



Full wwPDB EM Validation Report ⓘ

Dec 2, 2025 – 12:00 PM EST

PDB ID : 9BUP / pdb_00009bup
EMDB ID : EMD-44915
Title : Single particle CryoEM structure of the Pf80S ribosome in non-rotated PRE state (nrt A-P-E)
Authors : Anton, L.; Haile, M.; Ho, C.M.
Deposited on : 2024-05-17
Resolution : 2.70 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:

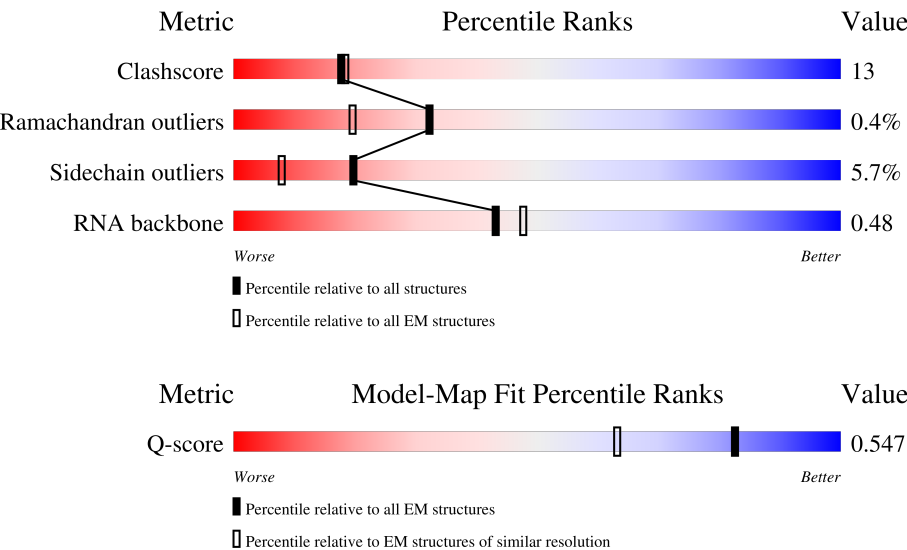
EMDB validation analysis : 0.0.1.dev129
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics : 202505.v01 (Using data in the EMDb archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.46

1 Overall quality at a glance i

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

The reported resolution of this entry is 2.70 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
RNA backbone	6643	2191	-
Q-score	-	25397	10327 (2.20 - 3.20)

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 $\leq 5\%$. 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	
2	S2	105	
3	S3	107	

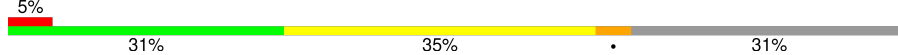
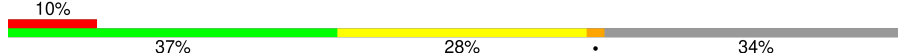
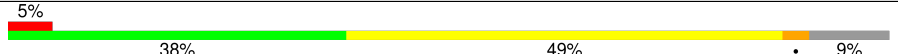
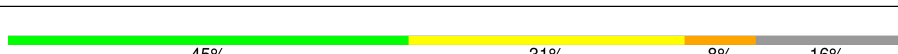
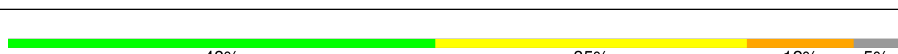
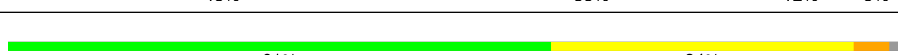
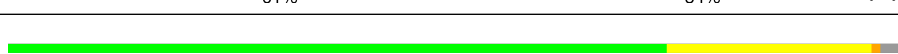
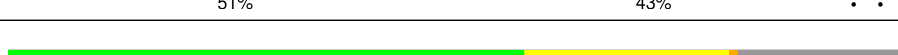
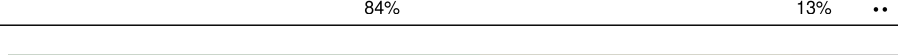
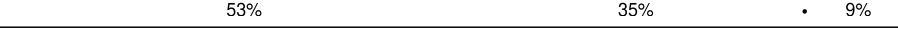
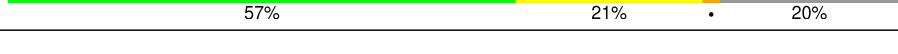
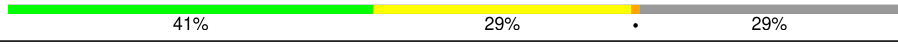
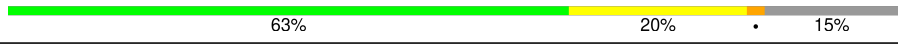
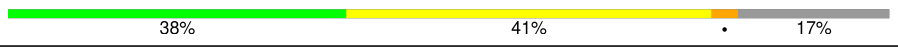
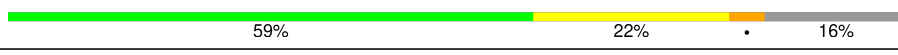
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Mol	Chain	Length	Quality of chain
4	S4	82	
5	S5	67	
6	S6	58	
7	S7	74	
8	SA	2092	
9	SB	262	
10	SC	263	
11	SD	221	
12	SE	189	
13	SF	261	
14	SG	272	
15	SH	306	
16	SI	195	
17	SJ	194	
18	SK	130	
19	SL	218	
20	SM	144	
21	SN	118	
22	SO	137	
23	SP	151	
24	SQ	145	
25	SR	141	
26	SS	156	
27	ST	54	
28	SU	151	

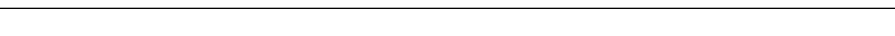
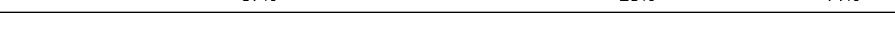
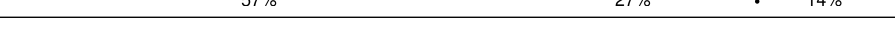
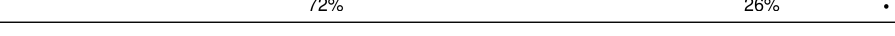
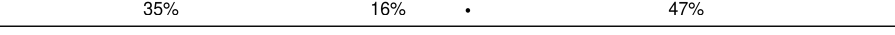
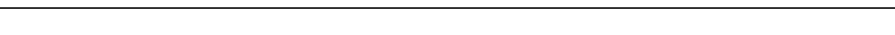
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Mol	Chain	Length	Quality of chain
29	SV	161	
30	SW	137	
31	SX	145	
32	SY	170	
33	SZ	82	
34	AA	3788	
35	AC	159	
36	AB	119	
37	AL	215	
38	A1	146	
39	A2	127	
40	A4	67	
41	A6	108	
42	A7	120	
43	AN	165	
44	A8	131	
45	A9	140	
46	Aa	150	
47	Ab	112	
48	Ad	87	
49	Ae	51	
50	Af	128	
51	AP	205	
52	Ah	96	
53	Ai	104	

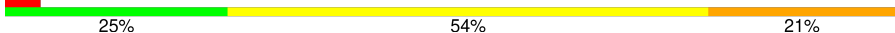
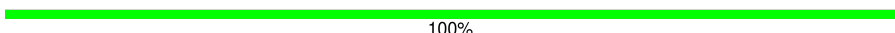
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Mol	Chain	Length	Quality of chain
54	AI	221	
55	AJ	283	
56	Ac	92	
57	AK	202	
58	AM	139	
59	AS	187	
60	AO	148	
61	AQ	219	
62	AR	294	
63	AW	173	
64	AY	190	
65	AT	182	
66	AZ	126	
67	A3	124	
68	A5	257	
69	AD	260	
70	AE	386	
71	AF	411	
72	AG	173	
73	AU	184	
74	AH	190	
75	AV	161	
76	Ag	39	
77	AX	139	
78	A0	162	

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Mol	Chain	Length	Quality of chain
79	S8	76	
80	mR	11	
81	S9	76	
82	Sa	6	

2 Entry composition

There are 82 unique types of molecules in this entry. The entry contains 196488 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
1	S1	120	Total	C	N	O	S	0	0
			985	632	189	162	2		

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

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

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

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

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

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

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

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

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

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

- Molecule 7 is a RNA chain called 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
			67887	30446	12053	22226	3162		

- 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	104	Total	C	N	O	S	0	0
			830	529	151	147	3		

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

- Molecule 51 is a protein called Ribosomal protein L15.

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

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

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

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

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

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

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

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

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

- Molecule 56 is a protein called Ribosomal protein L37.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

- Molecule 79 is a RNA chain called tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
79	S8	76	Total	C	N	O	P	0	0
			1620	723	295	527	75		

- Molecule 80 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
80	mR	11	Total	C	N	O	P	0	0
			230	103	35	81	11		

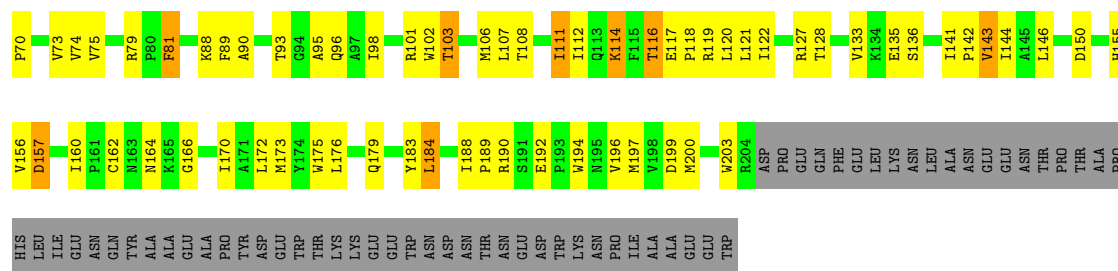
- Molecule 81 is a RNA chain called tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
81	S9	76	Total	C	N	O	P	0	0
			1619	723	290	531	75		

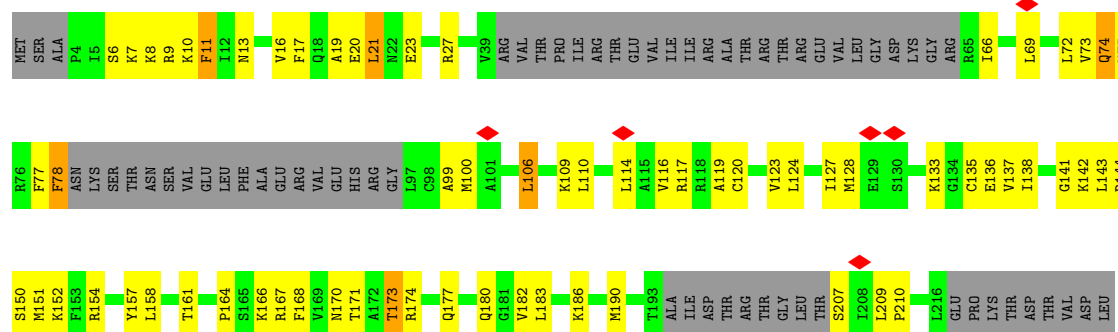
- Molecule 82 is a protein called nascent polypeptide chain.

Mol	Chain	Residues	Atoms				AltConf	Trace
82	Sa	6	Total	C	N	O	0	0
			30	18	6	6		

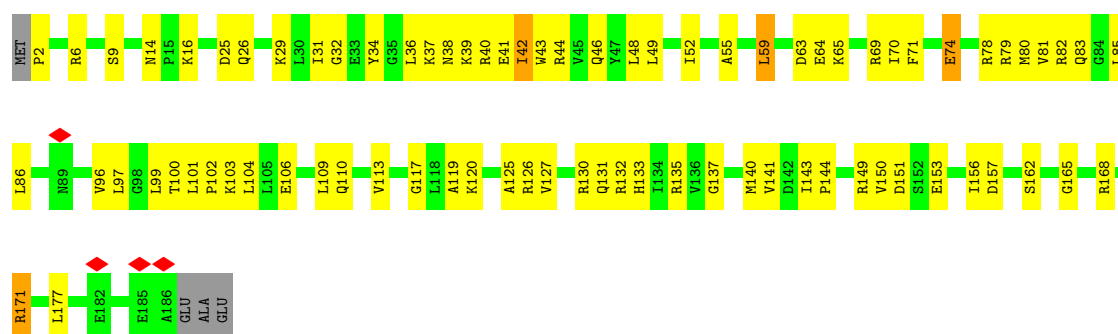
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A	U1460	C1381	A1317	U1238	U1098	C996	G922	A852	U	A	U	C576	C	U408
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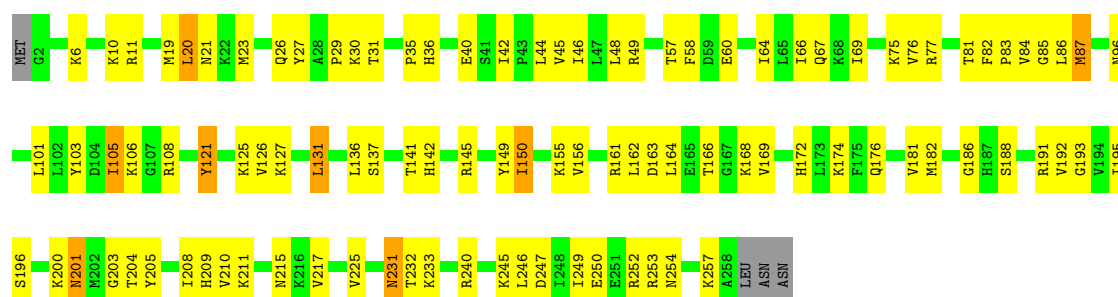
• Molecule 11: 40S ribosomal protein S3



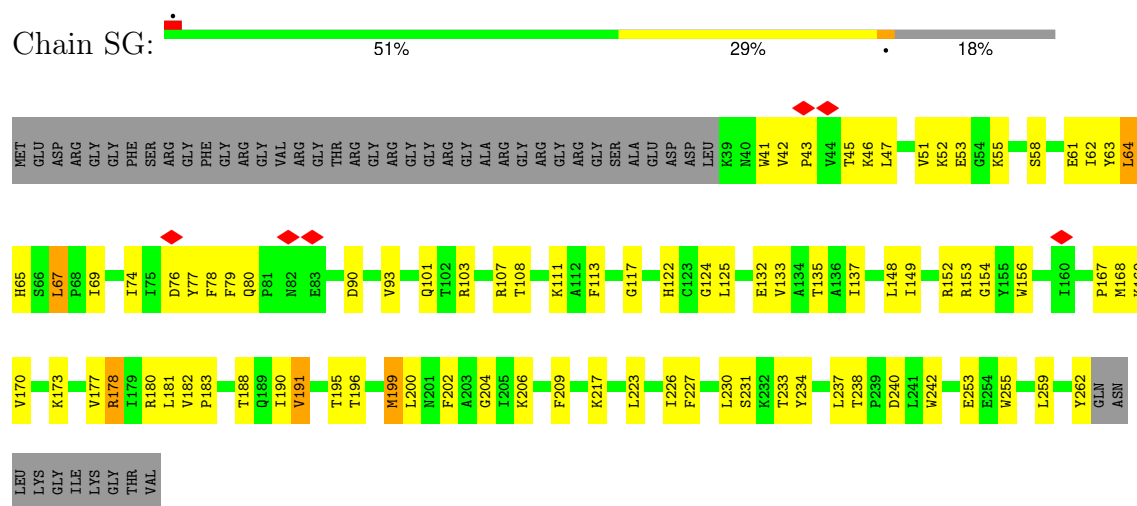
• Molecule 12: 40S ribosomal protein S9



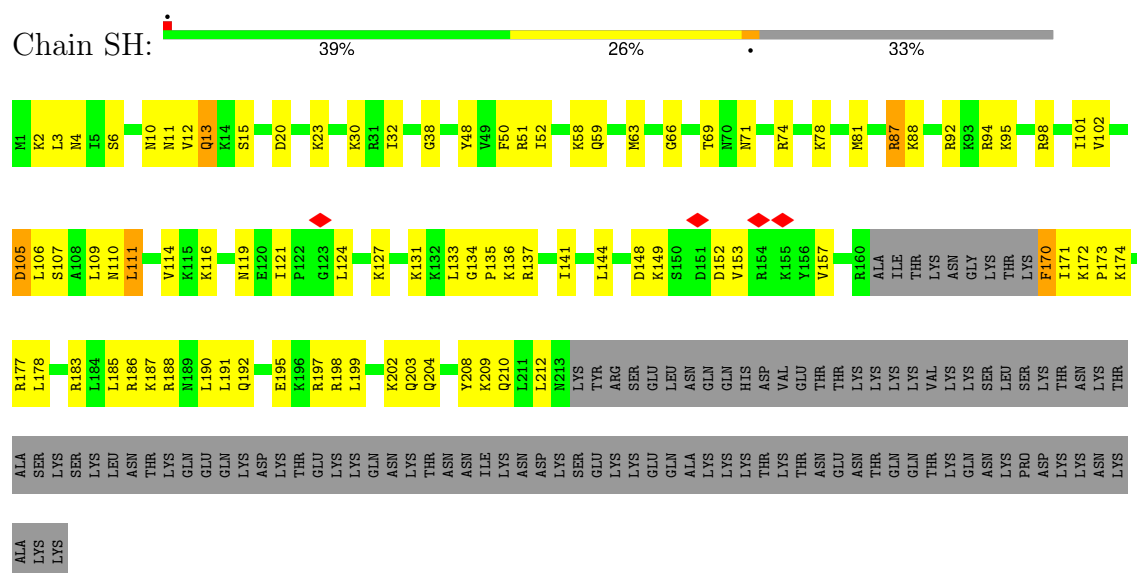
• Molecule 13: 40S ribosomal protein S4



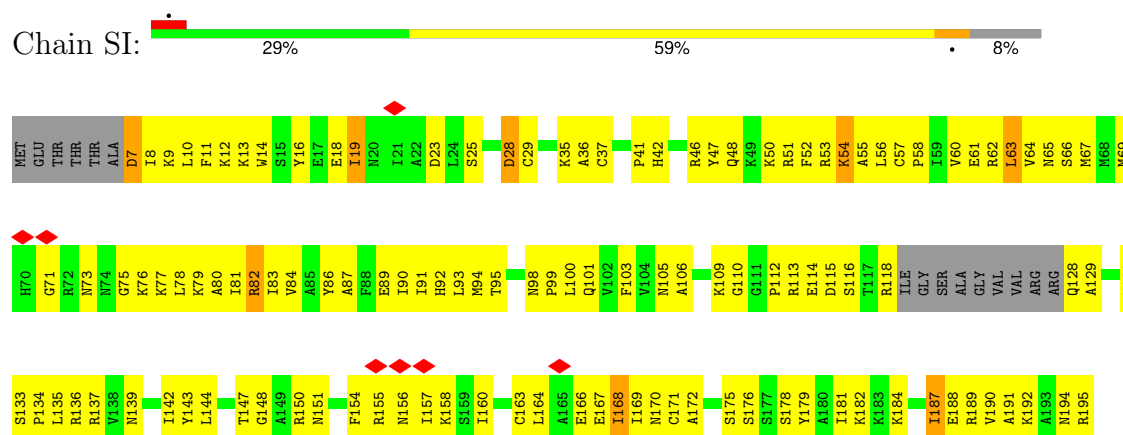
- Molecule 14: 40S ribosomal protein S5



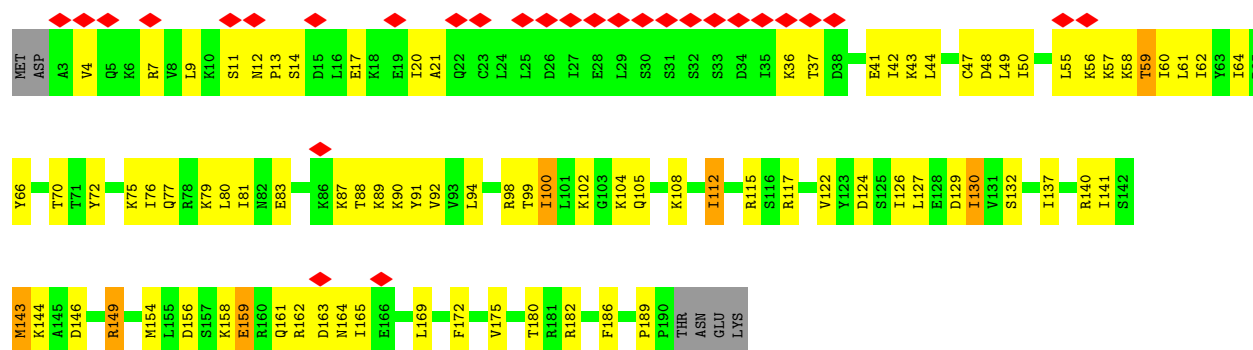
- Molecule 15: 40S ribosomal protein S6



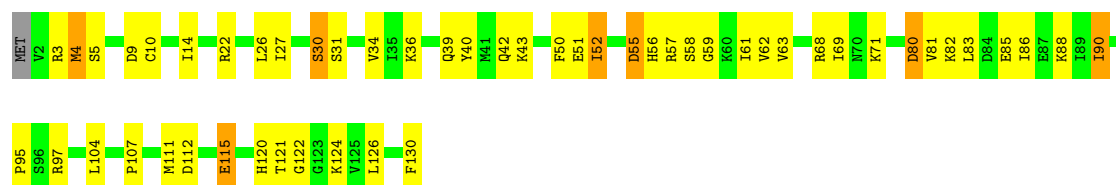
- Molecule 16: 40S ribosomal protein S5



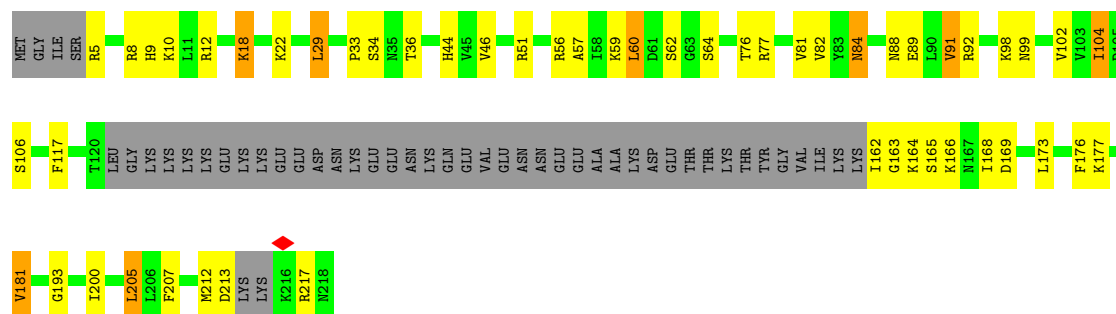
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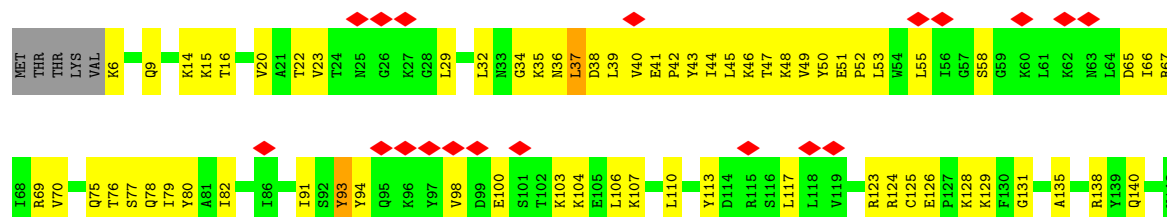
Chain SK: 59% 35% 5%



Chain SL: 54% 21% • 22%



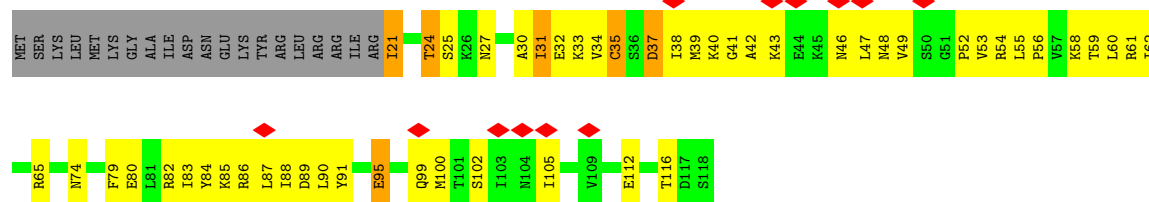
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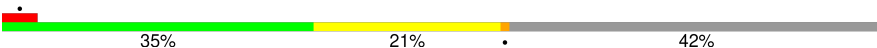
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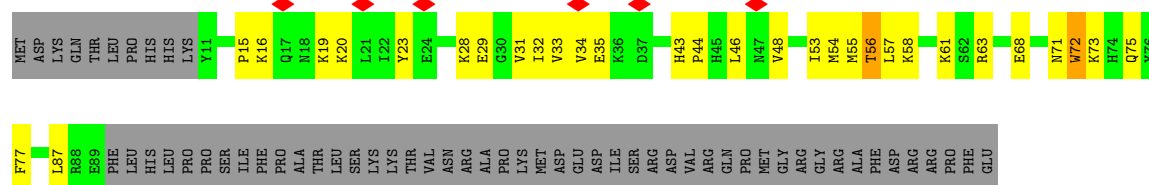
- Molecule 21: 40S ribosomal protein S20e

Chain SN: 



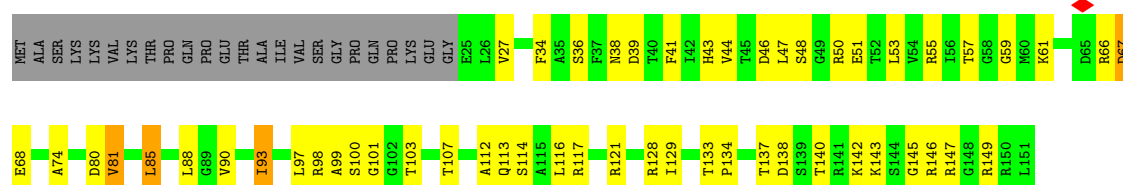
- Molecule 22: 40S ribosomal protein S10

Chain SO: 



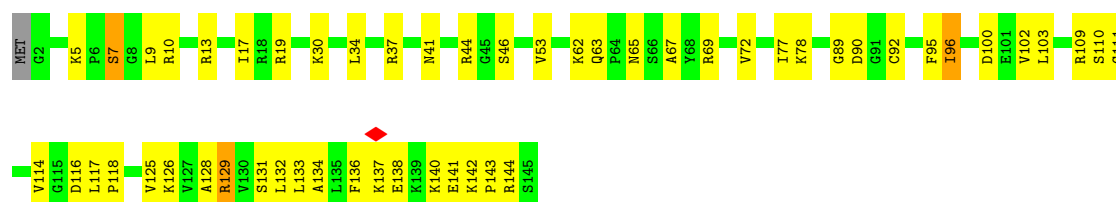
- Molecule 23: 40S ribosomal protein S11

Chain SP: 

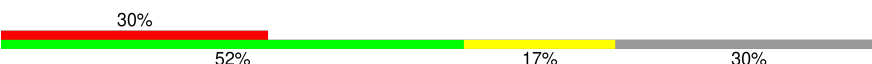


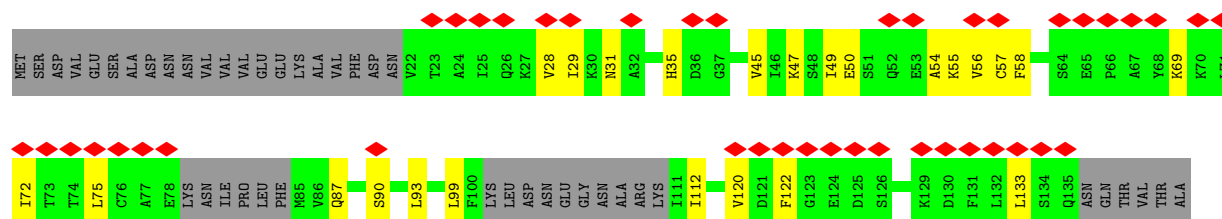
- Molecule 24: 40S ribosomal protein S23

Chain SQ: 

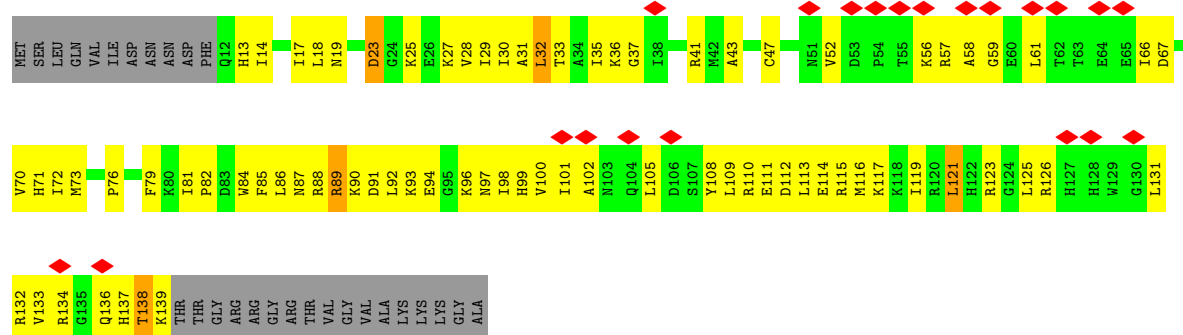


- Molecule 25: 40S ribosomal protein S12

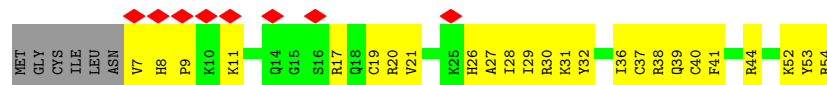
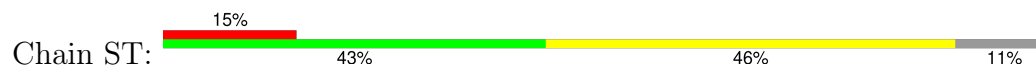
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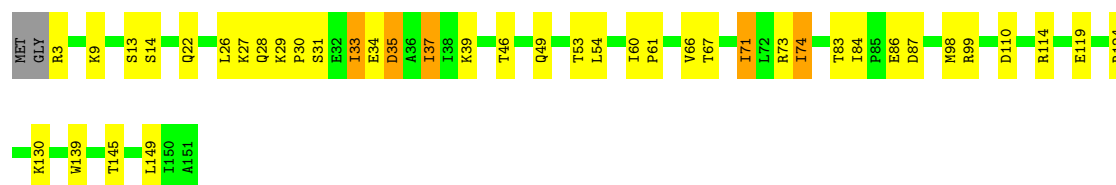
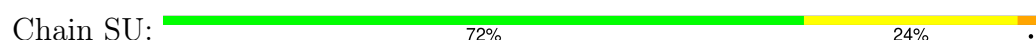
• Molecule 26: 40S ribosomal protein S18



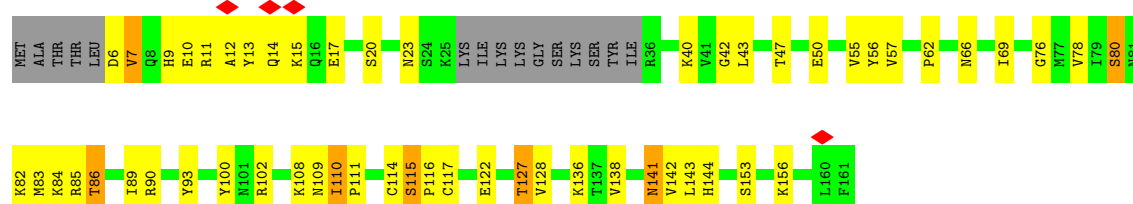
• Molecule 27: 40S ribosomal protein S29



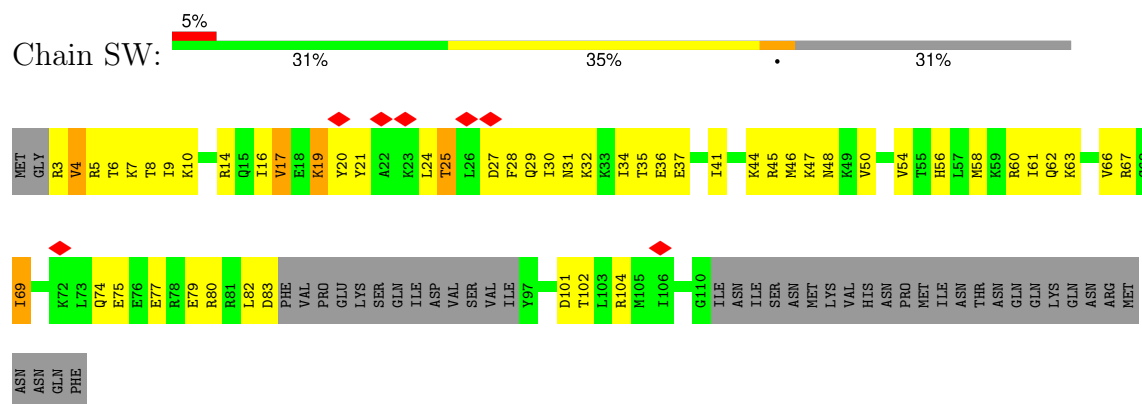
• Molecule 28: 40S ribosomal protein S15



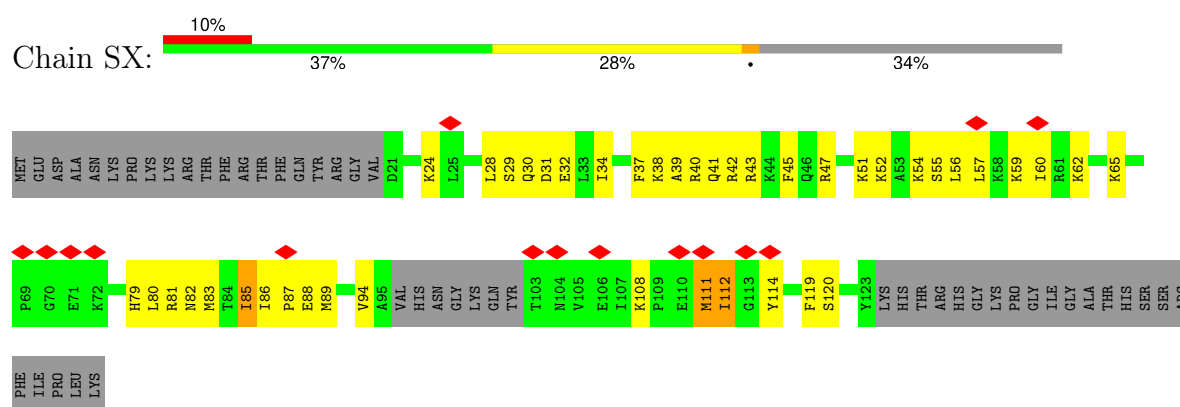
• Molecule 29: 40S ribosomal protein S11



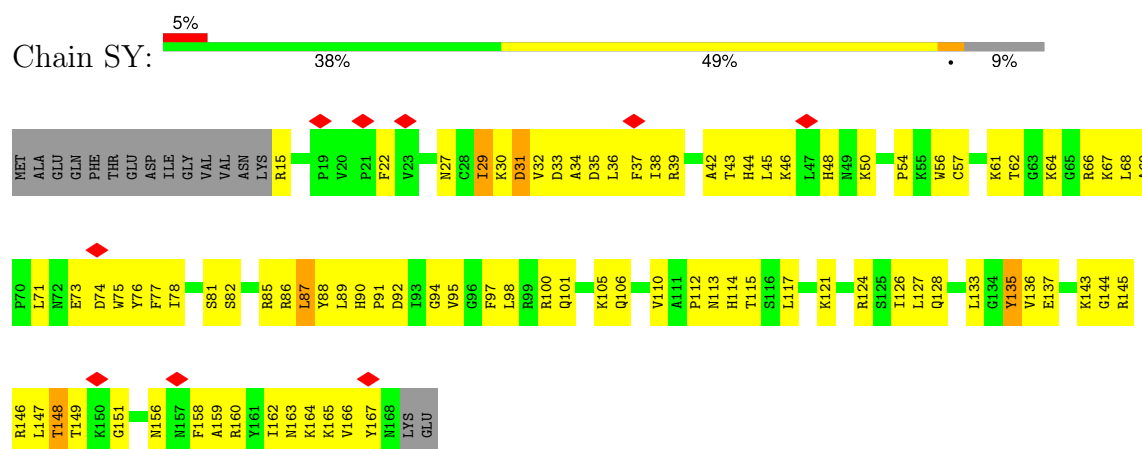
- Molecule 30: 40S ribosomal protein S17



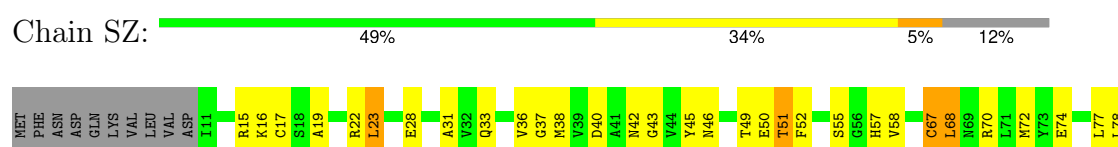
- Molecule 31: 40S ribosomal protein S19



- Molecule 32: 40S ribosomal protein S19

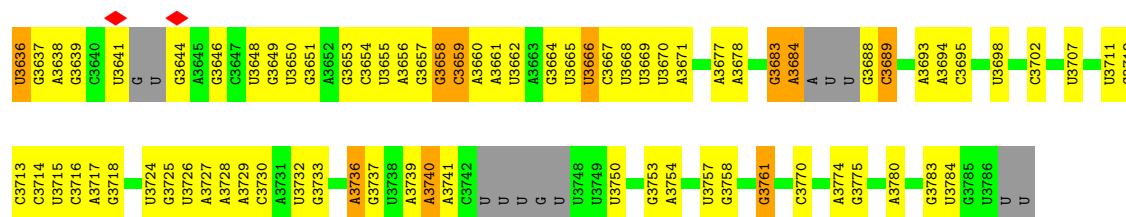


- Molecule 33: 40S ribosomal protein S21



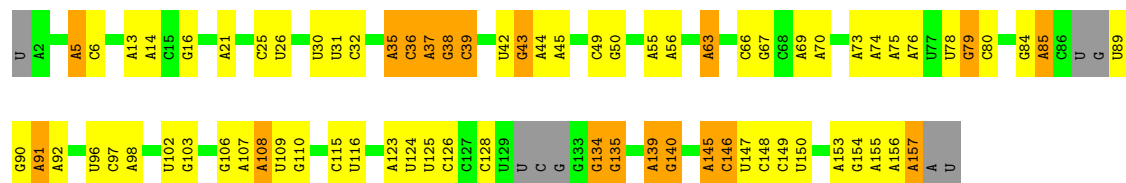


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U	U	G3469	A3383	U3291	C3203	U3112	C3014	C	U	C	A2712	U2645	A2515	A2400
U	U	G3470	A3384	A3292	C3204	U3116	A3015	U	U	U	C2713	A2648	A2516	A2401
U	U	G3471	U3385	U3293	U3205	A3116	G3016	U	C	A	U2719	G2648	A2517	U2402
C	U3567	A3476	A3386	A3295	G3206	U3120	A3017	C	U	A	C2720	A2649	U2518	G2403
U	U	A3477	U3387	A3296	U3209	U3121	A3018	U	A	A	G2722	A2651	A2521	A2404
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U	U	U3483	C3301	C3301	A3214	A3122	G3021	A2919	A	A	U2727	A2653	A2525	A2410
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U	U	G3485	A3394	G3306	U3216	U3127	C3023	U	U	G		C2655	G2532	G2415
U	U	C3494	A3398	U3313	C3226	A3128	U3025	C	U	A	A2732	A2656	G2533	
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U	U	U3503	A3403	C3320	A3231	U3133	A3030	A2932	C	C		G2663	G2542	U2433
U	U	U3504	C3404	U3321	U3234	U3134	A3033	C2933	A	A	U2739	A2664		
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U	U	C3536	A3434	U3357	A3259	A3167	C3065	U2964	U2819	U		G2687	A2461	
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U	U	U	A3458	U	G3281	G3187	U3097	A2995	A	A		U2700	U2498	
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U	U	U	C3463	U	C3287	G3198	U3106	G3009	U	A		G2708	A2507	
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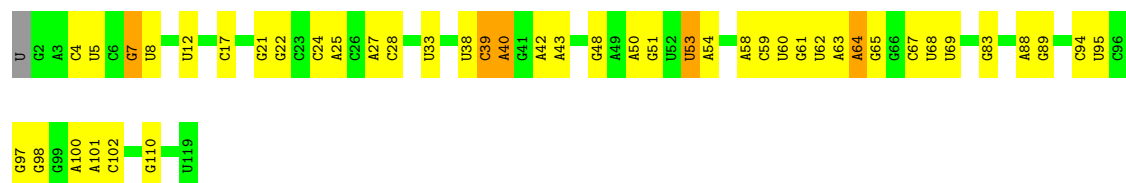
• Molecule 35: 5.8S ribosomal RNA

Chain AC: 48% 35% 12% 5%



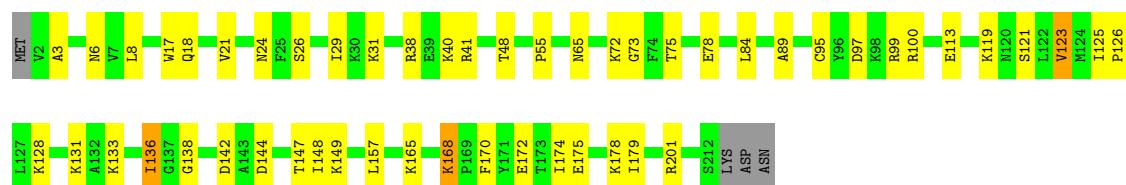
• Molecule 36: 5S ribosomal RNA

Chain AB: 61% 34% . .



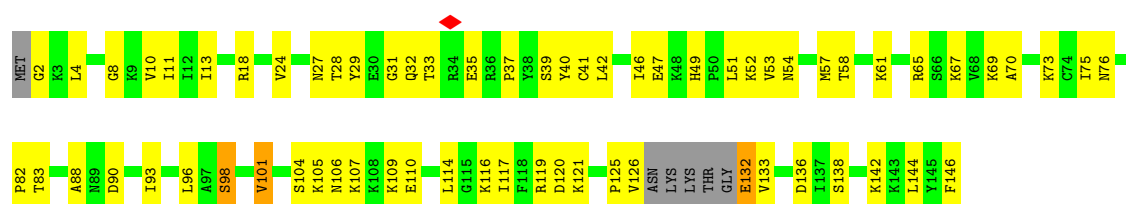
• Molecule 37: 60S ribosomal protein L13

Chain AL: 74% 23% . .



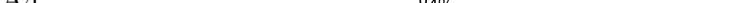
• Molecule 38: 60S ribosomal protein L27

Chain A1: 51% 43% . .

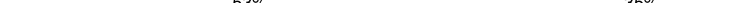


• Molecule 39: 60S ribosomal protein L28

Amino Acid	Number of Mutations
MET	1
S2	2
N3	3
H10	4
E11	5
R14	6
K15	7
K21	8
K22	9
N23	10
K24	11
A25	12
G26	13
K27	14
K28	15
N39	16
Y40	17
T43	18
P44	19
S45	20
N53	21
H56	22
V65	23
K69	24
THR	25
SER	26
LYS	27
GLU	28
SER	29
ASN	30
VAL	31
V77	32
F81	33
K82	34
ALA	35
LYS	36
ASN	37
H86	38
L92	39
Q95	40
S98	41
PHE	42
GLU	43
LYS	44
ALA	45
K103	46
H109	47

- Chain A4:  84% 13% ..

Amino Acid	Relative Abundance (approx.)
MET	10
A2	20
K3	15
H10	15
M30	15
N42	15
C46	15
I50	15
E56	25
L57	15
K62	15
K65	15
N66	20
N67	20

- Chain A6:  53% 35% 9%

S91	C92	D97	D100	S101	D102	I103	I104	K105	THR	ASN	GLU	MET	ALA	LYS	LYS	SER	LYS	LYS	S8	N12	I13	K16	L17	Q18	L19	V20	M21	K25	Y26	Q27	F28	L37	G40	K41	L44	V45	S48	S49	R50	I54	O55	R56	S57	Y58	I59	E60	V61	Y62	A63	M64	L65	V70	D76	N77	M78	T82	A83	R89	T90
-----	-----	-----	------	------	------	------	------	------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

- Chain A7: 57% 21% • 20%

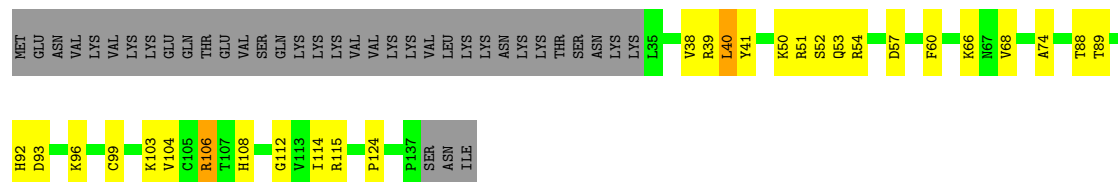
K96	R96	VAL	MET
M97	M97	VAL	
Y98	Y98	GLY	
T99	T99	THR	
I100	I100	VAL	
	V104	LYS	
	K110	GLN	
	C116	LYS	
GLU	GLU	THR	
ALA	ALA	LEU	
ASN	ASN	LYS	P15
GLU	GLU	V16	P15
		T17	
		L27	
		V31	
		C32	
		Y33	
		K36	
		A40	
		E43	
		I44	
		R45	
		S46	
		M52	
		H53	
		T54	
		V57	
		K65	
		F66	
		R73	
		P76	
		R80	
		E84	
		R85	
		K86	
		R87	
		N88	
		GLU	
		ASP	
		GLU	
		ASP	
		SER	
		LYS	
		E96	

- Chain AN: 65% 24% • 11%

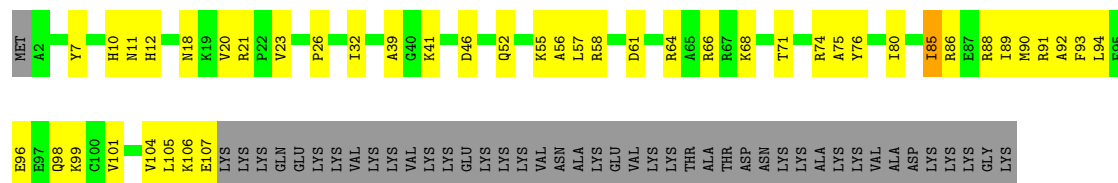
M107	M108	M109	D125	R136	K139	K141	M142	I145	K146	M147	M150	GLY	GLU	ASN	LYS	LYS	VAL	LYS	ASN	GLN	LYS	VAL	LYS	ALA	MET	PRO	ARG	V4	E5	L6	T7	E8	E9	L12	K17	K22	R23	F24	V25	E26	P27	R28	G29	L30	C31	Y35	V49	T50	R53	V54	I55	V56	D57	G58	A59	F60	I61	T62	R66	M67	V68	I69	P70	L71	K72	R73	R80	I81	K82	K88	E103	E104	F105	P106
------	------	------	------	------	------	------	------	------	------	------	------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	----	----	----	----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	------	------	------	------

- Chain A8: 56% 36% 5%

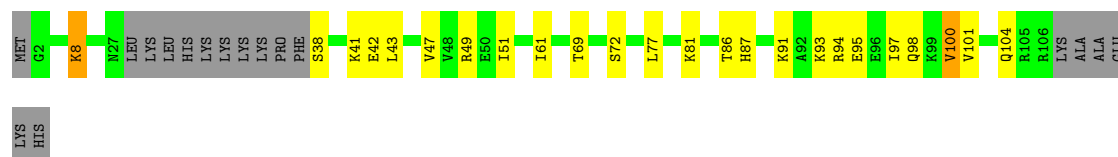
- Molecule 45: 60S ribosomal protein L35ae



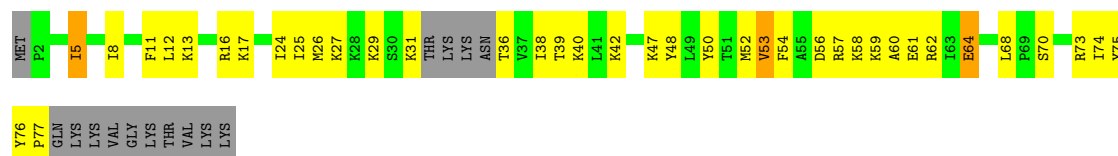
- Molecule 46: 60S ribosomal protein L34



- Molecule 47: 60S ribosomal protein L36

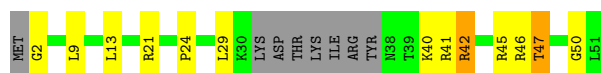


- Molecule 48: 60S ribosomal protein L38



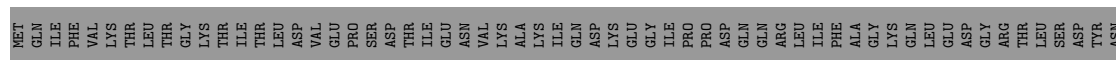
- Molecule 49: 60S ribosomal protein L39





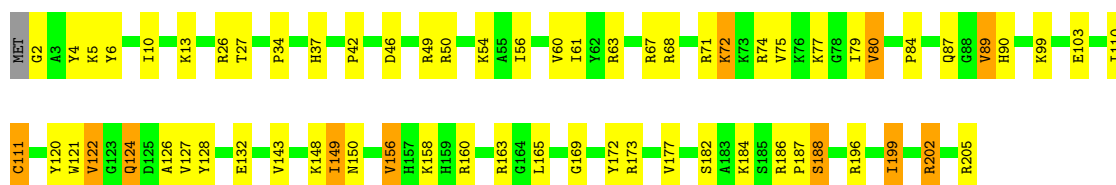
- Molecule 50: Ubiquitin-60S ribosomal protein L40

Chain Af: 30% 9% 60%



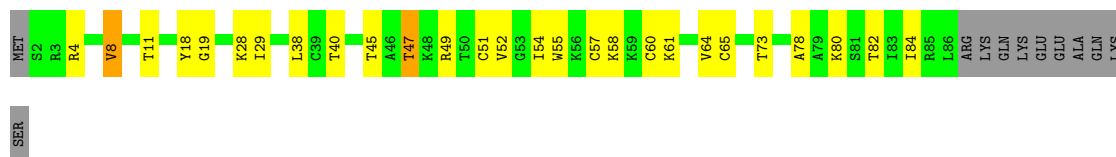
- Molecule 51: Ribosomal protein L15

Chain AP: 67% 27% 5%



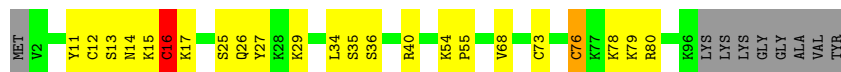
- Molecule 52: Large ribosomal subunit protein eL43

Chain Ah: 60% 26% 11%



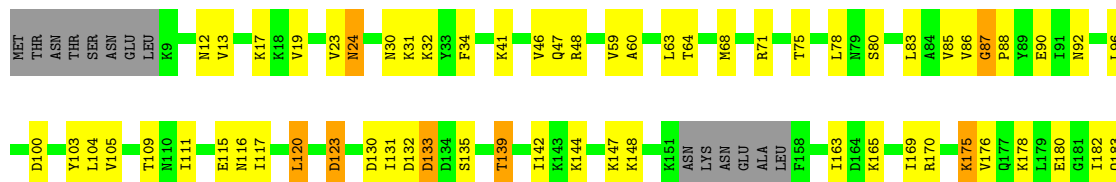
- Molecule 53: Large ribosomal subunit protein eL42

Chain Ai: 69% 20% 9%



- Molecule 54: 60S ribosomal protein L6

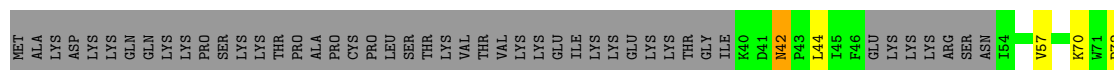
Chain AI: 62% 28% 6%





- Molecule 55: 60S ribosomal protein L7a

Chain AJ: 49% 27% 22%



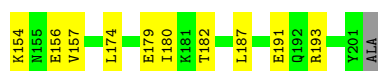
- Molecule 56: Ribosomal protein L37

Chain Ac: 67% 28%



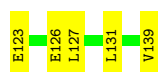
- Molecule 57: 60S ribosomal protein L13

Chain AK: 78% 19%



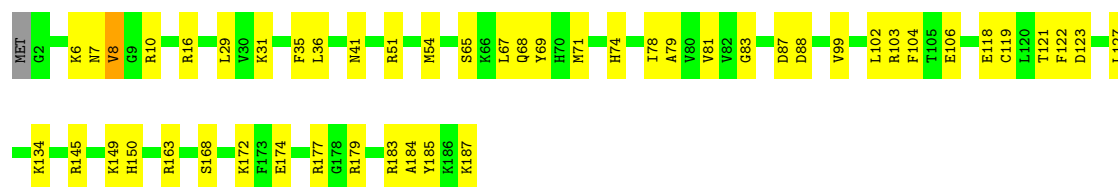
- Molecule 58: 60S ribosomal protein L23

Chain AM: 68% 25% 5%



- Molecule 59: 60S ribosomal protein L18-2

Chain AS:  73% 26% ..



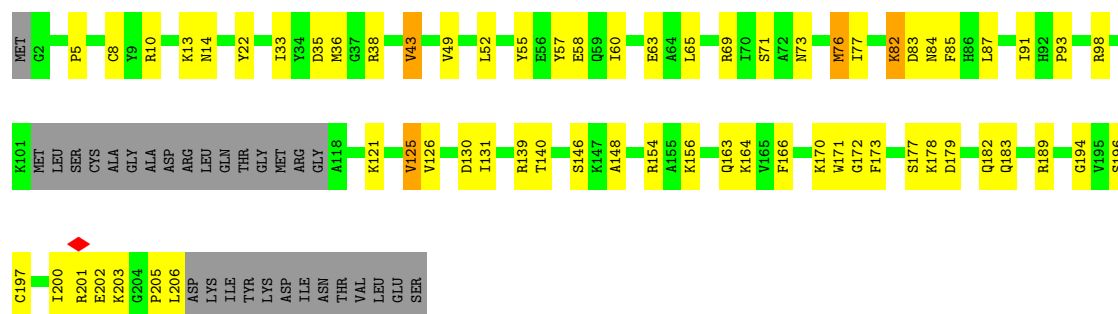
- Molecule 60: 60S ribosomal protein L27a

Chain AO:  78% 19% ..



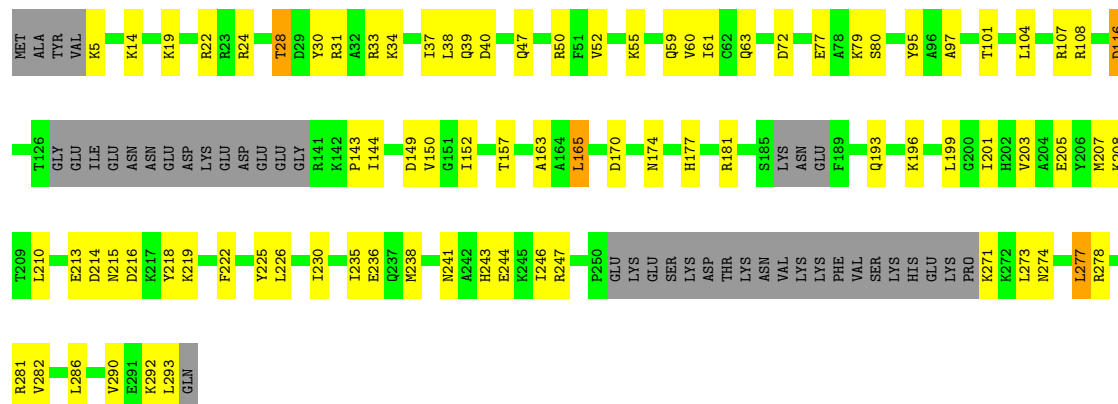
- Molecule 61: 60S ribosomal protein L10

Chain AQ:  57% 28% 14%



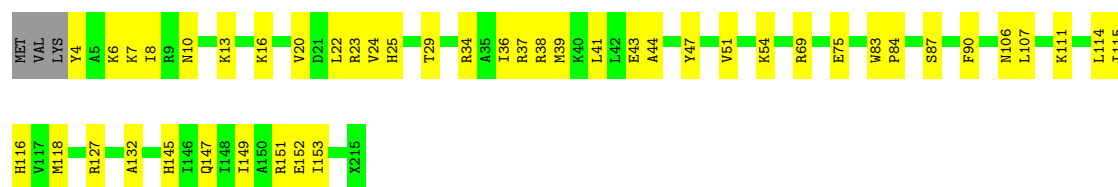
- Molecule 62: 60S ribosomal protein L5

Chain AR:  57% 27% 14%



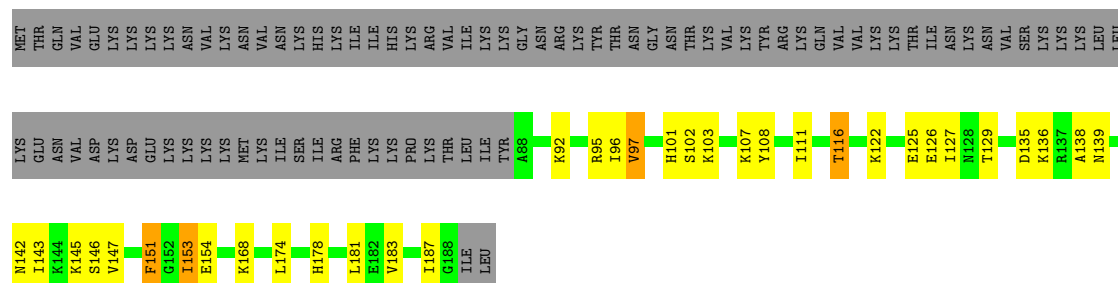
- Molecule 63: 60S ribosomal protein L17

Chain AW:  72% 26% .



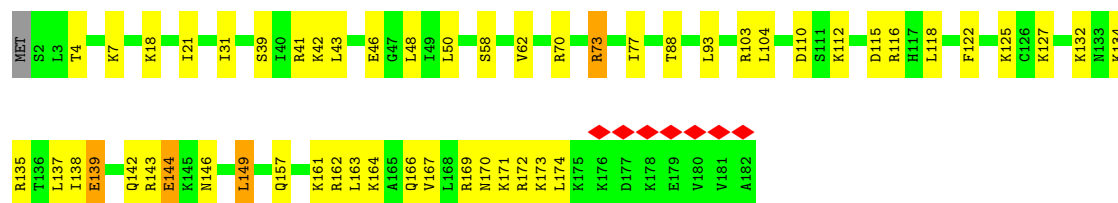
- Molecule 64: 60S ribosomal protein L23

Chain AY:  35% 16% 47% .



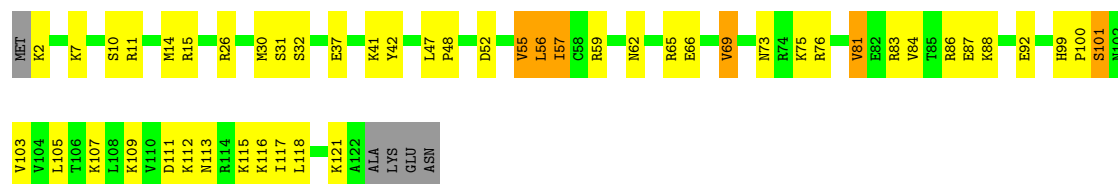
- Molecule 65: 60S ribosomal protein L19

Chain AT:  70% 27% ..



- Molecule 66: 60S ribosomal protein L26

Chain AZ:  57% 34% 5% .



- Molecule 67: 60S ribosomal protein L35

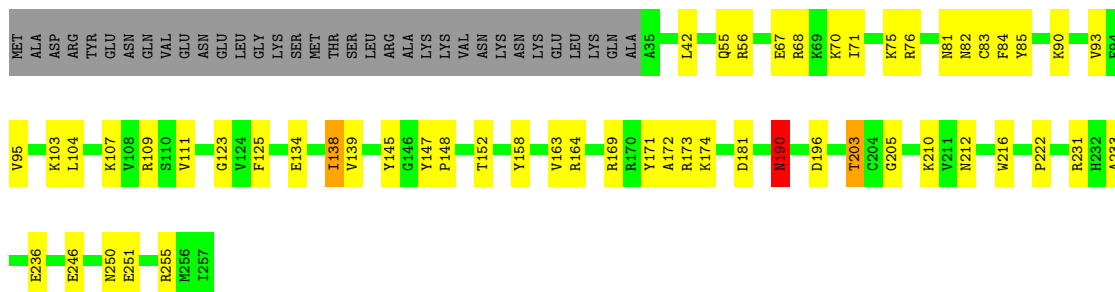
Chain A3:  68% 27% . .



LYS
GLU

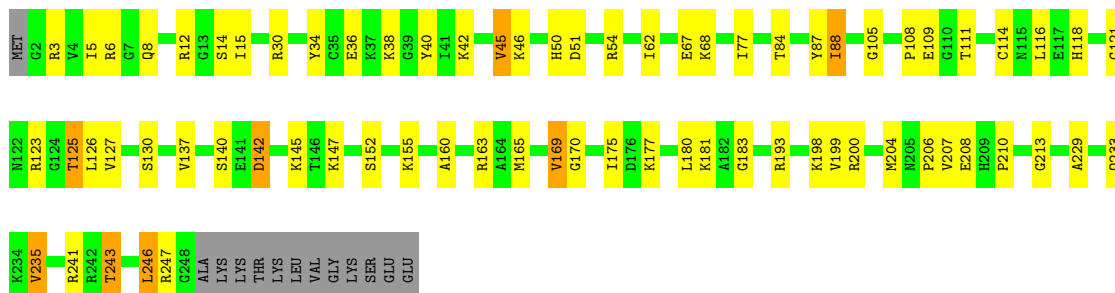
• Molecule 68: 60S ribosomal protein L7

Chain A5:  65% 20% 13%



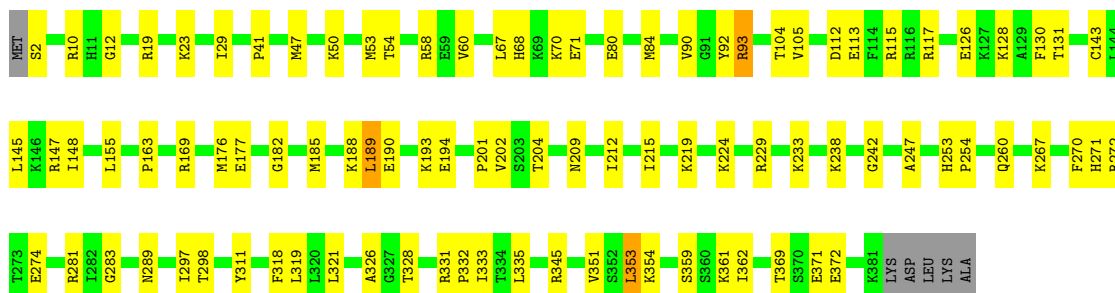
• Molecule 69: 60S ribosomal protein L2

Chain AD:  67% 25% 5%



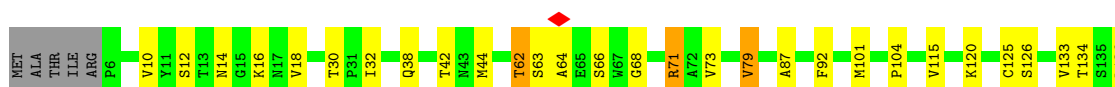
• Molecule 70: 60S ribosomal protein L3

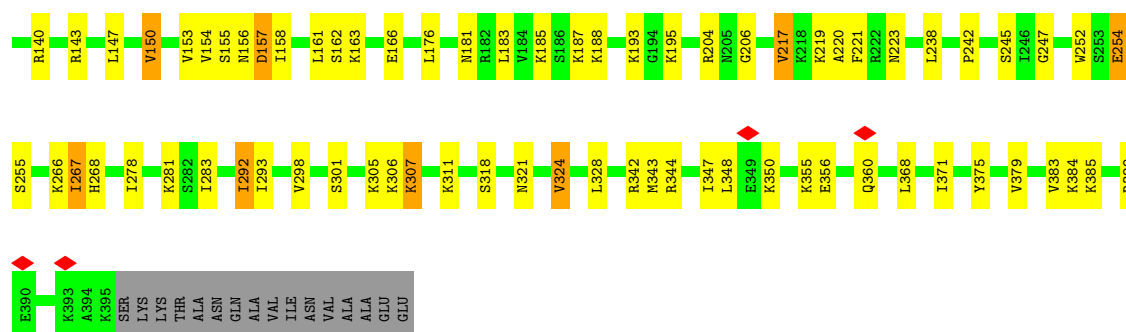
Chain AE:  74% 24% 2%



• Molecule 71: 60S ribosomal protein L4

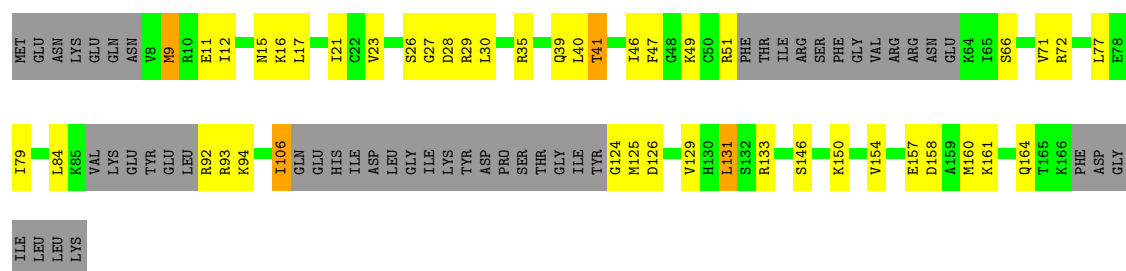
Chain AF:  71% 22% 5%





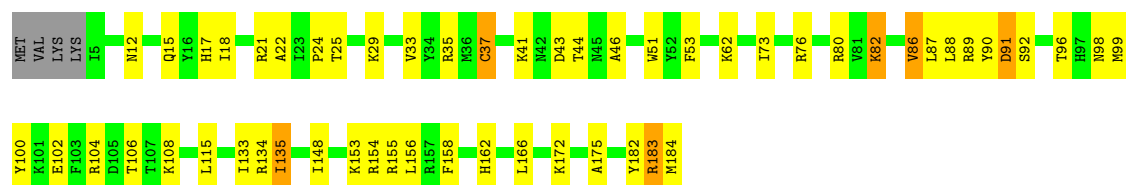
- Molecule 72: 60S ribosomal protein L11a

Chain AG: 46% 24% 28%



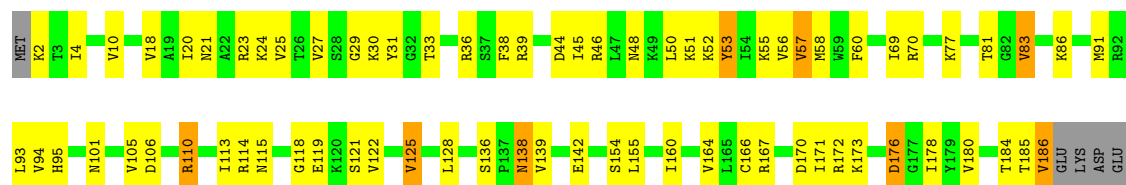
- Molecule 73: 60S ribosomal protein L18a

Chain AU: 68% 27%



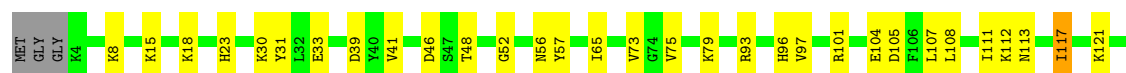
- Molecule 74: 60S ribosomal protein L6

Chain AH: 59% 34%



- Molecule 75: 60S ribosomal protein L21

Chain AV: 73% 22%





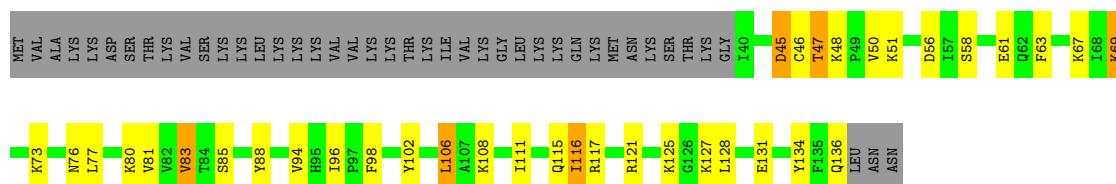
- Molecule 76: 60S ribosomal protein L41

Chain Ag: 72% 23% 5%



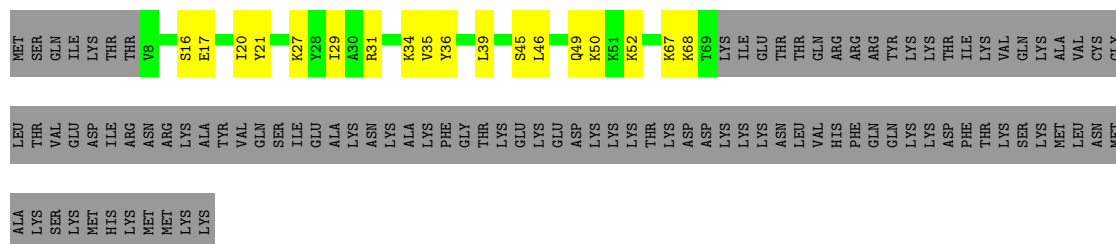
- Molecule 77: 60S ribosomal protein L22

Chain AX: 43% 22% 30%



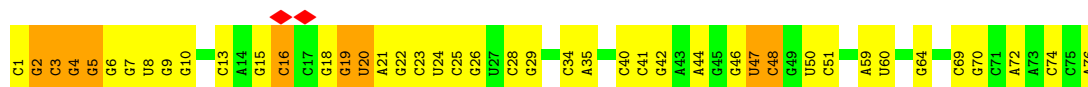
- Molecule 78: 60S ribosomal protein L24

Chain A0: 27% 11% 62%



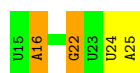
- Molecule 79: tRNA

Chain S8: 43% 45% 12%



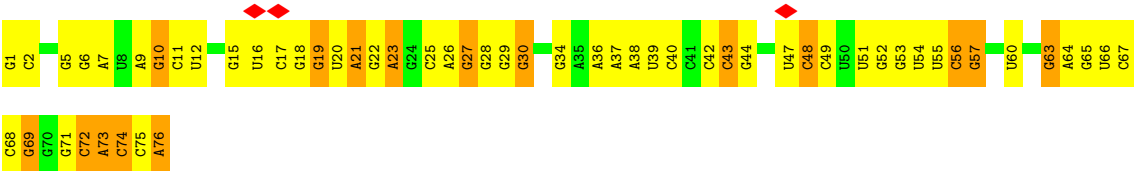
- Molecule 80: mRNA

Chain mR: 64% 18% 18%



- Molecule 81: tRNA

Chain S9: 25% 54% 21%



● Molecule 82: nascent polypeptide chain



There are no outlier residues recorded for this chain.

