



Full wwPDB X-ray Structure Validation Report ⓘ

Jun 12, 2024 – 08:19 AM EDT

PDB ID : 1Z58
Title : Crystal structure of a complex of the ribosome large subunit with rapamycin
Authors : Amit, M.; Berisio, R.; Baram, D.; Harms, J.; Bashan, A.; Yonath, A.
Deposited on : 2005-03-17
Resolution : 3.80 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

MolProbity : 4.02b-467
Mogul : 2022.3.0, CSD as543be (2022)
Xtrriage (Phenix) : **NOT EXECUTED**
EDS : **NOT EXECUTED**
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.36.2

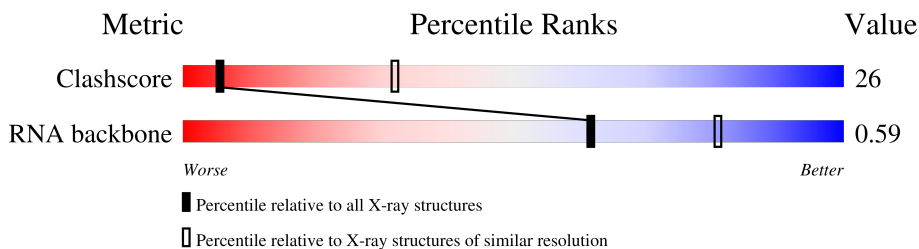
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.80 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
Clashscore	141614	1288 (4.00-3.60)
RNA backbone	3102	1036 (4.60-3.00)

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

Note EDS was not executed.

Mol	Chain	Length	Quality of chain
1	2	2880	

2 Entry composition [i](#)

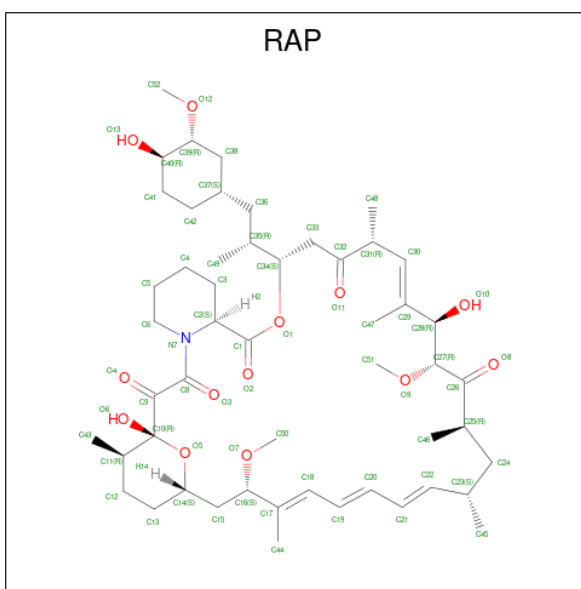
There are 2 unique types of molecules in this entry. The entry contains 59424 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, 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 23S RIBOSOMAL RNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
1	2	2766	59359	26479	10949	19166	2765	0	0	0

- Molecule 2 is RAPAMYCIN IMMUNOSUPPRESSANT DRUG (three-letter code: RAP) (formula: C₅₁H₇₉NO₁₃).



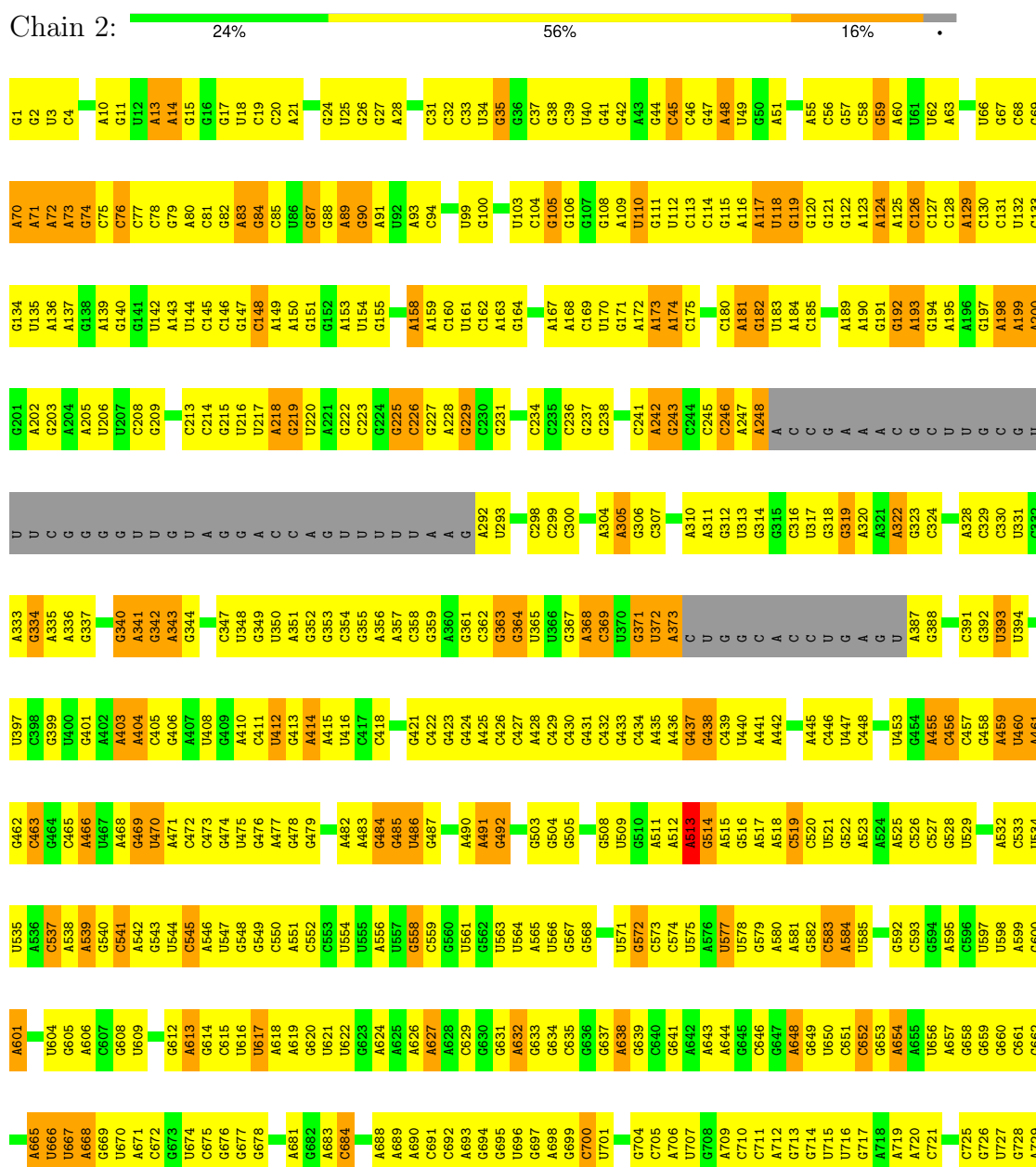
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	N	O		
2	2	1	65	51	1	13	0	0

3 Residue-property plots

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

Note EDS was not executed.

- Molecule 1: 23S RIBOSOMAL RNA



C1677	G1608	A1538	U1473	U1409	G1341	A1278	C1210	A1139	G1067	C996	G932	U868	A806	G736
G1678	G1609	U1539	A1474	U1410	U1342	G1279	C1211	A1140	A1068	C997	G933	C869	A807	C737
U1679	C1540	G1541	U1475	C1411	C1343	U1280	U1212	U1141	G1069	C998	G934	C870	C808	G738
A1681	U1611	G1544	G1476	C1412	G1344	A1281	U1211	G1142	U1073	A999	G935	U871	C809	G739
G1683	G1612	A1544	G1479	U1413	G1345	A1282	C1214	U1143	G1074	A1001	A936	U872	U810	A740
A1684	C1614	G1545	G1480	C1414	C1346	C1283	A1215	U1144	G1075	C1002	C937	U873	G811	G741
G1685	C1615	C1546	U1481	C1415	C1347	G1284	A1216	C1145	G1079	C1003	G938	A874	G812	G742
A1686	C1616	U1416	U1482	A1416	C1348	A1285	G1217	G1146	A1080	C1004	C940	A875	G813	A743
G1687	G1617	C1549	G1483	C1417	C1350	U1286	U1217	G1147	A1081	U1005	G941	A876	G814	G746
A1688	U1618	C1550	G1484	G1418	G1351	A1287	C1218	C1150	A1082	U1006	U942	C877	A815	A747
U1689	A1685	U1551	U1485	G1419	G1352	A1288	C1219	U1151	G1083	A1007	U943	A878	A817	
G1690	C1620	C1552	A1486	A1420	G1353	A1289	G1220	C1152	A1084	U1008	U944	C879	G818	
A1691	C1621	U1487	C1487	C1422	A1354	G1291	G1222	A1153	G1085	C1009	G945	U881	C819	G754
G1692	G1622	G1488	G1488	A1423	A1355	A1292	G1223	G1154	C1086	U946	U946	C882	U820	G755
A1694	A1624	C1558	U1490	G1427	G1356	A1293	A1224	G1155	C1087	G947	A821	C883	G814	G756
U1695	A1625	U1560	G1496	U1428	C1357	G1294	G1225	A1166	A1088	U1015	C948	A885	U816	G757
G1696	A1626	A1499	G1498	A1429	U1358	U1295	A1226	U1161	C1089	C1018	G951	U886	U823	G758
U1697	C1627	U1501	G1495	G1430	G1359	G1296	A1227	A1167	C1090	U1019	A952	U887	U824	G759
C1698	A1632	G1502	C1496	U1431	G1361	A1297	A1233	C1163	C1091	G1023	A953	C888	C825	U760
A1699	C1633	U1503	G1497	G1437	U1370	U1298	C1234	U1174	G1100	U1024	G954	C889	U826	G761
C1700	A1634	G1504	U1474	G1438	G1371	A1299	C1235	A1175	G1101	G1025	U954	U890	C827	A762
C1701	G1635	U1505	G1475	G1439	A1372	A1300	C1236	U1176	U1102	G1026	G955	A891	C828	A763
U1705	G1636	C1506	U1476	U1441	G1373	U1301	G1236	U1177	G1102	A1025	A956	C829	C829	A764
A1706	U1637	G1507	G1477	C1441	C1374	G1308	A1237	U1178	A1106	U1026	G957	C830	C830	G765
U1707	G1638	U1508	G1478	U1442	C1375	G1309	G1243	C1189	A1107	C1027	G958	C831	G831	A766
C1708	U1639	G1509	U1479	G1443	C1376	C1310	G1244	C1188	A1108	G1028	G959	A852	A852	U768
U1709	G1640	A1510	G1480	G1444	G1377	C1311	U1245	G1186	U1109	U1029	U960	C833	C833	U769
G1710	C1641	U1511	U1481	C1445	A1378	G1312	G1246	U1187	A1109	C1030	G961	A834	A834	G772
U1711	U1642	U1512	G1482	U1446	G1379	U1313	U1247	A1188	U1108	U1031	G962	U837	U837	G773
C1712	A1643	G1513	G1483	U1447	C1380	A1314	G1248	C1183	G1110	A1032	A964	A838	A838	A774
G1713	G1644	C1514	U1484	G1450	G1381	A1315	G1249	G1184	A1109	G1033	G965	U839	U839	U775
U1714	U1645	U1515	G1485	C1451	C1382	A1316	U1249	C1185	A1107	U1034	U969	U840	U840	G776
A1715	C1646	G1516	U1486	U1452	G1383	G1316	G1250	G1186	U1108	G1035	A971	U841	U841	A777
U1716	U1647	U1517	G1487	G1453	C1384	U1317	C1251	A1187	A1109	U1037	A970	U842	U842	G778
A1717	G1648	C1518	U1488	U1454	C1385	A1318	G1252	A1188	G1110	U1038	A971	U843	U843	G779
U1720	U1651	U1519	G1489	C1455	C1386	A1319	G1253	G1189	G1111	A1039	C972	U844	U844	U780
G1721	G1652	G1520	U1490	C1456	G1387	G1323	U1254	C1190	C1112	U1040	U974	U845	U845	G781
C1722	A1653	U1521	G1491	C1457	C1388	U1324	U1255	G1191	C1115	G1041	C975	U846	U846	U782
U1723	C1654	A1458	U1492	A1457	C1389	G1325	U1256	U1192	G1116	U1042	G976	C847	C847	G785
C1724	U1655	U1459	U1493	U1458	G1390	U1326	G1257	A1193	G1117	A1043	G977	A848	A848	U786
U1725	A1656	A1460	U1494	A1459	C1391	U1327	U1258	U1194	G1118	U1044	U978	U849	U849	A787
C1726	C1657	U1522	U1495	U1459	U1392	U1328	G1259	U1194	G1119	U1045	A979	U851	U851	A788
U1727	U1658	C1523	G1496	U1459	U1393	U1329	U1260	U1195	G1120	G980	U979	U852	U852	G788
A1728	G1659	U1524	U1497	C1460	C1394	G1329	U1261	G1196	A1122	U1048	G981	U853	U853	G789
U1729	C1663	A1526	U1498	U1462	U1395	U1330	G1262	U1197	G1123	C1049	C982	U854	U854	A790
G1730	G1664	C1527	U1499	A1463	U1396	U1331	U1263	U1198	U1124	U1050	G983	U855	U855	G791
C1731	C1665	U1528	U1500	U1464	C1397	U1332	U1264	C1199	G1125	U1051	A984	U856	U856	A795
U1732	G1666	C1529	U1501	A1465	C1398	G1333	G1265	U1199	U1130	C1052	A985	U857	U857	A796
G1737	U1670	U1530	U1502	C1466	C1399	U1334	U1266	U1199	G1131	G1053	A986	U858	U858	A797
U1738	A1671	C1531	U1503	G1467	C1400	A1334	C1270	U1200	G1132	A1054	G987	U859	U859	A799
C1742	C1672	A1532	U1504	U1468	C1401	A1335	G1271	G1201	G1133	U1055	G988	U860	U860	G798
U1743	C1673	G1533	U1505	U1489	G1402	A1336	U1272	U1202	G1134	A1057	G989	U861	U861	C799
G1744	C1674	A1534	U1506	U1490	U1403	G1337	C1273	A1203	G1135	G1058	C926	U862	U862	U800
C1745	U1676	U1537	U1507	C1471	G1407	U1338	U1274	G1204	A1136	C928	A990	U863	U863	A801
				U1537	G1472	U1339	U1275	G1205	G1136	A992	A992	U864	U864	A802
						U1340	U1276	G1206	A1137	C993	C993	U865	U865	C803
							G1277	G1206	A1138	A994	A994	U866	U866	C804
												U867	U867	G805

C2747	G2811
C2748	A2812
G2749	G2813
G2750	A2817
C2751	G2818
C2752	G2819
C2753	C2820
C2754	G2821
A2755	U2822
A2756	G2823
G2757	C2824
A2758	A2825
U2759	C2826
G2760	G2827
A2761	C2828
G2762	A2829
C2765	U2830
U2766	A2831
C2767	U2836
C2768	G2837
C2769	U2838
A2770	G2839
C2771	U2840
U2772	U2841
G2773	C2842
U2774	A2843
U	G2844
U	C2845
A	G2846
U2778	G2847
C2779	A2848
A2780	C2849
G2781	G2854
G2782	A2858
U2783	U2859
A2784	C2860
A2785	A2861
G2786	G2862
A2787	U2863
C2788	C2864
U2789	G2865
C2790	A2866
C2791	G2867
C2792	C2868
C2793	U2869
G2794	C2870
A2795	A2874
A2796	C2875
G2797	C2876
C2800	A2877
A2801	C
G2805	U
G2806	C
U2807	U
U2808	C
A2809	
A2810	

4 Data and refinement statistics

Xtrriage (Phenix) and EDS were not executed - this section is therefore incomplete.

Property	Value	Source
Space group	I 2 2 2	Depositor
Cell constants a, b, c, α , β , γ	168.50Å 404.00Å 689.00Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	8.00 – 3.80	Depositor
% Data completeness (in resolution range)	(Not available) (8.00-3.80)	Depositor
R_{merge}	0.16	Depositor
R_{sym}	(Not available)	Depositor
Refinement program	CNS	Depositor
R, R_{free}	0.273 , 0.368	Depositor
Estimated twinning fraction	No twinning to report.	Xtrriage
Total number of atoms	59424	wwPDB-VP
Average B, all atoms (Å ²)	58.0	wwPDB-VP

5 Model quality [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: RAP

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	2	0.15	0/66467	0.63	1/103673 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed($^{\circ}$)	Ideal($^{\circ}$)
1	2	513	A	C2'-C3'-O3'	6.09	123.44	113.70

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	2	59359	0	29917	2275	0
2	2	65	0	79	20	0
All	All	59424	0	29996	2275	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 26.

All (2275) 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)
1:2:1773:C:H41	2:2:2881:RAP:C15	1.42	1.32
1:2:1773:C:N4	2:2:2881:RAP:H151	1.54	1.20
1:2:700:C:H42	1:2:800:U:H4'	1.11	1.15
1:2:1663:C:H5'	1:2:1664:G:H5''	1.32	1.08
1:2:940:G:H3'	1:2:941:U:H5''	1.36	1.08
1:2:824:U:H4'	1:2:1264:C:H1'	1.31	1.06
1:2:1773:C:H41	2:2:2881:RAP:H151	1.11	1.04
1:2:2636:A:H62	1:2:2643:G:H21	1.05	1.04
1:2:1773:C:N4	2:2:2881:RAP:C15	2.15	1.03
1:2:109:A:H2'	1:2:110:U:H5''	1.40	1.02
1:2:462:G:H2'	1:2:463:C:H5''	1.43	1.01
1:2:619:A:H61	1:2:629:C:H42	1.07	1.01
1:2:665:A:H3'	1:2:666:U:H5''	1.43	0.98
1:2:2476:A:O2'	1:2:2477:C:H5'	1.63	0.98
1:2:1327:C:H42	1:2:1351:G:H1	1.11	0.97
1:2:2082:C:H42	1:2:2173:G:H1	1.14	0.94
1:2:1715:A:H2'	1:2:1716:G:H5''	1.50	0.93
1:2:1468:A:H3'	1:2:1469:U:H5''	1.51	0.93
1:2:1572:C:H2'	1:2:1573:G:H5''	1.51	0.93
1:2:2380:U:H2'	1:2:2381:A:H5'	1.50	0.93
1:2:890:U:H3'	1:2:891:A:H5''	1.48	0.92
1:2:2194:A:H2'	1:2:2195:C:H5''	1.49	0.92
1:2:1773:C:H5	2:2:2881:RAP:O7	1.53	0.92
1:2:2081:U:H2'	1:2:2082:C:H5''	1.47	0.92
1:2:1617:G:H2'	1:2:1618:U:H5'	1.49	0.91
1:2:362:C:H2'	1:2:363:G:H4'	1.51	0.91
1:2:1432:G:H21	1:2:1596:A:H62	1.19	0.90
1:2:1438:G:H2'	1:2:1439:G:H5'	1.54	0.90
1:2:88:G:H3'	1:2:89:A:H5''	1.51	0.90
1:2:1908:C:H2'	1:2:1909:U:H4'	1.53	0.89
1:2:1715:A:C2'	1:2:1716:G:H5''	2.01	0.89
1:2:2:G:H1	1:2:2875:C:H42	1.21	0.89
1:2:1773:C:N4	2:2:2881:RAP:C14	2.35	0.89
1:2:1773:C:H41	2:2:2881:RAP:C14	1.86	0.88
1:2:2038:C:H2'	1:2:2483:U:H4'	1.54	0.88
1:2:2809:A:N6	1:2:2854:G:H1'	1.89	0.88
1:2:1442:C:H41	1:2:1585:A:H5''	1.39	0.87
1:2:1616:C:H2'	1:2:1617:G:H8	1.38	0.87
1:2:2281:C:H42	1:2:2293:G:H22	1.17	0.87
1:2:2299:A:H1'	1:2:2312:A:H62	1.39	0.87
1:2:545:C:H42	1:2:567:G:H1	1.18	0.87
1:2:2198:U:H3'	1:2:2199:C:H5''	1.53	0.87

