



Full wwPDB/EMDatabank EM Map/Model Validation Report ⓘ

Mar 2, 2017 – 12:21 pm GMT

PDB ID : 3JCS
EMDB ID: : EMD-6583
Title : 2.8 Angstrom cryo-EM structure of the large ribosomal subunit from the eukaryotic parasite Leishmania
Authors : Shalev-Benami, M.; Zhang, Y.; Matzov, D.; Halfon, Y.; Zackay, A.; Rozenberg, H.; Zimmerman, E.; Bashan, A.; Jaffe, C.L.; Yonath, A.; Skiniotis, G.
Deposited on : 2016-01-21
Resolution : 2.80 Å(reported)

This is a Full wwPDB/EMDatabank EM Map/Model Validation Report
for a publicly released PDB/EMDB entry.

We welcome your comments at validation@mail.wwpdb.org
A user guide is available at
<http://wwpdb.org/validation/2016/EMValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

MolProbity : 4.02b-467
Mogul : 1.7.2 (RC1), CSD as538be (2017)
Percentile statistics : 20161228.v01 (using entries in the PDB archive December 28th 2016)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et. al. (1996)
Validation Pipeline (wwPDB-VP) : recalc29047

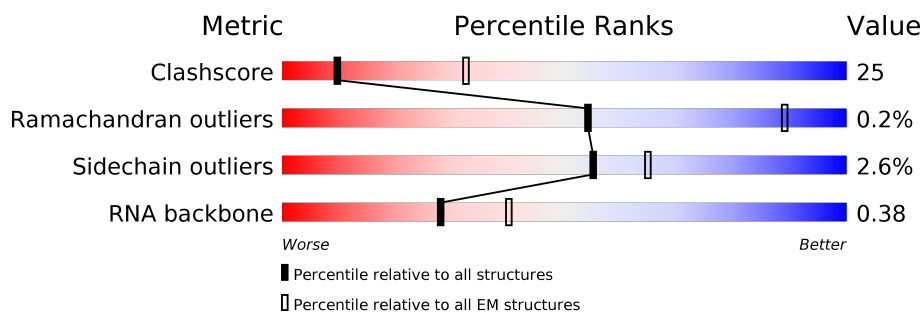
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 2.80 Å.

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







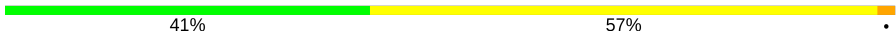
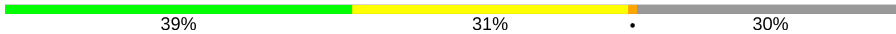
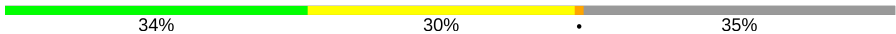
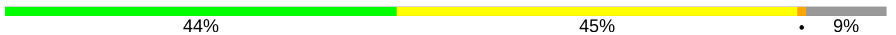
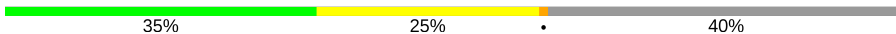

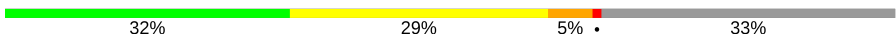





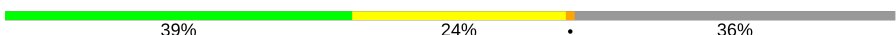








Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	125131	1336
Ramachandran outliers	121729	1120
Sidechain outliers	121581	1026
RNA backbone	3398	335

The table below summarises the geometric issues observed across the polymeric chains. The red, orange, yellow and green segments on the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria. 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 $\leq 5\%$

Mol	Chain	Length	Quality of chain
1	1	1782	26% (green) 39% (yellow) 22% (orange) 13% (grey) •
2	2	1527	21% (green) 34% (yellow) 18% (orange) 27% (grey)
3	3	213	23% (green) 39% (yellow) 24% (orange) 14% (grey)
4	4	183	28% (green) 36% (yellow) 18% (orange) 19% (grey)
5	5	133	17% (green) 28% (yellow) 14% (orange) 40% (grey) •
6	6	76	20% (green) 54% (yellow) 20% (grey) •
7	7	171	28% (green) 45% (yellow) 16% (orange) 10% (grey) •
8	8	121	13% (green) 47% (yellow) 38% (orange) •

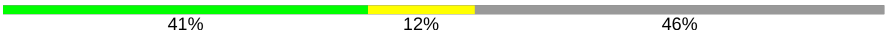
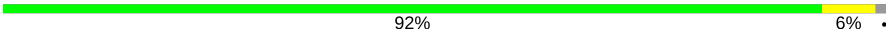



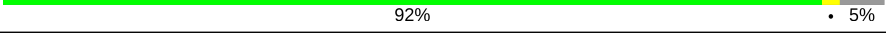

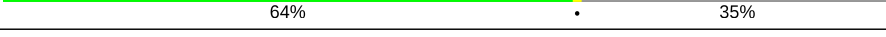

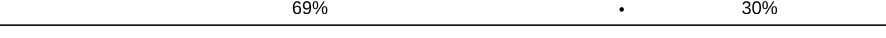
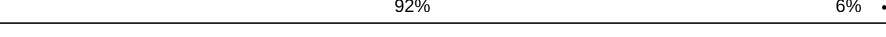
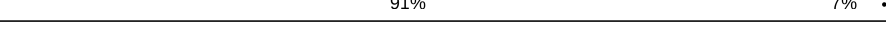

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Mol	Chain	Length	Quality of chain
9	A	260	
10	B	419	
11	C	373	
12	D	188	
13	E	190	
14	F	195	
15	G	348	
16	H	222	
17	I	220	
18	J	139	
19	K	233	
20	L	145	
21	M	204	
22	N	213	
23	O	305	
24	P	198	
25	Q	245	
26	R	179	
27	S	159	
28	T	166	
29	U	129	
30	V	145	
31	W	143	
32	X	124	
33	Y	134	

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Mol	Chain	Length	Quality of chain
34	Z	147	
35	a	127	
36	b	70	
37	c	252	
38	d	104	
39	e	183	
40	f	133	
41	g	144	
42	h	168	
43	i	105	
44	j	83	
45	k	83	
46	l	51	
47	m	92	
48	n	106	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
1	OMU	1	36	-	-	X	-
1	OMG	1	959	-	-	X	-
2	OMU	2	1078	-	-	X	-
2	OMG	2	1079	-	-	X	-
2	OMG	2	1254	-	-	X	-
2	OMC	2	1318	-	-	X	-
2	OMC	2	443	-	-	X	-
2	A2M	2	527	-	-	X	-
2	OMG	2	71	-	-	X	-
7	OMU	7	7	-	-	X	-

2 Entry composition

There are 50 unique types of molecules in this entry. The entry contains 117257 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called 26S alpha ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	1	1554	Total	C	N	O	P	0	0
			33313	14886	6081	10792	1554		

- Molecule 2 is a RNA chain called 26S delta ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	2	1119	Total	C	N	O	P	0	0
			23926	10702	4308	7797	1119		

- Molecule 3 is a RNA chain called 26S gamma ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	3	184	Total	C	N	O	P	0	0
			3893	1740	662	1307	184		

- Molecule 4 is a RNA chain called 26S delta ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	4	149	Total	C	N	O	P	0	0
			3177	1418	570	1040	149		

- Molecule 5 is a RNA chain called 26S epsilon ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	5	80	Total	C	N	O	P	0	0
			1708	763	310	555	80		

- Molecule 6 is a RNA chain called 26S zeta ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	6	61	Total	C	N	O	P	0	0
			1288	577	225	425	61		

- Molecule 7 is a RNA chain called 5.8S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	7	154	Total	C	N	O	P	0	0
			3280	1469	584	1074	153		

- Molecule 8 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	8	119	Total	C	N	O	P	0	0
			2531	1132	450	830	119		

- Molecule 9 is a protein called ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	A	245	Total	C	N	O	S	2	0
			1859	1158	384	307	10		

- Molecule 10 is a protein called ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	B	396	Total	C	N	O	S	2	0
			3020	1908	592	508	12		

- Molecule 11 is a protein called ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	C	301	Total	C	N	O	S	1	0
			2237	1413	428	384	12		

- Molecule 12 is a protein called ribosomal protein L5.

Mol	Chain	Residues	Atoms				AltConf	Trace
12	D	161	Total	C	N	O	0	0
			799	476	161	162		

- Molecule 13 is a protein called ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	E	190	Total	C	N	O	S	0	0
			1509	953	276	272	8		

- Molecule 14 is a protein called ribosomal protein L6e.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	F	137	Total	C	N	O	S	1	0
			1002	641	192	167	2		

- Molecule 15 is a protein called ribosomal protein L8e.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	G	226	Total	C	N	O	S	1	0
			1772	1113	353	299	7		

- Molecule 16 is a protein called ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	H	202	Total	C	N	O	S	0	0
			1596	1019	307	263	7		

- Molecule 17 is a protein called ribosomal protein L13e.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	I	132	Total	C	N	O	S	0	0
			1061	666	221	169	5		

- Molecule 18 is a protein called ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	J	128	Total	C	N	O	S	0	0
			924	588	171	160	5		

- Molecule 19 is a protein called ribosomal protein L14e.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	K	156	Total	C	N	O	S	0	0
			1061	661	212	184	4		

- Molecule 20 is a protein called ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	L	144	Total	C	N	O	S	0	0
			1096	691	223	177	5		

- Molecule 21 is a protein called ribosomal protein L15e.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	M	203	Total	C	N	O	S	0	0
			1714	1080	362	264	8		

- Molecule 22 is a protein called ribosomal protein L16.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	N	213	Total	C	N	O	S	0	0
			1714	1077	340	281	16		

- Molecule 23 is a protein called ribosomal protein L18.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	O	235	Total	C	N	O	S	0	0
			1557	986	300	268	3		

- Molecule 24 is a protein called ribosomal protein L18e.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	P	195	Total	C	N	O	S	1	0
			1494	942	299	247	6		

- Molecule 25 is a protein called ribosomal protein L19e.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	Q	156	Total	C	N	O	S	0	0
			1162	730	243	186	3		

- Molecule 26 is a protein called ribosomal protein L20e.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	R	131	Total	C	N	O	S	1	0
			1019	651	197	167	4		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
R	158	ILE	LEU	VARIANT	UNP E9BRT7

- Molecule 27 is a protein called ribosomal protein L21e.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	S	149	Total	C	N	O	S	2	0
			1112	704	218	187	3		

- Molecule 28 is a protein called ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	T	154	Total	C	N	O	S	2	0
			1221	763	241	206	11		

- Molecule 29 is a protein called ribosomal protein L22e.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	U	100	Total	C	N	O	S	0	0
			541	331	101	109			

- Molecule 30 is a protein called ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	V	118	Total	C	N	O	S	0	0
			892	566	171	153	2		

- Molecule 31 is a protein called ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	W	117	Total	C	N	O	S	1	0
			896	562	187	144	3		

- Molecule 32 is a protein called ribosomal protein L24e.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	X	64	Total	C	N	O	S	0	0
			508	333	96	76	3		

- Molecule 33 is a protein called ribosomal protein L27e.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	Y	132	Total	C	N	O	S	0	0
			914	589	174	151			

- Molecule 34 is a protein called ribosomal protein L28e.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	Z	79	Total	C	N	O	S	0	0
			538	329	111	95	3		

- Molecule 35 is a protein called ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	a	124	Total	C	N	O	S	0	0
			982	613	203	163	3		

- Molecule 36 is a protein called ribosomal protein L29e.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	b	65	Total	C	N	O	S	0	0
			503	309	113	80	1		

- Molecule 37 is a protein called ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	c	222	Total	C	N	O	S	0	0
			1732	1105	327	289	11		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
c	49	ALA	GLY	VARIANT	UNP E9BI29

- Molecule 38 is a protein called ribosomal protein L30e.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	d	75	Total	C	N	O	S	0	0
			518	325	93	97	3		

- Molecule 39 is a protein called ribosomal protein L31e.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	e	112	Total	C	N	O	S	1	0
			824	531	155	136	2		

- Molecule 40 is a protein called ribosomal protein L32e.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	f	126	Total	C	N	O	S	0	0
			982	616	195	167	4		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
f	105	LYS	THR	VARIANT	UNP E9BFJ5

- Molecule 41 is a protein called ribosomal protein L33e.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	g	125	Total	C	N	O	S	0	0
			983	612	205	161	5		

- Molecule 42 is a protein called ribosomal protein L34e.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	h	109	Total	C	N	O	S	0	0
			856	529	182	140	5		

- Molecule 43 is a protein called ribosomal protein L36e.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	i	63	Total	C	N	O	S	1	0
			494	316	100	76	2		

- Molecule 44 is a protein called ribosomal protein L37e.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	j	78	Total	C	N	O	S	0	0
			639	385	149	99	6		

- Molecule 45 is a protein called ribosomal protein L38e.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	k	58	Total	C	N	O	S	0	0
			373	234	71	66	2		

- Molecule 46 is a protein called ribosomal protein L39e.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	l	50	Total	C	N	O	S	1	0
			457	294	98	64	1		

- Molecule 47 is a protein called ribosomal protein L43e.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	m	90	Total	C	N	O	S	0	0
			668	414	135	113	6		

- Molecule 48 is a protein called ribosomal protein L44e.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	n	86	Total	C	N	O	S	0	0
			659	418	129	110	2		

- Molecule 49 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
49	g	1	Total	Mg	0
			1	1	
49	j	4	Total	Mg	0
			4	4	
49	l	51	Total	Mg	0
			51	51	
49	K	1	Total	Mg	0
			1	1	
49	h	1	Total	Mg	0
			1	1	
49	C	1	Total	Mg	0
			1	1	
49	V	1	Total	Mg	0
			1	1	
49	7	9	Total	Mg	0
			9	9	
49	a	1	Total	Mg	0
			1	1	
49	4	2	Total	Mg	0
			2	2	
49	5	4	Total	Mg	0
			4	4	
49	2	25	Total	Mg	0
			25	25	

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Mol	Chain	Residues	Atoms		AltConf
49	3	3	Total 3	Mg 3	0
49	f	2	Total 2	Mg 2	0
49	M	3	Total 3	Mg 3	0

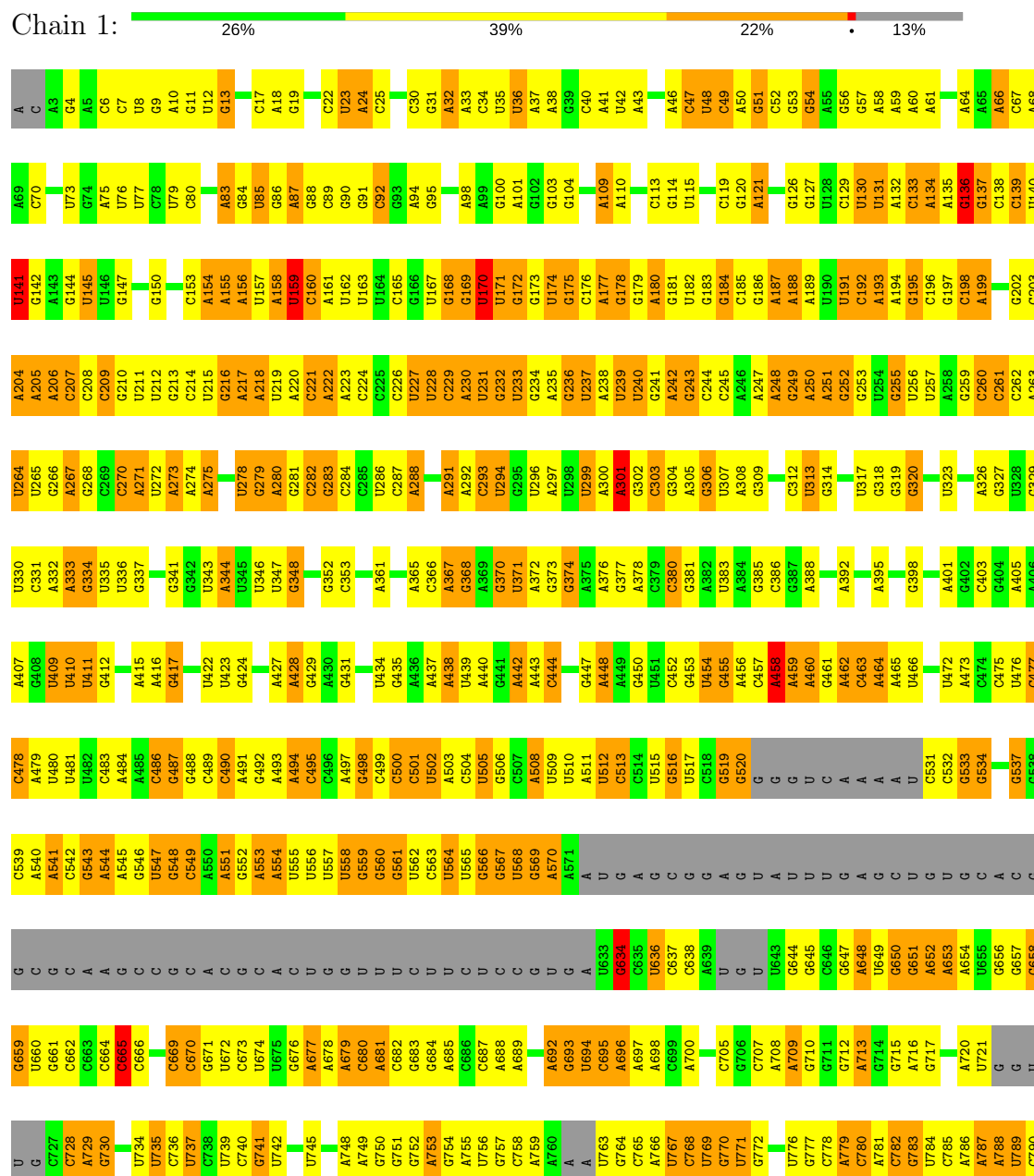
- Molecule 50 is water.

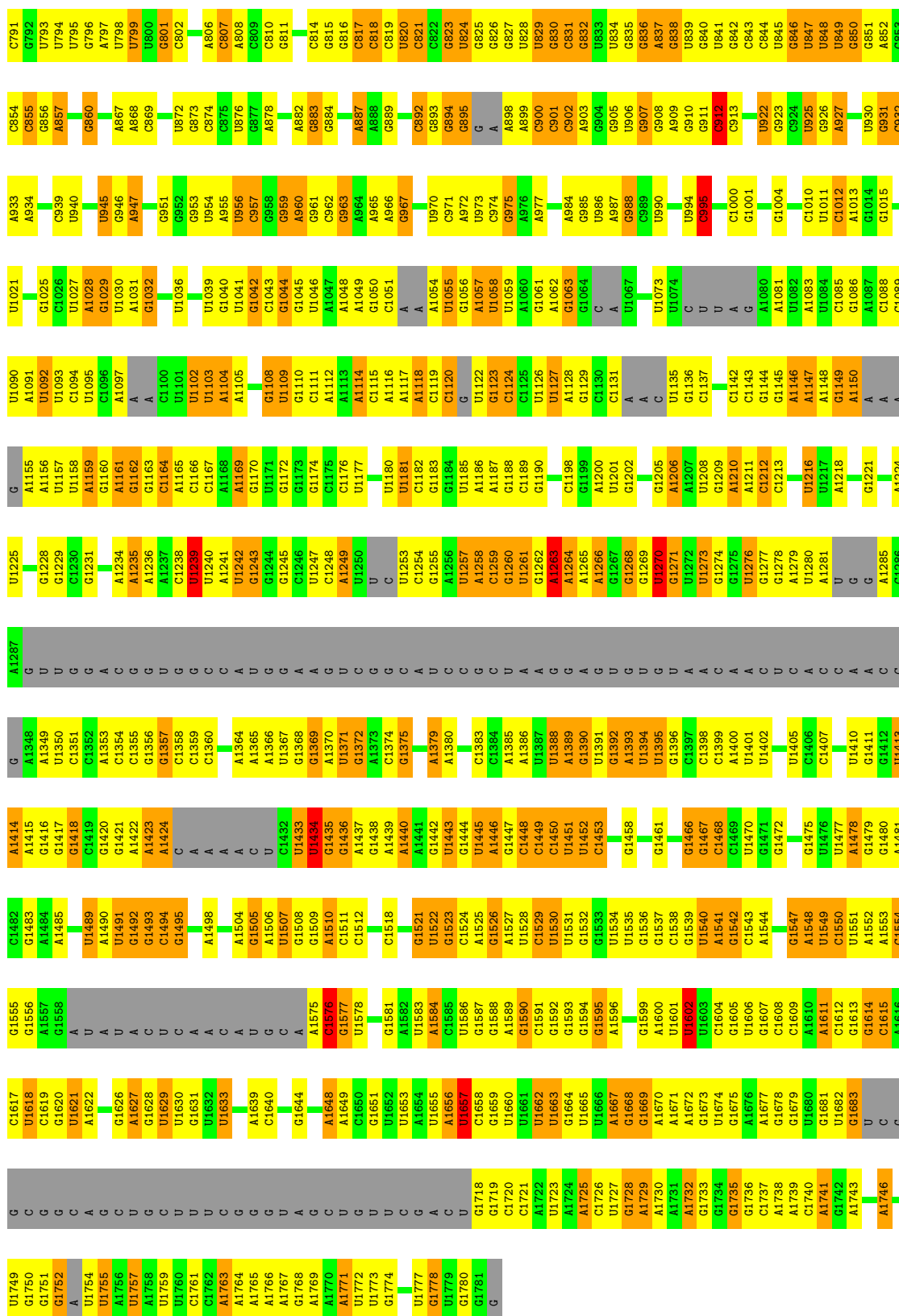
Mol	Chain	Residues	Atoms		AltConf
50	1	72	Total 72	O 72	0
50	2	40	Total 40	O 40	0
50	4	4	Total 4	O 4	0
50	5	4	Total 4	O 4	0
50	7	16	Total 16	O 16	0
50	8	1	Total 1	O 1	0
50	A	2	Total 2	O 2	0
50	G	1	Total 1	O 1	0
50	M	2	Total 2	O 2	0
50	i	1	Total 1	O 1	0
50	j	1	Total 1	O 1	0

3 Residue-property plots

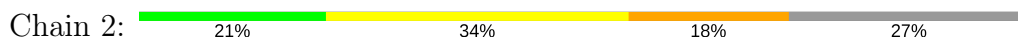
These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

- Molecule 1: 26S alpha ribosomal RNA



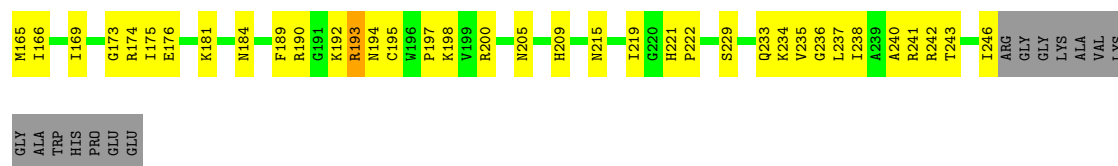


- Molecule 2: 26S delta ribosomal RNA

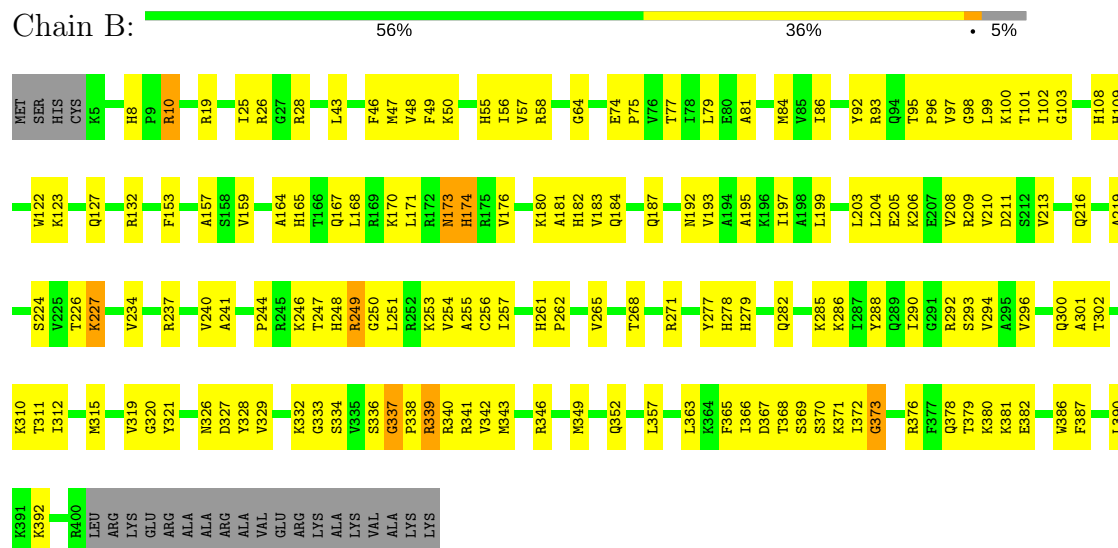


A1108	G1042	A977	G	G794	A730	U663	A460	A393	C	C	C	A	U78	U
U1109	G1043	C978	G	C795	A731	G864	G460	U394	C	G	G	C	U78	C2
C1110	C1044	C979	A	U795	A732	A665	G464	U395	C	U	C	C	G83	C3
U1111	U1045	A980	A	C	A733	C666		A396	G	A	C	C	G83	C4
A1112	G	A981	A	G	A734	U667	G467	G396	U	A	U	G	G89	A5
C1113	G	C982	A	G	C735	C668	G468	U400	U	A	C	A	G90	A6
C1114	G	G983	A	G	C736	U674	G469	G401	U	A	C	A	G91	G8
G1115	G1049	G984	U	G800	A737	G675	G470	G402	C	C	C	G	G92	C10
U1116	C1050	G985	U	C801	C738	G676	U471	G403	C	G	C	C	A93	A11
A1117	G1051	A986	A	U802	C739	G677	U472	A404	A	C	C	C	A94	G12
G1118	G1052	A987	C	A803	C740	C677	C473	U405	C	C	C	C	A95	A13
A1119	C1053	U988	G	U804	C741	U678	A474	U406	A	U	G	C	U96	A14
C1120	A	G989	U	G805	U742	U679	C475	C410	A	U	C	C	U97	C14
U1121	U1055	C990	U	C806	C743	G681	C476	C411	A	C	U	C	A97	A18
C1122	U1056	C991	U	A807	G744	U682	G477	C412	U342	U	G	U	A98	C19
C1123	U1057	C992	C	C808	G745	G683	A478	A413	U343	U	G	U	A99	C19
A1124	U1058	C993	C	C809	A746	C684	C479	G414	G344	A	U	C	U100	C19
G1125	G1060	G994	U	G810	A747	G685	G480	U415	C345	C	A	C	G101	C19
U1126	A	U995	U	U811	C	G686	C481	G416	C346	U	G	U	G102	U23
G1127	A1063	U996	C	C812	G749	C687	C482		A	C	C	C	G103	C24
A1131	C1064	G997	U	C813	U750	A618	C483	G419	A348	U	G	U	U104	C26
A1132	A1065	A998	G	U814	C690	A619	G484	U420	C349	U	G	U	U109	C29
A1133	C1066	G999	U	G815	U751	G620	G485	A421	U350	G	C	C	C110	A30
G1134	G1067	U1000	U	G816	C752	G621	U487	U422	U351	G	C	U	G111	C112
U1137	A1070	U1001	C	U817	U753	A623	A489	U423	C352	A	G	A	G112	A113
U1140	C1072	C1003	U	U818	U755	C624	A490	U424	G353	C	U	U	A113	G34
U1141	U1073	U1004	G	G822	C756	A625	G495	U425	A354	G	C	C	A114	G35
A1143	G1076	A	C	A823	A757	G628	G496	A426	C355	G	C	C	A115	G36
U1144	U1077	U1005	C	G824	C758	A629	G497	A427	U356	C	U	G	A116	U36
U1145	G1078	U1006	U	U825	U759	G630	G498	A428	C357	C	U	C	A117	C37
A1146	U1079	U1007	U	U826	C760	G631	G499	U429	G358	U	C	C	G118	C37
C1147	U1080	U1008	C	A827	U761	G632	U498	A430	U360	G	C	C	C119	A41
G1148	A1084	U1009	C	U828	U762	G633	U499	C431	U361	U	U	U	U120	C44
A1150	A1085	U1010	C	U829	C763	U634	A	G432	A362	U	C	U	U121	C44
U1151	G1086	U1011	C	U830	U764	A635	C	A433	C363	U	C	U	U122	A45
U1152	U1087	U1012	C	U831	U765	A636	U	U434	C364	U	C	U	G123	U46
C1153	C1088	U1013	C	A832	U766	G637	C	U435	G365	U	C	U	G124	A47
U1154	G1089	U1014	C	U833	A769	C638	U	C438	G366	G	C	U	C125	A48
C1155	U1090	U1015	G	U834	A770	G639	A	U439	U367	G	C	A	U126	A49
A1156	C1091	G1019	C	G835	C771	A640	G	C440	G368	U	C	A	C127	U54
G1157	U1092	U1020	C	C836	A772	G641	A508	C441	A372	G	G	G	C55	C55
U1158	C1093	C1021	U	G837	C773	G642	C509	C442	U373	U	U	U	U56	G57
C1159	U1094	A1022	C	U838	C774	A643	U510	C443	A377	U	C	U	G131	A60
G1160	C1095	U1023	C	G839	A775	G646	C511	A444	U378	C	C	U	G132	A60
A1162	U1096	U1024	C	U840	C776	A647	U512	G445	A379	A	C	U	G133	A60
C1163	G1097	C1025	C	A	A777	A648	C513	U446	U379	C	A	U	C134	C61
U1164	U1098	A1026	C	C	A778	G649	C514	G447	U380	C	C	U	A135	A62
C1165	C1099	G1027	C	C	U779	A650	U515	C448	G380	G	U	U	U136	U63
G1166	A1101	C1028	C	C	G780	G651	A516	U449	U381	C	U	U	A	G
A1167	C1102	U1029	C	C	A781	C652	A517	C450	A382	U	U	U	G	G67
C1168	U1103	U1030	C	C	C782	U654	G518	U451	A385	C	C	U	U	A68
A1169	G1104	G1034	C	C	U783	G655	G519	A452	U386	C	C	C	C	A69
C1170	A	A1104	C	C	U784	U656	U520	A453	U387	C	C	C	C	A70
U1171	G	U1035	C	C	U785	G657	A521	U454	U388	C	C	C	C	G71
G1172	A	A1105	C	C	C786	A658	G522	U455	A389	U	U	U	C	G72
		U1036	C	C	G787	G659	C523	G456	A390	U	U	U	C	U73
		A1037	C	C	U788	U660	C524	U457	A391	G	C	C	C	A74
		U1038	C	C	U789	U661	A525	C458	C392	U	U	U	C	C75
		A976	C	C	A791	U662	A526	A459		G	C	U	C	

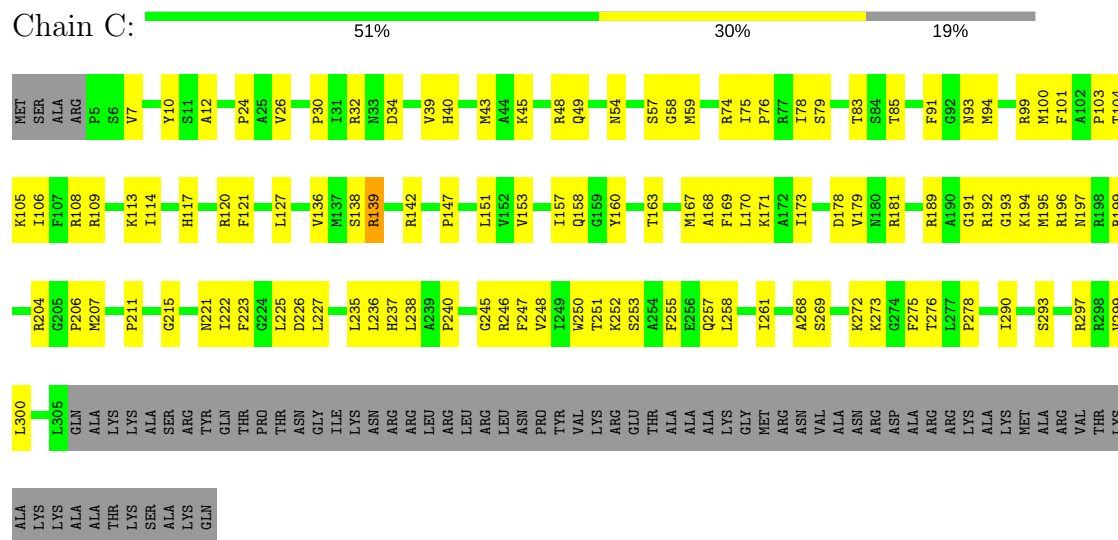




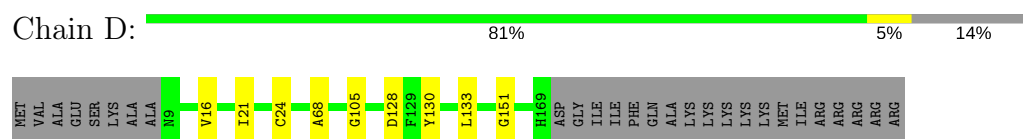
• Molecule 10: ribosomal protein L3



• Molecule 11: ribosomal protein L4

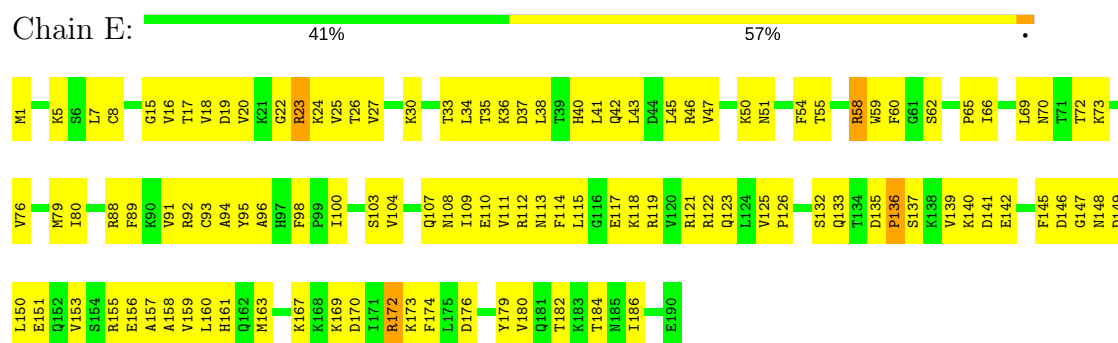


• Molecule 12: ribosomal protein L5



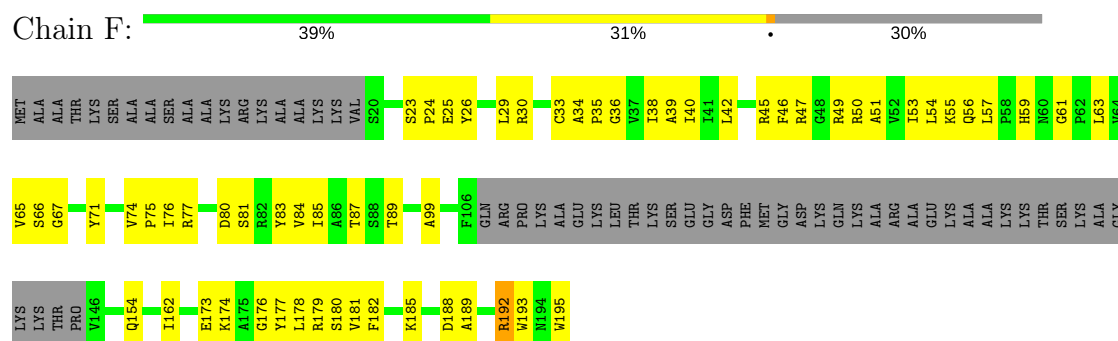
• Molecule 13: ribosomal protein L6

Chain E:



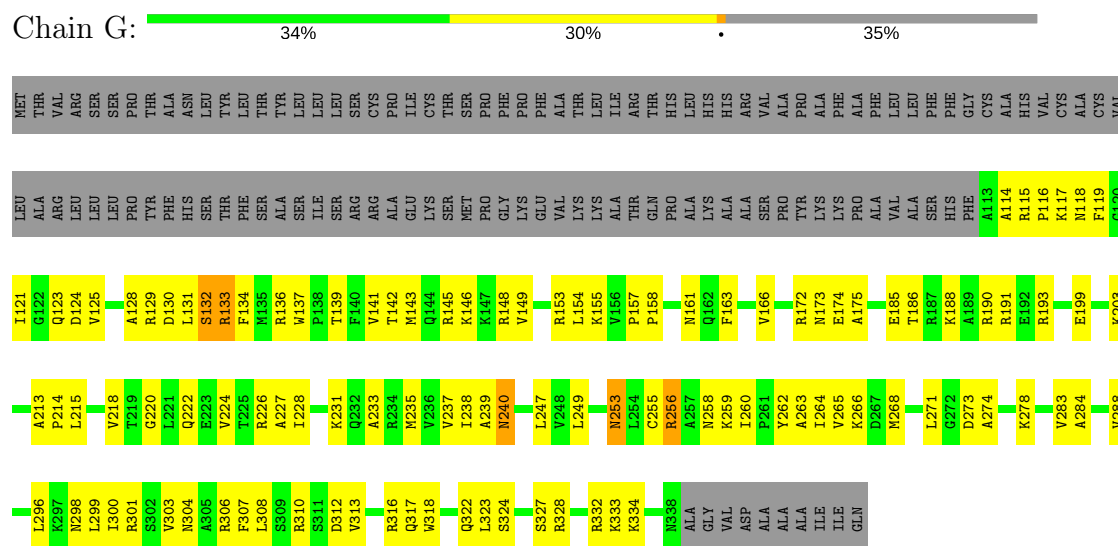
- Molecule 14: ribosomal protein L6e

Chain F:



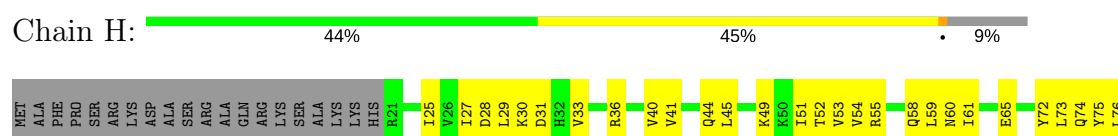
- Molecule 15: ribosomal protein L8e

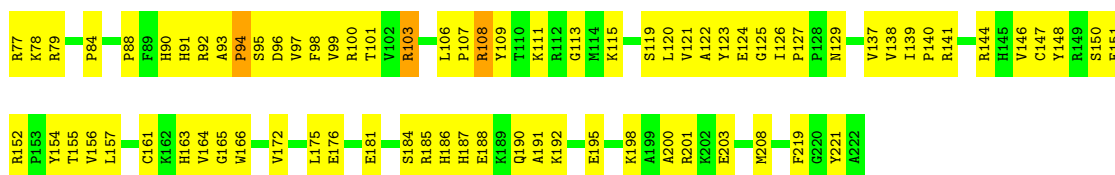
Chain G:



- Molecule 16: ribosomal protein L13

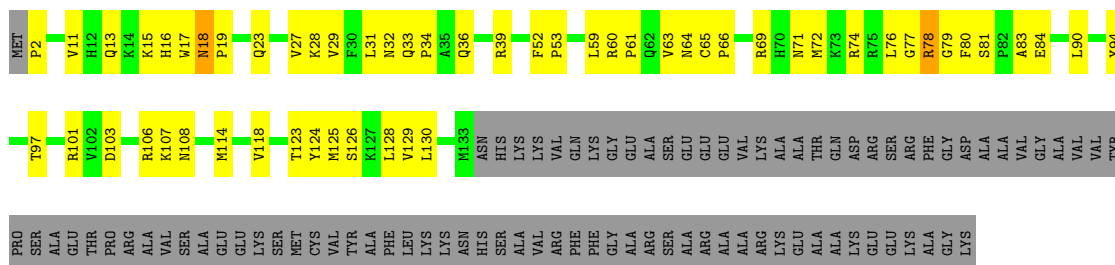
Chain H:





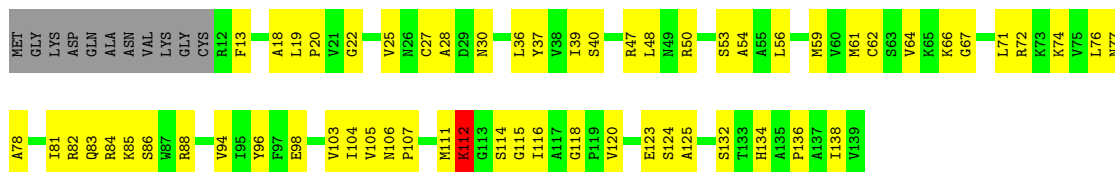
- Molecule 17: ribosomal protein L13e

Chain I: 



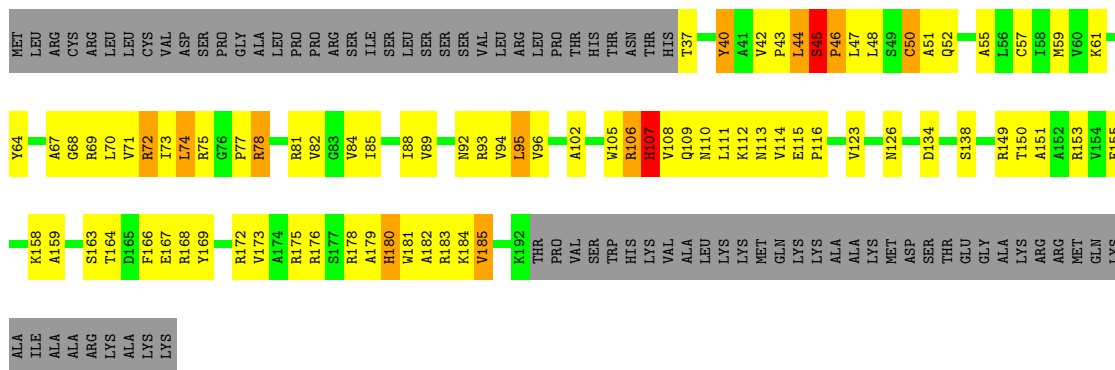
- Molecule 18: ribosomal protein L14

Chain J:  49% 42% • 8%



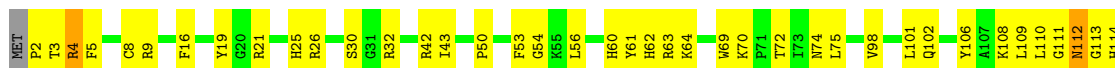
- Molecule 19: ribosomal protein L14e

Chain K: 32% 29% 5% • 33%



- Molecule 20: ribosomal protein L15

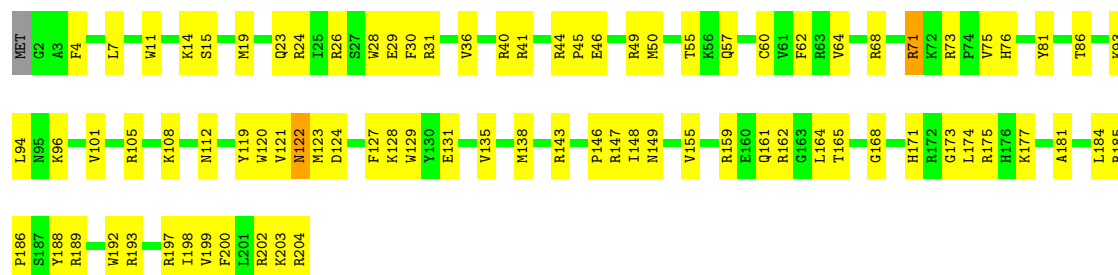
Chain L: 64% 34%





• Molecule 21: ribosomal protein L15e

Chain M: 58% 40%



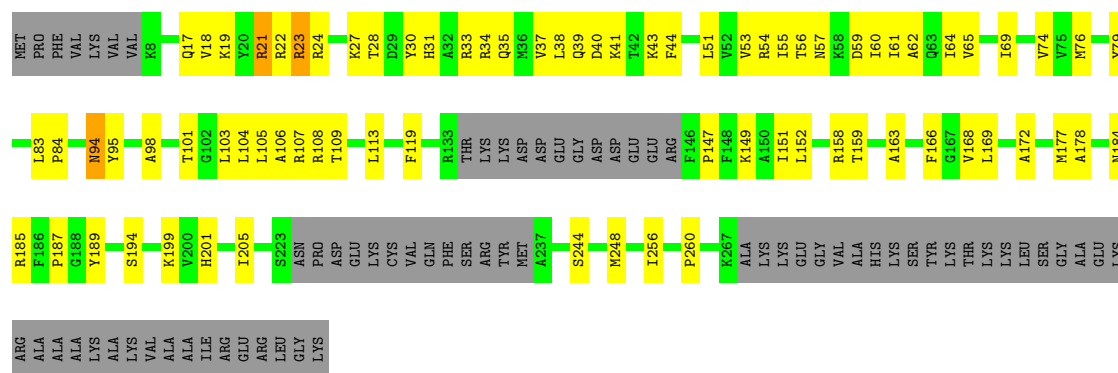
• Molecule 22: ribosomal protein L16

Chain N: 46% 53%



• Molecule 23: ribosomal protein L18

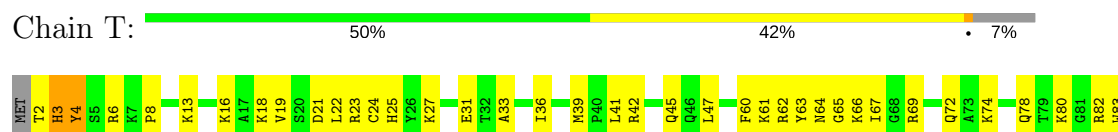
Chain O: 52% 24% 23%



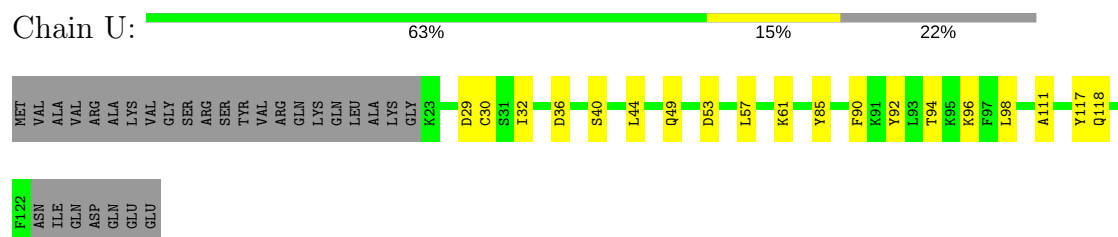
• Molecule 24: ribosomal protein L18e

Chain P: 61% 36%

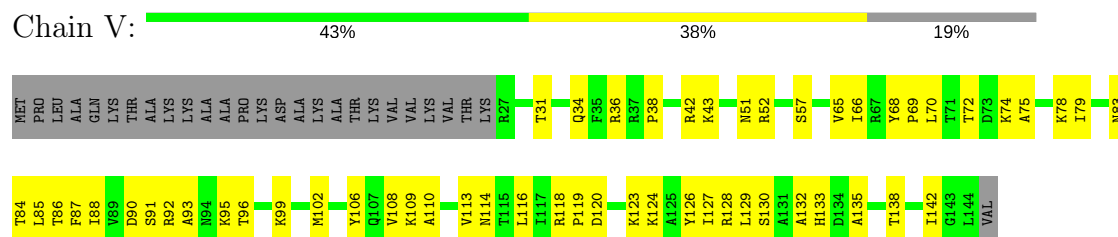




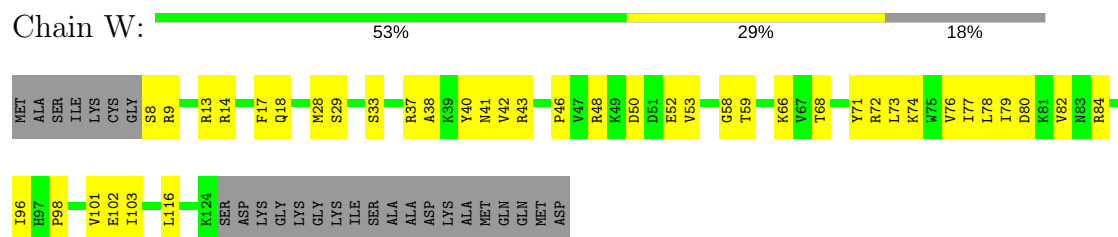
- Molecule 29: ribosomal protein L22e



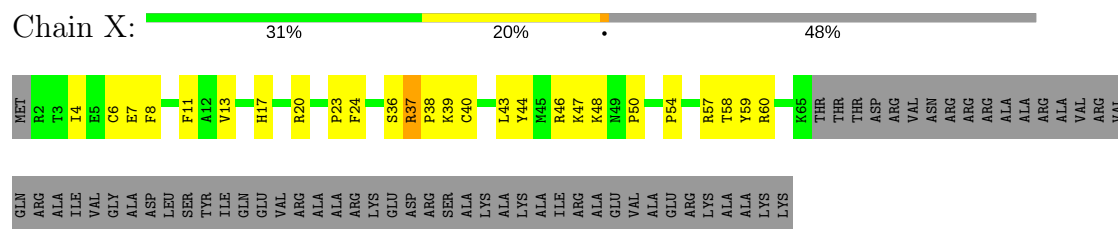
- Molecule 30: ribosomal protein L23



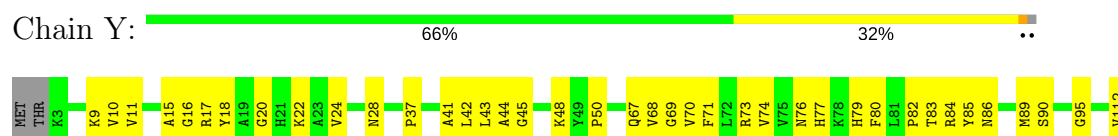
- Molecule 31: ribosomal protein L24



- Molecule 32: ribosomal protein L24e



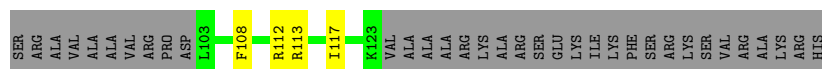
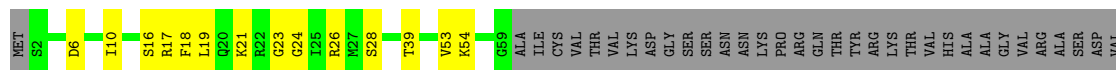
- Molecule 33: ribosomal protein L27e





- Molecule 34: ribosomal protein L28e

Chain Z: 41% 12% 46%



- Molecule 35: ribosomal protein L29

Chain a: 92% 6%



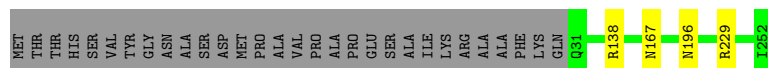
- Molecule 36: ribosomal protein L29e

Chain b: 87% 6% 7%



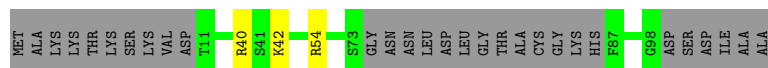
- Molecule 37: ribosomal protein L30

Chain c: 87% 12%



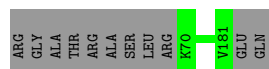
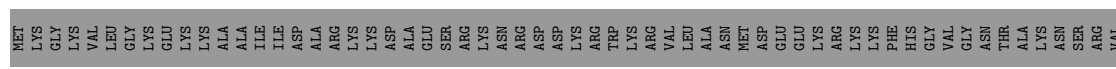
- Molecule 38: ribosomal protein L30e

Chain d: 69% 28%




- Molecule 39: ribosomal protein L31e

Chain e: 61% 39%




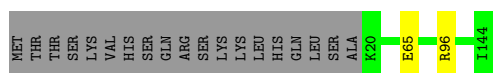
- Molecule 40: ribosomal protein L32e

Chain f:  92% • 5%



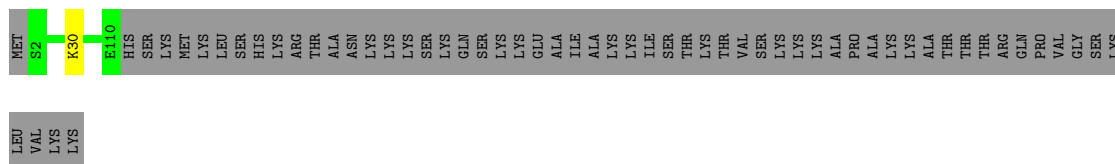
- Molecule 41: ribosomal protein L33e

Chain g:  85% • 13%



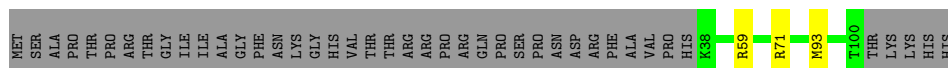
- Molecule 42: ribosomal protein L34e

Chain h:  64% • 35%



- Molecule 43: ribosomal protein L36e

Chain i:  57% • 40%



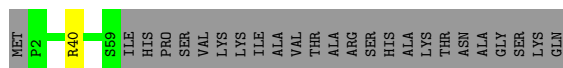
- Molecule 44: ribosomal protein L37e

Chain j:  90% • 6%



- Molecule 45: ribosomal protein L38e

Chain k:  69% • 30%

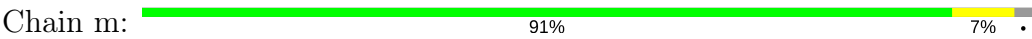


- Molecule 46: ribosomal protein L39e

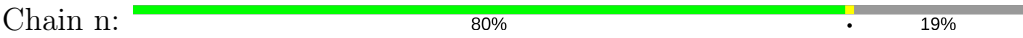
Chain l:  92% • 6%



- Molecule 47: ribosomal protein L43e



• Molecule 48: ribosomal protein L44e



4 Experimental information

Property	Value	Source
Reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	Depositor
Number of particles used	107134	Depositor
Resolution determination method	FSC 0.143	Depositor
CTF correction method	Not provided	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	30	Depositor
Minimum defocus (nm)	600	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	25000	Depositor
Image detector	K2 Summit direct electron detector	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: OMC, MG, OMG, H2U, OMU, A2M

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	$\# Z > 2$	RMSZ	$\# Z > 2$
1	1	0.75	8/36881 (0.0%)	0.90	48/57466 (0.1%)
10	B	0.44	0/3086	0.55	0/4176
11	C	0.45	0/2284	0.60	0/3092
12	D	0.25	0/800	0.49	0/1111
13	E	0.29	0/1529	0.56	0/2056
14	F	0.40	0/1023	0.56	0/1390
15	G	0.38	0/1798	0.59	1/2423 (0.0%)
16	H	0.42	0/1628	0.60	0/2194
17	I	0.40	0/1084	0.57	0/1454
18	J	0.39	0/941	0.61	2/1277 (0.2%)
19	K	0.27	0/1077	0.59	1/1475 (0.1%)
2	2	0.60	0/26109	0.86	28/40668 (0.1%)
20	L	0.43	0/1123	0.56	0/1505
21	M	0.49	0/1754	0.57	0/2342
22	N	0.27	0/1747	0.54	0/2338
23	O	0.32	0/1583	0.50	0/2157
24	P	0.42	0/1519	0.57	0/2040
25	Q	0.35	0/1179	0.53	0/1588
26	R	0.42	0/1044	0.59	1/1415 (0.1%)
27	S	0.43	0/1142	0.60	0/1547
28	T	0.45	0/1249	0.65	1/1679 (0.1%)
29	U	0.26	0/545	0.49	0/754
3	3	0.48	0/4337	0.84	1/6734 (0.0%)
30	V	0.42	0/907	0.51	0/1227
31	W	0.37	0/910	0.56	0/1224
32	X	0.40	0/527	0.53	0/716
33	Y	0.37	0/934	0.51	0/1274
34	Z	0.28	0/545	0.52	0/739
35	a	0.32	0/992	0.53	0/1326
36	b	0.34	0/514	0.50	0/690
37	c	0.42	0/1763	0.52	0/2374
38	d	0.31	0/525	0.50	0/719