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	57974	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 ($e^-/\text{\AA}^2$)	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	0.079	Depositor
Minimum map value	-0.023	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.003	Depositor
Recommended contour level	0.00615	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	0.22	0/998	0.41	0/1321
2	S2	0.16	0/323	0.46	1/435 (0.2%)
3	S3	0.30	0/793	0.45	0/1055
4	S4	0.21	0/597	0.48	0/801
5	S5	0.15	0/466	0.32	0/616
6	S6	0.22	0/348	0.51	0/458
7	S7	0.23	0/1754	0.33	0/2732
8	SA	0.30	0/38276	0.34	0/59598
9	SB	0.27	0/1737	0.45	0/2321
10	SC	0.26	0/1569	0.54	0/2129
11	SD	0.21	0/1240	0.50	0/1652
12	SE	0.26	0/1538	0.47	0/2055
13	SF	0.27	0/2097	0.46	0/2819
14	SG	0.31	0/1799	0.48	0/2429
15	SH	0.21	0/1668	0.42	0/2214
16	SI	0.22	0/1443	0.52	0/1936
17	SJ	0.24	0/1544	0.50	0/2064
18	SK	0.31	0/1054	0.48	0/1411
19	SL	0.29	0/1407	0.47	0/1879
20	SM	0.21	0/1113	0.50	0/1487
21	SN	0.20	0/780	0.46	0/1053
22	SO	0.15	0/705	0.41	0/950
23	SP	0.29	0/966	0.49	0/1295
24	SQ	0.30	0/1149	0.45	0/1532
25	SR	0.12	0/754	0.34	0/1013
26	SS	0.23	0/1062	0.60	0/1425
27	ST	0.21	0/412	0.36	0/544
28	SU	0.29	0/1223	0.44	0/1634
29	SV	0.30	0/1233	0.42	0/1645
30	SW	0.23	0/792	0.61	0/1053
31	SX	0.20	0/787	0.55	1/1050 (0.1%)
32	SY	0.19	0/1294	0.44	0/1742
33	SZ	0.27	0/565	0.47	0/758
34	AA	0.41	0/75950	0.38	0/118259

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
35	AC	0.41	0/3599	0.38	0/5603
36	AB	0.37	0/2816	0.30	0/4388
37	AL	0.33	0/1793	0.46	0/2387
38	A1	0.30	0/1151	0.48	0/1531
39	A2	0.33	0/839	0.44	0/1114
40	A4	0.31	0/564	0.43	0/737
41	A6	0.32	0/748	0.46	0/1001
42	A7	0.34	0/805	0.43	0/1073
43	AN	0.32	0/1226	0.46	0/1632
44	A8	0.40	0/1053	0.56	1/1399 (0.1%)
45	A9	0.40	0/864	0.49	0/1160
46	Aa	0.36	0/871	0.42	0/1161
47	Ab	0.30	0/762	0.51	0/1008
48	Ad	0.32	0/611	0.57	0/812
49	Ae	0.35	0/396	0.38	0/521
50	Af	0.31	0/418	0.43	0/556
51	AP	0.40	0/1735	0.51	0/2320
52	Ah	0.36	0/667	0.43	0/887
53	Ai	0.35	0/788	0.46	1/1032 (0.1%)
54	AI	0.31	0/1708	0.46	0/2274
55	AJ	0.29	0/1840	0.54	1/2456 (0.0%)
56	Ac	0.37	0/722	0.54	0/951
57	AK	0.36	0/1689	0.41	0/2260
58	AM	0.35	0/1012	0.47	0/1363
59	AS	0.35	0/1531	0.42	0/2040
60	AO	0.37	0/1199	0.43	0/1597
61	AQ	0.30	0/1579	0.40	0/2113
62	AR	0.30	0/2078	0.40	0/2776
63	AW	0.37	0/1244	0.46	0/1663
64	AY	0.32	0/805	0.45	0/1074
65	AT	0.34	0/1525	0.46	0/2016
66	AZ	0.33	0/1012	0.47	0/1339
67	A3	0.32	0/1004	0.45	0/1329
68	A5	0.44	1/1917 (0.1%)	0.55	1/2562 (0.0%)
69	AD	0.37	0/1901	0.47	0/2544
70	AE	0.36	0/3129	0.41	0/4195
71	AF	0.33	0/3144	0.41	0/4205
72	AG	0.27	0/1020	0.47	0/1349
73	AU	0.36	0/1527	0.44	0/2043
74	AH	0.33	0/1500	0.46	0/2025
75	AV	0.35	0/1300	0.43	0/1732
76	Ag	0.35	0/348	0.48	0/448
77	AX	0.27	0/841	0.53	0/1125

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
78	A0	0.34	0/533	0.48	0/711
79	S8	0.23	0/1810	0.33	0/2821
80	mR	0.27	0/255	0.34	0/394
81	S9	0.20	0/1809	0.36	0/2819
All	All	0.35	1/211124 (0.0%)	0.41	6/309911 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
39	A2	0	1
51	AP	0	1
54	AI	0	1
All	All	0	3

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
68	A5	222	PRO	CA-C	-5.34	1.49	1.51

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
53	Ai	16	CYS	CA-CB-SG	6.90	130.26	114.40
31	SX	111	MET	CA-CB-CG	5.85	125.81	114.10
68	A5	190	ASN	CA-CB-CG	5.80	118.40	112.60
44	A8	103	LYS	CB-CG-CD	-5.42	98.84	111.30
2	S2	59	ILE	N-CA-C	-5.38	107.12	111.91
55	AJ	129	LEU	CA-CB-CG	5.28	134.79	116.30

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
39	A2	26	GLY	Peptide
54	AI	87	GLY	Peptide
51	AP	120	TYR	Peptide

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	S1	985	0	1076	28	0
2	S2	320	0	338	14	0
3	S3	781	0	820	32	0
4	S4	586	0	604	20	0
5	S5	465	0	505	24	0
6	S6	345	0	381	9	0
7	S7	1571	0	797	68	0
8	SA	34208	0	17266	895	0
9	SB	1713	0	1838	50	0
10	SC	1538	0	1600	91	0
11	SD	1228	0	1311	69	0
12	SE	1514	0	1605	67	0
13	SF	2061	0	2200	83	0
14	SG	1757	0	1811	62	0
15	SH	1651	0	1807	74	0
16	SI	1424	0	1471	128	0
17	SJ	1528	0	1680	71	0
18	SK	1037	0	1099	43	0
19	SL	1383	0	1434	43	0
20	SM	1098	0	1183	61	0
21	SN	772	0	813	51	0
22	SO	686	0	695	31	0
23	SP	954	0	997	48	0
24	SQ	1129	0	1196	36	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	33	0
29	SV	1206	0	1239	39	0
30	SW	785	0	858	51	0
31	SX	776	0	832	48	0
32	SY	1266	0	1316	97	0
33	SZ	557	0	558	30	0
34	AA	67887	0	34242	1058	0
35	AC	3215	0	1633	57	0
36	AB	2517	0	1275	37	0
37	AL	1761	0	1896	49	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
38	A1	1134	0	1245	49	0
39	A2	830	0	887	24	0
40	A4	555	0	599	7	0
41	A6	740	0	763	25	0
42	A7	793	0	869	20	0
43	AN	1210	0	1329	34	0
44	A8	1036	0	1139	44	0
45	A9	844	0	886	19	0
46	Aa	858	0	912	36	0
47	Ab	756	0	842	19	0
48	Ad	603	0	686	33	0
49	Ae	388	0	421	10	0
50	Af	413	0	452	12	0
51	AP	1697	0	1802	55	0
52	Ah	658	0	727	16	0
53	Ai	778	0	857	17	0
54	AI	1685	0	1849	49	0
55	AJ	1813	0	1985	70	0
56	Ac	709	0	761	25	0
57	AK	1659	0	1782	35	0
58	AM	996	0	1044	26	0
59	AS	1503	0	1636	30	0
60	AO	1172	0	1230	30	0
61	AQ	1544	0	1582	38	0
62	AR	2049	0	2145	70	0
63	AW	1319	0	1303	39	0
64	AY	796	0	850	23	0
65	AT	1509	0	1682	42	0
66	AZ	1000	0	1099	38	0
67	A3	994	0	1121	28	0
68	A5	1879	0	2005	36	0
69	AD	1866	0	1964	55	0
70	AE	3061	0	3205	71	0
71	AF	3094	0	3333	74	0
72	AG	1010	0	1073	34	0
73	AU	1497	0	1556	48	0
74	AH	1475	0	1574	52	0
75	AV	1275	0	1355	26	0
76	Ag	343	0	388	7	0
77	AX	824	0	882	23	0
78	A0	521	0	539	16	0
79	S8	1620	0	827	40	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
80	mR	230	0	116	11	0
81	S9	1619	0	822	62	0
82	Sa	30	0	10	0	0
All	All	196488	0	146083	4470	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 (4470) 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)
8:SA:1838:G:N2	8:SA:1867:A:H62	1.32	1.25
8:SA:1838:G:H21	8:SA:1867:A:N6	1.36	1.22
81:S9:15:G:N2	81:S9:48:C:H42	1.44	1.14
34:AA:10:G:H21	34:AA:1706:A:N6	1.48	1.12
80:mR:22:G:N1	81:S9:36:A:H2	1.47	1.10
81:S9:15:G:H22	81:S9:48:C:N4	1.48	1.10
80:mR:22:G:N1	81:S9:36:A:C2	2.18	1.09
79:S8:15:G:N2	79:S8:48:C:H42	1.53	1.04
67:A3:15:LYS:HE2	67:A3:15:LYS:H	1.24	1.01
79:S8:15:G:H22	79:S8:48:C:N4	1.60	0.99
34:AA:11:A:H61	35:AC:154:G:H1	0.98	0.97
34:AA:1762:A:HO2'	34:AA:1763:G:H8	1.02	0.97
34:AA:1531:G:H1	34:AA:1573:C:H5	1.13	0.96
34:AA:3571:A:H8	34:AA:3677:A:HO2'	1.09	0.95
19:SL:8:ARG:O	19:SL:9:HIS:ND1	1.99	0.95
26:SS:86:LEU:HD11	26:SS:98:ILE:HA	1.48	0.95
41:A6:37:LEU:HD11	41:A6:62:TYR:HB3	1.46	0.95
79:S8:50:U:H3	79:S8:64:G:H1	1.13	0.95
7:S7:74:A:H8	34:AA:3103:C:H42	1.09	0.94
79:S8:15:G:H22	79:S8:48:C:H42	0.95	0.94
7:S7:29:G:H1	7:S7:38:A:N6	1.66	0.93
34:AA:1102:U:H3	34:AA:1231:A:H2	1.04	0.93
7:S7:8:U:H3	7:S7:14:A:H62	1.17	0.93
35:AC:128:C:OP1	67:A3:15:LYS:NZ	2.01	0.93
34:AA:3635:G:H1	34:AA:3650:U:H3	1.17	0.92
68:A5:190:ASN:O	68:A5:190:ASN:ND2	2.01	0.92
34:AA:661:G:N2	34:AA:673:U:O2	2.03	0.92
7:S7:29:G:H1	7:S7:38:A:H61	0.95	0.91
34:AA:11:A:N6	35:AC:154:G:H1	1.67	0.91
8:SA:1910:U:O2'	16:SI:136:ARG:NH2	2.02	0.91

