Full wwPDB EM Validation Report ⓘ

May 19, 2025 – 06:35 PM EDT

PDB ID	:	9BUQ / pdb_00009buq
EMDB ID	:	EMD-44916
Title	:	Single particle cryoEM structure of the Pf80S ribosome in the POST state (nrt with P- and E-site tRNA)
Authors	:	Anton, L.; Haile, M.; Ho, C.M.
Deposited on	:	2024-05-17
Resolution	:	2.30 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:

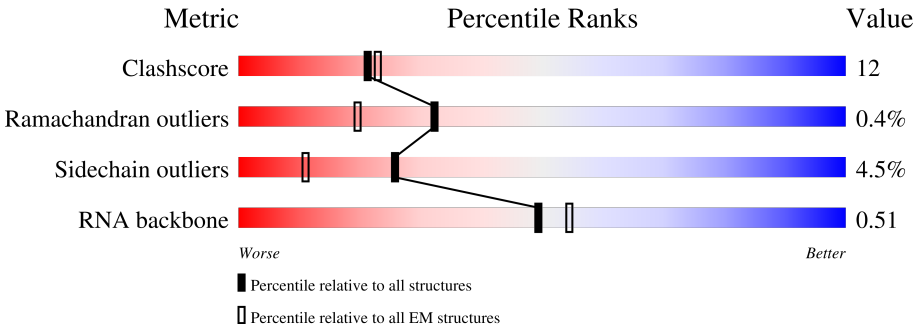
EMDB validation analysis	:	0.0.1.dev118
MolProbity	:	4-5-2 with Phenix2.0rc1
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.43.1

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 2.30 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415
RNA backbone	6643	2191

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	S1	133	56% 34% 10%
2	S2	105	13% 30% 9% 61%
3	S3	107	63% 26% 11%
4	S4	82	60% 30% 7%
5	S5	67	15% 55% 30% 12%
6	S6	58	48% 26% 26%
7	S7	74	30% 58% 12%

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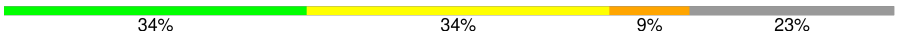
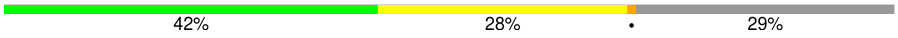
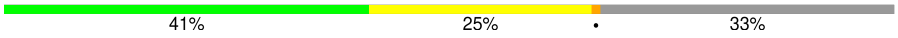
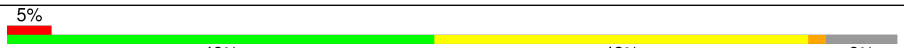
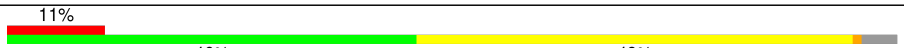
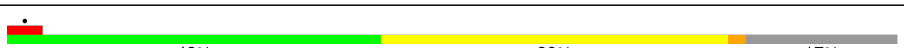
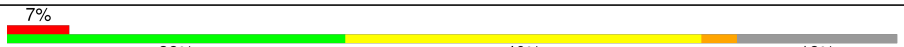
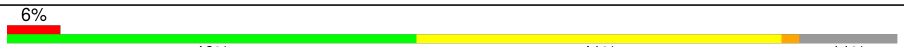
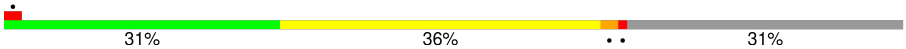
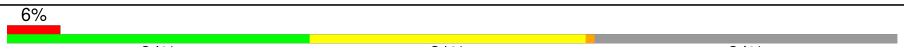
Mol	Chain	Length	Quality of chain
8	SA	2092	
9	SB	262	
10	SC	263	
11	SD	221	
12	SE	189	
13	SF	261	
14	SG	272	
15	SH	306	
16	SI	195	
17	SJ	194	
18	SK	130	
19	SL	218	
20	SM	144	
21	SN	118	
22	SO	137	
23	SP	151	
24	SQ	145	
25	SR	141	
26	SS	156	
27	ST	54	
28	SU	151	
29	SV	161	
30	SW	137	
31	SX	145	
32	SY	170	

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Mol	Chain	Length	Quality of chain
33	SZ	82	50% 35% 12%
34	AA	3788	45% 32% 7% 16%
35	AC	159	50% 35% 10% 5%
36	AB	119	57% 34% 8%
37	AL	215	74% 21%
38	A1	146	59% 34%
39	A2	127	61% 20% 17%
40	A4	67	76% 22%
41	A6	108	61% 28% 9%
42	A7	120	62% 17% 20%
43	AN	165	62% 25% 11%
44	A8	131	58% 35% 5%
45	A9	140	56% 18% 26%
46	Aa	150	46% 24% 29%
47	Ab	112	57% 27% 15%
48	Ad	87	52% 31% 17%
49	Ae	51	76% 8% 16%
50	Af	128	31% 8% 60%
51	AP	205	66% 32%
52	Ah	96	64% 23% 11%
53	Ai	104	78% 13% 9%
54	AI	221	66% 24% 6%
55	AJ	283	51% 26% 22%
56	Ac	92	71% 26%
57	AK	202	76% 23%

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Mol	Chain	Length	Quality of chain
58	AM	139	66% 27% • 5%
59	AS	187	78% 20% ••
60	AO	148	81% 16% • •
61	AQ	219	59% 27% 14%
62	AR	294	63% 21% • 14%
63	AW	173	75% 23% • •
64	AY	190	33% 19% • 47%
65	AT	182	73% 25% • •
66	AZ	126	67% 26% • •
67	A3	124	69% 24% • •
68	A5	257	67% 19% 13%
69	AD	260	68% 25% • 5%
70	AE	386	77% 21% • •
71	AF	411	74% 20% • 5%
72	AG	173	42% 29% • 28%
73	AU	184	67% 30% • •
74	AH	190	69% 23% 5% •
75	AV	161	67% 28% • •
76	Ag	39	54% 38% • 5%
77	AX	139	36% 30% • 30%
78	A0	162	28% 10% 62%
79	S9	76	51% 36% 13%
80	mR	7	71% 29%

2 Entry composition (i)

There are 80 unique types of molecules in this entry. The entry contains 194758 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called 40S ribosomal protein S24.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	S1	120	985	632	189	162	2	0	0

- Molecule 2 is a protein called 40S ribosomal protein S25.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
2	S2	41	320	208	56	56	0	0

- Molecule 3 is a protein called 40S ribosomal protein S26.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	S3	95	781	478	169	128	6	0	0

- Molecule 4 is a protein called 40S ribosomal protein S27.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	S4	76	586	368	102	107	9	0	0

- Molecule 5 is a protein called 40S ribosomal protein S28e.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	S5	59	465	290	94	80	1	0	0

- Molecule 6 is a protein called 40S ribosomal protein S30.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
6	S6	43	345	213	75	57	0	0

- Molecule 7 is a RNA chain called E-site tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	S7	74	Total	C	N	O	P	0	0
			1571	702	275	521	73		

- Molecule 8 is a RNA chain called 18S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	SA	1608	Total	C	N	O	P	0	0
			34208	15346	6106	11170	1586		

- Molecule 9 is a protein called 40S ribosomal protein S3a.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	SB	210	Total	C	N	O	S	0	0
			1713	1097	301	303	12		

- Molecule 10 is a protein called 40S ribosomal protein SA.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	SC	195	Total	C	N	O	S	0	0
			1538	990	266	273	9		

- Molecule 11 is a protein called 40S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	SD	157	Total	C	N	O	S	0	0
			1228	782	225	214	7		

- Molecule 12 is a protein called 40S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	SE	185	Total	C	N	O	S	0	0
			1514	962	290	260	2		

- Molecule 13 is a protein called 40S ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	SF	257	Total	C	N	O	S	0	0
			2061	1320	377	356	8		

- Molecule 14 is a protein called 40S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	SG	224	Total	C	N	O	S	0	0
			1757	1132	307	309	9		

- Molecule 15 is a protein called 40S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	SH	204	Total	C	N	O	S	0	0
			1651	1046	316	283	6		

- Molecule 16 is a protein called 40S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	SI	180	Total	C	N	O	S	0	0
			1424	893	263	258	10		

- Molecule 17 is a protein called 40S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	SJ	188	Total	C	N	O	S	0	0
			1528	982	264	278	4		

- Molecule 18 is a protein called 40S ribosomal protein S15A.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	SK	129	Total	C	N	O	S	0	0
			1037	665	189	178	5		

- Molecule 19 is a protein called 40S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	SL	171	Total	C	N	O	S	0	0
			1383	872	264	243	4		

- Molecule 20 is a protein called 40S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	SM	138	Total	C	N	O	S	0	0
			1098	704	200	193	1		

- Molecule 21 is a protein called 40S ribosomal protein S20e.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	SN	98	Total	C	N	O	S	0	0
			772	484	135	148	5		

- Molecule 22 is a protein called 40S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	SO	79	Total	C	N	O	S	0	0
			686	450	116	118	2		

- Molecule 23 is a protein called 40S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	SP	127	Total	C	N	O	S	0	0
			954	591	184	176	3		

- Molecule 24 is a protein called 40S ribosomal protein S23.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	SQ	144	Total	C	N	O	S	0	0
			1129	712	222	193	2		

- Molecule 25 is a protein called 40S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	SR	98	Total	C	N	O	S	0	0
			746	474	123	145	4		

- Molecule 26 is a protein called 40S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	SS	128	Total	C	N	O	S	0	0
			1046	657	205	180	4		

- Molecule 27 is a protein called 40S ribosomal protein S29.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	ST	48	Total	C	N	O	S	0	0
			405	252	85	64	4		

- Molecule 28 is a protein called 40S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	SU	149	Total	C	N	O	S	0	0
			1202	769	220	210	3		

- Molecule 29 is a protein called 40S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	SV	146	Total	C	N	O	S	0	0
			1206	772	227	200	7		

- Molecule 30 is a protein called 40S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	SW	95	Total	C	N	O	S	0	0
			785	498	149	135	3		

- Molecule 31 is a protein called 40S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	SX	96	Total	C	N	O	S	0	0
			776	497	137	138	4		

- Molecule 32 is a protein called 40S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	SY	154	Total	C	N	O	S	0	0
			1266	811	239	214	2		

- Molecule 33 is a protein called 40S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	SZ	72	Total	C	N	O	S	0	0
			557	346	102	105	4		

- Molecule 34 is a RNA chain called 28S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	AA	3193	Total	C	N	O	P	0	0
			67884	30446	12053	22224	3161		

- Molecule 35 is a RNA chain called 5.8S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	AC	151	Total	C	N	O	P	0	0
			3215	1444	589	1034	148		

- Molecule 36 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	AB	118	Total	C	N	O	P	0	0
			2517	1126	457	817	117		

- Molecule 37 is a protein called 60S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	AL	211	Total	C	N	O	S	0	0
			1761	1119	349	290	3		

- Molecule 38 is a protein called 60S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	A1	140	Total	C	N	O	S	0	0
			1134	736	204	191	3		

- Molecule 39 is a protein called 60S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	A2	105	Total	C	N	O	S	0	0
			837	534	152	148	3		

- Molecule 40 is a protein called 60S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	A4	66	Total	C	N	O	S	0	0
			555	347	116	90	2		

- Molecule 41 is a protein called 60S ribosomal protein L30e.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	A6	98	Total	C	N	O	S	0	0
			740	462	132	139	7		

- Molecule 42 is a protein called 60S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	A7	96	Total	C	N	O	S	0	0
			793	508	151	129	5		

- Molecule 43 is a protein called 60S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	AN	147	Total	C	N	O	S	0	0
			1210	787	212	205	6		

- Molecule 44 is a protein called 60S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	A8	125	Total	C	N	O	S	0	0
			1036	660	206	163	7		

- Molecule 45 is a protein called 60S ribosomal protein L35ae.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	A9	103	Total	C	N	O	S	0	0
			844	543	163	135	3		

- Molecule 46 is a protein called 60S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	Aa	106	Total	C	N	O	S	0	0
			858	530	184	138	6		

- Molecule 47 is a protein called 60S ribosomal protein L36.

Mol	Chain	Residues	Atoms				AltConf	Trace
47	Ab	95	Total	C	N	O	0	0
			756	477	150	129		

- Molecule 48 is a protein called 60S ribosomal protein L38.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	Ad	72	Total	C	N	O	S	0	0
			603	395	107	99	2		

- Molecule 49 is a protein called 60S ribosomal protein L39.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	Ae	43	Total	C	N	O	S	0	0
			388	243	92	52	1		

- Molecule 50 is a protein called Ubiquitin-60S ribosomal protein L40.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	Af	51	Total	C	N	O	S	0	0
			413	255	87	66	5		

- Molecule 51 is a protein called Ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	AP	204	Total	C	N	O	S	0	0
			1697	1075	351	267	4		

- Molecule 52 is a protein called Large ribosomal subunit protein eL43.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	Ah	85	Total	C	N	O	S	0	0
			658	417	127	107	7		

- Molecule 53 is a protein called Large ribosomal subunit protein eL42.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	Ai	95	Total	C	N	O	S	0	0
			778	490	152	127	9		

- Molecule 54 is a protein called 60S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	AI	207	Total	C	N	O	S	0	0
			1685	1096	298	286	5		

- Molecule 55 is a protein called 60S ribosomal protein L7a.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	AJ	222	Total	C	N	O	S	0	0
			1813	1174	323	309	7		

- Molecule 56 is a protein called Ribosomal protein L37.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	Ac	89	Total	C	N	O	S	0	0
			709	441	150	113	5		

- Molecule 57 is a protein called 60S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	AK	201	Total	C	N	O	S	0	0
			1659	1064	311	276	8		

- Molecule 58 is a protein called 60S ribosomal protein L23, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	AM	132	Total	C	N	O	S	0	0
			996	631	179	178	8		

- Molecule 59 is a protein called 60S ribosomal protein L18-2.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	AS	186	Total	C	N	O	S	0	0
			1503	958	299	241	5		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
60	AO	147	Total	C	N	O	S	0	0
			1172	747	232	189	4		

- Molecule 61 is a protein called 60S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	AQ	189	Total	C	N	O	S	0	0
			1544	984	291	261	8		

- Molecule 62 is a protein called 60S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	AR	252	Total	C	N	O	S	0	0
			2049	1301	385	357	6		

- Molecule 63 is a protein called 60S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
63	AW	170	Total	C	N	O	S	0	0
			1319	824	266	222	7		

- Molecule 64 is a protein called 60S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	AY	101	Total	C	N	O	S	0	0
			796	502	144	144	6		

- Molecule 65 is a protein called 60S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
65	AT	181	Total	C	N	O	S	0	0
			1509	952	309	244	4		

- Molecule 66 is a protein called 60S ribosomal protein L26.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	AZ	121	Total	C	N	O	S	0	0
			1000	626	206	165	3		

- Molecule 67 is a protein called 60S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
67	A3	119	Total	C	N	O	S	0	0
			994	635	194	163	2		

- Molecule 68 is a protein called 60S ribosomal protein L7.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	A5	223	Total	C	N	O	S	0	0
			1879	1211	357	306	5		

- Molecule 69 is a protein called 60S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
69	AD	247	Total	C	N	O	S	0	0
			1866	1166	374	317	9		

- Molecule 70 is a protein called 60S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	AE	380	Total	C	N	O	S	0	0
			3061	1948	575	521	17		

- Molecule 71 is a protein called 60S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	AF	390	Total	C	N	O	S	0	0
			3094	1962	594	527	11		

- Molecule 72 is a protein called 60S ribosomal protein L11a.

Mol	Chain	Residues	Atoms					AltConf	Trace
72	AG	124	Total	C	N	O	S	0	0
			1010	636	197	171	6		

- Molecule 73 is a protein called 60S ribosomal protein L18a.

Mol	Chain	Residues	Atoms					AltConf	Trace
73	AU	180	Total	C	N	O	S	0	0
			1497	946	289	255	7		

- Molecule 74 is a protein called 60S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
74	AH	185	Total	C	N	O	S	0	0
			1475	950	264	255	6		

- Molecule 75 is a protein called 60S ribosomal protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
75	AV	155	Total	C	N	O	S	0	0
			1275	814	241	214	6		

- Molecule 76 is a protein called 60S ribosomal protein L41.

Mol	Chain	Residues	Atoms					AltConf	Trace
76	Ag	37	Total	C	N	O	S	0	0
			343	210	86	45	2		

- Molecule 77 is a protein called 60S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
77	AX	97	Total	C	N	O	S	0	0
			824	548	135	139	2		

- Molecule 78 is a protein called 60S ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
78	A0	62	Total	C	N	O	S	0	0
			521	336	97	87	1		

- Molecule 79 is a RNA chain called P-site tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
79	S9	76	Total	C	N	O	P	0	0
			1620	723	295	527	75		

- Molecule 80 is a RNA chain called mRNA.

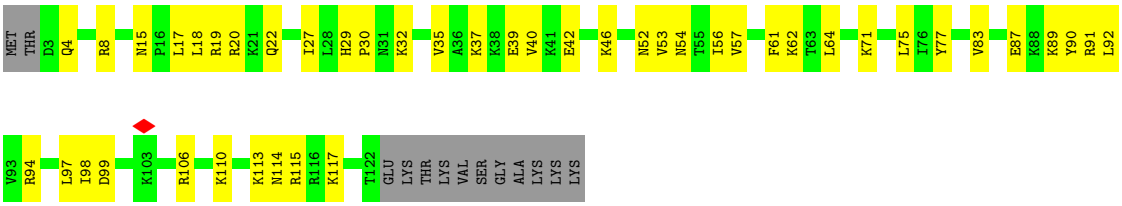
Mol	Chain	Residues	Atoms					AltConf	Trace
80	mR	7	Total	C	N	O	P	0	0
			145	65	21	52	7		

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.

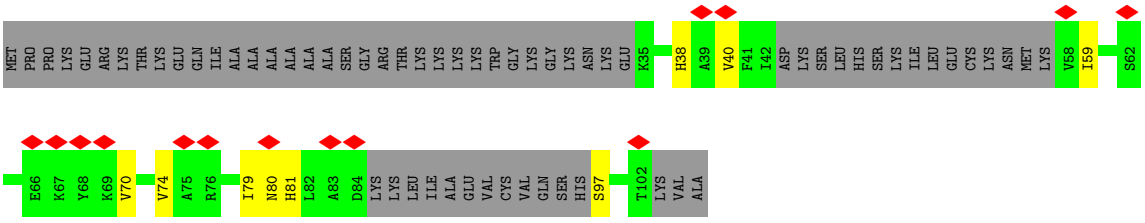
• Molecule 1: 40S ribosomal protein S24

Chain S1:



• Molecule 2: 40S ribosomal protein S25

Chain S2:

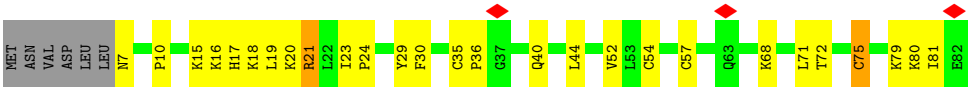


• Molecule 3: 40S ribosomal protein S26

Chain S3:

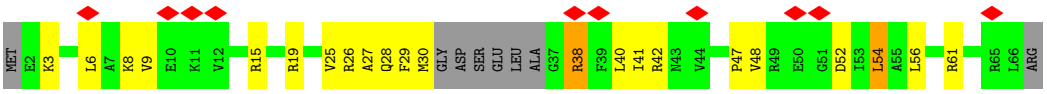
• Molecule 4: 40S ribosomal protein S27

Chain S4:



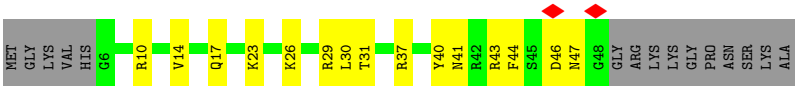
• Molecule 5: 40S ribosomal protein S28e

Chain S5:



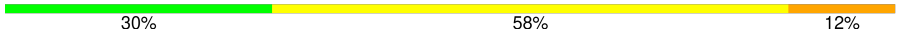
• Molecule 6: 40S ribosomal protein S30

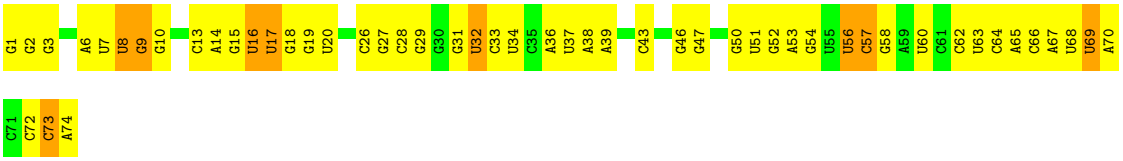
Chain S6:



• Molecule 7: E-site tRNA

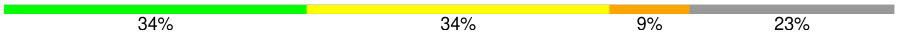
Chain S7:

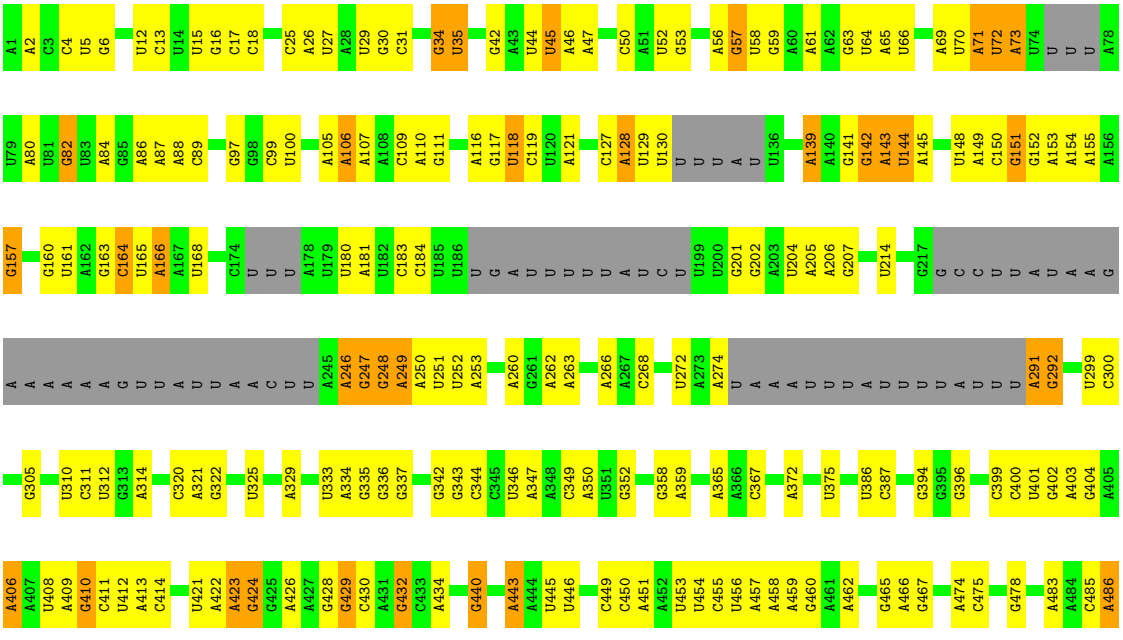


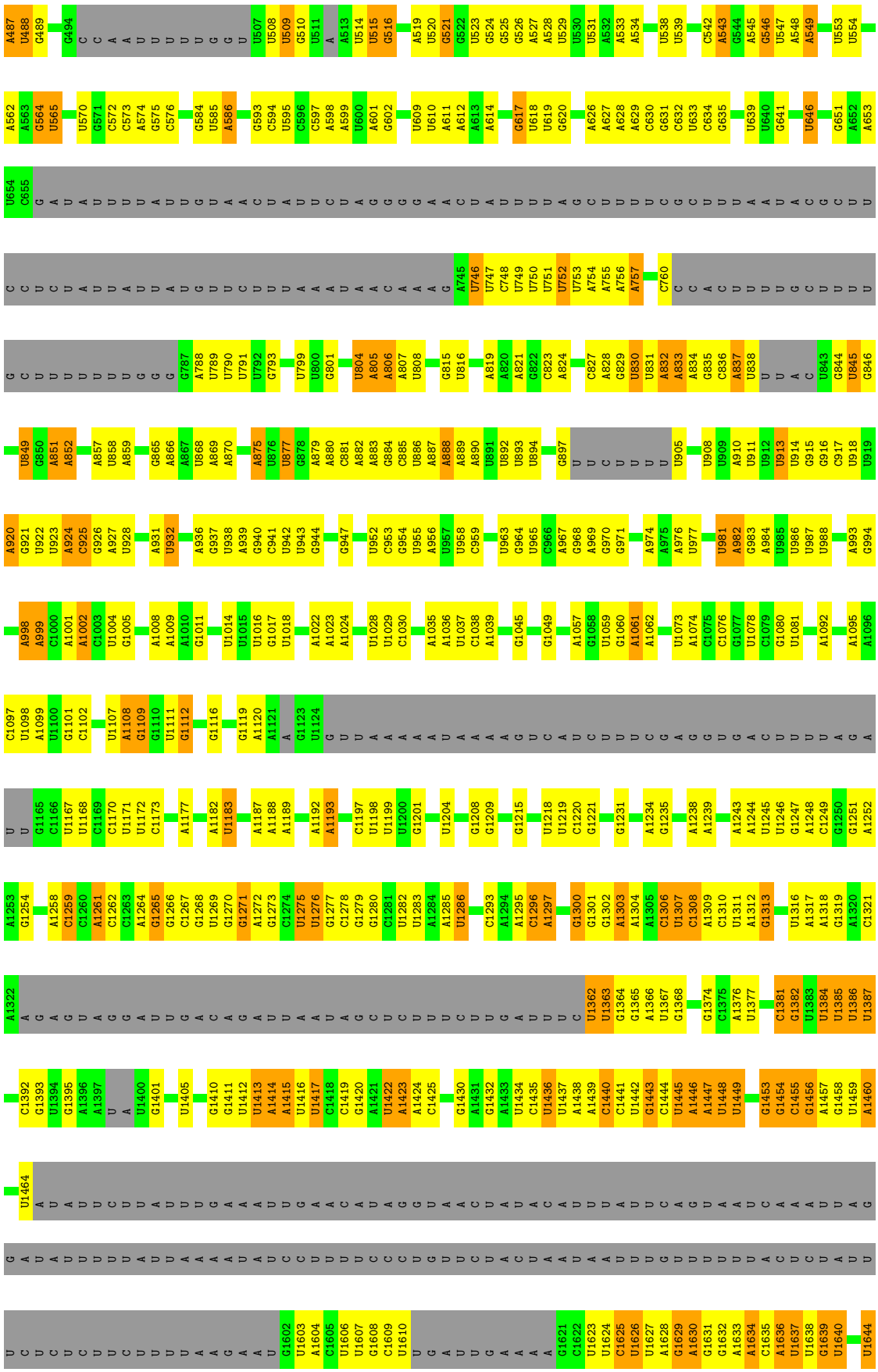


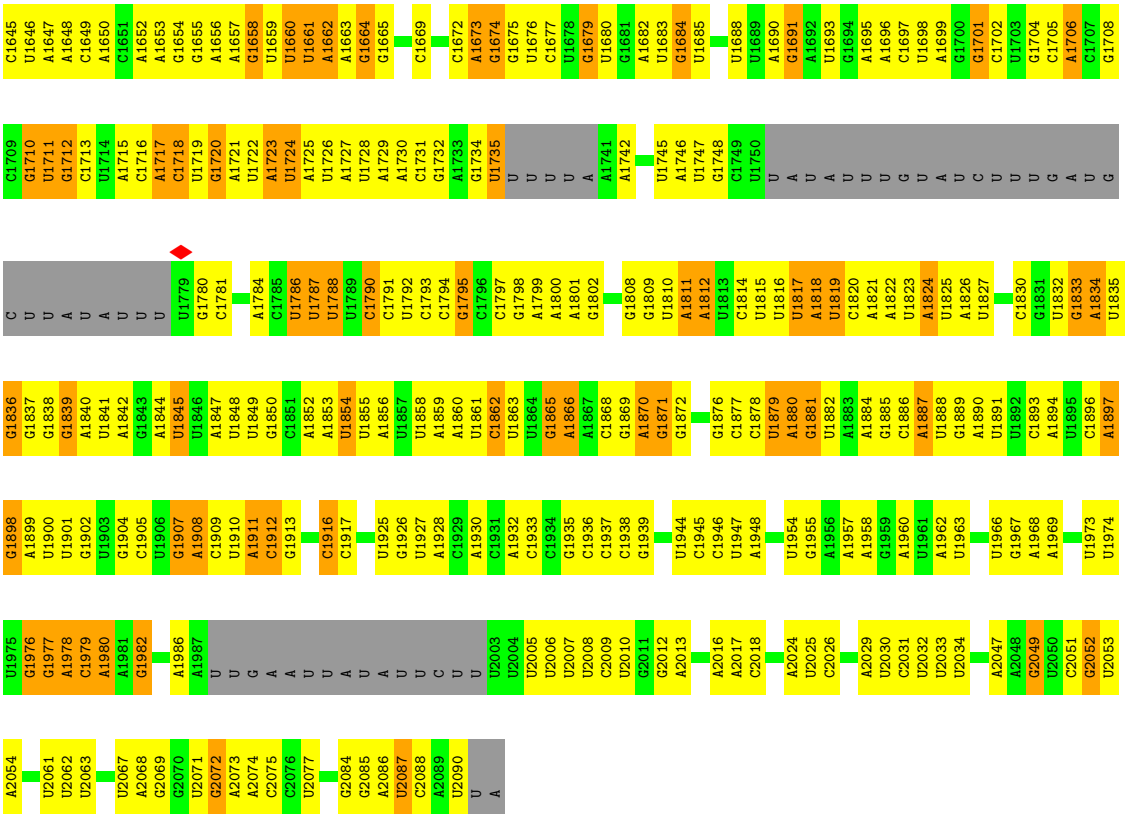
• Molecule 8: 18S ribosomal RNA

Chain SA:



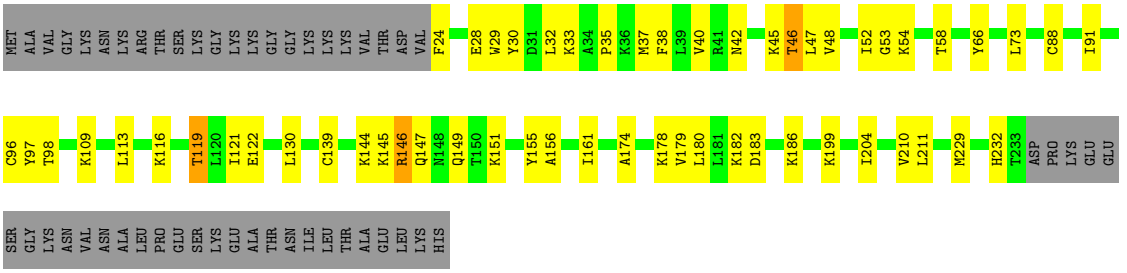






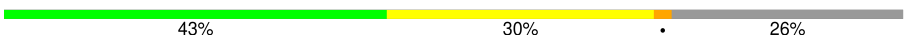
• Molecule 9: 40S ribosomal protein S3a

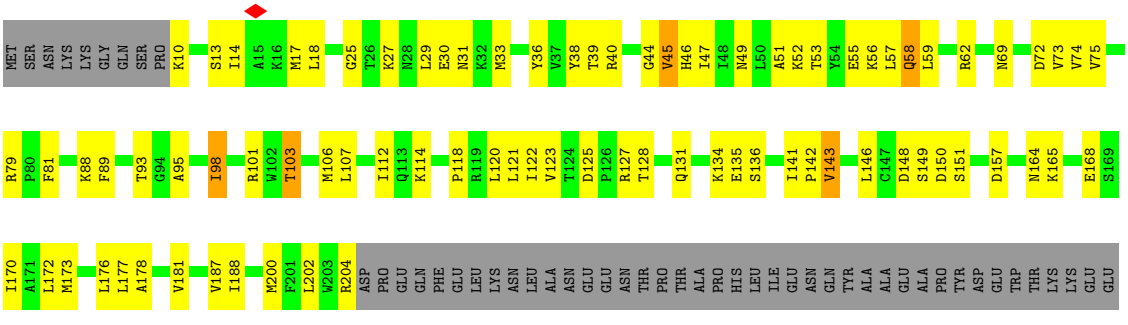
Chain SB:



• Molecule 10: 40S ribosomal protein SA

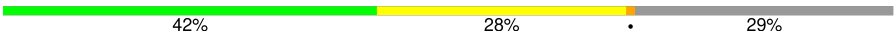
Chain SC:

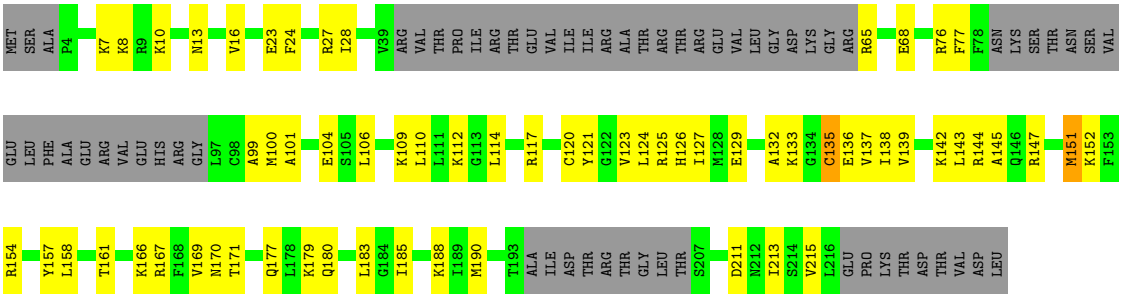




• Molecule 11: 40S ribosomal protein S3

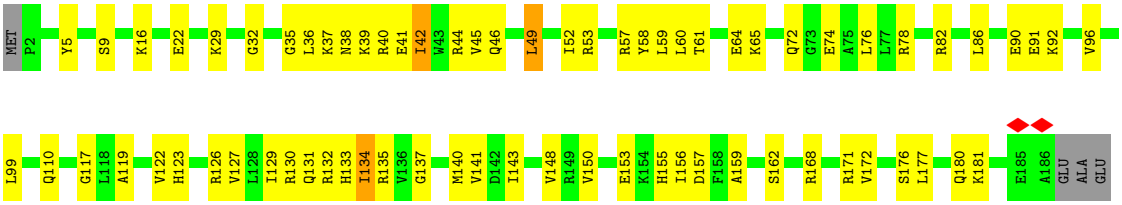
Chain SD:





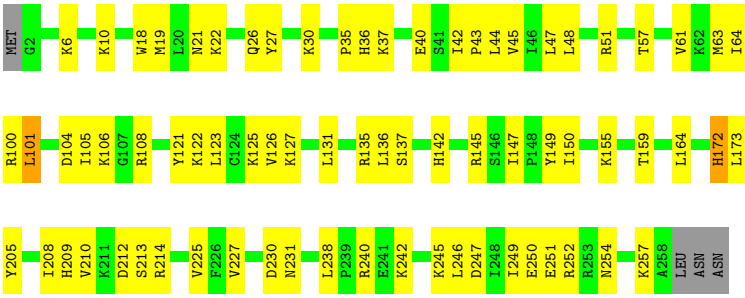
• Molecule 12: 40S ribosomal protein S9

Chain SE:



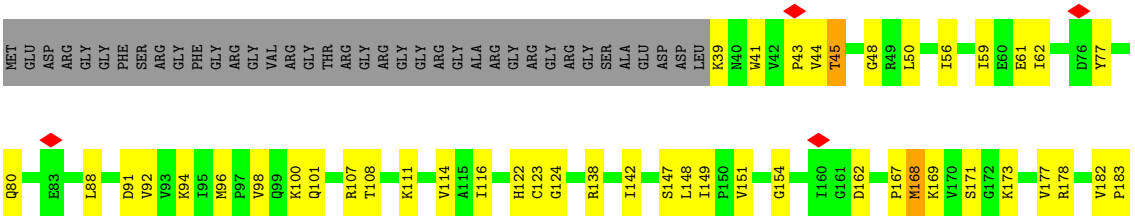
• Molecule 13: 40S ribosomal protein S4

Chain SF:



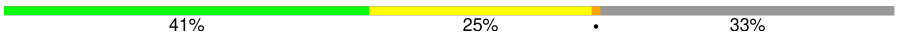
• Molecule 14: 40S ribosomal protein S5

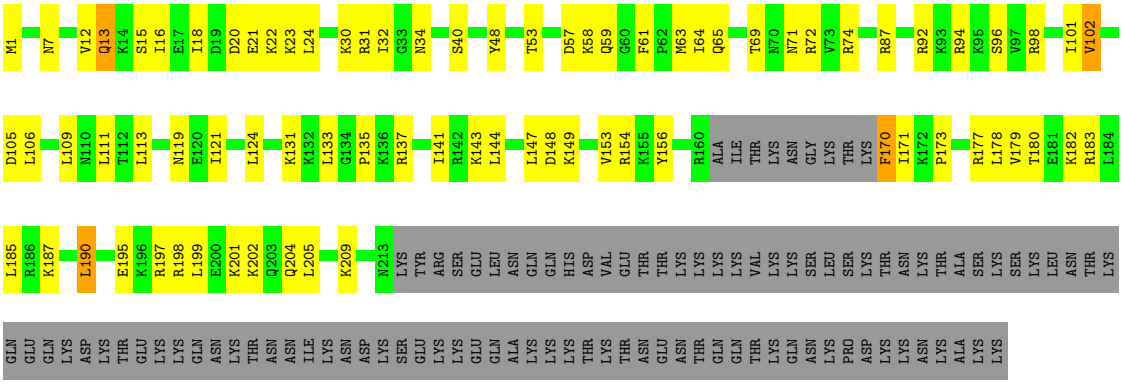
Chain SG:



• Molecule 15: 40S ribosomal protein S6

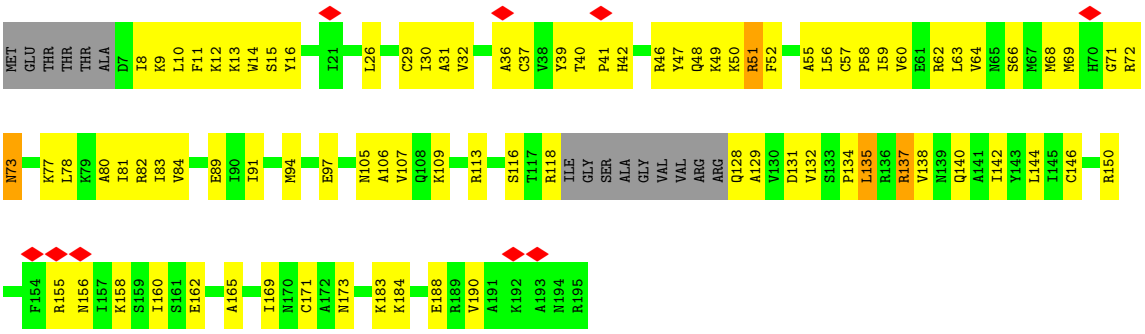
Chain SH:





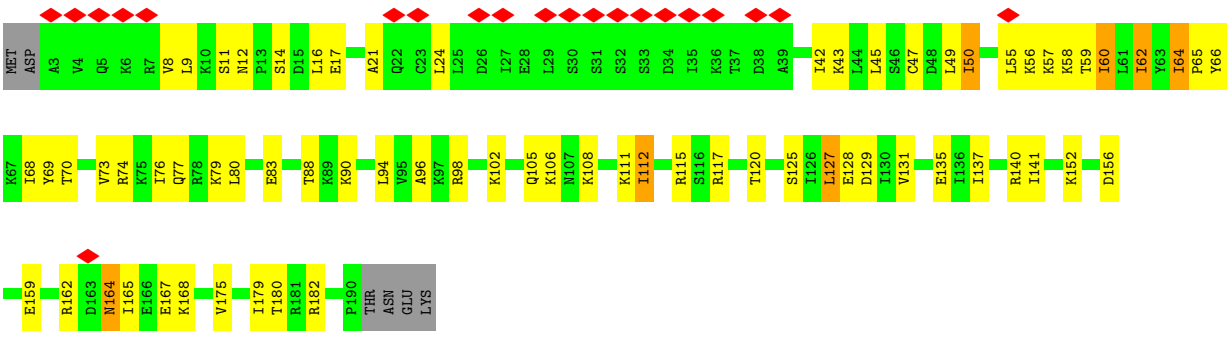
• Molecule 16: 40S ribosomal protein S5

Chain SI:



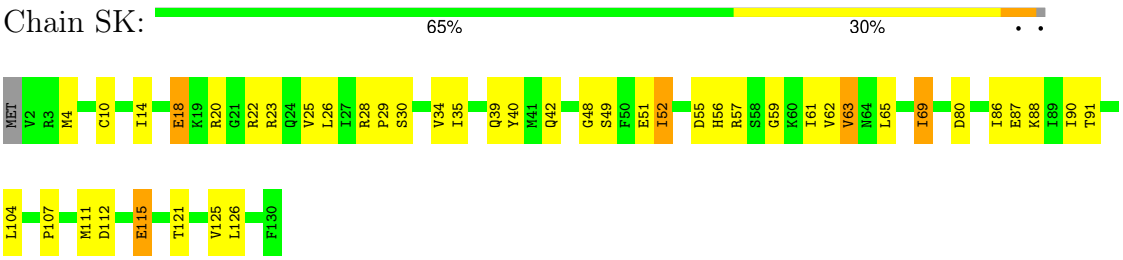
• Molecule 17: 40S ribosomal protein S7

Chain SJ:



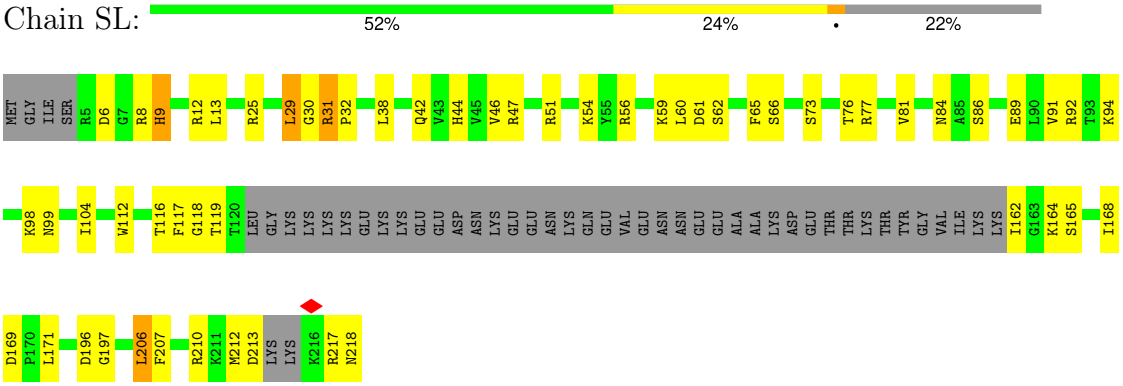
• Molecule 18: 40S ribosomal protein S15A

Chain SK:



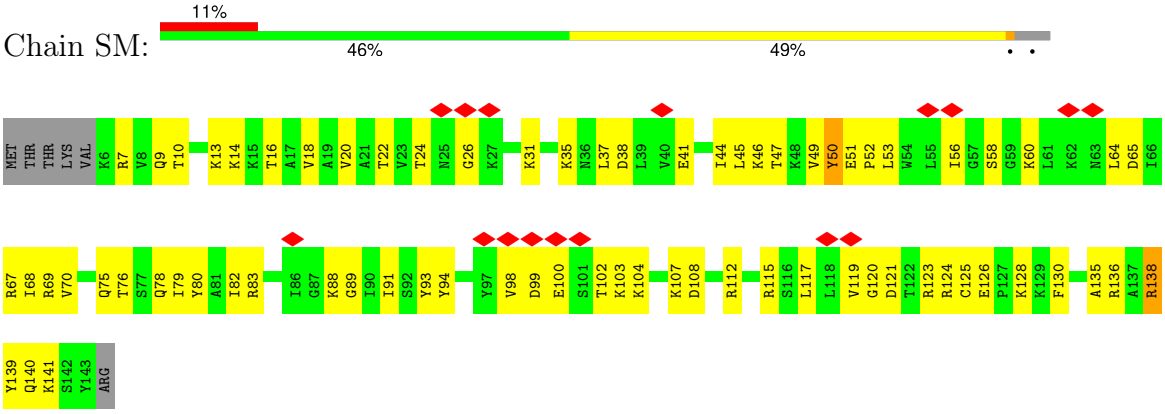
• Molecule 19: 40S ribosomal protein S8

Chain SL:



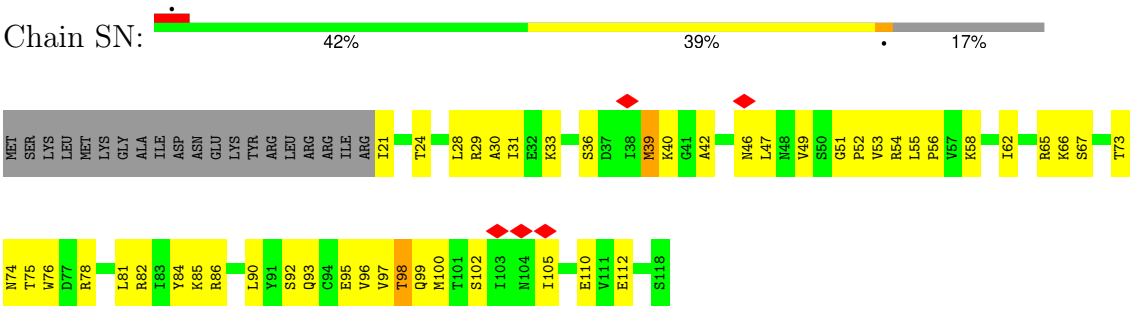
• Molecule 20: 40S ribosomal protein S16

Chain SM:



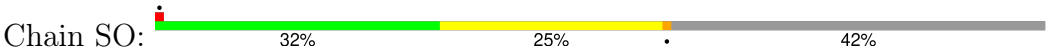
• Molecule 21: 40S ribosomal protein S20e

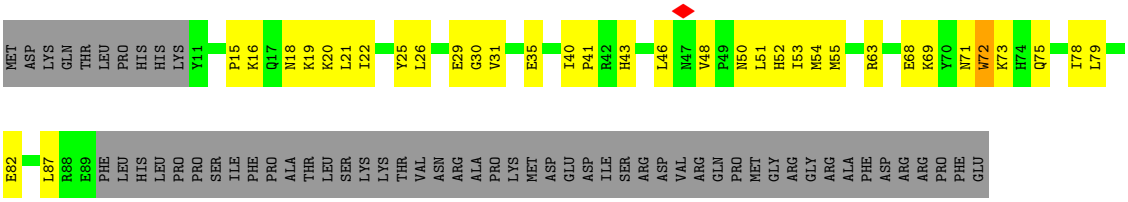
Chain SN:

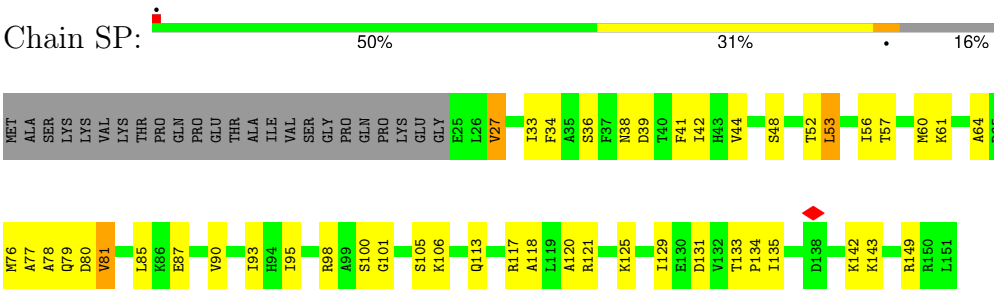


• Molecule 22: 40S ribosomal protein S10

Chain SO:





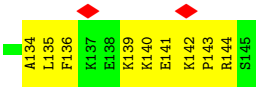


• Molecule 23: 40S ribosomal protein S11

Chain SP:

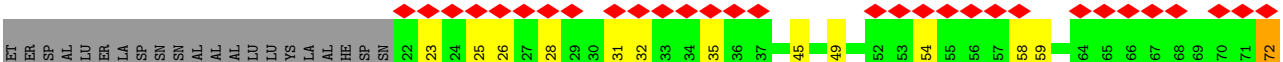
• Molecule 24: 40S ribosomal protein S23

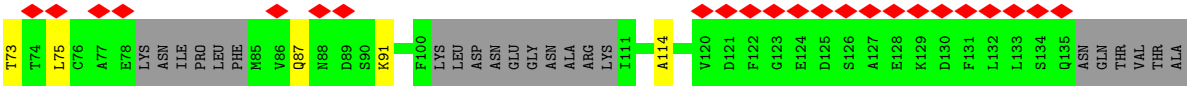
Chain SQ:



• Molecule 25: 40S ribosomal protein S12

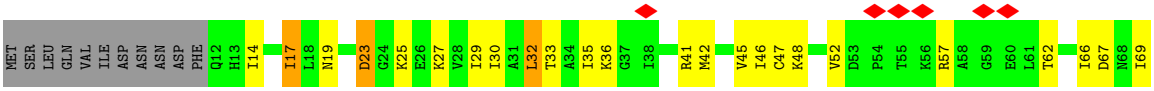
Chain SR:

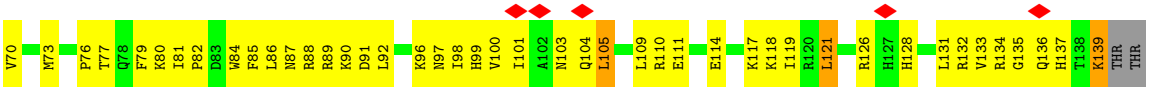


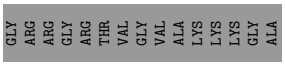


• Molecule 26: 40S ribosomal protein S18

Chain SS:

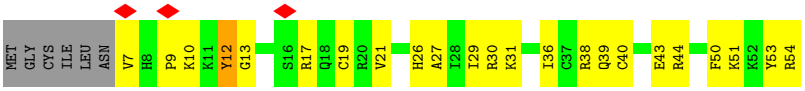






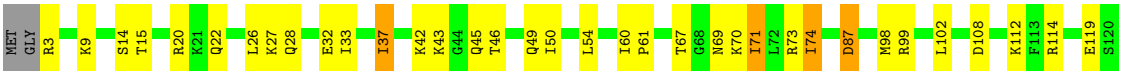
• Molecule 27: 40S ribosomal protein S29

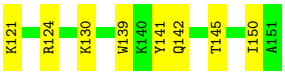
Chain ST:



• Molecule 28: 40S ribosomal protein S15

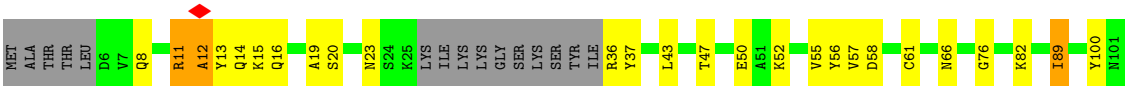
Chain SU:

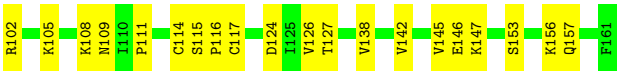




• Molecule 29: 40S ribosomal protein S11

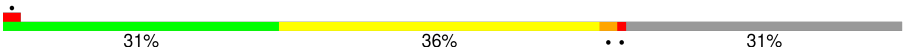
Chain SV:

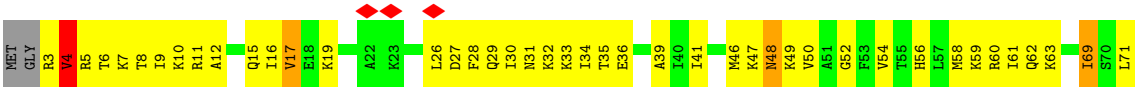




• Molecule 30: 40S ribosomal protein S17

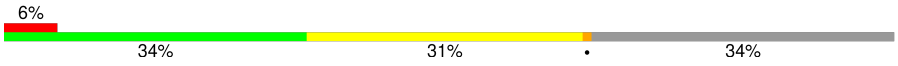
Chain SW:

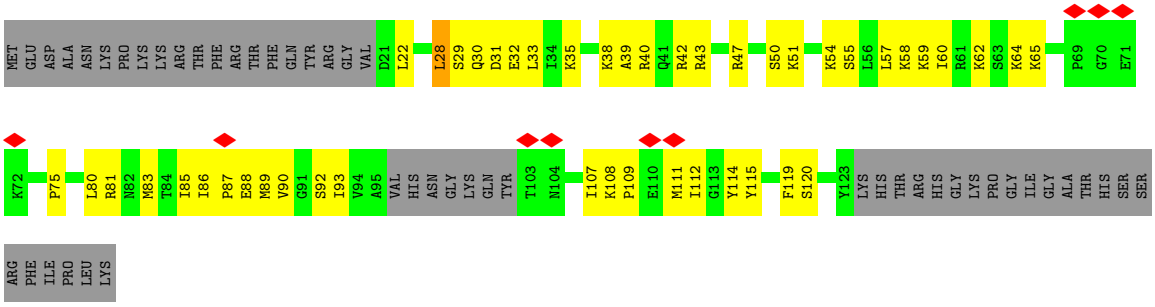




• Molecule 31: 40S ribosomal protein S19

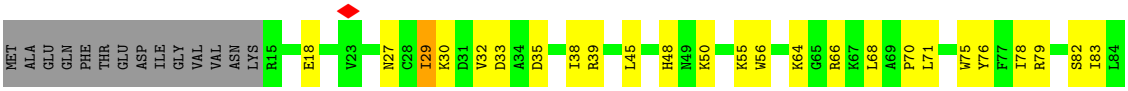
Chain SX:





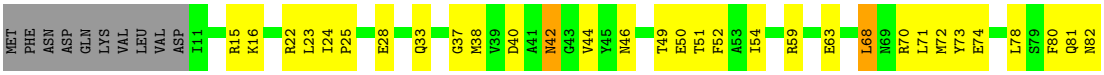
• Molecule 32: 40S ribosomal protein S19

Chain SY:



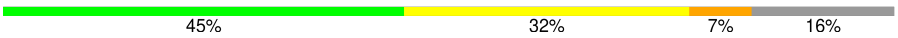
• Molecule 33: 40S ribosomal protein S21

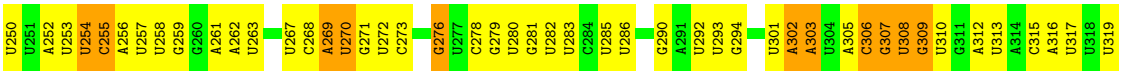
Chain SZ:

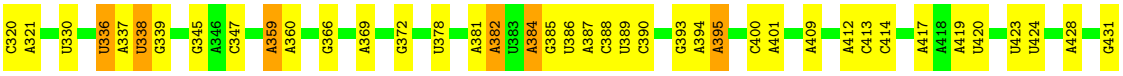


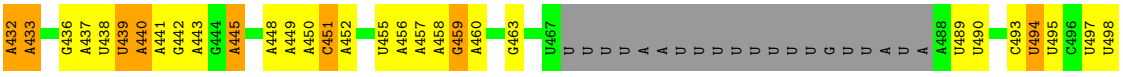
• Molecule 34: 28S ribosomal RNA

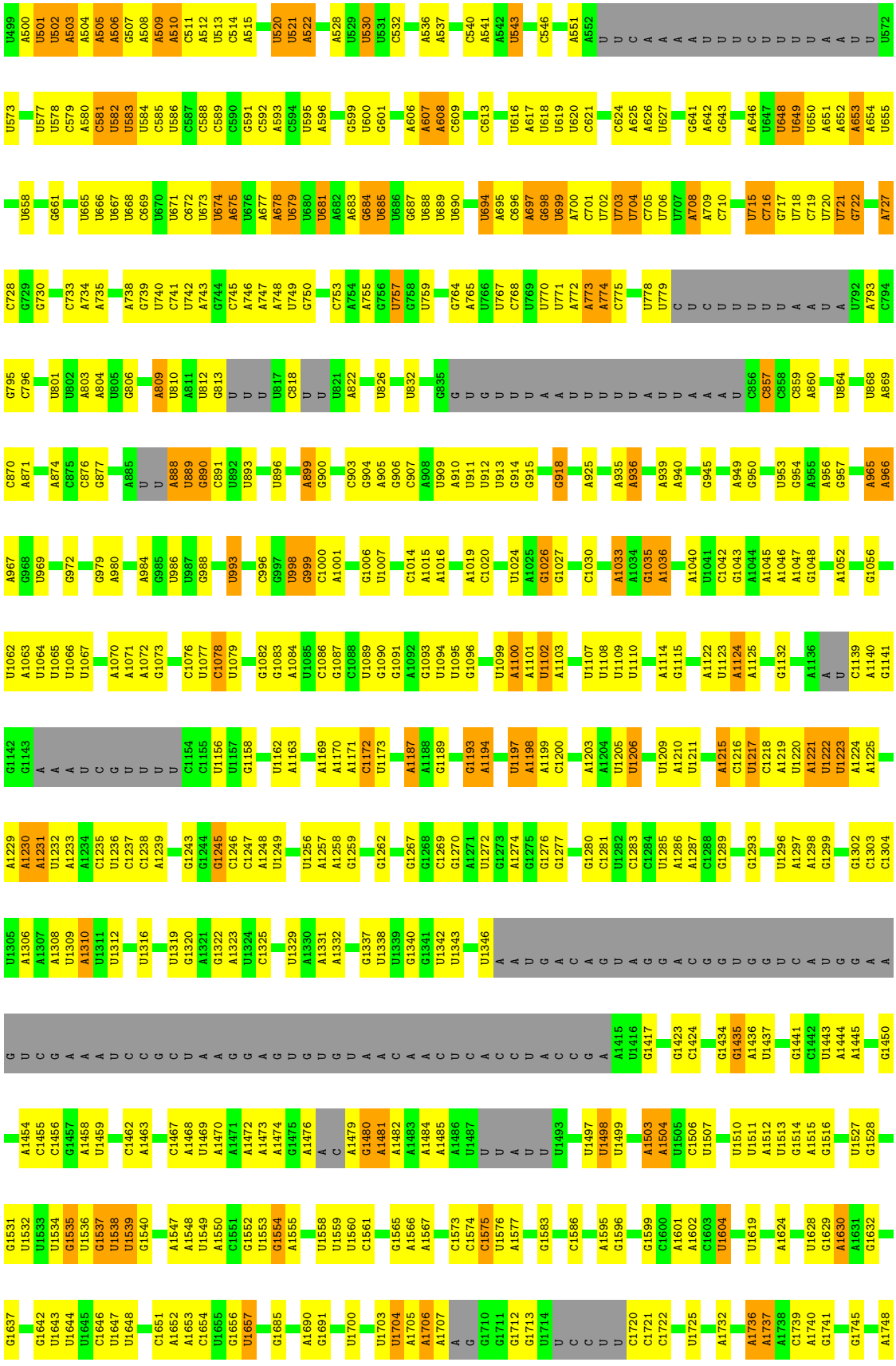
Chain AA:

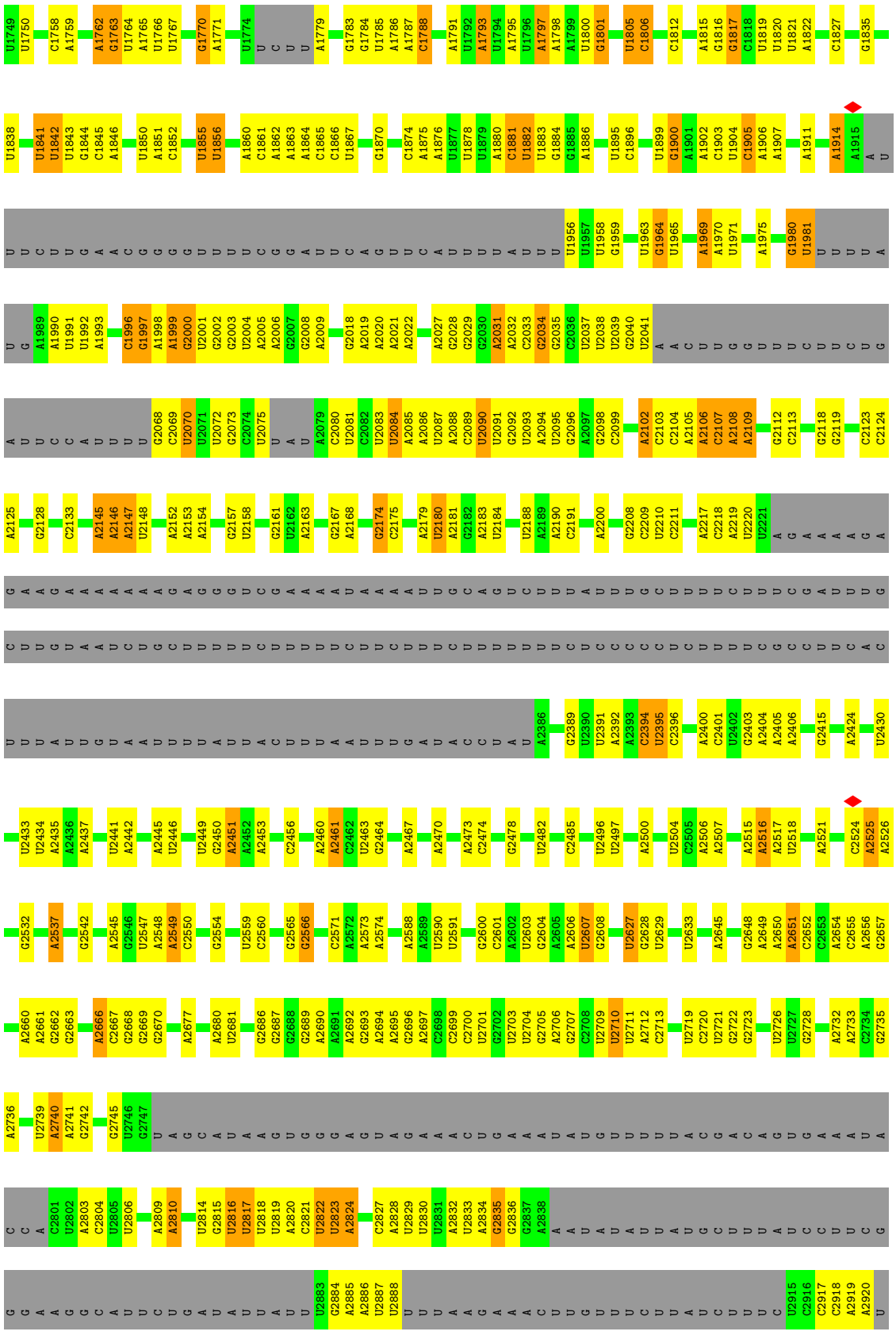


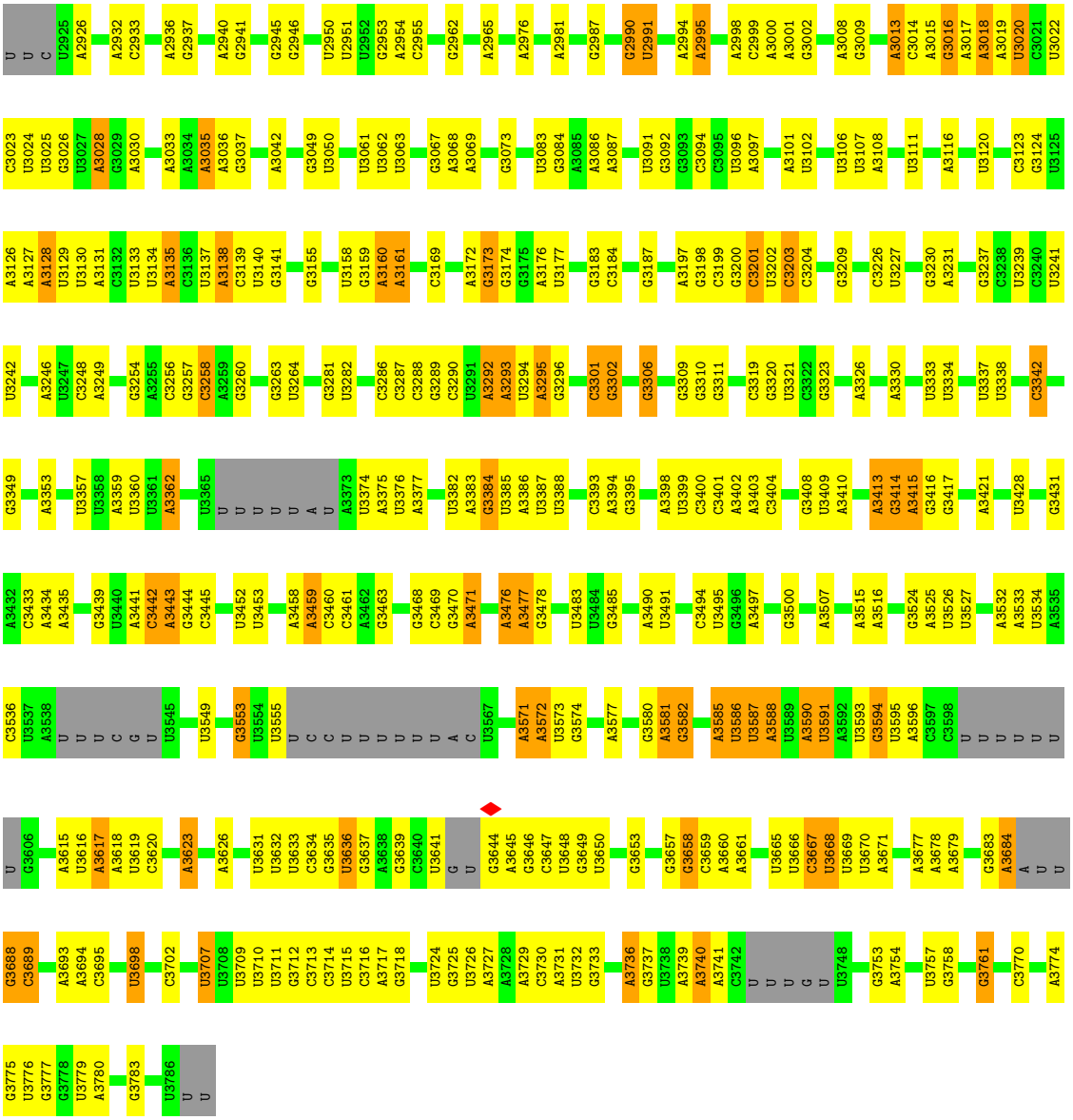






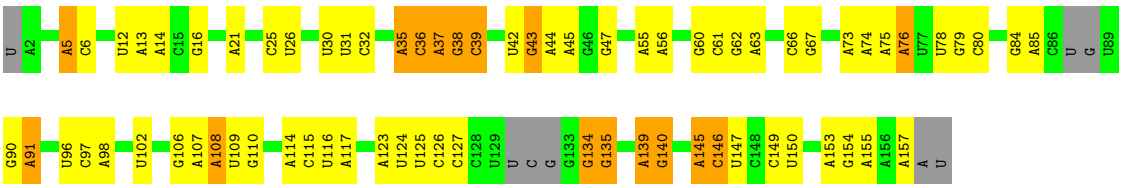






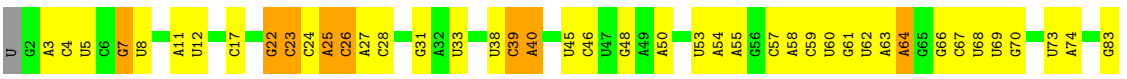
• Molecule 35: 5.8S ribosomal RNA

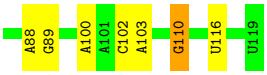
Chain AC:



