Full wwPDB EM Validation Report ⓘ

Oct 28, 2026 – 02:13 AM JST

PDB ID	:	23EA / pdb_000023ea
EMDB ID	:	EMD-68898
Title	:	Non-rotated 80S with eRF1(AAQ) and P/P tRNA
Authors	:	Wu, M.; Yuan, S.
Deposited on	:	2026-02-03
Resolution	:	2.59 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:

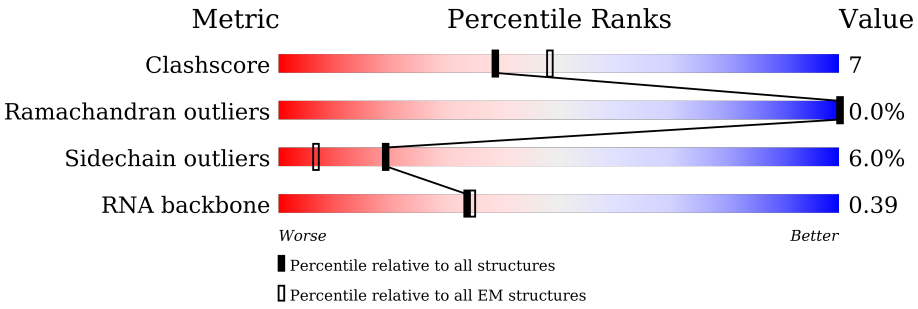
EMDB validation analysis	:	0.0.1.dev133
MolProbity	:	4-5-2 with Phenix2.2
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh &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

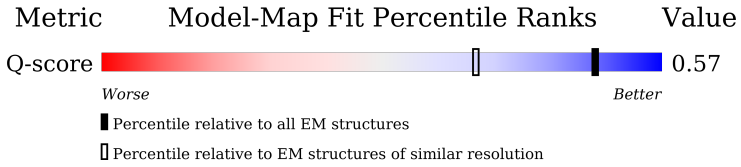
1 Overall quality at a glance

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

The reported resolution of this entry is 2.59 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.





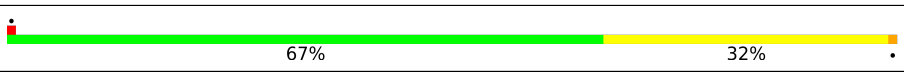
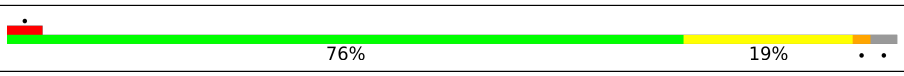
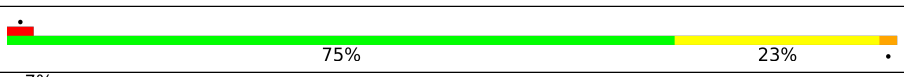
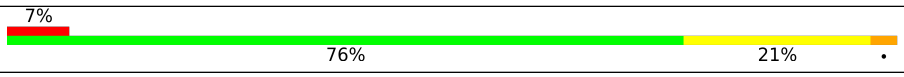
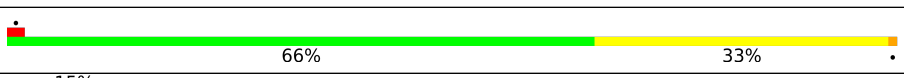
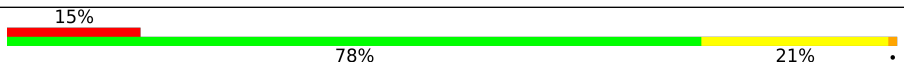
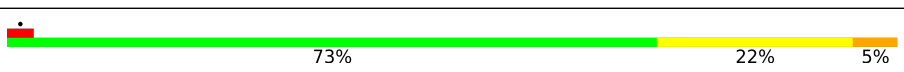
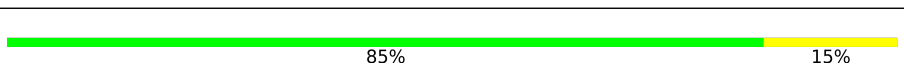
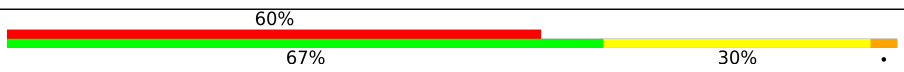
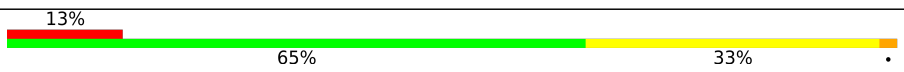
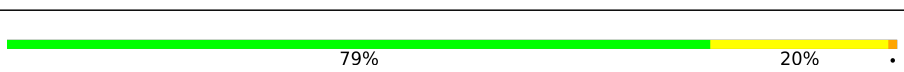
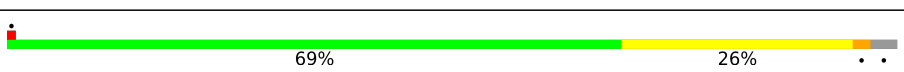
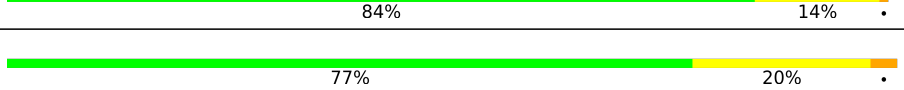
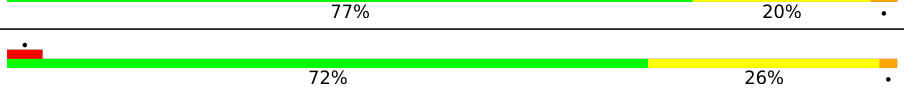
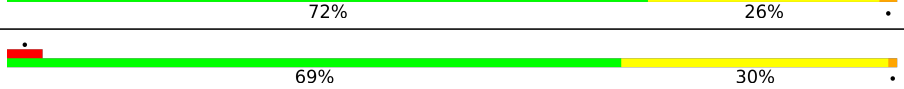
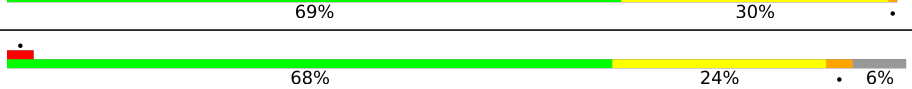
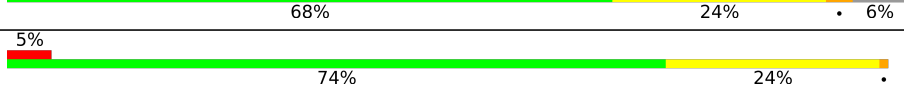
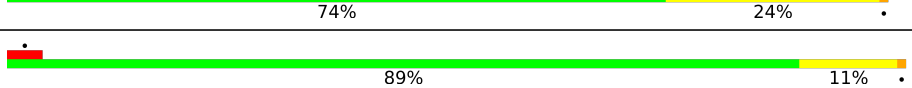
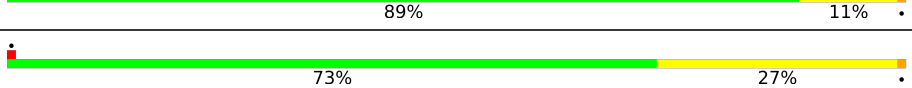
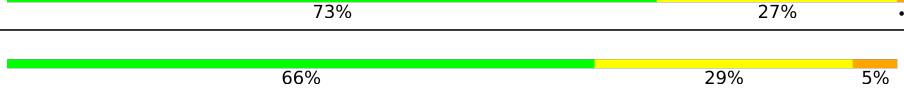
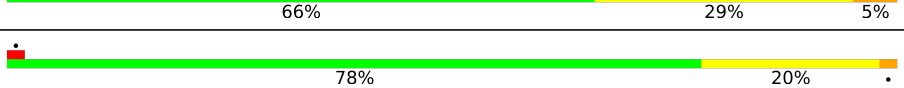
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	7741 (2.09 - 3.09)

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	S2	1800	8% 40% 43% 15%
2	SA	222	8% 80% 19%
3	SB	206	9% 73% 25%

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Mol	Chain	Length	Quality of chain
4	SC	92	
5	SD	121	
6	SE	117	
7	SF	141	
8	SG	125	
9	SH	145	
10	SI	143	
11	SJ	100	
12	SK	82	
13	SL	63	
14	SM	53	
15	SN	73	
16	SO	312	
17	SP	206	
18	SQ	232	
19	SR	216	
20	SS	258	
21	ST	228	
22	SU	184	
23	SV	198	
24	SW	184	
25	SX	142	
26	SY	150	
27	SZ	127	
28	Sa	87	

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Mol	Chain	Length	Quality of chain
29	Sb	129	
30	Sc	144	
31	Sd	134	
32	Se	97	
33	Sf	81	
34	Sg	57	
35	LA	3396	
36	LB	121	
37	LC	158	
38	LD	251	
39	LE	386	
40	LF	361	
41	LG	294	
42	LH	175	
43	LI	222	
44	LJ	233	
45	LK	191	
46	LL	218	
47	LM	169	
48	LN	193	
49	LO	136	
50	LP	203	
51	LQ	197	
52	LR	183	
53	LS	185	

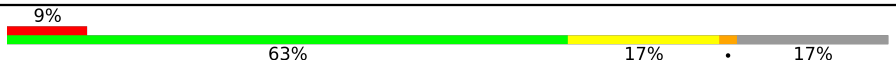
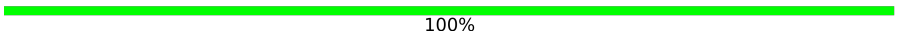
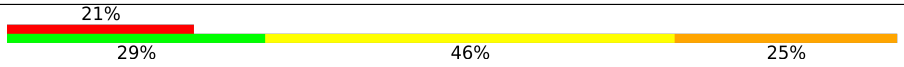
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Mol	Chain	Length	Quality of chain
54	LT	188	90% 9%
55	LU	171	74% 23%
56	LV	159	80% 18%
57	LW	100	76% 22%
58	LX	136	77% 21%
59	LY	65	82% 18%
60	LZ	121	78% 21%
61	La	125	7% 67% 26% 6%
62	Lb	135	71% 26%
63	Lc	148	76% 23%
64	Ld	58	83% 16%
65	Le	96	83% 17%
66	Lf	109	6% 83% 16%
67	Lg	127	5% 80% 20%
68	Lh	106	80% 20%
69	Li	112	81% 18%
70	Lj	119	81% 18%
71	Lk	99	80% 20%
72	Ll	81	88% 11%
73	Lm	77	66% 32%
74	Ln	50	74% 26%
75	Lo	52	85% 15%
76	Lp	25	84% 16%
77	Lq	103	90% 10%
78	Lr	91	80% 19%

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Mol	Chain	Length	Quality of chain
79	eR	446	
80	mR	10	
81	Cc	77	
82	pp	24	

2 Entry composition (i)

There are 82 unique types of molecules in this entry. The entry contains 203511 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 (1800-MER).

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

- Molecule 2 is a protein called Small ribosomal subunit protein uS3.

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

- Molecule 3 is a protein called Small ribosomal subunit protein uS7.

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

- Molecule 4 is a protein called Small ribosomal subunit protein eS10A.

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

- Molecule 5 is a protein called Small ribosomal subunit protein eS12.

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

- Molecule 6 is a protein called Small ribosomal subunit protein uS19.

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

- Molecule 7 is a protein called Small ribosomal subunit protein uS9A.

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

- Molecule 8 is a protein called Small ribosomal subunit protein eS17B.

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

- Molecule 9 is a protein called Small ribosomal subunit protein uS13A.

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

- Molecule 10 is a protein called Small ribosomal subunit protein eS19A.

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

- Molecule 11 is a protein called Small ribosomal subunit protein uS10.

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

- Molecule 12 is a protein called Small ribosomal subunit protein eS25A.

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

- Molecule 13 is a protein called Small ribosomal subunit protein eS28A.

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

- Molecule 14 is a protein called Small ribosomal subunit protein uS14A.

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

- Molecule 15 is a protein called Small ribosomal subunit protein eS31.

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

- Molecule 16 is a protein called Small ribosomal subunit protein RACK1.

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

- Molecule 17 is a protein called Small ribosomal subunit protein uS2A.

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

- Molecule 18 is a protein called Small ribosomal subunit protein eS1A.

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

- Molecule 19 is a protein called Small ribosomal subunit protein uS5.

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

- Molecule 20 is a protein called Small ribosomal subunit protein eS4A.

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

- Molecule 21 is a protein called Small ribosomal subunit protein eS6A.

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

- Molecule 22 is a protein called Small ribosomal subunit protein eS7A.

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

- Molecule 23 is a protein called Small ribosomal subunit protein eS8A.

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

- Molecule 24 is a protein called Small ribosomal subunit protein uS4A.

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

- Molecule 25 is a protein called Small ribosomal subunit protein uS17A.

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

- Molecule 26 is a protein called Small ribosomal subunit protein uS15.

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

- Molecule 27 is a protein called Small ribosomal subunit protein uS11B.

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

- Molecule 28 is a protein called Small ribosomal subunit protein eS21A.

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

- Molecule 29 is a protein called Small ribosomal subunit protein uS8A.

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

- Molecule 30 is a protein called Small ribosomal subunit protein uS12A.

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

- Molecule 31 is a protein called Small ribosomal subunit protein eS24A.

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

- Molecule 32 is a protein called Small ribosomal subunit protein eS26B.

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

- Molecule 33 is a protein called Small ribosomal subunit protein eS27A.

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

- Molecule 34 is a protein called Small ribosomal subunit protein eS30A.

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

- Molecule 35 is a RNA chain called RNA (3393-MER).

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

- Molecule 36 is a RNA chain called RNA (121-MER).

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

- Molecule 37 is a RNA chain called RNA (158-MER).

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

- Molecule 38 is a protein called Large ribosomal subunit protein uL2A.

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

- Molecule 39 is a protein called Large ribosomal subunit protein uL3.

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

- Molecule 40 is a protein called Large ribosomal subunit protein uL4A.

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

- Molecule 41 is a protein called Large ribosomal subunit protein uL18.

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

- Molecule 42 is a protein called Large ribosomal subunit protein eL6B.

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

- Molecule 43 is a protein called Large ribosomal subunit protein uL30A.

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

- Molecule 44 is a protein called Large ribosomal subunit protein eL8A.

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

- Molecule 45 is a protein called Large ribosomal subunit protein uL6A.

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

- Molecule 46 is a protein called Large ribosomal subunit protein uL16.

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

- Molecule 47 is a protein called Large ribosomal subunit protein uL5B.

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

- Molecule 48 is a protein called Large ribosomal subunit protein eL13A.

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

- Molecule 49 is a protein called Large ribosomal subunit protein eL14A.

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

- Molecule 50 is a protein called Large ribosomal subunit protein eL15A.

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

- Molecule 51 is a protein called Large ribosomal subunit protein uL13A.

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

- Molecule 52 is a protein called Large ribosomal subunit protein uL22A.

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

- Molecule 53 is a protein called Large ribosomal subunit protein eL18A.

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

- Molecule 54 is a protein called Large ribosomal subunit protein eL19A.

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

- Molecule 55 is a protein called Large ribosomal subunit protein eL20A.

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

- Molecule 56 is a protein called Large ribosomal subunit protein eL21A.

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

- Molecule 57 is a protein called Large ribosomal subunit protein eL22A.

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

- Molecule 58 is a protein called Large ribosomal subunit protein uL14A.

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

- Molecule 59 is a protein called Large ribosomal subunit protein eL24A.

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

- Molecule 60 is a protein called Large ribosomal subunit protein uL23.

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

- Molecule 61 is a protein called Large ribosomal subunit protein uL24A.

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

- Molecule 62 is a protein called Large ribosomal subunit protein eL27A.

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

- Molecule 63 is a protein called Large ribosomal subunit protein uL15.

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

- Molecule 64 is a protein called Large ribosomal subunit protein eL29.

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

- Molecule 65 is a protein called Large ribosomal subunit protein eL30.

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

- Molecule 66 is a protein called Large ribosomal subunit protein eL31A.

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

- Molecule 67 is a protein called Large ribosomal subunit protein eL32.

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

- Molecule 68 is a protein called Large ribosomal subunit protein eL33A.

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

- Molecule 69 is a protein called Large ribosomal subunit protein eL34A.

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

- Molecule 70 is a protein called Large ribosomal subunit protein uL29A.

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

- Molecule 71 is a protein called Large ribosomal subunit protein eL36A.

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

- Molecule 72 is a protein called Large ribosomal subunit protein eL37A.

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

- Molecule 73 is a protein called Large ribosomal subunit protein eL38.

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

- Molecule 74 is a protein called Large ribosomal subunit protein eL39.

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

- Molecule 75 is a protein called Large ribosomal subunit protein eL40A.

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

- Molecule 76 is a protein called Large ribosomal subunit protein eL41A.

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

- Molecule 77 is a protein called Large ribosomal subunit protein eL42A.

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

- Molecule 78 is a protein called Large ribosomal subunit protein eL43A.

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

- Molecule 79 is a protein called Eukaryotic peptide chain release factor subunit 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
79	eR	368	Total	C	N	O	S	0	0
			2881	1839	494	539	9		

There are 11 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
eR	-8	MET	-	initiating methionine	UNP P62495
eR	-7	HIS	-	expression tag	UNP P62495
eR	-6	HIS	-	expression tag	UNP P62495
eR	-5	HIS	-	expression tag	UNP P62495
eR	-4	HIS	-	expression tag	UNP P62495
eR	-3	HIS	-	expression tag	UNP P62495
eR	-2	HIS	-	expression tag	UNP P62495
eR	-1	GLY	-	expression tag	UNP P62495
eR	0	SER	-	expression tag	UNP P62495
eR	183	ALA	GLY	engineered mutation	UNP P62495
eR	184	ALA	GLY	engineered mutation	UNP P62495

- Molecule 80 is a RNA chain called RNA (5'-R(P*GP*AP*CP*CP*CP*UP*UP*AP*AP*C) -3').

Mol	Chain	Residues	Atoms					AltConf	Trace
80	mR	10	Total	C	N	O	P	0	0
			209	94	36	69	10		

- Molecule 81 is a RNA chain called RNA (77-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
81	Cc	77	Total	C	N	O	P	0	0
			1638	733	296	533	76		

- Molecule 82 is a protein called PRO-GLN-ARG-HIS-ASP-GLU-LYS-THR-LEU-VAL-GLN-SER-GLN-VAL-ASN-ALA-TYR-ASN-ALA-ASP-MET-ILE-ASP-PRO.

Mol	Chain	Residues	Atoms					AltConf	Trace
82	pp	24	Total	C	N	O	S	0	0
			184	112	33	38	1		

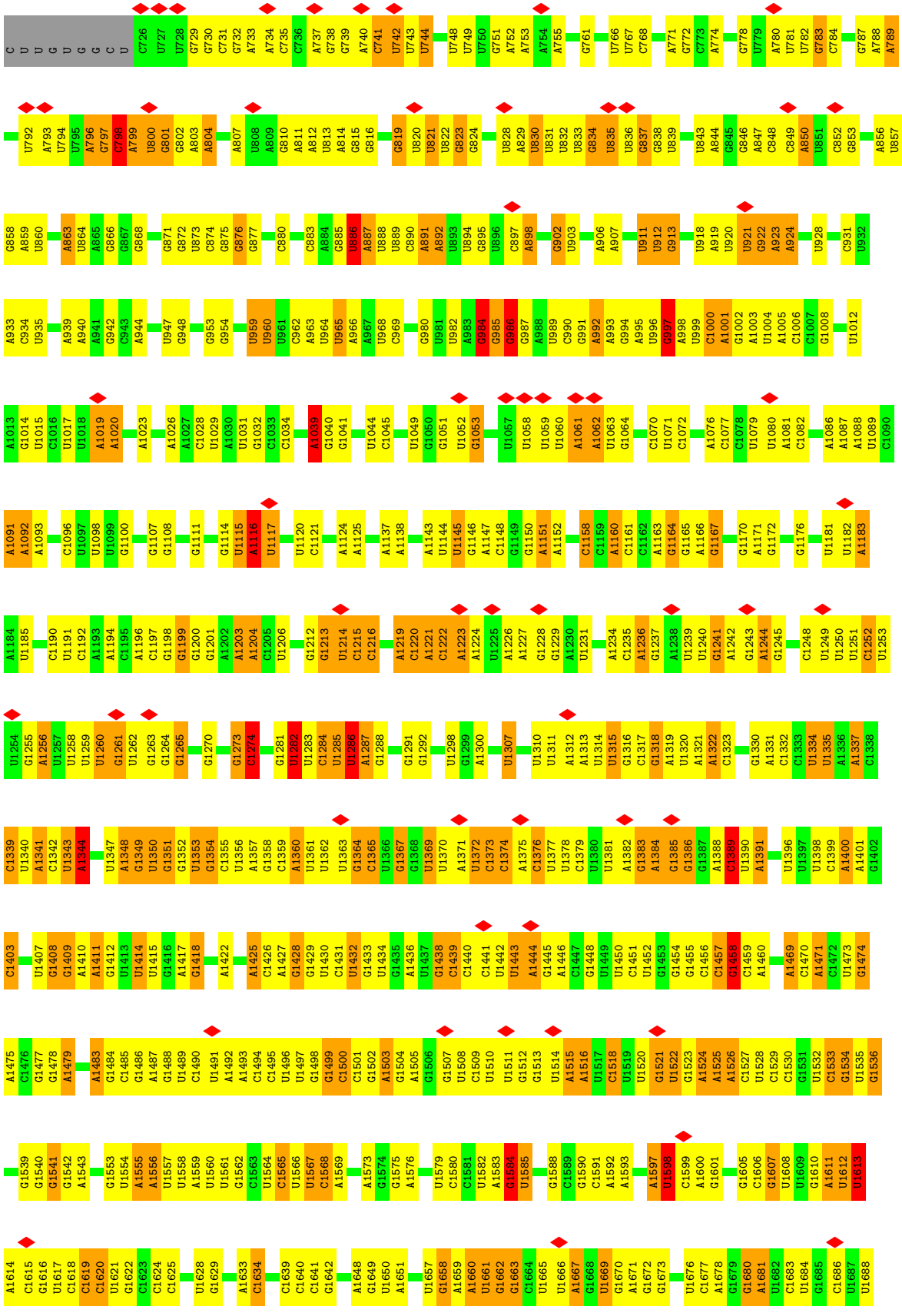
3 Residue-property plots (i)

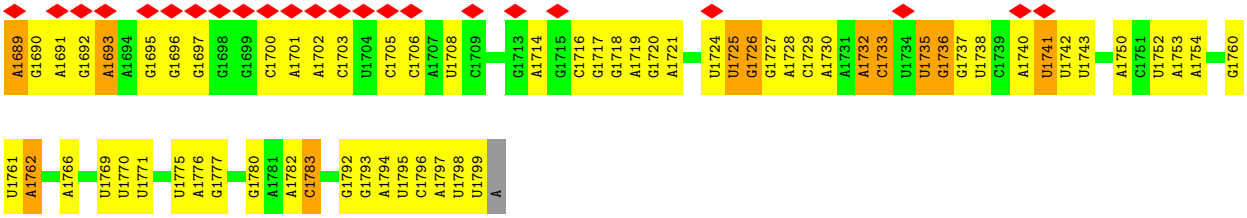
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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 (1800-MER)

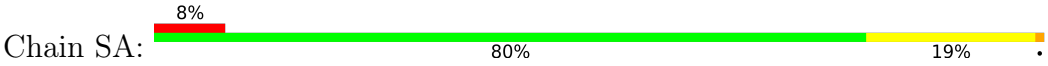
Chain S2:

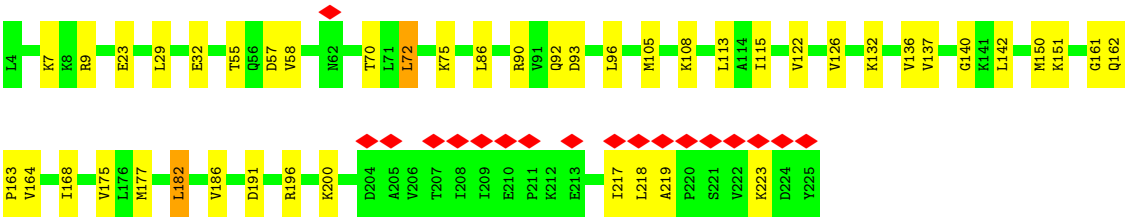




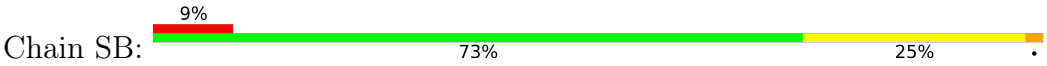


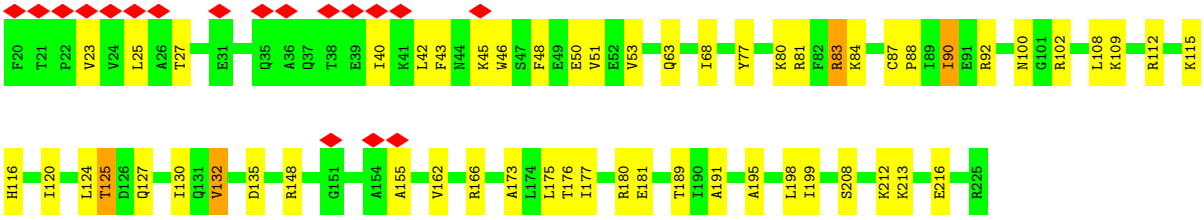
• Molecule 2: Small ribosomal subunit protein uS3





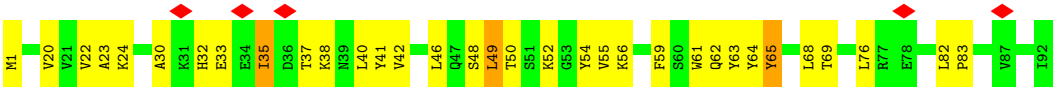
• Molecule 3: Small ribosomal subunit protein uS7



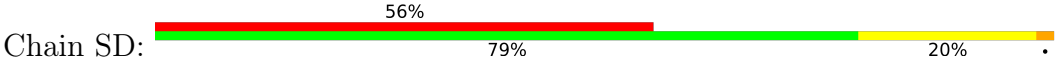


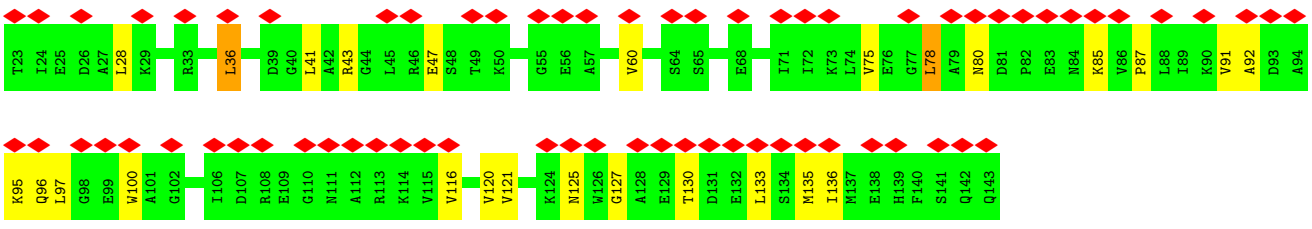
• Molecule 4: Small ribosomal subunit protein eS10A





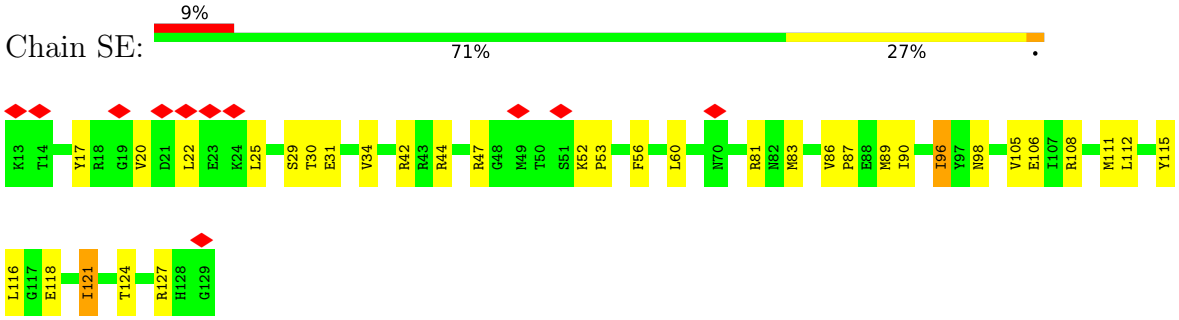
• Molecule 5: Small ribosomal subunit protein eS12





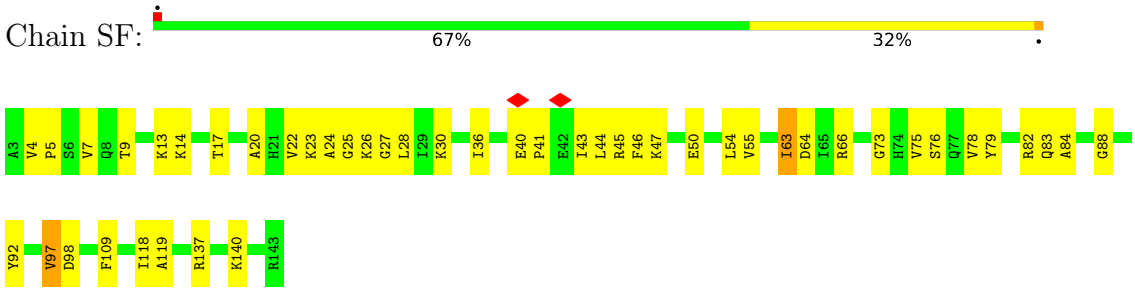
• Molecule 6: Small ribosomal subunit protein uS19

Chain SE:



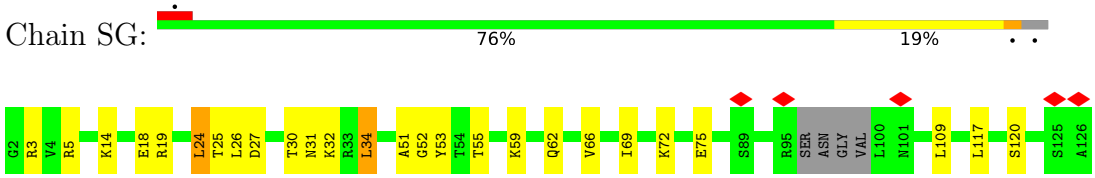
• Molecule 7: Small ribosomal subunit protein uS9A

Chain SF:



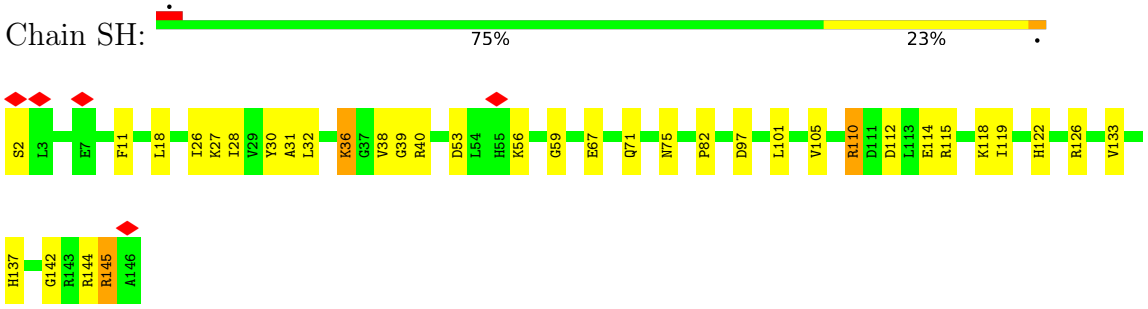
• Molecule 8: Small ribosomal subunit protein eS17B

Chain SG:



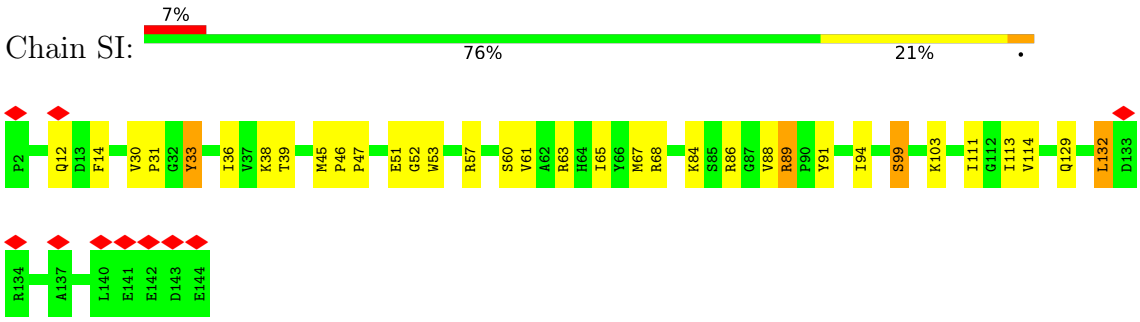
• Molecule 9: Small ribosomal subunit protein uS13A

Chain SH:



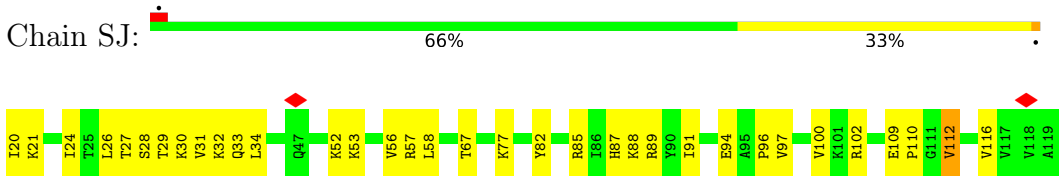
• Molecule 10: Small ribosomal subunit protein eS19A

Chain SI:



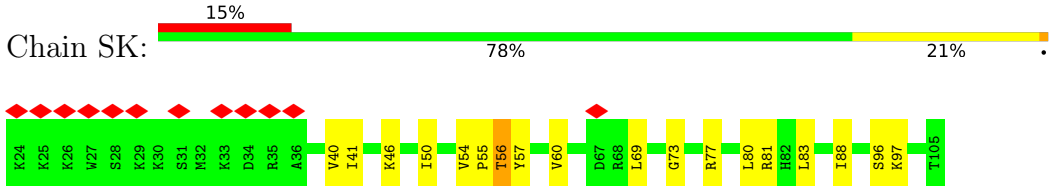
• Molecule 11: Small ribosomal subunit protein uS10

Chain SJ:



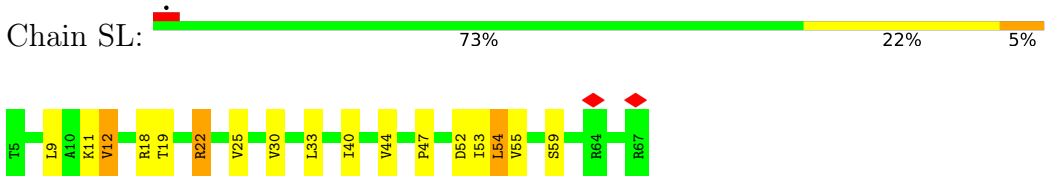
• Molecule 12: Small ribosomal subunit protein eS25A

Chain SK:



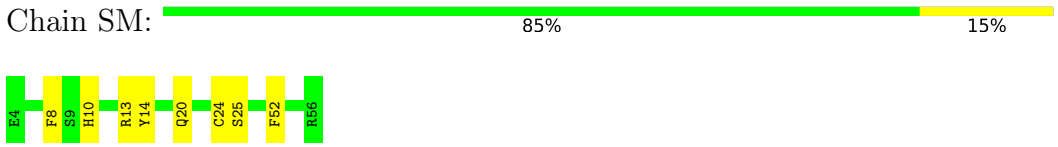
• Molecule 13: Small ribosomal subunit protein eS28A

Chain SL:



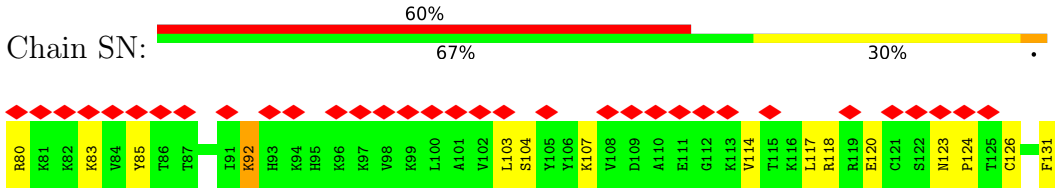
• Molecule 14: Small ribosomal subunit protein uS14A

Chain SM:



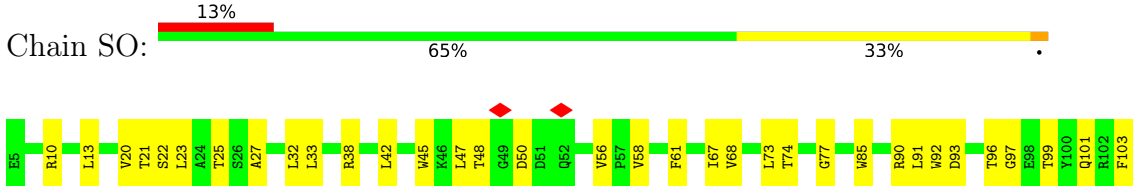
• Molecule 15: Small ribosomal subunit protein eS31

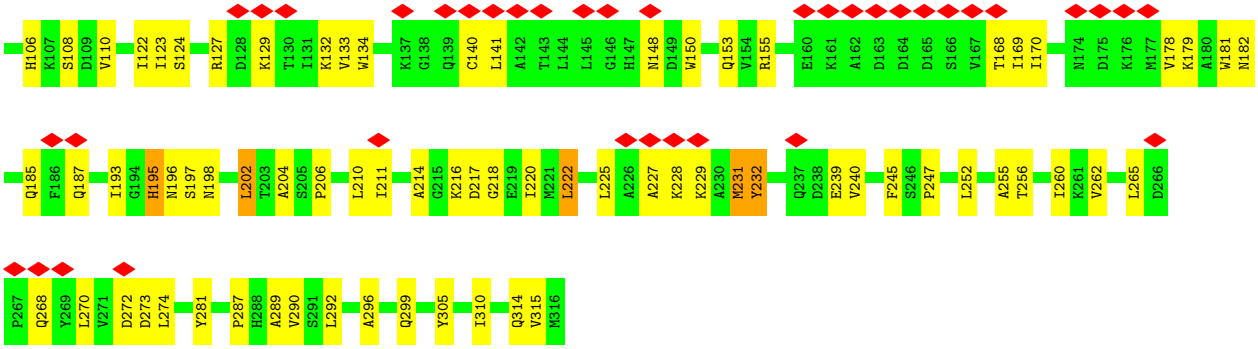
Chain SN:



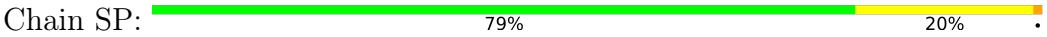
• Molecule 16: Small ribosomal subunit protein RACK1

Chain SO:





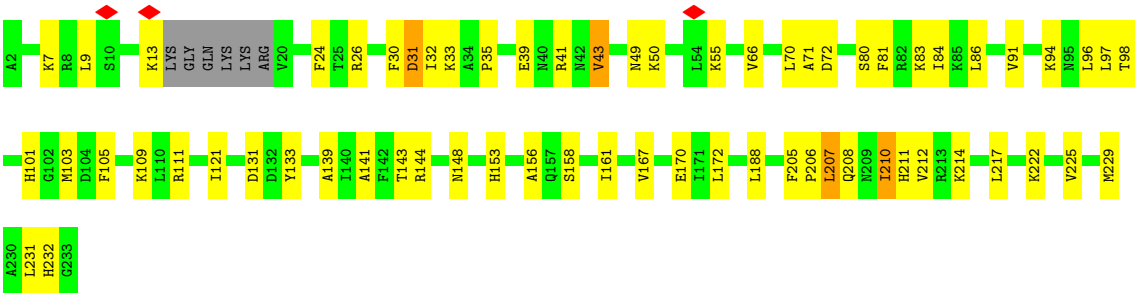
• Molecule 17: Small ribosomal subunit protein uS2A



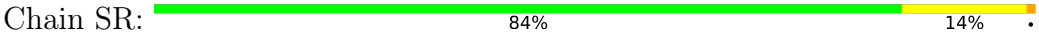


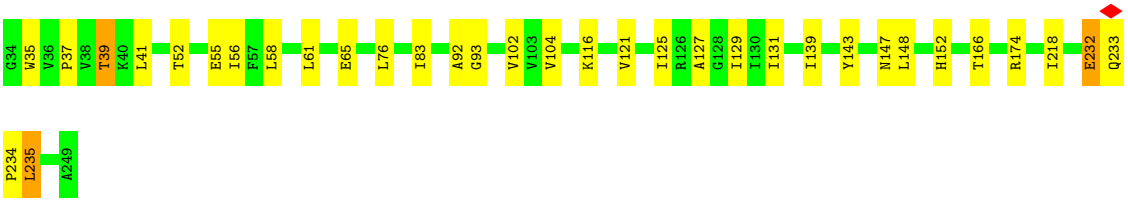
• Molecule 18: Small ribosomal subunit protein eS1A



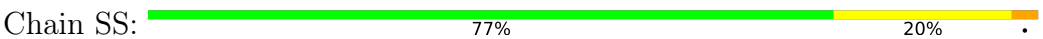


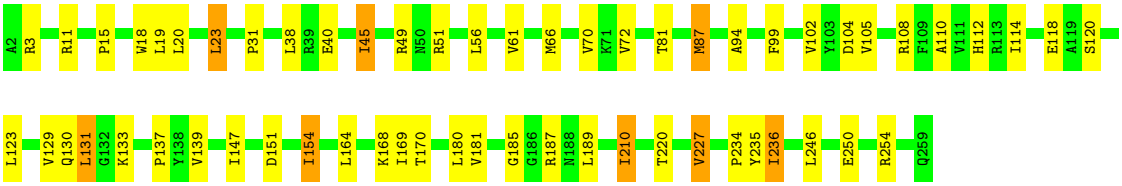
• Molecule 19: Small ribosomal subunit protein uS5

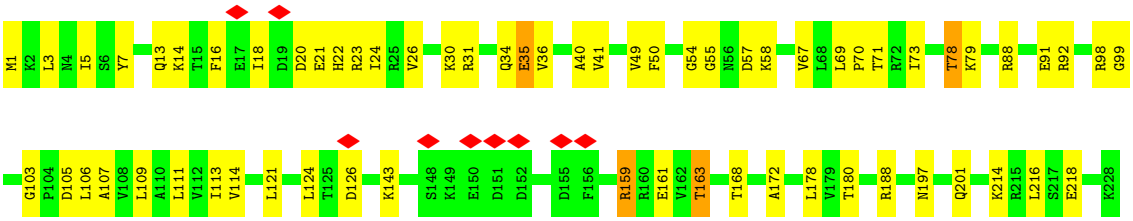




• Molecule 20: Small ribosomal subunit protein eS4A







• Molecule 21: Small ribosomal subunit protein eS6A

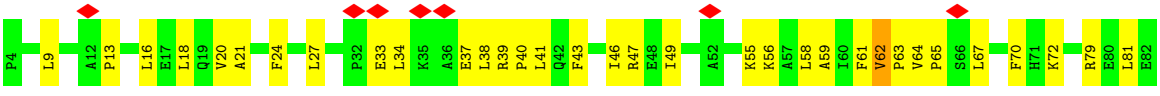
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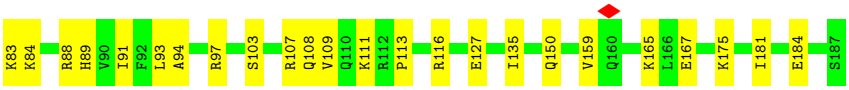


• Molecule 22: Small ribosomal subunit protein eS7A

Chain SU:



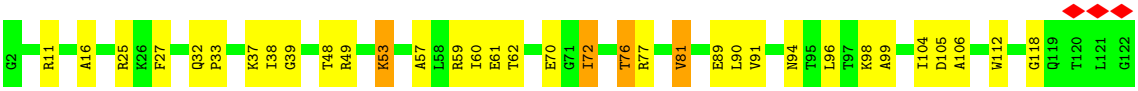


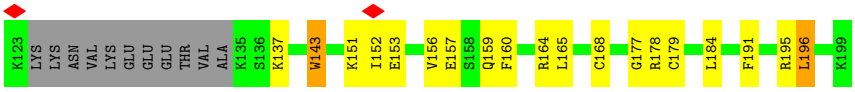


• Molecule 23: Small ribosomal subunit protein eS8A

Chain SV:



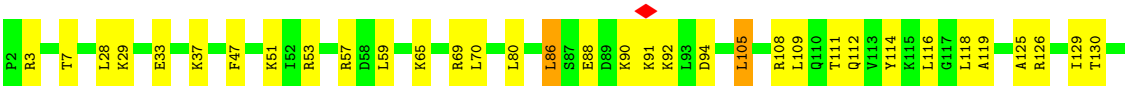


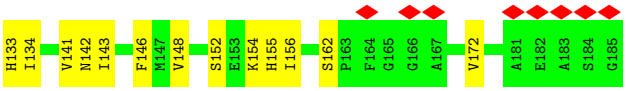


• Molecule 24: Small ribosomal subunit protein uS4A

Chain SW:







• Molecule 25: Small ribosomal subunit protein uS17A

Chain SX:

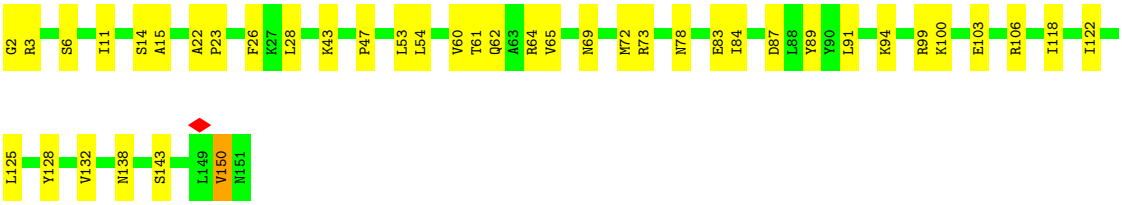




• Molecule 26: Small ribosomal subunit protein uS15

Chain SY:

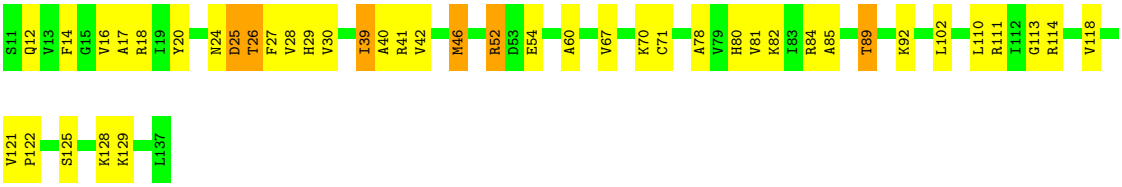




• Molecule 27: Small ribosomal subunit protein uS11B

Chain SZ:

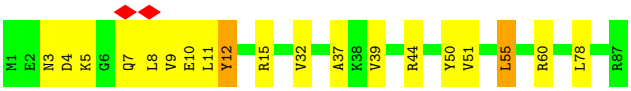




• Molecule 28: Small ribosomal subunit protein eS21A

Chain Sa:

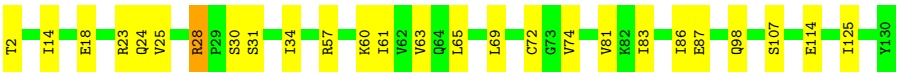




• Molecule 29: Small ribosomal subunit protein uS8A

Chain Sb:

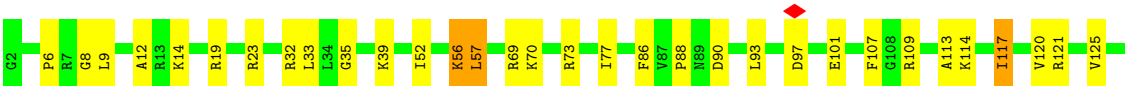




• Molecule 30: Small ribosomal subunit protein uS12A

Chain Sc:



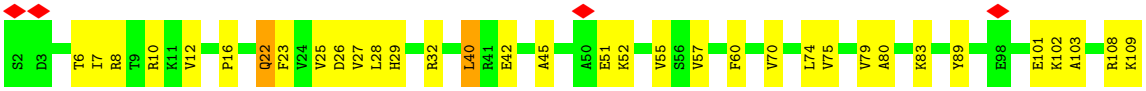


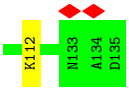


• Molecule 31: Small ribosomal subunit protein eS24A

Chain Sd:



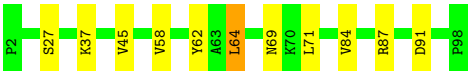




• Molecule 32: Small ribosomal subunit protein eS26B

Chain Se:

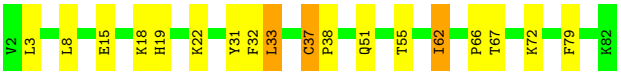




• Molecule 33: Small ribosomal subunit protein eS27A

Chain Sf:

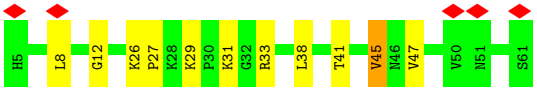




• Molecule 34: Small ribosomal subunit protein eS30A

Chain Sg:

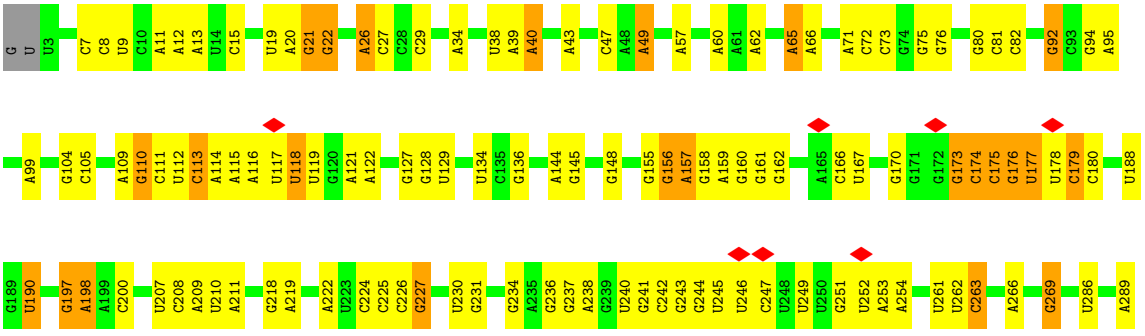


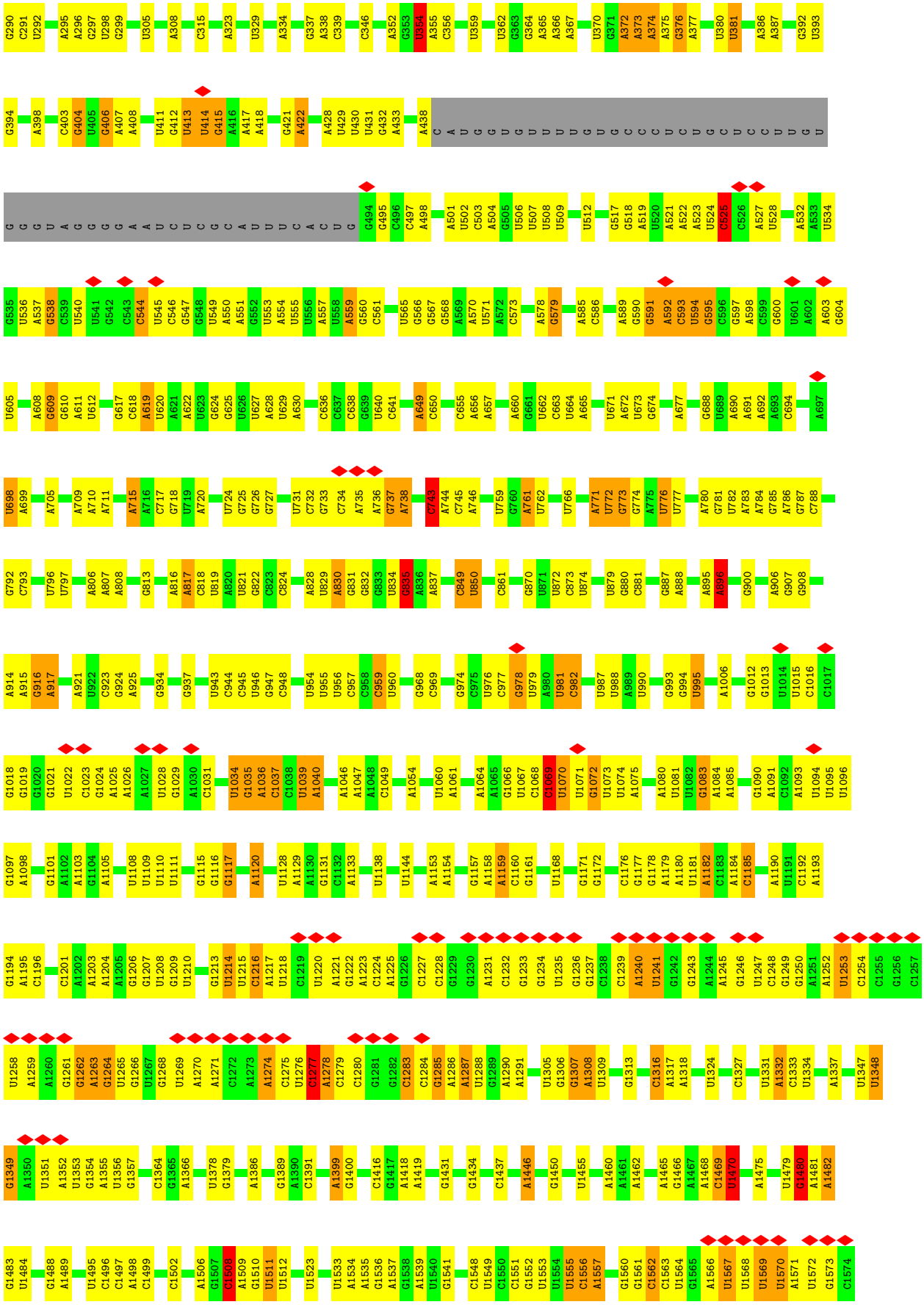


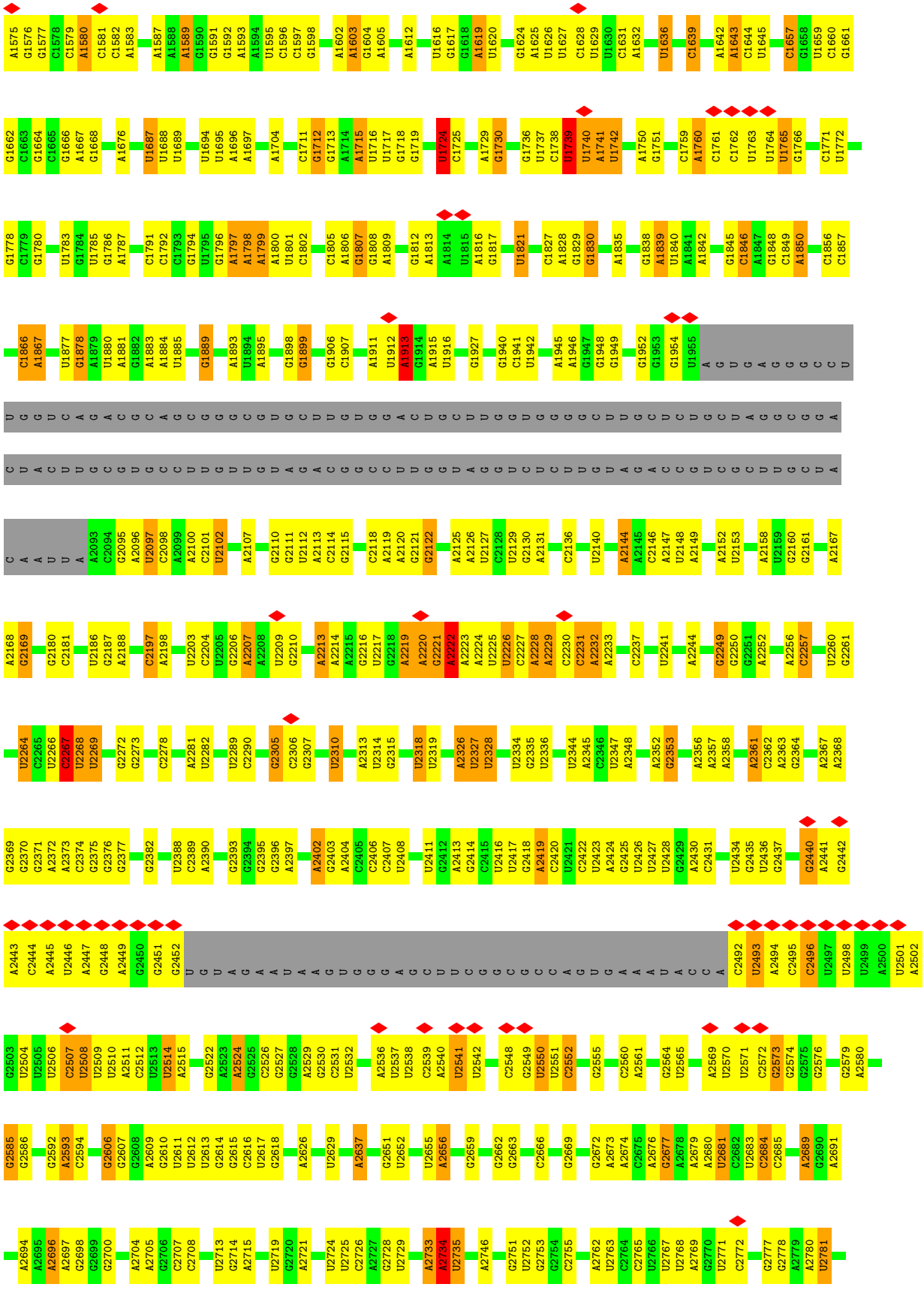
• Molecule 35: RNA (3393-MER)

