



wwPDB EM Map/Model Validation Report ⓘ

Apr 28, 2016 – 12:16 PM 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 : 2015-12-09
Resolution : 3.88 Å(reported)

This is a wwPDB EM Map/Model Validation Report for a publicly released PDB/EMDB entry.
For rigid body fitted models, validation errors reported here could stem from errors in the original structure(s) used in the fitting.
We welcome your comments at validation@mail.wwpdb.org
A user guide is available at
<http://wwpdb.org/validation/2016/EMValidationReportHelp>

MolProbity : 4.02b-467
Mogul : 1.7.1 (RC1), CSD as537be (2016)
Percentile statistics : 20151230.v01 (using entries in the PDB archive December 30th 2015)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et. al. (1996)
Validation Pipeline (wwPDB-VP) : rb-20027457

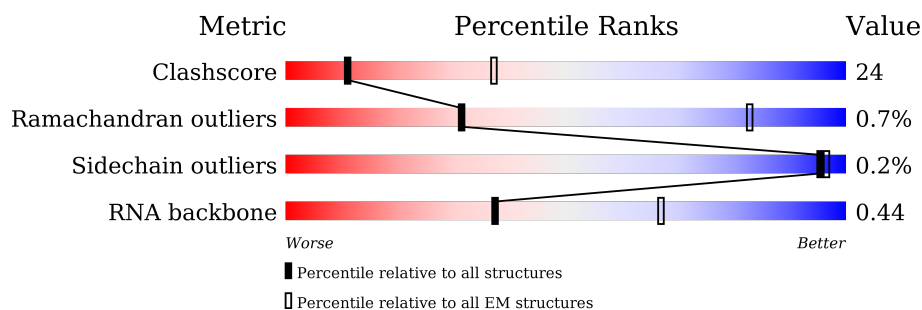
1 Overall quality at a glance

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.




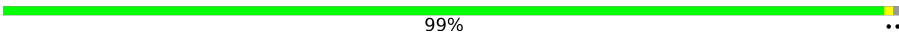

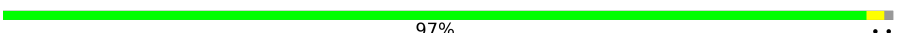

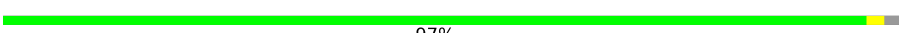










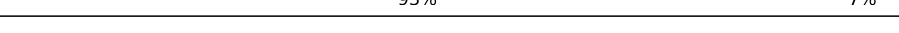

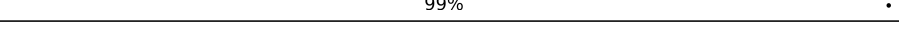

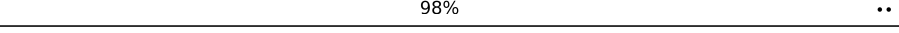

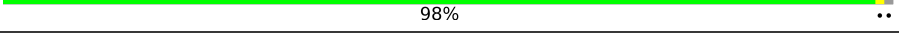

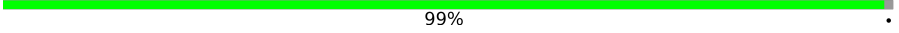
Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	114402	924
Ramachandran outliers	111179	726
Sidechain outliers	111093	686
RNA backbone	3027	244

The table below summarises the geometric issues observed across the polymeric chains. The red, orange, yellow and green segments on the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$

Mol	Chain	Length	Quality of chain
1	1	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	
10	b	136	
11	C	106	
12	c	149	
13	D	92	
14	d	59	
15	E	254	
16	e	105	
17	F	387	
18	f	109	
19	G	362	
20	g	130	
21	H	297	
22	h	107	
23	I	176	
24	i	121	
25	J	244	
26	j	120	
27	K	256	
28	k	100	
29	L	191	
30	l	88	
31	M	174	
32	m	78	
33	N	199	

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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		

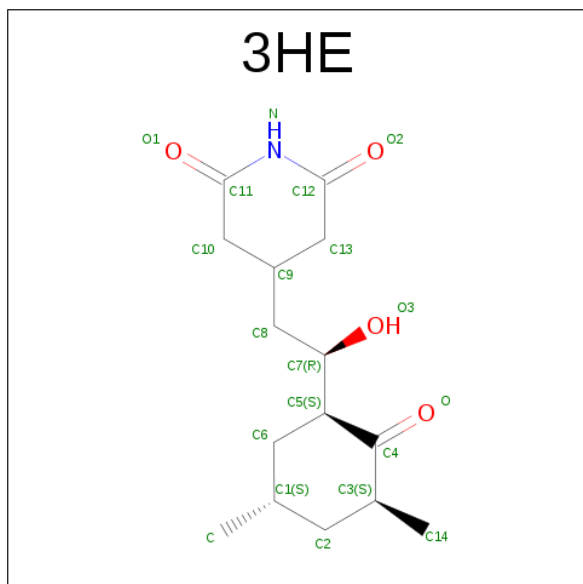
- Molecule 48 is a protein called 60S ribosomal protein L22-A.

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		

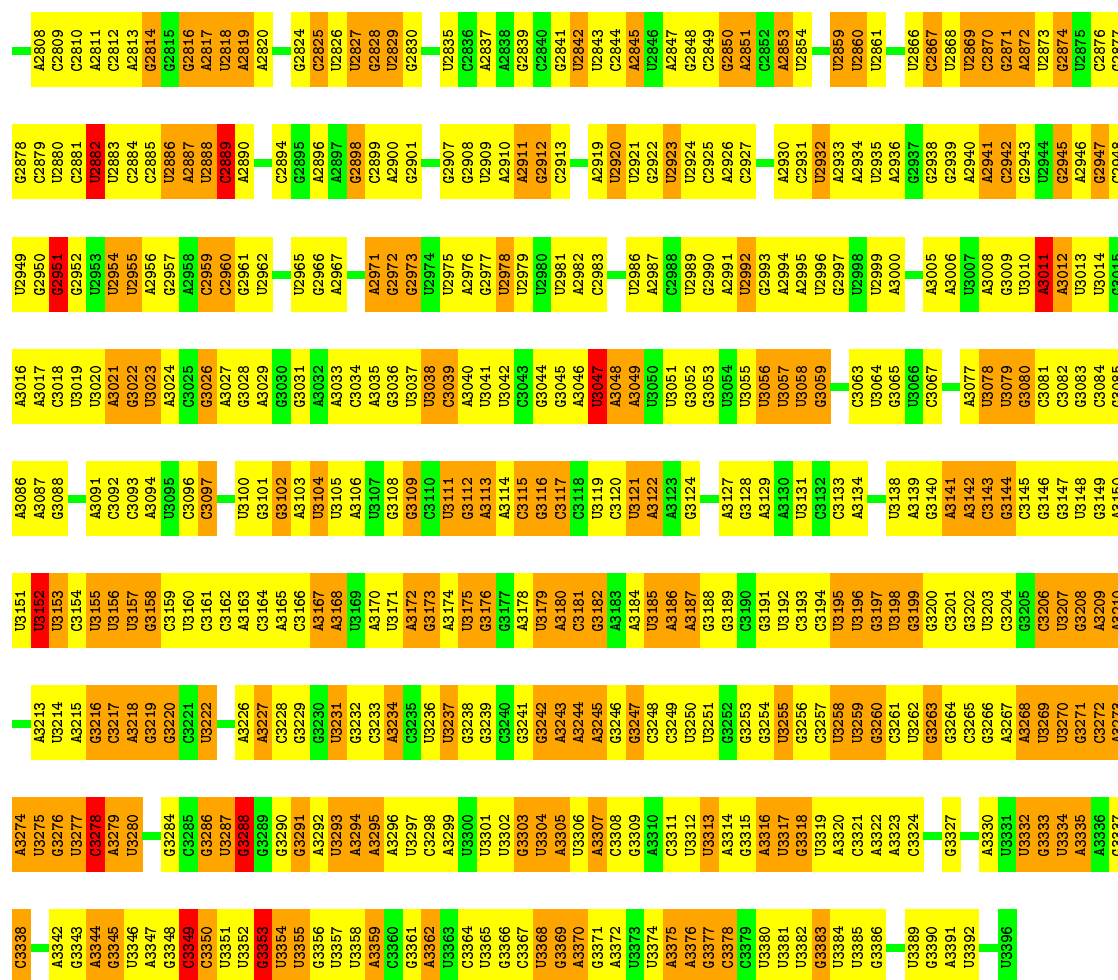
- Molecule 50 is 4-{(2R)-2-[(1S,3S,5S)-3,5-dimethyl-2-oxocyclohexyl]-2-hydroxyethyl}piperidine-2,6-dione (three-letter code: 3HE) (formula: C₁₅H₂₃NO₄).