• Molecule 36: 5S ribosomal RNA

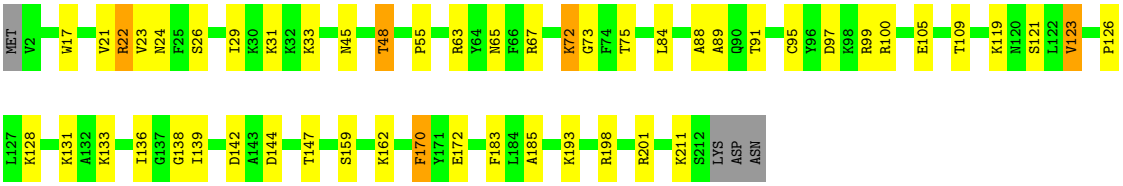
Chain AB:





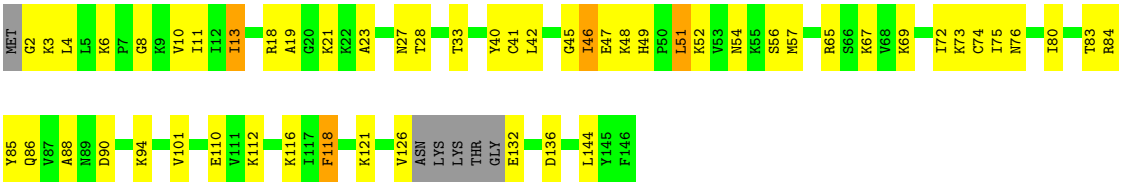
• Molecule 37: 60S ribosomal protein L13

Chain AL:



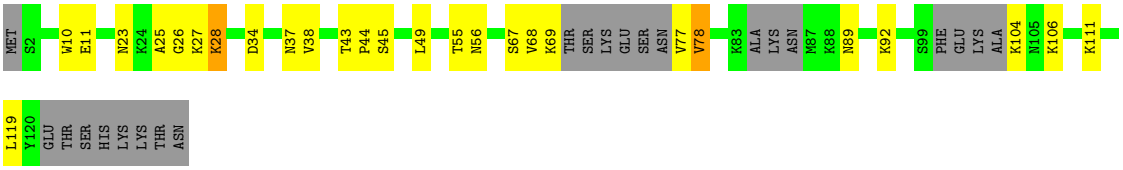
• Molecule 38: 60S ribosomal protein L27

Chain A1:



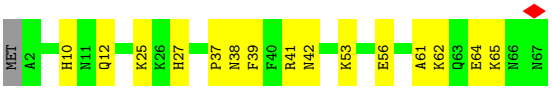
• Molecule 39: 60S ribosomal protein L28

Chain A2:



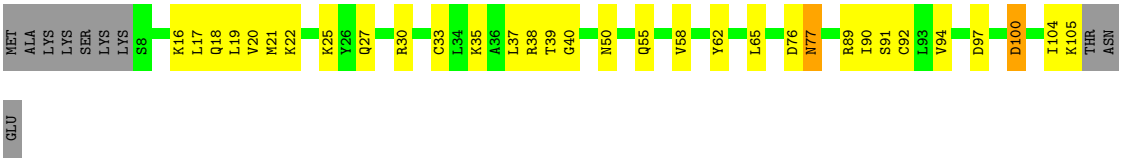
• Molecule 40: 60S ribosomal protein L29

Chain A4:



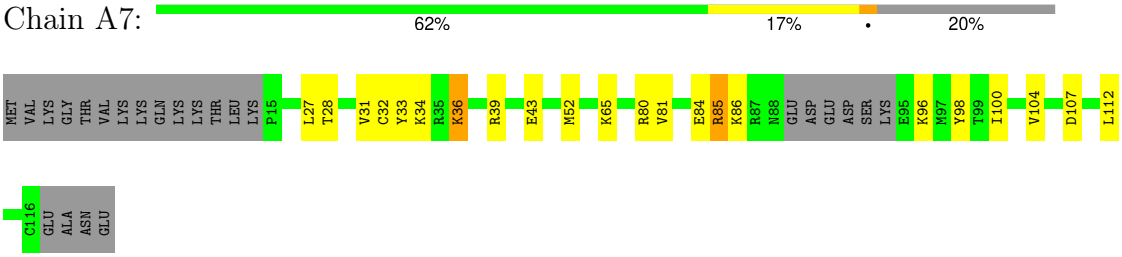
• Molecule 41: 60S ribosomal protein L30e

Chain A6:



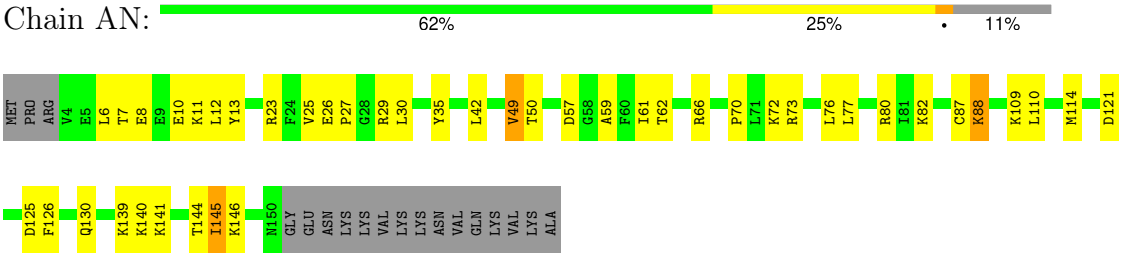
• Molecule 42: 60S ribosomal protein L31

Chain A7:



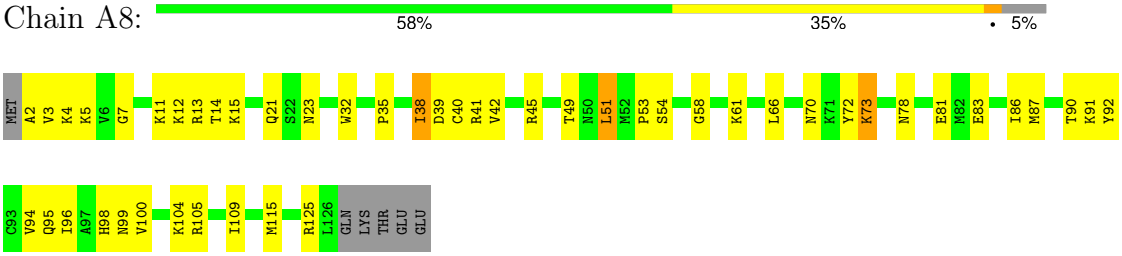
• Molecule 43: 60S ribosomal protein L14

Chain AN:



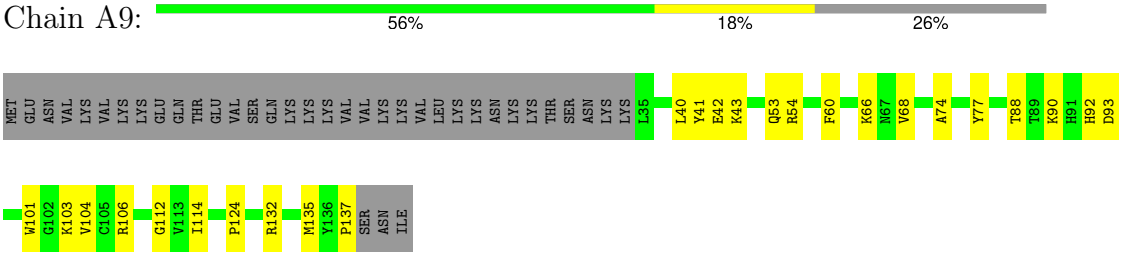
• Molecule 44: 60S ribosomal protein L32

Chain A8:



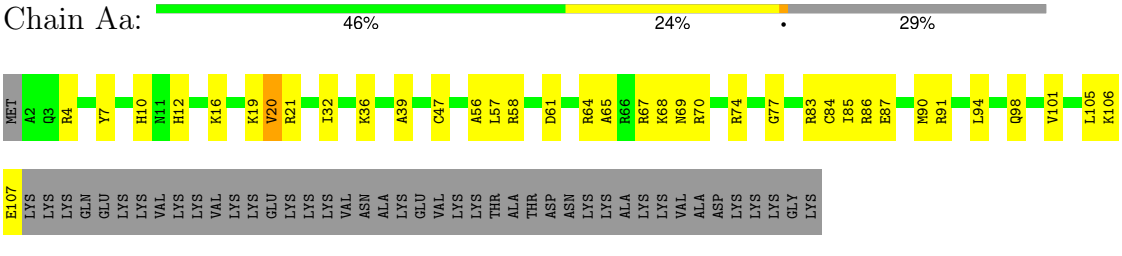
• Molecule 45: 60S ribosomal protein L35ae

Chain A9:



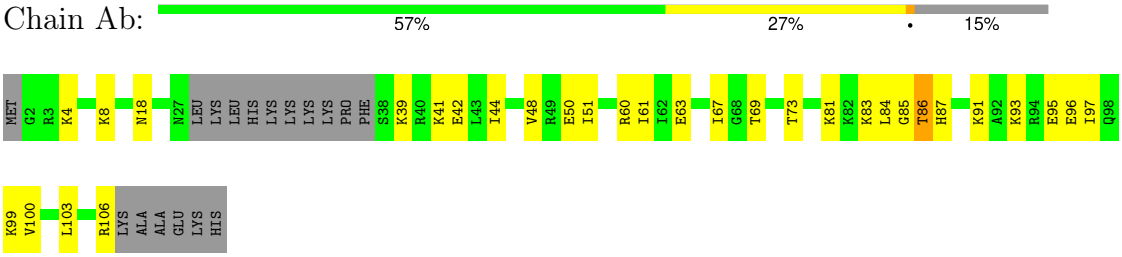
• Molecule 46: 60S ribosomal protein L34

Chain Aa:



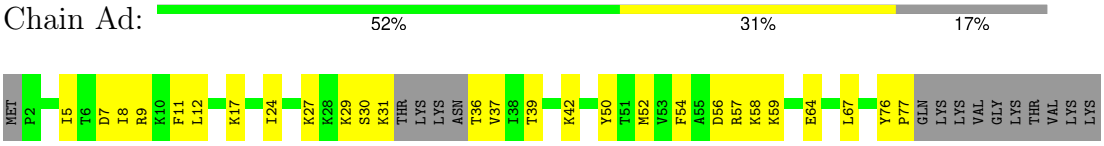
• Molecule 47: 60S ribosomal protein L36

Chain Ab:



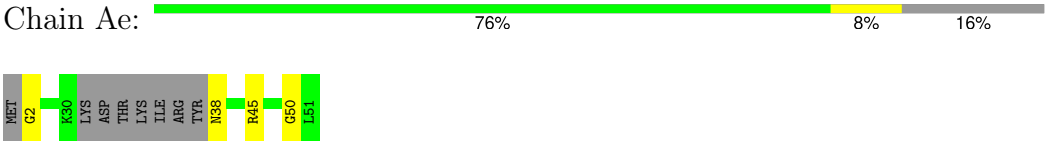
• Molecule 48: 60S ribosomal protein L38

Chain Ad:



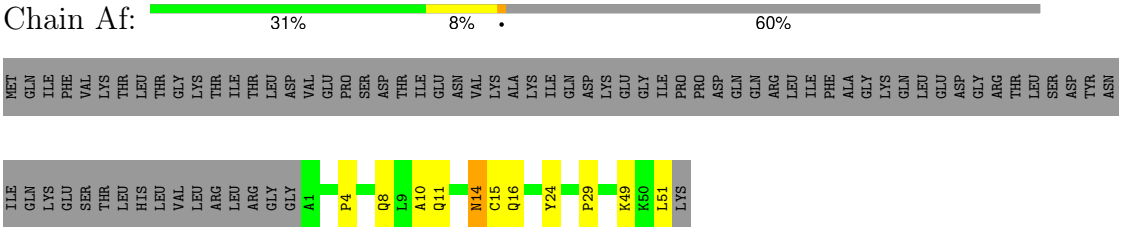
• Molecule 49: 60S ribosomal protein L39

Chain Ae:



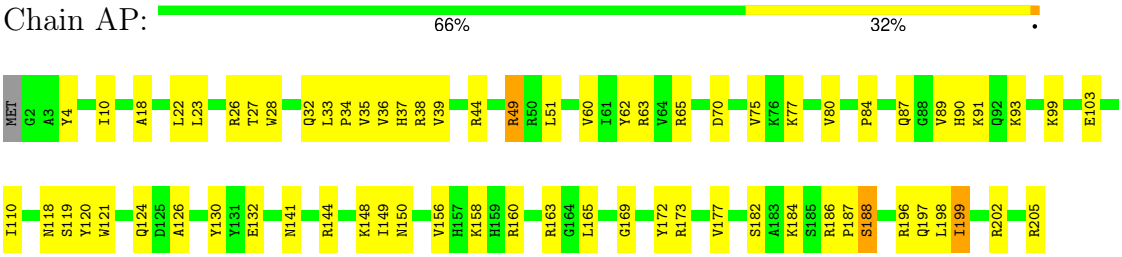
• Molecule 50: Ubiquitin-60S ribosomal protein L40

Chain Af:



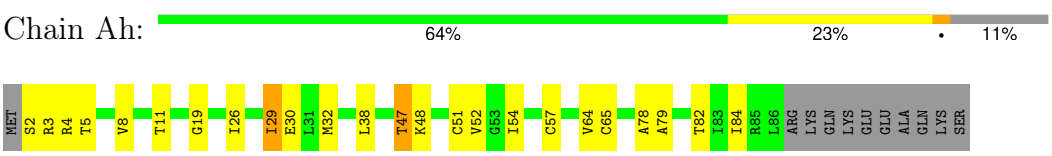
• Molecule 51: Ribosomal protein L15

Chain AP:



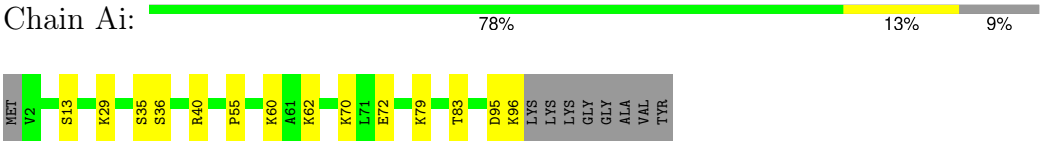
• Molecule 52: Large ribosomal subunit protein eL43

Chain Ah:



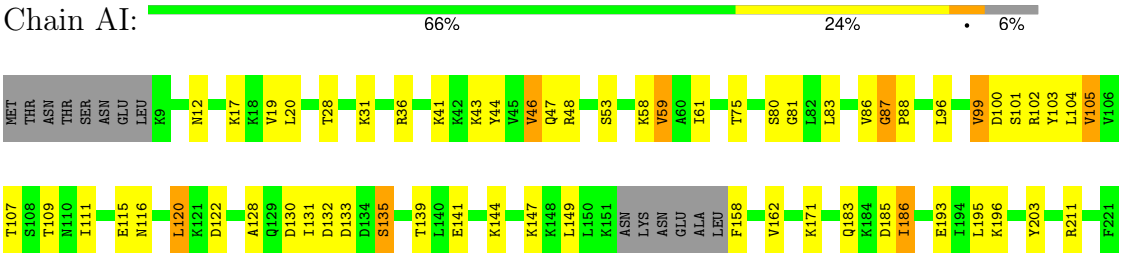
• Molecule 53: Large ribosomal subunit protein eL42

Chain Ai:



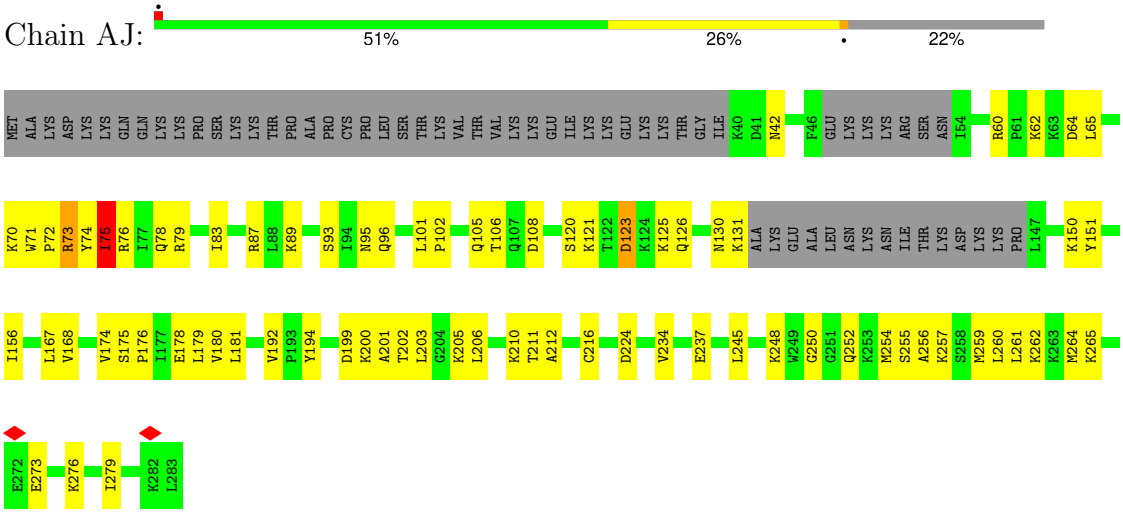
• Molecule 54: 60S ribosomal protein L6

Chain AI:



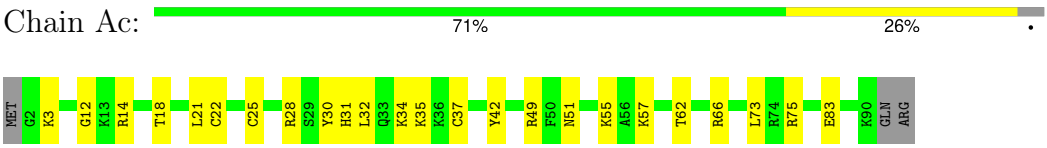
• Molecule 55: 60S ribosomal protein L7a

Chain AJ:



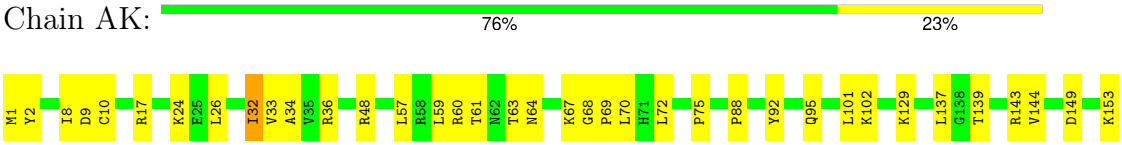
• Molecule 56: Ribosomal protein L37

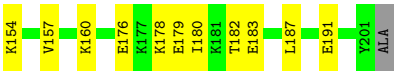
Chain Ac:



• Molecule 57: 60S ribosomal protein L13

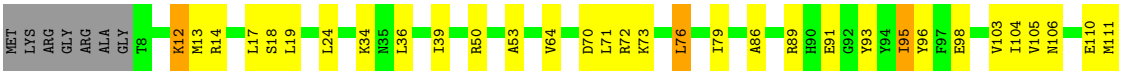
Chain AK:





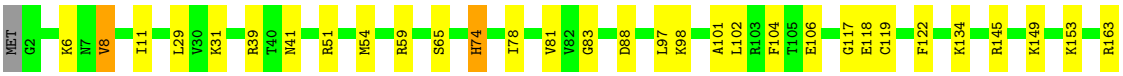
• Molecule 58: 60S ribosomal protein L23, putative

Chain AM:



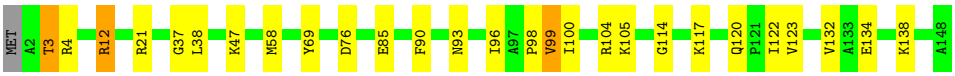
• Molecule 59: 60S ribosomal protein L18-2

Chain AS:



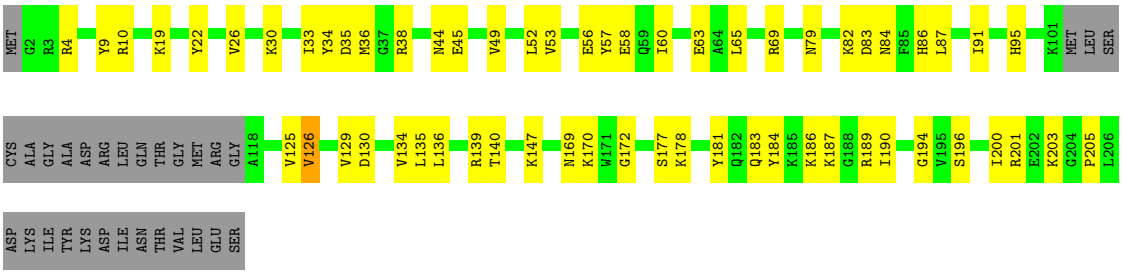
• Molecule 60: 60S ribosomal protein L27a

Chain AO:



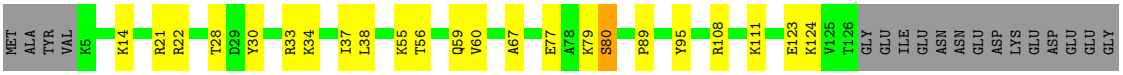
• Molecule 61: 60S ribosomal protein L10

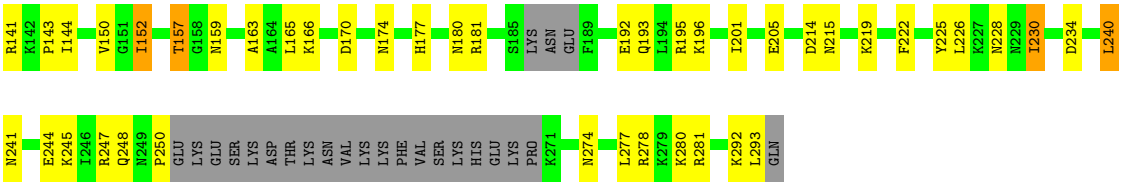
Chain AQ:



• Molecule 62: 60S ribosomal protein L5

Chain AR:



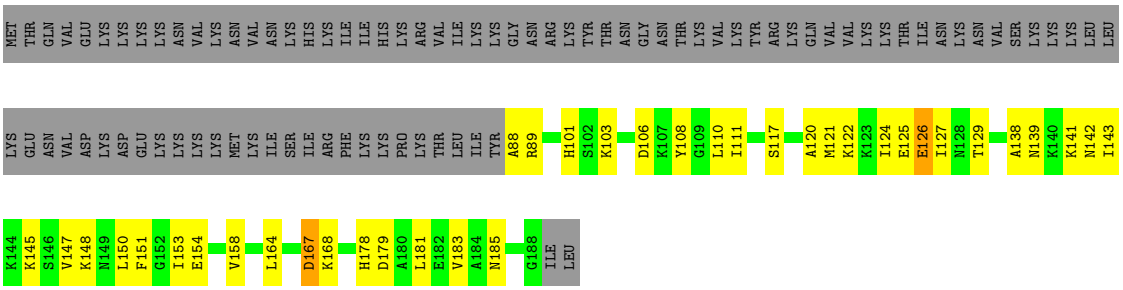


• Molecule 63: 60S ribosomal protein L17

Chain AW:

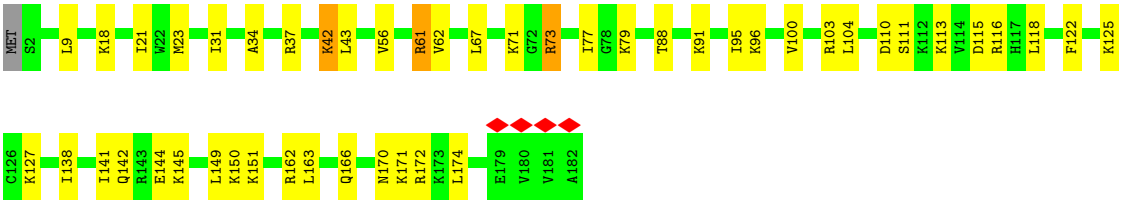
• Molecule 64: 60S ribosomal protein L23

Chain AY:



• Molecule 65: 60S ribosomal protein L19

Chain AT:

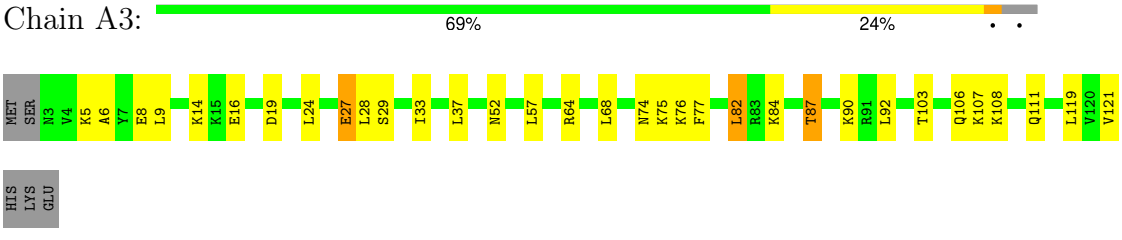


• Molecule 66: 60S ribosomal protein L26

Chain AZ:

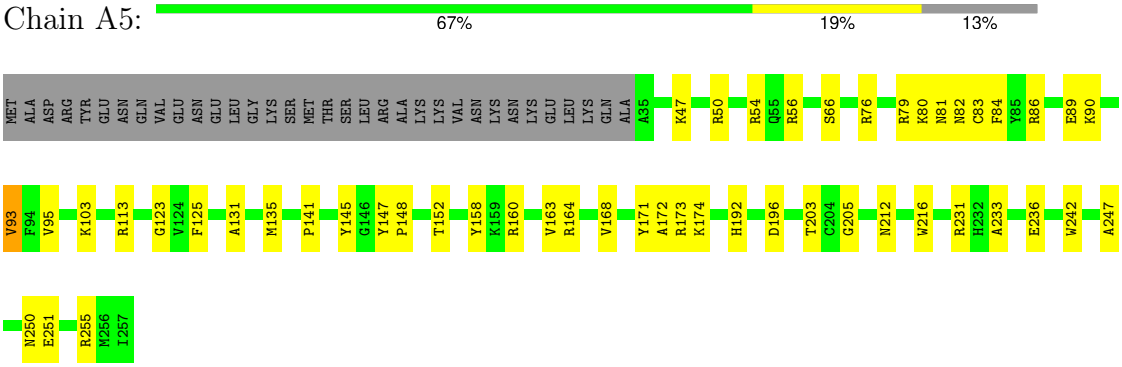
• Molecule 67: 60S ribosomal protein L35

Chain A3:



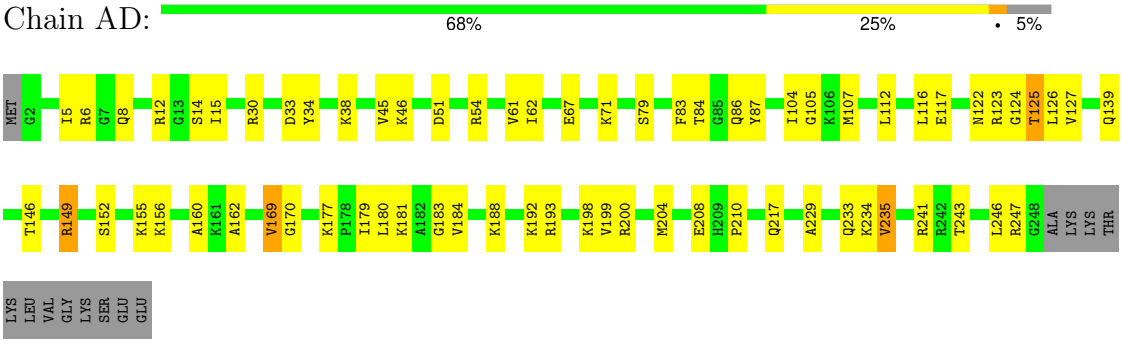
• Molecule 68: 60S ribosomal protein L7

Chain A5:



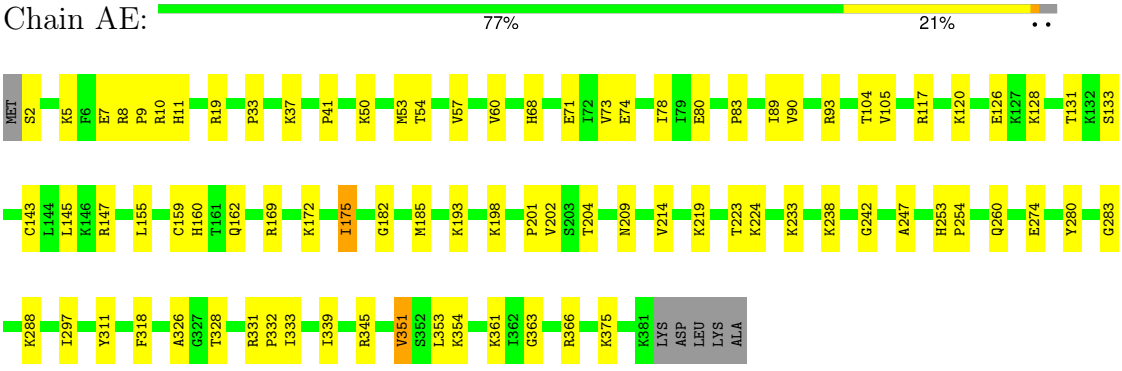
• Molecule 69: 60S ribosomal protein L2

Chain AD:



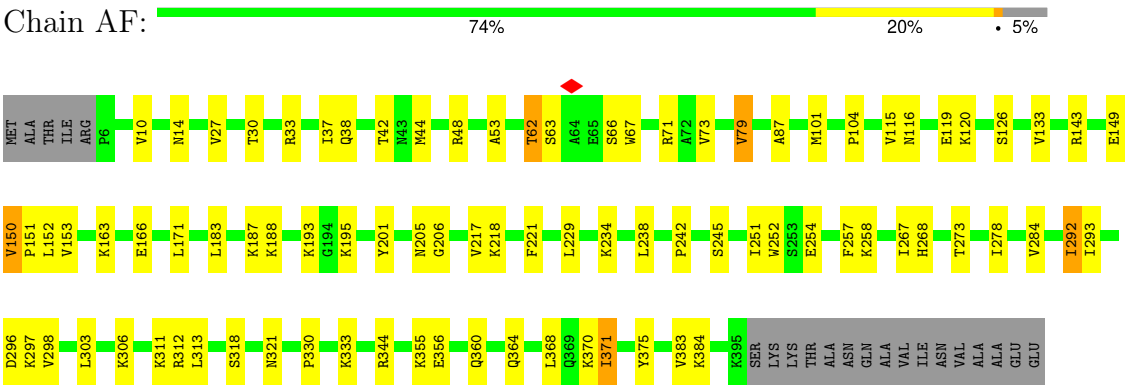
• Molecule 70: 60S ribosomal protein L3

Chain AE:



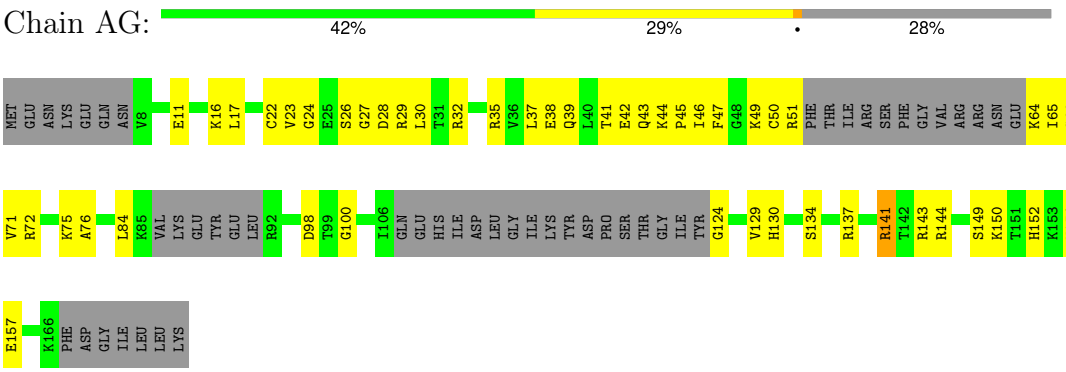
• Molecule 71: 60S ribosomal protein L4

Chain AF:



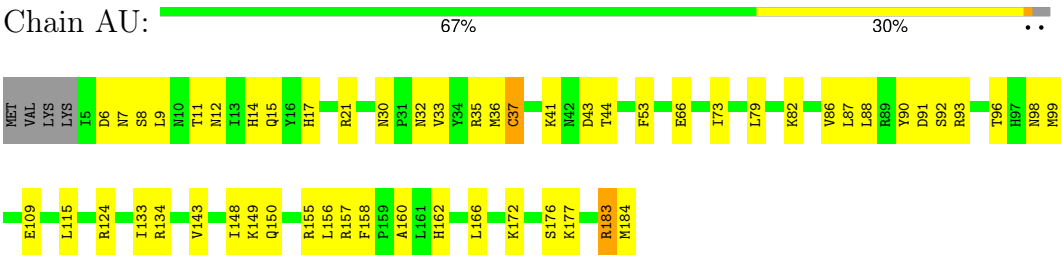
• Molecule 72: 60S ribosomal protein L11a

Chain AG:



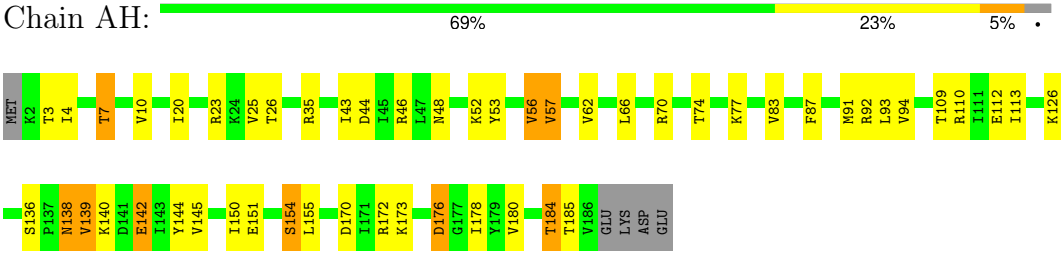
• Molecule 73: 60S ribosomal protein L18a

Chain AU:



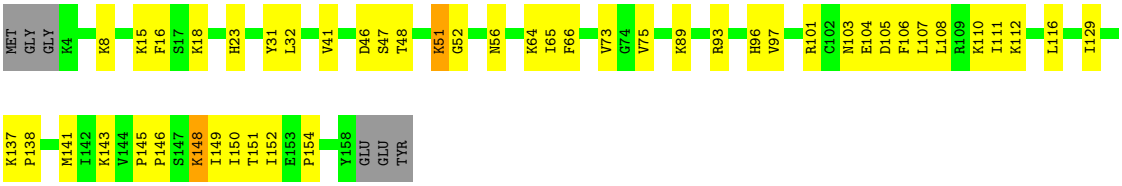
• Molecule 74: 60S ribosomal protein L6

Chain AH:



• Molecule 75: 60S ribosomal protein L21

Chain AV:

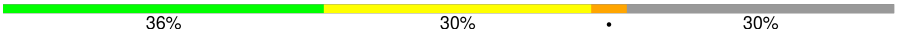


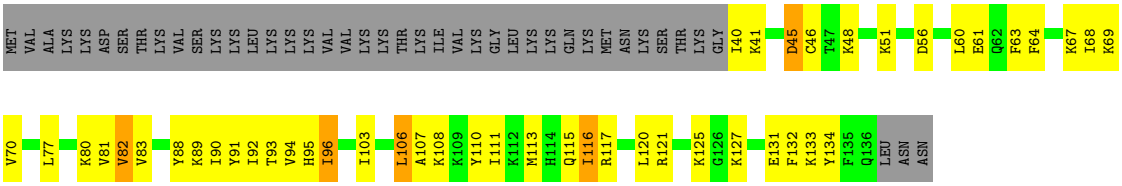
• Molecule 76: 60S ribosomal protein L41

Chain Ag:

• Molecule 77: 60S ribosomal protein L22

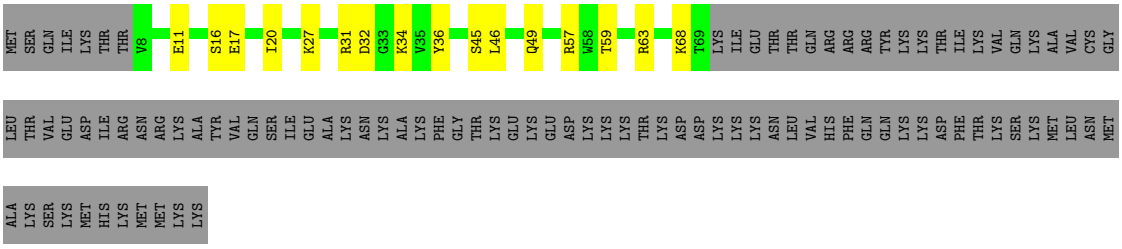
Chain AX:





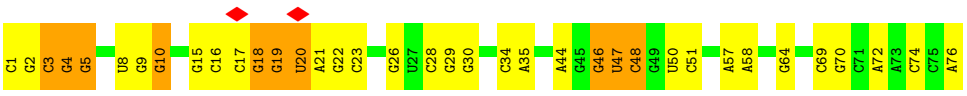
• Molecule 78: 60S ribosomal protein L24

Chain A0:



• Molecule 79: P-site tRNA

Chain S9:



• Molecule 80: mRNA

Chain mR:

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	261029	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	60	Depositor
Minimum defocus (nm)	1200	Depositor
Maximum defocus (nm)	1800	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.083	Depositor
Minimum map value	-0.020	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.003	Depositor
Recommended contour level	0.00404	Depositor
Map size (Å)	415.0, 415.0, 415.0	wwPDB
Map dimensions	500, 500, 500	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.83, 0.83, 0.83	Depositor

5 Model quality (i)

5.1 Standard geometry (i)

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	S1	0.17	0/998	0.37	0/1321
2	S2	0.12	0/323	0.27	0/435
3	S3	0.21	0/793	0.37	0/1055
4	S4	0.17	0/597	0.45	0/801
5	S5	0.13	0/466	0.38	0/616
6	S6	0.16	0/348	0.51	0/458
7	S7	0.14	0/1754	0.23	0/2732
8	SA	0.20	0/38276	0.29	0/59598
9	SB	0.24	0/1737	0.51	1/2321 (0.0%)
10	SC	0.19	0/1569	0.47	0/2129
11	SD	0.14	0/1240	0.38	0/1652
12	SE	0.20	0/1538	0.45	0/2055
13	SF	0.20	0/2097	0.40	0/2819
14	SG	0.22	0/1799	0.42	0/2429
15	SH	0.16	0/1668	0.42	0/2214
16	SI	0.16	0/1443	0.42	0/1936
17	SJ	0.17	0/1544	0.44	0/2064
18	SK	0.23	0/1054	0.45	0/1411
19	SL	0.22	0/1407	0.44	0/1879
20	SM	0.14	0/1113	0.38	0/1487
21	SN	0.15	0/780	0.41	0/1053
22	SO	0.15	0/705	0.46	0/950
23	SP	0.22	0/966	0.44	0/1295
24	SQ	0.20	0/1149	0.39	0/1532
25	SR	0.09	0/754	0.25	0/1013
26	SS	0.15	0/1062	0.49	0/1425
27	ST	0.14	0/412	0.28	0/544
28	SU	0.24	0/1223	0.39	0/1634
29	SV	0.22	0/1233	0.39	0/1645
30	SW	0.17	0/792	0.50	0/1053
31	SX	0.13	0/787	0.40	0/1050
32	SY	0.15	0/1294	0.38	0/1742
33	SZ	0.20	0/565	0.38	0/758
34	AA	0.27	0/75947	0.32	0/118255

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
35	AC	0.26	0/3599	0.31	0/5603
36	AB	0.24	0/2816	0.28	0/4388
37	AL	0.22	0/1793	0.39	0/2387
38	A1	0.21	0/1151	0.40	0/1531
39	A2	0.22	0/846	0.42	0/1124
40	A4	0.20	0/564	0.37	0/737
41	A6	0.23	0/748	0.37	0/1001
42	A7	0.21	0/805	0.33	0/1073
43	AN	0.21	0/1226	0.36	0/1632
44	A8	0.25	0/1053	0.45	0/1399
45	A9	0.28	0/864	0.46	0/1160
46	Aa	0.24	0/871	0.32	0/1161
47	Ab	0.21	0/762	0.44	0/1008
48	Ad	0.21	0/611	0.42	0/812
49	Ae	0.22	0/396	0.29	0/521
50	Af	0.23	0/418	0.38	0/556
51	AP	0.26	0/1735	0.46	1/2320 (0.0%)
52	Ah	0.22	0/667	0.34	0/887
53	Ai	0.22	0/788	0.33	0/1032
54	AI	0.22	0/1708	0.41	0/2274
55	AJ	0.22	0/1840	0.47	0/2456
56	Ac	0.25	0/722	0.44	0/951
57	AK	0.23	0/1689	0.34	0/2260
58	AM	0.25	0/1012	0.42	0/1363
59	AS	0.23	0/1531	0.37	0/2040
60	AO	0.24	0/1199	0.37	0/1597
61	AQ	0.19	0/1579	0.34	0/2113
62	AR	0.20	0/2078	0.34	0/2776
63	AW	0.23	0/1244	0.40	0/1663
64	AY	0.22	0/805	0.40	0/1074
65	AT	0.23	0/1525	0.41	0/2016
66	AZ	0.22	0/1012	0.48	0/1339
67	A3	0.21	0/1004	0.35	0/1329
68	A5	0.23	0/1917	0.42	0/2562
69	AD	0.25	0/1901	0.40	0/2544
70	AE	0.23	0/3129	0.33	0/4195
71	AF	0.22	0/3144	0.36	0/4205
72	AG	0.22	0/1020	0.44	0/1349
73	AU	0.23	0/1527	0.35	0/2043
74	AH	0.22	0/1500	0.38	0/2025
75	AV	0.23	0/1300	0.41	0/1732
76	Ag	0.22	0/348	0.44	0/448
77	AX	0.22	0/841	0.50	0/1125

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
78	A0	0.22	0/533	0.45	0/711
79	S9	0.13	0/1810	0.26	0/2821
80	mR	0.12	0/160	0.22	0/246
All	All	0.23	0/209224	0.35	2/306950 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
9	SB	0	1
29	SV	0	1
54	AI	0	1
All	All	0	3

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
9	SB	54	LYS	N-CA-C	-9.08	104.27	114.62
51	AP	156	VAL	N-CA-C	-6.95	106.45	113.47

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
54	AI	87	GLY	Peptide
9	SB	53	GLY	Peptide
29	SV	12	ALA	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	S1	985	0	1076	39	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	S2	320	0	338	6	0
3	S3	781	0	820	25	0
4	S4	586	0	604	20	0
5	S5	465	0	505	18	0
6	S6	345	0	381	12	0
7	S7	1571	0	797	43	0
8	SA	34208	0	17266	768	0
9	SB	1713	0	1838	32	0
10	SC	1538	0	1600	62	0
11	SD	1228	0	1311	50	0
12	SE	1514	0	1605	49	0
13	SF	2061	0	2200	70	0
14	SG	1757	0	1811	47	0
15	SH	1651	0	1807	70	0
16	SI	1424	0	1471	86	0
17	SJ	1528	0	1680	51	0
18	SK	1037	0	1099	28	0
19	SL	1383	0	1434	39	0
20	SM	1098	0	1183	56	0
21	SN	772	0	813	47	0
22	SO	686	0	695	27	0
23	SP	954	0	997	40	0
24	SQ	1129	0	1196	30	0
25	SR	746	0	754	9	0
26	SS	1046	0	1101	63	0
27	ST	405	0	419	30	0
28	SU	1202	0	1299	41	0
29	SV	1206	0	1239	35	0
30	SW	785	0	858	53	0
31	SX	776	0	832	38	0
32	SY	1266	0	1316	53	0
33	SZ	557	0	558	25	0
34	AA	67884	0	34243	1041	0
35	AC	3215	0	1633	53	0
36	AB	2517	0	1275	44	0
37	AL	1761	0	1896	45	0
38	A1	1134	0	1245	45	0
39	A2	837	0	896	18	0
40	A4	555	0	599	10	0
41	A6	740	0	763	26	0
42	A7	793	0	869	17	0
43	AN	1210	0	1329	36	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
44	A8	1036	0	1139	39	0
45	A9	844	0	886	23	0
46	Aa	858	0	912	28	0
47	Ab	756	0	842	19	0
48	Ad	603	0	686	21	0
49	Ae	388	0	421	4	0
50	Af	413	0	452	9	0
51	AP	1697	0	1802	50	0
52	Ah	658	0	727	17	0
53	Ai	778	0	859	10	0
54	AI	1685	0	1849	39	0
55	AJ	1813	0	1985	65	0
56	Ac	709	0	761	21	0
57	AK	1659	0	1782	34	0
58	AM	996	0	1044	25	0
59	AS	1503	0	1636	26	0
60	AO	1172	0	1230	25	0
61	AQ	1544	0	1582	35	0
62	AR	2049	0	2145	50	0
63	AW	1319	0	1303	27	0
64	AY	796	0	850	29	0
65	AT	1509	0	1682	36	0
66	AZ	1000	0	1099	29	0
67	A3	994	0	1121	21	0
68	A5	1879	0	2005	36	0
69	AD	1866	0	1964	52	0
70	AE	3061	0	3205	61	0
71	AF	3094	0	3333	67	0
72	AG	1010	0	1073	37	0
73	AU	1497	0	1556	48	0
74	AH	1475	0	1574	37	0
75	AV	1275	0	1355	31	0
76	Ag	343	0	388	14	0
77	AX	824	0	882	35	0
78	A0	521	0	539	13	0
79	S9	1620	0	827	28	0
80	mR	145	0	74	1	0
All	All	194758	0	145221	3875	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 12.