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:1820:C:H4'	32:SY:100:ARG:HE	1.34	0.91
8:SA:70:U:H3	8:SA:82:G:H1	0.93	0.90
34:AA:2742:G:H1	34:AA:2806:U:H3	0.90	0.90
10:SC:63:ILE:HD11	10:SC:144:ILE:HD11	1.55	0.89
8:SA:1386:U:H4'	8:SA:1387:U:H5'	1.54	0.89
34:AA:3121:G:N7	37:AL:201:ARG:NH2	2.20	0.89
34:AA:2499:G:N3	34:AA:2501:A:N6	2.19	0.89
34:AA:3254:G:O2'	50:Af:24:TYR:O	1.91	0.88
20:SM:38:ASP:HA	20:SM:46:LYS:HD3	1.54	0.88
10:SC:29:LEU:O	10:SC:34:LYS:NZ	2.06	0.88
21:SN:52:PRO:HB2	21:SN:54:ARG:HE	1.37	0.88
34:AA:773:A:HO2'	34:AA:774:A:H8	0.93	0.88
34:AA:3636:U:H3	34:AA:3649:G:H1	1.18	0.88
8:SA:106:A:OP2	8:SA:314:A:N6	2.06	0.87
21:SN:21:ILE:HA	21:SN:112:GLU:O	1.75	0.86
75:AV:46:ASP:H	75:AV:96:HIS:HD2	1.22	0.86
34:AA:1141:G:H1	34:AA:1156:U:H3	0.86	0.86
8:SA:1705:C:OP2	26:SS:139:LYS:NZ	2.09	0.85
34:AA:3517:C:O2'	57:AK:54:GLN:NE2	2.09	0.85
34:AA:1277:G:OP2	45:A9:54:ARG:NH2	2.09	0.85
10:SC:23:HIS:HD2	30:SW:102:THR:HG21	1.38	0.85
8:SA:887:A:N1	8:SA:915:G:O6	2.10	0.84
63:AW:20:VAL:O	63:AW:145:HIS:ND1	2.10	0.84
34:AA:203:A:H2	34:AA:207:A:H2	1.21	0.83
34:AA:372:G:OP2	56:Ac:55:LYS:NZ	2.10	0.83
8:SA:1061:A:H2	8:SA:1081:U:H3	1.24	0.83
34:AA:1706:A:H2'	55:AJ:73:ARG:HH22	1.43	0.83
34:AA:2735:G:H1	34:AA:2814:U:H3	0.84	0.83
81:S9:1:G:H21	81:S9:72:C:H41	1.25	0.83
34:AA:1855:U:H5''	34:AA:1856:U:H4'	1.60	0.83
7:S7:8:U:H3	7:S7:14:A:N6	1.75	0.83
34:AA:10:G:N2	34:AA:1706:A:N6	2.26	0.83
34:AA:3435:A:H4'	70:AE:361:LYS:HE3	1.59	0.82
8:SA:128:A:OP2	15:SH:197:ARG:NH2	2.12	0.82
27:ST:29:ILE:HD11	27:ST:31:LYS:HB2	1.58	0.82
19:SL:163:GLY:O	19:SL:166:LYS:NZ	2.11	0.82
34:AA:1881:C:O2'	34:AA:1882:U:O5'	1.97	0.82
34:AA:2040:G:N2	34:AA:2070:U:O4	2.12	0.82
38:A1:90:ASP:O	38:A1:121:LYS:NZ	2.13	0.82
8:SA:1379:G:N2	8:SA:1679:G:O6	2.11	0.82
8:SA:1816:U:H4'	8:SA:1817:U:H5'	1.60	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:1981:A:H61	8:SA:2009:C:H42	1.27	0.82
2:S2:35:LYS:NZ	8:SA:1834:A:OP1	2.13	0.81
15:SH:6:SER:HA	15:SH:13:GLN:HB3	1.62	0.81
67:A3:15:LYS:HE2	67:A3:15:LYS:N	1.95	0.81
7:S7:16:U:O2	7:S7:57:C:N3	2.13	0.81
34:AA:25:A:OP2	56:Ac:49:ARG:NH2	2.14	0.81
8:SA:886:U:O2	8:SA:916:G:N2	2.14	0.81
16:SI:176:SER:HA	16:SI:181:ILE:HD11	1.62	0.81
34:AA:1560:U:OP1	44:A8:105:ARG:NH2	2.14	0.80
8:SA:1316:U:H3	8:SA:1694:G:H1	1.29	0.80
34:AA:684:G:H22	71:AF:311:LYS:HE3	1.44	0.80
16:SI:176:SER:O	16:SI:182:LYS:NZ	2.15	0.80
34:AA:583:U:O2	34:AA:609:C:N4	2.14	0.80
38:A1:18:ARG:NH1	38:A1:47:GLU:OE1	2.15	0.80
43:AN:27:PRO:O	43:AN:80:ARG:NH1	2.14	0.80
26:SS:126:ARG:HG2	26:SS:131:LEU:HB2	1.63	0.80
34:AA:1122:A:H2	34:AA:1169:A:H62	1.30	0.80
8:SA:1655:G:N2	8:SA:1658:G:OP2	2.14	0.80
13:SF:96:ASN:ND2	13:SF:96:ASN:O	2.14	0.80
34:AA:661:G:H1	34:AA:673:U:H3	1.26	0.79
8:SA:1880:A:N6	16:SI:47:TYR:OH	2.15	0.79
8:SA:1848:U:O4	31:SX:40:ARG:NH1	2.15	0.79
23:SP:34:PHE:HB3	23:SP:41:PHE:HB2	1.64	0.79
34:AA:1630:A:O2'	34:AA:2125:A:H1'	1.82	0.79
38:A1:4:LEU:HD11	41:A6:65:LEU:HB3	1.65	0.79
51:AP:148:LYS:O	51:AP:150:ASN:N	2.15	0.79
10:SC:74:VAL:HG13	10:SC:118:PRO:HB3	1.65	0.79
24:SQ:53:VAL:HG21	24:SQ:96:ILE:HD11	1.64	0.79
81:S9:15:G:H22	81:S9:48:C:H42	0.80	0.79
14:SG:122:HIS:HB3	14:SG:148:LEU:HD11	1.64	0.79
34:AA:1219:A:OP1	75:AV:121:LYS:NZ	2.15	0.79
38:A1:109:LYS:H	38:A1:109:LYS:HE2	1.47	0.79
8:SA:1841:U:O4	8:SA:1865:G:N2	2.16	0.79
34:AA:3750:U:O2'	77:AX:73:LYS:NZ	2.16	0.79
63:AW:36:ILE:HA	63:AW:39:MET:HE2	1.63	0.79
65:AT:163:LEU:HA	65:AT:166:GLN:HE22	1.48	0.79
79:S8:1:C:H42	79:S8:72:A:H61	1.26	0.79
81:S9:51:U:H3	81:S9:63:G:H1	1.30	0.79
8:SA:150:C:O2'	15:SH:15:SER:OG	2.00	0.78
8:SA:1980:A:N6	8:SA:2010:U:O4	2.15	0.78
34:AA:453:A:N6	34:AA:502:U:O2	2.16	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
81:S9:19:G:N3	81:S9:57:G:N2	2.31	0.78
8:SA:1275:U:OP1	26:SS:137:HIS:ND1	2.14	0.78
8:SA:1435:C:O2'	27:ST:53:TYR:OH	1.99	0.78
30:SW:19:LYS:HD2	30:SW:20:TYR:H	1.47	0.78
8:SA:1697:C:H5''	27:ST:8:HIS:HB2	1.65	0.78
7:S7:8:U:O4	7:S7:14:A:N7	2.16	0.78
10:SC:10:LYS:N	10:SC:13:SER:HG	1.81	0.78
64:AY:154:GLU:OE1	64:AY:154:GLU:N	2.14	0.78
34:AA:1534:U:O2'	34:AA:1535:G:O5'	2.00	0.78
38:A1:11:ILE:HG22	38:A1:82:PRO:HA	1.63	0.77
79:S8:26:G:H1	79:S8:44:A:H2	1.32	0.77
23:SP:98:ARG:NH1	23:SP:100:SER:O	2.18	0.77
4:S4:68:LYS:NZ	8:SA:1119:G:OP2	2.18	0.77
66:AZ:31:SER:HA	66:AZ:48:PRO:HA	1.66	0.77
31:SX:51:LYS:HA	31:SX:54:LYS:HD2	1.66	0.77
30:SW:32:LYS:O	30:SW:35:THR:OG1	2.01	0.77
34:AA:2478:G:O2'	34:AA:2607:U:OP2	2.01	0.77
20:SM:52:PRO:HG3	20:SM:117:LEU:HD11	1.67	0.77
4:S4:9:ASP:HB2	4:S4:10:PRO:HD3	1.67	0.77
34:AA:2091:U:O2	34:AA:2094:A:N7	2.18	0.77
8:SA:1843:G:OP1	26:SS:123:ARG:NH2	2.18	0.76
3:S3:44:ILE:HG22	3:S3:45:VAL:HG13	1.67	0.76
8:SA:1910:U:H5'	16:SI:139:ASN:HD21	1.49	0.76
34:AA:1303:C:H1'	57:AK:86:MET:HG2	1.67	0.76
7:S7:3:G:H22	7:S7:68:U:H3	1.29	0.76
10:SC:74:VAL:HA	10:SC:96:GLN:O	1.85	0.76
8:SA:935:G:OP2	28:SU:3:ARG:NH1	2.19	0.76
8:SA:887:A:H2	8:SA:915:G:H1	1.30	0.76
16:SI:36:ALA:HB1	16:SI:58:PRO:HG3	1.67	0.76
34:AA:3362:A:OP1	70:AE:93:ARG:NH2	2.19	0.76
8:SA:1845:U:O2	8:SA:1860:A:N6	2.18	0.76
31:SX:34:ILE:HG13	31:SX:42:ARG:HG2	1.68	0.76
79:S8:26:G:O6	79:S8:44:A:N1	2.18	0.76
8:SA:886:U:H3	8:SA:916:G:H1	0.78	0.75
34:AA:1851:A:H62	34:AA:1969:A:H2	1.34	0.75
8:SA:1854:U:H3	31:SX:81:ARG:HB3	1.50	0.75
34:AA:3441:A:H2	34:AA:3471:A:H62	1.33	0.75
14:SG:168:MET:HE1	18:SK:95:PRO:HB2	1.68	0.75
20:SM:16:THR:OG1	20:SM:124:ARG:NH2	2.19	0.75
34:AA:998:U:H4'	63:AW:132:ALA:HB2	1.67	0.75
75:AV:101:ARG:NH1	75:AV:104:GLU:OE2	2.18	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:S7:7:U:H3	7:S7:65:A:H2	1.31	0.75
8:SA:1729:A:N6	8:SA:1821:A:N7	2.33	0.75
34:AA:956:A:OP2	52:Ah:4:ARG:NH1	2.20	0.75
74:AH:95:HIS:HA	74:AH:176:ASP:HB3	1.69	0.75
8:SA:335:G:H5''	19:SL:98:LYS:HB3	1.66	0.75
42:A7:98:TYR:HE2	42:A7:100:ILE:HD11	1.52	0.75
51:AP:121:TRP:HH2	51:AP:124:GLN:HE21	1.33	0.75
34:AA:10:G:N2	34:AA:1706:A:H61	1.85	0.75
8:SA:1447:A:N7	8:SA:1623:U:C2	2.55	0.75
26:SS:136:GLN:NE2	26:SS:138:THR:OG1	2.18	0.75
34:AA:437:A:OP2	44:A8:15:LYS:NZ	2.20	0.74
55:AJ:153:ILE:HB	55:AJ:213:THR:HG21	1.68	0.74
70:AE:126:GLU:OE1	70:AE:126:GLU:N	2.18	0.74
34:AA:1630:A:O2'	34:AA:2125:A:N3	2.19	0.74
34:AA:2830:U:H3	34:AA:2832:A:H8	1.35	0.74
7:S7:52:G:H22	7:S7:56:U:H5	1.32	0.74
8:SA:1628:A:N1	8:SA:1629:G:O6	2.20	0.74
14:SG:154:GLY:HA3	14:SG:167:PRO:HB3	1.69	0.74
32:SY:165:LYS:HD2	32:SY:166:VAL:HG13	1.67	0.74
34:AA:3496:G:H21	34:AA:3507:A:H2	1.33	0.74
35:AC:128:C:H5'	67:A3:15:LYS:HD2	1.69	0.74
8:SA:1845:U:O2'	26:SS:89:ARG:NH2	2.21	0.74
43:AN:70:PRO:HG2	43:AN:73:ARG:HD2	1.68	0.74
16:SI:136:ARG:HA	16:SI:139:ASN:HB2	1.69	0.74
8:SA:1447:A:N7	8:SA:1623:U:O2	2.20	0.74
30:SW:19:LYS:HD2	30:SW:20:TYR:N	2.01	0.74
11:SD:173:THR:O	11:SD:174:ARG:NH1	2.21	0.74
34:AA:174:U:N3	34:AA:257:U:O4	2.20	0.74
8:SA:139:A:OP1	15:SH:149:LYS:NZ	2.16	0.74
42:A7:80:ARG:HG3	42:A7:104:VAL:HB	1.68	0.74
8:SA:1888:U:H2'	8:SA:1889:G:H8	1.52	0.73
34:AA:224:G:OP1	66:AZ:15:ARG:NH1	2.20	0.73
34:AA:3388:U:O2'	70:AE:177:GLU:OE1	2.06	0.73
51:AP:158:LYS:O	51:AP:163:ARG:NH1	2.21	0.73
34:AA:1656:G:H2'	34:AA:2147:A:H1'	1.68	0.73
51:AP:177:VAL:HG23	51:AP:182:SER:HB2	1.69	0.73
81:S9:25:C:H2'	81:S9:26:A:H8	1.52	0.73
34:AA:920:A:OP1	60:AO:27:LYS:NZ	2.22	0.73
34:AA:3637:G:O6	34:AA:3648:U:O4	2.06	0.73
34:AA:3402:A:H2'	34:AA:3403:A:C8	2.23	0.73
8:SA:1460:A:O2'	32:SY:160:ARG:NH1	2.22	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31: SX:51: LYS:NZ	31: SX:55: SER:OG	2.21	0.73
34: AA:2208: G:H21	34: AA:3754: A:H8	1.36	0.73
8: SA:214: U:O2'	29: SV:23: ASN:OD1	2.06	0.73
8: SA:1625: C:O2	20: SM:9: GLN:NE2	2.21	0.73
11: SD:164: PRO:HA	11: SD:167: ARG:HG2	1.70	0.73
65: AT:166: GLN:OE1	65: AT:166: GLN:N	2.19	0.73
15: SH:210: GLN:OE1	15: SH:210: GLN:N	2.19	0.73
57: AK:61: THR:HG23	57: AK:68: GLY:HA2	1.71	0.73
8: SA:1278: C:H2'	8: SA:1279: G:H8	1.54	0.72
8: SA:1310: C:N3	8: SA:1701: G:N2	2.36	0.72
8: SA:1853: A:N6	8: SA:1895: U:O2	2.17	0.72
81: S9:28: G:H2'	81: S9:29: G:H8	1.54	0.72
34: AA:3736: A:H2	34: AA:3753: G:H21	1.34	0.72
8: SA:1285: A:N6	8: SA:1700: G:O2'	2.21	0.72
8: SA:1422: U:H3'	10: SC:101: ARG:HH12	1.54	0.72
34: AA:72: C:O2'	37: AL:65: ASN:OD1	2.07	0.72
8: SA:6: G:N7	14: SG:217: LYS:NZ	2.38	0.72
65: AT:42: LYS:NZ	65: AT:46: GLU:OE1	2.21	0.72
8: SA:881: C:H2'	8: SA:882: A:H8	1.54	0.72
15: SH:178: LEU:O	15: SH:183: ARG:NH1	2.22	0.72
34: AA:10: G:H21	34: AA:1706: A:H61	1.32	0.72
34: AA:166: U:N3	34: AA:265: U:O4	2.13	0.72
8: SA:635: G:N1	8: SA:1039: A:OP2	2.22	0.72
7: S7:34: U:H3'	7: S7:35: C:H5''	1.71	0.72
8: SA:887: A:C2	8: SA:915: G:N1	2.57	0.72
8: SA:1716: C:O2	8: SA:1868: C:O2'	2.08	0.72
28: SU:37: ILE:HG22	28: SU:54: LEU:HD11	1.71	0.72
34: AA:513: U:H3	34: AA:685: U:H5	1.35	0.72
34: AA:703: U:H2'	34: AA:704: U:C6	2.24	0.72
8: SA:1436: U:O2	27: ST:54: ARG:NH1	2.22	0.72
30: SW:5: ARG:HB3	30: SW:9: ILE:HD11	1.71	0.72
32: SY:45: LEU:HD12	32: SY:50: LYS:HZ2	1.55	0.72
34: AA:249: U:H2'	34: AA:250: U:H5''	1.70	0.72
7: S7:17: U:O5'	7: S7:58: G:N2	2.22	0.72
34: AA:3106: U:O2'	53: Ai:29: LYS:O	2.07	0.72
59: AS:67: LEU:HD21	59: AS:99: VAL:HG21	1.71	0.72
8: SA:865: G:H21	18: SK:107: PRO:HG3	1.55	0.71
20: SM:94: TYR:HB3	20: SM:103: LYS:HB2	1.73	0.71
26: SS:87: ASN:HB3	26: SS:99: HIS:HB2	1.72	0.71
34: AA:1139: C:H2'	34: AA:1140: A:H8	1.54	0.71
39: A2:11: GLU:OE1	59: AS:31: LYS:NZ	2.21	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:164:C:H4'	15:SH:131:LYS:HD3	1.71	0.71
34:AA:2809:A:OP2	34:AA:2810:A:N6	2.22	0.71
1:S1:64:LEU:O	8:SA:538:U:O2'	2.09	0.71
12:SE:127:VAL:O	12:SE:131:GLN:HG2	1.90	0.71
79:S8:21:A:H61	79:S8:46:G:H2'	1.55	0.71
15:SH:98:ARG:NH2	15:SH:101:ILE:O	2.17	0.71
20:SM:38:ASP:O	20:SM:46:LYS:NZ	2.19	0.71
7:S7:29:G:N2	7:S7:38:A:N1	2.35	0.71
8:SA:1832:U:H4'	8:SA:1833:G:C2	2.25	0.71
29:SV:122:GLU:N	29:SV:122:GLU:OE2	2.22	0.71
7:S7:1:G:H22	7:S7:70:A:H2	1.37	0.71
8:SA:1799:A:H5''	32:SY:121:LYS:HD3	1.73	0.71
51:AP:84:PRO:HA	51:AP:87:GLN:HG3	1.71	0.71
20:SM:15:LYS:HB2	20:SM:77:SER:HB3	1.73	0.71
64:AY:97:VAL:O	67:A3:81:ASN:ND2	2.24	0.71
77:AX:125:LYS:HD2	77:AX:131:GLU:HB3	1.72	0.71
81:S9:15:G:N1	81:S9:48:C:N3	2.33	0.71
8:SA:1712:G:O2'	8:SA:1899:A:OP1	2.07	0.71
21:SN:42:ALA:HB1	21:SN:49:VAL:HG21	1.73	0.71
8:SA:887:A:N1	8:SA:915:G:C6	2.59	0.70
9:SB:190:PRO:O	9:SB:195:LYS:NZ	2.24	0.70
19:SL:62:SER:HA	19:SL:77:ARG:HA	1.73	0.70
24:SQ:110:SER:OG	24:SQ:111:GLY:N	2.21	0.70
53:AI:73:CYS:SG	53:AI:76:CYS:N	2.65	0.70
17:SJ:129:ASP:O	17:SJ:132:SER:OG	2.07	0.70
31:SX:62:LYS:HG2	31:SX:65:LYS:HE3	1.71	0.70
71:AF:375:TYR:OH	73:AU:37:CYS:SG	2.35	0.70
34:AA:506:A:H2'	34:AA:507:G:C8	2.27	0.70
34:AA:643:G:H1'	34:AA:684:G:N2	2.05	0.70
34:AA:2217:A:OP1	65:AT:103:ARG:NH1	2.24	0.70
55:AJ:267:LYS:HE3	55:AJ:271:ILE:HD11	1.73	0.70
7:S7:64:C:H2'	7:S7:65:A:C8	2.26	0.70
12:SE:80:MET:HB3	12:SE:86:LEU:HD13	1.71	0.70
12:SE:117:GLY:O	12:SE:119:ALA:N	2.25	0.70
17:SJ:144:LYS:O	18:SK:42:GLN:NE2	2.24	0.70
20:SM:47:THR:HA	20:SM:50:TYR:HB2	1.72	0.70
37:AL:123:VAL:HG13	67:A3:119:LEU:HB2	1.74	0.70
80:mR:22:G:O6	81:S9:36:A:N1	2.25	0.70
16:SI:109:LYS:NZ	16:SI:171:CYS:O	2.24	0.70
8:SA:1061:A:O2'	8:SA:2077:U:O2	2.08	0.70
31:SX:24:LYS:O	31:SX:28:LEU:HB2	1.91	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:222:G:O2'	66:AZ:14:MET:SD	2.44	0.70
34:AA:2884:G:N1	46:Aa:96:GLU:OE2	2.22	0.70
5:S5:26:ARG:HE	5:S5:41:ILE:HA	1.57	0.70
8:SA:413:A:H2'	8:SA:414:C:C6	2.27	0.70
39:A2:23:ASN:ND2	39:A2:26:GLY:O	2.25	0.70
8:SA:1417:U:OP1	8:SA:1430:G:N2	2.21	0.70
34:AA:936:A:C8	56:Ac:18:THR:HG23	2.27	0.70
1:S1:15:ASN:HD22	1:S1:22:GLN:HE22	1.39	0.70
8:SA:651:G:O6	8:SA:749:U:O4	2.10	0.70
34:AA:503:A:OP2	54:AI:144:LYS:NZ	2.25	0.70
34:AA:2401:C:H1'	34:AA:3736:A:C8	2.27	0.70
55:AJ:166:ASN:ND2	55:AJ:218:GLU:O	2.25	0.70
62:AR:225:TYR:HB3	62:AR:230:ILE:HD11	1.73	0.70
34:AA:64:G:OP1	51:AP:186:ARG:NH2	2.25	0.69
34:AA:3494:C:O3'	74:AH:154:SER:OG	2.11	0.69
47:Ab:51:ILE:HD11	55:AJ:182:PHE:HA	1.74	0.69
65:AT:122:PHE:HA	65:AT:125:LYS:HG2	1.73	0.69
3:S3:50:GLN:HG3	3:S3:64:LEU:HD12	1.74	0.69
4:S4:7:ASN:HD21	4:S4:10:PRO:HD2	1.57	0.69
16:SI:46:ARG:HG3	20:SM:123:ARG:HH22	1.56	0.69
34:AA:668:U:OP1	71:AF:344:ARG:NH2	2.25	0.69
34:AA:2219:A:N6	34:AA:2387:A:N1	2.39	0.69
48:Ad:64:GLU:OE1	48:Ad:64:GLU:N	2.23	0.69
12:SE:141:VAL:HG12	12:SE:143:ILE:H	1.57	0.69
31:SX:89:MET:HA	31:SX:89:MET:HE3	1.75	0.69
34:AA:3201:C:OP1	34:AA:3203:C:N4	2.26	0.69
3:S3:32:LYS:NZ	8:SA:999:A:OP2	2.26	0.69
8:SA:1982:G:H1	8:SA:2008:U:H3	0.75	0.69
34:AA:423:U:OP1	63:AW:34:ARG:NH1	2.26	0.69
34:AA:3639:G:H22	34:AA:3646:G:H1	1.39	0.69
34:AA:3726:U:H4'	34:AA:3727:A:H5'	1.75	0.69
36:AB:83:G:H4'	68:A5:231:ARG:HG2	1.74	0.69
59:AS:81:VAL:HG12	59:AS:83:GLY:H	1.56	0.69
65:AT:115:ASP:OD1	65:AT:116:ARG:N	2.25	0.69
71:AF:71:ARG:HB3	71:AF:73:VAL:HG22	1.75	0.69
8:SA:849:U:OP2	13:SF:240:ARG:NH1	2.25	0.69
8:SA:993:A:H2'	8:SA:994:G:C8	2.27	0.69
8:SA:1023:A:H2'	8:SA:1024:A:C8	2.28	0.69
8:SA:1637:U:H2'	8:SA:1638:U:C6	2.27	0.69
9:SB:48:VAL:HG22	9:SB:61:LEU:HD11	1.74	0.69
17:SJ:83:GLU:OE1	17:SJ:87:LYS:NZ	2.20	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:2157:G:H5''	70:AE:242:GLY:HA3	1.75	0.69
51:AP:6:TYR:OH	55:AJ:161:GLU:OE1	2.05	0.69
73:AU:87:LEU:HB3	73:AU:133:ILE:HG13	1.73	0.69
8:SA:1023:A:H2'	8:SA:1024:A:H8	1.57	0.69
8:SA:1849:U:OP2	31:SX:43:ARG:NH2	2.26	0.69
34:AA:715:U:H3	34:AA:730:G:H1	1.41	0.69
11:SD:106:LEU:HD13	11:SD:110:LEU:HD13	1.75	0.69
34:AA:1822:A:N1	34:AA:2004:U:H5	1.90	0.69
11:SD:27:ARG:NH1	11:SD:27:ARG:O	2.26	0.68
34:AA:1096:G:H21	34:AA:1231:A:H8	1.41	0.68
8:SA:1653:A:H2'	8:SA:1654:G:C8	2.28	0.68
16:SI:116:SER:HA	16:SI:129:ALA:HA	1.74	0.68
34:AA:1878:U:O4	65:AT:127:LYS:NZ	2.26	0.68
55:AJ:102:PRO:HG2	55:AJ:105:GLN:HE22	1.59	0.68
8:SA:1841:U:H5''	26:SS:132:ARG:HD2	1.75	0.68
43:AN:22:LYS:H	73:AU:184:MET:HE1	1.58	0.68
48:Ad:29:LYS:NZ	48:Ad:31:LYS:O	2.25	0.68
13:SF:40:GLU:HB2	13:SF:86:LEU:HD21	1.75	0.68
13:SF:196:SER:N	13:SF:209:HIS:O	2.27	0.68
34:AA:449:A:H5''	44:A8:69:ASN:HB3	1.75	0.68
58:AM:97:PHE:CE2	78:A0:29:ILE:HD11	2.28	0.68
12:SE:48:LEU:O	12:SE:52:ILE:HD12	1.93	0.68
17:SJ:79:LYS:H	17:SJ:79:LYS:HE2	1.58	0.68
34:AA:2649:A:H61	34:AA:3342:C:H5	1.39	0.68
36:AB:62:U:OP2	62:AR:278:ARG:NH1	2.26	0.68
73:AU:17:HIS:HB2	73:AU:73:ILE:HD11	1.75	0.68
8:SA:1319:G:N2	8:SA:1690:A:OP2	2.24	0.68
17:SJ:7:ARG:O	17:SJ:43:LYS:NZ	2.24	0.68
55:AJ:125:LYS:O	55:AJ:129:LEU:HD12	1.94	0.68
34:AA:10:G:O6	35:AC:155:A:N1	2.27	0.68
34:AA:92:G:H5'	34:AA:93:C:H5''	1.75	0.68
65:AT:43:LEU:HA	65:AT:46:GLU:HG2	1.75	0.68
5:S5:29:PHE:HE2	5:S5:59:THR:HA	1.59	0.68
8:SA:1973:U:OP1	19:SL:44:HIS:ND1	2.26	0.68
34:AA:521:U:O2'	34:AA:522:A:O5'	2.12	0.68
34:AA:661:G:C2	34:AA:673:U:O2	2.46	0.68
34:AA:1905:C:H2'	34:AA:1906:A:H8	1.56	0.68
47:Ab:81:LYS:HD3	47:Ab:87:HIS:HA	1.75	0.68
8:SA:520:U:H2'	8:SA:521:G:C8	2.29	0.68
8:SA:1793:C:H5'	8:SA:1815:U:H4'	1.75	0.68
34:AA:1141:G:N2	34:AA:1156:U:O2	2.19	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:1881:C:O2'	34:AA:1882:U:H6	1.77	0.68
8:SA:1794:C:H2'	8:SA:1795:G:C8	2.29	0.68
8:SA:2047:A:O2'	8:SA:2048:A:O5'	2.12	0.68
65:AT:134:LYS:O	65:AT:138:ILE:HG12	1.93	0.68
7:S7:2:G:H1	7:S7:69:U:H3	1.43	0.67
8:SA:1272:A:O2'	8:SA:1867:A:N3	2.25	0.67
13:SF:208:ILE:HD11	13:SF:225:VAL:HG21	1.75	0.67
1:S1:17:LEU:HB3	13:SF:64:ILE:HD12	1.74	0.67
3:S3:90:GLU:N	3:S3:90:GLU:OE2	2.27	0.67
8:SA:110:A:H2'	8:SA:111:G:C8	2.29	0.67
8:SA:325:U:H4'	8:SA:329:A:C8	2.29	0.67
8:SA:2049:G:HO2'	34:AA:2548:A:HO2'	1.42	0.67
18:SK:30:SER:HB2	18:SK:61:ILE:HG13	1.74	0.67
79:S8:19:G:OP1	79:S8:59:A:N6	2.27	0.67
8:SA:79:U:OP2	15:SH:170:PHE:N	2.27	0.67
8:SA:253:A:H8	13:SF:131:LEU:HD21	1.59	0.67
8:SA:598:A:H2'	8:SA:599:A:C8	2.29	0.67
8:SA:833:A:H2'	8:SA:834:A:O4'	1.95	0.67
58:AM:68:LYS:NZ	58:AM:70:ASP:OD2	2.24	0.67
70:AE:47:MET:HB2	70:AE:176:MET:HE2	1.74	0.67
14:SG:204:GLY:O	14:SG:206:LYS:NZ	2.26	0.67
16:SI:87:ALA:O	16:SI:91:ILE:HG13	1.93	0.67
20:SM:75:GLN:CD	20:SM:75:GLN:H	2.03	0.67
34:AA:2506:A:H2'	34:AA:2507:A:C8	2.29	0.67
34:AA:3669:U:C2	54:AI:68:MET:HE1	2.30	0.67
55:AJ:178:GLU:HA	55:AJ:181:LEU:HD22	1.76	0.67
55:AJ:244:ASP:O	55:AJ:248:LYS:HB2	1.94	0.67
62:AR:59:GLN:HB2	62:AR:80:SER:HB2	1.76	0.67
80:mR:22:G:C2	81:S9:36:A:H2	2.13	0.67
8:SA:1903:U:H2'	8:SA:1904:G:H8	1.59	0.67
10:SC:23:HIS:CD2	30:SW:102:THR:HG21	2.27	0.67
34:AA:3197:A:N6	34:AA:3209:G:O2'	2.27	0.67
38:A1:114:LEU:HD12	38:A1:117:ILE:HD11	1.76	0.67
46:Aa:20:VAL:HB	46:Aa:32:ILE:HG13	1.76	0.67
55:AJ:73:ARG:H	55:AJ:73:ARG:HE	1.41	0.67
5:S5:19:ARG:HB3	8:SA:1913:G:H21	1.59	0.67
8:SA:1663:A:H2'	8:SA:1664:G:C8	2.28	0.67
23:SP:44:VAL:HG11	23:SP:85:LEU:HD11	1.75	0.67
29:SV:17:GLU:OE2	29:SV:17:GLU:N	2.20	0.67
68:A5:93:VAL:HG21	68:A5:145:TYR:HD2	1.60	0.67
26:SS:100:VAL:HG23	26:SS:105:LEU:HA	1.76	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:SD:127:ILE:HD12	11:SD:128:MET:H	1.59	0.67
16:SI:61:GLU:HA	16:SI:64:VAL:HG22	1.77	0.67
26:SS:132:ARG:HG3	26:SS:134:ARG:H	1.60	0.67
16:SI:18:GLU:OE1	16:SI:18:GLU:N	2.29	0.66
17:SJ:159:GLU:HG2	17:SJ:162:ARG:HD2	1.77	0.66
23:SP:138:ASP:OD2	23:SP:140:THR:N	2.24	0.66
34:AA:1905:C:H2'	34:AA:1906:A:C8	2.30	0.66
39:A2:114:ARG:HH21	44:A8:87:MET:HG2	1.59	0.66
8:SA:1719:U:H2'	16:SI:73:ASN:OD1	1.95	0.66
20:SM:131:GLY:HA3	20:SM:138:ARG:HE	1.58	0.66
34:AA:157:G:OP2	51:AP:4:TYR:OH	2.13	0.66
63:AW:116:HIS:HB3	63:AW:149:ILE:HB	1.78	0.66
75:AV:18:LYS:HD2	75:AV:48:THR:HG23	1.76	0.66
37:AL:157:LEU:HD23	67:A3:120:VAL:HG12	1.78	0.66
8:SA:411:C:O2'	15:SH:92:ARG:O	2.12	0.66
8:SA:1830:C:H4'	26:SS:27:LYS:HD2	1.77	0.66
34:AA:1468:A:OP2	44:A8:61:LYS:NZ	2.28	0.66
34:AA:1788:C:OP2	46:Aa:74:ARG:NH1	2.23	0.66
34:AA:3623:A:OP2	43:AN:139:LYS:NZ	2.29	0.66
8:SA:939:A:H2'	8:SA:940:G:C8	2.31	0.66
30:SW:16:ILE:HD12	30:SW:17:VAL:HG23	1.77	0.66
34:AA:89:A:OP2	59:AS:172:LYS:NZ	2.21	0.66
34:AA:1720:C:H2'	34:AA:1721:C:C6	2.30	0.66
78:A0:34:LYS:HD3	78:A0:36:TYR:CE2	2.31	0.66
8:SA:1436:U:H4'	21:SN:82:ARG:HH22	1.61	0.66
8:SA:1603:U:O2	32:SY:27:ASN:ND2	2.27	0.66
35:AC:106:G:OP2	35:AC:108:A:O2'	2.13	0.66
81:S9:56:C:O2'	81:S9:57:G:O4'	2.13	0.66
12:SE:36:LEU:HD12	12:SE:41:GLU:HB2	1.77	0.66
62:AR:104:LEU:HB2	62:AR:246:ILE:HD11	1.77	0.66
70:AE:190:GLU:O	70:AE:194:GLU:HG2	1.96	0.66
71:AF:44:MET:HG2	71:AF:238:LEU:HD21	1.78	0.66
73:AU:89:ARG:NH1	75:AV:155:LEU:O	2.29	0.66
1:S1:11:LYS:NZ	8:SA:825:A:N7	2.43	0.66
35:AC:153:A:H2'	35:AC:154:G:C8	2.31	0.66
62:AR:50:ARG:NH1	62:AR:149:ASP:OD1	2.26	0.66
12:SE:25:ASP:OD1	12:SE:26:GLN:N	2.29	0.66
34:AA:308:U:HO2'	34:AA:309:G:H8	1.43	0.66
8:SA:1734:G:H3'	8:SA:1811:A:H61	1.61	0.65
11:SD:167:ARG:HH22	11:SD:207:SER:HB2	1.59	0.65
33:SZ:17:CYS:HB2	33:SZ:55:SER:HB3	1.78	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:1906:A:H2'	34:AA:1907:A:C8	2.31	0.65
55:AJ:156:ILE:HD11	55:AJ:183:LEU:HD21	1.78	0.65
9:SB:49:THR:OG1	9:SB:50:LYS:N	2.29	0.65
9:SB:72:ASP:OD1	23:SP:128:ARG:NH1	2.30	0.65
34:AA:2106:A:H5''	34:AA:2107:C:C5	2.31	0.65
45:A9:38:VAL:HG22	54:AI:209:THR:HB	1.77	0.65
8:SA:1636:A:N6	8:SA:1650:A:OP2	2.30	0.65
17:SJ:55:LEU:HB3	17:SJ:56:LYS:HE3	1.78	0.65
38:A1:46:ILE:HD11	38:A1:49:HIS:CE1	2.32	0.65
69:AD:6:ARG:NH1	69:AD:198:LYS:O	2.28	0.65
4:S4:35:CYS:HB3	4:S4:38:CYS:HB2	1.77	0.65
8:SA:1320:A:H1'	22:SO:58:LYS:HZ2	1.61	0.65
17:SJ:141:ILE:HB	18:SK:52:ILE:HG23	1.78	0.65
34:AA:936:A:H8	56:Ac:18:THR:HG23	1.60	0.65
51:AP:10:ILE:HD13	55:AJ:181:LEU:HD21	1.77	0.65
8:SA:1884:A:H2'	8:SA:1885:G:H8	1.62	0.65
34:AA:176:A:H2'	34:AA:177:A:H8	1.62	0.65
34:AA:440:A:H2'	34:AA:441:A:C8	2.30	0.65
34:AA:646:A:OP1	54:AI:31:LYS:NZ	2.27	0.65
34:AA:1697:A:N1	51:AP:74:ARG:NH2	2.44	0.65
34:AA:1821:U:H2'	34:AA:1822:A:C8	2.30	0.65
34:AA:3637:G:N2	34:AA:3648:U:O2	2.20	0.65
44:A8:40:CYS:O	44:A8:42:VAL:N	2.29	0.65
8:SA:1911:A:H3'	16:SI:51:ARG:NH2	2.11	0.65
33:SZ:38:MET:H	33:SZ:38:MET:HE2	1.62	0.65
34:AA:1739:C:H2'	34:AA:1740:A:C8	2.32	0.65
78:A0:29:ILE:HG22	78:A0:35:VAL:HG13	1.78	0.65
8:SA:454:U:H2'	8:SA:455:C:C6	2.32	0.65
8:SA:647:C:O2'	17:SJ:149:ARG:NH2	2.28	0.65
8:SA:812:A:OP1	12:SE:79:ARG:NH2	2.23	0.65
31:SX:30:GLN:NE2	31:SX:31:ASP:OD1	2.29	0.65
34:AA:2742:G:O6	34:AA:2806:U:O4	2.14	0.65
43:AN:142:MET:HG2	57:AK:180:ILE:HG22	1.78	0.65
8:SA:1187:A:OP2	14:SG:178:ARG:NH2	2.29	0.65
13:SF:125:LYS:H	13:SF:142:HIS:HD2	1.43	0.65
15:SH:137:ARG:HD3	15:SH:177:ARG:HH11	1.60	0.65
34:AA:1024:U:O2'	69:AD:12:ARG:NH2	2.30	0.65
8:SA:1459:U:O4	8:SA:1460:A:N6	2.30	0.64
14:SG:168:MET:HE3	14:SG:169:LYS:H	1.60	0.64
29:SV:111:PRO:HB2	29:SV:138:VAL:HG12	1.78	0.64
65:AT:7:LYS:HD3	65:AT:21:ILE:HD11	1.79	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S1:79:ASN:HD22	1:S1:81:ASP:HB2	1.61	0.64
24:SQ:142:LYS:NZ	24:SQ:143:PRO:O	2.29	0.64
8:SA:1982:G:O6	8:SA:2008:U:O4	2.15	0.64
11:SD:190:MET:HE2	11:SD:190:MET:N	2.12	0.64
12:SE:153:GLU:HA	12:SE:156:ILE:HG13	1.78	0.64
24:SQ:13:ARG:O	24:SQ:17:ILE:HG12	1.98	0.64
60:AO:85:GLU:OE1	60:AO:85:GLU:N	2.22	0.64
81:S9:5:G:H2'	81:S9:6:G:C8	2.33	0.64
13:SF:19:MET:HE3	13:SF:108:ARG:HD2	1.78	0.64
34:AA:2450:G:N7	69:AD:152:SER:OG	2.29	0.64
42:A7:52:MET:O	42:A7:85:ARG:NH1	2.30	0.64
77:AX:76:ASN:O	77:AX:80:LYS:NZ	2.30	0.64
34:AA:3553:G:H21	34:AA:3572:A:H8	1.43	0.64
8:SA:65:A:H2	8:SA:86:A:H62	1.45	0.64
8:SA:1460:A:N1	8:SA:1604:A:N6	2.45	0.64
17:SJ:159:GLU:HA	17:SJ:162:ARG:HH11	1.63	0.64
34:AA:118:G:OP2	55:AJ:158:LYS:NZ	2.26	0.64
1:S1:6:THR:HB	1:S1:28:LEU:HB2	1.79	0.64
8:SA:651:G:N2	8:SA:749:U:O2	2.19	0.64
8:SA:1690:A:H4'	8:SA:1691:G:H3'	1.80	0.64
16:SI:168:ILE:HD12	16:SI:169:ILE:H	1.62	0.64
10:SC:26:THR:OG1	10:SC:150:ASP:OD2	2.15	0.64
34:AA:366:G:N2	34:AA:369:A:OP2	2.24	0.64
7:S7:26:C:H2'	7:S7:27:G:C8	2.33	0.64
8:SA:1647:A:OP1	30:SW:56:HIS:NE2	2.29	0.64
8:SA:1911:A:O5'	16:SI:51:ARG:NH2	2.31	0.64
11:SD:190:MET:HE2	11:SD:190:MET:H	1.63	0.64
35:AC:128:C:H5''	67:A3:15:LYS:HZ2	1.62	0.64
1:S1:52:ASN:ND2	1:S1:54:ASN:OD1	2.29	0.64
8:SA:148:U:H2'	8:SA:149:A:H8	1.63	0.63
8:SA:565:U:H3	11:SD:144:ARG:HE	1.45	0.63
8:SA:1261:A:H2'	8:SA:1262:C:C6	2.33	0.63
8:SA:1418:C:H5'	30:SW:7:LYS:HB3	1.78	0.63
8:SA:1669:C:OP1	11:SD:154:ARG:NH1	2.32	0.63
34:AA:1331:A:H2'	34:AA:1332:A:C8	2.34	0.63
2:S2:60:THR:HG22	2:S2:63:ALA:H	1.63	0.63
13:SF:250:GLU:HA	13:SF:253:ARG:HG3	1.79	0.63
32:SY:148:THR:HG23	32:SY:151:GLY:H	1.63	0.63
34:AA:1779:A:O2'	38:A1:67:LYS:NZ	2.25	0.63
34:AA:3241:U:H2'	34:AA:3242:U:C6	2.33	0.63
34:AA:3402:A:H2'	34:AA:3403:A:H8	1.59	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:AC:126:C:OP1	67:A3:64:ARG:NH2	2.29	0.63
16:SI:92:HIS:HB3	16:SI:99:PRO:HD3	1.80	0.63
34:AA:1748:A:O2'	34:AA:1750:U:OP2	2.16	0.63
34:AA:3613:A:OP1	43:AN:109:LYS:NZ	2.25	0.63
61:AQ:10:ARG:NE	61:AQ:58:GLU:OE2	2.31	0.63
8:SA:1276:U:H2'	8:SA:1277:G:H8	1.62	0.63
8:SA:1649:C:OP1	30:SW:3:ARG:N	2.32	0.63
38:A1:40:TYR:HA	38:A1:76:ASN:HA	1.80	0.63
78:A0:45:SER:O	78:A0:49:GLN:HG3	1.98	0.63
8:SA:921:G:OP1	65:AT:172:ARG:NH2	2.32	0.63
31:SX:28:LEU:HD21	31:SX:32:GLU:HB3	1.79	0.63
34:AA:2401:C:H1'	34:AA:3736:A:H8	1.62	0.63
21:SN:65:ARG:NH2	21:SN:74:ASN:OD1	2.32	0.63
34:AA:3258:C:O2'	74:AH:170:ASP:OD1	2.10	0.63
4:S4:35:CYS:HB2	4:S4:40:GLN:HE22	1.62	0.63
8:SA:1276:U:H2'	8:SA:1277:G:C8	2.34	0.63
9:SB:54:LYS:NZ	34:AA:2732:A:O2'	2.32	0.63
31:SX:86:ILE:HG22	31:SX:88:GLU:HG3	1.79	0.63
37:AL:26:SER:HA	37:AL:29:ILE:HD12	1.81	0.63
55:AJ:268:ALA:HA	55:AJ:271:ILE:HD12	1.81	0.63
65:AT:104:LEU:HD23	65:AT:137:LEU:HD23	1.81	0.63
13:SF:19:MET:CE	13:SF:108:ARG:HD2	2.29	0.63
34:AA:914:G:H2'	34:AA:915:G:C8	2.33	0.63
34:AA:2083:U:H2'	34:AA:2084:U:C6	2.34	0.63
34:AA:3431:G:N2	70:AE:274:GLU:OE2	2.30	0.63
38:A1:28:THR:HA	38:A1:41:CYS:HA	1.80	0.63
67:A3:24:LEU:HD21	67:A3:52:ASN:HB3	1.81	0.63
68:A5:164:ARG:HB3	68:A5:171:TYR:HB3	1.79	0.63
71:AF:153:VAL:HG12	71:AF:252:TRP:HB2	1.81	0.63
8:SA:1725:A:O2'	8:SA:1726:U:O4'	2.16	0.63
17:SJ:60:ILE:HD11	17:SJ:92:VAL:HG23	1.79	0.63
22:SO:16:LYS:HD3	22:SO:19:LYS:HD2	1.81	0.63
8:SA:1786:U:O2'	8:SA:1787:U:OP1	2.17	0.62
34:AA:1770:G:H21	34:AA:1798:A:H8	1.46	0.62
37:AL:168:LYS:HG2	60:AO:104:ARG:HH21	1.64	0.62
6:S6:43:ARG:NH2	12:SE:29:LYS:HD3	2.15	0.62
8:SA:756:A:H4'	17:SJ:108:LYS:HE2	1.82	0.62
22:SO:32:ILE:HD11	22:SO:57:LEU:HD22	1.81	0.62
34:AA:1322:G:H2'	34:AA:1323:A:C8	2.34	0.62
71:AF:356:GLU:O	71:AF:360:GLN:NE2	2.32	0.62
74:AH:29:GLY:HA3	74:AH:83:VAL:HG13	1.80	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
81:S9:28:G:H2'	81:S9:29:G:C8	2.33	0.62
7:S7:3:G:N2	7:S7:68:U:H3	1.96	0.62
8:SA:423:A:H5'	8:SA:424:G:C4	2.33	0.62
8:SA:1861:U:H2'	8:SA:1862:C:C6	2.33	0.62
24:SQ:95:PHE:O	24:SQ:144:ARG:NH1	2.33	0.62
24:SQ:138:GLU:CD	24:SQ:140:LYS:HD2	2.24	0.62
34:AA:1474:A:H5''	71:AF:306:LYS:HB2	1.80	0.62
62:AR:38:LEU:HD13	75:AV:31:TYR:HB3	1.80	0.62
7:S7:35:C:H3'	7:S7:36:A:H8	1.65	0.62
32:SY:143:LYS:O	32:SY:145:ARG:NH2	2.32	0.62
35:AC:147:U:O2'	51:AP:110:ILE:O	2.16	0.62
3:S3:57:SER:OG	3:S3:58:VAL:N	2.31	0.62
8:SA:337:G:OP1	19:SL:56:ARG:NH1	2.32	0.62
8:SA:1719:U:H5	16:SI:150:ARG:HD2	1.62	0.62
12:SE:85:LEU:HD22	12:SE:104:LEU:HD22	1.81	0.62
16:SI:41:PRO:HG3	16:SI:60:VAL:HG13	1.81	0.62
24:SQ:128:ALA:C	24:SQ:129:ARG:HD2	2.25	0.62
66:AZ:65:ARG:NH2	66:AZ:83:ARG:O	2.33	0.62
4:S4:17:HIS:O	4:S4:21:ARG:NH2	2.33	0.62
10:SC:197:MET:HG3	10:SC:199:ASP:H	1.65	0.62
18:SK:81:VAL:HG23	18:SK:85:GLU:HG2	1.81	0.62
23:SP:46:ASP:OD1	23:SP:48:SER:N	2.31	0.62
24:SQ:65:ASN:ND2	24:SQ:116:ASP:OD2	2.29	0.62
34:AA:1103:A:H62	34:AA:1230:A:H8	1.45	0.62
45:A9:88:THR:HG21	45:A9:92:HIS:CD2	2.34	0.62
74:AH:91:MET:HE2	74:AH:178:ILE:HG22	1.81	0.62
2:S2:40:VAL:HG23	2:S2:74:VAL:HB	1.81	0.62
34:AA:2219:A:O2'	34:AA:2220:U:O5'	2.13	0.62
34:AA:2699:C:H2'	34:AA:2700:C:C6	2.34	0.62
34:AA:2823:U:H5'	55:AJ:87:ARG:HG2	1.81	0.62
34:AA:3476:A:H1'	34:AA:3477:A:H2'	1.80	0.62
53:AI:11:TYR:O	53:AI:80:ARG:NH2	2.33	0.62
61:AQ:38:ARG:HG3	61:AQ:83:ASP:HA	1.80	0.62
7:S7:2:G:H2'	7:S7:3:G:C8	2.34	0.62
8:SA:1264:A:H3'	8:SA:1265:G:C8	2.34	0.62
12:SE:36:LEU:HD11	12:SE:42:ILE:HG22	1.82	0.62
17:SJ:66:TYR:O	17:SJ:70:THR:HG23	2.00	0.62
34:AA:1980:G:H5'	34:AA:1981:U:H5	1.65	0.62
80:mR:22:G:H1	81:S9:36:A:H2	0.73	0.62
8:SA:1628:A:C6	8:SA:1629:G:O6	2.53	0.62
8:SA:1718:C:H3'	16:SI:160:ILE:HG22	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:SD:120:CYS:O	11:SD:124:LEU:HD12	2.00	0.62
16:SI:8:ILE:HG12	16:SI:37:CYS:HB3	1.81	0.62
75:AV:65:ILE:HD12	75:AV:73:VAL:HG11	1.80	0.62
7:S7:74:A:H8	34:AA:3103:C:N4	1.91	0.62
26:SS:32:LEU:HD11	26:SS:47:CYS:HB2	1.82	0.62
34:AA:123:A:OP1	55:AJ:121:LYS:NZ	2.33	0.62
69:AD:142:ASP:OD1	69:AD:142:ASP:N	2.30	0.62
8:SA:12:U:H2'	8:SA:13:C:C6	2.35	0.61
8:SA:1651:C:H2'	8:SA:1652:A:C8	2.35	0.61
34:AA:746:A:H2'	34:AA:747:A:C8	2.36	0.61
34:AA:1198:A:O2'	40:A4:42:ASN:OD1	2.16	0.61
47:Ab:42:GLU:OE2	47:Ab:42:GLU:N	2.27	0.61
8:SA:486:A:H2'	8:SA:487:A:C8	2.34	0.61
8:SA:1730:A:H2'	8:SA:1731:C:C6	2.36	0.61
9:SB:139:CYS:SG	9:SB:172:MET:HE2	2.40	0.61
15:SH:69:THR:HG23	15:SH:71:ASN:H	1.65	0.61
17:SJ:49:LEU:HD13	17:SJ:58:LYS:HD2	1.82	0.61
26:SS:35:ILE:HD12	26:SS:36:LYS:N	2.14	0.61
36:AB:17:C:OP1	72:AG:150:LYS:NZ	2.32	0.61
8:SA:1379:G:OP1	11:SD:186:LYS:NZ	2.33	0.61
22:SO:54:MET:SD	22:SO:54:MET:N	2.68	0.61
34:AA:606:A:H2'	34:AA:607:A:C8	2.35	0.61
34:AA:696:C:H4'	34:AA:697:A:H5'	1.83	0.61
34:AA:1794:U:OP2	48:Ad:13:LYS:NZ	2.34	0.61
61:AQ:49:VAL:HB	61:AQ:172:GLY:HA2	1.82	0.61
7:S7:58:G:H3'	7:S7:59:A:C8	2.35	0.61
8:SA:1646:U:H2'	8:SA:1647:A:C8	2.36	0.61
15:SH:199:LEU:HA	15:SH:202:LYS:HD2	1.81	0.61
16:SI:184:LYS:O	16:SI:188:GLU:HG2	1.99	0.61
34:AA:551:A:OP2	71:AF:384:LYS:NZ	2.33	0.61
34:AA:3085:A:H61	62:AR:150:VAL:HG21	1.65	0.61
38:A1:27:ASN:HD21	38:A1:42:LEU:HD23	1.63	0.61
58:AM:122:ARG:O	58:AM:126:GLU:HG2	2.01	0.61
8:SA:881:C:H2'	8:SA:882:A:C8	2.35	0.61
8:SA:1076:C:O3'	23:SP:149:ARG:NH1	2.33	0.61
16:SI:69:MET:HE2	16:SI:71:GLY:H	1.65	0.61
34:AA:748:A:OP1	59:AS:145:ARG:NH2	2.27	0.61
34:AA:767:U:O2'	34:AA:768:C:H5'	2.00	0.61
34:AA:773:A:O2'	34:AA:774:A:H8	1.74	0.61
37:AL:84:LEU:HD13	37:AL:89:ALA:HB2	1.82	0.61
70:AE:54:THR:HG22	70:AE:361:LYS:HE2	1.82	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
71:AF:383:VAL:HG22	73:AU:134:ARG:HD3	1.83	0.61
74:AH:50:LEU:HD12	74:AH:51:LYS:HG3	1.81	0.61
7:S7:56:U:O2'	7:S7:58:G:OP2	2.19	0.61
8:SA:1732:G:H4'	21:SN:61:ARG:HH22	1.65	0.61
10:SC:36:TYR:OH	10:SC:56:LYS:NZ	2.33	0.61
11:SD:69:LEU:O	11:SD:73:VAL:HG23	2.01	0.61
11:SD:106:LEU:HD23	11:SD:123:VAL:HG21	1.82	0.61
13:SF:6:LYS:O	13:SF:30:LYS:NZ	2.33	0.61
17:SJ:98:ARG:NH1	17:SJ:129:ASP:OD2	2.31	0.61
29:SV:69:ILE:HG13	29:SV:143:LEU:HD21	1.83	0.61
29:SV:127:THR:HG23	29:SV:144:HIS:HB3	1.81	0.61
48:Ad:57:ARG:NH1	48:Ad:57:ARG:HA	2.15	0.61
64:AY:125:GLU:N	64:AY:125:GLU:OE2	2.31	0.61
68:A5:203:THR:O	68:A5:205:GLY:N	2.34	0.61
8:SA:1278:C:H2'	8:SA:1279:G:C8	2.35	0.61
8:SA:1445:U:O2'	21:SN:54:ARG:NH2	2.29	0.61
30:SW:29:GLN:HA	30:SW:32:LYS:HE3	1.83	0.61
34:AA:1895:U:H2'	34:AA:1896:C:C6	2.36	0.61
8:SA:56:A:OP1	8:SA:409:A:N6	2.33	0.61
8:SA:1198:U:H1'	14:SG:180:ARG:HD2	1.83	0.61
13:SF:163:ASP:HB3	13:SF:166:THR:HG22	1.83	0.61
34:AA:500:A:O2'	34:AA:501:U:O5'	2.17	0.61
35:AC:84:G:O3'	35:AC:91:A:O2'	2.19	0.61
51:AP:122:VAL:HG21	51:AP:132:GLU:HG3	1.82	0.61
8:SA:875:A:H1'	8:SA:877:U:H1'	1.83	0.61
8:SA:1284:A:N6	8:SA:1285:A:N1	2.49	0.61
8:SA:1711:U:OP1	20:SM:140:GLN:NE2	2.33	0.61
34:AA:911:U:H2'	34:AA:912:U:C6	2.36	0.61
34:AA:3386:A:H2'	34:AA:3387:U:C6	2.35	0.61
39:A2:56:ASN:HA	39:A2:108:LEU:HD11	1.83	0.61
69:AD:210:PRO:HG2	69:AD:235:VAL:HG11	1.81	0.61
72:AG:11:GLU:H	72:AG:11:GLU:CD	2.08	0.61
8:SA:150:C:O2'	15:SH:4:ASN:OD1	2.10	0.61
8:SA:1454:G:H2'	8:SA:1455:C:C6	2.34	0.61
10:SC:79:ARG:HA	10:SC:79:ARG:HE	1.64	0.61
16:SI:47:TYR:HA	16:SI:53:ARG:HG2	1.83	0.61
34:AA:765:A:O2'	34:AA:767:U:O4	2.17	0.61
34:AA:1900:G:P	46:Aa:21:ARG:HH22	2.24	0.61
34:AA:2167:G:O2'	34:AA:2627:U:O4	2.18	0.61
53:Ai:12:CYS:HB3	53:Ai:16:CYS:O	2.00	0.61
55:AJ:175:SER:OG	55:AJ:176:PRO:HD3	2.01	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
73:AU:80:ARG:O	73:AU:82:LYS:NZ	2.33	0.61
13:SF:127:LYS:HD2	13:SF:142:HIS:HA	1.82	0.60
16:SI:164:LEU:O	16:SI:168:ILE:HG13	2.01	0.60
32:SY:92:ASP:HA	32:SY:144:GLY:HA3	1.83	0.60
34:AA:2884:G:OP1	69:AD:87:TYR:OH	2.13	0.60
34:AA:3658:G:O2'	34:AA:3659:C:O5'	2.13	0.60
53:AI:13:SER:O	53:AI:17:LYS:NZ	2.30	0.60
67:A3:12:LEU:HB3	67:A3:16:GLU:HB2	1.83	0.60
2:S2:76:ARG:HA	2:S2:79:ILE:HD12	1.84	0.60
8:SA:1199:U:OP2	14:SG:180:ARG:NH2	2.33	0.60
16:SI:7:ASP:N	16:SI:7:ASP:OD1	2.34	0.60
16:SI:113:ARG:HA	16:SI:137:ARG:CZ	2.31	0.60
20:SM:29:LEU:N	20:SM:65:ASP:OD1	2.28	0.60
21:SN:24:THR:HB	21:SN:85:LYS:HZ2	1.66	0.60
34:AA:506:A:H2'	34:AA:507:G:H8	1.66	0.60
34:AA:2726:U:H1'	51:AP:126:ALA:HB2	1.84	0.60
34:AA:3197:A:OP1	61:AQ:154:ARG:NH1	2.34	0.60
3:S3:5:ARG:NH2	8:SA:2087:U:OP2	2.34	0.60
8:SA:22:A:H4'	12:SE:16:LYS:HA	1.83	0.60
8:SA:1903:U:H2'	8:SA:1904:G:C8	2.36	0.60
9:SB:183:ASP:N	9:SB:183:ASP:OD1	2.27	0.60
14:SG:168:MET:HE3	14:SG:169:LYS:N	2.16	0.60
19:SL:82:VAL:HB	19:SL:212:MET:HE3	1.83	0.60
34:AA:63:A:H4'	51:AP:186:ARG:O	2.01	0.60
41:A6:25:LYS:HG2	41:A6:97:ASP:OD1	2.00	0.60
48:Ad:42:LYS:HA	48:Ad:50:TYR:O	2.01	0.60
8:SA:148:U:H2'	8:SA:149:A:C8	2.36	0.60
8:SA:1628:A:H5'	21:SN:56:PRO:HA	1.83	0.60
12:SE:132:ARG:HE	12:SE:140:MET:HE1	1.66	0.60
14:SG:152:ARG:HD3	14:SG:167:PRO:HG3	1.83	0.60
22:SO:43:HIS:HB3	22:SO:46:LEU:HB2	1.83	0.60
34:AA:642:A:N6	34:AA:684:G:O2'	2.31	0.60
34:AA:2699:C:H2'	34:AA:2700:C:H6	1.67	0.60
43:AN:103:GLU:OE1	43:AN:107:ASN:ND2	2.35	0.60
5:S5:9:VAL:HG22	5:S5:25:VAL:HG21	1.84	0.60
8:SA:889:A:H2'	8:SA:890:A:H8	1.66	0.60
8:SA:1884:A:H2'	8:SA:1885:G:C8	2.36	0.60
13:SF:204:THR:HG22	13:SF:205:TYR:H	1.66	0.60
17:SJ:44:LEU:HD23	17:SJ:62:ILE:HG12	1.83	0.60
34:AA:1480:G:N7	39:A2:103:LYS:NZ	2.48	0.60
34:AA:2039:U:H3	34:AA:2071:U:H3	1.48	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:3107:U:H2'	34:AA:3108:A:H8	1.65	0.60
47:Ab:47:VAL:HG11	51:AP:6:TYR:HE1	1.65	0.60
8:SA:1308:C:H5'	8:SA:1309:A:C4	2.37	0.60
8:SA:1683:U:O3'	11:SD:177:GLN:NE2	2.34	0.60
13:SF:125:LYS:H	13:SF:142:HIS:CD2	2.20	0.60
15:SH:121:ILE:HB	15:SH:124:LEU:HB3	1.83	0.60
16:SI:194:ASN:OD1	16:SI:195:ARG:N	2.35	0.60
20:SM:67:ARG:NH1	20:SM:69:ARG:HG2	2.16	0.60
21:SN:87:LEU:O	21:SN:88:ILE:HD13	2.02	0.60
26:SS:86:LEU:O	26:SS:89:ARG:HG3	2.02	0.60
34:AA:1086:C:OP1	60:AO:47:LYS:NZ	2.35	0.60
34:AA:2145:A:H2'	34:AA:2146:A:O4'	2.01	0.60
34:AA:3641:U:O2	34:AA:3644:G:N2	2.33	0.60
34:AA:3650:U:H2'	34:AA:3651:G:H8	1.66	0.60
35:AC:63:A:OP2	64:AY:103:LYS:NZ	2.34	0.60
35:AC:128:C:P	67:A3:15:LYS:HZ3	2.23	0.60
45:A9:104:VAL:HG13	45:A9:114:ILE:HD13	1.82	0.60
51:AP:121:TRP:CH2	51:AP:124:GLN:NE2	2.64	0.60
53:Ai:35:SER:O	53:Ai:40:ARG:NH1	2.34	0.60
65:AT:31:ILE:HD11	65:AT:48:LEU:HB3	1.83	0.60
8:SA:166:A:OP1	15:SH:136:LYS:N	2.32	0.60
8:SA:651:G:H1	8:SA:749:U:H3	0.68	0.60
8:SA:932:U:OP2	18:SK:57:ARG:HD3	2.01	0.60
14:SG:242:TRP:CD2	18:SK:68:ARG:HD3	2.37	0.60
22:SO:55:MET:N	22:SO:55:MET:SD	2.74	0.60
34:AA:1706:A:H2'	55:AJ:73:ARG:NH2	2.16	0.60
42:A7:27:LEU:HB3	42:A7:43:GLU:HG3	1.83	0.60
44:A8:35:PRO:HB2	44:A8:40:CYS:SG	2.42	0.60
71:AF:134:THR:HA	71:AF:150:VAL:HG21	1.83	0.60
80:mR:22:G:C6	81:S9:36:A:N1	2.69	0.60
8:SA:10:G:H1'	14:SG:101:GLN:HG3	1.82	0.60
8:SA:877:U:O2	8:SA:926:G:N2	2.34	0.60
8:SA:1662:A:N6	8:SA:1663:A:N6	2.50	0.60
8:SA:1792:U:O2	8:SA:1807:A:N6	2.33	0.60
8:SA:1799:A:OP2	32:SY:121:LYS:NZ	2.32	0.60
13:SF:35:PRO:HD2	13:SF:83:PRO:HG2	1.84	0.60
34:AA:2633:U:OP1	70:AE:233:LYS:NZ	2.32	0.60
35:AC:30:U:H2'	35:AC:31:U:C6	2.36	0.60
47:Ab:94:ARG:O	47:Ab:98:GLN:HG3	2.01	0.60
71:AF:115:VAL:HB	71:AF:120:LYS:HD2	1.84	0.60
3:S3:85:ARG:NH1	8:SA:1253:A:O2'	2.35	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:750:U:H2'	8:SA:751:U:C6	2.37	0.60
8:SA:1907:G:H4'	16:SI:42:HIS:CE1	2.37	0.60
12:SE:40:ARG:O	12:SE:44:ARG:HG3	2.02	0.60
33:SZ:49:THR:OG1	33:SZ:50:GLU:N	2.33	0.60
34:AA:1992:U:H2'	34:AA:1993:A:C8	2.37	0.60
34:AA:2740:A:H2'	34:AA:2741:A:H8	1.66	0.60
35:AC:78:U:OP2	66:AZ:75:LYS:NZ	2.26	0.60
37:AL:38:ARG:HA	37:AL:41:ARG:HG2	1.83	0.60
38:A1:32:GLN:HE22	38:A1:37:PRO:HA	1.67	0.60
61:AQ:189:ARG:NH2	61:AQ:200:ILE:O	2.34	0.60
8:SA:201:G:H2'	8:SA:202:G:C8	2.36	0.60
8:SA:1456:G:N1	8:SA:1607:U:N3	2.49	0.60
34:AA:452:A:O2'	34:AA:503:A:N7	2.35	0.60
34:AA:939:A:H2'	34:AA:940:A:C8	2.37	0.60
34:AA:1139:C:H2'	34:AA:1140:A:C8	2.37	0.60
34:AA:3234:U:O2'	81:S9:76:A:H4'	2.02	0.60
35:AC:103:G:O6	56:Ac:68:ARG:NH2	2.34	0.60
61:AQ:164:LYS:HE2	61:AQ:166:PHE:HE1	1.67	0.60
70:AE:115:ARG:HD2	70:AE:130:PHE:HB2	1.84	0.60
81:S9:27:G:H21	81:S9:43:C:H5	1.48	0.60
4:S4:7:ASN:ND2	4:S4:10:PRO:HD2	2.16	0.59
8:SA:1654:G:H3'	8:SA:1655:G:H8	1.66	0.59
26:SS:17:ILE:HD12	26:SS:19:ASN:H	1.67	0.59
27:ST:19:CYS:HB2	27:ST:28:ILE:HD12	1.83	0.59
34:AA:801:U:OP1	34:AA:899:A:O2'	2.17	0.59
34:AA:2394:C:HO2'	34:AA:2395:U:H6	1.49	0.59
35:AC:79:G:H2'	35:AC:80:C:C6	2.37	0.59
64:AY:116:THR:HG21	67:A3:37:LEU:HD23	1.84	0.59
70:AE:155:LEU:HB2	70:AE:185:MET:HE1	1.84	0.59
8:SA:174:C:N4	8:SA:267:A:OP2	2.35	0.59
8:SA:1311:U:H2'	8:SA:1312:A:C8	2.37	0.59
9:SB:137:MET:HE2	9:SB:172:MET:SD	2.42	0.59
24:SQ:133:LEU:HD21	24:SQ:137:LYS:HE3	1.82	0.59
34:AA:1141:G:H2'	34:AA:1142:G:C8	2.37	0.59
34:AA:1553:U:H5'	44:A8:58:GLY:HA2	1.83	0.59
34:AA:2474:C:OP1	69:AD:193:ARG:NH2	2.35	0.59
34:AA:3625:C:N3	43:AN:136:ARG:HD3	2.16	0.59
61:AQ:84:ASN:O	61:AQ:140:THR:OG1	2.20	0.59
69:AD:105:GLY:HA3	69:AD:160:ALA:HB1	1.84	0.59
75:AV:52:GLY:HA3	75:AV:93:ARG:HG3	1.84	0.59
1:S1:5:PHE:CE2	1:S1:35:VAL:HG21	2.37	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:3683:G:H2'	34:AA:3684:A:H4'	1.84	0.59
71:AF:163:LYS:HB2	71:AF:166:GLU:HG2	1.82	0.59
79:S8:28:C:H2'	79:S8:29:G:H8	1.67	0.59
7:S7:73:C:O2'	53:AI:55:PRO:O	2.15	0.59
8:SA:586:A:N7	11:SD:180:GLN:HG2	2.17	0.59
8:SA:637:A:H4'	29:SV:156:LYS:HE3	1.84	0.59
8:SA:1982:G:N2	8:SA:2008:U:O2	2.23	0.59
29:SV:7:VAL:HB	29:SV:55:VAL:HG22	1.84	0.59
59:AS:65:SER:OG	59:AS:88:ASP:OD2	2.19	0.59
7:S7:2:G:H22	7:S7:69:U:H3	1.49	0.59
8:SA:413:A:H2'	8:SA:414:C:H6	1.65	0.59
10:SC:88:LYS:HD2	10:SC:200:MET:HE1	1.83	0.59
13:SF:191:ARG:HD2	13:SF:245:LYS:HB2	1.84	0.59
15:SH:188:ARG:O	15:SH:192:GLN:HG3	2.02	0.59
16:SI:98:ASN:HB3	16:SI:101:GLN:HB2	1.83	0.59
34:AA:11:A:N1	35:AC:154:G:N2	2.40	0.59
34:AA:3650:U:H2'	34:AA:3651:G:C8	2.38	0.59
37:AL:17:TRP:CE2	37:AL:18:GLN:NE2	2.65	0.59
38:A1:33:THR:HG22	38:A1:35:GLU:H	1.67	0.59
42:A7:57:VAL:HB	42:A7:99:THR:HG23	1.85	0.59
3:S3:54:LYS:NZ	3:S3:62:PHE:O	2.36	0.59
8:SA:635:G:OP1	28:SU:124:ARG:NH1	2.35	0.59
8:SA:755:A:H2'	8:SA:756:A:H8	1.67	0.59
8:SA:844:G:H2'	8:SA:845:U:C6	2.38	0.59
10:SC:136:SER:HB2	10:SC:141:ILE:HB	1.84	0.59
13:SF:196:SER:OG	13:SF:211:LYS:HG2	2.01	0.59
14:SG:168:MET:HB3	14:SG:170:VAL:HG13	1.84	0.59
16:SI:60:VAL:O	16:SI:64:VAL:HG13	2.02	0.59
32:SY:69:ALA:O	32:SY:71:LEU:HD23	2.02	0.59
34:AA:1209:U:H2'	34:AA:1210:A:C8	2.37	0.59
34:AA:1577:A:H2'	60:AO:3:THR:HG21	1.84	0.59
34:AA:1783:G:OP1	38:A1:107:LYS:NZ	2.36	0.59
34:AA:3120:U:OP1	34:AA:3140:U:H5	1.86	0.59
34:AA:3319:C:H2'	34:AA:3320:G:C8	2.38	0.59
51:AP:80:VAL:HG11	51:AP:87:GLN:HA	1.83	0.59
61:AQ:55:TYR:HE2	61:AQ:164:LYS:HG3	1.67	0.59
8:SA:161:U:H2'	8:SA:162:A:H8	1.68	0.59
8:SA:333:U:H4'	29:SV:12:ALA:HB1	1.85	0.59
8:SA:1608:G:H2'	8:SA:1609:C:C6	2.38	0.59
8:SA:1662:A:H2'	8:SA:1663:A:C8	2.38	0.59
8:SA:1907:G:H4'	16:SI:42:HIS:HE1	1.66	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:SC:73:VAL:HG22	10:SC:120:LEU:HB3	1.83	0.59
30:SW:61:ILE:HG22	30:SW:66:VAL:HG11	1.83	0.59
34:AA:1312:U:OP2	43:AN:72:LYS:NZ	2.36	0.59
34:AA:2735:G:N2	34:AA:2814:U:O2	2.27	0.59
34:AA:3256:C:H2'	34:AA:3258:C:H5'	1.84	0.59
54:AI:185:ASP:OD1	54:AI:186:ILE:N	2.36	0.59
8:SA:886:U:H2'	8:SA:887:A:C8	2.37	0.59
8:SA:1976:G:H2'	8:SA:1977:G:C8	2.38	0.59
32:SY:48:HIS:HB2	32:SY:50:LYS:NZ	2.17	0.59
34:AA:26:A:H2'	34:AA:27:U:H6	1.68	0.59
34:AA:832:U:H5''	59:AS:134:LYS:HD3	1.83	0.59
34:AA:1536:U:O2'	44:A8:99:ASN:O	2.21	0.59
34:AA:3012:A:O2'	72:AG:126:ASP:OD1	2.12	0.59
43:AN:22:LYS:N	73:AU:184:MET:HE1	2.18	0.59
14:SG:149:ILE:HD13	14:SG:231:SER:HB3	1.84	0.59
26:SS:33:THR:HA	26:SS:43:ALA:HB1	1.84	0.59
34:AA:1851:A:H2'	34:AA:1852:C:C6	2.38	0.59
34:AA:2021:A:H2'	34:AA:2022:A:C8	2.38	0.59
34:AA:3281:G:N2	81:S9:76:A:C2	2.71	0.59
36:AB:60:U:H2'	36:AB:61:G:H8	1.68	0.59
58:AM:79:ILE:HD12	58:AM:105:VAL:HG11	1.84	0.59
8:SA:454:U:H2'	8:SA:455:C:H6	1.67	0.59
8:SA:1821:A:H2'	8:SA:1822:A:C8	2.37	0.59
8:SA:2069:G:N7	76:Ag:22:LYS:NZ	2.51	0.59
9:SB:131:ASP:HB3	9:SB:133:TYR:HD1	1.67	0.59
34:AA:687:G:H2'	34:AA:688:U:C6	2.38	0.59
41:A6:54:ILE:HD11	46:Aa:90:MET:HB2	1.85	0.59
50:Af:28:HIS:HB2	50:Af:30:ARG:HH11	1.68	0.59
8:SA:986:U:O2	23:SP:55:ARG:NH1	2.35	0.58
10:SC:89:PHE:O	10:SC:93:THR:HG22	2.03	0.58
30:SW:67:ARG:NE	30:SW:67:ARG:O	2.36	0.58
34:AA:176:A:H2'	34:AA:177:A:C8	2.38	0.58
34:AA:1712:G:H2'	34:AA:1713:G:C8	2.38	0.58
34:AA:1979:C:H42	34:AA:1989:A:H61	1.51	0.58
68:A5:107:LYS:HG2	68:A5:138:ILE:HD13	1.85	0.58
77:AX:47:THR:HG22	77:AX:88:TYR:HB3	1.84	0.58
4:S4:18:LYS:HG3	4:S4:19:LEU:O	2.02	0.58
7:S7:39:A:H4'	16:SI:189:ARG:HH22	1.67	0.58
8:SA:884:G:H22	8:SA:918:U:H3	1.51	0.58
8:SA:1433:A:O3'	30:SW:46:MET:HE1	2.02	0.58
8:SA:1898:G:H5'	32:SY:112:PRO:HG2	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:SM:23:VAL:HG13	20:SM:66:ILE:HG12	1.85	0.58
20:SM:67:ARG:HD2	20:SM:67:ARG:C	2.28	0.58
25:SR:90:SER:HA	25:SR:93:LEU:HD12	1.86	0.58
30:SW:82:LEU:HD23	30:SW:83:ASP:HB2	1.85	0.58
34:AA:2112:G:H5'	34:AA:2113:C:H5''	1.85	0.58
37:AL:175:GLU:HB2	37:AL:178:LYS:HD3	1.83	0.58
62:AR:143:PRO:HG2	62:AR:174:ASN:HB2	1.83	0.58
14:SG:132:GLU:HB2	14:SG:135:THR:HG22	1.85	0.58
20:SM:37:LEU:HD23	20:SM:37:LEU:H	1.68	0.58
24:SQ:109:ARG:HG3	24:SQ:114:VAL:HG22	1.86	0.58
26:SS:100:VAL:HG21	26:SS:108:TYR:HB2	1.85	0.58
28:SU:99:ARG:NH1	28:SU:119:GLU:OE2	2.36	0.58
30:SW:34:ILE:HA	30:SW:37:GLU:HB2	1.85	0.58
34:AA:3022:U:H2'	34:AA:3023:C:C6	2.38	0.58
34:AA:3313:U:O4	81:S9:76:A:O3'	2.17	0.58
36:AB:61:G:O2'	62:AR:281:ARG:NH2	2.36	0.58
67:A3:68:LEU:HD13	67:A3:82:LEU:HD11	1.84	0.58
71:AF:181:ASN:O	71:AF:185:LYS:HG3	2.03	0.58
6:S6:10:ARG:NH1	8:SA:573:C:O3'	2.36	0.58
8:SA:756:A:C6	8:SA:757:A:N6	2.71	0.58
12:SE:36:LEU:HD23	12:SE:36:LEU:H	1.67	0.58
34:AA:193:C:H5''	66:AZ:121:LYS:HD3	1.85	0.58
34:AA:612:G:H2'	34:AA:613:C:H6	1.68	0.58
34:AA:1786:A:OP1	38:A1:73:LYS:NZ	2.36	0.58
41:A6:48:SER:HB3	41:A6:91:SER:HA	1.84	0.58
8:SA:600:U:H3'	12:SE:38:ASN:HD21	1.69	0.58
8:SA:1850:G:H2'	8:SA:1852:A:OP2	2.04	0.58
13:SF:44:LEU:HD23	13:SF:82:PHE:HB3	1.86	0.58
14:SG:90:ASP:OD1	14:SG:90:ASP:N	2.33	0.58
30:SW:69:ILE:O	30:SW:74:GLN:NE2	2.36	0.58
34:AA:307:G:C2'	34:AA:308:U:H5'	2.33	0.58
34:AA:1033:A:C2	69:AD:204:MET:HG2	2.38	0.58
34:AA:1124:A:H2'	34:AA:1125:A:H8	1.68	0.58
34:AA:3693:A:H2'	34:AA:3694:A:C8	2.38	0.58
46:Aa:39:ALA:HB2	46:Aa:58:ARG:HG2	1.84	0.58
66:AZ:41:LYS:HG2	66:AZ:42:TYR:CD2	2.39	0.58
4:S4:30:PHE:CZ	28:SU:61:PRO:HG3	2.39	0.58
8:SA:1414:A:O2'	8:SA:1415:A:OP1	2.18	0.58
8:SA:1629:G:O5'	21:SN:86:ARG:NH2	2.37	0.58
14:SG:58:SER:C	14:SG:78:PHE:HZ	2.11	0.58
14:SG:93:VAL:HG11	14:SG:223:LEU:HD21	1.86	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:SY:45:LEU:HB3	32:SY:77:PHE:CE2	2.39	0.58
32:SY:62:THR:OG1	32:SY:66:ARG:NE	2.30	0.58
34:AA:26:A:N3	34:AA:336:U:O2'	2.32	0.58
34:AA:698:G:O2'	34:AA:699:U:O5'	2.22	0.58
34:AA:1210:A:H2'	34:AA:1211:U:H6	1.69	0.58
10:SC:106:MET:HA	10:SC:112:ILE:HD11	1.86	0.58
16:SI:86:TYR:O	16:SI:90:ILE:HD12	2.03	0.58
17:SJ:72:TYR:CE2	17:SJ:76:ILE:HD11	2.38	0.58
20:SM:40:VAL:HG23	20:SM:42:PRO:HD2	1.85	0.58
34:AA:381:A:O2'	34:AA:384:A:OP1	2.13	0.58
34:AA:2163:A:O2'	34:AA:3439:G:H4'	2.02	0.58
34:AA:3042:A:N6	62:AR:28:THR:O	2.36	0.58
34:AA:3497:A:H4'	74:AH:70:ARG:HG2	1.86	0.58
43:AN:141:LYS:HG2	57:AK:187:LEU:HB2	1.84	0.58
52:Ah:8:VAL:O	52:Ah:11:THR:OG1	2.21	0.58
70:AE:201:PRO:HG2	70:AE:204:THR:HG23	1.84	0.58
8:SA:1629:G:O2'	21:SN:32:GLU:OE2	2.12	0.58
29:SV:128:VAL:HG12	29:SV:142:VAL:HA	1.86	0.58
34:AA:1443:U:OP1	57:AK:17:ARG:NH1	2.37	0.58
34:AA:1784:G:N2	34:AA:1787:A:OP2	2.33	0.58
58:AM:94:TYR:O	78:A0:27:LYS:N	2.26	0.58
8:SA:804:U:H3'	8:SA:805:A:H5'	1.84	0.58
8:SA:1247:G:H2'	8:SA:1248:A:C8	2.39	0.58
8:SA:1839:G:O2'	8:SA:1865:G:N2	2.36	0.58
21:SN:30:ALA:HA	21:SN:33:LYS:HE3	1.84	0.58
28:SU:34:GLU:CD	28:SU:34:GLU:H	2.12	0.58
34:AA:619:U:OP2	71:AF:355:LYS:NZ	2.36	0.58
74:AH:58:MET:HB2	74:AH:69:ILE:HD11	1.85	0.58
8:SA:974:A:H5''	23:SP:66:ARG:HD3	1.85	0.58
20:SM:100:GLU:HG3	20:SM:104:LYS:HE3	1.86	0.58
34:AA:727:A:OP2	34:AA:3227:U:O2'	2.21	0.58
34:AA:3001:A:H2'	34:AA:3002:G:C8	2.39	0.58
55:AJ:93:SER:O	55:AJ:96:GLN:NE2	2.37	0.58
62:AR:225:TYR:O	62:AR:230:ILE:HG13	2.04	0.58
8:SA:32:U:O2'	8:SA:601:A:N1	2.33	0.57
8:SA:1264:A:O2'	16:SI:136:ARG:NE	2.37	0.57
8:SA:1300:G:H5''	27:ST:27:ALA:HB2	1.85	0.57
8:SA:1830:C:O2'	8:SA:1836:G:N1	2.35	0.57
16:SI:11:PHE:HB2	16:SI:13:LYS:HE2	1.84	0.57
16:SI:75:GLY:O	16:SI:77:LYS:NZ	2.36	0.57
34:AA:1900:G:OP1	46:Aa:21:ARG:NH2	2.37	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
64:AY:122:LYS:O	64:AY:126:GLU:HG3	2.04	0.57
73:AU:108:LYS:HG2	73:AU:135:ILE:HD13	1.86	0.57
74:AH:139:VAL:HG13	74:AH:142:GLU:HB2	1.85	0.57
81:S9:1:G:N2	81:S9:72:C:H41	1.99	0.57
8:SA:882:A:H61	8:SA:920:A:H61	1.50	0.57
8:SA:1720:G:OP1	16:SI:76:LYS:HE2	2.04	0.57
20:SM:125:CYS:SG	20:SM:126:GLU:N	2.77	0.57
32:SY:48:HIS:HB2	32:SY:50:LYS:HZ1	1.68	0.57
34:AA:672:C:N4	34:AA:673:U:O4	2.36	0.57
34:AA:718:U:OP1	60:AO:21:ARG:NH1	2.36	0.57
41:A6:102:ASP:OD1	41:A6:102:ASP:N	2.31	0.57
51:AP:187:PRO:O	51:AP:188:SER:HB3	2.04	0.57
58:AM:72:ARG:HG2	58:AM:72:ARG:HH11	1.67	0.57
8:SA:66:U:OP1	15:SH:136:LYS:NZ	2.27	0.57
8:SA:453:U:O2'	13:SF:27:TYR:O	2.21	0.57
8:SA:1423:A:OP2	10:SC:101:ARG:NH1	2.36	0.57
10:SC:102:TRP:CD2	10:SC:106:MET:HE3	2.38	0.57
29:SV:83:MET:HG3	29:SV:86:THR:HG23	1.85	0.57
33:SZ:38:MET:HE1	33:SZ:49:THR:HA	1.86	0.57
34:AA:121:U:N3	55:AJ:119:GLU:OE1	2.37	0.57
34:AA:246:U:O2'	34:AA:247:A:OP2	2.21	0.57
34:AA:734:A:H2'	34:AA:735:A:C8	2.39	0.57
34:AA:1816:G:H2'	34:AA:1817:G:C8	2.39	0.57
64:AY:95:ARG:HG2	64:AY:96:ILE:HG22	1.86	0.57
66:AZ:47:LEU:HD11	66:AZ:118:LEU:HD21	1.84	0.57
71:AF:156:ASN:HD21	71:AF:255:SER:HB3	1.69	0.57
73:AU:100:TYR:OH	73:AU:102:GLU:OE1	2.18	0.57
81:S9:5:G:H2'	81:S9:6:G:H8	1.68	0.57
8:SA:1108:A:O2'	8:SA:1109:G:O5'	2.22	0.57
8:SA:1723:A:OP1	32:SY:66:ARG:NH1	2.36	0.57
8:SA:1903:U:OP2	20:SM:128:LYS:N	2.35	0.57
20:SM:49:VAL:O	20:SM:52:PRO:HD2	2.05	0.57
23:SP:103:THR:HG22	23:SP:142:LYS:HB3	1.84	0.57
29:SV:62:PRO:HG3	29:SV:141:ASN:HB3	1.85	0.57
34:AA:1210:A:H2'	34:AA:1211:U:C6	2.39	0.57
34:AA:1248:A:H2'	34:AA:1249:U:H6	1.70	0.57
34:AA:1553:U:O2'	34:AA:1554:G:O5'	2.21	0.57
34:AA:1855:U:C5'	34:AA:1856:U:H4'	2.34	0.57
39:A2:28:LYS:HD2	44:A8:72:TYR:CE2	2.39	0.57
41:A6:18:GLN:NE2	41:A6:83:ALA:O	2.36	0.57
52:Ah:29:ILE:HD11	69:AD:177:LYS:HG3	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:AD:116:LEU:HB3	69:AD:126:LEU:HB2	1.86	0.57
74:AH:125:VAL:HG21	74:AH:160:ILE:HG13	1.86	0.57
1:S1:85:LYS:NZ	8:SA:460:G:O6	2.30	0.57
8:SA:1908:A:H4'	16:SI:65:ASN:HB2	1.86	0.57
16:SI:148:GLY:HA2	16:SI:179:TYR:HD2	1.69	0.57
21:SN:55:LEU:HD23	21:SN:85:LYS:HB2	1.85	0.57
23:SP:41:PHE:HA	23:SP:57:THR:HA	1.86	0.57
34:AA:1646:C:H2'	34:AA:1647:U:C6	2.39	0.57
34:AA:1794:U:N3	48:Ad:17:LYS:HD2	2.19	0.57
46:Aa:46:ASP:OD2	46:Aa:88:ARG:NH2	2.37	0.57
59:AS:7:ASN:ND2	59:AS:10:ARG:O	2.37	0.57
68:A5:148:PRO:O	68:A5:250:ASN:ND2	2.37	0.57
69:AD:5:ILE:HG12	69:AD:8:GLN:HG3	1.86	0.57
72:AG:26:SER:OG	72:AG:27:GLY:N	2.37	0.57
8:SA:884:G:H1	8:SA:918:U:H3	1.50	0.57
8:SA:1844:A:N1	8:SA:1862:C:N4	2.52	0.57
18:SK:85:GLU:OE1	18:SK:85:GLU:N	2.36	0.57
30:SW:75:GLU:O	30:SW:79:GLU:HG2	2.05	0.57
34:AA:1222:U:O2'	34:AA:1223:U:O5'	2.22	0.57
34:AA:2449:U:OP2	69:AD:241:ARG:NH2	2.37	0.57
48:Ad:27:LYS:H	48:Ad:77:PRO:HG3	1.70	0.57
70:AE:143:CYS:SG	70:AE:147:ARG:NH1	2.77	0.57
8:SA:1453:G:C6	8:SA:1454:G:C6	2.93	0.57
8:SA:1723:A:H2'	8:SA:1724:U:C6	2.39	0.57
20:SM:6:LYS:N	20:SM:93:TYR:HH	2.02	0.57
34:AA:582:U:H2'	34:AA:583:U:C6	2.40	0.57
34:AA:1247:C:H2'	34:AA:1248:A:H8	1.68	0.57
34:AA:1444:A:OP2	57:AK:132:ARG:NH1	2.37	0.57
39:A2:2:SER:OG	39:A2:3:ASN:N	2.36	0.57
46:Aa:61:ASP:OD2	46:Aa:64:ARG:NH2	2.37	0.57
8:SA:183:C:H2'	8:SA:184:C:C6	2.40	0.57
8:SA:1431:A:OP2	11:SD:161:THR:OG1	2.18	0.57
8:SA:1635:C:OP1	30:SW:48:ASN:ND2	2.25	0.57
8:SA:1979:C:O2'	8:SA:1980:A:N3	2.36	0.57
16:SI:115:ASP:OD1	16:SI:115:ASP:N	2.37	0.57
20:SM:20:VAL:HG12	20:SM:67:ARG:HH12	1.68	0.57
21:SN:55:LEU:HD12	21:SN:56:PRO:HD2	1.85	0.57
35:AC:154:G:H2'	35:AC:155:A:H8	1.70	0.57
67:A3:63:LYS:O	67:A3:67:GLU:HG3	2.05	0.57
72:AG:92:ARG:HA	72:AG:92:ARG:HE	1.70	0.57
1:S1:27:ILE:HB	1:S1:70:THR:HB	1.87	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:S3:12:LYS:NZ	8:SA:1098:U:OP2	2.37	0.57
8:SA:886:U:O4	8:SA:916:G:O6	2.23	0.57
8:SA:964:G:H2'	8:SA:965:U:C6	2.40	0.57
8:SA:1308:C:H5'	8:SA:1309:A:C5	2.39	0.57
8:SA:1723:A:H5''	32:SY:66:ARG:HH11	1.69	0.57
16:SI:52:PHE:O	16:SI:55:ALA:N	2.37	0.57
19:SL:84:ASN:ND2	19:SL:84:ASN:C	2.63	0.57
34:AA:1540:G:H8	34:AA:1566:A:H62	1.51	0.57
34:AA:1801:G:H2'	34:AA:2030:G:N2	2.20	0.57
35:AC:124:U:H2'	35:AC:125:U:C6	2.40	0.57
70:AE:128:LYS:O	70:AE:131:THR:OG1	2.19	0.57
8:SA:1790:C:H2'	8:SA:1791:C:C6	2.40	0.57
8:SA:1853:A:C2	8:SA:1857:U:H1'	2.40	0.57
13:SF:42:ILE:HB	13:SF:46:ILE:HD11	1.87	0.57
13:SF:211:LYS:HD2	13:SF:217:VAL:HG22	1.86	0.57
14:SG:61:GLU:H	14:SG:61:GLU:CD	2.12	0.57
14:SG:61:GLU:OE1	14:SG:61:GLU:N	2.31	0.57
34:AA:600:U:H2'	34:AA:601:G:C8	2.40	0.57
34:AA:3274:U:H5'	34:AA:3275:C:H5'	1.85	0.57
38:A1:126:VAL:HG22	38:A1:132:GLU:HG3	1.85	0.57
41:A6:56:ARG:O	41:A6:60:GLU:HG2	2.05	0.57
46:Aa:85:ILE:O	46:Aa:89:ILE:HG12	2.05	0.57
63:AW:22:LEU:HB3	63:AW:90:PHE:CD2	2.39	0.57
68:A5:233:ALA:HB3	68:A5:236:GLU:HG3	1.86	0.57
71:AF:62:THR:OG1	71:AF:63:SER:N	2.37	0.57
8:SA:1802:G:O2'	8:SA:1847:A:O2'	2.23	0.56
10:SC:127:ARG:HH11	10:SC:127:ARG:HG2	1.70	0.56
11:SD:74:GLN:HA	11:SD:77:PHE:CZ	2.40	0.56
12:SE:168:ARG:HH12	12:SE:171:ARG:NH2	2.02	0.56
16:SI:132:VAL:HB	16:SI:137:ARG:HH21	1.70	0.56
23:SP:101:GLY:HA2	23:SP:134:PRO:HG2	1.87	0.56
32:SY:50:LYS:HG3	32:SY:133:LEU:HD11	1.87	0.56
34:AA:2816:U:H2'	34:AA:2817:U:C6	2.39	0.56
34:AA:3634:C:H2'	34:AA:3635:G:H8	1.68	0.56
66:AZ:75:LYS:H	66:AZ:75:LYS:HE2	1.70	0.56
81:S9:43:C:H2'	81:S9:44:G:O4'	2.05	0.56
10:SC:121:LEU:HB3	10:SC:143:VAL:HG22	1.87	0.56
11:SD:127:ILE:HD12	11:SD:128:MET:N	2.19	0.56
12:SE:79:ARG:O	12:SE:83:GLN:HG2	2.05	0.56
30:SW:17:VAL:H	30:SW:19:LYS:HE3	1.70	0.56
34:AA:2735:G:O6	34:AA:2814:U:O4	2.23	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:AJ:254:MET:HG2	55:AJ:259:MET:HE2	1.86	0.56
63:AW:16:LYS:HG2	63:AW:149:ILE:HG12	1.87	0.56
8:SA:70:U:O4	8:SA:82:G:O6	2.24	0.56
8:SA:914:U:H2'	8:SA:915:G:H8	1.70	0.56
8:SA:1734:G:O2'	8:SA:1790:C:O2'	2.21	0.56
10:SC:40:ARG:HB3	10:SC:46:HIS:CD2	2.41	0.56
16:SI:63:LEU:HD22	16:SI:142:ILE:HG23	1.88	0.56
34:AA:195:A:H8	34:AA:216:C:O2'	1.89	0.56
34:AA:257:U:HO2'	34:AA:258:U:H6	1.54	0.56
34:AA:582:U:O2'	34:AA:583:U:O5'	2.17	0.56
34:AA:607:A:O2'	34:AA:608:A:O5'	2.18	0.56
34:AA:683:A:O2'	54:AI:41:LYS:NZ	2.33	0.56
34:AA:1064:U:H2'	34:AA:1065:U:C6	2.41	0.56
34:AA:1511:U:H2'	34:AA:1512:A:C8	2.40	0.56
34:AA:3443:A:H2'	34:AA:3444:G:H5'	1.87	0.56
34:AA:3533:A:O2'	70:AE:104:THR:HG22	2.05	0.56
34:AA:3657:G:H2'	34:AA:3658:G:C8	2.40	0.56
35:AC:79:G:H2'	35:AC:80:C:H6	1.70	0.56
41:A6:12:ASN:OD1	41:A6:13:ILE:N	2.39	0.56
44:A8:61:LYS:HA	44:A8:64:LYS:HB2	1.87	0.56
51:AP:63:ARG:NH1	51:AP:132:GLU:OE1	2.38	0.56
57:AK:8:ILE:HD12	57:AK:32:ILE:HD13	1.87	0.56
58:AM:12:LYS:NZ	58:AM:58:ASP:OD1	2.39	0.56
61:AQ:57:TYR:HA	61:AQ:130:ASP:HA	1.87	0.56
61:AQ:201:ARG:HH21	61:AQ:203:LYS:HG3	1.70	0.56
62:AR:201:ILE:HD11	62:AR:236:GLU:HG3	1.86	0.56
75:AV:15:LYS:NZ	75:AV:56:ASN:OD1	2.21	0.56
13:SF:231:ASN:OD1	13:SF:231:ASN:N	2.24	0.56
30:SW:6:THR:HG22	30:SW:8:THR:H	1.69	0.56
34:AA:158:U:OP2	51:AP:49:ARG:NH1	2.38	0.56
34:AA:440:A:H2'	34:AA:441:A:H8	1.70	0.56
34:AA:1142:G:H2'	34:AA:1143:G:H8	1.70	0.56
43:AN:35:TYR:HB3	43:AN:73:ARG:HG2	1.87	0.56
55:AJ:203:LEU:HD23	55:AJ:203:LEU:H	1.70	0.56
62:AR:222:PHE:HB3	62:AR:225:TYR:HB2	1.86	0.56
69:AD:51:ASP:HB3	69:AD:54:ARG:HG2	1.87	0.56
71:AF:157:ASP:N	71:AF:157:ASP:OD1	2.35	0.56
8:SA:1300:G:C4	27:ST:38:ARG:HD2	2.41	0.56
9:SB:97:TYR:O	9:SB:232:HIS:NE2	2.39	0.56
28:SU:29:LYS:HG3	28:SU:31:SER:H	1.70	0.56
34:AA:1142:G:H2'	34:AA:1143:G:C8	2.41	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:1156:U:H2'	34:AA:1157:U:H6	1.70	0.56
34:AA:1515:A:O2'	44:A8:45:ARG:NH1	2.39	0.56
34:AA:2885:A:O2'	34:AA:2886:A:O5'	2.23	0.56
39:A2:81:PHE:HB2	39:A2:92:LEU:HD21	1.85	0.56
48:Ad:40:LYS:HE2	48:Ad:53:VAL:HG12	1.87	0.56
57:AK:61:THR:OG1	57:AK:64:ASN:O	2.24	0.56
8:SA:1303:A:O2'	8:SA:1308:C:N4	2.38	0.56
13:SF:188:SER:HB2	13:SF:191:ARG:HG3	1.87	0.56
13:SF:254:ASN:HA	13:SF:257:LYS:HG2	1.88	0.56
14:SG:238:THR:HG23	14:SG:240:ASP:H	1.71	0.56
34:AA:1654:C:OP2	63:AW:23:ARG:NH2	2.38	0.56
37:AL:172:GLU:HG2	60:AO:99:VAL:HB	1.87	0.56
66:AZ:56:LEU:HD23	66:AZ:66:GLU:HG2	1.87	0.56
4:S4:13:GLU:OE1	4:S4:15:LYS:NZ	2.30	0.56
8:SA:1228:C:OP1	76:Ag:25:ARG:NH2	2.34	0.56
11:SD:72:LEU:HD13	22:SO:31:VAL:HB	1.87	0.56
30:SW:46:MET:N	30:SW:46:MET:SD	2.79	0.56
34:AA:501:U:O2'	34:AA:502:U:OP1	2.23	0.56
34:AA:600:U:H2'	34:AA:601:G:H8	1.69	0.56
34:AA:1030:C:H5''	69:AD:15:ILE:HD13	1.85	0.56
35:AC:31:U:H2'	35:AC:32:C:C6	2.40	0.56
81:S9:6:G:H2'	81:S9:7:A:C8	2.41	0.56
8:SA:1368:G:H1	8:SA:1688:U:H3	1.54	0.56
17:SJ:9:LEU:HD23	17:SJ:13:PRO:HG3	1.88	0.56
17:SJ:14:SER:H	17:SJ:17:GLU:HB2	1.71	0.56
20:SM:43:TYR:HA	20:SM:46:LYS:HE3	1.87	0.56
24:SQ:134:ALA:HB1	24:SQ:141:GLU:HB2	1.87	0.56
34:AA:668:U:H4'	34:AA:669:C:H5''	1.87	0.56
34:AA:733:C:H2'	34:AA:734:A:H8	1.71	0.56
34:AA:2732:A:H2'	34:AA:2733:A:C8	2.41	0.56
35:AC:26:U:OP1	66:AZ:11:ARG:NH2	2.38	0.56
8:SA:1021:A:H5''	28:SU:98:MET:HE2	1.87	0.56
8:SA:1279:G:H2'	8:SA:1280:G:O4'	2.06	0.56
8:SA:1636:A:OP1	30:SW:3:ARG:NH2	2.39	0.56
8:SA:1822:A:H2'	8:SA:1823:U:C6	2.41	0.56
8:SA:1906:U:O2	16:SI:77:LYS:NZ	2.36	0.56
34:AA:10:G:N2	34:AA:1706:A:C6	2.73	0.56
34:AA:510:A:HO2'	54:AI:103:TYR:HH	1.53	0.56
34:AA:770:U:OP2	34:AA:771:U:O2'	2.23	0.56
34:AA:3000:A:H2'	34:AA:3001:A:C8	2.41	0.56
34:AA:3590:A:H4'	34:AA:3591:U:O5'	2.05	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
65:AT:118:LEU:HD21	65:AT:144:GLU:OE2	2.06	0.56
79:S8:3:C:O2'	79:S8:4:G:OP1	2.19	0.56
8:SA:651:G:H2'	8:SA:652:A:H8	1.70	0.56
8:SA:1008:A:H2'	8:SA:1009:A:C8	2.41	0.56
8:SA:1456:G:N1	8:SA:1607:U:C2	2.73	0.56
8:SA:1826:A:H2'	8:SA:1827:U:C6	2.40	0.56
8:SA:1843:G:OP2	8:SA:1856:A:N6	2.38	0.56
34:AA:496:C:OP1	44:A8:113:LYS:NZ	2.23	0.56
34:AA:979:G:C5	69:AD:181:LYS:HB2	2.41	0.56
8:SA:632:C:H2'	8:SA:633:U:C6	2.41	0.55
8:SA:828:A:H2'	8:SA:829:G:C8	2.41	0.55
8:SA:1275:U:H5''	26:SS:137:HIS:ND1	2.21	0.55
8:SA:1679:G:O2'	8:SA:1680:U:O4'	2.20	0.55
8:SA:1980:A:O2'	8:SA:1981:A:H8	1.89	0.55
22:SO:68:GLU:OE2	22:SO:75:GLN:NE2	2.40	0.55
34:AA:1644:U:H5	34:AA:2102:A:N1	2.04	0.55
34:AA:1693:U:O2'	34:AA:2461:A:N3	2.33	0.55
34:AA:3096:U:H4'	75:AV:8:LYS:HB2	1.87	0.55
40:A4:56:GLU:OE2	40:A4:57:LEU:HD12	2.06	0.55
69:AD:137:VAL:HG23	69:AD:147:LYS:HG2	1.87	0.55
73:AU:133:ILE:HG22	75:AV:154:PRO:HG2	1.89	0.55
4:S4:40:GLN:NE2	4:S4:54:CYS:SG	2.80	0.55
8:SA:70:U:O2	8:SA:82:G:N2	2.31	0.55
8:SA:531:U:N3	8:SA:534:A:OP2	2.29	0.55
9:SB:27:LYS:NZ	23:SP:51:GLU:OE2	2.28	0.55
9:SB:110:LEU:HA	9:SB:113:LEU:HD12	1.89	0.55
10:SC:184:LEU:HD12	33:SZ:45:TYR:HB2	1.88	0.55
11:SD:100:MET:HE2	11:SD:100:MET:HA	1.87	0.55
15:SH:198:ARG:O	15:SH:202:LYS:HG3	2.06	0.55
34:AA:3022:U:H2'	34:AA:3023:C:H6	1.71	0.55
47:Ab:69:THR:HG23	47:Ab:72:SER:H	1.71	0.55
5:S5:27:ALA:HB3	5:S5:40:LEU:HB3	1.88	0.55
8:SA:1696:A:H2'	8:SA:1697:C:C6	2.40	0.55
8:SA:1723:A:H5''	32:SY:66:ARG:HD3	1.88	0.55
8:SA:1889:G:H1	8:SA:1901:U:H3	1.53	0.55
13:SF:105:ILE:HB	13:SF:245:LYS:HG3	1.89	0.55
16:SI:164:LEU:HA	16:SI:167:GLU:HG3	1.87	0.55
22:SO:72:TRP:H	22:SO:72:TRP:CD1	2.22	0.55
34:AA:110:G:OP2	37:AL:72:LYS:NZ	2.39	0.55
34:AA:1019:A:H2'	34:AA:1020:C:C6	2.41	0.55
34:AA:2590:U:O2	34:AA:2590:U:H2'	2.05	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:AS:149:LYS:HB3	59:AS:163:ARG:HG3	1.88	0.55
65:AT:163:LEU:HD12	65:AT:166:GLN:HE22	1.71	0.55
73:AU:91:ASP:OD1	73:AU:91:ASP:N	2.34	0.55
81:S9:27:G:H2'	81:S9:28:G:N7	2.21	0.55
8:SA:756:A:H2'	8:SA:757:A:C8	2.42	0.55
8:SA:1651:C:H2'	8:SA:1652:A:H8	1.70	0.55
26:SS:112:ASP:OD1	26:SS:115:ARG:NH1	2.39	0.55
34:AA:709:A:N3	45:A9:124:PRO:HG2	2.22	0.55
34:AA:979:G:OP2	69:AD:181:LYS:NZ	2.31	0.55
34:AA:2662:G:H2'	34:AA:2663:G:C8	2.41	0.55
37:AL:78:GLU:OE2	37:AL:100:ARG:NH2	2.40	0.55
61:AQ:178:LYS:O	61:AQ:182:GLN:HG2	2.06	0.55
66:AZ:32:SER:OG	66:AZ:100:PRO:O	2.23	0.55
8:SA:1285:A:O2'	8:SA:1310:C:O2'	2.22	0.55
8:SA:1747:U:H2'	8:SA:1748:G:H8	1.72	0.55
34:AA:445:A:N1	34:AA:702:U:H5	2.05	0.55
43:AN:49:VAL:HG13	43:AN:53:ARG:HB3	1.89	0.55
72:AG:41:THR:HG21	72:AG:71:VAL:HG11	1.87	0.55
6:S6:30:LEU:HD23	6:S6:38:GLN:OE1	2.07	0.55
7:S7:14:A:H2'	7:S7:15:G:H8	1.72	0.55
8:SA:485:C:H2'	8:SA:486:A:C8	2.42	0.55
8:SA:1285:A:H62	8:SA:1701:G:H5'	1.71	0.55
23:SP:117:ARG:O	23:SP:121:ARG:HG2	2.07	0.55
30:SW:16:ILE:O	30:SW:17:VAL:HB	2.07	0.55
34:AA:530:U:H4'	71:AF:368:LEU:HD13	1.89	0.55
34:AA:3433:C:H5'	70:AE:326:ALA:HA	1.89	0.55
35:AC:37:A:O2'	35:AC:38:G:H4'	2.05	0.55
77:AX:77:LEU:H	77:AX:77:LEU:HD12	1.71	0.55
7:S7:61:C:N3	7:S7:62:C:N4	2.55	0.55
8:SA:1320:A:H1'	22:SO:58:LYS:NZ	2.22	0.55
8:SA:1701:G:H2'	8:SA:1702:C:C2	2.41	0.55
8:SA:1834:A:H61	8:SA:1868:C:H2'	1.71	0.55
8:SA:1880:A:O2'	16:SI:48:GLN:OE1	2.23	0.55
10:SC:60:ALA:HB1	10:SC:144:ILE:HD13	1.89	0.55
14:SG:125:LEU:HB2	14:SG:199:MET:HE1	1.87	0.55
17:SJ:172:PHE:HB3	17:SJ:186:PHE:CE2	2.40	0.55
24:SQ:72:VAL:HG11	24:SQ:96:ILE:HD13	1.89	0.55
34:AA:733:C:H2'	34:AA:734:A:C8	2.42	0.55
34:AA:1083:G:H2'	34:AA:1084:A:C8	2.41	0.55
34:AA:2099:C:OP1	64:AY:168:LYS:NZ	2.33	0.55
34:AA:3639:G:H1	34:AA:3646:G:H1	1.54	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:AC:110:G:H4'	35:AC:145:A:H5'	1.88	0.55
57:AK:120:PRO:HA	57:AK:123:LEU:CD2	2.36	0.55
71:AF:383:VAL:HG13	73:AU:134:ARG:HD2	1.89	0.55
7:S7:2:G:H2'	7:S7:3:G:H8	1.72	0.55
8:SA:565:U:H3	11:SD:144:ARG:NE	2.04	0.55
16:SI:61:GLU:OE1	16:SI:65:ASN:ND2	2.40	0.55
19:SL:8:ARG:NH2	19:SL:22:LYS:O	2.40	0.55
34:AA:1843:U:H2'	34:AA:1844:G:C8	2.41	0.55
34:AA:3044:A:OP1	62:AR:31:ARG:NH1	2.36	0.55
36:AB:39:C:O2'	36:AB:40:A:OP1	2.25	0.55
38:A1:116:LYS:HD3	38:A1:119:ARG:HH21	1.72	0.55
39:A2:105:LYS:H	39:A2:105:LYS:HD2	1.72	0.55
71:AF:38:GLN:O	71:AF:42:THR:HG23	2.06	0.55
7:S7:57:C:H3'	7:S7:58:G:H8	1.71	0.55
8:SA:121:A:H1'	8:SA:403:A:C5	2.42	0.55
8:SA:440:G:N2	8:SA:443:A:OP2	2.32	0.55
8:SA:954:G:H2'	8:SA:955:U:C6	2.42	0.55
8:SA:1448:U:H2'	8:SA:1449:U:H2'	1.89	0.55
8:SA:1841:U:H4'	26:SS:132:ARG:NH1	2.21	0.55
8:SA:1844:A:OP1	31:SX:114:TYR:OH	2.25	0.55
26:SS:121:LEU:O	26:SS:125:LEU:HG	2.07	0.55
34:AA:1974:U:H2'	34:AA:1975:A:C8	2.42	0.55
34:AA:3435:A:C8	70:AE:53:MET:HE2	2.42	0.55
34:AA:3784:U:O2'	63:AW:75:GLU:OE1	2.25	0.55
54:AI:24:ASN:OD1	54:AI:24:ASN:N	2.39	0.55
55:AJ:259:MET:O	55:AJ:263:LYS:HG2	2.07	0.55
8:SA:423:A:H4'	8:SA:424:G:O5'	2.07	0.55
8:SA:576:C:H41	24:SQ:69:ARG:HH22	1.54	0.55
16:SI:168:ILE:HD12	16:SI:169:ILE:N	2.22	0.55
18:SK:95:PRO:HD3	18:SK:130:PHE:CD1	2.41	0.55
43:AN:23:ARG:HA	43:AN:29:ARG:CZ	2.37	0.55
57:AK:10:CYS:SG	57:AK:34:ALA:HB1	2.47	0.55
73:AU:17:HIS:HE1	73:AU:35:ARG:HB2	1.72	0.55
74:AH:30:LYS:HE3	74:AH:31:TYR:CZ	2.41	0.55
8:SA:455:C:H2'	8:SA:456:U:C6	2.42	0.54
8:SA:1172:U:H2'	8:SA:1173:C:C6	2.41	0.54
29:SV:56:TYR:CD2	29:SV:116:PRO:HG2	2.42	0.54
34:AA:1015:A:H5''	69:AD:183:GLY:HA2	1.89	0.54
34:AA:3036:A:H2'	34:AA:3037:G:C8	2.42	0.54
34:AA:3655:U:H2'	34:AA:3656:A:C8	2.43	0.54
42:A7:27:LEU:HD13	42:A7:43:GLU:HB3	1.90	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:1821:A:H2'	8:SA:1822:A:H8	1.71	0.54
8:SA:1979:C:O2'	8:SA:1980:A:H5'	2.08	0.54
13:SF:103:TYR:HB2	13:SF:182:MET:HE3	1.89	0.54
16:SI:67:MET:HE2	16:SI:67:MET:O	2.07	0.54
27:ST:36:ILE:HD12	27:ST:37:CYS:H	1.72	0.54
32:SY:61:LYS:HZ2	32:SY:67:LYS:HD2	1.71	0.54
34:AA:179:G:O2'	34:AA:180:C:OP1	2.19	0.54
34:AA:1100:A:N6	68:A5:164:ARG:O	2.40	0.54
34:AA:1553:U:O2'	34:AA:1554:G:C8	2.58	0.54
34:AA:3633:U:H2'	34:AA:3634:C:C6	2.42	0.54
46:Aa:92:ALA:O	46:Aa:96:GLU:HG2	2.07	0.54
70:AE:229:ARG:HA	70:AE:267:LYS:HD2	1.89	0.54
7:S7:73:C:O2	53:Ai:54:LYS:NZ	2.38	0.54
8:SA:914:U:H2'	8:SA:915:G:C8	2.42	0.54
8:SA:976:A:H2'	8:SA:977:U:H6	1.70	0.54
8:SA:1704:G:N3	8:SA:1704:G:H2'	2.21	0.54
12:SE:82:ARG:HH21	12:SE:149:ARG:NH1	2.06	0.54
15:SH:63:MET:SD	15:SH:106:LEU:HD11	2.46	0.54
20:SM:103:LYS:HE2	20:SM:107:LYS:HE3	1.90	0.54
34:AA:67:A:O2'	34:AA:323:A:N3	2.39	0.54
36:AB:27:A:H2'	36:AB:28:C:C6	2.42	0.54
51:AP:182:SER:O	51:AP:184:LYS:N	2.39	0.54
8:SA:1311:U:H2'	8:SA:1312:A:H8	1.71	0.54
8:SA:1410:G:H2'	8:SA:1411:G:H8	1.72	0.54
8:SA:1842:A:H5'	26:SS:132:ARG:HH21	1.72	0.54
15:SH:78:LYS:H	15:SH:81:MET:HG3	1.71	0.54
19:SL:213:ASP:C	19:SL:217:ARG:HE	2.15	0.54
20:SM:53:LEU:HD21	20:SM:58:SER:HA	1.89	0.54
26:SS:110:ARG:HA	26:SS:113:LEU:HG	1.88	0.54
33:SZ:70:ARG:NH1	33:SZ:74:GLU:OE2	2.41	0.54
34:AA:125:C:H2'	34:AA:126:C:H6	1.73	0.54
34:AA:161:U:O2'	34:AA:164:A:OP1	2.23	0.54
34:AA:809:A:OP1	60:AO:132:VAL:HB	2.08	0.54
34:AA:1248:A:H2'	34:AA:1249:U:C6	2.42	0.54
34:AA:1423:G:OP1	73:AU:92:SER:HB2	2.06	0.54
34:AA:1560:U:H2'	34:AA:1561:C:C6	2.43	0.54
34:AA:1690:A:H2'	34:AA:1691:G:O4'	2.06	0.54
34:AA:2712:A:H2'	34:AA:2713:C:C6	2.41	0.54
34:AA:2740:A:H2'	34:AA:2741:A:C8	2.42	0.54
51:AP:99:LYS:O	51:AP:103:GLU:HG2	2.07	0.54
69:AD:30:ARG:HH21	69:AD:36:GLU:HG3	1.71	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
77:AX:111:ILE:HB	77:AX:116:ILE:HG13	1.88	0.54
11:SD:136:GLU:HB2	11:SD:158:LEU:HD11	1.90	0.54
32:SY:57:CYS:SG	32:SY:75:TRP:NE1	2.77	0.54
34:AA:3302:G:OP2	70:AE:2:SER:OG	2.24	0.54
43:AN:59:ALA:O	43:AN:61:ILE:N	2.40	0.54
5:S5:22:VAL:HG13	5:S5:43:ASN:HB3	1.89	0.54
7:S7:13:C:H2'	7:S7:14:A:C8	2.43	0.54
7:S7:50:G:H22	7:S7:60:U:H3	1.55	0.54
8:SA:1321:C:H4'	22:SO:63:ARG:HE	1.72	0.54
8:SA:1637:U:H2'	8:SA:1638:U:H6	1.70	0.54
8:SA:1665:G:O3'	27:ST:52:LYS:NZ	2.38	0.54
8:SA:1795:G:H5''	32:SY:145:ARG:HH12	1.73	0.54
20:SM:53:LEU:HD11	20:SM:58:SER:HB3	1.88	0.54
32:SY:113:ASN:OD1	32:SY:114:HIS:N	2.40	0.54
34:AA:438:U:OP1	44:A8:2:ALA:N	2.41	0.54
34:AA:2152:A:H2'	34:AA:2153:A:O4'	2.08	0.54
34:AA:2183:A:H2'	34:AA:2184:U:C6	2.43	0.54
34:AA:3306:G:N3	70:AE:247:ALA:HB1	2.23	0.54
54:AI:63:LEU:HD11	54:AI:105:VAL:HG23	1.89	0.54
54:AI:96:LEU:HB2	54:AI:183:GLN:HG3	1.90	0.54
57:AK:75:PRO:HB3	57:AK:137:LEU:HG	1.90	0.54
8:SA:888:A:H2'	8:SA:889:A:C8	2.43	0.54
8:SA:1637:U:H5''	30:SW:28:PHE:CZ	2.43	0.54
8:SA:1662:A:C6	8:SA:1663:A:N6	2.76	0.54
10:SC:146:LEU:O	10:SC:164:ASN:ND2	2.37	0.54
10:SC:176:LEU:HA	10:SC:179:GLN:HB3	1.89	0.54
34:AA:727:A:H2'	34:AA:728:C:C6	2.43	0.54
34:AA:2962:G:O2'	79:S8:2:G:O2'	2.23	0.54
34:AA:3458:A:H2'	34:AA:3459:A:O4'	2.08	0.54
39:A2:28:LYS:HD2	44:A8:72:TYR:CZ	2.42	0.54
62:AR:22:ARG:HB3	62:AR:28:THR:HG23	1.88	0.54
70:AE:212:ILE:HD12	70:AE:335:LEU:HB3	1.90	0.54
81:S9:7:A:O2'	81:S9:49:C:O4'	2.25	0.54
8:SA:1381:C:H2'	8:SA:1382:G:H8	1.71	0.54
20:SM:91:ILE:HG23	20:SM:103:LYS:HE2	1.89	0.54
23:SP:80:ASP:OD2	23:SP:81:VAL:N	2.40	0.54
33:SZ:42:ASN:OD1	33:SZ:42:ASN:N	2.40	0.54
34:AA:308:U:O2'	34:AA:309:G:H8	1.91	0.54
34:AA:450:A:H5''	34:AA:451:C:H5'	1.89	0.54
34:AA:2027:A:H4'	46:Aa:76:TYR:O	2.08	0.54
34:AA:2179:A:H2'	34:AA:2180:U:C5	2.43	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:3282:U:H3	81:S9:74:C:H41	1.56	0.54
38:A1:53:VAL:HG12	38:A1:65:ARG:HD3	1.89	0.54
61:AQ:55:TYR:CE2	61:AQ:164:LYS:HG3	2.43	0.54
8:SA:755:A:H2'	8:SA:756:A:C8	2.43	0.54
8:SA:1312:A:N6	8:SA:1313:G:C5	2.76	0.54
8:SA:1444:C:C4	8:SA:1445:U:C4	2.96	0.54
8:SA:1869:G:O2'	16:SI:155:ARG:NH1	2.41	0.54
10:SC:119:ARG:NH2	14:SG:253:GLU:HB2	2.23	0.54
26:SS:66:ILE:O	26:SS:70:VAL:HG13	2.07	0.54
26:SS:88:ARG:HG2	26:SS:91:ASP:HB2	1.90	0.54
34:AA:63:A:OP1	51:AP:173:ARG:NH1	2.36	0.54
34:AA:276:G:H5'	51:AP:121:TRP:CG	2.43	0.54
34:AA:709:A:H2'	34:AA:710:C:C6	2.42	0.54
34:AA:2559:U:H2'	34:AA:2560:C:C6	2.43	0.54
47:Ab:91:LYS:O	47:Ab:95:GLU:HG3	2.08	0.54
63:AW:10:ASN:HD22	63:AW:13:LYS:HE2	1.73	0.54
68:A5:83:CYS:SG	68:A5:84:PHE:N	2.81	0.54
70:AE:60:VAL:HB	70:AE:68:HIS:O	2.08	0.54
10:SC:75:VAL:HG13	10:SC:122:ILE:HB	1.89	0.54
11:SD:11:PHE:HE2	21:SN:83:ILE:HG23	1.73	0.54
12:SE:135:ARG:HG2	12:SE:137:GLY:H	1.73	0.54
16:SI:190:VAL:O	16:SI:194:ASN:ND2	2.40	0.54
19:SL:84:ASN:ND2	19:SL:84:ASN:O	2.41	0.54
34:AA:2209:C:OP2	65:AT:73:ARG:HG3	2.08	0.54
34:AA:3386:A:H2'	34:AA:3387:U:H6	1.73	0.54
35:AC:145:A:H2'	35:AC:146:C:C6	2.43	0.54
37:AL:126:PRO:HA	37:AL:142:ASP:OD1	2.08	0.54
37:AL:168:LYS:CG	60:AO:104:ARG:HH21	2.21	0.54
51:AP:202:ARG:HG3	51:AP:205:ARG:HA	1.90	0.54
52:Ah:78:ALA:O	52:Ah:82:THR:HG23	2.07	0.54
8:SA:1098:U:O2'	8:SA:1099:A:OP1	2.15	0.53
8:SA:1278:C:C2	8:SA:1279:G:C8	2.97	0.53
8:SA:1727:A:H61	8:SA:1825:U:H1'	1.73	0.53
10:SC:57:LEU:HD11	10:SC:173:MET:HE1	1.89	0.53
18:SK:80:ASP:OD1	18:SK:80:ASP:N	2.34	0.53
34:AA:3035:A:N7	34:AA:3097:A:N6	2.56	0.53
39:A2:43:THR:HG22	39:A2:45:SER:H	1.74	0.53
71:AF:12:SER:OG	71:AF:14:ASN:O	2.19	0.53
74:AH:184:THR:OG1	74:AH:185:THR:N	2.40	0.53
8:SA:975:A:OP1	23:SP:66:ARG:HB2	2.08	0.53
8:SA:1308:C:H5'	8:SA:1309:A:C8	2.44	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:1981:A:H61	8:SA:2009:C:N4	2.03	0.53
11:SD:75:LYS:HE3	22:SO:31:VAL:O	2.08	0.53
12:SE:37:LYS:HG3	12:SE:38:ASN:HB2	1.91	0.53
12:SE:102:PRO:O	12:SE:106:GLU:HG2	2.08	0.53
19:SL:117:PHE:CZ	19:SL:164:LYS:HB3	2.44	0.53
28:SU:49:GLN:O	28:SU:53:THR:HG22	2.08	0.53
31:SX:57:LEU:HA	31:SX:60:ILE:HG22	1.90	0.53
34:AA:888:A:H61	34:AA:3111:U:H5	1.56	0.53
34:AA:2819:U:H2'	34:AA:2820:A:H8	1.73	0.53
34:AA:3399:U:H2'	34:AA:3400:C:C6	2.43	0.53
41:A6:50:ASN:OD1	52:Ah:40:THR:O	2.26	0.53
43:AN:59:ALA:C	43:AN:61:ILE:H	2.17	0.53
54:AI:120:LEU:HD23	54:AI:120:LEU:H	1.73	0.53
74:AH:20:ILE:HG12	74:AH:25:VAL:HG13	1.88	0.53
79:S8:19:G:H4'	79:S8:20:U:OP2	2.08	0.53
8:SA:1717:A:H2	8:SA:1720:G:N3	2.07	0.53
8:SA:1747:U:H2'	8:SA:1748:G:C8	2.44	0.53
8:SA:2024:A:H2'	8:SA:2025:U:C6	2.42	0.53
10:SC:117:GLU:OE2	14:SG:46:LYS:HG2	2.08	0.53
17:SJ:57:LYS:HZ2	17:SJ:89:LYS:HG2	1.73	0.53
32:SY:100:ARG:HA	32:SY:117:LEU:HD22	1.90	0.53
34:AA:193:C:OP1	66:AZ:121:LYS:NZ	2.34	0.53
34:AA:1073:G:H1	34:AA:1243:G:H1'	1.74	0.53
34:AA:1537:G:H4'	34:AA:1537:G:OP1	2.08	0.53
34:AA:1996:C:O2'	34:AA:1997:G:N2	2.34	0.53
34:AA:3688:G:H2'	34:AA:3689:C:O4'	2.09	0.53
8:SA:837:A:H2'	8:SA:838:U:C6	2.43	0.53
8:SA:889:A:H2'	8:SA:890:A:C8	2.44	0.53
8:SA:1741:A:H4'	27:ST:11:LYS:HE2	1.89	0.53
10:SC:114:LYS:O	10:SC:116:THR:OG1	2.25	0.53
13:SF:45:VAL:O	13:SF:49:ARG:HB3	2.08	0.53
25:SR:35:HIS:CG	25:SR:122:PHE:HB2	2.42	0.53
26:SS:27:LYS:O	26:SS:30:ILE:HG22	2.09	0.53
34:AA:2020:A:H2'	34:AA:2021:A:C8	2.44	0.53
34:AA:3183:G:H2'	34:AA:3184:C:H6	1.73	0.53
34:AA:3443:A:N6	34:AA:3470:G:O2'	2.41	0.53
34:AA:3636:U:O2	34:AA:3649:G:N2	2.38	0.53
44:A8:105:ARG:HD2	44:A8:125:ARG:HD2	1.90	0.53
51:AP:143:VAL:HG13	51:AP:149:ILE:HD12	1.90	0.53
55:AJ:246:ARG:HB3	55:AJ:247:ARG:HD2	1.91	0.53
57:AK:60:ARG:HA	57:AK:69:PRO:HD2	1.89	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
76:Ag:7:ARG:HG3	76:Ag:17:TRP:CE2	2.43	0.53
8:SA:539:U:OP1	12:SE:132:ARG:NH2	2.42	0.53
8:SA:1839:G:N2	8:SA:1866:A:OP2	2.41	0.53
8:SA:1849:U:O2'	8:SA:1894:A:N3	2.33	0.53
11:SD:16:VAL:O	11:SD:20:GLU:HG2	2.08	0.53
13:SF:57:THR:HG23	13:SF:60:GLU:H	1.73	0.53
20:SM:39:LEU:O	20:SM:39:LEU:HD13	2.09	0.53
34:AA:1576:U:OP2	60:AO:4:ARG:NH1	2.36	0.53
55:AJ:102:PRO:O	55:AJ:106:THR:HG22	2.09	0.53
69:AD:34:TYR:CZ	69:AD:38:LYS:HG2	2.44	0.53
72:AG:157:GLU:O	72:AG:161:LYS:HD3	2.08	0.53
74:AH:136:SER:OG	74:AH:139:VAL:O	2.25	0.53
8:SA:1264:A:H61	8:SA:1911:A:H8	1.57	0.53
12:SE:64:GLU:HA	12:SE:69:ARG:HD3	1.89	0.53
13:SF:31:THR:HA	13:SF:81:THR:HB	1.91	0.53
16:SI:28:ASP:N	16:SI:28:ASP:OD1	2.41	0.53
22:SO:23:TYR:CD1	22:SO:87:LEU:HD21	2.43	0.53
30:SW:25:THR:O	30:SW:31:ASN:ND2	2.42	0.53
34:AA:221:A:OP1	66:AZ:2:LYS:NZ	2.34	0.53
66:AZ:37:GLU:CD	66:AZ:37:GLU:H	2.17	0.53
21:SN:80:GLU:OE2	21:SN:82:ARG:NH1	2.41	0.53
22:SO:28:LYS:NZ	22:SO:29:GLU:OE1	2.34	0.53
34:AA:3256:C:OP2	50:Af:48:LYS:NZ	2.42	0.53
34:AA:3660:A:H2'	34:AA:3661:A:C8	2.44	0.53
51:AP:34:PRO:HG2	51:AP:37:HIS:HB3	1.90	0.53
58:AM:86:ALA:HA	58:AM:96:TYR:HB3	1.90	0.53
71:AF:66:SER:O	71:AF:66:SER:OG	2.13	0.53
73:AU:82:LYS:NZ	73:AU:106:THR:O	2.39	0.53
8:SA:45:U:O2'	8:SA:46:A:H2'	2.09	0.53
8:SA:1846:U:OP2	31:SX:39:ALA:N	2.24	0.53
8:SA:1910:U:OP1	16:SI:62:ARG:NH2	2.42	0.53
9:SB:145:LYS:HD3	9:SB:154:CYS:SG	2.49	0.53
31:SX:108:LYS:H	31:SX:111:MET:HB3	1.74	0.53
34:AA:1003:A:OP1	56:Ac:8:THR:OG1	2.20	0.53
34:AA:1331:A:H2'	34:AA:1332:A:H8	1.73	0.53
49:Ae:21:ARG:HH12	49:Ae:24:PRO:HD3	1.73	0.53
77:AX:102:TYR:O	77:AX:106:LEU:HD22	2.09	0.53
8:SA:1277:G:H2'	8:SA:1278:C:H6	1.74	0.53
8:SA:1456:G:C6	8:SA:1607:U:N3	2.77	0.53
8:SA:1838:G:N2	8:SA:1867:A:N6	2.15	0.53
8:SA:2049:G:O2'	34:AA:2548:A:O2'	2.17	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:SG:41:TRP:CZ2	14:SG:43:PRO:HA	2.44	0.53
25:SR:99:LEU:HG	25:SR:112:ILE:HG21	1.90	0.53
28:SU:37:ILE:HD11	28:SU:74:ILE:HG13	1.90	0.53
34:AA:3443:A:H2	34:AA:3470:G:H21	1.57	0.53
35:AC:145:A:H2'	35:AC:146:C:H6	1.73	0.53
55:AJ:72:PRO:HD2	55:AJ:75:ILE:HD11	1.91	0.53
56:Ac:70:ILE:HA	56:Ac:73:LEU:HG	1.91	0.53
2:S2:78:VAL:HA	2:S2:81:HIS:CD2	2.44	0.53
8:SA:1808:G:H2'	8:SA:1809:G:C8	2.44	0.53
34:AA:701:C:H2'	34:AA:702:U:O2	2.09	0.53
34:AA:1208:G:H2'	34:AA:1209:U:C6	2.44	0.53
35:AC:139:A:OP2	64:AY:145:LYS:NZ	2.39	0.53
70:AE:47:MET:H	70:AE:84:MET:HE2	1.74	0.53
70:AE:372:GLU:OE2	78:A0:21:TYR:OH	2.21	0.53
7:S7:64:C:H2'	7:S7:65:A:H8	1.70	0.52
14:SG:133:VAL:O	14:SG:137:ILE:HG12	2.08	0.52