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >2	RMSZ	# Z >2
39	e	0.37	0/838	0.57	0/1131
4	4	0.69	0/3549	0.88	3/5525 (0.1%)
40	f	0.46	0/1002	0.55	0/1346
41	g	0.49	0/1003	0.53	0/1352
42	h	0.38	0/868	0.55	0/1160
43	i	0.38	0/499	0.56	0/662
44	j	0.50	0/651	0.61	0/869
45	k	0.30	0/378	0.57	0/518
46	l	0.43	0/470	0.51	0/627
47	m	0.43	0/680	0.53	0/913
48	n	0.34	0/667	0.56	0/889
5	5	0.69	0/1908	0.91	3/2967 (0.1%)
6	6	0.39	2/1437 (0.1%)	0.79	4/2234 (0.2%)
7	7	0.76	0/3615	0.87	2/5622 (0.0%)
8	8	0.47	0/2828	0.82	0/4401
9	A	0.47	0/1903	0.56	0/2559
All	All	0.59	10/125375 (0.0%)	0.79	95/185945 (0.1%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
10	B	0	2
13	E	0	1
15	G	0	1
16	H	0	1
19	K	0	3
26	R	0	1
27	S	0	1
28	T	0	1
40	f	0	1
9	A	0	1
All	All	0	13

All (10) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1	634	G	C1'-N9	-6.69	1.37	1.46
1	1	159	U	C1'-N1	6.17	1.58	1.48
1	1	568	U	C1'-N1	6.06	1.57	1.48

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1	564	U	C1'-N1	5.95	1.57	1.48
1	1	565	U	C1'-N1	5.91	1.57	1.48
1	1	562	U	C1'-N1	5.88	1.57	1.48
6	6	31	U	C1'-N1	5.28	1.56	1.48
1	1	692	A	N9-C4	-5.23	1.34	1.37
6	6	39	U	C1'-N1	5.16	1.56	1.48
1	1	170	U	C1'-N1	5.09	1.56	1.48

All (95) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
19	K	45	SER	C-N-CD	-11.87	94.48	120.60
1	1	1575	A	OP1-P-O3'	-11.81	79.22	105.20
1	1	1757	U	C2-N1-C1'	8.96	128.45	117.70
2	2	776	C	N1-C2-O2	8.91	124.25	118.90
2	2	776	C	C2-N1-C1'	8.72	128.39	118.80
2	2	24	C	C2-N1-C1'	8.09	127.70	118.80
1	1	1575	A	OP2-P-O3'	-8.07	87.44	105.20
1	1	1216	U	C2-N1-C1'	8.01	127.32	117.70
2	2	1275	C	N1-C2-O2	7.88	123.63	118.90
1	1	1270	U	N1-C2-O2	7.83	128.28	122.80
26	R	22	PRO	N-CA-CB	7.49	112.29	103.30
1	1	1270	U	C2-N1-C1'	7.48	126.68	117.70
1	1	1216	U	N1-C2-O2	7.48	128.03	122.80
2	2	24	C	N1-C2-O2	7.32	123.29	118.90
1	1	1216	U	N3-C2-O2	-7.12	117.22	122.20
6	6	38	C	P-O3'-C3'	7.06	128.18	119.70
2	2	776	C	N3-C2-O2	-7.05	116.97	121.90
2	2	540	C	C2-N1-C1'	6.94	126.43	118.80
1	1	1270	U	N3-C2-O2	-6.94	117.34	122.20
1	1	1576	C	OP1-P-OP2	6.93	129.99	119.60
2	2	1275	C	C2-N1-C1'	6.89	126.38	118.80
1	1	973	U	C2-N1-C1'	6.86	125.93	117.70
2	2	1275	C	N3-C2-O2	-6.76	117.17	121.90
1	1	1757	U	N1-C2-O2	6.72	127.50	122.80
18	J	112	LYS	CB-CA-C	-6.67	97.06	110.40
2	2	552	C	N1-C2-O2	6.67	122.90	118.90
2	2	552	C	C2-N1-C1'	6.65	126.11	118.80
1	1	1109	U	C2-N1-C1'	6.62	125.64	117.70
1	1	1602	U	C4-C5-C6	6.58	123.65	119.70
1	1	1602	U	C5-C6-N1	-6.54	119.43	122.70
4	4	86	U	N1-C2-O2	6.47	127.33	122.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
18	J	112	LYS	N-CA-C	6.45	128.41	111.00
1	1	1757	U	N3-C2-O2	-6.36	117.75	122.20
2	2	360	U	OP2-P-O3'	6.33	119.13	105.20
28	T	4	TYR	N-CA-C	6.17	127.67	111.00
2	2	776	C	C6-N1-C1'	-6.17	113.40	120.80
4	4	86	U	C2-N1-C1'	6.16	125.09	117.70
15	G	115	ARG	C-N-CD	-6.10	107.18	120.60
7	7	62	A	C2-N3-C4	-6.09	107.56	110.60
1	1	1757	U	C6-N1-C1'	-6.07	112.70	121.20
6	6	31	U	C2'-C3'-O3'	6.04	123.37	113.70
1	1	1618	U	C2-N1-C1'	5.99	124.89	117.70
1	1	912	C	C2-N1-C1'	5.96	125.36	118.80
2	2	1404	H2U	P-O3'-C3'	-5.94	112.58	119.70
2	2	24	C	N3-C2-O2	-5.93	117.75	121.90
2	2	61	C	C2-N1-C1'	5.78	125.16	118.80
4	4	86	U	N3-C2-O2	-5.78	118.16	122.20
2	2	24	C	C6-N1-C1'	-5.77	113.87	120.80
1	1	170	U	OP1-P-O3'	5.76	117.87	105.20
5	5	112	A	N7-C8-N9	5.72	116.66	113.80
2	2	1441	G	O4'-C1'-N9	5.65	112.72	108.20
1	1	665	C	O4'-C1'-N1	5.61	112.69	108.20
2	2	782	G	OP1-P-O3'	5.61	117.54	105.20
2	2	1289	G	C4-N9-C1'	5.59	133.77	126.50
1	1	205	A	OP1-P-O3'	5.58	117.49	105.20
1	1	912	C	N3-C2-O2	-5.51	118.04	121.90
1	1	1012	C	N1-C2-O2	5.49	122.20	118.90
2	2	540	C	C6-N1-C1'	-5.47	114.24	120.80
1	1	912	C	N1-C2-O2	5.42	122.15	118.90
2	2	776	C	C6-N1-C2	-5.42	118.13	120.30
1	1	1657	U	O4'-C1'-N1	5.40	112.52	108.20
1	1	1012	C	C2-N1-C1'	5.39	124.73	118.80
1	1	1618	U	N3-C2-O2	-5.38	118.43	122.20
6	6	41	G	C2'-C3'-O3'	5.38	122.30	113.70
6	6	39	U	O5'-P-OP1	-5.37	100.87	105.70
1	1	995	C	C2-N1-C1'	5.35	124.69	118.80
1	1	301	A	O4'-C1'-N9	5.34	112.48	108.20
3	3	108	A	P-O3'-C3'	5.34	126.11	119.70
1	1	458	A	O4'-C1'-N9	5.26	112.41	108.20
2	2	540	C	N1-C2-O2	5.20	122.02	118.90
5	5	112	A	C8-N9-C4	-5.20	103.72	105.80
1	1	824	U	C2-N1-C1'	5.19	123.93	117.70
1	1	1434	U	C2-N1-C1'	5.17	123.91	117.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	2	1155	C	N3-C2-O2	-5.17	118.28	121.90
1	1	229	C	P-O3'-C3'	5.16	125.89	119.70
2	2	360	U	P-O3'-C3'	5.16	125.89	119.70
1	1	1263	A	P-O3'-C3'	5.13	125.86	119.70
1	1	1596	A	O5'-P-OP1	-5.12	101.09	105.70
2	2	1393	U	P-O3'-C3'	5.12	125.85	119.70
1	1	141	U	P-O3'-C3'	5.12	125.85	119.70
1	1	1388	U	P-O3'-C3'	5.12	125.85	119.70
1	1	1600	A	O4'-C1'-N9	5.12	112.30	108.20
1	1	1618	U	N1-C2-O2	5.12	126.38	122.80
1	1	136	G	OP1-P-O3'	5.12	116.46	105.20
1	1	1239	U	P-O3'-C3'	5.11	125.83	119.70
5	5	113	A	P-O3'-C3'	5.09	125.80	119.70
1	1	542	C	P-O3'-C3'	5.08	125.80	119.70
1	1	1493	G	O4'-C1'-N9	5.08	112.27	108.20
1	1	1216	U	C6-N1-C1'	-5.06	114.12	121.20
1	1	1602	U	N1-C2-N3	5.05	117.93	114.90
2	2	755	U	P-O3'-C3'	5.04	125.75	119.70
7	7	140	U	C2-N1-C1'	5.03	123.74	117.70
1	1	205	A	P-O3'-C3'	5.02	125.73	119.70
2	2	552	C	C6-N1-C1'	-5.01	114.78	120.80
1	1	1216	U	C5-C6-N1	5.01	125.20	122.70

There are no chirality outliers.

All (13) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
9	A	60[B]	ARG	Mainchain
10	B	337	GLY	Peptide
10	B	373	GLY	Peptide
13	E	136	PRO	Peptide
15	G	114	ALA	Peptide
16	H	151	GLU	Peptide
19	K	107	HIS	Peptide
19	K	126	ASN	Peptide
19	K	40	TYR	Peptide
26	R	17	PRO	Peptide
27	S	100[B]	ARG	Mainchain
28	T	3	HIS	Peptide
40	f	9	ALA	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	1	33313	0	16798	1118	0
2	2	23926	0	12113	740	0
3	3	3893	0	1971	147	0
4	4	3177	0	1611	112	0
5	5	1708	0	867	59	0
6	6	1288	0	657	184	0
7	7	3280	0	1664	103	0
8	8	2531	0	1281	155	0
9	A	1859	0	1901	128	0
10	B	3020	0	3003	172	0
11	C	2237	0	2231	118	0
12	D	799	0	374	5	0
13	E	1509	0	1595	122	0
14	F	1002	0	994	55	0
15	G	1772	0	1853	108	0
16	H	1596	0	1683	143	0
17	I	1061	0	1123	64	0
18	J	924	0	934	60	0
19	K	1061	0	939	196	0
20	L	1096	0	1096	52	0
21	M	1714	0	1793	95	0
22	N	1714	0	1786	111	0
23	O	1557	0	1351	84	0
24	P	1494	0	1554	83	0
25	Q	1162	0	1130	74	0
26	R	1019	0	981	52	0
27	S	1112	0	1051	57	0
28	T	1221	0	1230	98	0
29	U	541	0	295	10	0
30	V	892	0	903	48	0
31	W	896	0	915	36	0
32	X	508	0	477	25	0
33	Y	914	0	813	40	0
34	Z	538	0	479	18	0
35	a	982	0	1029	0	0
36	b	503	0	500	0	0
37	c	1732	0	1768	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
38	d	518	0	462	0	0
39	e	824	0	839	0	0
40	f	982	0	985	0	0
41	g	983	0	1006	0	0
42	h	856	0	873	0	0
43	i	494	0	535	0	0
44	j	639	0	641	0	0
45	k	373	0	302	0	0
46	l	457	0	484	0	0
47	m	668	0	648	0	0
48	n	659	0	672	0	0
49	1	51	0	0	0	0
49	2	25	0	0	0	0
49	3	3	0	0	0	0
49	4	2	0	0	0	0
49	5	4	0	0	0	0
49	7	9	0	0	0	0
49	C	1	0	0	0	0
49	K	1	0	0	0	0
49	M	3	0	0	0	0
49	V	1	0	0	0	0
49	a	1	0	0	0	0
49	f	2	0	0	0	0
49	g	1	0	0	0	0
49	h	1	0	0	0	0
49	j	4	0	0	0	0
50	1	72	0	0	18	0
50	2	40	0	0	17	0
50	4	4	0	0	1	0
50	5	4	0	0	0	0
50	7	16	0	0	2	0
50	8	1	0	0	1	0
50	A	2	0	0	1	0
50	G	1	0	0	0	0
50	M	2	0	0	0	0
50	i	1	0	0	0	0
50	j	1	0	0	0	0
All	All	117257	0	80190	3902	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 25.

All (3902) 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)
3:3:57:U:H2'	3:3:58:C:C5	1.26	1.62
19:K:89:VAL:CG1	26:R:73:ALA:HB2	1.26	1.56
19:K:89:VAL:HG12	26:R:73:ALA:CB	1.38	1.50
24:P:17:HIS:CE1	24:P:18:HIS:HD1	1.29	1.50
25:Q:23:TRP:CE3	25:Q:51:ILE:CD1	2.02	1.42
24:P:17:HIS:CE1	24:P:18:HIS:ND1	1.85	1.39
19:K:78:ARG:HH12	19:K:107:HIS:CE1	1.41	1.38
16:H:200:ALA:HB1	19:K:185:VAL:CG1	1.51	1.36
1:1:1392:G:C6	19:K:105:TRP:HH2	1.43	1.36
1:1:1392:G:O6	19:K:105:TRP:CH2	1.78	1.36
16:H:203:GLU:OE2	19:K:185:VAL:CG2	1.75	1.34
19:K:95:LEU:HD11	19:K:106:ARG:CD	1.55	1.34
16:H:49:LYS:NZ	19:K:37:THR:N	1.73	1.34
3:3:57:U:C2'	3:3:58:C:C5	2.09	1.33
19:K:89:VAL:CG1	26:R:73:ALA:CB	1.95	1.31
22:N:121:LYS:HD2	22:N:122:PRO:CD	1.61	1.30
1:1:1392:G:O6	19:K:105:TRP:HH2	1.02	1.30
6:6:17:U:H5	19:K:43:PRO:CG	1.42	1.29
19:K:78:ARG:NH1	19:K:107:HIS:HE1	1.31	1.28
1:1:439:U:O5'	28:T:2:THR:N	1.68	1.27
25:Q:23:TRP:CE3	25:Q:51:ILE:HD13	1.62	1.27
4:4:95:U:OP2	25:Q:62:ARG:NH2	1.65	1.26
3:3:106:U:O2	3:3:129:G:O6	1.53	1.26
19:K:69:ARG:O	19:K:84:VAL:HG23	1.10	1.26
10:B:282:GLN:NE2	10:B:336:SER:OG	1.68	1.26
25:Q:23:TRP:HE3	25:Q:51:ILE:CD1	1.42	1.25
1:1:238:A:N6	1:1:239:U:O4	1.71	1.24
6:6:17:U:C5	19:K:43:PRO:HG2	1.71	1.23
22:N:121:LYS:CD	22:N:122:PRO:HD2	1.68	1.23
16:H:49:LYS:HZ2	19:K:37:THR:N	1.27	1.22
18:J:106:ASN:OD1	18:J:107:PRO:HD2	1.38	1.20
24:P:17:HIS:CE1	24:P:18:HIS:CE1	2.28	1.20
1:1:1392:G:C6	19:K:105:TRP:CH2	2.30	1.18
14:F:195:TRP:O	19:K:164:THR:OG1	1.59	1.18
28:T:6:ARG:NH2	28:T:116:HIS:HB2	1.57	1.17
10:B:369:SER:OG	10:B:378:GLN:OE1	1.62	1.17
13:E:137:SER:O	13:E:140:LYS:HG2	1.44	1.17
1:1:439:U:C5'	28:T:2:THR:N	2.08	1.16
1:1:1674:U:O4	1:1:1728:G:N2	1.78	1.15
8:8:48:G:N2	8:8:49:U:H1'	1.58	1.15
19:K:89:VAL:HG12	26:R:73:ALA:HB1	1.29	1.14
22:N:121:LYS:CD	22:N:122:PRO:CD	2.25	1.13

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:8:48:G:N2	8:8:49:U:C1'	2.10	1.13
6:6:17:U:C5	19:K:43:PRO:CG	2.30	1.11
3:3:106:U:O2	3:3:129:G:C6	2.04	1.11
19:K:78:ARG:NH1	19:K:107:HIS:CE1	2.08	1.10
2:2:1151:U:H2'	2:2:1152:U:H5'	1.34	1.09
1:1:439:U:O4	28:T:3:HIS:CE1	2.04	1.09
2:2:690:C:O2	2:2:749:G:N2	1.85	1.08
3:3:4:U:C4	33:Y:17:ARG:NH1	2.21	1.08
6:6:10:C:H2'	6:6:13:C:H41	1.16	1.08
8:8:2:C:C4	8:8:120:C:O2	2.07	1.08
19:K:180:HIS:NE2	19:K:184:LYS:HE2	1.67	1.08
8:8:40:U:O2'	8:8:44:A:N6	1.85	1.08
19:K:69:ARG:O	19:K:84:VAL:CG2	2.00	1.08
16:H:200:ALA:HB1	19:K:185:VAL:HG12	1.33	1.08
2:2:1079:OMG:N2	2:2:1237:C:O2	1.88	1.07
2:2:1318:OMC:H6	2:2:1318:OMC:H5'	1.19	1.06
3:3:209:G:H2'	3:3:210:G:H5'	1.33	1.06
6:6:34:C:H3'	6:6:35:U:H6	1.19	1.06
19:K:95:LEU:CD1	19:K:106:ARG:HD3	1.86	1.05
16:H:200:ALA:CB	19:K:185:VAL:CG1	2.33	1.05
22:N:121:LYS:HD2	22:N:122:PRO:HD3	1.12	1.04
1:1:1729:A:C2	1:1:1730:A:N7	2.25	1.04
6:6:30:C:H5'	6:6:30:C:H6	1.19	1.04
18:J:112:LYS:HG3	18:J:112:LYS:O	1.24	1.04
16:H:148:TYR:CD1	19:K:59:MET:CB	2.40	1.04
18:J:106:ASN:OD1	18:J:107:PRO:CD	2.05	1.03
1:1:353:C:OP2	17:I:107:LYS:NZ	1.91	1.03
6:6:28:A:C2	6:6:29:G:C6	2.47	1.03
25:Q:23:TRP:HE3	25:Q:51:ILE:HD12	1.21	1.03
25:Q:23:TRP:CZ3	25:Q:51:ILE:HD11	1.93	1.03
25:Q:23:TRP:CZ3	25:Q:51:ILE:CD1	2.41	1.03
6:6:41:G:H3'	19:K:180:HIS:CE1	1.93	1.02
10:B:367:ASP:OD2	32:X:17:HIS:NE2	1.91	1.02
2:2:1444:A:N7	6:6:6:G:N2	2.05	1.02
19:K:180:HIS:HA	19:K:183:ARG:HG2	1.40	1.02
3:3:106:U:C2	3:3:129:G:O6	2.12	1.02
19:K:93:ARG:HD2	19:K:108:VAL:CG1	1.89	1.02
1:1:48:OMU:HM22	1:1:49:C:C5'	1.90	1.02
2:2:1079:OMG:N1	2:2:1237:C:N3	2.06	1.02
2:2:591:A2M:HM'2	2:2:592:C:H5'	1.42	1.02
2:2:569:G:O2'	2:2:571:OMG:OP2	1.78	1.01

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:452:G:N2	2:2:482:G:N7	2.08	1.01
18:J:106:ASN:CG	18:J:107:PRO:HD2	1.80	1.01
2:2:1151:U:C2'	2:2:1152:U:H5'	1.89	1.01
2:2:749:G:O2'	2:2:750:U:O5'	1.79	1.01
6:6:22:G:O6	6:6:27:G:OP2	1.76	1.01
8:8:37:C:N4	8:8:48:G:H1'	1.76	1.00
1:1:48:OMU:HM22	1:1:49:C:H5'	1.00	0.99
1:1:34:C:H2'	1:1:35:U:H5'	1.45	0.99
16:H:203:GLU:OE2	19:K:185:VAL:HG21	0.81	0.98
6:6:34:C:H3'	6:6:35:U:C6	1.98	0.98
22:N:121:LYS:CE	22:N:122:PRO:HD2	1.92	0.98
25:Q:8:ALA:HB1	25:Q:19:ARG:NH1	1.79	0.98
7:7:55:U:H3	7:7:62:A:H2	1.10	0.97
18:J:112:LYS:O	18:J:112:LYS:CG	2.10	0.97
6:6:7:A:N1	6:6:59:C:N4	2.13	0.97
24:P:101:ARG:HH21	24:P:101:ARG:HG2	1.27	0.97
1:1:959:OMG:HM23	21:M:81:TYR:OH	1.62	0.97
2:2:666:C:N4	2:2:1034:G:O6	1.96	0.97
21:M:71:ARG:HG2	21:M:94:LEU:HB2	1.47	0.96
1:1:439:U:P	28:T:2:THR:N	2.37	0.96
8:8:3:G:H1	8:8:120:C:H42	1.04	0.95
23:O:18:VAL:CG2	23:O:24:ARG:HH21	1.78	0.95
1:1:1540:U:OP1	28:T:82:ARG:NH2	1.97	0.95
2:2:1317:G:O6	2:2:1387:C:N4	2.00	0.95
6:6:17:U:H4'	6:6:18:A:H5'	1.46	0.95
2:2:973:C:N4	2:2:977:A:N7	2.15	0.95
1:1:454:U:HO2'	1:1:455:G:H8	0.99	0.95
10:B:19:ARG:HB2	10:B:237:ARG:HH21	1.31	0.95
6:6:40:C:H3'	6:6:40:C:P	2.08	0.94
2:2:1254:OMG:H5''	2:2:1255:G:OP2	1.65	0.94
1:1:439:U:H5'	28:T:2:THR:N	1.78	0.94
7:7:145:G:H4'	30:V:52:ARG:HH11	1.32	0.93
2:2:667:OMU:C5'	2:2:667:OMU:H6	1.98	0.93
19:K:68:GLY:HA2	19:K:85:ILE:O	1.69	0.93
2:2:628:A2M:OP1	16:H:103:ARG:NH1	2.02	0.93
25:Q:8:ALA:HB1	25:Q:19:ARG:HH12	1.30	0.93
28:T:6:ARG:HH21	28:T:116:HIS:HB2	1.34	0.93
3:3:42:U:H3	3:3:178:G:H1	1.17	0.93
8:8:2:C:N3	8:8:120:C:O2	2.00	0.93
6:6:33:G:H5'	19:K:42:VAL:CG2	1.99	0.93
24:P:17:HIS:NE2	24:P:18:HIS:CE1	2.35	0.92

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:130:U:H3	1:1:136:G:H1	0.93	0.92
1:1:678:A2M:N6	2:2:617:G:N3	2.16	0.92
23:O:18:VAL:HG22	23:O:24:ARG:HH21	1.32	0.92
1:1:1674:U:C4	1:1:1728:G:N2	2.38	0.92
1:1:844:C:H5''	20:L:5:PHE:O	1.69	0.92
1:1:48:OMU:CM2	1:1:49:C:H5'	1.96	0.92
2:2:667:OMU:H5'	2:2:667:OMU:H6	1.52	0.92
2:2:443:OMC:H5''	2:2:488:A:N6	1.84	0.91
19:K:95:LEU:HD11	19:K:106:ARG:HD3	0.92	0.91
19:K:180:HIS:HB2	19:K:183:ARG:HH11	1.35	0.91
1:1:239:U:O2'	1:1:240:U:OP2	1.86	0.91
6:6:10:C:H2'	6:6:13:C:N4	1.84	0.91
6:6:28:A:N3	6:6:29:G:C5	2.38	0.91
1:1:174:U:H3	1:1:283:G:H1	0.92	0.91
8:8:2:C:N4	8:8:120:C:O2	2.03	0.90
1:1:895:G:H1	1:1:900:C:H42	1.18	0.90
8:8:74:U:H3	8:8:105:C:H42	1.18	0.90
6:6:30:C:H5'	6:6:30:C:C6	2.07	0.90
2:2:390:A:H1'	2:2:527:A2M:N6	1.85	0.90
19:K:73:ILE:HG13	19:K:114:VAL:HG22	1.52	0.90
2:2:103:G:N2	2:2:117:A:N7	2.19	0.90
3:3:57:U:O2'	3:3:58:C:C6	2.23	0.90
7:7:145:G:H4'	30:V:52:ARG:NH1	1.87	0.90
16:H:200:ALA:HB1	19:K:185:VAL:HG13	1.52	0.89
16:H:203:GLU:CD	19:K:185:VAL:HG21	1.92	0.89
9:A:65:HIS:HB2	9:A:72:VAL:HG13	1.51	0.89
2:2:1318:OMC:HM21	10:B:244:PRO:HD3	1.55	0.89
1:1:439:U:O4	28:T:3:HIS:HE1	1.50	0.89
22:N:121:LYS:CG	22:N:122:PRO:HD2	2.02	0.88
19:K:180:HIS:O	19:K:183:ARG:HG2	1.72	0.88
1:1:990:U:OP2	20:L:26:ARG:NH1	2.06	0.88
1:1:1048:A:N6	1:1:1102:U:O4	2.06	0.88
1:1:412:G:H22	1:1:415:A:H5''	1.38	0.88
2:2:70:A:C2'	2:2:71:OMG:H5'	2.03	0.88
4:4:133:C:N3	4:4:157:A:N6	2.20	0.88
6:6:30:C:O2'	6:6:31:U:OP1	1.91	0.88
2:2:1340:G:H5'	13:E:169:LYS:HE2	1.56	0.88
6:6:38:C:OP1	19:K:176:ARG:NH2	2.07	0.88
19:K:89:VAL:HG11	26:R:73:ALA:HB2	0.91	0.88
6:6:54:A:C2'	6:6:55:U:H5'	2.04	0.88
2:2:400:U:H5''	9:A:242:ARG:O	1.74	0.88

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:72:G:H5''	10:B:250:GLY:HA3	1.54	0.87
2:2:443:OMC:C5'	2:2:488:A:H61	1.86	0.87
6:6:41:G:H22	19:K:173:VAL:HG12	1.36	0.87
16:H:138:VAL:HG22	19:K:44:LEU:O	1.74	0.87
2:2:1318:OMC:HM21	10:B:244:PRO:CD	2.03	0.87
2:2:70:A:H2'	2:2:71:OMG:H5'	1.54	0.87
2:2:362:A:H8	4:4:90:G:H21	1.18	0.87
8:8:48:G:H21	8:8:49:U:C1'	1.83	0.87
19:K:180:HIS:CA	19:K:183:ARG:HG2	2.04	0.87
1:1:36:OMU:H4'	20:L:32:ARG:HD2	1.56	0.87
22:N:121:LYS:HE3	22:N:122:PRO:HD2	1.56	0.87
2:2:1157:G:N7	27:S:87:LYS:NZ	2.22	0.87
4:4:76:C:H5	4:4:119:A:H62	1.21	0.87
13:E:8:CYS:SG	13:E:70:ASN:ND2	2.48	0.87
1:1:1443:U:H1'	24:P:17:HIS:CE1	2.09	0.87
1:1:439:U:C6	28:T:2:THR:HA	2.10	0.86
7:7:70:C:N3	7:7:88:A:N6	2.23	0.86
19:K:180:HIS:O	19:K:183:ARG:CG	2.23	0.86
2:2:1005:G:O2'	15:G:119:PHE:CD2	2.28	0.86
1:1:36:OMU:CM2	1:1:94:A:O2'	2.23	0.86
1:1:1057:A:H61	1:1:1095:U:H3	1.21	0.86
2:2:425:C:H5	9:A:173:GLY:H	1.22	0.86
26:R:40:LYS:NZ	26:R:63:CYS:SG	2.48	0.86
1:1:243:G:H1	1:1:259:G:H1	1.22	0.86
25:Q:51:ILE:HD12	25:Q:51:ILE:H	1.38	0.86
2:2:1398:OMC:HM22	2:2:1399:C:O4'	1.76	0.86
6:6:17:U:H5	19:K:43:PRO:HG3	1.41	0.86
28:T:6:ARG:HH22	28:T:116:HIS:HB2	1.40	0.86
1:1:1543:C:O2	2:2:599:G:N2	2.09	0.86
19:K:95:LEU:HD11	19:K:106:ARG:NE	1.90	0.85
1:1:778:C:H42	1:1:797:A:H61	1.23	0.85
19:K:95:LEU:CD1	19:K:106:ARG:CD	2.50	0.85
23:O:152:LEU:HG	23:O:169:LEU:HD12	1.59	0.85
1:1:547:U:C5	1:1:1393:A:C6	2.65	0.85
1:1:35:U:C2'	1:1:36:OMU:H5''	2.06	0.85
4:4:95:U:H5	25:Q:62:ARG:CZ	1.90	0.84
2:2:535:U:O2'	2:2:536:C:H5'	1.75	0.84
3:3:22:G:O6	3:3:209:G:N1	2.10	0.84
2:2:749:G:H2'	2:2:750:U:C6	2.13	0.84
3:3:57:U:O2'	3:3:58:C:C5	2.29	0.84
25:Q:23:TRP:HZ3	25:Q:51:ILE:HD11	1.42	0.84