All (3875) 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)
34:AA:11:A:N6	35:AC:154:G:H1	1.40	1.20
50:Af:10:ALA:O	50:Af:14:ASN:HB2	1.57	1.02
34:AA:3636:U:H3	34:AA:3649:G:H1	1.02	1.00
7:S7:8:U:H3	7:S7:14:A:H62	1.06	0.99
34:AA:3641:U:H3	34:AA:3644:G:H1	1.02	0.98
8:SA:70:U:H3	8:SA:82:G:H1	1.03	0.96
34:AA:3635:G:H1	34:AA:3650:U:H3	1.03	0.95
34:AA:1141:G:H1	34:AA:1156:U:H3	1.00	0.95
34:AA:2735:G:H1	34:AA:2814:U:H3	1.00	0.94
34:AA:773:A:HO2'	34:AA:774:A:H8	0.96	0.94
10:SC:57:LEU:HD21	10:SC:173:MET:HE1	1.49	0.93
19:SL:8:ARG:O	19:SL:9:HIS:ND1	2.00	0.93
34:AA:2742:G:H1	34:AA:2806:U:H3	1.14	0.92
7:S7:8:U:H3	7:S7:14:A:N6	1.66	0.92
8:SA:1280:G:N2	8:SA:1706:A:N1	2.16	0.92
34:AA:1531:G:H1	34:AA:1573:C:H5	1.17	0.91
79:S9:50:U:H3	79:S9:64:G:H1	1.18	0.90
34:AA:3637:G:H1	34:AA:3648:U:H3	1.14	0.89
34:AA:2034:G:H1	34:AA:2075:U:H3	1.21	0.88
41:A6:37:LEU:HD11	41:A6:62:TYR:HB3	1.55	0.88
34:AA:715:U:H3	34:AA:730:G:H1	1.18	0.87
8:SA:887:A:N1	8:SA:915:G:O6	2.08	0.87
39:A2:34:ASP:HB2	39:A2:37:ASN:HB2	1.57	0.86
78:A0:11:GLU:HG3	78:A0:20:ILE:HB	1.58	0.85
7:S7:29:G:H1	7:S7:38:A:H61	1.24	0.85
8:SA:1982:G:H1	8:SA:2008:U:H3	0.89	0.85
34:AA:1122:A:H2	34:AA:1169:A:H62	1.25	0.84
8:SA:106:A:OP2	8:SA:314:A:N6	2.10	0.84
23:SP:34:PHE:HB3	23:SP:41:PHE:HB2	1.60	0.83
28:SU:33:ILE:HD11	28:SU:60:ILE:HG12	1.61	0.82
34:AA:1102:U:H3	34:AA:1231:A:H2	1.27	0.82
34:AA:583:U:O2	34:AA:609:C:N4	2.13	0.82
8:SA:1386:U:H4'	8:SA:1387:U:H5'	1.62	0.82
34:AA:1277:G:OP2	45:A9:54:ARG:NH2	2.12	0.82
8:SA:1061:A:H2	8:SA:1081:U:H3	1.26	0.81
1:S1:52:ASN:ND2	1:S1:54:ASN:OD1	2.14	0.81
8:SA:886:U:H3	8:SA:916:G:H1	0.83	0.81
34:AA:684:G:H22	71:AF:311:LYS:HE3	1.44	0.81
34:AA:10:G:H21	34:AA:1706:A:N6	1.79	0.80
16:SI:41:PRO:HD2	16:SI:81:ILE:HG23	1.61	0.80
55:AJ:74:TYR:O	55:AJ:76:ARG:N	2.15	0.80
75:AV:46:ASP:H	75:AV:96:HIS:HD2	1.27	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:SJ:74:ARG:HA	17:SJ:77:GLN:HE22	1.45	0.79
34:AA:3254:G:O2'	50:Af:24:TYR:O	2.01	0.79
63:AW:20:VAL:O	63:AW:145:HIS:ND1	2.14	0.79
34:AA:1560:U:OP1	44:A8:105:ARG:NH2	2.16	0.79
34:AA:372:G:OP2	56:Ac:55:LYS:NZ	2.17	0.78
10:SC:93:THR:HG23	10:SC:95:ALA:H	1.47	0.78
34:AA:596:A:H5'	74:AH:7:THR:HG21	1.64	0.78
8:SA:335:G:H5"	19:SL:98:LYS:HB3	1.64	0.77
54:AI:115:GLU:OE2	54:AI:115:GLU:N	2.16	0.77
42:A7:80:ARG:HG3	42:A7:104:VAL:HB	1.66	0.77
28:SU:37:ILE:HG22	28:SU:54:LEU:HD11	1.67	0.77
38:A1:90:ASP:O	38:A1:121:LYS:NZ	2.18	0.77
79:S9:15:G:H22	79:S9:48:C:H42	1.31	0.77
7:S7:16:U:O2	7:S7:57:C:N3	2.17	0.77
7:S7:50:G:H1	7:S7:60:U:H3	1.33	0.77
8:SA:1816:U:H4'	8:SA:1817:U:H5'	1.65	0.77
8:SA:1845:U:O2	8:SA:1860:A:N6	2.17	0.77
34:AA:1534:U:O2'	34:AA:1535:G:O5'	2.03	0.77
34:AA:1630:A:O2'	34:AA:2125:A:N3	2.16	0.77
43:AN:70:PRO:HG2	43:AN:73:ARG:HD2	1.66	0.77
34:AA:3736:A:H2	34:AA:3753:G:H21	1.32	0.76
30:SW:59:LYS:O	30:SW:63:LYS:NZ	2.18	0.76
34:AA:3441:A:H2	34:AA:3471:A:H62	1.33	0.76
34:AA:72:C:O2'	37:AL:65:ASN:OD1	2.03	0.76
5:S5:47:PRO:HG3	16:SI:51:ARG:HD2	1.67	0.76
34:AA:3497:A:H4'	74:AH:70:ARG:HG2	1.68	0.76
34:AA:1992:U:H2'	34:AA:1993:A:C8	2.20	0.76
32:SY:148:THR:HG23	32:SY:151:GLY:H	1.50	0.76
8:SA:877:U:O2	8:SA:926:G:N2	2.16	0.75
47:Ab:39:LYS:HA	47:Ab:39:LYS:HE3	1.68	0.75
8:SA:80:A:H5'	15:SH:154:ARG:HH12	1.52	0.75
20:SM:80:TYR:HA	20:SM:83:ARG:HE	1.51	0.75
3:S3:53:ILE:HD11	3:S3:64:LEU:HD21	1.68	0.75
67:A3:87:THR:HG22	67:A3:90:LYS:H	1.50	0.75
8:SA:1842:A:H5'	26:SS:132:ARG:HH21	1.51	0.75
22:SO:43:HIS:HB3	22:SO:46:LEU:HB2	1.67	0.75
8:SA:887:A:H2	8:SA:915:G:H1	1.35	0.74
34:AA:506:A:H2'	34:AA:507:G:C8	2.22	0.74
13:SF:125:LYS:H	13:SF:142:HIS:HD2	1.36	0.74
30:SW:26:LEU:HA	30:SW:58:MET:HE1	1.69	0.74
8:SA:1799:A:H5"	32:SY:121:LYS:HD3	1.68	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:2830:U:H3	34:AA:2832:A:H8	1.36	0.74
8:SA:214:U:O2'	29:SV:23:ASN:OD1	2.06	0.74
16:SI:36:ALA:HB1	16:SI:58:PRO:HG3	1.69	0.74
28:SU:142:GLN:NE2	28:SU:145:THR:OG1	2.21	0.73
8:SA:1718:C:H4'	8:SA:1719:U:H5"	1.68	0.73
64:AY:154:GLU:OE1	64:AY:154:GLU:N	2.21	0.73
34:AA:936:A:H8	56:Ac:18:THR:HG23	1.54	0.73
34:AA:551:A:OP2	71:AF:384:LYS:NZ	2.22	0.73
39:A2:106:LYS:H	39:A2:106:LYS:HD2	1.53	0.73
34:AA:92:G:H5'	34:AA:93:C:H5"	1.70	0.73
55:AJ:123:ASP:OD1	55:AJ:123:ASP:N	2.21	0.73
8:SA:651:G:H1	8:SA:749:U:H3	0.78	0.73
61:AQ:38:ARG:NH2	61:AQ:45:GLU:OE1	2.22	0.73
70:AE:219:LYS:HG2	70:AE:328:THR:HG22	1.70	0.73
7:S7:8:U:O4	7:S7:14:A:N7	2.22	0.73
61:AQ:38:ARG:HG3	61:AQ:83:ASP:HA	1.70	0.73
8:SA:1445:U:O2'	21:SN:54:ARG:NH2	2.21	0.73
8:SA:1376:A:O2'	11:SD:142:LYS:NZ	2.21	0.72
8:SA:1310:C:N3	8:SA:1701:G:N2	2.37	0.72
8:SA:1456:G:N1	8:SA:1607:U:N3	2.37	0.72
11:SD:120:CYS:O	11:SD:124:LEU:HD12	1.88	0.72
32:SY:48:HIS:HB2	32:SY:50:LYS:HD2	1.70	0.72
34:AA:1881:C:O2'	34:AA:1882:U:O5'	2.06	0.72
73:AU:133:ILE:HG22	75:AV:154:PRO:HG2	1.71	0.72
17:SJ:47:CYS:HB3	17:SJ:60:ILE:HD11	1.71	0.72
34:AA:3617:A:O2'	73:AU:172:LYS:NZ	2.20	0.72
75:AV:146:PRO:HA	75:AV:149:ILE:HD12	1.70	0.72
8:SA:1655:G:N2	8:SA:1658:G:OP2	2.22	0.72
76:Ag:21:LYS:HE2	76:Ag:25:ARG:HH21	1.54	0.72
20:SM:16:THR:OG1	20:SM:124:ARG:NH1	2.23	0.72
34:AA:442:G:H5'	45:A9:90:LYS:HD2	1.70	0.72
34:AA:2478:G:O2'	34:AA:2607:U:OP2	2.07	0.72
79:S9:15:G:N2	79:S9:48:C:H42	1.88	0.72
8:SA:1275:U:OP1	26:SS:137:HIS:ND1	2.19	0.72
24:SQ:110:SER:OG	24:SQ:111:GLY:N	2.23	0.72
34:AA:506:A:H2'	34:AA:507:G:H8	1.54	0.72
34:AA:2208:G:H21	34:AA:3754:A:H8	1.38	0.72
8:SA:1879:U:H5'	20:SM:136:ARG:HD2	1.71	0.71
34:AA:513:U:H3	34:AA:685:U:H5	1.38	0.71
38:A1:13:ILE:HD11	38:A1:18:ARG:HB2	1.72	0.71
74:AH:91:MET:HE2	74:AH:178:ILE:HG22	1.70	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:221:A:OP1	66:AZ:2:LYS:NZ	2.22	0.71
34:AA:716:C:OP1	44:A8:21:GLN:NE2	2.24	0.71
11:SD:190:MET:SD	11:SD:190:MET:N	2.63	0.71
8:SA:1448:U:H2'	8:SA:1449:U:H2'	1.72	0.71
34:AA:998:U:H4'	63:AW:132:ALA:HB2	1.72	0.71
43:AN:27:PRO:O	43:AN:80:ARG:NH1	2.23	0.71
8:SA:1847:A:OP2	31:SX:42:ARG:NH2	2.24	0.71
23:SP:67:ASP:O	23:SP:70:SER:OG	2.08	0.71
12:SE:86:LEU:HD22	12:SE:90:GLU:HG3	1.73	0.71
34:AA:382:A:N3	34:AA:385:G:H5"	2.05	0.71
69:AD:116:LEU:HB3	69:AD:126:LEU:HB2	1.73	0.71
13:SF:188:SER:HB2	13:SF:191:ARG:HG3	1.72	0.71
10:SC:58:GLN:O	10:SC:62:ARG:HG3	1.91	0.71
21:SN:55:LEU:HD12	21:SN:56:PRO:HD2	1.73	0.71
34:AA:2091:U:O2	34:AA:2094:A:N7	2.23	0.71
55:AJ:178:GLU:HA	55:AJ:181:LEU:HD22	1.73	0.71
34:AA:1851:A:H62	34:AA:1969:A:H2	1.39	0.71
73:AU:17:HIS:HB2	73:AU:73:ILE:HD11	1.71	0.71
8:SA:574:A:OP1	24:SQ:70:LYS:NZ	2.24	0.70
8:SA:1259:C:H42	8:SA:1265:G:H1	1.39	0.70
79:S9:1:C:H42	79:S9:72:A:H61	1.38	0.70
8:SA:897:G:H22	8:SA:905:U:H2'	1.57	0.70
13:SF:208:ILE:HD11	13:SF:225:VAL:HG11	1.73	0.70
30:SW:5:ARG:HB2	30:SW:10:LYS:HE2	1.72	0.70
34:AA:936:A:C8	56:Ac:18:THR:HG23	2.26	0.70
34:AA:2401:C:H1'	34:AA:3736:A:C8	2.27	0.70
8:SA:1061:A:O2'	8:SA:2077:U:O2	2.08	0.70
20:SM:38:ASP:HA	20:SM:46:LYS:HD3	1.73	0.70
34:AA:25:A:OP2	56:Ac:49:ARG:NH2	2.24	0.70
46:Aa:86:ARG:O	46:Aa:90:MET:HG3	1.91	0.70
17:SJ:98:ARG:NH1	17:SJ:129:ASP:OD2	2.23	0.70
48:Ad:27:LYS:HD3	48:Ad:57:ARG:HH12	1.55	0.70
63:AW:45:LYS:NZ	63:AW:96:ASP:OD1	2.23	0.70
63:AW:116:HIS:NE2	63:AW:118:MET:SD	2.64	0.70
10:SC:10:LYS:N	10:SC:13:SER:HG	1.89	0.70
20:SM:56:ILE:HG22	20:SM:60:LYS:HD3	1.73	0.70
8:SA:1712:G:O2'	8:SA:1899:A:OP1	2.09	0.70
34:AA:703:U:H2'	34:AA:704:U:C6	2.27	0.70
34:AA:3641:U:O2	34:AA:3644:G:N2	2.20	0.70
38:A1:11:ILE:HD13	38:A1:80:ILE:HB	1.73	0.70
57:AK:61:THR:HG23	57:AK:68:GLY:HA2	1.73	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
64:AY:125:GLU:OE1	64:AY:125:GLU:N	2.25	0.70
8:SA:1808:G:N2	8:SA:1814:C:O2	2.18	0.69
8:SA:1852:A:N6	27:ST:12:TYR:OH	2.26	0.69
21:SN:21:ILE:HA	21:SN:112:GLU:O	1.93	0.69
34:AA:203:A:H2	34:AA:207:A:H2	1.40	0.69
34:AA:1536:U:O2'	44:A8:99:ASN:O	2.08	0.69
34:AA:1762:A:HO2'	34:AA:1763:G:H8	1.41	0.69
35:AC:106:G:OP2	35:AC:108:A:O2'	2.11	0.69
47:Ab:4:LYS:HD2	47:Ab:18:ASN:HA	1.73	0.69
68:A5:56:ARG:NH1	68:A5:196:ASP:OD2	2.25	0.69
55:AJ:72:PRO:HD2	55:AJ:75:ILE:HD11	1.74	0.69
8:SA:952:U:H3	8:SA:1014:U:H3	1.41	0.69
23:SP:100:SER:OG	23:SP:101:GLY:N	2.21	0.69
29:SV:146:GLU:OE1	29:SV:146:GLU:N	2.25	0.69
34:AA:616:U:H2'	34:AA:617:A:H8	1.57	0.69
8:SA:1300:G:H1	27:ST:29:ILE:HG23	1.58	0.69
34:AA:1827:C:H42	34:AA:1998:A:H61	1.38	0.69
34:AA:3106:U:O2'	53:Ai:29:LYS:O	2.10	0.69
44:A8:5:LYS:NZ	44:A8:7:GLY:O	2.25	0.69
65:AT:122:PHE:HA	65:AT:125:LYS:HG2	1.75	0.69
70:AE:155:LEU:HB2	70:AE:185:MET:HE1	1.75	0.69
8:SA:201:G:H2'	8:SA:202:G:C8	2.28	0.69
34:AA:2809:A:OP2	34:AA:2810:A:N6	2.26	0.69
74:AH:92:ARG:HD3	74:AH:142:GLU:HG3	1.75	0.69
17:SJ:164:ASN:HD21	17:SJ:168:LYS:HB2	1.58	0.69
37:AL:84:LEU:HD13	37:AL:89:ALA:HB2	1.74	0.69
3:S3:32:LYS:NZ	8:SA:999:A:OP2	2.25	0.68
7:S7:29:G:H1	7:S7:38:A:N6	1.91	0.68
8:SA:1840:A:N6	8:SA:1866:A:OP2	2.26	0.68
13:SF:48:LEU:HD11	13:SF:61:VAL:HG13	1.73	0.68
8:SA:1894:A:OP2	27:ST:30:ARG:NH1	2.26	0.68
35:AC:126:C:OP1	67:A3:64:ARG:NH2	2.26	0.68
61:AQ:95:HIS:HB3	61:AQ:126:VAL:HG12	1.74	0.68
11:SD:169:VAL:HG22	11:SD:190:MET:HG3	1.74	0.68
34:AA:3639:G:H1	34:AA:3646:G:H1	1.42	0.68
46:Aa:47:CYS:SG	46:Aa:83:ARG:NH2	2.65	0.68
34:AA:451:C:H3'	34:AA:695:A:H61	1.59	0.68
34:AA:3637:G:O6	34:AA:3648:U:O4	2.10	0.68
47:Ab:42:GLU:OE1	47:Ab:42:GLU:N	2.26	0.68
13:SF:201:ASN:ND2	13:SF:205:TYR:O	2.27	0.68
32:SY:105:LYS:HB3	32:SY:113:ASN:HD21	1.56	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:A6:50:ASN:HB2	41:A6:76:ASP:HB2	1.76	0.68
8:SA:460:G:C8	13:SF:63:MET:HE1	2.28	0.68
8:SA:834:A:H2'	8:SA:835:G:H8	1.59	0.68
36:AB:61:G:H4'	62:AR:281:ARG:HH12	1.58	0.68
71:AF:356:GLU:O	71:AF:360:GLN:NE2	2.26	0.68
7:S7:17:U:O5'	7:S7:58:G:N2	2.26	0.68
8:SA:886:U:O2	8:SA:916:G:N2	2.23	0.68
8:SA:939:A:H2'	8:SA:940:G:C8	2.28	0.68
8:SA:993:A:H2'	8:SA:994:G:C8	2.28	0.68
8:SA:1880:A:O2'	16:SI:49:LYS:NZ	2.27	0.68
29:SV:16:GLN:HG2	29:SV:19:ALA:HB2	1.74	0.68
30:SW:16:ILE:HD12	30:SW:17:VAL:HG23	1.74	0.68
34:AA:1770:G:H21	34:AA:1798:A:H8	1.40	0.68
44:A8:83:GLU:N	44:A8:83:GLU:OE2	2.26	0.68
8:SA:877:U:H3	8:SA:926:G:H1	0.72	0.68
8:SA:1724:U:OP1	32:SY:79:ARG:NH2	2.27	0.68
16:SI:64:VAL:HG12	16:SI:84:VAL:HG11	1.73	0.68
44:A8:86:ILE:HD13	44:A8:115:MET:HG2	1.75	0.68
8:SA:1653:A:H2'	8:SA:1654:G:C8	2.29	0.68
23:SP:98:ARG:NH1	23:SP:100:SER:O	2.27	0.68
34:AA:746:A:H2'	34:AA:747:A:C8	2.29	0.68
69:AD:33:ASP:OD1	69:AD:34:TYR:N	2.26	0.68
8:SA:1705:C:H41	26:SS:139:LYS:HE3	1.59	0.68
13:SF:44:LEU:HA	13:SF:47:LEU:HB3	1.76	0.68
16:SI:11:PHE:HB2	16:SI:13:LYS:HE2	1.76	0.68
32:SY:79:ARG:O	32:SY:83:ILE:HG12	1.94	0.68
34:AA:2106:A:H5"	34:AA:2107:C:C5	2.29	0.68
34:AA:2506:A:H2'	34:AA:2507:A:C8	2.29	0.68
8:SA:1841:U:O4	8:SA:1865:G:N2	2.27	0.67
9:SB:33:LYS:HE3	9:SB:42:ASN:ND2	2.08	0.67
61:AQ:56:GLU:HB3	61:AQ:58:GLU:HG2	1.75	0.67
70:AE:126:GLU:OE1	70:AE:126:GLU:N	2.23	0.67
8:SA:1456:G:N1	8:SA:1607:U:C2	2.62	0.67
8:SA:921:G:OP1	65:AT:172:ARG:NH1	2.27	0.67
8:SA:1653:A:H2'	8:SA:1654:G:H8	1.60	0.67
34:AA:1786:A:OP1	38:A1:73:LYS:NZ	2.27	0.67
46:Aa:20:VAL:HG13	46:Aa:32:ILE:HD12	1.75	0.67
8:SA:1030:C:H5"	28:SU:71:ILE:HG21	1.75	0.67
8:SA:1848:U:O4	31:SX:40:ARG:NH1	2.28	0.67
34:AA:11:A:N1	35:AC:154:G:N2	2.33	0.67
34:AA:2726:U:H1'	51:AP:126:ALA:HB2	1.77	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
66:AZ:31:SER:HA	66:AZ:48:PRO:HA	1.75	0.67
13:SF:159:THR:HG22	13:SF:173:LEU:HB2	1.77	0.67
34:AA:1102:U:N3	34:AA:1231:A:H2	1.92	0.67
34:AA:3014:C:H42	72:AG:22:CYS:HB3	1.59	0.67
8:SA:70:U:O2	8:SA:82:G:N2	2.24	0.67
8:SA:1627:U:H4'	21:SN:56:PRO:HG3	1.76	0.67
28:SU:130:LYS:NZ	28:SU:139:TRP:O	2.25	0.67
38:A1:2:GLY:HA3	41:A6:40:GLY:HA3	1.75	0.67
61:AQ:65:LEU:HD21	61:AQ:91:ILE:HD11	1.77	0.67
74:AH:176:ASP:OD1	74:AH:176:ASP:N	2.23	0.67
32:SY:45:LEU:HD12	32:SY:50:LYS:HD3	1.76	0.67
8:SA:865:G:H21	18:SK:107:PRO:HG3	1.60	0.67
8:SA:1725:A:O2'	8:SA:1726:U:O4'	2.12	0.67
8:SA:1729:A:OP1	8:SA:1819:U:O2'	2.13	0.67
8:SA:1800:A:H4'	32:SY:64:LYS:HD2	1.75	0.67
34:AA:1992:U:H2'	34:AA:1993:A:H8	1.57	0.67
73:AU:160:ALA:H	73:AU:184:MET:HE3	1.59	0.67
15:SH:18:ILE:HD11	15:SH:24:LEU:HD23	1.76	0.66
34:AA:157:G:OP2	51:AP:4:TYR:OH	2.13	0.66
34:AA:1474:A:H5"	71:AF:306:LYS:HB2	1.76	0.66
1:S1:30:PRO:O	1:S1:32:LYS:NZ	2.28	0.66
10:SC:55:GLU:HA	10:SC:58:GLN:HG2	1.76	0.66
34:AA:1900:G:OP1	46:Aa:21:ARG:NH2	2.26	0.66
34:AA:3302:G:OP2	70:AE:2:SER:OG	2.13	0.66
48:Ad:64:GLU:OE2	48:Ad:64:GLU:N	2.27	0.66
51:AP:26:ARG:NH1	55:AJ:178:GLU:OE1	2.29	0.66
16:SI:78:LEU:HA	16:SI:81:ILE:HD12	1.76	0.66
34:AA:1906:A:H2'	34:AA:1907:A:C8	2.31	0.66
61:AQ:170:LYS:HA	61:AQ:177:SER:HA	1.75	0.66
71:AF:153:VAL:HG12	71:AF:252:TRP:HB2	1.77	0.66
22:SO:52:HIS:HA	22:SO:55:MET:HE1	1.77	0.66
38:A1:8:GLY:HA3	38:A1:88:ALA:HB2	1.77	0.66
44:A8:40:CYS:O	44:A8:42:VAL:N	2.27	0.66
12:SE:117:GLY:O	12:SE:119:ALA:N	2.29	0.66
30:SW:50:VAL:O	30:SW:54:VAL:HG23	1.94	0.66
31:SX:31:ASP:O	31:SX:35:LYS:NZ	2.27	0.66
55:AJ:179:LEU:HD12	55:AJ:180:VAL:HG13	1.77	0.66
8:SA:1982:G:N2	8:SA:2008:U:O2	2.26	0.66
16:SI:109:LYS:O	16:SI:184:LYS:NZ	2.28	0.66
28:SU:3:ARG:NH2	28:SU:9:LYS:O	2.28	0.66
34:AA:26:A:N3	34:AA:336:U:O2'	2.26	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:2105:A:H5"	34:AA:2106:A:H5'	1.77	0.66
1:S1:8:ARG:HD2	8:SA:829:G:C6	2.30	0.66
4:S4:40:GLN:NE2	4:S4:54:CYS:SG	2.59	0.66
8:SA:1308:C:H5'	8:SA:1309:A:C8	2.31	0.66
9:SB:28:GLU:N	9:SB:28:GLU:OE2	2.29	0.66
34:AA:521:U:O2'	34:AA:522:A:O5'	2.12	0.66
7:S7:1:G:H22	7:S7:70:A:H2	1.41	0.66
28:SU:99:ARG:NH2	28:SU:119:GLU:OE2	2.26	0.66
30:SW:74:GLN:OE1	30:SW:74:GLN:N	2.28	0.66
34:AA:733:C:H2'	34:AA:734:A:H8	1.61	0.66
34:AA:2394:C:HO2'	34:AA:2395:U:H6	1.44	0.66
1:S1:117:LYS:NZ	8:SA:87:A:OP1	2.29	0.66
8:SA:65:A:H2	8:SA:86:A:H62	1.41	0.66
18:SK:18:GLU:HG3	18:SK:69:ILE:HG23	1.77	0.66
26:SS:23:ASP:N	26:SS:23:ASP:OD1	2.28	0.66
58:AM:95:ILE:HG12	78:A0:27:LYS:HB2	1.76	0.66
71:AF:383:VAL:HG13	73:AU:134:ARG:HD3	1.78	0.66
7:S7:3:G:H22	7:S7:68:U:H3	1.44	0.65
31:SX:108:LYS:H	31:SX:111:MET:HB3	1.61	0.65
55:AJ:254:MET:N	55:AJ:254:MET:SD	2.69	0.65
7:S7:8:U:N3	7:S7:14:A:N6	2.35	0.65
26:SS:100:VAL:HG23	26:SS:105:LEU:HA	1.78	0.65
34:AA:1712:G:H2'	34:AA:1713:G:C8	2.31	0.65
34:AA:2835:G:N1	34:AA:2919:A:N7	2.44	0.65
34:AA:3632:U:O2	34:AA:3653:G:N2	2.23	0.65
36:AB:83:G:H4'	68:A5:231:ARG:HG2	1.77	0.65
42:A7:31:VAL:HG21	42:A7:39:ARG:HG2	1.79	0.65
62:AR:59:GLN:HB2	62:AR:80:SER:HB2	1.77	0.65
8:SA:520:U:H2'	8:SA:521:G:C8	2.32	0.65
79:S9:15:G:H22	79:S9:48:C:N4	1.94	0.65
8:SA:110:A:H2'	8:SA:111:G:C8	2.32	0.65
34:AA:1656:G:H2'	34:AA:2147:A:H1'	1.77	0.65
38:A1:4:LEU:HD11	41:A6:65:LEU:HB3	1.77	0.65
1:S1:39:GLU:N	1:S1:39:GLU:OE1	2.30	0.65
15:SH:178:LEU:O	15:SH:183:ARG:NH1	2.29	0.65
24:SQ:100:ASP:OD2	24:SQ:144:ARG:NH2	2.29	0.65
34:AA:582:U:O2'	34:AA:583:U:O5'	2.14	0.65
34:AA:616:U:H2'	34:AA:617:A:C8	2.32	0.65
34:AA:643:G:H1'	34:AA:684:G:N2	2.12	0.65
3:S3:82:ARG:NH1	8:SA:1254:G:OP1	2.29	0.65
8:SA:1319:G:N2	8:SA:1690:A:OP2	2.30	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:163:G:C6	34:AA:269:A:N1	2.65	0.65
34:AA:1083:G:H2'	34:AA:1084:A:C8	2.32	0.65
41:A6:58:VAL:HG21	46:Aa:90:MET:HE2	1.79	0.65
58:AM:93:TYR:CE2	78:A0:27:LYS:HE2	2.30	0.65
1:S1:113:LYS:NZ	8:SA:57:G:OP1	2.30	0.65
8:SA:1649:C:OP1	30:SW:3:ARG:N	2.30	0.65
8:SA:1886:C:OP1	16:SI:72:ARG:NH1	2.30	0.65
36:AB:28:C:OP1	72:AG:137:ARG:NH1	2.30	0.65
24:SQ:142:LYS:NZ	24:SQ:143:PRO:O	2.30	0.65
28:SU:98:MET:HE1	28:SU:114:ARG:HB2	1.77	0.65
32:SY:29:ILE:HG22	32:SY:159:ALA:HB2	1.78	0.65
34:AA:2157:G:H5"	70:AE:242:GLY:HA3	1.79	0.65
8:SA:413:A:H2'	8:SA:414:C:H6	1.61	0.65
22:SO:68:GLU:OE2	22:SO:75:GLN:NE2	2.29	0.65
36:AB:22:G:N3	36:AB:25:A:C6	2.65	0.65
8:SA:1023:A:H2'	8:SA:1024:A:C8	2.31	0.64
8:SA:1854:U:H3	31:SX:81:ARG:HB3	1.62	0.64
34:AA:195:A:H8	34:AA:216:C:HO2'	1.45	0.64
8:SA:325:U:H4'	8:SA:329:A:C8	2.32	0.64
8:SA:877:U:O4	8:SA:926:G:O6	2.16	0.64
8:SA:881:C:H2'	8:SA:882:A:H8	1.61	0.64
20:SM:7:ARG:HG3	20:SM:24:THR:HG22	1.80	0.64
34:AA:89:A:OP2	59:AS:172:LYS:NZ	2.25	0.64
37:AL:72:LYS:HE2	37:AL:97:ASP:HB3	1.79	0.64
8:SA:756:A:C6	8:SA:757:A:N6	2.65	0.64
19:SL:89:GLU:OE1	19:SL:92:ARG:NH1	2.30	0.64
30:SW:5:ARG:HB3	30:SW:9:ILE:HD11	1.80	0.64
30:SW:49:LYS:O	30:SW:49:LYS:NZ	2.31	0.64
38:A1:28:THR:HA	38:A1:41:CYS:HA	1.78	0.64
65:AT:166:GLN:O	65:AT:170:ASN:ND2	2.30	0.64
34:AA:3402:A:H2'	34:AA:3403:A:C8	2.33	0.64
62:AR:22:ARG:HB3	62:AR:28:THR:HG23	1.79	0.64
8:SA:411:C:O2'	15:SH:92:ARG:O	2.12	0.64
10:SC:73:VAL:HG22	10:SC:120:LEU:HB3	1.78	0.64
13:SF:45:VAL:HG23	13:SF:61:VAL:HG21	1.79	0.64
20:SM:13:LYS:HG2	20:SM:18:VAL:HG13	1.80	0.64
21:SN:42:ALA:HB1	21:SN:49:VAL:HG21	1.79	0.64
33:SZ:25:PRO:HD2	33:SZ:28:GLU:HG3	1.78	0.64
34:AA:979:G:C5	69:AD:181:LYS:HB2	2.32	0.64
1:S1:64:LEU:O	8:SA:538:U:O2'	2.15	0.64
12:SE:96:VAL:HA	12:SE:99:LEU:HD23	1.80	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
62:AR:55:LYS:NZ	62:AR:159:ASN:OD1	2.29	0.64
72:AG:22:CYS:HA	72:AG:66:SER:HB2	1.79	0.64
23:SP:41:PHE:HA	23:SP:57:THR:HA	1.78	0.64
23:SP:42:ILE:HG21	23:SP:81:VAL:HG11	1.78	0.64
32:SY:142:LYS:HE2	32:SY:146:ARG:HH21	1.63	0.64
75:AV:52:GLY:HA3	75:AV:93:ARG:HG3	1.79	0.64
7:S7:2:G:H1	7:S7:69:U:H3	1.46	0.64
8:SA:651:G:O6	8:SA:749:U:O4	2.16	0.64
34:AA:1576:U:OP2	60:AO:4:ARG:NH1	2.28	0.64
8:SA:887:A:N1	8:SA:915:G:C6	2.66	0.64
12:SE:22:GLU:N	12:SE:22:GLU:OE2	2.30	0.64
34:AA:440:A:H2'	34:AA:441:A:C8	2.32	0.64
34:AA:672:C:N4	34:AA:673:U:O4	2.31	0.64
34:AA:1630:A:O2'	34:AA:2125:A:H1'	1.98	0.64
34:AA:3362:A:OP1	70:AE:93:ARG:NH2	2.27	0.64
55:AJ:96:GLN:HA	55:AJ:245:LEU:HD11	1.79	0.64
69:AD:210:PRO:HG2	69:AD:235:VAL:HG11	1.80	0.64
21:SN:74:ASN:HB3	21:SN:76:TRP:HZ3	1.62	0.64
77:AX:63:PHE:O	77:AX:67:LYS:HB2	1.99	0.63
8:SA:337:G:OP1	19:SL:56:ARG:NH1	2.31	0.63
16:SI:13:LYS:NZ	16:SI:89:GLU:OE2	2.24	0.63
62:AR:89:PRO:HB2	62:AR:228:ASN:ND2	2.14	0.63
64:AY:111:ILE:HD11	64:AY:143:ILE:HG23	1.80	0.63
34:AA:3677:A:H2'	34:AA:3678:A:H8	1.64	0.63
34:AA:1219:A:N6	34:AA:1224:A:N7	2.46	0.63
34:AA:1424:C:H5'	73:AU:124:ARG:HE	1.62	0.63
68:A5:148:PRO:O	68:A5:152:THR:OG1	2.15	0.63
68:A5:233:ALA:HB3	68:A5:236:GLU:HG3	1.79	0.63
71:AF:364:GLN:O	71:AF:368:LEU:HB2	1.98	0.63
8:SA:598:A:H2'	8:SA:599:A:C8	2.34	0.63
8:SA:1880:A:C5	16:SI:48:GLN:HG3	2.34	0.63
59:AS:149:LYS:HB3	59:AS:163:ARG:HD2	1.80	0.63
5:S5:9:VAL:HG22	5:S5:25:VAL:HG11	1.80	0.63
17:SJ:9:LEU:HD21	17:SJ:21:ALA:HB2	1.81	0.63
34:AA:2145:A:H2'	34:AA:2146:A:O4'	1.99	0.63
34:AA:3668:U:OP2	45:A9:101:TRP:NE1	2.30	0.63
2:S2:97:SER:N	8:SA:1827:U:OP2	2.32	0.63
34:AA:1739:C:H2'	34:AA:1740:A:C8	2.34	0.63
10:SC:52:LYS:HA	10:SC:55:GLU:OE2	1.99	0.63
16:SI:156:ASN:OD1	16:SI:158:LYS:NZ	2.30	0.63
34:AA:957:G:O6	52:Ah:4:ARG:NH2	2.32	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:3657:G:H2'	34:AA:3658:G:C8	2.33	0.63
61:AQ:44:ASN:OD1	61:AQ:181:TYR:OH	2.16	0.63
71:AF:38:GLN:O	71:AF:42:THR:HG23	1.99	0.63
72:AG:41:THR:HG21	72:AG:71:VAL:HG11	1.81	0.63
77:AX:115:GLN:OE1	77:AX:115:GLN:N	2.32	0.63
17:SJ:76:ILE:HD12	17:SJ:80:LEU:HD21	1.81	0.63
34:AA:2449:U:OP2	69:AD:241:ARG:NH2	2.31	0.63
75:AV:18:LYS:HD2	75:AV:48:THR:HG23	1.80	0.63
5:S5:29:PHE:HD1	5:S5:30:MET:HG2	1.63	0.62
8:SA:73:A:N6	8:SA:80:A:N1	2.47	0.62
8:SA:1881:G:N2	8:SA:1907:G:O2'	2.31	0.62
31:SX:86:ILE:HG22	31:SX:88:GLU:H	1.63	0.62
34:AA:1788:C:OP2	46:Aa:74:ARG:NH1	2.31	0.62
34:AA:3197:A:N6	34:AA:3209:G:O2'	2.31	0.62
34:AA:3428:U:OP1	58:AM:50:ARG:NH1	2.32	0.62
51:AP:148:LYS:O	51:AP:150:ASN:N	2.29	0.62
51:AP:177:VAL:HG23	51:AP:182:SER:HB3	1.81	0.62
8:SA:413:A:H2'	8:SA:414:C:C6	2.34	0.62
8:SA:1979:C:P	15:SH:31:ARG:HH22	2.22	0.62
12:SE:52:ILE:HG23	12:SE:76:LEU:HD11	1.81	0.62
34:AA:268:C:N4	34:AA:269:A:N6	2.46	0.62
34:AA:956:A:OP2	52:Ah:4:ARG:NH1	2.32	0.62
8:SA:1858:U:H4'	8:SA:1896:C:H4'	1.80	0.62
20:SM:53:LEU:HD11	20:SM:58:SER:HB3	1.80	0.62
34:AA:1096:G:H21	34:AA:1231:A:H8	1.47	0.62
38:A1:13:ILE:HG22	38:A1:80:ILE:HG22	1.81	0.62
48:Ad:24:ILE:HD13	48:Ad:76:TYR:HE1	1.65	0.62
14:SG:122:HIS:HB3	14:SG:148:LEU:HD11	1.82	0.62
26:SS:86:LEU:HD13	26:SS:98:ILE:HA	1.81	0.62
37:AL:105:GLU:O	37:AL:109:THR:HG23	1.99	0.62
39:A2:11:GLU:OE2	59:AS:31:LYS:NZ	2.31	0.62
54:AI:61:ILE:HB	54:AI:105:VAL:HG13	1.82	0.62
65:AT:9:LEU:HD22	65:AT:37:ARG:HD3	1.80	0.62
79:S9:21:A:N6	79:S9:47:U:OP2	2.32	0.62
4:S4:19:LEU:O	4:S4:20:LYS:HG2	1.98	0.62
9:SB:47:LEU:HD21	23:SP:53:LEU:HD11	1.81	0.62
13:SF:45:VAL:HA	13:SF:61:VAL:HG11	1.82	0.62
34:AA:914:G:H2'	34:AA:915:G:C8	2.34	0.62
38:A1:48:LYS:HB2	38:A1:69:LYS:HG2	1.80	0.62
66:AZ:37:GLU:CD	66:AZ:37:GLU:H	2.07	0.62
34:AA:679:U:OP1	54:AI:43:LYS:NZ	2.31	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:1881:C:O2'	34:AA:1882:U:H6	1.81	0.62
36:AB:61:G:O2'	62:AR:281:ARG:NH2	2.33	0.62
43:AN:49:VAL:HG22	43:AN:50:THR:HG23	1.81	0.62
4:S4:68:LYS:NZ	8:SA:1119:G:OP2	2.24	0.62
32:SY:90:HIS:NE2	32:SY:92:ASP:O	2.32	0.62
43:AN:140:LYS:O	43:AN:144:THR:HG23	1.99	0.62
7:S7:56:U:O2'	7:S7:58:G:OP2	2.18	0.62
8:SA:554:U:OP1	24:SQ:140:LYS:NZ	2.33	0.62
8:SA:969:A:H3'	8:SA:970:G:H21	1.65	0.62
19:SL:66:SER:OG	19:SL:73:SER:OG	2.17	0.62
51:AP:33:LEU:O	51:AP:65:ARG:NH2	2.33	0.62
57:AK:178:LYS:O	57:AK:182:THR:HG23	2.00	0.62
29:SV:111:PRO:HB2	29:SV:138:VAL:HG12	1.82	0.62
34:AA:455:U:H2'	34:AA:456:A:H8	1.65	0.62
8:SA:1417:U:OP1	8:SA:1430:G:N2	2.23	0.61
30:SW:69:ILE:HG22	30:SW:71:LEU:HD22	1.81	0.61
34:AA:439:U:H2'	34:AA:440:A:H8	1.65	0.61
77:AX:64:PHE:HD2	77:AX:68:ILE:HD11	1.63	0.61
8:SA:1414:A:N6	8:SA:1660:U:O2	2.33	0.61
16:SI:62:ARG:HD2	16:SI:142:ILE:HG13	1.81	0.61
34:AA:1139:C:H2'	34:AA:1140:A:H8	1.63	0.61
37:AL:126:PRO:HA	37:AL:142:ASP:OD1	2.00	0.61
70:AE:353:LEU:HD23	70:AE:353:LEU:H	1.64	0.61
77:AX:51:LYS:NZ	77:AX:88:TYR:OH	2.32	0.61
8:SA:914:U:H2'	8:SA:915:G:H8	1.64	0.61
9:SB:119:THR:HG21	9:SB:156:ALA:H	1.65	0.61
20:SM:47:THR:HA	20:SM:50:TYR:HB3	1.81	0.61
34:AA:727:A:OP2	34:AA:3227:U:O2'	2.17	0.61
34:AA:888:A:H61	34:AA:3111:U:H5	1.47	0.61
34:AA:1443:U:OP1	57:AK:17:ARG:NH1	2.34	0.61
36:AB:22:G:O2'	36:AB:25:A:N6	2.33	0.61
8:SA:1821:A:N3	8:SA:1887:A:O2'	2.29	0.61
12:SE:39:LYS:HA	12:SE:42:ILE:HG23	1.82	0.61
34:AA:1821:U:H2'	34:AA:1822:A:C8	2.35	0.61
34:AA:1878:U:O4	65:AT:127:LYS:NZ	2.32	0.61
36:AB:3:A:H5'	36:AB:22:G:O6	2.00	0.61
57:AK:8:ILE:HD12	57:AK:32:ILE:HD13	1.81	0.61
7:S7:57:C:H3'	7:S7:58:G:H8	1.66	0.61
8:SA:884:G:H1	8:SA:918:U:H3	1.48	0.61
12:SE:135:ARG:HG2	12:SE:137:GLY:H	1.64	0.61
15:SH:198:ARG:O	15:SH:202:LYS:HG3	2.00	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:SI:118:ARG:O	16:SI:128:GLN:N	2.32	0.61
31:SX:85:ILE:HG21	31:SX:107:ILE:HG12	1.81	0.61
34:AA:268:C:C4	34:AA:269:A:N6	2.69	0.61
34:AA:437:A:OP2	44:A8:15:LYS:NZ	2.30	0.61
34:AA:1444:A:H5'	57:AK:129:LYS:HE2	1.82	0.61
34:AA:2823:U:OP2	55:AJ:87:ARG:NH1	2.32	0.61
35:AC:5:A:H61	63:AW:38:ARG:HD3	1.66	0.61
3:S3:45:VAL:HB	3:S3:49:ALA:HB3	1.83	0.61
8:SA:1888:U:H2'	8:SA:1889:G:H8	1.66	0.61
12:SE:141:VAL:HG12	12:SE:143:ILE:H	1.66	0.61
16:SI:42:HIS:HD1	16:SI:77:LYS:HB2	1.65	0.61
22:SO:30:GLY:HA2	22:SO:79:LEU:HD22	1.81	0.61
26:SS:105:LEU:O	26:SS:109:LEU:HG	2.01	0.61
34:AA:674:U:H2'	34:AA:675:A:C8	2.35	0.61
46:Aa:83:ARG:NH1	46:Aa:84:CYS:SG	2.74	0.61
69:AD:6:ARG:NH1	69:AD:198:LYS:O	2.34	0.61
11:SD:151:MET:N	11:SD:151:MET:SD	2.74	0.61
30:SW:6:THR:HG22	30:SW:8:THR:H	1.65	0.61
34:AA:203:A:H2	34:AA:207:A:C2	2.17	0.61
34:AA:1331:A:H2'	34:AA:1332:A:C8	2.36	0.61
71:AF:183:LEU:HD11	71:AF:206:GLY:HA3	1.82	0.61
1:S1:94:ARG:NH2	8:SA:533:A:OP2	2.32	0.61
63:AW:53:GLU:OE1	63:AW:55:LYS:NZ	2.33	0.61
68:A5:164:ARG:HB3	68:A5:171:TYR:HB3	1.82	0.61
7:S7:3:G:H1	7:S7:68:U:H3	1.47	0.61
7:S7:13:C:H2'	7:S7:14:A:C8	2.36	0.61
8:SA:1455:C:O2'	8:SA:1456:G:O5'	2.19	0.61
8:SA:1669:C:OP1	11:SD:154:ARG:NH2	2.34	0.61
10:SC:38:TYR:CD2	10:SC:39:THR:HG22	2.36	0.61
19:SL:31:ARG:HG3	19:SL:32:PRO:HD2	1.82	0.61
22:SO:40:ILE:HD12	22:SO:41:PRO:HD2	1.82	0.61
24:SQ:97:ASP:HB2	24:SQ:144:ARG:HH22	1.66	0.61
34:AA:1511:U:H2'	34:AA:1512:A:C8	2.36	0.61
34:AA:2588:A:C5	58:AM:39:ILE:HD12	2.35	0.61
42:A7:98:TYR:HE2	42:A7:100:ILE:HD11	1.64	0.61
51:AP:63:ARG:NH1	51:AP:132:GLU:OE1	2.33	0.61
3:S3:57:SER:OG	3:S3:58:VAL:N	2.31	0.61
14:SG:59:ILE:HG13	14:SG:62:ILE:HD11	1.83	0.61
51:AP:84:PRO:HA	51:AP:87:GLN:HG3	1.82	0.61
53:Ai:35:SER:O	53:Ai:40:ARG:NH1	2.34	0.61
26:SS:126:ARG:NH1	26:SS:133:VAL:HA	2.16	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:770:U:OP2	34:AA:771:U:O2'	2.16	0.60
34:AA:3001:A:H2'	34:AA:3002:G:C8	2.36	0.60
40:A4:38:ASN:OD1	40:A4:41:ARG:NH2	2.35	0.60
8:SA:454:U:H2'	8:SA:455:C:C6	2.36	0.60
11:SD:27:ARG:O	22:SO:69:LYS:NZ	2.34	0.60
16:SI:42:HIS:ND1	16:SI:77:LYS:HB2	2.16	0.60
32:SY:156:ASN:HB3	32:SY:160:ARG:HH12	1.65	0.60
34:AA:2451:A:OP2	69:AD:156:LYS:NZ	2.26	0.60
34:AA:3258:C:O2'	74:AH:170:ASP:OD2	2.17	0.60
34:AA:3683:G:H2'	34:AA:3684:A:H4'	1.83	0.60
47:Ab:81:LYS:HD3	47:Ab:87:HIS:HA	1.83	0.60
71:AF:152:LEU:HD21	71:AF:251:ILE:HD13	1.83	0.60
8:SA:755:A:H2'	8:SA:756:A:H8	1.66	0.60
8:SA:1453:G:H2'	8:SA:1454:G:C8	2.36	0.60
15:SH:195:GLU:O	15:SH:199:LEU:HD12	2.01	0.60
20:SM:128:LYS:HG2	20:SM:135:ALA:HA	1.84	0.60
33:SZ:70:ARG:NH1	33:SZ:74:GLU:OE1	2.33	0.60
34:AA:3241:U:H2'	34:AA:3242:U:C6	2.36	0.60
8:SA:964:G:H2'	8:SA:965:U:C6	2.37	0.60
16:SI:113:ARG:NH2	16:SI:132:VAL:O	2.34	0.60
17:SJ:50:ILE:HG13	17:SJ:59:THR:HG23	1.83	0.60
34:AA:456:A:H2'	34:AA:457:A:H8	1.65	0.60
34:AA:540:C:H2'	34:AA:541:A:C8	2.36	0.60
34:AA:2450:G:N7	69:AD:152:SER:OG	2.33	0.60
34:AA:2742:G:O6	34:AA:2806:U:O4	2.20	0.60
34:AA:3107:U:H2'	34:AA:3108:A:H8	1.66	0.60
66:AZ:34:LEU:HD21	66:AZ:47:LEU:HB2	1.84	0.60
34:AA:171:C:H5'	37:AL:133:LYS:HB3	1.82	0.60
34:AA:911:U:H2'	34:AA:912:U:C6	2.37	0.60
34:AA:3585:A:HO2'	34:AA:3586:U:H6	1.49	0.60
66:AZ:90:ASN:OD1	66:AZ:91:GLY:N	2.35	0.60
79:S9:26:G:H1	79:S9:44:A:H2	1.50	0.60
1:S1:42:GLU:O	1:S1:46:LYS:HG2	2.00	0.60
3:S3:2:PRO:HB3	8:SA:1243:A:H5"	1.84	0.60
4:S4:44:LEU:HD11	4:S4:52:VAL:HG21	1.83	0.60
8:SA:204:U:H2'	8:SA:205:A:H8	1.66	0.60
8:SA:1677:C:O2'	8:SA:1683:U:O4	2.19	0.60
8:SA:1880:A:C6	16:SI:48:GLN:HG3	2.37	0.60
8:SA:1911:A:H5'	16:SI:51:ARG:HE	1.65	0.60
34:AA:1895:U:H2'	34:AA:1896:C:C6	2.37	0.60
34:AA:1905:C:H2'	34:AA:1906:A:C8	2.36	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:A8:66:LEU:HD13	44:A8:70:ASN:HA	1.82	0.60
66:AZ:65:ARG:NH2	66:AZ:83:ARG:O	2.33	0.60
8:SA:1392:C:H2'	8:SA:1393:G:H8	1.67	0.60
17:SJ:76:ILE:HG22	17:SJ:79:LYS:HD2	1.83	0.60
30:SW:31:ASN:O	30:SW:35:THR:HG23	2.02	0.60
44:A8:87:MET:HA	44:A8:87:MET:HE2	1.83	0.60
1:S1:87:GLU:OE1	1:S1:91:ARG:NH1	2.33	0.60
8:SA:835:G:H1	8:SA:845:U:H3	1.50	0.60
8:SA:1902:G:OP1	21:SN:78:ARG:NH2	2.34	0.60
13:SF:122:LYS:HB3	13:SF:164:LEU:HD21	1.84	0.60
34:AA:66:A:OP2	37:AL:99:ARG:NH1	2.30	0.60
34:AA:733:C:H2'	34:AA:734:A:C8	2.37	0.60
34:AA:2167:G:O2'	34:AA:2627:U:O4	2.19	0.60
34:AA:2666:A:N3	34:AA:3183:G:O2'	2.28	0.60
34:AA:2819:U:H2'	34:AA:2820:A:H8	1.66	0.60
48:Ad:24:ILE:HB	48:Ad:42:LYS:HB2	1.82	0.60
52:Ah:78:ALA:O	52:Ah:82:THR:HG23	2.01	0.60
68:A5:83:CYS:SG	68:A5:84:PHE:N	2.75	0.60
8:SA:1679:G:C2	27:ST:39:GLN:HB3	2.37	0.60
8:SA:1808:G:H2'	8:SA:1809:G:C8	2.37	0.60
34:AA:338:U:H2'	34:AA:339:G:H8	1.67	0.60
34:AA:1816:G:H2'	34:AA:1817:G:C8	2.37	0.60
13:SF:191:ARG:HD2	13:SF:245:LYS:HB2	1.84	0.60
18:SK:30:SER:HB2	18:SK:61:ILE:HG13	1.84	0.60
32:SY:138:GLN:HG2	32:SY:145:ARG:HH11	1.66	0.60
30:SW:104:ARG:HA	30:SW:107:LYS:HG2	1.84	0.59
34:AA:3623:A:OP2	43:AN:139:LYS:NZ	2.35	0.59
72:AG:24:GLY:HA2	72:AG:65:ILE:HB	1.84	0.59
7:S7:73:C:O2'	53:Ai:55:PRO:O	2.16	0.59
8:SA:1277:G:N3	8:SA:1296:C:O2'	2.35	0.59
11:SD:123:VAL:O	11:SD:127:ILE:HG12	2.02	0.59
34:AA:158:U:OP2	51:AP:49:ARG:NH2	2.29	0.59
34:AA:159:C:H2'	34:AA:160:G:H8	1.66	0.59
55:AJ:75:ILE:HA	55:AJ:78:GLN:HB2	1.84	0.59
8:SA:183:C:H2'	8:SA:184:C:C6	2.37	0.59
11:SD:179:LYS:HD3	11:SD:180:GLN:HB2	1.83	0.59
17:SJ:49:LEU:HD21	17:SJ:58:LYS:HG3	1.84	0.59
26:SS:134:ARG:NH1	26:SS:135:GLY:O	2.35	0.59
34:AA:3000:A:H2'	34:AA:3001:A:H8	1.67	0.59
34:AA:452:A:O2'	34:AA:503:A:N7	2.34	0.59
7:S7:31:G:H3'	7:S7:32:U:H5"	1.83	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:SN:82:ARG:HB3	21:SN:84:TYR:HE1	1.67	0.59
34:AA:1198:A:O2'	40:A4:42:ASN:OD1	2.16	0.59
34:AA:2474:C:OP1	69:AD:193:ARG:NH2	2.35	0.59
50:Af:51:LEU:HG	74:AH:172:ARG:HG3	1.84	0.59
77:AX:64:PHE:O	77:AX:68:ILE:HD12	2.02	0.59
79:S9:4:G:O2'	79:S9:5:G:O5'	2.20	0.59
8:SA:453:U:O2'	13:SF:27:TYR:O	2.20	0.59
8:SA:1812:A:OP1	21:SN:58:LYS:NZ	2.35	0.59
15:SH:121:ILE:HB	15:SH:124:LEU:HB3	1.84	0.59
34:AA:193:C:H5"	66:AZ:121:LYS:HD3	1.84	0.59
59:AS:65:SER:OG	59:AS:88:ASP:OD2	2.21	0.59
8:SA:403:A:H5"	19:SL:51:ARG:HB2	1.83	0.59
8:SA:1279:G:H2'	8:SA:1280:G:O4'	2.03	0.59
9:SB:130:LEU:HD12	9:SB:180:LEU:HD12	1.85	0.59
20:SM:14:LYS:HB2	20:SM:120:GLY:HA3	1.85	0.59
38:A1:40:TYR:HA	38:A1:76:ASN:HA	1.85	0.59
8:SA:99:C:H1'	8:SA:432:G:H5'	1.85	0.59
8:SA:635:G:N1	8:SA:1039:A:OP2	2.31	0.59
23:SP:100:SER:OG	23:SP:105:SER:O	2.20	0.59
34:AA:308:U:HO2'	34:AA:309:G:H8	1.51	0.59
34:AA:1999:A:H2'	34:AA:2000:G:H8	1.68	0.59
43:AN:26:GLU:OE2	73:AU:157:ARG:NH2	2.30	0.59
52:Ah:51:CYS:HB3	52:Ah:54:ILE:HD12	1.84	0.59
7:S7:7:U:H3	7:S7:65:A:H2	1.48	0.59
12:SE:37:LYS:HG3	12:SE:38:ASN:HB2	1.85	0.59
15:SH:32:ILE:HD11	15:SH:63:MET:HE3	1.85	0.59
19:SL:217:ARG:NH2	19:SL:218:ASN:O	2.36	0.59
29:SV:8:GLN:HG2	29:SV:13:TYR:HB2	1.83	0.59
35:AC:25:C:OP1	71:AF:195:LYS:NZ	2.36	0.59
35:AC:31:U:H2'	35:AC:32:C:C6	2.38	0.59
3:S3:5:ARG:NH2	8:SA:2087:U:OP2	2.36	0.59
8:SA:423:A:H5'	8:SA:424:G:C4	2.37	0.59
14:SG:50:LEU:HD21	14:SG:56:ILE:HG13	1.84	0.59
18:SK:87:GLU:O	18:SK:91:THR:HG23	2.02	0.59
34:AA:3761:G:OP2	78:A0:57:ARG:NH2	2.36	0.59
42:A7:96:LYS:H	42:A7:96:LYS:HD3	1.68	0.59
79:S9:21:A:H61	79:S9:46:G:H2'	1.67	0.59
13:SF:100:ARG:NH2	13:SF:121:TYR:O	2.35	0.58
13:SF:254:ASN:HA	13:SF:257:LYS:HG2	1.85	0.58
18:SK:35:ILE:O	18:SK:39:GLN:HG3	2.03	0.58
34:AA:1247:C:H2'	34:AA:1248:A:H8	1.67	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:2112:G:H5'	34:AA:2113:C:H5"	1.85	0.58
34:AA:3478:G:OP1	58:AM:14:ARG:NH2	2.35	0.58
8:SA:12:U:H2'	8:SA:13:C:C6	2.38	0.58
8:SA:248:G:H21	29:SV:43:LEU:HD11	1.68	0.58
10:SC:103:THR:HG21	10:SC:114:LYS:HD2	1.85	0.58
17:SJ:141:ILE:HB	18:SK:52:ILE:HG23	1.84	0.58
39:A2:119:LEU:HD11	44:A8:115:MET:HG3	1.83	0.58
8:SA:1625:C:O2	20:SM:9:GLN:NE2	2.30	0.58
13:SF:43:PRO:HB2	13:SF:45:VAL:HG12	1.85	0.58
34:AA:1654:C:OP2	63:AW:23:ARG:NH2	2.37	0.58
34:AA:3000:A:H2'	34:AA:3001:A:C8	2.38	0.58
74:AH:109:THR:HG23	74:AH:127:ALA:HB3	1.83	0.58
79:S9:9:G:O2'	79:S9:10:G:N7	2.36	0.58
5:S5:15:ARG:HH22	8:SA:1912:C:H5"	1.68	0.58
8:SA:291:A:O2'	8:SA:292:G:OP1	2.20	0.58
8:SA:1297:A:OP2	8:SA:1710:G:N2	2.36	0.58
16:SI:16:TYR:OH	16:SI:37:CYS:SG	2.60	0.58
17:SJ:111:LYS:O	17:SJ:112:ILE:HG12	2.02	0.58
28:SU:87:ASP:N	28:SU:87:ASP:OD1	2.34	0.58
32:SY:38:ILE:HG13	32:SY:39:ARG:HD2	1.85	0.58
34:AA:918:G:O2'	37:AL:17:TRP:NE1	2.35	0.58
34:AA:1784:G:N2	34:AA:1787:A:OP2	2.28	0.58
34:AA:3553:G:H21	34:AA:3572:A:H8	1.50	0.58
51:AP:187:PRO:O	51:AP:188:SER:HB3	2.03	0.58
79:S9:26:G:O6	79:S9:44:A:N1	2.36	0.58
1:S1:4:GLN:HG3	8:SA:830:U:H3	1.68	0.58
8:SA:1878:C:OP1	20:SM:138:ARG:NH1	2.36	0.58
21:SN:47:LEU:HD11	21:SN:90:LEU:HB3	1.84	0.58
34:AA:123:A:OP1	55:AJ:121:LYS:NZ	2.36	0.58
34:AA:2699:C:H2'	34:AA:2700:C:C6	2.38	0.58
34:AA:3453:U:OP2	65:AT:61:ARG:NH2	2.31	0.58
58:AM:122:ARG:O	58:AM:126:GLU:HG2	2.04	0.58
8:SA:1199:U:OP1	14:SG:171:SER:OG	2.20	0.58
8:SA:1280:G:H21	8:SA:1706:A:N6	2.02	0.58
15:SH:198:ARG:HE	15:SH:202:LYS:HZ1	1.52	0.58
17:SJ:76:ILE:HA	17:SJ:79:LYS:HZ2	1.67	0.58
19:SL:62:SER:HA	19:SL:77:ARG:HA	1.85	0.58
23:SP:95:ILE:HB	23:SP:129:ILE:HG12	1.84	0.58
34:AA:530:U:H4'	71:AF:368:LEU:HD13	1.85	0.58
34:AA:3702:C:N3	63:AW:69:ARG:NH2	2.51	0.58
36:AB:40:A:N3	72:AG:72:ARG:NH1	2.52	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
72:AG:134:SER:O	72:AG:152:HIS:NE2	2.28	0.58
8:SA:1608:G:H2'	8:SA:1609:C:C6	2.38	0.58
8:SA:1799:A:OP2	32:SY:121:LYS:NZ	2.28	0.58
10:SC:136:SER:HB2	10:SC:141:ILE:HB	1.85	0.58
26:SS:25:LYS:O	26:SS:57:ARG:NH1	2.36	0.58
34:AA:1220:U:OP1	34:AA:1221:A:N6	2.35	0.58
34:AA:1312:U:OP2	43:AN:72:LYS:NZ	2.36	0.58
34:AA:1822:A:N1	34:AA:2004:U:H5	2.02	0.58
34:AA:3677:A:H2'	34:AA:3678:A:C8	2.38	0.58
37:AL:159:SER:HA	37:AL:162:LYS:HE2	1.85	0.58
77:AX:40:ILE:HD12	77:AX:41:LYS:H	1.67	0.58
1:S1:8:ARG:HH12	8:SA:829:G:H2'	1.68	0.58
8:SA:1261:A:H2'	8:SA:1262:C:C6	2.39	0.58
8:SA:1628:A:H5'	21:SN:56:PRO:HA	1.84	0.58
11:SD:106:LEU:HD12	11:SD:185:ILE:HG21	1.85	0.58
17:SJ:14:SER:H	17:SJ:17:GLU:HB3	1.69	0.58
54:AI:47:GLN:HG2	54:AI:48:ARG:H	1.68	0.58
58:AM:17:LEU:HD13	58:AM:53:ALA:HB3	1.86	0.58
79:S9:3:C:O2'	79:S9:4:G:OP1	2.16	0.58
8:SA:141:G:H2'	8:SA:142:G:C8	2.39	0.58
8:SA:1662:A:H2'	8:SA:1663:A:C8	2.39	0.58
10:SC:106:MET:HA	10:SC:112:ILE:HD11	1.86	0.58
34:AA:305:A:H4'	34:AA:306:C:H5"	1.85	0.58
34:AA:606:A:H2'	34:AA:607:A:C8	2.38	0.58
34:AA:3319:C:H2'	34:AA:3320:G:C8	2.39	0.58
36:AB:48:G:OP1	62:AR:225:TYR:OH	2.21	0.58
61:AQ:86:HIS:CD2	61:AQ:139:ARG:HE	2.22	0.58
8:SA:1849:U:OP2	31:SX:43:ARG:NH2	2.36	0.58
13:SF:63:MET:HE2	13:SF:63:MET:HA	1.85	0.58
20:SM:20:VAL:HB	20:SM:69:ARG:HG3	1.86	0.58
22:SO:46:LEU:HB3	22:SO:48:VAL:HG12	1.86	0.58
34:AA:803:A:H8	60:AO:58:MET:HE2	1.69	0.58
34:AA:1534:U:OP1	71:AF:143:ARG:NH1	2.37	0.58
8:SA:1008:A:H2'	8:SA:1009:A:C8	2.39	0.57
8:SA:1609:C:H2'	8:SA:1610:U:C6	2.39	0.57
14:SG:88:LEU:HD22	14:SG:116:ILE:HG13	1.85	0.57
16:SI:60:VAL:O	16:SI:64:VAL:HG13	2.04	0.57
16:SI:138:VAL:O	16:SI:142:ILE:HG12	2.04	0.57
17:SJ:175:VAL:O	17:SJ:179:ILE:HG22	2.04	0.57
18:SK:25:VAL:HG13	18:SK:63:VAL:HG13	1.86	0.57
34:AA:1322:G:H2'	34:AA:1323:A:C8	2.39	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:3019:A:H2	72:AG:24:GLY:HA3	1.69	0.57
34:AA:3433:C:H5'	70:AE:326:ALA:HA	1.86	0.57
40:A4:62:LYS:HA	40:A4:65:LYS:HE3	1.86	0.57
44:A8:91:LYS:HE3	44:A8:92:TYR:CE1	2.38	0.57
55:AJ:74:TYR:O	55:AJ:75:ILE:HG12	2.04	0.57
62:AR:170:ASP:O	62:AR:247:ARG:NH2	2.37	0.57
8:SA:1663:A:H2'	8:SA:1664:G:C8	2.39	0.57
16:SI:47:TYR:CD1	16:SI:48:GLN:HG2	2.39	0.57
26:SS:126:ARG:HG2	26:SS:131:LEU:HB2	1.85	0.57
34:AA:1064:U:H2'	34:AA:1065:U:C6	2.39	0.57
36:AB:12:U:OP2	36:AB:67:C:O2'	2.21	0.57
71:AF:115:VAL:HB	71:AF:120:LYS:HD2	1.86	0.57
8:SA:426:A:OP1	15:SH:96:SER:OG	2.15	0.57
8:SA:756:A:H4'	17:SJ:108:LYS:HE3	1.87	0.57
8:SA:954:G:H2'	8:SA:955:U:C6	2.39	0.57
8:SA:1453:G:H1	8:SA:1610:U:H3	1.52	0.57
8:SA:1636:A:N6	8:SA:1650:A:OP2	2.32	0.57
10:SC:74:VAL:HG13	10:SC:118:PRO:HB3	1.85	0.57
34:AA:3693:A:H2'	34:AA:3694:A:C8	2.39	0.57
71:AF:383:VAL:HG22	73:AU:134:ARG:HG3	1.86	0.57
8:SA:572:C:O2'	8:SA:584:G:N2	2.37	0.57
8:SA:829:G:H1'	8:SA:832:A:H62	1.68	0.57
8:SA:1723:A:H5"	32:SY:66:ARG:HH11	1.70	0.57
13:SF:18:TRP:O	13:SF:51:ARG:NH2	2.37	0.57
21:SN:39:MET:HG2	21:SN:40:LYS:HE2	1.87	0.57
34:AA:3639:G:H22	34:AA:3646:G:H22	1.52	0.57
8:SA:1879:U:O2'	8:SA:1911:A:N6	2.37	0.57
10:SC:55:GLU:OE1	10:SC:55:GLU:N	2.31	0.57
13:SF:149:TYR:HE1	15:SH:204:GLN:HE21	1.49	0.57
35:AC:26:U:OP1	66:AZ:11:ARG:NH2	2.33	0.57
37:AL:121:SER:HB3	67:A3:121:VAL:HG12	1.86	0.57
8:SA:547:U:N3	8:SA:549:A:N7	2.52	0.57
8:SA:1798:G:O6	32:SY:124:ARG:NH2	2.36	0.57
8:SA:1850:G:N2	8:SA:1852:A:H3'	2.18	0.57
11:SD:126:HIS:HA	11:SD:129:GLU:HG2	1.87	0.57
11:SD:171:THR:HG23	11:SD:188:LYS:HG2	1.85	0.57
15:SH:198:ARG:HH21	15:SH:202:LYS:HE2	1.70	0.57
34:AA:2401:C:H1'	34:AA:3736:A:H8	1.70	0.57
34:AA:3590:A:H4'	34:AA:3591:U:O5'	2.04	0.57
36:AB:62:U:OP2	62:AR:278:ARG:NE	2.33	0.57
39:A2:55:THR:HG22	39:A2:68:VAL:HG22	1.85	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
62:AR:143:PRO:HG2	62:AR:174:ASN:HB2	1.86	0.57
79:S9:69:C:H2'	79:S9:70:G:H8	1.69	0.57
34:AA:195:A:H8	34:AA:216:C:O2'	1.87	0.57
34:AA:734:A:H2'	34:AA:735:A:C8	2.39	0.57
34:AA:979:G:C6	69:AD:181:LYS:HB2	2.40	0.57
34:AA:1033:A:C2	69:AD:204:MET:HG2	2.39	0.57
34:AA:1577:A:H2'	60:AO:3:THR:HG21	1.86	0.57
34:AA:2649:A:H61	34:AA:3342:C:H5	1.48	0.57
34:AA:3201:C:OP1	34:AA:3203:C:N4	2.36	0.57
34:AA:3595:U:H2'	34:AA:3596:A:H8	1.70	0.57
62:AR:77:GLU:O	62:AR:108:ARG:NH1	2.36	0.57
69:AD:45:VAL:HG12	69:AD:61:VAL:HG22	1.85	0.57
72:AG:11:GLU:OE2	72:AG:11:GLU:N	2.28	0.57
1:S1:89:LYS:HA	1:S1:92:LEU:HD12	1.86	0.57
3:S3:49:ALA:HB2	23:SP:117:ARG:HE	1.69	0.57
5:S5:28:GLN:OE1	5:S5:38:ARG:NH1	2.38	0.57
7:S7:66:C:H2'	7:S7:67:A:H8	1.69	0.57
8:SA:1076:C:O3'	23:SP:149:ARG:NH1	2.38	0.57
10:SC:172:LEU:O	10:SC:176:LEU:HG	2.04	0.57
34:AA:3035:A:N7	34:AA:3097:A:N6	2.53	0.57
34:AA:3386:A:H2'	34:AA:3387:U:C6	2.39	0.57
62:AR:38:LEU:HD13	75:AV:31:TYR:HB3	1.86	0.57
63:AW:108:ASP:N	63:AW:152:GLU:OE2	2.38	0.57
8:SA:519:A:O2'	12:SE:133:HIS:HE1	1.88	0.57
12:SE:40:ARG:O	12:SE:44:ARG:HG3	2.04	0.57
12:SE:58:TYR:O	12:SE:61:THR:OG1	2.23	0.57
14:SG:94:LYS:HD3	14:SG:96:MET:HG3	1.86	0.57
16:SI:9:LYS:HD2	16:SI:15:SER:HB2	1.87	0.57
34:AA:2699:C:H2'	34:AA:2700:C:H6	1.70	0.57
68:A5:81:ASN:OD1	68:A5:82:ASN:N	2.38	0.57
5:S5:9:VAL:HB	5:S5:52:ASP:HB3	1.87	0.57
8:SA:121:A:H1'	8:SA:403:A:C5	2.40	0.57
34:AA:607:A:O2'	34:AA:608:A:O5'	2.22	0.57
34:AA:1480:G:N7	39:A2:104:LYS:NZ	2.49	0.57
34:AA:2021:A:H2'	34:AA:2022:A:C8	2.40	0.57
34:AA:3120:U:OP1	34:AA:3140:U:H5	1.87	0.57
6:S6:37:ARG:HG3	12:SE:123:HIS:CE1	2.40	0.56
8:SA:885:C:N3	8:SA:917:C:N4	2.49	0.56
8:SA:1438:A:N6	8:SA:1662:A:N1	2.54	0.56
8:SA:1717:A:O5'	8:SA:1870:A:N6	2.37	0.56
15:SH:98:ARG:NH2	15:SH:101:ILE:O	2.31	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:SM:94:TYR:HE2	20:SM:102:THR:HB	1.70	0.56
34:AA:179:G:O2'	34:AA:180:C:OP1	2.21	0.56
36:AB:27:A:H2'	36:AB:28:C:C6	2.40	0.56
37:AL:144:ASP:OD1	37:AL:147:THR:HG22	2.05	0.56
67:A3:107:LYS:O	67:A3:111:GLN:HG3	2.05	0.56
79:S9:22:G:N7	79:S9:46:G:O6	2.38	0.56
1:S1:37:LYS:NZ	8:SA:529:U:OP1	2.34	0.56
8:SA:1384:U:H5"	8:SA:1385:U:H2'	1.87	0.56
8:SA:1637:U:H2'	8:SA:1638:U:C6	2.40	0.56
16:SI:39:TYR:HB2	20:SM:44:ILE:HG22	1.86	0.56
16:SI:59:ILE:HD11	16:SI:107:VAL:HG21	1.87	0.56
21:SN:36:SER:HA	21:SN:39:MET:SD	2.44	0.56
22:SO:51:LEU:HA	22:SO:54:MET:SD	2.45	0.56
28:SU:45:GLN:HA	28:SU:49:GLN:HE21	1.69	0.56
34:AA:505:A:H2'	34:AA:506:A:H8	1.70	0.56
34:AA:746:A:H2'	34:AA:747:A:H8	1.66	0.56
34:AA:1024:U:O2'	69:AD:12:ARG:NH2	2.37	0.56
34:AA:1720:C:H2'	34:AA:1721:C:C6	2.40	0.56
34:AA:1762:A:O2'	34:AA:1763:G:H8	1.87	0.56
34:AA:3443:A:N6	34:AA:3470:G:O2'	2.37	0.56
34:AA:3698:U:O3'	70:AE:331:ARG:NH2	2.39	0.56
37:AL:88:ALA:HB1	37:AL:139:ILE:HD13	1.87	0.56
3:S3:53:ILE:HG22	23:SP:120:ALA:HB2	1.87	0.56
8:SA:1022:A:H2'	8:SA:1023:A:C8	2.40	0.56
8:SA:1319:G:O2'	8:SA:1365:G:N2	2.38	0.56
8:SA:1824:A:H4'	16:SI:78:LEU:HD22	1.87	0.56
8:SA:1862:C:H2'	8:SA:1863:U:C6	2.40	0.56
8:SA:1911:A:H5'	16:SI:51:ARG:NE	2.20	0.56
9:SB:147:GLN:CD	9:SB:147:GLN:H	2.13	0.56
16:SI:26:LEU:O	16:SI:30:ILE:HG23	2.05	0.56
23:SP:61:LYS:NZ	23:SP:80:ASP:OD2	2.24	0.56
27:ST:13:GLY:O	27:ST:17:ARG:NH1	2.37	0.56
34:AA:440:A:H2'	34:AA:441:A:H8	1.69	0.56
34:AA:451:C:N4	34:AA:694:U:O2'	2.31	0.56
35:AC:5:A:N1	63:AW:38:ARG:NH1	2.53	0.56
48:Ad:5:ILE:HD11	48:Ad:11:PHE:HD1	1.70	0.56
53:Ai:72:GLU:HG2	53:Ai:79:LYS:HG2	1.88	0.56
58:AM:98:GLU:OE2	78:A0:31:ARG:N	2.38	0.56
66:AZ:11:ARG:O	66:AZ:15:ARG:HG2	2.06	0.56
75:AV:46:ASP:OD1	75:AV:48:THR:OG1	2.23	0.56
76:Ag:9:LYS:O	76:Ag:9:LYS:HG3	2.04	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:S4:30:PHE:CZ	28:SU:61:PRO:HG3	2.40	0.56
7:S7:66:C:H2'	7:S7:67:A:C8	2.41	0.56
10:SC:79:ARG:HD3	10:SC:128:THR:HG21	1.86	0.56
28:SU:28:GLN:NE2	28:SU:32:GLU:OE2	2.38	0.56
34:AA:203:A:C2	34:AA:207:A:H2	2.23	0.56
34:AA:1072:A:H4'	34:AA:1073:G:H21	1.71	0.56
34:AA:2633:U:OP1	70:AE:233:LYS:NZ	2.35	0.56
5:S5:8:LYS:HB2	5:S5:28:GLN:HG3	1.87	0.56
8:SA:204:U:H2'	8:SA:205:A:C8	2.40	0.56
8:SA:1711:U:OP1	20:SM:140:GLN:NE2	2.39	0.56
8:SA:1912:C:H42	16:SI:50:LYS:HG3	1.69	0.56
14:SG:250:SER:N	14:SG:253:GLU:OE2	2.39	0.56
16:SI:156:ASN:O	16:SI:158:LYS:N	2.33	0.56
21:SN:28:LEU:HD23	21:SN:28:LEU:H	1.70	0.56
25:SR:58:PHE:HD2	25:SR:87:GLN:HB2	1.70	0.56
34:AA:1843:U:H2'	34:AA:1844:G:C8	2.40	0.56
34:AA:3260:G:O2'	34:AA:3410:A:N1	2.38	0.56
37:AL:123:VAL:HG13	67:A3:119:LEU:HB2	1.86	0.56
2:S2:38:HIS:HB3	2:S2:70:VAL:HA	1.88	0.56
8:SA:1729:A:N6	8:SA:1821:A:N7	2.54	0.56
15:SH:23:LYS:O	15:SH:40:SER:OG	2.24	0.56
20:SM:47:THR:O	20:SM:51:GLU:HG2	2.05	0.56
34:AA:687:G:H2'	34:AA:688:U:C6	2.41	0.56
34:AA:1740:A:H2'	34:AA:1741:G:C8	2.41	0.56
34:AA:2588:A:C6	58:AM:39:ILE:HD12	2.40	0.56
34:AA:2814:U:H2'	34:AA:2815:G:H8	1.70	0.56
34:AA:3580:G:O2'	34:AA:3582:G:OP2	2.24	0.56
38:A1:47:GLU:HB3	38:A1:69:LYS:HG3	1.88	0.56
55:AJ:257:LYS:H	55:AJ:257:LYS:HD2	1.71	0.56
56:Ac:83:GLU:HB2	67:A3:84:LYS:HD2	1.87	0.56
8:SA:1717:A:H2	8:SA:1720:G:N3	2.04	0.56
8:SA:1884:A:H2'	8:SA:1885:G:H8	1.70	0.56
15:SH:57:ASP:OD1	15:SH:61:PHE:N	2.39	0.56
34:AA:2119:G:H5"	56:Ac:3:LYS:HG3	1.87	0.56
41:A6:77:ASN:HB2	41:A6:89:ARG:HB3	1.88	0.56
55:AJ:174:VAL:HG11	55:AJ:179:LEU:HD11	1.86	0.56
72:AG:98:ASP:OD1	72:AG:98:ASP:N	2.33	0.56
8:SA:16:G:H2'	8:SA:17:C:C6	2.41	0.56
8:SA:881:C:H2'	8:SA:882:A:C8	2.40	0.56
8:SA:1938:C:H2'	8:SA:1939:G:C8	2.41	0.56
8:SA:1976:G:H2'	8:SA:1977:G:C8	2.41	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:SI:42:HIS:CE1	16:SI:77:LYS:HB2	2.41	0.56
26:SS:90:LYS:HE2	26:SS:92:LEU:HG	1.87	0.56
34:AA:26:A:H2'	34:AA:27:U:H6	1.71	0.56
36:AB:22:G:C2	36:AB:25:A:C6	2.93	0.56
41:A6:100:ASP:OD1	41:A6:100:ASP:N	2.32	0.56
20:SM:130:PHE:HE2	21:SN:75:THR:HA	1.70	0.56
30:SW:7:LYS:O	30:SW:11:ARG:HG2	2.04	0.56
30:SW:74:GLN:O	30:SW:77:GLU:HG3	2.06	0.56
34:AA:3387:U:O2'	70:AE:175:ILE:HD11	2.05	0.56
44:A8:91:LYS:HE3	44:A8:92:TYR:HE1	1.70	0.56
55:AJ:259:MET:HA	55:AJ:259:MET:HE3	1.88	0.56
8:SA:923:U:H3'	8:SA:924:A:H3'	1.88	0.56
10:SC:55:GLU:HA	10:SC:58:GLN:CG	2.35	0.56
11:SD:144:ARG:O	11:SD:144:ARG:HG2	2.05	0.56
17:SJ:140:ARG:NH1	18:SK:51:GLU:OE2	2.38	0.56
23:SP:44:VAL:HG21	23:SP:85:LEU:HD11	1.88	0.56
23:SP:131:ASP:OD1	23:SP:133:THR:HG22	2.06	0.56
34:AA:600:U:H2'	34:AA:601:G:H8	1.71	0.56
34:AA:709:A:H2'	34:AA:710:C:C6	2.39	0.56
69:AD:51:ASP:HB3	69:AD:54:ARG:HG2	1.88	0.56
6:S6:46:ASP:OD1	6:S6:46:ASP:N	2.36	0.55
8:SA:404:G:P	19:SL:47:ARG:HH22	2.29	0.55
8:SA:887:A:C2	8:SA:915:G:N1	2.71	0.55
8:SA:1300:G:C8	21:SN:65:ARG:HB3	2.41	0.55
24:SQ:117:LEU:HD12	24:SQ:118:PRO:HD2	1.88	0.55
34:AA:3587:U:H2'	34:AA:3588:A:C8	2.40	0.55
38:A1:51:LEU:O	38:A1:65:ARG:NH2	2.39	0.55
16:SI:47:TYR:HD1	16:SI:48:GLN:HG2	1.71	0.55
56:Ac:22:CYS:HB2	56:Ac:30:TYR:HB2	1.87	0.55
66:AZ:81:VAL:HG22	66:AZ:84:VAL:HG23	1.89	0.55
8:SA:1603:U:O2	32:SY:27:ASN:ND2	2.39	0.55
8:SA:1734:G:O2'	8:SA:1790:C:O2'	2.24	0.55
26:SS:86:LEU:HG	26:SS:89:ARG:HG2	1.88	0.55
28:SU:33:ILE:O	28:SU:37:ILE:HG23	2.06	0.55
28:SU:54:LEU:HB3	28:SU:60:ILE:HD11	1.88	0.55
34:AA:417:A:C2	35:AC:21:A:H1'	2.41	0.55
34:AA:745:C:O2	34:AA:915:G:N2	2.40	0.55
34:AA:1086:C:OP1	60:AO:47:LYS:NZ	2.39	0.55
34:AA:2020:A:H2'	34:AA:2021:A:C8	2.41	0.55
34:AA:3431:G:OP1	70:AE:19:ARG:NH2	2.39	0.55
34:AA:3639:G:H22	34:AA:3646:G:H1	1.54	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:AC:30:U:H2'	35:AC:31:U:C6	2.41	0.55
38:A1:3:LYS:HE3	38:A1:3:LYS:HA	1.87	0.55
50:Af:49:LYS:O	74:AH:172:ARG:NH1	2.39	0.55
59:AS:98:LYS:HG2	59:AS:118:GLU:OE1	2.06	0.55
34:AA:1604:U:OP1	34:AA:2146:A:N6	2.35	0.55
35:AC:147:U:O2'	51:AP:110:ILE:O	2.20	0.55
39:A2:23:ASN:ND2	39:A2:26:GLY:O	2.39	0.55
39:A2:49:LEU:HD23	39:A2:49:LEU:H	1.72	0.55
44:A8:14:THR:HG22	44:A8:15:LYS:H	1.70	0.55
55:AJ:71:TRP:O	55:AJ:76:ARG:NH1	2.40	0.55
3:S3:90:GLU:CD	3:S3:90:GLU:H	2.15	0.55
8:SA:1410:G:H2'	8:SA:1411:G:H8	1.71	0.55
17:SJ:102:LYS:HB3	17:SJ:105:GLN:HG2	1.87	0.55
26:SS:126:ARG:HG2	26:SS:131:LEU:HD12	1.89	0.55
34:AA:439:U:H2'	34:AA:440:A:C8	2.40	0.55
34:AA:3587:U:H2'	34:AA:3588:A:H8	1.71	0.55
34:AA:3636:U:O2	34:AA:3649:G:N2	2.31	0.55
34:AA:966:A:H2'	34:AA:967:A:C8	2.42	0.55
34:AA:1316:U:OP1	34:AA:1338:U:O2'	2.23	0.55
34:AA:1791:A:OP2	46:Aa:68:LYS:NZ	2.38	0.55
34:AA:1820:U:H2'	34:AA:1821:U:C6	2.41	0.55
43:AN:35:TYR:HB3	43:AN:73:ARG:HG2	1.87	0.55
50:Af:10:ALA:O	50:Af:14:ASN:CB	2.45	0.55
56:Ac:51:ASN:OD1	56:Ac:57:LYS:NZ	2.39	0.55
70:AE:201:PRO:HG2	70:AE:204:THR:HG23	1.89	0.55
5:S5:27:ALA:HB2	5:S5:42:ARG:HG3	1.88	0.55
8:SA:1717:A:N3	8:SA:1720:G:O2'	2.28	0.55
34:AA:10:G:O6	35:AC:155:A:N1	2.39	0.55
34:AA:180:C:H2'	34:AA:181:C:C6	2.42	0.55
34:AA:1283:C:OP1	68:A5:103:LYS:NZ	2.40	0.55
34:AA:2163:A:O2'	34:AA:3439:G:H4'	2.06	0.55
34:AA:3387:U:H2'	34:AA:3388:U:C6	2.41	0.55
58:AM:12:LYS:HB2	58:AM:127:LEU:HD11	1.87	0.55
8:SA:1422:U:H3'	10:SC:101:ARG:HH12	1.71	0.55
10:SC:127:ARG:NH2	10:SC:150:ASP:O	2.40	0.55
13:SF:44:LEU:HD22	13:SF:82:PHE:HB3	1.88	0.55
30:SW:71:LEU:H	30:SW:74:GLN:HE22	1.55	0.55
34:AA:64:G:OP1	51:AP:186:ARG:NH2	2.40	0.55
34:AA:674:U:OP2	68:A5:47:LYS:NZ	2.40	0.55
34:AA:1141:G:N2	34:AA:1156:U:O2	2.30	0.55
34:AA:1553:U:O2'	34:AA:1554:G:O5'	2.24	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:2817:U:H2'	34:AA:2818:U:C6	2.42	0.55
66:AZ:38:LEU:HA	66:AZ:41:LYS:HB3	1.88	0.55
1:S1:57:VAL:HG22	1:S1:75:LEU:HB2	1.88	0.55
6:S6:17:GLN:HE21	8:SA:570:U:H4'	1.72	0.55
8:SA:70:U:H2'	8:SA:71:A:C8	2.42	0.55
8:SA:1381:C:H2'	8:SA:1382:G:H8	1.70	0.55
29:SV:36:ARG:NH1	29:SV:56:TYR:O	2.35	0.55
62:AR:245:LYS:HA	62:AR:248:GLN:HG3	1.89	0.55
73:AU:14:HIS:HA	73:AU:109:GLU:HG2	1.89	0.55
8:SA:883:A:H2'	8:SA:884:G:H8	1.71	0.55
16:SI:63:LEU:HD21	16:SI:142:ILE:HD12	1.88	0.55
26:SS:86:LEU:HD11	26:SS:89:ARG:HA	1.87	0.55
34:AA:423:U:OP1	63:AW:34:ARG:NH1	2.39	0.55
34:AA:1030:C:H5"	69:AD:15:ILE:HD13	1.87	0.55
34:AA:1435:G:C6	57:AK:59:LEU:HD21	2.42	0.55
34:AA:2217:A:OP1	65:AT:103:ARG:NH1	2.40	0.55
34:AA:3431:G:N2	70:AE:274:GLU:OE2	2.38	0.55
41:A6:77:ASN:OD1	41:A6:77:ASN:N	2.39	0.55
47:Ab:91:LYS:O	47:Ab:95:GLU:HG3	2.07	0.55
4:S4:18:LYS:HG3	4:S4:19:LEU:O	2.07	0.54
8:SA:964:G:H1	8:SA:986:U:H3	1.54	0.54
8:SA:1982:G:O6	8:SA:2008:U:O4	2.26	0.54
34:AA:3319:C:H2'	34:AA:3320:G:H8	1.73	0.54
36:AB:22:G:N2	36:AB:25:A:C5	2.75	0.54
62:AR:34:LYS:HA	62:AR:37:ILE:HG12	1.87	0.54
8:SA:1679:G:H2'	8:SA:1680:U:C6	2.42	0.54
8:SA:1844:A:OP1	31:SX:114:TYR:OH	2.25	0.54
19:SL:46:VAL:HG21	19:SL:56:ARG:HE	1.71	0.54
31:SX:80:LEU:HD21	31:SX:83:MET:HB2	1.89	0.54
34:AA:683:A:O2'	54:AI:41:LYS:NZ	2.36	0.54
34:AA:3106:U:H2'	34:AA:3107:U:C6	2.42	0.54
41:A6:16:LYS:O	41:A6:20:VAL:HG13	2.07	0.54
71:AF:67:TRP:CZ3	71:AF:71:ARG:HG3	2.43	0.54
8:SA:1974:U:OP1	19:SL:42:GLN:NE2	2.40	0.54
14:SG:50:LEU:CD2	14:SG:56:ILE:HG13	2.38	0.54
26:SS:66:ILE:O	26:SS:70:VAL:HG13	2.07	0.54
29:SV:115:SER:OG	29:SV:117:CYS:SG	2.65	0.54
30:SW:35:THR:O	30:SW:39:ALA:HB3	2.08	0.54
34:AA:661:G:N1	34:AA:673:U:N3	2.54	0.54
69:AD:67:GLU:OE2	69:AD:67:GLU:N	2.25	0.54
8:SA:144:U:H2'	8:SA:145:A:H8	1.73	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:756:A:H2'	8:SA:757:A:C8	2.43	0.54
34:AA:864:U:O2'	59:AS:74:HIS:NE2	2.39	0.54
34:AA:3042:A:N6	62:AR:28:THR:O	2.36	0.54
34:AA:3399:U:H2'	34:AA:3400:C:C6	2.43	0.54
37:AL:183:PHE:O	60:AO:138:LYS:NZ	2.40	0.54
43:AN:66:ARG:HD3	73:AU:79:LEU:HD13	1.89	0.54
59:AS:54:MET:O	59:AS:59:ARG:NH1	2.40	0.54
77:AX:80:LYS:O	77:AX:95:HIS:ND1	2.36	0.54
5:S5:42:ARG:NH1	5:S5:61:ARG:O	2.40	0.54
31:SX:85:ILE:HD12	31:SX:85:ILE:H	1.71	0.54
34:AA:307:G:C2'	34:AA:308:U:H5'	2.38	0.54
34:AA:3108:A:H5'	53:Ai:79:LYS:HD2	1.89	0.54
36:AB:39:C:O2'	36:AB:40:A:OP1	2.22	0.54
58:AM:103:VAL:HG11	58:AM:116:ILE:HD12	1.89	0.54
65:AT:118:LEU:HD11	65:AT:144:GLU:OE2	2.06	0.54
78:A0:32:ASP:N	78:A0:32:ASP:OD1	2.39	0.54
7:S7:14:A:H2'	7:S7:15:G:C8	2.42	0.54
8:SA:1699:A:O2'	31:SX:81:ARG:NH1	2.41	0.54
8:SA:1705:C:C5	26:SS:139:LYS:HB3	2.42	0.54
8:SA:1729:A:H2'	8:SA:1730:A:C8	2.42	0.54
8:SA:1884:A:H2'	8:SA:1885:G:C8	2.43	0.54
12:SE:153:GLU:OE1	12:SE:153:GLU:N	2.29	0.54
16:SI:169:ILE:O	16:SI:173:ASN:ND2	2.40	0.54
34:AA:282:U:H2'	34:AA:283:U:C6	2.42	0.54
34:AA:2473:A:H2'	34:AA:2474:C:C6	2.43	0.54
8:SA:1247:G:H2'	8:SA:1248:A:C8	2.43	0.54
21:SN:28:LEU:HG	21:SN:29:ARG:HE	1.72	0.54
21:SN:65:ARG:HG3	21:SN:66:LYS:O	2.08	0.54
23:SP:101:GLY:HA2	23:SP:134:PRO:HG2	1.89	0.54
34:AA:3128:A:H2'	34:AA:3129:U:C6	2.42	0.54
35:AC:79:G:H2'	35:AC:80:C:C6	2.43	0.54
46:Aa:39:ALA:HB2	46:Aa:58:ARG:HG2	1.88	0.54
55:AJ:108:ASP:N	55:AJ:108:ASP:OD1	2.38	0.54
55:AJ:255:SER:OG	55:AJ:256:ALA:N	2.40	0.54
58:AM:129:PRO:O	58:AM:132:SER:OG	2.24	0.54
70:AE:80:GLU:OE1	70:AE:311:TYR:OH	2.23	0.54
71:AF:66:SER:O	71:AF:66:SER:OG	2.14	0.54
71:AF:71:ARG:HB3	71:AF:73:VAL:HG22	1.90	0.54
8:SA:1626:U:O2'	8:SA:1812:A:N1	2.36	0.54
8:SA:1821:A:H2'	8:SA:1822:A:C8	2.43	0.54
16:SI:68:MET:HG2	16:SI:77:LYS:HE3	1.90	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:SW:6:THR:O	30:SW:9:ILE:HG13	2.08	0.54
34:AA:1515:A:O2'	44:A8:45:ARG:NH1	2.41	0.54
58:AM:106:ASN:HB3	58:AM:110:GLU:HG2	1.89	0.54
72:AG:42:GLU:OE1	72:AG:75:LYS:NZ	2.41	0.54
74:AH:184:THR:OG1	74:AH:185:THR:N	2.41	0.54
78:A0:59:THR:O	78:A0:63:ARG:HG2	2.07	0.54
8:SA:157:G:O3'	15:SH:87:ARG:NH2	2.41	0.54
8:SA:955:U:O2'	23:SP:135:ILE:O	2.25	0.54
8:SA:1270:G:N1	8:SA:1872:G:OP2	2.41	0.54
8:SA:1457:A:H2'	8:SA:1458:G:O4'	2.07	0.54
10:SC:187:VAL:HG12	10:SC:188:ILE:HG23	1.90	0.54
14:SG:154:GLY:HA3	14:SG:167:PRO:HB3	1.88	0.54
34:AA:618:U:H3'	71:AF:355:LYS:NZ	2.23	0.54
34:AA:2814:U:H2'	34:AA:2815:G:C8	2.43	0.54
34:AA:3001:A:H2'	34:AA:3002:G:H8	1.72	0.54
34:AA:3320:G:H2'	34:AA:3321:U:C6	2.43	0.54
34:AA:3593:U:H2'	34:AA:3594:G:H8	1.73	0.54
43:AN:6:LEU:HB2	43:AN:10:GLU:HB3	1.89	0.54
45:A9:104:VAL:HG13	45:A9:114:ILE:HD13	1.89	0.54
68:A5:173:ARG:HB2	68:A5:216:TRP:CE3	2.42	0.54
77:AX:125:LYS:HG3	77:AX:131:GLU:HG2	1.89	0.54
8:SA:539:U:OP1	12:SE:132:ARG:NH2	2.41	0.54
8:SA:914:U:H2'	8:SA:915:G:C8	2.42	0.54
8:SA:927:A:C5	28:SU:73:ARG:HD3	2.43	0.54
24:SQ:63:GLN:O	24:SQ:63:GLN:NE2	2.41	0.54
34:AA:748:A:OP1	59:AS:145:ARG:NH2	2.26	0.54
34:AA:1704:U:O2'	55:AJ:76:ARG:NH2	2.41	0.54
34:AA:3362:A:H62	34:AA:3376:U:H3	1.56	0.54
41:A6:38:ARG:HG3	41:A6:62:TYR:HE2	1.73	0.54
4:S4:30:PHE:CE1	28:SU:61:PRO:HG3	2.43	0.53
8:SA:788:A:H2'	8:SA:789:U:C6	2.43	0.53
11:SD:215:VAL:HG23	30:SW:15:GLN:HE22	1.73	0.53
15:SH:7:ASN:HB2	15:SH:113:LEU:HD21	1.89	0.53
34:AA:455:U:H2'	34:AA:456:A:C8	2.42	0.53
34:AA:653:A:H2'	34:AA:654:A:C8	2.43	0.53
34:AA:1875:A:H4'	65:AT:116:ARG:HD2	1.90	0.53
42:A7:52:MET:HE3	42:A7:85:ARG:HG3	1.89	0.53
62:AR:152:ILE:HG21	72:AG:143:ARG:HA	1.88	0.53
8:SA:821:A:OP1	12:SE:9:SER:OG	2.20	0.53
8:SA:886:U:H2'	8:SA:887:A:C8	2.43	0.53
8:SA:1002:A:OP1	9:SB:116:LYS:NZ	2.40	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:1028:U:H5”	28:SU:14:SER:HB2	1.88	0.53
8:SA:1832:U:H4’	8:SA:1833:G:C2	2.43	0.53
8:SA:1882:U:OP1	20:SM:126:GLU:HG3	2.08	0.53
8:SA:1901:U:OP2	20:SM:139:TYR:OH	2.24	0.53
16:SI:55:ALA:HB2	16:SI:135:LEU:HD11	1.90	0.53
16:SI:105:ASN:O	16:SI:109:LYS:HG2	2.09	0.53
17:SJ:79:LYS:O	17:SJ:83:GLU:HG3	2.07	0.53
34:AA:2662:G:H2’	34:AA:2663:G:C8	2.43	0.53
34:AA:3402:A:H2’	34:AA:3403:A:H8	1.71	0.53
34:AA:3586:U:O2	34:AA:3593:U:H5”	2.08	0.53
34:AA:3595:U:H2’	34:AA:3596:A:C8	2.42	0.53
35:AC:31:U:H2’	35:AC:32:C:H6	1.74	0.53
51:AP:169:GLY:HA2	51:AP:172:TYR:CE2	2.42	0.53
8:SA:1300:G:H5”	27:ST:27:ALA:HB2	1.90	0.53
10:SC:51:ALA:HB2	30:SW:109:LEU:HD13	1.91	0.53
34:AA:115:A:OP1	51:AP:49:ARG:HD3	2.07	0.53
34:AA:234:C:H2’	34:AA:235:A:O4’	2.08	0.53
34:AA:1100:A:N6	68:A5:164:ARG:O	2.40	0.53
35:AC:62:G:O6	56:Ac:66:ARG:NH1	2.42	0.53
36:AB:22:G:N3	36:AB:25:A:N1	2.57	0.53
77:AX:77:LEU:HD23	77:AX:77:LEU:H	1.74	0.53
8:SA:553:U:H2’	8:SA:554:U:C6	2.43	0.53
8:SA:1368:G:H1	8:SA:1688:U:H3	1.57	0.53
8:SA:1723:A:H4’	32:SY:70:PRO:HA	1.91	0.53
8:SA:1786:U:O2’	8:SA:1787:U:OP1	2.20	0.53
30:SW:35:THR:O	30:SW:39:ALA:CB	2.57	0.53
34:AA:10:G:N2	34:AA:1706:A:N6	2.55	0.53
34:AA:2152:A:H2’	34:AA:2153:A:O4’	2.08	0.53
69:AD:117:GLU:HG3	69:AD:124:GLY:H	1.73	0.53
8:SA:913:U:H2’	8:SA:914:U:C6	2.43	0.53
8:SA:1718:C:H3’	16:SI:160:ILE:HG22	1.90	0.53
8:SA:1793:C:H5’	8:SA:1815:U:H4’	1.91	0.53
8:SA:1908:A:H8	8:SA:1909:C:C5	2.26	0.53
16:SI:30:ILE:HB	16:SI:59:ILE:HB	1.89	0.53
19:SL:117:PHE:HE1	19:SL:165:SER:H	1.54	0.53
34:AA:697:A:H4’	34:AA:698:G:O5’	2.08	0.53
34:AA:2394:C:O2’	34:AA:2395:U:H6	1.91	0.53
34:AA:3096:U:H4’	75:AV:8:LYS:HB2	1.91	0.53
34:AA:3717:A:H2’	34:AA:3718:G:C8	2.44	0.53
51:AP:99:LYS:O	51:AP:103:GLU:HG2	2.08	0.53
51:AP:158:LYS:O	51:AP:163:ARG:NH1	2.42	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S1:115:ARG:NH2	1:S1:117:LYS:HZ3	2.07	0.53
4:S4:21:ARG:H	4:S4:21:ARG:HD2	1.73	0.53
4:S4:36:PRO:HD3	4:S4:75:CYS:HA	1.91	0.53
15:SH:1:MET:HE2	15:SH:1:MET:N	2.24	0.53
22:SO:16:LYS:O	22:SO:20:LYS:HG2	2.08	0.53
26:SS:88:ARG:NH1	26:SS:98:ILE:O	2.38	0.53
34:AA:1534:U:HO2'	34:AA:1535:G:P	2.30	0.53
34:AA:2088:A:H2'	34:AA:2089:C:C6	2.44	0.53
34:AA:3022:U:H2'	34:AA:3023:C:C6	2.44	0.53
34:AA:3036:A:H2'	34:AA:3037:G:C8	2.44	0.53
69:AD:30:ARG:NH2	69:AD:33:ASP:OD2	2.42	0.53
75:AV:15:LYS:HE3	75:AV:56:ASN:OD1	2.08	0.53
8:SA:1675:G:H2'	8:SA:1676:U:C6	2.43	0.53
10:SC:52:LYS:HZ2	33:SZ:80:PHE:HD2	1.55	0.53
19:SL:212:MET:O	19:SL:217:ARG:NH2	2.42	0.53
30:SW:32:LYS:O	30:SW:36:GLU:HG2	2.08	0.53
34:AA:577:U:H2'	34:AA:578:U:H6	1.74	0.53
34:AA:909:U:H2'	34:AA:910:A:C8	2.43	0.53
34:AA:2128:G:H5"	65:AT:62:VAL:HG21	1.90	0.53
34:AA:3022:U:H2'	34:AA:3023:C:H6	1.74	0.53
34:AA:3647:C:H2'	34:AA:3648:U:C6	2.44	0.53
34:AA:3715:U:H2'	34:AA:3716:C:C6	2.44	0.53
37:AL:84:LEU:HB3	37:AL:138:GLY:HA3	1.89	0.53
61:AQ:86:HIS:HD2	61:AQ:139:ARG:HE	1.56	0.53
63:AW:116:HIS:HB3	63:AW:149:ILE:HB	1.90	0.53
65:AT:104:LEU:HD21	65:AT:138:ILE:HG13	1.91	0.53
71:AF:383:VAL:HG22	73:AU:134:ARG:HH11	1.73	0.53
78:A0:45:SER:O	78:A0:49:GLN:HG3	2.09	0.53
4:S4:20:LYS:HA	4:S4:24:PRO:HB3	1.89	0.53
8:SA:1456:G:C6	8:SA:1607:U:N3	2.77	0.53
34:AA:536:A:O2'	34:AA:537:A:H5"	2.09	0.53
34:AA:1073:G:H1	34:AA:1243:G:H1'	1.74	0.53
34:AA:2034:G:O6	34:AA:2075:U:O4	2.27	0.53
34:AA:3476:A:H1'	34:AA:3477:A:H2'	1.90	0.53
34:AA:3707:U:H5'	70:AE:172:LYS:HD3	1.90	0.53
55:AJ:89:LYS:HE2	55:AJ:252:GLN:HE22	1.74	0.53
61:AQ:184:TYR:HB3	61:AQ:190:ILE:HG23	1.90	0.53
72:AG:43:GLN:NE2	72:AG:70:THR:O	2.41	0.53
74:AH:7:THR:HG22	74:AH:57:VAL:HB	1.90	0.53
6:S6:17:GLN:NE2	8:SA:570:U:H4'	2.24	0.53
8:SA:454:U:H2'	8:SA:455:C:H6	1.72	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:597:C:H2'	8:SA:598:A:C8	2.44	0.53
8:SA:1623:U:O2	8:SA:1625:C:N4	2.39	0.53
8:SA:1911:A:O2'	8:SA:1912:C:OP1	2.24	0.53
8:SA:2068:A:H2'	8:SA:2069:G:C8	2.43	0.53
10:SC:49:ASN:C	10:SC:51:ALA:H	2.17	0.53
34:AA:906:G:H2'	34:AA:907:C:C6	2.43	0.53
34:AA:1197:U:H2'	34:AA:1198:A:C8	2.43	0.53
34:AA:3709:U:H5"	34:AA:3710:U:H5'	1.91	0.53
41:A6:30:ARG:NH1	41:A6:55:GLN:HG3	2.24	0.53
45:A9:42:GLU:OE2	45:A9:43:LYS:N	2.38	0.53
55:AJ:200:LYS:HG3	55:AJ:212:ALA:O	2.09	0.53
3:S3:49:ALA:O	3:S3:53:ILE:HG23	2.09	0.53
8:SA:1183:U:O2	33:SZ:22:ARG:NH2	2.42	0.53
8:SA:1319:G:OP1	8:SA:1690:A:N6	2.42	0.53
34:AA:1646:C:H2'	34:AA:1647:U:C6	2.44	0.53
35:AC:139:A:H4'	35:AC:140:G:O5'	2.08	0.53
36:AB:24:C:H2'	36:AB:25:A:H5'	1.90	0.53
36:AB:39:C:O4'	72:AG:46:ILE:HD11	2.09	0.53
36:AB:68:U:H2'	36:AB:69:U:C6	2.43	0.53
43:AN:23:ARG:HA	43:AN:29:ARG:CZ	2.39	0.53
55:AJ:73:ARG:CD	55:AJ:73:ARG:H	2.21	0.53
62:AR:192:GLU:OE2	62:AR:195:ARG:NH1	2.41	0.53
64:AY:110:LEU:HD22	64:AY:138:ALA:HB2	1.90	0.53
73:AU:12:ASN:O	73:AU:41:LYS:HA	2.09	0.53
79:S9:69:C:H2'	79:S9:70:G:C8	2.44	0.53
8:SA:1381:C:H2'	8:SA:1382:G:C8	2.44	0.52
8:SA:1720:G:H2'	8:SA:1721:A:H8	1.74	0.52
8:SA:1842:A:OP1	26:SS:132:ARG:NE	2.42	0.52
16:SI:91:ILE:HA	16:SI:94:MET:HG3	1.91	0.52
17:SJ:55:LEU:HB3	17:SJ:56:LYS:HE3	1.91	0.52
20:SM:37:LEU:HD23	20:SM:37:LEU:H	1.74	0.52
22:SO:73:LYS:NZ	27:ST:19:CYS:O	2.42	0.52
34:AA:15:U:H5"	64:AY:88:ALA:O	2.08	0.52
34:AA:673:U:O2'	34:AA:674:U:H5'	2.09	0.52
34:AA:2430:U:OP2	34:AA:2435:A:N6	2.33	0.52
55:AJ:95:ASN:HD21	55:AJ:250:GLY:HA3	1.73	0.52
68:A5:247:ALA:O	68:A5:250:ASN:ND2	2.41	0.52
69:AD:107:MET:O	69:AD:139:GLN:NE2	2.42	0.52
73:AU:90:TYR:CE1	73:AU:99:MET:HE3	2.44	0.52
8:SA:1973:U:OP1	19:SL:44:HIS:ND1	2.32	0.52
9:SB:97:TYR:O	9:SB:232:HIS:NE2	2.42	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:SE:41:GLU:O	12:SE:45:VAL:HG23	2.08	0.52
34:AA:381:A:O2'	34:AA:384:A:OP1	2.19	0.52
2:S2:80:ASN:OD1	2:S2:81:HIS:ND1	2.42	0.52
3:S3:22:ARG:NH2	3:S3:27:GLY:O	2.39	0.52
8:SA:1603:U:O3'	20:SM:31:LYS:NZ	2.42	0.52
10:SC:148:ASP:N	10:SC:151:SER:OG	2.42	0.52
13:SF:195:ILE:H	13:SF:210:VAL:HG13	1.73	0.52
34:AA:1850:U:O2'	34:AA:1969:A:N6	2.41	0.52
34:AA:2083:U:H2'	34:AA:2084:U:C6	2.44	0.52
34:AA:2732:A:H2'	34:AA:2733:A:C8	2.45	0.52
34:AA:2816:U:H2'	34:AA:2817:U:C6	2.44	0.52
34:AA:3645:A:H2'	34:AA:3646:G:H8	1.75	0.52
37:AL:45:ASN:ND2	37:AL:48:THR:O	2.43	0.52
47:Ab:96:GLU:O	47:Ab:100:VAL:HG13	2.10	0.52
6:S6:43:ARG:NH2	12:SE:29:LYS:HG3	2.24	0.52
8:SA:52:U:H2'	8:SA:53:G:C8	2.45	0.52
8:SA:875:A:H8	8:SA:875:A:OP1	1.93	0.52
8:SA:883:A:H2'	8:SA:884:G:C8	2.43	0.52
8:SA:1036:A:OP2	28:SU:124:ARG:NH2	2.41	0.52
8:SA:1795:G:O5'	32:SY:145:ARG:NH2	2.42	0.52
11:SD:135:CYS:SG	11:SD:136:GLU:N	2.83	0.52
16:SI:59:ILE:HA	16:SI:62:ARG:HE	1.74	0.52
17:SJ:80:LEU:HA	17:SJ:83:GLU:OE2	2.09	0.52
34:AA:63:A:H4'	51:AP:186:ARG:O	2.09	0.52
34:AA:76:G:N7	37:AL:100:ARG:HG3	2.25	0.52
34:AA:2029:G:O2'	34:AA:2888:U:O4	2.27	0.52
38:A1:10:VAL:O	38:A1:83:THR:HB	2.09	0.52
55:AJ:199:ASP:OD2	55:AJ:202:THR:HG23	2.08	0.52
68:A5:93:VAL:HG21	68:A5:145:TYR:HD2	1.75	0.52
75:AV:18:LYS:HD3	75:AV:23:HIS:HA	1.91	0.52
77:AX:45:ASP:HB2	77:AX:89:LYS:HD2	1.90	0.52
79:S9:16:C:H5"	79:S9:17:C:H5"	1.91	0.52
8:SA:632:C:H2'	8:SA:633:U:C6	2.44	0.52
8:SA:886:U:O4	8:SA:916:G:O6	2.28	0.52
68:A5:86:ARG:NH1	75:AV:138:PRO:O	2.40	0.52
73:AU:17:HIS:HE1	73:AU:35:ARG:HB2	1.75	0.52
78:A0:34:LYS:HE3	78:A0:36:TYR:OH	2.09	0.52
6:S6:23:LYS:NZ	8:SA:594:C:OP2	2.36	0.52
8:SA:66:U:C2	15:SH:173:PRO:HG3	2.45	0.52
8:SA:1215:G:O2'	8:SA:1231:G:O6	2.25	0.52
8:SA:1446:A:O2'	21:SN:52:PRO:O	2.25	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:1818:A:OP2	8:SA:1819:U:N3	2.42	0.52
8:SA:1821:A:H2'	8:SA:1822:A:H8	1.75	0.52
10:SC:131:GLN:O	10:SC:135:GLU:HG3	2.09	0.52
11:SD:133:LYS:HZ1	11:SD:190:MET:HE3	1.74	0.52
14:SG:39:LYS:O	14:SG:77:TYR:OH	2.25	0.52
34:AA:497:U:H2'	34:AA:498:U:C6	2.45	0.52
39:A2:106:LYS:HD2	39:A2:106:LYS:N	2.23	0.52
43:AN:57:ASP:HB2	43:AN:66:ARG:HG3	1.92	0.52
69:AD:5:ILE:HG12	69:AD:8:GLN:HG3	1.90	0.52
8:SA:1023:A:H2'	8:SA:1024:A:H8	1.74	0.52
8:SA:1664:G:O2'	27:ST:54:ARG:OXT	2.27	0.52
8:SA:1845:U:O2'	26:SS:89:ARG:NH2	2.42	0.52
31:SX:60:ILE:HG23	31:SX:89:MET:HE2	1.92	0.52
34:AA:76:G:H3'	37:AL:72:LYS:HG2	1.91	0.52
34:AA:888:A:H2	34:AA:3138:A:H5'	1.74	0.52
34:AA:3458:A:H2'	34:AA:3459:A:O4'	2.10	0.52
74:AH:150:ILE:O	74:AH:154:SER:OG	2.26	0.52
8:SA:1794:C:H2'	8:SA:1795:G:C8	2.45	0.52
26:SS:111:GLU:O	26:SS:114:GLU:HG3	2.10	0.52
34:AA:261:A:H5'	67:A3:108:LYS:HD3	1.90	0.52
34:AA:996:C:O2'	34:AA:999:G:O2'	2.27	0.52
34:AA:1103:A:H62	34:AA:1230:A:H8	1.57	0.52
34:AA:1210:A:H2'	34:AA:1211:U:C6	2.44	0.52
34:AA:1510:U:H2'	34:AA:1511:U:C6	2.45	0.52
34:AA:1819:U:H2'	34:AA:1820:U:C6	2.45	0.52
34:AA:2827:C:H2'	34:AA:2828:A:H8	1.75	0.52
34:AA:3386:A:H2'	34:AA:3387:U:H6	1.74	0.52
34:AA:3717:A:H2'	34:AA:3718:G:H8	1.73	0.52
70:AE:10:ARG:NH2	70:AE:260:GLN:O	2.43	0.52
1:S1:110:LYS:O	1:S1:110:LYS:NZ	2.43	0.52
8:SA:749:U:H2'	8:SA:750:U:H6	1.74	0.52
8:SA:827:C:H2'	8:SA:828:A:C8	2.44	0.52
8:SA:1837:G:H3'	8:SA:1838:G:H8	1.74	0.52
8:SA:1947:U:H2'	8:SA:1948:A:C8	2.45	0.52
13:SF:125:LYS:H	13:SF:142:HIS:CD2	2.24	0.52
21:SN:31:ILE:HD13	21:SN:84:TYR:HB3	1.91	0.52
29:SV:153:SER:O	29:SV:157:GLN:NE2	2.32	0.52
34:AA:1331:A:H2'	34:AA:1332:A:H8	1.75	0.52
34:AA:1855:U:C5'	34:AA:1856:U:H4'	2.39	0.52
43:AN:141:LYS:HG2	57:AK:187:LEU:HB2	1.91	0.52
74:AH:93:LEU:HD23	74:AH:178:ILE:HG23	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:1638:U:H2'	8:SA:1639:G:C8	2.45	0.52
8:SA:1826:A:H2'	8:SA:1827:U:C6	2.44	0.52
8:SA:1842:A:H5'	26:SS:132:ARG:NH2	2.22	0.52
10:SC:88:LYS:HE3	10:SC:200:MET:SD	2.49	0.52
22:SO:22:ILE:O	22:SO:26:LEU:HG	2.10	0.52
