Full wwPDB EM Validation Report

Oct 27, 2026 – 10:38 PM JST

PDB ID	:	22YN / pdb_000022yn
EMDB ID	:	EMD-68777
Title	:	Rotated 80S with A/A'-P/E tRNA
Authors	:	Wu, M.; Yuan, S.
Deposited on	:	2026-01-28
Resolution	:	2.90 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

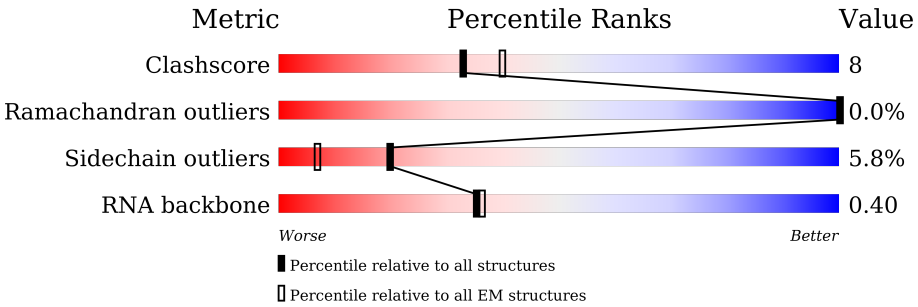
EMDB validation analysis	:	0.0.1.dev133
MolProbity	:	4-5-2 with Phenix2.2
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.51

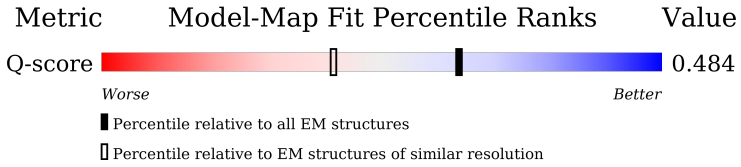
1 Overall quality at a glance (i)

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

The reported resolution of this entry is 2.90 Å.

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





Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	13054 (2.40 - 3.40)

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	Bb	76	8% 34% 53% 13%
2	LA	3396	49% 37% 7% 7%
3	LB	121	51% 42% 6%

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Mol	Chain	Length	Quality of chain
4	LC	158	52% 42% 6%
5	LD	251	78% 20%
6	LE	386	75% 24%
7	LF	361	78% 20%
8	LG	294	73% 27%
9	LH	175	6% 79% 15% 5%
10	LI	222	78% 21%
11	LJ	233	75% 25%
12	LK	191	80% 18%
13	LL	218	72% 26%
14	LM	169	5% 69% 27%
15	LN	193	80% 19%
16	LO	136	71% 26%
17	LP	203	81% 18%
18	LQ	197	81% 17%
19	LR	183	5% 84% 15%
20	LS	185	79% 20%
21	LT	188	7% 84% 15%
22	LU	171	81% 18%
23	LV	159	77% 23%
24	LW	100	82% 17%
25	LX	136	79% 20%
26	LY	65	89% 11%
27	LZ	121	83% 16%
28	La	125	70% 28%

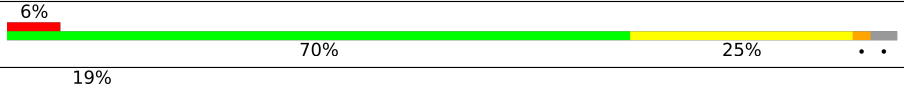
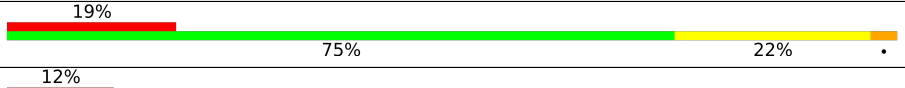
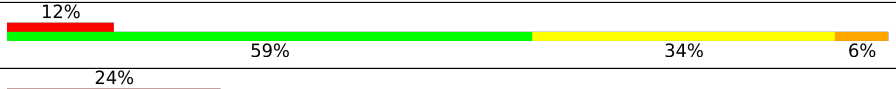
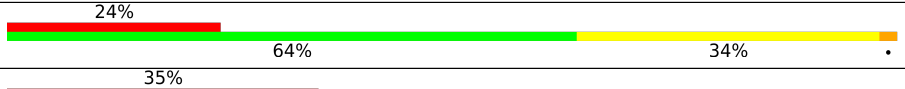
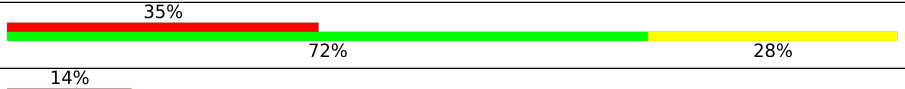
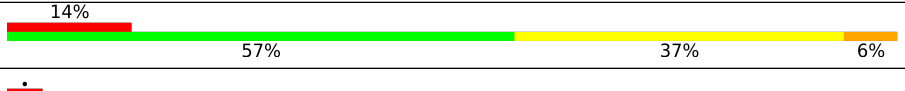
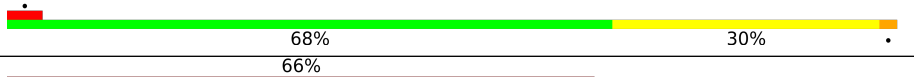
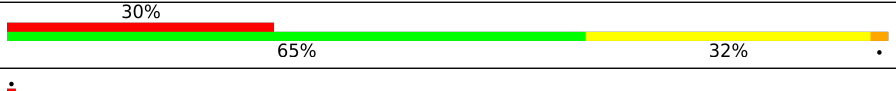
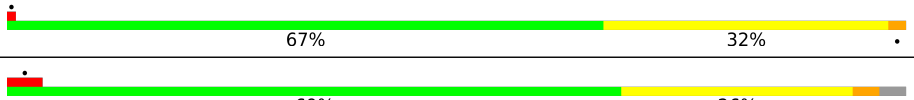
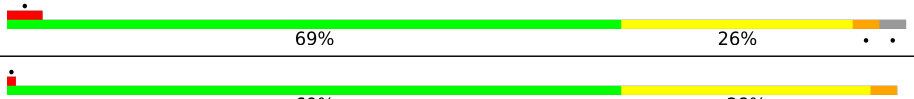
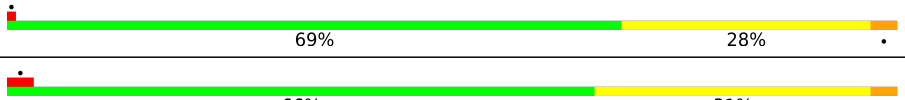
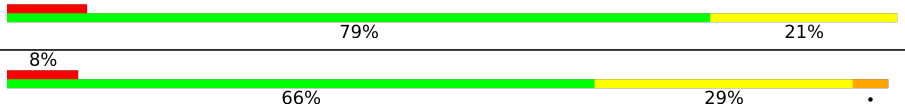
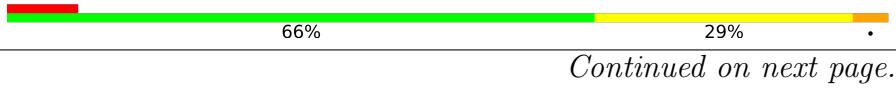
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Mol	Chain	Length	Quality of chain
29	Lb	135	82% 16%
30	Lc	148	80% 19%
31	Ld	58	79% 19%
32	Le	96	78% 21%
33	Lf	109	6% 81% 18%
34	Lg	127	91% 9%
35	Lh	106	82% 17%
36	Li	112	91% 9%
37	Lj	119	75% 24%
38	Lk	99	82% 15%
39	Ll	81	86% 12%
40	Lm	77	6% 78% 17% 5%
41	Ln	50	70% 24% 6%
42	Lo	52	87% 13%
43	Lp	25	80% 20%
44	Lq	103	81% 19%
45	Lr	91	79% 21%
46	mR	11	100%
47	Cc	77	5% 36% 56% 8%
48	S2	1800	12% 38% 46% 13%
49	SA	222	13% 70% 28%
50	SB	206	18% 62% 36%
51	SC	92	21% 65% 34%
52	SD	121	69% 75% 21%
53	SE	117	19% 66% 31%

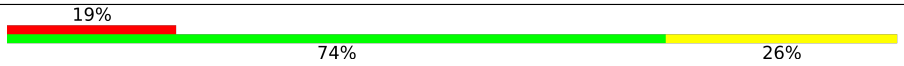
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Mol	Chain	Length	Quality of chain
54	SF	141	
55	SG	125	
56	SH	145	
57	SI	143	
58	SJ	100	
59	SK	82	
60	SL	63	
61	SM	53	
62	SN	73	
63	SO	312	
64	SP	206	
65	SQ	232	
66	SR	216	
67	SS	258	
68	ST	228	
69	SU	184	
70	SV	198	
71	SW	184	
72	SX	142	
73	SY	150	
74	SZ	127	
75	Sa	87	
76	Sb	129	
77	Sc	144	
78	Sd	134	

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Mol	Chain	Length	Quality of chain
79	Se	97	
80	Sf	81	
81	Sg	57	

2 Entry composition (i)

There are 81 unique types of molecules in this entry. The entry contains 202093 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 RNA (76-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	Bb	76	1622	725	293	529	75	0	0

- Molecule 2 is a RNA chain called RNA (3393-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	LA	3163	67653	30219	12193	22078	3163	0	0

- Molecule 3 is a RNA chain called RNA (121-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	LB	121	2579	1152	461	845	121	0	0

- Molecule 4 is a RNA chain called RNA (158-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
4	LC	158	3353	1500	586	1109	158	0	0

- Molecule 5 is a protein called Large ribosomal subunit protein uL2A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	LD	251	1899	1182	385	331	1	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	LE	386	3075	1950	584	533	8	0	0

- Molecule 7 is a protein called Large ribosomal subunit protein uL4A.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	LF	361	Total	C	N	O	S	0	0
			2748	1729	522	494	3		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
8	LG	294	Total	C	N	O	S	0	0
			2351	1484	410	455	2		

- Molecule 9 is a protein called Large ribosomal subunit protein eL6B.

Mol	Chain	Residues	Atoms				AltConf	Trace
9	LH	167	Total	C	N	O	0	0
			1307	843	234	230		

- Molecule 10 is a protein called Large ribosomal subunit protein uL30A.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	LI	222	Total	C	N	O	S	0	0
			1784	1151	324	308	1		

- Molecule 11 is a protein called Large ribosomal subunit protein eL8A.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	LJ	233	Total	C	N	O	S	0	0
			1804	1151	323	327	3		

- Molecule 12 is a protein called Large ribosomal subunit protein uL6A.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	LK	191	Total	C	N	O	S	0	0
			1508	957	274	273	4		

- Molecule 13 is a protein called Large ribosomal subunit protein uL16.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	LL	218	Total	C	N	O	S	0	0
			1764	1117	334	306	7		

- Molecule 14 is a protein called Large ribosomal subunit protein uL5B.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	LM	169	Total	C	N	O	S	0	0
			1346	843	252	247	4		

- Molecule 15 is a protein called Large ribosomal subunit protein eL13A.

Mol	Chain	Residues	Atoms				AltConf	Trace
15	LN	193	Total	C	N	O	0	0
			1543	962	315	266		

- Molecule 16 is a protein called Large ribosomal subunit protein eL14A.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	LO	136	Total	C	N	O	S	0	0
			1053	675	199	177	2		

- Molecule 17 is a protein called Large ribosomal subunit protein eL15A.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	LP	203	Total	C	N	O	S	0	0
			1720	1077	361	281	1		

- Molecule 18 is a protein called Large ribosomal subunit protein uL13A.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	LQ	197	Total	C	N	O	S	197	0
			1555	1003	289	262	1		

- Molecule 19 is a protein called Large ribosomal subunit protein uL22A.

Mol	Chain	Residues	Atoms				AltConf	Trace
19	LR	183	Total	C	N	O	0	0
			1416	879	284	253		

- Molecule 20 is a protein called Large ribosomal subunit protein eL18A.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	LS	185	Total	C	N	O	S	0	0
			1441	908	290	241	2		

- Molecule 21 is a protein called Large ribosomal subunit protein eL19A.

Mol	Chain	Residues	Atoms				AltConf	Trace
21	LT	188	Total	C	N	O	0	0
			1515	932	323	260		

- Molecule 22 is a protein called Large ribosomal subunit protein eL20A.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	LU	171	Total	C	N	O	S	0	0
			1437	925	266	243	3		

- Molecule 23 is a protein called Large ribosomal subunit protein eL21A.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	LV	159	Total	C	N	O	S	0	0
			1272	802	245	221	4		

- Molecule 24 is a protein called Large ribosomal subunit protein eL22A.

Mol	Chain	Residues	Atoms				AltConf	Trace
24	LW	100	Total	C	N	O	0	0
			796	516	131	149		

- Molecule 25 is a protein called Large ribosomal subunit protein uL14A.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	LX	136	Total	C	N	O	S	0	0
			1003	628	189	179	7		

- Molecule 26 is a protein called Large ribosomal subunit protein eL24A.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	LY	65	Total	C	N	O	S	0	0
			528	339	104	84	1		

- Molecule 27 is a protein called Large ribosomal subunit protein uL23.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	LZ	121	Total	C	N	O	S	0	0
			964	620	169	173	2		

- Molecule 28 is a protein called Large ribosomal subunit protein uL24A.

Mol	Chain	Residues	Atoms				AltConf	Trace
28	La	125	Total 984	C 620	N 191	O 173	0	0

- Molecule 29 is a protein called Large ribosomal subunit protein eL27A.

Mol	Chain	Residues	Atoms				AltConf	Trace
29	Lb	135	Total 1080	C 701	N 199	O 180	0	0

- Molecule 30 is a protein called Large ribosomal subunit protein uL15.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	Lc	148	Total 1169	C 747	N 231	O 188	S 3	0	0

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

Mol	Chain	Residues	Atoms				AltConf	Trace
31	Ld	58	Total 462	C 289	N 100	O 73	0	0

- Molecule 32 is a protein called Large ribosomal subunit protein eL30.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	Le	96	Total 737	C 476	N 123	O 137	S 1	0	0

- Molecule 33 is a protein called Large ribosomal subunit protein eL31A.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	Lf	109	Total 876	C 556	N 167	O 152	S 1	0	0

- Molecule 34 is a protein called Large ribosomal subunit protein eL32.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	Lg	127	Total 1017	C 644	N 205	O 167	S 1	0	0

- Molecule 35 is a protein called Large ribosomal subunit protein eL33A.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	Lh	106	Total	C	N	O	S	0	0
			850	540	165	144	1		

- Molecule 36 is a protein called Large ribosomal subunit protein eL34A.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	Li	112	Total	C	N	O	S	0	0
			880	545	179	152	4		

- Molecule 37 is a protein called Large ribosomal subunit protein uL29A.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	Lj	119	Total	C	N	O	S	0	0
			969	615	186	167	1		

- Molecule 38 is a protein called Large ribosomal subunit protein eL36A.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	Lk	99	Total	C	N	O	S	0	0
			766	478	154	132	2		

- Molecule 39 is a protein called Large ribosomal subunit protein eL37A.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	Ll	81	Total	C	N	O	S	0	0
			645	393	141	106	5		

- Molecule 40 is a protein called Large ribosomal subunit protein eL38.

Mol	Chain	Residues	Atoms				AltConf	Trace
40	Lm	77	Total	C	N	O	0	0
			612	391	115	106		

- Molecule 41 is a protein called Large ribosomal subunit protein eL39.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	Ln	50	Total	C	N	O	S	0	0
			436	272	97	65	2		

- Molecule 42 is a protein called Large ribosomal subunit protein eL40A.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	Lo	52	Total	C	N	O	S	0	0
			410	254	86	65	5		

- Molecule 43 is a protein called Large ribosomal subunit protein eL41A.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	Lp	25	Total	C	N	O	S	0	0
			229	139	62	27	1		

- Molecule 44 is a protein called Large ribosomal subunit protein eL42A.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	Lq	103	Total	C	N	O	S	0	0
			824	517	167	135	5		

- Molecule 45 is a protein called Large ribosomal subunit protein eL43A.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	Lr	91	Total	C	N	O	S	0	0
			694	429	138	121	6		

- Molecule 46 is a RNA chain called RNA (5'-R(P*UP*GP*AP*CP*GP*CP*UP*UP*UP*UP*C)-3').

Mol	Chain	Residues	Atoms					AltConf	Trace
46	mR	11	Total	C	N	O	P	0	0
			228	102	34	81	11		

- Molecule 47 is a RNA chain called tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	Cc	77	Total	C	N	O	P	0	0
			1644	732	298	537	77		

- Molecule 48 is a RNA chain called RNA(1770-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
48	S2	1771	Total	C	N	O	P	0	0
			37739	16872	6683	12413	1771		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
49	SA	222	Total	C	N	O	S	0	0
			1729	1098	312	313	6		

- Molecule 50 is a protein called Small ribosomal subunit protein uS7.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	SB	206	Total	C	N	O	S	0	0
			1605	1005	299	298	3		

- Molecule 51 is a protein called Small ribosomal subunit protein eS10A.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	SC	92	Total	C	N	O	S	0	0
			752	487	122	141	2		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
52	SD	121	Total	C	N	O	S	0	0
			875	551	153	169	2		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
53	SE	117	Total	C	N	O	S	0	0
			916	583	171	155	7		

- Molecule 54 is a protein called Small ribosomal subunit protein uS9A.

Mol	Chain	Residues	Atoms				AltConf	Trace
54	SF	141	Total	C	N	O	0	0
			1105	708	203	194		

- Molecule 55 is a protein called Small ribosomal subunit protein eS17B.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	SG	121	Total	C	N	O	S	0	0
			948	596	179	171	2		

- Molecule 56 is a protein called Small ribosomal subunit protein uS13A.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	SH	145	Total	C	N	O	S	0	0
			1188	741	237	208	2		

- Molecule 57 is a protein called Small ribosomal subunit protein eS19A.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	SI	143	Total	C	N	O	S	0	0
			1112	694	208	208	2		

- Molecule 58 is a protein called Small ribosomal subunit protein uS10.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	SJ	100	Total	C	N	O	S	0	0
			797	506	144	146	1		

- Molecule 59 is a protein called Small ribosomal subunit protein eS25A.

Mol	Chain	Residues	Atoms				AltConf	Trace
59	SK	82	Total	C	N	O	0	0
			651	416	123	112		

- Molecule 60 is a protein called Small ribosomal subunit protein eS28A.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	SL	63	Total	C	N	O	S	0	0
			491	303	96	91	1		

- Molecule 61 is a protein called Small ribosomal subunit protein uS14A.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	SM	53	Total	C	N	O	S	0	0
			442	274	92	72	4		

- Molecule 62 is a protein called Small ribosomal subunit protein eS31.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	SN	73	Total	C	N	O	S	0	0
			556	352	105	95	4		

- Molecule 63 is a protein called Small ribosomal subunit protein RACK1.

Mol	Chain	Residues	Atoms					AltConf	Trace
63	SO	312	Total	C	N	O	S	0	0
			2383	1514	409	452	8		

- Molecule 64 is a protein called Small ribosomal subunit protein uS2A.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	SP	206	Total	C	N	O	S	0	0
			1603	1030	284	287	2		

- Molecule 65 is a protein called Small ribosomal subunit protein eS1A.

Mol	Chain	Residues	Atoms					AltConf	Trace
65	SQ	226	Total	C	N	O	S	0	0
			1798	1139	330	325	4		

- Molecule 66 is a protein called Small ribosomal subunit protein uS5.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	SR	216	Total	C	N	O	S	0	0
			1626	1042	287	295	2		

- Molecule 67 is a protein called Small ribosomal subunit protein eS4A.

Mol	Chain	Residues	Atoms					AltConf	Trace
67	SS	258	Total	C	N	O	S	0	0
			2056	1308	387	358	3		

- Molecule 68 is a protein called Small ribosomal subunit protein eS6A.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	ST	228	Total	C	N	O	S	0	0
			1815	1138	351	323	3		

- Molecule 69 is a protein called Small ribosomal subunit protein eS7A.

Mol	Chain	Residues	Atoms				AltConf	Trace
69	SU	184	Total	C	N	O	0	0
			1473	946	263	264		

- Molecule 70 is a protein called Small ribosomal subunit protein eS8A.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	SV	187	Total	C	N	O	S	0	0
			1476	916	295	263	2		

- Molecule 71 is a protein called Small ribosomal subunit protein uS4A.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	SW	184	Total	C	N	O	S	0	0
			1479	935	285	258	1		

- Molecule 72 is a protein called Small ribosomal subunit protein uS17A.

Mol	Chain	Residues	Atoms					AltConf	Trace
72	SX	142	Total	C	N	O	S	0	0
			1142	733	217	189	3		

- Molecule 73 is a protein called Small ribosomal subunit protein uS15.

Mol	Chain	Residues	Atoms					AltConf	Trace
73	SY	150	Total	C	N	O	S	0	0
			1192	759	224	207	2		

- Molecule 74 is a protein called Small ribosomal subunit protein uS11B.

Mol	Chain	Residues	Atoms					AltConf	Trace
74	SZ	127	Total	C	N	O	S	0	0
			923	568	185	167	3		

- Molecule 75 is a protein called Small ribosomal subunit protein eS21A.

Mol	Chain	Residues	Atoms					AltConf	Trace
75	Sa	87	Total	C	N	O	S	0	0
			673	415	125	131	2		

- Molecule 76 is a protein called Small ribosomal subunit protein uS8A.

Mol	Chain	Residues	Atoms					AltConf	Trace
76	Sb	129	Total	C	N	O	S	0	0
			1021	650	188	180	3		

- Molecule 77 is a protein called Small ribosomal subunit protein uS12A.

Mol	Chain	Residues	Atoms					AltConf	Trace
77	Sc	144	Total	C	N	O	S	0	0
			1121	708	220	191	2		

- Molecule 78 is a protein called Small ribosomal subunit protein eS24A.

Mol	Chain	Residues	Atoms				AltConf	Trace
78	Sd	134	Total	C	N	O	0	0
			1032	651	195	186		

- Molecule 79 is a protein called Small ribosomal subunit protein eS26B.

Mol	Chain	Residues	Atoms					AltConf	Trace
79	Se	97	Total	C	N	O	S	0	0
			765	473	160	127	5		

- Molecule 80 is a protein called Small ribosomal subunit protein eS27A.

Mol	Chain	Residues	Atoms					AltConf	Trace
80	Sf	81	Total	C	N	O	S	0	0
			610	382	110	113	5		

- Molecule 81 is a protein called Small ribosomal subunit protein eS30A.

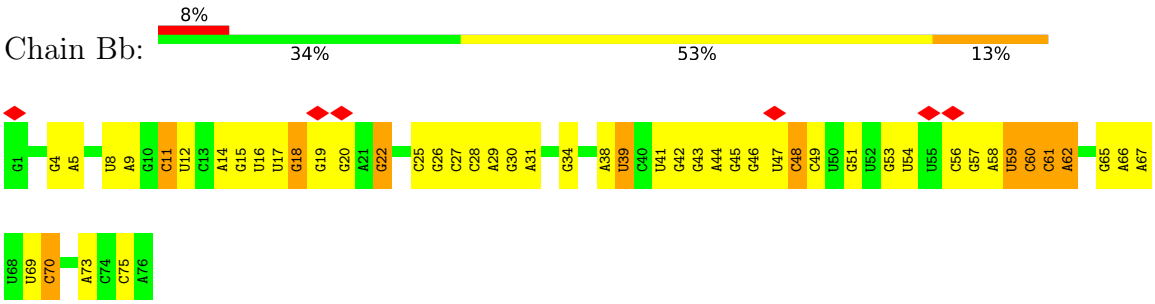
Mol	Chain	Residues	Atoms					AltConf	Trace
81	Sg	57	Total	C	N	O	S	0	0
			451	284	93	73	1		

3 Residue-property plots (i)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry 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.

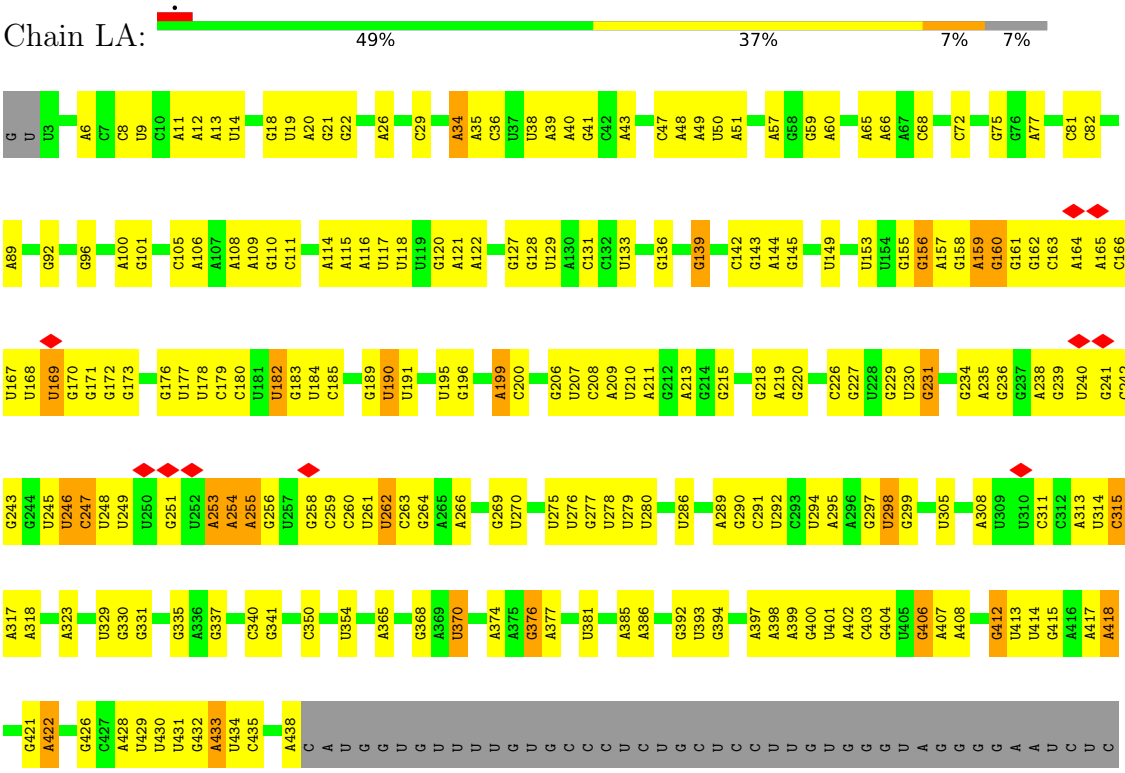
• Molecule 1: RNA (76-MER)

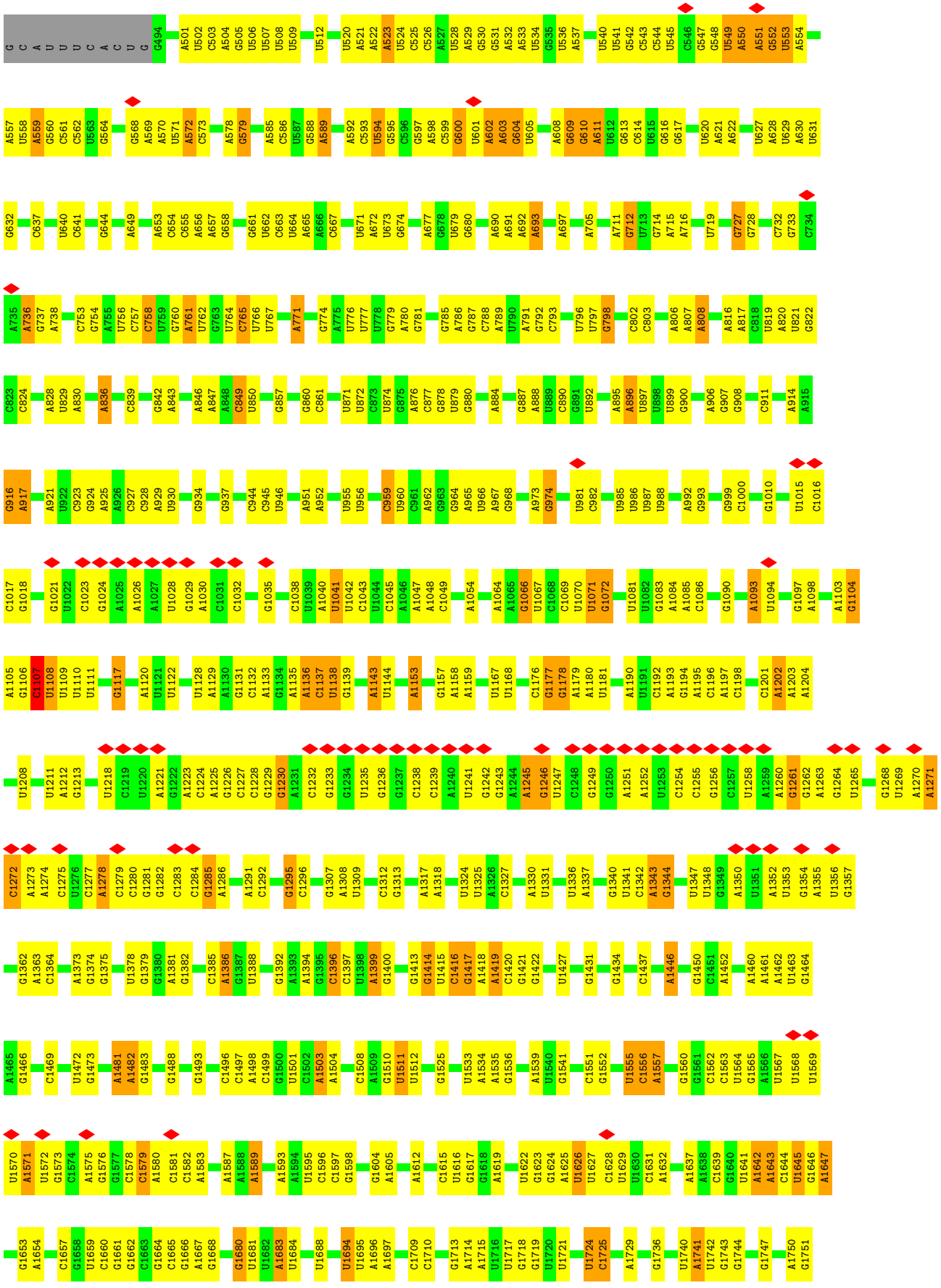
Chain Bb:

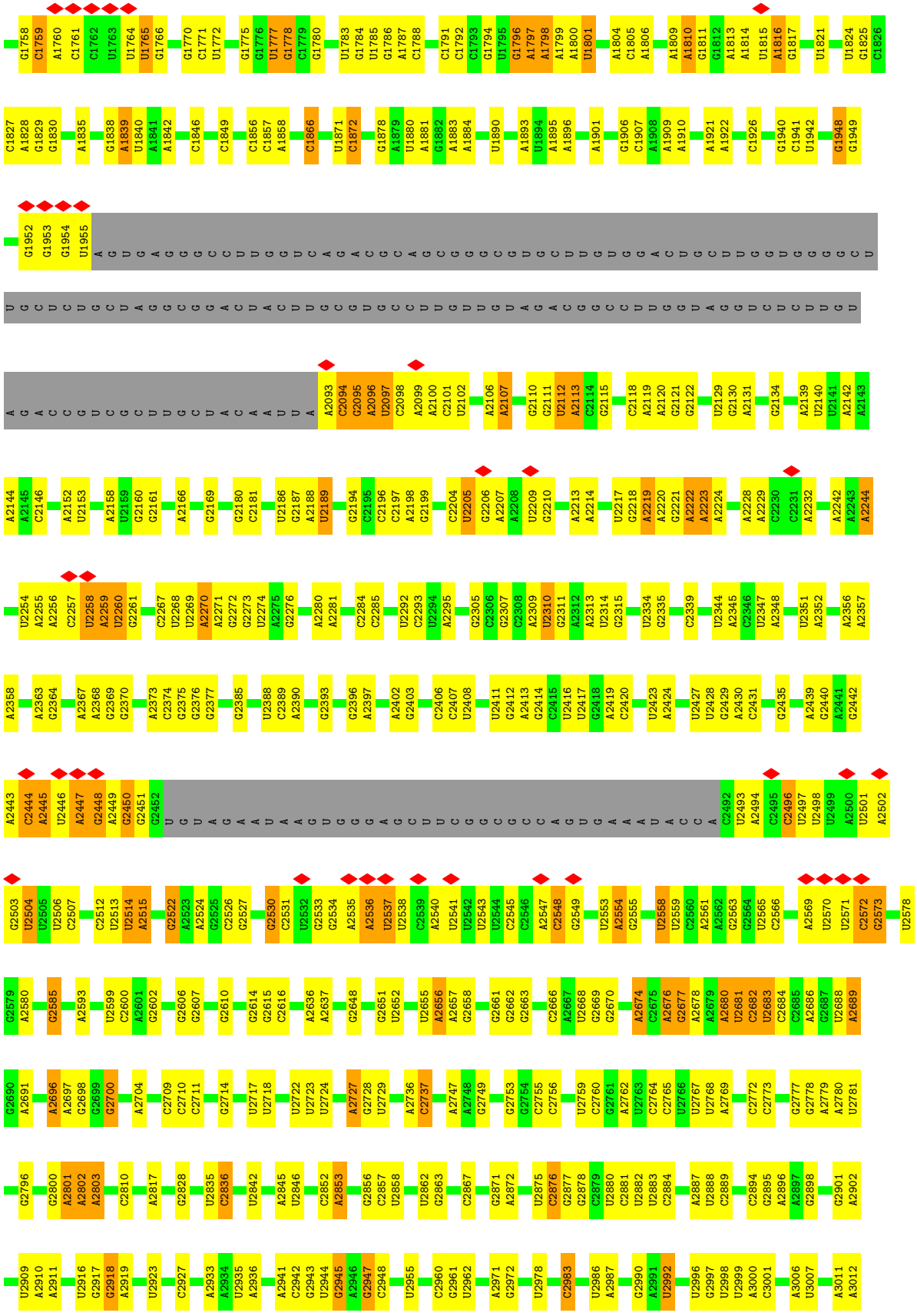


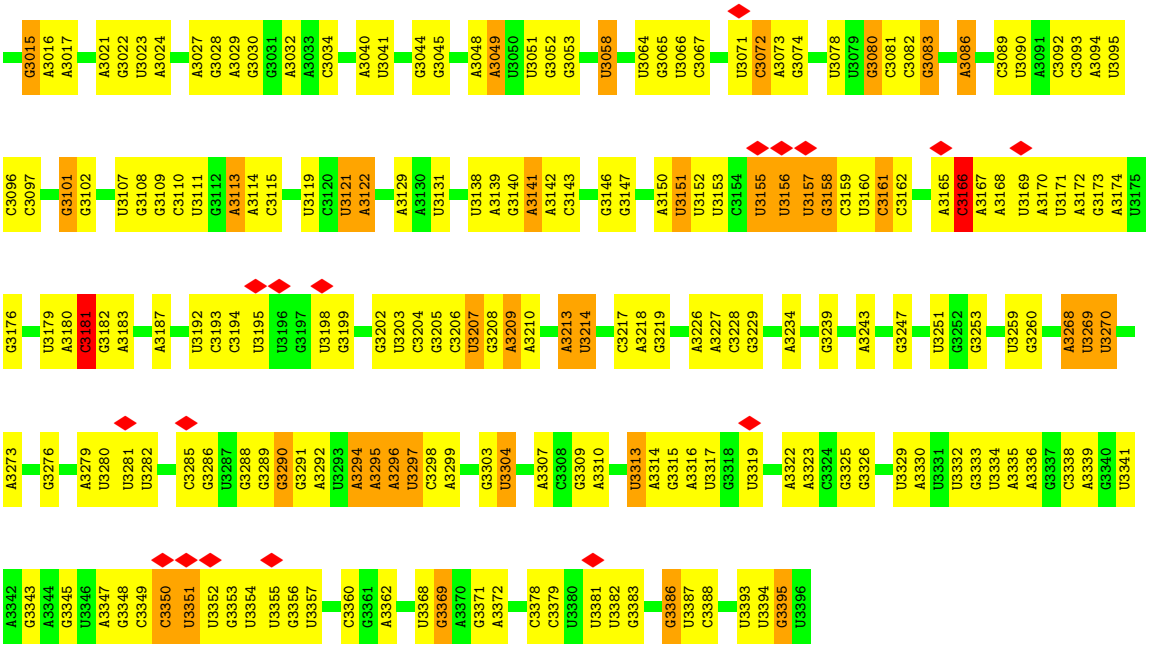
• Molecule 2: RNA (3393-MER)

Chain LA:





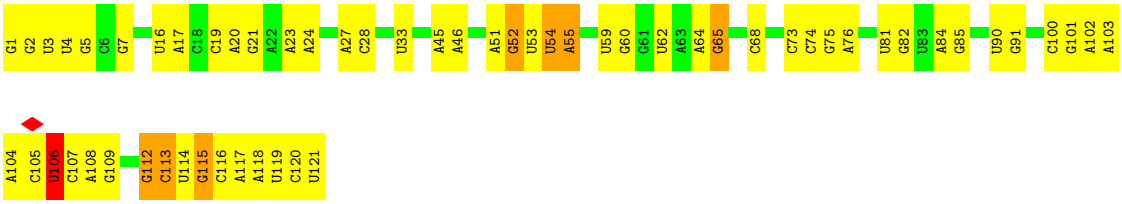




• Molecule 3: RNA (121-MER)

Chain LB:

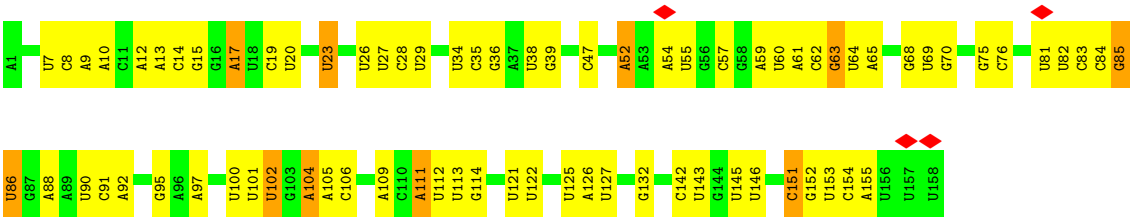




• Molecule 4: RNA (158-MER)

Chain LC:



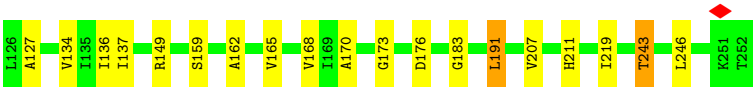


• Molecule 5: Large ribosomal subunit protein uL2A

Chain LD:



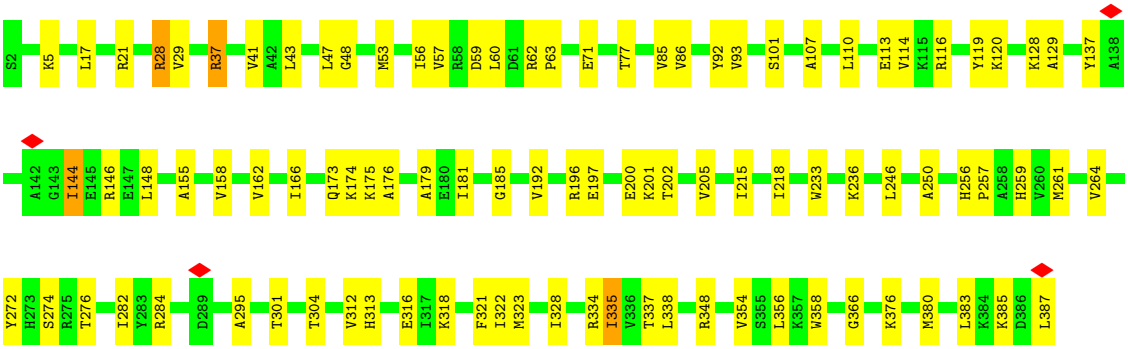




• Molecule 6: Large ribosomal subunit protein uL3

Chain LE:

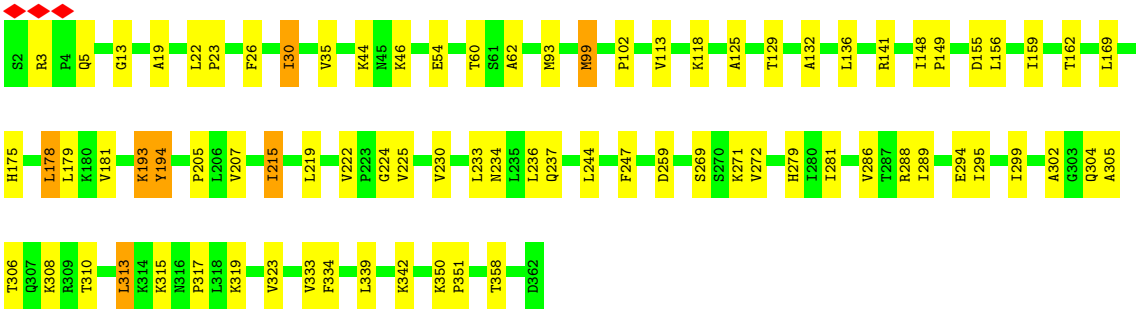




• Molecule 7: Large ribosomal subunit protein uL4A

Chain LF:

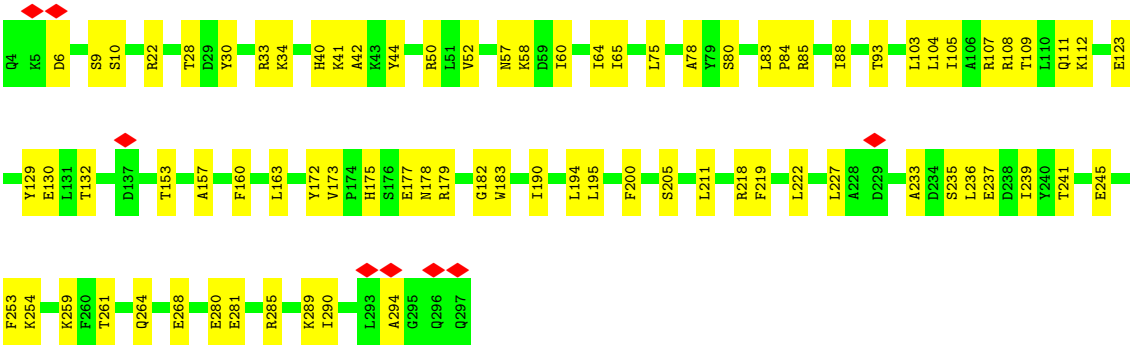




• Molecule 8: Large ribosomal subunit protein uL18

Chain LG:

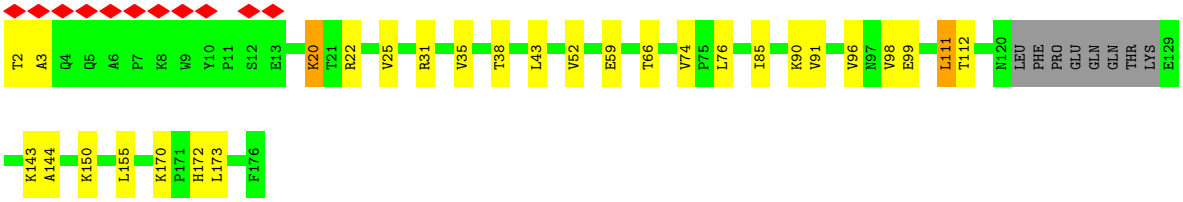




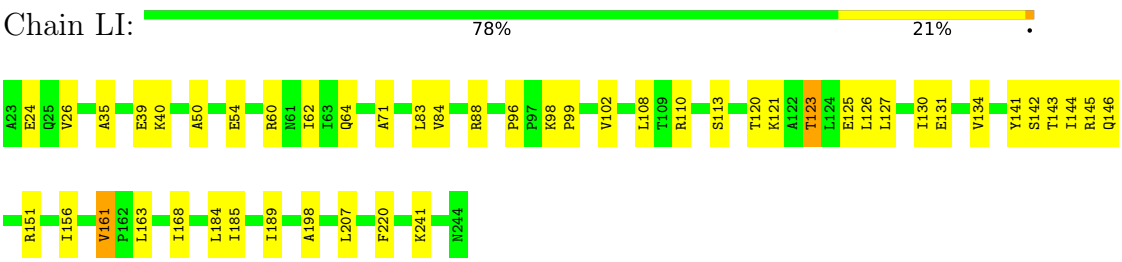
• Molecule 9: Large ribosomal subunit protein eL6B

Chain LH:

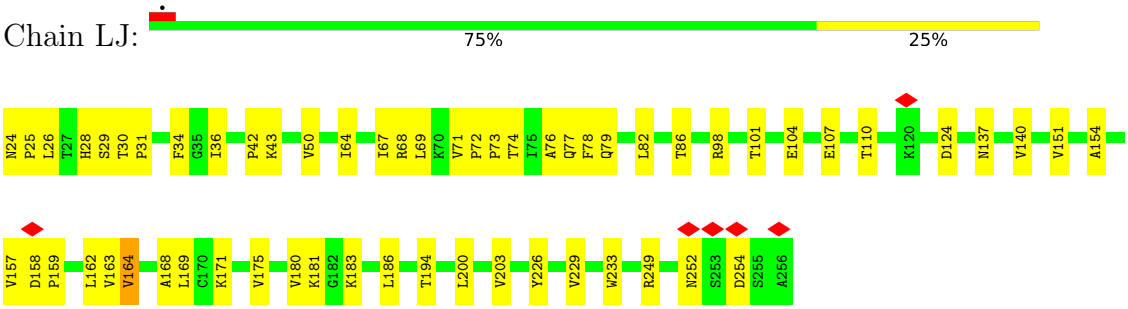




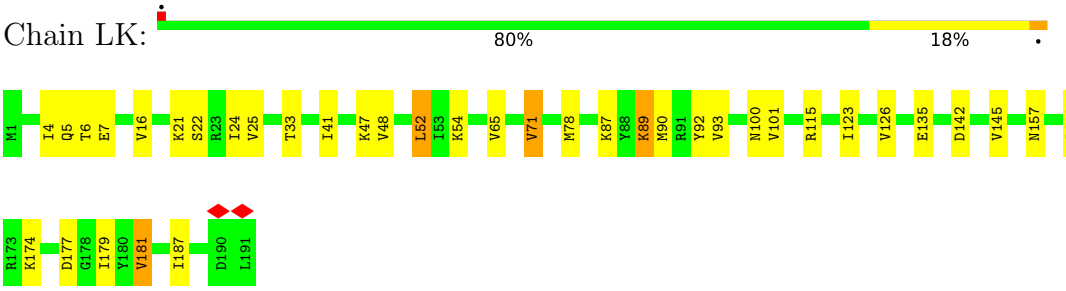
• Molecule 10: Large ribosomal subunit protein uL30A



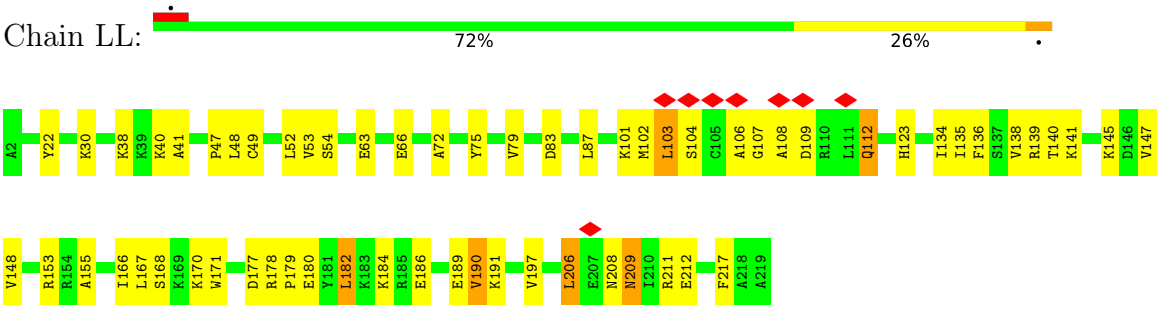
• Molecule 11: Large ribosomal subunit protein eL8A



• Molecule 12: Large ribosomal subunit protein uL6A

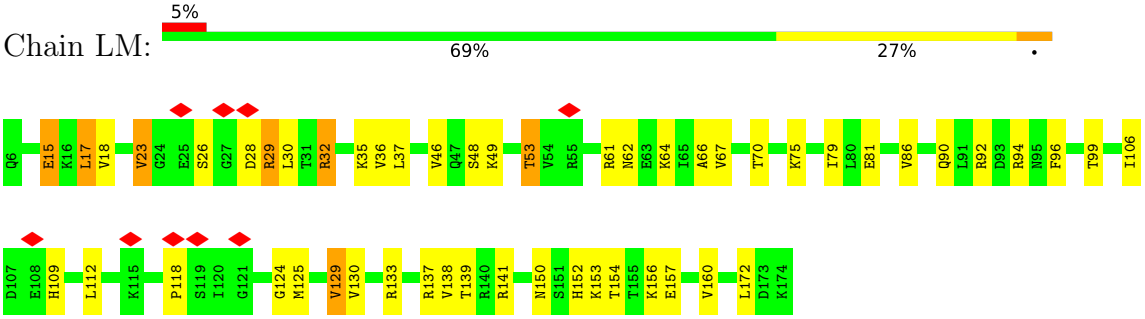


• Molecule 13: Large ribosomal subunit protein uL16



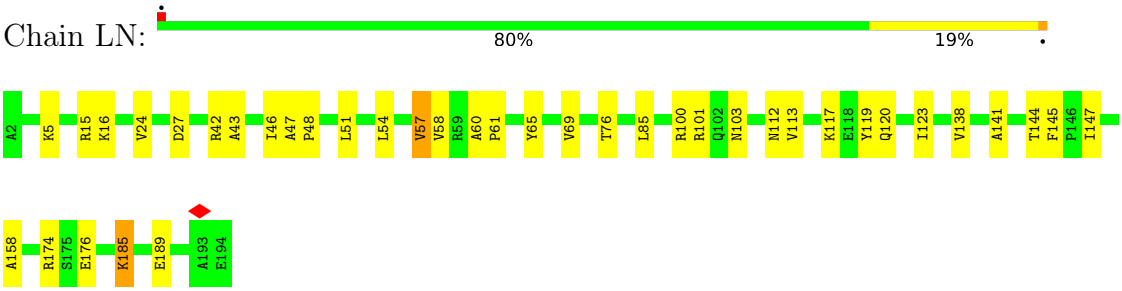
• Molecule 14: Large ribosomal subunit protein uL5B

Chain LM:



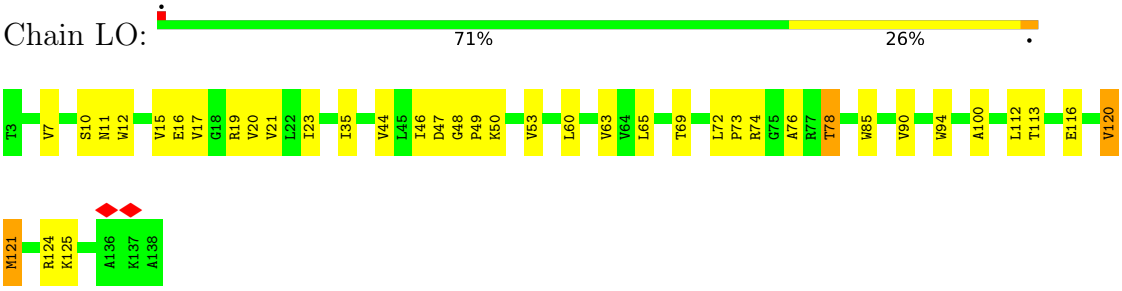
• Molecule 15: Large ribosomal subunit protein eL13A

Chain LN:



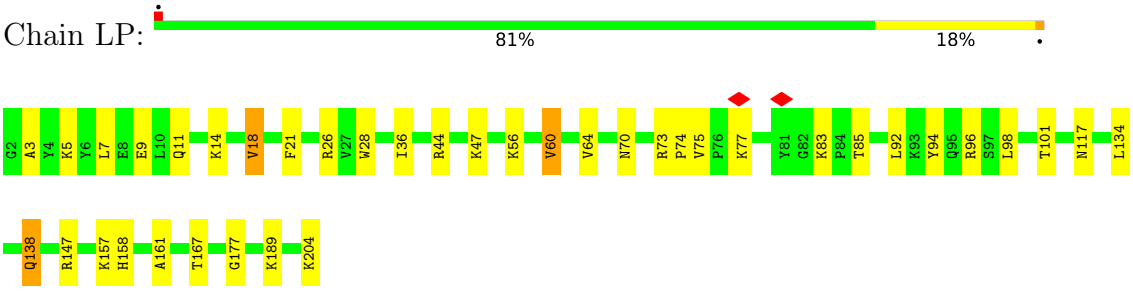
• Molecule 16: Large ribosomal subunit protein eL14A

Chain LO:



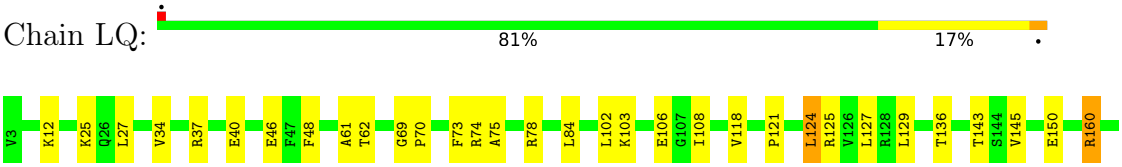
• Molecule 17: Large ribosomal subunit protein eL15A

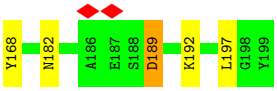
Chain LP:



• Molecule 18: Large ribosomal subunit protein uL13A

Chain LQ:

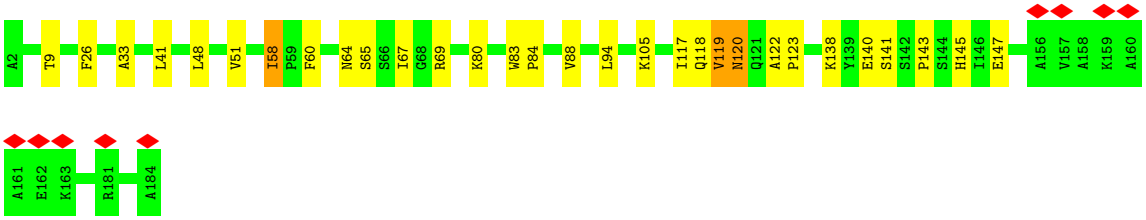




• Molecule 19: Large ribosomal subunit protein uL22A

Chain LR:

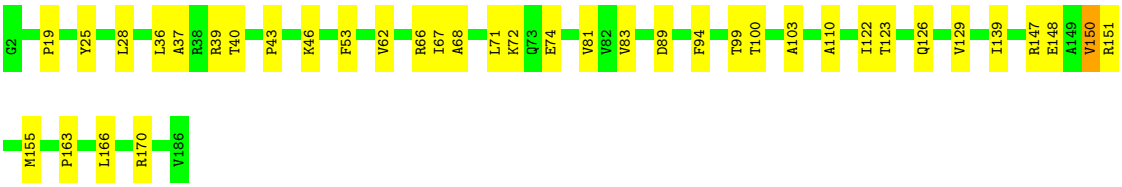




• Molecule 20: Large ribosomal subunit protein eL18A

Chain LS:

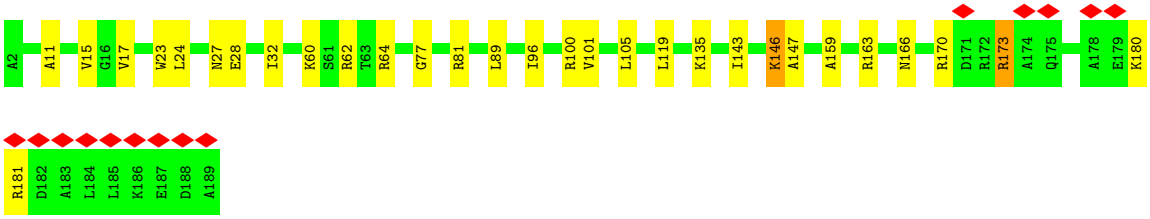




• Molecule 21: Large ribosomal subunit protein eL19A

Chain LT:





• Molecule 22: Large ribosomal subunit protein eL20A

Chain LU:

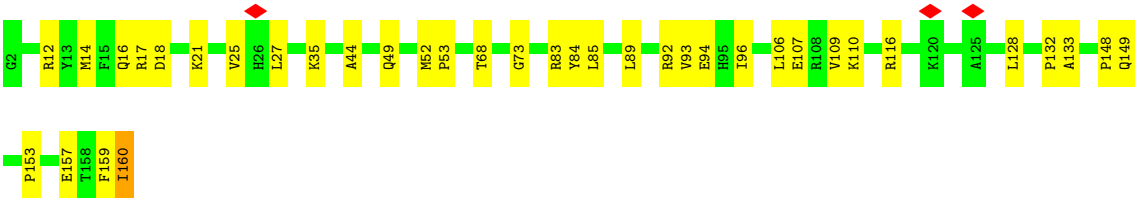




• Molecule 23: Large ribosomal subunit protein eL21A

Chain LV:

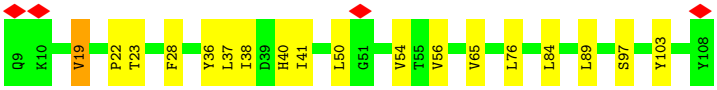




• Molecule 24: Large ribosomal subunit protein eL22A

Chain LW:

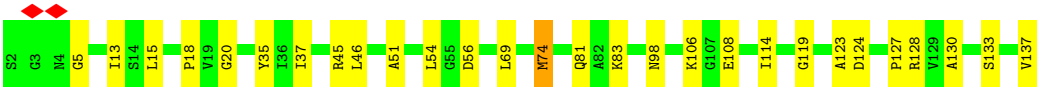




• Molecule 25: Large ribosomal subunit protein uL14A

Chain LX:

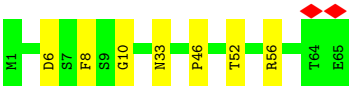




• Molecule 26: Large ribosomal subunit protein eL24A

Chain LY:

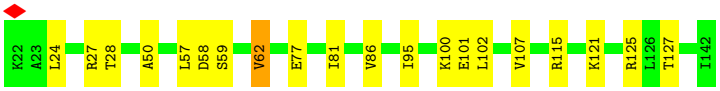




• Molecule 27: Large ribosomal subunit protein uL23

Chain LZ:

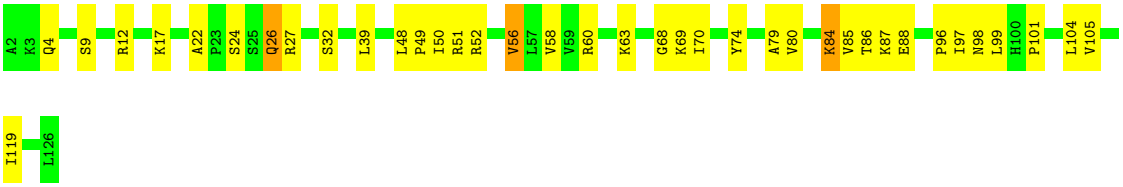




• Molecule 28: Large ribosomal subunit protein uL24A

Chain La:

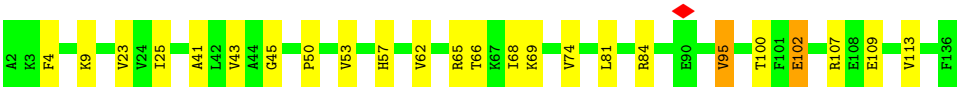




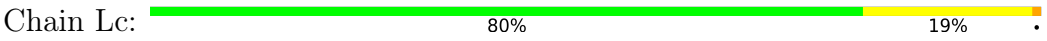
• Molecule 29: Large ribosomal subunit protein eL27A

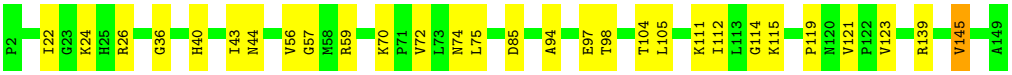
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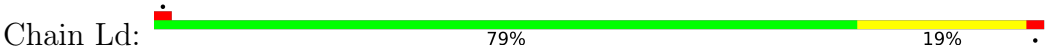


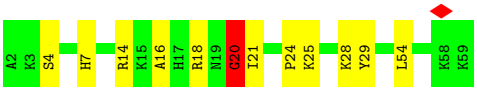
• Molecule 30: Large ribosomal subunit protein uL15



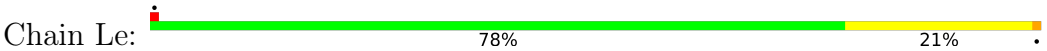


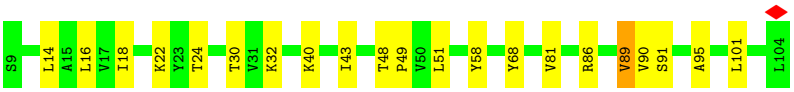
• Molecule 31: Large ribosomal subunit protein eL29