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:436:A:H5'	1:2:437:G:H5''	1.53	0.87
1:2:58:C:H3'	1:2:59:G:H5''	1.58	0.86
1:2:1268:U:H5'	1:2:1269:G:H5''	1.58	0.86
1:2:1333:G:N2	1:2:1346:C:H42	1.73	0.86
1:2:13:A:H5''	1:2:14:A:OP1	1.75	0.86
1:2:1549:C:H2'	1:2:1550:C:H5'	1.58	0.85
1:2:821:A:O2'	1:2:1267:A:H4'	1.77	0.85
1:2:174:A:H4'	1:2:2051:U:H2'	1.56	0.85
1:2:1336:G:H2'	1:2:1337:G:H5''	1.58	0.85
1:2:2727:G:H2'	1:2:2728:A:H5''	1.58	0.85
1:2:468:A:O2'	1:2:469:G:H4'	1.76	0.84
1:2:1656:U:H2'	1:2:1657:A:H5''	1.57	0.84
1:2:492:G:H22	1:2:519:C:H42	1.24	0.84
1:2:1621:C:H4'	1:2:1626:A:N6	1.93	0.84
1:2:2404:A:H4'	1:2:2405:A:O5'	1.75	0.84
1:2:1773:C:C5	2:2:2881:RAP:O7	2.30	0.84
1:2:1854:G:H22	1:2:1863:U:H3	1.25	0.84
1:2:391:C:H42	1:2:410:A:H61	1.25	0.84
1:2:1466:C:H2'	1:2:1467:U:O4'	1.77	0.83
1:2:1374:G:H1	1:2:1383:C:H42	1.22	0.83
1:2:614:G:H1'	1:2:670:U:H1'	1.59	0.83
1:2:929:A:H3'	1:2:930:A:H5''	1.59	0.83
1:2:1265:G:H2'	1:2:1266:G:O4'	1.79	0.83
1:2:1036:G:H1'	1:2:1145:C:H4'	1.58	0.83
1:2:1495:G:H1	1:2:1528:C:N4	1.75	0.83
1:2:2432:A:H2'	1:2:2433:G:H8	1.42	0.82
1:2:1139:A:H1'	1:2:2495:G:O2'	1.77	0.82
1:2:1066:G:H3'	1:2:1067:G:H5''	1.60	0.82
1:2:181:A:H4'	1:2:182:G:H4'	1.61	0.82
1:2:1401:G:H1	1:2:1412:C:H42	1.26	0.82
1:2:931:G:H22	1:2:2247:A:H3'	1.45	0.82
1:2:1373:G:H22	1:2:2192:U:H3	1.27	0.81
1:2:1483:G:H1	1:2:1539:U:H3	1.28	0.81
1:2:700:C:N4	1:2:800:U:H4'	1.95	0.81
1:2:1689:U:H2'	1:2:1690:U:H5''	1.62	0.81
1:2:2727:G:C2'	1:2:2728:A:H5''	2.11	0.81
1:2:890:U:H3'	1:2:891:A:C5'	2.10	0.81
1:2:1312:G:H4'	1:2:1314:A:N3	1.96	0.80
1:2:941:U:H2'	1:2:942:U:O4'	1.80	0.80
1:2:666:U:H2'	1:2:668:A:OP1	1.82	0.80
1:2:2633:A:H5''	1:2:2634:G:OP1	1.80	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1102:G:H1	1:2:1112:U:H1'	1.46	0.79
1:2:561:U:H5'	1:2:1233:A:H1'	1.64	0.79
1:2:2194:A:C2'	1:2:2195:C:H5''	2.13	0.79
1:2:2321:C:H2'	1:2:2322:U:O4'	1.82	0.78
1:2:63:A:H61	1:2:89:A:H61	1.28	0.78
1:2:759:C:H5'	1:2:761:G:H1'	1.65	0.78
1:2:2809:A:H61	1:2:2854:G:H1'	1.48	0.78
1:2:323:G:OP2	1:2:342:G:H2'	1.84	0.78
1:2:1495:G:H1	1:2:1528:C:H42	1.31	0.78
1:2:689:A:H8	1:2:2052:G:H21	1.31	0.78
1:2:1459:U:O2	1:2:1475:U:H2'	1.84	0.78
1:2:1974:U:C2'	1:2:1975:G:H5'	2.13	0.78
1:2:2058:U:H1'	1:2:2576:G:H21	1.47	0.77
1:2:2261:G:H4'	1:2:2262:C:OP2	1.84	0.77
1:2:184:A:H4'	1:2:812:G:H4'	1.64	0.77
1:2:215:G:H21	1:2:632:A:H8	1.33	0.77
1:2:538:A:H2'	1:2:539:A:H5''	1.64	0.77
1:2:1354:A:O2'	1:2:1355:A:H5'	1.82	0.77
1:2:1304:U:H2'	1:2:1305:C:H5''	1.65	0.77
1:2:1029:C:H2'	1:2:1030:U:H5''	1.67	0.77
1:2:541:C:H2'	1:2:2002:A:H2	1.48	0.77
1:2:2378:G:H1	1:2:2396:C:H42	1.33	0.77
1:2:940:G:H3'	1:2:941:U:C5'	2.13	0.76
1:2:1807:A:H2'	1:2:1808:C:H4'	1.67	0.76
1:2:109:A:C2'	1:2:110:U:H5''	2.14	0.76
1:2:1401:G:H1	1:2:1412:C:N4	1.82	0.76
1:2:1714:A:H62	1:2:1715:A:N6	1.82	0.76
1:2:1772:C:H5''	1:2:1773:C:OP1	1.85	0.76
1:2:1102:G:N1	1:2:1112:U:H1'	2.01	0.76
1:2:1690:U:H2'	1:2:1691:G:H5'	1.68	0.76
1:2:2059:U:H5''	1:2:2217:G:H1	1.47	0.76
1:2:77:C:N4	1:2:106:G:H1	1.84	0.76
1:2:2756:A:H1'	1:2:2758:A:N7	2.00	0.76
1:2:245:C:H2'	1:2:246:C:H5	1.51	0.76
1:2:698:A:H1'	1:2:701:U:O4	1.86	0.76
1:2:1181:C:H2'	1:2:1182:U:H4'	1.65	0.76
1:2:1322:G:H21	1:2:1627:C:H5'	1.51	0.76
1:2:1291:G:H1	1:2:1305:C:H42	1.33	0.75
1:2:2418:A:O2'	1:2:2566:A:H5''	1.86	0.75
1:2:1312:G:H5''	1:2:1313:U:H5''	1.68	0.75
1:2:361:G:N2	1:2:362:C:H41	1.85	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1496:G:H1	1:2:1527:G:H1	1.34	0.75
1:2:1144:U:O2	1:2:1147:G:H5''	1.87	0.75
1:2:1982:C:H5''	1:2:2703:C:O2'	1.87	0.75
1:2:1747:G:H4'	1:2:1749:G:H1'	1.68	0.75
1:2:684:C:H42	1:2:822:G:H1	1.34	0.74
1:2:1440:G:H1'	1:2:1588:A:H61	1.52	0.74
1:2:1327:C:N4	1:2:1351:G:H1	1.85	0.74
1:2:2549:G:H2'	1:2:2550:C:O4'	1.87	0.74
1:2:1357:U:O2'	1:2:1397:A:H2'	1.87	0.74
1:2:2475:C:H2'	1:2:2476:A:O4'	1.87	0.74
1:2:2227:C:H2'	1:2:2228:U:H5'	1.69	0.74
1:2:1111:C:H2'	1:2:1112:U:H5'	1.69	0.74
1:2:1289:A:H61	1:2:1307:U:H3	1.33	0.74
1:2:2691:C:H2'	1:2:2692:A:H5''	1.68	0.74
1:2:1226:A:N6	1:2:1249:G:H1'	2.02	0.74
1:2:1627:C:H3'	1:2:1627:C:OP2	1.88	0.74
1:2:245:C:H2'	1:2:246:C:C5	2.23	0.74
1:2:63:A:H61	1:2:89:A:N6	1.86	0.73
1:2:68:C:H2'	1:2:69:G:O4'	1.88	0.73
1:2:2380:U:C2'	1:2:2381:A:H5'	2.19	0.73
1:2:1656:U:C2'	1:2:1657:A:H5''	2.18	0.73
1:2:403:A:H5''	1:2:404:A:OP1	1.88	0.73
1:2:956:A:C2	1:2:2427:A:H1'	2.23	0.73
1:2:1141:U:O2	1:2:2008:C:H5''	1.87	0.73
1:2:1356:G:OP1	1:2:1356:G:H3'	1.87	0.73
1:2:871:U:H1'	1:2:2248:A:H4'	1.70	0.73
1:2:1185:C:H41	1:2:1189:G:H1	1.37	0.73
1:2:1195:U:H2'	1:2:1196:G:C8	2.24	0.73
1:2:1572:C:C2'	1:2:1573:G:H5''	2.18	0.73
1:2:1697:U:H2'	1:2:1698:C:H5'	1.71	0.73
1:2:2299:A:H1'	1:2:2312:A:N6	2.02	0.73
1:2:181:A:C4'	1:2:182:G:H4'	2.19	0.72
1:2:1772:C:O2'	2:2:2881:RAP:H502	1.89	0.72
1:2:821:A:H2'	1:2:822:G:H8	1.54	0.72
1:2:1386:A:H5''	1:2:2191:A:N6	2.04	0.72
1:2:1811:A:H1'	1:2:1813:A:C6	2.24	0.72
1:2:1501:C:H42	1:2:1519:G:H22	1.36	0.72
1:2:613:A:H2'	1:2:614:G:H8	1.53	0.72
1:2:715:U:H3	1:2:743:A:H61	1.37	0.72
1:2:1442:C:N4	1:2:1585:A:H5''	2.04	0.72
1:2:1882:G:H21	1:2:1885:C:N4	1.88	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:951:G:H2'	1:2:952:A:H5''	1.71	0.72
1:2:1183:C:N4	1:2:1191:G:H1	1.87	0.72
1:2:2783:U:H3	1:2:2866:A:H62	1.36	0.72
1:2:2429:A:OP2	1:2:2429:A:H8	1.73	0.72
1:2:1773:C:H41	2:2:2881:RAP:C16	2.03	0.71
1:2:2048:C:H1'	1:2:2428:U:O2	1.88	0.71
1:2:146:C:H2'	1:2:147:G:H8	1.55	0.71
1:2:2081:U:C2'	1:2:2082:C:H5''	2.20	0.71
1:2:1811:A:H5''	1:2:1812:U:OP1	1.91	0.71
1:2:119:G:H1	1:2:128:C:H42	1.38	0.71
1:2:1353:A:H4'	1:2:1407:G:H1'	1.72	0.71
1:2:1226:A:H62	1:2:1249:G:H1'	1.56	0.71
1:2:1458:A:H3'	1:2:1459:U:C5'	2.21	0.71
1:2:847:C:H41	1:2:955:G:N2	1.89	0.71
1:2:1373:G:N2	1:2:2192:U:H3	1.89	0.71
1:2:2379:G:H2'	1:2:2380:U:O4'	1.90	0.71
1:2:795:A:H4'	1:2:796:A:N7	2.06	0.70
1:2:2287:G:H2'	1:2:2287:G:N3	2.06	0.70
1:2:1001:A:H62	1:2:1200:G:H1'	1.56	0.70
1:2:2170:C:H2'	1:2:2171:U:H5'	1.73	0.70
1:2:538:A:C2'	1:2:539:A:H5''	2.20	0.70
1:2:1900:U:O2'	1:2:1946:U:H5'	1.92	0.70
1:2:1975:G:H1'	1:2:1977:C:H41	1.56	0.70
1:2:305:A:H2'	1:2:306:G:O4'	1.91	0.70
1:2:1541:G:H22	1:2:1561:A:H61	1.36	0.70
1:2:821:A:H2'	1:2:822:G:C8	2.26	0.70
1:2:1181:C:H3'	1:2:1182:U:H5''	1.73	0.70
1:2:2268:G:H5''	1:2:2363:G:O2'	1.91	0.70
1:2:2810:A:H4'	1:2:2811:G:C8	2.26	0.70
1:2:1055:A:N1	1:2:1122:A:H5'	2.06	0.70
1:2:2670:C:H42	1:2:2698:G:H22	1.37	0.70
1:2:1715:A:H1'	1:2:1717:A:O4'	1.92	0.70
1:2:1335:A:H2'	1:2:1336:G:H8	1.57	0.70
1:2:1947:G:H4'	1:2:1948:C:C5	2.27	0.70
1:2:2565:C:O2	2:2:2881:RAP:O4	2.09	0.70
1:2:2660:C:O2'	1:2:2661:G:H5'	1.91	0.70
1:2:2274:C:H2'	1:2:2275:U:H5'	1.74	0.70
1:2:411:C:H2'	1:2:412:U:H5''	1.74	0.69
1:2:912:A:H2'	1:2:913:A:O4'	1.92	0.69
1:2:2303:C:H5'	1:2:2304:G:H5''	1.75	0.69
1:2:1036:G:H1'	1:2:1145:C:C4'	2.22	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1440:G:H1'	1:2:1588:A:N6	2.06	0.69
1:2:1673:C:H42	1:2:1987:G:H1	1.39	0.69
1:2:342:G:O2'	1:2:343:A:OP1	2.11	0.69
1:2:1184:G:C2'	1:2:1185:C:H5''	2.23	0.69
1:2:1198:C:OP1	1:2:1199:U:H1'	1.92	0.69
1:2:1495:G:H2'	1:2:1496:G:H8	1.57	0.69
1:2:2636:A:H62	1:2:2643:G:N2	1.86	0.69
1:2:158:A:H1'	1:2:448:C:H5'	1.74	0.69
1:2:55:A:N6	1:2:69:G:H1	1.91	0.69
1:2:579:G:H2'	1:2:2013:A:N7	2.08	0.69
1:2:721:C:H42	1:2:736:G:H22	1.39	0.69
1:2:1088:A:H2'	1:2:1089:C:O4'	1.91	0.69
1:2:2795:A:H2'	1:2:2795:A:N3	2.08	0.69
1:2:2082:C:H2'	1:2:2083:G:O4'	1.92	0.69
1:2:918:A:H2'	1:2:919:U:H5''	1.73	0.69
1:2:401:G:H2'	1:2:403:A:N7	2.07	0.68
1:2:616:U:H2'	1:2:617:U:H5''	1.74	0.68
1:2:688:A:N6	1:2:816:U:H3	1.91	0.68
1:2:712:A:H4'	1:2:1651:U:N3	2.07	0.68
1:2:1094:C:H2'	1:2:1096:A:OP2	1.94	0.68
1:2:1814:G:H2'	1:2:1815:G:H8	1.58	0.68
1:2:2204:A:O2'	1:2:2205:C:OP2	2.10	0.68
1:2:2320:G:H2'	1:2:2321:C:O4'	1.92	0.68
1:2:2378:G:H1	1:2:2396:C:N4	1.92	0.68
1:2:2668:U:O2	1:2:2693:U:H1'	1.93	0.68
1:2:2756:A:N6	1:2:2762:G:H1'	2.09	0.68
1:2:2823:G:H1'	1:2:2843:A:N6	2.08	0.68
1:2:70:A:O2'	1:2:71:A:H5'	1.94	0.68
1:2:765:C:C4	1:2:1772:C:H1'	2.29	0.68
1:2:2063:A:H61	1:2:2219:U:H3	1.41	0.68
1:2:413:G:O2'	1:2:414:A:H5''	1.94	0.68
1:2:459:A:N6	1:2:484:G:H1'	2.08	0.68
1:2:1712:G:H3'	1:2:1712:G:N3	2.09	0.68
1:2:246:C:H3'	1:2:373:A:O5'	1.93	0.68
1:2:247:A:H3'	1:2:373:A:H5''	1.76	0.68
1:2:1912:G:H3'	1:2:1912:G:N3	2.09	0.68
1:2:32:C:H5'	1:2:1251:G:OP1	1.94	0.68
1:2:2406:C:H4'	1:2:2408:G:N3	2.08	0.68
1:2:47:G:H2'	1:2:48:A:H5''	1.76	0.68
1:2:169:C:H2'	1:2:170:U:H5'	1.76	0.68
1:2:129:A:H2'	1:2:130:C:O4'	1.94	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:863:C:H42	1:2:939:C:N4	1.92	0.68
1:2:572:G:H5'	1:2:581:A:H4'	1.76	0.67
1:2:58:C:C3'	1:2:59:G:H5''	2.24	0.67
1:2:351:A:H2'	1:2:352:G:C8	2.30	0.67
1:2:1468:A:H3'	1:2:1469:U:C5'	2.23	0.67
1:2:2796:A:H2'	1:2:2797:G:H8	1.59	0.67
1:2:487:G:H4'	1:2:512:A:N1	2.09	0.67
1:2:1356:G:H5'	1:2:1614:C:OP2	1.94	0.67
1:2:2179:C:H2'	1:2:2180:U:O4'	1.94	0.67
1:2:2736:U:O2'	1:2:2737:A:H5'	1.94	0.67
1:2:57:G:H2'	1:2:72:A:N6	2.09	0.67
1:2:614:G:H1	1:2:634:G:H1	1.40	0.67
1:2:2503:G:H22	1:2:2721:A:H1'	1.58	0.67
1:2:47:G:C2'	1:2:48:A:H5''	2.24	0.67
1:2:175:C:H42	1:2:225:G:H1	1.41	0.67
1:2:840:U:H1'	1:2:2225:G:H1'	1.75	0.67
1:2:1465:G:H2'	1:2:1466:C:C6	2.30	0.67
1:2:2670:C:N4	1:2:2698:G:H22	1.92	0.67
1:2:347:C:H2'	1:2:348:U:C6	2.29	0.67
1:2:1174:G:H2'	1:2:1175:A:H8	1.59	0.67
1:2:1850:G:H22	1:2:1867:A:H1'	1.58	0.67
1:2:318:G:N2	1:2:320:A:H3'	2.10	0.67
1:2:351:A:H2'	1:2:352:G:H8	1.60	0.67
1:2:2810:A:H5''	1:2:2811:G:OP1	1.94	0.67
1:2:863:C:H42	1:2:939:C:H42	1.39	0.67
1:2:1670:G:H21	1:2:1988:A:H62	1.40	0.67
1:2:2245:A:H5'	1:2:2246:A:C8	2.30	0.67
1:2:2281:C:N4	1:2:2293:G:H22	1.92	0.67
1:2:117:A:H5'	1:2:118:U:OP1	1.95	0.67
1:2:411:C:C3'	1:2:412:U:H5''	2.25	0.67
1:2:2139:G:H2'	1:2:2139:G:N3	2.10	0.67
1:2:1184:G:O2'	1:2:1185:C:H5''	1.95	0.66
1:2:1252:C:O2'	1:2:1253:C:H5''	1.95	0.66
1:2:1325:U:H1'	1:2:1326:U:C5	2.30	0.66
1:2:1338:G:H5'	1:2:1339:U:OP2	1.94	0.66
1:2:2429:A:OP2	1:2:2429:A:C8	2.47	0.66
1:2:13:A:H4'	1:2:14:A:C5'	2.25	0.66
1:2:59:G:O6	1:2:62:U:H2'	1.94	0.66
1:2:104:C:H2'	1:2:105:G:H5'	1.75	0.66
1:2:1296:G:H1'	1:2:1342:U:H3	1.61	0.66
1:2:2168:A:H2'	1:2:2169:A:H5'	1.76	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:2198:U:H3'	1:2:2199:C:C5'	2.25	0.66
1:2:2213:G:H2'	1:2:2214:G:H8	1.60	0.66
1:2:1223:G:H4'	1:2:1224:A:O5'	1.96	0.66
1:2:1926:U:O2'	1:2:1928:G:H5'	1.95	0.66
1:2:462:G:C2'	1:2:463:C:H5''	2.23	0.66
1:2:1055:A:H1'	1:2:1058:G:H1'	1.77	0.66
1:2:2122:G:N3	1:2:2122:G:H2'	2.10	0.66
1:2:13:A:H4'	1:2:14:A:H5''	1.75	0.66