24:SQ:13:ARG:NH2	29:SV:105:LYS:O	2.39	0.52
34:AA:86:G:O2'	34:AA:98:G:O6	2.26	0.52
34:AA:653:A:H2'	34:AA:654:A:H8	1.75	0.52
34:AA:684:G:H5"	71:AF:313:LEU:HB3	1.91	0.52
34:AA:1835:G:OP2	77:AX:117:ARG:NH2	2.41	0.52
34:AA:2741:A:H2'	34:AA:2742:G:H8	1.75	0.52
43:AN:7:THR:OG1	43:AN:8:GLU:N	2.44	0.52
52:Ah:51:CYS:SG	52:Ah:52:VAL:N	2.79	0.52
54:AI:141:GLU:H	54:AI:141:GLU:CD	2.17	0.52
54:AI:185:ASP:OD2	54:AI:186:ILE:N	2.43	0.52
78:A0:16:SER:OG	78:A0:17:GLU:N	2.43	0.52
8:SA:981:U:OP1	8:SA:982:A:O2'	2.13	0.51
8:SA:1822:A:O3'	32:SY:105:LYS:NZ	2.40	0.51
34:AA:581:C:O2'	34:AA:582:U:OP1	2.25	0.51
34:AA:775:C:H1'	71:AF:234:LYS:HD3	1.92	0.51
34:AA:1139:C:H2'	34:AA:1140:A:C8	2.45	0.51
34:AA:1841:U:O2'	34:AA:1842:U:OP1	2.22	0.51
34:AA:2460:A:H2'	34:AA:2461:A:C8	2.45	0.51
34:AA:2516:A:H2'	34:AA:2517:A:C8	2.45	0.51
34:AA:2650:A:H2'	34:AA:2651:A:C8	2.46	0.51
44:A8:13:ARG:HH12	44:A8:51:LEU:HD11	1.75	0.51
51:AP:121:TRP:CZ2	51:AP:124:GLN:HB2	2.45	0.51
59:AS:29:LEU:HD21	59:AS:122:PHE:HB2	1.92	0.51
65:AT:141:ILE:O	65:AT:145:LYS:HB2	2.10	0.51
66:AZ:56:LEU:HD23	66:AZ:66:GLU:HG3	1.92	0.51
8:SA:251:U:OP1	29:SV:37:TYR:OH	2.26	0.51
18:SK:40:TYR:OH	18:SK:112:ASP:OD2	2.28	0.51
20:SM:49:VAL:O	20:SM:52:PRO:HD2	2.09	0.51
34:AA:394:A:H2'	34:AA:395:A:C8	2.44	0.51
34:AA:501:U:O2'	34:AA:502:U:OP1	2.28	0.51
34:AA:1624:A:H4'	42:A7:65:LYS:HG2	1.92	0.51
34:AA:2209:C:OP2	65:AT:73:ARG:HG3	2.10	0.51
8:SA:1307:U:O2'	27:ST:26:HIS:NE2	2.35	0.51
13:SF:35:PRO:HD2	13:SF:83:PRO:HG2	1.92	0.51
29:SV:14:GLN:HB2	29:SV:57:VAL:CG2	2.41	0.51
31:SX:83:MET:HE1	31:SX:85:ILE:HA	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:445:A:N1	34:AA:702:U:H5	2.09	0.51
34:AA:709:A:N3	45:A9:124:PRO:HG2	2.25	0.51
52:Ah:3:ARG:HD2	52:Ah:5:THR:O	2.11	0.51
62:AR:215:ASN:O	62:AR:219:LYS:HG2	2.11	0.51
69:AD:14:SER:OG	69:AD:15:ILE:N	2.41	0.51
8:SA:888:A:H2'	8:SA:889:A:H8	1.74	0.51
8:SA:1280:G:H21	8:SA:1706:A:H61	1.57	0.51
8:SA:1392:C:H2'	8:SA:1393:G:C8	2.45	0.51
8:SA:1925:U:H2'	8:SA:1926:G:C8	2.45	0.51
8:SA:2024:A:H2'	8:SA:2025:U:C6	2.45	0.51
12:SE:5:TYR:O	13:SF:22:LYS:NZ	2.40	0.51
22:SO:72:TRP:H	22:SO:72:TRP:CD1	2.29	0.51
24:SQ:55:GLU:N	24:SQ:55:GLU:OE2	2.44	0.51
34:AA:451:C:H42	34:AA:694:U:HO2'	1.54	0.51
34:AA:596:A:O3'	74:AH:46:ARG:NH1	2.43	0.51
34:AA:1779:A:N7	34:AA:2033:C:O2'	2.33	0.51
71:AF:150:VAL:HG12	71:AF:151:PRO:HD3	1.92	0.51
8:SA:394:G:OP2	8:SA:429:G:O2'	2.27	0.51
8:SA:1978:A:C2	8:SA:2012:G:N2	2.77	0.51
8:SA:2008:U:H2'	8:SA:2009:C:H6	1.76	0.51
21:SN:65:ARG:HB2	21:SN:76:TRP:CE2	2.45	0.51
34:AA:215:C:O2'	34:AA:216:C:OP1	2.28	0.51
34:AA:1736:A:O2'	34:AA:1737:A:OP1	2.24	0.51
34:AA:1801:G:O2'	34:AA:2031:A:N6	2.44	0.51
34:AA:1905:C:H2'	34:AA:1906:A:H8	1.76	0.51
34:AA:2183:A:H2'	34:AA:2184:U:C6	2.46	0.51
34:AA:2566:G:O2'	34:AA:2604:G:O6	2.27	0.51
37:AL:72:LYS:HG3	37:AL:72:LYS:O	2.09	0.51
44:A8:100:VAL:O	44:A8:105:ARG:NH1	2.43	0.51
55:AJ:224:ASP:OD1	55:AJ:224:ASP:N	2.44	0.51
64:AY:117:SER:O	64:AY:121:MET:HG2	2.11	0.51
68:A5:76:ARG:NH1	71:AF:364:GLN:OE1	2.44	0.51
1:S1:39:GLU:HA	1:S1:42:GLU:OE1	2.11	0.51
8:SA:56:A:OP1	8:SA:409:A:N6	2.41	0.51
8:SA:423:A:H4'	8:SA:424:G:O5'	2.11	0.51
8:SA:1715:A:H4'	8:SA:1838:G:H4'	1.93	0.51
12:SE:153:GLU:HA	12:SE:156:ILE:CD1	2.40	0.51
14:SG:248:ASP:OD1	14:SG:248:ASP:N	2.40	0.51
34:AA:2039:U:H2'	34:AA:2040:G:C8	2.46	0.51
34:AA:3413:A:O2'	34:AA:3414:G:OP1	2.25	0.51
39:A2:25:ALA:HB1	44:A8:73:LYS:HE3	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
62:AR:111:LYS:HD2	62:AR:250:PRO:HG2	1.93	0.51
64:AY:167:ASP:N	64:AY:167:ASP:OD1	2.43	0.51
78:A0:63:ARG:HH11	78:A0:63:ARG:HG3	1.75	0.51
8:SA:1286:U:O2'	8:SA:1701:G:O2'	2.29	0.51
8:SA:1904:G:H2'	8:SA:1905:C:C6	2.46	0.51
17:SJ:58:LYS:HE2	17:SJ:90:LYS:HD3	1.93	0.51
20:SM:35:LYS:HE2	32:SY:30:LYS:HE2	1.92	0.51
24:SQ:73:ARG:NH1	24:SQ:84:THR:OG1	2.44	0.51
34:AA:202:C:H2'	34:AA:203:A:C8	2.45	0.51
34:AA:366:G:N2	34:AA:369:A:OP2	2.41	0.51
34:AA:456:A:H2'	34:AA:457:A:C8	2.45	0.51
34:AA:1210:A:H2'	34:AA:1211:U:H6	1.76	0.51
34:AA:1247:C:H2'	34:AA:1248:A:C8	2.45	0.51
34:AA:1805:U:O2'	34:AA:1806:C:H5'	2.11	0.51
34:AA:2650:A:H2'	34:AA:2651:A:H8	1.76	0.51
35:AC:110:G:H4'	35:AC:145:A:H5'	1.93	0.51
35:AC:145:A:H2'	35:AC:146:C:H6	1.75	0.51
55:AJ:262:LYS:HA	55:AJ:265:LYS:NZ	2.26	0.51
8:SA:128:A:OP2	15:SH:197:ARG:NH2	2.44	0.51
9:SB:30:TYR:N	9:SB:46:THR:O	2.42	0.51
10:SC:36:TYR:OH	10:SC:56:LYS:NZ	2.44	0.51
34:AA:1083:G:H2'	34:AA:1084:A:H8	1.73	0.51
34:AA:3036:A:H2'	34:AA:3037:G:H8	1.76	0.51
35:AC:84:G:O3'	35:AC:91:A:O2'	2.29	0.51
43:AN:145:ILE:HD11	57:AK:180:ILE:HG23	1.92	0.51
54:AI:20:LEU:HB3	54:AI:44:TYR:HB3	1.92	0.51
60:AO:76:ASP:HB3	60:AO:114:GLY:HA3	1.92	0.51
8:SA:372:A:OP1	8:SA:808:U:O2'	2.25	0.51
8:SA:1446:A:N6	8:SA:1624:U:OP2	2.40	0.51
11:SD:121:TYR:O	11:SD:125:ARG:HG2	2.10	0.51
19:SL:112:TRP:O	19:SL:116:THR:HG23	2.11	0.51
34:AA:582:U:H2'	34:AA:583:U:C6	2.45	0.51
34:AA:1015:A:H5"	69:AD:183:GLY:CA	2.41	0.51
34:AA:1740:A:H2'	34:AA:1741:G:H8	1.76	0.51
34:AA:3688:G:H2'	34:AA:3689:C:O4'	2.10	0.51
37:AL:26:SER:HA	37:AL:29:ILE:HD12	1.93	0.51
8:SA:17:C:H2'	8:SA:18:C:C6	2.45	0.51
8:SA:597:C:H2'	8:SA:598:A:H8	1.74	0.51
8:SA:1672:C:H3'	8:SA:1673:A:H4'	1.93	0.51
8:SA:1799:A:H2'	8:SA:1800:A:O4'	2.11	0.51
14:SG:138:ARG:O	14:SG:142:ILE:HG13	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:SY:39:ARG:HH22	32:SY:78:ILE:HG12	1.75	0.51
34:AA:1304:C:H4'	57:AK:88:PRO:HD3	1.93	0.51
34:AA:1845:C:H2'	34:AA:1846:A:H8	1.76	0.51
34:AA:2950:U:H2'	34:AA:2951:U:C6	2.46	0.51
51:AP:34:PRO:HG2	51:AP:37:HIS:HB3	1.93	0.51
61:AQ:36:MET:HE1	61:AQ:87:LEU:HD23	1.93	0.51
70:AE:10:ARG:NH1	70:AE:11:HIS:O	2.44	0.51
70:AE:160:HIS:CB	70:AE:175:ILE:HG22	2.40	0.51
74:AH:133:ILE:HG22	74:AH:145:VAL:HG22	1.92	0.51
8:SA:651:G:N2	8:SA:749:U:O2	2.26	0.50
8:SA:877:U:H4'	65:AT:162:ARG:NH2	2.26	0.50
8:SA:1725:A:H5"	32:SY:82:SER:HB2	1.94	0.50
8:SA:1734:G:H3'	8:SA:1811:A:H61	1.75	0.50
8:SA:1869:G:H5"	8:SA:1871:G:N2	2.25	0.50
26:SS:91:ASP:OD2	26:SS:97:ASN:ND2	2.44	0.50
31:SX:30:GLN:HA	31:SX:33:LEU:HB3	1.93	0.50
34:AA:11:A:H61	35:AC:154:G:H1	0.64	0.50
34:AA:308:U:O2'	34:AA:309:G:H8	1.95	0.50
34:AA:1187:A:H5'	34:AA:1189:G:H1'	1.93	0.50
34:AA:1739:C:H2'	34:AA:1740:A:H8	1.76	0.50
34:AA:2168:A:O2'	34:AA:2174:G:N7	2.39	0.50
34:AA:3585:A:O2'	34:AA:3586:U:H6	1.94	0.50
69:AD:105:GLY:HA3	69:AD:160:ALA:HB1	1.93	0.50
8:SA:963:U:H2'	8:SA:964:G:C8	2.47	0.50
8:SA:1321:C:H4'	22:SO:63:ARG:HH21	1.75	0.50
8:SA:1417:U:H1'	30:SW:4:VAL:HG21	1.93	0.50
8:SA:1701:G:O2'	8:SA:1702:C:O4'	2.16	0.50
8:SA:1705:C:C4	26:SS:139:LYS:HB3	2.46	0.50
13:SF:36:HIS:CE1	13:SF:85:GLY:HA3	2.47	0.50
26:SS:32:LEU:HD11	26:SS:47:CYS:HB2	1.93	0.50
27:ST:38:ARG:HG3	27:ST:39:GLN:OE1	2.11	0.50
31:SX:55:SER:O	31:SX:58:LYS:HG3	2.11	0.50
34:AA:2706:A:H2'	34:AA:2707:G:H8	1.76	0.50
34:AA:3258:C:H2'	74:AH:172:ARG:HH21	1.76	0.50
34:AA:3645:A:H2'	34:AA:3646:G:C8	2.46	0.50
36:AB:64:A:H4'	61:AQ:205:PRO:HD3	1.93	0.50
43:AN:146:LYS:NZ	57:AK:176:GLU:OE2	2.43	0.50
45:A9:88:THR:HG21	45:A9:92:HIS:CD2	2.46	0.50
52:Ah:29:ILE:HD11	69:AD:177:LYS:HD2	1.93	0.50
72:AG:45:PRO:C	72:AG:46:ILE:HD13	2.37	0.50
1:S1:110:LYS:HZ1	1:S1:114:ASN:HB2	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:SN:46:ASN:O	21:SN:46:ASN:ND2	2.44	0.50
25:SR:28:VAL:HA	25:SR:31:ASN:ND2	2.26	0.50
34:AA:1248:A:H2'	34:AA:1249:U:H6	1.76	0.50
34:AA:3669:U:H1'	34:AA:3671:A:H62	1.76	0.50
57:AK:75:PRO:HB3	57:AK:137:LEU:HG	1.93	0.50
61:AQ:189:ARG:NH2	61:AQ:200:ILE:O	2.44	0.50
73:AU:32:ASN:OD1	73:AU:32:ASN:N	2.42	0.50
3:S3:85:ARG:HH12	8:SA:1254:G:H5'	1.77	0.50
8:SA:1437:U:H2'	8:SA:1438:A:C8	2.47	0.50
8:SA:1723:A:H2'	8:SA:1724:U:C6	2.47	0.50
8:SA:1842:A:N1	8:SA:1863:U:N3	2.59	0.50
11:SD:127:ILE:HG22	11:SD:132:ALA:HB3	1.92	0.50
34:AA:338:U:H2'	34:AA:339:G:C8	2.44	0.50
34:AA:513:U:H4'	54:AI:46:VAL:HG22	1.94	0.50
34:AA:803:A:H2'	34:AA:804:A:O4'	2.11	0.50
34:AA:2525:A:H2'	34:AA:2526:A:C8	2.46	0.50
34:AA:2712:A:H2'	34:AA:2713:C:C6	2.46	0.50
34:AA:3323:G:N2	34:AA:3326:A:OP2	2.38	0.50
34:AA:3459:A:H2'	34:AA:3460:C:C6	2.46	0.50
44:A8:105:ARG:O	44:A8:109:ILE:HG12	2.11	0.50
55:AJ:79:ARG:O	55:AJ:83:ILE:HG23	2.11	0.50
62:AR:214:ASP:OD1	62:AR:214:ASP:N	2.43	0.50
1:S1:106:ARG:HH22	8:SA:465:G:P	2.35	0.50
8:SA:64:U:O2'	8:SA:166:A:N3	2.42	0.50
8:SA:453:U:H2'	8:SA:454:U:O4'	2.10	0.50
15:SH:63:MET:SD	15:SH:106:LEU:HD11	2.52	0.50
15:SH:148:ASP:OD1	15:SH:149:LYS:N	2.45	0.50
15:SH:179:VAL:O	15:SH:179:VAL:HG12	2.11	0.50
22:SO:43:HIS:HB2	22:SO:50:ASN:HD21	1.76	0.50
25:SR:91:LYS:NZ	25:SR:114:ALA:O	2.33	0.50
29:SV:14:GLN:HB2	29:SV:57:VAL:HG22	1.94	0.50
30:SW:16:ILE:O	30:SW:17:VAL:HB	2.11	0.50
34:AA:428:A:O2'	34:AA:708:A:OP1	2.21	0.50
34:AA:493:C:H2'	34:AA:494:U:O4'	2.11	0.50
34:AA:1467:C:H2'	34:AA:1468:A:C8	2.47	0.50
34:AA:2590:U:O2	34:AA:2590:U:H2'	2.11	0.50
34:AA:2739:U:H2'	34:AA:2740:A:C8	2.46	0.50
34:AA:3409:U:H2'	34:AA:3410:A:H8	1.76	0.50
36:AB:23:C:H2'	36:AB:24:C:H6	1.77	0.50
38:A1:18:ARG:O	38:A1:21:LYS:HG2	2.12	0.50
38:A1:83:THR:HG22	38:A1:85:TYR:H	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:AQ:201:ARG:HH21	61:AQ:203:LYS:HG3	1.77	0.50
8:SA:466:A:H3'	8:SA:467:G:H8	1.76	0.50
8:SA:943:U:H2'	8:SA:944:G:C8	2.47	0.50
8:SA:1312:A:N6	8:SA:1313:G:C5	2.80	0.50
8:SA:1414:A:H2	8:SA:1432:G:H5"	1.77	0.50
9:SB:149:GLN:HG2	9:SB:151:LYS:HB2	1.93	0.50
10:SC:14:ILE:O	10:SC:18:LEU:HG	2.12	0.50
24:SQ:128:ALA:O	24:SQ:129:ARG:HG2	2.12	0.50
34:AA:739:G:H4'	34:AA:740:U:C6	2.45	0.50
34:AA:1237:C:H2'	34:AA:1238:C:C6	2.46	0.50
38:A1:56:SER:O	38:A1:56:SER:OG	2.27	0.50
45:A9:74:ALA:HB2	45:A9:112:GLY:HA2	1.93	0.50
55:AJ:101:LEU:CD1	55:AJ:106:THR:HB	2.41	0.50
61:AQ:33:ILE:HD11	61:AQ:69:ARG:NH1	2.26	0.50
3:S3:44:ILE:HG23	3:S3:45:VAL:HG22	1.94	0.50
19:SL:213:ASP:HA	19:SL:217:ARG:HE	1.77	0.50
20:SM:94:TYR:HD2	20:SM:103:LYS:HB2	1.77	0.50
34:AA:61:A:H2'	34:AA:62:A:H8	1.77	0.50
34:AA:173:A:H3'	34:AA:174:U:H5"	1.94	0.50
34:AA:626:A:H2'	34:AA:627:U:C6	2.47	0.50
34:AA:700:A:H5'	45:A9:92:HIS:O	2.11	0.50
34:AA:1540:G:H8	34:AA:1566:A:H62	1.58	0.50
34:AA:2179:A:H2'	34:AA:2180:U:C5	2.46	0.50
34:AA:3387:U:H2'	34:AA:3388:U:H6	1.76	0.50
34:AA:3414:G:O2'	34:AA:3415:A:OP1	2.27	0.50
34:AA:3459:A:H2'	34:AA:3460:C:H6	1.77	0.50
37:AL:88:ALA:O	37:AL:91:THR:OG1	2.27	0.50
65:AT:111:SER:OG	65:AT:113:LYS:HG3	2.11	0.50
70:AE:145:LEU:HD13	70:AE:193:LYS:HD2	1.93	0.50
76:Ag:36:GLN:OE1	76:Ag:39:ARG:NH2	2.45	0.50
77:AX:89:LYS:HB2	77:AX:91:TYR:HE2	1.76	0.50
77:AX:120:LEU:HD12	77:AX:132:PHE:HD1	1.77	0.50
1:S1:15:ASN:HD21	1:S1:17:LEU:HB2	1.76	0.50
8:SA:1277:G:H2'	8:SA:1278:C:C6	2.47	0.50
14:SG:190:ILE:HD12	14:SG:200:LEU:HD23	1.92	0.50
16:SI:80:ALA:HA	16:SI:83:ILE:HG22	1.93	0.50
19:SL:118:GLY:O	19:SL:119:THR:OG1	2.28	0.50
20:SM:68:ILE:HG21	20:SM:82:ILE:HG13	1.94	0.50
31:SX:87:PRO:HD3	31:SX:112:ILE:HD12	1.93	0.50
34:AA:1193:G:H2'	34:AA:1194:A:H8	1.77	0.50
34:AA:2836:G:OP2	69:AD:38:LYS:NZ	2.34	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:AE:143:CYS:O	70:AE:147:ARG:HD3	2.11	0.50
73:AU:43:ASP:OD2	73:AU:44:THR:N	2.45	0.50
79:S9:18:G:N2	79:S9:58:A:O5'	2.44	0.50
8:SA:1220:C:H2'	8:SA:1221:G:H8	1.76	0.50
8:SA:1790:C:H2'	8:SA:1791:C:C6	2.47	0.50
8:SA:1870:A:H2	16:SI:71:GLY:HA3	1.75	0.50
14:SG:168:MET:O	14:SG:183:PRO:HD3	2.12	0.50
15:SH:59:GLN:HB2	15:SH:72:ARG:HH12	1.77	0.50
24:SQ:135:LEU:O	24:SQ:139:LYS:NZ	2.38	0.50
25:SR:23:THR:HA	25:SR:26:GLN:HG2	1.93	0.50
33:SZ:38:MET:SD	33:SZ:38:MET:N	2.85	0.50
34:AA:315:C:H2'	34:AA:316:A:C8	2.47	0.50
34:AA:648:U:O2'	34:AA:649:U:O5'	2.29	0.50
34:AA:655:U:OP2	71:AF:333:LYS:NZ	2.44	0.50
34:AA:1739:C:O2'	34:AA:1851:A:N3	2.40	0.50
34:AA:1841:U:OP1	77:AX:69:LYS:NZ	2.38	0.50
35:AC:153:A:H2'	35:AC:154:G:C8	2.46	0.50
59:AS:81:VAL:HG12	59:AS:83:GLY:H	1.77	0.50
66:AZ:69:VAL:HA	66:AZ:81:VAL:HA	1.94	0.50
70:AE:57:VAL:HG22	70:AE:73:VAL:HG22	1.94	0.50
76:Ag:7:ARG:HG3	76:Ag:17:TRP:CE2	2.46	0.50
1:S1:97:LEU:HD23	1:S1:98:ILE:HG23	1.94	0.49
8:SA:310:U:H2'	8:SA:311:C:C6	2.47	0.49
8:SA:1901:U:H5"	20:SM:130:PHE:CE1	2.47	0.49
21:SN:67:SER:O	21:SN:67:SER:OG	2.25	0.49
34:AA:677:A:H2'	34:AA:678:A:O4'	2.12	0.49
34:AA:1019:A:H2'	34:AA:1020:C:C6	2.47	0.49
34:AA:1559:U:H5"	44:A8:98:HIS:HB3	1.94	0.49
37:AL:63:ARG:HG2	60:AO:69:TYR:CD1	2.46	0.49
55:AJ:201:ALA:O	55:AJ:205:LYS:HG3	2.12	0.49
67:A3:5:LYS:HB2	67:A3:8:GLU:OE2	2.12	0.49
73:AU:15:GLN:HG2	73:AU:73:ILE:HB	1.93	0.49
8:SA:201:G:H2'	8:SA:202:G:H8	1.75	0.49
8:SA:1441:C:H2'	8:SA:1442:U:C6	2.47	0.49
8:SA:1453:G:O6	8:SA:1610:U:O4	2.30	0.49
8:SA:1824:A:H3'	8:SA:1825:U:C6	2.46	0.49
23:SP:77:ALA:O	23:SP:81:VAL:HG12	2.12	0.49
26:SS:110:ARG:NH1	26:SS:110:ARG:O	2.45	0.49
34:AA:508:A:H2'	34:AA:509:A:H8	1.77	0.49
34:AA:1093:G:H2'	34:AA:1094:U:C6	2.47	0.49
34:AA:2559:U:H2'	34:AA:2560:C:C6	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:A8:96:ILE:HG21	44:A8:105:ARG:HG2	1.93	0.49
51:AP:148:LYS:C	51:AP:150:ASN:H	2.18	0.49
62:AR:201:ILE:O	62:AR:205:GLU:HG2	2.12	0.49
8:SA:892:U:H2'	8:SA:893:U:C6	2.47	0.49
13:SF:212:ASP:OD1	13:SF:213:SER:N	2.41	0.49
15:SH:180:THR:HG22	15:SH:182:LYS:H	1.76	0.49
34:AA:1209:U:H2'	34:AA:1210:A:C8	2.47	0.49
35:AC:124:U:H2'	35:AC:125:U:C6	2.47	0.49
37:AL:136:ILE:C	37:AL:136:ILE:HD12	2.38	0.49
43:AN:57:ASP:OD2	43:AN:66:ARG:NH1	2.46	0.49
44:A8:78:ASN:HB2	44:A8:81:GLU:HG3	1.95	0.49
68:A5:203:THR:O	68:A5:205:GLY:N	2.44	0.49
8:SA:139:A:O2'	15:SH:183:ARG:NH2	2.45	0.49
8:SA:148:U:H2'	8:SA:149:A:C8	2.48	0.49
8:SA:428:G:H2'	8:SA:429:G:C8	2.47	0.49
8:SA:586:A:N7	11:SD:179:LYS:NZ	2.61	0.49
8:SA:1695:A:H2'	8:SA:1696:A:H8	1.77	0.49
34:AA:283:U:O2	51:AP:93:LYS:NZ	2.46	0.49
34:AA:668:U:H4'	34:AA:669:C:H5"	1.93	0.49
34:AA:698:G:O2'	34:AA:699:U:O5'	2.29	0.49
34:AA:3435:A:H4'	70:AE:361:LYS:HE3	1.93	0.49
38:A1:101:VAL:HG23	38:A1:110:GLU:HG3	1.94	0.49
43:AN:59:ALA:O	43:AN:61:ILE:N	2.46	0.49
44:A8:83:GLU:O	44:A8:86:ILE:HG22	2.12	0.49
54:AI:53:SER:O	54:AI:58:LYS:NZ	2.45	0.49
57:AK:10:CYS:SG	57:AK:34:ALA:HB1	2.52	0.49
68:A5:233:ALA:HB2	68:A5:242:TRP:CZ2	2.47	0.49
8:SA:1208:G:O2'	8:SA:1209:G:H5'	2.12	0.49
8:SA:1272:A:H2'	8:SA:1273:G:C8	2.47	0.49
8:SA:1300:G:H8	21:SN:65:ARG:HB3	1.77	0.49
12:SE:91:GLU:HG2	12:SE:92:LYS:HG2	1.93	0.49
34:AA:740:U:H2'	34:AA:741:C:C6	2.46	0.49
34:AA:2027:A:H2'	34:AA:2028:G:H8	1.77	0.49
34:AA:3393:C:H2'	34:AA:3394:A:H8	1.77	0.49
34:AA:3632:U:H3	34:AA:3653:G:H1	1.59	0.49
35:AC:134:G:O2'	35:AC:135:G:OP1	2.29	0.49
39:A2:10:TRP:CZ2	39:A2:44:PRO:HD3	2.48	0.49
48:Ad:30:SER:O	48:Ad:31:LYS:NZ	2.27	0.49
55:AJ:120:SER:OG	55:AJ:123:ASP:OD1	2.29	0.49
77:AX:94:VAL:HG12	77:AX:96:ILE:H	1.77	0.49
4:S4:7:ASN:OD1	4:S4:10:PRO:HD2	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:S7:3:G:N2	7:S7:68:U:H3	2.09	0.49
8:SA:45:U:O2'	8:SA:46:A:H2'	2.12	0.49
8:SA:1962:A:H2'	8:SA:1963:U:H6	1.78	0.49
8:SA:2032:U:H2'	8:SA:2033:U:C6	2.48	0.49
16:SI:29:CYS:SG	16:SI:134:PRO:HB2	2.53	0.49
20:SM:130:PHE:HZ	21:SN:76:TRP:HE3	1.61	0.49
26:SS:110:ARG:CZ	26:SS:114:GLU:HB3	2.43	0.49
30:SW:59:LYS:HG3	30:SW:60:ARG:NH1	2.28	0.49
34:AA:384:A:OP2	66:AZ:86:ARG:HD3	2.11	0.49
34:AA:1462:C:H2'	34:AA:1463:A:H8	1.77	0.49
34:AA:3616:U:O2'	73:AU:177:LYS:HD3	2.12	0.49
42:A7:27:LEU:HD13	42:A7:43:GLU:HB3	1.95	0.49
46:Aa:87:GLU:OE2	46:Aa:91:ARG:NH1	2.43	0.49
55:AJ:260:LEU:HB2	55:AJ:264:MET:HE3	1.93	0.49
66:AZ:50:ARG:HG3	66:AZ:114:ARG:NH1	2.28	0.49
68:A5:89:GLU:OE1	68:A5:89:GLU:N	2.42	0.49
72:AG:49:LYS:HE2	72:AG:51:ARG:HB3	1.95	0.49
8:SA:410:G:H2'	8:SA:411:C:C6	2.48	0.49
8:SA:1303:A:H1'	8:SA:1308:C:H41	1.77	0.49
10:SC:164:ASN:HB2	10:SC:165:LYS:NZ	2.28	0.49
13:SF:247:ASP:N	13:SF:250:GLU:OE2	2.46	0.49
22:SO:72:TRP:CD2	27:ST:21:VAL:HG13	2.48	0.49
26:SS:132:ARG:HB3	26:SS:136:GLN:N	2.28	0.49
34:AA:1006:G:H2'	34:AA:1007:U:C6	2.48	0.49
34:AA:1874:C:H2'	34:AA:1875:A:C8	2.47	0.49
34:AA:3256:C:H2'	34:AA:3258:C:H5'	1.94	0.49
34:AA:3286:C:H2'	34:AA:3287:C:C6	2.47	0.49
35:AC:145:A:H2'	35:AC:146:C:C6	2.48	0.49
53:Ai:70:LYS:HD3	53:Ai:79:LYS:HD3	1.94	0.49
54:AI:96:LEU:HB2	54:AI:183:GLN:HG3	1.95	0.49
61:AQ:183:GLN:O	61:AQ:187:LYS:HG2	2.12	0.49
72:AG:47:PHE:HA	72:AG:66:SER:O	2.13	0.49
73:AU:82:LYS:NZ	73:AU:106:THR:O	2.45	0.49
1:S1:18:LEU:HB3	1:S1:20:ARG:HG3	1.94	0.49
8:SA:29:U:H2'	8:SA:30:G:H8	1.78	0.49
8:SA:487:A:H2'	8:SA:488:U:C6	2.47	0.49
8:SA:1276:U:H2'	8:SA:1277:G:C8	2.48	0.49
8:SA:1898:G:H5'	32:SY:112:PRO:HG2	1.95	0.49
11:SD:65:ARG:N	11:SD:68:GLU:OE1	2.46	0.49
18:SK:42:GLN:NE2	18:SK:48:GLY:O	2.44	0.49
34:AA:521:U:O2'	34:AA:522:A:H8	1.96	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:719:C:OP1	60:AO:21:ARG:HG2	2.13	0.49
34:AA:2085:A:H2'	34:AA:2086:A:C8	2.48	0.49
34:AA:3469:C:O2'	34:AA:3724:U:OP1	2.24	0.49
35:AC:47:G:H4'	56:Ac:25:CYS:O	2.13	0.49
38:A1:46:ILE:HD11	38:A1:49:HIS:CG	2.48	0.49
48:Ad:42:LYS:HA	48:Ad:50:TYR:O	2.13	0.49
71:AF:375:TYR:OH	73:AU:37:CYS:HB3	2.13	0.49
73:AU:156:LEU:HD11	74:AH:4:ILE:HD13	1.95	0.49
74:AH:26:THR:HG23	74:AH:35:ARG:HG3	1.94	0.49
8:SA:885:C:H2'	8:SA:886:U:C6	2.46	0.49
8:SA:1904:G:H2'	8:SA:1905:C:H6	1.77	0.49
24:SQ:43:PHE:O	24:SQ:78:LYS:NZ	2.45	0.49
34:AA:1078:C:O2'	34:AA:2703:U:N3	2.39	0.49
34:AA:2824:A:N1	34:AA:2933:C:N4	2.57	0.49
34:AA:3128:A:O2'	34:AA:3129:U:O4'	2.23	0.49
53:Ai:60:LYS:NZ	53:Ai:62:LYS:O	2.41	0.49
55:AJ:89:LYS:HG3	55:AJ:252:GLN:NE2	2.27	0.49
62:AR:196:LYS:HB2	62:AR:201:ILE:HB	1.95	0.49
64:AY:139:ASN:H	64:AY:142:ASN:HB2	1.78	0.49
66:AZ:72:ILE:HG12	66:AZ:79:ILE:HG22	1.94	0.49
8:SA:875:A:H1'	8:SA:877:U:H1'	1.95	0.49
8:SA:1735:U:OP2	8:SA:1811:A:N6	2.41	0.49
8:SA:1746:A:H2'	8:SA:1747:U:C6	2.48	0.49
8:SA:1888:U:H2'	8:SA:1889:G:C8	2.46	0.49
8:SA:2067:U:OP1	76:Ag:25:ARG:NH2	2.39	0.49
13:SF:196:SER:N	13:SF:209:HIS:O	2.46	0.49
16:SI:106:ALA:HB1	16:SI:171:CYS:HB3	1.95	0.49
17:SJ:45:LEU:HG	17:SJ:65:PRO:HD3	1.95	0.49
30:SW:12:ALA:O	30:SW:15:GLN:HG3	2.13	0.49
34:AA:63:A:OP1	51:AP:173:ARG:NH1	2.35	0.49
34:AA:600:U:H2'	34:AA:601:G:C8	2.48	0.49
34:AA:809:A:OP1	60:AO:132:VAL:HB	2.13	0.49
34:AA:1906:A:H2'	34:AA:1907:A:H8	1.78	0.49
34:AA:3013:A:C2	72:AG:124:GLY:HA3	2.48	0.49
34:AA:3249:A:O2'	34:AA:3292:A:N3	2.38	0.49
53:Ai:36:SER:O	53:Ai:40:ARG:HG3	2.12	0.49
61:AQ:79:ASN:HB3	61:AQ:147:LYS:HZ3	1.78	0.49
72:AG:32:ARG:HG2	72:AG:35:ARG:HH22	1.77	0.49
75:AV:141:MET:HE3	75:AV:143:LYS:NZ	2.28	0.49
8:SA:1635:C:H5'	30:SW:48:ASN:HB3	1.94	0.48
8:SA:2024:A:H2'	8:SA:2025:U:H6	1.77	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:SC:38:TYR:HD2	10:SC:39:THR:HG22	1.78	0.48
34:AA:595:U:O2'	34:AA:596:A:N7	2.35	0.48
34:AA:684:G:H1	71:AF:311:LYS:NZ	2.11	0.48
34:AA:2709:U:H2'	34:AA:2710:U:C6	2.48	0.48
34:AA:2722:G:H2'	34:AA:2723:G:H8	1.78	0.48
34:AA:3639:G:N2	34:AA:3646:G:H22	2.11	0.48
66:AZ:26:ARG:O	66:AZ:30:MET:HG3	2.13	0.48
71:AF:116:ASN:HB2	71:AF:119:GLU:HG3	1.93	0.48
73:AU:90:TYR:HE1	73:AU:99:MET:HE3	1.77	0.48
74:AH:140:LYS:H	74:AH:140:LYS:HD3	1.78	0.48
7:S7:62:C:H2'	7:S7:63:U:C6	2.48	0.48
8:SA:619:U:OP2	24:SQ:5:LYS:NZ	2.45	0.48
8:SA:1302:G:N2	8:SA:1897:A:O5'	2.46	0.48
8:SA:1869:G:C8	16:SI:155:ARG:HD3	2.48	0.48
10:SC:89:PHE:O	10:SC:93:THR:HG22	2.13	0.48
11:SD:137:VAL:C	11:SD:138:ILE:HD13	2.38	0.48
31:SX:57:LEU:HA	31:SX:60:ILE:HG22	1.93	0.48
31:SX:64:LYS:HZ1	31:SX:92:SER:HA	1.77	0.48
34:AA:3013:A:H2'	34:AA:3014:C:O4'	2.13	0.48
55:AJ:260:LEU:HD12	55:AJ:261:LEU:HD12	1.94	0.48
62:AR:225:TYR:CD2	62:AR:230:ILE:HD11	2.48	0.48
3:S3:70:LYS:HG3	3:S3:70:LYS:O	2.13	0.48
8:SA:80:A:H5'	15:SH:154:ARG:NH1	2.24	0.48
8:SA:97:G:O2'	8:SA:466:A:O2'	2.17	0.48
8:SA:478:G:O2'	8:SA:819:A:N3	2.40	0.48
8:SA:1656:A:H5'	20:SM:119:VAL:HG11	1.96	0.48
8:SA:1901:U:H5"	20:SM:130:PHE:HE1	1.76	0.48
14:SG:235:GLY:HA2	33:SZ:23:LEU:HD11	1.94	0.48
21:SN:24:THR:HG22	21:SN:110:GLU:HB2	1.96	0.48
22:SO:22:ILE:HA	22:SO:25:TYR:HB3	1.94	0.48
26:SS:62:THR:O	26:SS:66:ILE:HG12	2.13	0.48
29:SV:56:TYR:CD1	29:SV:116:PRO:HG2	2.48	0.48
30:SW:79:GLU:HA	30:SW:82:LEU:HD23	1.94	0.48
31:SX:62:LYS:O	31:SX:65:LYS:HG3	2.13	0.48
33:SZ:54:ILE:HG13	33:SZ:68:LEU:HD21	1.94	0.48
34:AA:255:C:H2'	34:AA:256:A:C8	2.47	0.48
34:AA:953:U:H2'	34:AA:954:G:O4'	2.14	0.48
34:AA:1064:U:H2'	34:AA:1065:U:H6	1.77	0.48
47:Ab:44:ILE:O	47:Ab:48:VAL:HG23	2.13	0.48
58:AM:64:VAL:HG23	58:AM:72:ARG:HG2	1.94	0.48
64:AY:120:ALA:O	64:AY:124:ILE:HG13	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
65:AT:34:ALA:HB2	65:AT:43:LEU:HD21	1.95	0.48
71:AF:37:ILE:HD11	71:AF:126:SER:HB3	1.96	0.48
76:Ag:7:ARG:HG2	76:Ag:8:TYR:CD1	2.48	0.48
77:AX:81:VAL:HG22	77:AX:94:VAL:HG13	1.95	0.48
8:SA:546:G:OP2	8:SA:546:G:N2	2.41	0.48
8:SA:788:A:O2'	8:SA:789:U:O4'	2.31	0.48
8:SA:1460:A:N1	8:SA:1604:A:N6	2.61	0.48
8:SA:1849:U:H2'	8:SA:1850:G:C8	2.49	0.48
11:SD:7:LYS:HA	11:SD:10:LYS:HE3	1.94	0.48
13:SF:193:GLY:HA3	13:SF:210:VAL:HG12	1.96	0.48
14:SG:173:LYS:HB2	14:SG:178:ARG:HH11	1.77	0.48
15:SH:16:ILE:HG22	15:SH:18:ILE:HG23	1.95	0.48
21:SN:30:ALA:HA	21:SN:33:LYS:HE3	1.96	0.48
34:AA:442:G:OP1	45:A9:92:HIS:NE2	2.45	0.48
34:AA:1342:U:H2'	34:AA:1343:U:C6	2.48	0.48
34:AA:1706:A:H2'	55:AJ:73:ARG:HH12	1.78	0.48
34:AA:2103:C:O2'	34:AA:2109:A:N1	2.45	0.48
35:AC:44:A:H2'	35:AC:45:A:C8	2.48	0.48
36:AB:8:U:OP2	62:AR:30:TYR:OH	2.27	0.48
36:AB:57:C:H2'	36:AB:58:A:H8	1.78	0.48
44:A8:4:LYS:HG3	44:A8:11:LYS:HB2	1.96	0.48
46:Aa:10:HIS:ND1	46:Aa:10:HIS:O	2.46	0.48
70:AE:41:PRO:HA	70:AE:182:GLY:HA3	1.95	0.48
70:AE:83:PRO:O	70:AE:162:GLN:NE2	2.37	0.48
8:SA:248:G:N3	29:SV:43:LEU:HD21	2.28	0.48
8:SA:440:G:N1	8:SA:443:A:OP2	2.44	0.48
8:SA:882:A:H61	8:SA:920:A:H61	1.60	0.48
8:SA:1780:G:H2'	8:SA:1781:C:C6	2.49	0.48
14:SG:191:VAL:HG13	14:SG:209:PHE:HA	1.93	0.48
31:SX:43:ARG:HH12	31:SX:47:ARG:HH11	1.61	0.48
34:AA:703:U:H2'	34:AA:704:U:H6	1.79	0.48
34:AA:1035:G:H5'	34:AA:1036:A:OP1	2.13	0.48
34:AA:1193:G:H2'	34:AA:1194:A:C8	2.48	0.48
34:AA:1642:G:O6	49:Ae:2:GLY:N	2.47	0.48
34:AA:1646:C:H2'	34:AA:1647:U:H6	1.78	0.48
34:AA:1690:A:H2'	34:AA:1691:G:O4'	2.13	0.48
34:AA:1855:U:H5'	34:AA:1856:U:H4'	1.94	0.48
34:AA:2884:G:C8	46:Aa:91:ARG:HG2	2.48	0.48
34:AA:3241:U:H2'	34:AA:3242:U:H6	1.76	0.48
35:AC:13:A:H2'	35:AC:14:A:C8	2.47	0.48
36:AB:116:U:O2'	62:AR:79:LYS:NZ	2.46	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:AK:154:LYS:O	57:AK:157:VAL:HG12	2.14	0.48
62:AR:193:GLN:HA	62:AR:196:LYS:HG2	1.95	0.48
70:AE:90:VAL:HG13	70:AE:104:THR:HG22	1.95	0.48
5:S5:19:ARG:NH2	7:S7:32:U:O4	2.46	0.48
8:SA:70:U:H2'	8:SA:71:A:H8	1.78	0.48
8:SA:523:U:H2'	8:SA:524:G:H8	1.77	0.48
8:SA:1607:U:OP1	32:SY:142:LYS:NZ	2.46	0.48
8:SA:1802:G:HO2'	8:SA:1847:A:HO2'	1.61	0.48
8:SA:1957:A:H2'	8:SA:1958:A:C8	2.49	0.48
12:SE:135:ARG:N	12:SE:157:ASP:O	2.34	0.48
13:SF:172:HIS:HB2	13:SF:174:LYS:NZ	2.28	0.48
14:SG:250:SER:HB3	14:SG:253:GLU:OE1	2.13	0.48
15:SH:198:ARG:HE	15:SH:202:LYS:NZ	2.12	0.48
17:SJ:164:ASN:ND2	17:SJ:168:LYS:HB2	2.26	0.48
20:SM:108:ASP:O	20:SM:112:ARG:HB2	2.13	0.48
23:SP:64:ALA:C	23:SP:66:ARG:H	2.19	0.48
32:SY:86:ARG:HD2	32:SY:89:LEU:HD21	1.95	0.48
34:AA:674:U:H2'	34:AA:675:A:H8	1.77	0.48
34:AA:734:A:H2'	34:AA:735:A:H8	1.78	0.48
34:AA:803:A:C8	60:AO:58:MET:HE2	2.48	0.48
34:AA:1141:G:O6	34:AA:1156:U:O4	2.31	0.48
34:AA:2816:U:O2'	34:AA:2817:U:OP1	2.27	0.48
34:AA:3533:A:O2'	70:AE:104:THR:HG23	2.14	0.48
51:AP:75:VAL:HG13	51:AP:77:LYS:O	2.13	0.48
57:AK:61:THR:OG1	57:AK:64:ASN:O	2.32	0.48
79:S9:10:G:C2	79:S9:26:G:H1'	2.49	0.48
79:S9:21:A:N6	79:S9:46:G:H2'	2.28	0.48
8:SA:247:G:N1	8:SA:250:A:OP2	2.45	0.48
8:SA:882:A:H2'	8:SA:883:A:C8	2.49	0.48
8:SA:1172:U:H2'	8:SA:1173:C:C6	2.48	0.48
8:SA:1363:U:H2'	8:SA:1364:G:H8	1.79	0.48
8:SA:1690:A:H4'	8:SA:1691:G:H3'	1.96	0.48
8:SA:1809:G:HO2'	8:SA:1814:C:N4	2.11	0.48
8:SA:1916:C:H2'	8:SA:1917:C:H6	1.78	0.48
11:SD:76:ARG:NH2	11:SD:77:PHE:HB2	2.28	0.48
12:SE:130:ARG:HA	12:SE:130:ARG:HD2	1.59	0.48
16:SI:116:SER:HA	16:SI:129:ALA:HA	1.95	0.48
34:AA:1124:A:H2'	34:AA:1125:A:H8	1.78	0.48
34:AA:2021:A:H2'	34:AA:2022:A:H8	1.76	0.48
34:AA:3139:C:OP1	37:AL:198:ARG:NH2	2.46	0.48
34:AA:3306:G:N3	70:AE:247:ALA:HB1	2.29	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:AC:12:U:H2'	35:AC:13:A:C8	2.48	0.48
36:AB:26:C:H5'	62:AR:56:THR:HB	1.96	0.48
8:SA:52:U:H2'	8:SA:53:G:H8	1.79	0.48
8:SA:127:C:H3'	15:SH:197:ARG:NH2	2.29	0.48
8:SA:749:U:H2'	8:SA:750:U:C6	2.49	0.48
8:SA:756:A:N6	8:SA:757:A:N6	2.61	0.48
8:SA:947:G:O2'	28:SU:108:ASP:OD2	2.27	0.48
8:SA:1435:C:H2'	8:SA:1436:U:C6	2.49	0.48
8:SA:1631:G:H2'	8:SA:1632:G:C8	2.48	0.48
14:SG:147:SER:O	14:SG:149:ILE:HG23	2.14	0.48
15:SH:21:GLU:HG2	15:SH:22:LYS:HD3	1.96	0.48
17:SJ:24:LEU:HD11	17:SJ:42:ILE:HD11	1.95	0.48
18:SK:26:LEU:HD23	18:SK:62:VAL:HG22	1.96	0.48
19:SL:206:LEU:HD12	19:SL:210:ARG:HH21	1.78	0.48
26:SS:29:ILE:O	26:SS:33:THR:HG23	2.14	0.48
26:SS:30:ILE:HA	26:SS:33:THR:OG1	2.13	0.48
34:AA:272:U:H2'	34:AA:273:C:O4'	2.14	0.48
34:AA:1197:U:HO2'	34:AA:1198:A:P	2.37	0.48
34:AA:1423:G:OP1	73:AU:93:ARG:HG3	2.12	0.48
34:AA:1999:A:H2'	34:AA:2000:G:C8	2.49	0.48
34:AA:3713:C:H2'	34:AA:3714:C:C6	2.48	0.48
36:AB:60:U:H2'	36:AB:61:G:H8	1.79	0.48
55:AJ:178:GLU:HA	55:AJ:181:LEU:CD2	2.42	0.48
76:Ag:10:LYS:NZ	76:Ag:14:LYS:O	2.42	0.48
4:S4:29:TYR:CD2	4:S4:79:LYS:HD3	2.49	0.48
8:SA:1881:G:H3'	20:SM:125:CYS:HA	1.95	0.48
8:SA:2068:A:H2'	8:SA:2069:G:H8	1.79	0.48
9:SB:66:TYR:CE1	23:SP:48:SER:HB3	2.48	0.48
9:SB:145:LYS:O	9:SB:146:ARG:HG2	2.14	0.48
16:SI:10:LEU:N	16:SI:14:TRP:O	2.33	0.48
20:SM:45:LEU:HB3	20:SM:79:ILE:HG21	1.95	0.48
27:ST:51:LYS:NZ	27:ST:53:TYR:HB2	2.29	0.48
32:SY:29:ILE:O	32:SY:32:VAL:HG12	2.14	0.48
34:AA:107:C:H2'	34:AA:108:C:O4'	2.13	0.48
34:AA:669:C:OP1	71:AF:344:ARG:NH2	2.46	0.48
34:AA:1765:A:H2'	34:AA:1766:U:H6	1.79	0.48
34:AA:3295:A:H2'	34:AA:3296:G:C8	2.48	0.48
34:AA:3757:U:H2'	34:AA:3758:G:C8	2.49	0.48
37:AL:55:PRO:HG3	37:AL:73:GLY:O	2.14	0.48
40:A4:25:LYS:HD3	40:A4:25:LYS:HA	1.64	0.48
41:A6:37:LEU:CD1	41:A6:62:TYR:HB3	2.36	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:AN:109:LYS:HB3	43:AN:109:LYS:HE2	1.64	0.48
64:AY:179:ASP:OD2	64:AY:181:LEU:N	2.37	0.48
69:AD:149:ARG:HG3	69:AD:155:LYS:HZ2	1.79	0.48
77:AX:63:PHE:O	77:AX:67:LYS:CB	2.61	0.48
8:SA:958:U:H2'	8:SA:959:C:C6	2.49	0.48
8:SA:1410:G:H2'	8:SA:1411:G:C8	2.49	0.48
8:SA:1447:A:H5'	21:SN:51:GLY:HA3	1.95	0.48
8:SA:1747:U:H2'	8:SA:1748:G:C8	2.49	0.48
14:SG:80:GLN:H	14:SG:80:GLN:CD	2.21	0.48
17:SJ:74:ARG:HA	17:SJ:77:GLN:NE2	2.21	0.48
23:SP:27:VAL:HG13	23:SP:90:VAL:HA	1.95	0.48
24:SQ:96:ILE:HG22	24:SQ:127:VAL:HG11	1.95	0.48
32:SY:30:LYS:HG3	32:SY:88:TYR:HE2	1.79	0.48
41:A6:35:LYS:O	41:A6:39:THR:HG23	2.14	0.48
46:Aa:67:ARG:HB3	46:Aa:67:ARG:NH1	2.29	0.48
47:Ab:67:ILE:HG22	47:Ab:69:THR:HG23	1.96	0.48
61:AQ:4:ARG:NH1	61:AQ:9:TYR:OH	2.47	0.48
69:AD:180:LEU:HA	69:AD:180:LEU:HD23	1.73	0.48
73:AU:183:ARG:HG3	73:AU:184:MET:H	1.79	0.48
8:SA:851:A:OP1	13:SF:106:LYS:NZ	2.44	0.47
8:SA:955:U:C2	8:SA:956:A:C8	3.02	0.47
8:SA:976:A:H2'	8:SA:977:U:H6	1.78	0.47
8:SA:1188:A:H2'	8:SA:1189:A:C8	2.49	0.47
8:SA:1456:G:C2	8:SA:1607:U:C2	3.02	0.47
8:SA:1648:A:OP1	30:SW:4:VAL:HA	2.14	0.47
21:SN:47:LEU:HD13	21:SN:92:SER:HB2	1.95	0.47
23:SP:106:LYS:HA	23:SP:106:LYS:HD3	1.69	0.47
24:SQ:6:PRO:HG3	24:SQ:14:LYS:HG2	1.96	0.47
26:SS:103:ASN:OD1	26:SS:103:ASN:N	2.47	0.47
32:SY:122:ILE:HG13	32:SY:123:LEU:N	2.29	0.47
34:AA:133:U:H2'	34:AA:134:G:O4'	2.14	0.47
34:AA:149:A:OP1	55:AJ:125:LYS:NZ	2.41	0.47
34:AA:508:A:H2'	34:AA:509:A:C8	2.49	0.47
34:AA:979:G:O2'	34:AA:1014:C:H4'	2.13	0.47
34:AA:2817:U:H2'	34:AA:2818:U:H6	1.79	0.47
34:AA:3050:U:O2'	34:AA:3083:U:OP1	2.31	0.47
37:AL:128:LYS:HB2	37:AL:131:LYS:HB2	1.95	0.47
46:Aa:57:LEU:HB3	46:Aa:61:ASP:HB2	1.96	0.47
55:AJ:64:ASP:OD1	55:AJ:65:LEU:N	2.47	0.47
55:AJ:126:GLN:NE2	55:AJ:130:ASN:OD1	2.47	0.47
58:AM:89:ARG:HH21	58:AM:123:GLU:CD	2.20	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
64:AY:122:LYS:O	64:AY:126:GLU:HB2	2.14	0.47
66:AZ:34:LEU:HB3	66:AZ:38:LEU:CD1	2.44	0.47
66:AZ:57:ILE:HB	66:AZ:103:VAL:HG12	1.96	0.47
68:A5:79:ARG:HD2	71:AF:371:ILE:HG21	1.96	0.47
8:SA:58:U:OP1	8:SA:462:A:O2'	2.32	0.47
8:SA:628:A:OP1	76:Ag:6:SER:HB3	2.13	0.47
8:SA:2062:U:H2'	8:SA:2063:U:C6	2.50	0.47
11:SD:133:LYS:HZ3	11:SD:157:TYR:HB2	1.78	0.47
13:SF:57:THR:O	13:SF:61:VAL:HG23	2.14	0.47
13:SF:75:LYS:HD2	13:SF:77:ARG:NH2	2.30	0.47
17:SJ:65:PRO:HG2	17:SJ:68:ILE:HD13	1.96	0.47
20:SM:103:LYS:HD3	20:SM:107:LYS:HZ1	1.79	0.47
24:SQ:30:LYS:O	24:SQ:34:LEU:HB2	2.14	0.47
26:SS:76:PRO:HA	26:SS:79:PHE:HD1	1.79	0.47
34:AA:316:A:H1'	34:AA:2515:A:N3	2.29	0.47
34:AA:2445:A:H2'	34:AA:2446:U:H6	1.79	0.47
34:AA:3593:U:H2'	34:AA:3594:G:C8	2.48	0.47
51:AP:202:ARG:HG3	51:AP:205:ARG:HA	1.96	0.47
54:AI:12:ASN:HA	54:AI:17:LYS:H	1.80	0.47
55:AJ:74:TYR:C	55:AJ:76:ARG:N	2.72	0.47
70:AE:74:GLU:OE1	70:AE:280:TYR:OH	2.31	0.47
73:AU:17:HIS:CE1	73:AU:35:ARG:HD3	2.49	0.47
8:SA:401:U:H2'	8:SA:402:G:O4'	2.13	0.47
8:SA:1436:U:H1'	27:ST:53:TYR:HE2	1.79	0.47
8:SA:1853:A:OP1	31:SX:115:TYR:OH	2.19	0.47
10:SC:177:LEU:O	10:SC:181:VAL:HG13	2.14	0.47
15:SH:135:PRO:HG2	15:SH:141:ILE:HD13	1.95	0.47
18:SK:111:MET:HB2	18:SK:115:GLU:HG2	1.96	0.47
32:SY:39:ARG:NH2	32:SY:78:ILE:HG12	2.28	0.47
34:AA:505:A:O2'	34:AA:506:A:OP1	2.29	0.47
34:AA:888:A:H5'	34:AA:890:G:H4'	1.96	0.47
34:AA:935:A:OP2	56:Ac:31:HIS:HE1	1.96	0.47
34:AA:1881:C:O2'	34:AA:1882:U:C6	2.66	0.47
34:AA:3035:A:H2'	34:AA:3036:A:C8	2.49	0.47
34:AA:3724:U:H2'	34:AA:3725:G:O4'	2.13	0.47
52:Ah:8:VAL:O	52:Ah:11:THR:OG1	2.31	0.47
61:AQ:38:ARG:NH1	61:AQ:83:ASP:O	2.46	0.47
61:AQ:57:TYR:HA	61:AQ:130:ASP:HA	1.96	0.47
67:A3:24:LEU:HD21	67:A3:52:ASN:HB3	1.97	0.47
69:AD:83:PHE:CZ	69:AD:86:GLN:HB2	2.49	0.47
73:AU:88:LEU:HD12	73:AU:115:LEU:HD11	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:1264:A:N3	8:SA:1910:U:O2'	2.34	0.47
8:SA:1278:C:C2	8:SA:1279:G:C8	3.01	0.47
12:SE:64:GLU:O	12:SE:65:LYS:HG2	2.15	0.47
13:SF:198:ILE:HG23	13:SF:208:ILE:HG22	1.95	0.47
17:SJ:69:TYR:CG	17:SJ:96:ALA:HB2	2.50	0.47
33:SZ:42:ASN:N	33:SZ:42:ASN:OD1	2.40	0.47
34:AA:269:A:H2'	34:AA:270:U:C6	2.49	0.47
34:AA:1285:U:O2'	34:AA:1297:A:N3	2.40	0.47
34:AA:1293:G:H5'	45:A9:60:PHE:HZ	1.79	0.47
34:AA:1575:C:H5'	71:AF:42:THR:HG21	1.95	0.47
34:AA:1644:U:H5	34:AA:2102:A:N1	2.12	0.47
34:AA:2005:A:H2'	34:AA:2006:A:C8	2.49	0.47
34:AA:3433:C:O2'	34:AA:3434:A:H5'	2.14	0.47
38:A1:126:VAL:HG22	38:A1:132:GLU:HG3	1.97	0.47
47:Ab:51:ILE:HD11	51:AP:10:ILE:HD11	1.96	0.47
62:AR:123:GLU:HB3	62:AR:124:LYS:NZ	2.29	0.47
68:A5:131:ALA:O	68:A5:135:MET:HG3	2.14	0.47
5:S5:9:VAL:HG23	5:S5:54:LEU:HD11	1.97	0.47
7:S7:69:U:H3'	7:S7:70:A:H8	1.80	0.47
8:SA:1363:U:H2'	8:SA:1364:G:C8	2.49	0.47
15:SH:205:LEU:O	15:SH:209:LYS:HG2	2.15	0.47
24:SQ:34:LEU:O	24:SQ:37:ARG:HD3	2.13	0.47
34:AA:1169:A:H2'	34:AA:1172:C:C5	2.50	0.47
34:AA:2700:C:H2'	34:AA:2701:U:C6	2.49	0.47
34:AA:3239:U:H1'	70:AE:247:ALA:HB3	1.94	0.47
34:AA:3395:G:OP1	57:AK:60:ARG:NH1	2.47	0.47
34:AA:3726:U:H4'	34:AA:3727:A:H5'	1.95	0.47
55:AJ:248:LYS:HB3	55:AJ:248:LYS:HE2	1.53	0.47
66:AZ:62:ASN:HB3	66:AZ:65:ARG:HG3	1.96	0.47
74:AH:91:MET:HG2	74:AH:180:VAL:HA	1.96	0.47
8:SA:342:G:H1	19:SL:6:ASP:HB3	1.80	0.47
8:SA:1017:G:H2'	8:SA:1018:U:C6	2.49	0.47
8:SA:1220:C:H2'	8:SA:1221:G:C8	2.49	0.47
8:SA:1311:U:H2'	8:SA:1312:A:C8	2.50	0.47
8:SA:1684:G:H2'	8:SA:1685:U:H6	1.78	0.47
26:SS:36:LYS:NZ	26:SS:105:LEU:HD22	2.30	0.47
32:SY:82:SER:O	32:SY:86:ARG:HG2	2.14	0.47
34:AA:876:C:H2'	34:AA:877:G:H8	1.79	0.47
34:AA:1851:A:H2'	34:AA:1852:C:C6	2.49	0.47
34:AA:2108:A:H1'	49:Ae:45:ARG:HH22	1.79	0.47
41:A6:17:LEU:O	41:A6:21:MET:HG2	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:AJ:62:LYS:C	55:AJ:62:LYS:HD3	2.40	0.47
58:AM:79:ILE:HD12	58:AM:105:VAL:HG11	1.97	0.47
3:S3:37:LYS:O	3:S3:38:ARG:NH1	2.47	0.47
8:SA:17:C:H2'	8:SA:18:C:H6	1.79	0.47
8:SA:457:A:OP2	8:SA:459:A:N6	2.45	0.47
8:SA:882:A:H2'	8:SA:883:A:H8	1.78	0.47
8:SA:1107:U:O3'	18:SK:20:ARG:NH1	2.48	0.47
8:SA:1405:U:O2'	8:SA:1424:A:OP2	2.30	0.47
8:SA:1836:G:O2'	8:SA:1837:G:H5'	2.15	0.47
8:SA:1962:A:H2'	8:SA:1963:U:C6	2.50	0.47
9:SB:88:CYS:HA	9:SB:98:THR:HA	1.97	0.47
15:SH:48:TYR:OH	15:SH:119:ASN:O	2.30	0.47
17:SJ:105:GLN:O	17:SJ:106:LYS:HG3	2.15	0.47
26:SS:87:ASN:HB3	26:SS:99:HIS:HB2	1.97	0.47
26:SS:110:ARG:NH2	26:SS:114:GLU:HB3	2.30	0.47
29:SV:11:ARG:CZ	29:SV:12:ALA:HA	2.45	0.47
33:SZ:33:GLN:NE2	33:SZ:52:PHE:O	2.31	0.47
34:AA:66:A:N1	34:AA:77:A:H5"	2.30	0.47
34:AA:176:A:H2'	34:AA:177:A:H8	1.80	0.47
34:AA:248:A:H2'	34:AA:249:U:O4'	2.14	0.47
34:AA:459:G:H2'	34:AA:460:A:C8	2.49	0.47
34:AA:503:A:OP2	54:AI:144:LYS:NZ	2.35	0.47
34:AA:619:U:OP2	71:AF:355:LYS:NZ	2.45	0.47
34:AA:1109:U:H2'	34:AA:1110:U:C6	2.50	0.47
34:AA:1462:C:H2'	34:AA:1463:A:C8	2.50	0.47
34:AA:1468:A:H2'	34:AA:1469:U:C6	2.50	0.47
34:AA:1535:G:O6	71:AF:188:LYS:HD3	2.15	0.47
34:AA:2041:U:H3	34:AA:2068:G:H1	1.61	0.47
34:AA:2118:G:O3'	56:Ac:3:LYS:HE2	2.15	0.47
34:AA:2119:G:H1'	56:Ac:12:GLY:HA3	1.97	0.47
34:AA:2732:A:H2'	34:AA:2733:A:H8	1.78	0.47
34:AA:2832:A:C2	55:AJ:70:LYS:HA	2.50	0.47
34:AA:3393:C:H2'	34:AA:3394:A:C8	2.50	0.47
37:AL:119:LYS:HE2	37:AL:119:LYS:HB3	1.58	0.47
44:A8:32:TRP:CZ2	44:A8:53:PRO:HD2	2.49	0.47
49:Ae:50:GLY:O	56:Ac:28:ARG:HD3	2.15	0.47
55:AJ:102:PRO:HD2	55:AJ:105:GLN:HE21	1.78	0.47
55:AJ:151:TYR:HA	55:AJ:156:ILE:HD11	1.96	0.47
62:AR:241:ASN:O	62:AR:244:GLU:HG3	2.14	0.47
70:AE:160:HIS:HB3	70:AE:175:ILE:HG22	1.95	0.47
79:S9:3:C:O2'	79:S9:4:G:H5'	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S1:15:ASN:OD1	1:S1:18:LEU:HB2	2.15	0.47
7:S7:57:C:H3'	7:S7:58:G:C8	2.49	0.47
8:SA:609:U:H2'	8:SA:610:U:C6	2.50	0.47
8:SA:1187:A:OP2	14:SG:178:ARG:NH2	2.40	0.47
8:SA:1458:G:H2'	8:SA:1459:U:C6	2.50	0.47
19:SL:38:LEU:HD23	19:SL:38:LEU:H	1.80	0.47
34:AA:1216:C:C2'	34:AA:1217:U:H5'	2.45	0.47
34:AA:1248:A:H2'	34:AA:1249:U:C6	2.50	0.47
34:AA:1558:U:O2'	44:A8:95:GLN:OE1	2.33	0.47
34:AA:1736:A:O2'	46:Aa:64:ARG:NH1	2.46	0.47
34:AA:1900:G:P	46:Aa:21:ARG:HH22	2.38	0.47
34:AA:2087:U:H2'	34:AA:2088:A:C8	2.50	0.47
34:AA:2700:C:H2'	34:AA:2701:U:H6	1.78	0.47
36:AB:48:G:H5'	62:AR:225:TYR:HE1	1.79	0.47
54:AI:100:ASP:HB3	54:AI:103:TYR:HD2	1.79	0.47
59:AS:104:PHE:CE1	59:AS:119:CYS:HB3	2.50	0.47
68:A5:172:ALA:O	68:A5:174:LYS:HG2	2.15	0.47
72:AG:26:SER:OG	72:AG:27:GLY:N	2.48	0.47
75:AV:103:ASN:O	75:AV:107:LEU:HG	2.15	0.47
8:SA:71:A:H2'	8:SA:72:U:C6	2.50	0.47
8:SA:1108:A:O2'	8:SA:1109:G:O5'	2.30	0.47
8:SA:1629:G:O5'	21:SN:86:ARG:NH2	2.48	0.47
8:SA:1637:U:H5"	30:SW:28:PHE:CZ	2.50	0.47
8:SA:1912:C:H42	16:SI:51:ARG:H	1.61	0.47
8:SA:1944:U:H2'	8:SA:1945:C:H6	1.80	0.47
12:SE:53:ARG:O	12:SE:57:ARG:HG2	2.14	0.47
17:SJ:66:TYR:O	17:SJ:70:THR:HG23	2.15	0.47
19:SL:59:LYS:O	19:SL:60:LEU:HD13	2.14	0.47
19:SL:196:ASP:OD1	19:SL:197:GLY:N	2.48	0.47
33:SZ:68:LEU:HD12	33:SZ:72:MET:HE3	1.97	0.47
34:AA:1115:G:N3	34:AA:2976:A:H2'	2.29	0.47
34:AA:1553:U:H5'	44:A8:58:GLY:HA2	1.97	0.47
34:AA:2008:G:H2'	34:AA:2009:A:C8	2.50	0.47
47:Ab:8:LYS:NZ	47:Ab:8:LYS:HB3	2.30	0.47
48:Ad:29:LYS:NZ	48:Ad:31:LYS:O	2.48	0.47
72:AG:35:ARG:O	72:AG:39:GLN:HG2	2.15	0.47
2:S2:59:ILE:HG12	2:S2:79:ILE:HG23	1.97	0.47
7:S7:29:G:N2	7:S7:38:A:N1	2.52	0.47
8:SA:109:C:H2'	8:SA:110:A:H8	1.79	0.47
8:SA:151:G:H2'	8:SA:152:G:H8	1.79	0.47
8:SA:335:G:H5'	19:SL:99:ASN:HB2	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:410:G:H2'	8:SA:411:C:H6	1.79	0.47
8:SA:1438:A:H2'	8:SA:1439:A:O4'	2.14	0.47
8:SA:1729:A:N6	8:SA:1821:A:C5	2.83	0.47
8:SA:1907:G:H4'	16:SI:42:HIS:NE2	2.30	0.47
8:SA:1978:A:O3'	15:SH:31:ARG:NH2	2.45	0.47
8:SA:2005:U:H2'	8:SA:2006:U:C6	2.50	0.47
10:SC:55:GLU:HG2	33:SZ:78:LEU:HD12	1.97	0.47
14:SG:101:GLN:O	14:SG:101:GLN:HG3	2.14	0.47
23:SP:33:ILE:HD12	23:SP:42:ILE:HG12	1.97	0.47
24:SQ:39:LYS:N	24:SQ:39:LYS:HD2	2.29	0.47
34:AA:1484:A:H2'	34:AA:1485:A:H8	1.80	0.47
34:AA:1770:G:H1'	34:AA:1797:A:N1	2.30	0.47
34:AA:2032:A:H2'	34:AA:2033:C:C6	2.50	0.47
34:AA:3017:A:H2'	34:AA:3018:A:O4'	2.15	0.47
39:A2:28:LYS:HE2	39:A2:28:LYS:HB2	1.57	0.47
42:A7:28:THR:HB	42:A7:36:LYS:HG3	1.97	0.47
75:AV:66:PHE:CZ	75:AV:89:LYS:HB3	2.50	0.47
2:S2:40:VAL:HG23	2:S2:74:VAL:HB	1.96	0.46
8:SA:1119:G:H2'	8:SA:1120:A:C8	2.50	0.46
8:SA:1248:A:H2'	8:SA:1249:C:C6	2.50	0.46
9:SB:33:LYS:HB2	9:SB:97:TYR:HA	1.97	0.46
24:SQ:15:LEU:HD12	29:SV:102:ARG:HD2	1.97	0.46
24:SQ:92:CYS:SG	24:SQ:136:PHE:HB2	2.56	0.46
34:AA:179:G:O6	34:AA:252:A:N6	2.47	0.46
34:AA:2400:A:H2	34:AA:3736:A:C8	2.32	0.46
34:AA:2645:A:H5"	63:AW:83:TRP:O	2.15	0.46
34:AA:3359:A:H2'	34:AA:3360:U:C6	2.50	0.46
34:AA:3452:U:OP2	65:AT:61:ARG:NH1	2.48	0.46
35:AC:35:A:H2'	35:AC:36:C:C6	2.50	0.46
35:AC:43:G:OP2	35:AC:43:G:H8	1.98	0.46
47:Ab:41:LYS:HB2	47:Ab:41:LYS:HE2	1.68	0.46
61:AQ:49:VAL:HB	61:AQ:172:GLY:HA2	1.97	0.46
71:AF:268:HIS:HB2	71:AF:273:THR:HG21	1.98	0.46
77:AX:103:ILE:H	77:AX:103:ILE:HD12	1.80	0.46
1:S1:17:LEU:HD23	13:SF:64:ILE:HD13	1.97	0.46
2:S2:80:ASN:OD1	2:S2:81:HIS:N	2.48	0.46
7:S7:16:U:C2	7:S7:58:G:H1'	2.51	0.46
8:SA:1434:U:H2'	8:SA:1435:C:C6	2.50	0.46
8:SA:1717:A:N7	8:SA:1837:G:H1'	2.28	0.46
8:SA:1745:U:H2'	8:SA:1746:A:C8	2.50	0.46
9:SB:109:LYS:O	9:SB:113:LEU:HG	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:SF:181:VAL:HG12	13:SF:227:VAL:HA	1.97	0.46
15:SH:153:VAL:HA	15:SH:156:TYR:CD2	2.51	0.46
16:SI:41:PRO:HB3	16:SI:64:VAL:HG21	1.97	0.46
16:SI:69:MET:H	16:SI:150:ARG:HH21	1.62	0.46
23:SP:36:SER:C	23:SP:38:ASN:H	2.22	0.46
29:SV:11:ARG:O	29:SV:11:ARG:NE	2.47	0.46
31:SX:39:ALA:HA	31:SX:42:ARG:NE	2.30	0.46
34:AA:125:C:H2'	34:AA:126:C:H6	1.81	0.46
34:AA:3553:G:O2'	34:AA:3572:A:N6	2.48	0.46
36:AB:110:G:O6	62:AR:21:ARG:NH2	2.44	0.46
43:AN:25:VAL:HG23	73:AU:158:PHE:O	2.15	0.46
43:AN:141:LYS:O	43:AN:145:ILE:HG23	2.16	0.46
44:A8:41:ARG:HG2	44:A8:49:THR:HG21	1.96	0.46
46:Aa:16:LYS:HE2	46:Aa:16:LYS:HB3	1.76	0.46
75:AV:51:LYS:H	75:AV:51:LYS:HG2	1.55	0.46
77:AX:131:GLU:OE1	77:AX:133:LYS:HG3	2.16	0.46
6:S6:43:ARG:O	6:S6:47:ASN:ND2	2.43	0.46
8:SA:527:A:H2'	8:SA:528:A:H8	1.79	0.46
8:SA:1049:G:H4'	8:SA:2068:A:H4'	1.97	0.46
28:SU:102:LEU:HD11	28:SU:112:LYS:HA	1.98	0.46
34:AA:159:C:H2'	34:AA:160:G:C8	2.49	0.46
34:AA:162:U:O2'	34:AA:163:G:OP2	2.28	0.46
34:AA:671:U:H2'	34:AA:672:C:C6	2.51	0.46
34:AA:1306:A:N3	34:AA:1456:C:O2'	2.47	0.46
34:AA:1975:A:N1	34:AA:1993:A:N1	2.63	0.46
34:AA:1980:G:H3'	34:AA:1981:U:C6	2.49	0.46
34:AA:2188:U:O2'	34:AA:2200:A:N7	2.46	0.46
55:AJ:168:VAL:O	55:AJ:194:TYR:HA	2.15	0.46
57:AK:33:VAL:HG22	57:AK:102:LYS:HB3	1.97	0.46
60:AO:37:GLY:O	60:AO:38:LEU:HB2	2.15	0.46
61:AQ:10:ARG:HE	61:AQ:58:GLU:CD	2.22	0.46
61:AQ:201:ARG:HE	61:AQ:203:LYS:HG3	1.80	0.46
73:AU:36:MET:HE1	73:AU:53:PHE:CD2	2.50	0.46
8:SA:751:U:H2'	8:SA:752:U:C6	2.51	0.46
8:SA:884:G:H22	8:SA:918:U:H3	1.63	0.46
8:SA:928:U:O4'	17:SJ:115:ARG:HG3	2.14	0.46
8:SA:1455:C:H1'	8:SA:1456:G:OP1	2.16	0.46
8:SA:1724:U:C4	8:SA:1725:A:N6	2.83	0.46
8:SA:1908:A:H5"	16:SI:47:TYR:OH	2.16	0.46
8:SA:1911:A:H3'	8:SA:1911:A:N3	2.30	0.46
19:SL:65:PHE:HA	19:SL:197:GLY:O	2.14	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:SS:36:LYS:HZ1	26:SS:105:LEU:HD22	1.79	0.46
26:SS:45:VAL:O	26:SS:48:LYS:HG3	2.16	0.46
34:AA:61:A:H2'	34:AA:62:A:C8	2.50	0.46
34:AA:387:A:N1	34:AA:401:A:O2'	2.42	0.46
34:AA:1481:A:O2'	34:AA:1482:A:H5"	2.15	0.46
34:AA:1964:G:O2'	34:AA:1965:U:H4'	2.16	0.46
34:AA:2654:A:H2'	34:AA:2655:C:H6	1.80	0.46
34:AA:3577:A:H3'	34:AA:3581:A:N6	2.31	0.46
38:A1:54:ASN:H	38:A1:57:MET:HE2	1.80	0.46
47:Ab:106:ARG:HH11	47:Ab:106:ARG:C	2.23	0.46
54:AI:75:THR:OG1	54:AI:86:VAL:HG12	2.15	0.46
8:SA:755:A:H2'	8:SA:756:A:C8	2.48	0.46
8:SA:1837:G:C5	8:SA:1838:G:C5	3.03	0.46
8:SA:1877:C:H2'	8:SA:1878:C:C6	2.51	0.46
11:SD:24:PHE:O	11:SD:28:ILE:HG12	2.15	0.46
14:SG:94:LYS:HD2	14:SG:219:LYS:HB2	1.98	0.46
14:SG:247:PHE:HD2	33:SZ:51:THR:HG23	1.81	0.46
20:SM:91:ILE:HG13	20:SM:103:LYS:HE2	1.97	0.46
22:SO:63:ARG:CZ	22:SO:63:ARG:HA	2.46	0.46
30:SW:27:ASP:HB3	30:SW:30:ILE:HB	1.96	0.46
34:AA:80:C:H2'	34:AA:81:C:H6	1.81	0.46
34:AA:128:U:H2'	34:AA:129:C:C6	2.51	0.46
34:AA:739:G:H4'	34:AA:740:U:H6	1.80	0.46
34:AA:1045:A:H2'	34:AA:1046:A:C8	2.51	0.46
34:AA:1102:U:N3	34:AA:1231:A:C2	2.77	0.46
34:AA:1821:U:H2'	34:AA:1822:A:H8	1.81	0.46
34:AA:2588:A:N3	34:AA:3288:C:O2'	2.35	0.46
37:AL:133:LYS:O	37:AL:142:ASP:HB2	2.15	0.46
42:A7:107:ASP:OD1	42:A7:107:ASP:N	2.48	0.46
44:A8:38:ILE:HA	44:A8:38:ILE:HD13	1.82	0.46
47:Ab:69:THR:O	47:Ab:73:THR:HG23	2.16	0.46
62:AR:157:THR:HG22	62:AR:181:ARG:HH11	1.81	0.46
1:S1:77:TYR:CD2	1:S1:83:VAL:HG22	2.50	0.46
8:SA:1218:U:H2'	8:SA:1219:U:C6	2.51	0.46
13:SF:104:ASP:OD1	13:SF:108:ARG:N	2.40	0.46
14:SG:100:LYS:HD3	14:SG:107:ARG:HD3	1.98	0.46
15:SH:137:ARG:HD3	15:SH:177:ARG:HH11	1.81	0.46
23:SP:39:ASP:HA	23:SP:68:GLU:O	2.15	0.46
34:AA:239:U:H2'	34:AA:240:U:C6	2.51	0.46
34:AA:261:A:H2'	34:AA:262:A:C8	2.50	0.46
34:AA:1647:U:H2'	34:AA:1648:U:C6	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:1736:A:HO2'	46:Aa:64:ARG:HH12	1.61	0.46
34:AA:3183:G:H2'	34:AA:3184:C:H6	1.81	0.46
36:AB:39:C:HO2'	36:AB:40:A:P	2.39	0.46
48:Ad:27:LYS:H	48:Ad:77:PRO:HG2	1.80	0.46
56:Ac:14:ARG:HG2	56:Ac:14:ARG:HH11	1.80	0.46
1:S1:99:ASP:OD1	1:S1:99:ASP:N	2.42	0.46
8:SA:1265:G:H2'	8:SA:1266:G:C8	2.50	0.46
8:SA:1723:A:H2'	8:SA:1724:U:H6	1.80	0.46
8:SA:1935:G:H2'	8:SA:1936:C:O4'	2.16	0.46
11:SD:101:ALA:HA	11:SD:104:GLU:HG2	1.98	0.46
13:SF:101:LEU:HD22	13:SF:101:LEU:HA	1.70	0.46
16:SI:31:ALA:HB1	16:SI:56:LEU:HD12	1.98	0.46
33:SZ:70:ARG:O	33:SZ:74:GLU:HG3	2.16	0.46
34:AA:38:U:H2'	34:AA:39:A:O4'	2.15	0.46
34:AA:179:G:C6	34:AA:252:A:C6	3.04	0.46
34:AA:593:A:C2	43:AN:6:LEU:HD11	2.51	0.46
34:AA:1297:A:H2'	34:AA:1298:A:C8	2.50	0.46
34:AA:1785:U:H4'	38:A1:75:ILE:HA	1.97	0.46
51:AP:144:ARG:NH2	67:A3:92:LEU:O	2.48	0.46
61:AQ:30:LYS:HE3	61:AQ:63:GLU:HG3	1.98	0.46
61:AQ:84:ASN:O	61:AQ:140:THR:OG1	2.26	0.46
65:AT:96:LYS:O	65:AT:100:VAL:HG13	2.15	0.46
66:AZ:35:SER:O	66:AZ:39:ARG:HB3	2.16	0.46
70:AE:283:GLY:HA3	70:AE:318:PHE:CZ	2.51	0.46
71:AF:44:MET:HG2	71:AF:238:LEU:HD21	1.96	0.46
75:AV:65:ILE:HD12	75:AV:73:VAL:HG21	1.97	0.46
8:SA:312:U:OP2	29:SV:108:LYS:HD2	2.16	0.46
8:SA:321:A:C2	8:SA:359:A:C5	3.03	0.46
10:SC:59:LEU:HD13	33:SZ:78:LEU:HD13	1.98	0.46
11:SD:133:LYS:HB3	11:SD:133:LYS:HE3	1.69	0.46
15:SH:1:MET:HE2	15:SH:1:MET:H2	1.80	0.46
24:SQ:134:ALA:HB1	24:SQ:141:GLU:HB2	1.98	0.46
34:AA:63:A:P	51:AP:173:ARG:HH22	2.38	0.46
34:AA:600:U:OP1	73:AU:155:ARG:HD3	2.16	0.46
34:AA:1883:U:H2'	34:AA:1884:G:C8	2.51	0.46
34:AA:2884:G:OP1	69:AD:87:TYR:OH	2.20	0.46
34:AA:3020:U:OP1	72:AG:49:LYS:HD2	2.15	0.46
35:AC:37:A:O2'	35:AC:38:G:H4'	2.15	0.46
44:A8:23:ASN:OD1	44:A8:23:ASN:N	2.49	0.46
51:AP:65:ARG:HG3	51:AP:130:TYR:CE2	2.50	0.46
62:AR:34:LYS:HB2	75:AV:31:TYR:CD2	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
75:AV:141:MET:HE3	75:AV:143:LYS:HZ3	1.81	0.46
77:AX:111:ILE:HD12	77:AX:117:ARG:HA	1.98	0.46
78:A0:11:GLU:CG	78:A0:20:ILE:HB	2.39	0.46
1:S1:20:ARG:HG2	1:S1:77:TYR:CE1	2.51	0.46
6:S6:40:TYR:CG	12:SE:32:GLY:HA3	2.51	0.46
8:SA:251:U:N3	29:SV:66:ASN:OD1	2.49	0.46
8:SA:750:U:H2'	8:SA:751:U:C6	2.51	0.46
8:SA:1848:U:H2'	8:SA:1849:U:H6	1.81	0.46
11:SD:23:GLU:HG2	22:SO:72:TRP:HZ2	1.80	0.46
17:SJ:156:ASP:OD1	17:SJ:156:ASP:N	2.32	0.46
19:SL:76:THR:HG21	19:SL:104:ILE:HD12	1.98	0.46
20:SM:121:ASP:CG	20:SM:123:ARG:HE	2.24	0.46
28:SU:42:LYS:HG3	41:A6:100:ASP:OD2	2.16	0.46
31:SX:50:SER:O	31:SX:54:LYS:HG2	2.16	0.46
32:SY:83:ILE:O	32:SY:87:LEU:HG	2.16	0.46
34:AA:109:A:N1	34:AA:330:U:O2'	2.48	0.46
34:AA:245:U:O2'	34:AA:246:U:H5'	2.16	0.46
34:AA:432:A:O2'	34:AA:433:A:OP1	2.33	0.46
34:AA:1758:C:H2'	34:AA:1759:A:C8	2.51	0.46
34:AA:1866:C:H2'	34:AA:1867:U:H6	1.81	0.46
34:AA:3386:A:H5"	70:AE:120:LYS:HE3	1.98	0.46
34:AA:3403:A:H2'	34:AA:3404:C:C6	2.51	0.46
38:A1:13:ILE:HA	38:A1:80:ILE:HA	1.97	0.46
39:A2:69:LYS:HA	39:A2:78:VAL:O	2.16	0.46
54:AI:211:ARG:HA	54:AI:211:ARG:HD2	1.80	0.46
59:AS:106:GLU:HG3	71:AF:278:ILE:HD13	1.97	0.46
8:SA:877:U:O5'	65:AT:162:ARG:NE	2.49	0.46
11:SD:133:LYS:NZ	11:SD:190:MET:HE3	2.31	0.46
13:SF:231:ASN:OD1	13:SF:231:ASN:N	2.46	0.46
14:SG:239:PRO:HA	14:SG:242:TRP:CE2	2.51	0.46
15:SH:20:ASP:OD2	15:SH:23:LYS:N	2.48	0.46
16:SI:13:LYS:HB2	16:SI:13:LYS:HE3	1.73	0.46
17:SJ:9:LEU:HD22	17:SJ:17:GLU:OE2	2.15	0.46
28:SU:27:LYS:HA	28:SU:27:LYS:HD3	1.67	0.46
28:SU:60:ILE:HD12	28:SU:60:ILE:O	2.16	0.46
28:SU:150:ILE:HD12	41:A6:18:GLN:NE2	2.31	0.46
30:SW:31:ASN:O	30:SW:34:ILE:HG13	2.15	0.46
30:SW:61:ILE:O	30:SW:62:GLN:HG3	2.16	0.46
34:AA:104:G:OP1	37:AL:67:ARG:NH2	2.49	0.46
34:AA:1454:A:H2'	34:AA:1455:C:O4'	2.16	0.46
34:AA:2034:G:H2'	34:AA:2035:G:H8	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:2574:A:H8	34:AA:3333:U:H1'	1.80	0.46
34:AA:2660:A:H2'	34:AA:2661:A:C8	2.51	0.46
34:AA:3292:A:O2'	34:AA:3293:A:O5'	2.33	0.46
34:AA:3401:C:H2'	34:AA:3402:A:H8	1.80	0.46
46:Aa:20:VAL:CG1	46:Aa:32:ILE:HD12	2.45	0.46
48:Ad:17:LYS:HE2	48:Ad:17:LYS:HB2	1.75	0.46
60:AO:99:VAL:HA	60:AO:123:VAL:O	2.16	0.46
69:AD:179:ILE:HG23	69:AD:184:VAL:HB	1.98	0.46
70:AE:209:ASN:OD1	70:AE:351:VAL:HG12	2.16	0.46
77:AX:82:VAL:HG22	77:AX:93:THR:OG1	2.16	0.46
78:A0:68:LYS:HB2	78:A0:68:LYS:HE3	1.66	0.46
1:S1:61:PHE:O	8:SA:529:U:O2'	2.34	0.45
8:SA:142:G:O2'	8:SA:143:A:H5'	2.16	0.45
8:SA:205:A:H2'	8:SA:206:A:C8	2.51	0.45
8:SA:509:U:H2'	8:SA:510:G:C8	2.51	0.45
8:SA:805:A:O2'	8:SA:806:A:OP1	2.32	0.45
8:SA:998:A:HO2'	8:SA:999:A:P	2.39	0.45
8:SA:1440:C:H2'	8:SA:1441:C:C6	2.51	0.45
8:SA:1945:C:H2'	8:SA:1946:C:C6	2.50	0.45
8:SA:2047:A:N3	34:AA:2549:A:N6	2.64	0.45
11:SD:100:MET:HE3	11:SD:100:MET:O	2.16	0.45
13:SF:86:LEU:HD12	13:SF:142:HIS:ND1	2.31	0.45
17:SJ:16:LEU:HD13	17:SJ:49:LEU:HB2	1.98	0.45
30:SW:9:ILE:HB	30:SW:50:VAL:HG12	1.98	0.45
32:SY:83:ILE:HG13	32:SY:126:ILE:HG21	1.97	0.45
34:AA:99:A:OP1	51:AP:196:ARG:HD2	2.15	0.45
34:AA:125:C:H2'	34:AA:126:C:C6	2.52	0.45
34:AA:501:U:HO2'	34:AA:502:U:P	2.39	0.45
34:AA:514:C:H2'	34:AA:515:A:C8	2.51	0.45
34:AA:773:A:C4	34:AA:774:A:C8	3.04	0.45
34:AA:1472:A:H2'	34:AA:1473:A:H8	1.80	0.45
34:AA:2104:C:H2'	34:AA:2105:A:O4'	2.16	0.45
34:AA:2654:A:H2'	34:AA:2655:C:C6	2.52	0.45
34:AA:3571:A:H8	34:AA:3677:A:O2'	1.99	0.45
34:AA:3695:C:O2	70:AE:169:ARG:NH2	2.49	0.45
37:AL:75:THR:HG22	37:AL:100:ARG:HB3	1.98	0.45
38:A1:42:LEU:O	38:A1:42:LEU:HD13	2.16	0.45
41:A6:17:LEU:HD12	41:A6:17:LEU:HA	1.75	0.45
44:A8:104:LYS:HE3	44:A8:104:LYS:HB2	1.68	0.45
52:Ah:47:THR:HA	52:Ah:57:CYS:HA	1.98	0.45
54:AI:149:LEU:CD1	54:AI:162:VAL:HG13	2.47	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
77:AX:107:ALA:O	77:AX:111:ILE:HG23	2.16	0.45
7:S7:2:G:H2'	7:S7:3:G:C8	2.50	0.45
8:SA:519:A:OP1	12:SE:168:ARG:NH2	2.50	0.45
8:SA:1245:U:H2'	8:SA:1246:U:C6	2.51	0.45
8:SA:1647:A:OP1	30:SW:56:HIS:NE2	2.49	0.45
8:SA:1679:G:N3	27:ST:39:GLN:HB3	2.32	0.45
8:SA:1869:G:H5"	8:SA:1871:G:H21	1.81	0.45
8:SA:2016:A:H2'	8:SA:2017:A:H8	1.81	0.45
12:SE:176:SER:O	12:SE:180:GLN:HG2	2.16	0.45
14:SG:149:ILE:HD13	14:SG:231:SER:HB3	1.98	0.45
21:SN:95:GLU:O	21:SN:99:GLN:HG2	2.15	0.45
34:AA:110:G:OP2	37:AL:72:LYS:NZ	2.48	0.45
34:AA:302:A:H2'	34:AA:303:A:C8	2.52	0.45
34:AA:509:A:H2'	34:AA:510:A:C8	2.51	0.45
34:AA:512:A:H4'	54:AI:48:ARG:NE	2.31	0.45
34:AA:642:A:N6	34:AA:684:G:O2'	2.42	0.45
34:AA:2470:A:C6	69:AD:125:THR:HG23	2.51	0.45
34:AA:2669:G:H2'	34:AA:2670:G:C8	2.51	0.45
34:AA:3443:A:H2	34:AA:3470:G:H21	1.64	0.45
34:AA:3639:G:H22	34:AA:3646:G:N2	2.15	0.45
41:A6:90:ILE:HG22	41:A6:92:CYS:H	1.81	0.45
45:A9:90:LYS:HB3	45:A9:90:LYS:HE2	1.68	0.45
51:AP:121:TRP:CH2	51:AP:124:GLN:HB2	2.51	0.45
61:AQ:169:ASN:O	61:AQ:178:LYS:HG2	2.16	0.45
67:A3:74:ASN:C	67:A3:76:LYS:H	2.24	0.45
73:AU:7:ASN:OD1	73:AU:8:SER:N	2.49	0.45
75:AV:46:ASP:H	75:AV:96:HIS:CD2	2.19	0.45
1:S1:18:LEU:O	1:S1:19:ARG:HG2	2.15	0.45
8:SA:1192:A:H4'	8:SA:1193:A:O4'	2.17	0.45
8:SA:1453:G:H5'	20:SM:7:ARG:NH2	2.31	0.45
8:SA:1810:U:H5"	8:SA:1811:A:O4'	2.17	0.45
8:SA:1944:U:H2'	8:SA:1945:C:C6	2.50	0.45
9:SB:174:ALA:O	9:SB:178:LYS:HG2	2.17	0.45
10:SC:125:ASP:HB3	10:SC:128:THR:OG1	2.17	0.45
11:SD:106:LEU:HD23	11:SD:123:VAL:HG21	1.99	0.45
13:SF:47:LEU:O	13:SF:51:ARG:HB2	2.16	0.45
15:SH:58:LYS:HE2	15:SH:58:LYS:HB2	1.72	0.45
18:SK:25:VAL:HG12	18:SK:65:LEU:HD21	1.98	0.45
25:SR:31:ASN:OD1	25:SR:32:ALA:N	2.50	0.45
25:SR:31:ASN:O	25:SR:35:HIS:ND1	2.49	0.45
30:SW:60:ARG:NH2	30:SW:63:LYS:HZ1	2.14	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:100:A:H2'	34:AA:101:C:O2	2.16	0.45
34:AA:237:A:H2'	34:AA:238:G:O4'	2.17	0.45
34:AA:528:A:OP1	68:A5:76:ARG:NH2	2.49	0.45
34:AA:1066:U:H2'	34:AA:1067:U:C6	2.52	0.45
34:AA:1066:U:H2'	34:AA:1067:U:H6	1.81	0.45
34:AA:1293:G:H5'	45:A9:60:PHE:CZ	2.50	0.45
35:AC:73:A:H2'	35:AC:74:A:O4'	2.15	0.45
38:A1:86:GLN:NE2	38:A1:88:ALA:H	2.14	0.45
41:A6:77:ASN:HB3	41:A6:91:SER:HB3	1.98	0.45
43:AN:10:GLU:HG2	43:AN:11:LYS:N	2.31	0.45
43:AN:12:LEU:HD12	43:AN:13:TYR:N	2.32	0.45
45:A9:77:TYR:O	45:A9:104:VAL:HG11	2.16	0.45
55:AJ:102:PRO:HG2	55:AJ:105:GLN:HG2	1.99	0.45
60:AO:85:GLU:OE2	60:AO:85:GLU:N	2.25	0.45
63:AW:107:LEU:HB2	63:AW:152:GLU:OE2	2.16	0.45
64:AY:89:ARG:HA	64:AY:89:ARG:HD3	1.85	0.45
64:AY:153:ILE:HD12	64:AY:153:ILE:O	2.17	0.45
74:AH:74:THR:HA	74:AH:77:LYS:HG2	1.97	0.45
1:S1:110:LYS:NZ	1:S1:114:ASN:HB2	2.32	0.45
8:SA:150:C:O2'	15:SH:15:SER:HB2	2.17	0.45
8:SA:1001:A:OP2	9:SB:155:TYR:OH	2.30	0.45
8:SA:1456:G:C2	8:SA:1607:U:O2	2.69	0.45
12:SE:110:GLN:OE1	12:SE:126:ARG:HB2	2.16	0.45
16:SI:26:LEU:HD11	16:SI:107:VAL:HG12	1.98	0.45
16:SI:137:ARG:HG2	16:SI:138:VAL:N	2.29	0.45
26:SS:67:ASP:HA	26:SS:70:VAL:HG22	1.98	0.45
34:AA:283:U:O2'	51:AP:91:LYS:HD3	2.16	0.45
34:AA:687:G:H2'	34:AA:688:U:H6	1.80	0.45
34:AA:715:U:H4'	34:AA:716:C:OP1	2.16	0.45
34:AA:1632:G:O6	46:Aa:4:ARG:NH2	2.47	0.45
34:AA:2571:C:OP1	76:Ag:37:ARG:NH2	2.50	0.45
34:AA:3237:G:OP1	70:AE:5:LYS:NZ	2.46	0.45
36:AB:7:G:OP1	62:AR:33:ARG:NH1	2.49	0.45
38:A1:3:LYS:HB3	38:A1:6:LYS:HE3	1.98	0.45
39:A2:56:ASN:OD1	39:A2:67:SER:OG	2.35	0.45
57:AK:60:ARG:HA	57:AK:69:PRO:HD2	1.99	0.45
68:A5:80:LYS:HE3	68:A5:80:LYS:HB3	1.66	0.45
70:AE:33:PRO:HB3	70:AE:339:ILE:HA	1.98	0.45
75:AV:108:LEU:O	75:AV:111:ILE:HG13	2.17	0.45
3:S3:40:ASN:ND2	3:S3:71:GLN:OE1	2.50	0.45
8:SA:17:C:O2'	8:SA:1238:A:N1	2.40	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:152:G:H2'	8:SA:153:A:C8	2.52	0.45
8:SA:614:A:H5'	8:SA:620:G:N2	2.31	0.45
8:SA:836:C:O2'	8:SA:837:A:H5'	2.16	0.45
8:SA:1258:A:H2'	8:SA:1261:A:N7	2.32	0.45
8:SA:1300:G:C5	27:ST:38:ARG:HD2	2.52	0.45
8:SA:1414:A:O2'	8:SA:1415:A:OP1	2.33	0.45
8:SA:1441:C:H2'	8:SA:1442:U:H6	1.80	0.45
8:SA:1879:U:O2	8:SA:1911:A:N6	2.49	0.45
10:SC:29:LEU:HB2	10:SC:46:HIS:NE2	2.32	0.45
10:SC:146:LEU:O	10:SC:164:ASN:ND2	2.49	0.45
18:SK:30:SER:HB3	18:SK:59:GLY:O	2.17	0.45
21:SN:55:LEU:HG	21:SN:56:PRO:O	2.16	0.45
29:SV:100:TYR:O	29:SV:102:ARG:HG2	2.16	0.45
34:AA:172:C:H2'	34:AA:173:A:H8	1.82	0.45
34:AA:281:G:H2'	34:AA:282:U:C6	2.51	0.45
34:AA:1513:U:H2'	34:AA:1514:G:C8	2.52	0.45
34:AA:1793:A:H2'	34:AA:1795:A:H62	1.80	0.45
34:AA:1875:A:H2'	34:AA:1876:A:C8	2.51	0.45
34:AA:1895:U:H2'	34:AA:1896:C:H6	1.79	0.45
34:AA:2936:A:H2'	34:AA:2937:G:H8	1.81	0.45
42:A7:32:CYS:SG	42:A7:33:TYR:N	2.89	0.45
44:A8:12:LYS:HE3	44:A8:12:LYS:HB2	1.72	0.45
47:Ab:93:LYS:HA	47:Ab:93:LYS:HD3	1.80	0.45
59:AS:153:LYS:HB2	59:AS:153:LYS:HE2	1.73	0.45
61:AQ:53:VAL:HG22	61:AQ:134:VAL:HG22	1.99	0.45
63:AW:118:MET:SD	63:AW:147:GLN:NE2	2.90	0.45
66:AZ:50:ARG:NH1	66:AZ:111:ASP:OD1	2.46	0.45
70:AE:50:LYS:HB2	70:AE:333:ILE:HD11	1.97	0.45
70:AE:60:VAL:HB	70:AE:68:HIS:O	2.17	0.45
72:AG:100:GLY:HA3	72:AG:154:VAL:HG23	1.98	0.45
8:SA:455:C:H2'	8:SA:456:U:C6	2.51	0.45
8:SA:1646:U:H2'	8:SA:1647:A:H8	1.80	0.45
8:SA:2030:U:H2'	8:SA:2031:C:C6	2.52	0.45
15:SH:21:GLU:OE1	15:SH:21:GLU:N	2.40	0.45
20:SM:10:THR:HG21	20:SM:89:GLY:HA2	1.97	0.45
34:AA:72:C:OP2	47:Ab:4:LYS:NZ	2.39	0.45
34:AA:696:C:H4'	34:AA:697:A:O5'	2.16	0.45
34:AA:709:A:H5"	57:AK:92:TYR:CD2	2.51	0.45
34:AA:888:A:H4'	34:AA:889:U:O5'	2.15	0.45
34:AA:1094:U:H2'	34:AA:1095:U:C6	2.51	0.45
34:AA:1222:U:O2'	34:AA:1223:U:O5'	2.31	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:1308:A:C4	34:AA:1310:A:C8	3.04	0.45
34:AA:1434:G:C5	57:AK:61:THR:HA	2.51	0.45
34:AA:2037:U:H2'	34:AA:2038:U:C6	2.52	0.45
34:AA:2559:U:H2'	34:AA:2560:C:H6	1.80	0.45
34:AA:3536:C:P	70:AE:133:SER:HB3	2.57	0.45
35:AC:124:U:H2'	35:AC:125:U:H6	1.82	0.45
46:Aa:98:GLN:HA	46:Aa:101:VAL:HG22	1.99	0.45
52:Ah:48:LYS:HB3	52:Ah:48:LYS:HE2	1.75	0.45
60:AO:134:GLU:O	60:AO:138:LYS:HG2	2.15	0.45
70:AE:89:ILE:O	70:AE:104:THR:HA	2.17	0.45
74:AH:43:ILE:HG23	74:AH:56:VAL:HG23	1.98	0.45
8:SA:892:U:H2'	8:SA:893:U:H6	1.82	0.45
8:SA:927:A:C6	28:SU:73:ARG:HD3	2.52	0.45
11:SD:117:ARG:NE	11:SD:117:ARG:H	2.15	0.45
14:SG:182:VAL:HB	14:SG:209:PHE:HB2	1.99	0.45
15:SH:137:ARG:HD3	15:SH:177:ARG:NH1	2.32	0.45
18:SK:22:ARG:O	18:SK:23:ARG:HG2	2.17	0.45
18:SK:40:TYR:CE1	18:SK:112:ASP:HB3	2.51	0.45
19:SL:169:ASP:OD2	19:SL:169:ASP:C	2.60	0.45
23:SP:67:ASP:C	23:SP:70:SER:HG	2.17	0.45
28:SU:70:LYS:O	28:SU:74:ILE:HG22	2.17	0.45
34:AA:624:C:H5"	34:AA:625:A:O4'	2.17	0.45
34:AA:965:A:O2'	34:AA:966:A:OP1	2.30	0.45
34:AA:1503:A:H3'	34:AA:1504:A:H5"	1.99	0.45
34:AA:1806:C:H5"	69:AD:71:LYS:HD2	1.99	0.45
34:AA:3281:G:C2	34:AA:3311:G:H1'	2.51	0.45
34:AA:3442:C:H5	42:A7:32:CYS:SG	2.39	0.45
38:A1:136:ASP:OD1	38:A1:136:ASP:N	2.50	0.45
39:A2:27:LYS:HB3	39:A2:27:LYS:HE3	1.66	0.45
39:A2:89:ASN:HA	39:A2:92:LYS:HG2	1.99	0.45
65:AT:91:LYS:O	65:AT:95:ILE:HG13	2.16	0.45
69:AD:200:ARG:NH2	69:AD:217:GLN:OE1	2.50	0.45
70:AE:54:THR:HG22	70:AE:78:ILE:HD11	1.98	0.45
70:AE:253:HIS:HA	70:AE:254:PRO:C	2.42	0.45
72:AG:50:CYS:HA	72:AG:64:LYS:HE2	1.98	0.45
8:SA:888:A:H2'	8:SA:889:A:C8	2.52	0.45
8:SA:1059:U:H2'	8:SA:1060:G:O4'	2.16	0.45
14:SG:168:MET:HE3	14:SG:168:MET:HB2	1.70	0.45
14:SG:232:LYS:HB2	14:SG:232:LYS:HE3	1.66	0.45
16:SI:146:CYS:O	16:SI:150:ARG:HD3	2.16	0.45
29:SV:14:GLN:HG2	29:SV:57:VAL:HG13	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:507:G:H2'	34:AA:508:A:C8	2.52	0.45
34:AA:704:U:H2'	34:AA:705:C:C6	2.52	0.45
34:AA:3025:U:H2'	34:AA:3026:G:O4'	2.16	0.45
34:AA:3289:G:H2'	34:AA:3290:C:C6	2.52	0.45
38:A1:84:ARG:HB3	41:A6:65:LEU:HD21	1.98	0.45
40:A4:53:LYS:O	40:A4:56:GLU:HG3	2.16	0.45
42:A7:86:LYS:HB2	42:A7:98:TYR:CE1	2.51	0.45
46:Aa:74:ARG:O	46:Aa:77:GLY:N	2.50	0.45
50:Af:11:GLN:O	50:Af:15:CYS:N	2.41	0.45
54:AI:120:LEU:HD21	54:AI:193:GLU:HG3	1.99	0.45
57:AK:67:LYS:HB3	57:AK:67:LYS:NZ	2.31	0.45
61:AQ:84:ASN:OD1	61:AQ:84:ASN:N	2.50	0.45
70:AE:37:LYS:HA	70:AE:182:GLY:O	2.16	0.45
79:S9:28:C:H2'	79:S9:29:G:H8	1.81	0.45
8:SA:412:U:H2'	8:SA:413:A:C8	2.52	0.45
8:SA:964:G:H21	23:SP:52:THR:HG21	1.82	0.45
8:SA:1830:C:H4'	26:SS:27:LYS:HD2	1.99	0.45
8:SA:1979:C:O2'	8:SA:1980:A:H5'	2.15	0.45
10:SC:121:LEU:HD23	10:SC:143:VAL:HG22	1.99	0.45
29:SV:50:GLU:HG3	29:SV:117:CYS:HA	1.98	0.45
34:AA:176:A:H2'	34:AA:177:A:C8	2.52	0.45
34:AA:1532:U:H5"	71:AF:205:ASN:OD1	2.17	0.45
37:AL:84:LEU:HD23	37:AL:119:LYS:HD2	1.98	0.45
51:AP:18:ALA:O	51:AP:22:LEU:HG	2.17	0.45
60:AO:90:PHE:CE2	60:AO:98:PRO:HB3	2.52	0.45
63:AW:7:LYS:HA	63:AW:7:LYS:HD3	1.76	0.45
68:A5:54:ARG:HE	71:AF:330:PRO:HB2	1.82	0.45
68:A5:95:VAL:O	68:A5:123:GLY:HA2	2.17	0.45
4:S4:35:CYS:SG	4:S4:36:PRO:HD2	2.57	0.45
8:SA:527:A:H2'	8:SA:528:A:C8	2.52	0.45
8:SA:1708:G:H4'	79:S9:30:G:H5"	1.99	0.45
8:SA:1722:U:H4'	32:SY:68:LEU:HD22	1.97	0.45
9:SB:32:LEU:HD23	9:SB:96:CYS:HB2	1.99	0.45
10:SC:25:GLY:O	10:SC:45:VAL:HG13	2.16	0.45
12:SE:39:LYS:HE2	12:SE:39:LYS:HB3	1.51	0.45
12:SE:127:VAL:HG22	12:SE:131:GLN:OE1	2.17	0.45
14:SG:249:LYS:HE2	14:SG:253:GLU:HG3	1.99	0.45
19:SL:29:LEU:HB3	19:SL:30:GLY:H	1.62	0.45
26:SS:110:ARG:NH1	26:SS:114:GLU:HB3	2.31	0.45
28:SU:54:LEU:HB3	28:SU:60:ILE:CD1	2.47	0.45
29:SV:13:TYR:CE2	29:SV:15:LYS:HA	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:SZ:49:THR:OG1	33:SZ:50:GLU:N	2.49	0.45
34:AA:1205:U:H4'	34:AA:1206:U:O4'	2.17	0.45
34:AA:1511:U:H2'	34:AA:1512:A:H8	1.78	0.45
34:AA:1786:A:P	38:A1:73:LYS:HZ1	2.37	0.45
34:AA:2037:U:N3	34:AA:2073:G:O6	2.49	0.45
34:AA:3490:A:H2'	34:AA:3491:U:O4'	2.16	0.45
38:A1:72:ILE:HG21	38:A1:101:VAL:HG11	1.99	0.45
57:AK:191:GLU:OE1	57:AK:191:GLU:N	2.42	0.45
64:AY:103:LYS:HB3	64:AY:103:LYS:HE2	1.71	0.45
68:A5:79:ARG:HG2	68:A5:79:ARG:HH11	1.82	0.45
69:AD:116:LEU:HD12	69:AD:117:GLU:H	1.81	0.45
70:AE:214:VAL:HG23	70:AE:333:ILE:HG23	1.99	0.45
71:AF:193:LYS:HE3	71:AF:193:LYS:HB3	1.64	0.45
7:S7:6:A:H2'	7:S7:7:U:C6	2.51	0.44
8:SA:30:G:H2'	8:SA:31:C:C6	2.52	0.44
8:SA:139:A:N6	15:SH:183:ARG:O	2.47	0.44
8:SA:573:C:H2'	8:SA:574:A:O4'	2.18	0.44
8:SA:1293:C:H4'	20:SM:141:LYS:HE2	1.99	0.44
9:SB:37:MET:HB2	9:SB:186:LYS:HZ3	1.82	0.44
13:SF:48:LEU:CD1	13:SF:61:VAL:HG13	2.45	0.44
15:SH:187:LYS:HA	15:SH:190:LEU:HD23	1.98	0.44
16:SI:11:PHE:CE1	16:SI:40:THR:HG22	2.52	0.44
18:SK:111:MET:HB2	18:SK:115:GLU:CG	2.47	0.44
18:SK:126:LEU:HD23	18:SK:126:LEU:HA	1.85	0.44
27:ST:27:ALA:HB1	27:ST:38:ARG:HG2	1.99	0.44
27:ST:36:ILE:HD12	27:ST:36:ILE:HA	1.78	0.44
34:AA:10:G:N2	34:AA:1706:A:H61	2.15	0.44
34:AA:62:A:O2'	34:AA:63:A:OP1	2.34	0.44
34:AA:253:U:C2	34:AA:254:U:C5	3.05	0.44
34:AA:857:C:H4'	59:AS:41:ASN:HD21	1.82	0.44
34:AA:1472:A:H2'	34:AA:1473:A:C8	2.51	0.44
34:AA:1540:G:OP1	44:A8:125:ARG:NH1	2.50	0.44
34:AA:1878:U:O2'	34:AA:1880:A:N7	2.39	0.44
34:AA:1963:U:C2'	34:AA:1964:G:H5'	2.47	0.44
34:AA:3469:C:H2'	34:AA:3470:G:O4'	2.17	0.44
39:A2:43:THR:HG22	39:A2:45:SER:H	1.82	0.44
41:A6:104:ILE:HD12	41:A6:105:LYS:HG3	2.00	0.44
42:A7:34:LYS:HA	42:A7:34:LYS:HD3	1.78	0.44
48:Ad:8:ILE:HG13	48:Ad:12:LEU:HD23	1.99	0.44
63:AW:11:LEU:HD21	63:AW:105:ARG:HH12	1.82	0.44
71:AF:292:ILE:HG13	71:AF:293:ILE:N	2.31	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
72:AG:38:GLU:OE1	72:AG:44:LYS:HA	2.18	0.44
75:AV:101:ARG:NH2	75:AV:104:GLU:OE1	2.50	0.44
7:S7:8:U:N3	7:S7:15:G:O6	2.50	0.44
8:SA:334:A:N3	19:SL:86:SER:OG	2.51	0.44
8:SA:910:A:H2'	8:SA:911:U:C6	2.52	0.44
8:SA:936:A:OP1	28:SU:121:LYS:NZ	2.48	0.44
8:SA:998:A:O2'	8:SA:999:A:OP1	2.30	0.44
8:SA:2017:A:H2'	8:SA:2018:C:C6	2.53	0.44
9:SB:33:LYS:HE3	9:SB:42:ASN:HD22	1.82	0.44
10:SC:17:MET:HE1	10:SC:18:LEU:HD23	1.98	0.44
12:SE:82:ARG:O	12:SE:150:VAL:N	2.50	0.44
14:SG:186:ARG:HB3	14:SG:186:ARG:HH11	1.82	0.44
14:SG:196:THR:HA	14:SG:226:ILE:HD13	2.00	0.44
17:SJ:43:LYS:HA	17:SJ:43:LYS:HD3	1.75	0.44
17:SJ:62:ILE:HG23	17:SJ:94:LEU:HA	1.98	0.44
20:SM:88:LYS:O	20:SM:91:ILE:HG22	2.17	0.44
26:SS:88:ARG:HH22	26:SS:100:VAL:HG22	1.82	0.44
34:AA:76:G:C4	37:AL:99:ARG:HB3	2.52	0.44
34:AA:1875:A:H2'	34:AA:1876:A:H8	1.83	0.44
34:AA:1996:C:O2'	34:AA:1997:G:N2	2.37	0.44
34:AA:2183:A:H2'	34:AA:2184:U:H6	1.82	0.44
34:AA:2827:C:H2'	34:AA:2828:A:C8	2.52	0.44
34:AA:3197:A:H2'	34:AA:3198:G:O4'	2.18	0.44
36:AB:27:A:H2'	36:AB:28:C:H6	1.82	0.44
38:A1:94:LYS:HE2	38:A1:94:LYS:HB3	1.87	0.44
43:AN:42:LEU:O	43:AN:62:THR:HG21	2.17	0.44
43:AN:110:LEU:O	43:AN:114:MET:HG3	2.17	0.44
60:AO:100:ILE:HD12	60:AO:122:ILE:HD11	1.99	0.44
61:AQ:135:LEU:O	61:AQ:136:LEU:HD23	2.18	0.44
71:AF:221:PHE:HB2	71:AF:229:LEU:HD11	2.00	0.44
77:AX:48:LYS:HG2	77:AX:134:TYR:CE2	2.52	0.44
79:S9:19:G:H4'	79:S9:20:U:OP2	2.17	0.44
8:SA:15:U:H2'	8:SA:16:G:O4'	2.17	0.44
8:SA:880:A:H2'	8:SA:881:C:H6	1.82	0.44
8:SA:1730:A:H2'	8:SA:1731:C:C6	2.52	0.44
8:SA:1811:A:H1'	8:SA:1814:C:H42	1.82	0.44
8:SA:1841:U:H5"	26:SS:132:ARG:CD	2.47	0.44
9:SB:183:ASP:N	9:SB:183:ASP:OD1	2.47	0.44
10:SC:52:LYS:NZ	33:SZ:82:ASN:O	2.49	0.44
16:SI:68:MET:O	16:SI:73:ASN:ND2	2.50	0.44
31:SX:62:LYS:HG2	31:SX:65:LYS:HE3	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:909:U:H2'	34:AA:910:A:H8	1.80	0.44
34:AA:1162:U:H2'	34:AA:1163:A:C8	2.52	0.44
34:AA:1319:U:OP2	57:AK:48:ARG:NH1	2.50	0.44
34:AA:1740:A:H5'	34:AA:1851:A:H1'	1.99	0.44
34:AA:3023:C:OP1	72:AG:16:LYS:NZ	2.51	0.44
34:AA:3524:G:H2'	34:AA:3525:A:O4'	2.16	0.44
43:AN:30:LEU:HG	43:AN:77:LEU:HD12	1.99	0.44
48:Ad:7:ASP:C	48:Ad:7:ASP:OD1	2.59	0.44
51:AP:38:ARG:HB2	51:AP:62:TYR:CZ	2.52	0.44