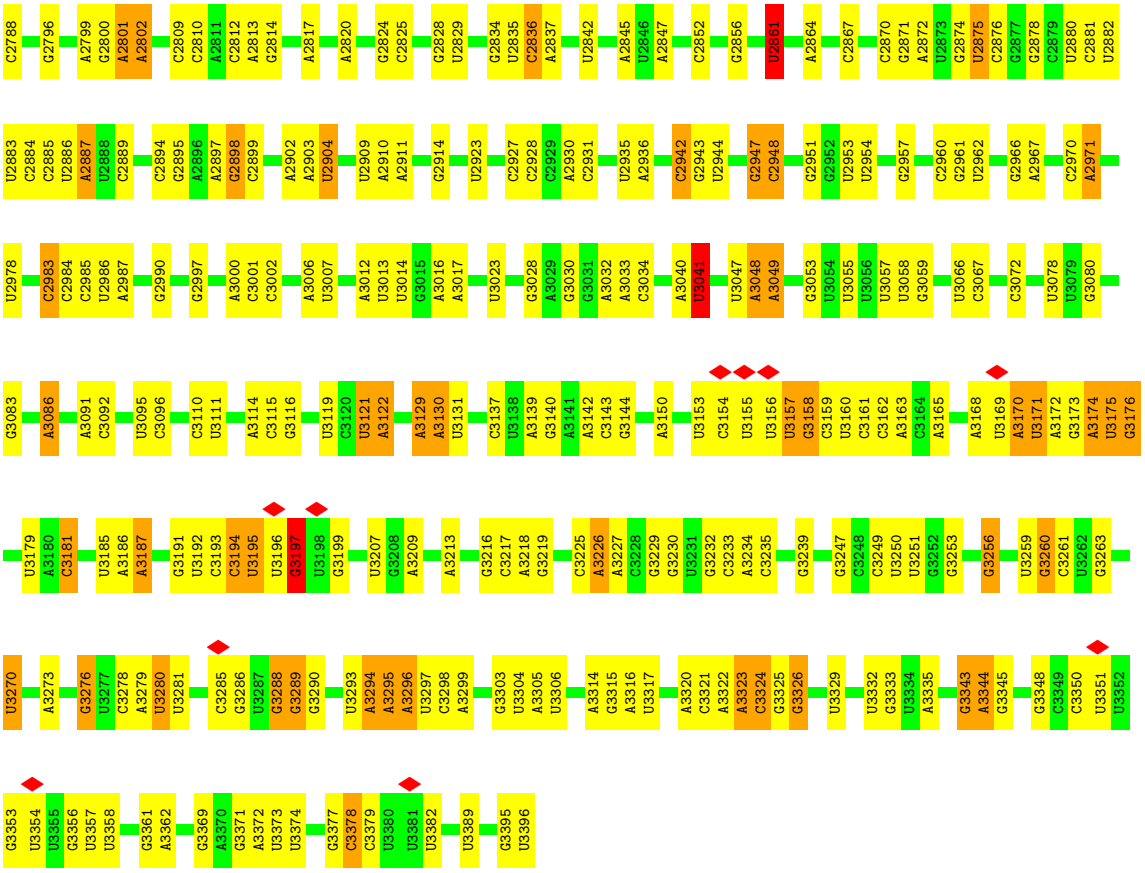
Chain LA:







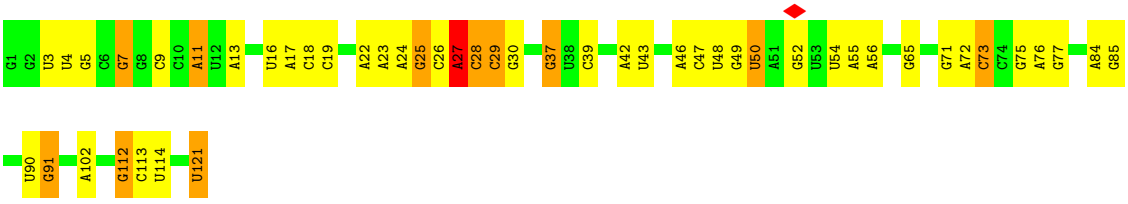




• Molecule 36: RNA (121-MER)

Chain LB:

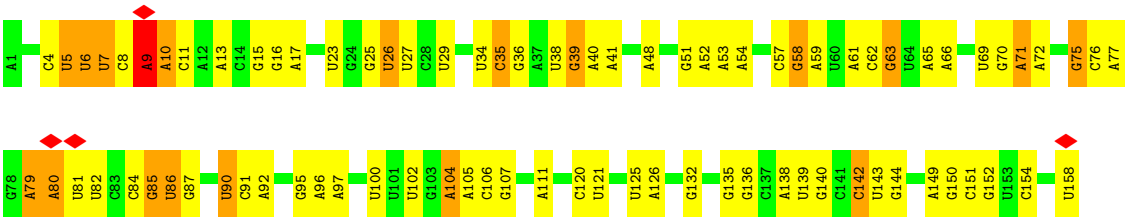




• Molecule 37: RNA (158-MER)

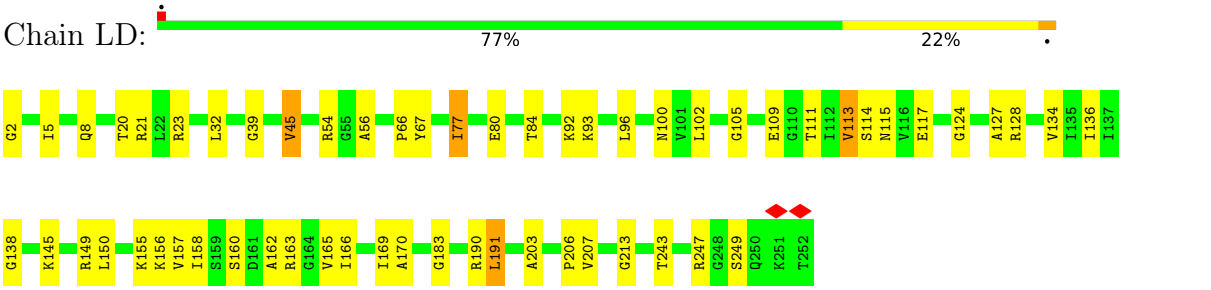
Chain LC:





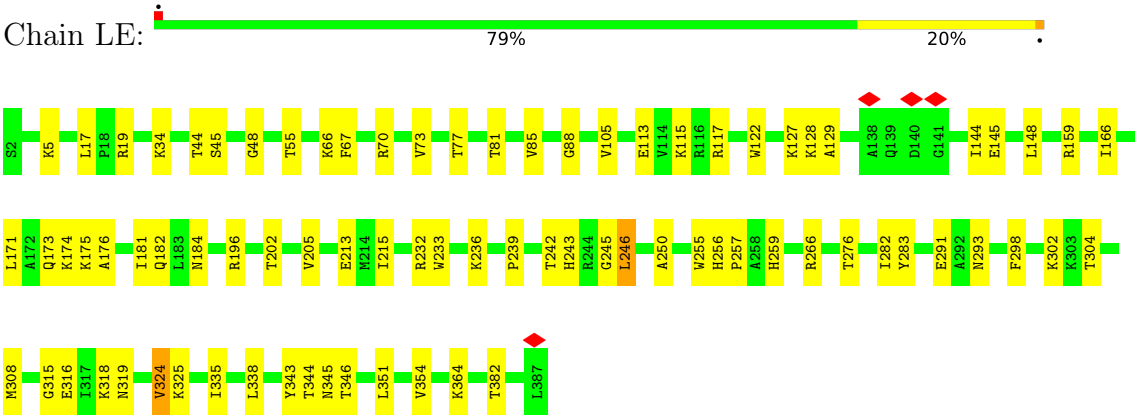
• Molecule 38: Large ribosomal subunit protein uL2A

Chain LD:



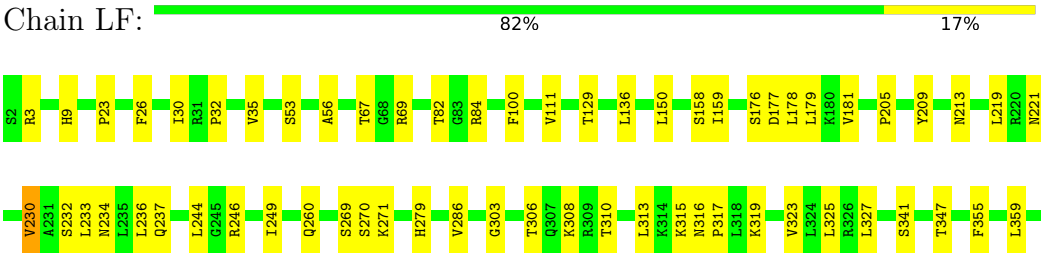
• Molecule 39: Large ribosomal subunit protein uL3

Chain LE:



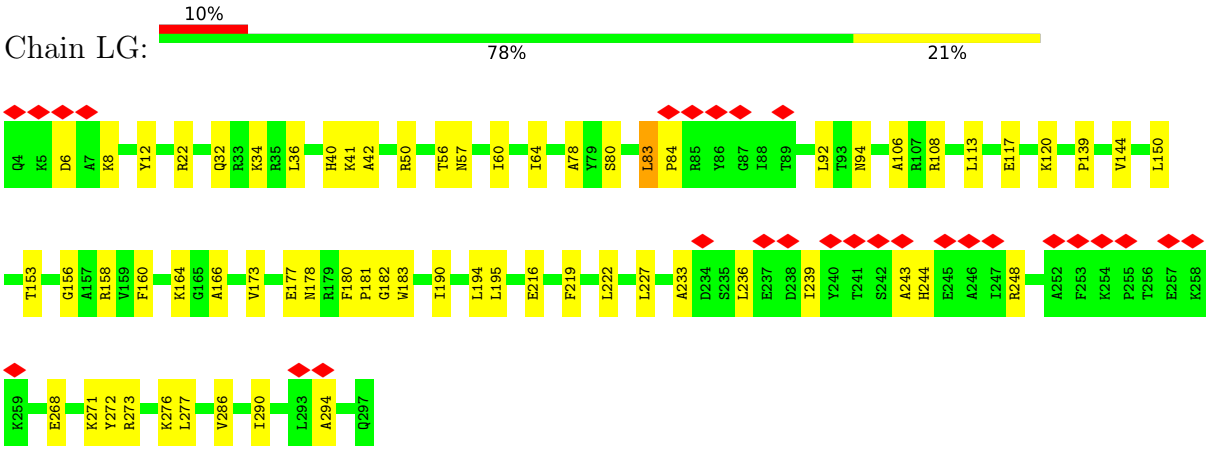
• Molecule 40: Large ribosomal subunit protein uL4A

Chain LF:



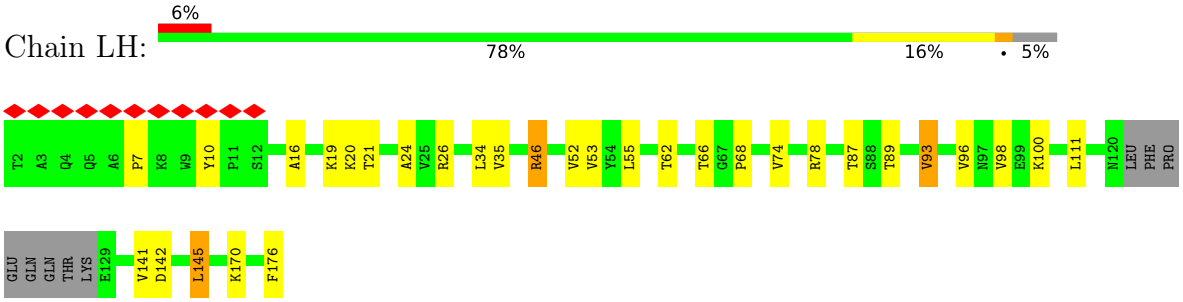
• Molecule 41: Large ribosomal subunit protein uL18

Chain LG:



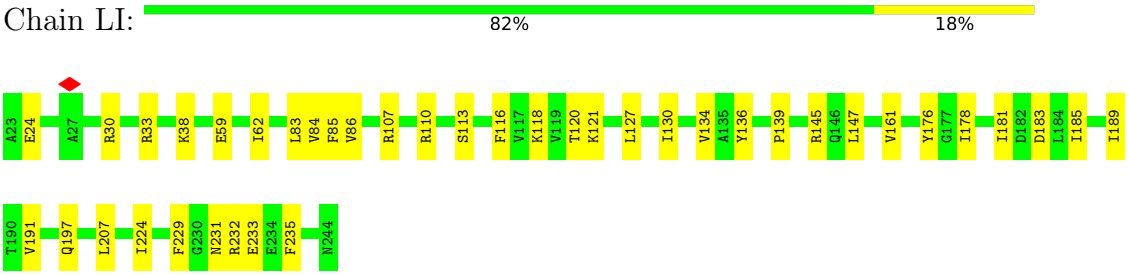
• Molecule 42: Large ribosomal subunit protein eL6B

Chain LH:



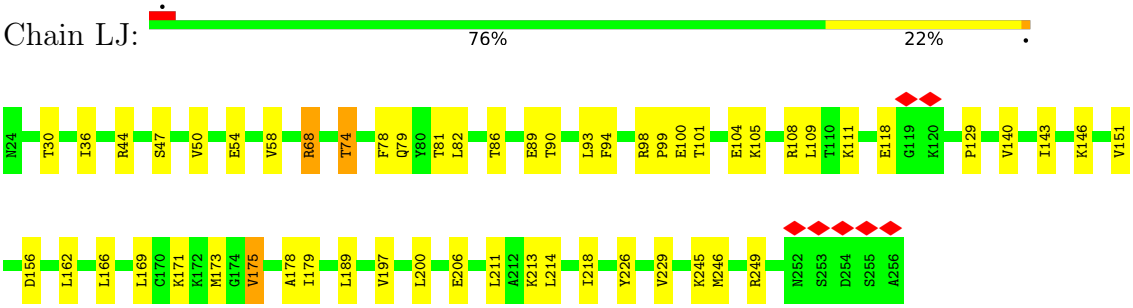
• Molecule 43: Large ribosomal subunit protein uL30A

Chain LI:



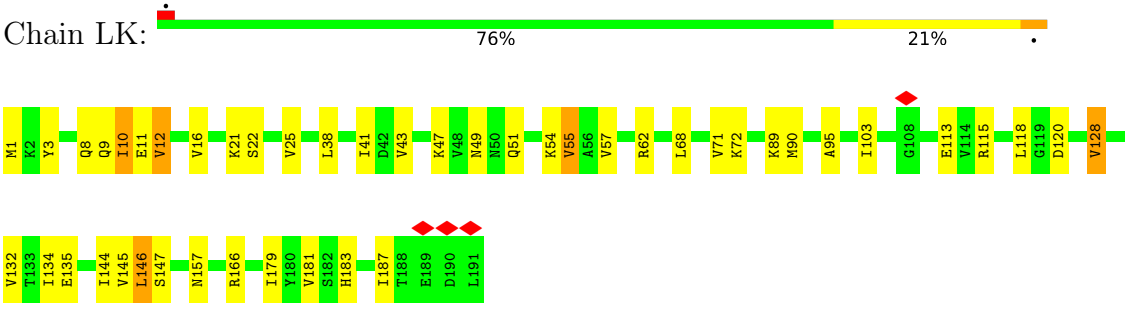
• Molecule 44: Large ribosomal subunit protein eL8A

Chain LJ:



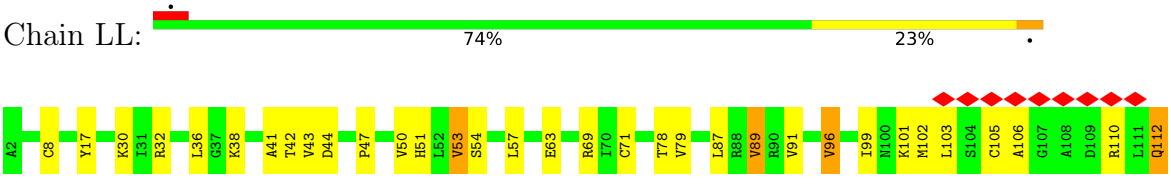
• Molecule 45: Large ribosomal subunit protein uL6A

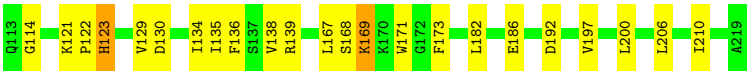
Chain LK:



• Molecule 46: Large ribosomal subunit protein uL16

Chain LL:



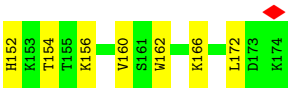


• Molecule 47: Large ribosomal subunit protein uL5B

Chain LM:



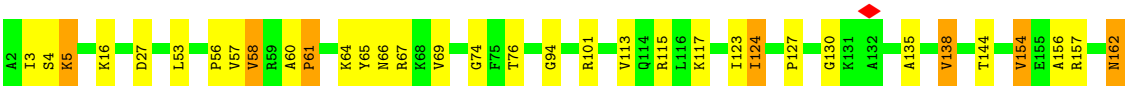


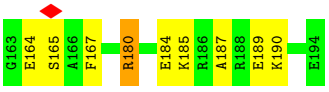


• Molecule 48: Large ribosomal subunit protein eL13A

Chain LN:



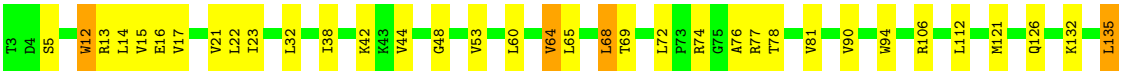




• Molecule 49: Large ribosomal subunit protein eL14A

Chain LO:



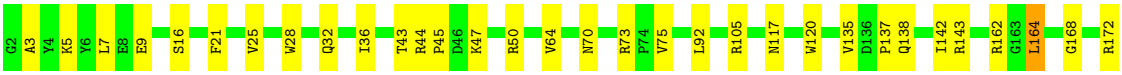


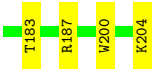


• Molecule 50: Large ribosomal subunit protein eL15A

Chain LP:



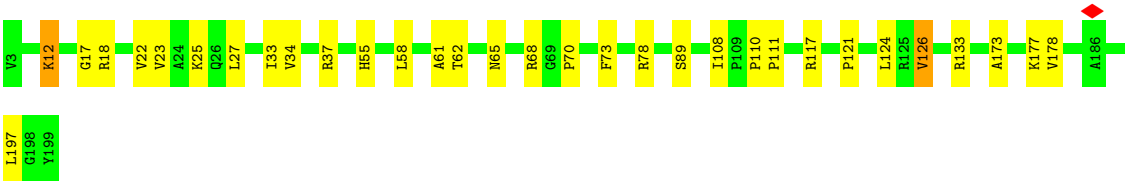




• Molecule 51: Large ribosomal subunit protein uL13A

Chain LQ:

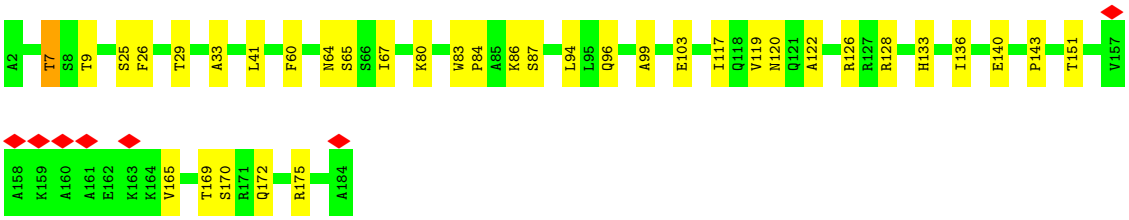




• Molecule 52: Large ribosomal subunit protein uL22A

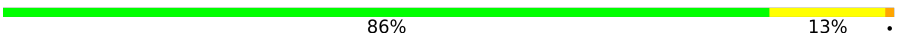
Chain LR:

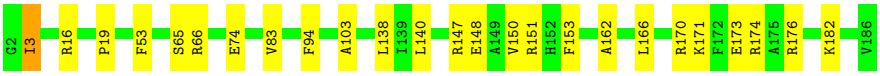




• Molecule 53: Large ribosomal subunit protein eL18A

Chain LS:

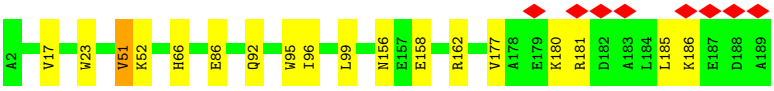




• Molecule 54: Large ribosomal subunit protein eL19A

Chain LT:

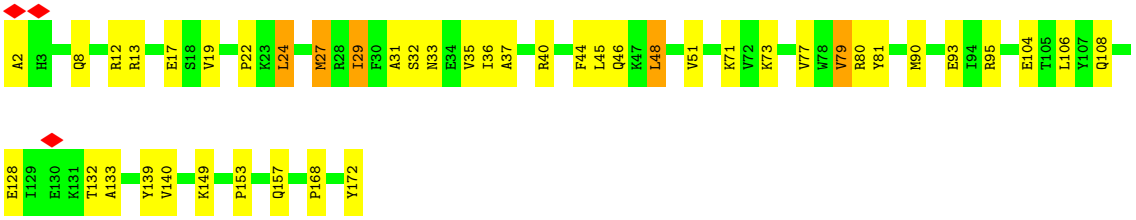




• Molecule 55: Large ribosomal subunit protein eL20A

Chain LU:

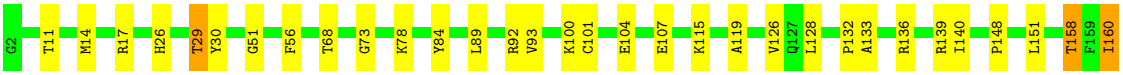




• Molecule 56: Large ribosomal subunit protein eL21A

Chain LV:





• Molecule 57: Large ribosomal subunit protein eL22A

Chain LW:

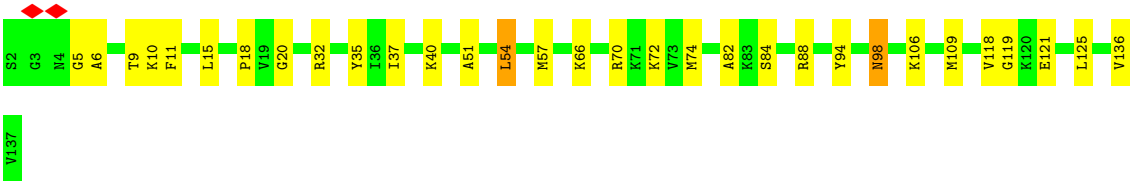




• Molecule 58: Large ribosomal subunit protein uL14A

Chain LX:

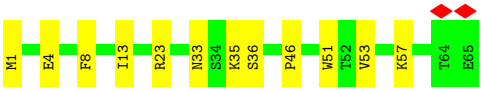




• Molecule 59: Large ribosomal subunit protein eL24A

Chain LY:

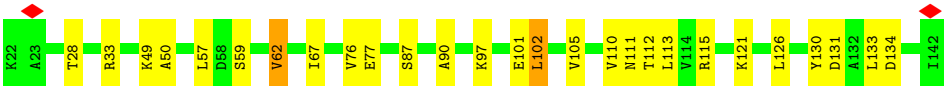




• Molecule 60: Large ribosomal subunit protein uL23

Chain LZ:

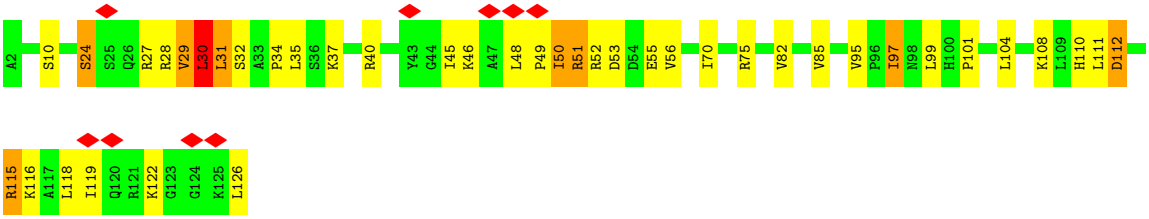




• Molecule 61: Large ribosomal subunit protein uL24A

Chain La:

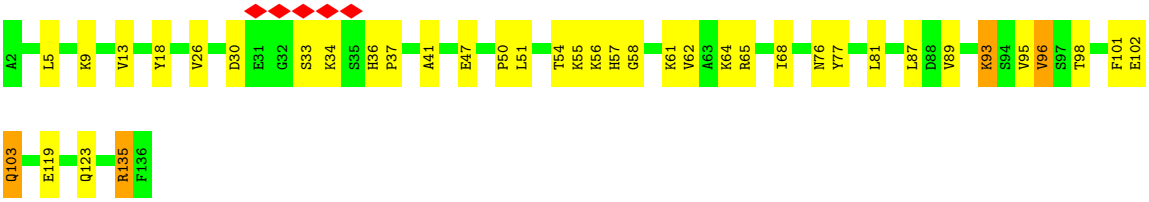




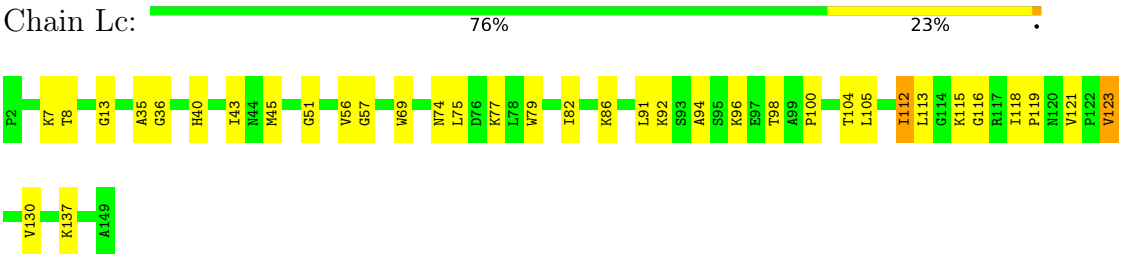
• Molecule 62: Large ribosomal subunit protein eL27A

Chain Lb:

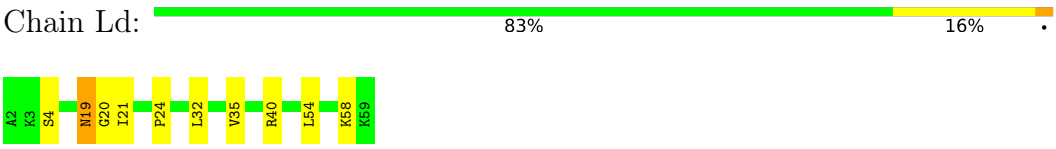




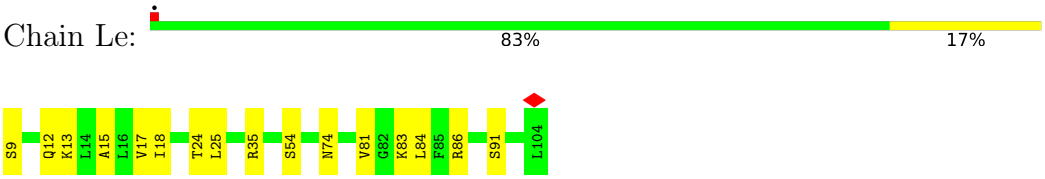
• Molecule 63: Large ribosomal subunit protein uL15



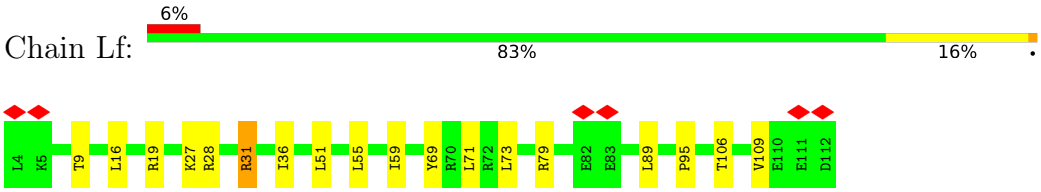
• Molecule 64: Large ribosomal subunit protein eL29



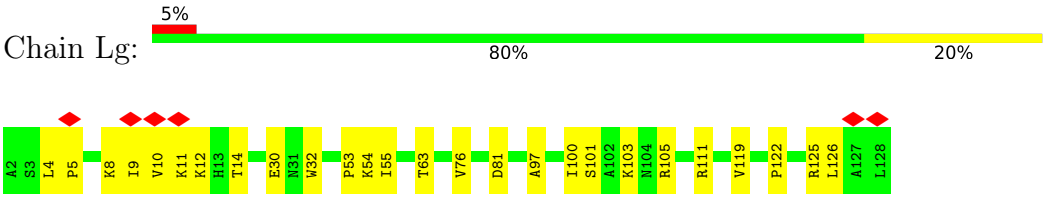
• Molecule 65: Large ribosomal subunit protein eL30



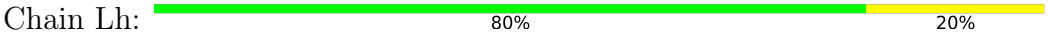
• Molecule 66: Large ribosomal subunit protein eL31A

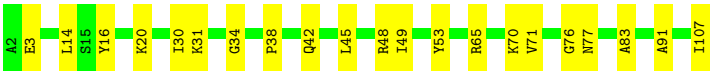


• Molecule 67: Large ribosomal subunit protein eL32



• Molecule 68: Large ribosomal subunit protein eL33A

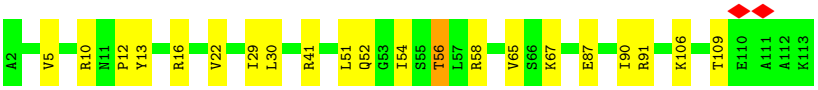




• Molecule 69: Large ribosomal subunit protein eL34A

Chain Li:

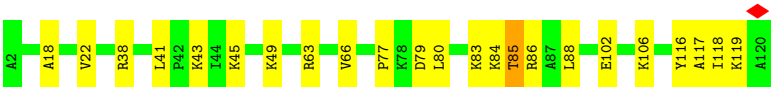




• Molecule 70: Large ribosomal subunit protein uL29A

Chain Lj:

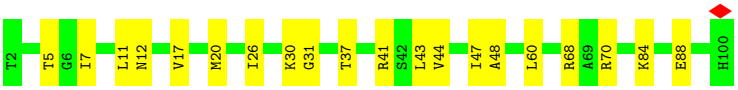




• Molecule 71: Large ribosomal subunit protein eL36A

Chain Lk:

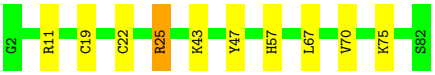




• Molecule 72: Large ribosomal subunit protein eL37A

Chain Ll:

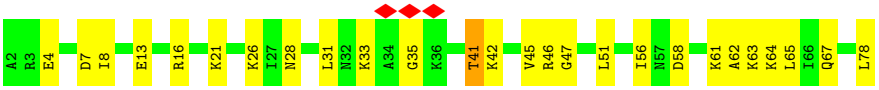




• Molecule 73: Large ribosomal subunit protein eL38

Chain Lm:





• Molecule 74: Large ribosomal subunit protein eL39

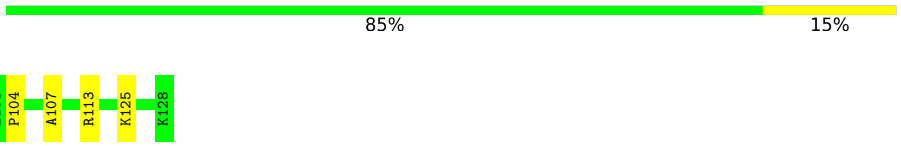
Chain Ln:





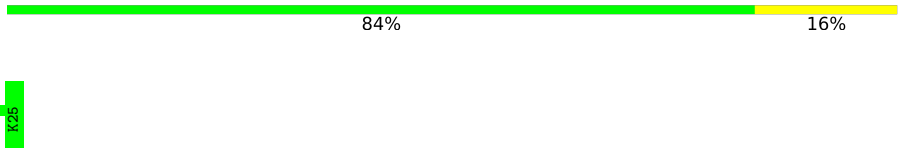
• Molecule 75: Large ribosomal subunit protein eL40A

Chain Lo:



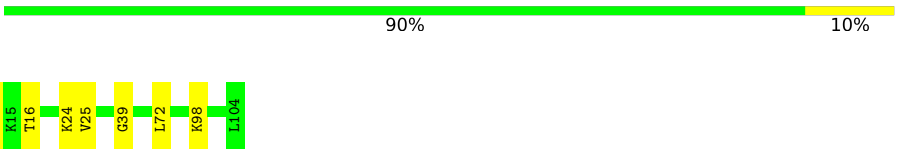
• Molecule 76: Large ribosomal subunit protein eL41A

Chain Lp:



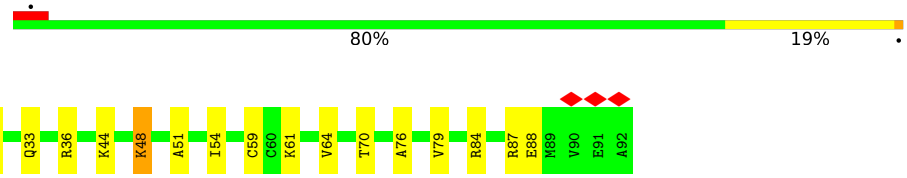
• Molecule 77: Large ribosomal subunit protein eL42A

Chain Lq:



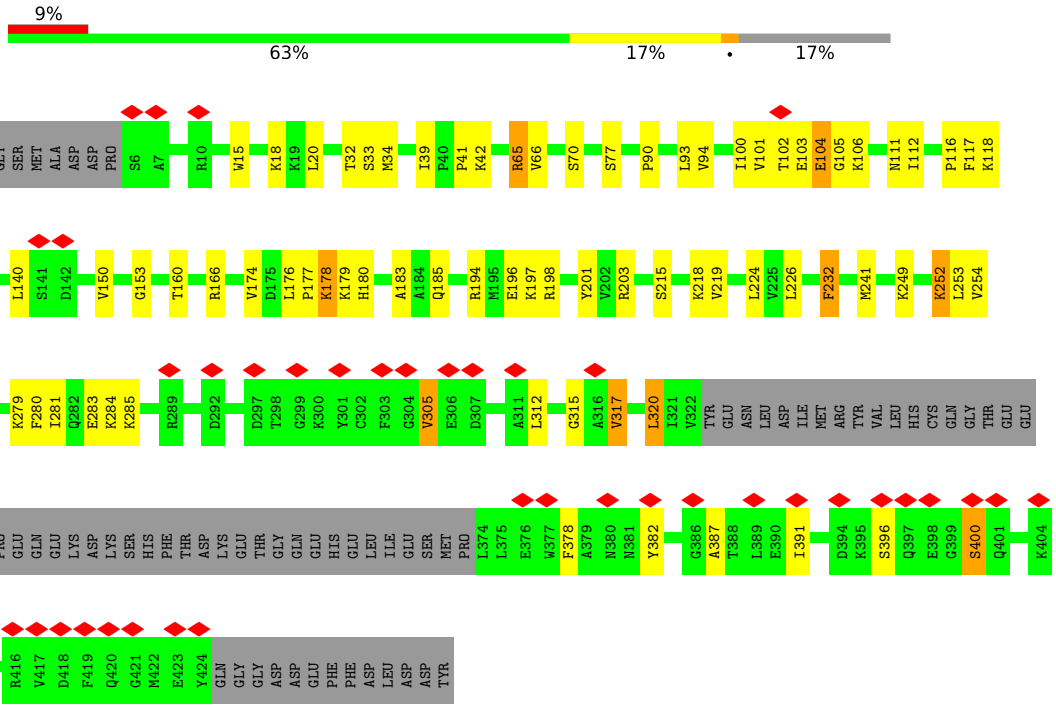
• Molecule 78: Large ribosomal subunit protein eL43A

Chain Lr:



• Molecule 79: Eukaryotic peptide chain release factor subunit 1

Chain eR:



• Molecule 80: RNA (5'-R(P*GP*AP*CP*CP*CP*UP*UP*AP*AP*C)-3')

Chain mR:

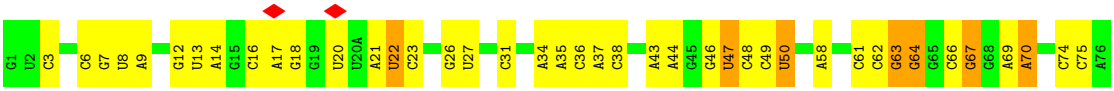


There are no outlier residues recorded for this chain.

• Molecule 81: RNA (77-MER)

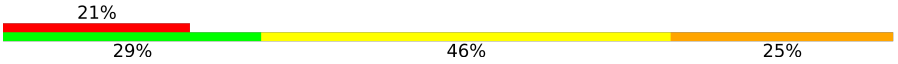
Chain Cc:

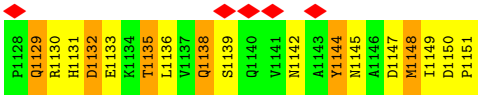




• Molecule 82: PRO-GLN-ARG-HIS-ASP-GLU-LYS-THR-LEU-VAL-GLN-SER-GLN-VAL-ASN-ALA-TYR-ASN-ALA-ASP-MET-ILE-ASP-PRO

Chain pp:





4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	53954	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	3.803	Depositor
Minimum map value	-1.905	Depositor
Average map value	-0.002	Depositor
Map value standard deviation	0.099	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	S2	0.69	4/42211 (0.0%)	0.91	81/65773 (0.1%)
2	SA	0.23	0/1754	0.34	0/2361
3	SB	0.24	0/1625	0.41	0/2197
4	SC	0.19	0/769	0.42	0/1039
5	SD	0.15	0/883	0.41	0/1199
6	SE	0.22	0/936	0.38	0/1259
7	SF	0.26	0/1125	0.38	0/1510
8	SG	0.21	0/957	0.32	0/1283
9	SH	0.22	0/1207	0.37	0/1623
10	SI	0.23	0/1130	0.39	0/1517
11	SJ	0.24	0/807	0.36	0/1091
12	SK	0.19	0/661	0.34	0/888
13	SL	0.25	0/493	0.35	0/663
14	SM	0.27	0/452	0.33	0/600
15	SN	0.13	0/567	0.35	0/764
16	SO	0.18	0/2436	0.39	0/3318
17	SP	0.26	0/1644	0.41	0/2249
18	SQ	0.27	0/1823	0.43	0/2447
19	SR	0.29	0/1656	0.45	0/2251
20	SS	0.26	0/2097	0.40	0/2823
21	ST	0.20	0/1839	0.31	0/2460
22	SU	0.22	0/1498	0.36	0/2019
23	SV	0.29	0/1501	0.39	0/2006
24	SW	0.26	0/1504	0.36	0/2016
25	SX	0.30	0/1168	0.33	0/1575
26	SY	0.29	0/1215	0.36	0/1638
27	SZ	0.32	0/934	0.43	0/1257
28	Sa	0.25	0/682	0.38	0/921
29	Sb	0.34	0/1038	0.40	0/1395
30	Sc	0.31	0/1139	0.37	0/1518
31	Sd	0.22	0/1046	0.35	0/1401
32	Se	0.31	0/778	0.41	0/1042
33	Sf	0.27	0/620	0.38	0/838
34	Sg	0.23	0/459	0.40	0/611

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
35	LA	0.83	0/75727	0.86	81/118064 (0.1%)
36	LB	0.72	0/2883	0.80	2/4491 (0.0%)
37	LC	0.80	0/3746	0.89	10/5832 (0.2%)
38	LD	0.38	0/1933	0.39	0/2598
39	LE	0.33	0/3146	0.36	0/4228
40	LF	0.32	0/2800	0.41	0/3790
41	LG	0.25	0/2400	0.35	0/3239
42	LH	0.26	0/1329	0.35	0/1794
43	LI	0.34	0/1821	0.38	0/2451
44	LJ	0.27	0/1836	0.40	0/2481
45	LK	0.28	0/1529	0.40	0/2060
46	LL	0.30	0/1801	0.37	0/2416
47	LM	0.25	0/1367	0.35	0/1834
48	LN	0.32	0/1568	0.40	0/2106
49	LO	0.27	0/1068	0.38	0/1438
50	LP	0.36	0/1757	0.36	0/2354
51	LQ	0.33	0/1585	0.37	0/2128
52	LR	0.34	0/1439	0.37	0/1938
53	LS	0.33	0/1465	0.38	0/1965
54	LT	0.28	0/1532	0.32	0/2043
55	LU	0.32	0/1473	0.36	0/1980
56	LV	0.31	0/1296	0.36	0/1739
57	LW	0.21	0/812	0.41	1/1099 (0.1%)
58	LX	0.33	0/1018	0.38	0/1369
59	LY	0.32	0/540	0.34	0/717
60	LZ	0.29	0/979	0.36	0/1321
61	La	0.31	0/995	0.48	0/1329
62	Lb	0.27	0/1106	0.37	0/1485
63	Lc	0.35	0/1200	0.38	0/1607
64	Ld	0.32	0/473	0.40	0/629
65	Le	0.29	0/745	0.30	0/1001
66	Lf	0.29	0/890	0.32	0/1196
67	Lg	0.31	0/1038	0.37	0/1390
68	Lh	0.35	0/868	0.38	0/1168
69	Li	0.32	0/890	0.33	0/1189
70	Lj	0.27	0/978	0.31	0/1301
71	Lk	0.27	0/772	0.37	0/1026
72	Ll	0.37	0/660	0.41	0/875
73	Lm	0.24	0/618	0.37	0/826
74	Ln	0.35	0/443	0.33	0/588
75	Lo	0.29	0/416	0.32	0/553
76	Lp	0.31	0/230	0.30	0/296
77	Lq	0.32	0/836	0.37	0/1104

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
78	Lr	0.31	0/701	0.35	0/934
79	eR	0.21	0/2925	0.33	0/3931
81	Cc	0.56	0/1831	0.89	2/2852 (0.1%)
82	pp	0.41	0/187	0.95	1/253 (0.4%)
All	All	0.62	4/218306 (0.0%)	0.72	178/320560 (0.1%)

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
19	SR	0	1
44	LJ	0	1
61	La	0	1
64	Ld	0	2
70	Lj	0	1
All	All	0	6

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	S2	992	A	N9-C4	-5.96	1.34	1.37
1	S2	1344	A	N9-C4	-5.83	1.34	1.37
1	S2	992	A	C2-N3	-5.75	1.28	1.33
1	S2	992	A	N3-C4	-5.23	1.31	1.34

All (178) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	S2	986	G	N3-C4-N9	-9.27	120.44	126.00
35	LA	2734	A	O4'-C1'-N9	8.86	115.29	108.20
1	S2	986	G	C6-C5-N7	8.85	135.71	130.40
37	LC	6	U	O5'-C5'-C4'	8.73	116.39	109.40
1	S2	986	G	C4-N9-C1'	-8.60	115.33	126.50
1	S2	997	G	O5'-C5'-C4'	8.28	116.03	109.40
1	S2	986	G	C8-N9-C1'	8.13	137.57	127.00
35	LA	406	G	O4'-C1'-N9	7.87	114.50	108.20
1	S2	342	C	O5'-C5'-C4'	7.74	115.59	109.40
35	LA	835	G	O4'-C1'-N9	7.58	114.26	108.20
35	LA	1724	U	N3-C2-O2	-7.55	116.91	122.20
1	S2	1439	C	O5'-C5'-C4'	7.54	115.43	109.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
35	LA	179	C	C2-N1-C1'	7.33	126.86	118.80
35	LA	2225	U	N3-C2-O2	-7.21	117.15	122.20
35	LA	1798	A	N7-C8-N9	7.11	117.35	113.80
1	S2	1612	U	N1-C2-O2	7.09	127.76	122.80
35	LA	743	C	C5-C6-N1	-7.09	117.46	121.00
35	LA	1724	U	N1-C2-O2	7.08	127.75	122.80
35	LA	2237	C	N3-C2-O2	-7.03	116.98	121.90
1	S2	996	U	O5'-C5'-C4'	7.01	115.01	109.40
1	S2	276	C	N3-C2-O2	-6.97	117.02	121.90
1	S2	1620	C	N1-C2-O2	6.94	123.06	118.90
1	S2	986	G	N3-C4-C5	6.88	132.04	128.60
37	LC	6	U	C2-N1-C1'	6.84	125.91	117.70
35	LA	1704	A	O4'-C1'-N9	6.80	113.64	108.20
1	S2	1439	C	C2-N1-C1'	6.79	126.27	118.80
1	S2	374	U	N3-C2-O2	-6.77	117.46	122.20
35	LA	743	C	N3-C4-N4	-6.76	113.27	118.00
1	S2	986	G	N3-C2-N2	-6.72	115.19	119.90
35	LA	2875	U	N1-C2-O2	6.66	127.46	122.80
37	LC	6	U	C5-C4-O4	-6.66	121.91	125.90
37	LC	5	U	C2-N1-C1'	6.63	125.66	117.70
1	S2	224	C	N3-C2-O2	-6.63	117.26	121.90
1	S2	624	G	O5'-C5'-C4'	6.59	114.67	109.40
1	S2	744	U	C2-N1-C1'	6.51	125.52	117.70
35	LA	977	C	O5'-C5'-C4'	6.39	114.52	109.40
35	LA	2875	U	C2-N1-C1'	6.38	125.35	117.70
37	LC	26	U	N3-C2-O2	-6.38	117.74	122.20
35	LA	3280	U	O5'-C5'-C4'	6.35	114.48	109.40
1	S2	798	C	O5'-C5'-C4'	6.34	114.47	109.40
35	LA	1280	C	N3-C2-O2	-6.33	117.47	121.90
35	LA	2198	A	O5'-C5'-C4'	6.32	114.45	109.40
37	LC	9	A	O5'-C5'-C4'	6.31	114.45	109.40
35	LA	2726	C	N3-C2-O2	-6.31	117.48	121.90
1	S2	1335	U	O5'-C5'-C4'	6.30	114.44	109.40
35	LA	2226	U	C2-N1-C1'	6.29	125.24	117.70
35	LA	743	C	C6-N1-C2	6.22	122.79	120.30
35	LA	1724	U	C2-N1-C1'	6.18	125.12	117.70
35	LA	2861	U	N3-C2-O2	-6.16	117.89	122.20
36	LB	27	A	C2-N3-C4	6.13	113.67	110.60
35	LA	3041	U	N1-C2-O2	6.11	127.08	122.80
1	S2	209	U	O5'-C5'-C4'	6.04	114.24	109.40
1	S2	886	U	O5'-C5'-C4'	6.03	114.23	109.40
35	LA	2264	U	N3-C2-O2	-6.02	117.99	122.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
35	LA	1798	A	C5-N7-C8	-6.01	100.90	103.90
1	S2	36	C	N3-C2-O2	-6.00	117.70	121.90
35	LA	1496	C	C2-N1-C1'	6.00	125.40	118.80
35	LA	743	C	C2-N1-C1'	-5.98	112.23	118.80
1	S2	1669	U	N3-C2-O2	-5.95	118.04	122.20
35	LA	2550	U	C2-N1-C1'	5.91	124.79	117.70
81	Cc	31	C	C2-N1-C1'	5.91	125.30	118.80
35	LA	1508	C	N3-C2-O2	-5.90	117.77	121.90
1	S2	965	U	C2-N1-C1'	5.90	124.78	117.70
1	S2	985	G	C4-N9-C1'	-5.87	118.87	126.50
1	S2	1439	C	C6-N1-C1'	-5.86	113.77	120.80
35	LA	1214	U	N3-C2-O2	-5.85	118.11	122.20
35	LA	1562	C	O5'-C5'-C4'	5.85	114.08	109.40
35	LA	1277	C	N3-C2-O2	-5.85	117.81	121.90
1	S2	1533	C	N1-C2-O2	5.80	122.38	118.90
35	LA	2222	A	O5'-C5'-C4'	5.78	114.02	109.40
1	S2	105	A	O5'-C5'-C4'	5.75	114.00	109.40
35	LA	2257	C	C2-N1-C1'	5.75	125.12	118.80
35	LA	1508	C	N1-C2-O2	5.71	122.33	118.90
1	S2	1145	U	N3-C2-O2	-5.71	118.20	122.20
1	S2	1287	A	N1-C2-N3	5.71	132.16	129.30
1	S2	36	C	C6-N1-C2	-5.68	118.03	120.30
1	S2	1389	C	C2-N1-C1'	5.66	125.02	118.80
37	LC	6	U	N3-C4-O4	5.64	123.35	119.40
35	LA	3194	C	C6-N1-C2	-5.63	118.05	120.30
35	LA	2327	U	C2-N1-C1'	5.63	124.46	117.70
35	LA	354	U	N3-C2-O2	-5.63	118.26	122.20
35	LA	2875	U	N3-C2-O2	-5.62	118.27	122.20
35	LA	743	C	C5-C4-N4	5.60	124.12	120.20
35	LA	3041	U	N3-C2-O2	-5.59	118.29	122.20
35	LA	1069	C	N3-C2-O2	-5.59	117.99	121.90
35	LA	1798	A	C8-N9-C4	-5.59	103.57	105.80
81	Cc	20	U	C2-N1-C1'	5.56	124.37	117.70
35	LA	179	C	C6-N1-C1'	-5.55	114.14	120.80
35	LA	3194	C	N3-C2-O2	-5.55	118.02	121.90
1	S2	986	G	C4-C5-C6	-5.54	115.47	118.80
1	S2	959	U	N3-C2-O2	-5.50	118.35	122.20
1	S2	1458	G	O5'-C5'-C4'	5.49	113.80	109.40
1	S2	984	G	C4-N9-C1'	-5.49	119.36	126.50
35	LA	1416	C	N1-C1'-C2'	5.49	118.04	112.00
1	S2	1612	U	C2-N1-C1'	5.49	124.29	117.70
35	LA	2327	U	N3-C2-O2	-5.49	118.36	122.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
57	LW	27	VAL	N-CA-C	-5.49	107.93	113.20
35	LA	525	C	C6-N1-C2	-5.48	118.11	120.30
35	LA	2681	U	C2-N1-C1'	5.48	124.27	117.70
37	LC	5	U	C6-N1-C1'	-5.47	113.53	121.20
35	LA	3197	G	N3-C4-N9	-5.47	122.72	126.00
1	S2	1613	U	O5'-C5'-C4'	5.46	113.77	109.40
37	LC	6	U	C6-N1-C1'	-5.46	113.56	121.20
1	S2	1533	C	N3-C2-O2	-5.46	118.08	121.90
82	pp	1144	TYR	CB-CA-C	-5.45	110.27	116.54
35	LA	1216	C	O5'-C5'-C4'	5.44	113.75	109.40
1	S2	984	G	N1-C6-O6	-5.43	116.64	119.90
35	LA	1907	C	N3-C2-O2	-5.43	118.10	121.90
1	S2	985	G	C8-N9-C1'	5.42	134.05	127.00
35	LA	3041	U	N3-C4-O4	-5.42	115.60	119.40
35	LA	1798	A	O4'-C1'-N9	5.42	112.30	108.50
1	S2	992	A	N3-C4-N9	-5.41	123.07	127.40
1	S2	985	G	N3-C4-N9	-5.40	122.76	126.00
35	LA	3048	A	O4'-C1'-N9	5.40	112.52	108.20
1	S2	1282	U	C5-C6-N1	5.38	125.39	122.70
1	S2	476	U	N1-C2-O2	5.37	126.56	122.80
1	S2	888	U	N3-C2-O2	-5.37	118.44	122.20
35	LA	374	A	O5'-C5'-C4'	5.37	113.69	109.40
1	S2	1611	A	N1-C2-N3	5.37	131.98	129.30
35	LA	2328	U	N3-C2-O2	-5.35	118.45	122.20
35	LA	2267	C	N3-C2-O2	-5.35	118.16	121.90
35	LA	544	C	N3-C2-O2	-5.33	118.17	121.90
35	LA	1508	C	C2-N1-C1'	5.33	124.66	118.80
35	LA	2836	C	C6-N1-C2	-5.33	118.17	120.30
1	S2	208	U	O5'-C5'-C4'	5.32	113.66	109.40
1	S2	524	U	O5'-C5'-C4'	5.32	113.65	109.40
1	S2	984	G	C8-N9-C4	5.30	108.52	106.40
35	LA	179	C	N1-C2-O2	5.30	122.08	118.90
1	S2	986	G	N9-C4-C5	5.29	107.52	105.40
1	S2	1053	G	N3-C4-N9	5.29	129.18	126.00
1	S2	912	U	O5'-C5'-C4'	5.29	113.63	109.40
35	LA	2541	U	P-O3'-C3'	5.28	126.04	119.70
1	S2	1598	U	C5-C6-N1	5.27	125.33	122.70
1	S2	1039	A	N1-C6-N6	-5.26	115.44	118.60
35	LA	1739	U	C5-C6-N1	5.26	125.33	122.70
35	LA	2617	U	N3-C2-O2	-5.25	118.53	122.20
36	LB	27	A	O4'-C1'-N9	5.25	112.17	108.50
1	S2	984	G	C6-C5-N7	5.24	133.54	130.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
35	LA	2836	C	N3-C2-O2	-5.24	118.23	121.90
35	LA	1470	U	N3-C2-O2	-5.23	118.54	122.20
1	S2	982	U	C2-N1-C1'	5.22	123.97	117.70
1	S2	1439	C	N1-C2-O2	5.21	122.03	118.90
1	S2	555	A	N1-C2-N3	5.20	131.90	129.30
35	LA	2267	C	C2-N1-C1'	5.20	124.52	118.80
1	S2	986	G	N1-C2-N2	5.20	120.88	116.20
35	LA	2326	A	O4'-C1'-N9	5.18	112.13	108.50
1	S2	36	C	C2-N1-C1'	5.18	124.49	118.80
35	LA	1069	C	C6-N1-C2	-5.18	118.23	120.30
35	LA	2870	C	C2-N1-C1'	-5.16	113.12	118.80
1	S2	819	G	P-O3'-C3'	5.16	125.89	119.70
1	S2	1274	C	O5'-C5'-C4'	5.16	113.52	109.40
1	S2	166	C	O5'-C5'-C4'	5.15	113.52	109.40
1	S2	1286	U	C6-N1-C2	-5.15	117.91	121.00
37	LC	5	U	O5'-C5'-C4'	5.15	113.52	109.40
1	S2	1389	C	C6-N1-C2	-5.14	118.24	120.30
35	LA	2978	U	O4'-C1'-N1	5.14	112.31	108.20
35	LA	1480	G	O4'-C1'-N9	5.14	112.31	108.20
1	S2	1053	G	C4-N9-C1'	5.14	133.18	126.50
35	LA	2226	U	N3-C2-O2	-5.14	118.60	122.20
1	S2	555	A	N7-C8-N9	5.13	116.36	113.80
35	LA	1913	A	O5'-C5'-C4'	5.13	113.50	109.40
35	LA	896	A	O5'-C5'-C4'	5.13	113.50	109.40
1	S2	830	U	N1-C1'-C2'	5.12	117.63	112.00
1	S2	1620	C	C5-C6-N1	5.11	123.56	121.00
35	LA	2257	C	C6-N1-C2	-5.11	118.26	120.30
35	LA	1307	G	P-O3'-C3'	5.11	125.83	119.70
1	S2	1344	A	N3-C4-C5	5.10	130.37	126.80
1	S2	959	U	N1-C2-O2	5.09	126.37	122.80
1	S2	1663	G	O5'-C5'-C4'	5.09	113.47	109.40
35	LA	3181	C	C2-N1-C1'	5.09	124.40	118.80
35	LA	3041	U	C5-C4-O4	5.08	128.95	125.90
1	S2	1584	G	P-O3'-C3'	5.08	125.80	119.70
1	S2	985	G	C6-C5-N7	5.07	133.44	130.40
1	S2	1658	G	N3-C4-C5	-5.05	126.07	128.60
1	S2	1287	A	C2-N3-C4	-5.04	108.08	110.60
1	S2	1438	G	N9-C1'-C2'	-5.04	106.46	112.00
1	S2	36	C	N1-C2-O2	5.02	121.91	118.90
1	S2	1116	A	N1-C2-N3	5.02	131.81	129.30

There are no chirality outliers.