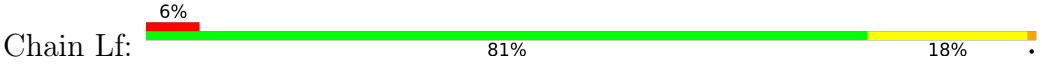


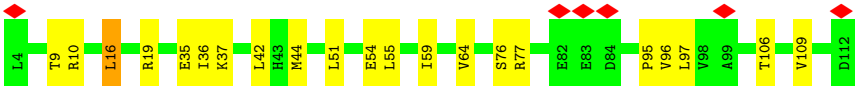
• Molecule 32: Large ribosomal subunit protein eL30



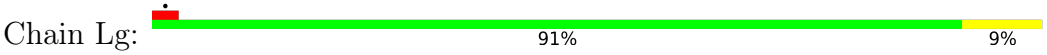


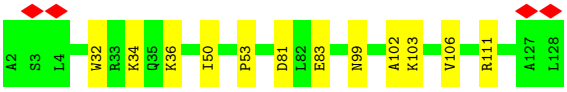
• Molecule 33: Large ribosomal subunit protein eL31A



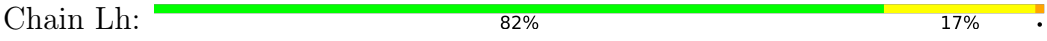


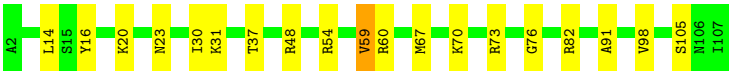
• Molecule 34: Large ribosomal subunit protein eL32





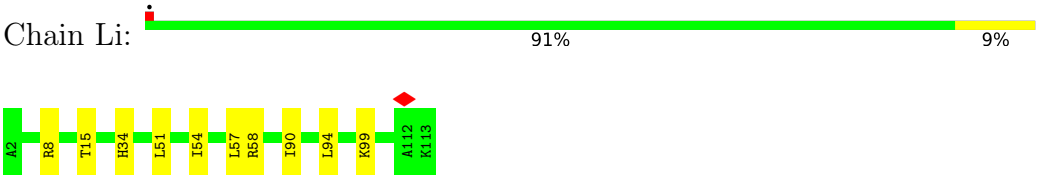
• Molecule 35: Large ribosomal subunit protein eL33A





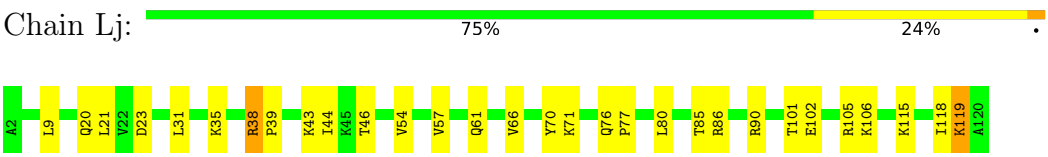
• Molecule 36: Large ribosomal subunit protein eL34A

Chain Li:



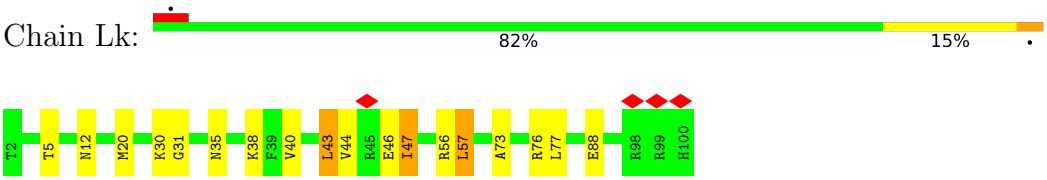
• Molecule 37: Large ribosomal subunit protein uL29A

Chain Lj:



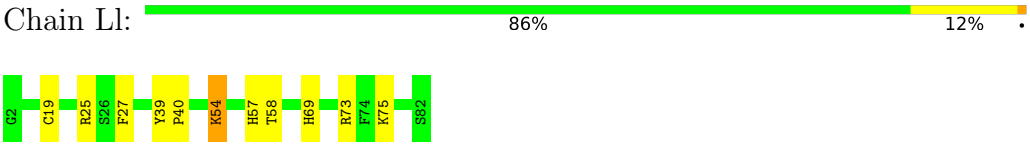
• Molecule 38: Large ribosomal subunit protein eL36A

Chain Lk:



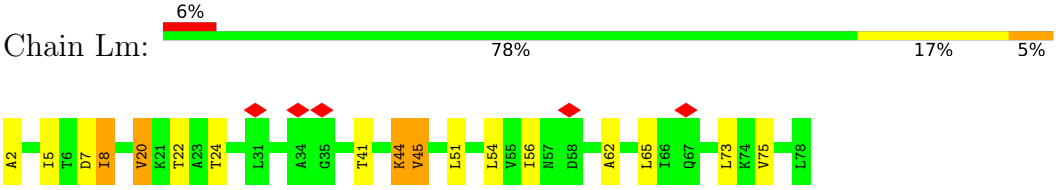
• Molecule 39: Large ribosomal subunit protein eL37A

Chain Ll:



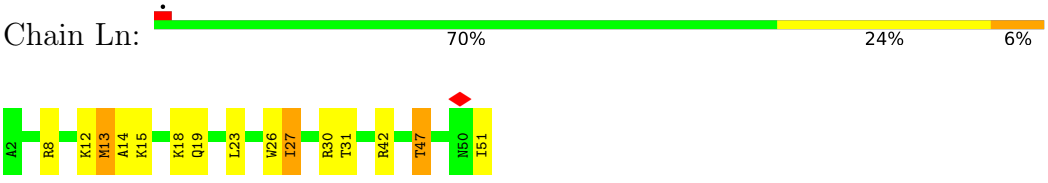
• Molecule 40: Large ribosomal subunit protein eL38

Chain Lm:



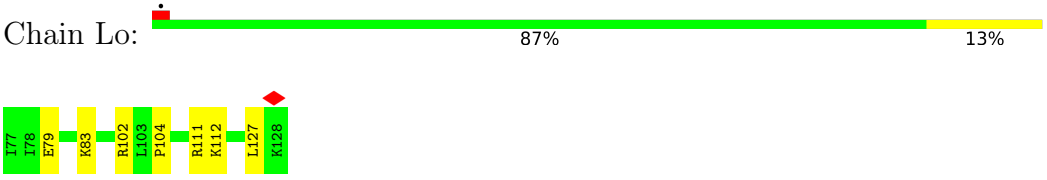
• Molecule 41: Large ribosomal subunit protein eL39

Chain Ln:



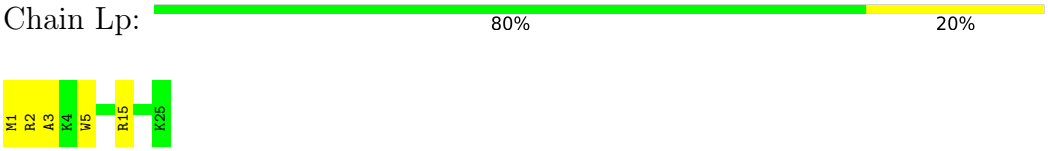
• Molecule 42: Large ribosomal subunit protein eL40A

Chain Lo:



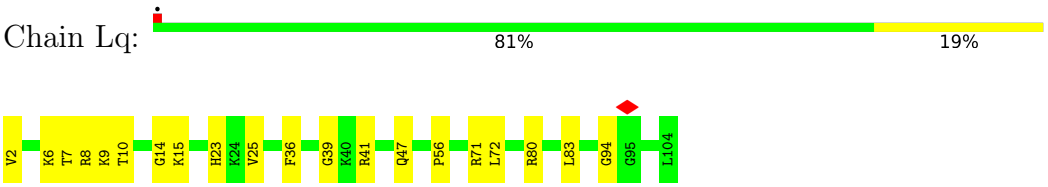
• Molecule 43: Large ribosomal subunit protein eL41A

Chain Lp:



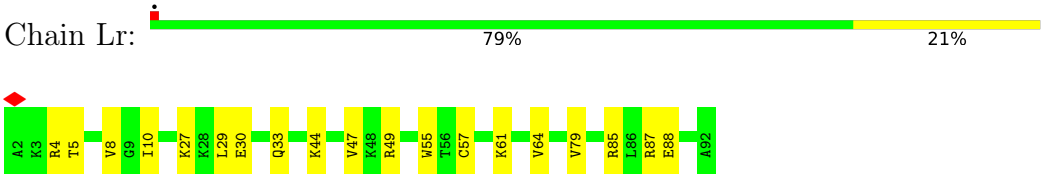
• Molecule 44: Large ribosomal subunit protein eL42A

Chain Lq:



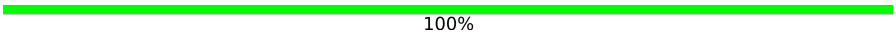
• Molecule 45: Large ribosomal subunit protein eL43A

Chain Lr:



• Molecule 46: RNA (5'-R(P*UP*GP*AP*CP*GP*CP*UP*UP*UP*UP*C)-3')

Chain mR:

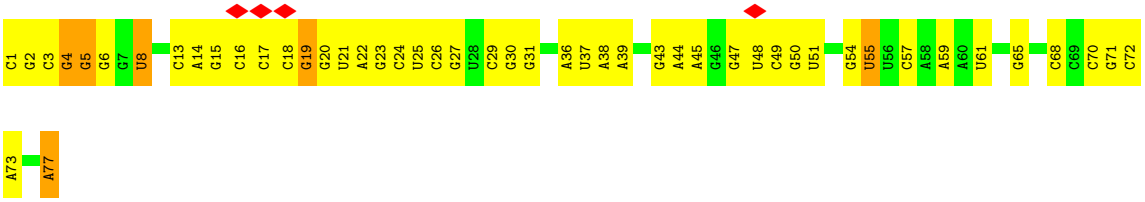


There are no outlier residues recorded for this chain.

• Molecule 47: tRNA

Chain Cc:

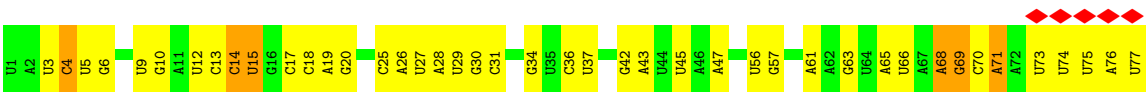


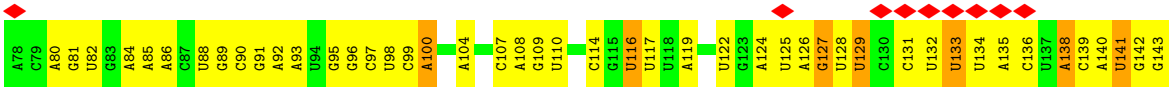


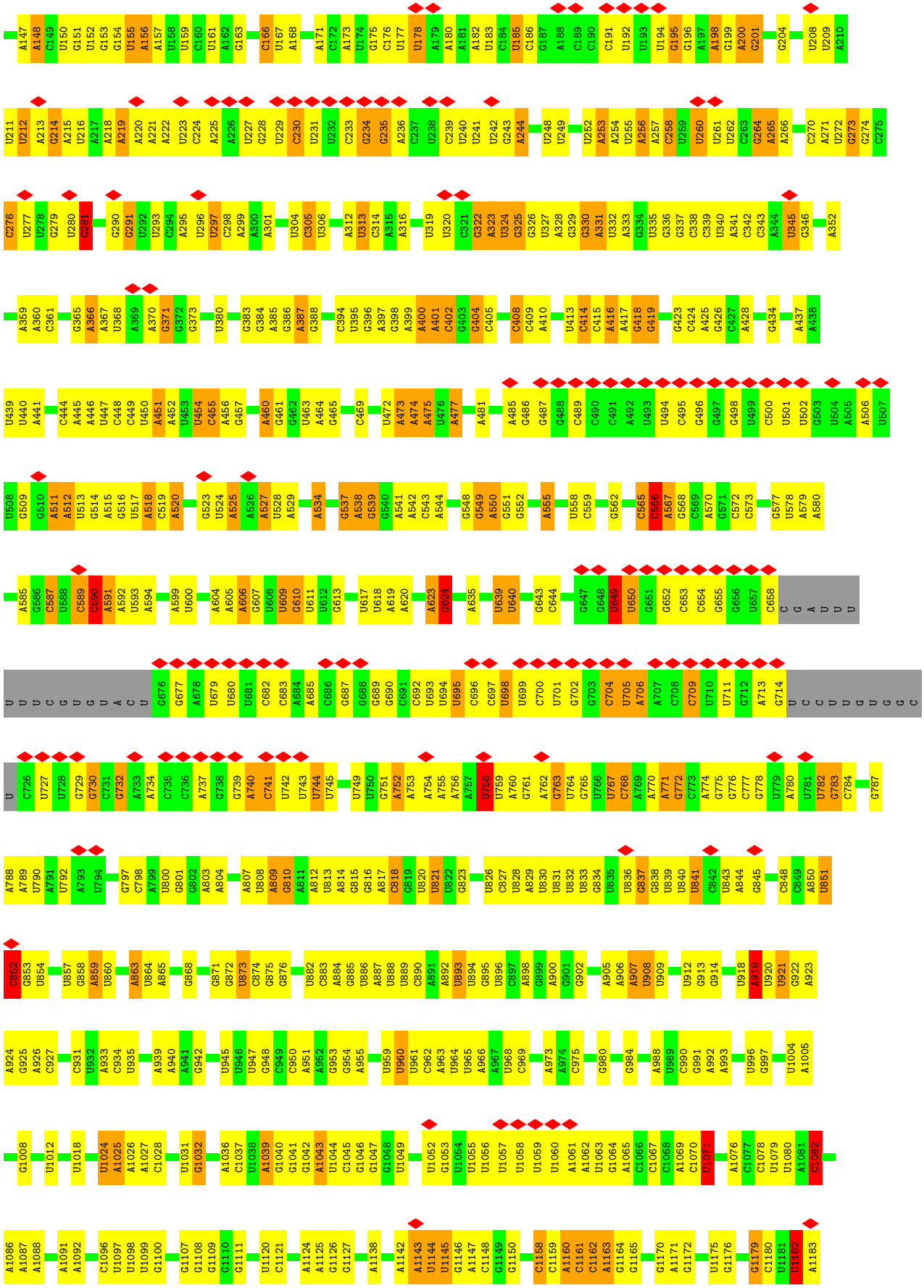
• Molecule 48: RNA(1770-MER)

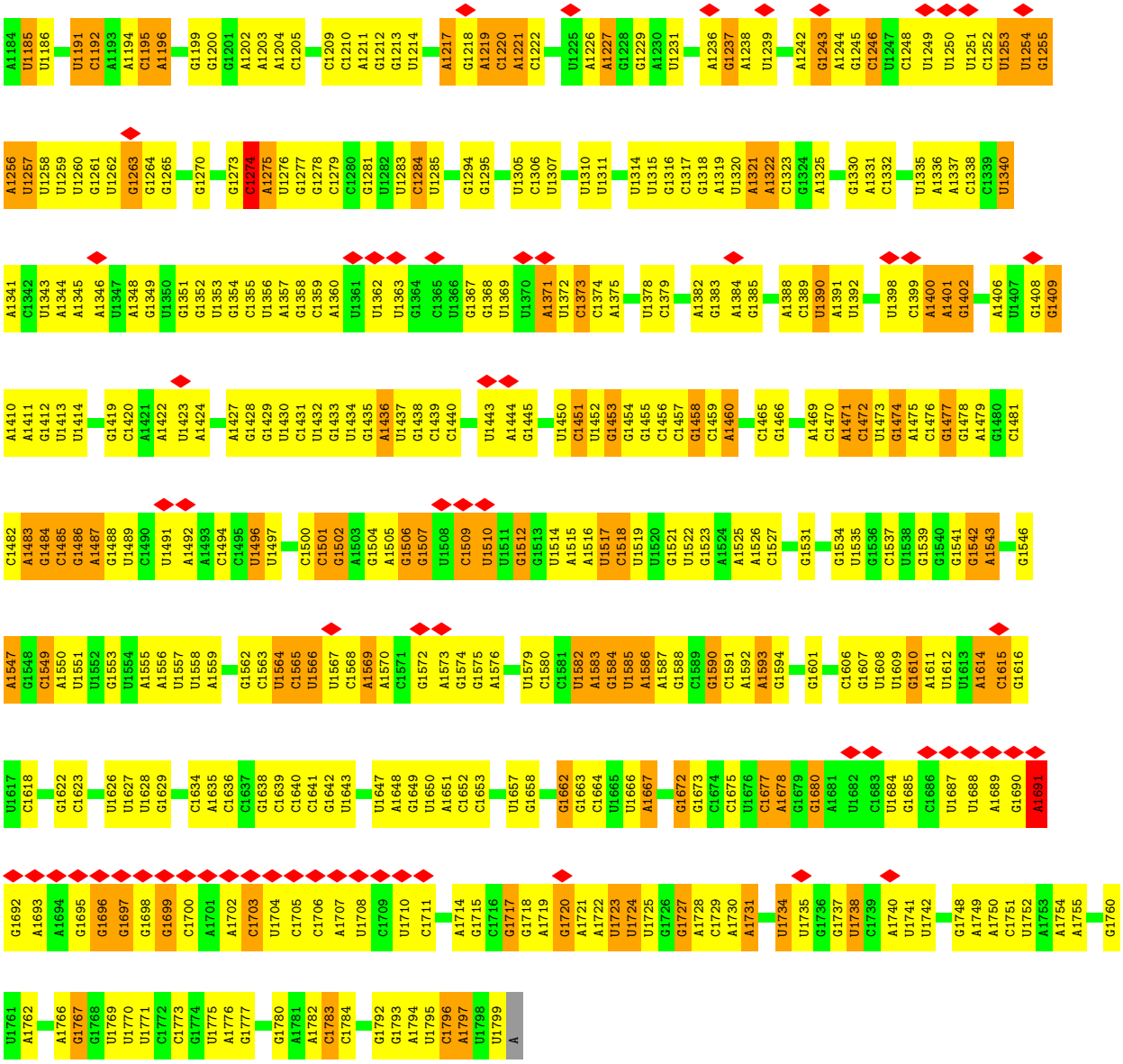
Chain S2:







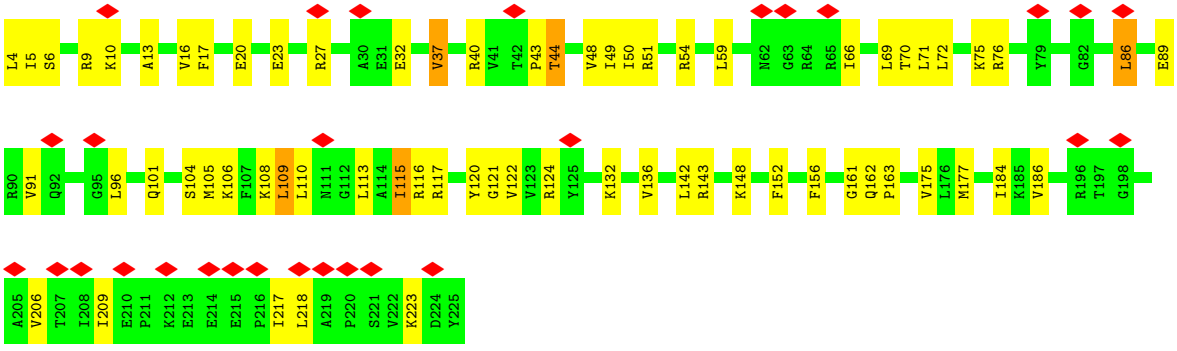




• Molecule 49: Small ribosomal subunit protein uS3

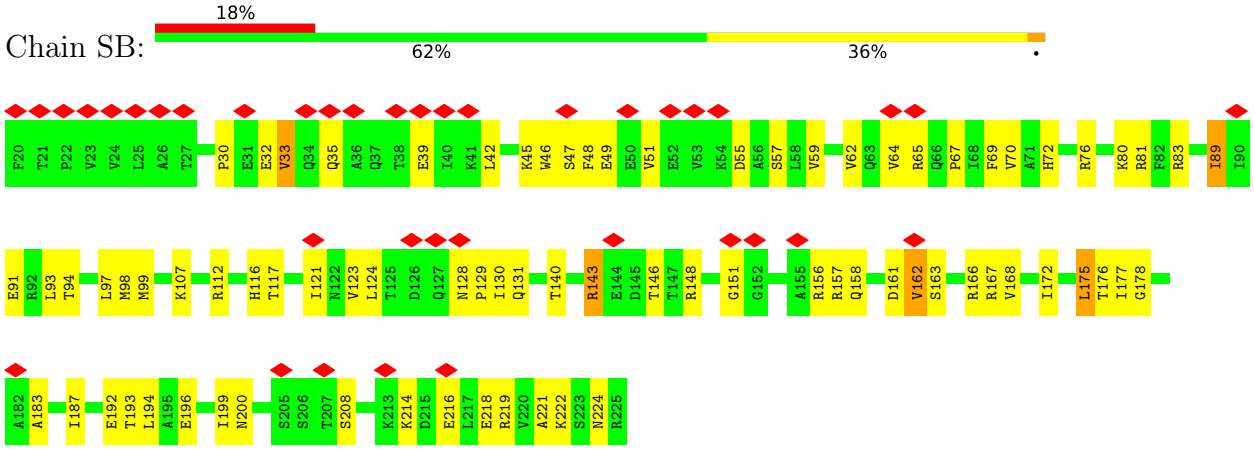
Chain SA:





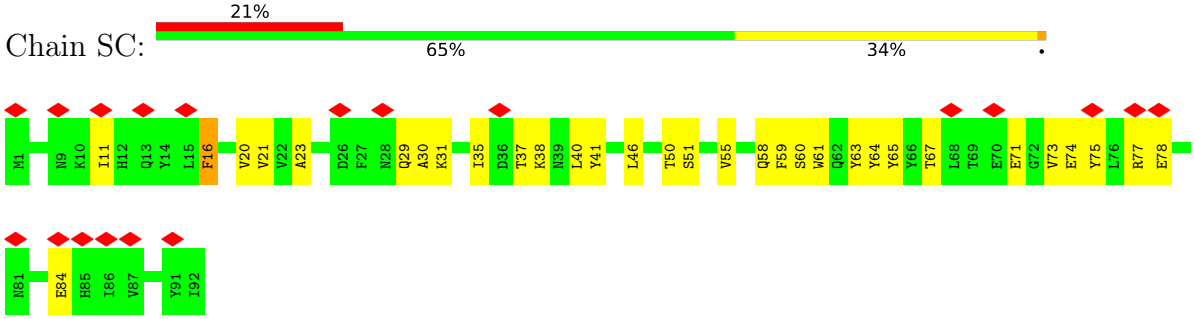
• Molecule 50: Small ribosomal subunit protein uS7

Chain SB:



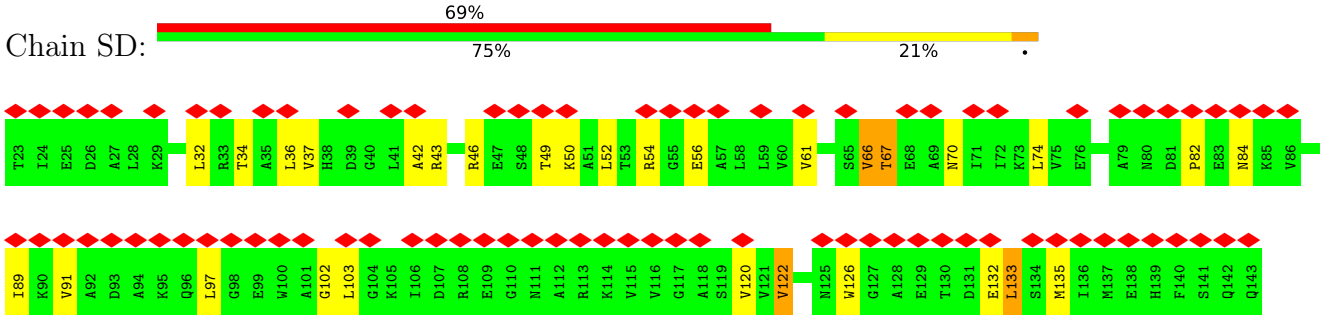
• Molecule 51: Small ribosomal subunit protein eS10A

Chain SC:



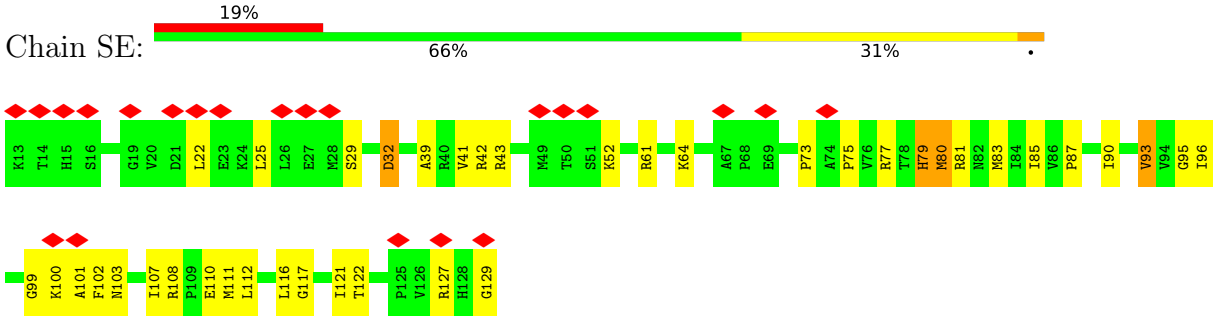
• Molecule 52: Small ribosomal subunit protein eS12

Chain SD:



• Molecule 53: Small ribosomal subunit protein uS19

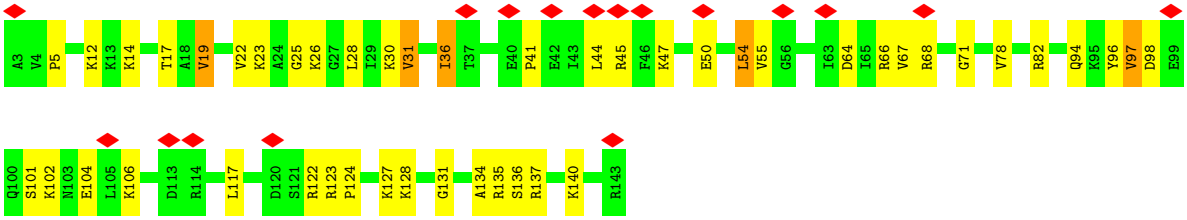
Chain SE:



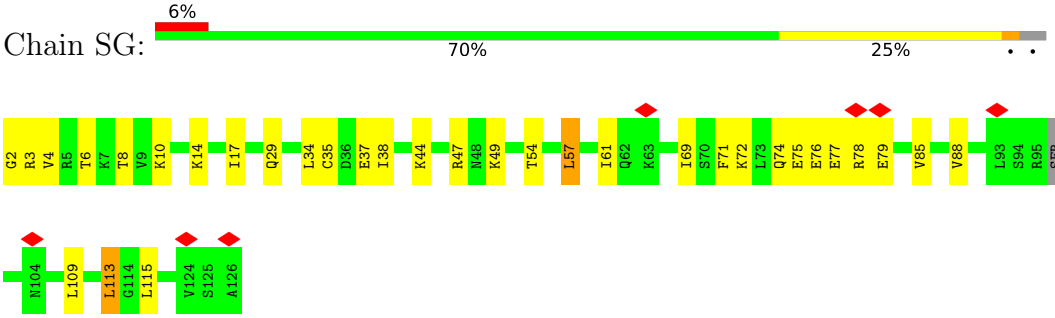
• Molecule 54: Small ribosomal subunit protein uS9A

Chain SF:

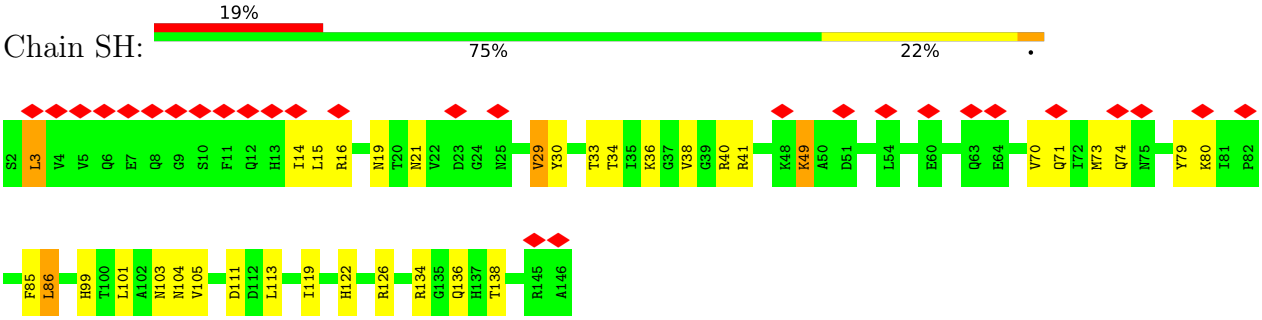




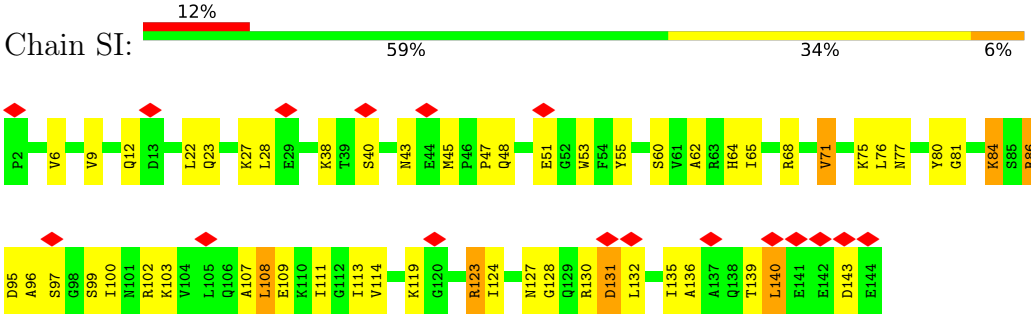
• Molecule 55: Small ribosomal subunit protein eS17B



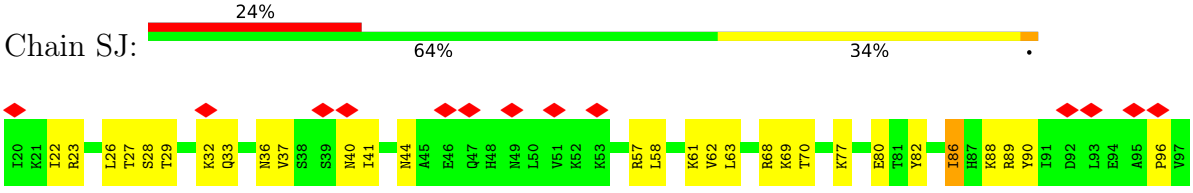
• Molecule 56: Small ribosomal subunit protein uS13A

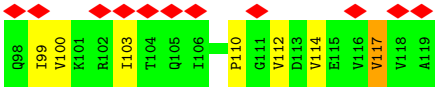


• Molecule 57: Small ribosomal subunit protein eS19A



• Molecule 58: Small ribosomal subunit protein uS10

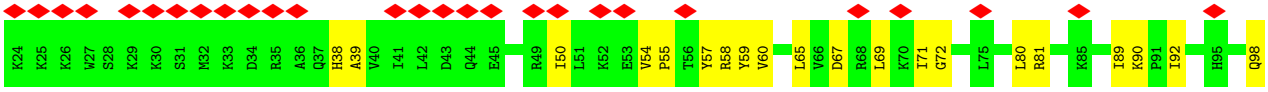


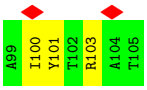


• Molecule 59: Small ribosomal subunit protein eS25A

Chain SK:



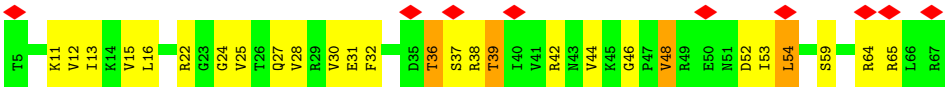




• Molecule 60: Small ribosomal subunit protein eS28A

Chain SL:

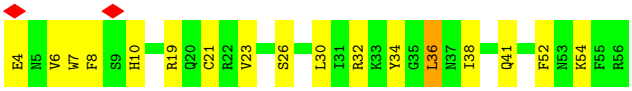




• Molecule 61: Small ribosomal subunit protein uS14A

Chain SM:

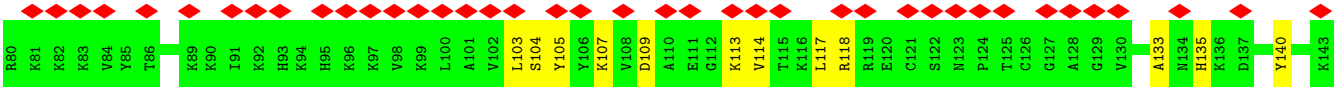


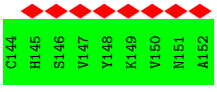


• Molecule 62: Small ribosomal subunit protein eS31

Chain SN:



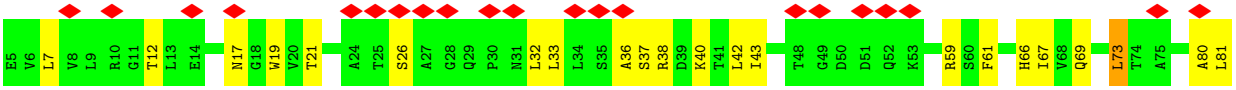


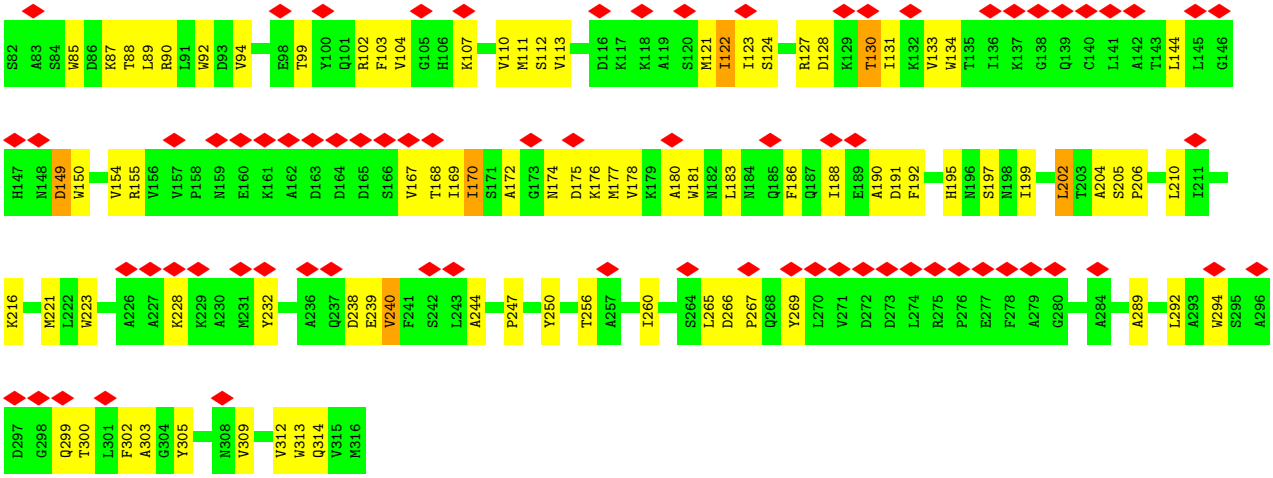


• Molecule 63: Small ribosomal subunit protein RACK1

Chain SO:



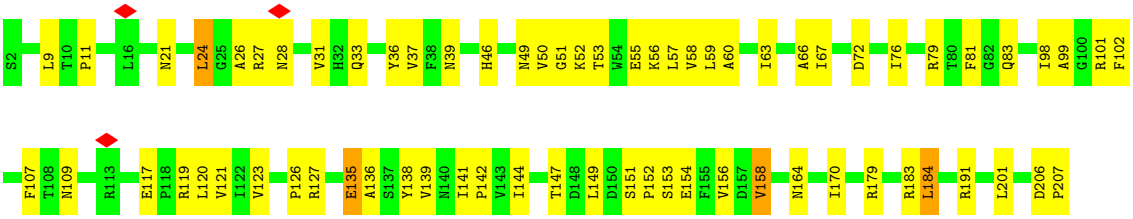




• Molecule 64: Small ribosomal subunit protein uS2A

Chain SP:

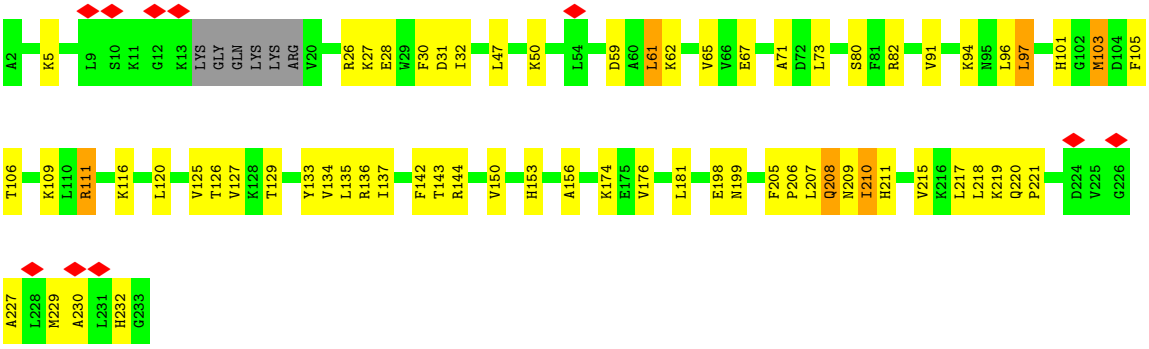




• Molecule 65: Small ribosomal subunit protein eS1A

Chain SQ:



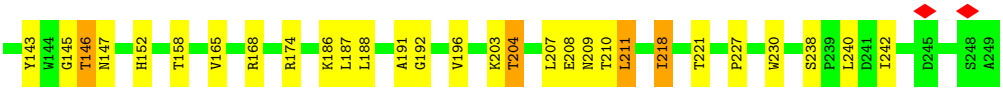


• Molecule 66: Small ribosomal subunit protein uS5

Chain SR:

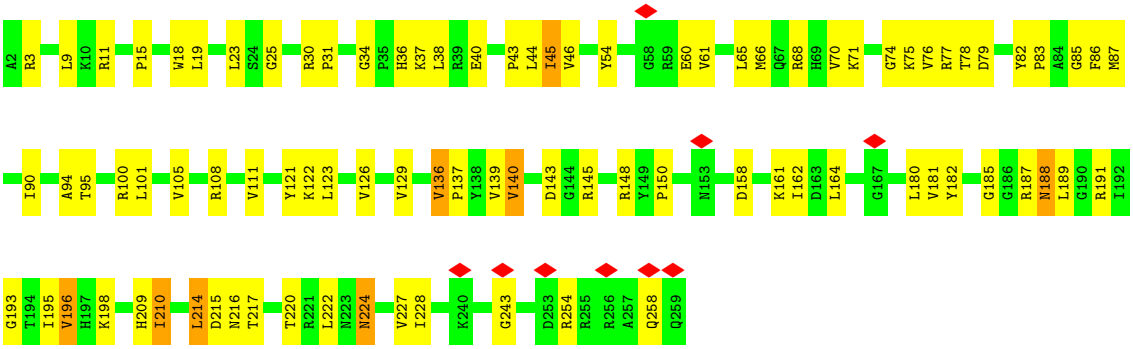






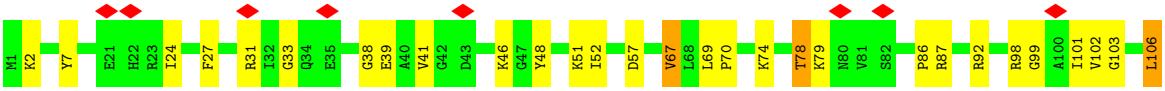
• Molecule 67: Small ribosomal subunit protein eS4A

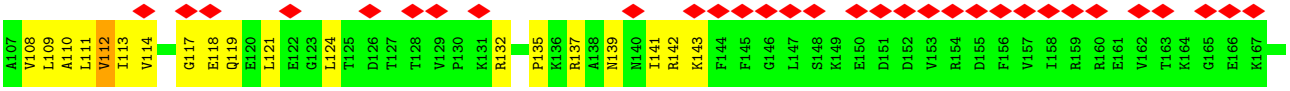


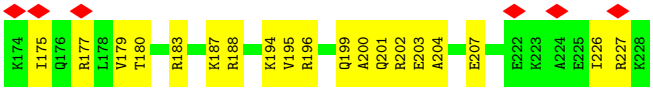


• Molecule 68: Small ribosomal subunit protein eS6A



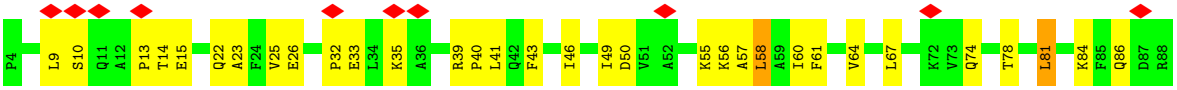


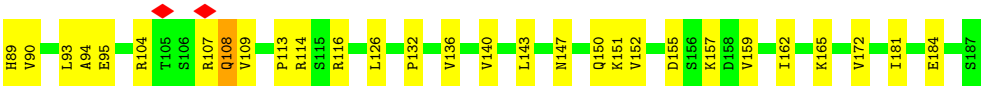




• Molecule 69: Small ribosomal subunit protein eS7A

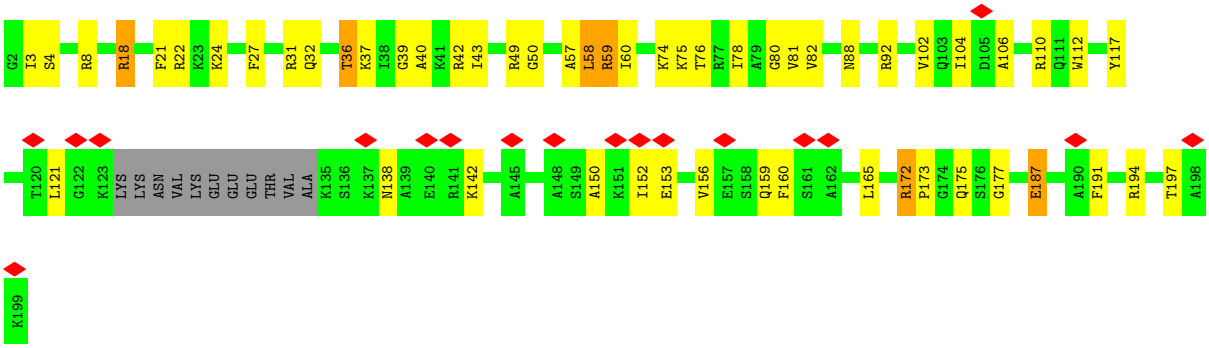




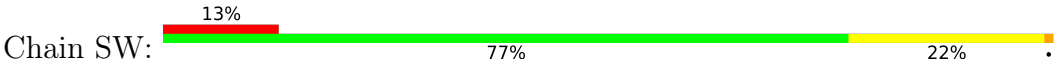


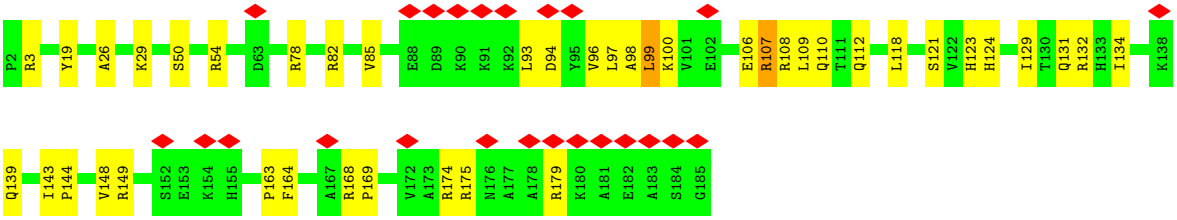
• Molecule 70: Small ribosomal subunit protein eS8A



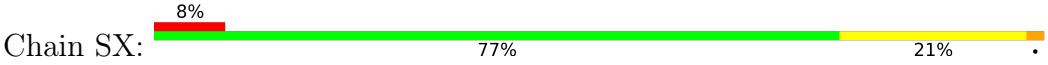


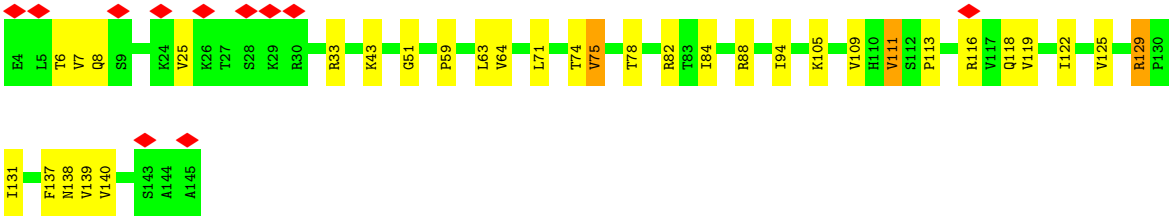
• Molecule 71: Small ribosomal subunit protein uS4A





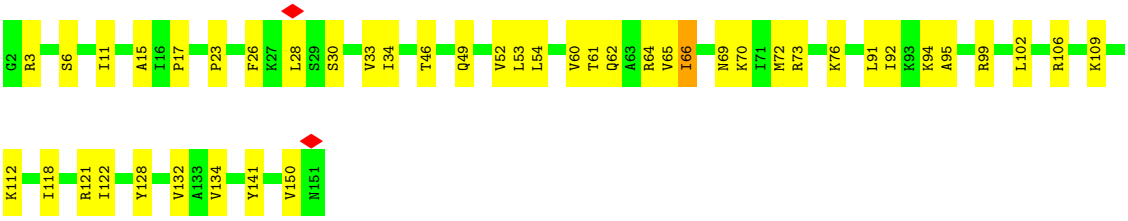
• Molecule 72: Small ribosomal subunit protein uS17A





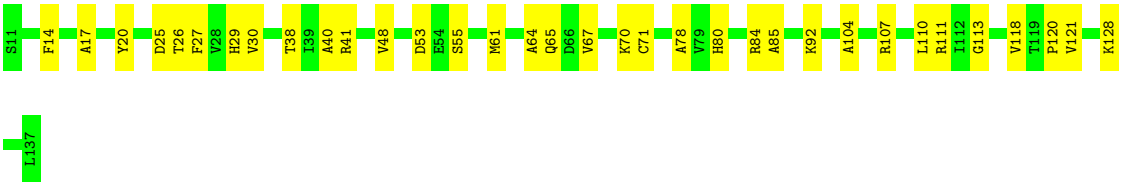
• Molecule 73: Small ribosomal subunit protein uS15



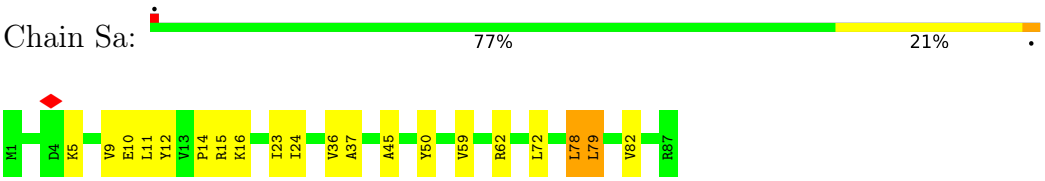


• Molecule 74: Small ribosomal subunit protein uS11B

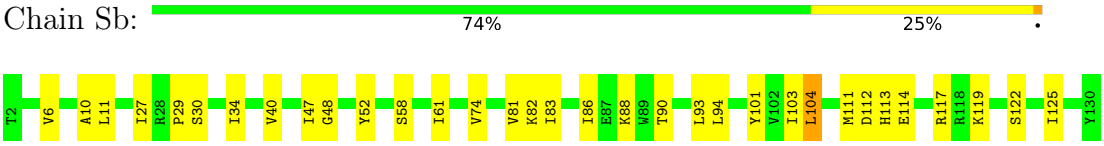




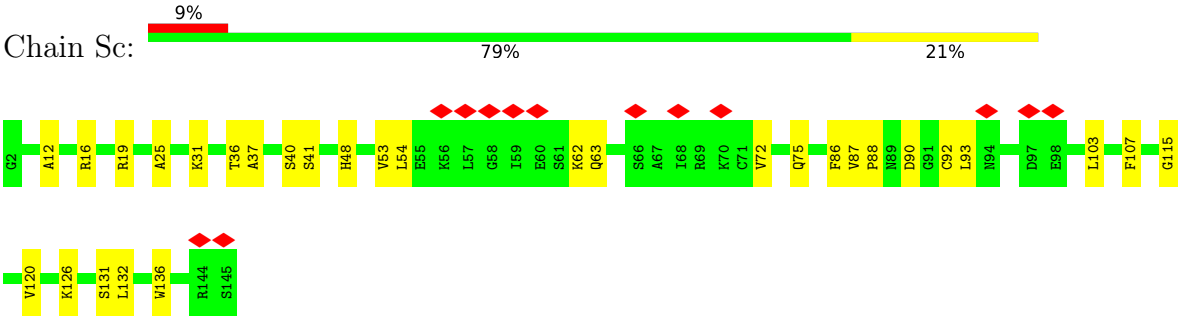
• Molecule 75: Small ribosomal subunit protein eS21A



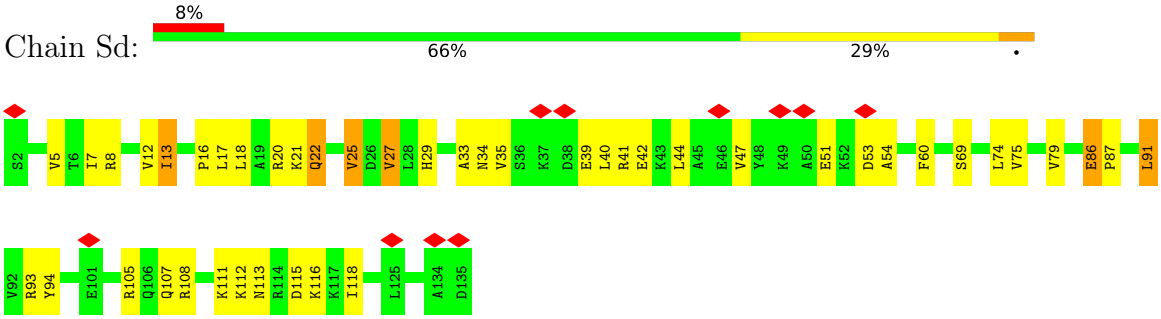
• Molecule 76: Small ribosomal subunit protein uS8A



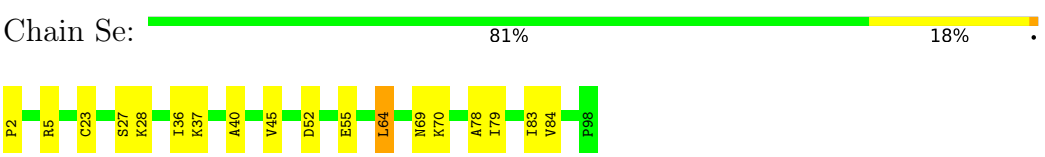
• Molecule 77: Small ribosomal subunit protein uS12A



• Molecule 78: Small ribosomal subunit protein eS24A



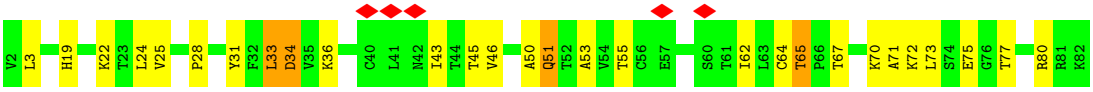
• Molecule 79: Small ribosomal subunit protein eS26B



• Molecule 80: Small ribosomal subunit protein eS27A

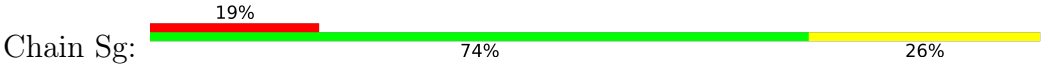
Chain Sf:





• Molecule 81: Small ribosomal subunit protein eS30A

Chain Sg:





4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	15173	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	JEOL CRYO ARM 300	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	50	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	1.781	Depositor
Minimum map value	-0.905	Depositor
Average map value	-0.002	Depositor
Map value standard deviation	0.069	Depositor
Recommended contour level	0.16	Depositor
Map size (Å)	570.0, 570.0, 570.0	wwPDB
Map dimensions	600, 600, 600	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.95, 0.95, 0.95	Depositor

5 Model quality

5.1 Standard geometry

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	Bb	0.27	0/1814	0.81	0/2827
2	LA	0.40	0/75727	0.75	22/118064 (0.0%)
3	LB	0.36	0/2883	0.74	2/4491 (0.0%)
4	LC	0.39	0/3746	0.71	0/5832
5	LD	0.20	0/1933	0.31	0/2598
6	LE	0.18	0/3146	0.31	0/4228
7	LF	0.17	0/2800	0.32	0/3790
8	LG	0.15	0/2400	0.32	0/3239
9	LH	0.16	0/1329	0.33	0/1794
10	LI	0.19	0/1821	0.32	0/2451
11	LJ	0.16	0/1836	0.35	0/2481
12	LK	0.15	0/1529	0.32	0/2060
13	LL	0.16	0/1801	0.32	0/2416
14	LM	0.14	0/1367	0.34	0/1834
15	LN	0.17	0/1568	0.33	0/2106
16	LO	0.14	0/1068	0.30	0/1438
17	LP	0.19	0/1757	0.33	0/2354
18	LQ	0.18	0/1585	0.30	0/2128
19	LR	0.17	0/1439	0.31	0/1938
20	LS	0.18	0/1465	0.34	0/1965
21	LT	0.15	0/1532	0.26	0/2043
22	LU	0.18	0/1473	0.34	0/1980
23	LV	0.18	0/1296	0.32	0/1739
24	LW	0.14	0/812	0.34	0/1099
25	LX	0.17	0/1018	0.29	0/1369
26	LY	0.16	0/540	0.28	0/717
27	LZ	0.16	0/979	0.30	0/1321
28	La	0.15	0/995	0.30	0/1329
29	Lb	0.16	0/1106	0.34	0/1485
30	Lc	0.18	0/1200	0.32	0/1607
31	Ld	0.17	0/473	0.51	1/629 (0.2%)
32	Le	0.15	0/745	0.31	0/1001
33	Lf	0.16	0/890	0.31	0/1196
34	Lg	0.18	0/1038	0.31	0/1390

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
35	Lh	0.19	0/868	0.33	0/1168
36	Li	0.16	0/890	0.28	0/1189
37	Lj	0.15	0/978	0.32	0/1301
38	Lk	0.14	0/772	0.30	0/1026
39	Ll	0.18	0/660	0.34	0/875
40	Lm	0.13	0/618	0.26	0/826
41	Ln	0.17	0/443	0.29	0/588
42	Lo	0.15	0/416	0.33	0/553
43	Lp	0.15	0/230	0.30	0/296
44	Lq	0.17	0/836	0.30	0/1104
45	Lr	0.19	0/701	0.35	0/934
47	Cc	0.26	0/1836	0.72	1/2859 (0.0%)
48	S2	0.33	0/42211	0.79	40/65773 (0.1%)
49	SA	0.14	0/1754	0.34	0/2361
50	SB	0.14	0/1625	0.34	0/2197
51	SC	0.12	0/769	0.32	0/1039
52	SD	0.15	0/883	0.46	0/1199
53	SE	0.15	0/936	0.34	0/1259
54	SF	0.13	0/1125	0.36	0/1510
55	SG	0.12	0/957	0.29	0/1283
56	SH	0.12	0/1207	0.32	0/1623
57	SI	0.13	0/1130	0.36	0/1517
58	SJ	0.14	0/807	0.37	0/1091
59	SK	0.12	0/661	0.33	0/888
60	SL	0.13	0/493	0.32	0/663
61	SM	0.13	0/452	0.34	0/600
62	SN	0.12	0/567	0.33	0/764
63	SO	0.13	0/2436	0.35	0/3318
64	SP	0.16	0/1644	0.38	0/2249
65	SQ	0.16	0/1823	0.39	0/2447
66	SR	0.16	0/1656	0.39	0/2251
67	SS	0.14	0/2097	0.37	0/2823
68	ST	0.12	0/1839	0.33	0/2460
69	SU	0.15	0/1498	0.35	0/2019
70	SV	0.12	0/1501	0.31	0/2006
71	SW	0.13	0/1504	0.36	0/2016
72	SX	0.14	0/1168	0.30	0/1575
73	SY	0.15	0/1215	0.31	0/1638
74	SZ	0.17	0/934	0.36	0/1257
75	Sa	0.14	0/682	0.33	0/921
76	Sb	0.18	0/1038	0.35	0/1395
77	Sc	0.15	0/1139	0.34	0/1518
78	Sd	0.11	0/1046	0.29	0/1401

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
79	Se	0.16	0/778	0.32	0/1042
80	Sf	0.14	0/620	0.31	0/838
81	Sg	0.12	0/459	0.34	0/611
All	All	0.31	0/217013	0.63	66/319210 (0.0%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand.A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
7	LF	0	1
11	LJ	0	2
31	Ld	0	1
All	All	0	4

There are no bond length outliers.

All (66) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
48	S2	893	U	N3-C4-O4	-11.81	111.13	119.40
48	S2	893	U	C5-C4-O4	10.42	132.15	125.90
31	Ld	20	GLY	N-CA-C	10.22	119.51	110.21
48	S2	919	A	N1-C6-N6	-9.49	112.90	118.60
48	S2	590	C	C2-N1-C1'	9.18	128.90	118.80
3	LB	106	U	C2-N1-C1'	8.68	128.12	117.70
48	S2	1182	U	C2-N1-C1'	7.99	127.29	117.70
48	S2	649	U	C2-N1-C1'	7.58	126.80	117.70
48	S2	649	U	N1-C2-O2	7.58	128.11	122.80
48	S2	590	C	C6-N1-C1'	-7.46	111.84	120.80
48	S2	649	U	N3-C2-O2	-6.95	117.34	122.20
2	LA	3058	U	C2-N1-C1'	6.89	125.97	117.70
48	S2	1585	U	C2-N1-C1'	6.88	125.95	117.70
48	S2	1182	U	N1-C2-O2	6.80	127.56	122.80
2	LA	1280	C	N3-C2-O2	-6.77	117.16	121.90
3	LB	106	U	C6-N1-C1'	-6.62	111.93	121.20
2	LA	1496	C	C2-N1-C1'	6.51	125.97	118.80
48	S2	1585	U	N3-C2-O2	-6.46	117.68	122.20
48	S2	1071	U	C2-N1-C1'	6.36	125.33	117.70
48	S2	323	A	N9-C1'-C2'	6.30	118.93	112.00
48	S2	1182	U	N3-C2-O2	-6.27	117.81	122.20
48	S2	1082	C	N1-C2-O2	6.16	122.59	118.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	LA	1280	C	N1-C2-O2	6.14	122.59	118.90
2	LA	1579	C	N3-C2-O2	-6.14	117.60	121.90
48	S2	590	C	N1-C2-O2	6.04	122.53	118.90
2	LA	3058	U	N1-C2-O2	6.04	127.03	122.80
48	S2	1389	C	C2-N1-C1'	6.03	125.43	118.80
48	S2	650	U	C2-N1-C1'	5.94	124.83	117.70
48	S2	1585	U	N1-C2-O2	5.89	126.93	122.80
2	LA	1107	C	O5'-C5'-C4'	5.86	114.09	109.40
48	S2	1691	A	N1-C6-N6	-5.85	115.09	118.60
48	S2	224	C	N3-C2-O2	-5.83	117.82	121.90
48	S2	166	C	N1-C2-O2	5.75	122.35	118.90
48	S2	1071	U	C6-N1-C1'	-5.68	113.24	121.20
48	S2	366	A	N9-C4-C5	-5.68	103.53	105.80
48	S2	281	G	N1-C2-N2	-5.66	111.10	116.20
2	LA	1801	U	N3-C2-O2	-5.40	118.42	122.20
2	LA	1224	C	C2-N1-C1'	5.36	124.69	118.80
2	LA	2846	U	C2-N1-C1'	5.36	124.13	117.70
48	S2	323	A	O5'-C5'-C4'	5.35	113.68	109.40
2	LA	2983	C	C2-N1-C1'	5.34	124.68	118.80
2	LA	3181	C	C2-N1-C1'	5.33	124.66	118.80
48	S2	1274	C	P-O3'-C3'	5.33	126.10	119.70
48	S2	1025	A	O5'-C5'-C4'	5.32	113.66	109.40
48	S2	276	C	N3-C2-O2	-5.30	118.19	121.90
48	S2	650	U	N1-C2-O2	5.29	126.51	122.80
2	LA	1324	U	C2-N1-C1'	5.27	124.02	117.70
48	S2	758	U	C2-N1-C1'	5.24	123.98	117.70
48	S2	1161	C	C2-N1-C1'	5.23	124.55	118.80
2	LA	1872	C	N3-C2-O2	-5.21	118.25	121.90
2	LA	561	C	C2-N1-C1'	5.21	124.53	118.80
2	LA	1496	C	C6-N1-C1'	-5.19	114.57	120.80
48	S2	1182	U	C6-N1-C1'	-5.19	113.94	121.20
2	LA	1120	A	N9-C4-C5	-5.19	103.72	105.80
2	LA	2530	G	N3-C4-N9	5.18	129.11	126.00
48	S2	852	C	N1-C2-O2	5.17	122.00	118.90
48	S2	566	C	O5'-C5'-C4'	5.17	113.53	109.40
48	S2	252	U	C2-N1-C1'	5.16	123.89	117.70
48	S2	1071	U	C5-C4-O4	-5.15	122.81	125.90
2	LA	3058	U	N3-C2-O2	-5.14	118.60	122.20
48	S2	919	A	C5-C6-N6	5.14	127.81	123.70
47	Cc	57	C	N3-C2-O2	-5.13	118.31	121.90
2	LA	3166	C	N1-C2-O2	5.12	121.97	118.90
2	LA	2189	U	O5'-C5'-C4'	5.10	113.48	109.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
48	S2	624	G	O5'-C5'-C4'	5.07	113.46	109.40
2	LA	3166	C	N3-C2-O2	-5.07	118.35	121.90

There are no chirality outliers.