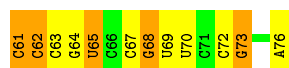


Mol	Chain	Residues	Atoms				AltConf
50	1	1	Total	C	N	O	0
			20	15	1	4	

U1717	G1651	A1589	G1528	A1468	A1401	C1339	C1275	G1213	A1143	A1079	C1017	C957	G891	A828	U767
G1718	G1652	G1590	A1529	A1469	C1402	G1340	U1276	U1214	U1144	A1080	G1018	C958	U892	U829	C768
G1719	G1653	G1591	U1630	A1470	C1403	U1341	C1277	A1217	G1145	U1081	G1019	C959	G893	A830	C769
U1720	A1654	G1592	C1531	U1471	G1404	C1342	A1278		U1082	U1082	G1020	U960	G894	G831	G770
U1721	G1655	A1593	C1532	U1472	A1405	A1343	C1279		G1147	G1083	U1021	C961	A895	G832	U771
U1722	A1656	G1594	U1533	G1473	A1407	G1344	C1280	U1220	G1148	A1084	U1022	A962	A896		U772
A1723	C1657	U1595	A1534	A1474	G1408	G1345	G1281	A1221	G1149	A1085	C1023	G963	U897	G835	G773
U1724	G1658	A1596	A1535	A1475	G1409	U1346	G1282	G1222	A1150	C1086	G1024	G964		A836	G774
C1725	U1659	C1597	G1536	A1476		U1347	C1283	A1223	U1151	A1087	A1025	A965	G900	A837	A775
G1726	G1660	G1598	A1537	A1477	G1412	U1348	C1284	C1224	U1152	U1088	A1026	U966	G901	G838	U776
G1727	G1661	G1599	G1538	C1478	G1413	U1349	G1285	A1225	A1153	G1089	A1027	A967	G902	G839	U777
G1728	G1662	A1600	A1539	U1479	A1414	A1350	A1286	C1226	A1154	G1090	U1028	G968	U903	C840	
A1729	C1663	U1601	U1540	G1480	U1415	U1351	A1287	C1227	C1155	A1091	G1029	C969	A904	C841	
G1730	G1664	A1602	G1541	A1481	C1416	A1352	U1288	G1228		C1092	A1030	A970	U905	G842	A780
A1731	C1665	A1603	G1542	A1482	G1417	U1353	G1289	G1229	A1158	A1093	C1031	G971	A906		G781
U1732	G1666	G1604	G1543	G1483	A1418	A1354	A1290	G1230	A1159	U1094	C1032	A972	G907	G845	U782
G1733	A1667	A1605	A1544	U1484	A1419	U1355	A1291	C1231	C1160	U1095	U1033	A973	G908	A846	A784
G1734	G1668	U1606	G1545	G1485	C1420	A1356	C1292	A1232	U1173	U1096	U1034	G974	G909	A847	G785
		U1607	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
U1737	G1672	C1608	G1548	G1488	C1423	C1359		U1235	G1171	A1099	C1037	C977	G912	U850	G788
C1738	A1673	G1609	U1549	A1489	C1424	U1360	A1301	G1236	A1172	U1100	C1038	G978	A913	C851	A789
U1739	G1674	G1610	C1550	A1490		C1361	A1302	G1237	U1173	G1101	U1039	U979	A914	U852	U790
U1740	G1675	C1551			U1427	A1428	A1303	C1238	G1174	A1102	U1040	A980	A915	G853	A791
A1741	A1676	A1612		G1491	G1429	G1429	A1304	A1240	G1176	G1104	U1041	U981	G916	G854	G792
G1742	G1677	C1614		G1492	A1430	A1362	A1305	A1241	C1177	A1105	U1042	C982	A917	U855	C793
G1743	A1678	G1615		U1494	U1430	G1363	U1306	G1242	G1178	G1106	U1043	A983	C918	G856	U794
G1744	A1679	C1556		G1495	G1431	A1366	G1307	G1243	A1179	G1107	U1044	U985	A920	G857	G795
G1745	U1681	G1616		C1496	C1432	U1367	A1308	A1244	A1180	U1108	A1046	U986	A921	G859	U796
	U1682	A1618		G1497	A1433	U1368	U1309	G1245	A1181	U1109	U1047	U987	U922	G860	G798
G1748	A1683	A1619		G1498	G1434		G1310	G1246	A1182	U1110	A1048	U988	C923	C861	G799
A1749	U1684	U1620		A1499	U1435	G1371	G1311	U1247	A1183	U1111	C1049	A989	G924	U862	G800
U1750	G1685	A1621		G1500	U1436	C1372	A1312	C1248	A1184	A1112	U1050	A990	A925	C863	A801
G1751	U1686	C1562		U1501	C1437	G1373	C1313	G1249	G1185	G1113	U1051	G991	A926		C802
G1753		G1623		C1502	U1438	G1374	C1314	G1250	G1186	U1114	U1052	A992	C927	A866	C803
G1754	U1689	U1564		A1503	U1439	G1375	U1315	A1251	C1187	G1115	A1053	G993	C928	G867	C804
C1755	C1690			A1504		C1376	C1316	A1252	U1188	G1116	A1054	G994	A929	C868	G805
G1756		G1628		C1505	G1443	C1377	A1317	U1253	C1189	U995	A1055	A996	U930	G869	A806
A1757	G1693	U1629		A1506	G1444	U1378	A1318	C1254	C1190	C1118	U1056	A997	C931	G870	A807
G1758	U1694	A1630		G1507	U1445	G1379	G1319	C1255	U1191	C1119		A998	U932	U871	A808
C1759	U1695	C1631		C1508	A1446	G1380	G1319	C1256	C1192	A1120	G1066	G999	A933	U872	C809
A1760	A1696	A1632		U1509	G1447	A1381	G1320	G1257	A1193	G1121	G1059		G934	C873	A810
C1761		C1633		G1510	U1448	G1382	G1321	C1258	A1194			G1000	U935	U874	U811
C1762		G1634		U1511	A1449		U1322	U1258			A1062	G1001	A936	G875	G812
U1763	G1700	G1635		U1512	G1450	C1385	G1323	A1259	A1195	G1127	G1063	A1002	G937	A876	G813
U1764	C1701	U1636		G1513		A1386	U1324	A1260	C1196	U1128	A1064	A1003	C938	C877	U814
U1765	U1702	A1637		G1514	A1453	G1387	G1325	G1261	A1197	A1129	A1065	A1004	U939	G878	G815
G1766	G1703	A1638		A1515	A1454	U1388	A1326	C1262	C1198	A1130	G1067	G1005	G940	U879	A816
C1767	A1704	C1639		G1516	U1455	G1389	C1327	A1263	G1199	G1131	U1067	A1006	G941	G880	A817
U1768		G1640		G1517	A1456	A1390	C1328	G1264	A1200	C1132	C1068	U1007	U942	C881	C818
G1769	A1707	U1641		U1518	U1457	C1391	U1329	U1265	C1201	A1133	C1069		U943	A882	U819
G1770	C1708	A1642		G1519	U1458	G1392	A1330	G1266	A1202	G1134	U1070	U1008	U943	A883	A820
C1771	G1709	A1643		C1520	C1459	A1393	U1331	U1267	A1203	A1135	U1071	A1009	C944	U884	U821
U1772	C1710	C1644		G1521	A1460	A1394	A1332	G1268	A1204	A1136	G1072	G1010		A885	G822
C1773	U1522	A1583		U1523	A1461	G1395	C1333	U1269	C1137	A1011	U1073	A1012	G950	C886	C823
C1774	G1712	G1646		U1524	A1462	C1396	U1334	A1270	U1208	G1138	U1074	A1013	A951	C887	C824
G1775	A1647	C1585		A1524	U1463	C1397	G1335	A1271	G1209	G1139	A1075	G1013	A952	G887	U825
G1776	U1714	G1586		G1525	U1464	U1398	C1336	C1272	U1210	G1140	C1076	G953	A954	A888	G826
U1777	A1715	A1587		U1526	G1464	A1399	A1337	A1273	U1211	C1141	U1077	U1015	U954	U889	A827
G1778	U1716	G1650		C1527	A1467	G1400	C1338	A1274	A1212	G1142	U1078			C990	