18:SK:55:ASP:OD1	18:SK:56:HIS:N	2.42	0.52
26:SS:30:ILE:HA	26:SS:33:THR:OG1	2.09	0.52
30:SW:9:ILE:HB	30:SW:50:VAL:HG12	1.90	0.52
34:AA:1539:U:C2	44:A8:103:LYS:HE2	2.44	0.52
34:AA:2709:U:H2'	34:AA:2710:U:C6	2.44	0.52
34:AA:3000:A:H2'	34:AA:3001:A:H8	1.74	0.52
51:AP:67:ARG:O	51:AP:71:ARG:NH2	2.42	0.52
55:AJ:158:LYS:HA	55:AJ:161:GLU:HG3	1.91	0.52
62:AR:19:LYS:O	62:AR:24:ARG:NH1	2.38	0.52
71:AF:183:LEU:HD11	71:AF:206:GLY:HA3	1.90	0.52
8:SA:460:G:N1	13:SF:66:ILE:HG21	2.23	0.52
8:SA:952:U:H3	8:SA:1014:U:H3	1.56	0.52
8:SA:1172:U:H2'	8:SA:1173:C:H6	1.75	0.52
8:SA:1444:C:N4	8:SA:1630:A:N1	2.57	0.52
8:SA:1636:A:H5''	30:SW:3:ARG:HH12	1.74	0.52
8:SA:1800:A:H2'	8:SA:1801:A:C8	2.44	0.52
8:SA:1837:G:H3'	8:SA:1838:G:H8	1.73	0.52
8:SA:1925:U:H2'	8:SA:1926:G:C8	2.44	0.52
11:SD:66:ILE:HD12	11:SD:69:LEU:HD21	1.91	0.52
17:SJ:37:THR:HG1	17:SJ:72:TYR:HH	1.52	0.52
23:SP:66:ARG:HG2	23:SP:67:ASP:H	1.75	0.52
29:SV:69:ILE:HG21	29:SV:143:LEU:HD11	1.90	0.52
34:AA:125:C:H2'	34:AA:126:C:C6	2.45	0.52
34:AA:1534:U:OP2	71:AF:204:ARG:NH1	2.43	0.52
34:AA:3319:C:H2'	34:AA:3320:G:H8	1.73	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:AB:64:A:H4'	61:AQ:205:PRO:HD3	1.90	0.52
62:AR:210:LEU:HB3	62:AR:218:TYR:HB2	1.91	0.52
66:AZ:111:ASP:OD1	66:AZ:112:LYS:N	2.43	0.52
70:AE:71:GLU:OE2	70:AE:354:LYS:NZ	2.42	0.52
7:S7:14:A:H2'	7:S7:15:G:C8	2.44	0.52
8:SA:485:C:H2'	8:SA:486:A:H8	1.75	0.52
8:SA:945:G:OP1	9:SB:158:THR:OG1	2.23	0.52
26:SS:88:ARG:HD3	26:SS:97:ASN:HB2	1.91	0.52
34:AA:1657:U:OP1	63:AW:127:ARG:NH1	2.41	0.52
34:AA:2588:A:C5	58:AM:39:ILE:HD12	2.44	0.52
34:AA:3301:C:OP1	34:AA:3301:C:H3'	2.09	0.52
34:AA:3639:G:N2	34:AA:3646:G:H1	2.07	0.52
34:AA:3683:G:N2	34:AA:3684:A:O3'	2.39	0.52
37:AL:72:LYS:HE2	37:AL:97:ASP:HB3	1.90	0.52
41:A6:78:ASN:O	41:A6:82:THR:HG23	2.09	0.52
74:AH:45:ILE:HG12	74:AH:56:VAL:HG12	1.92	0.52
8:SA:586:A:O2'	8:SA:587:A:H5''	2.08	0.52
8:SA:1679:G:H2'	8:SA:1680:U:C6	2.44	0.52
8:SA:1717:A:N7	8:SA:1837:G:H1'	2.24	0.52
10:SC:79:ARG:CD	10:SC:128:THR:HG21	2.39	0.52
26:SS:29:ILE:O	26:SS:33:THR:HG23	2.10	0.52
31:SX:111:MET:O	31:SX:111:MET:HE3	2.09	0.52
34:AA:1534:U:OP1	71:AF:143:ARG:NH1	2.39	0.52
37:AL:72:LYS:HG3	37:AL:72:LYS:O	2.08	0.52
37:AL:128:LYS:HB2	37:AL:131:LYS:HB2	1.91	0.52
58:AM:18:SER:HB2	58:AM:85:LYS:HB3	1.90	0.52
1:S1:56:ILE:HG22	1:S1:76:ILE:HA	1.90	0.52
3:S3:40:ASN:ND2	3:S3:42:ARG:HD3	2.25	0.52
7:S7:39:A:H4'	16:SI:189:ARG:HH12	1.74	0.52
8:SA:16:G:H2'	8:SA:17:C:C6	2.45	0.52
8:SA:553:U:H2'	8:SA:554:U:C6	2.44	0.52
15:SH:157:VAL:HG11	15:SH:172:LYS:HD3	1.92	0.52
26:SS:90:LYS:HD3	26:SS:92:LEU:HD13	1.92	0.52
30:SW:50:VAL:O	30:SW:54:VAL:HG23	2.09	0.52
34:AA:2739:U:H2'	34:AA:2740:A:C8	2.45	0.52
35:AC:84:G:C2	35:AC:85:A:N6	2.77	0.52
36:AB:21:G:O2'	36:AB:22:G:H5'	2.10	0.52
37:AL:17:TRP:NE1	37:AL:18:GLN:NE2	2.57	0.52
39:A2:103:LYS:N	39:A2:105:LYS:HZ2	2.07	0.52
46:Aa:86:ARG:O	46:Aa:90:MET:HG3	2.10	0.52
59:AS:29:LEU:HD21	59:AS:122:PHE:HB2	1.90	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
65:AT:139:GLU:OE1	65:AT:143:ARG:NH2	2.37	0.52
1:S1:110:LYS:NZ	1:S1:114:ASN:HB2	2.25	0.52
8:SA:387:C:OP1	13:SF:10:LYS:NZ	2.38	0.52
8:SA:1650:A:H2'	8:SA:1651:C:C6	2.45	0.52
11:SD:17:PHE:O	11:SD:21:LEU:HD23	2.10	0.52
21:SN:31:ILE:O	21:SN:35:CYS:HB3	2.08	0.52
34:AA:439:U:H2'	34:AA:440:A:H8	1.74	0.52
34:AA:583:U:H2'	34:AA:584:U:C6	2.44	0.52
34:AA:888:A:H2	34:AA:3138:A:H5'	1.74	0.52
34:AA:3106:U:H2'	34:AA:3107:U:C6	2.45	0.52
61:AQ:170:LYS:HA	61:AQ:177:SER:HA	1.91	0.52
66:AZ:55:VAL:HG13	66:AZ:103:VAL:HB	1.91	0.52
79:S8:69:C:H2'	79:S8:70:G:H8	1.75	0.52
80:mR:24:U:H3	81:S9:34:G:H1	1.57	0.52
81:S9:63:G:H2'	81:S9:64:A:H8	1.73	0.52
3:S3:22:ARG:NH2	3:S3:27:GLY:O	2.43	0.52
8:SA:158:C:O2'	15:SH:95:LYS:NZ	2.32	0.52
8:SA:2031:C:H2'	8:SA:2032:U:H6	1.73	0.52
10:SC:67:ILE:HG23	10:SC:119:ARG:NH1	2.25	0.52
14:SG:190:ILE:HD13	14:SG:200:LEU:HB3	1.92	0.52
32:SY:31:ASP:OD2	32:SY:31:ASP:N	2.43	0.52
33:SZ:36:VAL:HG11	33:SZ:77:LEU:HD13	1.91	0.52
34:AA:282:U:H2'	34:AA:283:U:C6	2.44	0.52
34:AA:549:G:H2'	34:AA:550:A:C8	2.45	0.52
34:AA:911:U:H2'	34:AA:912:U:H6	1.72	0.52
34:AA:1762:A:O2'	34:AA:1763:G:H8	1.80	0.52
34:AA:3715:U:H2'	34:AA:3716:C:C6	2.44	0.52
36:AB:68:U:H2'	36:AB:69:U:C6	2.45	0.52
70:AE:84:MET:HE1	70:AE:176:MET:HE3	1.92	0.52
70:AE:112:ASP:OD1	70:AE:115:ARG:NH1	2.42	0.52
2:S2:97:SER:N	8:SA:1827:U:OP2	2.43	0.52
3:S3:51:ARG:HB2	3:S3:51:ARG:NH1	2.25	0.52
8:SA:144:U:H2'	8:SA:145:A:H8	1.74	0.52
8:SA:2003:U:H2'	8:SA:2004:U:C6	2.45	0.52
8:SA:2008:U:H2'	8:SA:2009:C:C6	2.45	0.52
15:SH:152:ASP:OD1	15:SH:153:VAL:N	2.43	0.52
20:SM:34:GLY:C	32:SY:30:LYS:HD2	2.34	0.52
34:AA:1980:G:H3'	34:AA:1981:U:C6	2.45	0.52
34:AA:2700:C:H2'	34:AA:2701:U:H6	1.73	0.52
34:AA:3108:A:H5'	53:AI:79:LYS:HD2	1.91	0.52
36:AB:61:G:H4'	62:AR:281:ARG:HH12	1.75	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
71:AF:379:VAL:O	71:AF:383:VAL:HG23	2.09	0.52
74:AH:24:LYS:HE3	74:AH:39:ARG:HD2	1.91	0.52
77:AX:61:GLU:OE1	77:AX:83:VAL:HG22	2.09	0.52
7:S7:1:G:N2	7:S7:70:A:H2	2.07	0.52
8:SA:17:C:O2'	8:SA:1238:A:N1	2.36	0.52
8:SA:1277:G:H2'	8:SA:1278:C:C6	2.44	0.52
8:SA:1794:C:H2'	8:SA:1795:G:H8	1.74	0.52
8:SA:1981:A:N6	8:SA:2009:C:H42	2.03	0.52
26:SS:23:ASP:OD1	26:SS:23:ASP:N	2.31	0.52
30:SW:6:THR:O	30:SW:9:ILE:HG13	2.10	0.52
33:SZ:33:GLN:NE2	33:SZ:51:THR:OG1	2.43	0.52
34:AA:521:U:O2'	34:AA:522:A:H8	1.93	0.52
34:AA:1820:U:H2'	34:AA:1821:U:C6	2.45	0.52
34:AA:1881:C:O2'	34:AA:1882:U:C6	2.61	0.52
66:AZ:11:ARG:O	66:AZ:15:ARG:HG2	2.10	0.52
77:AX:108:LYS:HE3	77:AX:117:ARG:HH21	1.75	0.52
8:SA:1366:A:H2'	8:SA:1367:U:C6	2.45	0.52
8:SA:1876:G:H2'	8:SA:1877:C:C6	2.45	0.52
17:SJ:88:THR:OG1	17:SJ:90:LYS:NZ	2.28	0.52
34:AA:234:C:H2'	34:AA:235:A:O4'	2.10	0.52
34:AA:1015:A:H5''	69:AD:183:GLY:CA	2.38	0.52
34:AA:2088:A:H2'	34:AA:2089:C:C6	2.45	0.52
34:AA:2809:A:H5''	34:AA:2810:A:C6	2.45	0.52
45:A9:74:ALA:HB2	45:A9:112:GLY:HA2	1.90	0.52
52:Ah:51:CYS:SG	52:Ah:52:VAL:N	2.80	0.52
55:AJ:116:TYR:HE2	55:AJ:220:VAL:HG12	1.75	0.52
62:AR:215:ASN:O	62:AR:219:LYS:HG2	2.09	0.52
4:S4:13:GLU:HA	4:S4:15:LYS:HE2	1.92	0.51
8:SA:1863:U:H5''	26:SS:37:GLY:HA2	1.92	0.51
26:SS:70:VAL:HA	26:SS:73:MET:SD	2.51	0.51
26:SS:105:LEU:HG	26:SS:109:LEU:HD23	1.92	0.51
26:SS:126:ARG:O	26:SS:131:LEU:HD12	2.10	0.51
29:SV:153:SER:HB3	29:SV:156:LYS:HG2	1.92	0.51
43:AN:57:ASP:HB2	43:AN:66:ARG:HG3	1.92	0.51
45:A9:51:ARG:HG2	45:A9:52:SER:O	2.11	0.51
62:AR:235:ILE:HD12	62:AR:238:MET:HE2	1.91	0.51
73:AU:88:LEU:HD12	73:AU:115:LEU:HD11	1.91	0.51
7:S7:8:U:N3	7:S7:14:A:N6	2.41	0.51
7:S7:35:C:H3'	7:S7:36:A:C8	2.46	0.51
8:SA:877:U:H3	8:SA:926:G:H1	1.57	0.51
8:SA:1215:G:O2'	8:SA:1231:G:O6	2.28	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:1265:G:H2'	8:SA:1266:G:C8	2.45	0.51
8:SA:1609:C:H2'	8:SA:1610:U:C6	2.45	0.51
9:SB:145:LYS:O	9:SB:146:ARG:HG2	2.10	0.51
20:SM:39:LEU:CD2	32:SY:33:ASP:HA	2.40	0.51
28:SU:29:LYS:HD2	28:SU:30:PRO:HD2	1.93	0.51
34:AA:3637:G:H1	34:AA:3648:U:H3	0.65	0.51
34:AA:3713:C:H2'	34:AA:3714:C:C6	2.46	0.51
38:A1:125:PRO:HB3	38:A1:133:VAL:HG22	1.91	0.51
48:Ad:58:LYS:O	48:Ad:61:GLU:HG2	2.10	0.51
8:SA:166:A:H5'	15:SH:137:ARG:HE	1.76	0.51
8:SA:186:U:H3	8:SA:200:U:H3	1.57	0.51
8:SA:268:C:OP1	15:SH:183:ARG:NE	2.40	0.51
8:SA:1264:A:H3'	8:SA:1265:G:H8	1.74	0.51
10:SC:188:ILE:HD12	10:SC:188:ILE:O	2.11	0.51
11:SD:141:GLY:HA3	11:SD:183:LEU:HD13	1.92	0.51
32:SY:29:ILE:HG12	32:SY:88:TYR:CE2	2.46	0.51
34:AA:2666:A:N3	34:AA:3183:G:O2'	2.35	0.51
36:AB:5:U:H4'	62:AR:61:ILE:HD11	1.93	0.51
39:A2:82:LYS:C	39:A2:82:LYS:HD2	2.35	0.51
54:AI:90:GLU:HB3	54:AI:191:LYS:HD3	1.92	0.51
70:AE:41:PRO:HA	70:AE:182:GLY:HA3	1.91	0.51
73:AU:12:ASN:O	73:AU:41:LYS:HA	2.10	0.51
77:AX:63:PHE:CE1	77:AX:67:LYS:HE3	2.46	0.51
79:S8:46:G:H4'	79:S8:47:U:H5	1.75	0.51
81:S9:37:A:H3'	81:S9:38:A:H8	1.75	0.51
8:SA:572:C:H5'	8:SA:573:C:C6	2.45	0.51
8:SA:1636:A:H5''	30:SW:3:ARG:NH1	2.25	0.51
8:SA:2003:U:H2'	8:SA:2004:U:H6	1.75	0.51
16:SI:114:GLU:OE1	16:SI:191:ALA:HB2	2.10	0.51
17:SJ:126:ILE:O	17:SJ:130:ILE:HD12	2.09	0.51
25:SR:45:VAL:O	25:SR:49:ILE:HG13	2.11	0.51
34:AA:1283:C:OP1	68:A5:103:LYS:NZ	2.44	0.51
34:AA:1624:A:H4'	42:A7:65:LYS:HG3	1.91	0.51
38:A1:8:GLY:HA3	38:A1:88:ALA:HB2	1.91	0.51
48:Ad:58:LYS:HA	48:Ad:61:GLU:CD	2.35	0.51
55:AJ:199:ASP:OD1	55:AJ:201:ALA:N	2.44	0.51
61:AQ:63:GLU:OE1	61:AQ:63:GLU:N	2.43	0.51
8:SA:273:A:H3'	8:SA:274:A:H5''	1.93	0.51
8:SA:330:U:OP1	29:SV:136:LYS:NZ	2.28	0.51
8:SA:987:U:H2'	8:SA:988:U:C6	2.46	0.51
8:SA:1890:A:O2'	27:ST:31:LYS:NZ	2.40	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:SG:117:GLY:HA3	14:SG:202:PHE:HB3	1.91	0.51
23:SP:114:SER:HA	23:SP:117:ARG:HB3	1.93	0.51
26:SS:67:ASP:HA	26:SS:70:VAL:HG22	1.92	0.51
29:SV:6:ASP:O	29:SV:9:HIS:NE2	2.43	0.51
29:SV:10:GLU:O	29:SV:12:ALA:N	2.43	0.51
32:SY:39:ARG:NH1	32:SY:78:ILE:HG12	2.26	0.51
32:SY:94:GLY:H	32:SY:97:PHE:HB2	1.75	0.51
32:SY:135:TYR:O	32:SY:147:LEU:HD12	2.11	0.51
34:AA:1156:U:H2'	34:AA:1157:U:C6	2.44	0.51
34:AA:3502:C:O3'	50:Af:30:ARG:NH2	2.43	0.51
38:A1:2:GLY:HA3	41:A6:40:GLY:HA3	1.93	0.51
81:S9:63:G:H2'	81:S9:64:A:C8	2.46	0.51
7:S7:49:C:H42	7:S7:62:C:H42	1.57	0.51
7:S7:61:C:H2'	7:S7:62:C:C6	2.46	0.51
8:SA:1303:A:H3'	8:SA:1303:A:N3	2.26	0.51
8:SA:1890:A:H2'	8:SA:1891:U:C6	2.46	0.51
8:SA:1938:C:H2'	8:SA:1939:G:C8	2.45	0.51
9:SB:227:LYS:HE3	9:SB:231:LEU:HD23	1.93	0.51
16:SI:170:ASN:HA	16:SI:175:SER:HB3	1.92	0.51
18:SK:26:LEU:HD23	18:SK:62:VAL:HG22	1.93	0.51
20:SM:39:LEU:HD21	32:SY:33:ASP:HA	1.92	0.51
34:AA:459:G:H2'	34:AA:460:A:H8	1.75	0.51
34:AA:979:G:C6	69:AD:181:LYS:HB2	2.45	0.51
50:Af:30:ARG:H	50:Af:30:ARG:CD	2.23	0.51
4:S4:21:ARG:H	4:S4:21:ARG:HD2	1.75	0.51
8:SA:597:C:H2'	8:SA:598:A:C8	2.46	0.51
8:SA:1392:C:H2'	8:SA:1393:G:H8	1.76	0.51
8:SA:1746:A:H2'	8:SA:1747:U:C6	2.46	0.51
11:SD:11:PHE:CE2	21:SN:83:ILE:HD12	2.44	0.51
14:SG:191:VAL:HG13	14:SG:209:PHE:HA	1.91	0.51
16:SI:179:TYR:HA	16:SI:182:LYS:HE2	1.92	0.51
18:SK:14:ILE:HD11	18:SK:27:ILE:HD11	1.93	0.51
28:SU:3:ARG:NH2	28:SU:9:LYS:O	2.43	0.51
34:AA:2183:A:H2'	34:AA:2184:U:H6	1.76	0.51
44:A8:14:THR:HG22	44:A8:15:LYS:H	1.76	0.51
62:AR:34:LYS:HA	62:AR:37:ILE:HG12	1.91	0.51
79:S8:3:C:O2'	79:S8:4:G:H5'	2.11	0.51
8:SA:247:G:N1	8:SA:250:A:OP2	2.43	0.51
8:SA:253:A:O2'	13:SF:131:LEU:O	2.21	0.51
8:SA:573:C:H2'	8:SA:574:A:O4'	2.10	0.51
8:SA:1028:U:H5''	28:SU:14:SER:HB2	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:2031:C:H2'	8:SA:2032:U:C6	2.46	0.51
10:SC:98:ILE:O	10:SC:98:ILE:HD12	2.11	0.51
11:SD:127:ILE:HD11	11:SD:128:MET:HE2	1.93	0.51
12:SE:135:ARG:NH2	12:SE:157:ASP:OD2	2.43	0.51
13:SF:75:LYS:HD2	13:SF:77:ARG:NH2	2.25	0.51
13:SF:201:ASN:OD1	13:SF:201:ASN:N	2.43	0.51
16:SI:8:ILE:O	16:SI:9:LYS:NZ	2.37	0.51
23:SP:27:VAL:HG13	23:SP:90:VAL:HA	1.93	0.51
33:SZ:70:ARG:O	33:SZ:74:GLU:HG3	2.11	0.51
34:AA:1247:C:H2'	34:AA:1248:A:C8	2.46	0.51
40:A4:62:LYS:HA	40:A4:65:LYS:HE3	1.92	0.51
54:AI:111:ILE:HG12	54:AI:117:ILE:HG21	1.93	0.51
57:AK:13:HIS:HE1	57:AK:118:VAL:HG22	1.75	0.51
71:AF:375:TYR:HE2	73:AU:73:ILE:HD11	1.76	0.51
8:SA:1633:A:OP2	30:SW:44:LYS:HD2	2.10	0.51
8:SA:1715:A:H2'	8:SA:1716:C:O4'	2.10	0.51
10:SC:47:ILE:HD12	10:SC:47:ILE:O	2.11	0.51
13:SF:172:HIS:CE1	13:SF:174:LYS:HD3	2.45	0.51
15:SH:148:ASP:OD1	15:SH:149:LYS:N	2.44	0.51
31:SX:39:ALA:HA	31:SX:42:ARG:HG3	1.93	0.51
34:AA:1841:U:OP1	77:AX:69:LYS:NZ	2.43	0.51
34:AA:1978:U:OP1	77:AX:121:ARG:NH2	2.40	0.51
62:AR:214:ASP:OD1	62:AR:214:ASP:N	2.44	0.51
79:S8:21:A:N6	79:S8:46:G:H2'	2.25	0.51
79:S8:50:U:H2'	79:S8:51:C:C6	2.45	0.51
8:SA:34:G:H2'	8:SA:35:U:H5''	1.93	0.51
8:SA:892:U:H2'	8:SA:893:U:C6	2.46	0.51
8:SA:1248:A:OP1	14:SG:103:ARG:NH1	2.44	0.51
15:SH:69:THR:OG1	15:SH:71:ASN:OD1	2.24	0.51
16:SI:78:LEU:HA	16:SI:81:ILE:HD12	1.92	0.51
18:SK:27:ILE:HD12	18:SK:27:ILE:N	2.26	0.51
18:SK:82:LYS:HB2	18:SK:85:GLU:OE1	2.11	0.51
34:AA:953:U:H2'	34:AA:954:G:O4'	2.10	0.51
34:AA:1467:C:H2'	34:AA:1468:A:C8	2.46	0.51
34:AA:2162:U:O2'	34:AA:3440:U:OP1	2.27	0.51
43:AN:125:ASP:OD2	54:AI:203:TYR:OH	2.18	0.51
55:AJ:116:TYR:HD2	55:AJ:217:LEU:HD11	1.76	0.51
5:S5:29:PHE:HD1	5:S5:30:MET:H	1.57	0.50
8:SA:331:G:H4'	29:SV:86:THR:HG21	1.92	0.50
8:SA:1746:A:H2'	8:SA:1747:U:H6	1.75	0.50
8:SA:1797:C:OP2	32:SY:124:ARG:NH1	2.43	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:1845:U:H2'	8:SA:1846:U:C6	2.47	0.50
8:SA:2062:U:H2'	8:SA:2063:U:C6	2.46	0.50
10:SC:190:ARG:NH2	33:SZ:43:GLY:O	2.36	0.50
11:SD:127:ILE:CD1	11:SD:128:MET:HE2	2.41	0.50
11:SD:138:ILE:HG12	11:SD:152:LYS:HG3	1.93	0.50
15:SH:58:LYS:HA	15:SH:107:SER:HB2	1.92	0.50
30:SW:60:ARG:HA	30:SW:63:LYS:HE3	1.92	0.50
31:SX:119:PHE:CG	31:SX:120:SER:N	2.77	0.50
34:AA:661:G:N1	34:AA:673:U:N3	2.57	0.50
34:AA:2511:G:H2'	34:AA:2512:A:H8	1.76	0.50
34:AA:2806:U:H2'	34:AA:2807:U:C6	2.46	0.50
37:AL:84:LEU:HB3	37:AL:138:GLY:HA3	1.92	0.50
38:A1:31:GLY:H	38:A1:39:SER:HB3	1.76	0.50
48:Ad:52:MET:HE3	48:Ad:54:PHE:CZ	2.45	0.50
51:AP:121:TRP:HH2	51:AP:124:GLN:NE2	2.06	0.50
8:SA:141:G:H2'	8:SA:142:G:C8	2.47	0.50
8:SA:251:U:C4	29:SV:17:GLU:HB2	2.46	0.50
8:SA:644:U:O2	17:SJ:115:ARG:NH2	2.31	0.50
9:SB:107:ARG:NH2	23:SP:133:THR:O	2.36	0.50
21:SN:102:SER:HA	21:SN:105:ILE:HG12	1.93	0.50
22:SO:58:LYS:HD3	22:SO:58:LYS:C	2.37	0.50
24:SQ:46:SER:OG	24:SQ:78:LYS:NZ	2.43	0.50
34:AA:172:C:OP2	37:AL:133:LYS:NZ	2.37	0.50
34:AA:494:U:O2'	34:AA:495:U:H5'	2.11	0.50
34:AA:3036:A:H2'	34:AA:3037:G:H8	1.77	0.50
37:AL:170:PHE:HB3	60:AO:104:ARG:HG2	1.93	0.50
60:AO:117:LYS:HG2	60:AO:120:GLN:HG3	1.93	0.50
61:AQ:201:ARG:NH2	61:AQ:203:LYS:HG3	2.25	0.50
68:A5:173:ARG:HB2	68:A5:216:TRP:CE3	2.45	0.50
71:AF:292:ILE:HG13	71:AF:293:ILE:N	2.26	0.50
8:SA:1392:C:H2'	8:SA:1393:G:C8	2.46	0.50
8:SA:1808:G:N3	8:SA:1814:C:H1'	2.25	0.50
8:SA:1810:U:H1'	11:SD:6:SER:HB3	1.93	0.50
8:SA:1854:U:N3	31:SX:81:ARG:HB3	2.24	0.50
8:SA:2005:U:H2'	8:SA:2006:U:C6	2.46	0.50
12:SE:132:ARG:NE	12:SE:140:MET:HE1	2.25	0.50
16:SI:46:ARG:HG3	20:SM:123:ARG:NH2	2.25	0.50
23:SP:112:ALA:O	23:SP:116:LEU:HD12	2.11	0.50
24:SQ:100:ASP:OD2	24:SQ:144:ARG:NH2	2.44	0.50
34:AA:433:A:N1	44:A8:24:ARG:NH1	2.59	0.50
34:AA:739:G:H4'	34:AA:740:U:C6	2.46	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:A7:17:THR:OG1	42:A7:84:GLU:OE1	2.28	0.50
42:A7:32:CYS:SG	42:A7:33:TYR:N	2.84	0.50
52:Ah:58:LYS:O	52:Ah:61:LYS:HE2	2.11	0.50
55:AJ:74:TYR:O	55:AJ:75:ILE:HG12	2.11	0.50
62:AR:241:ASN:O	62:AR:244:GLU:HG3	2.11	0.50
74:AH:48:ASN:HB3	74:AH:52:LYS:O	2.10	0.50
74:AH:110:ARG:HB3	74:AH:110:ARG:HH11	1.76	0.50
79:S8:1:C:H2'	79:S8:2:G:H8	1.77	0.50
81:S9:19:G:P	81:S9:60:U:H3	2.33	0.50
8:SA:457:A:OP2	8:SA:459:A:N6	2.44	0.50
8:SA:888:A:H2'	8:SA:889:A:H8	1.76	0.50
8:SA:1679:G:C2	27:ST:39:GLN:HB3	2.47	0.50
8:SA:1722:U:H4'	32:SY:68:LEU:CD2	2.41	0.50
8:SA:2029:A:H2'	8:SA:2030:U:C6	2.47	0.50
10:SC:93:THR:HG23	10:SC:95:ALA:H	1.76	0.50
16:SI:187:ILE:O	16:SI:190:VAL:HG22	2.11	0.50
34:AA:670:U:H2'	34:AA:671:U:C6	2.46	0.50
34:AA:3013:A:C2	72:AG:124:GLY:HA3	2.46	0.50
36:AB:40:A:N3	72:AG:72:ARG:NH1	2.59	0.50
41:A6:50:ASN:HB2	41:A6:76:ASP:HB2	1.93	0.50
47:Ab:38:SER:HA	47:Ab:41:LYS:HZ3	1.76	0.50
55:AJ:57:VAL:O	55:AJ:57:VAL:HG12	2.10	0.50
60:AO:125:LYS:HG2	60:AO:145:ILE:HB	1.92	0.50
69:AD:67:GLU:HG2	69:AD:68:LYS:HG2	1.93	0.50
75:AV:18:LYS:HD3	75:AV:23:HIS:HA	1.93	0.50
79:S8:6:G:H2'	79:S8:7:G:H8	1.76	0.50
81:S9:15:G:O6	81:S9:48:C:O2	2.29	0.50
8:SA:181:A:H2'	8:SA:182:U:C6	2.46	0.50
8:SA:1285:A:HO2'	8:SA:1310:C:HO2'	1.52	0.50
8:SA:1840:A:N6	8:SA:1866:A:OP2	2.45	0.50
14:SG:230:LEU:O	14:SG:233:THR:OG1	2.22	0.50
17:SJ:164:ASN:OD1	17:SJ:164:ASN:N	2.44	0.50
21:SN:84:TYR:O	21:SN:85:LYS:HD3	2.11	0.50
32:SY:43:THR:HA	32:SY:46:LYS:HE2	1.93	0.50
34:AA:673:U:O2'	34:AA:674:U:H5'	2.11	0.50
34:AA:966:A:H2'	34:AA:967:A:C8	2.46	0.50
34:AA:1154:C:H2'	34:AA:1155:C:C6	2.46	0.50
35:AC:139:A:H4'	35:AC:140:G:O5'	2.11	0.50
41:A6:21:MET:HA	41:A6:26:TYR:CE2	2.47	0.50
55:AJ:102:PRO:HG2	55:AJ:105:GLN:NE2	2.24	0.50
56:Ac:74:ARG:O	56:Ac:75:ARG:NE	2.35	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:AQ:76:MET:HE2	61:AQ:148:ALA:HA	1.93	0.50
68:A5:83:CYS:SG	75:AV:141:MET:HE3	2.52	0.50
69:AD:34:TYR:O	69:AD:38:LYS:HG3	2.11	0.50
72:AG:160:MET:O	72:AG:164:GLN:HG3	2.12	0.50
3:S3:10:ARG:HB2	3:S3:33:ASP:OD1	2.10	0.50
8:SA:109:C:OP1	8:SA:389:G:O2'	2.23	0.50
8:SA:1282:U:H2'	8:SA:1283:U:O4'	2.11	0.50
8:SA:1732:G:O3'	21:SN:61:ARG:NH2	2.45	0.50
9:SB:119:THR:HG21	9:SB:156:ALA:H	1.77	0.50
10:SC:79:ARG:HA	10:SC:79:ARG:NE	2.27	0.50
11:SD:117:ARG:NE	11:SD:117:ARG:H	2.10	0.50
17:SJ:81:ILE:HD12	17:SJ:92:VAL:HG13	1.94	0.50
19:SL:46:VAL:HG21	19:SL:56:ARG:HE	1.75	0.50
23:SP:43:HIS:CD2	23:SP:55:ARG:HB2	2.45	0.50
33:SZ:16:LYS:HA	33:SZ:23:LEU:HA	1.93	0.50
34:AA:2574:A:H8	34:AA:3333:U:HO2'	1.59	0.50
34:AA:3577:A:OP2	57:AK:31:ARG:NH1	2.45	0.50
37:AL:125:ILE:HG13	37:AL:148:ILE:HD13	1.93	0.50
42:A7:86:LYS:HB2	42:A7:98:TYR:CZ	2.46	0.50
47:Ab:38:SER:HA	47:Ab:41:LYS:NZ	2.26	0.50
51:AP:169:GLY:HA2	51:AP:172:TYR:CE2	2.46	0.50
74:AH:113:ILE:HD12	74:AH:113:ILE:O	2.12	0.50
5:S5:27:ALA:N	5:S5:40:LEU:O	2.43	0.50
7:S7:69:U:H3'	7:S7:70:A:H8	1.76	0.50
8:SA:1017:G:H2'	8:SA:1018:U:C6	2.46	0.50
8:SA:1376:A:O2'	11:SD:142:LYS:NZ	2.37	0.50
15:SH:192:GLN:HA	15:SH:195:GLU:HG2	1.92	0.50
16:SI:191:ALA:HB3	16:SI:192:LYS:HE2	1.93	0.50
34:AA:949:A:H1'	34:AA:2133:C:H2'	1.93	0.50
34:AA:2816:U:H2'	34:AA:2817:U:H6	1.76	0.50
34:AA:2947:G:O2'	51:AP:79:ILE:HG13	2.11	0.50
34:AA:3577:A:H3'	34:AA:3581:A:N6	2.26	0.50
34:AA:3633:U:H2'	34:AA:3634:C:H6	1.76	0.50
38:A1:46:ILE:HA	38:A1:70:ALA:HA	1.93	0.50
56:Ac:11:PHE:HA	56:Ac:14:ARG:HD2	1.94	0.50
69:AD:108:PRO:O	69:AD:111:THR:HG23	2.11	0.50
8:SA:259:A:O2'	19:SL:64:SER:OG	2.15	0.50
8:SA:1701:G:O2'	8:SA:1702:C:O4'	2.17	0.50
8:SA:1783:U:H2'	8:SA:1784:A:C8	2.47	0.50
8:SA:1843:G:H2'	8:SA:1844:A:O4'	2.12	0.50
8:SA:1846:U:P	31:SX:39:ALA:H	2.34	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:1879:U:O2'	8:SA:1911:A:N6	2.44	0.50
8:SA:1888:U:H2'	8:SA:1889:G:C8	2.41	0.50
12:SE:64:GLU:O	12:SE:65:LYS:HG2	2.11	0.50
16:SI:105:ASN:O	16:SI:109:LYS:HG2	2.11	0.50
18:SK:10:CYS:SG	18:SK:27:ILE:HG21	2.52	0.50
28:SU:33:ILE:HG12	28:SU:66:VAL:HG11	1.94	0.50
31:SX:34:ILE:HD13	31:SX:45:PHE:HD2	1.77	0.50
34:AA:38:U:H2'	34:AA:39:A:O4'	2.11	0.50
34:AA:38:U:H5''	60:AO:32:ARG:HD2	1.94	0.50
34:AA:459:G:H2'	34:AA:460:A:C8	2.46	0.50
34:AA:3101:A:H2'	34:AA:3102:U:H6	1.75	0.50
35:AC:69:A:H2'	35:AC:70:A:H8	1.77	0.50
64:AY:143:ILE:O	64:AY:147:VAL:HG13	2.11	0.50
71:AF:385:LYS:HG2	71:AF:389:ARG:NH1	2.27	0.50
81:S9:27:G:H2'	81:S9:28:G:C8	2.47	0.50
8:SA:52:U:H2'	8:SA:53:G:C8	2.47	0.50
8:SA:53:G:H2'	8:SA:54:C:H6	1.77	0.50
8:SA:310:U:H2'	8:SA:311:C:C6	2.46	0.50
8:SA:455:C:H2'	8:SA:456:U:H6	1.75	0.50
13:SF:23:MET:HA	13:SF:23:MET:HE3	1.92	0.50
15:SH:199:LEU:HD22	15:SH:202:LYS:HE2	1.93	0.50
18:SK:40:TYR:CE1	18:SK:112:ASP:HB3	2.47	0.50
21:SN:35:CYS:HA	21:SN:38:ILE:HG12	1.94	0.50
21:SN:87:LEU:C	21:SN:88:ILE:HD13	2.37	0.50
28:SU:33:ILE:O	28:SU:37:ILE:HG23	2.12	0.50
32:SY:33:ASP:OD1	32:SY:34:ALA:N	2.45	0.50
32:SY:95:VAL:HA	32:SY:98:LEU:HD12	1.94	0.50
33:SZ:22:ARG:HD3	33:SZ:57:HIS:CE1	2.47	0.50
34:AA:147:C:H2'	34:AA:148:G:O4'	2.11	0.50
34:AA:238:G:H2'	34:AA:239:U:O4'	2.12	0.50
34:AA:2037:U:H2'	34:AA:2038:U:C6	2.47	0.50
34:AA:3658:G:O2'	34:AA:3659:C:H6	1.95	0.50
36:AB:12:U:OP2	36:AB:67:C:O2'	2.30	0.50
54:AI:75:THR:OG1	54:AI:86:VAL:HG12	2.12	0.50
62:AR:292:LYS:HE3	62:AR:293:LEU:HB2	1.93	0.50
72:AG:49:LYS:HD3	72:AG:51:ARG:HG2	1.93	0.50
74:AH:10:VAL:O	74:AH:53:TYR:HA	2.11	0.50
8:SA:1944:U:H2'	8:SA:1945:C:C6	2.47	0.49
10:SC:175:TRP:HE1	10:SC:196:VAL:HG12	1.76	0.49
15:SH:32:ILE:HD13	15:SH:52:ILE:HG22	1.94	0.49
17:SJ:144:LYS:HB2	17:SJ:146:ASP:OD1	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:SK:36:LYS:HA	18:SK:39:GLN:HG2	1.94	0.49
30:SW:41:ILE:HG21	30:SW:46:MET:HB2	1.92	0.49
32:SY:62:THR:HG1	32:SY:66:ARG:HE	1.57	0.49
34:AA:428:A:O2'	34:AA:708:A:OP1	2.21	0.49
34:AA:744:G:H22	34:AA:915:G:N2	2.10	0.49
34:AA:1255:G:OP2	61:AQ:98:ARG:NH2	2.31	0.49
34:AA:2440:A:OP2	69:AD:200:ARG:NH1	2.45	0.49
38:A1:106:ASN:O	38:A1:110:GLU:HG3	2.12	0.49
44:A8:5:LYS:HG3	44:A8:10:ILE:HG12	1.93	0.49
44:A8:38:ILE:HG22	44:A8:39:ASP:OD1	2.13	0.49
46:Aa:76:TYR:CD1	46:Aa:85:ILE:HD11	2.47	0.49
48:Ad:57:ARG:HA	48:Ad:57:ARG:HH11	1.76	0.49
55:AJ:121:LYS:HE2	55:AJ:121:LYS:HA	1.93	0.49
66:AZ:57:ILE:HB	66:AZ:103:VAL:HG12	1.94	0.49
77:AX:48:LYS:HG2	77:AX:134:TYR:HE1	1.77	0.49
81:S9:67:C:H2'	81:S9:68:C:C6	2.47	0.49
1:S1:120:ARG:HG3	1:S1:122:THR:H	1.76	0.49
7:S7:8:U:N3	7:S7:15:G:O6	2.45	0.49
8:SA:428:G:H2'	8:SA:429:G:C8	2.47	0.49
8:SA:751:U:H2'	8:SA:752:U:C6	2.47	0.49
8:SA:974:A:O3'	23:SP:66:ARG:NH1	2.40	0.49
8:SA:1457:A:H2'	8:SA:1458:G:O4'	2.11	0.49
8:SA:1715:A:O2'	8:SA:1837:G:N2	2.44	0.49
10:SC:60:ALA:O	10:SC:63:ILE:HG13	2.12	0.49
13:SF:125:LYS:NZ	13:SF:225:VAL:O	2.37	0.49
18:SK:30:SER:HB3	18:SK:59:GLY:O	2.12	0.49
18:SK:83:LEU:HG	18:SK:122:GLY:H	1.77	0.49
34:AA:1506:C:H2'	34:AA:1507:U:H6	1.77	0.49
34:AA:1575:C:H5'	71:AF:42:THR:HG21	1.94	0.49
34:AA:1706:A:O5'	55:AJ:73:ARG:NH2	2.45	0.49
34:AA:1793:A:H2'	34:AA:1795:A:H62	1.75	0.49
34:AA:2549:A:N1	81:S9:37:A:O2'	2.37	0.49
34:AA:3409:U:H2'	34:AA:3410:A:H8	1.77	0.49
34:AA:3757:U:H2'	34:AA:3758:G:C8	2.46	0.49
57:AK:118:VAL:HG12	73:AU:175:ALA:HB3	1.94	0.49
63:AW:10:ASN:ND2	63:AW:13:LYS:HE2	2.26	0.49
81:S9:66:U:H2'	81:S9:67:C:C6	2.48	0.49
8:SA:875:A:H8	8:SA:875:A:OP1	1.96	0.49
8:SA:1434:U:H2'	8:SA:1435:C:C6	2.47	0.49
8:SA:1450:A:H1'	8:SA:1626:U:C2	2.46	0.49
8:SA:1644:U:H2'	8:SA:1646:U:C4	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:1797:C:H2'	8:SA:1798:G:C8	2.47	0.49
8:SA:1944:U:H2'	8:SA:1945:C:H6	1.78	0.49
9:SB:188:PHE:CZ	9:SB:215:VAL:HG21	2.47	0.49
14:SG:55:LYS:HG3	14:SG:255:TRP:CE2	2.46	0.49
16:SI:46:ARG:HH12	16:SI:53:ARG:HH11	1.60	0.49
23:SP:59:GLY:HA2	23:SP:68:GLU:HG2	1.95	0.49
25:SR:54:ALA:HB3	25:SR:75:LEU:HD13	1.94	0.49
29:SV:50:GLU:CD	29:SV:50:GLU:H	2.19	0.49
34:AA:61:A:H2'	34:AA:62:A:C8	2.47	0.49
34:AA:149:A:OP1	55:AJ:125:LYS:NZ	2.32	0.49
34:AA:596:A:O3'	74:AH:46:ARG:NH1	2.43	0.49
65:AT:163:LEU:HA	65:AT:166:GLN:NE2	2.23	0.49
68:A5:172:ALA:O	68:A5:174:LYS:HG2	2.11	0.49
1:S1:77:TYR:OH	1:S1:87:GLU:OE2	2.22	0.49
8:SA:39:A:OP1	12:SE:6:ARG:NH1	2.45	0.49
8:SA:887:A:H2	8:SA:915:G:N1	2.01	0.49
8:SA:941:C:O2'	9:SB:163:LYS:NZ	2.30	0.49
8:SA:1947:U:H2'	8:SA:1948:A:C8	2.48	0.49
23:SP:34:PHE:HE1	23:SP:100:SER:HA	1.77	0.49
26:SS:17:ILE:HD12	26:SS:18:LEU:N	2.28	0.49
26:SS:126:ARG:HG2	26:SS:131:LEU:HD13	1.93	0.49
31:SX:34:ILE:HD12	31:SX:37:PHE:HB2	1.94	0.49
32:SY:29:ILE:O	32:SY:85:ARG:NH2	2.41	0.49
34:AA:338:U:H2'	34:AA:339:G:H8	1.77	0.49
34:AA:528:A:OP1	68:A5:76:ARG:NH2	2.40	0.49
34:AA:779:U:H2'	37:AL:165:LYS:NZ	2.27	0.49
34:AA:1205:U:H4'	34:AA:1206:U:O4'	2.12	0.49
34:AA:1506:C:H2'	34:AA:1507:U:C6	2.47	0.49
35:AC:13:A:H2'	35:AC:14:A:C8	2.47	0.49
54:AI:100:ASP:HB3	54:AI:103:TYR:HD2	1.76	0.49
70:AE:331:ARG:HG3	70:AE:332:PRO:HD2	1.94	0.49
1:S1:7:ILE:HD12	1:S1:27:ILE:HD12	1.95	0.49
5:S5:28:GLN:NE2	5:S5:38:ARG:HD3	2.27	0.49
8:SA:597:C:H2'	8:SA:598:A:H8	1.77	0.49
15:SH:63:MET:HG2	15:SH:98:ARG:HG3	1.93	0.49
19:SL:162:ILE:N	19:SL:164:LYS:HD3	2.28	0.49
21:SN:42:ALA:HA	21:SN:47:LEU:HD12	1.94	0.49
22:SO:46:LEU:HB3	22:SO:48:VAL:HG12	1.95	0.49
26:SS:126:ARG:NH1	26:SS:133:VAL:HA	2.27	0.49
34:AA:909:U:H2'	34:AA:910:A:C8	2.46	0.49
36:AB:48:G:OP1	62:AR:225:TYR:OH	2.25	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:AB:63:A:O4'	62:AR:282:VAL:HG21	2.13	0.49
41:A6:90:ILE:HG22	41:A6:92:CYS:H	1.77	0.49
58:AM:93:TYR:CD1	78:A0:27:LYS:HD3	2.47	0.49
62:AR:222:PHE:O	62:AR:226:LEU:HG	2.11	0.49
70:AE:289:ASN:OD1	70:AE:289:ASN:N	2.45	0.49
8:SA:248:G:C2	13:SF:203:GLY:HA2	2.48	0.49
8:SA:1381:C:H2'	8:SA:1382:G:C8	2.47	0.49
8:SA:1662:A:H2'	8:SA:1663:A:H8	1.76	0.49
8:SA:1822:A:N1	8:SA:1905:C:H1'	2.28	0.49
17:SJ:48:ASP:O	17:SJ:60:ILE:HA	2.12	0.49
23:SP:36:SER:C	23:SP:38:ASN:H	2.19	0.49
34:AA:61:A:H2'	34:AA:62:A:H8	1.78	0.49
34:AA:1779:A:N7	34:AA:2033:C:O2'	2.41	0.49
34:AA:1801:G:O2'	34:AA:2031:A:N6	2.45	0.49
34:AA:1850:U:O2	46:Aa:26:PRO:HB3	2.13	0.49
34:AA:1875:A:H2'	34:AA:1876:A:C8	2.48	0.49
34:AA:2410:A:O2'	34:AA:3465:G:O2'	2.28	0.49
38:A1:88:ALA:HA	38:A1:93:ILE:HD11	1.95	0.49
50:Af:3:GLU:OE2	50:Af:4:PRO:HD2	2.13	0.49
54:AI:71:ARG:O	54:AI:92:ASN:ND2	2.45	0.49
66:AZ:73:ASN:OD1	66:AZ:76:ARG:HD2	2.13	0.49
79:S8:9:G:H5''	79:S8:46:G:H1'	1.93	0.49
81:S9:26:A:C4	81:S9:27:G:C8	3.01	0.49
8:SA:207:G:N2	8:SA:208:U:O4	2.39	0.49
8:SA:564:G:O2'	8:SA:565:U:H5'	2.13	0.49
16:SI:64:VAL:HG12	16:SI:84:VAL:HG21	1.94	0.49
16:SI:181:ILE:HG13	16:SI:182:LYS:N	2.28	0.49
19:SL:84:ASN:C	19:SL:84:ASN:HD22	2.21	0.49
20:SM:37:LEU:HD21	32:SY:22:PHE:CD1	2.47	0.49
34:AA:455:U:H2'	34:AA:456:A:C8	2.48	0.49
34:AA:1237:C:H2'	34:AA:1238:C:C6	2.47	0.49
34:AA:1963:U:C2'	34:AA:1964:G:H5'	2.43	0.49
34:AA:3183:G:H2'	34:AA:3184:C:C6	2.47	0.49
34:AA:3241:U:H2'	34:AA:3242:U:H6	1.76	0.49
8:SA:335:G:H5'	19:SL:99:ASN:HB2	1.94	0.49
8:SA:857:A:N7	8:SA:859:A:C8	2.81	0.49
8:SA:1208:G:O2'	8:SA:1209:G:H5'	2.12	0.49
8:SA:1461:C:O4'	32:SY:160:ARG:NH2	2.46	0.49
8:SA:1717:A:H5'	16:SI:154:PHE:CE1	2.48	0.49
8:SA:1862:C:H1'	26:SS:87:ASN:HB2	1.95	0.49
8:SA:1911:A:N3	16:SI:51:ARG:NH2	2.38	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:SH:209:LYS:O	15:SH:212:LEU:HB2	2.13	0.49
17:SJ:158:LYS:O	17:SJ:162:ARG:NH1	2.46	0.49
22:SO:72:TRP:CE3	27:ST:21:VAL:HB	2.48	0.49
24:SQ:117:LEU:HD12	24:SQ:118:PRO:HD2	1.95	0.49
34:AA:431:G:O6	34:AA:2676:C:O2'	2.24	0.49
34:AA:1162:U:H2'	34:AA:1163:A:C8	2.47	0.49
34:AA:2027:A:H2'	34:AA:2028:G:H8	1.77	0.49
54:AI:86:VAL:HG22	54:AI:88:PRO:HA	1.93	0.49
61:AQ:156:LYS:HG3	61:AQ:163:GLN:HB2	1.95	0.49
75:AV:30:LYS:NZ	75:AV:33:GLU:OE1	2.46	0.49
76:Ag:7:ARG:HG2	76:Ag:8:TYR:CD1	2.47	0.49
5:S5:44:VAL:HG11	5:S5:48:VAL:HG21	1.94	0.49
8:SA:30:G:H4'	24:SQ:131:SER:OG	2.13	0.49
8:SA:53:G:H2'	8:SA:54:C:C6	2.48	0.49
8:SA:205:A:H2'	8:SA:206:A:C8	2.48	0.49
16:SI:143:TYR:O	16:SI:147:THR:HG23	2.13	0.49
19:SL:104:ILE:N	19:SL:181:VAL:O	2.30	0.49
30:SW:10:LYS:HB3	30:SW:14:ARG:NH1	2.28	0.49
32:SY:37:PHE:HD1	32:SY:162:ILE:HG21	1.77	0.49
34:AA:133:U:H2'	34:AA:134:G:C8	2.48	0.49
34:AA:172:C:H2'	34:AA:173:A:C8	2.48	0.49
34:AA:262:A:H2'	34:AA:263:U:C6	2.48	0.49
34:AA:451:C:N4	34:AA:694:U:O2'	2.44	0.49
34:AA:1454:A:H2'	34:AA:1455:C:O4'	2.13	0.49
34:AA:2394:C:O2'	34:AA:2395:U:H6	1.95	0.49
34:AA:3585:A:O2'	34:AA:3586:U:H6	1.96	0.49
34:AA:3641:U:H3	34:AA:3644:G:H1	1.60	0.49
35:AC:76:A:C5	35:AC:84:G:C2	3.00	0.49
62:AR:165:LEU:HD11	62:AR:177:HIS:HB3	1.95	0.49
75:AV:39:ASP:O	75:AV:65:ILE:HG12	2.12	0.49
8:SA:509:U:H2'	8:SA:510:G:C8	2.47	0.49
8:SA:1414:A:H2'	8:SA:1415:A:C8	2.48	0.49
8:SA:1908:A:H2'	8:SA:1909:C:C6	2.48	0.49
9:SB:66:TYR:CE2	23:SP:48:SER:HB3	2.48	0.49
11:SD:135:CYS:SG	11:SD:136:GLU:N	2.86	0.49
13:SF:247:ASP:N	13:SF:250:GLU:OE1	2.46	0.49
21:SN:91:TYR:HB2	21:SN:116:THR:HG23	1.94	0.49
26:SS:121:LEU:HD11	31:SX:111:MET:SD	2.53	0.49
33:SZ:57:HIS:CE1	33:SZ:58:VAL:HG23	2.48	0.49
34:AA:1298:A:H2'	34:AA:1299:G:O4'	2.13	0.49
34:AA:3442:C:H5	42:A7:32:CYS:SG	2.36	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:AC:102:U:OP1	64:AY:103:LYS:HD2	2.13	0.49
36:AB:22:G:N1	36:AB:53:U:O2'	2.44	0.49
63:AW:41:LEU:HD12	63:AW:114:LEU:HD21	1.95	0.49
73:AU:18:ILE:HD11	73:AU:46:ALA:HB1	1.95	0.49
79:S8:6:G:H2'	79:S8:7:G:C8	2.48	0.49
1:S1:97:LEU:HD23	1:S1:98:ILE:HG23	1.95	0.48
8:SA:987:U:H2'	8:SA:988:U:H6	1.78	0.48
8:SA:1712:G:H2'	8:SA:1713:C:C6	2.48	0.48
8:SA:1851:C:H5''	31:SX:47:ARG:NH1	2.28	0.48
10:SC:30:GLU:OE1	10:SC:31:ASN:N	2.45	0.48
10:SC:30:GLU:OE1	10:SC:32:LYS:N	2.44	0.48
11:SD:123:VAL:O	11:SD:127:ILE:HG13	2.13	0.48
17:SJ:43:LYS:HA	17:SJ:43:LYS:HD3	1.70	0.48
17:SJ:62:ILE:HG23	17:SJ:94:LEU:HD13	1.95	0.48
21:SN:39:MET:SD	21:SN:39:MET:N	2.66	0.48
26:SS:36:LYS:NZ	26:SS:102:ALA:H	2.11	0.48
28:SU:26:LEU:HD11	28:SU:28:GLN:HB3	1.95	0.48
34:AA:76:G:H3'	37:AL:72:LYS:HG2	1.95	0.48
34:AA:154:A:OP2	55:AJ:210:LYS:NZ	2.44	0.48
34:AA:203:A:H2	34:AA:207:A:C2	2.13	0.48
34:AA:536:A:O2'	34:AA:537:A:H5''	2.11	0.48
37:AL:136:ILE:HD13	67:A3:113:PHE:CE2	2.48	0.48
46:Aa:10:HIS:ND1	46:Aa:10:HIS:O	2.46	0.48
55:AJ:124:LYS:O	55:AJ:128:LEU:HD23	2.13	0.48
58:AM:12:LYS:CG	58:AM:127:LEU:HD11	2.42	0.48
62:AR:216:ASP:HA	62:AR:219:LYS:HZ2	1.77	0.48
72:AG:92:ARG:HG3	72:AG:94:LYS:H	1.77	0.48
8:SA:1384:U:H5''	8:SA:1385:U:H2'	1.95	0.48
8:SA:1634:A:C2	8:SA:1657:A:H2'	2.48	0.48
11:SD:209:LEU:HD12	11:SD:210:PRO:HD2	1.94	0.48
15:SH:10:ASN:HB3	15:SH:12:VAL:HG12	1.96	0.48
34:AA:670:U:H2'	34:AA:671:U:H6	1.78	0.48
34:AA:1765:A:H2'	34:AA:1766:U:C6	2.47	0.48
34:AA:3345:U:H2'	34:AA:3346:A:H8	1.78	0.48
34:AA:3428:U:OP1	58:AM:50:ARG:NH1	2.46	0.48
48:Ad:24:ILE:HG13	48:Ad:74:ILE:HB	1.95	0.48
50:Af:51:LEU:HD11	74:AH:173:LYS:HB2	1.95	0.48
55:AJ:42:ASN:OD1	55:AJ:42:ASN:N	2.39	0.48
55:AJ:119:GLU:HB2	55:AJ:123:ASP:HB2	1.95	0.48
62:AR:196:LYS:HB2	62:AR:201:ILE:HB	1.95	0.48
62:AR:273:LEU:O	62:AR:278:ARG:NH2	2.46	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
71:AF:14:ASN:HD21	71:AF:16:LYS:HB2	1.78	0.48
81:S9:64:A:H2'	81:S9:65:G:H8	1.78	0.48
8:SA:862:A:H4'	13:SF:201:ASN:HD22	1.78	0.48
8:SA:1279:G:H3'	8:SA:1280:G:H8	1.78	0.48
8:SA:1695:A:H2'	8:SA:1696:A:H8	1.78	0.48
8:SA:1854:U:N3	31:SX:81:ARG:O	2.46	0.48
20:SM:20:VAL:HB	20:SM:69:ARG:HG3	1.95	0.48
34:AA:700:A:H5'	45:A9:92:HIS:O	2.12	0.48
34:AA:949:A:H2	34:AA:983:G:H21	1.59	0.48
34:AA:1285:U:O2'	34:AA:1297:A:N3	2.40	0.48
34:AA:3345:U:H2'	34:AA:3346:A:C8	2.48	0.48
34:AA:3387:U:H2'	34:AA:3388:U:C6	2.48	0.48
34:AA:3669:U:H1'	34:AA:3671:A:H62	1.79	0.48
36:AB:7:G:OP1	62:AR:33:ARG:NH1	2.44	0.48
36:AB:24:C:N4	36:AB:25:A:N3	2.61	0.48
62:AR:50:ARG:NH2	62:AR:72:ASP:OD2	2.45	0.48
72:AG:92:ARG:NE	72:AG:93:ARG:H	2.11	0.48
75:AV:113:ASN:O	75:AV:117:ILE:HG23	2.14	0.48
5:S5:37:GLY:O	5:S5:39:PHE:N	2.46	0.48
8:SA:1696:A:H4'	27:ST:7:VAL:HG12	1.95	0.48
10:SC:29:LEU:HD13	10:SC:46:HIS:CD2	2.49	0.48
10:SC:162:CYS:HB3	10:SC:173:MET:HE2	1.95	0.48
12:SE:42:ILE:HG13	12:SE:43:TRP:N	2.28	0.48
13:SF:103:TYR:HB2	13:SF:182:MET:CE	2.44	0.48
17:SJ:59:THR:HB	17:SJ:91:TYR:HB2	1.95	0.48
19:SL:165:SER:O	19:SL:165:SER:OG	2.28	0.48
26:SS:73:MET:C	26:SS:73:MET:HE2	2.39	0.48
30:SW:101:ASP:O	30:SW:104:ARG:NH2	2.46	0.48
34:AA:1874:C:H2'	34:AA:1875:A:C8	2.48	0.48
34:AA:2036:C:N4	34:AA:2037:U:O4	2.45	0.48
34:AA:2119:G:H5''	56:Ac:3:LYS:HG3	1.95	0.48
34:AA:2654:A:H2'	34:AA:2655:C:C6	2.49	0.48
34:AA:3001:A:H2'	34:AA:3002:G:H8	1.78	0.48
41:A6:55:GLN:O	41:A6:58:VAL:HG12	2.13	0.48
52:Ah:51:CYS:HB3	52:Ah:54:ILE:HD12	1.94	0.48
55:AJ:244:ASP:OD1	55:AJ:248:LYS:HE3	2.13	0.48
64:AY:139:ASN:H	64:AY:142:ASN:HB2	1.78	0.48
72:AG:12:ILE:HG12	72:AG:154:VAL:HG12	1.94	0.48
76:Ag:3:HIS:CD2	76:Ag:4:GLY:H	2.32	0.48
3:S3:45:VAL:O	3:S3:50:GLN:NE2	2.38	0.48
5:S5:27:ALA:HB2	5:S5:42:ARG:HG3	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:353:G:OP1	29:SV:80:SER:OG	2.19	0.48
8:SA:1836:G:O2'	8:SA:1837:G:H5'	2.13	0.48
15:SH:30:LYS:O	15:SH:102:VAL:HG12	2.12	0.48
21:SN:46:ASN:O	21:SN:46:ASN:ND2	2.45	0.48
25:SR:57:CYS:HB2	25:SR:72:ILE:HB	1.95	0.48
26:SS:110:ARG:NH1	26:SS:114:GLU:HB3	2.28	0.48
34:AA:76:G:N7	37:AL:100:ARG:HG3	2.29	0.48
34:AA:688:U:H2'	34:AA:689:U:C6	2.49	0.48
34:AA:1093:G:H2'	34:AA:1094:U:C6	2.48	0.48
34:AA:1646:C:H2'	34:AA:1647:U:H6	1.77	0.48
34:AA:1740:A:H2'	34:AA:1741:G:C8	2.48	0.48
34:AA:3657:G:O2'	34:AA:3658:G:H5'	2.14	0.48
44:A8:13:ARG:HG3	44:A8:14:THR:O	2.14	0.48
48:Ad:47:LYS:HG2	48:Ad:48:TYR:CE2	2.49	0.48
48:Ad:68:LEU:HD12	48:Ad:70:SER:H	1.78	0.48
50:Af:51:LEU:HG	74:AH:172:ARG:HG3	1.95	0.48
59:AS:177:ARG:HA	59:AS:183:ARG:HB2	1.94	0.48
62:AR:104:LEU:CB	62:AR:246:ILE:HD11	2.43	0.48
62:AR:205:GLU:HA	62:AR:208:LYS:HG3	1.94	0.48
67:A3:78:LYS:O	67:A3:83:ARG:NH2	2.41	0.48
74:AH:77:LYS:O	74:AH:81:THR:HG22	2.13	0.48
8:SA:847:U:H2'	8:SA:848:U:H6	1.78	0.48
15:SH:63:MET:HG2	15:SH:98:ARG:CG	2.43	0.48
32:SY:61:LYS:NZ	32:SY:67:LYS:HD2	2.28	0.48
34:AA:494:U:H2'	34:AA:495:U:C6	2.49	0.48
34:AA:740:U:H2'	34:AA:741:C:C6	2.47	0.48
34:AA:2441:U:H2'	34:AA:2442:A:C5	2.49	0.48
46:Aa:76:TYR:CD2	46:Aa:80:ILE:HG13	2.48	0.48
58:AM:11:ASN:OD1	58:AM:11:ASN:N	2.40	0.48
61:AQ:179:ASP:O	61:AQ:183:GLN:HG2	2.13	0.48
62:AR:286:LEU:O	62:AR:290:VAL:HG23	2.14	0.48
71:AF:342:ARG:NH1	71:AF:342:ARG:HB2	2.28	0.48
71:AF:347:ILE:HB	71:AF:350:LYS:NZ	2.28	0.48
73:AU:90:TYR:HE1	73:AU:99:MET:HE3	1.77	0.48
8:SA:99:C:H1'	8:SA:432:G:H5'	1.96	0.48
8:SA:2030:U:H2'	8:SA:2031:C:C6	2.49	0.48
12:SE:100:THR:H	12:SE:103:LYS:HG2	1.78	0.48
15:SH:20:ASP:OD2	15:SH:23:LYS:HG3	2.12	0.48
17:SJ:72:TYR:HE2	17:SJ:76:ILE:HD11	1.79	0.48
28:SU:60:ILE:HD12	28:SU:60:ILE:O	2.13	0.48
32:SY:30:LYS:HB2	32:SY:88:TYR:HE2	1.78	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:642:A:H62	34:AA:684:G:HO2'	1.55	0.48
34:AA:1208:G:H2'	34:AA:1209:U:H6	1.78	0.48
34:AA:2108:A:H1'	49:Ae:45:ARG:HH22	1.79	0.48
34:AA:3023:C:OP1	72:AG:16:LYS:NZ	2.43	0.48
34:AA:3433:C:O2'	34:AA:3434:A:H5'	2.13	0.48
34:AA:3702:C:N3	63:AW:69:ARG:NH2	2.61	0.48
52:Ah:47:THR:HA	52:Ah:57:CYS:HA	1.96	0.48
59:AS:121:THR:OG1	59:AS:123:ASP:OD1	2.29	0.48
68:A5:56:ARG:NH1	68:A5:196:ASP:OD2	2.46	0.48
73:AU:182:TYR:O	73:AU:184:MET:N	2.47	0.48
79:S8:15:G:N1	79:S8:48:C:N3	2.54	0.48
8:SA:1434:U:OP2	30:SW:45:ARG:NE	2.47	0.48
8:SA:1781:C:H2'	8:SA:1782:A:C8	2.48	0.48
8:SA:1881:G:H5''	20:SM:123:ARG:HE	1.78	0.48
10:SC:79:ARG:HD2	10:SC:128:THR:HG21	1.96	0.48
25:SR:28:VAL:HA	25:SR:31:ASN:ND2	2.28	0.48
26:SS:41:ARG:HB3	26:SS:85:PHE:CZ	2.49	0.48
26:SS:67:ASP:O	26:SS:71:HIS:ND1	2.47	0.48
26:SS:132:ARG:HB3	26:SS:136:GLN:N	2.29	0.48
32:SY:87:LEU:HD23	32:SY:145:ARG:HB2	1.95	0.48
33:SZ:46:ASN:OD1	33:SZ:46:ASN:N	2.47	0.48
34:AA:417:A:C2	35:AC:21:A:H1'	2.49	0.48
34:AA:939:A:H2'	34:AA:940:A:H8	1.79	0.48
34:AA:1220:U:O2'	34:AA:1221:A:OP1	2.24	0.48
34:AA:3256:C:H5''	50:Af:49:LYS:HD2	1.95	0.48
34:AA:3553:G:O2'	34:AA:3572:A:N6	2.47	0.48
36:AB:58:A:H2'	36:AB:59:C:C6	2.48	0.48
54:AI:139:THR:HG22	54:AI:175:LYS:HD2	1.96	0.48
64:AY:151:PHE:O	64:AY:153:ILE:N	2.43	0.48
74:AH:44:ASP:HB3	74:AH:57:VAL:HG22	1.96	0.48
7:S7:22:A:H62	7:S7:44:G:H22	1.62	0.48
8:SA:401:U:H2'	8:SA:402:G:O4'	2.13	0.48
8:SA:926:G:OP1	17:SJ:117:ARG:NH2	2.47	0.48
8:SA:1653:A:H2'	8:SA:1654:G:H8	1.79	0.48
8:SA:1664:G:C2	8:SA:1665:G:N2	2.82	0.48
8:SA:1743:A:H2'	8:SA:1744:A:O4'	2.14	0.48
8:SA:1821:A:H4'	32:SY:115:THR:HG21	1.95	0.48
17:SJ:102:LYS:HB3	17:SJ:105:GLN:HG2	1.95	0.48
19:SL:81:VAL:HG22	19:SL:102:VAL:HG12	1.96	0.48
27:ST:17:ARG:HG3	27:ST:30:ARG:HH21	1.78	0.48
29:SV:76:GLY:HA3	29:SV:89:ILE:HG23	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:SW:29:GLN:HG3	30:SW:32:LYS:NZ	2.29	0.48
34:AA:1035:G:H5'	34:AA:1036:A:OP1	2.13	0.48
34:AA:1875:A:H2'	34:AA:1876:A:H8	1.79	0.48
34:AA:2654:A:H2'	34:AA:2655:C:H6	1.78	0.48
34:AA:2739:U:H2'	34:AA:2740:A:H8	1.77	0.48
36:AB:51:G:H21	72:AG:9:MET:HE1	1.79	0.48
37:AL:149:LYS:HE2	37:AL:149:LYS:HB3	1.76	0.48
56:Ac:31:HIS:CD2	56:Ac:34:LYS:HG2	2.49	0.48
1:S1:41:LYS:HG2	1:S1:56:ILE:HD11	1.96	0.48
7:S7:3:G:H1	7:S7:68:U:H3	1.61	0.48
8:SA:1743:A:C6	8:SA:1787:U:H5	2.31	0.48
19:SL:57:ALA:HB2	19:SL:193:GLY:HA2	1.96	0.48
28:SU:149:LEU:HD13	28:SU:149:LEU:O	2.14	0.48
34:AA:394:A:H2'	34:AA:395:A:C8	2.49	0.48
34:AA:642:A:N6	34:AA:684:G:HO2'	2.09	0.48
34:AA:1819:U:H2'	34:AA:1820:U:C6	2.49	0.48
34:AA:2831:U:O2'	34:AA:2833:U:OP2	2.32	0.48
34:AA:3263:G:H2'	34:AA:3264:U:C6	2.49	0.48
34:AA:3323:G:N2	34:AA:3326:A:OP2	2.38	0.48
36:AB:22:G:N2	36:AB:53:U:H2'	2.29	0.48
54:AI:132:ASP:O	54:AI:135:SER:OG	2.32	0.48
57:AK:73:ARG:HG2	57:AK:144:VAL:HG12	1.96	0.48
3:S3:85:ARG:NH1	8:SA:1254:G:H5'	2.28	0.47
8:SA:268:C:H3'	15:SH:186:ARG:HH22	1.78	0.47
8:SA:989:C:H2'	8:SA:990:U:H6	1.78	0.47
8:SA:1446:A:H1'	21:SN:54:ARG:CZ	2.44	0.47
8:SA:1696:A:H2'	8:SA:1697:C:H6	1.79	0.47
8:SA:1745:U:H2'	8:SA:1746:A:H8	1.79	0.47
8:SA:1837:G:C5	8:SA:1838:G:C5	3.02	0.47
12:SE:153:GLU:OE1	12:SE:153:GLU:N	2.40	0.47
18:SK:57:ARG:HB2	18:SK:57:ARG:HH11	1.79	0.47
34:AA:773:A:O2'	34:AA:774:A:P	2.72	0.47
34:AA:1115:G:N3	34:AA:2976:A:H2'	2.28	0.47
34:AA:1475:G:H5''	71:AF:305:LYS:HG2	1.95	0.47
34:AA:3524:G:H2'	34:AA:3525:A:O4'	2.14	0.47
54:AI:116:ASN:OD1	54:AI:116:ASN:N	2.38	0.47
2:S2:99:LYS:CE	32:SY:15:ARG:HE	2.27	0.47
8:SA:454:U:OP1	13:SF:29:PRO:HD3	2.14	0.47
8:SA:1015:U:H2'	8:SA:1016:U:C6	2.49	0.47
8:SA:1022:A:H2'	8:SA:1023:A:C8	2.49	0.47
8:SA:1275:U:OP2	26:SS:137:HIS:HB2	2.13	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:1443:G:OP1	8:SA:1443:G:H4'	2.14	0.47
10:SC:98:ILE:HD11	10:SC:102:TRP:HE3	1.77	0.47
13:SF:11:ARG:CZ	13:SF:20:LEU:HD13	2.44	0.47
13:SF:45:VAL:HG11	13:SF:58:PHE:CD2	2.49	0.47
13:SF:121:TYR:HB3	13:SF:161:ARG:HD2	1.96	0.47
13:SF:191:ARG:CD	13:SF:245:LYS:HB2	2.44	0.47
30:SW:36:GLU:OE1	30:SW:36:GLU:N	2.37	0.47
33:SZ:72:MET:HG2	33:SZ:77:LEU:HD12	1.95	0.47
34:AA:316:A:H2'	34:AA:317:U:C6	2.50	0.47
34:AA:1510:U:H2'	34:AA:1511:U:C6	2.49	0.47
34:AA:1534:U:HO2'	34:AA:1535:G:P	2.33	0.47
34:AA:2041:U:H3	34:AA:2068:G:H1	1.61	0.47
34:AA:2806:U:H2'	34:AA:2807:U:H6	1.80	0.47
34:AA:2823:U:OP1	34:AA:2823:U:H6	1.96	0.47
34:AA:3320:G:H2'	34:AA:3321:U:C6	2.49	0.47
72:AG:157:GLU:OE2	72:AG:157:GLU:HA	2.14	0.47
8:SA:12:U:H2'	8:SA:13:C:H6	1.78	0.47
8:SA:66:U:C2	15:SH:173:PRO:HG3	2.49	0.47
8:SA:821:A:OP1	12:SE:9:SER:OG	2.27	0.47
8:SA:1285:A:N3	8:SA:1311:U:H1'	2.28	0.47
8:SA:1364:G:C2	8:SA:1365:G:H1'	2.49	0.47
8:SA:1842:A:H5'	26:SS:132:ARG:NH2	2.29	0.47
11:SD:23:GLU:OE1	22:SO:71:ASN:ND2	2.40	0.47
11:SD:177:GLN:HG2	11:SD:182:VAL:HG12	1.96	0.47
18:SK:71:LYS:HB3	18:SK:130:PHE:CE2	2.50	0.47
32:SY:29:ILE:O	32:SY:32:VAL:HG12	2.14	0.47
32:SY:38:ILE:HB	32:SY:81:SER:HB2	1.97	0.47
34:AA:2727:U:H5	34:AA:2933:C:OP2	1.98	0.47
34:AA:3258:C:O2'	34:AA:3259:A:H5''	2.14	0.47
34:AA:3431:G:O3'	70:AE:272:ARG:NH1	2.46	0.47
39:A2:10:TRP:CZ2	39:A2:44:PRO:HD3	2.49	0.47
44:A8:78:ASN:OD1	44:A8:81:GLU:HG3	2.15	0.47
53:AI:27:TYR:HB3	53:AI:68:VAL:HB	1.95	0.47
57:AK:13:HIS:CE1	57:AK:118:VAL:HG22	2.49	0.47
62:AR:5:LYS:HD2	62:AR:5:LYS:HA	1.66	0.47
81:S9:43:C:H4'	81:S9:43:C:OP1	2.14	0.47
8:SA:158:C:H2'	8:SA:159:U:O4'	2.14	0.47
8:SA:480:A:OP2	12:SE:44:ARG:NH1	2.42	0.47
8:SA:797:C:H2'	8:SA:798:U:C6	2.49	0.47
8:SA:885:C:H2'	8:SA:886:U:H6	1.80	0.47
8:SA:1187:A:H2'	8:SA:1188:A:C8	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:SG:206:LYS:HE3	14:SG:206:LYS:HB3	1.77	0.47
16:SI:42:HIS:CD2	16:SI:81:ILE:HD11	2.49	0.47
18:SK:43:LYS:HD2	18:SK:43:LYS:C	2.38	0.47
30:SW:61:ILE:HG13	30:SW:62:GLN:OE1	2.14	0.47
34:AA:504:A:O2'	34:AA:505:A:OP1	2.28	0.47
34:AA:1154:C:H2'	34:AA:1155:C:H6	1.78	0.47
34:AA:1158:G:H2'	34:AA:1159:A:C8	2.49	0.47
34:AA:2515:A:H2'	34:AA:2516:A:C8	2.49	0.47
34:AA:2537:A:H5''	69:AD:243:THR:CG2	2.44	0.47
34:AA:2588:A:C6	58:AM:39:ILE:HD12	2.49	0.47
34:AA:2732:A:H2'	34:AA:2733:A:H8	1.79	0.47
38:A1:69:LYS:HB2	38:A1:69:LYS:HE3	1.52	0.47
52:Ah:51:CYS:SG	69:AD:50:HIS:ND1	2.87	0.47
54:AI:87:GLY:O	54:AI:88:PRO:C	2.58	0.47
54:AI:176:VAL:O	54:AI:180:GLU:HG2	2.14	0.47
61:AQ:36:MET:HE1	61:AQ:69:ARG:HG3	1.97	0.47
63:AW:25:HIS:O	63:AW:29:THR:OG1	2.27	0.47
66:AZ:87:GLU:OE1	66:AZ:87:GLU:HA	2.14	0.47
69:AD:34:TYR:CE2	69:AD:38:LYS:HE2	2.49	0.47
69:AD:118:HIS:ND1	69:AD:125:THR:HG21	2.29	0.47
73:AU:15:GLN:HG2	73:AU:73:ILE:HD12	1.95	0.47
79:S8:4:G:O2'	79:S8:5:G:H8	1.96	0.47
79:S8:26:G:C6	79:S8:44:A:N1	2.82	0.47
5:S5:8:LYS:HB2	5:S5:28:GLN:HB2	1.95	0.47
8:SA:1307:U:O2'	27:ST:26:HIS:NE2	2.39	0.47
8:SA:1638:U:H2'	8:SA:1639:G:C8	2.49	0.47
8:SA:1709:C:C2	8:SA:1710:G:C8	3.02	0.47
8:SA:1838:G:C2	8:SA:1867:A:N6	2.80	0.47
10:SC:142:PRO:O	10:SC:143:VAL:HB	2.14	0.47
16:SI:110:GLY:O	16:SI:184:LYS:HD2	2.15	0.47
26:SS:116:MET:HE3	26:SS:117:LYS:N	2.29	0.47
34:AA:384:A:OP2	66:AZ:86:ARG:HD3	2.14	0.47
34:AA:936:A:C5	56:Ac:17:LYS:HA	2.50	0.47
34:AA:2394:C:OP2	65:AT:70:ARG:NH1	2.43	0.47
34:AA:3434:A:OP2	70:AE:219:LYS:NZ	2.27	0.47
48:Ad:39:THR:HG22	48:Ad:54:PHE:HB2	1.97	0.47
57:AK:191:GLU:H	57:AK:191:GLU:CD	2.22	0.47
59:AS:71:MET:SD	59:AS:79:ALA:HB2	2.54	0.47
62:AR:213:GLU:N	62:AR:213:GLU:OE2	2.46	0.47
68:A5:190:ASN:ND2	68:A5:190:ASN:C	2.69	0.47
7:S7:17:U:O2'	7:S7:18:G:H5''	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:576:C:H2'	8:SA:577:A:O4'	2.15	0.47
8:SA:877:U:H4'	65:AT:162:ARG:NH1	2.30	0.47
8:SA:976:A:H2'	8:SA:977:U:C6	2.49	0.47
8:SA:1035:A:OP2	28:SU:124:ARG:NE	2.41	0.47
8:SA:1698:U:H2'	8:SA:1699:A:C8	2.50	0.47
9:SB:224:ASP:OD2	9:SB:227:LYS:N	2.33	0.47
10:SC:127:ARG:NH2	10:SC:150:ASP:O	2.47	0.47
10:SC:157:ASP:HB3	33:SZ:68:LEU:HD23	1.96	0.47
15:SH:198:ARG:HE	15:SH:202:LYS:NZ	2.12	0.47
32:SY:73:GLU:H	32:SY:75:TRP:HZ3	1.62	0.47
34:AA:687:G:H2'	34:AA:688:U:H6	1.78	0.47
34:AA:698:G:OP2	34:AA:700:A:N6	2.47	0.47
34:AA:718:U:H2'	34:AA:719:C:C6	2.50	0.47
34:AA:1765:A:H2'	34:AA:1766:U:H6	1.79	0.47
34:AA:2122:U:H2'	34:AA:2123:C:H6	1.80	0.47
35:AC:79:G:H1'	49:Ae:29:LEU:HD11	1.96	0.47
37:AL:24:ASN:OD1	51:AP:202:ARG:HA	2.15	0.47
39:A2:108:LEU:HD12	39:A2:108:LEU:HA	1.76	0.47
46:Aa:7:TYR:CD2	46:Aa:12:HIS:HA	2.49	0.47
54:AI:214:MET:HE2	54:AI:214:MET:HB3	1.76	0.47
59:AS:106:GLU:HG3	71:AF:278:ILE:HD13	1.97	0.47
63:AW:39:MET:HE3	63:AW:44:ALA:HA	1.96	0.47
71:AF:10:VAL:HA	71:AF:153:VAL:HG23	1.97	0.47
71:AF:147:LEU:HD23	71:AF:176:LEU:HD21	1.96	0.47
7:S7:5:A:H61	7:S7:66:C:H42	1.63	0.47
8:SA:15:U:H2'	8:SA:16:G:O4'	2.15	0.47
8:SA:547:U:N3	8:SA:549:A:N7	2.61	0.47
8:SA:592:A:H2'	8:SA:593:G:H8	1.79	0.47
8:SA:641:G:H4'	18:SK:4:MET:HA	1.97	0.47
8:SA:649:A:H2'	8:SA:650:A:C8	2.50	0.47
8:SA:832:A:O2'	8:SA:833:A:H5''	2.14	0.47
8:SA:885:C:H2'	8:SA:886:U:C6	2.50	0.47
8:SA:946:G:H5'	8:SA:1006:C:H1'	1.96	0.47
8:SA:1698:U:H2'	8:SA:1699:A:H8	1.80	0.47
8:SA:1705:C:C4	26:SS:139:LYS:HG3	2.50	0.47
8:SA:1801:A:H8	8:SA:1801:A:O5'	1.96	0.47
10:SC:183:TYR:HB3	10:SC:190:ARG:CZ	2.45	0.47
11:SD:114:LEU:HD23	11:SD:119:ALA:HB2	1.96	0.47
11:SD:116:VAL:HB	11:SD:117:ARG:NH1	2.29	0.47
15:SH:3:LEU:HD23	15:SH:111:LEU:HD11	1.97	0.47
17:SJ:122:VAL:O	17:SJ:126:ILE:HD13	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:SQ:63:GLN:HE21	80:mR:24:U:H5'	1.78	0.47
26:SS:88:ARG:NE	26:SS:98:ILE:O	2.48	0.47
26:SS:111:GLU:O	26:SS:114:GLU:HG3	2.14	0.47
29:SV:13:TYR:CE2	29:SV:15:LYS:HA	2.49	0.47
31:SX:87:PRO:HD3	31:SX:112:ILE:HD12	1.97	0.47
32:SY:124:ARG:HA	32:SY:127:LEU:HG	1.96	0.47
34:AA:107:C:H2'	34:AA:108:C:O4'	2.14	0.47
34:AA:192:G:O6	34:AA:239:U:H5	1.97	0.47
34:AA:510:A:H1'	34:AA:3666:U:O4	2.15	0.47
34:AA:616:U:H2'	34:AA:617:A:H8	1.78	0.47
34:AA:803:A:H2'	34:AA:804:A:O4'	2.14	0.47
34:AA:936:A:H8	56:Ac:18:THR:CG2	2.28	0.47
34:AA:1559:U:H5''	44:A8:98:HIS:HB3	1.95	0.47
34:AA:1736:A:O2'	34:AA:1737:A:OP1	2.31	0.47
34:AA:1866:C:H2'	34:AA:1867:U:H6	1.79	0.47
34:AA:2473:A:H2'	34:AA:2474:C:C6	2.49	0.47
34:AA:2525:A:H2'	34:AA:2526:A:C8	2.50	0.47
34:AA:2537:A:O4'	69:AD:243:THR:HG21	2.14	0.47
34:AA:2700:C:H2'	34:AA:2701:U:C6	2.48	0.47
34:AA:3260:G:O2'	34:AA:3410:A:N1	2.47	0.47
36:AB:101:A:H2'	36:AB:102:C:C6	2.50	0.47
42:A7:40:ALA:O	42:A7:44:ILE:HG13	2.14	0.47
44:A8:76:VAL:HG11	44:A8:82:MET:HG2	1.95	0.47
46:Aa:106:LYS:HE3	46:Aa:107:GLU:HG2	1.97	0.47
49:Ae:46:ARG:HA	49:Ae:46:ARG:HD3	1.71	0.47
53:Ai:25:SER:OG	53:Ai:26:GLN:N	2.47	0.47
54:AI:117:ILE:O	54:AI:120:LEU:HD23	2.14	0.47
55:AJ:223:GLU:CD	55:AJ:223:GLU:H	2.23	0.47
58:AM:24:LEU:HD22	58:AM:35:ASN:HB2	1.96	0.47
60:AO:134:GLU:O	60:AO:138:LYS:HG2	2.15	0.47
72:AG:154:VAL:O	72:AG:158:ASP:HB2	2.15	0.47
74:AH:18:VAL:HG22	74:AH:27:VAL:HG22	1.96	0.47
75:AV:104:GLU:O	75:AV:108:LEU:HG	2.15	0.47
78:A0:16:SER:OG	78:A0:17:GLU:N	2.48	0.47
79:S8:28:C:H2'	79:S8:29:G:C8	2.47	0.47
81:S9:9:A:N6	81:S9:23:A:N7	2.63	0.47
8:SA:649:A:H2'	8:SA:650:A:H8	1.80	0.47
8:SA:1705:C:C5	26:SS:139:LYS:HG3	2.48	0.47
9:SB:196:GLU:HA	9:SB:196:GLU:OE2	2.15	0.47
10:SC:121:LEU:HD23	10:SC:143:VAL:HG22	1.96	0.47
12:SE:64:GLU:OE2	12:SE:69:ARG:HD3	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:SI:52:PHE:C	16:SI:52:PHE:CD2	2.92	0.47
17:SJ:11:SER:OG	17:SJ:12:ASN:N	2.46	0.47
19:SL:213:ASP:HA	19:SL:217:ARG:HH21	1.79	0.47
21:SN:52:PRO:HG2	21:SN:54:ARG:HH21	1.79	0.47
23:SP:44:VAL:HG12	23:SP:53:LEU:HD12	1.97	0.47
24:SQ:140:LYS:HG2	24:SQ:141:GLU:N	2.30	0.47
31:SX:52:LYS:HD2	31:SX:52:LYS:HA	1.63	0.47
34:AA:746:A:H2'	34:AA:747:A:H8	1.78	0.47
34:AA:3677:A:H2'	34:AA:3678:A:C8	2.50	0.47
46:Aa:39:ALA:HB3	46:Aa:56:ALA:O	2.15	0.47
53:AI:15:LYS:HD3	53:AI:15:LYS:HA	1.74	0.47
64:AY:127:ILE:HD12	64:AY:129:THR:OG1	2.14	0.47
65:AT:163:LEU:HD12	65:AT:166:GLN:NE2	2.29	0.47
73:AU:86:VAL:HB	73:AU:135:ILE:HG13	1.97	0.47
73:AU:156:LEU:HD11	74:AH:4:ILE:HD13	1.96	0.47
7:S7:62:C:H2'	7:S7:63:U:C6	2.50	0.47
8:SA:247:G:N2	8:SA:249:A:H8	2.13	0.47
8:SA:248:G:H3'	8:SA:248:G:H8	1.79	0.47
8:SA:927:A:C5	28:SU:73:ARG:HD3	2.49	0.47
8:SA:937:G:H2'	8:SA:938:U:C6	2.50	0.47
8:SA:1261:A:H2'	8:SA:1262:C:H6	1.78	0.47
8:SA:1850:G:O6	31:SX:40:ARG:NH2	2.48	0.47
8:SA:2006:U:H2'	8:SA:2007:U:C6	2.49	0.47
8:SA:2068:A:H2'	8:SA:2069:G:C8	2.49	0.47
17:SJ:137:ILE:N	17:SJ:154:MET:O	2.44	0.47
19:SL:169:ASP:OD2	19:SL:169:ASP:C	2.57	0.47
28:SU:46:THR:HB	28:SU:86:GLU:OE2	2.14	0.47
34:AA:179:G:HO2'	34:AA:180:C:P	2.35	0.47
34:AA:684:G:H1	71:AF:311:LYS:NZ	2.13	0.47
34:AA:1026:G:H2'	34:AA:1045:A:H62	1.79	0.47
34:AA:1198:A:H1'	40:A4:46:CYS:SG	2.55	0.47
34:AA:2537:A:H5''	69:AD:243:THR:HG23	1.97	0.47
34:AA:3187:G:H5'	61:AQ:8:CYS:SG	2.55	0.47
34:AA:3292:A:O2'	34:AA:3293:A:O5'	2.33	0.47
36:AB:17:C:H5''	72:AG:150:LYS:HD2	1.97	0.47
46:Aa:98:GLN:HA	46:Aa:101:VAL:HG22	1.97	0.47
59:AS:150:HIS:ND1	59:AS:163:ARG:O	2.47	0.47
69:AD:46:LYS:HG3	69:AD:62:ILE:HG12	1.96	0.47
70:AE:10:ARG:NH1	70:AE:12:GLY:O	2.45	0.47
70:AE:143:CYS:O	70:AE:147:ARG:HD2	2.15	0.47
73:AU:183:ARG:CG	73:AU:184:MET:H	2.28	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:S5:30:MET:HG3	5:S5:38:ARG:NH2	2.30	0.47
8:SA:574:A:O2'	24:SQ:90:ASP:OD1	2.33	0.47
8:SA:750:U:H2'	8:SA:751:U:H6	1.77	0.47
8:SA:756:A:H2'	8:SA:757:A:H8	1.78	0.47
8:SA:852:A:O2'	13:SF:106:LYS:HE2	2.15	0.47
8:SA:1264:A:N6	8:SA:1911:A:H8	2.12	0.47
8:SA:1631:G:H2'	8:SA:1632:G:C8	2.50	0.47
12:SE:37:LYS:HB3	12:SE:126:ARG:NH2	2.29	0.47
17:SJ:100:ILE:HD11	17:SJ:122:VAL:HG21	1.97	0.47
26:SS:28:VAL:HG23	26:SS:61:LEU:HG	1.97	0.47
34:AA:99:A:OP1	51:AP:196:ARG:HD2	2.15	0.47
34:AA:195:A:H8	34:AA:216:C:HO2'	1.57	0.47
34:AA:1262:G:O2'	34:AA:2981:A:N3	2.41	0.47
34:AA:3188:U:C2	34:AA:3189:G:C8	3.03	0.47
35:AC:44:A:H2'	35:AC:45:A:C8	2.50	0.47
39:A2:10:TRP:O	39:A2:14:ARG:HG2	2.13	0.47
59:AS:127:LEU:HD23	71:AF:292:ILE:HB	1.97	0.47
60:AO:76:ASP:N	60:AO:76:ASP:OD1	2.46	0.47
66:AZ:52:ASP:HB2	66:AZ:109:LYS:HD2	1.96	0.47
67:A3:5:LYS:HB2	67:A3:8:GLU:OE2	2.15	0.47
75:AV:46:ASP:H	75:AV:96:HIS:CD2	2.14	0.47
2:S2:99:LYS:HD2	32:SY:15:ARG:HH21	1.79	0.46
3:S3:46:ASP:H	23:SP:113:GLN:HE22	1.62	0.46
8:SA:440:G:N2	8:SA:442:A:H3'	2.30	0.46
8:SA:576:C:H5	24:SQ:69:ARG:HH12	1.62	0.46
8:SA:1838:G:H2'	8:SA:1839:G:C8	2.50	0.46
8:SA:1868:C:H3'	8:SA:1869:G:H21	1.80	0.46
10:SC:194:TRP:HE3	10:SC:196:VAL:H	1.62	0.46
16:SI:63:LEU:HG	16:SI:103:PHE:HZ	1.80	0.46
16:SI:112:PRO:HB3	16:SI:187:ILE:HG21	1.97	0.46
31:SX:85:ILE:HB	31:SX:112:ILE:HA	1.97	0.46
33:SZ:19:ALA:HB1	33:SZ:67:CYS:SG	2.55	0.46
34:AA:589:C:H2'	34:AA:590:C:C6	2.51	0.46
34:AA:622:U:H2'	34:AA:623:U:H6	1.80	0.46
34:AA:1331:A:N3	34:AA:3214:A:O2'	2.42	0.46
34:AA:1434:G:C5	57:AK:61:THR:HA	2.49	0.46
34:AA:1540:G:OP1	44:A8:125:ARG:NH1	2.48	0.46
34:AA:1883:U:H2'	34:AA:1884:G:C8	2.51	0.46
34:AA:2034:G:H1	34:AA:2075:U:H3	1.63	0.46
34:AA:2574:A:H8	34:AA:3333:U:H1'	1.79	0.46
34:AA:2623:C:H2'	34:AA:2624:C:C6	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:3465:G:P	42:A7:73:ARG:HH22	2.37	0.46
35:AC:134:G:O2'	35:AC:135:G:OP1	2.31	0.46
43:AN:145:ILE:HD11	57:AK:180:ILE:HG23	1.97	0.46
49:Ae:50:GLY:O	56:Ac:28:ARG:HD3	2.14	0.46
63:AW:116:HIS:CD2	63:AW:149:ILE:HD12	2.50	0.46
3:S3:2:PRO:HB3	8:SA:1243:A:H5''	1.96	0.46
8:SA:1856:A:P	8:SA:1857:U:H5'	2.55	0.46
10:SC:56:LYS:HA	10:SC:56:LYS:HD2	1.65	0.46
11:SD:19:ALA:O	11:SD:23:GLU:HG3	2.16	0.46
13:SF:126:VAL:HA	13:SF:141:THR:HA	1.96	0.46
16:SI:53:ARG:H	16:SI:53:ARG:NE	2.13	0.46
30:SW:21:TYR:HA	30:SW:24:LEU:HD12	1.97	0.46
32:SY:66:ARG:HG2	32:SY:68:LEU:H	1.79	0.46
34:AA:63:A:P	51:AP:173:ARG:HH22	2.38	0.46
34:AA:2919:A:N3	34:AA:2919:A:H2'	2.30	0.46
34:AA:3403:A:H2'	34:AA:3404:C:C6	2.50	0.46
35:AC:124:U:H2'	35:AC:125:U:H6	1.79	0.46
52:Ah:80:LYS:O	52:Ah:84:ILE:HG12	2.15	0.46
65:AT:157:GLN:O	65:AT:161:LYS:HE2	2.14	0.46
71:AF:101:MET:SD	71:AF:104:PRO:HA	2.55	0.46
71:AF:161:LEU:HD11	71:AF:221:PHE:CE2	2.50	0.46
72:AG:23:VAL:HG11	72:AG:29:ARG:HG3	1.97	0.46
72:AG:35:ARG:O	72:AG:39:GLN:HG2	2.15	0.46
73:AU:183:ARG:HG3	73:AU:184:MET:H	1.80	0.46
8:SA:466:A:H5'	8:SA:467:G:OP2	2.15	0.46
8:SA:509:U:H2'	8:SA:510:G:H8	1.81	0.46
8:SA:893:U:H2'	8:SA:894:U:O4'	2.16	0.46
8:SA:989:C:H2'	8:SA:990:U:C6	2.50	0.46
8:SA:1061:A:H2	8:SA:1081:U:N3	2.03	0.46
8:SA:1845:U:H5''	31:SX:38:LYS:HD3	1.98	0.46
10:SC:107:LEU:HB2	10:SC:135:GLU:HB3	1.98	0.46
10:SC:172:LEU:O	10:SC:176:LEU:HG	2.15	0.46
13:SF:211:LYS:HE2	13:SF:215:ASN:HA	1.96	0.46
15:SH:2:LYS:O	15:SH:4:ASN:ND2	2.48	0.46
15:SH:185:LEU:HA	15:SH:188:ARG:HG2	1.98	0.46
16:SI:13:LYS:HB2	16:SI:13:LYS:HE3	1.71	0.46
16:SI:80:ALA:HA	16:SI:83:ILE:HG22	1.97	0.46
30:SW:41:ILE:HB	30:SW:47:LYS:HE3	1.98	0.46
34:AA:1850:U:O2'	34:AA:1969:A:N6	2.46	0.46
34:AA:3595:U:H2'	34:AA:3596:A:C8	2.50	0.46
37:AL:3:ALA:O	37:AL:6:ASN:ND2	2.48	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:A1:27:ASN:ND2	38:A1:42:LEU:HD23	2.29	0.46
38:A1:138:SER:HA	55:AJ:44:LEU:HD21	1.97	0.46
39:A2:21:LYS:HB3	39:A2:21:LYS:HE3	1.73	0.46
70:AE:80:GLU:OE1	70:AE:311:TYR:OH	2.23	0.46
79:S8:13:C:H42	79:S8:46:G:N2	2.13	0.46
2:S2:38:HIS:HB3	2:S2:70:VAL:HA	1.96	0.46
5:S5:30:MET:O	5:S5:37:GLY:N	2.48	0.46
7:S7:16:U:C2	7:S7:57:C:N3	2.83	0.46
10:SC:49:ASN:C	10:SC:51:ALA:H	2.24	0.46
10:SC:111:ILE:HD13	10:SC:111:ILE:HA	1.86	0.46
17:SJ:80:LEU:HD12	17:SJ:81:ILE:N	2.30	0.46
17:SJ:124:ASP:OD2	17:SJ:124:ASP:N	2.48	0.46
28:SU:35:ASP:OD2	28:SU:35:ASP:N	2.48	0.46
32:SY:82:SER:O	32:SY:86:ARG:HG2	2.16	0.46
32:SY:160:ARG:O	32:SY:164:LYS:HD2	2.15	0.46
34:AA:505:A:O2'	34:AA:506:A:OP1	2.30	0.46
34:AA:648:U:O2'	34:AA:649:U:O5'	2.33	0.46
34:AA:719:C:OP1	60:AO:21:ARG:HG2	2.15	0.46
34:AA:1740:A:H2'	34:AA:1741:G:H8	1.81	0.46
34:AA:2706:A:H2'	34:AA:2707:G:H8	1.80	0.46
38:A1:146:PHE:HB2	46:Aa:88:ARG:HG2	1.96	0.46
39:A2:105:LYS:H	39:A2:105:LYS:CD	2.28	0.46
51:AP:121:TRP:CZ2	51:AP:124:GLN:HB2	2.49	0.46
54:AI:12:ASN:HA	54:AI:17:LYS:H	1.80	0.46
74:AH:30:LYS:HE3	74:AH:31:TYR:CE2	2.51	0.46
78:A0:34:LYS:HE2	78:A0:36:TYR:CZ	2.50	0.46
8:SA:105:A:H5'	8:SA:107:A:C4	2.50	0.46
8:SA:830:U:H4'	8:SA:831:U:O4'	2.15	0.46
8:SA:883:A:H2'	8:SA:884:G:H8	1.79	0.46
8:SA:1869:G:OP2	8:SA:1869:G:N2	2.39	0.46
20:SM:45:LEU:O	20:SM:49:VAL:HG23	2.14	0.46
23:SP:93:ILE:HA	23:SP:93:ILE:HD12	1.69	0.46
34:AA:2128:G:H5''	65:AT:62:VAL:HG21	1.97	0.46
34:AA:2445:A:H2'	34:AA:2446:U:H6	1.79	0.46
34:AA:2884:G:O6	46:Aa:99:LYS:NZ	2.48	0.46
43:AN:59:ALA:C	43:AN:61:ILE:N	2.74	0.46
43:AN:141:LYS:O	43:AN:145:ILE:HG23	2.16	0.46
45:A9:103:LYS:HB2	45:A9:103:LYS:HE3	1.48	0.46
62:AR:104:LEU:HD13	62:AR:246:ILE:HG13	1.98	0.46
69:AD:180:LEU:HD23	69:AD:180:LEU:HA	1.67	0.46
81:S9:75:C:O2	81:S9:75:C:H3'	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:157:G:C5	15:SH:87:ARG:NH1	2.84	0.46
8:SA:1721:A:H4'	8:SA:1837:G:O3'	2.16	0.46
8:SA:1827:U:OP1	32:SY:15:ARG:NH2	2.49	0.46
9:SB:130:LEU:HD12	9:SB:179:VAL:C	2.40	0.46
16:SI:106:ALA:HB2	16:SI:172:ALA:HB2	1.98	0.46
17:SJ:47:CYS:HA	17:SJ:61:LEU:O	2.15	0.46
28:SU:83:THR:HG23	28:SU:84:ILE:HG13	1.98	0.46
34:AA:127:U:H2'	34:AA:128:U:C6	2.51	0.46
34:AA:307:G:H2'	34:AA:308:U:H5'	1.95	0.46
34:AA:616:U:H2'	34:AA:617:A:C8	2.51	0.46
34:AA:744:G:N2	34:AA:915:G:N2	2.63	0.46
34:AA:1725:U:H2'	34:AA:1726:C:C6	2.50	0.46
36:AB:4:C:H2'	36:AB:5:U:C6	2.51	0.46
37:AL:119:LYS:HE2	37:AL:119:LYS:HB3	1.75	0.46
58:AM:108:LYS:HE2	58:AM:108:LYS:HB2	1.71	0.46
62:AR:116:ASP:OD1	62:AR:116:ASP:N	2.43	0.46
69:AD:246:LEU:O	69:AD:247:ARG:HD3	2.15	0.46
70:AE:155:LEU:HD22	70:AE:189:LEU:HD22	1.98	0.46
71:AF:154:VAL:HG21	71:AF:158:ILE:HD12	1.98	0.46
74:AH:91:MET:HG2	74:AH:180:VAL:HA	1.98	0.46
77:AX:51:LYS:NZ	77:AX:88:TYR:OH	2.46	0.46
79:S8:69:C:H2'	79:S8:70:G:C8	2.50	0.46
5:S5:26:ARG:HH21	5:S5:42:ARG:H	1.62	0.46
8:SA:823:C:H5''	13:SF:21:ASN:HB2	1.97	0.46
8:SA:1271:G:C2	8:SA:1272:A:C8	3.04	0.46
8:SA:1643:G:C2	8:SA:1648:A:C6	3.04	0.46
8:SA:1675:G:H2'	8:SA:1676:U:C6	2.51	0.46
9:SB:48:VAL:CG2	9:SB:61:LEU:HD11	2.44	0.46
16:SI:35:LYS:HA	16:SI:35:LYS:HD3	1.65	0.46
17:SJ:77:GLN:O	17:SJ:81:ILE:HG12	2.16	0.46
27:ST:27:ALA:HB1	27:ST:38:ARG:HG2	1.97	0.46
31:SX:39:ALA:HA	31:SX:42:ARG:HB2	1.97	0.46
32:SY:32:VAL:HB	32:SY:163:ASN:HD21	1.80	0.46
34:AA:172:C:H2'	34:AA:173:A:H8	1.79	0.46
34:AA:432:A:C2	34:AA:2656:A:H4'	2.51	0.46
34:AA:906:G:H2'	34:AA:907:C:C6	2.51	0.46
34:AA:3128:A:H2'	34:AA:3129:U:C6	2.51	0.46
35:AC:73:A:H2'	35:AC:74:A:O4'	2.16	0.46
36:AB:101:A:H2'	36:AB:102:C:H6	1.81	0.46
37:AL:73:GLY:HA2	37:AL:95:CYS:C	2.41	0.46
38:A1:13:ILE:HG23	38:A1:75:ILE:HD13	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:A8:32:TRP:CZ2	44:A8:53:PRO:HD2	2.50	0.46
58:AM:139:VAL:HG11	78:A0:29:ILE:HD12	1.97	0.46
62:AR:165:LEU:HD21	62:AR:177:HIS:CG	2.51	0.46
1:S1:79:ASN:ND2	1:S1:81:ASP:HB2	2.29	0.46
8:SA:572:C:O2'	8:SA:584:G:N2	2.49	0.46
8:SA:850:G:H2'	8:SA:851:A:C8	2.50	0.46
8:SA:1401:G:O3'	14:SG:111:LYS:NZ	2.49	0.46
8:SA:1648:A:H5'	30:SW:4:VAL:HG12	1.98	0.46
8:SA:1827:U:H2'	8:SA:1828:A:H8	1.81	0.46
10:SC:63:ILE:HG22	33:SZ:36:VAL:HA	1.98	0.46
11:SD:124:LEU:O	11:SD:128:MET:HG2	2.15	0.46
14:SG:69:ILE:HG23	14:SG:74:ILE:HD13	1.98	0.46
14:SG:170:VAL:HG23	14:SG:181:LEU:HB2	1.98	0.46
16:SI:10:LEU:HB3	16:SI:14:TRP:HB2	1.97	0.46
16:SI:91:ILE:O	16:SI:95:THR:OG1	2.31	0.46
17:SJ:91:TYR:OH	17:SJ:164:ASN:HB2	2.15	0.46
21:SN:52:PRO:HB2	21:SN:54:ARG:NE	2.17	0.46
26:SS:84:TRP:HA	26:SS:89:ARG:HG2	1.98	0.46
26:SS:90:LYS:HA	26:SS:96:LYS:HD3	1.98	0.46
26:SS:126:ARG:CG	26:SS:131:LEU:HB2	2.40	0.46
31:SX:62:LYS:O	31:SX:65:LYS:HG3	2.15	0.46
34:AA:439:U:H2'	34:AA:440:A:C8	2.50	0.46
34:AA:445:A:N1	34:AA:702:U:C5	2.84	0.46
34:AA:2832:A:C2	55:AJ:70:LYS:HA	2.51	0.46
34:AA:3586:U:O2	34:AA:3593:U:H5''	2.16	0.46
38:A1:46:ILE:HD11	38:A1:49:HIS:NE2	2.30	0.46
47:Ab:43:LEU:O	47:Ab:47:VAL:HG12	2.15	0.46
61:AQ:139:ARG:HD3	61:AQ:173:PHE:CD2	2.51	0.46
65:AT:166:GLN:HA	65:AT:169:ARG:HB3	1.98	0.46
68:A5:158:TYR:O	71:AF:318:SER:OG	2.28	0.46
69:AD:130:SER:HA	69:AD:169:VAL:HG22	1.96	0.46
70:AE:369:THR:HB	70:AE:371:GLU:OE1	2.16	0.46
71:AF:140:ARG:HD3	71:AF:247:GLY:O	2.15	0.46
8:SA:334:A:H2'	8:SA:335:G:O4'	2.15	0.46
8:SA:1723:A:H5''	32:SY:66:ARG:NH1	2.30	0.46
8:SA:1978:A:H1'	15:SH:66:GLY:HA2	1.97	0.46
9:SB:99:ASP:OD1	9:SB:100:PHE:N	2.47	0.46
9:SB:175:GLU:OE2	9:SB:193:ILE:HD12	2.15	0.46
10:SC:90:ALA:HB1	10:SC:96:GLN:HA	1.97	0.46
10:SC:117:GLU:OE2	14:SG:46:LYS:NZ	2.33	0.46
14:SG:152:ARG:O	14:SG:167:PRO:HD3	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:SI:9:LYS:HB3	16:SI:12:LYS:HA	1.98	0.46
16:SI:67:MET:HE2	16:SI:67:MET:C	2.41	0.46
17:SJ:36:LYS:HE3	17:SJ:76:ILE:HD13	1.98	0.46
20:SM:35:LYS:HG2	20:SM:39:LEU:HB3	1.98	0.46
22:SO:43:HIS:CD2	22:SO:44:PRO:HD2	2.51	0.46
29:SV:100:TYR:O	29:SV:102:ARG:HG3	2.15	0.46
32:SY:145:ARG:HE	32:SY:145:ARG:N	2.14	0.46
34:AA:596:A:OP2	74:AH:55:LYS:NZ	2.38	0.46
34:AA:628:U:H2'	34:AA:629:A:H8	1.81	0.46
34:AA:935:A:OP2	56:Ac:31:HIS:HE1	1.98	0.46
34:AA:2990:G:H5''	34:AA:2991:U:O4'	2.16	0.46
36:AB:4:C:H2'	36:AB:5:U:H6	1.81	0.46
42:A7:31:VAL:O	42:A7:36:LYS:NZ	2.49	0.46
46:Aa:105:LEU:O	46:Aa:105:LEU:HD13	2.16	0.46
54:AI:205:LYS:HE2	54:AI:205:LYS:HB2	1.67	0.46
55:AJ:257:LYS:O	55:AJ:260:LEU:HD23	2.16	0.46
62:AR:95:TYR:CZ	62:AR:163:ALA:HB2	2.51	0.46
65:AT:164:LYS:O	65:AT:167:VAL:HG22	2.15	0.46
68:A5:111:VAL:HG21	68:A5:138:ILE:HG12	1.98	0.46
69:AD:45:VAL:HG22	69:AD:84:THR:HA	1.97	0.46
70:AE:209:ASN:OD1	70:AE:351:VAL:HG12	2.16	0.46
8:SA:487:A:H2'	8:SA:488:U:C6	2.51	0.46
8:SA:924:A:C8	17:SJ:99:THR:HG23	2.51	0.46
8:SA:1168:U:P	9:SB:146:ARG:HH21	2.39	0.46
8:SA:1460:A:H1'	32:SY:156:ASN:ND2	2.32	0.46
8:SA:1629:G:O4'	21:SN:86:ARG:NH2	2.49	0.46
8:SA:1861:U:O2'	8:SA:1862:C:H5'	2.16	0.46
8:SA:1882:U:OP1	20:SM:126:GLU:HG3	2.16	0.46
16:SI:10:LEU:HG	16:SI:11:PHE:CD2	2.51	0.46
18:SK:112:ASP:C	18:SK:112:ASP:OD2	2.58	0.46
31:SX:59:LYS:HD2	31:SX:59:LYS:HA	1.74	0.46
32:SY:42:ALA:O	32:SY:46:LYS:HG3	2.15	0.46
32:SY:127:LEU:HD12	32:SY:128:GLN:N	2.31	0.46
34:AA:3373:A:H2'	34:AA:3374:U:C6	2.51	0.46
34:AA:3517:C:H2'	34:AA:3518:C:C6	2.51	0.46
48:Ad:5:ILE:HD13	48:Ad:11:PHE:HB2	1.98	0.46
51:AP:46:ASP:OD2	51:AP:50:ARG:NH2	2.48	0.46
51:AP:72:LYS:HG2	51:AP:89:VAL:HG23	1.98	0.46
54:AI:144:LYS:O	54:AI:148:LYS:HG2	2.16	0.46
61:AQ:65:LEU:HD21	61:AQ:91:ILE:HD11	1.97	0.46
1:S1:106:ARG:HH22	8:SA:465:G:P	2.39	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:251:U:N3	29:SV:66:ASN:OD1	2.48	0.45
8:SA:1288:U:H2'	8:SA:1289:G:H8	1.81	0.45
8:SA:1314:U:H2'	8:SA:1315:U:C6	2.51	0.45
8:SA:1603:U:H2'	8:SA:1604:A:C8	2.51	0.45
8:SA:1837:G:C6	8:SA:1838:G:C6	3.04	0.45
15:SH:174:LYS:HE2	15:SH:174:LYS:HB2	1.82	0.45
16:SI:53:ARG:HA	16:SI:56:LEU:HB2	1.98	0.45
26:SS:90:LYS:HA	26:SS:96:LYS:CD	2.46	0.45
27:ST:17:ARG:CG	27:ST:30:ARG:HH21	2.29	0.45
31:SX:40:ARG:HD2	31:SX:40:ARG:HA	1.63	0.45
34:AA:509:A:H2'	34:AA:510:A:C8	2.52	0.45
34:AA:632:U:O2'	71:AF:343:MET:HE1	2.16	0.45
34:AA:1169:A:H2'	34:AA:1172:C:C5	2.51	0.45
34:AA:1230:A:H5'	68:A5:169:ARG:HH12	1.81	0.45
34:AA:1897:G:OP2	46:Aa:55:LYS:NZ	2.33	0.45
34:AA:3577:A:H3'	34:AA:3581:A:H61	1.82	0.45
37:AL:144:ASP:OD1	37:AL:147:THR:HG22	2.16	0.45
54:AI:123:ASP:OD1	54:AI:123:ASP:N	2.49	0.45
55:AJ:116:TYR:HE1	55:AJ:221:LYS:HE2	1.80	0.45
68:A5:104:LEU:O	68:A5:109:ARG:NH1	2.48	0.45
70:AE:58:ARG:HD3	70:AE:351:VAL:HG23	1.99	0.45
70:AE:145:LEU:HD13	70:AE:193:LYS:HD2	1.97	0.45
79:S8:41:C:H2'	79:S8:42:G:O4'	2.16	0.45
81:S9:27:G:N2	81:S9:43:C:H41	2.14	0.45
8:SA:118:U:H2'	8:SA:119:C:C6	2.51	0.45
8:SA:1276:U:C2	8:SA:1277:G:N7	2.84	0.45
8:SA:1679:G:N2	27:ST:39:GLN:HB3	2.31	0.45
8:SA:1860:A:H5''	32:SY:64:LYS:HD2	1.98	0.45
8:SA:2067:U:H2'	8:SA:2068:A:C8	2.52	0.45
8:SA:2071:U:O2'	8:SA:2072:G:OP1	2.33	0.45
10:SC:59:LEU:HD21	33:SZ:72:MET:SD	2.55	0.45
12:SE:130:ARG:HA	12:SE:130:ARG:HD2	1.54	0.45
17:SJ:57:LYS:HE2	17:SJ:91:TYR:CD2	2.52	0.45
18:SK:111:MET:HB2	18:SK:115:GLU:CG	2.46	0.45
19:SL:92:ARG:NH2	34:AA:2211:C:O2	2.49	0.45
27:ST:30:ARG:HG2	27:ST:30:ARG:HH11	1.82	0.45
28:SU:130:LYS:NZ	28:SU:139:TRP:O	2.39	0.45
33:SZ:28:GLU:OE2	33:SZ:31:ALA:HB2	2.16	0.45
34:AA:159:C:H2'	34:AA:160:G:H8	1.82	0.45
34:AA:499:U:H2'	34:AA:500:A:C8	2.51	0.45
34:AA:612:G:H2'	34:AA:613:C:C6	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:1064:U:H2'	34:AA:1065:U:H6	1.81	0.45
34:AA:1109:U:H2'	34:AA:1110:U:C6	2.51	0.45
34:AA:1657:U:OP1	63:AW:127:ARG:NH2	2.48	0.45
34:AA:1725:U:H2'	34:AA:1726:C:H6	1.81	0.45
34:AA:1760:A:H2'	34:AA:1761:U:O4'	2.17	0.45
34:AA:2835:G:N1	34:AA:2919:A:N7	2.64	0.45
34:AA:3567:U:C2	63:AW:153:ILE:HD12	2.51	0.45
47:Ab:97:ILE:O	47:Ab:100:VAL:HG12	2.16	0.45
48:Ad:8:ILE:HD12	48:Ad:52:MET:HE1	1.98	0.45
55:AJ:72:PRO:HD2	55:AJ:75:ILE:CD1	2.46	0.45
71:AF:32:ILE:O	71:AF:126:SER:HB3	2.16	0.45
71:AF:155:SER:OG	71:AF:157:ASP:OD1	2.24	0.45
73:AU:104:ARG:HG2	73:AU:148:ILE:HD12	1.98	0.45
7:S7:46:G:C6	7:S7:57:C:C4	3.04	0.45
8:SA:269:A:OP2	15:SH:186:ARG:NH2	2.46	0.45
8:SA:539:U:H2'	8:SA:540:C:H6	1.82	0.45
8:SA:1451:G:H2'	8:SA:1452:C:C6	2.51	0.45
8:SA:1936:C:H2'	8:SA:1937:C:O4'	2.16	0.45
9:SB:34:ALA:HB3	9:SB:41:ARG:HA	1.98	0.45
11:SD:9:ARG:NH1	11:SD:13:ASN:OD1	2.49	0.45
12:SE:39:LYS:HB3	12:SE:39:LYS:HE2	1.55	0.45
16:SI:29:CYS:SG	16:SI:134:PRO:HB2	2.56	0.45
19:SL:177:LYS:HE3	19:SL:177:LYS:HB3	1.83	0.45
21:SN:60:LEU:HG	27:ST:32:TYR:CZ	2.50	0.45
26:SS:36:LYS:HZ2	26:SS:102:ALA:H	1.63	0.45
34:AA:1203:A:C8	62:AR:144:ILE:HD13	2.51	0.45
34:AA:2482:U:H4'	52:Ah:19:GLY:HA3	1.99	0.45
62:AR:193:GLN:HA	62:AR:196:LYS:HG2	1.99	0.45
66:AZ:88:LYS:HE2	66:AZ:92:GLU:HG3	1.97	0.45
67:A3:73:LYS:O	67:A3:75:LYS:HG2	2.17	0.45
74:AH:114:ARG:HG2	74:AH:122:VAL:HG22	1.97	0.45
4:S4:54:CYS:SG	4:S4:61:LEU:HD21	2.56	0.45
8:SA:181:A:H2'	8:SA:182:U:H6	1.82	0.45
8:SA:747:U:H2'	8:SA:748:C:C6	2.52	0.45
8:SA:1170:C:H2'	8:SA:1171:U:C6	2.52	0.45
8:SA:1797:C:H2'	8:SA:1798:G:H8	1.81	0.45
8:SA:1945:C:H2'	8:SA:1946:C:C6	2.51	0.45
16:SI:52:PHE:C	16:SI:52:PHE:HD2	2.23	0.45
29:SV:89:ILE:HA	29:SV:89:ILE:HD13	1.77	0.45
34:AA:132:U:O2'	34:AA:133:U:O5'	2.28	0.45
34:AA:532:C:OP1	73:AU:76:ARG:NH2	2.48	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:1704:U:C2	55:AJ:73:ARG:HG2	2.52	0.45
34:AA:2118:G:O3'	56:Ac:3:LYS:HE2	2.16	0.45
34:AA:2559:U:H2'	34:AA:2560:C:H6	1.80	0.45
34:AA:3585:A:O2'	34:AA:3586:U:C6	2.68	0.45
38:A1:83:THR:HG23	46:Aa:93:PHE:CZ	2.51	0.45
65:AT:142:GLN:O	65:AT:146:ASN:ND2	2.48	0.45
66:AZ:37:GLU:CD	66:AZ:37:GLU:N	2.74	0.45
73:AU:51:TRP:CD1	73:AU:62:LYS:HG3	2.51	0.45
7:S7:17:U:H3	7:S7:56:U:P	2.40	0.45
8:SA:248:G:H3'	8:SA:248:G:C8	2.51	0.45
8:SA:614:A:H5'	8:SA:620:G:N2	2.31	0.45
8:SA:917:C:H2'	8:SA:918:U:C6	2.51	0.45
8:SA:1271:G:H1'	8:SA:1871:G:O2'	2.17	0.45
8:SA:1363:U:H2'	8:SA:1364:G:H8	1.81	0.45
8:SA:1459:U:O2'	32:SY:149:THR:HG23	2.16	0.45
8:SA:1656:A:H8	8:SA:1656:A:OP1	1.99	0.45
10:SC:103:THR:HG21	10:SC:114:LYS:HD3	1.98	0.45
11:SD:7:LYS:HG2	11:SD:10:LYS:HZ1	1.82	0.45
12:SE:78:ARG:HA	12:SE:81:VAL:HG22	1.97	0.45
12:SE:82:ARG:NE	12:SE:149:ARG:HD3	2.32	0.45
12:SE:101:LEU:HD23	12:SE:101:LEU:HA	1.77	0.45
14:SG:156:TRP:CZ2	18:SK:97:ARG:NH2	2.85	0.45
14:SG:237:LEU:HD23	33:SZ:23:LEU:HD23	1.98	0.45
16:SI:29:CYS:SG	16:SI:135:LEU:HD22	2.56	0.45
26:SS:31:ALA:HB2	26:SS:58:ALA:HB2	1.98	0.45
31:SX:34:ILE:HA	31:SX:37:PHE:HB2	1.98	0.45
34:AA:123:A:H3'	34:AA:124:U:H5''	1.98	0.45
34:AA:272:U:H2'	34:AA:273:C:O4'	2.17	0.45
34:AA:1030:C:OP1	69:AD:14:SER:OG	2.33	0.45
34:AA:2511:G:H2'	34:AA:2512:A:C8	2.51	0.45
34:AA:3017:A:H2'	34:AA:3018:A:O4'	2.16	0.45
58:AM:12:LYS:HG2	58:AM:127:LEU:HD11	1.99	0.45
74:AH:119:GLU:HG3	74:AH:121:SER:H	1.82	0.45
8:SA:29:U:H2'	8:SA:30:G:H8	1.82	0.45
8:SA:611:A:H2'	8:SA:612:A:O4'	2.16	0.45
8:SA:1273:G:H2'	8:SA:1274:C:C6	2.51	0.45
8:SA:1306:C:H3'	8:SA:1307:U:C5	2.52	0.45
10:SC:166:GLY:O	10:SC:170:ILE:HG13	2.17	0.45
11:SD:7:LYS:HA	11:SD:10:LYS:HZ2	1.81	0.45
34:AA:138:C:H2'	34:AA:139:A:O4'	2.17	0.45
34:AA:184:U:H2'	34:AA:185:A:C8	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:549:G:H2'	34:AA:550:A:H8	1.80	0.45
34:AA:876:C:H2'	34:AA:877:G:H8	1.81	0.45
34:AA:1316:U:OP1	34:AA:1338:U:O2'	2.31	0.45
34:AA:1710:G:H2'	34:AA:1711:G:H8	1.82	0.45
34:AA:1747:U:H4'	34:AA:2102:A:H4'	1.99	0.45
34:AA:3713:C:H2'	34:AA:3714:C:H6	1.82	0.45
38:A1:96:LEU:HD23	38:A1:96:LEU:HA	1.74	0.45
42:A7:96:LYS:HB3	42:A7:96:LYS:HE2	1.72	0.45
44:A8:41:ARG:HG2	44:A8:49:THR:HG21	1.97	0.45
47:Ab:8:LYS:HE2	47:Ab:8:LYS:HB2	1.65	0.45
70:AE:219:LYS:HE2	70:AE:328:THR:HG22	1.98	0.45
71:AF:383:VAL:HG22	73:AU:134:ARG:CD	2.46	0.45
75:AV:107:LEU:O	75:AV:111:ILE:HG13	2.16	0.45
79:S8:19:G:P	79:S8:60:U:H3	2.40	0.45
80:mR:24:U:H2'	80:mR:25:A:C8	2.51	0.45
8:SA:862:A:H4'	13:SF:201:ASN:ND2	2.32	0.45
8:SA:1679:G:N3	27:ST:39:GLN:HB3	2.32	0.45
12:SE:162:SER:OG	12:SE:165:GLY:N	2.50	0.45
14:SG:52:LYS:HD2	14:SG:77:TYR:CE2	2.52	0.45
14:SG:154:GLY:HA3	14:SG:167:PRO:CB	2.44	0.45
14:SG:169:LYS:HG2	14:SG:182:VAL:HG22	1.98	0.45
15:SH:198:ARG:C	15:SH:202:LYS:HZ2	2.24	0.45
17:SJ:140:ARG:HD3	18:SK:51:GLU:OE2	2.17	0.45
23:SP:88:LEU:HD23	23:SP:88:LEU:HA	1.83	0.45
25:SR:45:VAL:HB	25:SR:49:ILE:HD11	1.97	0.45
34:AA:498:U:H2'	34:AA:499:U:H6	1.82	0.45
34:AA:505:A:H2'	34:AA:506:A:H8	1.82	0.45
34:AA:734:A:H2'	34:AA:735:A:H8	1.82	0.45
34:AA:1073:G:H22	34:AA:1243:G:C4'	2.30	0.45
34:AA:2021:A:H2'	34:AA:2022:A:H8	1.79	0.45
34:AA:3453:U:OP1	65:AT:58:SER:N	2.42	0.45
34:AA:3585:A:O2'	34:AA:3586:U:P	2.74	0.45
55:AJ:108:ASP:OD2	55:AJ:108:ASP:N	2.44	0.45
61:AQ:194:GLY:C	61:AQ:196:SER:H	2.25	0.45
63:AW:54:LYS:HA	63:AW:83:TRP:CD1	2.52	0.45
68:A5:125:PHE:O	68:A5:212:ASN:ND2	2.42	0.45
69:AD:121:GLY:C	69:AD:123:ARG:H	2.25	0.45
70:AE:148:ILE:HG22	70:AE:189:LEU:HD21	1.99	0.45
72:AG:35:ARG:NE	72:AG:35:ARG:HA	2.31	0.45
72:AG:77:LEU:HD13	72:AG:77:LEU:HA	1.85	0.45
73:AU:154:ARG:HG3	73:AU:155:ARG:H	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
74:AH:171:ILE:HD12	74:AH:171:ILE:HA	1.77	0.45
6:S6:46:ASP:OD1	6:S6:47:ASN:N	2.50	0.45
8:SA:121:A:H1'	8:SA:403:A:C4	2.51	0.45
8:SA:793:G:C8	17:SJ:104:LYS:NZ	2.85	0.45
13:SF:126:VAL:HG13	13:SF:156:VAL:O	2.17	0.45
15:SH:74:ARG:NH2	15:SH:94:ARG:HG2	2.32	0.45
15:SH:170:PHE:HB3	15:SH:171:ILE:H	1.61	0.45
16:SI:178:SER:O	16:SI:182:LYS:HG3	2.17	0.45
21:SN:40:LYS:HD2	21:SN:41:GLY:N	2.31	0.45
32:SY:94:GLY:O	32:SY:98:LEU:HD12	2.17	0.45
32:SY:159:ALA:O	32:SY:163:ASN:ND2	2.47	0.45
34:AA:115:A:P	51:AP:49:ARG:HH21	2.39	0.45
34:AA:2660:A:H2'	34:AA:2661:A:C8	2.52	0.45
34:AA:3761:G:OP2	78:A0:68:LYS:HD3	2.17	0.45
36:AB:64:A:H2'	36:AB:65:G:C8	2.51	0.45
37:AL:40:LYS:HE3	37:AL:40:LYS:HB2	1.82	0.45
41:A6:77:ASN:OD1	41:A6:77:ASN:N	2.48	0.45
43:AN:25:VAL:HG23	73:AU:158:PHE:O	2.15	0.45
48:Ad:39:THR:HG21	48:Ad:60:ALA:HB1	1.99	0.45
61:AQ:93:PRO:HB2	61:AQ:125:VAL:HB	1.99	0.45
69:AD:14:SER:OG	69:AD:15:ILE:N	2.49	0.45
71:AF:188:LYS:HB2	71:AF:188:LYS:HE3	1.70	0.45
79:S8:50:U:H2'	79:S8:51:C:H6	1.82	0.45
81:S9:12:U:H3	81:S9:23:A:H61	1.65	0.45
7:S7:6:A:H2'	7:S7:7:U:C6	2.52	0.45
8:SA:1724:U:OP2	32:SY:66:ARG:NH2	2.50	0.45
8:SA:1724:U:C4	8:SA:1725:A:C6	3.05	0.45
12:SE:78:ARG:HG3	12:SE:79:ARG:N	2.32	0.45
13:SF:211:LYS:HE2	13:SF:211:LYS:HB3	1.86	0.45
16:SI:41:PRO:HG2	16:SI:64:VAL:HG11	1.98	0.45
16:SI:151:ASN:OD1	16:SI:151:ASN:N	2.49	0.45
19:SL:200:ILE:HG13	19:SL:205:LEU:HD23	1.99	0.45
29:SV:43:LEU:HD12	29:SV:43:LEU:HA	1.82	0.45
32:SY:54:PRO:HD3	32:SY:76:TYR:CE2	2.52	0.45
34:AA:545:C:O2	34:AA:612:G:H1'	2.17	0.45
34:AA:698:G:OP1	34:AA:698:G:H3'	2.17	0.45
34:AA:1999:A:O2'	34:AA:2000:G:OP1	2.34	0.45
34:AA:2449:U:P	69:AD:241:ARG:HH22	2.40	0.45
34:AA:2742:G:N2	34:AA:2806:U:O2	2.40	0.45
51:AP:42:PRO:HG3	51:AP:61:ILE:HD12	1.99	0.45
68:A5:251:GLU:O	68:A5:255:ARG:HG3	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:AD:38:LYS:HD2	69:AD:38:LYS:C	2.42	0.45
70:AE:92:TYR:OH	70:AE:177:GLU:OE2	2.30	0.45
8:SA:882:A:H2'	8:SA:883:A:C8	2.52	0.45
8:SA:913:U:H2'	8:SA:914:U:C6	2.52	0.45
8:SA:975:A:H2'	8:SA:976:A:C8	2.52	0.45
8:SA:997:G:H4'	8:SA:998:A:H5'	1.99	0.45
8:SA:1849:U:H2'	8:SA:1850:G:C8	2.52	0.45
8:SA:2004:U:H2'	8:SA:2005:U:C6	2.52	0.45
9:SB:37:MET:HE3	9:SB:37:MET:HB3	1.89	0.45
30:SW:77:GLU:HA	30:SW:80:ARG:HH21	1.82	0.45
34:AA:212:U:H2'	34:AA:213:C:C6	2.51	0.45
34:AA:512:A:H4'	54:AI:48:ARG:NE	2.31	0.45
34:AA:2719:U:H2'	34:AA:2720:C:C6	2.51	0.45
34:AA:2884:G:H8	46:Aa:91:ARG:HD2	1.82	0.45
34:AA:3131:A:O2'	34:AA:3133:U:OP2	2.31	0.45
34:AA:3532:A:H2'	34:AA:3533:A:C8	2.52	0.45
41:A6:19:LEU:HD12	41:A6:101:SER:OG	2.17	0.45
63:AW:47:TYR:O	63:AW:51:VAL:HG23	2.17	0.45
65:AT:21:ILE:C	65:AT:21:ILE:HD12	2.42	0.45
77:AX:45:ASP:OD2	77:AX:45:ASP:C	2.60	0.45
8:SA:410:G:H2'	8:SA:411:C:C6	2.52	0.44
8:SA:448:C:O2'	8:SA:532:A:N1	2.46	0.44
8:SA:480:A:H5''	12:SE:144:PRO:HD2	1.99	0.44
8:SA:592:A:H2'	8:SA:593:G:C8	2.51	0.44
8:SA:1410:G:H2'	8:SA:1411:G:C8	2.52	0.44
8:SA:1414:A:O5'	8:SA:1414:A:H8	2.00	0.44
8:SA:1433:A:H2	11:SD:164:PRO:HD2	1.81	0.44
8:SA:1435:C:H2'	8:SA:1436:U:C6	2.52	0.44
8:SA:1446:A:N3	21:SN:54:ARG:HD3	2.32	0.44
8:SA:1713:C:H2'	8:SA:1714:U:C6	2.52	0.44
8:SA:1846:U:C5	31:SX:39:ALA:HB3	2.52	0.44
8:SA:1888:U:OP1	32:SY:114:HIS:ND1	2.39	0.44
14:SG:65:HIS:HB2	14:SG:67:LEU:CD2	2.47	0.44
20:SM:128:LYS:HG2	20:SM:135:ALA:HA	1.99	0.44
21:SN:88:ILE:HG22	21:SN:89:ASP:N	2.32	0.44
29:SV:114:CYS:HA	29:SV:142:VAL:HG12	1.99	0.44
34:AA:347:C:OP1	34:AA:1529:G:O2'	2.34	0.44
34:AA:393:G:H2'	34:AA:394:A:O4'	2.16	0.44