All (4) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
7	LF	13	GLY	Peptide
11	LJ	30	THR	Peptide
11	LJ	76	ALA	Peptide
31	Ld	20	GLY	Peptide

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	Bb	1622	0	821	27	0
2	LA	67653	0	33997	784	0
3	LB	2579	0	1304	37	0
4	LC	3353	0	1695	45	0
5	LD	1899	0	1957	37	0
6	LE	3075	0	3142	63	0
7	LF	2748	0	2859	60	0
8	LG	2351	0	2294	46	0
9	LH	1307	0	1377	16	0
10	LI	1784	0	1862	28	0
11	LJ	1804	0	1877	39	0
12	LK	1508	0	1572	26	0
13	LL	1764	0	1804	42	0
14	LM	1346	0	1370	35	0
15	LN	1543	0	1608	29	0
16	LO	1053	0	1149	22	0
17	LP	1720	0	1779	30	0
18	LQ	1555	0	1659	20	0
19	LR	1416	0	1433	18	0
20	LS	1441	0	1543	23	0
21	LT	1515	0	1606	19	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
22	LU	1437	0	1475	18	0
23	LV	1272	0	1312	28	0
24	LW	796	0	812	7	0
25	LX	1003	0	1048	14	0
26	LY	528	0	546	4	0
27	LZ	964	0	1025	13	0
28	La	984	0	1075	24	0
29	Lb	1080	0	1122	18	0
30	Lc	1169	0	1211	21	0
31	Ld	462	0	491	9	0
32	Le	737	0	792	13	0
33	Lf	876	0	912	8	0
34	Lg	1017	0	1081	6	0
35	Lh	850	0	880	12	0
36	Li	880	0	945	6	0
37	Lj	969	0	1078	20	0
38	Lk	766	0	844	14	0
39	Ll	645	0	649	4	0
40	Lm	612	0	682	8	0
41	Ln	436	0	475	15	0
42	Lo	410	0	446	6	0
43	Lp	229	0	273	5	0
44	Lq	824	0	892	10	0
45	Lr	694	0	738	14	0
46	mR	228	0	0	0	0
47	Cc	1644	0	837	30	0
48	S2	37739	0	18988	562	0
49	SA	1729	0	1812	43	0
50	SB	1605	0	1669	53	0
51	SC	752	0	719	24	0
52	SD	875	0	878	17	0
53	SE	916	0	941	27	0
54	SF	1105	0	1166	38	0
55	SG	948	0	990	21	0
56	SH	1188	0	1218	23	0
57	SI	1112	0	1124	38	0
58	SJ	797	0	863	23	0
59	SK	651	0	682	15	0
60	SL	491	0	524	24	0
61	SM	442	0	432	10	0
62	SN	556	0	549	8	0
63	SO	2383	0	2332	68	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
64	SP	1603	0	1610	53	0
65	SQ	1798	0	1890	42	0
66	SR	1626	0	1715	42	0
67	SS	2056	0	2140	61	0
68	ST	1815	0	1894	44	0
69	SU	1473	0	1555	35	0
70	SV	1476	0	1501	42	0
71	SW	1479	0	1556	31	0
72	SX	1142	0	1209	16	0
73	SY	1192	0	1255	25	0
74	SZ	923	0	948	20	0
75	Sa	673	0	662	15	0
76	Sb	1021	0	1060	20	0
77	Sc	1121	0	1196	21	0
78	Sd	1032	0	1044	27	0
79	Se	765	0	814	14	0
80	Sf	610	0	633	13	0
81	Sg	451	0	494	9	0
All	All	202093	0	148412	2924	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 8.

