Full wwPDB EM Validation Report

May 19, 2025 – 06:38 PM EDT

PDB ID	:	9BUS / pdb_00009bus
EMDB ID	:	EMD-44918
Title	:	Single particle CryoEM structure of the Pf80S ribosome in the unloaded state (nrt with E-site tRNA)
Authors	:	Anton, L.; Haile, M.; Ho, C.M.
Deposited on	:	2024-05-17
Resolution	:	2.40 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:

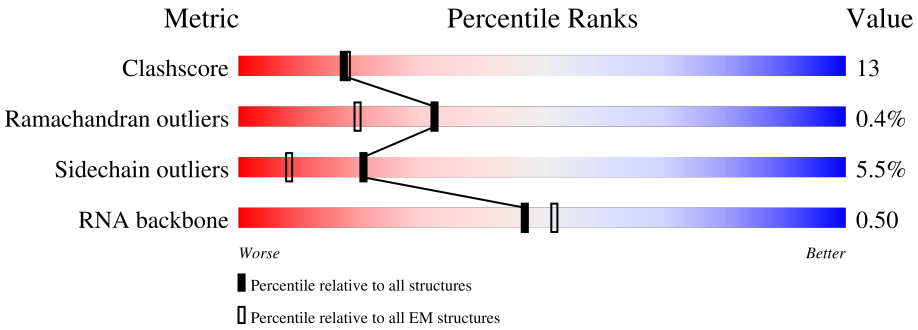
EMDB validation analysis	:	0.0.1.dev118
MolProbity	:	4-5-2 with Phenix2.0rc1
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline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

1 Overall quality at a glance

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

The reported resolution of this entry is 2.40 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	50% 38% • 10%
2	S2	105	29% 29% 10% 61%
3	S3	107	57% 32% 11%
4	S4	82	7% 50% 41% • 7%
5	S5	67	6% 43% 42% • 12%
6	S6	58	45% 28% • 26%
7	S7	74	24% 62% 14%

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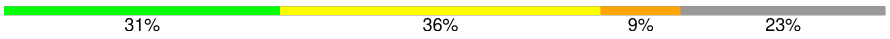
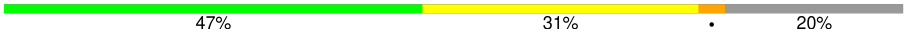
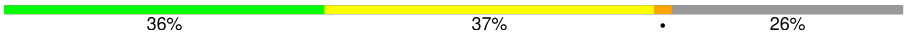
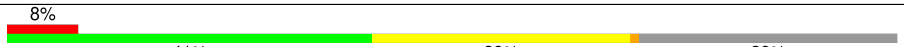
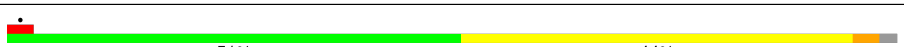
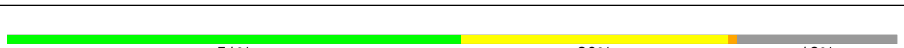
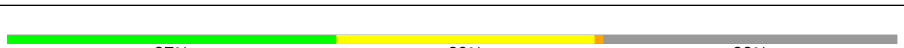
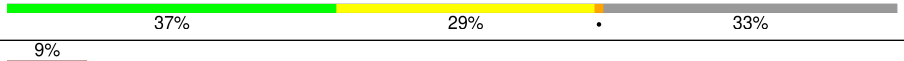
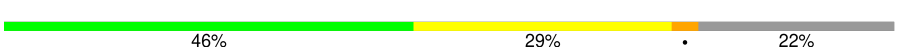
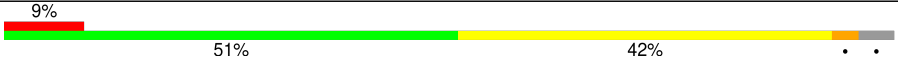
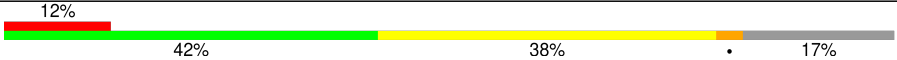
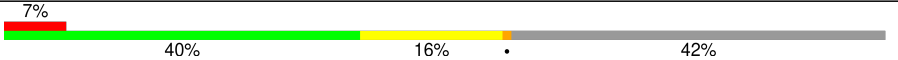
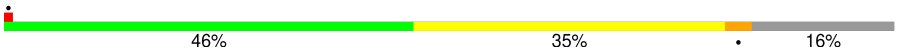
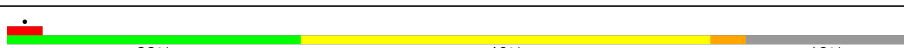
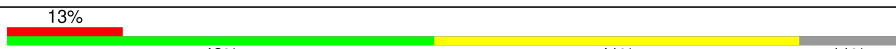
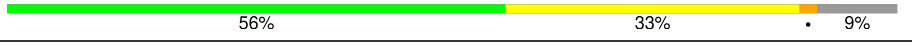
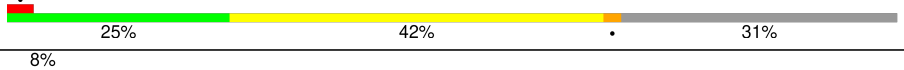
Mol	Chain	Length	Quality of chain
8	SA	2092	
9	SB	262	
10	SC	263	
11	SD	221	
12	SE	189	
13	SF	261	
14	SG	272	
15	SH	306	
16	SI	195	
17	SJ	194	
18	SK	130	
19	SL	218	
20	SM	144	
21	SN	118	
22	SO	137	
23	SP	151	
24	SQ	145	
25	SR	141	
26	SS	156	
27	ST	54	
28	SU	151	
29	SV	161	
30	SW	137	
31	SX	145	
32	SY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

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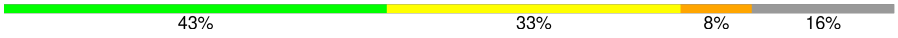
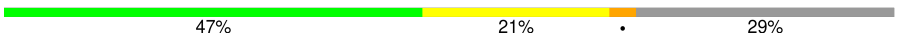
Mol	Chain	Length	Quality of chain
33	SZ	82	
34	AA	3788	
35	AC	159	
36	AB	119	
37	AL	215	
38	A1	146	
39	A2	127	
40	A4	67	
41	A6	108	
42	A7	120	
43	AN	165	
44	A8	131	
45	A9	140	
46	Aa	150	
47	Ab	112	
48	Ad	87	
49	Ae	51	
50	Af	128	
51	AP	205	
52	Ah	96	
53	Ai	104	
54	AI	221	
55	AJ	283	
56	Ac	92	
57	AK	202	

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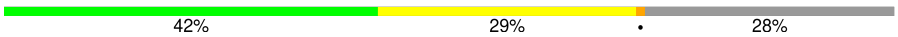
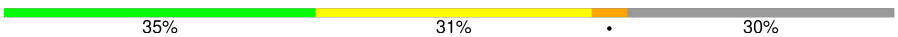
Mol	Chain	Length	Quality of chain
58	AM	139	
59	AS	187	
60	AO	148	
61	AQ	219	
62	AR	294	
63	AW	173	
64	AY	190	
65	AT	182	
66	AZ	126	
67	A3	124	
68	A5	257	
69	AD	260	
70	AE	386	
71	AF	411	
72	AG	173	
73	AU	184	
74	AH	190	
75	AV	161	
76	Ag	39	
77	AX	139	
78	A0	162	

2 Entry composition

There are 78 unique types of molecules in this entry. The entry contains 192985 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
			850	523	184	137	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, putative.

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.

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.

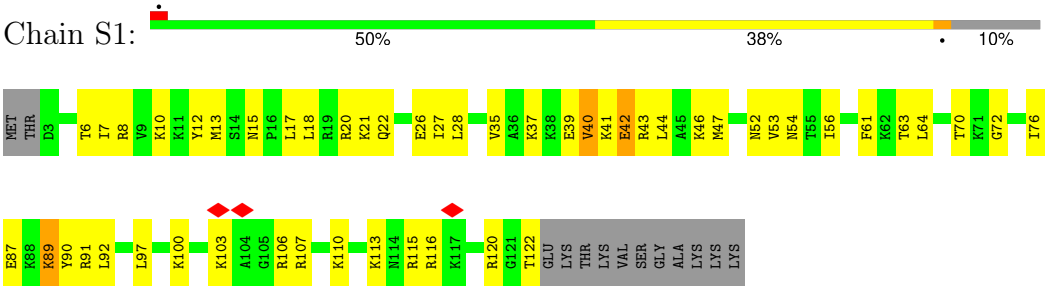
Mol	Chain	Residues	Atoms					AltConf	Trace
78	A0	62	Total	C	N	O	S	0	0
			521	336	97	87	1		

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.

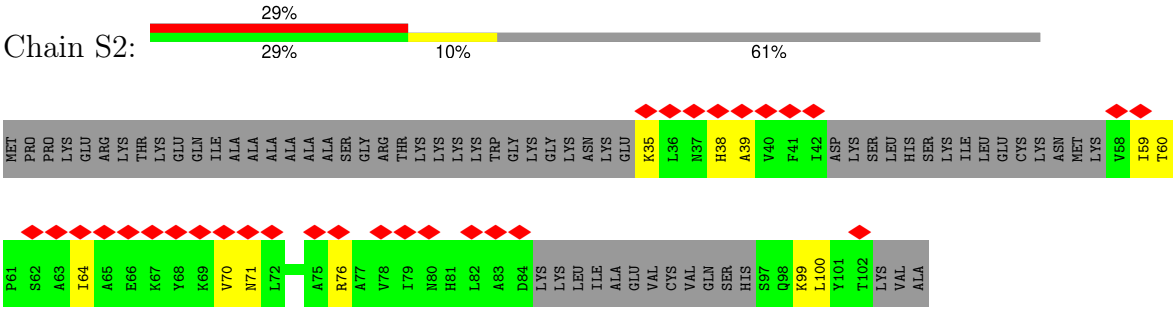
• Molecule 1: 40S ribosomal protein S24

Chain S1:



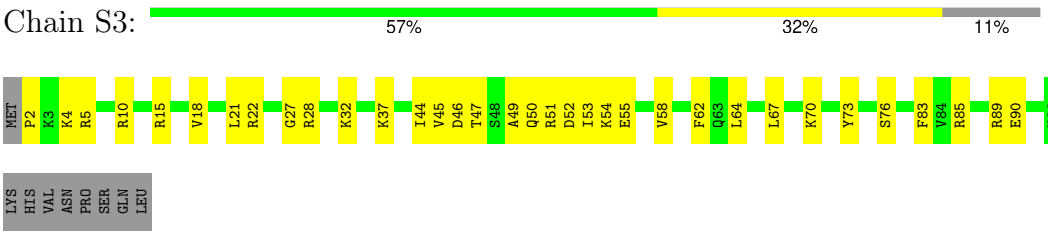
• Molecule 2: 40S ribosomal protein S25

Chain S2:



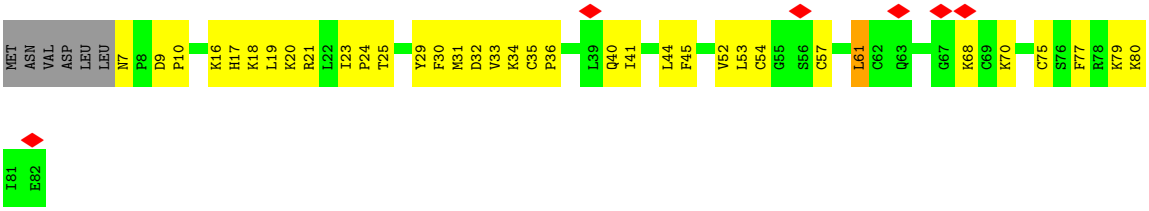
• Molecule 3: 40S ribosomal protein S26

Chain S3:



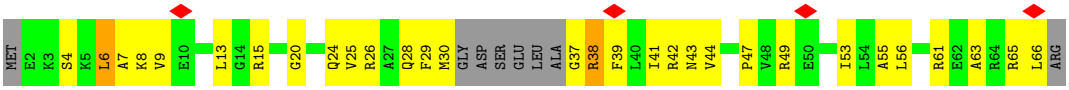
• Molecule 4: 40S ribosomal protein S27

Chain S4:



• Molecule 5: 40S ribosomal protein S28e

Chain S5:

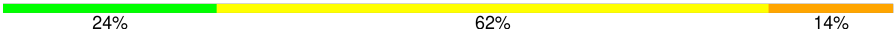


• Molecule 6: 40S ribosomal protein S30

Chain S6:

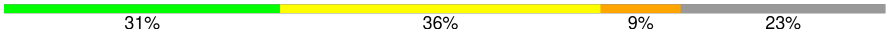
• Molecule 7: E-site tRNA

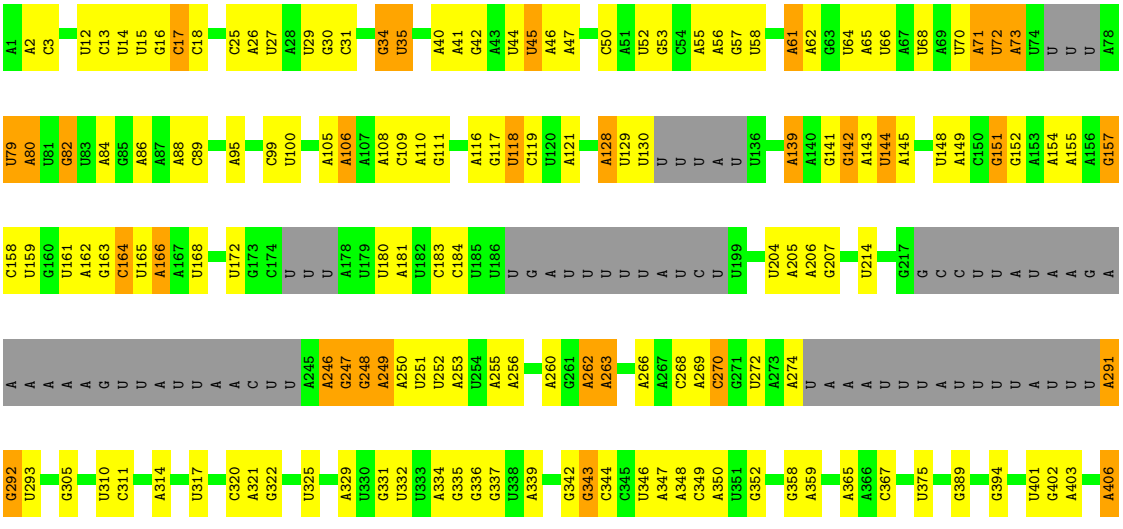
Chain S7:

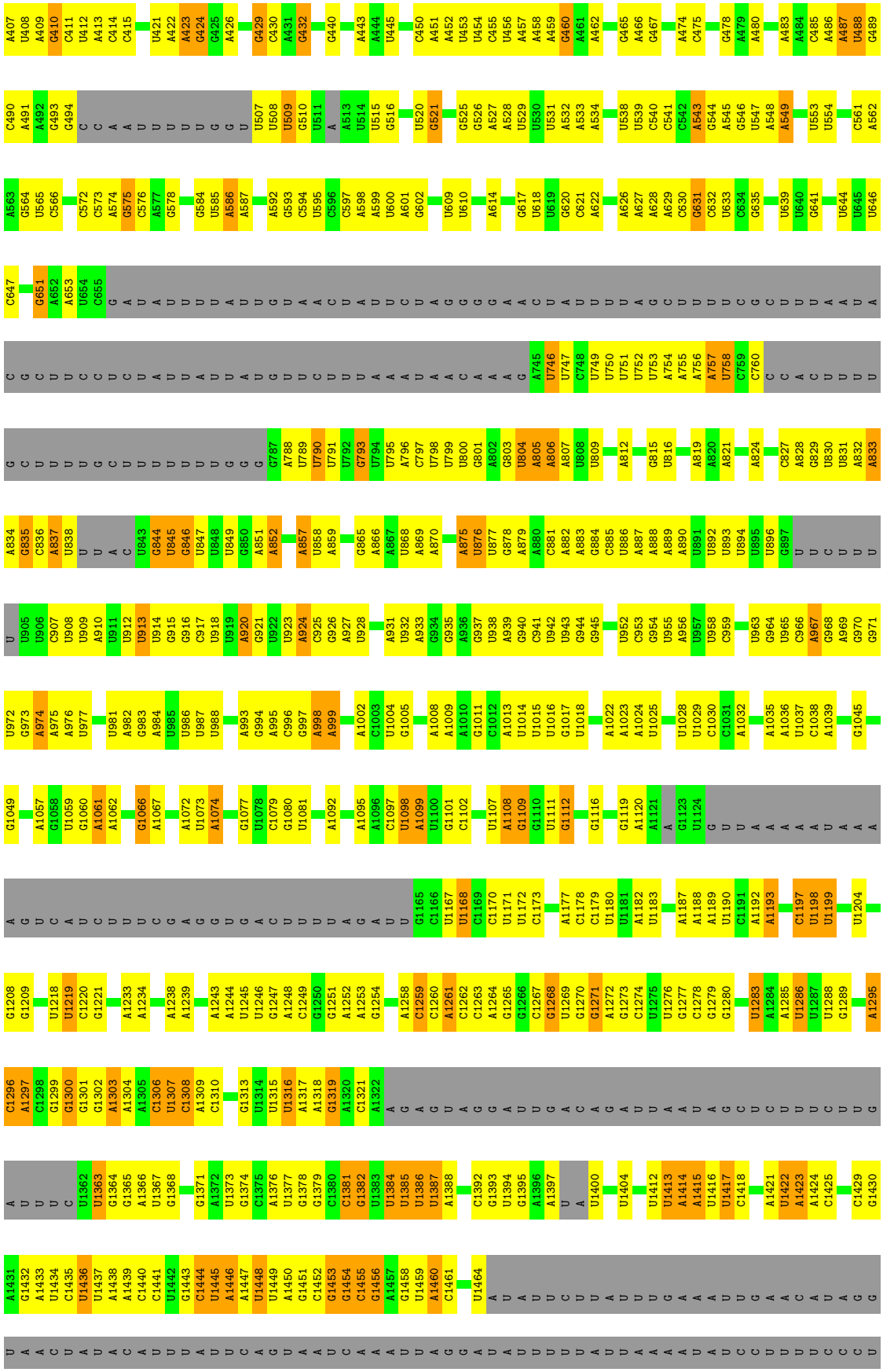


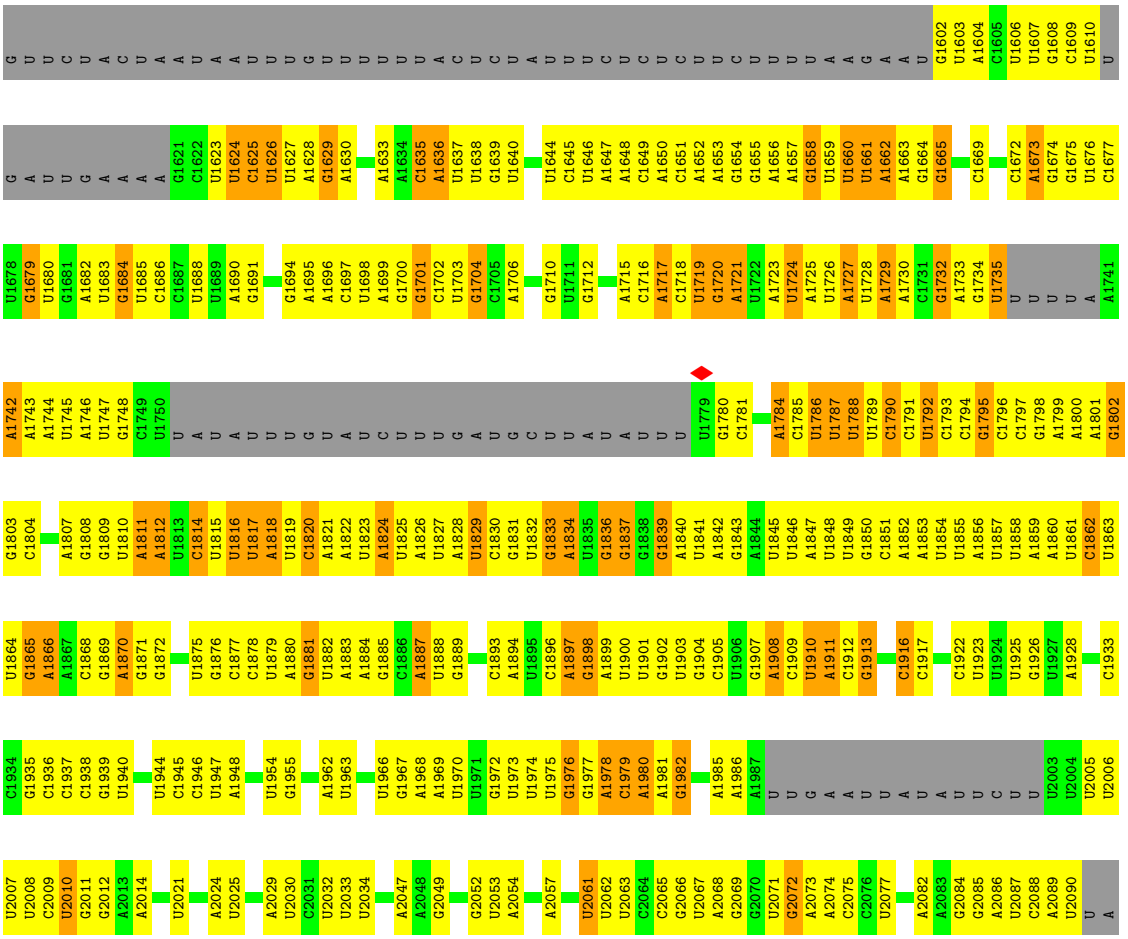
• Molecule 8: 18S ribosomal RNA

Chain SA:



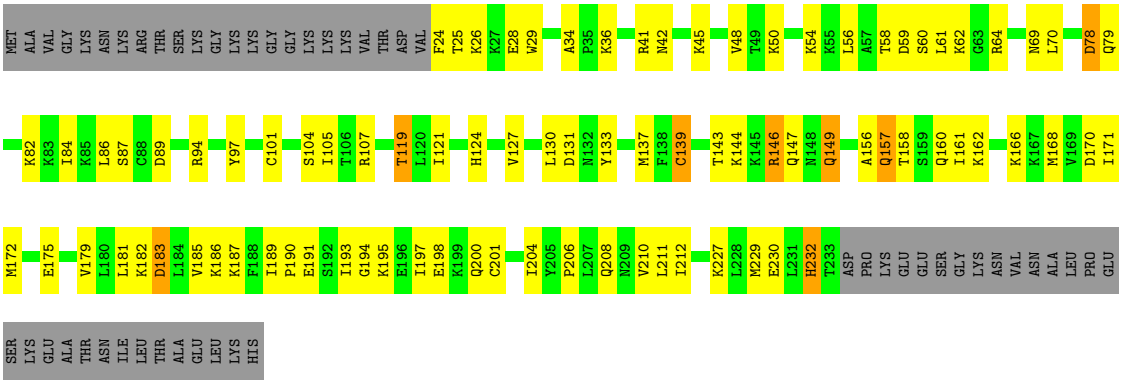






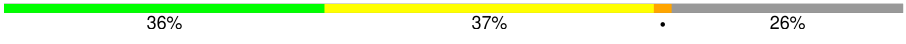
• Molecule 9: 40S ribosomal protein S3a

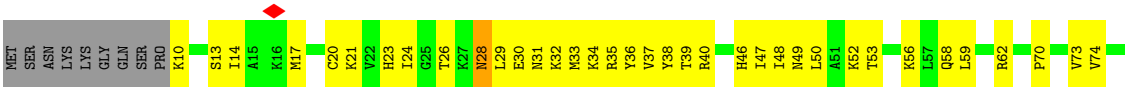
Chain SB:

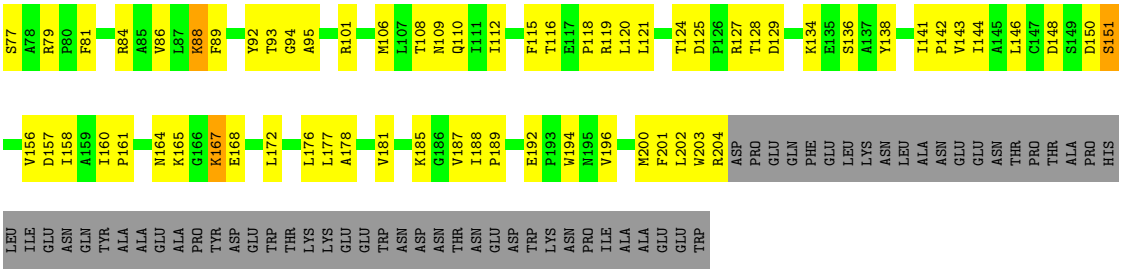


• Molecule 10: 40S ribosomal protein SA

Chain SC:

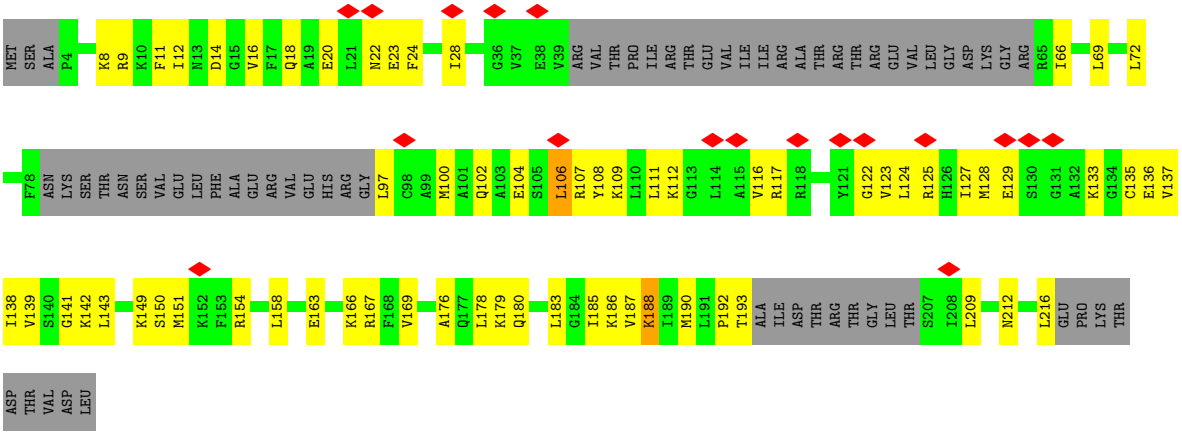






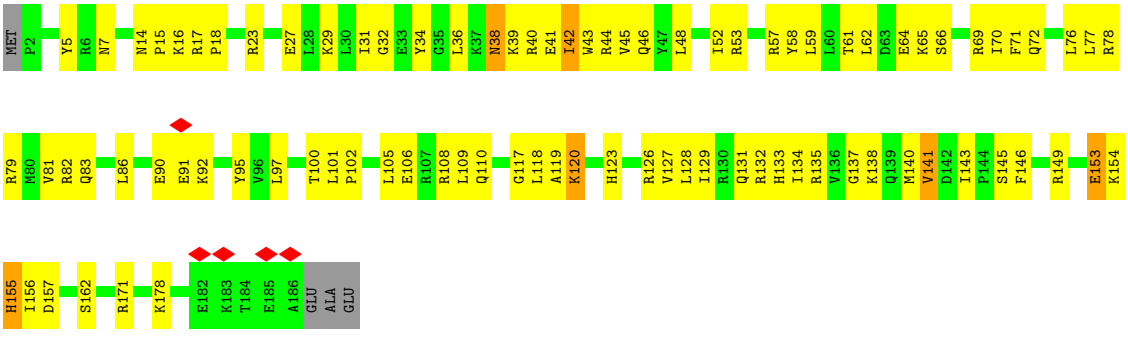
• Molecule 11: 40S ribosomal protein S3

Chain SD:



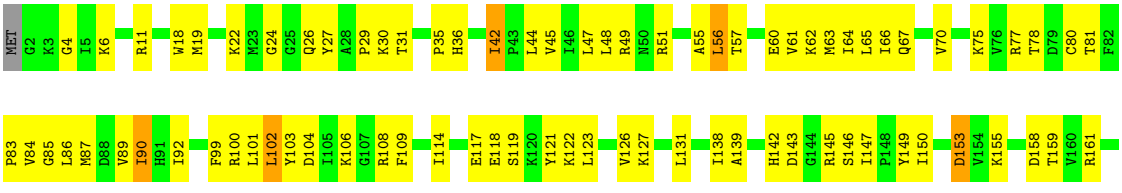
• Molecule 12: 40S ribosomal protein S9

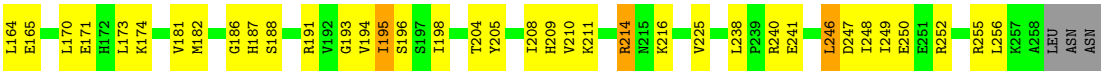
Chain SE:



• Molecule 13: 40S ribosomal protein S4

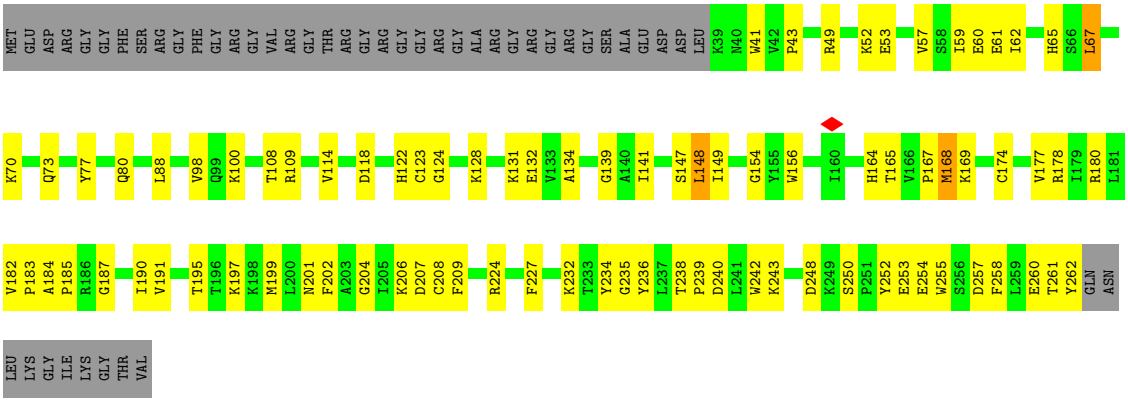
Chain SF:





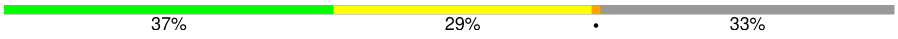
• Molecule 14: 40S ribosomal protein S5

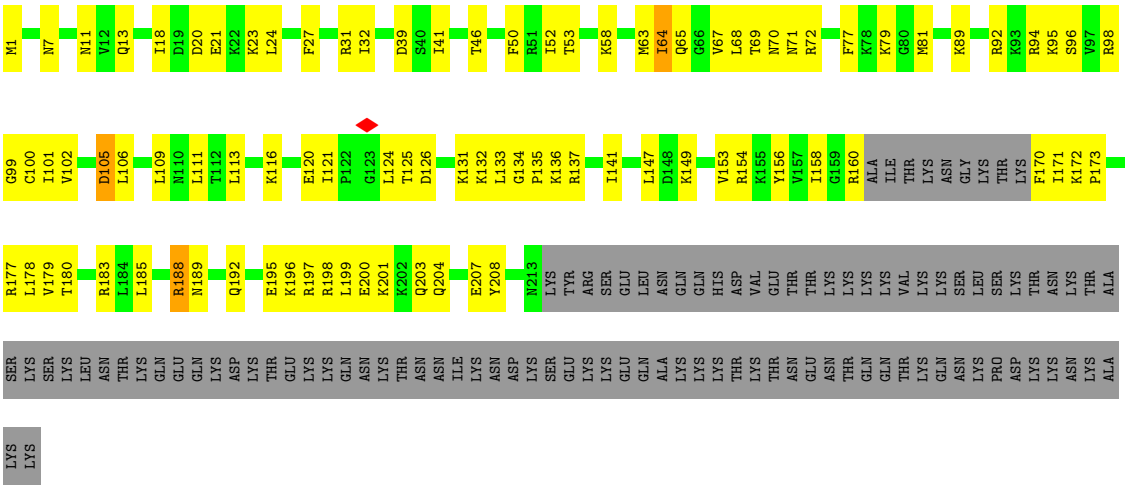
Chain SG:



• Molecule 15: 40S ribosomal protein S6

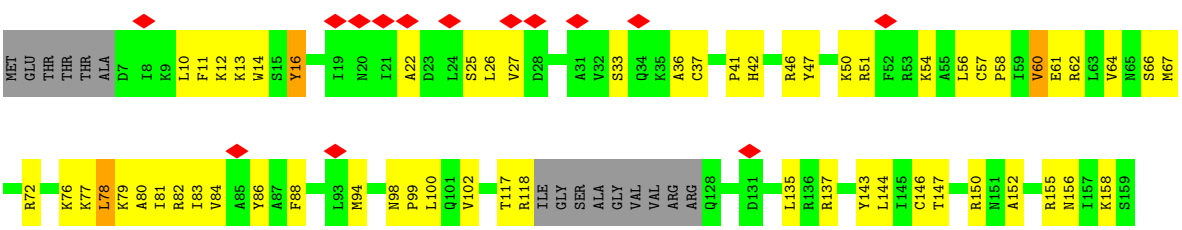
Chain SH:

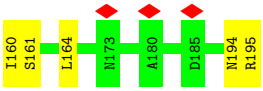




• Molecule 16: 40S ribosomal protein S5

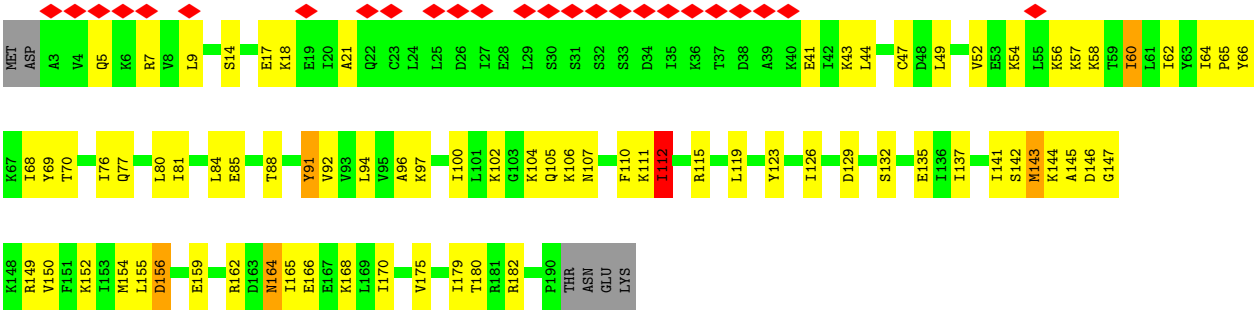
Chain SI:





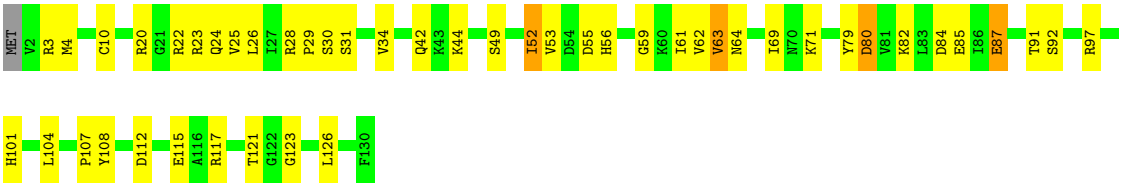
• Molecule 17: 40S ribosomal protein S7

Chain SJ:



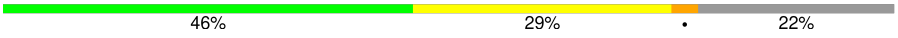
• Molecule 18: 40S ribosomal protein S15A

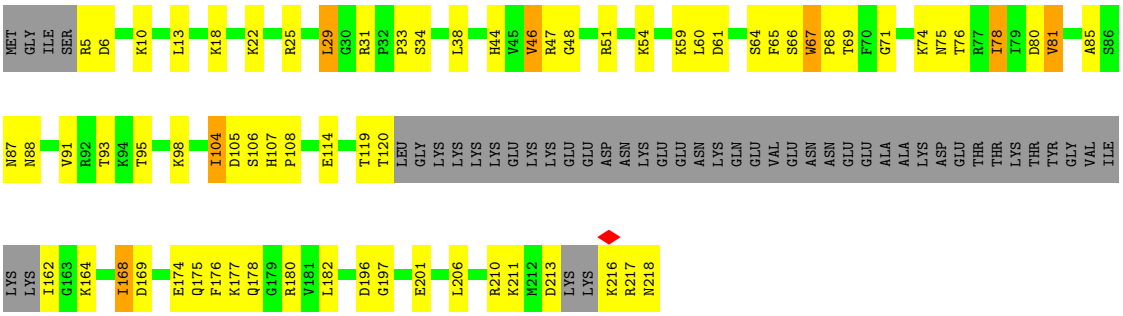
Chain SK:



• Molecule 19: 40S ribosomal protein S8

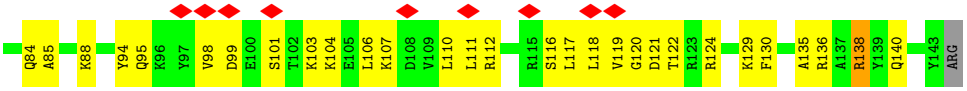
Chain SL:



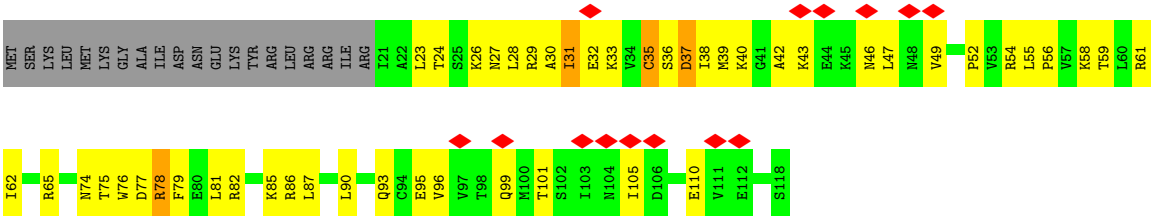


• Molecule 20: 40S ribosomal protein S16

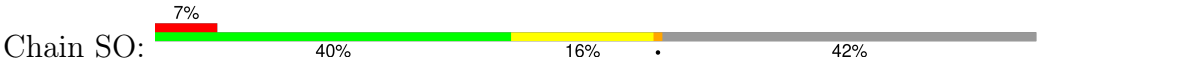
Chain SM:

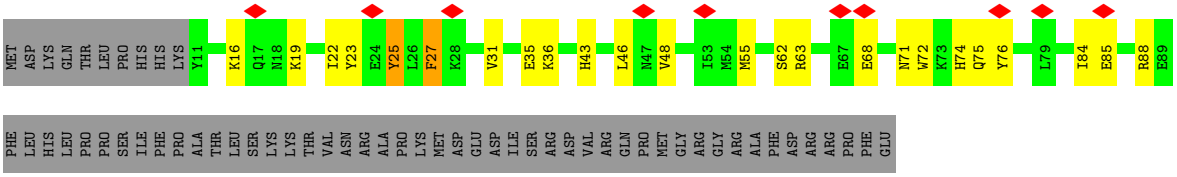


• Molecule 21: 40S ribosomal protein S20e

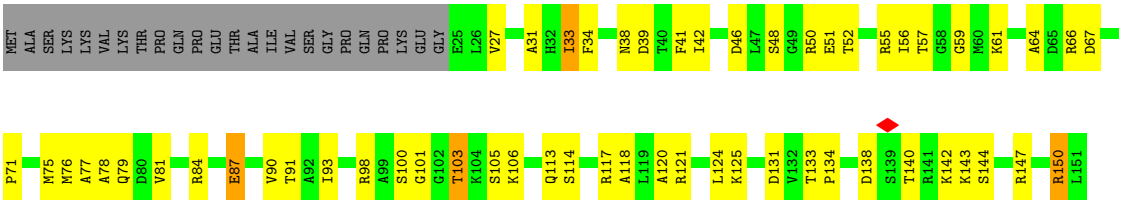


• Molecule 22: 40S ribosomal protein S10

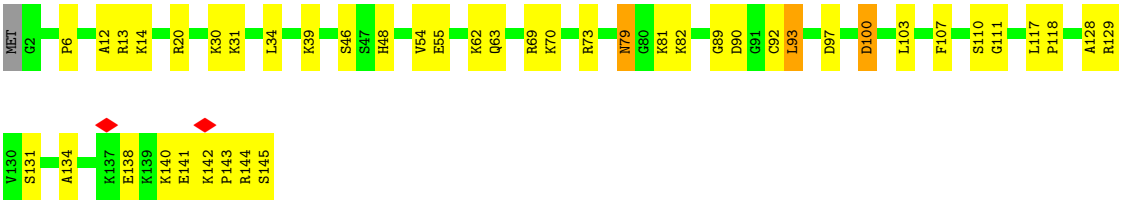




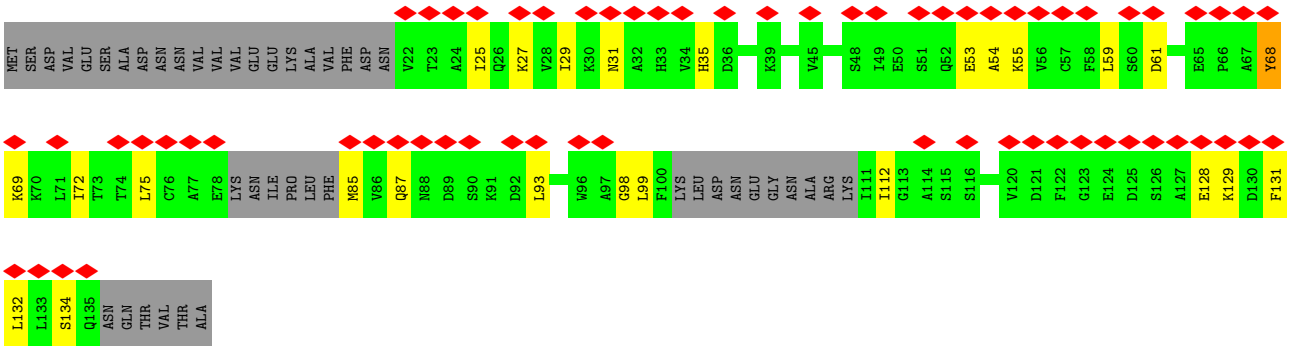
• Molecule 23: 40S ribosomal protein S11



• Molecule 24: 40S ribosomal protein S23

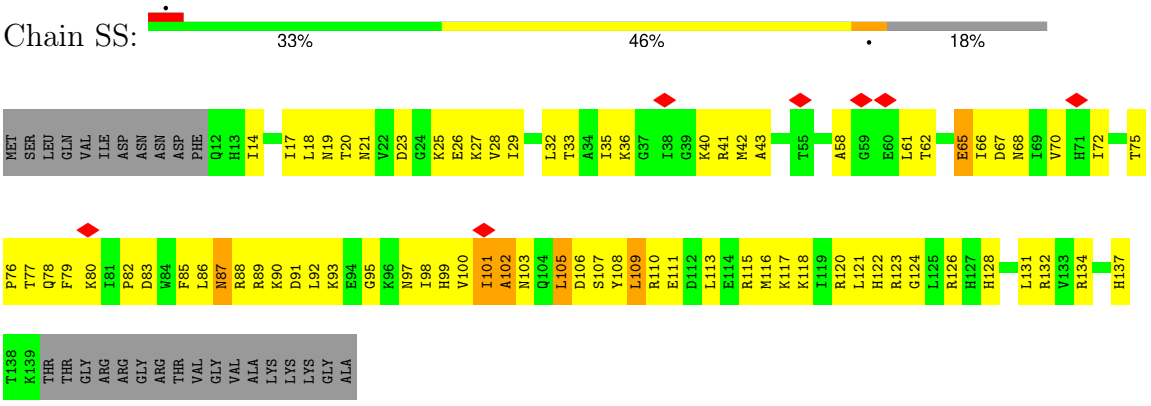


• Molecule 25: 40S ribosomal protein S12



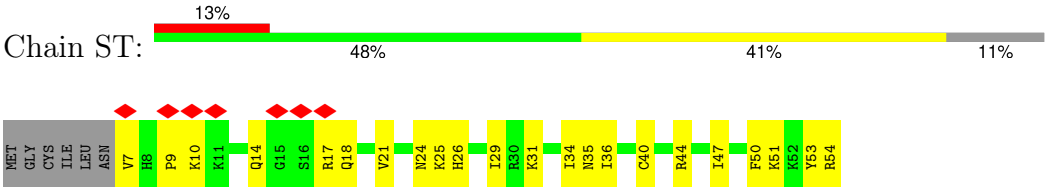
• Molecule 26: 40S ribosomal protein S18

Chain SS:



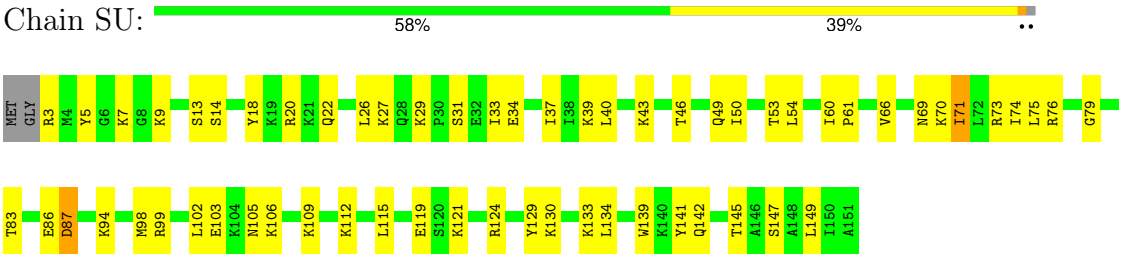
• Molecule 27: 40S ribosomal protein S29

Chain ST:



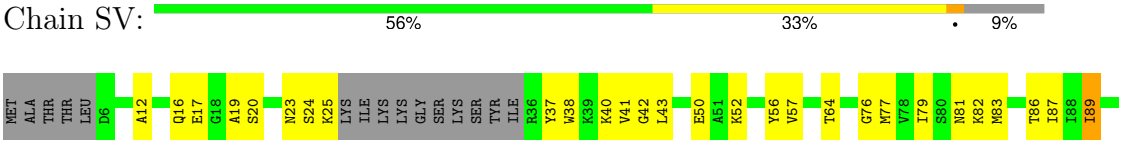
• Molecule 28: 40S ribosomal protein S15

Chain SU:



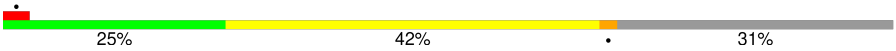
• Molecule 29: 40S ribosomal protein S11

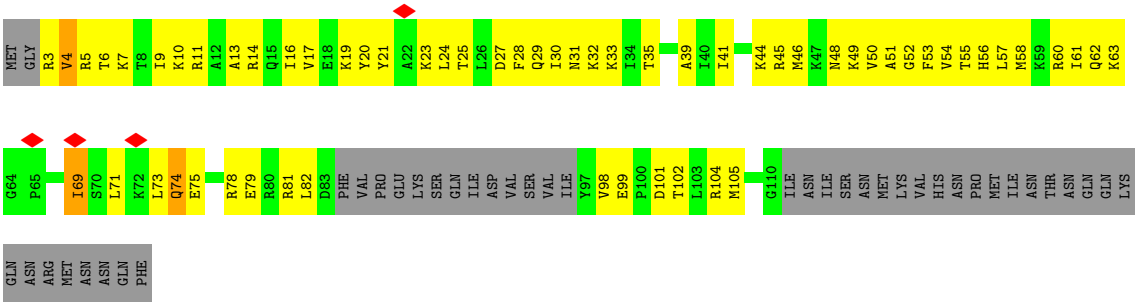
Chain SV:



• Molecule 30: 40S ribosomal protein S17

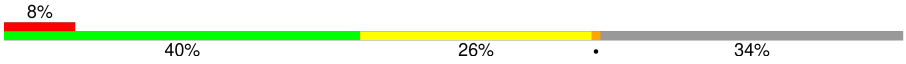
Chain SW:

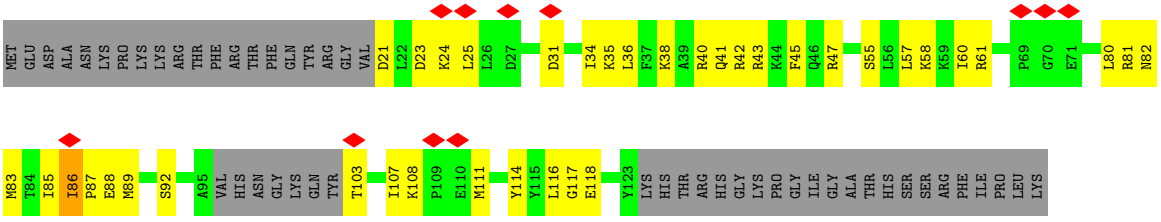




• Molecule 31: 40S ribosomal protein S19

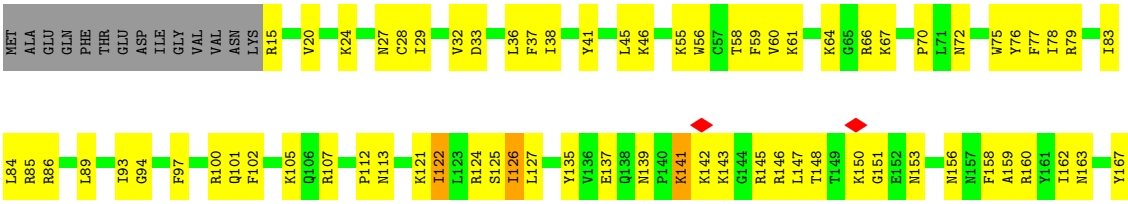
Chain SX:





• Molecule 32: 40S ribosomal protein S19

Chain SY:

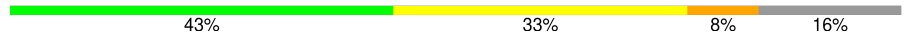


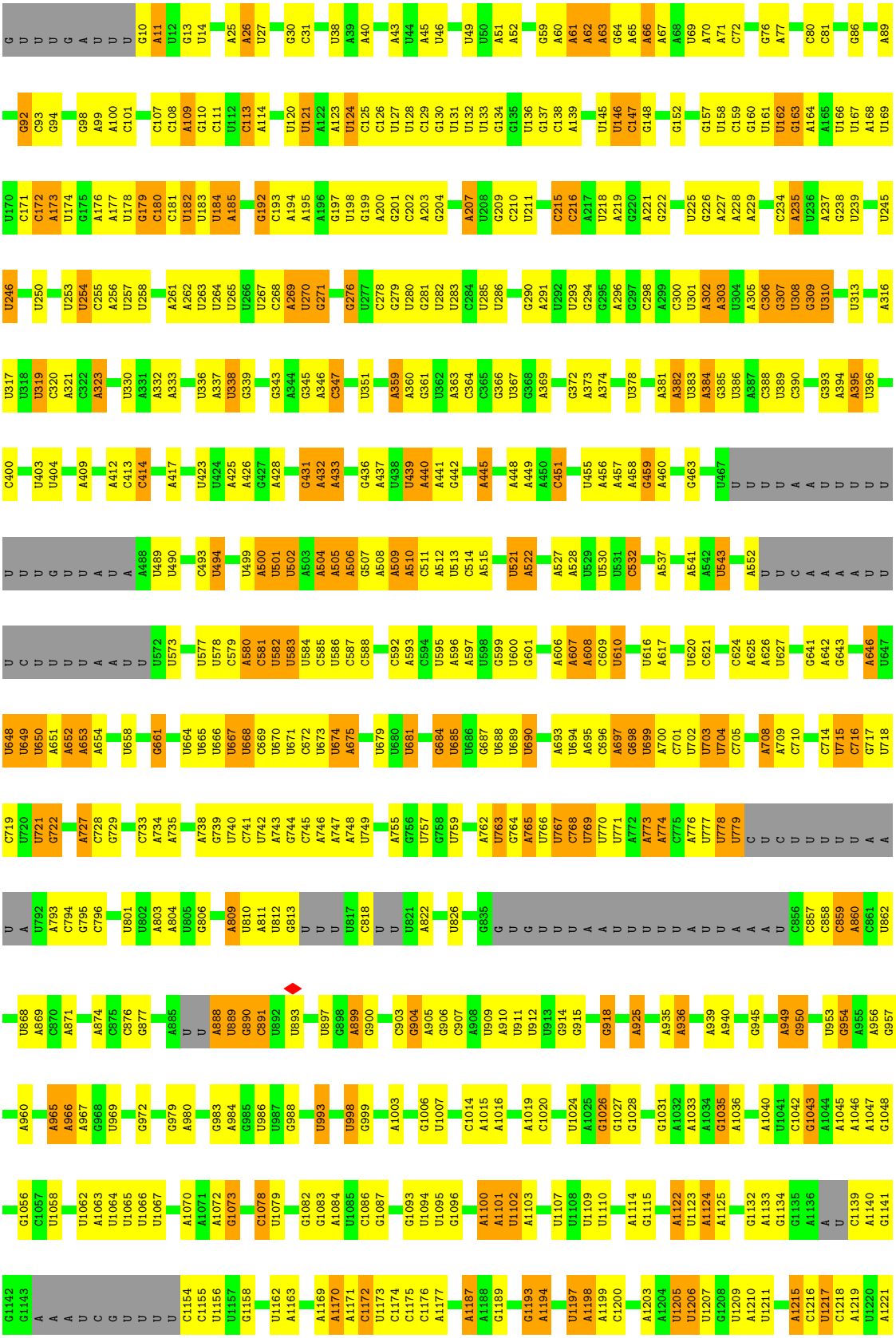
• Molecule 33: 40S ribosomal protein S21

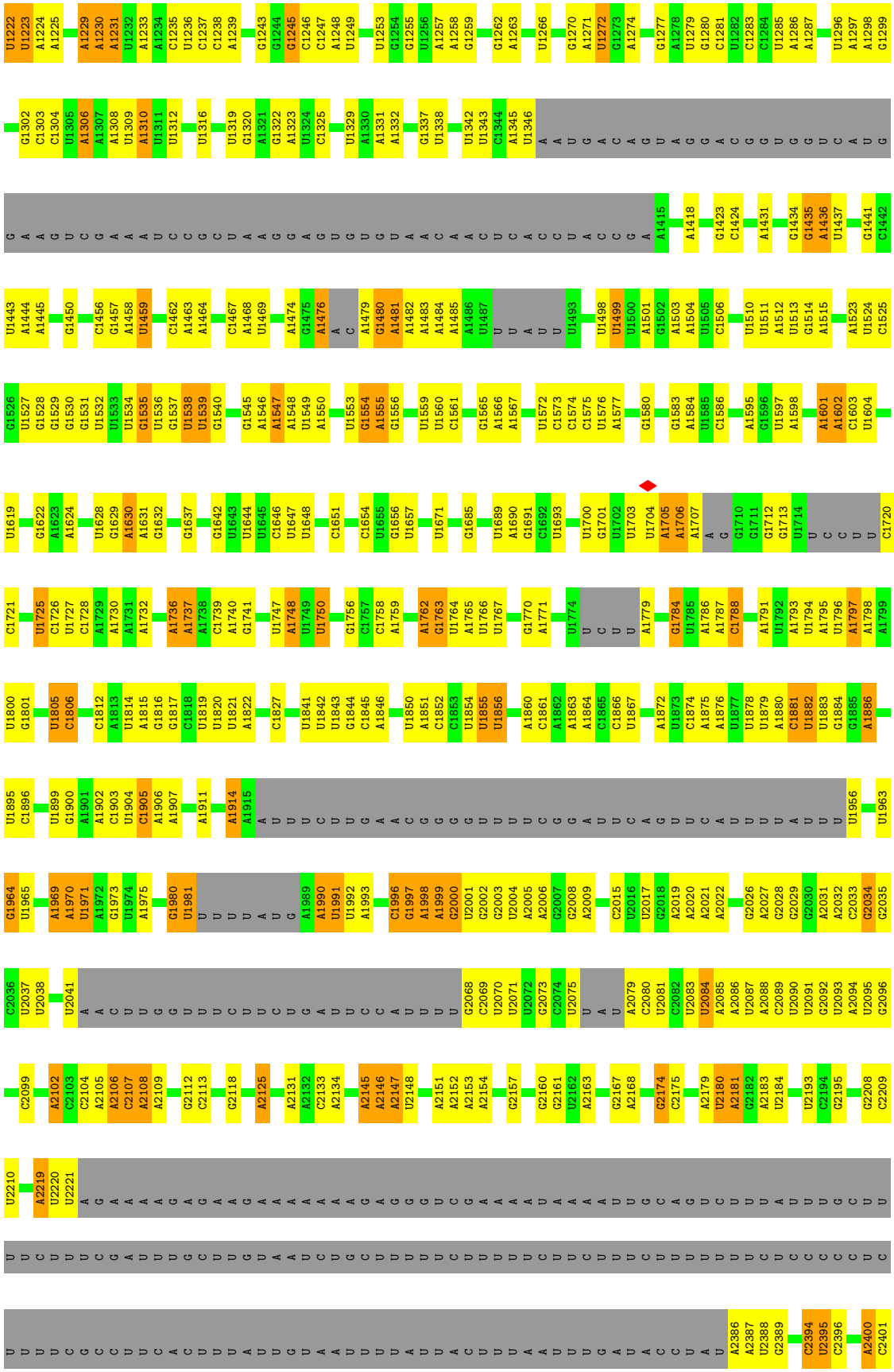
Chain SZ:

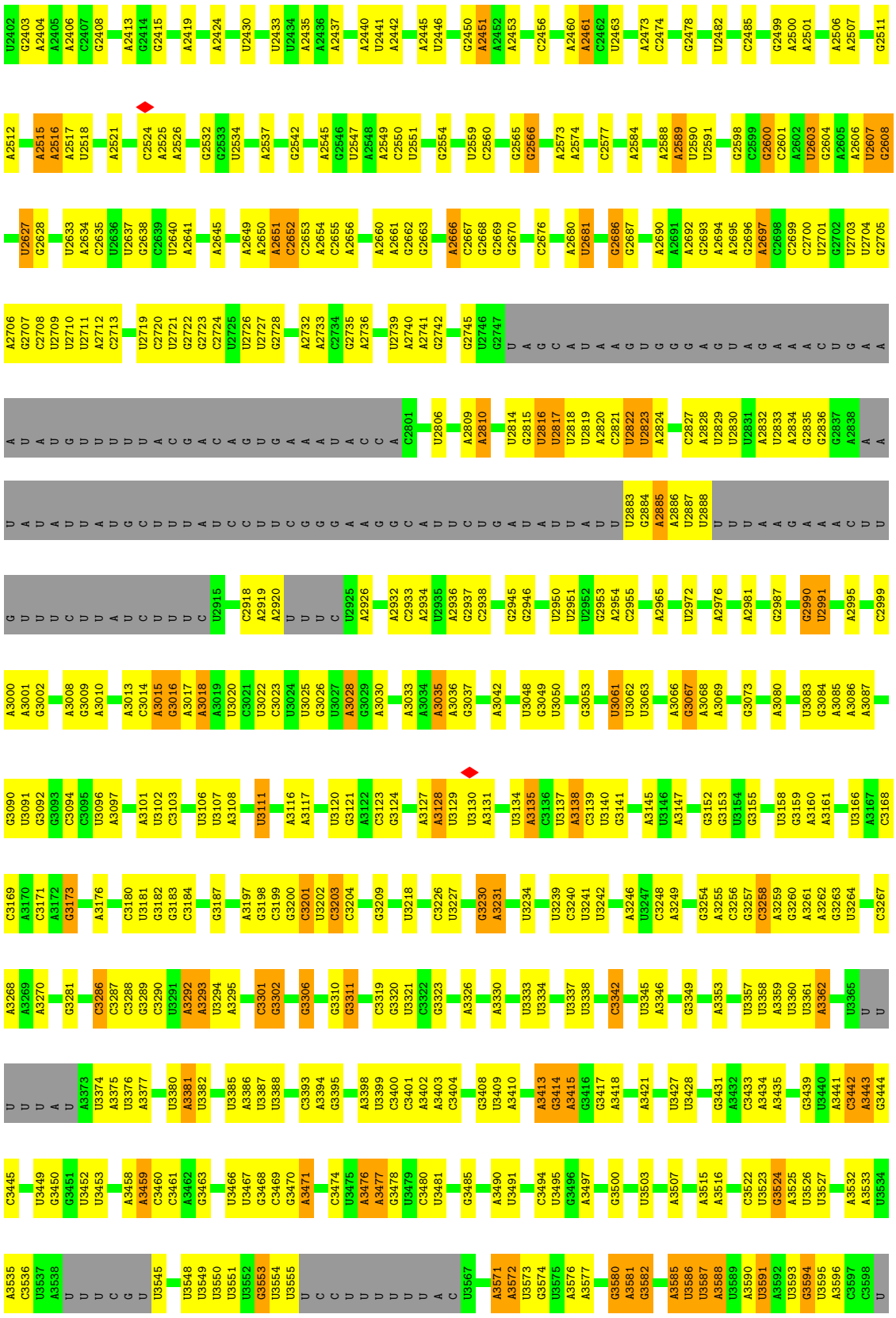
• Molecule 34: 28S ribosomal RNA

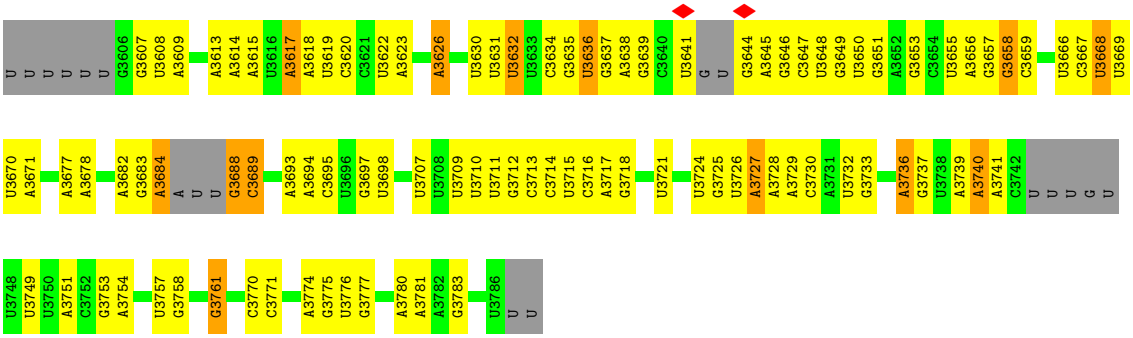
Chain AA:





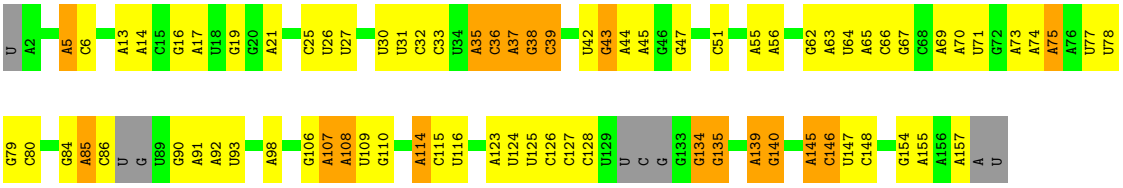






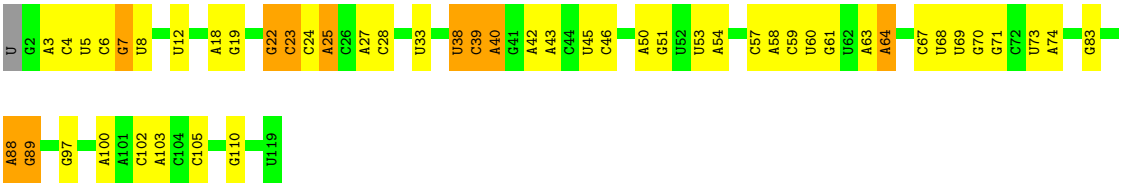
• Molecule 35: 5.8S ribosomal RNA

Chain AC:



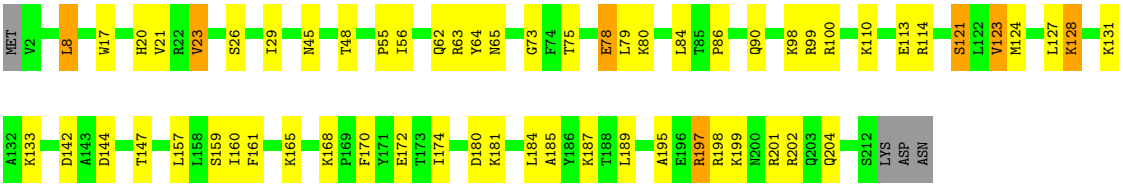
• Molecule 36: 5S ribosomal RNA

Chain AB:



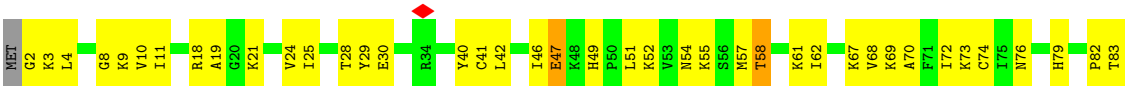
• Molecule 37: 60S ribosomal protein L13

Chain AL:



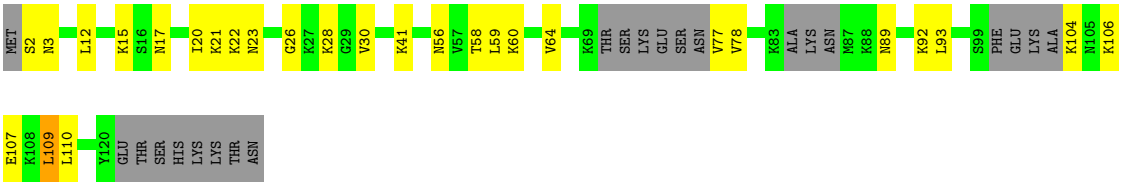
• Molecule 38: 60S ribosomal protein L27

Chain A1:



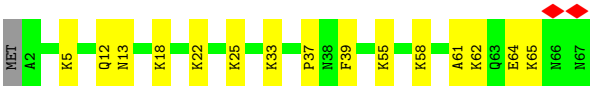
• Molecule 39: 60S ribosomal protein L28

Chain A2:



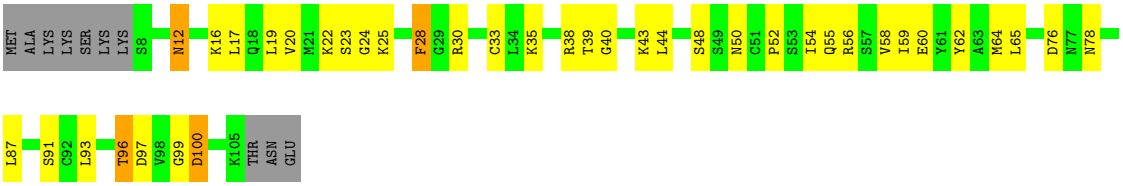
• Molecule 40: 60S ribosomal protein L29

Chain A4:



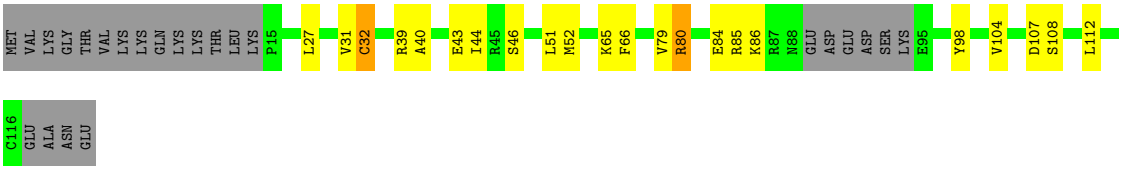
• Molecule 41: 60S ribosomal protein L30e

Chain A6:



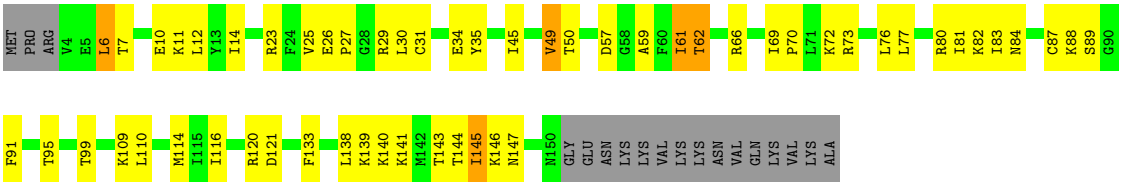
• Molecule 42: 60S ribosomal protein L31

Chain A7:



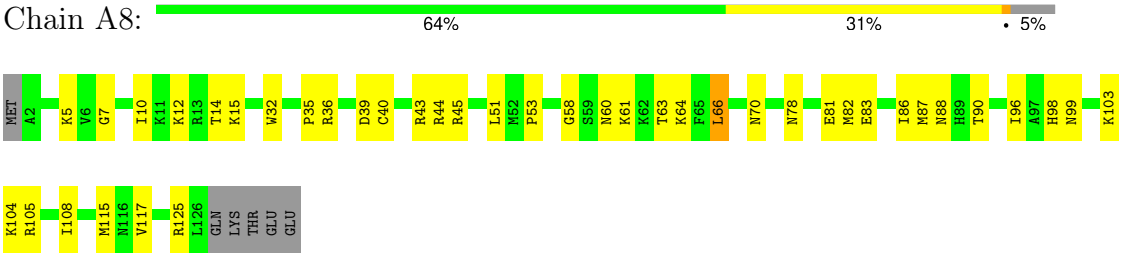
• Molecule 43: 60S ribosomal protein L14

Chain AN:



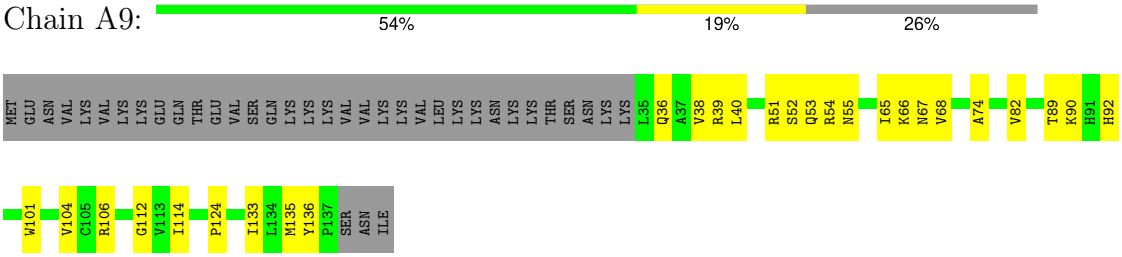
• Molecule 44: 60S ribosomal protein L32

Chain A8:



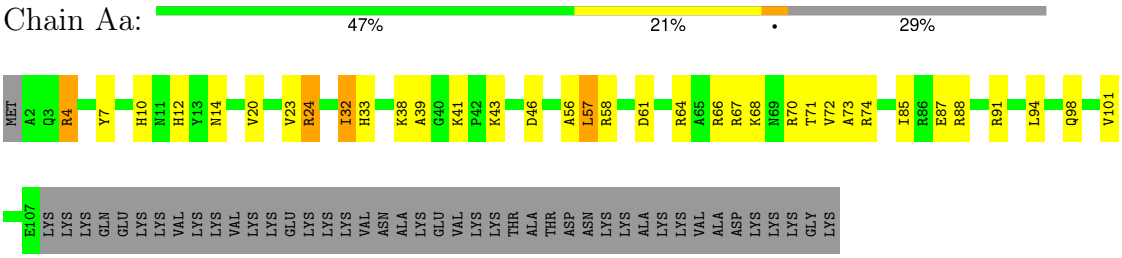
• Molecule 45: 60S ribosomal protein L35ae

Chain A9:



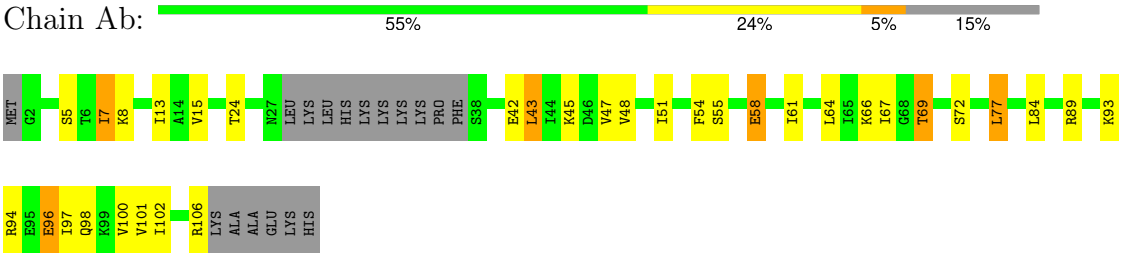
• Molecule 46: 60S ribosomal protein L34

Chain Aa:



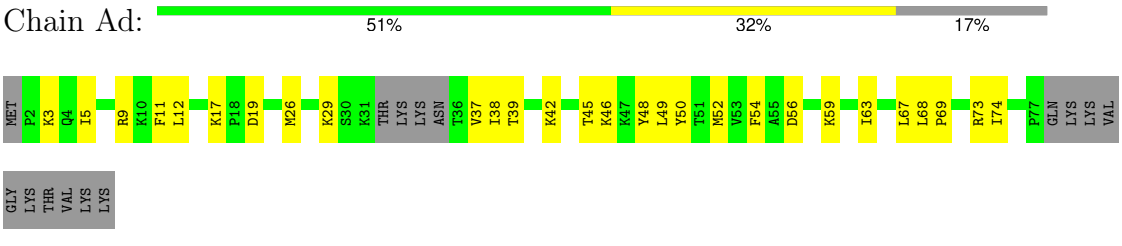
• Molecule 47: 60S ribosomal protein L36

Chain Ab:



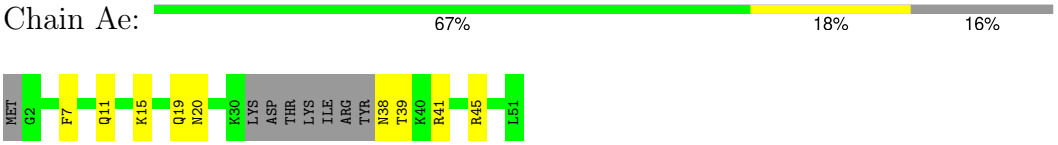
• Molecule 48: 60S ribosomal protein L38

Chain Ad:



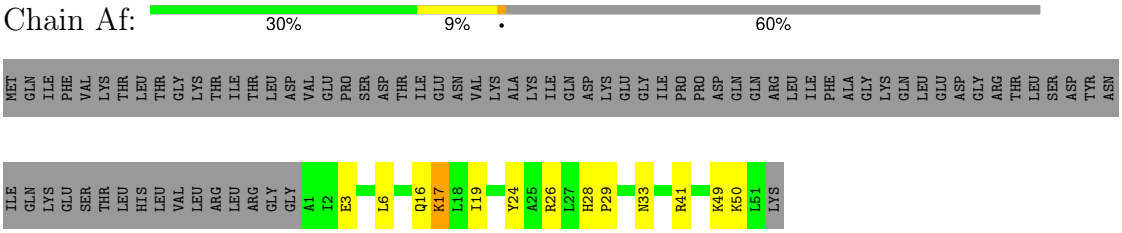
• Molecule 49: 60S ribosomal protein L39

Chain Ae:



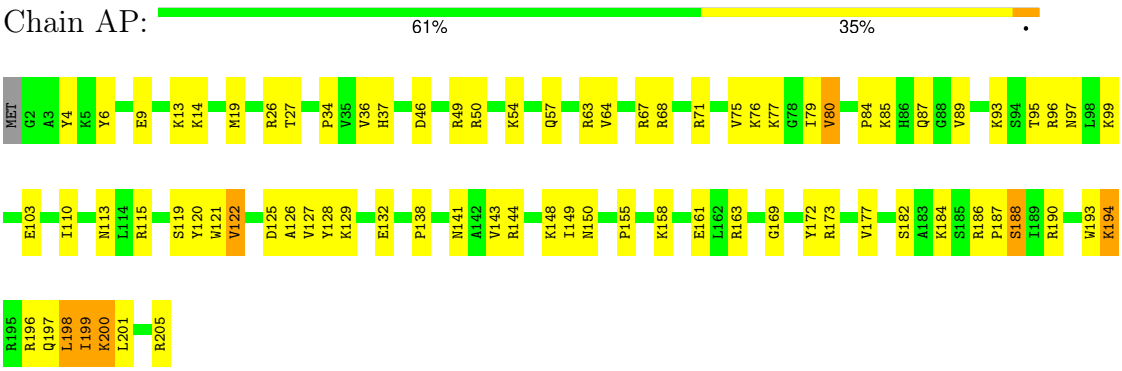
• Molecule 50: Ubiquitin-60S ribosomal protein L40

Chain Af:



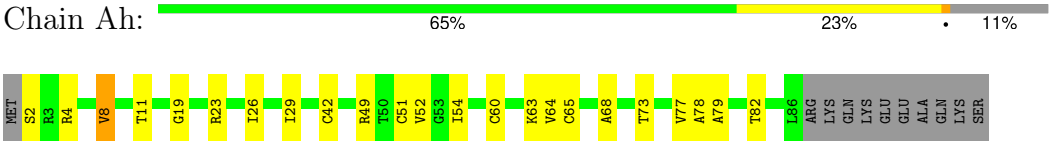
• Molecule 51: Ribosomal protein L15

Chain AP:



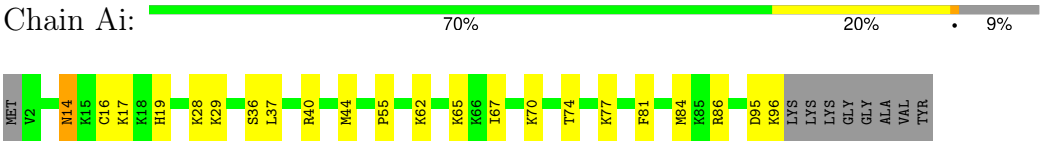
• Molecule 52: Large ribosomal subunit protein eL43

Chain Ah:



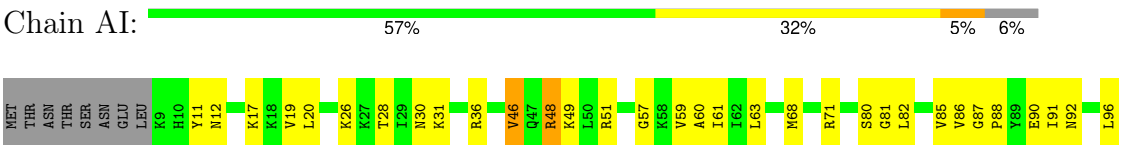
• Molecule 53: Large ribosomal subunit protein eL42

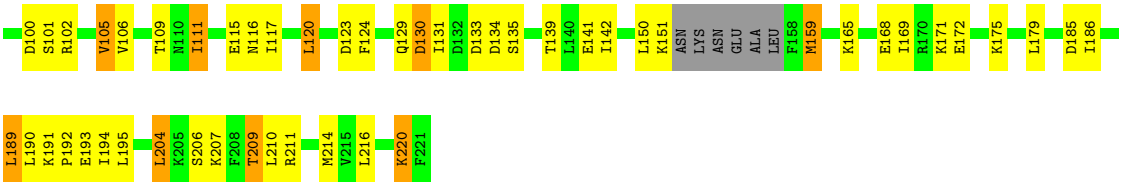
Chain Ai:



• Molecule 54: 60S ribosomal protein L6

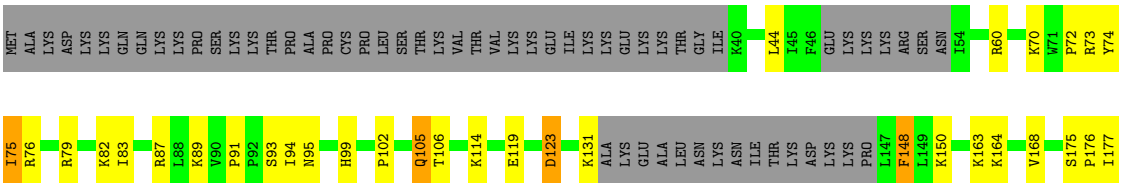
Chain AI:

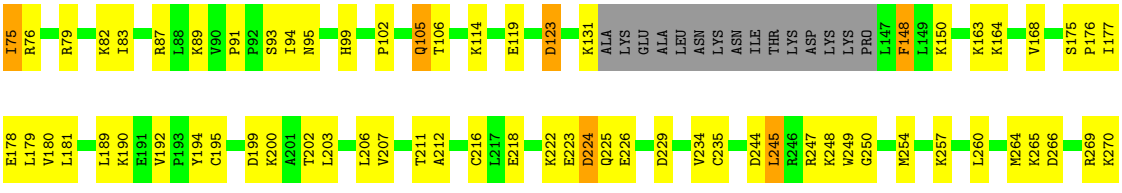




• Molecule 55: 60S ribosomal protein L7a

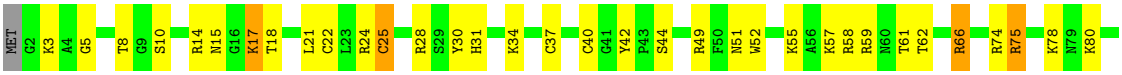
Chain AJ:





• Molecule 56: Ribosomal protein L37

Chain Ac:



• Molecule 57: 60S ribosomal protein L13, putative

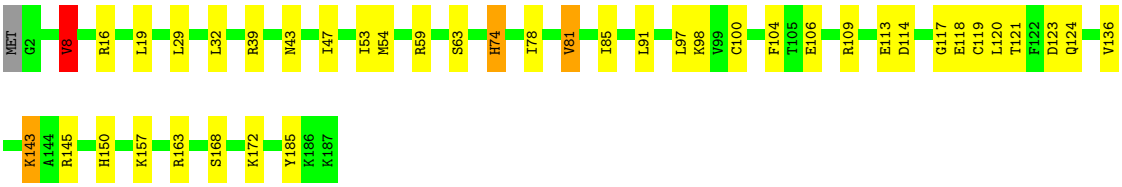
Chain AK:

• Molecule 58: 60S ribosomal protein L23

Chain AM:

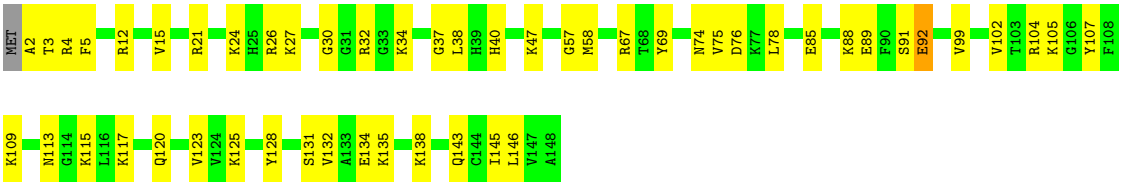
• Molecule 59: 60S ribosomal protein L18-2

Chain AS:



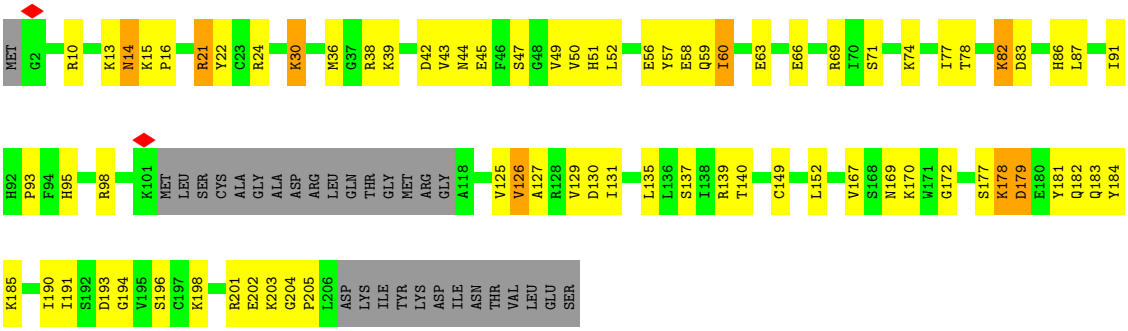
• Molecule 60: 60S ribosomal protein L27a

Chain AO:



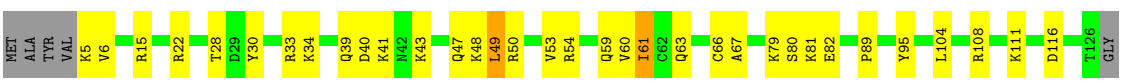
• Molecule 61: 60S ribosomal protein L10

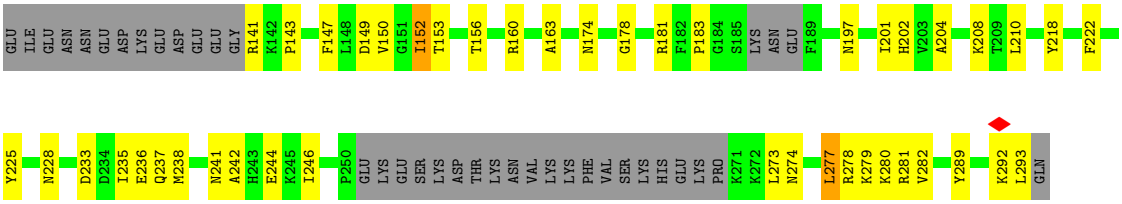
Chain AQ:



• Molecule 62: 60S ribosomal protein L5

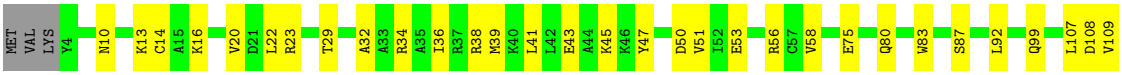
Chain AR:

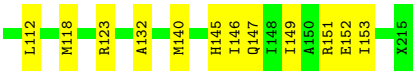




• Molecule 63: 60S ribosomal protein L17

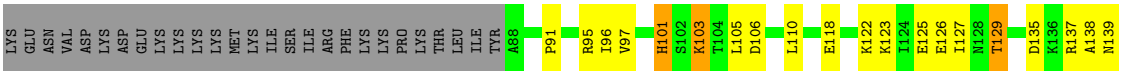
Chain AW:





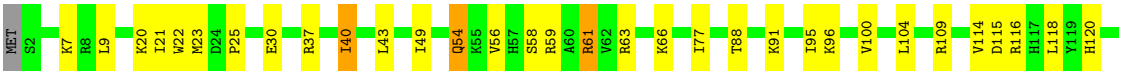
• Molecule 64: 60S ribosomal protein L23

Chain AY:



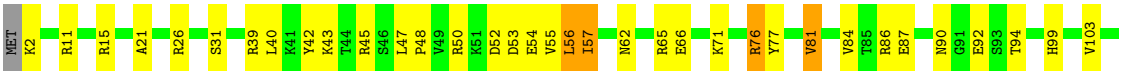
• Molecule 65: 60S ribosomal protein L19

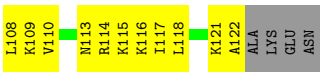
Chain AT:



• Molecule 66: 60S ribosomal protein L26

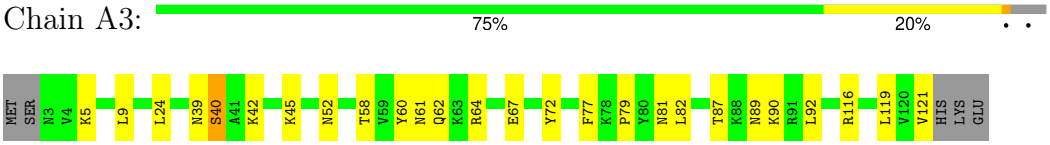
Chain AZ:





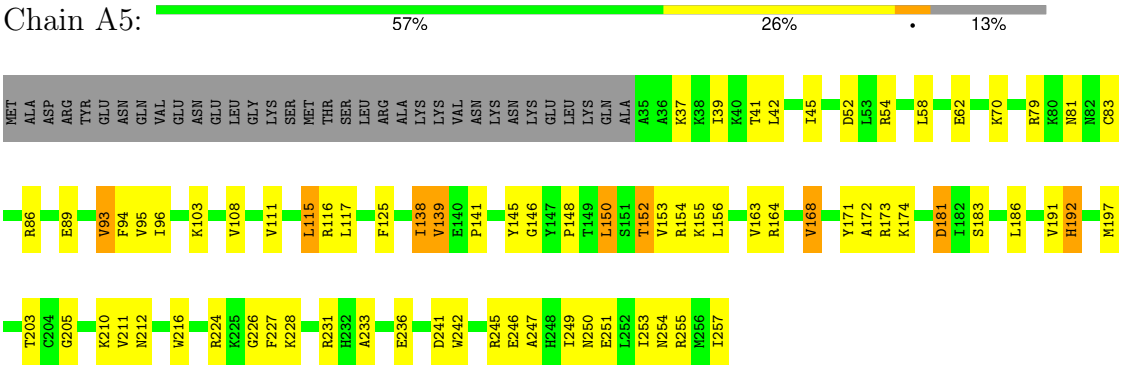
• Molecule 67: 60S ribosomal protein L35

Chain A3:



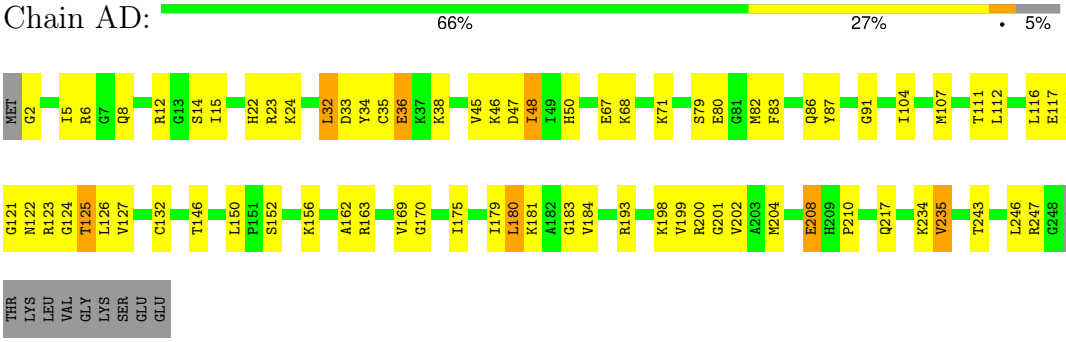
• Molecule 68: 60S ribosomal protein L7

Chain A5:



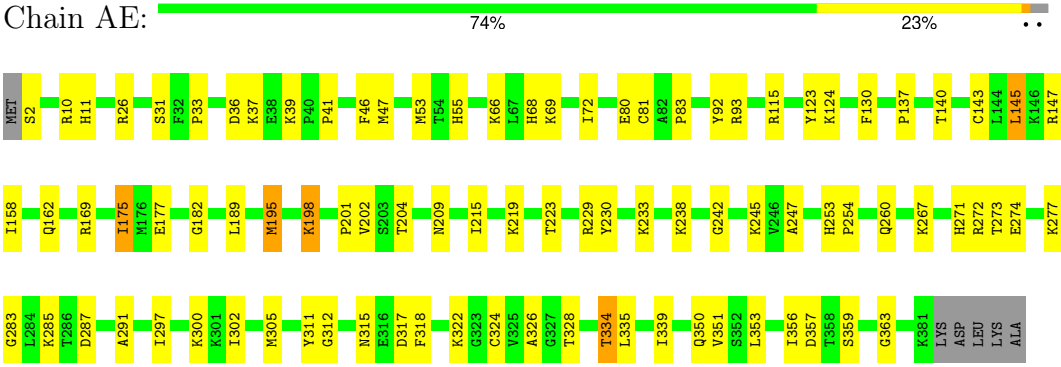
• Molecule 69: 60S ribosomal protein L2

Chain AD:



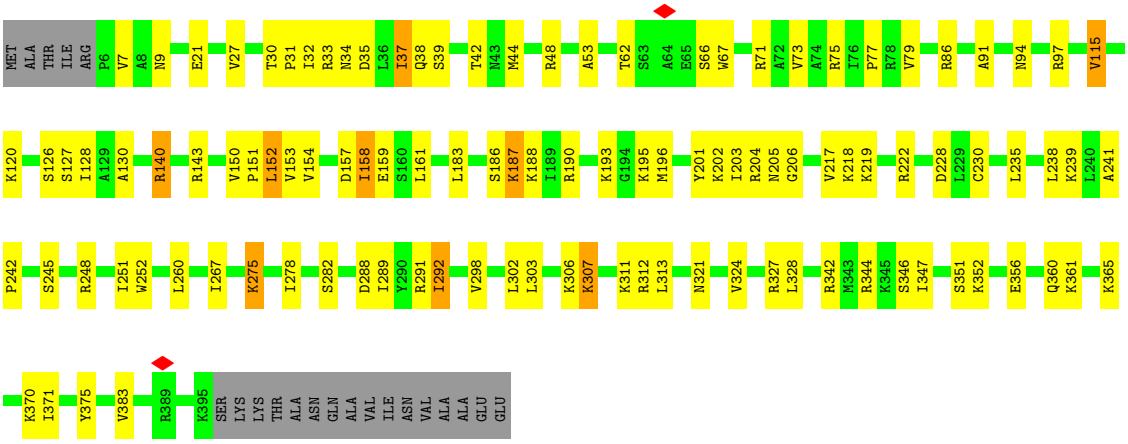
• Molecule 70: 60S ribosomal protein L3

Chain AE:



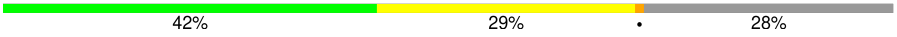
• Molecule 71: 60S ribosomal protein L4

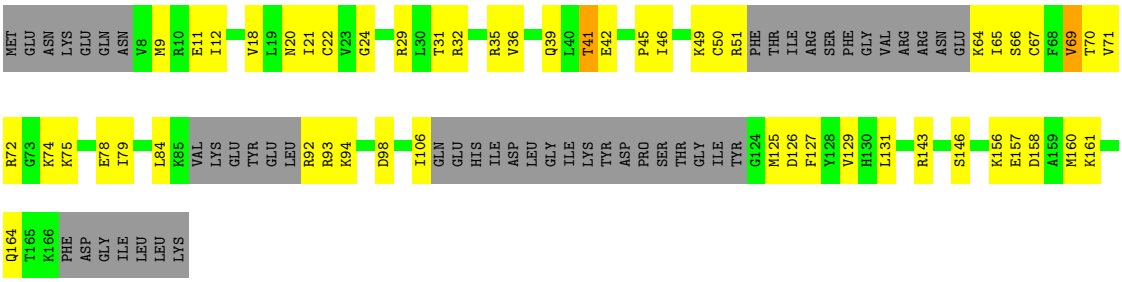
Chain AF:



• Molecule 72: 60S ribosomal protein L11a

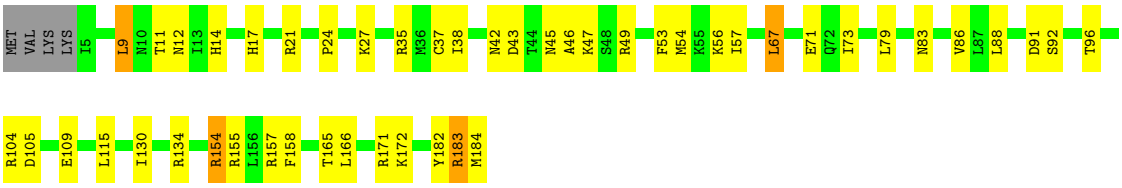
Chain AG:





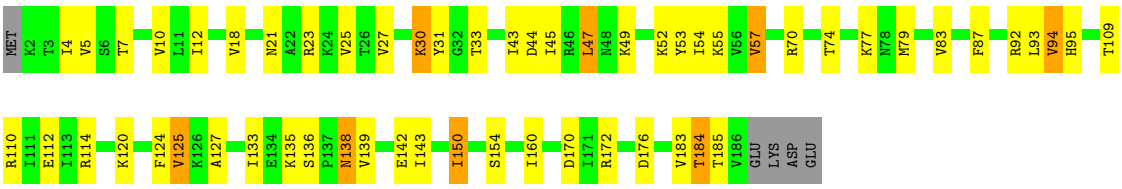
• Molecule 73: 60S ribosomal protein L18a

Chain AU:



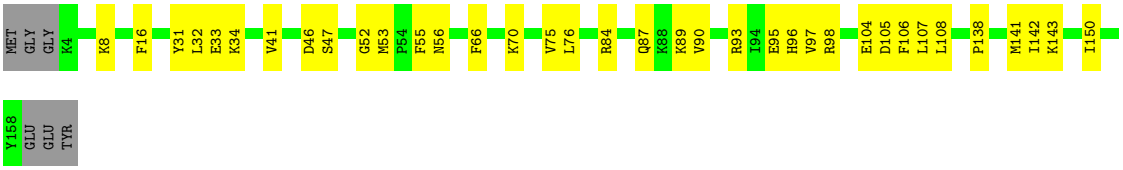
• Molecule 74: 60S ribosomal protein L6

Chain AH:

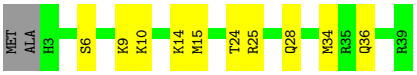


• Molecule 75: 60S ribosomal protein L21

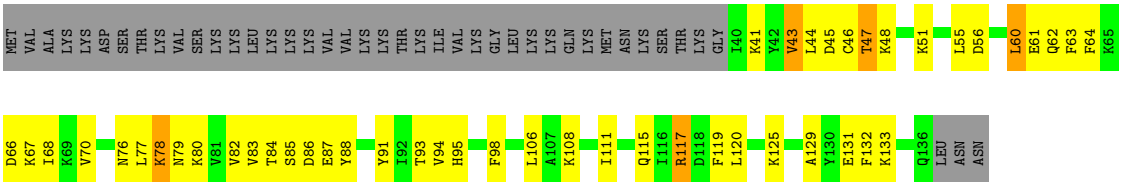
Chain AV:



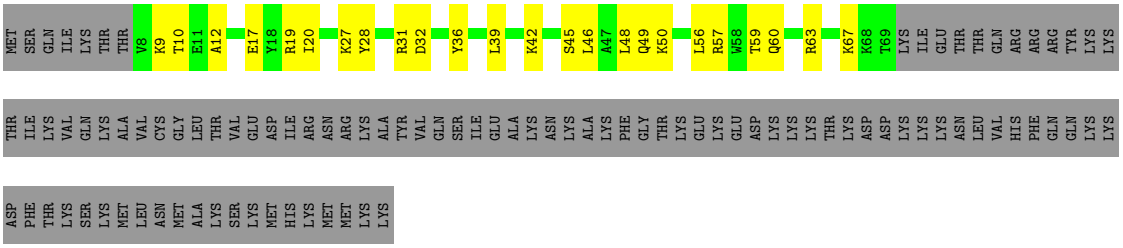
• Molecule 76: 60S ribosomal protein L41



• Molecule 77: 60S ribosomal protein L22



• Molecule 78: 60S ribosomal protein L24



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	248063	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	0.096	Depositor
Minimum map value	-0.024	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.003	Depositor
Recommended contour level	0.00547	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

5.1 Standard geometry

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|>5$	RMSZ	#$\|Z\|>5$
1	S1	0.23	0/998	0.47	0/1321
2	S2	0.08	0/323	0.26	0/435
3	S3	0.25	0/793	0.43	0/1055
4	S4	0.19	0/597	0.50	0/801
5	S5	0.14	0/466	0.38	0/616
6	S6	0.19	0/348	0.45	0/458
7	S7	0.18	0/1754	0.28	0/2732
8	SA	0.25	0/38276	0.29	0/59598
9	SB	0.26	0/1737	0.46	0/2321
10	SC	0.24	0/1569	0.51	0/2129
11	SD	0.15	0/1240	0.37	0/1652
12	SE	0.24	0/1538	0.44	0/2055
13	SF	0.24	0/2097	0.43	0/2819
14	SG	0.26	0/1799	0.46	0/2429
15	SH	0.20	0/1668	0.39	0/2214
16	SI	0.15	0/1443	0.39	0/1936
17	SJ	0.19	0/1544	0.43	0/2064
18	SK	0.28	0/1054	0.49	0/1411
19	SL	0.27	0/1407	0.51	0/1879
20	SM	0.17	0/1113	0.43	0/1487
21	SN	0.14	0/780	0.37	0/1053
22	SO	0.11	0/705	0.34	0/950
23	SP	0.26	0/966	0.50	0/1295
24	SQ	0.25	0/1149	0.39	0/1532
25	SR	0.09	0/754	0.29	0/1013
26	SS	0.19	0/1062	0.59	2/1425 (0.1%)
27	ST	0.13	0/412	0.35	0/544
28	SU	0.25	0/1223	0.41	0/1634
29	SV	0.27	0/1233	0.41	0/1645
30	SW	0.20	0/792	0.53	0/1053
31	SX	0.14	0/787	0.39	0/1050
32	SY	0.14	0/1294	0.33	0/1742
33	SZ	0.25	0/565	0.48	0/758
34	AA	0.34	0/75947	0.33	0/118255

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
35	AC	0.34	0/3599	0.33	0/5603
36	AB	0.30	0/2816	0.28	0/4388
37	AL	0.29	0/1793	0.40	0/2387
38	A1	0.27	0/1151	0.47	1/1531 (0.1%)
39	A2	0.26	0/846	0.43	0/1124
40	A4	0.27	0/564	0.40	0/737
41	A6	0.29	0/748	0.39	0/1001
42	A7	0.29	0/805	0.36	0/1073
43	AN	0.29	0/1226	0.44	0/1632
44	A8	0.31	0/1053	0.45	0/1399
45	A9	0.35	0/864	0.45	0/1160
46	Aa	0.31	0/862	0.42	0/1148
47	Ab	0.26	0/762	0.45	0/1008
48	Ad	0.28	0/611	0.55	0/812
49	Ae	0.29	0/396	0.29	0/521
50	Af	0.28	0/418	0.37	0/556
51	AP	0.35	0/1735	0.49	0/2320
52	Ah	0.31	0/667	0.37	0/887
53	Ai	0.30	0/788	0.37	0/1032
54	AI	0.28	0/1708	0.43	0/2274
55	AJ	0.24	0/1840	0.47	0/2456
56	Ac	0.32	0/722	0.46	0/951
57	AK	0.31	0/1689	0.41	0/2260
58	AM	0.30	0/1012	0.41	0/1363
59	AS	0.32	0/1531	0.43	0/2040
60	AO	0.32	0/1199	0.44	0/1597
61	AQ	0.22	0/1579	0.40	0/2113
62	AR	0.26	0/2078	0.40	0/2776
63	AW	0.31	0/1244	0.45	0/1663
64	AY	0.27	0/805	0.41	0/1074
65	AT	0.30	0/1525	0.46	0/2016
66	AZ	0.29	0/1012	0.48	0/1339
67	A3	0.26	0/1004	0.36	0/1329
68	A5	0.31	0/1917	0.43	1/2562 (0.0%)
69	AD	0.33	0/1901	0.44	0/2544
70	AE	0.31	0/3129	0.38	0/4195
71	AF	0.30	0/3144	0.40	0/4205
72	AG	0.24	0/1020	0.49	0/1349
73	AU	0.32	0/1527	0.41	0/2043
74	AH	0.28	0/1500	0.40	0/2025
75	AV	0.29	0/1300	0.39	0/1732
76	Ag	0.25	0/348	0.39	0/448
77	AX	0.27	0/841	0.52	0/1125

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
78	A0	0.30	0/533	0.43	0/711
All	All	0.29	0/207245	0.36	4/303870 (0.0%)

There are no bond length outliers.

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
26	SS	102	ALA	CB-CA-C	-6.90	108.62	116.63
38	A1	19	ALA	CB-CA-C	-5.86	109.81	116.54
68	A5	246	GLU	CB-CA-C	-5.77	109.94	116.63
26	SS	102	ALA	N-CA-C	5.71	117.74	108.08

There are no chirality outliers.

There are no planarity outliers.

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	65	0
2	S2	320	0	338	9	0
3	S3	781	0	820	31	0
4	S4	586	0	604	31	0
5	S5	465	0	505	24	0
6	S6	345	0	381	12	0
7	S7	1571	0	797	61	0
8	SA	34208	0	17266	831	0
9	SB	1713	0	1838	64	0
10	SC	1538	0	1600	91	0
11	SD	1228	0	1311	55	0
12	SE	1514	0	1605	71	0
13	SF	2061	0	2200	96	0
14	SG	1757	0	1811	65	0
15	SH	1651	0	1807	70	0
16	SI	1424	0	1471	62	0
17	SJ	1528	0	1680	59	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
18	SK	1037	0	1099	33	0
19	SL	1383	0	1434	59	0
20	SM	1098	0	1183	63	0
21	SN	772	0	813	44	0
22	SO	686	0	695	21	0
23	SP	954	0	997	51	0
24	SQ	1129	0	1196	33	0
25	SR	746	0	754	14	0
26	SS	1046	0	1101	87	0
27	ST	405	0	419	30	0
28	SU	1202	0	1299	52	0
29	SV	1206	0	1239	38	0
30	SW	785	0	858	68	0
31	SX	776	0	832	28	0
32	SY	1266	0	1316	58	0
33	SZ	557	0	558	23	0
34	AA	67884	0	34243	1148	0
35	AC	3215	0	1633	58	0
36	AB	2517	0	1275	57	0
37	AL	1761	0	1896	50	0
38	A1	1134	0	1245	42	0
39	A2	837	0	896	17	0
40	A4	555	0	599	12	0
41	A6	740	0	763	26	0
42	A7	793	0	869	14	0
43	AN	1210	0	1329	47	0
44	A8	1036	0	1139	35	0
45	A9	844	0	886	22	0
46	Aa	850	0	904	30	0
47	Ab	756	0	842	25	0
48	Ad	603	0	686	22	0
49	Ae	388	0	421	6	0
50	Af	413	0	452	10	0
51	AP	1697	0	1802	68	0
52	Ah	658	0	727	21	0
53	Ai	778	0	861	19	0
54	AI	1685	0	1849	62	0
55	AJ	1813	0	1985	64	0
56	Ac	709	0	761	31	0
57	AK	1659	0	1782	57	0
58	AM	996	0	1044	29	0
59	AS	1503	0	1636	29	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
60	AO	1172	0	1230	41	0
61	AQ	1544	0	1582	55	0
62	AR	2049	0	2145	70	0
63	AW	1319	0	1303	29	0
64	AY	796	0	850	30	0
65	AT	1509	0	1682	36	0
66	AZ	1000	0	1099	42	0
67	A3	994	0	1121	19	0
68	A5	1879	0	2005	60	0
69	AD	1866	0	1964	58	0
70	AE	3061	0	3205	68	0
71	AF	3094	0	3333	88	0
72	AG	1010	0	1073	38	0
73	AU	1497	0	1556	38	0
74	AH	1475	0	1574	38	0
75	AV	1275	0	1355	23	0
76	Ag	343	0	388	9	0
77	AX	824	0	882	35	0
78	A0	521	0	539	18	0
All	All	192985	0	144314	4451	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 13.

All (4451) 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:10:G:H21	34:AA:1706:A:N6	1.31	1.27
34:AA:10:G:N2	34:AA:1706:A:H61	1.38	1.20
34:AA:11:A:N6	35:AC:154:G:H1	1.40	1.19
7:S7:29:G:H1	7:S7:38:A:N6	1.42	1.17
36:AB:22:G:N2	36:AB:25:A:C6	2.23	1.05
8:SA:1259:C:N4	8:SA:1264:A:H61	1.57	1.03
34:AA:2735:G:H1	34:AA:2814:U:H3	1.06	1.03
8:SA:1259:C:H42	8:SA:1264:A:N6	1.60	0.99
8:SA:70:U:H3	8:SA:82:G:H1	1.09	0.98
36:AB:22:G:C2	36:AB:25:A:N1	2.32	0.97
7:S7:8:U:H3	7:S7:14:A:N6	1.65	0.95
7:S7:8:U:H3	7:S7:14:A:H62	1.14	0.95
37:AL:56:ILE:HD11	37:AL:110:LYS:HD3	1.44	0.94
63:AW:20:VAL:O	63:AW:145:HIS:ND1	2.01	0.94

