



# Full wwPDB/EMDatabank EM Map/Model Validation Report ⓘ

Jul 24, 2017 – 08:12 AM EDT

PDB ID : 5GAK  
EMDB ID: : EMD-3227  
Title : Yeast 60S ribosomal subunit with A-site tRNA, P-site tRNA and eIF-5A  
Authors : Schmidt, C.; Becker, T.  
Deposited on : unknown  
Resolution : 3.88 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](mailto: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.

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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) : rb-20029824

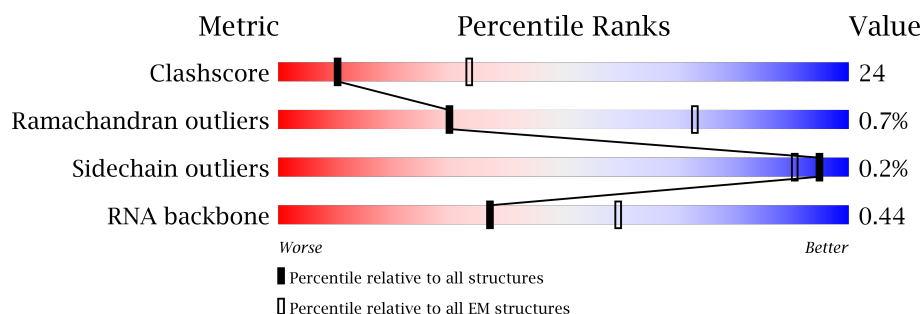
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 3.88 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.




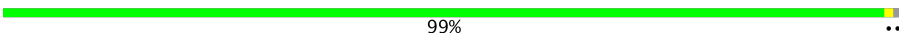



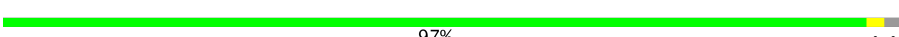




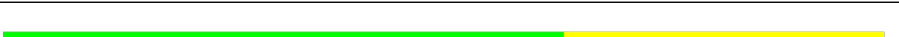


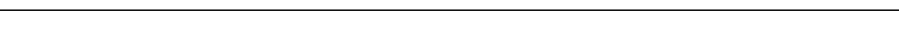
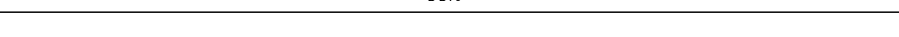
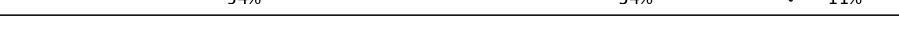
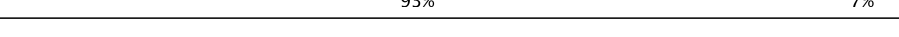

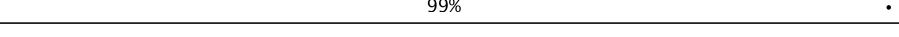
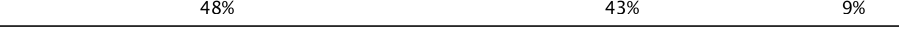
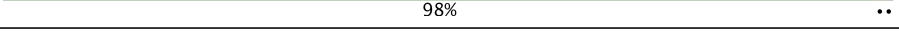

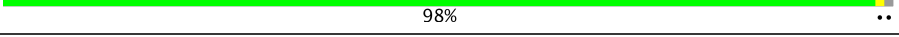

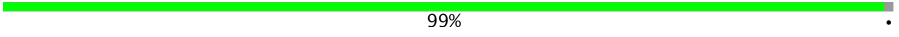
Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	125131	1336
Ramachandran outliers	121729	1120
Sidechain outliers	121581	1026
RNA backbone	3398	335

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  $\geq 3$ , 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	3396	18% 44% 30% 7%
2	X	137	59% 40%
3	3	121	21% 55% 23%
4	Y	155	46% 17% 37%
5	4	158	20% 49% 30%
6	Z	142	52% 32% 15%
7	A	76	12% 39% 46%
8	a	127	98%

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Mol	Chain	Length	Quality of chain
9	B	77	 18%40%40%.
10	b	136	 99%..
11	C	106	 70%29%.
12	c	149	 97%..
13	D	92	 54%45%.
14	d	59	 97%..
15	E	254	 62%37%.
16	e	105	 92%8%.
17	F	387	 56%43%.
18	f	109	 100%.
19	G	362	 63%36%.
20	g	130	 98%.
21	H	297	 54%44%.
22	h	107	 99%.
23	I	176	 54%34%11%.
24	i	121	 93%7%.
25	J	244	 57%34%9%.
26	j	120	 99%.
27	K	256	 48%43%9%.
28	k	100	 98%..
29	L	191	 59%41%.
30	l	88	 98%..
31	M	174	 61%36%..
32	m	78	 99%.
33	N	199	 63%34%.

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Mol	Chain	Length	Quality of chain
34	n	51	98% .
35	O	138	48% 50% ..
36	o	128	41% 59% .
37	P	204	59% 41% .
38	p	25	100% .
39	Q	199	64% 35% .
40	q	157	89% 8% ..
41	R	184	62% 38% .
42	r	210	100% .
43	S	186	66% 33% ..
44	s	221	94% . .
45	T	189	65% 34% .
46	U	172	64% 36% .
47	V	160	66% 33% ..
48	W	121	52% 31% 17% .
49	z	23	100% .

## 2 Entry composition

There are 50 unique types of molecules in this entry. The entry contains 128975 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 25S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	1	3165	Total	C	N	O	P	0	0
			67695	30238	12201	22091	3165		

- Molecule 2 is a protein called 60S ribosomal protein L23-A.

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

- Molecule 3 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	3	121	Total	C	N	O	P	0	0
			2579	1152	461	845	121		

- Molecule 4 is a protein called 60S ribosomal protein L24-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	Y	98	Total	C	N	O	S	0	0
			699	443	137	118	1		

- Molecule 5 is a RNA chain called 5.8S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	4	158	Total	C	N	O	P	0	0
			3353	1500	586	1109	158		

- Molecule 6 is a protein called 60S ribosomal protein L25.

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

- Molecule 7 is a RNA chain called The A-site tRNA was modeled based on an E. coli tRNA-Lys.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	A	76	Total	C	N	O	P	0	0
			1611	721	281	534	75		

- Molecule 8 is a protein called 60S ribosomal protein L26-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
8	a	126	Total	C	N	O	0	0
			993	625	192	176		

- Molecule 9 is a RNA chain called P-site tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	B	77	Total	C	N	O	P	0	0
			1644	731	290	546	77		

- Molecule 10 is a protein called 60S ribosomal protein L27-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
10	b	135	Total	C	N	O	0	0
			1092	710	202	180		

- Molecule 11 is a protein called 60S ribosomal protein L42-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	C	105	Total	C	N	O	S	0	0
			847	534	170	138	5		

- Molecule 12 is a protein called 60S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	c	148	Total	C	N	O	S	0	0
			1173	749	231	190	3		

- Molecule 13 is a protein called 60S ribosomal protein L43-A.

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

- Molecule 14 is a protein called 60S ribosomal protein L29.

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

- Molecule 15 is a protein called 60S ribosomal protein L2-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	E	252	Total	C	N	O	S	0	0
			1914	1191	388	334	1		

- Molecule 16 is a protein called 60S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	e	97	Total	C	N	O	S	0	0
			743	479	124	139	1		

- Molecule 17 is a protein called 60S ribosomal protein L3.

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

- Molecule 18 is a protein called 60S ribosomal protein L31-A.

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

- Molecule 19 is a protein called 60S ribosomal protein L4-A.

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

- Molecule 20 is a protein called 60S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	g	127	Total	C	N	O	S	0	0
			1020	647	205	167	1		

- Molecule 21 is a protein called 60S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	H	296	Total	C	N	O	S	0	0
			2375	1501	414	458	2		

- Molecule 22 is a protein called 60S ribosomal protein L33-A.

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

- Molecule 23 is a protein called 60S ribosomal protein L6-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	I	156	Total	C	N	O	S	0	0
			1239	800	222	216	1		

- Molecule 24 is a protein called 60S ribosomal protein L34-A.

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

- Molecule 25 is a protein called 60S ribosomal protein L7-A.

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

- Molecule 26 is a protein called 60S ribosomal protein L35-A.

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

- Molecule 27 is a protein called 60S ribosomal protein L8-A.

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

- Molecule 28 is a protein called 60S ribosomal protein L36-A.



Mol	Chain	Residues	Atoms					AltConf	Trace
28	k	99	Total	C	N	O	S	0	0
			771	481	156	132	2		

- Molecule 29 is a protein called 60S ribosomal protein L9-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	L	191	Total	C	N	O	S	0	0
			1518	963	274	277	4		

- Molecule 30 is a protein called 60S ribosomal protein L37-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	l	87	Total	C	N	O	S	0	0
			681	414	148	114	5		

- Molecule 31 is a protein called 60S ribosomal protein L11-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	M	169	Total	C	N	O	S	0	0
			1353	847	253	249	4		

- Molecule 32 is a protein called 60S ribosomal protein L38.

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

- Molecule 33 is a protein called 60S ribosomal protein L13-A.

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

- Molecule 34 is a protein called 60S ribosomal protein L39.

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

- Molecule 35 is a protein called 60S ribosomal protein L14-B.

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

- Molecule 36 is a protein called Ubiquitin-60S ribosomal protein L40.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	o	52	Total	C	N	O	S	0	0
			417	259	86	67	5		

- Molecule 37 is a protein called 60S ribosomal protein L15-A.

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

- Molecule 38 is a protein called 60S ribosomal protein L41-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	p	25	Total	C	N	O	S	0	0
			233	142	63	27	1		

- Molecule 39 is a protein called 60S ribosomal protein L16-A.

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

- Molecule 40 is a protein called Eukaryotic translation initiation factor 5A-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	q	154	Total	C	N	O	S	0	0
			1143	709	195	230	9		

- Molecule 41 is a protein called 60S ribosomal protein L17-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	R	183	Total	C	N	O		0	0
			1420	882	281	257			

- Molecule 42 is a protein called ribosomal protein RPL1.

Mol	Chain	Residues	Atoms				AltConf	Trace
42	r	210	Total	C	N	O	0	0
			1050	630	210	210		

- Molecule 43 is a protein called 60S ribosomal protein L18-A.

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

- Molecule 44 is a protein called 60S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	s	220	Total	C	N	O	S	0	0
			1770	1121	335	307	7		

- Molecule 45 is a protein called 60S ribosomal protein L19-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
45	T	188	Total	C	N	O	0	0
			1521	935	326	260		

- Molecule 46 is a protein called 60S ribosomal protein L20-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	U	172	Total	C	N	O	S	0	0
			1445	930	267	244	4		

- Molecule 47 is a protein called 60S ribosomal protein L21-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	V	159	Total	C	N	O	S	0	0
			1276	805	246	221	4		

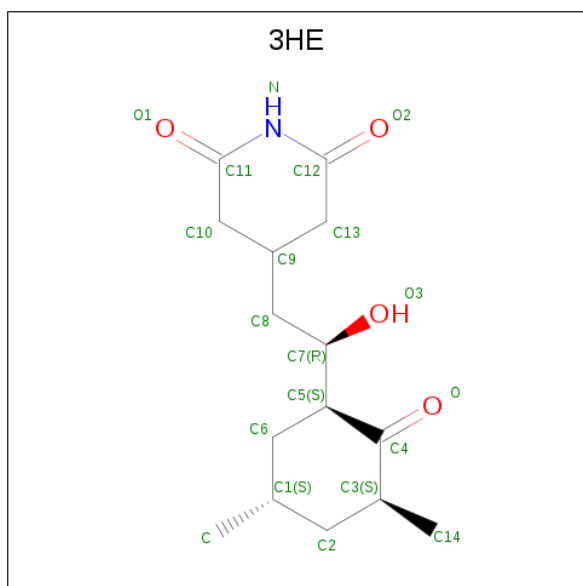
- Molecule 48 is a protein called 60S ribosomal protein L22-A.

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

- Molecule 49 is a protein called nascent polypeptide chain.

Mol	Chain	Residues	Atoms				AltConf	Trace
49	z	23	Total	C	N	O	0	0
			115	69	23	23		

- Molecule 50 is 4-{(2R)-2-[(1S,3S,5S)-3,5-dimethyl-2-oxocyclohexyl]-2-hydroxyethyl}piperidine-2,6-dione (three-letter code: 3HE) (formula: C<sub>15</sub>H<sub>23</sub>NO<sub>4</sub>).

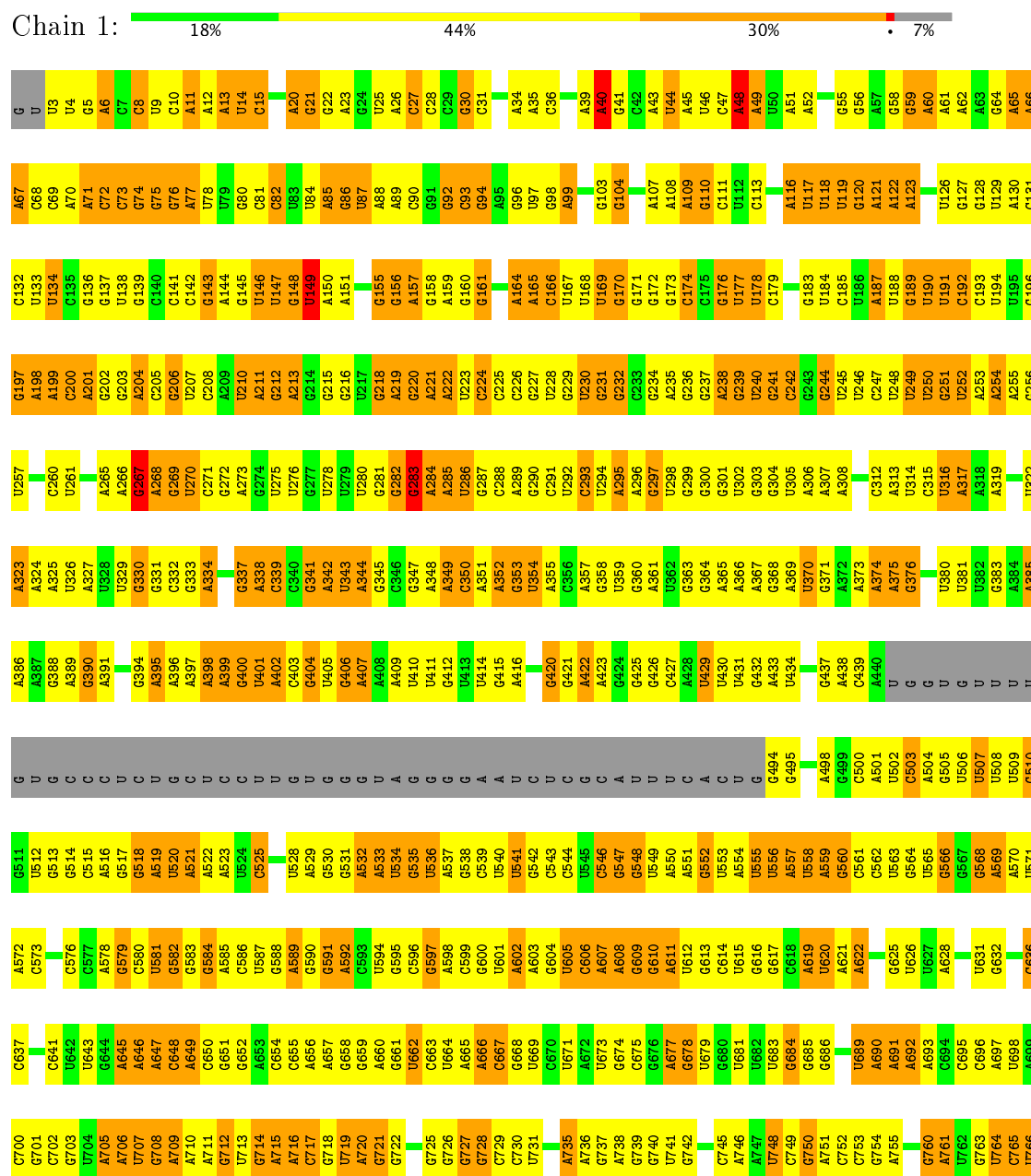


Mol	Chain	Residues	Atoms				AltConf
50	1	1	Total	C	N	O	0
			20	15	1	4	

### 3 Residue-property plots

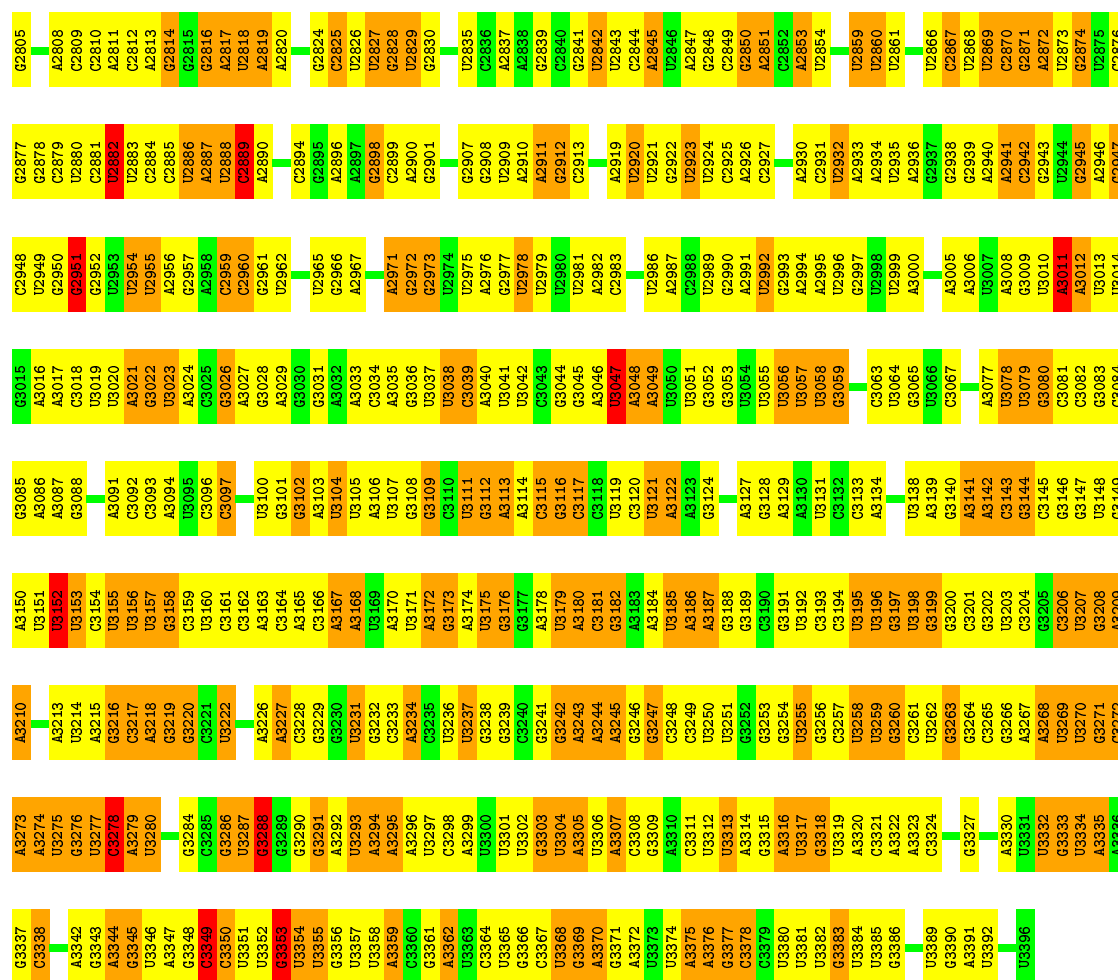
These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. Residues are color-coded according 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: 25S rRNA



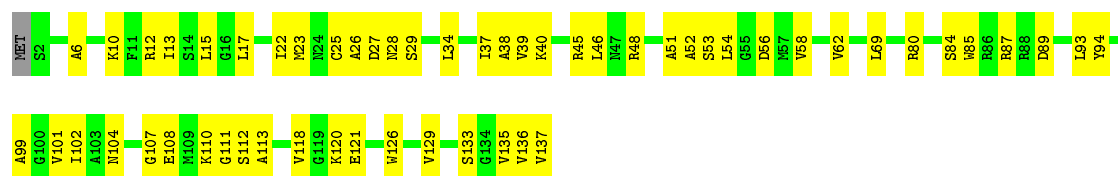
U1717	U1651	G1528	G1468	G1401	C1339	C1275	G1213	A1143	A1079	C1017	C957	G891	A828	U767
G1718	G1652	A1529	G1469	C1402	G1340	U1276	U1214	U1444	A1080	G1018	C958	U892	U829	C768
G1719	G1653	U1630	U1470	C1403	U1341	C1277	A1217	G1145	U1081	G1019	C959	U893	A830	C769
U1720	A1654	C1531	U1471	G1404	C1342	A1278		U1082	U1082	G1020	U960	U894	G831	G770
U1721	G1655	C1532	U1472		A1343	C1279		G1147	G1083	U1021	C961	A895	G832	A771
U1722	A1656	U1533	G1473	A1407	G1344	C1280	U1220	G1148	A1084	U1022	A962	U896		U772
G1657	C1657	A1534	G1474	G1408	G1345	G1281	A1221	G1149	A1085	C1023	C963	U897	G835	G773
G1658	U1659	A1535	A1475	G1409	U1346	G1282	G1222	A1150	C1086	G1024	G964		A836	G774
G1725	G1659	G1536	G1476		U1347	C1283	A1223	U1151	U1087	A1025	A965	G900	A837	A775
G1726	G1660	A1537	A1477	G1412	U1348	C1284	C1224	U1152	U1088	A1026	U966	G901	G838	U776
G1727	G1661	G1538	C1478	G1413	G1349	U1285	A1225	A1153	G1089	A1027	A967	G902	G839	U777
G1728	G1662	U1539	U1479	G1414	A1350	A1286	C1226	A1154	G1090	U1028	G968	U903	C840	
A1729	C1663	U1540	G1480	U1415	U1351	A1287	C1227	C1155	A1091	G1029	C969	A904	C841	
G1730	G1664	G1541	C1461	C1416	A1352	U1288	G1228		C1092	A1030	A970	U905	G842	A780
A1731	C1665	G1542	G1482	G1417	U1353	G1289	G1229	A1158	A1093	C1031	G971	A906		G781
U1732	G1666	G1543	G1483	A1418	U1354	A1290	G1230	A1159	U1094	C1032	A972	G907	G845	U782
G1733	A1667	A1544	U1484	A1419	U1355	A1291	C1231	C1160	U1095	U1033	A973	G908	A846	A784
G1734	G1668	G1545	G1485	C1420	U1356	C1292	A1232	U1173	U1096	U1034	G974	G909	A847	G785
		A1546	G1486	G1421	G1357	U1293	G1233	A1169	G1097	G1035	C975	G910	A848	A786
		G1547	G1487	G1422	C1358	A1294	G1234	A1170	A1098	A1036	U976	C911	C849	G787
		C1548	G1488	C1423	C1359		U1235	G1171	A1099	C1037	C977	G912	U850	G788
		U1549	A1489	C1424	U1361	G1300	G1236	A1172	U1100	C1038	G978	A913	C851	A789
		C1550	A1490		U1361	A1301	G1237	U1173	G1101	U1039	U979	A914	U852	U790
		C1551		U1427	G1362	A1302	C1238	G1174	U1102	A1040	A980	A915	G853	A791
				A1428	A1363	A1303	C1239	C1175	A1103	U1041	U981	G916	G854	G792
				G1429	C1364	A1304	A1240	G1176	G1104	U1042	C982	A917	U855	C793
				U1430	U1365	U1305	U1241	G1177	A1105	U1043	A983	C918	G857	U794
				G1431	A1366	G1306	G1242	G1178	G1106	U1044	A985	U919	U796	G795
				U1432	U1367	G1307	G1243	A1179	C1107	U1045	U986	A920	A858	U797
				G1433	U1368	A1308	A1244	A1180	U1108	A1046	U987	A921	G860	G798
				U1434		U1309	U1245	A1181	U1109	A1047	U987	U922	G861	G799
				G1435	G1371	G1310	G1246	A1182	U1110	A1048	U988	G923	U862	G800
				U1436	C1372	G1311	U1247	A1183	U1111	C1049	A989	G924	A801	A807
				U1437	A1373	C1312	G1248	A1184	A1112	U1050	A990	A925	C863	C802
				U1438	G1374	G1313	G1249	G1185	G1113	U1051	G991	A926		
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				U1445	U1380	G1319	C1255	U1191	C1119		A997	U932	U871	A808
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				U1448	G1382	G1321	C1257	A1193	G999	G1059	G999	G934	C873	A810
				A1449		U1322	U1258	G1194	U1121		C1000	U935	U874	U811
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				U1455	G1389	C1327	A1263	G1199	G1130	U1067	G1005	G940	U879	A816
				A1456	A1390	C1328	G1264	A1200	C1132	C1068	A1006	G941	G880	A817
				U1457	C1391	U1329	U1265	C1201	A1133	C1069	U1007	U942	C881	C818
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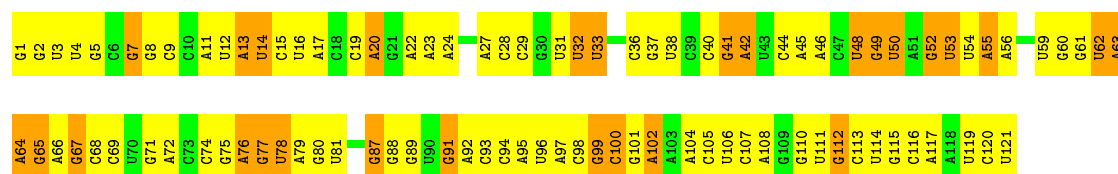
• Molecule 2: 60S ribosomal protein L23-A

Chain X: 59% 40%



• Molecule 3: 5S rRNA

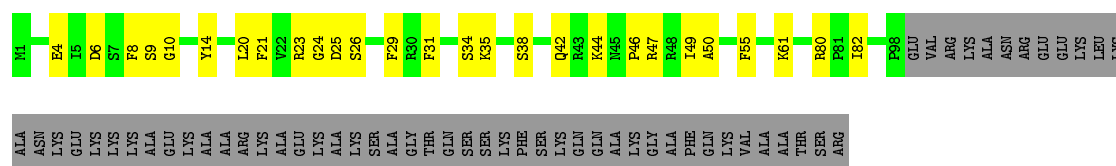
Chain 3: 21% 55% 23%




• Molecule 4: 60S ribosomal protein L24-A

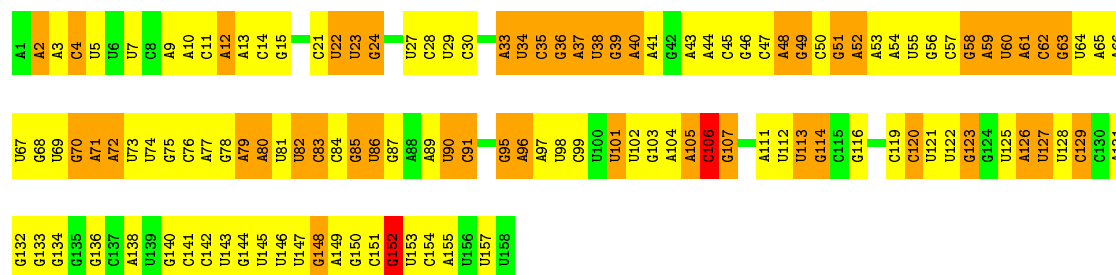


Chain Y:  46% 17% 37%



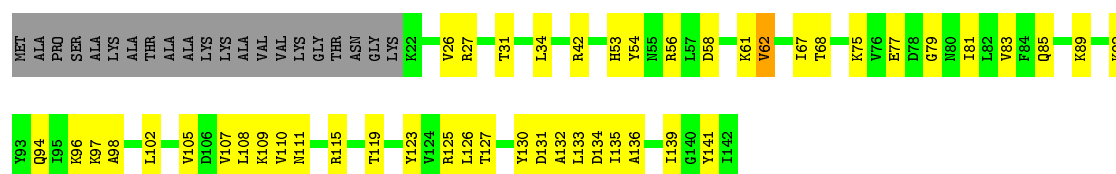
- Molecule 5: 5.8S rRNA

Chain 4:  20% 49% 30%



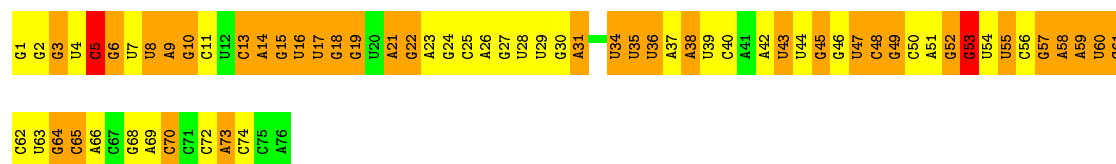
- Molecule 6: 60S ribosomal protein L25

Chain Z:  52% 32% • 15%



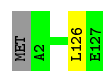
- Molecule 7: The A-site tRNA was modeled based on an E. coli tRNA-Lys

Chain A:  12% 39% 46% .



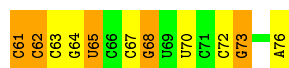
- Molecule 8: 60S ribosomal protein L26-A

Chain a:  98%



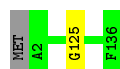
- Molecule 9: P-site tRNA

Chain B:  18% 40% 40%



- Molecule 10: 60S ribosomal protein L27-A

Chain b:  99%



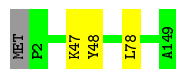
- Molecule 11: 60S ribosomal protein L42-A

Chain C:  70%



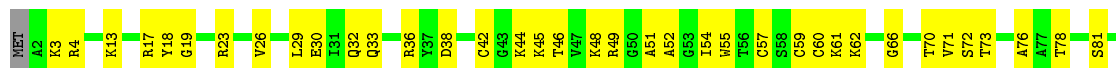
- Molecule 12: 60S ribosomal protein L28

Chain c:  97%



- Molecule 13: 60S ribosomal protein L43-A

Chain D:  54%



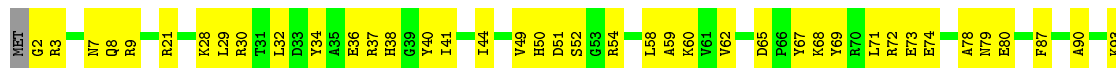
- Molecule 14: 60S ribosomal protein L29

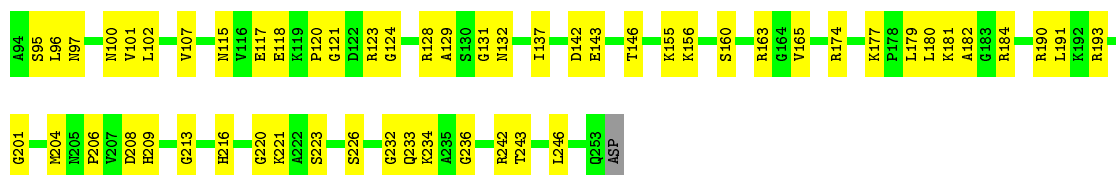
Chain d:  97%



- Molecule 15: 60S ribosomal protein L2-A

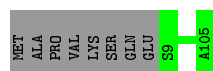
Chain E:  62%





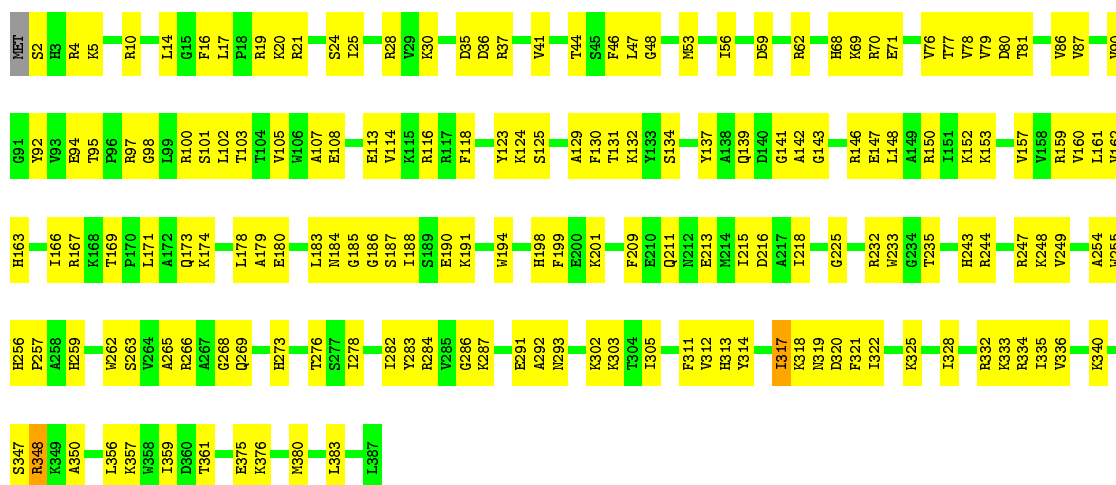
- Molecule 16: 60S ribosomal protein L30

Chain e: 92% 8%



- Molecule 17: 60S ribosomal protein L3

Chain F: 56% 43%



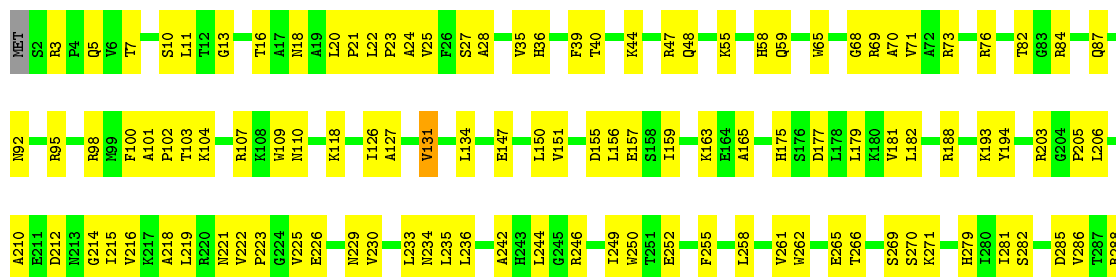
- Molecule 18: 60S ribosomal protein L31-A

Chain f: 100%

There are no outlier residues recorded for this chain.

- Molecule 19: 60S ribosomal protein L4-A

Chain G: 63% 36%





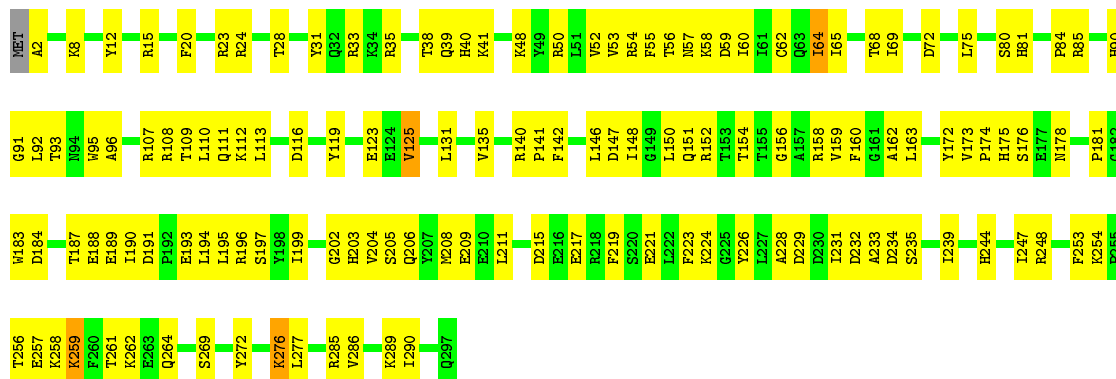
- Molecule 20: 60S ribosomal protein L32

Chain g: 98%



- Molecule 21: 60S ribosomal protein L5

Chain H: 54% 44%



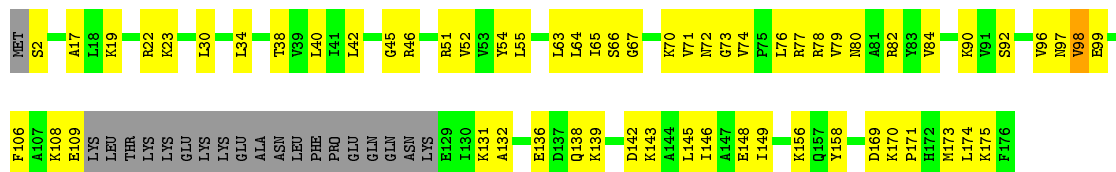
- Molecule 22: 60S ribosomal protein L33-A

Chain h: 99%



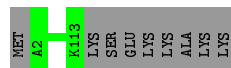
- Molecule 23: 60S ribosomal protein L6-A

Chain I: 54% 34% 11%



- Molecule 24: 60S ribosomal protein L34-A

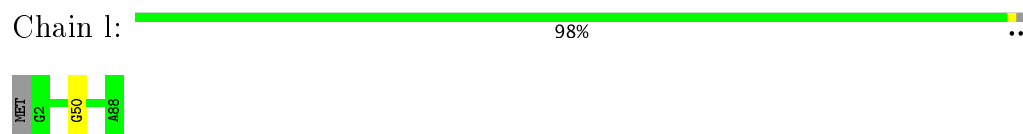
Chain i: 93% 7%



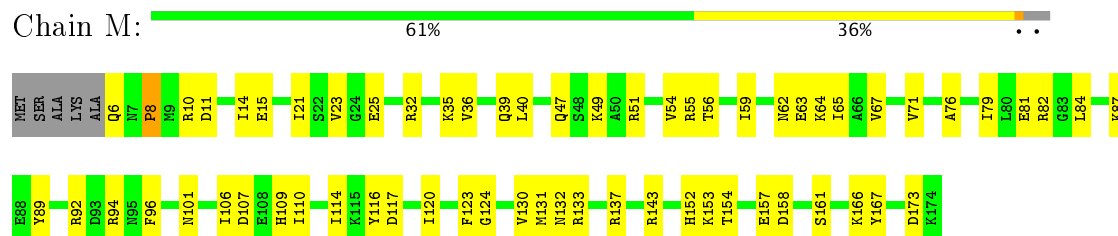
- Molecule 25: 60S ribosomal protein L7-A



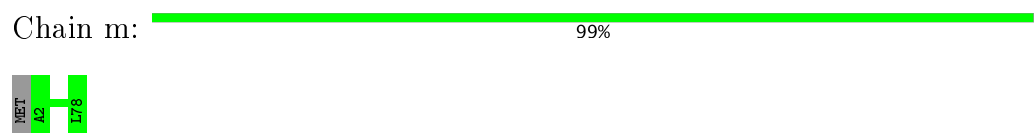
- Molecule 30: 60S ribosomal protein L37-A



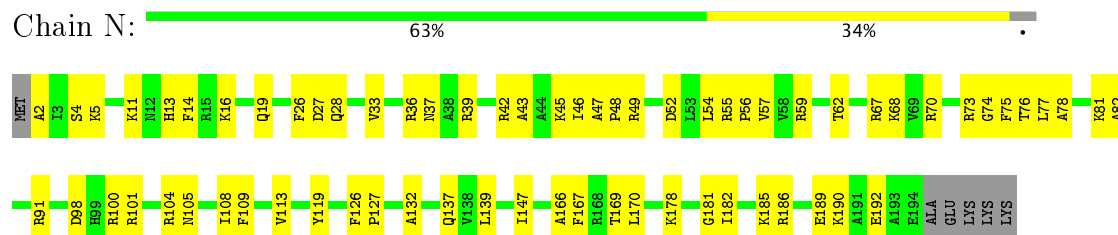
- Molecule 31: 60S ribosomal protein L11-A



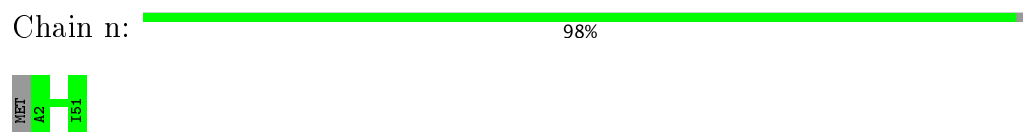
- Molecule 32: 60S ribosomal protein L38



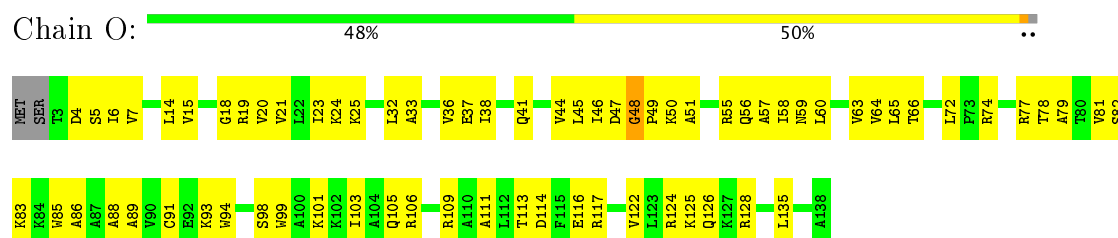
- Molecule 33: 60S ribosomal protein L13-A



- Molecule 34: 60S ribosomal protein L39

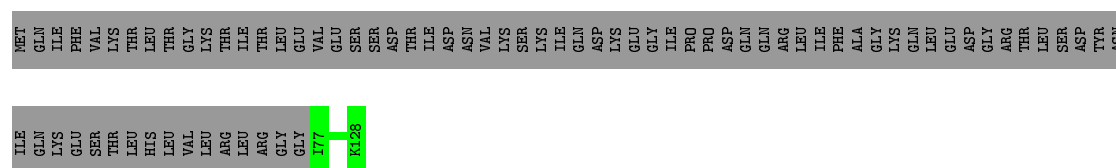


- Molecule 35: 60S ribosomal protein L14-B



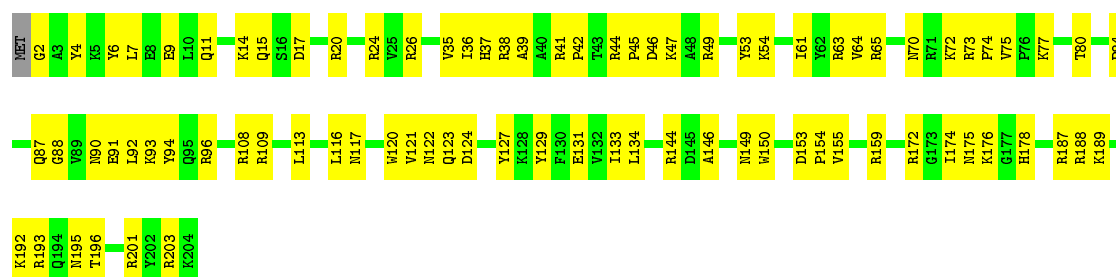
- Molecule 36: Ubiquitin-60S ribosomal protein L40

Chain o:  41% 59%



- Molecule 37: 60S ribosomal protein L15-A

Chain P:  59% 41%



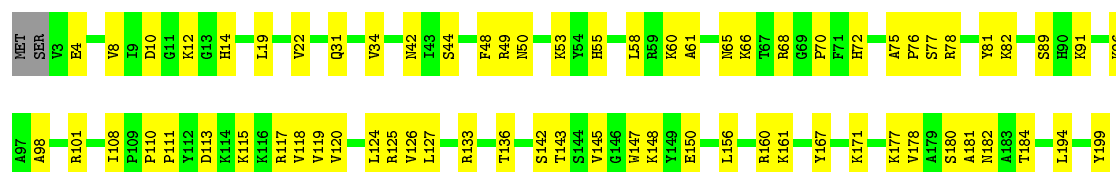
- Molecule 38: 60S ribosomal protein L41-A

Chain p:  100%


There are no outlier residues recorded for this chain.

- Molecule 39: 60S ribosomal protein L16-A

Chain Q:  64% 35%



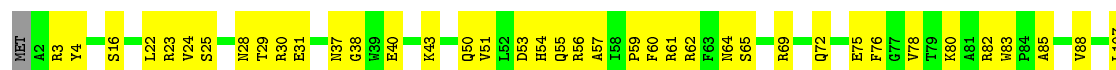
- Molecule 40: Eukaryotic translation initiation factor 5A-1

Chain q:  89% 8% ..



- Molecule 41: 60S ribosomal protein L17-A

Chain R:  62% 38%





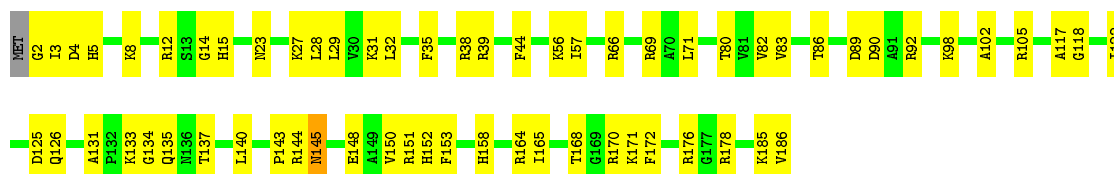
- Molecule 42: ribosomal protein RPL1

Chain r: 100%

There are no outlier residues recorded for this chain.

- Molecule 43: 60S ribosomal protein L18-A

Chain S: 66% 33% ..



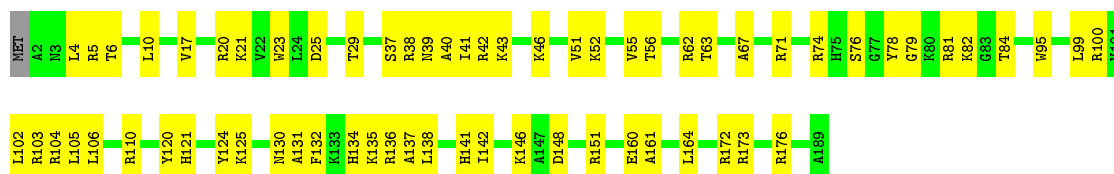
- Molecule 44: 60S ribosomal protein L10

Chain s: 94% ..



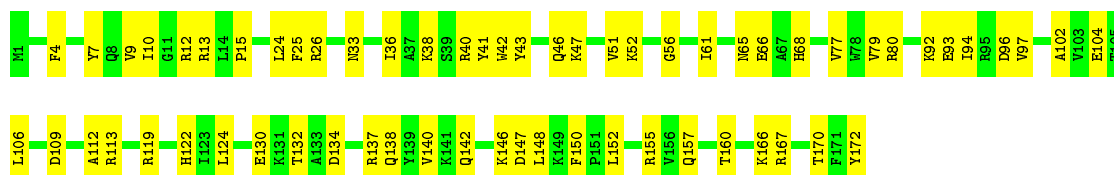
- Molecule 45: 60S ribosomal protein L19-A

Chain T: 65% 34% ..



- Molecule 46: 60S ribosomal protein L20-A

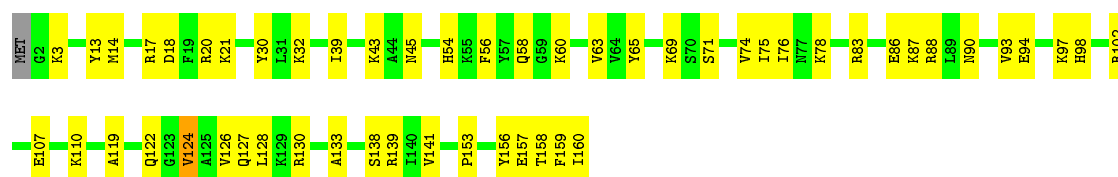
Chain U: 64% 36%



- Molecule 47: 60S ribosomal protein L21-A

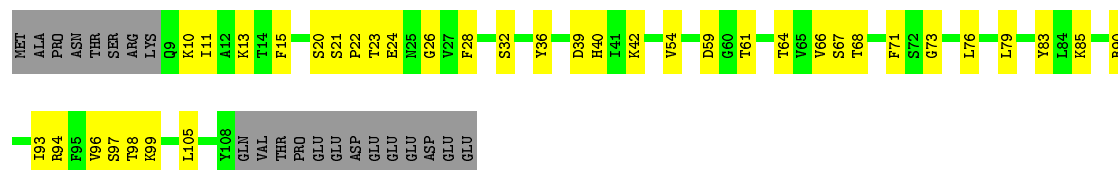
Chain V: 66% 33% ..





- Molecule 48: 60S ribosomal protein L22-A

Chain W: 52% 31% 17%



- Molecule 49: nascent polypeptide chain

Chain z: 100%

There are no outlier residues recorded for this chain.

## 4 Experimental information

Property	Value	Source
Reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	Depositor
Number of particles used	62532	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING ONLY; Each Particle	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	20	Depositor
Minimum defocus (nm)	Not provided	Depositor
Maximum defocus (nm)	Not provided	Depositor
Magnification	Not provided	Depositor
Image detector	FEI FALCON II (4k x 4k)	Depositor

## 5 Model quality ⓘ

### 5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: 5CT, 3HE

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	0.73	0/75774	1.03	156/118137 (0.1%)
10	b	0.35	0/1118	0.51	0/1497
11	C	0.37	0/860	0.53	0/1136
12	c	0.40	0/1204	0.54	0/1612
13	D	0.42	0/701	0.60	0/934
14	d	0.36	0/473	0.48	0/629
15	E	0.41	0/1948	0.56	0/2617
16	e	0.34	0/751	0.50	0/1008
17	F	0.40	0/3146	0.55	0/4228
18	f	0.40	0/890	0.54	0/1196
19	G	0.39	0/2800	0.53	0/3790
2	X	0.39	0/1018	0.52	0/1369
20	g	0.39	0/1041	0.54	0/1394
21	H	0.34	0/2425	0.50	0/3271
22	h	0.45	0/868	0.53	0/1168
23	I	0.34	0/1260	0.47	0/1694
24	i	0.39	0/890	0.52	0/1189
25	J	0.41	0/1821	0.50	0/2451
26	j	0.33	0/978	0.47	0/1301
27	K	0.35	0/1836	0.52	0/2481
28	k	0.31	0/778	0.50	0/1034
29	L	0.37	0/1539	0.53	0/2073
3	3	0.61	0/2883	0.94	0/4491
30	l	0.44	0/696	0.54	0/923
31	M	0.33	0/1374	0.51	0/1842
32	m	0.31	0/618	0.53	0/826
33	N	0.36	0/1568	0.52	0/2106
34	n	0.36	0/443	0.51	0/588
35	O	0.34	0/1068	0.52	0/1438
36	o	0.37	0/423	0.52	0/562
37	P	0.45	0/1757	0.58	0/2354
38	p	0.29	0/234	0.52	0/300

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >2	RMSZ	# Z  >2
39	Q	0.41	0/1585	0.54	0/2128
4	Y	0.32	0/712	0.50	0/958
40	q	0.32	0/1142	0.61	0/1537
41	R	0.40	0/1443	0.55	0/1944
43	S	0.37	0/1465	0.54	0/1965
44	s	0.40	0/1807	0.54	0/2425
45	T	0.34	0/1538	0.48	0/2050
46	U	0.43	0/1481	0.55	0/1990
47	V	0.39	0/1300	0.54	0/1743
48	W	0.36	0/812	0.52	0/1099
5	4	0.73	0/3746	0.99	8/5832 (0.1%)
6	Z	0.39	0/979	0.54	0/1321
7	A	0.52	0/1799	1.03	4/2801 (0.1%)
8	a	0.34	0/1004	0.55	1/1341 (0.1%)
9	B	0.57	1/1835 (0.1%)	1.01	1/2858 (0.0%)
All	All	0.61	1/137831 (0.0%)	0.89	170/203631 (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
17	F	0	1
25	J	0	1
27	K	0	1
30	l	0	1
35	O	0	1
39	Q	0	1
40	q	0	1
43	S	0	1
44	s	0	2
All	All	0	10

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
9	B	1	G	OP3-P	-10.85	1.48	1.61

All (170) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	922	U	C2-N1-C1'	8.41	127.79	117.70
1	1	3278	C	C2-N1-C1'	7.92	127.51	118.80
1	1	1836	C	N3-C2-O2	-7.81	116.43	121.90
1	1	2867	C	N1-C2-O2	7.79	123.57	118.90
1	1	1836	C	N1-C2-O2	7.77	123.56	118.90
1	1	3278	C	N1-C2-O2	7.72	123.53	118.90
1	1	2794	G	O4'-C1'-N9	7.58	114.26	108.20
1	1	3353	G	C4-N9-C1'	-7.47	116.78	126.50
1	1	1282	G	C8-N9-C1'	-7.47	117.29	127.00
1	1	2960	C	N3-C2-O2	-7.39	116.73	121.90
1	1	104	G	N3-C4-N9	-7.37	121.58	126.00
1	1	1918	C	N3-C2-O2	-7.28	116.81	121.90
1	1	1311	G	N3-C4-N9	-7.18	121.69	126.00
5	4	106	C	N1-C2-O2	6.96	123.08	118.90
1	1	1176	C	C2-N3-C4	-6.95	116.42	119.90
1	1	267	G	C4-N9-C1'	-6.92	117.51	126.50
1	1	1282	G	C4-N9-C1'	6.83	135.38	126.50
1	1	1282	G	N3-C4-N9	6.82	130.09	126.00
1	1	1311	G	C2-N3-C4	-6.77	108.52	111.90
1	1	2711	C	N3-C2-O2	-6.75	117.17	121.90
8	a	126	LEU	CA-CB-CG	6.64	130.58	115.30
1	1	2867	C	N3-C2-O2	-6.63	117.26	121.90
1	1	3353	G	C8-N9-C1'	6.60	135.58	127.00
1	1	2973	G	C6-N1-C2	-6.58	121.15	125.10
1	1	3349	C	C2-N1-C1'	6.57	126.02	118.80
1	1	3353	G	N3-C4-N9	-6.55	122.07	126.00
1	1	3353	G	N3-C4-C5	6.51	131.86	128.60
1	1	2959	C	N3-C2-O2	-6.47	117.37	121.90
1	1	1176	C	N1-C2-N3	6.46	123.72	119.20
1	1	1349	G	N3-C4-C5	-6.44	125.38	128.60
1	1	2973	G	N1-C2-N3	6.43	127.76	123.90
1	1	2960	C	N1-C2-N3	6.42	123.69	119.20
1	1	1597	C	N3-C2-O2	-6.41	117.41	121.90
1	1	2531	C	N1-C2-O2	6.40	122.74	118.90
1	1	2710	C	N3-C2-O2	-6.38	117.43	121.90
1	1	3278	C	N3-C2-O2	-6.29	117.50	121.90
1	1	1608	C	C2-N1-C1'	6.28	125.70	118.80
1	1	1918	C	C6-N1-C2	-6.27	117.79	120.30
1	1	2867	C	C2-N1-C1'	6.25	125.67	118.80
1	1	104	G	C2-N3-C4	-6.24	108.78	111.90
1	1	1403	C	N3-C2-O2	-6.23	117.54	121.90
1	1	1037	C	C2-N1-C1'	6.23	125.65	118.80
1	1	232	G	N3-C4-N9	-6.22	122.27	126.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	2973	G	N9-C4-C5	6.21	107.88	105.40
1	1	2889	C	C2-N1-C1'	6.20	125.61	118.80
1	1	1403	C	C6-N1-C2	-6.18	117.83	120.30
7	A	5	C	C2-N1-C1'	6.18	125.60	118.80
1	1	149	U	C2-N1-C1'	6.17	125.11	117.70
1	1	922	U	N1-C2-O2	6.17	127.12	122.80
1	1	1238	C	C6-N1-C2	-6.13	117.85	120.30
1	1	1918	C	N1-C2-N3	6.13	123.49	119.20
1	1	1790	G	N3-C4-N9	-6.09	122.35	126.00
1	1	82	C	N1-C2-O2	-6.05	115.27	118.90
1	1	8	C	C2-N3-C4	-6.04	116.88	119.90
1	1	1822	C	C2-N1-C1'	6.02	125.42	118.80
1	1	1349	G	N3-C4-N9	6.01	129.61	126.00
1	1	1790	G	N9-C4-C5	6.01	107.81	105.40
1	1	8	C	N1-C2-N3	6.00	123.40	119.20
1	1	1403	C	N1-C2-N3	5.99	123.40	119.20
7	A	53	G	N3-C4-N9	-5.98	122.41	126.00
1	1	3278	C	C6-N1-C1'	-5.97	113.63	120.80
1	1	2960	C	C2-N3-C4	-5.96	116.92	119.90
1	1	267	G	C8-N9-C1'	5.92	134.69	127.00
7	A	5	C	N1-C2-O2	5.90	122.44	118.90
1	1	2531	C	C2-N1-C1'	5.90	125.29	118.80
1	1	927	C	C2-N1-C1'	5.89	125.28	118.80
1	1	2951	G	N3-C4-N9	5.89	129.53	126.00
1	1	1608	C	N1-C2-O2	5.81	122.39	118.90
1	1	370	U	C2-N1-C1'	5.80	124.66	117.70
1	1	2444	C	N1-C2-O2	5.80	122.38	118.90
1	1	1269	U	C2-N1-C1'	5.79	124.65	117.70
1	1	2283	G	C4-N9-C1'	-5.79	118.97	126.50
1	1	1235	U	C5-C4-O4	5.77	129.36	125.90
1	1	1280	C	C2-N1-C1'	5.76	125.13	118.80
1	1	922	U	C6-N1-C1'	-5.75	113.15	121.20
1	1	1181	U	C2-N1-C1'	-5.75	110.80	117.70
1	1	2612	U	C2-N1-C1'	5.74	124.59	117.70
1	1	1520	G	N3-C4-N9	-5.74	122.56	126.00
1	1	293	C	N3-C2-O2	-5.74	117.89	121.90
1	1	2577	C	C2-N1-C1'	5.73	125.10	118.80
1	1	2960	C	C6-N1-C2	-5.72	118.01	120.30
1	1	1238	C	C2-N1-C1'	5.72	125.09	118.80
5	4	152	G	N3-C4-N9	-5.70	122.58	126.00
1	1	267	G	N3-C4-N9	-5.70	122.58	126.00
1	1	1086	C	C2-N1-C1'	5.69	125.06	118.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	4	152	G	N1-C2-N3	5.68	127.31	123.90
5	4	120	C	N1-C2-N3	5.66	123.16	119.20
1	1	1604	G	C4-N9-C1'	5.66	133.86	126.50
1	1	1020	G	C4-N9-C1'	5.66	133.86	126.50
1	1	3047	U	N1-C2-N3	5.64	118.29	114.90
1	1	2973	G	C4-C5-N7	-5.62	108.55	110.80
1	1	1822	C	C6-N1-C1'	-5.60	114.08	120.80
1	1	1095	U	OP1-P-O3'	5.57	117.46	105.20
1	1	1032	C	C2-N1-C1'	5.56	124.92	118.80
5	4	21	C	N3-C2-O2	-5.56	118.01	121.90
1	1	39	A	N1-C6-N6	5.56	121.93	118.60
1	1	2617	U	C2-N1-C1'	5.56	124.37	117.70
1	1	2710	C	N1-C2-O2	5.55	122.23	118.90
1	1	283	G	C4-N9-C1'	5.51	133.67	126.50
1	1	2794	G	N1-C2-N3	-5.51	120.59	123.90
1	1	3181	C	C2-N1-C1'	5.50	124.85	118.80
1	1	2614	G	C4-N9-C1'	5.47	133.61	126.50
1	1	267	G	N3-C4-C5	5.46	131.33	128.60
1	1	1269	U	N1-C2-O2	5.46	126.62	122.80
1	1	1917	C	N1-C2-O2	5.45	122.17	118.90
1	1	2951	G	C4-N9-C1'	5.44	133.57	126.50
1	1	1607	U	C2-N1-C1'	5.44	124.22	117.70
1	1	1311	G	N9-C4-C5	5.43	107.57	105.40
1	1	1790	G	N3-C2-N2	-5.43	116.10	119.90
1	1	2531	C	N3-C2-O2	-5.43	118.10	121.90
1	1	2572	C	N1-C2-O2	5.43	122.16	118.90
1	1	2366	C	C2-N1-C1'	5.41	124.75	118.80
1	1	1481	A	N1-C2-N3	5.41	132.00	129.30
1	1	2889	C	N1-C2-O2	5.40	122.14	118.90
1	1	2283	G	C8-N9-C1'	5.40	134.02	127.00
7	A	5	C	C6-N1-C1'	-5.40	114.33	120.80
1	1	82	C	N1-C2-N3	5.38	122.97	119.20
1	1	1906	G	C4-N9-C1'	5.38	133.49	126.50
1	1	149	U	C5-C6-N1	5.37	125.39	122.70
1	1	1397	C	N1-C2-N3	5.37	122.96	119.20
1	1	2415	C	C6-N1-C2	-5.36	118.16	120.30
1	1	3152	U	C2-N1-C1'	5.36	124.13	117.70
9	B	54	U	C2-N1-C1'	5.34	124.11	117.70
1	1	922	U	N3-C2-O2	-5.34	118.46	122.20
1	1	1235	U	N3-C4-O4	-5.33	115.67	119.40
1	1	370	U	N1-C2-O2	5.31	126.52	122.80
1	1	104	G	N3-C4-C5	5.30	131.25	128.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	1045	C	C2-N1-C1'	5.30	124.63	118.80
1	1	2572	C	C2-N1-C1'	5.30	124.62	118.80
1	1	1311	G	N1-C2-N3	5.29	127.08	123.90
1	1	1263	A	N1-C6-N6	-5.29	115.42	118.60
1	1	1906	G	C8-N9-C1'	-5.27	120.14	127.00
1	1	1020	G	C8-N9-C1'	-5.27	120.15	127.00
1	1	1397	C	C2-N3-C4	-5.27	117.27	119.90
1	1	113	C	C2-N1-C1'	5.26	124.59	118.80
1	1	1590	G	C4-N9-C1'	5.25	133.32	126.50
1	1	1260	A	O4'-C1'-N9	5.23	112.38	108.20
1	1	242	C	C2-N1-C1'	5.22	124.55	118.80
1	1	1095	U	P-O3'-C3'	5.22	125.96	119.70
1	1	2882	U	C2-N1-C1'	5.22	123.96	117.70
1	1	232	G	C5-C6-O6	5.21	131.73	128.60
1	1	40	A	O4'-C1'-N9	5.21	112.37	108.20
5	4	106	C	N3-C2-O2	-5.20	118.26	121.90
5	4	120	C	C2-N3-C4	-5.18	117.31	119.90
1	1	2951	G	C8-N9-C1'	-5.17	120.28	127.00
1	1	82	C	C6-N1-C2	-5.17	118.23	120.30
1	1	3047	U	C4-C5-C6	5.15	122.79	119.70
1	1	927	C	N1-C2-O2	5.14	121.98	118.90
1	1	3288	G	N9-C4-C5	-5.13	103.35	105.40
1	1	1836	C	C2-N1-C1'	5.12	124.43	118.80
1	1	1138	U	C2-N1-C1'	5.11	123.83	117.70
1	1	1608	C	C6-N1-C1'	-5.10	114.69	120.80
1	1	927	C	N3-C2-O2	-5.09	118.33	121.90
5	4	152	G	N3-C2-N2	-5.08	116.34	119.90
1	1	1571	A	N1-C6-N6	5.08	121.64	118.60
1	1	1020	G	N3-C4-N9	5.07	129.04	126.00
1	1	3011	A	P-O3'-C3'	5.05	125.76	119.70
1	1	48	A	P-O3'-C3'	5.05	125.76	119.70
1	1	2282	U	C2-N1-C1'	5.04	123.75	117.70
1	1	82	C	C2-N3-C4	-5.04	117.38	119.90
1	1	1497	C	N3-C2-O2	-5.04	118.37	121.90
1	1	1607	U	N1-C2-O2	5.03	126.32	122.80
1	1	2951	G	C6-C5-N7	-5.03	127.38	130.40
1	1	965	A	C6-N1-C2	-5.01	115.59	118.60
1	1	1160	C	N1-C2-O2	5.01	121.91	118.90
1	1	2334	U	C5-C6-N1	-5.01	120.19	122.70
1	1	1282	G	N9-C4-C5	-5.01	103.40	105.40
1	1	1409	G	N1-C2-N3	5.01	126.91	123.90
1	1	1497	C	N1-C2-N3	5.00	122.70	119.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	2398	A	N9-C4-C5	-5.00	103.80	105.80

There are no chirality outliers.