1:2:2092:U:H5''	1:2:2132:G:O2'	1.94	0.66
1:2:436:A:C5'	1:2:437:G:H5''	2.25	0.66
1:2:1952:A:H5'	1:2:1953:A:H5'	1.77	0.66
1:2:2593:A:O2'	1:2:2594:U:H5'	1.96	0.66
1:2:2023:C:H2'	1:2:2024:U:O4'	1.95	0.66
1:2:2432:A:H2'	1:2:2433:G:C8	2.28	0.66
1:2:511:A:O2'	1:2:512:A:H5'	1.96	0.66
1:2:653:G:H2'	1:2:654:A:H4'	1.78	0.66
1:2:1353:A:O2'	1:2:1619:A:H5'	1.96	0.66
1:2:1357:U:H5'	1:2:1358:C:OP2	1.96	0.66
1:2:1938:U:N3	1:2:2531:U:H1'	2.10	0.66
1:2:2133:G:H2'	1:2:2134:U:C6	2.31	0.66
1:2:2602:G:H2'	1:2:2603:G:H8	1.61	0.66
1:2:44:G:H21	1:2:192:G:H21	1.44	0.65
1:2:545:C:N4	1:2:567:G:H1	1.94	0.65
1:2:984:A:H2	1:2:1200:G:H1	1.42	0.65
1:2:2024:U:H2'	1:2:2025:A:H5'	1.77	0.65
1:2:2090:U:H3	1:2:2165:A:H2	1.43	0.65
1:2:128:C:H2'	1:2:129:A:H5''	1.78	0.65
1:2:191:G:O2'	1:2:192:G:H5'	1.96	0.65
1:2:1304:U:C2'	1:2:1305:C:H5''	2.26	0.65
1:2:2286:G:N2	1:2:2290:A:H61	1.93	0.65
1:2:27:G:H1'	1:2:523:A:H62	1.61	0.65
1:2:716:U:H2'	1:2:717:G:O4'	1.96	0.65
1:2:2249:U:H2'	1:2:2250:G:O4'	1.97	0.65
1:2:245:C:H1'	1:2:438:G:C2	2.31	0.65
1:2:762:A:H61	1:2:766:A:H2	1.44	0.65
1:2:1336:G:C2'	1:2:1337:G:H5''	2.27	0.65
1:2:1458:A:H3'	1:2:1459:U:H5''	1.77	0.65
1:2:1444:C:H2'	1:2:1445:A:C8	2.32	0.65
1:2:1616:C:H2'	1:2:1617:G:C8	2.25	0.65
1:2:1689:U:C2'	1:2:1690:U:H5''	2.27	0.65
1:2:2109:A:H2'	1:2:2109:A:N3	2.12	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:2422:C:OP1	2:2:2881:RAP:H40	1.95	0.65
1:2:2621:G:H2'	1:2:2622:G:H8	1.62	0.65
1:2:490:A:O2'	1:2:491:A:H3'	1.97	0.65
1:2:942:U:O2'	1:2:943:U:H5'	1.95	0.65
1:2:1640:C:H2'	1:2:1641:C:C6	2.31	0.65
1:2:2225:G:H1	1:2:2237:C:N4	1.95	0.65
1:2:2667:C:H1'	1:2:2702:G:H1	1.62	0.65
1:2:2781:G:H2'	1:2:2782:G:O4'	1.96	0.65
1:2:35:G:O4'	1:2:466:A:N3	2.30	0.65
1:2:1625:A:N3	1:2:1625:A:H2'	2.11	0.65
1:2:2283:G:H1	1:2:2291:U:H3	1.44	0.65
1:2:638:A:H2'	1:2:639:G:O4'	1.97	0.65
1:2:1066:G:H3'	1:2:1067:G:C5'	2.26	0.65
1:2:2425:G:H4'	1:2:2427:A:H62	1.62	0.65
1:2:633:G:H2'	1:2:634:G:H8	1.62	0.65
1:2:790:A:H2'	1:2:791:G:H8	1.62	0.65
1:2:1414:G:H21	1:2:1484:G:H21	1.43	0.65
1:2:1835:C:H2'	1:2:1836:C:C6	2.32	0.65
1:2:2616:U:H1'	1:2:2762:G:H22	1.62	0.65
1:2:813:A:H1'	1:2:815:A:H5'	1.79	0.64
1:2:1974:U:O2'	1:2:1975:G:H5'	1.97	0.64
1:2:2204:A:H4'	1:2:2205:C:O5'	1.97	0.64
1:2:427:C:H1'	1:2:1856:U:H1'	1.79	0.64
1:2:1333:G:H22	1:2:1346:C:H42	1.40	0.64
1:2:914:C:H2'	1:2:915:C:C6	2.33	0.64
1:2:1234:C:H2'	1:2:1235:C:C6	2.33	0.64
1:2:414:A:H2'	1:2:415:A:O4'	1.98	0.64
1:2:781:G:N2	1:2:1392:U:H1'	2.12	0.64
1:2:1386:A:H5''	1:2:2191:A:H62	1.62	0.64
1:2:2245:A:O2'	1:2:2246:A:OP2	2.09	0.64
1:2:1039:A:H62	1:2:1136:G:H2'	1.62	0.64
1:2:1197:U:H2'	1:2:1198:C:O4'	1.97	0.64
1:2:1438:G:C2'	1:2:1439:G:H5'	2.27	0.64
1:2:2491:C:C3'	1:2:2492:G:H5''	2.28	0.64
1:2:44:G:H1	1:2:445:A:H61	1.46	0.64
1:2:843:G:H2'	1:2:843:G:N3	2.12	0.64
1:2:2372:A:H2'	1:2:2373:C:C6	2.33	0.64
1:2:2692:A:N3	1:2:2692:A:H2'	2.13	0.64
1:2:168:A:H2'	1:2:169:C:C6	2.32	0.64
1:2:879:A:H2'	1:2:880:C:H5'	1.78	0.64
1:2:999:A:H4'	1:2:1166:A:N1	2.12	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1339:U:O2'	1:2:1340:C:H5'	1.98	0.64
1:2:2261:G:H5''	1:2:2262:C:O5'	1.98	0.64
1:2:2322:U:O2'	1:2:2323:U:H5'	1.98	0.64
1:2:860:U:H3	1:2:945:G:N2	1.96	0.64
1:2:2663:U:H3	1:2:2705:A:H61	1.44	0.64
1:2:38:G:H1	1:2:453:U:H3	1.45	0.63
1:2:368:A:C2'	1:2:369:C:H5'	2.28	0.63
1:2:413:G:H2'	1:2:413:G:N3	2.12	0.63
1:2:2821:G:H2'	1:2:2822:U:C6	2.33	0.63
1:2:1153:A:H5''	1:2:1154:A:N7	2.14	0.63
1:2:2315:A:H1'	1:2:2364:C:O4'	1.98	0.63
1:2:832:A:H2'	1:2:833:A:O4'	1.98	0.63
1:2:1151:U:H5''	1:2:1153:A:OP2	1.99	0.63
1:2:1826:U:H4'	1:2:1952:A:H2'	1.80	0.63
1:2:521:U:H4'	1:2:1248:G:H4'	1.81	0.63
1:2:1486:A:H2'	1:2:1487:C:C6	2.33	0.63
1:2:1827:G:H1'	1:2:1914:U:H3	1.63	0.63
1:2:2363:G:H3'	1:2:2365:U:OP2	1.98	0.63
1:2:1697:U:C2'	1:2:1698:C:H5'	2.29	0.63
1:2:146:C:H2'	1:2:147:G:C8	2.33	0.63
1:2:158:A:H61	1:2:192:G:H1	1.47	0.63
1:2:1525:A:N3	1:2:1525:A:H2'	2.13	0.63
1:2:1842:G:H1	1:2:1875:C:H42	1.46	0.63
1:2:108:G:H2'	1:2:109:A:O4'	1.99	0.63
1:2:1183:C:H2'	1:2:1184:G:O4'	1.98	0.63
1:2:492:G:H22	1:2:519:C:N4	1.94	0.63
1:2:1252:C:C2'	1:2:1253:C:H5''	2.29	0.63
1:2:2134:U:H2'	1:2:2135:C:O4'	1.99	0.63
1:2:32:C:H2'	1:2:33:C:C6	2.33	0.63
1:2:143:A:H2'	1:2:144:U:O4'	1.97	0.63
1:2:245:C:OP1	1:2:292:A:H5''	1.99	0.63
1:2:2264:C:H4'	1:2:2267:A:H62	1.64	0.63
1:2:2368:G:H5''	1:2:2369:U:O4'	1.99	0.63
1:2:474:G:N2	1:2:476:G:H3'	2.14	0.62
1:2:813:A:H1'	1:2:815:A:O4'	1.99	0.62
1:2:956:A:H2	1:2:2427:A:H1'	1.64	0.62
1:2:1608:U:H2'	1:2:1609:G:C8	2.33	0.62
1:2:38:G:H2'	1:2:39:C:C6	2.34	0.62
1:2:78:C:H42	1:2:105:G:H1	1.47	0.62
1:2:760:U:H3	1:2:1997:A:H2	1.47	0.62
1:2:777:A:N6	1:2:1766:U:H3	1.96	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:759:C:N3	1:2:2590:U:H5''	2.14	0.62
1:2:1656:U:H4'	1:2:2678:C:H4'	1.81	0.62
1:2:422:C:H2'	1:2:423:G:C8	2.34	0.62
1:2:1608:U:H2'	1:2:1609:G:H8	1.65	0.62
1:2:2516:U:H2'	1:2:2517:C:C6	2.35	0.62
1:2:684:C:N4	1:2:822:G:H1	1.97	0.62
1:2:759:C:C5'	1:2:761:G:H1'	2.30	0.62
1:2:775:U:O2	1:2:1445:A:H5''	2.00	0.62
1:2:1086:C:H2'	1:2:1087:C:H5''	1.80	0.62
1:2:2634:G:N3	1:2:2634:G:H2'	2.14	0.62
1:2:129:A:H61	1:2:142:U:H3	1.47	0.62
1:2:134:G:H2'	1:2:134:G:N3	2.14	0.62
1:2:1253:C:H2'	1:2:1254:G:O4'	1.99	0.62
1:2:1538:A:H2'	1:2:1539:U:C6	2.35	0.62
1:2:415:A:H2	1:2:435:A:H61	1.47	0.62
1:2:1773:C:N4	2:2:2881:RAP:H14	2.15	0.62
1:2:1967:U:H2'	1:2:1968:G:C8	2.35	0.62
1:2:583:C:O2'	1:2:584:A:OP2	2.15	0.62
1:2:1814:G:H2'	1:2:1815:G:C8	2.33	0.62
1:2:1030:U:C2'	1:2:1031:C:H5'	2.29	0.61
1:2:1670:G:H21	1:2:1988:A:N6	1.98	0.61
1:2:2672:U:H2'	1:2:2673:G:H8	1.65	0.61
1:2:2063:A:N6	1:2:2219:U:H3	1.98	0.61
1:2:2602:G:H2'	1:2:2603:G:C8	2.35	0.61
1:2:1886:G:H2'	1:2:1887:G:H8	1.65	0.61
1:2:202:A:H2'	1:2:203:G:O4'	2.00	0.61
1:2:391:C:H42	1:2:410:A:N6	1.97	0.61
1:2:619:A:H2'	1:2:620:G:C8	2.36	0.61
1:2:646:C:O2'	1:2:650:U:H5''	2.01	0.61
1:2:1032:A:H2'	1:2:1033:G:H4'	1.82	0.61
1:2:1994:U:H2'	1:2:1995:G:O4'	1.99	0.61
1:2:2004:U:H5'	1:2:2005:U:OP1	2.01	0.61
1:2:2371:A:H2'	1:2:2371:A:N3	2.15	0.61
1:2:1154:A:O2'	1:2:1155:G:OP1	2.15	0.61
1:2:58:C:H3'	1:2:59:G:C5'	2.31	0.61
1:2:1323:G:H1'	1:2:1627:C:H5''	1.83	0.61
1:2:1333:G:N2	1:2:1346:C:N4	2.48	0.61
1:2:1807:A:H1'	1:2:1809:G:C8	2.36	0.61
1:2:1948:C:H2'	1:2:1949:A:C8	2.35	0.61
1:2:2860:C:H2'	1:2:2861:A:O4'	2.01	0.61
1:2:2088:U:H3	1:2:2167:A:H2	1.48	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:2404:A:O2'	1:2:2405:A:OP2	2.19	0.61
1:2:411:C:C2'	1:2:412:U:H5''	2.30	0.61
1:2:1034:U:H4'	1:2:1134:C:OP1	2.01	0.61
1:2:1456:C:H2'	1:2:1457:A:C8	2.36	0.61
1:2:1435:G:H21	1:2:1508:G:H22	1.49	0.61
1:2:2482:A:O5'	1:2:2483:U:OP1	2.19	0.61
1:2:334:G:N3	1:2:344:G:H1'	2.16	0.61
1:2:477:A:H2'	1:2:478:G:H5'	1.82	0.61
1:2:1195:U:H2'	1:2:1196:G:H8	1.64	0.61
1:2:1923:U:H1'	1:2:1948:C:C4	2.36	0.61
1:2:391:C:N4	1:2:410:A:H61	1.98	0.60
1:2:979:A:H2'	1:2:980:G:C8	2.36	0.60
1:2:1510:A:H2'	1:2:1511:A:H5'	1.83	0.60
1:2:2018:G:O2'	1:2:2019:C:OP1	2.13	0.60
1:2:2490:U:H2'	1:2:2491:C:H6	1.66	0.60
1:2:2491:C:H3'	1:2:2492:G:H5''	1.83	0.60
1:2:192:G:H4'	1:2:193:A:O5'	2.01	0.60
1:2:604:U:H2'	1:2:605:G:C8	2.36	0.60
1:2:466:A:H5'	1:2:483:A:N6	2.16	0.60
1:2:613:A:H2'	1:2:614:G:C8	2.36	0.60
1:2:1458:A:C3'	1:2:1459:U:H5''	2.32	0.60
1:2:2329:C:H2'	1:2:2330:G:O4'	2.01	0.60
1:2:312:G:H2'	1:2:313:U:O4'	2.02	0.60
1:2:538:A:N1	1:2:2025:A:H2'	2.16	0.60
1:2:1561:A:H2'	1:2:1562:G:O4'	2.01	0.60
1:2:1904:G:H2'	1:2:1905:G:O4'	2.02	0.60
1:2:2692:A:H5'	1:2:2693:U:H5'	1.83	0.60
1:2:939:C:H2'	1:2:940:G:C8	2.37	0.60
1:2:1360:G:H2'	1:2:1361:G:H8	1.65	0.60
1:2:1456:C:H2'	1:2:1457:A:H8	1.65	0.60
1:2:1643:A:H61	1:2:1656:U:H3	1.47	0.60
1:2:2507:U:HO2'	1:2:2508:G:H8	1.47	0.60
1:2:2770:A:H5'	1:2:2867:G:N2	2.16	0.60
1:2:153:A:O2'	1:2:154:U:H5'	2.01	0.60
1:2:513:A:O2'	1:2:514:G:OP2	2.11	0.60
1:2:1064:C:H42	1:2:1117:G:H1	1.48	0.60
1:2:1124:U:H2'	1:2:1125:G:H8	1.66	0.60
1:2:1290:A:H2'	1:2:1291:G:C8	2.35	0.60
1:2:2175:A:H2'	1:2:2176:U:C6	2.37	0.60
1:2:459:A:O2'	1:2:461:A:N7	2.32	0.60
1:2:162:C:H2'	1:2:163:A:C8	2.37	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:889:C:H2'	1:2:890:U:C6	2.37	0.60
1:2:942:U:C2'	1:2:943:U:H5'	2.31	0.60
1:2:1179:A:H2'	1:2:1180:A:H8	1.67	0.60
1:2:1435:G:H21	1:2:1508:G:N2	1.99	0.60
1:2:1729:C:H2'	1:2:1730:G:C8	2.37	0.60
1:2:2324:G:O2'	1:2:2325:A:OP2	2.19	0.60
1:2:1773:C:H5	2:2:2881:RAP:C50	2.14	0.60
1:2:2666:U:H2'	1:2:2667:C:O4'	2.01	0.60
1:2:2841:U:H1'	1:2:2843:A:C1'	2.32	0.60
1:2:482:A:H2'	1:2:483:A:O4'	2.00	0.59
1:2:930:A:H4'	1:2:930:A:OP1	2.02	0.59
1:2:1174:G:H2'	1:2:1175:A:C8	2.35	0.59
1:2:1380:C:H2'	1:2:1381:G:H5'	1.82	0.59
1:2:1955:G:H2'	1:2:1956:G:H5'	1.82	0.59
1:2:619:A:H2'	1:2:620:G:H8	1.67	0.59
1:2:1194:U:H2'	1:2:1195:U:C6	2.37	0.59
1:2:1495:G:H22	1:2:1528:C:H42	1.48	0.59
1:2:1532:A:H2'	1:2:1533:G:C8	2.36	0.59
1:2:2245:A:H1'	1:2:2251:U:O4	2.02	0.59
1:2:933:G:H2'	1:2:934:G:H8	1.67	0.59
1:2:941:U:OP1	1:2:941:U:H4'	2.02	0.59
1:2:1289:A:N6	1:2:1307:U:H3	2.00	0.59
1:2:1327:C:OP1	1:2:1345:G:H5'	2.02	0.59
1:2:1681:A:C2	1:2:2706:U:H1'	2.37	0.59
1:2:1857:G:N2	1:2:1859:A:H3'	2.18	0.59
1:2:2588:U:O4	2:2:2881:RAP:C44	2.50	0.59
1:2:247:A:H5''	1:2:248:A:OP2	2.01	0.59
1:2:717:G:H1'	1:2:740:A:N6	2.16	0.59
1:2:1074:G:H22	1:2:1086:C:H2'	1.67	0.59
1:2:1391:A:O2'	1:2:1392:U:C6	2.54	0.59
1:2:1641:C:H2'	1:2:1642:G:H5'	1.84	0.59
1:2:1764:A:C5	1:2:1821:A:H1'	2.36	0.59
1:2:1894:U:H3	1:2:1901:A:H61	1.50	0.59
1:2:1310:C:OP1	1:2:2689:C:H4'	2.03	0.59
1:2:248:A:H5'	1:2:373:A:N7	2.17	0.59
1:2:392:G:O2'	1:2:2211:U:H5''	2.03	0.59
1:2:837:U:H2'	1:2:838:A:C8	2.37	0.59
1:2:1437:A:C2'	1:2:1438:G:H5'	2.31	0.59
1:2:1487:C:H2'	1:2:1488:G:H8	1.67	0.59
1:2:1790:G:C8	1:2:1811:A:N6	2.71	0.59
1:2:1840:A:H2'	1:2:1840:A:N3	2.16	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:2442:C:H2'	1:2:2443:C:C6	2.38	0.59
1:2:173:A:H61	1:2:818:G:N2	2.01	0.59
1:2:1274:C:H2'	1:2:1275:A:H8	1.68	0.59
1:2:1374:G:H1	1:2:1383:C:N4	1.95	0.59
1:2:649:G:H22	1:2:661:C:H1'	1.68	0.59
1:2:1804:U:H2'	1:2:1805:G:H8	1.66	0.59
1:2:170:U:H2'	1:2:171:G:H8	1.68	0.59
1:2:352:G:H2'	1:2:353:G:H5'	1.85	0.59
1:2:660:G:H2'	1:2:661:C:O4'	2.02	0.59
1:2:1441:A:H4'	1:2:1442:C:C6	2.38	0.59
1:2:2225:G:H1	1:2:2237:C:H42	1.48	0.59
1:2:422:C:H2'	1:2:423:G:H8	1.67	0.59
1:2:809:C:H2'	1:2:810:U:C6	2.38	0.59
1:2:1181:C:H3'	1:2:1182:U:C5'	2.33	0.59
1:2:1790:G:H1'	1:2:1791:C:C5	2.37	0.59
1:2:2220:A:H2'	1:2:2221:G:H8	1.67	0.59
1:2:2737:A:H2'	1:2:2738:A:H5'	1.84	0.59
1:2:1184:G:H2'	1:2:1185:C:H5''	1.85	0.58
1:2:1762:C:H2'	1:2:1763:G:C8	2.38	0.58