All (6) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
44	LJ	30	THR	Peptide
61	La	30	LEU	Peptide
64	Ld	19	ASN	Peptide
64	Ld	20	GLY	Peptide
70	Lj	83	LYS	Peptide
19	SR	233	GLN	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	S2	37739	0	18988	530	0
2	SA	1729	0	1812	31	0
3	SB	1605	0	1669	32	0
4	SC	752	0	719	28	0
5	SD	875	0	878	17	0
6	SE	916	0	941	22	0
7	SF	1105	0	1166	33	0
8	SG	948	0	990	14	0
9	SH	1188	0	1218	25	0
10	SI	1112	0	1124	20	0
11	SJ	797	0	863	24	0
12	SK	651	0	682	11	0
13	SL	491	0	524	12	0
14	SM	442	0	432	8	0
15	SN	556	0	549	20	0
16	SO	2383	0	2332	65	0
17	SP	1603	0	1610	25	0
18	SQ	1798	0	1890	36	0
19	SR	1626	0	1715	22	0
20	SS	2056	0	2140	41	0
21	ST	1815	0	1894	42	0
22	SU	1473	0	1555	35	0
23	SV	1476	0	1501	30	0
24	SW	1479	0	1556	25	0
25	SX	1142	0	1209	12	0
26	SY	1192	0	1255	22	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
27	SZ	923	0	948	32	0
28	Sa	673	0	662	13	0
29	Sb	1021	0	1060	14	0
30	Sc	1121	0	1196	23	0
31	Sd	1032	0	1044	22	0
32	Se	765	0	814	8	0
33	Sf	610	0	633	8	0
34	Sg	451	0	494	6	0
35	LA	67653	0	33997	671	0
36	LB	2579	0	1304	42	0
37	LC	3353	0	1695	46	0
38	LD	1899	0	1957	36	0
39	LE	3075	0	3142	51	0
40	LF	2748	0	2859	34	0
41	LG	2351	0	2294	42	0
42	LH	1307	0	1377	18	0
43	LI	1784	0	1862	22	0
44	LJ	1804	0	1877	30	0
45	LK	1508	0	1572	28	0
46	LL	1764	0	1802	35	0
47	LM	1346	0	1370	18	0
48	LN	1543	0	1608	30	0
49	LO	1053	0	1149	28	0
50	LP	1720	0	1779	25	0
51	LQ	1555	0	1659	19	0
52	LR	1416	0	1433	20	0
53	LS	1441	0	1543	18	0
54	LT	1515	0	1606	8	0
55	LU	1437	0	1475	37	0
56	LV	1272	0	1312	25	0
57	LW	796	0	812	11	0
58	LX	1003	0	1048	19	0
59	LY	528	0	546	5	0
60	LZ	964	0	1025	17	0
61	La	984	0	1075	35	0
62	Lb	1080	0	1122	23	0
63	Lc	1169	0	1211	23	0
64	Ld	462	0	491	4	0
65	Le	737	0	792	11	0
66	Lf	876	0	912	8	0
67	Lg	1017	0	1081	15	0
68	Lh	850	0	880	13	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
69	Li	880	0	945	15	0
70	Lj	969	0	1078	20	0
71	Lk	766	0	844	12	0
72	Ll	645	0	649	7	0
73	Lm	612	0	682	12	0
74	Ln	436	0	475	8	0
75	Lo	410	0	446	7	0
76	Lp	229	0	273	4	0
77	Lq	824	0	892	8	0
78	Lr	694	0	738	10	0
79	eR	2881	0	2947	52	0
80	mR	209	0	0	0	0
81	Cc	1638	0	834	19	0
82	pp	184	0	162	15	0
All	All	203511	0	150695	2586	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 7.