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:4:95:U:C5	25:Q:62:ARG:CZ	2.60	0.84
6:6:17:U:C6	19:K:43:PRO:HG2	2.12	0.84
1:1:1778:G:H1	2:2:6:A:H61	1.26	0.84
25:Q:19:ARG:HD2	25:Q:20:ALA:H	1.42	0.84
22:N:99:ILE:HG22	22:N:121:LYS:O	1.78	0.84
8:8:48:G:H21	8:8:49:U:H1'	1.41	0.83
8:8:66:A:H3'	8:8:67:G:H21	1.43	0.83
10:B:337:GLY:HA3	10:B:343:MET:HE1	1.60	0.83
23:O:38:LEU:HD21	27:S:70:ARG:HE	1.43	0.83
3:3:107:U:O4	3:3:128:C:C5	2.31	0.83
5:5:125:A:H5'	5:5:125:A:C8	2.14	0.83
19:K:180:HIS:CB	19:K:183:ARG:HH11	1.92	0.83
4:4:43:U:H3	4:4:67:A:H61	1.27	0.83
1:1:959:OMG:HN21	21:M:76:HIS:CG	1.96	0.83
1:1:204:A:N6	1:1:228:U:O4	2.12	0.83
10:B:49:PHE:CE1	10:B:342:VAL:CG2	2.62	0.83
15:G:118:ASN:ND2	15:G:123:GLN:OE1	2.12	0.83
2:2:1012:G:H21	15:G:149:VAL:HG23	1.40	0.83
3:3:28:U:H3	3:3:203:A:H61	1.25	0.83
13:E:24:LYS:NZ	13:E:37:ASP:OD1	2.11	0.83
3:3:58:C:O2'	3:3:60:U:C5'	2.26	0.82
8:8:3:G:H1	8:8:120:C:N4	1.76	0.82
25:Q:43:LYS:O	25:Q:47:ASP:OD1	1.97	0.82
2:2:602:A:N3	28:T:131:ARG:NH2	2.26	0.82
19:K:93:ARG:HD2	19:K:108:VAL:HG12	1.61	0.82
1:1:831:C:OP1	24:P:192:ARG:NH2	2.12	0.82
2:2:1077:G:O2'	2:2:1078:OMU:H5''	1.79	0.82
1:1:778:C:HO2'	1:1:779:A:H8	1.27	0.82
1:1:186:G:H1	1:1:267:A:H61	1.27	0.82
16:H:146:VAL:CG1	19:K:55:ALA:HB1	2.09	0.82
1:1:1012:C:N4	2:2:1043:G:O2'	2.12	0.82
13:E:59:TRP:CH2	19:K:64:TYR:CB	2.63	0.82
1:1:35:U:H2'	1:1:36:OMU:H5''	1.61	0.81
8:8:72:A:N6	8:8:107:U:O4	2.11	0.81
10:B:10:ARG:NH2	10:B:268:THR:O	2.13	0.81
3:3:95:C:N3	3:3:139:G:N2	2.26	0.81
7:7:75:G:OP2	31:W:71:TYR:OH	1.97	0.81
2:2:616:G:N2	2:2:621:G:O6	2.12	0.81
8:8:2:C:N4	8:8:120:C:C2	2.46	0.81
31:W:37:ARG:O	31:W:41:ASN:N	2.12	0.81
6:6:26:G:N3	6:6:26:G:H5''	1.95	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:S:100[A]:ARG:O	27:S:102:GLN:N	2.12	0.81
1:1:1392:G:O2'	1:1:1393:A:OP2	1.96	0.81
2:2:458:C:N3	2:2:479:C:N4	2.28	0.81
1:1:1674:U:O4	1:1:1728:G:C2	2.34	0.81
2:2:71:OMG:HM22	2:2:72:G:O4'	1.81	0.81
16:H:148:TYR:CG	19:K:59:MET:CB	2.63	0.81
1:1:836:G:OP1	24:P:149:ARG:NH1	2.13	0.81
30:V:118:ARG:HD3	30:V:124:LYS:HE3	1.62	0.81
1:1:370:G:N2	1:1:374:G:N7	2.29	0.81
1:1:424:G:H21	1:1:427:A:H8	1.27	0.81
3:3:209:G:C2'	3:3:210:G:H5'	2.09	0.81
22:N:67:ALA:O	22:N:71:GLN:N	2.12	0.81
26:R:71:LEU:HD12	26:R:99:VAL:HG11	1.63	0.81
6:6:4:U:H4'	6:6:4:U:OP1	1.80	0.81
16:H:200:ALA:CB	19:K:185:VAL:HG13	2.10	0.81
3:3:129:G:H21	3:3:130:G:H1'	1.44	0.81
19:K:89:VAL:HG11	26:R:73:ALA:CB	1.83	0.81
1:1:329:G:OP2	21:M:68:ARG:NH2	2.13	0.81
2:2:1057:U:O2	2:2:1077:G:N2	2.14	0.81
2:2:1131:A:C2	23:O:23:ARG:NH1	2.49	0.81
4:4:77:U:H4'	10:B:371:LYS:HE3	1.60	0.81
1:1:659:G:O2'	7:7:7:OMU:HM21	1.81	0.80
1:1:959:OMG:HN21	21:M:76:HIS:CD2	1.98	0.80
4:4:128:U:H3	4:4:162:A:H61	1.28	0.80
8:8:34:A:C6	8:8:43:G:N3	2.49	0.80
1:1:423:U:O4	1:1:428:A:N6	2.12	0.80
9:A:40:TYR:HA	9:A:91:GLY:HA3	1.63	0.80
1:1:1540:U:O2	2:2:602:A:N6	2.14	0.80
3:3:57:U:C2'	3:3:58:C:C6	2.63	0.80
19:K:74:LEU:HD23	19:K:74:LEU:H	1.43	0.80
14:F:51:ALA:HB2	14:F:74:VAL:HG21	1.63	0.80
16:H:148:TYR:HB3	19:K:59:MET:H	1.45	0.80
17:I:83:ALA:HB3	17:I:108:ASN:ND2	1.97	0.80
23:O:23:ARG:HD3	23:O:23:ARG:O	1.81	0.80
1:1:1253:U:H5'	16:H:74:GLN:HE22	1.47	0.80
1:1:1278:G:H1	1:1:1351:C:H42	1.25	0.80
3:3:39:U:O4	3:3:181:A:N6	2.12	0.80
10:B:321:TYR:CD1	10:B:340:ARG:HG2	2.16	0.80
3:3:195:A:OP2	21:M:49:ARG:NH1	83.69	0.79
16:H:146:VAL:CG1	19:K:55:ALA:CB	2.60	0.79
10:B:93:ARG:HG3	10:B:102:ILE:HG21	1.62	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:654:U:O2'	2:2:655:OMG:H5'	1.82	0.79
18:J:28:ALA:O	18:J:116:ILE:HG23	1.82	0.79
1:1:779:A:N6	1:1:796:G:O6	2.14	0.79
18:J:116:ILE:H	18:J:116:ILE:HD12	1.46	0.79
5:5:38:G:OP1	32:X:37:ARG:NH2	2.15	0.79
9:A:35:ALA:HA	15:G:121:ILE:HD11	1.64	0.79
1:1:543:G:H5'	1:1:543:G:N3	1.98	0.79
2:2:1318:OMC:H5'	2:2:1318:OMC:C6	2.15	0.79
1:1:779:A:OP1	24:P:141:LYS:HB3	1.83	0.79
22:N:76:MET:SD	22:N:147:GLN:NE2	2.55	0.78
1:1:1247:U:O2	1:1:1379:A:N6	2.15	0.78
2:2:655:OMG:CM2	2:2:657:U:H5''	2.14	0.78
19:K:93:ARG:HD2	19:K:108:VAL:HG11	1.64	0.78
2:2:734:A:OP2	2:2:736:C:N4	2.16	0.78
2:2:1253:G:OP1	11:C:74:ARG:NH1	2.16	0.78
1:1:109:A:OP1	17:I:101:ARG:NH1	2.17	0.78
1:1:713:A:H62	1:1:737:U:H3	1.31	0.78
1:1:1529:OMC:CM2	11:C:94:MET:HG2	2.14	0.78
1:1:34:C:C2'	1:1:35:U:H5'	2.14	0.78
13:E:107:GLN:NE2	13:E:125:VAL:O	2.16	0.78
25:Q:15:LEU:HD13	25:Q:52:ARG:HB3	1.66	0.78
2:2:729:G:N1	2:2:732:A:OP2	2.17	0.78
3:3:106:U:C2	3:3:129:G:C6	2.70	0.78
1:1:1659:G:H1'	2:2:414:G:H22	1.47	0.78
1:1:244:C:H42	1:1:248:A:H61	1.28	0.78
2:2:1255:G:H1	2:2:1259:A:H62	1.29	0.78
9:A:9:ARG:NH2	9:A:16:TYR:OH	2.16	0.78
26:R:14:ARG:HG3	26:R:61:LEU:HD11	1.66	0.78
33:Y:76:ASN:HB3	33:Y:79:HIS:HD2	1.49	0.78
10:B:234:VAL:HG11	10:B:254:VAL:HG23	1.66	0.77
16:H:103:ARG:HH11	16:H:103:ARG:HG3	1.49	0.77
1:1:845:OMU:H6	1:1:845:OMU:O5'	1.84	0.77
2:2:1044:C:O2	2:2:1052:G:N2	2.13	0.77
2:2:1280:G:O2'	2:2:1286:A:N6	2.16	0.77
19:K:70:LEU:HA	19:K:84:VAL:HA	1.65	0.77
2:2:654:U:C2'	2:2:655:OMG:H5'	2.15	0.77
8:8:37:C:H42	8:8:48:G:H1'	1.47	0.77
11:C:34:ASP:OD1	24:P:22:THR:OG1	2.01	0.77
4:4:71:C:OP1	18:J:47:ARG:NH2	2.16	0.77
1:1:1042:G:OP1	27:S:100[B]:ARG:NH1	2.18	0.77
1:1:490:C:N3	1:1:645:G:N2	2.31	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:443:OMC:H5''	2:2:488:A:H61	1.44	0.77
6:6:22:G:H2'	6:6:22:G:N3	1.98	0.77
27:S:48:VAL:HG21	27:S:94:GLU:HG3	1.66	0.77
1:1:183:G:O6	1:1:270:C:N4	2.16	0.77
2:2:1145:U:H3	2:2:1168:G:H1	1.28	0.77
3:3:129:G:N2	3:3:130:G:N9	2.32	0.77
6:6:7:A:C2	6:6:60:A:C2	2.72	0.77
2:2:655:OMG:HM21	2:2:657:U:H5''	1.67	0.77
8:8:71:C:H2'	8:8:72:A:H5''	1.65	0.77
6:6:30:C:O2'	6:6:31:U:P	2.42	0.77
7:7:29:C:OP1	17:I:36:GLN:NE2	2.19	0.77
1:1:1732:A:O2'	30:V:36:ARG:NH2	2.18	0.76
14:F:49:ARG:HH11	14:F:181:VAL:HG13	1.50	0.76
1:1:35:U:O2'	1:1:36:OMU:H5''	1.84	0.76
4:4:140:G:H21	4:4:150:A:H62	1.33	0.76
10:B:337:GLY:HA3	10:B:343:MET:CE	2.15	0.76
16:H:195:GLU:HA	16:H:198:LYS:HG2	1.67	0.76
16:H:141:ARG:NH2	19:K:48:LEU:O	2.14	0.76
25:Q:8:ALA:CB	25:Q:19:ARG:HH12	1.97	0.76
1:1:233:U:O2	1:1:255:G:N2	2.16	0.76
3:3:4:U:O4	33:Y:17:ARG:NH1	2.18	0.76
4:4:62:C:O2	13:E:119:ARG:NH1	2.18	0.76
10:B:26:ARG:NH2	10:B:183:VAL:O	2.18	0.76
15:G:298:ASN:OD1	15:G:301[B]:ARG:NH2	2.17	0.76
31:W:14:ARG:O	31:W:18:GLN:HB2	1.84	0.76
1:1:970:U:OP1	50:1:1955:HOH:O	2.03	0.76
6:6:19:C:H4'	6:6:19:C:OP1	1.84	0.76
17:I:80:PHE:O	17:I:106:ARG:NH1	2.17	0.76
1:1:1260:G:N2	1:1:1261:U:O4	2.19	0.76
1:1:239:U:H1'	1:1:240:U:H5'	1.67	0.76
13:E:103:SER:HB2	13:E:110:GLU:HB2	1.66	0.76
2:2:1369:A:O2'	18:J:40:SER:OG	2.03	0.76
8:8:66:A:OP2	8:8:67:G:N2	2.18	0.76
9:A:130:SER:OG	9:A:174:ARG:NH1	2.18	0.76
2:2:1333:C:H5'	13:E:167:LYS:HG2	1.67	0.75
8:8:8:C:OP1	23:O:54:ARG:NE	2.19	0.75
6:6:38:C:O2'	14:F:179:ARG:O	2.02	0.75
28:T:41:LEU:HD21	28:T:99:GLU:HG2	1.68	0.75
6:6:33:G:H5'	19:K:42:VAL:HG21	1.67	0.75
19:K:95:LEU:CD1	19:K:106:ARG:HE	1.99	0.75
6:6:30:C:H6	6:6:30:C:C5'	1.97	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:8:48:G:N2	8:8:49:U:N1	2.34	0.75
19:K:95:LEU:CD1	19:K:106:ARG:NE	2.49	0.75
27:S:118:ALA:HA	27:S:122:GLY:HA3	1.68	0.75
28:T:33:ALA:HB1	28:T:117:VAL:HG11	1.67	0.75
2:2:54:U:OP2	50:2:1710:HOH:O	2.05	0.75
5:5:46:G:O6	5:5:101:C:N4	2.19	0.75
9:A:116:VAL:HG23	9:A:126:LEU:HB2	1.67	0.75
1:1:995:C:H5	1:1:1467:G:H1	1.32	0.75
8:8:48:G:C2	8:8:49:U:N1	2.55	0.75
18:J:104:ILE:N	18:J:104:ILE:HD12	2.02	0.75
8:8:34:A:C6	8:8:43:G:C2	2.75	0.75
1:1:1205:G:O6	1:1:1212:C:N4	2.19	0.75
1:1:1586:U:OP2	50:2:1710:HOH:O	2.05	0.75
2:2:457:U:N3	2:2:480:G:O6	2.19	0.75
27:S:100[B]:ARG:O	27:S:102:GLN:N	2.18	0.75
3:3:4:U:C5	33:Y:17:ARG:NH1	2.43	0.75
16:H:108:ARG:HG2	16:H:108:ARG:HH11	1.49	0.75
19:K:81:ARG:NH1	19:K:102:ALA:O	2.19	0.75
1:1:1228:G:H1	1:1:1398:C:H5	1.32	0.74
2:2:782:G:O2'	2:2:784:U:OP1	2.04	0.74
19:K:180:HIS:HA	19:K:183:ARG:CG	2.16	0.74
16:H:49:LYS:HZ1	19:K:37:THR:N	1.85	0.74
2:2:1338:C:H2'	13:E:170:ASP:HB2	1.69	0.74
4:4:76:C:OP2	10:B:227[A]:LYS:NZ	2.20	0.74
2:2:1318:OMC:C5'	2:2:1318:OMC:H6	1.99	0.74
23:O:18:VAL:CG2	23:O:24:ARG:NH2	2.50	0.74
2:2:1254:OMG:N7	2:2:1309:C:O2'	2.20	0.74
5:5:125:A:H5'	5:5:125:A:H8	1.52	0.74
8:8:28:C:O2	8:8:58:G:N2	2.20	0.74
6:6:17:U:O2	6:6:30:C:O2'	2.03	0.74
1:1:855:C:OP1	11:C:99:ARG:NH2	2.20	0.74
18:J:86:SER:HA	18:J:96:TYR:HB3	1.70	0.74
2:2:591:A2M:HM'2	2:2:592:C:C5'	2.16	0.74
3:3:78:C:O2'	3:3:79:U:OP1	2.04	0.74
8:8:37:C:C4	8:8:48:G:H1'	2.22	0.74
2:2:762:U:OP1	21:M:31:ARG:NH1	2.20	0.74
1:1:193:A:H2'	1:1:194:A:H8	1.53	0.74
2:2:783:U:O2	2:2:810:G:N1	2.19	0.74
9:A:65:HIS:HD2	9:A:68:LYS:H	1.34	0.74
12:D:16:VAL:HA	12:D:133:LEU:HA	1.69	0.74
1:1:511:A:N1	1:1:541:A:N6	2.35	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:229:SER:O	9:A:234:LYS:NZ	2.20	0.74
2:2:1319:U:O2	10:B:255:ALA:HB3	1.87	0.74
19:K:180:HIS:C	19:K:183:ARG:HG2	2.08	0.74
22:N:121:LYS:HG3	22:N:122:PRO:HD2	1.68	0.74
1:1:260:C:O2'	1:1:261:C:OP1	2.06	0.74
19:K:73:ILE:N	19:K:73:ILE:HD12	2.02	0.74
2:2:1043:G:O6	2:2:1053:C:N4	2.18	0.73
1:1:501:C:N4	1:1:553:A:N3	2.36	0.73
1:1:934:A:OP1	50:1:1971:HOH:O	2.06	0.73
2:2:639:G:O2'	2:2:1421:A:N6	2.19	0.73
33:Y:28:ASN:HA	33:Y:41:ALA:HA	1.69	0.73
1:1:163:U:H3	1:1:292:A:H61	1.33	0.73
2:2:104:U:O2'	2:2:116:A:N7	2.20	0.73
13:E:58:ARG:HD2	13:E:69:LEU:HD22	1.70	0.73
16:H:108:ARG:HG3	16:H:109:TYR:CE2	2.24	0.73
1:1:1615:C:N4	2:2:62:A:OP1	2.21	0.73
3:3:58:C:O2'	3:3:60:U:O5'	2.06	0.73
13:E:5:LYS:HD2	13:E:66:ILE:HG21	1.69	0.73
6:6:41:G:C2	19:K:176:ARG:HD2	2.24	0.73
1:1:1266:A:H4'	22:N:162:ARG:HD3	1.71	0.73
1:1:1540:U:H2'	1:1:1541:A2M:H8	1.68	0.73
1:1:781:A:H61	1:1:794:U:H3	1.34	0.73
13:E:137:SER:O	13:E:140:LYS:CG	2.31	0.73
15:G:146:LYS:HB3	21:M:28:TRP:HH2	1.53	0.73
2:2:986:A:H61	2:2:1000:U:H3	1.35	0.73
11:C:54:ASN:HB3	11:C:57:SER:HB3	1.70	0.73
19:K:180:HIS:HE2	19:K:184:LYS:HE2	1.50	0.73
2:2:459:A:O2'	2:2:1029:A:O2'	2.06	0.73
2:2:71:OMG:HM22	2:2:72:G:C4'	2.19	0.73
2:2:1238:A:O2'	20:L:42:ARG:NH1	2.22	0.73
1:1:237:U:OP1	1:1:257:U:O2'	2.05	0.73
1:1:411:U:O2	1:1:415:A:N6	2.19	0.73
2:2:760:U:OP1	15:G:153:ARG:NE	2.17	0.73
6:6:11:G:O2'	16:H:190:GLN:NE2	2.21	0.73
15:G:166:VAL:HG21	15:G:266:LYS:HD3	1.70	0.73
1:1:1392:G:O6	19:K:105:TRP:CZ3	2.42	0.73
2:2:1100:G:H1	2:2:1110:C:H42	1.37	0.73
2:2:1338:C:H4'	2:2:1343:G:H22	1.52	0.73
7:7:7:OMU:H6	7:7:7:OMU:OP2	1.89	0.73
1:1:1369:G:H5'	16:H:78:LYS:HE3	1.71	0.73
19:K:180:HIS:NE2	19:K:184:LYS:CE	2.50	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:P:17:HIS:NE2	24:P:18:HIS:ND1	2.35	0.73
1:1:1041:U:OP1	27:S:100[B]:ARG:NH2	2.22	0.72
8:8:2:C:N3	8:8:120:C:C2	2.55	0.72
10:B:368:THR:H	10:B:378:GLN:NE2	1.87	0.72
8:8:54:U:O2'	8:8:56:A:N7	2.22	0.72
1:1:955:A2M:HM'1	9:A:14:SER:O	1.89	0.72
2:2:422:U:OP1	9:A:54:ARG:NH2	2.22	0.72
13:E:23:ARG:NH1	13:E:43:LEU:O	2.22	0.72
1:1:172:G:H2'	1:1:173:G:H8	1.54	0.72
2:2:523:C:N4	2:2:553:G:O6	2.16	0.72
7:7:6:G:H2'	7:7:7:OMU:H6	1.70	0.72
1:1:85:U:O2	1:1:98:A:N6	2.19	0.72
2:2:1159:A:H8	2:2:1159:A:H5''	1.55	0.72
22:N:184:LEU:HD22	22:N:189:LYS:HG3	1.71	0.72
23:O:107:ARG:NH1	23:O:119:PHE:O	2.17	0.72
1:1:90:G:OP2	1:1:92:C:N4	2.20	0.72
2:2:1310:G:H5'	2:2:1311:A:H5''	1.70	0.72
2:2:655:OMG:HM21	2:2:657:U:C5'	2.19	0.72
3:3:112:C:O2	3:3:120:G:N2	2.15	0.72
1:1:12:U:O4	7:7:156:A:N6	2.19	0.72
2:2:1310:G:OP2	50:2:1735:HOH:O	2.07	0.72
2:2:957:C:H1'	2:2:958:C:OP1	1.89	0.72
16:H:148:TYR:HB3	19:K:59:MET:N	2.04	0.72
7:7:145:G:C4'	30:V:52:ARG:NH1	2.51	0.72
1:1:19:G:H1	7:7:149:A:H61	1.37	0.72
2:2:1153:OMU:OP1	27:S:57:TYR:OH	2.06	0.72
8:8:42:C:O2'	8:8:44:A:N7	2.23	0.72
8:8:34:A:N1	8:8:43:G:N2	2.37	0.72
6:6:46:C:N4	14:F:179:ARG:HE	1.88	0.72
18:J:116:ILE:N	18:J:116:ILE:HD12	2.03	0.72
1:1:1548:A:H61	1:1:1584:A:H4'	1.54	0.72
14:F:51:ALA:HA	14:F:67:GLY:HA2	1.71	0.72
21:M:71:ARG:CG	21:M:94:LEU:HB2	2.20	0.72
2:2:1280:G:N2	2:2:1285:U:OP1	2.22	0.71
11:C:222:ILE:HG21	11:C:225:LEU:HD23	1.71	0.71
17:I:28:LYS:HB2	21:M:197:ARG:HD2	1.71	0.71
23:O:53:VAL:HG21	23:O:168:VAL:HG21	1.72	0.71
1:1:385:G:O2'	7:7:24:G:N3	2.22	0.71
25:Q:123:LEU:HD21	25:Q:138:LEU:HD11	1.71	0.71
1:1:24:A:N3	1:1:366:C:O2'	2.22	0.71
1:1:36:OMU:HM22	1:1:37:A:H5'	1.73	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:3:129:G:N2	3:3:130:G:C4	2.58	0.71
10:B:56:ILE:HD12	10:B:363:LEU:HD22	1.70	0.71
16:H:108:ARG:NH1	16:H:108:ARG:HG2	2.02	0.71
16:H:49:LYS:HZ3	19:K:37:THR:N	1.87	0.71
3:3:91:G:N2	3:3:92:G:O2'	2.24	0.71
8:8:107:U:H3'	22:N:203:LYS:HE3	1.71	0.71
18:J:81:ILE:HG22	18:J:82:ARG:HG3	1.72	0.71
1:1:1757:U:H4'	2:2:18:A:H4'	1.72	0.71
10:B:49:PHE:CE1	10:B:342:VAL:HG23	2.25	0.71
11:C:237:HIS:O	11:C:246:ARG:NH1	2.24	0.71
1:1:439:U:OP2	28:T:2:THR:N	2.23	0.71
1:1:1440:A:O2'	1:1:1442:G:N1	2.23	0.71
2:2:1056:A:H61	2:2:1078:OMU:HN3	1.36	0.71
2:2:459:A:HO2'	2:2:1029:A:HO2'	1.33	0.71
23:O:60:ILE:HD11	23:O:101:THR:HG21	1.73	0.71
33:Y:11:VAL:HG12	33:Y:82:PRO:HA	1.71	0.71
1:1:439:U:O4'	28:T:2:THR:OG1	2.07	0.71
2:2:421:A:N6	9:A:20:GLY:O	2.22	0.71
10:B:310:LYS:HE3	10:B:368:THR:OG1	1.90	0.71
15:G:153:ARG:NH1	15:G:322:GLN:O	2.23	0.71
4:4:41:U:H3	4:4:69:G:H1	1.38	0.71
16:H:55:ARG:HE	16:H:126:ILE:HD11	1.56	0.71
18:J:74:LYS:HE3	18:J:76:LEU:HD13	1.72	0.71
2:2:1090:A:OP1	50:2:1727:HOH:O	2.07	0.71
4:4:25:G:O6	4:4:180:C:N4	2.20	0.71
27:S:68:THR:HB	27:S:69:PRO:HD2	1.71	0.71
2:2:1268:U:N3	2:2:1300:U:O2	2.24	0.71
3:3:57:U:C2'	3:3:58:C:H5	1.71	0.71
6:6:42:A:N6	19:K:169:TYR:OH	2.24	0.71
1:1:326:A:O2'	21:M:93:LYS:O	2.08	0.71
6:6:40:C:H3'	6:6:40:C:OP2	1.89	0.70
10:B:216:GLN:NE2	10:B:288:TYR:O	2.23	0.70
16:H:137:VAL:HG13	19:K:45:SER:O	1.91	0.70
16:H:146:VAL:HG13	19:K:55:ALA:HB3	1.73	0.70
23:O:65:VAL:HG22	23:O:74:VAL:HG22	1.74	0.70
2:2:585:C:OP1	18:J:50:ARG:NH1	2.25	0.70
6:6:13:C:O2'	6:6:14:A:H5'	1.91	0.70
23:O:64:ILE:HD12	23:O:109:THR:HG21	1.72	0.70
8:8:96:C:OP1	26:R:45:ARG:NH1	2.23	0.70
1:1:546:G:N1	26:R:63:CYS:SG	2.64	0.70
10:B:56:ILE:HG22	10:B:366:ILE:HG23	1.73	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:H:140:PRO:HD3	19:K:46:PRO:HB3	1.74	0.70
1:1:253:G:OP1	31:W:13:ARG:NH2	2.24	0.70
1:1:1651:G:H21	2:2:414:G:H21	1.39	0.70
1:1:409:U:O2'	1:1:410:U:OP2	2.09	0.70
6:6:14:A:H4'	6:6:15:C:OP1	1.91	0.70
13:E:18:VAL:HG22	13:E:27:VAL:HG22	1.73	0.70
2:2:1131:A:N6	23:O:27:LYS:O	2.24	0.70
1:1:892:C:O2'	25:Q:126:ARG:NH2	2.24	0.70
13:E:135:ASP:HB2	13:E:136:PRO:HD3	1.71	0.70
1:1:385:G:O6	50:1:1954:HOH:O	2.08	0.70
2:2:1079:OMG:H4'	2:2:1080:U:OP2	1.91	0.70
6:6:34:C:C4	6:6:35:U:C4	2.79	0.70
16:H:53:VAL:HB	16:H:122:ALA:HA	1.73	0.70
28:T:19:VAL:HG13	28:T:94:LEU:HD12	1.72	0.70
1:1:1235:A:OP2	50:1:1960:HOH:O	2.09	0.70
2:2:1392:U:H3'	2:2:1393:U:H3'	1.74	0.70
10:B:365:PHE:CE2	10:B:367:ASP:OD1	2.45	0.70
16:H:200:ALA:HB1	19:K:185:VAL:HG11	1.64	0.70
1:1:1615:C:OP1	28:T:127:ARG:NH1	2.25	0.70
1:1:291:A:H2'	1:1:292:A:H8	1.56	0.69
1:1:753:A:N1	1:1:832:G:O2'	2.22	0.69
2:2:378:C:OP1	50:2:1716:HOH:O	2.09	0.69
13:E:89:PHE:HB2	13:E:145:PHE:HB2	1.74	0.69
16:H:28:ASP:OD2	16:H:55:ARG:NH1	2.25	0.69
22:N:121:LYS:CG	22:N:122:PRO:CD	2.67	0.69
1:1:1729:A:N3	1:1:1729:A:H3'	2.07	0.69
2:2:1078:OMU:O2	2:2:1078:OMU:HM23	1.92	0.69
10:B:290:ILE:HG13	10:B:329:VAL:HG22	1.72	0.69
19:K:163:SER:O	19:K:168:ARG:NH1	2.26	0.69
16:H:138:VAL:O	19:K:46:PRO:HA	1.92	0.69
1:1:238:A:C6	1:1:239:U:O4	2.46	0.69
1:1:435:G:N1	1:1:438:A:OP2	2.23	0.69
2:2:978:C:O2'	2:2:979:C:O5'	2.10	0.69
1:1:1480:G:O2'	1:1:1510:A:N1	2.24	0.69
1:1:461:G:N2	1:1:462:A:N7	2.36	0.69
2:2:990:C:O2'	2:2:996:G:N2	2.25	0.69
8:8:48:G:H22	8:8:49:U:H1'	1.55	0.69
4:4:52:A:O2'	13:E:176:ASP:OD1	2.07	0.69
14:F:77:ARG:HH11	14:F:77:ARG:HG3	1.57	0.69
15:G:175:ALA:HA	15:G:299:LEU:HD11	1.73	0.69
18:J:56:LEU:HD23	18:J:123:GLU:HB2	1.74	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:M:121:VAL:HG21	21:M:131:GLU:HG3	1.75	0.69
28:T:45:GLN:NE2	28:T:99:GLU:OE2	2.24	0.69
10:B:240:VAL:HG23	10:B:241:ALA:H	1.58	0.69
1:1:735:U:OP1	11:C:273:LYS:NZ	2.24	0.69
16:H:200:ALA:CA	19:K:185:VAL:HG11	2.23	0.69
1:1:1269:G:O2'	1:1:1270:U:O2	2.09	0.69
2:2:19:C:OP2	50:2:1712:HOH:O	2.09	0.69
2:2:749:G:C2'	2:2:750:U:C6	2.76	0.69
2:2:866:U:H2'	2:2:867:G:H8	1.58	0.69
13:E:5:LYS:H	13:E:58:ARG:NH1	1.90	0.69
2:2:1231:A:H5'	22:N:84:VAL:HG21	88.75	0.69
23:O:18:VAL:HG21	23:O:24:ARG:NH2	2.07	0.69
27:S:98:LYS:O	27:S:100[A]:ARG:NH1	2.26	0.69
1:1:1599:G:H1'	2:2:26:C:H5''	1.75	0.69
3:3:129:G:H21	3:3:130:G:C1'	2.05	0.69
6:6:54:A:H2'	6:6:55:U:H5'	1.74	0.69
18:J:115:GLY:HA2	18:J:134:HIS:HB3	1.74	0.69
2:2:1275:C:O2'	22:N:154:ARG:NH2	2.26	0.69
1:1:752:G:HO2'	1:1:810:C:HO2'	1.34	0.69
2:2:1057:U:H3	2:2:1077:G:H1	1.38	0.69
18:J:19:LEU:HB2	18:J:54:ALA:HB3	1.75	0.69
1:1:1208:U:N3	1:1:1260:G:O6	2.23	0.69
1:1:956:U:H2'	1:1:957:C:H5''	1.75	0.69
2:2:1043:G:N1	2:2:1053:C:N3	2.38	0.69
2:2:1079:OMG:OP1	2:2:1080:U:H1'	1.93	0.69
2:2:360:U:OP2	32:X:48:LYS:NZ	2.19	0.69
4:4:141:A:N7	4:4:146:C:N4	2.35	0.69
1:1:1186:A:N3	2:2:1265:U:O2'	2.25	0.68
9:A:89:PHE:H	9:A:100:ASN:HD22	1.41	0.68
1:1:1778:G:H1	2:2:6:A:N6	1.92	0.68
2:2:806:C:N3	2:2:807:A:N6	2.41	0.68
8:8:117:A:N6	8:8:118:C:N4	2.41	0.68
10:B:310:LYS:CE	10:B:368:THR:OG1	2.41	0.68
19:K:93:ARG:CD	19:K:108:VAL:HG12	2.24	0.68
1:1:1763:A:H2'	30:V:128:ARG:NH2	2.08	0.68
1:1:238:A:C6	1:1:239:U:C4	2.82	0.68
2:2:1254:OMG:H4'	2:2:1254:OMG:HM23	1.75	0.68
2:2:390:A:H1'	2:2:527:A2M:H61	1.56	0.68
13:E:117:GLU:OE2	13:E:119:ARG:NE	2.27	0.68
25:Q:23:TRP:CE3	25:Q:51:ILE:HD12	2.03	0.68
4:4:95:U:P	25:Q:62:ARG:NH2	2.65	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:884:G:H1	1:1:912:C:H5	1.41	0.68
3:3:77:U:O4	3:3:140:A:N6	2.20	0.68
8:8:13:A:N1	8:8:68:G:O2'	2.24	0.68
16:H:181:GLU:OE1	16:H:185:ARG:NH1	2.25	0.68
1:1:417:G:O2'	1:1:442:A:N6	2.27	0.68
1:1:498:G:H1	1:1:555:U:H3	1.39	0.68
2:2:973:C:H3'	9:A:89:PHE:HZ	1.58	0.68
1:1:251:A:N1	31:W:8:SER:N	2.41	0.68
1:1:1248:C:N3	16:H:152:ARG:NH2	2.41	0.68
1:1:776:U:H3'	1:1:777:G:H8	1.59	0.68
5:5:125:A:C2'	5:5:126:G:H5'	2.23	0.68
21:M:138:MET:HG2	21:M:143:ARG:HH21	1.58	0.68
1:1:1273:U:OP1	13:E:62:SER:OG	2.10	0.68
1:1:1602:U:H5	2:2:18:A:N1	1.92	0.68
2:2:1198:C:H3'	2:2:1199:G:H5''	1.76	0.68
24:P:165:PRO:HB3	24:P:193:LYS:HB3	1.76	0.68
28:T:6:ARG:HD3	28:T:116:HIS:CD2	2.29	0.68
1:1:697:A:H1'	17:I:13:GLN:HE22	1.57	0.68
3:3:209:G:H2'	3:3:210:G:C5'	2.17	0.68
6:6:13:C:H2'	6:6:14:A:H2'	1.74	0.68
6:6:41:G:H1	19:K:176:ARG:NH1	1.91	0.68
19:K:67:ALA:HB3	19:K:123:VAL:HA	1.75	0.68
1:1:1258:A:O2'	1:1:1259:C:O5'	2.12	0.68
1:1:754:G:C6	20:L:114:HIS:HB3	2.29	0.68
2:2:1174:G:N2	2:2:1177:A:OP2	2.27	0.68
4:4:140:G:H2'	4:4:141:A:C8	2.29	0.68
8:8:30:C:OP2	23:O:57:ASN:ND2	2.27	0.68
22:N:152:LEU:O	22:N:156:LYS:N	2.22	0.68
1:1:1541:A2M:H2'	1:1:1542:OMG:O4'	1.94	0.68
1:1:1746:A:O2'	1:1:1771:A:N3	2.27	0.68
1:1:380:C:OP2	11:C:196:ARG:NH2	2.18	0.68
1:1:740:C:H2'	1:1:741:G:H5'	1.74	0.68
2:2:1310:G:N7	50:2:1737:HOH:O	2.27	0.68
8:8:44:A:C8	8:8:45:U:C5	2.82	0.68
16:H:73:LEU:HD23	16:H:76:LEU:HD12	1.75	0.68
1:1:1062:A:OP1	22:N:39:ARG:NE	2.26	0.68
1:1:679:A:H4'	1:1:680:C:OP2	1.93	0.67
1:1:839:U:H2'	1:1:840:G:H8	1.60	0.67
1:1:889:G:N2	3:3:118:U:OP1	2.27	0.67
2:2:443:OMC:H5'	2:2:488:A:H61	1.57	0.67
6:6:20:A:N1	6:6:27:G:N7	2.42	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1672:A:C2	1:1:1729:A:N6	2.62	0.67
1:1:242:A:H61	1:1:260:C:H42	1.41	0.67
1:1:174:U:O2	1:1:283:G:N2	2.27	0.67
2:2:1386:G:OP1	2:2:1421:A:N6	2.23	0.67
2:2:98:G:OP1	2:2:115:G:N1	2.27	0.67
1:1:1769:A:O2'	3:3:70:A:N1	2.24	0.67
1:1:799:U:OP2	24:P:73:ARG:NH1	2.27	0.67
1:1:1594:G:O6	50:1:1970:HOH:O	2.10	0.67
11:C:30:PRO:HB3	24:P:25:TYR:HE2	1.59	0.67
15:G:323:LEU:HB2	15:G:328:ARG:HD2	1.75	0.67
18:J:30:ASN:CB	18:J:114:SER:HB2	2.24	0.67
28:T:64:ASN:O	28:T:67:ILE:HG23	1.95	0.67
1:1:1061:G:OP1	22:N:39:ARG:NH1	2.21	0.67
1:1:1062:A:H61	1:1:1090:U:H3	1.41	0.67
1:1:843:C:H5''	20:L:2:PRO:HG2	1.75	0.67
1:1:77:U:H5''	21:M:186:PRO:HG3	1.75	0.67
1:1:1778:G:N2	2:2:6:A:N1	2.40	0.67
1:1:376:A:O2'	11:C:49:GLN:NE2	2.28	0.67
1:1:487:G:H22	1:1:648:A:H2	1.43	0.67
2:2:1159:A:C8	2:2:1159:A:H5''	2.29	0.67
19:K:71:VAL:O	19:K:82:VAL:HG23	1.93	0.67
2:2:749:G:HO2'	2:2:750:U:H6	1.42	0.67
8:8:48:G:H2'	8:8:48:G:N3	2.08	0.67
9:A:246:ILE:C	9:A:246:ILE:HD12	2.15	0.67
1:1:1529:OMC:HM22	11:C:94:MET:HG2	1.76	0.67
23:O:185:ARG:O	23:O:185:ARG:NH2	2.28	0.67
1:1:1144:G:H2'	1:1:1145:G:H8	1.59	0.67
2:2:70:A:O2'	2:2:71:OMG:H5'	1.95	0.67
3:3:129:G:N2	3:3:130:G:C1'	2.57	0.67
5:5:34:G:H1	5:5:116:U:H3	1.42	0.67
6:6:28:A:C2	6:6:29:G:N1	2.62	0.67
8:8:13:A:O2'	8:8:15:A:OP2	2.12	0.67
1:1:1538:C:H5	2:2:603:A:H62	1.43	0.67
1:1:953:G:C2'	1:1:954:U:H5'	2.25	0.67
2:2:387:U:OP1	50:2:1706:HOH:O	2.11	0.67
3:3:129:G:N2	3:3:130:G:H1'	2.09	0.67
8:8:95:A:O2'	26:R:122:ASN:ND2	2.28	0.67
21:M:181:ALA:HB1	21:M:184:LEU:HB2	1.76	0.67
1:1:490:C:H42	1:1:645:G:H1	1.41	0.67
14:F:80:ASP:OD1	14:F:81:SER:N	2.25	0.67
2:2:769:A:O2'	15:G:134:PHE:O	2.06	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:K:180:HIS:CB	19:K:183:ARG:NH1	2.58	0.67
2:2:1178:G:O2'	23:O:35:GLN:OE1	2.13	0.67
1:1:1443:U:H1'	24:P:17:HIS:HE1	1.58	0.67
11:C:206:PRO:HB3	11:C:247:PHE:HD2	1.58	0.67
16:H:44:GLN:CD	19:K:48:LEU:HD21	2.15	0.67
22:N:45:GLU:O	22:N:141:LYS:NZ	2.26	0.67
2:2:446:U:O2'	2:2:664:G:N2	2.28	0.66
6:6:26:G:N3	6:6:26:G:H3'	2.09	0.66
14:F:53:ILE:HA	14:F:65:VAL:HG12	1.77	0.66
1:1:79:U:OP1	21:M:197:ARG:NH2	2.28	0.66
2:2:749:G:H4'	2:2:749:G:OP2	1.94	0.66
9:A:65:HIS:CD2	9:A:68:LYS:H	2.13	0.66
10:B:86:ILE:HD13	10:B:164:ALA:HB2	1.77	0.66
15:G:193:ARG:HH12	15:G:213:ALA:HA	1.59	0.66
1:1:222:A:H2'	1:1:223:A:H8	1.60	0.66
6:6:6:G:OP1	15:G:136:ARG:NH2	139.37	0.66
7:7:127:C:O2	7:7:136:G:N2	2.26	0.66
19:K:69:ARG:C	19:K:84:VAL:HG23	2.09	0.66
2:2:390:A:C1'	2:2:527:A2M:N6	2.58	0.66
5:5:33:G:H1	5:5:117:U:H3	1.41	0.66
6:6:17:U:C2	6:6:30:C:O2'	2.49	0.66
8:8:117:A:C6	8:8:118:C:N4	2.63	0.66
13:E:135:ASP:O	13:E:140:LYS:HD2	1.96	0.66
23:O:108:ARG:NE	23:O:260:PRO:O	2.25	0.66
24:P:101:ARG:NH2	24:P:101:ARG:HG2	2.01	0.66
25:Q:15:LEU:HD12	25:Q:22:VAL:HG12	1.75	0.66
1:1:1621:U:OP1	50:1:1968:HOH:O	2.14	0.66
1:1:1537:G:H21	2:2:604:A:H62	1.43	0.66
6:6:42:A:N3	6:6:43:A:N7	2.44	0.66
18:J:81:ILE:HD11	18:J:103:VAL:HG13	1.77	0.66
1:1:819:C:O2	1:1:821:C:O2'	2.13	0.66
2:2:1343:G:H2'	2:2:1344:A:H8	1.61	0.66
2:2:749:G:O2'	2:2:750:U:O4'	2.13	0.66
6:6:10:C:H42	6:6:33:G:H1	1.41	0.66
1:1:19:G:N2	7:7:149:A:N1	2.32	0.66
8:8:48:G:C2	8:8:49:U:C2	2.83	0.66
10:B:176:VAL:HG22	10:B:340:ARG:HB3	1.76	0.66
22:N:65:LEU:HD21	22:N:135:LEU:HD22	1.78	0.66
23:O:31:HIS:CD2	23:O:34:ARG:HH21	2.14	0.66
1:1:47:C:N4	21:M:188:TYR:CE1	2.64	0.66
1:1:894:G:O6	1:1:901:C:N4	2.28	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:751:U:H2'	2:2:752:G:C8	2.31	0.66
2:2:1151:U:O2'	27:S:88:ARG:O	2.11	0.66
1:1:1285:A:H2	1:1:1350:U:H1'	1.61	0.66
1:1:931:G:OP1	28:T:131:ARG:NH1	2.29	0.66
1:1:1445:U:O4'	1:1:1466:G:O2'	2.13	0.66
1:1:36:OMU:HM22	1:1:37:A:C5'	2.26	0.66
1:1:429:G:H4'	28:T:18:LYS:HB2	1.77	0.66
1:1:672:U:O4	50:1:1946:HOH:O	2.14	0.66
2:2:490:A:O4'	9:A:243:THR:HG21	1.96	0.66
2:2:619:A:H62	2:2:1306:C:H1'	1.61	0.66
2:2:70:A:H2'	2:2:71:OMG:C5'	2.26	0.66
5:5:37:G:H4'	10:B:373:GLY:HA3	1.77	0.66
10:B:57:VAL:HB	10:B:365:PHE:HB3	1.78	0.66
7:7:145:G:C4'	30:V:52:ARG:HH11	2.06	0.66
2:2:439:U:H5''	2:2:440:G:H5'	1.77	0.66
7:7:36:G:O2'	7:7:103:A:N1	2.24	0.66
16:H:29:LEU:HD13	16:H:59:LEU:HD21	1.77	0.66
19:K:180:HIS:CE1	19:K:181:TRP:CD1	2.84	0.66
22:N:99:ILE:HD12	22:N:123:ASN:HD22	1.59	0.66
4:4:168:A:O2'	4:4:169:A:OP2	2.12	0.65
4:4:116:G:OP1	10:B:339:ARG:NH1	2.29	0.65
2:2:1450:A:H2'	2:2:1451:G:C8	2.31	0.65
2:2:392:C:OP1	9:A:200:ARG:NH2	2.30	0.65
10:B:93:ARG:HG3	10:B:102:ILE:CG2	2.27	0.65
1:1:1608:C:N4	1:1:1620:G:OP2	2.28	0.65
1:1:752:G:N7	20:L:108:LYS:NZ	2.37	0.65
6:6:16:C:O2	6:6:30:C:H1'	1.95	0.65
13:E:5:LYS:H	13:E:58:ARG:HH12	1.42	0.65
19:K:180:HIS:HE1	19:K:181:TRP:CD1	2.15	0.65
1:1:1578:U:H5''	25:Q:5:LYS:HD3	1.76	0.65
31:W:82:VAL:HG21	31:W:96:ILE:HD11	1.77	0.65
1:1:931:G:H5'	28:T:132:ALA:HB2	1.77	0.65
2:2:1248:C:H2'	2:2:1249:OMC:H4'	1.79	0.65
1:1:959:OMG:HN1	21:M:76:HIS:HD2	1.44	0.65
3:3:209:G:C5	3:3:210:G:H2'	2.32	0.65
8:8:72:A:HO2'	8:8:73:G:H8	1.44	0.65
10:B:311:THR:O	10:B:368:THR:HG21	1.97	0.65
16:H:200:ALA:CB	19:K:185:VAL:HG11	2.23	0.65
1:1:83:A:H61	1:1:98:A:H3'	1.61	0.65
2:2:1133:A:H2	27:S:49:ARG:HH21	1.45	0.65
2:2:575:C:OP1	50:2:1725:HOH:O	2.15	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:6:28:A:C4	6:6:29:G:C5	2.84	0.65
24:P:30:ILE:HG23	24:P:49:TYR:HE1	1.61	0.65
1:1:1738:A:OP2	50:1:1969:HOH:O	2.13	0.65
1:1:511:A:N6	1:1:541:A:N7	2.45	0.65
2:2:526:A:O2'	2:2:527:A2M:O5'	2.12	0.65
2:2:591:A2M:CM'	2:2:592:C:H5'	2.21	0.65
6:6:28:A:N3	6:6:29:G:C6	2.63	0.65
19:K:180:HIS:CD2	19:K:184:LYS:HE2	2.32	0.65
23:O:21:ARG:C	23:O:21:ARG:HD3	2.18	0.65
27:S:40:VAL:HB	27:S:96:VAL:HG13	1.78	0.65
2:2:779:U:O2'	15:G:328:ARG:NH1	2.29	0.65
1:1:373:G:N2	7:7:29:C:O2	2.23	0.65
13:E:93:CYS:N	13:E:141:ASP:OD2	2.28	0.65
17:I:59:LEU:HD22	17:I:80:PHE:HZ	1.61	0.65
6:6:17:U:C5	19:K:43:PRO:CD	2.79	0.65
21:M:73:ARG:HH12	21:M:86:THR:HB	1.62	0.65
7:7:6:G:H2'	7:7:7:OMU:C6	2.26	0.65
10:B:48:VAL:HG21	10:B:79:LEU:HD13	1.78	0.65
17:I:79:GLY:HA3	17:I:103:ASP:HB2	1.79	0.65
7:7:52:A:OP2	50:7:313:HOH:O	2.14	0.64
11:C:189:ARG:HD2	11:C:193:GLY:HA3	1.79	0.64
11:C:170:LEU:HD11	11:C:225:LEU:HD22	1.79	0.64
23:O:185:ARG:O	23:O:185:ARG:HD2	1.97	0.64
1:1:831:C:N4	24:P:179:GLU:O	2.30	0.64
1:1:1041:U:H5''	27:S:100[B]:ARG:CZ	2.28	0.64
8:8:85:G:C8	8:8:85:G:H5''	2.32	0.64
10:B:366:ILE:HD12	10:B:366:ILE:N	2.13	0.64
21:M:159:ARG:HB2	21:M:164:LEU:HB2	1.79	0.64
1:1:1115:C:H4'	1:1:1116:A:H5'	1.79	0.64
2:2:1436:A:O2'	2:2:1438:A:OP2	2.15	0.64
11:C:43:MET:HB2	11:C:236:LEU:HD11	1.80	0.64
11:C:45:LYS:O	11:C:48:ARG:HG2	1.98	0.64
13:E:34:LEU:HD22	13:E:149:ASP:HA	1.80	0.64
1:1:852:A:N6	17:I:18:ASN:OD1	2.30	0.64
24:P:152:GLY:HA2	24:P:157:ARG:HH21	1.63	0.64
1:1:1539:G:OP1	28:T:65:GLY:HA3	1.96	0.64
1:1:395:A:N1	11:C:83:THR:HG22	2.13	0.64
2:2:1385:A:H5''	2:2:1386:G:H5'	1.79	0.64
2:2:749:G:H2'	2:2:750:U:C5	2.32	0.64
2:2:815:G:H4'	2:2:816:G:OP1	1.98	0.64
8:8:2:C:C4	8:8:120:C:C2	2.85	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:82:MET:HG3	9:A:86:GLN:OE1	1.97	0.64
21:M:122:ASN:HD22	21:M:123:MET:H	1.45	0.64
28:T:127:ARG:O	28:T:139:TYR:HB3	1.97	0.64
1:1:962:C:OP1	9:A:14:SER:OG	2.15	0.64
3:3:22:G:O6	3:3:209:G:C2	2.35	0.64
4:4:139:U:H4'	13:E:150:LEU:HD21	1.79	0.64
14:F:42:LEU:HD11	14:F:85:ILE:HG13	1.79	0.64
21:M:73:ARG:NH1	21:M:86:THR:HB	2.12	0.64
24:P:186:THR:HA	24:P:191:LYS:HB2	1.79	0.64
1:1:1672:A:C6	1:1:1729:A:N6	2.66	0.64
1:1:171:U:H3'	1:1:172:G:H8	1.61	0.64
2:2:828:U:O2	2:2:956:C:N4	2.30	0.64
3:3:88:G:O2'	3:3:89:C:O4'	2.15	0.64
1:1:1555:G:H1	1:1:1576:C:H42	1.46	0.64
2:2:1151:U:C2'	2:2:1152:U:C5'	2.71	0.64
8:8:14:U:OP2	8:8:69:C:O2'	2.15	0.64
1:1:179:G:O2'	1:1:180:A:O5'	2.15	0.64
1:1:238:A:N6	1:1:239:U:C4	2.61	0.64
2:2:1042:G:H1	2:2:1055:U:H3	1.46	0.64
6:6:54:A:O2'	6:6:55:U:H5'	1.97	0.64
7:7:139:A:O2'	7:7:140:U:OP1	2.15	0.64
10:B:102:ILE:HD11	10:B:157:ALA:HB2	1.80	0.64
13:E:95:TYR:CZ	13:E:100:ILE:HG12	2.33	0.64
23:O:17:GLN:NE2	27:S:21:LYS:HA	2.13	0.64
31:W:33:SER:HA	31:W:102:GLU:OE2	1.97	0.64
1:1:1278:G:N2	1:1:1351:C:N3	2.35	0.64
1:1:490:C:O2'	6:6:54:A:H2	1.81	0.64
1:1:728:C:H1'	1:1:730:G:C6	2.33	0.64
2:2:997:C:H2'	2:2:998:A:H8	1.61	0.64
13:E:43:LEU:HD21	13:E:72:THR:HG21	1.79	0.64
1:1:1253:U:OP1	16:H:74:GLN:NE2	2.31	0.64
7:7:28:C:H5''	17:I:32:ASN:HB3	1.80	0.64
22:N:100:ASN:ND2	22:N:118:ALA:O	2.30	0.64
23:O:107:ARG:HG3	23:O:256:ILE:HG22	1.81	0.64
3:3:137:A:O2'	3:3:138:A:O5'	2.16	0.63
1:1:1750:G:HO2'	3:3:149:U:HO2'	1.43	0.63
1:1:136:G:H4'	1:1:137:G:OP1	1.98	0.63
1:1:171:U:O2'	1:1:172:G:OP1	2.15	0.63
1:1:560:G:H4'	1:1:561:G:OP2	1.98	0.63
2:2:1184:C:O2'	2:2:1185:C:OP1	2.15	0.63
1:1:346:U:HO2'	2:2:468:A:H8	1.46	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:4:153:C:O2	13:E:155:ARG:NH2	2.31	0.63
6:6:10:C:N4	6:6:33:G:H1	1.96	0.63
8:8:2:C:H2'	8:8:3:G:C8	2.33	0.63
2:2:459:A:OP2	2:2:477:G:N1	2.31	0.63
4:4:157:A:O2'	4:4:158:A:OP1	2.11	0.63
8:8:48:G:N2	8:8:49:U:C2	2.67	0.63
9:A:112:ILE:HD11	9:A:133:TYR:CD1	2.33	0.63
22:N:76:MET:O	22:N:80:ALA:N	2.30	0.63
24:P:139:THR:HG23	24:P:141:LYS:HG2	1.80	0.63
13:E:91:VAL:HG21	13:E:160:LEU:HD11	1.80	0.63
19:K:180:HIS:HE2	19:K:184:LYS:CE	2.09	0.63
25:Q:14:ILE:HD11	25:Q:38:ARG:HB2	1.81	0.63
1:1:1394:U:H2'	1:1:1395:U:H5'	1.79	0.63
2:2:351:C:OP1	25:Q:88:ARG:NH2	2.32	0.63
2:2:803:A:H4'	15:G:313:VAL:HG21	1.81	0.63
2:2:806:C:H2'	2:2:807:A:C8	2.32	0.63
3:3:92:G:O2'	3:3:93:G:N7	2.30	0.63
9:A:137:ILE:HD11	9:A:149:LYS:HB2	1.79	0.63
2:2:972:A:OP1	15:G:123:GLN:NE2	2.31	0.63
16:H:92:ARG:HG2	16:H:165:GLY:HA3	1.79	0.63
33:Y:48:LYS:HB3	33:Y:69:GLY:H	1.64	0.63
4:4:112:C:O2'	5:5:39:C:OP1	2.16	0.63
8:8:4:A:O2'	8:8:5:G:H8	1.80	0.63
15:G:263:ALA:HB2	15:G:303:VAL:HG21	1.80	0.63
18:J:111:MET:HG2	18:J:134:HIS:CD2	2.34	0.63
21:M:71:ARG:O	21:M:71:ARG:HD3	1.98	0.63
28:T:6:ARG:NH2	28:T:116:HIS:CB	2.50	0.63
1:1:1551:U:H2'	1:1:1552:A:C8	2.34	0.63
2:2:871:U:O2	2:2:939:G:N2	2.31	0.63
8:8:81:U:H2'	8:8:82:G:C8	2.34	0.63
6:6:53:U:O2	14:F:80:ASP:HB2	1.98	0.63
19:K:180:HIS:O	19:K:183:ARG:HG3	1.99	0.63
2:2:1175:A:H1'	23:O:185:ARG:HH11	1.63	0.63
1:1:1143:C:H2'	1:1:1144:G:C8	2.34	0.63
8:8:34:A:N6	8:8:43:G:N3	2.45	0.63
10:B:292:ARG:HG2	10:B:293:SER:H	1.64	0.63
15:G:218:VAL:HB	15:G:284:ALA:HB3	1.80	0.63
21:M:200:PHE:HB3	21:M:204:ARG:HH21	1.63	0.63
2:2:1408:A:N7	9:A:215:ASN:ND2	2.46	0.63
3:3:139:G:H2'	3:3:140:A:H8	1.64	0.63
7:7:33:U:O2'	7:7:34:U:OP2	2.16	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:8:11:C:C5'	8:8:12:C:OP2	2.47	0.63
13:E:88:ARG:HB2	13:E:186:ILE:HB	1.81	0.63
6:6:37:C:C5	14:F:185:LYS:HD3	2.33	0.63
1:1:1780:G:N2	3:3:14:A:O2'	2.32	0.62
1:1:491:A:N1	1:1:644:G:N2	2.47	0.62
1:1:568:U:C4	1:1:634:G:O6	2.51	0.62
1:1:995:C:H5	1:1:1467:G:N1	1.97	0.62
2:2:442:C:H2'	2:2:488:A:N6	2.14	0.62
1:1:923:G:O2'	2:2:92:A:OP1	2.13	0.62
7:7:168:G:H2'	7:7:169:A:C8	2.34	0.62
10:B:368:THR:H	10:B:378:GLN:HE22	1.47	0.62
5:5:36:U:O2'	10:B:372:ILE:CG2	2.47	0.62
16:H:95:SER:OG	16:H:124:GLU:OE1	2.16	0.62
24:P:117:ARG:NH1	24:P:127:CYS:SG	2.71	0.62
26:R:103:GLY:O	26:R:107:GLN:NE2	2.32	0.62
1:1:1122:U:O2'	1:1:1144:G:N2	2.32	0.62
1:1:193:A:H2'	1:1:194:A:C8	2.34	0.62
2:2:1270:G:N2	2:2:1297:U:O2	2.21	0.62
2:2:755:U:HO2'	2:2:756:C:H6	1.45	0.62
8:8:63:C:O2'	8:8:64:A:O5'	2.17	0.62
6:6:41:G:N2	19:K:173:VAL:HG12	2.12	0.62
1:1:1611:A:N1	1:1:1622:A:O2'	2.30	0.62
3:3:82:G:N2	3:3:91:G:O6	2.16	0.62
14:F:174:LYS:HA	14:F:177:TYR:HB3	1.81	0.62
14:F:40:ILE:HB	14:F:85:ILE:HB	1.81	0.62
8:8:85:G:H8	8:8:85:G:C5'	2.11	0.62
10:B:321:TYR:HD1	10:B:340:ARG:CG	2.11	0.62
15:G:224:VAL:HG13	15:G:284:ALA:HB2	1.80	0.62
16:H:108:ARG:CG	16:H:108:ARG:HH11	2.12	0.62
16:H:52:THR:HG23	16:H:121:VAL:HB	1.80	0.62
23:O:41:LYS:NZ	27:S:32:THR:O	2.33	0.62
1:1:1180:U:H1'	1:1:1181:U:H5'	1.82	0.62
1:1:754:G:N2	1:1:768:C:OP2	2.33	0.62
6:6:16:C:N3	6:6:17:U:C4	2.67	0.62
6:6:42:A:O2'	6:6:43:A:O4'	2.16	0.62
1:1:1063:G:N2	1:1:1089:C:O2	2.32	0.62
1:1:1268:G:O6	1:1:1360:C:N4	2.30	0.62
1:1:1727:U:H3'	1:1:1728:G:C8	2.34	0.62
1:1:491:A:H61	1:1:644:G:H1	1.47	0.62
1:1:953:G:H2'	1:1:954:U:H5'	1.80	0.62
2:2:1011:U:O3'	15:G:148:ARG:NH1	2.32	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:606:G:O2'	2:2:608:C:OP2	2.16	0.62
4:4:173:C:O2'	4:4:175:G:OP1	2.16	0.62
9:A:111:CYS:SG	9:A:112:ILE:N	2.70	0.62
10:B:292:ARG:HE	10:B:296:VAL:HG11	1.64	0.62
13:E:26:THR:HA	13:E:35:THR:HG22	1.82	0.62
1:1:1481:A:N6	1:1:1510:A:O2'	2.32	0.62
1:1:154:A:H8	1:1:301:A:H62	1.46	0.62
1:1:251:A:N6	1:1:376:A:OP1	2.32	0.62
1:1:892:C:O3'	25:Q:126:ARG:NH1	2.31	0.62
6:6:21:A:H1'	6:6:22:G:P	2.39	0.62
16:H:103:ARG:HH11	16:H:103:ARG:CG	2.12	0.62
1:1:561:G:O2'	1:1:1424:A:O3'	2.17	0.62
1:1:988:G:N2	1:1:1012:C:OP1	2.33	0.62
4:4:180:C:H1'	5:5:3:C:H1'	1.82	0.62
9:A:28:LYS:O	9:A:74:GLU:OE2	2.17	0.62
10:B:25:ILE:HG22	10:B:277:TYR:HE1	1.65	0.62
6:6:51:A:C8	14:F:45:ARG:NH1	2.68	0.62
2:2:1012:G:H22	15:G:153:ARG:HH12	1.48	0.62
1:1:208:C:N3	1:1:209:C:N4	2.47	0.62
1:1:398:G:N1	1:1:401:A:OP2	2.31	0.62
1:1:543:G:H3'	1:1:543:G:N3	2.15	0.62
1:1:847:OMU:H5'	17:I:2:PRO:O	2.00	0.62
18:J:116:ILE:H	18:J:116:ILE:CD1	2.12	0.62
1:1:1057:A:H3'	1:1:1058:U:C6	2.35	0.62
2:2:663:U:O2'	2:2:1404:H2U:H52	2.00	0.62
2:2:526:A:H4'	2:2:527:A2M:OP1	2.00	0.62
2:2:834:G:O6	2:2:951:G:N2	2.31	0.62
2:2:362:A:N6	4:4:90:G:O2'	2.31	0.62
1:1:1163:G:O6	24:P:13:ARG:NH2	2.29	0.61
1:1:458:A:C2	1:1:459:A:H1'	2.35	0.61
9:A:105:GLY:HA3	9:A:160:SER:HB3	1.81	0.61
20:L:75:LEU:HG	20:L:111:GLY:HA2	1.81	0.61
23:O:23:ARG:HD3	23:O:23:ARG:C	2.20	0.61
25:Q:147:ASN:O	25:Q:151:LYS:N	2.33	0.61
2:2:1449:A:H3'	2:2:1450:A:C8	2.35	0.61
13:E:150:LEU:HD23	13:E:151:GLU:HB2	1.82	0.61
22:N:43:VAL:HG12	22:N:171:TRP:HE1	1.64	0.61
1:1:1202:G:N2	1:1:1401:U:O2'	2.33	0.61
2:2:1152:U:H2'	2:2:1153:OMU:H6	1.82	0.61
3:3:39:U:H1'	3:3:139:G:H5''	1.82	0.61
10:B:321:TYR:HD1	10:B:340:ARG:HG2	1.64	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:H:146:VAL:HG12	19:K:55:ALA:HB1	1.81	0.61
19:K:108:VAL:O	19:K:108:VAL:HG12	1.99	0.61
16:H:137:VAL:HA	19:K:45:SER:O	2.00	0.61
1:1:905:G:H4'	25:Q:130:ASN:HD22	1.65	0.61
1:1:770:G:H22	1:1:806:A:H2	1.49	0.61
1:1:831:C:OP1	24:P:184:ARG:NH2	2.33	0.61
2:2:787:G:H1	2:2:807:A:H61	1.48	0.61
11:C:158:GLN:HA	11:C:215:GLY:HA3	1.82	0.61
18:J:82:ARG:NH1	18:J:118:GLY:HA3	2.15	0.61
18:J:64:VAL:HG21	18:J:71:LEU:HD13	1.82	0.61
6:6:41:G:H3'	19:K:180:HIS:NE2	2.14	0.61
19:K:94:VAL:CG2	19:K:109:GLN:O	2.49	0.61
1:1:801:G:N3	24:P:147:ARG:NH1	2.48	0.61
1:1:317:U:O2'	1:1:319:G:N7	2.28	0.61
1:1:839:U:H2'	1:1:840:G:C8	2.35	0.61
8:8:34:A:N1	8:8:43:G:C2	2.69	0.61
8:8:40:U:C2'	8:8:44:A:H62	2.13	0.61
10:B:346:ARG:HH12	10:B:349:MET:HG2	1.64	0.61
1:1:1245:G:N3	26:R:114:SER:OG	2.28	0.61
1:1:1495:G:N2	1:1:1498:A:OP2	2.30	0.61
1:1:367:A:H4'	1:1:368:G:OP2	2.01	0.61
2:2:772:A:O2'	2:2:1016:C:OP1	2.15	0.61
2:2:455:U:H3'	2:2:456:G:H8	1.63	0.61
2:2:610:G:H1	2:2:642:G:H21	1.49	0.61
2:2:729:G:H2'	2:2:730:A:H3'	1.83	0.61
16:H:146:VAL:HG13	19:K:55:ALA:CB	2.28	0.61
1:1:1440:A:O4'	34:Z:39:THR:OG1	2.17	0.61
15:G:130:ASP:OD2	15:G:132:SER:OG	2.17	0.61
20:L:72:THR:HB	20:L:110:LEU:HD23	1.81	0.61
1:1:1242:U:O2'	1:1:1243:G:O4'	2.18	0.61
2:2:590:U:H2'	2:2:591:A2M:C8	2.30	0.61
2:2:747:A:N6	2:2:749:G:C6	2.68	0.61
2:2:771:G:N2	2:2:969:U:H3	1.98	0.61
1:1:1743:A:O2'	3:3:201:A:N1	2.31	0.61
5:5:125:A:H2'	5:5:126:G:H5'	1.81	0.61
1:1:381:G:N2	7:7:21:U:O2'	2.34	0.61
11:C:139:ARG:HD2	11:C:245:GLY:HA3	1.81	0.61
15:G:131:LEU:O	15:G:133:ARG:N	2.34	0.61
16:H:147:CYS:HA	19:K:57:CYS:O	2.00	0.61
32:X:37:ARG:HD3	32:X:39:LYS:HE2	1.81	0.61
1:1:848:U:H6	1:1:848:U:C5'	2.13	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:527:A2M:HM'1	2:2:1399:C:H1'	1.83	0.61
2:2:44:C:O2'	4:4:94:G:OP1	2.14	0.61
8:8:2:C:N3	8:8:120:C:N3	2.49	0.61
18:J:18:ALA:HB2	18:J:83:GLN:HE21	1.66	0.61
33:Y:17:ARG:NH2	33:Y:18:TYR:OH	2.34	0.61
1:1:1062:A:H5'	22:N:39:ARG:HG2	1.83	0.61
1:1:1530:U:H5''	11:C:75:ILE:HD11	1.83	0.61
2:2:1273:G:N1	2:2:1294:C:N3	2.49	0.61
5:5:37:G:H4'	10:B:373:GLY:CA	2.31	0.61
22:N:141:LYS:HB2	22:N:144:TYR:HD2	1.66	0.61
31:W:28:MET:SD	31:W:72:ARG:HG3	2.41	0.61
1:1:1549:U:OP2	2:2:60:A:O2'	2.16	0.60
1:1:229:C:HO2'	1:1:230:A:H8	1.47	0.60
2:2:685:G:N2	2:2:754:U:O2	2.22	0.60
3:3:195:A:H8	3:3:195:A:H5''	1.66	0.60
22:N:176:ILE:HG13	22:N:190:LEU:HD11	1.83	0.60
28:T:120:ASP:OD1	28:T:145:HIS:HB2	2.01	0.60
4:4:63:U:O4'	13:E:119:ARG:NH2	2.33	0.60
29:U:29:ASP:HB3	29:U:118:GLN:HA	1.83	0.60
1:1:1126:U:H2'	1:1:1127:U:H4'	1.83	0.60
1:1:806:A:O2'	1:1:807:C:O5'	2.19	0.60
6:6:16:C:H3'	6:6:16:C:H6	1.66	0.60
9:A:89:PHE:H	9:A:100:ASN:ND2	1.97	0.60
22:N:100:ASN:HD21	22:N:118:ALA:HB1	1.64	0.60
22:N:86:HIS:HB2	22:N:139:ARG:HB2	1.83	0.60
1:1:1122:U:H1'	1:1:1144:G:H22	1.65	0.60
2:2:97:A:O2'	2:2:366:C:O2	2.17	0.60
2:2:451:U:H3	2:2:483:C:H42	1.49	0.60
1:1:216:G:O2'	4:4:183:C:N3	2.34	0.60
1:1:660:U:H5'	7:7:7:OMU:HM22	1.83	0.60
10:B:288:TYR:CZ	10:B:332:LYS:HG3	2.36	0.60
13:E:89:PHE:O	13:E:145:PHE:N	2.32	0.60
18:J:106:ASN:OD1	18:J:107:PRO:HD3	1.98	0.60
25:Q:55:VAL:HG13	25:Q:56:LYS:H	1.65	0.60
1:1:1061:G:H2'	1:1:1062:A:C8	2.36	0.60
1:1:236:G:O2'	1:1:237:U:OP1	2.19	0.60
1:1:849:U:O2'	1:1:850:G:O5'	2.19	0.60
9:A:91:GLY:O	9:A:103:PRO:HD3	2.01	0.60
3:3:8:A:OP2	33:Y:73:ARG:NH2	2.35	0.60
1:1:388:A:H4'	1:1:407:A:N6	2.16	0.60
1:1:669:C:O2'	1:1:670:C:O5'	2.18	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:696:A:H5''	11:C:108:ARG:HA	1.84	0.60
2:2:1317:G:N1	2:2:1387:C:N3	2.50	0.60
4:4:74:G:N2	4:4:123:C:O2	2.24	0.60
2:2:1434:G:N2	4:4:170:G:N7	2.37	0.60
8:8:12:C:O2	8:8:15:A:C2	2.55	0.60
8:8:4:A:N6	8:8:119:U:O4	2.34	0.60
1:1:1674:U:N3	1:1:1728:G:N2	2.50	0.60
2:2:443:OMC:N4	2:2:487:U:H2'	2.16	0.60
2:2:957:C:H1'	2:2:958:C:P	2.41	0.60
2:2:996:G:H2'	2:2:997:C:C6	2.37	0.60
16:H:45:LEU:HD11	16:H:120:LEU:HG	1.84	0.60
17:I:83:ALA:CB	17:I:108:ASN:ND2	2.64	0.60
1:1:1209:G:N2	1:1:1209:G:OP2	2.24	0.60
4:4:181:C:H1'	5:5:2:A:C4	2.36	0.60
13:E:169:LYS:HZ2	13:E:174:PHE:HE1	1.50	0.60
1:1:1042:G:H1	1:1:1109:U:H5	1.50	0.60
1:1:778:C:O2'	1:1:779:A:H8	1.83	0.60
2:2:676:G:OP2	50:2:1702:HOH:O	2.16	0.60
11:C:7:VAL:HG11	11:C:255:PHE:HE2	1.67	0.60
1:1:1058:U:H1'	22:N:94:PHE:HE1	1.67	0.60
28:T:13:LYS:HA	28:T:107:LEU:HD21	1.84	0.60
10:B:376:ARG:NH2	32:X:11:PHE:HD1	1.99	0.60
1:1:1433:U:O2'	1:1:1434:U:H5''	2.02	0.59
1:1:1458:G:O6	50:1:1956:HOH:O	2.15	0.59
3:3:32:A:N1	3:3:33:A:N6	2.49	0.59
5:5:44:G:H1	5:5:103:U:H3	1.49	0.59
8:8:85:G:C8	8:8:85:G:C5'	2.85	0.59
33:Y:50:PRO:HD3	33:Y:68:VAL:HG22	1.84	0.59
1:1:1238:C:H5'	1:1:1239:U:H5''	1.84	0.59
2:2:1184:C:H2'	2:2:1185:C:O4'	2.02	0.59
2:2:590:U:H2'	2:2:591:A2M:H8	1.84	0.59
8:8:116:U:H2'	8:8:117:A:C8	2.37	0.59
1:1:1145:G:C2	1:1:1146:A:H1'	2.37	0.59
1:1:695:OMC:HM22	1:1:696:A:H5'	1.84	0.59
1:1:895:G:O6	1:1:901:C:N4	2.34	0.59
1:1:1651:G:H21	2:2:414:G:N2	2.00	0.59
6:6:17:U:N3	6:6:30:C:O2'	2.35	0.59
8:8:34:A:H4'	8:8:35:U:H5'	1.84	0.59
1:1:73:U:H5''	17:I:63:VAL:HB	1.84	0.59
24:P:36:LEU:O	24:P:40:THR:OG1	2.12	0.59
28:T:109:PRO:HA	28:T:112:MET:HG2	1.83	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:T:124:ARG:NH1	28:T:142:SER:OG	2.35	0.59
1:1:1122:U:O2	1:1:1144:G:N1	2.35	0.59
1:1:1129:G:H1	1:1:1137:C:H42	1.51	0.59
1:1:502:U:O2'	1:1:503:A:O4'	2.21	0.59
1:1:895:G:H1	1:1:900:C:N4	1.97	0.59
2:2:553:G:H4'	2:2:554:OMC:OP2	2.02	0.59
5:5:12:C:O2'	5:5:14:A:N6	2.34	0.59
13:E:20:VAL:HG21	13:E:46:ARG:HA	1.84	0.59
21:M:119:TYR:OH	21:M:131:GLU:OE1	2.15	0.59
22:N:121:LYS:CE	22:N:122:PRO:CD	2.70	0.59
22:N:152:LEU:HD13	22:N:165:ILE:HG12	1.83	0.59
26:R:13:GLY:HA2	26:R:61:LEU:HG	1.83	0.59
28:T:36:ILE:O	28:T:36:ILE:HD12	2.02	0.59
1:1:255:G:H1	31:W:59:THR:HG23	1.67	0.59
2:2:527:A2M:HM'3	2:2:1398:OMC:CM2	2.33	0.59
19:K:94:VAL:HG22	19:K:109:GLN:O	2.03	0.59
19:K:74:LEU:HD23	19:K:113:ASN:O	2.02	0.59
3:3:163:C:H41	25:Q:46:LYS:CB	2.16	0.59
1:1:1271:G:N2	1:1:1359:C:O2	2.33	0.59
1:1:930:U:O2	2:2:603:A:O2'	2.16	0.59
2:2:603:A:H2'	2:2:604:A:C8	2.38	0.59
2:2:743:C:H2'	2:2:744:G:H8	1.68	0.59
6:6:27:G:H2'	6:6:28:A:H5'	1.83	0.59
10:B:19:ARG:HB2	10:B:237:ARG:NH2	2.12	0.59
10:B:56:ILE:HD11	10:B:288:TYR:HD2	1.67	0.59
18:J:47:ARG:HE	18:J:50:ARG:HB2	1.68	0.59
24:P:144:TYR:CE2	24:P:146:LEU:HD21	2.36	0.59
1:1:1389:A:H3'	19:K:77:PRO:CG	2.32	0.59
1:1:1727:U:C5	1:1:1728:G:C5	2.90	0.59
3:3:45:C:H2'	3:3:46:A:C8	2.37	0.59
4:4:45:G:H2'	4:4:46:G:C8	2.38	0.59
8:8:14:U:O4'	8:8:110:G:N2	2.35	0.59
9:A:45:VAL:O	9:A:85:GLY:N	2.36	0.59
10:B:192:ASN:O	10:B:195:ALA:N	2.35	0.59
1:1:1763:A:H2'	30:V:128:ARG:HH22	1.65	0.59
1:1:779:A:P	24:P:142:ASN:H	2.26	0.59
3:3:31:C:H4'	3:3:32:A:OP2	2.02	0.59
8:8:44:A:N7	8:8:45:U:C5	2.71	0.59
11:C:299:VAL:HG21	24:P:138:PRO:HG2	1.84	0.59
20:L:112:ASN:HD22	20:L:113:GLY:N	2.00	0.59
22:N:14:ASN:OD1	22:N:15:LYS:N	2.35	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1019:G:H4'	2:2:1021:C:C2	2.37	0.59
1:1:429:G:H1'	28:T:97:ASN:HD21	1.68	0.59
1:1:1189:C:H2'	1:1:1190:G:C8	2.38	0.59
2:2:771:G:N7	9:A:67:TYR:OH	2.24	0.59
4:4:136:G:H22	4:4:155:A:H1'	1.67	0.59
4:4:181:C:H2'	4:4:182:A:H8	1.68	0.59
6:6:22:G:N7	6:6:26:G:N2	2.50	0.59
13:E:42:GLN:HG3	13:E:60:PHE:HB2	1.85	0.59
28:T:6:ARG:HH21	28:T:116:HIS:CB	2.11	0.59
1:1:1393:A:H3'	1:1:1393:A:OP1	2.02	0.58
1:1:167:U:O2'	1:1:168:G:N7	2.30	0.58
1:1:237:U:OP2	50:1:1928:HOH:O	2.17	0.58
1:1:301:A:H2'	1:1:302:G:C8	2.38	0.58
2:2:1078:OMU:CM2	2:2:1079:OMG:H5'	2.33	0.58
2:2:655:OMG:O2'	2:2:657:U:H5''	2.03	0.58
7:7:105:C:OP2	50:7:316:HOH:O	2.17	0.58
3:3:116:C:H5''	25:Q:99:LEU:HD12	1.85	0.58
1:1:1041:U:H4'	27:S:100[A]:ARG:HB2	1.85	0.58
1:1:300:A:N3	1:1:301:A:H1'	2.18	0.58
2:2:1095:A:O2'	2:2:1119:A:OP1	2.21	0.58
2:2:387:U:O2	2:2:1415:G:N2	2.35	0.58
2:2:387:U:OP2	50:2:1715:HOH:O	2.16	0.58
9:A:45:VAL:HG22	9:A:61:VAL:HG22	1.85	0.58
19:K:72:ARG:HD2	19:K:72:ARG:O	2.03	0.58
22:N:53:VAL:C	22:N:163:GLN:HE22	2.05	0.58
23:O:189:TYR:HA	23:O:194:SER:HA	1.85	0.58
23:O:19:LYS:NZ	23:O:19:LYS:HB2	2.18	0.58
1:1:1655:U:OP1	21:M:105:ARG:NE	2.32	0.58
2:2:1189:G:N2	2:2:1239:G:O4'	2.37	0.58
2:2:68:A:O2'	2:2:69:A:O5'	2.13	0.58
6:6:13:C:N4	6:6:14:A:N6	2.50	0.58
15:G:158:PRO:HB3	15:G:317:GLN:H	1.68	0.58
22:N:130:ARG:NH2	22:N:131:ILE:O	2.31	0.58
1:1:777:G:H21	24:P:144:TYR:HA	1.68	0.58
2:2:1051:G:N2	2:2:1072:C:O2	2.36	0.58
2:2:1153:OMU:OP2	2:2:1155:C:N4	2.36	0.58
2:2:1317:G:O6	2:2:1387:C:C4	2.55	0.58
3:3:106:U:C5	3:3:128:C:N4	2.71	0.58
11:C:257:GLN:O	11:C:261:ILE:N	2.31	0.58
25:Q:19:ARG:HD2	25:Q:20:ALA:N	2.17	0.58
1:1:237:U:H3'	1:1:238:A:C8	2.38	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:705:C:H4'	11:C:34:ASP:OD2	2.03	0.58
2:2:1332:G:H4'	4:4:157:A:H1'	1.85	0.58
8:8:73:G:H2'	8:8:74:U:O4'	2.03	0.58
23:O:44:PHE:CE1	27:S:33:ASN:HB3	2.38	0.58
31:W:29:SER:HA	31:W:46:PRO:HA	1.84	0.58
1:1:1491:U:H2'	1:1:1492:G:C8	2.37	0.58
1:1:1493:G:O2'	1:1:1494:C:OP2	2.14	0.58
1:1:179:G:O2'	1:1:180:A:O4'	2.22	0.58
1:1:157:U:H3	1:1:297:A:H61	1.51	0.58
2:2:1056:A:N6	2:2:1078:OMU:HN3	2.00	0.58
2:2:1316:G:H2'	2:2:1317:G:O4'	2.03	0.58
8:8:54:U:H1'	8:8:56:A:H62	1.68	0.58
20:L:70:LYS:HD3	20:L:108:LYS:HD2	1.84	0.58
1:1:547:U:C4	1:1:1393:A:N6	2.71	0.58
1:1:204:A:H2'	1:1:205:A:H5'	1.86	0.58
2:2:527:A2M:H4'	2:2:528:U:OP1	2.04	0.58
9:A:65:HIS:HB2	9:A:72:VAL:CG1	2.31	0.58
2:2:1386:G:C2	10:B:255:ALA:HB1	2.39	0.58
13:E:16:VAL:HG11	13:E:80:ILE:HG23	1.86	0.58
2:2:802:U:O3'	15:G:310:ARG:NH2	2.37	0.58
3:3:8:A:P	33:Y:73:ARG:HH21	2.25	0.58
1:1:422:U:O2'	1:1:423:U:H5''	2.03	0.58
1:1:836:G:OP2	24:P:63:SER:OG	2.21	0.58
4:4:95:U:C5	25:Q:62:ARG:NE	2.71	0.58
5:5:46:G:N1	5:5:101:C:N3	2.39	0.58
6:6:16:C:C4	6:6:17:U:C5	2.91	0.58
10:B:315:MET:O	10:B:370:SER:HB2	2.04	0.58
2:2:1443:G:O6	15:G:133:ARG:NH1	147.47	0.58
18:J:98:GLU:HG3	32:X:24:PHE:H	1.69	0.58
22:N:170:TYR:O	22:N:178:ARG:NE	2.33	0.58
23:O:61:ILE:HG23	23:O:79:TYR:CE1	2.39	0.58
25:Q:102:LEU:HD22	25:Q:138:LEU:HD22	1.85	0.58
1:1:242:A:N6	1:1:260:C:H42	2.01	0.58
10:B:379:THR:O	10:B:381:LYS:N	2.37	0.58
13:E:16:VAL:HG11	13:E:80:ILE:HG12	1.86	0.58
15:G:141:VAL:HG12	15:G:145:ARG:HH12	1.69	0.58
15:G:141:VAL:HG12	15:G:145:ARG:NH1	2.19	0.58
27:S:116:LEU:O	27:S:120:LYS:N	2.32	0.58
30:V:68:TYR:CE1	30:V:88:ILE:HD12	2.39	0.58
1:1:488:G:N2	1:1:648:A:N3	2.51	0.58
1:1:676:G:H2'	2:2:618:A:N7	2.19	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:872:U:H4'	1:1:963:G:H5'	1.85	0.58
2:2:654:U:H2'	2:2:655:OMG:H5'	1.86	0.58
8:8:93:U:HO2'	8:8:94:G:H8	1.50	0.58
21:M:23:GLN:HA	21:M:26:ARG:HG2	1.84	0.58
26:R:8:HIS:HD2	26:R:66:VAL:HG21	1.68	0.58
27:S:103:GLU:HA	27:S:106:LYS:HB2	1.84	0.58
1:1:1189:C:H2'	1:1:1190:G:H8	1.68	0.57
1:1:1523:G:OP2	20:L:9:ARG:NH1	2.31	0.57
1:1:933:A:OP1	2:2:30:A:N6	2.32	0.57
2:2:47:A:H5'	25:Q:88:ARG:HG2	1.86	0.57
2:2:716:C:H2'	2:2:717:G:O4'	2.04	0.57
15:G:215:LEU:HD21	15:G:288:VAL:HA	1.86	0.57
22:N:53:VAL:HG22	22:N:134:ILE:HG12	1.85	0.57
27:S:56:TYR:OH	27:S:79:PRO:HD2	2.04	0.57
28:T:31:GLU:HG2	28:T:60:PHE:HA	1.83	0.57
1:1:1445:U:O2	34:Z:26:ARG:CZ	2.52	0.57
1:1:270:C:H2'	1:1:271:A:H4'	1.86	0.57
1:1:61:A:N3	1:1:76:U:O2'	2.29	0.57
2:2:12:G:H5''	2:2:13:A:H5'	1.85	0.57
8:8:37:C:H42	8:8:48:G:C1'	2.17	0.57
12:D:105:GLY:HA3	12:D:130:TYR:HA	1.85	0.57
30:V:106:TYR:O	30:V:108:VAL:N	2.35	0.57
1:1:673:C:H42	1:1:677:A:H8	1.50	0.57
2:2:1146:A:O2'	2:2:1167:A:N1	2.35	0.57
2:2:442:C:H2'	2:2:488:A:H61	1.70	0.57
4:4:123:C:H2'	4:4:124:A:C8	2.40	0.57
14:F:57:LEU:HB2	14:F:61:GLY:HA3	1.86	0.57
2:2:1012:G:N2	15:G:153:ARG:HH12	2.02	0.57
19:K:68:GLY:CA	19:K:85:ILE:O	2.49	0.57
21:M:184:LEU:HD13	21:M:188:TYR:CE1	2.39	0.57
1:1:893:G:P	25:Q:126:ARG:HH12	2.27	0.57
2:2:512:U:H2'	2:2:513:C:C6	2.39	0.57
9:A:117:GLU:HB2	9:A:122:ASP:OD1	2.05	0.57
9:A:198:LYS:O	50:A:302:HOH:O	2.17	0.57
14:F:50:ARG:NH1	14:F:180:SER:OG	2.37	0.57
15:G:173:ASN:OD1	15:G:174:GLU:N	2.37	0.57
15:G:271:LEU:HD23	15:G:283:VAL:HG23	1.87	0.57
11:C:105:LYS:HE2	17:I:18:ASN:HD21	1.68	0.57
21:M:40:ARG:HH12	21:M:41:ARG:CZ	2.18	0.57
26:R:40:LYS:HE3	26:R:60:VAL:HG11	1.85	0.57
1:1:547:U:H5	1:1:1393:A:C6	2.20	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:209:C:N4	1:1:223:A:H61	2.02	0.57
1:1:966:A:OP2	50:1:1972:HOH:O	2.17	0.57
8:8:17:U:O2'	8:8:18:U:O5'	2.15	0.57
10:B:49:PHE:CE1	10:B:342:VAL:HG22	2.38	0.57
25:Q:142:ILE:HA	25:Q:145:ILE:HG12	1.87	0.57
2:2:557:G:OP1	50:2:1723:HOH:O	2.17	0.57
3:3:115:G:OP2	25:Q:124:TYR:OH	2.21	0.57
22:N:112:GLN:OE1	22:N:113:THR:OG1	2.17	0.57
22:N:88:ARG:NH2	22:N:89:THR:O	2.37	0.57
1:1:243:G:N2	1:1:260:C:O2	2.37	0.57
1:1:817:C:H2'	1:1:818:C:O4'	2.05	0.57
7:7:55:U:N3	7:7:62:A:H2	1.91	0.57
1:1:659:G:O2'	7:7:7:OMU:CM2	2.51	0.57
7:7:7:OMU:CM2	7:7:7:OMU:H4'	2.35	0.57
10:B:226:THR:O	10:B:341:ARG:NH2	2.37	0.57
19:K:179:ALA:O	19:K:182:ALA:HB3	2.05	0.57
20:L:16:PHE:CZ	20:L:21:ARG:HG2	2.40	0.57
2:2:1317:G:O6	2:2:1387:C:N3	2.38	0.57
3:3:106:U:N3	3:3:129:G:O6	2.37	0.57
3:3:30:A:O4'	3:3:31:C:C5	2.58	0.57
1:1:490:C:O2'	6:6:54:A:C2	2.54	0.57
7:7:152:C:O2	21:M:112:ASN:ND2	2.38	0.57
8:8:43:G:H8	8:8:43:G:OP2	1.88	0.57
4:4:52:A:N9	13:E:174:PHE:HB2	2.20	0.57
18:J:59:MET:HE2	18:J:77:ASN:HB3	1.87	0.57
19:K:164:THR:HG22	19:K:167:GLU:OE1	2.04	0.57
26:R:46:MET:O	26:R:50:LYS:N	2.38	0.57
31:W:71:TYR:CE1	31:W:74:LYS:HG2	2.39	0.57
32:X:4:ILE:HD11	32:X:20:ARG:HH21	1.68	0.57
1:1:1183:G:N2	1:1:1189:C:O2	2.34	0.57
1:1:47:C:OP1	17:I:15:LYS:NZ	2.29	0.57
1:1:498:G:H2'	1:1:499:C:C6	2.39	0.57
1:1:543:G:OP2	1:1:544:A:N1	2.38	0.57
2:2:1312:U:H3'	2:2:1313:G:H5''	1.86	0.57
3:3:58:C:HO2'	3:3:60:U:C5'	2.10	0.57
4:4:140:G:N1	4:4:149:U:OP1	2.35	0.57
16:H:74:GLN:O	16:H:78:LYS:NZ	2.38	0.57
23:O:187:PRO:HD2	23:O:199:LYS:NZ	2.20	0.57
1:1:205:A:H62	1:1:224:C:P	2.28	0.57
2:2:535:U:C2'	2:2:536:C:H5'	2.34	0.57
2:2:991:C:N4	2:2:996:G:O2'	2.37	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:3:47:C:N3	3:3:173:U:H5	2.03	0.57
1:1:836:G:O4'	24:P:98:ARG:NH2	2.37	0.57
1:1:945:U:H4'	1:1:946:G:O4'	2.05	0.56
2:2:1151:U:O2'	2:2:1152:U:C5'	2.53	0.56
2:2:1152:U:H2'	2:2:1153:OMU:C6	2.35	0.56
2:2:379:U:O2'	50:2:1705:HOH:O	2.17	0.56
6:6:48:C:H3'	6:6:49:C:H6	1.70	0.56
8:8:3:G:H2'	8:8:4:A:O4'	2.05	0.56
11:C:191:GLY:H	11:C:194:LYS:NZ	2.03	0.56
23:O:187:PRO:HD2	23:O:199:LYS:HZ3	1.69	0.56
24:P:17:HIS:NE2	24:P:18:HIS:HE1	1.95	0.56
26:R:17:PRO:HB3	26:R:24:PRO:HD2	1.87	0.56
29:U:94:THR:O	29:U:98:LEU:N	2.24	0.56
1:1:1529:OMC:H5'	1:1:1529:OMC:H6	1.70	0.56
1:1:694:U:H2'	1:1:695:OMC:C6	2.40	0.56
6:6:59:C:H6	6:6:59:C:H5''	1.70	0.56
10:B:371:LYS:HD2	10:B:371:LYS:N	2.19	0.56
11:C:206:PRO:HB3	11:C:247:PHE:CD2	2.40	0.56
17:I:27:VAL:HG12	21:M:198:ILE:HB	1.87	0.56
23:O:94:ASN:HD22	23:O:95:TYR:N	2.02	0.56
27:S:52:MET:HG2	27:S:95:HIS:CE1	2.40	0.56
2:2:723:G:O2'	2:2:734:A:N6	2.38	0.56
4:4:115:A:HO2'	5:5:111:G:H22	1.47	0.56
7:7:79:A:H2'	7:7:80:A:H5''	1.86	0.56
10:B:376:ARG:NH2	32:X:11:PHE:CD1	2.73	0.56
15:G:273:ASP:OD1	15:G:274:ALA:N	2.38	0.56
1:1:893:G:OP1	25:Q:126:ARG:NH1	2.38	0.56
27:S:100[B]:ARG:C	27:S:102:GLN:H	2.08	0.56
7:7:142:C:H4'	30:V:96:THR:HG21	1.88	0.56
1:1:159:U:C5	1:1:160:C:N3	2.73	0.56
1:1:265:U:H2'	1:1:266:G:H8	1.70	0.56
1:1:278:U:N3	1:1:279:G:N7	2.53	0.56
2:2:1078:OMU:HM22	2:2:1079:OMG:H5'	1.85	0.56
9:A:15:VAL:HG12	9:A:194:ASN:HD22	1.71	0.56
1:1:873:G:H1'	9:A:15:VAL:HG13	1.88	0.56
19:K:75:ARG:NH1	19:K:112:LYS:O	2.37	0.56
28:T:122:ALA:HB3	28:T:143:PRO:HG2	1.86	0.56
32:X:8:PHE:HB3	32:X:40:CYS:SG	2.45	0.56
1:1:1477:U:H2'	1:1:1478:A:O4'	2.05	0.56
1:1:1656:A:H2'	1:1:1657:U:H5''	1.88	0.56
1:1:1677:A:H61	1:1:1725:A:N6	2.03	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:763:U:H2'	1:1:764:G:C8	2.41	0.56
2:2:100:U:H2'	2:2:101:G:H8	1.70	0.56
2:2:690:C:H2'	2:2:691:A:C4	2.40	0.56
3:3:139:G:H2'	3:3:140:A:C8	2.39	0.56
3:3:173:U:H2'	3:3:174:U:O4'	2.06	0.56
5:5:104:G:H8	5:5:104:G:OP1	1.88	0.56
7:7:88:A:O2'	7:7:89:U:OP1	2.18	0.56
1:1:874:C:H5'	9:A:19:HIS:CE1	2.40	0.56
16:H:61:ILE:HD11	16:H:157:LEU:HD13	1.86	0.56
16:H:124:GLU:HG3	16:H:172:VAL:HG21	1.86	0.56
16:H:201:ARG:HG3	19:K:178:ARG:HD3	1.86	0.56
19:K:92:ASN:O	19:K:111:LEU:HG	2.05	0.56
23:O:40:ASP:OD1	23:O:43:LYS:NZ	2.36	0.56
25:Q:105:LEU:HD12	25:Q:138:LEU:HD23	1.88	0.56
1:1:786:A:H61	1:1:791:C:H42	1.52	0.56
2:2:3:C:H2'	2:2:4:C:C6	2.40	0.56
8:8:27:A:H2'	8:8:28:C:C6	2.41	0.56
15:G:137:TRP:HB2	15:G:142:THR:HG23	1.88	0.56
19:K:89:VAL:HG12	26:R:73:ALA:HB3	1.67	0.56
22:N:150:GLU:OE1	22:N:153:ARG:NH1	2.39	0.56
1:1:1540:U:H4'	28:T:66[A]:LYS:HE2	1.88	0.56
1:1:1727:U:H3'	1:1:1728:G:H8	1.70	0.56
1:1:556:U:H2'	1:1:557:U:O4'	2.04	0.56
1:1:763:U:H2'	1:1:764:G:H8	1.69	0.56
1:1:930:U:H3'	1:1:931:G:H5''	1.88	0.56
1:1:927:A2M:H5''	2:2:73:U:H5''	1.87	0.56
11:C:109:ARG:HA	21:M:204:ARG:HH12	1.70	0.56
14:F:39:ALA:HB1	14:F:84:VAL:CG2	2.34	0.56
16:H:144:ARG:CZ	16:H:154:TYR:HB3	2.36	0.56
20:L:101:LEU:HB3	20:L:106:TYR:O	2.05	0.56
1:1:1149:G:N1	1:1:1155:A:OP2	2.39	0.56
1:1:1410:U:H2'	1:1:1411:G:C8	2.40	0.56
1:1:453:G:O2'	28:T:119:VAL:O	2.22	0.56
1:1:36:OMU:HM21	1:1:94:A:O2'	2.02	0.56
1:1:9:G:H21	1:1:1669:G:H1	1.52	0.56
2:2:18:A:OP1	50:2:1712:HOH:O	2.17	0.56
2:2:718:C:H2'	2:2:719:A:O4'	2.06	0.56
23:O:39:GLN:HE21	23:O:43:LYS:HZ2	1.54	0.56
23:O:17:GLN:HE22	27:S:22:HIS:H	1.54	0.56
2:2:653:C:H2'	2:2:654:U:C6	2.40	0.56
2:2:667:OMU:H3'	2:2:668:C:H5''	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:3:168:U:O2	3:3:168:U:H3'	2.06	0.56
3:3:58:C:C2'	3:3:60:U:H5''	2.36	0.56
2:2:979:C:H5''	9:A:69:PHE:CE1	2.40	0.56
11:C:157:ILE:HG12	11:C:160:TYR:HE2	1.70	0.56
11:C:194:LYS:HB2	11:C:199:ARG:HD2	1.87	0.56
19:K:74:LEU:HD21	19:K:113:ASN:HA	1.87	0.56
22:N:31:ILE:HG13	22:N:69:ARG:HD3	1.87	0.56
33:Y:42:LEU:HA	33:Y:74:VAL:HA	1.86	0.56
1:1:456:A:H2'	1:1:457:C:O4'	2.05	0.56
1:1:776:U:O2	24:P:51:ARG:NH2	2.37	0.56
2:2:1077:G:C2'	2:2:1078:OMU:H5''	2.36	0.56
9:A:126:LEU:HD13	9:A:150:LEU:HD21	1.88	0.56
20:L:136:LYS:O	20:L:136:LYS:HD3	2.06	0.56
1:1:1044:G:N3	2:2:1065:A:H2'	2.21	0.56
1:1:1631:G:O2'	1:1:1633:U:OP1	2.23	0.56
1:1:299:U:H4'	1:1:300:A:N7	2.21	0.56
1:1:370:G:O2'	1:1:372:A:N7	2.39	0.56
1:1:533:G:O2'	1:1:534:G:H5'	2.06	0.56
2:2:827:A:O2'	2:2:828:U:O5'	2.23	0.56
7:7:37:U:OP1	7:7:38:U:O2'	2.18	0.56
8:8:50:G:C4	8:8:51:A:H2	2.24	0.56
6:6:41:G:N1	19:K:176:ARG:NH1	2.52	0.56
2:2:1177:A:H4'	23:O:151:ILE:HG21	1.88	0.56
26:R:14:ARG:CZ	26:R:17:PRO:HG3	2.36	0.56
2:2:1035:G:H5'	9:A:233:GLN:HB2	1.88	0.55
2:2:957:C:C1'	2:2:958:C:P	2.94	0.55
3:3:207:G:H2'	3:3:208:G:C8	2.41	0.55
4:4:115:A:OP1	50:4:303:HOH:O	2.18	0.55
6:6:28:A:C4	6:6:29:G:N7	2.75	0.55
19:K:180:HIS:ND1	19:K:181:TRP:N	2.54	0.55
22:N:150:GLU:O	22:N:154:ARG:N	2.37	0.55
30:V:95:LYS:HE3	30:V:113:VAL:O	2.05	0.55
4:4:77:U:O2'	10:B:55:HIS:HD2	1.89	0.55
15:G:304:ASN:HB2	15:G:308:LEU:HB2	1.87	0.55
22:N:38:ARG:HG2	22:N:41:ALA:HB2	1.87	0.55
1:1:30:C:H5''	21:M:71:ARG:HH22	1.71	0.55
1:1:458:A:H2	1:1:459:A:H1'	1.70	0.55
1:1:543:G:N7	19:K:105:TRP:CD1	2.74	0.55
2:2:635:A:H5'	28:T:80:LYS:HE2	1.89	0.55
3:3:39:U:O2'	3:3:139:G:O3'	2.22	0.55
4:4:179:C:O2'	5:5:3:C:O2'	2.21	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:L:134:ILE:HD12	20:L:141:VAL:HG22	1.87	0.55
21:M:31:ARG:HD3	21:M:124:ASP:OD2	2.06	0.55
28:T:3:HIS:HB2	28:T:4:TYR:HD2	1.71	0.55
30:V:90:ASP:OD1	30:V:93:ALA:HB2	2.06	0.55
1:1:240:U:H2'	1:1:241:G:C8	2.40	0.55
2:2:395:A:N6	2:2:433:G:O2'	2.35	0.55
6:6:33:G:H2'	6:6:34:C:O4'	2.06	0.55
7:7:76:C:O2'	7:7:77:A:O4'	2.23	0.55
8:8:34:A:C2	8:8:43:G:N2	2.74	0.55
9:A:140:ASN:O	9:A:144:GLY:N	2.34	0.55
23:O:55:ILE:HG23	23:O:60:ILE:HG22	1.88	0.55
26:R:14:ARG:NH2	26:R:17:PRO:HG3	2.21	0.55
7:7:71:A:OP2	31:W:48:ARG:NH1	2.39	0.55
1:1:729:A:N1	7:7:27:U:O2'	2.36	0.55
2:2:1132:A:H4'	23:O:31:HIS:CE1	2.42	0.55