59:AS:102:LEU:HD23	59:AS:102:LEU:HA	1.80	0.44
70:AE:89:ILE:HB	70:AE:105:VAL:HG22	2.00	0.44
71:AF:296:ASP:OD2	71:AF:297:LYS:N	2.50	0.44
8:SA:485:C:H2'	8:SA:486:A:C8	2.53	0.44
8:SA:1061:A:OP2	8:SA:1080:G:N1	2.37	0.44
8:SA:1395:G:O2'	8:SA:1423:A:N1	2.50	0.44
8:SA:1723:A:OP1	32:SY:66:ARG:HG3	2.17	0.44
8:SA:1978:A:H8	15:SH:65:GLN:HG3	1.83	0.44
11:SD:144:ARG:HH12	11:SD:145:ALA:HB2	1.83	0.44
15:SH:180:THR:HG22	15:SH:182:LYS:HG2	1.99	0.44
16:SI:39:TYR:HD2	20:SM:44:ILE:HA	1.83	0.44
16:SI:47:TYR:HB3	16:SI:57:CYS:SG	2.57	0.44
17:SJ:49:LEU:HD11	17:SJ:58:LYS:HD2	1.98	0.44
32:SY:50:LYS:HB3	32:SY:133:LEU:HD11	1.99	0.44
34:AA:127:U:OP1	51:AP:141:ASN:ND2	2.37	0.44
34:AA:1552:G:N2	34:AA:1555:A:OP2	2.44	0.44
34:AA:1647:U:H2'	34:AA:1648:U:H6	1.83	0.44
34:AA:2995:A:P	53:Ai:96:LYS:HD2	2.57	0.44
34:AA:3134:U:H2'	34:AA:3135:A:H8	1.81	0.44
34:AA:3301:C:OP1	34:AA:3301:C:H3'	2.17	0.44
35:AC:146:C:H2'	35:AC:147:U:H6	1.83	0.44
35:AC:146:C:H2'	35:AC:147:U:C6	2.52	0.44
37:AL:73:GLY:HA2	37:AL:95:CYS:C	2.42	0.44
41:A6:25:LYS:HE3	41:A6:25:LYS:HB3	1.66	0.44
55:AJ:121:LYS:HD3	55:AJ:121:LYS:HA	1.52	0.44
71:AF:254:GLU:O	71:AF:258:LYS:HG3	2.18	0.44
79:S9:10:G:N2	79:S9:26:G:H1'	2.32	0.44
5:S5:6:LEU:HD23	5:S5:6:LEU:H	1.82	0.44
7:S7:8:U:C2	7:S7:14:A:N6	2.84	0.44
8:SA:163:G:H2'	8:SA:164:C:C6	2.52	0.44
8:SA:412:U:H2'	8:SA:413:A:H8	1.81	0.44
8:SA:746:U:H2'	8:SA:747:U:C6	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:804:U:H3'	8:SA:805:A:H5'	1.99	0.44
8:SA:858:U:HO2'	8:SA:859:A:H8	1.65	0.44
8:SA:893:U:H2'	8:SA:894:U:O4'	2.18	0.44
8:SA:1037:U:H2'	8:SA:1038:C:O4'	2.18	0.44
8:SA:1978:A:C8	15:SH:65:GLN:HG3	2.53	0.44
12:SE:177:LEU:O	12:SE:181:LYS:HG2	2.16	0.44
16:SI:52:PHE:CZ	16:SI:56:LEU:HD13	2.52	0.44
16:SI:134:PRO:HA	16:SI:137:ARG:HD2	1.98	0.44
17:SJ:159:GLU:HA	17:SJ:162:ARG:HH11	1.83	0.44
17:SJ:164:ASN:HD21	17:SJ:168:LYS:HE2	1.83	0.44
27:ST:40:CYS:O	27:ST:43:GLU:HG2	2.16	0.44
32:SY:158:PHE:O	32:SY:162:ILE:HG12	2.17	0.44
34:AA:127:U:H2'	34:AA:128:U:C6	2.53	0.44
34:AA:641:G:H21	34:AA:685:U:H5"	1.81	0.44
34:AA:1298:A:H2'	34:AA:1299:G:O4'	2.17	0.44
34:AA:2450:G:H4'	34:AA:2451:A:H5'	1.99	0.44
34:AA:3494:C:H2'	34:AA:3495:U:C6	2.52	0.44
37:AL:31:LYS:HE2	37:AL:31:LYS:HB3	1.62	0.44
37:AL:172:GLU:HG2	60:AO:99:VAL:HG13	1.99	0.44
52:Ah:26:ILE:HD13	69:AD:180:LEU:HG	1.99	0.44
63:AW:115:ILE:HD13	63:AW:151:ARG:HD2	1.98	0.44
69:AD:229:ALA:HB1	69:AD:233:GLN:HB3	2.00	0.44
71:AF:79:VAL:HG22	71:AF:87:ALA:HA	2.00	0.44
8:SA:253:A:H8	13:SF:131:LEU:HD21	1.83	0.44
8:SA:352:G:H5'	29:SV:82:LYS:HG3	1.99	0.44
8:SA:799:U:H5'	18:SK:121:THR:HA	2.00	0.44
8:SA:1797:C:OP2	32:SY:124:ARG:NH1	2.45	0.44
8:SA:1822:A:N1	8:SA:1905:C:H1'	2.33	0.44
14:SG:169:LYS:HG2	14:SG:182:VAL:HG22	2.00	0.44
16:SI:9:LYS:HE3	16:SI:9:LYS:HB3	1.74	0.44
26:SS:35:ILE:HD12	26:SS:36:LYS:N	2.33	0.44
34:AA:233:C:O3'	66:AZ:31:SER:OG	2.36	0.44
34:AA:268:C:O2'	34:AA:269:A:O5'	2.35	0.44
34:AA:1079:U:H4'	34:AA:1082:G:N1	2.33	0.44
34:AA:1866:C:H2'	34:AA:1867:U:C6	2.53	0.44
34:AA:2001:U:H2'	34:AA:2002:G:O4'	2.18	0.44
56:Ac:31:HIS:CD2	56:Ac:34:LYS:HG2	2.52	0.44
64:AY:150:LEU:HD12	64:AY:150:LEU:HA	1.85	0.44
72:AG:141:ARG:HH21	72:AG:144:ARG:HB2	1.83	0.44
75:AV:106:PHE:CZ	75:AV:110:LYS:HD2	2.53	0.44
3:S3:80:HIS:NE2	80:mR:15:U:H1'	2.33	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:S7:56:U:H1'	7:S7:58:G:C5	2.53	0.44
8:SA:346:U:H2'	8:SA:347:A:C8	2.53	0.44
8:SA:1111:U:H2'	8:SA:1112:G:O4'	2.18	0.44
8:SA:1443:G:OP1	8:SA:1443:G:H4'	2.16	0.44
8:SA:1460:A:N6	8:SA:1604:A:H61	2.16	0.44
8:SA:1637:U:H2'	8:SA:1638:U:H6	1.83	0.44
9:SB:38:PHE:HD2	9:SB:73:LEU:HB3	1.82	0.44
10:SC:69:ASN:HD21	10:SC:72:ASP:HB2	1.83	0.44
10:SC:107:LEU:HD23	10:SC:107:LEU:HA	1.74	0.44
10:SC:157:ASP:OD1	33:SZ:59:ARG:NH1	2.47	0.44
12:SE:49:LEU:HA	12:SE:52:ILE:HD12	2.00	0.44
16:SI:80:ALA:O	16:SI:84:VAL:HG22	2.17	0.44
34:AA:650:U:H2'	34:AA:651:A:O4'	2.17	0.44
34:AA:721:U:O2'	34:AA:722:G:OP1	2.34	0.44
34:AA:1467:C:OP1	44:A8:61:LYS:HG2	2.18	0.44
34:AA:1527:U:H2'	34:AA:1528:G:H8	1.83	0.44
34:AA:2087:U:H2'	34:AA:2088:A:H8	1.82	0.44
34:AA:2692:A:N6	34:AA:2693:G:O6	2.51	0.44
34:AA:3028:A:N3	34:AA:3028:A:H2'	2.33	0.44
34:AA:3069:A:H4'	59:AS:185:TYR:CG	2.52	0.44
34:AA:3134:U:H2'	34:AA:3135:A:C8	2.53	0.44
35:AC:102:U:OP1	64:AY:103:LYS:HD2	2.18	0.44
35:AC:149:C:H2'	35:AC:150:U:C6	2.52	0.44
38:A1:112:LYS:O	38:A1:116:LYS:HG2	2.16	0.44
54:AI:87:GLY:O	54:AI:88:PRO:C	2.61	0.44
55:AJ:73:ARG:H	55:AJ:73:ARG:HD2	1.83	0.44
55:AJ:89:LYS:HE2	55:AJ:252:GLN:NE2	2.31	0.44
55:AJ:234:VAL:HA	55:AJ:237:GLU:HG2	1.99	0.44
61:AQ:183:GLN:O	61:AQ:186:LYS:HG2	2.18	0.44
63:AW:24:VAL:HG23	63:AW:86:LYS:HG3	2.00	0.44
64:AY:127:ILE:HG13	64:AY:129:THR:HG23	2.00	0.44
64:AY:148:LYS:O	64:AY:148:LYS:HD3	2.18	0.44
73:AU:30:ASN:OD1	73:AU:30:ASN:N	2.50	0.44
74:AH:136:SER:OG	74:AH:139:VAL:O	2.35	0.44
77:AX:45:ASP:C	77:AX:45:ASP:OD1	2.60	0.44
8:SA:88:A:H2'	8:SA:89:C:H6	1.83	0.44
8:SA:151:G:H2'	8:SA:152:G:C8	2.53	0.44
8:SA:161:U:H4'	15:SH:53:THR:HG23	2.00	0.44
8:SA:515:U:H2'	8:SA:516:G:H5'	2.00	0.44
8:SA:1861:U:H2'	8:SA:1862:C:C6	2.53	0.44
20:SM:75:GLN:CD	20:SM:75:GLN:H	2.26	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:SP:76:MET:HA	23:SP:79:GLN:HG2	2.00	0.44
26:SS:42:MET:O	26:SS:46:ILE:HG12	2.18	0.44
26:SS:69:ILE:O	26:SS:73:MET:HG3	2.18	0.44
26:SS:80:LYS:NZ	32:SY:55:LYS:O	2.50	0.44
26:SS:121:LEU:HD11	31:SX:111:MET:HE1	2.00	0.44
29:SV:114:CYS:HA	29:SV:142:VAL:HG22	2.00	0.44
32:SY:133:LEU:HD23	32:SY:133:LEU:HA	1.84	0.44
34:AA:131:U:H2'	34:AA:132:U:C6	2.53	0.44
34:AA:163:G:N1	34:AA:269:A:N1	2.66	0.44
34:AA:301:U:H4'	47:Ab:84:LEU:HD23	1.99	0.44
34:AA:1548:A:H3'	34:AA:1549:U:H5"	1.99	0.44
35:AC:127:C:OP1	67:A3:14:LYS:HD2	2.17	0.44
37:AL:170:PHE:HB3	60:AO:104:ARG:HG2	2.00	0.44
45:A9:41:TYR:CE1	45:A9:132:ARG:HG2	2.53	0.44
46:Aa:94:LEU:O	46:Aa:98:GLN:HG2	2.17	0.44
66:AZ:50:ARG:HG3	66:AZ:114:ARG:CZ	2.47	0.44
72:AG:30:LEU:HD12	72:AG:30:LEU:HA	1.83	0.44
5:S5:26:ARG:NH1	5:S5:41:ILE:HG22	2.33	0.44
6:S6:10:ARG:NH1	8:SA:573:C:O3'	2.51	0.44
8:SA:747:U:H2'	8:SA:748:C:H6	1.83	0.44
8:SA:968:G:H4'	23:SP:60:MET:HE2	2.00	0.44
8:SA:1259:C:N4	8:SA:1265:G:H22	2.16	0.44
8:SA:1424:A:H2'	8:SA:1425:C:C6	2.53	0.44
8:SA:2007:U:H2'	8:SA:2008:U:H6	1.82	0.44
15:SH:131:LYS:C	15:SH:133:LEU:H	2.26	0.44
16:SI:78:LEU:O	16:SI:81:ILE:HB	2.18	0.44
22:SO:82:GLU:OE1	22:SO:82:GLU:N	2.51	0.44
24:SQ:134:ALA:HB1	24:SQ:141:GLU:CB	2.47	0.44
31:SX:59:LYS:HD2	31:SX:59:LYS:HA	1.82	0.44
34:AA:262:A:H2'	34:AA:263:U:C6	2.53	0.44
34:AA:438:U:OP1	44:A8:2:ALA:N	2.51	0.44
34:AA:1073:G:H1'	40:A4:12:GLN:CD	2.43	0.44
34:AA:1171:A:H2'	61:AQ:22:TYR:CZ	2.53	0.44
34:AA:1484:A:H2'	34:AA:1485:A:C8	2.53	0.44
34:AA:2803:A:H2'	34:AA:2804:C:C6	2.53	0.44
34:AA:3619:U:H2'	34:AA:3620:C:C6	2.53	0.44
36:AB:69:U:H2'	36:AB:70:G:C8	2.53	0.44
43:AN:88:LYS:HE2	43:AN:88:LYS:HB2	1.85	0.44
51:AP:103:GLU:OE1	51:AP:119:SER:OG	2.25	0.44
59:AS:51:ARG:HA	59:AS:54:MET:HG3	1.98	0.44
65:AT:42:LYS:HG3	65:AT:43:LEU:N	2.32	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
65:AT:116:ARG:HE	65:AT:116:ARG:HB3	1.58	0.44
70:AE:233:LYS:HB2	70:AE:233:LYS:HE2	1.63	0.44
74:AH:138:ASN:N	74:AH:138:ASN:OD1	2.50	0.44
74:AH:155:LEU:HD12	74:AH:155:LEU:HA	1.85	0.44
1:S1:20:ARG:CZ	1:S1:22:GLN:HE21	2.30	0.43
7:S7:51:U:H2'	7:S7:52:G:H8	1.83	0.43
8:SA:519:A:O2'	12:SE:131:GLN:HG2	2.18	0.43
8:SA:1889:G:H2'	8:SA:1890:A:H8	1.83	0.43
8:SA:1947:U:H2'	8:SA:1948:A:H8	1.83	0.43
11:SD:8:LYS:HE3	11:SD:8:LYS:HB3	1.79	0.43
11:SD:138:ILE:O	11:SD:185:ILE:HA	2.18	0.43
12:SE:53:ARG:NE	14:SG:187:GLY:HA3	2.33	0.43
12:SE:74:GLU:OE2	12:SE:74:GLU:N	2.38	0.43
13:SF:252:ARG:HA	13:SF:252:ARG:HD2	1.54	0.43
31:SX:28:LEU:HD21	31:SX:32:GLU:HB2	1.99	0.43
33:SZ:73:TYR:CD1	33:SZ:81:GLN:HA	2.52	0.43
34:AA:193:C:H2'	34:AA:194:A:O4'	2.17	0.43
34:AA:276:G:H5'	51:AP:121:TRP:CG	2.53	0.43
34:AA:388:C:H2'	34:AA:389:U:H6	1.83	0.43
34:AA:718:U:OP1	60:AO:21:ARG:NH1	2.42	0.43
34:AA:1256:U:H2'	34:AA:1257:A:O4'	2.18	0.43
34:AA:1280:G:OP2	34:AA:1280:G:N2	2.45	0.43
34:AA:1845:C:H2'	34:AA:1846:A:C8	2.51	0.43
34:AA:1958:U:H2'	34:AA:1959:G:H8	1.82	0.43
34:AA:2940:A:H2'	34:AA:2941:G:C8	2.53	0.43
34:AA:3199:C:H2'	34:AA:3200:G:O4'	2.18	0.43
34:AA:3713:C:H2'	34:AA:3714:C:H6	1.83	0.43
45:A9:137:PRO:C	54:AI:102:ARG:HH21	2.26	0.43
46:Aa:39:ALA:HB3	46:Aa:56:ALA:O	2.18	0.43
51:AP:182:SER:O	51:AP:184:LYS:N	2.49	0.43
54:AI:48:ARG:CZ	54:AI:81:GLY:HA3	2.48	0.43
58:AM:76:LEU:HD13	58:AM:104:ILE:HG12	1.99	0.43
64:AY:151:PHE:O	64:AY:153:ILE:N	2.48	0.43
65:AT:23:MET:HG2	65:AT:31:ILE:HD13	1.99	0.43
68:A5:173:ARG:HB2	68:A5:216:TRP:CZ3	2.53	0.43
72:AG:71:VAL:HG23	72:AG:76:ALA:HB2	1.99	0.43
76:Ag:7:ARG:HG2	76:Ag:8:TYR:HD1	1.83	0.43
76:Ag:30:LYS:HE2	76:Ag:30:LYS:HB2	1.61	0.43
5:S5:25:VAL:HG21	5:S5:48:VAL:HG11	2.00	0.43
8:SA:248:G:H2'	8:SA:249:A:C8	2.53	0.43
8:SA:868:U:C2	8:SA:869:A:C8	3.05	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:1219:U:H2'	8:SA:1220:C:C6	2.53	0.43
8:SA:1264:A:H2'	8:SA:1910:U:O2'	2.17	0.43
8:SA:1265:G:OP2	8:SA:1265:G:H8	2.00	0.43
8:SA:1845:U:OP1	26:SS:92:LEU:HB2	2.19	0.43
8:SA:1891:U:H5"	27:ST:31:LYS:HD3	1.98	0.43
8:SA:1912:C:N4	16:SI:51:ARG:H	2.15	0.43
8:SA:1979:C:OP1	15:SH:31:ARG:NH2	2.51	0.43
25:SR:59:LEU:HD12	25:SR:72:ILE:HD11	2.00	0.43
34:AA:184:U:H2'	34:AA:185:A:C8	2.53	0.43
34:AA:514:C:H2'	34:AA:515:A:H8	1.83	0.43
34:AA:718:U:H2'	34:AA:719:C:C6	2.53	0.43
34:AA:999:G:H5'	34:AA:1000:C:OP2	2.18	0.43
34:AA:1015:A:H5"	69:AD:183:GLY:HA2	1.99	0.43
34:AA:1267:G:O6	40:A4:10:HIS:NE2	2.48	0.43
34:AA:1657:U:OP1	63:AW:127:ARG:NH1	2.43	0.43
34:AA:2816:U:H2'	34:AA:2817:U:H6	1.80	0.43
51:AP:160:ARG:HB3	51:AP:165:LEU:HB2	2.00	0.43
54:AI:130:ASP:C	54:AI:130:ASP:OD1	2.61	0.43
58:AM:71:LEU:HD21	58:AM:112:LYS:HE2	2.00	0.43
71:AF:62:THR:OG1	71:AF:63:SER:N	2.50	0.43
8:SA:406:A:H5"	19:SL:25:ARG:HA	1.99	0.43
8:SA:593:G:H2'	8:SA:594:C:C6	2.53	0.43
8:SA:617:G:O2'	8:SA:620:G:O2'	2.34	0.43
8:SA:837:A:O2'	8:SA:838:U:O4'	2.19	0.43
31:SX:28:LEU:HD22	31:SX:29:SER:H	1.83	0.43
34:AA:741:C:H2'	34:AA:742:U:C6	2.53	0.43
34:AA:1015:A:H5"	69:AD:183:GLY:HA3	2.00	0.43
34:AA:1628:U:O4	34:AA:1629:G:N1	2.51	0.43
34:AA:1843:U:H2'	34:AA:1844:G:H8	1.83	0.43
34:AA:2719:U:H2'	34:AA:2720:C:C6	2.53	0.43
34:AA:2735:G:O6	34:AA:2814:U:O4	2.36	0.43
45:A9:53:GLN:O	45:A9:54:ARG:HG2	2.18	0.43
47:Ab:61:ILE:HG22	47:Ab:97:ILE:HG21	2.00	0.43
48:Ad:67:LEU:HD12	48:Ad:67:LEU:HA	1.80	0.43
61:AQ:19:LYS:HD3	61:AQ:26:VAL:HB	2.00	0.43
61:AQ:194:GLY:C	61:AQ:196:SER:H	2.26	0.43
62:AR:292:LYS:HE3	62:AR:293:LEU:HD12	2.01	0.43
71:AF:242:PRO:O	71:AF:245:SER:OG	2.31	0.43
1:S1:62:LYS:HE3	1:S1:62:LYS:HB3	1.81	0.43
8:SA:823:C:OP1	13:SF:21:ASN:HB2	2.19	0.43
8:SA:1945:C:H2'	8:SA:1946:C:H6	1.81	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:2008:U:H2'	8:SA:2009:C:C6	2.53	0.43
30:SW:19:LYS:HE2	30:SW:19:LYS:HB2	1.80	0.43
34:AA:280:U:H2'	34:AA:281:G:H8	1.84	0.43
34:AA:3683:G:N2	34:AA:3684:A:H1'	2.34	0.43
35:AC:79:G:H2'	35:AC:80:C:H6	1.80	0.43
36:AB:17:C:H5"	72:AG:150:LYS:HD2	2.00	0.43
52:Ah:65:CYS:SG	69:AD:170:GLY:HA3	2.58	0.43
53:Ai:95:ASP:N	53:Ai:95:ASP:OD1	2.50	0.43
59:AS:29:LEU:HD13	71:AF:284:VAL:HG12	2.01	0.43
65:AT:118:LEU:HD12	65:AT:118:LEU:HA	1.77	0.43
66:AZ:57:ILE:HD13	66:AZ:62:ASN:HB2	2.00	0.43
70:AE:331:ARG:HG3	70:AE:332:PRO:HD2	2.01	0.43
1:S1:64:LEU:HD11	1:S1:71:LYS:HG3	2.00	0.43
8:SA:99:C:H2'	8:SA:100:U:C6	2.54	0.43
8:SA:1662:A:H2'	8:SA:1663:A:H8	1.83	0.43
8:SA:1726:U:H5'	32:SY:85:ARG:HH11	1.83	0.43
9:SB:199:LYS:HB2	9:SB:199:LYS:HE2	1.76	0.43
10:SC:53:THR:O	10:SC:57:LEU:HD23	2.18	0.43
14:SG:91:ASP:OD1	14:SG:198:LYS:HD2	2.18	0.43
17:SJ:64:ILE:HD13	17:SJ:73:VAL:HG21	2.00	0.43
22:SO:15:PRO:HB2	22:SO:18:ASN:HB2	1.99	0.43
24:SQ:128:ALA:O	24:SQ:130:VAL:HG23	2.18	0.43
27:ST:7:VAL:HG23	27:ST:9:PRO:HD3	2.00	0.43
34:AA:388:C:H2'	34:AA:389:U:C6	2.53	0.43
34:AA:1861:C:H2'	34:AA:1862:A:H8	1.84	0.43
34:AA:3617:A:HO2'	73:AU:172:LYS:NZ	2.14	0.43
45:A9:66:LYS:HA	57:AK:2:TYR:CE2	2.53	0.43
55:AJ:150:LYS:HB2	55:AJ:216:CYS:SG	2.58	0.43
56:Ac:37:CYS:HB3	56:Ac:42:TYR:H	1.82	0.43
58:AM:86:ALA:HA	58:AM:96:TYR:HB3	2.00	0.43
58:AM:91:GLU:OE1	58:AM:91:GLU:N	2.45	0.43
62:AR:274:ASN:OD1	62:AR:277:LEU:HG	2.17	0.43
63:AW:4:TYR:HB3	63:AW:147:GLN:NE2	2.34	0.43
65:AT:42:LYS:HE2	65:AT:42:LYS:HB2	1.87	0.43
69:AD:188:LYS:O	69:AD:192:LYS:HG3	2.17	0.43
73:AU:15:GLN:HG2	73:AU:73:ILE:HD12	2.00	0.43
79:S9:19:G:N2	79:S9:57:A:H1'	2.34	0.43
5:S5:3:LYS:HD2	5:S5:3:LYS:HA	1.89	0.43
8:SA:69:A:H2'	8:SA:70:U:C6	2.54	0.43
8:SA:460:G:C6	13:SF:66:ILE:HG21	2.54	0.43
8:SA:1303:A:H1'	8:SA:1308:C:N4	2.34	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:1306:C:H3'	8:SA:1307:U:C5	2.54	0.43
8:SA:1387:U:OP2	8:SA:1387:U:H6	1.99	0.43
8:SA:1646:U:H2'	8:SA:1647:A:C8	2.54	0.43
8:SA:2072:G:H2'	8:SA:2073:A:C8	2.53	0.43
10:SC:134:LYS:HB3	10:SC:134:LYS:HE2	1.87	0.43
10:SC:164:ASN:O	10:SC:170:ILE:HD11	2.18	0.43
16:SI:131:ASP:OD1	16:SI:132:VAL:N	2.52	0.43
18:SK:111:MET:HE2	18:SK:111:MET:HB3	1.87	0.43
25:SR:45:VAL:O	25:SR:49:ILE:HG13	2.18	0.43
34:AA:546:C:O4'	34:AA:613:C:H5'	2.19	0.43
34:AA:1047:A:H2'	34:AA:1048:G:C8	2.53	0.43
34:AA:1285:U:H2'	34:AA:1286:A:O4'	2.19	0.43
34:AA:1497:U:H2'	34:AA:1498:U:C6	2.54	0.43
34:AA:1721:C:H2'	34:AA:1722:C:C6	2.53	0.43
34:AA:2815:G:H2'	34:AA:2816:U:C6	2.54	0.43
36:AB:11:A:N1	36:AB:66:G:O2'	2.45	0.43
42:A7:80:ARG:NH2	42:A7:112:LEU:HB3	2.33	0.43
52:Ah:29:ILE:HA	52:Ah:32:MET:HE2	1.99	0.43
54:AI:171:LYS:HA	54:AI:171:LYS:HD2	1.73	0.43
55:AJ:42:ASN:OD1	55:AJ:42:ASN:N	2.50	0.43
57:AK:139:THR:O	57:AK:143:ARG:HG2	2.18	0.43
60:AO:99:VAL:HB	60:AO:123:VAL:HB	2.00	0.43
65:AT:151:LYS:HB3	65:AT:151:LYS:NZ	2.33	0.43
70:AE:8:ARG:NH1	70:AE:9:PRO:O	2.51	0.43
75:AV:64:LYS:HB3	75:AV:64:LYS:HE3	1.74	0.43
76:Ag:21:LYS:HE2	76:Ag:25:ARG:NH2	2.28	0.43
3:S3:15:ARG:HD3	8:SA:1005:G:O6	2.18	0.43
8:SA:44:U:OP2	8:SA:443:A:N6	2.45	0.43
8:SA:109:C:H2'	8:SA:110:A:C8	2.53	0.43
8:SA:349:C:H2'	8:SA:350:A:H8	1.82	0.43
8:SA:387:C:OP1	13:SF:10:LYS:NZ	2.43	0.43
12:SE:129:ILE:HG12	12:SE:134:ILE:HD11	2.00	0.43
16:SI:144:LEU:HD13	16:SI:183:LYS:HB3	2.00	0.43
22:SO:43:HIS:HB2	22:SO:50:ASN:ND2	2.33	0.43
28:SU:141:TYR:CD1	28:SU:141:TYR:O	2.72	0.43
34:AA:393:G:H8	34:AA:393:G:OP1	2.01	0.43
34:AA:588:C:H2'	34:AA:589:C:H6	1.83	0.43
34:AA:906:G:H2'	34:AA:907:C:H6	1.84	0.43
34:AA:1026:G:H2'	34:AA:1045:A:H62	1.84	0.43
34:AA:1235:C:H2'	34:AA:1236:U:H6	1.83	0.43
34:AA:3023:C:H2'	34:AA:3024:U:H6	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:3128:A:H2	34:AA:3133:U:C4	2.37	0.43
36:AB:67:C:OP1	62:AR:14:LYS:HG3	2.18	0.43
41:A6:33:CYS:HB2	41:A6:94:VAL:HB	2.01	0.43
56:Ac:21:LEU:HD23	56:Ac:21:LEU:HA	1.77	0.43
62:AR:165:LEU:HD21	62:AR:177:HIS:CG	2.54	0.43
67:A3:33:ILE:O	67:A3:37:LEU:HG	2.18	0.43
72:AG:41:THR:HA	72:AG:75:LYS:NZ	2.33	0.43
76:Ag:6:SER:O	76:Ag:6:SER:OG	2.33	0.43
4:S4:20:LYS:HE2	4:S4:20:LYS:HB3	1.92	0.43
4:S4:71:LEU:HB3	4:S4:72:THR:H	1.71	0.43
8:SA:926:G:OP1	17:SJ:117:ARG:NH2	2.52	0.43
8:SA:1716:C:O2'	8:SA:1834:A:N6	2.51	0.43
8:SA:1847:A:H2'	8:SA:1848:U:C6	2.54	0.43
8:SA:1859:A:H2'	8:SA:1860:A:C8	2.54	0.43
9:SB:179:VAL:HG23	9:SB:180:LEU:O	2.19	0.43
14:SG:247:PHE:HB2	33:SZ:51:THR:HG21	2.00	0.43
16:SI:11:PHE:H	16:SI:39:TYR:HA	1.84	0.43
20:SM:130:PHE:HZ	21:SN:76:TRP:CE3	2.37	0.43
23:SP:78:ALA:HB3	23:SP:118:ALA:HB3	1.99	0.43
31:SX:75:PRO:HD3	31:SX:93:ILE:HD11	2.01	0.43
33:SZ:16:LYS:HA	33:SZ:23:LEU:HA	1.99	0.43
34:AA:92:G:H5"	34:AA:94:G:N7	2.33	0.43
34:AA:182:U:O2'	34:AA:183:U:OP1	2.34	0.43
34:AA:543:U:C5	34:AA:581:C:H5"	2.54	0.43
34:AA:694:U:OP2	54:AI:147:LYS:NZ	2.42	0.43
34:AA:1538:U:H4'	34:AA:1539:U:O5'	2.18	0.43
34:AA:1999:A:O2'	34:AA:2000:G:OP1	2.35	0.43
34:AA:2395:U:H2'	34:AA:2396:C:H6	1.84	0.43
34:AA:2441:U:H2'	34:AA:2442:A:C5	2.54	0.43
34:AA:2721:U:H2'	34:AA:2722:G:C8	2.54	0.43
34:AA:2962:G:O2'	79:S9:2:G:O2'	2.37	0.43
34:AA:3263:G:H2'	34:AA:3264:U:C6	2.54	0.43
38:A1:23:ALA:HA	38:A1:45:GLY:HA2	2.01	0.43
43:AN:145:ILE:HD11	57:AK:180:ILE:HG12	2.00	0.43
65:AT:171:LYS:O	65:AT:174:LEU:HG	2.18	0.43
73:AU:143:VAL:HG12	73:AU:149:LYS:HG2	2.01	0.43
74:AH:87:PHE:CE2	74:AH:150:ILE:HB	2.54	0.43
79:S9:50:U:H2'	79:S9:51:C:C6	2.52	0.43
6:S6:29:ARG:HE	6:S6:29:ARG:HB2	1.76	0.43
7:S7:52:G:H22	7:S7:56:U:H5	1.66	0.43
8:SA:201:G:H8	8:SA:201:G:O5'	2.02	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:1278:C:H2'	8:SA:1279:G:H8	1.82	0.43
8:SA:1672:C:O2'	8:SA:1674:G:H5'	2.18	0.43
8:SA:1720:G:H2'	8:SA:1721:A:C8	2.52	0.43
8:SA:1786:U:HO2'	8:SA:1787:U:P	2.39	0.43
8:SA:1850:G:O3'	27:ST:10:LYS:NZ	2.47	0.43
10:SC:30:GLU:CD	10:SC:31:ASN:H	2.27	0.43
15:SH:30:LYS:O	15:SH:102:VAL:HG12	2.18	0.43
16:SI:97:GLU:OE2	16:SI:97:GLU:N	2.52	0.43
19:SL:38:LEU:HD21	19:SL:94:LYS:HB3	2.00	0.43
20:SM:70:VAL:HG12	20:SM:78:GLN:CD	2.44	0.43
23:SP:117:ARG:O	23:SP:121:ARG:HG3	2.18	0.43
26:SS:82:PRO:HG2	26:SS:85:PHE:HB2	2.01	0.43
27:ST:40:CYS:O	27:ST:44:ARG:HG2	2.19	0.43
28:SU:45:GLN:HB3	28:SU:49:GLN:HG3	1.99	0.43
34:AA:505:A:HO2'	34:AA:506:A:P	2.42	0.43
34:AA:1090:G:H2'	34:AA:1091:G:C8	2.53	0.43
34:AA:1203:A:N3	62:AR:141:ARG:NH2	2.67	0.43
34:AA:1236:U:H2'	34:AA:1237:C:H6	1.84	0.43
34:AA:1765:A:H2'	34:AA:1766:U:C6	2.53	0.43
34:AA:3016:G:H2'	34:AA:3016:G:N3	2.33	0.43
36:AB:58:A:H2'	36:AB:59:C:C6	2.54	0.43
59:AS:97:LEU:O	59:AS:117:GLY:HA3	2.19	0.43
1:S1:56:ILE:HD12	1:S1:56:ILE:O	2.19	0.43
8:SA:1644:U:H2'	8:SA:1646:U:C4	2.54	0.43
8:SA:1697:C:H2'	8:SA:1698:U:H6	1.84	0.43
8:SA:1936:C:H2'	8:SA:1937:C:O4'	2.19	0.43
9:SB:40:VAL:C	9:SB:42:ASN:H	2.27	0.43
10:SC:17:MET:C	10:SC:17:MET:HE2	2.44	0.43
12:SE:135:ARG:HB2	12:SE:159:ALA:HA	2.01	0.43
13:SF:18:TRP:CD1	13:SF:42:ILE:HG22	2.54	0.43
18:SK:10:CYS:O	18:SK:14:ILE:HG12	2.19	0.43
19:SL:162:ILE:O	19:SL:164:LYS:HD3	2.19	0.43
23:SP:125:LYS:HA	23:SP:125:LYS:HD2	1.89	0.43
26:SS:84:TRP:HA	26:SS:89:ARG:HD2	2.01	0.43
29:SV:76:GLY:HA3	29:SV:89:ILE:HG23	2.01	0.43
31:SX:28:LEU:HD13	31:SX:29:SER:O	2.18	0.43
32:SY:91:PRO:HB2	32:SY:146:ARG:HD3	2.00	0.43
34:AA:163:G:N1	34:AA:269:A:C6	2.86	0.43
34:AA:505:A:H2'	34:AA:506:A:C8	2.52	0.43
34:AA:507:G:H2'	34:AA:508:A:H8	1.84	0.43
34:AA:520:U:C2'	34:AA:521:U:H5'	2.49	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:1914:A:H2	34:AA:1956:U:H3	1.66	0.43
34:AA:2657:G:H22	34:AA:2689:G:H1'	1.83	0.43
34:AA:2829:U:H2'	34:AA:2830:U:C6	2.54	0.43
34:AA:3585:A:O2'	34:AA:3586:U:P	2.77	0.43
34:AA:3698:U:H1'	70:AE:331:ARG:HH21	1.83	0.43
35:AC:42:U:H3'	35:AC:43:G:H5'	2.01	0.43
38:A1:86:GLN:N	38:A1:136:ASP:OD2	2.38	0.43
44:A8:105:ARG:HD2	44:A8:125:ARG:HD2	2.00	0.43
61:AQ:52:LEU:HB3	61:AQ:136:LEU:HB2	2.01	0.43
65:AT:149:LEU:HD23	65:AT:149:LEU:HA	1.82	0.43
72:AG:150:LYS:HB2	72:AG:150:LYS:HE3	1.63	0.43
73:AU:177:LYS:HB2	73:AU:177:LYS:HE2	1.90	0.43
5:S5:27:ALA:HB1	5:S5:56:LEU:HD11	2.00	0.42
8:SA:970:G:C6	8:SA:971:G:C6	3.07	0.42
8:SA:1697:C:H5'	27:ST:7:VAL:HA	2.00	0.42
8:SA:1800:A:H2'	8:SA:1801:A:C8	2.53	0.42
8:SA:1823:U:H5'	32:SY:105:LYS:NZ	2.34	0.42
8:SA:1946:C:H2'	8:SA:1947:U:C6	2.53	0.42
8:SA:2074:A:H5"	76:Ag:15:MET:HE3	1.99	0.42
12:SE:59:LEU:HD11	12:SE:72:GLN:HB3	2.00	0.42
13:SF:137:SER:HB3	13:SF:150:ILE:HD11	2.01	0.42
20:SM:98:VAL:HG13	20:SM:99:ASP:OD1	2.19	0.42
21:SN:102:SER:HA	21:SN:105:ILE:HG12	2.01	0.42
28:SU:42:LYS:HD3	28:SU:42:LYS:HA	1.86	0.42
33:SZ:15:ARG:HG3	33:SZ:24:ILE:HD12	2.00	0.42
34:AA:583:U:H2'	34:AA:584:U:C6	2.54	0.42
34:AA:653:A:H5"	68:A5:50:ARG:NH2	2.33	0.42
34:AA:911:U:H2'	34:AA:912:U:H6	1.83	0.42
34:AA:965:A:HO2'	34:AA:966:A:P	2.40	0.42
34:AA:965:A:H2'	34:AA:966:A:C8	2.53	0.42
34:AA:3174:G:N2	34:AA:3177:U:O2	2.48	0.42
35:AC:39:C:H4'	56:Ac:73:LEU:HD21	2.00	0.42
36:AB:69:U:H2'	36:AB:70:G:H8	1.83	0.42
38:A1:46:ILE:HD11	38:A1:49:HIS:ND1	2.34	0.42
46:Aa:16:LYS:HA	46:Aa:19:LYS:HE2	2.01	0.42
51:AP:10:ILE:HD13	55:AJ:181:LEU:HD21	2.01	0.42
54:AI:133:ASP:OD1	54:AI:133:ASP:N	2.52	0.42
55:AJ:131:LYS:HA	55:AJ:131:LYS:HD3	1.74	0.42
57:AK:149:ASP:O	57:AK:153:LYS:HG2	2.19	0.42
68:A5:125:PHE:O	68:A5:212:ASN:ND2	2.42	0.42
69:AD:104:ILE:HG12	69:AD:162:ALA:O	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
71:AF:171:LEU:HD12	71:AF:171:LEU:HA	1.92	0.42
73:AU:150:GLN:OE1	74:AH:3:THR:HA	2.18	0.42
8:SA:88:A:H2'	8:SA:89:C:C6	2.54	0.42
8:SA:932:U:OP2	18:SK:57:ARG:HD2	2.19	0.42
8:SA:1307:U:HO2'	27:ST:26:HIS:HE2	1.60	0.42
11:SD:211:ASP:OD1	11:SD:211:ASP:N	2.50	0.42
15:SH:74:ARG:NH1	15:SH:94:ARG:HG2	2.35	0.42
15:SH:135:PRO:O	15:SH:141:ILE:HD11	2.19	0.42
29:SV:52:LYS:HE3	29:SV:52:LYS:HB2	1.82	0.42
30:SW:61:ILE:C	30:SW:62:GLN:HG3	2.44	0.42
34:AA:113:C:C2	34:AA:114:A:C8	3.08	0.42
34:AA:681:U:O2'	71:AF:321:ASN:OD1	2.30	0.42
34:AA:999:G:H2'	34:AA:1001:A:N7	2.34	0.42
34:AA:1169:A:O2'	34:AA:1171:A:OP2	2.33	0.42
34:AA:1855:U:H5"	34:AA:1856:U:H4'	2.01	0.42
34:AA:3023:C:H2'	34:AA:3024:U:C6	2.54	0.42
34:AA:3631:U:H2'	34:AA:3632:U:O4'	2.19	0.42
36:AB:45:U:H2'	36:AB:46:C:C6	2.54	0.42
52:Ah:79:ALA:HB2	69:AD:112:LEU:HD12	2.02	0.42
58:AM:36:LEU:HD23	58:AM:64:VAL:HG12	2.00	0.42
60:AO:93:ASN:ND2	60:AO:96:ILE:HG13	2.34	0.42
63:AW:29:THR:HA	63:AW:87:SER:OG	2.19	0.42
73:AU:91:ASP:HA	73:AU:96:THR:HA	2.01	0.42
75:AV:104:GLU:HG3	75:AV:105:ASP:N	2.34	0.42
3:S3:44:ILE:HG21	3:S3:64:LEU:HD22	2.00	0.42
4:S4:79:LYS:HB3	4:S4:81:ILE:HG22	2.01	0.42
7:S7:9:G:H1'	7:S7:43:C:H2'	2.02	0.42
8:SA:893:U:N3	8:SA:910:A:N1	2.67	0.42
8:SA:977:U:O2	8:SA:1078:U:H1'	2.19	0.42
8:SA:1303:A:H3'	8:SA:1303:A:N3	2.35	0.42
8:SA:1656:A:H8	8:SA:1656:A:OP1	2.02	0.42
8:SA:1698:U:H2'	8:SA:1699:A:C8	2.54	0.42
8:SA:1826:A:OP2	16:SI:82:ARG:NH2	2.52	0.42
8:SA:1836:G:H1	26:SS:27:LYS:HZ2	1.67	0.42
10:SC:56:LYS:HD2	10:SC:56:LYS:HA	1.70	0.42
17:SJ:159:GLU:OE1	17:SJ:165:ILE:HD12	2.20	0.42
32:SY:113:ASN:OD1	32:SY:114:HIS:N	2.52	0.42
34:AA:320:C:H2'	34:AA:321:A:C8	2.54	0.42
34:AA:458:A:O2'	34:AA:459:G:H8	2.03	0.42
34:AA:618:U:O2'	34:AA:619:U:H5'	2.19	0.42
34:AA:700:A:OP1	45:A9:92:HIS:ND1	2.46	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:801:U:OP1	34:AA:899:A:O2'	2.25	0.42
34:AA:832:U:H5"	59:AS:134:LYS:HD3	2.01	0.42
34:AA:868:U:H2'	34:AA:869:A:C8	2.55	0.42
34:AA:912:U:H2'	34:AA:913:U:C6	2.54	0.42
34:AA:1089:U:H2'	34:AA:1090:G:C8	2.54	0.42
34:AA:1423:G:OP1	73:AU:92:SER:HB2	2.19	0.42
34:AA:1560:U:H2'	34:AA:1561:C:C6	2.54	0.42
34:AA:3533:A:H2'	34:AA:3534:U:O4'	2.19	0.42
34:AA:3729:A:H2'	34:AA:3730:C:C6	2.54	0.42
34:AA:3736:A:N3	34:AA:3736:A:H2'	2.34	0.42
38:A1:76:ASN:C	38:A1:76:ASN:OD1	2.62	0.42
43:AN:72:LYS:HA	73:AU:162:HIS:CD2	2.53	0.42
50:Af:4:PRO:O	50:Af:8:GLN:HG3	2.19	0.42
51:AP:120:TYR:OH	51:AP:132:GLU:OE2	2.28	0.42
71:AF:10:VAL:HA	71:AF:153:VAL:HG23	2.01	0.42
71:AF:163:LYS:O	71:AF:166:GLU:HG2	2.20	0.42
74:AH:110:ARG:HG2	74:AH:126:LYS:HG2	2.02	0.42
8:SA:974:A:H5"	23:SP:66:ARG:CD	2.49	0.42
8:SA:1170:C:H2'	8:SA:1171:U:C6	2.54	0.42
8:SA:1715:A:O2'	8:SA:1837:G:N2	2.53	0.42
10:SC:38:TYR:CE2	30:SW:105:MET:HG3	2.55	0.42
14:SG:92:VAL:HG22	14:SG:114:VAL:HG12	2.01	0.42
14:SG:123:CYS:SG	14:SG:124:GLY:N	2.92	0.42
15:SH:201:LYS:HE2	15:SH:201:LYS:HB2	1.90	0.42
23:SP:39:ASP:OD2	23:SP:39:ASP:N	2.50	0.42
28:SU:54:LEU:HD13	28:SU:60:ILE:HD11	2.01	0.42
30:SW:74:GLN:H	30:SW:74:GLN:CD	2.20	0.42
34:AA:254:U:H2'	34:AA:255:C:C6	2.54	0.42
34:AA:939:A:H2'	34:AA:940:A:C8	2.54	0.42
34:AA:2391:U:O2'	34:AA:2392:A:H5'	2.19	0.42
48:Ad:24:ILE:HD13	48:Ad:76:TYR:CE1	2.48	0.42
55:AJ:105:GLN:HA	55:AJ:108:ASP:OD1	2.19	0.42
57:AK:9:ASP:CG	57:AK:36:ARG:HH21	2.28	0.42
67:A3:27:GLU:HG3	67:A3:28:LEU:N	2.34	0.42
70:AE:224:LYS:HD3	70:AE:224:LYS:HA	1.89	0.42
73:AU:6:ASP:OD1	73:AU:8:SER:OG	2.32	0.42
7:S7:69:U:O2	34:AA:2504:U:O2'	2.37	0.42
8:SA:1401:G:O3'	14:SG:111:LYS:NZ	2.52	0.42
9:SB:35:PRO:HB2	9:SB:37:MET:SD	2.60	0.42
11:SD:215:VAL:CG2	30:SW:15:GLN:HE22	2.33	0.42
12:SE:168:ARG:HD2	12:SE:172:VAL:CG1	2.49	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:SJ:180:THR:O	17:SJ:182:ARG:N	2.50	0.42
20:SM:100:GLU:O	20:SM:104:LYS:HG2	2.19	0.42
26:SS:17:ILE:HG13	26:SS:19:ASN:O	2.20	0.42
26:SS:27:LYS:O	26:SS:30:ILE:HG22	2.20	0.42
32:SY:29:ILE:HG21	32:SY:155:ILE:HG13	2.01	0.42
34:AA:293:U:H2'	34:AA:294:G:C8	2.55	0.42
34:AA:459:G:H2'	34:AA:460:A:H8	1.83	0.42
34:AA:591:G:H1	34:AA:600:U:H3	1.67	0.42
34:AA:1216:C:O2'	34:AA:1217:U:H5'	2.18	0.42
34:AA:1257:A:H2'	34:AA:1258:A:C8	2.55	0.42
34:AA:3008:A:H2'	34:AA:3009:G:C8	2.54	0.42
34:AA:3460:C:H2'	34:AA:3461:C:C6	2.53	0.42
54:AI:100:ASP:OD2	54:AI:101:SER:N	2.53	0.42
62:AR:222:PHE:O	62:AR:226:LEU:HG	2.20	0.42
73:AU:105:ASP:C	73:AU:105:ASP:OD1	2.63	0.42
75:AV:112:LYS:HZ3	75:AV:112:LYS:HB2	1.83	0.42
77:AX:106:LEU:HD12	77:AX:106:LEU:HA	1.88	0.42
6:S6:14:VAL:HG13	8:SA:574:A:H1'	2.01	0.42
7:S7:1:G:N2	7:S7:70:A:H2	2.12	0.42
8:SA:576:C:H5	24:SQ:69:ARG:HH12	1.68	0.42
8:SA:955:U:H2'	8:SA:956:A:H8	1.83	0.42
8:SA:1876:G:H2'	8:SA:1877:C:C6	2.55	0.42
8:SA:1891:U:OP2	8:SA:1893:C:N4	2.53	0.42
10:SC:39:THR:OG1	10:SC:40:ARG:N	2.52	0.42
11:SD:23:GLU:OE2	22:SO:71:ASN:ND2	2.51	0.42
11:SD:166:LYS:O	11:SD:166:LYS:HD3	2.20	0.42
13:SF:155:LYS:HD3	13:SF:155:LYS:HA	1.65	0.42
15:SH:63:MET:HG2	15:SH:98:ARG:HG3	2.01	0.42
17:SJ:64:ILE:HD11	17:SJ:68:ILE:HG22	2.01	0.42
19:SL:92:ARG:NH2	34:AA:2211:C:O2	2.53	0.42
29:SV:126:VAL:HG12	29:SV:145:VAL:HG22	2.01	0.42
30:SW:71:LEU:N	30:SW:74:GLN:HE22	2.18	0.42
34:AA:521:U:HO2'	34:AA:522:A:P	2.41	0.42
34:AA:1289:G:O2'	44:A8:54:SER:OG	2.38	0.42
34:AA:1423:G:H2'	34:AA:1424:C:C6	2.55	0.42
34:AA:1745:G:OP2	65:AT:37:ARG:HG2	2.19	0.42
34:AA:1865:C:H2'	34:AA:1866:C:H6	1.85	0.42
34:AA:3333:U:H2'	34:AA:3334:U:C6	2.54	0.42
34:AA:3413:A:HO2'	34:AA:3414:G:P	2.43	0.42
34:AA:3594:G:H2'	34:AA:3595:U:C6	2.55	0.42
36:AB:57:C:H2'	36:AB:58:A:C8	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:AN:125:ASP:OD2	54:AI:203:TYR:OH	2.23	0.42
45:A9:53:GLN:C	45:A9:54:ARG:HG2	2.44	0.42
50:Af:51:LEU:HD11	74:AH:173:LYS:HB2	2.00	0.42
60:AO:117:LYS:HG2	60:AO:120:GLN:HG3	2.01	0.42
70:AE:375:LYS:HE2	70:AE:375:LYS:HB2	1.86	0.42
6:S6:41:ASN:HA	6:S6:44:PHE:CZ	2.55	0.42
8:SA:1362:U:H3'	8:SA:1363:U:C5	2.55	0.42
8:SA:1639:G:H2'	8:SA:1640:U:C6	2.55	0.42
8:SA:1812:A:H5"	21:SN:58:LYS:HE2	2.00	0.42
9:SB:182:LYS:O	9:SB:186:LYS:HG3	2.20	0.42
12:SE:148:VAL:HG11	12:SE:156:ILE:HD11	2.01	0.42
13:SF:44:LEU:HD21	13:SF:79:ASP:O	2.20	0.42
13:SF:238:LEU:HB2	13:SF:242:LYS:HD3	2.00	0.42
16:SI:165:ALA:O	16:SI:169:ILE:HG23	2.19	0.42
18:SK:42:GLN:NE2	18:SK:49:SER:HA	2.33	0.42
19:SL:54:LYS:HB2	19:SL:54:LYS:HE3	1.81	0.42
26:SS:117:LYS:HD2	26:SS:118:LYS:N	2.35	0.42
28:SU:67:THR:C	28:SU:69:ASN:H	2.27	0.42
31:SX:119:PHE:CG	31:SX:120:SER:N	2.87	0.42
34:AA:136:U:H3'	34:AA:137:G:H5"	2.01	0.42
34:AA:1274:A:H4'	34:AA:1459:U:C4	2.54	0.42
34:AA:2098:G:O2'	35:AC:117:A:OP1	2.31	0.42
34:AA:2990:G:H5"	34:AA:2991:U:O4'	2.20	0.42
35:AC:149:C:H2'	35:AC:150:U:H6	1.84	0.42
41:A6:25:LYS:HG2	41:A6:97:ASP:OD1	2.18	0.42
48:Ad:31:LYS:HD3	48:Ad:31:LYS:HA	1.74	0.42
8:SA:107:A:OP1	19:SL:12:ARG:NH1	2.53	0.42
8:SA:299:U:H2'	8:SA:300:C:C6	2.55	0.42
8:SA:806:A:C4	8:SA:807:A:C8	3.07	0.42
8:SA:889:A:H2'	8:SA:890:A:H8	1.84	0.42
8:SA:937:G:H2'	8:SA:938:U:C6	2.55	0.42
8:SA:1022:A:H2'	8:SA:1023:A:H8	1.84	0.42
8:SA:1028:U:H5'	28:SU:15:THR:O	2.20	0.42
8:SA:1037:U:OP1	8:SA:1102:C:O2'	2.38	0.42
8:SA:1911:A:N1	16:SI:48:GLN:NE2	2.68	0.42
8:SA:2029:A:H2'	8:SA:2030:U:C6	2.55	0.42
11:SD:13:ASN:HA	11:SD:16:VAL:HG12	2.01	0.42
15:SH:202:LYS:O	15:SH:205:LEU:HG	2.19	0.42
20:SM:79:ILE:O	20:SM:82:ILE:HG22	2.18	0.42
21:SN:36:SER:O	21:SN:40:LYS:HG2	2.20	0.42
24:SQ:73:ARG:HH21	24:SQ:82:LYS:HB3	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:SW:4:VAL:C	30:SW:5:ARG:HD2	2.45	0.42
32:SY:75:TRP:CD1	32:SY:75:TRP:H	2.38	0.42
32:SY:90:HIS:HD2	32:SY:93:ILE:HG22	1.84	0.42
34:AA:282:U:H2'	34:AA:283:U:H6	1.81	0.42
34:AA:378:U:H4'	34:AA:414:C:H5'	2.01	0.42
34:AA:1302:G:H2'	34:AA:1303:C:C6	2.55	0.42
34:AA:1553:U:O2'	34:AA:1554:G:O4'	2.38	0.42
34:AA:2834:A:N7	55:AJ:60:ARG:HD2	2.34	0.42
34:AA:3107:U:H2'	34:AA:3108:A:C8	2.50	0.42
34:AA:3532:A:H2'	34:AA:3533:A:C8	2.55	0.42
37:AL:21:VAL:HA	51:AP:199:ILE:HG23	2.01	0.42
37:AL:24:ASN:OD1	51:AP:202:ARG:HA	2.19	0.42
38:A1:46:ILE:HG22	38:A1:118:PHE:CE2	2.55	0.42
38:A1:83:THR:CG2	38:A1:85:TYR:HD1	2.33	0.42
40:A4:61:ALA:O	40:A4:64:GLU:HG3	2.20	0.42
54:AI:128:ALA:O	54:AI:131:ILE:HG12	2.20	0.42
55:AJ:89:LYS:HG3	55:AJ:252:GLN:HE21	1.84	0.42
55:AJ:273:GLU:O	55:AJ:276:LYS:HG3	2.20	0.42
62:AR:234:ASP:OD1	62:AR:234:ASP:N	2.53	0.42
62:AR:280:LYS:HE2	62:AR:280:LYS:HB2	1.72	0.42
77:AX:56:ASP:OD1	77:AX:56:ASP:C	2.62	0.42
77:AX:83:VAL:HG12	77:AX:92:ILE:HG13	2.02	0.42
77:AX:90:ILE:HD12	77:AX:90:ILE:N	2.35	0.42
77:AX:127:LYS:HA	77:AX:127:LYS:HD2	1.88	0.42
3:S3:22:ARG:HD3	23:SP:142:LYS:HG2	2.02	0.42
4:S4:23:ILE:HD13	4:S4:23:ILE:HA	1.85	0.42
8:SA:164:C:O3'	15:SH:131:LYS:HE2	2.20	0.42
8:SA:633:U:H2'	8:SA:634:C:H6	1.84	0.42
8:SA:639:U:O2'	8:SA:1204:U:OP1	2.34	0.42
8:SA:849:U:H5'	13:SF:240:ARG:HH22	1.85	0.42
8:SA:1243:A:H2'	8:SA:1244:A:C8	2.55	0.42
8:SA:1269:U:C2	8:SA:1270:G:C8	3.07	0.42
8:SA:1721:A:N6	8:SA:1830:C:N3	2.68	0.42
8:SA:1908:A:H5"	16:SI:47:TYR:CE2	2.55	0.42
10:SC:69:ASN:ND2	10:SC:72:ASP:HB2	2.35	0.42
15:SH:12:VAL:HG22	15:SH:13:GLN:H	1.85	0.42
15:SH:143:LYS:HE3	15:SH:143:LYS:HB2	1.75	0.42
18:SK:86:ILE:O	18:SK:90:ILE:HG12	2.19	0.42
21:SN:95:GLU:O	21:SN:98:THR:HG22	2.20	0.42
22:SO:18:ASN:HA	22:SO:21:LEU:CD2	2.49	0.42
28:SU:46:THR:O	28:SU:50:ILE:HG13	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:673:U:HO2'	34:AA:674:U:H6	1.64	0.42
34:AA:2123:C:H2'	34:AA:2124:C:H6	1.84	0.42
34:AA:2803:A:H2'	34:AA:2804:C:H6	1.84	0.42
34:AA:2994:A:H4'	34:AA:2995:A:O4'	2.20	0.42
34:AA:3289:G:H2'	34:AA:3290:C:H6	1.85	0.42
44:A8:35:PRO:HB2	44:A8:40:CYS:SG	2.60	0.42
45:A9:103:LYS:HB2	45:A9:103:LYS:HE3	1.71	0.42
54:AI:86:VAL:HG22	54:AI:88:PRO:HA	2.01	0.42
64:AY:141:LYS:HE3	64:AY:141:LYS:HB3	1.92	0.42
74:AH:10:VAL:O	74:AH:53:TYR:HA	2.20	0.42
7:S7:2:G:H2'	7:S7:3:G:H8	1.85	0.42
8:SA:180:U:H2'	8:SA:181:A:C8	2.54	0.42
8:SA:246:A:H2'	8:SA:247:G:C8	2.55	0.42
8:SA:923:U:H5"	8:SA:925:C:OP2	2.19	0.42
8:SA:1652:A:H2'	8:SA:1653:A:C8	2.55	0.42
8:SA:1862:C:P	26:SS:41:ARG:HE	2.42	0.42
8:SA:1930:A:H2	14:SG:101:GLN:HG2	1.85	0.42
11:SD:136:GLU:OE1	11:SD:154:ARG:HG2	2.19	0.42
17:SJ:127:LEU:O	17:SJ:131:VAL:HG22	2.20	0.42
28:SU:70:LYS:HB3	28:SU:70:LYS:HE2	1.82	0.42
34:AA:593:A:C5	43:AN:6:LEU:HD21	2.55	0.42
34:AA:716:C:N4	34:AA:717:G:O6	2.53	0.42
34:AA:753:C:O2'	34:AA:757:U:OP1	2.34	0.42
34:AA:1763:G:H2'	34:AA:1764:U:C6	2.55	0.42
34:AA:1860:A:H2'	34:AA:1861:C:C6	2.55	0.42
34:AA:3320:G:H2'	34:AA:3321:U:H6	1.83	0.42
34:AA:3707:U:OP1	70:AE:117:ARG:NH1	2.42	0.42
35:AC:12:U:H2'	35:AC:13:A:H8	1.84	0.42
38:A1:11:ILE:C	38:A1:11:ILE:HD12	2.44	0.42
39:A2:77:VAL:HG13	39:A2:78:VAL:HG22	2.02	0.42
46:Aa:106:LYS:HE3	46:Aa:107:GLU:HG2	2.02	0.42
54:AI:28:THR:HG22	54:AI:36:ARG:HH21	1.85	0.42
62:AR:34:LYS:HB2	75:AV:31:TYR:HD2	1.84	0.42
77:AX:120:LEU:HD12	77:AX:132:PHE:CD1	2.54	0.42
7:S7:64:C:H2'	7:S7:65:A:C8	2.55	0.41
8:SA:611:A:H2'	8:SA:612:A:O4'	2.19	0.41
8:SA:953:C:H2'	8:SA:954:G:C8	2.55	0.41
8:SA:1382:G:H4'	21:SN:73:THR:H	1.84	0.41
10:SC:27:LYS:HG2	10:SC:44:GLY:O	2.20	0.41
13:SF:145:ARG:HD2	13:SF:147:ILE:HD11	2.02	0.41
16:SI:158:LYS:HD3	16:SI:162:GLU:HB2	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:SK:28:ARG:HB3	18:SK:29:PRO:HD3	2.01	0.41
21:SN:47:LEU:HD23	21:SN:47:LEU:H	1.84	0.41
26:SS:114:GLU:O	26:SS:117:LYS:HG3	2.20	0.41
32:SY:33:ASP:OD1	32:SY:33:ASP:N	2.53	0.41
34:AA:309:G:H2'	34:AA:310:U:C6	2.55	0.41
34:AA:432:A:C2	34:AA:2656:A:H4'	2.55	0.41
34:AA:436:G:H2'	34:AA:437:A:C8	2.55	0.41
34:AA:457:A:H2'	34:AA:458:A:C8	2.55	0.41
34:AA:509:A:O2'	34:AA:3667:C:N3	2.52	0.41
34:AA:701:C:H2'	34:AA:702:U:O2	2.20	0.41
34:AA:773:A:H4'	71:AF:48:ARG:HB3	2.02	0.41
34:AA:774:A:OP1	71:AF:44:MET:HG3	2.20	0.41
34:AA:1030:C:OP1	69:AD:14:SER:OG	2.38	0.41
34:AA:1094:U:H2'	34:AA:1095:U:H6	1.85	0.41
34:AA:1643:U:C4	64:AY:164:LEU:HD11	2.55	0.41
34:AA:1805:U:H2'	34:AA:1806:C:C6	2.55	0.41
34:AA:1863:A:H2'	34:AA:1864:A:C8	2.55	0.41
36:AB:102:C:H2'	36:AB:103:A:O4'	2.19	0.41
37:AL:185:ALA:N	60:AO:134:GLU:OE2	2.45	0.41
40:A4:37:PRO:C	40:A4:39:PHE:H	2.28	0.41
46:Aa:65:ALA:O	46:Aa:70:ARG:NH1	2.53	0.41
51:AP:23:LEU:HD23	51:AP:23:LEU:HA	1.86	0.41
54:AI:132:ASP:OD2	54:AI:135:SER:OG	2.36	0.41
62:AR:157:THR:HG22	62:AR:181:ARG:NH1	2.35	0.41
62:AR:240:LEU:HD13	62:AR:240:LEU:HA	1.87	0.41
65:AT:142:GLN:OE1	65:AT:142:GLN:HA	2.19	0.41
67:A3:68:LEU:HG	67:A3:82:LEU:HD11	2.01	0.41
68:A5:251:GLU:O	68:A5:255:ARG:HG3	2.20	0.41
72:AG:141:ARG:NH2	72:AG:144:ARG:HB2	2.34	0.41
73:AU:6:ASP:HB3	73:AU:9:LEU:HB2	2.02	0.41
75:AV:145:PRO:HB2	75:AV:148:LYS:HZ3	1.84	0.41
4:S4:30:PHE:HB3	4:S4:80:LYS:HD3	2.02	0.41
8:SA:528:A:H2'	8:SA:529:U:O4'	2.20	0.41
8:SA:756:A:H2'	8:SA:757:A:H8	1.84	0.41
8:SA:1634:A:C2	8:SA:1658:G:C5	3.08	0.41
8:SA:2025:U:H2'	8:SA:2026:C:H6	1.85	0.41
9:SB:58:THR:OG1	9:SB:91:ILE:HD12	2.20	0.41
12:SE:38:ASN:O	12:SE:41:GLU:HG3	2.19	0.41
13:SF:37:LYS:HD2	13:SF:40:GLU:OE1	2.20	0.41
15:SH:34:ASN:HD22	15:SH:34:ASN:HA	1.70	0.41
29:SV:124:ASP:OD1	29:SV:147:LYS:HA	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:61:A:O2'	34:AA:62:A:OP1	2.36	0.41
34:AA:510:A:H2'	34:AA:511:C:C6	2.55	0.41
34:AA:719:C:H2'	34:AA:720:U:O4'	2.20	0.41
34:AA:1232:U:H5	59:AS:6:LYS:O	2.03	0.41
34:AA:1820:U:H2'	34:AA:1821:U:H6	1.85	0.41
34:AA:2209:C:H2'	34:AA:2210:U:C6	2.55	0.41
34:AA:2816:U:HO2'	34:AA:2817:U:P	2.42	0.41
34:AA:2936:A:H2'	34:AA:2937:G:C8	2.55	0.41
34:AA:3062:U:H2'	34:AA:3063:U:C6	2.54	0.41
34:AA:3258:C:O2	74:AH:172:ARG:NH2	2.53	0.41
35:AC:96:U:H2'	35:AC:97:C:O4'	2.20	0.41
35:AC:145:A:HO2'	35:AC:146:C:P	2.41	0.41
42:A7:84:GLU:HG2	42:A7:86:LYS:HD3	2.02	0.41
54:AI:59:VAL:HG13	54:AI:107:THR:OG1	2.20	0.41
57:AK:24:LYS:HD2	57:AK:24:LYS:HA	1.84	0.41
58:AM:18:SER:OG	58:AM:19:LEU:N	2.52	0.41
58:AM:126:GLU:HG2	58:AM:126:GLU:H	1.72	0.41
59:AS:39:ARG:NH2	71:AF:303:LEU:O	2.45	0.41
61:AQ:35:ASP:HB2	61:AQ:86:HIS:HE1	1.85	0.41
69:AD:246:LEU:O	69:AD:247:ARG:HD3	2.20	0.41
71:AF:101:MET:SD	71:AF:104:PRO:HA	2.60	0.41
73:AU:11:THR:OG1	73:AU:12:ASN:N	2.53	0.41
3:S3:39:PHE:CD1	3:S3:70:LYS:HB2	2.55	0.41
5:S5:27:ALA:HB3	5:S5:40:LEU:HD23	2.01	0.41
8:SA:917:C:H2'	8:SA:918:U:C6	2.55	0.41
8:SA:1045:G:N1	8:SA:1092:A:O2'	2.42	0.41
8:SA:1267:C:O2'	8:SA:1884:A:H4'	2.19	0.41
8:SA:1695:A:H2'	8:SA:1696:A:C8	2.55	0.41
8:SA:2049:G:O2'	34:AA:2548:A:O2'	2.35	0.41
8:SA:2051:C:H2'	8:SA:2052:G:O4'	2.20	0.41
9:SB:29:TRP:CG	9:SB:45:LYS:HE3	2.55	0.41
14:SG:45:THR:HG23	14:SG:48:GLY:H	1.85	0.41
24:SQ:56:LYS:HB3	24:SQ:93:LEU:HD11	2.02	0.41
24:SQ:101:GLU:OE2	24:SQ:129:ARG:NH2	2.54	0.41
30:SW:99:GLU:HG2	30:SW:100:PRO:HD2	2.02	0.41
34:AA:285:U:H2'	34:AA:286:U:C6	2.55	0.41
34:AA:715:U:O4	34:AA:730:G:O6	2.37	0.41
34:AA:2099:C:OP1	64:AY:168:LYS:NZ	2.51	0.41
34:AA:2735:G:H2'	34:AA:2736:A:H8	1.86	0.41
34:AA:3008:A:H2'	34:AA:3009:G:H8	1.84	0.41
34:AA:3035:A:N6	34:AA:3097:A:N7	2.69	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:3226:C:O2'	34:AA:3227:U:H5'	2.20	0.41
35:AC:30:U:O2'	71:AF:53:ALA:O	2.35	0.41
35:AC:45:A:O2'	56:Ac:62:THR:OG1	2.25	0.41
38:A1:27:ASN:OD1	38:A1:27:ASN:C	2.63	0.41
43:AN:126:PHE:O	43:AN:130:GLN:HG3	2.19	0.41
44:A8:66:LEU:HB3	44:A8:72:TYR:CE2	2.56	0.41
46:Aa:7:TYR:CD2	46:Aa:12:HIS:HA	2.55	0.41
51:AP:38:ARG:HG3	51:AP:39:VAL:N	2.35	0.41
64:AY:143:ILE:O	64:AY:147:VAL:HG22	2.21	0.41
65:AT:79:LYS:HD2	65:AT:79:LYS:HA	1.79	0.41
1:S1:106:ARG:HG2	8:SA:449:C:OP2	2.20	0.41
8:SA:34:G:H2'	8:SA:35:U:H5"	2.03	0.41
8:SA:110:A:H2'	8:SA:111:G:H8	1.81	0.41
8:SA:139:A:OP1	15:SH:149:LYS:NZ	2.25	0.41
8:SA:829:G:H1'	8:SA:832:A:N6	2.35	0.41
8:SA:1455:C:HO2'	8:SA:1456:G:P	2.43	0.41
8:SA:1635:C:H4'	30:SW:49:LYS:HA	2.02	0.41
8:SA:1724:U:C4	8:SA:1725:A:C6	3.08	0.41
8:SA:1801:A:H8	8:SA:1801:A:O5'	2.03	0.41
8:SA:1839:G:O2'	8:SA:1865:G:N2	2.43	0.41
8:SA:2006:U:H2'	8:SA:2007:U:C6	2.55	0.41
8:SA:2016:A:H2'	8:SA:2017:A:C8	2.55	0.41
13:SF:19:MET:HE2	13:SF:108:ARG:HD2	2.02	0.41
13:SF:246:LEU:HD13	13:SF:250:GLU:OE1	2.20	0.41
14:SG:41:TRP:CZ2	14:SG:43:PRO:HA	2.55	0.41
23:SP:56:ILE:HD13	23:SP:56:ILE:HA	1.86	0.41
26:SS:67:ASP:O	26:SS:70:VAL:HG22	2.21	0.41
33:SZ:40:ASP:OD1	33:SZ:46:ASN:HB3	2.21	0.41
34:AA:320:C:OP2	37:AL:211:LYS:NZ	2.54	0.41
34:AA:699:U:O2'	45:A9:92:HIS:O	2.15	0.41
34:AA:1245:G:H2'	34:AA:1246:C:C6	2.56	0.41
34:AA:1262:G:O2'	34:AA:2981:A:N3	2.46	0.41
34:AA:2473:A:H2'	34:AA:2474:C:H6	1.84	0.41
34:AA:2739:U:H2'	34:AA:2740:A:H8	1.84	0.41
34:AA:2918:C:C2	34:AA:2919:A:H8	2.38	0.41
34:AA:3337:U:O2'	34:AA:3338:U:H5'	2.20	0.41
34:AA:3693:A:H2'	34:AA:3694:A:H8	1.82	0.41
35:AC:35:A:OP1	37:AL:33:LYS:HE3	2.19	0.41
55:AJ:79:ARG:HE	55:AJ:79:ARG:HB3	1.74	0.41
58:AM:24:LEU:HD23	58:AM:24:LEU:HA	1.88	0.41
62:AR:95:TYR:CZ	62:AR:163:ALA:HB2	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
65:AT:67:LEU:O	65:AT:71:LYS:HG3	2.20	0.41
67:A3:29:SER:O	67:A3:33:ILE:HG13	2.19	0.41
69:AD:46:LYS:HE3	69:AD:46:LYS:HB3	1.79	0.41
70:AE:53:MET:HE2	70:AE:53:MET:HB3	1.94	0.41
72:AG:37:LEU:HD23	72:AG:37:LEU:HA	1.83	0.41
8:SA:646:U:OP2	17:SJ:120:THR:HG23	2.21	0.41
8:SA:1300:G:C4	27:ST:38:ARG:HD2	2.55	0.41
8:SA:1382:G:H4'	21:SN:73:THR:N	2.35	0.41
8:SA:1419:C:H2'	8:SA:1420:G:O4'	2.20	0.41
8:SA:1734:G:H3'	8:SA:1811:A:N6	2.34	0.41
8:SA:1834:A:N7	8:SA:1869:G:N1	2.68	0.41
8:SA:1966:U:H2'	8:SA:1967:G:O4'	2.20	0.41
8:SA:2006:U:H2'	8:SA:2007:U:H6	1.85	0.41
10:SC:98:ILE:HD12	10:SC:106:MET:HE2	2.01	0.41
13:SF:172:HIS:HB2	13:SF:174:LYS:HZ2	1.85	0.41
16:SI:62:ARG:O	16:SI:66:SER:OG	2.19	0.41
24:SQ:48:HIS:CD2	24:SQ:105:SER:HB3	2.55	0.41
33:SZ:68:LEU:HD13	33:SZ:68:LEU:HA	1.90	0.41
34:AA:316:A:H2'	34:AA:317:U:C6	2.56	0.41
34:AA:514:C:O3'	34:AA:681:U:H5'	2.20	0.41
34:AA:795:G:H2'	34:AA:796:C:C6	2.56	0.41
34:AA:870:C:H4'	40:A4:27:HIS:CG	2.54	0.41
34:AA:993:U:OP2	70:AE:238:LYS:HG2	2.20	0.41
34:AA:1276:G:O4'	34:AA:1298:A:H2	2.02	0.41
34:AA:1506:C:H2'	34:AA:1507:U:C6	2.55	0.41
34:AA:2917:C:H2'	34:AA:2918:C:C6	2.55	0.41
34:AA:2998:A:H2'	34:AA:2999:C:C6	2.55	0.41
34:AA:3435:A:H4'	70:AE:361:LYS:CE	2.50	0.41
36:AB:22:G:N2	36:AB:25:A:C6	2.88	0.41
37:AL:22:ARG:CZ	51:AP:198:LEU:HD21	2.49	0.41
38:A1:86:GLN:NE2	38:A1:88:ALA:HB3	2.35	0.41
48:Ad:5:ILE:HD13	48:Ad:50:TYR:HB3	2.02	0.41
48:Ad:52:MET:HG2	48:Ad:54:PHE:CZ	2.55	0.41
68:A5:147:TYR:HA	68:A5:148:PRO:HD3	1.84	0.41
71:AF:27:VAL:O	71:AF:30:THR:HG23	2.21	0.41
74:AH:20:ILE:HG12	74:AH:25:VAL:HG12	2.02	0.41
77:AX:116:ILE:HG22	77:AX:120:LEU:HD23	2.03	0.41
8:SA:756:A:N1	8:SA:757:A:C6	2.88	0.41
8:SA:953:C:H2'	8:SA:954:G:H8	1.86	0.41
8:SA:1628:A:H2	21:SN:54:ARG:HD2	1.83	0.41
8:SA:1635:C:O2'	30:SW:52:GLY:HA3	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:SC:62:ARG:NH2	33:SZ:37:GLY:O	2.44	0.41
10:SC:168:GLU:HA	10:SC:202:LEU:HD21	2.02	0.41
11:SD:143:LEU:HD22	11:SD:183:LEU:HD11	2.02	0.41
15:SH:170:PHE:HB3	15:SH:171:ILE:H	1.49	0.41
16:SI:46:ARG:HD3	20:SM:123:ARG:HH11	1.85	0.41
16:SI:184:LYS:O	16:SI:188:GLU:HG2	2.21	0.41
28:SU:22:GLN:NE2	28:SU:26:LEU:O	2.51	0.41
31:SX:22:LEU:HD22	31:SX:109:PRO:HG2	2.02	0.41
34:AA:688:U:H2'	34:AA:689:U:C6	2.56	0.41
34:AA:745:C:H2'	34:AA:746:A:C8	2.54	0.41
34:AA:1215:A:C6	34:AA:1216:C:C4	3.08	0.41
34:AA:1479:A:H2'	34:AA:1479:A:N3	2.35	0.41
34:AA:2069:C:H2'	34:AA:2070:U:C5	2.56	0.41
34:AA:2157:G:H2'	34:AA:2158:U:C6	2.55	0.41
34:AA:2832:A:O2'	34:AA:2926:A:H1'	2.20	0.41
34:AA:3776:U:H2'	34:AA:3777:G:C8	2.55	0.41
43:AN:25:VAL:HG22	43:AN:76:LEU:HD11	2.03	0.41
55:AJ:262:LYS:HA	55:AJ:265:LYS:HZ2	1.84	0.41
67:A3:19:ASP:OD1	67:A3:19:ASP:N	2.49	0.41
68:A5:141:PRO:HA	68:A5:242:TRP:CD2	2.55	0.41
70:AE:160:HIS:HB2	70:AE:175:ILE:HG22	2.02	0.41
77:AX:60:LEU:O	77:AX:64:PHE:HD1	2.03	0.41
77:AX:63:PHE:CD1	77:AX:110:TYR:HD2	2.38	0.41
1:S1:90:TYR:CE1	1:S1:91:ARG:HG2	2.55	0.41
8:SA:151:G:C5	8:SA:160:G:C6	3.09	0.41
8:SA:165:U:H4'	15:SH:135:PRO:HA	2.02	0.41
8:SA:913:U:H2'	8:SA:914:U:H6	1.86	0.41
8:SA:1304:A:C2	8:SA:1853:A:C4	3.09	0.41
8:SA:1684:G:O2'	11:SD:180:GLN:HA	2.21	0.41
8:SA:1916:C:H2'	8:SA:1917:C:C6	2.56	0.41
9:SB:45:LYS:HG2	9:SB:46:THR:N	2.35	0.41
9:SB:121:ILE:HG23	9:SB:161:ILE:HG23	2.03	0.41
9:SB:229:MET:HG3	55:AJ:279:ILE:HD12	2.03	0.41
10:SC:142:PRO:O	10:SC:143:VAL:HB	2.20	0.41
11:SD:138:ILE:HD12	11:SD:152:LYS:HG3	2.02	0.41
12:SE:78:ARG:NH2	12:SE:82:ARG:HD3	2.36	0.41
12:SE:168:ARG:HH12	12:SE:171:ARG:NH2	2.19	0.41
13:SF:88:ASP:HB3	13:SF:122:LYS:NZ	2.35	0.41
13:SF:180:LEU:HD23	13:SF:230:ASP:O	2.20	0.41
14:SG:61:GLU:CD	14:SG:61:GLU:H	2.28	0.41
16:SI:183:LYS:HD2	16:SI:183:LYS:HA	1.84	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:SL:38:LEU:CD2	19:SL:94:LYS:HB3	2.50	0.41
20:SM:22:THR:HB	20:SM:67:ARG:HG2	2.01	0.41
26:SS:100:VAL:O	26:SS:104:GLN:HB3	2.21	0.41
29:SV:11:ARG:NE	29:SV:11:ARG:C	2.79	0.41
30:SW:29:GLN:O	30:SW:33:LYS:HG2	2.21	0.41
30:SW:105:MET:O	30:SW:109:LEU:HG	2.21	0.41
32:SY:138:GLN:HG2	32:SY:145:ARG:NH1	2.34	0.41
34:AA:10:G:N2	34:AA:11:A:H1'	2.36	0.41
34:AA:423:U:H2'	34:AA:424:U:C6	2.56	0.41
34:AA:715:U:H1'	34:AA:716:C:C6	2.56	0.41
34:AA:749:U:H2'	34:AA:750:G:H8	1.86	0.41
34:AA:1062:U:H2'	60:AO:12:ARG:O	2.20	0.41
34:AA:1071:A:H4'	34:AA:1087:G:N2	2.35	0.41
34:AA:1090:G:H2'	34:AA:1091:G:H8	1.86	0.41
34:AA:1515:A:H2'	34:AA:1516:G:O4'	2.21	0.41
34:AA:2496:U:H2'	34:AA:2497:U:C6	2.56	0.41
34:AA:2815:G:H2'	34:AA:2816:U:H6	1.85	0.41
41:A6:37:LEU:C	41:A6:37:LEU:HD12	2.45	0.41
43:AN:6:LEU:CB	43:AN:10:GLU:HB3	2.49	0.41
43:AN:121:ASP:OD1	43:AN:121:ASP:C	2.64	0.41
47:Ab:85:GLY:O	47:Ab:86:THR:OG1	2.36	0.41
51:AP:35:VAL:HG12	51:AP:36:VAL:HG23	2.03	0.41
54:AI:116:ASN:HD22	54:AI:196:LYS:HD2	1.85	0.41
54:AI:158:PHE:O	54:AI:162:VAL:HG23	2.20	0.41
62:AR:67:ALA:HB1	75:AV:32:LEU:HD11	2.03	0.41
67:A3:6:ALA:O	67:A3:9:LEU:HD12	2.21	0.41
67:A3:57:LEU:HA	67:A3:57:LEU:HD23	1.87	0.41
70:AE:71:GLU:OE2	70:AE:354:LYS:NZ	2.53	0.41
1:S1:27:ILE:HG21	1:S1:35:VAL:HG11	2.01	0.41
8:SA:148:U:H2'	8:SA:149:A:H8	1.85	0.41
8:SA:1423:A:H4'	8:SA:1424:A:O5'	2.21	0.41
8:SA:1877:C:H5"	20:SM:138:ARG:HH21	1.85	0.41
8:SA:1900:U:H2'	8:SA:1901:U:C6	2.55	0.41
10:SC:75:VAL:HG13	10:SC:122:ILE:HB	2.02	0.41
11:SD:109:LYS:HE3	11:SD:109:LYS:HB2	1.88	0.41
11:SD:127:ILE:HG21	11:SD:135:CYS:HB2	2.02	0.41
12:SE:35:GLY:HA3	12:SE:122:VAL:HG13	2.03	0.41
13:SF:6:LYS:O	13:SF:30:LYS:NZ	2.50	0.41
13:SF:87:MET:HA	13:SF:101:LEU:O	2.21	0.41
17:SJ:98:ARG:CZ	17:SJ:125:SER:HB3	2.51	0.41
21:SN:93:GLN:HB3	21:SN:96:VAL:HG22	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:SW:46:MET:HE2	30:SW:46:MET:HA	2.01	0.41
34:AA:1269:C:H2'	34:AA:1270:G:O4'	2.21	0.41
34:AA:2430:U:C6	34:AA:2434:U:C4	3.09	0.41
34:AA:2735:G:H2'	34:AA:2736:A:C8	2.56	0.41
34:AA:3408:G:O2'	34:AA:3417:G:O6	2.33	0.41
48:Ad:56:ASP:HB3	48:Ad:59:LYS:HB2	2.02	0.41
57:AK:26:LEU:HD11	57:AK:101:LEU:HB2	2.02	0.41
58:AM:111:MET:HE2	58:AM:111:MET:HB3	1.81	0.41
59:AS:177:ARG:HA	59:AS:183:ARG:HB2	2.02	0.41
59:AS:178:GLY:O	59:AS:187:LYS:N	2.51	0.41
62:AR:166:LYS:HD2	62:AR:166:LYS:HA	1.89	0.41
68:A5:90:LYS:HD3	68:A5:90:LYS:HA	1.89	0.41
69:AD:45:VAL:HG23	69:AD:84:THR:HA	2.02	0.41
73:AU:21:ARG:NH2	73:AU:66:GLU:OE2	2.35	0.41
73:AU:87:LEU:HB3	73:AU:133:ILE:HG13	2.01	0.41
74:AH:48:ASN:HB3	74:AH:52:LYS:O	2.20	0.41
1:S1:29:HIS:HB2	1:S1:32:LYS:HG3	2.02	0.41
7:S7:28:C:H2'	7:S7:29:G:C8	2.56	0.41
8:SA:30:G:H2'	8:SA:31:C:H6	1.86	0.41
8:SA:142:G:H8	8:SA:142:G:OP2	2.04	0.41
8:SA:151:G:C6	8:SA:160:G:C6	3.09	0.41
8:SA:333:U:O3'	29:SV:14:GLN:NE2	2.53	0.41
8:SA:335:G:H2'	8:SA:336:G:H8	1.85	0.41
8:SA:421:U:H2'	8:SA:423:A:N7	2.35	0.41
8:SA:434:A:N3	8:SA:446:U:O2'	2.36	0.41
8:SA:564:G:O2'	8:SA:565:U:H5'	2.21	0.41
8:SA:833:A:H2'	8:SA:834:A:O4'	2.20	0.41
8:SA:835:G:N3	8:SA:835:G:H2'	2.36	0.41
8:SA:852:A:O2'	13:SF:106:LYS:HE2	2.21	0.41
8:SA:1271:G:H2'	8:SA:1271:G:N3	2.36	0.41
8:SA:1277:G:C6	8:SA:1710:G:O6	2.74	0.41
8:SA:1278:C:N3	8:SA:1279:G:N7	2.68	0.41
8:SA:1455:C:O2'	8:SA:1456:G:H8	2.03	0.41
8:SA:1629:G:H5'	21:SN:84:TYR:HE2	1.85	0.41
8:SA:1673:A:N3	11:SD:147:ARG:NH1	2.69	0.41
8:SA:1713:C:H4'	32:SY:112:PRO:HG3	2.03	0.41
8:SA:1787:U:H1'	8:SA:1788:U:O2	2.21	0.41
8:SA:1811:A:H1'	8:SA:1814:C:N4	2.36	0.41
8:SA:1850:G:N7	31:SX:47:ARG:NH1	2.69	0.41
8:SA:2007:U:H2'	8:SA:2008:U:C6	2.56	0.41
8:SA:2033:U:H2'	8:SA:2034:U:C6	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:SC:33:MET:HE3	10:SC:33:MET:HB3	1.86	0.41
11:SD:99:ALA:HB3	11:SD:170:ASN:OD1	2.21	0.41
11:SD:213:ILE:HG12	30:SW:41:ILE:HG13	2.03	0.41
13:SF:105:ILE:HB	13:SF:245:LYS:HG3	2.02	0.41
14:SG:218:THR:OG1	14:SG:221:ASN:HB2	2.21	0.41
14:SG:239:PRO:HA	14:SG:242:TRP:NE1	2.36	0.41
15:SH:147:LEU:HD11	15:SH:153:VAL:HG12	2.02	0.41
16:SI:13:LYS:HE3	16:SI:14:TRP:CE2	2.55	0.41
18:SK:56:HIS:ND1	28:SU:20:ARG:NH1	2.68	0.41
18:SK:104:LEU:HD23	18:SK:125:VAL:HA	2.03	0.41
19:SL:207:PHE:HE2	29:SV:11:ARG:HH11	1.69	0.41
20:SM:98:VAL:HG13	20:SM:99:ASP:N	2.36	0.41
21:SN:97:VAL:O	21:SN:100:MET:HG3	2.21	0.41
22:SO:19:LYS:O	22:SO:22:ILE:HG13	2.20	0.41
23:SP:143:LYS:HB3	23:SP:143:LYS:HE3	1.81	0.41
25:SR:54:ALA:HB3	25:SR:75:LEU:HD13	2.03	0.41
27:ST:21:VAL:HG23	27:ST:36:ILE:HD11	2.02	0.41
30:SW:28:PHE:C	30:SW:28:PHE:CD2	2.98	0.41
30:SW:41:ILE:HB	30:SW:47:LYS:HG2	2.03	0.41
31:SX:54:LYS:HG2	31:SX:54:LYS:H	1.68	0.41
34:AA:389:U:H2'	34:AA:390:C:C6	2.56	0.41
34:AA:910:A:H2'	34:AA:911:U:C6	2.56	0.41
34:AA:993:U:H5"	34:AA:3309:G:OP1	2.21	0.41
34:AA:1462:C:O2'	68:A5:160:ARG:NH2	2.54	0.41
34:AA:1815:A:H2'	34:AA:1816:G:C8	2.55	0.41
34:AA:3049:G:H2'	34:AA:3050:U:C6	2.55	0.41
34:AA:3383:A:H2'	34:AA:3384:G:H8	1.85	0.41
34:AA:3779:U:H5"	34:AA:3780:A:H5'	2.03	0.41
35:AC:150:U:P	51:AP:38:ARG:HH12	2.44	0.41
36:AB:23:C:H2'	36:AB:24:C:C6	2.56	0.41
45:A9:40:LEU:O	45:A9:135:MET:HG3	2.21	0.41
47:Ab:60:ARG:HA	47:Ab:63:GLU:OE2	2.21	0.41
50:Af:16:GLN:O	50:Af:29:PRO:HG3	2.20	0.41
55:AJ:203:LEU:HA	55:AJ:206:LEU:HB2	2.03	0.41
60:AO:105:LYS:HA	60:AO:105:LYS:HD2	1.87	0.41
62:AR:292:LYS:HG3	62:AR:293:LEU:N	2.35	0.41
63:AW:30:TYR:CZ	63:AW:34:ARG:HD2	2.56	0.41
63:AW:152:GLU:O	63:AW:153:ILE:HD13	2.20	0.41
64:AY:106:ASP:C	64:AY:106:ASP:OD2	2.64	0.41
64:AY:138:ALA:O	64:AY:168:LYS:HE3	2.21	0.41
65:AT:110:ASP:OD1	65:AT:110:ASP:C	2.62	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
66:AZ:34:LEU:HB3	66:AZ:38:LEU:HD12	2.02	0.41
67:A3:75:LYS:O	67:A3:77:PHE:N	2.53	0.41
70:AE:145:LEU:HD23	70:AE:145:LEU:HA	1.88	0.41
71:AF:153:VAL:HG11	71:AF:257:PHE:CG	2.55	0.41
71:AF:163:LYS:HA	71:AF:163:LYS:HD2	1.90	0.41
71:AF:296:ASP:OD2	71:AF:296:ASP:C	2.64	0.41
72:AG:157:GLU:OE2	72:AG:157:GLU:HA	2.20	0.41
75:AV:16:PHE:O	75:AV:47:SER:OG	2.35	0.41
8:SA:121:A:H1'	8:SA:403:A:C4	2.55	0.41
8:SA:154:A:C4	8:SA:155:A:C8	3.09	0.41
8:SA:253:A:C8	13:SF:131:LEU:HD11	2.56	0.41
8:SA:291:A:HO2'	8:SA:292:G:P	2.42	0.41
8:SA:987:U:H2'	8:SA:988:U:C6	2.55	0.41
8:SA:1630:A:H2'	8:SA:1631:G:C8	2.56	0.41
8:SA:1655:G:H3'	20:SM:115:ARG:HH21	1.85	0.41
8:SA:1661:U:H2'	8:SA:1662:A:C8	2.56	0.41
8:SA:1716:C:O2	8:SA:1868:C:O2'	2.25	0.41
8:SA:1786:U:O2'	8:SA:1787:U:P	2.79	0.41
12:SE:131:GLN:O	12:SE:132:ARG:HG2	2.21	0.41
22:SO:72:TRP:CE3	27:ST:21:VAL:HG22	2.55	0.41
23:SP:131:ASP:OD1	23:SP:131:ASP:C	2.63	0.41
28:SU:43:LYS:O	41:A6:19:LEU:HD21	2.21	0.41
32:SY:35:ASP:O	32:SY:39:ARG:HG2	2.21	0.41
34:AA:153:A:OP1	55:AJ:210:LYS:NZ	2.34	0.41
34:AA:705:C:H2'	34:AA:706:U:C6	2.55	0.41
34:AA:972:G:N7	52:Ah:2:SER:N	2.69	0.41
34:AA:1172:C:H2'	34:AA:1173:U:C6	2.56	0.41
34:AA:1236:U:H2'	34:AA:1237:C:C6	2.56	0.41
34:AA:1779:A:O2'	38:A1:67:LYS:NZ	2.50	0.41
34:AA:2506:A:H2'	34:AA:2507:A:H8	1.80	0.41
34:AA:2954:A:H2'	34:AA:2955:C:H6	1.85	0.41
34:AA:3739:A:O2'	34:AA:3740:A:H8	2.03	0.41
36:AB:4:C:H2'	36:AB:5:U:C6	2.56	0.41
42:A7:39:ARG:O	42:A7:43:GLU:HG2	2.21	0.41
48:Ad:58:LYS:H	48:Ad:58:LYS:HG2	1.67	0.41
54:AI:99:VAL:HG11	54:AI:104:LEU:HD13	2.03	0.41
68:A5:158:TYR:O	71:AF:318:SER:OG	2.39	0.41
72:AG:23:VAL:HG11	72:AG:29:ARG:HG3	2.03	0.41
73:AU:36:MET:HG2	75:AV:152:ILE:O	2.21	0.41
5:S5:8:LYS:H	5:S5:28:GLN:HB2	1.85	0.40
8:SA:346:U:H2'	8:SA:347:A:H8	1.84	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:531:U:N3	8:SA:534:A:OP2	2.43	0.40
8:SA:572:C:H5'	8:SA:573:C:C6	2.56	0.40
8:SA:594:C:H2'	8:SA:595:U:C6	2.56	0.40
8:SA:877:U:O3'	65:AT:162:ARG:NH1	2.55	0.40
8:SA:1017:G:H2'	8:SA:1018:U:H6	1.85	0.40
8:SA:1662:A:OP2	8:SA:1662:A:H8	2.04	0.40
12:SE:42:ILE:O	12:SE:46:GLN:HG2	2.21	0.40
12:SE:59:LEU:HD23	12:SE:59:LEU:HA	1.90	0.40
15:SH:69:THR:HG23	15:SH:71:ASN:H	1.86	0.40
15:SH:98:ARG:NH1	15:SH:105:ASP:OD2	2.53	0.40
16:SI:8:ILE:HG12	16:SI:37:CYS:HB3	2.02	0.40
21:SN:53:VAL:O	21:SN:86:ARG:HB3	2.21	0.40
22:SO:50:ASN:O	22:SO:54:MET:SD	2.78	0.40
26:SS:132:ARG:HB2	26:SS:136:GLN:HB3	2.03	0.40
27:ST:51:LYS:HZ3	27:ST:53:TYR:HB2	1.85	0.40
27:ST:53:TYR:CE2	27:ST:54:ARG:HD3	2.56	0.40
30:SW:59:LYS:HE3	30:SW:59:LYS:HB3	1.76	0.40
34:AA:290:G:O6	34:AA:312:A:H1'	2.21	0.40
34:AA:359:A:H61	49:Ae:38:ASN:HA	1.85	0.40
34:AA:419:A:C8	34:AA:420:U:C5	3.09	0.40
34:AA:1109:U:H2'	34:AA:1110:U:H6	1.86	0.40
34:AA:1596:G:O2'	34:AA:2648:G:O6	2.34	0.40
34:AA:2002:G:H1'	34:AA:2003:G:N7	2.36	0.40
34:AA:2482:U:H4'	52:Ah:19:GLY:HA3	2.03	0.40
34:AA:2740:A:H2'	34:AA:2741:A:C8	2.56	0.40
34:AA:2828:A:H2'	34:AA:2829:U:C6	2.56	0.40
34:AA:2950:U:H2'	34:AA:2951:U:H6	1.84	0.40
34:AA:3084:G:N2	34:AA:3087:A:OP2	2.46	0.40
34:AA:3101:A:H2'	34:AA:3102:U:H6	1.84	0.40
34:AA:3120:U:OP1	37:AL:201:ARG:NH1	2.53	0.40
34:AA:3730:C:H2'	34:AA:3731:A:C8	2.57	0.40
38:A1:51:LEU:HA	38:A1:51:LEU:HD12	1.88	0.40
55:AJ:174:VAL:HG11	55:AJ:179:LEU:CD1	2.48	0.40
55:AJ:175:SER:OG	55:AJ:176:PRO:HD3	2.21	0.40
63:AW:131:LYS:HD2	63:AW:137:ASN:OD1	2.21	0.40
64:AY:164:LEU:HD23	64:AY:164:LEU:HA	1.94	0.40
69:AD:122:ASN:C	69:AD:123:ARG:HG2	2.46	0.40
71:AF:149:GLU:O	71:AF:152:LEU:HB3	2.21	0.40
79:S9:22:G:H2'	79:S9:23:C:H6	1.87	0.40
3:S3:39:PHE:HA	3:S3:70:LYS:HA	2.02	0.40
4:S4:15:LYS:HE3	4:S4:16:LYS:N	2.36	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:S4:17:HIS:O	4:S4:21:ARG:NH2	2.54	0.40
8:SA:118:U:H2'	8:SA:119:C:C6	2.56	0.40
8:SA:524:G:C6	8:SA:543:A:N1	2.89	0.40
8:SA:1234:A:H2'	8:SA:1235:G:O4'	2.20	0.40
8:SA:1957:A:H2'	8:SA:1958:A:H8	1.84	0.40
10:SC:204:ARG:HH11	10:SC:204:ARG:C	2.29	0.40
15:SH:109:LEU:HG	15:SH:111:LEU:HD11	2.02	0.40
15:SH:180:THR:CG2	15:SH:182:LYS:HG2	2.51	0.40
17:SJ:16:LEU:H	17:SJ:16:LEU:HD23	1.86	0.40
19:SL:29:LEU:HD12	19:SL:29:LEU:HA	1.80	0.40
29:SV:153:SER:HB3	29:SV:156:LYS:HG2	2.03	0.40
34:AA:142:C:H2'	34:AA:143:C:H6	1.87	0.40
34:AA:267:U:H2'	34:AA:268:C:C6	2.55	0.40
34:AA:698:G:H3'	34:AA:698:G:OP1	2.21	0.40
34:AA:1510:U:OP1	71:AF:311:LYS:NZ	2.43	0.40
34:AA:1721:C:H2'	34:AA:1722:C:H6	1.86	0.40
34:AA:2677:A:H61	57:AK:95:GLN:HE22	1.68	0.40
34:AA:3160:A:O2'	34:AA:3161:A:H3'	2.21	0.40
34:AA:3471:A:H4'	70:AE:363:GLY:HA2	2.03	0.40
34:AA:3586:U:O3'	57:AK:160:LYS:HE2	2.21	0.40
34:AA:3678:A:H2'	34:AA:3679:A:H8	1.86	0.40
42:A7:86:LYS:HB2	42:A7:98:TYR:CZ	2.56	0.40
48:Ad:5:ILE:HD11	48:Ad:11:PHE:CD1	2.54	0.40
51:AP:51:LEU:HD13	51:AP:118:ASN:HB3	2.02	0.40
57:AK:57:LEU:C	57:AK:59:LEU:H	2.28	0.40
57:AK:191:GLU:H	57:AK:191:GLU:CD	2.27	0.40
59:AS:81:VAL:O	59:AS:101:ALA:HA	2.21	0.40
64:AY:106:ASP:OD2	64:AY:108:TYR:N	2.53	0.40
64:AY:145:LYS:HE3	64:AY:145:LYS:HB2	1.96	0.40
67:A3:103:THR:H	67:A3:106:GLN:HE21	1.67	0.40
69:AD:46:LYS:HG3	69:AD:62:ILE:HG12	2.03	0.40
70:AE:128:LYS:O	70:AE:131:THR:OG1	2.23	0.40
71:AF:187:LYS:HD2	71:AF:201:TYR:CD1	2.56	0.40
73:AU:143:VAL:HG11	73:AU:148:ILE:HG22	2.03	0.40
77:AX:121:ARG:HE	77:AX:121:ARG:HB2	1.62	0.40
3:S3:59:TYR:C	3:S3:61:THR:H	2.28	0.40
8:SA:5:U:H2'	8:SA:6:G:H8	1.84	0.40
8:SA:399:C:H2'	8:SA:400:C:C6	2.57	0.40
8:SA:1016:U:H2'	8:SA:1017:G:C8	2.56	0.40
8:SA:1261:A:H2'	8:SA:1262:C:H6	1.86	0.40
8:SA:1275:U:OP2	26:SS:137:HIS:HB2	2.20	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:1842:A:H5”	26:SS:133:VAL:HG21	2.03	0.40
10:SC:148:ASP:OD1	10:SC:149:SER:N	2.48	0.40
10:SC:178:ALA:O	10:SC:181:VAL:HG22	2.20	0.40
11:SD:68:GLU:HG2	22:SO:78:ILE:HD11	2.02	0.40
16:SI:12:LYS:HA	16:SI:12:LYS:HD2	2.00	0.40
20:SM:20:VAL:HG11	20:SM:69:ARG:NH2	2.37	0.40
21:SN:81:LEU:HD11	27:ST:50:PHE:HA	2.02	0.40
28:SU:71:ILE:O	28:SU:74:ILE:HG23	2.21	0.40
31:SX:38:LYS:O	31:SX:42:ARG:HG3	2.21	0.40
34:AA:224:G:OP1	66:AZ:15:ARG:NH1	2.55	0.40
34:AA:671:U:H2’	34:AA:672:C:H6	1.85	0.40
34:AA:742:U:H2’	34:AA:743:A:H8	1.86	0.40
34:AA:1238:C:H2’	34:AA:1239:A:O4’	2.21	0.40
34:AA:1553:U:O2’	34:AA:1554:G:C8	2.66	0.40
34:AA:1652:A:C4	34:AA:1653:A:C8	3.10	0.40
34:AA:1958:U:H2’	34:AA:1959:G:C8	2.56	0.40
34:AA:2089:C:H2’	34:AA:2090:U:C6	2.57	0.40
34:AA:2456:C:OP1	69:AD:234:LYS:NZ	2.37	0.40
34:AA:2537:A:H5”	69:AD:243:THR:HB	2.04	0.40
34:AA:2706:A:H2’	34:AA:2707:G:C8	2.54	0.40
34:AA:2821:C:O2’	34:AA:2822:U:H5’	2.21	0.40
34:AA:3444:G:H2’	34:AA:3445:C:C6	2.57	0.40
34:AA:3633:U:H2’	34:AA:3634:C:C6	2.56	0.40
48:Ad:9:ARG:HB2	48:Ad:9:ARG:HH11	1.86	0.40
54:AI:31:LYS:HB3	54:AI:31:LYS:HE3	1.97	0.40
54:AI:80:SER:OG	54:AI:133:ASP:OD2	2.26	0.40
63:AW:39:MET:HB2	63:AW:43:GLU:OE2	2.21	0.40
66:AZ:26:ARG:HG2	66:AZ:77:TYR:CE1	2.57	0.40
69:AD:79:SER:HA	69:AD:169:VAL:HA	2.03	0.40
71:AF:33:ARG:HA	71:AF:33:ARG:HD2	1.78	0.40
3:S3:45:VAL:HG12	23:SP:113:GLN:OE1	2.20	0.40
7:S7:26:C:N4	7:S7:27:G:O6	2.55	0.40
8:SA:887:A:C6	8:SA:915:G:O6	2.74	0.40
8:SA:922:U:OP2	65:AT:172:ARG:NH2	2.55	0.40
8:SA:1016:U:H2’	8:SA:1017:G:H8	1.86	0.40
8:SA:1412:U:H2’	8:SA:1413:U:C6	2.56	0.40
8:SA:1633:A:H2’	8:SA:1657:A:N1	2.36	0.40
13:SF:87:MET:SD	13:SF:123:LEU:HB2	2.60	0.40
13:SF:100:ARG:HH12	13:SF:122:LYS:HA	1.86	0.40
13:SF:208:ILE:HD11	13:SF:225:VAL:CG1	2.48	0.40
14:SG:41:TRP:HZ3	14:SG:44:VAL:HB	1.86	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:SJ:11:SER:OG	17:SJ:12:ASN:N	2.53	0.40
17:SJ:125:SER:HA	17:SJ:128:GLU:HG2	2.04	0.40
19:SL:171:LEU:HD12	19:SL:171:LEU:HA	1.85	0.40
28:SU:46:THR:H	28:SU:49:GLN:NE2	2.20	0.40
31:SX:51:LYS:HA	31:SX:54:LYS:CG	2.50	0.40
33:SZ:16:LYS:HG2	33:SZ:23:LEU:HB3	2.02	0.40
34:AA:138:C:H2'	34:AA:139:A:O4'	2.21	0.40
34:AA:278:C:H2'	34:AA:279:G:O4'	2.22	0.40
34:AA:2547:U:H2'	34:AA:2554:G:N2	2.37	0.40
34:AA:2712:A:H2'	34:AA:2713:C:H6	1.84	0.40
34:AA:3258:C:H2'	34:AA:3258:C:O2	2.21	0.40
34:AA:3590:A:O3'	74:AH:23:ARG:NH1	2.54	0.40
34:AA:3660:A:H2'	34:AA:3661:A:C8	2.57	0.40
35:AC:60:G:H2'	35:AC:61:C:O4'	2.21	0.40
36:AB:55:A:H4'	72:AG:152:HIS:HB2	2.02	0.40
37:AL:193:LYS:HA	37:AL:193:LYS:HD2	1.94	0.40
65:AT:18:LYS:HE3	65:AT:18:LYS:HB2	1.85	0.40
66:AZ:7:LYS:HE3	66:AZ:7:LYS:HB2	1.73	0.40
73:AU:53:PHE:CE1	75:AV:154:PRO:HB3	2.57	0.40
74:AH:44:ASP:CG	74:AH:46:ARG:HE	2.30	0.40
8:SA:880:A:H2'	8:SA:881:C:C6	2.57	0.40
13:SF:66:ILE:HD13	13:SF:66:ILE:HA	1.90	0.40
13:SF:251:GLU:HA	13:SF:254:ASN:HD21	1.86	0.40
16:SI:32:VAL:HG12	16:SI:58:PRO:HB3	2.02	0.40
17:SJ:8:VAL:C	17:SJ:9:LEU:HD23	2.45	0.40
17:SJ:57:LYS:HG2	17:SJ:167:GLU:HG2	2.03	0.40
20:SM:26:GLY:HA3	20:SM:65:ASP:CG	2.46	0.40
20:SM:64:LEU:HD22	20:SM:93:TYR:HE2	1.87	0.40
21:SN:55:LEU:HD22	21:SN:85:LYS:HE2	2.03	0.40
23:SP:44:VAL:HG13	23:SP:93:ILE:HD11	2.03	0.40
26:SS:17:ILE:HD12	26:SS:19:ASN:H	1.85	0.40
29:SV:58:ASP:HB3	29:SV:61:CYS:HB2	2.03	0.40
31:SX:39:ALA:HA	31:SX:42:ARG:HE	1.87	0.40
32:SY:99:ARG:HB3	32:SY:117:LEU:HB3	2.03	0.40
34:AA:183:U:H2'	34:AA:184:U:C6	2.56	0.40
34:AA:217:A:H4'	34:AA:219:A:N7	2.36	0.40
34:AA:689:U:H2'	34:AA:690:U:C6	2.57	0.40
34:AA:727:A:H2'	34:AA:728:C:C6	2.56	0.40
34:AA:1076:C:H2'	34:AA:1077:U:O4'	2.21	0.40
34:AA:1470:A:O2'	59:AS:11:ILE:O	2.39	0.40
34:AA:1537:G:H4'	34:AA:1537:G:OP1	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:2190:A:H2'	34:AA:2191:C:O4'	2.21	0.40
34:AA:2467:A:OP2	69:AD:193:ARG:NH1	2.55	0.40
34:AA:3172:A:H2'	34:AA:3173:G:O4'	2.22	0.40
34:AA:3409:U:H2'	34:AA:3410:A:C8	2.55	0.40
35:AC:76:A:C5	35:AC:84:G:C2	3.09	0.40
38:A1:19:ALA:O	38:A1:21:LYS:N	2.54	0.40
51:AP:28:TRP:O	51:AP:32:GLN:HG2	2.22	0.40
51:AP:44:ARG:NH1	51:AP:121:TRP:HB3	2.36	0.40
52:Ah:29:ILE:HG13	52:Ah:30:GLU:N	2.35	0.40
54:AI:195:LEU:HD23	54:AI:195:LEU:HA	1.88	0.40
56:Ac:32:LEU:O	56:Ac:35:LYS:HD2	2.22	0.40
57:AK:1:MET:HG3	57:AK:2:TYR:CE2	2.57	0.40
62:AR:124:LYS:HD3	62:AR:124:LYS:N	2.36	0.40
63:AW:116:HIS:CB	63:AW:149:ILE:HB	2.52	0.40
64:AY:148:LYS:HD3	64:AY:148:LYS:C	2.47	0.40
68:A5:113:ARG:HH11	68:A5:113:ARG:HG2	1.86	0.40
71:AF:370:LYS:HE2	71:AF:370:LYS:HA	2.03	0.40
74:AH:62:VAL:O	74:AH:66:LEU:HG	2.21	0.40
74:AH:133:ILE:HA	74:AH:144:TYR:O	2.22	0.40
77:AX:108:LYS:HE3	77:AX:117:ARG:NH2	2.36	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	S1	118/133 (89%)	116 (98%)	2 (2%)	0	100	100
2	S2	35/105 (33%)	35 (100%)	0	0	100	100
3	S3	93/107 (87%)	84 (90%)	9 (10%)	0	100	100
4	S4	74/82 (90%)	62 (84%)	12 (16%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
5	S5	55/67 (82%)	45 (82%)	9 (16%)	1 (2%)	7 6
6	S6	41/58 (71%)	38 (93%)	2 (5%)	1 (2%)	5 4
9	SB	208/262 (79%)	198 (95%)	9 (4%)	1 (0%)	25 32
10	SC	193/263 (73%)	179 (93%)	13 (7%)	1 (0%)	25 32
11	SD	149/221 (67%)	147 (99%)	2 (1%)	0	100 100
12	SE	183/189 (97%)	172 (94%)	11 (6%)	0	100 100
13	SF	255/261 (98%)	237 (93%)	17 (7%)	1 (0%)	30 39
14	SG	222/272 (82%)	211 (95%)	11 (5%)	0	100 100
15	SH	200/306 (65%)	189 (94%)	11 (6%)	0	100 100
16	SI	176/195 (90%)	165 (94%)	11 (6%)	0	100 100
17	SJ	186/194 (96%)	169 (91%)	16 (9%)	1 (0%)	25 32
18	SK	127/130 (98%)	117 (92%)	9 (7%)	1 (1%)	16 20
19	SL	165/218 (76%)	151 (92%)	13 (8%)	1 (1%)	22 27
20	SM	136/144 (94%)	130 (96%)	5 (4%)	1 (1%)	19 23
21	SN	96/118 (81%)	92 (96%)	4 (4%)	0	100 100
22	SO	77/137 (56%)	71 (92%)	5 (6%)	1 (1%)	10 11
23	SP	125/151 (83%)	115 (92%)	10 (8%)	0	100 100
24	SQ	142/145 (98%)	135 (95%)	7 (5%)	0	100 100
25	SR	92/141 (65%)	86 (94%)	6 (6%)	0	100 100
26	SS	126/156 (81%)	110 (87%)	14 (11%)	2 (2%)	8 7
27	ST	46/54 (85%)	45 (98%)	1 (2%)	0	100 100
28	SU	147/151 (97%)	137 (93%)	10 (7%)	0	100 100
29	SV	142/161 (88%)	135 (95%)	6 (4%)	1 (1%)	19 23
30	SW	91/137 (66%)	79 (87%)	9 (10%)	3 (3%)	3 2
31	SX	92/145 (63%)	84 (91%)	8 (9%)	0	100 100
32	SY	152/170 (89%)	146 (96%)	6 (4%)	0	100 100
33	SZ	70/82 (85%)	66 (94%)	4 (6%)	0	100 100
37	AL	209/215 (97%)	202 (97%)	7 (3%)	0	100 100
38	A1	136/146 (93%)	124 (91%)	11 (8%)	1 (1%)	19 23
39	A2	97/127 (76%)	93 (96%)	3 (3%)	1 (1%)	13 15
40	A4	64/67 (96%)	60 (94%)	4 (6%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
41	A6	96/108 (89%)	92 (96%)	4 (4%)	0	100	100
42	A7	92/120 (77%)	91 (99%)	1 (1%)	0	100	100
43	AN	145/165 (88%)	135 (93%)	10 (7%)	0	100	100
44	A8	123/131 (94%)	113 (92%)	10 (8%)	0	100	100
45	A9	101/140 (72%)	91 (90%)	10 (10%)	0	100	100
46	Aa	104/150 (69%)	98 (94%)	6 (6%)	0	100	100
47	Ab	91/112 (81%)	83 (91%)	7 (8%)	1 (1%)	12	13
48	Ad	68/87 (78%)	67 (98%)	1 (2%)	0	100	100
49	Ae	39/51 (76%)	38 (97%)	1 (3%)	0	100	100
50	Af	49/128 (38%)	45 (92%)	4 (8%)	0	100	100
51	AP	202/205 (98%)	182 (90%)	18 (9%)	2 (1%)	13	15
52	Ah	83/96 (86%)	80 (96%)	3 (4%)	0	100	100
53	Ai	93/104 (89%)	87 (94%)	6 (6%)	0	100	100
54	AI	203/221 (92%)	190 (94%)	12 (6%)	1 (0%)	25	32
55	AJ	216/283 (76%)	209 (97%)	6 (3%)	1 (0%)	25	32
56	Ac	87/92 (95%)	80 (92%)	7 (8%)	0	100	100
57	AK	199/202 (98%)	194 (98%)	4 (2%)	1 (0%)	25	32
58	AM	130/139 (94%)	124 (95%)	5 (4%)	1 (1%)	16	20
59	AS	184/187 (98%)	177 (96%)	6 (3%)	1 (0%)	25	32
60	AO	145/148 (98%)	137 (94%)	8 (6%)	0	100	100
61	AQ	185/219 (84%)	174 (94%)	9 (5%)	2 (1%)	12	13
62	AR	244/294 (83%)	236 (97%)	7 (3%)	1 (0%)	30	39
63	AW	149/173 (86%)	143 (96%)	6 (4%)	0	100	100
64	AY	99/190 (52%)	96 (97%)	3 (3%)	0	100	100
65	AT	179/182 (98%)	177 (99%)	2 (1%)	0	100	100
66	AZ	119/126 (94%)	115 (97%)	4 (3%)	0	100	100
67	A3	117/124 (94%)	109 (93%)	8 (7%)	0	100	100
68	A5	221/257 (86%)	205 (93%)	16 (7%)	0	100	100
69	AD	245/260 (94%)	231 (94%)	12 (5%)	2 (1%)	16	20
70	AE	378/386 (98%)	364 (96%)	13 (3%)	1 (0%)	37	47
71	AF	388/411 (94%)	373 (96%)	14 (4%)	1 (0%)	37	47