A2749	C2675	G2602	U2536	U2347	U2217	C2151	A	U	G	A1842	C1779
A2740	A2576	G2603	U2537	A2948	G2218	A2152	A	A	G	A1843	G1780
C2741	G2677	U2604	U2538	U2949	A2219	U2153	U	C	U	A1844	C1781
C2742	C2678	G2605	C2539	G2283	A2220	U2154	U	U	C	G1845	U1782
A2679	A2506	G2506	A2540	C2284	G2221	G2155	A	A	A	C1846	U1783
U2744	A2680	G2607	U2541	C2285	A2222	C2156	A2093	U	G	A1847	G1784
C2745	U2681	G2608	C2542	C2286	A2223	G2157	C2094	C	A	G1848	U1785
A2746	C2682	A2609	U2543	G2355	A2224	A2158	G2095	C	A	G1849	G1786
A2747	U2683	G2610	U2544	A2356	U2225	U2159	A2096	U	G	A1850	A1787
A2748	C2685	U2611	C2545	A2357	G2226	G2160	U	C	C	G1851	G1788
G2749	C2686	U2612	C2546	A2358	C2227	G2161	U	C	A	G1852	G1789
U2752	A2687	G2613	A2547	C2359	A2228	U2162	A2099	C	G	U1853	G1790
G2753	U2688	U2614	C2548	U2292	A2229	U2163	A2100	C	C	C1854	
G2754	A2689	G2615	G2549	C2362	G2230	A2166	A2101	U	G		C1793
C2755	U2617	C2616	U2550	A2363	C2231	A2167	U2103	U	G	A1858	G1794
C2756	G2690	U2618	U2551	G2364	A2232	G2168	A2104	G	G	A1859	U1795
U2757	A2691	G2619	C2552	G2365	A2233	A2169	G2105	U	C	G1860	G1796
		G2620	U2553	C2366	U2297	G2170	A2106	G	G	A1861	A1797
	A2694		C2554	A2367	U2298	U2171	A2107	U	U	U1862	A1798
	A2695		G2555	A2368	A2299	A2172	C2108	A	C	G1863	A1799
	A2696		C2556	G2369		G2173	U2109	G	C	A1864	A1800
	G2697		A2557	G2370	G2302	U2174	G2110	A	U	A1865	
	G2698		U2558	G2371		G2175	G2111	C	U	G1866	
			U2559	A2372	G2305	U2176	U2112	G	G	A1867	
	A2702	U2628	C2560	A2373	C2306	U2177	A2113	G	U	G1868	C1805
A2703	A2704	C2630		C2374	G2307	G2178	C2114	C	G	A1869	
A2704	A2705	G2632	U2565	A2375	C2308	A2179	G2115	C	G	C1870	G1807
G2706	G2707	A2635	C2568	G2376	A2309	G2180	G2116	U	A	G1871	G1808
G2707	C2707	A2636	U2569	G2377	U2310	A2181	A2117	U	C	C1872	A1809
C2708	C2708	A2637	U2570	C2378	G2311	G2182	C2118	G	U	A1873	A1810
C2709	C2710		U2571	U2379	A2312	A2183	A2119	U	C	A1874	G1811
C2710	C2711	G2643	C2572	U2380	A2313	A2184	A2120	U	C	G1875	G1812
C2711	U2712	A2644	G2573	G2382	U2314	U2185	G2121	A	U	A1876	A1813
U2715	U2716	G2645	G2574	C2383	G2315	G2186	G2122	G	U	U1877	A1814
G2714	G2714	G2646	G2575	A2384	G2316	G2187	G2123	G	G	A1878	U1815
A2715	U2716	A2647	C2576	U2385	U2319	A2188	G2124	U	U	A1879	A1816
U2717	G2648		C2577	A2386	A2320		A2125	C	U	G1880	G1817
U2718	U2651	U2652	U2578	A2387		U2193	A2126	U	G	A1881	U1818
U2719	U2652		A2580	U2388	G2323	G2194	U2127	C	G	U1882	U1820
G2720			U2581	C2389	A2324	C2195	U2128	U	G	U1885	U1821
				C2390	G2325	C2196	U2129	U	C	A1886	C1822
				C2391	A2326	C2197	G2130	G	C	A1887	A1823
				C2392		A2198	A2131	U	U	U1888	U1824
				C2393		G2199	C2132	A	G	G1889	G1825
						U2200	C2136	G	C	C1826	
						G2201	U2137	A	C	G1890	C1827
						C2202	A2138	C	U	A1891	A1828
						U2203	A2139	G	A	G1892	G1829
						C2204	U2140	U	C	A1893	U1830
						U2205	U2141	C	C	U1894	G1831
						G2206	A2142	G	U	A1895	U1832
						A2207	A2143	C	U	A1896	C1833
						G2208	A2144	U	A	G1897	A1834
						U2209	A2145	U	G	A1898	U1835
						G2210	C2146	G	C	A1899	A1836
						A2213	A2147	C	G	A1900	C1836
						A2214	U2148	U	C	A1901	
							A2149	A	U	G1902	A1839
							G2150	C	C	U1903	U1840
											A1841