4:4:162:A:OP1	16:H:92:ARG:NH2	2.38	0.55
8:8:7:A:N6	8:8:117:A:N1	2.55	0.55
11:C:235:LEU:O	11:C:236:LEU:HB2	2.05	0.55
14:F:176:GLY:HA2	14:F:179:ARG:HH11	1.72	0.55
15:G:238:ILE:N	15:G:263:ALA:O	2.33	0.55
27:S:115:TYR:O	27:S:119:LYS:N	2.39	0.55
1:1:1355:C:H2'	1:1:1356:G:H8	1.71	0.55
1:1:893:G:H2'	1:1:894:G:H5'	1.88	0.55
2:2:467:G:N2	2:2:470:A:OP2	2.24	0.55
8:8:48:G:C2	8:8:49:U:C6	2.94	0.55
9:A:43:GLY:O	9:A:88:VAL:N	2.40	0.55
15:G:255:CYS:O	15:G:259:LYS:N	2.40	0.55
1:1:987:A:OP1	20:L:32:ARG:NH2	2.40	0.55
24:P:17:HIS:CG	24:P:18:HIS:HD1	2.23	0.55
3:3:104:U:H4'	33:Y:37:PRO:HB2	1.88	0.55
1:1:326:A:H2'	1:1:327:G:C8	2.41	0.55
1:1:35:U:H2'	1:1:36:OMU:C5'	2.33	0.55
9:A:90:CYS:HB2	9:A:101:VAL:HB	1.89	0.55
1:1:712:G:H2'	1:1:713:A:O4'	2.06	0.55
2:2:1340:G:H5'	13:E:169:LYS:CE	2.32	0.55
2:2:1403:G:N2	2:2:1406:A:OP2	2.35	0.55
2:2:668:C:H6	2:2:668:C:C5'	2.20	0.55
3:3:36:C:N3	3:3:185:C:N4	2.55	0.55
4:4:115:A:O2'	5:5:111:G:N2	2.31	0.55
5:5:45:C:H2'	5:5:46:G:C8	2.42	0.55
6:6:31:U:H6	6:6:31:U:H3'	1.72	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:8:40:U:C2'	8:8:44:A:N6	2.68	0.55
9:A:135:ILE:HD13	9:A:149:LYS:NZ	2.22	0.55
11:C:207:MET:HB3	11:C:226:ASP:HB3	1.89	0.55
16:H:186:HIS:NE2	16:H:190:GLN:OE1	2.40	0.55
18:J:56:LEU:O	18:J:124:SER:OG	2.24	0.55
23:O:244:SER:O	23:O:248:MET:N	2.38	0.55
1:1:353:C:OP2	17:I:107:LYS:CE	2.54	0.55
1:1:505:U:H2'	1:1:506:G:C8	2.42	0.55
1:1:814:C:H2'	1:1:815:G:C8	2.42	0.55
1:1:893:G:O6	1:1:902:C:N4	2.27	0.55
2:2:1254:OMG:C4'	2:2:1254:OMG:HM23	2.36	0.55
2:2:403:G:N1	2:2:424:U:OP2	2.31	0.55
1:1:678:A2M:C6	2:2:617:G:H21	2.14	0.55
5:5:42:G:N7	5:5:106:G:O2'	2.37	0.55
10:B:321:TYR:CD1	10:B:340:ARG:CG	2.87	0.55
27:S:117:ALA:O	27:S:122:GLY:N	2.39	0.55
28:T:16:LYS:O	28:T:101:ASN:ND2	2.40	0.55
1:1:1656:A:N6	2:2:412:A:N1	2.54	0.55
6:6:16:C:C4	6:6:17:U:C4	2.95	0.55
11:C:207:MET:HB3	11:C:246:ARG:HH21	1.72	0.55
16:H:40:VAL:O	16:H:44:GLN:HG2	2.06	0.55
17:I:128:LEU:HD21	17:I:130:LEU:HB2	1.88	0.55
29:U:92:TYR:O	29:U:96:LYS:N	2.38	0.55
32:X:4:ILE:HD11	32:X:20:ARG:HE	1.71	0.55
33:Y:77:HIS:HA	33:Y:80:PHE:CD2	2.41	0.55
2:2:393:A:O3'	9:A:197:PRO:HB3	2.07	0.54
2:2:534:OMG:H3'	2:2:535:U:H5	1.72	0.54
6:6:16:C:H3'	6:6:16:C:C6	2.42	0.54
2:2:423:A:O2'	9:A:125:THR:O	2.15	0.54
22:N:75:TYR:OH	22:N:154:ARG:NE	2.40	0.54
27:S:48:VAL:HG11	27:S:94:GLU:OE2	2.07	0.54
31:W:79:ILE:HD12	31:W:96:ILE:HD13	1.89	0.54
1:1:1114:A:H2	1:1:1148:A:C4	2.26	0.54
1:1:312:C:N4	1:1:313:U:O4	2.40	0.54
1:1:956:U:C2'	1:1:957:C:H5''	2.37	0.54
2:2:776:C:O2'	2:2:777:A:O5'	2.24	0.54
13:E:88:ARG:NH1	13:E:186:ILE:HG22	2.22	0.54
28:T:112:MET:HA	28:T:151:SER:O	2.07	0.54
34:Z:21:LYS:NZ	34:Z:23:GLY:O	2.28	0.54
1:1:120:G:N7	15:G:226:ARG:NH1	2.55	0.54
1:1:442:A:H1'	1:1:444:C:C4	2.42	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:848:U:H5''	1:1:848:U:H6	1.71	0.54
2:2:1128:G:H21	27:S:49:ARG:HH22	1.55	0.54
2:2:1254:OMG:C4'	2:2:1254:OMG:CM2	2.86	0.54
1:1:1595:G:N2	2:2:37:C:O2	2.19	0.54
3:3:28:U:H3	3:3:203:A:N6	2.00	0.54
1:1:147:G:O6	15:G:220:GLY:HA3	2.07	0.54
19:K:78:ARG:HB2	19:K:81:ARG:HE	1.72	0.54
24:P:45:ASN:HA	24:P:48:VAL:HG12	1.90	0.54
1:1:147:G:H4'	21:M:55:THR:HG21	1.90	0.54
1:1:1525:A:O2'	1:1:1526:OMG:OP2	2.22	0.54
1:1:178:G:O6	1:1:274:A:O2'	2.24	0.54
1:1:769:U:O2	24:P:66:ARG:NH1	2.36	0.54
10:B:240:VAL:HG23	10:B:241:ALA:N	2.22	0.54
22:N:55:ARG:NH1	22:N:162:ARG:HH11	2.06	0.54
24:P:17:HIS:HE1	24:P:18:HIS:CE1	2.16	0.54
1:1:517:U:H3	1:1:534:G:H1	1.55	0.54
2:2:390:A:N9	2:2:527:A2M:N6	2.56	0.54
2:2:699:U:N3	2:2:707:A:O5'	2.39	0.54
6:6:33:G:C5'	19:K:42:VAL:CG2	2.80	0.54
7:7:154:A:O2'	21:M:57:GLN:NE2	2.40	0.54
22:N:76:MET:HE3	22:N:80:ALA:HB3	1.90	0.54
27:S:115:TYR:HA	27:S:118:ALA:HB3	1.88	0.54
30:V:70:LEU:HD13	30:V:88:ILE:HD11	1.90	0.54
1:1:1751:G:N2	1:1:1752:G:N7	2.55	0.54
1:1:771:U:H2'	1:1:772:G:C8	2.43	0.54
2:2:1437:A:O2'	2:2:1438:A:OP1	2.18	0.54
2:2:473:C:H2'	2:2:474:A:O4'	2.07	0.54
2:2:729:G:N3	2:2:731:A:H8	2.05	0.54
6:6:21:A:C1'	6:6:22:G:P	2.95	0.54
9:A:73:LYS:NZ	9:A:73:LYS:HB2	2.23	0.54
18:J:106:ASN:CG	18:J:107:PRO:CD	2.64	0.54
20:L:54:GLY:C	24:P:181:LYS:HD2	2.27	0.54
27:S:75:ILE:HG22	27:S:88:ARG:HD3	1.88	0.54
5:5:18:G:H1'	28:T:69:ARG:HE	1.73	0.54
1:1:180:A:N6	1:1:271:A:H62	2.06	0.54
2:2:1318:OMC:HM21	10:B:244:PRO:CG	2.37	0.54
19:K:89:VAL:O	19:K:89:VAL:HG23	2.07	0.54
25:Q:10:LEU:HD11	25:Q:41:VAL:HG21	1.90	0.54
1:1:1158:U:H2'	1:1:1159:A:H4'	1.90	0.54
1:1:195:G:N2	1:1:237:U:O4	2.41	0.54
1:1:373:G:H2'	1:1:374:G:O4'	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:3:107:U:O4	3:3:128:C:C6	2.61	0.54
6:6:43:A:H2'	6:6:44:G:O4'	2.07	0.54
7:7:168:G:H2'	7:7:169:A:H8	1.70	0.54
8:8:19:G:O6	8:8:64:A:N6	2.40	0.54
14:F:38:ILE:HG21	14:F:177:TYR:HE2	1.72	0.54
19:K:73:ILE:HD12	19:K:73:ILE:H	1.70	0.54
1:1:172:G:H2'	1:1:173:G:C8	2.39	0.54
1:1:422:U:HO2'	1:1:423:U:H6	1.56	0.54
2:2:1110:C:H3'	2:2:1111:U:H5''	1.90	0.54
2:2:768:G:H1'	30:V:34:GLN:HE22	1.73	0.54
4:4:45:G:H2'	4:4:46:G:H8	1.73	0.54
4:4:64:C:O2'	4:4:65:C:OP1	2.22	0.54
5:5:111:G:N2	5:5:115:U:OP1	2.40	0.54
11:C:127:LEU:HD23	11:C:238:LEU:HD11	1.90	0.54
11:C:94:MET:N	11:C:94:MET:SD	2.81	0.54
11:C:59:MET:SD	11:C:99:ARG:HD3	2.48	0.54
14:F:55:LYS:NZ	14:F:99:ALA:O	2.29	0.54
22:N:121:LYS:HG3	22:N:122:PRO:CD	2.34	0.54
29:U:111:ALA:HA	29:U:117:TYR:HA	1.90	0.54
30:V:69:PRO:HA	30:V:87:PHE:HA	1.88	0.54
2:2:551:G:N2	2:2:551:G:OP2	2.39	0.54
2:2:715:G:H2'	2:2:716:C:C6	2.43	0.54
6:6:37:C:C2	19:K:172:ARG:HD2	2.43	0.54
7:7:76:C:O2'	7:7:77:A:N3	2.41	0.54
7:7:7:OMU:CM2	7:7:7:OMU:C4'	2.86	0.54
10:B:50:LYS:HA	10:B:79:LEU:HD23	1.90	0.54
21:M:121:VAL:HG21	21:M:131:GLU:CG	2.38	0.54
1:1:1257:U:O2'	1:1:1258:A:O5'	2.24	0.53
1:1:218:A:H2'	1:1:219:U:C6	2.43	0.53
1:1:237:U:H3'	1:1:238:A:H8	1.72	0.53
1:1:777:G:H22	24:P:144:TYR:HD1	1.56	0.53
2:2:396:G:O2'	2:2:435:U:OP1	2.18	0.53
2:2:451:U:H3	2:2:483:C:N4	2.06	0.53
2:2:981:A:O2'	2:2:982:C:OP1	2.22	0.53
10:B:302:THR:CG2	10:B:310:LYS:HG2	2.39	0.53
15:G:166:VAL:HG12	15:G:264:ILE:HG22	1.90	0.53
16:H:92:ARG:HB3	16:H:166:TRP:HB2	1.89	0.53
19:K:78:ARG:H	19:K:78:ARG:HD2	1.73	0.53
20:L:111:GLY:N	20:L:130:ALA:HB2	2.23	0.53
24:P:101:ARG:HH21	24:P:101:ARG:CG	2.11	0.53
1:1:1628:OMG:H5''	30:V:74:LYS:HD3	1.89	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:V:78:LYS:HB3	30:V:84:THR:OG1	2.09	0.53
1:1:138:C:O2'	1:1:139:C:O5'	2.22	0.53
1:1:1669:G:H21	30:V:38:PRO:HD2	1.74	0.53
1:1:208:C:O2'	1:1:226:C:N3	2.38	0.53
1:1:439:U:H5	28:T:3:HIS:HD1	1.54	0.53
1:1:461:G:O2'	1:1:462:A:O4'	2.15	0.53
1:1:464:A:N1	2:2:608:C:O2'	2.34	0.53
4:4:95:U:H5	25:Q:62:ARG:NH1	2.07	0.53
10:B:108:HIS:CE1	10:B:109:HIS:HD2	2.25	0.53
32:X:6:CYS:SG	32:X:7:GLU:N	2.81	0.53
1:1:219:U:H2'	1:1:220:A:C8	2.44	0.53
1:1:807:C:H2'	1:1:808:A:O4'	2.08	0.53
1:1:855:C:O2'	1:1:856:OMG:H5'	2.08	0.53
1:1:951:G:H1'	1:1:1741:A:N6	2.24	0.53
2:2:973:C:H3'	9:A:89:PHE:CZ	2.43	0.53
11:C:269:SER:OG	11:C:272:LYS:O	2.27	0.53
13:E:22:GLY:O	13:E:23:ARG:HG3	2.08	0.53
19:K:180:HIS:HB2	19:K:183:ARG:HD2	1.90	0.53
25:Q:118:HIS:CD2	25:Q:122:ASP:HB3	2.43	0.53
1:1:1263:A:H1'	1:1:1264:A:OP2	2.08	0.53
1:1:155:A:H4'	1:1:156:A:O5'	2.08	0.53
1:1:23:U:H1'	1:1:25:C:H41	1.74	0.53
1:1:279:G:H2'	1:1:280:A:H4'	1.90	0.53
1:1:53:G:C2'	1:1:54:G:H5'	2.38	0.53
4:4:128:U:H3	4:4:162:A:N6	2.02	0.53
4:4:140:G:H21	4:4:150:A:N6	2.05	0.53
4:4:95:U:P	25:Q:62:ARG:HH21	2.29	0.53
2:2:1275:C:H5	2:2:1292:G:H1	1.55	0.53
4:4:39:A:N1	4:4:71:C:O2'	2.35	0.53
8:8:72:A:O2'	8:8:73:G:H8	1.92	0.53
14:F:40:ILE:HD13	14:F:50:ARG:HG2	1.90	0.53
20:L:112:ASN:HD22	20:L:113:GLY:H	1.56	0.53
22:N:133:GLN:NE2	22:N:134:ILE:O	2.41	0.53
22:N:191:GLU:O	22:N:197:CYS:HB2	2.09	0.53
1:1:133:C:OP1	1:1:134:A:N6	2.41	0.53
1:1:209:C:H42	1:1:223:A:H61	1.57	0.53
1:1:454:U:OP1	28:T:62:ARG:NH2	2.42	0.53
1:1:754:G:C5	20:L:114:HIS:HB3	2.44	0.53
8:8:85:G:H8	8:8:85:G:H5''	1.72	0.53
17:I:81:SER:HB3	17:I:84:GLU:OE1	2.09	0.53
22:N:36:ILE:HB	22:N:87:MET:HB3	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:252:G:H5''	31:W:9:ARG:HD2	1.91	0.53
1:1:36:OMU:HM22	1:1:37:A:C4'	2.39	0.53
1:1:465:A:H2'	1:1:466:U:O4'	2.09	0.53
1:1:558:U:O2'	1:1:559:G:OP2	2.26	0.53
4:4:179:C:HO2'	5:5:3:C:HO2'	1.56	0.53
10:B:95:THR:OG1	10:B:96:PRO:HD2	2.08	0.53
14:F:30:ARG:NH2	14:F:33:CYS:SG	2.82	0.53
1:1:1091:A:H3'	1:1:1092:U:H5''	1.90	0.53
2:2:1131:A:N6	23:O:28:THR:O	2.42	0.53
2:2:541:A:N3	2:2:1368:C:O2'	2.36	0.53
2:2:729:G:C2	2:2:731:A:H3'	2.43	0.53
8:8:101:G:O6	26:R:54:LYS:NZ	2.37	0.53
8:8:9:G:OP2	23:O:28:THR:OG1	2.21	0.53
11:C:226:ASP:OD1	11:C:227:LEU:N	2.41	0.53
18:J:20:PRO:HA	18:J:53:SER:HA	1.91	0.53
6:6:33:G:C8	19:K:42:VAL:HG11	2.43	0.53
22:N:190:LEU:HD22	22:N:199:LEU:HG	1.91	0.53
23:O:94:ASN:HD22	23:O:95:TYR:H	1.57	0.53
2:2:598:A:OP1	28:T:82:ARG:HB3	2.09	0.53
1:1:1442:G:O2'	1:1:1443:U:OP1	2.24	0.53
1:1:491:A:HO2'	14:F:83:TYR:HH	1.56	0.53
2:2:452:G:O2'	2:2:454:A:OP2	2.18	0.53
2:2:728:U:H1'	2:2:729:G:C2	2.44	0.53
10:B:294:VAL:HG13	10:B:300:GLN:NE2	2.23	0.53
11:C:246:ARG:O	11:C:248:VAL:HG13	2.08	0.53
14:F:34:ALA:HB1	14:F:35:PRO:HD2	1.91	0.53
26:R:16:SER:OG	26:R:57:HIS:O	2.23	0.53
2:2:768:G:H1'	30:V:34:GLN:NE2	2.23	0.53
33:Y:76:ASN:OD1	33:Y:77:HIS:N	2.42	0.53
1:1:650:G:O2'	1:1:651:G:N2	2.41	0.53
2:2:1285:U:H1'	2:2:1288:C:H5	1.73	0.53
2:2:1394:U:H5''	2:2:1416:G:H22	1.73	0.53
8:8:59:C:H2'	8:8:60:A:C8	2.44	0.53
2:2:1386:G:N3	10:B:255:ALA:HB1	2.24	0.53
28:T:60:PHE:HE2	28:T:82:ARG:HD2	1.73	0.53
1:1:1587:G:N7	50:2:1710:HOH:O	2.34	0.52
1:1:160:C:H2'	1:1:161:A:C8	2.45	0.52
1:1:564:U:O5'	1:1:564:U:H6	1.91	0.52
2:2:387:U:H1'	2:2:1415:G:H21	1.73	0.52
3:3:57:U:H2'	3:3:58:C:H5	0.77	0.52
13:E:7:LEU:HD21	13:E:55:THR:HG23	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:708:A:N6	24:P:92:ASP:OD2	2.42	0.52
28:T:64:ASN:OD1	28:T:65:GLY:N	2.35	0.52
1:1:1273:U:H3	1:1:1356:G:H22	1.57	0.52
1:1:158:A:H2'	1:1:159:U:C2	2.45	0.52
1:1:1754:U:N3	1:1:1757:U:OP2	2.29	0.52
1:1:770:G:O2'	1:1:771:U:OP2	2.21	0.52
1:1:959:OMG:HN1	21:M:76:HIS:CD2	2.25	0.52
2:2:1229:A:H2'	2:2:1230:OMG:O4'	2.08	0.52
7:7:167:C:H2'	7:7:168:G:C8	2.44	0.52
8:8:17:U:O2'	8:8:18:U:O4'	2.26	0.52
9:A:92:GLN:NE2	9:A:106:GLN:OE1	2.42	0.52
13:E:123:GLN:HE22	13:E:159:VAL:HB	1.74	0.52
28:T:119:VAL:HG22	28:T:146:VAL:HG22	1.90	0.52
28:T:22:LEU:O	28:T:22:LEU:HD13	2.09	0.52
33:Y:9:LYS:HZ2	33:Y:9:LYS:HB2	1.74	0.52
1:1:857:A:N3	2:2:1251:C:O2'	2.39	0.52
3:3:58:C:O2'	3:3:60:U:C4'	2.57	0.52
3:3:58:C:H6	3:3:58:C:O5'	1.92	0.52
8:8:117:A:N6	8:8:118:C:H42	2.07	0.52
8:8:39:G:O2'	8:8:40:U:H5''	2.09	0.52
10:B:386:TRP:HD1	10:B:387:PHE:CD1	2.28	0.52
1:1:47:C:N4	21:M:188:TYR:CD1	2.77	0.52
1:1:1041:U:H5''	27:S:100[B]:ARG:NH2	2.24	0.52
1:1:150:G:OP2	21:M:147:ARG:NH2	2.42	0.52
1:1:1626:G:H2'	1:1:1627:A:O4'	2.09	0.52
1:1:657:G:C2'	1:1:658:G:H5'	2.39	0.52
1:1:669:C:HO2'	1:1:670:C:C5'	2.22	0.52
1:1:669:C:H2'	1:1:670:C:C6	2.44	0.52
1:1:784:U:H3	1:1:786:A:H62	1.56	0.52
2:2:499:G:H1	2:2:510:U:H3	1.58	0.52
4:4:101:G:H2'	4:4:102:G:O4'	2.09	0.52
5:5:23:A:H2'	5:5:24:A:O4'	2.10	0.52
8:8:19:G:N1	8:8:64:A:N1	2.57	0.52
8:8:47:U:OP1	23:O:158:ARG:N	2.40	0.52
10:B:379:THR:HG23	10:B:382:GLU:HG2	1.92	0.52
4:4:51:U:H2'	13:E:98:PHE:CZ	2.44	0.52
7:7:168:G:H5''	15:G:172:ARG:NH2	2.23	0.52
20:L:98:VAL:HG22	20:L:120:ILE:HD11	1.91	0.52
23:O:19:LYS:NZ	23:O:19:LYS:CB	2.73	0.52
23:O:53:VAL:HG23	23:O:62:ALA:HB2	1.91	0.52
1:1:439:U:C4	28:T:3:HIS:CE1	2.93	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:7:146:U:H5''	30:V:51:ASN:HB2	1.91	0.52
1:1:198:C:C4	1:1:199:A:H1'	2.44	0.52
1:1:931:G:O2'	1:1:932:C:H3'	2.09	0.52
2:2:1036:G:H2'	2:2:1037:A:C8	2.45	0.52
2:2:1318:OMC:C5'	2:2:1318:OMC:C6	2.85	0.52
2:2:701:U:H3'	2:2:702:A:C8	2.43	0.52
2:2:749:G:C2'	2:2:750:U:O5'	2.58	0.52
4:4:139:U:H2'	4:4:140:G:O4'	2.09	0.52
6:6:10:C:N3	6:6:33:G:N2	2.53	0.52
8:8:117:A:C6	8:8:118:C:C4	2.97	0.52
10:B:58:ARG:NH2	10:B:74:GLU:OE2	2.42	0.52
11:C:30:PRO:HG2	11:C:121:PHE:HE1	1.74	0.52
13:E:8:CYS:HB3	13:E:73:LYS:HE3	1.92	0.52
19:K:71:VAL:HG23	19:K:116:PRO:HA	1.91	0.52
22:N:169:LYS:HE3	22:N:177:LEU:HD13	1.91	0.52
30:V:138:THR:O	30:V:142:ILE:N	2.36	0.52
1:1:1539:G:N7	28:T:27:LYS:HB2	2.25	0.52
1:1:816:G:H22	1:1:823:G:N2	2.06	0.52
1:1:1528:U:N3	2:2:648:A:OP1	2.40	0.52
2:2:677:C:H2'	2:2:678:U:O4'	2.10	0.52
2:2:5:A:H2'	2:2:6:A:C8	2.45	0.52
2:2:1430:A:O2'	5:5:18:G:N7	2.43	0.52
7:7:75:G:O6	7:7:76:C:N4	2.42	0.52
9:A:73:LYS:NZ	9:A:73:LYS:CB	2.73	0.52
14:F:49:ARG:HH11	14:F:181:VAL:CG1	2.21	0.52
15:G:163:PHE:O	15:G:240:ASN:ND2	2.43	0.52
1:1:1683:G:O3'	1:1:1718:G:N2	2.40	0.52
1:1:1729:A:C3'	1:1:1729:A:N3	2.73	0.52
1:1:273:A:O2'	1:1:275:A:N7	2.43	0.52
1:1:910:G:O2'	1:1:912:C:O2	2.26	0.52
2:2:1252:A:H2'	2:2:1253:G:O4'	2.10	0.52
2:2:1433:U:H2'	2:2:1434:G:C8	2.44	0.52
2:2:706:U:OP1	2:2:706:U:H4'	2.08	0.52
3:3:108:A:H1'	3:3:109:C:OP2	2.09	0.52
8:8:44:A:N7	8:8:45:U:C4	2.78	0.52
10:B:168:LEU:HD12	10:B:180:LYS:O	2.10	0.52
13:E:23:ARG:HH21	13:E:24:LYS:HZ1	1.58	0.52
17:I:84:GLU:HA	17:I:118:VAL:HG22	1.92	0.52
18:J:66:LYS:HA	18:J:72:ARG:HH12	1.74	0.52
21:M:173:GLY:HA3	21:M:184:LEU:CD1	2.40	0.52
26:R:92:MET:SD	26:R:112:LEU:HD21	2.49	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:S:63:ILE:HB	27:S:75:ILE:HG12	1.91	0.52
2:2:1334:G:H1	2:2:1345:C:H42	1.56	0.52
2:2:29:C:O2'	2:2:30:A:H8	1.92	0.52
6:6:20:A:OP2	6:6:20:A:H3'	2.09	0.52
6:6:24:C:O2'	6:6:25:U:O5'	2.24	0.52
1:1:1475:G:OP2	11:C:204:ARG:NH2	2.43	0.52
15:G:143:MET:HE2	21:M:29:GLU:HA	1.90	0.52
13:E:59:TRP:CZ2	19:K:64:TYR:CB	2.93	0.52
20:L:70:LYS:HE2	20:L:125:TYR:CD2	2.44	0.52
1:1:454:U:P	28:T:62:ARG:HH22	2.32	0.52
1:1:499:C:H42	1:1:554:A:H61	1.56	0.52
1:1:843:C:H2'	1:1:844:C:C6	2.44	0.52
1:1:975:G:N3	2:2:660:G:O2'	2.38	0.52
2:2:1290:A:H5'	2:2:1291:C:H5	1.75	0.52
2:2:685:G:H1	2:2:754:U:H3	1.57	0.52
3:3:179:U:H2'	3:3:180:G:O4'	2.10	0.52
6:6:35:U:O2	6:6:35:U:H2'	2.08	0.52
10:B:368:THR:N	10:B:378:GLN:HE22	2.06	0.52
11:C:100:MET:CE	11:C:103:PRO:HA	2.40	0.52
11:C:39:VAL:HG13	11:C:114:ILE:HD13	1.90	0.52
22:N:123:ASN:OD1	22:N:124:GLY:N	2.43	0.52
1:1:652:A:H1'	1:1:653:A:C8	2.45	0.52
2:2:1153:OMU:HM23	2:2:1153:OMU:O2	2.10	0.52
2:2:1254:OMG:HM21	2:2:1256:A:H2'	1.91	0.52
1:1:1602:U:C5	2:2:18:A:N1	2.74	0.52
5:5:42:G:OP2	5:5:104:G:N2	2.43	0.52
9:A:60[B]:ARG:NH1	9:A:73:LYS:HD2	2.25	0.52
10:B:122:TRP:O	10:B:127:GLN:NE2	2.41	0.52
10:B:173:ASN:HD22	10:B:174[A]:HIS:N	2.07	0.52
18:J:27:CYS:SG	18:J:36:LEU:HG	2.50	0.52
22:N:98:ARG:NH1	22:N:122:PRO:HG3	2.25	0.52
23:O:83:LEU:N	23:O:84:PRO:HD2	2.25	0.52
29:U:40:SER:O	29:U:44:LEU:N	2.39	0.52
2:2:811:U:O2'	2:2:812:C:O5'	2.23	0.51
2:2:996:G:O2'	2:2:997:C:OP1	2.26	0.51
16:H:219:PHE:HE1	19:K:163:SER:HB3	1.76	0.51
19:K:164:THR:HG23	19:K:166:PHE:H	1.75	0.51
21:M:62:PHE:O	21:M:131:GLU:HA	2.09	0.51
1:1:1274:G:OP1	13:E:1:MET:N	2.31	0.51
1:1:1276:U:H2'	1:1:1277:G:C8	2.45	0.51
1:1:497:A:O2'	1:1:498:G:H8	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1151:U:O2'	2:2:1152:U:H5''	2.10	0.51
2:2:708:G:N7	2:2:740:A:O2'	2.35	0.51
6:6:34:C:O2	6:6:34:C:H2'	2.10	0.51
7:7:161:C:H2'	7:7:161:C:O2	2.11	0.51
11:C:59:MET:SD	11:C:91:PHE:HB2	2.50	0.51
16:H:103:ARG:NH1	16:H:103:ARG:CG	2.72	0.51
21:M:26:ARG:HA	21:M:29:GLU:OE1	2.10	0.51
28:T:3:HIS:CD2	28:T:4:TYR:HB2	2.46	0.51
1:1:1015:G:H4'	20:L:30:SER:HB3	1.91	0.51
1:1:244:C:H42	1:1:248:A:N6	2.04	0.51
1:1:994:U:H5	1:1:1523:G:OP1	1.93	0.51
2:2:1037:A:H2'	2:2:1038:G:C8	2.45	0.51
2:2:424:U:H2'	9:A:152:SER:HB3	1.92	0.51
2:2:830:U:H5''	2:2:955:A:N6	2.24	0.51
6:6:56:A:O2'	15:G:136:ARG:NH1	142.91	0.51
1:1:1185:U:H5	22:N:102:MET:HE2	1.75	0.51
22:N:79:ARG:HH12	22:N:150:GLU:HB3	1.74	0.51
23:O:172:ALA:HB1	23:O:177:MET:HG3	1.92	0.51
25:Q:32:ILE:HD11	25:Q:49:PHE:HB3	1.92	0.51
33:Y:10:VAL:HA	33:Y:24:VAL:HA	1.91	0.51
1:1:1263:A:H4'	1:1:1264:A:O5'	2.11	0.51
1:1:687:C:H2'	1:1:688:A:C8	2.46	0.51
2:2:1120:A:N6	2:2:1128:G:O6	2.43	0.51
2:2:363:C:O2'	4:4:108:G:H1'	2.09	0.51
2:2:534:OMG:H3'	2:2:535:U:C5	2.45	0.51
2:2:760:U:OP2	2:2:1013:U:N3	2.41	0.51
10:B:371:LYS:N	10:B:371:LYS:CD	2.74	0.51
13:E:172:ARG:HH11	13:E:173:LYS:HZ1	1.58	0.51
15:G:185:GLU:HG3	15:G:190:ARG:HB2	1.91	0.51
17:I:29:VAL:HG12	17:I:31:LEU:HG	1.93	0.51
24:P:65:SER:HA	24:P:99:MET:HG3	1.92	0.51
33:Y:83:THR:OG1	33:Y:84:ARG:N	2.32	0.51
1:1:801:G:H1	1:1:1028:A:H2	1.58	0.51
1:1:1158:U:C4	1:1:1159:A:H1'	2.45	0.51
1:1:1682:U:O2'	1:1:1683:G:N7	2.42	0.51
1:1:222:A:H2'	1:1:223:A:C8	2.43	0.51
1:1:240:U:H2'	1:1:241:G:H8	1.74	0.51
2:2:1131:A:N3	23:O:23:ARG:NH1	2.57	0.51
4:4:168:A:HO2'	4:4:169:A:P	2.32	0.51
6:6:14:A:C4'	6:6:15:C:OP1	2.58	0.51
6:6:22:G:C5	6:6:26:G:N2	2.78	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:6:46:C:H42	14:F:179:ARG:HE	1.56	0.51
6:6:8:A:H2'	6:6:9:U:C6	2.45	0.51
15:G:185:GLU:OE2	15:G:193:ARG:NH2	2.44	0.51
16:H:79:ARG:HH21	16:H:84:PRO:HG3	1.75	0.51
18:J:25:VAL:O	18:J:36:LEU:N	2.44	0.51
1:1:304:G:N2	21:M:50:MET:O	2.43	0.51
1:1:1116:A:N3	1:1:1118:A:N6	2.58	0.51
1:1:1221:G:H1	1:1:1405:U:H3	1.58	0.51
1:1:1259:C:H2'	1:1:1260:G:H4'	1.93	0.51
1:1:1674:U:H3	1:1:1728:G:N2	2.08	0.51
1:1:696:A:H2'	1:1:697:A:C8	2.45	0.51
2:2:1090:A:H2'	2:2:1091:G:H8	1.75	0.51
2:2:1441:G:O2'	2:2:1443:G:N2	2.44	0.51
2:2:449:U:H2'	2:2:450:C:C6	2.46	0.51
2:2:701:U:H3'	2:2:702:A:H8	1.75	0.51
6:6:27:G:N3	6:6:27:G:C5'	2.73	0.51
8:8:42:C:O2'	8:8:43:G:H5''	2.11	0.51
10:B:47:MET:HE1	10:B:182:HIS:O	2.10	0.51
10:B:204:LEU:O	10:B:205:GLU:HG2	2.10	0.51
19:K:155:GLU:HG2	19:K:158:LYS:HE2	1.92	0.51
21:M:120:TRP:HZ2	21:M:123:MET:HG2	1.75	0.51
22:N:30:LYS:HB3	22:N:66:GLU:OE1	2.10	0.51
23:O:101:THR:HA	23:O:104:LEU:HB3	1.91	0.51
23:O:22:ARG:NE	23:O:28:THR:OG1	2.44	0.51
1:1:708:A:OP2	24:P:111:ARG:NH1	2.43	0.51
26:R:5:HIS:ND1	26:R:6:LEU:HB2	2.26	0.51
33:Y:22:LYS:NZ	33:Y:127:TRP:O	2.40	0.51
1:1:157:U:H2'	1:1:158:A:H4'	1.92	0.51
1:1:238:A:OP2	50:1:1929:HOH:O	2.18	0.51
1:1:670:C:H2'	1:1:671:G:C8	2.46	0.51
1:1:739:U:H2'	1:1:740:C:C6	2.46	0.51
2:2:1151:U:O2'	2:2:1152:U:H5'	2.10	0.51
6:6:42:A:H1'	6:6:43:A:N7	2.25	0.51
7:7:135:U:H2'	7:7:136:G:O4'	2.10	0.51
10:B:338:PRO:HD2	10:B:341:ARG:HD2	1.93	0.51
14:F:188:ASP:HB2	14:F:193:TRP:CZ2	2.46	0.51
15:G:247:LEU:HD12	21:M:45:PRO:HG2	1.92	0.51
24:P:112:PHE:CZ	24:P:127:CYS:HB2	2.46	0.51
30:V:65:VAL:HG23	30:V:66:ILE:H	1.74	0.51
1:1:1659:G:H1'	2:2:414:G:N2	2.20	0.51
1:1:452:C:H2'	1:1:453:G:C8	2.45	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:913:C:OP2	50:1:1952:HOH:O	2.19	0.51
2:2:1254:OMG:C5	2:2:1309:C:O2'	2.62	0.51
2:2:535:U:HO2'	2:2:536:C:H5'	1.73	0.51
2:2:745:G:H2'	2:2:746:A:C8	2.46	0.51
11:C:139:ARG:HH11	11:C:240:PRO:HD2	1.76	0.51
13:E:19:ASP:OD1	13:E:26:THR:N	2.44	0.51
14:F:173:GLU:O	14:F:177:TYR:N	2.39	0.51
21:M:108:LYS:HE3	21:M:161:GLN:NE2	2.26	0.51
1:1:1613:G:OP2	28:T:127:ARG:NH2	2.44	0.51
30:V:83:ASN:H	30:V:128:ARG:NH1	2.09	0.51
1:1:559:G:HO2'	1:1:560:G:H8	1.54	0.51
1:1:669:C:O2	1:1:684:G:N2	2.31	0.51
1:1:84:G:H4'	1:1:85:U:H5'	1.93	0.51
2:2:780:G:O6	2:2:812:C:N4	2.44	0.51
10:B:365:PHE:HE2	10:B:367:ASP:OD1	1.91	0.51
14:F:23:SER:O	14:F:25:GLU:N	2.35	0.51
14:F:76:ILE:H	14:F:76:ILE:HD12	1.75	0.51
2:2:1445:G:N2	16:H:119:SER:O	2.39	0.51
16:H:208:MET:SD	19:K:181:TRP:CD2	3.04	0.51
20:L:75:LEU:HD21	20:L:109:LEU:HD11	1.93	0.51
22:N:191:GLU:HG2	22:N:192:GLN:H	1.75	0.51
23:O:76:MET:HE2	23:O:108:ARG:HB2	1.93	0.51
23:O:41:LYS:N	27:S:69:PRO:O	2.40	0.51
1:1:178:G:N7	1:1:274:A:O2'	2.42	0.51
1:1:547:U:C4	1:1:1393:A:C6	2.99	0.51
2:2:833:U:H3	2:2:952:G:N2	2.09	0.51
5:5:101:C:H1'	5:5:102:U:H5'	1.92	0.51
5:5:24:A:H5''	10:B:123:LYS:HG3	1.91	0.51
6:6:22:G:N3	6:6:22:G:C2'	2.73	0.51
22:N:47:PRO:HD2	22:N:141:LYS:HA	1.92	0.51
22:N:44:ASP:HA	22:N:171:TRP:HZ2	1.76	0.51
1:1:434:U:O2'	31:W:84[A]:ARG:NH1	2.44	0.51
1:1:1375:G:H5'	16:H:101:THR:HG23	1.93	0.50
1:1:1452:U:H2'	1:1:1453:C:C6	2.46	0.50
1:1:159:U:C5	1:1:160:C:C4	2.99	0.50
1:1:567:G:H2'	1:1:568:U:C6	2.45	0.50
1:1:752:G:C4	20:L:110:LEU:HD11	2.46	0.50
1:1:781:A:HO2'	1:1:782:C:C5'	2.24	0.50
2:2:1024:C:O2	2:2:1025:U:H5	1.94	0.50
2:2:533:C:C5	2:2:544:U:C6	2.99	0.50
5:5:6:C:O3'	28:T:74:LYS:NZ	2.39	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:6:10:C:O2'	6:6:12:C:OP2	2.28	0.50
8:8:27:A:N6	8:8:55:U:O4	2.44	0.50
18:J:67:GLY:O	18:J:72:ARG:NH2	2.44	0.50
21:M:168:GLY:HA2	21:M:171:HIS:CD2	2.46	0.50
22:N:150:GLU:O	22:N:154:ARG:HG2	2.11	0.50
26:R:8:HIS:CD2	26:R:66:VAL:HG21	2.46	0.50
1:1:1729:A:N3	1:1:1729:A:C2'	2.74	0.50
1:1:478:C:H2'	1:1:479:A:C8	2.45	0.50
1:1:788:A:H2'	1:1:789:U:O4'	2.11	0.50
2:2:1239:G:O6	20:L:42:ARG:NH2	2.40	0.50
2:2:1383:U:H1'	10:B:256:CYS:SG	2.50	0.50
2:2:622:G:H2'	2:2:623:A:C8	2.46	0.50
2:2:777:A:H62	2:2:812:C:H6	1.59	0.50
6:6:22:G:C6	6:6:26:G:N2	2.80	0.50
16:H:58:GLN:HA	16:H:156:VAL:HG13	1.93	0.50
19:K:88:ILE:HD12	19:K:88:ILE:N	2.26	0.50
20:L:4:ARG:H	20:L:4:ARG:HD3	1.77	0.50
25:Q:147:ASN:OD1	25:Q:148:GLU:N	2.40	0.50
1:1:1236:A:OP2	50:1:1960:HOH:O	2.19	0.50
1:1:409:U:HO2'	1:1:410:U:P	2.32	0.50
1:1:700:A:H4'	24:P:172:TYR:CE1	2.46	0.50
1:1:847:OMU:H2'	1:1:848:U:H5''	1.92	0.50
2:2:971:A:N7	15:G:118:ASN:HB2	2.27	0.50
4:4:33:G:H21	4:4:171:A:H2	1.58	0.50
6:6:26:G:N3	6:6:26:G:C3'	2.73	0.50
6:6:56:A:C2	6:6:58:U:OP2	2.64	0.50
9:A:133:TYR:HE1	9:A:135:ILE:HD11	1.74	0.50
13:E:91:VAL:HG22	13:E:180:VAL:HA	1.91	0.50
1:1:1512:C:OP2	11:C:194:LYS:NZ	2.32	0.50
1:1:1773:U:H2'	1:1:1774:G:C8	2.46	0.50
1:1:780:C:H2'	1:1:781:A:C8	2.46	0.50
2:2:1255:G:H1	2:2:1259:A:N6	2.04	0.50
2:2:14:C:OP2	30:V:95:LYS:HD3	2.11	0.50
1:1:1590:G:N2	2:2:56:U:O4	2.37	0.50
8:8:110:G:H1'	8:8:111:U:H5'	1.93	0.50
13:E:111:VAL:HB	13:E:121:ARG:HB2	1.93	0.50
15:G:128:ALA:HB1	30:V:31:THR:HG21	1.93	0.50
16:H:107:PRO:O	16:H:113:GLY:HA3	2.11	0.50
21:M:193:ARG:O	21:M:197:ARG:HG3	2.12	0.50
25:Q:99:LEU:HD11	25:Q:103:ARG:CZ	2.42	0.50
31:W:28:MET:HB3	31:W:98:PRO:HG2	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:Z:113:ARG:O	34:Z:117:ILE:HG13	2.11	0.50
1:1:1483:G:O2'	1:1:1508:G:O6	2.30	0.50
1:1:1548:A:N6	1:1:1584:A:HO2'	2.09	0.50
1:1:930:U:H3'	1:1:931:G:C5'	2.40	0.50
2:2:1012:G:O2'	2:2:1013:U:OP2	2.25	0.50
1:1:1547:G:H4'	4:4:106:G:H22	1.76	0.50
4:4:33:G:H5''	10:B:98:GLY:HA3	1.94	0.50
4:4:77:U:C2	10:B:75:PRO:HB3	2.46	0.50
10:B:173:ASN:HD22	10:B:174[B]:HIS:N	2.07	0.50
10:B:365:PHE:C	10:B:366:ILE:HD12	2.31	0.50
11:C:127:LEU:HD22	11:C:250:TRP:HZ2	1.76	0.50
13:E:126:PRO:HD3	13:E:156:GLU:CD	2.32	0.50
15:G:227:ALA:HB1	15:G:233:ALA:HB2	1.93	0.50
2:2:800:G:O5'	15:G:301[A]:ARG:NH1	2.44	0.50
16:H:79:ARG:HA	16:H:88:PRO:HD2	1.94	0.50
2:2:603:A:H5'	28:T:137:THR:OG1	2.11	0.50
1:1:1729:A:C6	1:1:1730:A:N6	2.80	0.50
1:1:282:C:H2'	1:1:283:G:C8	2.47	0.50
1:1:491:A:O4'	6:6:54:A:C2	2.65	0.50
1:1:520:G:N2	1:1:531:C:N3	2.44	0.50
2:2:468:A:HO2'	2:2:469:G:P	2.35	0.50
2:2:509:C:H2'	2:2:510:U:C6	2.46	0.50
2:2:638:C:O2'	10:B:271:ARG:NH1	2.43	0.50
2:2:958:C:O2	2:2:958:C:H2'	2.10	0.50
9:A:192:LYS:HB3	9:A:193:ARG:NH2	2.27	0.50
9:A:62:GLU:OE1	9:A:71:ARG:NH2	2.45	0.50
10:B:28:ARG:H	10:B:279:HIS:CE1	2.30	0.50
10:B:96:PRO:HD3	16:H:175:LEU:CD1	2.41	0.50
15:G:306:ARG:O	15:G:310:ARG:HD3	2.12	0.50
2:2:1446:A:H3'	16:H:129:ASN:ND2	2.26	0.50
16:H:30:LYS:HB2	16:H:55:ARG:NH2	2.26	0.50
19:K:110:ASN:OD1	19:K:111:LEU:N	2.44	0.50
6:6:14:A:OP2	19:K:42:VAL:HB	2.11	0.50
1:1:1135:U:H3'	1:1:1136:G:C8	2.47	0.50
1:1:1166:C:H2'	1:1:1167:C:C6	2.46	0.50
1:1:173:G:C4	1:1:174:U:H1'	2.47	0.50
1:1:229:C:O2'	1:1:230:A:H8	1.95	0.50
1:1:452:C:H2'	1:1:453:G:H8	1.76	0.50
1:1:664:C:C2'	1:1:665:C:H5'	2.42	0.50
1:1:681:A2M:H2'	1:1:682:C:C6	2.47	0.50
2:2:1089:G:H1	2:2:1137:U:H3	1.60	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1443:G:H4'	2:2:1444:A:O5'	2.10	0.50
2:2:628:A2M:OP1	16:H:103:ARG:CZ	2.58	0.50
3:3:93:G:H2'	3:3:94:G:O4'	2.11	0.50
8:8:11:C:H5''	8:8:12:C:OP2	2.10	0.50
9:A:116:VAL:HG21	9:A:148:LEU:HD11	1.94	0.50
2:2:1005:G:O3'	15:G:117:LYS:O	2.16	0.50
2:2:1005:G:O2'	15:G:119:PHE:CE2	2.57	0.50
1:1:1539:G:O6	28:T:25:HIS:ND1	2.45	0.50
31:W:52:GLU:HA	31:W:66:LYS:HA	1.94	0.50
1:1:129:C:H2'	1:1:130:U:O4'	2.12	0.50
1:1:1489:U:H1'	1:1:1491:U:OP1	2.12	0.50
1:1:1631:G:N2	1:1:1759:U:O2'	2.45	0.50
1:1:232:G:O2'	1:1:233:U:OP1	2.26	0.50
2:2:776:C:H2'	2:2:776:C:O2	2.12	0.50
3:3:108:A:H5''	3:3:109:C:H5	1.77	0.50
3:3:55:U:O2'	3:3:57:U:OP2	2.18	0.50
10:B:153:PHE:O	10:B:157:ALA:HB3	2.12	0.50
7:7:20:C:OP1	11:C:194:LYS:HD2	2.11	0.50
13:E:23:ARG:HB3	13:E:46:ARG:HH22	1.77	0.50
19:K:74:LEU:HD12	19:K:75:ARG:HG3	1.93	0.50
19:K:93:ARG:CG	19:K:108:VAL:HG12	2.42	0.50
1:1:765:C:OP2	20:L:136:LYS:HE2	2.12	0.50
21:M:122:ASN:HD22	21:M:123:MET:N	2.09	0.50
28:T:60:PHE:O	28:T:64:ASN:HB3	2.11	0.50
1:1:1278:G:H1	1:1:1351:C:N4	2.01	0.50
1:1:242:A:H61	1:1:260:C:N4	2.10	0.50
1:1:568:U:O4	1:1:634:G:O6	2.30	0.50
1:1:672:U:OP1	20:L:21:ARG:NH2	2.45	0.50
2:2:772:A:C8	15:G:134:PHE:HZ	2.29	0.50
6:6:34:C:C3'	6:6:35:U:C6	2.85	0.50
6:6:40:C:H5''	6:6:41:G:C8	2.46	0.50
7:7:124:A:H2'	7:7:125:A:C8	2.46	0.50
13:E:149:ASP:O	13:E:153:VAL:HG22	2.12	0.50
16:H:94:PRO:HA	16:H:97:VAL:HB	1.93	0.50
1:1:1161:A:N6	24:P:13:ARG:HD2	2.27	0.50
28:T:41:LEU:HD13	28:T:150:MET:HE2	1.94	0.50
1:1:1032:G:N2	1:1:1164:C:OP1	2.44	0.49
1:1:872:U:C4'	1:1:963:G:H5'	2.42	0.49
2:2:69:A:C2'	2:2:70:A:H5'	2.42	0.49
2:2:700:G:H2'	2:2:701:U:H5''	1.94	0.49
5:5:28:G:O6	5:5:122:C:N4	2.43	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:7:145:G:H2'	7:7:146:U:C6	2.47	0.49
1:1:368:G:H22	7:7:34:U:H3	1.59	0.49
17:I:59:LEU:HD22	17:I:80:PHE:CZ	2.46	0.49
28:T:60:PHE:CE2	28:T:82:ARG:HD2	2.46	0.49
1:1:215:U:H3'	1:1:217:A:H2	1.77	0.49
1:1:306:G:OP2	21:M:44:ARG:NH1	2.41	0.49
2:2:1277:A:C5	2:2:1278:G:H1'	2.47	0.49
2:2:1387:C:P	10:B:249:ARG:HH21	2.36	0.49
2:2:459:A:N6	2:2:479:C:N3	2.60	0.49
2:2:71:OMG:O5'	2:2:71:OMG:H8	1.96	0.49
6:6:42:A:H1'	6:6:43:A:C5	2.47	0.49
17:I:52:PHE:CD1	17:I:53:PRO:HA	2.47	0.49
23:O:103:LEU:HA	23:O:106:ALA:HB3	1.94	0.49
24:P:93:VAL:HB	24:P:112:PHE:CD1	2.48	0.49
1:1:453:G:OP1	28:T:62:ARG:HD3	2.12	0.49
1:1:235:A:H2'	1:1:235:A:N3	2.27	0.49
1:1:291:A:H2'	1:1:292:A:C8	2.43	0.49
1:1:53:G:O2'	21:M:161:GLN:NE2	2.44	0.49
1:1:740:C:C2'	1:1:741:G:H5'	2.40	0.49
1:1:776:U:H3'	1:1:777:G:C8	2.42	0.49
1:1:751:G:O2'	1:1:811:G:H5''	2.11	0.49
1:1:88:G:OP2	50:1:1926:HOH:O	2.20	0.49
2:2:620:C:OP1	2:2:1262:G:O2'	2.30	0.49
3:3:128:C:O2	3:3:128:C:H3'	2.12	0.49
3:3:51:G:H5'	3:3:153:G:O2'	2.13	0.49
4:4:35:G:H5''	16:H:90:HIS:O	2.12	0.49
7:7:76:C:O2'	7:7:77:A:O5'	2.29	0.49
8:8:48:G:N1	8:8:49:U:C2	2.79	0.49
10:B:92:TYR:HD2	10:B:99:LEU:HD13	1.76	0.49
11:C:192:ARG:O	11:C:196:ARG:HD3	2.11	0.49
13:E:104:VAL:HG22	13:E:109:ILE:HG13	1.93	0.49
13:E:108:ASN:HD21	13:E:122:ARG:HB3	1.77	0.49
13:E:161:HIS:CD2	13:E:180:VAL:HG12	2.48	0.49
13:E:182:THR:HG22	13:E:184:THR:OG1	2.12	0.49
13:E:40:HIS:CE1	13:E:41:LEU:HB3	2.46	0.49
17:I:33:GLN:HE21	21:M:202:ARG:HE	1.59	0.49
22:N:193:ARG:HH11	22:N:198:LYS:HE3	1.77	0.49
23:O:18:VAL:HG22	23:O:24:ARG:NH2	2.15	0.49
28:T:36:ILE:HG22	28:T:39:MET:SD	2.52	0.49
1:1:1102:U:O2'	1:1:1103:U:O5'	2.29	0.49
1:1:1554:C:H2'	1:1:1555:G:C8	2.46	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:273:A:H2'	1:1:274:A:H4'	1.94	0.49
1:1:308:A:H2'	1:1:309:G:O4'	2.13	0.49
1:1:543:G:C5'	1:1:543:G:N3	2.73	0.49
2:2:1113:A:O2'	2:2:1114:C:O4'	2.21	0.49
2:2:1398:OMC:HM22	2:2:1399:C:C4'	2.41	0.49
9:A:30:ARG:O	9:A:163:ARG:NH2	2.40	0.49
10:B:248:HIS:CE1	10:B:249:ARG:HD3	2.46	0.49
11:C:10:TYR:CE2	11:C:147:PRO:HB2	2.47	0.49
11:C:207:MET:HB3	11:C:246:ARG:NH2	2.27	0.49
16:H:30:LYS:HE3	16:H:55:ARG:NH2	2.27	0.49
19:K:134:ASP:O	19:K:138:SER:N	2.45	0.49
24:P:89:VAL:HG22	24:P:91:GLY:H	1.78	0.49
7:7:12:A:O2'	28:T:121:GLN:O	2.30	0.49
1:1:1144:G:H2'	1:1:1145:G:C8	2.46	0.49
1:1:1662:U:H4'	1:1:1663:U:O5'	2.11	0.49
1:1:212:U:H3	1:1:221:C:H42	1.59	0.49
1:1:300:A:C2	1:1:301:A:H1'	2.47	0.49
1:1:519:G:H21	1:1:531:C:N4	2.10	0.49
1:1:779:A:OP1	24:P:142:ASN:N	2.46	0.49
1:1:819:C:H2'	1:1:820:U:H4'	1.95	0.49
2:2:1440:U:O2'	2:2:1441:G:H5''	2.12	0.49
2:2:527:A2M:HM'3	2:2:1398:OMC:HM23	1.95	0.49
2:2:373:U:H3	2:2:572:A2M:C2	2.26	0.49
2:2:782:G:C4	2:2:783:U:C5	3.00	0.49
2:2:988:U:H2'	2:2:989:G:C8	2.48	0.49
6:6:7:A:C2	6:6:60:A:N1	2.81	0.49
7:7:41:A:H61	7:7:102:G:C2'	2.25	0.49
2:2:410:C:O2'	9:A:12:ASN:OD1	2.19	0.49
19:K:78:ARG:HH12	19:K:107:HIS:HE1	0.65	0.49
22:N:96:VAL:HA	22:N:125:VAL:HG22	1.94	0.49
25:Q:32:ILE:HD12	25:Q:50:ILE:HD11	1.93	0.49
25:Q:21:ARG:NH2	25:Q:52:ARG:HH11	2.09	0.49
31:W:50:ASP:C	31:W:66:LYS:HE2	2.33	0.49
1:1:777:G:N2	24:P:144:TYR:HA	2.28	0.49
6:6:16:C:H2'	6:6:17:U:O4'	2.13	0.49
6:6:8:A:N6	6:6:34:C:N4	2.60	0.49
3:3:24:C:H5''	9:A:70:ARG:HG2	1.95	0.49
1:1:1530:U:H5''	11:C:75:ILE:CD1	2.43	0.49
16:H:93:ALA:H	16:H:166:TRP:HB2	1.78	0.49
31:W:77:ILE:HD11	31:W:101:VAL:HG21	1.93	0.49
31:W:80:ASP:O	31:W:80:ASP:OD1	2.30	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1165:A:H2'	1:1:1166:C:C6	2.46	0.49
1:1:1576:C:H2'	1:1:1577:G:C8	2.47	0.49
2:2:1021:C:H2'	2:2:1022:A:O4'	2.13	0.49
2:2:768:G:H8	30:V:34:GLN:HE22	1.59	0.49
2:2:969:U:O2'	2:2:970:A:O4'	2.30	0.49
3:3:36:C:H2'	3:3:37:A:C8	2.47	0.49
5:5:113:A:H1'	5:5:114:A:OP2	2.12	0.49
5:5:32:G:H2'	5:5:33:G:H8	1.77	0.49
8:8:109:A:N6	8:8:110:G:O6	2.46	0.49
9:A:113:VAL:HG12	9:A:166:ILE:HD13	1.93	0.49
9:A:192:LYS:HD3	9:A:193:ARG:HH22	1.77	0.49
13:E:108:ASN:OD1	13:E:109:ILE:N	2.44	0.49
14:F:25:GLU:O	14:F:26:TYR:HB3	2.13	0.49
1:1:1368:G:O6	2:2:612:C:O2'	2.29	0.49
1:1:649:U:O2'	1:1:650:G:O4'	2.30	0.49
2:2:455:U:H3'	2:2:456:G:C8	2.46	0.49
2:2:522:G:N2	2:2:562:G:O2'	2.44	0.49
4:4:140:G:N2	4:4:150:A:H62	2.06	0.49
6:6:37:C:C6	14:F:185:LYS:HD3	2.48	0.49
6:6:41:G:H1	19:K:176:ARG:HH11	1.56	0.49
8:8:76:A:N1	8:8:102:A:H5'	2.27	0.49
8:8:27:A:OP2	8:8:27:A:H8	1.96	0.49
10:B:300:GLN:HB3	10:B:312:ILE:HG12	1.93	0.49
1:1:1357:G:H2'	1:1:1358:C:C6	2.48	0.49
1:1:1752:G:H2'	1:1:1754:U:OP2	2.13	0.49
1:1:70:C:H1'	17:I:66:PRO:O	2.13	0.49
2:2:1044:C:H2'	2:2:1045:U:C2	2.48	0.49
2:2:1140:U:H2'	2:2:1141:U:C6	2.48	0.49
2:2:601:G:H4'	28:T:139:TYR:CE1	2.48	0.49
6:6:18:A:H1'	6:6:29:G:H22	1.78	0.49
9:A:79:PRO:HD2	9:A:82:MET:CE	2.42	0.49
10:B:301:ALA:HB2	10:B:312:ILE:HD13	1.94	0.49
16:H:123:TYR:CG	16:H:127:PRO:HG2	2.48	0.49
18:J:81:ILE:HG23	18:J:120:VAL:HG22	1.94	0.49
16:H:200:ALA:HA	19:K:185:VAL:HG11	1.93	0.49
1:1:1677:A:O5'	1:1:1677:A:H8	1.95	0.49
1:1:300:A:C2'	1:1:301:A:H4'	2.43	0.49
1:1:353:C:P	17:I:107:LYS:HE3	2.53	0.49
1:1:1651:G:O2'	2:2:414:G:O2'	2.30	0.49
2:2:94:A:H2'	2:2:95:A:O4'	2.13	0.49
3:3:194:A:H8	3:3:196:A:HO2'	1.59	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:132:C:H4'	5:5:133:A:O5'	2.13	0.49
8:8:29:A:OP2	23:O:56:THR:OG1	2.31	0.49
9:A:237:LEU:HB3	9:A:240:ALA:HB2	1.95	0.49
13:E:137:SER:HA	13:E:140:LYS:HD3	1.95	0.49
2:2:1012:G:N2	15:G:153:ARG:NH1	2.61	0.49
15:G:166:VAL:HG21	15:G:266:LYS:CD	2.40	0.49
16:H:188:GLU:HA	16:H:191:ALA:HB2	1.94	0.49
17:I:16:HIS:HD2	17:I:23:GLN:HG3	1.78	0.49
26:R:14:ARG:HG2	26:R:26:VAL:HG22	1.94	0.49
1:1:1629:U:O4	30:V:119:PRO:HG3	2.13	0.49
34:Z:18:PHE:O	34:Z:28:SER:HA	2.13	0.49
1:1:1505:G:H2'	1:1:1507:U:C6	2.48	0.48
2:2:393:A:H2'	2:2:394:U:O4'	2.14	0.48
2:2:483:C:O2'	2:2:484:G:O4'	2.25	0.48
2:2:749:G:H2'	2:2:750:U:H6	1.74	0.48
5:5:102:U:H2'	5:5:103:U:C6	2.47	0.48
5:5:36:U:H2'	5:5:37:G:O4'	2.12	0.48
6:6:5:C:N4	6:6:6:G:C6	2.81	0.48
9:A:60[B]:ARG:HD2	9:A:73:LYS:HD2	1.95	0.48
10:B:376:ARG:HD3	32:X:37:ARG:HH12	1.78	0.48
2:2:1277:A:OP1	22:N:154:ARG:NH1	2.46	0.48
25:Q:98:ARG:NH2	25:Q:132:PHE:O	2.46	0.48
26:R:29:PHE:CZ	26:R:43:PHE:HA	2.47	0.48
2:2:1164:U:O2'	27:S:90:CYS:O	2.30	0.48
34:Z:53:VAL:HG12	34:Z:54:LYS:H	1.77	0.48
1:1:113:C:P	21:M:147:ARG:HE	2.36	0.48
1:1:1169:A:N3	1:1:1461:G:O2'	2.46	0.48
1:1:1472:G:N2	1:1:1518:C:O2	2.31	0.48
1:1:1674:U:H3	1:1:1728:G:H21	1.62	0.48
1:1:215:U:H3'	1:1:217:A:C2	2.47	0.48
1:1:494:A:H2'	1:1:495:C:C6	2.48	0.48
1:1:956:U:C4'	9:A:14:SER:HB2	2.44	0.48
1:1:959:OMG:H2'	1:1:959:OMG:N3	2.28	0.48
2:2:427:C:H5''	9:A:193:ARG:NH1	2.28	0.48
3:3:57:U:O2'	3:3:58:C:P	2.71	0.48
2:2:1446:A:H1'	4:4:174:A:O2'	2.12	0.48
6:6:10:C:C2'	6:6:13:C:H41	2.07	0.48
7:7:12:A:H2'	7:7:13:U:C6	2.48	0.48
10:B:248:HIS:ND1	10:B:249:ARG:HD3	2.28	0.48
15:G:253:ASN:ND2	15:G:253:ASN:O	2.41	0.48
17:I:61:PRO:HD2	17:I:77:GLY:O	2.12	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:M:7:LEU:HB3	21:M:46:GLU:HG2	1.94	0.48
22:N:60:ILE:HG23	22:N:160:PRO:HD2	1.94	0.48
23:O:31:HIS:HD2	23:O:34:ARG:HH21	1.57	0.48
26:R:32:PHE:HE2	26:R:128:VAL:HG21	1.77	0.48
1:1:1414:A:H8	1:1:1414:A:OP2	1.96	0.48
1:1:35:U:O3'	1:1:986:U:H4'	2.13	0.48
1:1:708:A:O2'	1:1:710:G:O2'	2.31	0.48
2:2:100:U:H2'	2:2:101:G:C8	2.47	0.48
2:2:572:A2M:O2'	2:2:573:U:H5'	2.12	0.48
5:5:125:A:C6	5:5:126:G:N1	2.82	0.48
6:6:5:C:H2'	6:6:6:G:H5'	1.94	0.48
10:B:288:TYR:OH	10:B:332:LYS:HG3	2.13	0.48
13:E:126:PRO:HD3	13:E:156:GLU:OE2	2.13	0.48
13:E:24:LYS:HZ3	13:E:38:LEU:H	1.60	0.48
1:1:848:U:O2	17:I:11:VAL:HG11	2.12	0.48
19:K:73:ILE:HA	19:K:113:ASN:O	2.13	0.48
23:O:105:LEU:O	23:O:109:THR:HG23	2.13	0.48
26:R:12:VAL:HG23	26:R:28:LYS:HB3	1.94	0.48
1:1:765:C:H2'	1:1:766:A:H8	1.79	0.48
8:8:12:C:O2	8:8:15:A:H2	1.96	0.48
14:F:38:ILE:HG21	14:F:177:TYR:CE2	2.49	0.48
16:H:27:ILE:HD11	16:H:139:ILE:HG13	1.94	0.48
22:N:34:PHE:HD1	22:N:89:THR:HB	1.77	0.48
1:1:1548:A:N6	1:1:1584:A:H4'	2.27	0.48
1:1:22:C:H2'	1:1:23:U:H5'	1.94	0.48
1:1:787:A:N7	1:1:788:A:H8	2.11	0.48
1:1:892:C:H2'	1:1:893:G:C8	2.49	0.48
2:2:1317:G:C6	2:2:1387:C:N3	2.81	0.48
2:2:541:A:C8	18:J:39:ILE:HD12	2.49	0.48
2:2:776:C:O2'	2:2:777:A:O4'	2.27	0.48
2:2:962:C:N4	2:2:963:G:O6	2.46	0.48
3:3:182:G:OP2	3:3:182:G:H8	1.97	0.48
3:3:201:A:H2'	3:3:202:A:C8	2.48	0.48
3:3:97:U:O2'	3:3:98:G:H8	1.97	0.48
4:4:43:U:H2'	4:4:44:G:C8	2.49	0.48
6:6:8:A:H61	6:6:34:C:N4	2.12	0.48
6:6:3:A:H2'	6:6:4:U:H5''	1.95	0.48
7:7:164:U:H5''	7:7:165:G:OP1	2.13	0.48
9:A:19:HIS:CD2	9:A:192:LYS:O	2.66	0.48
13:E:145:PHE:HD2	13:E:157:ALA:HB2	1.78	0.48
1:1:1092:U:OP1	1:1:1092:U:H4'	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:114:G:H2'	1:1:115:U:O4'	2.13	0.48
2:2:342:U:O2	2:2:343:U:N3	2.46	0.48
2:2:966:C:H5''	2:2:967:U:OP2	2.12	0.48
2:2:971:A:C5	15:G:118:ASN:HB2	2.48	0.48
3:3:155:U:H2'	3:3:156:C:O4'	2.13	0.48
5:5:46:G:H2'	5:5:47:G:C8	2.49	0.48
7:7:119:G:C2'	7:7:120:G:H5'	2.43	0.48
9:A:60[B]:ARG:HD2	9:A:73:LYS:CD	2.44	0.48
13:E:93:CYS:SG	13:E:94:ALA:N	2.86	0.48
19:K:180:HIS:HA	19:K:183:ARG:CD	2.42	0.48
9:A:108:THR:CG2	21:M:146:PRO:HG2	86.11	0.48
22:N:57:LEU:HA	22:N:130:ARG:HA	1.96	0.48
22:N:98:ARG:HB3	22:N:120:GLY:HA3	1.95	0.48
27:S:80:VAL:HG21	27:S:85:LEU:HD23	1.96	0.48
1:1:447:G:H1'	7:7:15:G:N2	2.29	0.48
1:1:454:U:H3	7:7:9:G:H1	1.61	0.48
2:2:1159:A:H3'	2:2:1160:OMC:H6	1.78	0.48
2:2:822:G:C6	2:2:823:A:C6	3.02	0.48
9:A:173:GLY:O	9:A:176:GLU:HG2	2.13	0.48
10:B:25:ILE:HG22	10:B:277:TYR:CE1	2.46	0.48
3:3:182:G:C4'	16:H:36:ARG:HH12	126.38	0.48
17:I:123:THR:O	17:I:126:SER:OG	2.23	0.48
18:J:78:ALA:N	18:J:105:VAL:HG22	2.29	0.48
23:O:19:LYS:CB	23:O:19:LYS:HZ3	2.26	0.48
26:R:115:ARG:HG3	26:R:116:HIS:ND1	2.29	0.48
31:W:40:TYR:CG	31:W:116:LEU:HD21	2.48	0.48
1:1:1042:G:N1	1:1:1109:U:H5	2.12	0.48
1:1:1446:A:C8	34:Z:24:GLY:HA3	2.49	0.48
1:1:766:A:N6	1:1:767:U:O2	2.47	0.48
2:2:1029:A:H2'	2:2:1030:G:C8	2.49	0.48
3:3:82:G:H2'	3:3:83:G:N7	2.29	0.48
5:5:13:C:C4	10:B:340:ARG:O	2.67	0.48
9:A:65:HIS:HD2	9:A:68:LYS:N	2.08	0.48
9:A:79:PRO:HD2	9:A:82:MET:HE2	1.96	0.48
19:K:73:ILE:HG21	19:K:109:GLN:NE2	2.29	0.48
1:1:1185:U:H4'	22:N:8:CYS:HB3	1.95	0.48
1:1:1150:A:OP1	27:S:116:LEU:HD21	2.14	0.48
32:X:54:PRO:HA	32:X:59:TYR:CD2	2.48	0.48
1:1:248:A:H2'	11:C:221:ASN:OD1	2.14	0.48
1:1:244:C:N4	1:1:248:A:H61	2.05	0.48
1:1:287:C:H2'	1:1:288:A:O4'	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:33:A:C8	1:1:46:A:N6	2.81	0.48
1:1:947:A:N1	2:2:393:A:O2'	2.39	0.48
2:2:512:U:H2'	2:2:513:C:H6	1.79	0.48
2:2:967:U:H4'	2:2:968:G:C8	2.49	0.48
3:3:78:C:HO2'	3:3:79:U:P	2.33	0.48
6:6:26:G:H3'	6:6:27:G:H4'	1.96	0.48
6:6:52:G:H8	6:6:52:G:OP2	1.96	0.48
1:1:967:G:O4'	9:A:205:ASN:ND2	2.47	0.48
11:C:297:ARG:HA	11:C:300:LEU:HG	1.95	0.48
2:2:1012:G:C6	15:G:324:SER:HA	2.49	0.48
16:H:28:ASP:OD1	16:H:29:LEU:N	2.47	0.48
21:M:71:ARG:HG2	21:M:94:LEU:CB	2.33	0.48
1:1:1050:G:H4'	8:8:104:C:O2'	2.13	0.48
1:1:1262:G:C2	1:1:1263:A:H2'	2.48	0.48
2:2:528:U:O2	2:2:556:U:H4'	2.13	0.48
2:2:667:OMU:C4'	2:2:667:OMU:H6	2.44	0.48
2:2:984:G:H2'	2:2:985:G:C8	2.49	0.48
3:3:45:C:H2'	3:3:46:A:H8	1.78	0.48
6:6:21:A:H1'	6:6:22:G:OP1	2.14	0.48
2:2:1442:C:H42	6:6:3:A:H61	1.61	0.48
6:6:49:C:H5'	14:F:45:ARG:HH12	1.79	0.48
6:6:5:C:C2'	6:6:6:G:H5'	2.43	0.48
7:7:164:U:O4	15:G:133:ARG:HA	2.13	0.48
11:C:257:GLN:HB3	11:C:261:ILE:HG23	1.96	0.48
4:4:52:A:H1'	13:E:174:PHE:HD2	1.79	0.48
15:G:199:GLU:O	15:G:203:LYS:HD3	2.14	0.48
15:G:193:ARG:NH1	15:G:214:PRO:HD3	2.28	0.48
16:H:192:LYS:HA	16:H:195:GLU:OE1	2.14	0.48
19:K:81:ARG:CZ	19:K:102:ALA:O	2.62	0.48
22:N:49:CYS:SG	22:N:172:GLY:HA2	2.53	0.48
24:P:136:ILE:O	24:P:136:ILE:HG13	2.14	0.48
27:S:75:ILE:HA	27:S:87:LYS:O	2.14	0.48
1:1:35:U:C2'	1:1:36:OMU:C5'	2.86	0.47
1:1:454:U:O2'	1:1:455:G:O5'	2.32	0.47
2:2:1090:A:H2'	2:2:1091:G:C8	2.48	0.47
2:2:467:G:HO2'	2:2:468:A:H2	1.60	0.47
2:2:540:C:O2'	2:2:541:A:O5'	2.32	0.47
2:2:544:U:O2'	2:2:545:A:H5'	2.14	0.47
2:2:739:C:H2'	2:2:740:A:H5'	1.96	0.47
1:1:1751:G:H5'	3:3:150:G:H5''	1.96	0.47
3:3:195:A:C8	3:3:195:A:H5''	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:32:G:H2'	5:5:33:G:C8	2.48	0.47
6:6:13:C:C4	6:6:14:A:N6	2.81	0.47
10:B:310:LYS:NZ	10:B:368:THR:OG1	2.47	0.47
13:E:16:VAL:HG21	13:E:80:ILE:HG23	1.96	0.47
20:L:50:PRO:HG3	24:P:162:SER:O	2.14	0.47
21:M:173:GLY:HA3	21:M:184:LEU:HD12	1.97	0.47
21:M:71:ARG:HD3	21:M:71:ARG:C	2.34	0.47
1:1:1123:G:O2'	1:1:1124:C:H5''	2.14	0.47
2:2:789:G:H2'	2:2:790:U:H5'	1.96	0.47
10:B:310:LYS:HE2	10:B:368:THR:CG2	2.43	0.47
11:C:207:MET:CB	11:C:226:ASP:HB3	2.45	0.47
15:G:146:LYS:HB3	21:M:28:TRP:CH2	2.42	0.47
15:G:262:TYR:CZ	15:G:307:PHE:HB3	2.49	0.47
19:K:94:VAL:HG23	19:K:109:GLN:O	2.14	0.47
28:T:124:ARG:HA	28:T:143:PRO:HD2	1.97	0.47
1:1:171:U:H3	1:1:287:C:H1'	1.79	0.47
1:1:429:G:H5''	28:T:18:LYS:HD3	1.96	0.47
1:1:555:U:H2'	1:1:556:U:C6	2.49	0.47
7:7:119:G:H2'	7:7:120:G:H5'	1.95	0.47
7:7:75:G:C6	7:7:76:C:C4	3.02	0.47
9:A:116:VAL:HG12	9:A:164:ALA:HB1	1.96	0.47
9:A:242:ARG:NH2	9:A:246:ILE:HA	2.29	0.47
3:3:25:A:H4'	9:A:71:ARG:HH11	1.77	0.47
10:B:165:HIS:HB2	10:B:181:ALA:HB1	1.97	0.47
11:C:290:ILE:HA	11:C:293:SER:HB2	1.95	0.47
22:N:59:GLN:NE2	22:N:128:ARG:HG3	2.28	0.47
24:P:101:ARG:NH2	24:P:101:ARG:CG	2.72	0.47
26:R:76:TYR:O	26:R:96:PHE:N	2.47	0.47
30:V:68:TYR:HE1	30:V:88:ILE:HD12	1.79	0.47
1:1:1268:G:H2'	1:1:1269:G:C8	2.48	0.47
1:1:245:C:H4'	1:1:247:A:N7	2.30	0.47
1:1:489:C:H2'	1:1:490:C:O4'	2.15	0.47
1:1:636:U:H2'	1:1:637:C:C2	2.49	0.47
1:1:801:G:N2	1:1:1027:U:O3'	2.48	0.47
2:2:1158:U:OP2	24:P:165:PRO:HD2	2.14	0.47
2:2:1077:G:O2'	2:2:1186:A2M:H2	2.13	0.47
2:2:646:G:O2'	2:2:647:A:OP1	2.23	0.47
5:5:17:C:N3	28:T:69:ARG:NH2	2.61	0.47
6:6:20:A:H4'	6:6:21:A:OP1	2.13	0.47
7:7:43:A:O2'	7:7:44:A:H8	1.97	0.47
10:B:319:VAL:O	10:B:339:ARG:HD2	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:B:43:LEU:O	10:B:213:VAL:HG13	2.14	0.47
14:F:189:ALA:O	14:F:192:ARG:HB2	2.15	0.47
14:F:87:THR:HG22	14:F:89:THR:H	1.79	0.47
16:H:79:ARG:NH2	16:H:84:PRO:HG3	2.30	0.47
24:P:182:ARG:HA	24:P:188:ARG:CB	2.44	0.47
28:T:93:SER:HA	28:T:96:LYS:HG2	1.96	0.47
1:1:169:G:H4'	1:1:170:U:H5'	1.96	0.47
1:1:748:A:H2'	1:1:749:A:C8	2.49	0.47
1:1:814:C:H2'	1:1:815:G:H8	1.79	0.47
1:1:832:G:OP1	24:P:170[B]:LYS:HE3	2.14	0.47
2:2:1233:G:H1'	2:2:1234:U:C6	2.50	0.47
3:3:129:G:N3	3:3:129:G:H2'	2.28	0.47
6:6:20:A:C2	6:6:27:G:N7	2.82	0.47
7:7:121:G:O2'	7:7:122:A:O5'	2.30	0.47
11:C:191:GLY:H	11:C:194:LYS:HZ2	1.60	0.47
16:H:219:PHE:CE1	19:K:163:SER:HB3	2.50	0.47
18:J:28:ALA:HB3	18:J:81:ILE:HD12	1.97	0.47
19:K:78:ARG:N	19:K:78:ARG:HD2	2.30	0.47
20:L:102:GLN:NE2	20:L:144:GLN:OE1	2.23	0.47
23:O:147:PRO:HG2	23:O:178:ALA:HB2	1.97	0.47
33:Y:113:ARG:O	33:Y:117:GLN:HG3	2.14	0.47
16:H:77:ARG:HG2	33:Y:16:GLY:O	133.90	0.47
1:1:1726:C:H2'	1:1:1727:U:O4'	2.14	0.47
2:2:443:OMC:C5'	2:2:488:A:N6	2.54	0.47
1:1:346:U:O2'	2:2:468:A:H8	1.97	0.47
10:B:167:GLN:HB3	10:B:170:LYS:HB2	1.96	0.47
13:E:62:SER:HB3	13:E:65:PRO:HD2	1.95	0.47
18:J:104:ILE:N	18:J:104:ILE:CD1	2.73	0.47
19:K:73:ILE:N	19:K:73:ILE:CD1	2.73	0.47
22:N:48:VAL:HA	22:N:178:ARG:NH1	2.29	0.47
8:8:77:G:C8	26:R:52:LYS:HG3	2.49	0.47
27:S:109:GLU:HA	27:S:112:PHE:HB3	1.95	0.47
1:1:1061:G:H2'	1:1:1062:A:H8	1.77	0.47
1:1:1388:U:H4'	1:1:1389:A:O5'	2.15	0.47
1:1:543:G:C3'	1:1:543:G:N3	2.78	0.47
1:1:788:A:H3'	1:1:788:A:N3	2.29	0.47
1:1:872:U:H2'	1:1:873:G:C8	2.50	0.47
2:2:1088:C:O2'	2:2:1173:C:O2	2.31	0.47
1:1:1595:G:N1	2:2:37:C:N3	2.40	0.47
3:3:195:A:N1	9:A:175:ILE:HD12	2.29	0.47
10:B:209:ARG:HG3	10:B:211:ASP:OD1	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:B:386:TRP:HD1	10:B:387:PHE:CE1	2.33	0.47
11:C:100:MET:HE1	11:C:104:THR:H	1.80	0.47
11:C:151:LEU:HD21	11:C:173:ILE:HD13	1.96	0.47
14:F:71:TYR:HD2	14:F:178:LEU:HD12	1.80	0.47
16:H:72:TYR:OH	16:H:91:HIS:O	2.32	0.47
19:K:94:VAL:HG23	19:K:96:VAL:HG23	1.97	0.47
1:1:113:C:OP1	21:M:147:ARG:NE	2.47	0.47
22:N:50:ILE:HG13	22:N:138:MET:HB2	1.96	0.47
22:N:81:ASN:OD1	22:N:82:LYS:N	2.47	0.47
24:P:66:ARG:O	24:P:70:VAL:HG22	2.15	0.47
1:1:250:A:H4'	1:1:251:A:C2	2.50	0.47
2:2:1336:C:OP2	2:2:1338:C:N4	2.48	0.47
2:2:1441:G:O2'	2:2:1442:C:H2'	2.14	0.47
2:2:1442:C:H42	6:6:3:A:N6	2.13	0.47
2:2:442:C:O2'	2:2:516:A:N3	2.39	0.47
8:8:50:G:O2'	8:8:51:A:H5'	2.14	0.47
11:C:170:LEU:HD13	11:C:179:VAL:HG21	1.96	0.47
11:C:78:ILE:HB	11:C:85:THR:O	2.15	0.47
13:E:58:ARG:HD3	13:E:58:ARG:H	1.78	0.47
14:F:77:ARG:HH11	14:F:77:ARG:CG	2.21	0.47
20:L:62:HIS:CD2	20:L:64:LYS:HE3	2.50	0.47
1:1:959:OMG:N2	21:M:76:HIS:CG	2.75	0.47
26:R:32:PHE:CE2	26:R:105:VAL:HG21	2.50	0.47
28:T:42:ARG:HG3	28:T:110:ASN:HD22	1.80	0.47
28:T:31:GLU:OE2	28:T:63:TYR:HB2	2.14	0.47
1:1:1145:G:N3	1:1:1146:A:H1'	2.30	0.47
1:1:1176:C:H2'	1:1:1177:U:O4'	2.14	0.47
1:1:1440:A:HO2'	1:1:1442:G:N2	2.12	0.47
1:1:1729:A:C2	1:1:1730:A:C5	3.01	0.47
1:1:569:G:P	1:1:569:G:H8	2.37	0.47
2:2:992:U:N3	2:2:995:U:O4	2.48	0.47
3:3:66:C:H2'	3:3:173:U:H3	1.78	0.47
13:E:17:THR:HA	13:E:51:ASN:ND2	2.30	0.47
18:J:78:ALA:CA	18:J:105:VAL:HG22	2.45	0.47
22:N:46:PHE:HB3	22:N:140:THR:O	2.15	0.47
25:Q:19:ARG:O	25:Q:20:ALA:HB3	2.15	0.47
33:Y:45:GLY:O	33:Y:70:VAL:HA	2.15	0.47
1:1:1111:C:H2'	1:1:1112:A:C8	2.50	0.47
1:1:1228:G:OP1	8:8:86:U:O2'	2.24	0.47
1:1:334:G:OP2	50:1:1937:HOH:O	2.20	0.47
1:1:33:A:O2'	1:1:860:G:N3	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:344:A:C2	2:2:1223:C:H1'	2.49	0.47
1:1:453:G:H21	28:T:118:GLN:NE2	2.12	0.47
1:1:781:A:N6	1:1:794:U:H3	2.09	0.47
2:2:1036:G:H2'	2:2:1037:A:H8	1.79	0.47
2:2:1267:G:N2	2:2:1301:U:O2	2.26	0.47
2:2:1387:C:OP1	10:B:249:ARG:NH2	2.47	0.47
2:2:1423:C:OP1	28:T:66[B]:LYS:HE2	2.15	0.47
3:3:38:A:N6	3:3:182:G:H1	2.12	0.47
4:4:140:G:O6	4:4:147:U:O2'	2.31	0.47
4:4:62:C:H2'	13:E:119:ARG:NH1	2.29	0.47
16:H:25:ILE:HG12	19:K:47:LEU:HD21	1.97	0.47
23:O:159:THR:HG22	23:O:166:PHE:HZ	1.80	0.47
23:O:106:ALA:HB2	23:O:172:ALA:HA	1.97	0.47
1:1:453:G:H21	28:T:118:GLN:HE22	1.62	0.47
33:Y:84:ARG:NH1	33:Y:85:TYR:HE1	2.13	0.47
1:1:42:U:H2'	1:1:43:A:O4'	2.15	0.47
1:1:557:U:H6	1:1:557:U:O5'	1.98	0.47
2:2:1151:U:H4'	27:S:88:ARG:HB2	1.96	0.47
2:2:125:C:H2'	2:2:126:U:C6	2.50	0.47
2:2:1437:A:N6	2:2:1440:U:O2'	2.39	0.47
1:1:922:U:H5'	2:2:388:A:H3'	1.97	0.47
2:2:460:A:H2	2:2:676:G:H1'	1.80	0.47
2:2:787:G:H22	2:2:807:A:N6	2.12	0.47
4:4:105:A:H5''	4:4:106:G:H5''	1.96	0.47
8:8:44:A:C5	8:8:45:U:C4	3.03	0.47
8:8:48:G:OP1	8:8:48:G:H4'	2.15	0.47
2:2:419:G:OP1	9:A:18:VAL:HG12	2.15	0.47
7:7:21:U:OP2	11:C:195:MET:HG2	2.15	0.47
1:1:245:C:O2	11:C:221:ASN:ND2	2.48	0.47
16:H:96:ASP:O	16:H:100:ARG:N	2.47	0.47
17:I:18:ASN:HD22	17:I:19:PRO:N	2.13	0.47
6:6:41:G:N1	19:K:176:ARG:HD2	2.30	0.47
24:P:69:VAL:O	24:P:73:ARG:HG2	2.15	0.47
25:Q:120:TYR:O	25:Q:124:TYR:N	2.48	0.47
1:1:1669:G:H21	30:V:38:PRO:CD	2.27	0.47
1:1:500:C:H2'	1:1:501:C:H5'	1.96	0.46
2:2:1109:U:H2'	2:2:1110:C:C6	2.50	0.46
2:2:755:U:O2'	2:2:756:C:H6	1.97	0.46
2:2:865:G:H2'	2:2:866:U:O4'	2.15	0.46
8:8:103:A:H2'	8:8:104:C:C6	2.50	0.46
8:8:26:A:C2'	8:8:27:A:H5'	2.44	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:101:VAL:O	9:A:101:VAL:HG12	2.16	0.46
10:B:159:VAL:HG13	10:B:187:GLN:HE22	1.78	0.46
1:1:1472:G:H5''	11:C:191:GLY:O	2.14	0.46
4:4:52:A:H1'	13:E:174:PHE:CD2	2.50	0.46
14:F:162:ILE:HD12	14:F:162:ILE:H	1.80	0.46
19:K:180:HIS:CE1	19:K:184:LYS:HE2	2.46	0.46
21:M:96:LYS:HE3	21:M:101:VAL:HG22	1.96	0.46
3:3:8:A:H5''	33:Y:15:ALA:O	2.15	0.46
1:1:519:G:H21	1:1:531:C:H41	1.63	0.46
1:1:660:U:H2'	1:1:661:G:C8	2.50	0.46
1:1:906:U:H2'	1:1:907:G:O4'	2.15	0.46
2:2:431:C:C5'	9:A:219:ILE:HD11	2.45	0.46
4:4:181:C:H2'	4:4:182:A:C8	2.50	0.46
5:5:18:G:H3'	5:5:19:A:H8	1.80	0.46
11:C:151:LEU:HD21	11:C:173:ILE:HG21	1.97	0.46
13:E:125:VAL:HA	13:E:156:GLU:OE1	2.15	0.46
15:G:155:LYS:HE3	15:G:318:TRP:HB3	1.97	0.46
15:G:316:ARG:HG3	15:G:316:ARG:O	2.16	0.46
23:O:60:ILE:CD1	23:O:101:THR:HG21	2.43	0.46
23:O:69:ILE:H	23:O:69:ILE:HD12	1.80	0.46
28:T:72:GLN:OE1	28:T:83:TRP:NE1	2.44	0.46
1:1:157:U:H2'	1:1:158:A:C4'	2.46	0.46
1:1:1732:A:H2'	1:1:1733:G:O4'	2.15	0.46
1:1:243:G:N2	1:1:259:G:H22	2.13	0.46
1:1:392:A:N1	1:1:405:A:H5''	2.29	0.46
1:1:815:G:H1	1:1:825:G:H1	1.62	0.46
2:2:619:A:N6	2:2:1306:C:H1'	2.28	0.46
2:2:1345:C:H5''	2:2:1346:G:OP2	2.15	0.46
2:2:428:A:C2'	2:2:429:A:H5'	2.44	0.46
4:4:114:A:O3'	10:B:372:ILE:O	2.34	0.46
15:G:218:VAL:N	15:G:284:ALA:O	2.49	0.46
15:G:231:LYS:HG2	15:G:258:ASN:HB3	1.98	0.46
13:E:41:LEU:HD13	16:H:150:SER:HB3	1.97	0.46
9:A:108:THR:HG23	21:M:146:PRO:HG2	86.07	0.46
32:X:13:VAL:HG22	32:X:36:SER:OG	2.15	0.46
1:1:162:U:H2'	1:1:163:U:O4'	2.15	0.46
1:1:312:C:C2'	1:1:313:U:H5'	2.45	0.46
1:1:66:A:N6	1:1:352:G:O2'	2.48	0.46
2:2:534:OMG:H2'	2:2:534:OMG:N3	2.30	0.46
2:2:591:A2M:H5''	2:2:591:A2M:H8	1.98	0.46
2:2:479:C:O2'	2:2:674:U:O3'	2.33	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:956:C:O2'	2:2:957:C:O4'	2.30	0.46
4:4:94:G:N2	4:4:103:C:O2	2.46	0.46
4:4:43:U:H3	4:4:67:A:N6	2.05	0.46
7:7:108:A:H2'	7:7:109:A:O4'	2.16	0.46
10:B:367:ASP:HA	10:B:378:GLN:HE22	1.80	0.46
1:1:692:A:H5''	11:C:101:PHE:CG	2.50	0.46
11:C:211:PRO:HG3	11:C:253:SER:HB2	1.97	0.46
11:C:24:PRO:HB2	11:C:26:VAL:HG12	1.97	0.46
16:H:121:VAL:HG11	16:H:123:TYR:CZ	2.51	0.46
17:I:33:GLN:HE21	21:M:202:ARG:NE	2.13	0.46
17:I:79:GLY:HA2	17:I:101:ARG:C	2.36	0.46
19:K:108:VAL:HG23	26:R:71:LEU:HD21	1.96	0.46
1:1:1118:A:H2'	1:1:1119:C:O4'	2.16	0.46
1:1:1390:G:H5''	1:1:1391:U:H3'	1.97	0.46
1:1:13:G:H5''	30:V:43:LYS:O	2.15	0.46
1:1:223:A:H2	1:1:224:C:C2	2.32	0.46
1:1:52:C:H2'	1:1:53:G:O4'	2.16	0.46
1:1:734:U:OP2	11:C:120:ARG:NH2	2.47	0.46
1:1:834:U:H5''	1:1:835:G:H5''	1.97	0.46
2:2:1070:A:H2'	2:2:1071:A:C8	2.51	0.46
2:2:1080:U:O2	2:2:1080:U:H2'	2.15	0.46
2:2:495:G:H22	2:2:514:U:H1'	1.79	0.46
2:2:526:A:O2'	2:2:527:A2M:P	2.74	0.46
2:2:635:A:H5''	28:T:66[B]:LYS:HA	1.98	0.46
3:3:56:U:H3'	3:3:57:U:H6	1.80	0.46
3:3:95:C:H42	3:3:139:G:H1	1.62	0.46
8:8:61:C:H2'	8:8:62:U:C6	2.50	0.46
9:A:150:LEU:HD11	9:A:156:LYS:HD2	1.97	0.46
10:B:352:GLN:HA	10:B:357:LEU:HD23	1.95	0.46
14:F:54:LEU:HD11	14:F:66:SER:HB3	1.97	0.46
19:K:74:LEU:CD2	19:K:74:LEU:H	2.21	0.46
24:P:128:LEU:HD12	24:P:132:GLN:HG2	1.98	0.46
26:R:6:LEU:HG	26:R:32:PHE:HB3	1.96	0.46
1:1:1253:U:H5'	16:H:74:GLN:NE2	2.23	0.46
1:1:1549:U:O2'	1:1:1550:C:O5'	2.33	0.46
1:1:1556:G:N3	1:1:1618:U:H5	2.14	0.46
1:1:181:G:H2'	1:1:182:U:O4'	2.15	0.46
1:1:836:G:O6	24:P:97:VAL:HG22	2.15	0.46
2:2:540:C:O2'	2:2:542:A:OP2	2.30	0.46
1:1:685:A:H5''	2:2:607:A:C5'	2.45	0.46
2:2:705:A:H2'	2:2:706:U:H5''	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:4:94:G:H2'	4:4:95:U:O4'	2.15	0.46
2:2:68:A:H2'	5:5:113:A:N6	2.30	0.46
7:7:155:U:H2'	7:7:156:A:C8	2.50	0.46
9:A:127:ALA:HB2	9:A:134:CYS:SG	2.56	0.46
10:B:310:LYS:HE3	10:B:368:THR:HG1	1.79	0.46
11:C:194:LYS:HA	11:C:199:ARG:HA	1.97	0.46
15:G:124:ASP:OD1	15:G:125:VAL:N	2.47	0.46
17:I:90:LEU:HD21	17:I:125:MET:SD	2.55	0.46
19:K:150:THR:H	19:K:153:ARG:CZ	2.28	0.46
1:1:133:C:H1'	1:1:172:G:H1'	1.97	0.46
1:1:180:A:H2'	1:1:181:G:H8	1.80	0.46
2:2:1044:C:N3	2:2:1052:G:N1	2.46	0.46
2:2:1254:OMG:CM2	2:2:1254:OMG:H4'	2.45	0.46
2:2:1433:U:H2'	2:2:1434:G:H8	1.80	0.46
1:1:463:C:H2'	2:2:630:G:N2	2.31	0.46
5:5:125:A:C5'	5:5:125:A:H8	2.26	0.46
6:6:13:C:O2'	6:6:14:A:C5'	2.63	0.46
11:C:206:PRO:O	11:C:225:LEU:HA	2.16	0.46
2:2:1005:G:C2'	15:G:119:PHE:CD2	2.98	0.46
17:I:65:CYS:O	17:I:71:ASN:HA	2.16	0.46
22:N:95:HIS:O	22:N:125:VAL:HG13	2.15	0.46
23:O:56:THR:HG23	23:O:59:ASP:H	1.80	0.46
27:S:75:ILE:HG22	27:S:88:ARG:CD	2.46	0.46
10:B:386:TRP:CZ2	32:X:57:ARG:HD3	2.51	0.46
1:1:1004:G:H1'	1:1:1172:G:H5'	1.97	0.46
1:1:1228:G:H2'	1:1:1229:G:O4'	2.16	0.46
1:1:159:U:H2'	1:1:160:C:O4'	2.15	0.46
1:1:208:C:H1'	1:1:226:C:H42	1.81	0.46
1:1:296:U:O2'	1:1:297:A:O4'	2.25	0.46
1:1:849:U:O2'	1:1:850:G:O4'	2.33	0.46
1:1:901:C:O2'	1:1:902:C:O5'	2.34	0.46
2:2:424:U:OP1	9:A:128:ARG:N	2.35	0.46
6:6:16:C:C6	6:6:16:C:C3'	2.97	0.46
11:C:157:ILE:HA	11:C:160:TYR:CD2	2.51	0.46
8:8:57:A:O2'	12:D:151:GLY:HA3	2.16	0.46
14:F:39:ALA:HB1	14:F:84:VAL:HG21	1.97	0.46
14:F:46:PHE:HB3	14:F:49:ARG:HG3	1.98	0.46
1:1:492:G:H4'	14:F:80:ASP:OD2	2.15	0.46
15:G:163:PHE:HE2	15:G:249:LEU:HD12	1.80	0.46
19:K:180:HIS:CA	19:K:183:ARG:NH1	2.79	0.46
20:L:60:HIS:CE1	20:L:63:ARG:HA	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:O:149:LYS:HA	23:O:178:ALA:HB3	1.96	0.46
23:O:184:ASN:HA	23:O:189:TYR:CE1	2.50	0.46
11:C:197:ASN:HD21	31:W:8:SER:HB2	1.79	0.46
1:1:1375:G:O2'	1:1:1380:A:N1	2.38	0.46
1:1:1443:U:H2'	1:1:1444:G:O4'	2.15	0.46
1:1:177:A:N1	1:1:280:A:H2	2.14	0.46
2:2:1097:U:H2'	2:2:1098:G:C8	2.51	0.46
2:2:1165:C:H2'	2:2:1166:G:O4'	2.15	0.46
6:6:19:C:O2	6:6:19:C:H2'	2.15	0.46
7:7:62:A:H5''	7:7:63:G:O4'	2.16	0.46
8:8:106:C:H2'	8:8:107:U:C6	2.51	0.46
9:A:43:GLY:N	9:A:88:VAL:O	2.48	0.46
5:5:36:U:O2'	10:B:372:ILE:HG21	2.15	0.46
15:G:157:PRO:HA	15:G:318:TRP:CZ3	2.51	0.46
20:L:109:LEU:HD12	20:L:126:VAL:HG23	1.98	0.46
22:N:9:TYR:CE2	22:N:97:LEU:HD11	2.51	0.46
26:R:32:PHE:CE2	26:R:128:VAL:HG21	2.50	0.46
27:S:18:LYS:HG3	27:S:19:PHE:H	1.80	0.46
34:Z:21:LYS:NZ	34:Z:24:GLY:HA2	2.31	0.46
1:1:1445:U:O2	34:Z:26:ARG:NH2	2.49	0.46
1:1:1388:U:H1'	1:1:1389:A:OP2	2.15	0.46
1:1:1494:C:O2'	1:1:1495:G:OP2	2.26	0.46
1:1:1529:OMC:H5'	1:1:1529:OMC:C6	2.51	0.46
1:1:1673:G:N3	1:1:1673:G:H2'	2.31	0.46
1:1:191:U:H4'	1:1:192:C:O5'	2.16	0.46
1:1:907:G:OP1	25:Q:92:LYS:HG2	2.16	0.46
1:1:960:A:H2'	1:1:961:G:H8	1.81	0.46
2:2:1196:U:H2'	2:2:1197:G:C8	2.51	0.46
2:2:1340:G:H3'	2:2:1341:A:C8	2.51	0.46
2:2:591:A2M:C2'	2:2:592:C:H5'	2.46	0.46
2:2:782:G:H4'	2:2:783:U:OP1	2.16	0.46
3:3:102:C:H2'	3:3:103:U:C6	2.51	0.46
3:3:113:U:OP2	25:Q:121:ARG:NE	2.38	0.46
6:6:55:U:OP1	14:F:47:ARG:NH2	2.49	0.46
7:7:163:G:O2'	7:7:165:G:OP2	2.22	0.46
8:8:39:G:H21	8:8:46:U:H3	1.64	0.46
14:F:49:ARG:NH1	14:F:179:ARG:O	2.49	0.46
14:F:24:PRO:HG3	14:F:59:HIS:NE2	2.31	0.46
25:Q:4:LEU:HD23	25:Q:24:LEU:HD23	1.98	0.46
1:1:1755:U:OP2	25:Q:38:ARG:HG2	2.16	0.46
31:W:77:ILE:HG23	31:W:98:PRO:HG3	1.96	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:Y:70:VAL:HG11	33:Y:112:VAL:HG23	1.98	0.46
1:1:1241:A:O2'	19:K:75:ARG:NH1	2.49	0.45
1:1:1448:C:H2'	1:1:1449:C:C6	2.51	0.45
1:1:1630:U:H1'	30:V:114:ASN:HB3	1.98	0.45
1:1:32:A:OP1	1:1:32:A:H4'	2.14	0.45
1:1:816:G:H22	1:1:823:G:H21	1.64	0.45
1:1:925:U:OP1	10:B:246:LYS:HG3	2.16	0.45
1:1:934:A:O4'	28:T:133[A]:HIS:HA	2.16	0.45
2:2:768:G:O2'	2:2:769:A:O5'	2.20	0.45
6:6:17:U:H1'	6:6:18:A:N3	2.31	0.45
6:6:3:A:N3	6:6:4:U:H5''	2.31	0.45
7:7:106:G:H4'	7:7:149:A:H5'	1.98	0.45
7:7:37:U:H5	7:7:105:C:N3	2.14	0.45
13:E:135:ASP:N	13:E:136:PRO:CD	2.78	0.45
6:6:15:C:C5	16:H:187:HIS:CE1	3.05	0.45
6:6:41:G:C3'	19:K:180:HIS:CE1	2.82	0.45
16:H:140:PRO:CD	19:K:46:PRO:HB3	2.45	0.45
20:L:70:LYS:HE2	20:L:125:TYR:CE2	2.51	0.45
21:M:30:PHE:HB3	21:M:129:TRP:CE2	2.51	0.45
23:O:109:THR:O	23:O:113:LEU:N	2.46	0.45
23:O:17:GLN:HE22	27:S:21:LYS:HA	1.80	0.45
1:1:23:U:H4'	1:1:24:A:N7	2.31	0.45
1:1:816:G:H1'	1:1:825:G:H22	1.81	0.45
2:2:1147:A:OP2	2:2:1168:G:N2	2.49	0.45
2:2:607:A:H61	2:2:623:A:H61	1.63	0.45
2:2:867:G:N2	2:2:943:U:O2	2.49	0.45
3:3:209:G:C3'	3:3:210:G:H5'	2.46	0.45
3:3:95:C:H5''	3:3:96:U:OP2	2.15	0.45
6:6:7:A:N1	6:6:60:A:C6	2.85	0.45
8:8:112:G:C5	8:8:113:C:C4	3.04	0.45
8:8:32:A:C6	8:8:50:G:C6	3.04	0.45
10:B:102:ILE:HG13	10:B:153:PHE:CE1	2.50	0.45
11:C:136:VAL:HG11	11:C:247:PHE:HB2	1.98	0.45
1:1:245:C:H2'	11:C:163:THR:HG21	1.98	0.45