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:SL:168:ILE:HG12	19:SL:169:ASP:H	1.33	0.93
34:AA:2034:G:H1	34:AA:2075:U:H3	0.95	0.93
34:AA:1855:U:H5”	34:AA:1856:U:H4’	1.48	0.93
8:SA:1061:A:H2	8:SA:1081:U:H3	1.17	0.92
8:SA:1368:G:H1	8:SA:1688:U:H3	0.99	0.92
34:AA:3635:G:H1	34:AA:3650:U:H3	1.01	0.91
36:AB:22:G:C2	36:AB:25:A:C6	2.58	0.91
34:AA:3641:U:H3	34:AA:3644:G:H1	1.12	0.90
13:SF:106:LYS:HD2	13:SF:108:ARG:HE	1.36	0.90
34:AA:3121:G:N7	37:AL:201:ARG:NH2	2.19	0.90
8:SA:651:G:H1	8:SA:749:U:H3	0.90	0.88
8:SA:886:U:H3	8:SA:916:G:H1	0.91	0.88
7:S7:74:A:H8	34:AA:3103:C:H42	1.20	0.87
8:SA:1453:G:H1	8:SA:1610:U:H3	1.21	0.86
20:SM:12:GLY:HA2	20:SM:84:GLN:HE22	1.41	0.86
34:AA:2742:G:H1	34:AA:2806:U:H3	1.18	0.86
8:SA:887:A:H2	8:SA:915:G:H1	1.19	0.86
8:SA:1259:C:H42	8:SA:1264:A:H61	0.86	0.86
8:SA:1799:A:H5”	32:SY:121:LYS:HD3	1.55	0.85
23:SP:34:PHE:HB3	23:SP:41:PHE:HB2	1.58	0.85
31:SX:85:ILE:HG21	31:SX:107:ILE:HG12	1.59	0.85
34:AA:3553:G:H21	34:AA:3572:A:H8	1.23	0.85
8:SA:106:A:OP2	8:SA:314:A:N6	2.10	0.84
34:AA:2726:U:H1’	51:AP:126:ALA:HB2	1.60	0.84
8:SA:335:G:H5”	19:SL:98:LYS:HB3	1.57	0.84
34:AA:1531:G:H1	34:AA:1573:C:H5	1.23	0.83
34:AA:3636:U:H3	34:AA:3649:G:H1	1.26	0.83
8:SA:887:A:N1	8:SA:915:G:O6	2.12	0.83
7:S7:16:U:O2	7:S7:57:C:N3	2.13	0.82
27:ST:29:ILE:HB	27:ST:34:ILE:HD11	1.59	0.82
7:S7:50:G:H1	7:S7:60:U:H3	1.27	0.82
12:SE:57:ARG:HD3	14:SG:185:PRO:HG3	1.63	0.81
8:SA:1979:C:H4’	15:SH:65:GLN:HE21	1.46	0.81
9:SB:168:MET:HB2	9:SB:197:ILE:HD11	1.62	0.81
10:SC:29:LEU:HD21	10:SC:34:LYS:HE3	1.62	0.81
23:SP:42:ILE:HG21	23:SP:81:VAL:HG11	1.62	0.81
34:AA:684:G:H22	71:AF:311:LYS:HE3	1.46	0.80
8:SA:1379:G:N2	8:SA:1679:G:O6	2.15	0.80
34:AA:1474:A:H5”	71:AF:306:LYS:HB2	1.64	0.80
34:AA:1630:A:O2’	34:AA:2125:A:H1’	1.82	0.80
55:AJ:74:TYR:O	55:AJ:76:ARG:N	2.14	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:1830:C:H5'	26:SS:27:LYS:HZ2	1.48	0.79
34:AA:1689:U:O2	34:AA:1705:A:N6	2.15	0.79
8:SA:1660:U:H5'	30:SW:3:ARG:HD3	1.62	0.79
17:SJ:49:LEU:HD11	17:SJ:58:LYS:HE3	1.63	0.79
34:AA:2075:U:HO2'	34:AA:2079:A:HO2'	1.29	0.79
34:AA:3441:A:H2	34:AA:3471:A:H62	1.28	0.79
56:Ac:5:GLY:O	56:Ac:10:SER:OG	2.00	0.79
14:SG:235:GLY:HA2	33:SZ:23:LEU:HD11	1.62	0.79
4:S4:40:GLN:NE2	4:S4:54:CYS:SG	2.56	0.79
31:SX:86:ILE:HG13	31:SX:88:GLU:H	1.48	0.79
34:AA:3256:C:H5"	50:Af:49:LYS:HG3	1.64	0.78
34:AA:3637:G:H1	34:AA:3648:U:H3	0.79	0.78
8:SA:214:U:O2'	29:SV:23:ASN:ND2	2.15	0.78
34:AA:11:A:N1	35:AC:154:G:N2	2.29	0.78
34:AA:2830:U:H3	34:AA:2832:A:H8	1.28	0.78
34:AA:506:A:H2'	34:AA:507:G:C8	2.19	0.78
34:AA:506:A:H2'	34:AA:507:G:H8	1.48	0.78
8:SA:1829:U:O2'	26:SS:27:LYS:NZ	2.13	0.77
34:AA:1534:U:O2'	34:AA:1535:G:O5'	2.02	0.77
26:SS:93:LYS:HG3	26:SS:95:GLY:H	1.49	0.77
34:AA:372:G:OP2	56:Ac:55:LYS:NZ	2.18	0.77
38:A1:2:GLY:HA3	41:A6:40:GLY:HA3	1.65	0.77
7:S7:1:G:C2	7:S7:71:C:C2	2.73	0.77
8:SA:955:U:H2'	8:SA:956:A:C8	2.20	0.77
7:S7:29:G:N2	7:S7:38:A:N1	2.30	0.76
34:AA:1881:C:O2'	34:AA:1882:U:O5'	2.02	0.76
34:AA:63:A:OP1	51:AP:173:ARG:NH2	2.17	0.76
8:SA:1734:G:H3'	8:SA:1811:A:H61	1.49	0.76
14:SG:154:GLY:HA3	14:SG:167:PRO:HB3	1.66	0.76
27:ST:34:ILE:HD12	27:ST:36:ILE:H	1.50	0.76
12:SE:53:ARG:NH1	14:SG:187:GLY:O	2.18	0.76
65:AT:171:LYS:HG2	65:AT:172:ARG:HH21	1.50	0.76
10:SC:21:LYS:HG2	10:SC:24:ILE:HG12	1.68	0.76
58:AM:91:GLU:OE1	58:AM:91:GLU:N	2.19	0.76
1:S1:8:ARG:HB3	1:S1:26:GLU:HG2	1.65	0.76
8:SA:1061:A:O2'	8:SA:2077:U:O2	2.02	0.76
8:SA:1376:A:O2'	11:SD:142:LYS:NZ	2.18	0.76
10:SC:10:LYS:N	10:SC:13:SER:HG	1.84	0.76
34:AA:3254:G:O2'	50:Af:24:TYR:O	2.03	0.76
75:AV:46:ASP:H	75:AV:96:HIS:HD2	1.31	0.76
24:SQ:100:ASP:OD2	24:SQ:144:ARG:NH1	2.18	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:SS:17:ILE:HD12	26:SS:19:ASN:H	1.49	0.75
34:AA:3736:A:H2	34:AA:3753:G:H21	1.32	0.75
57:AK:191:GLU:N	57:AK:191:GLU:OE2	2.20	0.75
11:SD:169:VAL:HG22	11:SD:190:MET:HG3	1.66	0.75
8:SA:1980:A:N6	8:SA:2010:U:O4	2.19	0.75
15:SH:178:LEU:O	15:SH:183:ARG:NH1	2.19	0.75
38:A1:86:GLN:HE22	38:A1:88:ALA:HB3	1.50	0.75
22:SO:68:GLU:OE2	22:SO:75:GLN:NE2	2.20	0.75
26:SS:126:ARG:HG3	26:SS:131:LEU:HB2	1.68	0.75
8:SA:1304:A:C2	8:SA:1850:G:N2	2.55	0.75
8:SA:248:G:H21	29:SV:43:LEU:HD11	1.50	0.74
34:AA:2809:A:OP2	34:AA:2810:A:N6	2.19	0.74
8:SA:128:A:OP2	15:SH:197:ARG:NH2	2.19	0.74
59:AS:121:THR:OG1	59:AS:123:ASP:OD1	2.04	0.74
13:SF:208:ILE:HD11	13:SF:225:VAL:HG11	1.68	0.74
34:AA:92:G:H5'	34:AA:93:C:H5"	1.68	0.74
61:AQ:170:LYS:HA	61:AQ:177:SER:HA	1.69	0.74
34:AA:1791:A:OP2	46:Aa:68:LYS:NZ	2.19	0.74
43:AN:35:TYR:HB3	43:AN:73:ARG:HG2	1.69	0.74
7:S7:1:G:N2	7:S7:71:C:C2	2.55	0.74
34:AA:72:C:O2'	37:AL:65:ASN:OD1	2.05	0.74
34:AA:203:A:H2	34:AA:207:A:H2	1.34	0.74
43:AN:27:PRO:O	43:AN:80:ARG:NH1	2.20	0.74
8:SA:877:U:O4	8:SA:926:G:O6	2.06	0.74
20:SM:16:THR:OG1	20:SM:124:ARG:NH1	2.20	0.74
20:SM:45:LEU:HD22	20:SM:79:ILE:HG21	1.69	0.74
34:AA:1263:A:OP2	40:A4:5:LYS:NZ	2.20	0.74
8:SA:651:G:N2	8:SA:749:U:O2	2.20	0.73
34:AA:218:U:O2	71:AF:219:LYS:NZ	2.20	0.73
7:S7:8:U:O4	7:S7:14:A:N7	2.21	0.73
34:AA:3591:U:OP1	74:AH:23:ARG:NH1	2.21	0.73
34:AA:3637:G:O6	34:AA:3648:U:O4	2.07	0.73
38:A1:40:TYR:HA	38:A1:76:ASN:HA	1.68	0.73
43:AN:145:ILE:HD11	57:AK:180:ILE:HG23	1.69	0.73
38:A1:126:VAL:HG22	38:A1:132:GLU:HG3	1.70	0.73
64:AY:125:GLU:OE2	64:AY:125:GLU:N	2.19	0.73
54:AI:211:ARG:H	54:AI:214:MET:HE2	1.53	0.73
74:AH:43:ILE:HD12	74:AH:45:ILE:HD11	1.71	0.73
20:SM:14:LYS:HD2	20:SM:80:TYR:HB3	1.68	0.73
8:SA:955:U:H2'	8:SA:956:A:H8	1.51	0.73
8:SA:161:U:H2'	8:SA:162:A:H8	1.53	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:1851:A:H62	34:AA:1969:A:H2	1.37	0.73
8:SA:974:A:H5'	23:SP:66:ARG:HD3	1.70	0.73
23:SP:138:ASP:OD2	23:SP:140:THR:N	2.22	0.73
7:S7:1:G:N1	7:S7:71:C:N3	2.36	0.73
8:SA:1635:C:O4'	30:SW:48:ASN:ND2	2.22	0.73
34:AA:1737:A:OP1	46:Aa:64:ARG:NH2	2.22	0.73
34:AA:3630:U:H3	34:AA:3655:U:H3	1.36	0.73
66:AZ:52:ASP:HB2	66:AZ:109:LYS:HD2	1.69	0.73
69:AD:47:ASP:OD1	69:AD:48:ILE:N	2.21	0.73
7:S7:17:U:O5'	7:S7:58:G:N2	2.22	0.72
14:SG:122:HIS:HB3	14:SG:148:LEU:HD11	1.70	0.72
8:SA:1981:A:H61	8:SA:2009:C:H42	1.33	0.72
8:SA:1272:A:H2'	8:SA:1273:G:H8	1.54	0.72
21:SN:101:THR:O	21:SN:105:ILE:HB	1.89	0.72
8:SA:1839:G:N2	8:SA:1866:A:OP2	2.21	0.72
34:AA:66:A:OP2	37:AL:99:ARG:NH1	2.22	0.72
34:AA:998:U:H4'	63:AW:132:ALA:HB2	1.71	0.72
8:SA:1437:U:H2'	8:SA:1438:A:H8	1.53	0.72
8:SA:1648:A:H5'	30:SW:4:VAL:HA	1.72	0.72
8:SA:1652:A:OP2	16:SI:50:LYS:NZ	2.20	0.72
68:A5:247:ALA:O	68:A5:250:ASN:ND2	2.23	0.72
24:SQ:134:ALA:HB1	24:SQ:141:GLU:HB2	1.72	0.72
34:AA:2478:G:O2'	34:AA:2607:U:OP2	2.08	0.72
77:AX:51:LYS:NZ	77:AX:88:TYR:OH	2.23	0.72
8:SA:865:G:H21	18:SK:107:PRO:HG3	1.54	0.72
9:SB:147:GLN:OE1	9:SB:147:GLN:N	2.23	0.72
32:SY:83:ILE:HD12	32:SY:126:ILE:HG21	1.70	0.72
8:SA:952:U:H3	8:SA:1014:U:H3	1.35	0.71
11:SD:23:GLU:OE2	22:SO:71:ASN:ND2	2.23	0.71
33:SZ:50:GLU:OE2	33:SZ:75:LYS:NZ	2.23	0.71
34:AA:158:U:OP2	51:AP:49:ARG:NH2	2.22	0.71
8:SA:574:A:OP1	24:SQ:70:LYS:NZ	2.23	0.71
9:SB:143:THR:O	9:SB:208:GLN:NE2	2.21	0.71
34:AA:596:A:H5'	74:AH:7:THR:HG21	1.71	0.71
8:SA:1277:G:N3	8:SA:1296:C:O2'	2.23	0.71
69:AD:33:ASP:OD1	69:AD:34:TYR:N	2.23	0.71
71:AF:383:VAL:HG13	73:AU:134:ARG:HD3	1.72	0.71
8:SA:1729:A:H5'	20:SM:72:GLY:HA2	1.73	0.71
44:A8:14:THR:HG22	44:A8:15:LYS:H	1.55	0.71
8:SA:756:A:C6	8:SA:757:A:N6	2.58	0.71
13:SF:139:ALA:HB2	13:SF:150:ILE:HD13	1.72	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:1762:A:HO2'	34:AA:1763:G:H8	1.38	0.71
55:AJ:72:PRO:HD2	55:AJ:75:ILE:HD11	1.72	0.71
66:AZ:115:LYS:HD3	66:AZ:115:LYS:N	2.04	0.71
12:SE:127:VAL:O	12:SE:131:GLN:HG2	1.90	0.71
34:AA:1630:A:O2'	34:AA:2125:A:N3	2.22	0.71
37:AL:185:ALA:N	60:AO:134:GLU:OE1	2.23	0.71
50:Af:17:LYS:HD3	50:Af:26:ARG:HB3	1.73	0.71
8:SA:1799:A:H1'	32:SY:60:VAL:HG11	1.73	0.71
34:AA:3014:C:H42	72:AG:22:CYS:HB3	1.56	0.71
10:SC:157:ASP:OD1	33:SZ:59:ARG:NH1	2.24	0.71
8:SA:1451:G:N3	8:SA:1625:C:N4	2.39	0.71
13:SF:19:MET:HE1	13:SF:108:ARG:HD3	1.73	0.70
17:SJ:47:CYS:HB3	17:SJ:60:ILE:HD11	1.73	0.70
58:AM:30:ASN:HD21	58:AM:114:SER:HB2	1.56	0.70
60:AO:92:GLU:OE1	60:AO:92:GLU:N	2.23	0.70
30:SW:46:MET:SD	30:SW:46:MET:N	2.56	0.70
71:AF:375:TYR:HE1	73:AU:35:ARG:HD3	1.55	0.70
16:SI:160:ILE:O	16:SI:164:LEU:HD12	1.91	0.70
30:SW:50:VAL:O	30:SW:54:VAL:HG23	1.91	0.70
34:AA:3042:A:N6	62:AR:28:THR:O	2.23	0.70
38:A1:11:ILE:HG22	38:A1:82:PRO:HA	1.73	0.70
38:A1:90:ASP:O	38:A1:121:LYS:NZ	2.24	0.70
5:S5:15:ARG:NH2	5:S5:20:GLY:O	2.24	0.70
31:SX:86:ILE:HD12	31:SX:87:PRO:HD2	1.73	0.70
68:A5:241:ASP:OD1	68:A5:245:ARG:NH2	2.25	0.70
8:SA:1792:U:O2	8:SA:1807:A:N6	2.23	0.70
19:SL:178:GLN:OE1	19:SL:180:ARG:NH1	2.25	0.70
37:AL:172:GLU:HB2	60:AO:99:VAL:HB	1.72	0.70
62:AR:61:ILE:HG22	62:AR:79:LYS:HG2	1.72	0.70
8:SA:1310:C:N3	8:SA:1701:G:N2	2.39	0.70
1:S1:107:ARG:HD2	1:S1:110:LYS:HD2	1.73	0.70
43:AN:57:ASP:OD2	43:AN:66:ARG:NH1	2.25	0.70
46:Aa:87:GLU:OE2	46:Aa:91:ARG:NH1	2.25	0.70
66:AZ:110:VAL:HA	66:AZ:115:LYS:HZ1	1.57	0.70
21:SN:82:ARG:O	21:SN:82:ARG:NH1	2.23	0.69
30:SW:74:GLN:OE1	30:SW:78:ARG:NH2	2.25	0.69
34:AA:283:U:O2	51:AP:93:LYS:NZ	2.24	0.69
34:AA:3613:A:OP1	43:AN:109:LYS:NZ	2.23	0.69
63:AW:10:ASN:OD1	63:AW:151:ARG:NH1	2.24	0.69
73:AU:17:HIS:HB2	73:AU:73:ILE:HD11	1.74	0.69
8:SA:1436:U:O2	27:ST:54:ARG:NH2	2.23	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:1864:U:OP1	26:SS:36:LYS:NZ	2.25	0.69
17:SJ:144:LYS:O	18:SK:42:GLN:NE2	2.25	0.69
34:AA:661:G:N1	34:AA:673:U:N3	2.40	0.69
34:AA:936:A:H8	56:Ac:18:THR:HG23	1.58	0.69
42:A7:31:VAL:HG11	42:A7:39:ARG:HG2	1.73	0.69
44:A8:5:LYS:NZ	44:A8:7:GLY:O	2.24	0.69
4:S4:68:LYS:NZ	8:SA:1119:G:OP2	2.25	0.69
34:AA:664:U:N3	34:AA:667:U:O4	2.19	0.69
58:AM:90:HIS:HB3	70:AE:72:ILE:HD12	1.74	0.69
34:AA:859:C:H2'	34:AA:860:A:C8	2.27	0.69
34:AA:3617:A:O2'	73:AU:172:LYS:NZ	2.22	0.69
8:SA:993:A:H2'	8:SA:994:G:C8	2.28	0.69
29:SV:40:LYS:O	29:SV:42:GLY:N	2.21	0.69
16:SI:78:LEU:HA	16:SI:81:ILE:HD12	1.74	0.69
34:AA:25:A:OP2	56:Ac:49:ARG:NH2	2.25	0.69
54:AI:130:ASP:OD1	54:AI:130:ASP:N	2.25	0.69
7:S7:1:G:C2	7:S7:71:C:O2	2.45	0.69
17:SJ:159:GLU:HA	17:SJ:162:ARG:HH11	1.58	0.69
4:S4:19:LEU:O	4:S4:20:LYS:HG2	1.92	0.69
8:SA:1306:C:N3	27:ST:14:GLN:NE2	2.41	0.69
8:SA:1665:G:N2	11:SD:163:GLU:OE2	2.24	0.69
34:AA:1786:A:OP1	38:A1:73:LYS:NZ	2.22	0.69
34:AA:2208:G:H21	34:AA:3754:A:H8	1.39	0.69
1:S1:41:LYS:HG2	1:S1:56:ILE:HG21	1.75	0.69
11:SD:151:MET:N	11:SD:151:MET:SD	2.66	0.69
34:AA:888:A:H61	34:AA:3111:U:H5	1.38	0.69
55:AJ:177:ILE:HD13	55:AJ:181:LEU:HD13	1.75	0.69
61:AQ:63:GLU:OE2	61:AQ:63:GLU:N	2.25	0.69
8:SA:798:U:OP1	18:SK:82:LYS:NZ	2.26	0.68
8:SA:1849:U:OP2	31:SX:43:ARG:NH2	2.27	0.68
34:AA:1806:C:H5"	69:AD:71:LYS:HD2	1.75	0.68
22:SO:43:HIS:HB3	22:SO:46:LEU:HB2	1.74	0.68
8:SA:1712:G:O2'	8:SA:1899:A:OP1	2.11	0.68
34:AA:746:A:H2'	34:AA:747:A:C8	2.29	0.68
8:SA:1628:A:H5'	21:SN:56:PRO:HA	1.75	0.68
32:SY:148:THR:HG23	32:SY:151:GLY:H	1.58	0.68
34:AA:442:G:H5'	45:A9:90:LYS:HD2	1.75	0.68
34:AA:1096:G:H21	34:AA:1231:A:H8	1.40	0.68
7:S7:56:U:O2'	7:S7:58:G:OP2	2.12	0.68
9:SB:183:ASP:HA	9:SB:186:LYS:HG2	1.75	0.68
34:AA:89:A:OP2	59:AS:172:LYS:NZ	2.25	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:1770:G:H21	34:AA:1798:A:H8	1.41	0.68
1:S1:21:LYS:HG3	1:S1:76:ILE:HD11	1.74	0.68
8:SA:965:U:O2	23:SP:55:ARG:NH2	2.26	0.68
8:SA:1274:C:OP1	26:SS:132:ARG:NH2	2.20	0.68
8:SA:1456:G:N1	8:SA:1607:U:N3	2.41	0.68
19:SL:213:ASP:HA	19:SL:217:ARG:HE	1.58	0.68
34:AA:3402:A:H2'	34:AA:3403:A:C8	2.28	0.68
8:SA:939:A:H2'	8:SA:940:G:C8	2.29	0.68
34:AA:2506:A:H2'	34:AA:2507:A:C8	2.28	0.68
51:AP:99:LYS:NZ	51:AP:119:SER:O	2.27	0.68
55:AJ:260:LEU:O	55:AJ:264:MET:HG2	1.94	0.68
8:SA:1453:G:OP2	20:SM:69:ARG:NH2	2.27	0.68
71:AF:356:GLU:O	71:AF:360:GLN:NE2	2.27	0.68
29:SV:16:GLN:HG2	29:SV:19:ALA:HB2	1.76	0.68
34:AA:703:U:H2'	34:AA:704:U:C6	2.29	0.68
34:AA:936:A:C8	56:Ac:18:THR:HG23	2.28	0.68
34:AA:1101:A:OP1	68:A5:210:LYS:NZ	2.22	0.68
70:AE:33:PRO:HB3	70:AE:339:ILE:HA	1.76	0.68
16:SI:64:VAL:HG12	16:SI:84:VAL:HG21	1.75	0.68
34:AA:308:U:HO2'	34:AA:309:G:H8	1.41	0.68
34:AA:513:U:H3	34:AA:685:U:H5	1.42	0.68
8:SA:539:U:OP1	12:SE:132:ARG:NH2	2.27	0.67
10:SC:93:THR:HG23	10:SC:95:ALA:H	1.59	0.67
16:SI:76:LYS:HE3	16:SI:79:LYS:HD2	1.77	0.67
7:S7:1:G:H2'	7:S7:2:G:H8	1.57	0.67
8:SA:1982:G:N2	8:SA:2008:U:O2	2.22	0.67
21:SN:93:GLN:HB3	21:SN:96:VAL:HG12	1.76	0.67
62:AR:89:PRO:HB2	62:AR:228:ASN:HD22	1.59	0.67
64:AY:106:ASP:O	64:AY:110:LEU:HB2	1.95	0.67
34:AA:193:C:H5"	66:AZ:121:LYS:HD3	1.77	0.67
51:AP:67:ARG:O	51:AP:71:ARG:NH2	2.27	0.67
8:SA:1272:A:H2'	8:SA:1273:G:C8	2.28	0.67
12:SE:91:GLU:HB2	12:SE:92:LYS:HD2	1.75	0.67
13:SF:138:ILE:HD11	13:SF:146:SER:HB3	1.76	0.67
62:AR:82:GLU:OE1	62:AR:108:ARG:NH1	2.28	0.67
8:SA:1636:A:H2	8:SA:1658:G:H1'	1.59	0.67
15:SH:185:LEU:HD12	15:SH:188:ARG:HE	1.57	0.67
34:AA:3453:U:OP1	65:AT:58:SER:N	2.27	0.67
43:AN:34:GLU:OE2	73:AU:183:ARG:NH2	2.28	0.67
54:AI:159:MET:SD	54:AI:159:MET:N	2.67	0.67
55:AJ:163:LYS:NZ	55:AJ:190:LYS:O	2.17	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
73:AU:42:ASN:OD1	73:AU:45:ASN:ND2	2.27	0.67
8:SA:1881:G:N2	8:SA:1907:G:O2'	2.28	0.67
33:SZ:70:ARG:NH1	33:SZ:74:GLU:OE1	2.28	0.67
34:AA:3639:G:H22	34:AA:3646:G:H22	1.42	0.67
62:AR:242:ALA:O	62:AR:246:ILE:HG22	1.95	0.67
69:AD:119:ARG:O	69:AD:122:ASN:ND2	2.28	0.67
9:SB:48:VAL:HG21	9:SB:61:LEU:HD22	1.76	0.67
59:AS:54:MET:O	59:AS:59:ARG:NH1	2.28	0.67
68:A5:233:ALA:HB3	68:A5:236:GLU:HG3	1.76	0.67
8:SA:1907:G:H4'	16:SI:77:LYS:HZ3	1.58	0.67
11:SD:137:VAL:HG22	11:SD:187:VAL:HG13	1.76	0.67
26:SS:117:LYS:HZ2	26:SS:128:HIS:HB2	1.59	0.67
34:AA:1064:U:H2'	34:AA:1065:U:C6	2.29	0.67
34:AA:1906:A:H2'	34:AA:1907:A:C8	2.30	0.67
8:SA:887:A:C2	8:SA:915:G:N1	2.62	0.66
8:SA:1304:A:H61	8:SA:1850:G:H1'	1.60	0.66
7:S7:8:U:N3	7:S7:14:A:N6	2.29	0.66
32:SY:28:CYS:SG	32:SY:29:ILE:N	2.68	0.66
34:AA:1031:G:N1	69:AD:208:GLU:OE1	2.22	0.66
35:AC:106:G:OP2	35:AC:108:A:O2'	2.13	0.66
59:AS:81:VAL:HG11	59:AS:85:ILE:HD11	1.78	0.66
66:AZ:110:VAL:HA	66:AZ:115:LYS:NZ	2.10	0.66
17:SJ:14:SER:H	17:SJ:17:GLU:HB3	1.60	0.66
34:AA:727:A:OP2	34:AA:3227:U:O2'	2.13	0.66
44:A8:104:LYS:O	44:A8:108:ILE:HG13	1.94	0.66
11:SD:133:LYS:HE2	11:SD:192:PRO:HA	1.77	0.66
19:SL:93:THR:HG23	19:SL:95:THR:HG23	1.77	0.66
29:SV:125:ILE:H	29:SV:125:ILE:HD12	1.60	0.66
34:AA:221:A:OP1	66:AZ:2:LYS:NZ	2.26	0.66
34:AA:960:A:O2'	65:AT:130:GLN:NE2	2.28	0.66
34:AA:2105:A:H5"	34:AA:2106:A:H5'	1.77	0.66
47:Ab:64:LEU:O	47:Ab:72:SER:OG	2.13	0.66
51:AP:63:ARG:NH1	51:AP:132:GLU:OE2	2.28	0.66
51:AP:148:LYS:O	51:AP:150:ASN:N	2.25	0.66
8:SA:1453:G:OP1	20:SM:7:ARG:NH2	2.28	0.66
8:SA:1843:G:OP1	26:SS:123:ARG:NH2	2.28	0.66
16:SI:66:SER:O	16:SI:150:ARG:NH2	2.29	0.66
19:SL:13:LEU:HG	29:SV:137:THR:HG21	1.77	0.66
30:SW:73:LEU:HD12	30:SW:74:GLN:HG3	1.76	0.66
34:AA:949:A:H2	34:AA:983:G:H21	1.44	0.66
8:SA:877:U:O2	8:SA:926:G:N2	2.17	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:S6:15:LYS:NZ	8:SA:592:A:OP1	2.28	0.66
11:SD:190:MET:SD	11:SD:190:MET:N	2.68	0.66
17:SJ:111:LYS:O	17:SJ:112:ILE:HG12	1.95	0.66
23:SP:100:SER:OG	23:SP:101:GLY:N	2.22	0.66
34:AA:643:G:H1'	34:AA:684:G:N2	2.10	0.66
34:AA:1534:U:OP1	71:AF:143:ARG:NH1	2.28	0.66
58:AM:129:PRO:O	58:AM:132:SER:OG	2.14	0.66
70:AE:83:PRO:O	70:AE:162:GLN:NE2	2.29	0.66
74:AH:44:ASP:HB2	74:AH:57:VAL:HG13	1.77	0.66
34:AA:2835:G:N1	34:AA:2919:A:N7	2.44	0.66
34:AA:3623:A:OP2	43:AN:139:LYS:NZ	2.29	0.66
72:AG:35:ARG:O	72:AG:39:GLN:NE2	2.28	0.66
72:AG:42:GLU:OE1	72:AG:75:LYS:NZ	2.26	0.66
77:AX:108:LYS:HG2	77:AX:117:ARG:HH12	1.60	0.66
5:S5:42:ARG:NH2	5:S5:61:ARG:O	2.28	0.66
8:SA:1307:U:O2'	27:ST:26:HIS:NE2	2.29	0.66
8:SA:1821:A:H2'	8:SA:1822:A:C8	2.31	0.66
10:SC:202:LEU:O	30:SW:81:ARG:NH2	2.25	0.66
11:SD:108:TYR:O	11:SD:112:LYS:HG3	1.96	0.66
14:SG:41:TRP:CG	14:SG:73:GLN:HG2	2.31	0.66
20:SM:44:ILE:O	20:SM:47:THR:OG1	2.14	0.66
34:AA:440:A:H2'	34:AA:441:A:C8	2.31	0.66
52:Ah:51:CYS:HB3	52:Ah:54:ILE:HD12	1.77	0.66
61:AQ:21:ARG:O	61:AQ:24:ARG:NH1	2.29	0.66
68:A5:181:ASP:N	68:A5:181:ASP:OD1	2.25	0.66
69:AD:32:LEU:HD23	69:AD:121:GLY:HA2	1.78	0.66
72:AG:31:THR:HG22	72:AG:35:ARG:HE	1.61	0.66
72:AG:157:GLU:OE1	72:AG:157:GLU:N	2.26	0.66
8:SA:520:U:H2'	8:SA:521:G:C8	2.31	0.66
13:SF:240:ARG:NH1	13:SF:241:GLU:OE2	2.28	0.66
34:AA:773:A:O2'	34:AA:774:A:H8	1.79	0.66
34:AA:1247:C:H2'	34:AA:1248:A:H8	1.60	0.66
34:AA:1511:U:H2'	34:AA:1512:A:C8	2.31	0.66
43:AN:30:LEU:HD13	43:AN:77:LEU:HD23	1.77	0.66
65:AT:7:LYS:HG2	65:AT:23:MET:HE2	1.77	0.66
66:AZ:31:SER:HA	66:AZ:48:PRO:HA	1.78	0.66
8:SA:1319:G:O2'	8:SA:1365:G:N2	2.30	0.65
26:SS:32:LEU:HA	26:SS:35:ILE:HG12	1.79	0.65
34:AA:2649:A:H61	34:AA:3342:C:H5	1.43	0.65
8:SA:1017:G:OP2	9:SB:162:LYS:NZ	2.25	0.65
8:SA:1381:C:H2'	8:SA:1382:G:H8	1.61	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:2157:G:H5”	70:AE:242:GLY:HA3	1.78	0.65
34:AA:2401:C:H1’	34:AA:3736:A:C8	2.31	0.65
54:AI:28:THR:HG22	54:AI:36:ARG:HH21	1.62	0.65
8:SA:1283:U:O2’	8:SA:1286:U:O2	2.13	0.65
8:SA:1453:G:O6	8:SA:1610:U:O4	2.13	0.65
22:SO:55:MET:N	22:SO:55:MET:SD	2.69	0.65
34:AA:10:G:N2	34:AA:1706:A:N6	2.15	0.65
34:AA:3761:G:OP2	78:A0:57:ARG:NH2	2.30	0.65
68:A5:83:CYS:SG	75:AV:141:MET:HE1	2.37	0.65
72:AG:24:GLY:HA2	72:AG:65:ILE:HB	1.76	0.65
8:SA:453:U:OP1	13:SF:49:ARG:NH1	2.29	0.65
34:AA:1576:U:OP2	60:AO:4:ARG:NH1	2.28	0.65
34:AA:1656:G:H2’	34:AA:2147:A:H1’	1.78	0.65
34:AA:2451:A:OP2	69:AD:156:LYS:NZ	2.26	0.65
34:AA:3197:A:N6	34:AA:3209:G:O2’	2.28	0.65
34:AA:3641:U:O2	34:AA:3644:G:N2	2.24	0.65
34:AA:3657:G:H2’	34:AA:3658:G:C8	2.31	0.65
57:AK:136:ARG:HD2	57:AK:139:THR:HG23	1.78	0.65
61:AQ:93:PRO:HB2	61:AQ:125:VAL:HG12	1.77	0.65
62:AR:273:LEU:O	62:AR:278:ARG:NH2	2.29	0.65
1:S1:8:ARG:HD2	8:SA:829:G:C6	2.31	0.65
8:SA:852:A:H2	13:SF:248:ILE:HD11	1.62	0.65
8:SA:1816:U:H4’	8:SA:1817:U:H5’	1.77	0.65
8:SA:1985:A:H2’	8:SA:1986:A:C8	2.32	0.65
10:SC:144:ILE:HG23	10:SC:158:ILE:HB	1.77	0.65
19:SL:217:ARG:NH2	19:SL:218:ASN:O	2.29	0.65
68:A5:173:ARG:HB2	68:A5:216:TRP:CE3	2.32	0.65
8:SA:1448:U:H2’	8:SA:1449:U:H2’	1.78	0.65
8:SA:1606:U:H4’	32:SY:146:ARG:HH22	1.62	0.65
30:SW:21:TYR:HA	30:SW:24:LEU:HD12	1.79	0.65
8:SA:554:U:OP1	24:SQ:140:LYS:NZ	2.30	0.65
34:AA:1992:U:H2’	34:AA:1993:A:C8	2.32	0.65
34:AA:2823:U:OP2	55:AJ:87:ARG:NH1	2.29	0.65
12:SE:48:LEU:O	12:SE:52:ILE:HD12	1.97	0.65
55:AJ:60:ARG:NH1	69:AD:35:CYS:SG	2.70	0.65
62:AR:274:ASN:H	62:AR:277:LEU:HD11	1.61	0.65
71:AF:383:VAL:HG22	73:AU:134:ARG:HG3	1.77	0.65
1:S1:52:ASN:ND2	1:S1:54:ASN:OD1	2.25	0.65
3:S3:52:ASP:HA	3:S3:55:GLU:HG3	1.79	0.65
9:SB:28:GLU:N	9:SB:28:GLU:OE1	2.30	0.65
11:SD:166:LYS:O	11:SD:166:LYS:NZ	2.26	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:A2:77:VAL:HG12	39:A2:78:VAL:HG22	1.77	0.65
66:AZ:56:LEU:HD23	66:AZ:66:GLU:HB3	1.79	0.65
8:SA:73:A:N6	8:SA:80:A:N1	2.44	0.64
8:SA:110:A:H2'	8:SA:111:G:C8	2.32	0.64
8:SA:325:U:H4'	8:SA:329:A:C8	2.31	0.64
15:SH:67:VAL:HG22	15:SH:69:THR:HG22	1.79	0.64
18:SK:80:ASP:OD1	18:SK:80:ASP:N	2.27	0.64
34:AA:203:A:O2'	34:AA:1539:U:OP1	2.13	0.64
62:AR:59:GLN:HB2	62:AR:80:SER:HB2	1.79	0.64
8:SA:413:A:H2'	8:SA:414:C:H6	1.62	0.64
8:SA:1677:C:H1'	8:SA:1683:U:H3	1.61	0.64
12:SE:86:LEU:HD13	12:SE:90:GLU:HG3	1.78	0.64
34:AA:157:G:OP2	51:AP:4:TYR:OH	2.11	0.64
34:AA:2021:A:H2'	34:AA:2022:A:C8	2.32	0.64
8:SA:598:A:H2'	8:SA:599:A:C8	2.32	0.64
8:SA:1023:A:H2'	8:SA:1024:A:C8	2.32	0.64
9:SB:200:GLN:NE2	9:SB:201:CYS:SG	2.69	0.64
19:SL:67:TRP:O	19:SL:71:GLY:N	2.30	0.64
7:S7:57:C:H3'	7:S7:58:G:H8	1.61	0.64
12:SE:52:ILE:HG23	12:SE:76:LEU:HD11	1.80	0.64
13:SF:35:PRO:HD2	13:SF:83:PRO:HG2	1.80	0.64
34:AA:979:G:C5	69:AD:181:LYS:HB2	2.33	0.64
34:AA:2106:A:H5"	34:AA:2107:C:C5	2.33	0.64
42:A7:40:ALA:O	42:A7:44:ILE:HG13	1.97	0.64
47:Ab:61:ILE:HG22	47:Ab:97:ILE:HG21	1.78	0.64
55:AJ:203:LEU:HA	55:AJ:206:LEU:HG	1.78	0.64
61:AQ:50:VAL:HG12	61:AQ:167:VAL:HG12	1.80	0.64
8:SA:1316:U:H3	8:SA:1694:G:H1	1.43	0.64
8:SA:1888:U:H2'	8:SA:1889:G:H8	1.62	0.64
26:SS:19:ASN:ND2	26:SS:35:ILE:O	2.30	0.64
31:SX:60:ILE:HD11	31:SX:92:SER:HB3	1.79	0.64
34:AA:1784:G:N2	34:AA:1787:A:OP2	2.28	0.64
34:AA:2666:A:N3	34:AA:3183:G:O2'	2.29	0.64
76:Ag:10:LYS:NZ	76:Ag:14:LYS:O	2.30	0.64
9:SB:41:ARG:HH11	9:SB:41:ARG:HG3	1.63	0.64
12:SE:117:GLY:O	12:SE:119:ALA:N	2.31	0.64
34:AA:367:U:O3'	56:Ac:28:ARG:NH1	2.31	0.64
34:AA:773:A:HO2'	34:AA:774:A:H8	1.46	0.64
36:AB:40:A:N3	72:AG:72:ARG:NH1	2.40	0.64
71:AF:66:SER:O	71:AF:66:SER:OG	2.15	0.64
8:SA:1798:G:N2	8:SA:1801:A:OP2	2.30	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:SH:69:THR:OG1	15:SH:71:ASN:OD1	2.15	0.64
34:AA:583:U:O2'	43:AN:84:ASN:ND2	2.25	0.64
36:AB:7:G:OP1	62:AR:33:ARG:NH1	2.30	0.64
69:AD:179:ILE:HG23	69:AD:184:VAL:HB	1.80	0.64
72:AG:50:CYS:HA	72:AG:64:LYS:HG2	1.80	0.64
8:SA:1446:A:H4'	21:SN:52:PRO:HD2	1.78	0.64
17:SJ:145:ALA:HA	18:SK:42:GLN:HE21	1.63	0.64
32:SY:93:ILE:HB	32:SY:145:ARG:HB2	1.79	0.64
34:AA:956:A:OP2	52:Ah:4:ARG:NH1	2.31	0.64
34:AA:1905:C:H2'	34:AA:1906:A:C8	2.33	0.64
70:AE:10:ARG:NH2	70:AE:260:GLN:O	2.31	0.64
17:SJ:77:GLN:O	17:SJ:81:ILE:HG12	1.97	0.64
75:AV:52:GLY:HA3	75:AV:93:ARG:HG3	1.79	0.64
1:S1:115:ARG:HH11	1:S1:120:ARG:HB3	1.63	0.64
8:SA:834:A:H2'	8:SA:835:G:H8	1.61	0.64
12:SE:36:LEU:HD13	12:SE:41:GLU:HB2	1.79	0.64
13:SF:204:THR:HG22	13:SF:205:TYR:H	1.62	0.64
17:SJ:91:TYR:HH	17:SJ:164:ASN:HB2	1.62	0.64
28:SU:26:LEU:HD21	28:SU:60:ILE:HG22	1.79	0.64
36:AB:22:G:N3	36:AB:25:A:N1	2.46	0.64
41:A6:48:SER:HB3	41:A6:91:SER:HA	1.78	0.64
52:Ah:79:ALA:HB2	69:AD:112:LEU:HD22	1.80	0.64
71:AF:152:LEU:HD21	71:AF:251:ILE:HG12	1.80	0.64
71:AF:370:LYS:HA	71:AF:370:LYS:HE3	1.79	0.64
74:AH:47:LEU:HA	74:AH:54:ILE:HG22	1.80	0.64
1:S1:39:GLU:OE1	1:S1:39:GLU:N	2.25	0.63
8:SA:1413:U:H2'	8:SA:1414:A:H3'	1.78	0.63
9:SB:97:TYR:O	9:SB:232:HIS:NE2	2.31	0.63
30:SW:28:PHE:HB2	30:SW:55:THR:HG21	1.81	0.63
32:SY:79:ARG:O	32:SY:83:ILE:HG13	1.99	0.63
34:AA:1312:U:OP2	43:AN:72:LYS:NZ	2.32	0.63
34:AA:1821:U:H2'	34:AA:1822:A:C8	2.33	0.63
34:AA:2430:U:OP2	34:AA:2435:A:N6	2.25	0.63
34:AA:3000:A:H2'	34:AA:3001:A:H8	1.63	0.63
34:AA:3106:U:O2'	53:Ai:29:LYS:O	2.11	0.63
8:SA:1270:G:N1	8:SA:1872:G:OP2	2.28	0.63
8:SA:1851:C:H41	27:ST:10:LYS:HD2	1.61	0.63
9:SB:193:ILE:HG21	9:SB:212:ILE:HD11	1.80	0.63
34:AA:521:U:O2'	34:AA:522:A:O5'	2.15	0.63
34:AA:1537:G:OP2	44:A8:104:LYS:NZ	2.29	0.63
34:AA:1827:C:H42	34:AA:1998:A:H61	1.44	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:AD:36:GLU:OE2	69:AD:163:ARG:NH1	2.28	0.63
3:S3:49:ALA:HB2	23:SP:117:ARG:HH21	1.63	0.63
8:SA:1384:U:H5"	8:SA:1385:U:H2'	1.80	0.63
14:SG:77:TYR:O	14:SG:80:GLN:NE2	2.32	0.63
39:A2:23:ASN:ND2	39:A2:26:GLY:O	2.32	0.63
64:AY:97:VAL:O	67:A3:81:ASN:ND2	2.31	0.63
8:SA:827:C:H2'	8:SA:828:A:H8	1.64	0.63
11:SD:143:LEU:HD12	11:SD:149:LYS:HB2	1.80	0.63
16:SI:143:TYR:O	16:SI:147:THR:HG23	1.98	0.63
34:AA:748:A:OP1	59:AS:145:ARG:NH2	2.26	0.63
34:AA:1331:A:H2'	34:AA:1332:A:C8	2.34	0.63
34:AA:1779:A:N7	34:AA:2033:C:O2'	2.30	0.63
36:AB:22:G:N2	36:AB:25:A:C5	2.66	0.63
72:AG:98:ASP:OD1	72:AG:98:ASP:N	2.31	0.63
21:SN:55:LEU:HD21	21:SN:87:LEU:HG	1.80	0.63
34:AA:672:C:N4	34:AA:673:U:O4	2.31	0.63
34:AA:1816:G:H2'	34:AA:1817:G:C8	2.33	0.63
71:AF:321:ASN:HB3	71:AF:324:VAL:HG12	1.79	0.63
8:SA:1732:G:OP1	21:SN:61:ARG:NH2	2.31	0.63
34:AA:582:U:O2'	34:AA:583:U:O5'	2.15	0.63
38:A1:57:MET:HB2	38:A1:62:ILE:HD11	1.80	0.63
55:AJ:273:GLU:HA	55:AJ:276:LYS:HG2	1.79	0.63
64:AY:182:GLU:OE2	64:AY:182:GLU:N	2.27	0.63
1:S1:64:LEU:O	8:SA:538:U:O2'	2.17	0.63
10:SC:56:LYS:HB3	10:SC:160:ILE:HG22	1.80	0.63
10:SC:59:LEU:HD21	33:SZ:72:MET:HE3	1.80	0.63
34:AA:607:A:O2'	34:AA:608:A:O5'	2.17	0.63
8:SA:887:A:N1	8:SA:915:G:C6	2.67	0.63
8:SA:1030:C:H5"	28:SU:71:ILE:HG21	1.81	0.63
8:SA:1392:C:H2'	8:SA:1393:G:H8	1.64	0.63
34:AA:733:C:H2'	34:AA:734:A:H8	1.64	0.63
34:AA:1303:C:H1'	57:AK:86:MET:HG2	1.81	0.63
34:AA:3302:G:OP2	70:AE:2:SER:OG	2.15	0.63
40:A4:62:LYS:HA	40:A4:65:LYS:HE3	1.81	0.63
59:AS:109:ARG:O	59:AS:113:GLU:HG2	1.98	0.63
34:AA:1501:A:O3'	39:A2:41:LYS:NZ	2.31	0.63
61:AQ:30:LYS:HD2	61:AQ:63:GLU:HG3	1.81	0.63
8:SA:486:A:H2'	8:SA:487:A:C8	2.34	0.62
26:SS:91:ASP:O	26:SS:93:LYS:NZ	2.32	0.62
34:AA:606:A:H2'	34:AA:607:A:C8	2.34	0.62
34:AA:1435:G:C6	57:AK:59:LEU:HD21	2.34	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:S3:5:ARG:NH2	8:SA:2087:U:OP2	2.32	0.62
8:SA:65:A:H2	8:SA:86:A:H62	1.45	0.62
12:SE:58:TYR:O	12:SE:61:THR:OG1	2.17	0.62
34:AA:543:U:O2'	34:AA:580:A:O2'	2.17	0.62
34:AA:859:C:H2'	34:AA:860:A:H8	1.63	0.62
57:AK:193:ARG:O	57:AK:197:GLU:HG2	1.99	0.62
77:AX:94:VAL:HG11	77:AX:98:PHE:HB2	1.80	0.62
8:SA:1982:G:O6	8:SA:2008:U:O4	2.16	0.62
57:AK:120:PRO:HA	57:AK:123:LEU:HD12	1.81	0.62
2:S2:100:LEU:H	32:SY:15:ARG:HE	1.47	0.62
8:SA:635:G:N1	8:SA:1039:A:OP2	2.26	0.62
8:SA:935:G:OP2	28:SU:3:ARG:NH1	2.32	0.62
8:SA:1447:A:N6	8:SA:1623:U:O2'	2.28	0.62
21:SN:42:ALA:HB1	21:SN:49:VAL:HG21	1.82	0.62
34:AA:423:U:OP1	63:AW:34:ARG:NH1	2.31	0.62
34:AA:1064:U:H2'	34:AA:1065:U:H6	1.64	0.62
53:Ai:70:LYS:HG3	53:Ai:81:PHE:HE1	1.63	0.62
68:A5:152:THR:HG21	68:A5:250:ASN:HB3	1.81	0.62
5:S5:53:ILE:HB	16:SI:25:SER:HB3	1.81	0.62
8:SA:827:C:H2'	8:SA:828:A:C8	2.34	0.62
8:SA:1877:C:O3'	20:SM:138:ARG:NH1	2.33	0.62
15:SH:7:ASN:HB2	15:SH:113:LEU:HD21	1.82	0.62
34:AA:770:U:OP2	34:AA:771:U:O2'	2.16	0.62
69:AD:117:GLU:HG2	69:AD:124:GLY:H	1.62	0.62
8:SA:411:C:O2'	15:SH:92:ARG:O	2.16	0.62
28:SU:49:GLN:O	28:SU:53:THR:HG23	2.00	0.62
34:AA:914:G:H2'	34:AA:915:G:C8	2.35	0.62
34:AA:1881:C:O2'	34:AA:1882:U:H6	1.81	0.62
34:AA:3000:A:H2'	34:AA:3001:A:C8	2.35	0.62
35:AC:26:U:OP1	66:AZ:11:ARG:NH2	2.31	0.62
35:AC:64:U:O4	67:A3:61:ASN:ND2	2.31	0.62
69:AD:5:ILE:HG12	69:AD:8:GLN:HG3	1.81	0.62
6:S6:46:ASP:OD1	6:S6:46:ASP:N	2.33	0.62
8:SA:1321:C:H5'	22:SO:62:SER:HB3	1.81	0.62
8:SA:1456:G:N1	8:SA:1607:U:C2	2.68	0.62
17:SJ:126:ILE:HD13	17:SJ:179:ILE:HD13	1.82	0.62
17:SJ:164:ASN:N	17:SJ:164:ASN:OD1	2.32	0.62
20:SM:130:PHE:HE2	21:SN:75:THR:HA	1.64	0.62
28:SU:87:ASP:N	28:SU:87:ASP:OD1	2.25	0.62
65:AT:134:LYS:O	65:AT:138:ILE:HG12	1.99	0.62
72:AG:93:ARG:NH1	72:AG:164:GLN:OE1	2.33	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:413:A:H2'	8:SA:414:C:C6	2.35	0.62
8:SA:1625:C:O2	20:SM:9:GLN:NE2	2.33	0.62
8:SA:1696:A:H4'	27:ST:7:VAL:HG12	1.81	0.62
15:SH:135:PRO:HG2	15:SH:141:ILE:HD13	1.80	0.62
19:SL:162:ILE:HG13	19:SL:164:LYS:HD3	1.81	0.62
34:AA:382:A:N3	34:AA:385:G:H5"	2.15	0.62
34:AA:778:U:OP2	71:AF:275:LYS:NZ	2.31	0.62
35:AC:114:A:N1	56:Ac:17:LYS:NZ	2.47	0.62
36:AB:83:G:H4'	68:A5:231:ARG:HG2	1.82	0.62
62:AR:210:LEU:HB3	62:AR:218:TYR:HB2	1.81	0.62
8:SA:1319:G:OP1	8:SA:1690:A:N6	2.33	0.62
30:SW:10:LYS:HD3	30:SW:14:ARG:HH21	1.64	0.62
34:AA:1895:U:H2'	34:AA:1896:C:C6	2.34	0.62
34:AA:3201:C:OP1	34:AA:3203:C:N4	2.31	0.62
43:AN:140:LYS:O	43:AN:144:THR:HG23	1.99	0.62
55:AJ:75:ILE:O	55:AJ:79:ARG:HG2	2.00	0.62
4:S4:34:LYS:NZ	4:S4:41:ILE:HA	2.15	0.62
8:SA:1978:A:O3'	15:SH:31:ARG:NH2	2.32	0.62
12:SE:135:ARG:NH2	12:SE:157:ASP:OD1	2.32	0.62
24:SQ:142:LYS:NZ	24:SQ:143:PRO:O	2.33	0.62
34:AA:203:A:H2	34:AA:207:A:C2	2.18	0.62
34:AA:374:A:OP1	71:AF:97:ARG:NH2	2.32	0.62
70:AE:37:LYS:HA	70:AE:37:LYS:HE3	1.81	0.62
2:S2:39:ALA:HA	26:SS:25:LYS:HE2	1.81	0.61
8:SA:61:A:N3	8:SA:270:C:O2'	2.29	0.61
8:SA:1286:U:H5	8:SA:1704:G:C5	2.18	0.61
8:SA:1635:C:H4'	30:SW:49:LYS:HA	1.81	0.61
11:SD:139:VAL:HG22	11:SD:185:ILE:HG13	1.80	0.61
34:AA:2834:A:N7	55:AJ:60:ARG:NH1	2.47	0.61
36:AB:22:G:H21	36:AB:25:A:N6	1.98	0.61
38:A1:18:ARG:NH1	38:A1:47:GLU:OE2	2.33	0.61
8:SA:70:U:O2	8:SA:82:G:N2	2.28	0.61
14:SG:156:TRP:HZ2	18:SK:97:ARG:HH22	1.49	0.61
29:SV:124:ASP:HA	29:SV:148:HIS:HB3	1.82	0.61
32:SY:76:TYR:OH	32:SY:125:SER:OG	2.17	0.61
34:AA:1139:C:H2'	34:AA:1140:A:H8	1.65	0.61
34:AA:1905:C:H2'	34:AA:1906:A:H8	1.64	0.61
34:AA:1914:A:H2	34:AA:1956:U:H3	1.46	0.61
8:SA:886:U:O2	8:SA:916:G:N2	2.22	0.61
8:SA:1381:C:H2'	8:SA:1382:G:C8	2.35	0.61
12:SE:17:ARG:O	12:SE:23:ARG:NH2	2.33	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:SF:250:GLU:OE2	13:SF:250:GLU:N	2.26	0.61
34:AA:1850:U:O2'	34:AA:1969:A:N6	2.32	0.61
34:AA:904:G:OP2	59:AS:63:SER:OG	2.17	0.61
34:AA:2692:A:N6	34:AA:2693:G:O6	2.33	0.61
46:Aa:41:LYS:O	46:Aa:43:LYS:NZ	2.32	0.61
62:AR:183:PRO:HG2	62:AR:197:ASN:HD22	1.65	0.61
9:SB:78:ASP:N	9:SB:78:ASP:OD1	2.32	0.61
33:SZ:38:MET:HE3	33:SZ:38:MET:HA	1.81	0.61
34:AA:979:G:OP2	69:AD:181:LYS:NZ	2.30	0.61
36:AB:6:C:OP1	62:AR:54:ARG:NH1	2.33	0.61
8:SA:165:U:H1'	15:SH:133:LEU:HD11	1.82	0.61
8:SA:1982:G:H1	8:SA:2008:U:H3	0.72	0.61
34:AA:3035:A:N7	34:AA:3097:A:N6	2.49	0.61
55:AJ:179:LEU:HD12	55:AJ:180:VAL:HG13	1.81	0.61
69:AD:36:GLU:HG3	69:AD:91:GLY:HA2	1.83	0.61
7:S7:13:C:H2'	7:S7:14:A:C8	2.36	0.61
47:Ab:42:GLU:OE1	47:Ab:42:GLU:N	2.33	0.61
68:A5:164:ARG:HB3	68:A5:171:TYR:HB3	1.81	0.61
8:SA:884:G:H1	8:SA:918:U:H3	1.48	0.61
11:SD:179:LYS:HD3	11:SD:180:GLN:HB2	1.83	0.61
34:AA:31:C:OP2	51:AP:190:ARG:NH2	2.30	0.61
63:AW:29:THR:HG21	63:AW:146:ILE:HD11	1.82	0.61
7:S7:28:C:H2'	7:S7:29:G:C8	2.35	0.61
34:AA:715:U:H2'	34:AA:716:C:C6	2.35	0.61
41:A6:33:CYS:SG	41:A6:59:ILE:HD11	2.41	0.61
7:S7:32:U:O4	16:SI:194:ASN:ND2	2.33	0.61
8:SA:1297:A:OP2	8:SA:1710:G:N2	2.34	0.61
34:AA:26:A:N3	34:AA:336:U:O2'	2.28	0.61
39:A2:56:ASN:HA	39:A2:109:LEU:HD11	1.83	0.61
71:AF:71:ARG:HB3	71:AF:73:VAL:HG22	1.83	0.61
7:S7:3:G:H22	7:S7:68:U:H3	1.48	0.60
18:SK:56:HIS:HB3	28:SU:20:ARG:NH2	2.15	0.60
26:SS:87:ASN:HB3	26:SS:99:HIS:HB2	1.83	0.60
74:AH:136:SER:HB3	74:AH:142:GLU:HB3	1.83	0.60
3:S3:15:ARG:NH1	8:SA:1005:G:N7	2.49	0.60
8:SA:1793:C:O2	32:SY:143:LYS:NZ	2.32	0.60
9:SB:107:ARG:NH1	23:SP:133:THR:O	2.24	0.60
11:SD:216:LEU:O	30:SW:19:LYS:NZ	2.32	0.60
13:SF:100:ARG:HB3	13:SF:114:ILE:HG13	1.84	0.60
14:SG:204:GLY:O	14:SG:206:LYS:NZ	2.33	0.60
18:SK:24:GLN:NE2	18:SK:64:ASN:OD1	2.34	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:SL:162:ILE:N	19:SL:164:LYS:HZ2	1.99	0.60
34:AA:346:A:OP2	71:AF:48:ARG:NH2	2.23	0.60
34:AA:3085:A:H61	62:AR:150:VAL:HG21	1.66	0.60
43:AN:70:PRO:HG2	43:AN:73:ARG:HD2	1.81	0.60
8:SA:651:G:O6	8:SA:749:U:O4	2.19	0.60
8:SA:964:G:H2'	8:SA:965:U:C6	2.36	0.60
13:SF:11:ARG:NH2	13:SF:24:GLY:O	2.34	0.60
34:AA:1083:G:H2'	34:AA:1084:A:C8	2.36	0.60
34:AA:3362:A:H62	34:AA:3376:U:H3	1.49	0.60
54:AI:141:GLU:OE1	54:AI:141:GLU:N	2.33	0.60
77:AX:86:ASP:OD1	77:AX:87:GLU:N	2.34	0.60
8:SA:1108:A:O2'	8:SA:1109:G:O5'	2.18	0.60
13:SF:117:GLU:OE2	13:SF:117:GLU:N	2.22	0.60
17:SJ:9:LEU:HD21	17:SJ:21:ALA:HB2	1.84	0.60
34:AA:1443:U:OP1	57:AK:17:ARG:NH1	2.35	0.60
34:AA:2588:A:N3	34:AA:3288:C:O2'	2.31	0.60
34:AA:3632:U:O2	34:AA:3653:G:N2	2.30	0.60
38:A1:28:THR:HA	38:A1:41:CYS:HA	1.84	0.60
47:Ab:55:SER:OG	47:Ab:58:GLU:OE1	2.19	0.60
50:Af:6:LEU:HD13	74:AH:94:VAL:HG12	1.82	0.60
78:A0:45:SER:O	78:A0:49:GLN:HG3	2.02	0.60
3:S3:45:VAL:HB	3:S3:49:ALA:HB3	1.83	0.60
6:S6:43:ARG:HH21	6:S6:44:PHE:HB3	1.66	0.60
8:SA:454:U:H2'	8:SA:455:C:C6	2.36	0.60
8:SA:1655:G:N2	8:SA:1658:G:OP2	2.34	0.60
30:SW:5:ARG:HG3	30:SW:9:ILE:HD11	1.82	0.60
34:AA:1141:G:O6	34:AA:1156:U:O4	2.20	0.60
34:AA:3139:C:OP1	37:AL:198:ARG:NH2	2.35	0.60
34:AA:3453:U:OP2	65:AT:61:ARG:NH2	2.35	0.60
52:Ah:78:ALA:O	52:Ah:82:THR:HG23	2.02	0.60
71:AF:153:VAL:HG12	71:AF:252:TRP:HB2	1.82	0.60
6:S6:33:ARG:HH11	12:SE:123:HIS:HD2	1.48	0.60
8:SA:139:A:OP1	15:SH:149:LYS:NZ	2.29	0.60
8:SA:163:G:H21	15:SH:132:LYS:HD3	1.67	0.60
11:SD:138:ILE:HD11	11:SD:150:SER:HB3	1.82	0.60
34:AA:600:U:H2'	34:AA:601:G:H8	1.67	0.60
34:AA:3319:C:H2'	34:AA:3320:G:C8	2.36	0.60
35:AC:62:G:O6	56:Ac:66:ARG:NH2	2.34	0.60
36:AB:27:A:H2'	36:AB:28:C:C6	2.37	0.60
53:Ai:95:ASP:OD1	53:Ai:95:ASP:N	2.34	0.60
8:SA:423:A:H5'	8:SA:424:G:C4	2.36	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:3362:A:O5'	70:AE:93:ARG:NH2	2.34	0.60
72:AG:49:LYS:HE2	72:AG:51:ARG:HB3	1.83	0.60
10:SC:172:LEU:O	10:SC:176:LEU:HD12	2.01	0.60
34:AA:64:G:OP1	51:AP:186:ARG:NH2	2.34	0.60
74:AH:125:VAL:HG21	74:AH:160:ILE:HG13	1.83	0.60
8:SA:1717:A:N7	8:SA:1837:G:H1'	2.16	0.60
12:SE:82:ARG:HE	12:SE:149:ARG:HD3	1.66	0.60
20:SM:74:GLY:O	20:SM:77:SER:OG	2.12	0.60
23:SP:46:ASP:OD1	23:SP:48:SER:N	2.31	0.60
36:AB:60:U:H2'	36:AB:61:G:H8	1.66	0.60
69:AD:210:PRO:HG2	69:AD:235:VAL:HG11	1.84	0.60
8:SA:1695:A:H2'	8:SA:1696:A:H8	1.67	0.60
21:SN:81:LEU:HD11	27:ST:50:PHE:HA	1.83	0.60
23:SP:98:ARG:NH1	23:SP:100:SER:O	2.35	0.60
34:AA:451:C:H3'	34:AA:695:A:H61	1.67	0.60
34:AA:616:U:H2'	34:AA:617:A:H8	1.65	0.60
54:AI:117:ILE:HD13	54:AI:193:GLU:HB3	1.83	0.60
8:SA:1745:U:H2'	8:SA:1746:A:C8	2.37	0.59
9:SB:183:ASP:N	9:SB:183:ASP:OD1	2.35	0.59
25:SR:61:ASP:OD1	25:SR:61:ASP:N	2.35	0.59
34:AA:2474:C:OP1	69:AD:193:ARG:NH2	2.35	0.59
41:A6:100:ASP:OD1	41:A6:100:ASP:N	2.31	0.59
71:AF:115:VAL:HB	71:AF:120:LYS:HD2	1.82	0.59
72:AG:156:LYS:O	72:AG:160:MET:HG2	2.02	0.59
1:S1:116:ARG:HD3	8:SA:157:G:O4'	2.02	0.59
5:S5:7:ALA:HA	5:S5:28:GLN:O	2.01	0.59
8:SA:1649:C:OP1	30:SW:3:ARG:N	2.35	0.59
16:SI:41:PRO:HB3	16:SI:64:VAL:HG21	1.83	0.59
17:SJ:41:GLU:OE2	17:SJ:41:GLU:N	2.25	0.59
20:SM:94:TYR:HA	20:SM:98:VAL:HG22	1.84	0.59
26:SS:76:PRO:HA	26:SS:79:PHE:HD2	1.66	0.59
30:SW:41:ILE:HG21	30:SW:46:MET:HG2	1.83	0.59
32:SY:29:ILE:HD13	32:SY:85:ARG:HD2	1.83	0.59
34:AA:616:U:H2'	34:AA:617:A:C8	2.36	0.59
34:AA:911:U:H2'	34:AA:912:U:C6	2.37	0.59
34:AA:1794:U:OP1	34:AA:1795:A:N6	2.33	0.59
34:AA:2021:A:H2'	34:AA:2022:A:H8	1.65	0.59
34:AA:3241:U:H2'	34:AA:3242:U:C6	2.37	0.59
35:AC:79:G:H2'	35:AC:80:C:C6	2.37	0.59
57:AK:53:TYR:OH	57:AK:72:LEU:O	2.19	0.59
59:AS:150:HIS:ND1	59:AS:163:ARG:O	2.35	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
64:AY:155:CYS:SG	64:AY:172:VAL:HG13	2.42	0.59
9:SB:175:GLU:OE2	9:SB:193:ILE:HG12	2.02	0.59
22:SO:46:LEU:HB3	22:SO:48:VAL:HG12	1.84	0.59
30:SW:35:THR:HG21	30:SW:51:ALA:HB2	1.83	0.59
34:AA:1078:C:O2'	34:AA:2703:U:N3	2.35	0.59
55:AJ:95:ASN:HD21	55:AJ:250:GLY:HA3	1.67	0.59
70:AE:143:CYS:O	70:AE:147:ARG:HD3	2.02	0.59
77:AX:120:LEU:HD12	77:AX:132:PHE:HD2	1.67	0.59
8:SA:317:U:OP2	24:SQ:20:ARG:NH1	2.34	0.59
8:SA:1197:C:OP2	18:SK:71:LYS:NZ	2.35	0.59
8:SA:1447:A:O2'	8:SA:1450:A:N6	2.35	0.59
19:SL:201:GLU:N	19:SL:201:GLU:OE2	2.36	0.59
24:SQ:69:ARG:HG3	24:SQ:117:LEU:HD13	1.84	0.59
27:ST:14:GLN:O	27:ST:25:LYS:NZ	2.34	0.59
30:SW:32:LYS:O	30:SW:35:THR:HG22	2.02	0.59
34:AA:440:A:H2'	34:AA:441:A:H8	1.67	0.59
34:AA:1739:C:H2'	34:AA:1740:A:C8	2.38	0.59
34:AA:2650:A:H2'	34:AA:2651:A:H8	1.67	0.59
34:AA:2834:A:H62	55:AJ:60:ARG:CZ	2.16	0.59
34:AA:2883:U:O2	69:AD:46:LYS:NZ	2.36	0.59
34:AA:3726:U:H4'	34:AA:3727:A:H5'	1.84	0.59
36:AB:46:C:OP2	62:AR:160:ARG:NH1	2.34	0.59
36:AB:105:C:OP1	61:AQ:201:ARG:HD2	2.01	0.59
8:SA:1008:A:H2'	8:SA:1009:A:C8	2.38	0.59
8:SA:1028:U:H5"	28:SU:14:SER:HB2	1.83	0.59
8:SA:1414:A:H2'	8:SA:1415:A:C8	2.37	0.59
10:SC:36:TYR:OH	10:SC:56:LYS:NZ	2.35	0.59
33:SZ:17:CYS:HB2	33:SZ:55:SER:HB3	1.85	0.59
34:AA:338:U:H2'	34:AA:339:G:H8	1.67	0.59
34:AA:1762:A:O2'	34:AA:1763:G:H8	1.85	0.59
34:AA:2450:G:N7	69:AD:152:SER:OG	2.33	0.59
34:AA:3428:U:OP1	58:AM:50:ARG:NH1	2.36	0.59
37:AL:123:VAL:HG13	67:A3:119:LEU:HB2	1.85	0.59
46:Aa:57:LEU:HB3	46:Aa:61:ASP:HB2	1.84	0.59
51:AP:122:VAL:HG21	51:AP:132:GLU:HG3	1.85	0.59
54:AI:185:ASP:OD1	54:AI:186:ILE:N	2.35	0.59
66:AZ:92:GLU:OE1	66:AZ:92:GLU:N	2.35	0.59
8:SA:914:U:H2'	8:SA:915:G:H8	1.66	0.59
12:SE:42:ILE:O	12:SE:46:GLN:HG3	2.01	0.59
17:SJ:62:ILE:HG23	17:SJ:94:LEU:HA	1.84	0.59
23:SP:100:SER:OG	23:SP:105:SER:O	2.20	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:SW:75:GLU:OE1	30:SW:75:GLU:N	2.36	0.59
45:A9:65:ILE:HD11	45:A9:133:ILE:HD12	1.84	0.59
58:AM:12:LYS:NZ	58:AM:58:ASP:OD1	2.36	0.59
2:S2:35:LYS:HD3	8:SA:1833:G:H4'	1.83	0.59
8:SA:829:G:H1'	8:SA:832:A:N6	2.18	0.59
8:SA:1107:U:O3'	18:SK:20:ARG:NH1	2.35	0.59
34:AA:1622:G:H4'	65:AT:25:PRO:HG3	1.83	0.59
34:AA:3001:A:H2'	34:AA:3002:G:C8	2.38	0.59
54:AI:71:ARG:O	54:AI:92:ASN:ND2	2.35	0.59
7:S7:29:G:N1	7:S7:38:A:N6	2.19	0.59
8:SA:1653:A:H2'	8:SA:1654:G:C8	2.37	0.59
8:SA:1723:A:H4'	32:SY:70:PRO:HA	1.83	0.59
16:SI:80:ALA:O	16:SI:84:VAL:HG13	2.03	0.59
34:AA:1306:A:N3	34:AA:1456:C:O2'	2.36	0.59
34:AA:2015:C:OP2	52:Ah:49:ARG:NH2	2.35	0.59
38:A1:4:LEU:HD11	41:A6:65:LEU:HB3	1.85	0.59
41:A6:50:ASN:HB2	41:A6:76:ASP:HB2	1.85	0.59
43:AN:139:LYS:O	43:AN:143:THR:HG23	2.01	0.59
47:Ab:47:VAL:O	47:Ab:51:ILE:HG22	2.03	0.59
1:S1:115:ARG:NH1	1:S1:120:ARG:O	2.34	0.59
3:S3:44:ILE:HG13	3:S3:67:LEU:HD13	1.85	0.59
8:SA:755:A:H2'	8:SA:756:A:H8	1.68	0.59
17:SJ:52:VAL:HG23	17:SJ:54:LYS:H	1.68	0.59
28:SU:99:ARG:NH2	28:SU:119:GLU:OE1	2.35	0.59
34:AA:803:A:H8	60:AO:58:MET:HE2	1.65	0.59
34:AA:1122:A:H2	34:AA:1169:A:H62	1.49	0.59
35:AC:27:U:OP1	66:AZ:15:ARG:NH1	2.36	0.59
61:AQ:51:HIS:ND1	61:AQ:137:SER:OG	2.31	0.59
70:AE:80:GLU:OE1	70:AE:311:TYR:OH	2.16	0.59
34:AA:3677:A:H2'	34:AA:3678:A:H8	1.67	0.59
61:AQ:77:ILE:HD12	61:AQ:82:LYS:HG2	1.84	0.59
4:S4:18:LYS:HG3	4:S4:19:LEU:O	2.03	0.58
8:SA:56:A:OP1	8:SA:409:A:N6	2.35	0.58
34:AA:661:G:C2	34:AA:673:U:O2	2.55	0.58
34:AA:1531:G:P	71:AF:190:ARG:HH22	2.26	0.58
42:A7:66:PHE:HE2	42:A7:79:VAL:HG12	1.67	0.58
49:Ae:20:ASN:O	49:Ae:41:ARG:NE	2.36	0.58
77:AX:61:GLU:OE1	77:AX:85:SER:HA	2.03	0.58
8:SA:99:C:H1'	8:SA:432:G:H5'	1.85	0.58
8:SA:803:G:H2'	8:SA:804:U:O4'	2.03	0.58
8:SA:1247:G:H2'	8:SA:1248:A:C8	2.39	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:SB:62:LYS:NZ	9:SB:89:ASP:O	2.31	0.58
11:SD:22:ASN:OD1	11:SD:23:GLU:N	2.36	0.58
12:SE:66:SER:O	12:SE:70:ILE:HD12	2.02	0.58
17:SJ:107:ASN:HD21	17:SJ:110:PHE:HB2	1.68	0.58
19:SL:216:LYS:N	34:AA:2389:G:OP2	2.35	0.58
26:SS:117:LYS:NZ	26:SS:124:GLY:O	2.33	0.58
62:AR:143:PRO:HG2	62:AR:174:ASN:HB2	1.85	0.58
5:S5:15:ARG:NH1	8:SA:1912:C:OP1	2.36	0.58
7:S7:1:G:N1	7:S7:71:C:C2	2.70	0.58
8:SA:331:G:OP1	29:SV:137:THR:OG1	2.20	0.58
8:SA:1856:A:H5'	26:SS:134:ARG:CZ	2.33	0.58
24:SQ:13:ARG:NH2	29:SV:105:LYS:O	2.36	0.58
68:A5:79:ARG:HH21	71:AF:371:ILE:HG21	1.68	0.58
1:S1:7:ILE:HD13	1:S1:27:ILE:HG22	1.85	0.58
8:SA:1608:G:H2'	8:SA:1609:C:C6	2.38	0.58
8:SA:2047:A:OP1	24:SQ:63:GLN:NE2	2.37	0.58
10:SC:168:GLU:H	10:SC:168:GLU:CD	2.11	0.58
11:SD:163:GLU:O	11:SD:167:ARG:HG3	2.03	0.58
34:AA:765:A:O2'	34:AA:767:U:O4	2.12	0.58
34:AA:3152:G:H5"	53:Ai:65:LYS:HG2	1.85	0.58
54:AI:80:SER:OG	54:AI:133:ASP:OD2	2.17	0.58
70:AE:10:ARG:NH1	70:AE:11:HIS:O	2.36	0.58
16:SI:152:ALA:O	16:SI:158:LYS:NZ	2.36	0.58
26:SS:75:THR:O	26:SS:78:GLN:NE2	2.36	0.58
34:AA:1072:A:H5'	34:AA:1073:G:H5"	1.83	0.58
34:AA:1322:G:H2'	34:AA:1323:A:C8	2.39	0.58
34:AA:3085:A:H5'	62:AR:181:ARG:HD3	1.86	0.58
71:AF:34:ASN:OD1	71:AF:35:ASP:N	2.37	0.58
12:SE:41:GLU:N	12:SE:41:GLU:OE1	2.35	0.58
17:SJ:143:MET:HE3	17:SJ:149:ARG:HG2	1.84	0.58
34:AA:1532:U:O3'	71:AF:140:ARG:NH2	2.35	0.58
34:AA:1720:C:H2'	34:AA:1721:C:C6	2.38	0.58
34:AA:3386:A:H2'	34:AA:3387:U:C6	2.38	0.58
51:AP:187:PRO:O	51:AP:188:SER:HB3	2.02	0.58
54:AI:111:ILE:HD11	54:AI:194:ILE:HD11	1.84	0.58
71:AF:239:LYS:O	71:AF:248:ARG:NH1	2.35	0.58
8:SA:12:U:H2'	8:SA:13:C:C6	2.39	0.58
8:SA:1793:C:H5'	8:SA:1815:U:H4'	1.85	0.58
13:SF:55:ALA:HB1	13:SF:60:GLU:HB2	1.84	0.58
19:SL:174:GLU:CD	19:SL:174:GLU:H	2.11	0.58
61:AQ:49:VAL:HB	61:AQ:172:GLY:HA2	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
71:AF:33:ARG:O	71:AF:37:ILE:HG22	2.03	0.58
77:AX:43:VAL:O	77:AX:129:ALA:HA	2.04	0.58
78:A0:20:ILE:HG12	78:A0:39:LEU:HD23	1.85	0.58
8:SA:1882:U:O2	8:SA:1882:U:H2'	2.04	0.58
15:SH:98:ARG:NH2	15:SH:101:ILE:O	2.27	0.58
16:SI:36:ALA:HB1	16:SI:58:PRO:HG3	1.86	0.58
34:AA:1654:C:OP2	63:AW:23:ARG:NH2	2.36	0.58
68:A5:150:LEU:HD11	68:A5:154:ARG:HH21	1.68	0.58
71:AF:183:LEU:HD11	71:AF:206:GLY:HA3	1.86	0.58
7:S7:17:U:O2'	7:S7:55:U:O2	2.22	0.58
19:SL:105:ASP:OD2	19:SL:107:HIS:ND1	2.36	0.58
21:SN:26:LYS:O	21:SN:82:ARG:NH1	2.37	0.58
34:AA:3319:C:H2'	34:AA:3320:G:H8	1.69	0.58
69:AD:67:GLU:HG2	69:AD:68:LYS:HG2	1.86	0.58
15:SH:32:ILE:HD11	15:SH:63:MET:HE3	1.85	0.58
28:SU:129:TYR:HD2	28:SU:134:LEU:HD11	1.68	0.58
34:AA:439:U:H2'	34:AA:440:A:H8	1.68	0.58
34:AA:733:C:H2'	34:AA:734:A:C8	2.39	0.58
34:AA:918:G:O2'	37:AL:17:TRP:NE1	2.32	0.58
34:AA:3066:A:OP2	34:AA:3067:G:N2	2.34	0.58
53:Ai:74:THR:O	53:Ai:77:LYS:NZ	2.30	0.58
73:AU:88:LEU:HD11	73:AU:130:ILE:HG23	1.85	0.58
12:SE:27:GLU:O	12:SE:31:ILE:HG23	2.03	0.57
34:AA:508:A:H2'	34:AA:509:A:H8	1.68	0.57
34:AA:1015:A:H5"	69:AD:183:GLY:HA2	1.86	0.57
34:AA:2145:A:H2'	34:AA:2146:A:O4'	2.04	0.57
50:Af:3:GLU:OE1	50:Af:3:GLU:N	2.30	0.57
6:S6:29:ARG:HH21	6:S6:30:LEU:HG	1.69	0.57
7:S7:73:C:O2'	53:Ai:55:PRO:O	2.22	0.57
8:SA:1368:G:O6	8:SA:1688:U:O4	2.23	0.57
8:SA:1698:U:H2'	8:SA:1699:A:C8	2.38	0.57
8:SA:1879:U:H5"	20:SM:136:ARG:HH11	1.69	0.57
11:SD:12:ILE:HD11	27:ST:34:ILE:HA	1.86	0.57
12:SE:108:ARG:HE	12:SE:110:GLN:HE21	1.51	0.57
16:SI:72:ARG:H	16:SI:72:ARG:HD3	1.68	0.57
34:AA:159:C:H2'	34:AA:160:G:H8	1.68	0.57
55:AJ:257:LYS:HA	55:AJ:260:LEU:HD12	1.86	0.57
71:AF:375:TYR:CE1	73:AU:35:ARG:HD3	2.36	0.57
74:AH:94:VAL:HG23	74:AH:176:ASP:HA	1.86	0.57
3:S3:90:GLU:CD	3:S3:90:GLU:H	2.12	0.57
6:S6:14:VAL:O	6:S6:18:THR:OG1	2.22	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:1831:G:H4'	8:SA:1832:U:H5'	1.85	0.57
10:SC:110:GLN:HA	10:SC:115:PHE:CE2	2.38	0.57
31:SX:24:LYS:HG3	31:SX:25:LEU:HD12	1.87	0.57
34:AA:2819:U:H2'	34:AA:2820:A:H8	1.68	0.57
52:Ah:8:VAL:O	52:Ah:11:THR:OG1	2.22	0.57
54:AI:90:GLU:OE1	54:AI:90:GLU:N	2.33	0.57
62:AR:279:LYS:HD2	62:AR:280:LYS:N	2.19	0.57
8:SA:291:A:O2'	8:SA:292:G:OP1	2.21	0.57
8:SA:756:A:H2'	8:SA:757:A:C8	2.39	0.57
8:SA:1404:U:OP1	14:SG:100:LYS:NZ	2.38	0.57
8:SA:1846:U:OP1	26:SS:90:LYS:NZ	2.35	0.57
13:SF:44:LEU:HA	13:SF:47:LEU:HB3	1.86	0.57
34:AA:653:A:H2'	34:AA:654:A:C8	2.39	0.57
34:AA:2034:G:O6	34:AA:2075:U:O4	2.20	0.57
34:AA:2699:C:H2'	34:AA:2700:C:C6	2.39	0.57
64:AY:143:ILE:O	64:AY:147:VAL:HG22	2.04	0.57
8:SA:1603:U:O2	32:SY:27:ASN:ND2	2.35	0.57
34:AA:10:G:O6	35:AC:155:A:N1	2.38	0.57
34:AA:26:A:H2'	34:AA:27:U:H6	1.70	0.57
34:AA:674:U:H2'	34:AA:675:A:C8	2.40	0.57
34:AA:1553:U:O2'	34:AA:1554:G:O5'	2.23	0.57
34:AA:3402:A:H2'	34:AA:3403:A:H8	1.67	0.57
34:AA:3443:A:H2'	34:AA:3444:G:H5'	1.85	0.57
34:AA:3478:G:OP1	58:AM:14:ARG:NH2	2.36	0.57
38:A1:68:VAL:HG12	38:A1:119:ARG:HG2	1.85	0.57
67:A3:42:LYS:HE2	67:A3:45:LYS:HD2	1.85	0.57
8:SA:1651:C:H2'	8:SA:1652:A:H8	1.69	0.57
8:SA:1861:U:O2	26:SS:89:ARG:NH2	2.37	0.57
30:SW:13:ALA:HA	30:SW:16:ILE:HD11	1.85	0.57
34:AA:1141:G:N2	34:AA:1156:U:O2	2.35	0.57
34:AA:3476:A:H1'	34:AA:3477:A:H2'	1.85	0.57
38:A1:47:GLU:HB3	38:A1:69:LYS:HG3	1.86	0.57
22:SO:27:PHE:HE1	22:SO:84:ILE:HG12	1.69	0.57
34:AA:2633:U:OP1	70:AE:233:LYS:NZ	2.34	0.57
34:AA:3695:C:O2	70:AE:169:ARG:NH2	2.38	0.57
38:A1:46:ILE:HD11	38:A1:49:HIS:CE1	2.39	0.57
74:AH:184:THR:OG1	74:AH:185:THR:N	2.36	0.57
8:SA:876:U:H3'	65:AT:162:ARG:NH2	2.20	0.57
8:SA:896:U:H1'	8:SA:907:C:H42	1.69	0.57
8:SA:1720:G:H2'	8:SA:1721:A:C8	2.39	0.57
20:SM:38:ASP:HA	20:SM:46:LYS:HD3	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:SQ:48:HIS:HB3	24:SQ:103:LEU:HD11	1.85	0.57
24:SQ:97:ASP:HB2	24:SQ:144:ARG:HH12	1.70	0.57
34:AA:1100:A:N6	68:A5:164:ARG:O	2.38	0.57
41:A6:12:ASN:OD1	41:A6:12:ASN:N	2.36	0.57
51:AP:161:GLU:N	51:AP:161:GLU:OE1	2.37	0.57
55:AJ:244:ASP:O	55:AJ:248:LYS:HB3	2.04	0.57
57:AK:9:ASP:OD2	57:AK:36:ARG:NH2	2.28	0.57
61:AQ:10:ARG:NE	61:AQ:58:GLU:OE2	2.37	0.57
61:AQ:42:ASP:OD1	61:AQ:43:VAL:N	2.38	0.57
62:AR:201:ILE:HD11	62:AR:236:GLU:HG3	1.86	0.57
66:AZ:90:ASN:HB2	66:AZ:92:GLU:OE1	2.04	0.57
68:A5:58:LEU:O	68:A5:62:GLU:HG2	2.04	0.57
70:AE:115:ARG:HD2	70:AE:130:PHE:HB2	1.86	0.57
72:AG:29:ARG:HH11	72:AG:32:ARG:HB3	1.68	0.57
1:S1:87:GLU:OE2	1:S1:91:ARG:NH1	2.38	0.57
8:SA:597:C:H2'	8:SA:598:A:C8	2.40	0.57
8:SA:1271:G:H21	8:SA:1868:C:H4'	1.70	0.57
8:SA:1300:G:H1	27:ST:29:ILE:HG13	1.70	0.57
34:AA:3260:G:O2'	34:AA:3410:A:N1	2.37	0.57
34:AA:3497:A:H4'	74:AH:70:ARG:HG2	1.86	0.57
35:AC:30:U:H2'	35:AC:31:U:C6	2.40	0.57
54:AI:51:ARG:NH2	54:AI:101:SER:O	2.37	0.57
7:S7:29:G:H1	7:S7:38:A:H61	0.63	0.57
8:SA:1302:G:N2	8:SA:1897:A:O5'	2.35	0.57
8:SA:1437:U:H2'	8:SA:1438:A:C8	2.38	0.57
8:SA:1910:U:OP1	16:SI:62:ARG:NH1	2.38	0.57
8:SA:1976:G:H2'	8:SA:1977:G:C8	2.40	0.57
11:SD:109:LYS:NZ	11:SD:116:VAL:O	2.38	0.57
20:SM:43:TYR:HA	20:SM:46:LYS:HB2	1.87	0.57
30:SW:60:ARG:HA	30:SW:63:LYS:HE2	1.86	0.57
34:AA:3632:U:H3	34:AA:3653:G:H1	1.51	0.57
58:AM:111:MET:HE1	58:AM:116:ILE:HD11	1.87	0.57
61:AQ:194:GLY:O	61:AQ:196:SER:N	2.37	0.57
66:AZ:21:ALA:O	66:AZ:26:ARG:NH1	2.38	0.57
5:S5:41:ILE:HG23	5:S5:63:ALA:H	1.70	0.56
8:SA:599:A:OP1	12:SE:39:LYS:NZ	2.29	0.56
8:SA:1386:U:H4'	8:SA:1387:U:C5'	2.35	0.56
8:SA:1790:C:H2'	8:SA:1791:C:C6	2.40	0.56
13:SF:45:VAL:HG22	13:SF:61:VAL:HG11	1.87	0.56
34:AA:746:A:H2'	34:AA:747:A:H8	1.67	0.56
34:AA:1464:A:OP1	71:AF:312:ARG:NH2	2.38	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:3677:A:H2'	34:AA:3678:A:C8	2.40	0.56
8:SA:1794:C:H2'	8:SA:1795:G:C8	2.39	0.56
11:SD:104:GLU:OE1	11:SD:107:ARG:NH2	2.38	0.56
14:SG:190:ILE:O	14:SG:197:LYS:NZ	2.38	0.56
30:SW:46:MET:O	30:SW:50:VAL:HG13	2.06	0.56
34:AA:307:G:C2'	34:AA:308:U:H5'	2.35	0.56
35:AC:39:C:OP2	67:A3:87:THR:HG21	2.04	0.56
51:AP:169:GLY:HA2	51:AP:172:TYR:CE2	2.41	0.56
8:SA:883:A:H2'	8:SA:884:G:C8	2.40	0.56
8:SA:954:G:H2'	8:SA:955:U:C6	2.40	0.56
8:SA:1607:U:OP1	32:SY:141:LYS:NZ	2.38	0.56
8:SA:1653:A:H2'	8:SA:1654:G:H8	1.70	0.56
10:SC:194:TRP:HE3	10:SC:196:VAL:H	1.51	0.56
15:SH:195:GLU:OE2	15:SH:198:ARG:NH2	2.37	0.56
17:SJ:81:ILE:O	17:SJ:85:GLU:HG2	2.05	0.56
30:SW:25:THR:O	30:SW:31:ASN:ND2	2.28	0.56
31:SX:35:LYS:O	31:SX:35:LYS:NZ	2.30	0.56
34:AA:668:U:OP1	71:AF:344:ARG:NH2	2.38	0.56
34:AA:858:C:H2'	34:AA:859:C:C6	2.40	0.56
34:AA:2650:A:H2'	34:AA:2651:A:C8	2.40	0.56
34:AA:3669:U:C2	54:AI:68:MET:HE1	2.40	0.56
46:Aa:46:ASP:OD2	46:Aa:88:ARG:NH2	2.38	0.56
51:AP:182:SER:O	51:AP:184:LYS:N	2.37	0.56
68:A5:250:ASN:O	68:A5:254:ASN:ND2	2.38	0.56
70:AE:195:MET:HG3	70:AE:198:LYS:HG3	1.88	0.56
8:SA:1609:C:H2'	8:SA:1610:U:C6	2.41	0.56
8:SA:1701:G:O2'	8:SA:1702:C:O4'	2.22	0.56
8:SA:1786:U:O2'	8:SA:1787:U:OP1	2.22	0.56
23:SP:33:ILE:HD12	23:SP:42:ILE:HD13	1.88	0.56
27:ST:17:ARG:NH2	27:ST:18:GLN:O	2.39	0.56
34:AA:2099:C:OP1	64:AY:168:LYS:NZ	2.37	0.56
59:AS:106:GLU:HG3	71:AF:278:ILE:HD13	1.87	0.56
61:AQ:52:LEU:HB2	61:AQ:152:LEU:HD13	1.87	0.56
1:S1:10:LYS:HD3	8:SA:827:C:H41	1.70	0.56
8:SA:1032:A:N7	28:SU:70:LYS:NZ	2.52	0.56
8:SA:1832:U:H3	16:SI:155:ARG:HA	1.71	0.56
8:SA:1884:A:H2'	8:SA:1885:G:H8	1.71	0.56
10:SC:38:TYR:CD2	10:SC:39:THR:HG22	2.40	0.56
13:SF:171:GLU:OE2	13:SF:171:GLU:N	2.39	0.56
28:SU:54:LEU:HB3	28:SU:60:ILE:HD11	1.88	0.56
29:SV:153:SER:O	29:SV:157:GLN:HG3	2.06	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:SY:32:VAL:O	32:SY:85:ARG:NH2	2.39	0.56
32:SY:75:TRP:CD1	32:SY:75:TRP:H	2.22	0.56
34:AA:180:C:H2'	34:AA:181:C:C6	2.41	0.56
34:AA:1331:A:H2'	34:AA:1332:A:H8	1.70	0.56
34:AA:1515:A:O2'	44:A8:45:ARG:NH1	2.38	0.56
34:AA:3120:U:OP1	37:AL:201:ARG:NE	2.39	0.56
48:Ad:39:THR:HG22	48:Ad:54:PHE:HB2	1.86	0.56
52:Ah:26:ILE:HD13	69:AD:180:LEU:HD22	1.88	0.56
1:S1:42:GLU:O	1:S1:46:LYS:HG2	2.06	0.56
8:SA:148:U:O4	8:SA:149:A:N6	2.39	0.56
8:SA:1319:G:N2	8:SA:1690:A:OP2	2.29	0.56
8:SA:1373:U:O2'	8:SA:1376:A:OP2	2.21	0.56
31:SX:38:LYS:O	31:SX:42:ARG:HG3	2.06	0.56
31:SX:116:LEU:H	31:SX:116:LEU:HD23	1.70	0.56
34:AA:734:A:H2'	34:AA:735:A:C8	2.41	0.56
36:AB:24:C:H2'	36:AB:25:A:H5'	1.87	0.56
44:A8:35:PRO:HB2	44:A8:40:CYS:SG	2.44	0.56
46:Aa:39:ALA:HB2	46:Aa:58:ARG:HG2	1.86	0.56
1:S1:106:ARG:NH2	8:SA:465:G:OP2	2.34	0.56
8:SA:121:A:H1'	8:SA:403:A:C5	2.41	0.56
8:SA:788:A:H2'	8:SA:789:U:C6	2.40	0.56
8:SA:1662:A:H2'	8:SA:1663:A:H8	1.71	0.56
26:SS:88:ARG:HG2	26:SS:97:ASN:HD21	1.71	0.56
30:SW:11:ARG:HA	30:SW:14:ARG:HD2	1.87	0.56
34:AA:195:A:H8	34:AA:216:C:O2'	1.88	0.56
34:AA:2699:C:H2'	34:AA:2700:C:H6	1.71	0.56
54:AI:82:LEU:HD23	54:AI:100:ASP:HB3	1.87	0.56
55:AJ:79:ARG:O	55:AJ:83:ILE:HG23	2.05	0.56
62:AR:34:LYS:HD3	75:AV:31:TYR:HE2	1.70	0.56
4:S4:30:PHE:CZ	28:SU:61:PRO:HG3	2.41	0.56
8:SA:1908:A:C8	8:SA:1909:C:H5	2.24	0.56
23:SP:117:ARG:O	23:SP:121:ARG:HG2	2.06	0.56
24:SQ:54:VAL:HG21	24:SQ:82:LYS:HE2	1.88	0.56
34:AA:709:A:H2'	34:AA:710:C:C6	2.39	0.56
43:AN:49:VAL:HG22	43:AN:50:THR:HG23	1.86	0.56
47:Ab:98:GLN:O	47:Ab:102:ILE:HG13	2.06	0.56
57:AK:14:LEU:HD21	57:AK:124:ARG:HG3	1.88	0.56
61:AQ:44:ASN:OD1	61:AQ:181:TYR:OH	2.11	0.56
8:SA:141:G:H2'	8:SA:142:G:C8	2.41	0.56
8:SA:851:A:OP2	13:SF:108:ARG:NH2	2.25	0.56
8:SA:1848:U:O4	31:SX:40:ARG:NH1	2.39	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:SE:132:ARG:HE	12:SE:140:MET:HE1	1.71	0.56
16:SI:78:LEU:HD23	16:SI:79:LYS:H	1.71	0.56
34:AA:1101:A:O2'	34:AA:1102:U:O4'	2.24	0.56
34:AA:1480:G:N7	39:A2:104:LYS:NZ	2.46	0.56
34:AA:3061:U:OP1	75:AV:89:LYS:NZ	2.34	0.56
35:AC:126:C:OP1	67:A3:64:ARG:NH2	2.24	0.56
61:AQ:74:LYS:O	61:AQ:78:THR:HG23	2.04	0.56
62:AR:235:ILE:O	62:AR:238:MET:HG3	2.05	0.56
68:A5:183:SER:HA	68:A5:192:HIS:HB3	1.88	0.56
72:AG:92:ARG:HG2	72:AG:94:LYS:HG2	1.87	0.56
77:AX:60:LEU:HD13	77:AX:64:PHE:HE2	1.71	0.56
8:SA:394:G:OP2	8:SA:429:G:O2'	2.24	0.56
8:SA:1022:A:H2'	8:SA:1023:A:C8	2.41	0.56
8:SA:1652:A:H2'	8:SA:1653:A:H8	1.70	0.56
10:SC:160:ILE:HD12	10:SC:160:ILE:O	2.06	0.56
34:AA:653:A:H2'	34:AA:654:A:H8	1.71	0.56
34:AA:687:G:H2'	34:AA:688:U:C6	2.42	0.56
34:AA:1462:C:H2'	34:AA:1463:A:H8	1.70	0.56
34:AA:1970:A:OP1	48:Ad:42:LYS:NZ	2.38	0.56
34:AA:3452:U:OP2	65:AT:61:ARG:NH1	2.39	0.56
34:AA:3683:G:H2'	34:AA:3684:A:H4'	1.88	0.56
41:A6:52:PRO:HG2	41:A6:55:GLN:HG2	1.88	0.56
65:AT:91:LYS:O	65:AT:95:ILE:HG12	2.05	0.56
31:SX:23:ASP:OD1	31:SX:23:ASP:N	2.39	0.55
31:SX:34:ILE:HG22	31:SX:45:PHE:HD2	1.71	0.55
34:AA:127:U:OP1	51:AP:141:ASN:ND2	2.34	0.55
34:AA:1210:A:H2'	34:AA:1211:U:C6	2.41	0.55
34:AA:1827:C:OP1	65:AT:63:ARG:NE	2.36	0.55
34:AA:2163:A:O2'	34:AA:3439:G:H4'	2.05	0.55
34:AA:2460:A:H2'	34:AA:2461:A:C8	2.41	0.55
34:AA:3386:A:H2'	34:AA:3387:U:H6	1.70	0.55
8:SA:17:C:O2'	8:SA:1238:A:N1	2.39	0.55
19:SL:47:ARG:HE	19:SL:51:ARG:HG2	1.71	0.55
23:SP:103:THR:HG23	23:SP:142:LYS:HB3	1.88	0.55
34:AA:86:G:O2'	34:AA:98:G:O6	2.20	0.55
34:AA:114:A:OP1	51:AP:54:LYS:NZ	2.39	0.55
34:AA:2681:U:O2'	63:AW:80:GLN:OE1	2.24	0.55
34:AA:3399:U:H2'	34:AA:3400:C:C6	2.41	0.55
51:AP:99:LYS:O	51:AP:103:GLU:HG2	2.06	0.55
68:A5:39:ILE:HD12	68:A5:39:ILE:H	1.71	0.55
8:SA:204:U:H2'	8:SA:205:A:C8	2.41	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:1386:U:H4'	8:SA:1387:U:H5'	1.89	0.55
8:SA:1656:A:H5'	20:SM:119:VAL:HG21	1.87	0.55
9:SB:166:LYS:NZ	9:SB:170:ASP:OD2	2.33	0.55
34:AA:501:U:O2'	34:AA:502:U:OP1	2.24	0.55
34:AA:595:U:O2'	34:AA:596:A:N7	2.37	0.55
34:AA:794:C:H2'	34:AA:795:G:H8	1.71	0.55
34:AA:3096:U:H4'	75:AV:8:LYS:HB2	1.88	0.55
34:AA:3320:G:H2'	34:AA:3321:U:C6	2.42	0.55
35:AC:5:A:H61	63:AW:38:ARG:HD3	1.71	0.55
35:AC:31:U:H2'	35:AC:32:C:C6	2.42	0.55
36:AB:51:G:H21	72:AG:9:MET:HE1	1.72	0.55
38:A1:67:LYS:HA	38:A1:119:ARG:HD3	1.88	0.55
56:Ac:24:ARG:NH2	56:Ac:44:SER:O	2.38	0.55
69:AD:116:LEU:HB3	69:AD:126:LEU:HB2	1.89	0.55
73:AU:14:HIS:HA	73:AU:109:GLU:HG2	1.87	0.55
8:SA:204:U:H2'	8:SA:205:A:H8	1.72	0.55
8:SA:1862:C:O3'	26:SS:42:MET:HE3	2.07	0.55
8:SA:1884:A:H2'	8:SA:1885:G:C8	2.41	0.55
10:SC:127:ARG:NH2	10:SC:150:ASP:O	2.38	0.55
34:AA:1197:U:H2'	34:AA:1198:A:C8	2.41	0.55
34:AA:2026:G:OP1	46:Aa:67:ARG:NH1	2.40	0.55
34:AA:3587:U:H2'	34:AA:3588:A:H8	1.71	0.55
34:AA:3683:G:N2	34:AA:3684:A:O3'	2.40	0.55
4:S4:29:TYR:CD1	4:S4:79:LYS:HE2	2.42	0.55
8:SA:410:G:H2'	8:SA:411:C:C6	2.42	0.55
8:SA:851:A:N7	13:SF:108:ARG:NH1	2.54	0.55
8:SA:881:C:H2'	8:SA:882:A:C8	2.41	0.55
8:SA:883:A:H2'	8:SA:884:G:H8	1.71	0.55
18:SK:26:LEU:HD23	18:SK:62:VAL:HG22	1.88	0.55
19:SL:175:GLN:OE1	19:SL:182:LEU:N	2.38	0.55
33:SZ:70:ARG:O	33:SZ:74:GLU:HG3	2.06	0.55
34:AA:583:U:H2'	34:AA:584:U:C6	2.42	0.55
34:AA:1247:C:H2'	34:AA:1248:A:C8	2.41	0.55
34:AA:1822:A:N1	34:AA:2004:U:H5	2.05	0.55
34:AA:3554:U:O2'	34:AA:3572:A:O2'	2.24	0.55
34:AA:3693:A:H2'	34:AA:3694:A:C8	2.41	0.55
42:A7:52:MET:O	42:A7:85:ARG:NH1	2.39	0.55
43:AN:83:ILE:HG22	43:AN:95:THR:HG21	1.88	0.55
61:AQ:57:TYR:HB2	61:AQ:131:ILE:HG12	1.88	0.55
73:AU:83:ASN:OD1	73:AU:104:ARG:NH1	2.39	0.55
8:SA:1720:G:H2'	8:SA:1721:A:H8	1.71	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:SE:70:ILE:HD12	12:SE:70:ILE:H	1.72	0.55
13:SF:161:ARG:HH11	13:SF:161:ARG:HA	1.72	0.55
37:AL:63:ARG:HG3	60:AO:69:TYR:CD1	2.41	0.55
60:AO:91:SER:HA	60:AO:120:GLN:NE2	2.22	0.55
62:AR:54:ARG:NH2	62:AR:149:ASP:OD1	2.39	0.55
72:AG:41:THR:HA	72:AG:75:LYS:HZ1	1.72	0.55
1:S1:26:GLU:OE1	1:S1:26:GLU:N	2.40	0.55
8:SA:1794:C:H5"	32:SY:94:GLY:HA3	1.88	0.55
10:SC:121:LEU:HB2	10:SC:141:ILE:HG21	1.88	0.55
13:SF:127:LYS:HD2	13:SF:142:HIS:HA	1.89	0.55
34:AA:10:G:H21	34:AA:1706:A:H61	0.61	0.55
56:Ac:51:ASN:HA	56:Ac:57:LYS:HE2	1.88	0.55
72:AG:22:CYS:HA	72:AG:66:SER:HB2	1.88	0.55
34:AA:305:A:H4'	34:AA:306:C:H5"	1.87	0.55
34:AA:1740:A:H2'	34:AA:1741:G:C8	2.42	0.55
36:AB:22:G:N2	36:AB:25:A:N6	2.55	0.55
37:AL:45:ASN:ND2	37:AL:48:THR:O	2.39	0.55
55:AJ:119:GLU:HB2	55:AJ:123:ASP:HB2	1.88	0.55
2:S2:38:HIS:HB3	2:S2:70:VAL:HA	1.88	0.55
3:S3:85:ARG:NH1	8:SA:1253:A:O2'	2.39	0.55
4:S4:20:LYS:HA	4:S4:24:PRO:HB3	1.89	0.55
7:S7:27:G:H1	7:S7:40:U:H3	1.54	0.55
23:SP:131:ASP:OD2	23:SP:133:THR:HG22	2.07	0.55
28:SU:3:ARG:NH2	28:SU:9:LYS:O	2.39	0.55
34:AA:906:G:H2'	34:AA:907:C:C6	2.41	0.55
34:AA:1788:C:OP2	46:Aa:74:ARG:NH2	2.28	0.55
34:AA:2083:U:H2'	34:AA:2084:U:C6	2.42	0.55
36:AB:8:U:OP2	62:AR:30:TYR:OH	2.22	0.55
62:AR:39:GLN:HE21	62:AR:40:ASP:H	1.55	0.55
68:A5:203:THR:O	68:A5:205:GLY:N	2.39	0.55
71:AF:228:ASP:OD1	71:AF:248:ARG:NH2	2.40	0.55
8:SA:969:A:H3'	8:SA:970:G:H21	1.71	0.55
14:SG:156:TRP:HB3	14:SG:164:HIS:HE2	1.72	0.55
17:SJ:56:LYS:HG3	17:SJ:57:LYS:HG3	1.88	0.55
20:SM:98:VAL:HG23	20:SM:99:ASP:OD1	2.07	0.55
26:SS:100:VAL:C	26:SS:101:ILE:HG13	2.32	0.55
34:AA:30:G:OP2	51:AP:190:ARG:NH1	2.40	0.55
34:AA:361:G:O6	56:Ac:58:ARG:NH2	2.40	0.55
34:AA:2085:A:H2'	34:AA:2086:A:H8	1.72	0.55
46:Aa:10:HIS:ND1	46:Aa:10:HIS:O	2.40	0.55
55:AJ:195:CYS:HB3	55:AJ:235:CYS:SG	2.47	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:16:G:H2'	8:SA:17:C:C6	2.42	0.54
8:SA:66:U:OP1	15:SH:136:LYS:NZ	2.28	0.54
8:SA:1830:C:H5'	26:SS:27:LYS:NZ	2.19	0.54
10:SC:49:ASN:HB2	10:SC:52:LYS:HG2	1.88	0.54
34:AA:1980:G:H3'	34:AA:1981:U:C6	2.42	0.54
34:AA:2152:A:H2'	34:AA:2153:A:O4'	2.07	0.54
34:AA:2440:A:OP2	69:AD:200:ARG:NH1	2.40	0.54
34:AA:2814:U:H2'	34:AA:2815:G:H8	1.73	0.54
34:AA:2884:G:C8	46:Aa:91:ARG:HG2	2.42	0.54
61:AQ:38:ARG:NH1	61:AQ:45:GLU:OE1	2.36	0.54
62:AR:89:PRO:HB2	62:AR:228:ASN:ND2	2.22	0.54
66:AZ:117:ILE:HG13	66:AZ:118:LEU:HD23	1.89	0.54
68:A5:226:GLY:O	68:A5:255:ARG:NH2	2.40	0.54
8:SA:2068:A:H2'	8:SA:2069:G:C8	2.42	0.54
9:SB:97:TYR:CD2	9:SB:229:MET:HE1	2.42	0.54
14:SG:239:PRO:HA	14:SG:242:TRP:CE2	2.41	0.54
21:SN:37:ASP:O	21:SN:40:LYS:HG3	2.07	0.54
30:SW:74:GLN:O	30:SW:78:ARG:HG3	2.07	0.54
34:AA:166:U:N3	34:AA:265:U:O4	2.18	0.54
34:AA:254:U:H2'	34:AA:255:C:C6	2.42	0.54
34:AA:456:A:H2'	34:AA:457:A:H8	1.72	0.54
34:AA:2091:U:O2	34:AA:2094:A:N7	2.40	0.54
34:AA:2473:A:H2'	34:AA:2474:C:C6	2.42	0.54
34:AA:3128:A:H2'	34:AA:3129:U:C6	2.42	0.54
57:AK:75:PRO:HB3	57:AK:137:LEU:HG	1.88	0.54
58:AM:98:GLU:OE1	78:A0:31:ARG:HG2	2.07	0.54
71:AF:187:LYS:HD2	71:AF:201:TYR:CD1	2.42	0.54
5:S5:47:PRO:HG3	16:SI:51:ARG:HH21	1.72	0.54
8:SA:1199:U:OP2	14:SG:180:ARG:NH2	2.39	0.54
26:SS:77:THR:HG23	26:SS:98:ILE:HD12	1.89	0.54
34:AA:1162:U:OP2	62:AR:5:LYS:NZ	2.40	0.54
34:AA:1255:G:OP2	61:AQ:98:ARG:NH2	2.37	0.54
34:AA:1999:A:HO2'	34:AA:2000:G:P	2.30	0.54
34:AA:2027:A:H2'	34:AA:2028:G:H8	1.72	0.54
34:AA:2087:U:H2'	34:AA:2088:A:H8	1.72	0.54
34:AA:3323:G:N2	34:AA:3326:A:OP2	2.33	0.54
35:AC:13:A:H2'	35:AC:14:A:C8	2.41	0.54
43:AN:141:LYS:HG2	57:AK:187:LEU:HB2	1.90	0.54
56:Ac:74:ARG:O	56:Ac:75:ARG:NE	2.36	0.54
62:AR:47:GLN:NE2	62:AR:66:CYS:SG	2.71	0.54
62:AR:104:LEU:HB2	62:AR:246:ILE:HD11	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
64:AY:123:LYS:HB3	64:AY:129:THR:HG22	1.89	0.54
3:S3:54:LYS:NZ	3:S3:62:PHE:O	2.29	0.54
8:SA:180:U:H5'	15:SH:198:ARG:HH11	1.73	0.54
8:SA:531:U:N3	8:SA:534:A:OP2	2.32	0.54
8:SA:1288:U:H2'	8:SA:1289:G:H8	1.73	0.54
16:SI:67:MET:N	16:SI:67:MET:SD	2.81	0.54
34:AA:648:U:O2'	34:AA:649:U:O5'	2.26	0.54
34:AA:1216:C:C2'	34:AA:1217:U:H5'	2.37	0.54
34:AA:3409:U:H2'	34:AA:3410:A:H8	1.72	0.54
55:AJ:74:TYR:O	55:AJ:75:ILE:HG13	2.08	0.54
55:AJ:225:GLN:NE2	55:AJ:229:ASP:OD1	2.40	0.54
69:AD:14:SER:OG	69:AD:15:ILE:N	2.40	0.54
77:AX:80:LYS:HD3	77:AX:80:LYS:N	2.23	0.54
3:S3:47:THR:HA	3:S3:50:GLN:HG3	1.88	0.54
8:SA:632:C:H2'	8:SA:633:U:C6	2.43	0.54
8:SA:933:A:OP1	18:SK:3:ARG:NH1	2.41	0.54
8:SA:1717:A:OP1	16:SI:155:ARG:NH1	2.41	0.54
9:SB:229:MET:HA	9:SB:229:MET:HE3	1.90	0.54
26:SS:42:MET:HE2	26:SS:42:MET:N	2.23	0.54
29:SV:81:ASN:HA	29:SV:87:ILE:HG22	1.90	0.54
34:AA:181:C:H3'	34:AA:182:U:H5'	1.90	0.54
34:AA:507:G:H2'	34:AA:508:A:H8	1.73	0.54
34:AA:2732:A:H2'	34:AA:2733:A:C8	2.43	0.54
38:A1:21:LYS:NZ	38:A1:47:GLU:OE2	2.40	0.54
61:AQ:184:TYR:HB3	61:AQ:190:ILE:HG12	1.88	0.54
5:S5:24:GLN:NE2	5:S5:43:ASN:OD1	2.38	0.54
10:SC:106:MET:HA	10:SC:112:ILE:HD11	1.88	0.54
11:SD:66:ILE:HD12	11:SD:69:LEU:HD22	1.89	0.54
11:SD:158:LEU:H	11:SD:190:MET:HE3	1.71	0.54
13:SF:165:GLU:OE2	13:SF:165:GLU:N	2.39	0.54
14:SG:41:TRP:CZ3	14:SG:43:PRO:HA	2.42	0.54
15:SH:116:LYS:NZ	15:SH:125:THR:HG21	2.22	0.54
18:SK:87:GLU:O	18:SK:91:THR:HG23	2.07	0.54
34:AA:417:A:C2	35:AC:21:A:H1'	2.43	0.54
34:AA:743:A:OP1	51:AP:205:ARG:NH1	2.36	0.54
34:AA:803:A:C8	60:AO:58:MET:HE2	2.42	0.54
34:AA:1996:C:O2'	34:AA:1997:G:N2	2.35	0.54
34:AA:2827:C:H2'	34:AA:2828:A:H8	1.72	0.54
34:AA:3469:C:O2'	34:AA:3724:U:OP1	2.20	0.54
36:AB:61:G:O3'	62:AR:281:ARG:NH1	2.41	0.54
54:AI:165:LYS:O	54:AI:169:ILE:HG22	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:SF:121:TYR:CE1	13:SF:161:ARG:HB3	2.42	0.54
15:SH:1:MET:HE2	15:SH:1:MET:N	2.23	0.54
34:AA:1444:A:H5'	57:AK:129:LYS:HE3	1.89	0.54
34:AA:2085:A:H2'	34:AA:2086:A:C8	2.43	0.54
57:AK:157:VAL:O	57:AK:161:GLN:HG2	2.08	0.54
60:AO:2:ALA:HB1	60:AO:5:PHE:HD2	1.71	0.54
8:SA:66:U:O2'	8:SA:68:U:OP2	2.22	0.54
8:SA:1392:C:H2'	8:SA:1393:G:C8	2.42	0.54
10:SC:187:VAL:HG12	10:SC:188:ILE:HG23	1.90	0.54
12:SE:38:ASN:OD1	12:SE:39:LYS:N	2.41	0.54
12:SE:135:ARG:HG2	12:SE:137:GLY:H	1.71	0.54
21:SN:28:LEU:HG	21:SN:29:ARG:HD2	1.89	0.54
28:SU:130:LYS:NZ	28:SU:139:TRP:O	2.28	0.54
29:SV:150:ILE:HG13	29:SV:157:GLN:HE22	1.72	0.54
34:AA:698:G:O2'	34:AA:699:U:O5'	2.23	0.54
34:AA:1534:U:HO2'	34:AA:1535:G:P	2.29	0.54
34:AA:1851:A:H2'	34:AA:1852:C:C6	2.43	0.54
34:AA:2574:A:H8	34:AA:3333:U:H1'	1.72	0.54
41:A6:30:ARG:NH1	41:A6:55:GLN:HG3	2.22	0.54
71:AF:38:GLN:O	71:AF:42:THR:HG23	2.06	0.54
8:SA:597:C:H2'	8:SA:598:A:H8	1.72	0.54
8:SA:1382:G:OP1	21:SN:75:THR:OG1	2.26	0.54
14:SG:184:ALA:HB3	14:SG:207:ASP:OD1	2.07	0.54
33:SZ:49:THR:OG1	33:SZ:50:GLU:N	2.41	0.54
34:AA:739:G:H4'	34:AA:740:U:C6	2.43	0.54
34:AA:1895:U:H2'	34:AA:1896:C:H6	1.73	0.54
34:AA:3001:A:H2'	34:AA:3002:G:H8	1.73	0.54
43:AN:133:PHE:HD2	57:AK:192:GLN:HE22	1.56	0.54
51:AP:46:ASP:OD2	51:AP:50:ARG:NH2	2.40	0.54
62:AR:197:ASN:OD1	62:AR:202:HIS:ND1	2.40	0.54
66:AZ:50:ARG:HD3	66:AZ:109:LYS:HD3	1.89	0.54
8:SA:917:C:H2'	8:SA:918:U:C6	2.43	0.54
8:SA:1679:G:H2'	8:SA:1680:U:C6	2.43	0.54
9:SB:36:LYS:HA	9:SB:41:ARG:NH1	2.23	0.54
9:SB:194:GLY:O	9:SB:197:ILE:HG22	2.08	0.54
26:SS:118:LYS:O	26:SS:120:ARG:NH1	2.41	0.54
34:AA:1210:A:H2'	34:AA:1211:U:H6	1.72	0.54
34:AA:3715:U:H2'	34:AA:3716:C:C6	2.43	0.54
51:AP:79:ILE:HG13	51:AP:80:VAL:H	1.73	0.54
75:AV:105:ASP:OD1	75:AV:106:PHE:N	2.41	0.54
8:SA:423:A:H4'	8:SA:424:G:O5'	2.07	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:920:A:H5'	65:AT:171:LYS:NZ	2.23	0.53
8:SA:1821:A:N3	8:SA:1887:A:O2'	2.31	0.53
13:SF:149:TYR:HB3	15:SH:208:TYR:HD2	1.72	0.53
16:SI:146:CYS:HB3	16:SI:150:ARG:NH1	2.23	0.53
24:SQ:117:LEU:HD12	24:SQ:118:PRO:HD2	1.90	0.53
34:AA:234:C:H2'	34:AA:235:A:O4'	2.08	0.53
43:AN:95:THR:O	43:AN:99:THR:HG23	2.07	0.53
64:AY:147:VAL:HB	64:AY:153:ILE:HD11	1.90	0.53
8:SA:1172:U:H2'	8:SA:1173:C:C6	2.43	0.53
8:SA:1661:U:H2'	8:SA:1662:A:C8	2.44	0.53
19:SL:10:LYS:O	19:SL:18:LYS:HE2	2.09	0.53
19:SL:168:ILE:HG12	19:SL:169:ASP:N	2.14	0.53
30:SW:69:ILE:HG22	30:SW:71:LEU:HD13	1.89	0.53
32:SY:29:ILE:HG22	32:SY:159:ALA:HB2	1.89	0.53
34:AA:697:A:H4'	34:AA:698:G:O5'	2.07	0.53
34:AA:1819:U:H2'	34:AA:1820:U:C6	2.44	0.53
37:AL:86:PRO:O	37:AL:90:GLN:HG3	2.07	0.53
43:AN:59:ALA:C	43:AN:61:ILE:H	2.17	0.53
61:AQ:47:SER:O	61:AQ:178:LYS:NZ	2.36	0.53
69:AD:119:ARG:H	69:AD:122:ASN:ND2	2.06	0.53
4:S4:33:VAL:HG12	4:S4:77:PHE:HB3	1.90	0.53
8:SA:1363:U:H2'	8:SA:1364:G:H8	1.74	0.53
12:SE:109:LEU:HB2	12:SE:146:PHE:HB3	1.89	0.53
28:SU:29:LYS:HD3	28:SU:31:SER:H	1.74	0.53
30:SW:9:ILE:HB	30:SW:50:VAL:HG12	1.90	0.53
30:SW:20:TYR:HB2	30:SW:23:LYS:NZ	2.22	0.53
34:AA:203:A:C2	34:AA:207:A:H2	2.21	0.53
34:AA:282:U:H2'	34:AA:283:U:C6	2.43	0.53
65:AT:163:LEU:O	65:AT:167:VAL:HG13	2.08	0.53
68:A5:186:LEU:HB3	68:A5:191:VAL:CG1	2.38	0.53
8:SA:144:U:H2'	8:SA:145:A:H8	1.74	0.53
8:SA:553:U:H2'	8:SA:554:U:C6	2.43	0.53
8:SA:1277:G:H2'	8:SA:1278:C:H6	1.72	0.53
8:SA:1925:U:H2'	8:SA:1926:G:C8	2.43	0.53
9:SB:79:GLN:NE2	9:SB:189:ILE:O	2.42	0.53
9:SB:137:MET:HE2	9:SB:172:MET:HE2	1.90	0.53
23:SP:31:ALA:N	23:SP:93:ILE:HD11	2.23	0.53
30:SW:61:ILE:O	30:SW:62:GLN:HG3	2.08	0.53
34:AA:507:G:H2'	34:AA:508:A:C8	2.44	0.53
34:AA:1209:U:H2'	34:AA:1210:A:C8	2.43	0.53
34:AA:3358:U:H2'	34:AA:3359:A:H8	1.72	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:AI:61:ILE:HB	54:AI:105:VAL:HG13	1.90	0.53
71:AF:9:ASN:HA	71:AF:21:GLU:HA	1.90	0.53
8:SA:52:U:H2'	8:SA:53:G:C8	2.44	0.53
8:SA:1172:U:H2'	8:SA:1173:C:H6	1.73	0.53
8:SA:1973:U:OP1	19:SL:44:HIS:ND1	2.30	0.53
8:SA:2008:U:H2'	8:SA:2009:C:H6	1.73	0.53
10:SC:58:GLN:O	10:SC:62:ARG:HG3	2.09	0.53
13:SF:6:LYS:O	13:SF:30:LYS:NZ	2.40	0.53
19:SL:114:GLU:OE1	19:SL:120:THR:HA	2.07	0.53
23:SP:84:ARG:NH2	23:SP:87:GLU:OE2	2.42	0.53
34:AA:215:C:O2'	34:AA:216:C:OP1	2.25	0.53
34:AA:642:A:N6	34:AA:684:G:O2'	2.40	0.53
34:AA:684:G:H1	71:AF:311:LYS:NZ	2.07	0.53
34:AA:2739:U:H2'	34:AA:2740:A:C8	2.44	0.53
34:AA:3249:A:O2'	34:AA:3292:A:N3	2.33	0.53
35:AC:147:U:O2'	51:AP:110:ILE:O	2.23	0.53
60:AO:99:VAL:HG22	60:AO:123:VAL:HB	1.89	0.53
69:AD:79:SER:H	69:AD:82:MET:HE3	1.73	0.53
77:AX:63:PHE:HE1	77:AX:67:LYS:HG2	1.72	0.53
5:S5:63:ALA:HA	16:SI:195:ARG:HH22	1.73	0.53
12:SE:171:ARG:HA	12:SE:171:ARG:NE	2.23	0.53
29:SV:50:GLU:HG3	29:SV:117:CYS:HA	1.91	0.53
30:SW:57:LEU:HB2	30:SW:58:MET:HE2	1.90	0.53
34:AA:459:G:H2'	34:AA:460:A:H8	1.72	0.53
34:AA:2598:G:OP2	34:AA:2598:G:N2	2.32	0.53
35:AC:145:A:H2'	35:AC:146:C:H6	1.73	0.53
42:A7:27:LEU:HD13	42:A7:43:GLU:HB3	1.91	0.53
65:AT:20:LYS:HE3	65:AT:54:GLN:HA	1.91	0.53
1:S1:61:PHE:CD1	1:S1:72:GLY:HA3	2.43	0.53
1:S1:61:PHE:O	8:SA:529:U:O2'	2.26	0.53
8:SA:457:A:OP2	8:SA:459:A:N6	2.38	0.53
8:SA:493:G:N2	8:SA:507:U:O2	2.38	0.53
8:SA:1220:C:H2'	8:SA:1221:G:H8	1.74	0.53
8:SA:1799:A:H5'	32:SY:56:TRP:HZ2	1.73	0.53
8:SA:1809:G:H1'	8:SA:1814:C:C2	2.43	0.53
11:SD:122:GLY:HA2	11:SD:125:ARG:HD2	1.91	0.53
20:SM:41:GLU:HB2	20:SM:42:PRO:HD3	1.90	0.53
33:SZ:78:LEU:HG	33:SZ:80:PHE:H	1.72	0.53
34:AA:508:A:H2'	34:AA:509:A:C8	2.44	0.53
34:AA:1805:U:O2'	34:AA:1806:C:H5'	2.08	0.53
34:AA:2740:A:H2'	34:AA:2741:A:H8	1.73	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:AL:170:PHE:HB3	60:AO:104:ARG:HG2	1.90	0.53
39:A2:89:ASN:O	39:A2:93:LEU:HG	2.08	0.53
62:AR:292:LYS:HG2	62:AR:293:LEU:HG	1.89	0.53
63:AW:22:LEU:HD12	63:AW:146:ILE:HD12	1.90	0.53
8:SA:343:G:H3'	29:SV:136:LYS:HB2	1.91	0.53
8:SA:628:A:OP1	76:Ag:6:SER:HB3	2.09	0.53
10:SC:29:LEU:HD11	10:SC:37:VAL:HG11	1.90	0.53
12:SE:40:ARG:O	12:SE:44:ARG:HG3	2.09	0.53
17:SJ:76:ILE:O	17:SJ:80:LEU:HG	2.09	0.53
34:AA:366:G:N2	34:AA:369:A:OP2	2.35	0.53
36:AB:23:C:H2'	36:AB:24:C:H6	1.74	0.53
45:A9:136:TYR:HB3	54:AI:63:LEU:HD23	1.91	0.53
70:AE:46:PHE:HE2	70:AE:81:CYS:HB3	1.72	0.53
8:SA:424:G:O2'	15:SH:72:ARG:NH2	2.34	0.53
8:SA:1743:A:H2'	8:SA:1744:A:C8	2.44	0.53
16:SI:88:PHE:CD1	16:SI:99:PRO:HB2	2.44	0.53
34:AA:455:U:H2'	34:AA:456:A:C8	2.44	0.53
34:AA:1304:C:H4'	57:AK:88:PRO:HD3	1.91	0.53
34:AA:1319:U:OP2	57:AK:48:ARG:NH1	2.37	0.53
34:AA:1499:U:OP1	44:A8:90:THR:OG1	2.25	0.53
34:AA:1646:C:H2'	34:AA:1647:U:C6	2.44	0.53
34:AA:1875:A:H4'	65:AT:116:ARG:HD2	1.91	0.53
34:AA:3387:U:H2'	34:AA:3388:U:C6	2.44	0.53
61:AQ:129:VAL:HG21	61:AQ:135:LEU:HD21	1.91	0.53
63:AW:16:LYS:HG2	63:AW:149:ILE:HG23	1.90	0.53
65:AT:96:LYS:O	65:AT:100:VAL:HG13	2.09	0.53
73:AU:184:MET:C	73:AU:184:MET:HE2	2.33	0.53
7:S7:8:U:C2	7:S7:14:A:N6	2.77	0.53
8:SA:66:U:C2	15:SH:173:PRO:HG3	2.43	0.53
8:SA:253:A:H8	13:SF:131:LEU:HD21	1.73	0.53
8:SA:1985:A:H2'	8:SA:1986:A:H8	1.74	0.53
12:SE:5:TYR:O	13:SF:22:LYS:NZ	2.38	0.53
13:SF:56:LEU:HD12	13:SF:57:THR:HG23	1.90	0.53
26:SS:80:LYS:HD2	32:SY:59:PHE:CE2	2.44	0.53
34:AA:957:G:O6	52:Ah:4:ARG:NH2	2.41	0.53
34:AA:1690:A:H2'	34:AA:1691:G:O4'	2.09	0.53
34:AA:2662:G:H2'	34:AA:2663:G:C8	2.44	0.53
34:AA:3587:U:H2'	34:AA:3588:A:C8	2.43	0.53
34:AA:3726:U:O2'	78:A0:57:ARG:NH1	2.42	0.53
51:AP:26:ARG:NH2	55:AJ:178:GLU:OE2	2.42	0.53
70:AE:353:LEU:HD23	70:AE:356:ILE:HD11	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
71:AF:31:PRO:HG3	71:AF:282:SER:HB2	1.91	0.53
71:AF:37:ILE:HD11	71:AF:241:ALA:HB2	1.91	0.53
71:AF:94:ASN:OD1	71:AF:94:ASN:N	2.42	0.53
71:AF:347:ILE:O	71:AF:351:SER:OG	2.26	0.53
73:AU:165:THR:O	73:AU:165:THR:OG1	2.27	0.53
8:SA:109:C:H2'	8:SA:110:A:H8	1.74	0.52
8:SA:881:C:H2'	8:SA:882:A:H8	1.74	0.52
8:SA:1889:G:H1	8:SA:1901:U:H3	1.56	0.52
12:SE:59:LEU:HD11	12:SE:72:GLN:HB3	1.90	0.52
15:SH:52:ILE:HD11	15:SH:109:LEU:HD22	1.92	0.52
16:SI:42:HIS:HB2	16:SI:81:ILE:HD11	1.91	0.52
18:SK:44:LYS:HD3	18:SK:101:HIS:CE1	2.44	0.52
19:SL:31:ARG:NH2	19:SL:48:GLY:HA2	2.24	0.52
27:ST:17:ARG:CZ	27:ST:35:ASN:HB3	2.39	0.52
34:AA:308:U:O2'	34:AA:309:G:H8	1.92	0.52
34:AA:1262:G:O2'	34:AA:2981:A:N3	2.36	0.52
34:AA:1434:G:C5	57:AK:61:THR:HA	2.43	0.52
34:AA:2088:A:H2'	34:AA:2089:C:C6	2.44	0.52
34:AA:3494:C:O3'	74:AH:154:SER:OG	2.25	0.52
34:AA:3635:G:O6	34:AA:3650:U:O4	2.27	0.52
35:AC:5:A:N1	63:AW:38:ARG:NH1	2.57	0.52
35:AC:75:A:N1	35:AC:84:G:O2'	2.38	0.52
35:AC:139:A:H4'	35:AC:140:G:O5'	2.08	0.52
55:AJ:223:GLU:N	55:AJ:223:GLU:OE2	2.41	0.52
58:AM:98:GLU:OE2	78:A0:28:TYR:OH	2.21	0.52
63:AW:41:LEU:O	63:AW:45:LYS:HG2	2.09	0.52
74:AH:18:VAL:HG12	74:AH:27:VAL:HG22	1.89	0.52
74:AH:95:HIS:HA	74:AH:176:ASP:HB3	1.90	0.52
1:S1:18:LEU:HG	1:S1:20:ARG:HH21	1.74	0.52
8:SA:64:U:O2'	8:SA:166:A:N3	2.40	0.52
8:SA:80:A:H5"	15:SH:154:ARG:HH22	1.73	0.52
8:SA:1798:G:P	32:SY:121:LYS:HZ1	2.32	0.52
16:SI:156:ASN:O	16:SI:158:LYS:N	2.38	0.52
23:SP:77:ALA:O	23:SP:81:VAL:HG12	2.10	0.52
32:SY:79:ARG:HH21	32:SY:122:ILE:HD11	1.72	0.52
34:AA:338:U:H2'	34:AA:339:G:C8	2.44	0.52
34:AA:577:U:H2'	34:AA:578:U:H6	1.74	0.52
34:AA:979:G:C6	69:AD:181:LYS:HB2	2.44	0.52
34:AA:1003:A:OP1	56:Ac:8:THR:OG1	2.20	0.52
34:AA:1534:U:OP2	71:AF:204:ARG:NH1	2.41	0.52
34:AA:2817:U:H2'	34:AA:2818:U:C6	2.45	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:AC:79:G:H2'	35:AC:80:C:H6	1.72	0.52
51:AP:84:PRO:HA	51:AP:87:GLN:CG	2.39	0.52
60:AO:85:GLU:N	60:AO:85:GLU:OE2	2.42	0.52
8:SA:329:A:OP2	19:SL:10:LYS:HB2	2.08	0.52
8:SA:803:G:OP1	13:SF:186:GLY:HA2	2.10	0.52
8:SA:927:A:C5	28:SU:73:ARG:HD3	2.44	0.52
8:SA:1746:A:H2'	8:SA:1747:U:C6	2.45	0.52
8:SA:1916:C:H2'	8:SA:1917:C:H6	1.75	0.52
15:SH:120:GLU:OE1	15:SH:125:THR:OG1	2.27	0.52
17:SJ:44:LEU:HA	17:SJ:64:ILE:HG22	1.91	0.52
23:SP:64:ALA:C	23:SP:66:ARG:H	2.16	0.52
26:SS:111:GLU:O	26:SS:115:ARG:HG3	2.07	0.52
30:SW:101:ASP:HA	30:SW:104:ARG:HE	1.74	0.52
34:AA:1139:C:H2'	34:AA:1140:A:C8	2.44	0.52
34:AA:1527:U:H2'	34:AA:1528:G:H8	1.75	0.52
34:AA:1693:U:O2'	34:AA:2461:A:N3	2.37	0.52
34:AA:3014:C:OP2	34:AA:3015:A:O2'	2.28	0.52
57:AK:8:ILE:HD11	57:AK:22:ILE:HD11	1.91	0.52
64:AY:122:LYS:O	64:AY:126:GLU:HG3	2.09	0.52
8:SA:1363:U:H2'	8:SA:1364:G:C8	2.44	0.52
13:SF:106:LYS:HD2	13:SF:108:ARG:NE	2.14	0.52
30:SW:58:MET:HA	30:SW:61:ILE:HG12	1.92	0.52
34:AA:1536:U:O2'	44:A8:99:ASN:O	2.23	0.52
37:AL:121:SER:HB2	67:A3:121:VAL:HG12	1.90	0.52
48:Ad:5:ILE:HD11	48:Ad:11:PHE:HD1	1.75	0.52
52:Ah:51:CYS:SG	52:Ah:52:VAL:N	2.81	0.52
65:AT:166:GLN:HA	65:AT:169:ARG:HG3	1.92	0.52
68:A5:148:PRO:HB2	68:A5:153:VAL:HG23	1.91	0.52
1:S1:56:ILE:CD1	1:S1:76:ILE:HG22	2.39	0.52
3:S3:58:VAL:HG13	23:SP:125:LYS:HZ3	1.73	0.52
4:S4:21:ARG:NH1	4:S4:25:THR:O	2.43	0.52
8:SA:833:A:H2'	8:SA:834:A:O4'	2.10	0.52
8:SA:1629:G:H2'	8:SA:1630:A:C8	2.45	0.52
8:SA:1970:U:OP1	15:SH:94:ARG:NH2	2.43	0.52
12:SE:77:LEU:O	12:SE:81:VAL:HG13	2.10	0.52
15:SH:32:ILE:HG12	15:SH:100:CYS:HB2	1.91	0.52
34:AA:2008:G:OP1	46:Aa:38:LYS:NZ	2.41	0.52
34:AA:3358:U:H2'	34:AA:3359:A:C8	2.44	0.52
34:AA:3388:U:O2'	70:AE:177:GLU:OE1	2.22	0.52
34:AA:3458:A:H2'	34:AA:3459:A:O4'	2.10	0.52
48:Ad:59:LYS:O	48:Ad:63:ILE:HG12	2.08	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:AQ:56:GLU:HB3	61:AQ:58:GLU:HG2	1.92	0.52
8:SA:1432:G:H3'	8:SA:1433:A:H8	1.74	0.52
9:SB:121:ILE:HD11	9:SB:161:ILE:HD12	1.90	0.52
10:SC:39:THR:OG1	10:SC:40:ARG:N	2.43	0.52
10:SC:177:LEU:O	10:SC:181:VAL:HG12	2.10	0.52
11:SD:18:GLN:NE2	27:ST:47:ILE:O	2.33	0.52
22:SO:72:TRP:CE2	27:ST:21:VAL:HG12	2.45	0.52
34:AA:1248:A:H2'	34:AA:1249:U:H6	1.75	0.52
34:AA:3036:A:H2'	34:AA:3037:G:C8	2.45	0.52
34:AA:3668:U:OP2	45:A9:101:TRP:NE1	2.37	0.52
35:AC:31:U:H2'	35:AC:32:C:H6	1.75	0.52
43:AN:138:LEU:HD21	57:AK:181:LYS:HE2	1.92	0.52
66:AZ:81:VAL:HG22	66:AZ:84:VAL:HG23	1.92	0.52
68:A5:148:PRO:O	68:A5:152:THR:OG1	2.14	0.52
74:AH:127:ALA:HB2	74:AH:133:ILE:HD11	1.92	0.52
8:SA:1261:A:H2'	8:SA:1262:C:C6	2.45	0.52
8:SA:2007:U:H2'	8:SA:2008:U:H6	1.74	0.52
8:SA:2074:A:H5"	76:Ag:15:MET:HE3	1.92	0.52
9:SB:146:ARG:HG3	9:SB:149:GLN:HG2	1.90	0.52
11:SD:100:MET:HE3	11:SD:100:MET:O	2.09	0.52
11:SD:136:GLU:HB3	11:SD:188:LYS:HG3	1.90	0.52
34:AA:61:A:H2'	34:AA:62:A:H8	1.75	0.52
34:AA:1736:A:O2'	34:AA:1737:A:OP1	2.25	0.52
35:AC:44:A:H2'	35:AC:45:A:C8	2.45	0.52
51:AP:122:VAL:HG21	51:AP:132:GLU:CG	2.40	0.52
64:AY:118:GLU:CD	64:AY:118:GLU:H	2.16	0.52
64:AY:123:LYS:HD3	64:AY:127:ILE:HD11	1.92	0.52
8:SA:478:G:O2'	8:SA:819:A:N3	2.39	0.52
8:SA:829:G:H1'	8:SA:832:A:H62	1.74	0.52
8:SA:1808:G:N3	8:SA:1814:C:H1'	2.25	0.52
8:SA:1904:G:H2'	8:SA:1905:C:C6	2.45	0.52
19:SL:174:GLU:HA	19:SL:177:LYS:HE3	1.91	0.52
20:SM:12:GLY:HA2	20:SM:84:GLN:NE2	2.16	0.52
34:AA:493:C:H2'	34:AA:494:U:O4'	2.10	0.52
34:AA:509:A:H2'	34:AA:510:A:C8	2.44	0.52
34:AA:1015:A:H5"	69:AD:183:GLY:CA	2.40	0.52
34:AA:3387:U:O2'	70:AE:175:ILE:HD11	2.10	0.52
34:AA:3585:A:O2'	34:AA:3586:U:H6	1.93	0.52
36:AB:6:C:O2'	62:AR:50:ARG:NH2	2.43	0.52
51:AP:148:LYS:C	51:AP:150:ASN:H	2.16	0.52
58:AM:11:ASN:OD1	70:AE:66:LYS:HE2	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
62:AR:279:LYS:HD2	62:AR:279:LYS:C	2.35	0.52
72:AG:45:PRO:HA	72:AG:69:VAL:HG23	1.90	0.52
8:SA:969:A:P	23:SP:59:GLY:HA3	2.50	0.52
10:SC:119:ARG:HD2	14:SG:252:TYR:HB3	1.92	0.52
26:SS:42:MET:HG3	26:SS:99:HIS:CD2	2.45	0.52
27:ST:44:ARG:HH11	27:ST:44:ARG:HG3	1.75	0.52
34:AA:381:A:O2'	34:AA:384:A:OP1	2.24	0.52
34:AA:1444:A:H62	57:AK:130:LYS:HZ3	1.57	0.52
34:AA:1820:U:H2'	34:AA:1821:U:C6	2.44	0.52
34:AA:3014:C:N4	72:AG:22:CYS:HB3	2.24	0.52
55:AJ:91:PRO:HG2	55:AJ:94:ILE:HG13	1.92	0.52
64:AY:101:HIS:HB3	67:A3:60:TYR:HE2	1.75	0.52
66:AZ:113:ASN:O	66:AZ:117:ILE:HG23	2.10	0.52
8:SA:247:G:N1	8:SA:250:A:OP2	2.40	0.52
8:SA:755:A:H2'	8:SA:756:A:C8	2.45	0.52
8:SA:1629:G:O5'	21:SN:86:ARG:NH2	2.43	0.52
8:SA:1808:G:H2'	8:SA:1809:G:C8	2.45	0.52
8:SA:1875:U:H2'	8:SA:1876:G:H8	1.75	0.52
10:SC:70:PRO:HB2	10:SC:94:GLY:HA3	1.91	0.52
17:SJ:142:SER:OG	17:SJ:152:LYS:NZ	2.44	0.52
34:AA:673:U:O2'	34:AA:674:U:H5'	2.09	0.52
34:AA:715:U:O2'	34:AA:716:C:O4'	2.22	0.52
34:AA:1103:A:H62	34:AA:1230:A:H8	1.57	0.52
34:AA:1203:A:N3	62:AR:141:ARG:NH2	2.58	0.52
34:AA:1468:A:H2'	34:AA:1469:U:C6	2.45	0.52
34:AA:2566:G:O2'	34:AA:2604:G:O6	2.23	0.52
68:A5:152:THR:HA	68:A5:155:LYS:HG2	1.91	0.52
72:AG:49:LYS:O	72:AG:64:LYS:N	2.42	0.52
8:SA:914:U:H2'	8:SA:915:G:C8	2.45	0.51
8:SA:921:G:P	65:AT:172:ARG:HH22	2.33	0.51
8:SA:1418:C:H5'	30:SW:7:LYS:HB3	1.92	0.51
8:SA:1716:C:O2	8:SA:1868:C:O2'	2.27	0.51
8:SA:2033:U:O3'	24:SQ:39:LYS:NZ	2.42	0.51
15:SH:178:LEU:HB3	15:SH:180:THR:HG23	1.90	0.51
16:SI:13:LYS:HB2	16:SI:14:TRP:CE2	2.44	0.51
34:AA:123:A:H3'	34:AA:124:U:H5"	1.92	0.51
34:AA:2032:A:H2'	34:AA:2033:C:C6	2.45	0.51
34:AA:2168:A:O2'	34:AA:2174:G:N7	2.38	0.51
35:AC:37:A:O2'	35:AC:38:G:H4'	2.10	0.51
77:AX:76:ASN:N	77:AX:76:ASN:OD1	2.43	0.51
8:SA:52:U:H2'	8:SA:53:G:H8	1.75	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:1747:U:H2'	8:SA:1748:G:C8	2.45	0.51
8:SA:2008:U:H2'	8:SA:2009:C:C6	2.46	0.51
10:SC:48:ILE:HG21	10:SC:161:PRO:HB2	1.91	0.51
12:SE:45:VAL:HG21	12:SE:105:LEU:HD21	1.92	0.51
19:SL:34:SER:O	19:SL:34:SER:OG	2.26	0.51
23:SP:46:ASP:OD2	23:SP:51:GLU:HB2	2.11	0.51
28:SU:149:LEU:HD12	28:SU:149:LEU:O	2.10	0.51
34:AA:648:U:H5	71:AF:307:LYS:HZ3	1.57	0.51
34:AA:2445:A:H2'	34:AA:2446:U:H6	1.75	0.51
34:AA:3106:U:H2'	34:AA:3107:U:C6	2.45	0.51
34:AA:3401:C:H2'	34:AA:3402:A:H8	1.75	0.51
57:AK:18:LEU:HD12	57:AK:119:LEU:HD12	1.91	0.51
59:AS:97:LEU:O	59:AS:117:GLY:HA3	2.10	0.51
5:S5:41:ILE:HG13	5:S5:63:ALA:HB3	1.91	0.51
8:SA:975:A:P	23:SP:66:ARG:HG2	2.49	0.51
13:SF:48:LEU:HD11	13:SF:61:VAL:HG13	1.92	0.51
14:SG:250:SER:HB3	14:SG:253:GLU:OE1	2.10	0.51
15:SH:197:ARG:NH2	15:SH:201:LYS:HD2	2.25	0.51
34:AA:109:A:N1	34:AA:330:U:O2'	2.42	0.51
34:AA:1024:U:O2'	69:AD:12:ARG:NH2	2.43	0.51
34:AA:1845:C:H2'	34:AA:1846:A:H8	1.76	0.51
34:AA:1999:A:H2'	34:AA:2000:G:H8	1.76	0.51
36:AB:71:G:OP1	73:AU:27:LYS:NZ	2.43	0.51
44:A8:105:ARG:NE	44:A8:125:ARG:HD2	2.25	0.51
62:AR:22:ARG:HB3	62:AR:28:THR:HG23	1.91	0.51
62:AR:111:LYS:HD3	62:AR:116:ASP:OD2	2.10	0.51
68:A5:224:ARG:H	68:A5:255:ARG:HB2	1.75	0.51
72:AG:158:ASP:HA	72:AG:161:LYS:HG3	1.91	0.51
77:AX:63:PHE:CE1	77:AX:67:LYS:HG2	2.45	0.51
8:SA:1903:U:H2'	8:SA:1904:G:C8	2.45	0.51
8:SA:2032:U:H2'	8:SA:2033:U:C6	2.45	0.51
25:SR:29:ILE:HG21	25:SR:93:LEU:HD22	1.93	0.51
34:AA:715:U:O2'	34:AA:716:C:O5'	2.29	0.51
34:AA:1444:A:H62	57:AK:130:LYS:NZ	2.08	0.51
34:AA:2884:G:N2	38:A1:145:TYR:O	2.43	0.51
34:AA:3433:C:O2'	34:AA:3434:A:H5'	2.10	0.51
34:AA:3577:A:H3'	34:AA:3581:A:H61	1.75	0.51
35:AC:134:G:O2'	35:AC:135:G:OP1	2.27	0.51
35:AC:145:A:H2'	35:AC:146:C:C6	2.46	0.51
37:AL:144:ASP:OD2	37:AL:147:THR:HG22	2.11	0.51
42:A7:80:ARG:HG2	42:A7:104:VAL:HB	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:AN:29:ARG:HD2	43:AN:76:LEU:HB3	1.92	0.51
66:AZ:115:LYS:HD3	66:AZ:115:LYS:H	1.73	0.51
1:S1:17:LEU:HD11	13:SF:92:ILE:HG21	1.93	0.51
8:SA:1220:C:H2'	8:SA:1221:G:C8	2.45	0.51
8:SA:1299:G:OP1	8:SA:1300:G:O2'	2.20	0.51
8:SA:1626:U:H2'	8:SA:1627:U:O4'	2.11	0.51
8:SA:1675:G:H2'	8:SA:1676:U:C6	2.45	0.51
8:SA:1822:A:N1	8:SA:1905:C:H1'	2.26	0.51
10:SC:88:LYS:HB3	10:SC:201:PHE:CE1	2.44	0.51
16:SI:12:LYS:NZ	20:SM:47:THR:HG22	2.26	0.51
16:SI:80:ALA:O	16:SI:83:ILE:HG22	2.11	0.51
20:SM:14:LYS:NZ	20:SM:116:SER:O	2.43	0.51
30:SW:53:PHE:O	30:SW:57:LEU:HG	2.10	0.51
34:AA:179:G:O2'	34:AA:180:C:OP1	2.24	0.51
34:AA:291:A:OP2	53:Ai:40:ARG:NH1	2.44	0.51
34:AA:648:U:H1'	34:AA:650:U:C2	2.45	0.51
34:AA:1712:G:H2'	34:AA:1713:G:C8	2.45	0.51
34:AA:2167:G:O2'	34:AA:2627:U:O4	2.21	0.51
36:AB:3:A:H5'	36:AB:22:G:O6	2.10	0.51
54:AI:124:PHE:CE1	54:AI:186:ILE:HD11	2.45	0.51
62:AR:50:ARG:NH1	62:AR:149:ASP:OD2	2.43	0.51
69:AD:132:CYS:O	69:AD:169:VAL:HG12	2.10	0.51
74:AH:109:THR:HG23	74:AH:127:ALA:HB3	1.91	0.51
8:SA:454:U:H2'	8:SA:455:C:H6	1.74	0.51
8:SA:1725:A:N1	8:SA:1826:A:C6	2.79	0.51
10:SC:89:PHE:HD1	10:SC:178:ALA:HB2	1.76	0.51
26:SS:18:LEU:HD11	26:SS:103:ASN:HD21	1.75	0.51
33:SZ:76:LYS:HE2	33:SZ:76:LYS:HA	1.92	0.51
36:AB:22:G:N3	36:AB:25:A:C6	2.77	0.51
38:A1:46:ILE:HA	38:A1:70:ALA:HA	1.93	0.51
45:A9:65:ILE:CD1	45:A9:133:ILE:HD12	2.41	0.51
55:AJ:102:PRO:HG2	55:AJ:105:GLN:HB2	1.92	0.51
61:AQ:57:TYR:HD1	61:AQ:130:ASP:HA	1.75	0.51
8:SA:1798:G:O5'	32:SY:121:LYS:NZ	2.44	0.51
8:SA:2021:U:H4'	19:SL:5:ARG:NH1	2.26	0.51
15:SH:20:ASP:OD2	15:SH:23:LYS:N	2.44	0.51
15:SH:79:LYS:HZ1	15:SH:89:LYS:HE2	1.76	0.51
15:SH:160:ARG:HB3	15:SH:171:ILE:HG13	1.91	0.51
30:SW:71:LEU:O	30:SW:74:GLN:NE2	2.44	0.51
34:AA:2075:U:O2'	34:AA:2079:A:O2'	2.10	0.51
34:AA:3449:U:H2'	34:AA:3450:G:H8	1.76	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:A9:104:VAL:HG13	45:A9:114:ILE:HD13	1.93	0.51
46:Aa:72:VAL:HG12	46:Aa:73:ALA:H	1.74	0.51
47:Ab:8:LYS:HG3	47:Ab:8:LYS:O	2.11	0.51
47:Ab:96:GLU:O	47:Ab:100:VAL:HG13	2.11	0.51
54:AI:57:GLY:O	54:AI:111:ILE:N	2.41	0.51
68:A5:89:GLU:OE1	68:A5:89:GLU:N	2.39	0.51
69:AD:83:PHE:CZ	69:AD:86:GLN:HB2	2.45	0.51
69:AD:200:ARG:NH2	69:AD:217:GLN:OE1	2.44	0.51
7:S7:26:C:H2'	7:S7:27:G:H8	1.76	0.51
7:S7:28:C:H2'	7:S7:29:G:H8	1.76	0.51
8:SA:410:G:H2'	8:SA:411:C:H6	1.75	0.51
8:SA:1830:C:H4'	8:SA:1836:G:O6	2.11	0.51
8:SA:1962:A:H2'	8:SA:1963:U:H6	1.76	0.51
29:SV:150:ILE:HG13	29:SV:157:GLN:NE2	2.25	0.51
34:AA:1248:A:H2'	34:AA:1249:U:C6	2.46	0.51
34:AA:2814:U:H2'	34:AA:2815:G:C8	2.45	0.51
36:AB:23:C:H2'	36:AB:24:C:C6	2.45	0.51
36:AB:27:A:H2'	36:AB:28:C:H6	1.74	0.51
36:AB:64:A:H4'	61:AQ:204:GLY:HA2	1.92	0.51
41:A6:23:SER:OG	41:A6:99:GLY:HA3	2.11	0.51
55:AJ:222:LYS:HA	55:AJ:222:LYS:HE3	1.93	0.51
77:AX:115:GLN:OE1	77:AX:115:GLN:N	2.44	0.51
78:A0:9:LYS:HE2	78:A0:9:LYS:HA	1.93	0.51
1:S1:8:ARG:NH1	8:SA:829:G:N7	2.59	0.51
8:SA:44:U:OP2	8:SA:443:A:N6	2.39	0.51
8:SA:572:C:O2'	8:SA:584:G:N2	2.44	0.51
8:SA:943:U:H2'	8:SA:944:G:C8	2.45	0.51
8:SA:1198:U:H1'	14:SG:180:ARG:HD2	1.92	0.51
8:SA:1628:A:N3	21:SN:54:ARG:HD2	2.26	0.51
8:SA:1735:U:O2'	8:SA:1810:U:O4	2.23	0.51
16:SI:60:VAL:O	16:SI:64:VAL:HG13	2.10	0.51
17:SJ:7:ARG:O	17:SJ:43:LYS:NZ	2.40	0.51
27:ST:21:VAL:HG13	27:ST:36:ILE:HD11	1.91	0.51
32:SY:41:TYR:OH	32:SY:158:PHE:HB3	2.11	0.51
34:AA:319:U:H1'	37:AL:204:GLN:OE1	2.11	0.51
34:AA:674:U:H2'	34:AA:675:A:H8	1.76	0.51
34:AA:1740:A:H2'	34:AA:1741:G:H8	1.76	0.51
42:A7:107:ASP:OD1	42:A7:107:ASP:N	2.40	0.51
44:A8:78:ASN:OD1	44:A8:81:GLU:HG3	2.10	0.51
47:Ab:13:ILE:HG22	47:Ab:15:VAL:H	1.76	0.51
61:AQ:86:HIS:CD2	61:AQ:139:ARG:HE	2.29	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
68:A5:156:LEU:HA	68:A5:257:ILE:HD11	1.93	0.51
8:SA:29:U:H2'	8:SA:30:G:H8	1.76	0.51
8:SA:79:U:O4	8:SA:80:A:N6	2.44	0.51
8:SA:586:A:O2'	8:SA:587:A:H5"	2.11	0.51
8:SA:1277:G:H2'	8:SA:1278:C:C6	2.46	0.51
8:SA:1304:A:N6	8:SA:1850:G:H1'	2.26	0.51
8:SA:1636:A:N6	8:SA:1650:A:OP2	2.43	0.51
8:SA:1827:U:C2	8:SA:1828:A:C8	2.98	0.51
8:SA:1862:C:OP1	32:SY:61:LYS:NZ	2.42	0.51
9:SB:144:LYS:HB2	9:SB:206:PRO:HB2	1.92	0.51
13:SF:63:MET:O	13:SF:67:GLN:NE2	2.44	0.51
15:SH:64:ILE:HD11	15:SH:99:GLY:HA2	1.92	0.51
17:SJ:102:LYS:HB3	17:SJ:105:GLN:HG2	1.93	0.51
26:SS:62:THR:HG23	26:SS:65:GLU:H	1.76	0.51
34:AA:718:U:H2'	34:AA:719:C:C6	2.46	0.51
34:AA:803:A:H2'	34:AA:804:A:O4'	2.11	0.51
34:AA:2087:U:H2'	34:AA:2088:A:C8	2.45	0.51
34:AA:2183:A:H2'	34:AA:2184:U:C6	2.46	0.51
34:AA:2401:C:H1'	34:AA:3736:A:H8	1.75	0.51
34:AA:2590:U:O2	34:AA:2590:U:H2'	2.11	0.51
34:AA:3101:A:H2'	34:AA:3102:U:H6	1.75	0.51
46:Aa:23:VAL:HG11	46:Aa:33:HIS:ND1	2.26	0.51
54:AI:30:ASN:OD1	54:AI:30:ASN:N	2.43	0.51
73:AU:154:ARG:HH11	73:AU:155:ARG:HB3	1.75	0.51
5:S5:37:GLY:O	5:S5:39:PHE:N	2.44	0.50
8:SA:1845:U:H2'	8:SA:1846:U:C6	2.46	0.50
8:SA:1947:U:H2'	8:SA:1948:A:C8	2.47	0.50
13:SF:18:TRP:O	13:SF:51:ARG:NH2	2.38	0.50
14:SG:261:THR:HG23	14:SG:262:TYR:CD1	2.46	0.50
26:SS:115:ARG:HA	26:SS:118:LYS:HZ3	1.76	0.50
31:SX:31:ASP:O	31:SX:34:ILE:HG13	2.10	0.50
34:AA:437:A:OP2	44:A8:15:LYS:NZ	2.36	0.50
34:AA:582:U:H2'	34:AA:583:U:C6	2.46	0.50
34:AA:953:U:H2'	34:AA:954:G:O4'	2.11	0.50
34:AA:966:A:H2'	34:AA:967:A:C8	2.46	0.50
34:AA:2740:A:H2'	34:AA:2741:A:C8	2.46	0.50
34:AA:3585:A:HO2'	34:AA:3586:U:H6	1.59	0.50
38:A1:3:LYS:HE2	38:A1:3:LYS:HA	1.92	0.50
41:A6:43:LYS:NZ	41:A6:96:THR:O	2.45	0.50
41:A6:54:ILE:O	41:A6:58:VAL:HG12	2.11	0.50
60:AO:88:LYS:NZ	60:AO:92:GLU:HB3	2.26	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:AE:280:TYR:CZ	70:AE:322:LYS:HG3	2.46	0.50
72:AG:75:LYS:O	72:AG:79:ILE:HG13	2.11	0.50
3:S3:22:ARG:NH2	3:S3:27:GLY:O	2.42	0.50
3:S3:89:ARG:NH1	8:SA:1190:U:OP1	2.44	0.50
8:SA:331:G:OP1	29:SV:135:SER:OG	2.29	0.50
8:SA:480:A:OP1	12:SE:145:SER:OG	2.17	0.50
11:SD:16:VAL:O	11:SD:20:GLU:HG2	2.11	0.50
30:SW:39:ALA:HB1	30:SW:41:ILE:HD12	1.93	0.50
34:AA:439:U:H2'	34:AA:440:A:C8	2.45	0.50
34:AA:689:U:H2'	34:AA:690:U:C6	2.46	0.50
34:AA:936:A:C5	56:Ac:17:LYS:HA	2.47	0.50
34:AA:1444:A:OP2	57:AK:132:ARG:NH1	2.43	0.50
34:AA:2450:G:C5	69:AD:150:LEU:HD23	2.46	0.50
34:AA:2817:U:H2'	34:AA:2818:U:H6	1.76	0.50
45:A9:39:ARG:O	45:A9:40:LEU:HD12	2.11	0.50
48:Ad:5:ILE:HD11	48:Ad:11:PHE:CD1	2.47	0.50
78:A0:67:LYS:HB2	78:A0:67:LYS:NZ	2.27	0.50
2:S2:59:ILE:HA	2:S2:64:ILE:HD11	1.93	0.50
8:SA:756:A:N6	8:SA:757:A:N6	2.59	0.50
8:SA:1208:G:O2'	8:SA:1209:G:H5'	2.11	0.50
8:SA:1834:A:N7	8:SA:1869:G:N1	2.60	0.50
9:SB:227:LYS:HA	9:SB:230:GLU:HB3	1.93	0.50
10:SC:29:LEU:HB2	10:SC:46:HIS:NE2	2.26	0.50
12:SE:79:ARG:O	12:SE:83:GLN:HG3	2.12	0.50
19:SL:85:ALA:HB1	29:SV:12:ALA:HB2	1.92	0.50
23:SP:27:VAL:HG13	23:SP:90:VAL:HA	1.93	0.50
34:AA:767:U:O2'	34:AA:768:C:H5'	2.11	0.50
34:AA:1048:G:O2'	56:Ac:52:TRP:O	2.26	0.50
34:AA:1222:U:O2'	34:AA:1223:U:O5'	2.27	0.50
34:AA:1462:C:H2'	34:AA:1463:A:C8	2.46	0.50
34:AA:3306:G:N3	70:AE:247:ALA:HB1	2.26	0.50
43:AN:145:ILE:HG13	43:AN:146:LYS:N	2.26	0.50
47:Ab:67:ILE:HG22	47:Ab:69:THR:HG23	1.93	0.50
57:AK:139:THR:O	57:AK:143:ARG:HG2	2.11	0.50
69:AD:45:VAL:HG23	69:AD:45:VAL:O	2.11	0.50
69:AD:119:ARG:H	69:AD:122:ASN:HD21	1.57	0.50
71:AF:150:VAL:HG13	71:AF:151:PRO:HD3	1.94	0.50
1:S1:44:LEU:HA	1:S1:47:MET:HB2	1.94	0.50
8:SA:1802:G:HO2'	8:SA:1847:A:HO2'	1.59	0.50
15:SH:189:ASN:HA	15:SH:192:GLN:NE2	2.27	0.50
21:SN:24:THR:OG1	21:SN:110:GLU:HG3	2.10	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:459:G:H2'	34:AA:460:A:C8	2.46	0.50
34:AA:532:C:OP2	71:AF:365:LYS:NZ	2.36	0.50
34:AA:1006:G:H2'	34:AA:1007:U:C6	2.47	0.50
34:AA:2020:A:H2'	34:AA:2021:A:C8	2.47	0.50
34:AA:2068:G:H2'	34:AA:2069:C:C6	2.46	0.50
38:A1:110:GLU:CD	38:A1:110:GLU:H	2.19	0.50
55:AJ:79:ARG:HA	55:AJ:82:LYS:HG2	1.93	0.50
55:AJ:226:GLU:N	55:AJ:226:GLU:OE1	2.45	0.50
59:AS:78:ILE:HG12	59:AS:98:LYS:HG2	1.92	0.50
61:AQ:182:GLN:OE1	61:AQ:182:GLN:HA	2.12	0.50
77:AX:78:LYS:HG2	77:AX:79:ASN:H	1.76	0.50
1:S1:122:THR:O	8:SA:86:A:O2'	2.24	0.50
8:SA:151:G:H2'	8:SA:152:G:H8	1.76	0.50
8:SA:460:G:O5'	13:SF:62:LYS:NZ	2.45	0.50
8:SA:1646:U:H2'	8:SA:1647:A:C8	2.46	0.50
17:SJ:44:LEU:HB3	17:SJ:62:ILE:HD11	1.93	0.50
17:SJ:143:MET:N	17:SJ:143:MET:SD	2.85	0.50
20:SM:95:GLN:HB2	20:SM:103:LYS:HE3	1.94	0.50
27:ST:7:VAL:HG23	27:ST:9:PRO:HD3	1.93	0.50
33:SZ:16:LYS:HA	33:SZ:23:LEU:HA	1.92	0.50
34:AA:163:G:N1	34:AA:269:A:N1	2.59	0.50
34:AA:626:A:H2'	34:AA:627:U:C6	2.46	0.50
34:AA:1540:G:OP1	44:A8:125:ARG:NH1	2.44	0.50
43:AN:110:LEU:O	43:AN:114:MET:HG3	2.11	0.50
57:AK:30:GLN:NE2	57:AK:31:ARG:O	2.41	0.50
63:AW:118:MET:HB2	63:AW:147:GLN:HG2	1.94	0.50
5:S5:9:VAL:HG22	5:S5:25:VAL:HG11	1.92	0.50
5:S5:49:ARG:HH12	16:SI:135:LEU:HD23	1.77	0.50
7:S7:31:G:H2'	7:S7:32:U:H3'	1.94	0.50
8:SA:1860:A:H4'	32:SY:64:LYS:HG2	1.93	0.50
10:SC:20:CYS:SG	10:SC:21:LYS:N	2.85	0.50
14:SG:59:ILE:O	14:SG:62:ILE:HG13	2.12	0.50
16:SI:10:LEU:HB3	16:SI:14:TRP:HD1	1.77	0.50
26:SS:28:VAL:O	26:SS:32:LEU:HD23	2.11	0.50
30:SW:17:VAL:O	30:SW:21:TYR:HB2	2.11	0.50
34:AA:1796:U:H2'	46:Aa:66:ARG:HD3	1.94	0.50
34:AA:3107:U:H2'	34:AA:3108:A:H8	1.77	0.50
39:A2:17:ASN:HB3	39:A2:20:ILE:HG13	1.94	0.50
41:A6:56:ARG:O	41:A6:60:GLU:HG3	2.12	0.50
54:AI:12:ASN:HA	54:AI:17:LYS:H	1.77	0.50
60:AO:131:SER:O	60:AO:135:LYS:HG3	2.10	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
63:AW:108:ASP:N	63:AW:152:GLU:OE1	2.43	0.50
70:AE:291:ALA:HB3	70:AE:300:LYS:HG3	1.93	0.50
3:S3:2:PRO:HB3	8:SA:1243:A:H5"	1.94	0.50
8:SA:976:A:H2'	8:SA:977:U:H6	1.75	0.50
8:SA:1459:U:O4	8:SA:1460:A:N6	2.44	0.50
8:SA:1651:C:H2'	8:SA:1652:A:C8	2.47	0.50
12:SE:64:GLU:OE1	12:SE:64:GLU:HA	2.12	0.50
57:AK:196:LEU:HD22	57:AK:201:TYR:HB2	1.93	0.50
58:AM:49:ASN:HD22	70:AE:233:LYS:HE3	1.76	0.50
62:AR:278:ARG:O	62:AR:281:ARG:HG2	2.12	0.50
70:AE:277:LYS:NZ	70:AE:324:CYS:O	2.39	0.50
71:AF:44:MET:HG2	71:AF:238:LEU:HD21	1.93	0.50
7:S7:3:G:N2	7:S7:68:U:H3	2.09	0.50
8:SA:886:U:O4	8:SA:916:G:O6	2.30	0.50
8:SA:1824:A:O5'	16:SI:76:LYS:NZ	2.44	0.50
15:SH:170:PHE:N	15:SH:172:LYS:HZ1	2.10	0.50
34:AA:2108:A:H1'	49:Ae:45:ARG:HH22	1.76	0.50
54:AI:120:LEU:HD23	54:AI:120:LEU:H	1.76	0.50
56:Ac:37:CYS:HB3	56:Ac:42:TYR:H	1.76	0.50
68:A5:224:ARG:NH1	68:A5:224:ARG:O	2.44	0.50
73:AU:47:LYS:HD3	73:AU:67:LEU:HD11	1.94	0.50
74:AH:4:ILE:HG22	74:AH:5:VAL:HG12	1.93	0.50
7:S7:68:U:C4	7:S7:69:U:C4	3.00	0.50
8:SA:1812:A:OP2	21:SN:58:LYS:NZ	2.35	0.50
8:SA:2024:A:H2'	8:SA:2025:U:C6	2.47	0.50
10:SC:36:TYR:HA	10:SC:52:LYS:HD3	1.93	0.50
12:SE:110:GLN:OE1	12:SE:126:ARG:HB2	2.11	0.50
13:SF:45:VAL:HA	13:SF:61:VAL:HG11	1.93	0.50
13:SF:65:LEU:HD12	13:SF:78:THR:HA	1.94	0.50
13:SF:252:ARG:HH11	13:SF:255:ARG:HD3	1.76	0.50
14:SG:182:VAL:HB	14:SG:209:PHE:HB2	1.94	0.50
28:SU:69:ASN:OD1	28:SU:74:ILE:HG23	2.11	0.50
31:SX:43:ARG:HH12	31:SX:47:ARG:NH1	2.10	0.50
34:AA:394:A:H2'	34:AA:395:A:C8	2.47	0.50
34:AA:1554:G:O2'	34:AA:1555:A:O5'	2.25	0.50
34:AA:3645:A:H2'	34:AA:3646:G:C8	2.47	0.50
42:A7:52:MET:HE3	42:A7:85:ARG:HG3	1.94	0.50
55:AJ:102:PRO:O	55:AJ:106:THR:HG22	2.12	0.50
8:SA:882:A:H2'	8:SA:883:A:H8	1.77	0.49
11:SD:106:LEU:HD22	11:SD:109:LYS:HD3	1.94	0.49
13:SF:161:ARG:HG3	13:SF:171:GLU:CD	2.36	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:SG:60:GLU:N	14:SG:60:GLU:OE1	2.45	0.49
17:SJ:100:ILE:HD12	17:SJ:119:LEU:HA	1.94	0.49
17:SJ:123:TYR:O	17:SJ:126:ILE:HG13	2.11	0.49
22:SO:16:LYS:HA	22:SO:19:LYS:HE2	1.94	0.49
34:AA:1511:U:H2'	34:AA:1512:A:H8	1.74	0.49
34:AA:3494:C:H2'	34:AA:3495:U:C6	2.47	0.49
45:A9:74:ALA:HB2	45:A9:112:GLY:HA2	1.93	0.49
55:AJ:83:ILE:O	55:AJ:87:ARG:HB2	2.11	0.49
72:AG:9:MET:HA	72:AG:11:GLU:OE2	2.12	0.49
1:S1:20:ARG:HD3	1:S1:77:TYR:CZ	2.47	0.49
8:SA:154:A:H2'	8:SA:155:A:H8	1.77	0.49
8:SA:576:C:H41	24:SQ:69:ARG:NH2	2.10	0.49
8:SA:877:U:H3	8:SA:926:G:H1	0.62	0.49
8:SA:913:U:H2'	8:SA:914:U:C6	2.47	0.49
34:AA:162:U:H4'	34:AA:163:G:H5'	1.94	0.49
34:AA:521:U:O2'	34:AA:522:A:H8	1.94	0.49
34:AA:2219:A:N6	34:AA:2388:U:O4	2.44	0.49
34:AA:2700:C:H2'	34:AA:2701:U:H6	1.75	0.49
59:AS:118:GLU:N	59:AS:118:GLU:OE2	2.45	0.49
62:AR:274:ASN:O	62:AR:278:ARG:HB2	2.11	0.49
78:A0:42:LYS:O	78:A0:46:LEU:HG	2.13	0.49
7:S7:1:G:N2	7:S7:71:C:O2	2.44	0.49
7:S7:27:G:H2'	7:S7:28:C:C6	2.47	0.49
8:SA:339:A:OP1	19:SL:31:ARG:NH2	2.46	0.49
8:SA:339:A:OP2	19:SL:54:LYS:NZ	2.39	0.49
8:SA:958:U:H2'	8:SA:959:C:C6	2.47	0.49
8:SA:1274:C:H5"	26:SS:132:ARG:HH12	1.77	0.49
8:SA:1648:A:OP1	30:SW:5:ARG:HB2	2.11	0.49
8:SA:1909:C:O2	16:SI:143:TYR:OH	2.16	0.49
10:SC:88:LYS:HD3	10:SC:200:MET:HE1	1.95	0.49
12:SE:34:TYR:OH	12:SE:106:GLU:OE2	2.18	0.49
17:SJ:180:THR:O	17:SJ:182:ARG:N	2.44	0.49
19:SL:75:ASN:OD1	19:SL:76:THR:N	2.45	0.49
24:SQ:46:SER:OG	24:SQ:48:HIS:O	2.28	0.49
34:AA:61:A:H2'	34:AA:62:A:C8	2.47	0.49
34:AA:650:U:H2'	34:AA:651:A:O4'	2.12	0.49
55:AJ:269:ARG:HG2	55:AJ:273:GLU:OE2	2.12	0.49
70:AE:137:PRO:HG2	70:AE:140:THR:HG23	1.94	0.49
74:AH:110:ARG:HA	74:AH:125:VAL:O	2.12	0.49
7:S7:17:U:N3	7:S7:56:U:OP2	2.46	0.49
8:SA:180:U:H2'	8:SA:181:A:C8	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:1685:U:H2'	8:SA:1686:C:H6	1.77	0.49
8:SA:2007:U:H2'	8:SA:2008:U:C6	2.46	0.49
13:SF:174:LYS:H	13:SF:174:LYS:HE2	1.76	0.49
14:SG:165:THR:HG21	14:SG:184:ALA:H	1.76	0.49
15:SH:63:MET:SD	15:SH:106:LEU:HD11	2.53	0.49
17:SJ:175:VAL:O	17:SJ:179:ILE:HG22	2.12	0.49
18:SK:25:VAL:HG13	18:SK:63:VAL:HG13	1.94	0.49
21:SN:47:LEU:HD11	21:SN:90:LEU:HD23	1.95	0.49
34:AA:2089:C:H2'	34:AA:2090:U:C6	2.47	0.49
34:AA:2732:A:H2'	34:AA:2733:A:H8	1.76	0.49
36:AB:57:C:H2'	36:AB:58:A:H8	1.77	0.49
57:AK:135:CYS:SG	57:AK:136:ARG:N	2.85	0.49
58:AM:29:ASP:HB3	58:AM:103:VAL:HG12	1.94	0.49
61:AQ:191:ILE:HG23	61:AQ:198:LYS:HB2	1.94	0.49
65:AT:9:LEU:HD22	65:AT:37:ARG:HE	1.76	0.49
66:AZ:108:LEU:HD23	66:AZ:108:LEU:H	1.77	0.49
72:AG:41:THR:HA	72:AG:75:LYS:NZ	2.27	0.49
8:SA:1979:C:O2'	8:SA:1980:A:H5'	2.12	0.49
10:SC:204:ARG:HB3	30:SW:81:ARG:NE	2.28	0.49
14:SG:257:ASP:OD1	14:SG:257:ASP:N	2.43	0.49
15:SH:63:MET:HG2	15:SH:98:ARG:HG3	1.93	0.49
18:SK:30:SER:HB2	18:SK:61:ILE:HG13	1.94	0.49
26:SS:28:VAL:HA	26:SS:58:ALA:HB2	1.93	0.49
28:SU:22:GLN:NE2	28:SU:26:LEU:O	2.45	0.49
31:SX:57:LEU:O	31:SX:61:ARG:HG2	2.13	0.49
34:AA:62:A:H2'	34:AA:63:A:H8	1.77	0.49
34:AA:442:G:OP1	45:A9:92:HIS:NE2	2.45	0.49
34:AA:646:A:OP1	54:AI:31:LYS:NZ	2.45	0.49
34:AA:688:U:H2'	34:AA:689:U:C6	2.47	0.49
34:AA:2525:A:H2'	34:AA:2526:A:C8	2.47	0.49
37:AL:198:ARG:O	37:AL:202:ARG:HG2	2.11	0.49
68:A5:108:VAL:HG13	68:A5:139:VAL:HG23	1.95	0.49
68:A5:227:PHE:HB3	68:A5:241:ASP:OD2	2.12	0.49
8:SA:109:C:H2'	8:SA:110:A:C8	2.47	0.49
8:SA:527:A:H2'	8:SA:528:A:H8	1.77	0.49
8:SA:875:A:H8	8:SA:875:A:OP1	1.96	0.49
8:SA:1036:A:OP2	28:SU:124:ARG:NH2	2.46	0.49
8:SA:1269:U:H1'	20:SM:140:GLN:HE22	1.76	0.49
8:SA:1938:C:H2'	8:SA:1939:G:C8	2.48	0.49
11:SD:135:CYS:SG	11:SD:136:GLU:N	2.86	0.49
15:SH:121:ILE:HB	15:SH:124:LEU:HB3	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:63:A:H4'	51:AP:186:ARG:O	2.12	0.49
34:AA:2041:U:H3	34:AA:2068:G:H1	1.60	0.49
34:AA:3120:U:OP1	34:AA:3140:U:H5	1.95	0.49
37:AL:21:VAL:HG22	51:AP:199:ILE:HD11	1.95	0.49
53:Ai:14:ASN:C	53:Ai:16:CYS:H	2.19	0.49
55:AJ:265:LYS:HD3	55:AJ:266:ASP:N	2.28	0.49
76:Ag:9:LYS:O	76:Ag:9:LYS:HG3	2.13	0.49
1:S1:27:ILE:HG13	1:S1:70:THR:HB	1.94	0.49
6:S6:47:ASN:OD1	6:S6:47:ASN:N	2.39	0.49
8:SA:17:C:H2'	8:SA:18:C:C6	2.47	0.49
8:SA:403:A:H5"	19:SL:51:ARG:HB2	1.95	0.49
8:SA:547:U:N3	8:SA:549:A:N7	2.61	0.49
8:SA:1858:U:H4'	8:SA:1896:C:H4'	1.94	0.49
11:SD:9:ARG:HA	11:SD:12:ILE:HG22	1.95	0.49
29:SV:76:GLY:HA3	29:SV:89:ILE:HG23	1.94	0.49
34:AA:261:A:H2'	34:AA:262:A:C8	2.46	0.49
34:AA:290:G:H5'	53:Ai:44:MET:HE1	1.95	0.49
34:AA:1283:C:OP1	68:A5:103:LYS:NZ	2.45	0.49
34:AA:2990:G:H5"	34:AA:2991:U:O4'	2.13	0.49
34:AA:3413:A:O2'	34:AA:3414:G:OP1	2.29	0.49
43:AN:25:VAL:HG23	73:AU:158:PHE:O	2.13	0.49
4:S4:9:ASP:HB2	4:S4:10:PRO:HD3	1.95	0.49
8:SA:1716:C:H3'	8:SA:1870:A:H62	1.78	0.49
11:SD:178:LEU:HD22	11:SD:179:LYS:H	1.78	0.49
13:SF:75:LYS:HD2	13:SF:77:ARG:HH22	1.77	0.49
18:SK:22:ARG:O	18:SK:23:ARG:HG2	2.12	0.49
32:SY:156:ASN:HB3	32:SY:160:ARG:HH12	1.78	0.49
32:SY:163:ASN:O	32:SY:167:TYR:HB2	2.12	0.49
34:AA:38:U:H4'	60:AO:32:ARG:HD2	1.95	0.49
34:AA:62:A:H2'	34:AA:63:A:C8	2.48	0.49
34:AA:742:U:H2'	34:AA:743:A:H8	1.77	0.49
34:AA:972:G:N7	52:Ah:2:SER:N	2.61	0.49
34:AA:1093:G:H2'	34:AA:1094:U:C6	2.47	0.49
34:AA:1170:A:N3	34:AA:2972:U:O2'	2.46	0.49
34:AA:2950:U:H2'	34:AA:2951:U:C6	2.48	0.49
37:AL:63:ARG:HD2	37:AL:64:TYR:CE2	2.48	0.49
69:AD:118:HIS:ND1	69:AD:125:THR:HG21	2.28	0.49
70:AE:158:ILE:HD13	70:AE:177:GLU:HB3	1.95	0.49
1:S1:8:ARG:HD2	8:SA:829:G:C5	2.48	0.49
8:SA:347:A:H2'	8:SA:348:A:C8	2.48	0.49
8:SA:614:A:H5'	8:SA:620:G:N2	2.28	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:912:U:H2'	8:SA:913:U:C6	2.48	0.49
8:SA:1840:A:N6	8:SA:1865:G:O4'	2.43	0.49
9:SB:82:LYS:HG2	9:SB:105:ILE:HG22	1.94	0.49
13:SF:57:THR:O	13:SF:61:VAL:HG23	2.12	0.49
17:SJ:141:ILE:HD13	18:SK:52:ILE:HD11	1.95	0.49
18:SK:52:ILE:HG13	18:SK:52:ILE:O	2.11	0.49
20:SM:138:ARG:H	20:SM:138:ARG:HD3	1.78	0.49
23:SP:41:PHE:HA	23:SP:57:THR:HA	1.95	0.49
32:SY:141:LYS:HD2	32:SY:142:LYS:HG2	1.95	0.49
34:AA:668:U:H4'	34:AA:669:C:H5"	1.95	0.49
34:AA:696:C:H4'	34:AA:697:A:O5'	2.13	0.49
34:AA:906:G:H2'	34:AA:907:C:H6	1.78	0.49
34:AA:2721:U:H2'	34:AA:2722:G:H8	1.78	0.49
34:AA:2816:U:H2'	34:AA:2817:U:C6	2.47	0.49
34:AA:3387:U:H2'	34:AA:3388:U:H6	1.77	0.49
52:Ah:65:CYS:SG	69:AD:170:GLY:HA3	2.52	0.49
66:AZ:26:ARG:HG2	66:AZ:77:TYR:CE1	2.47	0.49
69:AD:6:ARG:NH2	69:AD:198:LYS:O	2.45	0.49
70:AE:219:LYS:HG3	70:AE:328:THR:HG22	1.95	0.49
72:AG:12:ILE:HG21	72:AG:131:LEU:HD13	1.94	0.49
72:AG:36:VAL:HA	72:AG:39:GLN:OE1	2.13	0.49
8:SA:1395:G:O2'	8:SA:1423:A:N1	2.34	0.49
14:SG:261:THR:HG23	14:SG:262:TYR:CE1	2.48	0.49
15:SH:50:PHE:HB3	15:SH:111:LEU:HD23	1.94	0.49
17:SJ:141:ILE:HB	18:SK:52:ILE:HG12	1.94	0.49
28:SU:129:TYR:CD2	28:SU:134:LEU:HD11	2.47	0.49
31:SX:41:GLN:H	31:SX:41:GLN:CD	2.20	0.49
34:AA:359:A:N1	49:Ae:38:ASN:HB2	2.28	0.49
34:AA:1237:C:H2'	34:AA:1238:C:C6	2.47	0.49
34:AA:1875:A:H2'	34:AA:1876:A:C8	2.48	0.49
34:AA:3393:C:H2'	34:AA:3394:A:H8	1.78	0.49
34:AA:3639:G:H1	34:AA:3646:G:H1	1.61	0.49
36:AB:68:U:H2'	36:AB:69:U:C6	2.48	0.49
41:A6:30:ARG:HH11	41:A6:55:GLN:HG3	1.77	0.49
45:A9:90:LYS:HB3	45:A9:90:LYS:HE2	1.59	0.49
46:Aa:98:GLN:HA	46:Aa:101:VAL:HG22	1.94	0.49
58:AM:72:ARG:HG2	58:AM:72:ARG:HH11	1.78	0.49
8:SA:1168:U:OP1	9:SB:149:GLN:NE2	2.44	0.48
8:SA:1192:A:H4'	8:SA:1193:A:O4'	2.13	0.48
8:SA:1662:A:H2'	8:SA:1663:A:C8	2.47	0.48
8:SA:1981:A:N6	8:SA:2009:C:H42	2.08	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:SJ:5:GLN:HG3	17:SJ:18:LYS:NZ	2.27	0.48
34:AA:125:C:H2'	34:AA:126:C:H6	1.78	0.48
34:AA:809:A:OP1	60:AO:132:VAL:HB	2.13	0.48
34:AA:2394:C:O2'	34:AA:2395:U:H6	1.96	0.48
34:AA:3713:C:H2'	34:AA:3714:C:C6	2.48	0.48
71:AF:7:VAL:HG12	71:AF:21:GLU:OE2	2.13	0.48
77:AX:78:LYS:HG2	77:AX:80:LYS:NZ	2.28	0.48
8:SA:1729:A:H4'	20:SM:73:GLY:H	1.77	0.48
9:SB:87:SER:HB3	9:SB:101:CYS:HB2	1.95	0.48
26:SS:100:VAL:HB	26:SS:108:TYR:HE2	1.77	0.48
30:SW:29:GLN:O	30:SW:33:LYS:HG2	2.12	0.48
31:SX:81:ARG:HE	31:SX:117:GLY:HA2	1.78	0.48
34:AA:1875:A:H2'	34:AA:1876:A:H8	1.79	0.48
34:AA:2936:A:H2'	34:AA:2937:G:H8	1.78	0.48
47:Ab:47:VAL:HG11	51:AP:6:TYR:HE1	1.77	0.48
69:AD:201:GLY:HA2	69:AD:204:MET:HG3	1.95	0.48
70:AE:123:TYR:CE2	70:AE:124:LYS:HG3	2.48	0.48
71:AF:228:ASP:OD1	71:AF:228:ASP:N	2.43	0.48
72:AG:32:ARG:O	72:AG:36:VAL:HG12	2.12	0.48
73:AU:54:MET:HE2	73:AU:54:MET:HA	1.94	0.48
74:AH:138:ASN:N	74:AH:138:ASN:OD1	2.44	0.48
8:SA:1652:A:H2'	8:SA:1653:A:C8	2.48	0.48
8:SA:1839:G:OP1	32:SY:107:ARG:NH2	2.46	0.48
9:SB:61:LEU:HD12	9:SB:64:ARG:HD2	1.95	0.48
11:SD:72:LEU:HG	22:SO:31:VAL:HB	1.95	0.48
13:SF:247:ASP:HB3	13:SF:250:GLU:CD	2.38	0.48
23:SP:143:LYS:O	23:SP:144:SER:OG	2.27	0.48
23:SP:147:ARG:CZ	23:SP:150:ARG:HH21	2.26	0.48
25:SR:131:PHE:HA	25:SR:134:SER:OG	2.13	0.48
32:SY:76:TYR:HH	32:SY:125:SER:HG	1.51	0.48
34:AA:501:U:O2'	34:AA:502:U:O4'	2.24	0.48
34:AA:587:C:H2'	34:AA:588:C:H6	1.77	0.48
34:AA:888:A:H2	34:AA:3138:A:H5'	1.78	0.48
34:AA:1035:G:H2'	34:AA:1043:G:N7	2.28	0.48
34:AA:3595:U:H2'	34:AA:3596:A:C8	2.47	0.48
36:AB:38:U:O2'	36:AB:40:A:N7	2.46	0.48
58:AM:18:SER:OG	58:AM:19:LEU:N	2.46	0.48
8:SA:1797:C:OP2	32:SY:124:ARG:NH1	2.46	0.48
8:SA:1799:A:H2'	8:SA:1800:A:O4'	2.13	0.48
8:SA:1847:A:H2'	8:SA:1848:U:C6	2.48	0.48
8:SA:1900:U:H2'	8:SA:1901:U:C6	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:SI:67:MET:HE1	16:SI:146:CYS:HA	1.94	0.48
17:SJ:66:TYR:O	17:SJ:70:THR:HG23	2.13	0.48
26:SS:23:ASP:CG	26:SS:26:GLU:HB3	2.39	0.48
26:SS:108:TYR:HA	26:SS:111:GLU:HG2	1.95	0.48
34:AA:2607:U:O2'	34:AA:2608:G:OP1	2.30	0.48
34:AA:3080:A:H4'	53:Ai:17:LYS:O	2.13	0.48
34:AA:3256:C:H2'	34:AA:3258:C:H5'	1.94	0.48
34:AA:3431:G:O3'	70:AE:272:ARG:NH1	2.47	0.48
35:AC:25:C:OP1	71:AF:195:LYS:NZ	2.34	0.48
60:AO:74:ASN:OD1	60:AO:113:ASN:HB3	2.14	0.48
4:S4:32:ASP:OD2	4:S4:80:LYS:HB3	2.13	0.48
8:SA:639:U:O2'	8:SA:1204:U:OP1	2.28	0.48
8:SA:1978:A:C2	8:SA:2012:G:N2	2.80	0.48
17:SJ:64:ILE:HD11	17:SJ:69:TYR:CD2	2.48	0.48
26:SS:92:LEU:HD11	31:SX:36:LEU:HG	1.96	0.48
32:SY:105:LYS:HB2	32:SY:113:ASN:HD21	1.77	0.48
34:AA:1308:A:C4	34:AA:1310:A:C8	3.01	0.48
34:AA:1642:G:OP2	34:AA:1642:G:N2	2.40	0.48
34:AA:1739:C:H2'	34:AA:1740:A:H8	1.77	0.48
34:AA:1874:C:H2'	34:AA:1875:A:C8	2.48	0.48
34:AA:3292:A:O2'	34:AA:3293:A:O5'	2.31	0.48
34:AA:3414:G:O2'	34:AA:3415:A:OP1	2.31	0.48
36:AB:12:U:OP2	36:AB:67:C:O2'	2.30	0.48
42:A7:86:LYS:HB2	42:A7:98:TYR:CE1	2.47	0.48
51:AP:193:TRP:O	51:AP:197:GLN:HG3	2.13	0.48
59:AS:123:ASP:OD1	59:AS:124:GLN:N	2.45	0.48
60:AO:76:ASP:N	60:AO:76:ASP:OD1	2.38	0.48
71:AF:154:VAL:HG21	71:AF:158:ILE:HD12	1.95	0.48
71:AF:242:PRO:O	71:AF:245:SER:OG	2.29	0.48
77:AX:64:PHE:HD1	77:AX:68:ILE:HD11	1.79	0.48
1:S1:100:LYS:HD2	1:S1:103:LYS:HE3	1.96	0.48
8:SA:401:U:H2'	8:SA:402:G:O4'	2.12	0.48
8:SA:1308:C:H5'	8:SA:1309:A:C8	2.49	0.48
8:SA:1315:U:H2'	8:SA:1316:U:C6	2.48	0.48
8:SA:1603:U:H2'	8:SA:1604:A:C8	2.49	0.48
8:SA:2068:A:H2'	8:SA:2069:G:H8	1.78	0.48
9:SB:194:GLY:O	9:SB:198:GLU:HG2	2.13	0.48
10:SC:56:LYS:CB	10:SC:160:ILE:HG22	2.42	0.48
12:SE:141:VAL:HG22	12:SE:143:ILE:H	1.77	0.48
19:SL:217:ARG:CZ	19:SL:218:ASN:H	2.27	0.48
21:SN:38:ILE:HG13	21:SN:39:MET:SD	2.53	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:SN:95:GLU:O	21:SN:99:GLN:HG2	2.14	0.48
25:SR:59:LEU:HG	25:SR:69:LYS:HG2	1.95	0.48
34:AA:11:A:H61	35:AC:154:G:H1	0.60	0.48
34:AA:1316:U:OP1	34:AA:1338:U:O2'	2.21	0.48
34:AA:1646:C:H2'	34:AA:1647:U:H6	1.78	0.48
34:AA:2706:A:H2'	34:AA:2707:G:H8	1.79	0.48
51:AP:84:PRO:HA	51:AP:87:GLN:HG2	1.95	0.48
55:AJ:257:LYS:H	55:AJ:257:LYS:HD2	1.78	0.48
63:AW:41:LEU:HD21	63:AW:99:GLN:HB2	1.96	0.48
8:SA:1660:U:H5'	30:SW:3:ARG:HH11	1.78	0.48
8:SA:1811:A:H1'	8:SA:1814:C:N4	2.28	0.48
14:SG:239:PRO:HA	14:SG:242:TRP:NE1	2.29	0.48
21:SN:46:ASN:O	21:SN:46:ASN:ND2	2.46	0.48
27:ST:21:VAL:HG22	27:ST:36:ILE:HD11	1.94	0.48
29:SV:114:CYS:HA	29:SV:142:VAL:HG22	1.94	0.48
34:AA:253:U:C2	34:AA:254:U:C5	3.01	0.48
34:AA:280:U:H2'	34:AA:281:G:H8	1.79	0.48
34:AA:309:G:H2'	34:AA:310:U:C6	2.48	0.48
34:AA:745:C:H2'	34:AA:746:A:C8	2.48	0.48
34:AA:1881:C:O2'	34:AA:1882:U:C6	2.65	0.48
34:AA:3263:G:H2'	34:AA:3264:U:C6	2.47	0.48
34:AA:3647:C:H2'	34:AA:3648:U:C6	2.49	0.48
36:AB:39:C:HO2'	36:AB:40:A:P	2.37	0.48
45:A9:53:GLN:HG2	45:A9:54:ARG:HG3	1.96	0.48
47:Ab:43:LEU:O	47:Ab:47:VAL:HG12	2.13	0.48
54:AI:169:ILE:HA	54:AI:172:GLU:HG3	1.96	0.48
56:Ac:22:CYS:HB2	56:Ac:30:TYR:HB2	1.96	0.48
62:AR:41:LYS:HE3	75:AV:33:GLU:O	2.13	0.48
62:AR:241:ASN:O	62:AR:244:GLU:HG3	2.14	0.48
76:Ag:6:SER:O	76:Ag:6:SER:OG	2.27	0.48
8:SA:1321:C:OP1	22:SO:63:ARG:NH1	2.47	0.48
8:SA:1855:U:H5'	26:SS:126:ARG:NH2	2.28	0.48
8:SA:1859:A:H2'	8:SA:1860:A:C8	2.49	0.48
10:SC:164:ASN:HB2	10:SC:165:LYS:NZ	2.29	0.48
26:SS:28:VAL:HG23	26:SS:61:LEU:HD11	1.96	0.48
29:SV:38:TRP:CH2	29:SV:52:LYS:HE2	2.48	0.48
34:AA:202:C:H2'	34:AA:203:A:C8	2.48	0.48
34:AA:298:C:OP1	51:AP:68:ARG:HG2	2.13	0.48
34:AA:909:U:H2'	34:AA:910:A:C8	2.48	0.48
34:AA:1538:U:H4'	34:AA:1539:U:O5'	2.14	0.48
34:AA:2827:C:H2'	34:AA:2828:A:C8	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:3403:A:H2'	34:AA:3404:C:C6	2.49	0.48
34:AA:3431:G:N2	70:AE:274:GLU:OE2	2.42	0.48
34:AA:3577:A:H3'	34:AA:3581:A:N6	2.29	0.48
34:AA:3593:U:H2'	34:AA:3594:G:H8	1.79	0.48
41:A6:28:PHE:HB3	41:A6:93:LEU:HD13	1.96	0.48
43:AN:26:GLU:OE2	73:AU:157:ARG:NH2	2.31	0.48
55:AJ:89:LYS:HG2	55:AJ:249:TRP:CE3	2.49	0.48
56:Ac:80:LYS:HE2	56:Ac:80:LYS:HB2	1.63	0.48
59:AS:43:ASN:O	59:AS:47:ILE:HG13	2.13	0.48
64:AY:101:HIS:HB3	67:A3:60:TYR:CE2	2.49	0.48
71:AF:32:ILE:O	71:AF:126:SER:HB3	2.14	0.48
71:AF:157:ASP:N	71:AF:157:ASP:OD1	2.47	0.48
3:S3:47:THR:O	3:S3:51:ARG:HG3	2.14	0.48
4:S4:16:LYS:O	8:SA:1171:U:O2'	2.32	0.48
8:SA:868:U:C2	8:SA:869:A:C8	3.01	0.48
8:SA:1017:G:H2'	8:SA:1018:U:C6	2.48	0.48
8:SA:1695:A:H2'	8:SA:1696:A:C8	2.49	0.48
8:SA:1725:A:H2'	8:SA:1726:U:C6	2.48	0.48
10:SC:136:SER:HB2	10:SC:141:ILE:HB	1.96	0.48
23:SP:66:ARG:CZ	23:SP:67:ASP:H	2.26	0.48
28:SU:142:GLN:NE2	28:SU:145:THR:HB	2.28	0.48
34:AA:580:A:O2'	34:AA:581:C:O5'	2.32	0.48
34:AA:729:G:O2'	34:AA:1584:A:OP1	2.32	0.48
34:AA:2739:U:H2'	34:AA:2740:A:H8	1.78	0.48
57:AK:77:LYS:HA	57:AK:77:LYS:HD3	1.72	0.48
58:AM:112:LYS:HE3	58:AM:112:LYS:HB2	1.64	0.48
70:AE:41:PRO:HA	70:AE:182:GLY:HA3	1.95	0.48
71:AF:288:ASP:O	71:AF:292:ILE:HG23	2.14	0.48
8:SA:151:G:H2'	8:SA:152:G:C8	2.49	0.48
8:SA:1274:C:H5"	26:SS:132:ARG:NH1	2.29	0.48
8:SA:1717:A:H2	8:SA:1720:G:N3	2.11	0.48
8:SA:1729:A:H2'	8:SA:1730:A:C8	2.48	0.48
14:SG:201:ASN:OD1	14:SG:202:PHE:N	2.46	0.48
15:SH:98:ARG:NH1	15:SH:105:ASP:OD2	2.38	0.48
21:SN:28:LEU:HB3	21:SN:82:ARG:HH21	1.79	0.48
24:SQ:79:ASN:HB2	24:SQ:81:LYS:HG3	1.96	0.48
26:SS:36:LYS:HE3	26:SS:102:ALA:HA	1.95	0.48
34:AA:1603:C:N4	34:AA:2146:A:O2'	2.47	0.48
43:AN:145:ILE:HD13	57:AK:183:GLU:OE1	2.13	0.48
56:Ac:31:HIS:CD2	56:Ac:34:LYS:HG2	2.49	0.48
62:AR:95:TYR:CZ	62:AR:163:ALA:HB2	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
62:AR:204:ALA:O	62:AR:208:LYS:HG2	2.14	0.48
68:A5:42:LEU:HD22	68:A5:45:ILE:HD11	1.96	0.48
8:SA:882:A:H61	8:SA:920:A:H61	1.61	0.47
8:SA:1672:C:H3'	8:SA:1673:A:H4'	1.96	0.47
8:SA:1780:G:H2'	8:SA:1781:C:C6	2.49	0.47
8:SA:1820:C:H4'	32:SY:100:ARG:HD2	1.96	0.47
13:SF:31:THR:HA	13:SF:81:THR:HB	1.96	0.47
13:SF:122:LYS:C	13:SF:161:ARG:HH12	2.21	0.47
13:SF:122:LYS:NZ	13:SF:143:ASP:OD1	2.47	0.47
14:SG:257:ASP:HA	14:SG:260:GLU:HB2	1.96	0.47
17:SJ:65:PRO:HD2	17:SJ:68:ILE:HD11	1.96	0.47
20:SM:15:LYS:HB3	20:SM:124:ARG:NH2	2.29	0.47
21:SN:55:LEU:HB3	21:SN:85:LYS:HZ3	1.79	0.47
31:SX:86:ILE:HG23	31:SX:89:MET:HB2	1.96	0.47
34:AA:184:U:H2'	34:AA:185:A:C8	2.49	0.47
34:AA:1066:U:H2'	34:AA:1067:U:H6	1.79	0.47
34:AA:1297:A:H2'	34:AA:1298:A:C8	2.49	0.47
34:AA:1794:U:C2	48:Ad:17:LYS:HD3	2.48	0.47
34:AA:2034:G:H2'	34:AA:2035:G:H8	1.78	0.47
34:AA:3281:G:N3	34:AA:3311:G:H1'	2.29	0.47
54:AI:129:GLN:OE1	54:AI:129:GLN:N	2.43	0.47
54:AI:209:THR:HG22	54:AI:210:LEU:H	1.79	0.47
56:Ac:24:ARG:HD2	56:Ac:40:CYS:SG	2.53	0.47
58:AM:95:ILE:HG12	78:A0:27:LYS:HB2	1.95	0.47
63:AW:152:GLU:O	63:AW:153:ILE:HD13	2.15	0.47
77:AX:77:LEU:O	77:AX:78:LYS:HD3	2.14	0.47
8:SA:836:C:O2'	8:SA:837:A:H5'	2.14	0.47
8:SA:2062:U:H2'	8:SA:2063:U:C6	2.50	0.47
13:SF:252:ARG:NH1	13:SF:255:ARG:HD3	2.29	0.47
16:SI:33:SER:O	16:SI:37:CYS:N	2.47	0.47
26:SS:107:SER:O	26:SS:111:GLU:HG2	2.14	0.47
34:AA:69:U:H2'	34:AA:70:A:O4'	2.15	0.47
34:AA:1253:U:OP1	61:AQ:15:LYS:HG3	2.13	0.47
34:AA:1763:G:H2'	34:AA:1764:U:C6	2.49	0.47
34:AA:2008:G:H2'	34:AA:2009:A:C8	2.49	0.47
34:AA:2742:G:O6	34:AA:2806:U:O4	2.32	0.47
34:AA:3241:U:H2'	34:AA:3242:U:H6	1.77	0.47
34:AA:3645:A:H2'	34:AA:3646:G:H8	1.79	0.47
34:AA:3771:C:H4'	70:AE:312:GLY:HA2	1.96	0.47
36:AB:61:G:OP1	62:AR:273:LEU:N	2.46	0.47
38:A1:46:ILE:HD11	38:A1:49:HIS:NE2	2.29	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:Aa:20:VAL:HB	46:Aa:32:ILE:HD12	1.96	0.47
48:Ad:19:ASP:OD1	48:Ad:46:LYS:HB3	2.14	0.47
49:Ae:15:LYS:O	49:Ae:19:GLN:HG3	2.14	0.47