- Molecule 10: 60S ribosomal protein L27-A

Chain b: 99%



- Molecule 11: 60S ribosomal protein L42-A

Chain C: 70% 29%



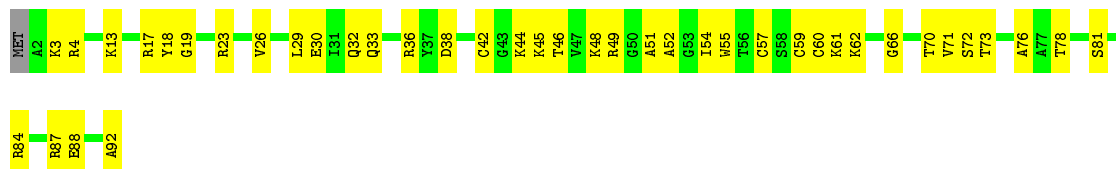
- Molecule 12: 60S ribosomal protein L28

Chain c: 97%



- Molecule 13: 60S ribosomal protein L43-A

Chain D: 54% 45%



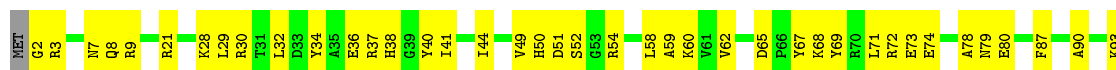
- Molecule 14: 60S ribosomal protein L29

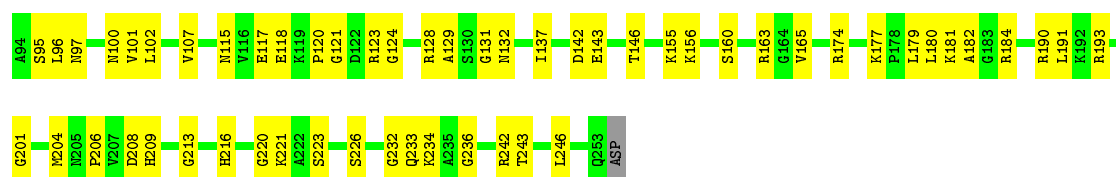
Chain d: 97%



- Molecule 15: 60S ribosomal protein L2-A

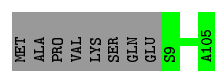
Chain E: 62% 37%





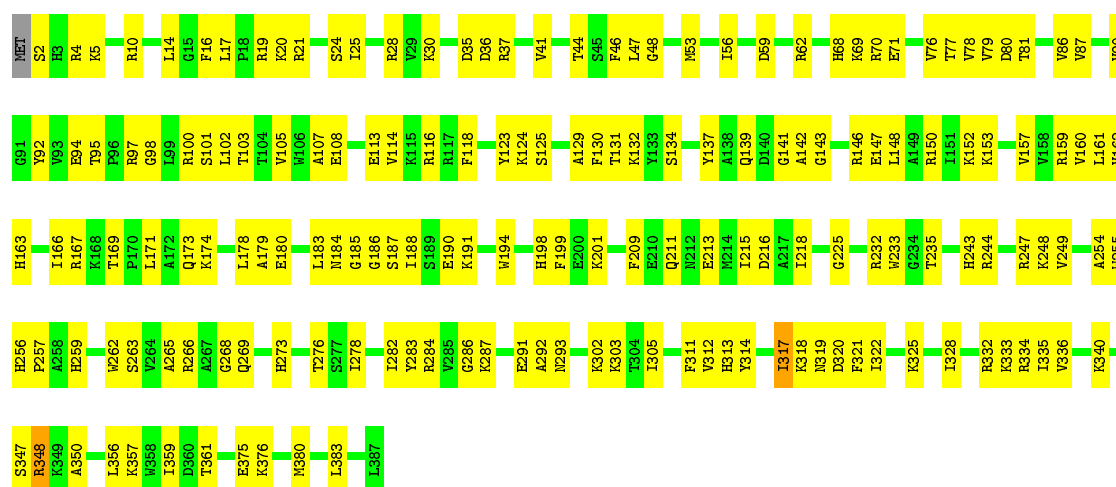
- Molecule 16: 60S ribosomal protein L30

Chain e: 92% 8%



- Molecule 17: 60S ribosomal protein L3

Chain F: 56% 43%



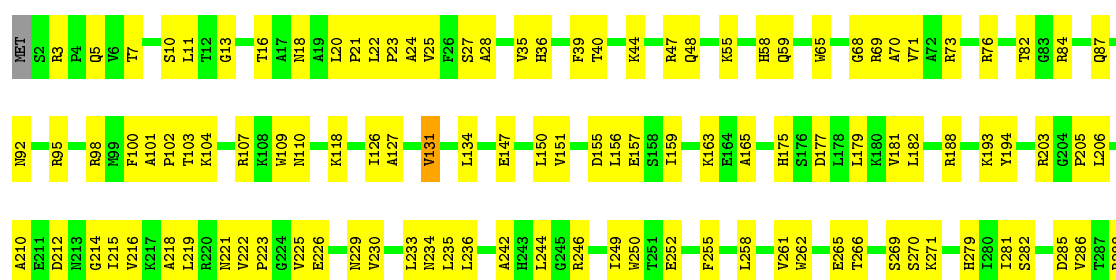
- Molecule 18: 60S ribosomal protein L31-A

Chain f: 100%

There are no outlier residues recorded for this chain.

- Molecule 19: 60S ribosomal protein L4-A

Chain G: 63% 36%





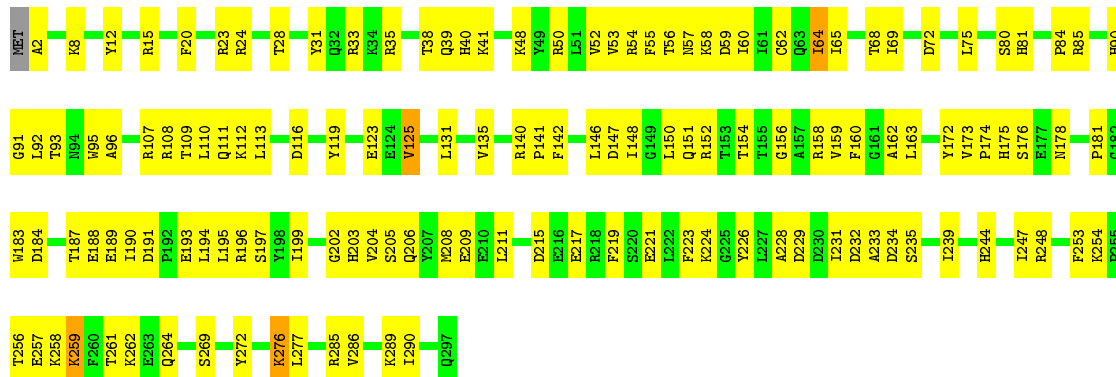
- Molecule 20: 60S ribosomal protein L32