11:C:121:PHE:CE1	11:C:278[A]:PRO:HG3	2.50	0.45
13:E:89:PHE:CE2	13:E:153:VAL:HG23	2.51	0.45
23:O:38:LEU:CD2	27:S:70:ARG:HE	2.20	0.45
1:1:1126:U:O2	1:1:1127:U:O2'	2.26	0.45
1:1:1535:U:H2'	1:1:1536:G:C8	2.52	0.45
1:1:1604:C:H2'	1:1:1605:G:C8	2.51	0.45
1:1:1653:U:N3	1:1:1656:A:OP2	2.45	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:912:C:OP1	2:2:379:U:O2'	2.20	0.45
1:1:869:C:C2	1:1:971:C:H5'	2.51	0.45
2:2:1276:A:H2	2:2:1291:C:H41	1.64	0.45
2:2:578:U:H2'	2:2:579:C:O4'	2.16	0.45
2:2:776:C:H1'	2:2:777:A:C5	2.52	0.45
5:5:42:G:N7	5:5:104:G:N1	2.64	0.45
10:B:28:ARG:H	10:B:279:HIS:HE1	1.64	0.45
4:4:74:G:N2	10:B:334:SER:OG	2.40	0.45
11:C:153:VAL:O	11:C:252:LYS:N	2.45	0.45
12:D:24:CYS:HA	12:D:68:ALA:HA	1.98	0.45
16:H:126:ILE:H	16:H:176:GLU:CD	2.19	0.45
2:2:1370:C:OP1	18:J:61:MET:HE1	2.16	0.45
1:1:1115:C:H1'	1:1:1147:A:N6	2.32	0.45
1:1:1391:U:H4'	1:1:1392:G:H5'	1.98	0.45
1:1:657:G:O2'	1:1:1493:G:OP2	2.27	0.45
1:1:37:A:H2'	1:1:40:C:N4	2.31	0.45
1:1:53:G:H2'	1:1:54:G:H5'	1.99	0.45
1:1:551:A:H2'	1:1:552:G:C8	2.51	0.45
1:1:647:G:C2'	1:1:648:A:H5'	2.46	0.45
2:2:1114:C:H2'	2:2:1115:G:O4'	2.17	0.45
2:2:1337:G:H5''	2:2:1339:A:OP2	2.16	0.45
2:2:583:OMC:O2	2:2:583:OMC:HM23	2.16	0.45
3:3:141:U:O2'	3:3:142:U:OP1	2.31	0.45
1:1:876:U:H5''	3:3:199:A:C6	2.50	0.45
6:6:28:A:N3	6:6:29:G:C4	2.82	0.45
8:8:27:A:H2'	8:8:28:C:H6	1.78	0.45
10:B:251:LEU:H	10:B:251:LEU:HD23	1.81	0.45
16:H:25:ILE:HD11	16:H:137:VAL:HG21	1.98	0.45
6:6:15:C:H1'	16:H:184:SER:HB2	1.99	0.45
18:J:125:ALA:HB1	18:J:132:SER:HB3	1.98	0.45
16:H:221:TYR:CD2	19:K:175:ARG:HD2	2.52	0.45
21:M:174:LEU:HD22	21:M:185:ARG:NH1	2.32	0.45
26:R:81:ALA:HA	26:R:91:ARG:HA	1.97	0.45
26:R:77:LEU:HA	26:R:95:GLU:HA	1.98	0.45
1:1:1266:A:H4'	22:N:162:ARG:HH21	1.82	0.45
1:1:1467:G:O2'	1:1:1468:C:OP2	2.28	0.45
1:1:171:U:C3'	1:1:172:G:H8	2.29	0.45
1:1:307:U:H2'	1:1:308:A:H8	1.80	0.45
1:1:50:A:H2'	1:1:51:G:H5'	1.97	0.45
1:1:490:C:N4	1:1:645:G:H1	2.13	0.45
1:1:779:A:OP2	24:P:141:LYS:CE	2.65	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1279:C:H42	2:2:1288:C:N4	2.14	0.45
2:2:1340:G:OP2	2:2:1341:A:N6	2.48	0.45
2:2:763:C:H2'	2:2:764:G:C8	2.52	0.45
2:2:768:G:O6	2:2:770:A:N6	2.47	0.45
3:3:141:U:H2'	3:3:142:U:C6	2.51	0.45
8:8:11:C:H5'	8:8:12:C:OP2	2.14	0.45
9:A:148:LEU:H	9:A:148:LEU:HD23	1.81	0.45
9:A:219:ILE:HD12	9:A:219:ILE:H	1.82	0.45
10:B:282:GLN:HB3	10:B:285:LYS:CE	2.46	0.45
10:B:81:ALA:HB3	10:B:327:ASP:O	2.16	0.45
13:E:33:THR:O	13:E:148:ASN:ND2	2.50	0.45
22:N:129:VAL:HG13	22:N:133:GLN:HB3	1.98	0.45
22:N:57:LEU:HD23	22:N:57:LEU:O	2.16	0.45
22:N:73:ASN:O	22:N:76:MET:HG2	2.16	0.45
1:1:893:G:P	25:Q:126:ARG:NH1	2.89	0.45
28:T:61:LYS:HG2	28:T:78:GLN:NE2	2.32	0.45
1:1:150:G:P	21:M:147:ARG:HH22	2.40	0.45
1:1:161:A:H2'	1:1:162:U:C6	2.52	0.45
1:1:171:U:H3'	1:1:172:G:C8	2.44	0.45
1:1:205:A:H3'	1:1:205:A:N3	2.32	0.45
1:1:422:U:O2'	1:1:423:U:H6	1.99	0.45
1:1:472:U:H2'	1:1:473:A:C8	2.51	0.45
1:1:75:A:OP2	17:I:78:ARG:NH2	2.48	0.45
1:1:766:A:H5''	1:1:767:U:H5	1.82	0.45
2:2:1333:C:H2'	2:2:1334:G:H8	1.82	0.45
2:2:361:U:O2	4:4:110:C:O2'	2.24	0.45
2:2:414:G:OP2	2:2:414:G:H8	1.99	0.45
2:2:778:A:H2'	2:2:779:U:H5''	1.99	0.45
6:6:48:C:H3'	6:6:49:C:C6	2.50	0.45
7:7:141:C:C2'	7:7:142:C:H5'	2.46	0.45
4:4:166:C:H5''	10:B:279:HIS:O	2.16	0.45
11:C:121:PHE:CD1	11:C:278[B]:PRO:HG2	2.51	0.45
13:E:114:PHE:O	13:E:115:LEU:HG	2.16	0.45
13:E:132:SER:OG	13:E:133:GLN:N	2.49	0.45
14:F:77:ARG:NH1	14:F:77:ARG:CG	2.78	0.45
15:G:146:LYS:HA	15:G:149:VAL:HG12	1.97	0.45
16:H:41:VAL:HG11	16:H:120:LEU:HD21	1.99	0.45
16:H:31:ASP:HA	16:H:60:ASN:ND2	2.31	0.45
17:I:108:ASN:HB3	17:I:114:MET:HE2	1.99	0.45
18:J:138:ILE:O	18:J:138:ILE:HG23	2.15	0.45
25:Q:126:ARG:HD3	25:Q:126:ARG:HA	1.62	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:S:9:SER:O	27:S:55:LYS:HD3	2.16	0.45
1:1:1158:U:C5	1:1:1159:A:H1'	2.52	0.45
1:1:1198:C:O2'	1:1:1210:A:N3	2.44	0.45
1:1:1727:U:C5	1:1:1728:G:C6	3.05	0.45
1:1:477:C:H4'	1:1:478:C:OP1	2.16	0.45
1:1:758:C:N4	1:1:759:A:N1	2.63	0.45
4:4:140:G:H2'	4:4:141:A:H8	1.78	0.45
6:6:49:C:C6	6:6:49:C:OP2	2.70	0.45
9:A:189:PHE:HA	9:A:192:LYS:HB2	1.99	0.45
9:A:54:ARG:HD2	9:A:58:LEU:HD11	1.98	0.45
10:B:376:ARG:HD2	32:X:11:PHE:CD1	2.52	0.45
13:E:146:ASP:OD1	13:E:147:GLY:N	2.45	0.45
13:E:17:THR:HG21	13:E:50:LYS:HE3	1.99	0.45
13:E:34:LEU:HD11	13:E:79:MET:HA	1.98	0.45
6:6:41:G:N2	19:K:176:ARG:HH11	2.14	0.45
13:E:59:TRP:HB3	19:K:61:LYS:CA	2.35	0.45
11:C:113:LYS:CG	21:M:203:LYS:HB3	2.47	0.45
22:N:36:ILE:HG21	22:N:73:ASN:OD1	2.17	0.45
25:Q:133:ARG:H	25:Q:137:ASN:ND2	2.15	0.45
28:T:116:HIS:HB3	28:T:149:PHE:CE2	2.51	0.45
34:Z:53:VAL:HG12	34:Z:54:LYS:N	2.32	0.45
1:1:25:C:O2'	1:1:365:A:N3	2.47	0.45
1:1:558:U:O2'	1:1:559:G:H8	2.00	0.45
1:1:756:U:H2'	1:1:757:G:C8	2.52	0.45
1:1:740:C:O2'	1:1:839:U:H5''	2.17	0.45
2:2:1295:G:OP2	22:N:7:ARG:NH1	2.50	0.45
2:2:71:OMG:O2'	2:2:72:G:H5'	2.17	0.45
4:4:123:C:H2'	4:4:124:A:H8	1.82	0.45
4:4:169:A:H2'	4:4:169:A:N3	2.32	0.45
6:6:1:U:H6	6:6:1:U:H5''	1.82	0.45
6:6:22:G:O6	6:6:26:G:N2	2.50	0.45
9:A:116:VAL:HG12	9:A:164:ALA:CB	2.47	0.45
10:B:48:VAL:HG12	10:B:81:ALA:HB2	1.99	0.45
11:C:139:ARG:NH1	11:C:240:PRO:HG2	2.32	0.45
14:F:36:GLY:HA2	14:F:53:ILE:O	2.16	0.45
15:G:172:ARG:HG2	15:G:265:VAL:HG13	1.98	0.45
21:M:146:PRO:HA	21:M:149:ASN:ND2	2.31	0.45
22:N:152:LEU:HD23	22:N:156:LYS:HB2	1.99	0.45
23:O:98:ALA:HB1	23:O:168:VAL:HG13	1.99	0.45
1:1:439:U:C5	28:T:2:THR:HA	2.51	0.45
32:X:50:PRO:HB2	32:X:58:THR:OG1	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:X:54:PRO:HA	32:X:59:TYR:CE2	2.51	0.45
33:Y:43:LEU:HD23	33:Y:73:ARG:O	2.17	0.45
34:Z:6:ASP:O	34:Z:10:ILE:HG12	2.17	0.45
1:1:1090:U:H2'	1:1:1091:A:C8	2.51	0.45
1:1:1369:G:OP2	16:H:77:ARG:NH2	2.49	0.45
1:1:779:A:OP1	24:P:141:LYS:CB	2.62	0.45
1:1:782:C:H2'	1:1:783:G:C8	2.52	0.45
2:2:402:U:H3	2:2:426:G:H1	1.63	0.45
4:4:136:G:N2	4:4:155:A:H1'	2.32	0.45
10:B:310:LYS:HZ1	10:B:378:GLN:HE21	1.65	0.45
4:4:77:U:H5''	10:B:371:LYS:HG3	1.99	0.45
13:E:23:ARG:NH2	13:E:24:LYS:HZ1	2.13	0.45
13:E:23:ARG:O	13:E:24:LYS:HE2	2.17	0.45
13:E:95:TYR:CE1	13:E:100:ILE:HG12	2.52	0.45
15:G:163:PHE:HA	15:G:264:ILE:HG21	1.98	0.45
15:G:153:ARG:NH2	15:G:324:SER:OG	2.48	0.45
18:J:81:ILE:HD13	18:J:116:ILE:HG21	1.98	0.45
31:W:37:ARG:HG3	31:W:38:ALA:N	2.32	0.45
31:W:68:THR:N	31:W:78:LEU:O	2.44	0.45
1:1:1238:C:H5'	1:1:1239:U:C5'	2.47	0.45
1:1:694:U:C5	1:1:694:U:OP2	2.70	0.45
1:1:721:U:H2'	1:1:728:C:N3	2.31	0.45
2:2:1100:G:H22	2:2:1110:C:N4	2.15	0.45
2:2:760:U:HO2'	2:2:761:A:H8	1.65	0.45
6:6:32:U:O2	6:6:32:U:H2'	2.17	0.45
1:1:381:G:O2'	7:7:21:U:O4	2.27	0.45
13:E:112:ARG:HD3	13:E:113:ASN:N	2.32	0.45
17:I:69:ARG:HG3	20:L:69:TRP:CE2	2.52	0.45
23:O:21:ARG:C	23:O:21:ARG:CD	2.86	0.45
1:1:398:G:N2	1:1:401:A:OP2	2.50	0.44
2:2:535:U:H2'	2:2:536:C:C5'	2.47	0.44
2:2:540:C:N4	2:2:543:U:OP1	2.34	0.44
2:2:649:G:OP1	50:2:1734:HOH:O	2.21	0.44
2:2:684:C:H2'	2:2:685:G:O4'	2.17	0.44
2:2:830:U:O2'	2:2:831:U:O4'	2.29	0.44
4:4:113:G:H5''	4:4:114:A:OP1	2.17	0.44
2:2:588:G:H5''	4:4:117:C:O2'	2.17	0.44
6:6:22:G:C6	6:6:27:G:OP2	2.63	0.44
10:B:301:ALA:HB3	10:B:310:LYS:HG3	1.98	0.44
11:C:32:ARG:HG3	11:C:121:PHE:CZ	2.53	0.44
14:F:53:ILE:HG12	14:F:63:LEU:HD13	1.98	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:H:148:TYR:HB3	19:K:59:MET:CB	2.48	0.44
17:I:59:LEU:HD12	17:I:124:TYR:CD1	2.51	0.44
19:K:95:LEU:CG	19:K:106:ARG:HE	2.29	0.44
1:L:752:G:N1	20:L:72:THR:HG21	2.32	0.44
25:Q:55:VAL:HG13	25:Q:56:LYS:N	2.32	0.44
26:R:39:ALA:O	26:R:43:PHE:N	2.50	0.44
28:T:67:ILE:HD11	28:T:80:LYS:HB3	1.98	0.44
34:Z:21:LYS:HZ3	34:Z:24:GLY:HA2	1.82	0.44
1:1:1442:G:O2'	1:1:1443:U:H5''	2.17	0.44
1:1:508:A:OP2	1:1:508:A:H8	2.00	0.44
1:1:552:G:O5'	1:1:552:G:H8	2.00	0.44
1:1:657:G:H2'	1:1:658:G:H5'	1.99	0.44
2:2:120:A:H2'	2:2:121:U:C6	2.52	0.44
2:2:352:A:H2'	2:2:353:G:C8	2.52	0.44
2:2:357:U:C2'	2:2:358:G:H5'	2.47	0.44
2:2:755:U:O2'	2:2:756:C:H5''	2.17	0.44
2:2:787:G:H22	2:2:807:A:H61	1.66	0.44
2:2:941:C:H2'	2:2:942:G:O4'	2.18	0.44
4:4:98:A:H2'	4:4:99:A:O4'	2.17	0.44
7:7:54:G:H2'	7:7:55:U:C6	2.53	0.44
11:C:100:MET:HE2	11:C:103:PRO:HA	1.99	0.44
15:G:332:ARG:NH1	15:G:333:LYS:HE2	2.32	0.44
17:I:18:ASN:HD22	17:I:18:ASN:C	2.20	0.44
19:K:72:ARG:C	19:K:72:ARG:CD	2.85	0.44
22:N:156:LYS:HA	22:N:159:PHE:CD2	2.52	0.44
1:1:1477:U:C5'	34:Z:17:ARG:HG3	2.47	0.44
1:1:1279:A:H2'	1:1:1280:U:O4'	2.16	0.44
1:1:715:G:H2'	1:1:716:A:O4'	2.17	0.44
1:1:103:G:O2'	1:1:736:C:O2	2.30	0.44
1:1:755:A:H4'	1:1:770:G:H5'	2.00	0.44
1:1:783:G:H2'	1:1:784:U:O4'	2.18	0.44
2:2:705:A:N3	2:2:705:A:H2'	2.32	0.44
2:2:747:A:H2'	2:2:749:G:H5'	1.98	0.44
3:3:58:C:H2'	3:3:60:U:O4'	2.17	0.44
3:3:7:U:H1'	33:Y:76:ASN:HB2	1.99	0.44
4:4:137:G:N2	13:E:155:ARG:HH22	2.16	0.44
8:8:29:A:O2'	8:8:57:A:N1	2.36	0.44
5:5:37:G:H5'	10:B:370:SER:OG	2.17	0.44
10:B:46:PHE:HE2	10:B:81:ALA:HB1	1.82	0.44
4:4:31:G:HO2'	10:B:92:TYR:HH	1.61	0.44
13:E:111:VAL:HG12	13:E:114:PHE:HB2	1.97	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:G:131:LEU:C	15:G:133:ARG:H	2.20	0.44
19:K:95:LEU:HG	19:K:106:ARG:HE	1.82	0.44
1:1:115:U:H4'	21:M:4:PHE:CD2	2.52	0.44
23:O:103:LEU:H	23:O:103:LEU:HD23	1.82	0.44
24:P:35:PHE:HD2	24:P:36:LEU:HD12	1.82	0.44
30:V:84:THR:HA	30:V:127:ILE:O	2.17	0.44
1:1:129:C:H1'	1:1:137:G:N2	2.33	0.44
1:1:140:U:H5'	1:1:141:U:P	2.58	0.44
1:1:1529:OMC:HM22	11:C:94:MET:CG	2.45	0.44
1:1:1535:U:H2'	1:1:1536:G:H8	1.82	0.44
1:1:1771:A:H2'	1:1:1772:U:O4'	2.17	0.44
1:1:275:A:H8	1:1:275:A:P	2.41	0.44
1:1:427:A:H3'	1:1:428:A:C8	2.53	0.44
1:1:547:U:H1'	1:1:548:G:C2	2.52	0.44
1:1:681:A2M:H1'	1:1:681:A2M:HM'3	1.82	0.44
1:1:786:A:N6	1:1:791:C:H42	2.16	0.44
2:2:650:A:N6	2:2:1311:A:H62	2.16	0.44
2:2:477:G:C2	2:2:478:A:C6	3.05	0.44
5:5:42:G:H2'	5:5:42:G:N3	2.33	0.44
6:6:26:G:N3	6:6:26:G:C5'	2.73	0.44
6:6:42:A:O2'	6:6:43:A:O5'	2.35	0.44
6:6:7:A:N1	6:6:60:A:N1	2.66	0.44
7:7:43:A:HO2'	7:7:44:A:C5'	2.31	0.44
8:8:104:C:H2'	8:8:105:C:O4'	2.18	0.44
8:8:22:U:H2'	8:8:23:G:C8	2.53	0.44
13:E:112:ARG:HA	13:E:119:ARG:O	2.17	0.44
17:I:13:GLN:HB3	17:I:17:TRP:HE1	1.82	0.44
22:N:98:ARG:HH12	22:N:122:PRO:HG3	1.82	0.44
23:O:30:TYR:HA	23:O:33:ARG:HB3	2.00	0.44
27:S:67:VAL:O	27:S:67:VAL:HG13	2.17	0.44
28:T:133[B]:HIS:O	28:T:133[B]:HIS:CD2	2.71	0.44
33:Y:11:VAL:HG21	33:Y:80:PHE:CD1	2.52	0.44
33:Y:89:MET:HA	33:Y:119:ARG:HH22	1.83	0.44
33:Y:90:SER:O	33:Y:95:GLY:N	2.45	0.44
1:1:1045:G:O2'	1:1:1104:A:N6	2.50	0.44
1:1:1248:C:H4'	1:1:1249:A:H5'	1.99	0.44
1:1:1629:U:OP1	30:V:126:TYR:OH	2.35	0.44
1:1:176:C:O2'	1:1:177:A:H8	2.01	0.44
1:1:263:A:H2'	1:1:264:U:O4'	2.17	0.44
1:1:50:A:C2'	1:1:51:G:H5'	2.47	0.44
1:1:658:G:HO2'	1:1:659:G:P	2.40	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:707:C:H5'	11:C:117:HIS:CE1	2.53	0.44
1:1:786:A:H61	1:1:791:C:N4	2.15	0.44
2:2:1184:C:H3'	2:2:1185:C:C6	2.52	0.44
2:2:1332:G:H2'	2:2:1333:C:C6	2.52	0.44
2:2:1404:H2U:H51	2:2:1405:G:C4	2.52	0.44
2:2:661:U:OP1	9:A:2:GLY:HA2	2.18	0.44
2:2:812:C:H4'	2:2:813:U:C5	2.53	0.44
3:3:58:C:O2'	3:3:60:U:H5''	2.10	0.44
4:4:138:C:H41	4:4:148:C:H1'	1.82	0.44
6:6:40:C:P	6:6:40:C:C3'	2.94	0.44
7:7:20:C:N4	7:7:21:U:C4	2.86	0.44
11:C:178:ASP:CG	11:C:206:PRO:HD3	2.38	0.44
13:E:92:ARG:HG2	13:E:93:CYS:H	1.82	0.44
15:G:154:LEU:HD22	21:M:24:ARG:HH22	1.83	0.44
22:N:46:PHE:CE1	22:N:141:LYS:HE2	2.53	0.44
23:O:23:ARG:CD	23:O:23:ARG:C	2.85	0.44
1:1:798:U:H5'	24:P:77:PHE:HD2	1.82	0.44
2:2:1133:A:N6	27:S:47:ALA:O	2.50	0.44
31:W:71:TYR:CD1	31:W:74:LYS:HG2	2.53	0.44
1:1:1442:G:N2	1:1:1448:C:O4'	2.51	0.44
1:1:1485:A:N3	7:7:18:G:O2'	2.46	0.44
1:1:1648:A:H2'	1:1:1649:A:O4'	2.17	0.44
1:1:18:A:C6	1:1:19:G:C6	3.05	0.44
1:1:333:A:O2'	1:1:334:G:O5'	2.29	0.44
1:1:370:G:O5'	1:1:371:U:H5'	2.17	0.44
1:1:786:A:O2'	1:1:787:A:OP1	2.28	0.44
2:2:1103:C:H3'	2:2:1104:A:H2'	2.00	0.44
2:2:1128:G:N2	27:S:49:ARG:HH22	2.15	0.44
2:2:1159:A:OP1	24:P:196:ARG:NH2	2.50	0.44
2:2:1381:C:OP1	2:2:1382:G:H5''	2.18	0.44
2:2:773:G:H2'	2:2:774:A:O4'	2.17	0.44
2:2:834:G:H22	2:2:951:G:H1'	1.83	0.44
3:3:32:A:C6	3:3:33:A:C6	3.05	0.44
3:3:38:A:N6	3:3:182:G:N1	2.66	0.44
4:4:180:C:OP2	10:B:132:ARG:NH2	2.51	0.44
8:8:36:C:C2	8:8:48:G:O2'	2.65	0.44
9:A:181:LYS:HG3	9:A:184:ASN:H	1.82	0.44
1:1:89:C:O2'	1:1:319:G:OP1	2.34	0.44
1:1:347:U:H2'	1:1:348:G:O4'	2.18	0.44
1:1:670:C:H2'	1:1:671:G:H8	1.83	0.44
2:2:1451:G:H2'	2:2:1452:A:O4'	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:666:C:OP2	2:2:666:C:C6	2.70	0.44
3:3:108:A:H4'	3:3:109:C:O5'	2.17	0.44
3:3:194:A:O2'	3:3:196:A:H5'	2.17	0.44
4:4:158:A:H3'	4:4:159:G:H8	1.83	0.44
9:A:116:VAL:CG2	9:A:126:LEU:HB2	2.42	0.44
10:B:8:HIS:HB3	18:J:48:LEU:HG	2.00	0.44
16:H:33:VAL:HG13	16:H:36:ARG:HB2	2.00	0.44
17:I:94:TYR:OH	17:I:130:LEU:HD11	2.18	0.44
17:I:61:PRO:O	17:I:76:LEU:HA	2.17	0.44
18:J:77:ASN:OD1	18:J:107:PRO:HA	2.18	0.44
1:1:1043:C:C2'	1:1:1044:G:H5'	2.48	0.44
1:1:1186:A:H2'	1:1:1187:A:C8	2.53	0.44
1:1:1434:U:H1'	1:1:1435:G:N7	2.33	0.44
1:1:854:C:C2'	1:1:855:C:H5'	2.48	0.44
2:2:1254:OMG:C3'	2:2:1255:G:H5''	2.48	0.44
2:2:809:C:C4	2:2:810:G:O6	2.71	0.44
2:2:808:C:H3'	2:2:809:C:C5	2.53	0.44
4:4:141:A:H3'	4:4:142:A:C8	2.53	0.44
7:7:74:U:OP2	31:W:73:LEU:HD23	2.17	0.44
1:1:1049:A:H4'	8:8:103:A:C2	2.53	0.44
9:A:79:PRO:HD3	9:A:165:MET:SD	2.58	0.44
17:I:60:ARG:NH1	17:I:76:LEU:O	2.50	0.44
18:J:81:ILE:HD11	18:J:103:VAL:CG1	2.48	0.44
18:J:83:GLN:HG2	18:J:85:LYS:H	1.81	0.44
21:M:7:LEU:O	21:M:11:TRP:HD1	2.01	0.44
8:8:107:U:H5''	22:N:202:PRO:HG2	1.99	0.44
24:P:61:PRO:HB3	24:P:92:ASP:OD1	2.18	0.44
26:R:111:ASP:OD1	26:R:115:ARG:NE	2.42	0.44
1:1:1394:U:C6	1:1:1394:U:O5'	2.71	0.44
1:1:656:G:H2'	1:1:657:G:O4'	2.18	0.44
1:1:659:G:H2'	1:1:660:U:C6	2.53	0.44
2:2:426:G:H2'	2:2:427:C:C6	2.52	0.44
1:1:1537:G:N2	2:2:604:A:H62	2.12	0.44
2:2:827:A:O2'	2:2:828:U:O4'	2.33	0.44
6:6:13:C:O2'	6:6:14:A:P	2.75	0.44
6:6:32:U:O4	16:H:221:TYR:CE1	2.71	0.44
6:6:39:U:C6	6:6:39:U:OP2	2.71	0.44
1:1:462:A:H62	7:7:3:C:H42	1.64	0.44
8:8:20:A:H2'	8:8:21:G:H8	1.83	0.44
10:B:312:ILE:HG13	10:B:328:TYR:CZ	2.52	0.44
17:I:59:LEU:HD23	17:I:60:ARG:N	2.33	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1392:G:N1	19:K:105:TRP:CH2	2.82	0.44
16:H:146:VAL:HG11	19:K:55:ALA:CB	2.47	0.44
1:1:56:G:H4'	21:M:155:VAL:HG12	1.99	0.44
21:M:155:VAL:O	21:M:162:ARG:NH2	2.41	0.44
21:M:189:ARG:HA	21:M:192:TRP:HB3	1.99	0.44
23:O:39:GLN:HE21	23:O:43:LYS:NZ	2.16	0.44
24:P:64:LEU:HD22	24:P:120:ILE:HD11	2.00	0.44
1:1:1208:U:H3'	1:1:1209:G:N2	2.33	0.43
1:1:1257:U:HO2'	1:1:1258:A:P	2.40	0.43
1:1:1443:U:H1'	24:P:17:HIS:ND1	2.30	0.43
1:1:213:G:H22	1:1:220:A:H2	1.66	0.43
1:1:319:G:H5''	1:1:320:G:OP1	2.18	0.43
1:1:460:A:H2'	1:1:461:G:O4'	2.18	0.43
1:1:492:G:C2	1:1:644:G:N2	2.86	0.43
2:2:631:G:H1	2:2:1433:U:H3	1.66	0.43
6:6:16:C:H3'	6:6:17:U:H5''	2.00	0.43
13:E:112:ARG:CZ	13:E:118:LYS:HD2	2.48	0.43
13:E:109:ILE:O	13:E:122:ARG:HA	2.18	0.43
13:E:15:GLY:HA2	13:E:30:LYS:NZ	2.32	0.43
23:O:41:LYS:HA	23:O:41:LYS:HE2	2.00	0.43
26:R:9:TYR:CE1	26:R:65:VAL:HG12	2.53	0.43
1:1:1371:U:O2'	1:1:1372:G:P	2.76	0.43
1:1:1667:A:N3	15:G:139:THR:HG22	2.33	0.43
1:1:1754:U:H5''	25:Q:38:ARG:HD2	2.00	0.43
1:1:180:A:H2'	1:1:181:G:C8	2.54	0.43
1:1:300:A:O3'	1:1:301:A:H4'	2.18	0.43
2:2:404:A:H4'	2:2:405:U:H5''	2.00	0.43
2:2:483:C:H2'	2:2:484:G:C8	2.53	0.43
2:2:525:A:H1'	2:2:529:G:C8	2.53	0.43
2:2:554:OMC:HM22	2:2:555:A:OP1	2.18	0.43
4:4:137:G:O2'	13:E:158:ALA:HB1	2.18	0.43
7:7:7:OMU:HM23	7:7:7:OMU:H4'	2.00	0.43
16:H:111:LYS:O	16:H:115:LYS:HG3	2.19	0.43
16:H:96:ASP:HA	16:H:99:VAL:HB	2.00	0.43
19:K:149:ARG:C	19:K:151:ALA:H	2.21	0.43
5:5:17:C:O2'	28:T:69:ARG:O	2.23	0.43
1:1:1029:G:H8	1:1:1029:G:OP2	2.01	0.43
1:1:1054:A:H2'	1:1:1055:U:H5'	2.00	0.43
1:1:1435:G:C2	1:1:1436:G:C6	3.06	0.43
1:1:1640:C:H4'	3:3:202:A:H1'	2.00	0.43
1:1:1735:G:C2	1:1:1736:G:H1'	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:67:C:H2'	1:1:68:A:O4'	2.18	0.43
1:1:829:U:O2'	1:1:830:G:OP2	2.29	0.43
1:1:984:A:C6	11:C:99:ARG:HD2	2.53	0.43
2:2:1088:C:H2'	2:2:1089:G:C8	2.54	0.43
2:2:1248:C:H5''	2:2:1395:A:H4'	2.00	0.43
2:2:1290:A:H5'	2:2:1291:C:C5	2.53	0.43
2:2:44:C:H2'	2:2:45:A:C8	2.54	0.43
2:2:533:C:C5	2:2:544:U:C5	3.06	0.43
2:2:812:C:H4'	2:2:813:U:C6	2.54	0.43
2:2:812:C:H6	2:2:812:C:H2'	1.62	0.43
5:5:102:U:H2'	5:5:103:U:O4'	2.19	0.43
8:8:108:G:C6	8:8:109:A:C6	3.06	0.43
8:8:85:G:OP2	50:8:201:HOH:O	2.21	0.43
10:B:371:LYS:HD2	10:B:371:LYS:HA	1.80	0.43
16:H:53:VAL:HG21	16:H:98:PHE:HE2	1.83	0.43
18:J:94:VAL:O	32:X:20:ARG:N	2.51	0.43
19:K:45:SER:HA	19:K:46:PRO:HD3	1.10	0.43
26:R:29:PHE:CE1	26:R:43:PHE:HA	2.53	0.43
30:V:99:LYS:HE3	30:V:110:ALA:O	2.19	0.43
30:V:109:LYS:H	30:V:133:HIS:CD2	2.35	0.43
32:X:8:PHE:CD1	32:X:44:TYR:HD1	2.36	0.43
33:Y:68:VAL:H	33:Y:113:ARG:HH12	1.66	0.43
1:1:1413:U:H4'	1:1:1414:A:H5'	2.00	0.43
1:1:145:U:H5''	1:1:147:G:H5'	1.99	0.43
1:1:1470:U:C2	1:1:1522:U:H1'	2.53	0.43
1:1:270:C:C4	1:1:271:A:H1'	2.53	0.43
1:1:487:G:H1	1:1:648:A:H2	1.62	0.43
2:2:1161:G:H2'	2:2:1162:A:O4'	2.18	0.43
2:2:1088:C:H5''	2:2:1179:C:O2'	2.18	0.43
2:2:1275:C:H5	2:2:1292:G:N1	2.14	0.43
2:2:1310:G:H5'	2:2:1311:A:C5'	2.45	0.43
2:2:1347:C:C2'	2:2:1348:U:H5'	2.48	0.43
2:2:581:G:N2	2:2:585:C:O2'	2.51	0.43
5:5:122:C:H5'	5:5:123:U:OP2	2.18	0.43
6:6:12:C:H3'	6:6:12:C:OP1	2.17	0.43
7:7:39:G:H1'	7:7:104:A:N1	2.34	0.43
7:7:95:A:H2'	7:7:96:A:O4'	2.19	0.43
15:G:253:ASN:ND2	15:G:256:ARG:HE	2.16	0.43
16:H:93:ALA:HA	16:H:166:TRP:CD1	2.54	0.43
16:H:208:MET:SD	19:K:181:TRP:CE3	3.11	0.43
1:1:1238:C:H5	19:K:50:CYS:HG	1.60	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:N:60:ILE:HG12	22:N:160:PRO:HG2	2.00	0.43
23:O:33:ARG:O	23:O:37:VAL:HG22	2.17	0.43
25:Q:136:ARG:O	25:Q:139:VAL:HG22	2.18	0.43
1:1:1136:G:H2'	1:1:1137:C:H6	1.83	0.43
1:1:1285:A:H2'	1:1:1285:A:N3	2.34	0.43
1:1:1674:U:H2'	1:1:1675:G:C8	2.54	0.43
1:1:171:U:O2'	1:1:172:G:H5'	2.18	0.43
1:1:1772:U:H2'	1:1:1773:U:C6	2.53	0.43
2:2:1190:A:O3'	24:P:189:SER:HB3	2.19	0.43
2:2:1393:U:H1'	2:2:1394:U:OP2	2.18	0.43
2:2:634:U:H1'	2:2:1431:G:N2	2.33	0.43
2:2:946:C:H2'	2:2:947:U:C6	2.52	0.43
3:3:119:U:HO2'	3:3:120:G:H8	1.62	0.43
8:8:11:C:C5	8:8:12:C:N3	2.87	0.43
13:E:24:LYS:NZ	13:E:38:LEU:H	2.17	0.43
23:O:163:ALA:HB3	23:O:166:PHE:CD2	2.53	0.43
1:1:1166:C:H5''	24:P:159:PHE:CG	2.54	0.43
1:1:100:G:H2'	1:1:101:A:O4'	2.19	0.43
1:1:1659:G:H2'	1:1:1660:U:C6	2.53	0.43
1:1:240:U:O2'	1:1:241:G:O4'	2.34	0.43
1:1:36:OMU:O5'	1:1:36:OMU:H6	2.19	0.43
1:1:448:A:C2	7:7:16:A:H1'	2.54	0.43
1:1:487:G:N2	1:1:648:A:H2	2.13	0.43
1:1:752:G:H1	20:L:72:THR:HG21	1.83	0.43
2:2:1167:A:H2'	2:2:1168:G:H8	1.84	0.43
2:2:650:A:N6	2:2:1311:A:N7	2.66	0.43
2:2:668:C:N3	2:2:1036:G:N2	2.52	0.43
2:2:71:OMG:H2'	2:2:72:G:O5'	2.19	0.43
3:3:129:G:C2	3:3:130:G:C8	3.06	0.43
3:3:197:G:H4'	3:3:198:C:O4'	2.17	0.43
6:6:3:A:H2'	6:6:3:A:N3	2.33	0.43
8:8:42:C:O2'	8:8:43:G:C5'	2.66	0.43
8:8:61:C:H2'	8:8:62:U:H6	1.83	0.43
9:A:21:HIS:HD2	9:A:22:LYS:NZ	2.16	0.43
10:B:226:THR:HB	10:B:278:HIS:H	1.82	0.43
16:H:27:ILE:HG22	16:H:53:VAL:HA	2.00	0.43
16:H:30:LYS:HE3	16:H:30:LYS:HB3	3.23	0.43
18:J:47:ARG:HH11	18:J:50:ARG:HD3	1.83	0.43
6:6:33:G:N7	19:K:42:VAL:HG11	2.33	0.43
25:Q:14:ILE:HG21	25:Q:42:ARG:HG2	2.01	0.43
26:R:93:VAL:HG13	26:R:94:LYS:H	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:934:A:O4'	28:T:133[B]:HIS:HA	2.18	0.43
30:V:102:MET:O	30:V:106:TYR:N	2.51	0.43
30:V:129:LEU:HD12	30:V:135:ALA:HA	2.01	0.43
33:Y:68:VAL:O	33:Y:113:ARG:NH1	2.51	0.43
33:Y:67:GLN:HB3	33:Y:113:ARG:HH22	1.83	0.43
1:1:1149:G:H2'	1:1:1149:G:N3	2.33	0.43
1:1:1445:U:O2'	1:1:1446:A:H3'	2.18	0.43
1:1:1681:G:O5'	1:1:1681:G:H8	2.02	0.43
1:1:36:OMU:CM2	1:1:37:A:H5'	2.46	0.43
1:1:504:C:C2	1:1:505:U:H1'	2.54	0.43
2:2:1088:C:OP1	2:2:1179:C:O2'	2.35	0.43
2:2:1171:U:H2'	2:2:1172:G:C8	2.54	0.43
2:2:526:A:H2'	2:2:527:A2M:O3'	2.19	0.43
2:2:592:C:H2'	2:2:593:U:O4'	2.19	0.43
2:2:801:C:H2'	2:2:802:U:O4'	2.19	0.43
3:3:58:C:O5'	3:3:58:C:C6	2.71	0.43
5:5:41:U:H4'	5:5:42:G:O5'	2.19	0.43
6:6:33:G:C5'	19:K:42:VAL:HG22	2.48	0.43
2:2:1442:C:N4	6:6:3:A:H61	2.16	0.43
7:7:37:U:C5	7:7:105:C:N3	2.87	0.43
1:1:911:G:C5	9:A:181:LYS:HB2	2.54	0.43
9:A:246:ILE:C	9:A:246:ILE:CD1	2.85	0.43
10:B:226:THR:O	10:B:277:TYR:HA	2.19	0.43
10:B:77:THR:OG1	10:B:333:GLY:O	2.32	0.43
13:E:36:LYS:HZ3	13:E:38:LEU:HD21	1.84	0.43
19:K:180:HIS:HE1	19:K:181:TRP:NE1	2.15	0.43
22:N:92:HIS:HB3	22:N:94:PHE:CZ	2.53	0.43
33:Y:77:HIS:HA	33:Y:80:PHE:HD2	1.84	0.43
1:1:121:A:O2'	1:1:144:G:N2	2.51	0.43
1:1:307:U:H2'	1:1:308:A:C8	2.53	0.43
1:1:330:U:H2'	1:1:331:C:O4'	2.18	0.43
1:1:80:C:OP1	21:M:199:VAL:HG11	2.18	0.43
1:1:838:G:OP1	24:P:154:GLU:N	2.38	0.43
2:2:1023:U:C4	2:2:1024:C:H1'	2.54	0.43
2:2:1159:A:H2'	2:2:1160:OMC:O4'	2.19	0.43
2:2:1307:U:OP2	50:2:1736:HOH:O	2.21	0.43
2:2:413:A:H2'	2:2:414:G:C8	2.54	0.43
2:2:432:U:H2'	2:2:433:G:O4'	2.18	0.43
2:2:729:G:C4	2:2:731:A:H5''	2.54	0.43
1:1:927:A2M:H4'	2:2:73:U:O3'	2.19	0.43
8:8:48:G:C2'	8:8:48:G:N3	2.80	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:103:PRO:O	9:A:107:ILE:HG13	2.19	0.43
9:A:147:ARG:HG2	9:A:157:SER:HB3	1.99	0.43
1:1:1521:G:C4	11:C:100:MET:SD	3.11	0.43
4:4:141:A:O3'	13:E:70:ASN:HB2	2.19	0.43
16:H:27:ILE:O	16:H:54:VAL:HG22	2.19	0.43
28:T:107:LEU:HD23	28:T:112:MET:HE1	2.01	0.43
34:Z:19:LEU:CD2	34:Z:21:LYS:HB2	2.48	0.43
1:1:1205:G:O2'	1:1:1206:A:H5'	2.19	0.43
1:1:271:A:H2'	1:1:272:U:C6	2.53	0.43
1:1:695:OMC:OP1	20:L:3:THR:HG22	2.18	0.43
1:1:815:G:N2	1:1:825:G:N2	2.67	0.43
1:1:887:A:C2	1:1:909:A:H1'	2.54	0.43
2:2:1441:G:N2	2:2:1443:G:O2'	2.41	0.43
2:2:526:A:HO2'	2:2:527:A2M:P	2.37	0.43
2:2:780:G:O5'	15:G:328:ARG:NH2	2.49	0.43
6:6:37:C:H3'	6:6:37:C:O2	2.18	0.43
10:B:210:VAL:HG21	10:B:329:VAL:HG21	2.00	0.43
13:E:148:ASN:OD1	13:E:149:ASP:N	2.51	0.43
16:H:95:SER:OG	16:H:124:GLU:HB2	2.19	0.43
17:I:64:ASN:OD1	17:I:74:ARG:NH2	2.52	0.43
20:L:74:ASN:HA	20:L:110:LEU:O	2.19	0.43
22:N:99:ILE:HB	22:N:123:ASN:ND2	2.34	0.43
1:1:835:G:O2'	24:P:65:SER:OG	2.27	0.43
29:U:57:LEU:H	29:U:61:LYS:HA	1.83	0.43
1:1:1136:G:H2'	1:1:1137:C:C6	2.54	0.43
1:1:1389:A:OP1	19:K:77:PRO:HG3	2.18	0.43
1:1:23:U:H4'	1:1:24:A:C8	2.54	0.43
1:1:306:G:O6	21:M:15:SER:HB3	2.19	0.43
1:1:424:G:N2	1:1:427:A:H8	2.06	0.43
1:1:506:G:N2	1:1:549:C:O2	2.52	0.43
1:1:709:A:H5''	1:1:837:A:H61	1.84	0.43
2:2:535:U:C2'	2:2:536:C:C5'	2.97	0.43
8:8:20:A:H2'	8:8:21:G:O4'	2.19	0.43
10:B:282:GLN:HB3	10:B:285:LYS:HE2	2.01	0.43
11:C:167:MET:SD	11:C:222:ILE:HD12	2.59	0.43
11:C:30:PRO:HB3	24:P:25:TYR:CE2	2.48	0.43
19:K:73:ILE:CG1	19:K:114:VAL:HG22	2.36	0.43
13:E:59:TRP:HH2	19:K:64:TYR:CB	2.23	0.43
22:N:72:ALA:HA	22:N:151:ALA:HB1	2.01	0.43
22:N:156:LYS:HG3	22:N:163:GLN:HB3	2.01	0.43
23:O:51:LEU:N	23:O:151:ILE:O	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:8:116:U:O2'	23:O:74:VAL:O	2.35	0.43
25:Q:18:GLY:O	25:Q:21:ARG:HB2	2.19	0.43
28:T:36:ILE:HG23	28:T:47:LEU:HD23	2.01	0.43
28:T:61:LYS:CG	28:T:78:GLN:HE22	2.32	0.43
1:1:1108:G:H3'	1:1:1109:U:O2	2.19	0.42
1:1:1112:A:O2'	27:S:105:PHE:HE1	2.02	0.42
1:1:1119:C:H2'	1:1:1120:C:C6	2.54	0.42
1:1:130:U:H3'	1:1:131:U:H5'	2.00	0.42
1:1:1354:C:H2'	1:1:1355:C:C6	2.54	0.42
1:1:1668:G:C2	15:G:136:ARG:HD3	2.53	0.42
1:1:403:C:O2'	11:C:79:SER:O	2.37	0.42
1:1:59:A:H2'	1:1:60:A:O4'	2.18	0.42
2:2:1277:A:OP1	22:N:75:TYR:OH	2.15	0.42
2:2:29:C:HO2'	2:2:30:A:P	2.42	0.42
3:3:112:C:N3	3:3:120:G:N1	2.53	0.42
3:3:151:C:H2'	3:3:152:A:O4'	2.18	0.42
8:8:37:C:N3	8:8:48:G:O4'	2.52	0.42
8:8:43:G:C8	8:8:43:G:OP2	2.70	0.42
8:8:6:U:O2'	8:8:7:A:H8	2.02	0.42
10:B:321:TYR:HD1	10:B:340:ARG:HG3	1.81	0.42
4:4:137:G:H21	13:E:155:ARG:HH22	1.67	0.42
13:E:88:ARG:HH11	13:E:186:ILE:HG22	1.82	0.42
17:I:79:GLY:HA2	17:I:101:ARG:O	2.19	0.42
26:R:6:LEU:O	26:R:102:THR:HG23	2.18	0.42
27:S:100[B]:ARG:C	27:S:102:GLN:N	2.68	0.42
27:S:14:LEU:HD11	27:S:58:HIS:CD2	2.54	0.42
7:7:147:G:C5'	30:V:51:ASN:HD21	2.32	0.42
30:V:79:ILE:HG12	30:V:85:LEU:HD23	2.01	0.42
1:1:1048:A:H2'	1:1:1049:A:O4'	2.20	0.42
1:1:1394:U:H6	1:1:1394:U:O5'	2.01	0.42
1:1:1450:C:H2'	1:1:1451:U:H5'	2.01	0.42
1:1:1727:U:C4	1:1:1728:G:C4	3.07	0.42
1:1:48:OMU:H2'	1:1:48:OMU:O2	2.18	0.42
1:1:752:G:H4'	1:1:810:C:O3'	2.19	0.42
1:1:851:G:H2'	1:1:852:A:C8	2.54	0.42
1:1:939:C:H2'	1:1:940:U:O4'	2.19	0.42
2:2:498:A:H2'	2:2:499:G:C8	2.54	0.42
2:2:775:C:N4	2:2:814:A:OP2	2.52	0.42
3:3:3:G:H2'	3:3:4:U:C6	2.53	0.42
8:8:34:A:N1	8:8:48:G:C6	2.88	0.42
10:B:165:HIS:HA	10:B:182:HIS:O	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:B:337:GLY:HA3	10:B:343:MET:HE3	1.99	0.42
18:J:13:PHE:CD2	18:J:123:GLU:HG3	2.54	0.42
19:K:51:ALA:O	19:K:52:GLN:HG3	2.19	0.42
21:M:73:ARG:HG2	21:M:75:VAL:HG13	2.01	0.42
22:N:58:GLU:O	22:N:129:VAL:HB	2.19	0.42
2:2:1276:A:H4'	22:N:154:ARG:HH12	1.83	0.42
22:N:47:PRO:HA	22:N:171:TRP:CZ3	2.54	0.42
2:2:635:A:H5''	28:T:66[A]:LYS:HA	2.01	0.42
29:U:85:TYR:HH	29:U:90:PHE:HZ	1.63	0.42
1:1:1531:U:H2'	1:1:1532:G:C8	2.53	0.42
1:1:1541:A2M:OP2	50:1:1966:HOH:O	2.21	0.42
1:1:827:G:H2'	1:1:828:U:O4'	2.19	0.42
2:2:71:OMG:H2'	2:2:72:G:O4'	2.20	0.42
6:6:33:G:H5'	19:K:42:VAL:HG22	1.94	0.42
8:8:46:U:O2'	8:8:47:U:H5'	2.19	0.42
10:B:26:ARG:HD3	10:B:184:GLN:OE1	2.19	0.42
10:B:320:GLY:O	10:B:340:ARG:NE	2.48	0.42
10:B:56:ILE:CG2	10:B:366:ILE:HG23	2.47	0.42
15:G:117:LYS:HE2	15:G:117:LYS:HA	2.00	0.42
1:1:6:C:H5''	15:G:278:LYS:HB3	2.01	0.42
16:H:148:TYR:CB	19:K:59:MET:H	2.25	0.42
20:L:120:ILE:HG13	20:L:120:ILE:O	2.19	0.42
26:R:12:VAL:HG12	26:R:62:SER:O	2.20	0.42
1:1:1183:G:OP1	22:N:17:TYR:OH	2.35	0.42
1:1:22:C:C2'	1:1:23:U:H5'	2.50	0.42
1:1:260:C:HO2'	1:1:261:C:P	2.39	0.42
1:1:493:A:C2'	1:1:494:A:H5'	2.49	0.42
1:1:497:A:O2'	1:1:498:G:P	2.78	0.42
1:1:899:A:H3'	1:1:900:C:C6	2.54	0.42
1:1:923:G:N2	1:1:940:U:H1'	2.33	0.42
2:2:1078:OMU:O4'	2:2:1186:A2M:H2	2.19	0.42
2:2:1230:OMG:HM23	2:2:1230:OMG:H1'	1.84	0.42
2:2:805:G:H2'	2:2:806:C:C6	2.55	0.42
6:6:26:G:C3'	6:6:27:G:H4'	2.49	0.42
7:7:20:C:H2'	7:7:21:U:H5'	2.00	0.42
9:A:101:VAL:HG22	9:A:165:MET:HG2	2.01	0.42
1:1:874:C:H5'	9:A:19:HIS:ND1	2.34	0.42
10:B:204:LEU:O	10:B:206:LYS:HD2	2.19	0.42
15:G:324:SER:HB2	15:G:327:SER:H	1.83	0.42
19:K:78:ARG:O	19:K:78:ARG:HG2	2.19	0.42
28:T:127:ARG:O	28:T:127:ARG:HG3	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:W:74:LYS:HB2	31:W:76:VAL:HG22	2.00	0.42
32:X:43:LEU:O	32:X:43:LEU:HD23	2.20	0.42
33:Y:20:GLY:HA3	33:Y:134:PHE:CE1	2.54	0.42
33:Y:43:LEU:HD13	33:Y:80:PHE:HE1	1.84	0.42
1:1:1093:U:H2'	1:1:1094:C:C6	2.54	0.42
1:1:1004:G:O2'	1:1:1172:G:H4'	2.20	0.42
1:1:1450:C:C2'	1:1:1451:U:H5'	2.49	0.42
1:1:1729:A:N1	1:1:1730:A:N6	2.66	0.42
1:1:205:A:H4'	1:1:206:A:OP1	2.19	0.42
1:1:243:G:H22	1:1:259:G:N2	2.18	0.42
1:1:30:C:H2'	1:1:31:G:O4'	2.19	0.42
1:1:73:U:H5'	17:I:64:ASN:O	2.20	0.42
1:1:840:G:H2'	1:1:841:U:O4'	2.20	0.42
2:2:1161:G:H4'	2:2:1188:C:H4'	2.01	0.42
2:2:1198:C:H3'	2:2:1199:G:C5'	2.47	0.42
2:2:628:A2M:H1'	2:2:628:A2M:HM'3	1.84	0.42
2:2:639:G:OP1	10:B:253:LYS:HD3	2.20	0.42
2:2:754:U:H2'	2:2:755:U:C6	2.54	0.42
6:6:31:U:C6	6:6:31:U:H3'	2.53	0.42
7:7:44:A:H2'	7:7:45:C:C6	2.54	0.42
2:2:770:A:H61	9:A:68:LYS:HE3	1.84	0.42
9:A:65:HIS:CB	9:A:72:VAL:HG13	2.35	0.42
11:C:100:MET:HE1	11:C:103:PRO:HA	2.02	0.42
1:1:405:A:O2'	11:C:85:THR:HG23	2.19	0.42
16:H:161:CYS:HA	16:H:164:VAL:HG22	2.01	0.42
25:Q:140:GLU:O	25:Q:144:LYS:HG2	2.19	0.42
2:2:1060:G:O6	27:S:3:HIS:NE2	2.53	0.42
1:1:1126:U:N3	1:1:1127:U:H1'	2.35	0.42
1:1:1161:A:H2'	1:1:1162:G:H8	1.84	0.42
1:1:1161:A:H2'	1:1:1162:G:C8	2.55	0.42
1:1:1440:A:C6	1:1:1448:C:H4'	2.54	0.42
1:1:231:U:H4'	1:1:232:G:H5'	2.00	0.42
1:1:673:C:N4	1:1:677:A:H8	2.17	0.42
2:2:1140:U:O2'	2:2:1172:G:O2'	2.20	0.42
2:2:1413:U:H2'	2:2:1414:U:C6	2.54	0.42
2:2:429:A:O2'	9:A:236:GLY:N	2.45	0.42
2:2:747:A:C6	2:2:749:G:C6	3.08	0.42
2:2:996:G:H2'	2:2:997:C:C5	2.55	0.42
2:2:9:G:H2'	2:2:10:C:C6	2.54	0.42
7:7:136:G:H2'	7:7:137:U:C6	2.54	0.42
8:8:12:C:H1'	8:8:15:A:N1	2.34	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:8:31:C:O2'	8:8:52:A:N6	2.53	0.42
9:A:54:ARG:HG2	9:A:56:ALA:H	1.84	0.42
13:E:161:HIS:HD2	13:E:179:TYR:HB2	1.84	0.42
13:E:24:LYS:HE2	13:E:24:LYS:HA	2.01	0.42
16:H:148:TYR:HE2	16:H:150:SER:HG	1.67	0.42
18:J:78:ALA:HA	18:J:105:VAL:HG22	2.01	0.42
19:K:155:GLU:O	19:K:159:ALA:N	2.53	0.42
16:H:49:LYS:NZ	19:K:37:THR:HG23	2.35	0.42
21:M:159:ARG:NH1	21:M:165:THR:HG22	2.35	0.42
25:Q:90:PRO:O	25:Q:94:LEU:HD23	2.19	0.42
1:1:1369:G:C5	16:H:78:LYS:HD3	2.55	0.42
1:1:1536:G:H2'	1:1:1537:G:O4'	2.20	0.42
1:1:672:U:H2'	1:1:673:C:C6	2.55	0.42
1:1:673:C:H2'	1:1:674:U:O4'	2.19	0.42
1:1:846:G:O2'	1:1:847:OMU:H5''	2.20	0.42
1:1:94:A:C5	1:1:95:G:H1'	2.55	0.42
2:2:102:C:H2'	2:2:103:G:O4'	2.20	0.42
2:2:113:A:H4'	2:2:567:A:H5''	2.01	0.42
2:2:1254:OMG:H3'	2:2:1255:G:H5''	2.00	0.42
2:2:412:A:H2'	2:2:413:A:C8	2.54	0.42
2:2:813:U:O4	2:2:1009:C:O2'	2.26	0.42
2:2:942:G:C6	2:2:943:U:C2	3.08	0.42
7:7:141:C:H2'	7:7:142:C:H5'	2.01	0.42
9:A:59:ALA:CB	9:A:82:MET:HE3	2.49	0.42
10:B:265:VAL:HG21	10:B:271:ARG:HH21	1.84	0.42
10:B:257:ILE:HD12	10:B:271:ARG:NH2	2.34	0.42
3:3:182:G:H4'	16:H:36:ARG:HH12	126.55	0.42
21:M:174:LEU:O	21:M:175:ARG:HB3	2.19	0.42
1:1:959:OMG:N2	21:M:76:HIS:CD2	2.78	0.42
24:P:51:ARG:CZ	24:P:147:ARG:HD2	2.50	0.42
28:T:8:PRO:HD3	28:T:16:LYS:NZ	2.34	0.42
32:X:47:LYS:HA	32:X:47:LYS:HD2	1.83	0.42
1:1:144:G:OP1	21:M:40:ARG:NH2	2.52	0.42
1:1:1729:A:N3	1:1:1729:A:H2'	2.34	0.42
1:1:293:C:H2'	1:1:294:U:C5	2.54	0.42
1:1:516:G:H2'	1:1:517:U:C6	2.55	0.42
1:1:770:G:O2'	1:1:771:U:H5'	2.19	0.42
1:1:819:C:H6	1:1:819:C:O5'	2.02	0.42
2:2:554:OMC:O3'	2:2:554:OMC:HM22	2.20	0.42
1:1:930:U:N3	2:2:603:A:N3	2.67	0.42
3:3:116:C:H2'	3:3:117:G:H5'	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:105:A:N3	5:5:105:A:H3'	2.35	0.42
6:6:46:C:H2'	6:6:47:G:C8	2.54	0.42
7:7:118:U:H2'	7:7:119:G:C8	2.54	0.42
8:8:78:U:H2'	8:8:79:A:H8	1.85	0.42
2:2:431:C:H5''	9:A:219:ILE:HD11	2.02	0.42
10:B:390:LEU:HD12	10:B:392:LYS:H	1.84	0.42
15:G:157:PRO:HA	15:G:318:TRP:CE3	2.55	0.42
15:G:296:LEU:O	15:G:299:LEU:N	2.53	0.42
16:H:93:ALA:O	16:H:95:SER:N	2.53	0.42
17:I:129:VAL:HG23	17:I:130:LEU:N	2.35	0.42
17:I:83:ALA:CB	17:I:108:ASN:HD22	2.30	0.42
29:U:32:ILE:O	29:U:36:ASP:N	2.53	0.42
1:1:1357:G:C5	1:1:1358:C:C4	3.08	0.42
1:1:1374:C:H2'	1:1:1375:G:O4'	2.19	0.42
1:1:1423:A:H4'	1:1:1424:A:OP1	2.18	0.42
1:1:333:A:H2'	1:1:334:G:C8	2.55	0.42
1:1:386:C:C2	7:7:24:G:H4'	2.55	0.42
1:1:720:A:H2'	1:1:721:U:O4'	2.19	0.42
2:2:1195:U:H2'	2:2:1196:U:C6	2.54	0.42
2:2:1369:A:H2'	2:2:1370:C:H6	1.85	0.42
3:3:69:A:H2'	3:3:70:A:C8	2.54	0.42
4:4:137:G:H21	13:E:155:ARG:NH2	2.18	0.42
6:6:37:C:H5	14:F:185:LYS:HZ3	1.68	0.42
8:8:23:G:H4'	8:8:24:A:N7	2.35	0.42
2:2:447:G:H1'	9:A:222:PRO:HG2	2.01	0.42
10:B:84:MET:HE2	10:B:164:ALA:CB	2.50	0.42
1:1:247:A:OP2	11:C:221:ASN:HB2	2.20	0.42
15:G:186:THR:C	15:G:188:LYS:H	2.23	0.42
15:G:239:ALA:HB1	15:G:268:MET:HB3	2.01	0.42
22:N:49:CYS:SG	22:N:139:ARG:HG2	2.60	0.42
22:N:4:ARG:HA	22:N:5:PRO:HD3	1.90	0.42
2:2:57:G:OP1	25:Q:21:ARG:HG3	2.19	0.42
30:V:116:LEU:HD21	30:V:124:LYS:HD2	2.01	0.42
1:1:1271:G:H1	1:1:1358:C:N4	2.18	0.42
1:1:1448:C:H2'	1:1:1449:C:H6	1.84	0.42
1:1:1555:G:H2'	1:1:1556:G:O4'	2.20	0.42
1:1:1677:A:H2'	1:1:1678:G:O4'	2.20	0.42
1:1:249:G:H1'	1:1:251:A:OP1	2.20	0.42
1:1:302:G:HO2'	1:1:303:C:H6	1.65	0.42
1:1:503:A:H8	1:1:504:C:C5	2.38	0.42
1:1:844:C:H2'	1:1:845:OMU:C6	2.50	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1079:OMG:O6	2:2:1237:C:N4	2.24	0.42
1:1:990:U:O2'	2:2:648:A:N1	2.43	0.42
2:2:967:U:H4'	2:2:968:G:H8	1.84	0.42
4:4:120:U:H2'	4:4:120:U:H6	1.65	0.42
7:7:102:G:OP2	7:7:104:A:O2'	2.35	0.42
8:8:15:A:H5''	8:8:112:G:O5'	2.20	0.42
8:8:47:U:H1'	8:8:48:G:H8	1.85	0.42
9:A:193:ARG:HD3	9:A:195:CYS:SG	2.60	0.42
11:C:12:ALA:HB1	11:C:160:TYR:OH	2.20	0.42
11:C:168:ALA:HA	11:C:171:LYS:HE2	2.01	0.42
11:C:151:LEU:O	11:C:250:TRP:HB2	2.20	0.42
11:C:153:VAL:HG23	11:C:251:THR:HA	2.01	0.42
13:E:92:ARG:HG2	13:E:93:CYS:N	2.35	0.42
1:1:1001:G:OP2	50:1:1956:HOH:O	2.22	0.41
1:1:1091:A:C2	1:1:1092:U:H1'	2.55	0.41
1:1:1092:U:H2'	1:1:1093:U:O4'	2.20	0.41
1:1:1371:U:O2'	1:1:1372:G:OP1	2.38	0.41
1:1:1581:G:OP2	25:Q:53:LYS:NZ	2.52	0.41
1:1:207:C:H2'	1:1:208:C:C6	2.55	0.41
1:1:217:A:H2'	1:1:218:A:N9	2.34	0.41
1:1:188:A:H1'	1:1:244:C:O2'	2.20	0.41
1:1:370:G:H4'	1:1:371:U:C6	2.55	0.41
1:1:498:G:N2	1:1:556:U:H3	2.18	0.41
1:1:488:G:H1	1:1:647:G:H1	1.67	0.41
2:2:1175:A:H2'	2:2:1176:A:O4'	2.20	0.41
2:2:1199:G:N3	2:2:1199:G:H3'	2.35	0.41
2:2:1270:G:OP2	2:2:1270:G:H8	2.02	0.41
2:2:548:G:H2'	2:2:549:A:O4'	2.20	0.41
2:2:723:G:H1'	2:2:734:A:C5	2.55	0.41
2:2:749:G:O2'	2:2:750:U:C6	2.69	0.41
3:3:147:A:N3	3:3:147:A:H2'	2.35	0.41
8:8:109:A:C2'	8:8:110:G:H5'	2.50	0.41
8:8:3:G:N1	8:8:4:A:N3	2.68	0.41
8:8:44:A:C5	8:8:45:U:C5	3.07	0.41
9:A:90:CYS:CB	9:A:101:VAL:HB	2.49	0.41
9:A:73:LYS:HZ3	9:A:73:LYS:HB2	1.83	0.41
10:B:101:THR:HG22	10:B:103:GLY:H	1.85	0.41
11:C:106:ILE:HD12	17:I:29:VAL:HG21	2.02	0.41
11:C:138:SER:HB2	34:Z:16:SER:HB2	2.01	0.41
13:E:18:VAL:HG13	13:E:25:VAL:HG13	2.02	0.41
17:I:61:PRO:HB3	17:I:80:PHE:CE2	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:J:39:ILE:HG12	18:J:62:CYS:HA	2.01	0.41
16:H:138:VAL:CG2	19:K:44:LEU:O	2.57	0.41
20:L:75:LEU:HD12	20:L:133:LYS:HD2	2.02	0.41
1:1:234:G:H4'	31:W:58:GLY:HA2	2.01	0.41
31:W:79:ILE:O	31:W:82:VAL:HG12	2.20	0.41
1:1:1586:U:H2'	1:1:1587:G:H5'	2.01	0.41
1:1:1729:A:N3	1:1:1730:A:N7	2.65	0.41
1:1:547:U:C5	1:1:1393:A:N6	2.86	0.41
1:1:664:C:N4	1:1:665:C:N4	2.68	0.41
1:1:955:A2M:H1'	1:1:955:A2M:HM'3	1.83	0.41
2:2:1004:G:H2'	2:2:1005:G:O4'	2.19	0.41
2:2:1175:A:OP1	2:2:1175:A:H8	2.03	0.41
2:2:533:C:N4	2:2:544:U:C4	2.88	0.41
2:2:657:U:H2'	2:2:658:G:O4'	2.19	0.41
2:2:695:G:N7	2:2:697:G:H5''	2.34	0.41
3:3:207:G:H2'	3:3:208:G:H8	1.83	0.41
3:3:37:A:H2'	3:3:38:A:H8	1.85	0.41
7:7:167:C:H5''	15:G:266:LYS:HG3	2.01	0.41
8:8:66:A:O2'	8:8:67:G:OP1	2.25	0.41
10:B:265:VAL:HG11	10:B:271:ARG:HH21	1.85	0.41
13:E:139:VAL:HG11	13:E:142:GLU:HB2	2.03	0.41
21:M:123:MET:SD	21:M:128:LYS:NZ	2.94	0.41
26:R:93:VAL:HG13	26:R:94:LYS:N	2.35	0.41
1:1:1445:U:O2	34:Z:26:ARG:NH1	2.53	0.41
1:1:1353:A:H2'	1:1:1354:C:O4'	2.20	0.41
1:1:1611:A:OP2	1:1:1611:A:H8	2.03	0.41
1:1:1614:G:N2	28:T:129:THR:OG1	2.52	0.41
1:1:1617:C:H2'	1:1:1619:C:C5	2.55	0.41
1:1:491:A:C2	1:1:644:G:N2	2.88	0.41
1:1:512:U:OP2	1:1:513:C:N4	2.53	0.41
1:1:658:G:OP2	1:1:658:G:H8	2.04	0.41
2:2:4:C:H2'	2:2:5:A:C8	2.55	0.41
2:2:602:A:N1	2:2:1422:C:H5	2.18	0.41
3:3:114:C:OP2	25:Q:110:ARG:NH1	2.53	0.41
3:3:208:G:C6	3:3:209:G:C6	3.08	0.41
4:4:90:G:H2'	4:4:91:U:O4'	2.20	0.41
6:6:13:C:C2'	6:6:14:A:H2'	2.46	0.41
8:8:77:G:N2	8:8:101:G:H2'	2.36	0.41
10:B:102:ILE:HG13	10:B:153:PHE:HE1	1.86	0.41
10:B:97:VAL:HG23	10:B:100:LYS:HE2	2.02	0.41
11:C:40:HIS:CD2	11:C:236:LEU:HA	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:C:272:LYS:HB3	11:C:275:PHE:HB3	2.01	0.41
11:C:93:ASN:ND2	11:C:101:PHE:HB2	2.35	0.41
13:E:27:VAL:HG11	13:E:80:ILE:HA	2.03	0.41
16:H:108:ARG:HG3	16:H:109:TYR:CD2	2.54	0.41
16:H:148:TYR:CB	19:K:59:MET:CB	2.97	0.41
16:H:75:TYR:CE2	16:H:90:HIS:HD2	2.38	0.41
17:I:33:GLN:N	17:I:34:PRO:HD2	2.35	0.41
18:J:28:ALA:HB2	18:J:82:ARG:HH22	1.84	0.41
11:C:113:LYS:HG3	21:M:203:LYS:HB3	2.01	0.41
21:M:36:VAL:HG22	21:M:64:VAL:HG22	2.02	0.41
23:O:201:HIS:O	23:O:205:ILE:N	2.52	0.41
26:R:87:CYS:O	26:R:90:THR:HG23	2.20	0.41
27:S:102:GLN:O	27:S:106:LYS:HG2	2.20	0.41
28:T:41:LEU:HD21	28:T:99:GLU:CG	2.46	0.41
31:W:53:VAL:HG12	31:W:103:ILE:HA	2.02	0.41
33:Y:10:VAL:CG1	33:Y:85:TYR:HB2	2.51	0.41
33:Y:44:ALA:HA	33:Y:71:PHE:O	2.19	0.41
1:1:1146:A:H61	1:1:1147:A:N6	2.18	0.41
1:1:1393:A:P	1:1:1393:A:H3'	2.60	0.41
1:1:490:C:HO2'	6:6:54:A:H2	1.49	0.41
1:1:491:A:N6	1:1:644:G:H1	2.13	0.41
1:1:7:C:O2'	1:1:8:U:H5'	2.20	0.41
2:2:1323:C:H2'	2:2:1324:C:C6	2.55	0.41
2:2:372:A:H61	2:2:573:U:H3	1.68	0.41
2:2:667:OMU:C6	2:2:667:OMU:H5'	2.36	0.41
2:2:68:A:HO2'	2:2:69:A:P	2.39	0.41
3:3:194:A:H1'	3:3:196:A:C8	2.55	0.41
6:6:28:A:C1'	6:6:29:G:N7	2.77	0.41
9:A:134:CYS:SG	9:A:150:LEU:HA	2.61	0.41
2:2:403:G:C4	9:A:150:LEU:HD13	2.55	0.41
10:B:193:VAL:O	10:B:197:ILE:HD12	2.21	0.41
11:C:121:PHE:CE1	11:C:278[B]:PRO:HG2	2.55	0.41
13:E:117:GLU:HG3	13:E:119:ARG:HG2	2.02	0.41
1:1:139:C:H5''	15:G:191:ARG:NH2	2.36	0.41
1:1:120:G:H1	15:G:222:GLN:NE2	2.18	0.41
16:H:25:ILE:HG23	16:H:51:ILE:HG13	2.02	0.41
1:1:87:A:O2'	20:L:60:HIS:O	2.36	0.41
29:U:29:ASP:CG	29:U:30:CYS:H	2.23	0.41
30:V:72:THR:H	30:V:75:ALA:HB3	1.85	0.41
30:V:91:SER:HA	30:V:123:LYS:HB2	2.01	0.41
31:W:13:ARG:O	31:W:17:PHE:HD2	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:W:37:ARG:HG3	31:W:38:ALA:H	1.86	0.41
31:W:37:ARG:HH12	31:W:43:ARG:NH2	2.18	0.41
1:1:1224:A:H2'	1:1:1225:U:O4'	2.21	0.41
1:1:12:U:H1'	1:1:13:G:H5'	2.01	0.41
1:1:240:U:O2'	1:1:241:G:O5'	2.33	0.41
1:1:98:A:H1'	1:1:318:G:N7	2.35	0.41
1:1:537:G:N3	1:1:537:G:H2'	2.35	0.41
1:1:679:A:H3'	1:1:680:C:H5''	2.01	0.41
1:1:894:G:O2'	1:1:895:G:H5'	2.21	0.41
2:2:519:G:H1'	2:2:520:U:H5	1.85	0.41
2:2:608:C:C2	2:2:609:A:H1'	2.56	0.41
2:2:749:G:O3'	2:2:749:G:P	2.79	0.41
2:2:790:U:H2'	2:2:791:A:O4'	2.19	0.41
6:6:34:C:C5	6:6:35:U:C4	3.08	0.41
8:8:7:A:N6	8:8:117:A:C6	2.89	0.41
9:A:104:LEU:HD12	9:A:107:ILE:HD12	2.03	0.41
9:A:114:CYS:HB2	9:A:169:ILE:HG12	2.01	0.41
9:A:234:LYS:HG2	9:A:238:ILE:HG12	2.01	0.41
9:A:209:HIS:NE2	9:A:235:VAL:HG21	2.35	0.41
9:A:74:GLU:HG3	9:A:76:MET:HG3	2.02	0.41
10:B:122:TRP:CG	10:B:122:TRP:O	2.74	0.41
10:B:219:ALA:HA	10:B:286:LYS:HA	2.02	0.41
11:C:268:ALA:HA	11:C:276:THR:HG22	2.02	0.41
4:4:52:A:C8	13:E:174:PHE:HB2	2.55	0.41
16:H:28:ASP:N	16:H:137:VAL:O	2.53	0.41
1:1:1062:A:H4'	22:N:40:ARG:HA	2.00	0.41
22:N:76:MET:HA	22:N:147:GLN:NE2	2.35	0.41
33:Y:9:LYS:NZ	33:Y:86:ASN:HD21	2.19	0.41
1:1:1043:C:O2'	1:1:1044:G:H5'	2.20	0.41
1:1:1549:U:O2'	1:1:1550:C:H6	2.04	0.41
1:1:1605:G:H2'	1:1:1606:U:C6	2.56	0.41
1:1:281:G:H3'	1:1:282:C:H5''	2.02	0.41
1:1:388:A:H4'	1:1:407:A:H61	1.82	0.41
1:1:486:C:H1'	1:1:487:G:N7	2.36	0.41
1:1:566:G:H2'	1:1:567:G:C8	2.56	0.41
1:1:569:G:N2	1:1:570:A:C4	2.88	0.41
1:1:661:G:H2'	1:1:662:C:C6	2.55	0.41
1:1:682:C:H2'	1:1:683:G:C8	2.54	0.41
1:1:728:C:H1'	1:1:730:G:C5	2.56	0.41
1:1:770:G:OP1	1:1:770:G:H2'	2.20	0.41
2:2:1248:C:O5'	2:2:1248:C:H6	2.04	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1387:C:H4'	10:B:247:THR:HG23	2.02	0.41
2:2:1426:A:H2'	2:2:1427:C:O4'	2.20	0.41
2:2:424:U:H1'	2:2:426:G:C5	2.56	0.41
1:1:922:U:H1'	2:2:570:A:H1'	2.02	0.41
2:2:742:U:H2'	2:2:743:C:O4'	2.21	0.41
2:2:972:A:O4'	15:G:123:GLN:NE2	2.53	0.41
4:4:96:C:OP1	25:Q:58:HIS:HA	2.21	0.41
5:5:26:A:O3'	5:5:27:U:H4'	2.21	0.41
6:6:31:U:C3'	6:6:31:U:C6	3.04	0.41
6:6:40:C:H5''	6:6:41:G:N7	2.35	0.41
6:6:59:C:C5'	6:6:59:C:H6	2.32	0.41
7:7:122:A:H3'	7:7:123:G:C8	2.56	0.41
10:B:224:SER:OG	10:B:336:SER:HB2	2.20	0.41
14:F:29:LEU:HG	14:F:56:GLN:OE1	2.20	0.41
19:K:40:TYR:HD2	19:K:42:VAL:HG13	1.86	0.41
20:L:109:LEU:HG	20:L:121:VAL:HG21	2.03	0.41
20:L:56:LEU:HD23	24:P:180:THR:HG23	2.02	0.41
20:L:61:TYR:OH	22:N:38:ARG:NH1	111.25	0.41
21:M:19:MET:O	21:M:23:GLN:HG2	2.20	0.41
22:N:184:LEU:O	22:N:188:GLY:N	2.54	0.41
3:3:112:C:OP1	25:Q:118:HIS:HB2	2.20	0.41
27:S:48:VAL:O	27:S:49:ARG:HG2	2.21	0.41
28:T:3:HIS:HD2	28:T:4:TYR:HB2	1.84	0.41
28:T:24:CYS:HB3	28:T:86:LYS:HE2	2.03	0.41
1:1:1525:A:O2'	1:1:1526:OMG:P	2.79	0.41
1:1:685:A:H5'	2:2:606:G:H2'	2.02	0.41
1:1:841:U:H2'	1:1:842:G:H8	1.86	0.41
1:1:882:A:H2'	1:1:883:G:O4'	2.20	0.41
2:2:1001:U:H2'	2:2:1002:C:C6	2.56	0.41
2:2:686:G:H2'	2:2:687:C:C6	2.56	0.41
2:2:70:A:C2'	2:2:71:OMG:C5'	2.86	0.41
2:2:756:C:H2'	2:2:757:A:C8	2.55	0.41
2:2:775:C:OP1	15:G:332:ARG:NH1	2.47	0.41
3:3:57:U:C6	3:3:58:C:N4	2.89	0.41
3:3:63:C:H5''	25:Q:58:HIS:O	2.20	0.41
4:4:66:C:H4'	10:B:64:GLY:HA3	2.02	0.41
6:6:13:C:C4	6:6:14:A:C6	3.09	0.41
6:6:4:U:C2'	6:6:4:U:O2	2.68	0.41
6:6:8:A:O2'	6:6:9:U:P	2.78	0.41
7:7:7:OMU:HM22	7:7:7:OMU:H4'	2.02	0.41
8:8:67:G:H3'	8:8:68:G:H8	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:8:7:A:O2'	8:8:8:C:P	2.79	0.41
9:A:63:PHE:HE2	9:A:76:MET:HE3	1.85	0.41
10:B:199:LEU:HG	10:B:203:LEU:HD22	2.03	0.41
10:B:49:PHE:CD1	10:B:342:VAL:CG2	3.04	0.41
11:C:178:ASP:HA	11:C:181:ARG:HG2	2.03	0.41
11:C:250:TRP:CH2	11:C:258:LEU:HD11	2.56	0.41
11:C:32:ARG:NH2	11:C:34:ASP:OD2	2.52	0.41
15:G:237:VAL:HG12	15:G:271:LEU:HD21	2.01	0.41
15:G:296:LEU:O	15:G:300:ILE:HD12	2.20	0.41
1:1:1369:G:C4	16:H:78:LYS:HD3	2.55	0.41
17:I:32:ASN:O	17:I:36:GLN:HG2	2.20	0.41
17:I:61:PRO:HB3	17:I:80:PHE:CD2	2.55	0.41
19:K:115:GLU:HA	19:K:116:PRO:HD3	1.93	0.41
19:K:73:ILE:HG23	19:K:113:ASN:O	2.20	0.41
22:N:22:PHE:HD2	22:N:23:CYS:HG	1.68	0.41
27:S:29:THR:HA	27:S:32:THR:HG23	2.03	0.41
28:T:31:GLU:HG2	28:T:61:LYS:H	1.85	0.41
28:T:6:ARG:HH21	28:T:116:HIS:CG	2.38	0.41
29:U:49:GLN:O	29:U:53:ASP:N	2.28	0.41
30:V:130:SER:C	30:V:132:ALA:H	2.22	0.41
1:1:552:G:H3'	1:1:553:A:O4'	2.21	0.41
1:1:688:A:H2'	1:1:689:A:C8	2.56	0.41
1:1:819:C:H2'	1:1:820:U:C4'	2.51	0.41
2:2:1317:G:H2'	2:2:1317:G:N3	2.36	0.41
2:2:1333:C:H2'	2:2:1334:G:O4'	2.21	0.41
2:2:1409:C:H5''	2:2:1410:A:C6	2.56	0.41
2:2:69:A:N1	2:2:636:A:O2'	2.54	0.41
2:2:707:A:O2'	2:2:708:G:H5''	2.21	0.41
3:3:23:C:H42	3:3:208:G:H1	1.69	0.41
5:5:3:C:H2'	5:5:4:G:O4'	2.20	0.41
6:6:28:A:O3'	6:6:29:G:H2'	2.21	0.41
6:6:8:A:O2'	6:6:9:U:OP1	2.35	0.41
7:7:166:U:OP1	15:G:148:ARG:NE	2.54	0.41
7:7:27:U:H2'	7:7:28:C:O4'	2.21	0.41
11:C:142:ARG:HG3	11:C:181:ARG:HD2	2.02	0.41
4:4:52:A:H2'	13:E:96:ALA:HB3	2.02	0.41
16:H:65:GLU:OE2	16:H:163:HIS:ND1	2.53	0.41
18:J:22:GLY:HA2	18:J:37:TYR:CZ	2.56	0.41
21:M:14:LYS:HD3	21:M:120:TRP:CZ3	2.55	0.41
28:T:61:LYS:HG2	28:T:78:GLN:HE22	1.85	0.41
1:1:1380:A:H62	16:H:36:ARG:HD3	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:248:A:C8	11:C:223:PHE:HB2	2.56	0.41
1:1:480:U:H2'	1:1:481:U:C6	2.56	0.41
1:1:491:A:H2'	1:1:492:G:H8	1.86	0.41
1:1:694:U:C6	1:1:694:U:OP2	2.74	0.41
1:1:716:A:H2'	1:1:717:G:O4'	2.20	0.41
2:2:1160:OMC:H1'	2:2:1160:OMC:HM23	1.84	0.41
2:2:1340:G:H5''	2:2:1341:A:OP2	2.20	0.41
2:2:1436:A:H2	4:4:173:C:OP2	2.03	0.41
2:2:382:A2M:H1'	2:2:382:A2M:HM'3	1.79	0.41
2:2:411:C:H2'	2:2:413:A:OP2	2.21	0.41
2:2:439:U:H1'	2:2:561:G:N2	2.35	0.41
2:2:870:C:N4	2:2:940:G:O6	2.54	0.41
2:2:982:C:H2'	2:2:983:G:C8	2.56	0.41
3:3:55:U:O2'	3:3:58:C:N4	2.53	0.41
4:4:174:A:N3	4:4:174:A:H2'	2.36	0.41
5:5:107:G:H2'	5:5:108:C:O4'	2.21	0.41
6:6:17:U:H1'	6:6:18:A:C4	2.55	0.41
2:2:663:U:H5''	9:A:221:HIS:CE1	2.56	0.41
9:A:42:ARG:NH1	9:A:87:SER:OG	2.53	0.41
10:B:84:MET:HE2	10:B:164:ALA:HB3	2.02	0.41
10:B:261:HIS:HA	10:B:262:PRO:C	2.40	0.41
16:H:106:LEU:HD12	16:H:107:PRO:HD2	2.03	0.41
16:H:55:ARG:HG2	16:H:125:GLY:HA2	2.03	0.41
21:M:101:VAL:O	21:M:105:ARG:HG2	2.21	0.41
21:M:124:ASP:OD1	21:M:127:PHE:N	2.25	0.41
2:2:1268:U:OP1	22:N:5:PRO:HD3	2.20	0.41
23:O:21:ARG:O	23:O:21:ARG:HD3	2.21	0.41
24:P:153:ARG:HG2	24:P:155:SER:H	1.86	0.41
24:P:79:ALA:C	24:P:81:SER:H	2.24	0.41
25:Q:50:ILE:HG22	25:Q:50:ILE:O	2.21	0.41
1:1:1114:A:H4'	1:1:1115:C:H5'	2.02	0.41
1:1:1157:U:H2'	1:1:1158:U:C6	2.56	0.41
1:1:1169:A:H3'	1:1:1170:G:H8	1.86	0.41
1:1:1417:G:H2'	1:1:1418:G:O4'	2.20	0.41
1:1:1583:U:H2'	1:1:1584:A:O4'	2.21	0.41
1:1:175:G:O6	1:1:176:C:N4	2.54	0.41
1:1:203:C:H2'	1:1:204:A:O4'	2.21	0.41
1:1:226:C:N4	1:1:227:U:C2	2.89	0.41
1:1:181:G:N1	1:1:273:A:N6	2.69	0.41
1:1:159:U:H1'	1:1:297:A:C2	2.56	0.41
1:1:685:A:H5''	2:2:607:A:H5'	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:745:U:H5''	1:1:830:G:H1'	2.02	0.41
1:1:905:G:H4'	25:Q:130:ASN:ND2	2.34	0.41
1:1:959:OMG:N2	21:M:76:HIS:CB	2.84	0.41
2:2:1446:A:H3'	16:H:129:ASN:HD22	1.86	0.41
2:2:83:G:O2'	2:2:580:U:O4	2.21	0.41
2:2:739:C:C2'	2:2:740:A:H5'	2.51	0.41
6:6:5:C:N4	6:6:6:G:N1	2.69	0.41
7:7:91:A:H5''	7:7:92:C:OP2	2.21	0.41
2:2:424:U:H5''	9:A:151:PRO:HG2	2.03	0.41
11:C:290:ILE:HB	24:P:135:MET:HE1	2.03	0.41
13:E:159:VAL:O	13:E:163:MET:N	2.52	0.41
13:E:23:ARG:HH22	13:E:45:LEU:HD13	1.86	0.41
13:E:54:PHE:CD2	13:E:76:VAL:HG21	2.56	0.41
18:J:111:MET:SD	18:J:111:MET:O	2.79	0.41
18:J:118:GLY:O	18:J:136:PRO:HD2	2.21	0.41
16:H:146:VAL:CG1	19:K:55:ALA:HB3	2.34	0.41
27:S:28:SER:O	27:S:32:THR:HG23	2.20	0.41
31:W:37:ARG:HB2	31:W:42:VAL:O	2.21	0.41
1:1:1392:G:O2'	1:1:1393:A:P	2.79	0.41
1:1:1773:U:H2'	1:1:1774:G:H8	1.84	0.41
1:1:187:A:N6	1:1:266:G:H2'	2.36	0.41
1:1:458:A:H3'	1:1:459:A:H4'	2.02	0.41
1:1:898:A:H2'	1:1:899:A:N7	2.35	0.41
2:2:1078:OMU:HM22	2:2:1079:OMG:O4'	2.20	0.41
2:2:1228:C:C2'	2:2:1229:A:H5'	2.51	0.41
2:2:443:OMC:HN42	2:2:488:A:P	2.43	0.41
2:2:496:G:N2	2:2:514:U:O4'	2.55	0.41
2:2:534:OMG:H2'	2:2:535:U:C5	2.57	0.41
1:1:967:G:O6	2:2:660:G:O2'	2.39	0.41
3:3:93:G:O5'	3:3:93:G:H8	2.04	0.41
4:4:60:A:N3	4:4:60:A:H2'	2.36	0.41
5:5:112:A:H3'	5:5:114:A:O4'	2.21	0.41
6:6:42:A:H1'	6:6:43:A:C8	2.56	0.41
7:7:67:U:O2'	7:7:68:A:H8	2.04	0.41
8:8:12:C:O2	8:8:15:A:N1	2.54	0.41
8:8:20:A:H2'	8:8:21:G:C8	2.56	0.41
9:A:146:THR:N	9:A:158:VAL:O	2.54	0.41
10:B:171:LEU:HA	10:B:326:ASN:HD21	1.86	0.41
11:C:43:MET:CB	11:C:236:LEU:HD11	2.50	0.41
14:F:182:PHE:CZ	14:F:195:TRP:HH2	2.38	0.41
15:G:228:ILE:HG23	15:G:260:ILE:HD13	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:H:25:ILE:O	16:H:25:ILE:HG23	2.21	0.41
20:L:19:TYR:CB	20:L:25:HIS:HB2	2.51	0.41
27:S:92:ARG:HB2	27:S:94:GLU:OE2	2.21	0.41
1:1:12:U:H4'	30:V:42:ARG:CD	2.50	0.41
34:Z:108:PHE:O	34:Z:112:ARG:HG3	2.21	0.41
1:1:1039:U:H2'	1:1:1040:G:O4'	2.20	0.40
1:1:17:C:H2'	1:1:18:A:C8	2.56	0.40
1:1:292:A:C6	1:1:293:C:H1'	2.56	0.40
1:1:487:G:H5''	1:1:488:G:OP2	2.21	0.40
1:1:838:G:H5'	24:P:154:GLU:CD	2.42	0.40
1:1:911:G:O2'	1:1:946:G:H4'	2.21	0.40
1:1:36:OMU:HM23	1:1:94:A:O2'	2.15	0.40
2:2:1078:OMU:O2'	2:2:1079:OMG:H5'	2.21	0.40
2:2:1271:C:H2'	2:2:1272:G:H8	1.87	0.40
2:2:382:A2M:O5'	2:2:382:A2M:H8	2.21	0.40
2:2:536:C:O2	2:2:548:G:N2	2.41	0.40
2:2:747:A:C6	2:2:749:G:C5	3.09	0.40
2:2:779:U:H1'	15:G:332:ARG:HD3	2.02	0.40
2:2:867:G:N2	2:2:942:G:O6	2.48	0.40
3:3:117:G:O2'	3:3:118:U:OP1	2.36	0.40
3:3:3:G:H2'	3:3:4:U:H6	1.87	0.40
8:8:113:C:H2'	8:8:114:C:C6	2.56	0.40
2:2:419:G:H5''	9:A:18:VAL:H	1.86	0.40
13:E:114:PHE:CE2	13:E:115:LEU:HD23	2.56	0.40
17:I:125:MET:HA	17:I:125:MET:HE2	2.03	0.40
17:I:94:TYR:O	17:I:97:THR:HG22	2.20	0.40
17:I:71:ASN:OD1	20:L:124:ARG:NH2	2.54	0.40
21:M:177:LYS:HG2	21:M:185:ARG:NH2	2.36	0.40
2:2:1158:U:P	24:P:164:VAL:HG13	2.61	0.40
26:R:29:PHE:CE1	26:R:43:PHE:HD1	2.39	0.40
30:V:75:ALA:HB1	30:V:86:THR:OG1	2.21	0.40
1:1:1542:OMG:HM23	1:1:1542:OMG:H1'	1.87	0.40
1:1:278:U:C2	1:1:279:G:N7	2.89	0.40
1:1:450:G:N2	1:1:1534:U:H4'	2.36	0.40
1:1:508:A:H2'	1:1:509:U:C6	2.56	0.40
2:2:114:A:C8	2:2:116:A:H1'	2.57	0.40
2:2:1167:A:H2'	2:2:1168:G:C8	2.57	0.40
2:2:1078:OMU:H4'	2:2:1186:A2M:C2	2.51	0.40
2:2:1369:A:H2'	2:2:1370:C:C6	2.56	0.40
2:2:364:G:H2'	2:2:365:G:O4'	2.22	0.40
3:3:104:U:OP1	33:Y:76:ASN:ND2	2.46	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:3:208:G:O6	3:3:209:G:C6	2.75	0.40
8:8:3:G:C6	8:8:4:A:C4	3.09	0.40
9:A:14:SER:OG	9:A:15:VAL:N	2.55	0.40
10:B:310:LYS:HE2	10:B:368:THR:HG23	2.03	0.40
10:B:93:ARG:O	10:B:99:LEU:HA	2.22	0.40
11:C:58:GLY:O	11:C:91:PHE:HB3	2.21	0.40
14:F:53:ILE:HG13	14:F:65:VAL:HG12	2.03	0.40
15:G:129:ARG:O	15:G:131:LEU:HD12	2.22	0.40
1:1:147:G:N7	15:G:222:GLN:HG2	2.37	0.40
15:G:235:MET:HG2	15:G:300:ILE:HG13	2.03	0.40
15:G:312:ASP:O	15:G:316:ARG:HG2	2.22	0.40
17:I:128:LEU:CD2	17:I:130:LEU:HB2	2.50	0.40
17:I:65:CYS:HA	17:I:66:PRO:HD3	1.90	0.40
2:2:1156:A:C2	20:L:43:ILE:HG23	2.56	0.40
4:4:113:G:OP1	32:X:38:PRO:HG2	2.21	0.40
1:1:1445:U:C2	34:Z:26:ARG:NH1	2.89	0.40
1:1:1102:U:HO2'	1:1:1103:U:P	2.43	0.40
1:1:1422:A:H2'	1:1:1422:A:N3	2.35	0.40
1:1:1466:G:N3	1:1:1466:G:H2'	2.36	0.40
1:1:1677:A:P	1:1:1677:A:H8	2.44	0.40
1:1:435:G:H2'	1:1:437:A:H2	1.87	0.40
1:1:478:C:H2'	1:1:479:A:H8	1.85	0.40
1:1:53:G:H4'	21:M:108:LYS:NZ	2.36	0.40
1:1:927:A2M:H1'	1:1:927:A2M:HM'3	1.84	0.40
2:2:740:A:H8	2:2:740:A:OP2	2.03	0.40
3:3:134:C:H2'	3:3:135:U:O4'	2.21	0.40
7:7:146:U:H4'	30:V:51:ASN:HB2	2.03	0.40
8:8:37:C:N3	8:8:48:G:C1'	2.84	0.40
10:B:203:LEU:HD12	10:B:208:VAL:HG22	2.04	0.40
1:1:856:OMG:OP1	11:C:76:PRO:HD3	2.21	0.40
13:E:42:GLN:HB3	13:E:58:ARG:HB2	2.03	0.40
14:F:75:PRO:HA	14:F:154:GLN:HE22	1.86	0.40
15:G:158:PRO:HD3	15:G:318:TRP:CE2	2.56	0.40
16:H:53:VAL:HG21	16:H:98:PHE:CE2	2.56	0.40
17:I:16:HIS:CD2	17:I:23:GLN:HG3	2.57	0.40
17:I:52:PHE:CG	17:I:53:PRO:HA	2.57	0.40
20:L:53:PHE:O	24:P:182:ARG:HB3	2.21	0.40
21:M:135:VAL:HG21	21:M:148:ILE:HD11	2.03	0.40
1:1:801:G:H21	1:1:1027:U:H4'	1.86	0.40
1:1:11:G:C6	1:1:12:U:O4	2.74	0.40
1:1:140:U:OP2	15:G:188:LYS:HD3	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1548:A:N6	1:1:1584:A:O2'	2.53	0.40
1:1:184:G:C6	1:1:185:C:C4	3.09	0.40
1:1:708:A:C5	24:P:94:LEU:HD21	2.57	0.40
1:1:841:U:H2'	1:1:842:G:C8	2.57	0.40
2:2:1286:A:O2'	2:2:1345:C:H4'	2.22	0.40
2:2:1329:C:O2'	2:2:1372:G:N3	2.54	0.40
2:2:449:U:H4'	9:A:241:ARG:CB	2.50	0.40
2:2:476:C:N4	2:2:477:G:C2	2.90	0.40
2:2:490:A:O4'	9:A:243:THR:CG2	2.67	0.40
2:2:556:U:O5'	2:2:556:U:H6	2.04	0.40
2:2:666:C:H6	2:2:666:C:OP2	2.05	0.40
2:2:677:C:O2	2:2:1026:G:N2	2.46	0.40
7:7:67:U:O2'	7:7:68:A:H5'	2.21	0.40
8:8:45:U:C4	8:8:46:U:C4	3.09	0.40
11:C:153:VAL:HG11	11:C:169:PHE:HZ	1.87	0.40
13:E:18:VAL:HG12	13:E:47:VAL:HG21	2.03	0.40
16:H:65:GLU:HA	16:H:155:THR:HG21	2.03	0.40
17:I:114:MET:O	17:I:118:VAL:HG23	2.21	0.40
18:J:98:GLU:HG2	32:X:23:PRO:HA	2.02	0.40
2:2:1276:A:H4'	22:N:154:ARG:NH1	2.36	0.40
22:N:50:ILE:HG22	22:N:167:MET:HA	2.03	0.40
30:V:118:ARG:C	30:V:120:ASP:H	2.25	0.40
32:X:46:ARG:HD2	32:X:48:LYS:HE2	2.03	0.40
1:1:1149:G:H5'	1:1:1150:A:OP2	2.22	0.40
1:1:130:U:H3'	1:1:131:U:C5'	2.50	0.40
1:1:136:G:H3'	1:1:136:G:P	2.61	0.40
1:1:1394:U:C2'	1:1:1395:U:H5'	2.47	0.40
1:1:1529:OMC:H1'	1:1:1529:OMC:HM23	1.83	0.40
1:1:183:G:N3	1:1:272:U:H1'	2.36	0.40
1:1:262:C:O3'	31:W:29:SER:OG	2.39	0.40
1:1:693:G:H2'	20:L:8:CYS:SG	2.61	0.40
1:1:708:A:O2'	1:1:837:A:N1	2.49	0.40
1:1:87:A:H2'	1:1:88:G:O4'	2.21	0.40
2:2:1152:U:H2'	2:2:1153:OMU:O4'	2.21	0.40
2:2:531:C:OP2	2:2:532:U:O2'	2.30	0.40
2:2:611:U:O2	2:2:628:A2M:H2	2.22	0.40
3:3:202:A:H2'	3:3:203:A:O4'	2.22	0.40
4:4:116:G:H2'	4:4:117:C:O4'	2.21	0.40
4:4:135:C:H2'	4:4:136:G:C8	2.56	0.40
6:6:49:C:O2'	6:6:49:C:O2	2.29	0.40
7:7:164:U:H6	7:7:164:U:H2'	1.65	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:D:21:ILE:HA	12:D:128:ASP:O	2.21	0.40
16:H:201:ARG:HG3	19:K:178:ARG:CD	2.50	0.40
19:K:106:ARG:NH1	26:R:71:LEU:O	2.54	0.40
22:N:59:GLN:HG2	22:N:128:ARG:HA	2.04	0.40
26:R:11:VAL:HG21	26:R:39:ALA:HB1	2.04	0.40
28:T:21:ASP:O	28:T:23:ARG:N	2.54	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
9	A	245/260 (94%)	220 (90%)	25 (10%)	0	100	100
10	B	396/419 (94%)	352 (89%)	43 (11%)	1 (0%)	44	77
11	C	300/373 (80%)	269 (90%)	31 (10%)	0	100	100
12	D	159/188 (85%)	136 (86%)	23 (14%)	0	100	100
13	E	188/190 (99%)	160 (85%)	28 (15%)	0	100	100
14	F	134/195 (69%)	112 (84%)	22 (16%)	0	100	100
15	G	225/348 (65%)	205 (91%)	18 (8%)	2 (1%)	20	52
16	H	200/222 (90%)	175 (88%)	24 (12%)	1 (0%)	32	67
17	I	130/220 (59%)	120 (92%)	10 (8%)	0	100	100
18	J	126/139 (91%)	115 (91%)	11 (9%)	0	100	100
19	K	154/233 (66%)	136 (88%)	17 (11%)	1 (1%)	28	62
20	L	142/145 (98%)	127 (89%)	15 (11%)	0	100	100
21	M	201/204 (98%)	187 (93%)	14 (7%)	0	100	100
22	N	211/213 (99%)	186 (88%)	25 (12%)	0	100	100
23	O	229/305 (75%)	205 (90%)	24 (10%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
24	P	194/198 (98%)	179 (92%)	15 (8%)	0	100	100
25	Q	154/245 (63%)	141 (92%)	13 (8%)	0	100	100
26	R	130/179 (73%)	104 (80%)	25 (19%)	1 (1%)	22	55
27	S	149/159 (94%)	125 (84%)	22 (15%)	2 (1%)	14	41
28	T	154/166 (93%)	127 (82%)	27 (18%)	0	100	100
29	U	98/129 (76%)	81 (83%)	17 (17%)	0	100	100
30	V	116/145 (80%)	99 (85%)	17 (15%)	0	100	100
31	W	116/143 (81%)	106 (91%)	10 (9%)	0	100	100
32	X	62/124 (50%)	59 (95%)	3 (5%)	0	100	100
33	Y	130/134 (97%)	111 (85%)	19 (15%)	0	100	100
34	Z	75/147 (51%)	65 (87%)	10 (13%)	0	100	100
35	a	122/127 (96%)	105 (86%)	17 (14%)	0	100	100
36	b	63/70 (90%)	53 (84%)	10 (16%)	0	100	100
37	c	220/252 (87%)	190 (86%)	30 (14%)	0	100	100
38	d	71/104 (68%)	63 (89%)	8 (11%)	0	100	100
39	e	111/183 (61%)	92 (83%)	19 (17%)	0	100	100
40	f	124/133 (93%)	110 (89%)	14 (11%)	0	100	100
41	g	123/144 (85%)	112 (91%)	11 (9%)	0	100	100
42	h	106/168 (63%)	91 (86%)	15 (14%)	0	100	100
43	i	62/105 (59%)	57 (92%)	5 (8%)	0	100	100
44	j	76/83 (92%)	68 (90%)	8 (10%)	0	100	100
45	k	56/83 (68%)	52 (93%)	4 (7%)	0	100	100
46	l	49/51 (96%)	46 (94%)	2 (4%)	1 (2%)	9	28
47	m	88/92 (96%)	71 (81%)	16 (18%)	1 (1%)	17	47
48	n	82/106 (77%)	66 (80%)	16 (20%)	0	100	100
All	All	5771/7124 (81%)	5078 (88%)	683 (12%)	10 (0%)	54	83