34:AA:721:U:H5''	34:AA:1072:A:C2	2.52	0.44
34:AA:728:C:H2'	34:AA:729:G:C8	2.52	0.44
34:AA:912:U:H2'	34:AA:913:U:C6	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:1066:U:H2'	34:AA:1067:U:C6	2.52	0.44
34:AA:1158:G:H2'	34:AA:1159:A:H8	1.82	0.44
34:AA:2168:A:O2'	34:AA:2174:G:N7	2.40	0.44
41:A6:16:LYS:HE2	41:A6:16:LYS:HB2	1.78	0.44
61:AQ:76:MET:HB3	61:AQ:85:PHE:CE1	2.52	0.44
70:AE:29:ILE:HD13	70:AE:215:ILE:HD13	1.99	0.44
71:AF:44:MET:HE3	71:AF:44:MET:HB2	1.85	0.44
8:SA:110:A:H2'	8:SA:111:G:H8	1.80	0.44
8:SA:337:G:H5'	19:SL:33:PRO:HA	2.00	0.44
8:SA:805:A:HO2'	8:SA:806:A:P	2.40	0.44
8:SA:1682:A:H2'	8:SA:1683:U:C6	2.53	0.44
8:SA:1780:G:H2'	8:SA:1781:C:C6	2.52	0.44
9:SB:187:LYS:C	9:SB:190:PRO:HD2	2.42	0.44
12:SE:2:PRO:N	13:SF:26:GLN:HE22	2.15	0.44
13:SF:84:VAL:HB	13:SF:101:LEU:HD22	1.99	0.44
13:SF:87:MET:HA	13:SF:101:LEU:O	2.18	0.44
14:SG:196:THR:HA	14:SG:226:ILE:HD13	1.99	0.44
23:SP:53:LEU:HD13	23:SP:90:VAL:HG21	1.99	0.44
24:SQ:126:LYS:HA	24:SQ:132:LEU:HD23	1.99	0.44
25:SR:55:LYS:HB3	25:SR:56:VAL:H	1.56	0.44
31:SX:87:PRO:HB3	31:SX:112:ILE:HD13	1.98	0.44
32:SY:30:LYS:HB2	32:SY:88:TYR:CE2	2.53	0.44
34:AA:709:A:H5''	57:AK:92:TYR:CD2	2.52	0.44
34:AA:1006:G:H2'	34:AA:1007:U:C6	2.53	0.44
34:AA:2712:A:H2'	34:AA:2713:C:H6	1.80	0.44
34:AA:3028:A:N3	34:AA:3028:A:H2'	2.33	0.44
35:AC:69:A:H2'	35:AC:70:A:C8	2.51	0.44
47:Ab:47:VAL:HG11	51:AP:6:TYR:CE1	2.47	0.44
53:Ai:76:CYS:O	53:Ai:78:LYS:N	2.50	0.44
8:SA:142:G:O2'	8:SA:143:A:H5'	2.17	0.44
8:SA:1713:C:H2'	8:SA:1714:U:H6	1.83	0.44
8:SA:1848:U:H2'	8:SA:1849:U:C6	2.53	0.44
13:SF:232:THR:OG1	13:SF:233:LYS:N	2.51	0.44
14:SG:62:ILE:HG13	14:SG:63:TYR:N	2.32	0.44
26:SS:41:ARG:NH1	32:SY:61:LYS:HE2	2.33	0.44
33:SZ:38:MET:SD	33:SZ:38:MET:N	2.91	0.44
34:AA:180:C:H2'	34:AA:181:C:C6	2.52	0.44
34:AA:596:A:C5	34:AA:597:A:C6	3.04	0.44
34:AA:722:G:OP1	34:AA:1270:G:O2'	2.28	0.44
34:AA:1192:C:H2'	34:AA:1193:G:H5''	1.99	0.44
34:AA:1235:C:H2'	34:AA:1236:U:H6	1.81	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:1468:A:H2'	34:AA:1469:U:C6	2.53	0.44
34:AA:1597:U:H2'	34:AA:1598:A:H8	1.82	0.44
34:AA:1805:U:O2'	34:AA:1806:C:H5'	2.17	0.44
34:AA:2645:A:H5''	63:AW:83:TRP:O	2.17	0.44
34:AA:3587:U:H2'	34:AA:3588:A:H8	1.81	0.44
45:A9:53:GLN:O	45:A9:54:ARG:HG2	2.17	0.44
53:AI:36:SER:O	53:AI:40:ARG:HG3	2.17	0.44
53:AI:76:CYS:C	53:AI:78:LYS:H	2.25	0.44
55:AJ:233:LYS:HE3	55:AJ:233:LYS:HB3	1.56	0.44
59:AS:36:LEU:HD23	59:AS:36:LEU:HA	1.86	0.44
65:AT:112:LYS:HE3	65:AT:112:LYS:HB2	1.75	0.44
66:AZ:41:LYS:HG2	66:AZ:42:TYR:CE2	2.53	0.44
66:AZ:59:ARG:HD3	66:AZ:59:ARG:HA	1.74	0.44
68:A5:203:THR:O	68:A5:203:THR:OG1	2.35	0.44
73:AU:43:ASP:OD1	73:AU:44:THR:N	2.51	0.44
73:AU:99:MET:HE2	73:AU:99:MET:HB3	1.83	0.44
81:S9:71:G:N2	81:S9:72:C:H1'	2.32	0.44
7:S7:66:C:H2'	7:S7:67:A:H8	1.82	0.44
8:SA:321:A:C2	8:SA:359:A:C5	3.04	0.44
8:SA:1456:G:O6	8:SA:1607:U:O4	2.35	0.44
8:SA:1629:G:H5'	21:SN:84:TYR:HE1	1.82	0.44
8:SA:1669:C:H5''	11:SD:154:ARG:NH2	2.32	0.44
17:SJ:17:GLU:O	17:SJ:20:ILE:HG22	2.18	0.44
20:SM:113:TYR:HE2	20:SM:117:LEU:HD12	1.83	0.44
34:AA:66:A:OP2	37:AL:99:ARG:NH1	2.47	0.44
34:AA:541:A:H2	34:AA:611:G:H22	1.66	0.44
34:AA:546:C:O4'	34:AA:613:C:H5'	2.18	0.44
34:AA:677:A:H2'	34:AA:678:A:O4'	2.17	0.44
34:AA:1548:A:H3'	34:AA:1549:U:H5''	2.00	0.44
34:AA:1596:G:O2'	34:AA:2648:G:O6	2.34	0.44
34:AA:1964:G:O2'	34:AA:1965:U:H4'	2.16	0.44
34:AA:2070:U:H2'	34:AA:2071:U:C6	2.52	0.44
48:Ad:12:LEU:HB3	48:Ad:16:ARG:NH1	2.33	0.44
48:Ad:56:ASP:OD2	48:Ad:59:LYS:HG3	2.16	0.44
60:AO:61:LEU:HD23	60:AO:61:LEU:HA	1.63	0.44
63:AW:6:LYS:NZ	63:AW:115:ILE:O	2.50	0.44
65:AT:104:LEU:HD21	65:AT:138:ILE:HD13	2.00	0.44
70:AE:90:VAL:HG22	70:AE:104:THR:HB	1.99	0.44
72:AG:92:ARG:HG3	72:AG:93:ARG:N	2.32	0.44
81:S9:6:G:H2'	81:S9:7:A:H8	1.81	0.44
1:S1:110:LYS:HZ2	1:S1:114:ASN:HB2	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:S5:20:GLY:HA3	8:SA:1913:G:O2'	2.16	0.44
7:S7:74:A:N1	34:AA:3152:G:H2'	2.32	0.44
8:SA:524:G:C6	8:SA:543:A:N1	2.85	0.44
8:SA:1451:G:N3	8:SA:1625:C:N4	2.66	0.44
14:SG:41:TRP:NE1	14:SG:42:VAL:O	2.51	0.44
14:SG:152:ARG:HG3	14:SG:234:TYR:CE1	2.53	0.44
20:SM:131:GLY:HA3	20:SM:138:ARG:NE	2.29	0.44
22:SO:72:TRP:HB2	27:ST:21:VAL:HA	1.99	0.44
31:SX:56:LEU:HD12	31:SX:83:MET:SD	2.58	0.44
32:SY:45:LEU:HD12	32:SY:50:LYS:NZ	2.26	0.44
34:AA:1238:C:H2'	34:AA:1239:A:O4'	2.18	0.44
34:AA:1867:U:H2'	34:AA:1868:U:C6	2.53	0.44
34:AA:1995:C:H5''	34:AA:1996:C:O5'	2.17	0.44
34:AA:2547:U:H2'	34:AA:2554:G:N2	2.33	0.44
34:AA:2721:U:H2'	34:AA:2722:G:C8	2.53	0.44
34:AA:2954:A:H2'	34:AA:2955:C:H6	1.82	0.44
34:AA:2970:U:OP1	34:AA:3096:U:O2'	2.32	0.44
34:AA:3065:C:O2'	34:AA:3066:A:H2'	2.18	0.44
34:AA:3537:U:H2'	34:AA:3538:A:C8	2.52	0.44
34:AA:3724:U:H2'	34:AA:3725:G:O4'	2.17	0.44
47:Ab:41:LYS:HB2	47:Ab:41:LYS:HE2	1.63	0.44
49:Ae:40:LYS:HE3	49:Ae:40:LYS:HB2	1.73	0.44
56:Ac:22:CYS:HB2	56:Ac:30:TYR:HB2	2.00	0.44
62:AR:97:ALA:O	62:AR:101:THR:OG1	2.35	0.44
69:AD:206:PRO:HD3	69:AD:213:GLY:CA	2.48	0.44
79:S8:1:C:N4	79:S8:72:A:H61	2.04	0.44
3:S3:66:LYS:HD3	3:S3:66:LYS:HA	1.79	0.44
7:S7:19:G:H8	7:S7:19:G:OP2	2.01	0.44
8:SA:87:A:N3	8:SA:146:A:O2'	2.49	0.44
8:SA:149:A:N6	8:SA:162:A:N6	2.66	0.44
8:SA:1848:U:H2'	8:SA:1849:U:H6	1.81	0.44
8:SA:1868:C:H3'	8:SA:1869:G:N2	2.32	0.44
8:SA:1957:A:H2'	8:SA:1958:A:C8	2.53	0.44
10:SC:14:ILE:HA	10:SC:17:MET:HE3	2.00	0.44
10:SC:30:GLU:CD	10:SC:31:ASN:H	2.25	0.44
10:SC:79:ARG:HD3	10:SC:128:THR:HG21	2.00	0.44
15:SH:48:TYR:OH	15:SH:119:ASN:O	2.25	0.44
16:SI:23:ASP:C	16:SI:25:SER:H	2.24	0.44
20:SM:14:LYS:HE3	20:SM:80:TYR:O	2.17	0.44
26:SS:88:ARG:CD	26:SS:97:ASN:HB2	2.47	0.44
29:SV:115:SER:OG	29:SV:117:CYS:SG	2.67	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:644:G:H5''	54:AI:32:LYS:HB2	2.00	0.44
34:AA:822:A:C2	59:AS:69:TYR:HB2	2.52	0.44
34:AA:1045:A:H2'	34:AA:1046:A:C8	2.53	0.44
34:AA:1860:A:H2'	34:AA:1861:C:C6	2.53	0.44
34:AA:3382:U:H2'	34:AA:3383:A:O4'	2.17	0.44
34:AA:3424:U:H2'	34:AA:3425:G:O4'	2.16	0.44
37:AL:72:LYS:HE2	37:AL:97:ASP:CB	2.48	0.44
43:AN:105:PHE:C	43:AN:107:ASN:H	2.26	0.44
48:Ad:12:LEU:O	48:Ad:16:ARG:HD3	2.18	0.44
48:Ad:26:MET:HE3	48:Ad:26:MET:HB3	1.86	0.44
56:Ac:51:ASN:OD1	56:Ac:57:LYS:NZ	2.49	0.44
60:AO:99:VAL:HG22	60:AO:123:VAL:HB	1.99	0.44
64:AY:111:ILE:HG12	64:AY:146:SER:OG	2.17	0.44
70:AE:155:LEU:HD12	70:AE:155:LEU:HA	1.80	0.44
71:AF:79:VAL:HG22	71:AF:87:ALA:HA	1.98	0.44
75:AV:112:LYS:HE3	75:AV:112:LYS:HB3	1.71	0.44
79:S8:22:G:N7	79:S8:46:G:O6	2.51	0.44
5:S5:28:GLN:HE21	5:S5:38:ARG:HD3	1.81	0.44
5:S5:29:PHE:HB2	5:S5:40:LEU:HD22	2.00	0.44
6:S6:38:GLN:HG2	6:S6:39:LEU:HD22	1.98	0.44
8:SA:62:A:N1	8:SA:293:U:O2'	2.42	0.44
8:SA:68:U:H2'	8:SA:69:A:H8	1.83	0.44
8:SA:466:A:H3'	8:SA:467:G:H8	1.82	0.44
8:SA:1279:G:C4	8:SA:1280:G:C8	3.06	0.44
9:SB:85:LYS:O	9:SB:101:CYS:N	2.43	0.44
10:SC:133:VAL:HG12	10:SC:155:HIS:HB2	2.00	0.44
11:SD:23:GLU:CD	22:SO:71:ASN:HD21	2.24	0.44
12:SE:42:ILE:O	12:SE:46:GLN:HG2	2.17	0.44
12:SE:55:ALA:O	12:SE:59:LEU:HD22	2.17	0.44
20:SM:48:LYS:NZ	20:SM:80:TYR:OH	2.50	0.44
20:SM:51:GLU:HB2	20:SM:52:PRO:HD3	1.98	0.44
20:SM:129:LYS:HB2	20:SM:135:ALA:O	2.17	0.44
26:SS:100:VAL:CG2	26:SS:105:LEU:HA	2.45	0.44
28:SU:54:LEU:HD13	28:SU:60:ILE:HD11	2.00	0.44
34:AA:187:U:H2'	34:AA:188:U:C6	2.53	0.44
34:AA:628:U:H2'	34:AA:629:A:C8	2.53	0.44
34:AA:684:G:N2	71:AF:311:LYS:HE3	2.22	0.44
34:AA:1764:U:H2'	34:AA:1765:A:C8	2.52	0.44
34:AA:3101:A:H2'	34:AA:3102:U:C6	2.52	0.44
34:AA:3387:U:H2'	34:AA:3388:U:H6	1.82	0.44
34:AA:3459:A:H2'	34:AA:3460:C:C6	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:3617:A:HO2'	73:AU:172:LYS:HZ3	1.60	0.44
39:A2:40:TYR:CD1	44:A8:84:PRO:HA	2.53	0.44
42:A7:110:LYS:H	42:A7:110:LYS:HG2	1.67	0.44
47:Ab:61:ILE:HG22	47:Ab:97:ILE:HG21	2.00	0.44
60:AO:37:GLY:O	60:AO:38:LEU:HB2	2.17	0.44
61:AQ:13:LYS:O	61:AQ:14:ASN:HB2	2.18	0.44
62:AR:292:LYS:HG3	62:AR:293:LEU:N	2.32	0.44
66:AZ:69:VAL:HA	66:AZ:81:VAL:HA	2.00	0.44
68:A5:90:LYS:HA	68:A5:90:LYS:HD3	1.79	0.44
72:AG:15:ASN:H	72:AG:131:LEU:HA	1.83	0.44
72:AG:47:PHE:HA	72:AG:66:SER:O	2.18	0.44
77:AX:61:GLU:HG2	77:AX:85:SER:HB3	1.99	0.44
8:SA:1049:G:H4'	8:SA:2068:A:H4'	1.99	0.44
8:SA:1378:G:H2'	8:SA:1379:G:C8	2.53	0.44
8:SA:1790:C:O2'	8:SA:1791:C:O4'	2.36	0.44
8:SA:1914:U:H2'	8:SA:1915:C:C6	2.52	0.44
11:SD:8:LYS:HG3	21:SN:58:LYS:NZ	2.33	0.44
11:SD:133:LYS:HD2	11:SD:157:TYR:CE2	2.53	0.44
11:SD:133:LYS:NZ	11:SD:157:TYR:H	2.15	0.44
12:SE:63:ASP:O	12:SE:69:ARG:HD2	2.18	0.44
13:SF:44:LEU:HD12	13:SF:48:LEU:HD11	1.98	0.44
14:SG:111:LYS:HD3	14:SG:113:PHE:CZ	2.53	0.44
22:SO:61:LYS:HB2	22:SO:77:PHE:HE2	1.83	0.44
26:SS:86:LEU:C	26:SS:86:LEU:HD13	2.43	0.44
30:SW:24:LEU:HD22	30:SW:58:MET:CE	2.48	0.44
34:AA:763:U:C2'	34:AA:764:G:H5'	2.48	0.44
34:AA:1062:U:H2'	60:AO:12:ARG:O	2.18	0.44
34:AA:1235:C:H2'	34:AA:1236:U:C6	2.52	0.44
34:AA:2026:G:H5''	46:Aa:71:THR:HG22	1.99	0.44
34:AA:2069:C:H2'	34:AA:2070:U:C5	2.52	0.44
55:AJ:110:LEU:O	55:AJ:114:LYS:HG2	2.18	0.44
55:AJ:226:GLU:OE1	55:AJ:227:LYS:N	2.50	0.44
61:AQ:43:VAL:HG11	61:AQ:197:CYS:SG	2.58	0.44
62:AR:107:ARG:NH2	62:AR:116:ASP:HB3	2.33	0.44
68:A5:68:ARG:O	68:A5:71:ILE:HG22	2.18	0.44
69:AD:140:SER:OG	69:AD:145:LYS:HB3	2.17	0.44
70:AE:253:HIS:HA	70:AE:254:PRO:C	2.42	0.44
70:AE:371:GLU:OE1	70:AE:371:GLU:N	2.26	0.44
71:AF:64:ALA:HB2	71:AF:92:PHE:HZ	1.83	0.44
71:AF:158:ILE:O	71:AF:217:VAL:HG13	2.18	0.44
2:S2:35:LYS:HD3	8:SA:1833:G:H4'	1.98	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:S5:42:ARG:HH22	5:S5:61:ARG:C	2.25	0.44
8:SA:1037:U:H2'	8:SA:1038:C:O4'	2.17	0.44
8:SA:1456:G:O6	8:SA:1607:U:C4	2.71	0.44
8:SA:1818:A:N6	20:SM:69:ARG:HH11	2.15	0.44
8:SA:1822:A:H2'	8:SA:1823:U:H6	1.80	0.44
8:SA:1870:A:N6	16:SI:154:PHE:HZ	2.16	0.44
9:SB:227:LYS:HA	9:SB:227:LYS:HD2	1.89	0.44
13:SF:67:GLN:O	13:SF:69:ILE:N	2.51	0.44
13:SF:252:ARG:HA	13:SF:252:ARG:HD2	1.55	0.44
14:SG:53:GLU:OE2	14:SG:55:LYS:N	2.51	0.44
16:SI:53:ARG:H	16:SI:53:ARG:HE	1.65	0.44
17:SJ:180:THR:O	17:SJ:182:ARG:N	2.50	0.44
18:SK:3:ARG:O	18:SK:5:SER:N	2.51	0.44
20:SM:91:ILE:HD13	20:SM:91:ILE:HA	1.86	0.44
22:SO:15:PRO:O	22:SO:19:LYS:HG3	2.18	0.44
25:SR:58:PHE:HD2	25:SR:87:GLN:HB2	1.83	0.44
34:AA:2817:U:H2'	34:AA:2818:U:C6	2.53	0.44
34:AA:2919:A:H3'	34:AA:2920:A:H8	1.83	0.44
34:AA:3403:A:H2'	34:AA:3404:C:H6	1.83	0.44
48:Ad:5:ILE:HD12	48:Ad:5:ILE:O	2.18	0.44
50:Af:38:LYS:HD3	50:Af:38:LYS:HA	1.78	0.44
56:Ac:31:HIS:CD2	56:Ac:34:LYS:H	2.36	0.44
62:AR:77:GLU:O	62:AR:108:ARG:NH1	2.43	0.44
72:AG:29:ARG:O	72:AG:29:ARG:HD2	2.18	0.44
74:AH:101:ASN:O	74:AH:113:ILE:HA	2.18	0.44
3:S3:39:PHE:HA	3:S3:70:LYS:HA	1.99	0.43
8:SA:515:U:H2'	8:SA:516:G:H5'	2.00	0.43
8:SA:538:U:H2'	8:SA:539:U:H6	1.84	0.43
8:SA:617:G:H21	24:SQ:19:ARG:HH22	1.65	0.43
8:SA:1168:U:H2'	8:SA:1169:C:H6	1.83	0.43
8:SA:1265:G:H8	8:SA:1265:G:OP2	2.01	0.43
8:SA:1695:A:H2'	8:SA:1696:A:C8	2.53	0.43
8:SA:1706:A:H2'	8:SA:1707:C:O4'	2.18	0.43
8:SA:1794:C:H5''	32:SY:94:GLY:HA3	1.99	0.43
8:SA:1881:G:O2'	8:SA:1907:G:O6	2.34	0.43
8:SA:2030:U:H2'	8:SA:2031:C:H6	1.82	0.43
10:SC:21:LYS:HE2	10:SC:21:LYS:HB2	1.77	0.43
10:SC:28:ASN:HB2	10:SC:150:ASP:HB3	2.00	0.43
11:SD:17:PHE:O	11:SD:20:GLU:HB2	2.18	0.43
11:SD:166:LYS:HA	11:SD:166:LYS:HD2	1.77	0.43
12:SE:31:ILE:HA	12:SE:36:LEU:HD21	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:SE:151:ASP:OD1	12:SE:151:ASP:N	2.51	0.43
14:SG:61:GLU:O	14:SG:65:HIS:ND1	2.47	0.43
20:SM:79:ILE:HG22	20:SM:80:TYR:CD1	2.54	0.43
24:SQ:137:LYS:HG3	24:SQ:138:GLU:OE1	2.18	0.43
31:SX:28:LEU:HD23	31:SX:29:SER:N	2.33	0.43
34:AA:589:C:H2'	34:AA:590:C:H6	1.82	0.43
34:AA:909:U:H2'	34:AA:910:A:H8	1.82	0.43
34:AA:1225:A:O5'	75:AV:130:LYS:HB2	2.18	0.43
34:AA:1267:G:O6	40:A4:10:HIS:NE2	2.49	0.43
34:AA:2027:A:H2'	34:AA:2028:G:C8	2.53	0.43
34:AA:3016:G:H2'	34:AA:3016:G:N3	2.33	0.43
34:AA:3289:G:H2'	34:AA:3290:C:C6	2.54	0.43
34:AA:3595:U:H2'	34:AA:3596:A:H8	1.83	0.43
38:A1:98:SER:O	38:A1:101:VAL:HG12	2.18	0.43
39:A2:27:LYS:HB3	39:A2:27:LYS:HE3	1.65	0.43
48:Ad:62:ARG:HE	48:Ad:62:ARG:HB3	1.65	0.43
55:AJ:229:ASP:N	55:AJ:229:ASP:OD1	2.51	0.43
58:AM:19:LEU:HD21	58:AM:100:ASN:CG	2.43	0.43
61:AQ:202:GLU:O	61:AQ:203:LYS:HD2	2.17	0.43
63:AW:152:GLU:O	63:AW:153:ILE:HD13	2.18	0.43
64:AY:153:ILE:HD12	64:AY:153:ILE:O	2.18	0.43
66:AZ:62:ASN:HB3	66:AZ:65:ARG:HG3	1.99	0.43
68:A5:81:ASN:OD1	68:A5:82:ASN:N	2.51	0.43
73:AU:88:LEU:HD22	73:AU:99:MET:HG2	2.00	0.43
77:AX:56:ASP:OD1	77:AX:58:SER:N	2.51	0.43
81:S9:10:G:H2'	81:S9:11:C:C6	2.53	0.43
81:S9:68:C:H2'	81:S9:69:G:O4'	2.16	0.43
5:S5:42:ARG:HD2	5:S5:56:LEU:HD13	2.00	0.43
8:SA:882:A:H2'	8:SA:883:A:H8	1.83	0.43
8:SA:1192:A:H4'	8:SA:1193:A:O4'	2.18	0.43
8:SA:1220:C:H2'	8:SA:1221:G:C8	2.53	0.43
10:SC:39:THR:O	10:SC:47:ILE:HG13	2.19	0.43
12:SE:120:LYS:HE3	12:SE:120:LYS:HB3	1.89	0.43
13:SF:57:THR:HG22	13:SF:60:GLU:HG3	2.01	0.43
16:SI:110:GLY:C	16:SI:184:LYS:HD2	2.43	0.43
20:SM:91:ILE:O	20:SM:103:LYS:HE3	2.19	0.43
31:SX:86:ILE:O	31:SX:88:GLU:N	2.51	0.43
34:AA:203:A:C2	34:AA:207:A:H2	2.13	0.43
34:AA:779:U:O2'	37:AL:168:LYS:HD3	2.18	0.43
34:AA:1285:U:H2'	34:AA:1286:A:O4'	2.18	0.43
34:AA:2209:C:H2'	34:AA:2210:U:C6	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:3293:A:H2'	34:AA:3294:U:O4'	2.19	0.43
55:AJ:276:LYS:HE3	55:AJ:276:LYS:HB3	1.78	0.43
57:AK:191:GLU:OE2	57:AK:191:GLU:N	2.40	0.43
61:AQ:171:TRP:HA	61:AQ:178:LYS:HD3	2.00	0.43
64:AY:183:VAL:O	64:AY:187:ILE:HG23	2.19	0.43
65:AT:146:ASN:HA	65:AT:149:LEU:HD23	1.99	0.43
66:AZ:26:ARG:O	66:AZ:30:MET:HG3	2.18	0.43
70:AE:224:LYS:HA	70:AE:224:LYS:HD3	1.76	0.43
70:AE:345:ARG:HE	70:AE:345:ARG:HB2	1.58	0.43
71:AF:348:LEU:HD13	71:AF:348:LEU:HA	1.80	0.43
74:AH:110:ARG:HA	74:AH:125:VAL:O	2.18	0.43
74:AH:170:ASP:OD2	74:AH:172:ARG:HG2	2.18	0.43
3:S3:55:GLU:OE2	3:S3:55:GLU:C	2.62	0.43
4:S4:30:PHE:CE1	28:SU:61:PRO:HG3	2.52	0.43
4:S4:68:LYS:HZ2	8:SA:1119:G:P	2.35	0.43
8:SA:453:U:H2'	8:SA:454:U:O4'	2.17	0.43
8:SA:844:G:O2'	8:SA:845:U:O5'	2.31	0.43
8:SA:1822:A:H5''	32:SY:105:LYS:HG3	1.99	0.43
8:SA:1851:C:H5''	31:SX:47:ARG:HH12	1.84	0.43
8:SA:1873:A:O2'	79:S8:40:C:O2'	2.33	0.43
8:SA:1900:U:H2'	8:SA:1901:U:H6	1.83	0.43
10:SC:62:ARG:NH1	33:SZ:38:MET:HA	2.34	0.43
17:SJ:143:MET:HG3	18:SK:50:PHE:CZ	2.53	0.43
26:SS:36:LYS:HZ1	26:SS:105:LEU:HD22	1.83	0.43
31:SX:30:GLN:H	31:SX:30:GLN:HG3	1.64	0.43
32:SY:39:ARG:HH12	32:SY:78:ILE:HG23	1.83	0.43
34:AA:302:A:H2'	34:AA:303:A:C8	2.53	0.43
34:AA:514:C:H2'	34:AA:515:A:C8	2.53	0.43
34:AA:1175:C:H2'	34:AA:1176:C:O4'	2.19	0.43
34:AA:2672:U:H2'	34:AA:2673:U:C6	2.54	0.43
34:AA:3401:C:H2'	34:AA:3402:A:H8	1.83	0.43
36:AB:60:U:H2'	36:AB:61:G:C8	2.51	0.43
47:Ab:49:ARG:HG2	47:Ab:49:ARG:HH11	1.84	0.43
62:AR:77:GLU:OE2	62:AR:79:LYS:NZ	2.39	0.43
62:AR:170:ASP:O	62:AR:247:ARG:NH2	2.48	0.43
67:A3:16:GLU:O	67:A3:20:LYS:HB3	2.18	0.43
67:A3:17:LEU:HD23	67:A3:17:LEU:HA	1.87	0.43
71:AF:193:LYS:NZ	71:AF:193:LYS:HB3	2.33	0.43
6:S6:40:TYR:CG	12:SE:32:GLY:HA3	2.54	0.43
7:S7:11:C:H2'	7:S7:12:G:C8	2.53	0.43
7:S7:16:U:C2	7:S7:58:G:H1'	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:403:A:H5''	19:SL:51:ARG:HB2	2.00	0.43
8:SA:1059:U:H2'	8:SA:1060:G:O4'	2.18	0.43
8:SA:1321:C:H4'	22:SO:63:ARG:NE	2.33	0.43
8:SA:1635:C:O4'	30:SW:48:ASN:ND2	2.52	0.43
8:SA:1810:U:H5''	8:SA:1811:A:O4'	2.18	0.43
8:SA:1953:U:H5''	8:SA:1954:U:OP2	2.19	0.43
14:SG:168:MET:O	14:SG:183:PRO:HD3	2.19	0.43
16:SI:9:LYS:HD3	16:SI:9:LYS:HA	1.57	0.43
17:SJ:159:GLU:OE2	17:SJ:165:ILE:HA	2.17	0.43
18:SK:22:ARG:HD2	18:SK:22:ARG:HA	1.80	0.43
19:SL:18:LYS:H	19:SL:18:LYS:HG2	1.59	0.43
19:SL:36:THR:OG1	19:SL:57:ALA:O	2.33	0.43
22:SO:53:ILE:O	22:SO:56:THR:HG23	2.18	0.43
26:SS:86:LEU:HD13	26:SS:87:ASN:O	2.19	0.43
32:SY:162:ILE:HA	32:SY:165:LYS:HE3	1.99	0.43
34:AA:215:C:O2'	34:AA:216:C:OP1	2.30	0.43
34:AA:424:U:OP1	63:AW:37:ARG:HD2	2.18	0.43
34:AA:857:C:H5''	59:AS:41:ASN:HD21	1.83	0.43
34:AA:1467:C:OP1	44:A8:61:LYS:HG2	2.17	0.43
34:AA:1796:U:H2'	46:Aa:66:ARG:HD3	1.99	0.43
34:AA:2008:G:H2'	34:AA:2009:A:C8	2.53	0.43
34:AA:2700:C:C2	34:AA:2701:U:C5	3.07	0.43
34:AA:3413:A:O2'	34:AA:3414:G:OP1	2.33	0.43
34:AA:3636:U:H2'	34:AA:3637:G:H8	1.83	0.43
41:A6:77:ASN:ND2	41:A6:89:ARG:HD2	2.34	0.43
43:AN:57:ASP:OD2	43:AN:66:ARG:NH1	2.51	0.43
57:AK:36:ARG:HD3	57:AK:156:GLU:OE2	2.18	0.43
62:AR:274:ASN:OD1	62:AR:277:LEU:HD12	2.19	0.43
64:AY:135:ASP:OD1	64:AY:136:LYS:N	2.52	0.43
67:A3:80:TYR:HA	67:A3:83:ARG:HG2	2.01	0.43
1:S1:64:LEU:HD11	1:S1:71:LYS:HG3	1.99	0.43
3:S3:82:ARG:HG2	3:S3:85:ARG:NH2	2.34	0.43
8:SA:331:G:H2'	8:SA:332:U:H6	1.83	0.43
8:SA:631:G:H2'	8:SA:632:C:C6	2.54	0.43
8:SA:1639:G:H2'	8:SA:1640:U:C6	2.54	0.43
8:SA:1745:U:H2'	8:SA:1746:A:C8	2.53	0.43
8:SA:2079:C:H2'	8:SA:2080:G:C8	2.54	0.43
9:SB:56:LEU:HB3	9:SB:58:THR:HG22	2.00	0.43
11:SD:72:LEU:O	11:SD:75:LYS:HG2	2.18	0.43
20:SM:106:LEU:O	20:SM:110:LEU:HG	2.18	0.43
21:SN:31:ILE:HA	21:SN:34:VAL:HG22	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:SV:84:LYS:HD2	29:SV:85:ARG:HG3	2.00	0.43
32:SY:29:ILE:HG13	32:SY:85:ARG:NH2	2.33	0.43
34:AA:374:A:H2'	34:AA:375:A:O4'	2.18	0.43
34:AA:1866:C:H2'	34:AA:1867:U:C6	2.53	0.43
34:AA:3239:U:H1'	70:AE:247:ALA:HB3	2.01	0.43
34:AA:3534:U:H2'	34:AA:3535:A:C8	2.54	0.43
34:AA:3693:A:O2'	34:AA:3780:A:N1	2.49	0.43
35:AC:31:U:H2'	35:AC:32:C:H6	1.82	0.43
36:AB:8:U:OP2	62:AR:30:TYR:OH	2.25	0.43
37:AL:75:THR:HG22	37:AL:100:ARG:HB3	2.01	0.43
39:A2:15:LYS:HD3	39:A2:15:LYS:HA	1.79	0.43
42:A7:98:TYR:CE2	42:A7:100:ILE:HD11	2.42	0.43
47:Ab:8:LYS:HG3	47:Ab:8:LYS:O	2.19	0.43
57:AK:193:ARG:HG2	57:AK:193:ARG:HH11	1.83	0.43
58:AM:98:GLU:OE2	78:A0:31:ARG:N	2.51	0.43
66:AZ:86:ARG:NH1	66:AZ:87:GLU:O	2.52	0.43
70:AE:283:GLY:HA3	70:AE:318:PHE:CE1	2.53	0.43
73:AU:91:ASP:HA	73:AU:96:THR:HA	2.00	0.43
74:AH:166:CYS:O	74:AH:167:ARG:HD3	2.19	0.43
79:S8:15:G:OP2	79:S8:16:C:H5	2.02	0.43
7:S7:56:U:H1'	7:S7:58:G:C8	2.52	0.43
8:SA:38:C:N4	8:SA:39:A:H62	2.16	0.43
8:SA:756:A:N6	8:SA:757:A:N6	2.66	0.43
8:SA:928:U:O4'	17:SJ:115:ARG:HG3	2.19	0.43
8:SA:944:G:OP1	9:SB:158:THR:N	2.39	0.43
8:SA:1312:A:H3'	8:SA:1313:G:H5''	2.01	0.43
8:SA:1320:A:C2	8:SA:1321:C:H1'	2.53	0.43
8:SA:1830:C:HO2'	8:SA:1836:G:H1	1.64	0.43
11:SD:100:MET:HE1	11:SD:174:ARG:HH21	1.82	0.43
12:SE:96:VAL:O	12:SE:99:LEU:HG	2.19	0.43
15:SH:98:ARG:NH1	15:SH:105:ASP:OD2	2.39	0.43
17:SJ:100:ILE:HD13	17:SJ:100:ILE:HA	1.84	0.43
17:SJ:156:ASP:OD1	17:SJ:156:ASP:N	2.46	0.43
20:SM:22:THR:HB	20:SM:67:ARG:HG3	1.99	0.43
26:SS:92:LEU:O	26:SS:93:LYS:HE2	2.18	0.43
34:AA:1535:G:O6	71:AF:188:LYS:HD3	2.19	0.43
34:AA:1785:U:H4'	38:A1:75:ILE:HA	2.01	0.43
34:AA:3596:A:H2'	34:AA:3597:C:H6	1.84	0.43
42:A7:54:THR:OG1	42:A7:99:THR:HG22	2.18	0.43
55:AJ:150:LYS:HA	55:AJ:150:LYS:HD3	1.91	0.43
66:AZ:109:LYS:HE2	66:AZ:109:LYS:HB2	1.89	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:AE:155:LEU:HD23	70:AE:188:LYS:HB3	2.00	0.43
71:AF:162:SER:HA	71:AF:220:ALA:HB2	2.00	0.43
3:S3:85:ARG:HH12	8:SA:1254:G:H5'	1.84	0.43
8:SA:803:G:OP1	13:SF:186:GLY:HA3	2.19	0.43
8:SA:805:A:H2'	8:SA:806:A:O4'	2.18	0.43
8:SA:984:A:OP2	8:SA:985:U:H5	2.02	0.43
8:SA:1439:A:H2'	8:SA:1440:C:C6	2.54	0.43
8:SA:1654:G:H3'	8:SA:1655:G:C8	2.49	0.43
8:SA:1698:U:C2	8:SA:1699:A:C8	3.07	0.43
8:SA:1834:A:N6	8:SA:1868:C:H2'	2.34	0.43
15:SH:116:LYS:HA	15:SH:116:LYS:HD2	1.77	0.43
16:SI:19:ILE:HA	16:SI:101:GLN:NE2	2.34	0.43
16:SI:78:LEU:HA	16:SI:78:LEU:HD23	1.85	0.43
16:SI:144:LEU:HD23	16:SI:144:LEU:HA	1.92	0.43
17:SJ:50:ILE:O	17:SJ:58:LYS:HD3	2.18	0.43
18:SK:88:LYS:HB2	18:SK:88:LYS:HE3	1.53	0.43
32:SY:86:ARG:HH21	32:SY:89:LEU:HD12	1.83	0.43
34:AA:1481:A:O2'	34:AA:1482:A:H5''	2.19	0.43
34:AA:2112:G:C5'	34:AA:2113:C:H5''	2.47	0.43
34:AA:2218:C:H2'	34:AA:2219:A:H5''	2.00	0.43
34:AA:2507:A:H2'	34:AA:2508:C:O4'	2.19	0.43
34:AA:3025:U:H2'	34:AA:3026:G:O4'	2.18	0.43
34:AA:3107:U:H2'	34:AA:3108:A:C8	2.50	0.43
34:AA:3587:U:H2'	34:AA:3588:A:C8	2.54	0.43
35:AC:5:A:N1	63:AW:38:ARG:NH1	2.66	0.43
47:Ab:101:VAL:HA	47:Ab:104:GLN:HG2	2.01	0.43
63:AW:22:LEU:HB3	63:AW:90:PHE:CE2	2.54	0.43
71:AF:30:THR:HG21	71:AF:125:CYS:HB3	2.01	0.43
71:AF:385:LYS:HG2	71:AF:389:ARG:HH12	1.84	0.43
73:AU:153:LYS:HA	73:AU:153:LYS:HE3	2.00	0.43
75:AV:65:ILE:HD12	75:AV:73:VAL:CG1	2.46	0.43
76:Ag:9:LYS:HB2	76:Ag:9:LYS:HE3	1.54	0.43
78:A0:20:ILE:HG12	78:A0:39:LEU:HD23	2.01	0.43
6:S6:27:LYS:HD3	6:S6:27:LYS:HA	1.85	0.43
8:SA:151:G:H2'	8:SA:152:G:H8	1.83	0.43
8:SA:883:A:H2'	8:SA:884:G:C8	2.53	0.43
8:SA:964:G:H1	8:SA:986:U:H3	1.66	0.43
8:SA:1030:C:H5''	28:SU:71:ILE:HG21	2.00	0.43
8:SA:1423:A:H4'	8:SA:1424:A:O5'	2.19	0.43
8:SA:1711:U:H2'	8:SA:1712:G:O4'	2.18	0.43
8:SA:1928:A:C2	76:Ag:13:ALA:HB2	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:SC:98:ILE:HD12	10:SC:98:ILE:C	2.44	0.43
14:SG:255:TRP:O	14:SG:259:LEU:HD12	2.19	0.43
20:SM:52:PRO:HA	20:SM:55:LEU:HB2	2.01	0.43
21:SN:39:MET:HB2	21:SN:43:LYS:HZ3	1.84	0.43
25:SR:35:HIS:ND1	25:SR:122:PHE:HB2	2.34	0.43
32:SY:86:ARG:HD2	32:SY:101:GLN:NE2	2.34	0.43
33:SZ:52:PHE:HE2	33:SZ:72:MET:HG3	1.84	0.43
34:AA:744:G:N2	34:AA:915:G:H22	2.16	0.43
34:AA:1257:A:H2'	34:AA:1258:A:C8	2.54	0.43
34:AA:2549:A:C6	81:S9:38:A:H5'	2.54	0.43
34:AA:2884:G:C8	46:Aa:91:ARG:HD2	2.53	0.43
34:AA:3166:U:O3'	34:AA:3167:A:H3'	2.18	0.43
34:AA:3387:U:H4'	70:AE:117:ARG:HG3	1.99	0.43
34:AA:3596:A:H2'	34:AA:3597:C:C6	2.53	0.43
37:AL:157:LEU:HD22	67:A3:121:VAL:HG12	2.01	0.43
48:Ad:76:TYR:N	48:Ad:77:PRO:HD2	2.34	0.43
54:AI:68:MET:HE3	54:AI:68:MET:HB2	1.76	0.43
68:A5:95:VAL:O	68:A5:123:GLY:HA2	2.18	0.43
72:AG:106:ILE:HG12	72:AG:125:MET:HG3	2.00	0.43
74:AH:115:ASN:OD1	74:AH:118:GLY:HA2	2.18	0.43
75:AV:104:GLU:HG3	75:AV:105:ASP:N	2.34	0.43
1:S1:12:TYR:OH	1:S1:21:LYS:HD3	2.19	0.43
8:SA:139:A:H2'	8:SA:139:A:N3	2.33	0.43
8:SA:554:U:OP1	24:SQ:140:LYS:NZ	2.39	0.43
8:SA:1220:C:H2'	8:SA:1221:G:H8	1.84	0.43
8:SA:1862:C:H2'	8:SA:1863:U:C6	2.54	0.43
13:SF:166:THR:HG23	13:SF:168:LYS:HB2	2.00	0.43
17:SJ:58:LYS:HE2	17:SJ:58:LYS:HB2	1.73	0.43
28:SU:60:ILE:O	28:SU:60:ILE:CD1	2.67	0.43
34:AA:1297:A:H2'	34:AA:1298:A:C8	2.53	0.43
34:AA:1312:U:O3'	43:AN:53:ARG:NH1	2.51	0.43
34:AA:1975:A:N1	34:AA:1993:A:C2	2.87	0.43
34:AA:2445:A:H2'	34:AA:2446:U:C6	2.54	0.43
34:AA:2462:C:H2'	34:AA:2463:U:O4'	2.19	0.43
34:AA:2830:U:N3	34:AA:2832:A:H8	2.11	0.43
34:AA:2950:U:H2'	34:AA:2951:U:C6	2.53	0.43
34:AA:3020:U:OP1	72:AG:49:LYS:HD2	2.19	0.43
34:AA:3062:U:H2'	34:AA:3063:U:C6	2.53	0.43
34:AA:3226:C:O2'	34:AA:3227:U:H5'	2.19	0.43
34:AA:3281:G:N2	81:S9:76:A:H2	2.17	0.43
34:AA:3494:C:H2'	34:AA:3495:U:C6	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:AC:148:C:H4'	51:AP:111:CYS:HB3	2.01	0.43
37:AL:131:LYS:HA	37:AL:131:LYS:HD2	1.81	0.43
40:A4:30:MET:HE2	40:A4:30:MET:HB3	1.70	0.43
43:AN:49:VAL:HG22	43:AN:50:THR:HG23	2.00	0.43
48:Ad:31:LYS:HD3	48:Ad:31:LYS:HA	1.81	0.43
59:AS:87:ASP:OD1	59:AS:88:ASP:N	2.51	0.43
61:AQ:57:TYR:HB2	61:AQ:131:ILE:HG12	2.01	0.43
74:AH:136:SER:OG	74:AH:142:GLU:HB3	2.19	0.43
5:S5:5:LYS:HD3	5:S5:29:PHE:CZ	2.54	0.43
7:S7:2:G:N2	7:S7:69:U:H3	2.16	0.43
8:SA:540:C:C2	8:SA:541:C:C5	3.07	0.43
8:SA:846:G:C2	8:SA:847:U:C2	3.07	0.43
8:SA:1017:G:H2'	8:SA:1018:U:H6	1.83	0.43
8:SA:1823:U:P	32:SY:105:LYS:HZ2	2.41	0.43
9:SB:120:LEU:HD13	9:SB:140:ILE:HD11	2.00	0.43
12:SE:64:GLU:HA	12:SE:64:GLU:OE2	2.19	0.43
13:SF:193:GLY:HA3	13:SF:210:VAL:HG12	2.01	0.43
16:SI:167:GLU:OE2	16:SI:168:ILE:HG23	2.18	0.43
19:SL:34:SER:HB2	19:SL:56:ARG:CG	2.48	0.43
22:SO:16:LYS:O	22:SO:20:LYS:HG2	2.18	0.43
30:SW:63:LYS:HE2	30:SW:63:LYS:HB3	1.75	0.43
32:SY:158:PHE:O	32:SY:162:ILE:HG12	2.19	0.43
34:AA:237:A:H2'	34:AA:238:G:O4'	2.18	0.43
34:AA:510:A:H2'	34:AA:511:C:C6	2.54	0.43
34:AA:594:C:H5''	34:AA:595:U:OP2	2.19	0.43
34:AA:739:G:H4'	34:AA:740:U:H6	1.84	0.43
34:AA:993:U:OP2	70:AE:238:LYS:HG2	2.19	0.43
34:AA:1423:G:H2'	34:AA:1424:C:C6	2.54	0.43
34:AA:3393:C:H2'	34:AA:3394:A:H8	1.84	0.43
35:AC:42:U:H3'	35:AC:43:G:H5'	2.01	0.43
37:AL:8:LEU:HD23	37:AL:8:LEU:HA	1.89	0.43
54:AI:165:LYS:O	54:AI:169:ILE:HG13	2.19	0.43
58:AM:111:MET:HE2	58:AM:111:MET:HB3	1.87	0.43
67:A3:13:LYS:HB3	67:A3:15:LYS:HZ1	1.84	0.43
68:A5:147:TYR:HA	68:A5:148:PRO:HD3	1.79	0.43
70:AE:359:SER:O	70:AE:361:LYS:HD3	2.18	0.43
4:S4:18:LYS:HD3	8:SA:1173:C:H5'	2.01	0.42
7:S7:7:U:N3	7:S7:65:A:H2	2.06	0.42
8:SA:66:U:O4	15:SH:134:GLY:N	2.43	0.42
8:SA:139:A:C6	15:SH:183:ARG:HG2	2.54	0.42
8:SA:1203:G:OP1	24:SQ:7:SER:OG	2.36	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:1722:U:H4'	32:SY:68:LEU:HD22	2.01	0.42
8:SA:1833:G:OP2	16:SI:157:ILE:HA	2.20	0.42
8:SA:1889:G:C4	8:SA:1890:A:C8	3.06	0.42
10:SC:62:ARG:NH1	33:SZ:37:GLY:O	2.52	0.42
11:SD:143:LEU:HD23	11:SD:151:MET:HE1	2.01	0.42
12:SE:109:LEU:O	12:SE:113:VAL:HG12	2.19	0.42
16:SI:11:PHE:O	16:SI:13:LYS:HG3	2.18	0.42
16:SI:77:LYS:O	16:SI:81:ILE:HD12	2.19	0.42
16:SI:93:LEU:HD23	16:SI:93:LEU:HA	1.83	0.42
17:SJ:162:ARG:HB2	17:SJ:164:ASN:OD1	2.19	0.42
23:SP:143:LYS:HE3	23:SP:143:LYS:HB3	1.62	0.42
24:SQ:136:PHE:CD1	24:SQ:137:LYS:N	2.87	0.42
25:SR:69:LYS:O	25:SR:72:ILE:HG13	2.18	0.42
32:SY:89:LEU:HD23	32:SY:89:LEU:HA	1.76	0.42
34:AA:80:C:H2'	34:AA:81:C:H6	1.83	0.42
34:AA:281:G:H2'	34:AA:282:U:C6	2.53	0.42
34:AA:593:A:C2	43:AN:6:LEU:HD21	2.54	0.42
34:AA:694:U:H5''	54:AI:147:LYS:HD3	2.01	0.42
34:AA:1462:C:H2'	34:AA:1463:A:C8	2.54	0.42
34:AA:2422:C:H4'	34:AA:2574:A:C2	2.53	0.42
34:AA:3483:U:O2'	34:AA:3484:U:H5'	2.19	0.42
38:A1:47:GLU:HB3	38:A1:69:LYS:HE2	2.01	0.42
41:A6:58:VAL:HA	46:Aa:94:LEU:HD11	2.01	0.42
51:AP:160:ARG:HB3	51:AP:165:LEU:HB2	2.01	0.42
54:AI:78:LEU:C	54:AI:80:SER:H	2.26	0.42
60:AO:114:GLY:O	60:AO:136:LYS:NZ	2.35	0.42
61:AQ:35:ASP:HA	61:AQ:87:LEU:O	2.19	0.42
62:AR:243:HIS:O	62:AR:246:ILE:HG22	2.18	0.42
62:AR:293:LEU:HD23	62:AR:293:LEU:HA	1.87	0.42
69:AD:36:GLU:OE1	69:AD:163:ARG:NH1	2.50	0.42
72:AG:46:ILE:HD13	72:AG:46:ILE:HA	1.88	0.42
77:AX:77:LEU:HB3	77:AX:81:VAL:O	2.19	0.42
3:S3:59:TYR:O	3:S3:61:THR:HG22	2.19	0.42
8:SA:424:G:H1'	15:SH:59:GLN:HE21	1.84	0.42
8:SA:1081:U:H5''	69:AD:247:ARG:HB3	2.00	0.42
9:SB:137:MET:HG2	9:SB:215:VAL:HG22	2.01	0.42
13:SF:137:SER:HB3	13:SF:150:ILE:HD11	2.01	0.42
16:SI:47:TYR:HA	16:SI:53:ARG:CG	2.47	0.42
19:SL:5:ARG:HD2	19:SL:29:LEU:O	2.19	0.42
23:SP:74:ALA:HB3	23:SP:114:SER:OG	2.19	0.42
34:AA:90:C:C2'	34:AA:91:G:H5'	2.50	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:100:A:H2'	34:AA:101:C:O2	2.19	0.42
34:AA:195:A:C8	34:AA:216:C:O2'	2.68	0.42
34:AA:527:A:H2'	34:AA:528:A:C8	2.54	0.42
34:AA:532:C:H2'	34:AA:533:A:O4'	2.18	0.42
34:AA:965:A:O2'	34:AA:966:A:OP1	2.33	0.42
34:AA:1161:C:H2'	34:AA:1162:U:H6	1.84	0.42
34:AA:2499:G:O2'	34:AA:2501:A:N1	2.48	0.42
34:AA:2692:A:N6	34:AA:2693:G:O6	2.52	0.42
34:AA:3244:C:O2'	34:AA:3245:U:H5'	2.19	0.42
34:AA:3634:C:O2'	43:AN:147:ASN:HB3	2.20	0.42
36:AB:68:U:H2'	36:AB:69:U:H6	1.84	0.42
41:A6:65:LEU:HD23	41:A6:65:LEU:HA	1.86	0.42
43:AN:9:GLU:O	43:AN:12:LEU:HD23	2.18	0.42
55:AJ:199:ASP:HB3	55:AJ:202:THR:OG1	2.19	0.42
66:AZ:116:LYS:HE3	66:AZ:116:LYS:HB2	1.89	0.42
1:S1:5:PHE:HE2	1:S1:35:VAL:HG21	1.83	0.42
1:S1:37:LYS:O	1:S1:41:LYS:HG3	2.19	0.42
3:S3:22:ARG:NH2	23:SP:145:GLY:O	2.53	0.42
8:SA:854:A:H2'	8:SA:855:C:C6	2.55	0.42
8:SA:1100:U:H4'	8:SA:1101:G:OP2	2.19	0.42
8:SA:1434:U:H2'	8:SA:1435:C:O4'	2.19	0.42
8:SA:1808:G:C6	8:SA:1809:G:C6	3.08	0.42
9:SB:171:ILE:HG21	9:SB:197:ILE:HG13	2.00	0.42
9:SB:198:GLU:HG3	9:SB:210:VAL:CG1	2.49	0.42
10:SC:34:LYS:HD3	10:SC:34:LYS:HA	1.71	0.42
10:SC:38:TYR:HD1	10:SC:47:ILE:HD11	1.84	0.42
15:SH:178:LEU:HD12	15:SH:178:LEU:HA	1.82	0.42
23:SP:99:ALA:N	23:SP:133:THR:OG1	2.52	0.42
29:SV:40:LYS:C	29:SV:42:GLY:H	2.27	0.42
30:SW:27:ASP:HB3	30:SW:30:ILE:HB	2.01	0.42
34:AA:175:G:O6	34:AA:256:A:N6	2.52	0.42
34:AA:202:C:H2'	34:AA:203:A:C8	2.54	0.42
34:AA:598:U:OP2	43:AN:17:LYS:NZ	2.51	0.42
34:AA:830:U:H5	34:AA:864:U:O2	2.03	0.42
34:AA:1763:G:H2'	34:AA:1764:U:C6	2.54	0.42
34:AA:1963:U:O2'	34:AA:1964:G:H5'	2.19	0.42
34:AA:2128:G:O2'	34:AA:3451:G:OP1	2.34	0.42
34:AA:2810:A:H4'	34:AA:2811:A:H5'	2.01	0.42
34:AA:3283:U:C4	81:S9:74:C:N4	2.87	0.42
34:AA:3695:C:O2	70:AE:169:ARG:NH2	2.52	0.42
34:AA:3736:A:H2'	34:AA:3736:A:N3	2.34	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:Ae:9:LEU:O	49:Ae:13:LEU:HG	2.19	0.42
55:AJ:80:LYS:HE2	55:AJ:80:LYS:HB2	1.91	0.42
62:AR:207:MET:HE3	62:AR:222:PHE:CG	2.55	0.42
63:AW:7:LYS:HA	63:AW:7:LYS:HD3	1.85	0.42
63:AW:39:MET:HB2	63:AW:43:GLU:OE1	2.19	0.42
64:AY:181:LEU:HD13	64:AY:181:LEU:HA	1.93	0.42
70:AE:47:MET:HB2	70:AE:176:MET:CE	2.47	0.42
71:AF:10:VAL:HG21	71:AF:254:GLU:OE1	2.19	0.42
71:AF:318:SER:HB2	71:AF:328:LEU:HD12	2.00	0.42
72:AG:41:THR:HG23	72:AG:79:ILE:HD11	2.01	0.42
78:A0:67:LYS:HB3	78:A0:67:LYS:HE2	1.58	0.42
79:S8:24:U:H2'	79:S8:25:C:C6	2.55	0.42
3:S3:45:VAL:HB	3:S3:49:ALA:HB3	2.01	0.42
3:S3:67:LEU:HD23	3:S3:67:LEU:HA	1.89	0.42
8:SA:454:U:OP2	13:SF:49:ARG:NH1	2.47	0.42
8:SA:1118:U:H2'	8:SA:1119:G:C8	2.54	0.42
8:SA:1373:U:O2'	8:SA:1376:A:OP2	2.31	0.42
8:SA:1434:U:H2'	8:SA:1435:C:H6	1.84	0.42
8:SA:1939:G:H2'	8:SA:1940:U:H6	1.85	0.42
11:SD:72:LEU:HD12	11:SD:72:LEU:HA	1.85	0.42
11:SD:75:LYS:NZ	22:SO:33:VAL:HG23	2.34	0.42
16:SI:89:GLU:O	16:SI:93:LEU:HG	2.19	0.42
20:SM:20:VAL:HG12	20:SM:67:ARG:HH22	1.84	0.42
23:SP:39:ASP:HB3	23:SP:68:GLU:HB3	2.01	0.42
23:SP:80:ASP:OD2	23:SP:80:ASP:C	2.62	0.42
29:SV:78:VAL:HA	29:SV:89:ILE:HD13	2.01	0.42
34:AA:124:U:H1'	34:AA:158:U:O2	2.19	0.42
34:AA:1066:U:H2'	34:AA:1067:U:H6	1.85	0.42
34:AA:1245:G:H2'	34:AA:1246:C:C6	2.54	0.42
34:AA:3613:A:C5	34:AA:3614:A:C6	3.07	0.42
34:AA:3677:A:H2'	34:AA:3678:A:H8	1.83	0.42
36:AB:94:C:C2	36:AB:95:U:C5	3.07	0.42
38:A1:105:LYS:HA	38:A1:105:LYS:HD2	1.70	0.42
54:AI:47:GLN:HG3	54:AI:48:ARG:N	2.33	0.42
54:AI:115:GLU:CD	54:AI:115:GLU:N	2.78	0.42
57:AK:24:LYS:HD2	57:AK:24:LYS:HA	1.81	0.42
65:AT:139:GLU:O	65:AT:143:ARG:HB2	2.19	0.42
77:AX:46:CYS:O	77:AX:50:VAL:HG22	2.19	0.42
8:SA:68:U:H2'	8:SA:69:A:C8	2.55	0.42
8:SA:399:C:H2'	8:SA:400:C:C6	2.55	0.42
8:SA:1277:G:N3	8:SA:1296:C:O2'	2.49	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:1303:A:N7	8:SA:1702:C:C2	2.87	0.42
8:SA:1313:G:C6	8:SA:1698:U:O4	2.73	0.42
8:SA:1436:U:O2'	27:ST:54:ARG:NE	2.52	0.42
8:SA:1628:A:C2	8:SA:1629:G:O6	2.73	0.42
8:SA:1654:G:C5	8:SA:1655:G:C5	3.08	0.42
8:SA:1818:A:H61	20:SM:69:ARG:HH11	1.68	0.42
10:SC:52:LYS:HA	10:SC:55:GLU:CD	2.44	0.42
10:SC:63:ILE:CG2	33:SZ:36:VAL:HG22	2.50	0.42
10:SC:88:LYS:HD3	10:SC:88:LYS:HA	1.79	0.42
13:SF:208:ILE:O	13:SF:208:ILE:HG13	2.20	0.42
13:SF:246:LEU:HB3	13:SF:250:GLU:OE1	2.20	0.42
18:SK:58:SER:O	18:SK:58:SER:OG	2.27	0.42
26:SS:36:LYS:NZ	26:SS:105:LEU:HD22	2.35	0.42
34:AA:1171:A:H2'	61:AQ:22:TYR:CZ	2.54	0.42
34:AA:1232:U:H5	59:AS:6:LYS:O	2.02	0.42
34:AA:1330:A:C2	34:AA:3216:C:H5'	2.54	0.42
34:AA:2039:U:H3'	34:AA:2040:G:C8	2.54	0.42
34:AA:2499:G:H1'	34:AA:2501:A:H61	1.84	0.42
34:AA:3655:U:H2'	34:AA:3656:A:H8	1.83	0.42
48:Ad:58:LYS:HB3	48:Ad:62:ARG:NH2	2.34	0.42
57:AK:127:ARG:HE	57:AK:127:ARG:HB3	1.61	0.42
62:AR:104:LEU:CA	62:AR:246:ILE:HD11	2.50	0.42
63:AW:84:PRO:HB2	63:AW:87:SER:HB3	2.01	0.42
81:S9:54:U:C4	81:S9:55:U:C4	3.08	0.42
3:S3:65:PRO:HG3	23:SP:129:ILE:O	2.20	0.42
8:SA:1105:A:H2'	8:SA:1106:C:C6	2.55	0.42
8:SA:1456:G:H2'	8:SA:1457:A:C8	2.55	0.42
8:SA:1832:U:O2'	8:SA:1833:G:N2	2.53	0.42
12:SE:71:PHE:HD1	13:SF:249:ILE:HA	1.83	0.42
15:SH:203:GLN:OE1	15:SH:203:GLN:HA	2.19	0.42
16:SI:47:TYR:CD1	16:SI:54:LYS:HE3	2.54	0.42
19:SL:88:ASN:O	19:SL:91:VAL:HG13	2.20	0.42
23:SP:36:SER:C	23:SP:38:ASN:N	2.77	0.42
26:SS:72:ILE:HD13	26:SS:79:PHE:CE2	2.54	0.42
27:ST:40:CYS:O	27:ST:44:ARG:HG2	2.18	0.42
31:SX:34:ILE:HD13	31:SX:45:PHE:CD2	2.54	0.42
34:AA:92:G:H5''	34:AA:94:G:N7	2.34	0.42
34:AA:270:U:O2'	34:AA:271:G:OP2	2.30	0.42
34:AA:1779:A:H62	34:AA:2033:C:H2'	1.85	0.42
34:AA:2036:C:C4	34:AA:2037:U:C4	3.07	0.42
34:AA:2516:A:H2'	34:AA:2517:A:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:3306:G:C2	70:AE:247:ALA:HB1	2.54	0.42
36:AB:67:C:OP1	62:AR:14:LYS:HG3	2.18	0.42
38:A1:76:ASN:OD1	38:A1:76:ASN:C	2.63	0.42
39:A2:110:LYS:HG3	39:A2:111:LYS:N	2.33	0.42
41:A6:44:LEU:HD22	41:A6:45:VAL:H	1.85	0.42
52:Ah:65:CYS:SG	69:AD:170:GLY:HA3	2.60	0.42
56:Ac:21:LEU:HD23	56:Ac:21:LEU:HA	1.84	0.42
56:Ac:24:ARG:HD3	56:Ac:42:TYR:HD1	1.83	0.42
2:S2:99:LYS:HE3	32:SY:15:ARG:HE	1.85	0.42
7:S7:39:A:H5'	16:SI:189:ARG:HH12	1.84	0.42
7:S7:50:G:H2'	7:S7:51:U:H6	1.85	0.42
8:SA:973:G:C4	80:mR:16:A:H1'	2.54	0.42
8:SA:1225:A:H2'	8:SA:1226:A:C8	2.54	0.42
8:SA:1844:A:H5'	26:SS:115:ARG:HH22	1.85	0.42
8:SA:1873:A:HO2'	79:S8:40:C:HO2'	1.61	0.42
8:SA:1881:G:H1'	8:SA:1907:G:C5	2.54	0.42
8:SA:1892:U:OP1	27:ST:29:ILE:HD12	2.20	0.42
8:SA:1906:U:O4	8:SA:1907:G:N1	2.53	0.42
13:SF:176:GLN:N	13:SF:176:GLN:OE1	2.53	0.42
14:SG:46:LYS:HG3	14:SG:47:LEU:N	2.34	0.42
23:SP:44:VAL:HG13	23:SP:93:ILE:HD11	2.01	0.42
26:SS:93:LYS:HG3	26:SS:94:GLU:OE1	2.20	0.42
34:AA:432:A:HO2'	34:AA:433:A:P	2.42	0.42
34:AA:449:A:H5''	44:A8:69:ASN:CB	2.46	0.42
34:AA:1087:G:H2'	34:AA:1088:C:C6	2.55	0.42
34:AA:1276:G:O4'	34:AA:1298:A:H2	2.01	0.42
34:AA:1641:G:N7	49:Ae:2:GLY:N	2.67	0.42
34:AA:1980:G:H3'	34:AA:1981:U:H6	1.85	0.42
34:AA:2552:A:H2'	34:AA:2553:U:O4'	2.20	0.42
34:AA:3172:A:H2'	34:AA:3173:G:O4'	2.20	0.42
34:AA:3282:U:H3	81:S9:74:C:N4	2.17	0.42
35:AC:38:G:C4	35:AC:39:C:C5	3.08	0.42
39:A2:114:ARG:NH2	44:A8:87:MET:HG2	2.31	0.42
43:AN:55:ILE:CD1	43:AN:68:VAL:HG22	2.50	0.42
43:AN:72:LYS:HA	73:AU:162:HIS:CD2	2.54	0.42
47:Ab:93:LYS:HA	47:Ab:93:LYS:HD3	1.76	0.42
48:Ad:73:ARG:HB3	48:Ad:75:TYR:CE2	2.54	0.42
49:Ae:42:ARG:HB2	49:Ae:47:THR:HG23	2.02	0.42
55:AJ:195:CYS:HB3	55:AJ:235:CYS:SG	2.60	0.42
58:AM:10:LYS:HD2	58:AM:10:LYS:HA	1.81	0.42
59:AS:102:LEU:HD23	59:AS:102:LEU:HA	1.88	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
65:AT:173:LYS:HD2	65:AT:173:LYS:HA	1.80	0.42
66:AZ:99:HIS:ND1	66:AZ:101:SER:HB3	2.35	0.42
72:AG:12:ILE:HG21	72:AG:131:LEU:HD13	2.02	0.42
73:AU:184:MET:SD	73:AU:184:MET:C	3.02	0.42
8:SA:1105:A:H2'	8:SA:1106:C:H6	1.85	0.42
8:SA:1709:C:H2'	8:SA:1710:G:O4'	2.19	0.42
8:SA:1972:G:H2'	8:SA:1973:U:C6	2.54	0.42
9:SB:26:LYS:HD3	9:SB:50:LYS:HD3	2.01	0.42
11:SD:143:LEU:HD13	11:SD:183:LEU:HD12	2.01	0.42
20:SM:70:VAL:HG12	20:SM:78:GLN:OE1	2.20	0.42
24:SQ:67:ALA:HB3	24:SQ:69:ARG:HE	1.84	0.42
26:SS:28:VAL:HG21	26:SS:56:LYS:HE3	2.02	0.42
26:SS:67:ASP:O	26:SS:70:VAL:HG22	2.20	0.42
32:SY:163:ASN:HB3	32:SY:167:TYR:CE2	2.55	0.42
34:AA:217:A:N3	71:AF:223:ASN:ND2	2.66	0.42
34:AA:748:A:P	59:AS:145:ARG:HH22	2.41	0.42
34:AA:1560:U:H5''	44:A8:124:ALA:HB2	2.01	0.42
34:AA:1788:C:H5'	46:Aa:52:GLN:HG3	2.02	0.42
34:AA:2962:G:H3'	34:AA:2963:G:H8	1.84	0.42
34:AA:3048:U:H2'	34:AA:3049:G:C8	2.54	0.42
34:AA:3593:U:H2'	34:AA:3594:G:H8	1.84	0.42
34:AA:3661:A:O2'	34:AA:3662:U:H5'	2.19	0.42
37:AL:168:LYS:HG2	60:AO:104:ARG:NH2	2.32	0.42
38:A1:58:THR:HG23	38:A1:61:LYS:H	1.85	0.42
44:A8:23:ASN:OD1	44:A8:23:ASN:N	2.50	0.42
45:A9:108:HIS:HB2	45:A9:115:ARG:HG3	2.01	0.42
46:Aa:11:ASN:O	46:Aa:18:ASN:ND2	2.49	0.42
48:Ad:8:ILE:HD12	48:Ad:8:ILE:HA	1.88	0.42
51:AP:26:ARG:HE	51:AP:26:ARG:HB3	1.51	0.42
51:AP:79:ILE:HD12	51:AP:79:ILE:H	1.84	0.42
54:AI:131:ILE:HG12	54:AI:182:ILE:HD13	2.01	0.42
55:AJ:217:LEU:HD23	55:AJ:217:LEU:HA	1.85	0.42
56:Ac:32:LEU:O	56:Ac:35:LYS:HD2	2.20	0.42
75:AV:152:ILE:HD13	75:AV:152:ILE:HA	1.86	0.42
77:AX:61:GLU:OE2	77:AX:61:GLU:HA	2.19	0.42
3:S3:58:VAL:HG23	3:S3:59:TYR:CE2	2.55	0.42
8:SA:17:C:H2'	8:SA:18:C:C6	2.55	0.42
8:SA:887:A:C6	8:SA:915:G:O6	2.71	0.42
8:SA:1037:U:OP1	8:SA:1102:C:O2'	2.35	0.42
8:SA:1317:A:O2'	8:SA:1690:A:N1	2.48	0.42
8:SA:1631:G:H2'	8:SA:1632:G:H8	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:SB:70:LEU:HD23	9:SB:70:LEU:HA	1.88	0.42
10:SC:55:GLU:HG3	33:SZ:78:LEU:HD12	2.02	0.42
10:SC:60:ALA:HB2	10:SC:160:ILE:HD11	2.02	0.42
12:SE:65:LYS:HA	12:SE:70:ILE:HD13	2.02	0.42
12:SE:113:VAL:HG13	12:SE:125:ALA:HB1	2.01	0.42
13:SF:36:HIS:CE1	13:SF:85:GLY:HA3	2.54	0.42
15:SH:191:LEU:HD13	15:SH:191:LEU:HA	1.89	0.42
16:SI:10:LEU:CD2	16:SI:100:LEU:HD11	2.50	0.42
16:SI:158:LYS:HE2	16:SI:166:GLU:CD	2.45	0.42
17:SJ:154:MET:SD	17:SJ:189:PRO:HD3	2.60	0.42
17:SJ:169:LEU:HD12	17:SJ:186:PHE:HB2	2.01	0.42
19:SL:59:LYS:O	19:SL:60:LEU:HD13	2.19	0.42
19:SL:76:THR:HG21	19:SL:104:ILE:HG23	2.02	0.42
34:AA:137:G:H8	34:AA:140:A:N7	2.18	0.42
34:AA:338:U:H2'	34:AA:339:G:C8	2.54	0.42
34:AA:2122:U:H2'	34:AA:2123:C:C6	2.55	0.42
34:AA:3199:C:H2'	34:AA:3200:G:O4'	2.20	0.42
34:AA:3359:A:H2'	34:AA:3360:U:C6	2.55	0.42
34:AA:3631:U:O4	34:AA:3654:C:N3	2.53	0.42
35:AC:25:C:OP1	71:AF:195:LYS:NZ	2.43	0.42
41:A6:17:LEU:O	41:A6:21:MET:HG2	2.20	0.42
43:AN:82:LYS:HA	43:AN:82:LYS:HD2	1.76	0.42
44:A8:38:ILE:HD13	44:A8:38:ILE:HA	1.92	0.42
46:Aa:32:ILE:HD12	46:Aa:32:ILE:HA	1.92	0.42
54:AI:87:GLY:O	54:AI:92:ASN:HB3	2.19	0.42
63:AW:4:TYR:HB3	63:AW:147:GLN:NE2	2.35	0.42
63:AW:8:ILE:HD11	63:AW:149:ILE:HG21	2.01	0.42
63:AW:10:ASN:HB2	63:AW:13:LYS:NZ	2.34	0.42
68:A5:71:ILE:HD11	68:A5:85:TYR:HE2	1.85	0.42
68:A5:190:ASN:C	68:A5:190:ASN:HD22	2.14	0.42
69:AD:229:ALA:HB1	69:AD:233:GLN:HB3	2.01	0.42
71:AF:298:VAL:HA	71:AF:301:SER:HB3	2.01	0.42
73:AU:24:PRO:HB3	73:AU:29:LYS:O	2.20	0.42
81:S9:20:U:H2'	81:S9:21:A:H4'	2.01	0.42
81:S9:72:C:H2'	81:S9:73:A:H5'	2.02	0.42
2:S2:71:ASN:HB2	2:S2:74:VAL:HG22	2.02	0.42
3:S3:64:LEU:HD23	3:S3:64:LEU:HA	1.83	0.42
8:SA:593:G:H2'	8:SA:594:C:C6	2.54	0.42
8:SA:958:U:H2'	8:SA:959:C:C6	2.55	0.42
8:SA:1314:U:H2'	8:SA:1315:U:H6	1.84	0.42
11:SD:75:LYS:HZ2	22:SO:33:VAL:HG23	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:SE:74:GLU:H	12:SE:74:GLU:CD	2.19	0.42
15:SH:109:LEU:HD23	15:SH:110:ASN:N	2.35	0.42
19:SL:10:LYS:O	19:SL:18:LYS:HD3	2.20	0.42
23:SP:85:LEU:HD23	23:SP:85:LEU:HA	1.90	0.42
24:SQ:34:LEU:O	24:SQ:37:ARG:HG2	2.20	0.42
24:SQ:41:ASN:OD1	24:SQ:44:ARG:N	2.52	0.42
26:SS:35:ILE:HD12	26:SS:36:LYS:H	1.83	0.42
26:SS:110:ARG:O	26:SS:113:LEU:HD12	2.20	0.42
31:SX:82:ASN:N	31:SX:82:ASN:OD1	2.52	0.42
34:AA:109:A:H4'	34:AA:110:G:OP1	2.20	0.42
34:AA:151:G:H2'	34:AA:152:G:O4'	2.20	0.42
34:AA:212:U:H2'	34:AA:213:C:H6	1.85	0.42
34:AA:705:C:H2'	34:AA:706:U:C6	2.54	0.42
34:AA:1579:U:O4	60:AO:3:THR:HG23	2.20	0.42
34:AA:1980:G:H5'	34:AA:1981:U:C5	2.49	0.42
34:AA:3009:G:H2'	34:AA:3010:A:C8	2.55	0.42
34:AA:3023:C:H2'	34:AA:3024:U:H6	1.85	0.42
34:AA:3717:A:H2'	34:AA:3718:G:C8	2.55	0.42
34:AA:3739:A:O2'	34:AA:3740:A:H5'	2.19	0.42
35:AC:38:G:HO2'	35:AC:39:C:H6	1.64	0.42
41:A6:16:LYS:HB3	41:A6:103:ILE:HD12	2.02	0.42
51:AP:2:GLY:N	55:AJ:154:ASN:HD22	2.18	0.42
51:AP:122:VAL:HG21	51:AP:132:GLU:CG	2.49	0.42
55:AJ:75:ILE:O	55:AJ:79:ARG:HG3	2.20	0.42
57:AK:61:THR:HG23	57:AK:68:GLY:CA	2.46	0.42
62:AR:50:ARG:HD2	62:AR:149:ASP:OD1	2.20	0.42
65:AT:132:LYS:HB2	65:AT:132:LYS:HE3	1.64	0.42
71:AF:66:SER:O	71:AF:68:GLY:N	2.53	0.42
73:AU:182:TYR:O	73:AU:184:MET:HG3	2.18	0.42
74:AH:105:VAL:HG23	74:AH:106:ASP:OD2	2.20	0.42
77:AX:94:VAL:HG21	77:AX:98:PHE:HB3	2.02	0.42
79:S8:23:C:H2'	79:S8:24:U:C6	2.55	0.42
1:S1:41:LYS:HB3	1:S1:53:VAL:HG22	2.02	0.41
7:S7:54:G:H3'	7:S7:55:U:C6	2.55	0.41
8:SA:1217:A:H2'	8:SA:1218:U:C6	2.55	0.41
8:SA:1283:U:H4'	8:SA:1284:A:OP2	2.19	0.41
8:SA:1453:G:C2	8:SA:1454:G:C4	3.08	0.41
8:SA:1921:C:H2'	8:SA:1922:C:H6	1.85	0.41
15:SH:38:GLY:HA3	15:SH:50:PHE:CE2	2.55	0.41
16:SI:50:LYS:HG2	16:SI:51:ARG:H	1.84	0.41
17:SJ:9:LEU:HD11	17:SJ:21:ALA:HB2	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:SK:57:ARG:HB2	18:SK:57:ARG:NH1	2.35	0.41
18:SK:86:ILE:O	18:SK:90:ILE:HG12	2.20	0.41
20:SM:32:LEU:HD13	20:SM:36:ASN:C	2.45	0.41
24:SQ:103:LEU:HB3	24:SQ:126:LYS:HG2	2.01	0.41
29:SV:110:ILE:HA	29:SV:111:PRO:HD3	1.93	0.41
34:AA:91:G:OP2	34:AA:93:C:N4	2.45	0.41
34:AA:94:G:H2'	34:AA:95:A:C8	2.54	0.41
34:AA:175:G:C6	34:AA:256:A:C6	3.08	0.41
34:AA:361:G:O6	56:Ac:58:ARG:NH2	2.49	0.41
34:AA:388:C:H2'	34:AA:389:U:C6	2.55	0.41
34:AA:652:A:N1	34:AA:682:A:O2'	2.47	0.41
34:AA:883:C:H2'	34:AA:884:A:O4'	2.20	0.41
34:AA:1597:U:H2'	34:AA:1598:A:C8	2.55	0.41
34:AA:1764:U:H2'	34:AA:1765:A:H8	1.85	0.41
34:AA:1791:A:OP2	46:Aa:68:LYS:NZ	2.50	0.41
34:AA:1875:A:H4'	65:AT:116:ARG:HD2	2.03	0.41
34:AA:2669:G:H2'	34:AA:2670:G:C8	2.54	0.41
34:AA:3069:A:H4'	59:AS:185:TYR:CG	2.55	0.41
34:AA:3085:A:H61	62:AR:150:VAL:CG2	2.32	0.41
34:AA:3262:A:H2'	34:AA:3263:G:O4'	2.19	0.41
34:AA:3401:C:H2'	34:AA:3402:A:C8	2.55	0.41
35:AC:43:G:OP2	35:AC:43:G:H8	2.03	0.41
37:AL:174:ILE:HD11	60:AO:123:VAL:HG21	2.02	0.41
42:A7:86:LYS:HB2	42:A7:98:TYR:CE1	2.54	0.41
44:A8:80:LYS:O	44:A8:83:GLU:HG3	2.20	0.41
51:AP:13:LYS:HA	51:AP:13:LYS:HD3	1.83	0.41
54:AI:130:ASP:OD1	54:AI:130:ASP:C	2.63	0.41
55:AJ:206:LEU:HD23	55:AJ:206:LEU:HA	1.94	0.41
55:AJ:231:PHE:HA	55:AJ:234:VAL:HG12	2.01	0.41
70:AE:113:GLU:HG2	70:AE:163:PRO:HD2	2.03	0.41
81:S9:29:G:H2'	81:S9:30:G:O4'	2.20	0.41
4:S4:16:LYS:HD2	8:SA:1171:U:H4'	2.01	0.41
8:SA:543:A:H2'	8:SA:544:G:O4'	2.20	0.41
8:SA:754:A:H62	17:SJ:105:GLN:CD	2.28	0.41
8:SA:910:A:H2'	8:SA:911:U:C6	2.55	0.41
8:SA:1047:A:H2'	8:SA:1048:A:O4'	2.20	0.41
8:SA:1233:A:OP1	24:SQ:30:LYS:NZ	2.33	0.41
8:SA:1272:A:H2'	8:SA:1273:G:C8	2.54	0.41
8:SA:1306:C:O2	8:SA:1306:C:H2'	2.20	0.41
8:SA:1713:C:H4'	32:SY:112:PRO:HG3	2.01	0.41
8:SA:1717:A:C2	8:SA:1720:G:N3	2.87	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:SA:1732:G:C4'	21:SN:61:ARG:HH22	2.31	0.41
8:SA:1885:G:H2'	8:SA:1886:C:O4'	2.20	0.41
8:SA:1966:U:H2'	8:SA:1967:G:O4'	2.20	0.41
9:SB:86:LEU:HA	9:SB:99:ASP:O	2.20	0.41
9:SB:106:THR:HG23	9:SB:109:LYS:H	1.85	0.41
9:SB:121:ILE:HG23	9:SB:161:ILE:HG23	2.02	0.41
12:SE:16:LYS:HE2	12:SE:16:LYS:HB2	1.82	0.41
15:SH:187:LYS:O	15:SH:190:LEU:HG	2.20	0.41
16:SI:64:VAL:HG12	16:SI:84:VAL:HG11	2.00	0.41
26:SS:25:LYS:O	26:SS:57:ARG:NH1	2.52	0.41
27:ST:7:VAL:HG23	27:ST:9:PRO:HD3	2.01	0.41
28:SU:114:ARG:HA	28:SU:114:ARG:HD3	1.94	0.41
31:SX:86:ILE:HD13	31:SX:86:ILE:HA	1.86	0.41
32:SY:67:LYS:HD2	32:SY:67:LYS:HA	1.85	0.41
34:AA:507:G:H2'	34:AA:508:A:C8	2.55	0.41
34:AA:1124:A:H2'	34:AA:1125:A:C8	2.50	0.41
38:A1:54:ASN:C	38:A1:54:ASN:OD1	2.63	0.41
38:A1:83:THR:HG23	46:Aa:93:PHE:HZ	1.85	0.41
44:A8:110:GLU:HG3	44:A8:111:ARG:N	2.33	0.41
59:AS:103:ARG:NH2	71:AF:283:ILE:HD11	2.35	0.41
61:AQ:73:ASN:O	61:AQ:77:ILE:HG12	2.20	0.41
62:AR:181:ARG:HA	62:AR:181:ARG:HD3	1.72	0.41
69:AD:175:ILE:HD13	69:AD:175:ILE:HA	1.84	0.41
70:AE:10:ARG:NH2	70:AE:260:GLN:O	2.53	0.41
70:AE:224:LYS:HG3	70:AE:267:LYS:HD3	2.01	0.41
70:AE:233:LYS:HB2	70:AE:233:LYS:HE2	1.60	0.41
7:S7:12:G:N1	7:S7:23:G:C6	2.88	0.41
8:SA:988:U:H1'	23:SP:50:ARG:HG2	2.03	0.41
8:SA:1321:C:H2'	8:SA:1322:A:C8	2.56	0.41
8:SA:1785:C:H2'	8:SA:1786:U:C5	2.55	0.41
8:SA:1890:A:H2'	8:SA:1891:U:H6	1.85	0.41
8:SA:1891:U:H2'	8:SA:1892:U:C6	2.56	0.41
9:SB:224:ASP:OD2	9:SB:226:SER:HB3	2.21	0.41
10:SC:10:LYS:N	10:SC:13:SER:OG	2.49	0.41
11:SD:78:PHE:HD1	11:SD:78:PHE:HA	1.68	0.41
18:SK:83:LEU:HD11	18:SK:121:THR:H	1.83	0.41
20:SM:49:VAL:HG22	20:SM:79:ILE:HG23	2.02	0.41
21:SN:65:ARG:HB3	27:ST:38:ARG:HH21	1.84	0.41
24:SQ:9:LEU:HA	24:SQ:9:LEU:HD12	1.85	0.41
25:SR:122:PHE:CZ	25:SR:133:LEU:HD11	2.56	0.41
32:SY:91:PRO:O	32:SY:146:ARG:HG2	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:145:U:H2'	34:AA:146:U:C5	2.55	0.41
34:AA:177:A:H2'	34:AA:178:U:H6	1.85	0.41
34:AA:436:G:H2'	34:AA:437:A:C8	2.56	0.41
34:AA:741:C:H2'	34:AA:742:U:C6	2.55	0.41
34:AA:2395:U:H4'	65:AT:88:THR:OG1	2.20	0.41
34:AA:2821:C:O2'	34:AA:2822:U:H5'	2.19	0.41
34:AA:3035:A:H2'	34:AA:3036:A:C8	2.55	0.41
34:AA:3477:A:H8	34:AA:3477:A:OP1	2.03	0.41
36:AB:39:C:HO2'	36:AB:40:A:P	2.43	0.41
38:A1:29:TYR:HD2	38:A1:40:TYR:CE2	2.38	0.41
44:A8:36:ARG:O	44:A8:43:ARG:HD3	2.21	0.41
45:A9:39:ARG:O	45:A9:40:LEU:C	2.63	0.41
51:AP:54:LYS:HB3	51:AP:56:ILE:CD1	2.49	0.41
51:AP:75:VAL:HG23	51:AP:77:LYS:O	2.20	0.41
59:AS:51:ARG:HA	59:AS:54:MET:HG3	2.02	0.41
60:AO:85:GLU:H	60:AO:85:GLU:CD	2.14	0.41
61:AQ:52:LEU:HD12	61:AQ:164:LYS:O	2.20	0.41
64:AY:136:LYS:HA	64:AY:168:LYS:HE2	2.02	0.41
66:AZ:65:ARG:NH2	66:AZ:84:VAL:HA	2.35	0.41
66:AZ:81:VAL:HG22	66:AZ:84:VAL:HG22	2.03	0.41
68:A5:173:ARG:HB2	68:A5:216:TRP:CZ3	2.56	0.41
69:AD:42:LYS:HA	69:AD:88:ILE:O	2.20	0.41
70:AE:50:LYS:HB2	70:AE:333:ILE:CD1	2.49	0.41
71:AF:321:ASN:HB3	71:AF:324:VAL:HG22	2.02	0.41
73:AU:21:ARG:HG2	73:AU:22:ALA:O	2.20	0.41
4:S4:29:TYR:H	4:S4:46:SER:HB3	1.85	0.41
8:SA:107:A:OP1	19:SL:12:ARG:NH1	2.50	0.41
8:SA:539:U:C2	8:SA:540:C:C5	3.08	0.41
8:SA:619:U:OP2	24:SQ:5:LYS:NZ	2.53	0.41
8:SA:1168:U:H2'	8:SA:1169:C:C6	2.55	0.41
8:SA:1186:G:N2	8:SA:1189:A:OP2	2.39	0.41
8:SA:1271:G:H2'	8:SA:1271:G:N3	2.35	0.41
8:SA:1271:G:H1	8:SA:1715:A:H61	1.68	0.41
8:SA:1880:A:C5	16:SI:48:GLN:HG2	2.55	0.41
8:SA:1911:A:P	16:SI:51:ARG:HH21	2.43	0.41
8:SA:2079:C:OP2	23:SP:146:ARG:HG2	2.21	0.41
13:SF:125:LYS:O	13:SF:142:HIS:N	2.48	0.41
15:SH:209:LYS:HA	15:SH:212:LEU:HD12	2.01	0.41
19:SL:207:PHE:HZ	29:SV:11:ARG:HE	1.67	0.41
22:SO:73:LYS:HG3	27:ST:20:ARG:O	2.20	0.41
23:SP:61:LYS:HA	23:SP:61:LYS:HD3	1.62	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:SS:17:ILE:CD1	26:SS:19:ASN:H	2.33	0.41
34:AA:62:A:H2'	34:AA:63:A:C8	2.56	0.41
34:AA:112:U:O2'	34:AA:113:C:OP2	2.34	0.41
34:AA:218:U:H5'	71:AF:219:LYS:O	2.20	0.41
34:AA:253:U:H2'	34:AA:254:U:C6	2.55	0.41
34:AA:514:C:H2'	34:AA:515:A:H8	1.85	0.41
34:AA:803:A:H1'	60:AO:57:GLY:HA2	2.02	0.41
34:AA:1256:U:H2'	34:AA:1257:A:O4'	2.20	0.41
34:AA:2091:U:C2	34:AA:2094:A:N7	2.88	0.41
34:AA:3459:A:H2'	34:AA:3460:C:H6	1.85	0.41
34:AA:3664:G:C6	54:AI:170:ARG:HG3	2.56	0.41
34:AA:3684:A:N3	34:AA:3684:A:H2'	2.35	0.41
37:AL:55:PRO:HG3	37:AL:73:GLY:O	2.19	0.41
54:AI:135:SER:HA	54:AI:175:LYS:HE2	2.02	0.41
55:AJ:203:LEU:HA	55:AJ:206:LEU:HB2	2.02	0.41
55:AJ:270:LYS:HA	55:AJ:270:LYS:HD2	1.85	0.41
57:AK:153:LYS:O	57:AK:157:VAL:HG13	2.21	0.41
58:AM:57:GLY:HA3	58:AM:127:LEU:HD12	2.02	0.41
58:AM:89:ARG:HH21	58:AM:123:GLU:CD	2.28	0.41
62:AR:230:ILE:C	62:AR:230:ILE:HD12	2.45	0.41
81:S9:66:U:H2'	81:S9:67:C:H6	1.84	0.41
4:S4:47:HIS:HA	4:S4:67:GLY:O	2.21	0.41
8:SA:452:A:C6	8:SA:453:U:C4	3.08	0.41
8:SA:520:U:H4'	12:SE:131:GLN:HB3	2.02	0.41
8:SA:970:G:C6	8:SA:971:G:C6	3.08	0.41
8:SA:1845:U:H4'	26:SS:89:ARG:HH21	1.85	0.41
8:SA:1904:G:H2'	8:SA:1905:C:C6	2.56	0.41
8:SA:1945:C:H2'	8:SA:1946:C:H6	1.86	0.41
9:SB:144:LYS:HG3	9:SB:208:GLN:HB3	2.02	0.41
10:SC:189:PRO:HG2	10:SC:192:GLU:OE1	2.21	0.41
12:SE:177:LEU:HD23	12:SE:177:LEU:HA	1.94	0.41
16:SI:79:LYS:HA	16:SI:82:ARG:HB2	2.02	0.41
21:SN:39:MET:HB2	21:SN:43:LYS:NZ	2.36	0.41
21:SN:95:GLU:O	21:SN:99:GLN:HG2	2.21	0.41
26:SS:119:ILE:HG22	26:SS:121:LEU:H	1.85	0.41
34:AA:592:C:H5'	34:AA:593:A:OP1	2.21	0.41
34:AA:1849:U:O2'	34:AA:1850:U:H5'	2.21	0.41
34:AA:1881:C:H1'	34:AA:1882:U:OP1	2.21	0.41
34:AA:3593:U:H2'	34:AA:3594:G:C8	2.55	0.41
35:AC:49:C:H2'	35:AC:50:G:O4'	2.21	0.41
37:AL:113:GLU:OE1	37:AL:113:GLU:O	2.39	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:A7:66:PHE:CE2	42:A7:76:PRO:HG3	2.55	0.41
59:AS:179:ARG:HH12	59:AS:187:LYS:HE2	1.85	0.41
71:AF:307:LYS:HE3	71:AF:307:LYS:HB3	1.84	0.41
2:S2:61:PRO:HD2	2:S2:101:TYR:OH	2.21	0.41
3:S3:45:VAL:HG23	3:S3:50:GLN:NE2	2.36	0.41
5:S5:3:LYS:HD2	5:S5:3:LYS:HA	1.84	0.41
5:S5:45:LYS:HB3	16:SI:133:SER:HB2	2.03	0.41
6:S6:30:LEU:HD21	6:S6:34:ALA:HB1	2.02	0.41
8:SA:1123:G:N2	8:SA:1167:U:C2	2.89	0.41
10:SC:81:PHE:HA	10:SC:203:TRP:CD1	2.55	0.41
11:SD:109:LYS:HB3	11:SD:110:LEU:HD12	2.01	0.41
13:SF:181:VAL:O	13:SF:192:VAL:HA	2.21	0.41
16:SI:156:ASN:O	16:SI:158:LYS:N	2.49	0.41
17:SJ:57:LYS:HD2	17:SJ:57:LYS:HA	1.88	0.41
25:SR:47:LYS:HD3	25:SR:50:GLU:OE2	2.20	0.41
34:AA:533:A:N3	34:AA:623:U:H1'	2.35	0.41
34:AA:616:U:C2	34:AA:617:A:N7	2.87	0.41
34:AA:698:G:HO2'	34:AA:699:U:P	2.43	0.41
34:AA:704:U:H2'	34:AA:705:C:C6	2.56	0.41
34:AA:1512:A:H2'	34:AA:1513:U:O4'	2.21	0.41
34:AA:2741:A:H2'	34:AA:2742:G:C8	2.56	0.41
34:AA:3129:U:H6	34:AA:3129:U:O5'	2.04	0.41
34:AA:3300:A:OP2	34:AA:3300:A:H8	2.04	0.41
34:AA:3523:U:OP1	70:AE:271:HIS:ND1	2.51	0.41
38:A1:109:LYS:H	38:A1:109:LYS:CE	2.25	0.41
38:A1:120:ASP:N	38:A1:120:ASP:OD1	2.53	0.41
44:A8:96:ILE:HG21	44:A8:105:ARG:HG2	2.02	0.41
63:AW:22:LEU:HB3	63:AW:90:PHE:HD2	1.83	0.41
63:AW:107:LEU:HB2	63:AW:152:GLU:OE2	2.20	0.41
63:AW:111:LYS:HD3	63:AW:111:LYS:HA	1.89	0.41
65:AT:171:LYS:O	65:AT:174:LEU:HG	2.21	0.41
69:AD:3:ARG:HG2	69:AD:207:VAL:HG22	2.01	0.41
70:AE:19:ARG:HB3	70:AE:270:PHE:CZ	2.56	0.41
70:AE:283:GLY:HA3	70:AE:318:PHE:CZ	2.56	0.41
70:AE:321:LEU:HD23	70:AE:321:LEU:HA	1.87	0.41
3:S3:46:ASP:OD1	3:S3:46:ASP:C	2.63	0.41
8:SA:1708:G:H2'	8:SA:1709:C:H6	1.84	0.41
11:SD:174:ARG:HD3	11:SD:174:ARG:HA	1.97	0.41
13:SF:155:LYS:HA	13:SF:155:LYS:HD3	1.68	0.41
14:SG:173:LYS:HB2	14:SG:178:ARG:HH11	1.84	0.41
16:SI:16:TYR:CD2	16:SI:100:LEU:HD12	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:SI:62:ARG:O	16:SI:66:SER:HB3	2.21	0.41
18:SK:10:CYS:O	18:SK:14:ILE:HG12	2.20	0.41
19:SL:173:LEU:HA	19:SL:176:PHE:CD2	2.56	0.41
21:SN:31:ILE:HD13	21:SN:84:TYR:HB3	2.03	0.41
21:SN:54:ARG:N	21:SN:54:ARG:HD2	2.36	0.41
26:SS:13:HIS:CD2	26:SS:59:GLY:HA3	2.56	0.41
34:AA:209:G:H4'	34:AA:228:A:N7	2.35	0.41
34:AA:388:C:H2'	34:AA:389:U:H6	1.85	0.41
34:AA:458:A:O2'	34:AA:459:G:H8	2.04	0.41
34:AA:501:U:HO2'	34:AA:502:U:P	2.43	0.41
34:AA:1293:G:H5'	45:A9:60:PHE:HZ	1.85	0.41
34:AA:1895:U:H2'	34:AA:1896:C:H6	1.83	0.41
34:AA:2809:A:O2'	34:AA:2810:A:O4'	2.38	0.41
34:AA:3286:C:H2'	34:AA:3287:C:C6	2.56	0.41
34:AA:3534:U:H2'	34:AA:3535:A:H8	1.86	0.41
35:AC:125:U:H2'	35:AC:126:C:C6	2.56	0.41
35:AC:156:A:O2'	35:AC:157:A:O5'	2.38	0.41
37:AL:6:ASN:O	60:AO:49:HIS:NE2	2.51	0.41
48:Ad:25:ILE:HD11	48:Ad:73:ARG:HG3	2.02	0.41
51:AP:5:LYS:HD2	51:AP:5:LYS:HA	1.77	0.41
52:Ah:49:ARG:HG3	52:Ah:55:TRP:CE2	2.56	0.41
54:AI:31:LYS:HE2	54:AI:34:PHE:CZ	2.55	0.41
70:AE:67:LEU:O	70:AE:70:LYS:HG2	2.20	0.41
70:AE:281:ARG:NH2	70:AE:353:LEU:HD11	2.35	0.41
72:AG:92:ARG:HG3	72:AG:94:LYS:N	2.36	0.41
74:AH:86:LYS:HB2	74:AH:86:LYS:HE2	1.81	0.41
75:AV:57:TYR:CE2	75:AV:79:LYS:HG3	2.56	0.41
7:S7:12:G:C2	7:S7:23:G:C6	3.08	0.41
8:SA:38:C:H42	8:SA:39:A:N6	2.19	0.41
8:SA:151:G:C6	8:SA:160:G:C6	3.09	0.41
8:SA:349:C:H2'	8:SA:350:A:C8	2.56	0.41
8:SA:1628:A:N3	8:SA:1629:G:N7	2.68	0.41
8:SA:1662:A:N6	8:SA:1663:A:H62	2.18	0.41
8:SA:1663:A:H2'	8:SA:1664:G:H8	1.78	0.41
8:SA:1824:A:H3'	8:SA:1825:U:C6	2.56	0.41
9:SB:35:PRO:HB3	9:SB:231:LEU:HD13	2.01	0.41
10:SC:70:PRO:O	10:SC:95:ALA:HA	2.20	0.41
10:SC:81:PHE:HA	10:SC:203:TRP:CG	2.56	0.41
10:SC:146:LEU:HB3	10:SC:162:CYS:SG	2.61	0.41
12:SE:83:GLN:HG2	12:SE:83:GLN:H	1.77	0.41
13:SF:200:LYS:HB2	13:SF:200:LYS:HE2	1.65	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:SG:64:LEU:O	33:SZ:15:ARG:NH1	2.48	0.41
19:SL:106:SER:OG	19:SL:181:VAL:HB	2.21	0.41
20:SM:100:GLU:O	20:SM:104:LYS:HG2	2.20	0.41
21:SN:25:SER:HB2	21:SN:31:ILE:HG22	2.03	0.41
26:SS:76:PRO:HA	26:SS:79:PHE:CD1	2.56	0.41
28:SU:39:LYS:HE2	28:SU:39:LYS:HB3	1.77	0.41
29:SV:14:GLN:O	29:SV:57:VAL:HG21	2.21	0.41
30:SW:44:LYS:HA	30:SW:47:LYS:HB2	2.03	0.41
32:SY:162:ILE:O	32:SY:165:LYS:HG3	2.21	0.41
34:AA:298:C:OP1	51:AP:68:ARG:HB3	2.20	0.41
34:AA:671:U:H2'	34:AA:672:C:H6	1.86	0.41
34:AA:1109:U:OP1	68:A5:134:GLU:HG2	2.21	0.41
34:AA:1274:A:H4'	34:AA:1459:U:C4	2.56	0.41
34:AA:1306:A:N3	34:AA:1456:C:O2'	2.51	0.41
34:AA:1601:A:O2'	34:AA:1602:A:H5'	2.21	0.41
34:AA:1958:U:C2	34:AA:1959:G:C8	3.09	0.41
34:AA:2026:G:H2'	34:AA:2027:A:O4'	2.21	0.41
34:AA:2885:A:O2'	34:AA:2886:A:C8	2.74	0.41
34:AA:3582:G:H8	34:AA:3582:G:OP2	2.04	0.41
34:AA:3607:G:OP1	74:AH:21:ASN:ND2	2.46	0.41
34:AA:3693:A:H2'	34:AA:3694:A:H8	1.83	0.41
45:A9:39:ARG:HG3	45:A9:40:LEU:N	2.36	0.41
45:A9:106:ARG:CD	45:A9:115:ARG:HD2	2.51	0.41
54:AI:60:ALA:HB1	54:AI:104:LEU:HG	2.03	0.41
74:AH:2:LYS:HD2	74:AH:60:PHE:HB3	2.03	0.41
1:S1:18:LEU:HD22	13:SF:64:ILE:HD11	2.03	0.41
7:S7:58:G:P	7:S7:59:A:H62	2.44	0.41
8:SA:247:G:H21	8:SA:249:A:H8	1.69	0.41
8:SA:331:G:H2'	8:SA:332:U:C6	2.56	0.41
8:SA:571:G:O2'	8:SA:584:G:H4'	2.20	0.41
8:SA:574:A:H2'	8:SA:575:G:O4'	2.21	0.41
8:SA:799:U:H5'	18:SK:121:THR:HA	2.03	0.41
8:SA:1305:A:C4	8:SA:1306:C:C5	3.08	0.41
8:SA:1313:G:N1	8:SA:1698:U:O4	2.54	0.41
8:SA:1699:A:H2'	8:SA:1700:G:O4'	2.20	0.41
8:SA:1804:C:H2'	8:SA:1805:G:C8	2.55	0.41
8:SA:1830:C:H4'	8:SA:1836:G:H1	1.86	0.41
8:SA:1904:G:H2'	8:SA:1905:C:H6	1.85	0.41
8:SA:2068:A:H2'	8:SA:2069:G:H8	1.86	0.41
9:SB:191:GLU:O	9:SB:195:LYS:HG2	2.21	0.41
10:SC:164:ASN:O	10:SC:170:ILE:HD11	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:SC:199:ASP:OD2	10:SC:199:ASP:N	2.54	0.41
14:SG:124:GLY:HA2	14:SG:227:PHE:HE1	1.85	0.41
14:SG:153:ARG:NH1	14:SG:204:GLY:O	2.54	0.41
15:SH:135:PRO:O	15:SH:141:ILE:HD11	2.21	0.41
16:SI:53:ARG:HA	16:SI:56:LEU:CB	2.50	0.41
17:SJ:88:THR:HG1	17:SJ:90:LYS:HZ3	1.56	0.41
17:SJ:100:ILE:HD11	17:SJ:122:VAL:CG2	2.51	0.41
19:SL:89:GLU:OE1	19:SL:92:ARG:HD2	2.21	0.41
20:SM:79:ILE:O	20:SM:82:ILE:HG22	2.21	0.41
21:SN:48:ASN:HB3	21:SN:91:TYR:HB3	2.03	0.41
21:SN:79:PHE:HE2	27:ST:41:PHE:CE2	2.39	0.41
24:SQ:89:GLY:HA3	24:SQ:92:CYS:SG	2.60	0.41
28:SU:13:SER:OG	28:SU:14:SER:N	2.54	0.41
28:SU:86:GLU:HA	28:SU:86:GLU:OE1	2.21	0.41
31:SX:41:GLN:HB3	31:SX:45:PHE:CE2	2.56	0.41
32:SY:35:ASP:HA	32:SY:38:ILE:HG12	2.02	0.41
34:AA:37:U:H5'	34:AA:1053:U:O2	2.21	0.41
34:AA:209:G:H5'	34:AA:228:A:O2'	2.21	0.41
34:AA:309:G:H2'	34:AA:310:U:C6	2.56	0.41
34:AA:508:A:H2'	34:AA:509:A:C8	2.56	0.41
34:AA:626:A:H2'	34:AA:627:U:C6	2.55	0.41
34:AA:936:A:N7	56:Ac:17:LYS:HA	2.36	0.41
34:AA:1219:A:N7	34:AA:1224:A:C6	2.89	0.41
34:AA:1308:A:C4	34:AA:1310:A:C8	3.09	0.41
34:AA:1666:A:OP1	49:Ae:41:ARG:NH1	2.34	0.41
34:AA:2535:A:H5'	69:AD:243:THR:HG22	2.03	0.41
34:AA:2657:G:H22	34:AA:2689:G:H1'	1.85	0.41
34:AA:2741:A:H2'	34:AA:2742:G:H8	1.85	0.41
34:AA:2940:A:H2'	34:AA:2941:G:C8	2.55	0.41
34:AA:3460:C:H2'	34:AA:3461:C:C6	2.55	0.41
34:AA:3729:A:H2'	34:AA:3730:C:C6	2.56	0.41
35:AC:154:G:C2	35:AC:155:A:C5	3.09	0.41
36:AB:58:A:H2'	36:AB:59:C:H6	1.86	0.41
37:AL:21:VAL:HA	51:AP:199:ILE:HG23	2.03	0.41
37:AL:179:ILE:HG23	60:AO:143:GLN:HB2	2.02	0.41
38:A1:8:GLY:HA2	38:A1:93:ILE:HD12	2.02	0.41
44:A8:13:ARG:HH12	44:A8:51:LEU:HD11	1.86	0.41
44:A8:40:CYS:HB3	44:A8:43:ARG:HB3	2.02	0.41
44:A8:69:ASN:ND2	44:A8:71:LYS:HB2	2.36	0.41
45:A9:66:LYS:HA	57:AK:2:TYR:CE1	2.56	0.41
48:Ad:26:MET:HA	48:Ad:77:PRO:HD3	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:Ah:28:LYS:HD3	52:Ah:28:LYS:C	2.45	0.41
52:Ah:38:LEU:HA	52:Ah:45:THR:HA	2.03	0.41
54:AI:31:LYS:HB3	54:AI:31:LYS:HE3	1.85	0.41
54:AI:178:LYS:O	54:AI:182:ILE:HG22	2.21	0.41
57:AK:154:LYS:O	57:AK:157:VAL:HG22	2.21	0.41
59:AS:104:PHE:CE1	59:AS:119:CYS:HB3	2.55	0.41
60:AO:105:LYS:HA	60:AO:105:LYS:HD2	1.82	0.41
61:AQ:5:PRO:HD2	61:AQ:8:CYS:SG	2.61	0.41
62:AR:203:VAL:O	62:AR:207:MET:HG3	2.21	0.41
62:AR:210:LEU:HA	62:AR:210:LEU:HD12	1.81	0.41
64:AY:92:LYS:HD2	67:A3:77:PHE:CE2	2.56	0.41
64:AY:138:ALA:O	64:AY:168:LYS:HE3	2.21	0.41
65:AT:104:LEU:HD21	65:AT:138:ILE:CD1	2.51	0.41
72:AG:133:ARG:NH2	72:AG:154:VAL:HA	2.35	0.41
73:AU:53:PHE:CE1	75:AV:154:PRO:HB3	2.56	0.41
74:AH:31:TYR:CD2	74:AH:86:LYS:HG3	2.55	0.41
74:AH:86:LYS:O	74:AH:186:VAL:HG23	2.21	0.41
77:AX:56:ASP:OD1	77:AX:56:ASP:C	2.64	0.41
79:S8:15:G:N7	79:S8:16:C:C2	2.89	0.41
79:S8:23:C:H2'	79:S8:24:U:H6	1.86	0.41
81:S9:39:U:H2'	81:S9:40:C:C6	2.55	0.41
1:S1:15:ASN:ND2	1:S1:22:GLN:HE22	2.12	0.41
8:SA:40:A:H2'	8:SA:41:A:O4'	2.21	0.41
8:SA:877:U:H2'	8:SA:878:G:C8	2.56	0.41
8:SA:912:U:H2'	8:SA:913:U:C6	2.56	0.41
8:SA:1720:G:C2	8:SA:1721:A:N7	2.89	0.41
8:SA:1743:A:N6	8:SA:1787:U:H5	2.19	0.41
8:SA:2078:G:OP2	23:SP:147:ARG:NH1	2.54	0.41
11:SD:99:ALA:HB3	11:SD:170:ASN:ND2	2.36	0.41
12:SE:97:LEU:HD23	12:SE:97:LEU:HA	1.86	0.41
12:SE:120:LYS:H	12:SE:120:LYS:HG2	1.66	0.41
16:SI:46:ARG:HH22	16:SI:53:ARG:NH1	2.19	0.41
18:SK:80:ASP:HA	18:SK:124:LYS:HG3	2.03	0.41
19:SL:51:ARG:HH11	19:SL:51:ARG:HG3	1.85	0.41
26:SS:76:PRO:HA	26:SS:79:PHE:HD1	1.86	0.41
32:SY:133:LEU:HD23	32:SY:133:LEU:HA	1.92	0.41
34:AA:278:C:H2'	34:AA:279:G:O4'	2.21	0.41
34:AA:536:A:HO2'	34:AA:537:A:H5''	1.86	0.41
34:AA:1436:A:OP2	34:AA:1436:A:C8	2.74	0.41
34:AA:2180:U:H1'	34:AA:2181:A:C5'	2.51	0.41
34:AA:2721:U:H2'	34:AA:2722:G:H8	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:3267:C:H2'	34:AA:3268:A:C8	2.56	0.41
34:AA:3362:A:H2'	34:AA:3363:U:O4'	2.21	0.41
34:AA:3375:A:H8	34:AA:3375:A:OP2	2.04	0.41
34:AA:3638:A:H2'	34:AA:3639:G:C8	2.56	0.41
35:AC:89:U:H5	66:AZ:113:ASN:ND2	2.19	0.41
40:A4:46:CYS:O	40:A4:50:ILE:HG13	2.21	0.41
44:A8:13:ARG:HG3	44:A8:14:THR:N	2.34	0.41
55:AJ:234:VAL:HA	55:AJ:237:GLU:HG3	2.02	0.41
57:AK:139:THR:O	57:AK:143:ARG:HG2	2.20	0.41
62:AR:39:GLN:HG3	62:AR:40:ASP:N	2.36	0.41
65:AT:110:ASP:OD1	65:AT:110:ASP:C	2.63	0.41
65:AT:135:ARG:CZ	65:AT:135:ARG:HB3	2.51	0.41
71:AF:158:ILE:O	71:AF:161:LEU:HG	2.20	0.41
74:AH:36:ARG:HG2	74:AH:38:PHE:CZ	2.55	0.41
74:AH:113:ILE:HD12	74:AH:113:ILE:C	2.46	0.41
78:A0:50:LYS:HB2	78:A0:50:LYS:HE2	1.71	0.41
80:mR:22:G:N2	81:S9:36:A:H2	2.19	0.41
8:SA:268:C:H3'	15:SH:186:ARG:NH2	2.35	0.40
8:SA:651:G:H2'	8:SA:652:A:C8	2.54	0.40
8:SA:849:U:P	13:SF:240:ARG:HH12	2.43	0.40
8:SA:1264:A:N1	8:SA:1911:A:C8	2.90	0.40
8:SA:1274:C:H5'	8:SA:1840:A:O2'	2.21	0.40
8:SA:1285:A:C3'	8:SA:1286:U:H4'	2.52	0.40
8:SA:1652:A:C4	8:SA:1653:A:C8	3.09	0.40
8:SA:1704:G:N2	8:SA:1705:C:O4'	2.54	0.40
8:SA:1726:U:H3	8:SA:1727:A:H62	1.68	0.40
9:SB:87:SER:O	9:SB:98:THR:HA	2.21	0.40
13:SF:66:ILE:HD13	13:SF:66:ILE:HA	1.85	0.40
14:SG:76:ASP:O	14:SG:80:GLN:HG3	2.20	0.40
15:SH:30:LYS:HA	15:SH:30:LYS:HD3	1.83	0.40
15:SH:191:LEU:O	15:SH:195:GLU:HG2	2.21	0.40
22:SO:34:VAL:HG21	22:SO:57:LEU:HD23	2.03	0.40
23:SP:46:ASP:OD1	23:SP:47:LEU:N	2.54	0.40
26:SS:81:ILE:HD12	26:SS:82:PRO:O	2.20	0.40
26:SS:100:VAL:HG21	26:SS:108:TYR:CD2	2.57	0.40
28:SU:110:ASP:O	28:SU:114:ARG:HG2	2.21	0.40
29:SV:93:TYR:OH	29:SV:108:LYS:NZ	2.44	0.40
31:SX:80:LEU:HD11	31:SX:83:MET:HG2	2.01	0.40
34:AA:183:U:H2'	34:AA:184:U:C6	2.56	0.40
34:AA:1881:C:HO2'	34:AA:1882:U:P	2.39	0.40
34:AA:2146:A:H3'	34:AA:2148:U:OP1	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:2706:A:H2'	34:AA:2707:G:C8	2.56	0.40
34:AA:2810:A:N3	34:AA:2810:A:H2'	2.36	0.40
34:AA:3314:U:OP2	34:AA:3336:G:N1	2.37	0.40
34:AA:3469:C:H2'	34:AA:3470:G:O4'	2.21	0.40
43:AN:8:GLU:OE1	43:AN:8:GLU:C	2.64	0.40
54:AI:133:ASP:OD1	54:AI:133:ASP:N	2.52	0.40
55:AJ:105:GLN:HA	55:AJ:108:ASP:OD2	2.21	0.40
62:AR:274:ASN:H	62:AR:277:LEU:HD12	1.85	0.40
63:AW:24:VAL:HG21	63:AW:87:SER:HA	2.03	0.40
66:AZ:115:LYS:HD2	66:AZ:115:LYS:HA	1.95	0.40
67:A3:27:GLU:HG3	67:A3:28:LEU:N	2.36	0.40
67:A3:57:LEU:HD23	67:A3:57:LEU:HA	1.91	0.40
67:A3:109:LYS:HB2	67:A3:109:LYS:HE3	1.85	0.40
6:S6:25:ASP:C	6:S6:26:LYS:HG3	2.47	0.40
7:S7:66:C:H2'	7:S7:67:A:C8	2.56	0.40
8:SA:58:U:OP1	8:SA:462:A:O2'	2.32	0.40
8:SA:246:A:H4'	8:SA:247:G:OP1	2.21	0.40
8:SA:248:G:O2'	8:SA:249:A:O4'	2.33	0.40
8:SA:963:U:H2'	8:SA:964:G:C8	2.56	0.40
8:SA:1364:G:C6	8:SA:1365:G:C4	3.08	0.40
8:SA:1450:A:H1'	8:SA:1626:U:O2	2.20	0.40
8:SA:1880:A:C4	16:SI:48:GLN:HG2	2.56	0.40
9:SB:127:VAL:HG21	9:SB:176:ALA:HB3	2.02	0.40
11:SD:106:LEU:O	11:SD:110:LEU:HD13	2.21	0.40
12:SE:34:TYR:O	12:SE:110:GLN:NE2	2.54	0.40
12:SE:133:HIS:ND1	12:SE:162:SER:HB2	2.36	0.40
16:SI:10:LEU:N	16:SI:14:TRP:O	2.35	0.40
16:SI:42:HIS:HD2	16:SI:81:ILE:HD11	1.84	0.40
19:SL:51:ARG:HG3	19:SL:51:ARG:NH1	2.35	0.40
24:SQ:62:LYS:CE	24:SQ:118:PRO:HB3	2.52	0.40
32:SY:136:VAL:HG22	32:SY:137:GLU:H	1.86	0.40
34:AA:176:A:N6	34:AA:255:C:H42	2.18	0.40
34:AA:888:A:H4'	34:AA:889:U:O5'	2.20	0.40
34:AA:1178:A:H5''	36:AB:98:G:O2'	2.21	0.40
34:AA:1484:A:H2'	34:AA:1485:A:C8	2.56	0.40
34:AA:1857:A:OP2	34:AA:1900:G:N2	2.46	0.40
34:AA:2123:C:H2'	34:AA:2124:C:H6	1.86	0.40
34:AA:2386:A:H2'	34:AA:2387:A:C8	2.57	0.40
34:AA:2885:A:O2'	34:AA:2886:A:H8	2.04	0.40
34:AA:3362:A:H62	34:AA:3376:U:H3	1.69	0.40
34:AA:3503:U:H4'	50:Af:28:HIS:CE1	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:AC:35:A:H2'	35:AC:36:C:C6	2.57	0.40
38:A1:49:HIS:NE2	38:A1:142:LYS:O	2.54	0.40
45:A9:53:GLN:C	45:A9:54:ARG:HG2	2.46	0.40
53:AI:14:ASN:C	53:AI:16:CYS:H	2.29	0.40
54:AI:64:THR:HG21	54:AI:103:TYR:CD1	2.56	0.40
54:AI:163:ILE:HD13	54:AI:163:ILE:HA	1.96	0.40
57:AK:1:MET:HE1	57:AK:28:ASN:HB3	2.02	0.40
58:AM:97:PHE:CD2	78:A0:29:ILE:HD11	2.55	0.40
62:AR:22:ARG:HE	62:AR:28:THR:CG2	2.34	0.40
1:S1:67:GLY:HA2	8:SA:539:U:H4'	2.02	0.40
8:SA:378:A:OP1	18:SK:88:LYS:NZ	2.45	0.40
8:SA:1111:U:H2'	8:SA:1112:G:O4'	2.20	0.40
8:SA:1170:C:H2'	8:SA:1171:U:H6	1.85	0.40
8:SA:1317:A:O3'	8:SA:1318:A:H3'	2.20	0.40
8:SA:1447:A:C5	8:SA:1623:U:O2	2.75	0.40
8:SA:1628:A:C5'	21:SN:56:PRO:HA	2.51	0.40
8:SA:1862:C:O2'	26:SS:87:ASN:HB2	2.21	0.40
8:SA:1866:A:H8	8:SA:1866:A:P	2.44	0.40
13:SF:45:VAL:O	13:SF:49:ARG:CB	2.68	0.40
13:SF:149:TYR:HB3	15:SH:208:TYR:CG	2.56	0.40
14:SG:47:LEU:O	14:SG:51:VAL:HG23	2.21	0.40
14:SG:78:PHE:O	14:SG:79:PHE:HD1	2.04	0.40
15:SH:127:LYS:N	15:SH:127:LYS:HD2	2.37	0.40
15:SH:198:ARG:NE	15:SH:202:LYS:HZ3	2.20	0.40
17:SJ:75:LYS:HD3	17:SJ:75:LYS:N	2.36	0.40
21:SN:37:ASP:O	21:SN:40:LYS:HE3	2.20	0.40
22:SO:16:LYS:HD3	22:SO:16:LYS:HA	1.79	0.40
30:SW:3:ARG:O	30:SW:4:VAL:HG22	2.22	0.40
32:SY:29:ILE:HG12	32:SY:88:TYR:CZ	2.56	0.40
34:AA:171:C:H5'	37:AL:133:LYS:HB3	2.03	0.40
34:AA:316:A:H1'	34:AA:2515:A:N3	2.37	0.40
34:AA:498:U:C2	34:AA:499:U:C5	3.09	0.40
34:AA:1794:U:C2	48:Ad:17:LYS:HD2	2.57	0.40
34:AA:2017:U:H2'	69:AD:50:HIS:CD2	2.57	0.40
34:AA:3023:C:H2'	34:AA:3024:U:C6	2.56	0.40
45:A9:39:ARG:NH1	45:A9:41:TYR:O	2.54	0.40
50:Af:22:LYS:HB2	50:Af:39:CYS:SG	2.61	0.40
51:AP:127:VAL:HG23	51:AP:128:TYR:CD2	2.56	0.40
53:AI:17:LYS:HD2	53:AI:17:LYS:HA	1.92	0.40
57:AK:179:GLU:HA	57:AK:182:THR:HG22	2.03	0.40
63:AW:116:HIS:NE2	63:AW:118:MET:HG3	2.36	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
63:AW:151:ARG:NH1	63:AW:152:GLU:O	2.54	0.40
64:AY:107:LYS:HE3	64:AY:108:TYR:CZ	2.56	0.40
65:AT:39:SER:O	65:AT:43:LEU:HG	2.22	0.40
68:A5:148:PRO:O	68:A5:152:THR:OG1	2.30	0.40
68:A5:210:LYS:HA	68:A5:210:LYS:HD2	1.73	0.40
73:AU:133:ILE:HD13	73:AU:133:ILE:HG21	1.83	0.40
74:AH:138:ASN:OD1	74:AH:139:VAL:HG12	2.21	0.40
74:AH:155:LEU:HD12	74:AH:155:LEU:HA	1.93	0.40
3:S3:85:ARG:HA	3:S3:85:ARG:HD3	1.81	0.40
8:SA:271:G:OP2	8:SA:271:G:H8	2.05	0.40
8:SA:805:A:O2'	8:SA:806:A:OP1	2.34	0.40
8:SA:836:C:O2'	8:SA:837:A:H5'	2.20	0.40
8:SA:995:A:H1'	8:SA:1057:A:C2	2.56	0.40
8:SA:998:A:N7	23:SP:137:THR:HG23	2.36	0.40
8:SA:1368:G:O6	8:SA:1688:U:O4	2.40	0.40
8:SA:1634:A:C2	8:SA:1658:G:C4	3.10	0.40
8:SA:1644:U:H2'	8:SA:1646:U:C5	2.55	0.40
8:SA:1799:A:H5'	32:SY:56:TRP:CZ2	2.56	0.40
10:SC:47:ILE:HD12	10:SC:47:ILE:C	2.47	0.40
13:SF:162:LEU:HD12	13:SF:162:LEU:HA	1.85	0.40
15:SH:135:PRO:HG2	15:SH:141:ILE:HD13	2.03	0.40
17:SJ:161:GLN:H	17:SJ:161:GLN:CD	2.27	0.40
29:SV:82:LYS:HB3	29:SV:82:LYS:HE3	1.85	0.40
29:SV:90:ARG:HA	29:SV:109:ASN:HA	2.04	0.40
30:SW:46:MET:O	30:SW:50:VAL:HG22	2.22	0.40
34:AA:239:U:H2'	34:AA:240:U:C6	2.57	0.40
34:AA:888:A:H8	34:AA:890:G:H1'	1.87	0.40
34:AA:1089:U:H2'	34:AA:1090:G:C8	2.56	0.40
34:AA:1093:G:OP1	59:AS:16:ARG:HG2	2.22	0.40
34:AA:1302:G:H2'	34:AA:1303:C:C6	2.57	0.40
34:AA:1476:A:H2	59:AS:35:PHE:HB2	1.86	0.40
34:AA:1744:U:OP1	65:AT:41:ARG:NH2	2.54	0.40
34:AA:1769:U:O2'	34:AA:1793:A:O2'	2.31	0.40
34:AA:1999:A:H2'	34:AA:2000:G:H8	1.87	0.40
34:AA:2071:U:O5'	34:AA:2071:U:H6	2.03	0.40
34:AA:2623:C:H2'	34:AA:2624:C:H6	1.87	0.40
34:AA:3289:G:H2'	34:AA:3290:C:H6	1.86	0.40
34:AA:3590:A:O3'	74:AH:23:ARG:NH1	2.54	0.40
35:AC:96:U:H2'	35:AC:97:C:O4'	2.21	0.40
35:AC:149:C:H2'	35:AC:150:U:C6	2.56	0.40
38:A1:10:VAL:HG22	38:A1:24:VAL:HG12	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:A1:52:LYS:HE2	38:A1:52:LYS:HB2	1.71	0.40
39:A2:111:LYS:HB2	44:A8:87:MET:SD	2.61	0.40
51:AP:148:LYS:C	51:AP:150:ASN:H	2.18	0.40
55:AJ:177:ILE:HD12	55:AJ:177:ILE:HA	1.94	0.40
62:AR:22:ARG:HE	62:AR:28:THR:HG23	1.86	0.40
62:AR:271:LYS:HE2	62:AR:271:LYS:N	2.36	0.40
68:A5:246:GLU:HG3	73:AU:44:THR:HG23	2.04	0.40
71:AF:242:PRO:O	71:AF:245:SER:OG	2.36	0.40
71:AF:266:LYS:O	71:AF:267:ILE:C	2.65	0.40
74:AH:136:SER:CB	74:AH:142:GLU:HB3	2.51	0.40
74:AH:164:VAL:HG11	74:AH:178:ILE:HG13	2.03	0.40
2:S2:60:THR:OG1	16:SI:93:LEU:HD13	2.21	0.40
7:S7:49:C:N4	7:S7:62:C:H42	2.18	0.40
8:SA:246:A:H2'	8:SA:247:G:C8	2.56	0.40
8:SA:357:U:H3'	8:SA:358:G:H5'	2.03	0.40
8:SA:1313:G:H2'	8:SA:1314:U:C6	2.57	0.40
8:SA:1723:A:C6	8:SA:1828:A:N1	2.90	0.40
8:SA:1827:U:C2	8:SA:1828:A:C8	3.09	0.40
8:SA:1916:C:H2'	8:SA:1917:C:H6	1.86	0.40
10:SC:63:ILE:HG22	33:SZ:36:VAL:HG22	2.03	0.40
11:SD:23:GLU:HG3	11:SD:23:GLU:H	1.73	0.40
15:SH:11:ASN:HD22	15:SH:11:ASN:C	2.30	0.40
15:SH:131:LYS:C	15:SH:133:LEU:H	2.28	0.40
16:SI:47:TYR:CG	16:SI:54:LYS:HE3	2.56	0.40
17:SJ:41:GLU:HB2	17:SJ:72:TYR:CE1	2.57	0.40
17:SJ:61:LEU:HD22	17:SJ:175:VAL:HG23	2.04	0.40
18:SK:31:SER:H	18:SK:34:VAL:HG22	1.86	0.40
18:SK:126:LEU:HD12	18:SK:126:LEU:HA	1.88	0.40
32:SY:74:ASP:O	32:SY:78:ILE:HD12	2.22	0.40
32:SY:106:GLN:O	32:SY:106:GLN:HG3	2.21	0.40
34:AA:58:A:H4'	51:AP:156:VAL:HG22	2.02	0.40
34:AA:282:U:H2'	34:AA:283:U:H6	1.83	0.40
34:AA:651:A:H2'	34:AA:652:A:O4'	2.22	0.40
34:AA:689:U:H2'	34:AA:690:U:C6	2.57	0.40
34:AA:992:C:H4'	34:AA:2176:A:H5'	2.03	0.40
34:AA:1644:U:C5	34:AA:2102:A:N1	2.88	0.40
34:AA:2001:U:H2'	34:AA:2002:G:O4'	2.21	0.40
34:AA:2498:U:O2'	34:AA:2499:G:H5'	2.22	0.40
34:AA:2698:C:O2	34:AA:3178:A:N1	2.54	0.40
34:AA:2736:A:C2	34:AA:2814:U:C2	3.09	0.40
34:AA:2832:A:O2'	34:AA:2926:A:H1'	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:AA:3409:U:H2'	34:AA:3410:A:C8	2.55	0.40
36:AB:42:A:C4	36:AB:43:A:C8	3.09	0.40
38:A1:32:GLN:HE22	38:A1:37:PRO:CA	2.33	0.40
45:A9:50:LYS:NZ	45:A9:57:ASP:OD2	2.46	0.40
55:AJ:75:ILE:HA	55:AJ:78:GLN:HB2	2.04	0.40
56:Ac:74:ARG:HE	56:Ac:74:ARG:HB2	1.61	0.40
57:AK:120:PRO:HA	57:AK:123:LEU:HD22	2.02	0.40
61:AQ:77:ILE:HD12	61:AQ:82:LYS:HG2	2.04	0.40
62:AR:52:VAL:HA	62:AR:149:ASP:HB3	2.02	0.40
69:AD:114:CYS:SG	69:AD:165:MET:HB3	2.62	0.40
77:AX:127:LYS:C	77:AX:128:LEU:HD23	2.47	0.40
81:S9:27:G:H21	81:S9:43:C:H41	1.69	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	S1	118/133 (89%)	113 (96%)	5 (4%)	0	100	100
2	S2	35/105 (33%)	34 (97%)	1 (3%)	0	100	100
3	S3	93/107 (87%)	84 (90%)	8 (9%)	1 (1%)	12	30
4	S4	74/82 (90%)	62 (84%)	12 (16%)	0	100	100
5	S5	55/67 (82%)	51 (93%)	3 (6%)	1 (2%)	7	18
6	S6	41/58 (71%)	36 (88%)	4 (10%)	1 (2%)	5	13
9	SB	208/262 (79%)	197 (95%)	10 (5%)	1 (0%)	25	49
10	SC	193/263 (73%)	176 (91%)	16 (8%)	1 (0%)	25	49
11	SD	149/221 (67%)	140 (94%)	9 (6%)	0	100	100
12	SE	183/189 (97%)	169 (92%)	14 (8%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
13	SF	255/261 (98%)	235 (92%)	19 (8%)	1 (0%)	30	55
14	SG	222/272 (82%)	209 (94%)	13 (6%)	0	100	100
15	SH	200/306 (65%)	188 (94%)	12 (6%)	0	100	100
16	SI	176/195 (90%)	159 (90%)	17 (10%)	0	100	100
17	SJ	186/194 (96%)	171 (92%)	14 (8%)	1 (0%)	25	49
18	SK	127/130 (98%)	116 (91%)	10 (8%)	1 (1%)	16	38
19	SL	165/218 (76%)	148 (90%)	16 (10%)	1 (1%)	22	45
20	SM	136/144 (94%)	127 (93%)	8 (6%)	1 (1%)	19	42
21	SN	96/118 (81%)	89 (93%)	7 (7%)	0	100	100
22	SO	77/137 (56%)	70 (91%)	6 (8%)	1 (1%)	10	26
23	SP	125/151 (83%)	105 (84%)	20 (16%)	0	100	100
24	SQ	142/145 (98%)	134 (94%)	8 (6%)	0	100	100
25	SR	92/141 (65%)	86 (94%)	6 (6%)	0	100	100
26	SS	126/156 (81%)	105 (83%)	19 (15%)	2 (2%)	8	21
27	ST	46/54 (85%)	42 (91%)	4 (9%)	0	100	100
28	SU	147/151 (97%)	135 (92%)	12 (8%)	0	100	100
29	SV	142/161 (88%)	133 (94%)	8 (6%)	1 (1%)	19	42
30	SW	91/137 (66%)	79 (87%)	9 (10%)	3 (3%)	3	7
31	SX	92/145 (63%)	80 (87%)	12 (13%)	0	100	100
32	SY	152/170 (89%)	137 (90%)	15 (10%)	0	100	100
33	SZ	70/82 (85%)	64 (91%)	5 (7%)	1 (1%)	9	24
37	AL	209/215 (97%)	198 (95%)	11 (5%)	0	100	100
38	A1	136/146 (93%)	123 (90%)	13 (10%)	0	100	100
39	A2	96/127 (76%)	90 (94%)	6 (6%)	0	100	100
40	A4	64/67 (96%)	60 (94%)	4 (6%)	0	100	100
41	A6	96/108 (89%)	91 (95%)	5 (5%)	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%)	113 (92%)	10 (8%)	0	100	100
45	A9	101/140 (72%)	94 (93%)	7 (7%)	0	100	100
46	Aa	104/150 (69%)	98 (94%)	5 (5%)	1 (1%)	13	33