Chain g: 98%



- Molecule 21: 60S ribosomal protein L5

Chain H: 54% 44%



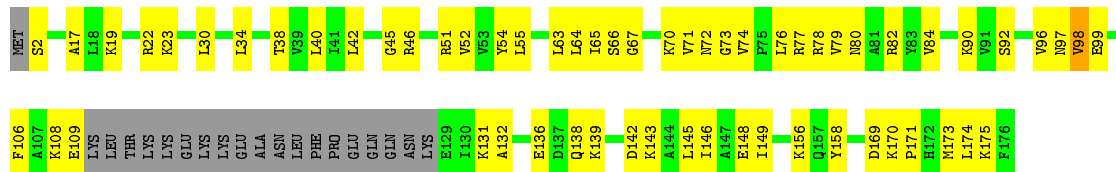
- Molecule 22: 60S ribosomal protein L33-A

Chain h: 99%



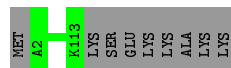
- Molecule 23: 60S ribosomal protein L6-A

Chain I: 54% 34% 11%



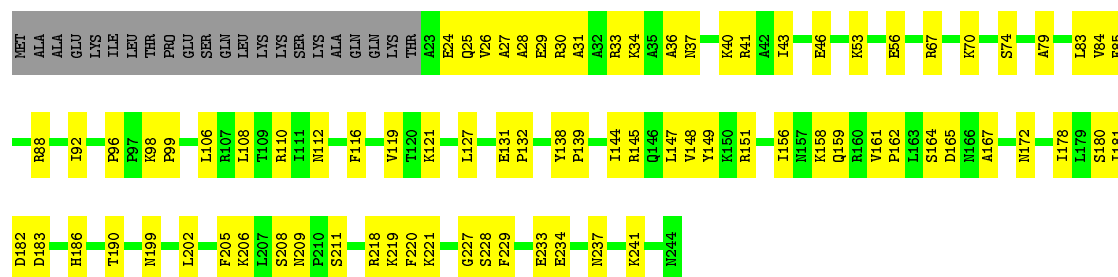
- Molecule 24: 60S ribosomal protein L34-A

Chain i: 93% 7%



- Molecule 25: 60S ribosomal protein L7-A

Chain J:  57% 34% 9%



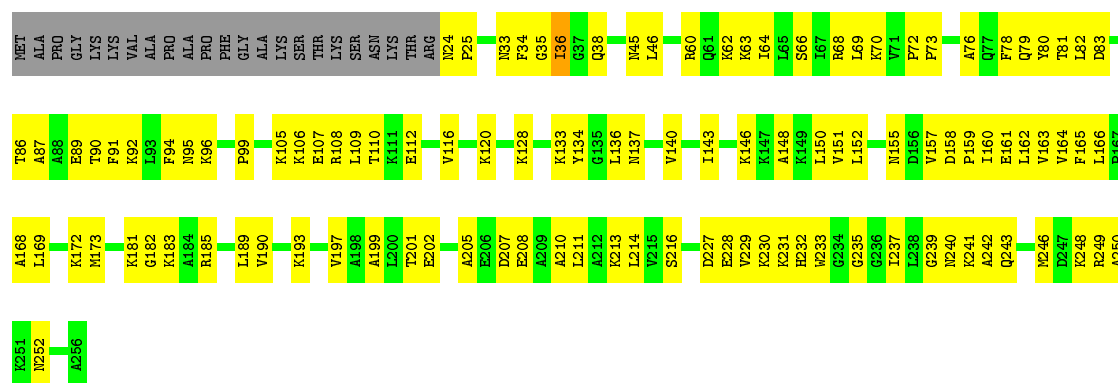
- Molecule 26: 60S ribosomal protein L35-A

Chain j:  99%



- Molecule 27: 60S ribosomal protein L8-A

Chain K:  48% 43% 9%



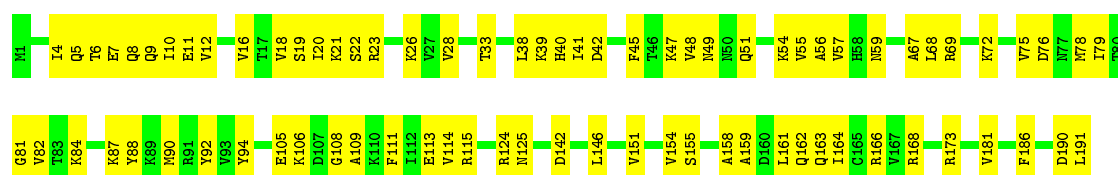
- Molecule 28: 60S ribosomal protein L36-A

Chain k:  98%

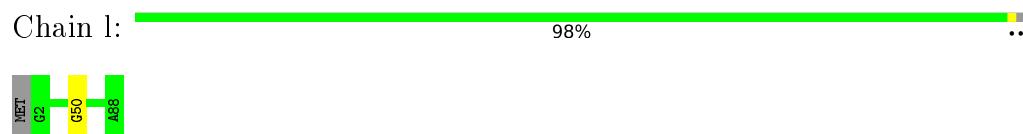


- Molecule 29: 60S ribosomal protein L9-A

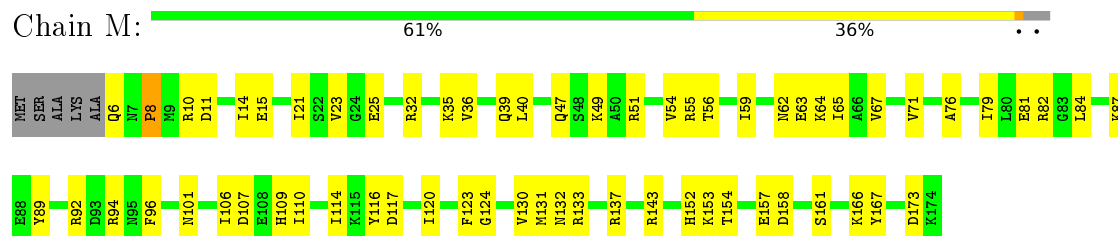
Chain L:  59% 41%



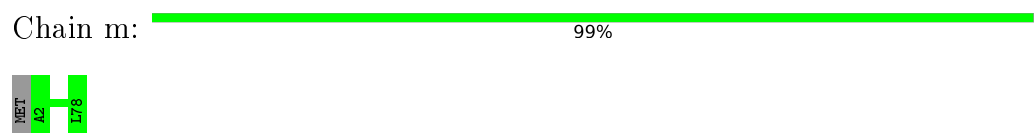
- Molecule 30: 60S ribosomal protein L37-A