52:Ah:42:CYS:HB3	52:Ah:60:CYS:SG	2.54	0.47
54:AI:150:LEU:HD23	54:AI:150:LEU:HA	1.75	0.47
57:AK:190:PRO:O	57:AK:194:GLN:HG2	2.13	0.47
3:S3:45:VAL:HG23	3:S3:50:GLN:HG2	1.96	0.47
7:S7:40:U:H2'	7:S7:41:C:O4'	2.15	0.47
8:SA:964:G:H1	8:SA:986:U:H3	1.61	0.47
8:SA:1656:A:H2'	8:SA:1657:A:O4'	2.14	0.47
8:SA:1846:U:H3	8:SA:1859:A:H2	1.61	0.47
17:SJ:154:MET:N	17:SJ:154:MET:SD	2.87	0.47
20:SM:110:LEU:HD13	20:SM:118:LEU:HD21	1.95	0.47
21:SN:55:LEU:HB3	21:SN:85:LYS:NZ	2.30	0.47
30:SW:57:LEU:O	30:SW:61:ILE:HG12	2.14	0.47
34:AA:1632:G:N7	46:Aa:4:ARG:NH2	2.60	0.47
34:AA:1879:U:O4'	65:AT:95:ILE:HD12	2.13	0.47
34:AA:2183:A:H2'	34:AA:2184:U:H6	1.80	0.47
34:AA:3286:C:H2'	34:AA:3287:C:C6	2.48	0.47
34:AA:3409:U:H2'	34:AA:3410:A:C8	2.49	0.47
34:AA:3595:U:H2'	34:AA:3596:A:H8	1.79	0.47
37:AL:160:ILE:HD12	37:AL:161:PHE:N	2.30	0.47
48:Ad:56:ASP:C	48:Ad:56:ASP:OD2	2.57	0.47
52:Ah:73:THR:O	52:Ah:77:VAL:HG13	2.14	0.47
58:AM:86:ALA:HA	58:AM:96:TYR:HB3	1.96	0.47
8:SA:1697:C:H2'	8:SA:1698:U:C6	2.49	0.47
8:SA:1861:U:H2'	8:SA:1862:C:C6	2.49	0.47
13:SF:195:ILE:H	13:SF:210:VAL:HG13	1.79	0.47
14:SG:53:GLU:HG3	14:SG:258:PHE:HZ	1.79	0.47
18:SK:79:TYR:OH	29:SV:102:ARG:NH2	2.47	0.47
20:SM:121:ASP:OD1	20:SM:122:THR:N	2.47	0.47
25:SR:128:GLU:O	25:SR:132:LEU:HG	2.15	0.47
34:AA:203:A:H2'	34:AA:204:G:O4'	2.14	0.47
34:AA:709:A:N3	45:A9:124:PRO:HG2	2.29	0.47
34:AA:818:C:OP2	60:AO:115:LYS:NZ	2.47	0.47
34:AA:1827:C:H42	34:AA:1998:A:N6	2.13	0.47
34:AA:2709:U:H2'	34:AA:2710:U:C6	2.50	0.47
34:AA:3258:C:O2'	74:AH:170:ASP:OD2	2.20	0.47
34:AA:3669:U:H1'	34:AA:3671:A:H62	1.79	0.47
36:AB:22:G:C2	36:AB:25:A:C2	3.01	0.47
52:Ah:49:ARG:NH1	52:Ah:52:VAL:HA	2.30	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S1:85:LYS:NZ	8:SA:460:G:O6	2.34	0.47
8:SA:34:G:H2'	8:SA:35:U:H5"	1.96	0.47
8:SA:310:U:H2'	8:SA:311:C:C6	2.48	0.47
8:SA:460:G:N2	13:SF:66:ILE:HD12	2.29	0.47
8:SA:1111:U:H2'	8:SA:1112:G:O4'	2.14	0.47
8:SA:1303:A:H3'	8:SA:1303:A:N3	2.29	0.47
8:SA:1638:U:H2'	8:SA:1639:G:C8	2.49	0.47
19:SL:206:LEU:HD11	19:SL:210:ARG:HH22	1.79	0.47
26:SS:33:THR:HG21	26:SS:40:LYS:HD3	1.96	0.47
34:AA:1577:A:H2'	60:AO:3:THR:HG21	1.95	0.47
34:AA:2700:C:H2'	34:AA:2701:U:C6	2.49	0.47
34:AA:3069:A:H4'	59:AS:185:TYR:CG	2.49	0.47
35:AC:110:G:H4'	35:AC:145:A:H5'	1.97	0.47
36:AB:39:C:O2'	36:AB:40:A:OP1	2.30	0.47
36:AB:46:C:OP1	62:AR:160:ARG:HD3	2.14	0.47
47:Ab:5:SER:OG	47:Ab:7:ILE:O	2.23	0.47
63:AW:50:ASP:HB3	63:AW:56:ARG:HG3	1.96	0.47
78:A0:32:ASP:N	78:A0:32:ASP:OD1	2.48	0.47
4:S4:36:PRO:HD3	4:S4:75:CYS:HA	1.96	0.47
7:S7:14:A:H2'	7:S7:15:G:C8	2.49	0.47
8:SA:1911:A:H5"	8:SA:1912:C:H5	1.80	0.47
10:SC:89:PHE:O	10:SC:93:THR:HG22	2.14	0.47
18:SK:55:ASP:HA	28:SU:18:TYR:HE1	1.79	0.47
18:SK:108:TYR:HE1	18:SK:121:THR:HG21	1.79	0.47
34:AA:3261:A:OP1	34:AA:3418:A:O2'	2.26	0.47
34:AA:3721:U:H5"	70:AE:305:MET:HE2	1.97	0.47
34:AA:3724:U:OP1	78:A0:42:LYS:HD3	2.13	0.47
34:AA:3729:A:H2'	34:AA:3730:C:C6	2.50	0.47
47:Ab:54:PHE:HB3	47:Ab:58:GLU:HB3	1.95	0.47
50:Af:16:GLN:O	50:Af:29:PRO:HG3	2.13	0.47
51:AP:76:LYS:O	51:AP:79:ILE:HG12	2.14	0.47
54:AI:206:SER:OG	54:AI:207:LYS:N	2.48	0.47
55:AJ:273:GLU:O	55:AJ:277:LYS:HE2	2.15	0.47
70:AE:285:LYS:N	70:AE:317:ASP:OD2	2.45	0.47
74:AH:120:LYS:HE2	74:AH:120:LYS:HB3	1.75	0.47
5:S5:28:GLN:NE2	5:S5:38:ARG:HH11	2.13	0.47
7:S7:5:A:H2'	7:S7:6:A:C8	2.50	0.47
7:S7:11:C:H2'	7:S7:12:G:C8	2.50	0.47
7:S7:16:U:C2	7:S7:57:C:N3	2.80	0.47
8:SA:575:G:N7	24:SQ:69:ARG:NH1	2.53	0.47
8:SA:1049:G:H4'	8:SA:2068:A:H4'	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:1278:C:H2'	8:SA:1279:G:H8	1.79	0.47
8:SA:1422:U:H3'	10:SC:101:ARG:HH22	1.80	0.47
8:SA:1716:C:O2'	8:SA:1834:A:N6	2.47	0.47
8:SA:1826:A:H2'	8:SA:1827:U:H6	1.80	0.47
8:SA:1902:G:P	21:SN:78:ARG:HH12	2.38	0.47
10:SC:156:VAL:O	33:SZ:64:SER:OG	2.30	0.47
11:SD:106:LEU:HD23	11:SD:123:VAL:HG21	1.96	0.47
14:SG:132:GLU:OE2	14:SG:134:ALA:N	2.36	0.47
23:SP:71:PRO:HB3	23:SP:114:SER:OG	2.15	0.47
26:SS:106:ASP:HA	26:SS:109:LEU:HD21	1.96	0.47
27:ST:29:ILE:HG22	27:ST:31:LYS:H	1.80	0.47
30:SW:58:MET:HE2	30:SW:58:MET:N	2.30	0.47
30:SW:101:ASP:O	30:SW:104:ARG:HG2	2.15	0.47
34:AA:31:C:H5"	51:AP:95:THR:OG1	2.14	0.47
34:AA:125:C:H2'	34:AA:126:C:C6	2.50	0.47
34:AA:505:A:O2'	34:AA:506:A:OP1	2.30	0.47
34:AA:719:C:OP1	60:AO:21:ARG:HG2	2.15	0.47
34:AA:1073:G:H1	34:AA:1243:G:H1'	1.78	0.47
34:AA:1510:U:H2'	34:AA:1511:U:C6	2.50	0.47
34:AA:2179:A:H2'	34:AA:2180:U:C5	2.49	0.47
34:AA:2600:G:O2'	34:AA:2603:U:OP2	2.33	0.47
34:AA:2832:A:C2	55:AJ:70:LYS:HA	2.50	0.47
34:AA:3380:U:C2'	34:AA:3381:A:H5'	2.45	0.47
34:AA:3576:A:O2'	57:AK:100:LYS:NZ	2.48	0.47
36:AB:39:C:C5	72:AG:46:ILE:HD13	2.50	0.47
36:AB:46:C:P	62:AR:160:ARG:HH11	2.38	0.47
36:AB:60:U:H2'	36:AB:61:G:C8	2.49	0.47
43:AN:23:ARG:HA	43:AN:29:ARG:CZ	2.44	0.47
44:A8:32:TRP:CZ2	44:A8:53:PRO:HD2	2.49	0.47
55:AJ:73:ARG:HD3	55:AJ:73:ARG:H	1.79	0.47
57:AK:10:CYS:SG	57:AK:34:ALA:HB1	2.53	0.47
58:AM:106:ASN:HD22	58:AM:110:GLU:HG2	1.80	0.47
59:AS:32:LEU:HB2	71:AF:289:ILE:HD12	1.96	0.47
60:AO:102:VAL:CG1	60:AO:107:TYR:HB2	2.44	0.47
61:AQ:36:MET:CE	61:AQ:69:ARG:HH11	2.28	0.47
63:AW:39:MET:HE3	63:AW:43:GLU:HG2	1.96	0.47
65:AT:30:GLU:H	65:AT:30:GLU:CD	2.23	0.47
77:AX:43:VAL:HG13	77:AX:129:ALA:HB2	1.97	0.47
8:SA:88:A:H2'	8:SA:89:C:H6	1.80	0.47
8:SA:453:U:H2'	8:SA:454:U:O4'	2.14	0.47
8:SA:953:C:H2'	8:SA:954:G:C8	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:1258:A:H2'	8:SA:1261:A:N7	2.29	0.47
8:SA:1412:U:H2'	8:SA:1413:U:C6	2.49	0.47
8:SA:1638:U:H2'	8:SA:1639:G:H8	1.80	0.47
8:SA:1901:U:H5"	20:SM:130:PHE:CE1	2.50	0.47
15:SH:204:GLN:O	15:SH:207:GLU:HG2	2.15	0.47
28:SU:37:ILE:HD13	28:SU:74:ILE:HD11	1.95	0.47
34:AA:670:U:H2'	34:AA:671:U:C6	2.50	0.47
34:AA:1019:A:H2'	34:AA:1020:C:C6	2.50	0.47
34:AA:1572:U:H5"	39:A2:22:LYS:HG2	1.97	0.47
34:AA:1647:U:H2'	34:AA:1648:U:C6	2.50	0.47
34:AA:2708:C:OP1	69:AD:2:GLY:N	2.47	0.47
34:AA:3048:U:H2'	34:AA:3049:G:H8	1.80	0.47
34:AA:3134:U:H2'	34:AA:3135:A:H8	1.79	0.47
34:AA:3443:A:N6	34:AA:3470:G:O2'	2.46	0.47
41:A6:25:LYS:HG2	41:A6:97:ASP:OD2	2.14	0.47
43:AN:69:ILE:HG13	43:AN:70:PRO:HD2	1.97	0.47
48:Ad:68:LEU:HD23	48:Ad:69:PRO:HD2	1.96	0.47
63:AW:13:LYS:HE2	63:AW:13:LYS:HB2	1.74	0.47
64:AY:151:PHE:O	64:AY:153:ILE:N	2.44	0.47
1:S1:41:LYS:O	1:S1:44:LEU:HD12	2.14	0.47
7:S7:39:A:H2'	7:S7:40:U:C6	2.49	0.47
8:SA:158:C:H2'	8:SA:159:U:O4'	2.15	0.47
8:SA:251:U:N3	29:SV:17:GLU:OE1	2.48	0.47
8:SA:964:G:H21	23:SP:52:THR:HG21	1.79	0.47
8:SA:1417:U:P	8:SA:1430:G:H1	2.38	0.47
8:SA:2014:A:O2'	15:SH:67:VAL:HG23	2.15	0.47
12:SE:16:LYS:HG2	12:SE:17:ARG:N	2.30	0.47
34:AA:162:U:O2'	34:AA:163:G:OP2	2.29	0.47
34:AA:505:A:H2'	34:AA:506:A:H8	1.80	0.47
34:AA:1065:U:H2'	34:AA:1066:U:H6	1.79	0.47
34:AA:2829:U:H2'	34:AA:2830:U:C6	2.50	0.47
51:AP:113:ASN:OD1	51:AP:113:ASN:N	2.44	0.47
60:AO:37:GLY:O	60:AO:38:LEU:HB2	2.14	0.47
66:AZ:57:ILE:HD13	66:AZ:62:ASN:HB2	1.95	0.47
71:AF:67:TRP:CH2	71:AF:71:ARG:HG3	2.49	0.47
74:AH:47:LEU:HD22	74:AH:49:LYS:HG3	1.96	0.47
8:SA:998:A:O2'	8:SA:999:A:OP1	2.32	0.47
8:SA:1719:U:O3'	16:SI:79:LYS:NZ	2.39	0.47
8:SA:1853:A:C2	8:SA:1857:U:H1'	2.50	0.47
8:SA:1962:A:H2'	8:SA:1963:U:C6	2.50	0.47
20:SM:98:VAL:HG23	20:SM:99:ASP:N	2.30	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:SN:31:ILE:HG13	21:SN:32:GLU:N	2.29	0.47
23:SP:33:ILE:HD12	23:SP:42:ILE:CD1	2.45	0.47
31:SX:55:SER:O	31:SX:58:LYS:HG3	2.15	0.47
34:AA:2118:G:O3'	56:Ac:3:LYS:HE2	2.14	0.47
34:AA:2918:C:C2	34:AA:2919:A:H8	2.32	0.47
34:AA:3085:A:N1	62:AR:150:VAL:HG22	2.29	0.47
37:AL:56:ILE:C	37:AL:56:ILE:HD12	2.39	0.47
38:A1:106:ASN:ND2	38:A1:110:GLU:OE1	2.48	0.47
40:A4:18:LYS:HE3	40:A4:18:LYS:HB2	1.72	0.47
55:AJ:177:ILE:HD12	55:AJ:178:GLU:N	2.29	0.47
65:AT:115:ASP:C	65:AT:115:ASP:OD1	2.58	0.47
75:AV:66:PHE:CZ	75:AV:89:LYS:HD3	2.50	0.47
4:S4:9:ASP:OD1	4:S4:9:ASP:N	2.48	0.46
7:S7:1:G:H2'	7:S7:2:G:C8	2.44	0.46
7:S7:26:C:H2'	7:S7:27:G:C8	2.50	0.46
8:SA:118:U:H2'	8:SA:119:C:C6	2.50	0.46
8:SA:1701:G:H2'	8:SA:1702:C:C2	2.50	0.46
8:SA:1849:U:O2'	8:SA:1894:A:N3	2.46	0.46
8:SA:1939:G:H2'	8:SA:1940:U:H6	1.79	0.46
8:SA:1945:C:H2'	8:SA:1946:C:C6	2.50	0.46
9:SB:195:LYS:HD3	9:SB:195:LYS:N	2.29	0.46
11:SD:20:GLU:O	11:SD:23:GLU:HG3	2.15	0.46
12:SE:132:ARG:HH21	12:SE:140:MET:HE1	1.80	0.46
17:SJ:106:LYS:HD2	17:SJ:106:LYS:O	2.15	0.46
34:AA:67:A:O2'	34:AA:323:A:N3	2.45	0.46
34:AA:734:A:H2'	34:AA:735:A:H8	1.80	0.46
34:AA:1102:U:N3	34:AA:1231:A:C2	2.83	0.46
34:AA:2721:U:H2'	34:AA:2722:G:C8	2.50	0.46
43:AN:66:ARG:HD3	73:AU:79:LEU:HD13	1.96	0.46
65:AT:22:TRP:CZ2	65:AT:25:PRO:HD3	2.50	0.46
68:A5:37:LYS:O	68:A5:41:THR:HG22	2.16	0.46
71:AF:187:LYS:HD3	71:AF:203:ILE:HD11	1.97	0.46
34:AA:71:A:OP2	60:AO:67:ARG:NE	2.40	0.46
34:AA:276:G:H5'	51:AP:121:TRP:CG	2.50	0.46
34:AA:1066:U:H2'	34:AA:1067:U:C6	2.50	0.46
34:AA:1133:A:H2'	34:AA:1134:G:C8	2.50	0.46
34:AA:1758:C:H2'	34:AA:1759:A:C8	2.50	0.46
43:AN:57:ASP:OD2	43:AN:89:SER:OG	2.29	0.46
44:A8:82:MET:O	44:A8:115:MET:HE1	2.15	0.46
63:AW:32:ALA:O	63:AW:36:ILE:HG23	2.16	0.46
9:SB:29:TRP:CD1	9:SB:45:LYS:HZ3	2.33	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:SC:146:LEU:HA	10:SC:160:ILE:CD1	2.45	0.46
20:SM:14:LYS:HG2	20:SM:120:GLY:HA3	1.96	0.46
25:SR:99:LEU:HG	25:SR:112:ILE:HG21	1.97	0.46
26:SS:66:ILE:O	26:SS:70:VAL:HG13	2.15	0.46
26:SS:100:VAL:HG23	26:SS:105:LEU:HD13	1.98	0.46
29:SV:56:TYR:CD1	29:SV:116:PRO:HG2	2.51	0.46
34:AA:1843:U:H2'	34:AA:1844:G:C8	2.50	0.46
34:AA:1845:C:H2'	34:AA:1846:A:C8	2.50	0.46
34:AA:2836:G:H3'	69:AD:38:LYS:NZ	2.31	0.46
34:AA:3197:A:H2'	34:AA:3198:G:O4'	2.16	0.46
34:AA:3523:U:OP1	70:AE:271:HIS:ND1	2.47	0.46
37:AL:78:GLU:OE2	37:AL:100:ARG:NH2	2.48	0.46
47:Ab:106:ARG:HH11	47:Ab:106:ARG:C	2.22	0.46
54:AI:60:ALA:HB2	54:AI:106:VAL:HG12	1.97	0.46
54:AI:171:LYS:HD2	54:AI:171:LYS:HA	1.72	0.46
56:Ac:14:ARG:HG3	56:Ac:14:ARG:HH11	1.80	0.46
60:AO:109:LYS:HG3	60:AO:128:TYR:HB2	1.97	0.46
66:AZ:39:ARG:HD2	66:AZ:45:ARG:HA	1.96	0.46
74:AH:18:VAL:HG23	74:AH:47:LEU:HD11	1.96	0.46
77:AX:56:ASP:C	77:AX:56:ASP:OD1	2.57	0.46
8:SA:1303:A:N6	8:SA:1703:U:OP1	2.49	0.46
9:SB:56:LEU:C	9:SB:58:THR:H	2.24	0.46
10:SC:189:PRO:O	10:SC:192:GLU:HG3	2.15	0.46
12:SE:154:LYS:HB2	12:SE:155:HIS:CE1	2.50	0.46
13:SF:155:LYS:HD3	13:SF:155:LYS:HA	1.60	0.46
30:SW:19:LYS:HG3	30:SW:20:TYR:CZ	2.51	0.46
34:AA:715:U:O2'	34:AA:716:C:P	2.74	0.46
34:AA:890:G:H2'	34:AA:891:C:H6	1.79	0.46
34:AA:1257:A:H2'	34:AA:1258:A:C8	2.51	0.46
34:AA:1298:A:H2'	34:AA:1299:G:O4'	2.16	0.46
34:AA:1476:A:P	59:AS:39:ARG:HH21	2.39	0.46
34:AA:3085:A:HO2'	62:AR:178:GLY:H	1.60	0.46
37:AL:20:HIS:HB3	51:AP:198:LEU:HA	1.97	0.46
51:AP:115:ARG:HD2	51:AP:138:PRO:HG3	1.96	0.46
71:AF:159:GLU:HA	71:AF:217:VAL:HB	1.97	0.46
73:AU:53:PHE:O	73:AU:57:ILE:HD12	2.16	0.46
74:AH:93:LEU:HD11	74:AH:143:ILE:HG12	1.96	0.46
8:SA:15:U:H2'	8:SA:16:G:O4'	2.16	0.46
8:SA:205:A:H2'	8:SA:206:A:C8	2.50	0.46
8:SA:539:U:H2'	8:SA:540:C:C6	2.50	0.46
8:SA:1669:C:H5"	11:SD:154:ARG:HH21	1.78	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:1697:C:H2'	8:SA:1698:U:H6	1.80	0.46
10:SC:74:VAL:HG23	10:SC:118:PRO:HB3	1.98	0.46
10:SC:167:LYS:HE3	10:SC:203:TRP:O	2.16	0.46
12:SE:66:SER:O	12:SE:69:ARG:N	2.47	0.46
12:SE:108:ARG:HH21	12:SE:110:GLN:NE2	2.13	0.46
15:SH:137:ARG:HD3	15:SH:177:ARG:NH1	2.31	0.46
21:SN:30:ALA:O	21:SN:33:LYS:HG3	2.16	0.46
22:SO:19:LYS:HA	22:SO:22:ILE:HG12	1.97	0.46
28:SU:5:TYR:HE2	28:SU:121:LYS:HG3	1.79	0.46
34:AA:267:U:H2'	34:AA:268:C:C6	2.50	0.46
34:AA:543:U:C6	34:AA:581:C:H5"	2.51	0.46
34:AA:624:C:H5"	34:AA:625:A:O4'	2.15	0.46
34:AA:2816:U:HO2'	34:AA:2817:U:P	2.37	0.46
34:AA:3025:U:H2'	34:AA:3026:G:O4'	2.14	0.46
34:AA:3717:A:H2'	34:AA:3718:G:C8	2.51	0.46
36:AB:22:G:N3	36:AB:25:A:N6	2.63	0.46
37:AL:195:ALA:O	37:AL:199:LYS:HG3	2.15	0.46
39:A2:21:LYS:HE3	39:A2:21:LYS:HB3	1.63	0.46
70:AE:201:PRO:HG2	70:AE:204:THR:HG23	1.98	0.46
70:AE:253:HIS:HA	70:AE:254:PRO:C	2.41	0.46
3:S3:46:ASP:H	23:SP:113:GLN:HE22	1.63	0.46
3:S3:58:VAL:HG13	23:SP:125:LYS:NZ	2.30	0.46
8:SA:70:U:H2'	8:SA:71:A:C8	2.51	0.46
8:SA:857:A:H2'	8:SA:858:U:C6	2.50	0.46
8:SA:1119:G:H2'	8:SA:1120:A:C8	2.51	0.46
9:SB:69:ASN:OD1	9:SB:70:LEU:N	2.49	0.46
10:SC:28:ASN:HB2	10:SC:150:ASP:HB3	1.97	0.46
10:SC:79:ARG:HA	10:SC:79:ARG:NE	2.31	0.46
12:SE:71:PHE:HB2	13:SF:249:ILE:HD11	1.98	0.46
16:SI:12:LYS:HZ1	20:SM:47:THR:HG22	1.81	0.46
20:SM:129:LYS:HB2	20:SM:135:ALA:O	2.15	0.46
21:SN:43:LYS:HA	21:SN:43:LYS:HD3	1.75	0.46
34:AA:1125:A:N1	34:AA:1172:C:O2'	2.44	0.46
34:AA:1483:A:H2'	34:AA:1484:A:C8	2.50	0.46
34:AA:1531:G:N1	34:AA:1573:C:H5	2.03	0.46
34:AA:1601:A:O2'	34:AA:1602:A:H5'	2.16	0.46
34:AA:1971:U:H5	48:Ad:26:MET:HG3	1.80	0.46
34:AA:3459:A:H2'	34:AA:3460:C:H6	1.80	0.46
43:AN:141:LYS:O	43:AN:145:ILE:HG23	2.14	0.46
54:AI:96:LEU:HD23	54:AI:96:LEU:HA	1.76	0.46
67:A3:79:PRO:HD2	67:A3:82:LEU:HD12	1.96	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
67:A3:89:ASN:OD1	67:A3:90:LYS:N	2.49	0.46
68:A5:233:ALA:HB2	68:A5:242:TRP:CZ2	2.51	0.46
75:AV:95:GLU:H	75:AV:95:GLU:CD	2.22	0.46
1:S1:15:ASN:ND2	1:S1:22:GLN:OE1	2.42	0.46
5:S5:49:ARG:NH1	16:SI:135:LEU:HD23	2.31	0.46
5:S5:65:ARG:NE	5:S5:66:LEU:O	2.48	0.46
7:S7:17:U:H3	7:S7:56:U:P	2.39	0.46
8:SA:88:A:H2'	8:SA:89:C:C6	2.51	0.46
8:SA:163:G:H2'	8:SA:164:C:C6	2.51	0.46
8:SA:927:A:C6	28:SU:73:ARG:HD3	2.50	0.46
8:SA:1602:G:H2'	8:SA:1603:U:C6	2.51	0.46
8:SA:1880:A:O2'	16:SI:46:ARG:NH2	2.49	0.46
10:SC:23:HIS:HB3	10:SC:50:LEU:HD11	1.95	0.46
14:SG:168:MET:SD	14:SG:236:TYR:CG	3.09	0.46
15:SH:58:LYS:HE2	15:SH:58:LYS:HB2	1.70	0.46
24:SQ:62:LYS:HE2	24:SQ:118:PRO:HB3	1.98	0.46
30:SW:19:LYS:HD2	30:SW:19:LYS:HA	1.78	0.46
33:SZ:42:ASN:OD1	33:SZ:42:ASN:N	2.49	0.46
34:AA:51:A:C4	34:AA:52:A:C8	3.03	0.46
34:AA:302:A:H2'	34:AA:303:A:C8	2.51	0.46
34:AA:950:G:O2'	34:AA:2131:A:N3	2.46	0.46
34:AA:1058:U:OP2	60:AO:26:ARG:NH2	2.35	0.46
34:AA:1079:U:H4'	34:AA:1082:G:N1	2.31	0.46
34:AA:1141:G:N1	34:AA:1156:U:N3	2.38	0.46
34:AA:1644:U:H5	34:AA:2102:A:N1	2.14	0.46
34:AA:2669:G:H2'	34:AA:2670:G:C8	2.51	0.46
34:AA:3199:C:H2'	34:AA:3200:G:O4'	2.16	0.46
55:AJ:200:LYS:HG3	55:AJ:212:ALA:O	2.15	0.46
61:AQ:10:ARG:HG3	61:AQ:58:GLU:OE1	2.15	0.46
69:AD:117:GLU:OE2	69:AD:123:ARG:N	2.47	0.46
70:AE:145:LEU:HD12	70:AE:189:LEU:HD22	1.98	0.46
74:AH:170:ASP:OD1	74:AH:172:ARG:HG2	2.15	0.46
78:A0:59:THR:O	78:A0:63:ARG:HG2	2.16	0.46
8:SA:455:C:H2'	8:SA:456:U:C6	2.50	0.46
8:SA:1826:A:H2'	8:SA:1827:U:C6	2.50	0.46
8:SA:1936:C:H2'	8:SA:1937:C:O4'	2.16	0.46
9:SB:82:LYS:NZ	9:SB:191:GLU:OE1	2.38	0.46
10:SC:124:THR:HA	10:SC:146:LEU:HD12	1.97	0.46
13:SF:45:VAL:HG23	13:SF:80:CYS:O	2.14	0.46
17:SJ:105:GLN:O	17:SJ:106:LYS:HG3	2.16	0.46
20:SM:76:THR:HG22	20:SM:80:TYR:CE2	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:253:U:H2'	34:AA:254:U:C6	2.51	0.46
34:AA:868:U:H5"	59:AS:143:LYS:HG3	1.98	0.46
34:AA:1280:G:OP2	34:AA:1280:G:N2	2.42	0.46
34:AA:2816:U:O2'	34:AA:2817:U:OP1	2.27	0.46
34:AA:3036:A:H2'	34:AA:3037:G:H8	1.81	0.46
34:AA:3401:C:H2'	34:AA:3402:A:C8	2.50	0.46
34:AA:3459:A:H2'	34:AA:3460:C:C6	2.51	0.46
34:AA:3608:U:H2'	34:AA:3609:A:C8	2.50	0.46
36:AB:18:A:H2'	36:AB:19:G:H8	1.81	0.46
44:A8:14:THR:HG22	44:A8:15:LYS:N	2.29	0.46
55:AJ:218:GLU:OE1	55:AJ:218:GLU:HA	2.16	0.46
57:AK:136:ARG:HD3	57:AK:138:GLY:H	1.81	0.46
64:AY:140:LYS:HE2	64:AY:158:VAL:O	2.16	0.46
64:AY:154:GLU:H	64:AY:178:HIS:CE1	2.33	0.46
68:A5:172:ALA:O	68:A5:174:LYS:HG2	2.16	0.46
70:AE:285:LYS:HG3	70:AE:315:ASN:O	2.16	0.46
71:AF:186:SER:CB	71:AF:204:ARG:HG3	2.46	0.46
73:AU:105:ASP:C	73:AU:105:ASP:OD1	2.59	0.46
4:S4:34:LYS:HD3	4:S4:34:LYS:HA	1.79	0.46
8:SA:3:C:O2	12:SE:17:ARG:NH2	2.48	0.46
8:SA:58:U:OP1	8:SA:462:A:O2'	2.34	0.46
8:SA:805:A:O2'	8:SA:806:A:OP1	2.33	0.46
8:SA:812:A:OP1	12:SE:79:ARG:NH2	2.39	0.46
8:SA:2021:U:H4'	19:SL:5:ARG:HH12	1.81	0.46
12:SE:65:LYS:HA	12:SE:70:ILE:HD11	1.98	0.46
17:SJ:60:ILE:HG23	17:SJ:92:VAL:HA	1.98	0.46
23:SP:39:ASP:OD1	23:SP:39:ASP:N	2.47	0.46
25:SR:27:LYS:HZ1	25:SR:129:LYS:HG2	1.81	0.46
34:AA:779:U:H2'	37:AL:165:LYS:NZ	2.31	0.46
34:AA:1219:A:N6	34:AA:1224:A:N7	2.64	0.46
34:AA:1560:U:H2'	34:AA:1561:C:C6	2.51	0.46
34:AA:2654:A:H2'	34:AA:2655:C:H6	1.81	0.46
34:AA:3084:G:N2	34:AA:3087:A:OP2	2.42	0.46
34:AA:3183:G:H2'	34:AA:3184:C:C6	2.50	0.46
34:AA:3571:A:H8	34:AA:3677:A:O2'	1.99	0.46
37:AL:110:LYS:O	37:AL:113:GLU:HG3	2.16	0.46
44:A8:96:ILE:HG21	44:A8:105:ARG:HG2	1.98	0.46
51:AP:75:VAL:HG13	51:AP:77:LYS:O	2.15	0.46
51:AP:115:ARG:NH2	51:AP:158:LYS:HG2	2.31	0.46
54:AI:151:LYS:HA	54:AI:151:LYS:HD2	1.82	0.46
1:S1:39:GLU:H	1:S1:39:GLU:CD	2.21	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:30:G:H4'	24:SQ:131:SER:HB2	1.98	0.46
8:SA:793:G:H8	17:SJ:104:LYS:NZ	2.14	0.46
8:SA:1243:A:H2'	8:SA:1244:A:C8	2.51	0.46
8:SA:1607:U:H2'	8:SA:1608:G:C8	2.50	0.46
14:SG:238:THR:HG22	14:SG:240:ASP:H	1.81	0.46
16:SI:14:TRP:CE2	16:SI:88:PHE:HZ	2.34	0.46
26:SS:21:ASN:C	26:SS:23:ASP:H	2.24	0.46
34:AA:11:A:N6	35:AC:154:G:N1	2.22	0.46
34:AA:121:U:H3	55:AJ:148:PHE:HE2	1.61	0.46
34:AA:147:C:H2'	34:AA:148:G:O4'	2.16	0.46
34:AA:316:A:H2'	34:AA:317:U:C6	2.52	0.46
34:AA:600:U:H2'	34:AA:601:G:C8	2.48	0.46
34:AA:3586:U:O2	34:AA:3593:U:H5"	2.16	0.46
34:AA:3655:U:H2'	34:AA:3656:A:C8	2.51	0.46
34:AA:3682:A:H2'	34:AA:3683:G:H8	1.81	0.46
54:AI:87:GLY:O	54:AI:88:PRO:C	2.59	0.46
65:AT:9:LEU:HB2	65:AT:40:ILE:HD12	1.97	0.46
65:AT:104:LEU:HD21	65:AT:138:ILE:CD1	2.45	0.46
70:AE:229:ARG:HA	70:AE:267:LYS:HD2	1.97	0.46
76:Ag:34:MET:HE3	76:Ag:34:MET:HB3	1.84	0.46
4:S4:31:MET:HE2	4:S4:77:PHE:HB2	1.98	0.45
4:S4:52:VAL:HG23	4:S4:61:LEU:HB2	1.98	0.45
8:SA:953:C:H2'	8:SA:954:G:H8	1.81	0.45
9:SB:34:ALA:HB3	9:SB:41:ARG:HA	1.98	0.45
13:SF:196:SER:N	13:SF:209:HIS:O	2.49	0.45
15:SH:39:ASP:OD2	15:SH:46:THR:HA	2.16	0.45
16:SI:144:LEU:HD13	16:SI:144:LEU:HA	1.80	0.45
19:SL:38:LEU:HD23	19:SL:38:LEU:H	1.80	0.45
20:SM:94:TYR:HB3	20:SM:103:LYS:HG3	1.98	0.45
26:SS:106:ASP:O	26:SS:110:ARG:HG3	2.16	0.45
34:AA:316:A:H1'	34:AA:2515:A:N3	2.31	0.45
34:AA:1484:A:H2'	34:AA:1485:A:C8	2.52	0.45
34:AA:1597:U:H2'	34:AA:1598:A:H8	1.81	0.45
34:AA:2456:C:OP1	69:AD:234:LYS:NZ	2.37	0.45
34:AA:3650:U:H2'	34:AA:3651:G:H8	1.81	0.45
34:AA:3739:A:O2'	34:AA:3740:A:H5'	2.16	0.45
43:AN:7:THR:N	43:AN:10:GLU:OE1	2.45	0.45
70:AE:36:ASP:HB3	70:AE:39:LYS:HG3	1.98	0.45
7:S7:22:A:H2'	7:S7:23:G:C8	2.51	0.45
8:SA:451:A:H1'	8:SA:532:A:H5'	1.98	0.45
8:SA:851:A:H5'	8:SA:852:A:O4'	2.15	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:917:C:H2'	8:SA:918:U:H6	1.81	0.45
8:SA:1248:A:O2'	8:SA:1933:C:OP2	2.32	0.45
8:SA:1449:U:O2	8:SA:1812:A:H2'	2.15	0.45
8:SA:1810:U:H5"	8:SA:1811:A:O4'	2.16	0.45
8:SA:1945:C:H2'	8:SA:1946:C:H6	1.79	0.45
9:SB:97:TYR:HB3	9:SB:232:HIS:CD2	2.51	0.45
15:SH:69:THR:OG1	15:SH:70:ASN:N	2.49	0.45
16:SI:61:GLU:HA	16:SI:64:VAL:HG22	1.98	0.45
26:SS:29:ILE:O	26:SS:33:THR:HG23	2.16	0.45
26:SS:35:ILE:HG13	26:SS:36:LYS:N	2.31	0.45
34:AA:179:G:HO2'	34:AA:180:C:P	2.39	0.45
34:AA:445:A:N1	34:AA:702:U:H5	2.13	0.45
34:AA:979:G:O2'	34:AA:1014:C:H4'	2.16	0.45
34:AA:1747:U:H4'	34:AA:2102:A:H4'	1.99	0.45
34:AA:1756:G:OP1	48:Ad:49:LEU:N	2.49	0.45
34:AA:1794:U:N3	48:Ad:17:LYS:HD3	2.32	0.45
34:AA:1860:A:H2'	34:AA:1861:C:C6	2.51	0.45
34:AA:2034:G:N2	34:AA:2075:U:O2	2.34	0.45
34:AA:3393:C:H2'	34:AA:3394:A:C8	2.51	0.45
34:AA:3480:C:H2'	34:AA:3481:U:C6	2.50	0.45
35:AC:77:U:H4'	35:AC:93:U:H4'	1.98	0.45
35:AC:85:A:H2'	35:AC:86:C:C6	2.51	0.45
40:A4:37:PRO:C	40:A4:39:PHE:H	2.24	0.45
53:Ai:70:LYS:HG3	53:Ai:81:PHE:CE1	2.48	0.45
57:AK:190:PRO:O	57:AK:194:GLN:NE2	2.45	0.45
65:AT:132:LYS:HE3	65:AT:132:LYS:HB2	1.69	0.45
71:AF:298:VAL:O	71:AF:302:LEU:HG	2.16	0.45
77:AX:80:LYS:O	77:AX:95:HIS:ND1	2.39	0.45
77:AX:82:VAL:HG22	77:AX:93:THR:HB	1.99	0.45
3:S3:53:ILE:HD13	23:SP:120:ALA:HB2	1.98	0.45
8:SA:509:U:H2'	8:SA:510:G:C8	2.52	0.45
8:SA:1198:U:H6	14:SG:180:ARG:HD2	1.82	0.45
8:SA:1898:G:H5'	32:SY:112:PRO:HG2	1.98	0.45
13:SF:36:HIS:CE1	13:SF:85:GLY:HA3	2.51	0.45
27:ST:36:ILE:HD12	27:ST:36:ILE:HA	1.88	0.45
34:AA:1109:U:H2'	34:AA:1110:U:C6	2.51	0.45
70:AE:215:ILE:HB	70:AE:334:THR:OG1	2.16	0.45
77:AX:125:LYS:HE2	77:AX:131:GLU:HG2	1.98	0.45
1:S1:107:ARG:HA	1:S1:107:ARG:HH11	1.82	0.45
8:SA:154:A:C4	8:SA:155:A:C8	3.05	0.45
8:SA:490:C:H2'	8:SA:491:A:H8	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:1981:A:H61	8:SA:2009:C:N4	2.09	0.45
8:SA:2029:A:H2'	8:SA:2030:U:C6	2.52	0.45
9:SB:171:ILE:CD1	9:SB:200:GLN:HG2	2.47	0.45
9:SB:171:ILE:HD11	9:SB:200:GLN:HG2	1.97	0.45
12:SE:120:LYS:H	12:SE:120:LYS:HD3	1.81	0.45
12:SE:138:LYS:HE2	12:SE:138:LYS:HB3	1.75	0.45
14:SG:169:LYS:HG2	14:SG:182:VAL:HG22	1.98	0.45
16:SI:99:PRO:HA	16:SI:102:VAL:HB	1.98	0.45
16:SI:152:ALA:C	16:SI:156:ASN:HD22	2.23	0.45
19:SL:74:LYS:HE2	19:SL:74:LYS:HB2	1.69	0.45
29:SV:77:MET:HE2	29:SV:123:GLY:O	2.16	0.45
34:AA:383:U:O2	66:AZ:76:ARG:NH2	2.48	0.45
34:AA:513:U:H4'	54:AI:46:VAL:HG22	1.99	0.45
34:AA:700:A:H5'	45:A9:92:HIS:O	2.15	0.45
34:AA:818:C:H2'	60:AO:117:LYS:HZ3	1.81	0.45
34:AA:1045:A:H2'	34:AA:1046:A:C8	2.51	0.45
34:AA:1277:G:OP2	45:A9:54:ARG:NH2	2.44	0.45
34:AA:1302:G:H2'	34:AA:1303:C:C6	2.52	0.45
34:AA:1793:A:H2'	34:AA:1795:A:H62	1.81	0.45
34:AA:3613:A:C5	34:AA:3614:A:C6	3.04	0.45
34:AA:3717:A:H2'	34:AA:3718:G:H8	1.81	0.45
38:A1:136:ASP:OD1	38:A1:136:ASP:N	2.49	0.45
45:A9:51:ARG:HG2	45:A9:52:SER:O	2.17	0.45
47:Ab:48:VAL:HG21	51:AP:9:GLU:HB2	1.98	0.45
50:Af:50:LYS:HD2	50:Af:50:LYS:N	2.32	0.45
8:SA:406:A:H5"	19:SL:25:ARG:HA	1.99	0.45
8:SA:412:U:H2'	8:SA:413:A:H8	1.81	0.45
8:SA:756:A:N1	8:SA:757:A:C6	2.84	0.45
8:SA:1248:A:H2'	8:SA:1249:C:C6	2.52	0.45
8:SA:1378:G:H2'	8:SA:1379:G:C8	2.52	0.45
8:SA:1727:A:OP1	20:SM:35:LYS:NZ	2.50	0.45
8:SA:1730:A:H1'	8:SA:1903:U:O2'	2.17	0.45
8:SA:1907:G:O2'	8:SA:1908:A:OP2	2.28	0.45
8:SA:1966:U:H2'	8:SA:1967:G:O4'	2.16	0.45
12:SE:64:GLU:O	12:SE:65:LYS:HG2	2.17	0.45
13:SF:126:VAL:HG12	13:SF:158:ASP:O	2.17	0.45
15:SH:134:GLY:HA3	15:SH:158:ILE:HD11	1.99	0.45
17:SJ:5:GLN:HG3	17:SJ:18:LYS:HZ3	1.81	0.45
17:SJ:64:ILE:HD11	17:SJ:69:TYR:HD2	1.81	0.45
17:SJ:156:ASP:OD1	17:SJ:156:ASP:N	2.33	0.45
18:SK:112:ASP:C	18:SK:112:ASP:OD1	2.60	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:SP:101:GLY:HA2	23:SP:134:PRO:HG2	1.97	0.45
32:SY:150:LYS:HA	32:SY:153:ASN:HD21	1.82	0.45
34:AA:128:U:H2'	34:AA:129:C:C6	2.52	0.45
34:AA:296:A:H5"	51:AP:97:ASN:HB3	1.97	0.45
34:AA:504:A:HO2'	34:AA:505:A:P	2.38	0.45
34:AA:1062:U:O2'	60:AO:12:ARG:HG3	2.16	0.45
34:AA:1468:A:OP2	44:A8:61:LYS:NZ	2.34	0.45
34:AA:1559:U:H5"	44:A8:98:HIS:HB3	1.98	0.45
34:AA:2741:A:H2'	34:AA:2742:G:H8	1.81	0.45
34:AA:2809:A:H2'	34:AA:2810:A:C4	2.51	0.45
35:AC:74:A:H5"	35:AC:75:A:OP1	2.17	0.45
38:A1:54:ASN:OD1	38:A1:55:LYS:N	2.50	0.45
48:Ad:9:ARG:HH11	48:Ad:9:ARG:HG3	1.82	0.45
53:Ai:14:ASN:OD1	53:Ai:14:ASN:N	2.50	0.45
63:AW:107:LEU:HB2	63:AW:152:GLU:OE1	2.17	0.45
70:AE:209:ASN:ND2	70:AE:351:VAL:HG22	2.31	0.45
71:AF:77:PRO:HB2	71:AF:91:ALA:HB3	1.98	0.45
1:S1:47:MET:HE1	8:SA:831:U:C2	2.51	0.45
1:S1:113:LYS:NZ	8:SA:55:A:OP2	2.31	0.45
7:S7:30:G:H2'	7:S7:31:G:O4'	2.17	0.45
8:SA:161:U:H2'	8:SA:162:A:C8	2.42	0.45
8:SA:877:U:H2'	8:SA:878:G:C8	2.51	0.45
8:SA:972:U:O2	8:SA:974:A:H5"	2.17	0.45
8:SA:1059:U:H2'	8:SA:1060:G:O4'	2.16	0.45
8:SA:1818:A:OP2	20:SM:71:LYS:HE3	2.17	0.45
8:SA:1880:A:H5'	20:SM:136:ARG:HH12	1.80	0.45
9:SB:187:LYS:C	9:SB:190:PRO:HD2	2.41	0.45
13:SF:193:GLY:HA3	13:SF:210:VAL:HG12	1.98	0.45
16:SI:47:TYR:CE1	16:SI:57:CYS:HB2	2.51	0.45
20:SM:62:LYS:HA	20:SM:62:LYS:HD3	1.75	0.45
21:SN:55:LEU:HB2	21:SN:85:LYS:O	2.17	0.45
23:SP:76:MET:HA	23:SP:79:GLN:HG2	1.99	0.45
34:AA:262:A:H2'	34:AA:263:U:C6	2.52	0.45
34:AA:1285:U:H2'	34:AA:1286:A:O4'	2.17	0.45
34:AA:2534:U:HO2'	69:AD:243:THR:H	1.65	0.45
38:A1:29:TYR:OH	38:A1:99:ASP:OD1	2.27	0.45
68:A5:146:GLY:HA3	68:A5:249:ILE:HB	1.98	0.45
69:AD:246:LEU:O	69:AD:247:ARG:HD3	2.17	0.45
74:AH:95:HIS:HA	74:AH:176:ASP:CB	2.47	0.45
1:S1:113:LYS:HD3	1:S1:113:LYS:HA	1.79	0.45
3:S3:45:VAL:HA	23:SP:113:GLN:OE1	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:161:U:H4'	15:SH:53:THR:HG23	1.99	0.45
8:SA:337:G:H5'	19:SL:33:PRO:HA	1.98	0.45
8:SA:1045:G:N1	8:SA:1092:A:O2'	2.38	0.45
8:SA:1262:C:H2'	8:SA:1263:C:C6	2.51	0.45
11:SD:116:VAL:HB	11:SD:117:ARG:NH1	2.31	0.45
13:SF:194:VAL:HG22	13:SF:211:LYS:HB3	1.98	0.45
14:SG:41:TRP:O	14:SG:52:LYS:NZ	2.42	0.45
14:SG:65:HIS:HB2	14:SG:67:LEU:HD22	1.98	0.45
14:SG:165:THR:CG2	14:SG:183:PRO:HA	2.46	0.45
30:SW:21:TYR:HD1	30:SW:24:LEU:HB2	1.82	0.45
34:AA:255:C:H2'	34:AA:256:A:C8	2.51	0.45
34:AA:264:U:OP1	37:AL:80:LYS:NZ	2.49	0.45
34:AA:3134:U:H2'	34:AA:3135:A:C8	2.52	0.45
34:AA:3345:U:H2'	34:AA:3346:A:H8	1.82	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:H1	1.65	0.45
34:AA:3724:U:H2'	34:AA:3725:G:O4'	2.16	0.45
36:AB:63:A:C4	61:AQ:202:GLU:OE1	2.70	0.45
37:AL:26:SER:HA	37:AL:29:ILE:HD12	1.99	0.45
58:AM:111:MET:HG2	58:AM:113:GLY:H	1.82	0.45
62:AR:54:ARG:HD3	62:AR:54:ARG:HA	1.74	0.45
66:AZ:90:ASN:OD1	66:AZ:90:ASN:N	2.49	0.45
71:AF:186:SER:HB2	71:AF:204:ARG:HG3	1.99	0.45
71:AF:383:VAL:HA	73:AU:134:ARG:NH1	2.31	0.45
77:AX:55:LEU:HD11	77:AX:60:LEU:HD23	1.98	0.45
77:AX:120:LEU:HD12	77:AX:132:PHE:CD2	2.49	0.45
1:S1:43:ARG:O	1:S1:47:MET:HG2	2.17	0.45
8:SA:987:U:H2'	8:SA:988:U:C6	2.51	0.45
8:SA:1417:U:OP2	8:SA:1430:G:N1	2.46	0.45
9:SB:131:ASP:HB2	9:SB:133:TYR:HD1	1.81	0.45
13:SF:114:ILE:HG23	13:SF:118:GLU:HB3	1.98	0.45
28:SU:39:LYS:HE3	28:SU:39:LYS:HB3	1.72	0.45
29:SV:83:MET:HE3	29:SV:86:THR:HG22	1.98	0.45
32:SY:58:THR:HA	32:SY:75:TRP:HZ2	1.80	0.45
34:AA:80:C:H2'	34:AA:81:C:H6	1.82	0.45
34:AA:107:C:H2'	34:AA:108:C:O4'	2.17	0.45
34:AA:504:A:O2'	34:AA:505:A:OP1	2.29	0.45
34:AA:1170:A:H2'	34:AA:1171:A:C8	2.52	0.45
34:AA:1171:A:H2'	61:AQ:22:TYR:CZ	2.52	0.45
34:AA:1484:A:H2'	34:AA:1485:A:H8	1.82	0.45
34:AA:1770:G:H1'	34:AA:1797:A:N1	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:2809:A:H5”	34:AA:2810:A:C6	2.51	0.45
34:AA:3180:C:H2’	34:AA:3181:U:H6	1.81	0.45
35:AC:124:U:H2’	35:AC:125:U:C6	2.52	0.45
36:AB:45:U:OP1	62:AR:153:THR:OG1	2.30	0.45
38:A1:9:LYS:HG3	38:A1:85:TYR:O	2.17	0.45
54:AI:123:ASP:OD1	54:AI:123:ASP:N	2.49	0.45
55:AJ:95:ASN:ND2	55:AJ:250:GLY:HA3	2.31	0.45
55:AJ:199:ASP:OD2	55:AJ:202:THR:HG23	2.17	0.45
56:Ac:61:THR:OG1	56:Ac:62:THR:N	2.50	0.45
58:AM:106:ASN:O	58:AM:109:GLY:N	2.50	0.45
68:A5:197:MET:HG2	68:A5:211:VAL:HG13	1.99	0.45
8:SA:466:A:H3’	8:SA:467:G:H8	1.82	0.45
8:SA:1245:U:H2’	8:SA:1246:U:C6	2.52	0.45
8:SA:1795:G:H2’	8:SA:1796:C:O4’	2.17	0.45
8:SA:1821:A:H2’	8:SA:1822:A:H8	1.79	0.45
9:SB:124:HIS:HA	9:SB:137:MET:O	2.17	0.45
9:SB:157:GLN:O	9:SB:161:ILE:HG12	2.17	0.45
14:SG:248:ASP:C	14:SG:248:ASP:OD1	2.59	0.45
15:SH:126:ASP:OD1	15:SH:126:ASP:N	2.50	0.45
16:SI:146:CYS:O	16:SI:150:ARG:HD3	2.16	0.45
28:SU:54:LEU:HB3	28:SU:60:ILE:CD1	2.46	0.45
34:AA:641:G:H21	34:AA:685:U:H5”	1.81	0.45
34:AA:3333:U:H2’	34:AA:3334:U:C6	2.51	0.45
34:AA:3580:G:O2’	34:AA:3582:G:OP2	2.35	0.45
35:AC:127:C:H2’	35:AC:128:C:C6	2.52	0.45
36:AB:5:U:O2’	62:AR:63:GLN:OE1	2.27	0.45
37:AL:20:HIS:CD2	51:AP:197:GLN:HE22	2.34	0.45
45:A9:36:GLN:OE1	45:A9:36:GLN:N	2.44	0.45
47:Ab:93:LYS:HA	47:Ab:93:LYS:HD3	1.71	0.45
68:A5:111:VAL:HG21	68:A5:138:ILE:HG12	1.98	0.45
71:AF:230:CYS:SG	71:AF:235:LEU:HA	2.57	0.45
74:AH:30:LYS:HE3	74:AH:31:TYR:CZ	2.52	0.45
8:SA:1379:G:H5”	11:SD:186:LYS:HE2	1.98	0.45
8:SA:1444:C:H3’	8:SA:1445:U:C6	2.52	0.45
9:SB:24:PHE:HD1	9:SB:25:THR:H	1.65	0.45
16:SI:11:PHE:HB3	16:SI:13:LYS:HE3	1.99	0.45
16:SI:86:TYR:HB3	16:SI:161:SER:OG	2.16	0.45
23:SP:142:LYS:HE3	23:SP:142:LYS:HB2	1.76	0.45
25:SR:98:GLY:HA3	25:SR:112:ILE:HG12	1.98	0.45
34:AA:378:U:H4’	34:AA:414:C:H5’	1.99	0.45
34:AA:1154:C:H2’	34:AA:1155:C:C6	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:2086:A:H2'	34:AA:2087:U:H6	1.82	0.45
34:AA:3267:C:H2'	34:AA:3268:A:H8	1.82	0.45
34:AA:3433:C:H5'	70:AE:326:ALA:HA	1.99	0.45
34:AA:3585:A:O2'	34:AA:3586:U:C6	2.69	0.45
34:AA:3688:G:H2'	34:AA:3689:C:O4'	2.17	0.45
37:AL:127:LEU:HD13	67:A3:116:ARG:HE	1.82	0.45
46:Aa:39:ALA:HB3	46:Aa:56:ALA:O	2.17	0.45
46:Aa:67:ARG:NH2	46:Aa:71:THR:HG21	2.32	0.45
47:Ab:13:ILE:HD13	47:Ab:13:ILE:HA	1.78	0.45
51:AP:155:PRO:O	51:AP:158:LYS:HG3	2.16	0.45
53:Ai:62:LYS:HE3	53:Ai:62:LYS:HB3	1.79	0.45
62:AR:278:ARG:O	62:AR:282:VAL:HG12	2.17	0.45
71:AF:150:VAL:CG1	71:AF:151:PRO:HD3	2.47	0.45
7:S7:39:A:H2'	7:S7:40:U:H6	1.82	0.44
7:S7:66:C:H2'	7:S7:67:A:C8	2.52	0.44
8:SA:1023:A:H2'	8:SA:1024:A:H8	1.79	0.44
8:SA:1037:U:H2'	8:SA:1038:C:O4'	2.17	0.44
8:SA:1170:C:H2'	8:SA:1171:U:C6	2.52	0.44
8:SA:1218:U:H2'	8:SA:1219:U:C6	2.52	0.44
8:SA:1438:A:H2'	8:SA:1439:A:O4'	2.17	0.44
8:SA:1745:U:H2'	8:SA:1746:A:H8	1.79	0.44
8:SA:1822:A:H2'	8:SA:1823:U:C6	2.52	0.44
8:SA:2067:U:P	76:Ag:25:ARG:HH12	2.40	0.44
10:SC:31:ASN:O	10:SC:34:LYS:HG2	2.17	0.44
13:SF:246:LEU:HA	13:SF:246:LEU:HD12	1.73	0.44
15:SH:11:ASN:CG	15:SH:11:ASN:O	2.60	0.44
20:SM:49:VAL:HG13	20:SM:79:ILE:CD1	2.48	0.44
25:SR:31:ASN:O	25:SR:35:HIS:ND1	2.50	0.44
26:SS:75:THR:O	26:SS:75:THR:OG1	2.28	0.44
26:SS:108:TYR:HA	26:SS:111:GLU:CG	2.48	0.44
28:SU:98:MET:HG3	28:SU:115:LEU:HD13	1.99	0.44
29:SV:155:ARG:NH1	29:SV:155:ARG:HB2	2.32	0.44
34:AA:596:A:C5	34:AA:597:A:C6	3.05	0.44
34:AA:965:A:O2'	34:AA:966:A:OP1	2.33	0.44
34:AA:1647:U:H2'	34:AA:1648:U:H6	1.82	0.44
34:AA:2482:U:H4'	52:Ah:19:GLY:HA3	1.99	0.44
34:AA:2559:U:H2'	34:AA:2560:C:C6	2.52	0.44
34:AA:3289:G:H2'	34:AA:3290:C:C6	2.52	0.44
36:AB:45:U:H2'	36:AB:46:C:C6	2.52	0.44
37:AL:144:ASP:OD2	37:AL:144:ASP:C	2.60	0.44
41:A6:76:ASP:C	41:A6:76:ASP:OD1	2.59	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:AP:125:ASP:C	51:AP:125:ASP:OD2	2.60	0.44
65:AT:114:VAL:HG23	65:AT:118:LEU:HD23	1.99	0.44
67:A3:5:LYS:HA	67:A3:5:LYS:HD3	1.78	0.44
72:AG:79:ILE:HG22	72:AG:127:PHE:CZ	2.52	0.44
1:S1:6:THR:HG23	1:S1:28:LEU:HB2	1.98	0.44
1:S1:106:ARG:O	1:S1:110:LYS:HG3	2.16	0.44
3:S3:37:LYS:HB3	3:S3:70:LYS:HZ1	1.82	0.44
3:S3:85:ARG:HH12	8:SA:1254:G:H5'	1.82	0.44
5:S5:42:ARG:HD2	5:S5:56:LEU:HD22	1.99	0.44
8:SA:412:U:H2'	8:SA:413:A:C8	2.52	0.44
8:SA:572:C:H5'	8:SA:573:C:C6	2.51	0.44
8:SA:1794:C:O2'	8:SA:1795:G:H5'	2.16	0.44
8:SA:1972:G:H2'	8:SA:1973:U:C6	2.52	0.44
10:SC:84:ARG:HH21	10:SC:88:LYS:HE3	1.82	0.44
10:SC:148:ASP:OD1	10:SC:148:ASP:C	2.59	0.44
12:SE:178:LYS:HA	12:SE:178:LYS:HD2	1.64	0.44
13:SF:204:THR:HG22	13:SF:205:TYR:N	2.30	0.44
21:SN:35:CYS:HA	21:SN:38:ILE:HG12	1.98	0.44
26:SS:75:THR:HA	26:SS:98:ILE:HD13	2.00	0.44
34:AA:393:G:H8	34:AA:393:G:OP1	2.01	0.44
34:AA:801:U:OP1	34:AA:899:A:O2'	2.27	0.44
34:AA:3016:G:C2	34:AA:3018:A:H2	2.34	0.44
34:AA:3101:A:H2'	34:AA:3102:U:C6	2.51	0.44
34:AA:3239:U:H1'	70:AE:247:ALA:HB3	1.99	0.44
34:AA:3240:C:OP1	70:AE:11:HIS:HE1	2.01	0.44
34:AA:3593:U:H2'	34:AA:3594:G:C8	2.52	0.44
40:A4:22:LYS:HB2	75:AV:84:ARG:HB2	1.98	0.44
47:Ab:58:GLU:OE2	47:Ab:93:LYS:NZ	2.46	0.44
51:AP:122:VAL:CG2	51:AP:132:GLU:HG3	2.47	0.44
55:AJ:175:SER:OG	55:AJ:176:PRO:HD3	2.18	0.44
55:AJ:276:LYS:HG3	55:AJ:277:LYS:N	2.32	0.44
68:A5:52:ASP:N	68:A5:52:ASP:OD1	2.49	0.44
75:AV:46:ASP:H	75:AV:96:HIS:CD2	2.22	0.44
77:AX:67:LYS:HD3	77:AX:67:LYS:HA	1.80	0.44
1:S1:27:ILE:CG1	1:S1:70:THR:HB	2.47	0.44
1:S1:61:PHE:HD1	1:S1:72:GLY:HA3	1.81	0.44
4:S4:35:CYS:HA	4:S4:75:CYS:HB3	2.00	0.44
8:SA:453:U:O2'	13:SF:27:TYR:O	2.34	0.44
8:SA:893:U:H2'	8:SA:894:U:O4'	2.17	0.44
8:SA:1288:U:H2'	8:SA:1289:G:C8	2.50	0.44
8:SA:1455:C:O2'	8:SA:1456:G:O5'	2.30	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:1911:A:H5”	8:SA:1912:C:C5	2.52	0.44
8:SA:2034:U:H5’	24:SQ:39:LYS:HZ3	1.82	0.44
9:SB:70:LEU:HD11	9:SB:84:ILE:HG12	2.00	0.44
10:SC:77:SER:HB2	10:SC:86:VAL:HG11	1.99	0.44
26:SS:121:LEU:HD13	31:SX:114:TYR:CD2	2.52	0.44
28:SU:69:ASN:OD1	28:SU:69:ASN:C	2.61	0.44
31:SX:82:ASN:OD1	31:SX:82:ASN:N	2.49	0.44
34:AA:132:U:H3	34:AA:146:U:H3	1.64	0.44
34:AA:1342:U:H2’	34:AA:1343:U:C6	2.53	0.44
34:AA:1548:A:H3’	34:AA:1549:U:H5”	1.98	0.44
34:AA:3582:G:OP2	34:AA:3582:G:H8	2.01	0.44
38:A1:107:LYS:O	38:A1:111:VAL:HG23	2.18	0.44
51:AP:127:VAL:HG23	51:AP:128:TYR:CD1	2.53	0.44
55:AJ:224:ASP:OD1	55:AJ:224:ASP:N	2.42	0.44
66:AZ:43:LYS:HZ3	66:AZ:122:ALA:HA	1.81	0.44
5:S5:6:LEU:HG	5:S5:29:PHE:HD1	1.81	0.44
8:SA:180:U:H2’	8:SA:181:A:H8	1.82	0.44
8:SA:1935:G:H2’	8:SA:1936:C:O4’	2.17	0.44
11:SD:24:PHE:O	11:SD:28:ILE:HG12	2.18	0.44
14:SG:147:SER:O	14:SG:149:ILE:HG23	2.17	0.44
14:SG:243:LYS:H	14:SG:243:LYS:HD3	1.82	0.44
26:SS:67:ASP:O	26:SS:70:VAL:HG22	2.17	0.44
34:AA:745:C:H2’	34:AA:746:A:H8	1.82	0.44
34:AA:1169:A:H2’	34:AA:1172:C:C5	2.53	0.44
34:AA:1483:A:H2’	34:AA:1484:A:H8	1.82	0.44
34:AA:1740:A:H5’	34:AA:1851:A:H1’	1.99	0.44
34:AA:1964:G:O2’	34:AA:1965:U:H4’	2.17	0.44
34:AA:2151:A:H2’	34:AA:2152:A:C8	2.53	0.44
34:AA:2499:G:H1’	34:AA:2501:A:H61	1.82	0.44
34:AA:2660:A:H2’	34:AA:2661:A:C8	2.53	0.44
34:AA:2884:G:OP1	69:AD:87:TYR:OH	2.14	0.44
34:AA:3263:G:H2’	34:AA:3264:U:H6	1.83	0.44
34:AA:3630:U:H2’	34:AA:3631:U:C6	2.52	0.44
38:A1:94:LYS:HE3	38:A1:94:LYS:HB3	1.69	0.44
41:A6:16:LYS:O	41:A6:20:VAL:HG12	2.17	0.44
62:AR:39:GLN:NE2	62:AR:43:LYS:HD2	2.32	0.44
70:AE:46:PHE:CE2	70:AE:81:CYS:HB3	2.51	0.44
70:AE:280:TYR:OH	70:AE:322:LYS:HG3	2.18	0.44
1:S1:56:ILE:HD11	1:S1:76:ILE:HG22	1.99	0.44
8:SA:17:C:H2’	8:SA:18:C:H6	1.81	0.44
8:SA:262:A:H3’	8:SA:263:A:H8	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:321:A:C2	8:SA:359:A:C5	3.04	0.44
8:SA:795:U:H2'	8:SA:796:A:H8	1.82	0.44
8:SA:837:A:H2'	8:SA:838:U:C6	2.52	0.44
8:SA:1072:A:O2'	8:SA:1074:A:N7	2.41	0.44
8:SA:1385:U:O4'	8:SA:1387:U:N3	2.51	0.44
8:SA:1456:G:C2	8:SA:1607:U:O2	2.69	0.44
8:SA:1698:U:H2'	8:SA:1699:A:H8	1.81	0.44
11:SD:97:LEU:N	11:SD:102:GLN:HE22	2.15	0.44
12:SE:15:PRO:O	12:SE:16:LYS:HB3	2.17	0.44
13:SF:123:LEU:HD22	13:SF:159:THR:HG22	1.99	0.44
16:SI:26:LEU:HD11	16:SI:137:ARG:NH1	2.32	0.44
19:SL:47:ARG:HH21	19:SL:51:ARG:HG2	1.83	0.44
20:SM:49:VAL:O	20:SM:52:PRO:HD2	2.17	0.44
24:SQ:128:ALA:C	24:SQ:129:ARG:HG2	2.43	0.44
28:SU:27:LYS:HA	28:SU:27:LYS:HD3	1.69	0.44
32:SY:72:ASN:HD21	32:SY:75:TRP:HB3	1.82	0.44
34:AA:302:A:H2'	34:AA:303:A:H8	1.82	0.44
34:AA:512:A:H4'	54:AI:48:ARG:NE	2.33	0.44
34:AA:671:U:H2'	34:AA:672:C:C6	2.53	0.44
34:AA:1193:G:H2'	34:AA:1194:A:H8	1.82	0.44
34:AA:1435:G:O2'	34:AA:1436:A:OP2	2.32	0.44
34:AA:2026:G:H5"	46:Aa:71:THR:HG22	1.98	0.44
34:AA:2408:G:H22	34:AA:2413:A:H1'	1.83	0.44
34:AA:2735:G:O6	34:AA:2814:U:O4	2.34	0.44
34:AA:3460:C:H2'	34:AA:3461:C:C6	2.52	0.44
36:AB:64:A:H4'	61:AQ:205:PRO:HD3	2.00	0.44
37:AL:75:THR:OG1	37:AL:78:GLU:HG2	2.17	0.44
43:AN:7:THR:O	43:AN:11:LYS:HE3	2.17	0.44
44:A8:36:ARG:O	44:A8:43:ARG:HD3	2.18	0.44
51:AP:26:ARG:HH22	55:AJ:178:GLU:CD	2.25	0.44
55:AJ:74:TYR:C	55:AJ:76:ARG:N	2.75	0.44
56:Ac:21:LEU:HD23	56:Ac:21:LEU:HA	1.74	0.44
63:AW:41:LEU:HD23	63:AW:109:VAL:HG13	1.99	0.44
65:AT:151:LYS:O	65:AT:154:ILE:HG13	2.18	0.44
68:A5:93:VAL:HG13	68:A5:145:TYR:HB2	2.00	0.44
71:AF:27:VAL:O	71:AF:30:THR:HG22	2.18	0.44
71:AF:307:LYS:HE3	71:AF:307:LYS:HB3	1.79	0.44
72:AG:18:VAL:HG13	72:AG:70:THR:HG22	1.98	0.44
1:S1:15:ASN:HD21	1:S1:18:LEU:HD23	1.83	0.44
8:SA:963:U:H2'	8:SA:964:G:C8	2.52	0.44
8:SA:1903:U:H2'	8:SA:1904:G:H8	1.81	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:SC:73:VAL:HG22	10:SC:120:LEU:HB3	1.99	0.44
11:SD:166:LYS:HA	11:SD:166:LYS:HD2	1.82	0.44
13:SF:87:MET:SD	13:SF:123:LEU:HB2	2.58	0.44
34:AA:193:C:H2'	34:AA:194:A:O4'	2.17	0.44
34:AA:404:U:H5'	66:AZ:86:ARG:HH22	1.83	0.44
34:AA:458:A:O2'	34:AA:459:G:H8	2.00	0.44
34:AA:510:A:H2'	34:AA:511:C:C6	2.53	0.44
34:AA:803:A:H1'	60:AO:57:GLY:HA2	1.98	0.44
34:AA:1671:U:OP2	64:AY:169:LYS:NZ	2.49	0.44
34:AA:2450:G:H4'	34:AA:2451:A:H5'	2.00	0.44
34:AA:2712:A:H2'	34:AA:2713:C:C6	2.53	0.44
34:AA:2828:A:H2'	34:AA:2829:U:C6	2.52	0.44
35:AC:35:A:H2'	35:AC:36:C:C6	2.53	0.44
37:AL:128:LYS:HB3	37:AL:131:LYS:HB2	2.00	0.44
39:A2:12:LEU:HD22	71:AF:34:ASN:HB3	1.99	0.44
55:AJ:164:LYS:HD2	55:AJ:164:LYS:HA	1.74	0.44
57:AK:41:ASN:OD1	57:AK:124:ARG:HD3	2.18	0.44
61:AQ:59:GLN:CD	61:AQ:126:VAL:HG11	2.43	0.44
62:AR:67:ALA:HB1	75:AV:32:LEU:HD11	2.00	0.44
1:S1:110:LYS:HG3	1:S1:110:LYS:H	1.60	0.44
5:S5:4:SER:HB3	5:S5:55:ALA:HB1	1.99	0.44
8:SA:426:A:OP1	15:SH:96:SER:OG	2.24	0.44
8:SA:1841:U:H2'	8:SA:1842:A:C8	2.53	0.44
10:SC:33:MET:HE2	10:SC:36:TYR:HD2	1.82	0.44
12:SE:153:GLU:HA	12:SE:156:ILE:HG13	2.00	0.44
16:SI:79:LYS:O	16:SI:82:ARG:HG2	2.18	0.44
16:SI:94:MET:HE2	16:SI:94:MET:HB2	1.76	0.44
20:SM:11:PHE:CZ	20:SM:88:LYS:HE2	2.53	0.44
23:SP:91:THR:O	23:SP:124:LEU:HB2	2.18	0.44
27:ST:40:CYS:HB3	27:ST:44:ARG:CZ	2.47	0.44
32:SY:46:LYS:HA	32:SY:46:LYS:HD2	1.76	0.44
34:AA:601:G:OP2	73:AU:154:ARG:NH2	2.50	0.44
34:AA:811:A:C2	60:AO:115:LYS:HD3	2.53	0.44
34:AA:890:G:H2'	34:AA:891:C:C6	2.53	0.44
34:AA:1222:U:HO2'	34:AA:1223:U:P	2.40	0.44
34:AA:1963:U:C2'	34:AA:1964:G:H5'	2.47	0.44
34:AA:2588:A:O2'	34:AA:2589:A:O5'	2.35	0.44
34:AA:2654:A:H2'	34:AA:2655:C:C6	2.52	0.44
34:AA:3173:G:OP1	71:AF:75:ARG:NH1	2.45	0.44
34:AA:3471:A:H4'	70:AE:363:GLY:HA2	1.99	0.44
54:AI:191:LYS:HB3	54:AI:192:PRO:HD3	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
62:AR:81:LYS:HE2	62:AR:81:LYS:HB3	1.85	0.44
64:AY:135:ASP:OD2	64:AY:137:ARG:HB2	2.17	0.44
69:AD:67:GLU:OE1	69:AD:67:GLU:N	2.35	0.44
71:AF:193:LYS:O	71:AF:196:MET:HG2	2.18	0.44
72:AG:74:LYS:N	72:AG:74:LYS:HD3	2.33	0.44
73:AU:49:ARG:HD2	73:AU:49:ARG:HA	1.64	0.44
73:AU:182:TYR:CZ	73:AU:184:MET:SD	3.11	0.44
77:AX:45:ASP:C	77:AX:45:ASP:OD1	2.61	0.44
4:S4:18:LYS:HB2	8:SA:1172:U:O2'	2.18	0.44
8:SA:460:G:N1	13:SF:66:ILE:HG21	2.31	0.44
8:SA:490:C:H2'	8:SA:491:A:C8	2.52	0.44
8:SA:1435:C:O2'	27:ST:53:TYR:OH	2.19	0.44
8:SA:1888:U:H2'	8:SA:1889:G:C8	2.47	0.44
8:SA:1916:C:H2'	8:SA:1917:C:C6	2.53	0.44
10:SC:92:TYR:HE2	10:SC:196:VAL:HG11	1.83	0.44
10:SC:158:ILE:HD12	10:SC:158:ILE:N	2.33	0.44
12:SE:129:ILE:HG12	12:SE:134:ILE:HD13	2.00	0.44
14:SG:128:LYS:HG2	14:SG:139:GLY:HA3	1.98	0.44
15:SH:21:GLU:O	15:SH:24:LEU:HD12	2.18	0.44
17:SJ:62:ILE:HG13	17:SJ:64:ILE:HG23	1.99	0.44
19:SL:46:VAL:HG13	19:SL:54:LYS:HB3	1.99	0.44
20:SM:101:SER:HA	20:SM:104:LYS:HE3	2.00	0.44
28:SU:34:GLU:O	28:SU:37:ILE:HG22	2.18	0.44
30:SW:102:THR:HA	30:SW:105:MET:HB3	1.98	0.44
32:SY:97:PHE:CD1	32:SY:97:PHE:C	2.95	0.44
34:AA:425:A:H2'	34:AA:426:A:H8	1.83	0.44
34:AA:687:G:H2'	34:AA:688:U:H6	1.80	0.44
34:AA:762:A:H2'	34:AA:763:U:H6	1.82	0.44
34:AA:1124:A:H2'	34:AA:1125:A:H8	1.82	0.44
34:AA:1527:U:H2'	34:AA:1528:G:C8	2.53	0.44
34:AA:1739:C:O2'	34:AA:1851:A:N3	2.46	0.44
34:AA:1872:A:N7	41:A6:87:LEU:HD12	2.33	0.44
34:AA:2037:U:N3	34:AA:2073:G:O6	2.50	0.44
34:AA:3028:A:N3	34:AA:3028:A:H2'	2.33	0.44
34:AA:3049:G:H2'	34:AA:3050:U:C6	2.52	0.44
34:AA:3292:A:O2'	34:AA:3293:A:C8	2.64	0.44
34:AA:3607:G:OP1	74:AH:21:ASN:ND2	2.47	0.44
35:AC:19:G:OP1	63:AW:123:ARG:HG3	2.18	0.44
40:A4:58:LYS:HB3	40:A4:58:LYS:HE3	1.81	0.44
52:Ah:52:VAL:O	52:Ah:68:ALA:HA	2.18	0.44
53:Ai:67:ILE:HB	53:Ai:84:MET:HB2	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:AK:87:LEU:HG	57:AK:88:PRO:HD2	2.00	0.44
68:A5:173:ARG:HB2	68:A5:216:TRP:CD2	2.52	0.44
74:AH:10:VAL:O	74:AH:53:TYR:HA	2.18	0.44
1:S1:7:ILE:HD11	1:S1:40:VAL:HG23	2.00	0.44
1:S1:8:ARG:HD3	1:S1:8:ARG:HA	1.52	0.44
8:SA:887:A:C6	8:SA:916:G:C6	3.06	0.44
8:SA:1016:U:H2'	8:SA:1017:G:H8	1.83	0.44
8:SA:1261:A:H2'	8:SA:1262:C:H6	1.82	0.44
8:SA:1271:G:C2	8:SA:1272:A:C8	3.06	0.44
8:SA:1460:A:H2'	8:SA:1461:C:C6	2.53	0.44
8:SA:1696:A:H2'	8:SA:1697:C:C6	2.52	0.44
13:SF:47:LEU:O	13:SF:51:ARG:HB2	2.18	0.44
13:SF:121:TYR:CE1	13:SF:170:LEU:HD12	2.52	0.44
14:SG:206:LYS:HA	14:SG:206:LYS:HD3	1.72	0.44
14:SG:254:GLU:OE2	14:SG:255:TRP:NE1	2.50	0.44
20:SM:130:PHE:HZ	21:SN:76:TRP:HD1	1.65	0.44
26:SS:97:ASN:OD1	26:SS:98:ILE:N	2.51	0.44
34:AA:192:G:H1	34:AA:239:U:H5	1.65	0.44
34:AA:425:A:H2'	34:AA:426:A:C8	2.53	0.44
34:AA:1205:U:O2'	34:AA:1206:U:OP2	2.30	0.44
34:AA:2005:A:H2'	34:AA:2006:A:C8	2.53	0.44
34:AA:3048:U:H2'	34:AA:3049:G:C8	2.52	0.44
34:AA:3182:G:C6	34:AA:3183:G:N7	2.86	0.44
38:A1:57:MET:HE3	38:A1:61:LYS:HE2	2.00	0.44
41:A6:23:SER:OG	41:A6:24:GLY:N	2.51	0.44
45:A9:65:ILE:HD13	45:A9:65:ILE:HA	1.75	0.44
51:AP:34:PRO:HG2	51:AP:37:HIS:HB3	1.99	0.44
53:Ai:96:LYS:HD3	53:Ai:96:LYS:HA	1.65	0.44
71:AF:188:LYS:HE2	71:AF:188:LYS:HB2	1.81	0.44
73:AU:43:ASP:N	73:AU:43:ASP:OD1	2.48	0.44
1:S1:76:ILE:C	1:S1:76:ILE:HD12	2.43	0.43
1:S1:107:ARG:HH11	1:S1:110:LYS:HD2	1.83	0.43
3:S3:15:ARG:HD2	3:S3:18:VAL:HG12	1.99	0.43
4:S4:35:CYS:HB3	4:S4:40:GLN:HE22	1.83	0.43
8:SA:573:C:H2'	8:SA:574:A:O4'	2.18	0.43
8:SA:746:U:H2'	8:SA:747:U:C6	2.53	0.43
8:SA:750:U:H2'	8:SA:751:U:C6	2.53	0.43
8:SA:803:G:H2'	8:SA:804:U:C4'	2.47	0.43
8:SA:882:A:H2'	8:SA:883:A:C8	2.53	0.43
8:SA:1188:A:H2'	8:SA:1189:A:C8	2.53	0.43
8:SA:1434:U:O2'	11:SD:167:ARG:NH2	2.51	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:2033:U:H2'	8:SA:2034:U:C6	2.53	0.43
9:SB:97:TYR:HD2	9:SB:232:HIS:CG	2.35	0.43
10:SC:146:LEU:CD2	10:SC:160:ILE:HD11	2.47	0.43
11:SD:111:LEU:HD21	11:SD:176:ALA:HB1	2.00	0.43
11:SD:128:MET:HE1	11:SD:135:CYS:HB3	2.00	0.43
14:SG:207:ASP:OD1	14:SG:207:ASP:C	2.60	0.43
20:SM:75:GLN:O	20:SM:79:ILE:HG22	2.18	0.43
22:SO:27:PHE:CZ	22:SO:84:ILE:HG23	2.53	0.43
23:SP:56:ILE:HD13	23:SP:56:ILE:HA	1.81	0.43
24:SQ:12:ALA:HB2	29:SV:102:ARG:HG3	2.00	0.43
25:SR:72:ILE:HG22	25:SR:85:MET:HE1	2.00	0.43
26:SS:23:ASP:OD1	26:SS:26:GLU:HB3	2.18	0.43
32:SY:33:ASP:HB3	32:SY:36:LEU:HD22	2.00	0.43
34:AA:278:C:O2	47:Ab:89:ARG:NH2	2.36	0.43
34:AA:609:C:H2'	34:AA:610:U:H5'	1.99	0.43
34:AA:721:U:H2'	34:AA:722:G:O4'	2.18	0.43
34:AA:1047:A:H2'	34:AA:1048:G:C8	2.52	0.43
34:AA:1219:A:N7	34:AA:1224:A:C6	2.86	0.43
34:AA:1597:U:H2'	34:AA:1598:A:C8	2.53	0.43
34:AA:1866:C:H2'	34:AA:1867:U:H6	1.82	0.43
34:AA:2936:A:H2'	34:AA:2937:G:C8	2.53	0.43
34:AA:3522:C:OP2	70:AE:31:SER:OG	2.33	0.43
34:AA:3585:A:O2'	34:AA:3586:U:P	2.76	0.43
35:AC:69:A:H2'	35:AC:70:A:H8	1.83	0.43
51:AP:76:LYS:HB2	51:AP:76:LYS:HE3	1.57	0.43
51:AP:194:LYS:O	51:AP:198:LEU:HB3	2.18	0.43
63:AW:112:LEU:HA	63:AW:112:LEU:HD23	1.82	0.43
67:A3:24:LEU:HD21	67:A3:52:ASN:HB3	2.00	0.43
70:AE:357:ASP:OD2	70:AE:359:SER:N	2.45	0.43
8:SA:844:G:H2'	8:SA:845:U:O4'	2.17	0.43
8:SA:1030:C:H5"	28:SU:71:ILE:CG2	2.48	0.43
14:SG:156:TRP:HB3	14:SG:164:HIS:NE2	2.33	0.43
26:SS:88:ARG:O	26:SS:97:ASN:ND2	2.51	0.43
28:SU:133:LYS:HE2	29:SV:149:GLN:HG2	2.00	0.43
30:SW:10:LYS:HA	30:SW:53:PHE:HE2	1.83	0.43
34:AA:225:U:H4'	66:AZ:99:HIS:CD2	2.53	0.43
34:AA:1539:U:H4'	34:AA:1540:G:OP2	2.18	0.43
34:AA:2112:G:H5'	34:AA:2113:C:H5"	1.99	0.43
34:AA:3226:C:H2'	34:AA:3227:U:H6	1.83	0.43
34:AA:3553:G:N2	34:AA:3572:A:H8	2.02	0.43
36:AB:57:C:H2'	36:AB:58:A:C8	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:AK:24:LYS:HA	57:AK:24:LYS:HD2	1.63	0.43
61:AQ:36:MET:SD	61:AQ:87:LEU:HD23	2.58	0.43
64:AY:91:PRO:HB3	64:AY:95:ARG:NH1	2.33	0.43
64:AY:150:LEU:HD23	64:AY:150:LEU:HA	1.81	0.43
65:AT:88:THR:O	65:AT:88:THR:HG23	2.18	0.43
65:AT:118:LEU:HD11	65:AT:144:GLU:HG2	2.00	0.43
66:AZ:55:VAL:O	66:AZ:66:GLU:HB2	2.18	0.43
74:AH:112:GLU:OE1	74:AH:114:ARG:NH2	2.51	0.43
75:AV:16:PHE:O	75:AV:47:SER:OG	2.29	0.43
77:AX:44:LEU:HD11	77:AX:132:PHE:CE1	2.53	0.43
4:S4:34:LYS:NZ	4:S4:40:GLN:O	2.33	0.43
7:S7:69:U:O2'	7:S7:70:A:H5'	2.18	0.43
8:SA:599:A:H2'	8:SA:600:U:O4'	2.17	0.43
8:SA:998:A:HO2'	8:SA:999:A:P	2.42	0.43
8:SA:1025:U:OP1	8:SA:1173:C:O2'	2.35	0.43
8:SA:1647:A:OP1	30:SW:56:HIS:NE2	2.52	0.43
8:SA:1904:G:H2'	8:SA:1905:C:H6	1.83	0.43
9:SB:181:LEU:O	9:SB:185:VAL:HG23	2.18	0.43
10:SC:14:ILE:HA	10:SC:17:MET:HE3	1.99	0.43
10:SC:35:ARG:HH22	33:SZ:66:ALA:HB2	1.83	0.43
13:SF:101:LEU:O	13:SF:102:LEU:HD13	2.18	0.43
13:SF:118:GLU:OE1	13:SF:121:TYR:HB3	2.18	0.43
15:SH:116:LYS:HZ3	15:SH:125:THR:HG21	1.82	0.43
15:SH:200:GLU:HA	15:SH:203:GLN:HG3	2.00	0.43
34:AA:245:U:O2'	34:AA:246:U:H5'	2.18	0.43
34:AA:293:U:H2'	34:AA:294:G:C8	2.53	0.43
34:AA:432:A:HO2'	34:AA:433:A:P	2.40	0.43
34:AA:593:A:C5	43:AN:6:LEU:HD11	2.53	0.43
34:AA:744:G:N2	34:AA:915:G:N2	2.66	0.43
34:AA:1102:U:N3	34:AA:1231:A:H2	2.17	0.43
34:AA:1114:A:OP1	75:AV:98:ARG:NH2	2.44	0.43
34:AA:1236:U:H2'	34:AA:1237:C:H6	1.84	0.43
34:AA:1539:U:C4	44:A8:103:LYS:NZ	2.76	0.43
34:AA:1876:A:OP2	65:AT:120:HIS:ND1	2.40	0.43
34:AA:2637:U:H2'	34:AA:2638:G:H8	1.83	0.43
34:AA:2832:A:O2'	34:AA:2926:A:H1'	2.17	0.43
34:AA:3281:G:C2	34:AA:3311:G:H1'	2.53	0.43
34:AA:3550:U:H2'	34:AA:3551:U:C6	2.52	0.43
34:AA:3553:G:O2'	34:AA:3572:A:N6	2.51	0.43
34:AA:3639:G:N2	34:AA:3646:G:H22	2.10	0.43
35:AC:43:G:OP2	35:AC:43:G:H8	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:AB:42:A:C4	36:AB:43:A:C8	3.06	0.43
37:AL:114:ARG:NH2	37:AL:160:ILE:O	2.52	0.43
40:A4:25:LYS:HA	40:A4:25:LYS:HD3	1.84	0.43
41:A6:76:ASP:OD1	41:A6:78:ASN:N	2.52	0.43
57:AK:67:LYS:HE2	57:AK:67:LYS:HB3	1.82	0.43
62:AR:39:GLN:HE21	62:AR:40:ASP:N	2.15	0.43
62:AR:104:LEU:CA	62:AR:246:ILE:HD11	2.48	0.43
68:A5:111:VAL:O	68:A5:115:LEU:HG	2.18	0.43
72:AG:12:ILE:CG2	72:AG:131:LEU:HD13	2.49	0.43
74:AH:12:ILE:HB	74:AH:52:LYS:HB3	2.00	0.43
74:AH:92:ARG:HD2	74:AH:92:ARG:HA	1.71	0.43
75:AV:76:LEU:HD22	75:AV:87:GLN:OE1	2.18	0.43
5:S5:13:LEU:HD11	5:S5:26:ARG:HG2	2.00	0.43
7:S7:49:C:H2'	7:S7:50:G:C8	2.54	0.43
8:SA:335:G:H2'	8:SA:336:G:H8	1.82	0.43
8:SA:389:G:OP2	13:SF:6:LYS:NZ	2.47	0.43
8:SA:995:A:H2'	8:SA:996:C:O4'	2.19	0.43
8:SA:1848:U:H2'	8:SA:1849:U:H6	1.82	0.43
8:SA:1975:U:H2'	8:SA:1976:G:O4'	2.18	0.43
10:SC:40:ARG:HA	10:SC:46:HIS:HA	1.99	0.43
11:SD:11:PHE:HA	11:SD:14:ASP:OD2	2.19	0.43
16:SI:117:THR:OG1	16:SI:118:ARG:N	2.51	0.43
19:SL:87:ASN:OD1	19:SL:87:ASN:C	2.61	0.43
20:SM:130:PHE:HZ	21:SN:76:TRP:CD1	2.36	0.43
21:SN:35:CYS:SG	21:SN:36:SER:N	2.92	0.43
21:SN:65:ARG:NH2	21:SN:74:ASN:OD1	2.51	0.43
26:SS:106:ASP:HA	26:SS:109:LEU:CD2	2.49	0.43
29:SV:24:SER:OG	29:SV:25:LYS:N	2.47	0.43
30:SW:75:GLU:HA	30:SW:78:ARG:NE	2.33	0.43
32:SY:41:TYR:HE1	32:SY:162:ILE:HG13	1.83	0.43
32:SY:45:LEU:HD23	32:SY:77:PHE:HD1	1.83	0.43
32:SY:75:TRP:O	32:SY:78:ILE:HG22	2.19	0.43
34:AA:100:A:H2'	34:AA:101:C:O2	2.18	0.43
34:AA:113:C:C2	34:AA:114:A:C8	3.07	0.43
34:AA:172:C:H2'	34:AA:173:A:C8	2.53	0.43
34:AA:1456:C:H2'	34:AA:1457:G:O4'	2.19	0.43
34:AA:2002:G:H1'	34:AA:2003:G:N7	2.33	0.43
34:AA:2029:G:O2'	34:AA:2888:U:O4	2.33	0.43
34:AA:2386:A:H2'	34:AA:2387:A:C8	2.54	0.43
34:AA:2400:A:H2	34:AA:3736:A:C8	2.35	0.43
34:AA:2516:A:H2'	34:AA:2517:A:C8	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:A1:49:HIS:CE1	38:A1:143:LYS:HA	2.53	0.43
48:Ad:67:LEU:HB3	48:Ad:73:ARG:NH2	2.34	0.43
51:AP:144:ARG:NH2	67:A3:92:LEU:O	2.52	0.43
54:AI:63:LEU:HD13	54:AI:105:VAL:HG12	2.00	0.43
61:AQ:16:PRO:HA	61:AQ:95:HIS:ND1	2.33	0.43
68:A5:54:ARG:HG3	68:A5:54:ARG:HH11	1.83	0.43
68:A5:83:CYS:HB3	75:AV:143:LYS:HD3	2.00	0.43
71:AF:33:ARG:HA	71:AF:33:ARG:HD2	1.74	0.43
77:AX:131:GLU:OE2	77:AX:133:LYS:HB2	2.19	0.43
8:SA:617:G:O2'	8:SA:620:G:O2'	2.30	0.43
8:SA:622:A:O2'	8:SA:628:A:N1	2.45	0.43
8:SA:857:A:N7	8:SA:859:A:C8	2.86	0.43
8:SA:889:A:H2'	8:SA:890:A:H8	1.84	0.43
8:SA:937:G:H2'	8:SA:938:U:C6	2.54	0.43
8:SA:1233:A:H2'	8:SA:1234:A:H8	1.82	0.43
8:SA:1306:C:H42	27:ST:14:GLN:HE22	1.65	0.43
8:SA:1629:G:H2'	8:SA:1630:A:H8	1.81	0.43
8:SA:1725:A:O2'	8:SA:1726:U:O4'	2.35	0.43
8:SA:1832:U:H4'	8:SA:1833:G:C2	2.53	0.43
8:SA:1846:U:O4	8:SA:1847:A:N6	2.48	0.43
9:SB:157:GLN:HB2	9:SB:160:GLN:HG3	2.00	0.43
9:SB:168:MET:HB2	9:SB:197:ILE:CD1	2.41	0.43
10:SC:134:LYS:HB3	10:SC:134:LYS:HE2	1.76	0.43
20:SM:74:GLY:N	20:SM:77:SER:OG	2.52	0.43
26:SS:83:ASP:O	26:SS:86:LEU:HB3	2.19	0.43
32:SY:55:LYS:HE3	32:SY:55:LYS:HB3	1.73	0.43
34:AA:46:U:O4	51:AP:85:LYS:NZ	2.51	0.43
34:AA:383:U:O4	66:AZ:71:LYS:HD3	2.18	0.43
34:AA:499:U:O4	34:AA:500:A:N6	2.51	0.43
34:AA:727:A:H2'	34:AA:728:C:C6	2.53	0.43
34:AA:1215:A:C6	34:AA:1216:C:C4	3.07	0.43
34:AA:1235:C:H2'	34:AA:1236:U:H6	1.82	0.43
34:AA:1423:G:H2'	34:AA:1424:C:C6	2.54	0.43
34:AA:2727:U:H5	34:AA:2933:C:OP2	2.01	0.43
34:AA:3359:A:H2'	34:AA:3360:U:C6	2.53	0.43
35:AC:27:U:OP2	66:AZ:15:ARG:HD3	2.18	0.43
39:A2:15:LYS:HA	39:A2:15:LYS:HD2	1.63	0.43
42:A7:80:ARG:NE	42:A7:112:LEU:HD13	2.33	0.43
52:Ah:65:CYS:HB2	69:AD:48:ILE:HD12	2.01	0.43
54:AI:135:SER:HA	54:AI:175:LYS:HD2	2.01	0.43
56:Ac:31:HIS:CG	56:Ac:34:LYS:HG2	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:AM:71:LEU:HD23	58:AM:71:LEU:HA	1.87	0.43
65:AT:104:LEU:HD21	65:AT:138:ILE:HD11	2.00	0.43
68:A5:86:ARG:NH1	75:AV:138:PRO:O	2.51	0.43
70:AE:357:ASP:OD2	70:AE:357:ASP:C	2.61	0.43
74:AH:124:PHE:C	74:AH:124:PHE:CD1	2.96	0.43
1:S1:39:GLU:HA	1:S1:42:GLU:OE1	2.18	0.43
5:S5:7:ALA:HA	5:S5:28:GLN:H	1.84	0.43
8:SA:1633:A:N7	30:SW:44:LYS:NZ	2.66	0.43
12:SE:42:ILE:HD12	12:SE:43:TRP:N	2.34	0.43
12:SE:131:GLN:C	12:SE:132:ARG:HG2	2.44	0.43
21:SN:77:ASP:OD1	21:SN:77:ASP:N	2.51	0.43
24:SQ:70:LYS:HB3	24:SQ:93:LEU:HG	2.00	0.43
26:SS:100:VAL:HG21	26:SS:108:TYR:HD2	1.82	0.43
32:SY:46:LYS:HD3	32:SY:77:PHE:CD2	2.53	0.43
34:AA:704:U:H2'	34:AA:705:C:C6	2.54	0.43
34:AA:742:U:H2'	34:AA:743:A:C8	2.53	0.43
34:AA:1423:G:OP1	73:AU:92:SER:HB2	2.18	0.43
34:AA:2445:A:H2'	34:AA:2446:U:C6	2.54	0.43
34:AA:3503:U:H4'	50:Af:28:HIS:CE1	2.53	0.43
34:AA:3736:A:H2'	34:AA:3736:A:N3	2.33	0.43
51:AP:200:LYS:HB2	51:AP:200:LYS:HE2	1.64	0.43
55:AJ:247:ARG:HH11	55:AJ:247:ARG:HG3	1.83	0.43
57:AK:1:MET:HG3	57:AK:2:TYR:CE2	2.54	0.43
68:A5:186:LEU:HB3	68:A5:191:VAL:HG12	1.99	0.43
70:AE:229:ARG:HD3	70:AE:230:TYR:CE2	2.54	0.43
72:AG:20:ASN:O	72:AG:21:ILE:HD13	2.18	0.43
77:AX:41:LYS:HD2	77:AX:91:TYR:HD2	1.82	0.43
8:SA:262:A:H3'	8:SA:263:A:C8	2.54	0.43
8:SA:758:U:N3	8:SA:790:U:O2	2.38	0.43
9:SB:59:ASP:OD1	9:SB:60:SER:N	2.51	0.43
9:SB:119:THR:HG21	9:SB:156:ALA:H	1.84	0.43
13:SF:158:ASP:OD1	13:SF:174:LYS:HA	2.18	0.43
13:SF:198:ILE:HB	13:SF:208:ILE:HG22	2.01	0.43
17:SJ:18:LYS:HA	17:SJ:18:LYS:HD2	1.81	0.43
24:SQ:30:LYS:O	24:SQ:34:LEU:HB2	2.18	0.43
24:SQ:110:SER:OG	24:SQ:111:GLY:N	2.48	0.43
25:SR:54:ALA:HB3	25:SR:75:LEU:HD13	2.01	0.43
28:SU:75:LEU:HA	28:SU:75:LEU:HD12	1.78	0.43
29:SV:159:VAL:HG12	29:SV:161:PHE:H	1.84	0.43
30:SW:98:VAL:HG22	30:SW:99:GLU:H	1.84	0.43
34:AA:432:A:H2'	34:AA:433:A:C8	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:749:U:O3'	59:AS:16:ARG:NH2	2.52	0.43
34:AA:1479:A:H8	34:AA:1480:G:O6	2.02	0.43
34:AA:1883:U:H2'	34:AA:1884:G:C8	2.54	0.43
34:AA:1975:A:N1	34:AA:1993:A:N1	2.66	0.43
34:AA:2209:C:H2'	34:AA:2210:U:C6	2.53	0.43
34:AA:3062:U:H2'	34:AA:3063:U:C6	2.54	0.43
34:AA:3594:G:H2'	34:AA:3595:U:C6	2.54	0.43
35:AC:32:C:H2'	35:AC:33:C:C6	2.54	0.43
37:AL:189:LEU:HG	60:AO:146:LEU:HD11	2.00	0.43
51:AP:121:TRP:CG	51:AP:122:VAL:N	2.87	0.43
55:AJ:114:LYS:HE2	55:AJ:114:LYS:HB2	1.81	0.43
61:AQ:129:VAL:HG22	61:AQ:130:ASP:N	2.33	0.43
66:AZ:57:ILE:HB	66:AZ:103:VAL:HG12	2.00	0.43
68:A5:70:LYS:HB3	68:A5:70:LYS:HE2	1.64	0.43
1:S1:12:TYR:OH	1:S1:21:LYS:HD2	2.19	0.43
4:S4:7:ASN:C	4:S4:7:ASN:OD1	2.62	0.43
8:SA:95:A:O2'	13:SF:4:GLY:HA3	2.18	0.43
8:SA:487:A:H2'	8:SA:488:U:C6	2.53	0.43
8:SA:520:U:H4'	12:SE:131:GLN:HB3	2.00	0.43
8:SA:540:C:H2'	8:SA:541:C:H6	1.84	0.43
8:SA:756:A:H2'	8:SA:757:A:H8	1.84	0.43
8:SA:793:G:O5'	17:SJ:104:LYS:NZ	2.49	0.43
8:SA:1219:U:H2'	8:SA:1220:C:C6	2.54	0.43
8:SA:1304:A:N1	8:SA:1850:G:N3	2.67	0.43
20:SM:138:ARG:HD3	20:SM:138:ARG:N	2.34	0.43
22:SO:27:PHE:HD1	22:SO:27:PHE:HA	1.70	0.43
27:ST:24:ASN:OD1	27:ST:25:LYS:N	2.51	0.43
32:SY:20:VAL:HG21	32:SY:24:LYS:HE3	2.01	0.43
32:SY:86:ARG:HG3	32:SY:101:GLN:HE22	1.84	0.43
34:AA:347:C:OP1	34:AA:1529:G:O2'	2.35	0.43
34:AA:740:U:H2'	34:AA:741:C:C6	2.52	0.43
34:AA:993:U:OP2	70:AE:238:LYS:NZ	2.49	0.43
34:AA:1094:U:H2'	34:AA:1095:U:C6	2.53	0.43
34:AA:1172:C:H2'	34:AA:1173:U:C6	2.54	0.43
34:AA:1748:A:O2'	34:AA:1750:U:OP2	2.37	0.43
36:AB:58:A:H2'	36:AB:59:C:C6	2.54	0.43
44:A8:63:THR:HB	44:A8:66:LEU:HD11	2.00	0.43
54:AI:48:ARG:CZ	54:AI:81:GLY:HA3	2.49	0.43
61:AQ:30:LYS:HE2	61:AQ:30:LYS:HB2	1.79	0.43
66:AZ:114:ARG:O	66:AZ:118:LEU:HG	2.19	0.43
73:AU:21:ARG:HH21	73:AU:24:PRO:HD3	1.82	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:S4:54:CYS:SG	4:S4:61:LEU:HD11	2.59	0.43
6:S6:33:ARG:HH11	12:SE:123:HIS:CD2	2.33	0.43
7:S7:57:C:H3'	7:S7:58:G:C8	2.47	0.43
8:SA:1066:G:C6	8:SA:1077:G:C6	3.07	0.43
8:SA:1295:A:HO2'	8:SA:1296:C:P	2.42	0.43
8:SA:1417:U:OP1	8:SA:1430:G:N2	2.27	0.43
8:SA:1703:U:O3'	26:SS:137:HIS:NE2	2.52	0.43
8:SA:1882:U:O2	8:SA:1883:A:H8	2.02	0.43
8:SA:2006:U:H2'	8:SA:2007:U:C6	2.54	0.43
10:SC:30:GLU:OE1	10:SC:32:LYS:N	2.37	0.43
10:SC:53:THR:HA	10:SC:161:PRO:HD2	2.00	0.43
13:SF:104:ASP:CG	13:SF:108:ARG:HG2	2.43	0.43
15:SH:131:LYS:C	15:SH:133:LEU:H	2.27	0.43
19:SL:80:ASP:OD1	19:SL:81:VAL:N	2.52	0.43
20:SM:104:LYS:O	20:SM:107:LYS:HG2	2.19	0.43
28:SU:54:LEU:HD22	28:SU:60:ILE:HD11	2.01	0.43
28:SU:115:LEU:O	28:SU:119:GLU:HG3	2.18	0.43
30:SW:75:GLU:O	30:SW:78:ARG:N	2.52	0.43
32:SY:37:PHE:HD2	32:SY:38:ILE:HD12	1.83	0.43
33:SZ:68:LEU:HD13	33:SZ:68:LEU:HA	1.87	0.43
34:AA:203:A:O5'	34:AA:203:A:H8	2.02	0.43
34:AA:301:U:H4'	47:Ab:84:LEU:HD23	2.01	0.43
34:AA:456:A:H2'	34:AA:457:A:C8	2.51	0.43
34:AA:935:A:OP2	56:Ac:31:HIS:HE1	2.01	0.43
34:AA:1026:G:OP1	34:AA:1028:G:O2'	2.34	0.43
34:AA:2834:A:H62	55:AJ:60:ARG:NH2	2.16	0.43
34:AA:2954:A:H2'	34:AA:2955:C:H6	1.83	0.43
48:Ad:3:LYS:O	48:Ad:50:TYR:HA	2.18	0.43
55:AJ:131:LYS:HD3	55:AJ:131:LYS:HA	1.92	0.43
55:AJ:265:LYS:NZ	55:AJ:269:ARG:HH12	2.16	0.43
66:AZ:47:LEU:HD12	66:AZ:48:PRO:HD2	2.00	0.43
73:AU:38:ILE:HD11	73:AU:46:ALA:HA	2.00	0.43
75:AV:70:LYS:HB2	75:AV:70:LYS:HE2	1.86	0.43
77:AX:62:GLN:O	77:AX:66:ASP:OD1	2.37	0.43
77:AX:77:LEU:C	77:AX:78:LYS:HD3	2.44	0.43
78:A0:17:GLU:HG2	78:A0:60:GLN:HB2	2.00	0.43
7:S7:74:A:N1	34:AA:3152:G:H2'	2.34	0.43
8:SA:1787:U:H1'	8:SA:1788:U:O2	2.19	0.43
11:SD:128:MET:N	11:SD:128:MET:SD	2.91	0.43
15:SH:196:LYS:HA	15:SH:199:LEU:HD12	2.01	0.43
16:SI:16:TYR:HH	16:SI:37:CYS:HG	1.61	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:SK:85:GLU:OE1	18:SK:85:GLU:N	2.47	0.43
21:SN:39:MET:SD	21:SN:39:MET:N	2.92	0.43
26:SS:88:ARG:HE	26:SS:91:ASP:CG	2.26	0.43
31:SX:21:ASP:N	31:SX:23:ASP:OD1	2.52	0.43
32:SY:93:ILE:H	32:SY:145:ARG:N	2.16	0.43
34:AA:270:U:O2'	34:AA:271:G:OP2	2.31	0.43
34:AA:1073:G:H22	34:AA:1243:G:C1'	2.32	0.43
34:AA:1216:C:O2'	34:AA:1217:U:H5'	2.19	0.43
34:AA:1467:C:H5'	44:A8:60:ASN:HA	2.00	0.43
34:AA:2441:U:H2'	34:AA:2442:A:C5	2.54	0.43
34:AA:2719:U:H2'	34:AA:2720:C:C6	2.54	0.43
34:AA:3230:G:H5"	34:AA:3231:A:H5'	2.00	0.43
34:AA:3713:C:H2'	34:AA:3714:C:H6	1.84	0.43
36:AB:18:A:H2'	36:AB:19:G:C8	2.53	0.43
38:A1:89:ASN:OD1	38:A1:90:ASP:N	2.51	0.43
43:AN:121:ASP:OD1	43:AN:121:ASP:N	2.47	0.43
44:A8:78:ASN:OD1	44:A8:78:ASN:N	2.52	0.43
47:Ab:45:LYS:HB3	47:Ab:45:LYS:HE2	1.76	0.43
61:AQ:169:ASN:O	61:AQ:178:LYS:HG2	2.19	0.43
70:AE:233:LYS:HE2	70:AE:233:LYS:HB2	1.63	0.43
70:AE:291:ALA:HB2	70:AE:302:ILE:HA	2.01	0.43
71:AF:32:ILE:HG23	71:AF:130:ALA:HB2	2.01	0.43
3:S3:58:VAL:HG13	23:SP:125:LYS:CE	2.48	0.42
4:S4:23:ILE:HD12	18:SK:55:ASP:HB3	2.00	0.42
8:SA:165:U:H4'	15:SH:135:PRO:HA	2.01	0.42
8:SA:248:G:O2'	8:SA:249:A:O4'	2.29	0.42
8:SA:331:G:H2'	8:SA:332:U:H6	1.85	0.42
8:SA:527:A:H2'	8:SA:528:A:C8	2.54	0.42
8:SA:1734:G:OP2	11:SD:8:LYS:NZ	2.52	0.42
9:SB:41:ARG:HG3	9:SB:41:ARG:NH1	2.30	0.42
9:SB:42:ASN:OD1	9:SB:42:ASN:C	2.62	0.42
10:SC:36:TYR:HB3	10:SC:161:PRO:HB3	2.01	0.42
12:SE:119:ALA:HB2	12:SE:128:LEU:HD12	2.01	0.42
14:SG:43:PRO:CB	14:SG:49:ARG:HD2	2.49	0.42
19:SL:76:THR:HG21	19:SL:104:ILE:HG23	2.01	0.42
25:SR:53:GLU:OE1	25:SR:55:LYS:HG2	2.18	0.42
34:AA:307:G:H2'	34:AA:308:U:H5'	2.00	0.42
34:AA:3535:A:H2'	34:AA:3536:C:C6	2.53	0.42
35:AC:73:A:H2'	35:AC:74:A:O4'	2.19	0.42
35:AC:107:A:H5'	35:AC:108:A:H8	1.84	0.42
37:AL:184:LEU:HB3	37:AL:187:LYS:HB3	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:A8:15:LYS:HE2	44:A8:15:LYS:HB2	1.77	0.42
48:Ad:42:LYS:HA	48:Ad:50:TYR:O	2.19	0.42
54:AI:11:TYR:HD2	54:AI:20:LEU:HD11	1.83	0.42
59:AS:98:LYS:HE3	59:AS:98:LYS:HB2	1.76	0.42
61:AQ:185:LYS:HD2	61:AQ:185:LYS:HA	1.82	0.42
67:A3:72:TYR:CE1	67:A3:79:PRO:HD3	2.53	0.42
68:A5:116:ARG:NH2	68:A5:212:ASN:O	2.52	0.42
70:AE:68:HIS:CD2	70:AE:69:LYS:HG2	2.54	0.42
71:AF:346:SER:OG	71:AF:347:ILE:N	2.50	0.42
71:AF:375:TYR:OH	73:AU:37:CYS:SG	2.60	0.42
73:AU:11:THR:OG1	73:AU:12:ASN:N	2.50	0.42
75:AV:104:GLU:O	75:AV:108:LEU:HD13	2.19	0.42
77:AX:111:ILE:HD12	77:AX:117:ARG:HA	2.01	0.42
5:S5:8:LYS:H	5:S5:28:GLN:HB3	1.84	0.42
8:SA:561:C:N4	8:SA:578:G:O6	2.51	0.42
8:SA:593:G:H2'	8:SA:594:C:C6	2.54	0.42
8:SA:963:U:H1'	23:SP:50:ARG:HH21	1.84	0.42
8:SA:1444:C:H3'	8:SA:1445:U:H6	1.83	0.42
8:SA:1445:U:O2'	21:SN:54:ARG:NH2	2.51	0.42
8:SA:1628:A:C2	21:SN:54:ARG:HD2	2.54	0.42
8:SA:1855:U:H4'	26:SS:134:ARG:HH21	1.84	0.42
10:SC:181:VAL:O	10:SC:185:LYS:HG2	2.19	0.42
13:SF:36:HIS:CG	13:SF:85:GLY:HA3	2.54	0.42
13:SF:48:LEU:CD1	13:SF:61:VAL:HG13	2.48	0.42
19:SL:114:GLU:HA	19:SL:114:GLU:OE2	2.19	0.42
21:SN:23:LEU:O	21:SN:85:LYS:HA	2.18	0.42
26:SS:111:GLU:HG2	26:SS:111:GLU:H	1.67	0.42
26:SS:134:ARG:NE	26:SS:134:ARG:HA	2.34	0.42
28:SU:106:LYS:NZ	28:SU:106:LYS:HB3	2.33	0.42
32:SY:85:ARG:O	32:SY:89:LEU:HG	2.18	0.42
34:AA:261:A:H2'	34:AA:262:A:H8	1.84	0.42
34:AA:280:U:H2'	34:AA:281:G:C8	2.55	0.42
34:AA:373:A:OP1	71:AF:86:ARG:HD3	2.19	0.42
34:AA:795:G:H2'	34:AA:796:C:C6	2.55	0.42
34:AA:876:C:H2'	34:AA:877:G:H8	1.83	0.42
34:AA:925:A:N3	34:AA:3171:C:O2'	2.49	0.42
34:AA:1073:G:H1'	40:A4:12:GLN:CD	2.44	0.42
34:AA:1545:G:H2'	34:AA:1546:A:C8	2.54	0.42
34:AA:1706:A:H8	55:AJ:73:ARG:HH12	1.66	0.42
34:AA:2112:G:C5'	34:AA:2113:C:H5"	2.50	0.42
35:AC:32:C:H2'	35:AC:33:C:H6	1.83	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:A1:8:GLY:HA3	38:A1:88:ALA:HB2	2.02	0.42
52:Ah:63:LYS:HG3	69:AD:48:ILE:HG23	2.01	0.42
54:AI:210:LEU:HD12	54:AI:210:LEU:HA	1.92	0.42
60:AO:12:ARG:HD3	60:AO:12:ARG:HA	1.73	0.42
62:AR:237:GLN:OE1	62:AR:241:ASN:ND2	2.51	0.42
70:AE:287:ASP:OD2	70:AE:287:ASP:C	2.62	0.42
72:AG:46:ILE:O	72:AG:67:CYS:HA	2.20	0.42
73:AU:166:LEU:O	73:AU:171:ARG:NH2	2.37	0.42
78:A0:49:GLN:C	78:A0:50:LYS:HZ3	2.27	0.42
6:S6:40:TYR:CG	12:SE:32:GLY:HA3	2.54	0.42
8:SA:30:G:H2'	8:SA:31:C:C6	2.55	0.42
8:SA:342:G:H1	19:SL:6:ASP:HB3	1.84	0.42
8:SA:1978:A:H8	15:SH:65:GLN:HG3	1.84	0.42
9:SB:182:LYS:HE3	9:SB:182:LYS:HB2	1.89	0.42
10:SC:128:THR:OG1	10:SC:129:ASP:OD1	2.36	0.42
15:SH:137:ARG:O	15:SH:141:ILE:HG12	2.20	0.42
18:SK:22:ARG:HD2	18:SK:22:ARG:HA	1.73	0.42
27:ST:17:ARG:NH1	27:ST:35:ASN:HB3	2.34	0.42
28:SU:94:LYS:O	28:SU:98:MET:HG2	2.19	0.42
29:SV:151:PHE:O	29:SV:157:GLN:NE2	2.53	0.42
33:SZ:65:ASP:OD1	33:SZ:66:ALA:N	2.52	0.42
34:AA:171:C:H5'	37:AL:133:LYS:HB3	2.01	0.42
34:AA:432:A:C2	34:AA:2656:A:H4'	2.55	0.42
34:AA:695:A:H2'	34:AA:696:C:C6	2.55	0.42
34:AA:716:C:N4	34:AA:717:G:O6	2.52	0.42
34:AA:1624:A:H4'	42:A7:65:LYS:HG3	2.01	0.42
34:AA:2017:U:H2'	69:AD:50:HIS:CD2	2.55	0.42
34:AA:2180:U:H1'	34:AA:2181:A:H5'	2.01	0.42
34:AA:2722:G:H2'	34:AA:2723:G:H8	1.84	0.42
34:AA:3320:G:H2'	34:AA:3321:U:H6	1.83	0.42
34:AA:3608:U:H2'	34:AA:3609:A:H8	1.84	0.42
34:AA:3626:A:H2'	34:AA:3626:A:N3	2.34	0.42
36:AB:64:A:OP1	61:AQ:203:LYS:HD3	2.19	0.42
37:AL:8:LEU:HB3	60:AO:34:LYS:HD3	2.01	0.42
53:Ai:36:SER:O	53:Ai:40:ARG:HG3	2.20	0.42
54:AI:139:THR:OG1	54:AI:141:GLU:OE1	2.18	0.42
58:AM:106:ASN:HD22	58:AM:110:GLU:CG	2.32	0.42
77:AX:125:LYS:HE2	77:AX:125:LYS:HB2	1.85	0.42
6:S6:26:LYS:HZ2	6:S6:26:LYS:HG3	1.68	0.42
6:S6:34:ALA:O	6:S6:37:ARG:HG2	2.19	0.42
8:SA:349:C:H2'	8:SA:350:A:H8	1.83	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:846:G:H2'	8:SA:847:U:C6	2.54	0.42
8:SA:1276:U:H2'	8:SA:1277:G:C8	2.55	0.42
8:SA:1635:C:O2'	30:SW:52:GLY:HA3	2.19	0.42
8:SA:1825:U:H5'	16:SI:78:LEU:HD11	2.00	0.42
10:SC:52:LYS:HE3	10:SC:52:LYS:HB3	1.73	0.42
11:SD:141:GLY:HA3	11:SD:183:LEU:HD13	2.00	0.42
14:SG:88:LEU:HD23	14:SG:88:LEU:HA	1.74	0.42
16:SI:46:ARG:HD2	16:SI:46:ARG:HA	1.69	0.42
16:SI:46:ARG:NH1	16:SI:47:TYR:H	2.17	0.42
17:SJ:84:LEU:HB3	17:SJ:92:VAL:HG11	2.01	0.42
26:SS:42:MET:HG3	26:SS:99:HIS:NE2	2.34	0.42
28:SU:40:LEU:HD22	28:SU:50:ILE:HG23	2.01	0.42
33:SZ:55:SER:OG	33:SZ:57:HIS:ND1	2.53	0.42
34:AA:92:G:H5"	34:AA:94:G:N7	2.33	0.42
34:AA:131:U:H2'	34:AA:132:U:C6	2.55	0.42
34:AA:3337:U:O2'	34:AA:3338:U:H5'	2.18	0.42
34:AA:3647:C:H2'	34:AA:3648:U:H6	1.84	0.42
43:AN:70:PRO:HD2	73:AU:9:LEU:HD21	2.01	0.42
55:AJ:99:HIS:HD2	55:AJ:245:LEU:HD13	1.84	0.42
58:AM:56:LEU:HD23	58:AM:56:LEU:HA	1.77	0.42
61:AQ:13:LYS:O	61:AQ:14:ASN:HB2	2.20	0.42
62:AR:39:GLN:HE21	62:AR:40:ASP:HB2	1.84	0.42
62:AR:210:LEU:HD13	62:AR:218:TYR:HA	2.00	0.42
68:A5:251:GLU:O	68:A5:255:ARG:HG2	2.19	0.42
71:AF:260:LEU:HD23	71:AF:260:LEU:HA	1.92	0.42
77:AX:47:THR:HA	77:AX:88:TYR:CD1	2.54	0.42
1:S1:21:LYS:CG	1:S1:76:ILE:HD11	2.44	0.42
3:S3:4:LYS:NZ	8:SA:2087:U:OP2	2.37	0.42
8:SA:965:U:H2'	8:SA:966:C:C6	2.54	0.42
8:SA:970:G:C6	8:SA:971:G:C6	3.07	0.42
8:SA:975:A:H2'	8:SA:976:A:C8	2.54	0.42
8:SA:1016:U:H2'	8:SA:1017:G:C8	2.54	0.42
8:SA:1170:C:H2'	8:SA:1171:U:H6	1.83	0.42
8:SA:1624:U:H2'	8:SA:1625:C:O4'	2.19	0.42
8:SA:1786:U:O2'	8:SA:1787:U:P	2.77	0.42
10:SC:49:ASN:HD22	10:SC:52:LYS:HD2	1.84	0.42
18:SK:31:SER:H	18:SK:34:VAL:HG22	1.83	0.42
19:SL:88:ASN:C	19:SL:88:ASN:OD1	2.62	0.42
22:SO:22:ILE:HG13	22:SO:23:TYR:N	2.35	0.42
28:SU:13:SER:OG	28:SU:14:SER:N	2.51	0.42
29:SV:147:LYS:HA	29:SV:147:LYS:HD2	1.87	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:SW:75:GLU:CD	30:SW:78:ARG:HH21	2.28	0.42
34:AA:1229:A:O5'	68:A5:164:ARG:NH2	2.44	0.42
34:AA:3008:A:H2'	34:AA:3009:G:C8	2.54	0.42
37:AL:79:LEU:HB3	37:AL:84:LEU:O	2.20	0.42
37:AL:174:ILE:HD11	60:AO:123:VAL:HG21	2.02	0.42
43:AN:81:ILE:HG13	43:AN:83:ILE:HG23	2.01	0.42
44:A8:12:LYS:HE2	44:A8:12:LYS:HB2	1.69	0.42
44:A8:63:THR:O	44:A8:63:THR:OG1	2.37	0.42
45:A9:39:ARG:NH1	54:AI:210:LEU:O	2.52	0.42
45:A9:65:ILE:HG21	45:A9:68:VAL:HG23	2.01	0.42
51:AP:68:ARG:HD2	51:AP:129:LYS:HG3	2.01	0.42
54:AI:189:LEU:HD23	54:AI:190:LEU:HG	2.01	0.42
55:AJ:223:GLU:CD	55:AJ:223:GLU:H	2.23	0.42
59:AS:8:VAL:O	59:AS:8:VAL:HG13	2.19	0.42
60:AO:24:LYS:HD2	60:AO:26:ARG:NH1	2.35	0.42
61:AQ:201:ARG:HD3	61:AQ:201:ARG:HA	1.75	0.42
64:AY:103:LYS:HB3	64:AY:103:LYS:HE3	1.77	0.42
70:AE:26:ARG:HG3	70:AE:47:MET:HE1	2.01	0.42
70:AE:280:TYR:CE1	70:AE:351:VAL:HG11	2.54	0.42
3:S3:10:ARG:HH12	8:SA:2082:A:P	2.43	0.42
3:S3:73:TYR:CZ	3:S3:83:PHE:HE2	2.38	0.42
4:S4:44:LEU:HD13	4:S4:45:PHE:N	2.35	0.42
8:SA:40:A:H2'	8:SA:41:A:O4'	2.19	0.42
8:SA:110:A:H2'	8:SA:111:G:H8	1.79	0.42
8:SA:452:A:C6	8:SA:453:U:C4	3.08	0.42
8:SA:892:U:H2'	8:SA:893:U:C6	2.54	0.42
8:SA:1098:U:H3'	8:SA:1099:A:H5"	2.01	0.42
8:SA:1246:U:H4'	14:SG:100:LYS:HZ1	1.84	0.42
8:SA:1456:G:N2	8:SA:1607:U:O2	2.52	0.42
8:SA:1803:G:H2'	8:SA:1804:C:C6	2.54	0.42
8:SA:1877:C:H2'	8:SA:1878:C:C6	2.54	0.42
12:SE:131:GLN:HB2	12:SE:133:HIS:CD2	2.54	0.42
13:SF:188:SER:HB2	13:SF:191:ARG:HD2	2.02	0.42
14:SG:114:VAL:HG21	14:SG:141:ILE:HA	2.02	0.42
21:SN:62:ILE:HG23	21:SN:79:PHE:HD1	1.85	0.42
26:SS:35:ILE:HG13	26:SS:36:LYS:H	1.84	0.42
26:SS:88:ARG:NH2	26:SS:91:ASP:OD2	2.42	0.42
30:SW:27:ASP:HB3	30:SW:30:ILE:HG12	2.01	0.42
34:AA:320:C:H2'	34:AA:321:A:C8	2.54	0.42
34:AA:670:U:H2'	34:AA:671:U:H6	1.84	0.42
34:AA:1133:A:H2'	34:AA:1134:G:H8	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:2026:G:H2'	34:AA:2027:A:O4'	2.20	0.42
34:AA:2086:A:H2'	34:AA:2087:U:C6	2.54	0.42
34:AA:2816:U:H2'	34:AA:2817:U:H6	1.83	0.42
34:AA:3022:U:H2'	34:AA:3023:C:C6	2.54	0.42
34:AA:3395:G:OP1	57:AK:60:ARG:NH1	2.52	0.42
35:AC:127:C:H2'	35:AC:128:C:H6	1.85	0.42
35:AC:145:A:HO2'	35:AC:146:C:P	2.41	0.42
36:AB:88:A:H2'	36:AB:89:G:O4'	2.19	0.42
44:A8:86:ILE:HG23	44:A8:87:MET:SD	2.60	0.42
46:Aa:7:TYR:CD2	46:Aa:12:HIS:HA	2.54	0.42
47:Ab:77:LEU:HB2	47:Ab:94:ARG:NH1	2.34	0.42
48:Ad:52:MET:HE3	48:Ad:54:PHE:CZ	2.55	0.42
48:Ad:67:LEU:HD12	48:Ad:67:LEU:HA	1.78	0.42
51:AP:96:ARG:HG2	51:AP:172:TYR:CZ	2.54	0.42
54:AI:28:THR:HG22	54:AI:36:ARG:NH2	2.32	0.42
54:AI:116:ASN:HB2	54:AI:193:GLU:OE2	2.20	0.42
56:Ac:14:ARG:HG3	56:Ac:14:ARG:NH1	2.34	0.42
56:Ac:15:ASN:N	56:Ac:15:ASN:OD1	2.52	0.42
57:AK:51:LEU:HD12	57:AK:51:LEU:HA	1.84	0.42
57:AK:153:LYS:O	57:AK:157:VAL:HG13	2.19	0.42
60:AO:105:LYS:HA	60:AO:105:LYS:HD2	1.80	0.42
62:AR:104:LEU:CB	62:AR:246:ILE:HD11	2.50	0.42
66:AZ:42:TYR:O	66:AZ:43:LYS:HD2	2.20	0.42
69:AD:34:TYR:CE1	69:AD:38:LYS:HD2	2.55	0.42
1:S1:40:VAL:O	1:S1:44:LEU:HG	2.20	0.42
7:S7:61:C:H2'	7:S7:62:C:C6	2.54	0.42
8:SA:99:C:H2'	8:SA:100:U:C6	2.55	0.42
8:SA:799:U:H5'	18:SK:121:THR:HA	2.01	0.42
8:SA:1742:A:H1'	8:SA:1789:U:O2	2.20	0.42
8:SA:1743:A:H2'	8:SA:1744:A:O4'	2.19	0.42
9:SB:156:ALA:HB3	9:SB:161:ILE:HD11	2.01	0.42
14:SG:243:LYS:H	14:SG:243:LYS:CD	2.33	0.42
15:SH:116:LYS:HA	15:SH:116:LYS:HD3	1.77	0.42
16:SI:98:ASN:HD21	16:SI:100:LEU:HB3	1.85	0.42
17:SJ:129:ASP:O	17:SJ:132:SER:HB3	2.19	0.42
19:SL:65:PHE:HA	19:SL:197:GLY:O	2.18	0.42
24:SQ:73:ARG:NH2	24:SQ:82:LYS:HB3	2.35	0.42
26:SS:18:LEU:HD11	26:SS:103:ASN:ND2	2.34	0.42
28:SU:94:LYS:HB2	28:SU:94:LYS:HE2	1.87	0.42
34:AA:403:U:O3'	66:AZ:86:ARG:NH2	2.52	0.42
34:AA:436:G:H2'	34:AA:437:A:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:681:U:O2'	71:AF:321:ASN:OD1	2.31	0.42
34:AA:1481:A:O2'	34:AA:1482:A:H5"	2.20	0.42
34:AA:1498:U:H5'	44:A8:90:THR:HG21	2.01	0.42
34:AA:1863:A:H2'	34:AA:1864:A:C8	2.55	0.42
34:AA:2640:U:H2'	34:AA:2641:A:O4'	2.20	0.42
34:AA:3053:G:N3	34:AA:3090:G:H2'	2.34	0.42
35:AC:84:G:C2	35:AC:85:A:N6	2.87	0.42
35:AC:146:C:H2'	35:AC:147:U:C6	2.54	0.42
37:AL:124:MET:HB2	37:AL:142:ASP:HA	2.01	0.42
38:A1:105:LYS:H	38:A1:105:LYS:HG2	1.61	0.42
41:A6:38:ARG:HG3	41:A6:62:TYR:HE2	1.85	0.42
61:AQ:39:LYS:HA	61:AQ:86:HIS:ND1	2.35	0.42
61:AQ:60:ILE:HD12	61:AQ:129:VAL:HG11	2.02	0.42
67:A3:58:THR:O	67:A3:62:GLN:HG3	2.19	0.42
71:AF:140:ARG:HH22	71:AF:205:ASN:HB2	1.84	0.42
73:AU:56:LYS:HE2	73:AU:56:LYS:HB2	1.92	0.42
3:S3:21:LEU:HD23	3:S3:32:LYS:HG3	2.01	0.42
8:SA:909:U:H2'	8:SA:910:A:C8	2.55	0.42
8:SA:1015:U:H2'	8:SA:1016:U:C6	2.54	0.42
8:SA:1437:U:C2	8:SA:1438:A:N7	2.88	0.42
8:SA:1826:A:C6	8:SA:1827:U:C4	3.07	0.42
8:SA:1855:U:OP1	26:SS:122:HIS:HB3	2.20	0.42
8:SA:1862:C:H5"	26:SS:41:ARG:HD3	2.02	0.42
9:SB:29:TRP:O	9:SB:94:ARG:HD2	2.20	0.42
10:SC:48:ILE:CG2	10:SC:161:PRO:HB2	2.48	0.42
10:SC:202:LEU:HD13	10:SC:203:TRP:N	2.35	0.42
12:SE:23:ARG:HD3	12:SE:27:GLU:OE2	2.19	0.42
13:SF:145:ARG:HD2	13:SF:147:ILE:HD11	2.01	0.42
13:SF:164:LEU:HD23	13:SF:164:LEU:HA	1.89	0.42
13:SF:241:GLU:OE1	13:SF:241:GLU:HA	2.19	0.42
26:SS:36:LYS:HA	26:SS:36:LYS:HD2	1.74	0.42
34:AA:124:U:H1'	34:AA:158:U:O2	2.19	0.42
34:AA:512:A:H4'	54:AI:48:ARG:HD3	2.01	0.42
34:AA:911:U:H2'	34:AA:912:U:H6	1.83	0.42
34:AA:2473:A:H2'	34:AA:2474:C:H6	1.84	0.42
34:AA:2634:A:H2'	34:AA:2635:C:C6	2.54	0.42
34:AA:2821:C:O2'	34:AA:2822:U:H5'	2.20	0.42
34:AA:3008:A:H2'	34:AA:3009:G:H8	1.84	0.42
34:AA:3145:A:H5"	53:Ai:37:LEU:HB2	2.01	0.42
34:AA:3262:A:H2'	34:AA:3263:G:O4'	2.20	0.42
34:AA:3414:G:HO2'	34:AA:3415:A:P	2.43	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:3653:G:H5”	43:AN:140:LYS:HD3	2.01	0.42
36:AB:4:C:H2’	36:AB:5:U:C6	2.55	0.42
39:A2:89:ASN:HA	39:A2:92:LYS:HG2	2.00	0.42
42:A7:51:LEU:HD23	42:A7:51:LEU:HA	1.77	0.42
46:Aa:24:ARG:H	46:Aa:24:ARG:HG2	1.71	0.42
49:Ae:7:PHE:O	49:Ae:11:GLN:HG2	2.20	0.42
55:AJ:87:ARG:CD	55:AJ:254:MET:HA	2.50	0.42
55:AJ:105:GLN:HE21	55:AJ:234:VAL:HG11	1.85	0.42
57:AK:33:VAL:HG22	57:AK:102:LYS:HB3	2.02	0.42
61:AQ:178:LYS:HG2	61:AQ:178:LYS:H	1.52	0.42
65:AT:43:LEU:HD12	65:AT:49:ILE:HD12	2.02	0.42
65:AT:59:ARG:O	65:AT:63:ARG:HD3	2.20	0.42
68:A5:186:LEU:O	68:A5:191:VAL:HG12	2.19	0.42
71:AF:218:LYS:O	71:AF:222:ARG:HG2	2.20	0.42
71:AF:361:LYS:HD3	71:AF:361:LYS:HA	1.68	0.42
1:S1:6:THR:CG2	1:S1:28:LEU:HB2	2.50	0.42
4:S4:30:PHE:CE1	28:SU:61:PRO:HG3	2.55	0.42
4:S4:54:CYS:HB2	4:S4:57:CYS:O	2.20	0.42
8:SA:421:U:H2’	8:SA:423:A:N7	2.35	0.42
8:SA:797:C:H2’	8:SA:798:U:C6	2.55	0.42
8:SA:1179:C:H2’	8:SA:1180:U:C6	2.54	0.42
8:SA:1424:A:H2’	8:SA:1425:C:C6	2.54	0.42
8:SA:1905:C:P	20:SM:124:ARG:HH12	2.42	0.42
8:SA:2061:U:O2	23:SP:150:ARG:HG2	2.20	0.42
9:SB:190:PRO:O	9:SB:195:LYS:NZ	2.53	0.42
10:SC:36:TYR:CG	10:SC:161:PRO:HG3	2.55	0.42
10:SC:48:ILE:O	30:SW:105:MET:HE1	2.20	0.42
10:SC:157:ASP:OD2	33:SZ:32:VAL:HG21	2.19	0.42
11:SD:124:LEU:O	11:SD:128:MET:HG2	2.20	0.42
14:SG:165:THR:HG21	14:SG:183:PRO:HA	2.02	0.42
17:SJ:146:ASP:OD2	17:SJ:147:GLY:N	2.53	0.42
19:SL:78:ILE:HA	19:SL:104:ILE:HD13	2.02	0.42
22:SO:27:PHE:HE2	22:SO:88:ARG:HA	1.85	0.42
27:ST:18:GLN:HB3	27:ST:25:LYS:HE2	2.01	0.42
27:ST:44:ARG:HG3	27:ST:44:ARG:NH1	2.35	0.42
30:SW:79:GLU:OE2	30:SW:79:GLU:N	2.51	0.42
34:AA:359:A:H61	49:Ae:38:ASN:HA	1.85	0.42
34:AA:607:A:O2’	34:AA:608:A:C8	2.73	0.42
34:AA:1026:G:H2’	34:AA:1045:A:H62	1.85	0.42
34:AA:3267:C:H2’	34:AA:3268:A:C8	2.55	0.42
34:AA:3524:G:H2’	34:AA:3525:A:O4’	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:3634:C:O2'	43:AN:147:ASN:HB3	2.20	0.42
36:AB:69:U:H2'	36:AB:70:G:C8	2.54	0.42
38:A1:9:LYS:HB3	38:A1:25:ILE:HD12	2.01	0.42
39:A2:2:SER:OG	39:A2:3:ASN:N	2.51	0.42
43:AN:80:ARG:NH2	43:AN:82:LYS:HD2	2.35	0.42
45:A9:66:LYS:HG3	45:A9:67:ASN:ND2	2.35	0.42
54:AI:26:LYS:HE3	54:AI:26:LYS:HB2	1.55	0.42
62:AR:152:ILE:HG21	72:AG:143:ARG:HA	2.00	0.42
64:AY:146:SER:O	64:AY:150:LEU:HB2	2.20	0.42
70:AE:283:GLY:HA3	70:AE:318:PHE:CZ	2.55	0.42
73:AU:9:LEU:HD12	73:AU:9:LEU:HA	1.72	0.42
76:Ag:36:GLN:OE1	76:Ag:36:GLN:HA	2.18	0.42
8:SA:1187:A:H2'	8:SA:1188:A:C8	2.55	0.42
8:SA:1188:A:H5'	8:SA:1400:U:O4	2.20	0.42
8:SA:1279:G:H2'	8:SA:1280:G:O4'	2.20	0.42
8:SA:1440:C:H2'	8:SA:1441:C:H6	1.84	0.42
8:SA:1729:A:C2	8:SA:1904:G:H1'	2.54	0.42
8:SA:1744:A:H61	8:SA:1785:C:N4	2.17	0.42
8:SA:1842:A:H2'	8:SA:1843:G:H8	1.84	0.42
11:SD:106:LEU:O	11:SD:109:LYS:HB3	2.20	0.42
13:SF:60:GLU:O	13:SF:64:ILE:HG13	2.19	0.42
14:SG:168:MET:O	14:SG:183:PRO:HD3	2.19	0.42
14:SG:232:LYS:HE3	14:SG:232:LYS:HB2	1.84	0.42
17:SJ:164:ASN:O	17:SJ:168:LYS:HB3	2.20	0.42
22:SO:36:LYS:HD3	22:SO:36:LYS:HA	1.79	0.42
23:SP:61:LYS:HA	23:SP:61:LYS:HD2	1.85	0.42
24:SQ:117:LEU:HD12	24:SQ:117:LEU:HA	1.88	0.42
26:SS:68:ASN:O	26:SS:72:ILE:HG12	2.20	0.42
28:SU:46:THR:O	28:SU:50:ILE:HG13	2.20	0.42
32:SY:66:ARG:NH2	32:SY:102:PHE:O	2.42	0.42
34:AA:389:U:H2'	34:AA:390:C:C6	2.55	0.42
34:AA:606:A:O2'	34:AA:607:A:H5'	2.20	0.42
34:AA:1779:A:H62	34:AA:2033:C:H2'	1.83	0.42
34:AA:1886:A:N6	52:Ah:42:CYS:HA	2.35	0.42
34:AA:2652:C:H2'	34:AA:2653:C:C6	2.55	0.42
34:AA:3166:U:O2'	34:AA:3168:C:OP1	2.32	0.42
34:AA:3301:C:OP1	34:AA:3301:C:H3'	2.20	0.42
41:A6:35:LYS:O	41:A6:39:THR:HG23	2.20	0.42
44:A8:60:ASN:OD1	44:A8:60:ASN:C	2.62	0.42
54:AI:134:ASP:O	54:AI:175:LYS:HD2	2.20	0.42
54:AI:165:LYS:O	54:AI:168:GLU:HG2	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:AK:26:LEU:HD11	57:AK:101:LEU:HB2	2.02	0.42
58:AM:20:PRO:HA	58:AM:53:ALA:HA	2.02	0.42
61:AQ:179:ASP:O	61:AQ:183:GLN:NE2	2.53	0.42
66:AZ:116:LYS:HG3	66:AZ:117:ILE:N	2.35	0.42
75:AV:66:PHE:CZ	75:AV:89:LYS:HB3	2.54	0.42
8:SA:62:A:N1	8:SA:293:U:O2'	2.51	0.41
8:SA:70:U:O2'	8:SA:71:A:H5'	2.20	0.41
8:SA:789:U:H3'	8:SA:790:U:C5	2.55	0.41
8:SA:799:U:H2'	8:SA:800:U:C6	2.55	0.41
8:SA:885:C:H2'	8:SA:886:U:C6	2.55	0.41
8:SA:1434:U:OP1	30:SW:45:ARG:NE	2.37	0.41
10:SC:204:ARG:HB3	30:SW:81:ARG:CZ	2.50	0.41
14:SG:49:ARG:O	14:SG:53:GLU:HG2	2.20	0.41
15:SH:71:ASN:OD1	15:SH:71:ASN:N	2.51	0.41
16:SI:78:LEU:HD23	16:SI:79:LYS:N	2.35	0.41
19:SL:54:LYS:HB2	19:SL:54:LYS:HE3	1.61	0.41
19:SL:69:THR:OG1	19:SL:201:GLU:OE1	2.38	0.41
20:SM:84:GLN:HA	20:SM:117:LEU:O	2.20	0.41
22:SO:74:HIS:HB3	22:SO:76:TYR:CZ	2.55	0.41
30:SW:28:PHE:CD1	30:SW:28:PHE:C	2.97	0.41
32:SY:127:LEU:HD21	32:SY:145:ARG:HG3	2.01	0.41
33:SZ:78:LEU:HG	33:SZ:80:PHE:HB2	2.02	0.41
34:AA:76:G:N7	37:AL:100:ARG:HG2	2.35	0.41
34:AA:138:C:H2'	34:AA:139:A:O4'	2.20	0.41
34:AA:279:G:H2'	34:AA:280:U:C6	2.55	0.41
34:AA:428:A:O2'	34:AA:708:A:OP1	2.22	0.41
34:AA:765:A:O2'	34:AA:766:U:H5"	2.20	0.41
34:AA:1065:U:H2'	34:AA:1066:U:C6	2.55	0.41
34:AA:1109:U:H2'	34:AA:1110:U:H6	1.85	0.41
34:AA:1725:U:H2'	34:AA:1726:C:C6	2.54	0.41
34:AA:1999:A:H2'	34:AA:2000:G:C8	2.54	0.41
34:AA:2001:U:H2'	34:AA:2002:G:O4'	2.20	0.41
34:AA:2511:G:H2'	34:AA:2512:A:H8	1.84	0.41
34:AA:2547:U:H2'	34:AA:2554:G:N2	2.35	0.41
34:AA:2559:U:H2'	34:AA:2560:C:H6	1.84	0.41
34:AA:3050:U:O2'	34:AA:3083:U:OP1	2.34	0.41
34:AA:3230:G:O2'	34:AA:3231:A:OP2	2.31	0.41
34:AA:3638:A:H2'	34:AA:3639:G:O4'	2.20	0.41
38:A1:10:VAL:HG22	38:A1:24:VAL:HG12	2.01	0.41
41:A6:17:LEU:HD23	41:A6:17:LEU:HA	1.80	0.41
55:AJ:150:LYS:HB2	55:AJ:216:CYS:SG	2.59	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
66:AZ:53:ASP:OD2	66:AZ:114:ARG:NH1	2.51	0.41
67:A3:40:SER:O	67:A3:40:SER:OG	2.34	0.41
68:A5:150:LEU:HD11	68:A5:154:ARG:NH2	2.34	0.41
71:AF:352:LYS:HA	71:AF:352:LYS:HD2	1.84	0.41
75:AV:55:PHE:CG	75:AV:56:ASN:N	2.88	0.41
78:A0:56:LEU:HD23	78:A0:56:LEU:HA	1.86	0.41
2:S2:60:THR:O	2:S2:64:ILE:HG12	2.20	0.41
4:S4:23:ILE:HD13	4:S4:23:ILE:HA	1.81	0.41
6:S6:43:ARG:NH2	12:SE:29:LYS:HE2	2.34	0.41
8:SA:255:A:H2'	8:SA:256:A:H8	1.84	0.41
8:SA:314:A:OP2	29:SV:106:ARG:NH2	2.51	0.41
8:SA:974:A:N6	8:SA:1067:A:O2'	2.53	0.41
8:SA:995:A:H2'	8:SA:996:C:C6	2.54	0.41
8:SA:1395:G:O2'	10:SC:108:THR:OG1	2.38	0.41
8:SA:2011:G:C2	8:SA:2012:G:H1'	2.55	0.41
8:SA:2072:G:H2'	8:SA:2073:A:C8	2.55	0.41
10:SC:115:PHE:HB3	10:SC:116:THR:H	1.50	0.41
11:SD:124:LEU:O	11:SD:128:MET:HE2	2.19	0.41
14:SG:118:ASP:CG	14:SG:122:HIS:HB2	2.45	0.41
14:SG:123:CYS:SG	14:SG:124:GLY:N	2.93	0.41
14:SG:168:MET:HB2	14:SG:168:MET:HE3	1.71	0.41
19:SL:29:LEU:HD12	19:SL:29:LEU:HA	1.76	0.41
19:SL:59:LYS:O	19:SL:60:LEU:HD13	2.20	0.41
20:SM:98:VAL:HG23	20:SM:99:ASP:H	1.85	0.41
20:SM:130:PHE:CZ	21:SN:76:TRP:CD1	3.08	0.41
24:SQ:90:ASP:OD2	24:SQ:90:ASP:C	2.62	0.41
34:AA:388:C:H2'	34:AA:389:U:H6	1.85	0.41
34:AA:610:U:H5"	43:AN:91:PHE:CD1	2.55	0.41
34:AA:701:C:H2'	34:AA:702:U:O2	2.20	0.41
34:AA:773:A:O2'	34:AA:774:A:P	2.78	0.41
34:AA:888:A:H4'	34:AA:889:U:O5'	2.20	0.41
34:AA:1238:C:H2'	34:AA:1239:A:O4'	2.20	0.41
34:AA:1553:U:H5'	44:A8:58:GLY:HA2	2.01	0.41
34:AA:2735:G:H2'	34:AA:2736:A:H8	1.85	0.41
34:AA:3532:A:H2'	34:AA:3533:A:C8	2.55	0.41
35:AC:69:A:C4	35:AC:70:A:C8	3.08	0.41
43:AN:59:ALA:C	43:AN:61:ILE:N	2.78	0.41
44:A8:44:ARG:H	44:A8:44:ARG:HG2	1.61	0.41
46:Aa:88:ARG:HE	46:Aa:88:ARG:HB2	1.67	0.41
56:Ac:55:LYS:O	56:Ac:59:ARG:HG2	2.20	0.41
57:AK:15:LEU:HD12	57:AK:79:LEU:HD23	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:AK:114:LYS:HE2	57:AK:114:LYS:HB3	1.81	0.41
68:A5:141:PRO:HA	68:A5:242:TRP:CD2	2.54	0.41
71:AF:291:ARG:HG2	71:AF:291:ARG:HH11	1.83	0.41
74:AH:25:VAL:HG23	74:AH:79:MET:HE1	2.01	0.41
8:SA:253:A:C8	13:SF:131:LEU:HD21	2.54	0.41
8:SA:996:C:O2	23:SP:138:ASP:HB2	2.20	0.41
8:SA:1453:G:H2'	8:SA:1454:G:C8	2.55	0.41
8:SA:1836:G:O2'	8:SA:1837:G:H5'	2.21	0.41
8:SA:1933:C:O2	8:SA:2057:A:N6	2.53	0.41
8:SA:1944:U:H2'	8:SA:1945:C:C6	2.55	0.41
9:SB:54:LYS:HD2	9:SB:54:LYS:HA	1.84	0.41
11:SD:125:ARG:O	11:SD:129:GLU:HG2	2.20	0.41
12:SE:18:PRO:HA	12:SE:23:ARG:HH22	1.86	0.41
19:SL:87:ASN:OD1	19:SL:88:ASN:N	2.53	0.41
19:SL:211:LYS:HB2	19:SL:211:LYS:HE2	1.72	0.41
28:SU:22:GLN:HE21	28:SU:26:LEU:HB3	1.85	0.41
28:SU:141:TYR:CD2	28:SU:141:TYR:O	2.73	0.41
30:SW:56:HIS:O	30:SW:60:ARG:HG2	2.20	0.41
31:SX:60:ILE:HD13	31:SX:89:MET:HG3	2.01	0.41
34:AA:910:A:H2'	34:AA:911:U:C6	2.55	0.41
34:AA:1187:A:H5'	34:AA:1189:G:H1'	2.03	0.41
34:AA:1725:U:H2'	34:AA:1726:C:H6	1.85	0.41
34:AA:1990:A:O2'	34:AA:1991:U:OP1	2.32	0.41
34:AA:2395:U:H2'	34:AA:2396:C:H6	1.85	0.41
34:AA:3460:C:C2	34:AA:3461:C:C5	3.09	0.41
34:AA:3709:U:H5"	34:AA:3710:U:H5'	2.02	0.41
37:AL:78:GLU:HG2	37:AL:78:GLU:H	1.57	0.41
39:A2:26:GLY:O	39:A2:28:LYS:N	2.54	0.41
39:A2:60:LYS:HB3	39:A2:60:LYS:HE3	1.72	0.41
47:Ab:64:LEU:HD23	47:Ab:64:LEU:HA	1.83	0.41
54:AI:115:GLU:OE1	54:AI:116:ASN:N	2.53	0.41
55:AJ:270:LYS:HA	55:AJ:270:LYS:HD3	1.82	0.41
57:AK:36:ARG:HD3	57:AK:156:GLU:OE2	2.21	0.41
60:AO:30:GLY:O	60:AO:40:HIS:HE1	2.04	0.41
62:AR:156:THR:HA	62:AR:181:ARG:HH21	1.85	0.41
68:A5:125:PHE:O	68:A5:212:ASN:ND2	2.36	0.41
69:AD:104:ILE:HG12	69:AD:162:ALA:O	2.20	0.41
69:AD:180:LEU:HA	69:AD:180:LEU:HD12	1.72	0.41
8:SA:45:U:O2'	8:SA:46:A:H2'	2.20	0.41
8:SA:478:G:OP1	12:SE:40:ARG:NH2	2.54	0.41
8:SA:594:C:H2'	8:SA:595:U:C6	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:928:U:O4'	17:SJ:115:ARG:HG3	2.20	0.41
8:SA:997:G:H4'	8:SA:998:A:H5'	2.02	0.41
8:SA:1022:A:H2'	8:SA:1023:A:H8	1.84	0.41
8:SA:1079:C:H2'	8:SA:1080:G:O4'	2.20	0.41
8:SA:1973:U:H2'	8:SA:1974:U:H6	1.85	0.41
10:SC:146:LEU:HA	10:SC:160:ILE:HD12	2.02	0.41
10:SC:148:ASP:N	10:SC:151:SER:OG	2.53	0.41
14:SG:262:TYR:CD1	14:SG:262:TYR:N	2.88	0.41
18:SK:28:ARG:HB3	18:SK:29:PRO:HD3	2.02	0.41
20:SM:11:PHE:CE1	20:SM:88:LYS:HE2	2.55	0.41
21:SN:27:ASN:OD1	21:SN:27:ASN:N	2.50	0.41
24:SQ:6:PRO:HG3	24:SQ:14:LYS:HG2	2.01	0.41
24:SQ:138:GLU:HG3	24:SQ:140:LYS:HD3	2.02	0.41
26:SS:29:ILE:HA	26:SS:32:LEU:HD23	2.02	0.41
26:SS:33:THR:HG22	26:SS:43:ALA:HB3	2.01	0.41
26:SS:82:PRO:HD2	26:SS:85:PHE:HB3	2.03	0.41
26:SS:109:LEU:HD23	26:SS:109:LEU:H	1.85	0.41
28:SU:102:LEU:HD11	28:SU:112:LYS:HA	2.02	0.41
30:SW:10:LYS:HG2	30:SW:53:PHE:CE2	2.54	0.41
32:SY:137:GLU:N	32:SY:137:GLU:OE1	2.53	0.41
33:SZ:73:TYR:CE1	33:SZ:81:GLN:HB2	2.55	0.41
34:AA:163:G:C6	34:AA:269:A:N1	2.88	0.41
34:AA:164:A:N6	34:AA:268:C:H42	2.19	0.41
34:AA:332:A:H2'	34:AA:333:A:C8	2.55	0.41
34:AA:739:G:H4'	34:AA:740:U:H6	1.81	0.41
34:AA:744:G:H22	34:AA:915:G:N2	2.18	0.41
34:AA:936:A:N7	56:Ac:17:LYS:HA	2.35	0.41
34:AA:1435:G:H1'	34:AA:1436:A:C8	2.55	0.41
34:AA:1540:G:H8	34:AA:1566:A:H62	1.66	0.41
34:AA:1805:U:O2'	34:AA:1806:C:OP1	2.27	0.41
34:AA:1866:C:H2'	34:AA:1867:U:C6	2.55	0.41
34:AA:1878:U:O2'	34:AA:1880:A:N7	2.51	0.41
34:AA:3120:U:OP2	37:AL:197:ARG:NH1	2.50	0.41
34:AA:3442:C:H5	42:A7:32:CYS:HB2	1.86	0.41
34:AA:3587:U:P	57:AK:36:ARG:HH12	2.44	0.41
34:AA:3631:U:H2'	34:AA:3632:U:O4'	2.21	0.41
35:AC:70:A:H2'	35:AC:71:U:C6	2.55	0.41
43:AN:31:CYS:SG	43:AN:45:ILE:HG13	2.61	0.41
43:AN:62:THR:O	43:AN:62:THR:OG1	2.34	0.41
53:Ai:28:LYS:HE2	53:Ai:28:LYS:HA	2.01	0.41
53:Ai:62:LYS:HD3	53:Ai:86:ARG:HH12	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:AJ:82:LYS:HG3	55:AJ:83:ILE:N	2.35	0.41
58:AM:16:THR:HG21	58:AM:85:LYS:HE3	2.03	0.41
62:AR:289:TYR:HA	62:AR:292:LYS:HB3	2.02	0.41
65:AT:169:ARG:O	65:AT:173:LYS:HG2	2.20	0.41
68:A5:117:LEU:HD23	68:A5:117:LEU:HA	1.89	0.41
1:S1:52:ASN:HD21	1:S1:54:ASN:CG	2.23	0.41
3:S3:90:GLU:CD	3:S3:90:GLU:N	2.77	0.41
8:SA:164:C:O3'	15:SH:131:LYS:HE2	2.20	0.41
8:SA:631:G:H2'	8:SA:632:C:C6	2.56	0.41
8:SA:749:U:H2'	8:SA:750:U:H6	1.84	0.41
8:SA:851:A:C5	13:SF:19:MET:SD	3.14	0.41
8:SA:971:G:H2'	8:SA:972:U:C6	2.55	0.41
8:SA:1167:U:H6	8:SA:1167:U:O5'	2.04	0.41
9:SB:139:CYS:HB3	9:SB:172:MET:HE1	2.02	0.41
9:SB:197:ILE:HD13	9:SB:197:ILE:HG21	1.86	0.41
10:SC:108:THR:O	14:SG:70:LYS:NZ	2.49	0.41
13:SF:214:ARG:HG3	13:SF:216:LYS:HE2	2.02	0.41
15:SH:178:LEU:HA	15:SH:178:LEU:HD12	1.85	0.41
20:SM:22:THR:OG1	20:SM:67:ARG:NH2	2.54	0.41
24:SQ:55:GLU:OE1	24:SQ:73:ARG:HD3	2.21	0.41
30:SW:49:LYS:HE3	30:SW:49:LYS:HB2	1.90	0.41
34:AA:184:U:H4'	34:AA:185:A:OP1	2.20	0.41
34:AA:383:U:H4'	66:AZ:94:THR:HG21	2.02	0.41
34:AA:527:A:H2'	34:AA:528:A:C8	2.56	0.41
34:AA:1072:A:H4'	34:AA:1073:G:H21	1.86	0.41
34:AA:1154:C:H2'	34:AA:1155:C:H6	1.85	0.41
34:AA:1513:U:H2'	34:AA:1514:G:C8	2.56	0.41
34:AA:1553:U:OP1	44:A8:64:LYS:NZ	2.54	0.41
34:AA:2070:U:H2'	34:AA:2071:U:C6	2.55	0.41
34:AA:2104:C:H2'	34:AA:2105:A:O4'	2.20	0.41
34:AA:2645:A:H5"	63:AW:83:TRP:O	2.20	0.41
34:AA:3619:U:H2'	34:AA:3620:C:C6	2.56	0.41
34:AA:3636:U:H2'	34:AA:3637:G:H8	1.85	0.41
34:AA:3780:A:N1	34:AA:3781:A:N6	2.66	0.41
36:AB:7:G:H5"	62:AR:22:ARG:HD3	2.03	0.41
37:AL:55:PRO:HG3	37:AL:73:GLY:O	2.20	0.41
38:A1:10:VAL:O	38:A1:83:THR:OG1	2.20	0.41
41:A6:22:LYS:HB3	41:A6:22:LYS:HE3	1.91	0.41
57:AK:127:ARG:HE	57:AK:127:ARG:HB3	1.62	0.41
61:AQ:36:MET:SD	61:AQ:87:LEU:HB3	2.61	0.41
61:AQ:66:GLU:CD	61:AQ:69:ARG:HH21	2.28	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
63:AW:47:TYR:O	63:AW:51:VAL:HG23	2.20	0.41
66:AZ:86:ARG:HG2	66:AZ:87:GLU:N	2.35	0.41
73:AU:88:LEU:HD22	73:AU:115:LEU:HD11	2.02	0.41
76:Ag:24:THR:O	76:Ag:28:GLN:HG3	2.20	0.41
1:S1:13:MET:HE2	1:S1:22:GLN:NE2	2.36	0.41
5:S5:29:PHE:CD2	5:S5:30:MET:HE1	2.56	0.41
8:SA:454:U:OP1	13:SF:29:PRO:HD3	2.20	0.41
8:SA:485:C:H2'	8:SA:486:A:C8	2.56	0.41
8:SA:967:A:N3	8:SA:968:G:H1'	2.36	0.41
8:SA:975:A:H2'	8:SA:976:A:O4'	2.20	0.41
8:SA:1178:C:H2'	8:SA:1179:C:H6	1.86	0.41
8:SA:1724:U:H2'	8:SA:1725:A:C8	2.56	0.41
8:SA:1850:G:N2	8:SA:1852:A:H3'	2.36	0.41
19:SL:75:ASN:OD1	19:SL:75:ASN:C	2.63	0.41
20:SM:12:GLY:HA3	20:SM:85:ALA:HB2	2.01	0.41
22:SO:25:TYR:CE2	22:SO:46:LEU:HD11	2.55	0.41
26:SS:100:VAL:HG21	26:SS:108:TYR:CD2	2.55	0.41
29:SV:89:ILE:HD13	29:SV:89:ILE:HA	1.83	0.41
34:AA:11:A:H1'	34:AA:1706:A:N6	2.36	0.41
34:AA:99:A:OP1	51:AP:196:ARG:HD2	2.18	0.41
34:AA:113:C:P	51:AP:148:LYS:HD3	2.61	0.41
34:AA:363:A:H2'	34:AA:364:C:O4'	2.20	0.41
34:AA:455:U:H2'	34:AA:456:A:H8	1.86	0.41
34:AA:581:C:O2'	34:AA:582:U:OP1	2.31	0.41
34:AA:1255:G:P	61:AQ:98:ARG:HH21	2.41	0.41
34:AA:1671:U:OP1	64:AY:171:TYR:OH	2.35	0.41
34:AA:2919:A:N3	34:AA:2919:A:H2'	2.36	0.41
34:AA:3286:C:H2'	34:AA:3287:C:H6	1.85	0.41
34:AA:3306:G:C2	70:AE:247:ALA:HB1	2.56	0.41
34:AA:3490:A:H2'	34:AA:3491:U:O4'	2.20	0.41
34:AA:3776:U:H2'	34:AA:3777:G:C8	2.54	0.41
54:AI:86:VAL:HG22	54:AI:88:PRO:HA	2.03	0.41
54:AI:91:ILE:HD11	54:AI:204:LEU:HD23	2.02	0.41
68:A5:168:VAL:HA	68:A5:171:TYR:CE1	2.56	0.41
1:S1:37:LYS:NZ	8:SA:529:U:OP1	2.47	0.41
1:S1:90:TYR:CZ	1:S1:91:ARG:HG2	2.56	0.41
5:S5:15:ARG:NE	8:SA:1913:G:H4'	2.35	0.41
8:SA:533:A:H2'	8:SA:534:A:O4'	2.21	0.41
8:SA:572:C:H4'	8:SA:573:C:H5"	2.03	0.41
8:SA:832:A:C8	8:SA:833:A:C2	3.09	0.41
8:SA:944:G:OP1	9:SB:158:THR:N	2.43	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:1247:G:H2'	8:SA:1248:A:H8	1.85	0.41
8:SA:1295:A:O2'	8:SA:1296:C:OP1	2.32	0.41
8:SA:1394:U:O2	10:SC:109:ASN:ND2	2.48	0.41
8:SA:1784:A:H2'	8:SA:1785:C:C6	2.56	0.41
8:SA:1922:C:H2'	8:SA:1923:U:H6	1.86	0.41
10:SC:50:LEU:HA	10:SC:53:THR:OG1	2.20	0.41
13:SF:86:LEU:HA	13:SF:109:PHE:CE1	2.55	0.41
13:SF:211:LYS:HD3	13:SF:211:LYS:HA	1.88	0.41
17:SJ:66:TYR:HB2	17:SJ:97:LYS:O	2.21	0.41
17:SJ:137:ILE:HD13	17:SJ:137:ILE:HA	1.81	0.41
17:SJ:166:GLU:O	17:SJ:170:ILE:HG12	2.20	0.41
26:SS:113:LEU:O	26:SS:117:LYS:HG2	2.21	0.41
34:AA:596:A:OP2	74:AH:55:LYS:NZ	2.47	0.41
34:AA:897:U:OP1	40:A4:33:LYS:NZ	2.51	0.41
34:AA:965:A:HO2'	34:AA:966:A:P	2.43	0.41
34:AA:1631:A:N6	34:AA:2134:A:H5'	2.35	0.41
34:AA:1727:U:H2'	34:AA:1728:C:C6	2.56	0.41
34:AA:1814:U:H2'	34:AA:1815:A:H8	1.84	0.41
34:AA:1854:U:H5"	34:AA:1855:U:OP2	2.21	0.41
34:AA:2034:G:H2'	34:AA:2035:G:C8	2.56	0.41
34:AA:3550:U:H2'	34:AA:3551:U:H6	1.84	0.41
35:AC:47:G:H4'	56:Ac:25:CYS:O	2.21	0.41
41:A6:54:ILE:HD11	46:Aa:91:ARG:HB2	2.03	0.41
52:Ah:63:LYS:HE2	52:Ah:63:LYS:HB3	1.71	0.41
57:AK:27:LEU:HD23	57:AK:27:LEU:HA	1.91	0.41
58:AM:98:GLU:OE1	78:A0:31:ARG:N	2.54	0.41
59:AS:114:ASP:N	59:AS:114:ASP:OD1	2.53	0.41
59:AS:157:LYS:HE3	60:AO:47:LYS:HE3	2.03	0.41
61:AQ:93:PRO:HA	61:AQ:127:ALA:HA	2.03	0.41
4:S4:20:LYS:HE2	4:S4:20:LYS:HB3	1.82	0.41
7:S7:71:C:H2'	7:S7:72:C:O4'	2.20	0.41
8:SA:70:U:H2'	8:SA:71:A:H8	1.85	0.41
8:SA:248:G:H2'	8:SA:249:A:C8	2.55	0.41
8:SA:346:U:H2'	8:SA:347:A:C8	2.55	0.41
8:SA:617:G:H2'	8:SA:621:C:C5	2.56	0.41
8:SA:809:U:P	12:SE:7:ASN:HD21	2.43	0.41
8:SA:1233:A:H2'	8:SA:1234:A:C8	2.55	0.41
8:SA:1647:A:OP1	30:SW:60:ARG:NH1	2.54	0.41
10:SC:28:ASN:OD1	10:SC:28:ASN:N	2.54	0.41
12:SE:100:THR:OG1	12:SE:102:PRO:HD2	2.21	0.41
17:SJ:43:LYS:HA	17:SJ:43:LYS:HD3	1.82	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:SJ:69:TYR:CG	17:SJ:96:ALA:HB2	2.55	0.41
19:SL:74:LYS:HG2	19:SL:108:PRO:HB2	2.02	0.41
23:SP:105:SER:C	23:SP:106:LYS:HD3	2.46	0.41
31:SX:57:LEU:O	31:SX:60:ILE:HG22	2.20	0.41
34:AA:209:G:H2'	34:AA:210:C:H6	1.86	0.41
34:AA:1467:C:C5'	44:A8:60:ASN:HA	2.50	0.41
34:AA:1532:U:H5"	71:AF:242:PRO:HB2	2.02	0.41
34:AA:1546:A:H2'	34:AA:1547:A:O4'	2.20	0.41
34:AA:1765:A:H2'	34:AA:1766:U:H6	1.85	0.41
35:AC:75:A:OP2	66:AZ:50:ARG:NH2	2.54	0.41
37:AL:157:LEU:HD23	67:A3:121:VAL:HG13	2.03	0.41
38:A1:58:THR:HG23	38:A1:61:LYS:HB3	2.03	0.41
39:A2:59:LEU:HA	39:A2:64:VAL:HA	2.03	0.41
44:A8:40:CYS:SG	44:A8:40:CYS:O	2.79	0.41
48:Ad:45:THR:OG1	48:Ad:48:TYR:O	2.33	0.41
51:AP:13:LYS:HA	51:AP:13:LYS:HD3	1.73	0.41
52:Ah:23:ARG:HA	52:Ah:26:ILE:HG22	2.01	0.41
54:AI:190:LEU:HD23	54:AI:190:LEU:HA	1.87	0.41
54:AI:220:LYS:HE3	54:AI:220:LYS:HB3	1.75	0.41
60:AO:134:GLU:O	60:AO:138:LYS:HG3	2.20	0.41
62:AR:49:LEU:H	62:AR:49:LEU:HD22	1.86	0.41
62:AR:222:PHE:HB3	62:AR:225:TYR:HB2	2.02	0.41
63:AW:140:MET:HE3	63:AW:140:MET:HB3	1.90	0.41
66:AZ:47:LEU:HD12	66:AZ:47:LEU:HA	1.80	0.41
73:AU:91:ASP:HA	73:AU:96:THR:HA	2.03	0.41
1:S1:106:ARG:C	1:S1:110:LYS:HE3	2.45	0.41
3:S3:85:ARG:NH1	8:SA:1254:G:H5'	2.36	0.41
8:SA:158:C:O3'	15:SH:95:LYS:NZ	2.54	0.41
8:SA:183:C:H2'	8:SA:184:C:C6	2.56	0.41
8:SA:246:A:H2'	8:SA:247:G:C8	2.56	0.41
8:SA:806:A:C4	8:SA:807:A:C8	3.09	0.41
8:SA:923:U:H3'	8:SA:924:A:H3'	2.02	0.41
8:SA:1303:A:O2'	8:SA:1308:C:N4	2.54	0.41
8:SA:1306:C:O2'	8:SA:1307:U:OP1	2.35	0.41
8:SA:1413:U:HO2'	8:SA:1414:A:P	2.43	0.41
8:SA:1651:C:C2	8:SA:1652:A:C8	3.09	0.41
8:SA:1733:A:H2'	8:SA:1734:G:O4'	2.21	0.41
8:SA:1829:U:H2'	8:SA:1830:C:O4'	2.20	0.41
8:SA:1862:C:H2'	8:SA:1863:U:C6	2.56	0.41
8:SA:1947:U:H2'	8:SA:1948:A:H8	1.85	0.41
8:SA:2065:C:H2'	8:SA:2066:G:C8	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:SB:26:LYS:HG2	9:SB:50:LYS:NZ	2.36	0.41
10:SC:125:ASP:OD1	10:SC:127:ARG:N	2.53	0.41
11:SD:127:ILE:HB	11:SD:128:MET:HE2	2.03	0.41
14:SG:174:CYS:SG	14:SG:224:ARG:HG2	2.60	0.41
16:SI:11:PHE:O	16:SI:13:LYS:HG3	2.21	0.41
19:SL:104:ILE:HD13	19:SL:104:ILE:HA	1.78	0.41
20:SM:23:VAL:HG13	20:SM:66:ILE:HG12	2.03	0.41
23:SP:78:ALA:HB3	23:SP:118:ALA:HB3	2.03	0.41
34:AA:300:C:H2'	34:AA:301:U:O4'	2.21	0.41
34:AA:351:U:O4'	71:AF:97:ARG:NH1	2.54	0.41
34:AA:543:U:H6	34:AA:581:C:H3'	1.84	0.41
34:AA:709:A:H5"	57:AK:92:TYR:CD2	2.56	0.41
34:AA:762:A:H2'	34:AA:763:U:C6	2.54	0.41
34:AA:776:A:O2'	34:AA:777:U:H5'	2.21	0.41
34:AA:868:U:H2'	34:AA:869:A:C8	2.55	0.41
34:AA:1083:G:H2'	34:AA:1084:A:H8	1.82	0.41
34:AA:1270:G:OP2	34:AA:1272:U:O2'	2.32	0.41
34:AA:1274:A:H4'	34:AA:1459:U:C4	2.56	0.41
34:AA:1285:U:O2'	34:AA:1297:A:N3	2.47	0.41
34:AA:1530:G:H2'	34:AA:1531:G:H8	1.85	0.41
34:AA:1763:G:H2'	34:AA:1764:U:H6	1.86	0.41
34:AA:2697:A:N7	34:AA:3231:A:N6	2.69	0.41
34:AA:2834:A:H62	55:AJ:60:ARG:NE	2.18	0.41
34:AA:2884:G:OP2	46:Aa:91:ARG:HD3	2.21	0.41
34:AA:2999:C:H2'	34:AA:3000:A:C8	2.56	0.41
34:AA:3017:A:H2'	34:AA:3018:A:O4'	2.21	0.41
34:AA:3413:A:HO2'	34:AA:3414:G:P	2.44	0.41
34:AA:3427:U:H2'	34:AA:3428:U:C6	2.56	0.41
35:AC:30:U:O2'	71:AF:53:ALA:O	2.36	0.41
35:AC:51:C:H1'	35:AC:65:A:H2'	2.03	0.41
35:AC:124:U:H2'	35:AC:125:U:H6	1.86	0.41
35:AC:148:C:O2	51:AP:113:ASN:ND2	2.54	0.41
38:A1:87:VAL:O	38:A1:91:PHE:HB3	2.20	0.41
45:A9:66:LYS:HA	57:AK:2:TYR:CE2	2.56	0.41
47:Ab:96:GLU:HG3	47:Ab:97:ILE:N	2.35	0.41
48:Ad:38:ILE:HD12	48:Ad:38:ILE:O	2.20	0.41
51:AP:79:ILE:HG13	51:AP:80:VAL:N	2.35	0.41
51:AP:120:TYR:CZ	51:AP:132:GLU:HB2	2.56	0.41
51:AP:197:GLN:OE1	51:AP:197:GLN:C	2.64	0.41
61:AQ:74:LYS:HE3	61:AQ:74:LYS:HB3	1.84	0.41
62:AR:48:LYS:HD2	62:AR:147:PHE:CE2	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
63:AW:92:LEU:HD23	63:AW:92:LEU:HA	1.82	0.41
64:AY:141:LYS:HE2	64:AY:141:LYS:HB3	1.96	0.41
64:AY:164:LEU:HD23	64:AY:164:LEU:HA	1.88	0.41
66:AZ:62:ASN:HB3	66:AZ:65:ARG:HD3	2.03	0.41
68:A5:81:ASN:HB2	68:A5:83:CYS:SG	2.60	0.41
68:A5:228:LYS:HA	68:A5:228:LYS:HD3	1.66	0.41
68:A5:249:ILE:O	68:A5:253:ILE:HD12	2.21	0.41
70:AE:215:ILE:HG13	70:AE:273:THR:HG23	2.02	0.41
71:AF:328:LEU:HD23	71:AF:328:LEU:HA	1.95	0.41
72:AG:74:LYS:O	72:AG:78:GLU:HG3	2.21	0.41
74:AH:74:THR:HA	74:AH:77:LYS:HG2	2.02	0.41
74:AH:87:PHE:CE2	74:AH:150:ILE:HB	2.55	0.41
1:S1:89:LYS:HA	1:S1:92:LEU:HD12	2.03	0.41
2:S2:99:LYS:HD2	2:S2:100:LEU:O	2.21	0.41
7:S7:60:U:H2'	7:S7:61:C:C6	2.56	0.41
8:SA:139:A:H2'	8:SA:139:A:N3	2.35	0.41
8:SA:346:U:H2'	8:SA:347:A:H8	1.86	0.41
8:SA:1017:G:H2'	8:SA:1018:U:H6	1.85	0.41
8:SA:1037:U:OP1	8:SA:1102:C:O2'	2.39	0.41
8:SA:1109:G:H4'	10:SC:31:ASN:ND2	2.36	0.41
8:SA:1376:A:C2	8:SA:1684:G:C4	3.09	0.41
8:SA:2005:U:H2'	8:SA:2006:U:C6	2.55	0.41
12:SE:59:LEU:HD13	12:SE:59:LEU:HA	1.90	0.41
13:SF:42:ILE:O	13:SF:84:VAL:HG22	2.20	0.41
13:SF:103:TYR:HB2	13:SF:182:MET:HE3	2.02	0.41
15:SH:64:ILE:HD12	15:SH:64:ILE:H	1.86	0.41
18:SK:30:SER:HB3	18:SK:59:GLY:O	2.21	0.41
19:SL:66:SER:O	19:SL:68:PRO:HD3	2.21	0.41
20:SM:46:LYS:HA	20:SM:49:VAL:HG22	2.03	0.41
20:SM:56:ILE:HG23	20:SM:106:LEU:HD13	2.03	0.41
20:SM:58:SER:O	20:SM:62:LYS:HG2	2.21	0.41
23:SP:75:MET:HE2	23:SP:75:MET:HB3	1.98	0.41
28:SU:43:LYS:HE3	28:SU:43:LYS:HB3	1.90	0.41
28:SU:76:ARG:O	28:SU:79:GLY:N	2.46	0.41
29:SV:19:ALA:HA	29:SV:37:TYR:HB2	2.03	0.41
32:SY:61:LYS:HZ3	32:SY:67:LYS:HD2	1.86	0.41
34:AA:179:G:C6	34:AA:180:C:C4	3.09	0.41
34:AA:237:A:H2'	34:AA:238:G:O4'	2.20	0.41
34:AA:285:U:H2'	34:AA:286:U:C6	2.56	0.41
34:AA:939:A:H2'	34:AA:940:A:C8	2.56	0.41
34:AA:1115:G:N3	34:AA:2976:A:H2'	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:1235:C:H2'	34:AA:1236:U:C6	2.55	0.41
34:AA:1523:A:H2'	34:AA:1524:U:O4'	2.20	0.41
34:AA:3435:A:O2'	70:AE:55:HIS:ND1	2.42	0.41
34:AA:3693:A:H2'	34:AA:3694:A:H8	1.82	0.41
36:AB:4:C:H2'	36:AB:5:U:H6	1.86	0.41
38:A1:49:HIS:CG	38:A1:143:LYS:HB2	2.56	0.41
38:A1:76:ASN:OD1	38:A1:79:HIS:ND1	2.54	0.41
43:AN:116:ILE:O	43:AN:120:ARG:HB2	2.20	0.41
46:Aa:87:GLU:OE1	46:Aa:88:ARG:N	2.55	0.41
50:Af:33:ASN:ND2	50:Af:41:ARG:O	2.48	0.41
59:AS:16:ARG:NH1	59:AS:53:ILE:O	2.54	0.41
64:AY:138:ALA:O	64:AY:168:LYS:HE3	2.21	0.41
69:AD:122:ASN:C	69:AD:123:ARG:HG2	2.46	0.41
70:AE:66:LYS:HD3	70:AE:66:LYS:HA	1.80	0.41
71:AF:128:ILE:HD11	71:AF:235:LEU:HD11	2.03	0.41
74:AH:44:ASP:OD1	74:AH:44:ASP:N	2.53	0.41
1:S1:63:THR:O	1:S1:63:THR:HG22	2.21	0.40
7:S7:9:G:H1'	7:S7:43:C:H2'	2.03	0.40
8:SA:14:U:H2'	8:SA:15:U:C6	2.56	0.40
8:SA:334:A:H2'	8:SA:335:G:O4'	2.21	0.40
8:SA:352:G:H5'	29:SV:82:LYS:HD3	2.02	0.40
8:SA:414:C:C2	8:SA:415:C:C5	3.08	0.40
8:SA:543:A:H5'	8:SA:544:G:OP2	2.21	0.40
8:SA:644:U:O2	17:SJ:115:ARG:NH2	2.32	0.40
8:SA:1397:A:OP1	10:SC:138:TYR:OH	2.26	0.40
8:SA:1669:C:H5"	11:SD:154:ARG:NH2	2.37	0.40
10:SC:125:ASP:OD1	10:SC:125:ASP:C	2.63	0.40
13:SF:121:TYR:HE1	13:SF:170:LEU:HD12	1.85	0.40
13:SF:252:ARG:HA	13:SF:252:ARG:HD2	1.69	0.40
15:SH:153:VAL:HA	15:SH:156:TYR:CD2	2.56	0.40
16:SI:22:ALA:HB3	16:SI:27:VAL:HG23	2.03	0.40
25:SR:25:ILE:HD12	25:SR:87:GLN:HA	2.03	0.40
28:SU:33:ILE:HD11	28:SU:60:ILE:HG21	2.04	0.40
28:SU:54:LEU:HA	28:SU:54:LEU:HD23	1.83	0.40
34:AA:160:G:C6	34:AA:161:U:C4	3.10	0.40
34:AA:625:A:H2'	34:AA:626:A:C8	2.56	0.40
34:AA:1086:C:C2	34:AA:1087:G:C8	3.09	0.40
34:AA:1236:U:H2'	34:AA:1237:C:C6	2.56	0.40
34:AA:1245:G:H2'	34:AA:1246:C:C6	2.55	0.40
34:AA:2515:A:H2'	34:AA:2516:A:C8	2.56	0.40
34:AA:3255:A:H5"	50:Af:19:ILE:HD12	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:3757:U:H2'	34:AA:3758:G:C8	2.56	0.40
39:A2:106:LYS:HB2	39:A2:106:LYS:HE2	1.87	0.40
40:A4:55:LYS:HE3	40:A4:55:LYS:HB3	1.98	0.40
42:A7:84:GLU:HG2	42:A7:86:LYS:HD3	2.04	0.40
43:AN:88:LYS:HE2	43:AN:88:LYS:HB2	1.85	0.40
46:Aa:94:LEU:O	46:Aa:98:GLN:HG2	2.21	0.40
54:AI:11:TYR:HE2	54:AI:20:LEU:HD21	1.87	0.40
54:AI:179:LEU:HD23	54:AI:179:LEU:HA	1.88	0.40
55:AJ:168:VAL:O	55:AJ:194:TYR:HA	2.21	0.40
61:AQ:193:ASP:HB2	61:AQ:198:LYS:HG3	2.03	0.40
68:A5:249:ILE:HD12	68:A5:249:ILE:HA	1.92	0.40
71:AF:228:ASP:CG	71:AF:248:ARG:HH22	2.29	0.40
71:AF:324:VAL:HG23	71:AF:327:ARG:NH1	2.36	0.40
71:AF:342:ARG:NH1	71:AF:342:ARG:HB2	2.36	0.40
1:S1:76:ILE:HD12	1:S1:76:ILE:O	2.21	0.40
3:S3:55:GLU:OE1	3:S3:55:GLU:C	2.64	0.40
8:SA:1458:G:H2'	8:SA:1459:U:C6	2.56	0.40
8:SA:1718:C:H41	8:SA:1833:G:H1	1.70	0.40
8:SA:1832:U:O2'	8:SA:1833:G:N2	2.55	0.40
10:SC:59:LEU:CD2	33:SZ:78:LEU:HD13	2.51	0.40
11:SD:178:LEU:HD13	11:SD:179:LYS:N	2.35	0.40
13:SF:153:ASP:OD1	13:SF:153:ASP:N	2.46	0.40
14:SG:124:GLY:HA2	14:SG:227:PHE:HE2	1.85	0.40
15:SH:18:ILE:HD11	15:SH:24:LEU:HD23	2.02	0.40
15:SH:27:PHE:HZ	15:SH:41:ILE:HD11	1.85	0.40
18:SK:104:LEU:HD13	18:SK:123:GLY:H	1.86	0.40
18:SK:126:LEU:HD23	18:SK:126:LEU:HA	1.84	0.40
20:SM:117:LEU:HD23	20:SM:117:LEU:HA	1.91	0.40
26:SS:98:ILE:O	26:SS:100:VAL:HG13	2.21	0.40
28:SU:33:ILE:HG13	28:SU:66:VAL:HG11	2.04	0.40
31:SX:80:LEU:O	31:SX:83:MET:HE1	2.20	0.40
31:SX:107:ILE:HD12	31:SX:108:LYS:H	1.86	0.40
34:AA:178:U:H2'	34:AA:179:G:C8	2.56	0.40
34:AA:431:G:O6	34:AA:2676:C:O2'	2.25	0.40
34:AA:514:C:H2'	34:AA:515:A:C8	2.56	0.40
34:AA:1102:U:C4	34:AA:1231:A:H2	2.40	0.40
34:AA:1162:U:H2'	34:AA:1163:A:C8	2.56	0.40
34:AA:1628:U:O4	34:AA:1629:G:N1	2.54	0.40
34:AA:2193:U:O2'	34:AA:2195:G:N7	2.53	0.40
34:AA:3009:G:H2'	34:AA:3010:A:C8	2.56	0.40
43:AN:10:GLU:O	43:AN:14:ILE:HB	2.20	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:A8:61:LYS:H	44:A8:61:LYS:HG2	1.62	0.40
45:A9:135:MET:HE3	54:AI:216:LEU:HD21	2.03	0.40
46:Aa:14:ASN:O	46:Aa:14:ASN:CG	2.64	0.40
48:Ad:19:ASP:OD2	48:Ad:46:LYS:N	2.48	0.40
48:Ad:56:ASP:OD2	48:Ad:59:LYS:HB3	2.21	0.40
54:AI:48:ARG:HE	54:AI:48:ARG:HB2	1.67	0.40
54:AI:191:LYS:HA	54:AI:191:LYS:HD2	1.92	0.40
54:AI:195:LEU:HD23	54:AI:195:LEU:HA	1.82	0.40
57:AK:149:ASP:O	57:AK:153:LYS:HG2	2.21	0.40
59:AS:29:LEU:HD23	59:AS:29:LEU:HA	1.90	0.40
59:AS:97:LEU:HD23	59:AS:97:LEU:HA	1.80	0.40
60:AO:125:LYS:HG2	60:AO:145:ILE:HB	2.02	0.40
64:AY:105:LEU:HD23	64:AY:105:LEU:HA	1.89	0.40
64:AY:139:ASN:H	64:AY:142:ASN:HB2	1.86	0.40
1:S1:47:MET:HE1	8:SA:831:U:C6	2.56	0.40
1:S1:115:ARG:O	1:S1:115:ARG:HG3	2.21	0.40
7:S7:2:G:N1	7:S7:70:A:C2	2.89	0.40
7:S7:49:C:H2'	7:S7:50:G:H8	1.84	0.40
8:SA:291:A:HO2'	8:SA:292:G:P	2.42	0.40
8:SA:609:U:H2'	8:SA:610:U:C6	2.57	0.40
8:SA:1267:C:H2'	8:SA:1268:G:O4'	2.20	0.40
8:SA:1277:G:C6	8:SA:1710:G:C6	3.09	0.40
8:SA:1304:A:N1	8:SA:1850:G:C2	2.90	0.40
8:SA:1661:U:O4	8:SA:1662:A:N6	2.54	0.40
8:SA:1816:U:OP2	32:SY:100:ARG:NH2	2.54	0.40
10:SC:119:ARG:CZ	14:SG:253:GLU:HB3	2.51	0.40
10:SC:142:PRO:HB3	33:SZ:34:ILE:HD11	2.02	0.40
12:SE:133:HIS:ND1	12:SE:162:SER:HB2	2.36	0.40
13:SF:247:ASP:OD1	13:SF:248:ILE:N	2.52	0.40
15:SH:77:PHE:HA	15:SH:81:MET:SD	2.61	0.40
16:SI:54:LYS:HD2	16:SI:62:ARG:NH1	2.37	0.40
17:SJ:159:GLU:OE1	17:SJ:165:ILE:HA	2.21	0.40
22:SO:85:GLU:H	22:SO:85:GLU:HG3	1.75	0.40
27:ST:51:LYS:HE3	27:ST:51:LYS:HB3	1.95	0.40
31:SX:103:THR:HG22	31:SX:118:GLU:HB3	2.03	0.40
34:AA:145:U:H2'	34:AA:146:U:C5	2.56	0.40
34:AA:176:A:H2'	34:AA:177:A:H8	1.86	0.40
34:AA:501:U:O2'	34:AA:502:U:P	2.79	0.40
34:AA:1175:C:H2'	34:AA:1176:C:O4'	2.21	0.40
34:AA:1193:G:H2'	34:AA:1194:A:C8	2.56	0.40
34:AA:1736:A:HO2'	34:AA:1737:A:P	2.41	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:2450:G:C4	69:AD:150:LEU:HD23	2.57	0.40
34:AA:2686:G:OP1	70:AE:245:LYS:HD2	2.21	0.40
34:AA:2950:U:H2'	34:AA:2951:U:H6	1.85	0.40
34:AA:3009:G:H2'	34:AA:3010:A:H8	1.86	0.40
36:AB:102:C:H2'	36:AB:103:A:O4'	2.21	0.40
37:AL:184:LEU:HD23	37:AL:184:LEU:HA	1.96	0.40
40:A4:61:ALA:O	40:A4:64:GLU:HG3	2.21	0.40
58:AM:9:LEU:HA	58:AM:9:LEU:HD12	1.79	0.40
59:AS:100:CYS:HB2	59:AS:120:LEU:HB3	2.03	0.40
62:AR:48:LYS:HD2	62:AR:147:PHE:HE2	1.86	0.40
69:AD:22:HIS:O	69:AD:24:LYS:HE2	2.22	0.40
1:S1:43:ARG:HA	1:S1:43:ARG:HD3	1.94	0.40
2:S2:71:ASN:OD1	26:SS:25:LYS:HE3	2.22	0.40
7:S7:74:A:C2	34:AA:3153:G:H5'	2.57	0.40
8:SA:142:G:H8	8:SA:142:G:OP2	2.05	0.40
8:SA:248:G:H8	8:SA:248:G:H3'	1.87	0.40
8:SA:1304:A:H2	8:SA:1850:G:N2	2.12	0.40
8:SA:1446:A:O2'	21:SN:52:PRO:O	2.25	0.40
8:SA:1626:U:O2'	8:SA:1812:A:N1	2.43	0.40
8:SA:1860:A:C6	8:SA:1861:U:C4	3.10	0.40
10:SC:160:ILE:HA	10:SC:161:PRO:HD3	1.96	0.40
12:SE:81:VAL:HG12	12:SE:86:LEU:HB2	2.02	0.40
12:SE:97:LEU:HA	12:SE:97:LEU:HD23	1.88	0.40
13:SF:57:THR:OG1	13:SF:60:GLU:HG3	2.21	0.40
13:SF:90:ILE:HG23	13:SF:99:PHE:HB2	2.03	0.40
14:SG:208:CYS:SG	14:SG:209:PHE:N	2.94	0.40
19:SL:106:SER:HB3	19:SL:176:PHE:HD1	1.84	0.40
22:SO:72:TRP:CD1	27:ST:21:VAL:HA	2.56	0.40
24:SQ:89:GLY:HA3	24:SQ:92:CYS:SG	2.61	0.40
26:SS:19:ASN:OD1	26:SS:20:THR:N	2.55	0.40
26:SS:27:LYS:HE3	26:SS:29:ILE:HD11	2.03	0.40
30:SW:57:LEU:HB2	30:SW:58:MET:CE	2.51	0.40
34:AA:769:U:H2'	34:AA:770:U:O4'	2.22	0.40
34:AA:1174:C:OP1	62:AR:15:ARG:NH1	2.53	0.40
34:AA:1177:A:H5"	34:AA:2976:A:H61	1.87	0.40
34:AA:1266:U:OP1	40:A4:13:ASN:ND2	2.33	0.40
34:AA:2026:G:OP1	46:Aa:70:ARG:NH1	2.55	0.40
34:AA:2037:U:H2'	34:AA:2038:U:C6	2.56	0.40
34:AA:2884:G:C6	34:AA:2885:A:N6	2.90	0.40
34:AA:3545:U:N3	34:AA:3684:A:N7	2.69	0.40
34:AA:3571:A:O2'	34:AA:3572:A:N3	2.44	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:3637:G:O6	34:AA:3648:U:C4	2.74	0.40
38:A1:72:ILE:HD12	38:A1:111:VAL:HG22	2.03	0.40
38:A1:137:ILE:HA	38:A1:137:ILE:HD13	1.82	0.40
57:AK:196:LEU:HA	57:AK:196:LEU:HD23	1.82	0.40
59:AS:74:HIS:CE1	59:AS:136:VAL:HG21	2.57	0.40
59:AS:104:PHE:CE1	59:AS:119:CYS:HB3	2.56	0.40
68:A5:94:PHE:HB2	68:A5:148:PRO:HG3	2.02	0.40
78:A0:12:ALA:HB2	78:A0:19:ARG:NH1	2.37	0.40
2:S2:76:ARG:NH1	8:SA:1829:U:OP2	2.54	0.40
4:S4:53:LEU:HD13	4:S4:53:LEU:HA	1.97	0.40
7:S7:12:G:N1	7:S7:23:G:C6	2.90	0.40
8:SA:71:A:H2'	8:SA:72:U:C6	2.57	0.40
8:SA:639:U:OP1	29:SV:105:LYS:HE3	2.21	0.40
8:SA:886:U:H2'	8:SA:887:A:C8	2.56	0.40
8:SA:1452:C:H5"	20:SM:69:ARG:HH22	1.86	0.40
8:SA:1662:A:C6	8:SA:1663:A:N6	2.90	0.40
8:SA:1746:A:N6	8:SA:1784:A:H61	2.20	0.40
8:SA:1798:G:H3'	32:SY:121:LYS:NZ	2.37	0.40
8:SA:1822:A:H2'	8:SA:1823:U:H6	1.86	0.40
11:SD:209:LEU:HD23	11:SD:209:LEU:HA	1.83	0.40
13:SF:89:VAL:HG11	13:SF:119:SER:HB2	2.03	0.40
14:SG:131:LYS:HE3	14:SG:131:LYS:HB2	1.62	0.40
19:SL:106:SER:HB3	19:SL:176:PHE:CD1	2.56	0.40
23:SP:38:ASN:O	23:SP:39:ASP:C	2.65	0.40
23:SP:93:ILE:HG22	23:SP:125:LYS:O	2.21	0.40
25:SR:68:TYR:HD1	25:SR:68:TYR:HA	1.80	0.40
29:SV:92:ASN:HB3	29:SV:158:PHE:CE1	2.56	0.40
30:SW:79:GLU:HA	30:SW:82:LEU:HG	2.03	0.40
34:AA:209:G:H2'	34:AA:210:C:C6	2.57	0.40
34:AA:652:A:O2'	34:AA:653:A:OP1	2.35	0.40
34:AA:698:G:H3'	34:AA:698:G:OP1	2.22	0.40
34:AA:2506:A:H2'	34:AA:2507:A:H8	1.80	0.40
34:AA:2723:G:H2'	34:AA:2724:C:C6	2.57	0.40
34:AA:3087:A:O2'	62:AR:48:LYS:NZ	2.55	0.40
34:AA:3408:G:O2'	34:AA:3417:G:O6	2.31	0.40
34:AA:3636:U:H2'	34:AA:3637:G:C8	2.57	0.40
37:AL:23:VAL:HA	51:AP:201:LEU:O	2.22	0.40
37:AL:180:ASP:O	60:AO:143:GLN:HG3	2.21	0.40
51:AP:14:LYS:HA	51:AP:19:MET:HG2	2.03	0.40
57:AK:57:LEU:C	57:AK:59:LEU:H	2.30	0.40
58:AM:79:ILE:HG13	58:AM:105:VAL:HG11	2.04	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:AQ:86:HIS:HB3	61:AQ:139:ARG:HG3	2.04	0.40
63:AW:14:CYS:SG	63:AW:151:ARG:HD2	2.61	0.40
64:AY:110:LEU:HD12	64:AY:110:LEU:HA	1.78	0.40
65:AT:66:LYS:HD2	65:AT:66:LYS:HA	1.87	0.40
70:AE:92:TYR:HB2	70:AE:154:VAL:HB	2.03	0.40
72:AG:32:ARG:HA	72:AG:35:ARG:NE	2.36	0.40
72:AG:125:MET:SD	72:AG:126:ASP:N	2.95	0.40
75:AV:34:LYS:HB2	75:AV:34:LYS:HE2	1.72	0.40
77:AX:48:LYS:HE3	77:AX:48:LYS:HB2	1.68	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%)	114 (97%)	4 (3%)	0	100	100
2	S2	35/105 (33%)	35 (100%)	0	0	100	100
3	S3	93/107 (87%)	86 (92%)	7 (8%)	0	100	100
4	S4	74/82 (90%)	62 (84%)	12 (16%)	0	100	100
5	S5	55/67 (82%)	49 (89%)	5 (9%)	1 (2%)	7	9
6	S6	41/58 (71%)	39 (95%)	2 (5%)	0	100	100
9	SB	208/262 (79%)	197 (95%)	10 (5%)	1 (0%)	25	38
10	SC	193/263 (73%)	176 (91%)	16 (8%)	1 (0%)	25	38
11	SD	149/221 (67%)	146 (98%)	3 (2%)	0	100	100
12	SE	183/189 (97%)	170 (93%)	12 (7%)	1 (0%)	25	38
13	SF	255/261 (98%)	239 (94%)	15 (6%)	1 (0%)	30	44
14	SG	222/272 (82%)	211 (95%)	11 (5%)	0	100	100
15	SH	200/306 (65%)	188 (94%)	12 (6%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
16	SI	176/195 (90%)	161 (92%)	15 (8%)	0	100 100
17	SJ	186/194 (96%)	172 (92%)	13 (7%)	1 (0%)	25 38
18	SK	127/130 (98%)	116 (91%)	10 (8%)	1 (1%)	16 26
19	SL	165/218 (76%)	152 (92%)	11 (7%)	2 (1%)	11 16
20	SM	136/144 (94%)	132 (97%)	3 (2%)	1 (1%)	19 29
21	SN	96/118 (81%)	92 (96%)	4 (4%)	0	100 100
22	SO	77/137 (56%)	74 (96%)	2 (3%)	1 (1%)	10 15
23	SP	125/151 (83%)	110 (88%)	15 (12%)	0	100 100
24	SQ	142/145 (98%)	135 (95%)	7 (5%)	0	100 100
25	SR	92/141 (65%)	88 (96%)	4 (4%)	0	100 100
26	SS	126/156 (81%)	103 (82%)	21 (17%)	2 (2%)	8 11
27	ST	46/54 (85%)	44 (96%)	2 (4%)	0	100 100
28	SU	147/151 (97%)	137 (93%)	10 (7%)	0	100 100
29	SV	142/161 (88%)	135 (95%)	5 (4%)	2 (1%)	9 13
30	SW	91/137 (66%)	82 (90%)	7 (8%)	2 (2%)	5 6
31	SX	92/145 (63%)	84 (91%)	8 (9%)	0	100 100
32	SY	152/170 (89%)	145 (95%)	7 (5%)	0	100 100
33	SZ	70/82 (85%)	66 (94%)	4 (6%)	0	100 100
37	AL	209/215 (97%)	199 (95%)	10 (5%)	0	100 100
38	A1	136/146 (93%)	124 (91%)	10 (7%)	2 (2%)	8 12
39	A2	97/127 (76%)	90 (93%)	7 (7%)	0	100 100
40	A4	64/67 (96%)	59 (92%)	5 (8%)	0	100 100
41	A6	96/108 (89%)	93 (97%)	3 (3%)	0	100 100
42	A7	92/120 (77%)	91 (99%)	1 (1%)	0	100 100
43	AN	145/165 (88%)	134 (92%)	11 (8%)	0	100 100
44	A8	123/131 (94%)	111 (90%)	12 (10%)	0	100 100
45	A9	101/140 (72%)	95 (94%)	6 (6%)	0	100 100
46	Aa	104/150 (69%)	95 (91%)	9 (9%)	0	100 100
47	Ab	91/112 (81%)	84 (92%)	7 (8%)	0	100 100
48	Ad	68/87 (78%)	67 (98%)	1 (2%)	0	100 100
49	Ae	39/51 (76%)	38 (97%)	1 (3%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
50	Af	49/128 (38%)	45 (92%)	4 (8%)	0	100	100
51	AP	202/205 (98%)	183 (91%)	16 (8%)	3 (2%)	8	12
52	Ah	83/96 (86%)	81 (98%)	2 (2%)	0	100	100
53	Ai	93/104 (89%)	90 (97%)	3 (3%)	0	100	100
54	AI	203/221 (92%)	192 (95%)	9 (4%)	2 (1%)	13	20
55	AJ	216/283 (76%)	205 (95%)	10 (5%)	1 (0%)	25	38
56	Ac	87/92 (95%)	76 (87%)	11 (13%)	0	100	100
57	AK	199/202 (98%)	192 (96%)	6 (3%)	1 (0%)	25	38
58	AM	130/139 (94%)	122 (94%)	7 (5%)	1 (1%)	16	26
59	AS	184/187 (98%)	175 (95%)	8 (4%)	1 (0%)	25	38
60	AO	145/148 (98%)	136 (94%)	8 (6%)	1 (1%)	19	29
61	AQ	185/219 (84%)	167 (90%)	16 (9%)	2 (1%)	12	18
62	AR	244/294 (83%)	232 (95%)	11 (4%)	1 (0%)	30	44
63	AW	149/173 (86%)	141 (95%)	8 (5%)	0	100	100
64	AY	99/190 (52%)	93 (94%)	6 (6%)	0	100	100
65	AT	179/182 (98%)	177 (99%)	2 (1%)	0	100	100
66	AZ	119/126 (94%)	112 (94%)	7 (6%)	0	100	100
67	A3	117/124 (94%)	111 (95%)	6 (5%)	0	100	100
68	A5	221/257 (86%)	205 (93%)	16 (7%)	0	100	100
69	AD	245/260 (94%)	232 (95%)	11 (4%)	2 (1%)	16	26
70	AE	378/386 (98%)	366 (97%)	11 (3%)	1 (0%)	37	51
71	AF	388/411 (94%)	368 (95%)	19 (5%)	1 (0%)	37	51
72	AG	116/173 (67%)	107 (92%)	9 (8%)	0	100	100
73	AU	178/184 (97%)	169 (95%)	9 (5%)	0	100	100
74	AH	183/190 (96%)	170 (93%)	13 (7%)	0	100	100
75	AV	153/161 (95%)	149 (97%)	4 (3%)	0	100	100
76	Ag	35/39 (90%)	29 (83%)	6 (17%)	0	100	100
77	AX	95/139 (68%)	91 (96%)	3 (3%)	1 (1%)	12	18
78	A0	60/162 (37%)	59 (98%)	1 (2%)	0	100	100
All	All	10114/12049 (84%)	9495 (94%)	582 (6%)	37 (0%)	32	44