All (10) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
17	F	348	ARG	Peptide
25	J	108	LEU	Peptide
27	K	76	ALA	Peptide
35	O	48	GLY	Peptide
39	Q	148	LYS	Peptide
43	S	145	ASN	Peptide
30	l	50	GLY	Peptide
40	q	76	SER	Peptide
44	s	170	TRP	Peptide
44	s	171	GLY	Peptide

## 5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	1	67695	0	34019	2944	0
2	X	1003	0	1048	42	0
3	3	2579	0	1304	112	0
4	Y	699	0	640	23	0
5	4	3353	0	1695	139	0
6	Z	964	0	1025	40	0
7	A	1611	0	816	89	0
8	a	993	0	1081	0	0
9	B	1644	0	831	69	0
10	b	1092	0	1155	0	0
11	C	847	0	918	46	0
12	c	1173	0	1215	0	0
13	D	694	0	738	44	0
14	d	462	0	491	0	0
15	E	1914	0	1981	95	0
16	e	743	0	797	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
17	F	3075	0	3142	155	0
18	f	876	0	912	0	0
19	G	2748	0	2859	122	0
20	g	1020	0	1090	0	0
21	H	2375	0	2325	147	0
22	h	850	0	880	0	0
23	I	1239	0	1326	63	0
24	i	880	0	945	0	0
25	J	1784	0	1862	70	0
26	j	969	0	1078	0	0
27	K	1804	0	1877	99	0
28	k	771	0	849	0	0
29	L	1518	0	1587	66	0
30	l	681	0	687	0	0
31	M	1353	0	1383	52	0
32	m	612	0	682	0	0
33	N	1543	0	1608	71	0
34	n	436	0	475	0	0
35	O	1053	0	1149	79	0
36	o	417	0	459	0	0
37	P	1720	0	1779	104	0
38	p	233	0	284	0	0
39	Q	1555	0	1659	54	0
40	q	1143	0	1107	0	0
41	R	1420	0	1437	67	0
42	r	1050	0	222	0	0
43	S	1441	0	1543	74	0
44	s	1770	0	1808	0	0
45	T	1521	0	1617	70	0
46	U	1445	0	1487	63	0
47	V	1276	0	1323	50	0
48	W	796	0	812	25	0
49	z	115	0	37	0	0
50	1	20	0	23	2	0
All	All	128975	0	92067	4464	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 24.

All (4464) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:520:U:OP2	25:J:70:LYS:NZ	1.71	1.24
1:1:208:C:OP2	19:G:163:LYS:NZ	1.75	1.20
45:T:103:ARG:NH1	45:T:124:TYR:OH	1.82	1.13
1:1:1382:G:OP2	19:G:188:ARG:NH1	1.84	1.11
1:1:73:C:N3	33:N:59:ARG:NH1	1.99	1.11
1:1:942:U:O4	11:C:24:LYS:NZ	81.04	1.10
9:B:19:U:O2'	31:M:55:ARG:NH1	1.86	1.08
1:1:1257:C:H42	1:1:1261:G:N2	1.51	1.07
1:1:3185:U:OP1	29:L:23:ARG:NH1	1.89	1.06
27:K:146:LYS:NZ	27:K:173:MET:O	1.88	1.05
17:F:142:ALA:O	17:F:146:ARG:HB2	1.54	1.05
15:E:30:ARG:HH12	15:E:41:ILE:HD13	1.17	1.05
1:1:2941:A:OP2	17:F:256:HIS:ND1	1.90	1.04
1:1:1385:C:HO2'	23:I:2:SER:N	1.56	1.03
39:Q:91:LYS:O	39:Q:96:LYS:NZ	1.92	1.03
1:1:2218:G:OP2	27:K:68:ARG:NH2	42.92	1.02
1:1:2548:C:OP2	15:E:93:LYS:NZ	1.92	1.02
1:1:951:A:OP2	1:1:1367:G:N2	1.93	1.02
1:1:2514:U:OP2	1:1:2586:G:N2	1.92	1.01
1:1:532:A:H61	1:1:560:G:H1	1.05	1.01
1:1:284:A:OP2	11:C:41:ARG:NH1	1.94	1.01
1:1:2452:G:H21	1:1:2494:A:N6	1.56	1.01
1:1:668:G:O2'	43:S:164:ARG:NH1	1.93	1.01
1:1:2745:G:N2	1:1:2748:A:OP2	1.94	1.00
1:1:3206:C:H1'	46:U:155:ARG:HH12	1.20	1.00
1:1:2554:A:N7	13:D:62:LYS:NZ	2.09	1.00
1:1:3234:A:C2	1:1:3253:G:N1	2.29	0.99
1:1:3234:A:H2	1:1:3253:G:N1	1.61	0.98
1:1:2283:G:O2'	1:1:2284:C:OP2	1.81	0.97
1:1:394:G:N1	1:1:397:A:OP2	1.96	0.97
5:4:132:G:O2'	6:Z:97:LYS:NZ	1.96	0.97
1:1:86:G:O2'	1:1:87:U:OP2	1.81	0.97
1:1:80:G:OP2	37:P:193:ARG:NH1	1.97	0.97
1:1:3374:U:OP2	17:F:70:ARG:NH1	48.11	0.97
1:1:3348:G:H1	1:1:3357:U:H3	1.12	0.97
31:M:32:ARG:NH1	31:M:120:ILE:O	1.97	0.97
1:1:2955:U:OP2	1:1:2977:G:N1	1.97	0.96
1:1:149:U:P	37:P:49:ARG:HH12	1.89	0.96
1:1:92:G:O5'	11:C:46:LYS:NZ	1.99	0.96
1:1:2402:A:N7	19:G:73:ARG:NH2	2.14	0.96
1:1:86:G:N2	1:1:99:A:OP2	1.99	0.96
1:1:675:C:OP2	43:S:105:ARG:NH1	1.97	0.95

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:160:G:H1	1:1:261:U:H3	1.01	0.95
35:O:36:VAL:HG11	35:O:55:ARG:HH12	1.31	0.95
1:1:1712:G:N1	1:1:1731:A:OP2	1.99	0.95
1:1:353:G:O2'	1:1:354:U:OP2	1.84	0.95
1:1:1564:U:H3	1:1:1576:G:H1	1.14	0.94
1:1:3267:A:O3'	41:R:181:ARG:NH1	2.00	0.94
1:1:155:G:O2'	1:1:156:G:OP2	1.83	0.94
1:1:294:U:OP2	37:P:15:GLN:NE2	2.00	0.94
1:1:2655:U:OP1	11:C:98:LYS:NZ	1.99	0.94
9:B:10:G:O6	9:B:25:U:C4	2.21	0.94
4:Y:6:ASP:OD2	4:Y:9:SER:N	2.00	0.94
27:K:62:LYS:NZ	27:K:158:ASP:OD2	2.01	0.93
1:1:3366:G:OP1	4:Y:61:LYS:NZ	2.01	0.93
1:1:3206:C:H1'	46:U:155:ARG:NH1	1.83	0.93
1:1:89:A:N7	43:S:171:LYS:NZ	2.16	0.92
1:1:3222:U:H3	1:1:3263:G:H1	0.93	0.92
45:T:99:LEU:HD21	45:T:103:ARG:HE	1.35	0.92
3:3:49:G:OP2	21:H:91:GLY:N	2.02	0.92
1:1:600:G:N2	1:1:603:A:OP2	2.02	0.92
1:1:3232:G:H1	1:1:3255:U:H3	0.93	0.92
1:1:126:U:OP1	37:P:144:ARG:NH1	2.02	0.92
1:1:1355:A:O2'	1:1:1356:U:OP2	1.88	0.92
13:D:49:ARG:HH21	13:D:52:ALA:HB2	1.34	0.92
35:O:88:ALA:O	35:O:93:LYS:NZ	2.03	0.92
1:1:2452:G:N2	1:1:2494:A:H62	1.68	0.91
1:1:3047:U:O4	1:1:3094:A:N1	2.03	0.91
1:1:3160:U:H3	1:1:3290:G:H1	0.93	0.91
1:1:3317:U:O2'	1:1:3318:G:OP2	1.89	0.91
1:1:1257:C:N4	1:1:1261:G:H22	1.69	0.90
1:1:708:G:N2	1:1:711:A:OP2	2.04	0.90
1:1:1231:A:H5''	1:1:1232:C:H5'	1.54	0.89
1:1:1307:G:O2'	1:1:1308:A:OP2	1.89	0.89
1:1:3214:U:O4	35:O:124:ARG:NH1	2.05	0.89
1:1:2178:A:O2'	1:1:2179:C:OP2	1.89	0.89
19:G:7:THR:N	19:G:147:GLU:OE2	2.04	0.89
48:W:20:SER:HB3	48:W:61:THR:HA	1.55	0.89
1:1:1240:A:N6	1:1:1245:A:OP2	2.04	0.89
1:1:1213:G:H5''	46:U:137:ARG:HH12	1.36	0.89
1:1:1803:C:O3'	23:I:70:LYS:NZ	178.90	0.88
1:1:3047:U:C4	1:1:3094:A:N1	2.42	0.88
1:1:3192:U:H3	1:1:3200:G:H1	0.89	0.88

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:521:A:H62	1:1:571:U:H3	1.17	0.88
1:1:2452:G:N2	1:1:2494:A:N6	2.20	0.88
1:1:2434:U:O2'	1:1:2435:G:OP2	1.92	0.88
1:1:532:A:N6	1:1:560:G:H1	1.71	0.88
1:1:1564:U:O2	1:1:1576:G:N2	2.05	0.88
23:I:174:LEU:HD22	35:O:117:ARG:HH12	1.39	0.88
2:X:53:SER:N	2:X:56:ASP:OD2	2.06	0.87
1:1:147:U:O4	27:K:183:LYS:NZ	2.08	0.87
1:1:3269:U:O2'	1:1:3270:U:OP2	1.93	0.87
11:C:71:ARG:HH21	11:C:80:ARG:HH11	1.20	0.87
1:1:117:U:OP2	37:P:2:GLY:N	2.08	0.87
1:1:617:G:OP2	23:I:108:LYS:NZ	2.08	0.87
31:M:133:ARG:NH2	31:M:158:ASP:OD2	2.07	0.87
1:1:3231:U:H3	1:1:3256:G:H1	1.22	0.86
1:1:538:G:H1	1:1:553:U:H3	1.18	0.86
1:1:1721:U:OP2	45:T:103:ARG:HD3	1.74	0.86
1:1:2526:C:H2'	1:1:2527:G:C8	2.10	0.86
1:1:1448:U:OP2	41:R:82:ARG:NH2	2.06	0.86
1:1:3096:C:O3'	17:F:325:LYS:NZ	2.06	0.86
1:1:1078:U:N3	1:1:1081:U:OP2	2.08	0.86
1:1:3008:A:H2'	1:1:3009:G:H8	1.41	0.86
5:4:43:A:H2'	5:4:44:A:H8	1.40	0.85
1:1:1925:U:O2'	13:D:23:ARG:NH2	2.08	0.85
1:1:376:G:O2'	1:1:400:G:N2	2.09	0.85
1:1:1682:U:O4	48:W:90:ARG:NH1	2.08	0.85
1:1:3322:A:H2'	1:1:3323:A:H8	1.40	0.85
1:1:1834:U:OP1	33:N:5:LYS:NZ	82.19	0.85
1:1:911:C:OP2	15:E:9:ARG:HD2	1.75	0.85
17:F:53:MET:HG2	17:F:77:THR:HG22	1.57	0.85
1:1:1257:C:H42	1:1:1261:G:H22	1.16	0.85
13:D:46:THR:HG1	13:D:57:CYS:HG	1.19	0.85
33:N:16:LYS:NZ	37:P:195:ASN:OD1	2.10	0.85
1:1:2162:U:OP1	15:E:234:LYS:NZ	2.08	0.85
1:1:371:G:N1	1:1:374:A:OP2	2.10	0.85
1:1:1627:U:O2	1:1:1817:G:N2	2.09	0.84
1:1:533:A:N6	1:1:556:U:O4	2.09	0.84
1:1:1863:G:N1	1:1:1866:C:OP2	2.09	0.84
1:1:906:A:H1'	1:1:909:G:H21	1.41	0.84
1:1:170:G:H1	1:1:248:U:H3	1.22	0.84
21:H:33:ARG:HH12	21:H:50:ARG:HH22	1.24	0.84
1:1:2593:A:O2'	1:1:2594:C:OP2	1.94	0.84