1:2:2110:G:H3'	1:2:2110:G:N3	2.18	0.58
1:2:167:A:H5''	1:2:181:A:N1	2.18	0.58
1:2:415:A:H2'	1:2:416:U:O4'	2.03	0.58
1:2:1291:G:H1	1:2:1305:C:N4	2.00	0.58
1:2:103:U:H2'	1:2:104:C:C6	2.38	0.58
1:2:119:G:H1'	1:2:129:A:N1	2.18	0.58
1:2:951:G:C2'	1:2:952:A:H5''	2.32	0.58
1:2:2496:C:N4	1:2:2546:G:H1	2.02	0.58
1:2:644:A:N3	1:2:2382:C:H4'	2.19	0.58
1:2:1540:C:H2'	1:2:1541:G:H8	1.69	0.58
1:2:1571:G:H2'	1:2:1572:C:C6	2.39	0.58
1:2:2169:A:O2'	1:2:2170:C:H5'	2.04	0.58
1:2:132:U:H2'	1:2:133:C:C6	2.38	0.58
1:2:490:A:O2'	1:2:491:A:H5'	2.03	0.58
1:2:1191:G:N3	1:2:1191:G:H2'	2.18	0.58
1:2:1200:G:H2'	1:2:1201:G:O4'	2.04	0.58
1:2:1359:G:N2	1:2:1617:G:H1'	2.19	0.58
1:2:2425:G:H4'	1:2:2427:A:N6	2.17	0.58
1:2:2589:C:O2	1:2:2589:C:H2'	2.03	0.58
1:2:198:A:O2'	1:2:199:A:OP2	2.21	0.58
1:2:231:G:H4'	1:2:397:U:H5'	1.85	0.58
1:2:935:C:H2'	1:2:936:A:C8	2.38	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:60:A:N3	1:2:60:A:H2'	2.18	0.58
1:2:78:C:N4	1:2:105:G:H1	2.02	0.58
1:2:208:C:H2'	1:2:209:G:O4'	2.03	0.58
1:2:367:G:H2'	1:2:368:A:H5''	1.86	0.58
1:2:1003:C:H2'	1:2:1004:A:C8	2.39	0.58
1:2:1353:A:H4'	1:2:1407:G:C1'	2.33	0.58
1:2:1716:G:O6	1:2:1754:G:H1'	2.03	0.58
1:2:2286:G:H21	1:2:2290:A:H61	1.52	0.58
1:2:57:G:H2'	1:2:72:A:H62	1.69	0.58
1:2:584:A:O2'	1:2:585:U:H5'	2.04	0.58
1:2:1459:U:H3'	1:2:1459:U:OP1	2.03	0.58
1:2:1789:U:H3	1:2:1813:A:H61	1.52	0.58
1:2:181:A:H4'	1:2:182:G:C5'	2.34	0.58
1:2:218:A:HO2'	1:2:219:G:C4'	2.16	0.58
1:2:674:U:H2'	1:2:675:C:O4'	2.03	0.58
1:2:838:A:O2'	1:2:839:U:H5'	2.04	0.58
1:2:2038:C:H2'	1:2:2483:U:C4'	2.29	0.58
1:2:2607:C:H3'	1:2:2608:A:C5'	2.33	0.58
1:2:2722:C:H2'	1:2:2723:C:C6	2.39	0.58
1:2:826:U:H2'	1:2:827:C:C6	2.39	0.58
1:2:1223:G:O2'	1:2:1224:A:OP2	2.16	0.58
1:2:1949:A:H1'	1:2:2572:U:C5'	2.34	0.58
1:2:1974:U:H2'	1:2:1975:G:H5'	1.85	0.58
1:2:2490:U:H2'	1:2:2491:C:C6	2.39	0.58
1:2:2664:G:H21	1:2:2706:U:H3	1.52	0.58
1:2:879:A:H61	1:2:926:C:H1'	1.69	0.57
1:2:944:A:O2'	1:2:945:G:H5'	2.04	0.57
1:2:1055:A:H2	1:2:1121:G:H2'	1.69	0.57
1:2:1213:U:H2'	1:2:1214:C:C6	2.39	0.57
1:2:1769:U:C2'	1:2:1770:U:H5''	2.34	0.57
1:2:18:U:H2'	1:2:19:C:C6	2.39	0.57
1:2:139:A:H2'	1:2:140:G:H8	1.69	0.57
1:2:1066:G:H1'	1:2:1096:A:C2	2.39	0.57
1:2:1286:U:H4'	1:2:1288:A:OP1	2.03	0.57
1:2:1328:C:H42	1:2:1350:G:H1	1.52	0.57
1:2:1955:G:C2'	1:2:1956:G:H5'	2.33	0.57
1:2:2238:G:H4'	1:2:2407:G:OP2	2.03	0.57
1:2:371:G:H3'	1:2:371:G:N3	2.20	0.57
1:2:667:U:H2'	1:2:668:A:H5''	1.85	0.57
1:2:885:A:H2'	1:2:886:A:H8	1.69	0.57
1:2:929:A:C3'	1:2:930:A:H5''	2.30	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1335:A:H2'	1:2:1336:G:C8	2.39	0.57
1:2:17:G:H2'	1:2:18:U:C6	2.39	0.57
1:2:411:C:OP1	1:2:2073:A:H1'	2.05	0.57
1:2:973:U:H2'	1:2:974:U:C6	2.39	0.57
1:2:1742:G:H2'	1:2:1743:C:C6	2.39	0.57
1:2:1769:U:O4	1:2:1775:A:H1'	2.04	0.57
1:2:364:G:H2'	1:2:365:U:C6	2.39	0.57
1:2:1066:G:H2'	1:2:1067:G:H4'	1.86	0.57
1:2:2208:U:H2'	1:2:2209:G:H8	1.68	0.57
1:2:2224:U:OP1	1:2:2225:G:H5'	2.04	0.57
1:2:118:U:H1'	1:2:143:A:C4	2.40	0.57
1:2:937:C:H2'	1:2:938:G:O4'	2.05	0.57
1:2:1899:A:H2'	1:2:1946:U:H1'	1.86	0.57
1:2:2070:G:H2'	1:2:2071:G:H8	1.70	0.57
1:2:2369:U:H2'	1:2:2370:G:C8	2.39	0.57
1:2:159:A:O2'	1:2:160:C:H5'	2.05	0.57
1:2:193:A:H2'	1:2:194:G:O4'	2.03	0.57
1:2:411:C:H3'	1:2:412:U:H5''	1.85	0.57
1:2:797:A:C6	1:2:805:G:H1'	2.39	0.57
1:2:1087:C:H2'	1:2:1088:A:O4'	2.05	0.57
1:2:1973:C:H2'	1:2:1974:U:C6	2.40	0.57
1:2:2658:A:O2'	1:2:2659:C:H5'	2.04	0.57
1:2:213:C:H42	1:2:238:G:H22	1.51	0.57
1:2:387:A:H5''	1:2:436:A:H8	1.69	0.57
1:2:1190:C:H2'	1:2:1191:G:C8	2.39	0.57
1:2:1775:A:O2'	1:2:1776:A:OP2	2.14	0.57
1:2:2227:C:C2'	1:2:2228:U:H5'	2.33	0.57
1:2:125:A:H5''	1:2:126:C:C6	2.40	0.57
1:2:456:C:H2'	1:2:457:C:C6	2.40	0.57
1:2:1564:U:H2'	1:2:1565:G:O4'	2.05	0.57
1:2:2045:A:H2'	1:2:2046:C:H5'	1.87	0.57
1:2:2753:C:H2'	1:2:2754:C:C6	2.40	0.57
1:2:427:C:H2'	1:2:428:A:C8	2.39	0.57
1:2:856:A:H2'	1:2:857:U:O4'	2.05	0.57
1:2:983:G:OP2	1:2:985:G:H5''	2.04	0.57
1:2:1177:U:H3	1:2:1197:U:H1'	1.68	0.57
1:2:1355:A:N6	1:2:1358:C:N3	2.53	0.57
1:2:1750:A:H2'	1:2:1751:A:H8	1.70	0.57
1:2:1938:U:O2'	1:2:1939:U:OP1	2.16	0.57
1:2:2104:G:H2'	1:2:2105:U:C6	2.40	0.57
1:2:2183:C:H42	1:2:2202:G:H1	1.52	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:2866:A:H2'	1:2:2867:G:O4'	2.05	0.57
1:2:197:G:N2	1:2:440:U:H2'	2.20	0.56
1:2:717:G:H1'	1:2:740:A:H61	1.70	0.56
1:2:1451:C:H2'	1:2:1452:U:C6	2.40	0.56
1:2:2492:G:H2'	1:2:2493:U:C6	2.40	0.56
1:2:1698:C:H4'	1:2:1754:G:C8	2.40	0.56
1:2:2132:G:H2'	1:2:2133:G:O4'	2.04	0.56
1:2:21:A:H61	1:2:529:U:H3	1.52	0.56
1:2:475:U:H1'	1:2:801:A:H61	1.70	0.56
1:2:951:G:C3'	1:2:952:A:H5''	2.35	0.56
1:2:1139:A:O2'	1:2:2495:G:H4'	2.03	0.56
1:2:1345:G:H5''	1:2:1346:C:OP2	2.04	0.56
1:2:1923:U:H1'	1:2:1948:C:N4	2.20	0.56
1:2:2307:A:H2'	1:2:2308:A:C8	2.40	0.56
1:2:2470:U:O2'	1:2:2471:U:H5'	2.06	0.56
1:2:2636:A:N6	1:2:2643:G:H21	1.89	0.56
1:2:2638:G:N2	1:2:2640:G:H5''	2.21	0.56
1:2:2667:C:H1'	1:2:2702:G:N1	2.20	0.56
1:2:2678:C:H2'	1:2:2679:G:C8	2.41	0.56
1:2:1450:G:H2'	1:2:1451:C:C6	2.41	0.56
1:2:1690:U:H2'	1:2:1691:G:C5'	2.35	0.56
1:2:2517:C:H2'	1:2:2518:C:C6	2.40	0.56
1:2:2633:A:H4'	1:2:2634:G:O5'	2.05	0.56
1:2:980:G:H2'	1:2:981:C:C6	2.40	0.56
1:2:1715:A:H2'	1:2:1716:G:C5'	2.32	0.56
1:2:1773:C:H3'	1:2:1773:C:OP2	2.06	0.56
1:2:2034:A:H5'	1:2:2557:G:H5''	1.86	0.56
1:2:200:A:C6	1:2:435:A:H1'	2.41	0.56
1:2:330:C:H2'	1:2:331:U:C6	2.40	0.56
1:2:546:A:H2'	1:2:547:U:C6	2.41	0.56
1:2:2824:C:H4'	1:2:2825:A:H5'	1.86	0.56
1:2:428:A:H2'	1:2:429:C:O4'	2.06	0.56
1:2:478:G:H2'	1:2:479:G:H8	1.71	0.56
1:2:918:A:C2'	1:2:919:U:H5''	2.36	0.56
1:2:1001:A:N6	1:2:1200:G:H1'	2.18	0.56
1:2:1261:G:H8	1:2:1261:G:OP1	1.88	0.56
1:2:1339:U:H2'	1:2:1340:C:H6	1.71	0.56
1:2:1860:A:H2'	1:2:1861:G:O4'	2.06	0.56
1:2:2359:U:H2'	1:2:2360:C:C6	2.41	0.56
1:2:931:G:N2	1:2:2247:A:H5'	2.20	0.56
1:2:952:A:O2'	1:2:1204:G:H4'	2.06	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:981:C:O2'	1:2:995:A:H4'	2.06	0.56
1:2:1278:A:O2'	1:2:1279:G:O5'	2.19	0.56
1:2:1326:U:O2'	1:2:1345:G:H4'	2.05	0.56
1:2:1356:G:O4'	1:2:1613:G:H2'	2.04	0.56
1:2:405:C:H2'	1:2:406:G:H8	1.71	0.56
1:2:706:A:H2'	1:2:707:U:C6	2.40	0.56
1:2:840:U:H4'	1:2:841:G:C2	2.41	0.56
1:2:1179:A:H61	1:2:1195:U:H3	1.54	0.56
1:2:1392:U:H2'	1:2:1392:U:O2	2.06	0.56
1:2:1437:A:O2'	1:2:1438:G:H5'	2.06	0.56
1:2:1694:A:H2'	1:2:1695:U:C6	2.41	0.56
1:2:2496:C:H41	1:2:2546:G:H1	1.53	0.56
1:2:721:C:N4	1:2:736:G:H22	2.04	0.56
1:2:1311:C:H2'	1:2:1312:G:O4'	2.06	0.56
1:2:1480:G:H2'	1:2:1481:U:O4'	2.06	0.56
1:2:1982:C:H4'	1:2:2703:C:O2	2.06	0.56
1:2:2014:A:H2'	1:2:2434:G:H4'	1.87	0.56
1:2:2383:C:H2'	1:2:2384:G:O4'	2.06	0.56
1:2:483:A:H2'	1:2:484:G:H5'	1.88	0.55
1:2:781:G:H5'	1:2:1638:G:H5'	1.88	0.55
1:2:1263:G:O2'	1:2:1264:C:OP1	2.24	0.55
1:2:1611:U:H2'	1:2:1612:U:O4'	2.06	0.55
1:2:2778:U:H5''	1:2:2779:C:C5	2.41	0.55
1:2:192:G:O2'	1:2:193:A:OP2	2.22	0.55
1:2:616:U:C2'	1:2:617:U:H5''	2.35	0.55
1:2:688:A:H62	1:2:816:U:H3	1.53	0.55
1:2:824:U:C4'	1:2:1264:C:H1'	2.20	0.55
1:2:888:G:H2'	1:2:889:C:O4'	2.06	0.55
1:2:1398:G:H2'	1:2:1399:C:C6	2.40	0.55
1:2:2670:C:H42	1:2:2698:G:N2	2.02	0.55
1:2:1654:A:H4'	1:2:2690:A:O2'	2.06	0.55
1:2:1859:A:H2'	1:2:1860:A:H8	1.71	0.55
1:2:328:A:H2'	1:2:329:C:C6	2.40	0.55
1:2:566:U:H2'	1:2:567:G:C8	2.42	0.55
1:2:614:G:H22	1:2:634:G:H1	1.54	0.55
1:2:677:G:H4'	1:2:951:G:O3'	2.06	0.55
1:2:789:G:C2'	1:2:790:A:OP2	2.54	0.55
1:2:1683:G:H2'	1:2:1684:G:O4'	2.06	0.55
1:2:1859:A:H2'	1:2:1860:A:C8	2.41	0.55
1:2:2621:G:H1	1:2:2752:C:H42	1.54	0.55
1:2:63:A:N6	1:2:89:A:H61	2.01	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1279:G:H1'	1:2:1280:U:H5	1.71	0.55
1:2:1464:A:H2'	1:2:1465:G:C8	2.41	0.55
1:2:1537:U:H2'	1:2:1538:A:O4'	2.06	0.55
1:2:1563:U:H2'	1:2:1564:U:C6	2.42	0.55
1:2:1766:U:H2'	1:2:1767:G:O4'	2.07	0.55
1:2:2784:A:H5''	1:2:2865:G:H22	1.72	0.55
1:2:161:U:H2'	1:2:162:C:C6	2.42	0.55
1:2:245:C:H5'	1:2:292:A:H5'	1.87	0.55
1:2:1018:C:H5'	1:2:1019:U:OP2	2.06	0.55
1:2:2208:U:H2'	1:2:2209:G:C8	2.41	0.55
1:2:2271:C:H4'	1:2:2354:G:O4'	2.06	0.55
1:2:2705:A:C2	1:2:2706:U:H2'	2.42	0.55
1:2:44:G:H1	1:2:445:A:N6	2.04	0.55
1:2:77:C:H42	1:2:106:G:H1	1.52	0.55
1:2:658:G:H2'	1:2:659:G:H8	1.71	0.55
1:2:1466:C:O2'	1:2:1467:U:H5'	2.06	0.55
1:2:1532:A:H2'	1:2:1533:G:H8	1.72	0.55
1:2:1727:C:H2'	1:2:1728:A:C8	2.42	0.55
1:2:1817:U:H2'	1:2:1818:G:C8	2.41	0.55
1:2:2077:G:H1	1:2:2179:C:H1'	1.71	0.55
1:2:2092:U:OP1	1:2:2133:G:H4'	2.06	0.55
1:2:2245:A:HO2'	1:2:2246:A:P	2.28	0.55
1:2:2463:G:O2'	1:2:2464:G:H5'	2.07	0.55
1:2:614:G:N2	1:2:634:G:H1	2.05	0.55
1:2:1473:U:H4'	1:2:1474:A:C8	2.42	0.55
1:2:1894:U:H3	1:2:1901:A:N6	2.05	0.55
1:2:2057:U:H2'	1:2:2058:U:C6	2.42	0.55
1:2:218:A:O2'	1:2:219:G:C4'	2.55	0.55
1:2:712:A:H4'	1:2:1651:U:H3	1.71	0.55
1:2:964:A:H2'	1:2:965:G:H8	1.70	0.55
1:2:1175:A:O2'	1:2:1176:U:H5'	2.07	0.55
1:2:2010:G:H1'	1:2:2020:G:H22	1.72	0.55
1:2:2680:U:H3'	1:2:2681:A:H5''	1.89	0.55
1:2:56:C:H2'	1:2:57:G:O4'	2.06	0.54
1:2:468:A:C2'	1:2:469:G:H4'	2.37	0.54
1:2:713:G:H2'	1:2:714:G:O4'	2.07	0.54
1:2:990:A:H2'	1:2:993:C:H42	1.72	0.54
1:2:1066:G:H1'	1:2:1096:A:N1	2.22	0.54
1:2:1772:C:H4'	1:2:1773:C:O5'	2.07	0.54
1:2:1819:U:H4'	1:2:1953:A:O2'	2.07	0.54
1:2:2213:G:H2'	1:2:2214:G:C8	2.41	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:2493:U:H2'	1:2:2494:C:C6	2.42	0.54
1:2:2592:U:O2'	1:2:2593:A:OP1	2.23	0.54
1:2:796:A:C2	1:2:798:G:H1'	2.42	0.54
1:2:952:A:H2'	1:2:953:G:C8	2.43	0.54
1:2:1029:C:C2'	1:2:1030:U:H5''	2.35	0.54
1:2:1865:C:H2'	1:2:1866:G:O4'	2.06	0.54
1:2:2088:U:H2'	1:2:2089:C:C6	2.42	0.54
1:2:26:G:H4'	1:2:1273:G:H4'	1.88	0.54
1:2:113:C:H2'	1:2:114:C:C6	2.42	0.54
1:2:150:A:H2'	1:2:151:G:H5'	1.89	0.54
1:2:1000:G:OP1	1:2:1168:G:H4'	2.08	0.54
1:2:1455:C:H2'	1:2:1456:C:C6	2.42	0.54
1:2:1538:A:H2'	1:2:1539:U:C5	2.42	0.54
1:2:2469:G:H5''	1:2:2470:U:OP1	2.06	0.54
1:2:2691:C:C2'	1:2:2692:A:H5''	2.35	0.54
1:2:216:U:H2'	1:2:217:U:C6	2.42	0.54
1:2:597:U:H2'	1:2:598:U:C6	2.43	0.54
1:2:632:A:H2'	1:2:633:G:H5'	1.89	0.54
1:2:1079:G:H4'	1:2:1081:A:N6	2.22	0.54
1:2:2082:C:N4	1:2:2173:G:H1	1.95	0.54
1:2:2217:G:H3'	1:2:2217:G:N3	2.22	0.54
1:2:2836:U:H2'	1:2:2837:G:H8	1.73	0.54
1:2:726:G:H2'	1:2:727:U:H5'	1.88	0.54
1:2:830:C:O2'	1:2:852:U:H5''	2.08	0.54
1:2:1218:C:H2'	1:2:1219:C:C6	2.43	0.54
1:2:1975:G:C1'	1:2:1977:C:H41	2.20	0.54
1:2:2085:G:O2'	1:2:2086:U:H5'	2.07	0.54
1:2:2548:G:H2'	1:2:2549:G:C5'	2.38	0.54
1:2:2548:G:H2'	1:2:2549:G:H5'	1.89	0.54
1:2:2667:C:H42	1:2:2699:G:H3'	1.72	0.54