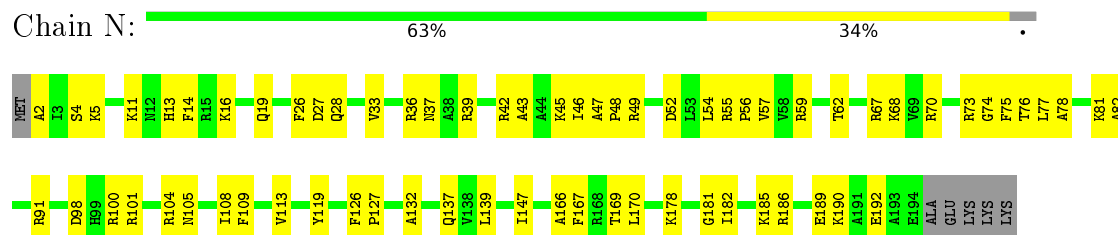
- Molecule 31: 60S ribosomal protein L11-A



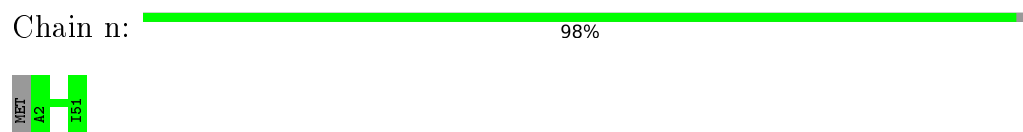
- Molecule 32: 60S ribosomal protein L38



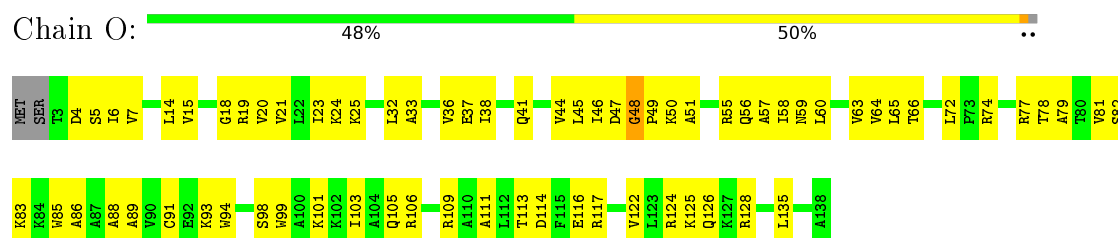
- Molecule 33: 60S ribosomal protein L13-A



- Molecule 34: 60S ribosomal protein L39

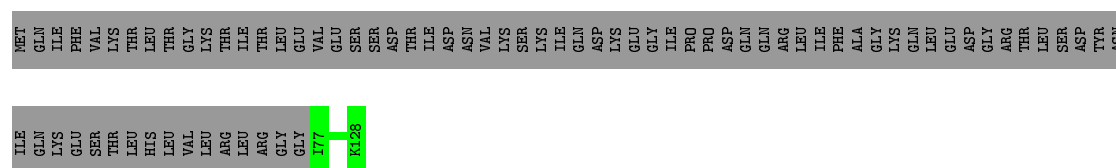


- Molecule 35: 60S ribosomal protein L14-B



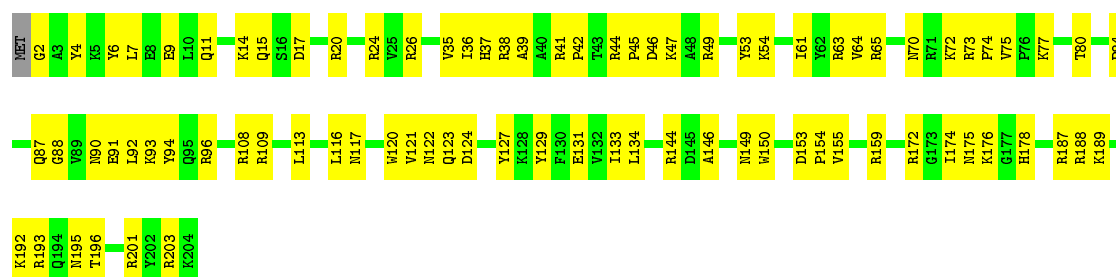
- Molecule 36: Ubiquitin-60S ribosomal protein L40

Chain o:  41% 59%



- Molecule 37: 60S ribosomal protein L15-A

Chain P:  59% 41%



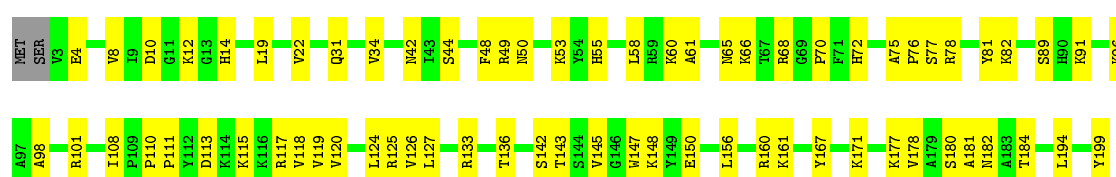
- Molecule 38: 60S ribosomal protein L41-A

Chain p:  100%


There are no outlier residues recorded for this chain.

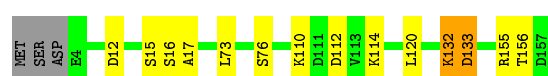
- Molecule 39: 60S ribosomal protein L16-A

Chain Q:  64% 35%



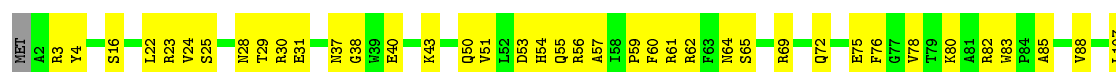
- Molecule 40: Eukaryotic translation initiation factor 5A-1

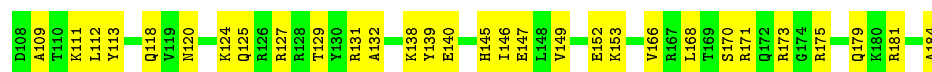
Chain q:  89% 8% ..



- 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% ..



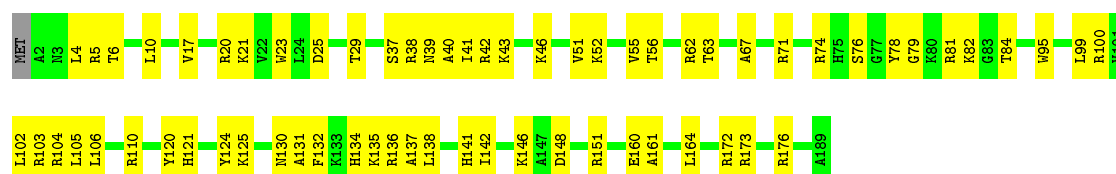
- Molecule 44: 60S ribosomal protein L10

Chain s:  94% ..



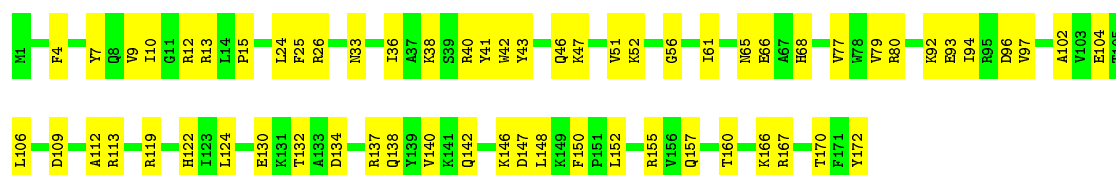
- Molecule 45: 60S ribosomal protein L19-A

Chain T:  65%  34% .