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
72	AG	116/173 (67%)	106 (91%)	8 (7%)	2 (2%)	7 7
73	AU	178/184 (97%)	171 (96%)	6 (3%)	1 (1%)	22 27
74	AH	183/190 (96%)	169 (92%)	14 (8%)	0	100 100
75	AV	153/161 (95%)	148 (97%)	5 (3%)	0	100 100
76	Ag	35/39 (90%)	28 (80%)	7 (20%)	0	100 100
77	AX	95/139 (68%)	92 (97%)	3 (3%)	0	100 100
78	A0	60/162 (37%)	58 (97%)	2 (3%)	0	100 100
All	All	10114/12049 (84%)	9533 (94%)	545 (5%)	36 (0%)	32 39

All (36) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
9	SB	146	ARG
17	SJ	112	ILE
19	SL	168	ILE
20	SM	41	GLU
26	SS	101	ILE
30	SW	4	VAL
51	AP	149	ILE
55	AJ	75	ILE
72	AG	155	THR
6	S6	26	LYS
26	SS	14	ILE
39	A2	78	VAL
51	AP	188	SER
62	AR	152	ILE
5	S5	38	ARG
29	SV	20	SER
57	AK	72	LEU
10	SC	143	VAL
22	SO	35	GLU
38	A1	52	LYS
47	Ab	86	THR
54	AI	19	VAL
61	AQ	34	TYR
13	SF	195	ILE
58	AM	13	MET
59	AS	8	VAL
61	AQ	60	ILE
69	AD	199	VAL