All (2924) 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)
48:S2:752:A:N6	48:S2:797:G:H1	1.41	1.18
48:S2:550:A:N6	48:S2:587:C:C4	2.13	1.17
48:S2:821:U:H3	48:S2:852:C:N4	1.41	1.16
1:Bb:4:G:H1	1:Bb:69:U:H3	1.16	0.94
48:S2:69:G:H1	48:S2:82:U:H3	1.16	0.93
48:S2:698:U:H3	48:S2:741:C:H42	1.17	0.92
47:Cc:51:U:H3	47:Cc:65:G:H1	1.09	0.91
4:LC:121:U:H3	4:LC:132:G:H1	0.90	0.90
48:S2:1673:G:H1	48:S2:1728:A:H2	0.90	0.89
49:SA:40:ARG:HD3	58:SJ:110:PRO:HB3	1.55	0.88
53:SE:81:ARG:HG3	53:SE:117:GLY:HA3	1.55	0.88
31:Ld:16:ALA:O	31:Ld:20:GLY:HA3	1.74	0.87
48:S2:698:U:H3	48:S2:741:C:N4	1.72	0.87
48:S2:893:U:N3	48:S2:919:A:N6	2.25	0.85
48:S2:550:A:N6	48:S2:587:C:N4	2.24	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:S2:1673:G:N1	48:S2:1728:A:C2	2.45	0.85
48:S2:148:A:H62	48:S2:166:C:H42	1.23	0.84
2:LA:2450:G:N2	2:LA:2496:C:O2	2.11	0.84
48:S2:1179:G:H21	48:S2:1460:A:H62	1.24	0.84
48:S2:1673:G:N1	48:S2:1728:A:H2	1.74	0.84
50:SB:128:ASN:HB3	50:SB:131:GLN:HB2	1.59	0.83
2:LA:542:G:H1	2:LA:549:U:H3	1.26	0.83
48:S2:148:A:H62	48:S2:166:C:N4	1.76	0.83
2:LA:512:U:H3	2:LA:579:G:H1	1.26	0.83
2:LA:2764:C:H42	47:Cc:77:A:H8	1.21	0.83
48:S2:212:U:H2'	48:S2:213:A:H8	1.44	0.83
7:LF:234:ASN:HD21	7:LF:236:LEU:HB2	1.42	0.83
48:S2:1588:G:H1	48:S2:1608:U:H3	0.84	0.81
67:SS:129:VAL:HG12	67:SS:139:VAL:HG12	1.61	0.80
48:S2:1047:G:N1	48:S2:1071:U:O4	2.13	0.80
2:LA:655:C:H2'	2:LA:656:A:H8	1.45	0.79
4:LC:154:C:H5"	11:LJ:181:LYS:HG2	1.63	0.79
48:S2:550:A:C6	48:S2:587:C:N4	2.50	0.79
48:S2:1673:G:O6	48:S2:1728:A:N1	2.14	0.79
74:SZ:48:VAL:HG11	74:SZ:53:ASP:HB2	1.64	0.79
48:S2:1047:G:N2	48:S2:1071:U:O4	2.16	0.79
2:LA:3299:A:H61	2:LA:3315:G:H1	1.28	0.79
48:S2:148:A:N6	48:S2:166:C:H42	1.80	0.79
48:S2:394:C:H42	48:S2:401:A:H62	1.30	0.78
10:LI:163:LEU:HA	10:LI:168:ILE:HD11	1.65	0.78
48:S2:1542:G:H4'	48:S2:1543:A:H5'	1.66	0.78
2:LA:1626:U:H3	2:LA:1817:G:H1	1.31	0.78
11:LJ:50:VAL:HG21	27:LZ:27:ARG:HD3	1.65	0.78
15:LN:48:PRO:HG2	37:Lj:115:LYS:HD3	1.65	0.78
2:LA:2572:C:H3'	2:LA:2573:G:H4'	1.66	0.77
20:LS:170:ARG:HD2	30:Lc:57:GLY:HA3	1.65	0.76
54:SF:64:ASP:HB3	54:SF:66:ARG:HH12	1.50	0.76
48:S2:752:A:N1	48:S2:797:G:N2	2.30	0.76
48:S2:1614:A:H5"	50:SB:81:ARG:HH12	1.51	0.76
2:LA:1571:A:H2'	2:LA:1572:U:H4'	1.67	0.75
16:LO:49:PRO:HB3	16:LO:78:THR:HG22	1.69	0.75
48:S2:550:A:C6	48:S2:587:C:C4	2.73	0.75
53:SE:85:ILE:HD11	53:SE:107:ILE:HG23	1.67	0.75
64:SP:79:ARG:HH22	64:SP:164:ASN:HD22	1.32	0.75
58:SJ:58:LEU:HB2	58:SJ:88:LYS:HG3	1.69	0.75
2:LA:2112:U:H4'	2:LA:2113:A:H5'	1.68	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:LO:48:GLY:HA3	16:LO:53:VAL:HB	1.70	0.74
48:S2:701:U:O4	48:S2:732:G:N1	2.14	0.74
1:Bb:48:C:H2'	1:Bb:59:U:H1'	1.70	0.73
67:SS:45:ILE:HA	67:SS:61:VAL:HG11	1.70	0.73
25:LX:54:LEU:HD21	25:LX:119:GLY:HA3	1.71	0.73
63:SO:167:VAL:HG22	63:SO:183:LEU:HD21	1.71	0.73
2:LA:3158:G:O6	2:LA:3292:A:N1	2.21	0.73
48:S2:1164:G:H2'	48:S2:1165:G:H8	1.53	0.73
61:SM:36:LEU:HD13	61:SM:38:ILE:HG22	1.71	0.73
1:Bb:54:U:O4	1:Bb:61:C:N3	2.22	0.73
2:LA:1724:U:H1'	2:LA:1725:C:C5	2.24	0.73
48:S2:1408:G:H3'	48:S2:1409:G:H8	1.54	0.72
69:SU:113:PRO:HG2	69:SU:116:ARG:HD3	1.69	0.72
14:LM:17:LEU:HD23	14:LM:129:VAL:HG22	1.71	0.72
2:LA:3049:A:H5"	6:LE:53:MET:HB3	1.70	0.72
14:LM:150:ASN:HA	14:LM:153:LYS:HD3	1.71	0.72
2:LA:289:A:H2'	2:LA:290:G:H8	1.55	0.72
48:S2:1451:C:H5'	61:SM:10:HIS:HB2	1.72	0.72
2:LA:1122:U:H3	2:LA:1136:A:H62	1.39	0.71
66:SR:81:MET:HG3	66:SR:211:LEU:HD21	1.72	0.71
2:LA:1805:C:H2'	2:LA:1806:A:H8	1.55	0.71
48:S2:1388:A:H61	48:S2:1409:G:H21	1.37	0.71
2:LA:394:G:H22	2:LA:397:A:H5'	1.56	0.70
68:ST:57:ASP:HA	68:ST:106:LEU:HA	1.73	0.70
76:Sb:90:THR:HG23	76:Sb:94:LEU:HD12	1.72	0.70
2:LA:2270:A:H2'	2:LA:2271:A:C8	2.26	0.70
80:Sf:53:ALA:HB1	80:Sf:62:ILE:HD11	1.73	0.70
78:Sd:20:ARG:HH21	78:Sd:74:LEU:HD11	1.56	0.70
63:SO:170:ILE:HD13	63:SO:202:LEU:HD11	1.73	0.70
77:Sc:54:LEU:HD11	77:Sc:75:GLN:HB2	1.74	0.70
70:SV:57:ALA:HB2	70:SV:177:GLY:HA2	1.72	0.70
8:LG:205:SER:HB3	8:LG:236:LEU:HD11	1.74	0.70
50:SB:148:ARG:HG3	50:SB:157:ARG:HH22	1.55	0.70
75:Sa:15:ARG:HH21	75:Sa:24:ILE:HG21	1.56	0.70
54:SF:94:GLN:HB2	54:SF:102:LYS:HG3	1.72	0.69
2:LA:2537:U:H5"	65:SQ:229:MET:HB2	1.73	0.69
2:LA:370:U:H4'	2:LA:404:G:H5'	1.74	0.69
38:Lk:5:THR:HG23	38:Lk:12:ASN:HB2	1.74	0.69
70:SV:81:VAL:HG12	70:SV:102:VAL:HG12	1.74	0.69
48:S2:821:U:O2	48:S2:852:C:N3	2.26	0.69
7:LF:35:VAL:HG21	7:LF:244:LEU:HD21	1.74	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
68:ST:2:LYS:HB2	68:ST:108:VAL:HG22	1.74	0.69
67:SS:143:ASP:HB3	67:SS:145:ARG:HG2	1.74	0.69
2:LA:1497:C:H2'	2:LA:1498:A:H8	1.57	0.69
2:LA:1661:G:H2'	2:LA:1662:G:C8	2.27	0.69
17:LP:11:GLN:HG2	17:LP:44:ARG:HH21	1.58	0.69
58:SJ:23:ARG:HB3	58:SJ:117:VAL:HG23	1.75	0.69
13:LL:72:ALA:HB2	13:LL:155:ALA:HB2	1.75	0.69
48:S2:96:G:H21	48:S2:426:G:H5'	1.58	0.69
48:S2:959:U:H6	73:SY:61:THR:HG23	1.57	0.69
7:LF:286:VAL:HG21	20:LS:28:LEU:HB3	1.75	0.69
48:S2:397:A:H4'	70:SV:50:GLY:HA2	1.74	0.69
2:LA:3064:U:H2'	2:LA:3065:G:H8	1.58	0.68
48:S2:1591:C:H2'	48:S2:1592:A:H8	1.58	0.68
55:SG:35:CYS:HA	55:SG:38:ILE:HG12	1.74	0.68
22:LU:42:TRP:O	22:LU:46:GLN:HG2	1.94	0.68
23:LV:84:TYR:HB2	31:Ld:24:PRO:HD3	1.73	0.68
48:S2:385:A:H5"	70:SV:22:ARG:HG2	1.75	0.68
76:Sb:6:VAL:HG22	76:Sb:34:ILE:HD11	1.76	0.68
2:LA:3208:G:H4'	2:LA:3209:A:H5"	1.74	0.68
74:SZ:80:HIS:HA	74:SZ:113:GLY:O	1.93	0.68
7:LF:3:ARG:HG3	7:LF:22:LEU:HD12	1.74	0.68
48:S2:408:C:H2'	48:S2:409:C:C6	2.29	0.68
48:S2:706:A:H4'	48:S2:734:A:H61	1.57	0.68
2:LA:1277:C:HO2'	2:LA:1278:A:H8	1.40	0.68
14:LM:92:ARG:HG2	14:LM:94:ARG:H	1.58	0.68
48:S2:1488:G:H21	48:S2:1512:G:H21	1.42	0.68
2:LA:2683:U:H5"	14:LM:18:VAL:HG11	1.76	0.68
7:LF:132:ALA:HA	7:LF:148:ILE:HD11	1.76	0.68
2:LA:627:U:H2'	2:LA:628:A:C8	2.29	0.68
76:Sb:6:VAL:HG23	76:Sb:29:PRO:HD2	1.76	0.68
2:LA:528:U:H3	2:LA:564:G:H1	1.41	0.68
2:LA:1948:G:H5'	21:LT:101:VAL:HG21	1.74	0.67
67:SS:68:ARG:HD2	67:SS:76:VAL:HG11	1.75	0.67
65:SQ:135:LEU:HD21	65:SQ:217:LEU:HD12	1.75	0.67
2:LA:2960:C:H2'	2:LA:2961:G:H8	1.59	0.67
2:LA:3160:U:H3	2:LA:3290:G:H1	0.78	0.67
67:SS:193:GLY:HA2	67:SS:210:ILE:HG23	1.77	0.67
67:SS:195:ILE:HG22	67:SS:210:ILE:HG13	1.77	0.67
2:LA:2853:A:H5'	13:LL:63:GLU:HB3	1.76	0.67
68:ST:51:LYS:HB3	68:ST:112:VAL:HG13	1.74	0.67
4:LC:52:A:H61	41:Ln:23:LEU:HD12	1.58	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:SF:26:LYS:HE3	54:SF:28:LEU:HD22	1.76	0.67
73:SY:23:PRO:HD2	73:SY:26:PHE:HB2	1.75	0.67
2:LA:1786:G:H2'	2:LA:1787:A:C8	2.30	0.67
15:LN:43:ALA:O	15:LN:47:ALA:HA	1.95	0.67
1:Bb:4:G:N2	1:Bb:69:U:O2	2.24	0.67
37:Lj:102:GLU:HA	37:Lj:105:ARG:HG2	1.76	0.67
48:S2:1164:G:H2'	48:S2:1165:G:C8	2.30	0.67
40:Lm:20:VAL:HG21	40:Lm:45:VAL:HG12	1.76	0.67
2:LA:1666:G:H1	2:LA:1783:U:H3	1.42	0.66
48:S2:258:C:H4'	70:SV:75:LYS:HD2	1.77	0.66
17:LP:9:GLU:HB3	38:Lk:44:VAL:HG21	1.77	0.66
30:Lc:104:THR:HG21	30:Lc:112:ILE:HD11	1.76	0.66
65:SQ:229:MET:HA	65:SQ:232:HIS:HB2	1.77	0.66
2:LA:655:C:H2'	2:LA:656:A:C8	2.30	0.66
2:LA:736:A:C5	2:LA:737:G:H1'	2.31	0.66
58:SJ:28:SER:HB2	58:SJ:112:VAL:HG13	1.76	0.66
68:ST:135:PRO:HB2	68:ST:141:ILE:HD11	1.77	0.66
48:S2:924:A:H2'	48:S2:925:G:C8	2.30	0.66
81:Sg:41:THR:HA	81:Sg:45:VAL:HG12	1.78	0.66
48:S2:709:C:H41	48:S2:730:G:H5"	1.61	0.66
65:SQ:59:ASP:HA	65:SQ:62:LYS:HG2	1.77	0.66
66:SR:81:MET:HE2	66:SR:103:VAL:HG11	1.77	0.66
68:ST:7:TYR:HB2	68:ST:124:LEU:HD21	1.77	0.66
2:LA:765:C:H41	15:LN:176:GLU:HG2	1.61	0.66
49:SA:223:LYS:HB3	63:SO:191:ASP:HB3	1.76	0.66
63:SO:181:TRP:HD1	63:SO:188:ILE:HA	1.61	0.66
22:LU:8:GLN:HB3	22:LU:64:ILE:HD11	1.77	0.66
2:LA:168:U:H2'	2:LA:169:U:H4'	1.77	0.65
48:S2:127:G:H5'	68:ST:194:LYS:HE2	1.77	0.65
48:S2:767:U:H4'	71:SW:139:GLN:HE21	1.61	0.65
78:Sd:18:LEU:HB2	78:Sd:20:ARG:HD3	1.77	0.65
48:S2:1158:C:H42	48:S2:1163:A:H61	1.42	0.65
1:Bb:54:U:N3	1:Bb:61:C:O2	2.21	0.65
16:LO:72:LEU:HD22	16:LO:73:PRO:HD2	1.79	0.65
48:S2:1276:U:H2'	48:S2:1277:G:H8	1.60	0.65
55:SG:14:LYS:HE3	55:SG:69:ILE:HG13	1.77	0.65
55:SG:17:ILE:HG13	55:SG:57:LEU:HD11	1.77	0.65
2:LA:1419:A:H5"	7:LF:193:LYS:HE2	1.78	0.65
2:LA:2344:U:H2'	2:LA:2345:A:H8	1.60	0.65
13:LL:47:PRO:HB2	13:LL:178:ARG:HH12	1.62	0.65
28:La:56:VAL:HG21	28:La:104:LEU:HD13	1.79	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
63:SO:206:PRO:HG2	63:SO:247:PRO:HA	1.77	0.65
65:SQ:28:GLU:HG2	65:SQ:50:LYS:HG2	1.77	0.65
66:SR:111:VAL:HG12	66:SR:139:ILE:HD11	1.79	0.65
74:SZ:61:MET:HG2	74:SZ:104:ALA:HB2	1.79	0.65
2:LA:839:C:H4'	2:LA:1724:U:H2'	1.78	0.65
4:LC:8:C:H2'	4:LC:9:A:C8	2.31	0.65
48:S2:1650:U:H2'	48:S2:1651:A:C8	2.31	0.65
74:SZ:78:ALA:HB2	74:SZ:111:ARG:HB2	1.79	0.65
12:LK:89:LYS:HG3	12:LK:145:VAL:HG22	1.79	0.64
48:S2:4:C:H5'	66:SR:204:THR:HG21	1.78	0.64
8:LG:41:LYS:HE3	23:LV:93:VAL:HG11	1.79	0.64
48:S2:1628:U:H2'	48:S2:1629:G:C8	2.33	0.64
16:LO:121:MET:HE2	16:LO:125:LYS:HG3	1.79	0.64
48:S2:1388:A:H61	48:S2:1409:G:N2	1.96	0.64
28:La:86:THR:HG22	28:La:96:PRO:HA	1.80	0.64
48:S2:953:G:H2'	48:S2:954:G:H8	1.62	0.64
53:SE:110:GLU:HB2	56:SH:119:ILE:HD11	1.80	0.64
65:SQ:126:THR:HG22	65:SQ:136:ARG:HD3	1.79	0.64
2:LA:3334:U:H4'	2:LA:3335:A:H5'	1.79	0.64
6:LE:85:VAL:HG22	6:LE:202:THR:HG22	1.79	0.64
48:S2:549:G:N2	48:S2:550:A:H62	1.96	0.64
1:Bb:60:C:H3'	1:Bb:61:C:H5"	1.78	0.64
17:LP:5:LYS:HG3	38:Lk:40:VAL:HG11	1.79	0.64
57:SI:6:VAL:HA	57:SI:9:VAL:HG12	1.80	0.64
66:SR:104:VAL:HG11	66:SR:133:LYS:HG2	1.80	0.64
67:SS:11:ARG:HH21	67:SS:25:GLY:HA3	1.62	0.64
54:SF:47:LYS:HG3	54:SF:82:ARG:HD2	1.78	0.64
7:LF:113:VAL:HB	7:LF:118:LYS:HE3	1.79	0.64
48:S2:550:A:N6	48:S2:587:C:C5	2.65	0.64
54:SF:44:LEU:HD22	54:SF:78:VAL:HG21	1.80	0.64
2:LA:2228:A:H2'	2:LA:2229:A:C8	2.33	0.63
12:LK:162:GLN:HE21	12:LK:181:VAL:H	1.46	0.63
50:SB:124:LEU:HD11	59:SK:59:TYR:HB2	1.80	0.63
72:SX:74:THR:HG22	72:SX:122:ILE:HG13	1.80	0.63
8:LG:85:ARG:HH12	8:LG:254:LYS:H	1.45	0.63
2:LA:2836:C:H5	2:LA:2852:C:H42	1.46	0.63
11:LJ:159:PRO:HA	17:LP:26:ARG:HH22	1.63	0.63
2:LA:3160:U:O4	2:LA:3290:G:O6	2.16	0.63
54:SF:14:LYS:HD3	54:SF:124:PRO:HG3	1.80	0.63
66:SR:57:PHE:HE2	66:SR:110:HIS:HD2	1.45	0.63
2:LA:407:A:C2	4:LC:17:A:H1'	2.33	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:LA:1378:U:H2'	2:LA:1379:G:H8	1.64	0.63
18:LQ:121[A]:PRO:HA	18:LQ:124[A]:LEU:HD12	1.80	0.63
48:S2:752:A:H61	48:S2:797:G:H1	0.70	0.63
48:S2:1534:G:H2'	50:SB:187:ILE:HD11	1.81	0.63
2:LA:238:A:H62	2:LA:239:G:H21	1.45	0.63
2:LA:1497:C:H2'	2:LA:1498:A:C8	2.34	0.63
48:S2:298:C:H5"	67:SS:38:LEU:HB2	1.81	0.63
2:LA:1203:A:H2'	2:LA:1204:A:C8	2.34	0.62
2:LA:1385:C:HO2'	9:LH:2:THR:N	1.97	0.62
8:LG:177:GLU:HB2	8:LG:190:ILE:HD12	1.80	0.62
11:LJ:169:LEU:HA	38:Lk:43:LEU:HD11	1.80	0.62
18:LQ:125[A]:ARG:HG3	18:LQ:129[A]:LEU:HD12	1.80	0.62
48:S2:29:U:H2'	48:S2:30:G:H8	1.64	0.62
48:S2:1388:A:N6	48:S2:1409:G:H21	1.97	0.62
2:LA:1481:A:H62	2:LA:1872:C:H5	1.47	0.62
50:SB:57:SER:HA	60:SL:53:ILE:HB	1.81	0.62
4:LC:83:C:H42	28:La:52:ARG:HH22	1.48	0.62
48:S2:1641:C:H2'	48:S2:1642:G:C8	2.34	0.62
49:SA:76:ARG:HE	51:SC:65:TYR:HE2	1.47	0.62
63:SO:180:ALA:HB3	63:SO:190:ALA:HB3	1.82	0.62
67:SS:79:ASP:HB2	67:SS:82:TYR:HB2	1.82	0.62
2:LA:1010:G:H5"	13:LL:40:LYS:HE2	1.81	0.62
2:LA:1717:U:H2'	2:LA:1718:G:C8	2.35	0.62
6:LE:144:ILE:HG23	6:LE:196:ARG:HH12	1.63	0.62
57:SI:77:ASN:HB3	57:SI:95:ASP:HB3	1.81	0.62
57:SI:108:LEU:HD12	57:SI:113:ILE:HB	1.81	0.62
64:SP:147:THR:HG23	64:SP:151:SER:HB2	1.82	0.62
71:SW:93:LEU:HD22	71:SW:96:VAL:HB	1.81	0.62
2:LA:1229:G:C2	2:LA:1230:G:N2	2.68	0.62
2:LA:2547:A:H3'	2:LA:2548:C:H5"	1.82	0.62
6:LE:166:ILE:HG21	6:LE:174:LYS:H	1.64	0.62
33:Lf:36:ILE:HD12	33:Lf:59:ILE:HD11	1.82	0.62
48:S2:1179:G:N2	48:S2:1460:A:H62	1.96	0.62
49:SA:70:THR:HB	49:SA:86:LEU:HB2	1.80	0.62
63:SO:155:ARG:HH22	63:SO:204:ALA:HB3	1.64	0.62
2:LA:1336:U:H2'	2:LA:1337:A:H8	1.65	0.62
2:LA:2364:G:H22	2:LA:2396:G:H1'	1.65	0.62
6:LE:29:VAL:HG22	6:LE:218:ILE:HD12	1.80	0.62
27:LZ:115:ARG:HD3	27:LZ:121:LYS:HE3	1.81	0.62
63:SO:169:ILE:HB	63:SO:183:LEU:HD22	1.80	0.62
63:SO:123:ILE:HG12	63:SO:133:VAL:HG12	1.82	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:LA:765:C:N4	15:LN:176:GLU:HG2	2.15	0.62
2:LA:1604:G:H4'	2:LA:1835:A:H4'	1.81	0.62
8:LG:60:ILE:HB	8:LG:80:SER:HB3	1.79	0.61
8:LG:64:ILE:HG13	8:LG:109:THR:HG21	1.81	0.61
54:SF:41:PRO:HG2	54:SF:44:LEU:HB2	1.82	0.61
2:LA:2960:C:H2'	2:LA:2961:G:C8	2.35	0.61
5:LD:3:ARG:HB2	5:LD:207:VAL:HG22	1.82	0.61
6:LE:261:MET:HB2	6:LE:264:VAL:HG23	1.82	0.61
48:S2:886:U:H2'	48:S2:887:A:H8	1.65	0.61
13:LL:30:LYS:HG3	13:LL:63:GLU:HG3	1.83	0.61
50:SB:183:ALA:HB2	50:SB:193:THR:HG21	1.82	0.61
48:S2:591:A:H2'	48:S2:592:A:C8	2.36	0.61
48:S2:868:G:H1	48:S2:960:U:H3	1.48	0.61
2:LA:2535:A:H3'	2:LA:2536:A:H4'	1.82	0.61
5:LD:80:GLU:HG2	5:LD:170:ALA:HA	1.81	0.61
48:S2:212:U:H2'	48:S2:213:A:C8	2.32	0.61
48:S2:1470:C:H5"	48:S2:1471:A:H8	1.66	0.61
50:SB:162:VAL:HG12	60:SL:44:VAL:HG13	1.82	0.61
2:LA:3107:U:H2'	2:LA:3108:G:H8	1.65	0.61
4:LC:121:U:O2	4:LC:132:G:N2	2.25	0.61
27:LZ:57:LEU:HG	27:LZ:62:VAL:HG12	1.82	0.61
48:S2:947:U:H2'	48:S2:948:G:H8	1.64	0.61
48:S2:1549:C:H5"	53:SE:42:ARG:HH22	1.65	0.61
64:SP:164:ASN:HA	64:SP:170:ILE:HD11	1.80	0.61
66:SR:78:ASP:HB3	66:SR:104:VAL:HG22	1.83	0.61
78:Sd:7:ILE:HG13	78:Sd:27:VAL:HG12	1.81	0.61
4:LC:8:C:H2'	4:LC:9:A:H8	1.65	0.61
48:S2:996:U:H2'	48:S2:997:G:H8	1.66	0.61
48:S2:1672:G:H2'	48:S2:1673:G:C8	2.35	0.61
51:SC:38:LYS:HB2	51:SC:41:TYR:HD1	1.65	0.61
69:SU:81:LEU:HB3	69:SU:90:VAL:HG21	1.81	0.61
7:LF:205:PRO:HG2	7:LF:225:VAL:HG22	1.83	0.61
48:S2:1374:C:C4	48:S2:1375:A:N6	2.69	0.61
65:SQ:137:ILE:HG23	65:SQ:215:VAL:HG22	1.82	0.61
2:LA:190:U:H2'	28:La:60:ARG:HH22	1.66	0.61
2:LA:1666:G:H2'	2:LA:1667:A:H8	1.65	0.61
2:LA:1810:A:H2'	2:LA:1811:G:C8	2.35	0.61
2:LA:2450:G:N1	2:LA:2496:C:N3	2.49	0.61
3:LB:112:G:H2'	3:LB:113:C:C6	2.36	0.61
13:LL:103:LEU:HD11	13:LL:108:ALA:HB3	1.83	0.61
27:LZ:50:ALA:HB2	37:Lj:77:PRO:HG2	1.83	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:S2:895:G:N1	48:S2:918:U:N3	2.49	0.61
48:S2:1546:G:H2'	48:S2:1547:A:H8	1.65	0.61
48:S2:1047:G:C2	48:S2:1071:U:O4	2.53	0.61
48:S2:1795:U:H5'	79:Se:79:ILE:HD11	1.83	0.61
76:Sb:86:ILE:HD11	76:Sb:113:HIS:HB2	1.82	0.61
2:LA:664:U:H2'	2:LA:665:A:C8	2.35	0.60
25:LX:18:PRO:HA	25:LX:51:ALA:HA	1.83	0.60
50:SB:70:VAL:HG22	50:SB:72:HIS:H	1.64	0.60
59:SK:54:VAL:HG23	59:SK:55:PRO:HD3	1.82	0.60
61:SM:19:ARG:HH21	61:SM:32:ARG:HB2	1.66	0.60
63:SO:183:LEU:HD23	63:SO:183:LEU:H	1.66	0.60
67:SS:136:VAL:HG21	67:SS:148:ARG:HE	1.66	0.60
2:LA:1680:G:H2'	2:LA:1681:U:H6	1.66	0.60
2:LA:2160:G:H2'	2:LA:2161:G:H8	1.65	0.60
2:LA:2697:A:H2'	2:LA:2698:G:H8	1.66	0.60
77:Sc:62:LYS:HG2	77:Sc:63:GLN:H	1.66	0.60
2:LA:627:U:H2'	2:LA:628:A:H8	1.65	0.60
48:S2:514:G:H2'	48:S2:515:A:H8	1.65	0.60
63:SO:88:THR:HG22	63:SO:104:VAL:HG12	1.83	0.60
67:SS:23:LEU:HD22	71:SW:3:ARG:HH21	1.65	0.60
2:LA:1622:U:H2'	2:LA:1623:G:H8	1.66	0.60
11:LJ:74:THR:HG22	11:LJ:164:VAL:HG22	1.82	0.60
69:SU:150:GLN:HB3	69:SU:181:ILE:HG22	1.84	0.60
2:LA:600:G:H1	2:LA:602:A:H62	1.48	0.60
2:LA:952:A:H4'	2:LA:968:G:N2	2.17	0.60
2:LA:3107:U:H2'	2:LA:3108:G:C8	2.36	0.60
15:LN:119:TYR:O	15:LN:123:ILE:HG23	2.01	0.60
2:LA:3119:U:H4'	42:Lo:104:PRO:HG2	1.84	0.60
10:LI:121:LYS:HB2	23:LV:133:ALA:HB3	1.83	0.60
48:S2:1041:G:H2'	48:S2:1042:G:C8	2.36	0.60
48:S2:1569:A:H2'	48:S2:1570:A:C8	2.37	0.60
50:SB:97:LEU:HD23	50:SB:176:THR:HG23	1.81	0.60
53:SE:111:MET:HB3	56:SH:119:ILE:HD12	1.83	0.60
59:SK:60:VAL:HB	59:SK:101:TYR:HB2	1.83	0.60
64:SP:127:ARG:HH11	64:SP:152:PRO:HD3	1.67	0.60
7:LF:288:ARG:HH21	7:LF:289:ILE:HD13	1.67	0.60
7:LF:334:PHE:HA	7:LF:339:LEU:HD13	1.83	0.60
70:SV:8:ARG:HE	70:SV:21:PHE:HD2	1.49	0.60
2:LA:1343:A:H2'	2:LA:1344:G:H8	1.67	0.60
2:LA:2344:U:H2'	2:LA:2345:A:C8	2.36	0.60
50:SB:163:SER:O	50:SB:167:ARG:HB2	2.02	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:LA:2697:A:H2'	2:LA:2698:G:C8	2.36	0.60
6:LE:17:LEU:HD21	6:LE:233:TRP:HH2	1.66	0.60
7:LF:234:ASN:HD22	7:LF:237:GLN:HG3	1.66	0.60
2:LA:1211:U:H2'	2:LA:1212:A:C8	2.37	0.59
33:Lf:44:MET:HE3	33:Lf:77:ARG:HB2	1.83	0.59
53:SE:73:PRO:HG2	53:SE:93:VAL:HG12	1.83	0.59
70:SV:39:GLY:O	70:SV:59:ARG:HB2	2.02	0.59
2:LA:908:G:H5"	17:LP:77:LYS:HD3	1.84	0.59
2:LA:1106:G:H2'	2:LA:1107:C:H5"	1.83	0.59
7:LF:317:PRO:C	7:LF:319:LYS:H	2.10	0.59
48:S2:1171:A:H2'	48:S2:1172:G:H8	1.67	0.59
67:SS:181:VAL:HG22	67:SS:193:GLY:HA3	1.83	0.59
68:ST:195:VAL:HG23	68:ST:196:ARG:HE	1.67	0.59
2:LA:2413:A:H2'	2:LA:2414:G:H8	1.65	0.59
11:LJ:158:ASP:HB3	11:LJ:159:PRO:HD3	1.83	0.59
58:SJ:69:LYS:HE3	58:SJ:80:GLU:HB3	1.83	0.59
69:SU:49:ILE:HB	69:SU:57:ALA:HB3	1.84	0.59
2:LA:1245:A:H3'	2:LA:1246:G:H5"	1.84	0.59
7:LF:299:ILE:HG23	20:LS:39:ARG:HB3	1.83	0.59
30:Lc:94:ALA:HA	30:Lc:121:VAL:HG13	1.84	0.59
48:S2:739:G:H5'	72:SX:43:LYS:HE3	1.84	0.59
48:S2:837:G:H2'	48:S2:838:G:C8	2.37	0.59
65:SQ:144:ARG:HB3	65:SQ:208:GLN:HB3	1.84	0.59
2:LA:1388:U:O2'	34:Lg:99:ASN:HB3	2.02	0.59
3:LB:114:U:H2'	3:LB:115:G:H8	1.67	0.59
48:S2:68:A:H5'	68:ST:132:ARG:HH22	1.67	0.59
2:LA:179:C:H2'	2:LA:180:C:O4'	2.03	0.59
64:SP:49:ASN:HB3	64:SP:52:LYS:HG2	1.84	0.59
71:SW:50:SER:O	71:SW:54:ARG:HG2	2.02	0.59
48:S2:1488:G:N2	48:S2:1512:G:H21	2.01	0.59
2:LA:429:U:H2'	2:LA:430:U:H6	1.66	0.59
2:LA:1666:G:H2'	2:LA:1667:A:C8	2.38	0.59
48:S2:329:G:H2'	48:S2:330:G:H8	1.66	0.59
48:S2:843:U:H2'	48:S2:844:A:C8	2.38	0.59
48:S2:1274:C:H4'	48:S2:1275:A:H5'	1.84	0.59
48:S2:1546:G:H2'	48:S2:1547:A:C8	2.37	0.59
56:SH:29:VAL:O	56:SH:33:THR:HG23	2.02	0.59
78:Sd:25:VAL:HG21	78:Sd:40:LEU:HD21	1.85	0.59
66:SR:102:VAL:HG21	66:SR:129:ILE:HD13	1.84	0.59
2:LA:2351:U:H2'	2:LA:2352:A:H8	1.68	0.59
13:LL:87:LEU:HD13	13:LL:138:VAL:HG22	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:Lf:19:ARG:HB3	33:Lf:35:GLU:HG2	1.84	0.59
48:S2:1357:A:H2'	48:S2:1358:G:C8	2.38	0.59
80:Sf:64:CYS:HB3	80:Sf:73:LEU:HD23	1.85	0.59
10:LI:142:SER:O	10:LI:146:GLN:HG2	2.03	0.58
15:LN:123:ILE:HG22	37:Lj:118:ILE:HG22	1.85	0.58
29:Lb:57:HIS:HB2	29:Lb:62:VAL:HG23	1.85	0.58
31:Ld:16:ALA:O	31:Ld:20:GLY:CA	2.48	0.58
48:S2:1146:G:H2'	48:S2:1147:A:C8	2.38	0.58
2:LA:3110:C:H2'	2:LA:3111:U:C6	2.38	0.58
5:LD:117:GLU:HG2	5:LD:124:GLY:H	1.68	0.58
18:LQ:12[A]:LYS:HA	18:LQ:40[A]:GLU:HB3	1.86	0.58
38:Lk:57:LEU:HD21	38:Lk:73:ALA:HB2	1.85	0.58
67:SS:31:PRO:HB3	67:SS:83:PRO:HB3	1.86	0.58
2:LA:8:C:H2'	2:LA:9:U:C6	2.38	0.58
2:LA:2768:U:H2'	2:LA:2769:A:H8	1.66	0.58
34:Lg:34:LYS:HB3	34:Lg:36:LYS:HE3	1.86	0.58
35:Lh:73:ARG:HD3	35:Lh:82:ARG:HD2	1.85	0.58
66:SR:66:PHE:HB2	66:SR:133:LYS:HE3	1.85	0.58
2:LA:507:U:H2'	2:LA:508:U:C6	2.39	0.58
48:S2:923:A:H2'	48:S2:924:A:C8	2.38	0.58
55:SG:113:LEU:HD21	64:SP:51:GLY:HA3	1.85	0.58
2:LA:1796:G:H5'	5:LD:22:LEU:HD22	1.86	0.58
48:S2:953:G:H2'	48:S2:954:G:C8	2.38	0.58
53:SE:90:ILE:HD11	53:SE:112:LEU:HD21	1.86	0.58
73:SY:33:VAL:HG21	73:SY:66:ILE:HG21	1.85	0.58
2:LA:429:U:H2'	2:LA:430:U:C6	2.38	0.58
8:LG:83:LEU:HB3	8:LG:88:ILE:HB	1.84	0.58
48:S2:931:C:H5"	65:SQ:116:LYS:HB3	1.86	0.58
49:SA:27:ARG:HD2	51:SC:58:GLN:HE22	1.69	0.58
50:SB:143:ARG:HH12	50:SB:214:LYS:HE3	1.68	0.58
71:SW:169:PRO:HG2	71:SW:174:ARG:HB3	1.85	0.58
72:SX:64:VAL:HA	72:SX:129:ARG:HH12	1.69	0.58
78:Sd:21:LYS:HB3	78:Sd:75:VAL:HG12	1.84	0.58
2:LA:1281:G:H2'	2:LA:1282:G:C8	2.39	0.58
10:LI:144:ILE:HD12	10:LI:189:ILE:HG12	1.85	0.58
21:LT:173:ARG:HH12	48:S2:851:U:H3'	1.68	0.58
2:LA:608:A:C5	9:LH:22:ARG:HD3	2.39	0.58
23:LV:73:GLY:HA2	23:LV:89:LEU:O	2.03	0.58
48:S2:1172:G:H21	57:SI:88:VAL:HG21	1.69	0.58
48:S2:1486:G:H2'	48:S2:1487:A:C8	2.38	0.58
50:SB:161:ASP:HB2	50:SB:162:VAL:HG23	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
72:SX:109:VAL:HG12	72:SX:137:PHE:HB2	1.84	0.58
2:LA:1460:A:H2'	2:LA:1461:A:H8	1.69	0.58
2:LA:2662:G:H2'	2:LA:2663:G:C8	2.39	0.58
2:LA:2882:U:H2'	2:LA:2883:U:C6	2.39	0.58
5:LD:80:GLU:HG3	5:LD:168:VAL:HG23	1.86	0.58
48:S2:744:U:H2'	48:S2:745:U:O4'	2.04	0.58
60:SL:42:ARG:HH21	60:SL:59:SER:HA	1.69	0.58
2:LA:161:G:H2'	2:LA:162:G:O4'	2.04	0.57
2:LA:182:U:H3	2:LA:234:G:H1	1.52	0.57
2:LA:1838:G:H5"	2:LA:1839:A:H5'	1.85	0.57
48:S2:12:U:H2'	48:S2:13:C:C6	2.39	0.57
48:S2:213:A:C6	48:S2:214:G:H1'	2.39	0.57
48:S2:340:U:H2'	48:S2:341:A:C8	2.39	0.57
48:S2:1253:U:H5"	52:SD:46:ARG:HH21	1.67	0.57
48:S2:1588:G:N2	48:S2:1608:U:O2	2.30	0.57
50:SB:162:VAL:HA	60:SL:54:LEU:HD21	1.86	0.57
56:SH:73:MET:HE3	56:SH:101:LEU:HD13	1.84	0.57
15:LN:85:LEU:HD11	15:LN:120:GLN:HE21	1.69	0.57
48:S2:1179:G:H21	48:S2:1460:A:N6	1.98	0.57
3:LB:27:A:H2'	3:LB:28:C:C6	2.39	0.57
48:S2:1330:G:H3'	48:S2:1331:A:H8	1.69	0.57
48:S2:1588:G:O6	48:S2:1608:U:O4	2.21	0.57
51:SC:30:ALA:HA	51:SC:38:LYS:HG2	1.86	0.57
72:SX:59:PRO:HG3	72:SX:138:ASN:HB3	1.86	0.57
2:LA:900:G:H1'	2:LA:1589:A:N6	2.20	0.57
2:LA:993:G:N3	2:LA:2637:A:H2'	2.19	0.57
2:LA:1596:C:H2'	2:LA:1597:C:C6	2.39	0.57
56:SH:16:ARG:HE	56:SH:19:ASN:HA	1.68	0.57
64:SP:79:ARG:HG3	64:SP:81:PHE:H	1.68	0.57
2:LA:656:A:H2'	2:LA:657:A:C8	2.40	0.57
2:LA:786:A:H4'	2:LA:787:G:H5'	1.86	0.57
2:LA:1108:U:H2'	2:LA:1109:U:C6	2.39	0.57
2:LA:2450:G:N2	2:LA:2496:C:C2	2.73	0.57
2:LA:3299:A:N6	2:LA:3315:G:H1	2.01	0.57
18:LQ:46[A]:GLU:HG3	18:LQ:48[A]:PHE:H	1.70	0.57
48:S2:871:G:H2'	48:S2:872:G:C8	2.40	0.57
64:SP:120:LEU:HD21	64:SP:144:ILE:HG13	1.86	0.57
68:ST:180:THR:HG23	68:ST:183:ARG:H	1.70	0.57
48:S2:1340:U:H1'	48:S2:1378:U:H1'	1.87	0.57
48:S2:1673:G:C6	48:S2:1728:A:N1	2.72	0.57
58:SJ:61:LYS:HB3	58:SJ:86:ILE:HG22	1.87	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
64:SP:9:LEU:HD12	64:SP:51:GLY:HA2	1.86	0.57
2:LA:1203:A:H2'	2:LA:1204:A:H8	1.69	0.57
2:LA:1597:C:H5'	2:LA:1696:A:H1'	1.85	0.57
13:LL:54:SER:HB3	13:LL:135:ILE:HD11	1.87	0.57
14:LM:106:ILE:HG12	14:LM:125:MET:HB3	1.86	0.57
48:S2:70:C:H2'	48:S2:71:A:C8	2.39	0.57
48:S2:394:C:N4	48:S2:401:A:H62	1.98	0.57
57:SI:77:ASN:HA	57:SI:96:ALA:HB3	1.86	0.57
63:SO:19:TRP:HB2	63:SO:38:ARG:HD2	1.86	0.57
2:LA:12:A:H2'	2:LA:13:A:C8	2.40	0.57
2:LA:2767:U:H2'	2:LA:2768:U:C6	2.40	0.57
2:LA:3121:U:H1'	2:LA:3122:A:H5"	1.86	0.57
6:LE:110:LEU:HD12	6:LE:114:VAL:HG11	1.86	0.57
7:LF:351:PRO:HA	10:LI:71:ALA:HA	1.87	0.57
29:Lb:23:VAL:HG12	29:Lb:45:GLY:HA3	1.86	0.57
63:SO:121:MET:HE2	63:SO:133:VAL:HB	1.87	0.57
64:SP:184:LEU:HD12	75:Sa:45:ALA:HB2	1.85	0.57
80:Sf:55:THR:HB	80:Sf:62:ILE:HD12	1.86	0.57
2:LA:1084:A:H2'	2:LA:1085:A:C8	2.39	0.57
2:LA:2662:G:H2'	2:LA:2663:G:H8	1.69	0.57
11:LJ:154:ALA:HB2	11:LJ:186:LEU:HD12	1.86	0.57
13:LL:145:LYS:HE3	13:LL:167:LEU:HD21	1.86	0.57
13:LL:53:VAL:HG22	13:LL:134:ILE:HG13	1.87	0.57
48:S2:1321:A:H4'	48:S2:1322:A:H5'	1.85	0.57
49:SA:27:ARG:HB3	51:SC:58:GLN:HE22	1.70	0.57
2:LA:1799:A:H2'	2:LA:1800:A:C8	2.40	0.56
2:LA:1896:A:H61	2:LA:2339:C:H42	1.52	0.56
43:Lp:1:MET:HB2	48:S2:1642:G:H5'	1.87	0.56
51:SC:11:ILE:HD11	51:SC:37:THR:HG21	1.86	0.56
64:SP:98:ILE:HG21	64:SP:102:PHE:HD2	1.70	0.56
29:Lb:102:GLU:H	29:Lb:107:ARG:HH21	1.51	0.56
48:S2:1585:U:H5"	48:S2:1610:G:H22	1.69	0.56
2:LA:928:C:H2'	2:LA:929:A:C8	2.41	0.56
2:LA:1104:G:H2'	2:LA:1105:A:H8	1.70	0.56
2:LA:2883:U:H2'	2:LA:2884:C:H6	1.71	0.56
2:LA:3325:G:H2'	2:LA:3326:G:H8	1.70	0.56
8:LG:200:PHE:HB3	8:LG:237:GLU:HG3	1.86	0.56
40:Lm:41:THR:HG23	40:Lm:56:ILE:HB	1.87	0.56
48:S2:93:A:H1'	67:SS:3:ARG:HB3	1.87	0.56
63:SO:7:LEU:HD12	63:SO:313:TRP:HB3	1.86	0.56
71:SW:129:ILE:HG12	71:SW:134:ILE:HG13	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:Bb:58:A:H3'	1:Bb:61:C:H41	1.70	0.56
2:LA:2407:C:H2'	2:LA:2408:U:H6	1.68	0.56
8:LG:182:GLY:HA2	8:LG:194:LEU:HD13	1.87	0.56
13:LL:184:LYS:HG3	13:LL:189:GLU:HB2	1.88	0.56
48:S2:413:U:H2'	48:S2:414:C:H5"	1.87	0.56
49:SA:5:ILE:HG23	49:SA:9:ARG:HH21	1.70	0.56
51:SC:20:VAL:HG12	51:SC:67:THR:HA	1.87	0.56
59:SK:92:ILE:HD13	59:SK:100:ILE:HG22	1.86	0.56
67:SS:9:LEU:HB2	67:SS:30:ARG:HB2	1.88	0.56
70:SV:194:ARG:HA	70:SV:197:THR:HG22	1.86	0.56
11:LJ:157:VAL:HG21	11:LJ:163:VAL:HG22	1.86	0.56
16:LO:120:VAL:HG23	18:LQ:197[A]:LEU:HD22	1.87	0.56
63:SO:90:ARG:HH21	63:SO:102:ARG:HE	1.54	0.56
66:SR:56:ILE:HG23	66:SR:61:LEU:HB2	1.86	0.56
71:SW:78:ARG:HH12	71:SW:82:ARG:HE	1.53	0.56
72:SX:7:VAL:HG23	72:SX:8:GLN:HG2	1.88	0.56
2:LA:2442:G:H1	2:LA:2504:U:H3	1.53	0.56
48:S2:1191:U:H2'	48:S2:1192:C:C6	2.41	0.56
48:S2:1218:G:H5"	48:S2:1219:A:H5'	1.87	0.56
48:S2:1606:C:H2'	48:S2:1607:G:C8	2.41	0.56
50:SB:162:VAL:HG11	60:SL:44:VAL:HG22	1.88	0.56
52:SD:91:VAL:HG11	52:SD:97:LEU:HD13	1.87	0.56
70:SV:36:THR:HG21	70:SV:173:PRO:HB2	1.87	0.56
2:LA:1799:A:H2'	2:LA:1800:A:H8	1.71	0.56
7:LF:99:MET:HE3	7:LF:102:PRO:HA	1.87	0.56
48:S2:884:A:H2'	48:S2:885:G:C8	2.40	0.56
48:S2:975:C:H5"	73:SY:109:LYS:HD2	1.87	0.56
81:Sg:55:ARG:HD2	81:Sg:58:PRO:HG3	1.87	0.56
2:LA:1653:G:H2'	2:LA:1654:A:C8	2.41	0.56
12:LK:41:ILE:HG21	12:LK:71:VAL:HG21	1.87	0.56
24:LW:37:LEU:O	24:LW:41:ILE:HG12	2.06	0.56
63:SO:300:THR:HG22	63:SO:314:GLN:HG2	1.87	0.56
2:LA:3067:C:H3'	21:LT:62:ARG:HH22	1.71	0.56
37:Lj:119:LYS:H	37:Lj:119:LYS:HD3	1.71	0.56
63:SO:113:VAL:HG23	63:SO:124:SER:HB3	1.87	0.56
70:SV:172:ARG:NE	70:SV:175:GLN:HG3	2.21	0.56
2:LA:1680:G:H2'	2:LA:1681:U:C6	2.41	0.56
49:SA:32:GLU:HA	49:SA:54:ARG:HD3	1.88	0.56
66:SR:174:ARG:HB2	71:SW:97:LEU:HD13	1.88	0.56
69:SU:49:ILE:HG13	69:SU:172:VAL:HG23	1.86	0.56
2:LA:1525:G:H5'	2:LA:1830:G:OP2	2.05	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:LJ:168:ALA:HB2	38:Lk:47:ILE:HD13	1.87	0.55
14:LM:26:SER:HA	14:LM:30:LEU:HG	1.87	0.55
48:S2:1160:A:H2'	48:S2:1161:C:C6	2.42	0.55
57:SI:84:LYS:HG2	57:SI:86:ARG:HG2	1.87	0.55
2:LA:692:A:C2	2:LA:693:A:H1'	2.41	0.55
2:LA:761:A:C2	2:LA:771:A:H1'	2.41	0.55
2:LA:959:C:H41	2:LA:2801:A:H2'	1.70	0.55
18:LQ:12[A]:LYS:HD2	18:LQ:37[A]:ARG:HH21	1.71	0.55
48:S2:851:U:H1'	48:S2:853:G:N7	2.21	0.55
48:S2:1322:A:H2'	48:S2:1323:C:C6	2.42	0.55
64:SP:136:ALA:HB1	64:SP:141:ILE:HB	1.88	0.55
67:SS:181:VAL:HG12	67:SS:227:VAL:HG22	1.87	0.55
10:LI:120:THR:HB	23:LV:132:PRO:HB2	1.88	0.55
48:S2:159:U:H1'	68:ST:87:ARG:HH12	1.70	0.55
48:S2:817:A:H2'	48:S2:818:C:C6	2.41	0.55
74:SZ:40:ALA:HB2	74:SZ:70:LYS:HG2	1.87	0.55
2:LA:1054:A:H5"	2:LA:2637:A:H61	1.71	0.55
2:LA:1798:A:H2'	2:LA:1799:A:C8	2.41	0.55
12:LK:100:ASN:HB2	12:LK:115:ARG:HB2	1.88	0.55
27:LZ:81:ILE:HG12	27:LZ:125:ARG:HB2	1.89	0.55
28:La:22:ALA:HB1	28:La:26:GLN:HG3	1.88	0.55
48:S2:1606:C:H2'	48:S2:1607:G:H8	1.72	0.55
48:S2:1729:C:H2'	48:S2:1730:A:O4'	2.05	0.55
2:LA:715:A:C8	30:Lc:115:LYS:HD3	2.42	0.55
12:LK:90:MET:HE3	12:LK:179:ILE:HG22	1.87	0.55
13:LL:52:LEU:HB3	13:LL:136:PHE:HB2	1.88	0.55
30:Lc:74:ASN:HB3	30:Lc:115:LYS:HB2	1.89	0.55
35:Lh:30:ILE:HD13	35:Lh:98:VAL:HG21	1.88	0.55
48:S2:331:A:H2'	48:S2:332:U:C6	2.41	0.55
48:S2:803:A:HO2'	48:S2:804:A:H8	1.52	0.55
48:S2:1373:C:H2'	48:S2:1374:C:C6	2.41	0.55
48:S2:1592:A:H2'	48:S2:1593:A:H8	1.71	0.55
48:S2:1691:A:H2'	48:S2:1692:G:C8	2.42	0.55
63:SO:221:MET:HB3	63:SO:223:TRP:HE1	1.70	0.55
64:SP:179:ARG:HE	64:SP:183:ARG:HH12	1.53	0.55
4:LC:9:A:H2'	4:LC:10:A:C8	2.41	0.55
8:LG:30:TYR:HA	8:LG:33:ARG:HB3	1.89	0.55
16:LO:19:ARG:HA	16:LO:69:THR:HG22	1.87	0.55
47:Cc:72:C:H2'	47:Cc:73:A:C8	2.42	0.55
48:S2:518:A:H1'	48:S2:534:A:H61	1.71	0.55
48:S2:1517:U:H5"	48:S2:1518:C:H5	1.72	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
67:SS:100:ARG:HH12	67:SS:122:LYS:HA	1.70	0.55
2:LA:616:G:H2'	2:LA:617:G:H8	1.72	0.55
8:LG:157:ALA:HB3	8:LG:160:PHE:HD2	1.70	0.55
30:Lc:36:GLY:HA3	30:Lc:40:HIS:CE1	2.41	0.55
30:Lc:139:ARG:HH12	30:Lc:145:VAL:H	1.54	0.55
64:SP:60:ALA:HB1	64:SP:144:ILE:HD13	1.87	0.55
69:SU:55:LYS:HD2	69:SU:89:HIS:HD2	1.71	0.55
76:Sb:104:LEU:HB3	76:Sb:125:ILE:HA	1.88	0.55
2:LA:2514:U:H5'	11:LJ:68:ARG:HG3	1.88	0.55
2:LA:2674:A:C2	14:LM:124:GLY:HA3	2.42	0.55
2:LA:3322:A:H2'	2:LA:3323:A:C8	2.41	0.55
60:SL:25:VAL:HA	60:SL:44:VAL:O	2.05	0.55
75:Sa:9:VAL:O	75:Sa:10:GLU:HG3	2.07	0.55
2:LA:3064:U:H2'	2:LA:3065:G:C8	2.39	0.55
5:LD:30:ARG:HG2	5:LD:74:GLU:HG3	1.89	0.55
51:SC:23:ALA:O	51:SC:64:TYR:HB2	2.06	0.55
2:LA:589:A:H1'	2:LA:1337:A:H5"	1.87	0.55
2:LA:1622:U:H2'	2:LA:1623:G:C8	2.42	0.55
2:LA:3313:U:H4'	6:LE:173:GLN:HG3	1.89	0.55
14:LM:53:THR:HB	14:LM:61:ARG:H	1.71	0.55
38:Lk:35:ASN:HA	38:Lk:38:LYS:HE3	1.87	0.55
48:S2:1479:A:H5"	57:SI:60:SER:HB2	1.89	0.55
74:SZ:17:ALA:HA	74:SZ:30:VAL:HG22	1.89	0.55
2:LA:2369:G:H2'	2:LA:2370:G:C8	2.42	0.54
32:Le:30:THR:HG22	32:Le:91:SER:HB3	1.87	0.54
48:S2:330:G:H2'	48:S2:331:A:C8	2.43	0.54
48:S2:893:U:H3	48:S2:919:A:N6	2.02	0.54
54:SF:44:LEU:HB3	54:SF:78:VAL:HG11	1.89	0.54
58:SJ:82:TYR:HB3	61:SM:52:PHE:HB3	1.88	0.54
67:SS:198:LYS:HE3	67:SS:222:LEU:HD11	1.88	0.54
2:LA:127:G:H2'	2:LA:128:G:H8	1.72	0.54
2:LA:1211:U:H2'	2:LA:1212:A:H8	1.71	0.54
13:LL:103:LEU:HD22	13:LL:104:SER:H	1.72	0.54
48:S2:1171:A:H2'	48:S2:1172:G:C8	2.41	0.54
67:SS:185:GLY:H	67:SS:189:LEU:HD13	1.73	0.54
2:LA:2357:A:H2'	2:LA:2358:A:H8	1.71	0.54
2:LA:3000:A:H5"	6:LE:120:LYS:HE2	1.88	0.54
4:LC:23:U:H4'	28:La:17:LYS:HB2	1.89	0.54
27:LZ:50:ALA:HB1	37:Lj:66:VAL:HG21	1.88	0.54
48:S2:12:U:H2'	48:S2:13:C:H6	1.72	0.54
75:Sa:11:LEU:H	75:Sa:11:LEU:HD23	1.72	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:LA:816:A:H5'	2:LA:906:A:H61	1.71	0.54
2:LA:2222:A:H2'	2:LA:2223:A:C8	2.42	0.54
14:LM:156:LYS:O	14:LM:160:VAL:HG13	2.07	0.54
23:LV:93:VAL:HA	23:LV:96:ILE:HG22	1.89	0.54
48:S2:5:U:H2'	48:S2:6:G:H8	1.73	0.54
48:S2:947:U:H2'	48:S2:948:G:C8	2.42	0.54
48:S2:1488:G:H21	48:S2:1512:G:N2	2.04	0.54
48:S2:1542:G:H1	48:S2:1568:C:H42	1.54	0.54
52:SD:36:LEU:HD11	52:SD:102:GLY:HA3	1.88	0.54
59:SK:65:LEU:O	59:SK:69:LEU:HB2	2.07	0.54
67:SS:188:ASN:HB3	67:SS:191:ARG:HG3	1.89	0.54
68:ST:79:LYS:HG2	68:ST:86:PRO:HG2	1.90	0.54
71:SW:82:ARG:HH11	71:SW:149:ARG:HD3	1.73	0.54
2:LA:173:G:N1	2:LA:246:U:H1'	2.23	0.54
2:LA:1597:C:H2'	2:LA:1598:G:C8	2.42	0.54
2:LA:2883:U:H2'	2:LA:2884:C:C6	2.42	0.54
48:S2:527:A:H2'	48:S2:528:U:C6	2.42	0.54
48:S2:922:G:H2'	48:S2:923:A:C8	2.43	0.54
80:Sf:65:THR:HG23	80:Sf:72:LYS:HG2	1.88	0.54
2:LA:616:G:H2'	2:LA:617:G:C8	2.43	0.54
2:LA:1653:G:H2'	2:LA:1654:A:H8	1.72	0.54
2:LA:1816:A:H2'	2:LA:1817:G:H8	1.73	0.54
2:LA:2267:C:H2'	2:LA:2268:U:C6	2.43	0.54
48:S2:329:G:H2'	48:S2:330:G:C8	2.42	0.54
48:S2:454:U:P	67:SS:66:MET:HE1	2.48	0.54
48:S2:1195:C:H5'	48:S2:1196:A:OP1	2.07	0.54
48:S2:1220:C:H2'	48:S2:1221:A:C8	2.43	0.54
64:SP:121:VAL:HG23	64:SP:141:ILE:HG21	1.89	0.54
70:SV:42:ARG:HE	70:SV:59:ARG:HD3	1.72	0.54
2:LA:542:G:H2'	2:LA:543:C:C6	2.43	0.54
2:LA:1498:A:H2'	2:LA:1499:C:C6	2.43	0.54
2:LA:1856:C:H2'	2:LA:1857:C:H6	1.72	0.54
2:LA:2696:A:H2'	2:LA:2697:A:C8	2.41	0.54
2:LA:3072:C:H2'	2:LA:3073:A:O4'	2.07	0.54
13:LL:134:ILE:HD11	23:LV:160:ILE:HD13	1.89	0.54
24:LW:56:VAL:HG23	24:LW:65:VAL:HG22	1.89	0.54
48:S2:1626:U:H2'	48:S2:1627:U:H6	1.73	0.54
48:S2:566:C:H2'	48:S2:567:A:C8	2.43	0.54
48:S2:1210:C:H2'	48:S2:1211:A:C8	2.43	0.54
48:S2:1485:C:H3'	48:S2:1486:G:H5'	1.90	0.54
67:SS:196:VAL:HG22	67:SS:209:HIS:HB2	1.90	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:LA:631:U:H2'	2:LA:632:G:H8	1.71	0.54
2:LA:1460:A:H2'	2:LA:1461:A:C8	2.43	0.54
2:LA:3295:A:H2'	2:LA:3296:A:C8	2.43	0.54
3:LB:84:A:H2'	3:LB:85:G:C8	2.42	0.54
48:S2:95:G:H3'	48:S2:96:G:H8	1.73	0.54
64:SP:139:VAL:HG23	64:SP:141:ILE:HG12	1.89	0.54
1:Bb:30:G:H2'	1:Bb:31:A:H8	1.72	0.54
2:LA:807:A:H61	2:LA:934:G:H22	1.56	0.54
2:LA:1616:U:H2'	2:LA:1617:G:C8	2.42	0.54
2:LA:2213:A:H2'	2:LA:2214:A:C8	2.43	0.54
2:LA:3159:C:H2'	2:LA:3160:U:H6	1.73	0.54
2:LA:3234:A:H61	2:LA:3253:G:H1	1.55	0.54
16:LO:44:VAL:HG13	16:LO:60:LEU:HD21	1.89	0.54
20:LS:147:ARG:HB2	20:LS:150:VAL:HG13	1.90	0.54
32:Le:86:ARG:HH21	45:Lr:44:LYS:HZ2	1.56	0.54
54:SF:41:PRO:HD2	54:SF:45:ARG:HB2	1.89	0.54
62:SN:133:ALA:HB3	62:SN:140:TYR:HB3	1.89	0.54
63:SO:122:ILE:HD11	63:SO:134:TRP:HB2	1.88	0.54
68:ST:27:PHE:HZ	68:ST:111:LEU:HD21	1.73	0.54
1:Bb:43:G:H2'	1:Bb:44:A:C8	2.43	0.53
2:LA:3113:A:H2'	2:LA:3114:A:O4'	2.08	0.53
2:LA:3322:A:H2'	2:LA:3323:A:H8	1.74	0.53
18:LQ:61[A]:ALA:HA	18:LQ:70[A]:PRO:HD2	1.90	0.53
48:S2:623:A:H3'	48:S2:624:G:H5"	1.89	0.53
48:S2:939:A:H2'	48:S2:940:A:C8	2.43	0.53
48:S2:1039:A:H2'	48:S2:1040:G:C8	2.43	0.53
48:S2:1592:A:H2'	48:S2:1593:A:C8	2.43	0.53
54:SF:106:LYS:HG3	54:SF:117:LEU:HD11	1.89	0.53
63:SO:250:TYR:HE1	63:SO:265:LEU:HB3	1.73	0.53
72:SX:109:VAL:HG11	72:SX:125:VAL:HG11	1.90	0.53
4:LC:47:C:H1'	4:LC:61:A:H2'	1.91	0.53
19:LR:60:PHE:HB3	19:LR:64:ASN:HB3	1.90	0.53
60:SL:32:PHE:HZ	60:SL:59:SER:HB3	1.73	0.53
67:SS:105:VAL:HG22	67:SS:243:GLY:HA2	1.91	0.53
2:LA:715:A:H8	30:Lc:115:LYS:HD3	1.73	0.53
2:LA:1422:G:H1'	9:LH:3:ALA:HA	1.90	0.53
2:LA:1534:A:H4'	2:LA:1797:A:H62	1.72	0.53
4:LC:151:C:H5	27:LZ:24:LEU:HD11	1.73	0.53
14:LM:48:SER:HB3	14:LM:66:ALA:HB3	1.90	0.53
51:SC:29:GLN:HG3	51:SC:31:LYS:H	1.73	0.53
63:SO:36:ALA:HB2	63:SO:42:LEU:HG	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:LJ:249:ARG:HA	11:LJ:252:ASN:ND2	2.22	0.53
12:LK:47:LYS:H	16:LO:7:VAL:HG21	1.72	0.53
22:LU:77:VAL:HG13	22:LU:126:VAL:HG22	1.90	0.53
32:Le:30:THR:HG21	32:Le:89:VAL:HG22	1.89	0.53
53:SE:39:ALA:HA	53:SE:42:ARG:HE	1.73	0.53
68:ST:31:ARG:HG2	68:ST:101:ILE:HG22	1.91	0.53
2:LA:2407:C:H2'	2:LA:2408:U:C6	2.43	0.53
2:LA:2681:U:H2'	2:LA:2682:C:H5'	1.91	0.53
48:S2:141:U:H5"	68:ST:179:VAL:HG21	1.91	0.53
48:S2:340:U:H2'	48:S2:341:A:H8	1.72	0.53
48:S2:1335:U:H2'	48:S2:1336:A:C8	2.43	0.53
48:S2:1727:G:H2'	48:S2:1728:A:C8	2.43	0.53
50:SB:46:TRP:CD1	50:SB:129:PRO:HG2	2.44	0.53
51:SC:16:PHE:HE1	51:SC:73:VAL:HG23	1.73	0.53
56:SH:3:LEU:HD23	56:SH:3:LEU:H	1.74	0.53
74:SZ:64:ALA:HA	74:SZ:67:VAL:HG12	1.91	0.53
80:Sf:19:HIS:HB3	80:Sf:22:LYS:HG2	1.91	0.53
2:LA:1615:C:H2'	2:LA:1616:U:C6	2.43	0.53
2:LA:1941:C:H2'	2:LA:1942:U:C6	2.44	0.53
2:LA:2129:U:H2'	2:LA:2130:G:C8	2.44	0.53
19:LR:122:ALA:HB3	19:LR:143:PRO:HB2	1.90	0.53
23:LV:83:ARG:HE	23:LV:85:LEU:HD21	1.73	0.53
25:LX:5:GLY:HA3	25:LX:106:LYS:O	2.08	0.53
32:Le:14:LEU:O	32:Le:18:ILE:HG12	2.07	0.53
75:Sa:9:VAL:HG22	75:Sa:10:GLU:H	1.73	0.53
75:Sa:36:VAL:HG11	75:Sa:78:LEU:HD13	1.90	0.53
2:LA:3101:G:H2'	2:LA:3102:G:C8	2.44	0.53
2:LA:3157:U:H4'	2:LA:3158:G:O5'	2.09	0.53
13:LL:102:MET:HB3	13:LL:112:GLN:HE21	1.73	0.53
48:S2:264:G:H5"	48:S2:265:A:H5"	1.90	0.53
2:LA:50:U:H2'	2:LA:51:A:H8	1.74	0.53
2:LA:2406:C:H2'	2:LA:2407:C:C6	2.44	0.53
8:LG:34:LYS:HA	23:LV:27:LEU:HD11	1.91	0.53
13:LL:49:CYS:HB3	13:LL:168:SER:OG	2.08	0.53
44:Lq:25:VAL:HG22	44:Lq:72:LEU:HD22	1.90	0.53
48:S2:980:G:H4'	48:S2:1776:A:H4'	1.90	0.53
49:SA:37:VAL:HG23	49:SA:50:ILE:HG12	1.91	0.53
64:SP:183:ARG:HD3	64:SP:191:ARG:HD2	1.89	0.53
21:LT:77:GLY:O	21:LT:81:ARG:HG2	2.09	0.53
21:LT:105:LEU:HD13	21:LT:135:LYS:HD2	1.90	0.53
48:S2:920:U:H2'	48:S2:921:U:O4'	2.09	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:S2:1663:G:H2'	48:S2:1664:C:C6	2.44	0.53
67:SS:254:ARG:NH1	67:SS:258:GLN:HB2	2.24	0.53
71:SW:110:GLN:HB2	71:SW:144:PRO:HB3	1.91	0.53
4:LC:75:G:H2'	4:LC:76:C:C6	2.44	0.53
28:La:32:SER:HA	28:La:49:PRO:HA	1.90	0.53
37:Lj:86:ARG:O	37:Lj:90:ARG:HG2	2.08	0.53
48:S2:1591:C:H2'	48:S2:1592:A:C8	2.41	0.53
48:S2:1775:U:H2'	48:S2:1776:A:C8	2.44	0.53
2:LA:129:U:H3	2:LA:139:G:H1	1.58	0.52
2:LA:314:U:H2'	2:LA:315:C:C6	2.43	0.52
2:LA:1277:C:O2'	2:LA:1278:A:H8	1.92	0.52
2:LA:3015:G:H2'	2:LA:3016:A:H8	1.73	0.52
17:LP:60:VAL:HG22	17:LP:134:LEU:HB2	1.91	0.52
48:S2:1580:C:H4'	54:SF:137:ARG:HB2	1.91	0.52
49:SA:108:LYS:HE3	49:SA:113:LEU:HD23	1.91	0.52
58:SJ:22:ILE:HD12	58:SJ:100:VAL:HG21	1.91	0.52
73:SY:91:LEU:HB3	73:SY:122:ILE:HG12	1.91	0.52
2:LA:1386:A:H5"	7:LF:141:ARG:HH21	1.74	0.52
13:LL:170:LYS:HA	13:LL:177:ASP:HA	1.89	0.52
14:LM:29:ARG:HH12	14:LM:32:ARG:HH11	1.56	0.52
27:LZ:86:VAL:HG11	27:LZ:95:ILE:HD11	1.90	0.52
48:S2:322:G:H4'	48:S2:323:A:H5'	1.91	0.52
48:S2:768:C:C2	71:SW:143:ILE:HG12	2.44	0.52
48:S2:906:A:H2'	48:S2:907:A:C8	2.45	0.52
48:S2:1160:A:H2'	48:S2:1161:C:H6	1.74	0.52
48:S2:1675:C:H1'	70:SV:32:GLN:HG3	1.91	0.52
54:SF:28:LEU:HD12	54:SF:30:LYS:HE2	1.92	0.52
55:SG:76:GLU:O	55:SG:79:GLU:HG3	2.10	0.52
2:LA:842:G:H2'	2:LA:843:A:H8	1.75	0.52
2:LA:1138:U:H2'	2:LA:1139:G:C8	2.45	0.52
2:LA:1343:A:H2'	2:LA:1344:G:C8	2.44	0.52
2:LA:1386:A:H5"	7:LF:141:ARG:NH2	2.24	0.52
16:LO:73:PRO:HG2	16:LO:76:ALA:HB2	1.91	0.52
20:LS:37:ALA:HB1	20:LS:46:LYS:HG2	1.92	0.52
26:LY:6:ASP:HB3	26:LY:10:GLY:H	1.75	0.52
48:S2:119:A:H1'	48:S2:397:A:C8	2.45	0.52
48:S2:1734:U:H2'	48:S2:1735:U:C6	2.45	0.52
70:SV:159:GLN:OE1	70:SV:165:LEU:HB3	2.09	0.52
70:SV:172:ARG:HE	70:SV:175:GLN:HG3	1.74	0.52
2:LA:1225:A:H2'	2:LA:1226:G:C8	2.45	0.52
2:LA:1283:C:N4	2:LA:1285:G:H22	2.06	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:LC:19:C:H2'	4:LC:20:U:C6	2.44	0.52
7:LF:281:ILE:HG22	20:LS:25:TYR:HB3	1.90	0.52
30:Lc:75:LEU:HG	30:Lc:114:GLY:HA2	1.92	0.52
48:S2:415:C:O2	48:S2:418:G:O6	2.28	0.52
48:S2:1039:A:H2'	48:S2:1040:G:H8	1.73	0.52
56:SH:40:ARG:HB3	57:SI:45:MET:HE1	1.91	0.52
59:SK:38:HIS:HB3	59:SK:72:GLY:HA2	1.91	0.52
63:SO:205:SER:HB3	63:SO:210:LEU:HB2	1.91	0.52
2:LA:1534:A:H2'	2:LA:1535:A:C8	2.45	0.52
2:LA:2213:A:H2'	2:LA:2214:A:H8	1.72	0.52
3:LB:64:A:H5'	3:LB:65:G:H5"	1.92	0.52
11:LJ:74:THR:HG23	38:Lk:47:ILE:HG13	1.90	0.52
63:SO:181:TRP:CD1	63:SO:188:ILE:HA	2.43	0.52
2:LA:1295:G:H2'	2:LA:1296:C:C6	2.45	0.52
9:LH:38:THR:HG22	9:LH:90:LYS:HE2	1.91	0.52
12:LK:48:VAL:HB	12:LK:52:LEU:HD12	1.91	0.52
15:LN:42:ARG:O	15:LN:46:ILE:HG12	2.09	0.52
18:LQ:108[A]:ILE:HD13	18:LQ:160[A]:ARG:CZ	2.40	0.52
48:S2:100:A:H61	48:S2:385:A:H1'	1.73	0.52
48:S2:859:A:C5	73:SY:73:ARG:HD3	2.45	0.52
67:SS:87:MET:SD	67:SS:123:LEU:HB2	2.50	0.52
69:SU:140:VAL:HB	76:Sb:52:TYR:HB3	1.91	0.52
70:SV:37:LYS:H	70:SV:59:ARG:H	1.56	0.52
79:Se:23:CYS:HB3	79:Se:28:LYS:H	1.75	0.52
81:Sg:10:ARG:HB2	81:Sg:13:LYS:HB2	1.91	0.52
2:LA:82:C:H4'	17:LP:204:LYS:HE2	1.92	0.52
2:LA:507:U:H2'	2:LA:508:U:H6	1.74	0.52
10:LI:141:TYR:HA	10:LI:189:ILE:HD13	1.91	0.52
15:LN:101:ARG:HH22	15:LN:112:ASN:ND2	2.08	0.52
28:La:50:ILE:HD13	28:La:80:VAL:HG11	1.91	0.52
48:S2:1486:G:H2'	48:S2:1487:A:H8	1.74	0.52
50:SB:151:GLY:HA3	50:SB:156:ARG:HH12	1.75	0.52
67:SS:139:VAL:HG13	67:SS:150:PRO:HG3	1.92	0.52
2:LA:2218:G:H2'	2:LA:2219:A:H8	1.75	0.52
2:LA:2352:A:H5"	19:LR:83:TRP:O	2.10	0.52
2:LA:2615:G:H2'	2:LA:2616:C:H6	1.75	0.52
14:LM:90:GLN:HG3	14:LM:172:LEU:HD21	1.91	0.52
48:S2:155:U:H3	48:S2:157:A:H8	1.57	0.52
67:SS:254:ARG:HH12	67:SS:258:GLN:HB2	1.74	0.52
73:SY:102:LEU:HD11	73:SY:112:LYS:HA	1.91	0.52
77:Sc:88:PRO:HD2	77:Sc:132:LEU:HD23	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
81:Sg:49:LEU:HD22	81:Sg:58:PRO:HG2	1.91	0.52
2:LA:1597:C:H2'	2:LA:1598:G:H8	1.75	0.52
2:LA:3268:A:H3'	2:LA:3269:U:H2'	1.92	0.52
3:LB:23:A:H2'	3:LB:24:A:C8	2.45	0.52
13:LL:184:LYS:HG2	13:LL:190:VAL:HG23	1.91	0.52
13:LL:208:ASN:HA	13:LL:211:ARG:HE	1.75	0.52
33:Lf:55:LEU:HB2	33:Lf:95:PRO:HD3	1.90	0.52
49:SA:142:LEU:O	49:SA:143:ARG:HG3	2.10	0.52
50:SB:48:PHE:CD2	50:SB:67:PRO:HA	2.45	0.52
57:SI:71:VAL:HG23	57:SI:75:LYS:HB2	1.92	0.52
58:SJ:80:GLU:HB2	61:SM:54:LYS:HE2	1.92	0.52
2:LA:1066:G:H2'	2:LA:1067:U:C6	2.45	0.52
2:LA:1071:U:O2'	2:LA:1072:G:H8	1.93	0.52
2:LA:1871:U:H2'	2:LA:1872:C:O2	2.09	0.52
2:LA:2406:C:H2'	2:LA:2407:C:H6	1.76	0.52
2:LA:3204:C:H2'	2:LA:3205:G:C8	2.44	0.52
12:LK:87:LYS:HB2	12:LK:187:ILE:HG12	1.92	0.52
48:S2:29:U:H2'	48:S2:30:G:C8	2.43	0.52
48:S2:1509:C:H2'	48:S2:1510:U:O4'	2.10	0.52
2:LA:169:U:O4	2:LA:253:A:C6	2.63	0.51
2:LA:1137:C:H2'	2:LA:1138:U:H5'	1.91	0.51
48:S2:394:C:H42	48:S2:401:A:N6	2.03	0.51
48:S2:450:U:H2'	48:S2:451:A:N7	2.25	0.51
48:S2:1474:G:H2'	48:S2:1475:A:H8	1.75	0.51
48:S2:1569:A:H2'	48:S2:1570:A:H8	1.74	0.51
58:SJ:96:PRO:HD2	58:SJ:99:ILE:HD11	1.91	0.51
2:LA:542:G:H2'	2:LA:543:C:H6	1.75	0.51
2:LA:952:A:H4'	2:LA:968:G:H22	1.74	0.51
2:LA:2115:G:H22	2:LA:2120:A:H1'	1.76	0.51
2:LA:2680:A:H3'	2:LA:2681:U:H6	1.74	0.51
22:LU:79:VAL:HG11	22:LU:106:LEU:HD11	1.92	0.51
30:Lc:70:LYS:HD3	30:Lc:111:LYS:HB2	1.90	0.51
48:S2:919:A:H5'	48:S2:920:U:OP2	2.10	0.51
69:SU:64:VAL:HB	69:SU:94:ALA:HB1	1.92	0.51
1:Bb:66:A:H2'	1:Bb:67:A:H8	1.75	0.51
2:LA:816:A:H5'	2:LA:906:A:N6	2.25	0.51
2:LA:965:A:H2	30:Lc:43:ILE:HD12	1.74	0.51
2:LA:1940:G:H21	2:LA:3362:A:H8	1.57	0.51
2:LA:2563:G:O6	2:LA:2578:U:O2	2.28	0.51
2:LA:3192:U:H2'	2:LA:3193:C:C6	2.45	0.51
6:LE:119:TYR:HE1	6:LE:129:ALA:HB2	1.73	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:LF:125:ALA:O	7:LF:129:THR:HG23	2.10	0.51
13:LL:166:ILE:HD11	23:LV:160:ILE:HD11	1.92	0.51
47:Cc:4:G:H2'	47:Cc:5:G:C8	2.45	0.51
48:S2:1583:A:H1'	48:S2:1585:U:H5	1.76	0.51
48:S2:1610:G:H5'	50:SB:107:LYS:HG3	1.92	0.51
64:SP:36:TYR:HD1	64:SP:52:LYS:HD3	1.74	0.51
80:Sf:50:ALA:H	80:Sf:71:ALA:HB2	1.73	0.51
2:LA:417:A:H2'	2:LA:418:A:C8	2.45	0.51
2:LA:2636:A:H5'	2:LA:2637:A:C5'	2.40	0.51
2:LA:3298:C:C2	2:LA:3299:A:C8	2.99	0.51
5:LD:36:GLU:HA	5:LD:91:GLY:HA2	1.92	0.51
13:LL:38:LYS:HE2	13:LL:41:ALA:HB2	1.91	0.51
14:LM:37:LEU:HD12	14:LM:67:VAL:HG22	1.92	0.51
15:LN:158:ALA:HA	30:Lc:97:GLU:HA	1.92	0.51
48:S2:1219:A:H62	48:S2:1264:G:H21	1.59	0.51
2:LA:1093:A:H1'	2:LA:1094:U:C2	2.46	0.51
2:LA:1394:A:H4'	2:LA:1420:C:H4'	1.92	0.51
2:LA:1909:A:H2'	2:LA:1910:A:C8	2.45	0.51
25:LX:127:PRO:HB2	25:LX:128:ARG:HH12	1.75	0.51
48:S2:222:A:H5"	48:S2:833:U:H1'	1.93	0.51
48:S2:783:G:H2'	48:S2:784:C:H6	1.75	0.51
48:S2:803:A:O2'	48:S2:804:A:H8	1.94	0.51
48:S2:1311:U:HO2'	55:SG:2:GLY:N	2.08	0.51
50:SB:163:SER:HB2	50:SB:166:ARG:HB2	1.93	0.51
69:SU:32:PRO:HA	69:SU:35:LYS:HE3	1.92	0.51
2:LA:1340:G:H2'	2:LA:1341:U:C6	2.46	0.51
5:LD:137:ILE:HD11	5:LD:149:ARG:HB2	1.93	0.51
48:S2:752:A:H5'	67:SS:187:ARG:HG3	1.92	0.51
48:S2:1046:G:H2'	48:S2:1047:G:O4'	2.11	0.51
48:S2:1470:C:H5"	48:S2:1471:A:C8	2.44	0.51
48:S2:1474:G:H2'	48:S2:1475:A:C8	2.45	0.51
50:SB:62:VAL:HG13	50:SB:89:ILE:HG12	1.92	0.51
52:SD:82:PRO:HD3	62:SN:113:LYS:HE3	1.91	0.51
66:SR:81:MET:HE1	66:SR:186:LYS:HB3	1.92	0.51
2:LA:824:C:H5"	5:LD:21:ARG:HG3	1.93	0.51
2:LA:1213:G:H4'	22:LU:90:MET:HB2	1.92	0.51
2:LA:1261:G:H4'	2:LA:1278:A:H61	1.75	0.51
2:LA:2515:A:H5"	17:LP:28:TRP:CD1	2.46	0.51
15:LN:113:VAL:O	15:LN:117:LYS:HG2	2.11	0.51
21:LT:159:ALA:O	21:LT:163:ARG:HD3	2.11	0.51
48:S2:702:G:C6	48:S2:737:A:N6	2.79	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:S2:1754:A:H5”	77:Sc:62:LYS:HG3	1.93	0.51
50:SB:143:ARG:HH22	50:SB:214:LYS:HE2	1.75	0.51
64:SP:27:ARG:HG3	64:SP:28:ASN:H	1.76	0.51
68:ST:78:THR:HG23	68:ST:92:ARG:HG2	1.93	0.51
1:Bb:18:G:H1’	1:Bb:58:A:H61	1.75	0.51
2:LA:2244:A:H5”	5:LD:243:THR:HB	1.92	0.51
48:S2:90:C:H2’	48:S2:91:G:C8	2.45	0.51
65:SQ:143:THR:HG21	65:SQ:156:ALA:HB2	1.93	0.51
66:SR:139:ILE:HD12	66:SR:218:ILE:HG23	1.91	0.51
76:Sb:11:LEU:HD12	76:Sb:74:VAL:HB	1.93	0.51
2:LA:2683:U:H2’	2:LA:2684:C:H6	1.76	0.51
29:Lb:25:ILE:HA	29:Lb:43:VAL:HG12	1.92	0.51
48:S2:607:G:H5’	48:S2:613:G:N2	2.26	0.51
50:SB:64:VAL:HG12	50:SB:65:ARG:HG3	1.92	0.51
68:ST:78:THR:HG22	68:ST:79:LYS:H	1.76	0.51
70:SV:78:ILE:HG22	70:SV:80:GLY:H	1.75	0.51
2:LA:68:C:O3’	17:LP:177:GLY:HA2	2.11	0.51
2:LA:1105:A:H2’	2:LA:1106:G:H8	1.75	0.51
2:LA:1696:A:H2’	2:LA:1697:A:C8	2.45	0.51
5:LD:104:LEU:HA	5:LD:107:VAL:HG22	1.92	0.51
7:LF:215:ILE:HG13	7:LF:219:LEU:HD23	1.93	0.51
8:LG:211:LEU:HD21	8:LG:218:ARG:HB3	1.92	0.51
28:La:99:LEU:HD11	28:La:104:LEU:HD21	1.92	0.51
48:S2:30:G:H2’	48:S2:31:C:C6	2.46	0.51
48:S2:127:G:H1’	48:S2:178:U:H3	1.76	0.51
48:S2:922:G:H2’	48:S2:923:A:H8	1.75	0.51
49:SA:121:GLY:HA2	49:SA:124:ARG:HE	1.76	0.51
2:LA:945:C:H2’	2:LA:946:U:C6	2.46	0.50
4:LC:68:G:H2’	4:LC:69:U:H6	1.76	0.50
41:Ln:14:ALA:O	41:Ln:18:LYS:HG3	2.12	0.50
48:S2:323:A:H2’	48:S2:324:U:C5	2.46	0.50
48:S2:516:G:H2’	48:S2:517:U:C6	2.46	0.50
48:S2:996:U:H2’	48:S2:997:G:C8	2.46	0.50
48:S2:1439:C:H2’	48:S2:1440:C:H6	1.76	0.50
48:S2:1458:G:P	48:S2:1458:G:H8	2.34	0.50
50:SB:46:TRP:HD1	50:SB:129:PRO:HG2	1.75	0.50
58:SJ:27:THR:HG22	58:SJ:88:LYS:HB3	1.94	0.50
80:Sf:36:LYS:HB2	80:Sf:43:ILE:HD13	1.93	0.50
2:LA:426:G:H5’	34:Lg:50:ILE:HG22	1.93	0.50
2:LA:1659:U:H2’	2:LA:1660:C:C6	2.46	0.50
2:LA:3051:U:H2’	2:LA:3052:G:H8	1.75	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:S2:163:G:H8	68:ST:110:ALA:HB1	1.76	0.50
48:S2:1108:G:H2'	77:Sc:25:ALA:HB1	1.92	0.50
63:SO:87:LYS:HA	63:SO:110:VAL:HG23	1.92	0.50
71:SW:109:LEU:HA	71:SW:112:GLN:HB2	1.94	0.50
74:SZ:71:CYS:SG	74:SZ:110:LEU:HD21	2.51	0.50
2:LA:209:A:H4'	2:LA:211:A:N7	2.26	0.50
2:LA:2357:A:H2'	2:LA:2358:A:C8	2.46	0.50
2:LA:2768:U:H2'	2:LA:2769:A:C8	2.47	0.50
6:LE:63:PRO:HD2	6:LE:348:ARG:HH22	1.76	0.50
48:S2:1436:A:H2'	48:S2:1437:U:C6	2.46	0.50
50:SB:51:VAL:HG23	50:SB:131:GLN:HG2	1.93	0.50
2:LA:100:A:H2'	2:LA:101:G:N3	2.27	0.50
2:LA:3294:A:H2'	2:LA:3295:A:O4'	2.11	0.50
48:S2:157:A:H2	48:S2:419:G:H8	1.59	0.50
50:SB:80:LYS:HB2	50:SB:83:ARG:HD2	1.92	0.50
50:SB:116:HIS:CG	59:SK:98:GLN:HG2	2.47	0.50
63:SO:244:ALA:HB1	63:SO:294:TRP:CD1	2.45	0.50
63:SO:289:ALA:HA	63:SO:305:TYR:HA	1.92	0.50
64:SP:63:ILE:HG12	75:Sa:36:VAL:HG22	1.92	0.50
2:LA:529:A:H2'	2:LA:530:G:C8	2.47	0.50
2:LA:1010:G:H4'	13:LL:40:LYS:HG2	1.94	0.50
2:LA:1117:G:OP1	31:Ld:4:SER:HB2	2.12	0.50
2:LA:2947:G:N3	6:LE:250:ALA:HB1	2.27	0.50
2:LA:2992:U:H5'	2:LA:3310:A:O2'	2.12	0.50
9:LH:111:LEU:HD22	9:LH:112:THR:H	1.76	0.50
19:LR:67:ILE:HG12	19:LR:80:LYS:HD2	1.93	0.50
23:LV:52:MET:HG2	23:LV:53:PRO:HD2	1.93	0.50
48:S2:477:A:H62	48:S2:539:G:N2	2.08	0.50
55:SG:74:GLN:O	55:SG:77:GLU:HG2	2.11	0.50
65:SQ:30:PHE:CD2	65:SQ:94:LYS:HA	2.46	0.50
78:Sd:7:ILE:HG12	78:Sd:40:LEU:HD13	1.94	0.50
2:LA:254:A:H2'	2:LA:255:A:C8	2.46	0.50
2:LA:1660:C:H2'	2:LA:1661:G:H8	1.76	0.50
2:LA:2636:A:H5'	2:LA:2637:A:H5'	1.94	0.50
2:LA:3368:U:H4'	2:LA:3369:G:H5'	1.93	0.50
20:LS:67:ILE:HG23	20:LS:81:VAL:HG11	1.93	0.50
43:Lp:15:ARG:HH12	48:S2:1125:A:H5"	1.77	0.50
48:S2:555:A:H61	71:SW:19:TYR:HD1	1.58	0.50
48:S2:1227:A:N7	52:SD:43:ARG:HD2	2.27	0.50
48:S2:1579:U:H2'	48:S2:1580:C:C6	2.46	0.50
48:S2:1614:A:H5"	50:SB:81:ARG:NH1	2.23	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:SE:80:MET:SD	53:SE:83:MET:HB2	2.51	0.50
64:SP:126:PRO:HG2	64:SP:152:PRO:HD2	1.93	0.50
66:SR:208:GLU:CD	66:SR:208:GLU:H	2.19	0.50
67:SS:137:PRO:HB2	67:SS:150:PRO:HD2	1.94	0.50
2:LA:965:A:C2	30:Lc:43:ILE:HD12	2.46	0.50
2:LA:1794:G:H4'	5:LD:191:LEU:HD21	1.94	0.50
2:LA:2530:G:H21	2:LA:2531:C:H5"	1.77	0.50
2:LA:3006:A:H2'	2:LA:3007:U:O4'	2.12	0.50
5:LD:168:VAL:HG13	45:Lr:79:VAL:HG21	1.93	0.50
11:LJ:26:LEU:HD23	29:Lb:53:VAL:HG11	1.94	0.50
48:S2:1584:G:H5'	54:SF:123:ARG:O	2.11	0.50
48:S2:1691:A:H2'	48:S2:1692:G:H8	1.76	0.50
56:SH:134:ARG:HB2	56:SH:136:GLN:HE22	1.77	0.50
69:SU:132:PRO:HG2	69:SU:162:ILE:HD11	1.93	0.50
70:SV:36:THR:HA	70:SV:58:LEU:HA	1.94	0.50
2:LA:1493:G:H2'	41:Ln:13:MET:HE2	1.94	0.50
2:LA:1616:U:H2'	2:LA:1617:G:H8	1.77	0.50
2:LA:2428:U:H2'	2:LA:2429:G:H8	1.77	0.50
2:LA:3101:G:H2'	2:LA:3102:G:H8	1.76	0.50
2:LA:3214:U:H3	16:LO:124:ARG:NH2	2.10	0.50
7:LF:54:GLU:H	7:LF:54:GLU:CD	2.20	0.50
26:LY:6:ASP:HB3	26:LY:10:GLY:N	2.27	0.50
48:S2:1294:G:O2'	64:SP:109:ASN:HB2	2.12	0.50
52:SD:61:VAL:HG23	52:SD:89:ILE:HB	1.94	0.50
58:SJ:57:ARG:HG2	58:SJ:89:ARG:HD2	1.94	0.50
6:LE:166:ILE:HG21	6:LE:174:LYS:N	2.27	0.50
6:LE:284:ARG:HB3	6:LE:323:MET:HG2	1.94	0.50
47:Cc:4:G:H2'	47:Cc:5:G:H8	1.77	0.50
48:S2:1126:G:H2'	48:S2:1127:G:H8	1.77	0.50
48:S2:1483:A:H5"	54:SF:71:GLY:HA2	1.94	0.50
65:SQ:133:TYR:CD1	65:SQ:217:LEU:HD11	2.47	0.50
66:SR:125:ILE:O	66:SR:129:ILE:HG12	2.11	0.50
2:LA:712:G:H5'	15:LN:174:ARG:HD2	1.94	0.49
2:LA:1272:C:H2'	2:LA:1273:A:O4'	2.12	0.49
2:LA:2536:A:H2'	65:SQ:227:ALA:N	2.27	0.49
2:LA:3082:C:H2'	2:LA:3083:G:H8	1.76	0.49
7:LF:315:LYS:HB2	7:LF:323:VAL:HG21	1.94	0.49
10:LI:50:ALA:O	10:LI:54:GLU:HG2	2.11	0.49
22:LU:12:ARG:HD2	22:LU:22:PRO:HD2	1.93	0.49
48:S2:1451:C:OP1	61:SM:8:PHE:HA	2.12	0.49
48:S2:1452:U:H2'	48:S2:1453:G:C8	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
78:Sd:29:HIS:CE1	78:Sd:34:ASN:HA	2.46	0.49
79:Se:23:CYS:O	79:Se:27:SER:HA	2.11	0.49
2:LA:75:G:H5'	15:LN:58:VAL:HB	1.94	0.49
2:LA:727:G:H22	20:LS:139:ILE:HB	1.77	0.49
2:LA:1771:C:H2'	2:LA:1772:U:O4'	2.13	0.49
2:LA:1856:C:H2'	2:LA:1857:C:C6	2.46	0.49
2:LA:3095:U:H2'	2:LA:3096:C:H6	1.76	0.49
3:LB:62:U:H4'	8:LG:285:ARG:HH12	1.75	0.49
4:LC:52:A:N6	41:Ln:23:LEU:HD12	2.27	0.49
7:LF:295:ILE:O	7:LF:299:ILE:HG12	2.12	0.49
18:LQ:34[A]:VAL:HG22	18:LQ:103[A]:LYS:HB2	1.93	0.49
18:LQ:62[A]:THR:H	18:LQ:69[A]:GLY:HA3	1.77	0.49
70:SV:37:LYS:C	70:SV:59:ARG:HA	2.36	0.49
78:Sd:107:GLN:O	78:Sd:111:LYS:HG2	2.12	0.49
2:LA:1777:U:H2'	2:LA:1778:G:C8	2.47	0.49
2:LA:3044:G:H2'	2:LA:3045:G:C8	2.47	0.49
5:LD:118:GLU:HG3	5:LD:125:ALA:HB3	1.95	0.49
6:LE:86:VAL:HG22	6:LE:162:VAL:HG12	1.95	0.49
48:S2:27:U:H2'	48:S2:28:A:C8	2.47	0.49
48:S2:195:G:H2'	48:S2:196:G:C8	2.47	0.49
48:S2:327:U:H2'	48:S2:328:A:C8	2.47	0.49
48:S2:1390:U:C5	55:SG:3:ARG:HG3	2.47	0.49
61:SM:21:CYS:HB3	61:SM:26:SER:H	1.77	0.49
2:LA:1667:A:H2'	2:LA:1668:G:C8	2.47	0.49
2:LA:2367:A:H2'	2:LA:2368:A:C8	2.47	0.49
48:S2:449:C:H2'	48:S2:450:U:C6	2.47	0.49
48:S2:464:A:C2	48:S2:465:G:C8	3.01	0.49
48:S2:1227:A:H61	52:SD:103:LEU:HD22	1.77	0.49
48:S2:1582:U:H5"	54:SF:135:ARG:HH11	1.77	0.49
57:SI:38:LYS:HD2	57:SI:43:ASN:HB2	1.95	0.49
4:LC:69:U:H2'	4:LC:70:G:O4'	2.11	0.49
15:LN:185:LYS:O	15:LN:189:GLU:HG2	2.12	0.49
39:Ll:54:LYS:O	39:Ll:58:THR:HB	2.13	0.49
47:Cc:5:G:H2'	47:Cc:6:G:H8	1.77	0.49
48:S2:395:U:H2'	48:S2:396:G:O4'	2.11	0.49
48:S2:1525:A:H2'	48:S2:1526:A:H8	1.76	0.49
67:SS:86:PHE:CE2	67:SS:87:MET:HE3	2.48	0.49
75:Sa:16:LYS:HG3	75:Sa:23:ILE:HD13	1.93	0.49
2:LA:127:G:H2'	2:LA:128:G:C8	2.47	0.49
2:LA:733:G:H22	2:LA:736:A:N6	2.09	0.49
2:LA:761:A:H2'	2:LA:762:U:C6	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:LA:1662:G:H22	2:LA:1787:A:H2	1.60	0.49
6:LE:215:ILE:HD13	6:LE:282:ILE:HD11	1.94	0.49
7:LF:207:VAL:HG11	7:LF:215:ILE:HD11	1.93	0.49
12:LK:6:THR:HG21	12:LK:65:VAL:HG12	1.94	0.49
48:S2:1483:A:H2'	48:S2:1484:G:C8	2.48	0.49
54:SF:12:LYS:HD2	54:SF:17:THR:HG22	1.95	0.49
64:SP:50:VAL:HA	64:SP:53:THR:HG22	1.95	0.49
2:LA:262:U:H2'	2:LA:263:C:O4'	2.13	0.49
2:LA:985:U:H2'	2:LA:986:U:H6	1.78	0.49
2:LA:1895:A:O2'	2:LA:3053:G:H4'	2.12	0.49
2:LA:2727:A:C2	30:Lc:43:ILE:HG23	2.47	0.49
2:LA:2857:C:H2'	2:LA:2858:U:C6	2.47	0.49
2:LA:2878:G:H5"	6:LE:5:LYS:HE2	1.94	0.49
2:LA:2987:A:O2'	6:LE:259:HIS:HB3	2.12	0.49
2:LA:3086:A:H4'	6:LE:366:GLY:HA2	1.94	0.49
4:LC:154:C:H2'	4:LC:155:A:C8	2.47	0.49
12:LK:25:VAL:HG23	12:LK:78:MET:HE1	1.94	0.49
20:LS:19:PRO:HD3	20:LS:53:PHE:CD1	2.48	0.49
20:LS:68:ALA:O	20:LS:72:LYS:HG2	2.13	0.49
48:S2:415:C:O2'	48:S2:416:A:H2'	2.13	0.49
48:S2:962:C:H2'	48:S2:963:A:O4'	2.13	0.49
53:SE:96:ILE:HD11	53:SE:116:LEU:HG	1.93	0.49
65:SQ:82:ARG:HD2	65:SQ:103:MET:HE1	1.95	0.49
68:ST:102:VAL:HG13	68:ST:106:LEU:HD13	1.94	0.49
79:Se:78:ALA:HA	79:Se:83:ILE:HD12	1.95	0.49
1:Bb:11:C:H2'	1:Bb:12:U:C6	2.48	0.49
2:LA:728:G:H5"	20:LS:43:PRO:HB2	1.94	0.49
2:LA:1110:U:H2'	2:LA:1111:U:C6	2.48	0.49
8:LG:41:LYS:HB2	23:LV:68:THR:O	2.13	0.49
8:LG:104:LEU:HG	8:LG:108:ARG:HE	1.78	0.49
25:LX:127:PRO:HB2	25:LX:128:ARG:NH1	2.27	0.49
40:Lm:41:THR:HG21	40:Lm:62:ALA:HB2	1.95	0.49
47:Cc:44:A:H2'	47:Cc:45:A:H8	1.78	0.49
48:S2:387:A:H2'	48:S2:402:C:H5'	1.95	0.49
48:S2:592:A:H2'	48:S2:593:U:O4'	2.13	0.49
48:S2:778:G:H22	78:Sd:8:ARG:NH2	2.10	0.49
48:S2:783:G:H2'	48:S2:784:C:C6	2.47	0.49
48:S2:1649:G:H2'	48:S2:1650:U:C6	2.47	0.49
50:SB:121:ILE:HG23	50:SB:129:PRO:HB3	1.94	0.49
53:SE:100:LYS:HG3	53:SE:101:ALA:N	2.28	0.49
54:SF:23:LYS:HG2	54:SF:66:ARG:HH22	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
64:SP:107:PHE:HB3	64:SP:139:VAL:HG21	1.95	0.49
68:ST:33:GLY:HA2	68:ST:51:LYS:HD2	1.94	0.49
2:LA:1232:C:H2'	2:LA:1233:G:C8	2.48	0.49
2:LA:2894:C:H2'	2:LA:2895:G:H8	1.78	0.49
2:LA:2986:U:C2	2:LA:2987:A:C8	3.01	0.49
3:LB:106:U:H5'	3:LB:107:C:OP2	2.13	0.49
14:LM:30:LEU:HD11	14:LM:64:LYS:O	2.12	0.49
19:LR:48:LEU:HD22	19:LR:88:VAL:HG13	1.95	0.49
48:S2:565:C:H2'	48:S2:577:G:N3	2.28	0.49
49:SA:106:LYS:HG2	49:SA:175:VAL:HG22	1.95	0.49
73:SY:132:VAL:HG13	73:SY:134:VAL:HG13	1.93	0.49
2:LA:796:U:H2'	2:LA:797:U:C6	2.48	0.49
2:LA:1054:A:H5"	2:LA:2637:A:N6	2.28	0.49
2:LA:2553:U:H3'	2:LA:2554:A:H5"	1.95	0.49
2:LA:2723:U:H2'	2:LA:2724:U:C6	2.48	0.49
2:LA:3151:U:H4'	2:LA:3294:A:H1'	1.95	0.49
24:LW:97:SER:HA	24:LW:103:TYR:HA	1.95	0.49
25:LX:69:LEU:HD22	25:LX:74:MET:HE1	1.95	0.49
40:Lm:8:ILE:HD11	40:Lm:65:LEU:HD22	1.95	0.49
47:Cc:72:C:H2'	47:Cc:73:A:H8	1.78	0.49
48:S2:127:G:H1'	48:S2:178:U:N3	2.27	0.49
48:S2:1162:C:O4'	60:SL:22:ARG:HD2	2.13	0.49
48:S2:1593:A:H2'	48:S2:1594:G:H8	1.78	0.49
58:SJ:32:LYS:HE3	58:SJ:36:ASN:HD22	1.77	0.49
58:SJ:63:LEU:HB3	61:SM:34:TYR:CE2	2.48	0.49
65:SQ:71:ALA:HB2	65:SQ:80:SER:HA	1.95	0.49
68:ST:52:ILE:HD11	68:ST:109:LEU:HD22	1.95	0.49
71:SW:131:GLN:O	71:SW:132:ARG:HG2	2.13	0.49
2:LA:19:U:H2'	2:LA:20:A:C8	2.47	0.48
2:LA:791:A:H2'	2:LA:792:G:H8	1.78	0.48
2:LA:821:U:H2'	2:LA:822:G:H8	1.76	0.48
2:LA:1108:U:H2'	2:LA:1109:U:H6	1.78	0.48
3:LB:75:G:N2	3:LB:103:A:H2	2.11	0.48
14:LM:15:GLU:HB3	14:LM:130:VAL:HG23	1.95	0.48
21:LT:15:VAL:HG23	21:LT:17:VAL:HG22	1.95	0.48
34:Lg:32:TRP:CZ2	34:Lg:53:PRO:HD2	2.48	0.48
47:Cc:19:G:H5'	47:Cc:61:U:N3	2.28	0.48
48:S2:888:U:H2'	48:S2:889:U:C6	2.48	0.48
48:S2:1087:A:H2'	48:S2:1088:A:C8	2.48	0.48
48:S2:1454:G:H4'	53:SE:122:THR:HG21	1.94	0.48
50:SB:112:ARG:HH21	50:SB:116:HIS:CE1	2.31	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:SK:50:ILE:HG22	59:SK:69:LEU:HD22	1.94	0.48
62:SN:109:ASP:HB2	62:SN:114:VAL:HG22	1.95	0.48
68:ST:38:GLY:HA3	68:ST:48:TYR:HB2	1.94	0.48
68:ST:57:ASP:HB3	68:ST:98:ARG:HD2	1.95	0.48
78:Sd:27:VAL:HG22	78:Sd:69:SER:HB2	1.94	0.48
2:LA:542:G:N2	2:LA:549:U:O2	2.41	0.48
2:LA:842:G:H2'	2:LA:843:A:C8	2.48	0.48
2:LA:2096:A:H2'	2:LA:2097:U:H5	1.77	0.48
2:LA:3325:G:H2'	2:LA:3326:G:C8	2.48	0.48
8:LG:178:ASN:HA	8:LG:183:TRP:CD2	2.48	0.48
8:LG:294:ALA:HB1	13:LL:217:PHE:HB3	1.95	0.48
29:Lb:25:ILE:HG23	29:Lb:41:ALA:HB1	1.95	0.48
48:S2:874:C:H2'	48:S2:875:G:C8	2.48	0.48
48:S2:1626:U:H2'	48:S2:1627:U:C6	2.49	0.48
58:SJ:68:ARG:HH21	58:SJ:77:LYS:HD3	1.78	0.48
63:SO:267:PRO:HB2	63:SO:269:TYR:HD1	1.78	0.48
63:SO:267:PRO:HB2	63:SO:269:TYR:CD1	2.49	0.48
2:LA:600:G:H22	2:LA:602:A:N6	2.11	0.48
2:LA:2880:U:H1'	6:LE:250:ALA:HB3	1.94	0.48
20:LS:94:PHE:CZ	30:Lc:119:PRO:HD3	2.49	0.48
28:La:51:ARG:HG2	28:La:52:ARG:H	1.77	0.48
48:S2:1429:G:H2'	48:S2:1430:U:C6	2.48	0.48
2:LA:428:A:H2'	2:LA:429:U:C6	2.48	0.48
2:LA:506:U:H2'	2:LA:507:U:O4'	2.14	0.48
2:LA:1085:A:H2'	2:LA:1086:C:C6	2.48	0.48
2:LA:1105:A:H2'	2:LA:1106:G:C8	2.49	0.48
2:LA:1612:A:H5"	40:Lm:51:LEU:HD22	1.94	0.48
2:LA:3297:U:H2'	2:LA:3298:C:H6	1.78	0.48
11:LJ:24:ASN:HB3	11:LJ:25:PRO:HD3	1.95	0.48
11:LJ:72:PRO:HG3	17:LP:18:VAL:HA	1.96	0.48
36:Li:51:LEU:HB3	36:Li:54:ILE:HD13	1.95	0.48
45:Lr:10:ILE:HG22	45:Lr:27:LYS:HG3	1.95	0.48
48:S2:604:A:H2'	48:S2:605:A:O4'	2.14	0.48
73:SY:49:GLN:HA	73:SY:52:VAL:HG12	1.95	0.48
2:LA:1381:A:H2'	2:LA:1382:G:H8	1.77	0.48
2:LA:1661:G:H2'	2:LA:1662:G:H8	1.75	0.48
2:LA:2444:C:H5"	2:LA:2445:A:OP1	2.13	0.48
2:LA:2668:U:H2'	2:LA:2669:G:H8	1.78	0.48
3:LB:45:A:H2'	3:LB:46:A:C8	2.47	0.48
48:S2:1357:A:H2'	48:S2:1358:G:H8	1.78	0.48
48:S2:1628:U:H2'	48:S2:1629:G:H8	1.78	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
73:SY:62:GLN:HB2	73:SY:65:VAL:HG22	1.96	0.48
2:LA:610:G:H21	7:LF:313:LEU:HD12	1.78	0.48
2:LA:1511:U:H5"	2:LA:1512:U:H5	1.78	0.48
2:LA:2106:A:H2'	2:LA:2107:A:C8	2.48	0.48
2:LA:2895:G:H5"	42:Lo:102:ARG:HH21	1.77	0.48
5:LD:102:LEU:HD12	5:LD:102:LEU:H	1.77	0.48
17:LP:73:ARG:HG2	17:LP:75:VAL:HG22	1.95	0.48
48:S2:1582:U:H5"	54:SF:135:ARG:NH1	2.28	0.48
63:SO:73:LEU:HA	63:SO:80:ALA:HA	1.96	0.48
69:SU:126:LEU:HD21	69:SU:152:VAL:HG21	1.95	0.48
2:LA:966:U:H2'	2:LA:967:A:C8	2.49	0.48
3:LB:90:U:H2'	3:LB:91:G:O4'	2.14	0.48
10:LI:96:PRO:HB2	10:LI:99:PRO:HD2	1.96	0.48
14:LM:96:PHE:CD2	14:LM:160:VAL:HG12	2.48	0.48
17:LP:98:LEU:HA	17:LP:101:THR:HG22	1.95	0.48
48:S2:148:A:N6	48:S2:166:C:N4	2.45	0.48
48:S2:1142:A:H5"	79:Se:2:PRO:HB3	1.95	0.48
48:S2:1371:A:H1'	48:S2:1373:C:OP2	2.13	0.48
48:S2:1609:U:H2'	48:S2:1610:G:O4'	2.13	0.48
48:S2:1717:G:H2'	48:S2:1718:G:C8	2.49	0.48
76:Sb:47:ILE:HG13	76:Sb:48:GLY:H	1.77	0.48
2:LA:631:U:H2'	2:LA:632:G:C8	2.47	0.48
2:LA:640:U:H2'	2:LA:641:C:C6	2.49	0.48
2:LA:656:A:H2'	2:LA:657:A:H8	1.79	0.48
2:LA:2423:U:H2'	2:LA:2424:A:H8	1.79	0.48
8:LG:123:GLU:CD	8:LG:123:GLU:H	2.22	0.48
32:Le:95:ALA:HB2	32:Le:101:LEU:HD23	1.95	0.48
48:S2:27:U:H2'	48:S2:28:A:H8	1.79	0.48
50:SB:35:GLN:O	50:SB:39:GLU:HG2	2.13	0.48
51:SC:75:TYR:O	51:SC:78:GLU:HG3	2.14	0.48
52:SD:34:THR:HA	52:SD:37:VAL:HG12	1.95	0.48
57:SI:123:ARG:HG2	57:SI:124:ILE:N	2.29	0.48
64:SP:50:VAL:O	64:SP:53:THR:HG22	2.14	0.48
66:SR:188:LEU:HD13	66:SR:196:VAL:HG11	1.96	0.48
72:SX:111:VAL:HG12	72:SX:139:VAL:HG21	1.94	0.48
74:SZ:61:MET:O	74:SZ:65:GLN:HG2	2.13	0.48
2:LA:254:A:H2'	2:LA:255:A:H8	1.77	0.48
2:LA:432:G:H2'	2:LA:433:A:H8	1.79	0.48
3:LB:7:G:H8	8:LG:22:ARG:NH1	2.11	0.48
6:LE:144:ILE:HG21	6:LE:196:ARG:HH22	1.79	0.48
8:LG:261:THR:HB	8:LG:264:GLN:HG3	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:LJ:64:ILE:O	11:LJ:68:ARG:HG2	2.14	0.48
12:LK:115:ARG:HG2	12:LK:123:ILE:HG22	1.96	0.48
12:LK:162:GLN:NE2	12:LK:181:VAL:HG12	2.29	0.48
21:LT:60:LYS:HB2	21:LT:64:ARG:HH21	1.77	0.48
28:La:58:VAL:HA	28:La:104:LEU:HD23	1.96	0.48
40:Lm:24:THR:HB	40:Lm:44:LYS:HB2	1.96	0.48
47:Cc:24:C:H2'	47:Cc:25:U:H6	1.79	0.48
47:Cc:29:C:H2'	47:Cc:30:G:H8	1.79	0.48
48:S2:895:G:N1	48:S2:918:U:C2	2.82	0.48
50:SB:69:PHE:HD2	54:SF:50:GLU:HG2	1.79	0.48
66:SR:69:ILE:HG13	66:SR:133:LYS:O	2.14	0.48
69:SU:43:PHE:CG	69:SU:60:ILE:HD11	2.49	0.48
2:LA:3295:A:H2'	2:LA:3296:A:H8	1.79	0.48
5:LD:32:LEU:HD11	5:LD:37:ARG:HB3	1.94	0.48
10:LI:60:ARG:O	10:LI:64:GLN:HG2	2.14	0.48
13:LL:102:MET:HB3	13:LL:112:GLN:NE2	2.28	0.48
14:LM:53:THR:HB	14:LM:61:ARG:N	2.29	0.48
17:LP:11:GLN:HG2	17:LP:44:ARG:NH2	2.28	0.48
17:LP:158:HIS:HB3	17:LP:161:ALA:HB3	1.94	0.48
22:LU:80:ARG:HE	22:LU:87:THR:HG21	1.79	0.48
28:La:48:LEU:HD11	28:La:119:ILE:HD11	1.96	0.48
49:SA:101:GLN:HE21	49:SA:122:VAL:HG23	1.79	0.48
50:SB:166:ARG:HG3	60:SL:46:GLY:HA3	1.94	0.48
57:SI:47:PRO:HB2	57:SI:53:TRP:CD1	2.49	0.48
67:SS:210:ILE:O	67:SS:217:THR:HA	2.14	0.48
68:ST:48:TYR:HE1	68:ST:117:GLY:H	1.61	0.48
2:LA:430:U:H2'	2:LA:431:U:C6	2.49	0.47
2:LA:613:G:H2'	2:LA:614:C:C6	2.49	0.47
11:LJ:162:LEU:HA	17:LP:7:LEU:HD21	1.96	0.47
13:LL:191:LYS:NZ	13:LL:212:GLU:HB3	2.28	0.47
19:LR:141:SER:O	19:LR:143:PRO:HD3	2.14	0.47
37:Lj:31:LEU:HD21	37:Lj:43:LYS:HG3	1.95	0.47
57:SI:84:LYS:HB3	57:SI:94:ILE:HD13	1.96	0.47
63:SO:178:VAL:HB	63:SO:192:PHE:HB2	1.95	0.47
70:SV:191:PHE:O	70:SV:194:ARG:HG2	2.14	0.47
80:Sf:31:TYR:HE1	80:Sf:33:LEU:HD23	1.79	0.47
2:LA:263:C:H2'	2:LA:264:G:O4'	2.14	0.47
2:LA:385:A:H2'	2:LA:386:A:C8	2.49	0.47
2:LA:673:U:H2'	2:LA:674:G:C8	2.49	0.47
2:LA:2413:A:H2'	2:LA:2414:G:C8	2.46	0.47
2:LA:3333:G:H22	2:LA:3369:G:H1'	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:LN:144:THR:HG23	15:LN:145:PHE:CD2	2.49	0.47
48:S2:455:C:H3'	48:S2:456:A:H8	1.78	0.47
48:S2:885:G:H2'	48:S2:886:U:C6	2.49	0.47
69:SU:64:VAL:HG23	69:SU:67:LEU:HB2	1.96	0.47
70:SV:138:ASN:O	70:SV:142:LYS:HG2	2.13	0.47
2:LA:671:U:H2'	2:LA:672:A:H8	1.79	0.47
2:LA:1342:C:H2'	2:LA:1343:A:C8	2.49	0.47
2:LA:1724:U:H1'	2:LA:1725:C:H5	1.75	0.47
2:LA:2536:A:C4	65:SQ:227:ALA:HB3	2.49	0.47
2:LA:3159:C:H2'	2:LA:3160:U:C6	2.48	0.47
41:Ln:8:ARG:O	41:Ln:12:LYS:HG2	2.14	0.47
42:Lo:111:ARG:HG3	42:Lo:112:LYS:HD2	1.96	0.47
48:S2:260:U:H3	70:SV:43:ILE:HG13	1.80	0.47
49:SA:109:LEU:HD13	49:SA:109:LEU:HA	1.78	0.47
54:SF:54:LEU:HD12	54:SF:55:VAL:HG13	1.97	0.47
63:SO:21:THR:HG22	63:SO:38:ARG:HG2	1.96	0.47
63:SO:221:MET:HB3	63:SO:223:TRP:NE1	2.29	0.47
64:SP:76:ILE:HD11	64:SP:123:VAL:HG12	1.96	0.47
64:SP:126:PRO:HB2	64:SP:152:PRO:HG2	1.96	0.47
74:SZ:64:ALA:HB3	74:SZ:104:ALA:HB3	1.96	0.47
77:Sc:93:LEU:HD22	81:Sg:11:ALA:O	2.14	0.47
81:Sg:43:ARG:HB3	81:Sg:44:PHE:HD1	1.79	0.47
2:LA:829:U:H3	2:LA:895:A:H62	1.63	0.47
2:LA:1225:A:H2'	2:LA:1226:G:H8	1.80	0.47
2:LA:2585:G:N3	2:LA:2585:G:H2'	2.29	0.47
2:LA:2669:G:H2'	2:LA:2670:G:H8	1.80	0.47
2:LA:2683:U:H2'	2:LA:2684:C:C6	2.50	0.47
2:LA:3150:A:H2'	2:LA:3151:U:O4'	2.14	0.47
2:LA:3160:U:H2'	2:LA:3161:C:C6	2.49	0.47
14:LM:23:VAL:HG11	14:LM:29:ARG:HB3	1.96	0.47
21:LT:173:ARG:CZ	21:LT:173:ARG:HB2	2.43	0.47
27:LZ:58:ASP:O	27:LZ:62:VAL:HG13	2.14	0.47
47:Cc:1:C:H2'	47:Cc:2:G:C8	2.49	0.47
48:S2:639:U:H4'	48:S2:640:U:O5'	2.13	0.47
48:S2:886:U:H2'	48:S2:887:A:C8	2.48	0.47
60:SL:30:VAL:O	60:SL:39:THR:HA	2.14	0.47
61:SM:4:GLU:HG3	61:SM:6:VAL:H	1.79	0.47
63:SO:89:LEU:HD22	63:SO:113:VAL:HG21	1.95	0.47
67:SS:34:GLY:HA3	67:SS:83:PRO:HG2	1.96	0.47
69:SU:136:VAL:HG21	69:SU:155:ASP:HB3	1.95	0.47
71:SW:107:ARG:HH11	71:SW:107:ARG:HA	1.78	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
76:Sb:111:MET:HB3	76:Sb:111:MET:HE2	1.68	0.47
2:LA:149:U:H4'	17:LP:56:LYS:HB3	1.95	0.47
2:LA:2537:U:C5	65:SQ:97:LEU:HD13	2.50	0.47
48:S2:1583:A:H1'	48:S2:1585:U:C5	2.50	0.47
56:SH:30:TYR:O	56:SH:34:THR:HG23	2.14	0.47
64:SP:83:GLN:HB2	64:SP:99:ALA:HB1	1.96	0.47
65:SQ:101:HIS:O	65:SQ:217:LEU:HB2	2.13	0.47
2:LA:736:A:C4	2:LA:737:G:H1'	2.49	0.47
2:LA:896:A:H5"	5:LD:183:GLY:HA2	1.95	0.47
2:LA:1427:U:H5'	7:LF:44:LYS:HE2	1.96	0.47
2:LA:1473:G:H5'	21:LT:23:TRP:CD1	2.50	0.47
2:LA:3073:A:H2'	2:LA:3074:G:O4'	2.15	0.47
2:LA:3082:C:H2'	2:LA:3083:G:C8	2.49	0.47
2:LA:3202:G:H2'	2:LA:3203:U:C6	2.50	0.47
2:LA:3348:G:H2'	2:LA:3349:C:O4'	2.15	0.47
14:LM:157:GLU:O	14:LM:160:VAL:HG22	2.13	0.47
19:LR:118:GLN:HE21	19:LR:120:ASN:ND2	2.11	0.47
28:La:79:ALA:HB1	28:La:98:ASN:HB3	1.97	0.47
48:S2:297:U:H4'	67:SS:37:LYS:HG2	1.96	0.47
48:S2:895:G:C2	48:S2:918:U:O2	2.67	0.47
48:S2:1263:G:H2'	48:S2:1264:G:O4'	2.14	0.47
51:SC:60:SER:HB2	51:SC:65:TYR:HE1	1.79	0.47
65:SQ:106:THR:HG23	65:SQ:109:LYS:H	1.79	0.47
66:SR:108:ASN:HA	66:SR:192:GLY:HA3	1.97	0.47
2:LA:207:U:H2'	2:LA:208:C:C6	2.50	0.47
2:LA:393:U:H2'	2:LA:394:G:O4'	2.14	0.47
2:LA:662:U:H2'	2:LA:663:C:C6	2.49	0.47
2:LA:992:A:O2'	2:LA:993:G:H5'	2.14	0.47
2:LA:2217:U:H2'	2:LA:2218:G:H8	1.80	0.47
2:LA:2615:G:H2'	2:LA:2616:C:C6	2.50	0.47
2:LA:2862:U:H4'	13:LL:106:ALA:HB1	1.97	0.47
5:LD:95:SER:O	5:LD:102:LEU:HD11	2.14	0.47
10:LI:110:ARG:HG3	10:LI:113:SER:HB2	1.97	0.47
11:LJ:43:LYS:HB3	27:LZ:28:THR:HG23	1.95	0.47
24:LW:36:TYR:O	24:LW:40:HIS:HB2	2.15	0.47
26:LY:8:PHE:CD1	26:LY:46:PRO:HG3	2.50	0.47
28:La:24:SER:HA	28:La:27:ARG:HB2	1.95	0.47
45:Lr:85:ARG:O	45:Lr:88:GLU:HG2	2.15	0.47
48:S2:14:C:H5'	66:SR:203:LYS:HG2	1.97	0.47
48:S2:550:A:H2'	48:S2:550:A:N3	2.29	0.47
48:S2:756:A:H2'	48:S2:756:A:N3	2.30	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:S2:1262:U:H2'	48:S2:1263:G:C8	2.49	0.47
48:S2:1776:A:H2'	48:S2:1777:G:C8	2.50	0.47
51:SC:38:LYS:HD3	51:SC:41:TYR:CE1	2.49	0.47
53:SE:95:GLY:C	53:SE:102:PHE:HB3	2.39	0.47
55:SG:75:GLU:HA	55:SG:78:ARG:HG2	1.96	0.47
57:SI:109:GLU:HA	57:SI:114:VAL:O	2.15	0.47
59:SK:80:LEU:HD13	59:SK:101:TYR:HE2	1.78	0.47
63:SO:149:ASP:HB2	63:SO:174:ASN:HB3	1.97	0.47
63:SO:266:ASP:HB2	63:SO:267:PRO:HD3	1.96	0.47
67:SS:54:TYR:CE1	78:Sd:13:ILE:HD11	2.49	0.47
71:SW:97:LEU:HD12	71:SW:98:ALA:HB2	1.96	0.47
1:Bb:57:G:H2'	1:Bb:58:A:C8	2.50	0.47
2:LA:20:A:H2'	2:LA:21:G:C8	2.49	0.47
2:LA:604:G:H2'	2:LA:605:U:C6	2.50	0.47
2:LA:664:U:H2'	2:LA:665:A:H8	1.77	0.47
2:LA:999:G:H2'	2:LA:1000:C:C6	2.49	0.47
2:LA:1378:U:H2'	2:LA:1379:G:C8	2.47	0.47
2:LA:1421:G:H2'	2:LA:1422:G:H8	1.80	0.47
2:LA:2259:A:H2'	2:LA:2260:U:H5'	1.97	0.47
4:LC:85:G:H4'	4:LC:86:U:OP1	2.15	0.47
8:LG:235:SER:O	8:LG:239:ILE:HG23	2.15	0.47
48:S2:30:G:H4'	77:Sc:131:SER:HB2	1.97	0.47
48:S2:229:U:H3'	48:S2:230:C:H4'	1.97	0.47
48:S2:1506:G:H5'	48:S2:1551:U:H5"	1.97	0.47
48:S2:1639:C:H2'	48:S2:1640:C:O4'	2.15	0.47
57:SI:40:SER:HB3	57:SI:43:ASN:OD1	2.14	0.47
58:SJ:33:GLN:HA	58:SJ:36:ASN:ND2	2.30	0.47
64:SP:126:PRO:HG2	64:SP:151:SER:HB3	1.97	0.47
66:SR:227:PRO:HA	66:SR:230:TRP:CG	2.50	0.47
78:Sd:86:GLU:HG3	78:Sd:87:PRO:HD2	1.96	0.47
1:Bb:60:C:P	1:Bb:62:A:H62	2.38	0.47
2:LA:155:G:H5"	2:LA:156:G:H2'	1.97	0.47
2:LA:2423:U:H2'	2:LA:2424:A:C8	2.49	0.47
2:LA:2430:A:H2'	2:LA:2431:C:C6	2.49	0.47
2:LA:2676:A:H5'	2:LA:2677:G:C8	2.49	0.47
2:LA:3315:G:P	6:LE:116:ARG:HH22	2.38	0.47
4:LC:104:A:C8	4:LC:105:A:C8	3.03	0.47
13:LL:190:VAL:HG13	13:LL:197:VAL:HG21	1.97	0.47
31:Ld:28:LYS:HE3	31:Ld:29:TYR:CZ	2.50	0.47
48:S2:472:U:H4'	48:S2:770:A:H1'	1.97	0.47
48:S2:771:A:H3'	48:S2:772:G:H8	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:S2:918:U:C4	48:S2:919:A:H2	2.33	0.47
48:S2:1236:A:C8	48:S2:1237:G:H8	2.33	0.47
50:SB:93:LEU:HD12	50:SB:172:ILE:HG23	1.97	0.47
67:SS:36:HIS:CG	67:SS:85:GLY:HA3	2.50	0.47
68:ST:103:GLY:H	68:ST:106:LEU:HD12	1.80	0.47
76:Sb:81:VAL:HG21	76:Sb:125:ILE:HB	1.97	0.47
76:Sb:101:TYR:HB3	76:Sb:112:ASP:HB2	1.96	0.47
2:LA:158:G:H2'	2:LA:159:A:C8	2.50	0.47
2:LA:169:U:C4	2:LA:253:A:C6	3.03	0.47
2:LA:184:U:H2'	2:LA:185:C:C6	2.50	0.47
2:LA:3066:U:H2'	2:LA:3067:C:C6	2.50	0.47
22:LU:73:LYS:HD2	22:LU:128:GLU:HG3	1.97	0.47
43:Lp:2:ARG:HB3	43:Lp:5:TRP:CD1	2.50	0.47
48:S2:1583:A:N6	50:SB:76:ARG:HA	2.30	0.47
50:SB:177:ILE:HG13	50:SB:178:GLY:N	2.30	0.47
50:SB:199:ILE:HG13	50:SB:200:ASN:N	2.30	0.47
51:SC:60:SER:HB2	51:SC:65:TYR:CE1	2.50	0.47
53:SE:22:LEU:HA	53:SE:25:LEU:HG	1.96	0.47
63:SO:172:ALA:HB1	63:SO:199:ILE:HG21	1.97	0.47
69:SU:22:GLN:HA	69:SU:25:VAL:HG22	1.95	0.47
70:SV:42:ARG:HH21	70:SV:59:ARG:NH1	2.13	0.47
73:SY:17:PRO:HG3	80:Sf:28:PRO:HG3	1.97	0.47
79:Se:37:LYS:HD3	79:Se:70:LYS:HE3	1.96	0.47
2:LA:34:A:H2'	2:LA:35:A:C8	2.49	0.46
2:LA:2310:U:H2'	2:LA:2311:G:C8	2.51	0.46
4:LC:36:G:C5	37:Lj:86:ARG:HD3	2.51	0.46
24:LW:22:PRO:HB2	24:LW:28:PHE:HB2	1.97	0.46
30:Lc:24:LYS:HD2	30:Lc:26:ARG:NH2	2.30	0.46
44:Lq:36:PHE:HA	44:Lq:41:ARG:HD3	1.97	0.46
48:S2:448:C:H2'	48:S2:449:C:C6	2.50	0.46
48:S2:837:G:P	48:S2:837:G:H8	2.38	0.46
48:S2:1024:U:H5"	48:S2:1027:A:N6	2.30	0.46
48:S2:1320:U:H3'	64:SP:101:ARG:HH22	1.79	0.46
48:S2:1666:U:H5"	48:S2:1667:A:H5"	1.96	0.46
48:S2:1677:C:N4	48:S2:1725:U:C4	2.83	0.46
51:SC:50:THR:HG22	51:SC:55:VAL:HG13	1.97	0.46
64:SP:31:VAL:HG13	64:SP:33:GLN:H	1.80	0.46
67:SS:15:PRO:HG2	67:SS:18:TRP:CE2	2.50	0.46
69:SU:61:PHE:HB3	69:SU:95:GLU:HG2	1.97	0.46
2:LA:8:C:H2'	2:LA:9:U:H6	1.78	0.46
2:LA:173:G:H1	2:LA:245:U:H3	1.64	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:LA:501:A:H2'	2:LA:502:U:C6	2.50	0.46
2:LA:598:A:H2'	2:LA:599:C:C6	2.50	0.46
2:LA:792:G:H2'	2:LA:793:C:C6	2.50	0.46
2:LA:2722:U:H2'	2:LA:2723:U:C6	2.49	0.46
2:LA:2961:G:H2'	2:LA:2962:U:C6	2.50	0.46
6:LE:321:PHE:HE2	6:LE:323:MET:HE3	1.79	0.46
44:Lq:8:ARG:HH12	44:Lq:83:LEU:HD11	1.80	0.46
47:Cc:38:A:H2'	47:Cc:39:A:O4'	2.15	0.46
48:S2:143:G:P	68:ST:143:LYS:HE2	2.55	0.46
48:S2:693:U:C2	48:S2:695:U:O4	2.69	0.46
48:S2:1183:A:O2'	48:S2:1210:C:H4'	2.15	0.46
48:S2:1590:G:OP1	57:SI:91:TYR:HB2	2.15	0.46
64:SP:120:LEU:HD23	64:SP:121:VAL:N	2.29	0.46
67:SS:45:ILE:HD12	67:SS:61:VAL:HG21	1.97	0.46
2:LA:550:A:H2'	2:LA:551:A:O4'	2.15	0.46
2:LA:1482:A:C2	2:LA:1866:C:H2'	2.50	0.46
4:LC:26:U:H2'	4:LC:27:U:C6	2.50	0.46
6:LE:56:ILE:HD13	6:LE:356:LEU:HD22	1.97	0.46
6:LE:218:ILE:HG12	6:LE:276:THR:HG23	1.96	0.46
13:LL:47:PRO:HB3	13:LL:171:TRP:CZ2	2.51	0.46
13:LL:101:LYS:HA	13:LL:101:LYS:HD2	1.73	0.46
15:LN:46:ILE:HD11	15:LN:51:LEU:HA	1.98	0.46
25:LX:81:GLN:HG2	25:LX:83:LYS:H	1.80	0.46
28:La:87:LYS:HB2	28:La:97:ILE:HD11	1.96	0.46
37:Lj:57:VAL:O	37:Lj:61:GLN:HG2	2.15	0.46
48:S2:702:G:N1	48:S2:737:A:N6	2.63	0.46
48:S2:1439:C:H2'	48:S2:1440:C:C6	2.49	0.46
63:SO:216:LYS:HA	63:SO:239:GLU:HG2	1.96	0.46
64:SP:72:ASP:HB3	64:SP:119:ARG:HG2	1.97	0.46
65:SQ:208:GLN:HG2	65:SQ:209:ASN:N	2.30	0.46
67:SS:36:HIS:ND1	67:SS:85:GLY:HA3	2.30	0.46
2:LA:756:U:H2'	2:LA:757:C:C6	2.51	0.46
2:LA:3309:G:H1'	19:LR:69:ARG:HH11	1.80	0.46
11:LJ:183:LYS:HB2	11:LJ:194:THR:HG23	1.97	0.46
48:S2:950:C:H2'	48:S2:951:A:C8	2.50	0.46
48:S2:1220:C:H5'	51:SC:51:SER:OG	2.16	0.46
49:SA:48:VAL:HB	49:SA:86:LEU:HD12	1.97	0.46
53:SE:87:PRO:HA	53:SE:90:ILE:HG12	1.97	0.46
65:SQ:26:ARG:O	65:SQ:50:LYS:HG3	2.16	0.46
67:SS:185:GLY:N	67:SS:189:LEU:HD13	2.31	0.46
71:SW:121:SER:HB3	71:SW:124:HIS:HB3	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:LA:294:U:H4'	38:Lk:77:LEU:HD23	1.98	0.46
2:LA:1472:U:H2'	2:LA:1473:G:H8	1.80	0.46
2:LA:2700:G:H5"	23:LV:17:ARG:HG2	1.96	0.46
2:LA:3000:A:H2'	2:LA:3001:C:C6	2.51	0.46