All (2586) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S2:1673:G:N1	1:S2:1728:A:H2	1.49	1.09
1:S2:1673:G:N1	1:S2:1728:A:C2	2.24	1.03
1:S2:1483:A:H8	1:S2:1607:G:HO2'	1.06	1.00
81:Cc:50:U:H3	81:Cc:64:G:H1	1.08	0.98
37:LC:48:A:H61	37:LC:54:A:H61	1.13	0.96
1:S2:1588:G:H1	1:S2:1608:U:H3	0.96	0.93
45:LK:128:VAL:HG11	45:LK:134:ILE:HD11	1.49	0.92
35:LA:727:G:H1	35:LA:743:C:H41	1.17	0.91
35:LA:1533:U:HO2'	35:LA:1798:A:H8	1.08	0.90
37:LC:121:U:H3	37:LC:132:G:H1	0.95	0.90
1:S2:1673:G:O6	1:S2:1728:A:N1	2.04	0.89
1:S2:984:G:O6	1:S2:1017:U:O2	1.89	0.89
1:S2:1662:G:H1	1:S2:1738:U:H3	1.18	0.89
35:LA:3160:U:H3	35:LA:3290:G:H1	0.87	0.86
35:LA:1666:G:H1	35:LA:1783:U:H3	1.24	0.85
35:LA:512:U:H3	35:LA:579:G:H1	1.17	0.85
35:LA:1664:G:H1	35:LA:1785:U:H3	1.19	0.85
1:S2:889:U:H3	1:S2:922:G:H1	1.26	0.84
1:S2:1585:U:H3	1:S2:1611:A:H2	1.26	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:LL:102:MET:HB3	46:LL:112:GLN:HE21	1.44	0.83
35:LA:415:G:H1	37:LC:7:U:H3	1.27	0.82
35:LA:1657:C:H42	35:LA:1798:A:H2	1.27	0.81
1:S2:749:U:H3	1:S2:799:A:H2	1.27	0.81
1:S2:698:U:H3	1:S2:741:C:N4	1.79	0.81
7:SF:83:GLN:HE22	7:SF:119:ALA:HA	1.46	0.81
1:S2:174:U:H3	1:S2:266:A:H62	1.29	0.81
60:LZ:50:ALA:HB1	70:Lj:66:VAL:HG11	1.61	0.81
38:LD:149:ARG:HH22	38:LD:155:LYS:HE3	1.45	0.80
1:S2:1019:A:H3'	1:S2:1020:A:H4'	1.63	0.80
62:Lb:50:PRO:HG3	62:Lb:68:ILE:HG12	1.64	0.79
20:SS:104:ASP:HB3	20:SS:110:ALA:HB2	1.65	0.79
8:SG:24:LEU:HB3	8:SG:34:LEU:HD11	1.63	0.78
1:S2:554:C:H1'	1:S2:555:A:H2	1.48	0.78
63:Lc:104:THR:HG21	63:Lc:112:ILE:HD11	1.66	0.78
49:LO:38:ILE:HA	49:LO:44:VAL:HG23	1.63	0.78
35:LA:3195:U:H2'	35:LA:3197:G:H21	1.47	0.78
1:S2:1353:U:H3	1:S2:1370:U:H3	1.30	0.78
35:LA:688:G:H21	35:LA:692:A:H2	1.29	0.78
45:LK:166:ARG:HH22	75:Lo:102:ARG:HH12	1.30	0.78
35:LA:957:C:H1'	63:Lc:43:ILE:HD11	1.66	0.78
1:S2:1252:C:H4'	15:SN:131:PHE:HB2	1.66	0.77
1:S2:1525:A:H1'	1:S2:1590:G:H4'	1.65	0.77
21:ST:49:VAL:HG11	21:ST:114:VAL:HG12	1.65	0.77
1:S2:1352:G:H22	1:S2:1373:C:H42	1.32	0.77
35:LA:727:G:H1	35:LA:743:C:N4	1.83	0.77
11:SJ:57:ARG:HE	11:SJ:89:ARG:HH22	1.33	0.77
1:S2:1561:U:H2'	1:S2:1562:G:H8	1.50	0.76
35:LA:1940:G:H21	35:LA:3362:A:H8	1.30	0.76
16:SO:129:LYS:HG2	16:SO:148:ASN:HA	1.66	0.76
43:LI:233:GLU:HG2	55:LU:35:VAL:HG22	1.67	0.75
35:LA:1324:U:H5"	55:LU:2:ALA:HA	1.69	0.75
1:S2:698:U:N3	1:S2:741:C:N4	2.35	0.75
52:LR:122:ALA:HB3	52:LR:143:PRO:HB2	1.68	0.74
3:SB:43:PHE:HD2	3:SB:46:TRP:HB2	1.52	0.74
1:S2:984:G:O6	1:S2:1017:U:C2	2.40	0.74
6:SE:17:TYR:H	6:SE:20:VAL:HG12	1.53	0.74
11:SJ:28:SER:HB3	11:SJ:34:LEU:HB2	1.69	0.73
11:SJ:82:TYR:HB3	14:SM:52:PHE:HB3	1.70	0.73
35:LA:2249:G:H1	35:LA:2267:C:H5	1.35	0.73
35:LA:412:G:C5	35:LA:413:U:H1'	2.24	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
67:Lg:97:ALA:HB3	67:Lg:100:ILE:HD13	1.70	0.73
35:LA:3329:U:H5"	39:LE:308:MET:HE2	1.71	0.73
1:S2:1171:A:H2'	1:S2:1172:G:C8	2.24	0.73
1:S2:822:U:H3	1:S2:850:A:H2	1.35	0.72
70:Lj:85:THR:HG22	70:Lj:88:LEU:H	1.52	0.72
1:S2:886:U:H2'	1:S2:887:A:C8	2.24	0.72
35:LA:1687:U:H5	57:LW:42:LYS:HG3	1.53	0.72
7:SF:44:LEU:HD13	7:SF:78:VAL:HG21	1.71	0.72
79:eR:219:VAL:HG11	79:eR:249:LYS:HE3	1.71	0.72
18:SQ:35:PRO:HB3	18:SQ:231:LEU:HD13	1.72	0.72
79:eR:33:SER:HB3	79:eR:70:SER:HB3	1.71	0.72
35:LA:688:G:N2	35:LA:692:A:C2	2.54	0.72
22:SU:113:PRO:HG2	22:SU:116:ARG:HG2	1.70	0.71
16:SO:20:VAL:HG11	16:SO:310:ILE:HD11	1.71	0.71
35:LA:1807:G:H5"	62:Lb:135:ARG:HH22	1.55	0.71
39:LE:291:GLU:HB2	39:LE:302:LYS:HE2	1.71	0.71
35:LA:1661:G:H2'	35:LA:1662:G:C8	2.25	0.71
56:LV:84:TYR:HB2	64:Ld:24:PRO:HD3	1.72	0.71
1:S2:1667:A:H61	1:S2:1733:C:H42	1.39	0.71
3:SB:77:TYR:HA	3:SB:83:ARG:HG2	1.72	0.71
1:S2:1116:A:H2	1:S2:1117:U:H5	1.37	0.70
73:Lm:26:LYS:HD2	73:Lm:78:LEU:HD11	1.73	0.70
35:LA:2356:A:H61	35:LA:2983:C:H5	1.39	0.70
75:Lo:104:PRO:HG2	75:Lo:107:ALA:HB2	1.73	0.70
78:Lr:36:ARG:HG3	78:Lr:48:LYS:HD3	1.73	0.70
1:S2:1672:G:H2'	1:S2:1673:G:H8	1.56	0.70
1:S2:1681:A:H2	1:S2:1720:G:H21	1.38	0.70
55:LU:29:ILE:HD11	55:LU:31:ALA:HB2	1.73	0.70
45:LK:57:VAL:HG23	45:LK:68:LEU:HD13	1.74	0.70
1:S2:1597:A:H2'	1:S2:1598:U:H6	1.56	0.69
35:LA:2278:C:H42	35:LA:2305:G:H22	1.40	0.69
35:LA:3344:A:H2	35:LA:3361:G:H21	1.39	0.69
1:S2:1673:G:C6	1:S2:1728:A:N1	2.60	0.69
62:Lb:81:LEU:HD22	69:Li:90:ILE:HD13	1.73	0.69
1:S2:167:U:H3	1:S2:168:A:H62	1.41	0.69
1:S2:289:U:H2'	1:S2:290:G:H4'	1.75	0.69
21:ST:30:LYS:HE2	21:ST:36:VAL:HG12	1.72	0.69
46:LL:106:ALA:H	79:eR:197:LYS:HD3	1.57	0.69
20:SS:129:VAL:HG22	20:SS:139:VAL:HG12	1.75	0.69
46:LL:30:LYS:HG3	46:LL:63:GLU:HG3	1.74	0.69
79:eR:15:TRP:HA	79:eR:18:LYS:HE2	1.75	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:LA:1533:U:O2'	35:LA:1798:A:H8	1.74	0.69
35:LA:2107:A:H2	35:LA:3344:A:H8	1.41	0.69
35:LA:1101:G:H5"	43:LI:107:ARG:HD2	1.75	0.69
35:LA:1889:G:H5'	39:LE:245:GLY:HA2	1.74	0.68
45:LK:95:ALA:HA	75:Lo:78:ILE:HG21	1.76	0.68
35:LA:3016:A:H2'	35:LA:3017:A:H8	1.57	0.68
1:S2:1474:G:H2'	1:S2:1475:A:C8	2.28	0.68
28:Sa:51:VAL:HG21	28:Sa:78:LEU:HD11	1.75	0.68
56:LV:158:THR:HG22	56:LV:160:ILE:H	1.57	0.68
35:LA:374:A:H4'	35:LA:375:A:H5'	1.74	0.68
11:SJ:58:LEU:HD12	11:SJ:88:LYS:HG2	1.75	0.68
35:LA:3226:A:H62	35:LA:3260:G:N2	1.92	0.67
62:Lb:33:SER:H	62:Lb:37:PRO:HA	1.59	0.67
24:SW:126:ARG:O	24:SW:130:THR:HG23	1.94	0.67
44:LJ:162:LEU:HD23	50:LP:7:LEU:HD21	1.76	0.67
35:LA:1120:A:H62	35:LA:1138:U:H3	1.41	0.67
35:LA:3016:A:H2'	35:LA:3017:A:C8	2.29	0.67
1:S2:1672:G:H2'	1:S2:1673:G:C8	2.29	0.67
56:LV:115:LYS:HB3	56:LV:126:VAL:HG21	1.77	0.67
27:SZ:25:ASP:HA	27:SZ:54:GLU:OE1	1.95	0.67
41:LG:153:THR:HG23	41:LG:160:PHE:HZ	1.58	0.67
2:SA:7:LYS:HE2	11:SJ:27:THR:HG21	1.76	0.67
3:SB:51:VAL:HG11	3:SB:130:ILE:HG22	1.77	0.67
35:LA:1696:A:H2'	35:LA:1697:A:C8	2.30	0.67
54:LT:23:TRP:HB3	54:LT:51:VAL:HG12	1.75	0.67
1:S2:169:A:H4'	1:S2:170:U:H5'	1.76	0.67
49:LO:135:LEU:HD21	51:LQ:178[A]:VAL:HG22	1.77	0.67
7:SF:41:PRO:HG2	7:SF:44:LEU:HG	1.76	0.67
21:ST:159:ARG:HE	21:ST:172:ALA:HB2	1.60	0.67
27:SZ:42:VAL:HG13	27:SZ:46:MET:HE2	1.74	0.67
35:LA:959:C:H41	35:LA:2801:A:H2'	1.57	0.67
1:S2:837:G:H2'	1:S2:838:G:C8	2.30	0.66
26:SY:23:PRO:HD2	26:SY:26:PHE:HB2	1.76	0.66
16:SO:132:LYS:HD2	16:SO:134:TRP:HE1	1.58	0.66
16:SO:216:LYS:HA	16:SO:239:GLU:HG2	1.77	0.66
48:LN:3:ILE:HG21	63:Lc:45:MET:HE3	1.75	0.66
28:Sa:9:VAL:HG22	28:Sa:10:GLU:H	1.60	0.66
21:ST:78:THR:HG23	21:ST:92:ARG:HG3	1.77	0.66
35:LA:3233:C:H2'	35:LA:3234:A:C8	2.31	0.66
60:LZ:115:ARG:HD3	60:LZ:121:LYS:HE3	1.77	0.66
1:S2:921:U:H3'	1:S2:922:G:H5'	1.77	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:LJ:108:ARG:HA	44:LJ:111:LYS:HG2	1.78	0.66
1:S2:868:G:H1	1:S2:960:U:H3	1.44	0.66
36:LB:26:C:C4	36:LB:27:A:H1'	2.31	0.66
1:S2:513:U:H2'	1:S2:514:G:C8	2.31	0.65
16:SO:178:VAL:HG23	16:SO:195:HIS:HE1	1.60	0.65
1:S2:1145:U:H5	1:S2:1633:A:N1	1.94	0.65
26:SY:22:ALA:HB3	26:SY:65:VAL:HG11	1.77	0.65
63:Lc:91:LEU:HA	63:Lc:121:VAL:HG21	1.78	0.65
19:SR:232:GLU:HG2	19:SR:234:PRO:HD3	1.76	0.65
35:LA:2768:U:H2'	35:LA:2769:A:H8	1.61	0.65
40:LF:35:VAL:HG21	40:LF:244:LEU:HD21	1.77	0.65
8:SG:25:THR:HG23	8:SG:27:ASP:H	1.60	0.65
49:LO:135:LEU:HD11	51:LQ:178[A]:VAL:HA	1.76	0.65
61:La:52:ARG:O	61:La:70:ILE:HB	1.97	0.65
24:SW:109:LEU:HB2	24:SW:146:PHE:HB3	1.79	0.65
67:Lg:8:LYS:NZ	67:Lg:12:LYS:H	1.93	0.65
35:LA:538:G:O6	35:LA:553:U:O2	2.14	0.65
38:LD:190:ARG:HG3	38:LD:191:LEU:HD22	1.79	0.65
3:SB:87:CYS:HB3	3:SB:92:ARG:HD3	1.79	0.65
35:LA:1035:G:H2'	35:LA:1037:C:H41	1.62	0.65
53:LS:170:ARG:HD2	63:Lc:57:GLY:HA3	1.79	0.65
65:Le:24:THR:HG22	65:Le:91:SER:HB3	1.79	0.65
67:Lg:8:LYS:HZ1	67:Lg:12:LYS:H	1.45	0.65
18:SQ:24:PHE:CE1	27:SZ:39:ILE:HG22	2.32	0.64
16:SO:91:LEU:HD13	16:SO:101:GLN:HB3	1.78	0.64
35:LA:1446:A:H5"	52:LR:65:SER:HB3	1.77	0.64
44:LJ:143:ILE:HG23	44:LJ:175:VAL:HG11	1.78	0.64
56:LV:11:THR:HG22	56:LV:14:MET:HE3	1.78	0.64
23:SV:156:VAL:HA	23:SV:159:GLN:HE21	1.62	0.64
35:LA:900:G:H1'	35:LA:1589:A:N6	2.13	0.64
25:SX:109:VAL:HG11	25:SX:125:VAL:HG11	1.78	0.64
44:LJ:162:LEU:HD21	50:LP:45:PRO:HG2	1.79	0.64
20:SS:19:LEU:HD11	20:SS:108:ARG:HD3	1.79	0.64
31:Sd:12:VAL:HG22	31:Sd:23:PHE:HB3	1.80	0.64
1:S2:1353:U:H3'	1:S2:1354:G:C8	2.32	0.64
1:S2:1474:G:H2'	1:S2:1475:A:H8	1.62	0.64
1:S2:1567:U:H2'	1:S2:1568:C:C2	2.32	0.64
8:SG:26:LEU:HD21	8:SG:62:GLN:HG3	1.78	0.64
60:LZ:57:LEU:HG	60:LZ:62:VAL:HG12	1.80	0.64
19:SR:139:ILE:HD12	19:SR:218:ILE:HG13	1.80	0.64
18:SQ:71:ALA:HB2	18:SQ:80:SER:HA	1.79	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:LA:429:U:H2'	35:LA:430:U:C6	2.33	0.64
35:LA:1232:C:H2'	35:LA:1233:G:H8	1.62	0.64
23:SV:106:ALA:HB2	23:SV:165:LEU:HG	1.79	0.64
35:LA:1364:C:H5"	53:LS:3:ILE:HD13	1.78	0.64
35:LA:662:U:H2'	35:LA:663:C:C6	2.34	0.63
35:LA:1203:A:H2'	35:LA:1204:A:C8	2.33	0.63
35:LA:1604:G:H4'	35:LA:1835:A:H4'	1.80	0.63
35:LA:3295:A:H2'	35:LA:3296:A:C8	2.33	0.63
65:Le:15:ALA:HA	65:Le:18:ILE:HD12	1.81	0.63
1:S2:12:U:H2'	1:S2:13:C:C6	2.34	0.63
40:LF:219:LEU:HD22	40:LF:225:VAL:HG11	1.79	0.63
46:LL:102:MET:HB3	46:LL:112:GLN:NE2	2.12	0.63
23:SV:57:ALA:HB2	23:SV:177:GLY:HA2	1.80	0.63
41:LG:244:HIS:HA	41:LG:248:ARG:HB2	1.80	0.63
35:LA:1213:G:H4'	55:LU:90:MET:HB2	1.80	0.63
62:Lb:5:LEU:HD11	65:Le:35:ARG:HD2	1.80	0.63
35:LA:3230:G:H4'	49:LO:132:LYS:HD3	1.80	0.63
69:Li:51:LEU:HB3	69:Li:54:ILE:HD13	1.80	0.63
62:Lb:101:PHE:O	62:Lb:102:GLU:HG2	1.99	0.63
21:ST:103:GLY:H	21:ST:106:LEU:HD23	1.63	0.63
35:LA:829:U:H3	35:LA:895:A:H62	1.45	0.63
15:SN:80:ARG:HD2	79:eR:102:THR:O	1.99	0.62
20:SS:246:LEU:HB3	20:SS:250:GLU:HG3	1.81	0.62
35:LA:3344:A:C2	35:LA:3361:G:N2	2.60	0.62
37:LC:71:A:H5"	61:La:51:ARG:HG3	1.81	0.62
1:S2:1533:C:H4'	1:S2:1539:G:C6	2.34	0.62
3:SB:68:ILE:HD11	3:SB:90:ILE:HD11	1.80	0.62
11:SJ:28:SER:HB2	11:SJ:112:VAL:HG23	1.80	0.62
39:LE:242:THR:HG21	39:LE:246:LEU:HB3	1.81	0.62
40:LF:234:ASN:HB3	40:LF:237:GLN:HG2	1.81	0.62
49:LO:14:LEU:HD23	49:LO:14:LEU:H	1.64	0.62
62:Lb:54:THR:HG22	62:Lb:56:LYS:H	1.63	0.62
81:Cc:66:C:H2'	81:Cc:67:G:H8	1.64	0.62
1:S2:146:U:H2'	1:S2:147:A:H5"	1.80	0.62
1:S2:699:U:HO2'	1:S2:700:C:H6	1.48	0.62
35:LA:3119:U:H4'	75:Lo:104:PRO:HG3	1.82	0.62
37:LC:48:A:N6	37:LC:54:A:H61	1.92	0.62
81:Cc:66:C:H2'	81:Cc:67:G:C8	2.34	0.62
23:SV:168:CYS:HB2	23:SV:184:LEU:HD21	1.82	0.62
37:LC:57:C:H4'	37:LC:63:G:N7	2.15	0.62
49:LO:48:GLY:HA3	49:LO:53:VAL:HB	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:LA:2221:G:H2'	35:LA:2222:A:H5'	1.82	0.62
61:La:35:LEU:HG	61:La:46:LYS:HZ1	1.65	0.62
15:SN:80:ARG:HD3	79:eR:106:LYS:H	1.64	0.62
22:SU:27:LEU:HD11	22:SU:38:LEU:HD11	1.82	0.62
33:Sf:51:GLN:HA	33:Sf:66:PRO:HB3	1.80	0.62
35:LA:2836:C:H5	35:LA:2852:C:H42	1.46	0.62
35:LA:3270:U:C4	42:LH:46:ARG:HD3	2.34	0.62
1:S2:871:G:H2'	1:S2:872:G:C8	2.34	0.61
31:Sd:6:THR:HG23	31:Sd:28:LEU:HB2	1.81	0.61
35:LA:655:C:H2'	35:LA:656:A:H8	1.64	0.61
35:LA:2864:A:H5"	46:LL:114:GLY:HA2	1.82	0.61
39:LE:17:LEU:HD21	39:LE:233:TRP:HH2	1.64	0.61
61:La:40:ARG:HE	61:La:46:LYS:HD3	1.64	0.61
1:S2:1146:G:H2'	1:S2:1147:A:C8	2.35	0.61
35:LA:1639:C:H5'	69:Li:52:GLN:HG2	1.80	0.61
35:LA:1688:U:H2'	35:LA:1689:U:C6	2.35	0.61
1:S2:636:A:H5"	29:Sb:31:SER:HB3	1.82	0.61
1:S2:1471:A:H2	1:S2:1474:G:N3	1.99	0.61
20:SS:94:ALA:HB1	31:Sd:16:PRO:HB2	1.82	0.61
1:S2:834:G:H2'	1:S2:835:U:H4'	1.82	0.61
1:S2:1034:C:HO2'	29:Sb:2:THR:N	1.97	0.61
1:S2:1160:A:H2'	1:S2:1161:C:H6	1.66	0.61
2:SA:137:VAL:HG22	2:SA:151:LYS:HG3	1.80	0.61
24:SW:90:LYS:HZ2	24:SW:92:LYS:H	1.49	0.61
35:LA:655:C:H2'	35:LA:656:A:C8	2.35	0.61
42:LH:68:PRO:HB3	42:LH:142:ASP:HB2	1.83	0.61
35:LA:1794:G:H4'	38:LD:191:LEU:HD23	1.81	0.61
35:LA:1013:G:O6	35:LA:1035:G:C2	2.54	0.61
40:LF:177:ASP:HB3	40:LF:205:PRO:HD3	1.83	0.61
1:S2:407:A:H2'	1:S2:408:C:C6	2.35	0.61
6:SE:96:ILE:HG12	6:SE:116:LEU:HG	1.82	0.61
35:LA:1786:G:H2'	35:LA:1787:A:C8	2.36	0.61
35:LA:3322:A:H2'	35:LA:3323:A:C8	2.36	0.61
1:S2:1160:A:H2'	1:S2:1161:C:C6	2.36	0.60
35:LA:688:G:N2	35:LA:692:A:H2	1.95	0.60
41:LG:41:LYS:HD2	56:LV:93:VAL:HG11	1.82	0.60
57:LW:17:VAL:HB	57:LW:63:VAL:HG13	1.83	0.60
1:S2:103:A:H4'	1:S2:105:A:C8	2.36	0.60
16:SO:240:VAL:HG22	16:SO:256:THR:HG22	1.83	0.60
1:S2:1597:A:H2'	1:S2:1598:U:C6	2.35	0.60
35:LA:1764:U:H5"	35:LA:1765:U:C5	2.37	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:LM:117:ASP:HB3	47:LM:120:ILE:HG12	1.84	0.60
50:LP:183:THR:HG22	50:LP:187:ARG:HB2	1.83	0.60
35:LA:1724:U:H1'	35:LA:1725:C:C6	2.36	0.60
35:LA:2357:A:H2'	35:LA:2358:A:C8	2.35	0.60
54:LT:92:GLN:O	54:LT:96:ILE:HG12	2.01	0.60
16:SO:178:VAL:HG23	16:SO:195:HIS:CE1	2.36	0.60
17:SP:182:LEU:HB3	17:SP:188:LEU:HD13	1.83	0.60
20:SS:131:LEU:HA	20:SS:137:PRO:HA	1.83	0.60
46:LL:182:LEU:O	46:LL:186:GLU:HG2	2.01	0.60
55:LU:29:ILE:HD11	55:LU:37:ALA:HA	1.82	0.60
81:Cc:62:C:H2'	81:Cc:63:G:H8	1.66	0.60
67:Lg:9:ILE:HG22	67:Lg:10:VAL:HG23	1.83	0.60
22:SU:49:ILE:HG13	22:SU:175:LYS:HD3	1.84	0.60
35:LA:2125:A:N1	35:LA:2328:U:H5	2.00	0.60
1:S2:502:U:H2'	1:S2:503:G:C8	2.37	0.60
1:S2:1171:A:H2'	1:S2:1172:G:H8	1.66	0.60
6:SE:22:LEU:HA	6:SE:25:LEU:HG	1.84	0.60
16:SO:168:THR:HG23	16:SO:181:TRP:O	2.02	0.60
41:LG:41:LYS:HB2	56:LV:68:THR:O	2.02	0.60
1:S2:212:U:O5'	1:S2:213:A:H5"	2.01	0.60
36:LB:26:C:H5'	41:LG:56:THR:HB	1.84	0.60
39:LE:215:ILE:HD12	39:LE:338:LEU:HB3	1.82	0.60
1:S2:1485:C:H1'	1:S2:1606:C:H4'	1.84	0.59
1:S2:1590:G:OP1	10:SI:91:TYR:HB2	2.02	0.59
4:SC:1:MET:HE1	4:SC:40:LEU:HG	1.82	0.59
21:ST:121:LEU:HD13	21:ST:124:LEU:HD12	1.84	0.59
35:LA:1845:G:H5"	35:LA:1846:C:H5'	1.83	0.59
35:LA:2874:G:H4'	82:pp:1148:MET:HE3	1.82	0.59
48:LN:123:ILE:HG22	70:Lj:118:ILE:HG12	1.83	0.59
15:SN:117:LEU:HG	15:SN:118:ARG:HG2	1.84	0.59
27:SZ:18:ARG:HB3	27:SZ:29:HIS:O	2.01	0.59
1:S2:84:A:H3'	1:S2:85:A:H5"	1.83	0.59
1:S2:323:A:H5"	23:SV:11:ARG:HD2	1.83	0.59
35:LA:2768:U:H2'	35:LA:2769:A:C8	2.37	0.59
1:S2:891:A:H2'	1:S2:892:A:C8	2.37	0.59
1:S2:1561:U:H2'	1:S2:1562:G:C8	2.37	0.59
30:Sc:56:LYS:HG3	30:Sc:93:LEU:HD11	1.85	0.59
32:Se:87:ARG:HB3	32:Se:91:ASP:OD1	2.02	0.59
35:LA:2894:C:H2'	35:LA:2895:G:H8	1.68	0.59
46:LL:54:SER:HB3	46:LL:135:ILE:HD11	1.84	0.59
41:LG:153:THR:HG23	41:LG:160:PHE:CZ	2.38	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:LU:73:LYS:HD2	55:LU:128:GLU:HG3	1.83	0.59
6:SE:86:VAL:H	6:SE:89:MET:HE2	1.67	0.59
8:SG:31:ASN:HD22	8:SG:55:THR:HB	1.67	0.59
1:S2:918:U:H2'	1:S2:919:A:C8	2.38	0.59
16:SO:48:THR:HG23	16:SO:50:ASP:HB2	1.85	0.59
17:SP:37:VAL:HG22	17:SP:149:LEU:HD13	1.85	0.59
35:LA:370:U:H4'	35:LA:404:G:H5'	1.84	0.59
1:S2:939:A:H2'	1:S2:940:A:C8	2.37	0.59
18:SQ:121:ILE:HD12	18:SQ:207:LEU:HD11	1.85	0.59
35:LA:715:A:H8	63:Lc:115:LYS:HG3	1.67	0.59
35:LA:726:G:H21	35:LA:744:A:H2	1.47	0.59
35:LA:976:U:H3	35:LA:1105:A:H62	1.49	0.59
35:LA:3357:U:H2'	35:LA:3358:U:C6	2.38	0.59
36:LB:27:A:H5"	41:LG:57:ASN:ND2	2.18	0.59
46:LL:17:TYR:O	46:LL:96:VAL:HG13	2.03	0.59
55:LU:29:ILE:HD13	55:LU:40:ARG:HB2	1.84	0.59
70:Lj:85:THR:HB	70:Lj:88:LEU:HD12	1.84	0.59
79:eR:20:LEU:HD21	79:eR:112:ILE:HG21	1.84	0.59
35:LA:896:A:H61	35:LA:2147:A:H8	1.51	0.59
35:LA:2762:A:H2'	35:LA:2763:U:H6	1.68	0.59
16:SO:90:ARG:HH11	16:SO:99:THR:HG21	1.67	0.58
35:LA:2953:U:H2'	35:LA:2954:U:H2'	1.84	0.58
41:LG:243:ALA:HB1	41:LG:248:ARG:HG3	1.85	0.58
65:Le:74:ASN:HB2	65:Le:86:ARG:HB3	1.85	0.58
79:eR:32:THR:HB	79:eR:128:ASP:HA	1.84	0.58
1:S2:1221:A:H3'	1:S2:1222:C:H4'	1.85	0.58
35:LA:2767:U:H2'	35:LA:2768:U:C6	2.38	0.58
46:LL:36:LEU:HD21	46:LL:69:ARG:HD2	1.84	0.58
49:LO:68:LEU:HD11	49:LO:94:TRP:HB2	1.84	0.58
1:S2:212:U:H3'	1:S2:213:A:C5'	2.32	0.58
1:S2:1383:G:H8	1:S2:1384:A:H2'	1.67	0.58
16:SO:21:THR:HG21	16:SO:68:VAL:O	2.03	0.58
21:ST:20:ASP:O	21:ST:23:ARG:HG2	2.03	0.58
35:LA:595:G:H1	35:LA:609:G:H5"	1.67	0.58
35:LA:772:U:H3'	35:LA:773:G:H5'	1.84	0.58
74:Ln:13:MET:HE1	74:Ln:51:ILE:HD11	1.85	0.58
35:LA:3294:A:H2'	35:LA:3295:A:O4'	2.04	0.58
38:LD:20:THR:HA	38:LD:23:ARG:HD2	1.84	0.58
61:La:51:ARG:HB2	61:La:115:ARG:HH12	1.67	0.58
81:Cc:62:C:H2'	81:Cc:63:G:C8	2.38	0.58
4:SC:23:ALA:O	4:SC:64:TYR:HB2	2.04	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:SC:32:HIS:CE1	4:SC:42:VAL:HG11	2.39	0.58
22:SU:39:ARG:HG3	22:SU:40:PRO:HD3	1.84	0.58
35:LA:1717:U:H2'	35:LA:1718:G:C8	2.38	0.58
75:Lo:78:ILE:HG13	75:Lo:79:GLU:H	1.68	0.58
1:S2:167:U:H3	1:S2:168:A:N6	2.01	0.58
9:SH:26:ILE:HG13	9:SH:31:ALA:HB2	1.85	0.58
16:SO:108:SER:HB2	16:SO:127:ARG:HD2	1.84	0.58
36:LB:22:A:H2	36:LB:121:U:H3	1.51	0.58
37:LC:10:A:H2'	37:LC:11:C:C6	2.38	0.58
72:Ll:25:ARG:HH12	74:Ln:50:ASN:HB3	1.68	0.58
1:S2:82:U:H2'	1:S2:83:G:O4'	2.03	0.58
1:S2:303:U:H2'	1:S2:304:U:H4'	1.84	0.58
1:S2:1524:A:O2'	1:S2:1525:A:H5'	2.03	0.58
35:LA:19:U:H2'	35:LA:20:A:C8	2.38	0.58
35:LA:2152:A:H2'	35:LA:2153:U:H6	1.68	0.58
35:LA:2734:A:H1'	35:LA:2735:U:O2	2.03	0.58
1:S2:1360:A:N1	1:S2:1364:G:C6	2.72	0.58
35:LA:3193:C:H2'	35:LA:3194:C:H6	1.68	0.58
61:La:28:ARG:HD2	61:La:101:PRO:HG3	1.86	0.58
1:S2:86:A:H2'	1:S2:87:C:H6	1.69	0.58
1:S2:897:C:H3'	1:S2:898:A:H4'	1.86	0.58
1:S2:1499:G:H2'	1:S2:1500:C:H5"	1.85	0.58
20:SS:185:GLY:H	20:SS:189:LEU:HD13	1.69	0.58
24:SW:114:TYR:HA	24:SW:119:ALA:HB3	1.86	0.58
35:LA:627:U:H2'	35:LA:628:A:C8	2.38	0.58
35:LA:2222:A:H2'	35:LA:2223:A:C8	2.38	0.58
35:LA:2252:A:N1	35:LA:2264:U:H5	2.02	0.58
79:eR:203:ARG:HG2	79:eR:241:MET:SD	2.44	0.58
1:S2:525:A:H5'	31:Sd:89:TYR:HB2	1.86	0.57
1:S2:1539:G:O6	9:SH:27:LYS:HG3	2.04	0.57
16:SO:228:LYS:HZ2	16:SO:229:LYS:HE2	1.69	0.57
21:ST:31:ARG:H	21:ST:34:GLN:HG3	1.68	0.57
35:LA:226:C:H4'	61:La:30:LEU:HB2	1.86	0.57
35:LA:308:A:H1'	35:LA:2222:A:H1'	1.84	0.57
35:LA:3299:A:H61	35:LA:3315:G:H22	1.52	0.57
16:SO:218:GLY:HA2	16:SO:240:VAL:HG23	1.86	0.57
15:SN:144:CYS:HG	15:SN:148:TYR:HD1	1.53	0.57
35:LA:1805:C:H2'	35:LA:1806:A:H8	1.69	0.57
20:SS:11:ARG:NH1	20:SS:20:LEU:HB3	2.18	0.57
35:LA:2874:G:H1'	82:pp:1147:ASP:O	2.04	0.57
1:S2:1396:U:H1'	1:S2:1403:C:H41	1.69	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S2:838:G:H2'	1:S2:839:U:H6	1.68	0.57
1:S2:1384:A:H4'	1:S2:1385:G:O5'	2.02	0.57
4:SC:68:LEU:HD11	4:SC:76:LEU:HD12	1.85	0.57
38:LD:39:GLY:HA2	38:LD:93:LYS:HG2	1.87	0.57
45:LK:21:LYS:HG3	45:LK:22:SER:H	1.67	0.57
50:LP:135:VAL:HG13	50:LP:142:ILE:HD13	1.86	0.57
70:Lj:102:GLU:HG3	70:Lj:106:LYS:HE3	1.87	0.57
1:S2:1391:A:H62	1:S2:1408:G:N2	2.02	0.57
19:SR:83:ILE:HD11	19:SR:125:ILE:HD11	1.87	0.57
35:LA:1866:C:H5'	35:LA:1867:A:OP2	2.04	0.57
35:LA:2127:U:H3	35:LA:2326:A:H62	1.53	0.57
35:LA:2529:A:H2'	35:LA:2530:G:O4'	2.05	0.57
35:LA:656:A:H2'	35:LA:657:A:C8	2.40	0.57
35:LA:2971:A:C8	81:Cc:74:C:H4'	2.40	0.57
40:LF:317:PRO:C	40:LF:319:LYS:H	2.12	0.57
42:LH:68:PRO:HG3	42:LH:145:LEU:HD23	1.87	0.57
53:LS:174:ARG:O	63:Lc:56:VAL:HG21	2.05	0.57
3:SB:162:VAL:HG13	3:SB:166:ARG:HG2	1.86	0.57
7:SF:79:TYR:HA	7:SF:82:ARG:HD3	1.87	0.57
37:LC:9:A:H3'	37:LC:10:A:H5"	1.87	0.57
1:S2:1567:U:H5'	9:SH:36:LYS:HA	1.87	0.57
7:SF:63:ILE:HD11	7:SF:92:TYR:CZ	2.40	0.57
21:ST:57:ASP:HB3	21:ST:98:ARG:HD2	1.85	0.57
37:LC:69:U:H2'	37:LC:70:G:O4'	2.05	0.57
62:Lb:41:ALA:HB2	62:Lb:77:TYR:HE1	1.70	0.57
73:Lm:58:ASP:HB3	73:Lm:61:LYS:HB2	1.85	0.57
1:S2:367:A:N1	1:S2:374:U:H5	2.02	0.56
1:S2:1642:G:H5'	76:Lp:1:MET:HB2	1.87	0.56
35:LA:429:U:H2'	35:LA:430:U:H6	1.70	0.56
35:LA:1389:G:H5"	67:Lg:101:SER:HB3	1.86	0.56
35:LA:2219:A:H8	35:LA:2220:A:H62	1.53	0.56
1:S2:182:A:H2'	1:S2:183:U:C6	2.39	0.56
5:SD:60:VAL:H	5:SD:87:PRO:HB2	1.70	0.56
35:LA:1161:G:O2'	67:Lg:54:LYS:HD2	2.05	0.56
51:LQ:12[A]:LYS:HD3	51:LQ:37[A]:ARG:NH2	2.20	0.56
1:S2:501:U:H1'	1:S2:502:U:H5	1.70	0.56
1:S2:555:A:C8	1:S2:590:C:O2'	2.58	0.56
1:S2:1000:C:H5'	81:Cc:38:C:O3'	2.05	0.56
1:S2:1282:U:H2'	1:S2:1283:U:O4'	2.05	0.56
1:S2:1591:C:H2'	1:S2:1592:A:C8	2.40	0.56
35:LA:664:U:H2'	35:LA:665:A:C8	2.39	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:LA:824:C:H5”	38:LD:21:ARG:HD3	1.87	0.56
35:LA:1498:A:H2’	35:LA:1499:C:C6	2.40	0.56
35:LA:2216:G:H1	35:LA:2228:A:H61	1.53	0.56
40:LF:82:THR:N	82:pp:1129:GLN:HG2	2.20	0.56
41:LG:239:ILE:HA	41:LG:243:ALA:HB3	1.86	0.56
45:LK:89:LYS:HG2	45:LK:145:VAL:HG13	1.86	0.56
48:LN:187:ALA:HA	48:LN:190:LYS:HG2	1.86	0.56
18:SQ:144:ARG:HG2	18:SQ:206:PRO:HB2	1.87	0.56
20:SS:114:ILE:HB	20:SS:118:GLU:HG2	1.85	0.56
30:Sc:56:LYS:HE3	30:Sc:97:ASP:HA	1.87	0.56
35:LA:1084:A:H2’	35:LA:1085:A:C8	2.41	0.56
36:LB:121:U:C2	41:LG:268:GLU:HG2	2.40	0.56
35:LA:3226:A:H62	35:LA:3260:G:H21	1.53	0.56
49:LO:12:TRP:HE1	55:LU:153:PRO:HA	1.68	0.56
1:S2:591:A:H2’	1:S2:592:A:C8	2.41	0.56
15:SN:133:ALA:HB1	15:SN:135:HIS:CE1	2.41	0.56
35:LA:776:U:H5	35:LA:2719:U:O2	1.87	0.56
35:LA:2662:G:H2’	35:LA:2663:G:C8	2.41	0.56
1:S2:1591:C:H2’	1:S2:1592:A:H8	1.70	0.56
10:SI:38:LYS:HD3	10:SI:38:LYS:H	1.71	0.56
13:SL:44:VAL:HG22	13:SL:54:LEU:HD21	1.88	0.56
1:S2:1116:A:H4’	1:S2:1117:U:OP1	2.05	0.56
1:S2:1350:U:OP1	1:S2:1350:U:H4’	2.05	0.56
27:SZ:17:ALA:HA	27:SZ:30:VAL:HG22	1.87	0.56
35:LA:428:A:H2’	35:LA:429:U:C6	2.41	0.56
35:LA:3121:U:H1’	35:LA:3122:A:H5”	1.87	0.56
1:S2:354:C:H5”	23:SV:16:ALA:HB2	1.88	0.56
1:S2:980:G:H4’	1:S2:1776:A:H4’	1.88	0.56
7:SF:47:LYS:HB3	7:SF:82:ARG:HD2	1.88	0.56
35:LA:995:U:H1’	35:LA:2637:A:H5’	1.87	0.56
36:LB:28:C:O2	47:LM:9:MET:HE1	2.06	0.56
43:LI:176:TYR:CZ	43:LI:197:GLN:HG2	2.41	0.56
46:LL:105:CYS:HB2	79:eR:197:LYS:HD3	1.87	0.56
62:Lb:34:LYS:HB2	62:Lb:98:THR:HG21	1.88	0.56
1:S2:1641:C:H2’	1:S2:1642:G:C8	2.40	0.56
22:SU:150:GLN:HB2	22:SU:181:ILE:HG22	1.87	0.56
66:Lf:55:LEU:HB2	66:Lf:95:PRO:HD3	1.88	0.56
1:S2:1284:C:H5	1:S2:1288:G:H1’	1.70	0.55
20:SS:139:VAL:HG11	20:SS:154:ILE:HD11	1.88	0.55
35:LA:160:G:O6	35:LA:261:U:O4	2.24	0.55
43:LI:83:LEU:HD11	43:LI:116:PHE:HB3	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S2:16:G:H2'	1:S2:17:C:C6	2.41	0.55
1:S2:1414:U:OP1	8:SG:3:ARG:HD3	2.05	0.55
13:SL:9:LEU:HD22	13:SL:55:VAL:HG22	1.87	0.55
35:LA:1596:C:H2'	35:LA:1597:C:C6	2.42	0.55
66:Lf:16:LEU:HD12	66:Lf:71:LEU:HD12	1.88	0.55
35:LA:94:G:H2'	35:LA:95:A:C8	2.41	0.55
35:LA:786:A:H4'	35:LA:787:G:H5'	1.88	0.55
36:LB:37:G:H22	36:LB:43:U:H3	1.54	0.55
55:LU:95:ARG:HD3	55:LU:140:VAL:HG13	1.86	0.55
58:LX:54:LEU:HD21	58:LX:119:GLY:HA3	1.88	0.55
1:S2:590:C:H2'	1:S2:591:A:C8	2.41	0.55
1:S2:656:G:C8	1:S2:679:U:H1'	2.42	0.55
1:S2:1158:C:H5	1:S2:1163:A:H61	1.53	0.55
30:Sc:70:LYS:HB3	30:Sc:93:LEU:HD22	1.88	0.55
31:Sd:26:ASP:HB3	31:Sd:70:VAL:HG22	1.88	0.55
35:LA:1534:A:H2'	35:LA:1535:A:C8	2.41	0.55
35:LA:2696:A:H2'	35:LA:2697:A:C8	2.41	0.55
35:LA:2714:G:OP2	77:Lq:10:THR:HG22	2.07	0.55
60:LZ:131:ASP:HB3	60:LZ:134:ASP:HB3	1.88	0.55
35:LA:1262:G:C4	35:LA:1264:G:H5'	2.41	0.55
35:LA:1290:A:H2'	35:LA:1291:A:C8	2.42	0.55
35:LA:1555:U:H5'	35:LA:1556:C:OP2	2.06	0.55
35:LA:2180:G:H2'	35:LA:2181:C:C6	2.41	0.55
35:LA:2406:C:H2'	35:LA:2407:C:C6	2.42	0.55
45:LK:10:ILE:HD11	45:LK:72:LYS:HA	1.88	0.55
53:LS:66:ARG:HG2	53:LS:140:LEU:HD12	1.87	0.55
54:LT:185:LEU:HD23	54:LT:185:LEU:H	1.72	0.55
68:Lh:14:LEU:HD11	68:Lh:31:LYS:HB2	1.87	0.55
1:S2:1680:G:H1'	1:S2:1721:A:H61	1.72	0.55
35:LA:407:A:C2	37:LC:17:A:H1'	2.42	0.55
1:S2:15:U:H2'	1:S2:16:G:O4'	2.05	0.55
1:S2:1477:G:H2'	1:S2:1478:G:O4'	2.07	0.55
9:SH:53:ASP:HB3	9:SH:56:LYS:HE3	1.89	0.55
16:SO:272:ASP:HB3	16:SO:274:LEU:HD13	1.89	0.55
18:SQ:133:TYR:HD2	18:SQ:217:LEU:HD11	1.71	0.55
35:LA:1511:U:H5"	35:LA:1512:U:H5	1.71	0.55
1:S2:962:C:H2'	1:S2:963:A:O4'	2.07	0.55
4:SC:38:LYS:HD3	4:SC:41:TYR:HE2	1.72	0.55
16:SO:204:ALA:HA	16:SO:211:ILE:HD12	1.89	0.55
36:LB:27:A:H62	36:LB:49:G:N2	2.04	0.55
39:LE:213:GLU:O	39:LE:282:ILE:HG12	2.06	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:SZ:89:THR:HG23	27:SZ:128:LYS:HD2	1.88	0.55
35:LA:160:G:H1	35:LA:261:U:H3	0.74	0.55
35:LA:2677:G:H2'	35:LA:2679:A:H2	1.71	0.55
35:LA:2960:C:H2'	35:LA:2961:G:C8	2.41	0.55
38:LD:77:ILE:HD12	38:LD:128:ARG:HB3	1.89	0.55
1:S2:538:A:H5"	1:S2:543:C:H41	1.72	0.55
1:S2:1343:U:O2	11:SJ:57:ARG:HD3	2.07	0.55
4:SC:30:ALA:HA	4:SC:38:LYS:HA	1.89	0.55
35:LA:1203:A:H2'	35:LA:1204:A:H8	1.72	0.55
35:LA:1667:A:H2'	35:LA:1668:G:C8	2.41	0.55
35:LA:2206:G:H21	35:LA:2207:A:H61	1.55	0.55
35:LA:2767:U:H2'	35:LA:2768:U:H6	1.72	0.55
72:Ll:25:ARG:NH1	74:Ln:50:ASN:HB3	2.21	0.55
1:S2:1120:U:H2'	1:S2:1121:C:C6	2.42	0.54
35:LA:1711:C:H2'	35:LA:1712:G:H5"	1.88	0.54
35:LA:2369:G:H2'	35:LA:2370:G:C8	2.42	0.54
35:LA:2697:A:H2'	35:LA:2698:G:C8	2.41	0.54
41:LG:78:ALA:HA	41:LG:108:ARG:HH21	1.71	0.54
41:LG:294:ALA:HB1	46:LL:210:ILE:HG21	1.88	0.54
1:S2:1001:A:H2'	1:S2:1002:G:O4'	2.07	0.54
23:SV:81:VAL:HG13	23:SV:94:ASN:HA	1.90	0.54
27:SZ:122:PRO:HG2	27:SZ:125:SER:HB3	1.89	0.54
35:LA:1110:U:H2'	35:LA:1111:U:C6	2.42	0.54
35:LA:1497:C:H2'	35:LA:1498:A:C8	2.42	0.54
35:LA:2217:U:H3	35:LA:2227:C:H41	1.54	0.54
35:LA:2880:U:H1'	39:LE:250:ALA:HB3	1.87	0.54
38:LD:145:LYS:HD2	38:LD:157:VAL:HG12	1.89	0.54
2:SA:177:MET:HE1	2:SA:182:LEU:HD22	1.89	0.54
11:SJ:97:VAL:HA	11:SJ:100:VAL:HB	1.89	0.54
35:LA:73:C:C5	48:LN:66:ASN:HB3	2.43	0.54
35:LA:2152:A:H2'	35:LA:2153:U:C6	2.42	0.54
35:LA:2508:U:H2'	35:LA:2509:U:C6	2.43	0.54
36:LB:71:G:H2'	36:LB:72:A:C8	2.43	0.54
37:LC:91:C:H4'	61:La:27:ARG:HH21	1.72	0.54
74:Ln:9:ILE:HD12	74:Ln:51:ILE:HD12	1.90	0.54
1:S2:887:A:H61	1:S2:924:A:N6	2.05	0.54
17:SP:31:VAL:HG12	17:SP:33:GLN:H	1.73	0.54
28:Sa:8:LEU:H	28:Sa:8:LEU:HD22	1.72	0.54
31:Sd:42:GLU:HB3	31:Sd:52:LYS:HE2	1.90	0.54
35:LA:127:G:H2'	35:LA:128:G:H8	1.72	0.54
38:LD:2:GLY:HA2	38:LD:207:VAL:HG23	1.88	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:LQ:61[A]:ALA:HA	51:LQ:70[A]:PRO:HD2	1.89	0.54
3:SB:27:THR:HG21	7:SF:28:LEU:HA	1.88	0.54
35:LA:1182:A:N1	35:LA:1324:U:H5	2.06	0.54
35:LA:1729:A:H3'	35:LA:1730:G:H5'	1.90	0.54
35:LA:3023:U:H5	35:LA:3032:A:N7	2.05	0.54
47:LM:17:LEU:HD13	47:LM:129:VAL:HG22	1.89	0.54
1:S2:52:U:H2'	1:S2:53:G:C8	2.42	0.54
1:S2:172:C:H3'	1:S2:174:U:H5"	1.90	0.54
16:SO:270:LEU:HD12	16:SO:273:ASP:HB2	1.89	0.54
23:SV:153:GLU:O	23:SV:157:GLU:HG2	2.08	0.54
31:Sd:27:VAL:HG11	31:Sd:40:LEU:HD11	1.88	0.54
32:Se:37:LYS:HA	32:Se:71:LEU:O	2.08	0.54
35:LA:618:C:H2'	35:LA:619:A:H5"	1.89	0.54
35:LA:1034:U:H5	35:LA:1036:A:H62	1.55	0.54
35:LA:1213:G:H2'	35:LA:1214:U:O2	2.07	0.54
35:LA:1469:C:N3	35:LA:1508:C:H5	2.06	0.54
35:LA:2572:C:H3'	35:LA:2573:G:H4'	1.90	0.54
36:LB:112:G:H2'	36:LB:113:C:C6	2.42	0.54
60:LZ:67:ILE:HD12	60:LZ:121:LYS:HG3	1.89	0.54
1:S2:1667:A:H61	1:S2:1733:C:N4	2.03	0.54
14:SM:20:GLN:HB2	14:SM:25:SER:HA	1.90	0.54
16:SO:74:THR:HG23	16:SO:77:GLY:H	1.72	0.54
16:SO:232:TYR:HE2	16:SO:265:LEU:HB3	1.73	0.54
35:LA:1039:U:O2'	35:LA:1040:A:H8	1.90	0.54
35:LA:1069:C:H2'	35:LA:1070:U:C5	2.43	0.54
38:LD:111:THR:HB	38:LD:136:ILE:HD13	1.90	0.54
40:LF:181:VAL:HG21	40:LF:224:GLY:HA3	1.90	0.54
70:Lj:38:ARG:HD2	70:Lj:41:LEU:HD13	1.89	0.54
1:S2:212:U:H3'	1:S2:213:A:H5"	1.90	0.54
1:S2:886:U:H2'	1:S2:887:A:H8	1.73	0.54
35:LA:1602:A:C4	35:LA:1603:A:C8	2.96	0.54
43:LI:84:VAL:HG21	43:LI:127:LEU:HD11	1.90	0.54
44:LJ:54:GLU:O	44:LJ:58:VAL:HG23	2.08	0.54
79:eR:320:LEU:HB2	79:eR:387:ALA:HB1	1.89	0.54
15:SN:80:ARG:HB2	79:eR:102:THR:OG1	2.08	0.54
27:SZ:26:THR:HG21	27:SZ:60:ALA:HB2	1.91	0.54
39:LE:77:THR:HB	39:LE:324:VAL:HG23	1.90	0.54
61:La:24:SER:HA	61:La:27:ARG:HB2	1.90	0.54
1:S2:1292:G:H21	17:SP:111:ILE:HD11	1.73	0.53
3:SB:189:THR:HG22	3:SB:191:ALA:H	1.72	0.53
35:LA:507:U:H2'	35:LA:508:U:C6	2.43	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:LA:1741:A:H5'	35:LA:1742:U:H5	1.73	0.53
35:LA:2160:G:H2'	35:LA:2161:G:H8	1.72	0.53
4:SC:46:LEU:O	4:SC:50:THR:HG23	2.09	0.53
13:SL:33:LEU:HD11	13:SL:53:ILE:HD13	1.90	0.53
41:LG:286:VAL:HG23	46:LL:206:LEU:HD22	1.90	0.53
46:LL:134:ILE:HD11	56:LV:160:ILE:HD11	1.90	0.53
1:S2:168:A:H2'	1:S2:169:A:C4	2.43	0.53
1:S2:407:A:H2'	1:S2:408:C:H6	1.73	0.53
1:S2:1667:A:N6	1:S2:1733:C:H42	2.06	0.53
2:SA:72:LEU:HD13	4:SC:20:VAL:HB	1.88	0.53
35:LA:197:G:H2'	35:LA:198:A:C8	2.43	0.53
35:LA:3192:U:H2'	35:LA:3193:C:H6	1.73	0.53
39:LE:293:ASN:HB2	39:LE:304:THR:HA	1.90	0.53
63:Lc:75:LEU:HB3	63:Lc:118:ILE:HG23	1.89	0.53
64:Ld:54:LEU:O	64:Ld:58:LYS:HG2	2.07	0.53
1:S2:656:G:H8	1:S2:679:U:H1'	1.72	0.53
1:S2:811:A:N6	22:SU:113:PRO:HD3	2.24	0.53
16:SO:289:ALA:HB2	16:SO:305:TYR:CE1	2.43	0.53
31:Sd:57:VAL:HB	31:Sd:60:PHE:HE2	1.73	0.53
35:LA:269:G:H5'	50:LP:120:TRP:CE3	2.44	0.53
35:LA:585:A:H2'	35:LA:586:C:C6	2.43	0.53
35:LA:2101:C:O2'	35:LA:2102:U:H5"	2.09	0.53
35:LA:2289:U:H2'	35:LA:2290:C:C6	2.44	0.53
17:SP:76:ILE:HD13	17:SP:98:ILE:HB	1.89	0.53
36:LB:49:G:H4'	36:LB:50:U:H5"	1.91	0.53
39:LE:66:LYS:HZ1	58:LX:9:THR:HG23	1.73	0.53
43:LI:145:ARG:HA	43:LI:185:ILE:HD13	1.91	0.53
1:S2:143:G:H2'	1:S2:144:U:C6	2.44	0.53
10:SI:45:MET:HE3	10:SI:46:PRO:HD2	1.89	0.53
19:SR:232:GLU:C	19:SR:234:PRO:HD3	2.33	0.53
35:LA:761:A:H2'	35:LA:762:U:C6	2.43	0.53
35:LA:2244:A:O4'	38:LD:243:THR:HG21	2.09	0.53
36:LB:27:A:H5"	41:LG:57:ASN:HD21	1.73	0.53
37:LC:35:C:H5'	72:Ll:70:VAL:HG11	1.91	0.53
1:S2:953:G:H2'	1:S2:954:G:C8	2.44	0.53
1:S2:1385:G:H3'	1:S2:1386:G:H5"	1.91	0.53
6:SE:108:ARG:HB3	6:SE:111:MET:HE3	1.90	0.53
9:SH:122:HIS:O	9:SH:126:ARG:HG2	2.09	0.53
31:Sd:7:ILE:HG12	31:Sd:27:VAL:HG12	1.91	0.53
35:LA:1659:U:H2'	35:LA:1660:C:C6	2.43	0.53
52:LR:60:PHE:HB3	52:LR:64:ASN:HB3	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S2:180:A:H2'	1:S2:180:A:N3	2.24	0.53
1:S2:686:C:H2'	1:S2:687:G:C8	2.44	0.53
2:SA:90:ARG:HH12	2:SA:92:GLN:HG2	1.74	0.53
9:SH:112:ASP:HA	9:SH:115:ARG:HG2	1.89	0.53
20:SS:15:PRO:HG2	20:SS:18:TRP:CE2	2.43	0.53
24:SW:90:LYS:HZ2	24:SW:92:LYS:N	2.06	0.53
35:LA:422:A:C2	35:LA:2363:A:H4'	2.44	0.53
35:LA:1108:U:H2'	35:LA:1109:U:C6	2.44	0.53
38:LD:109:GLU:HG2	38:LD:138:GLY:HA2	1.91	0.53
1:S2:327:U:H2'	1:S2:328:A:C8	2.44	0.53
4:SC:63:TYR:HB3	4:SC:65:TYR:HE1	1.74	0.53
29:Sb:18:GLU:HG2	29:Sb:65:LEU:HD13	1.90	0.53
35:LA:761:A:H2'	35:LA:762:U:H6	1.73	0.53
35:LA:896:A:H5"	38:LD:183:GLY:HA2	1.90	0.53
35:LA:2971:A:C2	81:Cc:75:C:H5'	2.44	0.53
36:LB:27:A:C4	36:LB:28:C:H5	2.27	0.53
1:S2:284:G:N2	21:ST:188:ARG:HH12	2.07	0.53
16:SO:91:LEU:HD11	16:SO:103:PHE:CE2	2.44	0.53
27:SZ:82:LYS:HD3	27:SZ:118:VAL:HG11	1.91	0.53
35:LA:2683:U:H2'	35:LA:2684:C:C6	2.44	0.53
35:LA:3150:A:H4'	39:LE:128:LYS:O	2.09	0.53
40:LF:315:LYS:HB2	40:LF:323:VAL:HG21	1.91	0.53
52:LR:84:PRO:HB2	52:LR:87:SER:HB2	1.90	0.53
61:La:48:LEU:HA	61:La:118:LEU:HD23	1.91	0.53
61:La:112:ASP:H	61:La:115:ARG:HB2	1.74	0.53
67:Lg:11:LYS:HE3	67:Lg:14:THR:HG22	1.91	0.53
10:SI:86:ARG:HD2	10:SI:89:ARG:HH21	1.74	0.52
35:LA:2126:A:N1	35:LA:2327:U:H5	2.07	0.52
35:LA:3013:U:H2'	35:LA:3014:U:C6	2.45	0.52
79:eR:65:ARG:HG3	79:eR:66:VAL:N	2.23	0.52
1:S2:1541:G:C5	1:S2:1568:C:H5	2.27	0.52
6:SE:17:TYR:CZ	6:SE:112:LEU:HD13	2.44	0.52
6:SE:111:MET:HE2	9:SH:119:ILE:HB	1.91	0.52
35:LA:19:U:H4'	50:LP:138:GLN:HG3	1.90	0.52
35:LA:2419:A:H2'	35:LA:2420:C:C6	2.44	0.52
35:LA:3348:G:H1	35:LA:3357:U:H5	1.56	0.52
46:LL:53:VAL:HG12	46:LL:134:ILE:HG13	1.91	0.52
50:LP:200:TRP:CD1	50:LP:204:LYS:HD2	2.44	0.52
53:LS:170:ARG:O	53:LS:171:LYS:HG2	2.09	0.52
81:Cc:22:U:H2'	81:Cc:23:C:O4'	2.08	0.52
1:S2:284:G:H21	21:ST:188:ARG:HH12	1.56	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S2:798:C:H2'	1:S2:799:A:C8	2.42	0.52
3:SB:195:ALA:O	3:SB:199:ILE:HG12	2.09	0.52
4:SC:59:PHE:CZ	4:SC:62:GLN:HA	2.44	0.52
31:Sd:55:VAL:HG22	31:Sd:75:VAL:HG12	1.90	0.52
35:LA:1949:G:H22	35:LA:2097:U:H3	1.57	0.52
35:LA:2267:C:H2'	35:LA:2268:U:O4'	2.09	0.52
20:SS:180:LEU:HD23	20:SS:234:PRO:HB3	1.90	0.52
21:ST:26:VAL:HG21	21:ST:40:ALA:HB1	1.92	0.52
21:ST:163:THR:HB	21:ST:168:THR:HA	1.90	0.52
35:LA:2427:U:H2'	35:LA:2428:U:C6	2.45	0.52
35:LA:2882:U:H2'	35:LA:2883:U:C6	2.44	0.52
38:LD:32:LEU:HD13	38:LD:163:ARG:HD3	1.91	0.52
46:LL:105:CYS:HB2	79:eR:197:LYS:CD	2.38	0.52
56:LV:128:LEU:H	56:LV:128:LEU:HD22	1.73	0.52
1:S2:84:A:H5'	1:S2:85:A:OP2	2.09	0.52
1:S2:86:A:H2'	1:S2:87:C:C6	2.44	0.52
1:S2:181:A:H2'	1:S2:182:A:C8	2.45	0.52
5:SD:36:LEU:HD23	5:SD:36:LEU:H	1.74	0.52
5:SD:130:THR:HG23	5:SD:133:LEU:H	1.73	0.52
22:SU:59:ALA:HA	22:SU:91:ILE:HG13	1.92	0.52
35:LA:561:C:H5"	49:LO:76:ALA:HA	1.91	0.52
35:LA:2733:A:H2'	35:LA:2734:A:H5'	1.91	0.52
35:LA:3162:C:H2'	35:LA:3163:A:H8	1.74	0.52
37:LC:80:A:H1'	37:LC:82:U:H5	1.74	0.52
38:LD:45:VAL:HG22	38:LD:84:THR:HA	1.90	0.52
1:S2:399:A:H4'	20:SS:3:ARG:HG2	1.92	0.52
8:SG:66:VAL:HG21	8:SG:69:ILE:HD12	1.91	0.52
16:SO:255:ALA:HA	16:SO:260:ILE:HD13	1.91	0.52
35:LA:20:A:H2'	35:LA:21:G:C8	2.44	0.52
35:LA:2829:U:O2	35:LA:2861:U:H5	1.92	0.52
35:LA:2894:C:H2'	35:LA:2895:G:C8	2.44	0.52
35:LA:3047:U:O2'	35:LA:3048:A:H5'	2.10	0.52
35:LA:3174:A:OP1	35:LA:3174:A:H4'	2.10	0.52
46:LL:87:LEU:HD13	46:LL:138:VAL:HG22	1.91	0.52
53:LS:176:ARG:HA	53:LS:182:LYS:O	2.10	0.52
61:La:32:SER:HA	61:La:49:PRO:HA	1.92	0.52
1:S2:895:G:H8	27:SZ:41:ARG:HH12	1.55	0.52
10:SI:111:ILE:HG23	10:SI:113:ILE:HG12	1.92	0.52
28:Sa:3:ASN:HD21	28:Sa:7:GLN:HB2	1.75	0.52
35:LA:29:C:H4'	35:LA:62:A:H4'	1.92	0.52
35:LA:896:A:N6	35:LA:2147:A:H8	2.08	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:LA:2927:C:H2'	35:LA:2928:C:C6	2.44	0.52
40:LF:23:PRO:HD2	40:LF:26:PHE:CD2	2.45	0.52
58:LX:6:ALA:HB1	58:LX:125:LEU:HD22	1.92	0.52
62:Lb:119:GLU:O	62:Lb:123:GLN:HG2	2.09	0.52
1:S2:151:G:H2'	1:S2:152:U:H5	1.75	0.52
1:S2:1349:G:H2'	1:S2:1350:U:C4'	2.40	0.52
1:S2:1385:G:H3'	1:S2:1386:G:C5'	2.40	0.52
1:S2:1469:A:H2'	1:S2:1470:C:C6	2.44	0.52
35:LA:990:U:H1'	56:LV:101:CYS:HB3	1.92	0.52
35:LA:3344:A:H2	35:LA:3361:G:N2	2.05	0.52
82:pp:1149:ILE:HG13	82:pp:1151:PRO:HD3	1.92	0.52
1:S2:445:A:H1'	1:S2:524:U:H5'	1.91	0.52
1:S2:520:A:H61	1:S2:531:C:N4	2.08	0.52
1:S2:1236:A:C4	1:S2:1237:G:N7	2.78	0.52
19:SR:56:ILE:HA	19:SR:61:LEU:HD12	1.91	0.52
24:SW:59:LEU:HD22	24:SW:69:ARG:HA	1.92	0.52
35:LA:1217:A:N6	35:LA:1287:A:H61	2.08	0.52
35:LA:3296:A:H2'	35:LA:3297:U:C6	2.45	0.52
71:Lk:70:ARG:HD3	71:Lk:84:LYS:HG2	1.91	0.52
72:Ll:19:CYS:HB3	72:Ll:22:CYS:O	2.10	0.52
1:S2:131:C:H4'	1:S2:132:U:H5"	1.92	0.52
27:SZ:42:VAL:HB	27:SZ:67:VAL:HG23	1.92	0.52
35:LA:2402:A:H2'	40:LF:67:THR:HG21	1.92	0.52
39:LE:242:THR:CG2	39:LE:246:LEU:HB3	2.40	0.52
46:LL:192:ASP:HA	46:LL:197:VAL:HG12	1.92	0.52
48:LN:127:PRO:HG2	48:LN:130:GLY:HA3	1.90	0.52
49:LO:32:LEU:HD11	49:LO:94:TRP:CD1	2.45	0.52
51:LQ:12[A]:LYS:HD3	51:LQ:37[A]:ARG:HH21	1.74	0.52
1:S2:1590:G:H2'	1:S2:1591:C:C6	2.46	0.51
13:SL:9:LEU:HB2	13:SL:33:LEU:HD12	1.91	0.51
35:LA:299:G:C8	71:Lk:31:GLY:HA3	2.46	0.51
47:LM:109:HIS:HD2	47:LM:123:PHE:H	1.57	0.51
1:S2:65:A:H2	1:S2:84:A:N7	2.06	0.51
1:S2:778:G:H1'	31:Sd:10:ARG:HH22	1.76	0.51
9:SH:30:TYR:HE2	9:SH:40:ARG:HD3	1.74	0.51
30:Sc:86:PHE:CE2	30:Sc:88:PRO:HA	2.45	0.51
35:LA:12:A:H2'	35:LA:13:A:C8	2.45	0.51
39:LE:298:PHE:HE2	59:LY:1:MET:HE2	1.76	0.51
1:S2:195:G:H2'	1:S2:196:G:C8	2.46	0.51
1:S2:1229:G:H21	1:S2:1256:A:H62	1.59	0.51
1:S2:1526:A:H8	1:S2:1527:C:C6	2.28	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:SZ:17:ALA:HB3	27:SZ:81:VAL:HA	1.93	0.51
35:LA:916:G:H5'	35:LA:917:A:OP1	2.10	0.51
58:LX:54:LEU:HD23	58:LX:121:GLU:HB2	1.92	0.51
65:Le:18:ILE:HD11	65:Le:81:VAL:HA	1.92	0.51
1:S2:623:A:H3'	1:S2:624:G:H5"	1.91	0.51
1:S2:768:C:H1'	24:SW:143:ILE:HG21	1.92	0.51
1:S2:1628:U:H2'	1:S2:1629:G:C8	2.45	0.51
19:SR:76:LEU:HD22	19:SR:104:VAL:HG12	1.92	0.51
27:SZ:81:VAL:HG11	27:SZ:102:LEU:HD13	1.92	0.51
35:LA:2160:G:H2'	35:LA:2161:G:C8	2.46	0.51
37:LC:8:C:H2'	37:LC:10:A:C8	2.45	0.51
45:LK:47:LYS:HD2	49:LO:5:SER:O	2.10	0.51
67:Lg:76:VAL:HG13	67:Lg:81:ASP:HB2	1.92	0.51
73:Lm:46:ARG:HD3	73:Lm:47:GLY:O	2.10	0.51
81:Cc:43:A:H2'	81:Cc:44:A:C8	2.46	0.51
10:SI:129:GLN:HA	10:SI:132:LEU:HD22	1.93	0.51
27:SZ:80:HIS:HA	27:SZ:113:GLY:O	2.11	0.51
35:LA:3057:U:H5'	35:LA:3086:A:H61	1.76	0.51
35:LA:3295:A:H2'	35:LA:3296:A:H8	1.73	0.51
50:LP:43:THR:HG23	50:LP:44:ARG:HG3	1.93	0.51
1:S2:1617:U:H2'	1:S2:1618:C:C6	2.46	0.51
3:SB:116:HIS:O	3:SB:120:ILE:HG12	2.11	0.51
9:SH:67:GLU:O	9:SH:71:GLN:HG2	2.11	0.51
17:SP:189:VAL:HG12	28:Sa:44:ARG:HH21	1.75	0.51
27:SZ:111:ARG:HD2	32:Se:58:VAL:HG12	1.92	0.51
35:LA:595:G:N1	35:LA:609:G:H5"	2.25	0.51
79:eR:283:GLU:HG2	79:eR:284:LYS:HE2	1.93	0.51
1:S2:93:A:H1'	20:SS:3:ARG:HB3	1.91	0.51
1:S2:1639:C:H2'	1:S2:1640:C:O4'	2.10	0.51
15:SN:80:ARG:HG3	79:eR:102:THR:H	1.75	0.51
16:SO:195:HIS:H	16:SO:195:HIS:CD2	2.23	0.51
22:SU:89:HIS:CD2	22:SU:165:LYS:HG2	2.46	0.51
35:LA:2389:C:H2'	35:LA:2390:A:C8	2.46	0.51
35:LA:2679:A:H62	47:LM:56:THR:HG21	1.76	0.51
35:LA:3160:U:O4	35:LA:3290:G:O6	2.29	0.51
58:LX:10:LYS:HB2	58:LX:125:LEU:HD11	1.92	0.51
1:S2:30:G:H2'	1:S2:31:C:C6	2.46	0.51
1:S2:751:G:H22	1:S2:797:G:H1	1.59	0.51
1:S2:767:U:H5	24:SW:142:ASN:OD1	1.94	0.51
1:S2:788:A:C6	20:SS:19:LEU:HD13	2.45	0.51
1:S2:1204:A:N3	14:SM:10:HIS:HE1	2.09	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S2:1383:G:C8	1:S2:1384:A:C4	2.99	0.51
22:SU:58:LEU:HG	22:SU:88:ARG:HG2	1.93	0.51
35:LA:1176:C:H2'	35:LA:1177:G:N2	2.25	0.51
35:LA:1283:C:H2'	35:LA:1285:G:C2	2.46	0.51
35:LA:3033:A:H2	45:LK:120:ASP:HB3	1.75	0.51
35:LA:3325:G:O2'	35:LA:3326:G:H8	1.94	0.51
41:LG:233:ALA:HA	41:LG:236:LEU:HD13	1.92	0.51
52:LR:126:ARG:HA	52:LR:140:GLU:HG2	1.93	0.51
1:S2:395:U:H2'	1:S2:396:G:O4'	2.11	0.51
4:SC:32:HIS:HD2	4:SC:33:GLU:H	1.59	0.51
7:SF:7:VAL:HG22	7:SF:22:VAL:HB	1.93	0.51
18:SQ:144:ARG:HB3	18:SQ:208:GLN:HB3	1.93	0.51
19:SR:232:GLU:CD	19:SR:232:GLU:H	2.19	0.51
33:Sf:19:HIS:HB3	33:Sf:22:LYS:HD3	1.92	0.51
35:LA:262:U:H2'	35:LA:263:C:O4'	2.11	0.51
44:LJ:78:PHE:O	44:LJ:79:GLN:HG2	2.11	0.51
48:LN:76:THR:HG22	48:LN:101:ARG:HB3	1.93	0.51
51:LQ:108[A]:ILE:HD13	51:LQ:117[A]:ARG:HD3	1.93	0.51
57:LW:101:ASN:HA	57:LW:103:TYR:CZ	2.46	0.51
1:S2:358:U:O2'	1:S2:360:A:H5"	2.11	0.51
2:SA:105:MET:HE2	2:SA:122:VAL:HG21	1.93	0.51
16:SO:122:ILE:HD11	16:SO:134:TRP:HB2	1.93	0.51
21:ST:57:ASP:HA	21:ST:106:LEU:HA	1.91	0.51
22:SU:67:LEU:HD22	22:SU:94:ALA:HB2	1.92	0.51
30:Sc:113:ALA:HB2	30:Sc:121:ARG:HH12	1.76	0.51
35:LA:524:U:H5"	49:LO:77:ARG:HH22	1.76	0.51
35:LA:759:U:H3	35:LA:771:A:H62	1.58	0.51
61:La:27:ARG:HB3	61:La:75:ARG:HD3	1.92	0.51
1:S2:907:A:N1	1:S2:1008:G:H1'	2.26	0.50
1:S2:1566:U:H5'	9:SH:39:GLY:N	2.26	0.50
1:S2:1606:C:H2'	1:S2:1607:G:C8	2.46	0.50
35:LA:2101:C:HO2'	35:LA:2102:U:H6	1.58	0.50
35:LA:2948:C:H5"	39:LE:243:HIS:HB3	1.93	0.50
43:LI:185:ILE:O	43:LI:189:ILE:HG22	2.11	0.50
46:LL:89:VAL:HB	46:LL:136:PHE:CE1	2.47	0.50
59:LY:4:GLU:HB2	59:LY:13:ILE:HB	1.94	0.50
61:La:51:ARG:HB2	61:La:115:ARG:NH1	2.26	0.50
1:S2:329:G:H5'	23:SV:99:ALA:HB3	1.92	0.50
1:S2:1680:G:H2'	1:S2:1720:G:H22	1.76	0.50
9:SH:11:PHE:CE1	12:SK:41:ILE:HG13	2.46	0.50
16:SO:265:LEU:O	16:SO:268:GLN:HG3	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:ST:7:TYR:CD1	21:ST:113:ILE:HG13	2.46	0.50
35:LA:2970:C:H5"	35:LA:2971:A:C2	2.45	0.50
40:LF:209:TYR:O	40:LF:230:VAL:HG22	2.10	0.50
41:LG:178:ASN:HA	41:LG:183:TRP:CD2	2.46	0.50
49:LO:12:TRP:HB2	55:LU:172:TYR:O	2.11	0.50
60:LZ:77:GLU:HG2	60:LZ:133:LEU:HD12	1.92	0.50
1:S2:174:U:O4	1:S2:266:A:N7	2.44	0.50
1:S2:1144:U:H2'	1:S2:1145:U:O2	2.11	0.50
5:SD:78:LEU:HG	5:SD:85:LYS:HG3	1.94	0.50
18:SQ:210:ILE:H	18:SQ:210:ILE:HD12	1.76	0.50
35:LA:1718:G:H2'	35:LA:1719:G:C8	2.45	0.50
35:LA:2662:G:H2'	35:LA:2663:G:H8	1.75	0.50
1:S2:181:A:H2'	1:S2:182:A:H8	1.75	0.50
1:S2:1000:C:O3'	1:S2:1001:A:H8	1.95	0.50
17:SP:27:ARG:NH1	17:SP:165:ARG:HD3	2.26	0.50
19:SR:83:ILE:HD13	19:SR:121:VAL:HG13	1.93	0.50
21:ST:58:LYS:HD2	21:ST:107:ALA:HB2	1.92	0.50
27:SZ:78:ALA:HB2	27:SZ:111:ARG:HB2	1.94	0.50
35:LA:127:G:H2'	35:LA:128:G:C8	2.46	0.50
1:S2:109:G:H21	1:S2:796:A:H62	1.60	0.50
1:S2:182:A:H2'	1:S2:183:U:H6	1.76	0.50
1:S2:359:A:H62	30:Sc:35:GLY:HA3	1.77	0.50
1:S2:454:U:C2	20:SS:66:MET:HG3	2.47	0.50
3:SB:175:LEU:HD22	3:SB:198:LEU:HD23	1.93	0.50
7:SF:63:ILE:HD11	7:SF:92:TYR:CE1	2.46	0.50
17:SP:74:VAL:HG23	17:SP:118:PRO:HB3	1.93	0.50
35:LA:352:A:H5'	35:LA:354:U:H1'	1.93	0.50
35:LA:1497:C:H2'	35:LA:1498:A:H8	1.77	0.50
35:LA:2585:G:N3	35:LA:2585:G:H2'	2.26	0.50
35:LA:3343:G:H21	35:LA:3362:A:H2	1.55	0.50
37:LC:39:G:H8	37:LC:39:G:OP2	1.94	0.50
41:LG:182:GLY:HA2	41:LG:194:LEU:HD23	1.94	0.50
44:LJ:74:THR:HG21	71:Lk:47:ILE:O	2.11	0.50
11:SJ:57:ARG:NE	11:SJ:89:ARG:HH22	2.03	0.50
15:SN:80:ARG:NH1	79:eR:105:GLY:HA2	2.27	0.50
16:SO:225:LEU:H	16:SO:225:LEU:HD23	1.77	0.50
35:LA:308:A:H62	35:LA:2781:U:H3	1.58	0.50
35:LA:945:C:H2'	35:LA:946:U:C6	2.46	0.50
35:LA:2197:C:N4	35:LA:2241:U:H2'	2.27	0.50
35:LA:2801:A:O2'	35:LA:2802:A:H3'	2.12	0.50
35:LA:3034:C:C2	45:LK:120:ASP:HB2	2.46	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:LA:3296:A:H2'	35:LA:3297:U:H6	1.77	0.50
39:LE:148:LEU:HD11	39:LE:196:ARG:HD3	1.94	0.50
44:LJ:178:ALA:HB2	44:LJ:218:ILE:HG23	1.94	0.50
57:LW:93:ILE:HG21	57:LW:105:LEU:HD23	1.94	0.50
65:Le:9:SER:N	65:Le:12:GLN:HE21	2.10	0.50
1:S2:126:A:OP1	21:ST:201:GLN:HG3	2.11	0.50
1:S2:1071:U:H2'	1:S2:1072:C:C6	2.46	0.50