1:2:2841:U:H1'	1:2:2843:A:H1'	1.89	0.54
1:2:439:C:H2'	1:2:440:U:O4'	2.07	0.54
1:2:1259:A:O2'	1:2:1260:A:H5'	2.07	0.54
1:2:1399:C:H2'	1:2:1400:A:C8	2.42	0.54
1:2:1707:A:H2'	1:2:1708:C:O4'	2.07	0.54
1:2:2166:G:O2'	1:2:2167:A:H5'	2.07	0.54
1:2:2555:G:H3'	1:2:2555:G:N3	2.22	0.54
1:2:190:A:H2'	1:2:191:G:C8	2.43	0.54
1:2:617:U:H2'	1:2:618:A:H8	1.72	0.54
1:2:857:U:H2'	1:2:858:G:O4'	2.08	0.54
1:2:1007:A:H2'	1:2:1008:G:H8	1.72	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1529:C:H2'	1:2:1530:U:O4'	2.08	0.54
1:2:1791:C:H1'	1:2:1793:A:O4'	2.07	0.54
1:2:2370:G:HO2'	1:2:2371:A:P	2.31	0.54
1:2:2869:U:H2'	1:2:2870:C:C6	2.43	0.54
1:2:27:G:H1'	1:2:523:A:N6	2.21	0.54
1:2:104:C:H2'	1:2:105:G:C5'	2.37	0.54
1:2:203:G:H5'	1:2:234:C:H4'	1.89	0.54
1:2:671:A:H2'	1:2:672:C:C6	2.42	0.54
1:2:827:C:H2'	1:2:828:C:C6	2.43	0.54
1:2:1764:A:N7	1:2:1821:A:H1'	2.22	0.54
1:2:1980:A:H2'	1:2:1981:A:H8	1.71	0.54
1:2:890:U:O5'	1:2:891:A:H5''	2.08	0.54
1:2:1038:U:H2'	1:2:1039:A:O4'	2.08	0.54
1:2:1132:C:H2'	1:2:1133:G:H8	1.73	0.54
1:2:1141:U:O2'	1:2:1142:G:OP1	2.20	0.54
1:2:1313:U:O2'	1:2:1314:A:P	2.66	0.54
1:2:1355:A:C1'	1:2:1410:U:H1'	2.38	0.54
1:2:2496:C:N4	1:2:2546:G:H22	2.06	0.54
1:2:2579:A:O2'	1:2:2580:C:H5'	2.07	0.54
1:2:323:G:OP2	1:2:343:A:H5'	2.08	0.54
1:2:677:G:O2'	1:2:678:G:H5'	2.08	0.54
1:2:1376:C:O2'	1:2:1800:A:H1'	2.07	0.54
1:2:1684:G:N2	1:2:1977:C:H42	2.06	0.54
1:2:192:G:C1'	1:2:193:A:H4'	2.38	0.53
1:2:564:U:H2'	1:2:565:A:H8	1.73	0.53
1:2:931:G:H2'	1:2:932:G:O4'	2.08	0.53
1:2:1106:A:H2'	1:2:1107:A:H8	1.74	0.53
1:2:1572:C:C3'	1:2:1573:G:H5''	2.37	0.53
1:2:1787:U:H2'	1:2:1788:C:C6	2.43	0.53
1:2:1981:A:H4'	1:2:2704:U:H4'	1.89	0.53
1:2:2083:G:H2'	1:2:2084:G:H8	1.73	0.53
1:2:158:A:H2'	1:2:159:A:O4'	2.08	0.53
1:2:218:A:H5'	1:2:220:U:H1'	1.90	0.53
1:2:484:G:O2'	1:2:485:G:H5'	2.09	0.53
1:2:1189:G:H2'	1:2:1190:C:C6	2.44	0.53
1:2:1355:A:HO2'	1:2:1356:G:P	2.31	0.53
1:2:2362:G:H2'	1:2:2363:G:O4'	2.08	0.53
1:2:31:C:H2'	1:2:32:C:C6	2.43	0.53
1:2:57:G:N2	1:2:69:G:N3	2.56	0.53
1:2:241:C:C2'	1:2:242:A:H5''	2.38	0.53
1:2:322:A:N1	1:2:341:A:OP2	2.41	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:533:C:H2'	1:2:534:U:O4'	2.09	0.53
1:2:790:A:H2'	1:2:791:G:C8	2.42	0.53
1:2:920:G:H2'	1:2:921:A:H5''	1.90	0.53
1:2:953:G:H2'	1:2:954:U:O4'	2.08	0.53
1:2:1245:G:H2'	1:2:1246:G:H8	1.73	0.53
1:2:1665:C:H2'	1:2:1666:G:C8	2.43	0.53
1:2:1685:A:H4'	1:2:1686:A:H5'	1.90	0.53
1:2:1713:G:H2'	1:2:1714:A:O4'	2.09	0.53
1:2:1755:G:H2'	1:2:1756:C:C6	2.44	0.53
1:2:2419:C:N3	1:2:2420:C:H1'	2.24	0.53
1:2:534:U:H4'	1:2:564:U:H4'	1.90	0.53
1:2:1626:A:O2'	1:2:1627:C:OP1	2.25	0.53
1:2:1645:U:H2'	1:2:1646:G:C8	2.43	0.53
1:2:2312:A:N3	1:2:2314:A:N6	2.56	0.53
1:2:2389:G:H2'	1:2:2390:A:O5'	2.09	0.53
1:2:2459:C:C2'	1:2:2460:G:H5'	2.38	0.53
1:2:242:A:O2'	1:2:243:G:O4'	2.24	0.53
1:2:695:G:H2'	1:2:696:U:C6	2.43	0.53
1:2:754:G:H2'	1:2:755:C:C6	2.44	0.53
1:2:1565:G:H2'	1:2:1566:G:C8	2.43	0.53
1:2:2441:U:H2'	1:2:2442:C:C6	2.44	0.53
1:2:547:U:H2'	1:2:548:G:H8	1.73	0.53
1:2:617:U:H2'	1:2:618:A:C8	2.44	0.53
1:2:777:A:N6	1:2:1767:G:H1'	2.23	0.53
1:2:889:C:H2'	1:2:890:U:H6	1.72	0.53
1:2:1687:C:O2'	1:2:1977:C:H4'	2.08	0.53
1:2:2170:C:C2'	1:2:2171:U:H5'	2.39	0.53
1:2:2674:C:H2'	1:2:2675:U:C6	2.44	0.53
1:2:242:A:O2'	1:2:243:G:P	2.66	0.53
1:2:364:G:H2'	1:2:365:U:C5	2.43	0.53
1:2:574:C:H2'	1:2:575:U:C6	2.44	0.53
1:2:981:C:H2'	1:2:982:C:C6	2.43	0.53
1:2:1654:A:H2'	1:2:1655:C:C6	2.44	0.53
1:2:2080:U:H2'	1:2:2081:U:C6	2.44	0.53
1:2:2793:G:H2'	1:2:2794:G:H8	1.74	0.53
1:2:26:G:H2'	1:2:27:G:O4'	2.08	0.53
1:2:329:C:O2'	1:2:330:C:H5'	2.09	0.53
1:2:877:G:H2'	1:2:878:C:C6	2.44	0.53
1:2:981:C:H2'	1:2:982:C:H6	1.74	0.53
1:2:1223:G:H22	1:2:1249:G:H2'	1.74	0.53
1:2:1261:G:OP1	1:2:1261:G:C8	2.62	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1312:G:H5''	1:2:1313:U:C5'	2.36	0.53
1:2:2352:A:H2'	1:2:2353:G:C8	2.43	0.53
1:2:2759:U:HO2'	1:2:2761:A:N6	2.05	0.53
1:2:127:C:H5''	1:2:1615:C:O2'	2.08	0.53
1:2:681:A:H2'	1:2:683:A:N7	2.24	0.53
1:2:738:G:H2'	1:2:739:G:O4'	2.08	0.53
1:2:1354:A:O2'	1:2:1355:A:OP1	2.19	0.53
1:2:1651:U:H5''	1:2:1652:G:OP1	2.09	0.53
1:2:1685:A:O2'	1:2:1686:A:H3'	2.09	0.53
1:2:1806:G:P	1:2:1807:A:H5''	2.49	0.53
1:2:1967:U:H2'	1:2:1968:G:H8	1.73	0.53
1:2:2791:C:H2'	1:2:2792:C:C6	2.44	0.53
1:2:579:G:H2'	1:2:2013:A:C5	2.44	0.53
1:2:650:U:H3	1:2:659:G:H1	1.56	0.53
1:2:868:U:H2'	1:2:869:C:C6	2.44	0.53
1:2:1235:C:O2'	1:2:1236:G:H5'	2.09	0.53
1:2:1880:G:H2'	1:2:1881:U:C6	2.44	0.53
1:2:2745:A:H3'	1:2:2745:A:N3	2.24	0.53
1:2:2827:G:H2'	1:2:2828:C:O4'	2.08	0.53
1:2:59:G:H2'	1:2:62:U:O4	2.08	0.52
1:2:776:G:H3'	1:2:776:G:N3	2.23	0.52
1:2:841:G:N2	1:2:2226:A:H4'	2.24	0.52
1:2:1303:U:H2'	1:2:1304:U:C6	2.44	0.52
1:2:1606:C:H2'	1:2:1607:A:C8	2.43	0.52
1:2:2449:G:H2'	1:2:2450:A:H8	1.73	0.52
1:2:2686:C:H2'	1:2:2687:G:H8	1.74	0.52
1:2:333:A:O2'	1:2:350:U:H2'	2.09	0.52
1:2:1100:G:HO2'	1:2:1101:U:H5	1.56	0.52
1:2:1685:A:C6	1:2:1691:G:H1'	2.44	0.52
1:2:1804:U:H2'	1:2:1805:G:C8	2.43	0.52
1:2:1850:G:H22	1:2:1867:A:C1'	2.22	0.52
1:2:1917:C:H2'	1:2:1918:G:C8	2.44	0.52
1:2:2466:G:H2'	1:2:2467:A:C8	2.44	0.52
1:2:2558:C:O2'	1:2:2559:U:H5'	2.09	0.52
1:2:2759:U:H4'	1:2:2761:A:C5	2.43	0.52
1:2:1407:G:H2'	1:2:1408:A:O4'	2.09	0.52
1:2:1883:A:H2	1:2:1953:A:H62	1.57	0.52
1:2:37:C:H2'	1:2:38:G:C8	2.45	0.52
1:2:163:A:H2'	1:2:164:G:H8	1.75	0.52
1:2:1639:U:H2'	1:2:1640:C:C6	2.44	0.52
1:2:2103:G:H2'	1:2:2103:G:N3	2.23	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1665:C:H2'	1:2:1666:G:H8	1.74	0.52
1:2:1842:G:H1	1:2:1875:C:N4	2.07	0.52
1:2:2237:C:C4	1:2:2405:A:H4'	2.44	0.52
1:2:2422:C:OP1	2:2:2881:RAP:C40	2.56	0.52
1:2:2858:A:H3'	1:2:2859:U:H5'	1.90	0.52
1:2:181:A:H4'	1:2:182:G:C4'	2.34	0.52
1:2:817:A:H2'	1:2:819:C:N4	2.23	0.52
1:2:1273:G:H2'	1:2:1274:C:C6	2.45	0.52
1:2:1304:U:H2'	1:2:1305:C:C5'	2.38	0.52
1:2:1402:G:H2'	1:2:1403:U:O4'	2.09	0.52
1:2:1686:A:H2'	1:2:1686:A:N3	2.23	0.52
1:2:2006:G:O5'	1:2:2596:C:H4'	2.09	0.52
1:2:2103:G:H3'	1:2:2104:G:H5'	1.92	0.52
1:2:2194:A:C3'	1:2:2195:C:H5''	2.40	0.52
1:2:2240:C:H1'	1:2:2367:A:H1'	1.92	0.52
1:2:2343:C:H2'	1:2:2344:G:O4'	2.10	0.52
1:2:2425:G:H2'	1:2:2426:G:H4'	1.91	0.52
1:2:35:G:H4'	1:2:466:A:O2'	2.09	0.52
1:2:81:C:H2'	1:2:82:G:O4'	2.09	0.52
1:2:762:A:H5'	1:2:1284:G:H1'	1.91	0.52
1:2:1067:G:O5'	1:2:1068:A:H5'	2.10	0.52
1:2:1621:C:H4'	1:2:1626:A:H62	1.70	0.52
1:2:1984:A:H2'	1:2:1985:G:C8	2.45	0.52
1:2:2422:C:H2'	1:2:2423:G:H8	1.75	0.52
1:2:2828:C:H2'	1:2:2829:A:H8	1.75	0.52
1:2:323:G:H4'	1:2:342:G:C6	2.45	0.52
1:2:964:A:H61	1:2:976:C:N4	2.07	0.52
1:2:1749:G:O6	1:2:2674:C:H4'	2.10	0.52
1:2:2205:C:H2'	1:2:2206:C:O4'	2.10	0.52
1:2:2787:A:O2'	1:2:2788:C:H5'	2.10	0.52
1:2:577:U:H5'	1:2:956:A:H62	1.74	0.52
1:2:986:A:H61	1:2:1000:G:H1'	1.75	0.52
1:2:175:C:N4	1:2:225:G:H1	2.06	0.52
1:2:415:A:O2'	1:2:416:U:H5'	2.10	0.52
1:2:796:A:N3	1:2:798:G:H1'	2.25	0.52
1:2:1274:C:H2'	1:2:1275:A:C8	2.45	0.52
1:2:1327:C:P	1:2:1345:G:H5'	2.50	0.52
1:2:1760:G:H2'	1:2:1761:G:H8	1.74	0.52
1:2:575:U:H4'	1:2:822:G:OP2	2.10	0.51
1:2:621:U:H2'	1:2:622:U:C6	2.45	0.51
1:2:990:A:H3'	1:2:991:A:C5'	2.40	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1092:U:H2'	1:2:1093:U:C6	2.45	0.51
1:2:1145:C:H5'	1:2:1146:G:OP2	2.10	0.51
1:2:1221:C:H2'	1:2:1222:G:H8	1.75	0.51
1:2:1454:U:H2'	1:2:1455:C:C6	2.44	0.51
1:2:1466:C:C2'	1:2:1467:U:H5'	2.40	0.51
1:2:2375:G:H2'	1:2:2376:G:H8	1.75	0.51
1:2:2649:A:H2'	1:2:2650:G:H8	1.76	0.51
1:2:34:U:H6	1:2:466:A:C2	2.28	0.51
1:2:471:A:H2'	1:2:472:C:O4'	2.10	0.51
1:2:540:G:C2'	1:2:541:C:H5'	2.40	0.51
1:2:1278:A:O2'	1:2:1279:G:P	2.68	0.51
1:2:2510:A:H61	1:2:2641:A:N6	2.08	0.51
1:2:2723:C:O2'	1:2:2724:G:H5'	2.11	0.51
1:2:3:U:H2'	1:2:4:C:C6	2.45	0.51
1:2:135:U:H2'	1:2:136:A:C8	2.45	0.51
1:2:336:A:N6	1:2:349:G:H21	2.09	0.51
1:2:367:G:C3'	1:2:368:A:H5''	2.39	0.51
1:2:670:U:H2'	1:2:671:A:C8	2.45	0.51
1:2:1429:A:N6	1:2:1600:U:H4'	2.25	0.51
1:2:1474:A:H3'	1:2:1474:A:N3	2.25	0.51
1:2:1686:A:H2'	1:2:1687:C:H5'	1.91	0.51
1:2:2266:A:H61	1:2:2323:U:H1'	1.75	0.51
1:2:2633:A:C2	1:2:2644:A:H5''	2.44	0.51
1:2:2791:C:H2'	1:2:2792:C:H6	1.75	0.51
1:2:2838:U:H2'	1:2:2839:G:H8	1.76	0.51
1:2:160:C:H42	1:2:190:A:H61	1.59	0.51
1:2:387:A:H2'	1:2:387:A:N3	2.24	0.51
1:2:578:U:H1'	1:2:958:G:O4'	2.10	0.51
1:2:641:G:H4'	1:2:651:C:O2'	2.11	0.51
1:2:1314:A:H5''	1:2:1623:C:N4	2.25	0.51
1:2:1882:G:H21	1:2:1885:C:H42	1.59	0.51
1:2:2212:U:H2'	1:2:2213:G:C8	2.46	0.51
1:2:2228:U:H5''	1:2:2229:G:OP1	2.10	0.51
1:2:2437:G:H2'	1:2:2469:G:H22	1.75	0.51
1:2:2732:C:H3'	1:2:2733:A:H8	1.75	0.51
1:2:19:C:H2'	1:2:20:C:C6	2.46	0.51
1:2:1136:G:O6	1:2:1137:A:N6	2.44	0.51
1:2:1214:C:H2'	1:2:1215:A:H8	1.74	0.51
1:2:1279:G:C2'	1:2:1280:U:OP2	2.59	0.51
1:2:1380:C:C2'	1:2:1381:G:H5'	2.40	0.51
1:2:2220:A:H2'	1:2:2221:G:C8	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:2584:U:H2'	1:2:2585:C:C6	2.45	0.51
1:2:2668:U:O2'	1:2:2669:C:P	2.68	0.51
1:2:55:A:H61	1:2:112:U:H3	1.57	0.51
1:2:304:A:H62	1:2:355:G:N2	2.09	0.51
1:2:509:U:H3	1:2:513:A:H62	1.58	0.51
1:2:763:A:H2	1:2:765:C:H4'	1.76	0.51
1:2:787:A:H2'	1:2:788:G:C5	2.45	0.51
1:2:1030:U:H2'	1:2:1031:C:H5'	1.93	0.51
1:2:1699:A:H61	1:2:1723:U:H3	1.59	0.51
1:2:469:G:C2'	1:2:470:U:OP2	2.58	0.51
1:2:564:U:H2'	1:2:565:A:C8	2.45	0.51
1:2:1714:A:H62	1:2:1715:A:H61	1.56	0.51
1:2:2812:A:H2'	1:2:2813:G:C8	2.46	0.51
1:2:55:A:H2'	1:2:56:C:O4'	2.11	0.51
1:2:73:A:O2'	1:2:74:G:O5'	2.28	0.51
1:2:964:A:N6	1:2:976:C:H42	2.09	0.51
1:2:1294:G:H1	1:2:1302:C:N4	2.09	0.51
1:2:1422:C:H2'	1:2:1423:A:C8	2.46	0.51
1:2:1854:G:N2	1:2:1863:U:H3	2.02	0.51
1:2:2239:C:H2'	1:2:2240:C:C6	2.45	0.51
1:2:2780:A:H2'	1:2:2781:G:C8	2.46	0.51
1:2:132:U:H2'	1:2:133:C:C5	2.45	0.51
1:2:707:U:OP1	1:2:1585:A:H1'	2.11	0.51
1:2:785:U:H2'	1:2:786:U:C6	2.46	0.51
1:2:1026:U:H2'	1:2:1027:C:C6	2.45	0.51
1:2:1505:U:H2'	1:2:1507:A:OP1	2.11	0.51
1:2:1825:C:H2'	1:2:1826:U:O4'	2.11	0.51
1:2:2006:G:P	1:2:2596:C:H4'	2.51	0.51
1:2:2218:G:N2	1:2:2219:U:H1'	2.26	0.51
1:2:2263:C:H2'	1:2:2264:C:O4'	2.11	0.51
1:2:2471:U:H2'	1:2:2472:U:C6	2.46	0.51
1:2:228:A:C5	1:2:229:G:H1'	2.46	0.51
1:2:403:A:H5'	1:2:425:A:H4'	1.91	0.51
1:2:755:C:H2'	1:2:756:C:O4'	2.11	0.51
1:2:788:G:H5'	1:2:790:A:H1'	1.92	0.51
1:2:1714:A:N6	1:2:1715:A:N6	2.54	0.51
1:2:1843:U:H2'	1:2:1844:C:C6	2.46	0.51
1:2:1849:G:H21	1:2:1868:A:N6	2.08	0.51
1:2:2013:A:C2'	1:2:2014:A:OP2	2.59	0.51
1:2:2070:G:H2'	1:2:2071:G:C8	2.45	0.51
1:2:2225:G:H22	1:2:2237:C:H42	1.58	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:2811:G:H2'	1:2:2812:A:C8	2.46	0.51