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Mol	Chain	Res	Type
73	AU	183	ARG
18	SK	4	MET
30	SW	69	ILE
72	AG	28	ASP
70	AE	297	ILE
30	SW	17	VAL
69	AD	127	VAL
71	AF	267	ILE

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	S1	104/115 (90%)	102 (98%)	2 (2%)	52 69
2	S2	35/88 (40%)	35 (100%)	0	100 100
3	S3	87/98 (89%)	84 (97%)	3 (3%)	32 47
4	S4	70/76 (92%)	67 (96%)	3 (4%)	25 36
5	S5	48/54 (89%)	47 (98%)	1 (2%)	48 66
6	S6	36/47 (77%)	34 (94%)	2 (6%)	17 26
9	SB	195/238 (82%)	184 (94%)	11 (6%)	17 26
10	SC	167/227 (74%)	160 (96%)	7 (4%)	25 37
11	SD	132/188 (70%)	122 (92%)	10 (8%)	11 14
12	SE	161/167 (96%)	152 (94%)	9 (6%)	17 26
13	SF	233/237 (98%)	219 (94%)	14 (6%)	16 23
14	SG	191/222 (86%)	180 (94%)	11 (6%)	17 24
15	SH	182/279 (65%)	175 (96%)	7 (4%)	28 42
16	SI	154/165 (93%)	148 (96%)	6 (4%)	27 41
17	SJ	177/183 (97%)	167 (94%)	10 (6%)	17 26
18	SK	115/116 (99%)	106 (92%)	9 (8%)	10 14
19	SL	151/193 (78%)	142 (94%)	9 (6%)	16 23

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
20	SM	116/122 (95%)	112 (97%)	4 (3%)	32 47
21	SN	91/109 (84%)	88 (97%)	3 (3%)	33 48
22	SO	76/129 (59%)	71 (93%)	5 (7%)	14 19
23	SP	99/119 (83%)	94 (95%)	5 (5%)	20 29
24	SQ	120/121 (99%)	117 (98%)	3 (2%)	42 60
25	SR	83/121 (69%)	80 (96%)	3 (4%)	30 44
26	SS	114/136 (84%)	102 (90%)	12 (10%)	5 6
27	ST	43/48 (90%)	42 (98%)	1 (2%)	45 63
28	SU	132/133 (99%)	128 (97%)	4 (3%)	36 52
29	SV	131/144 (91%)	125 (95%)	6 (5%)	23 33
30	SW	86/127 (68%)	84 (98%)	2 (2%)	45 63
31	SX	88/130 (68%)	86 (98%)	2 (2%)	45 63
32	SY	137/151 (91%)	130 (95%)	7 (5%)	20 29
33	SZ	60/70 (86%)	55 (92%)	5 (8%)	9 12
37	AL	190/194 (98%)	184 (97%)	6 (3%)	34 50
38	A1	127/132 (96%)	120 (94%)	7 (6%)	18 26
39	A2	98/118 (83%)	95 (97%)	3 (3%)	35 51
40	A4	60/61 (98%)	60 (100%)	0	100 100
41	A6	83/92 (90%)	79 (95%)	4 (5%)	21 32
42	A7	90/112 (80%)	87 (97%)	3 (3%)	33 48
43	AN	136/152 (90%)	131 (96%)	5 (4%)	29 43
44	A8	114/120 (95%)	107 (94%)	7 (6%)	15 22
45	A9	90/127 (71%)	87 (97%)	3 (3%)	33 48
46	Aa	89/128 (70%)	84 (94%)	5 (6%)	17 26
47	Ab	82/97 (84%)	78 (95%)	4 (5%)	21 31
48	Ad	69/83 (83%)	66 (96%)	3 (4%)	25 36
49	Ae	40/48 (83%)	40 (100%)	0	100 100
50	Af	45/114 (40%)	44 (98%)	1 (2%)	47 65
51	AP	179/180 (99%)	170 (95%)	9 (5%)	20 30
52	Ah	70/80 (88%)	65 (93%)	5 (7%)	12 17
53	Ai	87/93 (94%)	85 (98%)	2 (2%)	45 63

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
54	AI	189/203 (93%)	177 (94%)	12 (6%)	15 21
55	AJ	204/260 (78%)	197 (97%)	7 (3%)	32 47
56	Ac	74/77 (96%)	73 (99%)	1 (1%)	62 77
57	AK	181/182 (100%)	175 (97%)	6 (3%)	33 48
58	AM	106/110 (96%)	100 (94%)	6 (6%)	17 25
59	AS	158/159 (99%)	152 (96%)	6 (4%)	28 42
60	AO	121/122 (99%)	118 (98%)	3 (2%)	42 60
61	AQ	165/190 (87%)	161 (98%)	4 (2%)	44 61
62	AR	215/254 (85%)	207 (96%)	8 (4%)	29 43
63	AW	128/131 (98%)	123 (96%)	5 (4%)	27 41
64	AY	90/177 (51%)	83 (92%)	7 (8%)	10 14
65	AT	162/163 (99%)	152 (94%)	10 (6%)	15 22
66	AZ	111/115 (96%)	105 (95%)	6 (5%)	18 27
67	A3	110/115 (96%)	106 (96%)	4 (4%)	30 44
68	A5	201/231 (87%)	196 (98%)	5 (2%)	42 60
69	AD	191/202 (95%)	185 (97%)	6 (3%)	35 51
70	AE	335/340 (98%)	325 (97%)	10 (3%)	36 52
71	AF	336/352 (96%)	325 (97%)	11 (3%)	33 48
72	AG	110/155 (71%)	104 (94%)	6 (6%)	18 26
73	AU	162/166 (98%)	156 (96%)	6 (4%)	29 43
74	AH	168/173 (97%)	153 (91%)	15 (9%)	8 10
75	AV	140/144 (97%)	130 (93%)	10 (7%)	12 17
76	Ag	34/35 (97%)	31 (91%)	3 (9%)	8 10
77	AX	92/131 (70%)	83 (90%)	9 (10%)	6 8
78	A0	53/146 (36%)	52 (98%)	1 (2%)	52 69
All	All	9099/10617 (86%)	8689 (96%)	410 (4%)	26 34

All (410) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	S1	40	VAL
1	S1	53	VAL
3	S3	11	SER

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Mol	Chain	Res	Type
3	S3	76	SER
3	S3	95	ARG
4	S4	21	ARG
4	S4	57	CYS
4	S4	75	CYS
5	S5	54	LEU
6	S6	30	LEU
6	S6	31	THR
9	SB	24	PHE
9	SB	46	THR
9	SB	48	VAL
9	SB	52	ILE
9	SB	119	THR
9	SB	122	GLU
9	SB	139	CYS
9	SB	144	LYS
9	SB	204	ILE
9	SB	210	VAL
9	SB	211	LEU
10	SC	45	VAL
10	SC	47	ILE
10	SC	58	GLN
10	SC	81	PHE
10	SC	98	ILE
10	SC	103	THR
10	SC	123	VAL
11	SD	110	LEU
11	SD	112	LYS
11	SD	114	LEU
11	SD	135	CYS
11	SD	139	VAL
11	SD	151	MET
11	SD	158	LEU
11	SD	161	THR
11	SD	167	ARG
11	SD	177	GLN
12	SE	16	LYS
12	SE	36	LEU
12	SE	42	ILE
12	SE	49	LEU
12	SE	60	LEU
12	SE	134	ILE

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Mol	Chain	Res	Type
12	SE	140	MET
12	SE	155	HIS
12	SE	162	SER
13	SF	26	GLN
13	SF	70	VAL
13	SF	74	ASN
13	SF	101	LEU
13	SF	126	VAL
13	SF	127	LYS
13	SF	135	ARG
13	SF	136	LEU
13	SF	172	HIS
13	SF	189	VAL
13	SF	197	SER
13	SF	204	THR
13	SF	214	ARG
13	SF	249	ILE
14	SG	45	THR
14	SG	98	VAL
14	SG	108	THR
14	SG	151	VAL
14	SG	162	ASP
14	SG	168	MET
14	SG	177	VAL
14	SG	191	VAL
14	SG	195	THR
14	SG	231	SER
14	SG	234	TYR
15	SH	13	GLN
15	SH	64	ILE
15	SH	102	VAL
15	SH	144	LEU
15	SH	170	PHE
15	SH	185	LEU
15	SH	190	LEU
16	SI	51	ARG
16	SI	73	ASN
16	SI	135	LEU
16	SI	137	ARG
16	SI	140	GLN
16	SI	190	VAL
17	SJ	50	ILE

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Mol	Chain	Res	Type
17	SJ	60	ILE
17	SJ	62	ILE
17	SJ	64	ILE
17	SJ	88	THR
17	SJ	127	LEU
17	SJ	135	GLU
17	SJ	137	ILE
17	SJ	152	LYS
17	SJ	164	ASN
18	SK	18	GLU
18	SK	34	VAL
18	SK	52	ILE
18	SK	55	ASP
18	SK	63	VAL
18	SK	69	ILE
18	SK	80	ASP
18	SK	88	LYS
18	SK	115	GLU
19	SL	9	HIS
19	SL	13	LEU
19	SL	29	LEU
19	SL	31	ARG
19	SL	61	ASP
19	SL	81	VAL
19	SL	84	ASN
19	SL	91	VAL
19	SL	206	LEU
20	SM	50	TYR
20	SM	76	THR
20	SM	117	LEU
20	SM	138	ARG
21	SN	39	MET
21	SN	62	ILE
21	SN	98	THR
22	SO	29	GLU
22	SO	31	VAL
22	SO	53	ILE
22	SO	72	TRP
22	SO	87	LEU
23	SP	27	VAL
23	SP	53	LEU
23	SP	67	ASP

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Mol	Chain	Res	Type
23	SP	81	VAL
23	SP	87	GLU
24	SQ	56	LYS
24	SQ	100	ASP
24	SQ	131	SER
25	SR	25	ILE
25	SR	72	ILE
25	SR	73	THR
26	SS	17	ILE
26	SS	23	ASP
26	SS	32	LEU
26	SS	52	VAL
26	SS	77	THR
26	SS	81	ILE
26	SS	96	LYS
26	SS	105	LEU
26	SS	119	ILE
26	SS	121	LEU
26	SS	128	HIS
26	SS	139	LYS
27	ST	12	TYR
28	SU	37	ILE
28	SU	71	ILE
28	SU	74	ILE
28	SU	87	ASP
29	SV	11	ARG
29	SV	47	THR
29	SV	55	VAL
29	SV	89	ILE
29	SV	109	ASN
29	SV	127	THR
30	SW	4	VAL
30	SW	48	ASN
31	SX	28	LEU
31	SX	90	VAL
32	SY	18	GLU
32	SY	29	ILE
32	SY	56	TRP
32	SY	71	LEU
32	SY	76	TYR
32	SY	135	TYR
32	SY	139	ASN

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Mol	Chain	Res	Type
33	SZ	42	ASN
33	SZ	44	VAL
33	SZ	63	GLU
33	SZ	68	LEU
33	SZ	71	LEU
37	AL	22	ARG
37	AL	23	VAL
37	AL	48	THR
37	AL	72	LYS
37	AL	123	VAL
37	AL	170	PHE
38	A1	13	ILE
38	A1	33	THR
38	A1	46	ILE
38	A1	51	LEU
38	A1	74	CYS
38	A1	118	PHE
38	A1	144	LEU
39	A2	28	LYS
39	A2	38	VAL
39	A2	111	LYS
41	A6	22	LYS
41	A6	27	GLN
41	A6	77	ASN
41	A6	100	ASP
42	A7	36	LYS
42	A7	81	VAL
42	A7	85	ARG
43	AN	49	VAL
43	AN	82	LYS
43	AN	87	CYS
43	AN	88	LYS
43	AN	145	ILE
44	A8	3	VAL
44	A8	38	ILE
44	A8	39	ASP
44	A8	51	LEU
44	A8	73	LYS
44	A8	90	THR
44	A8	94	VAL
45	A9	68	VAL
45	A9	93	ASP

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Mol	Chain	Res	Type
45	A9	106	ARG
46	Aa	20	VAL
46	Aa	36	LYS
46	Aa	69	ASN
46	Aa	85	ILE
46	Aa	105	LEU
47	Ab	50	GLU
47	Ab	83	LYS
47	Ab	99	LYS
47	Ab	103	LEU
48	Ad	36	THR
48	Ad	37	VAL
48	Ad	39	THR
50	Af	14	ASN
51	AP	27	THR
51	AP	49	ARG
51	AP	60	VAL
51	AP	70	ASP
51	AP	80	VAL
51	AP	89	VAL
51	AP	90	HIS
51	AP	197	GLN
51	AP	199	ILE
52	Ah	29	ILE
52	Ah	38	LEU
52	Ah	47	THR
52	Ah	64	VAL
52	Ah	84	ILE
53	Ai	13	SER
53	Ai	83	THR
54	AI	46	VAL
54	AI	59	VAL
54	AI	83	LEU
54	AI	99	VAL
54	AI	105	VAL
54	AI	109	THR
54	AI	111	ILE
54	AI	120	LEU
54	AI	122	ASP
54	AI	135	SER
54	AI	139	THR
54	AI	186	ILE

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Mol	Chain	Res	Type
55	AJ	73	ARG
55	AJ	75	ILE
55	AJ	93	SER
55	AJ	123	ASP
55	AJ	167	LEU
55	AJ	192	VAL
55	AJ	211	THR
56	Ac	75	ARG
57	AK	32	ILE
57	AK	63	THR
57	AK	70	LEU
57	AK	144	VAL
57	AK	179	GLU
57	AK	183	GLU
58	AM	12	LYS
58	AM	34	LYS
58	AM	70	ASP
58	AM	73	LYS
58	AM	76	LEU
58	AM	95	ILE
59	AS	8	VAL
59	AS	74	HIS
59	AS	78	ILE
59	AS	168	SER
59	AS	174	GLU
59	AS	181	LYS
60	AO	3	THR
60	AO	12	ARG
60	AO	99	VAL
61	AQ	82	LYS
61	AQ	125	VAL
61	AQ	126	VAL
61	AQ	129	VAL
62	AR	60	VAL
62	AR	80	SER
62	AR	144	ILE
62	AR	150	VAL
62	AR	157	THR
62	AR	180	ASN
62	AR	230	ILE
62	AR	240	LEU
63	AW	8	ILE

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Mol	Chain	Res	Type
63	AW	22	LEU
63	AW	43	GLU
63	AW	58	VAL
63	AW	106	ASN
64	AY	101	HIS
64	AY	126	GLU
64	AY	158	VAL
64	AY	167	ASP
64	AY	178	HIS
64	AY	183	VAL
64	AY	185	ASN
65	AT	21	ILE
65	AT	42	LYS
65	AT	56	VAL
65	AT	61	ARG
65	AT	73	ARG
65	AT	77	ILE
65	AT	88	THR
65	AT	115	ASP
65	AT	150	LYS
65	AT	163	LEU
66	AZ	43	LYS
66	AZ	55	VAL
66	AZ	56	LEU
66	AZ	57	ILE
66	AZ	69	VAL
66	AZ	81	VAL
67	A3	16	GLU
67	A3	27	GLU
67	A3	82	LEU
67	A3	87	THR
68	A5	66	SER
68	A5	93	VAL
68	A5	163	VAL
68	A5	168	VAL
68	A5	192	HIS
69	AD	125	THR
69	AD	146	THR
69	AD	149	ARG
69	AD	169	VAL
69	AD	208	GLU
69	AD	235	VAL

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Mol	Chain	Res	Type
70	AE	7	GLU
70	AE	159	CYS
70	AE	175	ILE
70	AE	198	LYS
70	AE	202	VAL
70	AE	223	THR
70	AE	288	LYS
70	AE	345	ARG
70	AE	351	VAL
70	AE	366	ARG
71	AF	14	ASN
71	AF	62	THR
71	AF	79	VAL
71	AF	133	VAL
71	AF	150	VAL
71	AF	217	VAL
71	AF	218	LYS
71	AF	292	ILE
71	AF	298	VAL
71	AF	312	ARG
71	AF	371	ILE
72	AG	17	LEU
72	AG	84	LEU
72	AG	129	VAL
72	AG	130	HIS
72	AG	141	ARG
72	AG	149	SER
73	AU	33	VAL
73	AU	37	CYS
73	AU	86	VAL
73	AU	98	ASN
73	AU	166	LEU
73	AU	176	SER
74	AH	7	THR
74	AH	56	VAL
74	AH	57	VAL
74	AH	83	VAL
74	AH	94	VAL
74	AH	112	GLU
74	AH	113	ILE
74	AH	133	ILE
74	AH	138	ASN

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Mol	Chain	Res	Type
74	AH	139	VAL
74	AH	142	GLU
74	AH	151	GLU
74	AH	154	SER
74	AH	176	ASP
74	AH	184	THR
75	AV	41	VAL
75	AV	51	LYS
75	AV	75	VAL
75	AV	97	VAL
75	AV	116	LEU
75	AV	129	ILE
75	AV	137	LYS
75	AV	148	LYS
75	AV	150	ILE
75	AV	151	THR
76	Ag	3	HIS
76	Ag	30	LYS
76	Ag	38	SER
77	AX	45	ASP
77	AX	46	CYS
77	AX	61	GLU
77	AX	70	VAL
77	AX	82	VAL
77	AX	96	ILE
77	AX	106	LEU
77	AX	113	MET
77	AX	116	ILE
78	A0	46	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (93) such sidechains are listed below:

Mol	Chain	Res	Type
1	S1	4	GLN
1	S1	15	ASN
3	S3	40	ASN
3	S3	50	GLN
4	S4	17	HIS
4	S4	58	ASN
9	SB	42	ASN
9	SB	81	HIS
10	SC	31	ASN

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Mol	Chain	Res	Type
10	SC	69	ASN
10	SC	155	HIS
11	SD	177	GLN
12	SE	83	GLN
12	SE	133	HIS
13	SF	36	HIS
13	SF	116	ASN
13	SF	142	HIS
14	SG	120	ASN
15	SH	7	ASN
15	SH	146	ASN
15	SH	189	ASN
15	SH	210	GLN
17	SJ	164	ASN
18	SK	70	ASN
20	SM	140	GLN
22	SO	50	ASN
22	SO	52	HIS
24	SQ	79	ASN
25	SR	88	ASN
26	SS	19	ASN
26	SS	104	GLN
28	SU	49	GLN
28	SU	57	ASN
28	SU	142	GLN
30	SW	48	ASN
31	SX	46	GLN
33	SZ	35	ASN
33	SZ	60	GLN
38	A1	86	GLN
39	A2	3	ASN
39	A2	39	ASN
39	A2	80	GLN
39	A2	96	GLN
42	A7	114	ASN
43	AN	106	ASN
45	A9	69	ASN
45	A9	75	GLN
46	Aa	12	HIS
47	Ab	104	GLN
49	Ae	19	GLN
50	Af	44	GLN

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Mol	Chain	Res	Type
51	AP	81	HIS
51	AP	92	GLN
54	AI	202	HIS
55	AJ	78	GLN
55	AJ	126	GLN
55	AJ	130	ASN
55	AJ	240	ASN
55	AJ	252	GLN
56	Ac	31	HIS
56	Ac	60	ASN
57	AK	49	ASN
57	AK	54	GLN
57	AK	62	ASN
57	AK	172	ASN
59	AS	18	HIS
59	AS	45	ASN
59	AS	70	HIS
60	AO	14	HIS
61	AQ	92	HIS
62	AR	94	ASN
62	AR	114	ASN
62	AR	221	HIS
62	AR	228	ASN
63	AW	80	GLN
65	AT	170	ASN
66	AZ	18	HIS
67	A3	93	GLN
68	A5	200	GLN
69	AD	21	HIS
70	AE	121	ASN
70	AE	350	GLN
71	AF	50	HIS
71	AF	198	ASN
71	AF	314	GLN
72	AG	39	GLN
73	AU	17	HIS
73	AU	64	ASN
73	AU	114	GLN
74	AH	108	ASN
74	AH	168	ASN
75	AV	96	HIS
77	AX	62	GLN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
34	AA	3163/3788 (83%)	607 (19%)	69 (2%)
35	AC	148/159 (93%)	31 (20%)	5 (3%)
36	AB	117/119 (98%)	20 (17%)	3 (2%)
7	S7	73/74 (98%)	24 (32%)	0
79	S9	75/76 (98%)	15 (20%)	2 (2%)
8	SA	1588/2092 (75%)	355 (22%)	28 (1%)
80	mR	6/7 (85%)	1 (16%)	0
All	All	5170/6315 (81%)	1053 (20%)	107 (2%)

All (1053) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
7	S7	8	U
7	S7	9	G
7	S7	10	G
7	S7	16	U
7	S7	17	U
7	S7	18	G
7	S7	19	G
7	S7	20	U
7	S7	32	U
7	S7	33	C
7	S7	34	U
7	S7	36	A
7	S7	37	U
7	S7	39	A
7	S7	46	G
7	S7	47	G
7	S7	53	A
7	S7	54	G
7	S7	56	U
7	S7	57	C
7	S7	69	U
7	S7	72	C
7	S7	73	C
7	S7	74	A
8	SA	2	A
8	SA	4	C
8	SA	25	C
8	SA	26	A
8	SA	27	U

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Mol	Chain	Res	Type
8	SA	34	G
8	SA	35	U
8	SA	42	G
8	SA	45	U
8	SA	47	A
8	SA	50	C
8	SA	57	G
8	SA	59	G
8	SA	61	A
8	SA	63	G
8	SA	71	A
8	SA	72	U
8	SA	73	A
8	SA	82	G
8	SA	84	A
8	SA	106	A
8	SA	116	A
8	SA	117	G
8	SA	118	U
8	SA	128	A
8	SA	129	U
8	SA	130	U
8	SA	139	A
8	SA	142	G
8	SA	143	A
8	SA	144	U
8	SA	151	G
8	SA	157	G
8	SA	164	C
8	SA	166	A
8	SA	168	U
8	SA	207	G
8	SA	247	G
8	SA	248	G
8	SA	249	A
8	SA	252	U
8	SA	260	A
8	SA	262	A
8	SA	263	A
8	SA	266	A
8	SA	268	C
8	SA	272	U

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Mol	Chain	Res	Type
8	SA	274	A
8	SA	292	G
8	SA	305	G
8	SA	320	C
8	SA	322	G
8	SA	343	G
8	SA	344	C
8	SA	358	G
8	SA	365	A
8	SA	367	C
8	SA	375	U
8	SA	386	U
8	SA	396	G
8	SA	406	A
8	SA	408	U
8	SA	410	G
8	SA	422	A
8	SA	423	A
8	SA	424	G
8	SA	429	G
8	SA	430	C
8	SA	432	G
8	SA	440	G
8	SA	443	A
8	SA	445	U
8	SA	450	C
8	SA	451	A
8	SA	458	A
8	SA	474	A
8	SA	475	C
8	SA	483	A
8	SA	486	A
8	SA	487	A
8	SA	488	U
8	SA	489	G
8	SA	508	U
8	SA	509	U
8	SA	514	U
8	SA	515	U
8	SA	516	G
8	SA	521	G
8	SA	526	G