1:S2:1107:G:O2'	1:S2:1108:G:H5'	2.11	0.50
1:S2:1344:A:H4'	11:SJ:56:VAL:HG22	1.94	0.50
1:S2:1454:G:C6	1:S2:1455:G:N7	2.80	0.50
3:SB:177:ILE:O	3:SB:181:GLU:HG2	2.12	0.50
6:SE:96:ILE:HD11	6:SE:105:VAL:HG12	1.94	0.50
39:LE:88:GLY:HA2	39:LE:105:VAL:O	2.12	0.50
45:LK:90:MET:HE1	45:LK:146:LEU:HG	1.93	0.50
67:Lg:54:LYS:HD3	67:Lg:55:ILE:N	2.26	0.50
16:SO:198:ASN:HD21	16:SO:216:LYS:HB3	1.76	0.50
24:SW:112:GLN:HG2	24:SW:148:VAL:HG21	1.93	0.50
35:LA:2357:A:H2'	35:LA:2358:A:H8	1.77	0.50
70:Lj:77:PRO:HD2	70:Lj:80:LEU:HD12	1.93	0.50
18:SQ:167:VAL:HA	18:SQ:170:GLU:HG2	1.94	0.50
20:SS:147:ILE:HG21	20:SS:169:ILE:HG13	1.94	0.50
20:SS:181:VAL:HG12	20:SS:227:VAL:HA	1.94	0.50
26:SY:83:GLU:HG2	26:SY:84:ILE:HG23	1.94	0.50
43:LI:121:LYS:HB2	56:LV:133:ALA:HB3	1.93	0.50
79:eR:94:VAL:HG11	79:eR:136:LEU:HD11	1.92	0.50
1:S2:1533:C:H4'	1:S2:1539:G:O6	2.12	0.49
3:SB:45:LYS:HG2	3:SB:46:TRP:CZ3	2.47	0.49
8:SG:14:LYS:HG3	8:SG:69:ILE:HG12	1.94	0.49
35:LA:1261:G:H8	35:LA:1278:A:H2	1.58	0.49
35:LA:3162:C:H2'	35:LA:3163:A:C8	2.47	0.49
66:Lf:36:ILE:HD12	66:Lf:59:ILE:HD11	1.94	0.49
2:SA:136:VAL:HG22	2:SA:186:VAL:HG22	1.93	0.49
7:SF:73:GLY:H	7:SF:76:SER:HB3	1.77	0.49
16:SO:260:ILE:O	16:SO:273:ASP:HA	2.12	0.49
20:SS:19:LEU:HB2	20:SS:51:ARG:HH22	1.76	0.49
26:SY:47:PRO:HG2	26:SY:72:MET:HE2	1.94	0.49
35:LA:524:U:C4	35:LA:525:C:H1'	2.47	0.49
35:LA:1616:U:H2'	35:LA:1617:G:C8	2.47	0.49
35:LA:2229:A:O3'	35:LA:2231:C:H5"	2.11	0.49
41:LG:64:ILE:HD12	41:LG:144:VAL:HG11	1.94	0.49
55:LU:17:GLU:CD	55:LU:17:GLU:H	2.19	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:LX:15:LEU:HD13	58:LX:51:ALA:HB3	1.93	0.49
63:Lc:100:PRO:HG2	63:Lc:123:VAL:HG12	1.94	0.49
1:S2:26:A:H2'	1:S2:27:U:C6	2.47	0.49
1:S2:344:A:H2'	1:S2:345:U:H4'	1.94	0.49
1:S2:1285:U:H4'	1:S2:1286:U:C2	2.47	0.49
1:S2:1534:G:H2'	12:SK:73:GLY:H	1.77	0.49
2:SA:23:GLU:HG2	4:SC:61:TRP:CD1	2.48	0.49
31:Sd:29:HIS:HB2	31:Sd:32:ARG:HB3	1.93	0.49
35:LA:727:G:H5"	35:LA:978:G:OP1	2.11	0.49
35:LA:1283:C:H2'	35:LA:1285:G:N1	2.27	0.49
35:LA:1838:G:H5"	35:LA:1839:A:H5'	1.93	0.49
35:LA:2389:C:H2'	35:LA:2390:A:H8	1.77	0.49
35:LA:2897:A:H5"	75:Lo:125:LYS:HD2	1.93	0.49
37:LC:8:C:O2'	37:LC:9:A:H5'	2.11	0.49
73:Lm:41:THR:HG21	73:Lm:62:ALA:HB2	1.95	0.49
79:eR:281:ILE:O	79:eR:285:LYS:HG2	2.12	0.49
1:S2:119:A:H3'	1:S2:120:U:O4'	2.12	0.49
1:S2:1680:G:H4'	1:S2:1681:A:OP1	2.11	0.49
35:LA:3322:A:H2'	35:LA:3323:A:H8	1.77	0.49
63:Lc:36:GLY:HA3	63:Lc:40:HIS:CE1	2.47	0.49
81:Cc:3:C:H42	81:Cc:70:A:H61	1.59	0.49
1:S2:1284:C:H4'	1:S2:1285:U:H5'	1.94	0.49
1:S2:1648:A:H2'	1:S2:1649:G:C8	2.46	0.49
1:S2:1648:A:H2'	1:S2:1649:G:H8	1.77	0.49
1:S2:1660:A:H2'	1:S2:1660:A:N3	2.27	0.49
15:SN:80:ARG:CZ	79:eR:101:VAL:HG13	2.43	0.49
22:SU:63:PRO:HB2	22:SU:65:PRO:HD3	1.94	0.49
35:LA:506:U:H2'	35:LA:507:U:O4'	2.13	0.49
35:LA:2406:C:H2'	35:LA:2407:C:H6	1.78	0.49
35:LA:2881:C:H2'	35:LA:2882:U:C6	2.47	0.49
50:LP:47:LYS:HD3	50:LP:50:ARG:HH11	1.78	0.49
68:Lh:49:ILE:HD11	68:Lh:71:VAL:CG2	2.43	0.49
68:Lh:53:TYR:CZ	68:Lh:65:ARG:HB2	2.47	0.49
79:eR:315:GLY:O	79:eR:317:VAL:HG22	2.12	0.49
16:SO:168:THR:HG22	16:SO:170:ILE:HD12	1.93	0.49
24:SW:125:ALA:O	24:SW:129:ILE:HG12	2.12	0.49
35:LA:2655:U:H2'	77:Lq:3:ASN:O	2.12	0.49
1:S2:694:U:H5"	1:S2:695:U:H5	1.78	0.49
1:S2:545:A:H4'	1:S2:546:U:H5'	1.95	0.49
3:SB:108:LEU:HD22	7:SF:43:ILE:HD12	1.95	0.49
7:SF:46:PHE:O	7:SF:50:GLU:HG3	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:LA:1771:C:H2'	35:LA:1772:U:O4'	2.12	0.49
40:LF:158:SER:HA	40:LF:213:ASN:HB2	1.95	0.49
40:LF:308:LYS:HE3	40:LF:310:THR:HG22	1.93	0.49
48:LN:124:ILE:HG23	70:Lj:119:LYS:HD3	1.93	0.49
79:eR:252:LYS:HE2	79:eR:274:VAL:HG21	1.95	0.49
81:Cc:12:G:H2'	81:Cc:13:U:O4'	2.13	0.49
1:S2:162:A:H2	21:ST:55:GLY:H	1.60	0.49
1:S2:923:A:H4'	1:S2:924:A:OP1	2.11	0.49
1:S2:1478:G:H1	1:S2:1529:C:N4	2.11	0.49
4:SC:32:HIS:HE1	4:SC:42:VAL:HG11	1.78	0.49
6:SE:52:LYS:HZ3	6:SE:83:MET:HG3	1.78	0.49
22:SU:9:LEU:HD11	22:SU:13:PRO:HA	1.94	0.49
35:LA:1184:A:H2'	35:LA:1185:C:C6	2.48	0.49
36:LB:113:C:H2'	36:LB:114:U:O4'	2.13	0.49
1:S2:329:G:H5"	23:SV:98:LYS:HB3	1.94	0.49
1:S2:1403:C:H4'	1:S2:1403:C:OP1	2.13	0.49
11:SJ:57:ARG:HG2	11:SJ:89:ARG:CZ	2.43	0.49
35:LA:2426:U:H2'	35:LA:2427:U:C6	2.48	0.49
43:LI:59:GLU:O	43:LI:62:ILE:HG22	2.12	0.49
46:LL:42:THR:HG22	46:LL:44:ASP:H	1.78	0.49
50:LP:28:TRP:O	50:LP:32:GLN:HG2	2.13	0.49
53:LS:148:GLU:HG2	53:LS:151:ARG:HD3	1.93	0.49
56:LV:73:GLY:HA2	56:LV:89:LEU:O	2.13	0.49
66:Lf:16:LEU:HD23	66:Lf:19:ARG:HB2	1.95	0.49
67:Lg:32:TRP:CZ2	67:Lg:53:PRO:HD2	2.48	0.49
1:S2:906:A:H2'	1:S2:907:A:C8	2.48	0.48
1:S2:1592:A:H2'	1:S2:1593:A:C8	2.48	0.48
2:SA:70:THR:HG22	2:SA:86:LEU:HD13	1.96	0.48
5:SD:28:LEU:HD11	5:SD:100:TRP:HB3	1.95	0.48
20:SS:19:LEU:HB2	20:SS:51:ARG:NH2	2.28	0.48
26:SY:94:LYS:HG2	26:SY:118:ILE:HD13	1.94	0.48
27:SZ:12:GLN:HG3	27:SZ:14:PHE:CD2	2.47	0.48
35:LA:968:G:H2'	35:LA:969:C:C6	2.48	0.48
36:LB:71:G:H2'	36:LB:72:A:H8	1.78	0.48
38:LD:102:LEU:HD12	38:LD:102:LEU:H	1.76	0.48
44:LJ:47:SER:HA	44:LJ:50:VAL:HG23	1.95	0.48
46:LL:51:HIS:HD2	56:LV:160:ILE:HG21	1.78	0.48
79:eR:312:LEU:HD12	79:eR:317:VAL:HG21	1.94	0.48
1:S2:199:G:H2'	1:S2:200:A:C8	2.48	0.48
1:S2:284:G:H21	21:ST:188:ARG:NH1	2.09	0.48
17:SP:26:ALA:HB3	17:SP:149:LEU:HB2	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:Sg:26:LYS:HG3	34:Sg:27:PRO:HD2	1.95	0.48
35:LA:987:U:H2'	35:LA:988:U:C6	2.48	0.48
35:LA:1580:A:H1'	60:LZ:33:ARG:HH22	1.78	0.48
35:LA:1911:A:H2	35:LA:2122:G:C8	2.31	0.48
45:LK:12:VAL:HG22	45:LK:51:GLN:HA	1.94	0.48
55:LU:104:GLU:O	55:LU:108:GLN:HG2	2.13	0.48
60:LZ:97:LYS:O	60:LZ:101:GLU:HG2	2.13	0.48
62:Lb:89:VAL:HG12	62:Lb:93:LYS:HB2	1.95	0.48
1:S2:887:A:H61	1:S2:924:A:H62	1.60	0.48
35:LA:3095:U:H2'	35:LA:3096:C:C6	2.48	0.48
58:LX:18:PRO:HA	58:LX:51:ALA:HA	1.95	0.48
1:S2:590:C:H2'	1:S2:591:A:H8	1.78	0.48
3:SB:212:LYS:O	3:SB:216:GLU:HG2	2.13	0.48
8:SG:117:LEU:HD22	17:SP:15:GLN:HG3	1.95	0.48
16:SO:169:ILE:HG23	16:SO:181:TRP:HB2	1.94	0.48
18:SQ:143:THR:HG21	18:SQ:156:ALA:HB2	1.95	0.48
20:SS:45:ILE:HD12	20:SS:61:VAL:HG21	1.95	0.48
21:ST:197:ASN:O	21:ST:201:GLN:HG2	2.13	0.48
22:SU:64:VAL:HB	22:SU:94:ALA:HB1	1.96	0.48
27:SZ:92:LYS:HD3	27:SZ:121:VAL:HG22	1.95	0.48
35:LA:114:A:H2'	35:LA:115:A:O4'	2.14	0.48
35:LA:2898:G:OP2	35:LA:2899:C:H5"	2.12	0.48
35:LA:2960:C:H2'	35:LA:2961:G:H8	1.78	0.48
39:LE:45:SER:HB3	39:LE:181:ILE:HG23	1.93	0.48
49:LO:22:LEU:HB3	49:LO:64:VAL:HG13	1.95	0.48
61:La:40:ARG:HE	61:La:46:LYS:CD	2.26	0.48
1:S2:105:A:H2'	1:S2:106:U:H6	1.78	0.48
1:S2:1650:U:H2'	1:S2:1651:A:C8	2.49	0.48
23:SV:76:THR:OG1	23:SV:105:ASP:HB2	2.14	0.48
25:SX:109:VAL:HG12	25:SX:137:PHE:HB2	1.96	0.48
35:LA:38:U:H2'	35:LA:39:A:O4'	2.14	0.48
35:LA:792:G:H2'	35:LA:793:C:C6	2.49	0.48
35:LA:1466:G:N2	35:LA:1510:G:H5"	2.29	0.48
35:LA:1657:C:N4	35:LA:1798:A:H2	2.05	0.48
35:LA:2656:A:H4'	77:Lq:98:LYS:HE2	1.96	0.48
35:LA:2700:G:H5"	56:LV:17:ARG:HG2	1.95	0.48
35:LA:2765:C:O3'	77:Lq:39:GLY:HA3	2.13	0.48
35:LA:3137:C:H5"	39:LE:276:THR:HB	1.95	0.48
35:LA:3371:G:H2'	35:LA:3372:A:C8	2.48	0.48
73:Lm:33:LYS:HE3	73:Lm:35:GLY:H	1.78	0.48
78:Lr:51:ALA:HB3	78:Lr:54:ILE:HD13	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S2:810:G:C5	22:SU:111:LYS:HG3	2.48	0.48
4:SC:35:ILE:HB	4:SC:37:THR:HG22	1.95	0.48
35:LA:673:U:H2'	35:LA:674:G:C8	2.49	0.48
35:LA:2115:G:H22	35:LA:2120:A:H1'	1.79	0.48
35:LA:2565:U:H3	35:LA:2576:G:H1	1.60	0.48
35:LA:3110:C:H2'	35:LA:3111:U:C6	2.48	0.48
61:La:97:ILE:HD12	61:La:97:ILE:HA	1.72	0.48
1:S2:1115:U:H5'	76:Lp:10:THR:HG21	1.95	0.48
3:SB:125:THR:HG22	3:SB:127:GLN:OE1	2.14	0.48
7:SF:20:ALA:HB2	7:SF:84:ALA:HB1	1.96	0.48
19:SR:102:VAL:HG11	19:SR:129:ILE:HG12	1.95	0.48
19:SR:116:LYS:HG2	19:SR:127:ALA:HB3	1.95	0.48
21:ST:1:MET:N	21:ST:18:ILE:HG21	2.28	0.48
21:ST:78:THR:HG22	21:ST:79:LYS:H	1.79	0.48
35:LA:22:G:H5'	72:Ll:43:LYS:HG2	1.95	0.48
35:LA:2203:U:H2'	35:LA:2204:C:C6	2.48	0.48
35:LA:2361:A:H2'	35:LA:2362:C:C6	2.49	0.48
46:LL:121:LYS:HG2	46:LL:122:PRO:HD2	1.95	0.48
1:S2:183:U:H2'	1:S2:184:C:C6	2.49	0.48
1:S2:183:U:H2'	1:S2:184:C:H6	1.79	0.48
1:S2:1590:G:H2'	1:S2:1591:C:H6	1.79	0.48
7:SF:13:LYS:HG3	7:SF:14:LYS:H	1.79	0.48
17:SP:60:ALA:O	17:SP:64:ILE:HG13	2.13	0.48
35:LA:374:A:N3	35:LA:376:G:H5"	2.29	0.48
35:LA:1072:G:H2'	35:LA:1073:U:C6	2.49	0.48
36:LB:22:A:H2'	36:LB:23:A:C8	2.48	0.48
36:LB:27:A:C8	36:LB:29:C:C4	3.02	0.48
42:LH:170:LYS:HE3	68:Lh:34:GLY:HA3	1.96	0.48
45:LK:1:MET:HG2	45:LK:3:TYR:CZ	2.48	0.48
1:S2:180:A:H3'	1:S2:181:A:H8	1.79	0.48
1:S2:422:G:H4'	1:S2:423:G:OP1	2.14	0.48
1:S2:761:G:H21	1:S2:789:A:H2	1.61	0.48
1:S2:1478:G:H1	1:S2:1529:C:H41	1.59	0.48
20:SS:151:ASP:HB3	20:SS:154:ILE:HG23	1.95	0.48
33:Sf:55:THR:HA	33:Sf:62:ILE:HA	1.96	0.48
35:LA:291:C:H2'	35:LA:292:U:C6	2.48	0.48
35:LA:955:U:H2'	35:LA:956:U:C6	2.48	0.48
39:LE:67:PHE:HA	39:LE:70:ARG:HD3	1.96	0.48
40:LF:327:LEU:HD22	43:LI:181:ILE:HG13	1.96	0.48
48:LN:113:VAL:O	48:LN:117:LYS:HG2	2.13	0.48
61:La:70:ILE:HD13	61:La:82:VAL:HG22	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
79:eR:226:LEU:HB2	79:eR:253:LEU:HD23	1.95	0.48
81:Cc:36:C:H2'	81:Cc:37:A:O4'	2.14	0.48
1:S2:963:A:HO2'	1:S2:964:U:H6	1.60	0.48
1:S2:1143:A:H8	1:S2:1300:A:H2	1.59	0.48
1:S2:1213:G:C8	1:S2:1214:U:H1'	2.48	0.48
1:S2:1331:A:N6	2:SA:161:GLY:HA3	2.29	0.48
1:S2:1391:A:H8	1:S2:1391:A:OP2	1.97	0.48
16:SO:182:ASN:HB3	16:SO:185:GLN:HB2	1.95	0.48
19:SR:39:THR:HG22	19:SR:41:LEU:H	1.79	0.48
35:LA:121:A:C2	44:LJ:129:PRO:HB3	2.48	0.48
35:LA:3276:G:O2'	52:LR:175:ARG:HD2	2.13	0.48
55:LU:33:ASN:HD21	55:LU:36:ILE:HD13	1.79	0.48
60:LZ:59:SER:HB3	60:LZ:102:LEU:HD13	1.95	0.48
1:S2:29:U:H2'	1:S2:30:G:H8	1.79	0.47
1:S2:968:U:H2'	1:S2:969:C:O4'	2.14	0.47
1:S2:1389:C:O2'	8:SG:52:GLY:HA3	2.14	0.47
15:SN:92:LYS:HE3	15:SN:92:LYS:HB3	1.48	0.47
21:ST:159:ARG:NE	21:ST:172:ALA:HB2	2.29	0.47
22:SU:127:GLU:HG2	22:SU:135:ILE:HD12	1.96	0.47
23:SV:104:ILE:O	23:SV:164:ARG:HA	2.13	0.47
35:LA:591:G:C6	42:LH:19:LYS:HG2	2.49	0.47
35:LA:594:U:H2'	35:LA:609:G:O6	2.14	0.47
35:LA:974:G:H5'	53:LS:16:ARG:HG3	1.96	0.47
35:LA:2129:U:H2'	35:LA:2130:G:C8	2.48	0.47
35:LA:2361:A:H2'	35:LA:2362:C:H6	1.79	0.47
35:LA:3033:A:H2'	35:LA:3034:C:H6	1.78	0.47
37:LC:40:A:H2'	37:LC:41:A:C8	2.49	0.47
38:LD:80:GLU:HG2	38:LD:170:ALA:HA	1.94	0.47
43:LI:30:ARG:HG3	43:LI:33:ARG:NH2	2.28	0.47
45:LK:10:ILE:HG13	45:LK:72:LYS:HG2	1.96	0.47
55:LU:79:VAL:HG21	55:LU:106:LEU:HD11	1.94	0.47
56:LV:51:GLY:HA3	56:LV:92:ARG:HG3	1.96	0.47
65:Le:81:VAL:HG13	65:Le:83:LYS:HG2	1.95	0.47
1:S2:108:A:H2'	1:S2:109:G:C8	2.49	0.47
1:S2:749:U:H5"	29:Sb:83:ILE:HG13	1.95	0.47
1:S2:1251:U:H1'	1:S2:1252:C:C5	2.49	0.47
25:SX:44:THR:HG23	25:SX:60:PHE:CD1	2.49	0.47
28:Sa:12:TYR:CG	28:Sa:12:TYR:O	2.67	0.47
35:LA:1915:A:H2'	35:LA:1916:U:C6	2.49	0.47
35:LA:2954:U:H5	79:eR:183:ALA:HA	1.80	0.47
46:LL:99:ILE:HG22	46:LL:123:HIS:HB3	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:LO:17:VAL:HG21	49:LO:74:ARG:HG3	1.97	0.47
52:LR:33:ALA:HB1	52:LR:117:ILE:HG12	1.97	0.47
55:LU:77:VAL:HG11	55:LU:106:LEU:HG	1.97	0.47
61:La:55:GLU:HG3	61:La:108:LYS:HB3	1.95	0.47
73:Lm:63:LYS:O	73:Lm:67:GLN:HG2	2.14	0.47
1:S2:1524:A:H2'	1:S2:1525:A:C2	2.50	0.47
1:S2:1592:A:H2'	1:S2:1593:A:H8	1.79	0.47
1:S2:1783:C:OP2	76:Lp:1:MET:HG3	2.15	0.47
12:SK:46:LYS:O	12:SK:50:ILE:HG23	2.13	0.47
35:LA:2367:A:H2'	35:LA:2368:A:C8	2.49	0.47
35:LA:2961:G:H2'	35:LA:2962:U:C6	2.50	0.47
44:LJ:90:THR:HG22	44:LJ:214:LEU:HD21	1.95	0.47
44:LJ:94:PHE:HB3	44:LJ:189:LEU:HD11	1.96	0.47
49:LO:121:MET:HE3	49:LO:121:MET:HB3	1.78	0.47
62:Lb:33:SER:N	62:Lb:37:PRO:HA	2.28	0.47
77:Lq:25:VAL:HG22	77:Lq:72:LEU:HG	1.94	0.47
1:S2:281:G:H2'	1:S2:281:G:N3	2.29	0.47
1:S2:1732:A:OP2	1:S2:1732:A:H2	1.97	0.47
11:SJ:21:LYS:HE2	11:SJ:21:LYS:HB2	1.67	0.47
18:SQ:131:ASP:HB2	18:SQ:133:TYR:HD1	1.80	0.47
35:LA:414:U:H5'	35:LA:415:G:C8	2.48	0.47
35:LA:968:G:H2'	35:LA:969:C:H6	1.80	0.47
35:LA:1194:G:H2'	35:LA:1195:A:C8	2.49	0.47
35:LA:1348:U:H4'	35:LA:1349:G:C5'	2.43	0.47
35:LA:1821:U:C4	69:Li:67:LYS:HE2	2.49	0.47
41:LG:180:PHE:HB3	41:LG:195:LEU:HD13	1.95	0.47
46:LL:139:ARG:HG3	46:LL:173:PHE:CE1	2.49	0.47
48:LN:57:VAL:HG23	48:LN:115:ARG:HD2	1.95	0.47
48:LN:180:ARG:O	48:LN:184:GLU:HG2	2.14	0.47
54:LT:158:GLU:O	54:LT:162:ARG:HG2	2.14	0.47
57:LW:38:ILE:HB	57:LW:56:VAL:HG11	1.95	0.47
62:Lb:41:ALA:HB2	62:Lb:77:TYR:CE1	2.50	0.47
1:S2:105:A:H2'	1:S2:106:U:C6	2.49	0.47
1:S2:892:A:N1	1:S2:919:A:N1	2.63	0.47
1:S2:1411:A:H8	1:S2:1411:A:OP2	1.97	0.47
15:SN:132:LEU:HD11	15:SN:148:TYR:OH	2.15	0.47
22:SU:61:PHE:HA	22:SU:93:LEU:O	2.15	0.47
22:SU:63:PRO:C	22:SU:65:PRO:HD3	2.40	0.47
35:LA:417:A:H2'	35:LA:418:A:C8	2.50	0.47
35:LA:732:C:H2'	35:LA:733:G:C8	2.49	0.47
35:LA:2529:A:C2	35:LA:2530:G:H1'	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:LD:127:ALA:HB2	38:LD:134:VAL:HG23	1.97	0.47
43:LI:178:ILE:HG23	43:LI:183:ASP:HB3	1.95	0.47
43:LI:232:ARG:HB2	43:LI:235:PHE:HB2	1.96	0.47
68:Lh:20:LYS:HE2	68:Lh:20:LYS:HB2	1.68	0.47
69:Li:41:ARG:HG2	69:Li:56:THR:HG21	1.96	0.47
1:S2:533:U:H3'	1:S2:535:A:OP2	2.15	0.47
1:S2:1286:U:H2'	1:S2:1287:A:C2	2.49	0.47
1:S2:1360:A:N1	1:S2:1364:G:O6	2.46	0.47
1:S2:1553:G:N2	1:S2:1555:A:H3'	2.29	0.47
1:S2:1610:G:P	7:SF:75:VAL:HG21	2.55	0.47
21:ST:178:LEU:HD23	21:ST:180:THR:HG22	1.97	0.47
35:LA:1462:A:N1	35:LA:1470:U:H5	2.11	0.47
36:LB:4:U:H2'	36:LB:5:G:H8	1.79	0.47
39:LE:44:THR:HG21	39:LE:184:ASN:ND2	2.30	0.47
39:LE:173:GLN:HG2	39:LE:175:LYS:H	1.79	0.47
42:LH:62:THR:HG22	42:LH:78:ARG:HB2	1.96	0.47
68:Lh:38:PRO:HD3	68:Lh:77:ASN:O	2.14	0.47
1:S2:40:A:H1'	1:S2:469:C:N4	2.28	0.47
1:S2:451:A:N3	1:S2:451:A:H2'	2.30	0.47
1:S2:823:G:H2'	1:S2:824:G:O4'	2.14	0.47
1:S2:984:G:N7	1:S2:985:G:C6	2.83	0.47
1:S2:1330:G:H2'	1:S2:1331:A:O4'	2.14	0.47
1:S2:1383:G:C8	1:S2:1384:A:H2'	2.47	0.47
1:S2:1391:A:H62	1:S2:1408:G:H21	1.62	0.47
1:S2:1434:U:H4'	14:SM:24:CYS:HB2	1.96	0.47
1:S2:1452:U:OP1	14:SM:10:HIS:HD2	1.98	0.47
1:S2:1528:U:OP1	3:SB:109:LYS:HB3	2.13	0.47
5:SD:80:ASN:HD22	15:SN:114:VAL:HB	1.79	0.47
17:SP:179:ARG:HD2	17:SP:183:ARG:HH21	1.80	0.47
22:SU:62:VAL:HG23	22:SU:64:VAL:H	1.80	0.47
35:LA:346:C:C2	37:LC:25:G:H4'	2.49	0.47
35:LA:776:U:H3'	35:LA:777:U:H5'	1.96	0.47
35:LA:1054:A:H5"	35:LA:2637:A:H61	1.78	0.47
35:LA:1327:C:O2'	68:Lh:76:GLY:HA2	2.15	0.47
35:LA:1332:A:H2'	35:LA:1333:C:C6	2.50	0.47
35:LA:1688:U:H2'	35:LA:1689:U:H6	1.77	0.47
35:LA:2423:U:H2'	35:LA:2424:A:C8	2.49	0.47
35:LA:2835:U:H2'	35:LA:2836:C:O2	2.15	0.47
35:LA:2883:U:H2'	35:LA:2884:C:C6	2.50	0.47
44:LJ:162:LEU:HA	50:LP:7:LEU:HD11	1.96	0.47
48:LN:53:LEU:HD22	48:LN:94:GLY:HA2	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:LS:147:ARG:O	53:LS:150:VAL:HG22	2.15	0.47
55:LU:24:LEU:O	56:LV:148:PRO:HA	2.15	0.47
63:Lc:79:TRP:CE3	63:Lc:82:ILE:HD13	2.50	0.47
67:Lg:4:LEU:HB3	67:Lg:5:PRO:HD2	1.97	0.47
1:S2:554:C:H1'	1:S2:555:A:C2	2.38	0.47
1:S2:1426:C:O2'	1:S2:1428:G:H5'	2.15	0.47
1:S2:1736:G:N7	1:S2:1737:G:C6	2.83	0.47
2:SA:161:GLY:O	2:SA:164:VAL:HG12	2.15	0.47
18:SQ:49:ASN:HB2	18:SQ:55:LYS:HE3	1.96	0.47
20:SS:210:ILE:HD11	20:SS:220:THR:HG22	1.96	0.47
31:Sd:101:GLU:CD	31:Sd:101:GLU:H	2.23	0.47
35:LA:1128:U:H2'	35:LA:1129:A:O4'	2.15	0.47
44:LJ:94:PHE:CD2	44:LJ:189:LEU:HD21	2.50	0.47
79:eR:39:ILE:HD12	79:eR:93:LEU:HD23	1.97	0.47
79:eR:117:PHE:CE2	79:eR:118:LYS:HD2	2.50	0.47
1:S2:61:A:H8	1:S2:269:G:O2'	1.98	0.47
1:S2:228:G:N7	1:S2:834:G:H1'	2.30	0.47
1:S2:524:U:N3	1:S2:527:A:C8	2.82	0.47
1:S2:1350:U:H3	1:S2:1376:C:N4	2.12	0.47
1:S2:1410:A:H2'	1:S2:1411:A:C8	2.50	0.47
22:SU:55:LYS:HB3	22:SU:55:LYS:HE2	1.75	0.47
30:Sc:86:PHE:HB2	30:Sc:120:VAL:HG11	1.97	0.47
35:LA:173:G:H2'	35:LA:173:G:N3	2.29	0.47
35:LA:226:C:H2'	35:LA:227:G:O4'	2.15	0.47
35:LA:900:G:H1'	35:LA:1589:A:H61	1.78	0.47
35:LA:3174:A:H5"	35:LA:3175:U:C5	2.50	0.47
40:LF:233:LEU:HD23	40:LF:233:LEU:HA	1.61	0.47
43:LI:130:ILE:HD12	43:LI:134:VAL:HG11	1.96	0.47
44:LJ:213:LYS:HE3	44:LJ:213:LYS:HB3	1.66	0.47
46:LL:78:THR:HG23	46:LL:79:VAL:HG23	1.96	0.47
48:LN:60:ALA:HB3	48:LN:65:TYR:O	2.14	0.47
70:Lj:41:LEU:HD11	70:Lj:43:LYS:HD3	1.96	0.47
79:eR:185:GLN:HE22	82:pp:1150:ASP:HB3	1.80	0.47
1:S2:198:A:H2'	1:S2:199:G:H5'	1.96	0.47
1:S2:1260:U:H2'	1:S2:1261:G:H5"	1.96	0.47
1:S2:1349:G:O6	1:S2:1350:U:C4	2.68	0.47
7:SF:97:VAL:HG12	7:SF:98:ASP:H	1.80	0.47
17:SP:179:ARG:O	17:SP:183:ARG:HG3	2.15	0.47
20:SS:250:GLU:O	20:SS:254:ARG:HD2	2.15	0.47
35:LA:1569:U:H5'	35:LA:1570:U:O2	2.15	0.47
35:LA:2249:G:N1	35:LA:2267:C:H5	2.10	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S2:997:G:H1	1:S2:1006:C:H41	1.63	0.46
1:S2:1087:A:H5'	1:S2:1298:U:C5	2.49	0.46
1:S2:1116:A:H2	1:S2:1117:U:C5	2.23	0.46
1:S2:1634:C:H42	19:SR:93:GLY:HA2	1.79	0.46
16:SO:33:LEU:HB3	16:SO:45:TRP:HB2	1.96	0.46
21:ST:88:ARG:HB3	21:ST:91:GLU:HB2	1.97	0.46
35:LA:1657:C:H1'	69:Li:16:ARG:HH22	1.79	0.46
35:LA:2413:A:H2'	35:LA:2414:G:H8	1.80	0.46
35:LA:2606:G:N3	35:LA:2606:G:H2'	2.31	0.46
36:LB:4:U:H2'	36:LB:5:G:C8	2.50	0.46
47:LM:92:ARG:HA	47:LM:172:LEU:HG	1.96	0.46
62:Lb:101:PHE:O	62:Lb:103:GLN:HG2	2.15	0.46
1:S2:1307:U:H3	1:S2:1318:G:H21	1.63	0.46
7:SF:9:THR:HG21	7:SF:88:GLY:HA2	1.96	0.46
21:ST:3:LEU:HD22	21:ST:111:LEU:HD11	1.98	0.46
35:LA:1941:C:H2'	35:LA:1942:U:C6	2.50	0.46
35:LA:2101:C:O2'	35:LA:2102:U:H6	1.98	0.46
35:LA:3192:U:H2'	35:LA:3193:C:C6	2.50	0.46
35:LA:3357:U:H2'	35:LA:3358:U:H6	1.78	0.46
47:LM:60:ARG:O	47:LM:63:GLU:HB2	2.15	0.46
53:LS:151:ARG:O	53:LS:162:ALA:HB3	2.14	0.46
1:S2:801:G:H2'	1:S2:802:G:H5'	1.98	0.46
1:S2:1483:A:H2'	1:S2:1484:G:C8	2.50	0.46
1:S2:1585:U:N3	1:S2:1611:A:H2	2.04	0.46
1:S2:1680:G:H1'	1:S2:1721:A:N6	2.30	0.46
15:SN:120:GLU:OE1	15:SN:126:CYS:HB3	2.16	0.46
17:SP:123:VAL:HG21	17:SP:133:ILE:HD11	1.97	0.46
23:SV:72:ILE:HG21	23:SV:112:TRP:CE2	2.50	0.46
24:SW:90:LYS:HG3	24:SW:94:ASP:OD1	2.16	0.46
26:SY:61:THR:HG22	33:Sf:32:PHE:CE1	2.50	0.46
32:Se:64:LEU:HD22	32:Se:64:LEU:HA	1.83	0.46
35:LA:174:C:H2'	35:LA:175:C:C6	2.50	0.46
35:LA:179:C:O2	35:LA:179:C:H2'	2.16	0.46
35:LA:834:U:C2'	35:LA:835:G:H5'	2.45	0.46
35:LA:1080:A:H5'	41:LG:139:PRO:HB3	1.97	0.46
35:LA:1498:A:H2'	35:LA:1499:C:H6	1.81	0.46
37:LC:104:A:C8	37:LC:105:A:C8	3.03	0.46
40:LF:150:LEU:HD23	40:LF:249:ILE:HG12	1.97	0.46
42:LH:87:THR:HG22	42:LH:176:PHE:HB3	1.97	0.46
45:LK:90:MET:HE3	45:LK:90:MET:HB2	1.81	0.46
46:LL:17:TYR:CD2	46:LL:96:VAL:HG22	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:LR:136:ILE:HD13	82:pp:1131:HIS:CD2	2.50	0.46
54:LT:185:LEU:HG	54:LT:186:LYS:HD2	1.97	0.46
1:S2:144:U:OP1	21:ST:143:LYS:HE2	2.14	0.46
1:S2:1770:U:H2'	1:S2:1771:U:C6	2.50	0.46
6:SE:108:ARG:HB2	6:SE:108:ARG:NH1	2.30	0.46
7:SF:28:LEU:HD11	7:SF:66:ARG:NH1	2.30	0.46
9:SH:82:PRO:HG2	10:SI:36:ILE:HG21	1.97	0.46
10:SI:84:LYS:HB2	10:SI:94:ILE:HG13	1.97	0.46
16:SO:27:ALA:HA	16:SO:296:ALA:HB2	1.97	0.46
16:SO:38:ARG:HA	16:SO:67:ILE:HG23	1.98	0.46
16:SO:210:LEU:HB3	16:SO:222:LEU:HD11	1.96	0.46
35:LA:82:C:H4'	50:LP:204:LYS:HE2	1.96	0.46
35:LA:266:A:N6	71:Lk:30:LYS:HA	2.30	0.46
35:LA:671:U:H2'	35:LA:672:A:H8	1.80	0.46
35:LA:993:G:N3	35:LA:2637:A:H2'	2.31	0.46
35:LA:1308:A:C8	35:LA:1308:A:OP2	2.69	0.46
35:LA:2148:U:H2'	35:LA:2149:A:C5	2.50	0.46
35:LA:2416:U:H2'	35:LA:2417:U:C6	2.51	0.46
35:LA:2986:U:H2'	35:LA:2987:A:H8	1.80	0.46
35:LA:3226:A:H61	35:LA:3261:C:H1'	1.80	0.46
36:LB:26:C:C5	36:LB:27:A:H1'	2.50	0.46
39:LE:283:TYR:CE1	39:LE:354:VAL:HG21	2.51	0.46
51:LQ:124[A]:LEU:HD13	55:LU:168:PRO:HG3	1.97	0.46
56:LV:100:LYS:O	56:LV:104:GLU:HG2	2.15	0.46
79:eR:280:PHE:HE1	79:eR:284:LYS:HE3	1.81	0.46
1:S2:210:A:H5"	25:SX:20:PHE:CG	2.51	0.46
1:S2:602:U:H2'	1:S2:603:U:C6	2.50	0.46
1:S2:625:C:H2'	1:S2:626:U:C6	2.50	0.46
1:S2:984:G:O6	1:S2:985:G:N1	2.49	0.46
20:SS:31:PRO:HG2	20:SS:38:LEU:HG	1.97	0.46
23:SV:70:GLU:HB3	23:SV:112:TRP:CH2	2.50	0.46
27:SZ:84:ARG:HG2	27:SZ:85:ALA:O	2.16	0.46
35:LA:372:A:H2'	35:LA:373:A:C8	2.50	0.46
35:LA:617:G:H5"	52:LR:170:SER:OG	2.15	0.46
35:LA:834:U:H2'	35:LA:835:G:O4'	2.16	0.46
35:LA:2395:G:H5"	39:LE:255:TRP:CD1	2.51	0.46
35:LA:2883:U:H2'	35:LA:2884:C:H6	1.81	0.46
36:LB:3:U:H2'	36:LB:4:U:H6	1.80	0.46
36:LB:3:U:H2'	36:LB:4:U:C6	2.51	0.46
37:LC:107:G:H4'	37:LC:138:A:H5'	1.97	0.46
43:LI:118:LYS:HG3	43:LI:191:VAL:HG11	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:LI:120:THR:HB	56:LV:132:PRO:HB2	1.98	0.46
59:LY:35:LYS:HE2	59:LY:51:TRP:CZ2	2.50	0.46
73:Lm:13:GLU:HG2	73:Lm:16:ARG:HH22	1.80	0.46
1:S2:5:U:H2'	1:S2:6:G:H8	1.80	0.46
1:S2:713:A:O2'	1:S2:714:G:H5"	2.15	0.46
1:S2:863:A:O5'	29:Sb:57:ARG:HG2	2.16	0.46
1:S2:1199:G:O6	11:SJ:67:THR:HG22	2.16	0.46
1:S2:1458:G:H2'	1:S2:1458:G:OP1	2.15	0.46
12:SK:60:VAL:HG12	12:SK:80:LEU:HD21	1.96	0.46
20:SS:185:GLY:N	20:SS:189:LEU:HD13	2.31	0.46
27:SZ:71:CYS:SG	27:SZ:110:LEU:HD21	2.55	0.46
29:Sb:28:ARG:HD3	29:Sb:60:LYS:HE2	1.96	0.46
33:Sf:37:CYS:SG	33:Sf:38:PRO:HD2	2.56	0.46
35:LA:155:G:H5"	35:LA:156:G:H2'	1.96	0.46
35:LA:828:A:H2'	35:LA:829:U:C6	2.51	0.46
35:LA:2376:G:H2'	35:LA:2377:G:C8	2.49	0.46
35:LA:2942:C:H5"	35:LA:2943:G:H5"	1.98	0.46
35:LA:3193:C:H2'	35:LA:3194:C:C6	2.49	0.46
43:LI:136:TYR:CZ	43:LI:231:ASN:HB2	2.50	0.46
45:LK:9:GLN:NE2	45:LK:54:LYS:HG3	2.31	0.46
59:LY:8:PHE:CD2	59:LY:46:PRO:HG3	2.49	0.46
79:eR:396:SER:O	79:eR:400:SER:HB2	2.16	0.46
1:S2:393:C:H2'	1:S2:394:C:C6	2.51	0.46
1:S2:480:G:H2'	1:S2:481:A:H8	1.80	0.46
1:S2:514:G:H2'	1:S2:515:A:H8	1.80	0.46
1:S2:992:A:O4'	1:S2:992:A:N3	2.48	0.46
1:S2:1012:U:H4'	38:LD:247:ARG:HB3	1.98	0.46
1:S2:1339:C:H2'	1:S2:1341:A:C8	2.51	0.46
1:S2:1348:A:C8	1:S2:1349:G:N7	2.83	0.46
2:SA:93:ASP:HB3	2:SA:96:LEU:HB2	1.97	0.46
10:SI:51:GLU:HG2	10:SI:52:GLY:N	2.30	0.46
20:SS:99:PHE:HA	20:SS:112:HIS:O	2.16	0.46
21:ST:49:VAL:O	21:ST:113:ILE:HG22	2.15	0.46
35:LA:430:U:H2'	35:LA:431:U:C6	2.51	0.46
35:LA:640:U:H2'	35:LA:641:C:C6	2.50	0.46
35:LA:2514:U:H5'	44:LJ:68:ARG:HG2	1.96	0.46
37:LC:63:G:H22	37:LC:97:A:H2	1.63	0.46
53:LS:83:VAL:O	53:LS:103:ALA:HA	2.16	0.46
1:S2:454:U:H1'	20:SS:66:MET:HE2	1.98	0.46
1:S2:622:A:H4'	1:S2:623:A:O5'	2.15	0.46
1:S2:947:U:H2'	1:S2:948:G:H8	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S2:1151:A:H2'	1:S2:1152:A:C8	2.50	0.46
5:SD:41:LEU:HD12	5:SD:121:VAL:HG13	1.96	0.46
18:SQ:91:VAL:HG22	18:SQ:96:LEU:HB3	1.98	0.46
20:SS:168:LYS:HE3	20:SS:170:THR:HG22	1.98	0.46
35:LA:519:A:H4'	40:LF:355:PHE:HE2	1.81	0.46
35:LA:1509:A:H2'	35:LA:1510:G:C8	2.51	0.46
35:LA:3186:A:H4'	35:LA:3187:A:OP2	2.15	0.46
35:LA:3343:G:H2'	35:LA:3344:A:C2	2.51	0.46
38:LD:117:GLU:HG2	38:LD:124:GLY:H	1.81	0.46
48:LN:162:ASN:HB2	48:LN:164:GLU:OE1	2.16	0.46
49:LO:72:LEU:HD11	49:LO:81:VAL:HG13	1.97	0.46
69:Li:5:VAL:HG11	69:Li:22:VAL:HG22	1.97	0.46
1:S2:1284:C:OP2	1:S2:1285:U:H3'	2.16	0.46
1:S2:1351:G:H8	1:S2:1352:G:C8	2.33	0.46
1:S2:1444:A:OP1	1:S2:1444:A:H3'	2.16	0.46
1:S2:1797:A:N6	32:Se:84:VAL:HB	2.31	0.46
2:SA:55:THR:HA	2:SA:58:VAL:HG12	1.97	0.46
3:SB:90:ILE:H	3:SB:90:ILE:HG13	1.56	0.46
16:SO:222:LEU:HD21	16:SO:245:PHE:HZ	1.81	0.46
22:SU:107:ARG:NH1	22:SU:107:ARG:HA	2.31	0.46
24:SW:91:LYS:C	24:SW:92:LYS:HD2	2.40	0.46
27:SZ:40:ALA:HB2	27:SZ:70:LYS:HB2	1.98	0.46
30:Sc:57:LEU:CD2	30:Sc:73:ARG:HG2	2.45	0.46
35:LA:355:A:N1	40:LF:82:THR:HG23	2.30	0.46
35:LA:393:U:H2'	35:LA:394:G:O4'	2.16	0.46
35:LA:1117:G:OP1	64:Ld:4:SER:HB2	2.15	0.46
35:LA:1741:A:H5'	35:LA:1742:U:C5	2.50	0.46
35:LA:2232:A:H2'	35:LA:2233:A:C8	2.51	0.46
35:LA:2268:U:H4'	35:LA:2269:U:OP1	2.16	0.46
48:LN:5:LYS:H	48:LN:5:LYS:HD3	1.81	0.46
57:LW:43:VAL:HG23	57:LW:49:ASN:HB2	1.98	0.46
61:La:48:LEU:HD23	61:La:118:LEU:HB3	1.97	0.46
79:eR:177:PRO:HG2	79:eR:197:LYS:HG3	1.97	0.46
1:S2:69:G:H2'	1:S2:70:C:C6	2.51	0.46
1:S2:1516:A:H5"	1:S2:1518:C:H41	1.81	0.46
1:S2:1521:G:H5'	1:S2:1522:U:H4'	1.98	0.46
19:SR:58:LEU:O	28:Sa:15:ARG:HD3	2.16	0.46
22:SU:41:LEU:HB3	22:SU:70:PHE:CZ	2.51	0.46
35:LA:1378:U:H2'	35:LA:1379:G:H8	1.81	0.46
35:LA:2721:A:N1	35:LA:2735:U:H5	2.14	0.46
42:LH:7:PRO:HG2	42:LH:10:TYR:CE1	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:LQ:18[A]:ARG:O	51:LQ:22[A]:VAL:HG23	2.16	0.46
77:Lq:8:ARG:HD2	77:Lq:72:LEU:HD21	1.98	0.46
79:eR:215:SER:O	79:eR:218:LYS:HG3	2.16	0.46
82:pp:1135:THR:HG23	82:pp:1138:GLN:HA	1.98	0.46
1:S2:788:A:H2'	20:SS:19:LEU:HD22	1.98	0.45
1:S2:920:U:H1'	18:SQ:101:HIS:HE2	1.80	0.45
35:LA:1856:C:H2'	35:LA:1857:C:H6	1.80	0.45
37:LC:79:A:H2'	37:LC:79:A:N3	2.31	0.45
42:LH:55:LEU:HD11	42:LH:66:THR:HG22	1.98	0.45
66:Lf:27:LYS:O	66:Lf:31:ARG:HB2	2.16	0.45
1:S2:19:A:H2'	1:S2:20:G:O4'	2.16	0.45
1:S2:803:A:H62	22:SU:103:SER:C	2.25	0.45
1:S2:1536:G:H2'	1:S2:1536:G:N3	2.31	0.45
11:SJ:32:LYS:HG3	11:SJ:33:GLN:N	2.31	0.45
11:SJ:53:LYS:O	11:SJ:91:ILE:HG13	2.15	0.45
35:LA:190:U:O4'	35:LA:224:C:H5'	2.17	0.45
35:LA:3185:U:C5	51:LQ:126[A]:VAL:HG21	2.52	0.45
36:LB:11:A:H5"	36:LB:13:A:C6	2.51	0.45
36:LB:84:A:H2'	36:LB:85:G:C8	2.52	0.45
39:LE:19:ARG:HB2	39:LE:232:ARG:NH2	2.31	0.45
40:LF:3:ARG:HH11	40:LF:3:ARG:HA	1.82	0.45
45:LK:90:MET:HB3	45:LK:179:ILE:HG22	1.97	0.45
49:LO:21:VAL:HG12	49:LO:65:LEU:HD23	1.98	0.45
79:eR:41:PRO:HB3	79:eR:90:PRO:O	2.16	0.45
81:Cc:34:A:H2'	81:Cc:35:A:C8	2.51	0.45
1:S2:413:U:H2'	1:S2:414:C:C6	2.52	0.45
1:S2:594:A:OP2	24:SW:37:LYS:HE2	2.16	0.45
1:S2:947:U:H2'	1:S2:948:G:C8	2.52	0.45
1:S2:990:C:H5"	27:SZ:129:LYS:HB2	1.98	0.45
1:S2:1166:A:H2'	1:S2:1167:G:O4'	2.16	0.45
3:SB:177:ILE:HD13	3:SB:180:ARG:NH1	2.31	0.45
15:SN:83:LYS:HB2	79:eR:104:GLU:OE1	2.16	0.45
27:SZ:12:GLN:HB2	27:SZ:111:ARG:HH22	1.81	0.45
27:SZ:16:VAL:O	27:SZ:30:VAL:HA	2.16	0.45
31:Sd:27:VAL:HG23	31:Sd:29:HIS:HD2	1.81	0.45
35:LA:207:U:H2'	35:LA:208:C:C6	2.52	0.45
35:LA:1111:U:H5"	48:LN:5:LYS:HE3	1.99	0.45
35:LA:1597:C:H5'	35:LA:1696:A:H1'	1.97	0.45
35:LA:2492:C:P	35:LA:2493:U:H5"	2.56	0.45
35:LA:2966:G:H2'	35:LA:2967:A:C8	2.51	0.45
35:LA:3232:G:C6	35:LA:3256:G:C6	3.04	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:LH:93:VAL:O	42:LH:96:VAL:HG12	2.16	0.45
49:LO:16:GLU:HB3	55:LU:149:LYS:HB3	1.98	0.45
64:Ld:32:LEU:O	64:Ld:40:ARG:HD2	2.16	0.45
1:S2:279:G:H2'	1:S2:281:G:H8	1.80	0.45
1:S2:800:U:O5'	1:S2:801:G:H5"	2.17	0.45
1:S2:959:U:H5"	26:SY:14:SER:HB3	1.99	0.45
1:S2:984:G:O6	1:S2:985:G:C2	2.70	0.45
1:S2:1753:A:H2'	1:S2:1754:A:C8	2.51	0.45
4:SC:32:HIS:CD2	4:SC:33:GLU:H	2.34	0.45
8:SG:5:ARG:HH11	8:SG:53:TYR:HD1	1.64	0.45
20:SS:123:LEU:HD21	20:SS:235:TYR:HB2	1.97	0.45
25:SX:99:ARG:HB2	30:Sc:9:LEU:O	2.16	0.45
35:LA:406:G:H1'	37:LC:16:G:N2	2.31	0.45
35:LA:598:A:H4'	40:LF:325:LEU:HD13	1.98	0.45
35:LA:2615:G:H2'	35:LA:2616:C:H6	1.82	0.45
35:LA:2672:G:H5'	47:LM:94:ARG:HH21	1.80	0.45
35:LA:2986:U:H2'	35:LA:2987:A:C8	2.51	0.45
35:LA:3299:A:N6	35:LA:3315:G:H22	2.13	0.45
35:LA:3332:U:H2'	35:LA:3333:G:O4'	2.16	0.45
39:LE:239:PRO:O	39:LE:242:THR:HG22	2.16	0.45
45:LK:113:GLU:OE2	45:LK:115:ARG:HD2	2.16	0.45
61:La:116:LYS:HA	61:La:119:ILE:HD12	1.98	0.45
67:Lg:54:LYS:HD3	67:Lg:55:ILE:H	1.82	0.45
70:Lj:45:LYS:HD3	70:Lj:49:LYS:HE3	1.98	0.45
70:Lj:63:ARG:HH22	70:Lj:79:ASP:CG	2.25	0.45
1:S2:624:G:OP1	1:S2:624:G:C8	2.69	0.45
1:S2:1166:A:OP1	3:SB:100:ASN:HA	2.17	0.45
1:S2:1216:C:C4	1:S2:1444:A:H4'	2.51	0.45
16:SO:134:TRP:CZ2	16:SO:140:CYS:HB2	2.51	0.45
17:SP:3:LEU:HD13	17:SP:7:PHE:HB2	1.97	0.45
18:SQ:30:PHE:CD2	18:SQ:94:LYS:HA	2.51	0.45
21:ST:14:LYS:HD3	21:ST:16:PHE:HE1	1.81	0.45
25:SX:123:VAL:HG12	25:SX:142:VAL:HG13	1.99	0.45
35:LA:352:A:H61	35:LA:365:A:H5"	1.81	0.45
35:LA:538:G:O6	35:LA:553:U:C2	2.69	0.45
35:LA:671:U:H2'	35:LA:672:A:C8	2.52	0.45
35:LA:1619:A:H2'	35:LA:1620:U:C2	2.51	0.45
35:LA:2434:U:H1'	35:LA:2593:A:O2'	2.17	0.45
35:LA:2615:G:H2'	35:LA:2616:C:C6	2.52	0.45
35:LA:2987:A:O2'	39:LE:259:HIS:HB3	2.17	0.45
35:LA:3049:A:H4'	39:LE:364:LYS:HD2	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:LE:117:ARG:HA	39:LE:175:LYS:HD2	1.98	0.45
45:LK:103:ILE:HD12	45:LK:134:ILE:HD13	1.97	0.45
52:LR:67:ILE:HD11	52:LR:80:LYS:HB3	1.99	0.45
1:S2:1039:A:N6	1:S2:1091:A:H62	2.15	0.45
1:S2:1486:G:H2'	1:S2:1487:A:C8	2.51	0.45
16:SO:13:LEU:HD13	16:SO:45:TRP:CZ3	2.51	0.45
21:ST:54:GLY:O	21:ST:109:LEU:HD12	2.16	0.45
23:SV:38:ILE:HG12	23:SV:96:LEU:HD11	1.98	0.45
35:LA:289:A:H2'	35:LA:290:G:H8	1.82	0.45
35:LA:590:G:N2	35:LA:591:G:H22	2.14	0.45
35:LA:2407:C:H2'	35:LA:2408:U:C6	2.51	0.45
35:LA:3040:A:H2'	35:LA:3041:U:H5"	1.99	0.45
37:LC:143:U:H2'	37:LC:144:G:O4'	2.17	0.45
38:LD:96:LEU:O	78:Lr:87:ARG:HD3	2.17	0.45
38:LD:115:ASN:OD1	38:LD:128:ARG:HD2	2.15	0.45
49:LO:23:ILE:HD13	49:LO:53:VAL:HG21	1.98	0.45
55:LU:13:ARG:O	55:LU:22:PRO:HG2	2.17	0.45
58:LX:109:MET:HE2	58:LX:109:MET:HB3	1.81	0.45
61:La:51:ARG:HG2	61:La:52:ARG:H	1.82	0.45
63:Lc:94:ALA:HB2	63:Lc:121:VAL:HG22	1.98	0.45
74:Ln:49:MET:HB2	74:Ln:49:MET:HE3	1.75	0.45
78:Lr:84:ARG:O	78:Lr:88:GLU:HG2	2.16	0.45
1:S2:912:U:O2'	1:S2:913:G:H5'	2.17	0.45
1:S2:1147:A:H2'	1:S2:1148:C:C6	2.51	0.45
1:S2:1479:A:H5'	10:SI:60:SER:HB2	1.98	0.45
11:SJ:32:LYS:HE3	11:SJ:33:GLN:OE1	2.17	0.45
12:SK:96:SER:O	12:SK:97:LYS:HB2	2.17	0.45
20:SS:87:MET:SD	20:SS:123:LEU:HB2	2.57	0.45
26:SY:100:LYS:O	26:SY:103:GLU:HG2	2.17	0.45
30:Sc:109:ARG:HG3	30:Sc:114:LYS:HA	1.99	0.45
35:LA:80:G:H2'	35:LA:81:C:C6	2.52	0.45
35:LA:354:U:H5	35:LA:365:A:N7	2.15	0.45
35:LA:377:A:H1'	35:LA:392:G:N2	2.31	0.45
35:LA:629:U:H2'	35:LA:630:A:C8	2.52	0.45
35:LA:698:U:H2'	35:LA:699:A:O4'	2.17	0.45
35:LA:1046:A:H2'	35:LA:1049:C:C5	2.52	0.45
35:LA:2344:U:H2'	35:LA:2345:A:C8	2.50	0.45
35:LA:2836:C:H2'	35:LA:2837:A:O4'	2.17	0.45
35:LA:2947:G:C2	39:LE:250:ALA:HB1	2.52	0.45
37:LC:9:A:H3'	37:LC:10:A:C5'	2.46	0.45
39:LE:316:GLU:HB2	39:LE:318:LYS:HD3	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:LJ:105:LYS:HE2	44:LJ:109:LEU:HD11	1.99	0.45
47:LM:49:LYS:HB3	47:LM:62:ASN:HA	1.99	0.45
53:LS:94:PHE:CZ	63:Lc:119:PRO:HD3	2.50	0.45
62:Lb:18:TYR:HE1	62:Lb:47:GLU:HG3	1.82	0.45
69:Li:106:LYS:O	69:Li:109:THR:HG22	2.17	0.45
75:Lo:93:LYS:HD3	75:Lo:102:ARG:HG2	1.99	0.45
1:S2:921:U:H3'	1:S2:922:G:C5'	2.46	0.45
1:S2:1400:A:H2'	1:S2:1401:A:C8	2.52	0.45
1:S2:1564:U:H2'	1:S2:1565:C:C6	2.52	0.45
1:S2:1567:U:H4'	9:SH:36:LYS:HD2	1.98	0.45
1:S2:1775:U:H2'	1:S2:1776:A:C8	2.51	0.45
5:SD:75:VAL:O	5:SD:78:LEU:HD22	2.16	0.45
6:SE:87:PRO:HA	6:SE:90:ILE:HG13	1.99	0.45
16:SO:22:SER:O	16:SO:23:LEU:HD13	2.16	0.45
18:SQ:83:LYS:HE3	18:SQ:83:LYS:HB2	1.76	0.45
23:SV:39:GLY:HA2	23:SV:61:GLU:CD	2.41	0.45
23:SV:81:VAL:HG22	23:SV:91:VAL:HA	1.97	0.45
23:SV:191:PHE:O	23:SV:195:ARG:HG2	2.17	0.45
26:SY:26:PHE:CZ	26:SY:28:LEU:HB2	2.52	0.45
35:LA:745:C:H2'	35:LA:746:A:C8	2.51	0.45
35:LA:2352:A:H5"	52:LR:83:TRP:O	2.17	0.45
41:LG:83:LEU:HD12	41:LG:83:LEU:HA	1.75	0.45
44:LJ:101:THR:OG1	44:LJ:104:GLU:HG2	2.17	0.45
44:LJ:140:VAL:HG22	44:LJ:166:LEU:HD21	1.97	0.45
44:LJ:171:LYS:HG2	44:LJ:226:TYR:CD1	2.51	0.45
71:Lk:84:LYS:O	71:Lk:88:GLU:HG2	2.17	0.45
79:eR:174:VAL:HG11	79:eR:201:TYR:CD1	2.52	0.45
1:S2:1450:U:H2'	1:S2:1451:C:C6	2.52	0.45
2:SA:75:LYS:HD2	4:SC:20:VAL:HG23	1.98	0.45
21:ST:69:LEU:O	21:ST:99:GLY:HA3	2.17	0.45
22:SU:58:LEU:HD21	22:SU:88:ARG:HD3	1.99	0.45
35:LA:8:C:H2'	35:LA:9:U:C6	2.52	0.45
35:LA:366:A:H2'	35:LA:367:A:O4'	2.17	0.45
35:LA:1597:C:H2'	35:LA:1598:G:C8	2.51	0.45
35:LA:1927:G:C8	78:Lr:16:VAL:HA	2.52	0.45
35:LA:2947:G:N3	39:LE:250:ALA:HB1	2.32	0.45
49:LO:13:ARG:HB2	55:LU:172:TYR:O	2.17	0.45
52:LR:169:THR:HG23	52:LR:172:GLN:H	1.81	0.45
59:LY:53:VAL:O	59:LY:57:LYS:HG2	2.17	0.45
61:La:82:VAL:HB	61:La:85:VAL:CG1	2.47	0.45
61:La:119:ILE:HD13	61:La:126:LEU:HD11	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
63:Lc:74:ASN:HA	63:Lc:113:LEU:O	2.17	0.45
73:Lm:21:LYS:HD3	73:Lm:21:LYS:HA	1.77	0.45
1:S2:1039:A:H61	1:S2:1091:A:H62	1.64	0.45
1:S2:1284:C:H5"	1:S2:1286:U:O2'	2.16	0.45
1:S2:1337:A:H2	1:S2:1386:G:H22	1.65	0.45
1:S2:1556:A:H5'	6:SE:115:TYR:OH	2.17	0.45
18:SQ:139:ALA:HB2	18:SQ:172:LEU:HD11	1.98	0.45
26:SY:89:TYR:HE2	26:SY:150:VAL:HG13	1.81	0.45
26:SY:91:LEU:HB3	26:SY:122:ILE:HG12	1.99	0.45
35:LA:1035:G:C2'	35:LA:1037:C:H41	2.30	0.45
35:LA:1348:U:H4'	35:LA:1349:G:H5"	1.99	0.45
35:LA:1479:U:C3'	35:LA:1480:G:H5'	2.47	0.45
35:LA:1739:U:H1'	69:Li:56:THR:H	1.82	0.45
35:LA:3209:A:C2	49:LO:106:ARG:HG2	2.52	0.45
37:LC:75:G:H2'	37:LC:76:C:C6	2.52	0.45
37:LC:142:C:H2'	37:LC:143:U:C6	2.52	0.45
39:LE:346:THR:HG23	39:LE:351:LEU:HD12	1.99	0.45
44:LJ:98:ARG:HD3	44:LJ:99:PRO:O	2.17	0.45
53:LS:147:ARG:HG3	53:LS:150:VAL:HG13	1.99	0.45
55:LU:81:TYR:HE1	55:LU:90:MET:HE3	1.82	0.45
60:LZ:50:ALA:HB2	70:Lj:77:PRO:HG2	1.99	0.45
79:eR:280:PHE:CE1	79:eR:284:LYS:HE3	2.52	0.45
1:S2:592:A:H2'	1:S2:593:U:O4'	2.17	0.44
1:S2:874:C:H2'	1:S2:875:G:C8	2.52	0.44
5:SD:135:MET:SD	5:SD:136:ILE:HG23	2.57	0.44
10:SI:86:ARG:CD	10:SI:89:ARG:HH21	2.30	0.44
21:ST:70:PRO:HA	21:ST:98:ARG:HH12	1.82	0.44
22:SU:79:ARG:O	22:SU:83:LYS:HG3	2.17	0.44
35:LA:375:A:H5"	61:La:95:VAL:HG21	1.99	0.44
35:LA:497:C:H2'	35:LA:498:A:O4'	2.17	0.44
35:LA:1073:U:H2'	35:LA:1074:U:C6	2.51	0.44
35:LA:2289:U:H2'	35:LA:2290:C:H6	1.82	0.44
35:LA:2903:A:H2'	35:LA:2904:U:O4'	2.17	0.44
36:LB:7:G:H8	41:LG:22:ARG:HH11	1.66	0.44
36:LB:16:U:H2'	36:LB:17:A:C8	2.52	0.44
37:LC:91:C:H1'	61:La:24:SER:HB2	1.98	0.44
37:LC:91:C:H2'	37:LC:92:A:H8	1.82	0.44
48:LN:154:VAL:HG22	48:LN:157:ARG:HG2	1.99	0.44
1:S2:143:G:C8	1:S2:143:G:OP2	2.70	0.44
1:S2:497:G:H2'	1:S2:498:G:C8	2.51	0.44
2:SA:196:ARG:O	2:SA:196:ARG:HG2	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:SB:109:LYS:HA	3:SB:112:ARG:HB2	2.00	0.44
3:SB:124:LEU:O	3:SB:125:THR:C	2.59	0.44
20:SS:123:LEU:HD13	20:SS:236:ILE:HG23	1.99	0.44
25:SX:99:ARG:HG3	30:Sc:12:ALA:HB2	1.99	0.44
31:Sd:103:ALA:HB3	31:Sd:108:ARG:HG2	1.98	0.44
35:LA:355:A:H2'	35:LA:356:C:O4'	2.17	0.44
35:LA:1067:U:H2'	35:LA:1068:C:C6	2.53	0.44
35:LA:1277:C:H5"	35:LA:1278:A:C8	2.53	0.44
35:LA:1913:A:N3	35:LA:2120:A:H2'	2.33	0.44
35:LA:2347:U:H2'	35:LA:2348:A:O4'	2.17	0.44
37:LC:57:C:O2'	37:LC:58:G:H5'	2.18	0.44
41:LG:276:LYS:HE3	41:LG:276:LYS:HB3	1.74	0.44
54:LT:17:VAL:HG11	54:LT:52:LYS:HD3	1.97	0.44
55:LU:71:LYS:NZ	55:LU:73:LYS:HB3	2.32	0.44
78:Lr:76:ALA:HA	78:Lr:79:VAL:HG12	1.99	0.44
79:eR:32:THR:HG22	79:eR:129:ASN:OD1	2.18	0.44
1:S2:153:G:N2	1:S2:162:A:N6	2.66	0.44
1:S2:476:U:H5'	1:S2:477:A:O4'	2.17	0.44
1:S2:872:G:H2'	1:S2:873:U:O4'	2.17	0.44
1:S2:1579:U:H2'	1:S2:1580:C:C6	2.53	0.44
2:SA:164:VAL:O	2:SA:168:ILE:HB	2.18	0.44
18:SQ:32:ILE:HB	18:SQ:43:VAL:HG22	1.98	0.44
18:SQ:141:ALA:HB1	18:SQ:207:LEU:HG	1.97	0.44
25:SX:54:ILE:HD13	25:SX:54:ILE:HA	1.80	0.44
35:LA:776:U:H5'	35:LA:777:U:OP2	2.18	0.44
35:LA:1190:A:H2'	35:LA:1190:A:N3	2.33	0.44
35:LA:1737:U:O2	35:LA:1738:C:N3	2.51	0.44
35:LA:2407:C:H2'	35:LA:2408:U:H6	1.82	0.44
35:LA:3305:A:H2'	35:LA:3306:U:O4'	2.18	0.44
38:LD:206:PRO:HD3	38:LD:213:GLY:CA	2.47	0.44
41:LG:219:PHE:CE2	41:LG:227:LEU:HD11	2.52	0.44
73:Lm:46:ARG:NH2	73:Lm:51:LEU:HB2	2.32	0.44
1:S2:458:G:OP1	31:Sd:109:LYS:HE2	2.17	0.44
1:S2:1192:C:H4'	7:SF:140:LYS:HE3	1.98	0.44
1:S2:1671:A:H2'	1:S2:1672:G:O4'	2.16	0.44
1:S2:1741:U:H5"	30:Sc:39:LYS:HG2	1.99	0.44
2:SA:162:GLN:N	2:SA:163:PRO:HD2	2.32	0.44
13:SL:12:VAL:HG13	13:SL:52:ASP:O	2.17	0.44
17:SP:67:ILE:HD13	17:SP:119:ARG:HB2	1.99	0.44
17:SP:84:ARG:HD3	17:SP:203:PHE:O	2.16	0.44
23:SV:157:GLU:HA	23:SV:160:PHE:HD2	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:SW:129:ILE:HD13	24:SW:134:ILE:HG13	2.00	0.44
27:SZ:20:TYR:HB3	27:SZ:27:PHE:HB2	1.99	0.44
27:SZ:128:LYS:HG2	32:Se:27:SER:HB3	2.00	0.44
30:Sc:32:ARG:HG2	30:Sc:33:LEU:HD12	1.99	0.44
35:LA:821:U:H2'	35:LA:822:G:H8	1.83	0.44
35:LA:1489:A:OP1	69:Li:10:ARG:HD3	2.16	0.44
35:LA:1523:U:H5'	60:LZ:113:LEU:HB3	1.99	0.44
35:LA:1636:U:H1'	62:Lb:76:ASN:H	1.83	0.44
35:LA:2878:G:H5"	39:LE:5:LYS:HE2	2.00	0.44
35:LA:3288:G:HO2'	35:LA:3289:G:H8	1.62	0.44
67:Lg:119:VAL:HB	67:Lg:122:PRO:HB3	2.00	0.44
68:Lh:49:ILE:HD11	68:Lh:71:VAL:HG23	1.98	0.44
78:Lr:30:GLU:HA	78:Lr:33:GLN:HG2	1.99	0.44
1:S2:259:U:H1'	23:SV:178:ARG:NH2	2.32	0.44
1:S2:783:G:H2'	1:S2:784:C:C6	2.53	0.44
1:S2:848:C:C2	1:S2:850:A:C8	3.06	0.44
1:S2:897:C:H5"	1:S2:898:A:H5"	2.00	0.44
5:SD:95:LYS:N	5:SD:95:LYS:HD2	2.32	0.44
17:SP:58:VAL:O	17:SP:62:ARG:HG3	2.18	0.44
35:LA:92:G:H5'	35:LA:94:G:N7	2.33	0.44
35:LA:408:A:N6	37:LC:15:G:H1'	2.32	0.44
35:LA:915:A:H8	35:LA:2136:C:O2'	2.01	0.44
35:LA:943:U:H3'	63:Lc:13:GLY:HA2	2.00	0.44
35:LA:2526:C:H2'	35:LA:2527:G:H8	1.82	0.44
36:LB:24:A:H2'	36:LB:25:G:H8	1.83	0.44
49:LO:32:LEU:HD11	49:LO:94:TRP:CG	2.52	0.44
52:LR:133:HIS:HB3	82:pp:1139:SER:HB3	2.00	0.44
58:LX:35:TYR:CE1	58:LX:37:ILE:HG22	2.52	0.44
68:Lh:16:TYR:OH	68:Lh:91:ALA:HB2	2.17	0.44
79:eR:252:LYS:HD2	79:eR:254:VAL:HG22	1.99	0.44
1:S2:279:G:H2'	1:S2:281:G:C8	2.53	0.44
1:S2:523:G:C8	1:S2:524:U:H5	2.36	0.44
1:S2:837:G:H2'	1:S2:838:G:H8	1.82	0.44
1:S2:1729:C:H2'	1:S2:1730:A:O4'	2.18	0.44
1:S2:1777:G:O6	76:Lp:8:LYS:HE3	2.18	0.44
15:SN:134:ASN:HB2	15:SN:139:LEU:HD23	2.00	0.44
24:SW:29:LYS:HG2	24:SW:33:GLU:OE2	2.18	0.44
35:LA:780:A:O4'	53:LS:162:ALA:HA	2.17	0.44
35:LA:784:A:H1'	53:LS:65:SER:HB3	1.99	0.44
35:LA:2107:A:C2	35:LA:3344:A:H8	2.27	0.44
35:LA:3320:A:H2'	35:LA:3321:C:C6	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:LD:117:GLU:HB2	38:LD:162:ALA:HB1	1.99	0.44
52:LR:41:LEU:HD21	52:LR:99:ALA:HB2	2.00	0.44
60:LZ:62:VAL:HB	60:LZ:90:ALA:HB2	2.00	0.44
79:eR:34:MET:HB2	79:eR:128:ASP:O	2.17	0.44
1:S2:501:U:H1'	1:S2:502:U:C5	2.52	0.44
1:S2:1332:C:O2'	2:SA:162:GLN:HB3	2.18	0.44
13:SL:40:ILE:HD13	13:SL:59:SER:O	2.18	0.44
16:SO:23:LEU:HD11	16:SO:310:ILE:CD1	2.47	0.44
16:SO:206:PRO:HG2	16:SO:247:PRO:HA	2.00	0.44
35:LA:158:G:H2'	35:LA:159:A:H8	1.81	0.44
35:LA:2524:A:C2	44:LJ:44:ARG:HD2	2.53	0.44
35:LA:2689:A:H2'	35:LA:2689:A:N3	2.32	0.44
35:LA:3006:A:H2'	35:LA:3007:U:O4'	2.17	0.44
39:LE:113:GLU:HB3	39:LE:176:ALA:HB2	2.00	0.44
40:LF:234:ASN:ND2	40:LF:236:LEU:HB2	2.33	0.44
41:LG:117:GLU:O	41:LG:120:LYS:HD3	2.18	0.44
79:eR:153:GLY:HA2	79:eR:232:PHE:CE2	2.53	0.44
1:S2:184:C:H2'	1:S2:185:U:C6	2.53	0.44
1:S2:197:A:H2'	1:S2:198:A:C8	2.53	0.44
1:S2:237:C:H4'	1:S2:238:U:O5'	2.17	0.44
1:S2:477:A:N6	1:S2:542:A:H61	2.16	0.44
1:S2:1317:C:H2'	1:S2:1318:G:O4'	2.18	0.44
1:S2:1660:A:H2	1:S2:1661:U:H3	1.65	0.44
8:SG:5:ARG:HD2	8:SG:53:TYR:CD1	2.53	0.44
22:SU:24:PHE:HE1	22:SU:81:LEU:HD11	1.83	0.44
35:LA:1214:U:H5	35:LA:1291:A:N1	2.15	0.44
35:LA:1216:C:N4	35:LA:1288:U:H3	2.16	0.44
35:LA:1566:A:C5	35:LA:1567:U:H1'	2.53	0.44
35:LA:1718:G:H2'	35:LA:1719:G:H8	1.80	0.44
35:LA:1740:U:H3'	35:LA:1740:U:OP1	2.18	0.44
35:LA:2734:A:H4'	35:LA:2735:U:OP1	2.18	0.44
39:LE:256:HIS:HA	39:LE:257:PRO:C	2.42	0.44
44:LJ:143:ILE:HG21	44:LJ:169:LEU:HG	2.00	0.44
50:LP:21:PHE:O	50:LP:25:VAL:HG22	2.18	0.44
70:Lj:41:LEU:HD12	70:Lj:41:LEU:HA	1.89	0.44
1:S2:93:A:H4'	1:S2:94:U:OP2	2.18	0.44
1:S2:333:A:P	23:SV:48:THR:HB	2.58	0.44
1:S2:400:A:H5"	23:SV:25:ARG:HA	2.00	0.44
1:S2:1251:U:H1'	1:S2:1252:C:H5	1.80	0.44
1:S2:1273:G:O2'	1:S2:1430:U:H5	1.99	0.44
1:S2:1283:U:H5"	1:S2:1285:U:OP1	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S2:1369:U:H4'	1:S2:1369:U:OP1	2.18	0.44
2:SA:132:LYS:HD3	2:SA:191:ASP:HA	1.99	0.44
7:SF:5:PRO:HG2	7:SF:24:ALA:HB2	2.00	0.44
16:SO:23:LEU:HD11	16:SO:310:ILE:HD11	2.00	0.44
16:SO:155:ARG:HD3	16:SO:155:ARG:HA	1.86	0.44
16:SO:260:ILE:HD12	16:SO:292:LEU:HD13	1.99	0.44
20:SS:133:LYS:HA	20:SS:133:LYS:HD3	1.79	0.44
25:SX:99:ARG:HD3	30:Sc:8:GLY:O	2.18	0.44
35:LA:1799:A:H2'	35:LA:1800:A:C8	2.53	0.44
35:LA:3176:G:N2	35:LA:3213:A:H1'	2.33	0.44
38:LD:66:PRO:HG2	38:LD:67:TYR:CE2	2.53	0.44
46:LL:91:VAL:HG11	46:LL:129:VAL:HG12	2.00	0.44
52:LR:136:ILE:HG21	82:pp:1131:HIS:HB3	2.00	0.44
73:Lm:28:ASN:HD21	73:Lm:42:LYS:HD2	1.83	0.44
79:eR:103:GLU:HG3	79:eR:104:GLU:H	1.82	0.44
1:S2:330:G:O2'	23:SV:33:PRO:HB3	2.18	0.43
1:S2:1204:A:N3	14:SM:10:HIS:CE1	2.86	0.43
1:S2:1613:U:O3'	13:SL:47:PRO:HG3	2.18	0.43
4:SC:82:LEU:HD13	4:SC:83:PRO:HD2	1.98	0.43
16:SO:150:TRP:C	16:SO:150:TRP:CD1	2.96	0.43
19:SR:52:THR:HG23	19:SR:55:GLU:HB2	1.99	0.43
21:ST:36:VAL:HG22	21:ST:50:PHE:HB2	1.99	0.43
22:SU:34:LEU:HD12	22:SU:37:GLU:HB3	2.00	0.43
34:Sg:41:THR:O	34:Sg:45:VAL:HG22	2.17	0.43
35:LA:593:C:H5"	42:LH:19:LYS:HE2	2.00	0.43
35:LA:662:U:OP1	63:Lc:8:THR:HG21	2.17	0.43
35:LA:1313:G:O3'	51:LQ:17[A]:GLY:HA3	2.17	0.43
35:LA:1460:A:H5'	66:Lf:51:LEU:O	2.18	0.43
35:LA:2515:A:H5"	50:LP:28:TRP:CD1	2.53	0.43
35:LA:2526:C:H2'	35:LA:2527:G:C8	2.53	0.43
41:LG:164:LYS:HE3	41:LG:195:LEU:HD21	2.00	0.43
48:LN:180:ARG:HG2	71:Lk:11:LEU:HD11	1.98	0.43
79:eR:194:ARG:O	79:eR:198:ARG:HG3	2.17	0.43
1:S2:470:A:H2'	1:S2:471:A:H8	1.84	0.43
1:S2:804:A:C8	29:Sb:107:SER:HA	2.53	0.43
1:S2:1488:G:H3'	1:S2:1515:A:H61	1.83	0.43
15:SN:120:GLU:HA	15:SN:132:LEU:HD12	2.00	0.43
16:SO:232:TYR:CE2	16:SO:265:LEU:HB3	2.52	0.43