All (37) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
9	SB	146	ARG
17	SJ	112	ILE
20	SM	41	GLU
26	SS	101	ILE
29	SV	41	VAL
30	SW	4	VAL
51	AP	149	ILE
55	AJ	75	ILE
77	AX	78	LYS
5	S5	38	ARG
19	SL	168	ILE
51	AP	80	VAL
19	SL	119	THR
29	SV	20	SER
38	A1	30	GLU
51	AP	188	SER
54	AI	49	LYS
10	SC	143	VAL
22	SO	35	GLU
54	AI	19	VAL
61	AQ	60	ILE
12	SE	118	LEU
13	SF	195	ILE
38	A1	52	LYS
57	AK	72	LEU
69	AD	199	VAL
18	SK	4	MET
58	AM	13	MET
61	AQ	14	ASN
71	AF	267	ILE
26	SS	14	ILE
30	SW	69	ILE
70	AE	297	ILE
69	AD	127	VAL
59	AS	8	VAL
62	AR	152	ILE
60	AO	15	VAL

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	S1	104/115 (90%)	98 (94%)	6 (6%)	17 29
2	S2	35/88 (40%)	35 (100%)	0	100 100
3	S3	87/98 (89%)	84 (97%)	3 (3%)	32 52
4	S4	70/76 (92%)	67 (96%)	3 (4%)	25 42
5	S5	48/54 (89%)	46 (96%)	2 (4%)	25 43
6	S6	36/47 (77%)	32 (89%)	4 (11%)	5 7
9	SB	195/238 (82%)	180 (92%)	15 (8%)	10 17
10	SC	167/227 (74%)	160 (96%)	7 (4%)	25 43
11	SD	132/188 (70%)	128 (97%)	4 (3%)	36 57
12	SE	161/167 (96%)	150 (93%)	11 (7%)	13 22
13	SF	233/237 (98%)	219 (94%)	14 (6%)	16 27
14	SG	191/222 (86%)	177 (93%)	14 (7%)	11 20
15	SH	182/279 (65%)	174 (96%)	8 (4%)	24 41
16	SI	154/165 (93%)	150 (97%)	4 (3%)	41 62
17	SJ	177/183 (97%)	167 (94%)	10 (6%)	17 30
18	SK	115/116 (99%)	103 (90%)	12 (10%)	5 8
19	SL	151/193 (78%)	140 (93%)	11 (7%)	11 20
20	SM	116/122 (95%)	111 (96%)	5 (4%)	25 42
21	SN	91/109 (84%)	86 (94%)	5 (6%)	18 31
22	SO	76/129 (59%)	74 (97%)	2 (3%)	41 62
23	SP	99/119 (83%)	95 (96%)	4 (4%)	27 45
24	SQ	120/121 (99%)	114 (95%)	6 (5%)	20 36
25	SR	83/121 (69%)	82 (99%)	1 (1%)	67 82
26	SS	114/136 (84%)	109 (96%)	5 (4%)	24 41
27	ST	43/48 (90%)	43 (100%)	0	100 100
28	SU	132/133 (99%)	123 (93%)	9 (7%)	13 22
29	SV	131/144 (91%)	122 (93%)	9 (7%)	13 22
30	SW	86/127 (68%)	84 (98%)	2 (2%)	45 66
31	SX	88/130 (68%)	86 (98%)	2 (2%)	45 66
32	SY	137/151 (91%)	129 (94%)	8 (6%)	17 29