All (10) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
15	G	132	SER
26	R	22	PRO
27	S	101	CYS

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Mol	Chain	Res	Type
47	m	40	SER
10	B	380	LYS
46	l	46	ARG
19	K	46	PRO
15	G	116	PRO
27	S	80	VAL
16	H	94	PRO

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	
9	A	188/204 (92%)	181 (96%)	7 (4%)	39	73
10	B	296/352 (84%)	288 (97%)	8 (3%)	50	83
11	C	222/302 (74%)	221 (100%)	1 (0%)	91	97
12	D	4/163 (2%)	4 (100%)	0	100	100
13	E	172/172 (100%)	169 (98%)	3 (2%)	66	90
14	F	92/154 (60%)	91 (99%)	1 (1%)	78	94
15	G	179/292 (61%)	173 (97%)	6 (3%)	42	76
16	H	166/188 (88%)	164 (99%)	2 (1%)	75	94
17	I	114/181 (63%)	110 (96%)	4 (4%)	41	75
18	J	91/111 (82%)	88 (97%)	3 (3%)	43	77
19	K	79/195 (40%)	68 (86%)	11 (14%)	4	12
20	L	105/115 (91%)	103 (98%)	2 (2%)	62	89
21	M	179/180 (99%)	176 (98%)	3 (2%)	66	90
22	N	178/179 (99%)	175 (98%)	3 (2%)	66	90
23	O	103/242 (43%)	100 (97%)	3 (3%)	48	81
24	P	149/164 (91%)	145 (97%)	4 (3%)	50	83
25	Q	100/196 (51%)	98 (98%)	2 (2%)	60	88
26	R	98/158 (62%)	96 (98%)	2 (2%)	60	88