1:2:1296:G:H1'	1:2:1342:U:N3	2.24	0.50
1:2:306:G:O2'	1:2:307:C:H5'	2.11	0.50
1:2:543:G:H2'	1:2:544:U:O4'	2.12	0.50
1:2:653:G:H21	1:2:657:A:H61	1.57	0.50
1:2:788:G:H21	1:2:800:U:H2'	1.76	0.50
1:2:933:G:H2'	1:2:934:G:C8	2.47	0.50
1:2:959:C:H2'	1:2:960:U:C6	2.46	0.50
1:2:1293:A:H2'	1:2:1294:G:H8	1.75	0.50
1:2:1342:U:H5'	1:2:1343:C:H5	1.76	0.50
1:2:1430:G:H2'	1:2:1431:U:C6	2.47	0.50
1:2:2395:C:H2'	1:2:2396:C:H5'	1.94	0.50
1:2:490:A:N6	1:2:492:G:N3	2.59	0.50
1:2:580:A:H1'	1:2:582:G:N7	2.26	0.50
1:2:808:C:H2'	1:2:809:C:C6	2.46	0.50
1:2:985:G:H1'	1:2:1001:A:N6	2.26	0.50
1:2:1050:G:H1	1:2:1127:C:H42	1.59	0.50
1:2:1737:G:H2'	1:2:1738:U:C6	2.46	0.50
1:2:1953:A:O4'	1:2:1955:G:H1'	2.11	0.50
1:2:2688:G:H2'	1:2:2689:C:C6	2.46	0.50
1:2:218:A:O2'	1:2:219:G:O4'	2.29	0.50
1:2:1495:G:N2	1:2:1528:C:H42	2.09	0.50
1:2:1677:C:H2'	1:2:1678:G:C8	2.47	0.50
1:2:1980:A:H2'	1:2:1981:A:C8	2.46	0.50
1:2:2313:G:O2'	1:2:2314:A:OP1	2.20	0.50
1:2:2517:C:H2'	1:2:2518:C:H6	1.76	0.50
1:2:368:A:H2'	1:2:369:C:H5'	1.94	0.50
1:2:1033:G:O2'	1:2:1034:U:C6	2.64	0.50
1:2:1144:U:H2'	1:2:1147:G:OP1	2.12	0.50
1:2:1621:C:C4'	1:2:1626:A:N6	2.71	0.50
1:2:1820:G:OP1	1:2:1955:G:H5'	2.11	0.50
1:2:2217:G:H5'	1:2:2218:G:N7	2.25	0.50
1:2:2496:C:O2	1:2:2497:A:N3	2.44	0.50
1:2:2766:U:O2'	1:2:2767:C:H5'	2.12	0.50
1:2:1325:U:C2'	1:2:1326:U:OP2	2.59	0.50
1:2:1441:A:H2'	1:2:1441:A:N3	2.27	0.50
1:2:1591:U:H2'	1:2:1592:U:O4'	2.11	0.50
1:2:2173:G:O2'	1:2:2174:G:H5'	2.11	0.50
1:2:45:C:H2'	1:2:46:C:C6	2.46	0.50
1:2:336:A:H2'	1:2:337:G:C8	2.47	0.50
1:2:470:U:H2'	1:2:471:A:C8	2.47	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:615:C:H2'	1:2:616:U:O4'	2.11	0.50
1:2:1510:A:C2'	1:2:1511:A:H5'	2.41	0.50
1:2:2001:G:H2'	1:2:2002:A:C8	2.47	0.50
1:2:181:A:H5''	1:2:182:G:OP1	2.12	0.50
1:2:781:G:H21	1:2:1392:U:H1'	1.77	0.50
1:2:1343:C:H2'	1:2:1344:C:C6	2.46	0.50
1:2:1855:G:O2'	1:2:2389:G:N2	2.44	0.50
1:2:1901:A:H3'	1:2:1901:A:N3	2.27	0.50
1:2:2299:A:H5'	1:2:2300:G:C5	2.46	0.50
1:2:2320:G:H22	1:2:2353:G:H4'	1.77	0.50
1:2:2629:U:H2'	1:2:2630:C:C6	2.47	0.50
1:2:87:G:H2'	1:2:87:G:N3	2.27	0.50
1:2:864:C:H2'	1:2:865:A:C8	2.47	0.50
1:2:918:A:C3'	1:2:919:U:H5''	2.42	0.50
1:2:991:A:N6	1:2:2020:G:H21	2.10	0.50
1:2:1263:G:O2'	1:2:1264:C:P	2.69	0.50
1:2:1314:A:H5''	1:2:1623:C:H42	1.77	0.50
1:2:1408:A:H2	1:2:1411:C:C2	2.29	0.50
1:2:1677:C:H2'	1:2:1678:G:H8	1.76	0.50
1:2:1926:U:HO2'	1:2:1927:U:P	2.34	0.50
1:2:2060:A:P	1:2:2060:A:H3'	2.52	0.50
1:2:2230:G:H2'	1:2:2231:G:C8	2.46	0.50
1:2:2389:G:C2'	1:2:2390:A:O5'	2.60	0.50
1:2:2491:C:H2'	1:2:2492:G:H5''	1.93	0.50
1:2:218:A:H5'	1:2:220:U:C1'	2.41	0.49
1:2:827:C:H2'	1:2:828:C:H6	1.76	0.49
1:2:1790:G:N2	1:2:1811:A:OP2	2.45	0.49
1:2:2038:C:C2'	1:2:2483:U:H4'	2.36	0.49
1:2:2086:U:H2'	1:2:2087:U:C6	2.47	0.49
1:2:2701:A:H1'	1:2:2849:C:H5'	1.94	0.49
1:2:2772:U:H3	1:2:2780:A:H61	1.59	0.49
1:2:864:C:H2'	1:2:865:A:H8	1.77	0.49
1:2:1278:A:H4'	1:2:1279:G:O5'	2.11	0.49
1:2:1308:C:H2'	1:2:1309:G:C8	2.47	0.49
1:2:1663:C:H5'	1:2:1664:G:C5'	2.23	0.49
1:2:1790:G:C2'	1:2:1791:C:OP2	2.60	0.49
1:2:2140:G:H3'	1:2:2140:G:N3	2.27	0.49
1:2:2618:A:H1'	1:2:2758:A:C2	2.45	0.49
1:2:25:U:H2'	1:2:26:G:O4'	2.11	0.49
1:2:174:A:C4'	1:2:2051:U:H2'	2.36	0.49
1:2:541:C:N4	1:2:572:G:H4'	2.28	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:551:A:H2'	1:2:552:C:H6	1.78	0.49
1:2:598:U:H2'	1:2:599:A:C8	2.47	0.49
1:2:692:C:H2'	1:2:693:A:C8	2.47	0.49
1:2:808:C:H2'	1:2:809:C:H6	1.77	0.49
1:2:841:G:H3'	1:2:841:G:N3	2.27	0.49
1:2:1205:G:H2'	1:2:1206:G:C8	2.47	0.49
1:2:1223:G:H1'	1:2:1225:G:N3	2.27	0.49
1:2:1364:C:H2'	1:2:1365:U:C6	2.47	0.49
1:2:1435:G:N2	1:2:1514:C:N3	2.60	0.49
1:2:2399:C:O2'	1:2:2400:G:H5'	2.13	0.49
1:2:2841:U:O2	1:2:2843:A:H1'	2.12	0.49
1:2:10:A:H2'	1:2:11:G:O4'	2.12	0.49
1:2:136:A:H2'	1:2:137:A:H5'	1.94	0.49
1:2:225:G:O5'	1:2:226:C:H5''	2.12	0.49
1:2:1194:U:H2'	1:2:1195:U:H6	1.77	0.49
1:2:1328:C:H2'	1:2:1329:U:C6	2.47	0.49
1:2:1619:A:O5'	1:2:1619:A:N3	2.45	0.49
1:2:2510:A:H61	1:2:2641:A:H61	1.60	0.49
1:2:131:C:H2'	1:2:132:U:C6	2.47	0.49
1:2:134:G:H21	1:2:136:A:P	2.35	0.49
1:2:135:U:H2'	1:2:136:A:H8	1.77	0.49
1:2:198:A:H5''	1:2:199:A:H4'	1.93	0.49
1:2:632:A:H2'	1:2:633:G:C5'	2.42	0.49
1:2:632:A:C2'	1:2:633:G:H5'	2.43	0.49
1:2:839:U:H5''	1:2:2408:G:OP2	2.11	0.49
1:2:978:U:H2'	1:2:979:A:C8	2.48	0.49
1:2:1245:G:H2'	1:2:1246:G:C8	2.48	0.49
1:2:1454:U:H3	1:2:1567:A:H61	1.60	0.49
1:2:1569:A:HO2'	1:2:1570:C:H5	1.60	0.49
1:2:1610:A:H2'	1:2:1611:U:C6	2.47	0.49
1:2:2009:U:H2'	1:2:2010:G:H8	1.78	0.49
1:2:2264:C:H1'	1:2:2363:G:N2	2.27	0.49
1:2:2468:G:H2'	1:2:2469:G:O4'	2.11	0.49
1:2:2638:G:N2	1:2:2640:G:H3'	2.26	0.49
1:2:147:G:C6	1:2:148:C:H1'	2.48	0.49
1:2:197:G:H22	1:2:440:U:H2'	1.77	0.49
1:2:1196:G:O2'	1:2:1197:U:H5'	2.11	0.49
1:2:2269:G:H4'	1:2:2360:C:O2'	2.13	0.49
1:2:70:A:C2'	1:2:71:A:OP2	2.60	0.49
1:2:130:C:H2'	1:2:131:C:C6	2.48	0.49
1:2:837:U:H2'	1:2:838:A:H8	1.75	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:986:A:N6	1:2:1000:G:H1'	2.27	0.49
1:2:1058:G:H2'	1:2:1121:G:C6	2.47	0.49
1:2:1391:A:O2'	1:2:1392:U:O5'	2.31	0.49
1:2:1495:G:O2'	1:2:1496:G:P	2.71	0.49
1:2:1496:G:N1	1:2:1527:G:N1	2.57	0.49
1:2:1622:G:H5''	1:2:1624:A:O4'	2.13	0.49
1:2:1856:U:H2'	1:2:1857:G:C8	2.47	0.49
1:2:2015:G:O2'	1:2:2016:A:P	2.71	0.49
1:2:2677:U:H2'	1:2:2678:C:C6	2.48	0.49
1:2:485:G:O2'	1:2:486:U:P	2.70	0.49
1:2:1541:G:H22	1:2:1561:A:N6	2.08	0.49
1:2:1915:A:H2'	1:2:1916:G:O4'	2.12	0.49
1:2:1938:U:H3'	1:2:2530:C:O2'	2.12	0.49
1:2:2010:G:N2	1:2:2019:C:N3	2.60	0.49
1:2:2390:A:H2'	1:2:2391:A:C8	2.47	0.49
1:2:2667:C:O2'	1:2:2701:A:N6	2.46	0.49
1:2:88:G:H3'	1:2:89:A:C5'	2.35	0.49
1:2:875:G:H2'	1:2:876:A:O4'	2.13	0.49
1:2:1047:G:H22	1:2:1130:U:H3	1.60	0.49
1:2:1194:U:O2'	1:2:1195:U:P	2.71	0.49
1:2:1214:C:H2'	1:2:1215:A:C8	2.48	0.49
1:2:1257:U:H2'	1:2:1258:G:C8	2.48	0.49
1:2:1312:G:N2	1:2:1657:A:H5'	2.28	0.49
1:2:1332:G:H2'	1:2:1333:G:O4'	2.13	0.49
1:2:1452:U:H5''	1:2:1533:G:H5'	1.95	0.49
1:2:1487:C:H2'	1:2:1488:G:C8	2.46	0.49
1:2:1861:G:O2'	1:2:1862:C:H5'	2.11	0.49
1:2:2708:U:H2'	1:2:2709:C:C6	2.47	0.49
1:2:2811:G:H2'	1:2:2812:A:H8	1.78	0.49
1:2:363:G:H2'	1:2:363:G:N3	2.28	0.49
1:2:719:A:H2'	1:2:720:A:O4'	2.13	0.49
1:2:762:A:H2'	1:2:763:A:H8	1.77	0.49
1:2:991:A:H61	1:2:2020:G:H21	1.60	0.49
1:2:1286:U:H4'	1:2:1288:A:P	2.53	0.49
1:2:2009:U:H2'	1:2:2010:G:C8	2.47	0.49
1:2:170:U:H2'	1:2:171:G:C8	2.47	0.48
1:2:706:A:H4'	1:2:1366:A:O2'	2.14	0.48
1:2:853:C:H2'	1:2:854:G:C8	2.48	0.48
1:2:1680:U:O2'	1:2:2665:G:H4'	2.12	0.48
1:2:1686:A:C2	1:2:1977:C:H1'	2.48	0.48
1:2:1923:U:O2'	1:2:1924:C:H5	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1993:G:H2'	1:2:1994:U:C6	2.48	0.48
1:2:2204:A:H4'	1:2:2205:C:H6	1.78	0.48
1:2:2571:G:H2'	1:2:2572:U:O4'	2.12	0.48
1:2:485:G:HO2'	1:2:486:U:P	2.36	0.48
1:2:688:A:N6	1:2:816:U:N3	2.61	0.48
1:2:1681:A:N3	1:2:1681:A:H2'	2.28	0.48
1:2:1694:A:H2'	1:2:1695:U:H6	1.78	0.48
1:2:1849:G:H2'	1:2:1850:G:C8	2.48	0.48
1:2:2184:C:C2'	1:2:2185:U:H5'	2.43	0.48
1:2:2225:G:N1	1:2:2405:A:H1'	2.29	0.48
1:2:2358:C:H2'	1:2:2359:U:C6	2.49	0.48
1:2:2417:U:O3'	1:2:2419:C:OP1	2.30	0.48
1:2:2638:G:C2	1:2:2640:G:H5''	2.48	0.48
1:2:427:C:H4'	1:2:1862:C:O2	2.12	0.48
1:2:525:A:H2'	1:2:525:A:N3	2.28	0.48
1:2:720:A:H2'	1:2:721:C:C6	2.48	0.48
1:2:1270:C:H2'	1:2:1271:C:C6	2.48	0.48
1:2:2783:U:H2'	1:2:2784:A:O4'	2.13	0.48
1:2:550:C:H2'	1:2:551:A:C8	2.48	0.48
1:2:726:G:C2'	1:2:727:U:H5'	2.43	0.48
1:2:1100:G:O2'	1:2:1101:U:H5	1.95	0.48
1:2:1143:A:H2'	1:2:1144:U:C6	2.49	0.48
1:2:1333:G:H22	1:2:1346:C:N4	2.08	0.48
1:2:1790:G:O2'	1:2:1791:C:P	2.71	0.48
1:2:121:G:O2'	1:2:122:G:H5'	2.13	0.48
1:2:485:G:O2'	1:2:486:U:OP1	2.28	0.48
1:2:1160:C:H2'	1:2:1161:U:C6	2.48	0.48
1:2:1358:C:H1'	1:2:1409:U:H3	1.78	0.48
1:2:1533:G:H2'	1:2:1534:A:H8	1.78	0.48
1:2:2828:C:H2'	1:2:2829:A:C8	2.48	0.48
1:2:74:G:H22	1:2:110:U:H3	1.62	0.48
1:2:1455:C:H2'	1:2:1456:C:H6	1.79	0.48
1:2:1549:C:C2'	1:2:1550:C:H5'	2.37	0.48
1:2:1672:A:C2	1:2:2032:G:H5''	2.48	0.48
1:2:1948:C:H2'	1:2:1949:A:N7	2.28	0.48
1:2:2786:G:H2'	1:2:2787:A:C8	2.49	0.48
1:2:1:G:H2'	1:2:2:G:C8	2.49	0.48
1:2:508:G:H22	1:2:516:G:H1	1.61	0.48
1:2:608:G:H2'	1:2:609:U:C6	2.48	0.48
1:2:616:U:H2'	1:2:617:U:C5'	2.41	0.48
1:2:1257:U:H2'	1:2:1258:G:H8	1.77	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1322:G:N2	1:2:1627:C:H5'	2.26	0.48
1:2:1326:U:O3'	1:2:1345:G:H5'	2.13	0.48
1:2:1655:C:H5''	1:2:2689:C:O2'	2.12	0.48
1:2:2627:G:H2'	1:2:2628:C:O4'	2.13	0.48
1:2:2793:G:H2'	1:2:2794:G:C8	2.48	0.48
1:2:648:A:H4'	1:2:649:G:O4'	2.13	0.48
1:2:704:G:H2'	1:2:705:C:C6	2.49	0.48
1:2:964:A:H2'	1:2:965:G:C8	2.48	0.48
1:2:1251:G:H2'	1:2:1252:C:O4'	2.14	0.48
1:2:1252:C:H2'	1:2:1253:C:H5''	1.96	0.48
1:2:1386:A:H2'	1:2:1387:G:O4'	2.14	0.48
1:2:1490:U:H3'	1:2:1490:U:OP1	2.13	0.48
1:2:2228:U:H4'	1:2:2254:C:N4	2.29	0.48
1:2:2459:C:H2'	1:2:2460:G:H5'	1.94	0.48
1:2:2560:G:H2'	1:2:2560:G:N3	2.28	0.48
1:2:2838:U:H2'	1:2:2839:G:C8	2.48	0.48
1:2:139:A:H2'	1:2:140:G:C8	2.48	0.48
1:2:333:A:H1'	1:2:351:A:C8	2.48	0.48
1:2:534:U:H2'	1:2:535:U:C6	2.49	0.48
1:2:852:U:H2'	1:2:853:C:C6	2.48	0.48
1:2:1728:A:H2'	1:2:1729:C:C6	2.49	0.48
1:2:1785:A:H2'	1:2:1786:C:C6	2.49	0.48
1:2:1828:C:H42	1:2:1887:G:H1	1.60	0.48
1:2:1917:C:H2'	1:2:1918:G:H8	1.78	0.48
1:2:2225:G:O2'	1:2:2226:A:H5'	2.13	0.48
1:2:37:C:H4'	1:2:463:C:OP1	2.14	0.48
1:2:121:G:H1	1:2:126:C:N4	2.12	0.48
1:2:128:C:C2'	1:2:129:A:H5''	2.44	0.48
1:2:516:G:O2'	1:2:517:A:O4'	2.31	0.48
1:2:532:A:H2'	1:2:533:C:C6	2.49	0.48
1:2:592:G:H2'	1:2:593:C:C6	2.49	0.48
1:2:1196:G:H2'	1:2:1197:U:O4'	2.14	0.48
1:2:1308:C:H2'	1:2:1309:G:H8	1.77	0.48
1:2:1743:C:H2'	1:2:1744:G:C8	2.48	0.48
1:2:2048:C:H2'	1:2:2049:C:H6	1.79	0.48
1:2:2265:A:OP1	1:2:2266:A:H5'	2.14	0.48
1:2:2312:A:H1'	1:2:2314:A:C5	2.49	0.48
1:2:2476:A:O2'	1:2:2477:C:C6	2.63	0.48
1:2:24:G:N2	1:2:526:C:O2	2.46	0.47
1:2:429:C:H2'	1:2:430:C:C6	2.48	0.47
1:2:637:G:H5'	1:2:668:A:O2'	2.13	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:811:G:H2'	1:2:812:G:C8	2.49	0.47
1:2:1168:G:H2'	1:2:1169:C:C6	2.48	0.47
1:2:1283:C:H4'	1:2:1284:G:C8	2.49	0.47
1:2:1460:G:O2'	1:2:1461:C:H5'	2.14	0.47
1:2:1699:A:H2'	1:2:1700:C:C6	2.49	0.47
1:2:1949:A:H1'	1:2:2572:U:H5'	1.95	0.47
1:2:2491:C:C2'	1:2:2492:G:H5''	2.44	0.47
1:2:2559:U:O2'	1:2:2560:G:H5'	2.14	0.47
1:2:2641:A:H2'	1:2:2642:G:O4'	2.14	0.47
1:2:246:C:C2	1:2:373:A:H4'	2.49	0.47
1:2:581:A:C2	1:2:582:G:H1'	2.49	0.47
1:2:618:A:H2'	1:2:619:A:H5'	1.95	0.47
1:2:631:G:H4'	1:2:632:A:C2	2.50	0.47