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:H:33:ARG:HH12	21:H:50:ARG:NH2	1.76	0.84
21:H:123:GLU:HG2	21:H:248:ARG:HH12	1.40	0.84
1:1:1463:U:H3	1:1:1467:A:H62	1.21	0.84
1:1:3232:G:N2	1:1:3255:U:O2	2.09	0.84
1:1:2573:G:H2'	1:1:2574:G:H8	1.41	0.83
1:1:3022:G:O2'	1:1:3023:U:OP2	1.94	0.83
1:1:608:A:O2'	19:G:326:ARG:NH1	2.10	0.83
1:1:1820:U:O2'	1:1:1821:U:OP2	1.96	0.83
45:T:39:ASN:O	45:T:43:LYS:NZ	2.10	0.83
1:1:123:A:OP1	27:K:105:LYS:NZ	2.11	0.83
11:C:32:LYS:HG2	11:C:34:SER:H	1.42	0.83
15:E:146:THR:HG1	15:E:160:SER:HG	1.24	0.83
17:F:183:LEU:O	17:F:191:LYS:NZ	2.12	0.82
43:S:98:LYS:NZ	43:S:118:GLY:HA3	1.93	0.82
1:1:2193:U:H5'	1:1:2194:G:H5'	1.61	0.82
1:1:2541:U:O2'	1:1:2542:U:OP2	1.96	0.82
11:C:15:LYS:NZ	11:C:18:ARG:NH1	2.28	0.82
1:1:2154:U:H2'	1:1:2155:G:H8	1.45	0.82
1:1:3234:A:N1	1:1:3253:G:O6	2.12	0.82
1:1:602:A:H2'	1:1:603:A:C4	2.15	0.82
39:Q:78:ARG:HA	39:Q:81:TYR:HB3	1.62	0.82
43:S:98:LYS:HZ2	43:S:118:GLY:HA3	1.42	0.82
48:W:59:ASP:OD2	48:W:61:THR:OG1	1.98	0.82
27:K:168:ALA:O	27:K:172:LYS:HB2	1.80	0.81
1:1:1018:G:H1	1:1:1034:U:H3	1.28	0.81
35:O:37:GLU:OE2	35:O:74:ARG:NH2	2.14	0.81
1:1:3041:U:OP1	2:X:12:ARG:NH1	2.13	0.81
1:1:2932:U:OP2	2:X:40:LYS:NZ	2.14	0.81
1:1:3105:U:OP2	1:1:3128:G:N1	2.14	0.81
7:A:16:U:O2'	7:A:18:G:OP2	1.98	0.81
1:1:2898:G:N7	35:O:125:LYS:NZ	98.56	0.81
1:1:2448:G:H1	1:1:2498:U:H3	1.26	0.80
1:1:1467:A:O2'	1:1:1469:C:OP2	1.99	0.80
1:1:2180:G:OP1	15:E:174:ARG:NH2	2.15	0.80
3:3:17:A:OP1	21:H:2:ALA:N	2.14	0.80
1:1:2651:G:O2'	1:1:2760:C:N4	2.14	0.80
35:O:14:LEU:H	35:O:19:ARG:NH1	1.79	0.80
3:3:13:A:H1'	3:3:112:G:C8	2.16	0.80
9:B:9:A:H5''	9:B:10:G:OP2	1.81	0.80
1:1:2177:G:N2	15:E:118:GLU:OE2	2.14	0.80
13:D:66:GLY:HA2	15:E:80:GLU:HG3	1.64	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:282:G:O2'	1:1:283:G:OP2	2.00	0.79
1:1:369:A:N6	1:1:404:G:O6	2.15	0.79
1:1:535:G:C2	1:1:555:U:O2	2.35	0.79
1:1:1050:U:OP2	47:V:13:TYR:OH	2.00	0.79
1:1:127:G:H2'	1:1:128:G:H8	1.47	0.79
1:1:3234:A:H2	1:1:3253:G:H1	0.82	0.79
1:1:2986:U:H2'	1:1:2987:A:H8	1.45	0.79
27:K:213:LYS:O	27:K:216:SER:HB3	1.83	0.79
1:1:1191:U:OP2	39:Q:49:ARG:HD3	1.81	0.79
1:1:1938:U:O2'	45:T:79:GLY:N	2.16	0.79
7:A:1:G:N1	7:A:72:C:N3	2.27	0.78
1:1:2206:G:H1	1:1:2237:C:H42	1.31	0.78
1:1:155:G:N1	1:1:265:A:OP2	2.15	0.78
37:P:187:ARG:HH21	37:P:188:ARG:HE	1.31	0.78
1:1:3078:U:O2'	1:1:3079:U:OP2	2.01	0.78
1:1:1529:A:OP2	1:1:1592:G:N2	2.16	0.78
5:4:152:G:O2'	27:K:63:LYS:NZ	2.12	0.78
1:1:2402:A:H62	19:G:73:ARG:HH22	1.31	0.78
1:1:2588:U:OP1	27:K:241:LYS:NZ	2.17	0.78
17:F:19:ARG:HD2	17:F:232:ARG:HH21	1.49	0.78
21:H:60:ILE:HB	21:H:80:SER:HB3	1.66	0.78
1:1:3273:A:OP2	23:I:77:ARG:NH2	2.17	0.78
5:4:59:A:OP2	5:4:98:U:O2'	2.00	0.77
19:G:20:LEU:HD11	19:G:252:GLU:HG3	1.67	0.77
1:1:1447:G:OP1	41:R:65:SER:OG	2.02	0.77
1:1:236:G:H2'	1:1:237:G:H8	1.48	0.77
1:1:521:A:N7	1:1:571:U:O4	2.17	0.77
1:1:2409:G:H4'	1:1:2410:U:OP2	1.82	0.77
9:B:54:U:H3	9:B:58:A:H62	1.33	0.77
17:F:213:GLU:OE1	17:F:340:LYS:NZ	2.17	0.77
48:W:98:THR:HG22	48:W:99:LYS:H	1.47	0.77
17:F:161:LEU:HB3	17:F:178:LEU:HD11	1.66	0.77
1:1:3322:A:H2'	1:1:3323:A:C8	2.20	0.77
9:B:49:G:H22	9:B:65:U:H5	1.30	0.77
1:1:1152:G:OP2	1:1:1152:G:N2	2.13	0.77
1:1:2305:G:N2	1:1:2305:G:OP2	2.17	0.77
1:1:2442:G:H2'	1:1:2443:A:H8	1.49	0.77
1:1:912:G:N1	15:E:208:ASP:OD2	2.12	0.77
1:1:2424:A:OP1	37:P:90:ASN:ND2	2.18	0.76
1:1:3182:G:O3'	39:Q:161:LYS:NZ	2.17	0.76
1:1:2167:A:OP1	37:P:72:LYS:NZ	2.18	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:I:54:TYR:HE1	23:I:63:LEU:HD22	1.49	0.76
1:1:972:A:OP1	43:S:12:ARG:NH2	2.18	0.76
1:1:1713:G:H22	1:1:1730:G:H2'	1.50	0.76
43:S:98:LYS:NZ	43:S:117:ALA:O	2.18	0.76
1:1:2174:G:OP2	15:E:193:ARG:NH1	2.17	0.76
1:1:2607:G:OP1	15:E:233:GLN:NE2	2.17	0.76
1:1:1305:U:OP2	1:1:2939:G:N2	2.18	0.76
11:C:71:ARG:HH21	11:C:80:ARG:NH1	1.83	0.76
21:H:123:GLU:HG2	21:H:248:ARG:NH1	2.00	0.76
47:V:18:ASP:HB2	47:V:21:LYS:HB2	1.67	0.76
1:1:1447:G:N2	1:1:2356:A:OP2	2.19	0.76
1:1:2177:G:O2'	1:1:2178:A:OP2	2.03	0.76
1:1:2213:A:H2'	1:1:2214:A:H8	1.51	0.76
1:1:2528:G:OP1	27:K:248:LYS:NZ	2.18	0.76
1:1:881:C:O2'	1:1:1849:C:O2'	2.04	0.75
1:1:1925:U:H4'	1:1:1926:C:OP2	1.86	0.75
1:1:3019:U:O2	1:1:3035:A:N6	2.18	0.75
1:1:520:U:O2'	1:1:521:A:OP2	2.03	0.75
1:1:1898:G:O6	1:1:1899:G:N2	2.18	0.75
7:A:1:G:O6	7:A:72:C:N4	2.19	0.75
1:1:1064:A:OP2	1:1:1097:G:N2	2.19	0.75
1:1:1659:U:H2'	1:1:1660:C:C6	2.21	0.75
19:G:110:ASN:HD22	37:P:201:ARG:HB3	1.51	0.75
29:L:163:GLN:O	29:L:166:ARG:NH1	2.19	0.75
1:1:809:G:N1	1:1:932:U:O4	2.20	0.75
3:3:7:G:OP1	21:H:33:ARG:NH1	2.18	0.75
1:1:1497:C:H2'	1:1:1498:A:H8	1.50	0.75
33:N:4:SER:OG	33:N:5:LYS:NZ	2.19	0.75
37:P:35:VAL:HA	37:P:65:ARG:HD3	1.69	0.75
1:1:1667:A:H2'	1:1:1668:G:H8	1.52	0.75
48:W:13:LYS:NZ	48:W:71:PHE:O	2.20	0.75
1:1:170:G:N3	1:1:250:U:N3	2.34	0.75
1:1:909:G:OP2	37:P:77:LYS:NZ	2.20	0.75
1:1:525:C:OP2	35:O:77:ARG:NH2	2.17	0.74
3:3:79:A:H62	3:3:101:G:H21	1.35	0.74
1:1:2525:G:N7	15:E:67:TYR:OH	2.21	0.74
1:1:2991:A:H4'	17:F:21:ARG:HH12	1.52	0.74
46:U:109:ASP:OD1	46:U:113:ARG:NH1	2.19	0.74
1:1:2442:G:H2'	1:1:2443:A:C8	2.21	0.74
1:1:3108:G:OP2	1:1:3120:C:N4	2.20	0.74
1:1:31:C:H41	37:P:188:ARG:HH12	1.35	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:R:170:SER:HA	41:R:173:ARG:NH1	2.01	0.74
25:J:233:GLU:OE2	46:U:38:LYS:NZ	2.20	0.74
1:1:3353:G:H2'	1:1:3356:G:OP2	1.88	0.74
1:1:540:U:H2'	1:1:541:U:H6	1.52	0.74
1:1:2797:C:H4'	1:1:2798:C:OP2	1.86	0.74
1:1:420:G:N2	1:1:2384:A:N7	2.34	0.74
45:T:142:ILE:O	45:T:146:LYS:N	2.20	0.74
1:1:2158:A:H1'	1:1:2160:G:C8	2.22	0.74
15:E:36:GLU:OE2	15:E:163:ARG:NH1	2.20	0.74
1:1:2157:G:O2'	15:E:156:LYS:NZ	2.20	0.74
1:1:184:U:H2'	1:1:185:C:C6	2.23	0.74
1:1:2525:G:O2'	1:1:2526:C:OP2	2.02	0.74
1:1:2651:G:H4'	1:1:2652:U:OP2	1.88	0.73
3:3:28:C:OP1	31:M:137:ARG:NH1	2.20	0.73
1:1:953:G:N2	1:1:1115:G:OP1	2.20	0.73
1:1:1827:C:H2'	1:1:1828:A:C8	2.24	0.73
3:3:77:G:N2	3:3:102:A:OP2	2.21	0.73
1:1:2141:U:HO2'	1:1:2976:A:HO2'	1.32	0.73
1:1:760:G:O2'	1:1:771:A:N6	2.22	0.73
17:F:71:GLU:OE2	17:F:357:LYS:NZ	2.21	0.73
1:1:2294:U:N3	1:1:2297:U:OP2	2.19	0.73
1:1:3218:A:O2'	1:1:3219:G:OP2	2.06	0.73
1:1:1257:C:N4	1:1:1261:G:N2	2.28	0.73
1:1:1729:A:H4'	1:1:1730:G:OP2	1.87	0.73
1:1:785:G:OP1	43:S:66:ARG:NH2	2.22	0.73
1:1:2374:C:N4	1:1:2941:A:N3	2.37	0.73
35:O:38:ILE:HG13	35:O:44:VAL:HG12	1.69	0.73
25:J:92:ILE:HD11	43:S:4:ASP:HB2	1.71	0.73
1:1:1144:U:O2'	1:1:1145:G:OP2	2.06	0.73
1:1:2177:G:HO2'	1:1:2178:A:P	2.12	0.73
1:1:3377:G:O2'	17:F:313:HIS:NE2	2.22	0.73
1:1:269:G:H5''	37:P:14:LYS:HE2	1.70	0.73
1:1:3268:A:P	41:R:181:ARG:HH12	2.12	0.72
1:1:2768:U:H2'	1:1:2769:A:H8	1.53	0.72
21:H:33:ARG:NH1	21:H:50:ARG:HH12	1.87	0.72
7:A:15:G:N2	7:A:21:A:N3	2.38	0.72
25:J:112:ASN:ND2	25:J:209:ASN:OD1	2.22	0.72
1:1:1715:A:H1'	1:1:1717:U:OP2	1.89	0.72
1:1:3157:U:H4'	1:1:3158:G:H8	1.55	0.72
21:H:146:LEU:HD11	21:H:163:LEU:HD12	1.72	0.72
1:1:1620:U:H5'	1:1:1621:A:OP2	1.90	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2451:G:H1	1:1:2494:A:H61	1.35	0.72
15:E:30:ARG:NH1	15:E:41:ILE:HG21	2.05	0.72
1:1:1119:C:H2'	1:1:1120:A:H8	1.55	0.72
1:1:1420:C:OP2	19:G:193:LYS:NZ	2.18	0.72
1:1:631:U:H2'	1:1:632:G:H8	1.54	0.72
7:A:2:G:H2'	7:A:3:G:H8	1.55	0.72
17:F:313:HIS:HB2	17:F:332:ARG:HD2	1.71	0.72
1:1:556:U:H1'	1:1:557:A:C5	2.25	0.71
3:3:96:U:H2'	3:3:97:A:C8	2.24	0.71
7:A:19:G:N7	7:A:56:C:N4	2.38	0.71
9:B:43:G:H2'	9:B:44:G:C8	2.25	0.71
35:O:81:VAL:O	35:O:85:TRP:HB2	1.90	0.71
37:P:73:ARG:HH21	37:P:92:LEU:HD21	1.55	0.71
1:1:1064:A:O2'	1:1:1065:A:OP2	2.06	0.71
1:1:1159:A:H5''	25:J:92:ILE:HG21	1.73	0.71
1:1:2342:U:H2'	1:1:2343:C:H6	1.55	0.71
1:1:2447:A:H2'	1:1:2448:G:H8	1.53	0.71
1:1:2945:G:O2'	1:1:2948:C:OP2	2.06	0.71
1:1:3153:U:O2'	1:1:3155:U:OP1	2.09	0.71
1:1:519:A:N6	46:U:65:ASN:O	2.22	0.71
1:1:695:C:H5'	19:G:271:LYS:NZ	2.04	0.71
1:1:3267:A:N6	23:I:71:VAL:O	2.22	0.71
31:M:47:GLN:HG2	31:M:67:VAL:HG12	1.70	0.71
3:3:27:A:P	21:H:57:ASN:HD22	2.13	0.71
5:4:81:U:H5''	5:4:82:U:H5'	1.72	0.71
27:K:148:ALA:HA	27:K:201:THR:HG22	1.71	0.71
1:1:411:U:H2'	1:1:412:G:H8	1.55	0.71
1:1:3243:A:H61	39:Q:160:ARG:HD2	1.55	0.71
1:1:1351:U:H2'	1:1:1352:A:H3'	1.71	0.71
1:1:1743:G:H2'	1:1:1744:G:H8	1.55	0.71
19:G:5:GLN:HE22	19:G:21:PRO:HG3	1.54	0.71
27:K:163:VAL:HG23	27:K:166:LEU:HD12	1.73	0.71
1:1:1526:U:H4'	1:1:1527:C:OP2	1.91	0.71
1:1:2154:U:H2'	1:1:2155:G:C8	2.26	0.71
1:1:615:U:H2'	1:1:616:G:H8	1.56	0.71
17:F:37:ARG:HD2	17:F:186:GLY:HA2	1.73	0.71
21:H:64:ILE:HD13	21:H:109:THR:HG21	1.72	0.71
1:1:109:A:O2'	1:1:110:G:O5'	2.06	0.71
1:1:352:A:O2'	1:1:353:G:O5'	2.09	0.71
1:1:1385:C:O2'	23:I:2:SER:N	2.23	0.71
45:T:160:GLU:HG2	45:T:164:LEU:HG	1.72	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:I:38:THR:OG1	23:I:90:LYS:NZ	2.23	0.71
1:1:1078:U:O2	1:1:1082:U:N3	2.24	0.70
1:1:993:G:H5''	1:1:994:G:OP2	1.90	0.70
1:1:337:G:N2	5:4:27:U:O2	2.24	0.70
1:1:1666:G:H2'	1:1:1667:A:H8	1.55	0.70
1:1:1827:C:H2'	1:1:1828:A:H8	1.56	0.70
1:1:2661:G:H2'	1:1:2662:G:H8	1.56	0.70
1:1:689:U:H5''	1:1:690:A:OP2	1.90	0.70
1:1:2439:A:H2'	1:1:2440:G:C8	2.25	0.70
5:4:39:G:OP2	5:4:39:G:H8	1.74	0.70
1:1:2512:C:OP1	27:K:249:ARG:NH1	2.24	0.70
33:N:48:PRO:HA	33:N:137:GLN:HB3	1.73	0.70
1:1:1279:C:H2'	1:1:1280:C:C5	2.27	0.70
1:1:1342:C:H2'	1:1:1343:A:H8	1.54	0.70
1:1:2441:A:H2'	1:1:2442:G:C8	2.25	0.70
1:1:2754:G:O2'	1:1:2755:C:OP2	2.08	0.70
1:1:738:A:H2'	1:1:739:G:H8	1.56	0.70
13:D:19:GLY:O	13:D:23:ARG:NE	2.25	0.70
1:1:665:A:OP1	37:P:203:ARG:NH1	2.24	0.70
41:R:59:PRO:HG2	41:R:76:PHE:HD2	1.57	0.70
1:1:149:U:OP2	37:P:49:ARG:NH2	2.21	0.70
1:1:2392:C:H5''	1:1:2393:G:OP2	1.90	0.70
1:1:349:A:H4'	1:1:350:C:OP2	1.89	0.70
17:F:37:ARG:HH12	17:F:188:ILE:HG23	1.56	0.70
1:1:1285:G:O2'	1:1:1286:A:O4'	2.08	0.70
1:1:2677:G:O6	1:1:2680:A:N7	2.23	0.70
19:G:84:ARG:NH1	19:G:87:GLN:OE1	2.25	0.70
21:H:183:TRP:HE3	21:H:190:ILE:HD13	1.56	0.70
33:N:181:GLY:O	33:N:185:LYS:HB2	1.92	0.70
1:1:165:A:H5'	1:1:166:C:OP2	1.91	0.70
1:1:2448:G:O6	1:1:2498:U:O4	2.10	0.70
1:1:2724:U:OP1	47:V:78:LYS:NZ	2.25	0.70
17:F:19:ARG:HB3	17:F:273:HIS:HE1	1.56	0.70
29:L:8:GLN:HB3	29:L:72:LYS:HD2	1.73	0.70
1:1:1667:A:H2'	1:1:1668:G:C8	2.26	0.70
1:1:2254:U:H2'	1:1:2261:G:H22	1.57	0.70
1:1:3148:U:H2'	1:1:3149:G:H8	1.55	0.70
1:1:611:A:OP1	23:I:23:LYS:NZ	2.18	0.70
27:K:246:MET:O	27:K:250:ALA:HB3	1.90	0.70
25:J:110:ARG:NH2	25:J:206:LYS:HG2	2.07	0.69
1:1:2131:A:H61	13:D:18:TYR:HA	1.57	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2526:C:H2'	1:1:2527:G:H8	1.53	0.69
1:1:860:G:H5'	13:D:17:ARG:HH12	1.57	0.69
1:1:908:G:N3	1:1:925:A:N6	2.38	0.69
5:4:47:C:O2'	5:4:62:C:OP2	2.06	0.69
29:L:41:ILE:HD11	29:L:67:ALA:HB1	1.74	0.69
1:1:531:G:H2'	1:1:532:A:H8	1.57	0.69
1:1:3005:A:C6	1:1:3140:G:C6	2.80	0.69
1:1:51:A:H2'	1:1:52:A:H8	1.57	0.69
5:4:38:U:O2'	5:4:39:G:OP1	2.10	0.69
9:B:10:G:C2	9:B:26:A:H1'	2.28	0.69
9:B:47:U:H5'	9:B:48:C:H5'	1.73	0.69
13:D:49:ARG:NH2	13:D:52:ALA:HB2	2.04	0.69
2:X:37:ILE:HG13	2:X:38:ALA:H	1.56	0.69
1:1:2503:G:H2'	1:1:2504:U:C6	2.28	0.69
1:1:1015:U:O4	1:1:1035:G:N1	2.22	0.69
1:1:1119:C:H2'	1:1:1120:A:C8	2.27	0.69
1:1:267:G:C6	1:1:319:A:N7	2.60	0.69
1:1:3346:U:H3	1:1:3359:A:H61	1.39	0.69
1:1:1321:G:H21	46:U:112:ALA:HB2	1.58	0.69
1:1:1245:A:H62	1:1:1272:C:H4'	1.58	0.69
1:1:1874:A:N6	45:T:20:ARG:HH12	1.90	0.69
1:1:2618:G:H4'	1:1:2618:G:OP2	1.90	0.69
1:1:2827:U:O2'	1:1:2828:G:H8	1.75	0.69
1:1:30:G:OP1	37:P:172:ARG:NE	2.22	0.69
21:H:54:ARG:NH1	21:H:148:ILE:O	2.26	0.69
1:1:790:U:H2'	1:1:791:A:H8	1.56	0.69
19:G:212:ASP:OD2	19:G:216:VAL:HG22	1.92	0.69
39:Q:108:ILE:HG21	39:Q:113:ASP:HB3	1.73	0.69
4:Y:23:ARG:NH2	4:Y:25:ASP:OD2	2.24	0.69
1:1:1243:G:N2	1:1:1244:A:N7	2.40	0.69
1:1:2344:U:H2'	1:1:2345:A:C8	2.28	0.69
1:1:2565:U:O2	1:1:2576:G:N2	2.24	0.69
1:1:2608:G:OP1	15:E:2:GLY:N	2.25	0.69
1:1:60:A:H2'	1:1:61:A:C8	2.28	0.69
3:3:28:C:OP2	21:H:57:ASN:ND2	2.25	0.69
7:A:42:A:H2'	7:A:43:U:O4'	1.93	0.69
1:1:2385:G:N3	1:1:3143:C:N4	2.40	0.69
3:3:120:C:H5	21:H:258:LYS:HZ1	1.39	0.69
17:F:139:GLN:HG3	17:F:141:GLY:H	1.57	0.69
1:1:1810:A:H2'	1:1:1811:G:H8	1.58	0.69
1:1:2742:C:H2'	1:1:2743:A:H8	1.58	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:O:24:LYS:HE2	35:O:25:LYS:NZ	2.08	0.69
45:T:148:ASP:OD1	45:T:151:ARG:NH2	2.26	0.69
1:1:1580:A:OP1	15:E:68:LYS:NZ	2.25	0.68
1:1:2369:G:H2'	1:1:2370:G:C8	2.27	0.68
1:1:108:A:OP1	33:N:42:ARG:NH2	2.26	0.68
1:1:1609:C:OP1	6:Z:125:ARG:NH2	2.25	0.68
37:P:45:PRO:O	37:P:49:ARG:HB2	1.93	0.68
1:1:1009:A:H2'	1:1:1010:G:C8	2.29	0.68
1:1:2450:G:N2	1:1:2496:C:C2	2.61	0.68
1:1:2715:A:O2'	1:1:2716:U:OP1	2.11	0.68
7:A:58:A:H2'	7:A:61:C:H41	1.57	0.68
29:L:7:GLU:HA	29:L:55:VAL:O	1.92	0.68
1:1:1039:U:H2'	1:1:1040:A:C8	2.27	0.68
1:1:1463:U:H3	1:1:1467:A:N6	1.91	0.68
1:1:1783:U:H2'	1:1:1784:G:C8	2.29	0.68
3:3:76:A:O2'	3:3:77:G:O5'	2.10	0.68
17:F:56:ILE:HG21	17:F:356:LEU:HD22	1.75	0.68
19:G:261:VAL:O	19:G:270:SER:OG	2.11	0.68
19:G:71:VAL:HG22	19:G:76:ARG:HH22	1.57	0.68
5:4:152:G:HO2'	27:K:63:LYS:HZ1	1.39	0.68
1:1:1213:G:OP2	46:U:137:ARG:NH1	2.27	0.68
1:1:1813:A:O2'	1:1:1817:G:N3	2.26	0.68
1:1:708:G:H5'	1:1:709:A:OP2	1.93	0.68
21:H:50:ARG:NH2	21:H:72:ASP:OD2	2.27	0.68
43:S:150:VAL:HA	43:S:153:PHE:CE2	2.29	0.68
17:F:347:SER:H	17:F:350:ALA:HB3	1.59	0.68
1:1:1511:U:O2'	1:1:1512:U:OP1	2.12	0.68
1:1:1722:U:H5''	45:T:99:LEU:HD22	1.75	0.68
1:1:2412:G:H2'	1:1:2413:A:H8	1.59	0.68
1:1:2899:C:N3	29:L:173:ARG:NH1	2.42	0.68
1:1:2986:U:H2'	1:1:2987:A:C8	2.27	0.68
5:4:29:U:H5''	33:N:27:ASP:HB3	1.74	0.68
41:R:82:ARG:HG2	41:R:83:TRP:H	1.58	0.68
1:1:1150:A:N7	1:1:1151:U:N3	2.42	0.67
1:1:3276:G:O6	41:R:171:ARG:NE	2.27	0.67
1:1:3005:A:N6	1:1:3140:G:C6	2.63	0.67
1:1:3306:U:O2'	1:1:3308:C:OP2	2.11	0.67
1:1:576:C:P	25:J:241:LYS:HZ1	2.17	0.67
27:K:99:PRO:HG2	27:K:190:VAL:HG23	1.76	0.67
29:L:90:MET:HG2	29:L:181:VAL:HA	1.77	0.67
41:R:54:HIS:O	41:R:72:GLN:NE2	2.25	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:236:G:H2'	1:1:237:G:C8	2.28	0.67
1:1:674:G:O6	43:S:56:LYS:NZ	2.27	0.67
9:B:29:U:H2'	9:B:30:G:C8	2.29	0.67
5:4:101:U:OP1	6:Z:89:LYS:NZ	2.27	0.67
1:1:2769:A:H2'	1:1:2770:G:H8	1.59	0.67
1:1:3052:G:H2'	1:1:3053:G:H8	1.59	0.67
1:1:907:G:N2	1:1:925:A:O2'	2.28	0.67
1:1:2451:G:C2	1:1:2452:G:H1'	2.29	0.67
5:4:9:A:H2'	5:4:10:A:C8	2.30	0.67
7:A:27:G:H1	7:A:43:U:H3	1.43	0.67
35:O:135:LEU:HD11	39:Q:177:LYS:HE2	1.76	0.67
1:1:1117:G:O6	1:1:1142:G:N2	2.27	0.67
1:1:1566:A:N3	1:1:1573:G:N1	2.42	0.67
1:1:1808:G:HO2'	1:1:1809:A:H8	1.42	0.67
1:1:598:A:OP1	25:J:41:ARG:NH1	2.28	0.67
47:V:39:ILE:HD12	47:V:102:ARG:HH11	1.57	0.67
1:1:1561:G:O6	1:1:1578:C:N4	2.27	0.67
1:1:1844:C:N4	1:1:1845:G:O6	2.27	0.67
1:1:647:A:H2	1:1:2371:G:H21	1.43	0.67
1:1:2703:A:OP2	21:H:23:ARG:NH2	2.28	0.67
1:1:1942:U:OP2	45:T:74:ARG:NH2	2.27	0.67
1:1:1740:U:H1'	1:1:1741:A:H2	1.59	0.67
1:1:2589:G:H5'	1:1:2590:A:OP2	1.95	0.67
37:P:11:GLN:HE21	37:P:14:LYS:HE3	1.60	0.67
1:1:62:A:H2	37:P:189:LYS:HZ3	1.42	0.67
1:1:1026:A:H8	1:1:1026:A:OP2	1.77	0.67
1:1:3008:A:H2'	1:1:3009:G:C8	2.28	0.67
1:1:3276:G:O2'	1:1:3277:U:O5'	2.13	0.67
3:3:94:C:H2'	3:3:95:A:H8	1.59	0.67
1:1:3234:A:N1	1:1:3253:G:C6	2.63	0.66
1:1:595:G:H22	1:1:609:G:H5''	1.61	0.66
7:A:1:G:H2'	7:A:2:G:H8	1.60	0.66
11:C:15:LYS:HZ1	11:C:18:ARG:NH1	1.91	0.66
21:H:50:ARG:HD2	21:H:147:ASP:OD2	1.95	0.66
1:1:2447:A:H2'	1:1:2448:G:C8	2.31	0.66
1:1:1815:U:O2'	1:1:1816:A:O5'	2.11	0.66
1:1:2784:G:H2'	1:1:2785:A:H8	1.59	0.66
1:1:3227:A:H8	1:1:3227:A:OP2	1.77	0.66
21:H:90:HIS:NE2	21:H:229:ASP:OD2	2.28	0.66
29:L:87:LYS:HA	29:L:146:LEU:O	1.96	0.66
1:1:2406:C:O2'	1:1:2619:G:N2	2.29	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:531:G:H2'	1:1:532:A:C8	2.29	0.66
1:1:540:U:H2'	1:1:541:U:C6	2.29	0.66
1:1:976:U:OP1	43:S:144:ARG:NH2	2.25	0.66
1:1:6:A:H61	5:4:153:U:H3	1.43	0.66
21:H:31:TYR:CZ	21:H:35:ARG:NH1	2.63	0.66
1:1:3271:G:OP2	1:1:3271:G:H8	1.79	0.66
17:F:92:TYR:HE1	17:F:101:SER:HB3	1.59	0.66
1:1:1460:A:H2'	1:1:1461:A:H8	1.60	0.66
1:1:1494:U:O2'	1:1:1495:U:O5'	2.10	0.66
1:1:2168:A:N6	1:1:2170:U:O2	2.29	0.66
3:3:119:U:H3'	21:H:258:LYS:HZ2	1.59	0.66
33:N:186:ARG:O	33:N:190:LYS:HB2	1.96	0.66
41:R:72:GLN:OE1	41:R:83:TRP:NE1	2.29	0.66
1:1:1169:A:H4'	25:J:219:LYS:HD3	1.76	0.66
1:1:1743:G:H2'	1:1:1744:G:C8	2.30	0.66
1:1:2248:C:HO2'	1:1:2272:G:HO2'	1.40	0.66
1:1:2392:C:O2'	17:F:266:ARG:NH2	2.28	0.66
1:1:398:A:O2'	1:1:399:A:OP2	2.12	0.66
5:4:131:A:H2'	5:4:132:G:H8	1.61	0.66
23:I:174:LEU:HD22	35:O:117:ARG:NH1	2.11	0.66
27:K:137:ASN:HD21	37:P:4:TYR:HE2	1.44	0.66
1:1:556:U:O2'	1:1:557:A:O5'	2.09	0.66
1:1:962:A:H5''	1:1:963:G:OP2	1.94	0.66
3:3:96:U:H2'	3:3:97:A:H8	1.60	0.66
17:F:47:LEU:HB3	17:F:335:ILE:HD11	1.76	0.66
1:1:1760:A:H61	45:T:46:LYS:NZ	1.94	0.66
1:1:2768:U:H2'	1:1:2769:A:C8	2.31	0.66
1:1:92:G:O2'	50:1:3401:3HE:O1	2.07	0.66
1:1:1080:A:OP1	21:H:140:ARG:N	2.28	0.66
2:X:104:ASN:OD1	2:X:108:GLU:N	2.29	0.66
1:1:1342:C:H2'	1:1:1343:A:C8	2.31	0.66
1:1:1597:C:H2'	1:1:1598:G:C8	2.31	0.66
1:1:2683:U:H2'	1:1:2684:C:C6	2.31	0.66
1:1:3186:A:OP2	46:U:170:THR:OG1	2.14	0.66
1:1:3208:G:H1'	1:1:3210:A:C8	2.30	0.66
1:1:684:G:H2'	1:1:685:G:H8	1.61	0.66
5:4:23:U:H5''	5:4:24:G:OP2	1.96	0.66
7:A:28:U:H2'	7:A:29:U:H6	1.60	0.66
27:K:72:PRO:HB3	37:P:17:ASP:HB3	1.78	0.66
1:1:671:U:OP2	43:S:57:ILE:HD12	1.96	0.66
2:X:27:ASP:OD2	2:X:111:GLY:HA3	1.96	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1522:U:O2'	1:1:1523:U:OP1	2.14	0.65
1:1:2179:C:H4'	1:1:2180:G:OP2	1.95	0.65
1:1:221:A:O2'	1:1:222:A:OP1	2.13	0.65
21:H:55:PHE:HE2	21:H:159:VAL:HG22	1.60	0.65
1:1:677:A:O2'	1:1:678:G:OP2	2.15	0.65
1:1:2157:G:N2	1:1:2177:G:O2'	2.30	0.65
1:1:1794:G:H5'	1:1:1795:U:OP2	1.96	0.65
1:1:2364:G:H22	1:1:2396:G:H1'	1.62	0.65
41:R:31:GLU:OE2	41:R:60:PHE:HA	1.96	0.65
1:1:1146:C:H2'	1:1:1147:G:H8	1.61	0.65
7:A:53:G:H8	7:A:53:G:OP2	1.80	0.65
11:C:71:ARG:NH2	11:C:80:ARG:HH11	1.94	0.65
19:G:92:ASN:HD22	19:G:100:PHE:HB2	1.61	0.65
37:P:11:GLN:HG2	37:P:44:ARG:CZ	2.27	0.65
1:1:1243:G:H8	1:1:1243:G:OP2	1.79	0.65
1:1:1908:A:N6	1:1:1909:A:N1	2.45	0.65
1:1:2129:U:H2'	1:1:2130:G:H8	1.62	0.65
1:1:2372:A:O2'	1:1:2373:A:OP2	2.14	0.65
1:1:3184:A:OP2	39:Q:12:LYS:NZ	2.15	0.65
7:A:1:G:N2	7:A:72:C:O2	2.25	0.65
11:C:15:LYS:HD2	11:C:18:ARG:HH11	1.61	0.65
15:E:65:ASP:OD2	15:E:68:LYS:N	2.29	0.65
3:3:119:U:H3'	21:H:258:LYS:NZ	2.10	0.65
1:1:1821:U:H5'	1:1:1822:C:OP2	1.95	0.65
1:1:2665:U:O2'	1:1:2666:C:O5'	2.14	0.65
1:1:3165:A:H2'	1:1:3166:C:C6	2.31	0.65
3:3:79:A:N6	3:3:101:G:H21	1.94	0.65
1:1:3369:G:N1	17:F:380:MET:HG3	2.12	0.65
43:S:131:ALA:HB1	43:S:134:GLY:HA2	1.77	0.65
1:1:116:A:O2'	1:1:117:U:OP1	2.14	0.65
1:1:1607:U:OP2	1:1:1608:C:N4	2.30	0.65
1:1:1635:G:N2	1:1:1638:A:OP2	2.29	0.65
1:1:3344:A:H4'	1:1:3345:G:OP2	1.97	0.65
1:1:971:G:OP1	43:S:8:LYS:NZ	2.20	0.65
1:1:1191:U:H1'	39:Q:48:PHE:CE2	2.32	0.65
1:1:784:A:O2'	43:S:92:ARG:NH1	2.30	0.65
5:4:133:G:OP1	6:Z:94:GLN:NE2	2.30	0.65
1:1:1657:C:N4	1:1:1797:A:H3'	2.12	0.65
1:1:2445:A:H2'	1:1:2446:U:C6	2.31	0.65
17:F:235:THR:HG21	17:F:249:VAL:HG22	1.79	0.65
1:1:1012:G:H2'	1:1:1013:G:C8	2.32	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2697:A:H2'	1:1:2698:G:C8	2.32	0.65
1:1:2939:G:O5'	17:F:2:SER:N	2.30	0.65
3:3:49:G:O2'	3:3:50:U:O5'	2.12	0.65
1:1:608:A:O3'	19:G:326:ARG:NH1	2.30	0.65
27:K:109:LEU:HD23	27:K:112:GLU:OE2	1.97	0.65
1:1:2901:G:N2	1:1:3029:A:N1	2.46	0.64
1:1:2163:C:OP2	15:E:234:LYS:HD2	1.96	0.64
15:E:30:ARG:NH1	15:E:41:ILE:HD13	2.02	0.64
17:F:211:GLN:HE22	17:F:284:ARG:HA	1.62	0.64
35:O:125:LYS:HA	35:O:128:ARG:HG2	1.78	0.64
37:P:17:ASP:HA	37:P:20:ARG:HG2	1.77	0.64
46:U:12:ARG:HH12	46:U:15:PRO:HG2	1.62	0.64
1:1:1241:U:O2'	1:1:1242:G:O5'	2.10	0.64
1:1:1352:A:O2'	1:1:1353:U:O5'	2.13	0.64
1:1:1647:A:H2'	1:1:1648:A:H8	1.61	0.64
1:1:1783:U:H2'	1:1:1784:G:H8	1.61	0.64
1:1:189:G:O2'	1:1:190:U:OP1	2.15	0.64
1:1:591:G:O2'	23:I:17:ALA:O	2.11	0.64
1:1:2565:U:H3	1:1:2576:G:H1	1.44	0.64
1:1:431:U:H2'	1:1:432:G:H8	1.62	0.64
1:1:836:A:N6	1:1:857:G:H1'	2.11	0.64
37:P:53:TYR:HB2	37:P:133:ILE:HD11	1.79	0.64
43:S:82:VAL:HG22	43:S:102:ALA:HB3	1.79	0.64
45:T:103:ARG:NH1	45:T:124:TYR:CZ	2.65	0.64
2:X:84:SER:HA	2:X:94:TYR:HB3	1.79	0.64
17:F:328:ILE:HD11	17:F:336:VAL:HG11	1.79	0.64
27:K:83:ASP:OD1	27:K:86:THR:N	2.28	0.64
35:O:46:ILE:O	35:O:55:ARG:HA	1.98	0.64
1:1:2402:A:O2'	1:1:2871:G:OP2	2.15	0.64
1:1:646:A:H2'	1:1:647:A:O4'	1.97	0.64
1:1:767:U:O2'	1:1:768:C:O4'	2.16	0.64
3:3:107:C:H2'	3:3:108:A:H8	1.61	0.64
37:P:174:ILE:O	37:P:175:ASN:ND2	2.30	0.64
47:V:32:LYS:NZ	47:V:98:HIS:H	1.95	0.64
1:1:1093:A:O2'	1:1:1094:U:O4'	2.15	0.64
1:1:197:G:N2	1:1:218:G:O2'	2.30	0.64
1:1:722:G:H1	1:1:748:U:H3	1.45	0.64
23:I:174:LEU:HA	35:O:117:ARG:HH22	1.62	0.64
6:Z:131:ASP:OD2	6:Z:134:ASP:N	2.29	0.64
1:1:1310:G:H2'	1:1:1311:G:C8	2.32	0.64
1:1:1348:U:O4'	1:1:1355:A:N6	2.31	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:608:A:H5''	1:1:609:G:OP2	1.98	0.64
1:1:74:G:H5''	33:N:104:ARG:HH21	1.63	0.64
1:1:1236:G:H1'	1:1:1245:A:H1'	1.79	0.64
47:V:119:ALA:HB1	47:V:124:VAL:HA	1.77	0.64
1:1:1177:G:O2'	1:1:1178:G:O5'	2.16	0.64
1:1:1702:U:H3	1:1:1743:G:H1	1.44	0.64
1:1:2213:A:H2'	1:1:2214:A:C8	2.32	0.64
1:1:2412:G:H2'	1:1:2413:A:C8	2.33	0.64
1:1:2608:G:H2'	1:1:2609:A:H8	1.62	0.64
1:1:359:U:O4'	1:1:817:A:N6	2.31	0.64
9:B:1:G:H2'	9:B:2:G:C8	2.33	0.64
21:H:40:HIS:CE1	47:V:69:LYS:HA	2.33	0.64
39:Q:78:ARG:O	39:Q:82:LYS:N	2.25	0.64
46:U:155:ARG:HD2	46:U:172:TYR:CD1	2.33	0.64
46:U:66:GLU:HG3	46:U:68:HIS:H	1.63	0.64
1:1:1538:G:H21	1:1:1583:A:H62	1.44	0.64
1:1:3215:A:H5''	1:1:3216:G:OP2	1.99	0.64
7:A:23:A:H2'	7:A:24:G:H8	1.62	0.64
17:F:86:VAL:HG22	17:F:162:VAL:HG12	1.80	0.64
41:R:111:LYS:HB3	41:R:153:LYS:HG2	1.80	0.64
47:V:32:LYS:HZ3	47:V:98:HIS:H	1.46	0.64
1:1:2219:A:H2'	1:1:2220:A:H8	1.61	0.63
1:1:2745:G:O2'	1:1:2747:A:N7	2.27	0.63
1:1:3084:C:O2'	1:1:3332:U:OP1	2.16	0.63
1:1:664:U:H2'	1:1:665:A:C8	2.32	0.63
1:1:815:G:O2'	1:1:920:A:N7	2.29	0.63
19:G:10:SER:OG	19:G:13:GLY:O	2.11	0.63
45:T:76:SER:O	45:T:81:ARG:NH1	2.30	0.63
1:1:1580:A:O2'	1:1:1581:C:O5'	2.16	0.63
1:1:1724:U:H1'	1:1:1725:C:C6	2.33	0.63
1:1:3085:G:OP1	4:Y:34:SER:OG	2.16	0.63
1:1:3348:G:O6	1:1:3357:U:O4	2.15	0.63
1:1:374:A:O2'	1:1:375:A:O5'	2.10	0.63
1:1:738:A:H2'	1:1:739:G:C8	2.33	0.63
7:A:14:A:C5	7:A:15:G:H1'	2.31	0.63
27:K:248:LYS:O	27:K:252:ASN:HB2	1.98	0.63
29:L:28:VAL:HG22	29:L:33:THR:HG22	1.80	0.63
29:L:88:TYR:HE2	29:L:155:SER:HA	1.63	0.63
1:1:1861:G:H2'	1:1:1862:U:C6	2.33	0.63
1:1:2539:C:O2'	1:1:2540:A:OP2	2.16	0.63
17:F:80:ASP:OD1	17:F:81:THR:N	2.32	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3233:C:H2'	1:1:3234:A:C8	2.33	0.63
3:3:41:G:O2'	3:3:44:C:N4	2.31	0.63
3:3:71:G:H2'	3:3:72:A:H8	1.63	0.63
9:B:54:U:O4	9:B:58:A:N7	2.31	0.63
1:1:2681:U:OP2	31:M:51:ARG:HD3	1.98	0.63
41:R:23:ARG:HH22	41:R:125:GLN:HG3	1.64	0.63
19:G:203:ARG:NH2	19:G:226:GLU:OE2	2.32	0.63
29:L:23:ARG:NH2	29:L:42:ASP:OD1	2.31	0.63
1:1:73:C:C2	33:N:59:ARG:NH1	2.67	0.63
1:1:1339:C:H2'	1:1:1340:G:H8	1.63	0.63
1:1:1953:G:N1	1:1:2093:A:N7	2.46	0.63
1:1:3337:G:H2'	1:1:3338:C:C6	2.34	0.63
1:1:767:U:O2'	1:1:768:C:O5'	2.16	0.63
1:1:803:C:H2'	1:1:804:C:H6	1.62	0.63
3:3:79:A:H62	3:3:101:G:N2	1.97	0.63
1:1:2775:U:OP2	33:N:178:LYS:NZ	2.31	0.63
1:1:1938:U:O2'	1:1:1939:G:OP1	2.16	0.63
1:1:2796:G:C8	11:C:63:LYS:NZ	2.67	0.63
1:1:1525:G:OP2	6:Z:109:LYS:NZ	2.22	0.63
1:1:3277:U:C4	41:R:175:ARG:NH1	2.67	0.63
1:1:607:A:H4'	1:1:608:A:OP2	1.99	0.63
1:1:926:A:H5''	1:1:927:C:OP2	1.99	0.63
5:4:143:U:OP1	37:P:38:ARG:NH2	2.31	0.63
39:Q:178:VAL:O	39:Q:182:ASN:ND2	2.32	0.63
1:1:1621:A:N7	1:1:1820:U:O4	2.32	0.63
1:1:3222:U:O2	1:1:3263:G:N2	2.24	0.63
1:1:595:G:N2	1:1:609:G:O4'	2.32	0.63
1:1:737:G:H2'	1:1:738:A:H8	1.63	0.63
1:1:900:G:N3	1:1:1589:A:N6	2.46	0.63
1:1:908:G:N1	1:1:2414:G:OP1	2.31	0.63
7:A:58:A:H2'	7:A:61:C:N4	2.13	0.63
1:1:1606:U:O2'	1:1:1607:U:OP1	2.14	0.62
1:1:81:C:H2'	1:1:82:C:C6	2.34	0.62
33:N:47:ALA:O	33:N:49:ARG:N	2.30	0.62
23:I:175:LYS:HD3	35:O:111:ALA:HA	1.80	0.62
48:W:73:GLY:HA2	48:W:76:LEU:HB3	1.81	0.62
1:1:1953:G:H4'	1:1:1954:G:OP2	1.97	0.62
1:1:2100:A:H5'	45:T:71:ARG:HH12	1.64	0.62
17:F:225:GLY:O	17:F:269:GLN:NE2	2.32	0.62
29:L:92:TYR:HB2	29:L:142:ASP:HB3	1.80	0.62
1:1:1024:G:O2'	1:1:1026:A:N6	2.28	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1816:A:O2'	1:1:1817:G:O5'	2.17	0.62
1:1:1492:G:O2'	1:1:1843:C:H5''	1.99	0.62
1:1:2217:U:N3	1:1:2218:G:N7	2.46	0.62
1:1:2597:U:H2'	1:1:2598:G:H8	1.64	0.62
1:1:3162:C:H2'	1:1:3163:A:H8	1.63	0.62
1:1:695:C:H5'	19:G:271:LYS:HZ2	1.63	0.62
1:1:718:G:H1	1:1:750:G:H21	1.46	0.62
1:1:71:A:H61	1:1:303:G:H21	1.46	0.62
9:B:10:G:O6	9:B:25:U:O4	2.17	0.62
1:1:1034:U:H2'	1:1:1035:G:C8	2.34	0.62
1:1:1810:A:H2'	1:1:1811:G:C8	2.34	0.62
1:1:2601:A:H2'	1:1:2602:G:H8	1.63	0.62
1:1:3021:A:O2'	1:1:3022:G:O5'	2.12	0.62
1:1:76:G:OP2	1:1:76:G:H8	1.83	0.62
3:3:63:A:H4'	3:3:64:A:OP2	1.99	0.62
7:A:1:G:H2'	7:A:2:G:C8	2.33	0.62
13:D:51:ALA:HB1	15:E:50:HIS:HB2	1.80	0.62
46:U:155:ARG:HE	46:U:157:GLN:HE21	1.45	0.62
46:U:96:ASP:OD1	46:U:97:VAL:N	2.30	0.62
1:1:122:A:O2'	1:1:123:A:O5'	2.16	0.62
1:1:1574:C:H2'	1:1:1575:A:H8	1.64	0.62
1:1:1741:A:OP2	1:1:1742:U:OP2	2.17	0.62
1:1:2724:U:H4'	47:V:54:HIS:CD2	2.35	0.62
1:1:28:C:O2'	1:1:61:A:N3	2.31	0.62
7:A:13:C:O2'	7:A:14:A:O5'	2.16	0.62
11:C:34:SER:OG	11:C:35:LEU:N	2.33	0.62
1:1:2733:A:H2'	1:1:2734:A:H8	1.65	0.62
5:4:83:C:O2'	5:4:85:G:N2	2.31	0.62
21:H:254:LYS:NZ	21:H:256:THR:HG22	2.15	0.62
1:1:1246:G:H2'	1:1:1247:U:C6	2.35	0.62
1:1:2655:U:H1'	1:1:2656:A:C2	2.35	0.62
1:1:706:A:H2'	1:1:707:U:O4'	1.98	0.62
3:3:16:U:H2'	3:3:17:A:H8	1.65	0.62
31:M:6:GLN:O	31:M:10:ARG:NH2	2.33	0.62
33:N:67:ARG:HG3	33:N:68:LYS:HG2	1.81	0.62
1:1:1831:U:H5''	1:1:1832:C:OP2	2.00	0.62
11:C:15:LYS:CD	11:C:18:ARG:HH11	2.13	0.62
23:I:54:TYR:CE1	23:I:63:LEU:HD22	2.33	0.62
29:L:12:VAL:HG13	29:L:16:VAL:HG23	1.81	0.62
19:G:302:ALA:CB	43:S:39:ARG:HH12	2.12	0.62
1:1:1225:A:H3'	1:1:1226:G:H8	1.64	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1811:G:H2'	1:1:1812:G:C8	2.34	0.62
35:O:14:LEU:H	35:O:19:ARG:HH11	1.47	0.62
41:R:51:VAL:HG11	41:R:88:VAL:HG21	1.81	0.62
1:1:1213:G:H5''	46:U:137:ARG:NH1	2.11	0.62
1:1:2155:G:H2'	1:1:2156:C:C6	2.35	0.61
1:1:2288:G:H2'	1:1:2289:U:C6	2.35	0.61
1:1:2344:U:H2'	1:1:2345:A:H8	1.64	0.61
1:1:2730:G:C6	1:1:2799:A:N6	2.67	0.61
1:1:989:A:H2'	1:1:990:U:C6	2.35	0.61
39:Q:119:VAL:HG11	46:U:167:ARG:HH11	1.65	0.61
1:1:1071:U:H2'	1:1:1072:G:C8	2.35	0.61
1:1:1467:A:O2'	1:1:1468:A:OP1	2.17	0.61
1:1:1702:U:O2	1:1:1743:G:N2	2.33	0.61
1:1:1814:A:H5'	1:1:1815:U:OP1	2.00	0.61
1:1:345:G:N2	1:1:349:A:OP2	2.31	0.61
19:G:299:ILE:HG21	43:S:39:ARG:HE	1.63	0.61
1:1:3392:U:O2'	41:R:75:GLU:OE2	2.10	0.61
21:H:150:LEU:HD13	31:M:143:ARG:HG3	1.82	0.61
1:1:1952:G:H5'	1:1:1953:G:OP2	2.01	0.61
1:1:2129:U:H2'	1:1:2130:G:C8	2.36	0.61
1:1:2513:U:O2'	1:1:2514:U:O5'	2.15	0.61
1:1:69:C:OP1	37:P:178:HIS:ND1	2.28	0.61
37:P:116:LEU:HB3	37:P:133:ILE:HG23	1.81	0.61
1:1:1480:G:O2'	1:1:1481:A:O5'	2.17	0.61
1:1:22:G:H1'	5:4:104:A:N3	2.15	0.61
1:1:2342:U:H2'	1:1:2343:C:C6	2.34	0.61
1:1:2655:U:O4	11:C:8:ARG:NH1	2.33	0.61
1:1:3263:G:H2'	1:1:3264:G:H8	1.66	0.61
1:1:500:C:H4'	23:I:80:ASN:HD21	1.64	0.61
1:1:786:A:OP2	1:1:786:A:C8	2.53	0.61
9:B:18:G:N2	9:B:57:G:N7	2.49	0.61
11:C:15:LYS:HZ1	11:C:18:ARG:HH12	1.48	0.61
1:1:2557:A:OP1	15:E:69:TYR:OH	2.18	0.61
15:E:79:ASN:HD21	15:E:165:VAL:HG13	1.66	0.61
19:G:102:PRO:O	19:G:104:LYS:HG3	2.00	0.61
21:H:54:ARG:NH1	21:H:64:ILE:HD11	12.76	0.61
23:I:146:ILE:HD13	23:I:149:ILE:HD12	1.83	0.61
35:O:103:ILE:HA	35:O:106:ARG:NH1	2.15	0.61
47:V:14:MET:HE3	47:V:58:GLN:HB2	1.82	0.61
1:1:1348:U:H4'	1:1:1349:G:OP1	2.00	0.61
1:1:966:U:H2'	1:1:967:A:H8	1.64	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:860:G:C5'	13:D:17:ARG:HH12	2.14	0.61
17:F:68:HIS:CD2	17:F:69:LYS:HG3	2.34	0.61
1:1:2402:A:N6	19:G:73:ARG:HH22	1.99	0.61
21:H:231:ILE:HG21	21:H:239:ILE:HD11	1.81	0.61
25:J:156:ILE:HD11	25:J:172:ASN:HD21	1.65	0.61
27:K:143:ILE:HD11	27:K:151:VAL:HG21	1.82	0.61
48:W:10:LYS:HE3	48:W:68:THR:HG21	1.83	0.61
1:1:1609:C:N4	1:1:1610:G:O6	2.34	0.61
1:1:2288:G:H2'	1:1:2289:U:H6	1.66	0.61
1:1:2339:C:O2'	1:1:2340:U:O4'	2.18	0.61
31:M:6:GLN:HG3	31:M:8:PRO:HD3	1.83	0.61
1:1:1235:U:H4'	1:1:1236:G:H5'	1.82	0.61
1:1:1271:A:O2'	1:1:1272:C:OP1	2.19	0.61
1:1:2537:U:H2'	1:1:2538:U:C6	2.35	0.61
1:1:2696:A:H8	1:1:2696:A:OP2	1.84	0.61
1:1:3195:U:H4'	1:1:3196:U:OP2	2.01	0.61
1:1:673:U:H2'	1:1:674:G:H8	1.66	0.61
1:1:1456:A:H3'	1:1:1456:A:OP2	2.00	0.61
1:1:2105:G:H2'	1:1:2106:A:H8	1.65	0.61
1:1:2176:U:OP1	15:E:128:ARG:NH2	2.33	0.61
1:1:2401:A:N6	1:1:2872:A:N7	2.49	0.61
9:B:61:C:H2'	9:B:62:C:H6	1.66	0.61
9:B:61:C:H2'	9:B:62:C:C6	2.35	0.61
1:1:2769:A:O2'	11:C:80:ARG:O	2.17	0.61
27:K:229:VAL:HA	27:K:232:HIS:HD2	1.65	0.61
1:1:2139:A:H4'	1:1:2140:U:H5''	1.82	0.61
1:1:2174:G:P	15:E:193:ARG:HH11	2.24	0.61
1:1:647:A:O2'	1:1:648:C:OP1	2.18	0.61
41:R:82:ARG:HG2	41:R:83:TRP:N	2.15	0.61
1:1:1280:C:C2	1:1:1281:G:H1'	2.36	0.60
1:1:790:U:H2'	1:1:791:A:C8	2.36	0.60
19:G:3:ARG:NH1	19:G:24:ALA:H	1.99	0.60
1:1:937:G:C6	1:1:2410:U:H5''	2.36	0.60
1:1:85:A:O2'	1:1:86:G:O5'	2.17	0.60
3:3:41:G:H1'	3:3:44:C:H42	1.66	0.60
1:1:824:C:H5''	15:E:21:ARG:HD3	1.82	0.60
1:1:121:A:N7	27:K:108:ARG:NH2	2.49	0.60
41:R:64:ASN:HB2	41:R:80:LYS:NZ	2.16	0.60
43:S:89:ASP:OD1	43:S:90:ASP:N	2.33	0.60
1:1:1874:A:C5	45:T:20:ARG:NH1	2.68	0.60
1:1:3040:A:H5''	2:X:12:ARG:HB2	1.82	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1002:A:H2'	1:1:1003:A:H8	1.66	0.60
1:1:129:U:H2'	1:1:130:A:C8	2.35	0.60
1:1:158:G:H2'	1:1:159:A:H8	1.65	0.60
1:1:244:G:H2'	1:1:245:U:O4'	2.02	0.60
1:1:160:G:N2	1:1:261:U:O2	2.23	0.60
1:1:343:U:O2'	1:1:344:A:OP1	2.19	0.60
48:W:36:TYR:O	48:W:40:HIS:ND1	2.30	0.60
1:1:1034:U:H2'	1:1:1035:G:H8	1.67	0.60
1:1:532:A:N1	1:1:560:G:N2	2.35	0.60
2:X:62:VAL:HG21	2:X:69:LEU:HB3	1.84	0.60
1:1:1340:G:H2'	1:1:1341:U:H6	1.66	0.60
1:1:1661:G:H2'	1:1:1662:G:C8	2.37	0.60
1:1:3238:G:H2'	1:1:3239:G:H8	1.67	0.60
1:1:2586:G:N7	27:K:241:LYS:HD3	2.16	0.60
2:X:135:VAL:HG11	4:Y:26:SER:HB3	1.84	0.60
1:1:1253:U:O2'	1:1:1254:C:O5'	2.17	0.60
1:1:2730:G:C2	1:1:2799:A:C5	2.90	0.60
1:1:3083:G:H4'	4:Y:42:GLN:HE22	1.67	0.60
1:1:3219:G:O2'	1:1:3220:G:OP2	2.15	0.60
5:4:43:A:H2'	5:4:44:A:C8	2.29	0.60
7:A:21:A:H61	7:A:46:G:H2'	1.66	0.60
21:H:160:PHE:O	21:H:163:LEU:HB3	2.02	0.60
19:G:286:VAL:HG21	43:S:28:LEU:HD22	1.83	0.60
1:1:1282:G:OP2	1:1:1284:C:N4	2.33	0.60
1:1:950:G:N1	1:1:1368:U:OP2	2.27	0.60
1:1:1446:A:O2'	1:1:1447:G:O5'	2.15	0.60
1:1:1447:G:O2'	1:1:1448:U:O5'	2.20	0.60
1:1:2225:U:H2'	1:1:2226:U:C6	2.37	0.60
1:1:1129:A:N3	1:1:2826:U:O2'	2.35	0.60
1:1:3011:A:H4'	1:1:3012:A:O5'	2.01	0.60
1:1:3317:U:HO2'	1:1:3318:G:P	2.25	0.60
1:1:359:U:O4	1:1:360:G:N1	2.35	0.60
15:E:201:GLY:HA3	15:E:209:HIS:CD2	2.37	0.60
23:I:40:LEU:HD13	23:I:84:VAL:HG11	1.83	0.60
39:Q:142:SER:HA	39:Q:145:VAL:HG22	1.81	0.60
45:T:130:ASN:O	45:T:132:PHE:N	2.34	0.60
2:X:28:ASN:OD1	2:X:111:GLY:HA2	2.01	0.60
1:1:546:C:H5'	1:1:547:G:C5	2.36	0.60
9:B:7:G:O2'	9:B:8:U:OP1	2.18	0.60
29:L:113:GLU:OE2	29:L:115:ARG:NH2	2.35	0.60
29:L:163:GLN:HB3	29:L:166:ARG:NH1	2.16	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:O:103:ILE:HG12	35:O:106:ARG:HH22	1.65	0.60
1:1:1246:G:O2'	1:1:1265:U:OP1	2.20	0.60
1:1:1340:G:H2'	1:1:1341:U:C6	2.37	0.60
1:1:3376:A:OP2	1:1:3378:C:OP2	2.19	0.60
1:1:368:G:N2	1:1:369:A:N3	2.50	0.60
1:1:512:U:H2'	1:1:513:G:H8	1.67	0.60
1:1:591:G:O2'	1:1:592:A:O5'	2.20	0.60
1:1:648:C:N4	1:1:2375:G:O3'	2.35	0.60
1:1:765:C:O2'	1:1:766:U:OP1	2.18	0.60
21:H:156:GLY:HA2	21:H:181:PRO:HB3	1.84	0.60
37:P:122:ASN:OD1	37:P:123:GLN:N	2.35	0.60
1:1:2339:C:O2'	1:1:2340:U:O5'	2.20	0.60
1:1:2445:A:H2'	1:1:2446:U:H6	1.67	0.60
1:1:2615:G:H2'	1:1:2616:C:H6	1.67	0.60
1:1:2769:A:H2'	1:1:2770:G:C8	2.37	0.60
1:1:272:G:N1	1:1:294:U:O2	2.34	0.60
31:M:107:ASP:HA	31:M:124:GLY:HA2	1.83	0.60
1:1:1066:G:H2'	1:1:1067:U:H6	1.65	0.59
1:1:1237:G:H5'	1:1:1238:C:OP2	2.02	0.59
1:1:1621:A:H62	1:1:1820:U:H3	1.49	0.59
1:1:2144:A:O2'	1:1:2281:A:N6	2.30	0.59
1:1:2169:G:H4'	1:1:2170:U:OP2	2.01	0.59
1:1:2539:C:H4'	1:1:2540:A:O4'	2.03	0.59
1:1:2877:G:H2'	1:1:2878:G:H8	1.67	0.59
1:1:3241:G:H5''	1:1:3242:G:OP2	2.02	0.59
1:1:3304:U:OP2	1:1:3377:G:H1'	2.02	0.59
7:A:21:A:O3'	7:A:22:G:H8	1.85	0.59
27:K:106:LYS:HA	27:K:109:LEU:HD12	1.84	0.59
1:1:1143:A:O2'	1:1:1144:U:OP1	2.20	0.59
1:1:2677:G:C6	1:1:2680:A:N7	2.69	0.59
1:1:3216:G:O2'	1:1:3217:C:OP1	2.20	0.59
9:B:17:C:N4	9:B:17(A):G:O6	2.35	0.59
15:E:29:LEU:O	15:E:123:ARG:NE	2.28	0.59
21:H:41:LYS:NZ	47:V:30:TYR:O	2.35	0.59
1:1:1491:A:N7	33:N:2:ALA:HB3	70.27	0.59
1:1:1127:G:H5''	1:1:1128:U:OP2	2.03	0.59
1:1:1290:A:H2'	1:1:1291:A:C8	2.37	0.59
1:1:1417:G:O2'	1:1:1418:A:OP1	2.19	0.59
1:1:2366:C:H2'	1:1:2367:A:H8	1.66	0.59
1:1:253:A:H2'	1:1:254:A:C8	2.37	0.59
1:1:155:G:N2	1:1:265:A:OP2	2.34	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2683:U:H2'	1:1:2684:C:H6	1.67	0.59
1:1:3192:U:O4	1:1:3200:G:O6	2.20	0.59
1:1:3376:A:H5''	1:1:3377:G:H5''	1.84	0.59
1:1:763:G:OP2	1:1:763:G:H8	1.84	0.59
1:1:846:A:H2'	1:1:847:A:C8	2.38	0.59
27:K:161:GLU:OE2	37:P:26:ARG:NH1	2.35	0.59
37:P:37:HIS:HE1	37:P:63:ARG:HH11	1.50	0.59
1:1:1213:G:C5'	46:U:137:ARG:HH12	2.13	0.59
1:1:1649:U:H2'	1:1:1650:G:H8	1.67	0.59
5:4:141:C:H2'	5:4:142:C:H6	1.66	0.59
1:1:594:U:H3	19:G:304:GLN:HE22	1.49	0.59
31:M:110:ILE:HG21	31:M:116:TYR:HD1	1.68	0.59
31:M:49:LYS:HB3	31:M:62:ASN:HA	1.82	0.59
46:U:80:ARG:HE	47:V:156:TYR:HB2	1.66	0.59
1:1:1012:G:H2'	1:1:1013:G:H8	1.67	0.59
1:1:170:G:H2'	1:1:171:G:C8	2.37	0.59
25:J:156:ILE:O	25:J:159:GLN:HB2	2.02	0.59
41:R:53:ASP:OD2	41:R:55:GLN:HB2	2.02	0.59
2:X:102:ILE:HG23	2:X:110:LYS:HB3	1.84	0.59
1:1:2747:A:H2'	1:1:2748:A:C8	2.37	0.59
1:1:269:G:N2	1:1:295:A:OP2	2.35	0.59
1:1:3343:G:N2	1:1:3362:A:C2	2.68	0.59
1:1:1729:A:N6	13:D:42:CYS:HA	2.17	0.59
13:D:36:ARG:NH1	13:D:48:LYS:HD2	2.17	0.59
19:G:65:TRP:CD2	19:G:69:ARG:NH1	2.70	0.59
29:L:47:LYS:NZ	35:O:5:SER:HB2	2.17	0.59
29:L:4:ILE:HG23	29:L:5:GLN:H	1.67	0.59
1:1:2686:A:O3'	21:H:8:LYS:NZ	2.34	0.59
1:1:712:G:H2'	1:1:713:U:C6	2.38	0.59
5:4:120:C:O2	5:4:134:G:N2	2.36	0.59
5:4:53:A:OP1	33:N:19:GLN:NE2	46.97	0.59
11:C:15:LYS:NZ	11:C:18:ARG:HH12	2.00	0.59
1:1:909:G:C5'	37:P:77:LYS:HZ3	2.15	0.59
1:1:1464:G:N2	1:1:1467:A:OP2	2.32	0.59
1:1:3067:C:OP2	45:T:62:ARG:NH1	2.33	0.59
15:E:7:ASN:OD1	15:E:8:GLN:N	2.35	0.59
27:K:73:PRO:HD3	27:K:233:TRP:CZ3	2.38	0.59
29:L:4:ILE:HB	46:U:142:GLN:HE21	1.68	0.59
1:1:1008:U:O4	1:1:1009:A:N6	2.36	0.59
1:1:1066:G:H2'	1:1:1067:U:C6	2.38	0.59
1:1:1084:A:H2'	1:1:1085:A:C8	2.37	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1497:C:H2'	1:1:1498:A:C8	2.36	0.59
1:1:1597:C:H2'	1:1:1598:G:H8	1.68	0.59
1:1:2287:C:O2'	1:1:2288:G:OP1	2.19	0.59
1:1:2540:A:H4'	1:1:2541:U:OP1	2.03	0.59
1:1:2851:A:O2'	7:A:64:G:O2'	2.10	0.59
1:1:3272:C:O2'	1:1:3273:A:OP1	2.20	0.59
7:A:27:G:H2'	7:A:28:U:C6	2.37	0.59
7:A:5:C:H2'	7:A:6:G:C8	2.38	0.59
1:1:2656:A:OP2	11:C:97:LYS:HB3	2.03	0.59
15:E:117:GLU:HG2	15:E:124:GLY:H	1.68	0.59
1:1:1109:U:H4'	43:S:153:PHE:CD1	2.37	0.59
1:1:1556:C:H5''	1:1:2169:G:N2	2.17	0.59
1:1:2658:G:N1	1:1:2713:U:O2	2.35	0.59
1:1:3179:U:H5''	1:1:3180:A:OP2	2.02	0.59
1:1:3244:A:C4	17:F:97:ARG:NH1	2.71	0.59
1:1:415:G:H2'	1:1:416:A:H8	1.67	0.59
1:1:501:A:OP1	23:I:82:ARG:NH2	2.28	0.59
1:1:520:U:O4	19:G:347:THR:OG1	2.17	0.59
1:1:65:A:H4'	1:1:66:A:OP2	2.03	0.59
1:1:792:G:H2'	1:1:793:C:H6	1.68	0.59
15:E:62:VAL:HG21	15:E:71:LEU:HD23	1.84	0.59
17:F:187:SER:O	17:F:190:GLU:N	2.35	0.59
21:H:33:ARG:NH1	21:H:50:ARG:NH1	2.51	0.59
35:O:18:GLY:HA2	35:O:72:LEU:HD12	1.85	0.59
1:1:1512:U:H2'	1:1:1513:G:H8	1.68	0.58
1:1:21:G:H5''	1:1:22:G:OP2	2.03	0.58
1:1:2727:A:O2'	1:1:2728:G:OP1	2.20	0.58
1:1:859:G:O2'	13:D:13:LYS:O	2.21	0.58
25:J:24:GLU:HG2	25:J:25:GLN:H	1.67	0.58
1:1:1601:U:H5''	45:T:38:ARG:HD3	1.84	0.58
1:1:2532:U:N3	1:1:2533:G:N7	2.51	0.58
1:1:2611:U:H2'	1:1:2612:U:H6	1.68	0.58
1:1:2888:U:O2'	1:1:2889:C:O5'	2.19	0.58
1:1:3157:U:H4'	1:1:3158:G:C8	2.38	0.58
1:1:8:C:O2	5:4:152:G:N2	2.35	0.58
1:1:927:C:H5''	1:1:928:C:OP2	2.03	0.58
3:3:120:C:N4	21:H:262:LYS:NZ	2.51	0.58
3:3:62:U:O3'	21:H:285:ARG:NH1	2.35	0.58
7:A:2:G:H2'	7:A:3:G:C8	2.35	0.58
43:S:133:LYS:H	43:S:135:GLN:NE2	2.00	0.58