2:LA:3314:A:OP1	6:LE:175:LYS:HB2	2.15	0.46
4:LC:68:G:H2'	4:LC:69:U:C6	2.51	0.46
7:LF:5:GLN:HB3	7:LF:19:ALA:HB1	1.97	0.46
41:Ln:23:LEU:HD11	41:Ln:27:ILE:HG21	1.98	0.46
48:S2:762:A:OP2	48:S2:763:G:H8	1.99	0.46
48:S2:1751:C:H2'	48:S2:1752:U:C6	2.50	0.46
49:SA:132:LYS:HD3	49:SA:156:PHE:CZ	2.50	0.46
54:SF:19:VAL:HG22	54:SF:68:ARG:HB3	1.97	0.46
55:SG:17:ILE:HD11	55:SG:54:THR:HG23	1.97	0.46
70:SV:153:GLU:HG2	70:SV:156:VAL:HG12	1.96	0.46
2:LA:1503:A:C4	2:LA:1504:A:C8	3.04	0.46
2:LA:2533:G:H2'	2:LA:2534:G:C8	2.51	0.46
2:LA:3051:U:C2	2:LA:3052:G:C8	3.04	0.46
8:LG:83:LEU:N	8:LG:84:PRO:HD2	2.31	0.46
48:S2:840:U:H2'	48:S2:841:U:H5	1.80	0.46
48:S2:1767:G:OP1	48:S2:1770:U:H4'	2.15	0.46
49:SA:23:GLU:CD	51:SC:61:TRP:HE1	2.24	0.46
54:SF:97:VAL:HG12	54:SF:98:ASP:H	1.80	0.46
60:SL:16:LEU:HD12	60:SL:27:GLN:HG2	1.97	0.46
65:SQ:31:ASP:O	65:SQ:96:LEU:HG	2.16	0.46
65:SQ:135:LEU:HD23	65:SQ:217:LEU:HA	1.97	0.46
2:LA:34:A:H3'	2:LA:48:A:H61	1.80	0.46
2:LA:529:A:H2'	2:LA:530:G:H8	1.80	0.46
2:LA:673:U:H2'	2:LA:674:G:H8	1.81	0.46
2:LA:692:A:H4'	7:LF:46:LYS:HB2	1.98	0.46
2:LA:1157:G:H2'	2:LA:1158:A:O4'	2.15	0.46
10:LI:130:ILE:HD12	10:LI:134:VAL:HG11	1.97	0.46
11:LJ:26:LEU:HD21	29:Lb:66:THR:HG21	1.97	0.46
48:S2:295:A:O2'	67:SS:140:VAL:HG21	2.15	0.46
48:S2:863:A:H62	48:S2:964:U:H3	1.63	0.46
53:SE:75:PRO:HA	53:SE:93:VAL:O	2.16	0.46
57:SI:99:SER:O	57:SI:102:ARG:HG2	2.16	0.46
63:SO:112:SER:HB2	63:SO:154:VAL:HB	1.98	0.46
70:SV:110:ARG:HH12	70:SV:121:LEU:HB2	1.81	0.46
2:LA:542:G:O6	2:LA:549:U:O4	2.34	0.46
2:LA:597:G:H2'	2:LA:598:A:H8	1.81	0.46
2:LA:1396:C:H2'	2:LA:1397:C:C6	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:LA:1466:G:N2	2:LA:1510:G:H5”	2.31	0.46
2:LA:1615:C:H2’	2:LA:1616:U:H6	1.81	0.46
4:LC:145:U:H2’	4:LC:146:U:C6	2.51	0.46
12:LK:21:LYS:HG3	12:LK:22:SER:H	1.81	0.46
17:LP:44:ARG:CZ	17:LP:47:LYS:HG3	2.46	0.46
21:LT:27:ASN:OD1	21:LT:28:GLU:HG2	2.15	0.46
23:LV:106:LEU:HA	23:LV:109:VAL:HG12	1.97	0.46
48:S2:5:U:H2’	48:S2:6:G:C8	2.50	0.46
48:S2:243:G:H2’	48:S2:244:A:C8	2.51	0.46
48:S2:649:U:O2	48:S2:649:U:H2’	2.15	0.46
48:S2:908:U:H1’	48:S2:996:U:O2’	2.15	0.46
48:S2:954:G:C4	48:S2:955:A:C8	3.04	0.46
48:S2:1775:U:H2’	48:S2:1776:A:H8	1.81	0.46
57:SI:127:ASN:HA	57:SI:130:ARG:HG2	1.98	0.46
66:SR:140:ARG:HB3	66:SR:221:THR:HB	1.98	0.46
71:SW:85:VAL:HG11	71:SW:99:LEU:HD12	1.98	0.46
71:SW:100:LYS:HE2	71:SW:100:LYS:HB2	1.63	0.46
2:LA:671:U:H2’	2:LA:672:A:C8	2.51	0.46
2:LA:1128:U:H2’	2:LA:1129:A:O4’	2.16	0.46
2:LA:1683:A:H3’	2:LA:1683:A:N3	2.30	0.46
2:LA:2118:C:H3’	2:LA:2119:A:C8	2.51	0.46
7:LF:148:ILE:HA	7:LF:149:PRO:C	2.41	0.46
11:LJ:73:PRO:HD3	11:LJ:233:TRP:CE2	2.51	0.46
48:S2:1750:A:H2’	48:S2:1751:C:C6	2.51	0.46
56:SH:70:VAL:HA	56:SH:73:MET:HG3	1.97	0.46
65:SQ:144:ARG:HG2	65:SQ:206:PRO:HB2	1.97	0.46
67:SS:181:VAL:HA	67:SS:227:VAL:HA	1.98	0.46
72:SX:84:ILE:HG12	72:SX:111:VAL:HG13	1.98	0.46
2:LA:505:G:H5”	7:LF:315:LYS:HA	1.98	0.46
2:LA:787:G:H2’	2:LA:788:C:C6	2.51	0.46
2:LA:911:C:H42	5:LD:3:ARG:HD3	1.81	0.46
2:LA:2129:U:H2’	2:LA:2130:G:H8	1.81	0.46
2:LA:2558:U:H1’	5:LD:69:TYR:CG	2.51	0.46
2:LA:2599:U:H2’	2:LA:2600:C:C6	2.51	0.46
2:LA:2881:C:H2’	2:LA:2882:U:C6	2.51	0.46
16:LO:21:VAL:HG12	16:LO:65:LEU:HD23	1.98	0.46
23:LV:49:GLN:HA	23:LV:52:MET:HE2	1.98	0.46
48:S2:739:G:H2’	48:S2:739:G:N3	2.31	0.46
48:S2:1648:A:H2’	48:S2:1649:G:C8	2.51	0.46
51:SC:46:LEU:O	51:SC:50:THR:HG23	2.16	0.46
63:SO:131:ILE:HD12	63:SO:144:LEU:HD11	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
65:SQ:27:LYS:HD3	65:SQ:47:LEU:HB3	1.98	0.46
69:SU:55:LYS:HG2	69:SU:56:LYS:H	1.81	0.46
71:SW:78:ARG:HH22	71:SW:82:ARG:HH21	1.63	0.46
77:Sc:48:HIS:HB3	77:Sc:103:LEU:HD11	1.98	0.46
78:Sd:20:ARG:NH1	78:Sd:22:GLN:HE21	2.14	0.46
2:LA:289:A:H2'	2:LA:290:G:C8	2.43	0.45
2:LA:663:C:H2'	2:LA:664:U:C6	2.51	0.45
2:LA:1176:C:H2'	2:LA:1177:G:N2	2.31	0.45
2:LA:3299:A:N1	2:LA:3315:G:N2	2.50	0.45
3:LB:16:U:H2'	3:LB:17:A:H8	1.81	0.45
22:LU:8:GLN:O	22:LU:8:GLN:HG3	2.15	0.45
23:LV:106:LEU:O	23:LV:110:LYS:HG2	2.16	0.45
32:Le:51:LEU:HD11	36:Li:90:ILE:HG22	1.96	0.45
47:Cc:44:A:H2'	47:Cc:45:A:C8	2.51	0.45
48:S2:219:A:C8	48:S2:220:A:H2	2.33	0.45
48:S2:312:A:H4'	48:S2:313:U:H5'	1.98	0.45
48:S2:404:G:H2'	48:S2:405:C:H6	1.81	0.45
49:SA:104:SER:O	49:SA:108:LYS:HG3	2.16	0.45
49:SA:115:ILE:H	49:SA:115:ILE:HG13	1.44	0.45
49:SA:162:GLN:N	49:SA:163:PRO:HD2	2.30	0.45
54:SF:31:VAL:HG13	54:SF:36:ILE:HG22	1.97	0.45
2:LA:2875:U:H2'	2:LA:2945:G:O6	2.16	0.45
2:LA:3176:G:N2	2:LA:3213:A:H1'	2.31	0.45
4:LC:111:A:O2'	4:LC:112:U:H5'	2.16	0.45
5:LD:96:LEU:HB3	45:Lr:87:ARG:HB2	1.98	0.45
9:LH:20:LYS:H	9:LH:20:LYS:HD2	1.81	0.45
21:LT:166:ASN:O	21:LT:170:ARG:HG2	2.16	0.45
35:Lh:14:LEU:HD11	35:Lh:31:LYS:HB3	1.97	0.45
35:Lh:48:ARG:NH1	35:Lh:70:LYS:HD3	2.31	0.45
37:Lj:119:LYS:HD3	37:Lj:119:LYS:N	2.31	0.45
48:S2:148:A:N6	48:S2:166:C:C4	2.84	0.45
48:S2:1770:U:H2'	48:S2:1771:U:C6	2.51	0.45
56:SH:14:ILE:HD11	56:SH:21:ASN:HB3	1.98	0.45
57:SI:113:ILE:HG23	57:SI:128:GLY:HA3	1.98	0.45
59:SK:89:ILE:HA	59:SK:103:ARG:HA	1.99	0.45
65:SQ:134:VAL:HG12	65:SQ:218:LEU:HD12	1.98	0.45
67:SS:121:TYR:CG	67:SS:161:LYS:HE3	2.51	0.45
69:SU:143:LEU:HB2	69:SU:147:ASN:OD1	2.16	0.45
73:SY:64:ARG:HB2	73:SY:70:LYS:HG2	1.97	0.45
1:Bb:66:A:H2'	1:Bb:67:A:C8	2.51	0.45
2:LA:756:U:H2'	2:LA:757:C:H6	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:LD:44:ILE:HD11	5:LD:85:GLY:HA2	1.98	0.45
8:LG:236:LEU:O	8:LG:239:ILE:HG12	2.16	0.45
18:LQ:73[A]:PHE:HB3	18:LQ:78[A]:ARG:HB3	1.97	0.45
48:S2:399:A:H4'	67:SS:3:ARG:HG2	1.97	0.45
53:SE:127:ARG:HG2	53:SE:129:GLY:H	1.82	0.45
57:SI:130:ARG:HG3	57:SI:131:ASP:N	2.30	0.45
58:SJ:100:VAL:HA	58:SJ:103:ILE:HG22	1.98	0.45
70:SV:27:PHE:HB3	70:SV:49:ARG:NH2	2.31	0.45
2:LA:412:G:H2'	2:LA:413:U:C6	2.51	0.45
2:LA:422:A:C2	2:LA:2363:A:H4'	2.52	0.45
2:LA:788:C:H2'	2:LA:789:A:H8	1.81	0.45
2:LA:1137:C:H4'	2:LA:1137:C:OP1	2.16	0.45
3:LB:81:U:H2'	3:LB:82:G:H8	1.81	0.45
7:LF:23:PRO:HD2	7:LF:26:PHE:CD2	2.51	0.45
23:LV:157:GLU:HB2	23:LV:159:PHE:CE1	2.51	0.45
48:S2:126:A:N6	48:S2:291:G:H2'	2.32	0.45
48:S2:456:A:H2'	48:S2:457:G:C8	2.51	0.45
48:S2:893:U:C4	48:S2:919:A:N6	2.85	0.45
48:S2:959:U:C6	73:SY:61:THR:HG23	2.46	0.45
49:SA:71:LEU:HD23	51:SC:20:VAL:HG22	1.97	0.45
52:SD:70:ASN:O	52:SD:74:LEU:HG	2.16	0.45
54:SF:127:LYS:HA	54:SF:134:ALA:HA	1.97	0.45
59:SK:39:ALA:H	59:SK:71:ILE:HA	1.82	0.45
60:SL:15:VAL:HA	60:SL:28:VAL:HG23	1.97	0.45
61:SM:4:GLU:HB3	61:SM:7:TRP:HB2	1.98	0.45
68:ST:200:ALA:O	68:ST:203:GLU:HG3	2.17	0.45
2:LA:207:U:H2'	2:LA:208:C:H6	1.81	0.45
2:LA:871:U:H2'	2:LA:872:U:C6	2.51	0.45
2:LA:1048:A:H2'	13:LL:22:TYR:CZ	2.51	0.45
2:LA:1463:U:H2'	2:LA:1464:G:O4'	2.17	0.45
2:LA:3386:G:H5'	33:Lf:10:ARG:NH1	2.31	0.45
8:LG:205:SER:HB2	8:LG:233:ALA:HB1	1.98	0.45
18:LQ:74[A]:ARG:HG3	18:LQ:145[A]:VAL:HG23	1.98	0.45
28:La:84:LYS:HE3	28:La:84:LYS:HB3	1.78	0.45
47:Cc:2:G:H2'	47:Cc:3:C:H6	1.80	0.45
47:Cc:29:C:H2'	47:Cc:30:G:C8	2.51	0.45
48:S2:69:G:O6	48:S2:82:U:O4	2.35	0.45
48:S2:97:C:H2'	48:S2:98:U:C6	2.51	0.45
48:S2:235:G:H2'	48:S2:235:G:N3	2.32	0.45
48:S2:463:U:H2'	48:S2:464:A:H8	1.82	0.45
48:S2:591:A:H2'	48:S2:592:A:H8	1.79	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:S2:990:C:H2'	48:S2:991:G:O4'	2.17	0.45
48:S2:1586:A:H2'	48:S2:1587:A:O4'	2.17	0.45
48:S2:1647:U:H2'	48:S2:1648:A:C8	2.52	0.45
78:Sd:53:ASP:HB2	78:Sd:79:VAL:HG22	1.99	0.45
2:LA:142:C:H2'	2:LA:143:G:O4'	2.16	0.45
2:LA:196:G:H22	2:LA:199:A:H5'	1.81	0.45
2:LA:413:U:H2'	2:LA:414:U:C6	2.52	0.45
2:LA:1226:G:H2'	2:LA:1227:C:C6	2.51	0.45
2:LA:3269:U:H4'	2:LA:3270:U:O5'	2.16	0.45
12:LK:174:LYS:HB2	42:Lo:127:LEU:HD11	1.98	0.45
23:LV:128:LEU:H	23:LV:128:LEU:HD22	1.82	0.45
48:S2:19:A:H2'	48:S2:20:G:O4'	2.17	0.45
48:S2:96:G:N2	48:S2:426:G:H5'	2.28	0.45
48:S2:809:A:H2'	48:S2:810:G:C8	2.52	0.45
48:S2:1647:U:H2'	48:S2:1648:A:H8	1.82	0.45
55:SG:71:PHE:CE2	55:SG:74:GLN:HB2	2.51	0.45
62:SN:103:LEU:HG	62:SN:104:SER:H	1.81	0.45
63:SO:26:SER:HB3	63:SO:73:LEU:HD11	1.99	0.45
63:SO:40:LYS:HG2	63:SO:66:HIS:O	2.16	0.45
77:Sc:53:VAL:HG13	77:Sc:72:VAL:HG13	1.98	0.45
2:LA:208:C:H2'	2:LA:209:A:O4'	2.16	0.45
2:LA:432:G:H2'	2:LA:433:A:C8	2.51	0.45
2:LA:540:U:H2'	2:LA:541:U:C6	2.52	0.45
2:LA:1414:G:C6	2:LA:1415:U:C4	3.05	0.45
2:LA:1805:C:H2'	2:LA:1806:A:C8	2.44	0.45
2:LA:2656:A:C5	2:LA:2658:G:C8	3.05	0.45
2:LA:3206:C:H5"	2:LA:3207:U:O4'	2.16	0.45
11:LJ:82:LEU:HD21	11:LJ:180:VAL:HG23	1.98	0.45
22:LU:167:ARG:HG3	22:LU:168:PRO:HD2	1.99	0.45
35:Lh:14:LEU:HD21	35:Lh:31:LYS:HD2	1.98	0.45
36:Li:58:ARG:HD2	36:Li:58:ARG:HA	1.73	0.45
47:Cc:26:C:C2	47:Cc:27:G:C8	3.04	0.45
48:S2:889:U:H2'	48:S2:890:C:C6	2.51	0.45
48:S2:968:U:H2'	48:S2:969:C:O4'	2.17	0.45
48:S2:1183:A:C2	53:SE:100:LYS:HB3	2.52	0.45
48:S2:1585:U:O2'	54:SF:134:ALA:HB3	2.17	0.45
49:SA:66:ILE:HG13	49:SA:86:LEU:HD23	1.99	0.45
49:SA:71:LEU:O	49:SA:75:LYS:HG2	2.17	0.45
56:SH:71:GLN:O	56:SH:74:GLN:HG3	2.16	0.45
56:SH:101:LEU:HB3	56:SH:104:ASN:HB2	1.99	0.45
62:SN:133:ALA:HB1	62:SN:135:HIS:CE1	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
72:SX:33:ARG:HH21	72:SX:51:GLY:C	2.24	0.45
74:SZ:128:LYS:HD3	79:Se:27:SER:HB2	1.97	0.45
76:Sb:10:ALA:HB1	76:Sb:27:ILE:HD13	1.97	0.45
2:LA:551:A:H1'	2:LA:552:G:N7	2.31	0.45
2:LA:594:U:C5	7:LF:308:LYS:HD3	2.52	0.45
2:LA:629:U:H2'	2:LA:630:A:C8	2.52	0.45
2:LA:798:G:H4'	15:LN:15:ARG:NH1	2.32	0.45
2:LA:1498:A:H2'	2:LA:1499:C:H6	1.80	0.45
2:LA:2882:U:H2'	2:LA:2883:U:H6	1.82	0.45
2:LA:3291:G:H2'	2:LA:3292:A:H8	1.82	0.45
4:LC:57:C:H4'	4:LC:63:G:N7	2.31	0.45
6:LE:113:GLU:HB3	6:LE:176:ALA:HB2	1.98	0.45
7:LF:30:ILE:HG22	7:LF:244:LEU:HD13	1.97	0.45
16:LO:23:ILE:HG12	16:LO:63:VAL:HG12	1.98	0.45
16:LO:47:ASP:HB3	16:LO:49:PRO:HD3	1.99	0.45
35:Lh:59:VAL:HG13	35:Lh:60:ARG:H	1.82	0.45
47:Cc:15:G:H2'	47:Cc:16:C:H5'	1.99	0.45
48:S2:128:U:H5"	48:S2:129:U:C6	2.52	0.45
48:S2:925:G:H2'	48:S2:926:A:C8	2.52	0.45
48:S2:1471:A:H4'	48:S2:1472:C:OP1	2.16	0.45
48:S2:1575:G:H8	48:S2:1576:A:C8	2.35	0.45
48:S2:1748:G:H2'	48:S2:1749:A:C8	2.52	0.45
59:SK:59:TYR:HE1	59:SK:100:ILE:HG23	1.81	0.45
64:SP:144:ILE:HG12	64:SP:158:VAL:HG13	1.98	0.45
65:SQ:198:GLU:HG3	65:SQ:210:ILE:HG21	1.99	0.45
66:SR:40:LYS:HD2	66:SR:240:LEU:HD21	1.99	0.45
68:ST:226:ILE:O	68:ST:227:ARG:HG3	2.17	0.45
80:Sf:55:THR:HB	80:Sf:62:ILE:HA	1.99	0.45
2:LA:1794:G:H4'	5:LD:191:LEU:HD11	1.99	0.45
2:LA:2565:U:H2'	2:LA:2566:C:C6	2.52	0.45
2:LA:3095:U:H2'	2:LA:3096:C:C6	2.51	0.45
2:LA:3192:U:H2'	2:LA:3193:C:H6	1.80	0.45
3:LB:19:C:H2'	3:LB:20:A:C8	2.52	0.45
7:LF:178:LEU:HD22	7:LF:178:LEU:HA	1.77	0.45
11:LJ:69:LEU:HB2	17:LP:21:PHE:HE1	1.81	0.45
13:LL:182:LEU:O	13:LL:186:GLU:HG2	2.17	0.45
24:LW:19:VAL:HG12	24:LW:22:PRO:HG2	1.98	0.45
30:Lc:94:ALA:HB2	30:Lc:121:VAL:HG22	1.99	0.45
32:Le:18:ILE:HD11	32:Le:81:VAL:HG13	1.99	0.45
48:S2:1584:G:H5"	54:SF:122:ARG:HB3	1.98	0.45
48:S2:1678:A:H8	48:S2:1678:A:OP2	2.00	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:SD:32:LEU:HD11	52:SD:102:GLY:N	2.32	0.45
63:SO:250:TYR:CE1	63:SO:265:LEU:HB3	2.51	0.45
67:SS:121:TYR:CD1	67:SS:161:LYS:HE3	2.52	0.45
77:Sc:90:ASP:HB3	77:Sc:136:TRP:CZ3	2.51	0.45
2:LA:29:C:OP1	17:LP:189:LYS:HB2	2.17	0.45
2:LA:230:U:H2'	2:LA:231:G:O4'	2.17	0.45
2:LA:654:C:H2'	2:LA:655:C:C6	2.52	0.45
2:LA:1104:G:H2'	2:LA:1105:A:C8	2.51	0.45
2:LA:1362:G:H2'	2:LA:1363:A:C8	2.52	0.45
2:LA:2412:G:H2'	2:LA:2413:A:C8	2.52	0.45
3:LB:1:G:H2'	3:LB:2:G:H8	1.82	0.45
9:LH:66:THR:HB	9:LH:76:LEU:HD23	1.99	0.45
16:LO:50:LYS:HD2	16:LO:85:TRP:CD1	2.52	0.45
19:LR:119:VAL:HA	19:LR:145:HIS:O	2.17	0.45
29:Lb:4:PHE:O	29:Lb:9:LYS:HD2	2.17	0.45
55:SG:57:LEU:O	55:SG:61:ILE:HG23	2.17	0.45
66:SR:54:GLU:HB2	75:Sa:12:TYR:HB2	1.98	0.45
70:SV:21:PHE:CD2	70:SV:22:ARG:HG3	2.52	0.45
70:SV:58:LEU:O	70:SV:59:ARG:HG2	2.16	0.45
71:SW:179:ARG:HD3	71:SW:179:ARG:HA	1.74	0.45
78:Sd:44:LEU:HA	78:Sd:47:VAL:HG22	1.99	0.45
2:LA:846:A:H2'	2:LA:847:A:C8	2.52	0.44
2:LA:1243:G:H4'	2:LA:1271:A:H2	1.82	0.44
2:LA:1312:C:H2'	2:LA:1313:G:O4'	2.17	0.44
2:LA:2909:U:H2'	2:LA:2910:A:O4'	2.17	0.44
2:LA:3159:C:H4'	2:LA:3395:G:C4	2.52	0.44
5:LD:28:LYS:HB3	5:LD:123:ARG:HB3	1.99	0.44
6:LE:57:VAL:HG12	6:LE:358:TRP:HE3	1.82	0.44
21:LT:96:ILE:CG2	21:LT:100:ARG:HE	2.31	0.44
25:LX:15:LEU:HD13	25:LX:51:ALA:HB3	2.00	0.44
27:LZ:100:LYS:HE2	27:LZ:100:LYS:HB3	1.70	0.44
48:S2:124:A:O2'	67:SS:148:ARG:HD2	2.16	0.44
48:S2:1256:A:H4'	48:S2:1257:U:O5'	2.17	0.44
48:S2:1356:U:H2'	48:S2:1357:A:C8	2.52	0.44
48:S2:1419:G:H2'	48:S2:1420:C:C6	2.52	0.44
53:SE:22:LEU:HD23	53:SE:25:LEU:HD21	1.99	0.44
60:SL:65:ARG:HD3	60:SL:65:ARG:HA	1.76	0.44
66:SR:101:VAL:HG22	66:SR:115:ILE:HG23	1.99	0.44
67:SS:71:LYS:HD3	67:SS:74:GLY:HA2	1.99	0.44
72:SX:71:LEU:HD13	72:SX:88:ARG:NH1	2.32	0.44
2:LA:892:U:H4'	2:LA:2134:G:OP1	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:LA:2668:U:H2'	2:LA:2669:G:C8	2.52	0.44
8:LG:219:PHE:CE1	8:LG:227:LEU:HD21	2.52	0.44
14:LM:36:VAL:HG21	14:LM:109:HIS:CD2	2.51	0.44
16:LO:17:VAL:HG11	16:LO:74:ARG:HA	1.98	0.44
20:LS:148:GLU:O	20:LS:151:ARG:HG2	2.18	0.44
29:Lb:95:VAL:HG21	29:Lb:113:VAL:HG11	1.99	0.44
41:Ln:15:LYS:HD2	41:Ln:19:GLN:NE2	2.33	0.44
48:S2:273:G:H2'	48:S2:274:G:C8	2.52	0.44
48:S2:1211:A:H1'	53:SE:99:GLY:O	2.17	0.44
48:S2:1553:G:O6	53:SE:43:ARG:HD3	2.17	0.44
48:S2:1714:A:H2'	48:S2:1715:G:C8	2.52	0.44
73:SY:3:ARG:HB3	73:SY:6:SER:HB3	1.97	0.44
2:LA:215:G:H5"	28:La:12:ARG:HG3	1.99	0.44
2:LA:2674:A:N1	14:LM:124:GLY:HA3	2.33	0.44
3:LB:52:G:H22	3:LB:55:A:N6	2.15	0.44
14:LM:125:MET:HE2	14:LM:125:MET:HB2	1.85	0.44
41:Ln:27:ILE:HD13	41:Ln:30:ARG:HD3	1.99	0.44
47:Cc:14:A:C2	47:Cc:15:G:H1'	2.52	0.44
48:S2:566:C:H2'	48:S2:567:A:H8	1.79	0.44
48:S2:893:U:C2	48:S2:919:A:N6	2.86	0.44
48:S2:1331:A:H61	49:SA:161:GLY:CA	2.31	0.44
63:SO:43:ILE:HD12	63:SO:59:ARG:O	2.17	0.44
66:SR:37:PRO:HD3	66:SR:46:LYS:HD3	2.00	0.44
66:SR:165:VAL:HG11	66:SR:210:THR:HA	1.99	0.44
69:SU:23:ALA:HA	69:SU:26:GLU:HG2	1.98	0.44
2:LA:190:U:H2'	28:La:60:ARG:NH2	2.32	0.44
2:LA:876:A:H5"	2:LA:1890:U:H5"	2.00	0.44
2:LA:2416:U:H2'	2:LA:2417:U:C6	2.52	0.44
12:LK:21:LYS:HD2	12:LK:21:LYS:HA	1.81	0.44
12:LK:162:GLN:HE21	12:LK:181:VAL:HG12	1.81	0.44
15:LN:47:ALA:HB3	15:LN:48:PRO:HD3	2.00	0.44
16:LO:20:VAL:HG21	16:LO:90:VAL:HG11	1.98	0.44
20:LS:62:VAL:HG13	20:LS:66:ARG:HD2	1.99	0.44
26:LY:52:THR:O	26:LY:56:ARG:HG3	2.17	0.44
32:Le:43:ILE:HB	32:Le:90:VAL:HG13	1.98	0.44
48:S2:28:A:H2'	48:S2:29:U:C6	2.53	0.44
48:S2:692:C:H2'	48:S2:693:U:O4'	2.18	0.44
48:S2:749:U:OP1	76:Sb:82:LYS:HB3	2.18	0.44
48:S2:959:U:H5'	73:SY:15:ALA:O	2.17	0.44
48:S2:1218:G:H4'	48:S2:1220:C:H41	1.82	0.44
48:S2:1242:A:H2'	48:S2:1243:G:H21	1.81	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
77:Sc:36:THR:HG23	77:Sc:40:SER:OG	2.16	0.44
2:LA:2180:G:H2'	2:LA:2181:C:C6	2.52	0.44
2:LA:2389:C:H2'	2:LA:2390:A:H8	1.83	0.44
2:LA:2427:U:H2'	2:LA:2428:U:C6	2.53	0.44
8:LG:52:VAL:HG21	8:LG:65:ILE:HD12	1.98	0.44
41:Ln:18:LYS:HB2	41:Ln:18:LYS:HZ3	1.81	0.44
44:Lq:6:LYS:HE3	44:Lq:94:GLY:HA2	1.99	0.44
48:S2:17:C:H2'	48:S2:18:C:C6	2.53	0.44
48:S2:335:U:H2'	48:S2:336:G:C8	2.53	0.44
48:S2:371:G:H1'	76:Sb:88:LYS:HD2	1.98	0.44
48:S2:572:C:H2'	48:S2:573:C:C6	2.53	0.44
48:S2:706:A:H4'	48:S2:734:A:N6	2.29	0.44
48:S2:1031:U:H4'	48:S2:1032:G:OP2	2.17	0.44
53:SE:29:SER:HB3	53:SE:32:ASP:OD1	2.18	0.44
56:SH:86:LEU:HD12	56:SH:99:HIS:HB2	1.99	0.44
56:SH:122:HIS:O	56:SH:126:ARG:HG2	2.18	0.44
57:SI:12:GLN:CD	57:SI:12:GLN:H	2.26	0.44
57:SI:51:GLU:H	57:SI:51:GLU:CD	2.26	0.44
78:Sd:86:GLU:HG2	78:Sd:91:LEU:HD13	1.99	0.44
2:LA:414:U:H2'	2:LA:415:G:H8	1.83	0.44
2:LA:753:C:H2'	2:LA:754:G:H8	1.83	0.44
2:LA:1446:A:H5"	19:LR:65:SER:OG	2.18	0.44
2:LA:1718:G:H2'	2:LA:1719:G:C8	2.52	0.44
2:LA:2160:G:H2'	2:LA:2161:G:C8	2.49	0.44
2:LA:2292:U:H2'	2:LA:2293:C:C6	2.52	0.44
2:LA:2447:A:O2'	2:LA:2448:G:H8	2.01	0.44
2:LA:3040:A:H2'	2:LA:3041:U:O4'	2.18	0.44
2:LA:3089:C:H2'	2:LA:3090:U:O4'	2.18	0.44
7:LF:181:VAL:HG11	7:LF:224:GLY:HA3	2.00	0.44
12:LK:162:GLN:HG2	12:LK:179:ILE:O	2.18	0.44
23:LV:116:ARG:HD3	23:LV:128:LEU:HD21	1.99	0.44
45:Lr:49:ARG:HG3	45:Lr:55:TRP:CE2	2.53	0.44
48:S2:397:A:H2'	48:S2:398:G:O4'	2.18	0.44
48:S2:550:A:C6	48:S2:587:C:N3	2.86	0.44
48:S2:1400:A:H2'	48:S2:1401:A:C8	2.52	0.44
64:SP:24:LEU:HD22	64:SP:24:LEU:HA	1.84	0.44
2:LA:1135:A:H2'	2:LA:1136:A:H5"	1.99	0.44
2:LA:1138:U:H2'	2:LA:1139:G:H8	1.81	0.44
2:LA:1791:C:H2'	2:LA:1792:C:C6	2.53	0.44
2:LA:1896:A:H61	2:LA:2339:C:N4	2.15	0.44
2:LA:3332:U:H2'	2:LA:3333:G:O4'	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:LA:3387:U:H2'	2:LA:3388:C:C6	2.53	0.44
2:LA:3393:U:H2'	2:LA:3394:U:C6	2.53	0.44
3:LB:103:A:C5	3:LB:104:A:H1'	2.53	0.44
4:LC:29:U:H5"	15:LN:27:ASP:HB3	1.98	0.44
10:LI:84:VAL:HG21	10:LI:127:LEU:HD11	2.00	0.44
11:LJ:34:PHE:CE1	11:LJ:42:PRO:HD3	2.53	0.44
11:LJ:82:LEU:HD12	11:LJ:86:THR:HG23	2.00	0.44
14:LM:37:LEU:HD23	14:LM:37:LEU:HA	1.87	0.44
14:LM:133:ARG:HB2	14:LM:152:HIS:NE2	2.33	0.44
29:Lb:102:GLU:H	29:Lb:107:ARG:NH2	2.15	0.44
48:S2:963:A:H4'	73:SY:128:TYR:OH	2.18	0.44
48:S2:1067:C:H5"	65:SQ:150:VAL:H	1.83	0.44
48:S2:1082:C:H5"	75:Sa:62:ARG:HH12	1.82	0.44
48:S2:1097:U:H1'	66:SR:168:ARG:HD2	1.98	0.44
48:S2:1120:U:H2'	48:S2:1121:C:C6	2.53	0.44
48:S2:1369:U:H5'	57:SI:119:LYS:NZ	2.32	0.44
48:S2:1401:A:C5	48:S2:1402:G:H1'	2.53	0.44
48:S2:1458:G:OP1	48:S2:1458:G:H3'	2.18	0.44
48:S2:1501:C:H41	57:SI:102:ARG:NH1	2.16	0.44
49:SA:113:LEU:HD21	49:SA:117:ARG:HD2	1.98	0.44
50:SB:30:PRO:O	50:SB:33:VAL:HG12	2.18	0.44
54:SF:25:GLY:HA3	54:SF:64:ASP:OD2	2.18	0.44
65:SQ:105:PHE:CZ	65:SQ:211:HIS:HB3	2.53	0.44
69:SU:46:ILE:HD11	69:SU:58:LEU:HD22	1.99	0.44
71:SW:26:ALA:O	71:SW:29:LYS:HG3	2.17	0.44
75:Sa:79:LEU:HD23	75:Sa:82:VAL:HG21	1.99	0.44
1:Bb:57:G:H2'	1:Bb:58:A:H8	1.81	0.44
2:LA:525:C:H2'	2:LA:526:C:H6	1.82	0.44
2:LA:1291:A:H2'	2:LA:1292:C:O4'	2.17	0.44
2:LA:1342:C:H2'	2:LA:1343:A:H8	1.81	0.44
2:LA:1709:C:H2'	2:LA:1710:C:C6	2.52	0.44
2:LA:2217:U:H2'	2:LA:2218:G:C8	2.53	0.44
2:LA:2429:G:H2'	2:LA:2430:A:C8	2.53	0.44
4:LC:19:C:H2'	4:LC:20:U:H6	1.83	0.44
7:LF:22:LEU:HD23	7:LF:22:LEU:HA	1.82	0.44
10:LI:121:LYS:O	10:LI:125:GLU:HG2	2.18	0.44
13:LL:140:THR:HG21	13:LL:148:VAL:HG21	1.98	0.44
48:S2:305:C:H2'	48:S2:306:U:C6	2.53	0.44
48:S2:341:A:H2'	48:S2:342:C:C6	2.53	0.44
48:S2:404:G:H2'	48:S2:405:C:C6	2.53	0.44
48:S2:1107:G:O2'	48:S2:1108:G:H5'	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:S2:1278:G:H2'	48:S2:1279:C:O4'	2.17	0.44
49:SA:13:ALA:HA	49:SA:16:VAL:HG22	2.00	0.44
50:SB:47:SER:HB2	50:SB:49:GLU:HG2	2.00	0.44
50:SB:146:THR:HA	50:SB:158:GLN:O	2.18	0.44
50:SB:216:GLU:HG2	50:SB:219:ARG:HH21	1.83	0.44
64:SP:37:VAL:HG13	64:SP:46:HIS:HB3	1.99	0.44
64:SP:120:LEU:HG	64:SP:142:PRO:HB2	2.00	0.44
66:SR:119:LYS:HB2	66:SR:119:LYS:HE2	1.73	0.44
68:ST:69:LEU:O	68:ST:99:GLY:HA3	2.18	0.44
68:ST:195:VAL:O	68:ST:199:GLN:HG2	2.18	0.44
69:SU:151:LYS:HD2	69:SU:184:GLU:HB2	1.99	0.44
71:SW:78:ARG:NH1	71:SW:82:ARG:HE	2.15	0.44
74:SZ:40:ALA:HB3	74:SZ:67:VAL:HG23	2.00	0.44
75:Sa:12:TYR:CG	75:Sa:12:TYR:O	2.69	0.44
2:LA:77:A:H5'	15:LN:100:ARG:NH1	2.33	0.44
2:LA:246:U:H2'	2:LA:247:C:C5	2.53	0.44
2:LA:786:A:H1'	2:LA:787:G:C8	2.53	0.44
2:LA:819:U:H2'	2:LA:820:A:H8	1.83	0.44
2:LA:1827:C:H2'	2:LA:1828:A:C8	2.53	0.44
2:LA:2526:C:H2'	2:LA:2527:G:H8	1.83	0.44
2:LA:2530:G:H2'	2:LA:2530:G:N3	2.33	0.44
3:LB:7:G:H8	8:LG:22:ARG:HH11	1.65	0.44
3:LB:20:A:H2'	3:LB:21:G:C8	2.52	0.44
4:LC:64:U:C2	4:LC:65:A:C8	3.06	0.44
10:LI:102:VAL:HG13	10:LI:126:LEU:HD22	1.98	0.44
47:Cc:8:U:H5'	47:Cc:50:G:H5'	2.00	0.44
48:S2:511:A:H4'	48:S2:512:A:OP1	2.17	0.44
48:S2:1476:C:H2'	48:S2:1477:G:H8	1.82	0.44
48:S2:1496:U:H4'	48:S2:1519:U:O2'	2.18	0.44
48:S2:1649:G:H2'	48:S2:1650:U:H6	1.82	0.44
57:SI:97:SER:HB3	57:SI:100:ILE:HG22	2.00	0.44
63:SO:244:ALA:HB1	63:SO:294:TRP:HD1	1.80	0.44
64:SP:59:LEU:O	64:SP:63:ILE:HG13	2.18	0.44
67:SS:43:PRO:HG2	67:SS:46:VAL:HG12	1.99	0.44
67:SS:44:LEU:HD23	67:SS:82:TYR:HB3	2.00	0.44
68:ST:70:PRO:HD3	68:ST:101:ILE:HD11	1.99	0.44
69:SU:49:ILE:HG21	69:SU:172:VAL:HA	1.99	0.44
2:LA:1363:A:H2'	2:LA:1364:C:O4'	2.18	0.43
2:LA:1555:U:H5'	2:LA:1556:C:OP2	2.18	0.43
2:LA:1596:C:H2'	2:LA:1597:C:H6	1.81	0.43
2:LA:2152:A:H2'	2:LA:2153:U:H6	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:LA:2196:C:H2'	2:LA:2242:A:H61	1.83	0.43
4:LC:121:U:H2'	4:LC:122:U:C6	2.53	0.43
15:LN:76:THR:HG23	15:LN:101:ARG:NH1	2.33	0.43
17:LP:3:ALA:O	17:LP:7:LEU:HG	2.18	0.43
21:LT:180:LYS:HB3	21:LT:181:ARG:HH21	1.83	0.43
24:LW:38:ILE:HD13	24:LW:56:VAL:HG12	1.99	0.43
35:Lh:73:ARG:HG2	35:Lh:82:ARG:HB2	1.99	0.43
48:S2:36:C:H2'	48:S2:37:U:C6	2.53	0.43
48:S2:116:U:H2'	48:S2:117:U:C6	2.53	0.43
48:S2:198:A:N3	48:S2:198:A:H2'	2.33	0.43
48:S2:606:A:H1'	48:S2:609:U:OP1	2.18	0.43
48:S2:954:G:H2'	48:S2:955:A:H8	1.83	0.43
48:S2:1042:G:H2'	48:S2:1043:A:O4'	2.17	0.43
48:S2:1616:G:N2	60:SL:22:ARG:HD3	2.33	0.43
49:SA:115:ILE:HG12	49:SA:142:LEU:HD22	1.99	0.43
49:SA:136:VAL:HG22	49:SA:186:VAL:HG22	1.99	0.43
65:SQ:205:PHE:CD2	65:SQ:206:PRO:HD2	2.53	0.43
71:SW:107:ARG:HH12	71:SW:112:GLN:CD	2.25	0.43
73:SY:65:VAL:HG23	73:SY:66:ILE:HD12	2.00	0.43
2:LA:47:C:H5"	15:LN:16:LYS:HG2	2.01	0.43
2:LA:209:A:H2'	7:LF:162:THR:HG21	2.00	0.43
2:LA:627:U:H4'	2:LA:1399:A:H1'	1.99	0.43
2:LA:828:A:H2'	2:LA:829:U:C6	2.53	0.43
2:LA:849:C:H2'	2:LA:850:U:C6	2.54	0.43
2:LA:3000:A:H2'	2:LA:3001:C:H6	1.83	0.43
7:LF:233:LEU:HA	7:LF:233:LEU:HD23	1.79	0.43
7:LF:308:LYS:HB3	7:LF:308:LYS:HE2	1.80	0.43
11:LJ:78:PHE:O	11:LJ:79:GLN:HG2	2.18	0.43
29:Lb:95:VAL:O	29:Lb:100:THR:HG21	2.18	0.43
29:Lb:109:GLU:O	29:Lb:113:VAL:HG12	2.19	0.43
48:S2:925:G:H2'	48:S2:926:A:H8	1.83	0.43
48:S2:1283:U:H5"	48:S2:1284:C:H2'	2.00	0.43
48:S2:1776:A:H2'	48:S2:1777:G:H8	1.82	0.43
49:SA:51:ARG:H	49:SA:51:ARG:HG2	1.67	0.43
54:SF:131:GLY:HA3	54:SF:136:SER:O	2.18	0.43
57:SI:62:ALA:O	57:SI:65:ILE:HG13	2.18	0.43
70:SV:187:GLU:H	70:SV:187:GLU:CD	2.26	0.43
72:SX:94:ILE:HD12	77:Sc:12:ALA:HB1	2.00	0.43
73:SY:54:LEU:HB3	73:SY:60:VAL:HG21	1.99	0.43
2:LA:340:C:H2'	2:LA:341:G:O4'	2.17	0.43
2:LA:1106:G:C2'	2:LA:1107:C:H5"	2.48	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:LA:1664:G:H2'	2:LA:1665:C:C6	2.53	0.43
2:LA:1829:G:H5"	2:LA:1830:G:H5'	2.00	0.43
2:LA:3150:A:H4'	6:LE:128:LYS:O	2.18	0.43
2:LA:3333:G:N2	2:LA:3369:G:H1'	2.34	0.43
8:LG:132:THR:HB	8:LG:172:TYR:HB2	2.00	0.43
15:LN:141:ALA:HA	15:LN:144:THR:HG22	2.00	0.43
15:LN:185:LYS:HE3	15:LN:185:LYS:HB3	1.89	0.43
17:LP:36:ILE:HG12	17:LP:64:VAL:HG23	2.00	0.43
19:LR:67:ILE:HD11	19:LR:80:LYS:HB3	2.00	0.43
23:LV:18:ASP:HB2	23:LV:21:LYS:HB2	2.00	0.43
23:LV:44:ALA:HB2	23:LV:53:PRO:HG2	2.00	0.43
31:Ld:25:LYS:HE2	31:Ld:25:LYS:HB3	1.75	0.43
48:S2:273:G:H2'	48:S2:274:G:H8	1.82	0.43
48:S2:1159:C:H4'	48:S2:1580:C:OP1	2.18	0.43
48:S2:1182:U:O2	48:S2:1182:U:H2'	2.18	0.43
48:S2:1567:U:H4'	56:SH:36:LYS:HG2	2.00	0.43
63:SO:12:THR:HG23	63:SO:309:VAL:HG13	1.99	0.43
66:SR:143:TYR:CG	66:SR:147:ASN:HA	2.53	0.43
76:Sb:29:PRO:HB2	76:Sb:58:SER:HB2	1.99	0.43
77:Sc:19:ARG:HA	77:Sc:19:ARG:HD3	1.72	0.43
1:Bb:44:A:H2'	1:Bb:45:G:O4'	2.19	0.43
2:LA:536:U:H1'	2:LA:559:A:C8	2.54	0.43
2:LA:884:A:N7	2:LA:2139:A:C4	2.86	0.43
2:LA:929:A:H2'	2:LA:930:U:C6	2.53	0.43
2:LA:955:U:H2'	2:LA:956:U:C6	2.53	0.43
2:LA:966:U:H2'	2:LA:967:A:H8	1.82	0.43
2:LA:1643:A:H2'	2:LA:1644:C:C2	2.53	0.43
2:LA:2526:C:H2'	2:LA:2527:G:C8	2.53	0.43
3:LB:45:A:H2'	3:LB:46:A:H8	1.82	0.43
3:LB:119:U:H2'	3:LB:120:C:C6	2.54	0.43
6:LE:53:MET:HE3	6:LE:53:MET:HB2	1.78	0.43
8:LG:179:ARG:HA	8:LG:179:ARG:HD2	1.79	0.43
25:LX:20:GLY:HA2	25:LX:35:TYR:CE1	2.54	0.43
47:Cc:43:G:H2'	47:Cc:44:A:H8	1.83	0.43
48:S2:428:A:H2	48:S2:440:U:O2	2.01	0.43
48:S2:446:A:H62	48:S2:461:G:H21	1.64	0.43
48:S2:474:A:H4'	48:S2:475:A:OP1	2.18	0.43
51:SC:71:GLU:O	51:SC:74:GLU:HG3	2.17	0.43
52:SD:54:ARG:HG3	52:SD:56:GLU:H	1.83	0.43
60:SL:32:PHE:CD1	60:SL:38:ARG:HG2	2.54	0.43
74:SZ:84:ARG:HG2	74:SZ:85:ALA:O	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
79:Se:52:ASP:O	79:Se:55:GLU:HG3	2.18	0.43
2:LA:597:G:H2'	2:LA:598:A:C8	2.54	0.43
2:LA:860:G:O2'	2:LA:895:A:H4'	2.18	0.43
2:LA:1396:C:H2'	2:LA:1397:C:H6	1.83	0.43
2:LA:2901:G:H2'	2:LA:2902:A:C8	2.54	0.43
2:LA:3155:U:H3'	2:LA:3156:U:H4'	1.99	0.43
2:LA:3171:U:O4	35:Lh:54:ARG:HD3	2.18	0.43
2:LA:3350:C:O2'	2:LA:3351:U:H2'	2.18	0.43
5:LD:5:ILE:HG12	5:LD:8:GLN:HG3	2.01	0.43
5:LD:10:LYS:HA	5:LD:16:PHE:CD2	2.54	0.43
6:LE:43:LEU:HB3	6:LE:181:ILE:HG21	2.01	0.43
14:LM:29:ARG:HA	14:LM:32:ARG:HD2	1.99	0.43
19:LR:58:ILE:HD13	19:LR:84:PRO:HD2	2.01	0.43
25:LX:114:ILE:HB	25:LX:133:SER:HA	2.00	0.43
48:S2:409:C:H2'	48:S2:410:A:C8	2.53	0.43
48:S2:590:C:H4'	81:Sg:56:MET:HE1	2.00	0.43
48:S2:1332:C:O2'	49:SA:162:GLN:HB3	2.18	0.43
48:S2:1437:U:O2'	48:S2:1438:G:H5'	2.19	0.43
54:SF:140:LYS:HA	54:SF:140:LYS:HD2	1.87	0.43
57:SI:132:LEU:O	57:SI:135:ILE:HG13	2.17	0.43
69:SU:39:ARG:HG2	69:SU:40:PRO:HD3	2.00	0.43
70:SV:104:ILE:HG22	70:SV:106:ALA:H	1.83	0.43
2:LA:114:A:H2'	2:LA:115:A:O4'	2.19	0.43
2:LA:299:G:C8	38:Lk:31:GLY:HA3	2.52	0.43
2:LA:1178:G:O6	35:Lh:20:LYS:HB2	2.18	0.43
2:LA:1225:A:H61	2:LA:1285:G:H21	1.66	0.43
2:LA:2669:G:H2'	2:LA:2670:G:C8	2.53	0.43
2:LA:2680:A:H3'	2:LA:2681:U:C6	2.53	0.43
2:LA:2709:C:H2'	2:LA:2710:C:C6	2.54	0.43
2:LA:3146:G:H2'	2:LA:3147:G:C8	2.54	0.43
2:LA:3234:A:N6	2:LA:3253:G:H1	2.16	0.43
3:LB:54:U:H4'	3:LB:55:A:H5'	2.01	0.43
6:LE:77:THR:HG21	6:LE:328:ILE:HG12	2.01	0.43
7:LF:205:PRO:HB3	7:LF:247:PHE:CD2	2.54	0.43
7:LF:234:ASN:ND2	7:LF:236:LEU:HB2	2.21	0.43
10:LI:151:ARG:HD2	10:LI:207:LEU:HD23	2.00	0.43
10:LI:184:LEU:HD12	10:LI:198:ALA:HB1	1.99	0.43
37:Lj:20:GLN:HA	37:Lj:23:ASP:OD2	2.19	0.43
37:Lj:38:ARG:HG3	37:Lj:39:PRO:HD2	2.00	0.43
48:S2:200:A:H2'	48:S2:201:G:H8	1.84	0.43
48:S2:332:U:H5"	70:SV:31:ARG:HH11	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:S2:525:A:H5'	78:Sd:93:ARG:HH21	1.84	0.43
48:S2:1217:A:H4'	48:S2:1219:A:H5"	2.00	0.43
48:S2:1408:G:H1'	63:SO:17:ASN:ND2	2.34	0.43
48:S2:1471:A:H2	48:S2:1474:G:H21	1.66	0.43
50:SB:218:GLU:HG3	50:SB:222:LYS:HE2	2.01	0.43
52:SD:49:THR:HA	52:SD:52:LEU:HG	1.99	0.43
55:SG:72:LYS:O	55:SG:75:GLU:HG3	2.17	0.43
64:SP:55:GLU:O	64:SP:58:VAL:HG22	2.18	0.43
67:SS:214:LEU:HB3	67:SS:216:ASN:OD1	2.18	0.43
1:Bb:69:U:H2'	1:Bb:70:C:C6	2.54	0.43
2:LA:18:G:O2'	17:LP:138:GLN:HG3	2.19	0.43
2:LA:254:A:H4'	37:Lj:106:LYS:HE3	2.00	0.43
2:LA:275:U:H2'	2:LA:276:U:C6	2.54	0.43
2:LA:911:C:H5"	5:LD:15:ILE:HD13	1.99	0.43
2:LA:916:G:H5'	2:LA:917:A:OP1	2.19	0.43
2:LA:985:U:H2'	2:LA:986:U:C6	2.53	0.43
2:LA:2998:U:H2'	2:LA:2999:U:C6	2.54	0.43
2:LA:3343:G:H21	2:LA:3362:A:H2	1.66	0.43
4:LC:152:G:H2'	4:LC:153:U:O4'	2.18	0.43
6:LE:107:ALA:HB1	6:LE:200:GLU:HG3	2.00	0.43
7:LF:169:LEU:HD11	7:LF:225:VAL:HG21	2.01	0.43
7:LF:175:HIS:O	7:LF:179:LEU:HG	2.19	0.43
14:LM:86:VAL:HG21	14:LM:112:LEU:HD23	2.01	0.43
48:S2:91:G:H2'	48:S2:92:A:O4'	2.19	0.43
48:S2:95:G:H21	48:S2:460:A:H5"	1.83	0.43
48:S2:1562:G:H2'	48:S2:1563:C:C6	2.54	0.43
48:S2:1696:G:O2'	48:S2:1697:G:H8	2.01	0.43
50:SB:55:ASP:O	50:SB:59:VAL:HG13	2.18	0.43
50:SB:128:ASN:OD1	50:SB:130:ILE:HG12	2.18	0.43
56:SH:79:TYR:O	56:SH:80:LYS:HG2	2.18	0.43
63:SO:302:PHE:HD2	63:SO:312:VAL:HG22	1.84	0.43
68:ST:139:ASN:O	68:ST:143:LYS:HG3	2.18	0.43
2:LA:226:C:H2'	2:LA:227:G:O4'	2.19	0.43
2:LA:247:C:H2'	2:LA:248:U:O4'	2.17	0.43
2:LA:298:U:O3'	2:LA:299:G:H8	2.02	0.43
2:LA:791:A:H2'	2:LA:792:G:C8	2.53	0.43
2:LA:1758:G:H2'	2:LA:1759:C:C6	2.54	0.43
2:LA:2661:G:H2'	2:LA:2662:G:H8	1.84	0.43
2:LA:2747:A:H5'	8:LG:175:HIS:HA	2.01	0.43
2:LA:3094:A:H2'	2:LA:3095:U:C6	2.54	0.43
3:LB:19:C:H2'	3:LB:20:A:H8	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:LD:211:HIS:CD2	5:LD:219:ILE:HG23	2.54	0.43
6:LE:323:MET:HE2	6:LE:323:MET:HB3	1.91	0.43
13:LL:209:ASN:HD22	13:LL:209:ASN:N	2.17	0.43
16:LO:94:TRP:CE2	16:LO:100:ALA:HB2	2.54	0.43
28:La:63:LYS:HD2	28:La:85:VAL:HG13	2.01	0.43
34:Lg:103:LYS:O	34:Lg:106:VAL:HG22	2.18	0.43
38:Lk:47:ILE:HD12	38:Lk:47:ILE:HA	1.83	0.43
48:S2:513:U:H2'	48:S2:514:G:C8	2.53	0.43
48:S2:1147:A:H2'	48:S2:1148:C:C6	2.54	0.43
48:S2:1648:A:H2'	48:S2:1649:G:H8	1.84	0.43
50:SB:76:ARG:HD3	54:SF:122:ARG:HD3	2.00	0.43
50:SB:162:VAL:HG13	60:SL:54:LEU:HD21	2.01	0.43
55:SG:17:ILE:HD13	55:SG:17:ILE:HA	1.89	0.43
58:SJ:26:LEU:HB3	58:SJ:114:VAL:HG13	2.00	0.43
60:SL:12:VAL:HG22	60:SL:52:ASP:H	1.84	0.43
64:SP:206:ASP:CG	64:SP:207:PRO:HD3	2.43	0.43
68:ST:67:VAL:HG23	68:ST:99:GLY:HA2	2.01	0.43
70:SV:172:ARG:H	70:SV:172:ARG:HG2	1.66	0.43
2:LA:57:A:H5'	17:LP:157:LYS:HD2	2.00	0.43
2:LA:173:G:O6	2:LA:245:U:O4	2.36	0.43
2:LA:1804:A:H2'	2:LA:1805:C:C6	2.54	0.43
2:LA:2206:G:H1'	2:LA:2207:A:N7	2.34	0.43
2:LA:2258:U:H2'	2:LA:2259:A:O4'	2.19	0.43
4:LC:63:G:H22	4:LC:97:A:H2	1.66	0.43
5:LD:104:LEU:HD22	5:LD:136:ILE:HD11	2.01	0.43
12:LK:135:GLU:HB2	12:LK:145:VAL:HB	2.01	0.43
16:LO:12:TRP:HE1	22:LU:153:PRO:HG3	1.84	0.43
21:LT:24:LEU:HG	21:LT:32:ILE:HD13	2.00	0.43
48:S2:279:G:H1'	48:S2:281:G:H1'	1.99	0.43
48:S2:325:G:H2'	48:S2:326:G:H8	1.83	0.43
48:S2:763:G:H2'	48:S2:764:U:C6	2.54	0.43
48:S2:882:U:H2'	48:S2:883:C:C6	2.53	0.43
63:SO:127:ARG:HA	63:SO:150:TRP:HB2	2.01	0.43
2:LA:183:G:H2'	2:LA:184:U:C6	2.54	0.43
2:LA:531:G:H2'	2:LA:532:A:C8	2.54	0.43
2:LA:1194:G:H2'	2:LA:1195:A:C8	2.54	0.43
2:LA:1341:U:H2'	2:LA:1342:C:C6	2.54	0.43
2:LA:1416:C:O2'	2:LA:1417:G:N7	2.52	0.43
2:LA:1541:G:H1'	2:LA:1557:A:C5	2.54	0.43
2:LA:1800:A:H3'	2:LA:1801:U:O2	2.19	0.43
2:LA:1948:G:H2'	2:LA:1949:G:H8	1.82	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:LA:2094:C:H2'	2:LA:2095:G:C8	2.53	0.43
2:LA:2213:A:H1'	2:LA:2602:G:H4'	2.01	0.43
2:LA:3121:U:H4'	2:LA:3122:A:OP1	2.19	0.43
2:LA:3181:C:H1'	18:LQ:168[A]:TYR:HB2	2.00	0.43
8:LG:40:HIS:CE1	8:LG:42:ALA:HB3	2.54	0.43
11:LJ:29:SER:C	11:LJ:31:PRO:HD3	2.44	0.43
17:LP:94:TYR:CE2	17:LP:96:ARG:HB2	2.54	0.43
45:Lr:49:ARG:HB2	45:Lr:55:TRP:CZ3	2.53	0.43
48:S2:383:G:C6	48:S2:384:G:N7	2.87	0.43
48:S2:702:G:N7	48:S2:732:G:N2	2.66	0.43
48:S2:923:A:H2'	48:S2:924:A:H8	1.80	0.43
48:S2:1045:C:OP1	65:SQ:153:HIS:HE1	2.02	0.43
48:S2:1252:C:H2'	48:S2:1253:U:O4'	2.18	0.43
50:SB:91:GLU:HA	50:SB:94:THR:HG22	2.01	0.43
57:SI:22:LEU:HB3	57:SI:28:LEU:HD11	2.00	0.43
65:SQ:219:LYS:HB2	65:SQ:219:LYS:HE3	1.76	0.43
70:SV:3:ILE:H	70:SV:3:ILE:HD12	1.84	0.43
70:SV:58:LEU:C	70:SV:59:ARG:HG2	2.44	0.43
71:SW:94:ASP:O	71:SW:97:LEU:HG	2.18	0.43
72:SX:105:LYS:HE3	72:SX:105:LYS:HB2	1.82	0.43
80:Sf:34:ASP:OD1	80:Sf:80:ARG:HB2	2.19	0.43
2:LA:38:U:H2'	2:LA:39:A:O4'	2.18	0.42
2:LA:72:C:H1'	15:LN:61:PRO:O	2.19	0.42
2:LA:354:U:H5	2:LA:365:A:N7	2.17	0.42
2:LA:603:A:H5"	2:LA:604:G:C8	2.54	0.42
2:LA:2573:G:H5'	29:Lb:57:HIS:HA	2.01	0.42
2:LA:3139:A:H2'	2:LA:3140:G:O4'	2.18	0.42
2:LA:3193:C:H2'	2:LA:3194:C:C6	2.53	0.42
3:LB:20:A:H2'	3:LB:21:G:H8	1.84	0.42
6:LE:63:PRO:HD2	6:LE:348:ARG:NH2	2.34	0.42
8:LG:78:ALA:HB3	8:LG:105:ILE:HB	2.01	0.42
18:LQ:75[A]:ALA:HB1	18:LQ:106[A]:GLU:OE2	2.19	0.42
19:LR:105:LYS:HE2	19:LR:105:LYS:HB2	1.85	0.42
22:LU:47:LYS:HE2	22:LU:122:HIS:HE1	1.83	0.42
45:Lr:47:VAL:HG22	45:Lr:57:CYS:HB2	2.01	0.42
47:Cc:5:G:H2'	47:Cc:6:G:C8	2.54	0.42
48:S2:126:A:OP2	68:ST:201:GLN:HG3	2.19	0.42
48:S2:599:A:H2'	48:S2:600:U:C6	2.54	0.42
48:S2:887:A:H5"	74:SZ:120:PRO:HB2	2.00	0.42
48:S2:1086:A:H2'	48:S2:1087:A:C8	2.54	0.42
48:S2:1124:A:H2'	48:S2:1125:A:C8	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:S2:1305:U:H5”	48:S2:1306:C:C5	2.54	0.42
54:SF:31:VAL:HG22	54:SF:36:ILE:HG22	2.01	0.42
63:SO:240:VAL:HA	63:SO:256:THR:HG22	2.01	0.42
63:SO:303:ALA:HB3	63:SO:313:TRP:HZ3	1.84	0.42
66:SR:145:GLY:O	66:SR:146:THR:HG22	2.19	0.42
69:SU:9:LEU:HD21	69:SU:13:PRO:HA	2.01	0.42
78:Sd:27:VAL:HG23	78:Sd:29:HIS:HD2	1.84	0.42
2:LA:276:U:H2’	2:LA:277:G:C8	2.54	0.42
2:LA:434:U:H2’	2:LA:435:C:C6	2.54	0.42
2:LA:1645:U:H2’	2:LA:1646:G:O4’	2.18	0.42
2:LA:2428:U:H2’	2:LA:2429:G:C8	2.54	0.42
2:LA:2655:U:H4’	2:LA:2656:A:O4’	2.20	0.42
3:LB:16:U:H2’	3:LB:17:A:C8	2.55	0.42
6:LE:48:GLY:O	6:LE:335:ILE:HD12	2.18	0.42
6:LE:376:LYS:HG2	6:LE:380:MET:HE2	2.02	0.42
8:LG:103:LEU:O	8:LG:107:ARG:HG2	2.19	0.42
11:LJ:36:ILE:H	11:LJ:36:ILE:HD12	1.84	0.42
12:LK:92:TYR:CZ	12:LK:101:VAL:HG11	2.54	0.42
16:LO:113:THR:HG23	16:LO:116:GLU:H	1.83	0.42
48:S2:98:U:H2’	48:S2:99:C:C6	2.54	0.42
48:S2:548:G:C2	48:S2:549:G:H1’	2.54	0.42
48:S2:1071:U:OP1	48:S2:1071:U:H4’	2.17	0.42
50:SB:140:THR:HG21	50:SB:175:LEU:HD13	2.01	0.42
51:SC:77:ARG:HH11	51:SC:84:GLU:HA	1.85	0.42
57:SI:23:GLN:HG2	57:SI:55:TYR:CG	2.53	0.42
57:SI:65:ILE:HD12	57:SI:124:ILE:HB	2.00	0.42
63:SO:81:LEU:HB2	63:SO:89:LEU:HD11	2.01	0.42
65:SQ:125:VAL:O	65:SQ:136:ARG:HA	2.19	0.42
66:SR:118:ALA:HB3	66:SR:124:ALA:HB2	2.01	0.42
80:Sf:70:LYS:HE3	80:Sf:70:LYS:HB3	1.79	0.42
2:LA:414:U:H2’	2:LA:415:G:C8	2.54	0.42
2:LA:965:A:O2’	30:Lc:44:ASN:HB2	2.19	0.42
2:LA:1340:G:H2’	2:LA:1341:U:H6	1.83	0.42
2:LA:2295:A:C6	25:LX:37:ILE:HB	2.55	0.42
2:LA:3166:C:H3’	2:LA:3167:A:H8	1.84	0.42
2:LA:3350:C:H4’	2:LA:3351:U:OP1	2.19	0.42
6:LE:197:GLU:O	6:LE:201:LYS:HE2	2.19	0.42
15:LN:60:ALA:HB3	15:LN:65:TYR:O	2.19	0.42
29:Lb:50:PRO:HD3	29:Lb:68:ILE:HG12	2.02	0.42
35:Lh:16:TYR:OH	35:Lh:91:ALA:HB2	2.19	0.42
44:Lq:71:ARG:HH11	44:Lq:80:ARG:HG2	1.83	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:S2:327:U:H2'	48:S2:328:A:H8	1.84	0.42
48:S2:456:A:H2'	48:S2:457:G:H8	1.84	0.42
48:S2:463:U:H2'	48:S2:464:A:C8	2.55	0.42
48:S2:788:A:C6	67:SS:19:LEU:HD13	2.54	0.42
48:S2:900:A:H62	65:SQ:5:LYS:NZ	2.17	0.42
48:S2:902:G:O2'	48:S2:1008:G:H4'	2.19	0.42
48:S2:1146:G:H2'	48:S2:1147:A:H8	1.80	0.42
48:S2:1565:C:H5'	56:SH:41:ARG:HB2	2.01	0.42
48:S2:1638:G:H2'	48:S2:1639:C:O4'	2.18	0.42
48:S2:1662:G:H1	48:S2:1738:U:H3	1.66	0.42
49:SA:17:PHE:HA	49:SA:20:GLU:HG2	2.01	0.42
63:SO:123:ILE:HD12	63:SO:169:ILE:HD12	2.02	0.42
64:SP:67:ILE:HD11	64:SP:120:LEU:HB2	2.02	0.42
64:SP:135:GLU:HA	64:SP:138:TYR:HD1	1.85	0.42
67:SS:126:VAL:HG12	67:SS:158:ASP:O	2.19	0.42
71:SW:78:ARG:HH12	71:SW:82:ARG:NE	2.16	0.42
73:SY:53:LEU:HD23	73:SY:53:LEU:HA	1.85	0.42
75:Sa:14:PRO:HG2	75:Sa:23:ILE:HD12	2.01	0.42
2:LA:118:U:O2	2:LA:121:A:H5"	2.20	0.42
2:LA:1261:G:H3'	2:LA:1261:G:N3	2.35	0.42
2:LA:1623:G:H2'	2:LA:1624:G:H8	1.84	0.42
2:LA:1667:A:H2'	2:LA:1668:G:H8	1.84	0.42
2:LA:2093:A:N6	21:LT:146:LYS:HE2	2.34	0.42
2:LA:2683:U:O2'	14:LM:130:VAL:HG11	2.19	0.42
2:LA:2835:U:C2'	2:LA:2836:C:H5'	2.49	0.42
2:LA:3371:G:H2'	2:LA:3372:A:C8	2.55	0.42
3:LB:59:U:H2'	3:LB:60:G:C8	2.54	0.42
6:LE:93:VAL:HG23	6:LE:155:ALA:H	1.84	0.42
7:LF:269:SER:C	7:LF:271:LYS:H	2.27	0.42
8:LG:129:TYR:CG	8:LG:177:GLU:HB3	2.54	0.42
15:LN:57:VAL:HG22	15:LN:147:ILE:HG23	2.02	0.42
20:LS:89:ASP:HB2	20:LS:110:ALA:N	2.34	0.42
20:LS:147:ARG:O	20:LS:150:VAL:HG22	2.19	0.42
23:LV:14:MET:HE3	23:LV:14:MET:HB2	1.90	0.42
41:Ln:42:ARG:HG3	41:Ln:47:THR:HG23	2.02	0.42
48:S2:460:A:H3'	48:S2:461:G:H8	1.84	0.42
48:S2:549:G:H4'	48:S2:550:A:OP1	2.17	0.42
48:S2:610:G:H21	77:Sc:19:ARG:HH22	1.67	0.42
48:S2:704:C:H5"	48:S2:705:U:O4'	2.19	0.42
48:S2:1144:U:H2'	48:S2:1145:U:O2	2.20	0.42
48:S2:1179:G:H2'	48:S2:1180:C:C6	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:S2:1515:A:H62	49:SA:6:SER:HB2	1.83	0.42
48:S2:1642:G:H2'	48:S2:1643:U:H6	1.84	0.42
55:SG:109:LEU:HD21	64:SP:50:VAL:HG23	2.01	0.42
64:SP:27:ARG:HD2	64:SP:27:ARG:HA	1.78	0.42
66:SR:59:HIS:CD2	66:SR:238:SER:HA	2.54	0.42
67:SS:94:ALA:HB3	78:Sd:17:LEU:HD13	2.01	0.42
69:SU:15:GLU:CD	69:SU:15:GLU:H	2.28	0.42
72:SX:75:VAL:HG23	72:SX:119:VAL:HA	2.01	0.42
77:Sc:37:ALA:O	77:Sc:41:SER:HB3	2.19	0.42
77:Sc:54:LEU:HD21	77:Sc:75:GLN:HB2	2.01	0.42
2:LA:169:U:C4	2:LA:253:A:N1	2.87	0.42
2:LA:658:G:N2	7:LF:93:MET:HB2	2.35	0.42
2:LA:1373:A:H2'	2:LA:1374:G:C8	2.54	0.42
2:LA:1374:G:H2'	2:LA:1375:G:O4'	2.20	0.42
2:LA:1809:A:P	29:Lb:65:ARG:HH12	2.42	0.42
2:LA:2419:A:H2'	2:LA:2420:C:C6	2.54	0.42
2:LA:2722:U:H2'	2:LA:2723:U:H6	1.84	0.42
2:LA:3338:C:H2'	2:LA:3339:A:C8	2.54	0.42
3:LB:3:U:H2'	3:LB:4:U:C6	2.55	0.42
6:LE:41:VAL:HA	6:LE:185:GLY:HA3	2.02	0.42
6:LE:295:ALA:HB2	6:LE:301:THR:O	2.20	0.42
10:LI:98:LYS:HB3	10:LI:99:PRO:HD3	2.01	0.42
48:S2:14:C:H2'	48:S2:15:U:C6	2.54	0.42
48:S2:589:C:H2'	48:S2:590:C:H41	1.84	0.42
48:S2:1220:C:H2'	48:S2:1221:A:H8	1.82	0.42
57:SI:81:GLY:HA3	57:SI:94:ILE:O	2.20	0.42
63:SO:90:ARG:HH21	63:SO:102:ARG:HH21	1.67	0.42
67:SS:182:TYR:HB2	67:SS:228:ILE:HD13	2.01	0.42
70:SV:4:SER:HB2	70:SV:24:LYS:HD3	2.01	0.42
70:SV:152:ILE:H	70:SV:152:ILE:HG12	1.64	0.42
2:LA:36:C:H4'	2:LA:808:A:C2	2.54	0.42
2:LA:41:G:N2	2:LA:2803:A:H62	2.18	0.42
2:LA:406:G:OP2	2:LA:1416:C:H5'	2.19	0.42
2:LA:533:A:O2'	2:LA:534:U:H3'	2.19	0.42
2:LA:697:A:P	7:LF:272:VAL:HG21	2.59	0.42
2:LA:1135:A:H5'	31:Ld:7:HIS:O	2.20	0.42
2:LA:2863:G:OP1	13:LL:107:GLY:HA2	2.20	0.42
10:LI:120:THR:H	10:LI:123:THR:HB	1.84	0.42
10:LI:156:ILE:HD13	10:LI:161:VAL:HG22	2.02	0.42
11:LJ:98:ARG:HH21	11:LJ:101:THR:HG23	1.83	0.42
36:Li:8:ARG:HB2	36:Li:34:HIS:CD2	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:S2:1319:A:H2'	48:S2:1320:U:O4'	2.20	0.42
50:SB:196:GLU:O	50:SB:200:ASN:HB2	2.20	0.42
51:SC:16:PHE:HD1	51:SC:16:PHE:HA	1.67	0.42
63:SO:32:LEU:HD21	63:SO:94:VAL:HG11	2.02	0.42
73:SY:30:SER:O	73:SY:34:ILE:HG23	2.19	0.42
81:Sg:28:LYS:HE3	81:Sg:28:LYS:HB2	1.91	0.42
1:Bb:28:C:C2	1:Bb:29:A:C8	3.08	0.42
1:Bb:43:G:H2'	1:Bb:44:A:H8	1.82	0.42
2:LA:408:A:N6	4:LC:15:G:H1'	2.35	0.42
2:LA:508:U:H2'	2:LA:509:U:C6	2.54	0.42
2:LA:1190:A:H2'	2:LA:1190:A:N3	2.35	0.42
2:LA:2876:C:H2'	2:LA:2877:G:O4'	2.19	0.42
4:LC:101:U:H2'	4:LC:102:U:O4'	2.20	0.42
5:LD:2:GLY:HA2	5:LD:207:VAL:HG23	2.02	0.42
5:LD:10:LYS:HG2	5:LD:16:PHE:CD1	2.55	0.42
6:LE:312:VAL:HG22	6:LE:313:HIS:ND1	2.34	0.42
6:LE:387:LEU:H	6:LE:387:LEU:HD12	1.85	0.42
11:LJ:104:GLU:O	11:LJ:107:GLU:HG3	2.19	0.42
12:LK:87:LYS:HE2	12:LK:187:ILE:HA	2.00	0.42
16:LO:12:TRP:HB2	22:LU:172:TYR:C	2.44	0.42
17:LP:14:LYS:HE2	17:LP:14:LYS:HB2	1.89	0.42
29:Lb:84:ARG:HG2	32:Le:58:TYR:OH	2.19	0.42
38:Lk:20:MET:HE2	38:Lk:20:MET:HA	2.02	0.42
41:Ln:13:MET:HE1	41:Ln:51:ILE:HD11	2.01	0.42
48:S2:1517:U:H5'	48:S2:1518:C:OP2	2.19	0.42
53:SE:85:ILE:HG21	53:SE:111:MET:O	2.19	0.42
58:SJ:68:ARG:NH2	58:SJ:77:LYS:HD3	2.35	0.42
60:SL:64:ARG:HG3	60:SL:65:ARG:N	2.35	0.42
66:SR:109:GLY:O	66:SR:139:ILE:HG12	2.19	0.42
77:Sc:86:PHE:CE2	77:Sc:88:PRO:HA	2.55	0.42
2:LA:887:G:H2'	2:LA:888:A:C8	2.55	0.42
2:LA:1083:G:H2'	2:LA:1084:A:H8	1.85	0.42
2:LA:2689:A:H2'	2:LA:2689:A:N3	2.35	0.42
2:LA:3096:C:H2'	2:LA:3097:C:C6	2.54	0.42
2:LA:3338:C:H2'	2:LA:3339:A:H8	1.84	0.42
3:LB:108:A:H2'	3:LB:109:G:C8	2.55	0.42
3:LB:118:A:H5"	8:LG:253:PHE:HZ	1.85	0.42
6:LE:37:ARG:H	6:LE:37:ARG:HG2	1.70	0.42
6:LE:215:ILE:HD12	6:LE:338:LEU:HB3	2.02	0.42
11:LJ:74:THR:O	11:LJ:77:GLN:HG2	2.19	0.42
12:LK:5:GLN:HG3	12:LK:7:GLU:OE2	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:LM:18:VAL:HG12	14:LM:70:THR:HG22	2.00	0.42
18:LQ:25[A]:LYS:HA	18:LQ:25[A]:LYS:HD2	1.74	0.42
23:LV:92:ARG:HB3	23:LV:94:GLU:OE1	2.20	0.42
27:LZ:57:LEU:HD12	27:LZ:57:LEU:HA	1.84	0.42
32:Le:18:ILE:HG13	32:Le:81:VAL:O	2.20	0.42
34:Lg:102:ALA:O	34:Lg:106:VAL:HG13	2.19	0.42
39:Ll:69:HIS:O	39:Ll:73:ARG:HG3	2.18	0.42
48:S2:617:U:H2'	48:S2:618:U:C6	2.55	0.42
48:S2:787:G:H2'	48:S2:788:A:C8	2.54	0.42
49:SA:148:LYS:HE3	49:SA:148:LYS:HB3	1.89	0.42
49:SA:217:ILE:HG13	49:SA:218:LEU:H	1.84	0.42
57:SI:113:ILE:HD12	57:SI:128:GLY:HA2	2.02	0.42
64:SP:179:ARG:NE	64:SP:183:ARG:HH22	2.18	0.42
73:SY:26:PHE:CZ	73:SY:28:LEU:HB2	2.55	0.42
74:SZ:92:LYS:HE3	74:SZ:92:LYS:HB2	1.87	0.42
1:Bb:38:A:C2'	1:Bb:39:U:H5'	2.49	0.42
2:LA:335:G:OP1	28:La:9:SER:HB2	2.20	0.42
2:LA:341:G:C6	7:LF:194:TYR:HD2	2.38	0.42
2:LA:987:U:H2'	2:LA:988:U:C6	2.55	0.42
2:LA:1482:A:H2'	2:LA:1482:A:N3	2.35	0.42
2:LA:1534:A:H5"	2:LA:1797:A:N6	2.35	0.42
2:LA:1564:U:H2'	2:LA:1565:G:H8	1.84	0.42
2:LA:1631:C:H5"	2:LA:1632:A:H5"	2.00	0.42
2:LA:1901:A:O3'	2:LA:2918:G:H5'	2.19	0.42
2:LA:2767:U:H2'	2:LA:2768:U:H6	1.83	0.42
2:LA:3082:C:O2'	2:LA:3083:G:H5'	2.20	0.42
6:LE:62:ARG:HA	6:LE:63:PRO:HD3	1.89	0.42
6:LE:205:VAL:HG21	6:LE:322:ILE:HD11	2.02	0.42
7:LF:358:THR:HG21	23:LV:148:PRO:HG2	2.02	0.42
9:LH:170:LYS:HB3	9:LH:172:HIS:CE1	2.55	0.42
18:LQ:12[A]:LYS:HG3	18:LQ:40[A]:GLU:HG2	2.01	0.42
25:LX:13:ILE:HD13	25:LX:54:LEU:HB3	2.01	0.42
25:LX:123:ALA:HB1	25:LX:130:ALA:HB2	2.01	0.42
45:Lr:57:CYS:O	45:Lr:61:LYS:HA	2.19	0.42
48:S2:551:G:H2'	48:S2:552:G:H8	1.85	0.42
48:S2:570:A:N1	77:Sc:115:GLY:HA3	2.35	0.42
48:S2:863:A:N7	48:S2:964:U:O4	2.52	0.42
48:S2:898:A:C8	48:S2:912:U:C4	3.07	0.42
48:S2:1158:C:H42	48:S2:1163:A:N6	2.14	0.42
48:S2:1531:G:H5'	59:SK:81:ARG:NH2	2.35	0.42
48:S2:1797:A:N6	79:Se:84:VAL:HB	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
65:SQ:105:PHE:HZ	65:SQ:211:HIS:HB3	1.85	0.42
65:SQ:111:ARG:HD3	65:SQ:111:ARG:HA	1.90	0.42
70:SV:74:LYS:HZ2	70:SV:112:TRP:HB2	1.85	0.42
2:LA:19:U:H2'	2:LA:20:A:H8	1.85	0.42
2:LA:96:G:H5'	15:LN:15:ARG:CZ	2.50	0.42
2:LA:400:G:H4'	2:LA:401:U:H5'	2.01	0.42
2:LA:1010:G:H1	2:LA:1041:U:H5	1.68	0.42
2:LA:1694:U:O2'	2:LA:1695:U:H5'	2.20	0.42
2:LA:1764:U:H5'	2:LA:1765:U:H5"	2.02	0.42
2:LA:2429:G:H2'	2:LA:2430:A:H8	1.85	0.42
2:LA:2947:G:C2	6:LE:250:ALA:HB1	2.55	0.42
5:LD:120:PRO:HD3	5:LD:159:SER:OG	2.20	0.42
8:LG:75:LEU:HG	8:LG:112:LYS:NZ	2.34	0.42
9:LH:143:LYS:HE2	9:LH:143:LYS:HB3	1.88	0.42
18:LQ:189[A]:ASP:O	18:LQ:192[A]:LYS:HG3	2.20	0.42
19:LR:51:VAL:HG11	19:LR:58:ILE:HD12	2.02	0.42
20:LS:83:VAL:O	20:LS:103:ALA:HA	2.20	0.42
33:Lf:9:THR:HG23	33:Lf:76:SER:HB3	2.00	0.42
47:Cc:24:C:H2'	47:Cc:25:U:C6	2.55	0.42
48:S2:133:U:O2	48:S2:201:G:H5'	2.19	0.42
48:S2:324:U:H2'	48:S2:325:G:C8	2.55	0.42
48:S2:872:G:H2'	48:S2:873:U:O4'	2.20	0.42
48:S2:961:U:H2'	48:S2:962:C:C6	2.55	0.42
48:S2:1723:U:H2'	48:S2:1724:U:O4'	2.20	0.42
55:SG:115:LEU:HD22	64:SP:11:PRO:HG3	2.02	0.42
56:SH:36:LYS:HD2	56:SH:105:VAL:HG11	2.02	0.42
56:SH:49:LYS:HE3	56:SH:49:LYS:HB2	1.93	0.42
58:SJ:33:GLN:HA	58:SJ:36:ASN:HD21	1.85	0.42
66:SR:58:LEU:HA	75:Sa:12:TYR:HE1	1.85	0.42
66:SR:152:HIS:CE1	66:SR:174:ARG:HG2	2.55	0.42
67:SS:193:GLY:HA2	67:SS:210:ILE:CG2	2.48	0.42
78:Sd:113:ASN:HA	78:Sd:116:LYS:HG2	2.02	0.42
79:Se:64:LEU:HD22	79:Se:64:LEU:HA	1.93	0.42
1:Bb:27:C:H2'	1:Bb:28:C:C6	2.55	0.41
2:LA:11:A:H2'	2:LA:12:A:C8	2.55	0.41
2:LA:1637:A:H1'	2:LA:1709:C:O2'	2.19	0.41
2:LA:1797:A:H2'	2:LA:1798:A:H5'	2.00	0.41
2:LA:1824:U:H2'	2:LA:1825:G:H8	1.85	0.41
2:LA:2204:C:H2'	2:LA:2205:U:H5"	2.01	0.41
4:LC:91:C:H2'	4:LC:92:A:C8	2.54	0.41
6:LE:47:LEU:HD11	6:LE:179:ALA:HB3	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:LF:156:LEU:HD12	7:LF:159:ILE:HD13	2.01	0.41
7:LF:350:LYS:HD3	7:LF:350:LYS:HA	1.91	0.41
11:LJ:107:GLU:HA	11:LJ:110:THR:HG22	2.02	0.41
18:LQ:27[A]:LEU:HD11	18:LQ:102[A]:LEU:HD13	2.02	0.41
28:La:68:GLY:HA2	28:La:84:LYS:HD3	2.00	0.41
39:Ll:19:CYS:HB2	39:Ll:27:PHE:HB2	2.02	0.41
41:Ln:27:ILE:HA	41:Ln:30:ARG:HG3	2.01	0.41
44:Lq:9:LYS:HE3	44:Lq:9:LYS:HB3	1.90	0.41
47:Cc:1:C:H2'	47:Cc:2:G:H8	1.85	0.41
48:S2:167:U:H4'	68:ST:137:ARG:HG3	2.01	0.41
48:S2:256:A:C5	48:S2:257:A:H1'	2.55	0.41
48:S2:520:A:H2	78:Sd:33:ALA:HB1	1.84	0.41
48:S2:1036:A:H2'	48:S2:1037:C:C6	2.55	0.41
48:S2:1525:A:H2'	48:S2:1526:A:C8	2.53	0.41
49:SA:105:MET:HE2	49:SA:105:MET:HB3	1.97	0.41
52:SD:126:TRP:CD1	52:SD:133:LEU:HD11	2.55	0.41
66:SR:111:VAL:HB	66:SR:191:ALA:HA	2.02	0.41
67:SS:54:TYR:HE1	78:Sd:13:ILE:HD11	1.85	0.41
67:SS:65:LEU:O	67:SS:78:THR:HG22	2.20	0.41
68:ST:7:TYR:CG	68:ST:113:ILE:HD11	2.55	0.41
68:ST:39:GLU:HB2	68:ST:46:LYS:HG3	2.01	0.41
68:ST:142:ARG:HH22	68:ST:177:ARG:HE	1.68	0.41
68:ST:187:LYS:HG3	68:ST:188:ARG:N	2.34	0.41
69:SU:89:HIS:ND1	69:SU:165:LYS:HE3	2.35	0.41
73:SY:92:ILE:HG23	73:SY:141:TYR:HE1	1.83	0.41
73:SY:94:LYS:HG2	73:SY:118:ILE:HD13	2.02	0.41
76:Sb:40:VAL:HG11	76:Sb:103:ILE:HD12	2.02	0.41
79:Se:40:ALA:HB3	79:Se:69:ASN:OD1	2.20	0.41
2:LA:144:A:H2'	2:LA:145:G:O4'	2.20	0.41
2:LA:266:A:H8	2:LA:266:A:O5'	2.04	0.41
2:LA:1660:C:H2'	2:LA:1661:G:C8	2.54	0.41
2:LA:2093:A:H3'	2:LA:2093:A:N3	2.34	0.41
2:LA:2756:C:O4'	23:LV:49:GLN:HG2	2.20	0.41
2:LA:3304:U:H1'	6:LE:334:ARG:HH12	1.84	0.41
3:LB:81:U:H2'	3:LB:82:G:C8	2.55	0.41
9:LH:31:ARG:H	9:LH:31:ARG:HG2	1.64	0.41
10:LI:24:GLU:HG2	10:LI:26:VAL:H	1.85	0.41
33:Lf:16:LEU:HD13	33:Lf:16:LEU:HA	1.89	0.41
47:Cc:2:G:H2'	47:Cc:3:C:C6	2.55	0.41
48:S2:234:G:H3'	48:S2:234:G:N3	2.35	0.41
48:S2:1452:U:O2'	53:SE:79:HIS:HB3	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:S2:1586:A:H5"	54:SF:136:SER:OG	2.20	0.41
49:SA:71:LEU:HG	49:SA:75:LYS:NZ	2.36	0.41
54:SF:101:SER:O	54:SF:104:GLU:HG3	2.20	0.41
63:SO:90:ARG:NH2	63:SO:102:ARG:HE	2.17	0.41
66:SR:65:GLU:HB3	66:SR:67:GLN:OE1	2.20	0.41
69:SU:165:LYS:HE3	69:SU:165:LYS:HB3	1.92	0.41
71:SW:123:HIS:NE2	81:Sg:37:ARG:HB2	2.34	0.41
78:Sd:105:ARG:HG2	78:Sd:108:ARG:NH2	2.35	0.41
2:LA:47:C:OP1	15:LN:16:LYS:HE2	2.20	0.41
2:LA:313:A:H2'	2:LA:314:U:C6	2.56	0.41
2:LA:757:C:H2'	2:LA:758:C:O4'	2.20	0.41
2:LA:1317:A:O2'	2:LA:1318:A:H3'	2.19	0.41
2:LA:1718:G:H2'	2:LA:1719:G:H8	1.85	0.41
2:LA:2376:G:H2'	2:LA:2377:G:C8	2.55	0.41
2:LA:3052:G:H2'	2:LA:3053:G:H8	1.85	0.41
3:LB:4:U:H2'	3:LB:5:G:H8	1.85	0.41
3:LB:7:G:OP2	8:LG:28:THR:HG22	2.19	0.41
4:LC:27:U:H2'	4:LC:28:C:H6	1.85	0.41
4:LC:69:U:H3'	4:LC:70:G:C8	2.55	0.41
12:LK:4:ILE:HD11	22:LU:150:PHE:CG	2.56	0.41
17:LP:147:ARG:HG2	37:Lj:101:THR:HG22	2.01	0.41
47:Cc:30:G:H2'	47:Cc:31:G:H8	1.85	0.41
48:S2:138:A:H8	48:S2:141:U:O2'	2.02	0.41
48:S2:1242:A:C6	53:SE:52:LYS:HE2	2.55	0.41
48:S2:1517:U:H5"	48:S2:1518:C:C5	2.53	0.41
55:SG:85:VAL:HB	64:SP:201:LEU:HD13	2.02	0.41
56:SH:134:ARG:HB2	56:SH:136:GLN:NE2	2.35	0.41
57:SI:64:HIS:O	57:SI:68:ARG:HG2	2.20	0.41
68:ST:67:VAL:CG2	68:ST:99:GLY:HA2	2.50	0.41
74:SZ:20:TYR:HB3	74:SZ:27:PHE:HB2	2.01	0.41
77:Sc:31:LYS:HD2	77:Sc:36:THR:HG21	2.01	0.41
2:LA:277:G:H2'	2:LA:278:U:C6	2.55	0.41
2:LA:317:A:H2'	2:LA:318:A:C8	2.56	0.41
2:LA:374:A:O2'	2:LA:376:G:H5'	2.21	0.41
2:LA:570:A:H2'	2:LA:571:U:O4'	2.21	0.41
2:LA:588:G:H21	2:LA:611:A:H5"	1.85	0.41
2:LA:737:G:H2'	2:LA:738:A:H8	1.85	0.41
2:LA:2347:U:H2'	2:LA:2348:A:O4'	2.20	0.41
2:LA:2682:C:C6	2:LA:2683:U:C5	3.08	0.41
6:LE:256:HIS:HA	6:LE:257:PRO:C	2.45	0.41
7:LF:205:PRO:HB3	7:LF:247:PHE:CE2	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:LM:49:LYS:HB3	14:LM:62:ASN:HA	2.02	0.41
16:LO:35:ILE:HA	16:LO:46:ILE:HG22	2.02	0.41
20:LS:36:LEU:O	20:LS:40:THR:HB	2.20	0.41
22:LU:3:HIS:CE1	22:LU:5:LYS:HG2	2.55	0.41
22:LU:17:GLU:CD	22:LU:17:GLU:H	2.28	0.41
35:Lh:16:TYR:HD2	35:Lh:23:ASN:HD22	1.68	0.41
48:S2:109:G:H2'	48:S2:110:U:O4'	2.20	0.41
48:S2:142:G:N1	48:S2:173:A:N6	2.67	0.41
48:S2:1143:A:OP2	79:Se:2:PRO:HG3	2.20	0.41
48:S2:1563:C:H2'	48:S2:1564:U:O2	2.21	0.41
49:SA:105:MET:SD	49:SA:122:VAL:HG11	2.61	0.41
49:SA:116:ARG:HD2	49:SA:152:PHE:HE2	1.85	0.41
52:SD:50:LYS:NZ	52:SD:54:ARG:HH21	2.19	0.41
55:SG:17:ILE:HG21	55:SG:57:LEU:HD11	2.02	0.41
59:SK:58:ARG:HD3	59:SK:58:ARG:HA	1.79	0.41
64:SP:117:GLU:O	66:SR:40:LYS:HE2	2.20	0.41
64:SP:119:ARG:O	64:SP:142:PRO:HD2	2.21	0.41
65:SQ:129:THR:HG22	65:SQ:176:VAL:HG13	2.02	0.41
68:ST:38:GLY:HA2	68:ST:41:VAL:HG12	2.02	0.41
80:Sf:50:ALA:O	80:Sf:51:GLN:HG2	2.20	0.41
1:Bb:56:C:H2'	1:Bb:57:G:C8	2.55	0.41
2:LA:160:G:H2'	2:LA:161:G:H5'	2.03	0.41
2:LA:279:U:H2'	2:LA:280:U:C6	2.56	0.41
2:LA:839:C:N4	45:Lr:4:ARG:HH12	2.18	0.41
2:LA:877:C:H2'	2:LA:878:G:O4'	2.21	0.41
2:LA:1083:G:H2'	2:LA:1084:A:C8	2.55	0.41
2:LA:1493:G:O2'	41:Ln:13:MET:HG3	2.21	0.41
2:LA:2677:G:H2'	2:LA:2677:G:N3	2.34	0.41
2:LA:2710:C:H2'	2:LA:2711:C:C6	2.55	0.41
6:LE:60:LEU:HD21	6:LE:62:ARG:NH1	2.36	0.41
7:LF:60:THR:HG22	7:LF:62:ALA:H	1.85	0.41
7:LF:181:VAL:HG11	7:LF:224:GLY:CA	2.50	0.41
12:LK:92:TYR:HB2	12:LK:142:ASP:HB3	2.02	0.41
13:LL:38:LYS:HD2	13:LL:83:ASP:HB2	2.01	0.41
14:LM:138:VAL:HG22	14:LM:141:ARG:HH12	1.85	0.41
48:S2:90:C:H2'	48:S2:91:G:H8	1.85	0.41
48:S2:220:A:C6	48:S2:831:U:N3	2.89	0.41
48:S2:253:A:H2'	48:S2:254:A:C8	2.55	0.41
48:S2:698:U:H4'	69:SU:107:ARG:HH21	1.85	0.41
48:S2:1214:U:H5'	48:S2:1246:C:H1'	2.02	0.41
48:S2:1796:C:O4'	79:Se:5:ARG:HD3	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:SA:10:LYS:HE3	49:SA:10:LYS:HB2	1.91	0.41
50:SB:117:THR:HG21	50:SB:194:LEU:HG	2.03	0.41
52:SD:66:VAL:HG22	52:SD:67:THR:OG1	2.21	0.41
55:SG:44:LYS:HG3	55:SG:47:ARG:HH21	1.84	0.41
57:SI:136:ALA:O	57:SI:139:THR:HG22	2.19	0.41
58:SJ:58:LEU:HD21	58:SJ:90:TYR:HE2	1.85	0.41
59:SK:90:LYS:HA	59:SK:90:LYS:HD3	1.93	0.41
62:SN:117:LEU:HB3	62:SN:118:ARG:HD3	2.02	0.41
63:SO:176:LYS:HD2	63:SO:197:SER:C	2.45	0.41
65:SQ:174:LYS:HE2	65:SQ:174:LYS:HB3	1.84	0.41
67:SS:75:LYS:O	67:SS:77:ARG:HG2	2.20	0.41
68:ST:199:GLN:HA	68:ST:202:ARG:HG2	2.02	0.41
72:SX:82:ARG:HH12	72:SX:113:PRO:HG3	1.86	0.41
74:SZ:107:ARG:NH1	74:SZ:107:ARG:HB2	2.35	0.41
2:LA:266:A:N6	38:Lk:30:LYS:HA	2.35	0.41
2:LA:1413:G:H2'	2:LA:1414:G:H8	1.86	0.41
2:LA:1580:A:H3'	2:LA:2522:G:N2	2.35	0.41
2:LA:1717:U:H2'	2:LA:1718:G:H8	1.85	0.41
2:LA:2198:A:C6	2:LA:2199:G:C8	3.08	0.41
2:LA:2356:A:H5'	19:LR:138:LYS:NZ	2.36	0.41
2:LA:2943:G:H2'	2:LA:2944:U:O4'	2.19	0.41
3:LB:28:C:OP1	14:LM:137:ARG:HD3	2.20	0.41
4:LC:12:A:C6	4:LC:13:A:N7	2.88	0.41
4:LC:14:C:H5"	19:LR:123:PRO:HG3	2.02	0.41
4:LC:83:C:H42	28:La:52:ARG:NH2	2.14	0.41
7:LF:219:LEU:HD12	7:LF:225:VAL:HG11	2.01	0.41
8:LG:33:ARG:HH12	8:LG:50:ARG:NH1	2.18	0.41
13:LL:47:PRO:HD2	13:LL:141:LYS:HA	2.03	0.41
13:LL:48:LEU:O	13:LL:139:ARG:HA	2.20	0.41
14:LM:28:ASP:O	14:LM:32:ARG:HD2	2.21	0.41
19:LR:33:ALA:HB1	19:LR:117:ILE:HG12	2.03	0.41
20:LS:122:ILE:HG23	20:LS:126:GLN:HB2	2.02	0.41
30:Lc:22:ILE:HD12	30:Lc:22:ILE:H	1.84	0.41
40:Lm:5:ILE:HG13	40:Lm:54:LEU:HB2	2.01	0.41
44:Lq:23:HIS:HB3	44:Lq:72:LEU:HB3	2.02	0.41
48:S2:97:C:H2'	48:S2:98:U:H6	1.85	0.41
48:S2:550:A:C5	48:S2:587:C:N4	2.87	0.41
48:S2:782:U:C5	48:S2:783:G:H1'	2.55	0.41
48:S2:1616:G:H21	60:SL:22:ARG:HD3	1.85	0.41
48:S2:1783:C:H2'	48:S2:1784:C:H6	1.85	0.41
52:SD:66:VAL:HG13	52:SD:67:THR:H	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
67:SS:66:MET:HE2	67:SS:66:MET:HB3	1.75	0.41
69:SU:74:GLN:O	69:SU:78:THR:HG22	2.20	0.41
70:SV:18:ARG:HH11	70:SV:18:ARG:HB2	1.85	0.41
78:Sd:112:LYS:HA	78:Sd:115:ASP:OD2	2.20	0.41
2:LA:916:G:H4'	2:LA:917:A:O5'	2.20	0.41
2:LA:1740:U:H1'	2:LA:1741:A:H2	1.86	0.41
2:LA:2356:A:H5'	19:LR:138:LYS:HZ1	1.85	0.41
2:LA:2506:U:H2'	2:LA:2507:C:C6	2.55	0.41
2:LA:2933:A:O4'	2:LA:3015:G:H5"	2.20	0.41
2:LA:3203:U:H2'	2:LA:3204:C:C6	2.56	0.41
2:LA:3371:G:H2'	2:LA:3372:A:H8	1.85	0.41
5:LD:173:GLY:O	5:LD:176:ASP:HB2	2.21	0.41
6:LE:59:ASP:OD1	6:LE:71:GLU:HG2	2.21	0.41
7:LF:304:GLN:C	7:LF:306:THR:H	2.29	0.41
9:LH:52:VAL:HG11	9:LH:74:VAL:HG11	2.03	0.41
9:LH:96:VAL:HG22	9:LH:144:ALA:HB1	2.02	0.41
11:LJ:226:TYR:HA	11:LJ:229:VAL:HG22	2.02	0.41
20:LS:155:MET:HE2	20:LS:163:PRO:HB3	2.03	0.41
22:LU:124:LEU:HD23	23:LV:153:PRO:HB2	2.03	0.41
37:Lj:70:TYR:HB3	37:Lj:76:GLN:OE1	2.20	0.41
43:Lp:2:ARG:HD3	43:Lp:5:TRP:NE1	2.36	0.41
48:S2:142:G:C6	48:S2:173:A:N6	2.89	0.41
48:S2:800:U:H2'	48:S2:801:G:C8	2.56	0.41
48:S2:963:A:H1'	48:S2:965:U:O4	2.21	0.41
50:SB:123:VAL:HG23	50:SB:124:LEU:HD13	2.02	0.41
51:SC:38:LYS:HD3	51:SC:41:TYR:HE1	1.84	0.41
54:SF:44:LEU:HD13	54:SF:78:VAL:HG11	2.02	0.41
57:SI:76:LEU:HD12	57:SI:80:TYR:HE2	1.85	0.41
63:SO:21:THR:H	63:SO:37:SER:HA	1.85	0.41
64:SP:66:ALA:HB2	75:Sa:37:ALA:HB2	2.03	0.41
68:ST:141:ILE:HD13	68:ST:141:ILE:HA	1.92	0.41
71:SW:108:ARG:HH21	71:SW:144:PRO:HB2	1.84	0.41
71:SW:108:ARG:NH2	71:SW:144:PRO:HB2	2.36	0.41
71:SW:163:PRO:HD3	71:SW:168:ARG:NH2	2.35	0.41
71:SW:175:ARG:HA	71:SW:175:ARG:HD3	1.91	0.41
77:Sc:87:VAL:HG21	77:Sc:92:CYS:HB3	2.01	0.41
1:Bb:38:A:H2'	1:Bb:39:U:H5'	2.02	0.41
2:LA:120:G:H22	11:LJ:124:ASP:HA	1.86	0.41
2:LA:503:C:H2'	2:LA:504:A:H8	1.85	0.41
2:LA:595:G:H1	2:LA:609:G:H5"	1.85	0.41
2:LA:945:C:H2'	2:LA:946:U:H6	1.83	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:LA:1157:G:H5”	10:LI:220:PHE:CE2	2.56	0.41
2:LA:1729:A:C6	32:Le:49:PRO:HD3	2.56	0.41
2:LA:3006:A:C2	2:LA:3141:A:C4	3.08	0.41
2:LA:3138:U:H5”	6:LE:274:SER:O	2.21	0.41
3:LB:4:U:H2’	3:LB:5:G:C8	2.56	0.41
4:LC:75:G:H5’	41:Ln:31:THR:HG23	2.03	0.41
5:LD:39:GLY:HA2	5:LD:93:LYS:HG3	2.02	0.41
5:LD:117:GLU:HB2	5:LD:162:ALA:HB1	2.02	0.41
6:LE:383:LEU:HD13	6:LE:385:LYS:HE2	2.03	0.41
7:LF:302:ALA:HB2	20:LS:39:ARG:NH1	2.36	0.41
8:LG:44:TYR:HE2	23:LV:35:LYS:HA	1.86	0.41
9:LH:172:HIS:CD2	9:LH:173:LEU:HG	2.56	0.41
11:LJ:26:LEU:HD21	29:Lb:66:THR:CG2	2.51	0.41
11:LJ:82:LEU:HD23	11:LJ:82:LEU:H	1.85	0.41
18:LQ:143[A]:THR:CG2	18:LQ:150[A]:GLU:HB2	2.50	0.41
31:Ld:14:ARG:O	31:Ld:18:ARG:HG2	2.20	0.41
48:S2:345:U:H1’	48:S2:346:G:C8	2.56	0.41
48:S2:895:G:C2	48:S2:918:U:C2	3.08	0.41
48:S2:1330:G:C2	48:S2:1331:A:H1’	2.55	0.41
48:S2:1477:G:H2’	48:S2:1478:G:C8	2.55	0.41
48:S2:1566:U:H5’	56:SH:38:VAL:C	2.46	0.41
48:S2:1584:G:N2	48:S2:1610:G:H3’	2.36	0.41
48:S2:1652:C:H2’	48:S2:1653:C:H6	1.84	0.41
49:SA:43:PRO:O	49:SA:44:THR:HG22	2.21	0.41
53:SE:121:ILE:HD12	53:SE:121:ILE:HA	1.91	0.41
57:SI:107:ALA:O	57:SI:111:ILE:HG12	2.21	0.41
58:SJ:37:VAL:HA	58:SJ:40:ASN:ND2	2.35	0.41
60:SL:13:ILE:HD11	60:SL:31:GLU:HB2	2.03	0.41
63:SO:61:PHE:HB3	63:SO:92:TRP:CE2	2.56	0.41
63:SO:69:GLN:HB2	63:SO:85:TRP:HE1	1.86	0.41
67:SS:220:THR:HG22	67:SS:224:ASN:HB3	2.03	0.41
68:ST:204:ALA:HA	68:ST:207:GLU:HG2	2.02	0.41
69:SU:89:HIS:ND1	69:SU:165:LYS:HB3	2.35	0.41
72:SX:116:ARG:HH12	72:SX:118:GLN:HG3	1.86	0.41
76:Sb:30:SER:HB2	76:Sb:61:ILE:HG13	2.03	0.41
76:Sb:83:ILE:O	76:Sb:86:ILE:HG22	2.19	0.41
78:Sd:112:LYS:HE3	78:Sd:112:LYS:HB3	1.76	0.41
2:LA:504:A:H2’	2:LA:505:G:H8	1.86	0.41
2:LA:585:A:H2’	2:LA:586:C:C6	2.55	0.41
2:LA:896:A:H5”	5:LD:183:GLY:CA	2.51	0.41
2:LA:973:A:H2’	2:LA:974:G:O4’	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:LA:1202:A:C2	2:LA:2857:C:H5'	2.55	0.41
2:LA:1327:C:O2'	35:Lh:76:GLY:HA2	2.20	0.41
2:LA:1551:C:H2'	2:LA:1552:G:O4'	2.20	0.41
2:LA:1921:A:H2'	2:LA:1922:A:H8	1.86	0.41
2:LA:2186:U:H2'	2:LA:2187:G:O4'	2.20	0.41
2:LA:2389:C:H2'	2:LA:2390:A:C8	2.55	0.41
2:LA:2802:A:C8	44:Lq:56:PRO:HB3	2.55	0.41
2:LA:3023:U:H2'	2:LA:3024:A:H8	1.84	0.41
2:LA:3166:C:H3'	2:LA:3167:A:C8	2.55	0.41
2:LA:3329:U:H2'	2:LA:3330:A:O4'	2.21	0.41
7:LF:317:PRO:C	7:LF:319:LYS:N	2.78	0.41
10:LI:35:ALA:O	10:LI:39:GLU:HG2	2.21	0.41
11:LJ:137:ASN:HA	11:LJ:140:VAL:HG12	2.03	0.41
11:LJ:162:LEU:HD23	17:LP:7:LEU:HD11	2.03	0.41
11:LJ:171:LYS:HG2	11:LJ:226:TYR:CD1	2.55	0.41
12:LK:92:TYR:CD1	12:LK:179:ILE:HG23	2.56	0.41
12:LK:93:VAL:O	12:LK:177:ASP:HA	2.21	0.41
13:LL:179:PRO:HA	13:LL:182:LEU:HD23	2.02	0.41
14:LM:75:LYS:NZ	14:LM:79:ILE:HD11	2.36	0.41
25:LX:45:ARG:HD2	25:LX:46:LEU:H	1.85	0.41
27:LZ:59:SER:HB2	27:LZ:102:LEU:HG	2.03	0.41
29:Lb:81:LEU:HD22	36:Li:90:ILE:HG12	2.02	0.41
31:Ld:54:LEU:HD23	31:Ld:54:LEU:HA	1.92	0.41
32:Le:40:LYS:HB3	32:Le:101:LEU:HD11	2.02	0.41
33:Lf:37:LYS:HG3	33:Lf:51:LEU:HD11	2.03	0.41
37:Lj:9:LEU:HD21	37:Lj:54:VAL:HA	2.02	0.41
41:Ln:26:TRP:CD1	41:Ln:26:TRP:H	2.38	0.41
42:Lo:79:GLU:O	42:Lo:83:LYS:HB2	2.20	0.41
48:S2:13:C:H5'	66:SR:209:ASN:ND2	2.36	0.41
48:S2:122:U:H5"	67:SS:77:ARG:NH1	2.35	0.41
48:S2:185:U:H2'	48:S2:186:C:C6	2.56	0.41
48:S2:386:G:H2'	48:S2:387:A:C8	2.56	0.41
48:S2:549:G:H5'	48:S2:550:A:OP2	2.21	0.41
48:S2:624:G:OP1	48:S2:624:G:C8	2.74	0.41
48:S2:1474:G:C2	48:S2:1475:A:C5	3.09	0.41
48:S2:1680:G:O6	48:S2:1720:G:H1'	2.21	0.41
49:SA:101:GLN:NE2	49:SA:122:VAL:HG23	2.35	0.41
52:SD:42:ALA:HB3	52:SD:122:VAL:HG22	2.02	0.41
57:SI:103:LYS:HD3	57:SI:103:LYS:HA	1.96	0.41
63:SO:128:ASP:OD1	63:SO:130:THR:HG22	2.20	0.41
63:SO:150:TRP:O	63:SO:174:ASN:HB2	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
63:SO:228:LYS:HE2	63:SO:228:LYS:HB2	1.90	0.41
64:SP:26:ALA:HB3	64:SP:149:LEU:HB2	2.02	0.41
68:ST:74:LYS:HE2	68:ST:74:LYS:HB2	1.88	0.41
69:SU:86:GLN:CD	69:SU:86:GLN:H	2.29	0.41
76:Sb:111:MET:HE1	76:Sb:119:LYS:HE2	2.02	0.41
78:Sd:51:GLU:HB3	78:Sd:54:ALA:HB3	2.02	0.41
1:Bb:25:C:H2'	1:Bb:26:G:H8	1.85	0.41
2:LA:153:U:H4'	2:LA:158:G:H4'	2.03	0.41
2:LA:238:A:N6	2:LA:239:G:H21	2.17	0.41
2:LA:291:C:H2'	2:LA:292:U:C6	2.56	0.41
2:LA:536:U:C2	2:LA:537:A:C8	3.09	0.41
2:LA:1040:A:N6	8:LG:10:SER:H	2.19	0.41
2:LA:1783:U:H2'	2:LA:1784:G:C8	2.56	0.41
2:LA:2537:U:C4	65:SQ:230:ALA:HA	2.56	0.41
2:LA:2918:G:C2	2:LA:2919:A:N7	2.90	0.41
2:LA:2941:A:H8	2:LA:2941:A:OP2	2.04	0.41
2:LA:3080:G:H2'	2:LA:3081:C:H6	1.86	0.41
6:LE:236:LYS:HE2	6:LE:236:LYS:HB2	1.89	0.41
9:LH:111:LEU:HD13	9:LH:112:THR:O	2.21	0.41
10:LI:88:ARG:HB2	10:LI:108:LEU:HB3	2.03	0.41
13:LL:75:TYR:O	13:LL:79:VAL:HG22	2.21	0.41
28:La:101:PRO:HA	28:La:104:LEU:HD12	2.03	0.41
37:Lj:66:VAL:HG13	37:Lj:80:LEU:HD11	2.03	0.41
39:Ll:39:TYR:CD1	39:Ll:40:PRO:HA	2.56	0.41
42:Lo:127:LEU:HD23	42:Lo:127:LEU:HA	1.90	0.41
45:Lr:30:GLU:HA	45:Lr:33:GLN:HG2	2.03	0.41
47:Cc:19:G:H22	47:Cc:55:U:H3	1.69	0.41
48:S2:1162:C:C2	60:SL:24:GLY:HA3	2.56	0.41
48:S2:1183:A:N1	53:SE:100:LYS:HB3	2.36	0.41
48:S2:1585:U:O2'	54:SF:135:ARG:HG2	2.21	0.41
48:S2:1699:G:N2	48:S2:1703:C:H41	2.19	0.41
48:S2:1731:A:H2'	48:S2:1731:A:N3	2.36	0.41
57:SI:140:LEU:HD13	57:SI:140:LEU:HA	1.87	0.41
60:SL:36:THR:HG22	60:SL:37:SER:H	1.85	0.41
60:SL:44:VAL:HG21	60:SL:48:VAL:HG11	2.02	0.41
63:SO:107:LYS:HB3	63:SO:128:ASP:HB3	2.03	0.41
64:SP:153:SER:O	64:SP:156:VAL:HG22	2.21	0.41
66:SR:35:TRP:CE2	66:SR:67:GLN:HB2	2.56	0.41
70:SV:88:ASN:O	70:SV:92:ARG:HG3	2.20	0.41
2:LA:195:U:H2'	2:LA:196:G:O4'	2.21	0.40
2:LA:413:U:H2'	2:LA:414:U:H6	1.86	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:LA:503:C:H2’	2:LA:504:A:C8	2.56	0.40
2:LA:572:A:N3	2:LA:572:A:H2’	2.36	0.40
2:LA:714:G:N1	30:Lc:72:VAL:HG11	2.36	0.40
2:LA:802:C:H2’	2:LA:803:C:C6	2.55	0.40
2:LA:951:A:H5”	2:LA:1143:A:N1	2.36	0.40
2:LA:1347:U:H4’	7:LF:305:ALA:HA	2.03	0.40
2:LA:1641:U:O2’	2:LA:1642:A:H3’	2.21	0.40
2:LA:1664:G:H1	2:LA:1785:U:H3	1.67	0.40
2:LA:2512:C:H2’	2:LA:2513:U:C6	2.56	0.40
5:LD:127:ALA:HB2	5:LD:134:VAL:HG23	2.03	0.40
6:LE:318:LYS:H	6:LE:318:LYS:HD3	1.86	0.40
10:LI:126:LEU:O	10:LI:130:ILE:HG12	2.21	0.40
13:LL:206:LEU:HD13	13:LL:206:LEU:HA	1.79	0.40
14:LM:118:PRO:HD3	56:SH:103:ASN:HD21	1.87	0.40
16:LO:10:SER:HB2	16:LO:12:TRP:HZ3	1.85	0.40
21:LT:146:LYS:HG3	21:LT:147:ALA:N	2.35	0.40
23:LV:12:ARG:O	23:LV:16:GLN:HG3	2.20	0.40
48:S2:219:A:H2’	48:S2:220:A:C2	2.56	0.40
48:S2:758:U:O2	48:S2:758:U:H2’	2.21	0.40
48:S2:926:A:H2’	48:S2:927:C:C6	2.57	0.40
48:S2:1317:C:H2’	48:S2:1318:G:O4’	2.21	0.40
48:S2:1583:A:O2’	48:S2:1584:G:H4’	2.21	0.40
48:S2:1615:C:H2’	50:SB:81:ARG:HD3	2.02	0.40
51:SC:35:ILE:HG22	51:SC:37:THR:HG22	2.03	0.40
54:SF:128:LYS:HE2	54:SF:128:LYS:HB2	1.88	0.40
60:SL:64:ARG:HG3	60:SL:65:ARG:H	1.85	0.40
65:SQ:120:LEU:HD12	65:SQ:142:PHE:CE1	2.56	0.40
69:SU:46:ILE:HD11	69:SU:58:LEU:HD13	2.03	0.40
70:SV:117:TYR:CD2	70:SV:150:ALA:HB2	2.55	0.40
74:SZ:25:ASP:N	74:SZ:55:SER:HB3	2.35	0.40
79:Se:36:ILE:O	79:Se:36:ILE:HG22	2.21	0.40
2:LA:18:G:H2’	2:LA:19:U:C6	2.57	0.40
2:LA:105:C:H2’	2:LA:106:A:H8	1.85	0.40
2:LA:229:G:H5”	28:La:4:GLN:HG2	2.03	0.40
2:LA:522:A:H3’	2:LA:523:A:H5”	2.03	0.40
2:LA:553:U:H3’	2:LA:554:A:C8	2.56	0.40
2:LA:679:U:H2’	2:LA:680:G:C8	2.56	0.40
2:LA:1000:C:C2	2:LA:1045:C:N4	2.89	0.40
2:LA:1167:U:H2’	2:LA:1168:U:O4’	2.22	0.40
2:LA:1462:A:H2’	2:LA:1463:U:C6	2.56	0.40
2:LA:1654:A:C2	2:LA:1801:U:H5	2.39	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:LA:1747:G:H21	40:Lm:2:ALA:HB1	1.87	0.40
2:LA:2717:U:H2'	2:LA:2718:U:C6	2.57	0.40
8:LG:289:LYS:HE2	8:LG:289:LYS:HB3	1.95	0.40
9:LH:150:LYS:HA	9:LH:150:LYS:HD2	1.88	0.40
17:LP:70:ASN:HB3	17:LP:92:LEU:O	2.20	0.40
20:LS:166:LEU:HD23	20:LS:166:LEU:HA	1.92	0.40
44:Lq:14:GLY:O	44:Lq:15:LYS:HB3	2.21	0.40
48:S2:400:A:H4'	48:S2:401:A:C5'	2.50	0.40
48:S2:472:U:H2'	48:S2:473:A:C8	2.56	0.40
48:S2:537:G:H5'	48:S2:538:A:OP2	2.21	0.40
48:S2:776:G:H2'	48:S2:777:C:C6	2.57	0.40
50:SB:221:ALA:HA	50:SB:224:ASN:ND2	2.36	0.40
65:SQ:133:TYR:CE1	65:SQ:221:PRO:HD2	2.56	0.40
66:SR:143:TYR:CD1	66:SR:147:ASN:HA	2.56	0.40
67:SS:94:ALA:HB1	78:Sd:16:PRO:HB2	2.03	0.40
70:SV:18:ARG:HB2	70:SV:18:ARG:NH1	2.35	0.40
70:SV:40:ALA:O	70:SV:59:ARG:HG3	2.22	0.40
76:Sb:112:ASP:OD2	76:Sb:114:GLU:HG2	2.21	0.40
2:LA:89:A:H5'	30:Lc:59:ARG:HB3	2.03	0.40
2:LA:171:G:H2'	2:LA:172:G:C8	2.55	0.40
2:LA:736:A:H62	2:LA:737:G:H21	1.68	0.40
2:LA:836:A:OP1	45:Lr:4:ARG:HD2	2.21	0.40
2:LA:1595:U:C2	2:LA:1596:C:C5	3.10	0.40
2:LA:1883:A:H2'	2:LA:1884:A:C8	2.57	0.40
2:LA:2093:A:N1	21:LT:143:ILE:HD12	2.37	0.40
2:LA:3028:G:H2'	2:LA:3029:A:C8	2.56	0.40
4:LC:154:C:H2'	4:LC:155:A:H8	1.86	0.40
7:LF:178:LEU:HD21	7:LF:222:VAL:HG12	2.04	0.40
7:LF:342:LYS:HD2	7:LF:342:LYS:HA	1.89	0.40
8:LG:57:ASN:O	8:LG:58:LYS:HG2	2.21	0.40
10:LI:143:THR:HB	10:LI:241:LYS:HE2	2.03	0.40
10:LI:145:ARG:HA	10:LI:185:ILE:HD13	2.03	0.40
12:LK:7:GLU:HG2	12:LK:54:LYS:HD2	2.03	0.40
13:LL:38:LYS:HB2	13:LL:38:LYS:HE3	1.72	0.40
17:LP:73:ARG:HA	17:LP:74:PRO:HD3	1.95	0.40
18:LQ:127[A]:LEU:HD22	22:LU:156:VAL:HG13	2.03	0.40
20:LS:71:LEU:HD11	20:LS:99:THR:HG21	2.03	0.40
32:Le:43:ILE:HG13	32:Le:68:TYR:HB3	2.02	0.40
37:Lj:21:LEU:HB2	37:Lj:54:VAL:HG11	2.04	0.40
43:Lp:3:ALA:HB3	48:S2:1773:C:OP1	2.21	0.40
48:S2:228:G:H2'	48:S2:229:U:C6	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:S2:1078:C:H2'	48:S2:1079:U:C6	2.56	0.40
48:S2:1254:U:H3'	48:S2:1255:G:H8	1.86	0.40
48:S2:1410:A:H2'	48:S2:1411:A:C8	2.57	0.40
58:SJ:41:ILE:HA	58:SJ:44:ASN:ND2	2.37	0.40
62:SN:107:LYS:HA	62:SN:107:LYS:HD3	1.86	0.40
62:SN:107:LYS:HB2	62:SN:114:VAL:HG13	2.02	0.40
63:SO:111:MET:HE2	63:SO:111:MET:HB2	1.72	0.40
64:SP:21:ASN:HD21	64:SP:24:LEU:HG	1.87	0.40
69:SU:108:GLN:HE21	69:SU:108:GLN:HB3	1.51	0.40
73:SY:72:MET:HG2	73:SY:76:LYS:HE3	2.03	0.40
1:Bb:14:A:C5	1:Bb:22:G:C2	3.09	0.40
2:LA:377:A:H1'	2:LA:392:G:N2	2.36	0.40
2:LA:407:A:H8	2:LA:407:A:O5'	2.05	0.40
2:LA:412:G:H2'	2:LA:413:U:H6	1.86	0.40
2:LA:899:U:H2'	2:LA:900:G:H8	1.86	0.40
2:LA:1132:C:H2'	2:LA:1133:A:H8	1.86	0.40
2:LA:1647:A:C2	2:LA:1809:A:H1'	2.55	0.40
2:LA:2736:A:H2'	2:LA:2737:C:O4'	2.21	0.40
2:LA:2759:U:H5"	2:LA:2760:C:H5'	2.04	0.40
2:LA:3023:U:H2'	2:LA:3024:A:C8	2.55	0.40
2:LA:3291:G:H2'	2:LA:3292:A:C8	2.56	0.40
3:LB:100:C:H2'	3:LB:101:G:O4'	2.21	0.40
4:LC:9:A:H2'	4:LC:10:A:H8	1.83	0.40
4:LC:142:C:H2'	4:LC:143:U:C6	2.56	0.40
6:LE:47:LEU:HD23	6:LE:337:THR:HG23	2.04	0.40
6:LE:318:LYS:HB2	6:LE:318:LYS:HE2	1.68	0.40
8:LG:290:ILE:HD11	13:LL:206:LEU:HD11	2.04	0.40
10:LI:98:LYS:O	10:LI:102:VAL:HG23	2.21	0.40
14:LM:35:LYS:HD2	14:LM:35:LYS:HA	1.92	0.40
17:LP:83:LYS:HB2	17:LP:85:THR:HG22	2.02	0.40
37:Lj:35:LYS:HB2	37:Lj:44:ILE:HD11	2.04	0.40
45:Lr:5:THR:OG1	45:Lr:8:VAL:HG22	2.21	0.40
48:S2:107:C:H2'	48:S2:108:A:H8	1.86	0.40
48:S2:155:U:H2'	48:S2:156:A:H8	1.87	0.40
48:S2:740:A:H2'	48:S2:741:C:C5	2.56	0.40
48:S2:860:U:O4'	69:SU:114:ARG:HG3	2.21	0.40
48:S2:1044:U:H2'	48:S2:1045:C:C6	2.56	0.40
48:S2:1185:U:H1'	48:S2:1455:G:O2'	2.21	0.40
48:S2:1507:G:H8	48:S2:1507:G:OP2	2.05	0.40
54:SF:22:VAL:HA	54:SF:64:ASP:O	2.21	0.40
55:SG:29:GLN:HB3	63:SO:85:TRP:CZ3	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
63:SO:66:HIS:CG	63:SO:67:ILE:H	2.39	0.40
66:SR:67:GLN:HA	66:SR:70:ASP:OD2	2.21	0.40
74:SZ:29:HIS:CD2	74:SZ:41:ARG:HB2	2.56	0.40
77:Sc:126:LYS:HD2	77:Sc:131:SER:HA	2.04	0.40
2:LA:330:G:C2	2:LA:331:G:C8	3.09	0.40
2:LA:644:G:H1'	2:LA:1153:A:N6	2.37	0.40
2:LA:1743:G:H2'	2:LA:1744:G:H8	1.86	0.40
2:LA:2351:U:H2'	2:LA:2352:A:C8	2.50	0.40
2:LA:2765:C:O3'	44:Lq:39:GLY:HA3	2.22	0.40
3:LB:107:C:H2'	3:LB:108:A:H8	1.86	0.40
4:LC:109:A:C2	4:LC:114:G:C6	3.09	0.40
6:LE:21:ARG:HB3	6:LE:272:TYR:HD2	1.87	0.40
6:LE:28:ARG:H	6:LE:28:ARG:HG3	1.52	0.40
6:LE:92:TYR:CE2	6:LE:101:SER:HB3	2.56	0.40
8:LG:241:THR:O	8:LG:245:GLU:HG2	2.21	0.40
8:LG:264:GLN:O	8:LG:268:GLU:HG2	2.22	0.40
9:LH:43:LEU:HD11	9:LH:85:ILE:HG13	2.02	0.40
21:LT:11:ALA:O	21:LT:15:VAL:HG22	2.21	0.40
36:Li:94:LEU:HD13	36:Li:94:LEU:HA	1.92	0.40
38:Lk:56:ARG:HH22	38:Lk:76:ARG:HH21	1.68	0.40
45:Lr:29:LEU:HA	45:Lr:29:LEU:HD23	1.84	0.40
47:Cc:14:A:H3'	47:Cc:15:G:H8	1.86	0.40
48:S2:332:U:OP1	70:SV:31:ARG:HD3	2.22	0.40
48:S2:1237:G:N3	48:S2:1237:G:H2'	2.36	0.40
48:S2:1374:C:N4	48:S2:1375:A:N6	2.70	0.40
48:S2:1437:U:H2'	48:S2:1438:G:H8	1.86	0.40
48:S2:1501:C:N4	48:S2:1502:G:C6	2.90	0.40
49:SA:177:MET:HE2	49:SA:177:MET:HB2	1.95	0.40
54:SF:5:PRO:HB2	54:SF:96:TYR:CE2	2.57	0.40
55:SG:6:THR:HG22	55:SG:8:THR:H	1.87	0.40
63:SO:89:LEU:HD23	63:SO:103:PHE:HB2	2.02	0.40
63:SO:175:ASP:HB3	63:SO:177:MET:HE2	2.03	0.40
65:SQ:61:LEU:HD21	65:SQ:96:LEU:HD22	2.03	0.40
69:SU:9:LEU:HD12	69:SU:10:SER:H	1.87	0.40
73:SY:95:ALA:O	73:SY:99:ARG:HG3	2.21	0.40
74:SZ:14:PHE:CD1	74:SZ:78:ALA:HB3	2.56	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
5	LD	249/251 (99%)	230 (92%)	19 (8%)	0	100	100
6	LE	384/386 (100%)	360 (94%)	24 (6%)	0	100	100
7	LF	359/361 (99%)	335 (93%)	24 (7%)	0	100	100
8	LG	292/294 (99%)	276 (94%)	16 (6%)	0	100	100
9	LH	163/175 (93%)	155 (95%)	8 (5%)	0	100	100
10	LI	220/222 (99%)	209 (95%)	11 (5%)	0	100	100
11	LJ	231/233 (99%)	217 (94%)	14 (6%)	0	100	100
12	LK	189/191 (99%)	177 (94%)	12 (6%)	0	100	100
13	LL	216/218 (99%)	204 (94%)	12 (6%)	0	100	100
14	LM	167/169 (99%)	157 (94%)	10 (6%)	0	100	100
15	LN	191/193 (99%)	175 (92%)	16 (8%)	0	100	100
16	LO	134/136 (98%)	128 (96%)	6 (4%)	0	100	100
17	LP	201/203 (99%)	189 (94%)	12 (6%)	0	100	100
18	LQ	195/197 (99%)	192 (98%)	3 (2%)	0	100	100
19	LR	181/183 (99%)	172 (95%)	9 (5%)	0	100	100
20	LS	183/185 (99%)	174 (95%)	9 (5%)	0	100	100
21	LT	186/188 (99%)	182 (98%)	4 (2%)	0	100	100
22	LU	169/171 (99%)	160 (95%)	9 (5%)	0	100	100
23	LV	157/159 (99%)	149 (95%)	8 (5%)	0	100	100
24	LW	98/100 (98%)	94 (96%)	4 (4%)	0	100	100
25	LX	134/136 (98%)	132 (98%)	2 (2%)	0	100	100
26	LY	63/65 (97%)	62 (98%)	1 (2%)	0	100	100
27	LZ	119/121 (98%)	115 (97%)	4 (3%)	0	100	100
28	La	123/125 (98%)	119 (97%)	4 (3%)	0	100	100
29	Lb	133/135 (98%)	126 (95%)	7 (5%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
30	Lc	146/148 (99%)	132 (90%)	14 (10%)	0	100	100
31	Ld	56/58 (97%)	52 (93%)	4 (7%)	0	100	100
32	Le	94/96 (98%)	93 (99%)	1 (1%)	0	100	100
33	Lf	107/109 (98%)	104 (97%)	3 (3%)	0	100	100
34	Lg	125/127 (98%)	122 (98%)	3 (2%)	0	100	100
35	Lh	104/106 (98%)	101 (97%)	3 (3%)	0	100	100
36	Li	110/112 (98%)	108 (98%)	2 (2%)	0	100	100
37	Lj	117/119 (98%)	113 (97%)	4 (3%)	0	100	100
38	Lk	97/99 (98%)	91 (94%)	6 (6%)	0	100	100
39	Ll	79/81 (98%)	78 (99%)	1 (1%)	0	100	100
40	Lm	75/77 (97%)	75 (100%)	0	0	100	100
41	Ln	48/50 (96%)	45 (94%)	3 (6%)	0	100	100
42	Lo	50/52 (96%)	48 (96%)	2 (4%)	0	100	100
43	Lp	23/25 (92%)	23 (100%)	0	0	100	100
44	Lq	101/103 (98%)	96 (95%)	5 (5%)	0	100	100
45	Lr	89/91 (98%)	85 (96%)	4 (4%)	0	100	100
49	SA	220/222 (99%)	212 (96%)	8 (4%)	0	100	100
50	SB	204/206 (99%)	189 (93%)	14 (7%)	1 (0%)	24	54
51	SC	90/92 (98%)	81 (90%)	9 (10%)	0	100	100
52	SD	119/121 (98%)	97 (82%)	22 (18%)	0	100	100
53	SE	115/117 (98%)	106 (92%)	9 (8%)	0	100	100
54	SF	139/141 (99%)	129 (93%)	10 (7%)	0	100	100
55	SG	117/125 (94%)	115 (98%)	2 (2%)	0	100	100
56	SH	143/145 (99%)	135 (94%)	8 (6%)	0	100	100
57	SI	141/143 (99%)	135 (96%)	6 (4%)	0	100	100
58	SJ	98/100 (98%)	93 (95%)	5 (5%)	0	100	100
59	SK	80/82 (98%)	72 (90%)	8 (10%)	0	100	100
60	SL	61/63 (97%)	58 (95%)	3 (5%)	0	100	100
61	SM	51/53 (96%)	50 (98%)	1 (2%)	0	100	100
62	SN	71/73 (97%)	55 (78%)	16 (22%)	0	100	100
63	SO	310/312 (99%)	286 (92%)	24 (8%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
64	SP	204/206 (99%)	190 (93%)	14 (7%)	0	100	100
65	SQ	222/232 (96%)	203 (91%)	19 (9%)	0	100	100
66	SR	214/216 (99%)	207 (97%)	7 (3%)	0	100	100
67	SS	256/258 (99%)	234 (91%)	22 (9%)	0	100	100
68	ST	226/228 (99%)	210 (93%)	15 (7%)	1 (0%)	30	59
69	SU	182/184 (99%)	171 (94%)	11 (6%)	0	100	100
70	SV	183/198 (92%)	171 (93%)	12 (7%)	0	100	100
71	SW	182/184 (99%)	169 (93%)	13 (7%)	0	100	100
72	SX	140/142 (99%)	134 (96%)	6 (4%)	0	100	100
73	SY	148/150 (99%)	140 (95%)	8 (5%)	0	100	100
74	SZ	125/127 (98%)	115 (92%)	10 (8%)	0	100	100
75	Sa	85/87 (98%)	78 (92%)	7 (8%)	0	100	100
76	Sb	127/129 (98%)	117 (92%)	10 (8%)	0	100	100
77	Sc	142/144 (99%)	127 (89%)	15 (11%)	0	100	100
78	Sd	132/134 (98%)	126 (96%)	6 (4%)	0	100	100
79	Se	95/97 (98%)	91 (96%)	4 (4%)	0	100	100
80	Sf	79/81 (98%)	76 (96%)	3 (4%)	0	100	100
81	Sg	55/57 (96%)	49 (89%)	6 (11%)	0	100	100
All	All	10914/11099 (98%)	10276 (94%)	636 (6%)	2 (0%)	100	100