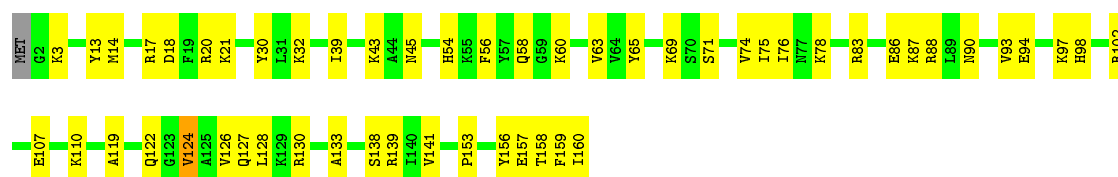
- Molecule 46: 60S ribosomal protein L20-A

Chain U:  64%  36%



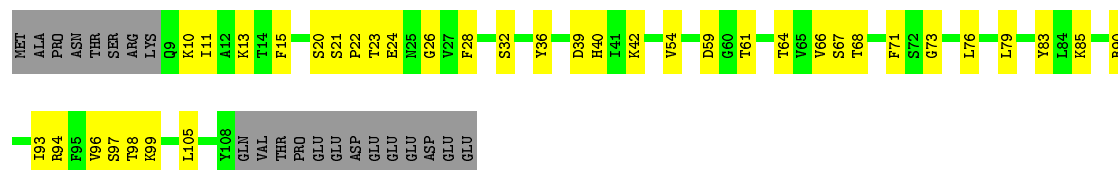
- Molecule 47: 60S ribosomal protein L21-A

Chain V:  66%  33% ..



- Molecule 48: 60S ribosomal protein L22-A

Chain W:



- Molecule 49: nascent polypeptide chain

Chain z:

There are no outlier residues recorded for this chain.

4 Experimental information

Property	Value	Source
Reconstruction method	Not provided	Depositor
Imposed symmetry	POINT, Not provided	Depositor
Number of images	62532	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	Not provided	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	Not provided	Depositor
Minimum defocus (nm)	Not provided	Depositor
Maximum defocus (nm)	Not provided	Depositor
Magnification	Not provided	Depositor
Image detector	Not provided	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	2941	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	138	0
6	Z	964	0	1025	40	0
7	A	1611	0	816	88	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	4460	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 (4460) 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
1:1:2206:G:N2	1:1:2237:C:N3	2.37	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1620:U:H5'	1:1:1621:A:OP2	1.90	0.72
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:T:160:GLU:HG2	45:T:164:LEU:HG	1.72	0.71
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2131:A:H61	13:D:18:TYR:HA	1.57	0.69
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2742:C:H2'	1:1:2743:A:H8	1.58	0.69
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:R:54:HIS:O	41:R:72:GLN:NE2	2.25	0.67
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2406:C:O2'	1:1:2619:G:N2	2.29	0.66
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:X:27:ASP:OD2	2:X:111:GLY:HA3	1.96	0.66
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
1:1:1497:C:O2	1:1:1520:G:N2	2.30	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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
1:1:189:G:N2	1:1:205:C:O2	2.33	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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
1:1:529: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:36:C:O2'	1:1:934:G:N3	2.36	0.58
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:532:A:H2'	1:1:533:A:C8	2.39	0.58
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3166:C:H2'	1:1:3167:A:C8	2.40	0.57
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1260:A:H1'	1:1:1280:C:O4'	2.05	0.56
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:246:U:H2'	1:1:247:C:C5	2.40	0.56
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1914:G:H2'	1:1:1915:A:C8	2.40	0.56
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3121:U:O2'	1:1:3122:A:O5'	2.22	0.55
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:F:293:ASN:HB2	17:F:305:ILE:H	1.71	0.55
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2843:U:OP2	1:1:2844:C:H5	1.89	0.55
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1186:G:O3'	46:U:113:ARG:NH2	2.40	0.54
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2656:A:C8	1:1:2658:G:C8	2.96	0.54
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
1:1:82:C:O2	1:1:104:G:N2	2.40	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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
1:1:2157: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2426:U:H2'	1:1:2427:U:C6	2.44	0.51
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:3:36:C:H2'	3:3:37:G:C8	2.46	0.51
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1900:A:O2'	1:1:1902:G:N7	2.44	0.51
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:H:215:ASP:OD2	21:H:217:GLU:HG2	2.11	0.50
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3270:U:H4'	1:1:3271:G:OP2	2.11	0.50
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:67:A:N6	1:1:271:C:O2'	2.45	0.50
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2540:A:O2'	1:1:2541:U:H5''	2.12	0.50
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1427:U:C5'	19:G:44:LYS:HZ1	2.25	0.49
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:G:131:VAL:HB	19:G:134:LEU:HD12	1.93	0.49
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
1:1:1176:C:O2	1:1:1311:G:N2	2.46	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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
1:1:2886: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1281:G:C2	1:1:1282:G:N7	2.81	0.48
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:W:93:ILE:HG21	48:W:105:LEU:HD23	1.96	0.48
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1887:A:H5'	1:1:1888:U:OP2	2.13	0.48
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1212:A:O3'	46:U:92:LYS:NZ	2.47	0.47
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
1:1:146:U:O2	1:1:148:G:N2	2.47	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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
9:B:4:G:N2	9:B:69:U:O2	2.49	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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
1:1:2284: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:O:47:ASP:OD2	35:O:49:PRO:HD3	2.16	0.45
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3087:A:H5''	1:1:3088:G:OP2	2.17	0.45
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:B:28:C:C2	9:B:43:G:C2	3.05	0.45
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1657:C:N4	1:1:1798:A:OP2	2.50	0.45
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1412:G:C2	1:1:1413:G:C8	3.05	0.45
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
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
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
41:R:16:SER:HB3	41:R:149:VAL:HG22	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
1:1:3279:A:C6	1:1:3280:U:C4	3.06	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:OP2	1:1:3234:A:H8	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
31:M:15:GLU:OE1	31:M:132:ASN:ND2	2.49	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
1:1:48:A:H5''	1:1:49:A:OP1	2.17	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
1:1:2366:C:H4'	17:F:259:HIS:CE1	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
1:1:1951: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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
1:1:2731: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
1:1:916: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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
1:1:2946:A:N3	1:1:2981:U:N3	2.68	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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
1:1:3111: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:OP2	1:1:3234:A:C8	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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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%)	24	68
8	a	124/127 (98%)	109 (88%)	15 (12%)	0	100	100
10	b	133/136 (98%)	120 (90%)	12 (9%)	1 (1%)	24	68
11	C	103/106 (97%)	88 (85%)	15 (15%)	0	100	100
12	c	146/149 (98%)	128 (88%)	15 (10%)	3 (2%)	9	51
13	D	89/92 (97%)	79 (89%)	10 (11%)	0	100	100
14	d	56/59 (95%)	48 (86%)	7 (12%)	1 (2%)	11	54
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%)	46	82
18	f	107/109 (98%)	99 (92%)	8 (8%)	0	100	100
19	G	359/362 (99%)	319 (89%)	38 (11%)	2 (1%)	30	73
20	g	125/130 (96%)	115 (92%)	10 (8%)	0	100	100
21	H	294/297 (99%)	260 (88%)	31 (10%)	3 (1%)	19	64
22	h	104/107 (97%)	100 (96%)	4 (4%)	0	100	100
23	I	152/176 (86%)	145 (95%)	6 (4%)	1 (1%)	26	70
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%)	15	60
28	k	97/100 (97%)	80 (82%)	16 (16%)	1 (1%)	19	64
29	L	189/191 (99%)	169 (89%)	20 (11%)	0	100	100
30	l	85/88 (97%)	74 (87%)	11 (13%)	0	100	100
31	M	167/174 (96%)	145 (87%)	20 (12%)	2 (1%)	16	61
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