1:1:974:G:H5''	43:S:14:GLY:O	2.03	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:S:90:ASP:OD2	43:S:92:ARG:NE	2.32	0.58
1:1:1314:C:H5''	1:1:1315:U:OP2	2.03	0.58
1:1:1391:C:H4'	1:1:1392:G:OP2	2.02	0.58
1:1:2204:C:H2'	1:1:2206:G:C8	2.39	0.58
1:1:254:A:H2'	1:1:255:A:C8	2.37	0.58
1:1:3055:U:O2	1:1:3087:A:N6	2.37	0.58
1:1:529:A:H2'	1:1:530:G:C8	2.37	0.58
1:1:933:A:O2'	1:1:934:G:OP1	2.20	0.58
1:1:976:U:H5'	43:S:144:ARG:NH1	2.18	0.58
15:E:59:ALA:HB2	15:E:78:ALA:HB2	1.83	0.58
33:N:39:ARG:O	33:N:43:ALA:HB2	2.03	0.58
37:P:117:ASN:H	37:P:133:ILE:HG22	1.67	0.58
27:K:159:PRO:HA	37:P:26:ARG:HH22	1.68	0.58
1:1:1192:C:O2'	1:1:1193:A:OP1	2.17	0.58
1:1:129:U:H2'	1:1:130:A:H8	1.68	0.58
1:1:1554:U:O2'	1:1:1555:U:O5'	2.17	0.58
1:1:2254:U:H2'	1:1:2261:G:N2	2.18	0.58
1:1:414:U:H2'	1:1:415:G:H8	1.67	0.58
1:1:535:G:N1	1:1:555:U:C2	2.71	0.58
3:3:16:U:H2'	3:3:17:A:C8	2.38	0.58
9:B:29:U:H2'	9:B:30:G:H8	1.66	0.58
1:1:3039:C:OP1	17:F:62:ARG:NH1	2.35	0.58
29:L:48:VAL:HG13	29:L:49:ASN:H	1.69	0.58
43:S:86:THR:HG22	43:S:105:ARG:HD2	1.84	0.58
4:Y:34:SER:O	4:Y:38:SER:N	2.29	0.58
6:Z:105:VAL:HG11	6:Z:126:LEU:HD13	1.85	0.58
1:1:2169:G:OP2	1:1:2170:U:OP2	2.22	0.58
1:1:235:A:H2'	1:1:236:G:C8	2.38	0.58
1:1:2843:U:O4	1:1:2898:G:N2	2.36	0.58
1:1:293:C:H2'	1:1:294:U:O4'	2.04	0.58
1:1:914:A:O2'	1:1:915:A:O5'	2.17	0.58
15:E:124:GLY:O	15:E:128:ARG:HD2	2.03	0.58
21:H:111:GLN:HA	21:H:116:ASP:HB2	1.86	0.58
23:I:52:VAL:HG23	23:I:67:GLY:HA2	1.85	0.58
1:1:2515:A:H5''	1:1:2516:U:OP2	2.04	0.58
1:1:2898:G:OP2	1:1:2899:C:H5''	2.04	0.58
1:1:296:A:H3'	1:1:297:G:H21	1.67	0.58
1:1:3024:A:H62	1:1:3031:G:H21	1.50	0.58
1:1:3272:C:H4'	1:1:3273:A:OP2	2.02	0.58
1:1:358:G:N2	1:1:361:A:OP2	2.36	0.58
1:1:36:C:O2'	1:1:934:G:N3	2.36	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:612:U:H2'	1:1:613:G:H8	1.67	0.58
1:1:768:C:H2'	1:1:769:G:C8	2.39	0.58
1:1:960:U:O2'	1:1:961:C:O4'	2.20	0.58
11:C:15:LYS:NZ	11:C:18:ARG:HH11	2.00	0.58
1:1:1159:A:O5'	43:S:2:GLY:N	2.36	0.58
1:1:1564:U:N3	1:1:1576:G:N1	2.35	0.58
1:1:1695:U:HO2'	1:1:1696:A:P	2.25	0.58
1:1:2355:G:O2'	1:1:2356:A:O5'	2.21	0.58
1:1:2534:G:H2'	1:1:2535:A:C8	2.39	0.58
1:1:92:G:O6	1:1:94:G:N2	2.37	0.58
5:4:154:C:H2'	5:4:155:A:C8	2.38	0.58
7:A:37:A:N6	7:A:38:A:N1	2.52	0.58
19:G:302:ALA:HB2	43:S:39:ARG:HH12	1.68	0.58
27:K:158:ASP:O	27:K:160:ILE:N	2.36	0.58
35:O:21:VAL:N	35:O:33:ALA:O	2.33	0.58
37:P:46:ASP:OD1	37:P:47:LYS:N	2.34	0.58
43:S:145:ASN:OD1	43:S:150:VAL:HG21	2.04	0.58
1:1:200:C:O2'	1:1:201:A:OP1	2.19	0.58
1:1:2198:A:C5	1:1:2199:G:C8	2.91	0.58
1:1:2586:G:O2'	1:1:2587:U:OP1	2.20	0.58
1:1:2956:A:H5''	1:1:2957:G:OP2	2.04	0.58
1:1:3375:A:C2	1:1:3378:C:H5''	2.39	0.58
1:1:662:U:O4	1:1:801:A:O2'	2.15	0.58
5:4:13:A:H2'	5:4:14:C:C6	2.39	0.58
7:A:28:U:H2'	7:A:29:U:C6	2.39	0.58
21:H:52:VAL:HG21	21:H:65:ILE:HD12	1.84	0.58
45:T:63:THR:O	45:T:67:ALA:N	2.35	0.58
1:1:1071:U:H2'	1:1:1072:G:H8	1.67	0.58
1:1:1357:G:H2'	1:1:1358:C:H6	1.69	0.58
1:1:1914:G:H2'	1:1:1915:A:H8	1.68	0.58
1:1:3306:U:H5''	17:F:21:ARG:HH21	1.69	0.58
1:1:979:U:O2'	1:1:980:A:O5'	2.20	0.58
7:A:26:A:H2'	7:A:27:G:H8	1.68	0.58
21:H:56:THR:OG1	21:H:59:ASP:HB3	2.03	0.58
1:1:1009:A:H2'	1:1:1010:G:H8	1.68	0.58
1:1:1469:C:O2'	1:1:1470:U:OP1	2.18	0.58
1:1:1666:G:H2'	1:1:1667:A:C8	2.39	0.58
1:1:2171:G:H2'	1:1:2172:A:H8	1.69	0.58
1:1:3146:G:H2'	1:1:3147:G:C8	2.39	0.58
1:1:3160:U:O4	1:1:3290:G:O6	2.21	0.58
1:1:532:A:H2'	1:1:533:A:C8	2.39	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:591:G:N2	1:1:612:U:OP1	2.34	0.58
17:F:332:ARG:NH1	17:F:333:LYS:HE2	2.19	0.58
1:1:2417:U:H1'	1:1:2966:G:H21	1.68	0.57
1:1:3033:A:H2'	1:1:3034:C:H6	1.69	0.57
1:1:3115:C:O2	1:1:3117:C:N4	2.36	0.57
1:1:988:U:H2'	1:1:989:A:H8	1.68	0.57
5:4:142:C:H2'	5:4:143:U:C6	2.39	0.57
7:A:29:U:N3	7:A:30:G:N7	2.52	0.57
1:1:1433:A:HO2'	1:1:1434:G:P	2.26	0.57
1:1:1522:U:H4'	1:1:1523:U:OP2	2.04	0.57
1:1:1596:C:H2'	1:1:1597:C:C6	2.38	0.57
1:1:3356:G:H2'	1:1:3357:U:O4'	2.03	0.57
1:1:655:C:H2'	1:1:656:A:C8	2.39	0.57
1:1:799:G:H2'	1:1:801:A:H62	1.69	0.57
1:1:81:C:H2'	1:1:82:C:H6	1.68	0.57
1:1:959:C:O2	1:1:2614:G:O2'	2.21	0.57
5:4:55:U:O4	5:4:62:C:N3	2.37	0.57
1:1:1262:G:H2'	1:1:1264:G:H1'	1.86	0.57
1:1:1564:U:O2	1:1:1576:G:C2	2.57	0.57
1:1:2611:U:H2'	1:1:2612:U:C6	2.39	0.57
1:1:2661:G:H2'	1:1:2662:G:C8	2.37	0.57
1:1:529:A:H2'	1:1:530:G:H8	1.70	0.57
27:K:62:LYS:O	27:K:66:SER:HB2	2.04	0.57
33:N:39:ARG:O	33:N:43:ALA:CB	2.52	0.57
1:1:1602:A:H5''	45:T:38:ARG:HG3	1.85	0.57
1:1:1615:C:H2'	1:1:1616:U:C6	2.39	0.57
1:1:2103:U:H2'	1:1:2104:A:H8	1.68	0.57
1:1:3238:G:H2'	1:1:3239:G:C8	2.39	0.57
17:F:78:VAL:HG11	17:F:305:ILE:HD12	1.86	0.57
27:K:94:PHE:HE2	27:K:152:LEU:HD12	1.69	0.57
37:P:37:HIS:CE1	37:P:63:ARG:HH11	2.22	0.57
1:1:2169:G:O2'	1:1:2170:U:OP1	2.20	0.57
1:1:230:U:H5''	1:1:231:G:OP2	2.04	0.57
1:1:286:U:H2'	1:1:287:G:C8	2.39	0.57
1:1:3016:A:H2'	1:1:3017:A:H8	1.69	0.57
1:1:794:U:H2'	1:1:795:G:H8	1.68	0.57
1:1:861:C:H5''	13:D:17:ARG:HH12	1.69	0.57
45:T:134:HIS:CE1	45:T:136:ARG:HB3	2.39	0.57
2:X:45:ARG:NH1	2:X:46:LEU:HB3	2.20	0.57
1:1:951:A:H62	1:1:1368:U:H3	1.51	0.57
1:1:3166:C:H2'	1:1:3167:A:C8	2.40	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:745:C:H2'	1:1:746:A:C8	2.39	0.57
3:3:12:U:H5''	3:3:13:A:OP2	2.04	0.57
9:B:37:A:H5'	9:B:38:C:OP2	2.04	0.57
21:H:33:ARG:NH1	21:H:50:ARG:HH22	1.98	0.57
31:M:25:GLU:HA	31:M:63:GLU:OE2	2.03	0.57
6:Z:107:VAL:HG12	6:Z:108:LEU:O	2.04	0.57
1:1:1562:C:H3'	1:1:1563:C:C6	2.40	0.57
1:1:1785:U:H2'	1:1:1786:G:C8	2.40	0.57
1:1:542:G:H2'	1:1:543:C:H6	1.69	0.57
1:1:673:U:H2'	1:1:674:G:C8	2.39	0.57
1:1:803:C:H2'	1:1:804:C:C6	2.39	0.57
23:I:42:LEU:HD22	23:I:79:VAL:HG11	1.86	0.57
48:W:59:ASP:HB3	48:W:61:THR:H	1.69	0.57
2:X:6:ALA:HB2	2:X:126:TRP:CH2	2.40	0.57
1:1:109:A:O2'	1:1:110:G:O4'	2.22	0.57
1:1:1184:A:H2'	1:1:1185:C:C6	2.40	0.57
1:1:1245:A:N6	1:1:1272:C:H4'	2.19	0.57
1:1:1529:A:P	1:1:1592:G:H22	2.27	0.57
1:1:2601:A:H2'	1:1:2602:G:C8	2.39	0.57
1:1:2609:A:H2'	1:1:2610:G:H8	1.70	0.57
1:1:2618:G:N2	1:1:2645:G:OP1	2.38	0.57
1:1:993:G:C5	1:1:2637:A:H2	2.23	0.57
13:D:87:ARG:HD3	15:E:97:ASN:HD21	1.70	0.57
27:K:159:PRO:HA	37:P:26:ARG:NH2	2.20	0.57
1:1:800:G:N2	1:1:801:A:N3	2.53	0.57
17:F:68:HIS:CD2	17:F:69:LYS:HZ2	2.23	0.57
33:N:54:LEU:HD11	33:N:119:TYR:CG	2.39	0.57
46:U:10:ILE:HG12	46:U:26:ARG:HB3	1.86	0.57
35:O:60:LEU:HD13	46:U:152:LEU:HD11	1.87	0.57
48:W:20:SER:O	48:W:24:GLU:N	2.23	0.57
1:1:1108:U:H2'	1:1:1109:U:C6	2.39	0.57
1:1:1170:A:OP1	25:J:218:ARG:HA	2.05	0.57
1:1:1288:U:H2'	1:1:1289:G:H8	1.68	0.57
1:1:1365:G:O2'	1:1:1366:A:OP1	2.23	0.57
1:1:1460:A:H2'	1:1:1461:A:C8	2.39	0.57
1:1:2094:C:H2'	1:1:2095:G:H8	1.70	0.57
21:H:202:GLY:O	21:H:205:SER:OG	2.16	0.57
25:J:132:PRO:HA	25:J:229:PHE:CD1	2.39	0.57
1:1:1184:A:H5''	35:O:59:ASN:HD22	1.70	0.57
43:S:4:ASP:OD1	43:S:5:HIS:N	2.37	0.57
1:1:1260:A:H1'	1:1:1280:C:O4'	2.05	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1479:U:O4	1:1:1480:G:C2	2.58	0.56
1:1:1841:A:H1'	1:1:1848:G:H1'	1.87	0.56
1:1:1842:A:O2'	1:1:1843:C:OP1	2.19	0.56
1:1:1917:C:H2'	1:1:1918:C:C6	2.40	0.56
1:1:3164:C:H2'	1:1:3165:A:C8	2.40	0.56
17:F:105:VAL:HG11	17:F:148:LEU:HD11	1.86	0.56
19:G:150:LEU:HD22	19:G:249:ILE:HG12	1.87	0.56
19:G:58:HIS:NE2	19:G:98:ARG:HD3	2.20	0.56
35:O:105:GLN:NE2	35:O:109:ARG:HH21	2.02	0.56
1:1:1253:U:H3	1:1:1264:G:P	2.28	0.56
1:1:1471:U:H2'	1:1:1472:U:C6	2.40	0.56
1:1:1481:A:O2'	1:1:1482:A:OP2	2.21	0.56
1:1:1808:G:O2'	1:1:1809:A:O5'	2.23	0.56
1:1:2553:U:H5''	1:1:2554:A:OP2	2.05	0.56
1:1:3264:G:H2'	1:1:3265:C:C6	2.40	0.56
1:1:400:G:O2'	1:1:401:U:O5'	2.21	0.56
1:1:879:U:H4'	41:R:132:ALA:HB3	1.85	0.56
1:1:2245:C:O2'	15:E:220:GLY:O	2.20	0.56
31:M:54:VAL:HG12	31:M:56:THR:H	1.69	0.56
37:P:74:PRO:O	37:P:75:VAL:HG22	2.05	0.56
27:K:162:LEU:HD23	37:P:7:LEU:HD21	1.86	0.56
1:1:1357:G:H2'	1:1:1358:C:C6	2.41	0.56
1:1:884:A:C6	1:1:2139:A:H1'	2.39	0.56
1:1:2174:G:H4'	1:1:2175:U:O5'	2.05	0.56
1:1:2584:G:O2'	27:K:240:ASN:ND2	2.39	0.56
1:1:528:U:H2'	1:1:529:A:C8	2.40	0.56
1:1:873:C:H3'	1:1:874:U:H4'	1.87	0.56
3:3:4:U:H2'	3:3:5:G:C8	2.41	0.56
23:I:30:LEU:HB3	23:I:34:LEU:HD12	1.87	0.56
27:K:246:MET:O	27:K:250:ALA:CB	2.53	0.56
35:O:59:ASN:OD1	35:O:60:LEU:N	2.38	0.56
1:1:2294:U:H2'	1:1:2296:A:OP2	2.05	0.56
1:1:2890:A:H61	1:1:2913:C:H42	1.53	0.56
1:1:727:G:H4'	1:1:978:G:OP2	2.06	0.56
21:H:33:ARG:HH11	21:H:50:ARG:HH12	1.53	0.56
1:1:1111:U:P	33:N:5:LYS:HD2	2.45	0.56
19:G:110:ASN:ND2	37:P:201:ARG:HE	2.03	0.56
6:Z:105:VAL:HG21	6:Z:135:ILE:HD12	1.86	0.56
1:1:1402:C:H2'	1:1:1403:C:C6	2.40	0.56
1:1:1566:A:C2	1:1:1567:U:H1'	2.41	0.56
1:1:246:U:H2'	1:1:247:C:C5	2.40	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:766:U:O2'	1:1:767:U:O5'	2.21	0.56
7:A:23:A:H2'	7:A:24:G:C8	2.40	0.56
27:K:78:PHE:O	27:K:79:GLN:HG2	2.05	0.56
1:1:1938:U:H1'	45:T:78:TYR:HB2	1.87	0.56
1:1:1246:G:H1'	1:1:1265:U:OP2	2.05	0.56
1:1:1808:G:O2'	1:1:1809:A:H8	1.89	0.56
1:1:2742:C:H2'	1:1:2743:A:C8	2.39	0.56
1:1:2848:G:H2'	1:1:2849:C:O4'	2.05	0.56
1:1:3334:U:O2'	1:1:3335:A:O5'	2.20	0.56
1:1:999:G:H2'	1:1:1000:C:C6	2.41	0.56
5:4:11:C:H5''	5:4:12:A:OP2	2.06	0.56
1:1:2799:A:H1'	11:C:42:ARG:HH12	24.52	0.56
17:F:318:LYS:O	17:F:319:ASN:ND2	2.39	0.56
3:3:45:A:OP1	21:H:151:GLN:NE2	2.38	0.56
27:K:116:VAL:HA	27:K:120:LYS:HA	1.88	0.56
33:N:43:ALA:HB1	33:N:139:LEU:HD22	1.88	0.56
1:1:1874:A:N7	45:T:20:ARG:NH1	2.53	0.56
1:1:1127:G:N2	1:1:1130:A:OP2	2.39	0.56
1:1:1566:A:N1	1:1:1567:U:H1'	2.21	0.56
1:1:157:A:H2'	1:1:158:G:O4'	2.06	0.56
1:1:1928:G:H8	1:1:1928:G:OP2	1.87	0.56
1:1:2280:A:N6	1:1:2282:U:O2	2.38	0.56
1:1:1899:G:C4	1:1:2334:U:H5	2.23	0.56
1:1:3258:U:O2'	1:1:3260:G:OP1	2.19	0.56
1:1:880:G:OP2	41:R:131:ARG:NE	2.34	0.56
5:4:95:G:O2'	29:L:81:GLY:N	169.89	0.56
17:F:102:LEU:HD12	17:F:103:THR:N	2.21	0.56
23:I:139:LYS:HB3	23:I:143:LYS:HE3	1.87	0.56
29:L:11:GLU:HA	29:L:51:GLN:O	2.06	0.56
39:Q:58:LEU:HA	39:Q:72:HIS:CD2	2.41	0.56
1:1:1027:A:N6	1:1:1029:G:N3	2.53	0.56
1:1:1288:U:H2'	1:1:1289:G:C8	2.40	0.56
1:1:2307:G:O2'	1:1:2308:C:OP1	2.20	0.56
1:1:2345:A:OP1	17:F:24:SER:OG	34.23	0.56
1:1:2451:G:N1	1:1:2452:G:H1'	2.21	0.56
1:1:286:U:H2'	1:1:287:G:H8	1.70	0.56
1:1:2991:A:H4'	17:F:21:ARG:NH1	2.19	0.56
1:1:607:A:HO2'	1:1:608:A:P	2.28	0.56
35:O:36:VAL:HG11	35:O:55:ARG:NH1	2.13	0.56
37:P:113:LEU:HD23	37:P:134:LEU:HB3	1.87	0.56
1:1:1914:G:H2'	1:1:1915:A:C8	2.40	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3163:A:H2'	1:1:3164:C:H6	1.70	0.56
1:1:9:U:O2	5:4:150:G:N2	2.38	0.56
3:3:13:A:O5'	3:3:111:U:O2'	2.22	0.56
15:E:49:VAL:HG11	15:E:60:LYS:NZ	2.20	0.56
21:H:110:LEU:HG	21:H:116:ASP:HA	1.87	0.56
31:M:92:ARG:HB3	31:M:173:ASP:OD2	2.06	0.56
1:1:668:G:HO2'	43:S:164:ARG:HH12	1.46	0.56
2:X:80:ARG:HB2	2:X:99:ALA:HB3	1.87	0.56
1:1:1456:A:H4'	1:1:1457:U:O5'	2.06	0.56
1:1:2541:U:H4'	1:1:2542:U:O5'	2.05	0.56
1:1:2656:A:O2'	1:1:2657:A:OP1	2.24	0.56
1:1:570:A:H2'	1:1:571:U:C6	2.41	0.56
1:1:795:G:H2'	1:1:796:U:H6	1.71	0.56
5:4:59:A:H2'	6:Z:61:LYS:NZ	2.21	0.56
1:1:608:A:C5	23:I:22:ARG:NH1	2.73	0.56
39:Q:178:VAL:HG12	39:Q:182:ASN:HD21	1.71	0.56
1:1:1760:A:H61	45:T:46:LYS:HZ2	1.54	0.56
1:1:1753:G:H2'	1:1:1754:G:H8	1.70	0.56
1:1:1900:A:H61	1:1:1908:A:H61	1.53	0.56
1:1:2158:A:N7	1:1:2177:G:N2	2.54	0.56
1:1:172:G:O6	1:1:246:U:O2	2.24	0.56
1:1:2705:A:O2'	1:1:2706:G:OP1	2.21	0.56
1:1:3115:C:O2'	1:1:3116:G:OP1	2.20	0.56
1:1:547:G:H2'	1:1:548:G:C8	2.40	0.56
1:1:909:G:H5'	37:P:77:LYS:HZ3	1.70	0.56
3:3:106:U:H2'	3:3:107:C:C6	2.41	0.56
21:H:33:ARG:HH12	21:H:50:ARG:CZ	2.19	0.56
1:1:49:A:C2	37:P:187:ARG:NH1	2.73	0.56
41:R:170:SER:HA	41:R:173:ARG:HH11	1.70	0.56
43:S:83:VAL:HG22	43:S:140:LEU:HB2	1.87	0.56
1:1:1321:G:N2	46:U:112:ALA:HB2	2.20	0.56
1:1:1078:U:C4	1:1:1081:U:OP2	2.59	0.55
1:1:1281:G:N3	1:1:1282:G:N7	2.54	0.55
1:1:1355:A:HO2'	1:1:1356:U:P	2.26	0.55
1:1:1737:U:H2'	1:1:1738:C:C6	2.41	0.55
1:1:1866:C:O2'	1:1:1867:A:OP1	2.23	0.55
1:1:1932:A:C8	1:1:1933:A:C8	2.94	0.55
1:1:2643:A:OP2	47:V:3:LYS:HE3	2.05	0.55
1:1:2688:U:O2'	1:1:2689:A:O5'	2.17	0.55
1:1:2789:U:O4	1:1:2790:A:N6	2.39	0.55
1:1:3121:U:O2'	1:1:3122:A:O5'	2.22	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3330:A:OP2	17:F:376:LYS:NZ	2.29	0.55
46:U:96:ASP:OD2	46:U:102:ALA:HA	2.06	0.55
1:1:1289:G:H2'	1:1:1290:A:H8	1.72	0.55
1:1:1650:G:H2'	1:1:1651:U:C6	2.41	0.55
1:1:3275:U:O2'	1:1:3276:G:OP1	2.25	0.55
1:1:330:G:H2'	1:1:331:G:H8	1.71	0.55
1:1:852:U:H2'	1:1:853:G:H8	1.72	0.55
1:1:965:A:H2'	1:1:966:U:O4'	2.06	0.55
17:F:131:THR:O	17:F:134:SER:N	2.38	0.55
29:L:8:GLN:HG2	29:L:68:LEU:HD21	1.87	0.55
1:1:1095:U:N3	47:V:127:GLN:OE1	2.24	0.55
4:Y:23:ARG:HG2	4:Y:24:GLY:H	1.70	0.55
1:1:1231:A:H1'	1:1:1261:G:H1'	1.89	0.55
1:1:1265:U:N3	1:1:1277:C:N3	2.54	0.55
1:1:190:U:O2'	1:1:191:U:OP2	2.17	0.55
1:1:2283:G:HO2'	1:1:2284:C:P	2.23	0.55
1:1:2817:A:H4'	1:1:2818:U:OP2	2.07	0.55
1:1:3287:U:H5'	1:1:3288:G:OP2	2.06	0.55
23:I:72:ASN:OD1	23:I:74:VAL:N	2.34	0.55
1:1:127:G:H2'	1:1:128:G:C8	2.36	0.55
1:1:1563:C:H2'	1:1:1564:U:C6	2.42	0.55
1:1:20:A:H8	1:1:20:A:OP2	1.90	0.55
1:1:235:A:H2'	1:1:236:G:H8	1.71	0.55
1:1:1214:U:OP2	46:U:137:ARG:NH2	2.39	0.55
1:1:1749:A:O2'	1:1:1750:A:O5'	2.20	0.55
1:1:2749:G:H8	1:1:2749:G:OP2	1.90	0.55
1:1:3321:C:H2'	1:1:3322:A:H8	1.72	0.55
1:1:515:C:H2'	1:1:516:A:H8	1.70	0.55
1:1:971:G:HO2'	1:1:1371:G:HO2'	1.52	0.55
7:A:15:G:H2'	7:A:16:U:C4	2.41	0.55
13:D:29:LEU:O	13:D:32:GLN:N	2.40	0.55
31:M:133:ARG:NH1	31:M:153:LYS:O	2.39	0.55
1:1:1149:G:H21	1:1:1199:C:N4	2.05	0.55
1:1:2535:A:H2'	1:1:2536:A:O4'	2.07	0.55
1:1:874:U:N3	1:1:2978:U:OP1	2.37	0.55
1:1:3005:A:HO2'	1:1:3006:A:H8	1.53	0.55
1:1:542:G:H2'	1:1:543:C:C6	2.41	0.55
1:1:718:G:H5''	1:1:719:U:OP2	2.07	0.55
1:1:952:A:H4'	1:1:968:G:H22	1.71	0.55
11:C:51:GLY:HA2	43:S:176:ARG:O	32.39	0.55
17:F:293:ASN:HB2	17:F:305:ILE:H	1.71	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:Q:61:ALA:HA	39:Q:70:PRO:HD2	1.88	0.55
1:1:1244:A:O2'	1:1:1245:A:H5''	2.07	0.55
1:1:1269:U:C2	1:1:1271:A:OP2	2.59	0.55
1:1:1569:U:H5''	1:1:1570:U:H6	1.72	0.55
1:1:2900:A:C6	1:1:2901:G:C6	2.94	0.55
1:1:3153:U:OP2	1:1:3153:U:H6	1.90	0.55
1:1:784:A:HO2'	1:1:785:G:P	2.30	0.55
1:1:933:A:N3	19:G:98:ARG:NH2	2.54	0.55
5:4:126:A:O2'	5:4:127:U:OP1	2.25	0.55
41:R:28:ASN:O	41:R:31:GLU:N	2.39	0.55
48:W:94:ARG:HB3	48:W:96:VAL:HG23	1.88	0.55
1:1:2112:U:H4'	1:1:2113:A:OP2	2.05	0.55
1:1:2266:U:H2'	1:1:2267:C:C6	2.41	0.55
1:1:230:U:H3'	1:1:231:G:H5''	1.88	0.55
1:1:269:G:OP1	37:P:44:ARG:NH1	2.36	0.55
1:1:3140:G:O2'	1:1:3141:A:O4'	2.24	0.55
1:1:3215:A:C5	1:1:3259:U:H1'	2.42	0.55
1:1:374:A:HO2'	1:1:375:A:C5'	2.18	0.55
1:1:528:U:O2	1:1:564:G:O6	2.25	0.55
1:1:62:A:H2	37:P:189:LYS:NZ	2.05	0.55
1:1:817:A:O2'	1:1:818:C:OP1	2.23	0.55
5:4:44:A:H2'	5:4:45:C:C6	2.42	0.55
1:1:3293:U:OP1	17:F:132:LYS:NZ	2.37	0.55
19:G:156:LEU:HG	19:G:159:ILE:HD12	1.88	0.55
5:4:141:C:H5'	37:P:109:ARG:HH12	1.71	0.55
2:X:17:LEU:HB2	2:X:52:ALA:HB3	1.88	0.55
4:Y:6:ASP:OD1	4:Y:31:PHE:HA	2.07	0.55
1:1:1647:A:N6	1:1:1808:G:H1'	2.20	0.55
1:1:1649:U:H2'	1:1:1650:G:C8	2.42	0.55
1:1:1714:A:C6	1:1:1728:G:C2	2.94	0.55
1:1:1772:U:H5''	1:1:1773:C:H5'	1.89	0.55
1:1:1929:G:H3'	1:1:1930:A:H8	1.71	0.55
1:1:3192:U:O2	1:1:3200:G:N2	2.30	0.55
1:1:594:U:C4	19:G:308:LYS:HE2	2.42	0.55
1:1:89:A:P	43:S:170:ARG:HH22	2.28	0.55
9:B:17(A):G:O2'	9:B:18:G:OP1	2.22	0.55
1:1:2687:G:H5'	21:H:8:LYS:NZ	2.22	0.55
1:1:1268:G:N2	1:1:1272:C:OP2	2.40	0.55
1:1:1362:G:H5''	1:1:1363:A:OP2	2.07	0.55
1:1:2227:C:H5''	1:1:2228:A:OP2	2.07	0.55
1:1:2843:U:OP2	1:1:2844:C:H5	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2898:G:OP1	29:L:173:ARG:NH2	2.40	0.55
1:1:2919:A:N6	1:1:2920:U:O4	2.40	0.55
1:1:2298:U:C5	1:1:2921:U:H1'	2.42	0.55
1:1:3153:U:OP2	1:1:3153:U:H3'	2.06	0.55
1:1:780:A:H4'	1:1:781:G:OP2	2.07	0.55
1:1:988:U:H2'	1:1:989:A:C8	2.42	0.55
3:3:94:C:H2'	3:3:95:A:C8	2.41	0.55
17:F:95:THR:OG1	17:F:98:GLY:O	2.25	0.55
19:G:177:ASP:OD2	19:G:205:PRO:HD3	2.07	0.55
19:G:289:ILE:HD13	43:S:125:ASP:HB2	1.89	0.55
25:J:220:PHE:O	25:J:229:PHE:HE2	1.90	0.55
25:J:24:GLU:HG2	25:J:25:GLN:N	2.22	0.55
31:M:166:LYS:HE2	31:M:167:TYR:CE2	2.42	0.55
1:1:1434:G:O2'	1:1:1435:A:OP1	2.24	0.54
1:1:1659:U:H2'	1:1:1660:C:H6	1.69	0.54
1:1:2941:A:H5''	1:1:2943:G:H4'	1.89	0.54
5:4:64:U:C2	5:4:65:A:C8	2.95	0.54
7:A:60:U:OP2	7:A:61:C:OP2	2.25	0.54
17:F:247:ARG:O	17:F:248:LYS:HG3	2.06	0.54
19:G:22:LEU:HD23	19:G:255:PHE:HZ	1.73	0.54
1:1:691:A:H62	19:G:48:GLN:HG2	1.71	0.54
27:K:168:ALA:O	27:K:172:LYS:CB	2.54	0.54
27:K:210:ALA:O	27:K:213:LYS:HB3	2.06	0.54
41:R:166:VAL:HG22	41:R:168:LEU:H	1.70	0.54
43:S:151:ARG:HH21	43:S:152:HIS:CE1	2.25	0.54
6:Z:98:ALA:O	6:Z:102:LEU:N	2.27	0.54
1:1:1293:U:H2'	1:1:1294:A:O4'	2.07	0.54
1:1:1834:U:H4'	1:1:1835:A:OP2	2.06	0.54
1:1:2101:C:H2'	1:1:2102:U:H6	1.73	0.54
1:1:2861:U:H6	1:1:2861:U:OP2	1.90	0.54
1:1:288:C:H2'	1:1:289:A:H8	1.73	0.54
1:1:655:C:H2'	1:1:656:A:H8	1.72	0.54
1:1:968:G:H5''	1:1:969:C:OP2	2.07	0.54
9:B:54:U:H5'	9:B:55:U:OP2	2.07	0.54
13:D:33:GLN:HE21	13:D:49:ARG:NH1	2.05	0.54
17:F:142:ALA:O	17:F:146:ARG:CB	2.44	0.54
17:F:211:GLN:NE2	17:F:283:TYR:O	2.38	0.54
1:1:2898:G:C5	35:O:125:LYS:NZ	99.65	0.54
35:O:32:LEU:HD21	35:O:94:TRP:CE2	2.42	0.54
45:T:39:ASN:OD1	45:T:42:ARG:NH2	2.40	0.54
1:1:1186:G:O3'	46:U:113:ARG:NH2	2.40	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1538:G:N2	1:1:1583:A:H62	2.05	0.54
1:1:183:G:H2'	1:1:184:U:C6	2.42	0.54
1:1:2225:U:H4'	11:C:36:PHE:HZ	1.72	0.54
1:1:2403:G:C2	1:1:2405:C:C4	2.94	0.54
1:1:2451:G:H1	1:1:2494:A:N6	2.05	0.54
1:1:2609:A:H2'	1:1:2610:G:C8	2.43	0.54
1:1:2950:G:H5''	1:1:2951:G:OP1	2.07	0.54
1:1:3036:G:H2'	1:1:3037:U:C6	2.43	0.54
1:1:92:G:P	11:C:46:LYS:NZ	2.80	0.54
15:E:36:GLU:CD	15:E:163:ARG:HH11	2.10	0.54
21:H:211:LEU:HB3	21:H:219:PHE:HB2	1.88	0.54
1:1:123:A:P	27:K:105:LYS:NZ	2.80	0.54
11:C:103:ALA:HB2	31:M:62:ASN:O	2.08	0.54
1:1:3206:C:OP2	35:O:99:TRP:HZ3	1.90	0.54
39:Q:76:PRO:HD3	39:Q:147:TRP:CD2	2.43	0.54
1:1:111:C:P	33:N:91:ARG:HH12	2.29	0.54
1:1:1417:G:HO2'	1:1:1418:A:P	2.29	0.54
1:1:1463:U:N3	1:1:1467:A:N6	2.47	0.54
1:1:160:G:O6	1:1:261:U:O4	2.24	0.54
1:1:1615:C:H2'	1:1:1616:U:H6	1.72	0.54
1:1:1308:A:H61	1:1:2367:A:H2	1.54	0.54
1:1:2543:U:H5''	1:1:2544:U:OP2	2.08	0.54
1:1:2771:U:O4	1:1:2773:C:N4	2.41	0.54
1:1:301:G:C6	1:1:302:U:C4	2.96	0.54
1:1:3172:A:O2'	1:1:3173:G:O5'	2.21	0.54
17:F:35:ASP:OD2	17:F:184:ASN:HA	2.07	0.54
1:1:3271:G:H1	23:I:109:GLU:HG2	1.72	0.54
1:1:1253:U:O2'	1:1:1254:C:O4'	2.26	0.54
1:1:1319:G:H2'	1:1:1320:C:C6	2.43	0.54
1:1:275:U:H2'	1:1:276:U:C6	2.43	0.54
1:1:2761:G:H22	1:1:2798:C:H4'	1.73	0.54
1:1:3152:U:H1'	1:1:3294:A:C8	2.42	0.54
1:1:343:U:H4'	1:1:344:A:OP2	2.08	0.54
5:4:10:A:H2'	5:4:11:C:C6	2.42	0.54
7:A:53:G:N2	7:A:62:C:N3	2.55	0.54
17:F:166:ILE:HD11	17:F:171:LEU:HD12	1.89	0.54
31:M:117:ASP:HB3	31:M:120:ILE:HD12	1.88	0.54
41:R:50:GLN:OE1	41:R:56:ARG:HD3	2.08	0.54
1:1:951:A:N7	1:1:1368:U:O4	2.41	0.54
1:1:1727:G:H2'	1:1:1728:G:H21	1.73	0.54
1:1:2656:A:C8	1:1:2658:G:C8	2.96	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:307:A:H2'	1:1:308:A:C8	2.42	0.54
1:1:3208:G:H4'	1:1:3209:A:O5'	2.06	0.54
5:4:113:U:O2'	5:4:114:G:OP2	2.22	0.54
5:4:119:C:H2'	5:4:120:C:C6	2.42	0.54
1:1:2760:C:C4	11:C:63:LYS:HE3	2.42	0.54
19:G:82:THR:HG23	19:G:84:ARG:HB3	1.89	0.54
25:J:88:ARG:HD3	25:J:110:ARG:O	2.08	0.54
25:J:178:ILE:HA	25:J:183:ASP:HB3	1.89	0.54
41:R:22:LEU:HD12	41:R:146:ILE:HD12	1.88	0.54
47:V:157:GLU:HG2	47:V:159:PHE:H	1.71	0.54
1:1:1159:A:H5''	25:J:92:ILE:CG2	2.37	0.54
1:1:1786:G:H2'	1:1:1787:A:C8	2.43	0.54
1:1:251:G:O2'	1:1:252:U:O5'	2.20	0.54
1:1:267:G:C6	1:1:319:A:C5	2.96	0.54
1:1:3195:U:O2'	1:1:3196:U:OP1	2.24	0.54
1:1:3263:G:H2'	1:1:3264:G:C8	2.43	0.54
1:1:512:U:H2'	1:1:513:G:C8	2.42	0.54
1:1:2526:C:H5''	15:E:37:ARG:HH12	1.72	0.54
21:H:131:LEU:HD23	21:H:172:TYR:CE1	2.42	0.54
43:S:148:GLU:OE2	43:S:151:ARG:NH2	2.41	0.54
1:1:2736:A:H1'	47:V:90:ASN:HD22	1.71	0.54
1:1:1031:C:H2'	1:1:1032:C:H6	1.73	0.54
1:1:1100:U:H2'	1:1:1101:G:C8	2.43	0.54
1:1:121:A:O2'	1:1:122:A:OP1	2.24	0.54
1:1:1720:U:OP2	45:T:110:ARG:NH2	2.38	0.54
1:1:2402:A:H62	19:G:73:ARG:NH2	2.03	0.54
1:1:592:A:H5'	23:I:19:LYS:HG2	1.90	0.54
1:1:989:A:H2'	1:1:990:U:H6	1.72	0.54
13:D:78:THR:O	13:D:81:SER:OG	2.18	0.54
25:J:110:ARG:HH21	25:J:206:LYS:HG2	1.73	0.54
1:1:2992:U:H1'	41:R:69:ARG:NH1	2.23	0.54
47:V:94:GLU:OE1	47:V:94:GLU:N	2.39	0.54
1:1:1132:C:H2'	1:1:1133:A:H8	1.73	0.54
1:1:1213:G:P	46:U:137:ARG:HH12	2.30	0.54
1:1:129:U:H3	1:1:139:G:H1	1.53	0.54
1:1:1339:C:H2'	1:1:1340:G:C8	2.42	0.54
1:1:1544:G:O6	1:1:1550:C:N4	2.41	0.54
1:1:1807:G:H5''	1:1:1808:G:OP2	2.08	0.54
1:1:2335:G:N2	1:1:2339:C:O2	2.37	0.54
1:1:3027:A:H2'	1:1:3028:G:O4'	2.08	0.54
1:1:608:A:C4	23:I:22:ARG:NH1	2.76	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:816:A:O2'	1:1:819:U:O4	2.17	0.54
1:1:984:G:O2'	1:1:985:U:OP1	2.20	0.54
5:4:39:G:H5'	5:4:40:A:OP1	2.07	0.54
7:A:53:G:H1	7:A:62:C:H42	1.56	0.54
23:I:170:LYS:HB2	23:I:173:MET:HB2	1.89	0.54
31:M:133:ARG:HH12	31:M:154:THR:HA	1.71	0.54
43:S:185:LYS:HG2	43:S:186:VAL:HG23	1.89	0.54
1:1:1090:G:H2'	1:1:1091:A:H8	1.72	0.54
1:1:1560:G:H2'	1:1:1561:G:O4'	2.07	0.54
1:1:2573:G:H2'	1:1:2574:G:C8	2.32	0.54
1:1:2696:A:N6	1:1:2697:A:N1	2.55	0.54
1:1:3292:A:O2'	1:1:3293:U:O5'	2.23	0.54
1:1:3375:A:O2'	1:1:3376:A:O4'	2.26	0.54
1:1:595:G:H2'	1:1:596:C:C6	2.43	0.54
1:1:726:G:H8	1:1:726:G:OP2	1.92	0.54
1:1:861:C:H5''	13:D:17:ARG:NH1	2.23	0.54
17:F:79:VAL:HG13	17:F:322:ILE:HB	1.90	0.54
19:G:292:SER:OG	19:G:293:SER:N	2.41	0.54
25:J:83:LEU:HD21	25:J:116:PHE:CD1	2.43	0.54
19:G:110:ASN:HD21	37:P:201:ARG:HE	1.54	0.54
6:Z:105:VAL:HG13	6:Z:130:TYR:CD2	2.43	0.54
1:1:1268:G:H2'	1:1:1269:U:C6	2.43	0.53
1:1:1372:C:H2'	1:1:1373:A:H8	1.73	0.53
1:1:1455:U:H5''	1:1:1456:A:OP2	2.08	0.53
1:1:1680:G:H2'	1:1:1681:U:C6	2.43	0.53
1:1:2221:G:N2	1:1:2223:A:H3'	2.23	0.53
1:1:2493:U:H1'	1:1:2494:A:N7	2.22	0.53
1:1:2726:C:O2'	1:1:2727:A:H8	1.91	0.53
1:1:2882:U:H2'	1:1:2883:U:H6	1.73	0.53
1:1:538:G:O6	1:1:553:U:O4	2.26	0.53
1:1:613:G:H2'	1:1:614:C:C6	2.43	0.53
1:1:987:U:H2'	1:1:988:U:C6	2.43	0.53
17:F:19:ARG:HB3	17:F:273:HIS:CE1	2.42	0.53
19:G:151:VAL:HG22	19:G:250:TRP:HB2	1.90	0.53
29:L:57:VAL:HG23	29:L:68:LEU:HD12	1.90	0.53
1:1:1408:G:H2'	1:1:1409:G:C8	2.44	0.53
1:1:1830:G:H5''	6:Z:92:LYS:HD2	1.89	0.53
1:1:2130:G:H2'	1:1:2131:A:H4'	1.90	0.53
1:1:229:G:H2'	1:1:230:U:O4'	2.08	0.53
1:1:2551:U:O2'	1:1:2552:C:O5'	2.16	0.53
1:1:160:G:N1	1:1:261:U:N3	2.36	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:324:A:H2'	1:1:325:A:C8	2.43	0.53
1:1:792:G:H2'	1:1:793:C:C6	2.44	0.53
3:3:54:U:H4'	3:3:55:A:H8	1.73	0.53
5:4:34:U:O2'	5:4:35:C:OP2	2.26	0.53
5:4:44:A:H2'	5:4:45:C:H6	1.73	0.53
7:A:24:G:H2'	7:A:25:C:C6	2.43	0.53
17:F:37:ARG:HH12	17:F:188:ILE:CG2	2.21	0.53
25:J:186:HIS:O	25:J:190:THR:OG1	2.27	0.53
46:U:80:ARG:HB2	46:U:124:LEU:HD11	1.89	0.53
47:V:43:LYS:HA	47:V:58:GLN:HE22	1.74	0.53
4:Y:14:TYR:OH	17:F:375:GLU:OE2	2.25	0.53
1:1:1611:G:H2'	1:1:1612:A:H8	1.73	0.53
1:1:1604:G:H4'	1:1:1835:A:H4'	1.90	0.53
1:1:2502:A:N1	1:1:2503:G:C5	2.76	0.53
1:1:2656:A:N7	1:1:2658:G:C8	2.76	0.53
1:1:3292:A:H2'	1:1:3293:U:C6	2.43	0.53
1:1:337:G:O2'	1:1:338:A:OP1	2.25	0.53
1:1:976:U:H5'	43:S:144:ARG:HH12	1.73	0.53
5:4:48:A:O2'	5:4:49:G:OP1	2.24	0.53
5:4:71:A:O2'	5:4:72:A:O5'	2.22	0.53
21:H:163:LEU:HD21	21:H:175:HIS:CG	2.42	0.53
23:I:51:ARG:NH1	23:I:158:TYR:CE1	2.77	0.53
33:N:78:ALA:O	33:N:82:ALA:HB2	2.08	0.53
1:1:1213:G:H2'	1:1:1214:U:C6	2.44	0.53
1:1:1468:A:C5	1:1:1469:C:N3	2.76	0.53
1:1:2435:G:H4'	37:P:24:ARG:HH22	1.73	0.53
1:1:253:A:H2'	1:1:254:A:H8	1.73	0.53
1:1:383:G:N2	1:1:385:A:H3'	2.23	0.53
1:1:2991:A:P	17:F:20:LYS:HB2	2.48	0.53
17:F:92:TYR:HB2	17:F:157:VAL:HG23	1.90	0.53
21:H:55:PHE:CE2	21:H:159:VAL:HG22	2.42	0.53
27:K:155:ASN:OD1	27:K:182:GLY:N	2.29	0.53
35:O:103:ILE:HG12	35:O:106:ARG:NH2	2.24	0.53
41:R:30:ARG:NH2	41:R:62:ARG:NH1	2.56	0.53
43:S:23:ASN:O	43:S:27:LYS:HG3	2.08	0.53
1:1:1336:U:H2'	1:1:1337:A:H8	1.72	0.53
1:1:2659:G:H2'	1:1:2660:G:C8	2.44	0.53
1:1:27:C:O2'	1:1:327:A:O2'	2.24	0.53
1:1:3141:A:O2'	1:1:3142:A:OP1	2.27	0.53
1:1:3162:C:H2'	1:1:3163:A:C8	2.41	0.53
1:1:3216:G:H22	1:1:3258:U:H5''	1.74	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3315:G:OP1	17:F:116:ARG:NH1	2.41	0.53
1:1:509:U:O2	1:1:583:G:C2	2.61	0.53
5:4:71:A:N6	5:4:87:G:H1'	2.23	0.53
7:A:61:C:N3	7:A:62:C:N4	2.56	0.53
41:R:168:LEU:O	41:R:173:ARG:NH2	2.42	0.53
48:W:97:SER:OG	48:W:98:THR:N	2.34	0.53
6:Z:67:ILE:HD13	6:Z:115:ARG:HH21	1.73	0.53
1:1:1604:G:H5''	1:1:1605:A:OP2	2.09	0.53
1:1:170:G:H2'	1:1:171:G:H8	1.73	0.53
1:1:1770:G:H5'	1:1:1771:C:OP2	2.09	0.53
1:1:199:A:O2'	1:1:200:C:O5'	2.20	0.53
1:1:2349:U:O4	1:1:2350:C:N4	2.42	0.53
1:1:2888:U:H4'	1:1:2889:C:OP1	2.07	0.53
1:1:288:C:H2'	1:1:289:A:C8	2.44	0.53
1:1:3210:A:H5'	35:O:109:ARG:HH12	1.73	0.53
1:1:65:A:O2'	33:N:100:ARG:NH2	2.41	0.53
1:1:821:U:H2'	1:1:822:G:H8	1.72	0.53
17:F:56:ILE:HD12	17:F:359:ILE:HG12	1.90	0.53
17:F:92:TYR:CE1	17:F:101:SER:HB3	2.42	0.53
17:F:92:TYR:HE2	17:F:159:ARG:HD2	1.74	0.53
1:1:49:A:C4	37:P:187:ARG:NH1	2.77	0.53
47:V:39:ILE:HD12	47:V:102:ARG:HD3	1.90	0.53
1:1:210:U:O2'	1:1:229:G:O2'	2.23	0.53
1:1:2499:U:H2'	1:1:2500:A:C8	2.43	0.53
1:1:2557:A:H4'	1:1:2558:U:OP2	2.08	0.53
1:1:2732:G:H4'	1:1:2760:C:H4'	1.90	0.53
1:1:2860:U:O2'	1:1:2861:U:H5'	2.09	0.53
1:1:3383:G:OP2	1:1:3383:G:H3'	2.08	0.53
3:3:32:U:O2'	3:3:33:U:O5'	2.26	0.53
7:A:29:U:C2	7:A:30:G:C8	2.96	0.53
9:B:62:C:H2'	9:B:63:C:C6	2.44	0.53
1:1:1795:U:C4	13:D:51:ALA:HA	2.44	0.53
19:G:281:ILE:HA	43:S:125:ASP:OD2	2.09	0.53
21:H:15:ARG:HA	47:V:20:ARG:HD3	1.91	0.53
29:L:5:GLN:HA	29:L:57:VAL:O	2.08	0.53
2:X:129:VAL:O	2:X:133:SER:OG	2.18	0.53
6:Z:132:ALA:HA	6:Z:135:ILE:HG22	1.90	0.53
1:1:1132:C:H2'	1:1:1133:A:C8	2.43	0.53
1:1:1193:A:H2'	1:1:1194:G:C8	2.43	0.53
1:1:1258:U:HO2'	1:1:1260:A:H8	1.56	0.53
1:1:3215:A:C6	1:1:3259:U:H1'	2.44	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3294:A:H2'	1:1:3295:A:O4'	2.09	0.53
1:1:525:C:OP1	35:O:79:ALA:N	2.39	0.53
1:1:966:U:H2'	1:1:967:A:C8	2.43	0.53
9:B:18:G:H5'	9:B:19:U:OP2	2.08	0.53
9:B:28:C:H2'	9:B:29:U:H6	1.73	0.53
11:C:15:LYS:HZ2	11:C:18:ARG:NH1	2.03	0.53
19:G:181:VAL:HG12	19:G:182:LEU:HD12	1.90	0.53
23:I:142:ASP:O	23:I:146:ILE:HG12	2.08	0.53
29:L:18:VAL:O	35:O:5:SER:HA	2.08	0.53
1:1:692:A:OP1	37:P:201:ARG:NH2	2.41	0.53
1:1:1266:G:OP2	1:1:1266:G:C8	2.62	0.53
1:1:2179:C:N4	15:E:131:GLY:O	2.42	0.53
1:1:221:A:H2'	1:1:223:U:OP2	2.09	0.53
1:1:2930:A:H2'	1:1:2931:C:H6	1.73	0.53
1:1:887:G:O6	1:1:888:A:N6	2.42	0.53
9:B:23:A:H2'	9:B:24:A:C8	2.43	0.53
9:B:7:G:H2'	9:B:49:G:H8	1.74	0.53
11:C:38:GLN:HG3	11:C:42:ARG:NH1	2.24	0.53
15:E:41:ILE:HG22	15:E:90:ALA:HB3	1.91	0.53
1:1:2882:U:O2'	17:F:263:SER:OG	2.26	0.53
35:O:24:LYS:HZ2	35:O:64:VAL:HB	1.73	0.53
41:R:59:PRO:HG2	41:R:76:PHE:CD2	2.41	0.53
1:1:1322:U:H5''	1:1:1323:G:OP2	2.09	0.53
1:1:1498:A:H2'	1:1:1499:C:C6	2.43	0.53
1:1:1599:G:N2	1:1:1609:C:O2	2.42	0.53
1:1:1893:A:H2'	1:1:1894:U:C6	2.44	0.53
1:1:2286:U:O2'	1:1:2287:C:O5'	2.21	0.53
1:1:3047:U:C5	1:1:3048:A:C5	2.96	0.53
1:1:3391:A:O2'	41:R:50:GLN:NE2	2.42	0.53
1:1:685:G:H2'	1:1:686:G:H8	1.74	0.53
3:3:60:G:H2'	3:3:61:G:H8	1.72	0.53
29:L:84:LYS:HB3	29:L:186:PHE:HB3	1.90	0.53
41:R:60:PHE:CE2	41:R:82:ARG:HB3	2.43	0.53
1:1:1072:G:H2'	1:1:1073:U:C6	2.44	0.52
1:1:1826:C:H2'	1:1:1827:C:C6	2.43	0.52
1:1:1900:A:N6	1:1:1906:G:N3	2.57	0.52
1:1:2115:G:H5''	1:1:2116:G:OP2	2.08	0.52
1:1:2926:A:H2'	1:1:2927:C:C6	2.44	0.52
1:1:3165:A:H2'	1:1:3166:C:H6	1.73	0.52
1:1:799:G:N3	1:1:801:A:N6	2.57	0.52
1:1:907:G:O2'	1:1:908:G:O5'	2.22	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:943:U:O2'	1:1:944:C:OP1	2.27	0.52
15:E:242:ARG:NH1	15:E:246:LEU:HD23	2.25	0.52
17:F:213:GLU:OE2	17:F:340:LYS:HE3	2.09	0.52
21:H:60:ILE:HD11	21:H:93:THR:HA	1.90	0.52
27:K:166:LEU:HD23	27:K:169:LEU:HD12	1.92	0.52
29:L:21:LYS:O	29:L:22:SER:OG	2.27	0.52
48:W:54:VAL:HG12	48:W:67:SER:HB2	1.91	0.52
1:1:1486:G:H3'	1:1:1487:G:H5''	1.90	0.52
1:1:1587:A:C6	1:1:1590:G:C4	2.97	0.52
1:1:1652:G:H2'	1:1:1653:G:H8	1.73	0.52
1:1:1807:G:C6	1:1:1808:G:N2	2.77	0.52
1:1:2330:C:H2'	1:1:2331:C:H6	1.73	0.52
1:1:2441:A:H2'	1:1:2442:G:H8	1.75	0.52
1:1:3159:C:H2'	1:1:3160:U:C6	2.44	0.52
1:1:45:A:H2'	1:1:46:U:O4'	2.08	0.52
1:1:717:C:H3'	1:1:718:G:C8	2.45	0.52
3:3:27:A:OP2	21:H:57:ASN:HB2	2.08	0.52
3:3:64:A:OP2	21:H:289:LYS:NZ	2.42	0.52
5:4:98:U:H5''	5:4:99:C:OP2	2.10	0.52
7:A:46:G:H5'	7:A:47:U:OP1	2.09	0.52
7:A:58:A:OP2	7:A:58:A:C8	2.62	0.52
11:C:23:HIS:HA	11:C:73:GLU:O	2.09	0.52
25:J:30:ARG:O	25:J:34:LYS:HB2	2.08	0.52
37:P:153:ASP:OD2	37:P:155:VAL:HG22	2.10	0.52
1:1:1072:G:H2'	1:1:1073:U:H6	1.75	0.52
1:1:1100:U:H2'	1:1:1101:G:H8	1.74	0.52
1:1:1607:U:O2'	1:1:1608:C:OP1	2.19	0.52
1:1:1621:A:N6	1:1:1820:U:H3	2.07	0.52
1:1:2232:A:H2'	1:1:2233:A:C8	2.44	0.52
1:1:2627:C:O2'	1:1:2628:A:OP1	2.21	0.52
1:1:2719:U:O2'	1:1:2720:G:O4'	2.17	0.52
1:1:2975:U:H2'	1:1:2976:A:H8	1.73	0.52
1:1:405:U:H5''	1:1:406:G:OP2	2.10	0.52
1:1:51:A:H2'	1:1:52:A:C8	2.43	0.52
1:1:678:G:H2'	1:1:679:U:C6	2.44	0.52
1:1:710:A:H2'	1:1:711:A:C8	2.44	0.52
5:4:142:C:H2'	5:4:143:U:H6	1.74	0.52
5:4:40:A:H2'	5:4:41:A:H8	1.74	0.52
13:D:84:ARG:HH11	13:D:87:ARG:NH2	2.07	0.52
19:G:269:SER:O	19:G:270:SER:OG	2.25	0.52
27:K:91:PHE:CZ	27:K:185:ARG:NH1	2.77	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:O:24:LYS:NZ	35:O:64:VAL:HB	2.25	0.52
35:O:98:SER:HA	35:O:101:LYS:HD2	1.91	0.52
1:1:1182:A:H2'	1:1:1183:C:H6	1.75	0.52
1:1:1724:U:O2'	1:1:1725:C:O5'	2.21	0.52
1:1:1767:C:H2'	1:1:1768:U:C6	2.44	0.52
1:1:2173:U:N3	1:1:2174:G:O6	2.43	0.52
1:1:241:G:H2'	1:1:242:C:H6	1.74	0.52
1:1:2531:C:H5	1:1:2547:A:H61	1.57	0.52
1:1:2534:G:H2'	1:1:2535:A:H8	1.74	0.52
1:1:2881:C:H2'	1:1:2882:U:C6	2.44	0.52
1:1:3249:C:H2'	1:1:3250:U:O4'	2.09	0.52
1:1:3298:C:C2	1:1:3299:A:C8	2.97	0.52
1:1:3303:G:O2'	1:1:3304:U:O5'	2.15	0.52
1:1:3346:U:H3	1:1:3359:A:N6	2.06	0.52
1:1:347:G:H2'	1:1:348:A:C8	2.44	0.52
1:1:433:A:H2'	1:1:434:U:C6	2.44	0.52
1:1:535:G:H4'	1:1:536:U:OP1	2.07	0.52
1:1:625:G:H2'	1:1:626:U:C6	2.44	0.52
1:1:66:A:O2'	37:P:176:LYS:HD2	2.09	0.52
3:3:66:A:C2	3:3:67:G:H1'	2.45	0.52
9:B:63:C:H2'	9:B:64:G:H8	1.75	0.52
13:D:55:TRP:NE1	13:D:70:THR:O	2.42	0.52
17:F:169:THR:HG22	17:F:171:LEU:H	1.74	0.52
17:F:305:ILE:HD11	17:F:317:ILE:HG21	1.91	0.52
21:H:68:THR:HG22	21:H:69:ILE:N	2.24	0.52
1:1:3173:G:N1	21:H:96:ALA:HB2	140.82	0.52
1:1:2512:C:H5''	27:K:249:ARG:NH2	2.25	0.52
37:P:94:TYR:CZ	37:P:96:ARG:HB2	2.44	0.52
39:Q:178:VAL:HA	39:Q:181:ALA:HB3	1.92	0.52
1:1:1070:U:H2'	1:1:1071:U:C6	2.45	0.52
1:1:1221:A:H5''	1:1:1222:G:O4'	2.10	0.52
1:1:14:U:O2'	6:Z:42:ARG:NE	2.37	0.52
1:1:2659:G:H2'	1:1:2660:G:H8	1.75	0.52
1:1:2911:A:H4'	1:1:2912:G:O5'	2.08	0.52
1:1:3163:A:H2'	1:1:3164:C:C6	2.44	0.52
1:1:3237:U:H2'	1:1:3238:G:C8	2.44	0.52
1:1:3152:U:C2	1:1:3294:A:C6	2.97	0.52
1:1:3349:C:H2'	1:1:3350:C:C6	2.45	0.52
1:1:347:G:C2	1:1:348:A:C5	2.98	0.52
1:1:737:G:H2'	1:1:738:A:C8	2.44	0.52
1:1:941:G:H1'	1:1:1435:A:H1'	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:26:A:H2'	7:A:27:G:C8	2.44	0.52
19:G:181:VAL:O	19:G:182:LEU:HB2	2.09	0.52
1:1:1900:A:O2'	1:1:1901:A:OP2	2.22	0.52
1:1:1948:G:H2'	1:1:1949:G:H8	1.75	0.52
1:1:2513:U:O2'	1:1:2514:U:H3'	2.10	0.52
1:1:2702:A:O2'	1:1:2703:A:O5'	2.19	0.52
39:Q:194:LEU:O	39:Q:199:TYR:N	2.42	0.52
43:S:165:ILE:HD13	43:S:168:THR:HG22	1.91	0.52
1:1:1559:A:OP2	1:1:1559:A:H3'	2.09	0.52
1:1:1737:U:H2'	1:1:1738:C:H6	1.74	0.52
1:1:2295:A:N6	1:1:2296:A:N1	2.57	0.52
1:1:2439:A:C8	1:1:2439:A:OP2	2.63	0.52
1:1:3005:A:O2'	1:1:3006:A:H8	1.91	0.52
1:1:3200:G:H2'	1:1:3201:C:C6	2.44	0.52
1:1:3241:G:OP1	17:F:153:LYS:NZ	2.43	0.52
19:G:203:ARG:HB3	19:G:246:ARG:HH12	1.75	0.52
19:G:285:ASP:OD2	19:G:288:ARG:HB2	2.10	0.52
27:K:90:THR:HA	27:K:214:LEU:HD21	1.92	0.52
45:T:4:LEU:HD11	45:T:29:THR:OG1	2.09	0.52
29:L:4:ILE:HD13	46:U:148:LEU:HD11	1.92	0.52
1:1:1464:G:N1	1:1:1467:A:OP2	2.39	0.52
1:1:1634:G:H2'	1:1:1635:G:H8	1.75	0.52
1:1:172:G:O6	1:1:247:C:N4	2.43	0.52
1:1:2139:A:H4'	1:1:2140:U:C5'	2.39	0.52
1:1:2218:G:H2'	1:1:2219:A:H8	1.75	0.52
1:1:2273:G:HO2'	1:1:2274:U:P	2.33	0.52
1:1:2330:C:H2'	1:1:2331:C:C6	2.45	0.52
1:1:2522:G:H4'	1:1:2522:G:OP2	2.08	0.52
1:1:2571:U:O2'	1:1:2572:C:O5'	2.21	0.52
1:1:3141:A:H4'	1:1:3142:A:OP2	2.08	0.52
1:1:3333:G:O2'	1:1:3334:U:O5'	2.26	0.52
1:1:855:U:H4'	45:T:95:TRP:CD1	2.45	0.52
7:A:4:U:H2'	7:A:5:C:O4'	2.10	0.52
1:1:520:U:N3	19:G:347:THR:O	2.43	0.52
1:1:1003:A:H1'	21:H:15:ARG:CZ	2.39	0.52
35:O:77:ARG:O	35:O:81:VAL:HG23	2.09	0.52
39:Q:42:ASN:OD1	39:Q:125:ARG:HD2	2.10	0.52
46:U:43:TYR:HE2	46:U:122:HIS:HE1	1.57	0.52
1:1:1570:U:O2'	1:1:1571:A:N7	2.35	0.52
1:1:1804:A:H2'	1:1:1805:C:C6	2.44	0.52
1:1:2339:C:OP1	2:X:48:ARG:NH1	2.42	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2347:U:H3'	1:1:2348:A:C8	2.45	0.52
1:1:3266:G:H2'	1:1:3267:A:C8	2.44	0.52
3:3:4:U:H2'	3:3:5:G:H8	1.73	0.52
3:3:87:G:H2'	3:3:88:G:H8	1.74	0.52
5:4:33:A:O2'	5:4:34:U:O5'	2.22	0.52
33:N:33:VAL:O	33:N:37:ASN:ND2	2.43	0.52
1:1:1213:G:P	46:U:137:ARG:NH1	2.82	0.52
1:1:132:C:N3	1:1:137:G:N1	2.58	0.52
1:1:2157:G:H22	1:1:2177:G:HO2'	1.58	0.52
1:1:196:G:N2	1:1:219:A:H61	2.07	0.52
1:1:272:G:H2'	1:1:273:A:H8	1.75	0.52
1:1:3056:U:O2'	1:1:3058:U:OP2	2.27	0.52
1:1:3067:C:P	45:T:62:ARG:HH11	2.33	0.52
1:1:3083:G:H2'	1:1:3084:C:C6	2.45	0.52
1:1:607:A:O2'	1:1:608:A:OP1	2.22	0.52
5:4:62:C:H4'	5:4:63:G:O5'	2.09	0.52
11:C:102:GLN:OE1	31:M:49:LYS:NZ	2.22	0.52
15:E:65:ASP:HB2	15:E:72:ARG:HE	1.74	0.52
1:1:3378:C:O5'	17:F:313:HIS:NE2	2.43	0.52
37:P:116:LEU:HG	37:P:117:ASN:HD22	1.75	0.52
1:1:147:U:N3	37:P:41:ARG:NH1	2.58	0.52
3:3:78:U:OP1	46:U:47:LYS:NZ	2.43	0.52
2:X:37:ILE:HG13	2:X:38:ALA:N	2.22	0.52
1:1:1064:A:H1'	1:1:1066:G:C8	2.45	0.51
1:1:2380:U:H2'	1:1:2381:G:O4'	2.10	0.51
1:1:353:G:O2'	1:1:364:G:N1	2.42	0.51
1:1:810:A:H2'	1:1:811:U:H6	1.75	0.51
5:4:67:U:C2	5:4:68:G:C8	2.99	0.51
13:D:72:SER:HA	15:E:80:GLU:OE2	2.11	0.51
17:F:14:LEU:HD22	17:F:262:TRP:CZ3	2.44	0.51
19:G:229:ASN:OD1	19:G:230:VAL:N	2.43	0.51
19:G:258:LEU:HD12	19:G:262:TRP:HD1	1.75	0.51
21:H:183:TRP:CE3	21:H:190:ILE:HD13	2.42	0.51
1:1:591:G:H1'	23:I:19:LYS:HG3	1.91	0.51
1:1:2585:G:O6	27:K:60:ARG:NH2	2.41	0.51
1:1:103:G:N2	1:1:104:G:C2	2.78	0.51
1:1:1443:G:OP1	41:R:124:LYS:NZ	2.31	0.51
1:1:156:G:O2'	1:1:157:A:OP1	2.27	0.51
1:1:1453:A:N1	1:1:1850:A:H1'	2.26	0.51
1:1:1942:U:H6	1:1:1942:U:OP2	1.92	0.51
1:1:2426:U:H2'	1:1:2427:U:C6	2.44	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3164:C:H2'	1:1:3165:A:H8	1.75	0.51
1:1:921:A:H4'	1:1:922:U:OP2	2.10	0.51
3:3:48:U:H5''	21:H:91:GLY:HA3	1.92	0.51
11:C:102:GLN:HE22	31:M:64:LYS:HE2	1.76	0.51
19:G:215:ILE:HD12	19:G:218:ALA:HB3	1.92	0.51
1:1:1469:C:HO2'	1:1:1470:U:P	2.31	0.51
1:1:1484:U:O2'	1:1:1485:G:OP1	2.23	0.51
1:1:149:U:P	37:P:49:ARG:NH1	2.71	0.51
1:1:1611:G:H2'	1:1:1612:A:C8	2.45	0.51
1:1:2367:A:H2'	1:1:2368:A:C8	2.46	0.51
1:1:3021:A:H1'	1:1:3023:U:C5	2.45	0.51
1:1:3111:U:O2'	29:L:151:VAL:HG11	2.09	0.51
1:1:3278:C:H5''	1:1:3279:A:OP2	2.10	0.51
1:1:3317:U:H4'	1:1:3318:G:O5'	2.10	0.51
1:1:380:U:H2'	1:1:381:U:O4'	2.09	0.51
1:1:981:U:H2'	1:1:982:C:O4'	2.11	0.51
46:U:124:LEU:HA	47:V:153:PRO:HG2	1.92	0.51
2:X:25:CYS:SG	2:X:29:SER:OG	2.64	0.51
1:1:1000:C:C4	1:1:1045:C:C4	2.98	0.51
1:1:1279:C:H2'	1:1:1280:C:H5	1.74	0.51
1:1:1926:C:O2'	1:1:1927:G:O5'	2.25	0.51
1:1:2401:A:H5''	19:G:70:ALA:HB2	1.91	0.51
1:1:2587:U:H2'	1:1:2588:U:H6	1.75	0.51
1:1:2959:C:H2'	1:1:2960:C:C6	2.46	0.51
1:1:3207:U:O4	46:U:160:THR:N	2.38	0.51
5:4:90:U:O2'	5:4:91:C:OP1	2.20	0.51
19:G:291:ASN:HA	19:G:296:GLN:HE21	1.75	0.51
1:1:269:G:H5'	37:P:120:TRP:CE3	2.45	0.51
39:Q:14:HIS:CD2	39:Q:19:LEU:HD13	2.44	0.51
1:1:3243:A:C4	39:Q:156:LEU:HD13	2.45	0.51
1:1:1720:U:P	45:T:110:ARG:HH22	2.34	0.51
48:W:22:PRO:HB2	48:W:28:PHE:HB3	1.92	0.51
6:Z:53:HIS:ND1	6:Z:54:TYR:O	2.38	0.51
1:1:659:G:C2	1:1:1432:C:N4	2.78	0.51
1:1:1915:A:H2'	1:1:1916:U:C6	2.46	0.51
1:1:2147:A:C5	1:1:2148:U:N3	2.78	0.51
1:1:3244:A:O2'	1:1:3245:A:OP1	2.27	0.51
1:1:3303:G:HO2'	1:1:3304:U:P	2.34	0.51
1:1:501:A:H2'	1:1:502:U:C6	2.46	0.51
1:1:745:C:H2'	1:1:746:A:H8	1.75	0.51