24:SW:154:LYS:HG3	24:SW:155:HIS:ND1	2.33	0.43
29:Sb:31:SER:H	29:Sb:34:ILE:HD12	1.82	0.43
35:LA:787:G:H2'	35:LA:788:C:C6	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:LA:813:G:H4'	72:Ll:47:TYR:OH	2.18	0.43
35:LA:818:C:H2'	35:LA:819:U:O4'	2.18	0.43
35:LA:1216:C:H42	35:LA:1288:U:H3	1.65	0.43
35:LA:1286:A:H4'	35:LA:1287:A:H4'	1.99	0.43
35:LA:2147:A:H2'	35:LA:2148:U:O4'	2.18	0.43
35:LA:3157:U:H4'	35:LA:3158:G:H5'	1.99	0.43
61:La:51:ARG:NH1	61:La:53:ASP:H	2.14	0.43
62:Lb:58:GLY:HA2	62:Lb:62:VAL:HG23	1.99	0.43
63:Lc:116:GLY:HA2	63:Lc:137:LYS:NZ	2.33	0.43
78:Lr:61:LYS:HA	78:Lr:61:LYS:HD3	1.78	0.43
79:eR:77:SER:HB3	79:eR:111:ASN:ND2	2.33	0.43
79:eR:378:PHE:O	79:eR:382:TYR:HB3	2.18	0.43
1:S2:331:A:H5'	23:SV:33:PRO:HA	2.00	0.43
1:S2:897:C:H3'	1:S2:898:A:C4'	2.48	0.43
1:S2:1170:G:C2	1:S2:1171:A:C8	3.05	0.43
1:S2:1203:A:C2	14:SM:14:TYR:HE2	2.36	0.43
4:SC:49:LEU:HB3	4:SC:55:VAL:HG12	2.00	0.43
9:SH:36:LYS:HB3	9:SH:36:LYS:HE2	1.66	0.43
13:SL:19:THR:HG23	13:SL:25:VAL:HG23	2.00	0.43
19:SR:35:TRP:CE2	19:SR:37:PRO:HB3	2.53	0.43
19:SR:39:THR:HB	19:SR:65:GLU:OE2	2.18	0.43
21:ST:3:LEU:HB3	21:ST:5:ILE:HD11	2.00	0.43
35:LA:76:G:H22	35:LA:315:C:H5'	1.84	0.43
35:LA:503:C:H2'	35:LA:504:A:H8	1.82	0.43
35:LA:2943:G:H2'	35:LA:2944:U:O4'	2.18	0.43
36:LB:22:A:C4	41:LG:272:TYR:HD2	2.36	0.43
42:LH:100:LYS:HE3	42:LH:100:LYS:HB2	1.75	0.43
54:LT:180:LYS:HE2	54:LT:181:ARG:HH21	1.83	0.43
61:La:37:LYS:NZ	61:La:40:ARG:HD2	2.32	0.43
62:Lb:61:LYS:O	62:Lb:65:ARG:HG3	2.18	0.43
1:S2:730:G:C5	1:S2:731:C:H5	2.36	0.43
1:S2:1087:A:H2'	1:S2:1088:A:C8	2.53	0.43
1:S2:1215:C:H5'	1:S2:1444:A:H2	1.82	0.43
3:SB:80:LYS:HG3	3:SB:81:ARG:N	2.33	0.43
11:SJ:34:LEU:HD11	11:SJ:89:ARG:NE	2.33	0.43
13:SL:22:ARG:H	13:SL:22:ARG:HG2	1.66	0.43
20:SS:31:PRO:HA	20:SS:81:THR:HB	2.00	0.43
22:SU:20:VAL:HG11	22:SU:46:ILE:HD11	2.00	0.43
26:SY:54:LEU:HB3	26:SY:60:VAL:HB	2.01	0.43
28:Sa:32:VAL:HG22	28:Sa:60:ARG:HD2	1.99	0.43
35:LA:1306:G:C6	51:LQ:62[A]:THR:HA	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:LA:1801:U:H2'	35:LA:1802:C:C6	2.54	0.43
35:LA:1812:G:O2'	35:LA:1817:G:H1'	2.18	0.43
35:LA:2266:U:H2'	35:LA:2267:C:O2	2.18	0.43
35:LA:2564:G:OP2	62:Lb:55:LYS:HD3	2.19	0.43
35:LA:3139:A:H2'	35:LA:3140:G:O4'	2.19	0.43
36:LB:9:C:OP1	56:LV:26:HIS:HB2	2.18	0.43
38:LD:54:ARG:HG2	38:LD:56:ALA:H	1.83	0.43
55:LU:29:ILE:O	55:LU:29:ILE:HG13	2.15	0.43
74:Ln:25:GLN:NE2	74:Ln:28:ARG:HH12	2.17	0.43
81:Cc:75:C:O5'	81:Cc:75:C:H6	2.01	0.43
1:S2:78:A:N1	21:ST:178:LEU:HD22	2.32	0.43
1:S2:797:G:N3	1:S2:797:G:H2'	2.33	0.43
1:S2:895:G:H8	27:SZ:41:ARG:NH1	2.16	0.43
5:SD:125:ASN:C	5:SD:127:GLY:H	2.27	0.43
6:SE:108:ARG:O	6:SE:111:MET:HG2	2.19	0.43
9:SH:110:ARG:O	9:SH:114:GLU:HG3	2.18	0.43
10:SI:61:VAL:O	10:SI:65:ILE:HG13	2.17	0.43
20:SS:49:ARG:HE	20:SS:49:ARG:HB3	1.60	0.43
20:SS:87:MET:HG2	20:SS:123:LEU:H	1.83	0.43
26:SY:89:TYR:CE2	26:SY:150:VAL:HG13	2.54	0.43
31:Sd:57:VAL:HB	31:Sd:60:PHE:CE2	2.53	0.43
35:LA:536:U:H1'	35:LA:559:A:C8	2.54	0.43
35:LA:1877:U:H5"	35:LA:1878:G:O4'	2.19	0.43
35:LA:2724:U:H2'	35:LA:2725:U:H6	1.82	0.43
36:LB:9:C:P	56:LV:26:HIS:HB2	2.58	0.43
36:LB:77:G:H3'	55:LU:46:GLN:O	2.19	0.43
46:LL:38:LYS:HG2	46:LL:41:ALA:HB2	2.00	0.43
53:LS:150:VAL:HA	53:LS:153:PHE:CD2	2.53	0.43
55:LU:81:TYR:CE1	55:LU:90:MET:HE3	2.53	0.43
61:La:28:ARG:NE	61:La:29:VAL:HG23	2.33	0.43
82:pp:1142:ASN:C	82:pp:1144:TYR:H	2.25	0.43
1:S2:337:G:H3'	25:SX:133:LYS:HB2	2.01	0.43
1:S2:800:U:OP2	1:S2:801:G:H8	2.02	0.43
1:S2:1425:A:H1'	19:SR:92:ALA:HB1	2.01	0.43
2:SA:115:ILE:HD13	2:SA:142:LEU:HD23	2.00	0.43
9:SH:28:ILE:O	9:SH:32:LEU:HG	2.19	0.43
35:LA:849:C:H2'	35:LA:850:U:H6	1.83	0.43
35:LA:2118:C:H2'	35:LA:2119:A:O4'	2.19	0.43
35:LA:3066:U:H2'	35:LA:3067:C:C6	2.53	0.43
35:LA:3232:G:H2'	35:LA:3233:C:H6	1.84	0.43
35:LA:3298:C:C2	35:LA:3299:A:C8	3.06	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:LB:46:A:OP1	41:LG:158:ARG:HD3	2.19	0.43
36:LB:73:C:N4	55:LU:19:VAL:HG21	2.34	0.43
41:LG:8:LYS:HD3	41:LG:12:TYR:CE2	2.52	0.43
50:LP:168:GLY:O	50:LP:172:ARG:HG3	2.18	0.43
56:LV:56:PHE:CZ	56:LV:78:LYS:HG3	2.54	0.43
81:Cc:47:U:OP1	81:Cc:47:U:H2'	2.18	0.43
1:S2:93:A:C6	1:S2:398:G:C6	3.06	0.43
1:S2:1215:C:N4	1:S2:1448:G:H1	2.17	0.43
1:S2:1525:A:N7	1:S2:1526:A:C6	2.87	0.43
1:S2:1618:C:H4'	1:S2:1619:C:C5	2.54	0.43
11:SJ:29:THR:HG23	11:SJ:30:LYS:HD2	2.00	0.43
19:SR:234:PRO:O	19:SR:235:LEU:HD12	2.19	0.43
26:SY:87:ASP:OD2	26:SY:125:LEU:HD21	2.19	0.43
29:Sb:24:GLN:HA	29:Sb:63:VAL:O	2.18	0.43
31:Sd:112:LYS:HE3	31:Sd:112:LYS:HB3	1.75	0.43
35:LA:158:G:H2'	35:LA:159:A:C8	2.54	0.43
35:LA:1072:G:H2'	35:LA:1073:U:H6	1.83	0.43
35:LA:1715:A:N7	65:Le:84:LEU:HD12	2.34	0.43
35:LA:2213:A:H2'	35:LA:2214:A:N3	2.33	0.43
35:LA:2376:G:O2'	35:LA:2377:G:H5'	2.19	0.43
35:LA:2426:U:H2'	35:LA:2427:U:H6	1.82	0.43
36:LB:16:U:H2'	36:LB:17:A:H8	1.84	0.43
37:LC:29:U:H5"	48:LN:27:ASP:HB3	2.01	0.43
37:LC:80:A:H1'	37:LC:82:U:C5	2.52	0.43
38:LD:149:ARG:NH2	38:LD:155:LYS:HE3	2.23	0.43
40:LF:53:SER:HB3	40:LF:56:ALA:HB2	1.99	0.43
46:LL:168:SER:HA	56:LV:160:ILE:HG22	2.00	0.43
47:LM:100:GLY:HA3	47:LM:154:THR:HG22	1.99	0.43
47:LM:162:TRP:CZ2	47:LM:166:LYS:HD2	2.53	0.43
55:LU:132:THR:HG22	55:LU:133:ALA:H	1.84	0.43
60:LZ:105:VAL:HG21	60:LZ:126:LEU:HD13	2.00	0.43
61:La:50:ILE:C	61:La:115:ARG:HH12	2.27	0.43
1:S2:1661:U:H6	1:S2:1661:U:H2'	1.52	0.43
2:SA:142:LEU:HD22	2:SA:150:MET:SD	2.59	0.43
3:SB:132:VAL:HA	3:SB:135:ASP:HB2	2.01	0.43
7:SF:13:LYS:HD2	7:SF:13:LYS:HA	1.83	0.43
9:SH:142:GLY:HA2	9:SH:145:ARG:NH1	2.34	0.43
16:SO:61:PHE:HB3	16:SO:92:TRP:NE1	2.34	0.43
18:SQ:70:LEU:HD13	18:SQ:84:ILE:HD13	2.00	0.43
30:Sc:19:ARG:NH1	30:Sc:19:ARG:HA	2.34	0.43
35:LA:26:A:H2'	35:LA:27:C:H6	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:LA:176:G:H3'	35:LA:177:U:H5"	2.01	0.43
35:LA:414:U:H3'	35:LA:415:G:O4'	2.18	0.43
35:LA:1595:U:C2	35:LA:1596:C:C5	3.07	0.43
35:LA:2659:G:H4'	35:LA:2751:G:O2'	2.18	0.43
36:LB:47:C:OP1	41:LG:94:ASN:HB2	2.19	0.43
41:LG:268:GLU:O	41:LG:271:LYS:HG2	2.18	0.43
44:LJ:86:THR:O	44:LJ:90:THR:HG23	2.18	0.43
60:LZ:105:VAL:HG23	60:LZ:130:TYR:CG	2.53	0.43
62:Lb:26:VAL:HG21	62:Lb:96:VAL:HG13	2.00	0.43
71:Lk:5:THR:HG23	71:Lk:7:ILE:H	1.84	0.43
1:S2:385:A:H2'	1:S2:386:G:C8	2.54	0.43
1:S2:1063:U:H2'	1:S2:1064:G:C8	2.54	0.43
1:S2:1385:G:P	1:S2:1386:G:H5"	2.59	0.43
1:S2:1555:A:P	6:SE:47:ARG:HH12	2.42	0.43
5:SD:92:ALA:HB3	5:SD:96:GLN:HB2	2.00	0.43
10:SI:33:TYR:CD1	10:SI:33:TYR:C	2.96	0.43
16:SO:227:ALA:O	16:SO:228:LYS:HG2	2.19	0.43
18:SQ:105:PHE:HZ	18:SQ:211:HIS:HB3	1.84	0.43
29:Sb:81:VAL:HG21	29:Sb:125:ILE:HB	2.00	0.43
55:LU:13:ARG:HE	55:LU:13:ARG:HB2	1.60	0.43
1:S2:52:U:H2'	1:S2:53:G:H8	1.84	0.43
1:S2:176:C:H2'	1:S2:177:U:O4'	2.19	0.43
1:S2:251:A:C2	20:SS:131:LEU:HD11	2.54	0.43
1:S2:866:G:H5"	26:SY:2:GLY:HA2	2.01	0.43
1:S2:913:G:C6	35:LA:2207:A:C6	3.07	0.43
1:S2:1181:U:H2'	1:S2:1183:A:N7	2.34	0.43
1:S2:1223:A:O5'	1:S2:1223:A:H8	2.02	0.43
1:S2:1251:U:O2'	1:S2:1252:C:H5	2.02	0.43
1:S2:1349:G:H2'	1:S2:1350:U:H4'	2.00	0.43
1:S2:1735:U:H2'	1:S2:1736:G:C2	2.54	0.43
4:SC:65:TYR:N	4:SC:65:TYR:CD1	2.86	0.43
6:SE:30:THR:O	6:SE:34:VAL:HG23	2.19	0.43
6:SE:52:LYS:HB3	6:SE:52:LYS:HE3	1.78	0.43
11:SJ:109:GLU:HG3	11:SJ:110:PRO:HD2	2.00	0.43
16:SO:85:TRP:CD1	16:SO:85:TRP:N	2.87	0.43
16:SO:90:ARG:HB2	16:SO:92:TRP:CH2	2.54	0.43
29:Sb:30:SER:HB2	29:Sb:61:ILE:HG12	2.01	0.43
30:Sc:69:ARG:HG3	30:Sc:117:ILE:HG23	2.00	0.43
35:LA:296:A:O2'	35:LA:297:G:H5'	2.19	0.43
35:LA:673:U:H2'	35:LA:674:G:H8	1.83	0.43
35:LA:736:A:H2'	35:LA:737:G:H5'	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:LA:1495:U:H5	35:LA:1835:A:N1	2.16	0.43
35:LA:2353:G:H5'	52:LR:86:LYS:HB2	2.00	0.43
35:LA:2430:A:H2'	35:LA:2431:C:C6	2.54	0.43
48:LN:56:PRO:HG3	48:LN:74:GLY:C	2.44	0.43
49:LO:14:LEU:HD12	55:LU:149:LYS:HB2	2.01	0.43
65:Le:25:LEU:HD21	65:Le:81:VAL:HG21	2.00	0.43
1:S2:449:C:H2'	1:S2:450:U:C6	2.55	0.42
1:S2:524:U:C4	1:S2:527:A:C8	3.07	0.42
1:S2:1203:A:H62	1:S2:1555:A:H62	1.66	0.42
1:S2:1213:G:H8	1:S2:1214:U:H1'	1.83	0.42
1:S2:1532:U:C4	1:S2:1533:C:C5	3.07	0.42
1:S2:1725:U:H5"	1:S2:1726:G:OP1	2.19	0.42
3:SB:112:ARG:NH1	7:SF:43:ILE:HG23	2.33	0.42
8:SG:109:LEU:HD11	17:SP:49:ASN:HA	2.01	0.42
18:SQ:133:TYR:CD2	18:SQ:217:LEU:HD11	2.54	0.42
20:SS:120:SER:O	20:SS:164:LEU:HB2	2.19	0.42
22:SU:107:ARG:HA	22:SU:107:ARG:HH11	1.82	0.42
24:SW:80:LEU:HB2	24:SW:86:LEU:HD23	2.01	0.42
25:SX:125:VAL:HB	25:SX:137:PHE:HB3	2.00	0.42
33:Sf:33:LEU:HD12	33:Sf:79:PHE:HB2	1.99	0.42
35:LA:1676:A:OP2	57:LW:72:SER:HB2	2.19	0.42
35:LA:2828:G:H5'	46:LL:8:CYS:SG	2.59	0.42
37:LC:65:A:H2'	37:LC:66:A:H8	1.84	0.42
38:LD:5:ILE:HG12	38:LD:8:GLN:HG3	2.01	0.42
40:LF:69:ARG:CZ	82:pp:1136:LEU:HA	2.49	0.42
41:LG:40:HIS:CE1	41:LG:42:ALA:HB3	2.53	0.42
65:Le:13:LYS:O	65:Le:17:VAL:HG23	2.19	0.42
82:pp:1129:GLN:HB3	82:pp:1132:ASP:HB2	1.99	0.42
1:S2:1608:U:O3'	7:SF:73:GLY:HA3	2.19	0.42
2:SA:105:MET:HE2	2:SA:105:MET:HB2	1.71	0.42
5:SD:91:VAL:HG23	5:SD:92:ALA:O	2.19	0.42
9:SH:2:SER:OG	12:SK:81:ARG:HG2	2.19	0.42
9:SH:11:PHE:CE1	9:SH:59:GLY:HA3	2.55	0.42
35:LA:47:C:H5"	48:LN:16:LYS:HG2	2.01	0.42
35:LA:406:G:N3	37:LC:16:G:C2	2.86	0.42
35:LA:1171:G:H2'	35:LA:1172:G:O4'	2.18	0.42
35:LA:1332:A:H2'	35:LA:1333:C:H6	1.84	0.42
35:LA:1631:C:H5"	35:LA:1632:A:H5"	2.00	0.42
35:LA:1791:C:H2'	35:LA:1792:C:C6	2.53	0.42
35:LA:1800:A:H2'	35:LA:1801:U:O4'	2.19	0.42
35:LA:1945:A:H2'	35:LA:1946:A:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:LA:2510:U:H2'	35:LA:2511:A:N7	2.33	0.42
35:LA:2611:U:H2'	35:LA:2612:U:C6	2.54	0.42
35:LA:2612:U:H2'	35:LA:2613:U:O4'	2.19	0.42
35:LA:2885:C:O2'	35:LA:2886:U:H5'	2.19	0.42
36:LB:56:A:H4'	47:LM:152:HIS:HB2	2.00	0.42
37:LC:65:A:C4	37:LC:66:A:C8	3.07	0.42
41:LG:120:LYS:HD2	41:LG:120:LYS:HA	1.75	0.42
41:LG:290:ILE:HA	41:LG:294:ALA:HB3	2.02	0.42
47:LM:54:VAL:HG21	47:LM:57:PHE:CD2	2.54	0.42
52:LR:7:THR:HG23	52:LR:9:THR:HG22	2.00	0.42
55:LU:46:GLN:HG2	55:LU:51:VAL:O	2.18	0.42
58:LX:66:LYS:O	58:LX:70:ARG:HG3	2.19	0.42
68:Lh:30:ILE:HD13	68:Lh:83:ALA:HB3	2.01	0.42
79:eR:271:SER:O	79:eR:275:LEU:HG	2.18	0.42
1:S2:171:A:H4'	1:S2:172:C:OP1	2.19	0.42
1:S2:803:A:N7	22:SU:103:SER:HA	2.35	0.42
1:S2:1124:A:H2'	1:S2:1125:A:C8	2.55	0.42
1:S2:1351:G:H22	1:S2:1376:C:H1'	1.84	0.42
11:SJ:31:VAL:HG22	11:SJ:87:HIS:NE2	2.34	0.42
24:SW:53:ARG:O	24:SW:57:ARG:HB2	2.19	0.42
35:LA:1602:A:H2'	35:LA:1603:A:H8	1.85	0.42
35:LA:1827:C:H2'	35:LA:1828:A:C8	2.54	0.42
35:LA:1895:A:O2'	35:LA:3053:G:H4'	2.20	0.42
35:LA:2186:U:H2'	35:LA:2187:G:O4'	2.19	0.42
35:LA:2260:U:H2'	35:LA:2261:G:O4'	2.19	0.42
35:LA:2592:G:H4'	35:LA:2594:C:C2	2.54	0.42
43:LI:85:PHE:H	43:LI:139:PRO:HD3	1.85	0.42
48:LN:135:ALA:HB3	70:Lj:117:ALA:HB3	2.01	0.42
50:LP:70:ASN:HB3	50:LP:92:LEU:O	2.19	0.42
51:LQ:110[A]:PRO:N	51:LQ:111[A]:PRO:HD2	2.34	0.42
1:S2:34:G:H2'	1:S2:35:U:H5"	2.01	0.42
1:S2:327:U:H2'	1:S2:328:A:H8	1.84	0.42
1:S2:922:G:O2'	1:S2:923:A:H5'	2.19	0.42
1:S2:934:C:C5	1:S2:1077:C:H4'	2.54	0.42
1:S2:1203:A:H5"	1:S2:1204:A:C8	2.54	0.42
1:S2:1265:G:O6	1:S2:1443:U:H2'	2.19	0.42
1:S2:1356:U:H1'	1:S2:1367:G:H22	1.84	0.42
1:S2:1383:G:H2'	1:S2:1384:A:N3	2.34	0.42
1:S2:1408:G:H2'	1:S2:1409:G:C4	2.53	0.42
6:SE:56:PHE:CE2	6:SE:60:LEU:HD11	2.53	0.42
10:SI:47:PRO:HG2	10:SI:53:TRP:CD2	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:SZ:54:GLU:OE1	27:SZ:54:GLU:C	2.61	0.42
35:LA:796:U:H2'	35:LA:797:U:C6	2.54	0.42
35:LA:1506:A:H1'	35:LA:1848:G:O6	2.18	0.42
35:LA:1797:A:H2'	35:LA:1798:A:O4'	2.20	0.42
35:LA:2167:A:H2'	35:LA:2168:A:C8	2.54	0.42
35:LA:2413:A:H2'	35:LA:2414:G:C8	2.55	0.42
37:LC:72:A:P	61:La:52:ARG:HB2	2.59	0.42
38:LD:100:ASN:O	38:LD:165:VAL:HA	2.19	0.42
43:LI:110:ARG:HG2	43:LI:113:SER:HB2	2.01	0.42
45:LK:49:ASN:C	45:LK:51:GLN:H	2.27	0.42
61:La:56:VAL:HG11	61:La:70:ILE:HD11	2.01	0.42
1:S2:571:G:H5"	30:Sc:114:LYS:HZ3	1.84	0.42
1:S2:1145:U:C5	1:S2:1633:A:N1	2.82	0.42
7:SF:25:GLY:HA3	7:SF:64:ASP:CG	2.43	0.42
13:SL:12:VAL:HA	13:SL:30:VAL:HA	2.00	0.42
13:SL:18:ARG:HA	13:SL:18:ARG:HD2	1.92	0.42
16:SO:13:LEU:CD1	16:SO:310:ILE:HB	2.50	0.42
24:SW:47:PHE:CE2	24:SW:51:LYS:HE3	2.54	0.42
35:LA:947:G:H2'	35:LA:948:C:C6	2.54	0.42
35:LA:2573:G:H5'	62:Lb:57:HIS:HA	2.01	0.42
35:LA:2820:A:C2	82:pp:1150:ASP:HB2	2.54	0.42
35:LA:2887:A:N3	35:LA:2887:A:H2'	2.34	0.42
40:LF:82:THR:HG22	40:LF:84:ARG:H	1.84	0.42
45:LK:55:VAL:HG22	45:LK:68:LEU:HD11	2.01	0.42
46:LL:103:LEU:C	46:LL:105:CYS:H	2.28	0.42
50:LP:9:GLU:HB2	71:Lk:44:VAL:HG21	2.01	0.42
51:LQ:73[A]:PHE:HB3	51:LQ:78[A]:ARG:HB3	2.01	0.42
56:LV:136:ARG:HB3	56:LV:139:ARG:NH2	2.35	0.42
68:Lh:48:ARG:HH21	68:Lh:70:LYS:HD3	1.85	0.42
77:Lq:24:LYS:HD2	77:Lq:24:LYS:HA	1.83	0.42
1:S2:162:A:C2'	1:S2:163:G:H5'	2.49	0.42
1:S2:241:U:H5"	21:ST:216:LEU:HD11	2.01	0.42
1:S2:772:G:H5"	20:SS:23:LEU:HD21	2.01	0.42
1:S2:1219:A:H4'	1:S2:1220:C:O5'	2.19	0.42
1:S2:1471:A:C8	1:S2:1540:G:H1'	2.55	0.42
1:S2:1580:C:H4'	7:SF:137:ARG:HB2	2.01	0.42
6:SE:81:ARG:HH21	6:SE:98:ASN:HA	1.84	0.42
9:SH:36:LYS:HB3	9:SH:105:VAL:HG11	2.01	0.42
10:SI:31:PRO:HG2	10:SI:103:LYS:NZ	2.33	0.42
13:SL:11:LYS:HE3	13:SL:11:LYS:HB3	1.82	0.42
16:SO:214:ALA:HB2	16:SO:220:ILE:HG22	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:SQ:26:ARG:O	18:SQ:50:LYS:HG2	2.19	0.42
35:LA:72:C:H1'	48:LN:61:PRO:O	2.19	0.42
35:LA:610:G:H21	40:LF:313:LEU:HD13	1.85	0.42
37:LC:63:G:OP1	37:LC:90:U:H5"	2.18	0.42
51:LQ:65[A]:ASN:HD22	51:LQ:68[A]:ARG:HD2	1.85	0.42
55:LU:12:ARG:HB3	55:LU:24:LEU:HD12	2.01	0.42
60:LZ:110:VAL:C	60:LZ:111:ASN:HD22	2.27	0.42
79:eR:116:PRO:HG2	79:eR:120:ILE:HD13	2.01	0.42
1:S2:1503:A:H1'	10:SI:99:SER:HB2	2.00	0.42
12:SK:54:VAL:O	12:SK:57:TYR:HB2	2.18	0.42
18:SQ:86:LEU:HB3	18:SQ:98:THR:HB	2.01	0.42
22:SU:21:ALA:HB2	22:SU:43:PHE:HZ	1.84	0.42
23:SV:25:ARG:HG3	23:SV:27:PHE:CZ	2.55	0.42
25:SX:46:LYS:O	25:SX:50:GLU:HG2	2.19	0.42
26:SY:106:ARG:HA	26:SY:106:ARG:HD3	1.89	0.42
35:LA:431:U:OP1	68:Lh:65:ARG:HD2	2.19	0.42
35:LA:2714:G:H4'	35:LA:2715:A:H5"	2.02	0.42
35:LA:2909:U:H2'	35:LA:2910:A:O4'	2.20	0.42
35:LA:3001:C:H2'	35:LA:3002:C:C6	2.54	0.42
39:LE:166:ILE:HD11	39:LE:171:LEU:HD12	2.00	0.42
42:LH:52:VAL:HG11	42:LH:74:VAL:HG11	2.02	0.42
44:LJ:81:THR:HA	44:LJ:179:ILE:O	2.19	0.42
48:LN:165:SER:C	48:LN:167:PHE:H	2.28	0.42
51:LQ:121[A]:PRO:HA	51:LQ:124[A]:LEU:HD12	2.00	0.42
51:LQ:173[A]:ALA:O	51:LQ:177[A]:LYS:HG2	2.20	0.42
61:La:53:ASP:HB2	61:La:110:HIS:CD2	2.53	0.42
67:Lg:105:ARG:HD2	67:Lg:125:ARG:HD2	2.01	0.42
71:Lk:20:MET:HE2	71:Lk:20:MET:HB3	1.82	0.42
79:eR:312:LEU:HA	79:eR:317:VAL:HG11	2.01	0.42
1:S2:322:G:H4'	1:S2:323:A:OP1	2.20	0.42
1:S2:1183:A:N6	6:SE:124:THR:HG21	2.34	0.42
1:S2:1521:G:C5'	1:S2:1522:U:H4'	2.49	0.42
1:S2:1669:U:H3	1:S2:1670:G:H21	1.68	0.42
2:SA:32:GLU:HG3	2:SA:57:ASP:HB2	2.02	0.42
3:SB:173:ALA:O	3:SB:177:ILE:HG12	2.19	0.42
5:SD:41:LEU:HD21	5:SD:43:ARG:NE	2.35	0.42
10:SI:33:TYR:OH	10:SI:99:SER:HB3	2.20	0.42
11:SJ:20:ILE:HD13	11:SJ:96:PRO:HA	2.01	0.42
15:SN:80:ARG:NH2	79:eR:101:VAL:HG22	2.35	0.42
18:SQ:158:SER:HA	18:SQ:161:ILE:HD12	2.01	0.42
21:ST:67:VAL:HB	21:ST:99:GLY:HA2	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:ST:161:GLU:OE2	21:ST:168:THR:HB	2.19	0.42
23:SV:196:LEU:HD12	23:SV:196:LEU:HA	1.84	0.42
24:SW:105:LEU:HA	24:SW:108:ARG:HG3	2.01	0.42
31:Sd:12:VAL:HA	31:Sd:22:GLN:O	2.20	0.42
35:LA:589:A:H1'	35:LA:1337:A:H5"	2.00	0.42
35:LA:1210:U:H5"	45:LK:62:ARG:HD3	2.01	0.42
35:LA:1898:G:C2'	35:LA:1899:G:H5'	2.50	0.42
35:LA:2552:C:N4	65:Le:54:SER:HB3	2.34	0.42
35:LA:3129:A:H2'	35:LA:3130:A:H5"	2.00	0.42
43:LI:229:PHE:CD1	43:LI:229:PHE:C	2.97	0.42
44:LJ:86:THR:HA	44:LJ:89:GLU:OE1	2.19	0.42
50:LP:137:PRO:O	50:LP:143:ARG:HD3	2.20	0.42
51:LQ:55[A]:HIS:HD1	51:LQ:58[A]:LEU:HD12	1.83	0.42
57:LW:80:THR:HG21	57:LW:95:PHE:HD2	1.83	0.42
61:La:48:LEU:HD21	61:La:119:ILE:HG13	2.01	0.42
62:Lb:51:LEU:HB3	62:Lb:65:ARG:NH1	2.34	0.42
74:Ln:25:GLN:CD	74:Ln:28:ARG:HH12	2.27	0.42
1:S2:509:G:O2'	1:S2:510:G:H5'	2.19	0.42
1:S2:858:G:O3'	22:SU:113:PRO:HB3	2.20	0.42
1:S2:1241:G:H2'	1:S2:1244:A:N1	2.35	0.42
3:SB:46:TRP:H	3:SB:46:TRP:HE3	1.67	0.42
18:SQ:32:ILE:HD13	18:SQ:66:VAL:HG11	2.01	0.42
18:SQ:205:PHE:CD2	18:SQ:206:PRO:HD2	2.55	0.42
30:Sc:6:PRO:HG3	30:Sc:14:LYS:HG2	2.02	0.42
35:LA:782:U:H2'	35:LA:783:A:O4'	2.19	0.42
35:LA:981:U:H5"	35:LA:982:C:C6	2.55	0.42
35:LA:1286:A:C4'	35:LA:1287:A:H4'	2.50	0.42
35:LA:1324:U:C5'	55:LU:2:ALA:HA	2.46	0.42
36:LB:26:C:C5	36:LB:27:A:N3	2.88	0.42
36:LB:90:U:H2'	36:LB:91:G:O4'	2.20	0.42
39:LE:85:VAL:HG22	39:LE:202:THR:HG22	2.02	0.42
41:LG:36:LEU:HB3	41:LG:50:ARG:HD3	2.02	0.42
45:LK:41:ILE:HD13	45:LK:71:VAL:HG22	2.00	0.42
46:LL:50:VAL:HG22	46:LL:167:LEU:HD13	2.02	0.42
46:LL:169:LYS:HE2	46:LL:169:LYS:HB3	1.83	0.42
58:LX:40:LYS:HG3	58:LX:57:MET:HG2	2.01	0.42
60:LZ:111:ASN:HD22	60:LZ:111:ASN:N	2.16	0.42
68:Lh:42:GLN:HA	68:Lh:45:LEU:HG	2.01	0.42
79:eR:150:VAL:HG13	79:eR:256:ILE:HD11	2.01	0.42
1:S2:742:U:H4'	22:SU:107:ARG:CZ	2.50	0.42
1:S2:1000:C:O2'	1:S2:1001:A:C8	2.69	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S2:1086:A:H2'	1:S2:1087:A:C8	2.55	0.42
1:S2:1351:G:O6	1:S2:1374:C:C4	2.73	0.42
18:SQ:31:ASP:HB3	18:SQ:33:LYS:HE3	2.02	0.42
18:SQ:96:LEU:O	18:SQ:96:LEU:HD12	2.19	0.42
26:SY:99:ARG:NE	26:SY:143:SER:HB3	2.34	0.42
27:SZ:114:ARG:HA	32:Se:62:TYR:OH	2.20	0.42
28:Sa:11:LEU:H	28:Sa:11:LEU:HD23	1.84	0.42
30:Sc:90:ASP:OD1	34:Sg:12:GLY:HA2	2.20	0.42
35:LA:144:A:H2'	35:LA:145:G:O4'	2.20	0.42
35:LA:364:G:O2'	40:LF:82:THR:HG21	2.20	0.42
35:LA:2148:U:H2'	35:LA:2149:A:C8	2.54	0.42
35:LA:2219:A:C8	35:LA:2220:A:N7	2.88	0.42
35:LA:2424:A:H2'	35:LA:2425:G:O4'	2.20	0.42
35:LA:2440:G:N3	35:LA:2440:G:H2'	2.35	0.42
35:LA:2762:A:H2'	35:LA:2763:U:C6	2.52	0.42
44:LJ:74:THR:HB	71:Lk:47:ILE:HG13	2.02	0.42
48:LN:154:VAL:HG23	48:LN:156:ALA:H	1.85	0.42
58:LX:20:GLY:HA2	58:LX:35:TYR:CE2	2.55	0.42
70:Lj:84:LYS:HE2	70:Lj:84:LYS:HB3	1.78	0.42
77:Lq:14:GLY:C	77:Lq:16:THR:H	2.28	0.42
1:S2:1092:A:O2'	1:S2:1093:A:H3'	2.19	0.41
1:S2:1235:C:C5	1:S2:1236:A:H1'	2.55	0.41
3:SB:109:LYS:HB2	3:SB:109:LYS:HE3	1.89	0.41
4:SC:65:TYR:N	4:SC:65:TYR:HD1	2.18	0.41
9:SH:115:ARG:HA	9:SH:118:LYS:HG2	2.02	0.41
17:SP:41:ARG:HG2	17:SP:45:VAL:O	2.20	0.41
17:SP:79:ARG:O	17:SP:83:GLN:HG3	2.20	0.41
20:SS:181:VAL:HG21	20:SS:210:ILE:HG21	2.02	0.41
35:LA:109:A:H4'	35:LA:110:G:OP1	2.19	0.41
35:LA:503:C:H2'	35:LA:504:A:C8	2.55	0.41
35:LA:709:A:H2'	35:LA:710:A:O4'	2.19	0.41
35:LA:2507:C:H5	35:LA:2508:U:H1'	1.84	0.41
39:LE:343:TYR:CE2	39:LE:345:ASN:HB2	2.55	0.41
47:LM:85:LYS:HE3	47:LM:85:LYS:HB3	1.78	0.41
49:LO:42:LYS:HE2	49:LO:42:LYS:HB3	1.82	0.41
53:LS:19:PRO:HB3	53:LS:53:PHE:HA	2.01	0.41
56:LV:119:ALA:HB2	56:LV:126:VAL:HB	2.02	0.41
69:Li:58:ARG:HA	69:Li:58:ARG:HD2	1.89	0.41
1:S2:545:A:H2'	34:Sg:31:LYS:HE2	2.02	0.41
1:S2:1274:C:H6	1:S2:1274:C:H5"	1.85	0.41
1:S2:1322:A:H2'	1:S2:1323:C:C6	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S2:1372:U:H2'	1:S2:1373:C:C5	2.54	0.41
1:S2:1676:U:H2'	1:S2:1677:C:C6	2.55	0.41
7:SF:23:LYS:HG3	7:SF:64:ASP:OD1	2.20	0.41
7:SF:43:ILE:HG13	7:SF:44:LEU:H	1.84	0.41
7:SF:54:LEU:HD11	7:SF:109:PHE:CD1	2.55	0.41
16:SO:124:SER:HB3	16:SO:132:LYS:HG3	2.01	0.41
19:SR:143:TYR:CD2	19:SR:147:ASN:HA	2.55	0.41
27:SZ:12:GLN:HG3	27:SZ:14:PHE:HD2	1.85	0.41
27:SZ:12:GLN:HA	27:SZ:111:ARG:HH22	1.85	0.41
35:LA:7:C:H2'	35:LA:8:C:C6	2.55	0.41
35:LA:517:G:O2'	35:LA:518:G:H5'	2.19	0.41
35:LA:959:C:N4	35:LA:2801:A:H2'	2.31	0.41
35:LA:1482:A:C2	35:LA:1866:C:H2'	2.54	0.41
35:LA:1551:C:H2'	35:LA:1552:G:O4'	2.20	0.41
35:LA:1612:A:H5"	73:Lm:51:LEU:HD22	2.01	0.41
35:LA:1687:U:H5"	57:LW:75:TYR:CE1	2.55	0.41
35:LA:1759:C:H2'	35:LA:1760:A:H4'	2.02	0.41
35:LA:2318:U:H2'	35:LA:2319:U:O4'	2.20	0.41
40:LF:226:GLU:HG3	40:LF:246:ARG:HH22	1.85	0.41
41:LG:106:ALA:HB2	41:LG:166:ALA:HA	2.01	0.41
46:LL:38:LYS:CG	46:LL:41:ALA:HB2	2.50	0.41
48:LN:64:LYS:HG3	63:Lc:69:TRP:CG	2.55	0.41
48:LN:144:THR:HG21	70:Lj:118:ILE:HG21	2.02	0.41
49:LO:23:ILE:H	49:LO:23:ILE:HD12	1.84	0.41
55:LU:27:MET:HE3	55:LU:27:MET:HB3	1.60	0.41
67:Lg:55:ILE:HD12	67:Lg:55:ILE:HA	1.91	0.41
70:Lj:18:ALA:O	70:Lj:22:VAL:HG23	2.20	0.41
1:S2:29:U:H2'	1:S2:30:G:C8	2.55	0.41
1:S2:40:A:H2'	1:S2:41:A:O4'	2.20	0.41
1:S2:902:G:H2'	1:S2:903:U:C6	2.54	0.41
1:S2:1315:U:H2'	1:S2:1316:G:O4'	2.20	0.41
1:S2:1365:C:H3'	1:S2:1365:C:OP2	2.20	0.41
5:SD:85:LYS:HD2	5:SD:85:LYS:HA	1.72	0.41
15:SN:103:LEU:HG	15:SN:104:SER:H	1.84	0.41
15:SN:123:ASN:ND2	15:SN:124:PRO:HD2	2.35	0.41
19:SR:152:HIS:H	19:SR:152:HIS:CD2	2.38	0.41
29:Sb:23:ARG:HD2	29:Sb:65:LEU:O	2.20	0.41
31:Sd:80:ALA:HA	31:Sd:83:LYS:HD3	2.02	0.41
35:LA:627:U:H4'	35:LA:1399:A:H1'	2.02	0.41
35:LA:724:U:H2'	35:LA:725:G:O4'	2.19	0.41
35:LA:726:G:N2	35:LA:744:A:C2	2.71	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:LA:726:G:H1'	35:LA:744:A:H61	1.85	0.41
35:LA:887:G:H2'	35:LA:888:A:C8	2.56	0.41
35:LA:1083:G:H2'	35:LA:1084:A:C8	2.55	0.41
35:LA:1133:A:H1'	35:LA:2618:G:O6	2.20	0.41
35:LA:1261:G:C8	35:LA:1278:A:H2	2.38	0.41
42:LH:62:THR:CG2	42:LH:78:ARG:HB2	2.50	0.41
45:LK:21:LYS:O	45:LK:22:SER:C	2.63	0.41
1:S2:449:C:H2'	1:S2:450:U:H6	1.85	0.41
1:S2:912:U:H2'	1:S2:913:G:H2'	2.01	0.41
1:S2:1229:G:O6	5:SD:47:GLU:HG3	2.20	0.41
1:S2:1417:A:H2'	1:S2:1418:G:O4'	2.20	0.41
2:SA:72:LEU:HD12	2:SA:72:LEU:HA	1.85	0.41
2:SA:140:GLY:HA3	2:SA:182:LEU:HD12	2.02	0.41
7:SF:26:LYS:HE2	7:SF:26:LYS:HB2	1.98	0.41
7:SF:28:LEU:HD13	7:SF:30:LYS:HG3	2.03	0.41
12:SK:83:LEU:HD22	12:SK:88:ILE:HD11	2.01	0.41
19:SR:39:THR:HG22	19:SR:41:LEU:N	2.36	0.41
21:ST:35:GLU:H	21:ST:35:GLU:HG2	1.72	0.41
24:SW:133:HIS:ND1	24:SW:162:SER:HB2	2.35	0.41
35:LA:104:G:H2'	35:LA:105:C:O4'	2.20	0.41
35:LA:1240:A:H2'	35:LA:1241:U:O4'	2.20	0.41
35:LA:1262:G:H2'	35:LA:1263:A:H3'	2.02	0.41
35:LA:1347:U:H5"	40:LF:303:GLY:H	1.85	0.41
35:LA:1856:C:H2'	35:LA:1857:C:C6	2.55	0.41
35:LA:2812:C:H2'	35:LA:2813:A:C8	2.55	0.41
35:LA:3159:C:H4'	35:LA:3395:G:C4	2.55	0.41
35:LA:3170:A:H5'	35:LA:3171:U:OP2	2.20	0.41
36:LB:25:G:N3	36:LB:25:G:H2'	2.35	0.41
36:LB:47:C:H2'	36:LB:48:U:C6	2.55	0.41
37:LC:8:C:H2'	37:LC:10:A:H8	1.85	0.41
39:LE:283:TYR:OH	39:LE:325:LYS:HD2	2.20	0.41
55:LU:44:PHE:O	55:LU:48:LEU:HD22	2.21	0.41
55:LU:139:TYR:CD1	55:LU:140:VAL:HG23	2.55	0.41
1:S2:911:U:O4	18:SQ:7:LYS:HE3	2.20	0.41
1:S2:990:C:H2'	1:S2:991:G:O4'	2.19	0.41
5:SD:60:VAL:N	5:SD:87:PRO:HB2	2.34	0.41
18:SQ:81:PHE:HB2	18:SQ:109:LYS:HB2	2.02	0.41
28:Sa:5:LYS:HE3	28:Sa:5:LYS:HB3	1.91	0.41
35:LA:737:G:H5"	35:LA:738:A:OP1	2.21	0.41
35:LA:945:C:H2'	35:LA:946:U:H6	1.85	0.41
35:LA:1378:U:H2'	35:LA:1379:G:C8	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:LA:1659:U:H2'	35:LA:1660:C:H6	1.82	0.41
35:LA:1694:U:O2'	35:LA:1695:U:H5'	2.21	0.41
35:LA:2609:A:H2'	35:LA:2610:G:C8	2.55	0.41
35:LA:3000:A:H2'	35:LA:3001:C:C6	2.55	0.41
35:LA:3000:A:H5'	35:LA:3296:A:H5'	2.01	0.41
36:LB:26:C:N4	36:LB:27:A:N3	2.67	0.41
44:LJ:245:LYS:O	44:LJ:249:ARG:HG2	2.20	0.41
47:LM:108:GLU:HA	47:LM:122:ILE:HG23	2.01	0.41
54:LT:95:TRP:CZ2	54:LT:99:LEU:HD22	2.55	0.41
57:LW:21:SER:HB3	57:LW:22:PRO:HD3	2.03	0.41
63:Lc:7:LYS:HD3	63:Lc:7:LYS:HA	1.82	0.41
73:Lm:8:ILE:HD12	73:Lm:8:ILE:H	1.86	0.41
1:S2:272:U:H5'	1:S2:273:G:H5'	2.02	0.41
1:S2:546:U:H2'	1:S2:547:U:C6	2.55	0.41
1:S2:1334:U:H4'	11:SJ:85:ARG:NH2	2.35	0.41
1:S2:1471:A:N3	1:S2:1471:A:H2'	2.35	0.41
1:S2:1584:G:HO2'	1:S2:1585:U:H5	1.67	0.41
1:S2:1752:U:H2'	1:S2:1753:A:O4'	2.21	0.41
2:SA:196:ARG:HB3	2:SA:196:ARG:NH1	2.36	0.41
2:SA:217:ILE:HD12	2:SA:219:ALA:O	2.20	0.41
4:SC:48:SER:O	4:SC:52:LYS:HG2	2.20	0.41
6:SE:83:MET:HE2	6:SE:83:MET:HB3	1.78	0.41
11:SJ:24:ILE:HG22	11:SJ:116:VAL:HA	2.03	0.41
12:SK:50:ILE:HG22	12:SK:69:LEU:HD13	2.02	0.41
16:SO:179:LYS:HE2	16:SO:181:TRP:HE1	1.86	0.41
22:SU:84:LYS:HE3	22:SU:84:LYS:HB3	1.82	0.41
34:Sg:26:LYS:HD3	34:Sg:26:LYS:HA	1.91	0.41
35:LA:211:A:OP2	40:LF:221:ASN:HB2	2.19	0.41
35:LA:386:A:C5	35:LA:387:A:H1'	2.55	0.41
35:LA:597:G:C2	35:LA:608:A:H1'	2.56	0.41
35:LA:710:A:H2'	35:LA:711:A:C8	2.55	0.41
35:LA:872:U:H2'	35:LA:873:C:C6	2.54	0.41
35:LA:1556:C:H2'	35:LA:2169:G:N2	2.35	0.41
35:LA:3160:U:H2'	35:LA:3161:C:C6	2.56	0.41
35:LA:3191:G:H2'	35:LA:3192:U:O4'	2.21	0.41
35:LA:3323:A:H2'	35:LA:3324:C:O4'	2.20	0.41
48:LN:94:GLY:HA3	70:Lj:116:TYR:OH	2.21	0.41
51:LQ:25[A]:LYS:HA	51:LQ:25[A]:LYS:HD2	1.83	0.41
58:LX:5:GLY:HA3	58:LX:106:LYS:O	2.21	0.41
78:Lr:36:ARG:CZ	78:Lr:48:LYS:HE2	2.51	0.41
1:S2:304:U:O2'	1:S2:305:C:H5	2.04	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S2:555:A:H8	1:S2:590:C:O2'	1.99	0.41
1:S2:607:G:H5'	1:S2:613:G:N2	2.35	0.41
1:S2:1044:U:H2'	1:S2:1045:C:C6	2.56	0.41
2:SA:218:LEU:HA	16:SO:196:ASN:ND2	2.35	0.41
4:SC:52:LYS:HG3	4:SC:54:TYR:CD2	2.55	0.41
16:SO:61:PHE:CD1	16:SO:97:GLY:HA2	2.55	0.41
18:SQ:103:MET:HE1	18:SQ:212:VAL:O	2.21	0.41
24:SW:65:LYS:HA	24:SW:70:LEU:HD11	2.01	0.41
26:SY:128:TYR:O	26:SY:132:VAL:HG22	2.21	0.41
30:Sc:52:ILE:HG13	30:Sc:77:ILE:HD11	2.03	0.41
35:LA:354:U:C5	35:LA:365:A:N7	2.89	0.41
35:LA:807:A:H61	35:LA:934:G:H22	1.67	0.41
35:LA:830:A:H2'	35:LA:831:G:O4'	2.21	0.41
35:LA:954:U:O4	35:LA:1115:G:H1'	2.21	0.41
35:LA:2364:G:H22	35:LA:2396:G:H1'	1.85	0.41
35:LA:3314:A:H5"	39:LE:174:LYS:HG2	2.02	0.41
37:LC:85:G:H4'	37:LC:86:U:OP1	2.20	0.41
37:LC:135:G:H5'	60:LZ:49:LYS:HD3	2.03	0.41
41:LG:34:LYS:HE3	56:LV:30:TYR:CZ	2.56	0.41
45:LK:8:GLN:HB2	45:LK:55:VAL:HG13	2.03	0.41
48:LN:185:LYS:O	48:LN:189:GLU:HG2	2.21	0.41
50:LP:36:ILE:HD11	50:LP:105:ARG:HB3	2.01	0.41
50:LP:162:ARG:HB2	50:LP:164:LEU:HD22	2.01	0.41
63:Lc:112:ILE:HB	63:Lc:130:VAL:HG23	2.01	0.41
74:Ln:44:TRP:CZ3	74:Ln:45:ARG:HG2	2.56	0.41
1:S2:256:A:H5'	1:S2:257:A:OP2	2.21	0.41
1:S2:514:G:H2'	1:S2:515:A:C8	2.55	0.41
1:S2:741:C:H2'	22:SU:107:ARG:NH2	2.35	0.41
1:S2:1164:G:H2'	1:S2:1165:G:C8	2.56	0.41
1:S2:1624:C:H2'	1:S2:1625:C:H6	1.86	0.41
1:S2:1693:A:H3'	1:S2:1693:A:N3	2.35	0.41
4:SC:49:LEU:HB3	4:SC:55:VAL:CG1	2.49	0.41
6:SE:52:LYS:NZ	6:SE:53:PRO:HB3	2.36	0.41
16:SO:197:SER:HB2	16:SO:217:ASP:OD2	2.21	0.41
18:SQ:41:ARG:HA	18:SQ:41:ARG:HH11	1.85	0.41
19:SR:116:LYS:HB2	19:SR:131:ILE:HD12	2.02	0.41
24:SW:152:SER:O	24:SW:156:ILE:HG13	2.20	0.41
30:Sc:19:ARG:O	30:Sc:23:ARG:HG3	2.20	0.41
30:Sc:57:LEU:HD13	30:Sc:57:LEU:HA	1.79	0.41
33:Sf:31:TYR:CE1	33:Sf:33:LEU:HD22	2.55	0.41
35:LA:40:A:H5"	63:Lc:35:ALA:HB1	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:LA:157:A:N7	71:Lk:26:ILE:HG12	2.36	0.41
35:LA:1066:G:H2'	35:LA:1067:U:C6	2.56	0.41
35:LA:1158:A:H2'	35:LA:1159:A:H4'	2.03	0.41
35:LA:1616:U:H2'	35:LA:1617:G:H8	1.85	0.41
36:LB:11:A:H4'	36:LB:13:A:C4	2.56	0.41
39:LE:44:THR:HG21	39:LE:184:ASN:HD22	1.84	0.41
43:LI:224:ILE:HG23	55:LU:36:ILE:HG13	2.03	0.41
45:LK:118:LEU:HD23	45:LK:118:LEU:HA	1.89	0.41
69:Li:87:GLU:HG2	69:Li:91:ARG:HH12	1.85	0.41
1:S2:192:U:C4	1:S2:193:U:H1'	2.56	0.41
1:S2:523:G:H2'	1:S2:524:U:C5	2.56	0.41
1:S2:838:G:H2'	1:S2:839:U:C6	2.51	0.41
1:S2:876:G:H1'	1:S2:944:A:O4'	2.21	0.41
1:S2:898:A:H2'	18:SQ:9:LEU:HD22	2.02	0.41
1:S2:959:U:H5'	26:SY:15:ALA:O	2.21	0.41
1:S2:1061:A:H4'	1:S2:1062:A:OP1	2.21	0.41
2:SA:72:LEU:HD12	4:SC:22:VAL:HG23	2.03	0.41
4:SC:24:LYS:HB2	4:SC:63:TYR:CE1	2.56	0.41
10:SI:12:GLN:H	10:SI:12:GLN:HG3	1.72	0.41
16:SO:153:GLN:HG2	16:SO:202:LEU:O	2.21	0.41
17:SP:164:ASN:O	17:SP:170:ILE:HD11	2.21	0.41
23:SV:27:PHE:HB3	23:SV:49:ARG:NH2	2.36	0.41
24:SW:126:ARG:HG2	34:Sg:33:ARG:HD3	2.03	0.41
29:Sb:69:LEU:HD21	29:Sb:72:CYS:SG	2.61	0.41
32:Se:45:VAL:O	32:Se:45:VAL:HG12	2.21	0.41
35:LA:112:U:O2'	35:LA:113:C:H5"	2.21	0.41
35:LA:411:U:H2'	35:LA:412:G:H8	1.86	0.41
35:LA:508:U:H2'	35:LA:509:U:C6	2.56	0.41
35:LA:720:A:C5	35:LA:783:A:H4'	2.56	0.41
35:LA:1157:G:H2'	35:LA:1158:A:O4'	2.21	0.41
35:LA:1227:C:N4	35:LA:1228:C:H41	2.19	0.41
35:LA:1482:A:N3	35:LA:1482:A:H2'	2.36	0.41
35:LA:1829:G:H5"	35:LA:1830:G:O5'	2.20	0.41
35:LA:2130:G:O4'	35:LA:2144:A:H4'	2.21	0.41
35:LA:2282:U:O2	35:LA:2310:U:H4'	2.20	0.41
35:LA:2746:A:N7	41:LG:153:THR:HG21	2.36	0.41
35:LA:2834:G:H2'	35:LA:2835:U:H6	1.85	0.41
35:LA:2931:C:H5"	58:LX:40:LYS:HE3	2.01	0.41
35:LA:3374:U:H2'	35:LA:3378:C:N4	2.36	0.41
37:LC:26:U:H2'	37:LC:27:U:C6	2.56	0.41
37:LC:149:A:H2'	37:LC:150:G:C8	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:LD:113:VAL:HG12	38:LD:166:ILE:HD13	2.03	0.41
39:LE:115:LYS:HE3	39:LE:129:ALA:HB3	2.03	0.41
40:LF:30:ILE:O	40:LF:32:PRO:HD3	2.21	0.41
41:LG:60:ILE:HB	41:LG:80:SER:HB2	2.03	0.41
41:LG:150:LEU:HD12	47:LM:143:ARG:HG3	2.03	0.41
41:LG:156:GLY:HA2	41:LG:181:PRO:HD3	2.03	0.41
49:LO:72:LEU:HD21	49:LO:81:VAL:HA	2.02	0.41
50:LP:5:LYS:HA	50:LP:5:LYS:HD2	1.78	0.41
51:LQ:23[A]:VAL:O	51:LQ:27[A]:LEU:HG	2.21	0.41
52:LR:94:LEU:HA	52:LR:94:LEU:HD23	1.84	0.41
52:LR:128:ARG:HD3	82:pp:1131:HIS:CG	2.50	0.41
53:LS:173:GLU:HA	63:Lc:51:GLY:O	2.21	0.41
57:LW:30:PRO:HB2	57:LW:58:GLU:OE2	2.21	0.41
72:Ll:75:LYS:HB3	72:Ll:75:LYS:HE2	1.87	0.41
78:Lr:44:LYS:HD2	78:Lr:59:CYS:SG	2.61	0.41
82:pp:1132:ASP:HB3	82:pp:1133:GLU:H	1.66	0.41
1:S2:35:U:H2'	1:S2:36:C:O2	2.21	0.41
1:S2:40:A:H1'	1:S2:469:C:H41	1.84	0.41
1:S2:521:A:H2'	1:S2:522:U:C6	2.55	0.41
1:S2:986:G:H3'	1:S2:987:G:H21	1.86	0.41
8:SG:32:LYS:HB3	8:SG:32:LYS:HE2	1.80	0.41
10:SI:67:MET:HE3	10:SI:68:ARG:HH12	1.85	0.41
16:SO:10:ARG:NH2	16:SO:314:GLN:HG2	2.35	0.41
17:SP:122:ILE:HA	17:SP:144:ILE:O	2.21	0.41
26:SY:54:LEU:HD23	26:SY:54:LEU:HA	1.91	0.41
31:Sd:45:ALA:HB1	31:Sd:51:GLU:O	2.20	0.41
35:LA:649:A:H2'	35:LA:650:C:C6	2.55	0.41
35:LA:1541:G:H1'	35:LA:1557:A:C5	2.55	0.41
35:LA:2496:C:O5'	35:LA:2496:C:H6	2.04	0.41
35:LA:3379:C:H4'	39:LE:315:GLY:HA2	2.03	0.41
37:LC:91:C:H2'	37:LC:92:A:C8	2.56	0.41
38:LD:105:GLY:HA3	38:LD:160:SER:HB3	2.03	0.41
39:LE:67:PHE:CZ	58:LX:88:ARG:HB2	2.56	0.41
42:LH:19:LYS:HG3	42:LH:20:LYS:H	1.84	0.41
45:LK:89:LYS:HG3	45:LK:183:HIS:ND1	2.36	0.41
50:LP:16:SER:HB2	71:Lk:48:ALA:O	2.21	0.41
50:LP:73:ARG:HG2	50:LP:75:VAL:HG13	2.02	0.41
58:LX:118:VAL:O	58:LX:136:VAL:HA	2.21	0.41
69:Li:12:PRO:HD2	69:Li:13:TYR:CD2	2.55	0.41
1:S2:162:A:H2'	1:S2:163:G:H5'	2.02	0.40
1:S2:477:A:H61	1:S2:542:A:N6	2.19	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S2:963:A:H1'	1:S2:965:U:O4	2.20	0.40
1:S2:1432:U:H5"	1:S2:1434:U:OP2	2.21	0.40
17:SP:66:ALA:HB2	28:Sa:37:ALA:HB2	2.03	0.40
21:ST:31:ARG:N	21:ST:34:GLN:HG3	2.35	0.40
28:Sa:37:ALA:HA	28:Sa:50:TYR:HB3	2.04	0.40
35:LA:660:A:H5"	40:LF:100:PHE:CD2	2.56	0.40
35:LA:1317:A:O2'	35:LA:1318:A:H3'	2.22	0.40
35:LA:1643:A:H2'	35:LA:1644:C:C2	2.56	0.40
35:LA:1739:U:H1'	69:Li:56:THR:HG23	2.03	0.40
35:LA:1889:G:H5'	39:LE:245:GLY:CA	2.49	0.40
38:LD:150:LEU:HD11	38:LD:156:LYS:HD2	2.03	0.40
39:LE:48:GLY:HA3	39:LE:81:THR:HG22	2.03	0.40
40:LF:359:LEU:HA	55:LU:8:GLN:OE1	2.21	0.40
43:LI:147:LEU:HD21	43:LI:207:LEU:HD21	2.02	0.40
44:LJ:100:GLU:HB2	44:LJ:104:GLU:HB2	2.03	0.40
45:LK:147:SER:HB3	45:LK:187:ILE:HD11	2.03	0.40
47:LM:156:LYS:O	47:LM:160:VAL:HG23	2.21	0.40
50:LP:3:ALA:O	50:LP:7:LEU:HD13	2.21	0.40
58:LX:82:ALA:HB3	58:LX:98:ASN:ND2	2.36	0.40
61:La:45:ILE:HG21	61:La:126:LEU:HA	2.03	0.40
79:eR:178:LYS:H	79:eR:178:LYS:HG3	1.75	0.40
1:S2:251:A:H2'	1:S2:252:U:O4'	2.21	0.40
1:S2:290:G:C5	1:S2:291:G:C6	3.10	0.40
1:S2:420:A:H2'	1:S2:421:A:O4'	2.21	0.40
1:S2:447:U:H2'	1:S2:448:C:O4'	2.22	0.40
1:S2:989:U:H2'	1:S2:990:C:C6	2.57	0.40
1:S2:1331:A:H61	2:SA:161:GLY:HA3	1.87	0.40
1:S2:1337:A:H1'	1:S2:1410:A:C4	2.56	0.40
1:S2:1534:G:H2'	12:SK:73:GLY:HA3	2.02	0.40
1:S2:1584:G:O2'	1:S2:1585:U:P	2.79	0.40
9:SH:145:ARG:HD2	9:SH:145:ARG:HA	1.84	0.40
16:SO:231:MET:HE3	16:SO:231:MET:HB3	1.92	0.40
16:SO:281:TYR:HB3	16:SO:287:PRO:HD3	2.04	0.40
23:SV:118:GLY:HA3	23:SV:143:TRP:CE2	2.56	0.40
24:SW:88:GLU:H	24:SW:88:GLU:CD	2.30	0.40
26:SY:3:ARG:HB3	26:SY:6:SER:HB3	2.02	0.40
26:SY:69:ASN:HB3	26:SY:73:ARG:HG2	2.03	0.40
30:Sc:57:LEU:HD21	30:Sc:73:ARG:HG2	2.03	0.40
35:LA:49:A:N7	50:LP:187:ARG:HD2	2.36	0.40
35:LA:432:G:H2'	35:LA:433:A:C8	2.57	0.40
35:LA:592:A:OP2	42:LH:16:ALA:HB1	2.20	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:LA:694:C:H4'	40:LF:232:SER:O	2.21	0.40
35:LA:881:C:H1'	35:LA:1850:A:C8	2.56	0.40
35:LA:1274:A:N3	35:LA:1274:A:H3'	2.37	0.40
35:LA:1333:C:C2	35:LA:1334:U:C5	3.10	0.40
35:LA:1597:C:H2'	35:LA:1598:G:H8	1.86	0.40
35:LA:2734:A:H2'	35:LA:2734:A:N3	2.36	0.40
37:LC:53:A:H2'	37:LC:54:A:C8	2.56	0.40
39:LE:236:LYS:HE2	39:LE:236:LYS:HB2	1.80	0.40
40:LF:269:SER:C	40:LF:271:LYS:H	2.29	0.40
46:LL:57:LEU:HD12	46:LL:130:ASP:HA	2.04	0.40
48:LN:138:VAL:HG22	70:Lj:118:ILE:HB	2.03	0.40
1:S2:473:A:H2'	1:S2:474:A:O4'	2.21	0.40
1:S2:502:U:H2'	1:S2:503:G:H8	1.83	0.40
1:S2:520:A:H61	1:S2:531:C:H41	1.67	0.40
1:S2:987:G:C4	38:LD:249:SER:HB3	2.56	0.40
1:S2:1344:A:O3'	11:SJ:53:LYS:HE3	2.21	0.40
1:S2:1410:A:H5"	7:SF:118:ILE:HG23	2.03	0.40
1:S2:1567:U:C4'	9:SH:36:LYS:HD2	2.52	0.40
1:S2:1624:C:H2'	1:S2:1625:C:C6	2.57	0.40
1:S2:1727:G:H2'	1:S2:1728:A:C8	2.56	0.40
2:SA:122:VAL:O	2:SA:126:VAL:HG23	2.21	0.40
3:SB:108:LEU:HD23	3:SB:108:LEU:HA	1.85	0.40
4:SC:38:LYS:HB2	4:SC:41:TYR:CD2	2.56	0.40
4:SC:56:LYS:NZ	4:SC:69:THR:HG22	2.37	0.40
6:SE:121:ILE:HD12	9:SH:122:HIS:HD2	1.84	0.40
7:SF:27:GLY:HA2	7:SF:63:ILE:O	2.22	0.40
16:SO:181:TRP:HA	16:SO:187:GLN:O	2.21	0.40
16:SO:299:GLN:NE2	16:SO:315:VAL:HB	2.35	0.40
17:SP:118:PRO:HG2	17:SP:141:ILE:HD12	2.02	0.40
18:SQ:103:MET:O	18:SQ:214:LYS:HA	2.22	0.40
18:SQ:225:VAL:HG22	18:SQ:229:MET:HE1	2.04	0.40
23:SV:53:LYS:HE3	23:SV:53:LYS:HB2	1.82	0.40
35:LA:380:U:H2'	35:LA:381:U:C6	2.56	0.40
35:LA:501:A:H2'	35:LA:502:U:C6	2.56	0.40
35:LA:3055:U:H1'	35:LA:3057:U:OP2	2.22	0.40
35:LA:3232:G:H2'	35:LA:3233:C:C6	2.56	0.40
39:LE:122:TRP:CH2	39:LE:127:LYS:HD2	2.56	0.40
46:LL:47:PRO:HB3	46:LL:171:TRP:CZ2	2.57	0.40
58:LX:72:LYS:HE2	58:LX:72:LYS:HB3	1.94	0.40
61:La:34:PRO:HA	61:La:46:LYS:HZ1	1.86	0.40
62:Lb:135:ARG:H	62:Lb:135:ARG:HG2	1.69	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
63:Lc:96:LYS:C	63:Lc:98:THR:H	2.28	0.40
66:Lf:79:ARG:HG2	66:Lf:89:LEU:HD23	2.02	0.40
1:S2:604:A:H2'	1:S2:605:A:O4'	2.22	0.40
1:S2:783:G:H2'	1:S2:784:C:H6	1.87	0.40
1:S2:992:A:H2	1:S2:1012:U:O4	2.05	0.40
1:S2:1688:U:O2'	1:S2:1689:A:H5'	2.22	0.40
3:SB:63:GLN:HG2	3:SB:88:PRO:HA	2.02	0.40
3:SB:166:ARG:O	3:SB:166:ARG:HG3	2.18	0.40
4:SC:59:PHE:CE2	4:SC:62:GLN:HA	2.55	0.40
7:SF:40:GLU:N	7:SF:41:PRO:HD3	2.36	0.40
8:SG:51:ALA:O	8:SG:55:THR:HG22	2.21	0.40
10:SI:14:PHE:CD2	10:SI:63:ARG:HD2	2.57	0.40
12:SK:55:PRO:O	12:SK:56:THR:HG22	2.21	0.40
16:SO:106:HIS:ND1	16:SO:110:VAL:HB	2.36	0.40
21:ST:58:LYS:HD3	21:ST:105:ASP:O	2.22	0.40
29:Sb:14:ILE:HG12	29:Sb:25:VAL:HG11	2.04	0.40
31:Sd:102:LYS:HD2	31:Sd:102:LYS:HA	1.93	0.40
33:Sf:15:GLU:OE1	33:Sf:18:LYS:HD2	2.21	0.40
35:LA:65:A:C4	35:LA:110:G:N7	2.90	0.40
35:LA:118:U:H3	35:LA:121:A:H5"	1.86	0.40
35:LA:359:U:H4'	35:LA:817:A:N6	2.36	0.40
35:LA:1060:U:H2'	35:LA:1061:A:C8	2.56	0.40
35:LA:1316:C:H5'	35:LA:1317:A:C2	2.56	0.40
35:LA:2146:C:H5"	38:LD:203:ALA:HB1	2.03	0.40
35:LA:2221:G:C8	35:LA:2222:A:H3'	2.56	0.40
35:LA:2824:G:H2'	35:LA:2825:C:H6	1.85	0.40
35:LA:3260:G:H4'	49:LO:126:GLN:HA	2.03	0.40
35:LA:3314:A:H2'	35:LA:3315:G:C8	2.57	0.40
35:LA:3373:U:H5"	66:Lf:69:TYR:CD2	2.57	0.40
38:LD:92:LYS:HG2	38:LD:93:LYS:HD2	2.02	0.40
41:LG:84:PRO:HB3	41:LG:92:LEU:HD11	2.02	0.40
42:LH:24:ALA:HB3	42:LH:26:ARG:NH1	2.36	0.40
42:LH:96:VAL:HG21	42:LH:141:VAL:HG13	2.02	0.40
52:LR:29:THR:HG22	52:LR:119:VAL:HG21	2.04	0.40
58:LX:84:SER:HA	58:LX:94:TYR:HB3	2.03	0.40
79:eR:280:PHE:O	79:eR:284:LYS:HG2	2.21	0.40
1:S2:821:U:H2'	1:S2:822:U:C6	2.56	0.40
1:S2:1146:G:H2'	1:S2:1147:A:H8	1.81	0.40
1:S2:1341:A:N1	1:S2:1383:G:C6	2.90	0.40
1:S2:1457:C:H5'	9:SH:137:HIS:NE2	2.36	0.40
1:S2:1761:U:H1'	1:S2:1762:A:N7	2.37	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:SB:155:ALA:HB1	27:SZ:52:ARG:HH22	1.87	0.40
14:SM:13:ARG:HG3	14:SM:14:TYR:CD1	2.57	0.40
21:ST:214:LYS:O	21:ST:218:GLU:HG2	2.21	0.40
22:SU:47:ARG:NH2	22:SU:175:LYS:HE2	2.37	0.40
23:SV:37:LYS:C	23:SV:59:ARG:HA	2.46	0.40
28:Sa:55:LEU:HD12	28:Sa:55:LEU:HA	1.92	0.40
35:LA:7:C:H2'	35:LA:8:C:H6	1.87	0.40
35:LA:75:G:H5"	48:LN:58:VAL:HG22	2.04	0.40
35:LA:208:C:H2'	35:LA:209:A:O4'	2.22	0.40
35:LA:1252:A:H5'	35:LA:1253:U:OP1	2.21	0.40
35:LA:1639:C:OP1	69:Li:52:GLN:HB3	2.21	0.40
35:LA:1915:A:H2'	35:LA:1916:U:H6	1.85	0.40
35:LA:2734:A:H1'	35:LA:2735:U:C2	2.57	0.40
35:LA:2984:C:H2'	35:LA:2985:C:H6	1.86	0.40
37:LC:36:G:C5	70:Lj:86:ARG:HD3	2.56	0.40
38:LD:114:SER:HB2	38:LD:169:ILE:HD11	2.04	0.40
39:LE:55:THR:HG23	39:LE:73:VAL:HG13	2.03	0.40
39:LE:159:ARG:HG2	39:LE:182:GLN:HA	2.03	0.40
44:LJ:146:LYS:HD3	44:LJ:173:MET:HE3	2.02	0.40
47:LM:27:GLY:O	47:LM:31:THR:HG23	2.22	0.40
56:LV:26:HIS:O	56:LV:29:THR:HG23	2.21	0.40
79:eR:305:VAL:HA	79:eR:409:ILE:HD11	2.03	0.40
81:Cc:26:G:C5	81:Cc:27:U:C5	3.10	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	
2	SA	220/222 (99%)	212 (96%)	8 (4%)	0	100	100
3	SB	204/206 (99%)	187 (92%)	17 (8%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
4	SC	90/92 (98%)	81 (90%)	9 (10%)	0	100	100
5	SD	119/121 (98%)	100 (84%)	19 (16%)	0	100	100
6	SE	115/117 (98%)	108 (94%)	7 (6%)	0	100	100
7	SF	139/141 (99%)	127 (91%)	12 (9%)	0	100	100
8	SG	117/125 (94%)	116 (99%)	1 (1%)	0	100	100
9	SH	143/145 (99%)	137 (96%)	6 (4%)	0	100	100
10	SI	141/143 (99%)	132 (94%)	9 (6%)	0	100	100
11	SJ	98/100 (98%)	95 (97%)	3 (3%)	0	100	100
12	SK	80/82 (98%)	74 (92%)	6 (8%)	0	100	100
13	SL	61/63 (97%)	57 (93%)	4 (7%)	0	100	100
14	SM	51/53 (96%)	50 (98%)	1 (2%)	0	100	100
15	SN	71/73 (97%)	57 (80%)	14 (20%)	0	100	100
16	SO	310/312 (99%)	283 (91%)	27 (9%)	0	100	100
17	SP	204/206 (99%)	183 (90%)	21 (10%)	0	100	100
18	SQ	222/232 (96%)	198 (89%)	24 (11%)	0	100	100
19	SR	214/216 (99%)	198 (92%)	16 (8%)	0	100	100
20	SS	256/258 (99%)	233 (91%)	23 (9%)	0	100	100
21	ST	226/228 (99%)	215 (95%)	11 (5%)	0	100	100
22	SU	182/184 (99%)	171 (94%)	11 (6%)	0	100	100
23	SV	183/198 (92%)	173 (94%)	10 (6%)	0	100	100
24	SW	182/184 (99%)	174 (96%)	8 (4%)	0	100	100
25	SX	140/142 (99%)	134 (96%)	6 (4%)	0	100	100
26	SY	148/150 (99%)	142 (96%)	6 (4%)	0	100	100
27	SZ	125/127 (98%)	113 (90%)	12 (10%)	0	100	100
28	Sa	85/87 (98%)	77 (91%)	8 (9%)	0	100	100
29	Sb	127/129 (98%)	121 (95%)	6 (5%)	0	100	100
30	Sc	142/144 (99%)	130 (92%)	12 (8%)	0	100	100
31	Sd	132/134 (98%)	127 (96%)	5 (4%)	0	100	100
32	Se	95/97 (98%)	89 (94%)	6 (6%)	0	100	100
33	Sf	79/81 (98%)	72 (91%)	7 (9%)	0	100	100
34	Sg	55/57 (96%)	47 (86%)	8 (14%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
38	LD	249/251 (99%)	235 (94%)	14 (6%)	0	100	100
39	LE	384/386 (100%)	362 (94%)	22 (6%)	0	100	100
40	LF	359/361 (99%)	339 (94%)	20 (6%)	0	100	100
41	LG	292/294 (99%)	273 (94%)	19 (6%)	0	100	100
42	LH	163/175 (93%)	154 (94%)	9 (6%)	0	100	100
43	LI	220/222 (99%)	207 (94%)	13 (6%)	0	100	100
44	LJ	231/233 (99%)	218 (94%)	13 (6%)	0	100	100
45	LK	189/191 (99%)	170 (90%)	19 (10%)	0	100	100
46	LL	216/218 (99%)	201 (93%)	15 (7%)	0	100	100
47	LM	167/169 (99%)	157 (94%)	10 (6%)	0	100	100
48	LN	191/193 (99%)	173 (91%)	17 (9%)	1 (0%)	24	46
49	LO	134/136 (98%)	128 (96%)	6 (4%)	0	100	100
50	LP	201/203 (99%)	190 (94%)	11 (6%)	0	100	100
51	LQ	195/197 (99%)	192 (98%)	3 (2%)	0	100	100
52	LR	181/183 (99%)	169 (93%)	12 (7%)	0	100	100
53	LS	183/185 (99%)	173 (94%)	10 (6%)	0	100	100
54	LT	186/188 (99%)	181 (97%)	5 (3%)	0	100	100
55	LU	169/171 (99%)	162 (96%)	7 (4%)	0	100	100
56	LV	157/159 (99%)	148 (94%)	9 (6%)	0	100	100
57	LW	98/100 (98%)	93 (95%)	5 (5%)	0	100	100
58	LX	134/136 (98%)	129 (96%)	5 (4%)	0	100	100
59	LY	63/65 (97%)	62 (98%)	1 (2%)	0	100	100
60	LZ	119/121 (98%)	117 (98%)	2 (2%)	0	100	100
61	La	123/125 (98%)	112 (91%)	10 (8%)	1 (1%)	16	34
62	Lb	133/135 (98%)	122 (92%)	11 (8%)	0	100	100
63	Lc	146/148 (99%)	134 (92%)	12 (8%)	0	100	100
64	Ld	56/58 (97%)	49 (88%)	7 (12%)	0	100	100
65	Le	94/96 (98%)	93 (99%)	1 (1%)	0	100	100
66	Lf	107/109 (98%)	100 (94%)	7 (6%)	0	100	100
67	Lg	125/127 (98%)	113 (90%)	12 (10%)	0	100	100
68	Lh	104/106 (98%)	101 (97%)	3 (3%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
69	Li	110/112 (98%)	107 (97%)	3 (3%)	0	100	100
70	Lj	117/119 (98%)	112 (96%)	5 (4%)	0	100	100
71	Lk	97/99 (98%)	92 (95%)	5 (5%)	0	100	100
72	Ll	79/81 (98%)	77 (98%)	2 (2%)	0	100	100
73	Lm	75/77 (97%)	74 (99%)	1 (1%)	0	100	100
74	Ln	48/50 (96%)	46 (96%)	2 (4%)	0	100	100
75	Lo	50/52 (96%)	48 (96%)	2 (4%)	0	100	100
76	Lp	23/25 (92%)	23 (100%)	0	0	100	100
77	Lq	101/103 (98%)	92 (91%)	9 (9%)	0	100	100
78	Lr	89/91 (98%)	85 (96%)	4 (4%)	0	100	100
79	eR	364/446 (82%)	342 (94%)	20 (6%)	2 (0%)	24	46
82	pp	22/24 (92%)	6 (27%)	16 (73%)	0	100	100
All	All	11300/11569 (98%)	10574 (94%)	722 (6%)	4 (0%)	100	100