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
33	SZ	60/70 (86%)	56 (93%)	4 (7%)	13 23
37	AL	190/194 (98%)	178 (94%)	12 (6%)	15 25
38	A1	127/132 (96%)	114 (90%)	13 (10%)	6 9
39	A2	98/118 (83%)	93 (95%)	5 (5%)	20 35
40	A4	60/61 (98%)	60 (100%)	0	100 100
41	A6	83/92 (90%)	76 (92%)	7 (8%)	9 14
42	A7	90/112 (80%)	86 (96%)	4 (4%)	24 41
43	AN	136/152 (90%)	129 (95%)	7 (5%)	20 35
44	A8	114/120 (95%)	106 (93%)	8 (7%)	12 21
45	A9	90/127 (71%)	85 (94%)	5 (6%)	17 30
46	Aa	88/128 (69%)	83 (94%)	5 (6%)	17 29
47	Ab	82/97 (84%)	73 (89%)	9 (11%)	5 7
48	Ad	69/83 (83%)	65 (94%)	4 (6%)	17 29
49	Ae	40/48 (83%)	39 (98%)	1 (2%)	42 63
50	Af	45/114 (40%)	44 (98%)	1 (2%)	47 67
51	AP	179/180 (99%)	166 (93%)	13 (7%)	11 20
52	Ah	70/80 (88%)	67 (96%)	3 (4%)	25 42
53	Ai	87/93 (94%)	85 (98%)	2 (2%)	45 66
54	AI	189/203 (93%)	172 (91%)	17 (9%)	8 12
55	AJ	204/260 (78%)	193 (95%)	11 (5%)	18 32
56	Ac	74/77 (96%)	68 (92%)	6 (8%)	9 15
57	AK	181/182 (100%)	170 (94%)	11 (6%)	15 27
58	AM	106/110 (96%)	99 (93%)	7 (7%)	14 23
59	AS	158/159 (99%)	151 (96%)	7 (4%)	24 41
60	AO	121/122 (99%)	116 (96%)	5 (4%)	26 44
61	AQ	165/190 (87%)	154 (93%)	11 (7%)	13 23
62	AR	215/254 (85%)	208 (97%)	7 (3%)	33 53
63	AW	128/131 (98%)	124 (97%)	4 (3%)	35 56
64	AY	90/177 (51%)	83 (92%)	7 (8%)	10 17
65	AT	162/163 (99%)	153 (94%)	9 (6%)	17 30
66	AZ	111/115 (96%)	105 (95%)	6 (5%)	18 32