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
47	Ab	91/112 (81%)	82 (90%)	8 (9%)	1 (1%)	12	30
48	Ad	68/87 (78%)	67 (98%)	1 (2%)	0	100	100
49	Ae	39/51 (76%)	36 (92%)	3 (8%)	0	100	100
50	Af	49/128 (38%)	49 (100%)	0	0	100	100
51	AP	202/205 (98%)	182 (90%)	16 (8%)	4 (2%)	6	16
52	Ah	83/96 (86%)	79 (95%)	4 (5%)	0	100	100
53	Ai	93/104 (89%)	86 (92%)	7 (8%)	0	100	100
54	AI	203/221 (92%)	188 (93%)	14 (7%)	1 (0%)	25	49
55	AJ	216/283 (76%)	205 (95%)	11 (5%)	0	100	100
56	Ac	87/92 (95%)	79 (91%)	8 (9%)	0	100	100
57	AK	199/202 (98%)	190 (96%)	8 (4%)	1 (0%)	25	49
58	AM	130/139 (94%)	120 (92%)	9 (7%)	1 (1%)	16	38
59	AS	184/187 (98%)	176 (96%)	6 (3%)	2 (1%)	12	30
60	AO	145/148 (98%)	134 (92%)	10 (7%)	1 (1%)	19	42
61	AQ	185/219 (84%)	172 (93%)	12 (6%)	1 (0%)	25	49
62	AR	244/294 (83%)	231 (95%)	12 (5%)	1 (0%)	30	55
63	AW	149/173 (86%)	138 (93%)	11 (7%)	0	100	100
64	AY	99/190 (52%)	94 (95%)	5 (5%)	0	100	100
65	AT	179/182 (98%)	178 (99%)	1 (1%)	0	100	100
66	AZ	119/126 (94%)	115 (97%)	4 (3%)	0	100	100
67	A3	117/124 (94%)	109 (93%)	8 (7%)	0	100	100
68	A5	221/257 (86%)	200 (90%)	20 (9%)	1 (0%)	25	49
69	AD	245/260 (94%)	234 (96%)	9 (4%)	2 (1%)	16	38
70	AE	378/386 (98%)	367 (97%)	10 (3%)	1 (0%)	37	61
71	AF	388/411 (94%)	369 (95%)	18 (5%)	1 (0%)	37	61
72	AG	116/173 (67%)	105 (90%)	10 (9%)	1 (1%)	14	35
73	AU	178/184 (97%)	168 (94%)	9 (5%)	1 (1%)	22	45
74	AH	183/190 (96%)	170 (93%)	13 (7%)	0	100	100
75	AV	153/161 (95%)	146 (95%)	7 (5%)	0	100	100
76	Ag	35/39 (90%)	29 (83%)	6 (17%)	0	100	100
77	AX	95/139 (68%)	88 (93%)	7 (7%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
78	A0	60/162 (37%)	58 (97%)	2 (3%)	0	100	100
All	All	10113/12049 (84%)	9410 (93%)	664 (7%)	39 (0%)	32	55