1:2:990:A:H3'	1:2:991:A:H5''	1.95	0.47
1:2:1446:U:H3	1:2:1577:G:H1	1.60	0.47
1:2:1500:U:H2'	1:2:1501:C:C6	2.49	0.47
1:2:1768:U:H2'	1:2:1769:U:C6	2.49	0.47
1:2:1939:U:H1'	1:2:2531:U:OP1	2.14	0.47
1:2:2054:A:H2'	1:2:2055:G:H8	1.78	0.47
1:2:2083:G:H2'	1:2:2084:G:C8	2.49	0.47
1:2:2122:G:N3	1:2:2122:G:C2'	2.75	0.47
1:2:2422:C:H2'	1:2:2423:G:C8	2.50	0.47
1:2:2618:A:C2	1:2:2619:G:H1'	2.49	0.47
1:2:2621:G:H2'	1:2:2622:G:C8	2.47	0.47
1:2:2790:C:H2'	1:2:2791:C:C6	2.48	0.47
1:2:2:G:H2'	1:2:3:U:C6	2.50	0.47
1:2:247:A:C8	1:2:373:A:H5'	2.49	0.47
1:2:367:G:H3'	1:2:368:A:H5''	1.95	0.47
1:2:571:U:H2'	1:2:581:A:H1'	1.95	0.47
1:2:777:A:N6	1:2:1766:U:N3	2.61	0.47
1:2:804:C:O2	1:2:806:A:O2'	2.33	0.47
1:2:1438:G:H2'	1:2:1439:G:C5'	2.34	0.47
1:2:1498:G:O2'	1:2:1499:A:H5'	2.14	0.47
1:2:1625:A:N3	1:2:1632:A:O4'	2.47	0.47
1:2:1685:A:C2'	1:2:1686:A:OP2	2.62	0.47
1:2:1888:C:H2'	1:2:1913:G:C6	2.50	0.47
1:2:2324:G:O2'	1:2:2325:A:P	2.72	0.47
1:2:2484:G:O2'	1:2:2485:U:H5'	2.14	0.47
1:2:2712:G:H5'	1:2:2713:A:C8	2.49	0.47
1:2:118:U:H1'	1:2:143:A:N9	2.29	0.47
1:2:465:C:H4'	1:2:468:A:N6	2.29	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:696:U:H2'	1:2:697:G:C8	2.49	0.47
1:2:1030:U:O2'	1:2:1031:C:H5'	2.14	0.47
1:2:1355:A:O2'	1:2:1356:G:P	2.71	0.47
1:2:2552:C:OP1	1:2:2553:G:H5''	2.15	0.47
1:2:2563:U:O2'	1:2:2564:U:H5'	2.14	0.47
1:2:2633:A:H2	1:2:2644:A:H5''	1.78	0.47
1:2:28:A:N6	1:2:522:G:H1'	2.29	0.47
1:2:40:U:H2'	1:2:41:G:C8	2.49	0.47
1:2:73:A:O2'	1:2:74:G:P	2.72	0.47
1:2:736:G:H2'	1:2:737:C:O4'	2.14	0.47
1:2:1205:G:H2'	1:2:1206:G:H8	1.78	0.47
1:2:1471:G:O2'	1:2:1472:C:H5'	2.15	0.47
1:2:1722:G:H2'	1:2:1723:U:C6	2.49	0.47
1:2:1846:A:H2'	1:2:1847:G:O4'	2.15	0.47
1:2:2245:A:H4'	1:2:2246:A:O5'	2.15	0.47
1:2:2262:C:C5	1:2:2368:G:H2'	2.50	0.47
1:2:2769:C:H2'	1:2:2770:A:H5'	1.95	0.47
1:2:544:U:H2'	1:2:545:C:C6	2.49	0.47
1:2:725:C:H2'	1:2:726:G:C8	2.50	0.47
1:2:1004:A:H2'	1:2:1005:U:H5''	1.96	0.47
1:2:1349:A:H2'	1:2:1350:G:C8	2.49	0.47
1:2:1357:U:HO2'	1:2:1397:A:H2'	1.78	0.47
1:2:1776:A:H4'	1:2:1965:U:O2'	2.15	0.47
1:2:1880:G:H2'	1:2:1881:U:H6	1.79	0.47
1:2:2032:G:H2'	1:2:2033:C:C6	2.50	0.47
1:2:2299:A:C1'	1:2:2312:A:H62	2.18	0.47
1:2:181:A:H4'	1:2:182:G:OP1	2.14	0.47
1:2:298:C:H42	1:2:364:G:H1	1.62	0.47
1:2:387:A:H5''	1:2:436:A:C8	2.48	0.47
1:2:643:A:N3	1:2:2382:C:H1'	2.30	0.47
1:2:940:G:C3'	1:2:941:U:H5''	2.26	0.47
1:2:1106:A:H2'	1:2:1107:A:C8	2.49	0.47
1:2:1183:C:N4	1:2:1191:G:N1	2.60	0.47
1:2:1388:C:H2'	1:2:1389:C:C6	2.50	0.47
1:2:1501:C:H2'	1:2:1502:G:O4'	2.14	0.47
1:2:1605:A:O2'	1:2:1606:C:H5'	2.15	0.47
1:2:1609:G:O2'	1:2:1610:A:H5'	2.15	0.47
1:2:1724:C:H2'	1:2:1725:C:C6	2.50	0.47
1:2:1747:G:H1'	1:2:1749:G:N3	2.30	0.47
1:2:1782:A:H2'	1:2:1783:G:O5'	2.15	0.47
1:2:1783:G:H2'	1:2:1784:C:O4'	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1807:A:C2'	1:2:1808:C:H4'	2.41	0.47
1:2:1861:G:H2'	1:2:1862:C:C6	2.50	0.47
1:2:2034:A:N3	1:2:2035:G:N7	2.62	0.47
1:2:2042:A:N3	1:2:2482:A:N6	2.63	0.47
1:2:2230:G:H2'	1:2:2231:G:H8	1.79	0.47
1:2:2270:U:O2'	1:2:2353:G:H1'	2.15	0.47
1:2:2325:A:H4'	1:2:2362:G:O4'	2.15	0.47
1:2:2408:G:OP1	1:2:2408:G:O4'	2.32	0.47
1:2:2520:A:H4'	1:2:2744:A:N1	2.30	0.47
1:2:2616:U:H1'	1:2:2762:G:N2	2.27	0.47
1:2:2680:U:H3'	1:2:2681:A:C5'	2.44	0.47
1:2:2800:C:H2'	1:2:2801:A:O4'	2.15	0.47
1:2:2863:U:H2'	1:2:2864:C:C6	2.49	0.47
1:2:238:G:H4'	1:2:618:A:C2	2.50	0.47
1:2:367:G:C2'	1:2:368:A:H5''	2.44	0.47
1:2:403:A:H4'	1:2:404:A:O5'	2.14	0.47
1:2:1110:G:H2'	1:2:1111:C:C6	2.49	0.47
1:2:1151:U:H5''	1:2:1153:A:P	2.55	0.47
1:2:1314:A:N6	1:2:1316:G:C5	2.83	0.47
1:2:1818:G:H2'	1:2:1819:U:C6	2.50	0.47
1:2:1871:G:N3	1:2:1871:G:H2'	2.28	0.47
1:2:2370:G:C2'	1:2:2371:A:OP2	2.61	0.47
1:2:2786:G:H2'	1:2:2787:A:H8	1.80	0.47
1:2:66:U:H2'	1:2:67:G:H8	1.79	0.47
1:2:198:A:O2'	1:2:199:A:P	2.73	0.47
1:2:298:C:H2'	1:2:299:C:O4'	2.14	0.47
1:2:352:G:C2'	1:2:353:G:H5'	2.45	0.47
1:2:421:G:H2'	1:2:422:C:C6	2.50	0.47
1:2:1039:A:H2'	1:2:1040:A:C8	2.49	0.47
1:2:1246:G:O2'	1:2:1247:U:H5'	2.14	0.47
1:2:1258:G:H2'	1:2:1259:A:C8	2.50	0.47
1:2:1398:G:H2'	1:2:1399:C:O4'	2.15	0.47
1:2:1452:U:H5'	1:2:1532:A:O2'	2.13	0.47
1:2:1944:C:H2'	1:2:1945:C:O4'	2.14	0.47
1:2:1975:G:H1'	1:2:1977:C:C5	2.50	0.47
1:2:2048:C:H2'	1:2:2049:C:C6	2.50	0.47
1:2:2705:A:N6	1:2:2707:G:H1'	2.30	0.47
1:2:2812:A:H2'	1:2:2813:G:H8	1.79	0.47
1:2:39:C:H2'	1:2:40:U:C6	2.49	0.47
1:2:172:A:OP2	1:2:173:A:O2'	2.33	0.47
1:2:328:A:H2'	1:2:329:C:H6	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:577:U:H5'	1:2:956:A:N6	2.29	0.47
1:2:715:U:H3	1:2:743:A:N6	2.10	0.47
1:2:797:A:C5	1:2:805:G:H1'	2.50	0.47
1:2:840:U:H5'	1:2:841:G:O5'	2.15	0.47
1:2:885:A:H2'	1:2:886:A:C8	2.47	0.47
1:2:1161:U:H2'	1:2:1162:A:H8	1.80	0.47
1:2:1482:U:H2'	1:2:1483:G:H8	1.79	0.47
1:2:2058:U:H1'	1:2:2576:G:N2	2.24	0.47
1:2:2379:G:C2	1:2:2380:U:H1'	2.50	0.47
1:2:2500:C:H2'	1:2:2501:U:C6	2.50	0.47
1:2:93:A:H2'	1:2:94:C:C6	2.50	0.46
1:2:1321:A:H2'	1:2:1322:G:O4'	2.15	0.46
1:2:1416:A:O2'	1:2:1417:C:H5'	2.14	0.46
1:2:1557:G:H2'	1:2:1558:C:C6	2.50	0.46
1:2:1821:A:H3'	1:2:1822:C:C6	2.50	0.46
1:2:2280:A:H2'	1:2:2281:C:C6	2.50	0.46
1:2:2447:G:N2	1:2:2461:G:OP2	2.47	0.46
1:2:2605:C:O2'	1:2:2606:G:H5'	2.15	0.46
1:2:117:A:O5'	1:2:118:U:H5	1.98	0.46
1:2:162:C:H2'	1:2:163:A:H8	1.79	0.46
1:2:356:A:H2'	1:2:357:A:C8	2.50	0.46
1:2:550:C:H2'	1:2:551:A:H8	1.80	0.46
1:2:653:G:H21	1:2:657:A:N6	2.14	0.46
1:2:1086:C:C2'	1:2:1087:C:H5''	2.45	0.46
1:2:1325:U:H2'	1:2:1326:U:OP2	2.15	0.46
1:2:1763:G:H2'	1:2:1764:A:H4'	1.98	0.46
1:2:1811:A:H1'	1:2:1813:A:C5	2.50	0.46
1:2:1821:A:H3'	1:2:1822:C:H6	1.80	0.46
1:2:2817:A:H2'	1:2:2818:G:C8	2.51	0.46
1:2:2844:G:H2'	1:2:2845:C:O4'	2.15	0.46
1:2:310:A:N6	1:2:311:A:N6	2.63	0.46
1:2:632:A:H2'	1:2:633:G:O4'	2.15	0.46
1:2:1087:C:H2'	1:2:1088:A:C8	2.51	0.46
1:2:1326:U:O2'	1:2:1345:G:C4'	2.64	0.46
1:2:2312:A:H1'	1:2:2314:A:C6	2.49	0.46
1:2:2342:U:H2'	1:2:2343:C:C6	2.49	0.46
1:2:2686:C:H2'	1:2:2687:G:C8	2.50	0.46
1:2:83:A:O3'	1:2:84:G:O4'	2.33	0.46
1:2:144:U:H2'	1:2:145:C:C6	2.50	0.46
1:2:470:U:H2'	1:2:471:A:H8	1.81	0.46
1:2:714:G:O2'	1:2:715:U:H5'	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:857:U:C2'	1:2:858:G:H5'	2.46	0.46
1:2:1161:U:H2'	1:2:1162:A:C8	2.50	0.46
1:2:1452:U:C5'	1:2:1533:G:H5'	2.46	0.46
1:2:1686:A:N3	1:2:1686:A:C2'	2.77	0.46
1:2:1820:G:O2'	1:2:1821:A:P	2.74	0.46
1:2:2044:G:C8	1:2:2480:C:O2'	2.68	0.46
1:2:2074:U:H3'	1:2:2075:U:C5'	2.44	0.46
1:2:2340:C:H2'	1:2:2341:G:H5'	1.97	0.46
1:2:2370:G:H2'	1:2:2371:A:OP2	2.15	0.46
1:2:2644:A:H2'	1:2:2645:C:C6	2.51	0.46
1:2:225:G:N3	1:2:2410:U:H4'	2.30	0.46
1:2:681:A:C2'	1:2:683:A:H62	2.28	0.46
1:2:988:G:O2'	1:2:989:G:H5'	2.16	0.46
1:2:1316:G:H1'	1:2:1658:A:N1	2.31	0.46
1:2:1698:C:H2'	1:2:1753:A:H2'	1.98	0.46
1:2:2406:C:O2'	1:2:2408:G:N2	2.49	0.46
1:2:129:A:N6	1:2:142:U:H3	2.12	0.46
1:2:558:G:H3'	1:2:558:G:OP2	2.15	0.46
1:2:1041:G:O2'	1:2:2445:C:H4'	2.16	0.46
1:2:1223:G:N3	1:2:1225:G:N3	2.63	0.46
1:2:1294:G:N1	1:2:1302:C:N4	2.62	0.46
1:2:1413:U:H2'	1:2:1414:G:H8	1.80	0.46
1:2:1414:G:H2'	1:2:1415:C:O4'	2.16	0.46
1:2:1466:C:H2'	1:2:1467:U:C4'	2.46	0.46
1:2:1541:G:N2	1:2:1562:G:N2	2.64	0.46
1:2:2225:G:N2	1:2:2237:C:H42	2.13	0.46
1:2:2270:U:H2'	1:2:2271:C:C6	2.51	0.46
1:2:2356:A:O2'	1:2:2357:A:H5'	2.16	0.46
1:2:2702:G:H2'	1:2:2703:C:C6	2.51	0.46
1:2:2721:A:H2'	1:2:2722:C:O4'	2.15	0.46
1:2:551:A:H2'	1:2:552:C:C6	2.51	0.46
1:2:643:A:H2'	1:2:644:A:C8	2.51	0.46
1:2:926:C:H2'	1:2:927:C:H5'	1.97	0.46
1:2:926:C:OP2	1:2:927:C:H5	1.99	0.46
1:2:1008:G:H2'	1:2:1009:C:C6	2.50	0.46
1:2:1124:U:H5''	1:2:2730:A:H5'	1.98	0.46
1:2:1182:U:O2	1:2:1192:A:N1	2.48	0.46
1:2:1302:C:H5''	1:2:1664:G:N2	2.30	0.46
1:2:1621:C:H2'	1:2:1622:G:O4'	2.16	0.46
1:2:1849:G:H21	1:2:1868:A:H62	1.64	0.46
1:2:2526:U:C2	1:2:2545:A:N6	2.83	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:460:U:O2'	1:2:461:A:P	2.73	0.46
1:2:558:G:H2'	1:2:558:G:N3	2.31	0.46
1:2:1139:A:H1'	1:2:2495:G:HO2'	1.77	0.46
1:2:1602:G:O3'	1:2:1603:A:H8	1.99	0.46
1:2:1685:A:H2'	1:2:1686:A:OP2	2.16	0.46
1:2:1758:C:H2'	1:2:1759:A:C8	2.50	0.46
1:2:1778:U:H4'	1:2:2568:A:H4'	1.97	0.46
1:2:2045:A:C2	2:2:2881:RAP:H41	2.51	0.46
1:2:2096:U:C4	1:2:2104:G:H4'	2.51	0.46
1:2:2697:G:H2'	1:2:2698:G:O4'	2.16	0.46
1:2:2810:A:H4'	1:2:2811:G:H8	1.75	0.46
1:2:216:U:H5''	1:2:601:A:H62	1.79	0.46
1:2:1587:A:H2'	1:2:1588:A:C8	2.51	0.46
1:2:2005:U:H4'	1:2:2017:U:O2	2.16	0.46
1:2:2015:G:O2'	1:2:2016:A:OP1	2.34	0.46
1:2:2274:C:C2'	1:2:2275:U:H5'	2.42	0.46
1:2:2305:C:N3	1:2:2367:A:N6	2.64	0.46
1:2:2370:G:N2	1:2:2403:C:C5	2.84	0.46
1:2:2692:A:OP1	1:2:2692:A:O4'	2.34	0.46
1:2:117:A:O5'	1:2:118:U:C5	2.69	0.46
1:2:319:G:O4'	1:2:511:A:O4'	2.34	0.46
1:2:405:C:H2'	1:2:406:G:C8	2.50	0.46
1:2:781:G:H2'	1:2:782:U:C6	2.51	0.46
1:2:935:C:H2'	1:2:936:A:H8	1.81	0.46
1:2:1033:G:C2'	1:2:1034:U:OP2	2.64	0.46
1:2:1166:A:C2'	1:2:1167:A:H5''	2.45	0.46
1:2:1347:C:H2'	1:2:1348:C:C6	2.51	0.46
1:2:1375:C:H42	1:2:1382:G:H1	1.64	0.46
1:2:1462:C:O2'	1:2:1560:A:H1'	2.15	0.46
1:2:1468:A:H2'	1:2:1468:A:N3	2.30	0.46
1:2:1985:G:H2'	1:2:1986:G:H8	1.80	0.46
1:2:2215:C:H2'	1:2:2216:G:O4'	2.16	0.46
1:2:2522:G:H2'	1:2:2523:G:C8	2.52	0.46
1:2:2569:A:H2'	1:2:2570:C:C6	2.50	0.46
1:2:2604:G:H2'	1:2:2605:C:O4'	2.15	0.46
1:2:2874:A:H2'	1:2:2875:C:C6	2.51	0.46
1:2:393:U:H2'	1:2:394:U:C6	2.51	0.45
1:2:1655:C:H2'	1:2:1656:U:O4'	2.15	0.45
1:2:1878:C:H2'	1:2:1879:G:C8	2.51	0.45
1:2:2056:C:O2'	1:2:2057:U:H5'	2.16	0.45
1:2:2058:U:H5'	1:2:2576:G:H1'	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:2485:U:O2'	1:2:2486:C:H5'	2.16	0.45
1:2:2495:G:H2'	1:2:2496:C:C6	2.51	0.45
1:2:2819:G:H2'	1:2:2820:C:O4'	2.15	0.45
1:2:198:A:H4'	1:2:199:A:O4'	2.15	0.45
1:2:567:G:H2'	1:2:568:G:C8	2.50	0.45
1:2:612:G:O3'	1:2:613:A:H4'	2.16	0.45
1:2:618:A:C2'	1:2:619:A:H5'	2.46	0.45
1:2:658:G:H2'	1:2:659:G:C8	2.50	0.45
1:2:757:U:H5''	1:2:1675:C:H5''	1.97	0.45
1:2:1280:U:H3	1:2:1996:A:H62	1.63	0.45
1:2:1456:C:H42	1:2:1565:G:H22	1.65	0.45
1:2:1775:A:HO2'	1:2:1776:A:P	2.34	0.45
1:2:1939:U:H2'	1:2:1940:C:O4'	2.16	0.45
1:2:2805:G:H2'	1:2:2806:G:O4'	2.15	0.45
1:2:215:G:H2'	1:2:216:U:O4'	2.16	0.45
1:2:403:A:OP1	1:2:404:A:OP1	2.35	0.45
1:2:1437:A:H2'	1:2:1438:G:H5'	1.97	0.45
1:2:1782:A:OP2	1:2:1820:G:N2	2.49	0.45
1:2:1962:C:O2'	1:2:1963:G:H5'	2.16	0.45
1:2:2013:A:N3	1:2:2478:C:H4'	2.31	0.45
1:2:2289:A:H2'	1:2:2290:A:H5'	1.99	0.45
1:2:2342:U:H2'	1:2:2343:C:H6	1.80	0.45
1:2:2524:G:O2'	1:2:2525:U:H5'	2.16	0.45
1:2:2633:A:N6	1:2:2646:C:N4	2.64	0.45
1:2:73:A:H2'	1:2:73:A:N3	2.32	0.45