3:3:36:C:H2'	3:3:37:G:C8	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:H:53:VAL:HG11	21:H:159:VAL:HG13	1.93	0.51
21:H:285:ARG:O	21:H:289:LYS:HB2	2.09	0.51
29:L:20:ILE:HB	35:O:7:VAL:HG22	1.92	0.51
31:M:166:LYS:HE2	31:M:167:TYR:HE2	1.76	0.51
1:1:1471:U:H5''	45:T:5:ARG:HD3	1.93	0.51
1:1:1188:U:OP1	1:1:1210:U:O2'	2.26	0.51
1:1:1341:U:H2'	1:1:1342:C:H6	1.75	0.51
1:1:1556:C:O2'	1:1:1557:A:OP1	2.27	0.51
1:1:2370:G:N2	1:1:2378:C:O2	2.44	0.51
1:1:2816:G:O6	1:1:2869:U:N3	2.44	0.51
1:1:645:A:N6	1:1:649:A:C5	2.79	0.51
13:D:88:GLU:O	13:D:92:ALA:N	2.43	0.51
33:N:27:ASP:OD1	33:N:28:GLN:N	2.39	0.51
45:T:130:ASN:C	45:T:132:PHE:H	2.13	0.51
1:1:1235:U:O2	1:1:1263:A:N7	2.43	0.51
1:1:1908:A:N7	1:1:1909:A:C5	2.79	0.51
1:1:2498:U:C4	1:1:2499:U:C4	2.99	0.51
1:1:3175:U:HO2'	1:1:3176:G:P	2.33	0.51
1:1:330:G:H3'	1:1:330:G:OP2	2.10	0.51
1:1:576:C:P	25:J:241:LYS:NZ	2.84	0.51
1:1:617:G:P	23:I:108:LYS:HZ1	2.32	0.51
1:1:619:A:H5''	1:1:620:U:OP1	2.09	0.51
5:4:105:A:O2'	5:4:106:C:O5'	2.26	0.51
21:H:208:MET:HG2	21:H:223:PHE:CE2	2.46	0.51
27:K:69:LEU:HD21	37:P:24:ARG:HD2	1.93	0.51
1:1:1018:G:H2'	1:1:1019:G:C8	2.44	0.51
1:1:1023:C:H2'	1:1:1024:G:H8	1.75	0.51
1:1:1064:A:H4'	1:1:1065:A:O5'	2.10	0.51
1:1:1117:G:C6	1:1:1142:G:N2	2.79	0.51
1:1:13:A:H5'	1:1:14:U:OP2	2.09	0.51
1:1:1462:A:H2'	1:1:1463:U:C6	2.46	0.51
1:1:1557:A:O2'	1:1:1558:A:OP1	2.25	0.51
1:1:544:C:O2'	1:1:547:G:N2	2.35	0.51
3:3:80:G:H2'	3:3:81:U:C6	2.46	0.51
9:B:62:C:H2'	9:B:63:C:H6	1.75	0.51
17:F:62:ARG:H	17:F:68:HIS:HD1	1.59	0.51
25:J:85:PHE:HB2	25:J:139:PRO:HG3	1.92	0.51
25:J:43:ILE:HA	25:J:46:GLU:OE2	2.11	0.51
27:K:160:ILE:O	27:K:164:VAL:HG13	2.10	0.51
1:1:122:A:C2	1:1:149:U:C2	2.98	0.51
1:1:1900:A:O2'	1:1:1902:G:N7	2.44	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2512:C:H5''	27:K:249:ARG:HH22	1.75	0.51
1:1:3258:U:O2'	1:1:3259:U:O5'	2.28	0.51
1:1:895:A:C6	1:1:897:U:C4	2.99	0.51
1:1:952:A:H4'	1:1:968:G:N2	2.25	0.51
15:E:40:TYR:HA	15:E:90:ALA:O	2.11	0.51
17:F:59:ASP:OD1	17:F:357:LYS:HE3	2.11	0.51
1:1:1079:A:H5'	21:H:142:PHE:HA	1.93	0.51
41:R:30:ARG:HH21	41:R:62:ARG:HH12	1.57	0.51
41:R:37:ASN:OD1	41:R:38:GLY:N	2.44	0.51
1:1:1023:C:H2'	1:1:1024:G:C8	2.46	0.51
1:1:1055:A:H2'	1:1:1056:U:O4'	2.10	0.51
1:1:211:A:H4'	1:1:212:G:OP2	2.11	0.51
1:1:2676:A:O2'	1:1:2677:G:O5'	2.23	0.51
1:1:3056:U:H4'	1:1:3057:U:OP1	2.11	0.51
1:1:3081:C:H2'	1:1:3082:C:H6	1.76	0.51
1:1:3278:C:OP2	1:1:3278:C:C2	2.63	0.51
1:1:519:A:O2'	1:1:520:U:OP1	2.29	0.51
1:1:66:A:N6	1:1:68:C:C2	2.79	0.51
1:1:763:G:C6	1:1:769:G:N2	2.79	0.51
5:4:128:U:H5''	5:4:129:C:OP2	2.11	0.51
17:F:143:GLY:O	17:F:147:GLU:HG2	2.11	0.51
17:F:161:LEU:HA	17:F:179:ALA:O	2.11	0.51
17:F:44:THR:O	17:F:340:LYS:HG2	2.11	0.51
31:M:23:VAL:HG12	31:M:25:GLU:H	1.76	0.51
1:1:1220:U:H5''	1:1:1286:A:N6	2.25	0.50
1:1:1307:G:O4'	39:Q:60:LYS:NZ	2.44	0.50
1:1:1479:U:OP2	1:1:1480:G:N7	2.43	0.50
1:1:149:U:OP1	37:P:49:ARG:NH1	2.44	0.50
1:1:150:A:H3'	1:1:151:A:H8	1.76	0.50
1:1:1663:C:H2'	1:1:1664:G:H8	1.75	0.50
1:1:1678:G:H2'	1:1:1679:A:H8	1.76	0.50
1:1:2531:C:H3'	1:1:2532:U:H6	1.75	0.50
1:1:397:A:H1'	1:1:399:A:C8	2.46	0.50
1:1:360:G:H21	1:1:815:G:H1'	1.76	0.50
1:1:890:C:H2'	1:1:891:G:H8	1.76	0.50
1:1:996:A:C4	1:1:1054:A:N6	2.79	0.50
3:3:71:G:H2'	3:3:72:A:C8	2.45	0.50
5:4:33:A:H4'	5:4:34:U:OP1	2.10	0.50
5:4:48:A:H2'	5:4:51:G:H22	1.75	0.50
5:4:89:A:C6	5:4:91:C:N4	2.79	0.50
21:H:215:ASP:OD2	21:H:217:GLU:HG2	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:I:92:SER:HB3	23:I:148:GLU:OE2	2.10	0.50
29:L:190:ASP:OD1	29:L:191:LEU:N	2.41	0.50
35:O:14:LEU:N	35:O:19:ARG:HH11	2.09	0.50
43:S:150:VAL:HA	43:S:153:PHE:CD2	2.46	0.50
46:U:24:LEU:O	46:U:25:PHE:CG	2.64	0.50
1:1:107:A:H2'	1:1:108:A:O4'	2.11	0.50
1:1:1184:A:H5''	35:O:59:ASN:ND2	2.26	0.50
1:1:1211:U:H2'	1:1:1212:A:H8	1.75	0.50
1:1:1752:A:OP2	1:1:1753:G:OP2	2.30	0.50
1:1:2538:U:O2'	1:1:2539:C:OP1	2.26	0.50
1:1:2574:G:C2	1:1:2575:G:C5	2.99	0.50
1:1:2615:G:H2'	1:1:2616:C:C6	2.46	0.50
1:1:300:G:C2	1:1:301:G:C8	2.99	0.50
1:1:786:A:O2'	1:1:787:G:C8	2.64	0.50
1:1:860:G:H5'	1:1:861:C:C5'	2.41	0.50
9:B:26:A:H61	9:B:44:G:H1	1.57	0.50
25:J:127:LEU:O	25:J:131:GLU:HG3	2.11	0.50
19:G:281:ILE:HG13	43:S:125:ASP:OD2	2.11	0.50
1:1:1491:A:H2'	1:1:1492:G:O4'	2.12	0.50
1:1:1602:A:C6	1:1:1603:A:N1	2.79	0.50
1:1:1744:G:H2'	1:1:1745:C:C6	2.46	0.50
1:1:2178:A:OP1	15:E:132:ASN:ND2	2.44	0.50
1:1:240:U:O2'	1:1:241:G:O5'	2.25	0.50
1:1:2557:A:O2'	1:1:2558:U:OP1	2.28	0.50
1:1:2687:G:P	21:H:8:LYS:NZ	2.84	0.50
1:1:2794:G:O2'	1:1:2795:U:O5'	2.29	0.50
1:1:911:C:N4	15:E:3:ARG:HD3	2.26	0.50
9:B:63:C:H2'	9:B:64:G:C8	2.47	0.50
27:K:205:ALA:HA	27:K:208:GLU:HB2	1.93	0.50
31:M:92:ARG:NH2	31:M:94:ARG:NH1	2.59	0.50
1:1:3277:U:O4	41:R:175:ARG:NH1	2.44	0.50
46:U:94:ILE:HD11	46:U:106:LEU:HD12	1.94	0.50
1:1:1396:C:H2'	1:1:1397:C:C6	2.46	0.50
1:1:1494:U:OP2	33:N:42:ARG:NH2	69.61	0.50
1:1:155:G:HO2'	1:1:156:G:P	2.32	0.50
1:1:2142:A:H4'	1:1:2143:A:O5'	2.11	0.50
1:1:2210:G:N2	1:1:2236:G:H1'	2.26	0.50
1:1:2345:A:H2'	1:1:2346:C:C6	2.46	0.50
1:1:2366:C:H2'	1:1:2367:A:C8	2.46	0.50
1:1:2677:G:C2	1:1:2679:A:H2	2.29	0.50
1:1:3270:U:H4'	1:1:3271:G:OP2	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3303:G:H2'	1:1:3305:A:N7	2.27	0.50
1:1:597:G:H2'	1:1:598:A:H8	1.76	0.50
1:1:600:G:HO2'	1:1:602:A:H62	1.54	0.50
1:1:810:A:H2'	1:1:811:U:C6	2.47	0.50
1:1:841:A:H5''	1:1:842:G:OP2	2.12	0.50
1:1:877:C:H2'	1:1:878:G:O4'	2.11	0.50
1:1:963:G:OP2	1:1:963:G:H8	1.94	0.50
3:3:60:G:H2'	3:3:61:G:C8	2.46	0.50
3:3:80:G:H2'	3:3:81:U:H6	1.76	0.50
5:4:89:A:H5''	5:4:90:U:OP2	2.10	0.50
7:A:15:G:H4'	7:A:16:U:OP2	2.11	0.50
17:F:216:ASP:OD1	17:F:278:ILE:HA	2.11	0.50
19:G:159:ILE:HG21	19:G:165:ALA:HB2	1.94	0.50
21:H:178:ASN:HA	21:H:183:TRP:CD2	2.45	0.50
25:J:149:TYR:OH	25:J:182:ASP:OD1	2.28	0.50
1:1:148:G:O6	27:K:137:ASN:HB2	2.11	0.50
33:N:78:ALA:O	33:N:82:ALA:CB	2.60	0.50
35:O:14:LEU:N	35:O:19:ARG:NH1	2.55	0.50
46:U:138:GLN:O	46:U:142:GLN:N	2.44	0.50
1:1:1068:C:H2'	1:1:1069:C:H6	1.75	0.50
1:1:158:G:N3	1:1:159:A:C8	2.79	0.50
1:1:1864:A:N7	1:1:1865:A:C5	2.80	0.50
1:1:2703:A:C5	21:H:23:ARG:NH1	2.80	0.50
1:1:2941:A:O2'	1:1:2942:C:OP2	2.25	0.50
1:1:3337:G:H2'	1:1:3338:C:H6	1.75	0.50
1:1:433:A:H2'	1:1:434:U:H6	1.77	0.50
1:1:617:G:P	23:I:108:LYS:NZ	2.84	0.50
1:1:861:C:OP2	1:1:862:U:OP2	2.29	0.50
5:4:28:C:H2'	5:4:29:U:C6	2.47	0.50
27:K:239:GLY:O	27:K:243:GLN:N	2.40	0.50
1:1:1455:U:O2	1:1:3078:U:H1'	2.11	0.50
1:1:1496:C:OP2	1:1:1497:C:OP2	2.30	0.50
1:1:1523:U:O2'	1:1:1524:A:OP1	2.27	0.50
1:1:1700:G:H2'	1:1:1701:C:C6	2.46	0.50
1:1:173:G:H2'	1:1:174:C:C6	2.47	0.50
1:1:193:C:H2'	1:1:194:U:C6	2.47	0.50
1:1:2501:U:O2'	1:1:2502:A:OP1	2.24	0.50
1:1:962:A:H1'	1:1:2817:A:C6	2.47	0.50
1:1:3193:C:H2'	1:1:3194:C:C6	2.45	0.50
1:1:668:G:H2'	1:1:669:U:H6	1.76	0.50
1:1:67:A:N6	1:1:271:C:O2'	2.45	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:997:A:H2'	1:1:998:A:H8	1.76	0.50
17:F:215:ILE:HG12	17:F:282:ILE:HG13	1.94	0.50
47:V:18:ASP:CB	47:V:21:LYS:HB2	2.39	0.50
1:1:1341:U:H2'	1:1:1342:C:C6	2.47	0.50
1:1:1761:C:H6	1:1:1761:C:OP2	1.93	0.50
1:1:2628:A:H5'	1:1:2629:U:OP2	2.11	0.50
1:1:267:G:H4'	1:1:268:A:OP1	2.10	0.50
1:1:2726:C:O2'	1:1:2727:A:H3'	2.11	0.50
1:1:3091:A:N7	1:1:3094:A:C5	2.80	0.50
1:1:3243:A:H5''	1:1:3244:A:OP2	2.11	0.50
1:1:338:A:O2'	1:1:339:C:OP1	2.22	0.50
1:1:341:G:C6	19:G:194:TYR:HE1	2.29	0.50
1:1:860:G:H5'	1:1:861:C:H5''	1.93	0.50
3:3:22:A:C4	21:H:272:TYR:CZ	3.00	0.50
5:4:2:A:N6	5:4:3:A:N1	2.60	0.50
9:B:3:A:H2'	9:B:4:G:C8	2.46	0.50
17:F:81:THR:OG1	17:F:322:ILE:HG12	2.12	0.50
1:1:517:G:OP1	25:J:67:ARG:NH2	2.43	0.50
1:1:975:C:OP2	43:S:15:HIS:HA	2.12	0.50
2:X:104:ASN:OD1	2:X:107:GLY:N	2.45	0.50
1:1:1333:C:C2	1:1:1334:U:C5	2.99	0.50
1:1:1741:A:H2'	1:1:1742:U:O4'	2.11	0.50
1:1:2754:G:HO2'	1:1:2755:C:P	2.33	0.50
5:4:14:C:H5''	5:4:15:G:OP2	2.12	0.50
9:B:2:G:H5''	9:B:3:A:OP2	2.11	0.50
13:D:33:GLN:HG3	13:D:49:ARG:HD3	1.92	0.50
15:E:117:GLU:OE1	15:E:120:PRO:HA	2.12	0.50
1:1:1079:A:H1'	21:H:113:LEU:HD23	1.94	0.50
25:J:98:LYS:HB3	25:J:99:PRO:HD3	1.94	0.50
27:K:160:ILE:HG22	27:K:164:VAL:HG13	1.93	0.50
31:M:157:GLU:O	31:M:161:SER:CB	2.60	0.50
35:O:91:CYS:O	35:O:94:TRP:N	2.44	0.50
39:Q:75:ALA:HA	39:Q:147:TRP:CD1	2.47	0.50
2:X:87:ARG:NE	2:X:121:GLU:OE2	2.42	0.50
1:1:119:U:H4'	1:1:120:G:O5'	2.12	0.50
1:1:1520:G:H21	1:1:1603:A:H2	1.58	0.50
1:1:1539:A:N7	1:1:1583:A:N6	2.59	0.50
1:1:1574:C:H2'	1:1:1575:A:C8	2.45	0.50
1:1:1716:U:O2'	1:1:1717:U:OP1	2.28	0.50
1:1:1793:C:N4	15:E:179:LEU:HB2	2.27	0.50
1:1:2540:A:O2'	1:1:2541:U:H5''	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3160:U:H2'	1:1:3161:C:C6	2.47	0.50
1:1:860:G:O6	15:E:182:ALA:N	2.34	0.50
15:E:30:ARG:HG3	15:E:74:GLU:OE2	2.12	0.50
21:H:108:ARG:NH1	21:H:253:PHE:HD1	2.10	0.50
23:I:71:VAL:HG22	23:I:156:LYS:NZ	2.27	0.50
43:S:125:ASP:OD1	43:S:126:GLN:N	2.45	0.50
3:3:96:U:H1'	46:U:119:ARG:HD2	1.93	0.50
1:1:1085:A:H2'	1:1:1086:C:O4'	2.12	0.49
1:1:1373:A:H2'	1:1:1374:G:H8	1.77	0.49
1:1:2593:A:HO2'	1:1:2594:C:P	2.27	0.49
1:1:2656:A:C6	1:1:2658:G:C5	3.00	0.49
1:1:2924:U:OP2	1:1:2925:C:H5	1.95	0.49
1:1:2960:C:H2'	1:1:2961:G:C8	2.47	0.49
1:1:3038:U:H5''	1:1:3039:C:OP2	2.12	0.49
1:1:3188:G:H2'	1:1:3189:G:H8	1.75	0.49
1:1:2991:A:O2'	1:1:3309:G:N7	2.45	0.49
1:1:3344:A:N7	1:1:3362:A:N6	2.59	0.49
1:1:684:G:H2'	1:1:685:G:C8	2.43	0.49
7:A:61:C:H2'	7:A:62:C:C6	2.47	0.49
27:K:62:LYS:O	27:K:66:SER:CB	2.59	0.49
35:O:47:ASP:OD2	35:O:78:THR:HG23	2.12	0.49
35:O:32:LEU:HD11	35:O:94:TRP:CD1	2.47	0.49
39:Q:167:TYR:OH	39:Q:171:LYS:HD2	2.12	0.49
41:R:30:ARG:HH21	41:R:62:ARG:NH1	2.10	0.49
1:1:1222:G:N2	1:1:1285:G:H2'	2.27	0.49
1:1:1471:U:H2'	1:1:1472:U:H6	1.77	0.49
1:1:1852:G:H2'	1:1:1853:U:C6	2.46	0.49
1:1:2111:G:O2'	4:Y:44:LYS:HD2	2.11	0.49
1:1:212:G:N2	1:1:222:A:N3	2.59	0.49
1:1:2427:U:H2'	1:1:2428:U:C6	2.46	0.49
1:1:2452:G:C2	1:1:2494:A:N6	2.80	0.49
1:1:2939:G:H2'	1:1:2940:A:O4'	2.12	0.49
1:1:2993:G:C6	1:1:3142:A:C5	3.00	0.49
1:1:508:U:OP1	25:J:211:SER:OG	2.23	0.49
1:1:666:A:H5''	1:1:667:C:OP2	2.12	0.49
3:3:93:C:H2'	3:3:94:C:H6	1.77	0.49
13:D:73:THR:HG23	13:D:76:ALA:H	1.76	0.49
15:E:137:ILE:HD11	15:E:155:LYS:HD3	1.93	0.49
19:G:234:ASN:HD21	19:G:236:LEU:HD12	1.76	0.49
19:G:35:VAL:HG21	19:G:244:LEU:HD21	1.94	0.49
1:1:1427:U:C5'	19:G:44:LYS:HZ1	2.25	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:N:127:PRO:HD2	33:N:132:ALA:HB2	1.93	0.49
33:N:48:PRO:CA	33:N:137:GLN:HB3	2.42	0.49
1:1:1097:G:H1'	47:V:128:LEU:HD11	1.93	0.49
1:1:2155:G:H2'	1:1:2156:C:H6	1.75	0.49
1:1:2677:G:O6	1:1:2680:A:C5	2.65	0.49
1:1:3314:A:H2'	1:1:3315:G:C8	2.47	0.49
1:1:690:A:C8	1:1:690:A:OP2	2.65	0.49
1:1:839:C:H2'	1:1:840:C:H6	1.78	0.49
3:3:49:G:N7	21:H:58:LYS:HG3	2.27	0.49
5:4:104:A:OP2	5:4:105:A:H3'	2.12	0.49
17:F:256:HIS:HA	17:F:257:PRO:C	2.32	0.49
21:H:119:TYR:CE1	21:H:135:VAL:HG23	2.46	0.49
27:K:107:GLU:O	27:K:110:THR:OG1	2.15	0.49
43:S:178:ARG:O	43:S:185:LYS:HG3	2.12	0.49
1:1:1194:G:O5'	1:1:1194:G:H8	1.95	0.49
1:1:1220:U:H1'	1:1:1222:G:N2	2.27	0.49
1:1:1392:G:C2	1:1:1417:G:C6	3.00	0.49
1:1:2372:A:H4'	1:1:2373:A:OP2	2.12	0.49
1:1:2613:U:O2'	1:1:2805:G:OP2	2.11	0.49
1:1:2824:G:H2'	1:1:2825:C:C6	2.46	0.49
1:1:2819:A:H5''	1:1:2866:U:C5	2.48	0.49
1:1:3133:C:H2'	1:1:3134:A:O4'	2.13	0.49
1:1:3203:U:H2'	1:1:3204:C:C6	2.48	0.49
1:1:3270:U:O2'	1:1:3271:G:OP1	2.29	0.49
1:1:3371:G:C5	1:1:3372:A:N7	2.80	0.49
1:1:848:A:H5''	1:1:849:C:OP2	2.12	0.49
5:4:40:A:H2'	5:4:41:A:C8	2.48	0.49
17:F:255:TRP:CD1	17:F:256:HIS:CE1	3.01	0.49
35:O:60:LEU:HA	35:O:63:VAL:HG12	1.93	0.49
1:1:1363:A:H5''	1:1:1364:C:OP2	2.12	0.49
1:1:1507:G:H8	41:R:129:THR:HG22	1.76	0.49
1:1:1647:A:C6	1:1:1809:A:C8	3.00	0.49
1:1:1811:G:H2'	1:1:1812:G:H8	1.74	0.49
1:1:1874:A:H62	45:T:20:ARG:HH12	1.57	0.49
1:1:1899:G:N3	1:1:2334:U:H5	2.11	0.49
1:1:2744:U:H2'	1:1:2745:G:C8	2.48	0.49
1:1:330:G:H2'	1:1:331:G:C8	2.47	0.49
1:1:589:A:H62	1:1:610:G:C2'	2.26	0.49
9:B:37:A:H3'	9:B:38:C:H6	1.76	0.49
17:F:76:VAL:HG12	17:F:325:LYS:HA	1.95	0.49
19:G:131:VAL:HB	19:G:134:LEU:HD12	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:H:254:LYS:HZ3	21:H:256:THR:HG22	1.77	0.49
1:1:3268:A:H2	23:I:138:GLN:HG2	1.76	0.49
27:K:90:THR:HG21	27:K:152:LEU:HD11	1.95	0.49
31:M:133:ARG:NH1	31:M:154:THR:HA	2.28	0.49
33:N:76:THR:HA	33:N:98:ASP:O	2.12	0.49
37:P:63:ARG:NH2	37:P:131:GLU:OE2	2.43	0.49
37:P:117:ASN:H	37:P:133:ILE:CG2	2.25	0.49
1:1:1817:G:H2'	1:1:1818:U:O4'	2.12	0.49
1:1:1489:A:C2	1:1:1854:C:C2	3.00	0.49
1:1:2105:G:H2'	1:1:2106:A:C8	2.46	0.49
1:1:2175:U:H5''	1:1:2176:U:OP2	2.13	0.49
1:1:2439:A:H2'	1:1:2440:G:H8	1.73	0.49
1:1:2587:U:H2'	1:1:2588:U:C6	2.47	0.49
1:1:3127:A:H2'	1:1:3128:G:O4'	2.12	0.49
1:1:3167:A:H8	1:1:3167:A:OP2	1.96	0.49
1:1:3197:G:C6	1:1:3199:G:C5	3.00	0.49
1:1:415:G:H2'	1:1:416:A:C8	2.47	0.49
1:1:983:A:O2'	1:1:984:G:OP1	2.27	0.49
15:E:142:ASP:O	15:E:143:GLU:HG2	2.12	0.49
23:I:72:ASN:OD1	23:I:73:GLY:N	2.45	0.49
27:K:68:ARG:HD3	27:K:237:ILE:O	2.12	0.49
37:P:45:PRO:O	37:P:49:ARG:CB	2.60	0.49
41:R:60:PHE:HE2	41:R:82:ARG:HB3	1.78	0.49
45:T:106:LEU:HB3	45:T:120:TYR:HE1	1.77	0.49
1:1:1096:U:O2'	1:1:1097:G:O5'	2.23	0.49
1:1:1842:A:H4'	1:1:1843:C:OP2	2.08	0.49
1:1:2684:C:H2'	1:1:2685:C:H6	1.77	0.49
1:1:2725:U:O2'	1:1:2726:C:OP1	2.25	0.49
1:1:589:A:N7	1:1:610:G:C4	2.81	0.49
1:1:409:A:HO2'	1:1:654:C:HO2'	1.54	0.49
1:1:72:C:H1'	33:N:62:THR:HA	1.95	0.49
3:3:54:U:H4'	3:3:55:A:C8	2.47	0.49
9:B:14:A:C5	9:B:22:G:C6	3.00	0.49
15:E:204:MET:SD	15:E:209:HIS:HB2	2.53	0.49
17:F:130:PHE:O	17:F:134:SER:N	2.46	0.49
29:L:9:GLN:HG2	29:L:54:LYS:HG2	1.95	0.49
1:1:1864:A:OP1	45:T:82:LYS:N	2.42	0.49
46:U:38:LYS:O	46:U:41:TYR:HB3	2.13	0.49
1:1:1303:A:O2'	1:1:1304:A:O5'	2.30	0.49
1:1:2660:G:H2'	1:1:2661:G:H8	1.78	0.49
1:1:2965:U:O2'	15:E:221:LYS:NZ	2.32	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3113:A:O3'	29:L:69:ARG:HG2	2.12	0.49
1:1:3141:A:N6	1:1:3144:G:N3	2.61	0.49
1:1:538:G:H2'	1:1:539:C:H6	1.78	0.49
1:1:760:G:C2	1:1:770:G:C5	3.01	0.49
1:1:911:C:H41	15:E:3:ARG:HD3	1.77	0.49
3:3:92:A:C5	3:3:93:C:H1'	2.48	0.49
19:G:339:LEU:HA	19:G:342:LYS:HB2	1.95	0.49
25:J:234:GLU:O	25:J:237:ASN:ND2	2.39	0.49
39:Q:49:ARG:O	39:Q:53:LYS:N	2.42	0.49
2:X:12:ARG:HH22	2:X:15:LEU:HD11	1.78	0.49
1:1:1105:A:H2'	1:1:1106:G:C8	2.48	0.49
1:1:150:A:C4	1:1:151:A:C8	3.01	0.49
1:1:1582:C:H4'	1:1:1583:A:H5'	1.94	0.49
1:1:1862:U:H2'	1:1:1863:G:O4'	2.12	0.49
1:1:2355:G:HO2'	1:1:2356:A:P	2.36	0.49
1:1:155:G:C2	1:1:265:A:OP2	2.66	0.49
1:1:3188:G:H2'	1:1:3189:G:C8	2.47	0.49
1:1:345:G:N1	1:1:349:A:OP2	2.43	0.49
1:1:385:A:H2'	1:1:386:A:C8	2.48	0.49
1:1:426:G:H2'	1:1:427:C:C6	2.48	0.49
1:1:600:G:N3	1:1:602:A:OP2	2.46	0.49
1:1:700:C:H2'	1:1:701:G:H8	1.76	0.49
1:1:88:A:C2	1:1:99:A:C6	3.01	0.49
5:4:53:A:H2'	5:4:54:A:H8	1.77	0.49
9:B:18:G:C8	9:B:18:G:OP2	2.65	0.49
17:F:10:ARG:NH1	17:F:14:LEU:HG	2.28	0.49
17:F:16:PHE:O	17:F:17:LEU:HD12	2.13	0.49
1:1:578:A:H2'	19:G:334:PHE:HD2	1.78	0.49
33:N:42:ARG:O	33:N:46:ILE:HG12	2.12	0.49
45:T:102:LEU:HD22	45:T:138:LEU:HD13	1.95	0.49
1:1:1287:A:H2'	1:1:1288:U:C6	2.47	0.49
1:1:2221:G:H21	1:1:2223:A:H8	1.59	0.49
1:1:2279:A:C2	1:1:2283:G:N1	2.81	0.49
1:1:231:G:H2'	1:1:232:G:O4'	2.12	0.49
1:1:241:G:H2'	1:1:242:C:C6	2.47	0.49
1:1:2569:A:H4'	1:1:2573:G:H22	1.78	0.49
1:1:3380:U:H2'	1:1:3381:U:C6	2.48	0.49
1:1:350:C:N4	1:1:367:A:N7	2.61	0.49
1:1:740:G:H2'	1:1:741:U:C6	2.48	0.49
3:3:55:A:H5'	31:M:6:GLN:NE2	2.28	0.49
3:3:89:G:N2	3:3:91:G:H3'	2.28	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:B:29:U:C2	9:B:30:G:N7	2.81	0.49
9:B:7:G:H2'	9:B:49:G:C8	2.48	0.49
17:F:114:VAL:HG11	17:F:163:HIS:CD2	2.48	0.49
21:H:224:LYS:O	21:H:228:ALA:CB	2.61	0.49
37:P:121:VAL:HG22	37:P:129:TYR:O	2.12	0.49
1:1:1189:C:C5	39:Q:133:ARG:NH1	2.81	0.49
1:1:1095:U:H4'	1:1:1096:U:OP1	2.13	0.48
1:1:1269:U:N1	1:1:1271:A:OP2	2.46	0.48
1:1:2631:U:OP1	1:1:2757:U:O2'	2.29	0.48
1:1:2691:A:N6	1:1:2702:A:H62	2.11	0.48
1:1:2737:C:C2	1:1:2738:A:C8	3.01	0.48
1:1:285:A:H5''	1:1:286:U:OP2	2.13	0.48
1:1:2908:G:C2	1:1:2909:U:C4	3.01	0.48
1:1:503:C:C2	1:1:504:A:C8	3.01	0.48
1:1:506:U:H2'	1:1:507:U:O4'	2.13	0.48
1:1:89:A:H2'	1:1:90:C:H6	1.77	0.48
17:F:68:HIS:CD2	17:F:69:LYS:NZ	2.80	0.48
19:G:39:PHE:CD2	19:G:242:ALA:HB2	2.48	0.48
25:J:202:LEU:HD13	25:J:205:PHE:HZ	1.77	0.48
31:M:87:LYS:HD3	31:M:106:ILE:HG22	1.94	0.48
35:O:50:LYS:HD3	35:O:85:TRP:CD1	2.48	0.48
35:O:50:LYS:HD3	35:O:85:TRP:NE1	2.28	0.48
1:1:80:G:P	37:P:193:ARG:NH1	2.86	0.48
45:T:172:ARG:O	45:T:176:ARG:N	2.42	0.48
2:X:87:ARG:HB2	2:X:89:ASP:OD1	2.12	0.48
1:1:1318:A:H4'	1:1:1319:G:OP2	2.13	0.48
1:1:1750:A:O2'	1:1:1751:G:O5'	2.24	0.48
1:1:1781:C:H2'	1:1:1782:U:C6	2.48	0.48
1:1:1893:A:H2'	1:1:1894:U:H6	1.78	0.48
1:1:2154:U:C2	1:1:2155:G:N7	2.81	0.48
1:1:2434:U:H4'	1:1:2435:G:O5'	2.13	0.48
1:1:2445:A:O2'	1:1:2446:U:O5'	2.24	0.48
1:1:3196:U:H1'	1:1:3197:G:C6	2.47	0.48
1:1:548:G:H2'	1:1:549:U:O4'	2.13	0.48
1:1:92:G:C6	1:1:94:G:N2	2.81	0.48
1:1:944:C:HO2'	1:1:1407:A:HO2'	1.61	0.48
17:F:286:GLY:HA3	17:F:321:PHE:CE2	2.48	0.48
17:F:80:ASP:OD2	17:F:314:TYR:OH	2.25	0.48
29:L:161:LEU:O	29:L:164:ILE:HG22	2.13	0.48
29:L:45:PHE:CD1	29:L:55:VAL:HG12	2.48	0.48
39:Q:113:ASP:O	39:Q:117:ARG:NH1	2.46	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:R:24:VAL:HG11	41:R:29:THR:HG23	1.95	0.48
1:1:1311:G:H2'	1:1:1312:C:C6	2.48	0.48
1:1:1532:C:O2'	1:1:1799:A:N3	2.41	0.48
1:1:2398:A:H5''	1:1:2399:A:OP2	2.12	0.48
1:1:2576:G:H2'	1:1:2577:C:C6	2.48	0.48
1:1:2877:G:N1	1:1:2951:G:O6	2.46	0.48
1:1:2886:U:O2'	1:1:2887:A:H3'	2.13	0.48
1:1:2884:C:H1'	1:1:2939:G:H22	1.77	0.48
1:1:1226:G:H5'	1:1:3117:C:H1'	1.95	0.48
1:1:3247:G:H2'	1:1:3248:C:H6	1.78	0.48
1:1:3256:G:H2'	1:1:3257:C:H6	1.78	0.48
1:1:794:U:H2'	1:1:795:G:C8	2.47	0.48
1:1:862:U:H2'	1:1:863:C:C6	2.49	0.48
1:1:934:G:H5''	1:1:935:U:OP2	2.13	0.48
1:1:975:C:H2'	1:1:976:U:C6	2.49	0.48
17:F:303:LYS:HD2	17:F:361:THR:HG21	1.95	0.48
21:H:244:HIS:HA	21:H:247:ILE:HD12	1.95	0.48
21:H:276:LYS:O	21:H:277:LEU:HB2	2.13	0.48
27:K:78:PHE:C	27:K:80:TYR:H	2.16	0.48
39:Q:143:THR:OG1	39:Q:150:GLU:OE1	2.13	0.48
1:1:1429:G:O2'	1:1:1430:U:OP1	2.29	0.48
1:1:149:U:H5'	37:P:54:LYS:HE3	1.95	0.48
1:1:1900:A:O2'	1:1:1901:A:P	2.72	0.48
1:1:2383:C:N4	1:1:2384:A:N1	2.61	0.48
1:1:247:C:H2'	1:1:248:U:C6	2.49	0.48
1:1:2635:A:H5''	1:1:2636:A:OP1	2.13	0.48
1:1:2999:U:H2'	1:1:3000:A:C8	2.48	0.48
1:1:3016:A:H2'	1:1:3017:A:C8	2.48	0.48
1:1:3045:G:H2'	1:1:3046:A:H8	1.78	0.48
1:1:3371:G:H2'	1:1:3372:A:H8	1.79	0.48
1:1:35:A:H2'	1:1:36:C:H6	1.79	0.48
1:1:614:C:H2'	1:1:615:U:C6	2.49	0.48
1:1:631:U:H2'	1:1:632:G:C8	2.43	0.48
1:1:690:A:H5''	1:1:691:A:OP1	2.11	0.48
7:A:61:C:C4	7:A:62:C:N4	2.82	0.48
21:H:80:SER:HB2	21:H:92:LEU:HD13	1.95	0.48
45:T:100:ARG:O	45:T:104:ARG:NE	2.47	0.48
1:1:2101:C:OP2	45:T:71:ARG:NH1	2.46	0.48
25:J:121:LYS:HB2	47:V:133:ALA:HB3	1.94	0.48
6:Z:132:ALA:O	6:Z:135:ILE:HG22	2.14	0.48
1:1:1281:G:C2	1:1:1282:G:N7	2.81	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1443:G:H2'	1:1:1444:G:H8	1.79	0.48
1:1:1569:U:H3'	1:1:1570:U:H5'	1.96	0.48
1:1:1720:U:OP1	45:T:110:ARG:NH1	2.38	0.48
1:1:2251:G:C4	1:1:2252:A:C8	3.01	0.48
1:1:2368:A:N6	1:1:2369:G:O6	2.46	0.48
1:1:3017:A:H2'	1:1:3018:C:H6	1.77	0.48
1:1:68:C:N4	1:1:314:U:O2'	2.45	0.48
1:1:46:U:C5	1:1:47:C:C4	3.01	0.48
1:1:503:C:H2'	1:1:504:A:C8	2.48	0.48
1:1:715:A:O2'	1:1:716:A:OP1	2.30	0.48
1:1:804:C:OP1	19:G:98:ARG:NH2	2.45	0.48
1:1:87:U:OP2	33:N:11:LYS:NZ	2.35	0.48
21:H:196:ARG:HD2	21:H:199:ILE:HD12	1.96	0.48
31:M:157:GLU:O	31:M:161:SER:HB3	2.14	0.48
1:1:31:C:H4'	37:P:96:ARG:HG3	1.96	0.48
41:R:31:GLU:CD	41:R:60:PHE:HA	2.34	0.48
1:1:3208:G:C8	46:U:166:LYS:NZ	2.81	0.48
2:X:22:ILE:HG23	2:X:34:LEU:O	2.14	0.48
1:1:1095:U:H4'	1:1:1096:U:H5''	1.96	0.48
1:1:1248:C:OP1	1:1:1249:G:H8	1.96	0.48
1:1:1326:A:H2'	1:1:1327:C:O4'	2.12	0.48
1:1:1418:A:O2'	1:1:1419:A:OP1	2.25	0.48
1:1:1421:G:C2	1:1:1422:G:N7	2.81	0.48
1:1:1861:G:H2'	1:1:1862:U:H6	1.78	0.48
1:1:187:A:N7	1:1:188:U:C4	2.81	0.48
1:1:2270:A:H2'	1:1:2271:A:O4'	2.13	0.48
1:1:2287:C:O4'	1:1:2298:U:H1'	2.14	0.48
1:1:2402:A:O2'	1:1:2403:G:O5'	2.32	0.48
1:1:3020:U:N3	1:1:3021:A:N7	2.61	0.48
1:1:27:C:HO2'	1:1:327:A:HO2'	1.50	0.48
1:1:3303:G:H4'	1:1:3304:U:OP1	2.13	0.48
1:1:657:A:H2'	1:1:658:G:H8	1.79	0.48
1:1:2148:U:O2'	15:E:182:ALA:HB2	2.14	0.48
17:F:380:MET:SD	17:F:383:LEU:HD21	2.54	0.48
19:G:101:ALA:O	19:G:103:THR:N	2.47	0.48
25:J:159:GLN:O	25:J:161:VAL:HG23	2.14	0.48
25:J:24:GLU:HG3	25:J:28:ALA:HB3	1.96	0.48
33:N:42:ARG:HE	33:N:46:ILE:HD11	1.78	0.48
37:P:192:LYS:O	37:P:196:THR:OG1	2.18	0.48
41:R:56:ARG:HH11	41:R:76:PHE:HZ	1.59	0.48
48:W:93:ILE:HG21	48:W:105:LEU:HD23	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1053:A:O2'	1:1:1054:A:O5'	2.30	0.48
1:1:1463:U:C2	1:1:1467:A:N6	2.81	0.48
1:1:1485:G:H2'	1:1:1486:G:H8	1.78	0.48
1:1:1840:U:H4'	1:1:1841:A:O5'	2.14	0.48
1:1:210:U:O2'	1:1:211:A:OP1	2.32	0.48
1:1:2513:U:H4'	1:1:2514:U:OP1	2.13	0.48
1:1:2780:A:C4	1:1:2781:U:H5	2.31	0.48
1:1:366:A:OP1	19:G:95:ARG:NH2	2.36	0.48
1:1:594:U:H5''	1:1:595:G:OP2	2.13	0.48
5:4:140:G:H2'	5:4:141:C:C6	2.48	0.48
5:4:53:A:C4	5:4:54:A:C8	3.02	0.48
1:1:837:A:OP2	13:D:4:ARG:NH2	2.46	0.48
21:H:257:GLU:HG3	21:H:259:LYS:H	1.79	0.48
37:P:36:ILE:HG12	37:P:64:VAL:HG23	1.96	0.48
4:Y:47:ARG:O	4:Y:55:PHE:HD1	1.97	0.48
1:1:1831:U:OP1	6:Z:92:LYS:HG3	2.13	0.48
1:1:1602:A:H4'	45:T:10:LEU:HD21	1.96	0.48
1:1:2731:U:C2	1:1:2732:G:C8	3.02	0.48
1:1:2747:A:OP1	21:H:176:SER:OG	2.27	0.48
1:1:2799:A:H1'	11:C:42:ARG:NH1	24.50	0.48
1:1:2946:A:H2'	1:1:2982:A:H62	1.78	0.48
1:1:590:G:N1	1:1:611:A:H5'	2.29	0.48
1:1:692:A:C8	1:1:693:A:C8	3.01	0.48
1:1:849:C:H2'	1:1:850:U:H6	1.78	0.48
1:1:920:A:H5''	1:1:921:A:OP1	2.13	0.48
3:3:22:A:H2'	3:3:23:A:C8	2.49	0.48
1:1:2183:A:O2'	15:E:236:GLY:O	2.27	0.48
15:E:8:GLN:HE21	15:E:232:GLY:CA	2.26	0.48
29:L:163:GLN:HB3	29:L:166:ARG:HH11	1.79	0.48
1:1:3187:A:OP2	29:L:23:ARG:HG3	2.13	0.48
31:M:11:ASP:O	31:M:133:ARG:HG2	2.14	0.48
35:O:15:VAL:HG22	46:U:150:PHE:O	2.13	0.48
45:T:40:ALA:HA	45:T:43:LYS:NZ	2.28	0.48
1:1:1063:G:C6	1:1:1097:G:C5	3.01	0.48
1:1:953:G:O2'	1:1:1115:G:H4'	2.14	0.48
1:1:1153:A:H5''	1:1:1154:A:OP2	2.13	0.48
1:1:1477:A:H2'	1:1:1478:C:C6	2.49	0.48
1:1:1544:G:H21	1:1:2167:A:H2	1.61	0.48
1:1:1634:G:H2'	1:1:1635:G:C8	2.48	0.48
1:1:1686:U:H5''	48:W:42:LYS:HE3	1.96	0.48
1:1:1887:A:H5'	1:1:1888:U:OP2	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1949:G:H2'	1:1:1950:U:C6	2.49	0.48
1:1:2513:U:HO2'	1:1:2514:U:P	2.37	0.48
1:1:2730:G:C5	1:1:2731:U:C5	3.02	0.48
1:1:3012:A:H2'	1:1:3013:U:C6	2.48	0.48
1:1:3375:A:O2'	1:1:3376:A:O5'	2.30	0.48
1:1:559:A:N6	1:1:560:G:N3	2.61	0.48
1:1:612:U:H2'	1:1:613:G:C8	2.48	0.48
9:B:15:G:H3'	9:B:16:U:O4'	2.14	0.48
21:H:109:THR:HA	21:H:112:LYS:HG2	1.95	0.48
21:H:208:MET:HB3	21:H:219:PHE:HE1	1.79	0.48
19:G:329:PRO:HB3	25:J:41:ARG:NH2	2.28	0.48
25:J:83:LEU:HD21	25:J:116:PHE:HD1	1.79	0.48
35:O:44:VAL:O	35:O:57:ALA:HA	2.14	0.48
45:T:99:LEU:HD21	45:T:103:ARG:NE	2.17	0.48
1:1:1062:A:O2'	1:1:1098:A:OP1	2.28	0.48
1:1:1237:G:H1'	1:1:1263:A:N6	2.29	0.48
1:1:2094:C:H2'	1:1:2095:G:C8	2.49	0.48
1:1:2280:A:C6	1:1:2282:U:N3	2.82	0.48
1:1:2356:A:H2'	1:1:2357:A:H8	1.79	0.48
1:1:2972:G:P	1:1:2973:G:OP2	2.72	0.48
1:1:2981:U:O2'	1:1:2982:A:H5'	2.14	0.48
1:1:3052:G:C4	1:1:3053:G:C8	3.01	0.48
1:1:3160:U:H2'	1:1:3161:C:H6	1.79	0.48
1:1:3216:G:N2	1:1:3258:U:H5''	2.29	0.48
1:1:3277:U:O2'	21:H:64:ILE:HD12	135.41	0.48
1:1:3303:G:HO2'	1:1:3304:U:C5'	2.22	0.48
1:1:605:U:H5''	1:1:606:C:OP2	2.14	0.48
1:1:705:A:O2'	1:1:706:A:C8	2.67	0.48
1:1:974:G:H2'	1:1:975:C:C6	2.48	0.48
3:3:7:G:H2'	3:3:8:G:H8	1.78	0.48
5:4:49:G:C6	5:4:50:C:C4	3.02	0.48
9:B:22:G:H2'	9:B:23:A:H8	1.79	0.48
13:D:26:VAL:HG21	15:E:180:LEU:HD11	1.96	0.48
15:E:190:ARG:HG3	15:E:191:LEU:HD12	1.95	0.48
21:H:152:ARG:HG2	21:H:154:THR:HG23	1.96	0.48
33:N:46:ILE:HG23	33:N:49:ARG:NH1	2.28	0.48
46:U:77:VAL:HG12	46:U:79:VAL:HG23	1.95	0.48
6:Z:105:VAL:HG12	6:Z:126:LEU:HD22	1.96	0.48
1:1:1131:G:O2'	1:1:1132:C:OP1	2.30	0.47
1:1:1171:G:C4	1:1:1172:G:C8	3.02	0.47
1:1:1212:A:O3'	46:U:92:LYS:NZ	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1220:U:H1'	1:1:1222:G:C2	2.48	0.47
1:1:1221:A:H3'	1:1:1222:G:H5'	1.96	0.47
1:1:1235:U:H4'	1:1:1236:G:C5'	2.43	0.47
1:1:1275:C:H2'	1:1:1276:U:H6	1.79	0.47
1:1:1447:G:HO2'	1:1:1448:U:P	2.37	0.47
1:1:1718:G:OP2	45:T:121:HIS:HD2	1.97	0.47
1:1:1506:A:H1'	1:1:1848:G:O6	2.14	0.47
1:1:2365:C:O2'	39:Q:68:ARG:NH2	2.47	0.47
1:1:2657:A:O2'	1:1:2658:G:OP1	2.29	0.47
1:1:267:G:N1	1:1:319:A:C5	2.81	0.47
1:1:3176:G:C6	1:1:3213:A:C2	3.02	0.47
1:1:708:G:C2	1:1:711:A:OP2	2.66	0.47
1:1:972:A:H2'	1:1:973:A:H8	1.79	0.47
5:4:89:A:C6	5:4:91:C:C4	3.01	0.47
7:A:14:A:C4	7:A:15:G:H1'	2.49	0.47
9:B:32:C:O2	9:B:39:G:N2	2.46	0.47
25:J:110:ARG:CZ	25:J:206:LYS:NZ	2.77	0.47
27:K:228:GLU:HA	27:K:231:LYS:HE2	1.96	0.47
45:T:134:HIS:CE1	45:T:137:ALA:H	2.32	0.47
45:T:17:VAL:HG21	45:T:52:LYS:HG3	1.96	0.47
1:1:1225:A:H5'	1:1:1226:G:OP2	2.13	0.47
1:1:1311:G:H8	1:1:1311:G:O5'	1.97	0.47
1:1:1321:G:H2'	1:1:1322:U:O4'	2.14	0.47
1:1:1169:A:C6	1:1:1330:A:C5	3.02	0.47
1:1:178:U:H2'	1:1:179:C:C6	2.49	0.47
1:1:2570:U:H4'	1:1:2571:U:H3'	1.96	0.47
1:1:2703:A:C4	21:H:23:ARG:NH1	2.81	0.47
1:1:2933:A:N6	1:1:2934:A:N1	2.61	0.47
1:1:3048:A:H4'	1:1:3049:A:O5'	2.14	0.47
1:1:3159:C:H2'	1:1:3160:U:H6	1.78	0.47
1:1:510:G:C6	1:1:582:G:C6	3.02	0.47
1:1:553:U:H3'	1:1:554:A:H8	1.79	0.47
1:1:565:U:H2'	1:1:566:G:O4'	2.13	0.47
1:1:749:C:H2'	1:1:750:G:O4'	2.13	0.47
1:1:811:U:H2'	1:1:812:G:C8	2.50	0.47
25:J:116:PHE:O	25:J:199:ASN:ND2	2.47	0.47
29:L:12:VAL:O	29:L:51:GLN:HG3	2.14	0.47
1:1:97:U:OP2	33:N:13:HIS:CD2	2.67	0.47
39:Q:4:GLU:O	39:Q:31:GLN:NE2	2.46	0.47
45:T:17:VAL:HG11	45:T:21:LYS:HB2	1.96	0.47
46:U:33:ASN:OD1	46:U:36:ILE:N	2.43	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1120:A:H2'	1:1:1121:U:C6	2.49	0.47
1:1:1485:G:H2'	1:1:1486:G:C8	2.50	0.47
1:1:1489:A:H2'	1:1:1490:A:O4'	2.14	0.47
1:1:1564:U:C2	1:1:1576:G:N1	2.76	0.47
1:1:2381:G:C5	1:1:2382:G:N7	2.82	0.47
1:1:253:A:O2'	1:1:254:A:H5'	2.13	0.47
1:1:2948:C:H2'	1:1:2949:U:O4'	2.14	0.47
1:1:3152:U:H3'	1:1:3153:U:H5'	1.95	0.47
1:1:34:A:C2	1:1:35:A:C4	3.03	0.47
1:1:879:U:HO2'	1:1:880:G:P	2.37	0.47
1:1:972:A:H2'	1:1:973:A:C8	2.49	0.47
15:E:28:LYS:HB3	15:E:123:ARG:NE	2.29	0.47
21:H:209:GLU:OE2	21:H:233:ALA:HB3	2.14	0.47
23:I:40:LEU:HD11	23:I:54:TYR:HB2	1.97	0.47
29:L:94:TYR:HE2	29:L:142:ASP:OD2	1.96	0.47
35:O:122:VAL:O	35:O:126:GLN:HG2	2.14	0.47
35:O:83:LYS:O	35:O:86:ALA:N	3.07	0.47
45:T:141:HIS:ND1	45:T:141:HIS:O	2.47	0.47
1:1:1609:C:H2'	1:1:1610:G:C8	2.50	0.47
1:1:1704:A:N3	1:1:1741:A:N6	2.63	0.47
1:1:2762:A:C2	1:1:2763:U:C4	3.02	0.47
1:1:2991:A:H2	41:R:69:ARG:HH22	1.61	0.47
1:1:3047:U:O4	1:1:3094:A:C6	2.67	0.47
1:1:532:A:H2'	1:1:533:A:H8	1.77	0.47
1:1:604:G:H2'	1:1:605:U:O4'	2.14	0.47
1:1:720:A:H4'	1:1:721:G:H5'	1.94	0.47
1:1:974:G:H2'	1:1:975:C:H6	1.80	0.47
7:A:26:A:N3	7:A:27:G:C8	2.82	0.47
15:E:115:ASN:HB3	15:E:165:VAL:HG12	1.96	0.47
15:E:51:ASP:OD2	15:E:54:ARG:NE	2.44	0.47
19:G:92:ASN:ND2	19:G:100:PHE:HB2	2.27	0.47
41:R:83:TRP:O	41:R:85:ALA:N	2.46	0.47
47:V:65:TYR:CD2	47:V:75:ILE:HG23	2.49	0.47
48:W:13:LYS:O	48:W:66:VAL:HG13	2.13	0.47
1:1:1042:U:O2'	1:1:1043:C:H5'	2.13	0.47
1:1:1189:C:O2'	1:1:1190:A:O5'	2.25	0.47
1:1:120:G:C5	27:K:128:LYS:HG3	2.49	0.47
1:1:122:A:N7	1:1:146:U:N3	2.63	0.47
1:1:145:G:OP2	27:K:193:LYS:NZ	2.32	0.47
1:1:1472:U:C2	1:1:1473:G:C8	3.02	0.47
1:1:1545:A:H2	1:1:1548:C:OP2	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1562:C:N4	1:1:1578:C:H42	2.12	0.47
1:1:2156:C:O2'	1:1:2157:G:H5'	2.13	0.47
1:1:221:A:C5	1:1:224:C:C4	3.02	0.47
1:1:2263:C:C2	1:1:2264:U:C5	3.03	0.47
1:1:2614:G:C2	1:1:2797:C:H1'	2.49	0.47
1:1:323:A:N6	1:1:324:A:C6	2.82	0.47
1:1:515:C:H2'	1:1:516:A:C8	2.50	0.47
1:1:799:G:C2	1:1:801:A:C6	3.03	0.47
27:K:24:ASN:HB3	27:K:25:PRO:HD3	1.95	0.47
27:K:72:PRO:HA	27:K:233:TRP:CZ3	2.49	0.47
1:1:1348:U:H5''	43:S:38:ARG:HH22	1.80	0.47
46:U:146:LYS:HE2	46:U:147:ASP:OD2	2.13	0.47
47:V:17:ARG:NH1	47:V:45:ASN:ND2	2.63	0.47
48:W:39:ASP:OD1	48:W:40:HIS:ND1	2.48	0.47
1:1:148:G:HO2'	1:1:149:U:P	2.38	0.47
1:1:1592:G:O2'	1:1:1593:A:OP1	2.30	0.47
1:1:1652:G:H2'	1:1:1653:G:C8	2.49	0.47
1:1:1718:G:H2'	1:1:1719:G:H8	1.80	0.47
1:1:1924:U:N3	1:1:1926:C:O2	2.47	0.47
1:1:2323:G:O2'	1:1:2324:A:OP1	2.32	0.47
1:1:2401:A:H4'	19:G:68:GLY:O	2.14	0.47
1:1:2879:C:H2'	1:1:2880:U:O4'	2.14	0.47
1:1:3020:U:H5''	1:1:3021:A:OP2	2.14	0.47
1:1:3064:U:H2'	1:1:3065:G:H8	1.79	0.47
1:1:3231:U:H2'	1:1:3232:G:H8	1.79	0.47
1:1:3236:U:H2'	1:1:3237:U:H6	1.80	0.47
1:1:431:U:H2'	1:1:432:G:C8	2.48	0.47
1:1:815:G:N2	1:1:920:A:OP2	2.34	0.47
3:3:104:A:H2'	3:3:105:C:O4'	2.15	0.47
9:B:48:C:H2'	9:B:59:G:H1'	1.95	0.47
1:1:1925:U:O2	13:D:19:GLY:HA2	2.15	0.47
17:F:123:TYR:CE1	17:F:124:LYS:HG3	2.49	0.47
39:Q:98:ALA:HA	39:Q:101:ARG:NH1	2.29	0.47
6:Z:115:ARG:HD2	6:Z:119:THR:OG1	2.14	0.47
1:1:1588:A:H5'	1:1:1589:A:OP1	2.15	0.47
1:1:1661:G:C6	1:1:1789:G:C6	3.03	0.47
1:1:167:U:H2'	1:1:168:U:C6	2.49	0.47
1:1:1867:A:H2'	1:1:1868:G:O4'	2.15	0.47
1:1:2244:A:H2'	1:1:2245:C:C6	2.49	0.47
1:1:2713:U:H4'	1:1:2714:G:OP1	2.13	0.47
1:1:2731:U:H2'	1:1:2732:G:H8	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2817:A:OP2	1:1:2868:U:OP2	2.32	0.47
1:1:3033:A:H2'	1:1:3034:C:C6	2.49	0.47
1:1:3343:G:C4	1:1:3361:G:N2	2.82	0.47
5:4:152:G:OP1	27:K:60:ARG:NH2	2.39	0.47
17:F:103:THR:HG21	17:F:150:ARG:HD2	1.96	0.47
17:F:243:HIS:CD2	17:F:244:ARG:HG3	2.49	0.47
17:F:24:SER:OG	17:F:25:ILE:N	2.48	0.47
17:F:218:ILE:HG12	17:F:276:THR:HG23	1.97	0.47
31:M:101:ASN:ND2	31:M:130:VAL:HG23	2.30	0.47
33:N:57:VAL:HG22	33:N:147:ILE:HD12	1.97	0.47
35:O:101:LYS:O	35:O:105:GLN:HB2	2.15	0.47
1:1:1281:G:H2'	1:1:1282:G:C8	2.49	0.47
1:1:1336:U:H2'	1:1:1337:A:C8	2.50	0.47
1:1:1524:A:C2	1:1:1527:C:C5	3.02	0.47
1:1:1656:A:H4'	1:1:1657:C:O4'	2.15	0.47
1:1:1765:U:H2'	1:1:1766:G:O4'	2.14	0.47
1:1:2219:A:H2'	1:1:2220:A:C8	2.46	0.47
1:1:2900:A:N1	1:1:3026:G:O2'	2.46	0.47
1:1:3013:U:H2'	1:1:3014:U:C6	2.50	0.47
1:1:316:U:O2'	1:1:317:A:O5'	2.33	0.47
1:1:3270:U:C4	23:I:46:ARG:HG2	2.50	0.47
1:1:546:C:H5'	1:1:547:G:N7	2.30	0.47
1:1:67:A:C6	1:1:317:A:C2	3.03	0.47
1:1:717:C:H5'	1:1:718:G:OP2	2.15	0.47
1:1:763:G:C2	1:1:764:U:H1'	2.50	0.47
7:A:13:C:H4'	7:A:14:A:OP1	2.15	0.47
9:B:14:A:C6	9:B:22:G:C6	3.02	0.47
15:E:95:SER:O	15:E:100:ASN:ND2	2.48	0.47
1:1:338:A:C8	19:G:47:ARG:HG2	2.50	0.47
33:N:55:ARG:NH1	33:N:73:ARG:O	2.45	0.47
35:O:48:GLY:O	35:O:51:ALA:N	2.34	0.47
41:R:61:ARG:HE	41:R:78:VAL:HG21	1.80	0.47
45:T:172:ARG:O	45:T:176:ARG:HG2	2.15	0.47
1:1:118:U:N3	1:1:122:A:OP2	2.46	0.47
1:1:1276:U:H3'	1:1:1277:C:H6	1.79	0.47
1:1:1658:G:H2'	1:1:1659:U:C6	2.49	0.47
1:1:1660:C:C2	1:1:1661:G:C8	3.02	0.47
1:1:1874:A:C6	45:T:20:ARG:NH1	2.82	0.47
1:1:1875:G:H2'	1:1:1876:U:C6	2.49	0.47
1:1:2196:C:N4	1:1:2242:A:N7	2.63	0.47
1:1:2262:A:OP2	1:1:2263:C:N4	2.46	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2285:C:C4	1:1:2286:U:C4	3.03	0.47
1:1:265:A:H5''	1:1:266:A:OP2	2.15	0.47
1:1:2828:G:O2'	1:1:2829:U:OP1	2.31	0.47
1:1:61:A:C6	1:1:62:A:C6	3.03	0.47
3:3:68:C:H2'	3:3:69:C:C6	2.49	0.47
15:E:206:PRO:HG3	15:E:213:GLY:HA3	1.96	0.47
17:F:194:TRP:CE2	17:F:198:HIS:CE1	3.03	0.47
1:1:3324:C:P	17:F:19:ARG:HH22	42.98	0.47
1:1:3214:U:O3'	21:H:2:ALA:N	133.92	0.47
1:1:3272:C:OP2	23:I:78:ARG:NH2	2.48	0.47
37:P:80:THR:OG1	37:P:87:GLN:HG3	2.15	0.47
41:R:166:VAL:HG21	41:R:168:LEU:HD23	1.96	0.47
43:S:86:THR:CG2	43:S:105:ARG:HD2	2.44	0.47
1:1:1068:C:H2'	1:1:1069:C:C6	2.50	0.47
1:1:1428:A:O2'	1:1:1429:G:OP1	2.24	0.47
1:1:1512:U:H2'	1:1:1513:G:C8	2.49	0.47
1:1:165:A:H3'	1:1:166:C:H5''	1.96	0.47
1:1:1933:A:H5''	1:1:1934:G:OP2	2.15	0.47
1:1:2263:C:H2'	1:1:2264:U:C6	2.50	0.47
1:1:2409:G:O3'	1:1:2410:U:H4'	2.15	0.47
1:1:2447:A:C2	1:1:2448:G:C5	3.03	0.47
1:1:2590:A:H3'	1:1:2591:A:H8	1.80	0.47
1:1:2753:G:N2	1:1:2754:G:N3	2.63	0.47
1:1:3188:G:C2	1:1:3189:G:C5	3.03	0.47
1:1:3216:G:H4'	1:1:3217:C:OP2	2.15	0.47
1:1:64:G:C6	1:1:322:U:C5	3.03	0.47
1:1:799:G:C5	1:1:801:A:C5	3.03	0.47
1:1:986:U:H2'	1:1:987:U:C6	2.50	0.47
1:1:349:A:C2	5:4:24:G:C5	3.03	0.47
5:4:28:C:H2'	5:4:29:U:H6	1.78	0.47
5:4:60:U:O2'	5:4:61:A:OP1	2.32	0.47
7:A:8:U:O2'	7:A:48:C:H1'	2.14	0.47
21:H:55:PHE:CD1	21:H:60:ILE:HG12	2.50	0.47
27:K:34:PHE:O	27:K:36:ILE:N	2.47	0.47
4:Y:6:ASP:HB3	4:Y:10:GLY:N	2.30	0.47
1:1:1582:C:H5''	1:1:1583:A:OP1	2.14	0.47
1:1:2678:A:C2'	1:1:2679:A:H5'	2.45	0.47
1:1:2742:C:C2	1:1:2743:A:N7	2.83	0.47
1:1:2962:U:O4	15:E:216:HIS:NE2	2.38	0.47
1:1:2989:U:C4	1:1:2990:G:N7	2.83	0.47
1:1:299:G:H1	1:1:316:U:H3	1.63	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3009:G:C6	1:1:3010:U:C4	3.03	0.47
1:1:677:A:H4'	1:1:678:G:O5'	2.15	0.47
1:1:908:G:O2'	1:1:925:A:N6	2.48	0.47
1:1:962:A:O2'	1:1:2817:A:N6	2.48	0.47
5:4:153:U:H2'	5:4:154:C:C6	2.50	0.47
1:1:3297:U:O4	17:F:124:LYS:NZ	2.48	0.47
19:G:326:ARG:HG3	19:G:327:LEU:HD12	1.96	0.47
3:3:120:C:N4	21:H:262:LYS:HZ2	2.12	0.47
31:M:71:VAL:HG12	31:M:76:ALA:HB2	1.96	0.47
39:Q:65:ASN:OD1	39:Q:66:LYS:N	2.48	0.47
2:X:10:LYS:NZ	2:X:56:ASP:OD1	2.48	0.47
1:1:1005:G:H5'	1:1:1006:A:OP2	2.15	0.46
1:1:1282:G:C6	1:1:1283:C:C5	3.03	0.46
1:1:1645:U:H5'	1:1:1646:G:OP2	2.15	0.46
1:1:1799:A:C2	1:1:1800:A:C4	3.03	0.46
1:1:1823:A:H2'	1:1:1824:U:C6	2.50	0.46
1:1:239:G:H4'	1:1:240:U:OP1	2.15	0.46
1:1:2772:C:H5'	1:1:2773:C:OP1	2.14	0.46
1:1:3139:A:O2'	17:F:20:LYS:HE3	2.16	0.46
1:1:438:A:H2'	1:1:438:A:N3	2.30	0.46
1:1:677:A:O2'	1:1:678:G:O4'	2.21	0.46
1:1:76:G:H2'	33:N:100:ARG:HD2	1.96	0.46
1:1:784:A:O2'	1:1:785:G:O5'	2.24	0.46
3:3:77:G:O2'	3:3:78:U:OP2	2.33	0.46
5:4:141:C:H2'	5:4:142:C:C6	2.49	0.46
1:1:2799:A:O2'	11:C:42:ARG:NH1	24.14	0.46
21:H:191:ASP:OD2	21:H:194:LEU:HB2	2.15	0.46
1:1:3198:U:H1'	29:L:21:LYS:HB3	1.97	0.46
2:X:94:TYR:CE1	4:Y:21:PHE:HD1	2.33	0.46
6:Z:108:LEU:HG	6:Z:127:THR:HG22	1.96	0.46
6:Z:75:LYS:O	6:Z:79:GLY:N	2.48	0.46
1:1:1278:A:OP2	1:1:1279:C:C5	2.68	0.46
1:1:134:U:C6	1:1:134:U:OP2	2.68	0.46
1:1:1456:A:O2'	1:1:1457:U:O4'	2.22	0.46
1:1:1482:A:OP2	1:1:1858:A:C5	2.68	0.46
1:1:1714:A:C4	1:1:1731:A:C6	3.03	0.46
1:1:1774:C:H2'	1:1:1775:G:O4'	2.16	0.46
1:1:1935:G:H2'	1:1:1936:A:O4'	2.15	0.46
1:1:2131:A:H2'	1:1:2132:C:O4'	2.15	0.46
1:1:2166:A:OP1	1:1:2166:A:H8	1.98	0.46
1:1:2263:C:H2'	1:1:2264:U:H6	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2532:U:C2	1:1:2533:G:C8	3.03	0.46
1:1:2651:G:C5	1:1:2796:G:N2	2.83	0.46
1:1:286:U:C2	1:1:287:G:C8	3.04	0.46
1:1:296:A:H2'	1:1:297:G:N3	2.31	0.46
1:1:300:G:N3	1:1:301:G:C8	2.83	0.46
1:1:3231:U:O2	1:1:3256:G:N2	2.37	0.46
1:1:429:U:H2'	1:1:430:U:C6	2.49	0.46
1:1:533:A:O2'	1:1:534:U:OP1	2.28	0.46
1:1:61:A:H2'	1:1:62:A:C8	2.50	0.46
1:1:650:C:H2'	1:1:651:G:C8	2.51	0.46
1:1:71:A:H61	1:1:303:G:N2	2.13	0.46
1:1:845:G:N2	1:1:848:A:OP2	2.42	0.46
1:1:981:U:OP2	1:1:981:U:H6	1.98	0.46
7:A:55:U:H2'	7:A:57:G:N7	2.29	0.46
25:J:208:SER:OG	25:J:209:ASN:N	2.47	0.46
25:J:219:LYS:O	25:J:228:SER:N	2.48	0.46
25:J:53:LYS:HA	25:J:56:GLU:HG2	1.96	0.46
27:K:89:GLU:OE2	27:K:213:LYS:NZ	2.48	0.46
29:L:38:LEU:O	29:L:41:ILE:HG22	2.16	0.46
35:O:4:ASP:O	35:O:6:ILE:HG12	2.14	0.46
37:P:116:LEU:HA	37:P:159:ARG:NH1	2.30	0.46
1:1:44:U:OP1	37:P:84:PRO:HG2	2.15	0.46
45:T:37:SER:O	45:T:41:ILE:HG12	2.15	0.46
1:1:3332:U:OP1	4:Y:35:LYS:HD2	2.14	0.46
1:1:1104:G:H4'	1:1:1104:G:OP2	2.15	0.46
1:1:1262:G:H2'	1:1:1264:G:C1'	2.44	0.46
1:1:1415:U:H5''	1:1:1416:C:OP2	2.14	0.46
1:1:1421:G:C2	1:1:1422:G:C8	3.04	0.46
1:1:213:A:H61	1:1:227:G:H2'	1.80	0.46
1:1:2575:G:H2'	1:1:2576:G:C8	2.50	0.46
1:1:2868:U:H2'	1:1:2869:U:C6	2.50	0.46
1:1:2992:U:H1'	41:R:69:ARG:HH12	1.79	0.46
1:1:3347:A:C6	1:1:3359:A:C6	3.04	0.46
1:1:645:A:C6	1:1:649:A:C5	3.04	0.46
1:1:69:C:H2'	1:1:70:A:O4'	2.16	0.46
1:1:730:C:H2'	1:1:731:U:C6	2.51	0.46
5:4:4:C:H5''	5:4:5:U:OP2	2.15	0.46
7:A:21:A:N6	7:A:46:G:H2'	2.29	0.46
15:E:49:VAL:HG11	15:E:60:LYS:HZ1	1.79	0.46
1:1:1439:U:H5''	19:G:87:GLN:HG2	1.96	0.46
27:K:105:LYS:O	27:K:109:LEU:HG	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3034:C:H4'	29:L:168:ARG:NH2	2.30	0.46
2:X:26:ALA:HB3	2:X:101:VAL:HG12	1.96	0.46
1:1:1088:U:H2'	1:1:1089:G:H8	1.80	0.46
1:1:1470:U:C2	1:1:1471:U:C5	3.03	0.46
1:1:1678:G:H2'	1:1:1679:A:C8	2.51	0.46