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
68	ST	175	ILE
50	SB	162	VAL

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
5	LD	190/193 (98%)	183 (96%)	7 (4%)	30	64
6	LE	318/322 (99%)	305 (96%)	13 (4%)	27	61
7	LF	288/288 (100%)	273 (95%)	15 (5%)	21	52
8	LG	241/243 (99%)	228 (95%)	13 (5%)	20	51
9	LH	139/154 (90%)	130 (94%)	9 (6%)	15	44
10	LI	186/186 (100%)	180 (97%)	6 (3%)	34	68
11	LJ	187/191 (98%)	178 (95%)	9 (5%)	23	55
12	LK	168/171 (98%)	158 (94%)	10 (6%)	17	47
13	LL	185/185 (100%)	173 (94%)	12 (6%)	15	44
14	LM	145/147 (99%)	133 (92%)	12 (8%)	10	32
15	LN	154/154 (100%)	146 (95%)	8 (5%)	21	52
16	LO	107/107 (100%)	100 (94%)	7 (6%)	15	44
17	LP	175/175 (100%)	170 (97%)	5 (3%)	37	71
18	LQ	160/160 (100%)	153 (96%)	7 (4%)	25	59
19	LR	138/145 (95%)	129 (94%)	9 (6%)	15	44
20	LS	150/150 (100%)	145 (97%)	5 (3%)	33	67
21	LT	152/153 (99%)	148 (97%)	4 (3%)	40	73
22	LU	155/155 (100%)	149 (96%)	6 (4%)	28	63
23	LV	135/136 (99%)	131 (97%)	4 (3%)	36	70
24	LW	87/87 (100%)	80 (92%)	7 (8%)	11	34
25	LX	104/104 (100%)	98 (94%)	6 (6%)	18	49
26	LY	54/57 (95%)	53 (98%)	1 (2%)	50	79
27	LZ	104/105 (99%)	99 (95%)	5 (5%)	23	55
28	La	108/108 (100%)	99 (92%)	9 (8%)	10	32
29	Lb	112/115 (97%)	108 (96%)	4 (4%)	31	65
30	Lc	117/118 (99%)	111 (95%)	6 (5%)	21	53
31	Ld	46/46 (100%)	45 (98%)	1 (2%)	45	77
32	Le	81/81 (100%)	75 (93%)	6 (7%)	13	38
33	Lf	92/96 (96%)	84 (91%)	8 (9%)	9	30
34	Lg	108/109 (99%)	105 (97%)	3 (3%)	38	72
35	Lh	90/90 (100%)	86 (96%)	4 (4%)	25	59
36	Li	95/95 (100%)	92 (97%)	3 (3%)	34	68