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Mol	Chain	Res	Type
8	SA	542	C
8	SA	543	A
8	SA	545	A
8	SA	546	G
8	SA	548	A
8	SA	549	A
8	SA	562	A
8	SA	564	G
8	SA	565	U
8	SA	575	G
8	SA	585	U
8	SA	586	A
8	SA	601	A
8	SA	602	G
8	SA	617	G
8	SA	618	U
8	SA	626	A
8	SA	627	A
8	SA	629	A
8	SA	630	C
8	SA	631	G
8	SA	641	G
8	SA	646	U
8	SA	653	A
8	SA	746	U
8	SA	753	U
8	SA	754	A
8	SA	757	A
8	SA	760	C
8	SA	790	U
8	SA	791	U
8	SA	793	G
8	SA	801	G
8	SA	804	U
8	SA	805	A
8	SA	806	A
8	SA	815	G
8	SA	816	U
8	SA	824	A
8	SA	830	U
8	SA	831	U
8	SA	832	A

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Mol	Chain	Res	Type
8	SA	833	A
8	SA	837	A
8	SA	844	G
8	SA	845	U
8	SA	846	G
8	SA	849	U
8	SA	851	A
8	SA	852	A
8	SA	857	A
8	SA	866	A
8	SA	870	A
8	SA	875	A
8	SA	877	U
8	SA	879	A
8	SA	888	A
8	SA	908	U
8	SA	913	U
8	SA	920	A
8	SA	924	A
8	SA	925	C
8	SA	931	A
8	SA	932	U
8	SA	941	C
8	SA	942	U
8	SA	967	A
8	SA	982	A
8	SA	983	G
8	SA	984	A
8	SA	999	A
8	SA	1002	A
8	SA	1004	U
8	SA	1011	G
8	SA	1029	U
8	SA	1035	A
8	SA	1057	A
8	SA	1061	A
8	SA	1062	A
8	SA	1073	U
8	SA	1074	A
8	SA	1095	A
8	SA	1097	C
8	SA	1098	U

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Mol	Chain	Res	Type
8	SA	1099	A
8	SA	1101	G
8	SA	1108	A
8	SA	1109	G
8	SA	1112	G
8	SA	1116	G
8	SA	1167	U
8	SA	1168	U
8	SA	1177	A
8	SA	1182	A
8	SA	1183	U
8	SA	1193	A
8	SA	1197	C
8	SA	1198	U
8	SA	1201	G
8	SA	1239	A
8	SA	1251	G
8	SA	1252	A
8	SA	1259	C
8	SA	1261	A
8	SA	1265	G
8	SA	1268	G
8	SA	1271	G
8	SA	1275	U
8	SA	1276	U
8	SA	1282	U
8	SA	1283	U
8	SA	1285	A
8	SA	1286	U
8	SA	1295	A
8	SA	1296	C
8	SA	1297	A
8	SA	1300	G
8	SA	1301	G
8	SA	1303	A
8	SA	1306	C
8	SA	1307	U
8	SA	1308	C
8	SA	1313	G
8	SA	1316	U
8	SA	1317	A
8	SA	1318	A

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Mol	Chain	Res	Type
8	SA	1363	U
8	SA	1366	A
8	SA	1367	U
8	SA	1374	G
8	SA	1377	U
8	SA	1382	G
8	SA	1384	U
8	SA	1385	U
8	SA	1386	U
8	SA	1387	U
8	SA	1414	A
8	SA	1415	A
8	SA	1416	U
8	SA	1417	U
8	SA	1422	U
8	SA	1423	A
8	SA	1436	U
8	SA	1440	C
8	SA	1443	G
8	SA	1444	C
8	SA	1445	U
8	SA	1446	A
8	SA	1447	A
8	SA	1448	U
8	SA	1449	U
8	SA	1453	G
8	SA	1454	G
8	SA	1455	C
8	SA	1456	G
8	SA	1460	A
8	SA	1464	U
8	SA	1606	U
8	SA	1625	C
8	SA	1626	U
8	SA	1629	G
8	SA	1630	A
8	SA	1634	A
8	SA	1636	A
8	SA	1637	U
8	SA	1639	G
8	SA	1640	U
8	SA	1644	U

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Mol	Chain	Res	Type
8	SA	1645	C
8	SA	1658	G
8	SA	1659	U
8	SA	1660	U
8	SA	1661	U
8	SA	1662	A
8	SA	1664	G
8	SA	1665	G
8	SA	1673	A
8	SA	1674	G
8	SA	1679	G
8	SA	1682	A
8	SA	1684	G
8	SA	1691	G
8	SA	1693	U
8	SA	1701	G
8	SA	1704	G
8	SA	1706	A
8	SA	1710	G
8	SA	1711	U
8	SA	1712	G
8	SA	1717	A
8	SA	1718	C
8	SA	1720	G
8	SA	1723	A
8	SA	1724	U
8	SA	1727	A
8	SA	1728	U
8	SA	1732	G
8	SA	1735	U
8	SA	1742	A
8	SA	1784	A
8	SA	1787	U
8	SA	1788	U
8	SA	1790	C
8	SA	1792	U
8	SA	1795	G
8	SA	1811	A
8	SA	1812	A
8	SA	1817	U
8	SA	1818	A
8	SA	1819	U

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Mol	Chain	Res	Type
8	SA	1820	C
8	SA	1824	A
8	SA	1833	G
8	SA	1834	A
8	SA	1835	U
8	SA	1836	G
8	SA	1839	G
8	SA	1845	U
8	SA	1854	U
8	SA	1855	U
8	SA	1856	A
8	SA	1862	C
8	SA	1866	A
8	SA	1870	A
8	SA	1871	G
8	SA	1879	U
8	SA	1880	A
8	SA	1881	G
8	SA	1887	A
8	SA	1897	A
8	SA	1898	G
8	SA	1907	G
8	SA	1908	A
8	SA	1911	A
8	SA	1912	C
8	SA	1913	G
8	SA	1916	C
8	SA	1927	U
8	SA	1928	A
8	SA	1932	A
8	SA	1933	C
8	SA	1954	U
8	SA	1955	G
8	SA	1960	A
8	SA	1969	A
8	SA	1976	G
8	SA	1977	G
8	SA	1978	A
8	SA	1979	C
8	SA	1980	A
8	SA	1982	G
8	SA	1986	A

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Mol	Chain	Res	Type
8	SA	2010	U
8	SA	2013	A
8	SA	2049	G
8	SA	2052	G
8	SA	2054	A
8	SA	2061	U
8	SA	2072	G
8	SA	2075	C
8	SA	2084	G
8	SA	2085	G
8	SA	2086	A
8	SA	2087	U
8	SA	2088	C
8	SA	2090	U
34	AA	11	A
34	AA	13	G
34	AA	14	U
34	AA	15	U
34	AA	26	A
34	AA	40	A
34	AA	43	A
34	AA	49	U
34	AA	59	G
34	AA	60	A
34	AA	62	A
34	AA	63	A
34	AA	65	A
34	AA	66	A
34	AA	72	C
34	AA	74	A
34	AA	77	A
34	AA	92	G
34	AA	109	A
34	AA	110	G
34	AA	111	C
34	AA	120	U
34	AA	121	U
34	AA	124	U
34	AA	130	G
34	AA	133	U
34	AA	136	U
34	AA	137	G

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Mol	Chain	Res	Type
34	AA	146	U
34	AA	147	C
34	AA	152	G
34	AA	163	G
34	AA	167	U
34	AA	168	A
34	AA	169	U
34	AA	174	U
34	AA	179	G
34	AA	180	C
34	AA	182	U
34	AA	183	U
34	AA	185	A
34	AA	192	G
34	AA	197	G
34	AA	198	U
34	AA	199	G
34	AA	200	A
34	AA	201	G
34	AA	207	A
34	AA	208	U
34	AA	211	U
34	AA	215	C
34	AA	216	C
34	AA	219	A
34	AA	222	G
34	AA	226	G
34	AA	227	A
34	AA	228	A
34	AA	229	A
34	AA	235	A
34	AA	246	U
34	AA	250	U
34	AA	254	U
34	AA	255	C
34	AA	257	U
34	AA	258	U
34	AA	259	G
34	AA	269	A
34	AA	271	G
34	AA	276	G
34	AA	292	U

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Mol	Chain	Res	Type
34	AA	302	A
34	AA	303	A
34	AA	306	C
34	AA	307	G
34	AA	308	U
34	AA	309	G
34	AA	313	U
34	AA	319	U
34	AA	336	U
34	AA	337	A
34	AA	338	U
34	AA	345	G
34	AA	347	C
34	AA	359	A
34	AA	360	A
34	AA	382	A
34	AA	384	A
34	AA	386	U
34	AA	395	A
34	AA	400	C
34	AA	409	A
34	AA	412	A
34	AA	413	C
34	AA	431	G
34	AA	432	A
34	AA	433	A
34	AA	439	U
34	AA	440	A
34	AA	443	A
34	AA	445	A
34	AA	448	A
34	AA	449	A
34	AA	450	A
34	AA	451	C
34	AA	459	G
34	AA	463	G
34	AA	489	U
34	AA	490	U
34	AA	494	U
34	AA	495	U
34	AA	501	U
34	AA	502	U

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Mol	Chain	Res	Type
34	AA	503	A
34	AA	505	A
34	AA	506	A
34	AA	509	A
34	AA	510	A
34	AA	520	U
34	AA	521	U
34	AA	522	A
34	AA	530	U
34	AA	532	C
34	AA	543	U
34	AA	573	U
34	AA	580	A
34	AA	581	C
34	AA	582	U
34	AA	583	U
34	AA	585	C
34	AA	586	U
34	AA	592	C
34	AA	599	G
34	AA	607	A
34	AA	608	A
34	AA	620	U
34	AA	621	C
34	AA	646	A
34	AA	648	U
34	AA	649	U
34	AA	652	A
34	AA	653	A
34	AA	658	U
34	AA	665	U
34	AA	666	U
34	AA	667	U
34	AA	674	U
34	AA	675	A
34	AA	678	A
34	AA	679	U
34	AA	681	U
34	AA	684	G
34	AA	685	U
34	AA	694	U
34	AA	697	A

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Mol	Chain	Res	Type
34	AA	698	G
34	AA	699	U
34	AA	704	U
34	AA	708	A
34	AA	715	U
34	AA	716	C
34	AA	722	G
34	AA	727	A
34	AA	738	A
34	AA	755	A
34	AA	757	U
34	AA	759	U
34	AA	765	A
34	AA	767	U
34	AA	768	C
34	AA	772	A
34	AA	773	A
34	AA	774	A
34	AA	778	U
34	AA	779	U
34	AA	793	A
34	AA	806	G
34	AA	809	A
34	AA	810	U
34	AA	812	U
34	AA	813	G
34	AA	818	C
34	AA	822	A
34	AA	826	U
34	AA	857	C
34	AA	859	C
34	AA	860	A
34	AA	871	A
34	AA	874	A
34	AA	889	U
34	AA	890	G
34	AA	891	C
34	AA	893	U
34	AA	896	U
34	AA	899	A
34	AA	900	G
34	AA	903	C

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Mol	Chain	Res	Type
34	AA	904	G
34	AA	905	A
34	AA	918	G
34	AA	925	A
34	AA	936	A
34	AA	945	G
34	AA	949	A
34	AA	950	G
34	AA	966	A
34	AA	969	U
34	AA	980	A
34	AA	984	A
34	AA	986	U
34	AA	988	G
34	AA	993	U
34	AA	998	U
34	AA	999	G
34	AA	1016	A
34	AA	1026	G
34	AA	1027	G
34	AA	1033	A
34	AA	1035	G
34	AA	1036	A
34	AA	1040	A
34	AA	1042	C
34	AA	1043	G
34	AA	1052	A
34	AA	1056	G
34	AA	1063	A
34	AA	1070	A
34	AA	1078	C
34	AA	1099	U
34	AA	1100	A
34	AA	1101	A
34	AA	1102	U
34	AA	1107	U
34	AA	1108	U
34	AA	1114	A
34	AA	1123	U
34	AA	1124	A
34	AA	1132	G
34	AA	1158	G

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Mol	Chain	Res	Type
34	AA	1170	A
34	AA	1172	C
34	AA	1187	A
34	AA	1193	G
34	AA	1194	A
34	AA	1197	U
34	AA	1198	A
34	AA	1199	A
34	AA	1200	C
34	AA	1206	U
34	AA	1215	A
34	AA	1217	U
34	AA	1218	C
34	AA	1221	A
34	AA	1222	U
34	AA	1223	U
34	AA	1225	A
34	AA	1229	A
34	AA	1230	A
34	AA	1231	A
34	AA	1233	A
34	AA	1245	G
34	AA	1259	G
34	AA	1272	U
34	AA	1281	C
34	AA	1287	A
34	AA	1296	U
34	AA	1309	U
34	AA	1310	A
34	AA	1320	G
34	AA	1325	C
34	AA	1329	U
34	AA	1337	G
34	AA	1340	G
34	AA	1346	U
34	AA	1417	G
34	AA	1435	G
34	AA	1436	A
34	AA	1437	U
34	AA	1441	G
34	AA	1445	A
34	AA	1450	G

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Mol	Chain	Res	Type
34	AA	1458	A
34	AA	1476	A
34	AA	1480	G
34	AA	1481	A
34	AA	1498	U
34	AA	1499	U
34	AA	1503	A
34	AA	1504	A
34	AA	1535	G
34	AA	1537	G
34	AA	1538	U
34	AA	1539	U
34	AA	1547	A
34	AA	1550	A
34	AA	1554	G
34	AA	1565	G
34	AA	1567	A
34	AA	1575	C
34	AA	1583	G
34	AA	1586	C
34	AA	1595	A
34	AA	1599	G
34	AA	1601	A
34	AA	1602	A
34	AA	1604	U
34	AA	1619	U
34	AA	1630	A
34	AA	1637	G
34	AA	1651	C
34	AA	1657	U
34	AA	1685	G
34	AA	1700	U
34	AA	1703	U
34	AA	1704	U
34	AA	1705	A
34	AA	1706	A
34	AA	1707	A
34	AA	1725	U
34	AA	1732	A
34	AA	1736	A
34	AA	1737	A
34	AA	1748	A

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Mol	Chain	Res	Type
34	AA	1750	U
34	AA	1762	A
34	AA	1763	G
34	AA	1767	U
34	AA	1770	G
34	AA	1771	A
34	AA	1783	G
34	AA	1788	C
34	AA	1793	A
34	AA	1797	A
34	AA	1800	U
34	AA	1801	G
34	AA	1806	C
34	AA	1812	C
34	AA	1817	G
34	AA	1838	U
34	AA	1842	U
34	AA	1855	U
34	AA	1856	U
34	AA	1870	G
34	AA	1881	C
34	AA	1882	U
34	AA	1886	A
34	AA	1899	U
34	AA	1900	G
34	AA	1902	A
34	AA	1903	C
34	AA	1904	U
34	AA	1905	C
34	AA	1911	A
34	AA	1914	A
34	AA	1964	G
34	AA	1969	A
34	AA	1970	A
34	AA	1971	U
34	AA	1980	G
34	AA	1981	U
34	AA	1991	U
34	AA	1996	C
34	AA	1997	G
34	AA	2000	G
34	AA	2018	G

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Mol	Chain	Res	Type
34	AA	2019	A
34	AA	2031	A
34	AA	2034	G
34	AA	2070	U
34	AA	2072	U
34	AA	2080	C
34	AA	2081	U
34	AA	2084	U
34	AA	2090	U
34	AA	2092	G
34	AA	2093	U
34	AA	2095	U
34	AA	2096	G
34	AA	2102	A
34	AA	2106	A
34	AA	2107	C
34	AA	2108	A
34	AA	2109	A
34	AA	2133	C
34	AA	2145	A
34	AA	2146	A
34	AA	2147	A
34	AA	2148	U
34	AA	2154	A
34	AA	2161	G
34	AA	2174	G
34	AA	2175	C
34	AA	2180	U
34	AA	2181	A
34	AA	2218	C
34	AA	2219	A
34	AA	2220	U
34	AA	2389	G
34	AA	2394	C
34	AA	2395	U
34	AA	2403	G
34	AA	2404	A
34	AA	2405	A
34	AA	2406	A
34	AA	2415	G
34	AA	2424	A
34	AA	2433	U

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Mol	Chain	Res	Type
34	AA	2437	A
34	AA	2451	A
34	AA	2453	A
34	AA	2461	A
34	AA	2463	U
34	AA	2464	G
34	AA	2485	C
34	AA	2500	A
34	AA	2516	A
34	AA	2518	U
34	AA	2521	A
34	AA	2524	C
34	AA	2525	A
34	AA	2532	G
34	AA	2537	A
34	AA	2542	G
34	AA	2545	A
34	AA	2549	A
34	AA	2550	C
34	AA	2565	G
34	AA	2566	G
34	AA	2573	A
34	AA	2591	U
34	AA	2600	G
34	AA	2601	C
34	AA	2603	U
34	AA	2606	A
34	AA	2607	U
34	AA	2608	G
34	AA	2627	U
34	AA	2628	G
34	AA	2629	U
34	AA	2652	C
34	AA	2666	A
34	AA	2667	C
34	AA	2668	G
34	AA	2680	A
34	AA	2681	U
34	AA	2686	G
34	AA	2687	G
34	AA	2690	A
34	AA	2694	A

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Mol	Chain	Res	Type
34	AA	2695	A
34	AA	2696	G
34	AA	2697	A
34	AA	2704	U
34	AA	2705	G
34	AA	2710	U
34	AA	2711	U
34	AA	2728	G
34	AA	2740	A
34	AA	2745	G
34	AA	2810	A
34	AA	2817	U
34	AA	2823	U
34	AA	2824	A
34	AA	2833	U
34	AA	2835	G
34	AA	2886	A
34	AA	2887	U
34	AA	2920	A
34	AA	2932	A
34	AA	2945	G
34	AA	2946	G
34	AA	2953	G
34	AA	2965	A
34	AA	2987	G
34	AA	2990	G
34	AA	2991	U
34	AA	2995	A
34	AA	3013	A
34	AA	3015	A
34	AA	3016	G
34	AA	3018	A
34	AA	3020	U
34	AA	3028	A
34	AA	3030	A
34	AA	3033	A
34	AA	3035	A
34	AA	3061	U
34	AA	3067	G
34	AA	3068	A
34	AA	3073	G
34	AA	3086	A

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Mol	Chain	Res	Type
34	AA	3091	U
34	AA	3092	G
34	AA	3094	C
34	AA	3116	A
34	AA	3123	C
34	AA	3124	G
34	AA	3126	A
34	AA	3127	A
34	AA	3128	A
34	AA	3130	U
34	AA	3131	A
34	AA	3135	A
34	AA	3138	A
34	AA	3141	G
34	AA	3155	G
34	AA	3158	U
34	AA	3159	G
34	AA	3160	A
34	AA	3161	A
34	AA	3169	C
34	AA	3173	G
34	AA	3176	A
34	AA	3187	G
34	AA	3201	C
34	AA	3203	C
34	AA	3204	C
34	AA	3230	G
34	AA	3231	A
34	AA	3246	A
34	AA	3248	C
34	AA	3257	G
34	AA	3258	C
34	AA	3282	U
34	AA	3292	A
34	AA	3293	A
34	AA	3294	U
34	AA	3295	A
34	AA	3301	C
34	AA	3302	G
34	AA	3306	G
34	AA	3310	G
34	AA	3330	A

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Mol	Chain	Res	Type
34	AA	3342	C
34	AA	3349	G
34	AA	3353	A
34	AA	3357	U
34	AA	3362	A
34	AA	3374	U
34	AA	3375	A
34	AA	3377	A
34	AA	3382	U
34	AA	3384	G
34	AA	3385	U
34	AA	3398	A
34	AA	3414	G
34	AA	3415	A
34	AA	3416	G
34	AA	3421	A
34	AA	3442	C
34	AA	3443	A
34	AA	3459	A
34	AA	3463	G
34	AA	3468	G
34	AA	3471	A
34	AA	3477	A
34	AA	3483	U
34	AA	3485	G
34	AA	3500	G
34	AA	3507	A
34	AA	3515	A
34	AA	3516	A
34	AA	3526	U
34	AA	3527	U
34	AA	3549	U
34	AA	3553	G
34	AA	3555	U
34	AA	3571	A
34	AA	3572	A
34	AA	3573	U
34	AA	3574	G
34	AA	3581	A
34	AA	3582	G
34	AA	3585	A
34	AA	3586	U

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Mol	Chain	Res	Type
34	AA	3588	A
34	AA	3590	A
34	AA	3591	U
34	AA	3594	G
34	AA	3615	A
34	AA	3617	A
34	AA	3618	A
34	AA	3623	A
34	AA	3626	A
34	AA	3636	U
34	AA	3658	G
34	AA	3659	C
34	AA	3665	U
34	AA	3666	U
34	AA	3668	U
34	AA	3670	U
34	AA	3684	A
34	AA	3689	C
34	AA	3698	U
34	AA	3707	U
34	AA	3711	U
34	AA	3712	G
34	AA	3732	U
34	AA	3733	G
34	AA	3736	A
34	AA	3737	G
34	AA	3740	A
34	AA	3741	A
34	AA	3761	G
34	AA	3770	C
34	AA	3774	A
34	AA	3775	G
34	AA	3783	G
35	AC	5	A
35	AC	6	C
35	AC	16	G
35	AC	36	C
35	AC	38	G
35	AC	39	C
35	AC	43	G
35	AC	55	A
35	AC	56	A

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Mol	Chain	Res	Type
35	AC	63	A
35	AC	66	C
35	AC	67	G
35	AC	75	A
35	AC	76	A
35	AC	78	U
35	AC	85	A
35	AC	90	G
35	AC	91	A
35	AC	98	A
35	AC	107	A
35	AC	108	A
35	AC	109	U
35	AC	114	A
35	AC	115	C
35	AC	116	U
35	AC	123	A
35	AC	135	G
35	AC	139	A
35	AC	140	G
35	AC	146	C
35	AC	157	A
36	AB	7	G
36	AB	22	G
36	AB	23	C
36	AB	25	A
36	AB	26	C
36	AB	31	G
36	AB	33	U
36	AB	38	U
36	AB	39	C
36	AB	40	A
36	AB	50	A
36	AB	53	U
36	AB	54	A
36	AB	63	A
36	AB	64	A
36	AB	73	U
36	AB	74	A
36	AB	89	G
36	AB	100	A
36	AB	110	G

Continued on next page...

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Mol	Chain	Res	Type
79	S9	3	C
79	S9	4	G
79	S9	5	G
79	S9	8	U
79	S9	10	G
79	S9	18	G
79	S9	19	G
79	S9	20	U
79	S9	34	C
79	S9	35	A
79	S9	46	G
79	S9	47	U
79	S9	48	C
79	S9	74	C
79	S9	76	A
80	mR	16	A

All (107) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
8	SA	105	A
8	SA	246	A
8	SA	248	G
8	SA	291	A
8	SA	423	A
8	SA	525	G
8	SA	752	U
8	SA	805	A
8	SA	844	G
8	SA	981	U
8	SA	998	A
8	SA	1182	A
8	SA	1295	A
8	SA	1362	U
8	SA	1381	C
8	SA	1386	U
8	SA	1413	U
8	SA	1414	A
8	SA	1455	C
8	SA	1786	U
8	SA	1818	A
8	SA	1819	U

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Mol	Chain	Res	Type
8	SA	1865	G
8	SA	1897	A
8	SA	1911	A
8	SA	1968	A
8	SA	2053	U
8	SA	2071	U
34	AA	13	G
34	AA	61	A
34	AA	62	A
34	AA	162	U
34	AA	179	G
34	AA	182	U
34	AA	184	U
34	AA	215	C
34	AA	257	U
34	AA	270	U
34	AA	432	A
34	AA	439	U
34	AA	500	A
34	AA	501	U
34	AA	504	A
34	AA	505	A
34	AA	579	C
34	AA	580	A
34	AA	581	C
34	AA	582	U
34	AA	607	A
34	AA	620	U
34	AA	648	U
34	AA	652	A
34	AA	674	U
34	AA	697	A
34	AA	698	G
34	AA	703	U
34	AA	715	U
34	AA	721	U
34	AA	764	G
34	AA	859	C
34	AA	888	A
34	AA	965	A
34	AA	1035	G
34	AA	1197	U

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Mol	Chain	Res	Type
34	AA	1217	U
34	AA	1222	U
34	AA	1435	G
34	AA	1538	U
34	AA	1574	C
34	AA	1736	A
34	AA	1805	U
34	AA	1841	U
34	AA	1881	C
34	AA	1990	A
34	AA	1996	C
34	AA	1999	A
34	AA	2180	U
34	AA	2219	A
34	AA	2394	C
34	AA	2651	A
34	AA	2816	U
34	AA	2822	U
34	AA	2885	A
34	AA	3130	U
34	AA	3137	U
34	AA	3202	U
34	AA	3230	G
34	AA	3413	A
34	AA	3414	G
34	AA	3476	A
34	AA	3526	U
34	AA	3587	U
34	AA	3590	A
34	AA	3658	G
34	AA	3667	C
34	AA	3688	G
34	AA	3736	A
35	AC	35	A
35	AC	37	A
35	AC	134	G
35	AC	139	A
35	AC	145	A
36	AB	22	G
36	AB	39	C
36	AB	88	A
79	S9	3	C

Continued on next page...

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Mol	Chain	Res	Type
79	S9	34	C

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

The following chains have linkage breaks:

Mol	Chain	Number of breaks
63	AW	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	AW	154:ASN	C	197:UNK	N	31.42

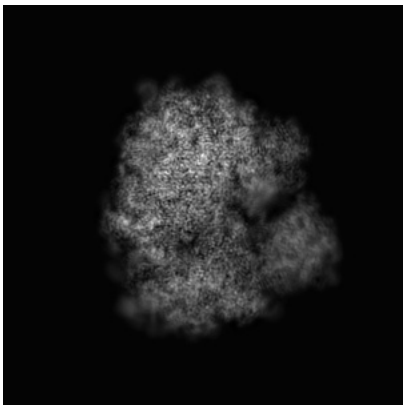
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-44916. These allow visual inspection of the internal detail of the map and identification of artifacts.

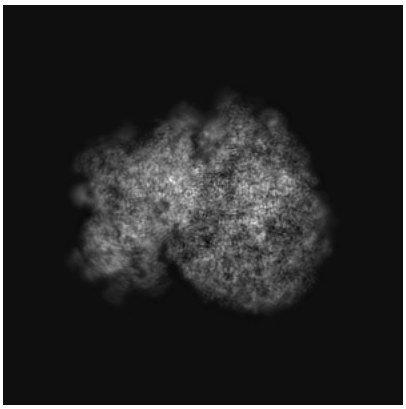
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

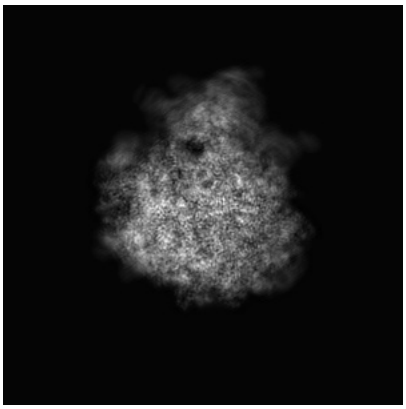
6.1.1 Primary map



X

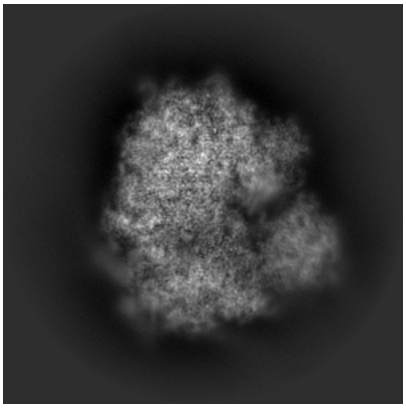


Y

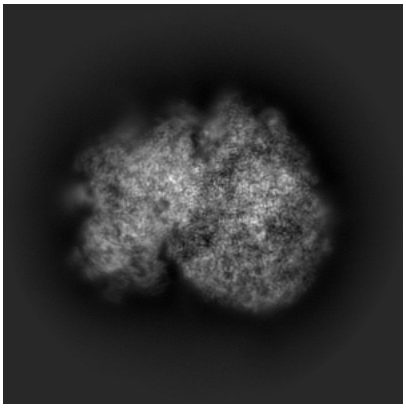


Z

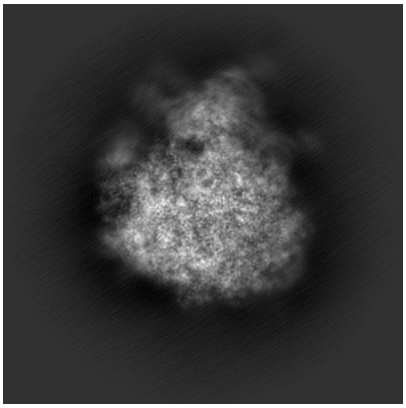
6.1.2 Raw map



X



Y

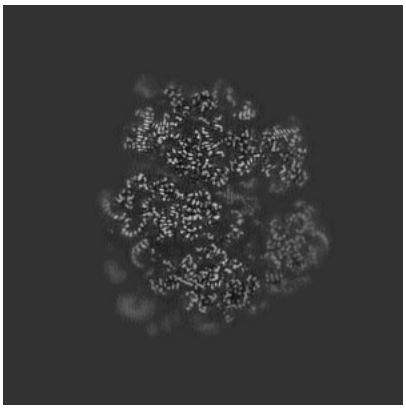


Z

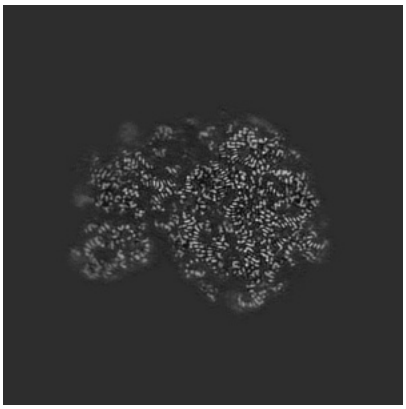
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

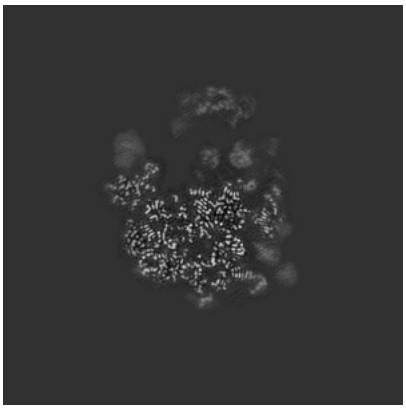
6.2.1 Primary map



X Index: 250

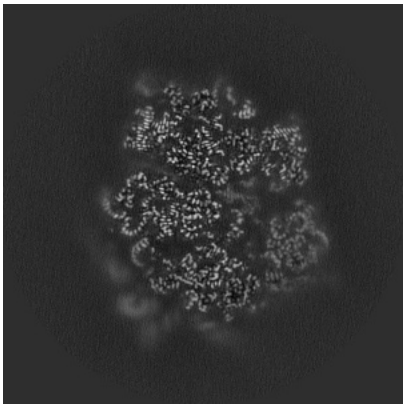


Y Index: 250

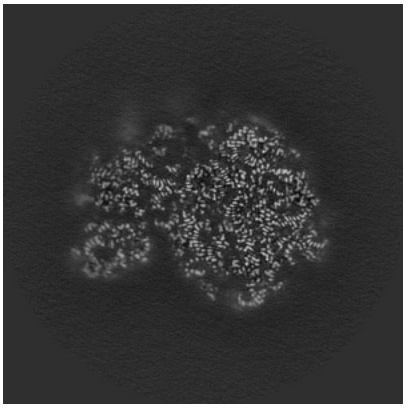


Z Index: 250

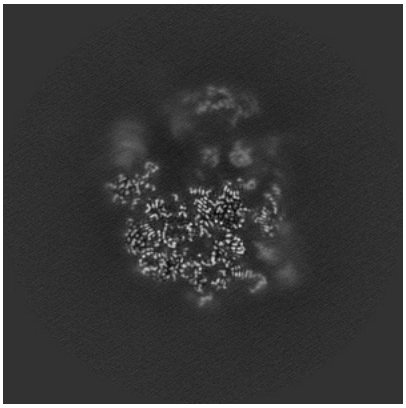
6.2.2 Raw map



X Index: 250



Y Index: 250

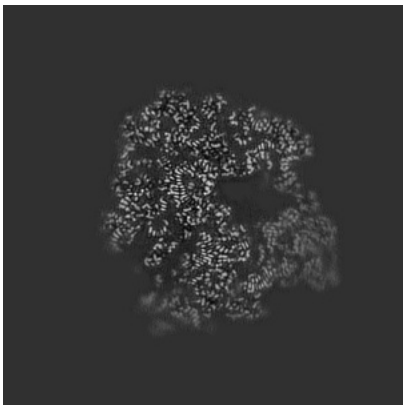


Z Index: 250

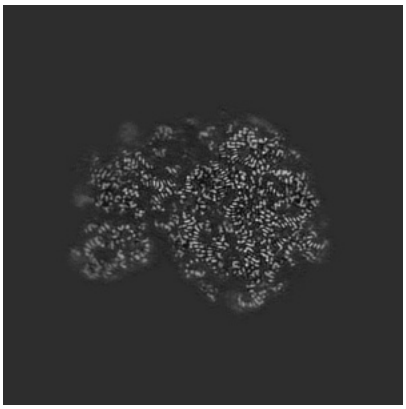
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

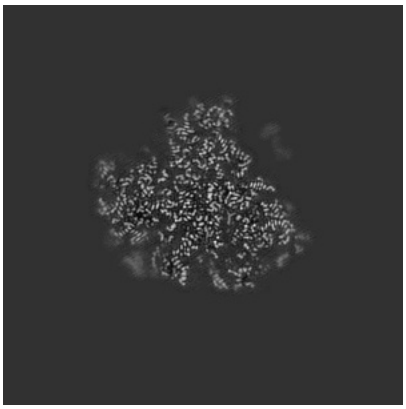
6.3.1 Primary map



X Index: 275

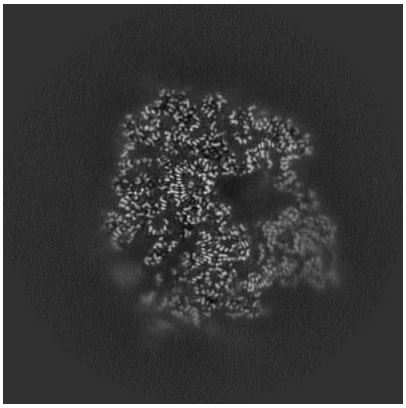


Y Index: 250

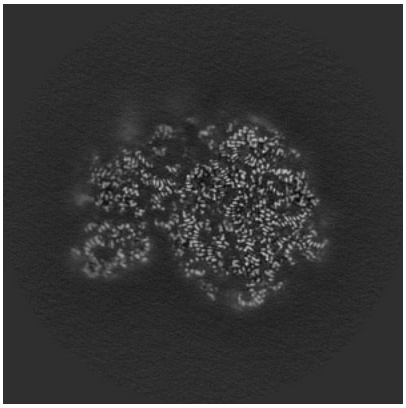


Z Index: 310

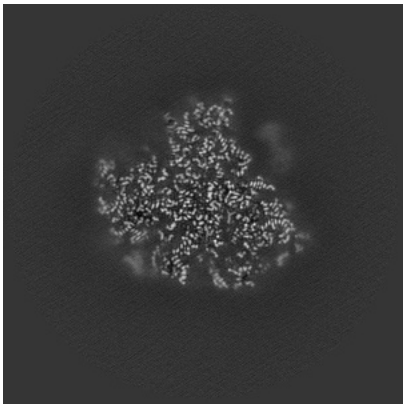
6.3.2 Raw map



X Index: 275



Y Index: 250

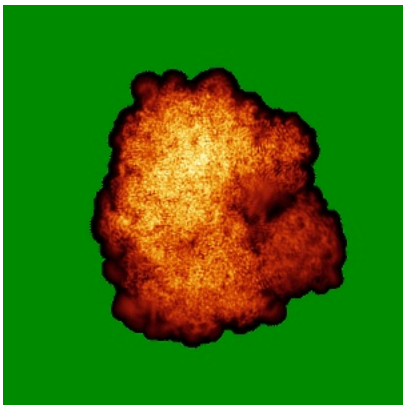


Z Index: 310

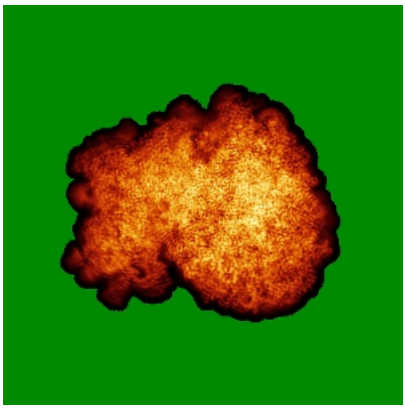
The images above show the largest variance slices of the map in three orthogonal directions.

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

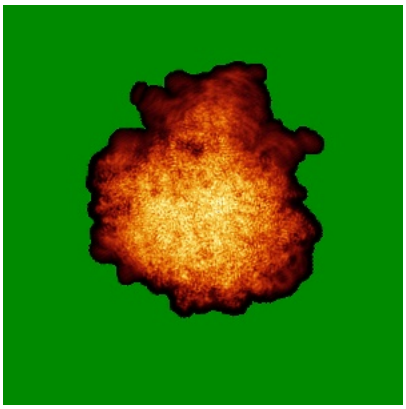
6.4.1 Primary map



X

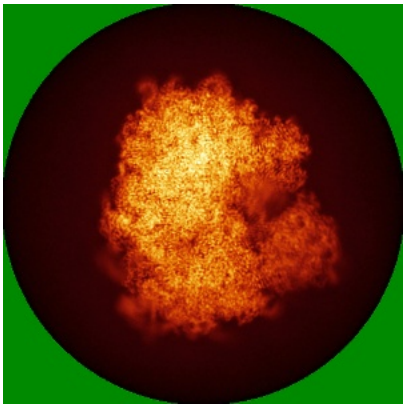


Y

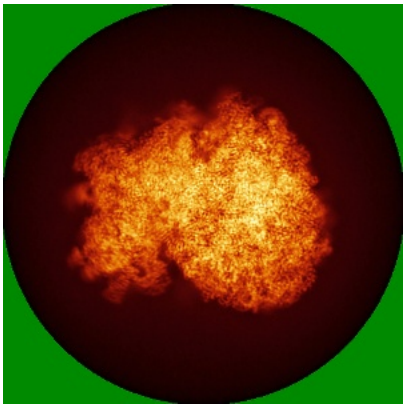


Z

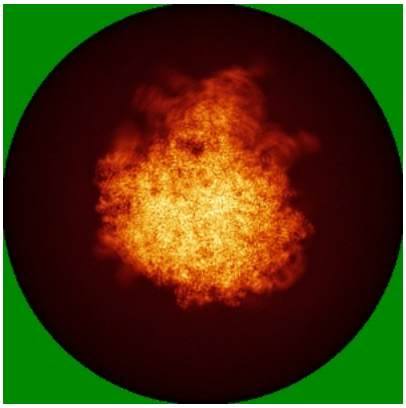
6.4.2 Raw map



X



Y

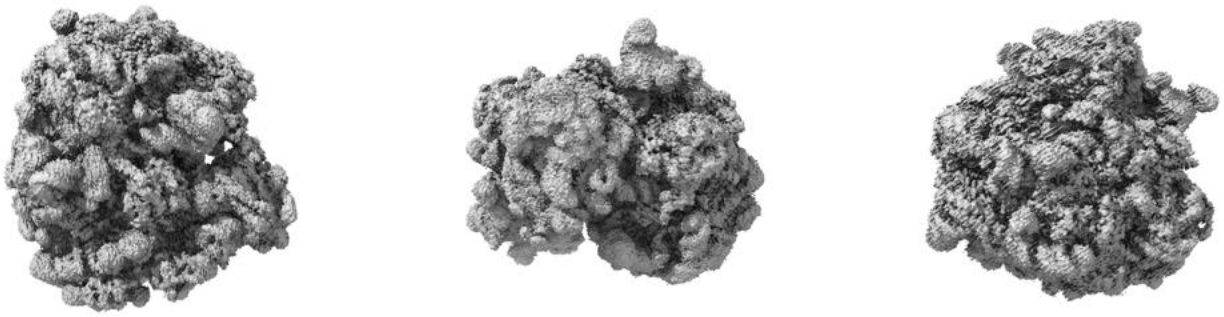


Z

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)

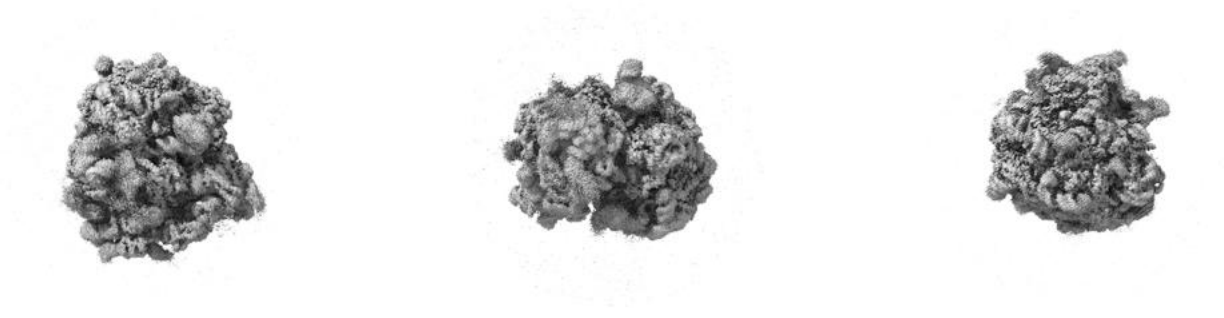
6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.00404. 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.

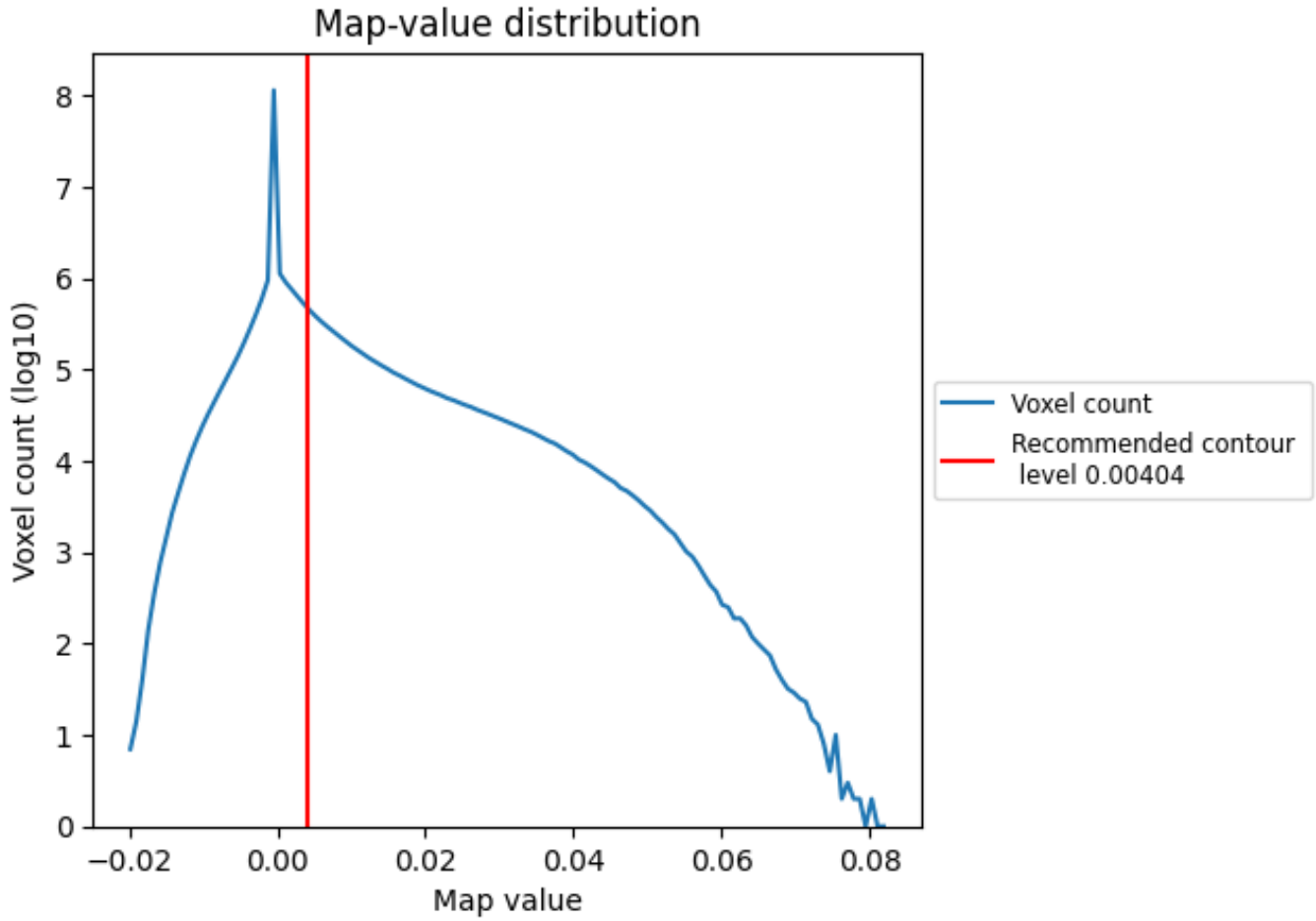
6.6 Mask visualisation (i)

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

7 Map analysis

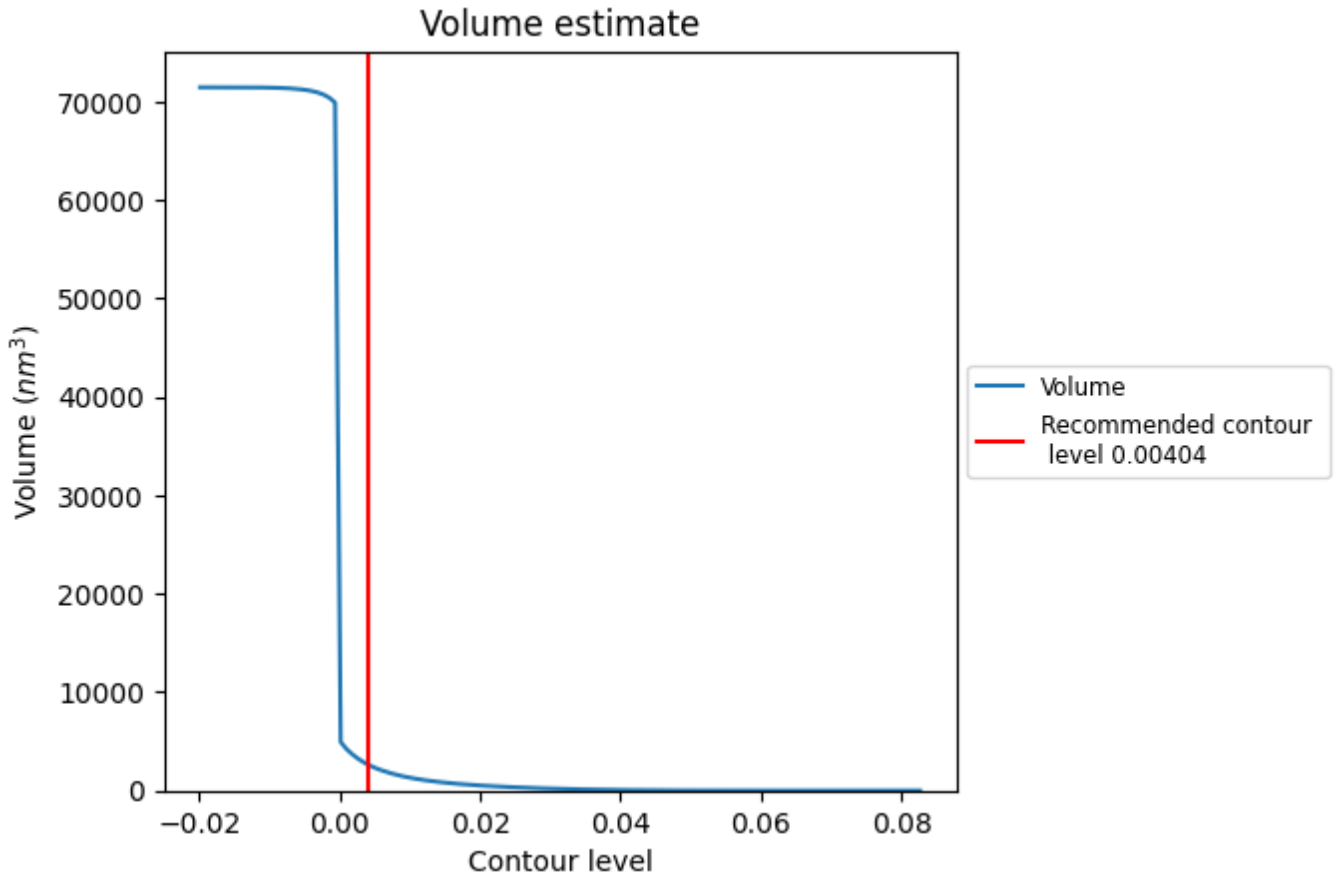
This section contains the results of statistical analysis of the map.

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.

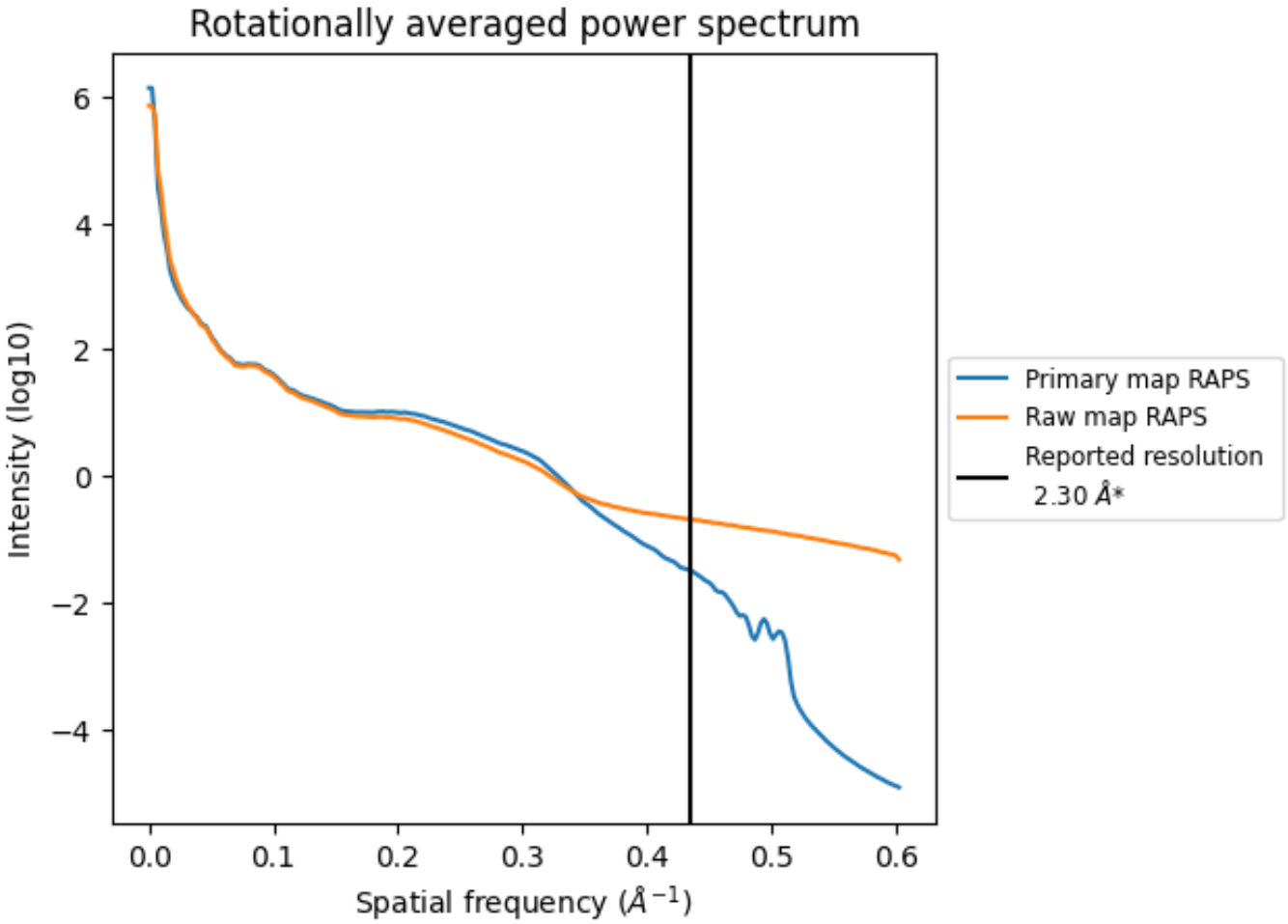
7.2 Volume estimate



The volume at the recommended contour level is 2655 nm^3; this corresponds to an approximate mass of 2399 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)

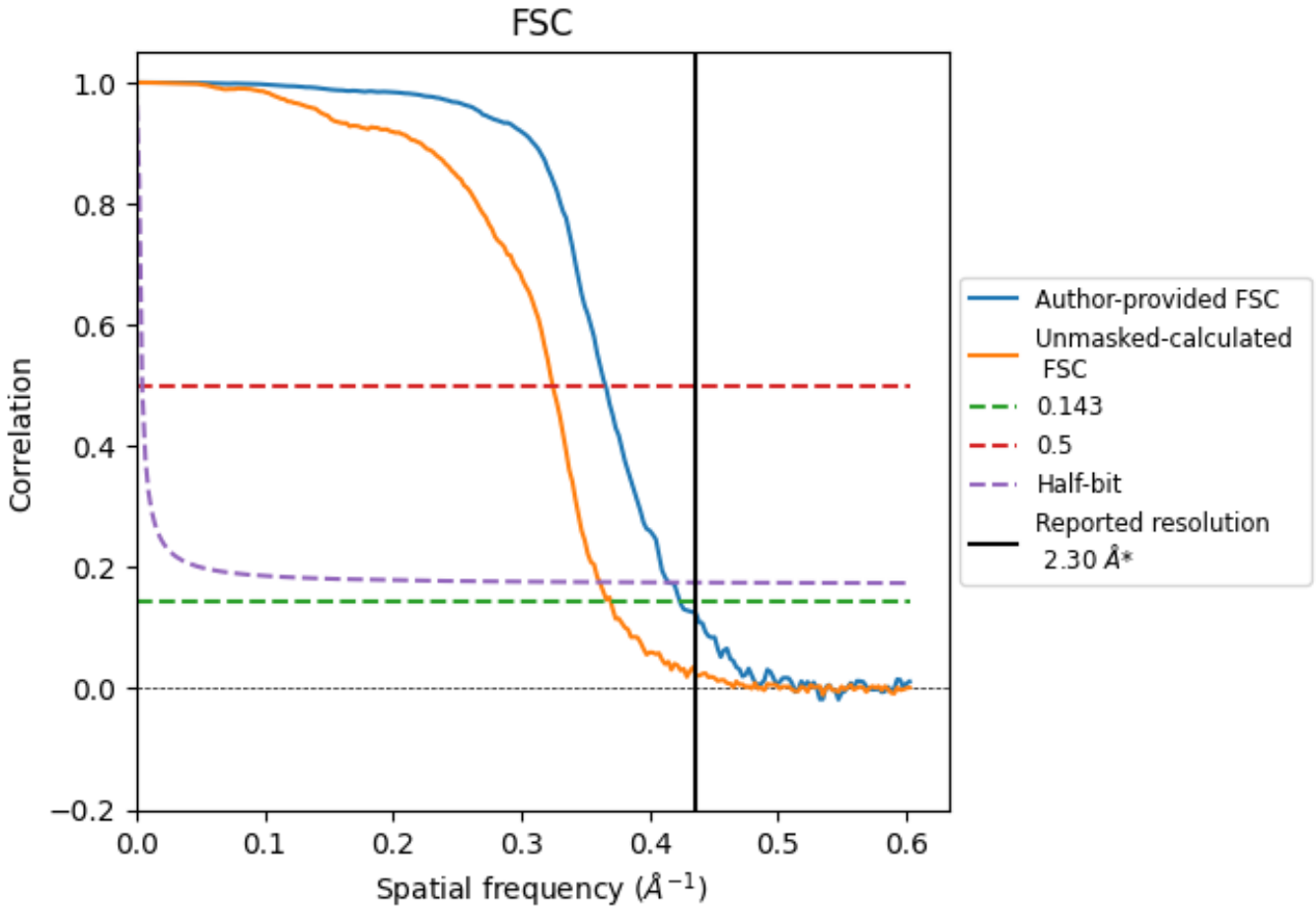


*Reported resolution corresponds to spatial frequency of 0.435 Å^{-1}

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 0.435 Å^{-1}

8.2 Resolution estimates (i)

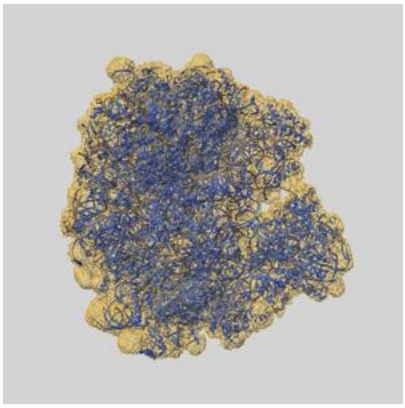
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.30	-	-
Author-provided FSC curve	2.36	2.74	2.41
Unmasked-calculated*	2.71	3.08	2.77

*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 2.71 differs from the reported value 2.3 by more than 10 %

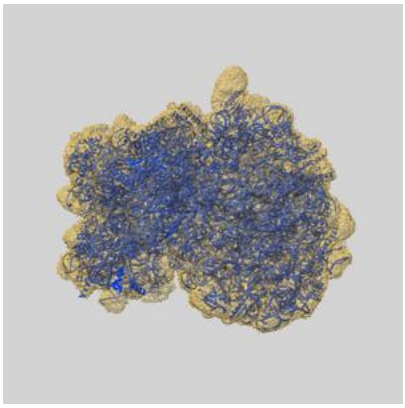
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-44916 and PDB model 9BUQ. Per-residue inclusion information can be found in section 3 on page 18.

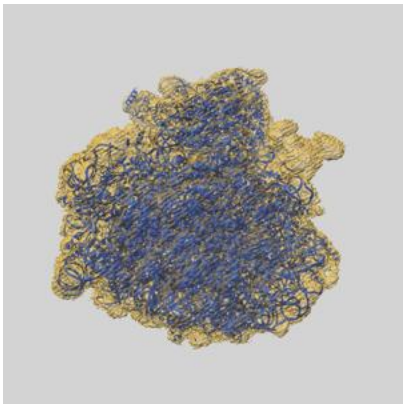
9.1 Map-model overlay



X



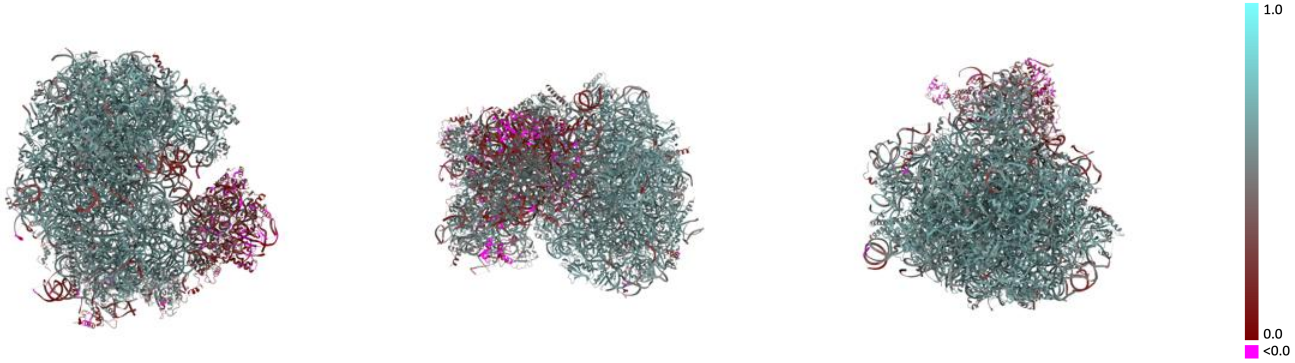
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.00404 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

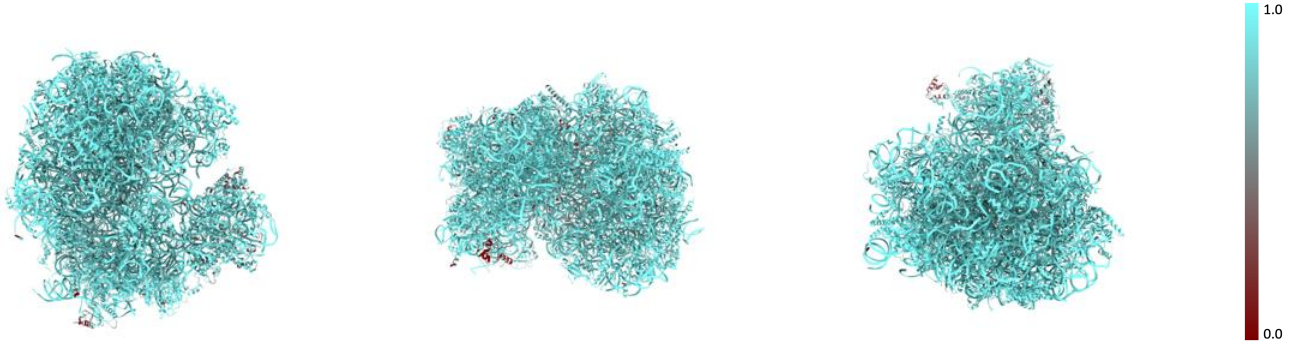
9.2 Q-score mapped to coordinate model



X Y Z

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

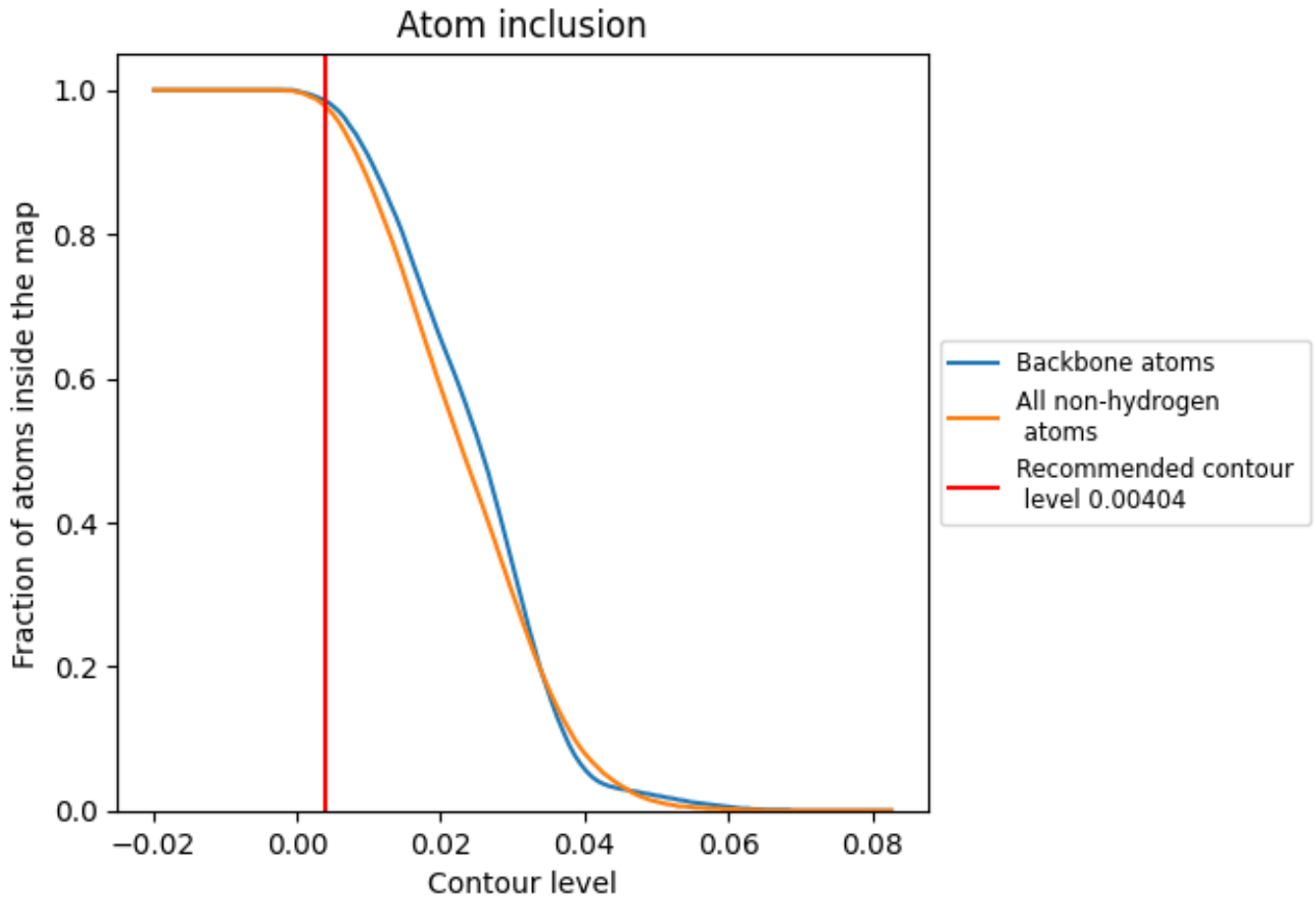
9.3 Atom inclusion mapped to coordinate model



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.00404).

9.4 Atom inclusion (i)



At the recommended contour level, 98% of all backbone atoms, 98% 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 (0.00404) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9770	0.5580
A0	0.9600	0.6110
A1	0.9770	0.5460
A2	0.9840	0.6020
A3	0.9960	0.6080
A4	0.9620	0.5600
A5	0.9890	0.6300
A6	0.9730	0.5860
A7	0.9920	0.6330
A8	0.9880	0.6410
A9	0.9930	0.6540
AA	0.9950	0.6100
AB	0.9970	0.6150
AC	0.9980	0.6200
AD	0.9890	0.6500
AE	0.9940	0.6460
AF	0.9620	0.5960
AG	0.9870	0.5470
AH	0.9960	0.6160
AI	0.9890	0.5940
AJ	0.9560	0.5310
AK	0.9930	0.6440
AL	0.9920	0.6240
AM	0.9820	0.6390
AN	0.9870	0.5930
AO	0.9950	0.6570
AP	0.9900	0.6510
AQ	0.9750	0.5940
AR	0.9850	0.5810
AS	0.9950	0.6530
AT	0.9400	0.5790
AU	0.9930	0.6350
AV	0.9900	0.6180
AW	0.9930	0.6440
AX	0.9630	0.5210

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Chain	Atom inclusion	Q-score
AY	0.9820	0.5860
AZ	0.9890	0.5920
Aa	0.9760	0.6150
Ab	0.9890	0.6000
Ac	0.9930	0.6390
Ad	0.9850	0.5620
Ae	0.9860	0.6320
Af	0.9930	0.6280
Ag	0.9620	0.6160
Ah	0.9880	0.6460
Ai	0.9840	0.6400
S1	0.9660	0.4950
S2	0.5820	0.1060
S3	0.9870	0.6130
S4	0.8810	0.3830
S5	0.7520	0.2300
S6	0.9100	0.4730
S7	0.9750	0.3090
S9	0.9400	0.4860
SA	0.9890	0.5010
SB	0.9700	0.5590
SC	0.9610	0.5010
SD	0.9150	0.3340
SE	0.9560	0.5340
SF	0.9760	0.5690
SG	0.9610	0.5290
SH	0.9690	0.4530
SI	0.8830	0.2630
SJ	0.8390	0.3860
SK	0.9750	0.6040
SL	0.9720	0.5770
SM	0.8330	0.1780
SN	0.8620	0.2100
SO	0.9180	0.2230
SP	0.9670	0.5650
SQ	0.9570	0.5770
SR	0.4270	0.0410
SS	0.8260	0.2140
ST	0.8710	0.3580
SU	0.9540	0.5720
SV	0.9520	0.5820
SW	0.8740	0.2480

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Chain	Atom inclusion	Q-score
SX	0.8520	0.2540
SY	0.9450	0.2580
SZ	0.9760	0.5510
mR	0.9310	0.5090