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
27	S	100/133 (75%)	100 (100%)	0	100	100
28	T	125/144 (87%)	125 (100%)	0	100	100
29	U	13/114 (11%)	13 (100%)	0	100	100
30	V	86/124 (69%)	84 (98%)	2 (2%)	56	86
31	W	87/122 (71%)	87 (100%)	0	100	100
32	X	48/104 (46%)	46 (96%)	2 (4%)	34	68
33	Y	70/115 (61%)	69 (99%)	1 (1%)	71	92
34	Z	44/119 (37%)	44 (100%)	0	100	100
35	a	99/117 (85%)	92 (93%)	7 (7%)	17	44
36	b	48/58 (83%)	44 (92%)	4 (8%)	13	36
37	c	168/209 (80%)	164 (98%)	4 (2%)	54	85
38	d	47/90 (52%)	44 (94%)	3 (6%)	20	50
39	e	79/156 (51%)	79 (100%)	0	100	100
40	f	97/114 (85%)	95 (98%)	2 (2%)	59	88
41	g	98/121 (81%)	96 (98%)	2 (2%)	60	88
42	h	85/145 (59%)	84 (99%)	1 (1%)	75	94
43	i	47/89 (53%)	44 (94%)	3 (6%)	20	50
44	j	63/70 (90%)	60 (95%)	3 (5%)	30	63
45	k	26/74 (35%)	25 (96%)	1 (4%)	38	72
46	l	46/47 (98%)	44 (96%)	2 (4%)	33	67
47	m	63/74 (85%)	58 (92%)	5 (8%)	14	38
48	n	64/92 (70%)	63 (98%)	1 (2%)	68	91
All	All	4118/5979 (69%)	4010 (97%)	108 (3%)	55	83

All (108) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
9	A	16	TYR
9	A	30	ARG
9	A	42	ARG
9	A	73	LYS
9	A	115	ASN
9	A	190	ARG
9	A	193	ARG

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Mol	Chain	Res	Type
10	B	10	ARG
10	B	173	ASN
10	B	174[A]	HIS
10	B	174[B]	HIS
10	B	227[A]	LYS
10	B	227[B]	LYS
10	B	249	ARG
10	B	339	ARG
11	C	139	ARG
13	E	23	ARG
13	E	58	ARG
13	E	172	ARG
14	F	192	ARG
15	G	133	ARG
15	G	161	ASN
15	G	240	ASN
15	G	253	ASN
15	G	256	ARG
15	G	334	LYS
16	H	103	ARG
16	H	108	ARG
17	I	18	ASN
17	I	39	ARG
17	I	72	MET
17	I	78	ARG
18	J	84	ARG
18	J	88	ARG
18	J	112	LYS
19	K	44	LEU
19	K	45	SER
19	K	50	CYS
19	K	72	ARG
19	K	74	LEU
19	K	78	ARG
19	K	95	LEU
19	K	106	ARG
19	K	107	HIS
19	K	180	HIS
19	K	185	VAL
20	L	4	ARG
20	L	112	ASN
21	M	60	CYS

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Mol	Chain	Res	Type
21	M	71	ARG
21	M	122	ASN
22	N	33	ASN
22	N	73	ASN
22	N	116	ARG
23	O	21	ARG
23	O	23	ARG
23	O	94	ASN
24	P	56	ARG
24	P	142	ASN
24	P	147	ARG
24	P	182	ARG
25	Q	47	ASP
25	Q	51	ILE
26	R	91	ARG
26	R	119	ARG
30	V	57	SER
30	V	92	ARG
32	X	37	ARG
32	X	60	ARG
33	Y	113	ARG
35	a	49	ARG
35	a	72	MET
35	a	88	ARG
35	a	107	LYS
35	a	110	ARG
35	a	111	GLN
35	a	112	MET
36	b	11	ASN
36	b	18	ARG
36	b	34	ARG
36	b	62	ARG
37	c	138	ARG
37	c	167	ASN
37	c	196	ASN
37	c	229	ARG
38	d	40	ARG
38	d	42	LYS
38	d	54	ARG
40	f	23	TYR
40	f	46	ARG
41	g	65	GLU