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
67	A3	110/115 (96%)	105 (96%)	5 (4%)	23 40
68	A5	201/231 (87%)	189 (94%)	12 (6%)	16 27
69	AD	191/202 (95%)	177 (93%)	14 (7%)	11 20
70	AE	335/340 (98%)	325 (97%)	10 (3%)	36 57
71	AF	336/352 (96%)	319 (95%)	17 (5%)	20 35
72	AG	110/155 (71%)	103 (94%)	7 (6%)	14 24
73	AU	162/166 (98%)	156 (96%)	6 (4%)	29 48
74	AH	168/173 (97%)	155 (92%)	13 (8%)	10 17
75	AV	140/144 (97%)	132 (94%)	8 (6%)	17 29
76	Ag	34/35 (97%)	34 (100%)	0	100 100
77	AX	92/131 (70%)	82 (89%)	10 (11%)	5 7
78	A0	53/146 (36%)	50 (94%)	3 (6%)	17 29
All	All	9098/10617 (86%)	8596 (94%)	502 (6%)	20 31

All (502) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	S1	35	VAL
1	S1	40	VAL
1	S1	42	GLU
1	S1	53	VAL
1	S1	89	LYS
1	S1	97	LEU
3	S3	28	ARG
3	S3	64	LEU
3	S3	76	SER
4	S4	17	HIS
4	S4	61	LEU
4	S4	70	LYS
5	S5	6	LEU
5	S5	44	VAL
6	S6	24	LEU
6	S6	31	THR
6	S6	42	ARG
6	S6	44	PHE
9	SB	78	ASP
9	SB	86	LEU
9	SB	104	SER

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Mol	Chain	Res	Type
9	SB	119	THR
9	SB	127	VAL
9	SB	130	LEU
9	SB	139	CYS
9	SB	149	GLN
9	SB	157	GLN
9	SB	179	VAL
9	SB	183	ASP
9	SB	204	ILE
9	SB	210	VAL
9	SB	211	LEU
9	SB	232	HIS
10	SC	26	THR
10	SC	28	ASN
10	SC	47	ILE
10	SC	81	PHE
10	SC	88	LYS
10	SC	151	SER
10	SC	167	LYS
11	SD	106	LEU
11	SD	188	LYS
11	SD	193	THR
11	SD	212	ASN
12	SE	14	ASN
12	SE	38	ASN
12	SE	42	ILE
12	SE	62	LEU
12	SE	78	ARG
12	SE	95	TYR
12	SE	101	LEU
12	SE	120	LYS
12	SE	141	VAL
12	SE	153	GLU
12	SE	155	HIS
13	SF	26	GLN
13	SF	42	ILE
13	SF	56	LEU
13	SF	70	VAL
13	SF	90	ILE
13	SF	102	LEU
13	SF	153	ASP
13	SF	173	LEU