All (39) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
9	SB	146	ARG
17	SJ	112	ILE
19	SL	168	ILE
20	SM	41	GLU
26	SS	101	ILE
30	SW	4	VAL
51	AP	149	ILE
73	AU	183	ARG
26	SS	14	ILE
51	AP	188	SER
5	S5	38	ARG
18	SK	4	MET
29	SV	20	SER
51	AP	156	VAL
57	AK	72	LEU
6	S6	26	LYS
10	SC	143	VAL
30	SW	17	VAL
33	SZ	81	GLN
47	Ab	86	THR
54	AI	19	VAL
58	AM	13	MET
69	AD	199	VAL
13	SF	195	ILE
61	AQ	60	ILE
72	AG	28	ASP
3	S3	87	ARG
22	SO	35	GLU
46	Aa	75	ALA
51	AP	72	LYS
59	AS	184	ALA
62	AR	152	ILE
68	A5	190	ASN
70	AE	297	ILE
30	SW	69	ILE
59	AS	8	VAL

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Mol	Chain	Res	Type
60	AO	15	VAL
69	AD	127	VAL
71	AF	267	ILE

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	S1	104/115 (90%)	101 (97%)	3 (3%)	37	67
2	S2	35/88 (40%)	34 (97%)	1 (3%)	37	67
3	S3	87/98 (89%)	84 (97%)	3 (3%)	32	61
4	S4	70/76 (92%)	62 (89%)	8 (11%)	4	11
5	S5	48/54 (89%)	45 (94%)	3 (6%)	15	35
6	S6	36/47 (77%)	35 (97%)	1 (3%)	38	68
9	SB	195/238 (82%)	181 (93%)	14 (7%)	12	30
10	SC	167/227 (74%)	154 (92%)	13 (8%)	10	26
11	SD	132/188 (70%)	122 (92%)	10 (8%)	11	27
12	SE	161/167 (96%)	154 (96%)	7 (4%)	25	52
13	SF	233/237 (98%)	220 (94%)	13 (6%)	17	41
14	SG	191/222 (86%)	179 (94%)	12 (6%)	15	35
15	SH	182/279 (65%)	172 (94%)	10 (6%)	18	41
16	SI	154/165 (93%)	141 (92%)	13 (8%)	9	22
17	SJ	177/183 (97%)	165 (93%)	12 (7%)	13	32
18	SK	115/116 (99%)	104 (90%)	11 (10%)	7	17
19	SL	151/193 (78%)	143 (95%)	8 (5%)	19	43
20	SM	116/122 (95%)	111 (96%)	5 (4%)	25	52
21	SN	91/109 (84%)	79 (87%)	12 (13%)	3	8
22	SO	76/129 (59%)	74 (97%)	2 (3%)	41	70
23	SP	99/119 (83%)	93 (94%)	6 (6%)	15	36

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
24	SQ	120/121 (99%)	113 (94%)	7 (6%)	17	39
25	SR	83/121 (69%)	81 (98%)	2 (2%)	44	73
26	SS	114/136 (84%)	108 (95%)	6 (5%)	19	43
27	ST	43/48 (90%)	43 (100%)	0	100	100
28	SU	132/133 (99%)	122 (92%)	10 (8%)	11	27
29	SV	131/144 (91%)	123 (94%)	8 (6%)	15	36
30	SW	86/127 (68%)	84 (98%)	2 (2%)	45	74
31	SX	88/130 (68%)	84 (96%)	4 (4%)	23	50
32	SY	137/151 (91%)	127 (93%)	10 (7%)	11	29
33	SZ	60/70 (86%)	55 (92%)	5 (8%)	9	22
37	AL	190/194 (98%)	184 (97%)	6 (3%)	34	63
38	A1	127/132 (96%)	119 (94%)	8 (6%)	15	35
39	A2	97/118 (82%)	92 (95%)	5 (5%)	19	44
40	A4	60/61 (98%)	58 (97%)	2 (3%)	33	62
41	A6	83/92 (90%)	74 (89%)	9 (11%)	5	13
42	A7	90/112 (80%)	85 (94%)	5 (6%)	17	41
43	AN	136/152 (90%)	131 (96%)	5 (4%)	29	58
44	A8	114/120 (95%)	105 (92%)	9 (8%)	10	25
45	A9	90/127 (71%)	83 (92%)	7 (8%)	10	26
46	Aa	89/128 (70%)	84 (94%)	5 (6%)	17	41
47	Ab	82/97 (84%)	79 (96%)	3 (4%)	29	58
48	Ad	69/83 (83%)	64 (93%)	5 (7%)	12	30
49	Ae	40/48 (83%)	38 (95%)	2 (5%)	20	46
50	Af	45/114 (40%)	44 (98%)	1 (2%)	47	76
51	AP	179/180 (99%)	169 (94%)	10 (6%)	17	41
52	Ah	70/80 (88%)	64 (91%)	6 (9%)	8	21
53	Ai	87/93 (94%)	84 (97%)	3 (3%)	32	61
54	AI	189/203 (93%)	174 (92%)	15 (8%)	10	25
55	AJ	204/260 (78%)	195 (96%)	9 (4%)	24	51
56	Ac	74/77 (96%)	72 (97%)	2 (3%)	40	69
57	AK	181/182 (100%)	174 (96%)	7 (4%)	27	56

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
58	AM	106/110 (96%)	100 (94%)	6 (6%)	17	40
59	AS	158/159 (99%)	151 (96%)	7 (4%)	24	51
60	AO	121/122 (99%)	116 (96%)	5 (4%)	26	54
61	AQ	165/190 (87%)	155 (94%)	10 (6%)	15	36
62	AR	215/254 (85%)	205 (95%)	10 (5%)	22	49
63	AW	128/131 (98%)	127 (99%)	1 (1%)	79	91
64	AY	90/177 (51%)	82 (91%)	8 (9%)	8	20
65	AT	162/163 (99%)	152 (94%)	10 (6%)	15	36
66	AZ	111/115 (96%)	100 (90%)	11 (10%)	6	16
67	A3	110/115 (96%)	105 (96%)	5 (4%)	23	50
68	A5	201/231 (87%)	190 (94%)	11 (6%)	18	41
69	AD	191/202 (95%)	178 (93%)	13 (7%)	13	32
70	AE	335/340 (98%)	326 (97%)	9 (3%)	40	69
71	AF	336/352 (96%)	319 (95%)	17 (5%)	20	45
72	AG	110/155 (71%)	99 (90%)	11 (10%)	6	16
73	AU	162/166 (98%)	153 (94%)	9 (6%)	17	41
74	AH	168/173 (97%)	156 (93%)	12 (7%)	12	30
75	AV	140/144 (97%)	134 (96%)	6 (4%)	25	52
76	Ag	34/35 (97%)	34 (100%)	0	100	100
77	AX	92/131 (70%)	83 (90%)	9 (10%)	6	16
78	A0	53/146 (36%)	51 (96%)	2 (4%)	28	56
All	All	9098/10617 (86%)	8581 (94%)	517 (6%)	20	40

All (517) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	S1	35	VAL
1	S1	103	LYS
1	S1	113	LYS
2	S2	62	SER
3	S3	44	ILE
3	S3	50	GLN
3	S3	95	ARG
4	S4	21	ARG
4	S4	41	ILE

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Mol	Chain	Res	Type
4	S4	43	THR
4	S4	44	LEU
4	S4	49	GLN
4	S4	50	ASN
4	S4	59	ILE
4	S4	77	PHE
5	S5	54	LEU
5	S5	57	LEU
5	S5	58	GLU
6	S6	17	GLN
9	SB	24	PHE
9	SB	36	LYS
9	SB	37	MET
9	SB	39	LEU
9	SB	48	VAL
9	SB	49	THR
9	SB	83	LYS
9	SB	108	ASP
9	SB	119	THR
9	SB	172	MET
9	SB	183	ASP
9	SB	209	ASN
9	SB	210	VAL
9	SB	211	LEU
10	SC	24	ILE
10	SC	26	THR
10	SC	28	ASN
10	SC	69	ASN
10	SC	81	PHE
10	SC	103	THR
10	SC	108	THR
10	SC	111	ILE
10	SC	114	LYS
10	SC	116	THR
10	SC	156	VAL
10	SC	157	ASP
10	SC	184	LEU
11	SD	11	PHE
11	SD	21	LEU
11	SD	74	GLN
11	SD	78	PHE
11	SD	106	LEU

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Mol	Chain	Res	Type
11	SD	137	VAL
11	SD	150	SER
11	SD	168	PHE
11	SD	171	THR
11	SD	173	THR
12	SE	14	ASN
12	SE	42	ILE
12	SE	49	LEU
12	SE	59	LEU
12	SE	74	GLU
12	SE	150	VAL
12	SE	171	ARG
13	SF	20	LEU
13	SF	76	VAL
13	SF	87	MET
13	SF	105	ILE
13	SF	121	TYR
13	SF	131	LEU
13	SF	136	LEU
13	SF	145	ARG
13	SF	150	ILE
13	SF	164	LEU
13	SF	169	VAL
13	SF	201	ASN
13	SF	231	ASN
14	SG	45	THR
14	SG	64	LEU
14	SG	67	LEU
14	SG	107	ARG
14	SG	108	THR
14	SG	177	VAL
14	SG	178	ARG
14	SG	188	THR
14	SG	191	VAL
14	SG	195	THR
14	SG	199	MET
14	SG	262	TYR
15	SH	13	GLN
15	SH	51	ARG
15	SH	87	ARG
15	SH	88	LYS
15	SH	105	ASP

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Mol	Chain	Res	Type
15	SH	111	LEU
15	SH	114	VAL
15	SH	144	LEU
15	SH	170	PHE
15	SH	204	GLN
16	SI	7	ASP
16	SI	19	ILE
16	SI	28	ASP
16	SI	54	LYS
16	SI	57	CYS
16	SI	63	LEU
16	SI	82	ARG
16	SI	94	MET
16	SI	118	ARG
16	SI	128	GLN
16	SI	163	CYS
16	SI	168	ILE
16	SI	187	ILE
17	SJ	4	VAL
17	SJ	42	ILE
17	SJ	59	THR
17	SJ	64	ILE
17	SJ	100	ILE
17	SJ	112	ILE
17	SJ	127	LEU
17	SJ	130	ILE
17	SJ	143	MET
17	SJ	149	ARG
17	SJ	159	GLU
17	SJ	163	ASP
18	SK	9	ASP
18	SK	30	SER
18	SK	52	ILE
18	SK	55	ASP
18	SK	63	VAL
18	SK	69	ILE
18	SK	80	ASP
18	SK	90	ILE
18	SK	104	LEU
18	SK	115	GLU
18	SK	120	HIS
19	SL	18	LYS

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Mol	Chain	Res	Type
19	SL	29	LEU
19	SL	60	LEU
19	SL	84	ASN
19	SL	91	VAL
19	SL	104	ILE
19	SL	181	VAL
19	SL	205	LEU
20	SM	37	LEU
20	SM	44	ILE
20	SM	76	THR
20	SM	93	TYR
20	SM	98	VAL
21	SN	21	ILE
21	SN	24	THR
21	SN	27	ASN
21	SN	31	ILE
21	SN	35	CYS
21	SN	37	ASP
21	SN	53	VAL
21	SN	59	THR
21	SN	62	ILE
21	SN	90	LEU
21	SN	95	GLU
21	SN	100	MET
22	SO	56	THR
22	SO	72	TRP
23	SP	67	ASP
23	SP	81	VAL
23	SP	85	LEU
23	SP	93	ILE
23	SP	97	LEU
23	SP	107	THR
24	SQ	7	SER
24	SQ	10	ARG
24	SQ	77	ILE
24	SQ	96	ILE
24	SQ	102	VAL
24	SQ	125	VAL
24	SQ	129	ARG
25	SR	29	ILE
25	SR	120	VAL
26	SS	23	ASP

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Mol	Chain	Res	Type
26	SS	32	LEU
26	SS	52	VAL
26	SS	89	ARG
26	SS	121	LEU
26	SS	138	THR
28	SU	22	GLN
28	SU	27	LYS
28	SU	33	ILE
28	SU	35	ASP
28	SU	37	ILE
28	SU	67	THR
28	SU	71	ILE
28	SU	74	ILE
28	SU	87	ASP
28	SU	145	THR
29	SV	7	VAL
29	SV	47	THR
29	SV	80	SER
29	SV	86	THR
29	SV	110	ILE
29	SV	115	SER
29	SV	127	THR
29	SV	141	ASN
30	SW	19	LYS
30	SW	25	THR
31	SX	79	HIS
31	SX	85	ILE
31	SX	94	VAL
31	SX	112	ILE
32	SY	29	ILE
32	SY	31	ASP
32	SY	36	LEU
32	SY	44	HIS
32	SY	87	LEU
32	SY	90	HIS
32	SY	110	VAL
32	SY	126	ILE
32	SY	135	TYR
32	SY	148	THR
33	SZ	23	LEU
33	SZ	40	ASP
33	SZ	51	THR

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Mol	Chain	Res	Type
33	SZ	67	CYS
33	SZ	68	LEU
37	AL	31	LYS
37	AL	48	THR
37	AL	121	SER
37	AL	123	VAL
37	AL	136	ILE
37	AL	168	LYS
38	A1	51	LEU
38	A1	57	MET
38	A1	98	SER
38	A1	101	VAL
38	A1	104	SER
38	A1	132	GLU
38	A1	136	ASP
38	A1	144	LEU
39	A2	24	LYS
39	A2	39	ASN
39	A2	53	ASN
39	A2	65	VAL
39	A2	95	GLN
40	A4	3	LYS
40	A4	56	GLU
41	A6	16	LYS
41	A6	27	GLN
41	A6	28	PHE
41	A6	41	LYS
41	A6	44	LEU
41	A6	64	MET
41	A6	70	VAL
41	A6	100	ASP
41	A6	102	ASP
42	A7	46	SER
42	A7	57	VAL
42	A7	95	GLU
42	A7	96	LYS
42	A7	99	THR
43	AN	31	CYS
43	AN	49	VAL
43	AN	62	THR
43	AN	67	MET
43	AN	88	LYS

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Mol	Chain	Res	Type
44	A8	3	VAL
44	A8	11	LYS
44	A8	13	ARG
44	A8	39	ASP
44	A8	47	LYS
44	A8	51	LEU
44	A8	66	LEU
44	A8	94	VAL
44	A8	126	LEU
45	A9	40	LEU
45	A9	68	VAL
45	A9	89	THR
45	A9	93	ASP
45	A9	96	LYS
45	A9	99	CYS
45	A9	106	ARG
46	Aa	23	VAL
46	Aa	41	LYS
46	Aa	57	LEU
46	Aa	85	ILE
46	Aa	104	VAL
47	Ab	8	LYS
47	Ab	77	LEU
47	Ab	100	VAL
48	Ad	5	ILE
48	Ad	36	THR
48	Ad	38	ILE
48	Ad	53	VAL
48	Ad	64	GLU
49	Ae	42	ARG
49	Ae	47	THR
50	Af	11	GLN
51	AP	27	THR
51	AP	60	VAL
51	AP	80	VAL
51	AP	89	VAL
51	AP	90	HIS
51	AP	111	CYS
51	AP	122	VAL
51	AP	124	GLN
51	AP	199	ILE
51	AP	202	ARG

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Mol	Chain	Res	Type
52	Ah	8	VAL
52	Ah	18	TYR
52	Ah	47	THR
52	Ah	60	CYS
52	Ah	64	VAL
52	Ah	73	THR
53	Ai	16	CYS
53	Ai	34	LEU
53	Ai	76	CYS
54	AI	13	VAL
54	AI	23	VAL
54	AI	24	ASN
54	AI	30	ASN
54	AI	46	VAL
54	AI	59	VAL
54	AI	83	LEU
54	AI	85	VAL
54	AI	109	THR
54	AI	120	LEU
54	AI	123	ASP
54	AI	133	ASP
54	AI	139	THR
54	AI	142	ILE
54	AI	175	LYS
55	AJ	42	ASN
55	AJ	75	ILE
55	AJ	82	LYS
55	AJ	95	ASN
55	AJ	161	GLU
55	AJ	167	LEU
55	AJ	192	VAL
55	AJ	236	LYS
55	AJ	254	MET
56	Ac	75	ARG
56	Ac	90	LYS
57	AK	32	ILE
57	AK	70	LEU
57	AK	86	MET
57	AK	118	VAL
57	AK	123	LEU
57	AK	144	VAL
57	AK	174	LEU

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Mol	Chain	Res	Type
58	AM	12	LYS
58	AM	13	MET
58	AM	17	LEU
58	AM	56	LEU
58	AM	106	ASN
58	AM	131	LEU
59	AS	8	VAL
59	AS	68	GLN
59	AS	74	HIS
59	AS	78	ILE
59	AS	118	GLU
59	AS	168	SER
59	AS	174	GLU
60	AO	3	THR
60	AO	12	ARG
60	AO	27	LYS
60	AO	92	GLU
60	AO	94	LYS
61	AQ	33	ILE
61	AQ	43	VAL
61	AQ	71	SER
61	AQ	76	MET
61	AQ	82	LYS
61	AQ	121	LYS
61	AQ	125	VAL
61	AQ	126	VAL
61	AQ	146	SER
61	AQ	206	LEU
62	AR	28	THR
62	AR	47	GLN
62	AR	55	LYS
62	AR	60	VAL
62	AR	63	GLN
62	AR	116	ASP
62	AR	157	THR
62	AR	165	LEU
62	AR	199	LEU
62	AR	277	LEU
63	AW	106	ASN
64	AY	97	VAL
64	AY	101	HIS
64	AY	102	SER

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Mol	Chain	Res	Type
64	AY	116	THR
64	AY	151	PHE
64	AY	153	ILE
64	AY	174	LEU
64	AY	178	HIS
65	AT	4	THR
65	AT	18	LYS
65	AT	50	LEU
65	AT	73	ARG
65	AT	77	ILE
65	AT	93	LEU
65	AT	139	GLU
65	AT	144	GLU
65	AT	149	LEU
65	AT	170	ASN
66	AZ	7	LYS
66	AZ	10	SER
66	AZ	55	VAL
66	AZ	56	LEU
66	AZ	57	ILE
66	AZ	69	VAL
66	AZ	81	VAL
66	AZ	101	SER
66	AZ	105	LEU
66	AZ	107	LYS
66	AZ	117	ILE
67	A3	27	GLU
67	A3	29	SER
67	A3	39	ASN
67	A3	66	MET
67	A3	87	THR
68	A5	42	LEU
68	A5	55	GLN
68	A5	67	GLU
68	A5	70	LYS
68	A5	75	LYS
68	A5	138	ILE
68	A5	139	VAL
68	A5	163	VAL
68	A5	181	ASP
68	A5	190	ASN
68	A5	203	THR

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Mol	Chain	Res	Type
69	AD	40	TYR
69	AD	45	VAL
69	AD	77	ILE
69	AD	88	ILE
69	AD	109	GLU
69	AD	125	THR
69	AD	142	ASP
69	AD	155	LYS
69	AD	169	VAL
69	AD	208	GLU
69	AD	235	VAL
69	AD	243	THR
69	AD	246	LEU
70	AE	23	LYS
70	AE	93	ARG
70	AE	105	VAL
70	AE	189	LEU
70	AE	202	VAL
70	AE	298	THR
70	AE	319	LEU
70	AE	353	LEU
70	AE	362	ILE
71	AF	18	VAL
71	AF	62	THR
71	AF	71	ARG
71	AF	79	VAL
71	AF	133	VAL
71	AF	136	LEU
71	AF	150	VAL
71	AF	157	ASP
71	AF	187	LYS
71	AF	217	VAL
71	AF	254	GLU
71	AF	268	HIS
71	AF	281	LYS
71	AF	292	ILE
71	AF	307	LYS
71	AF	324	VAL
71	AF	371	ILE
72	AG	9	MET
72	AG	17	LEU
72	AG	21	ILE