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
79	eR	317	VAL
61	La	31	LEU
79	eR	179	LYS
48	LN	61	PRO

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	
2	SA	182/182 (100%)	173 (95%)	9 (5%)	22	47
3	SB	172/173 (99%)	154 (90%)	18 (10%)	6	14
4	SC	77/85 (91%)	74 (96%)	3 (4%)	28	55
5	SD	88/98 (90%)	83 (94%)	5 (6%)	18	40

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
6	SE	95/98 (97%)	86 (90%)	9 (10%)	8 18
7	SF	117/117 (100%)	110 (94%)	7 (6%)	17 37
8	SG	101/113 (89%)	92 (91%)	9 (9%)	9 20
9	SH	127/128 (99%)	117 (92%)	10 (8%)	11 26
10	SI	115/115 (100%)	106 (92%)	9 (8%)	11 26
11	SJ	93/93 (100%)	87 (94%)	6 (6%)	15 35
12	SK	67/73 (92%)	64 (96%)	3 (4%)	24 50
13	SL	55/56 (98%)	52 (94%)	3 (6%)	19 41
14	SM	47/47 (100%)	46 (98%)	1 (2%)	47 73
15	SN	56/64 (88%)	50 (89%)	6 (11%)	6 14
16	SO	250/257 (97%)	229 (92%)	21 (8%)	10 23
17	SP	170/173 (98%)	164 (96%)	6 (4%)	32 59
18	SQ	200/205 (98%)	186 (93%)	14 (7%)	14 31
19	SR	175/175 (100%)	169 (97%)	6 (3%)	32 60
20	SS	220/220 (100%)	204 (93%)	16 (7%)	13 29
21	ST	189/195 (97%)	177 (94%)	12 (6%)	16 36
22	SU	163/165 (99%)	151 (93%)	12 (7%)	13 29
23	SV	148/159 (93%)	132 (89%)	16 (11%)	6 13
24	SW	156/157 (99%)	146 (94%)	10 (6%)	16 35
25	SX	126/127 (99%)	122 (97%)	4 (3%)	34 62
26	SY	127/127 (100%)	119 (94%)	8 (6%)	16 36
27	SZ	90/96 (94%)	82 (91%)	8 (9%)	9 20
28	Sa	71/74 (96%)	67 (94%)	4 (6%)	19 40
29	Sb	110/110 (100%)	104 (94%)	6 (6%)	19 41
30	Sc	119/119 (100%)	113 (95%)	6 (5%)	22 46
31	Sd	102/112 (91%)	96 (94%)	6 (6%)	18 38
32	Se	82/83 (99%)	80 (98%)	2 (2%)	43 70
33	Sf	70/70 (100%)	63 (90%)	7 (10%)	7 16
34	Sg	48/49 (98%)	43 (90%)	5 (10%)	7 14
38	LD	190/193 (98%)	185 (97%)	5 (3%)	40 68
39	LE	318/322 (99%)	307 (96%)	11 (4%)	32 59

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
40	LF	288/288 (100%)	271 (94%)	17 (6%)	18 38
41	LG	241/243 (99%)	230 (95%)	11 (5%)	24 49
42	LH	139/154 (90%)	129 (93%)	10 (7%)	13 30
43	LI	186/186 (100%)	182 (98%)	4 (2%)	45 72
44	LJ	187/191 (98%)	172 (92%)	15 (8%)	11 25
45	LK	168/171 (98%)	153 (91%)	15 (9%)	9 20
46	LL	185/185 (100%)	173 (94%)	12 (6%)	15 35
47	LM	145/147 (99%)	134 (92%)	11 (8%)	12 27
48	LN	154/154 (100%)	144 (94%)	10 (6%)	15 35
49	LO	107/107 (100%)	97 (91%)	10 (9%)	8 18
50	LP	175/175 (100%)	172 (98%)	3 (2%)	53 78
51	LQ	160/160 (100%)	153 (96%)	7 (4%)	25 50
52	LR	138/145 (95%)	130 (94%)	8 (6%)	18 39
53	LS	150/150 (100%)	146 (97%)	4 (3%)	39 67
54	LT	152/153 (99%)	147 (97%)	5 (3%)	33 61
55	LU	155/155 (100%)	145 (94%)	10 (6%)	15 35
56	LV	135/136 (99%)	129 (96%)	6 (4%)	25 50
57	LW	87/87 (100%)	81 (93%)	6 (7%)	14 32
58	LX	104/104 (100%)	99 (95%)	5 (5%)	23 47
59	LY	54/57 (95%)	51 (94%)	3 (6%)	19 40
60	LZ	104/105 (99%)	98 (94%)	6 (6%)	18 39
61	La	108/108 (100%)	94 (87%)	14 (13%)	4 8
62	Lb	112/115 (97%)	101 (90%)	11 (10%)	7 17
63	Lc	117/118 (99%)	111 (95%)	6 (5%)	21 45
64	Ld	46/46 (100%)	43 (94%)	3 (6%)	15 35
65	Le	81/81 (100%)	81 (100%)	0	100 100
66	Lf	92/96 (96%)	86 (94%)	6 (6%)	15 35
67	Lg	108/109 (99%)	103 (95%)	5 (5%)	24 49
68	Lh	90/90 (100%)	88 (98%)	2 (2%)	45 72
69	Li	95/95 (100%)	91 (96%)	4 (4%)	26 52
70	Lj	104/104 (100%)	103 (99%)	1 (1%)	68 86

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
71	Lk	80/81 (99%)	73 (91%)	7 (9%)	9 21
72	Ll	67/67 (100%)	63 (94%)	4 (6%)	17 37
73	Lm	68/68 (100%)	60 (88%)	8 (12%)	5 10
74	Ln	45/45 (100%)	41 (91%)	4 (9%)	9 20
75	Lo	45/47 (96%)	44 (98%)	1 (2%)	45 72
76	Lp	22/23 (96%)	21 (96%)	1 (4%)	24 50
77	Lq	87/88 (99%)	87 (100%)	0	100 100
78	Lr	71/71 (100%)	67 (94%)	4 (6%)	19 40
79	eR	312/384 (81%)	292 (94%)	20 (6%)	16 35
82	pp	19/22 (86%)	12 (63%)	7 (37%)	0 0
All	All	9499/9741 (98%)	8930 (94%)	569 (6%)	19 37

All (569) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	SA	9	ARG
2	SA	29	LEU
2	SA	72	LEU
2	SA	108	LYS
2	SA	113	LEU
2	SA	175	VAL
2	SA	182	LEU
2	SA	200	LYS
2	SA	223	LYS
3	SB	23	VAL
3	SB	25	LEU
3	SB	40	ILE
3	SB	42	LEU
3	SB	48	PHE
3	SB	50	GLU
3	SB	53	VAL
3	SB	83	ARG
3	SB	84	LYS
3	SB	90	ILE
3	SB	102	ARG
3	SB	115	LYS
3	SB	125	THR
3	SB	132	VAL

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Mol	Chain	Res	Type
3	SB	148	ARG
3	SB	176	THR
3	SB	208	SER
3	SB	213	LYS
4	SC	35	ILE
4	SC	49	LEU
4	SC	65	TYR
5	SD	36	LEU
5	SD	78	LEU
5	SD	97	LEU
5	SD	116	VAL
5	SD	120	VAL
6	SE	29	SER
6	SE	31	GLU
6	SE	42	ARG
6	SE	44	ARG
6	SE	96	ILE
6	SE	106	GLU
6	SE	118	GLU
6	SE	121	ILE
6	SE	127	ARG
7	SF	4	VAL
7	SF	17	THR
7	SF	36	ILE
7	SF	45	ARG
7	SF	55	VAL
7	SF	63	ILE
7	SF	97	VAL
8	SG	18	GLU
8	SG	19	ARG
8	SG	24	LEU
8	SG	30	THR
8	SG	34	LEU
8	SG	59	LYS
8	SG	72	LYS
8	SG	75	GLU
8	SG	120	SER
9	SH	18	LEU
9	SH	36	LYS
9	SH	38	VAL
9	SH	75	ASN
9	SH	97	ASP

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Mol	Chain	Res	Type
9	SH	101	LEU
9	SH	110	ARG
9	SH	133	VAL
9	SH	144	ARG
9	SH	145	ARG
10	SI	30	VAL
10	SI	33	TYR
10	SI	39	THR
10	SI	57	ARG
10	SI	88	VAL
10	SI	89	ARG
10	SI	99	SER
10	SI	114	VAL
10	SI	132	LEU
11	SJ	26	LEU
11	SJ	52	LYS
11	SJ	77	LYS
11	SJ	94	GLU
11	SJ	102	ARG
11	SJ	112	VAL
12	SK	40	VAL
12	SK	56	THR
12	SK	77	ARG
13	SL	12	VAL
13	SL	22	ARG
13	SL	54	LEU
14	SM	8	PHE
15	SN	85	TYR
15	SN	92	LYS
15	SN	107	LYS
15	SN	132	LEU
15	SN	145	HIS
15	SN	147	VAL
16	SO	25	THR
16	SO	32	LEU
16	SO	42	LEU
16	SO	47	LEU
16	SO	56	VAL
16	SO	58	VAL
16	SO	73	LEU
16	SO	93	ASP
16	SO	96	THR

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Mol	Chain	Res	Type
16	SO	123	ILE
16	SO	133	VAL
16	SO	141	LEU
16	SO	193	ILE
16	SO	195	HIS
16	SO	202	LEU
16	SO	222	LEU
16	SO	231	MET
16	SO	232	TYR
16	SO	252	LEU
16	SO	262	VAL
16	SO	290	VAL
17	SP	6	THR
17	SP	18	LEU
17	SP	27	ARG
17	SP	32	HIS
17	SP	165	ARG
17	SP	189	VAL
18	SQ	13	LYS
18	SQ	31	ASP
18	SQ	39	GLU
18	SQ	43	VAL
18	SQ	72	ASP
18	SQ	97	LEU
18	SQ	111	ARG
18	SQ	148	ASN
18	SQ	153	HIS
18	SQ	188	LEU
18	SQ	207	LEU
18	SQ	210	ILE
18	SQ	222	LYS
18	SQ	232	HIS
19	SR	39	THR
19	SR	148	LEU
19	SR	166	THR
19	SR	174	ARG
19	SR	232	GLU
19	SR	235	LEU
20	SS	23	LEU
20	SS	40	GLU
20	SS	45	ILE
20	SS	56	LEU

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Mol	Chain	Res	Type
20	SS	70	VAL
20	SS	72	VAL
20	SS	87	MET
20	SS	102	VAL
20	SS	105	VAL
20	SS	130	GLN
20	SS	131	LEU
20	SS	154	ILE
20	SS	187	ARG
20	SS	210	ILE
20	SS	227	VAL
20	SS	236	ILE
21	ST	13	GLN
21	ST	21	GLU
21	ST	22	HIS
21	ST	24	ILE
21	ST	35	GLU
21	ST	41	VAL
21	ST	71	THR
21	ST	73	ILE
21	ST	78	THR
21	ST	126	ASP
21	ST	159	ARG
21	ST	163	THR
22	SU	16	LEU
22	SU	18	LEU
22	SU	33	GLU
22	SU	56	LYS
22	SU	62	VAL
22	SU	72	LYS
22	SU	97	ARG
22	SU	108	GLN
22	SU	109	VAL
22	SU	159	VAL
22	SU	167	GLU
22	SU	184	GLU
23	SV	32	GLN
23	SV	53	LYS
23	SV	60	ILE
23	SV	62	THR
23	SV	72	ILE
23	SV	76	THR

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Mol	Chain	Res	Type
23	SV	77	ARG
23	SV	81	VAL
23	SV	89	GLU
23	SV	90	LEU
23	SV	137	LYS
23	SV	143	TRP
23	SV	151	LYS
23	SV	152	ILE
23	SV	179	CYS
23	SV	196	LEU
24	SW	3	ARG
24	SW	7	THR
24	SW	28	LEU
24	SW	86	LEU
24	SW	105	LEU
24	SW	111	THR
24	SW	116	LEU
24	SW	118	LEU
24	SW	141	VAL
24	SW	172	VAL
25	SX	15	LYS
25	SX	49	ILE
25	SX	107	VAL
25	SX	109	VAL
26	SY	11	ILE
26	SY	43	LYS
26	SY	53	LEU
26	SY	62	GLN
26	SY	64	ARG
26	SY	78	ASN
26	SY	138	ASN
26	SY	150	VAL
27	SZ	24	ASN
27	SZ	25	ASP
27	SZ	26	THR
27	SZ	28	VAL
27	SZ	39	ILE
27	SZ	46	MET
27	SZ	52	ARG
27	SZ	89	THR
28	Sa	4	ASP
28	Sa	12	TYR

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Mol	Chain	Res	Type
28	Sa	39	VAL
28	Sa	55	LEU
29	Sb	28	ARG
29	Sb	74	VAL
29	Sb	86	ILE
29	Sb	87	GLU
29	Sb	98	GLN
29	Sb	114	GLU
30	Sc	56	LYS
30	Sc	57	LEU
30	Sc	101	GLU
30	Sc	107	PHE
30	Sc	117	ILE
30	Sc	125	VAL
31	Sd	8	ARG
31	Sd	22	GLN
31	Sd	25	VAL
31	Sd	40	LEU
31	Sd	74	LEU
31	Sd	79	VAL
32	Se	64	LEU
32	Se	69	ASN
33	Sf	3	LEU
33	Sf	8	LEU
33	Sf	33	LEU
33	Sf	37	CYS
33	Sf	62	ILE
33	Sf	67	THR
33	Sf	72	LYS
34	Sg	8	LEU
34	Sg	29	LYS
34	Sg	38	LEU
34	Sg	45	VAL
34	Sg	47	VAL
38	LD	45	VAL
38	LD	77	ILE
38	LD	113	VAL
38	LD	158	ILE
38	LD	191	LEU
39	LE	34	LYS
39	LE	144	ILE
39	LE	145	GLU

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Mol	Chain	Res	Type
39	LE	205	VAL
39	LE	246	LEU
39	LE	266	ARG
39	LE	319	ASN
39	LE	324	VAL
39	LE	335	ILE
39	LE	344	THR
39	LE	382	THR
40	LF	9	HIS
40	LF	111	VAL
40	LF	129	THR
40	LF	136	LEU
40	LF	159	ILE
40	LF	176	SER
40	LF	178	LEU
40	LF	179	LEU
40	LF	230	VAL
40	LF	260	GLN
40	LF	270	SER
40	LF	279	HIS
40	LF	286	VAL
40	LF	306	THR
40	LF	316	ASN
40	LF	341	SER
40	LF	347	THR
41	LG	6	ASP
41	LG	32	GLN
41	LG	83	LEU
41	LG	113	LEU
41	LG	173	VAL
41	LG	177	GLU
41	LG	190	ILE
41	LG	216	GLU
41	LG	222	LEU
41	LG	273	ARG
41	LG	277	LEU
42	LH	21	THR
42	LH	34	LEU
42	LH	35	VAL
42	LH	46	ARG
42	LH	53	VAL
42	LH	89	THR

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Mol	Chain	Res	Type
42	LH	93	VAL
42	LH	98	VAL
42	LH	111	LEU
42	LH	145	LEU
43	LI	24	GLU
43	LI	38	LYS
43	LI	86	VAL
43	LI	161	VAL
44	LJ	36	ILE
44	LJ	68	ARG
44	LJ	74	THR
44	LJ	82	LEU
44	LJ	93	LEU
44	LJ	118	GLU
44	LJ	151	VAL
44	LJ	156	ASP
44	LJ	175	VAL
44	LJ	197	VAL
44	LJ	200	LEU
44	LJ	206	GLU
44	LJ	211	LEU
44	LJ	229	VAL
44	LJ	246	MET
45	LK	10	ILE
45	LK	11	GLU
45	LK	12	VAL
45	LK	16	VAL
45	LK	25	VAL
45	LK	38	LEU
45	LK	43	VAL
45	LK	55	VAL
45	LK	128	VAL
45	LK	132	VAL
45	LK	135	GLU
45	LK	144	ILE
45	LK	146	LEU
45	LK	157	ASN
45	LK	181	VAL
46	LL	32	ARG
46	LL	43	VAL
46	LL	53	VAL
46	LL	71	CYS

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Mol	Chain	Res	Type
46	LL	89	VAL
46	LL	96	VAL
46	LL	101	LYS
46	LL	110	ARG
46	LL	112	GLN
46	LL	123	HIS
46	LL	169	LYS
46	LL	200	LEU
47	LM	10	ARG
47	LM	15	GLU
47	LM	38	GLU
47	LM	46	VAL
47	LM	55	ARG
47	LM	59	ILE
47	LM	71	VAL
47	LM	79	ILE
47	LM	94	ARG
47	LM	145	LYS
47	LM	147	THR
48	LN	4	SER
48	LN	5	LYS
48	LN	58	VAL
48	LN	67	ARG
48	LN	69	VAL
48	LN	124	ILE
48	LN	138	VAL
48	LN	154	VAL
48	LN	162	ASN
48	LN	180	ARG
49	LO	12	TRP
49	LO	15	VAL
49	LO	60	LEU
49	LO	64	VAL
49	LO	68	LEU
49	LO	69	THR
49	LO	78	THR
49	LO	90	VAL
49	LO	112	LEU
49	LO	135	LEU
50	LP	64	VAL
50	LP	117	ASN
50	LP	164	LEU

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Mol	Chain	Res	Type
51	LQ	12[A]	LYS
51	LQ	33[A]	ILE
51	LQ	34[A]	VAL
51	LQ	89[A]	SER
51	LQ	126[A]	VAL
51	LQ	133[A]	ARG
51	LQ	197[A]	LEU
52	LR	7	THR
52	LR	25	SER
52	LR	26	PHE
52	LR	96	GLN
52	LR	103	GLU
52	LR	120	ASN
52	LR	151	THR
52	LR	165	VAL
53	LS	3	ILE
53	LS	74	GLU
53	LS	138	LEU
53	LS	166	LEU
54	LT	51	VAL
54	LT	66	HIS
54	LT	86	GLU
54	LT	156	ASN
54	LT	177	VAL
55	LU	24	LEU
55	LU	27	MET
55	LU	29	ILE
55	LU	32	SER
55	LU	45	LEU
55	LU	48	LEU
55	LU	79	VAL
55	LU	80	ARG
55	LU	93	GLU
55	LU	157	GLN
56	LV	29	THR
56	LV	107	GLU
56	LV	140	ILE
56	LV	151	LEU
56	LV	158	THR
56	LV	160	ILE
57	LW	39	ASP
57	LW	50	LEU

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Mol	Chain	Res	Type
57	LW	56	VAL
57	LW	63	VAL
57	LW	74	LYS
57	LW	89	LEU
58	LX	11	PHE
58	LX	32	ARG
58	LX	54	LEU
58	LX	74	MET
58	LX	98	ASN
59	LY	23	ARG
59	LY	33	ASN
59	LY	36	SER
60	LZ	28	THR
60	LZ	62	VAL
60	LZ	76	VAL
60	LZ	87	SER
60	LZ	102	LEU
60	LZ	112	THR
61	La	10	SER
61	La	24	SER
61	La	29	VAL
61	La	30	LEU
61	La	31	LEU
61	La	50	ILE
61	La	51	ARG
61	La	97	ILE
61	La	99	LEU
61	La	104	LEU
61	La	111	LEU
61	La	112	ASP
61	La	115	ARG
61	La	122	LYS
62	Lb	9	LYS
62	Lb	13	VAL
62	Lb	30	ASP
62	Lb	36	HIS
62	Lb	64	LYS
62	Lb	87	LEU
62	Lb	93	LYS
62	Lb	95	VAL
62	Lb	96	VAL
62	Lb	103	GLN

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Mol	Chain	Res	Type
62	Lb	135	ARG
63	Lc	77	LYS
63	Lc	86	LYS
63	Lc	92	LYS
63	Lc	105	LEU
63	Lc	112	ILE
63	Lc	123	VAL
64	Ld	19	ASN
64	Ld	21	ILE
64	Ld	35	VAL
66	Lf	9	THR
66	Lf	28	ARG
66	Lf	31	ARG
66	Lf	73	LEU
66	Lf	106	THR
66	Lf	109	VAL
67	Lg	30	GLU
67	Lg	63	THR
67	Lg	103	LYS
67	Lg	111	ARG
67	Lg	126	LEU
68	Lh	3	GLU
68	Lh	107	ILE
69	Li	29	ILE
69	Li	30	LEU
69	Li	56	THR
69	Li	65	VAL
70	Lj	85	THR
71	Lk	12	ASN
71	Lk	17	VAL
71	Lk	37	THR
71	Lk	41	ARG
71	Lk	43	LEU
71	Lk	60	LEU
71	Lk	68	ARG
72	Ll	11	ARG
72	Ll	25	ARG
72	Ll	57	HIS
72	Ll	67	LEU
73	Lm	4	GLU
73	Lm	7	ASP
73	Lm	31	LEU

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Mol	Chain	Res	Type
73	Lm	41	THR
73	Lm	45	VAL
73	Lm	56	ILE
73	Lm	64	LYS
73	Lm	65	LEU
74	Ln	12	LYS
74	Ln	18	LYS
74	Ln	27	ILE
74	Ln	29	LEU
75	Lo	113	ARG
76	Lp	15	ARG
78	Lr	4	ARG
78	Lr	48	LYS
78	Lr	64	VAL
78	Lr	70	THR
79	eR	42	LYS
79	eR	65	ARG
79	eR	100	ILE
79	eR	104	GLU
79	eR	140	LEU
79	eR	160	THR
79	eR	166	ARG
79	eR	176	LEU
79	eR	178	LYS
79	eR	180	HIS
79	eR	196	GLU
79	eR	224	LEU
79	eR	232	PHE
79	eR	252	LYS
79	eR	279	LYS
79	eR	305	VAL
79	eR	320	LEU
79	eR	391	ILE
79	eR	400	SER
79	eR	413	LEU
82	pp	1129	GLN
82	pp	1130	ARG
82	pp	1132	ASP
82	pp	1135	THR
82	pp	1138	GLN
82	pp	1145	ASN
82	pp	1148	MET

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (75) such sidechains are listed below:

Mol	Chain	Res	Type
3	SB	44	ASN
3	SB	186	ASN
4	SC	13	GLN
4	SC	29	GLN
4	SC	32	HIS
4	SC	39	ASN
6	SE	15	HIS
6	SE	70	ASN
6	SE	114	HIS
7	SF	83	GLN
9	SH	19	ASN
10	SI	127	ASN
11	SJ	40	ASN
14	SM	37	ASN
16	SO	153	GLN
16	SO	195	HIS
18	SQ	92	GLN
18	SQ	146	GLN
18	SQ	177	GLN
19	SR	82	ASN
19	SR	233	GLN
20	SS	57	ASN
20	SS	69	HIS
20	SS	112	HIS
20	SS	197	HIS
20	SS	201	HIS
21	ST	189	HIS
22	SU	89	HIS
22	SU	150	GLN
23	SV	94	ASN
24	SW	38	ASN
25	SX	14	GLN
26	SY	78	ASN
27	SZ	24	ASN
29	Sb	39	GLN
29	Sb	98	GLN
30	Sc	94	ASN
32	Se	8	ASN
39	LE	224	HIS
40	LF	116	ASN
40	LF	160	GLN

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Mol	Chain	Res	Type
40	LF	320	ASN
41	LG	32	GLN
42	LH	61	ASN
43	LI	194	HIS
43	LI	244	ASN
45	LK	96	HIS
46	LL	23	ASN
46	LL	51	HIS
46	LL	112	GLN
47	LM	68	HIS
51	LQ	26[A]	GLN
52	LR	54	HIS
52	LR	133	HIS
55	LU	154	HIS
56	LV	103	GLN
58	LX	24	ASN
58	LX	98	ASN
59	LY	59	HIS
60	LZ	111	ASN
61	La	42	GLN
62	Lb	122	HIS
63	Lc	44	ASN
64	Ld	6	ASN
67	Lg	49	ASN
67	Lg	104	ASN
70	Lj	99	GLN
70	Lj	104	GLN
70	Lj	113	GLN
72	Ll	69	HIS
74	Ln	33	ASN
79	eR	61	ASN
79	eR	200	ASN
79	eR	277	ASN
82	pp	1131	HIS

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	S2	1768/1800 (98%)	716 (40%)	28 (1%)
35	LA	3159/3396 (93%)	772 (24%)	29 (0%)
36	LB	120/121 (99%)	23 (19%)	1 (0%)

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Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
37	LC	157/158 (99%)	47 (29%)	1 (0%)
80	mR	0/10	-	-
81	Cc	76/77 (98%)	22 (28%)	0
All	All	5280/5562 (94%)	1580 (29%)	59 (1%)

All (1580) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	S2	3	U
1	S2	4	C
1	S2	17	C
1	S2	25	C
1	S2	26	A
1	S2	32	U
1	S2	33	U
1	S2	34	G
1	S2	35	U
1	S2	42	G
1	S2	47	A
1	S2	50	C
1	S2	56	U
1	S2	57	G
1	S2	59	C
1	S2	61	A
1	S2	62	A
1	S2	63	G
1	S2	66	U
1	S2	67	A
1	S2	68	A
1	S2	72	A
1	S2	73	U
1	S2	74	U
1	S2	75	U
1	S2	76	A
1	S2	77	U
1	S2	78	A
1	S2	80	A
1	S2	81	G
1	S2	84	A
1	S2	85	A
1	S2	86	A
1	S2	100	A

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Mol	Chain	Res	Type
1	S2	104	A
1	S2	105	A
1	S2	106	U
1	S2	107	C
1	S2	109	G
1	S2	110	U
1	S2	111	U
1	S2	114	C
1	S2	117	U
1	S2	119	A
1	S2	120	U
1	S2	127	G
1	S2	128	U
1	S2	129	U
1	S2	130	C
1	S2	132	U
1	S2	133	U
1	S2	134	U
1	S2	136	C
1	S2	138	A
1	S2	139	C
1	S2	140	A
1	S2	141	U
1	S2	142	G
1	S2	143	G
1	S2	147	A
1	S2	149	C
1	S2	152	U
1	S2	153	G
1	S2	158	U
1	S2	162	A
1	S2	164	A
1	S2	165	G
1	S2	166	C
1	S2	168	A
1	S2	169	A
1	S2	170	U
1	S2	172	C
1	S2	173	A
1	S2	174	U
1	S2	178	U
1	S2	179	A

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Mol	Chain	Res	Type
1	S2	180	A
1	S2	181	A
1	S2	188	A
1	S2	189	C
1	S2	190	C
1	S2	191	C
1	S2	193	U
1	S2	194	U
1	S2	195	G
1	S2	201	G
1	S2	202	A
1	S2	205	U
1	S2	207	U
1	S2	208	U
1	S2	213	A
1	S2	218	A
1	S2	224	C
1	S2	225	A
1	S2	226	A
1	S2	227	U
1	S2	228	G
1	S2	229	U
1	S2	234	G
1	S2	235	G
1	S2	237	C
1	S2	238	U
1	S2	241	U
1	S2	243	G
1	S2	250	C
1	S2	257	A
1	S2	259	U
1	S2	261	U
1	S2	262	U
1	S2	265	A
1	S2	274	G
1	S2	278	U
1	S2	280	U
1	S2	281	G
1	S2	282	C
1	S2	284	G
1	S2	287	G
1	S2	290	G

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Mol	Chain	Res	Type
1	S2	291	G
1	S2	292	U
1	S2	293	U
1	S2	299	A
1	S2	304	U
1	S2	305	C
1	S2	313	U
1	S2	314	C
1	S2	315	A
1	S2	316	A
1	S2	319	U
1	S2	320	U
1	S2	321	C
1	S2	322	G
1	S2	323	A
1	S2	324	U
1	S2	332	U
1	S2	337	G
1	S2	338	C
1	S2	341	A
1	S2	344	A
1	S2	345	U
1	S2	351	C
1	S2	352	A
1	S2	359	A
1	S2	360	A
1	S2	361	C
1	S2	388	G
1	S2	393	C
1	S2	398	G
1	S2	400	A
1	S2	401	A
1	S2	402	C
1	S2	417	A
1	S2	423	G
1	S2	424	C
1	S2	425	A
1	S2	426	G
1	S2	434	G
1	S2	439	U
1	S2	444	C
1	S2	448	C

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Mol	Chain	Res	Type
1	S2	453	U
1	S2	454	U
1	S2	455	C
1	S2	456	A
1	S2	459	G
1	S2	460	A
1	S2	468	A
1	S2	469	C
1	S2	470	A
1	S2	473	A
1	S2	475	A
1	S2	477	A
1	S2	478	A
1	S2	485	A
1	S2	486	G
1	S2	487	G
1	S2	488	G
1	S2	489	C
1	S2	490	C
1	S2	495	C
1	S2	497	G
1	S2	499	U
1	S2	500	C
1	S2	501	U
1	S2	505	A
1	S2	506	A
1	S2	507	U
1	S2	510	G
1	S2	511	A
1	S2	516	G
1	S2	518	A
1	S2	521	A
1	S2	523	G
1	S2	526	A
1	S2	527	A
1	S2	528	U
1	S2	529	A
1	S2	532	U
1	S2	534	A
1	S2	535	A
1	S2	536	C
1	S2	538	A

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Mol	Chain	Res	Type
1	S2	539	G
1	S2	540	G
1	S2	542	A
1	S2	544	A
1	S2	545	A
1	S2	549	G
1	S2	555	A
1	S2	556	A
1	S2	557	G
1	S2	558	U
1	S2	564	G
1	S2	565	C
1	S2	577	G
1	S2	578	U
1	S2	579	A
1	S2	583	C
1	S2	590	C
1	S2	594	A
1	S2	595	G
1	S2	606	A
1	S2	610	G
1	S2	611	U
1	S2	617	U
1	S2	619	A
1	S2	620	A
1	S2	623	A
1	S2	624	G
1	S2	638	U
1	S2	639	U
1	S2	641	G
1	S2	648	G
1	S2	649	U
1	S2	652	G
1	S2	653	C
1	S2	654	C
1	S2	655	G
1	S2	656	G
1	S2	658	C
1	S2	677	G
1	S2	679	U
1	S2	680	U
1	S2	683	C

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Mol	Chain	Res	Type
1	S2	684	A
1	S2	685	A
1	S2	686	C
1	S2	687	G
1	S2	694	U
1	S2	696	C
1	S2	697	C
1	S2	699	U
1	S2	700	C
1	S2	701	U
1	S2	705	U
1	S2	707	A
1	S2	708	C
1	S2	709	C
1	S2	710	U
1	S2	711	U
1	S2	712	G
1	S2	729	G
1	S2	732	G
1	S2	733	A
1	S2	734	A
1	S2	735	C
1	S2	737	A
1	S2	738	G
1	S2	739	G
1	S2	740	A
1	S2	741	C
1	S2	742	U
1	S2	743	U
1	S2	744	U
1	S2	748	U
1	S2	752	A
1	S2	753	A
1	S2	755	A
1	S2	766	U
1	S2	771	A
1	S2	774	A
1	S2	780	A
1	S2	781	U
1	S2	782	U
1	S2	783	G
1	S2	787	G

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Mol	Chain	Res	Type
1	S2	789	A
1	S2	792	U
1	S2	793	A
1	S2	794	U
1	S2	796	A
1	S2	797	G
1	S2	798	C
1	S2	799	A
1	S2	800	U
1	S2	801	G
1	S2	804	A
1	S2	807	A
1	S2	812	A
1	S2	813	U
1	S2	814	A
1	S2	815	G
1	S2	816	G
1	S2	819	G
1	S2	820	U
1	S2	821	U
1	S2	823	G
1	S2	828	U
1	S2	829	A
1	S2	830	U
1	S2	831	U
1	S2	832	U
1	S2	833	U
1	S2	834	G
1	S2	835	U
1	S2	836	U
1	S2	837	G
1	S2	843	U
1	S2	844	A
1	S2	846	G
1	S2	847	A
1	S2	849	C
1	S2	850	A
1	S2	852	C
1	S2	853	G
1	S2	856	A
1	S2	857	U
1	S2	859	A

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Mol	Chain	Res	Type
1	S2	860	U
1	S2	863	A
1	S2	864	U
1	S2	876	G
1	S2	877	G
1	S2	880	C
1	S2	883	C
1	S2	885	G
1	S2	886	U
1	S2	887	A
1	S2	890	C
1	S2	892	A
1	S2	894	U
1	S2	898	A
1	S2	902	G
1	S2	911	U
1	S2	913	G
1	S2	921	U
1	S2	922	G
1	S2	923	A
1	S2	924	A
1	S2	928	U
1	S2	931	C
1	S2	933	A
1	S2	935	U
1	S2	942	G
1	S2	960	U
1	S2	966	A
1	S2	984	G
1	S2	986	G
1	S2	993	A
1	S2	994	G
1	S2	995	A
1	S2	997	G
1	S2	998	A
1	S2	999	U
1	S2	1000	C
1	S2	1001	A
1	S2	1003	A
1	S2	1004	U
1	S2	1005	A
1	S2	1014	G

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Mol	Chain	Res	Type
1	S2	1015	U
1	S2	1019	A
1	S2	1020	A
1	S2	1023	A
1	S2	1026	A
1	S2	1028	C
1	S2	1029	U
1	S2	1031	U
1	S2	1032	G
1	S2	1039	A
1	S2	1040	G
1	S2	1041	G
1	S2	1049	U
1	S2	1051	G
1	S2	1052	U
1	S2	1053	G
1	S2	1058	U
1	S2	1059	U
1	S2	1060	U
1	S2	1061	A
1	S2	1062	A
1	S2	1070	C
1	S2	1076	A
1	S2	1079	U
1	S2	1080	U
1	S2	1081	A
1	S2	1082	C
1	S2	1089	U
1	S2	1091	A
1	S2	1092	A
1	S2	1096	C
1	S2	1098	U
1	S2	1100	G
1	S2	1111	G
1	S2	1114	G
1	S2	1115	U
1	S2	1116	A
1	S2	1117	U
1	S2	1137	A
1	S2	1138	A
1	S2	1150	G
1	S2	1151	A

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Mol	Chain	Res	Type
1	S2	1158	C
1	S2	1160	A
1	S2	1164	G
1	S2	1167	G
1	S2	1176	G
1	S2	1182	U
1	S2	1183	A
1	S2	1185	U
1	S2	1190	C
1	S2	1191	U
1	S2	1194	A
1	S2	1196	A
1	S2	1197	C
1	S2	1198	G
1	S2	1199	G
1	S2	1200	G
1	S2	1201	G
1	S2	1203	A
1	S2	1204	A
1	S2	1206	U
1	S2	1212	G
1	S2	1213	G
1	S2	1214	U
1	S2	1215	C
1	S2	1216	C
1	S2	1219	A
1	S2	1220	C
1	S2	1221	A
1	S2	1222	C
1	S2	1223	A
1	S2	1224	A
1	S2	1226	A
1	S2	1227	A
1	S2	1228	G
1	S2	1231	U
1	S2	1234	A
1	S2	1236	A
1	S2	1239	U
1	S2	1240	U
1	S2	1241	G
1	S2	1242	A
1	S2	1243	G

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Mol	Chain	Res	Type
1	S2	1244	A
1	S2	1245	G
1	S2	1248	C
1	S2	1249	U
1	S2	1250	U
1	S2	1252	C
1	S2	1253	U
1	S2	1255	G
1	S2	1256	A
1	S2	1258	U
1	S2	1259	U
1	S2	1260	U
1	S2	1261	G
1	S2	1262	U
1	S2	1263	G
1	S2	1264	G
1	S2	1265	G
1	S2	1270	G
1	S2	1273	G
1	S2	1274	C
1	S2	1281	G
1	S2	1282	U
1	S2	1284	C
1	S2	1285	U
1	S2	1286	U
1	S2	1291	G
1	S2	1307	U
1	S2	1310	U
1	S2	1311	U
1	S2	1312	A
1	S2	1313	A
1	S2	1314	U
1	S2	1315	U
1	S2	1318	G
1	S2	1319	A
1	S2	1320	U
1	S2	1321	A
1	S2	1322	A
1	S2	1334	U
1	S2	1335	U
1	S2	1337	A
1	S2	1339	C

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Mol	Chain	Res	Type
1	S2	1340	U
1	S2	1341	A
1	S2	1342	C
1	S2	1343	U
1	S2	1344	A
1	S2	1347	U
1	S2	1348	A
1	S2	1349	G
1	S2	1350	U
1	S2	1351	G
1	S2	1353	U
1	S2	1354	G
1	S2	1355	C
1	S2	1357	A
1	S2	1358	G
1	S2	1359	C
1	S2	1360	A
1	S2	1361	U
1	S2	1362	U
1	S2	1363	U
1	S2	1364	G
1	S2	1365	C
1	S2	1367	G
1	S2	1369	U
1	S2	1371	A
1	S2	1372	U
1	S2	1373	C
1	S2	1374	C
1	S2	1375	A
1	S2	1376	C
1	S2	1377	U
1	S2	1378	U
1	S2	1379	C
1	S2	1381	U
1	S2	1382	A
1	S2	1383	G
1	S2	1384	A
1	S2	1385	G
1	S2	1386	G
1	S2	1388	A
1	S2	1389	C
1	S2	1390	U

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Mol	Chain	Res	Type
1	S2	1391	A
1	S2	1398	U
1	S2	1399	C
1	S2	1400	A
1	S2	1403	C
1	S2	1407	U
1	S2	1408	G
1	S2	1409	G
1	S2	1411	A
1	S2	1412	G
1	S2	1414	U
1	S2	1415	U
1	S2	1418	G
1	S2	1422	A
1	S2	1425	A
1	S2	1427	A
1	S2	1428	G
1	S2	1429	G
1	S2	1431	C
1	S2	1432	U
1	S2	1433	G
1	S2	1436	A
1	S2	1438	G
1	S2	1439	C
1	S2	1440	C
1	S2	1441	C
1	S2	1442	U
1	S2	1444	A
1	S2	1445	G
1	S2	1446	A
1	S2	1456	C
1	S2	1457	C
1	S2	1458	G
1	S2	1459	C
1	S2	1460	A
1	S2	1469	A
1	S2	1471	A
1	S2	1473	U
1	S2	1474	G
1	S2	1479	A
1	S2	1483	A
1	S2	1489	U

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Mol	Chain	Res	Type
1	S2	1490	C
1	S2	1491	U
1	S2	1492	A
1	S2	1493	A
1	S2	1494	C
1	S2	1495	C
1	S2	1496	U
1	S2	1497	U
1	S2	1498	G
1	S2	1499	G
1	S2	1500	C
1	S2	1501	C
1	S2	1502	G
1	S2	1503	A
1	S2	1504	G
1	S2	1505	A
1	S2	1507	G
1	S2	1508	U
1	S2	1509	C
1	S2	1510	U
1	S2	1511	U
1	S2	1512	G
1	S2	1513	G
1	S2	1514	U
1	S2	1515	A
1	S2	1516	A
1	S2	1518	C
1	S2	1520	U
1	S2	1521	G
1	S2	1522	U
1	S2	1523	G
1	S2	1524	A
1	S2	1525	A
1	S2	1526	A
1	S2	1530	C
1	S2	1534	G
1	S2	1535	U
1	S2	1536	G
1	S2	1541	G
1	S2	1542	G
1	S2	1543	A
1	S2	1554	U

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Mol	Chain	Res	Type
1	S2	1555	A
1	S2	1556	A
1	S2	1557	U
1	S2	1558	U
1	S2	1559	A
1	S2	1560	U
1	S2	1565	C
1	S2	1567	U
1	S2	1568	C
1	S2	1569	A
1	S2	1573	A
1	S2	1575	G
1	S2	1576	A
1	S2	1582	U
1	S2	1583	A
1	S2	1584	G
1	S2	1585	U
1	S2	1597	A
1	S2	1598	U
1	S2	1599	C
1	S2	1600	A
1	S2	1601	G
1	S2	1605	G
1	S2	1607	G
1	S2	1612	U
1	S2	1614	A
1	S2	1615	C
1	S2	1616	G
1	S2	1619	C
1	S2	1620	C
1	S2	1621	U
1	S2	1622	G
1	S2	1634	C
1	S2	1657	U
1	S2	1658	G
1	S2	1659	A
1	S2	1660	A
1	S2	1661	U
1	S2	1662	G
1	S2	1663	G
1	S2	1665	U
1	S2	1666	U

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Mol	Chain	Res	Type
1	S2	1667	A
1	S2	1678	A
1	S2	1681	A
1	S2	1683	C
1	S2	1684	U
1	S2	1686	C
1	S2	1689	A
1	S2	1690	G
1	S2	1691	A
1	S2	1692	G
1	S2	1693	A
1	S2	1695	G
1	S2	1696	G
1	S2	1697	G
1	S2	1700	C
1	S2	1701	A
1	S2	1702	A
1	S2	1703	C
1	S2	1705	C
1	S2	1706	C
1	S2	1708	U
1	S2	1714	A
1	S2	1716	C
1	S2	1717	G
1	S2	1718	G
1	S2	1719	A
1	S2	1724	U
1	S2	1725	U
1	S2	1726	G
1	S2	1732	A
1	S2	1733	C
1	S2	1735	U
1	S2	1736	G
1	S2	1740	A
1	S2	1741	U
1	S2	1742	U
1	S2	1743	U
1	S2	1750	A
1	S2	1760	G
1	S2	1762	A
1	S2	1766	A
1	S2	1769	U

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Mol	Chain	Res	Type
1	S2	1780	G
1	S2	1782	A
1	S2	1783	C
1	S2	1792	G
1	S2	1793	G
1	S2	1794	A
1	S2	1795	U
1	S2	1796	C
1	S2	1798	U
1	S2	1799	U
35	LA	11	A
35	LA	15	C
35	LA	21	G
35	LA	22	G
35	LA	26	A
35	LA	34	A
35	LA	40	A
35	LA	43	A
35	LA	49	A
35	LA	57	A
35	LA	60	A
35	LA	65	A
35	LA	66	A
35	LA	71	A
35	LA	92	G
35	LA	99	A
35	LA	110	G
35	LA	111	C
35	LA	113	C
35	LA	116	A
35	LA	117	U
35	LA	118	U
35	LA	119	U
35	LA	122	A
35	LA	129	U
35	LA	134	U
35	LA	136	G
35	LA	148	G
35	LA	156	G
35	LA	157	A
35	LA	162	G
35	LA	166	C

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Mol	Chain	Res	Type
35	LA	167	U
35	LA	170	G
35	LA	173	G
35	LA	174	C
35	LA	175	C
35	LA	176	G
35	LA	177	U
35	LA	178	U
35	LA	180	C
35	LA	188	U
35	LA	190	U
35	LA	198	A
35	LA	200	C
35	LA	210	U
35	LA	218	G
35	LA	219	A
35	LA	222	A
35	LA	225	C
35	LA	227	G
35	LA	230	U
35	LA	231	G
35	LA	234	G
35	LA	236	G
35	LA	237	G
35	LA	238	A
35	LA	240	U
35	LA	241	G
35	LA	242	C
35	LA	243	G
35	LA	244	G
35	LA	245	U
35	LA	246	U
35	LA	247	C
35	LA	249	U
35	LA	251	G
35	LA	252	U
35	LA	253	A
35	LA	254	A
35	LA	263	C
35	LA	269	G
35	LA	286	U
35	LA	295	A

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Mol	Chain	Res	Type
35	LA	298	U
35	LA	305	U
35	LA	323	A
35	LA	329	U
35	LA	334	A
35	LA	337	G
35	LA	338	A
35	LA	339	C
35	LA	354	U
35	LA	362	U
35	LA	372	A
35	LA	373	A
35	LA	376	G
35	LA	381	U
35	LA	398	A
35	LA	403	C
35	LA	404	G
35	LA	413	U
35	LA	414	U
35	LA	415	G
35	LA	421	G
35	LA	422	A
35	LA	438	A
35	LA	495	G
35	LA	521	A
35	LA	522	A
35	LA	523	A
35	LA	525	C
35	LA	527	A
35	LA	528	U
35	LA	532	A
35	LA	534	U
35	LA	537	A
35	LA	538	G
35	LA	540	U
35	LA	544	C
35	LA	545	U
35	LA	546	C
35	LA	547	G
35	LA	549	U
35	LA	550	A
35	LA	551	A

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Mol	Chain	Res	Type
35	LA	554	A
35	LA	555	U
35	LA	557	A
35	LA	559	A
35	LA	560	G
35	LA	565	U
35	LA	566	G
35	LA	567	G
35	LA	568	G
35	LA	570	A
35	LA	571	U
35	LA	573	C
35	LA	578	A
35	LA	579	G
35	LA	591	G
35	LA	592	A
35	LA	593	C
35	LA	594	U
35	LA	595	G
35	LA	600	G
35	LA	603	A
35	LA	604	G
35	LA	605	U
35	LA	609	G
35	LA	611	A
35	LA	612	U
35	LA	619	A
35	LA	620	U
35	LA	622	A
35	LA	625	G
35	LA	636	C
35	LA	638	C
35	LA	649	A
35	LA	677	A
35	LA	690	A
35	LA	691	A
35	LA	698	U
35	LA	705	A
35	LA	715	A
35	LA	717	C
35	LA	718	G
35	LA	731	U

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Mol	Chain	Res	Type
35	LA	734	C
35	LA	735	A
35	LA	737	G
35	LA	738	A
35	LA	743	C
35	LA	761	A
35	LA	766	U
35	LA	771	A
35	LA	772	U
35	LA	773	G
35	LA	774	G
35	LA	776	U
35	LA	781	G
35	LA	785	G
35	LA	806	A
35	LA	808	A
35	LA	816	A
35	LA	817	A
35	LA	830	A
35	LA	832	G
35	LA	835	G
35	LA	837	A
35	LA	849	C
35	LA	850	U
35	LA	861	C
35	LA	870	G
35	LA	874	U
35	LA	879	U
35	LA	880	G
35	LA	896	A
35	LA	906	A
35	LA	907	G
35	LA	908	G
35	LA	914	A
35	LA	916	G
35	LA	917	A
35	LA	921	A
35	LA	923	C
35	LA	924	G
35	LA	925	A
35	LA	937	G
35	LA	944	C

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Mol	Chain	Res	Type
35	LA	959	C
35	LA	960	U
35	LA	978	G
35	LA	979	U
35	LA	981	U
35	LA	982	C
35	LA	994	G
35	LA	995	U
35	LA	1006	A
35	LA	1012	G
35	LA	1015	U
35	LA	1016	C
35	LA	1018	G
35	LA	1019	G
35	LA	1021	G
35	LA	1022	U
35	LA	1023	C
35	LA	1024	G
35	LA	1025	A
35	LA	1026	A
35	LA	1028	U
35	LA	1029	G
35	LA	1031	C
35	LA	1034	U
35	LA	1035	G
35	LA	1036	A
35	LA	1037	C
35	LA	1039	U
35	LA	1040	A
35	LA	1047	A
35	LA	1064	A
35	LA	1069	C
35	LA	1070	U
35	LA	1071	U
35	LA	1072	G
35	LA	1075	A
35	LA	1081	U
35	LA	1083	G
35	LA	1090	G
35	LA	1091	A
35	LA	1093	A
35	LA	1094	U

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Mol	Chain	Res	Type
35	LA	1095	U
35	LA	1096	U
35	LA	1097	G
35	LA	1098	A
35	LA	1103	A
35	LA	1116	G
35	LA	1117	G
35	LA	1120	A
35	LA	1131	G
35	LA	1144	U
35	LA	1153	A
35	LA	1154	A
35	LA	1159	A
35	LA	1160	C
35	LA	1168	U
35	LA	1178	G
35	LA	1179	A
35	LA	1180	A
35	LA	1181	U
35	LA	1182	A
35	LA	1185	C
35	LA	1192	C
35	LA	1193	A
35	LA	1196	C
35	LA	1201	C
35	LA	1206	G
35	LA	1207	G
35	LA	1208	U
35	LA	1209	G
35	LA	1215	U
35	LA	1218	U
35	LA	1220	U
35	LA	1221	A
35	LA	1222	G
35	LA	1223	A
35	LA	1224	C
35	LA	1225	A
35	LA	1231	A
35	LA	1234	G
35	LA	1235	U
35	LA	1236	G
35	LA	1237	G

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Mol	Chain	Res	Type
35	LA	1239	C
35	LA	1240	A
35	LA	1241	U
35	LA	1243	G
35	LA	1245	A
35	LA	1246	G
35	LA	1247	U
35	LA	1248	C
35	LA	1249	G
35	LA	1250	G
35	LA	1253	U
35	LA	1254	C
35	LA	1258	U
35	LA	1259	A
35	LA	1262	G
35	LA	1263	A
35	LA	1264	G
35	LA	1265	U
35	LA	1266	G
35	LA	1268	G
35	LA	1269	U
35	LA	1270	A
35	LA	1271	A
35	LA	1274	A
35	LA	1275	C
35	LA	1276	U
35	LA	1277	C
35	LA	1278	A
35	LA	1279	C
35	LA	1283	C
35	LA	1284	C
35	LA	1285	G
35	LA	1287	A
35	LA	1305	U
35	LA	1307	G
35	LA	1308	A
35	LA	1309	U
35	LA	1316	C
35	LA	1332	A
35	LA	1348	U
35	LA	1349	G
35	LA	1351	U