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Mol	Chain	Res	Type
13	SF	181	VAL
13	SF	187	HIS
13	SF	214	ARG
13	SF	238	LEU
13	SF	246	LEU
13	SF	256	LEU
14	SG	57	VAL
14	SG	61	GLU
14	SG	67	LEU
14	SG	98	VAL
14	SG	108	THR
14	SG	109	ARG
14	SG	148	LEU
14	SG	168	MET
14	SG	177	VAL
14	SG	178	ARG
14	SG	191	VAL
14	SG	195	THR
14	SG	199	MET
14	SG	234	TYR
15	SH	13	GLN
15	SH	64	ILE
15	SH	68	LEU
15	SH	102	VAL
15	SH	105	ASP
15	SH	147	LEU
15	SH	179	VAL
15	SH	188	ARG
16	SI	16	TYR
16	SI	56	LEU
16	SI	60	VAL
16	SI	78	LEU
17	SJ	60	ILE
17	SJ	88	THR
17	SJ	91	TYR
17	SJ	112	ILE
17	SJ	135	GLU
17	SJ	143	MET
17	SJ	150	VAL
17	SJ	155	LEU
17	SJ	156	ASP
17	SJ	164	ASN

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Mol	Chain	Res	Type
18	SK	10	CYS
18	SK	49	SER
18	SK	52	ILE
18	SK	53	VAL
18	SK	63	VAL
18	SK	69	ILE
18	SK	80	ASP
18	SK	84	ASP
18	SK	87	GLU
18	SK	92	SER
18	SK	115	GLU
18	SK	117	ARG
19	SL	22	LYS
19	SL	29	LEU
19	SL	46	VAL
19	SL	61	ASP
19	SL	64	SER
19	SL	67	TRP
19	SL	78	ILE
19	SL	81	VAL
19	SL	91	VAL
19	SL	104	ILE
19	SL	196	ASP
20	SM	14	LYS
20	SM	76	THR
20	SM	111	LEU
20	SM	112	ARG
20	SM	138	ARG
21	SN	31	ILE
21	SN	35	CYS
21	SN	37	ASP
21	SN	59	THR
21	SN	78	ARG
22	SO	25	TYR
22	SO	27	PHE
23	SP	33	ILE
23	SP	87	GLU
23	SP	103	THR
23	SP	150	ARG
24	SQ	31	LYS
24	SQ	79	ASN
24	SQ	93	LEU

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Mol	Chain	Res	Type
24	SQ	100	ASP
24	SQ	107	PHE
24	SQ	145	SER
25	SR	68	TYR
26	SS	65	GLU
26	SS	87	ASN
26	SS	105	LEU
26	SS	109	LEU
26	SS	116	MET
28	SU	7	LYS
28	SU	71	ILE
28	SU	83	THR
28	SU	86	GLU
28	SU	87	ASP
28	SU	103	GLU
28	SU	105	ASN
28	SU	109	LYS
28	SU	147	SER
29	SV	57	VAL
29	SV	64	THR
29	SV	79	ILE
29	SV	89	ILE
29	SV	104	GLU
29	SV	109	ASN
29	SV	110	ILE
29	SV	124	ASP
29	SV	135	SER
30	SW	6	THR
30	SW	74	GLN
31	SX	86	ILE
31	SX	111	MET
32	SY	84	LEU
32	SY	122	ILE
32	SY	126	ILE
32	SY	135	TYR
32	SY	139	ASN
32	SY	141	LYS
32	SY	147	LEU
32	SY	168	ASN
33	SZ	18	SER
33	SZ	58	VAL
33	SZ	63	GLU

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Mol	Chain	Res	Type
33	SZ	68	LEU
37	AL	8	LEU
37	AL	23	VAL
37	AL	62	GLN
37	AL	78	GLU
37	AL	98	LYS
37	AL	121	SER
37	AL	123	VAL
37	AL	128	LYS
37	AL	159	SER
37	AL	168	LYS
37	AL	181	LYS
37	AL	197	ARG
38	A1	42	LEU
38	A1	47	GLU
38	A1	51	LEU
38	A1	58	THR
38	A1	74	CYS
38	A1	94	LYS
38	A1	98	SER
38	A1	106	ASN
38	A1	114	LEU
38	A1	123	LEU
38	A1	132	GLU
38	A1	133	VAL
38	A1	137	ILE
39	A2	30	VAL
39	A2	58	THR
39	A2	107	GLU
39	A2	109	LEU
39	A2	110	LEU
41	A6	12	ASN
41	A6	19	LEU
41	A6	28	PHE
41	A6	44	LEU
41	A6	64	MET
41	A6	96	THR
41	A6	100	ASP
42	A7	32	CYS
42	A7	46	SER
42	A7	80	ARG
42	A7	108	SER

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Mol	Chain	Res	Type
43	AN	6	LEU
43	AN	12	LEU
43	AN	49	VAL
43	AN	61	ILE
43	AN	62	THR
43	AN	87	CYS
43	AN	145	ILE
44	A8	10	ILE
44	A8	39	ASP
44	A8	51	LEU
44	A8	66	LEU
44	A8	70	ASN
44	A8	83	GLU
44	A8	88	ASN
44	A8	117	VAL
45	A9	38	VAL
45	A9	55	ASN
45	A9	82	VAL
45	A9	89	THR
45	A9	106	ARG
46	Aa	4	ARG
46	Aa	24	ARG
46	Aa	32	ILE
46	Aa	57	LEU
46	Aa	85	ILE
47	Ab	7	ILE
47	Ab	24	THR
47	Ab	43	LEU
47	Ab	58	GLU
47	Ab	66	LYS
47	Ab	69	THR
47	Ab	77	LEU
47	Ab	96	GLU
47	Ab	101	VAL
48	Ad	12	LEU
48	Ad	29	LYS
48	Ad	37	VAL
48	Ad	74	ILE
49	Ae	39	THR
50	Af	17	LYS
51	AP	27	THR
51	AP	36	VAL

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Mol	Chain	Res	Type
51	AP	57	GLN
51	AP	64	VAL
51	AP	89	VAL
51	AP	122	VAL
51	AP	143	VAL
51	AP	163	ARG
51	AP	177	VAL
51	AP	194	LYS
51	AP	198	LEU
51	AP	199	ILE
51	AP	200	LYS
52	Ah	8	VAL
52	Ah	29	ILE
52	Ah	64	VAL
53	Ai	14	ASN
53	Ai	19	HIS
54	AI	46	VAL
54	AI	48	ARG
54	AI	59	VAL
54	AI	85	VAL
54	AI	102	ARG
54	AI	105	VAL
54	AI	109	THR
54	AI	111	ILE
54	AI	120	LEU
54	AI	130	ASP
54	AI	131	ILE
54	AI	142	ILE
54	AI	159	MET
54	AI	189	LEU
54	AI	204	LEU
54	AI	209	THR
54	AI	220	LYS
55	AJ	44	LEU
55	AJ	93	SER
55	AJ	105	GLN
55	AJ	123	ASP
55	AJ	148	PHE
55	AJ	189	LEU
55	AJ	192	VAL
55	AJ	207	VAL
55	AJ	211	THR

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Mol	Chain	Res	Type
55	AJ	224	ASP
55	AJ	245	LEU
56	Ac	17	LYS
56	Ac	25	CYS
56	Ac	66	ARG
56	Ac	75	ARG
56	Ac	78	LYS
56	Ac	90	LYS
57	AK	5	GLU
57	AK	8	ILE
57	AK	32	ILE
57	AK	60	ARG
57	AK	63	THR
57	AK	70	LEU
57	AK	79	LEU
57	AK	114	LYS
57	AK	135	CYS
57	AK	160	LYS
57	AK	176	GLU
58	AM	12	LYS
58	AM	17	LEU
58	AM	48	LEU
58	AM	55	SER
58	AM	83	GLN
58	AM	95	ILE
58	AM	130	LYS
59	AS	8	VAL
59	AS	19	LEU
59	AS	74	HIS
59	AS	81	VAL
59	AS	91	LEU
59	AS	143	LYS
59	AS	168	SER
60	AO	27	LYS
60	AO	75	VAL
60	AO	78	LEU
60	AO	89	GLU
60	AO	92	GLU
61	AQ	21	ARG
61	AQ	30	LYS
61	AQ	71	SER
61	AQ	82	LYS

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Mol	Chain	Res	Type
61	AQ	83	ASP
61	AQ	91	ILE
61	AQ	126	VAL
61	AQ	140	THR
61	AQ	149	CYS
61	AQ	178	LYS
61	AQ	179	ASP
62	AR	6	VAL
62	AR	49	LEU
62	AR	53	VAL
62	AR	60	VAL
62	AR	61	ILE
62	AR	233	ASP
62	AR	277	LEU
63	AW	53	GLU
63	AW	58	VAL
63	AW	75	GLU
63	AW	87	SER
64	AY	96	ILE
64	AY	101	HIS
64	AY	103	LYS
64	AY	129	THR
64	AY	175	SER
64	AY	178	HIS
64	AY	183	VAL
65	AT	21	ILE
65	AT	40	ILE
65	AT	54	GLN
65	AT	56	VAL
65	AT	61	ARG
65	AT	77	ILE
65	AT	109	ARG
65	AT	137	LEU
65	AT	141	ILE
66	AZ	40	LEU
66	AZ	54	GLU
66	AZ	56	LEU
66	AZ	57	ILE
66	AZ	76	ARG
66	AZ	81	VAL
67	A3	9	LEU
67	A3	39	ASN

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Mol	Chain	Res	Type
67	A3	40	SER
67	A3	67	GLU
67	A3	77	PHE
68	A5	93	VAL
68	A5	95	VAL
68	A5	96	ILE
68	A5	115	LEU
68	A5	138	ILE
68	A5	139	VAL
68	A5	150	LEU
68	A5	152	THR
68	A5	163	VAL
68	A5	168	VAL
68	A5	181	ASP
68	A5	192	HIS
69	AD	23	ARG
69	AD	32	LEU
69	AD	36	GLU
69	AD	48	ILE
69	AD	80	GLU
69	AD	107	MET
69	AD	111	THR
69	AD	125	THR
69	AD	146	THR
69	AD	175	ILE
69	AD	180	LEU
69	AD	202	VAL
69	AD	208	GLU
69	AD	235	VAL
70	AE	53	MET
70	AE	145	LEU
70	AE	175	ILE
70	AE	195	MET
70	AE	198	LYS
70	AE	202	VAL
70	AE	223	THR
70	AE	334	THR
70	AE	335	LEU
70	AE	350	GLN
71	AF	37	ILE
71	AF	39	SER
71	AF	62	THR

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Mol	Chain	Res	Type
71	AF	79	VAL
71	AF	115	VAL
71	AF	127	SER
71	AF	140	ARG
71	AF	152	LEU
71	AF	158	ILE
71	AF	161	LEU
71	AF	187	LYS
71	AF	202	LYS
71	AF	275	LYS
71	AF	292	ILE
71	AF	303	LEU
71	AF	307	LYS
71	AF	313	LEU
72	AG	41	THR
72	AG	69	VAL
72	AG	71	VAL
72	AG	84	LEU
72	AG	106	ILE
72	AG	129	VAL
72	AG	146	SER
73	AU	9	LEU
73	AU	67	LEU
73	AU	71	GLU
73	AU	86	VAL
73	AU	154	ARG
73	AU	183	ARG
74	AH	30	LYS
74	AH	33	THR
74	AH	47	LEU
74	AH	57	VAL
74	AH	83	VAL
74	AH	94	VAL
74	AH	125	VAL
74	AH	135	LYS
74	AH	138	ASN
74	AH	139	VAL
74	AH	150	ILE
74	AH	183	VAL
74	AH	184	THR
75	AV	41	VAL
75	AV	53	MET

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Mol	Chain	Res	Type
75	AV	75	VAL
75	AV	90	VAL
75	AV	97	VAL
75	AV	107	LEU
75	AV	142	ILE
75	AV	150	ILE
77	AX	43	VAL
77	AX	46	CYS
77	AX	47	THR
77	AX	60	LEU
77	AX	70	VAL
77	AX	83	VAL
77	AX	84	THR
77	AX	106	LEU
77	AX	117	ARG
77	AX	119	PHE
78	A0	10	THR
78	A0	36	TYR
78	A0	48	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (77) such sidechains are listed below:

Mol	Chain	Res	Type
4	S4	17	HIS
5	S5	28	GLN
6	S6	38	GLN
9	SB	75	ASN
9	SB	200	GLN
10	SC	49	ASN
10	SC	131	GLN
10	SC	155	HIS
12	SE	110	GLN
13	SF	67	GLN
13	SF	157	ASN
13	SF	231	ASN
15	SH	13	GLN
15	SH	34	ASN
15	SH	104	GLN
15	SH	119	ASN
16	SI	98	ASN
16	SI	105	ASN
18	SK	42	GLN

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Mol	Chain	Res	Type
20	SM	9	GLN
22	SO	64	ASN
24	SQ	79	ASN
26	SS	136	GLN
28	SU	62	GLN
29	SV	14	GLN
29	SV	23	ASN
40	A4	11	ASN
40	A4	27	HIS
41	A6	74	HIS
43	AN	97	ASN
43	AN	107	ASN
44	A8	21	GLN
44	A8	89	HIS
44	A8	114	GLN
45	A9	67	ASN
45	A9	91	HIS
47	Ab	18	ASN
50	Af	44	GLN
51	AP	15	GLN
51	AP	81	HIS
51	AP	92	GLN
54	AI	217	HIS
55	AJ	95	ASN
55	AJ	98	ASN
55	AJ	105	GLN
55	AJ	154	ASN
56	Ac	31	HIS
57	AK	49	ASN
57	AK	62	ASN
59	AS	14	HIS
60	AO	44	ASN
61	AQ	86	HIS
61	AQ	100	ASN
62	AR	39	GLN
62	AR	193	GLN
62	AR	197	ASN
62	AR	241	ASN
63	AW	147	GLN
64	AY	165	ASN
65	AT	130	GLN
65	AT	170	ASN

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Mol	Chain	Res	Type
68	A5	55	GLN
68	A5	200	GLN
68	A5	213	ASN
69	AD	8	GLN
69	AD	122	ASN
69	AD	233	GLN
70	AE	174	HIS
73	AU	14	HIS
73	AU	30	ASN
73	AU	114	GLN
73	AU	131	ASN
74	AH	108	ASN
75	AV	49	GLN
75	AV	50	GLN
77	AX	75	ASN
78	A0	26	GLN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
34	AA	3163/3788 (83%)	636 (20%)	69 (2%)
35	AC	148/159 (93%)	33 (22%)	5 (3%)
36	AB	117/119 (98%)	18 (15%)	3 (2%)
7	S7	73/74 (98%)	20 (27%)	0
8	SA	1587/2092 (75%)	349 (21%)	29 (1%)
All	All	5088/6232 (81%)	1056 (20%)	106 (2%)

All (1056) 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	34	U
7	S7	44	G
7	S7	46	G

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Mol	Chain	Res	Type
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	17	C
8	SA	25	C
8	SA	26	A
8	SA	27	U
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	61	A
8	SA	71	A
8	SA	72	U
8	SA	73	A
8	SA	79	U
8	SA	80	A
8	SA	82	G
8	SA	84	A
8	SA	106	A
8	SA	108	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

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Mol	Chain	Res	Type
8	SA	157	G
8	SA	164	C
8	SA	166	A
8	SA	168	U
8	SA	172	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	269	A
8	SA	270	C
8	SA	272	U
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	406	A
8	SA	407	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	445	U
8	SA	450	C

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Mol	Chain	Res	Type
8	SA	458	A
8	SA	460	G
8	SA	474	A
8	SA	475	C
8	SA	483	A
8	SA	487	A
8	SA	488	U
8	SA	489	G
8	SA	494	G
8	SA	508	U
8	SA	509	U
8	SA	515	U
8	SA	516	G
8	SA	521	G
8	SA	526	G
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	566	C
8	SA	575	G
8	SA	585	U
8	SA	586	A
8	SA	601	A
8	SA	602	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	647	C
8	SA	651	G
8	SA	653	A
8	SA	746	U
8	SA	753	U

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Mol	Chain	Res	Type
8	SA	754	A
8	SA	757	A
8	SA	758	U
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	821	A
8	SA	824	A
8	SA	830	U
8	SA	833	A
8	SA	835	G
8	SA	837	A
8	SA	845	U
8	SA	846	G
8	SA	849	U
8	SA	852	A
8	SA	857	A
8	SA	866	A
8	SA	870	A
8	SA	875	A
8	SA	876	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	945	G
8	SA	967	A
8	SA	973	G

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Mol	Chain	Res	Type
8	SA	974	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	1013	A
8	SA	1029	U
8	SA	1035	A
8	SA	1057	A
8	SA	1061	A
8	SA	1062	A
8	SA	1066	G
8	SA	1073	U
8	SA	1074	A
8	SA	1095	A
8	SA	1097	C
8	SA	1098	U
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	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	1199	U
8	SA	1219	U
8	SA	1239	A
8	SA	1251	G
8	SA	1252	A
8	SA	1259	C
8	SA	1260	C
8	SA	1261	A
8	SA	1265	G

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Mol	Chain	Res	Type
8	SA	1268	G
8	SA	1271	G
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	1307	U
8	SA	1308	C
8	SA	1313	G
8	SA	1316	U
8	SA	1317	A
8	SA	1318	A
8	SA	1319	G
8	SA	1363	U
8	SA	1366	A
8	SA	1367	U
8	SA	1371	G
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	1388	A
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	1429	C
8	SA	1436	U
8	SA	1443	G
8	SA	1444	C
8	SA	1445	U
8	SA	1446	A

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Mol	Chain	Res	Type
8	SA	1448	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	1624	U
8	SA	1625	C
8	SA	1626	U
8	SA	1629	G
8	SA	1635	C
8	SA	1636	A
8	SA	1637	U
8	SA	1640	U
8	SA	1644	U
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	1700	G
8	SA	1701	G
8	SA	1704	G
8	SA	1706	A
8	SA	1715	A
8	SA	1717	A
8	SA	1719	U
8	SA	1720	G
8	SA	1721	A
8	SA	1724	U
8	SA	1727	A
8	SA	1728	U

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Mol	Chain	Res	Type
8	SA	1729	A
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	1802	G
8	SA	1811	A
8	SA	1812	A
8	SA	1814	C
8	SA	1816	U
8	SA	1817	U
8	SA	1818	A
8	SA	1819	U
8	SA	1820	C
8	SA	1824	A
8	SA	1829	U
8	SA	1833	G
8	SA	1834	A
8	SA	1836	G
8	SA	1837	G
8	SA	1839	G
8	SA	1854	U
8	SA	1862	C
8	SA	1865	G
8	SA	1866	A
8	SA	1870	A
8	SA	1871	G
8	SA	1881	G
8	SA	1887	A
8	SA	1893	C
8	SA	1897	A
8	SA	1898	G
8	SA	1908	A
8	SA	1910	U
8	SA	1911	A
8	SA	1913	G
8	SA	1916	C

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Mol	Chain	Res	Type
8	SA	1928	A
8	SA	1954	U
8	SA	1955	G
8	SA	1969	A
8	SA	1976	G
8	SA	1978	A
8	SA	1979	C
8	SA	1980	A
8	SA	1982	G
8	SA	2010	U
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	2088	C
8	SA	2089	A
8	SA	2090	U
34	AA	11	A
34	AA	13	G
34	AA	14	U
34	AA	26	A
34	AA	40	A
34	AA	43	A
34	AA	45	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	77	A
34	AA	92	G
34	AA	109	A
34	AA	110	G
34	AA	111	C
34	AA	113	C

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Mol	Chain	Res	Type
34	AA	120	U
34	AA	121	U
34	AA	124	U
34	AA	130	G
34	AA	133	U
34	AA	134	G
34	AA	136	U
34	AA	137	G
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	172	C
34	AA	173	A
34	AA	174	U
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	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

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Mol	Chain	Res	Type
34	AA	257	U
34	AA	258	U
34	AA	269	A
34	AA	271	G
34	AA	276	G
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	310	U
34	AA	313	U
34	AA	319	U
34	AA	323	A
34	AA	337	A
34	AA	338	U
34	AA	343	G
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	396	U
34	AA	400	C
34	AA	409	A
34	AA	412	A
34	AA	413	C
34	AA	414	C
34	AA	431	G
34	AA	432	A
34	AA	433	A
34	AA	439	U
34	AA	440	A
34	AA	445	A
34	AA	448	A
34	AA	449	A
34	AA	451	C
34	AA	459	G

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Mol	Chain	Res	Type
34	AA	463	G
34	AA	489	U
34	AA	490	U
34	AA	494	U
34	AA	501	U
34	AA	502	U
34	AA	504	A
34	AA	505	A
34	AA	506	A
34	AA	509	A
34	AA	510	A
34	AA	521	U
34	AA	522	A
34	AA	530	U
34	AA	532	C
34	AA	537	A
34	AA	541	A
34	AA	543	U
34	AA	552	A
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	610	U
34	AA	620	U
34	AA	621	C
34	AA	646	A
34	AA	648	U
34	AA	649	U
34	AA	650	U
34	AA	652	A
34	AA	653	A
34	AA	658	U
34	AA	661	G
34	AA	665	U

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Mol	Chain	Res	Type
34	AA	666	U
34	AA	667	U
34	AA	668	U
34	AA	674	U
34	AA	675	A
34	AA	679	U
34	AA	681	U
34	AA	684	G
34	AA	685	U
34	AA	690	U
34	AA	693	A
34	AA	694	U
34	AA	697	A
34	AA	698	G
34	AA	699	U
34	AA	704	U
34	AA	708	A
34	AA	714	C
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	763	U
34	AA	765	A
34	AA	767	U
34	AA	768	C
34	AA	769	U
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	822	A

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Mol	Chain	Res	Type
34	AA	826	U
34	AA	857	C
34	AA	859	C
34	AA	860	A
34	AA	862	U
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	899	A
34	AA	900	G
34	AA	903	C
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	954	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	1056	G

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Mol	Chain	Res	Type
34	AA	1063	A
34	AA	1070	A
34	AA	1073	G
34	AA	1078	C
34	AA	1100	A
34	AA	1101	A
34	AA	1102	U
34	AA	1107	U
34	AA	1122	A
34	AA	1123	U
34	AA	1124	A
34	AA	1132	G
34	AA	1158	G
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	1205	U
34	AA	1206	U
34	AA	1207	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	1271	A
34	AA	1272	U
34	AA	1279	U
34	AA	1281	C

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Mol	Chain	Res	Type
34	AA	1287	A
34	AA	1296	U
34	AA	1306	A
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	1345	A
34	AA	1346	U
34	AA	1418	A
34	AA	1431	A
34	AA	1435	G
34	AA	1436	A
34	AA	1437	U
34	AA	1441	G
34	AA	1445	A
34	AA	1450	G
34	AA	1458	A
34	AA	1459	U
34	AA	1476	A
34	AA	1480	G
34	AA	1481	A
34	AA	1499	U
34	AA	1503	A
34	AA	1504	A
34	AA	1506	C
34	AA	1525	C
34	AA	1535	G
34	AA	1538	U
34	AA	1539	U
34	AA	1547	A
34	AA	1550	A
34	AA	1554	G
34	AA	1555	A
34	AA	1556	G
34	AA	1565	G
34	AA	1567	A
34	AA	1575	C
34	AA	1580	G
34	AA	1583	G

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Mol	Chain	Res	Type
34	AA	1586	C
34	AA	1595	A
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	1701	G
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	1730	A
34	AA	1732	A
34	AA	1736	A
34	AA	1737	A
34	AA	1748	A
34	AA	1750	U
34	AA	1762	A
34	AA	1763	G
34	AA	1767	U
34	AA	1771	A
34	AA	1784	G
34	AA	1788	C
34	AA	1797	A
34	AA	1800	U
34	AA	1801	G
34	AA	1806	C
34	AA	1812	C
34	AA	1842	U
34	AA	1855	U
34	AA	1856	U
34	AA	1881	C
34	AA	1882	U
34	AA	1886	A

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Mol	Chain	Res	Type
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	1973	G
34	AA	1980	G
34	AA	1981	U
34	AA	1991	U
34	AA	1996	C
34	AA	1997	G
34	AA	1998	A
34	AA	2000	G
34	AA	2019	A
34	AA	2031	A
34	AA	2034	G
34	AA	2080	C
34	AA	2081	U
34	AA	2084	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	2125	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

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Mol	Chain	Res	Type
34	AA	2160	G
34	AA	2161	G
34	AA	2174	G
34	AA	2175	C
34	AA	2180	U
34	AA	2181	A
34	AA	2219	A
34	AA	2220	U
34	AA	2221	U
34	AA	2394	C
34	AA	2395	U
34	AA	2400	A
34	AA	2403	G
34	AA	2404	A
34	AA	2406	A
34	AA	2415	G
34	AA	2419	A
34	AA	2424	A
34	AA	2433	U
34	AA	2437	A
34	AA	2451	A
34	AA	2453	A
34	AA	2461	A
34	AA	2463	U
34	AA	2485	C
34	AA	2500	A
34	AA	2515	A
34	AA	2516	A
34	AA	2518	U
34	AA	2521	A
34	AA	2524	C
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	2551	U
34	AA	2565	G
34	AA	2566	G
34	AA	2573	A
34	AA	2577	C

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Mol	Chain	Res	Type
34	AA	2584	A
34	AA	2589	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	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
34	AA	2695	A
34	AA	2696	G
34	AA	2697	A
34	AA	2704	U
34	AA	2705	G
34	AA	2711	U
34	AA	2728	G
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	2886	A
34	AA	2887	U
34	AA	2920	A
34	AA	2932	A
34	AA	2934	A
34	AA	2938	C
34	AA	2945	G
34	AA	2946	G

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Mol	Chain	Res	Type
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
34	AA	3091	U
34	AA	3092	G
34	AA	3094	C
34	AA	3111	U
34	AA	3116	A
34	AA	3117	A
34	AA	3123	C
34	AA	3124	G
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	3147	A
34	AA	3155	G
34	AA	3158	U
34	AA	3159	G
34	AA	3160	A
34	AA	3161	A
34	AA	3169	C

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Mol	Chain	Res	Type
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	3218	U
34	AA	3230	G
34	AA	3231	A
34	AA	3234	U
34	AA	3246	A
34	AA	3248	C
34	AA	3257	G
34	AA	3258	C
34	AA	3259	A
34	AA	3270	A
34	AA	3286	C
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	3311	G
34	AA	3330	A
34	AA	3342	C
34	AA	3349	G
34	AA	3353	A
34	AA	3357	U
34	AA	3361	U
34	AA	3362	A
34	AA	3374	U
34	AA	3375	A
34	AA	3377	A
34	AA	3381	A
34	AA	3382	U
34	AA	3385	U
34	AA	3398	A
34	AA	3414	G
34	AA	3415	A

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Mol	Chain	Res	Type
34	AA	3421	A
34	AA	3442	C
34	AA	3443	A
34	AA	3445	C
34	AA	3459	A
34	AA	3463	G
34	AA	3466	U
34	AA	3467	U
34	AA	3468	G
34	AA	3471	A
34	AA	3474	C
34	AA	3477	A
34	AA	3485	G
34	AA	3500	G
34	AA	3507	A
34	AA	3515	A
34	AA	3516	A
34	AA	3524	G
34	AA	3526	U
34	AA	3527	U
34	AA	3548	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	3580	G
34	AA	3581	A
34	AA	3582	G
34	AA	3585	A
34	AA	3586	U
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	3622	U
34	AA	3626	A

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Mol	Chain	Res	Type
34	AA	3632	U
34	AA	3636	U
34	AA	3659	C
34	AA	3666	U
34	AA	3668	U
34	AA	3670	U
34	AA	3684	A
34	AA	3689	C
34	AA	3697	G
34	AA	3698	U
34	AA	3707	U
34	AA	3711	U
34	AA	3712	G
34	AA	3727	A
34	AA	3728	A
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	3749	U
34	AA	3751	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	17	A
35	AC	36	C
35	AC	38	G
35	AC	39	C
35	AC	42	U
35	AC	43	G
35	AC	55	A
35	AC	56	A
35	AC	63	A
35	AC	66	C
35	AC	67	G

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Mol	Chain	Res	Type
35	AC	75	A
35	AC	78	U
35	AC	85	A
35	AC	90	G
35	AC	91	A
35	AC	92	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	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	64	A
36	AB	73	U
36	AB	74	A
36	AB	89	G
36	AB	97	G
36	AB	100	A
36	AB	110	G

All (106) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
8	SA	105	A

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Mol	Chain	Res	Type
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	1306	C
8	SA	1381	C
8	SA	1386	U
8	SA	1413	U
8	SA	1414	A
8	SA	1421	A
8	SA	1455	C
8	SA	1624	U
8	SA	1786	U
8	SA	1818	A
8	SA	1819	U
8	SA	1865	G
8	SA	1897	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

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Mol	Chain	Res	Type
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	1197	U
34	AA	1205	U
34	AA	1217	U
34	AA	1222	U
34	AA	1435	G
34	AA	1538	U
34	AA	1554	G
34	AA	1574	C
34	AA	1705	A
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

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Mol	Chain	Res	Type
34	AA	2885	A
34	AA	3137	U
34	AA	3202	U
34	AA	3230	G
34	AA	3361	U
34	AA	3413	A
34	AA	3414	G
34	AA	3476	A
34	AA	3526	U
34	AA	3587	U
34	AA	3658	G
34	AA	3667	C
34	AA	3688	G
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

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

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

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

There are no ligands in this entry.

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

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	31.36

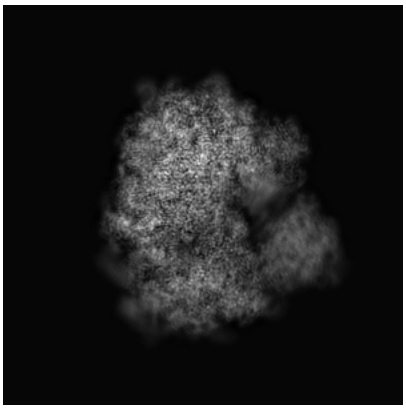
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-44918. These allow visual inspection of the internal detail of the map and identification of artifacts.

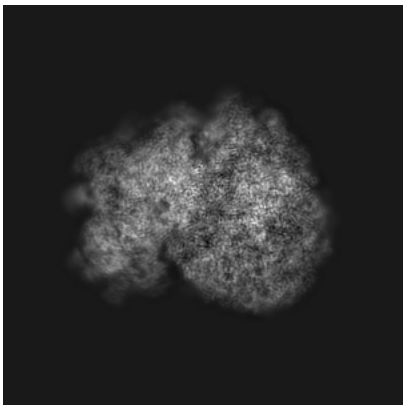
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

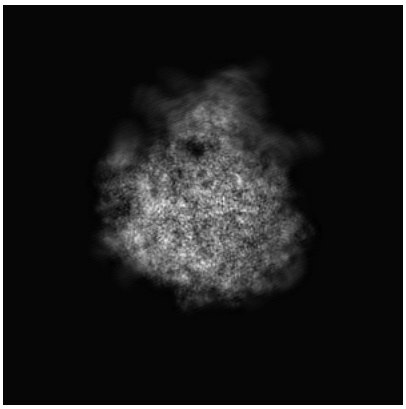
6.1.1 Primary map



X

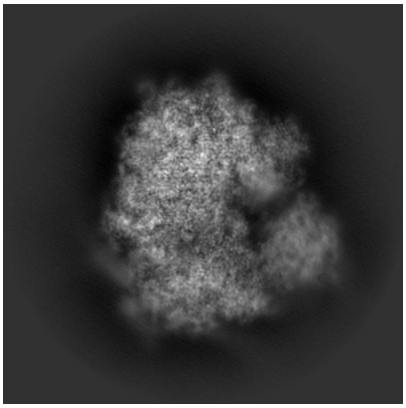


Y

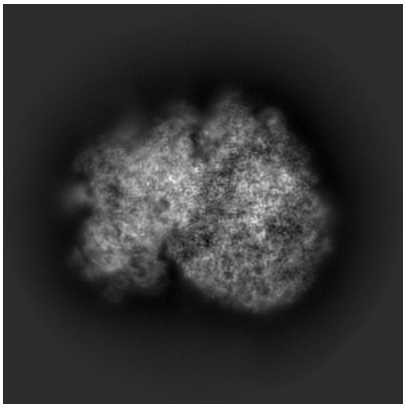


Z

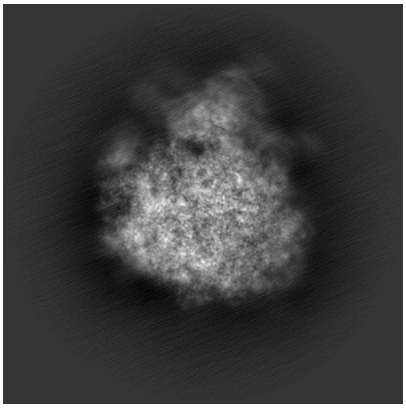
6.1.2 Raw map



X



Y

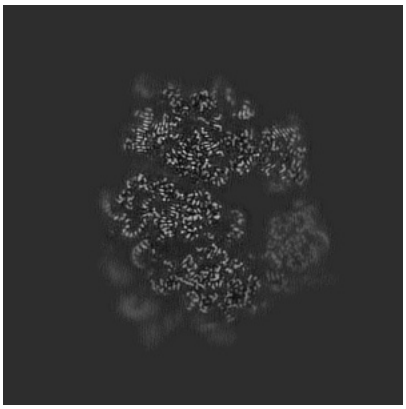


Z

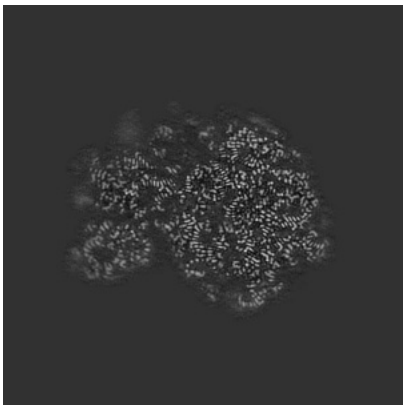
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

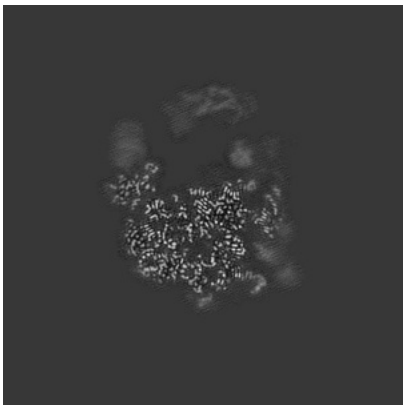
6.2.1 Primary map



X Index: 250

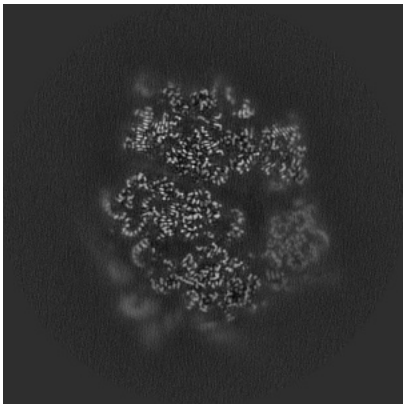


Y Index: 250

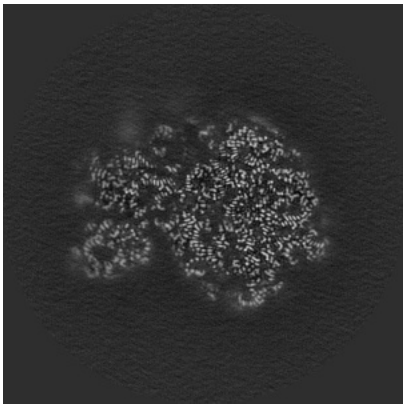


Z Index: 250

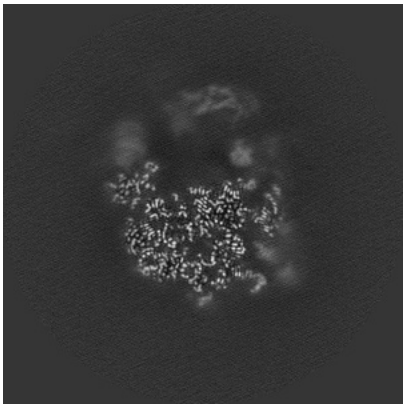
6.2.2 Raw map



X Index: 250



Y Index: 250



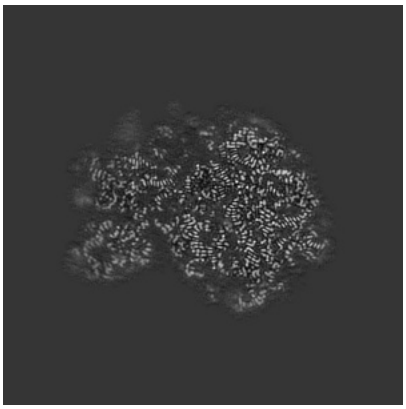
Z Index: 250

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

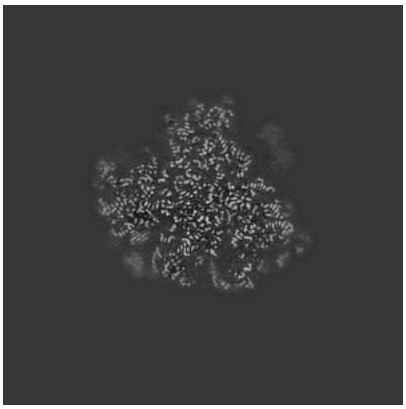
6.3 Largest variance slices (i)

6.3.1 Primary map

X Index: 275

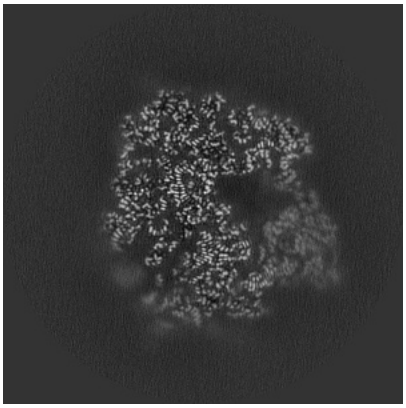


Y Index: 249

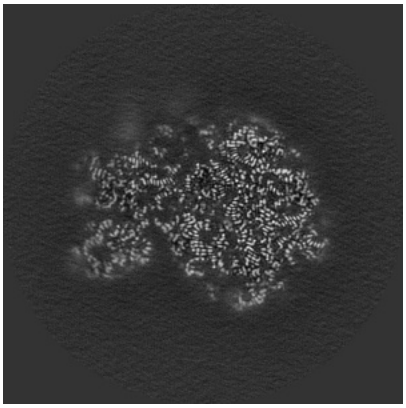


Z Index: 311

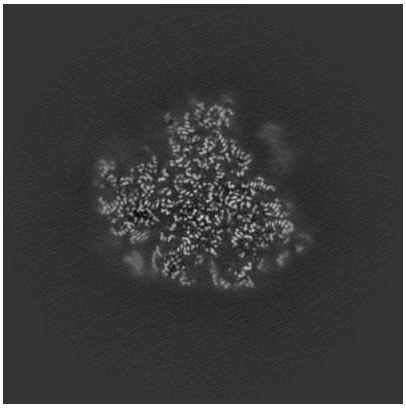
6.3.2 Raw map



X Index: 275



Y Index: 249

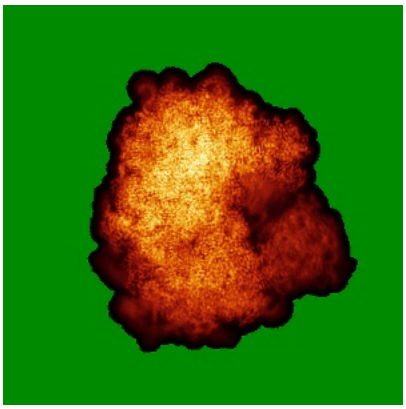


Z Index: 311

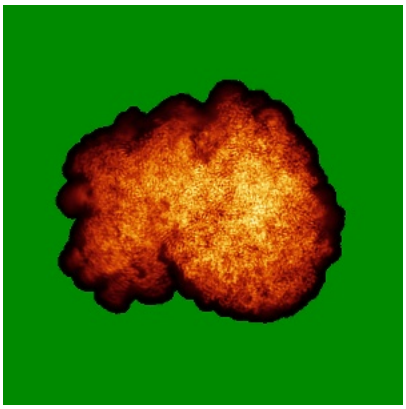
The images above show the largest variance slices of the map in three orthogonal directions.

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

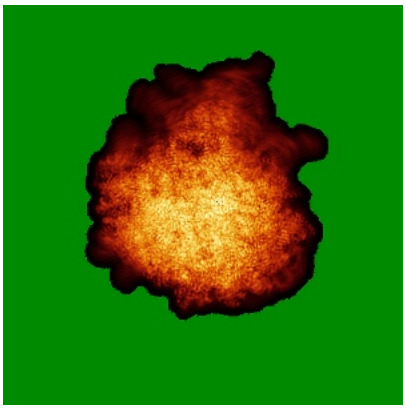
6.4.1 Primary map



X

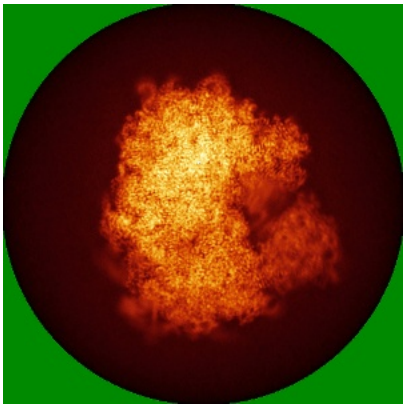


Y

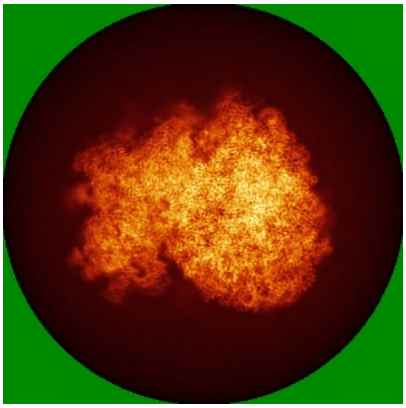


Z

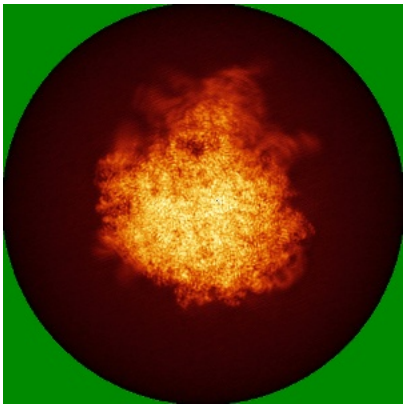
6.4.2 Raw map



X



Y

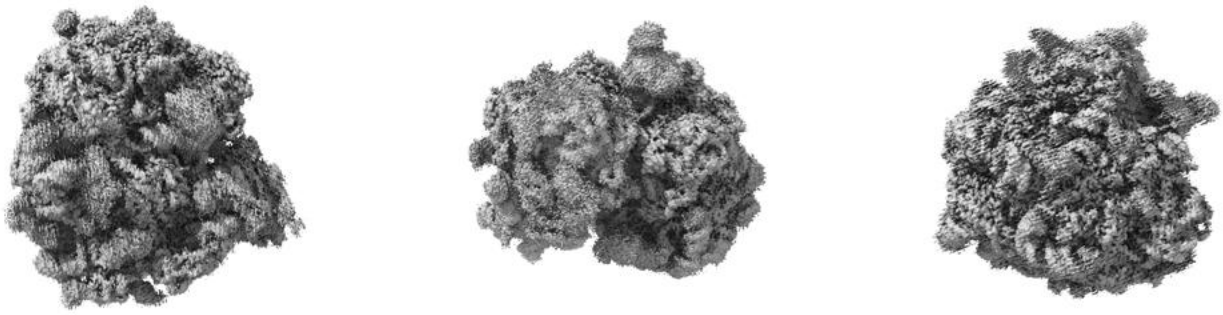


Z

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)

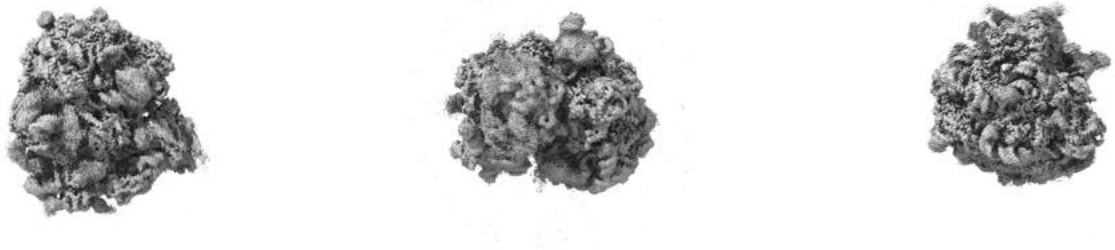
6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.00547. 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.

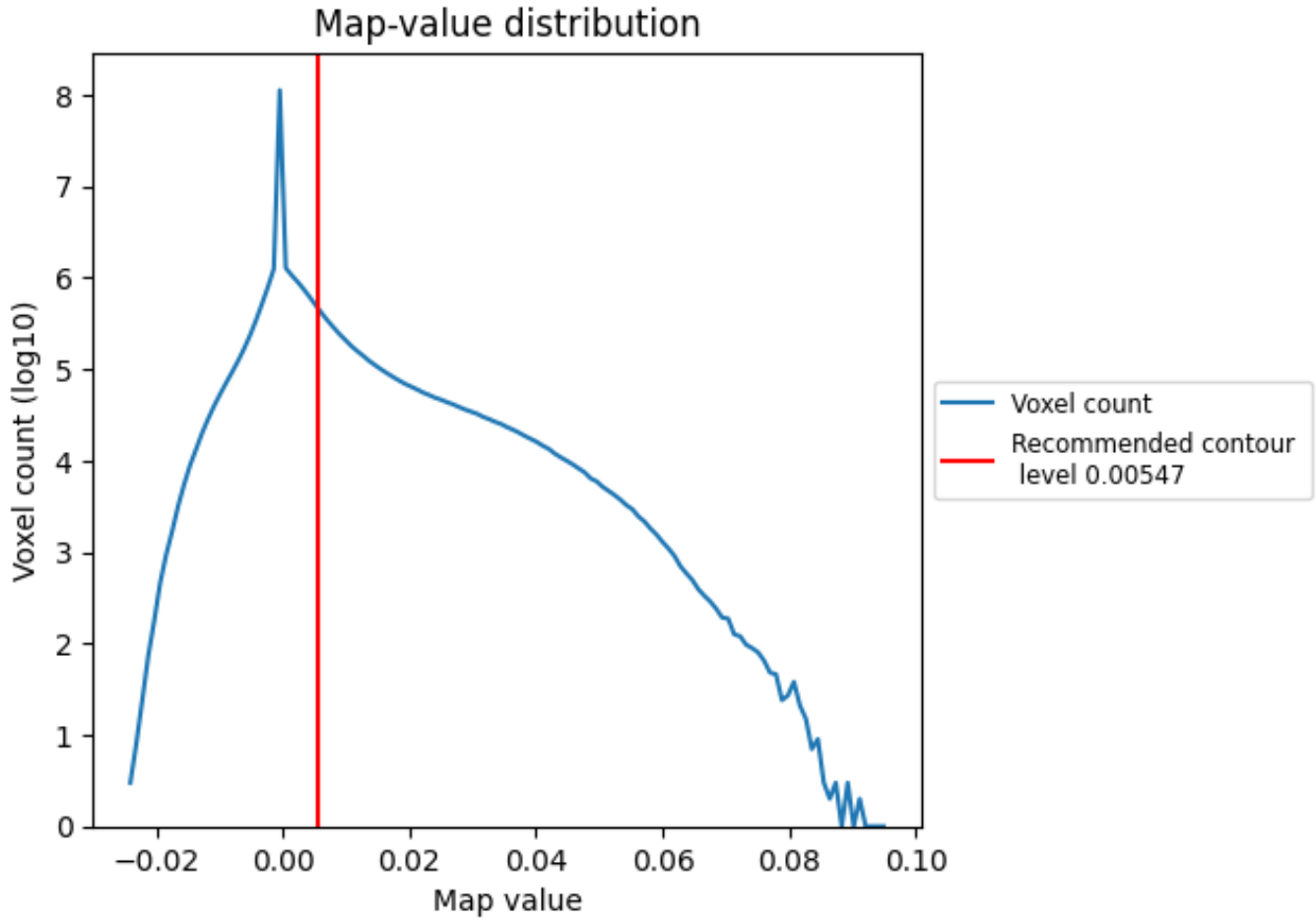
6.6 Mask visualisation (i)

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

7 Map analysis

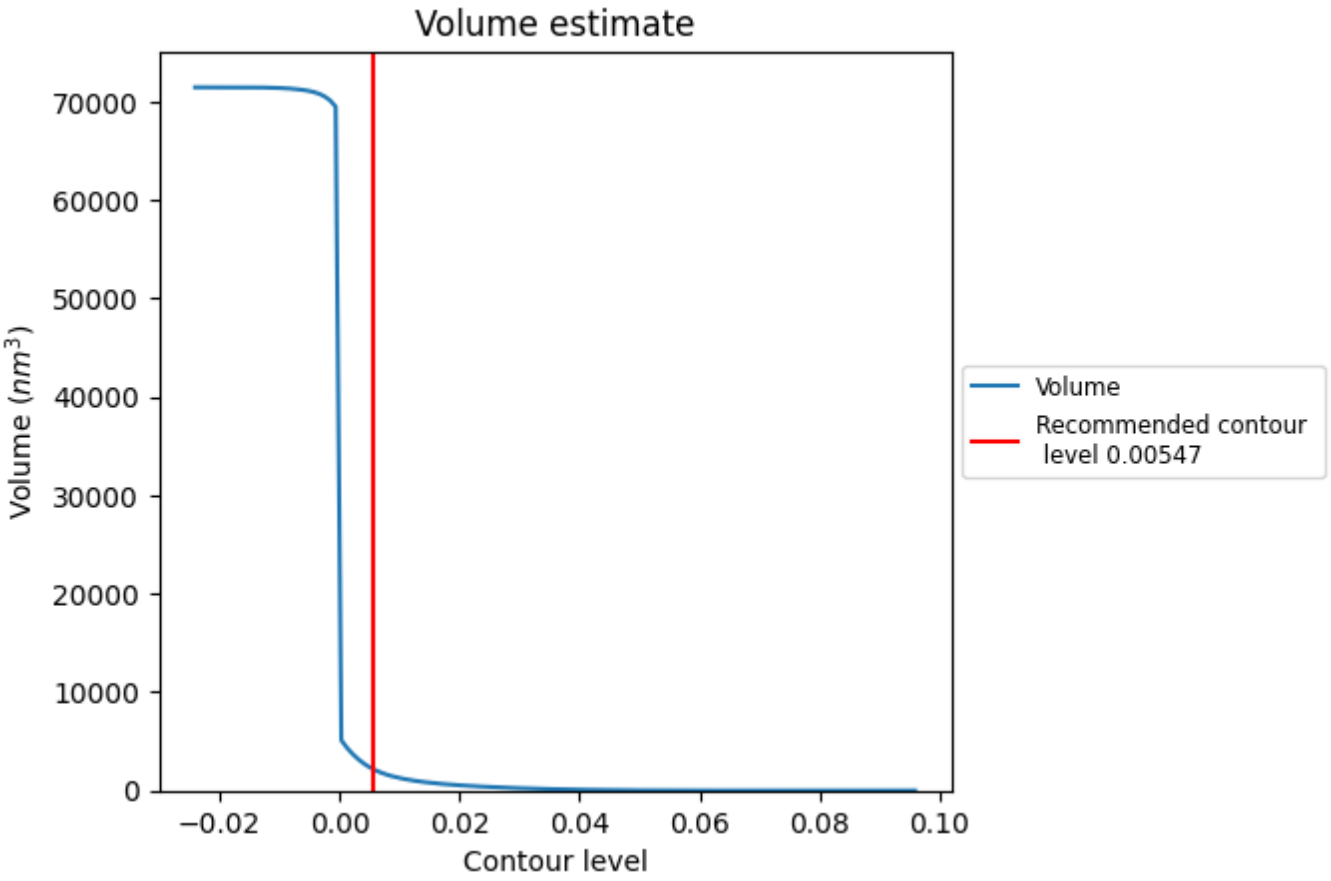
This section contains the results of statistical analysis of the map.

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.

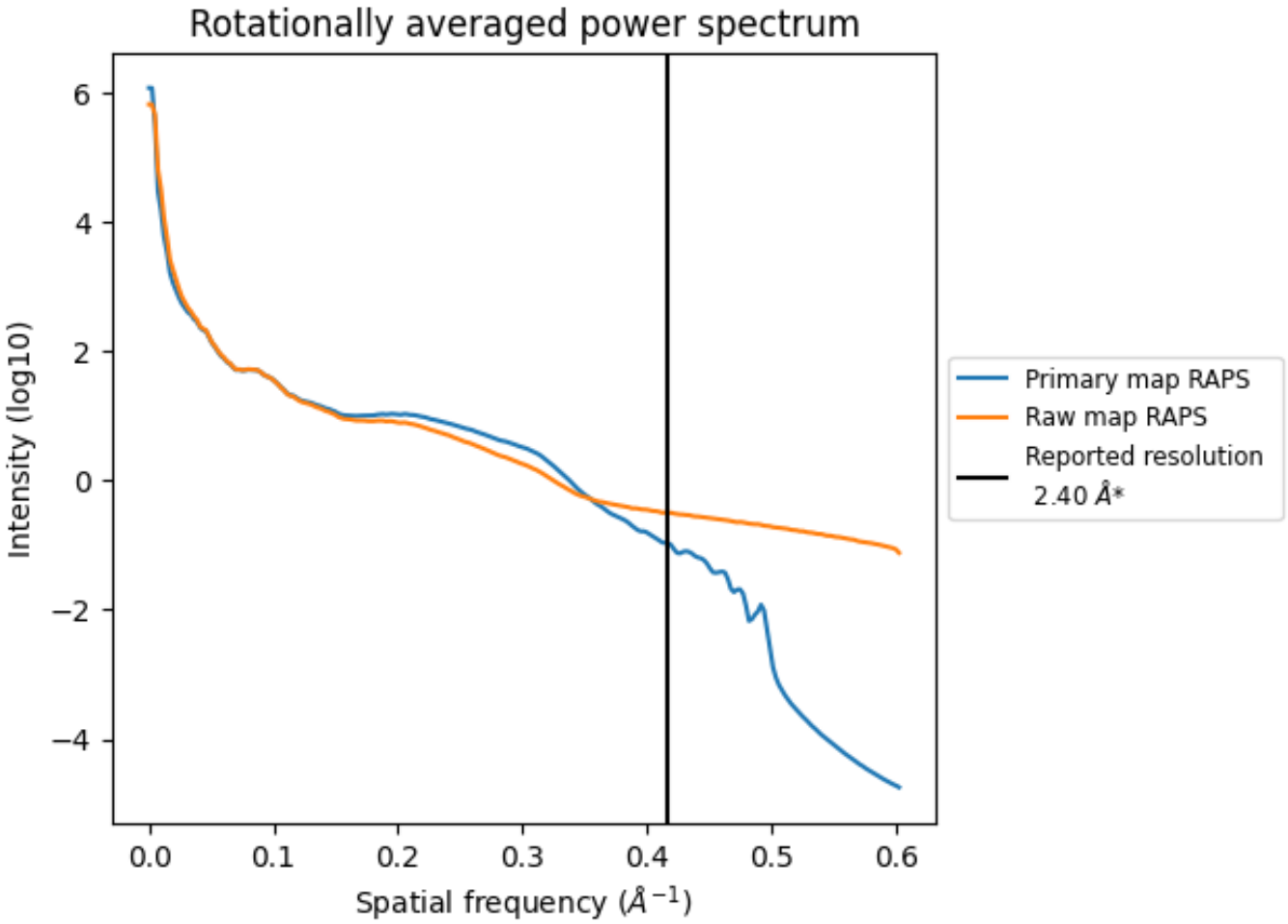
7.2 Volume estimate



The volume at the recommended contour level is 2225 nm^3; this corresponds to an approximate mass of 2010 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)

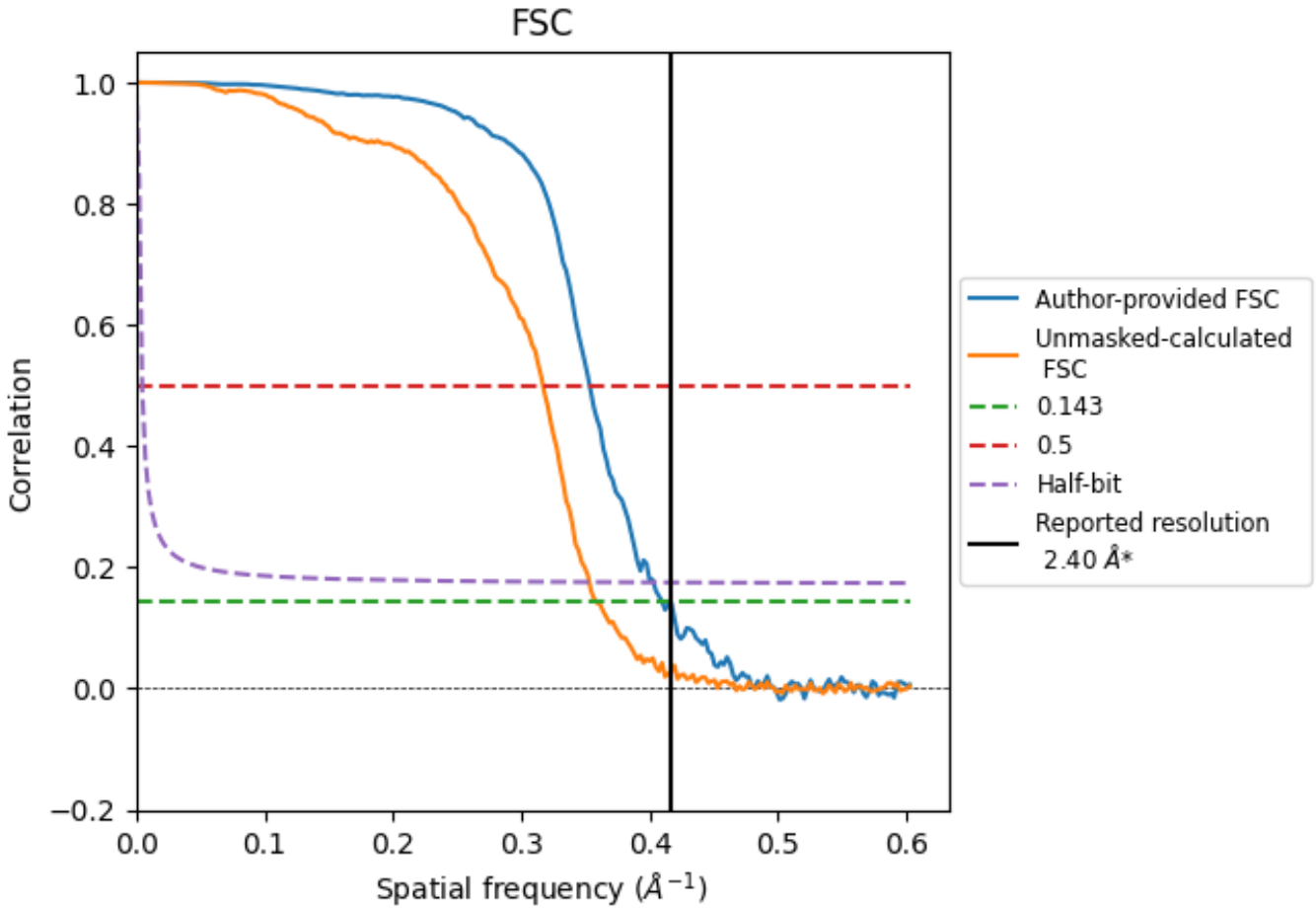


*Reported resolution corresponds to spatial frequency of 0.417 Å^{-1}

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 0.417 Å^{-1}

8.2 Resolution estimates (i)

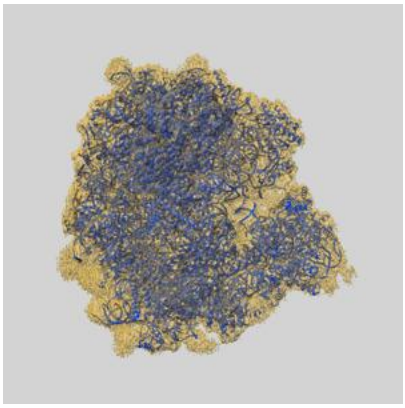
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.40	-	-
Author-provided FSC curve	2.44	2.83	2.48
Unmasked-calculated*	2.79	3.16	2.83

*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 2.79 differs from the reported value 2.4 by more than 10 %

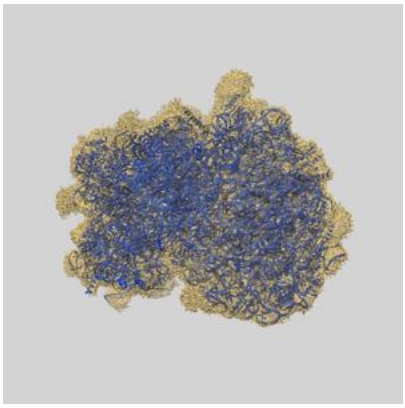
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-44918 and PDB model 9BUS. Per-residue inclusion information can be found in section 3 on page 18.

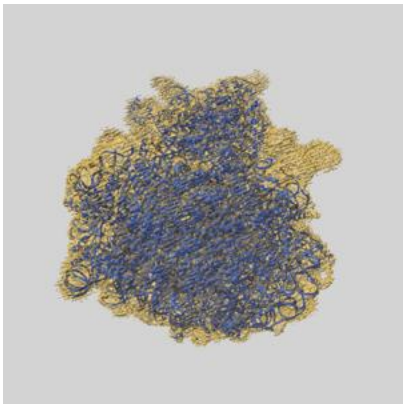
9.1 Map-model overlay



X



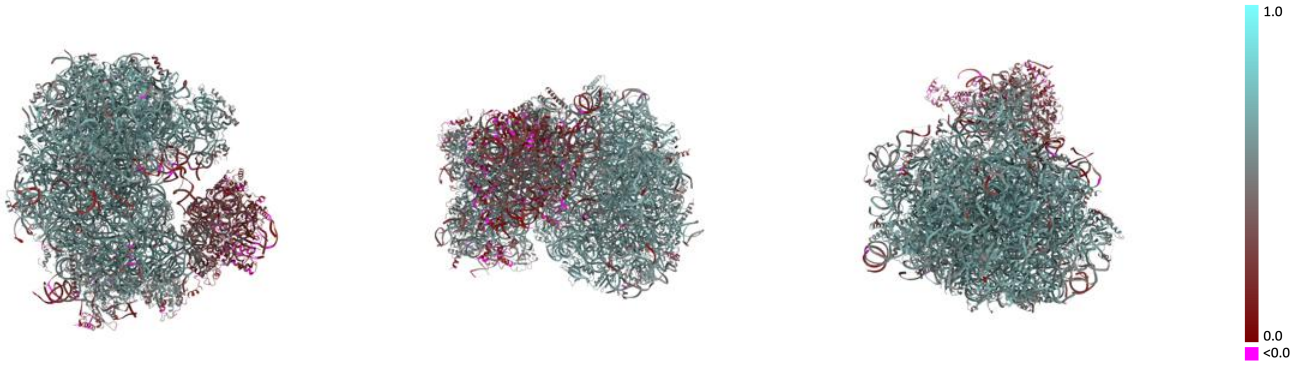
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.00547 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

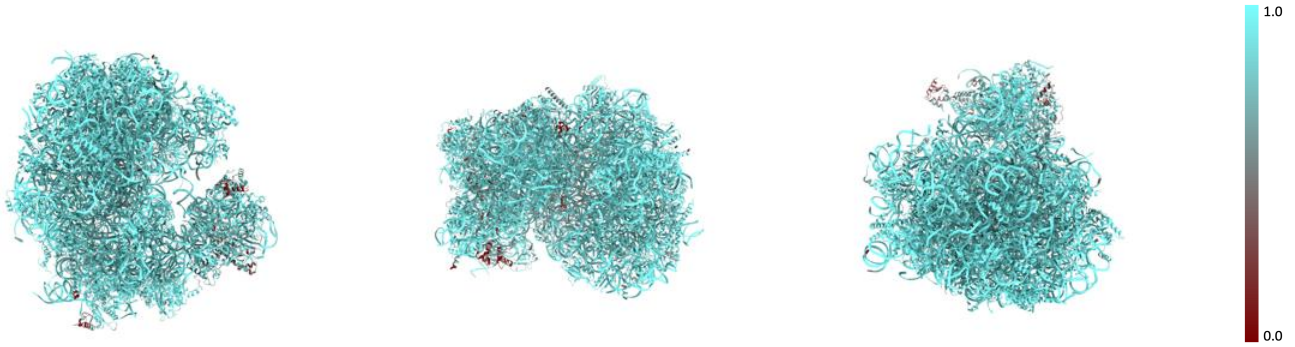
9.2 Q-score mapped to coordinate model (i)



X Y Z

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

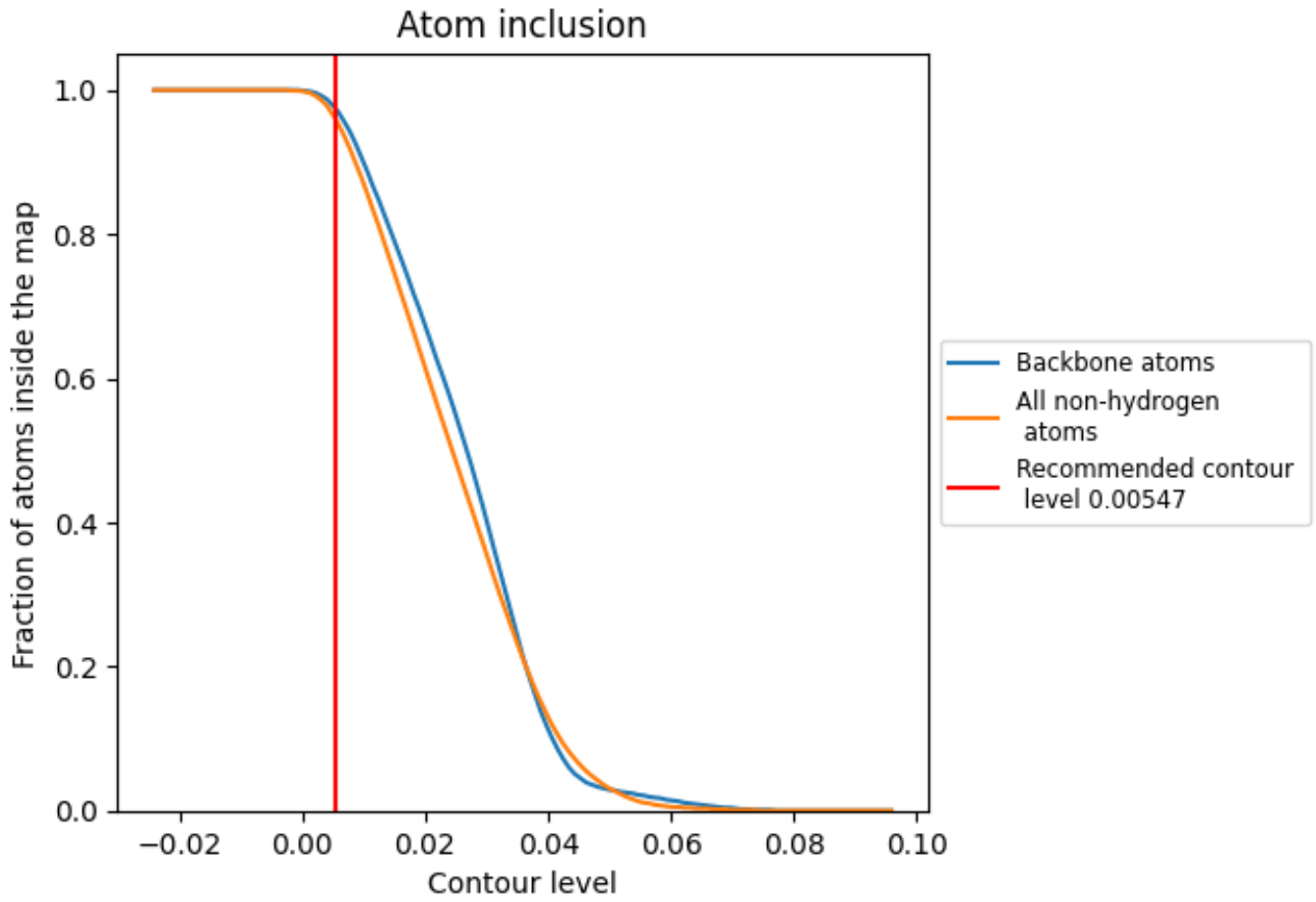
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.00547).

9.4 Atom inclusion (i)



At the recommended contour level, 97% of all backbone atoms, 96% 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 (0.00547) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9590	0.5550
A0	0.9460	0.6110
A1	0.9530	0.5420
A2	0.9720	0.6020
A3	0.9770	0.6050
A4	0.9120	0.5490
A5	0.9700	0.6290
A6	0.9530	0.5830
A7	0.9780	0.6330
A8	0.9700	0.6360
A9	0.9890	0.6560
AA	0.9910	0.6120
AB	0.9940	0.6160
AC	0.9980	0.6270
AD	0.9780	0.6480
AE	0.9860	0.6470
AF	0.9420	0.5950
AG	0.9610	0.5130
AH	0.9850	0.6140
AI	0.9720	0.5820
AJ	0.9150	0.5200
AK	0.9800	0.6350
AL	0.9820	0.6230
AM	0.9790	0.6360
AN	0.9620	0.5870
AO	0.9820	0.6510
AP	0.9830	0.6480
AQ	0.9380	0.5630
AR	0.9610	0.5670
AS	0.9800	0.6500
AT	0.9140	0.5760
AU	0.9840	0.6300
AV	0.9780	0.6230
AW	0.9850	0.6440
AX	0.9470	0.5180

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Chain	Atom inclusion	Q-score
AY	0.9500	0.5780
AZ	0.9750	0.5750
Aa	0.9620	0.6100
Ab	0.9670	0.5880
Ac	0.9810	0.6400
Ad	0.9710	0.5730
Ae	0.9840	0.6220
Af	0.9830	0.6220
Ag	0.9310	0.5980
Ah	0.9810	0.6500
Ai	0.9720	0.6430
S1	0.9130	0.4760
S2	0.2600	0.1370
S3	0.9690	0.5910
S4	0.8090	0.3900
S5	0.7740	0.2740
S6	0.9100	0.4830
S7	0.9100	0.2460
SA	0.9810	0.4990
SB	0.9300	0.5330
SC	0.9300	0.4880
SD	0.7020	0.2270
SE	0.9180	0.5240
SF	0.9480	0.5600
SG	0.9510	0.5520
SH	0.9100	0.4310
SI	0.7970	0.2350
SJ	0.7810	0.3890
SK	0.9650	0.6000
SL	0.9490	0.5740
SM	0.7660	0.2110
SN	0.6980	0.2070
SO	0.7390	0.1490
SP	0.9440	0.5510
SQ	0.9340	0.5720
SR	0.3180	0.0740
SS	0.7690	0.1760
ST	0.7450	0.2980
SU	0.9280	0.5760
SV	0.9560	0.6080
SW	0.8070	0.2510
SX	0.6910	0.1630

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Chain	Atom inclusion	Q-score
SY	0.8710	0.2330
SZ	0.9520	0.5360