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
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	25
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	36
45	T	186/189 (98%)	169 (91%)	16 (9%)	1 (0%)	34	76
46	U	170/172 (99%)	151 (89%)	18 (11%)	1 (1%)	30	73
47	V	157/160 (98%)	150 (96%)	6 (4%)	1 (1%)	30	73
48	W	98/121 (81%)	86 (88%)	11 (11%)	1 (1%)	19	64
All	All	6347/6736 (94%)	5722 (90%)	583 (9%)	42 (1%)	31	70

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
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

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Mol	Chain	Res	Type
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
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

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
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	97
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
40	q	118/132 (89%)	113 (96%)	5 (4%)	36	72
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%)	45	77
45	T	153/154 (99%)	153 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
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
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

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Mol	Chain	Res	Type
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
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

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Mol	Chain	Res	Type
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

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Mol	Chain	Res	Type
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
1	1	134	U
1	1	136	G
1	1	143	G
1	1	146	U

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Mol	Chain	Res	Type
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
1	1	238	A
1	1	240	U
1	1	241	G
1	1	244	G

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Mol	Chain	Res	Type
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
1	1	395	A
1	1	398	A
1	1	399	A
1	1	400	G

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Mol	Chain	Res	Type
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
1	1	569	A
1	1	579	G
1	1	581	U
1	1	582	G

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Mol	Chain	Res	Type
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
1	1	698	U
1	1	705	A
1	1	706	A
1	1	707	U

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Mol	Chain	Res	Type
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
1	1	808	A
1	1	815	G
1	1	816	A
1	1	817	A

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Mol	Chain	Res	Type
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
1	1	938	C
1	1	940	G
1	1	941	G
1	1	943	U

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Mol	Chain	Res	Type
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
1	1	1049	C
1	1	1054	A
1	1	1063	G
1	1	1064	A

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Mol	Chain	Res	Type
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
1	1	1182	A
1	1	1185	C
1	1	1186	G
1	1	1190	A

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Mol	Chain	Res	Type
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
1	1	1266	G
1	1	1269	U
1	1	1270	A
1	1	1271	A

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Mol	Chain	Res	Type
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
1	1	1366	A
1	1	1375	G
1	1	1380	G
1	1	1386	A

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Mol	Chain	Res	Type
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
1	1	1473	G
1	1	1475	A
1	1	1481	A
1	1	1482	A

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Mol	Chain	Res	Type
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
1	1	1561	G
1	1	1562	C
1	1	1563	C
1	1	1565	G

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Mol	Chain	Res	Type
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
1	1	1707	A
1	1	1708	C
1	1	1712	G
1	1	1713	G

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Mol	Chain	Res	Type
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
1	1	1818	U
1	1	1819	U
1	1	1820	U
1	1	1821	U

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Mol	Chain	Res	Type
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
1	1	1931	U
1	1	1932	A
1	1	1933	A
1	1	1935	G

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Mol	Chain	Res	Type
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
1	1	2176	U
1	1	2178	A
1	1	2179	C
1	1	2180	G

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Mol	Chain	Res	Type
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
1	1	2306	C
1	1	2307	G
1	1	2308	C
1	1	2309	A

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Mol	Chain	Res	Type
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
1	1	2439	A
1	1	2440	G
1	1	2444	C
1	1	2446	U

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Mol	Chain	Res	Type
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
1	1	2560	C
1	1	2570	U
1	1	2571	U
1	1	2572	C

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Mol	Chain	Res	Type
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
1	1	2694	A
1	1	2696	A
1	1	2703	A
1	1	2706	G

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Mol	Chain	Res	Type
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
1	1	2819	A
1	1	2825	C
1	1	2827	U
1	1	2829	U

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Mol	Chain	Res	Type
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
1	1	2954	U
1	1	2955	U
1	1	2971	A
1	1	2972	G

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Mol	Chain	Res	Type
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
1	1	3142	A
1	1	3143	C
1	1	3144	G
1	1	3145	C

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Mol	Chain	Res	Type
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
1	1	3234	A
1	1	3237	U
1	1	3242	G
1	1	3243	A

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Mol	Chain	Res	Type
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
1	1	3332	U
1	1	3334	U
1	1	3335	A
1	1	3338	C

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Mol	Chain	Res	Type
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
3	3	64	A
3	3	65	G
3	3	67	G
3	3	77	G

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Mol	Chain	Res	Type
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
5	4	85	G
5	4	86	U
5	4	90	U
5	4	91	C

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Mol	Chain	Res	Type
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
7	A	31	A
7	A	34	U
7	A	35	U
7	A	36	U

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Mol	Chain	Res	Type
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
9	B	40	C
9	B	42	G
9	B	44	G
9	B	46	G

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Mol	Chain	Res	Type
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
1	1	148	G
1	1	155	G
1	1	156	G
1	1	169	U

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Mol	Chain	Res	Type
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
1	1	556	U
1	1	558	U
1	1	591	G
1	1	607	A

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Mol	Chain	Res	Type
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
1	1	1075	A
1	1	1094	U
1	1	1095	U
1	1	1096	U

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Mol	Chain	Res	Type
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
1	1	1481	A
1	1	1482	A
1	1	1483	G
1	1	1484	U

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Mol	Chain	Res	Type
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
1	1	1820	U
1	1	1834	U
1	1	1840	U
1	1	1842	A

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Mol	Chain	Res	Type
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
1	1	2385	G
1	1	2402	A
1	1	2403	G
1	1	2409	G

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Mol	Chain	Res	Type
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
1	1	2713	U
1	1	2714	G
1	1	2715	A
1	1	2725	U

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Mol	Chain	Res	Type
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
1	1	3208	G
1	1	3216	G
1	1	3218	A
1	1	3219	G

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Mol	Chain	Res	Type
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
5	4	71	A
5	4	85	G
5	4	90	U
5	4	95	G

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Mol	Chain	Res	Type
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	12,14,15	0.37	0	12,15,17	1.38	3 (25%)

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	C4-C3-C2	-2.60	109.16	113.70
40	q	51	5CT	C1-NZ-CE	-2.38	108.23	113.83
40	q	51	5CT	O-C-CA	-2.01	120.33	125.72

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	0.83	1 (4%)	18,30,30	0.66	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	3.15	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.