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Mol	Chain	Res	Type
41	g	96	ARG
42	h	30	LYS
43	i	59	ARG
43	i	71	ARG
43	i	93	MET
44	j	22	CYS
44	j	33	ARG
44	j	73	ARG
45	k	40	ARG
46	l	5	LYS
46	l	34	ARG
47	m	28	LYS
47	m	44	LYS
47	m	56	ARG
47	m	58	ASP
47	m	60	CYS
48	n	45	ARG

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (117) such sidechains are listed below:

Mol	Chain	Res	Type
9	A	19	HIS
9	A	21	HIS
9	A	65	HIS
9	A	92	GLN
9	A	115	ASN
9	A	140	ASN
9	A	194	ASN
9	A	205	ASN
10	B	55	HIS
10	B	109	HIS
10	B	165	HIS
10	B	173	ASN
10	B	279	HIS
10	B	282	GLN
10	B	326	ASN
10	B	378	GLN
11	C	49	GLN
11	C	197	ASN
11	C	237	HIS
13	E	42	GLN
13	E	51	ASN

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Mol	Chain	Res	Type
13	E	70	ASN
13	E	78	ASN
13	E	97	HIS
13	E	123	GLN
13	E	161	HIS
14	F	72	ASN
14	F	154	GLN
15	G	161	ASN
15	G	222	GLN
16	H	74	GLN
16	H	90	HIS
16	H	190	GLN
17	I	12	HIS
17	I	13	GLN
17	I	33	GLN
17	I	70	HIS
17	I	108	ASN
18	J	77	ASN
18	J	134	HIS
19	K	52	GLN
19	K	92	ASN
19	K	107	HIS
19	K	180	HIS
20	L	28	HIS
20	L	60	HIS
20	L	112	ASN
21	M	57	GLN
21	M	76	HIS
21	M	122	ASN
22	N	33	ASN
22	N	59	GLN
22	N	71	GLN
22	N	100	ASN
22	N	163	GLN
22	N	196	HIS
23	O	17	GLN
23	O	31	HIS
23	O	39	GLN
23	O	94	ASN
24	P	58	ASN
24	P	142	ASN
24	P	197	HIS

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Mol	Chain	Res	Type
25	Q	58	HIS
25	Q	118	HIS
25	Q	130	ASN
25	Q	137	ASN
26	R	8	HIS
26	R	107	GLN
26	R	122	ASN
27	S	54	HIS
27	S	58	HIS
27	S	77	ASN
27	S	95	HIS
28	T	3	HIS
28	T	78	GLN
28	T	97	ASN
28	T	110	ASN
30	V	34	GLN
30	V	114	ASN
30	V	133	HIS
31	W	18	GLN
31	W	110	HIS
33	Y	79	HIS
33	Y	86	ASN
33	Y	121	ASN
34	Z	3	HIS
34	Z	14	GLN
35	a	116	HIS
36	b	7	HIS
36	b	11	ASN
36	b	16	ASN
36	b	30	HIS
36	b	43	ASN
37	c	120	GLN
37	c	123	ASN
37	c	135	ASN
37	c	167	ASN
37	c	176	ASN
37	c	196	ASN
37	c	245	ASN
38	d	71	HIS
39	e	120	ASN
40	f	122	ASN
41	g	52	GLN

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Mol	Chain	Res	Type
41	g	80	HIS
42	h	13	HIS
42	h	51	HIS
42	h	62	HIS
44	j	12	HIS
44	j	16	HIS
45	k	27	HIS
46	l	33	ASN
46	l	43	HIS
47	m	33	GLN
48	n	3	ASN
48	n	82	GLN

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	1	1533/1782 (86%)	588 (38%)	0
2	2	1105/1527 (72%)	445 (40%)	0
3	3	176/213 (82%)	83 (47%)	0
4	4	146/183 (79%)	48 (32%)	0
5	5	77/133 (57%)	30 (38%)	0
6	6	60/76 (78%)	48 (80%)	0
7	7	149/171 (87%)	50 (33%)	0
8	8	117/121 (96%)	54 (46%)	0
All	All	3363/4206 (79%)	1346 (40%)	0

All (1346) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	1	4	G
1	1	10	A
1	1	13	G
1	1	23	U
1	1	24	A
1	1	32	A
1	1	36	OMU
1	1	38	A
1	1	41	A
1	1	47	C
1	1	48	OMU
1	1	49	C

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Mol	Chain	Res	Type
1	1	51	G
1	1	54	G
1	1	57	G
1	1	58	A
1	1	64	A
1	1	66	A
1	1	83	A
1	1	85	U
1	1	86	G
1	1	87	A
1	1	91	G
1	1	92	C
1	1	104	G
1	1	109	A
1	1	110	A
1	1	119	C
1	1	121	A
1	1	126	G
1	1	127	G
1	1	130	U
1	1	131	U
1	1	132	A
1	1	133	C
1	1	134	A
1	1	135	A
1	1	136	G
1	1	137	G
1	1	139	C
1	1	141	U
1	1	142	G
1	1	145	U
1	1	153	C
1	1	154	A
1	1	155	A
1	1	156	A
1	1	158	A
1	1	159	U
1	1	160	C
1	1	165	C
1	1	168	G
1	1	169	G
1	1	170	U

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Mol	Chain	Res	Type
1	1	171	U
1	1	172	G
1	1	174	U
1	1	175	G
1	1	177	A
1	1	178	G
1	1	180	A
1	1	184	G
1	1	187	A
1	1	188	A
1	1	189	A
1	1	191	U
1	1	192	C
1	1	193	A
1	1	195	G
1	1	196	C
1	1	197	G
1	1	198	C
1	1	199	A
1	1	202	G
1	1	204	A
1	1	206	A
1	1	207	C
1	1	209	C
1	1	210	G
1	1	211	U
1	1	214	C
1	1	216	G
1	1	217	A
1	1	218	A
1	1	221	C
1	1	222	A
1	1	227	U
1	1	228	U
1	1	230	A
1	1	231	U
1	1	232	G
1	1	233	U
1	1	236	G
1	1	237	U
1	1	239	U
1	1	240	U

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Mol	Chain	Res	Type
1	1	242	A
1	1	243	G
1	1	248	A
1	1	249	G
1	1	250	A
1	1	251	A
1	1	252	G
1	1	255	G
1	1	256	U
1	1	260	C
1	1	261	C
1	1	264	U
1	1	267	A
1	1	268	G
1	1	270	C
1	1	271	A
1	1	273	A
1	1	275	A
1	1	278	U
1	1	279	G
1	1	280	A
1	1	282	C
1	1	283	G
1	1	284	C
1	1	286	U
1	1	288	A
1	1	291	A
1	1	293	C
1	1	294	U
1	1	299	U
1	1	301	A
1	1	303	C
1	1	305	A
1	1	306	G
1	1	313	U
1	1	314	G
1	1	320	G
1	1	323	U
1	1	332	A
1	1	333	A
1	1	334	G
1	1	335	U

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Mol	Chain	Res	Type
1	1	336	U
1	1	337	G
1	1	341	G
1	1	343	U
1	1	344	A
1	1	348	G
1	1	361	A
1	1	367	A
1	1	368	G
1	1	370	G
1	1	371	U
1	1	374	G
1	1	377	G
1	1	378	A
1	1	380	C
1	1	383	U
1	1	409	U
1	1	410	U
1	1	411	U
1	1	416	A
1	1	417	G
1	1	428	A
1	1	431	G
1	1	438	A
1	1	440	A
1	1	442	A
1	1	443	A
1	1	444	C
1	1	448	A
1	1	454	U
1	1	455	G
1	1	458	A
1	1	459	A
1	1	460	A
1	1	462	A
1	1	463	C
1	1	464	A
1	1	475	C
1	1	476	U
1	1	477	C
1	1	478	C
1	1	483	C

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Mol	Chain	Res	Type
1	1	484	A
1	1	486	C
1	1	487	G
1	1	490	C
1	1	494	A
1	1	495	C
1	1	498	G
1	1	500	C
1	1	501	C
1	1	502	U
1	1	505	U
1	1	508	A
1	1	510	U
1	1	512	U
1	1	513	C
1	1	515	U
1	1	516	G
1	1	519	G
1	1	520	G
1	1	532	C
1	1	533	G
1	1	534	G
1	1	537	G
1	1	539	C
1	1	540	A
1	1	541	A
1	1	543	G
1	1	544	A
1	1	545	A
1	1	547	U
1	1	548	G
1	1	549	C
1	1	551	A
1	1	553	A
1	1	554	A
1	1	558	U
1	1	559	G
1	1	560	G
1	1	561	G
1	1	563	C
1	1	566	G
1	1	567	G

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Mol	Chain	Res	Type
1	1	569	G
1	1	570	A
1	1	634	G
1	1	636	U
1	1	638	C
1	1	648	A
1	1	650	G
1	1	651	G
1	1	652	A
1	1	653	A
1	1	654	A
1	1	658	G
1	1	659	G
1	1	665	C
1	1	666	C
1	1	669	C
1	1	670	C
1	1	677	A
1	1	679	A
1	1	680	C
1	1	681	A2M
1	1	693	G
1	1	694	U
1	1	695	OMC
1	1	696	A
1	1	698	A
1	1	709	A
1	1	713	A
1	1	728	C
1	1	729	A
1	1	730	G
1	1	735	U
1	1	737	U
1	1	741	G
1	1	742	U
1	1	750	G
1	1	753	A
1	1	767	U
1	1	768	C
1	1	769	U
1	1	770	G
1	1	771	U

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Mol	Chain	Res	Type
1	1	779	A
1	1	780	C
1	1	782	C
1	1	783	G
1	1	785	C
1	1	787	A
1	1	788	A
1	1	789	U
1	1	790	C
1	1	793	U
1	1	795	U
1	1	799	U
1	1	801	G
1	1	802	C
1	1	807	C
1	1	817	C
1	1	818	C
1	1	820	U
1	1	821	C
1	1	823	G
1	1	824	U
1	1	826	G
1	1	829	U
1	1	830	G
1	1	831	C
1	1	832	G
1	1	836	G
1	1	837	A
1	1	838	G
1	1	846	G
1	1	847	OMU
1	1	848	U
1	1	849	U
1	1	850	G
1	1	855	C
1	1	857	A
1	1	860	G
1	1	867	A
1	1	868	A
1	1	878	A
1	1	883	G
1	1	887	A

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Mol	Chain	Res	Type
1	1	892	C
1	1	894	G
1	1	895	G
1	1	900	C
1	1	901	C
1	1	902	C
1	1	903	A
1	1	907	G
1	1	908	G
1	1	912	C
1	1	922	U
1	1	925	U
1	1	926	G
1	1	927	A2M
1	1	931	G
1	1	932	C
1	1	945	U
1	1	947	A
1	1	956	U
1	1	957	C
1	1	959	OMG
1	1	960	A
1	1	963	G
1	1	965	A
1	1	967	G
1	1	972	A
1	1	974	C
1	1	975	G
1	1	977	A
1	1	985	G
1	1	988	G
1	1	995	C
1	1	1000	C
1	1	1010	C
1	1	1011	U
1	1	1013	A
1	1	1021	U
1	1	1025	G
1	1	1028	A
1	1	1029	G
1	1	1030	U
1	1	1031	A

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Mol	Chain	Res	Type
1	1	1032	G
1	1	1036	U
1	1	1042	G
1	1	1044	G
1	1	1046	U
1	1	1051	C
1	1	1055	U
1	1	1056	G
1	1	1057	A
1	1	1058	U
1	1	1059	U
1	1	1063	G
1	1	1073	U
1	1	1081	A
1	1	1083	A
1	1	1085	C
1	1	1086	G
1	1	1088	C
1	1	1092	U
1	1	1097	A
1	1	1102	U
1	1	1103	U
1	1	1104	A
1	1	1105	A
1	1	1108	G
1	1	1110	G
1	1	1114	A
1	1	1117	A
1	1	1118	A
1	1	1120	C
1	1	1123	G
1	1	1124	C
1	1	1127	U
1	1	1128	A
1	1	1131	C
1	1	1142	C
1	1	1146	A
1	1	1147	A
1	1	1149	G
1	1	1150	A
1	1	1156	A
1	1	1159	A

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Mol	Chain	Res	Type
1	1	1160	G
1	1	1161	A
1	1	1162	G
1	1	1164	C
1	1	1169	A
1	1	1174	G
1	1	1181	U
1	1	1182	C
1	1	1188	G
1	1	1200	A
1	1	1201	U
1	1	1206	A
1	1	1210	A
1	1	1211	A
1	1	1212	C
1	1	1213	C
1	1	1216	U
1	1	1218	A
1	1	1231	G
1	1	1234	A
1	1	1235	A
1	1	1239	U
1	1	1240	U
1	1	1242	U
1	1	1243	G
1	1	1249	A
1	1	1254	C
1	1	1255	G
1	1	1257	U
1	1	1258	A
1	1	1259	C
1	1	1260	G
1	1	1261	U
1	1	1263	A
1	1	1264	A
1	1	1265	A
1	1	1266	A
1	1	1268	G
1	1	1270	U
1	1	1271	G
1	1	1273	U
1	1	1276	U

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Mol	Chain	Res	Type
1	1	1281	A
1	1	1349	A
1	1	1357	G
1	1	1364	A
1	1	1365	A
1	1	1366	A
1	1	1367	U
1	1	1369	G
1	1	1370	A
1	1	1371	U
1	1	1372	G
1	1	1375	G
1	1	1379	A
1	1	1383	C
1	1	1385	A
1	1	1386	A
1	1	1389	A
1	1	1390	G
1	1	1392	G
1	1	1393	A
1	1	1394	U
1	1	1395	U
1	1	1396	G
1	1	1399	C
1	1	1400	A
1	1	1402	U
1	1	1407	C
1	1	1413	U
1	1	1414	A
1	1	1415	A
1	1	1416	G
1	1	1418	G
1	1	1420	G
1	1	1421	G
1	1	1423	A
1	1	1424	A
1	1	1433	U
1	1	1434	U
1	1	1435	G
1	1	1436	G
1	1	1437	A
1	1	1438	G

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Mol	Chain	Res	Type
1	1	1439	A
1	1	1440	A
1	1	1443	U
1	1	1445	U
1	1	1446	A
1	1	1447	G
1	1	1448	C
1	1	1449	C
1	1	1450	C
1	1	1451	U
1	1	1452	U
1	1	1453	C
1	1	1466	G
1	1	1467	G
1	1	1468	C
1	1	1478	A
1	1	1479	G
1	1	1489	U
1	1	1490	A
1	1	1491	U
1	1	1492	G
1	1	1494	C
1	1	1495	G
1	1	1504	A
1	1	1505	G
1	1	1506	A
1	1	1507	U
1	1	1509	G
1	1	1510	A
1	1	1511	C
1	1	1521	G
1	1	1522	U
1	1	1523	G
1	1	1524	C
1	1	1526	OMG
1	1	1527	A
1	1	1529	OMC
1	1	1530	U
1	1	1540	U
1	1	1541	A2M
1	1	1542	OMG
1	1	1544	A

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Mol	Chain	Res	Type
1	1	1547	G
1	1	1548	A
1	1	1549	U
1	1	1550	C
1	1	1553	A
1	1	1554	C
1	1	1576	C
1	1	1577	G
1	1	1584	A
1	1	1588	G
1	1	1589	A
1	1	1590	G
1	1	1591	C
1	1	1592	G
1	1	1593	G
1	1	1595	G
1	1	1601	U
1	1	1602	U
1	1	1607	G
1	1	1609	C
1	1	1611	A
1	1	1612	C
1	1	1614	G
1	1	1615	C
1	1	1621	U
1	1	1627	A
1	1	1629	U
1	1	1633	U
1	1	1639	A
1	1	1644	G
1	1	1648	A
1	1	1656	A
1	1	1657	U
1	1	1658	C
1	1	1662	U
1	1	1663	U
1	1	1664	G
1	1	1665	U
1	1	1667	A
1	1	1668	G
1	1	1669	G
1	1	1670	A

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Mol	Chain	Res	Type
1	1	1671	A
1	1	1679	G
1	1	1683	G
1	1	1719	G
1	1	1720	C
1	1	1721	C
1	1	1723	U
1	1	1725	A
1	1	1728	G
1	1	1729	A
1	1	1732	A
1	1	1735	G
1	1	1737	C
1	1	1739	A
1	1	1740	C
1	1	1741	A
1	1	1746	A
1	1	1749	U
1	1	1752	G
1	1	1755	U
1	1	1761	C
1	1	1763	A
1	1	1764	A
1	1	1765	A
1	1	1766	A
1	1	1767	A
1	1	1768	G
1	1	1771	A
1	1	1777	U
1	1	1778	G
2	2	9	G
2	2	13	A
2	2	22	A
2	2	26	C
2	2	29	C
2	2	30	A
2	2	33	A
2	2	34	G
2	2	36	U
2	2	41	A
2	2	44	C
2	2	49	A

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Mol	Chain	Res	Type
2	2	54	U
2	2	61	C
2	2	63	U
2	2	67	G
2	2	68	A
2	2	69	A
2	2	70	A
2	2	75	C
2	2	78	U
2	2	89	G
2	2	90	G
2	2	92	A
2	2	98	G
2	2	99	A
2	2	103	G
2	2	109	U
2	2	110	C
2	2	111	G
2	2	116	A
2	2	119	C
2	2	122	U
2	2	123	G
2	2	127	C
2	2	130	A
2	2	131	G
2	2	133	G
2	2	134	C
2	2	135	A
2	2	343	U
2	2	344	G
2	2	345	C
2	2	346	C
2	2	349	C
2	2	350	U
2	2	355	A
2	2	358	G
2	2	359	C
2	2	360	U
2	2	361	U
2	2	362	A
2	2	363	C
2	2	368	G

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Mol	Chain	Res	Type
2	2	372	A
2	2	377	A
2	2	380	G
2	2	385	A
2	2	388	A
2	2	390	A
2	2	394	U
2	2	401	G
2	2	404	A
2	2	405	U
2	2	413	A
2	2	414	G
2	2	415	U
2	2	416	G
2	2	424	U
2	2	425	C
2	2	429	A
2	2	434	A
2	2	435	U
2	2	438	C
2	2	444	A
2	2	446	U
2	2	447	G
2	2	448	C
2	2	451	U
2	2	452	G
2	2	453	A
2	2	454	A
2	2	455	U
2	2	456	G
2	2	458	C
2	2	459	A
2	2	464	G
2	2	469	G
2	2	470	A
2	2	471	U
2	2	473	C
2	2	477	G
2	2	478	A
2	2	482	G
2	2	483	C
2	2	484	G

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Mol	Chain	Res	Type
2	2	489	A
2	2	490	A
2	2	495	G
2	2	497	G
2	2	498	A
2	2	509	C
2	2	511	C
2	2	512	U
2	2	513	C
2	2	515	U
2	2	518	G
2	2	519	G
2	2	522	G
2	2	525	A
2	2	526	A
2	2	527	A2M
2	2	528	U
2	2	529	G
2	2	530	C
2	2	534	OMG
2	2	535	U
2	2	541	A
2	2	543	U
2	2	544	U
2	2	547	A
2	2	549	A
2	2	553	G
2	2	554	OMC
2	2	555	A
2	2	556	U
2	2	559	A
2	2	560	U
2	2	561	G
2	2	570	A
2	2	571	OMG
2	2	572	A2M
2	2	580	U
2	2	582	U
2	2	583	OMC
2	2	584	C
2	2	591	A2M
2	2	592	C

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Mol	Chain	Res	Type
2	2	609	A
2	2	611	U
2	2	620	C
2	2	621	G
2	2	623	A
2	2	624	C
2	2	629	A
2	2	633	C
2	2	635	A
2	2	640	G
2	2	643	A
2	2	647	A
2	2	648	A
2	2	649	G
2	2	650	A
2	2	656	OMU
2	2	657	U
2	2	658	G
2	2	664	G
2	2	666	C
2	2	668	C
2	2	675	G
2	2	681	G
2	2	683	G
2	2	694	U
2	2	696	A
2	2	697	G
2	2	699	U
2	2	700	G
2	2	701	U
2	2	702	A
2	2	704	U
2	2	705	A
2	2	706	U
2	2	707	A
2	2	709	G
2	2	711	G
2	2	713	A
2	2	714	A
2	2	715	G
2	2	718	C
2	2	720	A

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Mol	Chain	Res	Type
2	2	721	G
2	2	725	A
2	2	726	A
2	2	727	A
2	2	728	U
2	2	729	G
2	2	730	A
2	2	731	A
2	2	732	A
2	2	733	U
2	2	734	A
2	2	735	C
2	2	736	C
2	2	737	A
2	2	739	C
2	2	741	C
2	2	742	U
2	2	750	U
2	2	756	C
2	2	758	C
2	2	759	U
2	2	760	U
2	2	761	A
2	2	768	G
2	2	769	A
2	2	774	A
2	2	775	C
2	2	776	C
2	2	777	A
2	2	778	A
2	2	779	U
2	2	780	G
2	2	782	G
2	2	783	U
2	2	784	U
2	2	785	U
2	2	786	A
2	2	789	G
2	2	790	U
2	2	791	A
2	2	794	C
2	2	795	U

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Mol	Chain	Res	Type
2	2	800	G
2	2	801	C
2	2	802	U
2	2	803	A
2	2	807	A
2	2	808	C
2	2	809	C
2	2	810	G
2	2	811	U
2	2	812	C
2	2	813	U
2	2	814	A
2	2	816	G
2	2	817	U
2	2	818	U
2	2	824	G
2	2	825	U
2	2	827	A
2	2	828	U
2	2	829	U
2	2	830	U
2	2	831	U
2	2	833	U
2	2	834	G
2	2	835	G
2	2	836	C
2	2	837	G
2	2	868	U
2	2	869	G
2	2	870	C
2	2	872	U
2	2	940	G
2	2	941	C
2	2	948	C
2	2	949	G
2	2	950	U
2	2	951	G
2	2	952	G
2	2	954	U
2	2	956	C
2	2	957	C
2	2	958	C

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Mol	Chain	Res	Type
2	2	959	A
2	2	960	A
2	2	961	C
2	2	962	C
2	2	967	U
2	2	968	G
2	2	969	U
2	2	970	A
2	2	971	A
2	2	972	A
2	2	973	C
2	2	974	U
2	2	975	G
2	2	976	A
2	2	977	A
2	2	979	C
2	2	981	A
2	2	982	C
2	2	983	G
2	2	989	G
2	2	991	C
2	2	992	U
2	2	993	C
2	2	996	G
2	2	997	C
2	2	1010	U
2	2	1011	U
2	2	1012	G
2	2	1013	U
2	2	1014	U
2	2	1016	C
2	2	1020	A
2	2	1024	C
2	2	1025	U
2	2	1028	C
2	2	1034	G
2	2	1035	G
2	2	1037	A
2	2	1042	G
2	2	1045	U
2	2	1050	C
2	2	1057	U

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Mol	Chain	Res	Type
2	2	1063	A
2	2	1066	C
2	2	1067	G
2	2	1072	C
2	2	1073	G
2	2	1076	G
2	2	1077	G
2	2	1079	OMG
2	2	1080	U
2	2	1084	A
2	2	1086	G
2	2	1093	U
2	2	1096	G
2	2	1097	U
2	2	1101	A
2	2	1102	A
2	2	1104	A
2	2	1109	U
2	2	1111	U
2	2	1112	C
2	2	1114	C
2	2	1116	U
2	2	1117	A
2	2	1118	G
2	2	1119	A
2	2	1122	A
2	2	1124	A
2	2	1131	A
2	2	1132	A
2	2	1133	A
2	2	1134	G
2	2	1142	G
2	2	1144	U
2	2	1147	A
2	2	1148	C
2	2	1149	G
2	2	1152	U
2	2	1154	C
2	2	1156	A
2	2	1157	G
2	2	1158	U
2	2	1161	G

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Mol	Chain	Res	Type
2	2	1166	G
2	2	1169	A
2	2	1171	U
2	2	1182	G
2	2	1184	C
2	2	1185	C
2	2	1186	A2M
2	2	1187	G
2	2	1189	G
2	2	1190	A
2	2	1199	G
2	2	1216	A
2	2	1217	A
2	2	1218	C
2	2	1229	A
2	2	1230	OMG
2	2	1231	A
2	2	1238	A
2	2	1239	G
2	2	1240	A
2	2	1242	U
2	2	1243	A
2	2	1248	C
2	2	1249	OMC
2	2	1253	G
2	2	1254	OMG
2	2	1255	G
2	2	1256	A
2	2	1257	U
2	2	1266	U
2	2	1267	G
2	2	1275	C
2	2	1276	A
2	2	1277	A
2	2	1278	G
2	2	1288	C
2	2	1290	A
2	2	1292	G
2	2	1295	G
2	2	1296	C
2	2	1298	U
2	2	1299	U

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Mol	Chain	Res	Type
2	2	1302	G
2	2	1303	A
2	2	1305	C
2	2	1306	C
2	2	1310	G
2	2	1312	U
2	2	1317	G
2	2	1318	OMC
2	2	1325	U
2	2	1326	A
2	2	1329	C
2	2	1333	C
2	2	1338	C
2	2	1339	A
2	2	1341	A
2	2	1343	G
2	2	1346	G
2	2	1347	C
2	2	1348	U
2	2	1349	A
2	2	1350	A
2	2	1351	G
2	2	1361	G
2	2	1362	U
2	2	1367	C
2	2	1372	G
2	2	1374	C
2	2	1375	A
2	2	1380	A
2	2	1381	C
2	2	1384	G
2	2	1385	A
2	2	1386	G
2	2	1389	G
2	2	1390	G
2	2	1393	U
2	2	1394	U
2	2	1410	A
2	2	1415	G
2	2	1417	U
2	2	1418	U
2	2	1422	C

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Mol	Chain	Res	Type
2	2	1423	C
2	2	1429	U
2	2	1435	G
2	2	1437	A
2	2	1438	A
2	2	1440	U
2	2	1441	G
2	2	1442	C
2	2	1443	G
2	2	1444	A
2	2	1446	A
2	2	1448	A
2	2	1449	A
3	3	10	U
3	3	14	A
3	3	21	U
3	3	22	G
3	3	23	C
3	3	29	A
3	3	30	A
3	3	32	A
3	3	33	A
3	3	37	A
3	3	38	A
3	3	47	C
3	3	48	G
3	3	50	U
3	3	54	C
3	3	55	U
3	3	56	U
3	3	58	C
3	3	61	U
3	3	62	U
3	3	63	C
3	3	69	A
3	3	70	A
3	3	78	C
3	3	79	U
3	3	81	C
3	3	82	G
3	3	83	G
3	3	84	C

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Mol	Chain	Res	Type
3	3	86	U
3	3	87	U
3	3	88	G
3	3	90	U
3	3	92	G
3	3	95	C
3	3	96	U
3	3	97	U
3	3	98	G
3	3	99	G
3	3	101	C
3	3	105	U
3	3	107	U
3	3	108	A
3	3	109	C
3	3	110	U
3	3	111	U
3	3	112	C
3	3	114	C
3	3	118	U
3	3	119	U
3	3	120	G
3	3	122	U
3	3	133	G
3	3	135	U
3	3	138	A
3	3	142	U
3	3	146	A
3	3	147	A
3	3	148	A
3	3	149	U
3	3	150	G
3	3	152	A
3	3	153	G
3	3	156	C
3	3	157	U
3	3	164	G
3	3	165	U
3	3	166	A
3	3	167	C
3	3	168	U
3	3	169	G

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Mol	Chain	Res	Type
3	3	170	U
3	3	176	U
3	3	181	A
3	3	182	G
3	3	185	C
3	3	186	U
3	3	194	A
3	3	195	A
3	3	196	A
3	3	198	C
3	3	199	A
3	3	210	G
4	4	31	G
4	4	40	G
4	4	46	G
4	4	50	G
4	4	51	U
4	4	52	A
4	4	62	C
4	4	63	U
4	4	64	C
4	4	65	C
4	4	67	A
4	4	73	U
4	4	86	U
4	4	93	U
4	4	96	C
4	4	97	G
4	4	100	C
4	4	102	G
4	4	106	G
4	4	107	U
4	4	114	A
4	4	119	A
4	4	120	U
4	4	121	C
4	4	127	G
4	4	128	U
4	4	129	G
4	4	131	U
4	4	132	U
4	4	139	U

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Mol	Chain	Res	Type
4	4	140	G
4	4	141	A
4	4	147	U
4	4	148	C
4	4	150	A
4	4	151	A
4	4	153	C
4	4	154	C
4	4	157	A
4	4	158	A
4	4	162	A
4	4	169	A
4	4	171	A
4	4	172	C
4	4	174	A
4	4	175	G
4	4	180	C
4	4	182	A
5	5	4	G
5	5	12	C
5	5	13	C
5	5	14	A
5	5	15	A
5	5	22	G
5	5	25	C
5	5	26	A
5	5	27	U
5	5	28	G
5	5	38	G
5	5	40	A
5	5	42	G
5	5	43	A
5	5	101	C
5	5	102	U
5	5	105	A
5	5	112	A
5	5	113	A
5	5	114	A
5	5	115	U
5	5	119	A
5	5	120	U
5	5	122	C

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Mol	Chain	Res	Type
5	5	123	U
5	5	126	G
5	5	127	G
5	5	131	A
5	5	132	C
5	5	133	A
6	6	2	C
6	6	3	A
6	6	4	U
6	6	5	C
6	6	7	A
6	6	8	A
6	6	9	U
6	6	12	C
6	6	13	C
6	6	14	A
6	6	15	C
6	6	16	C
6	6	17	U
6	6	18	A
6	6	19	C
6	6	20	A
6	6	21	A
6	6	22	G
6	6	23	A
6	6	24	C
6	6	25	U
6	6	26	G
6	6	27	G
6	6	28	A
6	6	29	G
6	6	30	C
6	6	31	U
6	6	32	U
6	6	33	G
6	6	35	U
6	6	37	C
6	6	39	U
6	6	40	C
6	6	41	G
6	6	42	A
6	6	44	G

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Mol	Chain	Res	Type
6	6	49	C
6	6	50	A
6	6	51	A
6	6	52	G
6	6	53	U
6	6	54	A
6	6	55	U
6	6	56	A
6	6	57	U
6	6	58	U
6	6	59	C
6	6	61	U
7	7	2	A
7	7	5	U
7	7	6	G
7	7	7	OMU
7	7	8	C
7	7	22	U
7	7	34	U
7	7	35	C
7	7	38	U
7	7	40	A
7	7	44	A
7	7	48	A
7	7	49	G
7	7	52	A
7	7	59	A
7	7	60	U
7	7	62	A
7	7	63	G
7	7	68	A
7	7	69	U
7	7	71	A
7	7	77	A
7	7	78	G
7	7	89	U
7	7	92	C
7	7	103	A
7	7	104	A
7	7	105	C
7	7	107	C
7	7	109	A

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Mol	Chain	Res	Type
7	7	110	A
7	7	111	C
7	7	115	G
7	7	119	G
7	7	120	G
7	7	121	G
7	7	122	A
7	7	124	A
7	7	125	A
7	7	126	G
7	7	127	C
7	7	137	U
7	7	138	C
7	7	139	A
7	7	140	U
7	7	142	C
7	7	157	U
7	7	158	U
7	7	159	C
7	7	161	C
8	8	2	C
8	8	3	G
8	8	4	A
8	8	5	G
8	8	7	A
8	8	8	C
8	8	9	G
8	8	12	C
8	8	13	A
8	8	15	A
8	8	17	U
8	8	18	U
8	8	24	A
8	8	27	A
8	8	36	C
8	8	39	G
8	8	40	U
8	8	41	C
8	8	43	G
8	8	44	A
8	8	45	U
8	8	47	U

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Mol	Chain	Res	Type
8	8	48	G
8	8	51	A
8	8	52	A
8	8	53	G
8	8	55	U
8	8	56	A
8	8	57	A
8	8	61	C
8	8	63	C
8	8	64	A
8	8	67	G
8	8	73	G
8	8	74	U
8	8	78	U
8	8	82	G
8	8	85	G
8	8	86	U
8	8	87	C
8	8	88	A
8	8	89	G
8	8	91	G
8	8	92	A
8	8	94	G
8	8	102	A
8	8	108	G
8	8	110	G
8	8	111	U
8	8	112	G
8	8	115	G
8	8	116	U
8	8	119	U
8	8	120	C

There are no RNA pucker outliers to report.

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

44 non-standard protein/DNA/RNA residues are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the chemical component dictionary. The Link column lists molecule types, if any, to which the group is linked. 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 $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
1	OMG	1	1526	1	18,26,27	1.21	2 (11%)	22,38,41	2.15	6 (27%)
1	OMC	1	1529	1	15,22,23	0.98	0	19,31,34	1.00	1 (5%)
1	A2M	1	1541	1,2	18,25,26	1.05	1 (5%)	20,36,39	1.64	2 (10%)
1	OMG	1	1542	1,2	18,26,27	1.20	2 (11%)	22,38,41	2.17	6 (27%)
1	OMG	1	1628	1	18,26,27	1.24	2 (11%)	22,38,41	2.25	6 (27%)
1	OMU	1	36	1	14,22,23	1.03	1 (7%)	18,31,34	1.82	1 (5%)
1	OMU	1	48	1	14,22,23	1.17	2 (14%)	18,31,34	1.95	1 (5%)
1	A2M	1	678	1,2	18,25,26	1.06	1 (5%)	20,36,39	1.70	2 (10%)
1	A2M	1	681	1	18,25,26	1.01	1 (5%)	20,36,39	1.67	2 (10%)
1	OMC	1	695	1	15,22,23	1.07	1 (6%)	19,31,34	1.14	2 (10%)
1	OMU	1	845	1	14,22,23	1.10	1 (7%)	18,31,34	1.85	1 (5%)
1	OMU	1	847	1	14,22,23	1.02	1 (7%)	18,31,34	1.84	1 (5%)
1	OMG	1	856	1	18,26,27	1.17	2 (11%)	22,38,41	2.14	6 (27%)
1	A2M	1	927	1	18,25,26	1.10	1 (5%)	20,36,39	1.70	2 (10%)
1	A2M	1	955	1	18,25,26	1.08	1 (5%)	20,36,39	1.72	2 (10%)
1	OMG	1	959	1	18,26,27	1.30	2 (11%)	22,38,41	2.13	6 (27%)
2	OMU	2	1078	2	14,22,23	0.97	1 (7%)	18,31,34	1.90	1 (5%)
2	OMG	2	1079	2	18,26,27	1.28	2 (11%)	22,38,41	2.22	6 (27%)
2	OMU	2	1153	2	14,22,23	1.14	2 (14%)	18,31,34	1.95	1 (5%)
2	OMC	2	1160	2	15,22,23	0.91	0	19,31,34	0.84	0
2	A2M	2	1186	2	18,25,26	1.04	1 (5%)	20,36,39	1.68	2 (10%)
2	OMG	2	1230	2	18,26,27	1.23	2 (11%)	22,38,41	2.12	6 (27%)
2	OMC	2	1249	2	15,22,23	0.84	0	19,31,34	0.93	1 (5%)
2	OMG	2	1254	2	18,26,27	1.22	2 (11%)	22,38,41	2.09	6 (27%)
2	OMC	2	1318	2	15,22,23	0.95	0	19,31,34	1.05	2 (10%)
2	OMC	2	1398	2	15,22,23	0.91	0	19,31,34	0.80	0
2	H2U	2	1404	2	17,21,22	1.17	2 (11%)	21,30,33	1.72	2 (9%)
2	A2M	2	382	2	18,25,26	1.03	1 (5%)	20,36,39	1.59	2 (10%)
2	OMC	2	443	2	15,22,23	0.91	0	19,31,34	0.95	0
2	A2M	2	527	2	18,25,26	1.02	1 (5%)	20,36,39	1.73	2 (10%)
2	OMG	2	534	2	18,26,27	1.25	2 (11%)	22,38,41	2.17	6 (27%)
2	OMC	2	554	2	15,22,23	0.89	0	19,31,34	1.04	1 (5%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	OMG	2	571	2	18,26,27	1.23	2 (11%)	22,38,41	2.21	6 (27%)
2	A2M	2	572	2	18,25,26	1.07	1 (5%)	20,36,39	1.57	2 (10%)
2	OMC	2	583	2	15,22,23	0.98	0	19,31,34	0.84	0
2	A2M	2	591	2	18,25,26	1.10	1 (5%)	20,36,39	1.71	2 (10%)
2	A2M	2	628	2	18,25,26	1.02	1 (5%)	20,36,39	1.67	2 (10%)
2	OMG	2	641	2	18,26,27	1.23	2 (11%)	22,38,41	2.18	6 (27%)
2	OMG	2	655	2	18,26,27	1.22	2 (11%)	22,38,41	2.11	6 (27%)
2	OMU	2	656	2	14,22,23	1.01	1 (7%)	18,31,34	1.85	1 (5%)
2	OMU	2	667	2	14,22,23	1.00	1 (7%)	18,31,34	2.00	1 (5%)
2	OMG	2	71	2	18,26,27	1.22	2 (11%)	22,38,41	2.05	6 (27%)
7	A2M	7	162	1,7	18,25,26	1.14	1 (5%)	20,36,39	1.71	3 (15%)
7	OMU	7	7	1,7	14,22,23	1.07	1 (7%)	18,31,34	1.93	1 (5%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the chemical component dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	OMG	1	1526	1	-	0/5/27/28	0/3/3/3
1	OMC	1	1529	1	-	0/5/27/28	0/2/2/2
1	A2M	1	1541	1,2	-	0/5/27/28	0/3/3/3
1	OMG	1	1542	1,2	-	0/5/27/28	0/3/3/3
1	OMG	1	1628	1	-	0/5/27/28	0/3/3/3
1	OMU	1	36	1	-	0/5/27/28	0/2/2/2
1	OMU	1	48	1	-	0/5/27/28	0/2/2/2
1	A2M	1	678	1,2	-	0/5/27/28	0/3/3/3
1	A2M	1	681	1	-	0/5/27/28	0/3/3/3
1	OMC	1	695	1	-	0/5/27/28	0/2/2/2
1	OMU	1	845	1	-	0/5/27/28	0/2/2/2
1	OMU	1	847	1	-	0/5/27/28	0/2/2/2
1	OMG	1	856	1	-	0/5/27/28	0/3/3/3
1	A2M	1	927	1	-	0/5/27/28	0/3/3/3
1	A2M	1	955	1	-	0/5/27/28	0/3/3/3
1	OMG	1	959	1	-	0/5/27/28	0/3/3/3
2	OMU	2	1078	2	-	0/5/27/28	0/2/2/2
2	OMG	2	1079	2	-	0/5/27/28	0/3/3/3
2	OMU	2	1153	2	-	0/5/27/28	0/2/2/2
2	OMC	2	1160	2	-	0/5/27/28	0/2/2/2
2	A2M	2	1186	2	-	0/5/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	OMG	2	1230	2	-	0/5/27/28	0/3/3/3
2	OMC	2	1249	2	-	0/5/27/28	0/2/2/2
2	OMG	2	1254	2	-	0/5/27/28	0/3/3/3
2	OMC	2	1318	2	-	0/5/27/28	0/2/2/2
2	OMC	2	1398	2	-	0/5/27/28	0/2/2/2
2	H2U	2	1404	2	-	0/7/38/39	0/2/2/2
2	A2M	2	382	2	-	0/5/27/28	0/3/3/3
2	OMC	2	443	2	-	0/5/27/28	0/2/2/2
2	A2M	2	527	2	-	0/5/27/28	0/3/3/3
2	OMG	2	534	2	-	0/5/27/28	0/3/3/3
2	OMC	2	554	2	-	0/5/27/28	0/2/2/2
2	OMG	2	571	2	-	0/5/27/28	0/3/3/3
2	A2M	2	572	2	-	0/5/27/28	0/3/3/3
2	OMC	2	583	2	-	0/5/27/28	0/2/2/2
2	A2M	2	591	2	-	0/5/27/28	0/3/3/3
2	A2M	2	628	2	-	0/5/27/28	0/3/3/3
2	OMG	2	641	2	-	0/5/27/28	0/3/3/3
2	OMG	2	655	2	-	0/5/27/28	0/3/3/3
2	OMU	2	656	2	-	0/5/27/28	0/2/2/2
2	OMU	2	667	2	-	0/5/27/28	0/2/2/2
2	OMG	2	71	2	-	0/5/27/28	0/3/3/3
7	A2M	7	162	1,7	-	0/5/27/28	0/3/3/3
7	OMU	7	7	1,7	-	0/5/27/28	0/2/2/2

All (52) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	2	1404	H2U	C4-N3	-2.72	1.33	1.37
2	2	1404	H2U	C2-N3	-2.64	1.33	1.38
1	1	845	OMU	C2-N3	-2.49	1.33	1.38
1	1	48	OMU	C2-N3	-2.44	1.33	1.38
1	1	36	OMU	C2-N3	-2.32	1.33	1.38
1	1	847	OMU	C2-N3	-2.31	1.33	1.38
2	2	1153	OMU	C2-N3	-2.28	1.33	1.38
2	2	667	OMU	C2-N3	-2.22	1.33	1.38
2	2	1078	OMU	C2-N3	-2.19	1.33	1.38
2	2	1153	OMU	O5'-C5'	-2.18	1.41	1.44
1	1	48	OMU	O5'-C5'	-2.15	1.41	1.44
2	2	656	OMU	C2-N3	-2.12	1.34	1.38
7	7	7	OMU	C2-N3	-2.11	1.34	1.38
1	1	695	OMC	O4'-C1'	2.06	1.44	1.41
1	1	1628	OMG	C5-C4	2.54	1.46	1.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1	856	OMG	C5-C4	2.57	1.46	1.40
1	1	1542	OMG	C5-C4	2.64	1.46	1.40
2	2	641	OMG	C5-C4	2.70	1.46	1.40
2	2	1254	OMG	C5-C4	2.71	1.46	1.40
1	1	681	A2M	C5-C4	2.74	1.46	1.40
2	2	655	OMG	C5-C4	2.74	1.46	1.40
2	2	71	OMG	C5-C4	2.74	1.46	1.40
1	1	1526	OMG	C5-C4	2.77	1.46	1.40
1	1	955	A2M	C5-C4	2.77	1.46	1.40
1	1	1541	A2M	C5-C4	2.79	1.46	1.40
2	2	382	A2M	C5-C4	2.79	1.46	1.40
2	2	527	A2M	C5-C4	2.80	1.46	1.40
2	2	1230	OMG	C5-C4	2.80	1.46	1.40
2	2	1079	OMG	C5-C4	2.80	1.46	1.40
2	2	571	OMG	C5-C4	2.81	1.46	1.40
2	2	628	A2M	C5-C4	2.82	1.46	1.40
1	1	678	A2M	C5-C4	2.84	1.46	1.40
2	2	534	OMG	C5-C4	2.85	1.46	1.40
2	2	591	A2M	C5-C4	2.87	1.47	1.40
1	1	927	A2M	C5-C4	2.88	1.47	1.40
2	2	1186	A2M	C5-C4	2.89	1.47	1.40
2	2	572	A2M	C5-C4	2.96	1.47	1.40
1	1	959	OMG	C5-C4	3.06	1.47	1.40
7	7	162	A2M	C5-C4	3.07	1.47	1.40
1	1	856	OMG	C6-C5	3.21	1.47	1.41
2	2	641	OMG	C6-C5	3.26	1.47	1.41
2	2	1254	OMG	C6-C5	3.38	1.47	1.41
1	1	1542	OMG	C6-C5	3.39	1.47	1.41
1	1	1526	OMG	C6-C5	3.40	1.47	1.41
1	1	1628	OMG	C6-C5	3.43	1.47	1.41
2	2	1230	OMG	C6-C5	3.53	1.48	1.41
2	2	71	OMG	C6-C5	3.54	1.48	1.41
1	1	959	OMG	C6-C5	3.58	1.48	1.41
2	2	655	OMG	C6-C5	3.58	1.48	1.41
2	2	571	OMG	C6-C5	3.63	1.48	1.41
2	2	534	OMG	C6-C5	3.66	1.48	1.41
2	2	1079	OMG	C6-C5	3.77	1.48	1.41

All (121) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	927	A2M	N3-C2-N1	-6.30	123.37	128.86

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	678	A2M	N3-C2-N1	-6.23	123.43	128.86
1	1	955	A2M	N3-C2-N1	-6.19	123.47	128.86
2	2	628	A2M	N3-C2-N1	-6.15	123.50	128.86
2	2	591	A2M	N3-C2-N1	-6.05	123.59	128.86
1	1	681	A2M	N3-C2-N1	-6.03	123.60	128.86
1	1	1541	A2M	N3-C2-N1	-5.98	123.65	128.86
2	2	1404	H2U	C4-N3-C2	-5.96	120.71	125.81
2	2	527	A2M	N3-C2-N1	-5.92	123.70	128.86
2	2	1186	A2M	N3-C2-N1	-5.77	123.83	128.86
7	7	162	A2M	N3-C2-N1	-5.70	123.89	128.86
2	2	382	A2M	N3-C2-N1	-5.70	123.89	128.86
2	2	572	A2M	N3-C2-N1	-5.59	123.99	128.86
1	1	1628	OMG	C6-C5-C4	-4.45	116.42	120.84
2	2	1079	OMG	C6-C5-C4	-4.19	116.68	120.84
2	2	641	OMG	C6-C5-C4	-4.17	116.70	120.84
2	2	571	OMG	C6-C5-C4	-4.12	116.75	120.84
1	1	856	OMG	C6-C5-C4	-4.12	116.75	120.84
1	1	1542	OMG	C6-C5-C4	-4.07	116.80	120.84
2	2	534	OMG	C5-C6-N1	-4.04	117.73	123.48
2	2	1230	OMG	C6-C5-C4	-3.99	116.88	120.84
1	1	1526	OMG	C5-C6-N1	-3.92	117.91	123.48
2	2	1404	H2U	C5-C6-N1	-3.89	106.66	110.70
2	2	641	OMG	C5-C6-N1	-3.87	117.97	123.48
2	2	655	OMG	C6-C5-C4	-3.85	117.02	120.84
2	2	71	OMG	C5-C6-N1	-3.85	118.00	123.48
2	2	571	OMG	C5-C6-N1	-3.83	118.03	123.48
2	2	1079	OMG	C5-C6-N1	-3.82	118.04	123.48
1	1	856	OMG	C5-C6-N1	-3.76	118.13	123.48
2	2	534	OMG	C6-C5-C4	-3.76	117.11	120.84
2	2	1230	OMG	C5-C6-N1	-3.76	118.14	123.48
2	2	1254	OMG	C5-C6-N1	-3.72	118.19	123.48
2	2	655	OMG	C5-C6-N1	-3.72	118.19	123.48
1	1	1542	OMG	C5-C6-N1	-3.67	118.26	123.48
2	2	71	OMG	C6-C5-C4	-3.67	117.19	120.84
2	2	1254	OMG	C6-C5-C4	-3.67	117.20	120.84
1	1	1526	OMG	C6-C5-C4	-3.62	117.24	120.84
1	1	1628	OMG	C5-C6-N1	-3.61	118.34	123.48
1	1	959	OMG	C5-C6-N1	-3.60	118.36	123.48
1	1	959	OMG	C6-C5-C4	-3.54	117.32	120.84
1	1	1628	OMG	N3-C2-N1	-3.50	122.35	127.46
2	2	641	OMG	N3-C2-N1	-3.45	122.42	127.46
1	1	856	OMG	N3-C2-N1	-3.39	122.51	127.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	2	1079	OMG	N3-C2-N1	-3.31	122.63	127.46
2	2	1254	OMG	N3-C2-N1	-3.28	122.67	127.46
2	2	571	OMG	N3-C2-N1	-3.25	122.72	127.46
1	1	1542	OMG	N3-C2-N1	-3.23	122.74	127.46
2	2	1230	OMG	N3-C2-N1	-3.21	122.78	127.46
1	1	678	A2M	C4-C5-N7	-3.20	106.32	109.41
2	2	534	OMG	N3-C2-N1	-3.19	122.79	127.46
1	1	955	A2M	C4-C5-N7	-3.15	106.37	109.41
1	1	1526	OMG	N3-C2-N1	-3.12	122.90	127.46
2	2	1079	OMG	C4-C5-N7	-3.11	106.41	109.41
1	1	959	OMG	N3-C2-N1	-3.07	122.97	127.46
2	2	655	OMG	N3-C2-N1	-3.06	122.99	127.46
2	2	534	OMG	C4-C5-N7	-3.05	106.46	109.41
7	7	162	A2M	C4'-O4'-C1'	-3.03	106.55	109.77
2	2	572	A2M	C4-C5-N7	-3.02	106.49	109.41
2	2	571	OMG	C4-C5-N7	-3.02	106.49	109.41
1	1	681	A2M	C4-C5-N7	-3.00	106.51	109.41
2	2	655	OMG	C4-C5-N7	-2.99	106.53	109.41
2	2	71	OMG	N3-C2-N1	-2.97	123.12	127.46
1	1	1628	OMG	C4-C5-N7	-2.94	106.57	109.41
2	2	1186	A2M	C4-C5-N7	-2.94	106.57	109.41
1	1	1526	OMG	C4-C5-N7	-2.93	106.58	109.41
2	2	1230	OMG	C4-C5-N7	-2.93	106.58	109.41
1	1	1542	OMG	C4-C5-N7	-2.87	106.64	109.41
1	1	1541	A2M	C4-C5-N7	-2.78	106.73	109.41
1	1	856	OMG	C4-C5-N7	-2.76	106.74	109.41
1	1	927	A2M	C4-C5-N7	-2.76	106.75	109.41
2	2	527	A2M	C4-C5-N7	-2.69	106.81	109.41
2	2	382	A2M	C4-C5-N7	-2.69	106.81	109.41
2	2	591	A2M	C4-C5-N7	-2.64	106.86	109.41
2	2	71	OMG	C4-C5-N7	-2.61	106.89	109.41
2	2	1254	OMG	C4-C5-N7	-2.56	106.94	109.41
2	2	628	A2M	C4-C5-N7	-2.53	106.96	109.41
2	2	641	OMG	C4-C5-N7	-2.52	106.97	109.41
1	1	959	OMG	C4-C5-N7	-2.45	107.05	109.41
7	7	162	A2M	C4-C5-N7	-2.17	107.31	109.41
1	1	695	OMC	C5'-C4'-C3'	-2.10	107.28	115.29
2	2	1318	OMC	C5'-C4'-C3'	-2.02	107.58	115.29
2	2	1318	OMC	N4-C4-N3	2.02	120.05	116.64
1	1	695	OMC	N4-C4-N3	2.04	120.07	116.64
2	2	554	OMC	N4-C4-N3	2.06	120.11	116.64
1	1	1529	OMC	N4-C4-N3	2.10	120.18	116.64

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	2	1249	OMC	N4-C4-N3	2.22	120.38	116.64
1	1	959	OMG	C6-N1-C2	4.14	122.01	116.06
2	2	655	OMG	C6-N1-C2	4.23	122.14	116.06
2	2	71	OMG	C6-N1-C2	4.30	122.25	116.06
1	1	1542	OMG	C6-N1-C2	4.32	122.28	116.06
2	2	1254	OMG	C6-N1-C2	4.36	122.34	116.06
2	2	1230	OMG	C6-N1-C2	4.39	122.37	116.06
1	1	1526	OMG	C6-N1-C2	4.40	122.39	116.06
1	1	1628	OMG	C6-N1-C2	4.44	122.44	116.06
2	2	1079	OMG	C6-N1-C2	4.47	122.48	116.06
2	2	571	OMG	C6-N1-C2	4.52	122.56	116.06
2	2	534	OMG	C6-N1-C2	4.54	122.59	116.06
1	1	856	OMG	C6-N1-C2	4.57	122.63	116.06
2	2	641	OMG	C6-N1-C2	4.68	122.80	116.06
1	1	1526	OMG	C2-N3-C4	4.76	120.72	115.16
1	1	856	OMG	C2-N3-C4	4.81	120.77	115.16
2	2	534	OMG	C2-N3-C4	4.83	120.80	115.16
2	2	71	OMG	C2-N3-C4	4.84	120.81	115.16
2	2	571	OMG	C2-N3-C4	4.88	120.85	115.16
2	2	1230	OMG	C2-N3-C4	4.89	120.87	115.16
2	2	641	OMG	C2-N3-C4	4.91	120.89	115.16
1	1	1542	OMG	C2-N3-C4	4.93	120.92	115.16
2	2	655	OMG	C2-N3-C4	4.95	120.94	115.16
2	2	1079	OMG	C2-N3-C4	4.95	120.94	115.16
1	1	959	OMG	C2-N3-C4	5.03	121.04	115.16
2	2	1254	OMG	C2-N3-C4	5.10	121.11	115.16
1	1	1628	OMG	C2-N3-C4	5.13	121.14	115.16
7	7	7	OMU	C4-N3-C2	7.13	120.26	114.13
2	2	656	OMU	C4-N3-C2	7.19	120.31	114.13
1	1	845	OMU	C4-N3-C2	7.20	120.31	114.13
2	2	1078	OMU	C4-N3-C2	7.27	120.37	114.13
1	1	36	OMU	C4-N3-C2	7.29	120.39	114.13
2	2	1153	OMU	C4-N3-C2	7.30	120.40	114.13
1	1	847	OMU	C4-N3-C2	7.30	120.40	114.13
1	1	48	OMU	C4-N3-C2	7.51	120.58	114.13
2	2	667	OMU	C4-N3-C2	7.69	120.74	114.13

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

41 monomers are involved in 186 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	1	1526	OMG	2	0
1	1	1529	OMC	6	0
1	1	1541	A2M	3	0
1	1	1542	OMG	2	0
1	1	1628	OMG	1	0
1	1	36	OMU	14	0
1	1	48	OMU	4	0
1	1	678	A2M	2	0
1	1	681	A2M	2	0
1	1	695	OMC	3	0
1	1	845	OMU	2	0
1	1	847	OMU	3	0
1	1	856	OMG	2	0
1	1	927	A2M	3	0
1	1	955	A2M	2	0
1	1	959	OMG	9	0
2	2	1078	OMU	11	0
2	2	1079	OMG	9	0
2	2	1153	OMU	6	0
2	2	1160	OMC	3	0
2	2	1186	A2M	3	0
2	2	1230	OMG	2	0
2	2	1249	OMC	1	0
2	2	1254	OMG	10	0
2	2	1318	OMC	7	0
2	2	1398	OMC	4	0
2	2	1404	H2U	2	0
2	2	382	A2M	2	0
2	2	443	OMC	7	0
2	2	527	A2M	13	0
2	2	534	OMG	4	0
2	2	554	OMC	3	0
2	2	571	OMG	1	0
2	2	572	A2M	2	0
2	2	583	OMC	1	0
2	2	591	A2M	7	0
2	2	628	A2M	4	0
2	2	655	OMG	7	0
2	2	667	OMU	5	0
2	2	71	OMG	11	0
7	7	7	OMU	10	0

5.5 Carbohydrates [i](#)

There are no carbohydrates in this entry.

5.6 Ligand geometry [i](#)

Of 109 ligands modelled in this entry, 109 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.