1:1:1902:G:N1	1:1:1903:U:O2	2.49	0.46
1:1:2198:A:C6	1:1:2199:G:C8	3.04	0.46
1:1:238:A:H2'	1:1:239:G:O4'	2.15	0.46
1:1:2530:G:H3'	1:1:2531:C:H5''	1.97	0.46
1:1:2655:U:H2'	11:C:5:PRO:HG3	1.97	0.46
1:1:2941:A:P	17:F:255:TRP:HB3	2.56	0.46
1:1:3005:A:C5	1:1:3140:G:N1	2.83	0.46
1:1:3100:U:H2'	1:1:3101:G:H8	1.81	0.46
1:1:3275:U:N3	1:1:3277:U:H1'	2.30	0.46
1:1:3318:G:H2'	1:1:3320:A:C8	2.51	0.46
1:1:35:A:OP2	1:1:48:A:N6	2.47	0.46
1:1:361:A:N3	1:1:814:U:H1'	2.30	0.46
1:1:539:C:H2'	1:1:540:U:C6	2.49	0.46
1:1:509:U:C2	1:1:583:G:N1	2.84	0.46
1:1:905:U:O2'	1:1:910:G:H4'	2.16	0.46
5:4:22:U:O2'	5:4:23:U:OP1	2.32	0.46
3:3:62:U:H4'	21:H:285:ARG:HH12	1.80	0.46
23:I:52:VAL:HG21	23:I:65:ILE:HD13	1.97	0.46
33:N:76:THR:HG22	33:N:101:ARG:HG3	1.97	0.46
1:1:2435:G:H4'	37:P:24:ARG:HH12	1.80	0.46
1:1:1258:U:H5'	1:1:1259:A:OP2	2.15	0.46
1:1:129:U:C2	1:1:130:A:N7	2.84	0.46
1:1:1372:C:H2'	1:1:1373:A:C8	2.50	0.46
1:1:1730:G:HO2'	1:1:1731:A:H8	1.64	0.46
1:1:1949:G:H5''	45:T:104:ARG:HH12	1.80	0.46
1:1:2198:A:N6	1:1:2270:A:N1	2.63	0.46
1:1:2412:G:C2	1:1:2413:A:C4	3.04	0.46
1:1:2494:A:OP2	1:1:2495:C:OP2	2.33	0.46
1:1:3005:A:O2'	1:1:3006:A:O4'	2.33	0.46
1:1:625:G:H2'	1:1:626:U:H6	1.80	0.46
1:1:86:G:HO2'	1:1:87:U:P	2.33	0.46
1:1:10:C:N3	5:4:149:A:H2	2.14	0.46
7:A:7:U:C2	7:A:66:A:N6	2.83	0.46
9:B:1:G:H2'	9:B:2:G:H8	1.79	0.46
9:B:52:G:H2'	9:B:53:G:C8	2.49	0.46
13:D:36:ARG:HG2	13:D:45:LYS:HG2	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:F:4:ARG:O	17:F:5:LYS:HB3	2.16	0.46
27:K:155:ASN:N	27:K:155:ASN:OD1	2.45	0.46
27:K:89:GLU:HA	27:K:92:LYS:HD3	1.96	0.46
31:M:59:ILE:HG21	31:M:65:ILE:HD12	1.97	0.46
41:R:24:VAL:HG12	41:R:25:SER:N	2.30	0.46
1:1:971:G:P	43:S:8:LYS:HZ2	2.33	0.46
1:1:1874:A:OP2	45:T:20:ARG:HD3	2.15	0.46
1:1:1017:C:H4'	1:1:1018:G:OP2	2.15	0.46
1:1:1018:G:C6	1:1:1035:G:C2	3.04	0.46
1:1:220:G:H4'	1:1:221:A:OP2	2.15	0.46
1:1:2494:A:H5''	1:1:2495:C:OP2	2.15	0.46
1:1:2516:U:H2'	1:1:2517:U:H6	1.81	0.46
1:1:2588:U:H2'	1:1:2589:G:O4'	2.15	0.46
1:1:2779:A:H3'	1:1:2779:A:OP2	2.15	0.46
1:1:3148:U:H2'	1:1:3149:G:C8	2.43	0.46
3:3:61:G:H2'	3:3:62:U:C6	2.51	0.46
7:A:1:G:O6	7:A:73:A:N6	2.49	0.46
19:G:265:GLU:HG2	19:G:266:THR:N	2.31	0.46
19:G:311:HIS:ND1	19:G:311:HIS:O	2.48	0.46
21:H:123:GLU:O	21:H:125:VAL:HG23	2.15	0.46
23:I:171:PRO:HA	23:I:174:LEU:HD12	1.98	0.46
25:J:36:ALA:O	25:J:40:LYS:HG3	2.15	0.46
29:L:109:ALA:HB3	29:L:111:PHE:CE2	2.51	0.46
29:L:19:SER:HA	35:O:5:SER:O	2.15	0.46
35:O:113:THR:HG23	35:O:116:GLU:H	1.80	0.46
43:S:133:LYS:H	43:S:135:GLN:HE22	1.63	0.46
1:1:1253:U:H4'	1:1:1254:C:OP1	2.16	0.46
1:1:1376:C:C2	1:1:1377:G:C8	3.04	0.46
1:1:1453:A:C4	1:1:1454:A:C8	3.03	0.46
1:1:1609:C:H2'	1:1:1610:G:H8	1.81	0.46
1:1:169:U:H4'	1:1:170:G:OP1	2.15	0.46
1:1:1710:C:H2'	1:1:1711:C:C6	2.51	0.46
1:1:1714:A:C2	1:1:1731:A:C4	3.03	0.46
1:1:876:A:H4'	1:1:1890:U:H4'	1.97	0.46
1:1:2103:U:H2'	1:1:2104:A:C8	2.50	0.46
1:1:236:G:C4	1:1:237:G:C8	3.03	0.46
1:1:2712:U:H5'	1:1:2713:U:OP2	2.16	0.46
1:1:3334:U:H1'	1:1:3370:A:C2	2.50	0.46
1:1:586:C:H2'	1:1:587:U:C6	2.50	0.46
1:1:922:U:O2	1:1:922:U:H2'	2.14	0.46
3:3:7:G:N1	3:3:115:G:C5	2.84	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:10:G:C2	7:A:26:A:H1'	2.51	0.46
1:1:2225:U:H4'	11:C:36:PHE:CZ	2.49	0.46
3:3:46:A:P	21:H:158:ARG:NH1	2.89	0.46
43:S:158:HIS:CE1	43:S:186:VAL:HG21	2.50	0.46
43:S:44:PHE:CD2	43:S:134:GLY:HA3	2.50	0.46
21:H:38:THR:HG22	47:V:30:TYR:HB3	1.98	0.46
1:1:1404:G:C6	1:1:1408:G:C6	3.04	0.46
1:1:1567:U:H3'	1:1:1568:U:O4'	2.15	0.46
1:1:1753:G:H2'	1:1:1754:G:C8	2.49	0.46
1:1:1872:C:H2'	1:1:1873:U:H6	1.80	0.46
1:1:1900:A:C6	1:1:1906:G:C4	3.04	0.46
1:1:199:A:H2	1:1:220:G:H22	1.64	0.46
1:1:210:U:HO2'	1:1:229:G:HO2'	1.61	0.46
1:1:2111:G:H4'	1:1:2112:U:OP2	2.16	0.46
1:1:2203:U:H2'	1:1:2204:C:C6	2.51	0.46
1:1:2575:G:H2'	1:1:2576:G:H8	1.78	0.46
1:1:2947:G:H4'	1:1:2947:G:OP2	2.15	0.46
1:1:374:A:O2'	1:1:376:G:H5''	2.16	0.46
1:1:402:A:P	33:N:36:ARG:NH1	59.91	0.46
1:1:656:A:H2'	1:1:657:A:C8	2.50	0.46
1:1:696:C:H2'	1:1:697:A:C8	2.51	0.46
1:1:754:G:H2'	1:1:755:A:H8	1.81	0.46
1:1:851:C:H2'	1:1:852:U:C6	2.51	0.46
1:1:958:C:O2	1:1:960:U:H5'	2.15	0.46
3:3:3:U:H2'	3:3:4:U:H6	1.81	0.46
5:4:76:C:H2'	5:4:77:A:C8	2.50	0.46
7:A:3:G:H1	7:A:69:A:N6	2.13	0.46
1:1:798:G:O2'	33:N:14:PHE:HB2	2.16	0.46
37:P:146:ALA:HA	37:P:149:ASN:ND2	2.30	0.46
39:Q:124:LEU:HB3	39:Q:126:VAL:HG12	1.97	0.46
39:Q:126:VAL:HG13	39:Q:127:LEU:HG	1.98	0.46
1:1:1724:U:O4	45:T:125:LYS:NZ	2.49	0.46
47:V:71:SER:HA	47:V:93:VAL:HG13	1.96	0.46
1:1:1231:A:N7	1:1:1276:U:OP2	2.49	0.46
1:1:130:A:C6	1:1:139:G:C6	3.04	0.46
1:1:1560:G:H21	1:1:1581:C:N4	2.13	0.46
1:1:158:G:C2	1:1:159:A:C8	3.04	0.46
1:1:1847:A:C6	1:1:1849:C:H1'	2.51	0.46
1:1:1845:G:H22	1:1:1849:C:H2'	1.80	0.46
1:1:2393:G:O6	1:1:2982:A:C4	2.69	0.46
1:1:2531:C:H3'	1:1:2532:U:C6	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2668:U:H2'	1:1:2669:G:C8	2.50	0.46
1:1:2675:C:N3	1:1:2676:A:N6	2.64	0.46
1:1:280:U:O2	1:1:286:U:C2	2.69	0.46
1:1:2819:A:C2	1:1:2820:A:C4	3.04	0.46
1:1:2877:G:H2'	1:1:2878:G:C8	2.48	0.46
1:1:2882:U:H2'	1:1:2883:U:C6	2.51	0.46
1:1:3273:A:C6	1:1:3274:A:C2	3.04	0.46
1:1:3286:G:H2'	1:1:3287:U:O4'	2.15	0.46
1:1:3290:G:C6	1:1:3291:G:C6	3.03	0.46
1:1:49:A:C5	37:P:187:ARG:NH1	2.82	0.46
1:1:690:A:H5'	1:1:692:A:C5	2.51	0.46
1:1:839:C:H2'	1:1:840:C:C6	2.51	0.46
5:4:51:G:O2'	5:4:52:A:O5'	2.33	0.46
29:L:79:ILE:O	29:L:82:VAL:HG12	2.15	0.46
25:J:79:ALA:HB2	47:V:138:SER:N	2.31	0.46
1:1:1186:G:H2'	1:1:1187:C:C6	2.51	0.46
1:1:1197:A:H5''	1:1:1198:C:OP2	2.16	0.46
1:1:1472:U:H2'	1:1:1473:G:O4'	2.16	0.46
1:1:1538:G:H21	1:1:1583:A:N6	2.11	0.46
1:1:1716:U:O2'	1:1:1717:U:P	2.73	0.46
1:1:1848:G:H4'	1:1:1849:C:OP2	2.11	0.46
1:1:2101:C:H2'	1:1:2102:U:C6	2.51	0.46
1:1:2249:G:H2'	1:1:2250:G:O4'	2.15	0.46
1:1:2363:A:H2'	1:1:2364:G:O4'	2.16	0.46
1:1:249:U:O2'	1:1:250:U:O5'	2.24	0.46
1:1:2437:G:C6	1:1:2511:A:C6	3.04	0.46
1:1:2946:A:C4	1:1:2982:A:C6	3.04	0.46
1:1:3375:A:N3	1:1:3375:A:H2'	2.31	0.46
1:1:370:U:O2	1:1:370:U:H2'	2.15	0.46
1:1:425:G:H2'	1:1:426:G:H8	1.81	0.46
1:1:509:U:C2	1:1:583:G:C2	3.04	0.46
1:1:811:U:H2'	1:1:812:G:H8	1.81	0.46
5:4:129:C:OP2	5:4:129:C:C6	2.69	0.46
5:4:67:U:H2'	5:4:68:G:H8	1.80	0.46
1:1:211:A:H5''	19:G:221:ASN:ND2	2.31	0.46
19:G:270:SER:OG	19:G:271:LYS:N	2.48	0.46
21:H:159:VAL:O	21:H:162:ALA:N	2.49	0.46
35:O:114:ASP:O	35:O:117:ARG:HB2	2.16	0.46
37:P:149:ASN:OD1	37:P:150:TRP:N	2.49	0.46
19:G:110:ASN:ND2	37:P:201:ARG:HB3	2.26	0.46
45:T:23:TRP:CH2	45:T:25:ASP:HB3	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:U:132:THR:C	46:U:134:ASP:H	2.20	0.46
2:X:29:SER:HB2	2:X:69:LEU:HD21	1.98	0.46
1:1:1054:A:C6	1:1:1055:A:C6	3.04	0.45
1:1:1587:A:N6	1:1:1590:G:C2	2.84	0.45
1:1:1614:C:H2'	1:1:1615:C:H6	1.80	0.45
1:1:1655:G:C6	1:1:1656:A:N6	2.84	0.45
1:1:1754:G:H2'	1:1:1755:C:C6	2.50	0.45
1:1:1655:G:N2	1:1:1801:U:O4	2.48	0.45
1:1:2284:C:C5	1:1:2285:C:C4	3.04	0.45
1:1:2291:A:H2'	1:1:2292:U:C6	2.51	0.45
1:1:2586:G:O6	27:K:242:ALA:N	2.35	0.45
1:1:2680:A:O2'	1:1:2681:U:OP1	2.30	0.45
1:1:282:G:O2'	1:1:286:U:OP1	2.34	0.45
1:1:302:U:H2'	1:1:303:G:C8	2.51	0.45
1:1:3156:U:O2'	1:1:3157:U:OP1	2.31	0.45
1:1:3275:U:HO2'	1:1:3276:G:P	2.39	0.45
1:1:3366:G:C6	1:1:3367:C:N4	2.85	0.45
1:1:513:G:C4	1:1:514:G:C8	3.04	0.45
1:1:562:C:H2'	1:1:563:U:C6	2.52	0.45
1:1:823:C:H2'	1:1:824:C:C6	2.51	0.45
3:3:120:C:H41	21:H:262:LYS:HZ2	1.63	0.45
5:4:36:G:HO2'	5:4:37:A:H2	1.64	0.45
5:4:81:U:C5'	5:4:82:U:H5'	2.42	0.45
7:A:69:A:H2'	7:A:70:C:O4'	2.14	0.45
15:E:96:LEU:O	15:E:97:ASN:ND2	2.49	0.45
17:F:216:ASP:OD2	17:F:278:ILE:HG22	2.16	0.45
35:O:45:LEU:HD21	35:O:55:ARG:HH11	1.80	0.45
37:P:121:VAL:HG23	37:P:122:ASN:N	2.31	0.45
37:P:117:ASN:O	37:P:133:ILE:HG22	2.16	0.45
39:Q:181:ALA:O	39:Q:184:THR:HG22	2.15	0.45
46:U:43:TYR:CE2	46:U:122:HIS:HE1	2.33	0.45
2:X:118:VAL:O	2:X:137:VAL:N	2.40	0.45
6:Z:111:ASN:O	6:Z:123:TYR:N	2.49	0.45
1:1:1136:A:H2'	1:1:1137:C:C6	2.51	0.45
1:1:1203:A:N6	1:1:1300:G:H2'	2.31	0.45
1:1:1233:G:C2	1:1:1234:G:C8	3.04	0.45
1:1:1238:C:O2	1:1:1238:C:H2'	2.15	0.45
1:1:1617:G:H2'	1:1:1618:G:C8	2.51	0.45
1:1:1784:G:H2'	1:1:1785:U:O4'	2.17	0.45
1:1:1789:G:H2'	1:1:1790:G:C8	2.51	0.45
1:1:1803:C:H2'	1:1:1804:A:C8	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2137:U:OP2	1:1:2142:A:N6	2.50	0.45
1:1:2258:U:H2'	1:1:2259:A:O4'	2.17	0.45
1:1:2859:U:O2'	1:1:2860:U:O5'	2.21	0.45
1:1:2954:U:HO2'	1:1:2955:U:P	2.37	0.45
1:1:3051:U:C2	1:1:3052:G:C8	3.04	0.45
1:1:431:U:C2	1:1:432:G:C8	3.04	0.45
1:1:521:A:N6	1:1:571:U:H3	1.99	0.45
1:1:677:A:C4	1:1:786:A:C2	3.03	0.45
7:A:3:G:C2	7:A:4:U:C2	3.05	0.45
9:B:13:C:N3	9:B:23:A:N6	2.64	0.45
21:H:187:THR:OG1	21:H:188:GLU:N	2.49	0.45
21:H:217:GLU:O	21:H:221:GLU:HG3	2.15	0.45
1:1:2703:A:C6	21:H:23:ARG:NH1	2.84	0.45
25:J:96:PRO:HB2	25:J:99:PRO:HD2	1.98	0.45
27:K:208:GLU:O	27:K:211:LEU:HB3	2.16	0.45
37:P:116:LEU:HB3	37:P:133:ILE:CG2	2.46	0.45
37:P:39:ALA:HB2	37:P:63:ARG:NH1	2.32	0.45
39:Q:50:ASN:HA	39:Q:53:LYS:HB2	1.98	0.45
2:X:93:LEU:HA	4:Y:20:LEU:O	2.16	0.45
6:Z:26:VAL:HA	27:K:45:ASN:OD1	2.16	0.45
1:1:1176:C:O2'	39:Q:89:SER:HB2	2.16	0.45
1:1:1246:G:O4'	1:1:1264:G:H3'	2.15	0.45
1:1:1249:G:H2'	1:1:1250:G:O4'	2.17	0.45
1:1:1385:C:N4	1:1:1387:G:N7	2.63	0.45
1:1:1493:G:H5''	1:1:1494:U:OP1	2.16	0.45
1:1:1571:A:H61	1:1:1573:G:H1'	1.80	0.45
1:1:1902:G:C6	1:1:1903:U:C2	3.04	0.45
1:1:1908:A:N6	1:1:1909:A:C6	2.85	0.45
1:1:2158:A:N7	1:1:2177:G:C2	2.85	0.45
1:1:222:A:H2'	1:1:223:U:O4'	2.16	0.45
1:1:2850:G:OP2	1:1:2850:G:H3'	2.15	0.45
1:1:3354:U:H5''	1:1:3355:U:H5'	1.98	0.45
1:1:559:A:N6	1:1:560:G:C2	2.84	0.45
5:4:114:G:H8	5:4:114:G:OP2	1.99	0.45
5:4:145:U:H2'	5:4:146:U:C6	2.52	0.45
17:F:194:TRP:O	17:F:198:HIS:ND1	2.33	0.45
19:G:23:PRO:O	19:G:25:VAL:N	2.49	0.45
3:3:119:U:O4	21:H:262:LYS:NZ	2.49	0.45
23:I:66:SER:HB3	23:I:76:LEU:HD23	1.99	0.45
27:K:140:VAL:HG22	27:K:166:LEU:HD21	1.98	0.45
35:O:47:ASP:OD2	35:O:49:PRO:HD3	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:4:142:C:OP1	37:P:38:ARG:NH1	2.49	0.45
39:Q:8:VAL:O	39:Q:118:VAL:HG22	2.15	0.45
43:S:98:LYS:HZ3	43:S:118:GLY:HA3	1.78	0.45
45:T:105:LEU:CD1	45:T:135:LYS:HG3	2.46	0.45
46:U:9:VAL:HG22	46:U:61:ILE:HD13	1.99	0.45
48:W:54:VAL:HA	48:W:66:VAL:O	2.15	0.45
2:X:54:LEU:HD22	2:X:85:TRP:CH2	2.52	0.45
2:X:39:VAL:HG22	2:X:58:VAL:HG12	1.97	0.45
1:1:1072:G:C6	1:1:1087:G:C6	3.05	0.45
1:1:1109:U:C4	1:1:1110:U:C4	3.05	0.45
1:1:1182:A:H2'	1:1:1183:C:C6	2.51	0.45
1:1:1246:G:H5'	1:1:1263:A:H4'	1.99	0.45
1:1:1599:G:H2'	1:1:1600:U:O4'	2.17	0.45
1:1:1909:A:N6	1:1:1910:A:N1	2.64	0.45
1:1:198:A:N6	1:1:219:A:N7	2.64	0.45
1:1:2207:A:C5	1:1:2208:A:H8	2.34	0.45
1:1:2356:A:C5	1:1:2357:A:N7	2.85	0.45
1:1:2409:G:C2	1:1:2813:A:C2	3.05	0.45
1:1:2617:U:HO2'	1:1:2644:C:N4	2.15	0.45
1:1:3044:G:H2'	1:1:3045:G:C8	2.51	0.45
1:1:3044:G:H2'	1:1:3045:G:H8	1.81	0.45
1:1:553:U:H3'	1:1:554:A:C8	2.51	0.45
1:1:691:A:H62	19:G:48:GLN:CG	2.28	0.45
1:1:706:A:C6	1:1:714:G:C2	3.04	0.45
1:1:737:G:C2	1:1:738:A:C5	3.04	0.45
3:3:27:A:P	21:H:57:ASN:H	2.39	0.45
5:4:29:U:H2'	5:4:30:C:H6	1.81	0.45
7:A:58:A:H4'	7:A:59:A:OP1	2.17	0.45
7:A:6:G:N1	7:A:66:A:N6	2.63	0.45
15:E:60:LYS:HB3	15:E:73:GLU:OE2	2.16	0.45
25:J:164:SER:OG	25:J:165:ASP:N	2.48	0.45
1:1:86:G:C4	33:N:13:HIS:HE1	2.34	0.45
1:1:1090:G:H2'	1:1:1091:A:C8	2.52	0.45
1:1:1244:A:C2	1:1:1248:C:OP2	2.69	0.45
1:1:1233:G:C2	1:1:1256:G:C5	3.05	0.45
1:1:199:A:C4	1:1:201:A:C8	3.04	0.45
1:1:2409:G:HO2'	1:1:2410:U:P	2.38	0.45
1:1:2440:G:C2	1:1:2441:A:N7	2.85	0.45
1:1:2498:U:H2'	1:1:2499:U:O4'	2.17	0.45
1:1:2526:C:C5'	15:E:37:ARG:NH1	2.80	0.45
1:1:3087:A:H5''	1:1:3088:G:OP2	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3269:U:HO2'	1:1:3270:U:P	2.34	0.45
1:1:3318:G:C6	1:1:3320:A:C6	3.05	0.45
1:1:407:A:H2'	1:1:407:A:N3	2.32	0.45
1:1:503:C:H2'	1:1:504:A:H8	1.79	0.45
1:1:650:C:H2'	1:1:651:G:H8	1.81	0.45
1:1:937:G:H5''	1:1:938:C:OP2	2.16	0.45
7:A:19:G:H2'	7:A:19:G:N3	2.32	0.45
15:E:28:LYS:HB3	15:E:123:ARG:CZ	2.46	0.45
21:H:55:PHE:CE1	21:H:60:ILE:HG12	2.52	0.45
33:N:28:GLN:OE1	37:P:201:ARG:HD3	2.17	0.45
35:O:36:VAL:HG21	35:O:55:ARG:NH1	2.32	0.45
35:O:82:SER:O	35:O:85:TRP:HB3	2.16	0.45
19:G:282:SER:N	43:S:125:ASP:OD2	2.42	0.45
1:1:1078:U:C2	1:1:1081:U:OP2	2.70	0.45
1:1:1223:A:H5'	1:1:1224:C:OP2	2.17	0.45
1:1:1266:G:OP2	1:1:1266:G:H8	1.99	0.45
1:1:1302:A:H1'	1:1:2887:A:C2	2.52	0.45
1:1:1421:G:H2'	1:1:1422:G:H8	1.81	0.45
1:1:1498:A:OP1	45:T:6:THR:OG1	2.32	0.45
1:1:148:G:O2'	1:1:149:U:H6	2.00	0.45
1:1:1759:C:H3'	1:1:1760:A:H5''	1.97	0.45
1:1:1793:C:H5''	1:1:1794:G:OP1	2.17	0.45
1:1:1846:C:O2'	1:1:1847:A:OP1	2.31	0.45
1:1:2364:G:O2'	1:1:2365:C:OP1	2.30	0.45
1:1:2590:A:C4	1:1:2591:A:C8	3.05	0.45
1:1:2632:G:O6	1:1:2647:A:N6	2.50	0.45
1:1:2685:C:H2'	1:1:2686:A:H8	1.82	0.45
1:1:2841:G:H2'	1:1:2844:C:H42	1.82	0.45
1:1:291:C:H2'	1:1:292:U:H6	1.81	0.45
1:1:2941:A:C2'	1:1:2942:C:OP2	2.65	0.45
1:1:3247:G:H2'	1:1:3248:C:C6	2.52	0.45
1:1:3304:U:OP2	17:F:332:ARG:NH2	2.48	0.45
1:1:343:U:HO2'	1:1:344:A:P	2.40	0.45
1:1:40:A:N7	1:1:937:G:C5	2.84	0.45
1:1:59:G:O2'	1:1:60:A:O5'	2.18	0.45
1:1:646:A:C2	1:1:2375:G:C2	3.05	0.45
1:1:68:C:H2'	1:1:69:C:H6	1.82	0.45
1:1:782:U:H2'	1:1:783:A:O4'	2.17	0.45
1:1:971:G:H2'	1:1:972:A:H8	1.82	0.45
3:3:3:U:H2'	3:3:4:U:C6	2.52	0.45
9:B:28:C:C2	9:B:43:G:C2	3.05	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:B:58:A:C6	9:B:61:C:C2	3.05	0.45
15:E:51:ASP:OD1	15:E:52:SER:N	2.49	0.45
17:F:232:ARG:HH12	17:F:268:GLY:HA3	1.81	0.45
1:1:3138:U:OP2	17:F:30:LYS:HG3	2.16	0.45
19:G:222:VAL:HG13	19:G:225:VAL:HB	1.99	0.45
1:1:2687:G:P	21:H:8:LYS:HZ2	2.39	0.45
23:I:55:LEU:HB3	23:I:98:VAL:HG11	1.98	0.45
29:L:4:ILE:O	29:L:59:ASN:N	2.36	0.45
1:1:1018:G:N2	1:1:1034:U:O2	2.40	0.45
1:1:1712:G:H5''	1:1:1713:G:OP2	2.17	0.45
1:1:201:A:H2'	1:1:202:G:H8	1.82	0.45
1:1:2116:G:O2'	1:1:2117:A:OP1	2.27	0.45
1:1:2206:G:C2	1:1:2238:G:C2	3.05	0.45
1:1:2243:A:C4	1:1:2313:A:N7	2.85	0.45
1:1:2376:G:H5''	1:1:2377:G:OP2	2.17	0.45
1:1:2500:A:O2'	1:1:2501:U:OP1	2.31	0.45
1:1:2954:U:H4'	1:1:2955:U:C5'	2.47	0.45
1:1:3222:U:O4	1:1:3263:G:O6	2.34	0.45
1:1:3248:C:H2'	1:1:3249:C:O4'	2.16	0.45
1:1:3321:C:H2'	1:1:3322:A:C8	2.51	0.45
1:1:558:U:H4'	1:1:559:A:OP2	2.16	0.45
1:1:568:G:H2'	1:1:569:A:O4'	2.16	0.45
1:1:740:G:C2	1:1:741:U:C2	3.04	0.45
3:3:1:G:C2	3:3:2:G:C8	3.05	0.45
15:E:44:ILE:HG22	15:E:87:PHE:CD1	2.52	0.45
21:H:224:LYS:O	21:H:228:ALA:HB2	2.17	0.45
23:I:169:ASP:HB3	23:I:174:LEU:HD21	1.97	0.45
25:J:147:LEU:O	25:J:151:ARG:N	2.48	0.45
1:1:98:G:P	33:N:16:LYS:HZ1	2.39	0.45
35:O:48:GLY:O	35:O:50:LYS:N	2.50	0.45
37:P:153:ASP:OD1	37:P:154:PRO:HD2	2.17	0.45
39:Q:178:VAL:HG12	39:Q:182:ASN:ND2	2.30	0.45
39:Q:22:VAL:HG21	39:Q:120:VAL:HG11	1.99	0.45
6:Z:136:ALA:HA	6:Z:139:ILE:HG22	1.99	0.45
1:1:1051:U:H5'	1:1:1052:U:OP2	2.17	0.45
1:1:1338:C:H2'	1:1:1339:C:H6	1.82	0.45
1:1:1561:G:H2'	1:1:1562:C:O4'	2.17	0.45
1:1:1764:U:OP1	45:T:43:LYS:HD2	2.17	0.45
1:1:1675:G:N2	1:1:1773:C:C4	2.85	0.45
1:1:1776:G:H2'	1:1:1777:U:C6	2.52	0.45
1:1:1657:C:N4	1:1:1798:A:OP2	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1924:U:HO2'	1:1:1925:U:H6	1.65	0.45
1:1:203:G:H2'	1:1:204:A:C8	2.52	0.45
1:1:2187:G:O2'	1:1:2188:A:H5'	2.17	0.45
1:1:2294:U:H1'	1:1:2297:U:H5	1.81	0.45
1:1:2353:G:H2'	1:1:2354:C:C6	2.52	0.45
1:1:646:A:C2	1:1:2375:G:N1	2.85	0.45
1:1:2614:G:H5'	1:1:2615:G:OP2	2.17	0.45
1:1:2687:G:OP1	21:H:8:LYS:NZ	2.47	0.45
1:1:2883:U:H2'	1:1:2884:C:C6	2.52	0.45
1:1:2900:A:H2'	1:1:2901:G:C8	2.51	0.45
1:1:390:G:C5	1:1:391:A:C8	3.05	0.45
1:1:551:A:N6	1:1:552:G:O6	2.50	0.45
1:1:579:G:H2'	1:1:580:C:C6	2.52	0.45
1:1:600:G:O2'	1:1:602:A:N6	2.33	0.45
1:1:750:G:C2	1:1:751:A:C8	3.04	0.45
1:1:86:G:O2'	1:1:87:U:P	2.75	0.45
7:A:52:G:N1	7:A:53:G:C6	2.85	0.45
7:A:18:G:H5'	7:A:60:U:O2'	2.17	0.45
27:K:105:LYS:HA	27:K:108:ARG:HG2	1.98	0.45
1:1:976:U:P	43:S:144:ARG:HH22	2.37	0.45
2:X:23:MET:CG	2:X:34:LEU:HB2	2.47	0.45
1:1:1349:G:N3	1:1:1349:G:H2'	2.32	0.45
1:1:1459:C:H2'	1:1:1460:A:C8	2.51	0.45
1:1:2146:C:H2'	1:1:2147:A:O4'	2.17	0.45
1:1:2408:U:H2'	1:1:2409:G:O4'	2.17	0.45
1:1:2437:G:C5	1:1:2438:A:C8	3.05	0.45
1:1:2694:A:H2'	1:1:2695:A:C8	2.52	0.45
1:1:3184:A:H5''	1:1:3185:U:OP2	2.17	0.45
1:1:353:G:O2'	1:1:354:U:P	2.75	0.45
1:1:801:A:H4'	1:1:802:C:O5'	2.16	0.45
1:1:832:G:C2	1:1:863:C:C2	3.05	0.45
1:1:89:A:H2'	1:1:90:C:C6	2.52	0.45
1:1:11:A:C2	5:4:148:G:C2	3.05	0.45
17:F:232:ARG:NH1	17:F:268:GLY:CA	2.80	0.45
19:G:157:GLU:OE2	19:G:210:ALA:HB3	2.16	0.45
25:J:92:ILE:HD11	43:S:4:ASP:CB	2.44	0.45
29:L:113:GLU:OE2	29:L:115:ARG:CZ	2.65	0.45
35:O:55:ARG:NH2	35:O:77:ARG:HA	2.31	0.45
43:S:3:ILE:HD12	43:S:3:ILE:H	1.82	0.45
1:1:1135:A:H2'	1:1:1136:A:H8	1.80	0.45
1:1:1412:G:C2	1:1:1413:G:C8	3.05	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1919:G:C2	1:1:1934:G:C6	3.05	0.45
1:1:2100:A:H5'	45:T:71:ARG:NH1	2.29	0.45
1:1:2136:C:N4	1:1:2142:A:H1'	2.32	0.45
1:1:2409:G:O2'	1:1:2410:U:OP1	2.32	0.45
1:1:2761:G:O6	1:1:2795:U:H5''	2.17	0.45
1:1:278:U:OP2	11:C:49:GLY:HA3	2.17	0.45
1:1:3055:U:H5''	1:1:3056:U:OP1	2.16	0.45
1:1:3302:U:N3	1:1:3303:G:C5	2.85	0.45
1:1:401:U:O2'	1:1:402:A:OP2	2.27	0.45
1:1:409:A:OP2	1:1:410:U:O4	2.35	0.45
9:B:67:C:O2'	9:B:68:G:H5'	2.16	0.45
19:G:214:GLY:O	19:G:218:ALA:N	2.50	0.45
21:H:107:ARG:NH1	21:H:110:LEU:HD23	2.32	0.45
21:H:232:ASP:OD1	21:H:235:SER:OG	2.21	0.45
25:J:148:VAL:HG12	25:J:181:ILE:HD11	1.99	0.45
31:M:32:ARG:O	31:M:36:VAL:HG23	2.17	0.45
1:1:534:U:O4	35:O:74:ARG:NH2	2.49	0.45
39:Q:110:PRO:HB2	39:Q:111:PRO:HD3	1.99	0.45
39:Q:55:HIS:HA	39:Q:58:LEU:HB3	1.98	0.45
41:R:118:GLN:NE2	41:R:147:GLU:OE2	2.49	0.45
47:V:32:LYS:HZ3	47:V:97:LYS:HA	1.82	0.45
1:1:1281:G:H2'	1:1:1282:G:N7	2.32	0.44
1:1:1462:A:H2'	1:1:1463:U:H6	1.82	0.44
1:1:1469:C:C2	1:1:1509:A:H2	2.34	0.44
1:1:1661:G:H5''	1:1:1662:G:OP2	2.18	0.44
1:1:1793:C:H41	15:E:179:LEU:HB2	1.82	0.44
1:1:197:G:C6	1:1:198:A:C6	3.06	0.44
1:1:2119:A:H62	1:1:2120:A:H2	1.65	0.44
1:1:2196:C:C4	1:1:2242:A:N7	2.85	0.44
1:1:2206:G:N3	1:1:2238:G:N2	2.65	0.44
1:1:2508:U:H2'	1:1:2509:U:O4'	2.18	0.44
1:1:3311:C:H2'	1:1:3312:U:H6	1.82	0.44
1:1:662:U:H2'	1:1:663:C:C6	2.52	0.44
1:1:93:C:H4'	1:1:94:G:O5'	2.16	0.44
3:3:12:U:HO2'	3:3:111:U:C4'	2.30	0.44
3:3:27:A:O5'	21:H:57:ASN:ND2	2.43	0.44
3:3:78:U:C2	3:3:79:A:C8	3.06	0.44
5:4:143:U:C2	5:4:144:G:C8	3.04	0.44
1:1:341:G:N2	5:4:24:G:O6	2.50	0.44
35:O:81:VAL:O	35:O:85:TRP:CB	2.63	0.44
1:1:784:A:H5'	43:S:69:ARG:HH21	1.81	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:S:90:ASP:OD2	43:S:92:ARG:NH1	2.47	0.44
1:1:1303:A:O2'	1:1:1304:A:O4'	2.31	0.44
1:1:1427:U:H5'	19:G:44:LYS:NZ	2.31	0.44
1:1:1503:A:H2'	1:1:1503:A:N3	2.32	0.44
1:1:2523:A:C6	1:1:2587:U:C5	3.05	0.44
1:1:2966:G:C6	1:1:2967:A:C6	3.06	0.44
1:1:2975:U:H2'	1:1:2976:A:C8	2.51	0.44
1:1:3147:G:H2'	1:1:3148:U:C6	2.52	0.44
1:1:349:A:O2'	1:1:350:C:OP1	2.33	0.44
1:1:658:G:C6	1:1:659:G:C6	3.06	0.44
5:4:40:A:C6	5:4:104:A:C2	3.05	0.44
5:4:56:G:C2	5:4:62:C:C2	3.05	0.44
15:E:121:GLY:O	15:E:123:ARG:HG3	2.17	0.44
17:F:199:PHE:O	17:F:201:LYS:HG2	2.16	0.44
1:1:3305:A:OP1	17:F:334:ARG:NH2	2.51	0.44
23:I:132:ALA:O	23:I:136:GLU:HG2	2.17	0.44
27:K:158:ASP:O	27:K:160:ILE:HG13	2.17	0.44
29:L:186:PHE:HB2	29:L:191:LEU:O	2.16	0.44
45:T:173:ARG:HA	45:T:176:ARG:HB2	2.00	0.44
48:W:32:SER:O	48:W:36:TYR:N	2.46	0.44
1:1:1002:A:H2'	1:1:1003:A:C8	2.50	0.44
1:1:1900:A:N6	1:1:1906:G:C2	2.86	0.44
1:1:1944:U:C2	1:1:1945:A:C8	3.06	0.44
1:1:1948:G:N3	1:1:1949:G:C8	2.85	0.44
1:1:234:G:C2	1:1:235:A:C8	3.04	0.44
1:1:2677:G:H5''	1:1:2678:A:OP2	2.16	0.44
1:1:2736:A:H1'	47:V:90:ASN:ND2	2.32	0.44
1:1:915:A:H5''	1:1:916:G:OP2	2.16	0.44
1:1:957:C:H2'	1:1:958:C:H6	1.82	0.44
5:4:106:C:H5''	5:4:107:G:OP1	2.18	0.44
7:A:3:G:C8	7:A:3:G:OP2	2.70	0.44
9:B:60:U:OP2	9:B:61:C:H5	2.00	0.44
15:E:44:ILE:HG22	15:E:87:PHE:CE1	2.52	0.44
29:L:146:LEU:HD22	29:L:158:ALA:HB2	2.00	0.44
29:L:75:VAL:HA	29:L:78:MET:HE2	2.00	0.44
31:M:109:HIS:CD2	31:M:123:PHE:H	2.36	0.44
31:M:36:VAL:O	31:M:40:LEU:HB2	2.17	0.44
33:N:167:PHE:O	33:N:170:LEU:N	2.49	0.44
4:Y:8:PHE:CE1	4:Y:46:PRO:HG3	2.53	0.44
5:4:134:G:H5''	6:Z:56:ARG:NH1	2.31	0.44
1:1:1231:A:H62	1:1:1276:U:P	2.41	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1895:A:C6	1:1:2335:G:N7	2.85	0.44
1:1:2375:G:O6	1:1:2378:C:C2	2.70	0.44
1:1:269:G:O2'	1:1:270:U:P	2.76	0.44
1:1:3114:A:N1	1:1:3115:C:N4	2.65	0.44
1:1:312:C:H2'	1:1:313:A:C8	2.52	0.44
1:1:3152:U:H1'	1:1:3294:A:C4	2.53	0.44
1:1:342:A:N6	1:1:368:G:C4	2.86	0.44
1:1:388:G:H2'	1:1:389:A:C8	2.51	0.44
1:1:429:U:H2'	1:1:430:U:H6	1.82	0.44
1:1:835:G:HO2'	1:1:836:A:P	2.41	0.44
1:1:860:G:C5	15:E:181:LYS:HB2	2.52	0.44
9:B:33:U:N3	9:B:35:U:H5''	2.32	0.44
13:D:70:THR:OG1	13:D:71:VAL:N	2.51	0.44
19:G:126:ILE:HD11	19:G:233:LEU:HD13	2.00	0.44
27:K:70:LYS:NZ	27:K:235:GLY:O	2.29	0.44
41:R:30:ARG:NH1	41:R:31:GLU:OE1	2.50	0.44
43:S:122:ILE:HG23	43:S:126:GLN:HB2	1.99	0.44
47:V:119:ALA:O	47:V:122:GLN:N	2.48	0.44
2:X:112:SER:OG	2:X:113:ALA:N	2.50	0.44
5:4:150:G:OP1	6:Z:27:ARG:NH2	2.50	0.44
6:Z:77:GLU:HA	6:Z:133:LEU:HD12	2.00	0.44
1:1:1062:A:H1'	47:V:130:ARG:HH22	1.83	0.44
1:1:1307:G:H4'	1:1:1308:A:O5'	2.18	0.44
1:1:1365:G:H4'	1:1:1366:A:OP2	2.17	0.44
1:1:1470:U:H2'	1:1:1471:U:C6	2.52	0.44
1:1:198:A:H5''	1:1:199:A:OP2	2.18	0.44
1:1:211:A:O2'	1:1:212:G:P	2.76	0.44
1:1:219:A:O2'	1:1:1390:A:N6	2.50	0.44
1:1:2605:G:O2'	1:1:2607:G:N7	2.44	0.44
1:1:2761:G:N2	1:1:2798:C:H4'	2.32	0.44
1:1:3108:G:H2'	1:1:3109:G:O4'	2.16	0.44
1:1:3152:U:H1'	1:1:3294:A:N9	2.33	0.44
1:1:55:G:C6	1:1:56:G:N7	2.85	0.44
1:1:995:U:C2	1:1:2637:A:C8	3.04	0.44
7:A:38:A:C8	7:A:39:U:C5	3.05	0.44
7:A:8:U:O2	7:A:15:G:N1	2.51	0.44
9:B:51:G:C6	9:B:52:G:C5	3.06	0.44
1:1:3295:A:OP2	17:F:125:SER:HB2	2.17	0.44
19:G:206:LEU:HB2	19:G:246:ARG:HH21	1.83	0.44
41:R:107:LEU:HB3	41:R:152:GLU:OE2	2.16	0.44
41:R:138:LYS:HD2	41:R:140:GLU:OE2	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:R:16:SER:HB3	41:R:149:VAL:HG22	1.99	0.44
1:1:1035:G:C6	1:1:1036:A:N7	2.86	0.44
1:1:991:G:C6	1:1:1059:G:C6	3.05	0.44
1:1:1103:A:O2'	1:1:1104:G:OP1	2.26	0.44
1:1:1331:U:O2'	1:1:1332:A:OP1	2.32	0.44
1:1:1573:G:H2'	1:1:1574:C:O4'	2.18	0.44
1:1:1897:G:H2'	1:1:1898:G:O4'	2.17	0.44
1:1:189:G:HO2'	1:1:190:U:P	2.40	0.44
1:1:2113:A:H2'	1:1:2114:C:O4'	2.17	0.44
1:1:211:A:C6	1:1:229:G:N2	2.85	0.44
1:1:2356:A:C4	1:1:2357:A:C8	3.06	0.44
1:1:2403:G:O2'	1:1:2404:A:P	2.75	0.44
1:1:2544:U:C4	1:1:2545:C:C4	3.05	0.44
1:1:2556:C:H2'	1:1:2557:A:C8	2.53	0.44
1:1:400:G:H4'	1:1:401:U:OP1	2.17	0.44
1:1:49:A:C6	37:P:187:ARG:NH1	2.83	0.44
1:1:60:A:H2'	1:1:61:A:H8	1.82	0.44
1:1:836:A:C4	1:1:837:A:C8	3.06	0.44
1:1:839:C:N4	13:D:4:ARG:HH12	2.16	0.44
1:1:918:C:H2'	1:1:919:U:H6	1.83	0.44
1:1:923:C:O2'	1:1:924:G:H5''	2.18	0.44
1:1:971:G:H2'	1:1:972:A:C8	2.52	0.44
3:3:100:C:N4	3:3:101:G:C6	2.85	0.44
3:3:77:G:O2'	3:3:78:U:P	2.75	0.44
5:4:44:A:C4	5:4:45:C:C5	3.05	0.44
5:4:53:A:H2'	5:4:54:A:C8	2.53	0.44
1:1:836:A:OP1	13:D:4:ARG:HB3	2.17	0.44
17:F:291:GLU:HG3	17:F:302:LYS:HZ1	1.82	0.44
33:N:46:ILE:CG2	33:N:49:ARG:HB2	2.47	0.44
33:N:56:PRO:HB3	33:N:75:PHE:CD1	2.52	0.44
46:U:42:TRP:CH2	46:U:56:GLY:HA3	2.53	0.44
1:1:1030:A:H2'	1:1:1031:C:C6	2.52	0.44
1:1:1228:C:H5''	1:1:1229:G:OP2	2.18	0.44
1:1:1378:U:H2'	1:1:1379:G:H8	1.83	0.44
1:1:1427:U:H5''	19:G:44:LYS:HZ1	1.83	0.44
1:1:1483:G:O2'	1:1:1484:U:P	2.76	0.44
1:1:226:C:H2'	1:1:227:G:O4'	2.17	0.44
1:1:2494:A:C2	1:1:2495:C:H1'	2.53	0.44
1:1:2546:C:C4	1:1:2547:A:C8	3.05	0.44
1:1:3102:G:C2	1:1:3103:A:C5	3.06	0.44
1:1:3261:C:H2'	1:1:3262:U:C6	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3279:A:C6	1:1:3280:U:C4	3.06	0.44
1:1:3306:U:H2'	1:1:3307:A:H5''	2.00	0.44
1:1:620:U:C4	1:1:622:A:C6	3.06	0.44
1:1:659:G:O5'	1:1:659:G:H8	2.01	0.44
1:1:76:G:OP2	1:1:76:G:C8	2.67	0.44
7:A:35:U:H5'	7:A:36:U:OP2	2.17	0.44
15:E:34:TYR:CE1	15:E:38:HIS:CD2	3.06	0.44
19:G:212:ASP:OD1	19:G:215:ILE:HG22	2.17	0.44
19:G:318:LEU:HD21	25:J:145:ARG:HH12	1.82	0.44
29:L:40:HIS:CE1	29:L:41:ILE:HB	2.52	0.44
29:L:6:THR:O	29:L:56:ALA:HA	2.18	0.44
39:Q:76:PRO:HD3	39:Q:147:TRP:CE2	2.52	0.44
25:J:74:SER:HB3	47:V:141:VAL:O	2.18	0.44
48:W:79:LEU:O	48:W:83:TYR:N	2.50	0.44
2:X:23:MET:HG3	2:X:34:LEU:HB2	1.98	0.44
1:1:1080:A:OP2	21:H:140:ARG:HB2	2.17	0.44
1:1:1140:G:C6	1:1:1141:C:N4	2.86	0.44
1:1:1240:A:P	1:1:1241:U:OP2	2.76	0.44
1:1:1453:A:C6	1:1:1454:A:C5	3.06	0.44
1:1:1508:C:H2'	1:1:1509:A:O4'	2.18	0.44
1:1:1558:A:O2'	6:Z:34:LEU:N	2.51	0.44
1:1:1616:U:H2'	1:1:1617:G:C8	2.53	0.44
1:1:1661:G:C2	1:1:1662:G:C5	3.06	0.44
1:1:202:G:C5	1:1:203:G:C8	3.06	0.44
1:1:2125:A:H5''	1:1:2126:A:OP2	2.18	0.44
1:1:198:A:C6	1:1:219:A:C5	3.06	0.44
1:1:2221:G:H21	1:1:2223:A:H3'	1.82	0.44
1:1:2923:U:H2'	1:1:2924:U:H6	1.82	0.44
1:1:3029:A:O5'	1:1:3029:A:H8	2.01	0.44
1:1:301:G:C5	1:1:302:U:C5	3.05	0.44
1:1:3234:A:H8	1:1:3234:A:OP2	2.01	0.44
1:1:3244:A:H4'	1:1:3245:A:OP2	2.16	0.44
1:1:3317:U:H4'	1:1:3318:G:O4'	2.16	0.44
1:1:3353:G:O2'	1:1:3356:G:H5'	2.17	0.44
1:1:347:G:H2'	1:1:348:A:H8	1.80	0.44
1:1:505:G:OP1	19:G:320:ASN:HB2	2.18	0.44
1:1:812:G:C2	1:1:929:A:C2	3.06	0.44
1:1:88:A:C2	1:1:99:A:N1	2.86	0.44
21:H:203:HIS:O	21:H:206:GLN:HB3	2.18	0.44
23:I:170:LYS:O	23:I:174:LEU:N	2.48	0.44
23:I:96:VAL:HG12	23:I:98:VAL:HG23	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:M:15:GLU:OE1	31:M:132:ASN:ND2	2.49	0.44
33:N:98:ASP:OD1	33:N:100:ARG:HG2	2.18	0.44
41:R:31:GLU:HG2	41:R:60:PHE:CD1	2.53	0.44
46:U:46:GLN:HE21	46:U:52:LYS:HB2	1.82	0.44
1:1:1242:G:H2'	1:1:1243:G:C8	2.53	0.44
1:1:1203:A:H61	1:1:1300:G:H2'	1.83	0.44
1:1:1317:A:O2'	1:1:1318:A:H3'	2.17	0.44
1:1:1421:G:N3	1:1:1422:G:C8	2.86	0.44
1:1:1471:U:C2	1:1:1472:U:C5	3.06	0.44
1:1:1727:G:OP1	13:D:44:LYS:NZ	2.28	0.44
1:1:215:G:H2'	1:1:216:G:H8	1.83	0.44
1:1:2842:U:H5''	1:1:2844:C:H41	1.82	0.44
1:1:3037:U:OP1	17:F:348:ARG:HD3	2.18	0.44
1:1:3268:A:OP2	1:1:3268:A:C8	2.71	0.44
1:1:438:A:OP1	19:G:118:LYS:NZ	56.46	0.44
1:1:571:U:H2'	1:1:572:A:H8	1.83	0.44
1:1:597:G:N3	1:1:598:A:C8	2.86	0.44
1:1:668:G:H2'	1:1:669:U:C6	2.52	0.44
1:1:701:G:H2'	1:1:702:C:C6	2.52	0.44
5:4:58:G:H4'	5:4:59:A:OP1	2.18	0.44
19:G:27:SER:O	19:G:279:HIS:HE1	2.01	0.44
19:G:3:ARG:HH11	19:G:22:LEU:C	2.20	0.44
27:K:150:LEU:O	27:K:199:ALA:HA	2.18	0.44
33:N:77:LEU:O	33:N:81:LYS:N	2.35	0.44
1:1:2723:U:H5'	47:V:88:ARG:O	2.18	0.44
1:1:120:G:H4'	1:1:121:A:O5'	2.18	0.43
1:1:1233:G:H2'	1:1:1233:G:N3	2.33	0.43
1:1:1504:A:C5	1:1:1505:C:C5	3.05	0.43
1:1:1517:G:C6	1:1:1518:U:C4	3.06	0.43
1:1:1829:G:H5''	1:1:1830:G:H5'	2.00	0.43
1:1:1894:U:H2'	1:1:1895:A:C8	2.52	0.43
1:1:2100:A:H3'	1:1:2101:C:C6	2.53	0.43
1:1:2127:U:H2'	1:1:2128:C:H6	1.82	0.43
1:1:2493:U:H2'	1:1:2495:C:C5	2.53	0.43
1:1:2766:U:H2'	1:1:2767:U:C6	2.52	0.43
1:1:2784:G:C5	1:1:2785:A:N7	2.85	0.43
1:1:2930:A:H2'	1:1:2931:C:C6	2.51	0.43
1:1:3077:A:N6	1:1:3080:G:C5	2.86	0.43
1:1:3236:U:H2'	1:1:3237:U:C6	2.53	0.43
1:1:3344:A:H5''	1:1:3345:G:O5'	2.17	0.43
1:1:405:U:H5	1:1:406:G:C5	2.35	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:48:A:H5''	1:1:49:A:OP1	2.17	0.43
1:1:616:G:C2	1:1:617:G:C5	3.06	0.43
1:1:72:C:N4	1:1:74:G:C8	2.86	0.43
1:1:859:G:C6	1:1:861:C:C4	3.05	0.43
1:1:359:U:C2	1:1:920:A:N6	2.86	0.43
1:1:932:U:O2'	1:1:933:A:O5'	2.26	0.43
5:4:154:C:H2'	5:4:155:A:H8	1.78	0.43
5:4:63:G:O6	5:4:97:A:N1	2.51	0.43
7:A:30:G:H2'	7:A:31:A:H8	1.83	0.43
9:B:6:G:H2'	9:B:7:G:C8	2.53	0.43
13:D:46:THR:OG1	13:D:57:CYS:SG	2.44	0.43
15:E:32:LEU:HA	15:E:36:GLU:OE1	2.18	0.43
33:N:189:GLU:O	33:N:192:GLU:HG2	2.18	0.43
35:O:20:VAL:HG13	35:O:66:THR:OG1	2.18	0.43
1:1:58:G:H4'	37:P:155:VAL:HG12	1.99	0.43
37:P:11:GLN:HG2	37:P:44:ARG:NH2	2.33	0.43
39:Q:78:ARG:O	39:Q:81:TYR:N	2.50	0.43
46:U:12:ARG:O	46:U:13:ARG:HB2	2.18	0.43
46:U:40:ARG:NH1	46:U:43:TYR:CD2	2.85	0.43
1:1:1104:G:H2'	1:1:1104:G:N3	2.33	0.43
1:1:1490:A:N7	1:1:1491:A:C5	2.86	0.43
1:1:1534:A:H62	1:1:1535:A:N6	2.17	0.43
1:1:1659:U:C2	1:1:1660:C:C5	3.06	0.43
1:1:2111:G:O2'	1:1:2112:U:OP1	2.29	0.43
1:1:2374:C:N4	1:1:2941:A:C4	2.86	0.43
1:1:2946:A:H5''	1:1:2947:G:H5'	2.00	0.43
1:1:3017:A:H2'	1:1:3018:C:C6	2.52	0.43
1:1:521:A:C6	1:1:572:A:C6	3.07	0.43
1:1:585:A:H2'	1:1:586:C:C6	2.53	0.43
1:1:648:C:C5	1:1:2375:G:H4'	2.52	0.43
1:1:73:C:O2'	1:1:74:G:OP1	2.26	0.43
1:1:761:A:N6	1:1:771:A:C8	2.86	0.43
1:1:796:U:C2	1:1:797:U:C5	3.06	0.43
1:1:880:G:C4	1:1:882:A:N7	2.87	0.43
1:1:884:A:H5''	1:1:885:U:OP1	2.18	0.43
1:1:916:G:H21	15:E:3:ARG:HH21	1.65	0.43
3:3:19:C:C2	3:3:20:A:C8	3.06	0.43
7:A:39:U:H2'	7:A:40:C:C6	2.53	0.43
11:C:2:VAL:N	11:C:90:HIS:O	2.52	0.43
13:D:46:THR:HG21	13:D:59:CYS:SG	2.58	0.43
13:D:59:CYS:C	13:D:61:LYS:H	2.21	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2366:C:H4'	17:F:259:HIS:CE1	2.54	0.43
21:H:108:ARG:NH1	21:H:253:PHE:CD1	2.86	0.43
21:H:90:HIS:HB2	21:H:226:TYR:CE1	2.53	0.43
25:J:221:LYS:O	25:J:227:GLY:HA3	2.18	0.43
31:M:36:VAL:O	31:M:40:LEU:CB	2.66	0.43
37:P:37:HIS:HE1	37:P:63:ARG:NH1	2.16	0.43
1:1:1095:U:O2	47:V:127:GLN:HA	2.18	0.43
47:V:17:ARG:HH12	47:V:45:ASN:ND2	2.17	0.43
48:W:21:SER:HA	48:W:24:GLU:OE2	2.18	0.43
1:1:1144:U:O2'	1:1:1145:G:P	2.76	0.43
1:1:1180:A:C4	1:1:1182:A:C8	3.06	0.43
1:1:1236:G:O2'	1:1:1245:A:H1'	2.17	0.43
1:1:1418:A:HO2'	1:1:1419:A:P	2.39	0.43
1:1:1695:U:O2'	1:1:1696:A:O5'	2.27	0.43
1:1:1707:A:H5''	1:1:1708:C:OP2	2.18	0.43
1:1:2221:G:N2	1:1:2224:A:OP2	2.51	0.43
1:1:2226:U:H2'	1:1:2227:C:O4'	2.18	0.43
1:1:2435:G:H4'	37:P:24:ARG:NH2	2.33	0.43
1:1:2874:G:O6	1:1:2945:G:H2'	2.18	0.43
1:1:2885:C:H2'	1:1:2886:U:O4'	2.19	0.43
1:1:3052:G:H21	1:1:3093:C:N4	2.16	0.43
1:1:3342:A:H2'	1:1:3343:G:O4'	2.19	0.43
1:1:3384:U:H2'	1:1:3385:U:O4'	2.19	0.43
1:1:595:G:H1	1:1:609:G:H5''	1.83	0.43
1:1:611:A:O2'	1:1:612:U:O5'	2.36	0.43
1:1:647:A:HO2'	1:1:648:C:P	2.39	0.43
1:1:802:C:H2'	1:1:803:C:C6	2.53	0.43
1:1:866:A:C8	1:1:867:G:C8	3.06	0.43
3:3:98:C:H3'	3:3:99:G:H5''	2.00	0.43
7:A:43:U:H2'	7:A:44:U:O4'	2.18	0.43
23:I:78:ARG:NH1	23:I:106:PHE:HB2	2.33	0.43
29:L:113:GLU:HG3	29:L:125:ASN:HD21	1.84	0.43
1:1:1387:G:OP2	1:1:1387:G:C8	2.72	0.43
1:1:1493:G:HO2'	1:1:1494:U:H5	1.63	0.43
1:1:1674:G:N1	1:1:1774:C:N3	2.66	0.43
1:1:1951:C:H5'	1:1:1952:G:OP2	2.19	0.43
1:1:995:U:N3	1:1:2637:A:N7	2.66	0.43
1:1:2656:A:HO2'	1:1:2657:A:P	2.42	0.43
1:1:2667:A:C4	1:1:2690:G:C2	3.07	0.43
1:1:2812:C:H2'	1:1:2813:A:C8	2.54	0.43
1:1:3035:A:C4	1:1:3036:G:C8	3.07	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3345:G:H2'	1:1:3346:U:C6	2.54	0.43
1:1:500:C:H2'	1:1:501:A:H8	1.83	0.43
1:1:810:A:C4	1:1:811:U:C5	3.06	0.43
1:1:967:A:C4	1:1:968:G:C8	3.06	0.43
5:4:37:A:H5''	5:4:38:U:O5'	2.19	0.43
9:B:33:U:C2	9:B:35:U:H5''	2.53	0.43
13:D:30:GLU:HA	13:D:33:GLN:HB3	2.00	0.43
17:F:108:GLU:HA	17:F:137:TYR:CE2	2.53	0.43
21:H:64:ILE:HG22	21:H:75:LEU:HB3	1.99	0.43
21:H:95:TRP:CD1	21:H:158:ARG:HA	2.54	0.43
23:I:131:LYS:HD2	23:I:132:ALA:H	1.83	0.43
25:J:26:VAL:HG23	25:J:27:ALA:H	1.83	0.43
29:L:105:GLU:HG3	29:L:108:GLY:HA2	2.01	0.43
29:L:88:TYR:CD2	29:L:154:VAL:HG12	2.53	0.43
2:X:136:VAL:HG12	2:X:137:VAL:HG23	1.99	0.43
4:Y:80:ARG:O	4:Y:82:ILE:N	2.51	0.43
1:1:1213:G:H2'	1:1:1214:U:H6	1.84	0.43
1:1:130:A:H2'	1:1:131:C:C6	2.53	0.43
1:1:1560:G:N1	1:1:1580:A:C6	2.86	0.43
1:1:164:A:H2'	1:1:165:A:O4'	2.17	0.43
1:1:1766:G:H2'	1:1:1767:C:H6	1.82	0.43
1:1:1850:A:H4'	1:1:1851:G:OP2	2.17	0.43
1:1:2099:A:C6	1:1:2100:A:C6	3.06	0.43
1:1:2248:C:O2'	1:1:2272:G:O2'	2.17	0.43
1:1:256:G:H2'	1:1:257:U:C6	2.53	0.43
1:1:2659:G:N1	1:1:2712:U:O2	2.51	0.43
1:1:2731:U:H2'	1:1:2732:G:C8	2.53	0.43
1:1:2816:G:N3	1:1:2870:C:N4	2.66	0.43
1:1:287:G:C6	1:1:288:C:C4	3.07	0.43
1:1:3008:A:N6	1:1:3139:A:N6	2.65	0.43
1:1:3213:A:H5''	35:O:128:ARG:HH12	1.84	0.43
1:1:595:G:O2'	1:1:596:C:O4'	2.27	0.43
1:1:867:G:N1	1:1:893:C:O2	2.52	0.43
1:1:916:G:N2	15:E:3:ARG:HH21	2.17	0.43
1:1:964:G:N1	1:1:965:A:C6	2.86	0.43
11:C:34:SER:HG	11:C:35:LEU:H	1.64	0.43
17:F:292:ALA:HB2	17:F:302:LYS:NZ	2.33	0.43
19:G:219:LEU:O	19:G:222:VAL:HG12	2.18	0.43
31:M:39:GLN:HE22	31:M:120:ILE:HD13	1.83	0.43
39:Q:180:SER:O	39:Q:184:THR:N	2.52	0.43
46:U:43:TYR:HE2	46:U:122:HIS:CE1	2.35	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1143:A:H4'	1:1:1144:U:OP2	2.19	0.43
1:1:1223:A:N3	1:1:1223:A:H2'	2.34	0.43
1:1:1254:C:N4	1:1:1263:A:OP1	2.51	0.43
1:1:1261:G:H4'	1:1:1278:A:H61	1.84	0.43
1:1:171:G:C6	1:1:172:G:N7	2.87	0.43
1:1:1922:A:H2'	1:1:1923:C:O4'	2.18	0.43
1:1:2207:A:C4	1:1:2208:A:H8	2.37	0.43
1:1:2325:G:H2'	1:1:2326:A:H8	1.83	0.43
1:1:2367:A:C4	1:1:2381:G:N2	2.87	0.43
1:1:2534:G:C2	1:1:2535:A:C5	3.07	0.43
1:1:3298:C:H2'	1:1:3299:A:H8	1.83	0.43
1:1:795:G:H2'	1:1:796:U:C6	2.52	0.43
1:1:852:U:H2'	1:1:853:G:C8	2.53	0.43
3:3:76:A:HO2'	3:3:77:G:P	2.40	0.43
5:4:103:G:C6	5:4:105:A:N6	2.87	0.43
5:4:75:G:H2'	5:4:76:C:C6	2.54	0.43
7:A:17:U:H5'	7:A:18:G:OP2	2.18	0.43
7:A:5:C:C2	7:A:6:G:N7	2.86	0.43
1:1:2244:A:H8	15:E:243:THR:HG21	1.82	0.43
17:F:19:ARG:HD2	17:F:232:ARG:NH2	2.26	0.43
1:1:909:G:P	37:P:77:LYS:NZ	2.92	0.43
47:V:56:PHE:CZ	47:V:60:LYS:NZ	2.85	0.43
47:V:30:TYR:HE1	47:V:94:GLU:OE2	2.01	0.43
1:1:1069:C:C4	1:1:1070:U:C4	3.07	0.43
1:1:1348:U:O4	43:S:31:LYS:HG3	2.19	0.43
1:1:1429:G:H4'	1:1:1430:U:OP2	2.16	0.43
1:1:1630:U:C2	1:1:1813:A:H8	2.37	0.43
1:1:1925:U:C4'	1:1:1926:C:OP2	2.63	0.43
1:1:2291:A:C6	1:1:2302:G:C6	3.06	0.43
1:1:2907:G:H2'	1:1:2908:G:H8	1.83	0.43
1:1:3100:U:H2'	1:1:3101:G:C8	2.54	0.43
1:1:3106:A:H62	1:1:3128:G:H21	1.67	0.43
1:1:3161:C:H2'	1:1:3162:C:H6	1.83	0.43
1:1:3219:G:O2'	1:1:3220:G:P	2.77	0.43
1:1:3218:A:H5''	1:1:3219:G:O4'	2.18	0.43
1:1:357:A:C6	1:1:363:G:N1	2.86	0.43
5:4:106:C:H4'	5:4:107:G:O5'	2.17	0.43
7:A:27:G:H2'	7:A:28:U:H6	1.83	0.43
11:C:14:GLY:C	11:C:16:THR:H	2.21	0.43
17:F:312:VAL:HG12	17:F:313:HIS:ND1	2.33	0.43
17:F:313:HIS:CB	17:F:332:ARG:HD2	2.45	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:H:195:LEU:O	21:H:199:ILE:HG13	2.18	0.43
31:M:49:LYS:HA	31:M:64:LYS:HA	2.00	0.43
37:P:42:PRO:HG3	37:P:61:ILE:HG13	2.01	0.43
37:P:6:TYR:O	37:P:9:GLU:N	2.49	0.43
2:X:120:LYS:HD3	2:X:137:VAL:HG22	2.00	0.43
1:1:1266:G:N2	1:1:1276:U:C6	2.87	0.43
1:1:1222:G:H22	1:1:1285:G:H2'	1.84	0.43
1:1:1443:G:H2'	1:1:1444:G:C8	2.53	0.43
1:1:1731:A:C6	1:1:1732:U:C4	3.07	0.43
1:1:196:G:H21	1:1:219:A:H61	1.66	0.43
1:1:241:G:O4'	33:N:45:LYS:NZ	2.51	0.43
1:1:2951:G:N2	1:1:2952:G:H1'	2.34	0.43
1:1:3333:G:HO2'	1:1:3334:U:P	2.41	0.43
1:1:677:A:O2'	1:1:678:G:P	2.76	0.43
1:1:851:C:OP2	13:D:3:LYS:HE2	2.18	0.43
1:1:84:U:H3	1:1:85:A:H62	1.65	0.43
1:1:87:U:OP1	43:S:172:PHE:HZ	2.02	0.43
3:3:7:G:OP2	21:H:28:THR:HG23	2.18	0.43
5:4:70:G:HO2'	5:4:71:A:P	2.41	0.43
5:4:75:G:H2'	5:4:76:C:H6	1.84	0.43
5:4:85:G:O2'	5:4:86:U:OP1	2.31	0.43
7:A:22:G:C6	7:A:23:A:C6	3.07	0.43
17:F:209:PHE:HA	17:F:340:LYS:HZ3	1.83	0.43
17:F:24:SER:O	17:F:28:ARG:HG3	7.72	0.43
17:F:311:PHE:HB2	17:F:314:TYR:HB3	2.00	0.43
19:G:311:HIS:CE1	25:J:162:PRO:HG3	2.53	0.43
21:H:107:ARG:HH11	21:H:110:LEU:HD23	1.82	0.43
29:L:22:SER:HB2	29:L:39:LYS:HZ3	1.84	0.43
29:L:47:LYS:HZ1	35:O:5:SER:HB2	1.83	0.43
1:1:49:A:N7	37:P:187:ARG:HD2	2.34	0.43
41:R:120:ASN:OD1	41:R:145:HIS:HB2	2.18	0.43
4:Y:6:ASP:HB3	4:Y:10:GLY:H	1.84	0.43
1:1:1423:C:C2	1:1:1424:C:C5	3.06	0.43
1:1:1433:A:H4'	1:1:1434:G:OP1	2.19	0.43
1:1:1610:G:C6	1:1:1611:G:C6	3.06	0.43
1:1:1733:G:C2	1:1:1734:G:C4	3.07	0.43
1:1:2228:A:H2'	1:1:2229:A:C8	2.54	0.43
1:1:2363:A:N3	1:1:2376:G:C2	2.87	0.43
1:1:2429:G:H2'	1:1:2430:A:H8	1.84	0.43
1:1:2531:C:O2	1:1:2531:C:H2'	2.19	0.43
1:1:2678:A:H2'	1:1:2679:A:H5'	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3106:A:H62	1:1:3128:G:N2	2.17	0.43
1:1:371:G:C5	1:1:373:A:OP2	2.72	0.43
1:1:500:C:H2'	1:1:501:A:C8	2.54	0.43
1:1:824:C:C2	1:1:902:G:N2	2.87	0.43
1:1:827:A:C2	1:1:828:A:C8	3.06	0.43
1:1:875:G:C4	1:1:887:G:N2	2.87	0.43
3:3:64:A:H5'	3:3:65:G:H5''	2.01	0.43
1:1:349:A:C2	5:4:24:G:C4	3.07	0.43
17:F:46:PHE:CE2	17:F:81:THR:HG23	2.54	0.43
1:1:1147:G:OP1	19:G:47:ARG:NH1	58.45	0.43
21:H:261:THR:OG1	21:H:264:GLN:OE1	2.18	0.43
23:I:55:LEU:HD22	23:I:98:VAL:HG11	2.01	0.43
27:K:146:LYS:HZ3	27:K:173:MET:HB3	1.84	0.43
35:O:45:LEU:HD12	35:O:56:GLN:O	2.19	0.43
45:T:100:ARG:O	45:T:104:ARG:HG2	2.18	0.43
45:T:134:HIS:HE1	45:T:136:ARG:HB3	1.79	0.43
1:1:1359:C:H2'	1:1:1360:C:C6	2.54	0.43
1:1:1539:A:C2	1:1:1540:U:C2	3.07	0.43