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
37	Lj	104/104 (100%)	99 (95%)	5 (5%)	23 55
38	Lk	80/81 (99%)	75 (94%)	5 (6%)	16 45
39	Ll	67/67 (100%)	63 (94%)	4 (6%)	17 47
40	Lm	68/68 (100%)	60 (88%)	8 (12%)	5 17
41	Ln	45/45 (100%)	42 (93%)	3 (7%)	15 43
42	Lo	45/47 (96%)	45 (100%)	0	100 100
43	Lp	22/23 (96%)	22 (100%)	0	100 100
44	Lq	87/88 (99%)	83 (95%)	4 (5%)	24 57
45	Lr	71/71 (100%)	70 (99%)	1 (1%)	59 85
49	SA	182/182 (100%)	164 (90%)	18 (10%)	7 24
50	SB	172/173 (99%)	160 (93%)	12 (7%)	14 40
51	SC	77/85 (91%)	72 (94%)	5 (6%)	15 44
52	SD	88/98 (90%)	80 (91%)	8 (9%)	9 28
53	SE	95/98 (97%)	85 (90%)	10 (10%)	6 22
54	SF	117/117 (100%)	111 (95%)	6 (5%)	21 53
55	SG	101/113 (89%)	93 (92%)	8 (8%)	11 34
56	SH	127/128 (99%)	118 (93%)	9 (7%)	13 40
57	SI	115/115 (100%)	103 (90%)	12 (10%)	7 23
58	SJ	93/93 (100%)	88 (95%)	5 (5%)	20 51
59	SK	67/73 (92%)	65 (97%)	2 (3%)	36 70
60	SL	55/56 (98%)	50 (91%)	5 (9%)	9 28
61	SM	47/47 (100%)	43 (92%)	4 (8%)	10 31
62	SN	56/64 (88%)	55 (98%)	1 (2%)	51 80
63	SO	250/257 (97%)	233 (93%)	17 (7%)	14 42
64	SP	170/173 (98%)	162 (95%)	8 (5%)	23 56
65	SQ	200/205 (98%)	184 (92%)	16 (8%)	11 34
66	SR	175/175 (100%)	161 (92%)	14 (8%)	11 34
67	SS	220/220 (100%)	200 (91%)	20 (9%)	9 28
68	ST	189/195 (97%)	180 (95%)	9 (5%)	23 55
69	SU	163/165 (99%)	150 (92%)	13 (8%)	11 34
70	SV	148/159 (93%)	138 (93%)	10 (7%)	14 42

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
71	SW	156/157 (99%)	150 (96%)	6 (4%)	29 64
72	SX	126/127 (99%)	117 (93%)	9 (7%)	13 40
73	SY	127/127 (100%)	120 (94%)	7 (6%)	19 50
74	SZ	90/96 (94%)	86 (96%)	4 (4%)	25 59
75	Sa	71/74 (96%)	65 (92%)	6 (8%)	10 31
76	Sb	110/110 (100%)	106 (96%)	4 (4%)	31 65
77	Sc	119/119 (100%)	116 (98%)	3 (2%)	42 74
78	Sd	102/112 (91%)	87 (85%)	15 (15%)	3 10
79	Se	82/83 (99%)	80 (98%)	2 (2%)	43 75
80	Sf	70/70 (100%)	58 (83%)	12 (17%)	2 7
81	Sg	48/49 (98%)	46 (96%)	2 (4%)	26 60
All	All	9168/9335 (98%)	8632 (94%)	536 (6%)	20 49

All (536) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
5	LD	96	LEU
5	LD	112	ILE
5	LD	113	VAL
5	LD	165	VAL
5	LD	191	LEU
5	LD	243	THR
5	LD	246	LEU
6	LE	28	ARG
6	LE	37	ARG
6	LE	137	TYR
6	LE	144	ILE
6	LE	146	ARG
6	LE	148	LEU
6	LE	158	VAL
6	LE	192	VAL
6	LE	246	LEU
6	LE	304	THR
6	LE	316	GLU
6	LE	335	ILE
6	LE	354	VAL
7	LF	30	ILE
7	LF	99	MET

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Mol	Chain	Res	Type
7	LF	136	LEU
7	LF	155	ASP
7	LF	178	LEU
7	LF	193	LYS
7	LF	194	TYR
7	LF	215	ILE
7	LF	230	VAL
7	LF	259	ASP
7	LF	279	HIS
7	LF	294	GLU
7	LF	310	THR
7	LF	313	LEU
7	LF	333	VAL
8	LG	6	ASP
8	LG	9	SER
8	LG	93	THR
8	LG	111	GLN
8	LG	130	GLU
8	LG	153	THR
8	LG	163	LEU
8	LG	173	VAL
8	LG	195	LEU
8	LG	222	LEU
8	LG	259	LYS
8	LG	280	GLU
8	LG	281	GLU
9	LH	20	LYS
9	LH	25	VAL
9	LH	35	VAL
9	LH	59	GLU
9	LH	91	VAL
9	LH	98	VAL
9	LH	99	GLU
9	LH	111	LEU
9	LH	155	LEU
10	LI	40	LYS
10	LI	62	ILE
10	LI	83	LEU
10	LI	123	THR
10	LI	131	GLU
10	LI	161	VAL
11	LJ	28	HIS

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Mol	Chain	Res	Type
11	LJ	67	ILE
11	LJ	71	VAL
11	LJ	151	VAL
11	LJ	164	VAL
11	LJ	175	VAL
11	LJ	200	LEU
11	LJ	203	VAL
11	LJ	254	ASP
12	LK	16	VAL
12	LK	24	ILE
12	LK	33	THR
12	LK	52	LEU
12	LK	71	VAL
12	LK	89	LYS
12	LK	126	VAL
12	LK	157	ASN
12	LK	172	ILE
12	LK	181	VAL
13	LL	66	GLU
13	LL	103	LEU
13	LL	109	ASP
13	LL	112	GLN
13	LL	123	HIS
13	LL	147	VAL
13	LL	153	ARG
13	LL	180	GLU
13	LL	182	LEU
13	LL	190	VAL
13	LL	206	LEU
13	LL	209	ASN
14	LM	15	GLU
14	LM	17	LEU
14	LM	23	VAL
14	LM	29	ARG
14	LM	32	ARG
14	LM	46	VAL
14	LM	53	THR
14	LM	81	GLU
14	LM	99	THR
14	LM	129	VAL
14	LM	139	THR
14	LM	154	THR

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Mol	Chain	Res	Type
15	LN	5	LYS
15	LN	24	VAL
15	LN	54	LEU
15	LN	57	VAL
15	LN	69	VAL
15	LN	103	ASN
15	LN	138	VAL
15	LN	185	LYS
16	LO	11	ASN
16	LO	15	VAL
16	LO	16	GLU
16	LO	78	THR
16	LO	112	LEU
16	LO	120	VAL
16	LO	121	MET
17	LP	18	VAL
17	LP	60	VAL
17	LP	117	ASN
17	LP	138	GLN
17	LP	167	THR
18	LQ	84[A]	LEU
18	LQ	118[A]	VAL
18	LQ	124[A]	LEU
18	LQ	136[A]	THR
18	LQ	160[A]	ARG
18	LQ	182[A]	ASN
18	LQ	189[A]	ASP
19	LR	9	THR
19	LR	26	PHE
19	LR	41	LEU
19	LR	58	ILE
19	LR	94	LEU
19	LR	119	VAL
19	LR	120	ASN
19	LR	140	GLU
19	LR	147	GLU
20	LS	74	GLU
20	LS	100	THR
20	LS	123	THR
20	LS	129	VAL
20	LS	150	VAL
21	LT	89	LEU

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Mol	Chain	Res	Type
21	LT	119	LEU
21	LT	146	LYS
21	LT	173	ARG
22	LU	8	GLN
22	LU	19	VAL
22	LU	45	LEU
22	LU	48	LEU
22	LU	148	LEU
22	LU	161	LYS
23	LV	25	VAL
23	LV	107	GLU
23	LV	149	GLN
23	LV	160	ILE
24	LW	19	VAL
24	LW	23	THR
24	LW	50	LEU
24	LW	54	VAL
24	LW	76	LEU
24	LW	84	LEU
24	LW	89	LEU
25	LX	56	ASP
25	LX	74	MET
25	LX	98	ASN
25	LX	108	GLU
25	LX	124	ASP
25	LX	137	VAL
26	LY	33	ASN
27	LZ	62	VAL
27	LZ	77	GLU
27	LZ	101	GLU
27	LZ	107	VAL
27	LZ	127	THR
28	La	26	GLN
28	La	39	LEU
28	La	56	VAL
28	La	69	LYS
28	La	70	ILE
28	La	74	TYR
28	La	84	LYS
28	La	88	GLU
28	La	105	VAL
29	Lb	69	LYS

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Mol	Chain	Res	Type
29	Lb	74	VAL
29	Lb	95	VAL
29	Lb	102	GLU
30	Lc	56	VAL
30	Lc	85	ASP
30	Lc	98	THR
30	Lc	105	LEU
30	Lc	123	VAL
30	Lc	145	VAL
31	Ld	21	ILE
32	Le	16	LEU
32	Le	22	LYS
32	Le	24	THR
32	Le	32	LYS
32	Le	48	THR
32	Le	89	VAL
33	Lf	16	LEU
33	Lf	42	LEU
33	Lf	54	GLU
33	Lf	64	VAL
33	Lf	96	VAL
33	Lf	97	LEU
33	Lf	106	THR
33	Lf	109	VAL
34	Lg	81	ASP
34	Lg	83	GLU
34	Lg	111	ARG
35	Lh	37	THR
35	Lh	59	VAL
35	Lh	67	MET
35	Lh	105	SER
36	Li	15	THR
36	Li	57	LEU
36	Li	99	LYS
37	Lj	38	ARG
37	Lj	46	THR
37	Lj	71	LYS
37	Lj	85	THR
37	Lj	119	LYS
38	Lk	43	LEU
38	Lk	46	GLU
38	Lk	47	ILE

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Mol	Chain	Res	Type
38	Lk	57	LEU
38	Lk	88	GLU
39	Ll	25	ARG
39	Ll	54	LYS
39	Ll	57	HIS
39	Ll	75	LYS
40	Lm	7	ASP
40	Lm	8	ILE
40	Lm	20	VAL
40	Lm	22	THR
40	Lm	44	LYS
40	Lm	45	VAL
40	Lm	73	LEU
40	Lm	75	VAL
41	Ln	13	MET
41	Ln	27	ILE
41	Ln	47	THR
44	Lq	2	VAL
44	Lq	7	THR
44	Lq	10	THR
44	Lq	47	GLN
45	Lr	64	VAL
49	SA	4	LEU
49	SA	37	VAL
49	SA	44	THR
49	SA	49	ILE
49	SA	59	LEU
49	SA	69	LEU
49	SA	72	LEU
49	SA	86	LEU
49	SA	89	GLU
49	SA	91	VAL
49	SA	96	LEU
49	SA	109	LEU
49	SA	110	LEU
49	SA	115	ILE
49	SA	120	TYR
49	SA	184	ILE
49	SA	206	VAL
49	SA	209	ILE
50	SB	32	GLU
50	SB	33	VAL

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Mol	Chain	Res	Type
50	SB	42	LEU
50	SB	45	LYS
50	SB	89	ILE
50	SB	98	MET
50	SB	99	MET
50	SB	143	ARG
50	SB	168	VAL
50	SB	175	LEU
50	SB	192	GLU
50	SB	208	SER
51	SC	16	PHE
51	SC	21	VAL
51	SC	40	LEU
51	SC	59	PHE
51	SC	63	TYR
52	SD	66	VAL
52	SD	67	THR
52	SD	84	ASN
52	SD	120	VAL
52	SD	122	VAL
52	SD	132	GLU
52	SD	133	LEU
52	SD	135	MET
53	SE	32	ASP
53	SE	41	VAL
53	SE	61	ARG
53	SE	64	LYS
53	SE	77	ARG
53	SE	79	HIS
53	SE	80	MET
53	SE	93	VAL
53	SE	103	ASN
53	SE	108	ARG
54	SF	19	VAL
54	SF	31	VAL
54	SF	36	ILE
54	SF	54	LEU
54	SF	67	VAL
54	SF	97	VAL
55	SG	4	VAL
55	SG	10	LYS
55	SG	34	LEU

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Mol	Chain	Res	Type
55	SG	37	GLU
55	SG	49	LYS
55	SG	57	LEU
55	SG	88	VAL
55	SG	113	LEU
56	SH	3	LEU
56	SH	15	LEU
56	SH	29	VAL
56	SH	49	LYS
56	SH	85	PHE
56	SH	86	LEU
56	SH	111	ASP
56	SH	113	LEU
56	SH	138	THR
57	SI	27	LYS
57	SI	48	GLN
57	SI	71	VAL
57	SI	84	LYS
57	SI	86	ARG
57	SI	88	VAL
57	SI	94	ILE
57	SI	108	LEU
57	SI	123	ARG
57	SI	131	ASP
57	SI	140	LEU
57	SI	143	ASP
58	SJ	29	THR
58	SJ	62	VAL
58	SJ	70	THR
58	SJ	86	ILE
58	SJ	117	VAL
59	SK	57	TYR
59	SK	67	ASP
60	SL	11	LYS
60	SL	36	THR
60	SL	39	THR
60	SL	48	VAL
60	SL	54	LEU
61	SM	23	VAL
61	SM	30	LEU
61	SM	36	LEU
61	SM	41	GLN

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Mol	Chain	Res	Type
62	SN	105	TYR
63	SO	33	LEU
63	SO	73	LEU
63	SO	99	THR
63	SO	122	ILE
63	SO	130	THR
63	SO	149	ASP
63	SO	168	THR
63	SO	170	ILE
63	SO	186	PHE
63	SO	195	HIS
63	SO	202	LEU
63	SO	232	TYR
63	SO	238	ASP
63	SO	240	VAL
63	SO	260	ILE
63	SO	292	LEU
63	SO	299	GLN
64	SP	24	LEU
64	SP	39	ASN
64	SP	56	LYS
64	SP	57	LEU
64	SP	135	GLU
64	SP	154	GLU
64	SP	158	VAL
64	SP	184	LEU
65	SQ	32	ILE
65	SQ	61	LEU
65	SQ	65	VAL
65	SQ	67	GLU
65	SQ	73	LEU
65	SQ	91	VAL
65	SQ	97	LEU
65	SQ	103	MET
65	SQ	111	ARG
65	SQ	127	VAL
65	SQ	181	LEU
65	SQ	199	ASN
65	SQ	207	LEU
65	SQ	208	GLN
65	SQ	210	ILE
65	SQ	220	GLN

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Mol	Chain	Res	Type
66	SR	39	THR
66	SR	72	LEU
66	SR	86	VAL
66	SR	90	THR
66	SR	102	VAL
66	SR	103	VAL
66	SR	146	THR
66	SR	158	THR
66	SR	187	LEU
66	SR	204	THR
66	SR	207	LEU
66	SR	211	LEU
66	SR	218	ILE
66	SR	242	ILE
67	SS	40	GLU
67	SS	45	ILE
67	SS	60	GLU
67	SS	70	VAL
67	SS	90	ILE
67	SS	95	THR
67	SS	101	LEU
67	SS	108	ARG
67	SS	111	VAL
67	SS	136	VAL
67	SS	140	VAL
67	SS	162	ILE
67	SS	164	LEU
67	SS	180	LEU
67	SS	188	ASN
67	SS	196	VAL
67	SS	210	ILE
67	SS	214	LEU
67	SS	215	ASP
67	SS	224	ASN
68	ST	24	ILE
68	ST	67	VAL
68	ST	78	THR
68	ST	106	LEU
68	ST	112	VAL
68	ST	114	VAL
68	ST	118	GLU
68	ST	119	GLN

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Mol	Chain	Res	Type
68	ST	121	LEU
69	SU	14	THR
69	SU	33	GLU
69	SU	41	LEU
69	SU	50	ASP
69	SU	58	LEU
69	SU	81	LEU
69	SU	84	LYS
69	SU	93	LEU
69	SU	104	ARG
69	SU	108	GLN
69	SU	109	VAL
69	SU	157	LYS
69	SU	159	VAL
70	SV	18	ARG
70	SV	36	THR
70	SV	58	LEU
70	SV	59	ARG
70	SV	60	ILE
70	SV	76	THR
70	SV	82	VAL
70	SV	160	PHE
70	SV	172	ARG
70	SV	187	GLU
71	SW	99	LEU
71	SW	106	GLU
71	SW	107	ARG
71	SW	118	LEU
71	SW	148	VAL
71	SW	164	PHE
72	SX	6	THR
72	SX	25	VAL
72	SX	63	LEU
72	SX	75	VAL
72	SX	78	THR
72	SX	111	VAL
72	SX	129	ARG
72	SX	131	ILE
72	SX	140	VAL
73	SY	11	ILE
73	SY	46	THR
73	SY	66	ILE

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Mol	Chain	Res	Type
73	SY	69	ASN
73	SY	106	ARG
73	SY	121	ARG
73	SY	150	VAL
74	SZ	26	THR
74	SZ	38	THR
74	SZ	118	VAL
74	SZ	121	VAL
75	Sa	5	LYS
75	Sa	50	TYR
75	Sa	59	VAL
75	Sa	72	LEU
75	Sa	78	LEU
75	Sa	79	LEU
76	Sb	93	LEU
76	Sb	104	LEU
76	Sb	117	ARG
76	Sb	122	SER
77	Sc	16	ARG
77	Sc	107	PHE
77	Sc	120	VAL
78	Sd	5	VAL
78	Sd	12	VAL
78	Sd	13	ILE
78	Sd	22	GLN
78	Sd	25	VAL
78	Sd	27	VAL
78	Sd	35	VAL
78	Sd	39	GLU
78	Sd	41	ARG
78	Sd	42	GLU
78	Sd	60	PHE
78	Sd	86	GLU
78	Sd	91	LEU
78	Sd	94	TYR
78	Sd	118	ILE
79	Se	45	VAL
79	Se	64	LEU
80	Sf	3	LEU
80	Sf	24	LEU
80	Sf	25	VAL
80	Sf	33	LEU

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Mol	Chain	Res	Type
80	Sf	34	ASP
80	Sf	45	THR
80	Sf	46	VAL
80	Sf	51	GLN
80	Sf	65	THR
80	Sf	67	THR
80	Sf	75	GLU
80	Sf	77	THR
81	Sg	29	LYS
81	Sg	47	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (84) such sidechains are listed below:

Mol	Chain	Res	Type
5	LD	205	ASN
6	LE	182	GLN
6	LE	184	ASN
6	LE	198	HIS
6	LE	293	ASN
7	LF	18	ASN
7	LF	59	GLN
7	LF	234	ASN
8	LG	17	GLN
8	LG	32	GLN
9	LH	4	GLN
9	LH	61	ASN
9	LH	167	ASN
10	LI	93	ASN
10	LI	194	HIS
10	LI	200	ASN
10	LI	225	GLN
11	LJ	33	ASN
12	LK	96	HIS
12	LK	162	GLN
12	LK	163	GLN
13	LL	73	ASN
14	LM	150	ASN
16	LO	105	GLN
17	LP	15	GLN
17	LP	123	GLN
17	LP	182	ASN
19	LR	116	HIS

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Mol	Chain	Res	Type
19	LR	120	ASN
20	LS	9	GLN
21	LT	68	GLN
21	LT	75	HIS
22	LU	88	HIS
23	LV	5	HIS
23	LV	134	GLN
25	LX	7	GLN
28	La	4	GLN
29	Lb	122	HIS
31	Ld	12	GLN
32	Le	75	ASN
37	Lj	104	GLN
39	Ll	13	ASN
40	Lm	10	GLN
40	Lm	32	ASN
45	Lr	32	GLN
50	SB	34	GLN
50	SB	44	ASN
50	SB	95	ASN
50	SB	104	ASN
50	SB	128	ASN
50	SB	186	ASN
50	SB	200	ASN
51	SC	39	ASN
51	SC	58	GLN
53	SE	15	HIS
53	SE	103	ASN
54	SF	74	HIS
54	SF	83	GLN
55	SG	101	ASN
56	SH	99	HIS
59	SK	95	HIS
60	SL	43	ASN
61	SM	53	ASN
62	SN	95	HIS
63	SO	66	HIS
63	SO	187	GLN
64	SP	21	ASN
64	SP	23	HIS
65	SQ	92	GLN
66	SR	209	ASN

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Mol	Chain	Res	Type
66	SR	233	GLN
67	SS	231	GLN
68	ST	189	HIS
69	SU	174	ASN
70	SV	52	ASN
71	SW	139	GLN
72	SX	22	ASN
73	SY	78	ASN
75	Sa	81	ASN
76	Sb	24	GLN
78	Sd	29	HIS
78	Sd	34	ASN
80	Sf	51	GLN
81	Sg	57	ASN

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	Bb	75/76 (98%)	28 (37%)	0
2	LA	3159/3396 (93%)	749 (23%)	30 (0%)
3	LB	120/121 (99%)	19 (15%)	1 (0%)
4	LC	157/158 (99%)	31 (19%)	1 (0%)
46	mR	0/11	-	-
47	Cc	76/77 (98%)	21 (27%)	0
48	S2	1768/1800 (98%)	689 (38%)	20 (1%)
All	All	5355/5639 (94%)	1537 (28%)	52 (0%)

All (1537) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	Bb	5	A
1	Bb	8	U
1	Bb	9	A
1	Bb	11	C
1	Bb	15	G
1	Bb	16	U
1	Bb	17	U
1	Bb	18	G
1	Bb	19	G
1	Bb	20	G
1	Bb	22	G

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Mol	Chain	Res	Type
1	Bb	39	U
1	Bb	41	U
1	Bb	42	G
1	Bb	46	G
1	Bb	47	U
1	Bb	48	C
1	Bb	49	C
1	Bb	51	G
1	Bb	53	G
1	Bb	59	U
1	Bb	60	C
1	Bb	61	C
1	Bb	62	A
1	Bb	65	G
1	Bb	70	C
1	Bb	73	A
1	Bb	75	C
2	LA	6	A
2	LA	14	U
2	LA	22	G
2	LA	26	A
2	LA	34	A
2	LA	40	A
2	LA	43	A
2	LA	49	A
2	LA	59	G
2	LA	60	A
2	LA	65	A
2	LA	66	A
2	LA	81	C
2	LA	92	G
2	LA	108	A
2	LA	109	A
2	LA	110	G
2	LA	111	C
2	LA	116	A
2	LA	117	U
2	LA	122	A
2	LA	131	C
2	LA	133	U
2	LA	136	G
2	LA	139	G

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Mol	Chain	Res	Type
2	LA	156	G
2	LA	157	A
2	LA	159	A
2	LA	160	G
2	LA	163	C
2	LA	164	A
2	LA	165	A
2	LA	166	C
2	LA	167	U
2	LA	169	U
2	LA	170	G
2	LA	176	G
2	LA	177	U
2	LA	178	U
2	LA	182	U
2	LA	189	G
2	LA	190	U
2	LA	191	U
2	LA	199	A
2	LA	200	C
2	LA	206	G
2	LA	210	U
2	LA	213	A
2	LA	218	G
2	LA	219	A
2	LA	220	G
2	LA	231	G
2	LA	235	A
2	LA	236	G
2	LA	240	U
2	LA	241	G
2	LA	242	C
2	LA	243	G
2	LA	246	U
2	LA	247	C
2	LA	249	U
2	LA	251	G
2	LA	253	A
2	LA	254	A
2	LA	255	A
2	LA	256	G
2	LA	258	G

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Mol	Chain	Res	Type
2	LA	259	C
2	LA	260	C
2	LA	261	U
2	LA	262	U
2	LA	269	G
2	LA	270	U
2	LA	286	U
2	LA	295	A
2	LA	297	G
2	LA	298	U
2	LA	305	U
2	LA	308	A
2	LA	311	C
2	LA	315	C
2	LA	323	A
2	LA	329	U
2	LA	337	G
2	LA	350	C
2	LA	368	G
2	LA	370	U
2	LA	376	G
2	LA	381	U
2	LA	398	A
2	LA	399	A
2	LA	402	A
2	LA	403	C
2	LA	406	G
2	LA	412	G
2	LA	418	A
2	LA	421	G
2	LA	422	A
2	LA	433	A
2	LA	438	A
2	LA	520	U
2	LA	521	A
2	LA	523	A
2	LA	524	U
2	LA	544	C
2	LA	545	U
2	LA	547	G
2	LA	548	G
2	LA	549	U

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Mol	Chain	Res	Type
2	LA	550	A
2	LA	551	A
2	LA	552	G
2	LA	553	U
2	LA	557	A
2	LA	558	U
2	LA	559	A
2	LA	560	G
2	LA	562	C
2	LA	568	G
2	LA	569	A
2	LA	572	A
2	LA	573	C
2	LA	578	A
2	LA	579	G
2	LA	589	A
2	LA	592	A
2	LA	593	C
2	LA	594	U
2	LA	600	G
2	LA	601	U
2	LA	602	A
2	LA	603	A
2	LA	604	G
2	LA	609	G
2	LA	610	G
2	LA	611	A
2	LA	620	U
2	LA	621	A
2	LA	622	A
2	LA	637	C
2	LA	649	A
2	LA	653	A
2	LA	661	G
2	LA	667	C
2	LA	677	A
2	LA	690	A
2	LA	691	A
2	LA	693	A
2	LA	705	A
2	LA	711	A
2	LA	712	G

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Mol	Chain	Res	Type
2	LA	716	A
2	LA	719	U
2	LA	727	G
2	LA	732	C
2	LA	736	A
2	LA	758	C
2	LA	760	G
2	LA	761	A
2	LA	764	U
2	LA	765	C
2	LA	766	U
2	LA	767	U
2	LA	771	A
2	LA	774	G
2	LA	776	U
2	LA	777	U
2	LA	779	G
2	LA	780	A
2	LA	781	G
2	LA	785	G
2	LA	798	G
2	LA	806	A
2	LA	808	A
2	LA	817	A
2	LA	830	A
2	LA	836	A
2	LA	849	C
2	LA	857	G
2	LA	861	C
2	LA	874	U
2	LA	879	U
2	LA	880	G
2	LA	890	C
2	LA	896	A
2	LA	897	U
2	LA	907	G
2	LA	914	A
2	LA	916	G
2	LA	917	A
2	LA	921	A
2	LA	923	C
2	LA	924	G

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Mol	Chain	Res	Type
2	LA	925	A
2	LA	927	C
2	LA	937	G
2	LA	944	C
2	LA	959	C
2	LA	960	U
2	LA	962	A
2	LA	964	G
2	LA	974	G
2	LA	981	U
2	LA	982	C
2	LA	1015	U
2	LA	1016	C
2	LA	1017	C
2	LA	1018	G
2	LA	1021	G
2	LA	1023	C
2	LA	1024	G
2	LA	1026	A
2	LA	1028	U
2	LA	1029	G
2	LA	1030	A
2	LA	1032	C
2	LA	1035	G
2	LA	1038	C
2	LA	1041	U
2	LA	1042	U
2	LA	1043	C
2	LA	1047	A
2	LA	1049	C
2	LA	1064	A
2	LA	1066	G
2	LA	1069	C
2	LA	1070	U
2	LA	1071	U
2	LA	1072	G
2	LA	1081	U
2	LA	1090	G
2	LA	1093	A
2	LA	1097	G
2	LA	1098	A
2	LA	1103	A

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Mol	Chain	Res	Type
2	LA	1104	G
2	LA	1108	U
2	LA	1117	G
2	LA	1131	G
2	LA	1136	A
2	LA	1137	C
2	LA	1138	U
2	LA	1143	A
2	LA	1144	U
2	LA	1153	A
2	LA	1159	A
2	LA	1177	G
2	LA	1178	G
2	LA	1179	A
2	LA	1180	A
2	LA	1181	U
2	LA	1192	C
2	LA	1193	A
2	LA	1196	C
2	LA	1198	C
2	LA	1201	C
2	LA	1202	A
2	LA	1208	U
2	LA	1218	U
2	LA	1221	A
2	LA	1223	A
2	LA	1228	C
2	LA	1230	G
2	LA	1236	G
2	LA	1239	C
2	LA	1241	U
2	LA	1242	G
2	LA	1245	A
2	LA	1246	G
2	LA	1247	U
2	LA	1249	G
2	LA	1251	A
2	LA	1252	A
2	LA	1254	C
2	LA	1255	C
2	LA	1256	G
2	LA	1258	U

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Mol	Chain	Res	Type
2	LA	1260	A
2	LA	1261	G
2	LA	1262	G
2	LA	1263	A
2	LA	1264	G
2	LA	1265	U
2	LA	1268	G
2	LA	1269	U
2	LA	1270	A
2	LA	1272	C
2	LA	1274	A
2	LA	1275	C
2	LA	1278	A
2	LA	1279	C
2	LA	1284	C
2	LA	1285	G
2	LA	1286	A
2	LA	1295	G
2	LA	1307	G
2	LA	1308	A
2	LA	1309	U
2	LA	1325	U
2	LA	1330	A
2	LA	1331	U
2	LA	1344	G
2	LA	1348	U
2	LA	1350	A
2	LA	1352	A
2	LA	1353	U
2	LA	1354	G
2	LA	1355	A
2	LA	1356	U
2	LA	1357	G
2	LA	1386	A
2	LA	1392	G
2	LA	1396	C
2	LA	1399	A
2	LA	1400	G
2	LA	1414	G
2	LA	1417	G
2	LA	1418	A
2	LA	1419	A

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Mol	Chain	Res	Type
2	LA	1431	G
2	LA	1434	G
2	LA	1437	C
2	LA	1446	A
2	LA	1450	G
2	LA	1452	A
2	LA	1469	C
2	LA	1481	A
2	LA	1482	A
2	LA	1483	G
2	LA	1488	G
2	LA	1501	U
2	LA	1503	A
2	LA	1508	C
2	LA	1511	U
2	LA	1533	U
2	LA	1536	G
2	LA	1539	A
2	LA	1555	U
2	LA	1556	C
2	LA	1557	A
2	LA	1560	G
2	LA	1562	C
2	LA	1563	C
2	LA	1567	U
2	LA	1568	U
2	LA	1569	U
2	LA	1570	U
2	LA	1571	A
2	LA	1573	G
2	LA	1575	A
2	LA	1576	G
2	LA	1578	C
2	LA	1579	C
2	LA	1581	C
2	LA	1582	C
2	LA	1583	A
2	LA	1587	A
2	LA	1589	A
2	LA	1593	A
2	LA	1605	A
2	LA	1619	A

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Mol	Chain	Res	Type
2	LA	1625	A
2	LA	1626	U
2	LA	1627	U
2	LA	1628	C
2	LA	1629	U
2	LA	1639	C
2	LA	1642	A
2	LA	1643	A
2	LA	1645	U
2	LA	1647	A
2	LA	1657	C
2	LA	1680	G
2	LA	1683	A
2	LA	1684	U
2	LA	1688	U
2	LA	1694	U
2	LA	1713	G
2	LA	1714	A
2	LA	1715	A
2	LA	1721	U
2	LA	1724	U
2	LA	1725	C
2	LA	1736	G
2	LA	1741	A
2	LA	1742	U
2	LA	1750	A
2	LA	1751	G
2	LA	1759	C
2	LA	1760	A
2	LA	1761	C
2	LA	1765	U
2	LA	1766	G
2	LA	1770	G
2	LA	1775	G
2	LA	1777	U
2	LA	1778	G
2	LA	1780	G
2	LA	1788	C
2	LA	1796	G
2	LA	1797	A
2	LA	1798	A
2	LA	1810	A

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Mol	Chain	Res	Type
2	LA	1813	A
2	LA	1814	A
2	LA	1815	U
2	LA	1816	A
2	LA	1821	U
2	LA	1839	A
2	LA	1840	U
2	LA	1842	A
2	LA	1846	C
2	LA	1849	C
2	LA	1858	A
2	LA	1866	C
2	LA	1878	G
2	LA	1880	U
2	LA	1881	A
2	LA	1893	A
2	LA	1906	G
2	LA	1907	C
2	LA	1926	C
2	LA	1948	G
2	LA	1952	G
2	LA	1953	G
2	LA	1954	G
2	LA	1955	U
2	LA	2094	C
2	LA	2095	G
2	LA	2097	U
2	LA	2098	C
2	LA	2099	A
2	LA	2100	A
2	LA	2101	C
2	LA	2102	U
2	LA	2107	A
2	LA	2110	G
2	LA	2111	G
2	LA	2112	U
2	LA	2113	A
2	LA	2121	G
2	LA	2122	G
2	LA	2131	A
2	LA	2140	U
2	LA	2142	A

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Mol	Chain	Res	Type
2	LA	2144	A
2	LA	2146	C
2	LA	2158	A
2	LA	2166	A
2	LA	2169	G
2	LA	2188	A
2	LA	2189	U
2	LA	2194	G
2	LA	2197	C
2	LA	2205	U
2	LA	2209	U
2	LA	2210	G
2	LA	2219	A
2	LA	2220	A
2	LA	2221	G
2	LA	2222	A
2	LA	2223	A
2	LA	2224	A
2	LA	2232	A
2	LA	2244	A
2	LA	2254	U
2	LA	2255	A
2	LA	2256	A
2	LA	2257	C
2	LA	2258	U
2	LA	2259	A
2	LA	2260	U
2	LA	2261	G
2	LA	2269	U
2	LA	2270	A
2	LA	2272	G
2	LA	2273	G
2	LA	2274	U
2	LA	2276	G
2	LA	2281	A
2	LA	2285	C
2	LA	2305	G
2	LA	2307	G
2	LA	2309	A
2	LA	2310	U
2	LA	2313	A
2	LA	2314	U

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Mol	Chain	Res	Type
2	LA	2315	G
2	LA	2334	U
2	LA	2335	G
2	LA	2373	A
2	LA	2374	C
2	LA	2375	G
2	LA	2385	G
2	LA	2388	U
2	LA	2393	G
2	LA	2397	A
2	LA	2402	A
2	LA	2403	G
2	LA	2411	U
2	LA	2435	G
2	LA	2439	A
2	LA	2440	G
2	LA	2443	A
2	LA	2444	C
2	LA	2445	A
2	LA	2446	U
2	LA	2447	A
2	LA	2448	G
2	LA	2449	A
2	LA	2450	G
2	LA	2451	G
2	LA	2493	U
2	LA	2494	A
2	LA	2496	C
2	LA	2498	U
2	LA	2501	U
2	LA	2502	A
2	LA	2503	G
2	LA	2504	U
2	LA	2514	U
2	LA	2515	A
2	LA	2522	G
2	LA	2524	A
2	LA	2536	A
2	LA	2537	U
2	LA	2538	U
2	LA	2540	A
2	LA	2541	U

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Mol	Chain	Res	Type
2	LA	2543	U
2	LA	2545	C
2	LA	2548	C
2	LA	2549	G
2	LA	2554	A
2	LA	2555	G
2	LA	2558	U
2	LA	2559	U
2	LA	2561	A
2	LA	2569	A
2	LA	2570	U
2	LA	2571	U
2	LA	2572	C
2	LA	2573	G
2	LA	2580	A
2	LA	2585	G
2	LA	2593	A
2	LA	2606	G
2	LA	2607	G
2	LA	2610	G
2	LA	2614	G
2	LA	2648	G
2	LA	2651	G
2	LA	2652	U
2	LA	2656	A
2	LA	2657	A
2	LA	2666	C
2	LA	2674	A
2	LA	2676	A
2	LA	2677	G
2	LA	2678	A
2	LA	2680	A
2	LA	2681	U
2	LA	2682	C
2	LA	2683	U
2	LA	2686	A
2	LA	2688	U
2	LA	2689	A
2	LA	2691	A
2	LA	2696	A
2	LA	2700	G
2	LA	2704	A

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Mol	Chain	Res	Type
2	LA	2714	G
2	LA	2727	A
2	LA	2728	G
2	LA	2729	U
2	LA	2737	C
2	LA	2749	G
2	LA	2753	G
2	LA	2755	C
2	LA	2762	A
2	LA	2772	C
2	LA	2773	C
2	LA	2777	G
2	LA	2778	G
2	LA	2779	A
2	LA	2780	A
2	LA	2781	U
2	LA	2796	G
2	LA	2800	G
2	LA	2801	A
2	LA	2802	A
2	LA	2803	A
2	LA	2810	C
2	LA	2817	A
2	LA	2828	G
2	LA	2836	C
2	LA	2842	U
2	LA	2845	A
2	LA	2853	A
2	LA	2856	G
2	LA	2867	C
2	LA	2871	G
2	LA	2872	A
2	LA	2876	C
2	LA	2887	A
2	LA	2888	U
2	LA	2889	C
2	LA	2896	A
2	LA	2898	G
2	LA	2911	A
2	LA	2916	U
2	LA	2917	G
2	LA	2918	G

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Mol	Chain	Res	Type
2	LA	2923	U
2	LA	2927	C
2	LA	2935	U
2	LA	2936	A
2	LA	2942	C
2	LA	2945	G
2	LA	2947	G
2	LA	2948	C
2	LA	2955	U
2	LA	2971	A
2	LA	2972	G
2	LA	2978	U
2	LA	2983	C
2	LA	2990	G
2	LA	2992	U
2	LA	2996	U
2	LA	2997	G
2	LA	3011	A
2	LA	3012	A
2	LA	3015	G
2	LA	3017	A
2	LA	3021	A
2	LA	3022	G
2	LA	3027	A
2	LA	3030	G
2	LA	3032	A
2	LA	3034	C
2	LA	3048	A
2	LA	3049	A
2	LA	3058	U
2	LA	3071	U
2	LA	3072	C
2	LA	3078	U
2	LA	3080	G
2	LA	3083	G
2	LA	3086	A
2	LA	3092	C
2	LA	3093	C
2	LA	3101	G
2	LA	3109	G
2	LA	3113	A
2	LA	3115	C

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Mol	Chain	Res	Type
2	LA	3122	A
2	LA	3129	A
2	LA	3131	U
2	LA	3141	A
2	LA	3142	A
2	LA	3143	C
2	LA	3151	U
2	LA	3152	U
2	LA	3153	U
2	LA	3155	U
2	LA	3156	U
2	LA	3157	U
2	LA	3158	G
2	LA	3161	C
2	LA	3162	C
2	LA	3165	A
2	LA	3166	C
2	LA	3168	A
2	LA	3169	U
2	LA	3170	A
2	LA	3172	A
2	LA	3173	G
2	LA	3174	A
2	LA	3179	U
2	LA	3180	A
2	LA	3181	C
2	LA	3182	G
2	LA	3183	A
2	LA	3187	A
2	LA	3195	U
2	LA	3198	U
2	LA	3199	G
2	LA	3207	U
2	LA	3209	A
2	LA	3210	A
2	LA	3213	A
2	LA	3214	U
2	LA	3217	C
2	LA	3218	A
2	LA	3219	G
2	LA	3226	A
2	LA	3227	A

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Mol	Chain	Res	Type
2	LA	3229	G
2	LA	3239	G
2	LA	3243	A
2	LA	3247	G
2	LA	3251	U
2	LA	3259	U
2	LA	3260	G
2	LA	3268	A
2	LA	3269	U
2	LA	3270	U
2	LA	3273	A
2	LA	3276	G
2	LA	3279	A
2	LA	3280	U
2	LA	3281	U
2	LA	3282	U
2	LA	3285	C
2	LA	3286	G
2	LA	3288	G
2	LA	3289	G
2	LA	3290	G
2	LA	3294	A
2	LA	3295	A
2	LA	3296	A
2	LA	3297	U
2	LA	3303	G
2	LA	3304	U
2	LA	3307	A
2	LA	3313	U
2	LA	3316	A
2	LA	3317	U
2	LA	3319	U
2	LA	3336	A
2	LA	3341	U
2	LA	3345	G
2	LA	3347	A
2	LA	3351	U
2	LA	3352	U
2	LA	3353	G
2	LA	3354	U
2	LA	3355	U
2	LA	3356	G

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Mol	Chain	Res	Type
2	LA	3357	U
2	LA	3360	C
2	LA	3369	G
2	LA	3378	C
2	LA	3379	C
2	LA	3381	U
2	LA	3382	U
2	LA	3383	G
2	LA	3386	G
2	LA	3395	G
3	LB	33	U
3	LB	51	A
3	LB	52	G
3	LB	53	U
3	LB	54	U
3	LB	55	A
3	LB	65	G
3	LB	68	C
3	LB	73	C
3	LB	74	C
3	LB	76	A
3	LB	102	A
3	LB	105	C
3	LB	106	U
3	LB	112	G
3	LB	113	C
3	LB	115	G
3	LB	117	A
3	LB	121	U
4	LC	7	U
4	LC	17	A
4	LC	23	U
4	LC	34	U
4	LC	35	C
4	LC	38	U
4	LC	39	G
4	LC	52	A
4	LC	54	A
4	LC	55	U
4	LC	59	A
4	LC	60	U
4	LC	62	C