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Mol	Chain	Res	Type
72	AG	30	LEU
72	AG	40	LEU
72	AG	41	THR
72	AG	84	LEU
72	AG	106	ILE
72	AG	129	VAL
72	AG	131	LEU
72	AG	146	SER
73	AU	25	THR
73	AU	33	VAL
73	AU	37	CYS
73	AU	82	LYS
73	AU	86	VAL
73	AU	91	ASP
73	AU	98	ASN
73	AU	135	ILE
73	AU	166	LEU
74	AH	33	THR
74	AH	53	TYR
74	AH	57	VAL
74	AH	83	VAL
74	AH	93	LEU
74	AH	94	VAL
74	AH	110	ARG
74	AH	125	VAL
74	AH	128	LEU
74	AH	138	ASN
74	AH	176	ASP
74	AH	186	VAL
75	AV	41	VAL
75	AV	75	VAL
75	AV	97	VAL
75	AV	117	ILE
75	AV	130	LYS
75	AV	151	THR
77	AX	45	ASP
77	AX	47	THR
77	AX	69	LYS
77	AX	83	VAL
77	AX	96	ILE
77	AX	106	LEU
77	AX	115	GLN

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Mol	Chain	Res	Type
77	AX	116	ILE
77	AX	136	GLN
78	A0	46	LEU
78	A0	52	LYS

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

Mol	Chain	Res	Type
1	S1	15	ASN
1	S1	52	ASN
2	S2	80	ASN
2	S2	81	HIS
3	S3	91	GLN
5	S5	28	GLN
5	S5	43	ASN
9	SB	93	ASN
9	SB	134	HIS
9	SB	149	GLN
10	SC	23	HIS
10	SC	91	GLN
11	SD	177	GLN
12	SE	139	GLN
13	SF	74	ASN
13	SF	96	ASN
13	SF	142	HIS
13	SF	172	HIS
15	SH	7	ASN
15	SH	65	GLN
16	SI	139	ASN
18	SK	42	GLN
22	SO	43	HIS
25	SR	26	GLN
25	SR	87	GLN
26	SS	78	GLN
26	SS	128	HIS
27	ST	18	GLN
28	SU	22	GLN
29	SV	130	GLN
32	SY	26	ASN
32	SY	168	ASN
33	SZ	33	GLN
38	A1	15	ASN

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Mol	Chain	Res	Type
39	A2	80	HIS
40	A4	9	ASN
40	A4	27	HIS
43	AN	97	ASN
43	AN	130	GLN
45	A9	56	GLN
46	Aa	12	HIS
46	Aa	62	ASN
49	Ae	11	GLN
49	Ae	19	GLN
51	AP	154	ASN
54	AI	202	HIS
55	AJ	162	ASN
56	Ac	31	HIS
56	Ac	60	ASN
57	AK	54	GLN
59	AS	18	HIS
59	AS	68	GLN
60	AO	14	HIS
60	AO	28	HIS
61	AQ	44	ASN
62	AR	68	HIS
62	AR	221	HIS
63	AW	80	GLN
63	AW	106	ASN
65	AT	57	HIS
66	AZ	18	HIS
68	A5	121	HIS
68	A5	179	ASN
68	A5	190	ASN
68	A5	213	ASN
69	AD	21	HIS
69	AD	22	HIS
69	AD	186	HIS
70	AE	68	HIS
70	AE	207	ASN
70	AE	368	GLN
71	AF	364	GLN
73	AU	12	ASN
73	AU	17	HIS
74	AH	168	ASN
75	AV	87	GLN

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Mol	Chain	Res	Type
75	AV	96	HIS

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
34	AA	3162/3788 (83%)	624 (19%)	70 (2%)
35	AC	148/159 (93%)	30 (20%)	5 (3%)
36	AB	117/119 (98%)	13 (11%)	2 (1%)
7	S7	73/74 (98%)	28 (38%)	0
79	S8	75/76 (98%)	16 (21%)	2 (2%)
8	SA	1588/2092 (75%)	372 (23%)	32 (2%)
80	mR	10/11 (90%)	2 (20%)	0
81	S9	75/76 (98%)	24 (32%)	1 (1%)
All	All	5248/6395 (82%)	1109 (21%)	112 (2%)

All (1109) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
7	S7	8	U
7	S7	9	G
7	S7	10	G
7	S7	14	A
7	S7	16	U
7	S7	17	U
7	S7	18	G
7	S7	19	G
7	S7	20	U
7	S7	23	G
7	S7	31	G
7	S7	32	U
7	S7	33	C
7	S7	34	U
7	S7	35	C
7	S7	36	A
7	S7	37	U
7	S7	39	A
7	S7	40	U
7	S7	46	G
7	S7	53	A
7	S7	54	G
7	S7	56	U

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Mol	Chain	Res	Type
7	S7	57	C
7	S7	69	U
7	S7	72	C
7	S7	73	C
7	S7	74	A
8	SA	4	C
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	59	G
8	SA	61	A
8	SA	63	G
8	SA	71	A
8	SA	72	U
8	SA	73	A
8	SA	80	A
8	SA	81	U
8	SA	82	G
8	SA	84	A
8	SA	102	A
8	SA	106	A
8	SA	108	A
8	SA	116	A
8	SA	118	U
8	SA	128	A
8	SA	129	U
8	SA	130	U
8	SA	139	A
8	SA	142	G
8	SA	143	A
8	SA	144	U
8	SA	151	G
8	SA	156	A
8	SA	157	G

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Mol	Chain	Res	Type
8	SA	164	C
8	SA	166	A
8	SA	168	U
8	SA	207	G
8	SA	247	G
8	SA	248	G
8	SA	249	A
8	SA	251	U
8	SA	252	U
8	SA	260	A
8	SA	262	A
8	SA	263	A
8	SA	264	G
8	SA	266	A
8	SA	268	C
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	323	C
8	SA	327	U
8	SA	339	A
8	SA	343	G
8	SA	344	C
8	SA	358	G
8	SA	365	A
8	SA	367	C
8	SA	375	U
8	SA	386	U
8	SA	396	G
8	SA	406	A
8	SA	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

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Mol	Chain	Res	Type
8	SA	432	G
8	SA	440	G
8	SA	445	U
8	SA	450	C
8	SA	451	A
8	SA	458	A
8	SA	470	A
8	SA	474	A
8	SA	475	C
8	SA	487	A
8	SA	488	U
8	SA	489	G
8	SA	509	U
8	SA	514	U
8	SA	515	U
8	SA	516	G
8	SA	521	G
8	SA	526	G
8	SA	542	C
8	SA	543	A
8	SA	545	A
8	SA	546	G
8	SA	547	U
8	SA	548	A
8	SA	549	A
8	SA	563	A
8	SA	564	G
8	SA	565	U
8	SA	575	G
8	SA	585	U
8	SA	586	A
8	SA	601	A
8	SA	602	G
8	SA	613	A
8	SA	617	G
8	SA	618	U
8	SA	626	A
8	SA	627	A
8	SA	629	A
8	SA	630	C
8	SA	631	G
8	SA	646	U

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Mol	Chain	Res	Type
8	SA	647	C
8	SA	653	A
8	SA	746	U
8	SA	749	U
8	SA	753	U
8	SA	754	A
8	SA	757	A
8	SA	760	C
8	SA	790	U
8	SA	791	U
8	SA	793	G
8	SA	801	G
8	SA	804	U
8	SA	805	A
8	SA	806	A
8	SA	815	G
8	SA	816	U
8	SA	821	A
8	SA	822	G
8	SA	824	A
8	SA	830	U
8	SA	831	U
8	SA	835	G
8	SA	837	A
8	SA	845	U
8	SA	846	G
8	SA	849	U
8	SA	853	U
8	SA	857	A
8	SA	866	A
8	SA	870	A
8	SA	875	A
8	SA	879	A
8	SA	888	A
8	SA	897	G
8	SA	908	U
8	SA	913	U
8	SA	916	G
8	SA	919	U
8	SA	920	A
8	SA	924	A
8	SA	925	C

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Mol	Chain	Res	Type
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	982	A
8	SA	984	A
8	SA	999	A
8	SA	1002	A
8	SA	1004	U
8	SA	1011	G
8	SA	1029	U
8	SA	1035	A
8	SA	1057	A
8	SA	1061	A
8	SA	1062	A
8	SA	1073	U
8	SA	1074	A
8	SA	1090	C
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	1184	G
8	SA	1193	A
8	SA	1194	A
8	SA	1197	C
8	SA	1198	U
8	SA	1199	U
8	SA	1201	G
8	SA	1239	A
8	SA	1251	G

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Mol	Chain	Res	Type
8	SA	1252	A
8	SA	1259	C
8	SA	1260	C
8	SA	1261	A
8	SA	1263	C
8	SA	1265	G
8	SA	1271	G
8	SA	1275	U
8	SA	1282	U
8	SA	1285	A
8	SA	1286	U
8	SA	1295	A
8	SA	1297	A
8	SA	1300	G
8	SA	1301	G
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	1363	U
8	SA	1366	A
8	SA	1367	U
8	SA	1382	G
8	SA	1384	U
8	SA	1385	U
8	SA	1386	U
8	SA	1387	U
8	SA	1414	A
8	SA	1415	A
8	SA	1416	U
8	SA	1417	U
8	SA	1422	U
8	SA	1423	A
8	SA	1433	A
8	SA	1436	U
8	SA	1440	C
8	SA	1443	G
8	SA	1444	C
8	SA	1445	U
8	SA	1446	A

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Mol	Chain	Res	Type
8	SA	1448	U
8	SA	1449	U
8	SA	1451	G
8	SA	1453	G
8	SA	1454	G
8	SA	1456	G
8	SA	1460	A
8	SA	1464	U
8	SA	1606	U
8	SA	1625	C
8	SA	1626	U
8	SA	1629	G
8	SA	1630	A
8	SA	1634	A
8	SA	1635	C
8	SA	1636	A
8	SA	1639	G
8	SA	1640	U
8	SA	1644	U
8	SA	1645	C
8	SA	1648	A
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	1678	U
8	SA	1679	G
8	SA	1682	A
8	SA	1691	G
8	SA	1692	A
8	SA	1693	U
8	SA	1700	G
8	SA	1701	G
8	SA	1703	U
8	SA	1704	G
8	SA	1705	C
8	SA	1706	A

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Mol	Chain	Res	Type
8	SA	1710	G
8	SA	1711	U
8	SA	1716	C
8	SA	1717	A
8	SA	1719	U
8	SA	1720	G
8	SA	1723	A
8	SA	1724	U
8	SA	1727	A
8	SA	1728	U
8	SA	1729	A
8	SA	1732	G
8	SA	1735	U
8	SA	1742	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	1812	A
8	SA	1817	U
8	SA	1818	A
8	SA	1819	U
8	SA	1820	C
8	SA	1826	A
8	SA	1833	G
8	SA	1834	A
8	SA	1835	U
8	SA	1836	G
8	SA	1837	G
8	SA	1839	G
8	SA	1840	A
8	SA	1852	A
8	SA	1854	U
8	SA	1855	U
8	SA	1856	A
8	SA	1862	C
8	SA	1865	G
8	SA	1866	A
8	SA	1870	A
8	SA	1871	G

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Mol	Chain	Res	Type
8	SA	1880	A
8	SA	1881	G
8	SA	1887	A
8	SA	1894	A
8	SA	1895	U
8	SA	1897	A
8	SA	1898	G
8	SA	1907	G
8	SA	1910	U
8	SA	1912	C
8	SA	1913	G
8	SA	1927	U
8	SA	1928	A
8	SA	1931	C
8	SA	1933	C
8	SA	1954	U
8	SA	1955	G
8	SA	1968	A
8	SA	1969	A
8	SA	1976	G
8	SA	1977	G
8	SA	1978	A
8	SA	1979	C
8	SA	1980	A
8	SA	1982	G
8	SA	2010	U
8	SA	2013	A
8	SA	2046	G
8	SA	2047	A
8	SA	2048	A
8	SA	2049	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

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Mol	Chain	Res	Type
34	AA	13	G
34	AA	14	U
34	AA	15	U
34	AA	26	A
34	AA	40	A
34	AA	43	A
34	AA	49	U
34	AA	59	G
34	AA	60	A
34	AA	62	A
34	AA	63	A
34	AA	65	A
34	AA	66	A
34	AA	74	A
34	AA	77	A
34	AA	92	G
34	AA	99	A
34	AA	109	A
34	AA	110	G
34	AA	111	C
34	AA	113	C
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	174	U
34	AA	180	C
34	AA	182	U
34	AA	183	U
34	AA	185	A

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Mol	Chain	Res	Type
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	208	U
34	AA	215	C
34	AA	216	C
34	AA	222	G
34	AA	226	G
34	AA	227	A
34	AA	228	A
34	AA	229	A
34	AA	235	A
34	AA	246	U
34	AA	250	U
34	AA	254	U
34	AA	255	C
34	AA	258	U
34	AA	268	C
34	AA	269	A
34	AA	270	U
34	AA	271	G
34	AA	276	G
34	AA	292	U
34	AA	302	A
34	AA	303	A
34	AA	306	C
34	AA	308	U
34	AA	309	G
34	AA	310	U
34	AA	313	U
34	AA	319	U
34	AA	336	U
34	AA	337	A
34	AA	338	U
34	AA	343	G
34	AA	345	G
34	AA	347	C
34	AA	357	A
34	AA	359	A

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Mol	Chain	Res	Type
34	AA	360	A
34	AA	382	A
34	AA	384	A
34	AA	386	U
34	AA	395	A
34	AA	400	C
34	AA	409	A
34	AA	410	G
34	AA	412	A
34	AA	413	C
34	AA	431	G
34	AA	432	A
34	AA	433	A
34	AA	439	U
34	AA	440	A
34	AA	445	A
34	AA	448	A
34	AA	449	A
34	AA	450	A
34	AA	451	C
34	AA	458	A
34	AA	459	G
34	AA	462	G
34	AA	463	G
34	AA	466	A
34	AA	490	U
34	AA	495	U
34	AA	497	U
34	AA	501	U
34	AA	502	U
34	AA	504	A
34	AA	505	A
34	AA	506	A
34	AA	520	U
34	AA	521	U
34	AA	522	A
34	AA	530	U
34	AA	532	C
34	AA	543	U
34	AA	547	C
34	AA	552	A
34	AA	573	U

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Mol	Chain	Res	Type
34	AA	580	A
34	AA	581	C
34	AA	582	U
34	AA	583	U
34	AA	585	C
34	AA	592	C
34	AA	593	A
34	AA	599	G
34	AA	608	A
34	AA	620	U
34	AA	621	C
34	AA	646	A
34	AA	648	U
34	AA	649	U
34	AA	658	U
34	AA	665	U
34	AA	666	U
34	AA	667	U
34	AA	668	U
34	AA	674	U
34	AA	675	A
34	AA	678	A
34	AA	679	U
34	AA	681	U
34	AA	684	G
34	AA	685	U
34	AA	694	U
34	AA	697	A
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	721	U
34	AA	722	G
34	AA	727	A
34	AA	738	A
34	AA	755	A
34	AA	759	U
34	AA	763	U
34	AA	765	A

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Mol	Chain	Res	Type
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	812	U
34	AA	813	G
34	AA	826	U
34	AA	834	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	895	A
34	AA	896	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	935	A
34	AA	936	A
34	AA	945	G
34	AA	949	A
34	AA	950	G
34	AA	966	A
34	AA	968	G
34	AA	980	A
34	AA	984	A

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Mol	Chain	Res	Type
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	1042	C
34	AA	1043	G
34	AA	1044	A
34	AA	1052	A
34	AA	1056	G
34	AA	1063	A
34	AA	1070	A
34	AA	1078	C
34	AA	1100	A
34	AA	1101	A
34	AA	1107	U
34	AA	1108	U
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	1206	U
34	AA	1215	A
34	AA	1218	C
34	AA	1221	A
34	AA	1222	U
34	AA	1223	U
34	AA	1225	A

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Mol	Chain	Res	Type
34	AA	1229	A
34	AA	1230	A
34	AA	1231	A
34	AA	1243	G
34	AA	1245	G
34	AA	1259	G
34	AA	1272	U
34	AA	1281	C
34	AA	1287	A
34	AA	1296	U
34	AA	1306	A
34	AA	1309	U
34	AA	1310	A
34	AA	1320	G
34	AA	1329	U
34	AA	1337	G
34	AA	1340	G
34	AA	1346	U
34	AA	1417	G
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	1476	A
34	AA	1481	A
34	AA	1499	U
34	AA	1503	A
34	AA	1504	A
34	AA	1531	G
34	AA	1535	G
34	AA	1537	G
34	AA	1538	U
34	AA	1539	U
34	AA	1540	G
34	AA	1547	A
34	AA	1550	A
34	AA	1554	G
34	AA	1555	A

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Mol	Chain	Res	Type
34	AA	1565	G
34	AA	1567	A
34	AA	1575	C
34	AA	1583	G
34	AA	1586	C
34	AA	1595	A
34	AA	1599	G
34	AA	1601	A
34	AA	1602	A
34	AA	1604	U
34	AA	1619	U
34	AA	1630	A
34	AA	1637	G
34	AA	1651	C
34	AA	1657	U
34	AA	1685	G
34	AA	1691	G
34	AA	1693	U
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	1739	C
34	AA	1748	A
34	AA	1749	U
34	AA	1750	U
34	AA	1756	G
34	AA	1762	A
34	AA	1763	G
34	AA	1766	U
34	AA	1767	U
34	AA	1771	A
34	AA	1774	U
34	AA	1783	G

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Mol	Chain	Res	Type
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	1870	G
34	AA	1881	C
34	AA	1882	U
34	AA	1886	A
34	AA	1899	U
34	AA	1902	A
34	AA	1903	C
34	AA	1904	U
34	AA	1905	C
34	AA	1912	A
34	AA	1914	A
34	AA	1964	G
34	AA	1969	A
34	AA	1970	A
34	AA	1971	U
34	AA	1980	G
34	AA	1981	U
34	AA	1991	U
34	AA	1996	C
34	AA	1997	G
34	AA	1998	A
34	AA	2000	G
34	AA	2018	G
34	AA	2019	A
34	AA	2031	A
34	AA	2034	G
34	AA	2070	U
34	AA	2072	U
34	AA	2073	G
34	AA	2081	U
34	AA	2082	C
34	AA	2084	U
34	AA	2090	U

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Mol	Chain	Res	Type
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
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	2389	G
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	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	2464	G
34	AA	2485	C
34	AA	2500	A
34	AA	2501	A
34	AA	2515	A

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Mol	Chain	Res	Type
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	2565	G
34	AA	2566	G
34	AA	2573	A
34	AA	2574	A
34	AA	2591	U
34	AA	2600	G
34	AA	2603	U
34	AA	2606	A
34	AA	2607	U
34	AA	2608	G
34	AA	2627	U
34	AA	2628	G
34	AA	2629	U
34	AA	2652	C
34	AA	2665	A
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	2710	U
34	AA	2728	G
34	AA	2745	G

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Mol	Chain	Res	Type
34	AA	2805	U
34	AA	2810	A
34	AA	2811	A
34	AA	2817	U
34	AA	2823	U
34	AA	2824	A
34	AA	2833	U
34	AA	2835	G
34	AA	2886	A
34	AA	2887	U
34	AA	2920	A
34	AA	2932	A
34	AA	2945	G
34	AA	2946	G
34	AA	2953	G
34	AA	2965	A
34	AA	2987	G
34	AA	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	3108	A
34	AA	3112	U
34	AA	3116	A
34	AA	3123	C
34	AA	3127	A
34	AA	3128	A
34	AA	3130	U

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Mol	Chain	Res	Type
34	AA	3131	A
34	AA	3135	A
34	AA	3138	A
34	AA	3141	G
34	AA	3155	G
34	AA	3158	U
34	AA	3159	G
34	AA	3160	A
34	AA	3161	A
34	AA	3169	C
34	AA	3173	G
34	AA	3176	A
34	AA	3187	G
34	AA	3201	C
34	AA	3203	C
34	AA	3204	C
34	AA	3206	A
34	AA	3227	U
34	AA	3228	U
34	AA	3230	G
34	AA	3231	A
34	AA	3246	A
34	AA	3248	C
34	AA	3257	G
34	AA	3258	C
34	AA	3259	A
34	AA	3263	G
34	AA	3270	A
34	AA	3282	U
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	3330	A
34	AA	3342	C
34	AA	3349	G
34	AA	3353	A
34	AA	3357	U

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Mol	Chain	Res	Type
34	AA	3362	A
34	AA	3374	U
34	AA	3375	A
34	AA	3377	A
34	AA	3382	U
34	AA	3384	G
34	AA	3385	U
34	AA	3398	A
34	AA	3414	G
34	AA	3415	A
34	AA	3416	G
34	AA	3421	A
34	AA	3442	C
34	AA	3443	A
34	AA	3459	A
34	AA	3463	G
34	AA	3468	G
34	AA	3471	A
34	AA	3477	A
34	AA	3483	U
34	AA	3485	G
34	AA	3507	A
34	AA	3515	A
34	AA	3516	A
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	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

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Mol	Chain	Res	Type
34	AA	3596	A
34	AA	3615	A
34	AA	3617	A
34	AA	3618	A
34	AA	3624	U
34	AA	3626	A
34	AA	3632	U
34	AA	3635	G
34	AA	3636	U
34	AA	3653	G
34	AA	3658	G
34	AA	3659	C
34	AA	3665	U
34	AA	3666	U
34	AA	3668	U
34	AA	3670	U
34	AA	3683	G
34	AA	3684	A
34	AA	3689	C
34	AA	3698	U
34	AA	3707	U
34	AA	3711	U
34	AA	3712	G
34	AA	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	3761	G
34	AA	3770	C
34	AA	3774	A
34	AA	3775	G
34	AA	3783	G
35	AC	5	A
35	AC	6	C
35	AC	16	G
35	AC	36	C
35	AC	38	G
35	AC	39	C
35	AC	43	G

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Mol	Chain	Res	Type
35	AC	55	A
35	AC	56	A
35	AC	63	A
35	AC	66	C
35	AC	67	G
35	AC	75	A
35	AC	79	G
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	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	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	89	G
36	AB	97	G
36	AB	100	A
36	AB	110	G
79	S8	2	G
79	S8	3	C
79	S8	4	G
79	S8	5	G
79	S8	8	U
79	S8	10	G

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Mol	Chain	Res	Type
79	S8	16	C
79	S8	18	G
79	S8	19	G
79	S8	20	U
79	S8	34	C
79	S8	35	A
79	S8	47	U
79	S8	48	C
79	S8	74	C
79	S8	76	A
80	mR	16	A
80	mR	22	G
81	S9	2	C
81	S9	10	G
81	S9	16	U
81	S9	17	C
81	S9	18	G
81	S9	19	G
81	S9	21	A
81	S9	22	G
81	S9	23	A
81	S9	27	G
81	S9	30	G
81	S9	42	C
81	S9	43	C
81	S9	47	U
81	S9	48	C
81	S9	52	G
81	S9	53	G
81	S9	56	C
81	S9	57	G
81	S9	63	G
81	S9	69	G
81	S9	72	C
81	S9	74	C
81	S9	76	A

All (112) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
8	SA	105	A
8	SA	116	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	1098	U
8	SA	1182	A
8	SA	1362	U
8	SA	1381	C
8	SA	1386	U
8	SA	1413	U
8	SA	1414	A
8	SA	1455	C
8	SA	1673	A
8	SA	1719	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	2047	A
8	SA	2048	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

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Mol	Chain	Res	Type
34	AA	500	A
34	AA	501	U
34	AA	504	A
34	AA	505	A
34	AA	579	C
34	AA	580	A
34	AA	581	C
34	AA	582	U
34	AA	607	A
34	AA	620	U
34	AA	648	U
34	AA	674	U
34	AA	697	A
34	AA	698	G
34	AA	703	U
34	AA	721	U
34	AA	764	G
34	AA	859	C
34	AA	888	A
34	AA	965	A
34	AA	1035	G
34	AA	1078	C
34	AA	1197	U
34	AA	1217	U
34	AA	1222	U
34	AA	1435	G
34	AA	1538	U
34	AA	1574	C
34	AA	1736	A
34	AA	1748	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	2549	A
34	AA	2651	A
34	AA	2665	A

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Mol	Chain	Res	Type
34	AA	2666	A
34	AA	2816	U
34	AA	2822	U
34	AA	2885	A
34	AA	3137	U
34	AA	3202	U
34	AA	3230	G
34	AA	3413	A
34	AA	3414	G
34	AA	3476	A
34	AA	3526	U
34	AA	3587	U
34	AA	3590	A
34	AA	3658	G
34	AA	3667	C
34	AA	3736	A
35	AC	35	A
35	AC	37	A
35	AC	134	G
35	AC	139	A
35	AC	145	A
36	AB	39	C
36	AB	88	A
79	S8	3	C
79	S8	34	C
81	S9	73	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	31.43

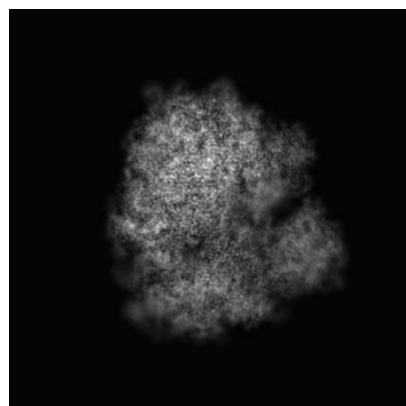
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-44915. These allow visual inspection of the internal detail of the map and identification of artifacts.

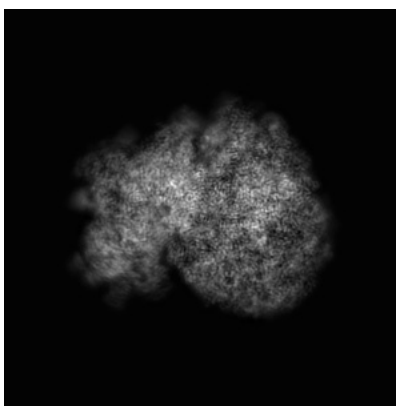
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

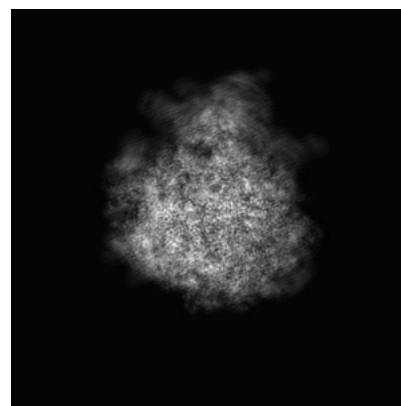
6.1.1 Primary map



X

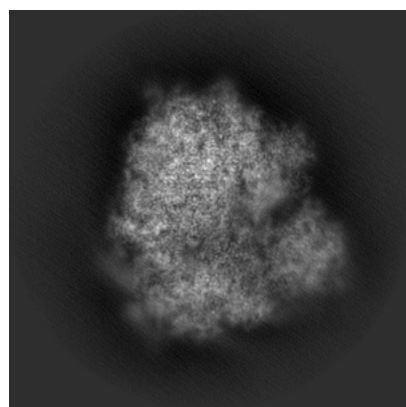


Y

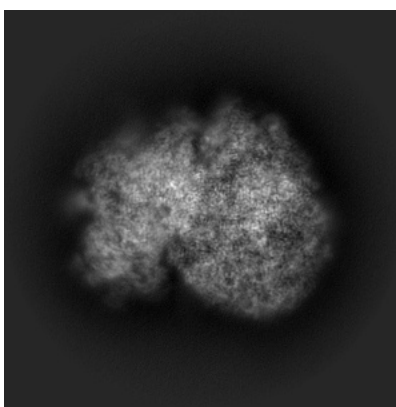


Z

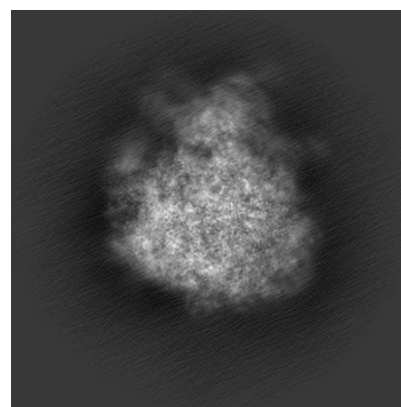
6.1.2 Raw map



X



Y

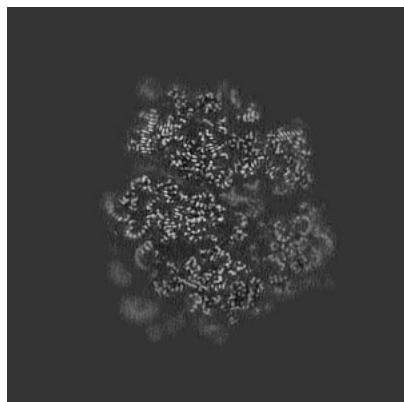


Z

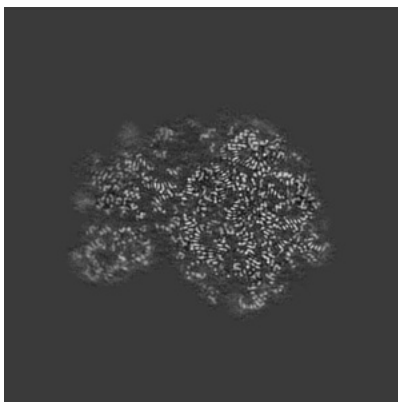
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

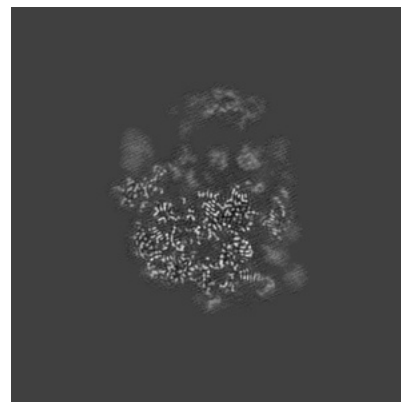
6.2.1 Primary map



X Index: 250

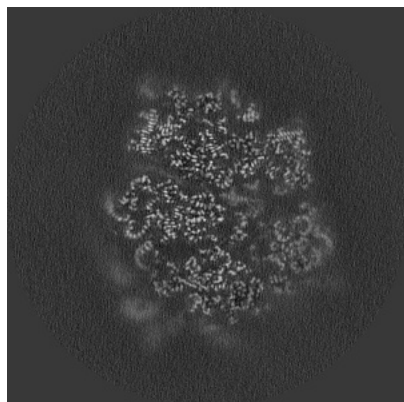


Y Index: 250

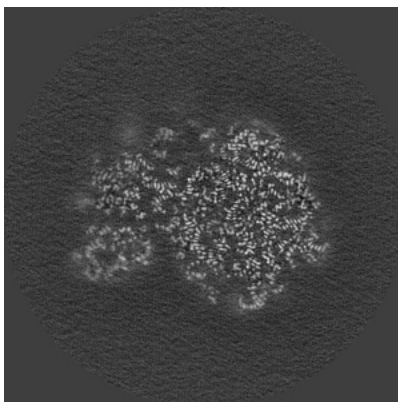


Z Index: 250

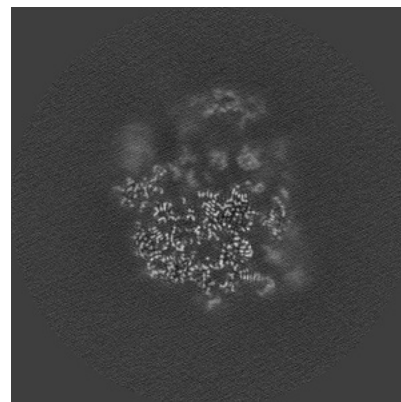
6.2.2 Raw map



X Index: 250



Y Index: 250

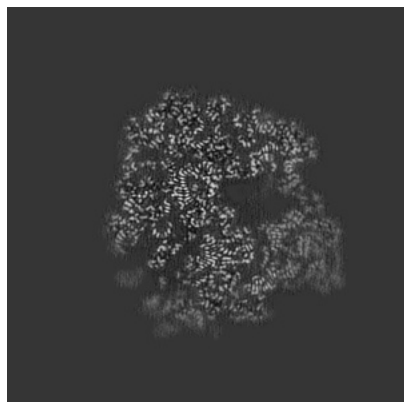


Z Index: 250

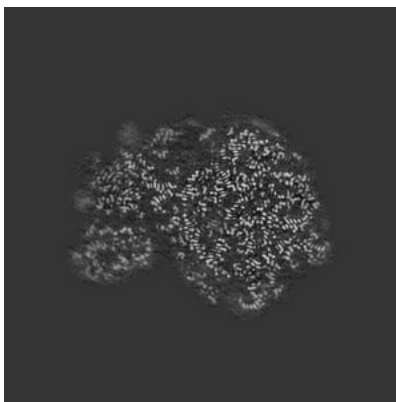
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

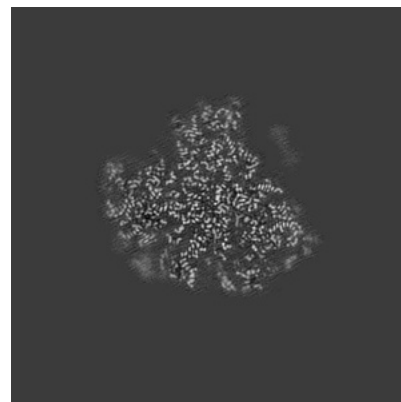
6.3.1 Primary map



X Index: 275

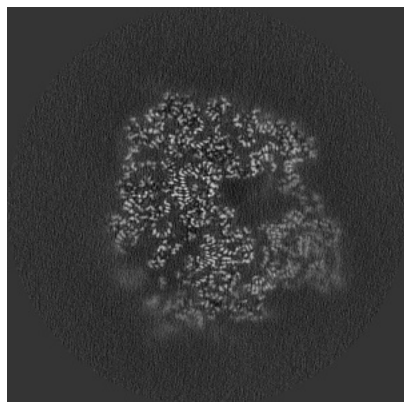


Y Index: 251

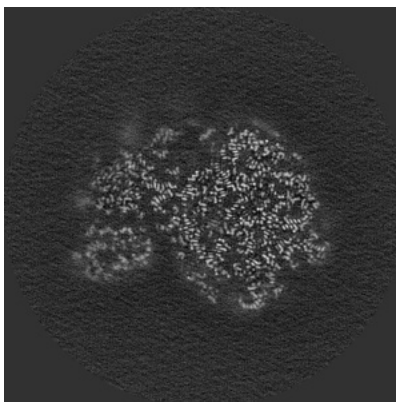


Z Index: 310

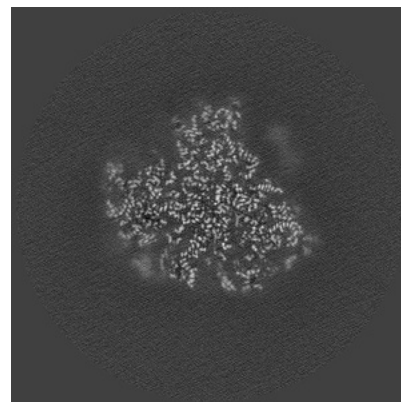
6.3.2 Raw map



X Index: 275



Y Index: 251

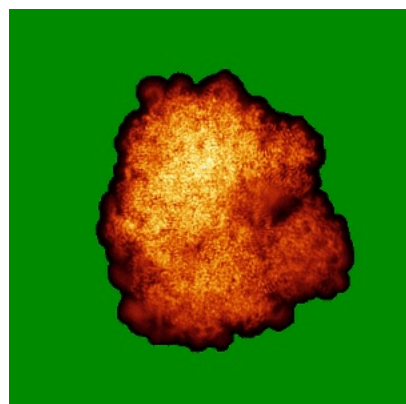


Z Index: 310

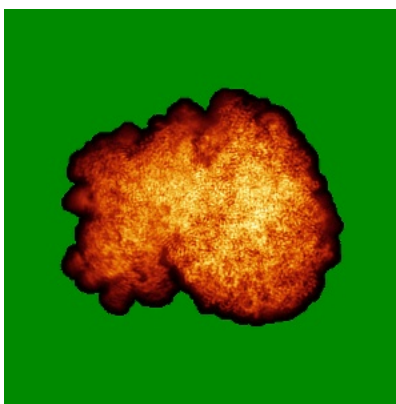
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) [i](#)

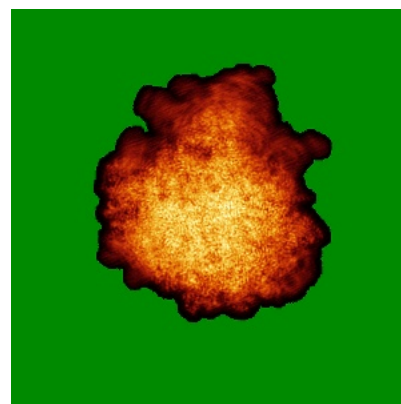
6.4.1 Primary map



X

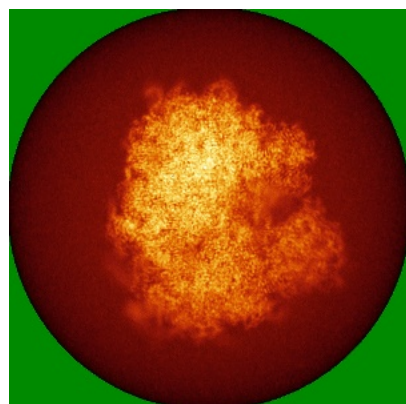


Y

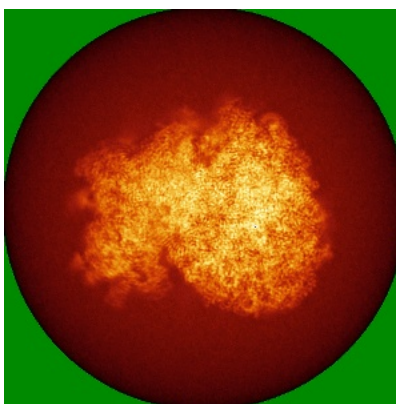


Z

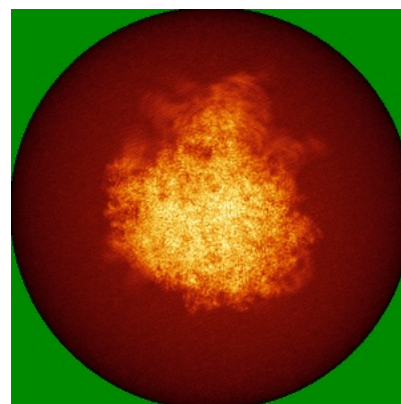
6.4.2 Raw map



X



Y

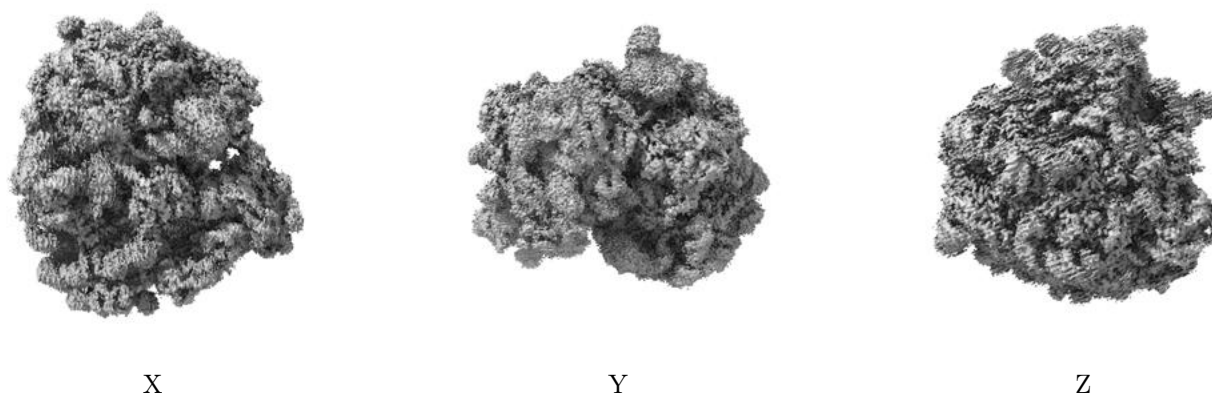


Z

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

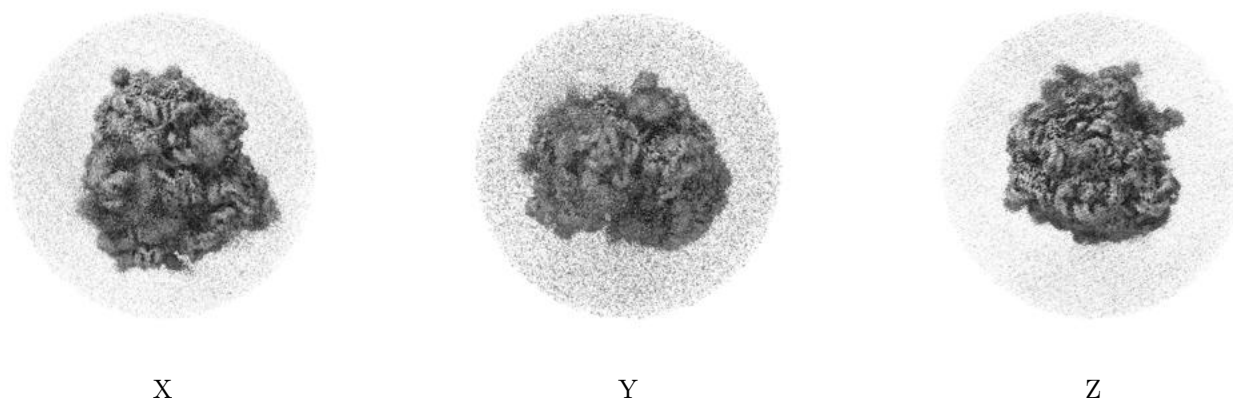
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.00615. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



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

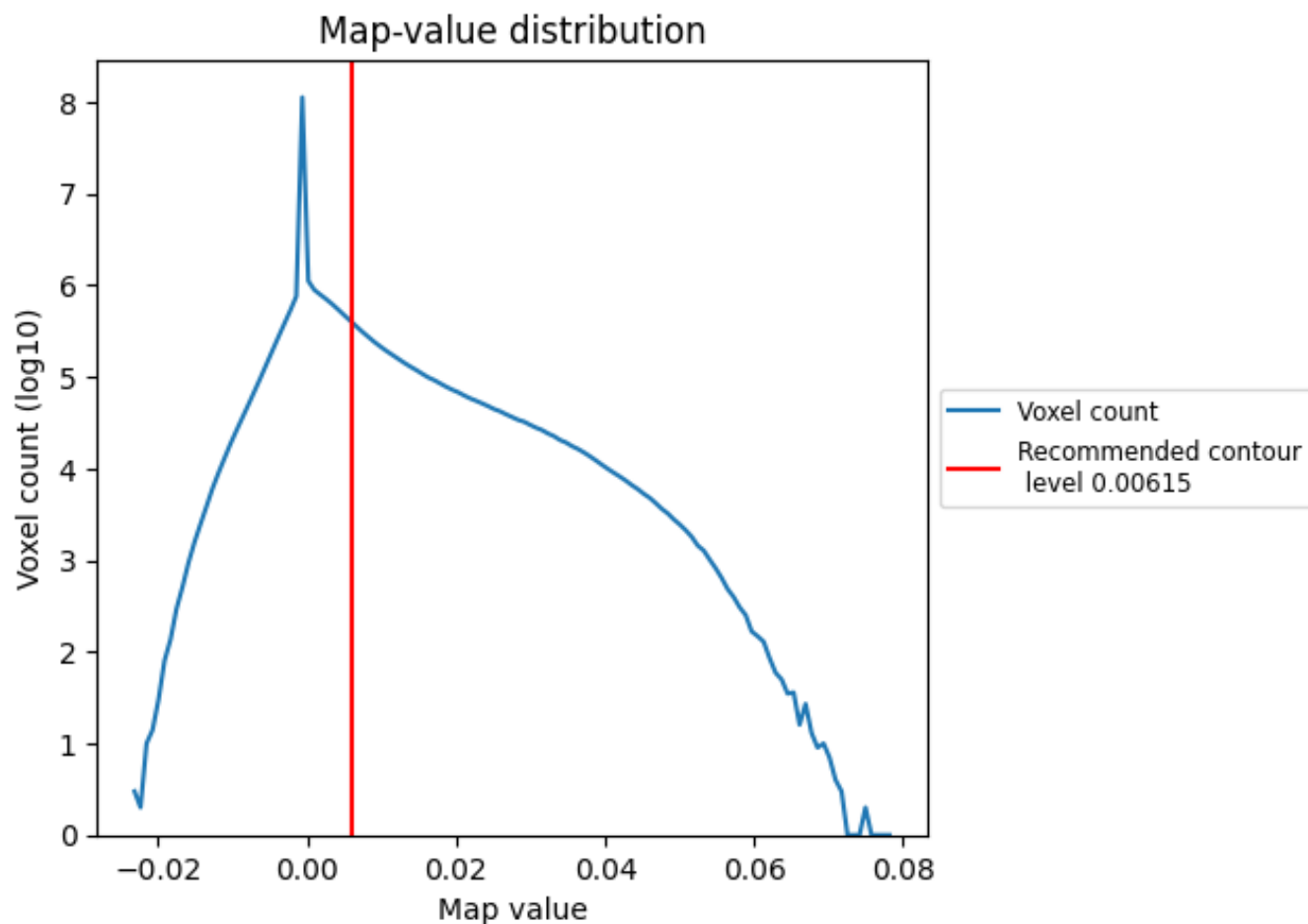
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

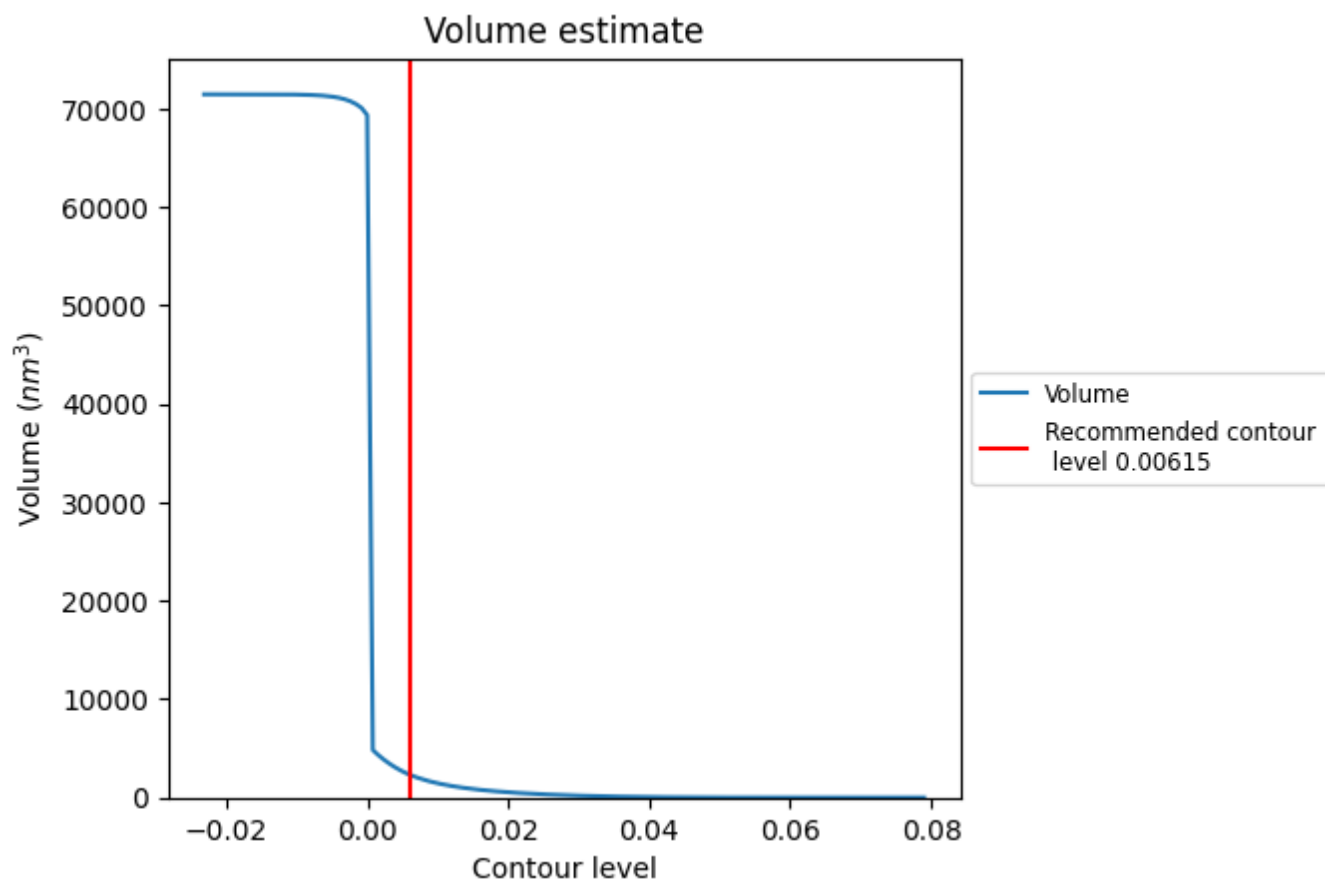
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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.

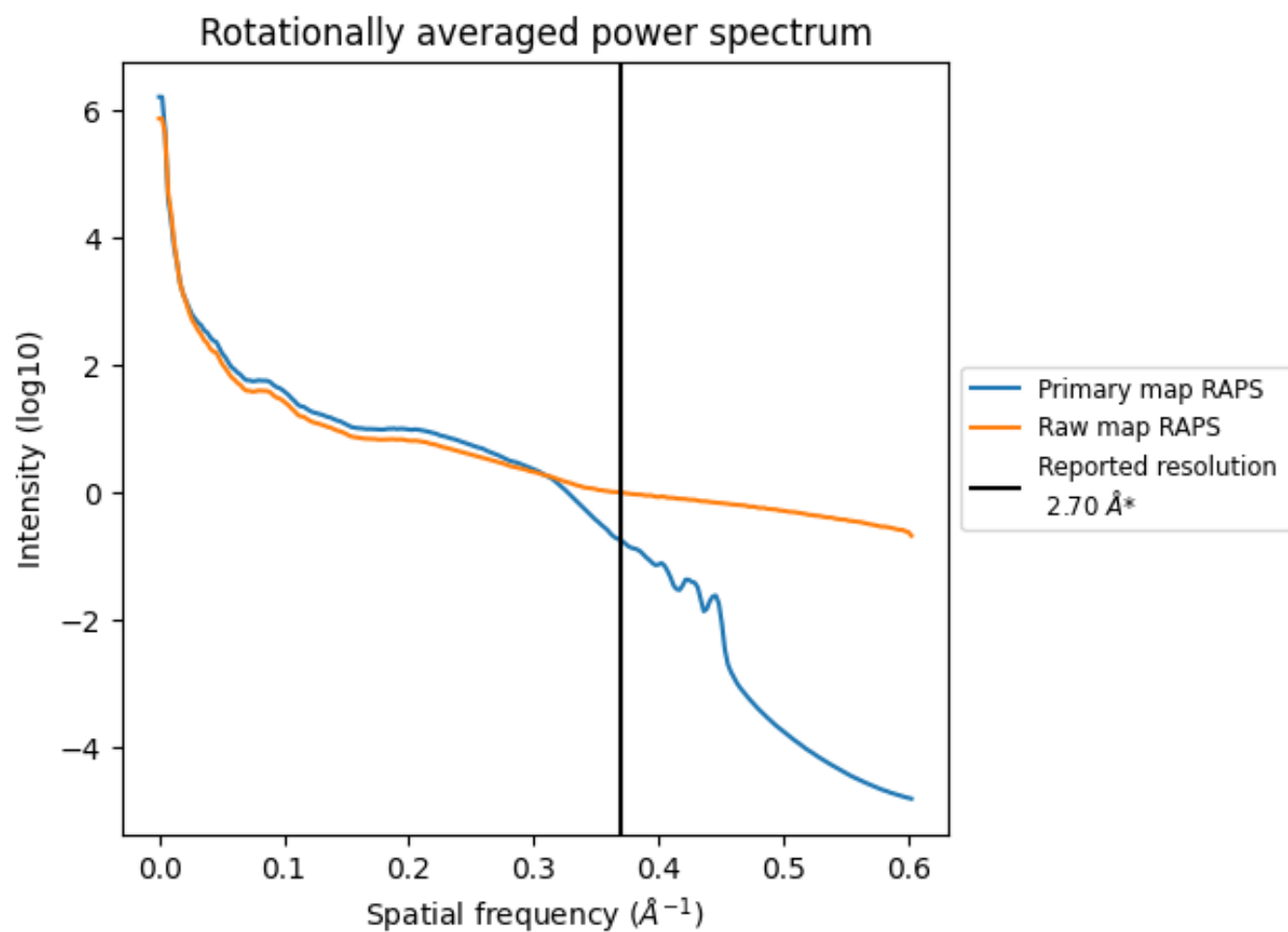
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 2290 nm³; this corresponds to an approximate mass of 2068 kDa.

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

7.3 Rotationally averaged power spectrum ⓘ

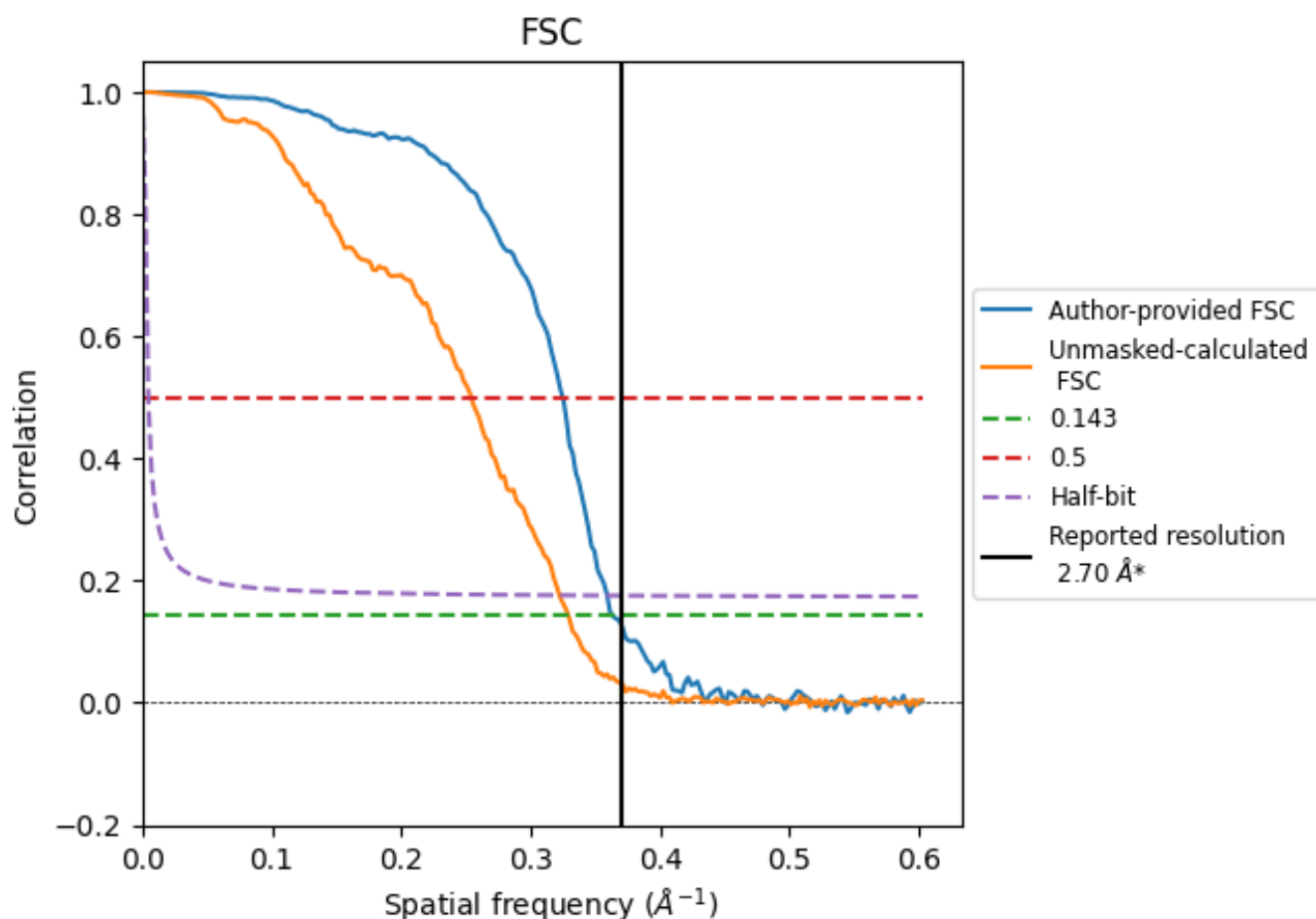


*Reported resolution corresponds to spatial frequency of 0.370 Å⁻¹

8 Fourier-Shell correlation [i](#)

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 [i](#)



*Reported resolution corresponds to spatial frequency of 0.370 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

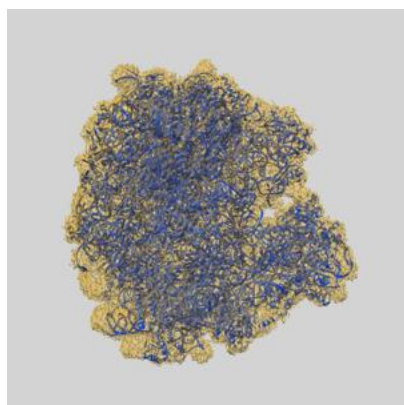
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.70	-	-
Author-provided FSC curve	2.75	3.08	2.78
Unmasked-calculated*	3.04	3.94	3.10

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.04 differs from the reported value 2.7 by more than 10 %

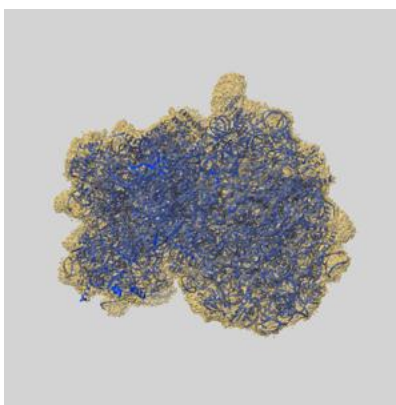
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-44915 and PDB model 9BUP. Per-residue inclusion information can be found in section 3 on page 19.

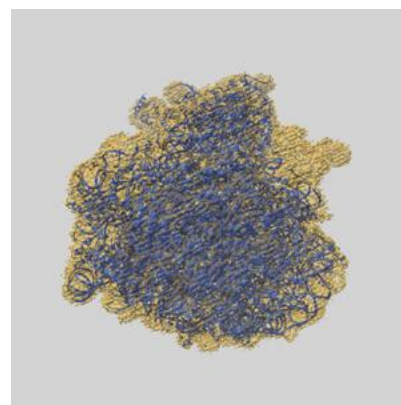
9.1 Map-model overlay [i](#)



X



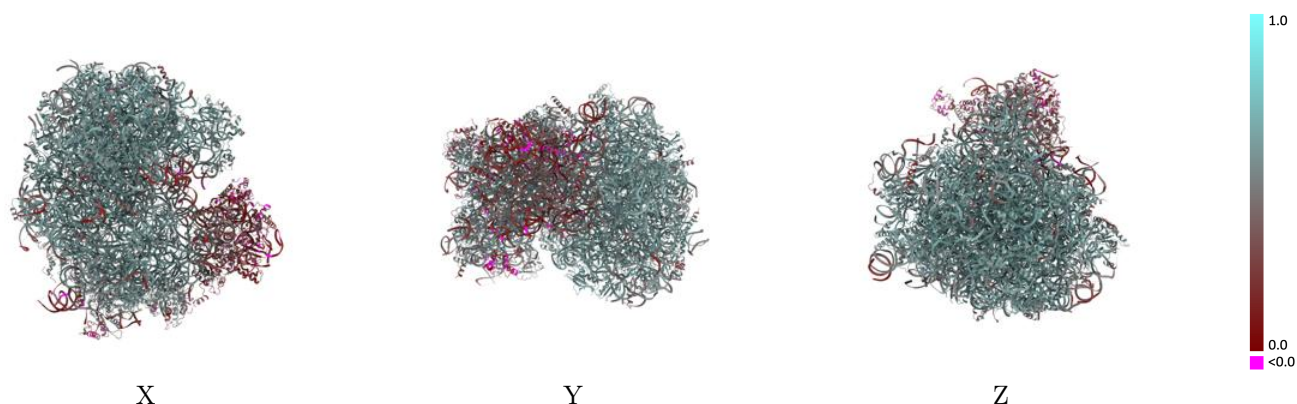
Y



Z

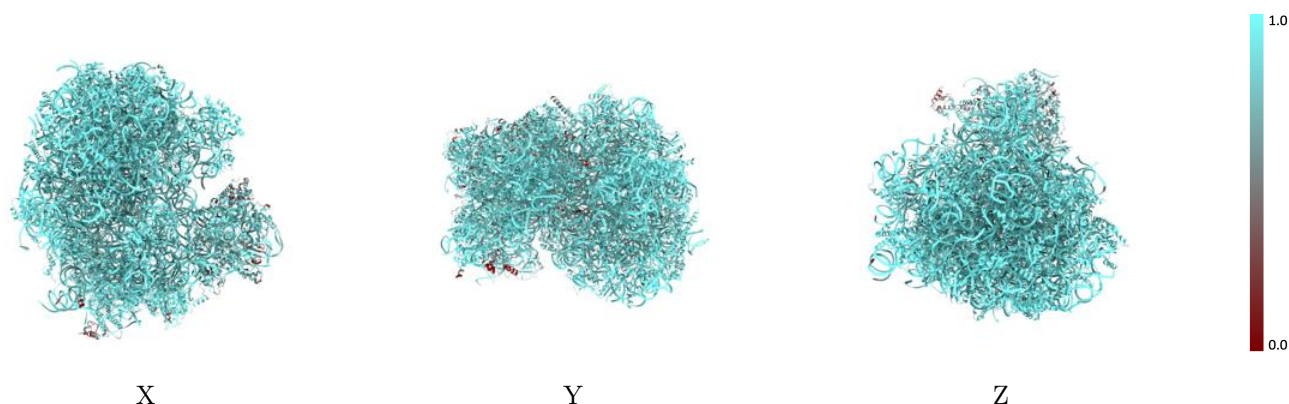
The images above show the 3D surface view of the map at the recommended contour level 0.00615 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model [i](#)



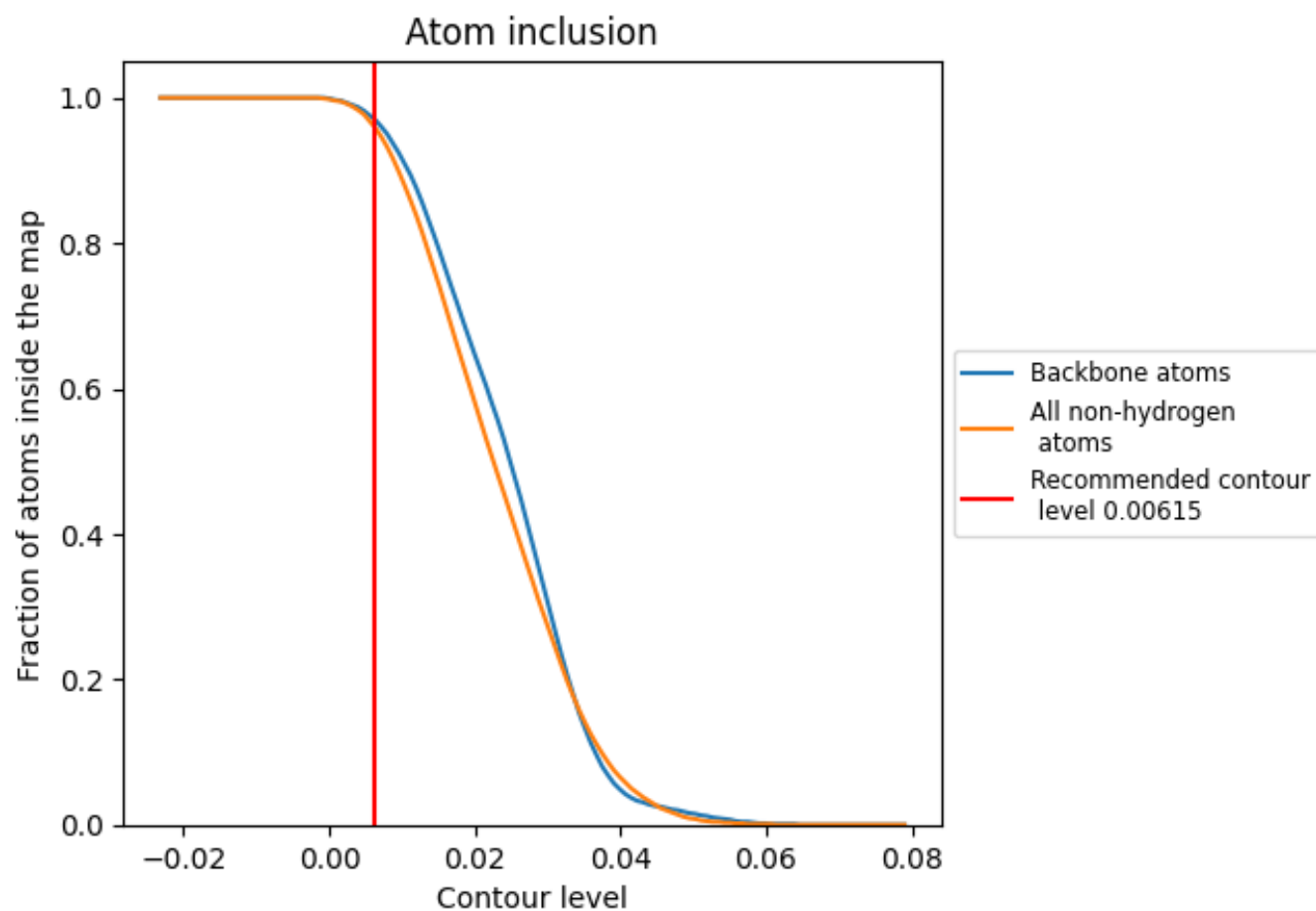
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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](#)



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 (0.00615).

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 (0.00615) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9610	 0.5470
A0	 0.9620	 0.6100
A1	 0.9580	 0.5480
A2	 0.9770	 0.5960
A3	 0.9890	 0.5950
A4	 0.9400	 0.5580
A5	 0.9780	 0.6120
A6	 0.9660	 0.5780
A7	 0.9740	 0.6130
A8	 0.9800	 0.6250
A9	 0.9920	 0.6350
AA	 0.9910	 0.5950
AB	 1.0000	 0.6070
AC	 0.9970	 0.6010
AD	 0.9800	 0.6330
AE	 0.9890	 0.6280
AF	 0.9460	 0.5840
AG	 0.9700	 0.5390
AH	 0.9860	 0.6060
AI	 0.9770	 0.5810
AJ	 0.9290	 0.5330
AK	 0.9880	 0.6250
AL	 0.9840	 0.6100
AM	 0.9860	 0.6230
AN	 0.9750	 0.5820
AO	 0.9910	 0.6370
AP	 0.9920	 0.6340
AQ	 0.9530	 0.5890
AR	 0.9680	 0.5640
AS	 0.9840	 0.6330
AT	 0.9140	 0.5620
AU	 0.9860	 0.6170
AV	 0.9830	 0.6110
AW	 0.9900	 0.6210
AX	 0.9380	 0.5200



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Chain	Atom inclusion	Q-score
AY	 0.9630	 0.5730
AZ	 0.9820	 0.5860
Aa	 0.9660	 0.5950
Ab	 0.9810	 0.5880
Ac	 0.9810	 0.6230
Ad	 0.9880	 0.5570
Ae	 0.9840	 0.6150
Af	 0.9900	 0.6170
Ag	 0.9530	 0.5940
Ah	 0.9770	 0.6290
Ai	 0.9760	 0.6240
S1	 0.9460	 0.4900
S2	 0.5760	 0.1780
S3	 0.9690	 0.5940
S4	 0.7920	 0.3820
S5	 0.5660	 0.2510
S6	 0.8850	 0.4640
S7	 0.9460	 0.3380
S8	 0.9440	 0.4890
S9	 0.8770	 0.3900
SA	 0.9710	 0.4890
SB	 0.9400	 0.5500
SC	 0.9340	 0.4950
SD	 0.8480	 0.3420
SE	 0.9190	 0.5220
SF	 0.9570	 0.5500
SG	 0.9390	 0.5280
SH	 0.9270	 0.4500
SI	 0.8550	 0.3280
SJ	 0.7900	 0.4110
SK	 0.9640	 0.5890
SL	 0.9660	 0.5700
SM	 0.7210	 0.2350
SN	 0.7800	 0.2560
SO	 0.8000	 0.2350
SP	 0.9490	 0.5620
SQ	 0.9410	 0.5660
SR	 0.4890	 0.1270
SS	 0.7320	 0.2360
ST	 0.8200	 0.3490
SU	 0.9510	 0.5650
SV	 0.9380	 0.5790

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Chain	Atom inclusion	Q-score
SW	 0.8100	 0.3160
SX	 0.7400	 0.2530
SY	 0.8280	 0.2500
SZ	 0.9620	 0.5440
Sa	 0.8330	 0.4780
mR	 0.9740	 0.5510