1:1:1683:A:C5	1:1:1684:U:C5	3.06	0.43
1:1:1710:C:H2'	1:1:1711:C:H6	1.84	0.43
1:1:183:G:H2'	1:1:184:U:H6	1.84	0.43
1:1:2247:G:N2	1:1:2248:C:O2	2.52	0.43
1:1:225:C:H2'	1:1:226:C:C6	2.53	0.43
1:1:2368:A:C6	1:1:2369:G:C6	3.07	0.43
1:1:1131:G:C2	1:1:2373:A:C4	3.07	0.43
1:1:2554:A:O2'	1:1:2555:G:OP1	2.32	0.43
1:1:2576:G:C4	1:1:2577:C:C5	3.07	0.43
1:1:3256:G:H2'	1:1:3257:C:C6	2.54	0.43
1:1:3364:C:H2'	1:1:3365:U:C6	2.54	0.43
1:1:597:G:OP1	25:J:41:ARG:HD2	2.19	0.43
1:1:716:A:C4	1:1:720:A:C8	3.07	0.43
3:3:59:U:C2	3:3:60:G:C8	3.07	0.43
5:4:95:G:O2'	5:4:96:A:OP1	2.29	0.43
7:A:27:G:C2	7:A:28:U:C4	3.07	0.43
7:A:49:G:O6	7:A:65:C:H2'	2.19	0.43
17:F:213:GLU:CD	17:F:340:LYS:HZ1	2.22	0.43
21:H:194:LEU:O	21:H:197:SER:HB3	2.17	0.43
25:J:138:TYR:CE2	25:J:233:GLU:HG2	2.53	0.43
35:O:105:GLN:O	35:O:109:ARG:HG3	2.19	0.43
4:Y:23:ARG:NH1	4:Y:29:PHE:HZ	2.17	0.43
1:1:1115:G:H5''	1:1:1116:G:H5''	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1449:A:H5''	1:1:1450:G:OP2	2.19	0.42
1:1:1646:G:C2	1:1:1808:G:C2	3.07	0.42
1:1:1481:A:N7	1:1:1859:A:C5	2.87	0.42
1:1:2283:G:O2'	1:1:2284:C:P	2.72	0.42
1:1:2429:G:C2	1:1:2430:A:C5	3.06	0.42
1:1:2529:A:C2	1:1:2530:G:H1'	2.54	0.42
1:1:2577:C:C4	1:1:2578:U:C4	3.06	0.42
1:1:3121:U:H1'	1:1:3122:A:C8	2.54	0.42
1:1:3104:U:H5''	1:1:3128:G:O6	2.20	0.42
1:1:3353:G:N1	1:1:3356:G:C2	2.87	0.42
1:1:531:G:O2'	1:1:532:A:O4'	2.25	0.42
1:1:625:G:C2	1:1:626:U:C2	3.07	0.42
1:1:674:G:H2'	1:1:675:C:C6	2.54	0.42
1:1:678:G:C6	1:1:703:G:C2	3.07	0.42
1:1:993:G:C4	1:1:2637:A:H2	2.36	0.42
5:4:73:U:C4	5:4:74:U:C4	3.07	0.42
9:B:15:G:N2	9:B:48:C:O2	2.41	0.42
13:D:57:CYS:SG	13:D:60:CYS:HB3	2.59	0.42
1:1:3304:U:O2'	17:F:334:ARG:NH2	2.52	0.42
21:H:20:PHE:O	21:H:24:ARG:HG3	2.19	0.42
21:H:234:ASP:OD1	21:H:235:SER:N	2.51	0.42
27:K:81:THR:OG1	27:K:82:LEU:N	2.52	0.42
1:1:1028:U:O2	31:M:94:ARG:NH2	2.52	0.42
33:N:109:PHE:O	33:N:113:VAL:HG23	2.19	0.42
1:1:3243:A:N6	39:Q:160:ARG:HD2	2.28	0.42
17:F:262:TRP:HE1	39:Q:66:LYS:NZ	2.17	0.42
39:Q:77:SER:OG	39:Q:78:ARG:N	2.51	0.42
1:1:3267:A:H4'	41:R:181:ARG:HH11	1.83	0.42
41:R:179:GLN:O	41:R:184:ALA:N	2.52	0.42
43:S:29:LEU:HD23	43:S:29:LEU:HA	1.82	0.42
1:1:1035:G:C6	1:1:1036:A:C5	3.06	0.42
1:1:109:A:H4'	1:1:110:G:OP1	2.19	0.42
1:1:1185:C:H2'	1:1:1186:G:O4'	2.19	0.42
1:1:1359:C:H2'	1:1:1360:C:H6	1.84	0.42
1:1:1560:G:C6	1:1:1580:A:N1	2.87	0.42
1:1:1652:G:C4	1:1:1653:G:C8	3.07	0.42
1:1:1730:G:O2'	1:1:1731:A:H8	2.02	0.42
1:1:1740:U:H1'	1:1:1741:A:C2	2.48	0.42
1:1:1748:G:C6	1:1:1749:A:N6	2.86	0.42
1:1:1913:A:N6	1:1:2120:A:C6	2.86	0.42
1:1:1940:G:H21	1:1:3362:A:H8	1.67	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1913:A:N6	1:1:2120:A:N1	2.67	0.42
1:1:2177:G:O2'	1:1:2178:A:P	2.69	0.42
1:1:2208:A:O2'	1:1:2209:U:OP1	2.28	0.42
1:1:212:G:C2	1:1:222:A:C4	3.07	0.42
1:1:2273:G:N2	1:1:2311:G:H2'	2.34	0.42
1:1:2506:U:H2'	1:1:2507:C:O4'	2.19	0.42
1:1:2525:G:HO2'	1:1:2526:C:P	2.30	0.42
1:1:254:A:H2'	1:1:255:A:H8	1.80	0.42
1:1:2760:C:N4	11:C:63:LYS:HE3	2.34	0.42
1:1:2861:U:C6	1:1:2861:U:OP2	2.70	0.42
1:1:299:G:H2'	1:1:300:G:C8	2.54	0.42
1:1:3047:U:C5	1:1:3094:A:C2	3.08	0.42
1:1:3121:U:O2'	1:1:3122:A:H3'	2.19	0.42
1:1:3250:U:H2'	1:1:3251:U:C6	2.54	0.42
1:1:3347:A:N6	1:1:3357:U:O4	2.52	0.42
1:1:374:A:N7	1:1:376:G:C5	2.87	0.42
1:1:510:G:O6	1:1:581:U:O4	2.37	0.42
1:1:597:G:C2	1:1:598:A:C8	3.07	0.42
1:1:60:A:C2	1:1:61:A:C5	3.07	0.42
3:3:115:G:H2'	3:3:116:C:H6	1.84	0.42
1:1:10:C:C2	5:4:149:A:H2	2.38	0.42
15:E:51:ASP:HB2	15:E:58:LEU:HG	2.00	0.42
17:F:48:GLY:O	17:F:335:ILE:HD12	2.19	0.42
19:G:28:ALA:HB3	19:G:127:ALA:HB2	2.01	0.42
19:G:338:LYS:O	19:G:339:LEU:HB2	2.19	0.42
21:H:184:ASP:OD2	21:H:189:GLU:HB2	2.19	0.42
25:J:165:ASP:OD2	25:J:167:ALA:HB3	2.19	0.42
27:K:96:LYS:HD2	27:K:207:ASP:OD2	2.19	0.42
29:L:114:VAL:HB	29:L:124:ARG:HB2	2.01	0.42
37:P:124:ASP:OD1	37:P:127:TYR:N	2.50	0.42
41:R:57:ALA:HB2	41:R:83:TRP:NE1	2.34	0.42
2:X:15:LEU:HD22	2:X:51:ALA:HB1	2.00	0.42
6:Z:85:GLN:NE2	6:Z:119:THR:HB	2.33	0.42
6:Z:58:ASP:O	6:Z:62:VAL:HG23	2.17	0.42
6:Z:79:GLY:O	6:Z:81:ILE:HG13	2.18	0.42
1:1:1013:G:N2	1:1:1038:C:C2	2.88	0.42
1:1:147:U:H1'	27:K:162:LEU:HD11	2.00	0.42
1:1:1500:G:C6	1:1:1517:G:C6	3.08	0.42
1:1:1525:G:H2'	1:1:1525:G:N3	2.33	0.42
1:1:2287:C:C1'	1:1:2298:U:H1'	2.49	0.42
1:1:2568:C:N3	1:1:2574:G:C6	2.87	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2772:C:OP1	1:1:2773:C:H5'	2.20	0.42
1:1:2878:G:C6	1:1:2879:C:N4	2.87	0.42
1:1:3150:A:H5'	17:F:130:PHE:H	1.84	0.42
1:1:405:U:C5	1:1:406:G:C4	3.08	0.42
1:1:537:A:C4	1:1:538:G:C8	3.07	0.42
1:1:646:A:C6	1:1:647:A:C2	3.08	0.42
1:1:87:U:C5	1:1:98:G:N2	2.88	0.42
5:4:43:A:N3	5:4:44:A:C8	2.87	0.42
9:B:58:A:H4'	9:B:59:G:OP1	2.17	0.42
17:F:148:LEU:O	17:F:152:LYS:HG3	2.20	0.42
17:F:41:VAL:HG22	17:F:185:GLY:HA3	2.01	0.42
19:G:212:ASP:CG	19:G:215:ILE:HG22	2.40	0.42
21:H:39:GLN:HA	21:H:48:LYS:HE2	2.00	0.42
23:I:77:ARG:NH1	23:I:79:VAL:HG22	2.34	0.42
45:T:38:ARG:O	45:T:41:ILE:N	2.52	0.42
45:T:55:VAL:HG12	45:T:56:THR:O	2.18	0.42
48:W:15:PHE:O	48:W:64:THR:HA	2.20	0.42
6:Z:96:LYS:HB2	6:Z:110:VAL:HG21	2.00	0.42
1:1:1031:C:H2'	1:1:1032:C:C6	2.52	0.42
1:1:1150:A:N7	1:1:1151:U:C2	2.87	0.42
1:1:1203:A:H2'	1:1:1204:A:H8	1.84	0.42
1:1:1211:U:H2'	1:1:1212:A:C8	2.52	0.42
1:1:1438:U:H2'	1:1:1439:U:C6	2.55	0.42
1:1:146:U:C4	27:K:134:TYR:HE1	2.36	0.42
1:1:1481:A:C2'	1:1:1482:A:OP2	2.67	0.42
1:1:1616:U:H2'	1:1:1617:G:H8	1.84	0.42
1:1:1895:A:H5'	1:1:1896:A:OP1	2.20	0.42
1:1:2732:G:H2'	1:1:2733:A:C8	2.54	0.42
1:1:2768:U:C2	1:1:2769:A:C8	3.08	0.42
1:1:2794:G:O2'	1:1:2795:U:O4'	2.37	0.42
1:1:2941:A:N7	17:F:255:TRP:CE2	2.86	0.42
1:1:3052:G:C2	1:1:3091:A:C2	3.07	0.42
1:1:3201:C:H2'	1:1:3202:G:H8	1.84	0.42
1:1:3386:G:OP1	17:F:10:ARG:NH2	63.75	0.42
1:1:517:G:H5''	1:1:518:G:N2	2.34	0.42
1:1:771:A:H2'	1:1:772:U:O4'	2.18	0.42
1:1:880:G:C2	1:1:882:A:N6	2.88	0.42
1:1:983:A:HO2'	1:1:984:G:P	2.42	0.42
1:1:997:A:C4	1:1:998:A:C8	3.08	0.42
3:3:74:C:N4	3:3:75:G:C6	2.87	0.42
25:J:132:PRO:HA	25:J:229:PHE:CG	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:K:33:ASN:CG	27:K:38:GLN:HE21	2.22	0.42
31:M:94:ARG:C	31:M:96:PHE:H	2.22	0.42
35:O:19:ARG:HG2	35:O:65:LEU:HD22	2.01	0.42
43:S:32:LEU:O	43:S:35:PHE:N	2.47	0.42
43:S:71:LEU:HD23	43:S:71:LEU:HA	1.82	0.42
6:Z:67:ILE:HD12	6:Z:83:VAL:HG12	2.01	0.42
1:1:1309:U:H5''	1:1:1311:G:P	2.59	0.42
1:1:1535:A:H62	1:1:1586:G:H21	1.67	0.42
1:1:1673:G:N2	1:1:1775:G:H1'	2.34	0.42
1:1:1775:G:C2	1:1:1776:G:C8	3.08	0.42
1:1:1915:A:H2'	1:1:1916:U:C5	2.55	0.42
1:1:1939:G:C8	1:1:2114:C:C2	3.07	0.42
1:1:1948:G:C2	1:1:1949:G:C8	3.07	0.42
1:1:2158:A:H2	1:1:2174:G:N2	2.17	0.42
1:1:2222:A:C6	1:1:2223:A:N1	2.87	0.42
1:1:1925:U:C4	1:1:2320:A:C6	3.07	0.42
1:1:2343:C:H2'	1:1:2344:U:H6	1.84	0.42
1:1:2385:G:O2'	1:1:2386:A:O5'	2.25	0.42
1:1:2390:A:H2'	1:1:2391:G:O4'	2.19	0.42
1:1:2704:A:C5	1:1:2706:G:N7	2.87	0.42
1:1:2813:A:H5''	1:1:2814:G:OP2	2.19	0.42
1:1:3081:C:H2'	1:1:3082:C:C6	2.53	0.42
1:1:3268:A:OP1	1:1:3268:A:H3'	2.19	0.42
1:1:519:A:O5'	1:1:520:U:OP2	2.38	0.42
1:1:51:A:C5	1:1:52:A:N7	2.88	0.42
1:1:677:A:N1	1:1:703:G:O2'	2.46	0.42
7:A:10:G:P	7:A:11:C:OP2	2.78	0.42
9:B:14:A:C6	9:B:15:G:C4	3.08	0.42
21:H:68:THR:HG22	21:H:69:ILE:H	1.83	0.42
23:I:71:VAL:HG22	23:I:156:LYS:HZ1	1.84	0.42
23:I:38:THR:HA	23:I:90:LYS:HG2	2.00	0.42
25:J:27:ALA:O	25:J:31:ALA:N	2.46	0.42
25:J:37:ASN:O	25:J:40:LYS:HB2	2.19	0.42
27:K:91:PHE:O	27:K:95:ASN:HB2	2.19	0.42
33:N:182:ILE:HA	33:N:185:LYS:HB3	2.01	0.42
27:K:165:PHE:HE2	37:P:7:LEU:HD12	1.83	0.42
1:1:1013:G:C2	1:1:1014:U:O2	2.73	0.42
1:1:1026:A:C8	1:1:1026:A:OP2	2.67	0.42
1:1:1105:A:H2'	1:1:1106:G:H8	1.82	0.42
1:1:1174:G:C5	1:1:1318:A:N3	2.87	0.42
1:1:1174:G:C6	1:1:1175:C:N4	2.88	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1209:G:H2'	1:1:1210:U:O4'	2.19	0.42
1:1:1236:G:C2	1:1:1244:A:OP2	2.73	0.42
1:1:1360:C:H2'	1:1:1361:U:C6	2.55	0.42
1:1:1525:G:C8	1:1:1829:G:C5	3.07	0.42
1:1:1640:G:H2'	1:1:1641:U:C6	2.55	0.42
1:1:1662:G:N2	1:1:1722:U:O4	2.41	0.42
1:1:1749:A:C4	1:1:1750:A:C6	3.07	0.42
1:1:2167:A:N6	1:1:2168:A:N1	2.67	0.42
1:1:2218:G:H2'	1:1:2219:A:C8	2.54	0.42
1:1:3253:G:N3	1:1:3254:G:C8	2.87	0.42
1:1:3316:A:H5'	1:1:3317:U:OP1	2.19	0.42
1:1:535:G:C2	1:1:555:U:C2	3.04	0.42
1:1:546:C:OP2	1:1:547:G:N1	2.52	0.42
1:1:763:G:C6	1:1:764:U:C2	3.08	0.42
1:1:771:A:H8	1:1:771:A:O5'	2.03	0.42
1:1:891:G:C6	1:1:892:U:C4	3.07	0.42
1:1:908:G:H1'	1:1:925:A:N7	2.34	0.42
3:3:115:G:H2'	3:3:116:C:C6	2.55	0.42
9:B:6:G:C6	9:B:68:G:C6	3.08	0.42
1:1:3097:C:P	17:F:325:LYS:HZ2	2.42	0.42
19:G:36:HIS:O	19:G:40:THR:HG23	2.20	0.42
1:1:2663:G:H5'	21:H:152:ARG:HE	1.84	0.42
21:H:244:HIS:O	21:H:247:ILE:HB	2.20	0.42
25:J:158:LYS:HG2	25:J:159:GLN:H	1.85	0.42
25:J:29:GLU:O	25:J:33:ARG:HB3	2.20	0.42
29:L:106:LYS:HB3	29:L:111:PHE:CD2	2.54	0.42
29:L:19:SER:HB2	29:L:26:LYS:HB3	2.01	0.42
35:O:89:ALA:O	35:O:93:LYS:HG3	2.19	0.42
48:W:23:THR:C	48:W:26:GLY:H	2.23	0.42
1:1:1151:U:H5''	1:1:1152:G:OP2	2.20	0.42
1:1:1469:C:H4'	1:1:1470:U:OP2	2.19	0.42
1:1:1551:C:O2'	1:1:2170:U:O2'	2.37	0.42
1:1:1689:U:H2'	1:1:1690:C:H6	1.85	0.42
1:1:1754:G:H2'	1:1:1755:C:H6	1.83	0.42
1:1:1767:C:H2'	1:1:1768:U:H6	1.83	0.42
1:1:1919:G:H1'	1:1:1934:G:N2	2.35	0.42
1:1:2732:G:H2'	1:1:2733:A:H8	1.84	0.42
1:1:3063:C:H2'	1:1:3064:U:H6	1.85	0.42
1:1:3083:G:H2'	1:1:3084:C:H6	1.84	0.42
1:1:589:A:N6	1:1:610:G:O2'	2.53	0.42
1:1:75:G:O3'	33:N:70:ARG:NH2	2.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:924:G:C2'	1:1:925:A:OP2	2.68	0.42
3:3:15:C:H2'	3:3:16:U:H6	1.83	0.42
3:3:66:A:C5	3:3:67:G:C8	3.08	0.42
5:4:133:G:P	6:Z:94:GLN:HE21	2.42	0.42
5:4:65:A:H2'	5:4:66:A:H8	1.85	0.42
7:A:30:G:H2'	7:A:31:A:C8	2.54	0.42
15:E:129:ALA:HB3	15:E:132:ASN:HD22	1.85	0.42
17:F:116:ARG:HD2	17:F:174:LYS:O	2.20	0.42
27:K:64:ILE:O	27:K:68:ARG:HG2	2.19	0.42
29:L:75:VAL:HA	29:L:78:MET:CE	2.49	0.42
33:N:56:PRO:HG3	33:N:74:GLY:O	2.19	0.42
47:V:107:GLU:HA	47:V:110:LYS:HB2	2.01	0.42
1:1:1449:A:N7	1:1:1450:G:C4	2.88	0.42
1:1:1595:U:O2'	1:1:1596:C:O5'	2.37	0.42
1:1:1658:G:O4'	1:1:1796:G:H2'	2.19	0.42
1:1:1672:U:H2'	1:1:1673:G:H8	1.85	0.42
1:1:1657:C:H42	1:1:1797:A:H3'	1.85	0.42
1:1:1810:A:C2	1:1:1811:G:C5	3.06	0.42
1:1:1847:A:N6	1:1:1849:C:H1'	2.35	0.42
1:1:2341:A:H2'	1:1:2342:U:O4'	2.20	0.42
1:1:2527:G:H2'	1:1:2528:G:O4'	2.20	0.42
1:1:2886:U:C4	1:1:2911:A:C6	3.07	0.42
1:1:290:G:H2'	1:1:291:C:C6	2.54	0.42
1:1:295:A:N3	1:1:296:A:C8	2.88	0.42
1:1:3064:U:O4	1:1:3080:G:N1	2.53	0.42
1:1:3216:G:N3	1:1:3259:U:C4	2.88	0.42
1:1:3368:U:H5"	1:1:3369:G:OP1	2.18	0.42
1:1:422:A:H3'	1:1:423:A:C8	2.55	0.42
1:1:4:U:H2'	1:1:5:G:C8	2.54	0.42
1:1:609:G:OP2	19:G:315:LYS:HD2	2.20	0.42
1:1:615:U:H2'	1:1:616:G:C8	2.45	0.42
1:1:675:C:OP2	43:S:105:ARG:CZ	2.64	0.42
1:1:92:G:P	11:C:46:LYS:HZ2	2.42	0.42
3:3:40:C:C4	3:3:42:A:N6	2.88	0.42
3:3:93:C:H2'	3:3:94:C:C6	2.55	0.42
5:4:34:U:C2'	5:4:35:C:OP2	2.67	0.42
7:A:58:A:O2'	7:A:59:A:O5'	2.34	0.42
15:E:65:ASP:OD2	15:E:68:LYS:HB3	2.20	0.42
17:F:36:ASP:OD1	17:F:37:ARG:N	2.53	0.42
19:G:23:PRO:C	19:G:25:VAL:H	2.22	0.42
25:J:26:VAL:HG23	25:J:27:ALA:N	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2674:A:C2	31:M:124:GLY:HA3	2.55	0.42
1:1:1213:G:H5''	46:U:137:ARG:HH22	1.84	0.42
46:U:7:TYR:CD1	46:U:61:ILE:HD11	2.55	0.42
1:1:1258:U:H2'	1:1:1260:A:H5''	2.01	0.42
1:1:1280:C:C4	1:1:1281:G:C8	3.07	0.42
1:1:1392:G:C2	1:1:1417:G:C5	3.07	0.42
1:1:1500:G:H2'	1:1:1501:U:O4'	2.20	0.42
1:1:1766:G:H2'	1:1:1767:C:C6	2.54	0.42
1:1:199:A:HO2'	1:1:200:C:C5'	2.31	0.42
1:1:2259:A:H2'	1:1:2260:U:O4'	2.19	0.42
1:1:234:G:C2	1:1:235:A:N7	2.88	0.42
1:1:2362:C:H2'	1:1:2363:A:O4'	2.20	0.42
1:1:2522:G:N3	1:1:2522:G:H3'	2.34	0.42
1:1:2726:C:HO2'	1:1:2727:A:P	2.43	0.42
1:1:2794:G:N2	50:1:3401:3HE:H5	2.35	0.42
1:1:3024:A:H62	1:1:3031:G:N2	2.15	0.42
1:1:3105:U:OP2	1:1:3128:G:C6	2.73	0.42
1:1:3320:A:C6	1:1:3321:C:C4	3.07	0.42
1:1:86:G:C4	33:N:13:HIS:CE1	3.07	0.42
1:1:944:C:C4	1:1:1431:G:O6	2.73	0.42
5:4:143:U:H2'	5:4:144:G:O4'	2.20	0.42
5:4:60:U:H4'	5:4:61:A:OP2	2.17	0.42
17:F:287:LYS:HA	17:F:320:ASP:HA	2.01	0.42
17:F:76:VAL:HG11	17:F:283:TYR:HD2	1.85	0.42
19:G:25:VAL:HG21	19:G:262:TRP:HB2	2.01	0.42
21:H:131:LEU:HD21	21:H:174:PRO:HA	2.01	0.42
21:H:286:VAL:O	21:H:290:ILE:HG12	2.19	0.42
25:J:110:ARG:HD3	43:S:3:ILE:HG13	2.02	0.42
25:J:84:VAL:HG13	25:J:119:VAL:CG2	2.50	0.42
31:M:79:ILE:HA	31:M:82:ARG:HG2	2.01	0.42
33:N:27:ASP:CG	33:N:28:GLN:H	2.22	0.42
1:1:1543:G:OP1	37:P:35:VAL:HG23	2.20	0.42
41:R:3:ARG:O	41:R:4:TYR:CG	2.73	0.42
1:1:1109:U:H4'	43:S:153:PHE:CE1	2.55	0.42
1:1:1389:G:C2	1:1:1419:A:C6	3.08	0.42
1:1:1699:A:H2'	1:1:1700:G:H8	1.85	0.42
1:1:172:G:C2	1:1:173:G:C8	3.08	0.42
1:1:1889:G:OP1	17:F:247:ARG:N	2.49	0.42
1:1:2542:U:N3	1:1:2543:U:C4	2.88	0.42
1:1:2647:A:C6	1:1:2648:G:N7	2.88	0.42
1:1:2660:G:H2'	1:1:2661:G:C8	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:272:G:H2'	1:1:273:A:C8	2.54	0.42
1:1:2966:G:O6	1:1:2967:A:N6	2.52	0.42
1:1:3036:G:H2'	1:1:3037:U:H6	1.85	0.42
1:1:3226:A:N1	1:1:3260:G:C6	2.88	0.42
1:1:396:A:C6	1:1:399:A:C5	3.07	0.42
1:1:571:U:H2'	1:1:572:A:C8	2.55	0.42
1:1:602:A:C8	1:1:602:A:OP2	2.73	0.42
1:1:752:C:C2	1:1:753:C:C5	3.08	0.42
1:1:941:G:C6	1:1:942:U:N3	2.88	0.42
1:1:986:U:H2'	1:1:987:U:H6	1.84	0.42
3:3:55:A:H2'	3:3:56:A:H8	1.85	0.42
5:4:62:C:H5''	5:4:63:G:OP1	2.20	0.42
5:4:78:G:H2'	5:4:79:A:O4'	2.20	0.42
5:4:79:A:H3'	5:4:80:A:H5''	2.01	0.42
7:A:30:G:C4	7:A:31:A:C8	3.08	0.42
15:E:177:LYS:HE2	15:E:184:ARG:HH12	1.85	0.42
1:1:3173:G:C6	21:H:96:ALA:HB2	141.38	0.42
27:K:140:VAL:HG11	37:P:6:TYR:HE2	1.85	0.42
33:N:166:ALA:O	33:N:169:THR:N	2.50	0.42
35:O:46:ILE:HD13	35:O:58:ILE:HG21	2.02	0.42
1:1:1915:A:H5''	45:T:84:THR:HG22	2.01	0.42
46:U:46:GLN:HG2	46:U:52:LYS:HB3	2.02	0.42
47:V:158:THR:O	47:V:160:ILE:N	2.53	0.42
2:X:85:TRP:CZ2	2:X:93:LEU:HD11	2.55	0.42
1:1:1254:C:O2	1:1:1263:A:N6	2.53	0.41
1:1:1307:G:O2'	1:1:1308:A:P	2.77	0.41
1:1:141:C:H2'	1:1:142:C:C6	2.55	0.41
1:1:1539:A:C8	1:1:1583:A:N6	2.88	0.41
1:1:1562:C:H3'	1:1:1563:C:C5	2.54	0.41
1:1:1634:G:C4	1:1:1640:G:N2	2.88	0.41
1:1:2514:U:O2'	1:1:2515:A:P	2.78	0.41
1:1:2697:A:H2'	1:1:2698:G:H8	1.81	0.41
1:1:2718:U:C4	1:1:2719:U:C4	3.08	0.41
1:1:2725:U:HO2'	1:1:2726:C:P	2.40	0.41
1:1:2753:G:C2	1:1:2754:G:C4	3.08	0.41
1:1:2971:A:H3'	1:1:2972:G:C5'	2.50	0.41
1:1:3201:C:H2'	1:1:3202:G:C8	2.54	0.41
1:1:3219:G:H4'	1:1:3220:G:H5'	2.01	0.41
1:1:3231:U:H2'	1:1:3232:G:C8	2.55	0.41
1:1:3377:G:H4'	1:1:3378:C:OP1	2.18	0.41
1:1:519:A:H61	46:U:65:ASN:C	2.22	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:522:A:C2	1:1:523:A:H1'	2.55	0.41
1:1:625:G:C6	1:1:626:U:C4	3.08	0.41
1:1:708:G:C2	1:1:712:G:C6	3.08	0.41
1:1:800:G:H2'	1:1:800:G:N3	2.33	0.41
1:1:875:G:C2	1:1:887:G:C2	3.08	0.41
1:1:937:G:OP2	1:1:938:C:C5	2.72	0.41
5:4:122:U:H2'	5:4:123:G:C8	2.55	0.41
7:A:15:G:O2'	7:A:16:U:OP1	2.32	0.41
7:A:25:C:C4	7:A:26:A:N7	2.87	0.41
9:B:9:A:C4	9:B:46:G:C2	3.08	0.41
11:C:15:LYS:CE	11:C:18:ARG:HH11	2.33	0.41
15:E:101:VAL:C	15:E:102:LEU:HD12	2.40	0.41
17:F:118:PHE:HE2	17:F:130:PHE:CZ	2.38	0.41
17:F:92:TYR:OH	17:F:94:GLU:OE2	11.68	0.41
21:H:52:VAL:O	21:H:62:CYS:HA	2.20	0.41
25:J:106:LEU:HA	25:J:106:LEU:HD23	1.83	0.41
27:K:240:ASN:OD1	27:K:241:LYS:N	2.52	0.41
31:M:21:ILE:HB	31:M:67:VAL:HG23	2.02	0.41
35:O:23:ILE:HD11	35:O:46:ILE:HD12	2.01	0.41
45:T:161:ALA:HA	45:T:164:LEU:HD12	2.02	0.41
46:U:13:ARG:CZ	46:U:51:VAL:HG11	2.50	0.41
2:X:39:VAL:HG21	2:X:51:ALA:O	2.20	0.41
6:Z:135:ILE:O	6:Z:139:ILE:HG22	2.20	0.41
1:1:1607:U:H2'	1:1:1607:U:O2	2.19	0.41
1:1:1656:A:H1'	1:1:1657:C:C4	2.55	0.41
1:1:1757:A:H2'	1:1:1758:G:C8	2.55	0.41
1:1:1664:G:C4	1:1:1786:G:N2	2.88	0.41
1:1:1522:U:O2	1:1:1835:A:H8	2.03	0.41
1:1:184:U:H2'	1:1:185:C:H6	1.77	0.41
1:1:187:A:N3	1:1:211:A:C6	2.87	0.41
1:1:2205:U:OP2	1:1:2206:G:OP2	2.39	0.41
1:1:2232:A:C6	1:1:2233:A:C6	3.08	0.41
1:1:2249:G:C8	1:1:2272:G:C5	3.08	0.41
1:1:2288:G:C4	1:1:2289:U:C5	3.08	0.41
1:1:211:A:C5	1:1:229:G:N2	2.88	0.41
1:1:1449:A:C2	1:1:2356:A:C4	3.08	0.41
1:1:173:G:N1	1:1:246:U:H1'	2.35	0.41
1:1:2609:A:C2	1:1:2610:G:C5	3.08	0.41
1:1:2853:A:H2'	1:1:2854:U:O4'	2.20	0.41
1:1:3078:U:HO2'	1:1:3079:U:P	2.33	0.41
1:1:3273:A:OP2	23:I:77:ARG:CZ	2.67	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:598:A:H2'	1:1:599:C:C6	2.55	0.41
1:1:735:A:H2'	1:1:736:A:C8	2.54	0.41
1:1:848:A:H8	1:1:848:A:O5'	2.03	0.41
3:3:120:C:N4	21:H:262:LYS:HZ1	2.18	0.41
13:D:38:ASP:HA	13:D:45:LYS:HA	2.02	0.41
15:E:30:ARG:HH12	15:E:41:ILE:HG21	1.79	0.41
17:F:143:GLY:O	17:F:146:ARG:HB3	2.20	0.41
25:J:116:PHE:CE1	25:J:144:ILE:HG12	2.55	0.41
1:1:3213:A:C5'	35:O:128:ARG:HH12	2.33	0.41
1:1:1241:U:O2'	1:1:1242:G:H3'	2.19	0.41
1:1:131:C:H2'	1:1:132:C:C6	2.55	0.41
1:1:1418:A:O2'	1:1:1419:A:P	2.79	0.41
1:1:1707:A:C6	1:1:1708:C:C4	3.08	0.41
1:1:2122:G:C2	1:1:2123:G:C4	3.08	0.41
1:1:2198:A:N6	1:1:2270:A:C2	2.88	0.41
1:1:2523:A:OP2	6:Z:31:THR:OG1	2.32	0.41
1:1:260:C:H2'	1:1:261:U:C6	2.55	0.41
1:1:2715:A:H2	1:1:2753:G:C6	2.38	0.41
1:1:2784:G:C4	1:1:2785:A:C8	3.09	0.41
1:1:3022:G:N2	1:1:3031:G:H2'	2.36	0.41
1:1:3141:A:C6	1:1:3144:G:C4	3.09	0.41
1:1:3167:A:C2	1:1:3168:A:C4	3.08	0.41
1:1:3273:A:H4'	23:I:45:GLY:H	1.84	0.41
1:1:760:G:N1	1:1:770:G:N7	2.68	0.41
1:1:767:U:H4'	1:1:768:C:OP1	2.21	0.41
1:1:797:U:H2'	1:1:798:G:C8	2.55	0.41
3:3:69:C:C2	3:3:110:G:N2	2.89	0.41
3:3:77:G:C2'	3:3:78:U:OP2	2.67	0.41
5:4:74:U:O2'	5:4:75:G:O5'	2.37	0.41
9:B:15:G:H2'	9:B:59:G:H22	1.84	0.41
1:1:3039:C:P	17:F:62:ARG:HH11	2.42	0.41
21:H:123:GLU:HA	21:H:248:ARG:HH12	1.85	0.41
21:H:187:THR:HG23	21:H:189:GLU:HG3	2.02	0.41
21:H:85:ARG:NE	21:H:254:LYS:HD3	2.35	0.41
25:J:151:ARG:NH1	25:J:206:LYS:O	2.53	0.41
27:K:155:ASN:ND2	27:K:181:LYS:HA	2.34	0.41
27:K:82:LEU:HD11	27:K:86:THR:HB	2.02	0.41
29:L:22:SER:HB2	29:L:39:LYS:NZ	2.35	0.41
41:R:127:ARG:HB2	41:R:139:TYR:O	2.19	0.41
1:1:519:A:N6	46:U:65:ASN:H	2.17	0.41
1:1:119:U:O3'	27:K:133:LYS:NZ	2.43	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1374:G:H2'	1:1:1375:G:O4'	2.21	0.41
1:1:1729:A:HO2'	1:1:1730:G:P	2.44	0.41
1:1:2218:G:C2	1:1:2219:A:C5	3.09	0.41
1:1:2240:G:C2	1:1:2241:U:C2	3.08	0.41
1:1:22:G:N2	1:1:23:A:H1'	2.36	0.41
1:1:2662:G:C2	1:1:2663:G:C5	3.08	0.41
1:1:3087:A:C8	1:1:3088:G:N7	2.87	0.41
1:1:3142:A:H4'	1:1:3142:A:OP2	2.20	0.41
1:1:3195:U:HO2'	1:1:3196:U:P	2.43	0.41
1:1:394:G:H5''	1:1:395:A:OP2	2.20	0.41
1:1:546:C:OP2	1:1:547:G:C2	2.72	0.41
1:1:845:G:N2	1:1:847:A:H3'	2.35	0.41
5:4:104:A:C8	5:4:105:A:C8	3.08	0.41
5:4:48:A:HO2'	5:4:49:G:P	2.42	0.41
7:A:62:C:H2'	7:A:63:U:C6	2.55	0.41
13:D:51:ALA:HB3	13:D:54:ILE:HD12	2.03	0.41
1:1:2943:G:O2'	17:F:254:ALA:HB1	2.20	0.41
1:1:1427:U:C5'	19:G:44:LYS:NZ	2.84	0.41
19:G:55:LYS:HD2	19:G:59:GLN:HE21	1.85	0.41
23:I:55:LEU:HB2	23:I:64:LEU:O	2.20	0.41
31:M:84:LEU:HD21	31:M:89:TYR:HA	2.01	0.41
37:P:187:ARG:NH2	37:P:188:ARG:HH21	2.17	0.41
27:K:162:LEU:HA	37:P:7:LEU:HD11	2.02	0.41
37:P:91:GLU:O	37:P:93:LYS:HG3	2.21	0.41
43:S:66:ARG:NH2	43:S:143:PRO:HD3	2.35	0.41
46:U:12:ARG:NH2	47:V:139:ARG:NH1	2.69	0.41
47:V:63:VAL:O	47:V:74:VAL:HA	2.20	0.41
1:1:1112:A:OP2	33:N:5:LYS:HD3	2.20	0.41
1:1:1187:C:H2'	1:1:1188:U:C6	2.56	0.41
1:1:1192:C:N4	1:1:1302:A:OP2	2.53	0.41
1:1:1243:G:O2'	1:1:1270:A:N6	2.54	0.41
1:1:1290:A:H2'	1:1:1291:A:H8	1.81	0.41
1:1:1310:G:C2	1:1:1311:G:C5	3.09	0.41
1:1:2335:G:H22	1:1:2339:C:H2'	1.85	0.41
1:1:2370:G:H2'	1:1:2371:G:C8	2.56	0.41
1:1:2372:A:O2'	1:1:2373:A:P	2.78	0.41
1:1:2385:G:OP2	1:1:2385:G:H8	2.04	0.41
1:1:2440:G:H8	1:1:2440:G:OP2	2.04	0.41
1:1:2713:U:O2'	1:1:2714:G:H5''	2.20	0.41
1:1:2909:U:H2'	1:1:2910:A:O4'	2.21	0.41
1:1:2941:A:OP2	17:F:255:TRP:HB3	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3254:G:C4	1:1:3255:U:C5	3.08	0.41
1:1:3271:G:H5''	1:1:3272:C:OP1	2.20	0.41
1:1:397:A:C6	1:1:400:G:C5	3.08	0.41
1:1:430:U:H2'	1:1:431:U:H6	1.85	0.41
1:1:535:G:N2	1:1:555:U:O2	2.53	0.41
1:1:879:U:O2'	41:R:131:ARG:HB3	2.20	0.41
5:4:129:C:OP2	5:4:129:C:H6	2.02	0.41
5:4:77:A:H2'	5:4:78:G:O4'	2.21	0.41
9:B:72:C:H5''	9:B:73:G:OP2	2.20	0.41
1:1:3146:G:H4'	17:F:100:ARG:HD2	2.03	0.41
17:F:292:ALA:HB2	17:F:302:LYS:HG2	2.03	0.41
21:H:193:GLU:O	21:H:196:ARG:HB3	2.20	0.41
1:1:591:G:C1'	23:I:19:LYS:HG3	2.50	0.41
27:K:136:LEU:HA	27:K:197:VAL:HG21	2.02	0.41
33:N:105:ASN:ND2	33:N:108:ILE:HG12	2.35	0.41
1:1:1479:U:H5''	1:1:1480:G:OP2	2.20	0.41
1:1:1530:U:O2	1:1:1530:U:H2'	2.19	0.41
1:1:1566:A:N3	1:1:1573:G:C6	2.88	0.41
1:1:1591:G:C6	1:1:1592:G:C4	3.08	0.41
1:1:14:U:O2'	1:1:15:C:OP1	2.29	0.41
1:1:1602:A:N6	1:1:1603:A:N1	2.68	0.41
1:1:1908:A:H62	1:1:1909:A:N6	2.19	0.41
1:1:2111:G:N3	4:Y:49:ILE:HD12	2.36	0.41
1:1:2115:G:H8	1:1:2115:G:O5'	2.03	0.41
1:1:2279:A:C5	1:1:2288:G:N7	2.88	0.41
1:1:2451:G:H5'	1:1:2452:G:OP2	2.20	0.41
1:1:2655:U:O2'	1:1:2713:U:O4	2.33	0.41
1:1:2385:G:C2	1:1:3143:C:C4	3.09	0.41
1:1:3178:A:N3	39:Q:115:LYS:HG2	2.35	0.41
1:1:331:G:H2'	1:1:332:C:C6	2.55	0.41
1:1:3348:G:O6	1:1:3357:U:C4	2.73	0.41
1:1:598:A:C6	1:1:599:C:N4	2.89	0.41
1:1:636:C:O4'	1:1:2378:C:H5'	2.21	0.41
1:1:651:G:C6	1:1:652:G:C6	3.08	0.41
1:1:728:G:H2'	1:1:729:C:O4'	2.20	0.41
1:1:359:U:C1'	1:1:817:A:H62	2.34	0.41
3:3:13:A:H5''	3:3:14:U:H5	1.85	0.41
7:A:9:A:C6	7:A:45:G:C6	3.09	0.41
15:E:52:SER:HB3	15:E:191:LEU:HD23	2.02	0.41
1:1:3097:C:P	17:F:325:LYS:NZ	2.93	0.41
1:1:594:U:C5	19:G:308:LYS:HE2	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:K:227:ASP:O	27:K:230:LYS:HB3	2.20	0.41
29:L:10:ILE:HG12	29:L:76:ASP:OD1	2.20	0.41
1:1:402:A:P	33:N:36:ARG:HH12	59.68	0.41
1:1:999:G:H1'	1:1:1002:A:H62	1.86	0.41
1:1:1307:G:H3'	1:1:1307:G:OP2	2.21	0.41
1:1:1346:G:H2'	1:1:1347:U:C6	2.55	0.41
1:1:1449:A:N3	1:1:2356:A:C6	2.88	0.41
1:1:1564:U:O5'	1:1:1564:U:H6	2.03	0.41
1:1:1566:A:H1'	1:1:1573:G:H1	1.85	0.41
1:1:160:G:H2'	1:1:161:G:C8	2.56	0.41
1:1:1860:G:C5	1:1:1861:G:N7	2.88	0.41
1:1:1917:C:H2'	1:1:1918:C:O4'	2.19	0.41
1:1:2181:C:H2'	1:1:2182:A:C8	2.56	0.41
1:1:2207:A:OP2	1:1:2207:A:H2	2.03	0.41
1:1:2618:G:OP1	13:D:3:LYS:HD2	90.21	0.41
1:1:2717:U:H2'	1:1:2718:U:H6	1.86	0.41
1:1:2728:G:N7	47:V:87:LYS:NZ	2.63	0.41
1:1:312:C:H2'	1:1:313:A:H8	1.86	0.41
1:1:3152:U:O2'	1:1:3153:U:OP1	2.30	0.41
1:1:3198:U:HO2'	1:1:3199:G:P	2.43	0.41
1:1:333:G:N2	1:1:334:A:C4	2.89	0.41
1:1:674:G:C6	1:1:789:A:N1	2.88	0.41
1:1:836:A:C8	1:1:858:A:C2	3.09	0.41
1:1:904:A:N6	1:1:905:U:O4	2.54	0.41
3:3:38:U:H2'	3:3:40:C:H5	1.86	0.41
1:1:11:A:N3	5:4:148:G:N2	2.69	0.41
17:F:302:LYS:HE3	17:F:302:LYS:HB3	1.87	0.41
21:H:173:VAL:O	21:H:175:HIS:ND1	2.34	0.41
3:3:61:G:H5"	21:H:276:LYS:HA	2.02	0.41
27:K:46:LEU:HD23	27:K:46:LEU:HA	1.86	0.41
46:U:12:ARG:HH21	47:V:139:ARG:NH1	2.18	0.41
47:V:14:MET:CE	47:V:58:GLN:HB2	2.49	0.41
4:Y:50:ALA:HA	4:Y:55:PHE:CD2	2.56	0.41
1:1:1146:C:H2'	1:1:1147:G:C8	2.47	0.41
1:1:1260:A:C5	1:1:1261:G:N7	2.89	0.41
1:1:1472:U:H2'	1:1:1473:G:C8	2.55	0.41
1:1:1496:C:P	1:1:1514:G:H5"	2.61	0.41
1:1:1571:A:H61	1:1:1573:G:C1'	2.33	0.41
1:1:1621:A:H2'	1:1:1622:U:C6	2.56	0.41
1:1:1632:A:N1	1:1:1644:C:C4	2.88	0.41
1:1:1847:A:N6	1:1:1849:C:O2	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1881:A:C2	1:1:1882:G:C8	3.09	0.41
1:1:2174:G:N3	1:1:2176:U:N3	2.69	0.41
1:1:2345:A:C6	1:1:2346:C:N4	2.88	0.41
1:1:2685:C:C2	1:1:2686:A:C8	3.08	0.41
1:1:2731:U:O2'	1:1:2732:G:H5'	2.21	0.41
1:1:2931:C:H2'	1:1:2932:U:O4'	2.20	0.41
1:1:2961:G:N1	1:1:2972:G:C6	2.89	0.41
1:1:3107:U:O4	1:1:3128:G:N2	2.54	0.41
1:1:3111:U:H2'	1:1:3112:G:H5'	2.02	0.41
1:1:315:C:C4	1:1:316:U:C4	3.08	0.41
1:1:355:A:N3	1:1:365:A:C6	2.89	0.41
1:1:537:A:H3'	1:1:538:G:H8	1.86	0.41
1:1:725:G:O6	1:1:746:A:N6	2.54	0.41
1:1:827:A:N3	1:1:828:A:C8	2.89	0.41
5:4:65:A:C4	5:4:66:A:C8	3.08	0.41
7:A:9:A:O5'	7:A:10:G:OP2	2.38	0.41
9:B:26:A:C4	9:B:27:C:C5	3.08	0.41
11:C:38:GLN:HE21	11:C:42:ARG:HB2	1.85	0.41
1:1:933:A:C2	19:G:98:ARG:NH1	2.89	0.41
35:O:14:LEU:O	35:O:19:ARG:NH1	2.47	0.41
41:R:40:GLU:HA	41:R:113:TYR:HA	2.03	0.41
47:V:76:ILE:O	47:V:86:GLU:HA	2.21	0.41
1:1:1021:G:C2	1:1:1032:C:C2	3.09	0.41
1:1:1083:G:H2'	1:1:1084:A:C8	2.56	0.41
1:1:1210:U:H2'	1:1:1211:U:C6	2.55	0.41
1:1:1404:G:C2	1:1:1408:G:C2	3.09	0.41
1:1:1490:A:C8	1:1:1491:A:C8	3.09	0.41
1:1:155:G:H22	1:1:265:A:P	2.44	0.41
1:1:1682:U:C6	48:W:85:LYS:HG2	2.55	0.41
1:1:1693:C:O2'	1:1:1772:U:O2'	2.37	0.41
1:1:191:U:H2'	1:1:192:C:C6	2.56	0.41
1:1:193:C:H2'	1:1:194:U:H6	1.86	0.41
1:1:198:A:N1	1:1:219:A:C4	2.89	0.41
1:1:2238:G:C6	1:1:2239:G:N7	2.88	0.41
1:1:3023:U:C4	1:1:3031:G:N2	2.89	0.41
1:1:3036:G:C6	1:1:3037:U:C4	3.09	0.41
1:1:3234:A:C8	1:1:3234:A:OP2	2.74	0.41
1:1:390:G:C2	1:1:391:A:H1'	2.56	0.41
1:1:402:A:OP2	33:N:36:ARG:NH2	60.79	0.41
1:1:422:A:H3'	1:1:423:A:H8	1.86	0.41
1:1:519:A:H4'	1:1:520:U:OP2	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:561:C:H2'	1:1:562:C:H6	1.85	0.41
1:1:572:A:C5	1:1:573:C:C5	3.09	0.41
1:1:645:A:C2	1:1:2372:A:C2	3.08	0.41
1:1:829:U:O4	1:1:894:G:N2	2.54	0.41
1:1:40:A:N7	1:1:937:G:C4	2.89	0.41
3:3:116:C:C2	3:3:117:A:C8	3.09	0.41
15:E:36:GLU:CD	15:E:163:ARG:NH1	2.71	0.41
21:H:204:VAL:O	21:H:208:MET:HG3	2.20	0.41
21:H:81:HIS:O	21:H:84:PRO:HD2	2.21	0.41
29:L:159:ALA:O	29:L:162:GLN:HB3	2.21	0.41
31:M:35:LYS:O	31:M:39:GLN:HG2	2.21	0.41
39:Q:8:VAL:HG22	39:Q:34:VAL:CG1	2.51	0.41
43:S:80:THR:OG1	43:S:137:THR:HG22	2.21	0.41
6:Z:68:THR:CG2	6:Z:141:TYR:HB2	2.51	0.41
1:1:1089:G:H2'	1:1:1090:G:C8	2.56	0.41
1:1:137:G:C2	1:1:138:U:C2	3.09	0.41
1:1:1422:G:C4	1:1:1423:C:C5	3.08	0.41
1:1:1470:U:H2'	1:1:1471:U:H6	1.85	0.41
1:1:1632:A:H2'	1:1:1633:C:C6	2.56	0.41
1:1:1653:G:H2'	1:1:1654:A:C8	2.56	0.41
1:1:1680:G:C2	1:1:1689:U:C2	3.09	0.41
1:1:1917:C:H2'	1:1:1918:C:H6	1.85	0.41
1:1:2280:A:O5'	1:1:2281:A:OP2	2.39	0.41
1:1:2403:G:O2'	1:1:2404:A:O5'	2.35	0.41
1:1:245:U:H2'	1:1:246:U:O4'	2.21	0.41
1:1:252:U:H5'	1:1:253:A:H5'	2.02	0.41
1:1:2602:G:C4	1:1:2603:G:C8	3.08	0.41
1:1:2837:A:C5	1:1:2850:G:C2	3.09	0.41
1:1:2842:U:C4	1:1:2843:U:C4	3.09	0.41
1:1:3023:U:H2'	1:1:3024:A:C8	2.56	0.41
1:1:3185:U:O2'	1:1:3186:A:OP2	2.30	0.41
1:1:3313:U:OP1	17:F:173:GLN:NE2	2.54	0.41
1:1:3355:U:C4	1:1:3357:U:OP2	2.74	0.41
1:1:365:A:C6	1:1:366:A:C5	3.09	0.41
1:1:517:G:H3'	1:1:518:G:N2	2.36	0.41
1:1:564:G:H2'	1:1:564:G:N3	2.36	0.41
1:1:584:G:H5''	1:1:585:A:OP2	2.20	0.41
1:1:797:U:H2'	1:1:798:G:H8	1.86	0.41
1:1:983:A:H61	1:1:1099:A:N6	2.18	0.41
3:3:12:U:O2'	3:3:111:U:O4'	2.31	0.41
3:3:12:U:H5''	3:3:13:A:P	2.61	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:3:32:U:H4'	3:3:33:U:OP1	2.21	0.41
3:3:52:G:O2'	3:3:53:U:OP1	2.35	0.41
9:B:44:G:H8	9:B:44:G:OP2	2.04	0.41
15:E:96:LEU:HD12	15:E:107:VAL:HG12	2.02	0.41
17:F:129:ALA:O	17:F:130:PHE:HB2	2.21	0.41
19:G:109:TRP:CD1	33:N:26:PHE:CE1	3.09	0.41
19:G:175:HIS:CE1	19:G:179:LEU:HD11	2.56	0.41
19:G:222:VAL:HA	19:G:223:PRO:HD3	1.90	0.41
19:G:315:LYS:HD3	19:G:320:ASN:ND2	2.36	0.41
1:1:338:A:N7	19:G:47:ARG:HG2	2.35	0.41
21:H:119:TYR:CE2	21:H:141:PRO:HA	2.56	0.41
23:I:64:LEU:HD21	23:I:76:LEU:HD22	2.03	0.41
31:M:81:GLU:HG3	31:M:167:TYR:HE1	1.86	0.41
1:1:72:C:O2'	33:N:62:THR:O	2.38	0.41
39:Q:10:ASP:HB2	39:Q:117:ARG:HB3	2.03	0.41
46:U:93:GLU:HB2	46:U:140:VAL:HG21	2.03	0.41
1:1:519:A:H61	46:U:65:ASN:H	1.69	0.41
1:1:1103:A:OP2	1:1:1104:G:OP2	2.39	0.41
1:1:1337:A:H2'	1:1:1338:C:C6	2.55	0.41
1:1:1547:G:H5''	37:P:108:ARG:NH2	2.35	0.41
1:1:1581:C:OP2	1:1:1582:C:N4	2.54	0.41
1:1:1584:U:C4	1:1:1585:C:C5	3.09	0.41
1:1:1535:A:H62	1:1:1586:G:N2	2.19	0.41
1:1:1636:U:H2'	1:1:1637:A:O4'	2.21	0.41
1:1:204:A:H5''	1:1:205:C:OP2	2.21	0.41
1:1:2117:A:C5	1:1:2118:C:C4	3.09	0.41
1:1:1912:U:N3	1:1:2122:G:OP2	2.54	0.41
1:1:2202:C:H5''	15:E:226:SER:HB2	2.03	0.41
1:1:2291:A:N6	1:1:2302:G:O6	2.54	0.41
1:1:2412:G:C4	1:1:2811:A:C2	3.09	0.41
1:1:2439:A:H8	1:1:2439:A:OP2	2.01	0.41
1:1:2445:A:N1	1:1:2502:A:C6	2.89	0.41
1:1:3101:G:C4	1:1:3102:G:C8	3.09	0.41
1:1:3301:U:H2'	1:1:3302:U:H6	1.86	0.41
1:1:358:G:C5	1:1:360:G:OP2	2.74	0.41
1:1:498:A:C2	1:1:616:G:C5	3.09	0.41
1:1:645:A:N6	1:1:649:A:C4	2.89	0.41
1:1:887:G:C6	1:1:888:A:C6	3.09	0.41
1:1:909:G:C6	1:1:910:G:C5	3.08	0.41
1:1:963:G:OP2	1:1:963:G:C8	2.73	0.41
1:1:983:A:H4'	1:1:984:G:OP2	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:997:A:H2'	1:1:998:A:C8	2.55	0.41
5:4:45:C:C2	5:4:46:G:C8	3.09	0.41
7:A:22:G:C6	7:A:23:A:C5	3.09	0.41
7:A:2:G:N3	7:A:3:G:C8	2.89	0.41
7:A:61:C:OP2	7:A:61:C:H6	2.04	0.41
9:B:54:U:H3'	9:B:55:U:H6	1.86	0.41
17:F:87:VAL:O	17:F:107:ALA:N	2.53	0.41
3:3:1:G:N2	21:H:269:SER:OG	2.54	0.41
29:L:59:ASN:OD1	35:O:41:GLN:NE2	2.54	0.41
33:N:46:ILE:O	33:N:47:ALA:HB3	2.21	0.41
39:Q:42:ASN:HA	39:Q:136:THR:O	2.21	0.41
41:R:64:ASN:HB2	41:R:80:LYS:CE	2.51	0.41
6:Z:67:ILE:HD13	6:Z:115:ARG:NH2	2.37	0.41
1:1:1280:C:H3'	1:1:1281:G:C4'	2.51	0.40
1:1:1289:G:H2'	1:1:1290:A:C8	2.53	0.40
1:1:143:G:H2'	1:1:144:A:O4'	2.21	0.40
1:1:1599:G:C2	1:1:1609:C:O2	2.75	0.40
1:1:1899:G:H2'	1:1:2334:U:O4	2.22	0.40
1:1:202:G:C4	1:1:203:G:C8	3.08	0.40
1:1:2145:A:C2	1:1:2146:C:C2	3.09	0.40
1:1:2370:G:H2'	1:1:2371:G:H8	1.86	0.40
1:1:2537:U:O2'	1:1:2538:U:OP1	2.37	0.40
1:1:2574:G:H2'	1:1:2575:G:C8	2.55	0.40
1:1:2708:C:H2'	1:1:2709:C:C6	2.56	0.40
1:1:3173:G:O6	21:H:93:THR:HG22	134.43	0.40
1:1:60:A:C6	1:1:327:A:C4	3.09	0.40
1:1:510:G:H1	1:1:581:U:H3	1.69	0.40
1:1:586:C:H2'	1:1:587:U:H6	1.85	0.40
1:1:590:G:C6	1:1:591:G:C2	3.10	0.40
1:1:678:G:H2'	1:1:679:U:H6	1.85	0.40
1:1:739:G:H2'	1:1:740:G:C8	2.55	0.40
1:1:74:G:C2	1:1:75:G:C4	3.09	0.40
1:1:769:G:C6	1:1:770:G:C6	3.10	0.40
3:3:37:G:N1	3:3:41:G:C2	2.89	0.40
9:B:10:G:N1	9:B:25:U:N3	2.68	0.40
9:B:53:G:C8	9:B:53:G:OP2	2.74	0.40
11:C:43:TYR:O	11:C:46:LYS:N	2.50	0.40
1:1:2244:A:HO2'	15:E:223:SER:HG	1.64	0.40
27:K:87:ALA:O	27:K:91:PHE:HD2	2.04	0.40
1:1:1492:G:N7	33:N:2:ALA:HB1	69.78	0.40
33:N:52:ASP:N	33:N:52:ASP:OD1	2.54	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:R:109:ALA:HA	41:R:112:LEU:HD13	2.03	0.40
46:U:4:PHE:HE2	46:U:104:GLU:OE1	2.03	0.40
1:1:1011:A:N6	1:1:1012:G:O6	2.54	0.40
1:1:1013:G:N2	1:1:1038:C:O2	2.54	0.40
1:1:1236:G:N1	1:1:1244:A:OP2	2.55	0.40
1:1:148:G:OP2	1:1:148:G:C8	2.75	0.40
1:1:1526:U:HO2'	1:1:1527:C:P	2.43	0.40
1:1:1658:G:C5	1:1:1659:U:C4	3.09	0.40
1:1:1729:A:O2'	1:1:1730:G:P	2.79	0.40
1:1:176:G:H3'	1:1:177:U:H6	1.87	0.40
1:1:20:A:C8	1:1:20:A:OP2	2.70	0.40
1:1:2108:C:C4	1:1:2109:U:C4	3.09	0.40
1:1:2151:C:H2'	1:1:2152:A:O4'	2.20	0.40
1:1:2254:U:C2	1:1:2261:G:C2	3.09	0.40
1:1:2599:U:H5''	37:P:70:ASN:CG	2.41	0.40
1:1:2778:G:O6	1:1:2779:A:N6	2.54	0.40
1:1:2876:C:C2	1:1:2952:G:N2	2.89	0.40
1:1:2951:G:H21	1:1:2952:G:H1'	1.85	0.40
1:1:2994:A:H2'	1:1:2995:A:O4'	2.21	0.40
1:1:3058:U:H5'	1:1:3059:G:OP1	2.22	0.40
1:1:3208:G:H5'	1:1:3209:A:OP1	2.21	0.40
1:1:3273:A:H2'	1:1:3274:A:O4'	2.22	0.40
1:1:931:C:C2	1:1:932:U:C5	3.09	0.40
1:1:934:G:N1	1:1:935:U:O2	2.54	0.40
3:3:15:C:H2'	3:3:16:U:C6	2.56	0.40
5:4:68:G:H2'	5:4:69:U:H6	1.86	0.40
7:A:61:C:C6	7:A:61:C:OP2	2.74	0.40
15:E:34:TYR:HA	15:E:37:ARG:HG2	2.02	0.40
17:F:160:VAL:O	17:F:180:GLU:HA	2.20	0.40
17:F:213:GLU:CD	17:F:340:LYS:NZ	2.74	0.40
19:G:103:THR:HB	19:G:107:ARG:HH21	1.86	0.40
19:G:234:ASN:OD1	19:G:235:LEU:N	2.54	0.40
23:I:97:ASN:O	23:I:99:GLU:HG3	2.21	0.40
41:R:55:GLN:O	41:R:72:GLN:NE2	2.54	0.40
45:T:106:LEU:HB3	45:T:120:TYR:CE1	2.56	0.40
45:T:21:LYS:HE3	45:T:55:VAL:HA	2.02	0.40
4:Y:4:GLU:OE1	4:Y:4:GLU:N	2.52	0.40
1:1:127:G:C4	1:1:128:G:C8	3.10	0.40
1:1:1500:G:N1	1:1:1501:U:O2	2.55	0.40
1:1:1517:G:H2'	1:1:1518:U:C6	2.57	0.40
1:1:156:G:H4'	1:1:157:A:OP2	2.17	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1622:U:H2'	1:1:1623:G:C8	2.55	0.40
1:1:1833:G:H5''	1:1:1834:U:OP2	2.21	0.40
1:1:2100:A:H5'	1:1:2101:C:OP2	2.20	0.40
1:1:2315:G:H2'	1:1:2316:G:H8	1.86	0.40
1:1:2433:U:H3'	1:1:2434:U:H3'	2.03	0.40
1:1:169:U:O4	1:1:251:G:N2	2.54	0.40
1:1:2728:G:O5'	47:V:83:ARG:NH2	2.54	0.40
1:1:282:G:H2'	1:1:286:U:C6	2.56	0.40
1:1:3055:U:O2'	1:1:3057:U:OP2	2.37	0.40
1:1:549:U:H2'	1:1:550:A:C8	2.57	0.40
1:1:712:G:H2'	1:1:713:U:H6	1.85	0.40
1:1:841:A:C6	1:1:853:G:C6	3.09	0.40
3:3:113:C:C4	3:3:114:U:C4	3.09	0.40
3:3:61:G:OP1	21:H:276:LYS:HG2	2.20	0.40
1:1:1055:A:H2	3:3:81:U:H4'	1.85	0.40
5:4:71:A:N6	5:4:87:G:O2'	2.55	0.40
5:4:49:G:C6	5:4:77:A:N1	2.89	0.40
9:B:2:G:H2'	9:B:3:A:C8	2.55	0.40
15:E:44:ILE:O	15:E:44:ILE:HG13	2.21	0.40
17:F:113:GLU:OE2	17:F:167:ARG:HG2	2.21	0.40
19:G:11:LEU:HD11	19:G:155:ASP:HB2	2.04	0.40
19:G:22:LEU:HA	19:G:23:PRO:HD3	1.89	0.40
19:G:71:VAL:CG2	19:G:76:ARG:HH22	2.31	0.40
27:K:189:LEU:HD12	27:K:190:VAL:N	2.37	0.40
33:N:54:LEU:HD11	33:N:119:TYR:CB	2.51	0.40
11:C:50:PHE:CE2	37:P:88:GLY:HA3	2.57	0.40
1:1:1315:U:H6	39:Q:44:SER:HG	1.66	0.40
41:R:64:ASN:HB2	41:R:80:LYS:HZ1	1.84	0.40
1:1:971:G:P	43:S:8:LYS:NZ	2.93	0.40
1:1:1223:A:H1'	1:1:1286:A:N1	2.36	0.40
1:1:1391:C:O2'	1:1:1392:G:OP1	2.28	0.40
1:1:1560:G:C6	1:1:1561:G:C6	3.10	0.40
1:1:1656:A:H1'	1:1:1657:C:C5	2.56	0.40
1:1:1733:G:H2'	1:1:1734:G:C8	2.56	0.40
1:1:1840:U:H5'	1:1:1841:A:OP1	2.21	0.40
1:1:1877:U:H5''	1:1:1878:G:O4'	2.21	0.40
1:1:206:G:H2'	1:1:207:U:C6	2.57	0.40
1:1:2095:G:H2'	1:1:2096:A:H8	1.86	0.40
1:1:2122:G:H2'	1:1:2123:G:O4'	2.22	0.40
1:1:2147:A:N7	1:1:2148:U:N3	2.70	0.40
1:1:2448:G:O6	1:1:2498:U:C4	2.73	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2528:G:C4	1:1:2529:A:C8	3.10	0.40
1:1:2817:A:O2'	1:1:2818:U:P	2.80	0.40
1:1:2839:G:O6	1:1:2845:A:O2'	2.34	0.40
1:1:2923:U:H2'	1:1:2924:U:C6	2.56	0.40
1:1:3121:U:O4	1:1:3124:G:C6	2.74	0.40
1:1:3161:C:H2'	1:1:3162:C:C6	2.57	0.40
1:1:3354:U:C5'	1:1:3355:U:H5'	2.51	0.40
1:1:3369:G:O2'	1:1:3370:A:H8	2.04	0.40
1:1:30:G:C2	1:1:55:G:C2	3.10	0.40
1:1:665:A:H2'	1:1:666:A:O4'	2.22	0.40
1:1:760:G:N1	1:1:770:G:C5	2.90	0.40
1:1:820:A:H2'	1:1:821:U:C6	2.56	0.40
1:1:910:G:C6	1:1:911:C:N3	2.89	0.40
1:1:96:G:C6	1:1:97:U:C4	3.09	0.40
3:3:79:A:C6	3:3:102:A:C8	3.10	0.40
1:1:20:A:C2	5:4:140:G:C2	3.09	0.40
5:4:2:A:N6	5:4:3:A:C6	2.90	0.40
7:A:14:A:C6	7:A:22:G:C5	3.10	0.40
9:B:50:C:H2'	9:B:51:G:C8	2.56	0.40
17:F:233:TRP:CD1	17:F:265:ALA:HB1	2.57	0.40
17:F:81:THR:O	17:F:320:ASP:HB2	2.21	0.40
21:H:178:ASN:HA	21:H:183:TRP:CG	2.56	0.40
31:M:109:HIS:HD2	31:M:123:PHE:H	1.70	0.40
33:N:126:PHE:CD1	33:N:132:ALA:HB1	2.56	0.40
1:1:674:G:P	43:S:105:ARG:NH2	2.95	0.40
47:V:18:ASP:OD2	47:V:21:LYS:HD2	2.21	0.40
1:1:11:A:C2	1:1:12:A:C5	3.10	0.40
1:1:1340:G:C4	1:1:1341:U:C5	3.09	0.40
1:1:1392:G:O2'	1:1:1393:A:O5'	2.39	0.40
1:1:1561:G:C2	1:1:1562:C:C2	3.09	0.40
1:1:1561:G:C6	1:1:1562:C:C4	3.09	0.40
1:1:1565:G:N3	1:1:1565:G:H2'	2.36	0.40
1:1:1604:G:C6	1:1:1605:A:C6	3.10	0.40
1:1:1665:C:H2'	1:1:1666:G:C8	2.56	0.40
1:1:1709:C:H2'	1:1:1710:C:C6	2.57	0.40
1:1:1723:A:N1	1:1:1788:C:O2'	2.46	0.40
1:1:1918:C:H2'	1:1:1919:G:C8	2.56	0.40
1:1:2140:U:OP1	1:1:2141:U:OP2	2.39	0.40
1:1:196:G:H21	1:1:219:A:N6	2.19	0.40
1:1:2222:A:N6	1:1:2223:A:N1	2.69	0.40
1:1:2122:G:C6	1:1:2332:A:N1	2.90	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2515:A:C6	1:1:2516:U:C2	3.09	0.40
1:1:2590:A:C5	1:1:2591:A:C5	3.08	0.40
1:1:2608:G:N3	1:1:2609:A:C8	2.89	0.40
1:1:2762:A:C6	1:1:2800:G:C8	3.09	0.40
1:1:2765:C:O3'	11:C:39:GLY:HA3	2.21	0.40
1:1:59:G:H1	1:1:330:G:H1	1.69	0.40
1:1:641:C:H42	1:1:645:A:H62	1.70	0.40
1:1:647:A:O2'	1:1:648:C:P	2.79	0.40
1:1:76:G:H4'	1:1:77:A:OP1	2.21	0.40
1:1:359:U:N3	1:1:920:A:C6	2.90	0.40
1:1:935:U:H5''	1:1:936:A:OP2	2.22	0.40
1:1:9:U:H2'	1:1:10:C:C6	2.57	0.40
3:3:116:C:H2'	3:3:117:A:H8	1.86	0.40
3:3:68:C:H2'	3:3:69:C:H6	1.85	0.40
5:4:142:C:C2	5:4:143:U:C5	3.09	0.40
1:1:3:U:H1'	5:4:157:U:H3	1.86	0.40
5:4:71:A:H4'	5:4:72:A:OP1	2.21	0.40
5:4:81:U:H5'	5:4:82:U:H6	1.86	0.40
7:A:22:G:C2	7:A:23:A:C4	3.10	0.40
7:A:34:U:H5''	7:A:35:U:OP2	2.21	0.40
9:B:24:A:C5	9:B:25:U:C4	3.09	0.40
9:B:37:A:H8	9:B:38:C:C5	2.39	0.40
19:G:16:THR:HG22	19:G:18:ASN:H	1.86	0.40
1:1:2688:U:H5''	21:H:12:TYR:HE1	1.87	0.40
21:H:223:PHE:HB3	21:H:226:TYR:HD2	1.87	0.40
23:I:145:LEU:O	23:I:149:ILE:HG13	2.22	0.40
1:1:611:A:H1'	23:I:23:LYS:HE2	2.02	0.40
25:J:180:SER:O	25:J:183:ASP:HB2	2.21	0.40
27:K:201:THR:OG1	27:K:202:GLU:N	2.53	0.40
31:M:10:ARG:HG3	31:M:152:HIS:HE1	1.87	0.40
31:M:14:ILE:HG12	31:M:131:MET:SD	2.61	0.40
41:R:43:LYS:HE3	41:R:43:LYS:HB3	1.92	0.40
45:T:23:TRP:HB3	45:T:51:VAL:HG22	2.03	0.40
47:V:126:VAL:HG23	47:V:127:GLN:N	2.37	0.40
2:X:13:ILE:CD1	2:X:54:LEU:HB3	2.51	0.40