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Mol	Chain	Res	Type
4	LC	63	G
4	LC	81	U
4	LC	82	U
4	LC	84	C
4	LC	86	U
4	LC	88	A
4	LC	90	U
4	LC	95	G
4	LC	100	U
4	LC	102	U
4	LC	104	A
4	LC	106	C
4	LC	111	A
4	LC	113	U
4	LC	125	U
4	LC	126	A
4	LC	127	U
4	LC	151	C
47	Cc	4	G
47	Cc	5	G
47	Cc	8	U
47	Cc	13	C
47	Cc	17	C
47	Cc	18	C
47	Cc	19	G
47	Cc	20	G
47	Cc	21	U
47	Cc	22	A
47	Cc	23	G
47	Cc	47	G
47	Cc	48	U
47	Cc	49	C
47	Cc	54	G
47	Cc	55	U
47	Cc	59	A
47	Cc	68	C
47	Cc	70	C
47	Cc	71	G
47	Cc	77	A
48	S2	3	U
48	S2	4	C
48	S2	9	U

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Mol	Chain	Res	Type
48	S2	10	G
48	S2	14	C
48	S2	15	U
48	S2	25	C
48	S2	26	A
48	S2	34	G
48	S2	42	G
48	S2	43	A
48	S2	45	U
48	S2	47	A
48	S2	56	U
48	S2	57	G
48	S2	61	A
48	S2	63	G
48	S2	65	A
48	S2	66	U
48	S2	68	A
48	S2	69	G
48	S2	71	A
48	S2	73	U
48	S2	74	U
48	S2	75	U
48	S2	76	A
48	S2	77	U
48	S2	80	A
48	S2	81	G
48	S2	84	A
48	S2	85	A
48	S2	86	A
48	S2	88	U
48	S2	89	G
48	S2	100	A
48	S2	104	A
48	S2	114	C
48	S2	116	U
48	S2	125	U
48	S2	127	G
48	S2	129	U
48	S2	131	C
48	S2	132	U
48	S2	133	U
48	S2	134	U

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Mol	Chain	Res	Type
48	S2	135	A
48	S2	136	C
48	S2	138	A
48	S2	140	A
48	S2	141	U
48	S2	147	A
48	S2	148	A
48	S2	150	U
48	S2	151	G
48	S2	152	U
48	S2	153	G
48	S2	154	G
48	S2	155	U
48	S2	156	A
48	S2	161	U
48	S2	168	A
48	S2	171	A
48	S2	175	G
48	S2	176	C
48	S2	177	U
48	S2	178	U
48	S2	180	A
48	S2	182	A
48	S2	183	U
48	S2	185	U
48	S2	191	C
48	S2	192	U
48	S2	194	U
48	S2	195	G
48	S2	198	A
48	S2	199	G
48	S2	200	A
48	S2	201	G
48	S2	204	G
48	S2	208	U
48	S2	209	U
48	S2	211	U
48	S2	212	U
48	S2	214	G
48	S2	215	A
48	S2	216	U
48	S2	218	A

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Mol	Chain	Res	Type
48	S2	219	A
48	S2	221	A
48	S2	223	U
48	S2	225	A
48	S2	227	U
48	S2	230	C
48	S2	231	U
48	S2	233	C
48	S2	234	G
48	S2	235	G
48	S2	236	A
48	S2	239	C
48	S2	240	U
48	S2	241	U
48	S2	242	U
48	S2	244	A
48	S2	248	U
48	S2	249	U
48	S2	253	A
48	S2	255	U
48	S2	256	A
48	S2	258	C
48	S2	260	U
48	S2	261	U
48	S2	262	U
48	S2	264	G
48	S2	265	A
48	S2	266	A
48	S2	270	C
48	S2	271	A
48	S2	272	U
48	S2	273	G
48	S2	276	C
48	S2	277	U
48	S2	280	U
48	S2	281	G
48	S2	290	G
48	S2	291	G
48	S2	293	U
48	S2	296	U
48	S2	297	U
48	S2	299	A

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Mol	Chain	Res	Type
48	S2	301	A
48	S2	304	U
48	S2	305	C
48	S2	313	U
48	S2	314	C
48	S2	316	A
48	S2	319	U
48	S2	320	U
48	S2	322	G
48	S2	324	U
48	S2	325	G
48	S2	331	A
48	S2	333	A
48	S2	337	G
48	S2	338	C
48	S2	339	C
48	S2	343	C
48	S2	345	U
48	S2	352	A
48	S2	359	A
48	S2	360	A
48	S2	361	C
48	S2	365	G
48	S2	366	A
48	S2	367	A
48	S2	368	U
48	S2	370	A
48	S2	371	G
48	S2	373	G
48	S2	380	U
48	S2	388	G
48	S2	400	A
48	S2	401	A
48	S2	402	C
48	S2	404	G
48	S2	408	C
48	S2	414	C
48	S2	416	A
48	S2	417	A
48	S2	418	G
48	S2	419	G
48	S2	423	G

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Mol	Chain	Res	Type
48	S2	424	C
48	S2	425	A
48	S2	434	G
48	S2	437	A
48	S2	439	U
48	S2	441	A
48	S2	444	C
48	S2	445	A
48	S2	447	U
48	S2	451	A
48	S2	452	A
48	S2	454	U
48	S2	455	C
48	S2	460	A
48	S2	469	C
48	S2	473	A
48	S2	475	A
48	S2	477	A
48	S2	481	A
48	S2	485	A
48	S2	486	G
48	S2	487	G
48	S2	489	C
48	S2	494	U
48	S2	495	C
48	S2	496	G
48	S2	498	G
48	S2	500	C
48	S2	501	U
48	S2	502	U
48	S2	506	A
48	S2	509	G
48	S2	511	A
48	S2	512	A
48	S2	518	A
48	S2	519	C
48	S2	520	A
48	S2	523	G
48	S2	524	U
48	S2	525	A
48	S2	527	A
48	S2	529	A

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Mol	Chain	Res	Type
48	S2	534	A
48	S2	537	G
48	S2	538	A
48	S2	539	G
48	S2	541	A
48	S2	542	A
48	S2	543	C
48	S2	544	A
48	S2	550	A
48	S2	555	A
48	S2	558	U
48	S2	559	C
48	S2	562	G
48	S2	565	C
48	S2	566	C
48	S2	567	A
48	S2	568	G
48	S2	578	U
48	S2	579	A
48	S2	580	A
48	S2	585	A
48	S2	587	C
48	S2	589	C
48	S2	590	C
48	S2	591	A
48	S2	594	A
48	S2	606	A
48	S2	610	G
48	S2	611	U
48	S2	619	A
48	S2	620	A
48	S2	623	A
48	S2	624	G
48	S2	635	A
48	S2	639	U
48	S2	640	U
48	S2	643	G
48	S2	644	C
48	S2	649	U
48	S2	650	U
48	S2	652	G
48	S2	653	C

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Mol	Chain	Res	Type
48	S2	654	C
48	S2	655	G
48	S2	658	C
48	S2	677	G
48	S2	679	U
48	S2	680	U
48	S2	682	C
48	S2	683	C
48	S2	685	A
48	S2	687	G
48	S2	689	G
48	S2	690	G
48	S2	694	U
48	S2	695	U
48	S2	696	C
48	S2	697	C
48	S2	698	U
48	S2	699	U
48	S2	700	C
48	S2	704	C
48	S2	705	U
48	S2	706	A
48	S2	709	C
48	S2	711	U
48	S2	713	A
48	S2	714	G
48	S2	727	U
48	S2	729	G
48	S2	730	G
48	S2	732	G
48	S2	740	A
48	S2	741	C
48	S2	742	U
48	S2	743	U
48	S2	744	U
48	S2	751	G
48	S2	752	A
48	S2	753	A
48	S2	754	A
48	S2	755	A
48	S2	758	U
48	S2	759	U

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Mol	Chain	Res	Type
48	S2	760	A
48	S2	761	G
48	S2	763	G
48	S2	765	G
48	S2	767	U
48	S2	768	C
48	S2	771	A
48	S2	772	G
48	S2	774	A
48	S2	775	G
48	S2	780	A
48	S2	782	U
48	S2	783	G
48	S2	789	A
48	S2	790	U
48	S2	792	U
48	S2	798	C
48	S2	807	A
48	S2	808	U
48	S2	809	A
48	S2	810	G
48	S2	812	A
48	S2	813	U
48	S2	814	A
48	S2	815	G
48	S2	816	G
48	S2	818	C
48	S2	820	U
48	S2	821	U
48	S2	823	G
48	S2	826	U
48	S2	827	C
48	S2	828	U
48	S2	829	A
48	S2	830	U
48	S2	832	U
48	S2	834	G
48	S2	836	U
48	S2	837	G
48	S2	839	U
48	S2	841	U
48	S2	845	G

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Mol	Chain	Res	Type
48	S2	848	C
48	S2	850	A
48	S2	851	U
48	S2	852	C
48	S2	854	U
48	S2	857	U
48	S2	858	G
48	S2	859	A
48	S2	863	A
48	S2	864	U
48	S2	865	A
48	S2	873	U
48	S2	876	G
48	S2	892	A
48	S2	894	U
48	S2	896	U
48	S2	905	A
48	S2	907	A
48	S2	908	U
48	S2	909	U
48	S2	913	G
48	S2	914	G
48	S2	919	A
48	S2	921	U
48	S2	933	A
48	S2	934	C
48	S2	935	U
48	S2	942	G
48	S2	945	U
48	S2	960	U
48	S2	966	A
48	S2	973	A
48	S2	984	G
48	S2	988	A
48	S2	992	A
48	S2	993	A
48	S2	1004	U
48	S2	1005	A
48	S2	1012	U
48	S2	1018	U
48	S2	1024	U
48	S2	1025	A

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Mol	Chain	Res	Type
48	S2	1026	A
48	S2	1028	C
48	S2	1032	G
48	S2	1039	A
48	S2	1043	A
48	S2	1049	U
48	S2	1052	U
48	S2	1053	G
48	S2	1055	U
48	S2	1056	U
48	S2	1057	U
48	S2	1058	U
48	S2	1059	U
48	S2	1060	U
48	S2	1061	A
48	S2	1062	A
48	S2	1063	U
48	S2	1064	G
48	S2	1065	A
48	S2	1069	A
48	S2	1070	C
48	S2	1071	U
48	S2	1076	A
48	S2	1080	U
48	S2	1082	C
48	S2	1091	A
48	S2	1092	A
48	S2	1096	C
48	S2	1098	U
48	S2	1099	U
48	S2	1100	G
48	S2	1109	G
48	S2	1111	G
48	S2	1138	A
48	S2	1143	A
48	S2	1144	U
48	S2	1145	U
48	S2	1150	G
48	S2	1158	C
48	S2	1160	A
48	S2	1162	C
48	S2	1163	A

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Mol	Chain	Res	Type
48	S2	1170	G
48	S2	1175	U
48	S2	1176	G
48	S2	1179	G
48	S2	1182	U
48	S2	1185	U
48	S2	1186	U
48	S2	1192	C
48	S2	1194	A
48	S2	1195	C
48	S2	1196	A
48	S2	1199	G
48	S2	1200	G
48	S2	1202	A
48	S2	1203	A
48	S2	1204	A
48	S2	1205	C
48	S2	1209	C
48	S2	1212	G
48	S2	1213	G
48	S2	1217	A
48	S2	1219	A
48	S2	1220	C
48	S2	1221	A
48	S2	1222	C
48	S2	1227	A
48	S2	1229	G
48	S2	1231	U
48	S2	1237	G
48	S2	1238	A
48	S2	1239	U
48	S2	1243	G
48	S2	1244	A
48	S2	1245	G
48	S2	1246	C
48	S2	1248	C
48	S2	1249	U
48	S2	1250	U
48	S2	1251	U
48	S2	1254	U
48	S2	1255	G
48	S2	1257	U

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Mol	Chain	Res	Type
48	S2	1258	U
48	S2	1259	U
48	S2	1260	U
48	S2	1261	G
48	S2	1263	G
48	S2	1265	G
48	S2	1270	G
48	S2	1273	G
48	S2	1275	A
48	S2	1281	G
48	S2	1284	C
48	S2	1285	U
48	S2	1295	G
48	S2	1307	U
48	S2	1310	U
48	S2	1314	U
48	S2	1315	U
48	S2	1316	G
48	S2	1321	A
48	S2	1322	A
48	S2	1325	A
48	S2	1337	A
48	S2	1338	C
48	S2	1340	U
48	S2	1341	A
48	S2	1343	U
48	S2	1344	A
48	S2	1345	A
48	S2	1346	A
48	S2	1348	A
48	S2	1349	G
48	S2	1351	G
48	S2	1352	G
48	S2	1353	U
48	S2	1354	G
48	S2	1355	C
48	S2	1359	C
48	S2	1360	A
48	S2	1362	U
48	S2	1363	U
48	S2	1367	G
48	S2	1368	G

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Mol	Chain	Res	Type
48	S2	1371	A
48	S2	1372	U
48	S2	1373	C
48	S2	1379	C
48	S2	1382	A
48	S2	1383	G
48	S2	1384	A
48	S2	1385	G
48	S2	1390	U
48	S2	1391	A
48	S2	1392	U
48	S2	1398	U
48	S2	1399	C
48	S2	1400	A
48	S2	1401	A
48	S2	1402	G
48	S2	1406	A
48	S2	1409	G
48	S2	1412	G
48	S2	1413	U
48	S2	1414	U
48	S2	1422	A
48	S2	1423	U
48	S2	1424	A
48	S2	1427	A
48	S2	1428	G
48	S2	1431	C
48	S2	1432	U
48	S2	1433	G
48	S2	1434	U
48	S2	1435	G
48	S2	1436	A
48	S2	1443	U
48	S2	1444	A
48	S2	1445	G
48	S2	1450	U
48	S2	1451	C
48	S2	1453	G
48	S2	1456	C
48	S2	1457	C
48	S2	1458	G
48	S2	1459	C

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Mol	Chain	Res	Type
48	S2	1460	A
48	S2	1465	C
48	S2	1466	G
48	S2	1469	A
48	S2	1471	A
48	S2	1472	C
48	S2	1473	U
48	S2	1474	G
48	S2	1477	G
48	S2	1481	C
48	S2	1482	C
48	S2	1483	A
48	S2	1484	G
48	S2	1485	C
48	S2	1486	G
48	S2	1487	A
48	S2	1489	U
48	S2	1491	U
48	S2	1492	A
48	S2	1494	C
48	S2	1496	U
48	S2	1497	U
48	S2	1500	C
48	S2	1501	C
48	S2	1502	G
48	S2	1504	G
48	S2	1505	A
48	S2	1506	G
48	S2	1507	G
48	S2	1509	C
48	S2	1510	U
48	S2	1512	G
48	S2	1514	U
48	S2	1516	A
48	S2	1517	U
48	S2	1518	C
48	S2	1521	G
48	S2	1522	U
48	S2	1523	G
48	S2	1527	C
48	S2	1535	U
48	S2	1537	C

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Mol	Chain	Res	Type
48	S2	1539	G
48	S2	1541	G
48	S2	1542	G
48	S2	1543	A
48	S2	1547	A
48	S2	1549	C
48	S2	1550	A
48	S2	1555	A
48	S2	1556	A
48	S2	1557	U
48	S2	1558	U
48	S2	1559	A
48	S2	1564	U
48	S2	1565	C
48	S2	1566	U
48	S2	1569	A
48	S2	1572	G
48	S2	1573	A
48	S2	1574	G
48	S2	1582	U
48	S2	1583	A
48	S2	1584	G
48	S2	1586	A
48	S2	1590	G
48	S2	1593	A
48	S2	1601	G
48	S2	1610	G
48	S2	1611	A
48	S2	1612	U
48	S2	1614	A
48	S2	1615	C
48	S2	1618	C
48	S2	1622	G
48	S2	1623	C
48	S2	1634	C
48	S2	1635	A
48	S2	1636	C
48	S2	1657	U
48	S2	1658	G
48	S2	1662	G
48	S2	1667	A
48	S2	1672	G

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Mol	Chain	Res	Type
48	S2	1677	C
48	S2	1678	A
48	S2	1680	G
48	S2	1684	U
48	S2	1685	G
48	S2	1687	U
48	S2	1688	U
48	S2	1689	A
48	S2	1690	G
48	S2	1691	A
48	S2	1693	A
48	S2	1695	G
48	S2	1696	G
48	S2	1697	G
48	S2	1698	G
48	S2	1699	G
48	S2	1700	C
48	S2	1702	A
48	S2	1703	C
48	S2	1704	U
48	S2	1705	C
48	S2	1706	C
48	S2	1707	A
48	S2	1708	U
48	S2	1710	U
48	S2	1711	C
48	S2	1717	G
48	S2	1719	A
48	S2	1720	G
48	S2	1721	A
48	S2	1722	A
48	S2	1723	U
48	S2	1724	U
48	S2	1727	G
48	S2	1731	A
48	S2	1734	U
48	S2	1737	G
48	S2	1738	U
48	S2	1740	A
48	S2	1741	U
48	S2	1742	U
48	S2	1755	A

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Mol	Chain	Res	Type
48	S2	1760	G
48	S2	1762	A
48	S2	1766	A
48	S2	1767	G
48	S2	1769	U
48	S2	1780	G
48	S2	1782	A
48	S2	1783	C
48	S2	1792	G
48	S2	1793	G
48	S2	1794	A
48	S2	1796	C
48	S2	1797	A
48	S2	1799	U

All (52) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
2	LA	260	C
2	LA	916	G
2	LA	1107	C
2	LA	1197	A
2	LA	1235	U
2	LA	1238	C
2	LA	1271	A
2	LA	1307	G
2	LA	1343	A
2	LA	1416	C
2	LA	1683	A
2	LA	2096	A
2	LA	2112	U
2	LA	2220	A
2	LA	2254	U
2	LA	2280	A
2	LA	2284	C
2	LA	2444	C
2	LA	2445	A
2	LA	2447	A
2	LA	2448	G
2	LA	2497	U
2	LA	2780	A
2	LA	3021	A

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Mol	Chain	Res	Type
2	LA	3071	U
2	LA	3121	U
2	LA	3168	A
2	LA	3228	C
2	LA	3269	U
2	LA	3350	C
3	LB	116	C
4	LC	85	G
48	S2	139	C
48	S2	330	G
48	S2	387	A
48	S2	400	A
48	S2	474	A
48	S2	511	A
48	S2	541	A
48	S2	549	G
48	S2	566	C
48	S2	609	U
48	S2	639	U
48	S2	740	A
48	S2	829	A
48	S2	1191	U
48	S2	1226	A
48	S2	1253	U
48	S2	1256	A
48	S2	1274	C
48	S2	1382	A
48	S2	1471	A

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

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

5.5 Carbohydrates

There are no oligosaccharides in this entry.

5.6 Ligand geometry

There are no ligands in this entry.

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

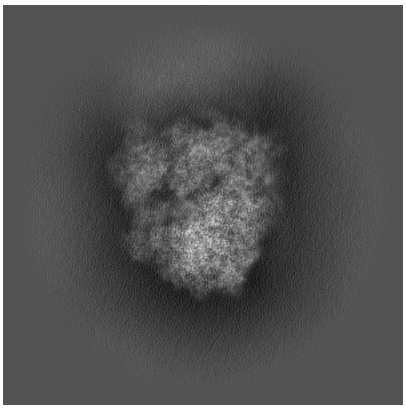
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-68777. These allow visual inspection of the internal detail of the map and identification of artifacts.

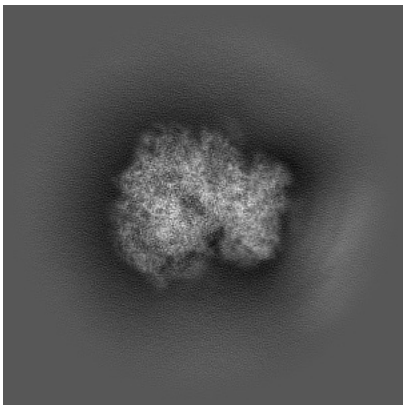
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

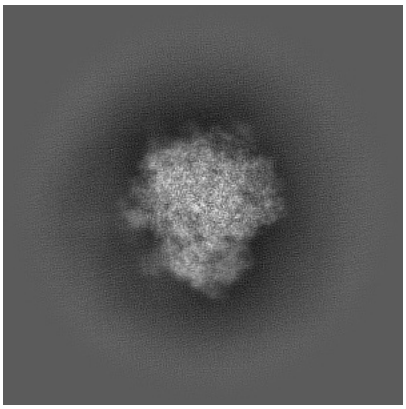
6.1.1 Primary map



X

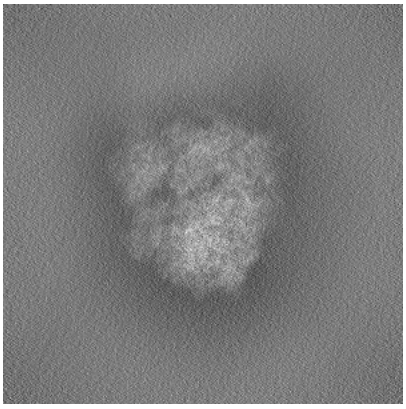


Y

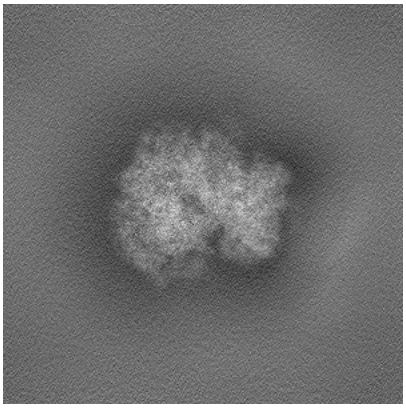


Z

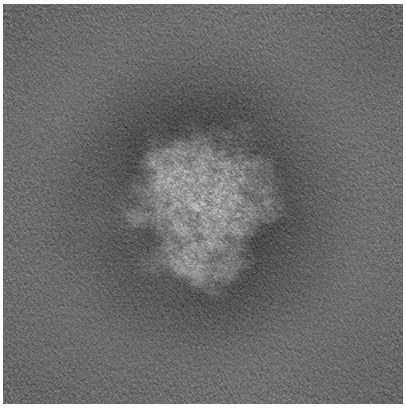
6.1.2 Raw map



X



Y

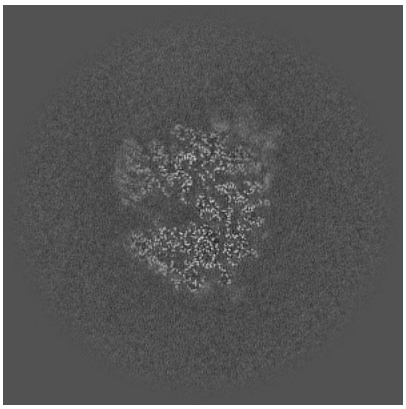


Z

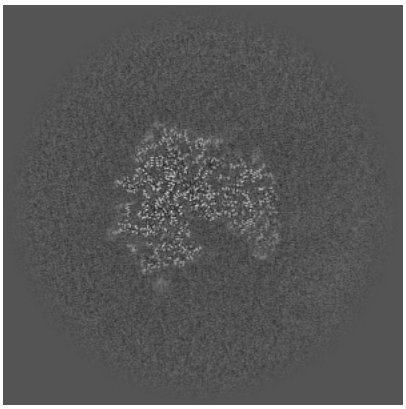
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

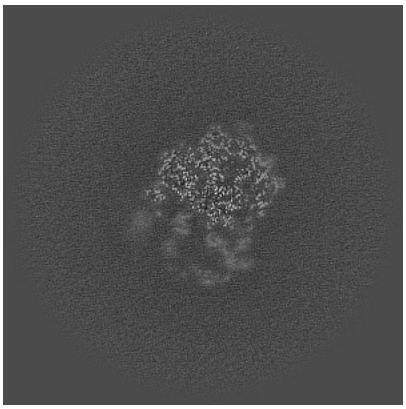
6.2.1 Primary map



X Index: 300

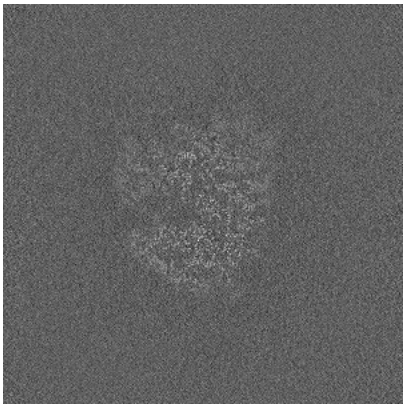


Y Index: 300

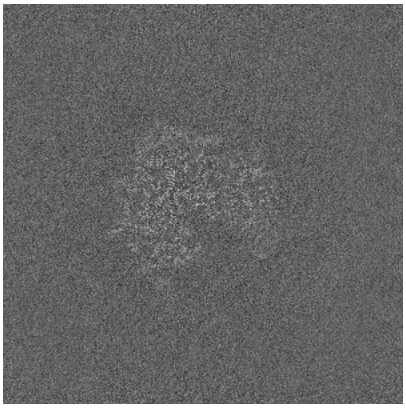


Z Index: 300

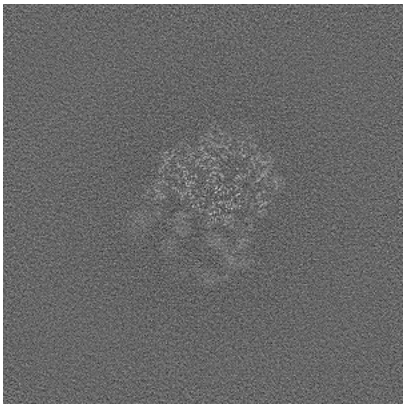
6.2.2 Raw map



X Index: 300



Y Index: 300

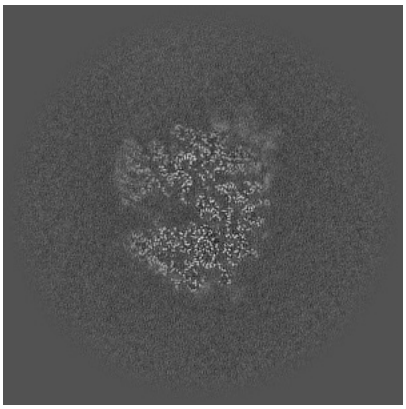


Z Index: 300

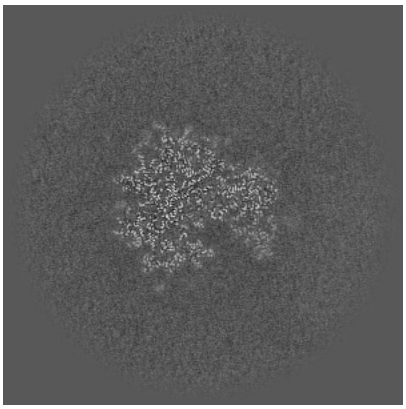
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

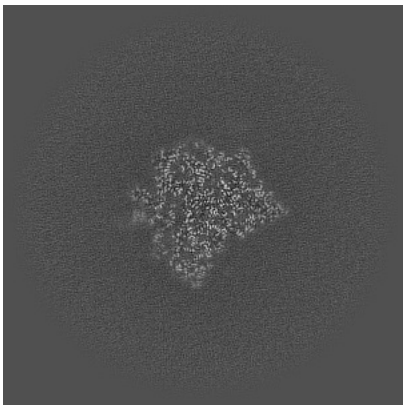
6.3.1 Primary map



X Index: 300

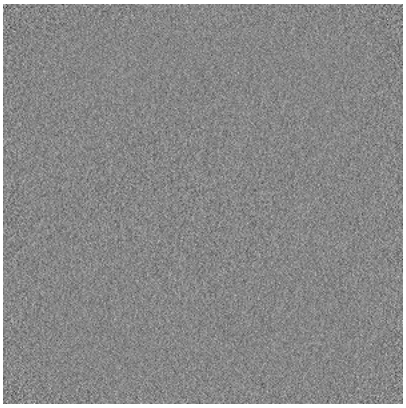


Y Index: 306

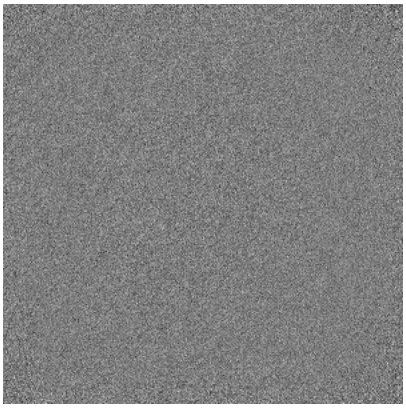


Z Index: 254

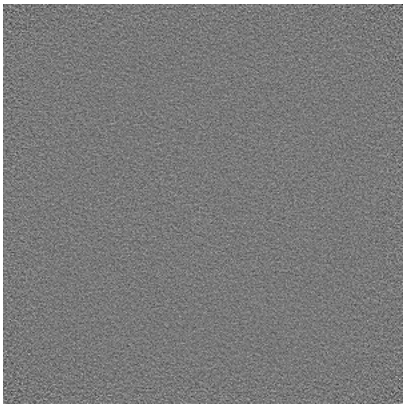
6.3.2 Raw map



X Index: 0



Y Index: 0

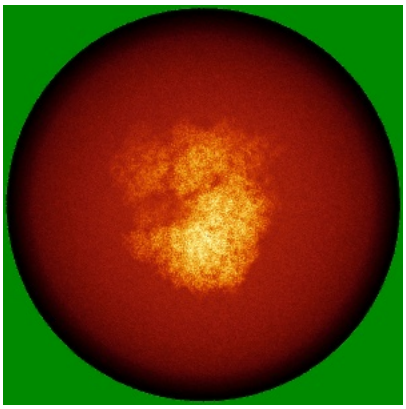


Z Index: 0

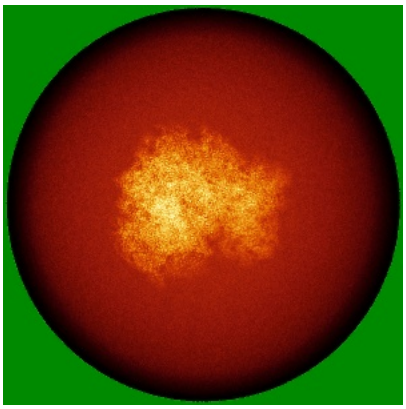
The images above show the largest variance slices of the map in three orthogonal directions.

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

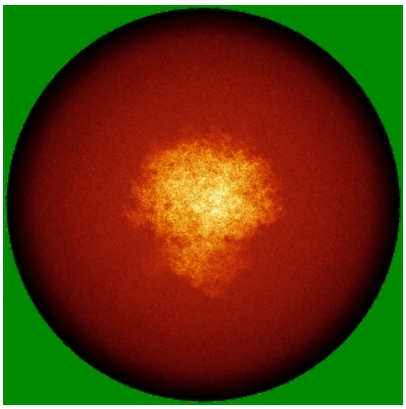
6.4.1 Primary map



X

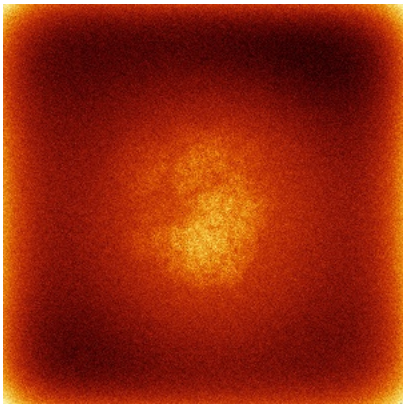


Y

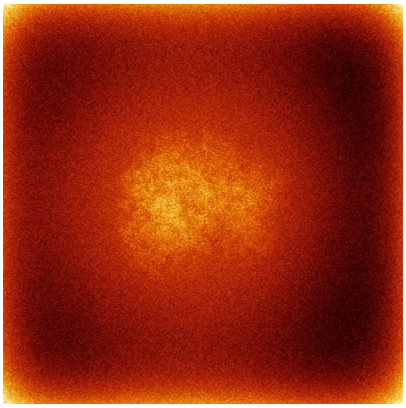


Z

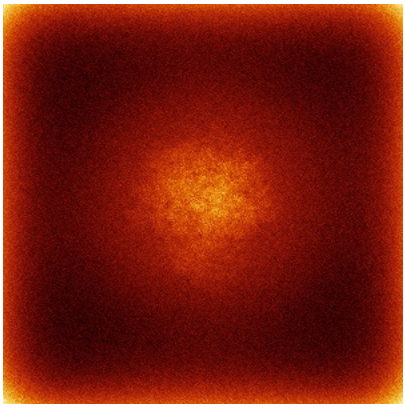
6.4.2 Raw map



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)

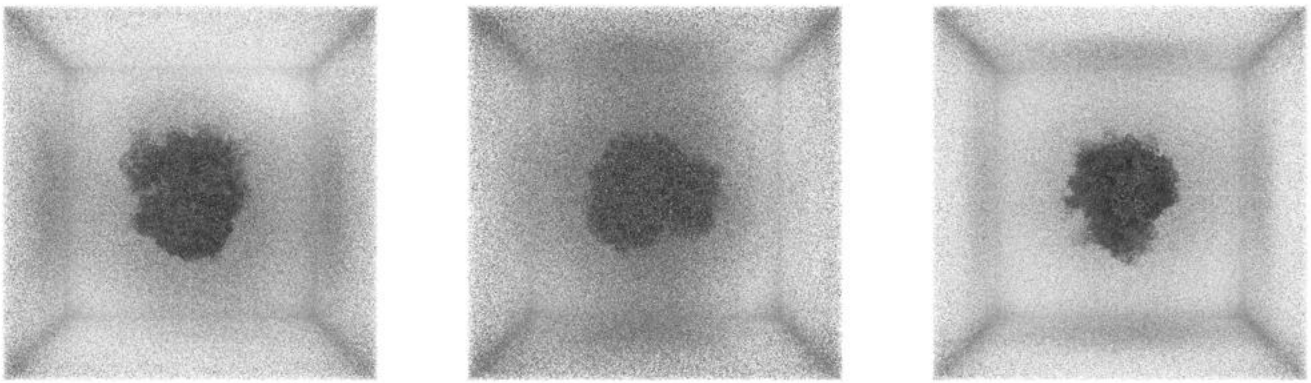
6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.16. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X Y Z

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

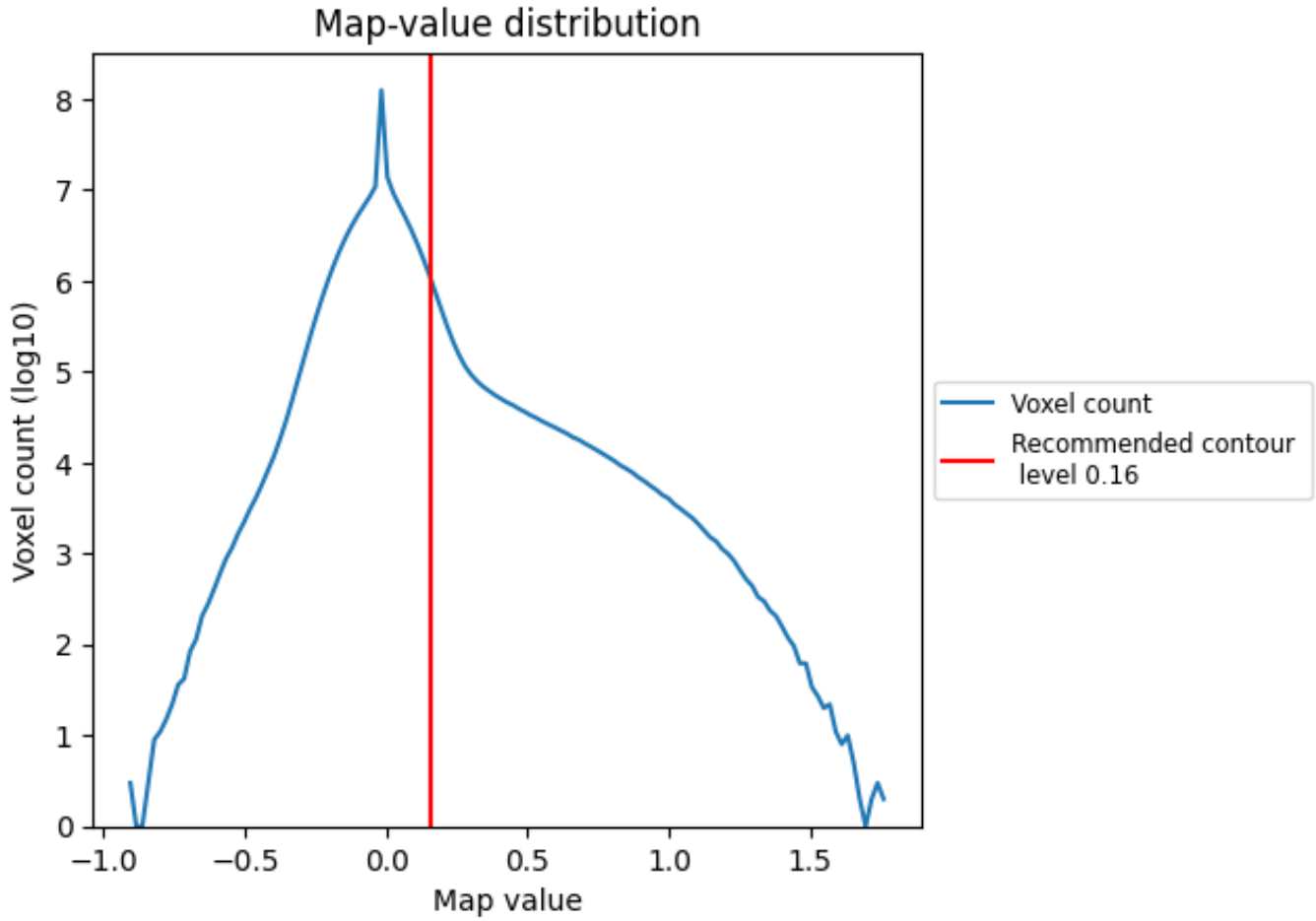
6.6 Mask visualisation (i)

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

7 Map analysis

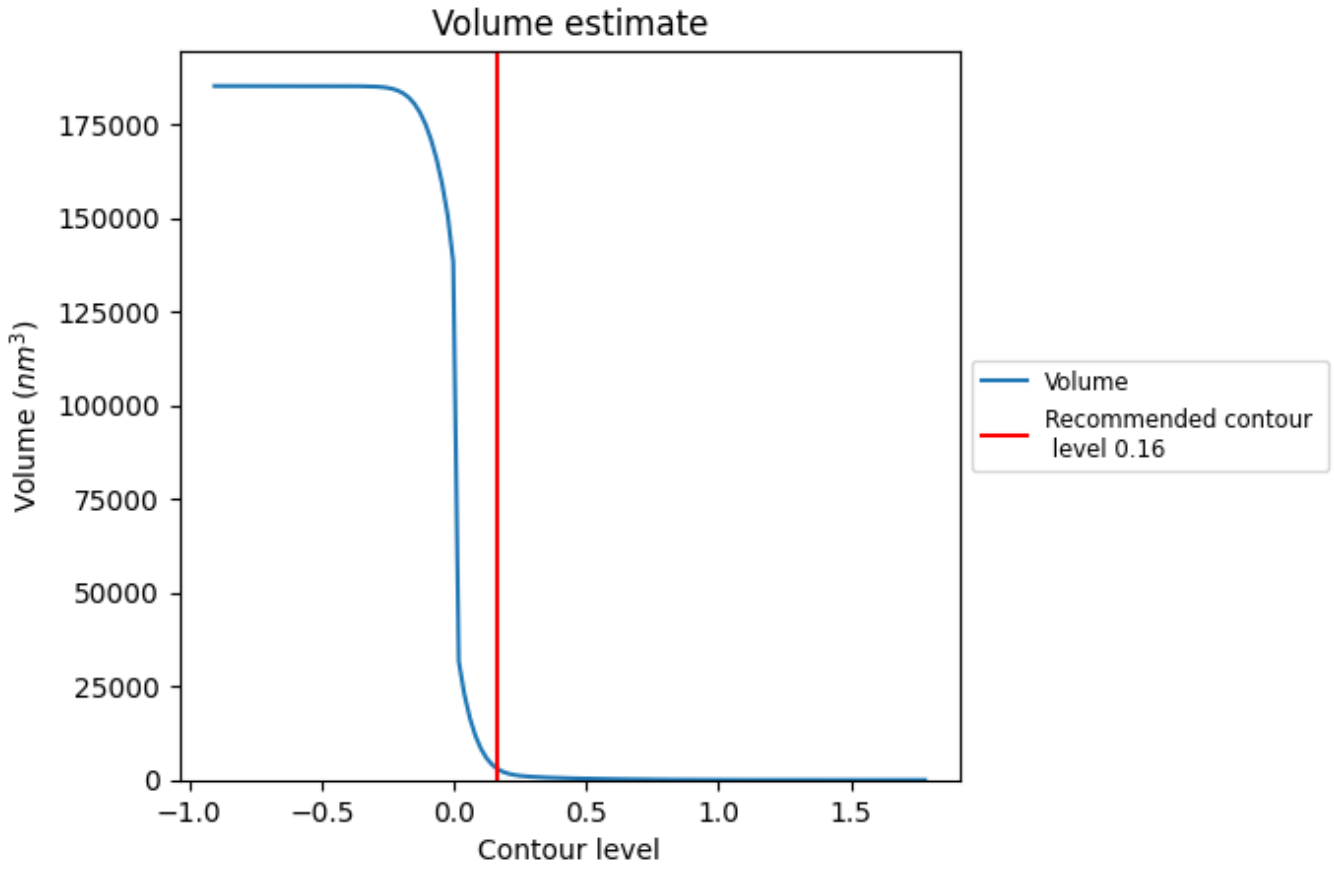
This section contains the results of statistical analysis of the map.

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.

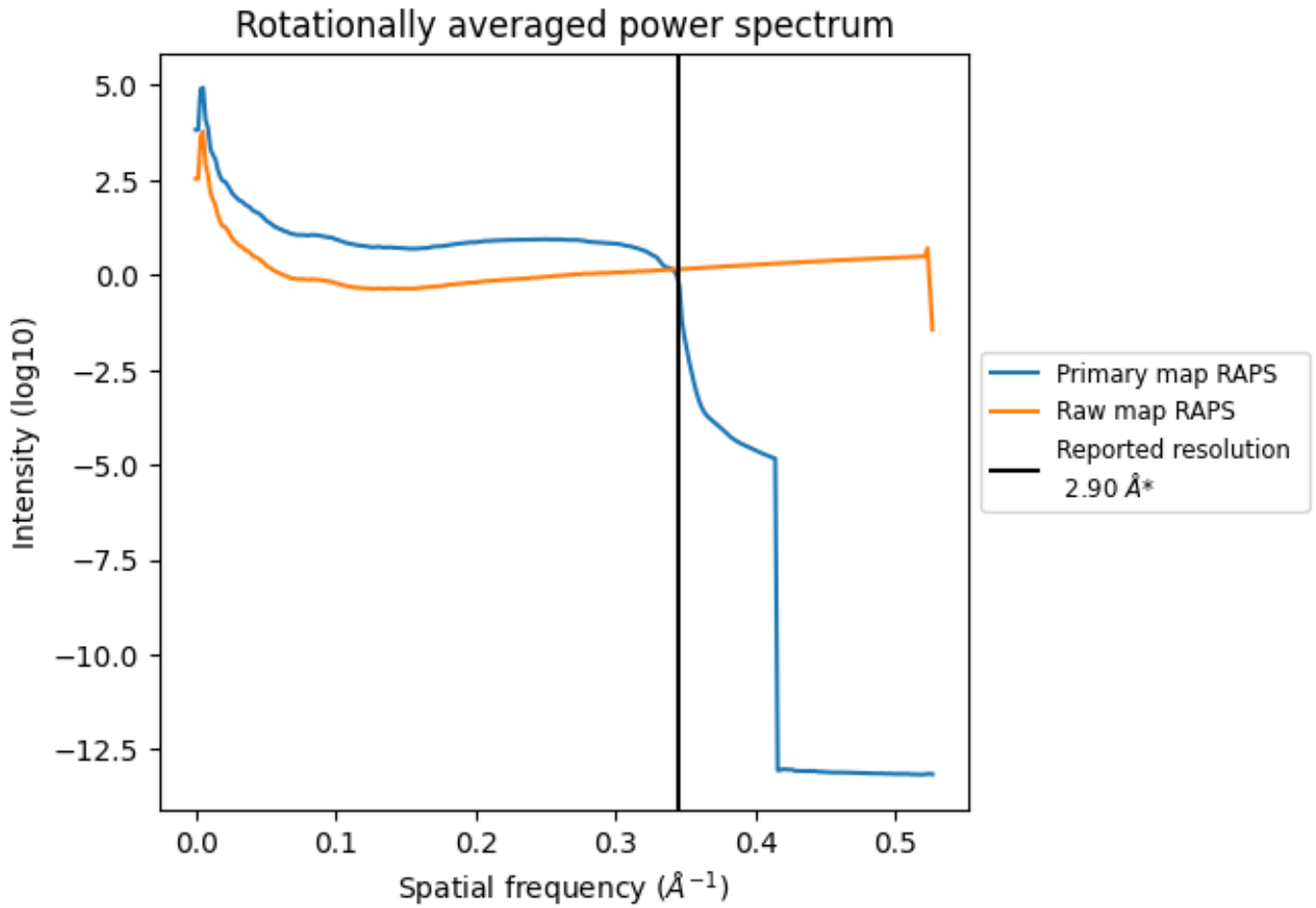
7.2 Volume estimate



The volume at the recommended contour level is 3207 nm^3; this corresponds to an approximate mass of 2897 kDa.

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

7.3 Rotationally averaged power spectrum (i)

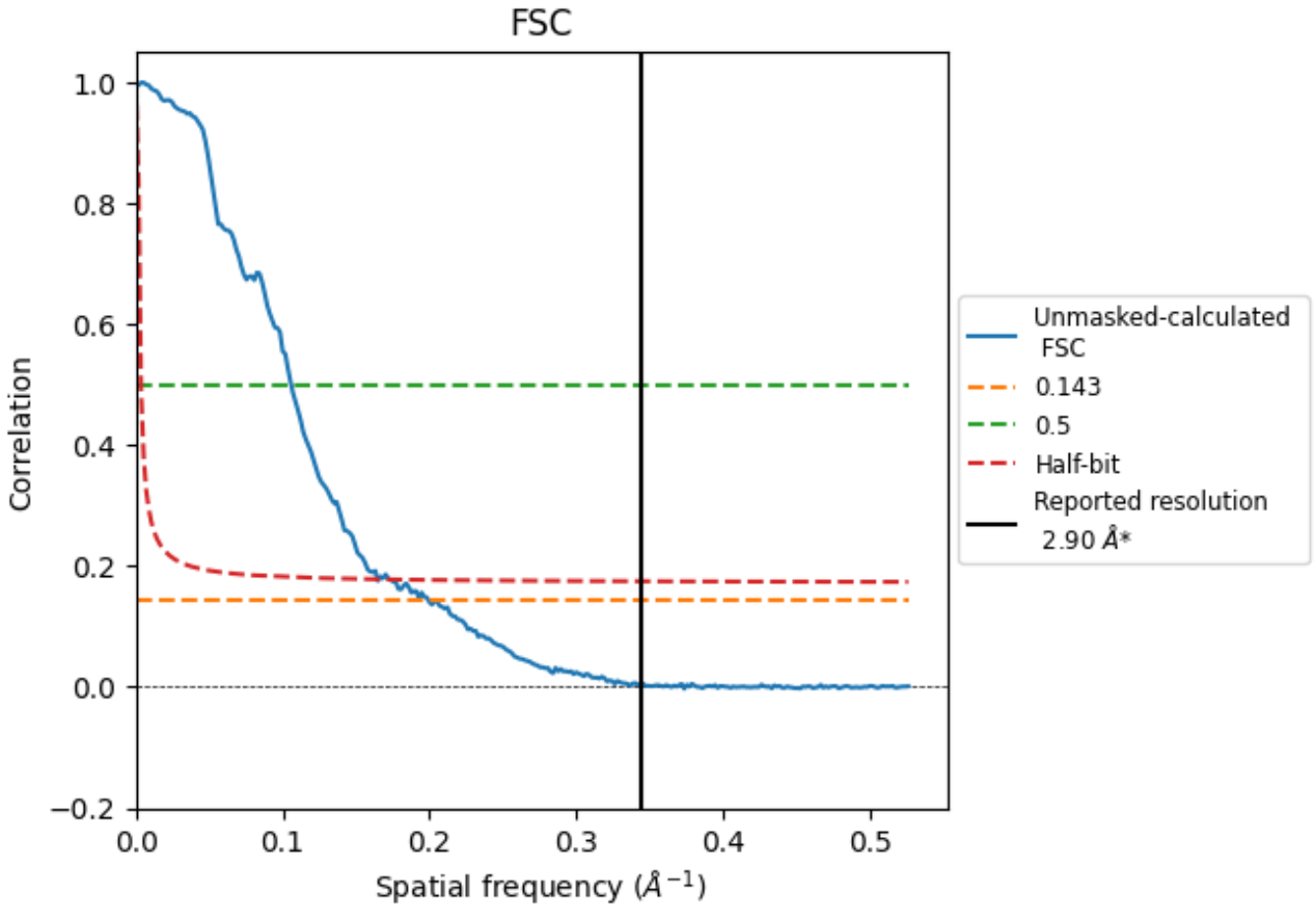


*Reported resolution corresponds to spatial frequency of 0.345 $Å^{-1}$

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 0.345 Å^{-1}

8.2 Resolution estimates (i)

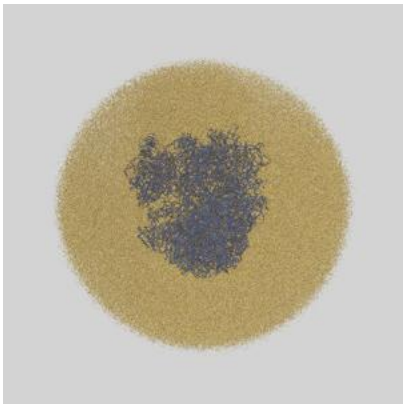
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.90	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	5.02	9.46	6.08

*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 5.02 differs from the reported value 2.9 by more than 10 %

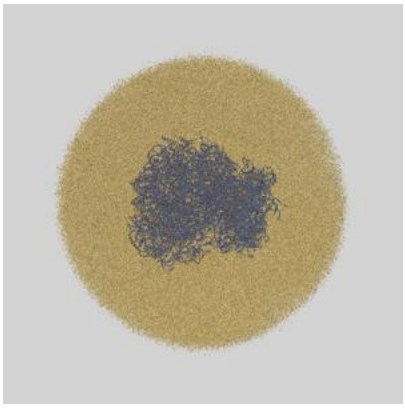
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-68777 and PDB model 22YN. Per-residue inclusion information can be found in section 3 on page 19.

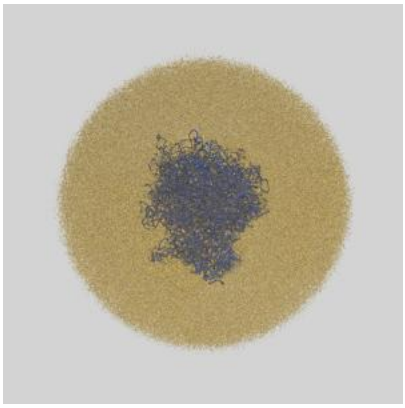
9.1 Map-model overlay



X



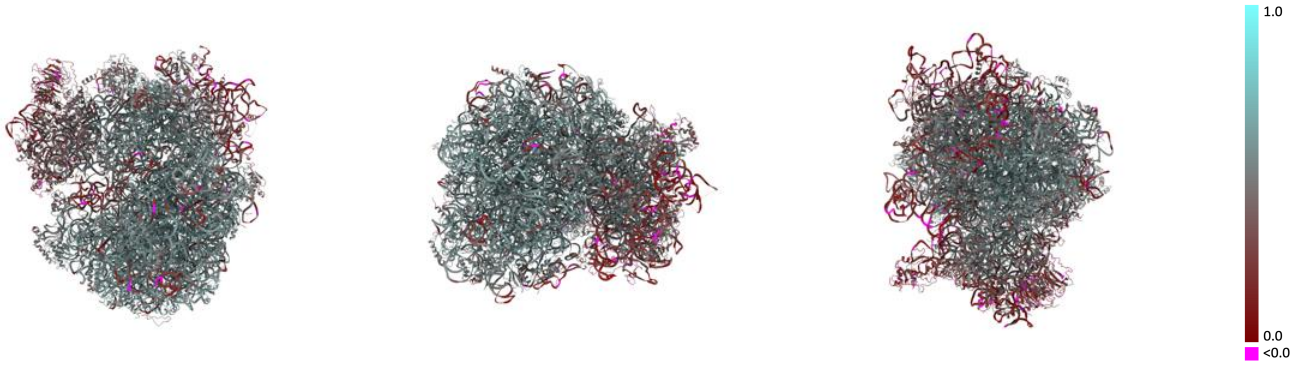
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.16 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.

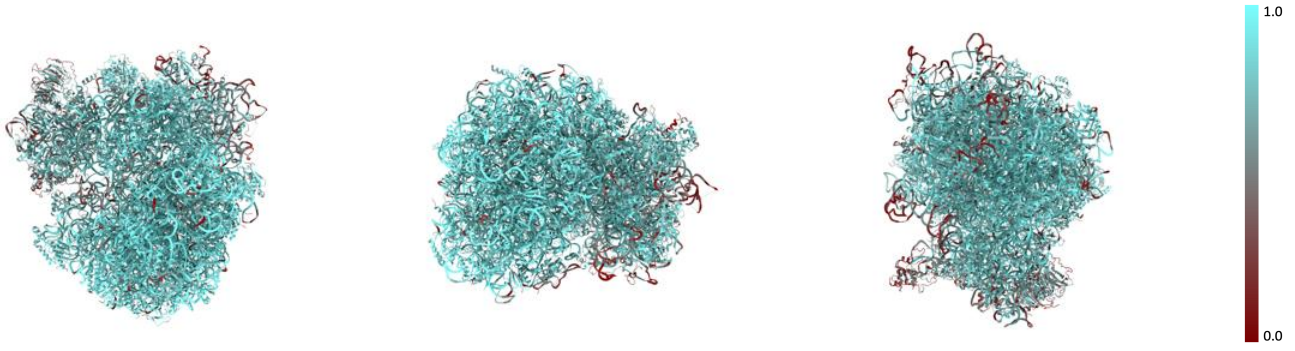
9.2 Q-score mapped to coordinate model



X Y Z

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.

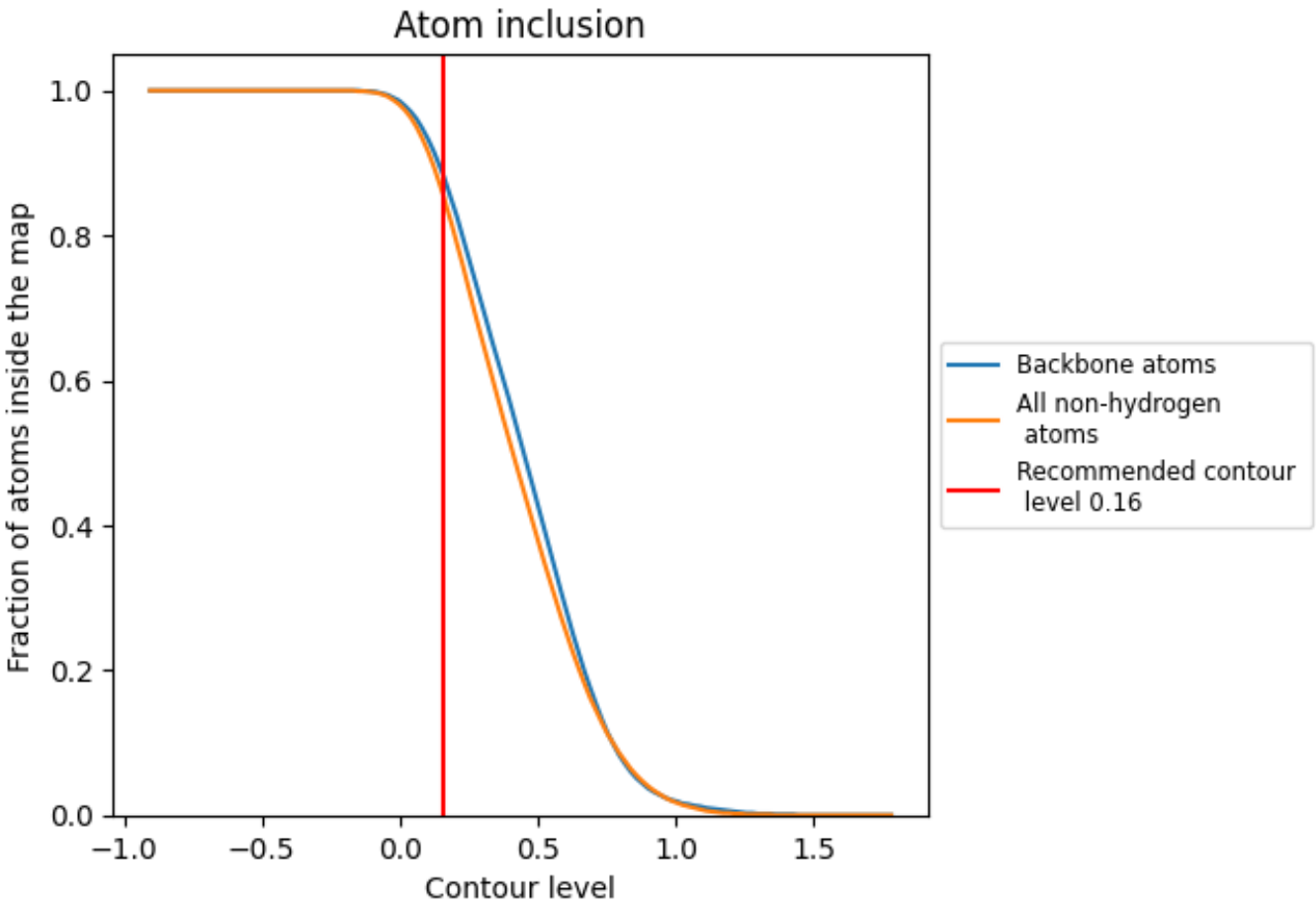
9.3 Atom inclusion mapped to coordinate model



X Y Z

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 (0.16).

9.4 Atom inclusion (i)



At the recommended contour level, 88% of all backbone atoms, 85% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.16) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8530	0.4840
Bb	0.7710	0.3180
Cc	0.8260	0.3610
LA	0.9200	0.5280
LB	0.9450	0.5270
LC	0.9420	0.5470
LD	0.9330	0.5920
LE	0.9260	0.5670
LF	0.9270	0.5640
LG	0.8660	0.5050
LH	0.8580	0.5110
LI	0.9220	0.5670
LJ	0.8870	0.5210
LK	0.8780	0.5380
LL	0.8780	0.5410
LM	0.8140	0.4480
LN	0.9150	0.5590
LO	0.8990	0.5350
LP	0.9330	0.5890
LQ	0.9190	0.5650
LR	0.9110	0.5660
LS	0.9280	0.5790
LT	0.8380	0.5170
LU	0.9130	0.5660
LV	0.9090	0.5620
LW	0.8290	0.4540
LX	0.9100	0.5800
LY	0.9160	0.5640
LZ	0.9050	0.5600
La	0.9270	0.5730
Lb	0.9000	0.5410
Lc	0.9370	0.5860
Ld	0.9030	0.5360
Le	0.8770	0.5280
Lf	0.8880	0.5460



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Chain	Atom inclusion	Q-score
Lg	0.8970	0.5620
Lh	0.9340	0.5920
Li	0.8880	0.5570
Lj	0.9120	0.5450
Lk	0.8770	0.5220
Ll	0.9550	0.5950
Lm	0.7810	0.4740
Ln	0.8940	0.5700
Lo	0.9170	0.5620
Lp	0.8560	0.5520
Lq	0.9140	0.5660
Lr	0.8860	0.5760
S2	0.7880	0.3960
SA	0.6920	0.3950
SB	0.6440	0.3530
SC	0.6250	0.3070
SD	0.2950	0.1950
SE	0.6890	0.3430
SF	0.7040	0.3820
SG	0.7420	0.4120
SH	0.6690	0.3570
SI	0.7070	0.3560
SJ	0.5920	0.3050
SK	0.4650	0.2590
SL	0.6720	0.3820
SM	0.8040	0.4310
SN	0.3480	0.1950
SO	0.5350	0.2600
SP	0.8320	0.4790
SQ	0.8180	0.4920
SR	0.8610	0.5280
SS	0.7870	0.4380
ST	0.6360	0.3300
SU	0.7550	0.4400
SV	0.7810	0.4170
SW	0.7240	0.3970
SX	0.8250	0.4930
SY	0.8730	0.5230
SZ	0.8690	0.5200
Sa	0.8300	0.4970
Sb	0.9110	0.5700
Sc	0.8060	0.4950

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Chain	Atom inclusion	Q-score
Sd	0.7380	0.3720
Se	0.9010	0.5510
Sf	0.8450	0.4790
Sg	0.7080	0.3980
mR	0.9170	0.4990