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Mol	Chain	Res	Type
35	LA	1352	A
35	LA	1353	U
35	LA	1354	G
35	LA	1355	A
35	LA	1356	U
35	LA	1357	G
35	LA	1366	A
35	LA	1386	A
35	LA	1391	C
35	LA	1399	A
35	LA	1400	G
35	LA	1418	A
35	LA	1419	A
35	LA	1431	G
35	LA	1434	G
35	LA	1437	C
35	LA	1446	A
35	LA	1450	G
35	LA	1455	U
35	LA	1465	A
35	LA	1468	A
35	LA	1469	C
35	LA	1470	U
35	LA	1475	A
35	LA	1480	G
35	LA	1481	A
35	LA	1482	A
35	LA	1483	G
35	LA	1484	U
35	LA	1488	G
35	LA	1502	C
35	LA	1508	C
35	LA	1511	U
35	LA	1536	G
35	LA	1537	A
35	LA	1539	A
35	LA	1548	C
35	LA	1549	U
35	LA	1553	U
35	LA	1555	U
35	LA	1556	C
35	LA	1557	A

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Mol	Chain	Res	Type
35	LA	1560	G
35	LA	1561	G
35	LA	1562	C
35	LA	1563	C
35	LA	1564	U
35	LA	1567	U
35	LA	1568	U
35	LA	1569	U
35	LA	1570	U
35	LA	1571	A
35	LA	1572	U
35	LA	1573	G
35	LA	1575	A
35	LA	1576	G
35	LA	1577	G
35	LA	1579	C
35	LA	1580	A
35	LA	1581	C
35	LA	1583	A
35	LA	1587	A
35	LA	1589	A
35	LA	1591	G
35	LA	1592	G
35	LA	1593	A
35	LA	1603	A
35	LA	1605	A
35	LA	1619	A
35	LA	1624	G
35	LA	1625	A
35	LA	1626	U
35	LA	1627	U
35	LA	1628	C
35	LA	1629	U
35	LA	1636	U
35	LA	1639	C
35	LA	1642	A
35	LA	1643	A
35	LA	1645	U
35	LA	1657	C
35	LA	1687	U
35	LA	1712	G
35	LA	1713	G

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Mol	Chain	Res	Type
35	LA	1715	A
35	LA	1716	U
35	LA	1724	U
35	LA	1730	G
35	LA	1736	G
35	LA	1740	U
35	LA	1741	A
35	LA	1742	U
35	LA	1750	A
35	LA	1751	G
35	LA	1760	A
35	LA	1761	C
35	LA	1762	C
35	LA	1763	U
35	LA	1765	U
35	LA	1766	G
35	LA	1778	G
35	LA	1780	G
35	LA	1796	G
35	LA	1797	A
35	LA	1799	A
35	LA	1808	G
35	LA	1809	A
35	LA	1813	A
35	LA	1816	A
35	LA	1821	U
35	LA	1830	G
35	LA	1839	A
35	LA	1840	U
35	LA	1842	A
35	LA	1846	C
35	LA	1849	C
35	LA	1850	A
35	LA	1866	C
35	LA	1867	A
35	LA	1878	G
35	LA	1880	U
35	LA	1881	A
35	LA	1883	A
35	LA	1884	A
35	LA	1885	U
35	LA	1889	G

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Mol	Chain	Res	Type
35	LA	1893	A
35	LA	1899	G
35	LA	1906	G
35	LA	1912	U
35	LA	1913	A
35	LA	1948	G
35	LA	1952	G
35	LA	1954	G
35	LA	2095	G
35	LA	2096	A
35	LA	2097	U
35	LA	2098	C
35	LA	2100	A
35	LA	2102	U
35	LA	2110	G
35	LA	2111	G
35	LA	2112	U
35	LA	2113	A
35	LA	2114	C
35	LA	2121	G
35	LA	2122	G
35	LA	2131	A
35	LA	2140	U
35	LA	2144	A
35	LA	2158	A
35	LA	2169	G
35	LA	2188	A
35	LA	2197	C
35	LA	2207	A
35	LA	2209	U
35	LA	2210	G
35	LA	2213	A
35	LA	2219	A
35	LA	2220	A
35	LA	2221	G
35	LA	2222	A
35	LA	2224	A
35	LA	2226	U
35	LA	2228	A
35	LA	2229	A
35	LA	2230	C
35	LA	2231	C

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Mol	Chain	Res	Type
35	LA	2232	A
35	LA	2249	G
35	LA	2250	G
35	LA	2256	A
35	LA	2257	C
35	LA	2267	C
35	LA	2268	U
35	LA	2269	U
35	LA	2272	G
35	LA	2273	G
35	LA	2281	A
35	LA	2305	G
35	LA	2306	C
35	LA	2307	G
35	LA	2310	U
35	LA	2313	A
35	LA	2314	U
35	LA	2315	G
35	LA	2318	U
35	LA	2334	U
35	LA	2335	G
35	LA	2336	U
35	LA	2353	G
35	LA	2361	A
35	LA	2371	G
35	LA	2372	A
35	LA	2373	A
35	LA	2374	C
35	LA	2375	G
35	LA	2382	G
35	LA	2388	U
35	LA	2393	G
35	LA	2397	A
35	LA	2402	A
35	LA	2403	G
35	LA	2404	A
35	LA	2411	U
35	LA	2418	G
35	LA	2419	A
35	LA	2422	C
35	LA	2435	G
35	LA	2436	U

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Mol	Chain	Res	Type
35	LA	2437	G
35	LA	2440	G
35	LA	2441	A
35	LA	2442	G
35	LA	2443	A
35	LA	2444	C
35	LA	2445	A
35	LA	2446	U
35	LA	2447	A
35	LA	2448	G
35	LA	2449	A
35	LA	2451	G
35	LA	2452	G
35	LA	2493	U
35	LA	2494	A
35	LA	2495	C
35	LA	2496	C
35	LA	2498	U
35	LA	2502	A
35	LA	2504	U
35	LA	2506	U
35	LA	2507	C
35	LA	2508	U
35	LA	2512	C
35	LA	2514	U
35	LA	2522	G
35	LA	2524	A
35	LA	2531	C
35	LA	2532	U
35	LA	2536	A
35	LA	2537	U
35	LA	2538	U
35	LA	2539	C
35	LA	2540	A
35	LA	2541	U
35	LA	2542	U
35	LA	2548	C
35	LA	2549	G
35	LA	2550	U
35	LA	2551	U
35	LA	2552	C
35	LA	2555	G

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Mol	Chain	Res	Type
35	LA	2560	C
35	LA	2561	A
35	LA	2569	A
35	LA	2570	U
35	LA	2571	U
35	LA	2573	G
35	LA	2574	G
35	LA	2579	G
35	LA	2580	A
35	LA	2585	G
35	LA	2586	G
35	LA	2593	A
35	LA	2606	G
35	LA	2607	G
35	LA	2614	G
35	LA	2626	A
35	LA	2629	U
35	LA	2637	A
35	LA	2651	G
35	LA	2652	U
35	LA	2656	A
35	LA	2666	C
35	LA	2669	G
35	LA	2674	A
35	LA	2676	A
35	LA	2677	G
35	LA	2680	A
35	LA	2681	U
35	LA	2684	C
35	LA	2685	C
35	LA	2689	A
35	LA	2691	A
35	LA	2694	A
35	LA	2696	A
35	LA	2704	A
35	LA	2705	A
35	LA	2707	C
35	LA	2708	C
35	LA	2713	U
35	LA	2728	G
35	LA	2729	U
35	LA	2733	A

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Mol	Chain	Res	Type
35	LA	2734	A
35	LA	2735	U
35	LA	2752	U
35	LA	2753	G
35	LA	2755	C
35	LA	2771	U
35	LA	2772	C
35	LA	2777	G
35	LA	2778	G
35	LA	2780	A
35	LA	2781	U
35	LA	2788	C
35	LA	2796	G
35	LA	2799	A
35	LA	2800	G
35	LA	2801	A
35	LA	2802	A
35	LA	2809	C
35	LA	2810	C
35	LA	2814	G
35	LA	2817	A
35	LA	2842	U
35	LA	2845	A
35	LA	2847	A
35	LA	2856	G
35	LA	2861	U
35	LA	2867	C
35	LA	2871	G
35	LA	2872	A
35	LA	2875	U
35	LA	2876	C
35	LA	2887	A
35	LA	2889	C
35	LA	2898	G
35	LA	2902	A
35	LA	2904	U
35	LA	2911	A
35	LA	2914	G
35	LA	2923	U
35	LA	2930	A
35	LA	2935	U
35	LA	2936	A

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Mol	Chain	Res	Type
35	LA	2942	C
35	LA	2947	G
35	LA	2948	C
35	LA	2951	G
35	LA	2957	G
35	LA	2971	A
35	LA	2983	C
35	LA	2990	G
35	LA	2997	G
35	LA	3012	A
35	LA	3028	G
35	LA	3030	G
35	LA	3041	U
35	LA	3049	A
35	LA	3058	U
35	LA	3059	G
35	LA	3072	C
35	LA	3078	U
35	LA	3080	G
35	LA	3083	G
35	LA	3086	A
35	LA	3091	A
35	LA	3092	C
35	LA	3114	A
35	LA	3115	C
35	LA	3116	G
35	LA	3122	A
35	LA	3129	A
35	LA	3130	A
35	LA	3131	U
35	LA	3142	A
35	LA	3143	C
35	LA	3144	G
35	LA	3153	U
35	LA	3154	C
35	LA	3155	U
35	LA	3156	U
35	LA	3157	U
35	LA	3158	G
35	LA	3165	A
35	LA	3168	A
35	LA	3169	U

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Mol	Chain	Res	Type
35	LA	3170	A
35	LA	3171	U
35	LA	3172	A
35	LA	3173	G
35	LA	3174	A
35	LA	3175	U
35	LA	3176	G
35	LA	3179	U
35	LA	3181	C
35	LA	3187	A
35	LA	3195	U
35	LA	3196	U
35	LA	3197	G
35	LA	3199	G
35	LA	3207	U
35	LA	3216	G
35	LA	3217	C
35	LA	3218	A
35	LA	3219	G
35	LA	3226	A
35	LA	3227	A
35	LA	3229	G
35	LA	3235	C
35	LA	3239	G
35	LA	3247	G
35	LA	3249	C
35	LA	3250	U
35	LA	3251	U
35	LA	3253	G
35	LA	3256	G
35	LA	3259	U
35	LA	3260	G
35	LA	3263	G
35	LA	3270	U
35	LA	3273	A
35	LA	3276	G
35	LA	3278	C
35	LA	3279	A
35	LA	3280	U
35	LA	3281	U
35	LA	3285	C
35	LA	3286	G

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Mol	Chain	Res	Type
35	LA	3288	G
35	LA	3289	G
35	LA	3293	U
35	LA	3294	A
35	LA	3295	A
35	LA	3296	A
35	LA	3303	G
35	LA	3304	U
35	LA	3316	A
35	LA	3317	U
35	LA	3324	C
35	LA	3326	G
35	LA	3335	A
35	LA	3344	A
35	LA	3345	G
35	LA	3350	C
35	LA	3351	U
35	LA	3353	G
35	LA	3354	U
35	LA	3356	G
35	LA	3369	G
35	LA	3377	G
35	LA	3378	C
35	LA	3382	U
35	LA	3389	U
35	LA	3396	U
36	LB	7	G
36	LB	11	A
36	LB	19	C
36	LB	25	G
36	LB	27	A
36	LB	28	C
36	LB	29	C
36	LB	30	G
36	LB	37	G
36	LB	39	C
36	LB	42	A
36	LB	50	U
36	LB	52	G
36	LB	54	U
36	LB	55	A
36	LB	65	G

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Mol	Chain	Res	Type
36	LB	73	C
36	LB	75	G
36	LB	76	A
36	LB	91	G
36	LB	102	A
36	LB	112	G
36	LB	121	U
37	LC	4	C
37	LC	5	U
37	LC	6	U
37	LC	7	U
37	LC	9	A
37	LC	10	A
37	LC	13	A
37	LC	23	U
37	LC	34	U
37	LC	35	C
37	LC	38	U
37	LC	39	G
37	LC	51	G
37	LC	52	A
37	LC	58	G
37	LC	59	A
37	LC	61	A
37	LC	62	C
37	LC	63	G
37	LC	71	A
37	LC	75	G
37	LC	77	A
37	LC	79	A
37	LC	80	A
37	LC	81	U
37	LC	84	C
37	LC	86	U
37	LC	87	G
37	LC	90	U
37	LC	95	G
37	LC	96	A
37	LC	100	U
37	LC	102	U
37	LC	104	A
37	LC	106	C

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Mol	Chain	Res	Type
37	LC	111	A
37	LC	120	C
37	LC	125	U
37	LC	126	A
37	LC	136	G
37	LC	139	U
37	LC	140	G
37	LC	142	C
37	LC	151	C
37	LC	152	G
37	LC	154	C
37	LC	158	U
81	Cc	6	C
81	Cc	7	G
81	Cc	8	U
81	Cc	9	A
81	Cc	14	A
81	Cc	16	C
81	Cc	17	A
81	Cc	18	G
81	Cc	21	A
81	Cc	22	U
81	Cc	46	G
81	Cc	47	U
81	Cc	48	C
81	Cc	49	C
81	Cc	50	U
81	Cc	58	A
81	Cc	61	C
81	Cc	63	G
81	Cc	64	G
81	Cc	67	G
81	Cc	69	A
81	Cc	70	A

All (59) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	S2	85	A
1	S2	129	U
1	S2	171	A
1	S2	172	C

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Mol	Chain	Res	Type
1	S2	237	C
1	S2	292	U
1	S2	322	G
1	S2	323	A
1	S2	387	A
1	S2	422	G
1	S2	498	G
1	S2	819	G
1	S2	859	A
1	S2	891	A
1	S2	998	A
1	S2	1061	A
1	S2	1219	A
1	S2	1226	A
1	S2	1378	U
1	S2	1384	A
1	S2	1411	A
1	S2	1440	C
1	S2	1443	U
1	S2	1523	G
1	S2	1584	G
1	S2	1613	U
1	S2	1662	G
1	S2	1680	G
35	LA	161	G
35	LA	197	G
35	LA	372	A
35	LA	593	C
35	LA	624	G
35	LA	849	C
35	LA	916	G
35	LA	1307	G
35	LA	1331	U
35	LA	1468	A
35	LA	1582	C
35	LA	1626	U
35	LA	1739	U
35	LA	1765	U
35	LA	1807	G
35	LA	2267	C
35	LA	2268	U
35	LA	2372	A

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Mol	Chain	Res	Type
35	LA	2501	U
35	LA	2541	U
35	LA	2673	A
35	LA	2707	C
35	LA	2734	A
35	LA	3115	C
35	LA	3121	U
35	LA	3225	C
35	LA	3323	A
35	LA	3343	G
35	LA	3350	C
36	LB	18	C
37	LC	85	G

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

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

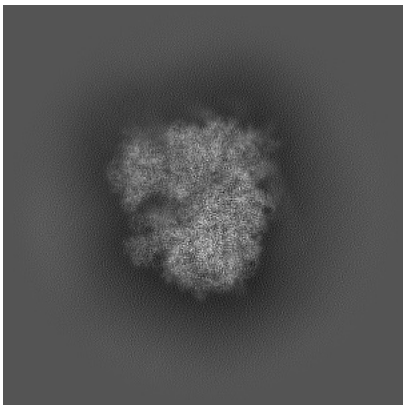
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-68898. These allow visual inspection of the internal detail of the map and identification of artifacts.

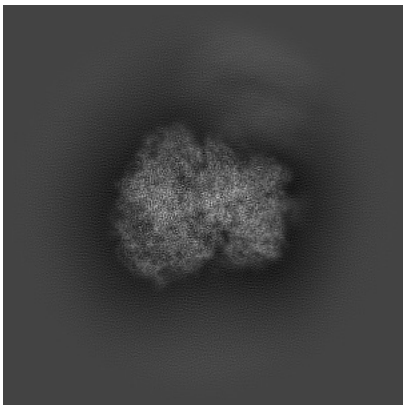
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

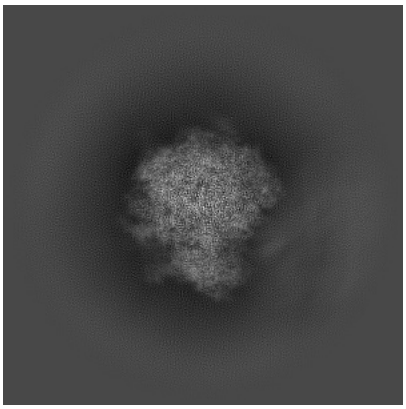
6.1.1 Primary map



X

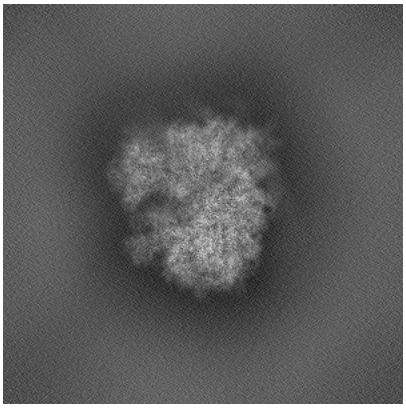


Y

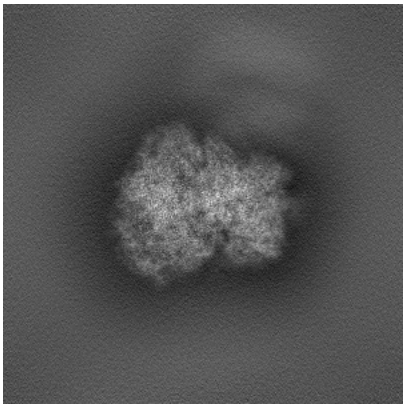


Z

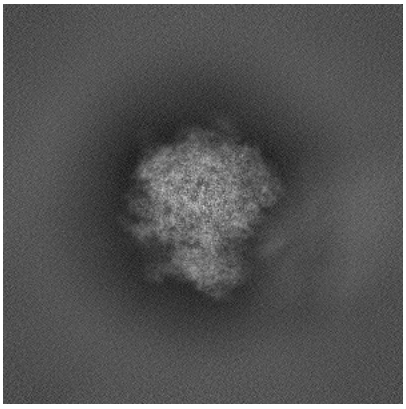
6.1.2 Raw map



X



Y

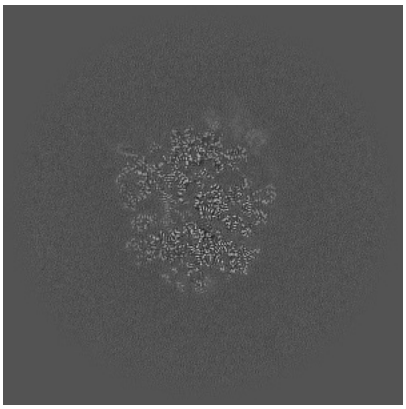


Z

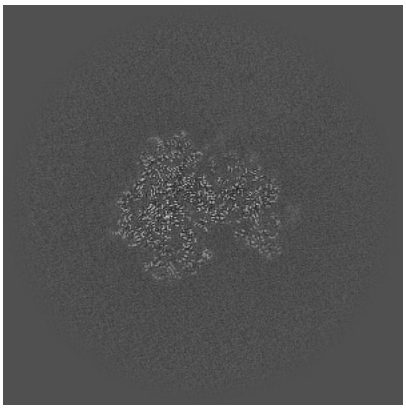
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

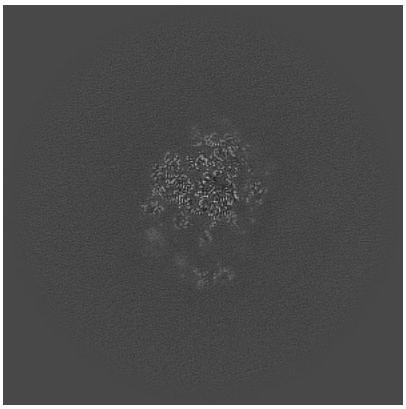
6.2.1 Primary map



X Index: 300

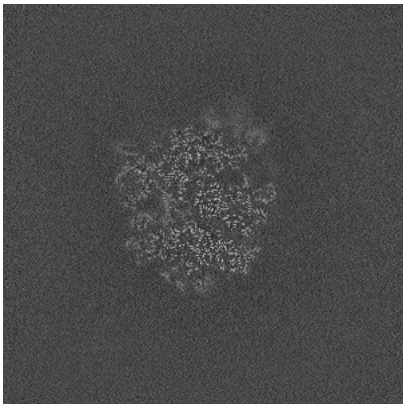


Y Index: 300

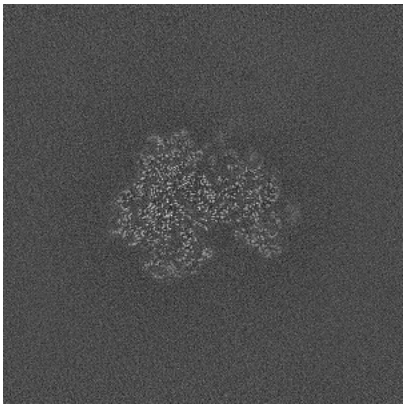


Z Index: 300

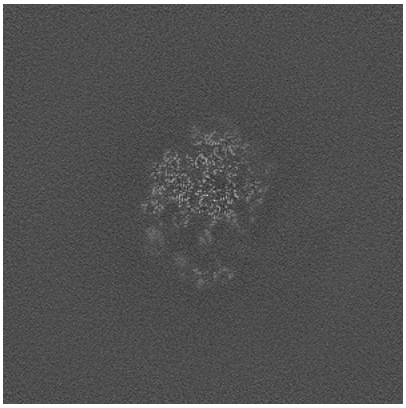
6.2.2 Raw map



X Index: 300



Y Index: 300

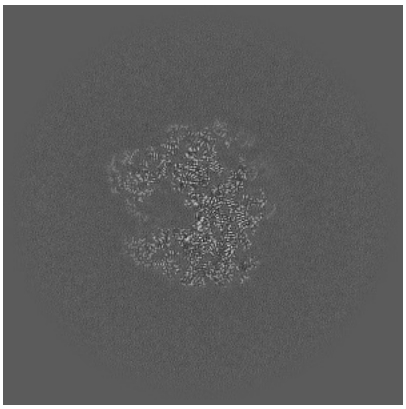


Z Index: 300

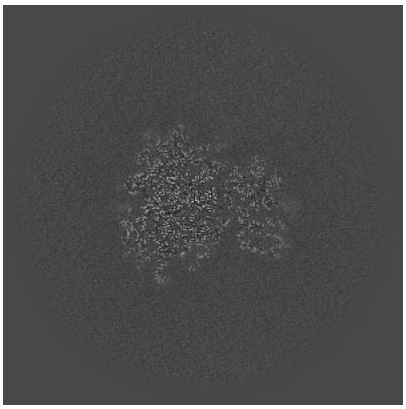
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

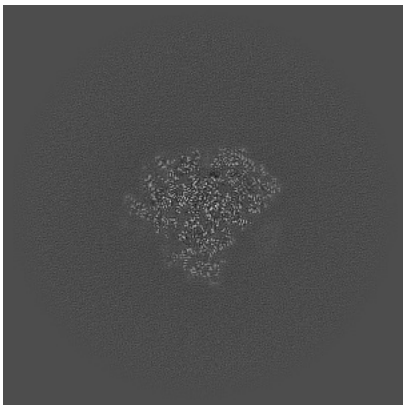
6.3.1 Primary map



X Index: 318

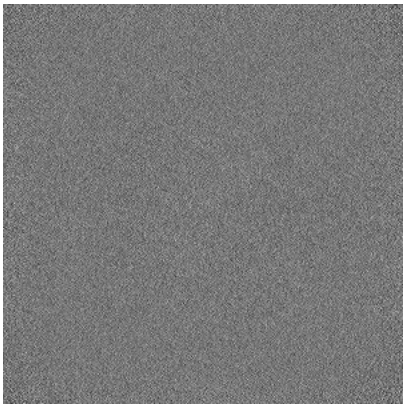


Y Index: 311

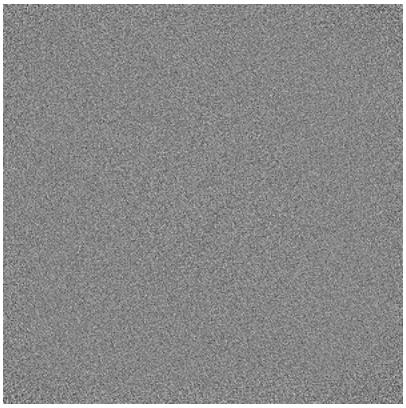


Z Index: 246

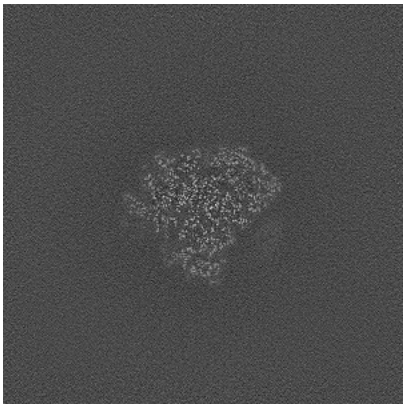
6.3.2 Raw map



X Index: 0



Y Index: 0

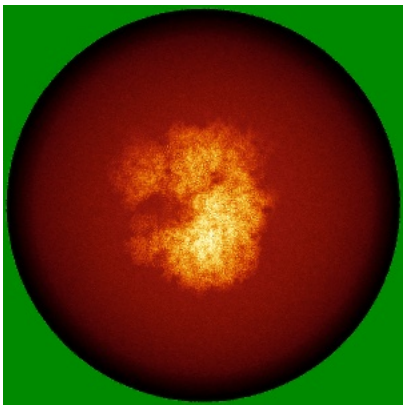


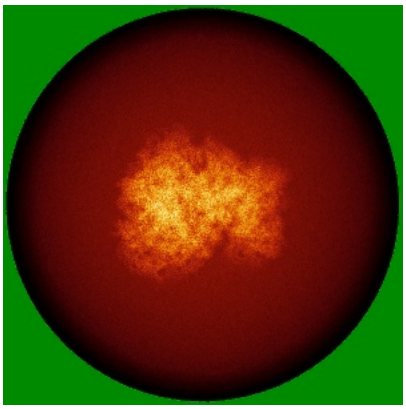
Z Index: 246

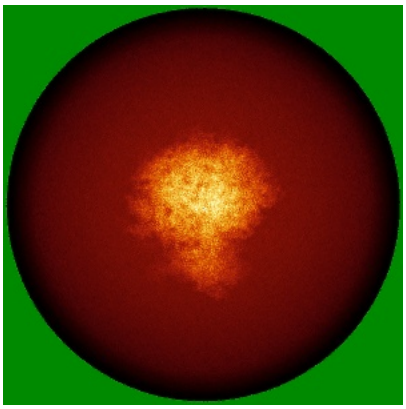
The images above show the largest variance slices of the map in three orthogonal directions.

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

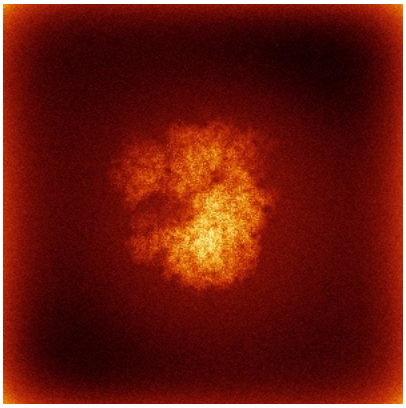
6.4.1 Primary map

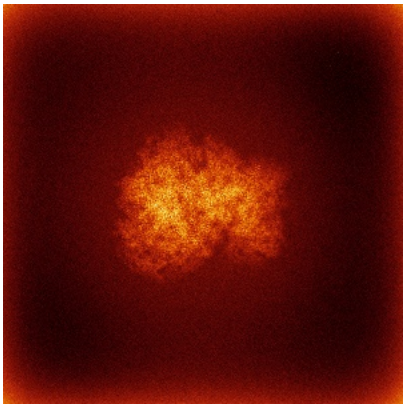

X

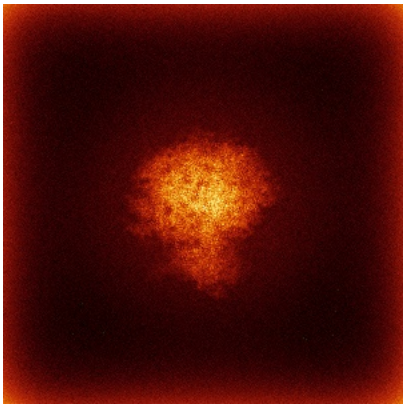

Y


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)

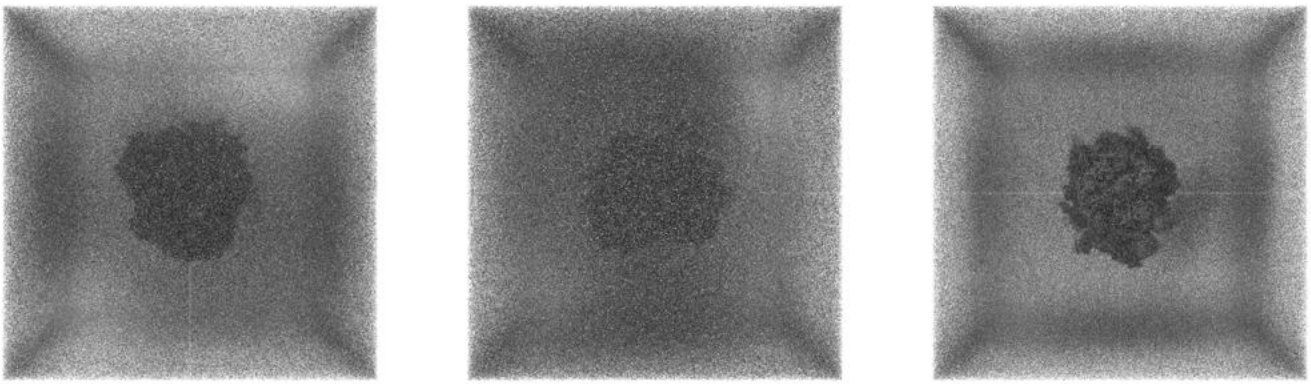
6.5.1 Primary map



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.

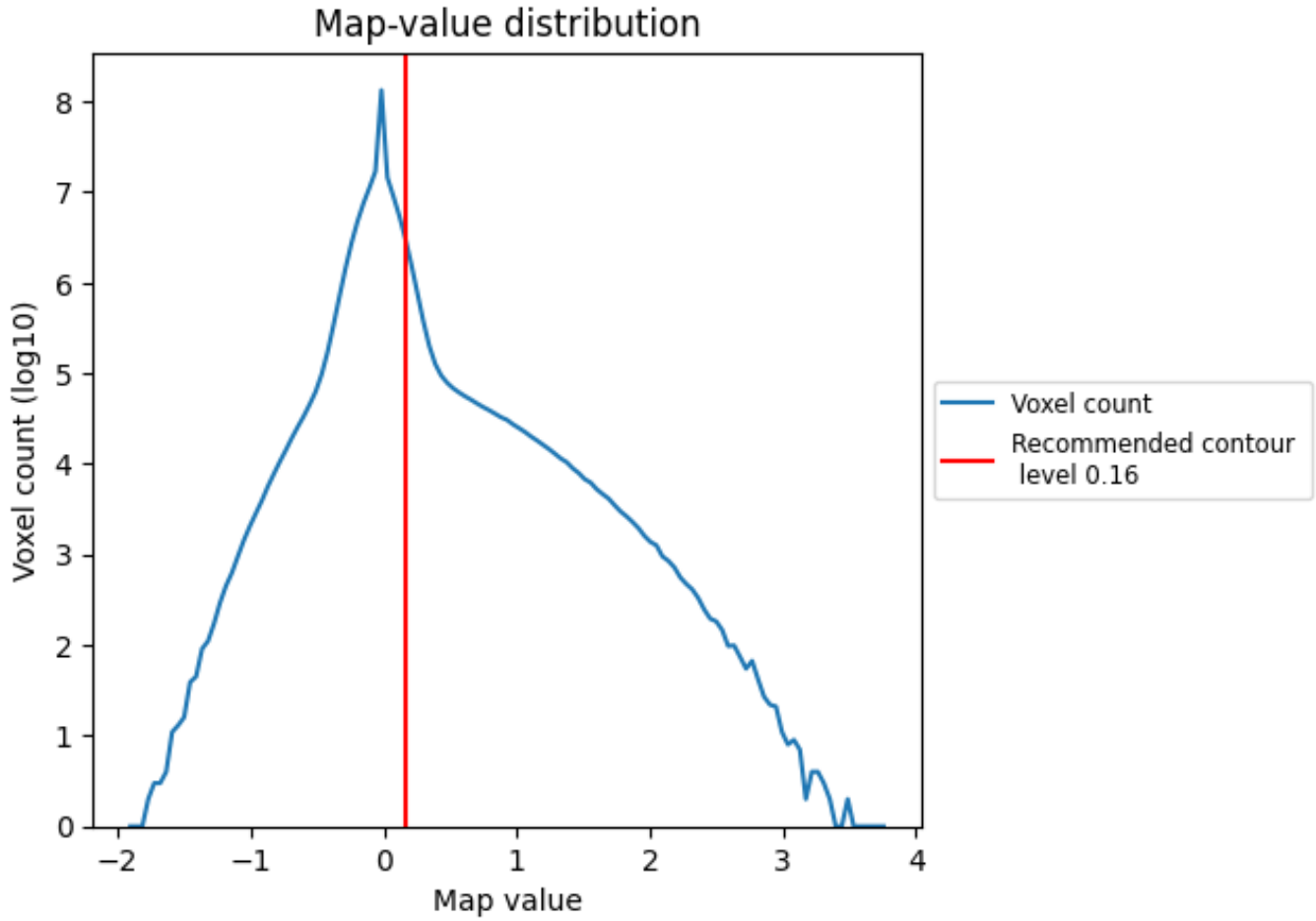
6.6 Mask visualisation (i)

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

7 Map analysis

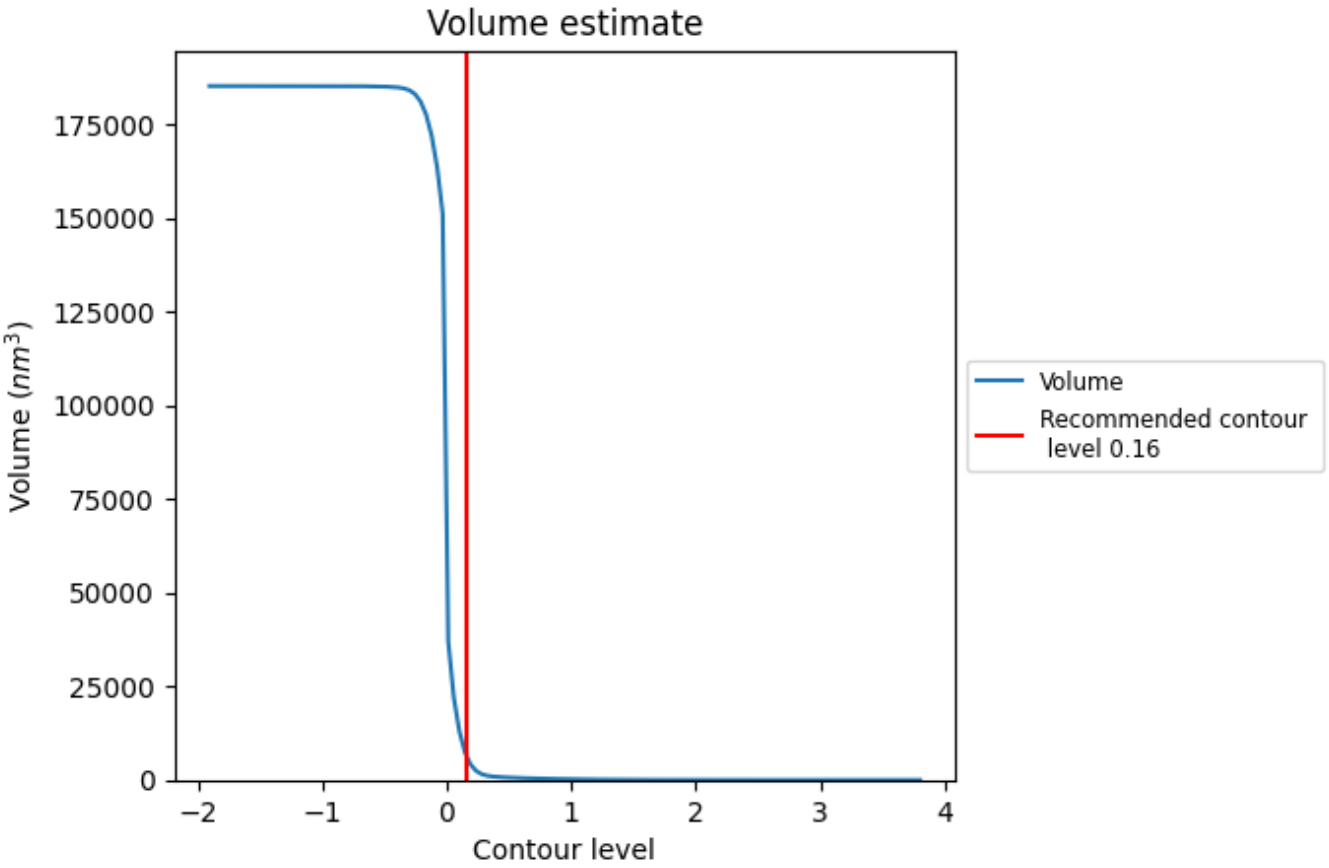
This section contains the results of statistical analysis of the map.

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.

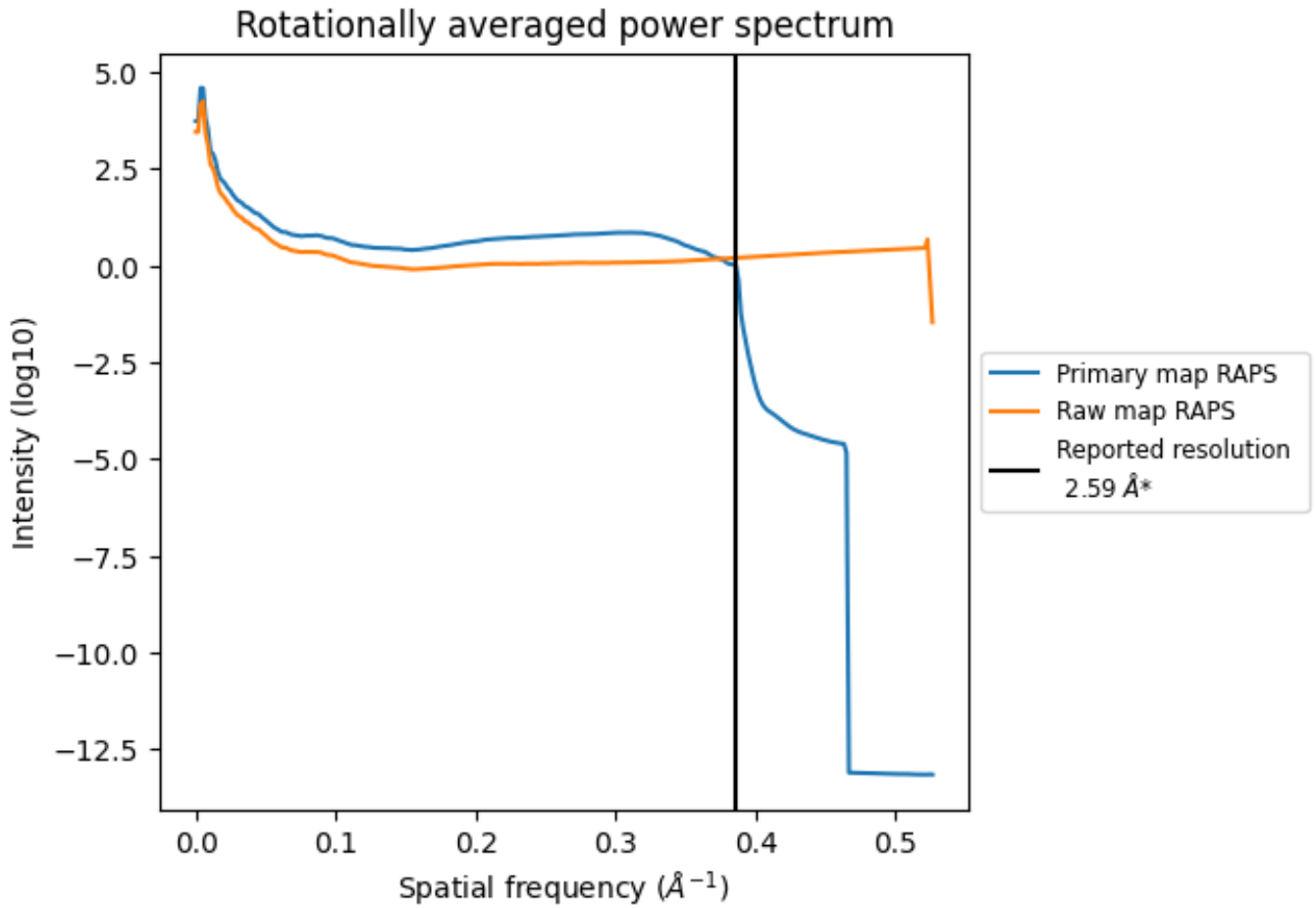
7.2 Volume estimate



The volume at the recommended contour level is 6444 nm^3; this corresponds to an approximate mass of 5821 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)

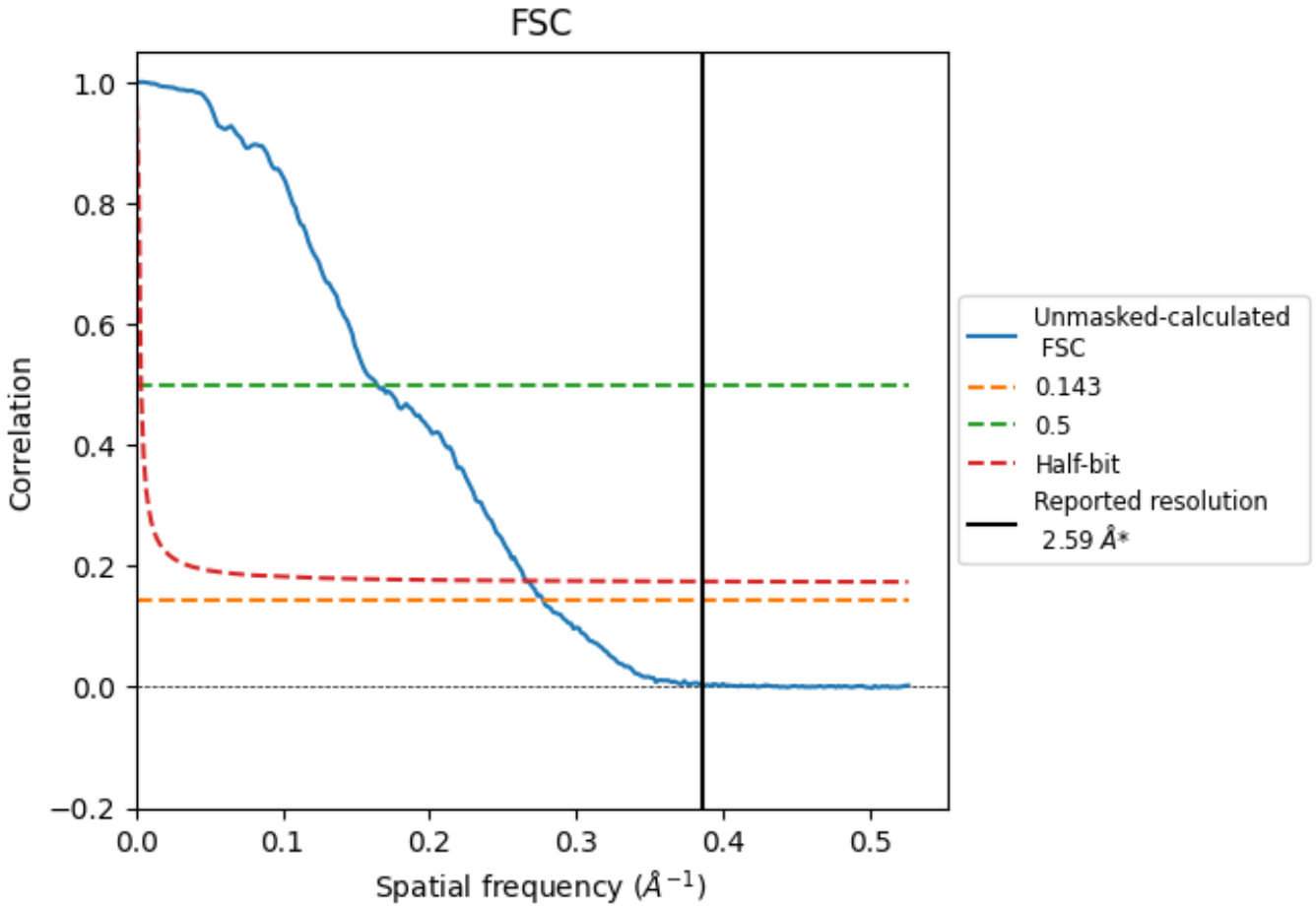


*Reported resolution corresponds to spatial frequency of 0.386 $Å^{-1}$

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 0.386 Å^{-1}

8.2 Resolution estimates (i)

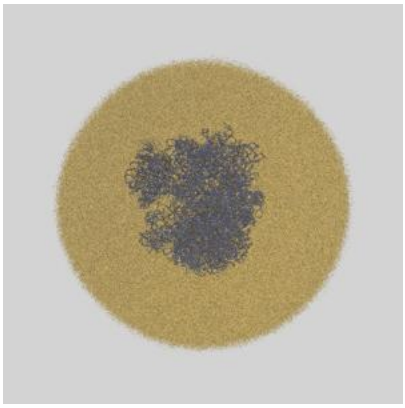
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.59	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.60	6.09	3.76

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.60 differs from the reported value 2.59 by more than 10 %

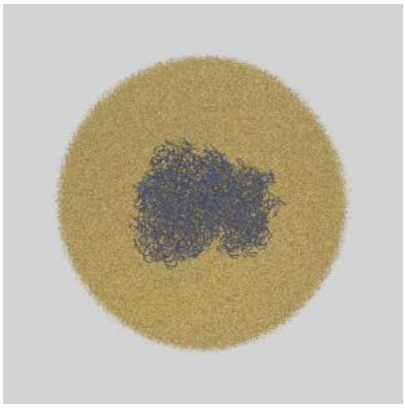
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-68898 and PDB model 23EA. Per-residue inclusion information can be found in section 3 on page 20.

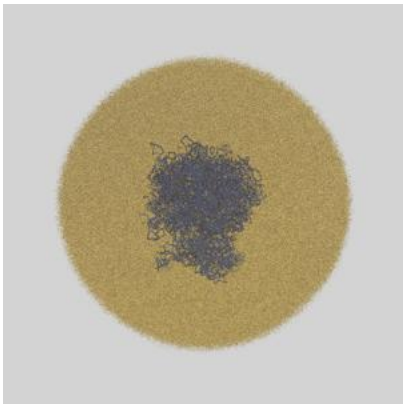
9.1 Map-model overlay



X



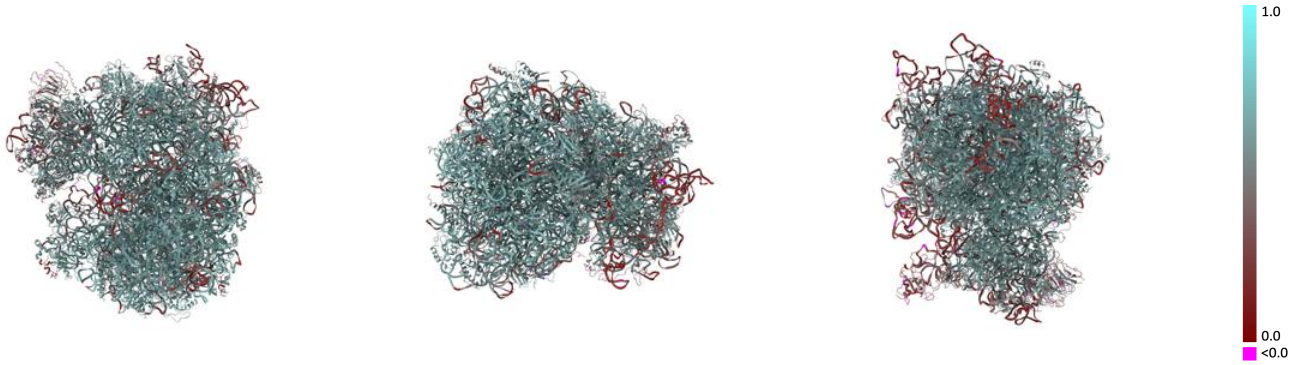
Y



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.

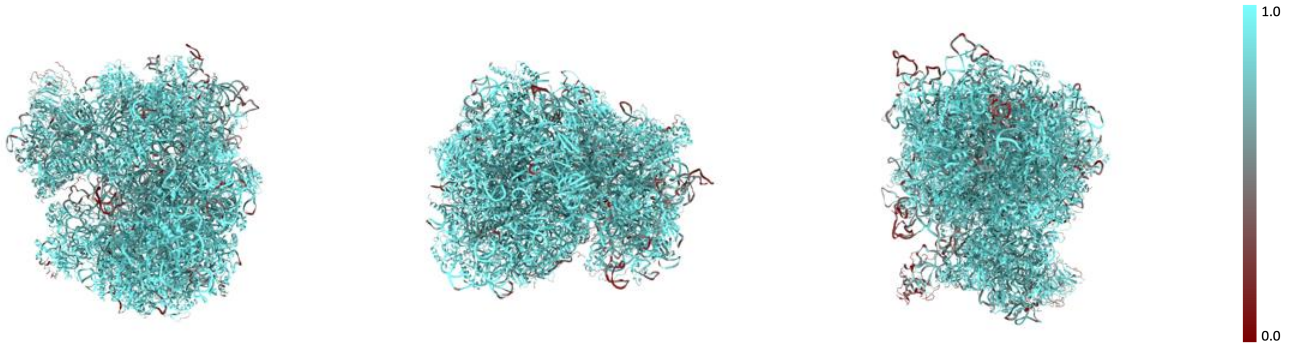
9.2 Q-score mapped to coordinate model (i)



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.

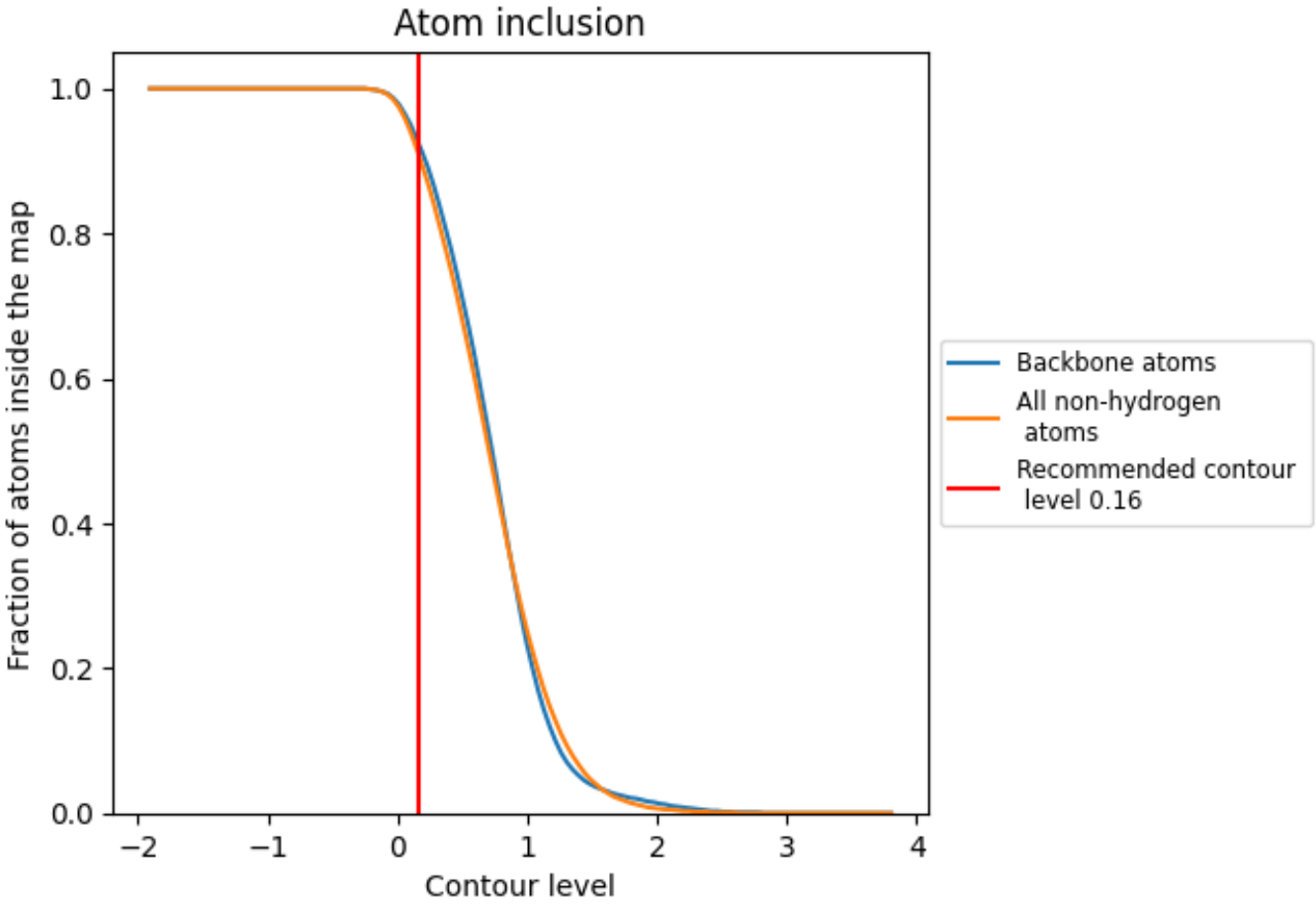
9.3 Atom inclusion mapped to coordinate model (i)



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, 92% of all backbone atoms, 91% 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	0.9110	0.5700
Cc	0.9350	0.5430
LA	0.9330	0.5910
LB	0.9610	0.5940
LC	0.9640	0.6120
LD	0.9810	0.6620
LE	0.9730	0.6390
LF	0.9660	0.6290
LG	0.8670	0.5520
LH	0.9050	0.5720
LI	0.9670	0.6340
LJ	0.9260	0.5810
LK	0.9450	0.6020
LL	0.9470	0.6170
LM	0.9400	0.5800
LN	0.9540	0.6150
LO	0.9570	0.6100
LP	0.9900	0.6630
LQ	0.9690	0.6330
LR	0.9610	0.6340
LS	0.9760	0.6480
LT	0.9190	0.6040
LU	0.9650	0.6330
LV	0.9750	0.6360
LW	0.8990	0.5290
LX	0.9640	0.6410
LY	0.9710	0.6440
LZ	0.9610	0.6190
La	0.8660	0.5320
Lb	0.9310	0.5870
Lc	0.9780	0.6500
Ld	0.9710	0.6250
Le	0.9640	0.6280
Lf	0.9220	0.6010
Lg	0.9200	0.6070



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Chain	Atom inclusion	Q-score
Lh	0.9790	0.6570
Li	0.9530	0.6210
Lj	0.9720	0.6250
Lk	0.9360	0.5970
Ll	0.9900	0.6600
Lm	0.8530	0.5170
Ln	0.9690	0.6310
Lo	0.9770	0.6290
Lp	0.9950	0.6630
Lq	0.9640	0.6340
Lr	0.9430	0.6380
S2	0.8550	0.5000
SA	0.8490	0.5270
SB	0.8660	0.5300
SC	0.8400	0.4660
SD	0.4000	0.2330
SE	0.8250	0.4700
SF	0.9020	0.5630
SG	0.8930	0.5570
SH	0.8850	0.5420
SI	0.8400	0.5040
SJ	0.8400	0.4950
SK	0.7550	0.4510
SL	0.8730	0.5390
SM	0.9570	0.5950
SN	0.3260	0.2100
SO	0.7530	0.4150
SP	0.9530	0.5990
SQ	0.9180	0.5890
SR	0.9610	0.6220
SS	0.9570	0.5960
ST	0.8600	0.4940
SU	0.8770	0.5230
SV	0.9500	0.6050
SW	0.9070	0.5610
SX	0.9450	0.6260
SY	0.9580	0.6210
SZ	0.9570	0.6080
Sa	0.9400	0.5970
Sb	0.9730	0.6440
Sc	0.9550	0.6270
Sd	0.8850	0.5300

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Chain	Atom inclusion	Q-score
Se	0.9660	0.6320
Sf	0.9280	0.5800
Sg	0.8410	0.5250
eR	0.8130	0.5080
mR	0.9710	0.6140
pp	0.6190	0.3830