There are no symmetry-related clashes.

## 5.3 Torsion angles ⓘ

### 5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	X	134/137 (98%)	130 (97%)	4 (3%)	0	100	100
4	Y	96/155 (62%)	86 (90%)	10 (10%)	0	100	100
6	Z	119/142 (84%)	111 (93%)	7 (6%)	1 (1%)	22	65
8	a	124/127 (98%)	109 (88%)	15 (12%)	0	100	100
10	b	133/136 (98%)	120 (90%)	12 (9%)	1 (1%)	22	65
11	C	103/106 (97%)	88 (85%)	15 (15%)	0	100	100
12	c	146/149 (98%)	128 (88%)	15 (10%)	3 (2%)	8	49
13	D	89/92 (97%)	79 (89%)	10 (11%)	0	100	100
14	d	56/59 (95%)	48 (86%)	7 (12%)	1 (2%)	10	52
15	E	250/254 (98%)	230 (92%)	20 (8%)	0	100	100
16	e	95/105 (90%)	88 (93%)	7 (7%)	0	100	100
17	F	384/387 (99%)	358 (93%)	25 (6%)	1 (0%)	44	80
18	f	107/109 (98%)	99 (92%)	8 (8%)	0	100	100
19	G	359/362 (99%)	319 (89%)	38 (11%)	2 (1%)	28	70
20	g	125/130 (96%)	115 (92%)	10 (8%)	0	100	100
21	H	294/297 (99%)	260 (88%)	31 (10%)	3 (1%)	18	61
22	h	104/107 (97%)	100 (96%)	4 (4%)	0	100	100
23	I	152/176 (86%)	145 (95%)	6 (4%)	1 (1%)	25	68
24	i	110/121 (91%)	106 (96%)	4 (4%)	0	100	100
25	J	220/244 (90%)	202 (92%)	18 (8%)	0	100	100
26	j	117/120 (98%)	103 (88%)	14 (12%)	0	100	100
27	K	231/256 (90%)	205 (89%)	23 (10%)	3 (1%)	14	57
28	k	97/100 (97%)	80 (82%)	16 (16%)	1 (1%)	18	61
29	L	189/191 (99%)	169 (89%)	20 (11%)	0	100	100
30	l	85/88 (97%)	74 (87%)	11 (13%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
31	M	167/174 (96%)	145 (87%)	20 (12%)	2 (1%)	15	59
32	m	75/78 (96%)	69 (92%)	6 (8%)	0	100	100
33	N	191/199 (96%)	171 (90%)	20 (10%)	0	100	100
34	n	48/51 (94%)	45 (94%)	3 (6%)	0	100	100
35	O	134/138 (97%)	119 (89%)	15 (11%)	0	100	100
36	o	50/128 (39%)	46 (92%)	4 (8%)	0	100	100
37	P	201/204 (98%)	176 (88%)	25 (12%)	0	100	100
38	p	23/25 (92%)	22 (96%)	1 (4%)	0	100	100
39	Q	195/199 (98%)	179 (92%)	16 (8%)	0	100	100
40	q	151/157 (96%)	127 (84%)	14 (9%)	10 (7%)	1	24
41	R	181/184 (98%)	166 (92%)	15 (8%)	0	100	100
43	S	183/186 (98%)	169 (92%)	14 (8%)	0	100	100
44	s	218/221 (99%)	180 (83%)	29 (13%)	9 (4%)	3	34
45	T	186/189 (98%)	169 (91%)	16 (9%)	1 (0%)	32	73
46	U	170/172 (99%)	151 (89%)	18 (11%)	1 (1%)	28	70
47	V	157/160 (98%)	150 (96%)	6 (4%)	1 (1%)	28	70
48	W	98/121 (81%)	86 (88%)	11 (11%)	1 (1%)	18	61
All	All	6347/6736 (94%)	5722 (90%)	583 (9%)	42 (1%)	30	68

All (42) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
12	c	48	TYR
23	I	98	VAL
40	q	110	LYS
40	q	112	ASP
40	q	133	ASP
44	s	102	LEU
44	s	104	CYS
44	s	107	ALA
44	s	111	GLN
12	c	47	LYS
12	c	78	LEU
40	q	15	SER
40	q	132	LYS
40	q	156	THR

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Mol	Chain	Res	Type
44	s	110	LEU
10	b	125	GLY
40	q	16	SER
40	q	17	ALA
40	q	114	LYS
44	s	103	SER
44	s	108	ASP
45	T	131	ALA
47	V	124	VAL
21	H	259	LYS
21	H	276	LYS
44	s	136	SER
40	q	12	ASP
46	U	130	GLU
27	K	36	ILE
27	K	35	GLY
27	K	157	VAL
31	M	114	ILE
44	s	106	GLY
19	G	317	PRO
19	G	131	VAL
28	k	3	VAL
31	M	8	PRO
6	Z	62	VAL
14	d	21	ILE
17	F	317	ILE
21	H	125	VAL
48	W	11	ILE

### 5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	X	104/105 (99%)	104 (100%)	0	100	100
4	Y	57/129 (44%)	57 (100%)	0	100	100
6	Z	104/118 (88%)	104 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
8	a	109/110 (99%)	109 (100%)	0	100	100
10	b	115/116 (99%)	115 (100%)	0	100	100
11	C	90/91 (99%)	90 (100%)	0	100	100
12	c	118/119 (99%)	118 (100%)	0	100	100
13	D	71/72 (99%)	71 (100%)	0	100	100
14	d	46/47 (98%)	46 (100%)	0	100	100
15	E	193/196 (98%)	193 (100%)	0	100	100
16	e	81/88 (92%)	81 (100%)	0	100	100
17	F	320/323 (99%)	319 (100%)	1 (0%)	94	97
18	f	92/96 (96%)	92 (100%)	0	100	100
19	G	288/289 (100%)	288 (100%)	0	100	100
20	g	109/111 (98%)	109 (100%)	0	100	100
21	H	244/245 (100%)	243 (100%)	1 (0%)	93	96
22	h	90/91 (99%)	90 (100%)	0	100	100
23	I	134/153 (88%)	134 (100%)	0	100	100
24	i	95/103 (92%)	95 (100%)	0	100	100
25	J	186/205 (91%)	186 (100%)	0	100	100
26	j	104/105 (99%)	104 (100%)	0	100	100
27	K	187/208 (90%)	187 (100%)	0	100	100
28	k	81/82 (99%)	81 (100%)	0	100	100
29	L	171/171 (100%)	171 (100%)	0	100	100
30	l	70/71 (99%)	70 (100%)	0	100	100
31	M	147/150 (98%)	147 (100%)	0	100	100
32	m	68/69 (99%)	68 (100%)	0	100	100
33	N	154/159 (97%)	154 (100%)	0	100	100
34	n	45/46 (98%)	45 (100%)	0	100	100
35	O	107/109 (98%)	107 (100%)	0	100	100
36	o	47/116 (40%)	47 (100%)	0	100	100
37	P	175/176 (99%)	175 (100%)	0	100	100
38	p	23/23 (100%)	23 (100%)	0	100	100
39	Q	160/162 (99%)	160 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
40	q	118/132 (89%)	113 (96%)	5 (4%)	34	68
41	R	140/146 (96%)	140 (100%)	0	100	100
43	S	150/151 (99%)	150 (100%)	0	100	100
44	s	184/187 (98%)	178 (97%)	6 (3%)	43	74
45	T	153/154 (99%)	153 (100%)	0	100	100
46	U	156/156 (100%)	156 (100%)	0	100	100
47	V	136/137 (99%)	136 (100%)	0	100	100
48	W	87/107 (81%)	87 (100%)	0	100	100
All	All	5309/5624 (94%)	5296 (100%)	13 (0%)	95	97

All (13) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
17	F	90	VAL
21	H	64	ILE
40	q	73	LEU
40	q	120	LEU
40	q	132	LYS
40	q	133	ASP
40	q	155	ARG
44	s	102	LEU
44	s	103	SER
44	s	104	CYS
44	s	108	ASP
44	s	109	ARG
44	s	110	LEU

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (79) such sidechains are listed below:

Mol	Chain	Res	Type
2	X	98	ASN
4	Y	32	GLN
4	Y	42	GLN
4	Y	45	ASN
8	a	4	GLN
8	a	42	GLN
8	a	110	HIS
10	b	29	HIS

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Mol	Chain	Res	Type
10	b	36	HIS
10	b	57	HIS
11	C	22	GLN
11	C	59	HIS
12	c	39	HIS
12	c	40	HIS
12	c	44	ASN
12	c	64	GLN
15	E	38	HIS
15	E	79	ASN
15	E	97	ASN
15	E	132	ASN
15	E	194	ASN
15	E	209	HIS
17	F	11	HIS
17	F	173	GLN
17	F	177	HIS
17	F	243	HIS
17	F	269	GLN
17	F	319	ASN
18	f	21	HIS
18	f	57	GLN
18	f	105	GLN
19	G	5	GLN
19	G	59	GLN
19	G	110	ASN
19	G	116	ASN
19	G	221	ASN
19	G	279	HIS
19	G	296	GLN
19	G	304	GLN
20	g	52	GLN
21	H	40	HIS
21	H	57	ASN
22	h	42	GLN
22	h	106	ASN
27	K	38	GLN
27	K	138	HIS
27	K	232	HIS
29	L	58	HIS
29	L	125	ASN
29	L	163	GLN

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Mol	Chain	Res	Type
30	l	76	ASN
31	M	39	GLN
31	M	68	HIS
31	M	152	HIS
32	m	28	ASN
35	O	41	GLN
35	O	105	GLN
36	o	109	ASN
37	P	11	GLN
37	P	87	GLN
37	P	156	HIS
37	P	175	ASN
39	Q	55	HIS
39	Q	182	ASN
40	q	88	ASN
40	q	125	GLN
41	R	54	HIS
41	R	97	ASN
43	S	9	GLN
43	S	73	GLN
43	S	152	HIS
44	s	54	ASN
44	s	94	HIS
44	s	112	GLN
45	T	121	HIS
46	U	46	GLN
46	U	122	HIS
46	U	142	GLN
46	U	157	GLN

### 5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	1	3162/3396 (93%)	1117 (35%)	336 (10%)
3	3	120/121 (99%)	30 (25%)	7 (5%)
5	4	157/158 (99%)	58 (36%)	20 (12%)
7	A	75/76 (98%)	40 (53%)	7 (9%)
9	B	76/77 (98%)	35 (46%)	6 (7%)
All	All	3590/3828 (93%)	1280 (35%)	376 (10%)

All (1280) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	1	6	A
1	1	11	A
1	1	13	A
1	1	14	U
1	1	15	C
1	1	20	A
1	1	25	U
1	1	26	A
1	1	27	C
1	1	30	G
1	1	40	A
1	1	41	G
1	1	44	U
1	1	48	A
1	1	49	A
1	1	59	G
1	1	60	A
1	1	66	A
1	1	67	A
1	1	71	A
1	1	72	C
1	1	74	G
1	1	75	G
1	1	76	G
1	1	77	A
1	1	78	U
1	1	85	A
1	1	86	G
1	1	87	U
1	1	92	G
1	1	93	C
1	1	94	G
1	1	99	A
1	1	110	G
1	1	116	A
1	1	117	U
1	1	118	U
1	1	119	U
1	1	120	G
1	1	121	A
1	1	122	A
1	1	123	A
1	1	133	U

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Mol	Chain	Res	Type
1	1	134	U
1	1	136	G
1	1	143	G
1	1	146	U
1	1	147	U
1	1	148	G
1	1	149	U
1	1	156	G
1	1	157	A
1	1	161	G
1	1	164	A
1	1	165	A
1	1	166	C
1	1	170	G
1	1	174	C
1	1	176	G
1	1	177	U
1	1	178	U
1	1	187	A
1	1	189	G
1	1	190	U
1	1	191	U
1	1	192	C
1	1	197	G
1	1	198	A
1	1	200	C
1	1	201	A
1	1	204	A
1	1	206	G
1	1	210	U
1	1	211	A
1	1	212	G
1	1	213	A
1	1	218	G
1	1	219	A
1	1	220	G
1	1	221	A
1	1	222	A
1	1	224	C
1	1	228	U
1	1	230	U
1	1	231	G

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Mol	Chain	Res	Type
1	1	238	A
1	1	240	U
1	1	241	G
1	1	244	G
1	1	250	U
1	1	251	G
1	1	252	U
1	1	254	A
1	1	268	A
1	1	269	G
1	1	270	U
1	1	281	G
1	1	283	G
1	1	284	A
1	1	286	U
1	1	295	A
1	1	297	G
1	1	298	U
1	1	304	G
1	1	305	U
1	1	306	A
1	1	317	A
1	1	323	A
1	1	326	U
1	1	329	U
1	1	330	G
1	1	334	A
1	1	338	A
1	1	339	C
1	1	342	A
1	1	343	U
1	1	344	A
1	1	349	A
1	1	350	C
1	1	351	A
1	1	352	A
1	1	353	G
1	1	354	U
1	1	375	A
1	1	376	G
1	1	385	A
1	1	390	G

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Mol	Chain	Res	Type
1	1	395	A
1	1	398	A
1	1	399	A
1	1	400	G
1	1	401	U
1	1	402	A
1	1	403	C
1	1	404	G
1	1	406	G
1	1	407	A
1	1	421	G
1	1	422	A
1	1	429	U
1	1	437	G
1	1	439	C
1	1	495	G
1	1	503	C
1	1	507	U
1	1	510	G
1	1	518	G
1	1	519	A
1	1	520	U
1	1	521	A
1	1	525	C
1	1	532	A
1	1	533	A
1	1	534	U
1	1	535	G
1	1	536	U
1	1	541	U
1	1	546	C
1	1	547	G
1	1	548	G
1	1	552	G
1	1	555	U
1	1	556	U
1	1	557	A
1	1	558	U
1	1	559	A
1	1	560	G
1	1	566	G
1	1	568	G

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Mol	Chain	Res	Type
1	1	569	A
1	1	579	G
1	1	581	U
1	1	582	G
1	1	584	G
1	1	588	G
1	1	589	A
1	1	592	A
1	1	597	G
1	1	601	U
1	1	602	A
1	1	605	U
1	1	606	C
1	1	608	A
1	1	609	G
1	1	610	G
1	1	611	A
1	1	620	U
1	1	621	A
1	1	622	A
1	1	628	A
1	1	636	C
1	1	637	C
1	1	643	U
1	1	645	A
1	1	646	A
1	1	647	A
1	1	648	C
1	1	649	A
1	1	660	A
1	1	661	G
1	1	662	U
1	1	666	A
1	1	667	C
1	1	678	G
1	1	681	U
1	1	683	U
1	1	684	G
1	1	689	U
1	1	690	A
1	1	691	A
1	1	692	A

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Mol	Chain	Res	Type
1	1	698	U
1	1	705	A
1	1	706	A
1	1	707	U
1	1	708	G
1	1	709	A
1	1	712	G
1	1	714	G
1	1	715	A
1	1	716	A
1	1	717	C
1	1	719	U
1	1	720	A
1	1	721	G
1	1	727	G
1	1	728	G
1	1	735	A
1	1	742	G
1	1	748	U
1	1	750	G
1	1	760	G
1	1	761	A
1	1	764	U
1	1	765	C
1	1	766	U
1	1	767	U
1	1	768	C
1	1	770	G
1	1	773	G
1	1	774	G
1	1	776	U
1	1	777	U
1	1	781	G
1	1	784	A
1	1	785	G
1	1	786	A
1	1	787	G
1	1	799	G
1	1	800	G
1	1	801	A
1	1	802	C
1	1	806	A

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Mol	Chain	Res	Type
1	1	808	A
1	1	815	G
1	1	816	A
1	1	817	A
1	1	818	C
1	1	825	U
1	1	826	G
1	1	830	A
1	1	836	A
1	1	841	A
1	1	842	G
1	1	849	C
1	1	854	G
1	1	859	G
1	1	860	G
1	1	861	C
1	1	869	G
1	1	871	U
1	1	874	U
1	1	879	U
1	1	880	G
1	1	884	A
1	1	888	A
1	1	894	G
1	1	895	A
1	1	905	U
1	1	908	G
1	1	910	G
1	1	914	A
1	1	915	A
1	1	916	G
1	1	917	A
1	1	922	U
1	1	925	A
1	1	926	A
1	1	927	C
1	1	931	C
1	1	932	U
1	1	933	A
1	1	934	G
1	1	936	A
1	1	937	G

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Mol	Chain	Res	Type
1	1	938	C
1	1	940	G
1	1	941	G
1	1	943	U
1	1	944	C
1	1	951	A
1	1	953	G
1	1	954	U
1	1	959	C
1	1	960	U
1	1	961	C
1	1	962	A
1	1	963	G
1	1	968	G
1	1	974	G
1	1	978	G
1	1	979	U
1	1	980	A
1	1	981	U
1	1	982	C
1	1	984	G
1	1	985	U
1	1	986	U
1	1	995	U
1	1	1001	G
1	1	1002	A
1	1	1006	A
1	1	1013	G
1	1	1015	U
1	1	1016	C
1	1	1017	C
1	1	1018	G
1	1	1020	G
1	1	1021	G
1	1	1025	A
1	1	1026	A
1	1	1029	G
1	1	1030	A
1	1	1036	A
1	1	1037	C
1	1	1038	C
1	1	1047	A

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Mol	Chain	Res	Type
1	1	1049	C
1	1	1054	A
1	1	1063	G
1	1	1064	A
1	1	1065	A
1	1	1066	G
1	1	1076	C
1	1	1080	A
1	1	1081	U
1	1	1086	C
1	1	1093	A
1	1	1095	U
1	1	1096	U
1	1	1097	G
1	1	1098	A
1	1	1103	A
1	1	1104	G
1	1	1105	A
1	1	1112	A
1	1	1114	U
1	1	1117	G
1	1	1127	G
1	1	1128	U
1	1	1131	G
1	1	1132	C
1	1	1138	U
1	1	1142	G
1	1	1143	A
1	1	1144	U
1	1	1145	G
1	1	1151	U
1	1	1153	A
1	1	1154	A
1	1	1155	C
1	1	1158	A
1	1	1159	A
1	1	1160	C
1	1	1174	G
1	1	1177	G
1	1	1178	G
1	1	1180	A
1	1	1181	U

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Mol	Chain	Res	Type
1	1	1182	A
1	1	1185	C
1	1	1186	G
1	1	1190	A
1	1	1191	U
1	1	1192	C
1	1	1193	A
1	1	1196	C
1	1	1197	A
1	1	1199	C
1	1	1200	A
1	1	1201	C
1	1	1202	A
1	1	1208	U
1	1	1217	A
1	1	1220	U
1	1	1221	A
1	1	1228	C
1	1	1229	G
1	1	1233	G
1	1	1234	G
1	1	1235	U
1	1	1236	G
1	1	1237	G
1	1	1238	C
1	1	1239	C
1	1	1241	U
1	1	1242	G
1	1	1243	G
1	1	1245	A
1	1	1246	G
1	1	1247	U
1	1	1248	C
1	1	1249	G
1	1	1251	A
1	1	1252	A
1	1	1253	U
1	1	1254	C
1	1	1260	A
1	1	1262	G
1	1	1263	A
1	1	1265	U

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Mol	Chain	Res	Type
1	1	1266	G
1	1	1269	U
1	1	1270	A
1	1	1271	A
1	1	1272	C
1	1	1274	A
1	1	1277	C
1	1	1278	A
1	1	1279	C
1	1	1280	C
1	1	1281	G
1	1	1286	A
1	1	1292	C
1	1	1293	U
1	1	1301	A
1	1	1302	A
1	1	1303	A
1	1	1305	U
1	1	1307	G
1	1	1308	A
1	1	1313	G
1	1	1315	U
1	1	1316	C
1	1	1317	A
1	1	1319	G
1	1	1323	G
1	1	1325	U
1	1	1330	A
1	1	1331	U
1	1	1332	A
1	1	1345	G
1	1	1349	G
1	1	1351	U
1	1	1352	A
1	1	1353	U
1	1	1354	G
1	1	1355	A
1	1	1356	U
1	1	1357	G
1	1	1362	G
1	1	1363	A
1	1	1364	C

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Mol	Chain	Res	Type
1	1	1366	A
1	1	1375	G
1	1	1380	G
1	1	1386	A
1	1	1387	G
1	1	1390	A
1	1	1391	C
1	1	1392	G
1	1	1393	A
1	1	1395	G
1	1	1399	A
1	1	1400	G
1	1	1407	A
1	1	1408	G
1	1	1409	G
1	1	1414	G
1	1	1418	A
1	1	1419	A
1	1	1428	A
1	1	1429	G
1	1	1430	U
1	1	1431	G
1	1	1432	C
1	1	1433	A
1	1	1434	G
1	1	1435	A
1	1	1436	U
1	1	1437	C
1	1	1443	G
1	1	1446	A
1	1	1447	G
1	1	1448	U
1	1	1449	A
1	1	1450	G
1	1	1455	U
1	1	1456	A
1	1	1457	U
1	1	1458	U
1	1	1464	G
1	1	1467	A
1	1	1468	A
1	1	1470	U

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Mol	Chain	Res	Type
1	1	1473	G
1	1	1475	A
1	1	1481	A
1	1	1482	A
1	1	1483	G
1	1	1484	U
1	1	1485	G
1	1	1486	G
1	1	1487	G
1	1	1490	A
1	1	1492	G
1	1	1493	G
1	1	1494	U
1	1	1495	U
1	1	1496	C
1	1	1503	A
1	1	1504	A
1	1	1507	G
1	1	1508	C
1	1	1512	U
1	1	1514	G
1	1	1515	A
1	1	1522	U
1	1	1523	U
1	1	1524	A
1	1	1525	G
1	1	1526	U
1	1	1527	C
1	1	1533	U
1	1	1536	G
1	1	1537	A
1	1	1539	A
1	1	1540	U
1	1	1542	G
1	1	1549	U
1	1	1554	U
1	1	1555	U
1	1	1556	C
1	1	1557	A
1	1	1558	A
1	1	1559	A
1	1	1560	G

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Mol	Chain	Res	Type
1	1	1561	G
1	1	1562	C
1	1	1563	C
1	1	1565	G
1	1	1567	U
1	1	1568	U
1	1	1569	U
1	1	1570	U
1	1	1571	A
1	1	1572	U
1	1	1573	G
1	1	1575	A
1	1	1578	C
1	1	1580	A
1	1	1581	C
1	1	1582	C
1	1	1583	A
1	1	1588	A
1	1	1589	A
1	1	1593	A
1	1	1595	U
1	1	1603	A
1	1	1605	A
1	1	1607	U
1	1	1608	C
1	1	1613	A
1	1	1620	U
1	1	1621	A
1	1	1623	G
1	1	1628	C
1	1	1629	U
1	1	1630	U
1	1	1642	A
1	1	1643	A
1	1	1645	U
1	1	1646	G
1	1	1656	A
1	1	1657	C
1	1	1662	G
1	1	1677	G
1	1	1683	A
1	1	1696	A

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Mol	Chain	Res	Type
1	1	1707	A
1	1	1708	C
1	1	1712	G
1	1	1713	G
1	1	1715	A
1	1	1716	U
1	1	1717	U
1	1	1724	U
1	1	1725	C
1	1	1729	A
1	1	1730	G
1	1	1731	A
1	1	1741	A
1	1	1749	A
1	1	1750	A
1	1	1751	G
1	1	1752	A
1	1	1758	G
1	1	1760	A
1	1	1762	C
1	1	1763	U
1	1	1765	U
1	1	1766	G
1	1	1769	G
1	1	1770	G
1	1	1771	C
1	1	1775	G
1	1	1779	C
1	1	1780	G
1	1	1785	U
1	1	1794	G
1	1	1795	U
1	1	1796	G
1	1	1797	A
1	1	1798	A
1	1	1809	A
1	1	1812	G
1	1	1813	A
1	1	1814	A
1	1	1815	U
1	1	1816	A
1	1	1817	G

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Mol	Chain	Res	Type
1	1	1818	U
1	1	1819	U
1	1	1820	U
1	1	1821	U
1	1	1822	C
1	1	1831	U
1	1	1835	A
1	1	1839	A
1	1	1840	U
1	1	1841	A
1	1	1843	C
1	1	1845	G
1	1	1846	C
1	1	1847	A
1	1	1848	G
1	1	1849	C
1	1	1850	A
1	1	1851	G
1	1	1858	A
1	1	1864	A
1	1	1866	C
1	1	1867	A
1	1	1869	C
1	1	1871	U
1	1	1874	A
1	1	1880	U
1	1	1885	U
1	1	1886	A
1	1	1892	G
1	1	1893	A
1	1	1895	A
1	1	1897	G
1	1	1900	A
1	1	1901	A
1	1	1906	G
1	1	1907	C
1	1	1912	U
1	1	1913	A
1	1	1914	G
1	1	1926	C
1	1	1927	G
1	1	1930	A

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Mol	Chain	Res	Type
1	1	1931	U
1	1	1932	A
1	1	1933	A
1	1	1935	G
1	1	1939	G
1	1	1942	U
1	1	1948	G
1	1	1952	G
1	1	1953	G
1	1	1954	G
1	1	2100	A
1	1	2101	C
1	1	2102	U
1	1	2105	G
1	1	2107	A
1	1	2111	G
1	1	2112	U
1	1	2113	A
1	1	2114	C
1	1	2115	G
1	1	2116	G
1	1	2117	A
1	1	2121	G
1	1	2122	G
1	1	2125	A
1	1	2126	A
1	1	2131	A
1	1	2138	A
1	1	2140	U
1	1	2143	A
1	1	2144	A
1	1	2145	A
1	1	2149	A
1	1	2158	A
1	1	2159	U
1	1	2160	G
1	1	2163	C
1	1	2166	A
1	1	2169	G
1	1	2170	U
1	1	2174	G
1	1	2175	U

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Mol	Chain	Res	Type
1	1	2176	U
1	1	2178	A
1	1	2179	C
1	1	2180	G
1	1	2184	U
1	1	2186	U
1	1	2187	G
1	1	2188	A
1	1	2194	G
1	1	2197	C
1	1	2198	A
1	1	2201	G
1	1	2204	C
1	1	2205	U
1	1	2206	G
1	1	2209	U
1	1	2225	U
1	1	2228	A
1	1	2231	C
1	1	2232	A
1	1	2243	A
1	1	2244	A
1	1	2249	G
1	1	2253	G
1	1	2256	A
1	1	2257	C
1	1	2258	U
1	1	2260	U
1	1	2263	C
1	1	2272	G
1	1	2274	U
1	1	2276	G
1	1	2281	A
1	1	2282	U
1	1	2283	G
1	1	2284	C
1	1	2285	C
1	1	2286	U
1	1	2287	C
1	1	2288	G
1	1	2298	U
1	1	2299	A

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Mol	Chain	Res	Type
1	1	2306	C
1	1	2307	G
1	1	2308	C
1	1	2309	A
1	1	2310	U
1	1	2313	A
1	1	2314	U
1	1	2315	G
1	1	2319	U
1	1	2324	A
1	1	2332	A
1	1	2334	U
1	1	2336	U
1	1	2339	C
1	1	2340	U
1	1	2343	C
1	1	2356	A
1	1	2359	C
1	1	2365	C
1	1	2373	A
1	1	2374	C
1	1	2375	G
1	1	2376	G
1	1	2377	G
1	1	2378	C
1	1	2385	G
1	1	2386	A
1	1	2387	A
1	1	2388	U
1	1	2393	G
1	1	2397	A
1	1	2402	A
1	1	2403	G
1	1	2404	A
1	1	2410	U
1	1	2411	U
1	1	2418	G
1	1	2419	A
1	1	2434	U
1	1	2435	G
1	1	2437	G
1	1	2438	A

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Mol	Chain	Res	Type
1	1	2439	A
1	1	2440	G
1	1	2444	C
1	1	2446	U
1	1	2451	G
1	1	2452	G
1	1	2493	U
1	1	2494	A
1	1	2495	C
1	1	2496	C
1	1	2497	U
1	1	2498	U
1	1	2501	U
1	1	2502	A
1	1	2503	G
1	1	2507	C
1	1	2514	U
1	1	2515	A
1	1	2521	U
1	1	2522	G
1	1	2523	A
1	1	2524	A
1	1	2526	C
1	1	2530	G
1	1	2531	C
1	1	2538	U
1	1	2539	C
1	1	2540	A
1	1	2541	U
1	1	2542	U
1	1	2544	U
1	1	2545	C
1	1	2546	C
1	1	2547	A
1	1	2548	C
1	1	2549	G
1	1	2550	U
1	1	2552	C
1	1	2553	U
1	1	2554	A
1	1	2555	G
1	1	2558	U

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Mol	Chain	Res	Type
1	1	2560	C
1	1	2570	U
1	1	2571	U
1	1	2572	C
1	1	2577	C
1	1	2579	G
1	1	2580	A
1	1	2581	U
1	1	2585	G
1	1	2587	U
1	1	2589	G
1	1	2590	A
1	1	2593	A
1	1	2594	C
1	1	2606	G
1	1	2607	G
1	1	2612	U
1	1	2614	G
1	1	2618	G
1	1	2619	G
1	1	2620	G
1	1	2626	A
1	1	2628	A
1	1	2629	U
1	1	2630	C
1	1	2635	A
1	1	2636	A
1	1	2652	U
1	1	2656	A
1	1	2657	A
1	1	2658	G
1	1	2666	C
1	1	2674	A
1	1	2676	A
1	1	2677	G
1	1	2678	A
1	1	2679	A
1	1	2680	A
1	1	2681	U
1	1	2689	A
1	1	2690	G
1	1	2691	A

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Mol	Chain	Res	Type
1	1	2694	A
1	1	2696	A
1	1	2703	A
1	1	2706	G
1	1	2713	U
1	1	2714	G
1	1	2715	A
1	1	2716	U
1	1	2725	U
1	1	2726	C
1	1	2727	A
1	1	2728	G
1	1	2729	U
1	1	2730	G
1	1	2732	G
1	1	2737	C
1	1	2740	A
1	1	2747	A
1	1	2752	U
1	1	2753	G
1	1	2755	C
1	1	2760	C
1	1	2762	A
1	1	2772	C
1	1	2773	C
1	1	2775	U
1	1	2777	G
1	1	2778	G
1	1	2779	A
1	1	2781	U
1	1	2797	C
1	1	2798	C
1	1	2800	G
1	1	2801	A
1	1	2802	A
1	1	2804	A
1	1	2809	C
1	1	2810	C
1	1	2814	G
1	1	2816	G
1	1	2817	A
1	1	2818	U

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Mol	Chain	Res	Type
1	1	2819	A
1	1	2825	C
1	1	2827	U
1	1	2829	U
1	1	2830	G
1	1	2835	U
1	1	2842	U
1	1	2845	A
1	1	2847	A
1	1	2850	G
1	1	2851	A
1	1	2853	A
1	1	2860	U
1	1	2867	C
1	1	2869	U
1	1	2870	C
1	1	2871	G
1	1	2872	A
1	1	2873	U
1	1	2874	G
1	1	2882	U
1	1	2886	U
1	1	2887	A
1	1	2888	U
1	1	2889	C
1	1	2894	C
1	1	2896	A
1	1	2898	G
1	1	2911	A
1	1	2912	G
1	1	2920	U
1	1	2922	G
1	1	2923	U
1	1	2932	U
1	1	2935	U
1	1	2936	A
1	1	2938	G
1	1	2941	A
1	1	2942	C
1	1	2945	G
1	1	2947	G
1	1	2951	G

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Mol	Chain	Res	Type
1	1	2954	U
1	1	2955	U
1	1	2971	A
1	1	2972	G
1	1	2978	U
1	1	2979	U
1	1	2983	C
1	1	2992	U
1	1	2996	U
1	1	2997	G
1	1	3011	A
1	1	3012	A
1	1	3022	G
1	1	3023	U
1	1	3026	G
1	1	3038	U
1	1	3039	C
1	1	3042	U
1	1	3047	U
1	1	3049	A
1	1	3057	U
1	1	3058	U
1	1	3059	G
1	1	3078	U
1	1	3079	U
1	1	3080	G
1	1	3086	A
1	1	3092	C
1	1	3097	C
1	1	3102	G
1	1	3104	U
1	1	3109	G
1	1	3111	U
1	1	3112	G
1	1	3113	A
1	1	3115	C
1	1	3116	G
1	1	3117	C
1	1	3119	U
1	1	3122	A
1	1	3129	A
1	1	3131	U

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Mol	Chain	Res	Type
1	1	3142	A
1	1	3143	C
1	1	3144	G
1	1	3145	C
1	1	3151	U
1	1	3152	U
1	1	3153	U
1	1	3154	C
1	1	3155	U
1	1	3156	U
1	1	3157	U
1	1	3158	G
1	1	3167	A
1	1	3168	A
1	1	3170	A
1	1	3172	A
1	1	3173	G
1	1	3174	A
1	1	3176	G
1	1	3180	A
1	1	3181	C
1	1	3182	G
1	1	3185	U
1	1	3186	A
1	1	3187	A
1	1	3191	G
1	1	3196	U
1	1	3197	G
1	1	3199	G
1	1	3206	C
1	1	3207	U
1	1	3208	G
1	1	3209	A
1	1	3210	A
1	1	3217	C
1	1	3218	A
1	1	3219	G
1	1	3220	G
1	1	3222	U
1	1	3227	A
1	1	3229	G
1	1	3231	U

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Mol	Chain	Res	Type
1	1	3234	A
1	1	3237	U
1	1	3242	G
1	1	3243	A
1	1	3244	A
1	1	3245	A
1	1	3247	G
1	1	3255	U
1	1	3259	U
1	1	3260	G
1	1	3263	G
1	1	3268	A
1	1	3269	U
1	1	3270	U
1	1	3271	G
1	1	3272	C
1	1	3273	A
1	1	3274	A
1	1	3275	U
1	1	3276	G
1	1	3277	U
1	1	3278	C
1	1	3279	A
1	1	3280	U
1	1	3284	G
1	1	3286	G
1	1	3287	U
1	1	3288	G
1	1	3291	G
1	1	3293	U
1	1	3294	A
1	1	3295	A
1	1	3296	A
1	1	3304	U
1	1	3305	A
1	1	3307	A
1	1	3313	U
1	1	3316	A
1	1	3317	U
1	1	3318	G
1	1	3319	U
1	1	3327	G

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Mol	Chain	Res	Type
1	1	3332	U
1	1	3334	U
1	1	3335	A
1	1	3338	C
1	1	3344	A
1	1	3345	G
1	1	3349	C
1	1	3351	U
1	1	3352	U
1	1	3354	U
1	1	3355	U
1	1	3358	U
1	1	3359	A
1	1	3362	A
1	1	3368	U
1	1	3369	G
1	1	3370	A
1	1	3375	A
1	1	3376	A
1	1	3378	C
1	1	3382	U
1	1	3383	G
1	1	3389	U
1	1	3390	G
3	3	7	G
3	3	9	C
3	3	11	A
3	3	13	A
3	3	14	U
3	3	20	A
3	3	24	A
3	3	29	C
3	3	31	U
3	3	33	U
3	3	41	G
3	3	42	A
3	3	48	U
3	3	49	G
3	3	50	U
3	3	53	U
3	3	55	A
3	3	62	U

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Mol	Chain	Res	Type
3	3	64	A
3	3	65	G
3	3	67	G
3	3	77	G
3	3	78	U
3	3	87	G
3	3	91	G
3	3	99	G
3	3	100	C
3	3	102	A
3	3	112	G
3	3	121	U
5	4	2	A
5	4	4	C
5	4	7	U
5	4	12	A
5	4	22	U
5	4	23	U
5	4	24	G
5	4	33	A
5	4	34	U
5	4	35	C
5	4	36	G
5	4	38	U
5	4	39	G
5	4	40	A
5	4	49	G
5	4	51	G
5	4	52	A
5	4	57	C
5	4	58	G
5	4	59	A
5	4	60	U
5	4	61	A
5	4	63	G
5	4	71	A
5	4	72	A
5	4	79	A
5	4	80	A
5	4	82	U
5	4	83	C
5	4	84	C

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Mol	Chain	Res	Type
5	4	85	G
5	4	86	U
5	4	90	U
5	4	91	C
5	4	95	G
5	4	96	A
5	4	101	U
5	4	102	U
5	4	105	A
5	4	106	C
5	4	107	G
5	4	111	A
5	4	112	U
5	4	113	U
5	4	114	G
5	4	116	G
5	4	121	U
5	4	123	G
5	4	125	U
5	4	126	A
5	4	127	U
5	4	129	C
5	4	136	G
5	4	138	A
5	4	147	U
5	4	148	G
5	4	151	C
5	4	152	G
7	A	3	G
7	A	5	C
7	A	6	G
7	A	8	U
7	A	9	A
7	A	10	G
7	A	14	A
7	A	15	G
7	A	16	U
7	A	17	U
7	A	18	G
7	A	19	G
7	A	21	A
7	A	22	G

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Mol	Chain	Res	Type
7	A	31	A
7	A	34	U
7	A	35	U
7	A	36	U
7	A	38	A
7	A	43	U
7	A	45	G
7	A	47	U
7	A	48	C
7	A	49	G
7	A	50	C
7	A	51	A
7	A	52	G
7	A	53	G
7	A	55	U
7	A	57	G
7	A	58	A
7	A	59	A
7	A	60	U
7	A	61	C
7	A	64	G
7	A	65	C
7	A	68	G
7	A	70	C
7	A	73	A
7	A	74	C
9	B	3	A
9	B	8	U
9	B	10	G
9	B	13	C
9	B	16	U
9	B	17	C
9	B	17(A)	G
9	B	18	G
9	B	19	U
9	B	20	U
9	B	21	A
9	B	22	G
9	B	33	U
9	B	35	U
9	B	37	A
9	B	38	C

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Mol	Chain	Res	Type
9	B	40	C
9	B	42	G
9	B	44	G
9	B	46	G
9	B	47	U
9	B	48	C
9	B	49	G
9	B	50	C
9	B	53	G
9	B	54	U
9	B	58	A
9	B	59	G
9	B	61	C
9	B	62	C
9	B	65	U
9	B	68	G
9	B	70	U
9	B	73	G
9	B	76	A

All (376) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	1	13	A
1	1	14	U
1	1	21	G
1	1	43	A
1	1	48	A
1	1	59	G
1	1	65	A
1	1	73	C
1	1	76	G
1	1	85	A
1	1	86	G
1	1	93	C
1	1	109	A
1	1	116	A
1	1	119	U
1	1	120	G
1	1	121	A
1	1	122	A
1	1	147	U

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Mol	Chain	Res	Type
1	1	148	G
1	1	155	G
1	1	156	G
1	1	169	U
1	1	189	G
1	1	199	A
1	1	200	C
1	1	210	U
1	1	211	A
1	1	220	G
1	1	221	A
1	1	239	G
1	1	240	U
1	1	249	U
1	1	251	G
1	1	267	G
1	1	269	G
1	1	282	G
1	1	285	A
1	1	316	U
1	1	337	G
1	1	338	A
1	1	341	G
1	1	343	U
1	1	349	A
1	1	350	C
1	1	352	A
1	1	353	G
1	1	374	A
1	1	398	A
1	1	400	G
1	1	401	U
1	1	406	G
1	1	420	G
1	1	494	G
1	1	518	G
1	1	519	A
1	1	520	U
1	1	533	A
1	1	534	U
1	1	535	G
1	1	547	G

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Mol	Chain	Res	Type
1	1	556	U
1	1	558	U
1	1	591	G
1	1	607	A
1	1	619	A
1	1	621	A
1	1	636	C
1	1	647	A
1	1	677	A
1	1	705	A
1	1	715	A
1	1	716	A
1	1	764	U
1	1	765	C
1	1	766	U
1	1	767	U
1	1	780	A
1	1	784	A
1	1	786	A
1	1	801	A
1	1	817	A
1	1	835	G
1	1	870	G
1	1	873	C
1	1	907	G
1	1	914	A
1	1	916	G
1	1	921	A
1	1	924	G
1	1	932	U
1	1	933	A
1	1	937	G
1	1	943	U
1	1	961	C
1	1	979	U
1	1	983	A
1	1	984	G
1	1	994	G
1	1	1001	G
1	1	1017	C
1	1	1053	A
1	1	1064	A

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Mol	Chain	Res	Type
1	1	1075	A
1	1	1094	U
1	1	1095	U
1	1	1096	U
1	1	1103	A
1	1	1116	G
1	1	1131	G
1	1	1143	A
1	1	1144	U
1	1	1177	G
1	1	1189	C
1	1	1192	C
1	1	1199	C
1	1	1235	U
1	1	1236	G
1	1	1241	U
1	1	1253	U
1	1	1271	A
1	1	1301	A
1	1	1307	G
1	1	1318	A
1	1	1329	U
1	1	1331	U
1	1	1348	U
1	1	1352	A
1	1	1355	A
1	1	1365	G
1	1	1391	C
1	1	1392	G
1	1	1417	G
1	1	1418	A
1	1	1428	A
1	1	1429	G
1	1	1431	G
1	1	1432	C
1	1	1433	A
1	1	1446	A
1	1	1447	G
1	1	1456	A
1	1	1467	A
1	1	1469	C
1	1	1480	G

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Mol	Chain	Res	Type
1	1	1481	A
1	1	1482	A
1	1	1483	G
1	1	1484	U
1	1	1493	G
1	1	1494	U
1	1	1502	C
1	1	1507	G
1	1	1511	U
1	1	1514	G
1	1	1522	U
1	1	1523	U
1	1	1524	A
1	1	1526	U
1	1	1554	U
1	1	1556	C
1	1	1557	A
1	1	1559	A
1	1	1562	C
1	1	1568	U
1	1	1580	A
1	1	1592	G
1	1	1606	U
1	1	1607	U
1	1	1642	A
1	1	1656	A
1	1	1695	U
1	1	1714	A
1	1	1715	A
1	1	1716	U
1	1	1724	U
1	1	1728	G
1	1	1729	A
1	1	1730	G
1	1	1740	U
1	1	1749	A
1	1	1750	A
1	1	1751	G
1	1	1778	G
1	1	1808	G
1	1	1815	U
1	1	1816	A

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Mol	Chain	Res	Type
1	1	1820	U
1	1	1834	U
1	1	1840	U
1	1	1842	A
1	1	1846	C
1	1	1848	G
1	1	1850	A
1	1	1866	C
1	1	1900	A
1	1	1925	U
1	1	1926	C
1	1	1930	A
1	1	1938	U
1	1	1953	G
1	1	2101	C
1	1	2111	G
1	1	2112	U
1	1	2116	G
1	1	2139	A
1	1	2142	A
1	1	2157	G
1	1	2158	A
1	1	2169	G
1	1	2174	G
1	1	2177	G
1	1	2178	A
1	1	2179	C
1	1	2197	C
1	1	2208	A
1	1	2273	G
1	1	2283	G
1	1	2286	U
1	1	2287	C
1	1	2307	G
1	1	2309	A
1	1	2313	A
1	1	2323	G
1	1	2335	G
1	1	2339	C
1	1	2355	G
1	1	2364	G
1	1	2372	A

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Mol	Chain	Res	Type
1	1	2385	G
1	1	2402	A
1	1	2403	G
1	1	2409	G
1	1	2418	G
1	1	2434	U
1	1	2445	A
1	1	2493	U
1	1	2495	C
1	1	2500	A
1	1	2501	U
1	1	2513	U
1	1	2514	U
1	1	2525	G
1	1	2537	U
1	1	2538	U
1	1	2539	C
1	1	2540	A
1	1	2541	U
1	1	2547	A
1	1	2549	G
1	1	2551	U
1	1	2554	A
1	1	2557	A
1	1	2571	U
1	1	2580	A
1	1	2586	G
1	1	2593	A
1	1	2606	G
1	1	2625	C
1	1	2627	C
1	1	2635	A
1	1	2651	G
1	1	2655	U
1	1	2656	A
1	1	2657	A
1	1	2665	U
1	1	2676	A
1	1	2680	A
1	1	2688	U
1	1	2702	A
1	1	2705	A

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Mol	Chain	Res	Type
1	1	2713	U
1	1	2714	G
1	1	2715	A
1	1	2725	U
1	1	2726	C
1	1	2727	A
1	1	2728	G
1	1	2754	G
1	1	2772	C
1	1	2797	C
1	1	2803	A
1	1	2808	A
1	1	2817	A
1	1	2818	U
1	1	2828	G
1	1	2850	G
1	1	2859	U
1	1	2887	A
1	1	2888	U
1	1	2911	A
1	1	2935	U
1	1	2941	A
1	1	2954	U
1	1	3011	A
1	1	3021	A
1	1	3022	G
1	1	3048	A
1	1	3056	U
1	1	3078	U
1	1	3115	C
1	1	3121	U
1	1	3141	A
1	1	3152	U
1	1	3154	C
1	1	3156	U
1	1	3171	U
1	1	3172	A
1	1	3175	U
1	1	3179	U
1	1	3186	A
1	1	3195	U
1	1	3198	U

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Mol	Chain	Res	Type
1	1	3208	G
1	1	3216	G
1	1	3218	A
1	1	3219	G
1	1	3228	C
1	1	3244	A
1	1	3246	G
1	1	3258	U
1	1	3268	A
1	1	3269	U
1	1	3270	U
1	1	3272	C
1	1	3275	U
1	1	3276	G
1	1	3303	G
1	1	3317	U
1	1	3333	G
1	1	3334	U
1	1	3344	A
1	1	3350	C
1	1	3353	G
1	1	3375	A
1	1	3377	G
3	3	32	U
3	3	41	G
3	3	49	G
3	3	52	G
3	3	63	A
3	3	76	A
3	3	77	G
5	4	22	U
5	4	33	A
5	4	34	U
5	4	37	A
5	4	38	U
5	4	39	G
5	4	48	A
5	4	51	G
5	4	58	G
5	4	60	U
5	4	62	C
5	4	70	G

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Mol	Chain	Res	Type
5	4	71	A
5	4	85	G
5	4	90	U
5	4	95	G
5	4	105	A
5	4	106	C
5	4	113	U
5	4	126	A
7	A	9	A
7	A	13	C
7	A	15	G
7	A	17	U
7	A	51	A
7	A	54	U
7	A	58	A
9	B	7	G
9	B	16	U
9	B	17(A)	G
9	B	18	G
9	B	58	A
9	B	60	U

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

1 non-standard protein/DNA/RNA residue is 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	$\# Z  > 2$
40	5CT	q	51	40	14,14,15	0.34	0	11,15,17	1.47	3 (27%)

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
40	5CT	q	51	40	-	0/12/14/16	0/0/0/0

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed( $^{\circ}$ )	Ideal( $^{\circ}$ )
40	q	51	5CT	C3-C2-C1	-2.55	109.38	112.20
40	q	51	5CT	C1-NZ-CE	-2.36	108.23	113.61
40	q	51	5CT	C4-C3-C2	-2.08	109.16	113.40

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

## 5.5 Carbohydrates [i](#)

There are no carbohydrates in this entry.

## 5.6 Ligand geometry [i](#)

1 ligand is 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	$\# Z  > 2$
50	3HE	1	3401	-	21,21,21	0.85	1 (4%)	18,30,30	0.77	0

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
50	3HE	1	3401	-	-	0/8/36/36	0/2/2/2

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
50	1	3401	3HE	C5-C7	3.22	1.58	1.53

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

1 monomer is involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
50	1	3401	3HE	2	0

## 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.