1:2:690:A:H4'	1:2:2053:G:O2'	2.17	0.45
1:2:697:G:C6	1:2:807:A:N6	2.85	0.45
1:2:787:A:H8	1:2:787:A:O5'	1.99	0.45
1:2:799:C:H2'	1:2:800:U:C6	2.51	0.45
1:2:1210:C:H2'	1:2:1211:G:C8	2.52	0.45
1:2:1294:G:H22	1:2:1299:A:N6	2.13	0.45
1:2:1689:U:H4'	1:2:2532:G:O3'	2.15	0.45
1:2:1820:G:H4'	1:2:1821:A:OP1	2.16	0.45
1:2:1886:G:H2'	1:2:1887:G:C8	2.50	0.45
1:2:2166:G:C2'	1:2:2167:A:H5'	2.46	0.45
1:2:2210:C:H2'	1:2:2211:U:O4'	2.16	0.45
1:2:2438:A:H2'	1:2:2438:A:N3	2.30	0.45
1:2:2449:G:H2'	1:2:2450:A:C8	2.51	0.45
1:2:2459:C:H2'	1:2:2460:G:O4'	2.16	0.45
1:2:44:G:H22	1:2:445:A:H61	1.65	0.45
1:2:300:C:N4	1:2:363:G:N2	2.64	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:473:C:H2'	1:2:474:G:H8	1.82	0.45
1:2:491:A:H2	1:2:509:U:O2	1.99	0.45
1:2:931:G:O2'	1:2:932:G:H5'	2.16	0.45
1:2:1043:A:H2'	1:2:1044:U:H5'	1.97	0.45
1:2:1215:A:O2'	1:2:1216:G:H5'	2.16	0.45
1:2:1312:G:O2'	1:2:1314:A:H2	1.99	0.45
1:2:1316:G:H5'	1:2:1659:G:H21	1.81	0.45
1:2:1333:G:N2	1:2:1344:C:N4	2.64	0.45
1:2:1399:C:H2'	1:2:1400:A:H8	1.81	0.45
1:2:1420:A:H2'	1:2:1421:U:C6	2.52	0.45
1:2:1495:G:H2'	1:2:1496:G:C8	2.44	0.45
1:2:1502:G:O2'	1:2:1503:G:H5'	2.17	0.45
1:2:1522:C:H2'	1:2:1523:A:O4'	2.16	0.45
1:2:1569:A:O2'	1:2:1570:C:H5	1.99	0.45
1:2:2036:G:O2'	1:2:2037:A:H5'	2.16	0.45
1:2:2406:C:H4'	1:2:2408:G:C2	2.50	0.45
1:2:2498:U:H5''	1:2:2499:C:OP1	2.17	0.45
1:2:2785:A:H2'	1:2:2786:G:O4'	2.16	0.45
1:2:82:G:O2'	1:2:83:A:H5'	2.16	0.45
1:2:84:G:O2'	1:2:85:C:H5'	2.16	0.45
1:2:89:A:O2'	1:2:90:G:C8	2.69	0.45
1:2:119:G:H2'	1:2:120:G:H8	1.80	0.45
1:2:222:G:H2'	1:2:223:C:C6	2.52	0.45
1:2:1166:A:C3'	1:2:1167:A:H5''	2.46	0.45
1:2:1444:C:H2'	1:2:1445:A:H8	1.78	0.45
1:2:1715:A:O2'	1:2:1717:A:H4'	2.16	0.45
1:2:1975:G:H1'	1:2:1977:C:N4	2.27	0.45
1:2:2019:C:OP2	1:2:2020:G:OP2	2.35	0.45
1:2:2258:G:O2'	1:2:2306:A:H4'	2.17	0.45
1:2:2541:U:O2'	1:2:2542:U:H5'	2.16	0.45
1:2:2633:A:H5'	1:2:2635:U:O4'	2.16	0.45
1:2:2691:C:C5	1:2:2693:U:H5''	2.51	0.45
1:2:192:G:O2'	1:2:193:A:P	2.75	0.45
1:2:657:A:O2'	1:2:658:G:H5'	2.16	0.45
1:2:806:A:O2'	1:2:807:A:H5''	2.17	0.45
1:2:984:A:H1'	1:2:1202:U:C6	2.52	0.45
1:2:1132:C:H2'	1:2:1133:G:C8	2.52	0.45
1:2:1187:A:H2'	1:2:1188:A:H8	1.82	0.45
1:2:1298:G:N2	1:2:1341:G:H5''	2.31	0.45
1:2:1336:G:C3'	1:2:1337:G:H5''	2.46	0.45
1:2:1632:A:O2'	1:2:1633:C:OP1	2.27	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1764:A:H2'	1:2:1765:C:H5'	1.98	0.45
1:2:1856:U:H5'	1:2:2389:G:N3	2.32	0.45
1:2:2124:C:H2'	1:2:2125:C:C6	2.52	0.45
1:2:2572:U:H2'	1:2:2573:C:C6	2.52	0.45
1:2:2772:U:H3	1:2:2780:A:N6	2.15	0.45
1:2:2782:G:H3'	1:2:2783:U:C5'	2.46	0.45
1:2:70:A:OP1	1:2:111:G:H4'	2.16	0.45
1:2:171:G:H2'	1:2:172:A:O4'	2.17	0.45
1:2:423:G:H1	1:2:430:C:H42	1.64	0.45
1:2:539:A:H2'	1:2:540:G:OP2	2.16	0.45
1:2:558:G:H5''	1:2:559:C:C5	2.52	0.45
1:2:608:G:H2'	1:2:609:U:H6	1.82	0.45
1:2:661:C:H2'	1:2:662:G:C8	2.52	0.45
1:2:676:G:H2'	1:2:677:G:O4'	2.17	0.45
1:2:1470:G:O6	1:2:2684:A:H2	2.00	0.45
1:2:1699:A:H5'	1:2:1753:A:O2'	2.17	0.45
1:2:1899:A:C2'	1:2:1946:U:H1'	2.47	0.45
1:2:2239:C:H2'	1:2:2240:C:H6	1.80	0.45
1:2:2297:G:O2'	1:2:2300:G:N7	2.50	0.45
1:2:2469:G:H4'	1:2:2470:U:C5	2.52	0.45
1:2:2705:A:H2'	1:2:2706:U:O5'	2.17	0.45
1:2:520:C:O5'	1:2:520:C:H6	2.00	0.45
1:2:709:A:O2'	1:2:1639:U:H5''	2.17	0.45
1:2:991:A:H2'	1:2:992:A:O5'	2.17	0.45
1:2:1115:C:O5'	1:2:1115:C:H6	2.00	0.45
1:2:1474:A:H2'	1:2:1475:U:C5'	2.47	0.45
1:2:1773:C:C5	2:2:2881:RAP:H442	2.52	0.45
1:2:1853:C:H2'	1:2:1854:G:C8	2.52	0.45
1:2:1886:G:O2'	1:2:1887:G:H5'	2.16	0.45
1:2:2343:C:O2'	1:2:2344:G:H5'	2.17	0.45
1:2:2488:G:H2'	1:2:2489:C:C6	2.51	0.45
1:2:2605:C:H2'	1:2:2606:G:C8	2.52	0.45
1:2:34:U:H5'	1:2:35:G:OP2	2.17	0.45
1:2:1166:A:H2'	1:2:1167:A:H5''	1.99	0.45
1:2:2326:C:H2'	1:2:2327:U:C6	2.52	0.45
1:2:2355:A:H2'	1:2:2356:A:O4'	2.17	0.45
1:2:2425:G:C2'	1:2:2426:G:H4'	2.47	0.45
1:2:2432:A:H4'	1:2:2551:A:O2'	2.17	0.45
1:2:2578:G:H2'	1:2:2579:A:O4'	2.17	0.45
1:2:2667:C:N3	1:2:2700:U:OP2	2.50	0.45
1:2:238:G:H4'	1:2:618:A:N1	2.32	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:391:C:N3	1:2:410:A:N1	2.65	0.44
1:2:781:G:H5'	1:2:1638:G:C5'	2.47	0.44
1:2:997:C:H2'	1:2:998:C:C6	2.52	0.44
1:2:1313:U:H4'	1:2:1314:A:O4'	2.16	0.44
1:2:1821:A:H5''	1:2:1822:C:H5	1.82	0.44
1:2:1856:U:H2'	1:2:1857:G:H8	1.81	0.44
1:2:2206:C:H2'	1:2:2207:G:O4'	2.17	0.44
1:2:2352:A:H2'	1:2:2353:G:H8	1.82	0.44
1:2:2442:C:H2'	1:2:2443:C:H6	1.81	0.44
1:2:2675:U:H2'	1:2:2676:G:H8	1.82	0.44
1:2:2861:A:H2'	1:2:2862:G:C8	2.53	0.44
1:2:689:A:H61	1:2:815:A:H61	1.66	0.44
1:2:1180:A:O2'	1:2:1181:C:H5'	2.17	0.44
1:2:1194:U:O2'	1:2:1195:U:OP1	2.35	0.44
1:2:1281:A:H2'	1:2:1282:A:O4'	2.17	0.44
1:2:2299:A:H5'	1:2:2300:G:C8	2.52	0.44
1:2:574:C:H2'	1:2:575:U:O4'	2.18	0.44
1:2:727:U:HO2'	1:2:729:A:H62	1.65	0.44
1:2:982:C:H2'	1:2:983:G:O4'	2.17	0.44
1:2:1052:C:H2'	1:2:1053:G:C8	2.52	0.44
1:2:1337:G:H1'	1:2:1632:A:N6	2.32	0.44
1:2:1519:G:O2'	1:2:1520:G:H5'	2.18	0.44
1:2:1790:G:H1'	1:2:1791:C:H5	1.80	0.44
1:2:1819:U:H2'	1:2:1820:G:O4'	2.16	0.44
1:2:2020:G:H2'	1:2:2021:G:C8	2.52	0.44
1:2:2033:C:H2'	1:2:2034:A:O4'	2.17	0.44
1:2:2396:C:O2'	1:2:2397:A:H5'	2.17	0.44
1:2:172:A:H3'	1:2:173:A:H4'	2.00	0.44
1:2:772:G:H2'	1:2:773:G:H8	1.82	0.44
1:2:789:G:O2'	1:2:790:A:OP2	2.31	0.44
1:2:1008:G:H2'	1:2:1009:C:H6	1.83	0.44
1:2:1033:G:H22	1:2:1150:C:H2'	1.81	0.44
1:2:1054:C:H2'	1:2:1055:A:H5'	1.98	0.44
1:2:1196:G:C2'	1:2:1197:U:H5'	2.47	0.44
1:2:1365:U:H1'	1:2:1586:A:C2	2.52	0.44
1:2:1681:A:N1	1:2:2706:U:H1'	2.31	0.44
1:2:2013:A:H2'	1:2:2014:A:OP2	2.18	0.44
1:2:2105:U:H2'	1:2:2106:G:H8	1.82	0.44
1:2:2241:U:O2'	1:2:2307:A:H1'	2.18	0.44
1:2:2617:G:N2	1:2:2756:A:O4'	2.49	0.44
1:2:70:A:O2'	1:2:71:A:C5'	2.64	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:115:G:H4'	1:2:124:A:C2	2.52	0.44
1:2:213:C:H2'	1:2:214:C:C6	2.52	0.44
1:2:248:A:HO3'	1:2:373:A:P	2.40	0.44
1:2:547:U:H2'	1:2:548:G:C8	2.53	0.44
1:2:665:A:H3'	1:2:666:U:C5'	2.31	0.44
1:2:688:A:H1'	1:2:2423:G:H5'	1.99	0.44
1:2:728:G:H2'	1:2:729:A:H5'	2.00	0.44
1:2:831:G:H5'	1:2:852:U:OP1	2.17	0.44
1:2:1227:A:H5'	1:2:1252:C:H4'	2.00	0.44
1:2:1294:G:H1	1:2:1302:C:H42	1.62	0.44
1:2:1364:C:O2'	1:2:1587:A:H1'	2.18	0.44
1:2:1381:G:O2'	1:2:1382:G:H5'	2.17	0.44
1:2:1476:G:H3'	1:2:1476:G:OP2	2.17	0.44
1:2:1573:G:N7	1:2:1574:A:C6	2.86	0.44
1:2:1865:C:C2'	1:2:1866:G:H5'	2.47	0.44
1:2:2021:G:H2'	1:2:2022:C:C6	2.52	0.44
1:2:2492:G:H2'	1:2:2493:U:O4'	2.17	0.44
1:2:2691:C:H5''	1:2:2694:G:C5'	2.47	0.44
1:2:2713:A:H2'	1:2:2714:A:C8	2.51	0.44
1:2:33:C:H2'	1:2:34:U:O5'	2.18	0.44
1:2:44:G:H2'	1:2:192:G:H2'	2.00	0.44
1:2:164:G:H21	1:2:1378:A:H2	1.66	0.44
1:2:170:U:H5'	1:2:815:A:H2	1.82	0.44
1:2:192:G:O2'	1:2:193:A:C5'	2.65	0.44
1:2:316:C:H2'	1:2:317:U:C6	2.53	0.44
1:2:320:A:N3	1:2:340:G:H2'	2.32	0.44
1:2:525:A:H2	1:2:526:C:C1'	2.31	0.44
1:2:605:G:H2'	1:2:606:A:H8	1.83	0.44
1:2:1357:U:C5'	1:2:1358:C:OP2	2.63	0.44
1:2:1370:U:H2'	1:2:1371:G:O4'	2.18	0.44
1:2:1432:G:O6	1:2:1594:U:H5''	2.18	0.44
1:2:1501:C:N4	1:2:1519:G:H22	2.11	0.44
1:2:1622:G:H4'	1:2:1624:A:C4	2.52	0.44
1:2:2310:G:H2'	1:2:2311:U:C6	2.52	0.44
1:2:2739:G:H2'	1:2:2740:C:C6	2.52	0.44
1:2:521:U:O3'	1:2:1248:G:H4'	2.18	0.44
1:2:881:U:H2'	1:2:882:C:C6	2.52	0.44
1:2:1323:G:N2	1:2:1326:U:H3	2.16	0.44
1:2:1778:U:H2'	1:2:1779:C:C6	2.53	0.44
1:2:1985:G:H2'	1:2:1986:G:C8	2.52	0.44
1:2:2029:G:O2'	1:2:2030:U:H5'	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:2139:G:N3	1:2:2139:G:C2'	2.80	0.44
1:2:2559:U:C2'	1:2:2560:G:H5'	2.47	0.44
1:2:599:A:H2'	1:2:600:G:C8	2.52	0.44
1:2:841:G:C2	1:2:2226:A:H4'	2.53	0.44
1:2:1033:G:H1'	1:2:1034:U:H5	1.81	0.44
1:2:1345:G:H5''	1:2:1346:C:P	2.57	0.44
1:2:1427:G:C2'	1:2:1428:G:H5'	2.48	0.44
1:2:1443:G:H2'	1:2:1444:C:C6	2.53	0.44
1:2:1452:U:H4'	1:2:1532:A:O3'	2.18	0.44
1:2:1617:G:H2'	1:2:1618:U:C5'	2.35	0.44
1:2:1750:A:H1'	1:2:2690:A:C2	2.52	0.44
1:2:1769:U:H2'	1:2:1770:U:H5''	1.99	0.44
1:2:1972:G:H2'	1:2:1973:C:C6	2.53	0.44
1:2:2252:A:H2'	1:2:2253:A:C8	2.53	0.44
1:2:51:A:N7	1:2:117:A:N6	2.66	0.44
1:2:150:A:C2'	1:2:151:G:H5'	2.48	0.44
1:2:311:A:O4'	1:2:330:C:H4'	2.18	0.44
1:2:460:U:O4	1:2:592:G:H1'	2.18	0.44
1:2:539:A:C2'	1:2:540:G:OP2	2.66	0.44
1:2:540:G:H2'	1:2:541:C:H5'	1.99	0.44
1:2:648:A:H5'	1:2:649:G:O5'	2.18	0.44
1:2:701:U:O5'	1:2:701:U:H6	2.01	0.44
1:2:929:A:H5''	1:2:2247:A:H61	1.83	0.44
1:2:930:A:H2'	1:2:931:G:H5'	1.98	0.44
1:2:1202:U:H2'	1:2:1203:A:H8	1.82	0.44
1:2:1249:G:O2'	1:2:1250:A:O5'	2.35	0.44
1:2:1639:U:H2'	1:2:1640:C:H6	1.83	0.44
1:2:1775:A:H4'	1:2:1776:A:O5'	2.18	0.44
1:2:1878:C:H2'	1:2:1879:G:H8	1.83	0.44
1:2:1922:U:H1'	1:2:2570:C:O2'	2.18	0.44
1:2:2404:A:C4'	1:2:2405:A:O5'	2.58	0.44
1:2:2454:C:H42	1:2:2508:G:H22	1.66	0.44
1:2:2861:A:H2'	1:2:2862:G:H8	1.83	0.44
1:2:604:U:H2'	1:2:605:G:H8	1.81	0.43
1:2:865:A:H2'	1:2:866:U:C6	2.53	0.43
1:2:874:A:H2'	1:2:875:G:O4'	2.18	0.43
1:2:1302:C:H5''	1:2:1664:G:H22	1.81	0.43
1:2:1482:U:H2'	1:2:1483:G:C8	2.53	0.43
1:2:1502:G:H2'	1:2:1503:G:H8	1.83	0.43
1:2:1632:A:H4'	1:2:1633:C:OP1	2.18	0.43
1:2:1638:G:H2'	1:2:1639:U:C6	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1715:A:C3'	1:2:1716:G:H5''	2.47	0.43
1:2:1757:C:H1'	1:2:1970:G:N2	2.33	0.43
1:2:1964:A:H3'	1:2:1965:U:H5'	1.99	0.43
1:2:2201:G:H2'	1:2:2202:G:H8	1.83	0.43
1:2:2225:G:C2	1:2:2405:A:H1'	2.53	0.43
1:2:2301:A:H2'	1:2:2302:G:O4'	2.18	0.43
1:2:2491:C:H2'	1:2:2492:G:C4'	2.48	0.43
1:2:2560:G:H2'	1:2:2561:G:OP2	2.18	0.43
1:2:2586:G:O2'	1:2:2587:G:H5'	2.17	0.43
1:2:2668:U:O2'	1:2:2669:C:O5'	2.34	0.43
1:2:44:G:H22	1:2:445:A:N6	2.15	0.43
1:2:77:C:H42	1:2:106:G:H22	1.66	0.43
1:2:149:A:H2'	1:2:150:A:C8	2.52	0.43
1:2:845:U:H2'	1:2:846:A:C8	2.53	0.43
1:2:1279:G:H2'	1:2:1280:U:OP2	2.17	0.43
1:2:1333:G:C6	1:2:1342:U:H5'	2.54	0.43
1:2:1374:G:N2	1:2:1384:G:H1'	2.33	0.43
1:2:1643:A:H1'	1:2:1657:A:C2	2.53	0.43
1:2:1681:A:N6	1:2:1979:C:H42	2.17	0.43
1:2:1772:C:O2'	2:2:2881:RAP:C50	2.64	0.43
1:2:1927:U:H3'	1:2:1928:G:C5'	2.48	0.43
1:2:2508:G:H5''	1:2:2509:A:H5''	2.00	0.43
1:2:1004:A:H2'	1:2:1005:U:C5'	2.48	0.43
1:2:1750:A:H2'	1:2:1751:A:C8	2.52	0.43
1:2:2134:U:H2'	1:2:2135:C:C6	2.53	0.43
1:2:27:G:H22	1:2:522:G:C2'	2.31	0.43
1:2:109:A:C3'	1:2:110:U:H5''	2.48	0.43
1:2:411:C:H4'	1:2:2072:C:O2'	2.17	0.43
1:2:563:U:H2'	1:2:564:U:C6	2.54	0.43
1:2:707:U:H5''	1:2:1585:A:C4	2.54	0.43
1:2:831:G:O2'	1:2:851:C:H4'	2.18	0.43
1:2:839:U:OP1	1:2:2408:G:OP2	2.37	0.43
1:2:1094:C:H2'	1:2:1095:A:H3'	2.01	0.43
1:2:2315:A:O2'	1:2:2364:C:H5''	2.18	0.43
1:2:27:G:O5'	1:2:27:G:H8	2.01	0.43
1:2:128:C:H2'	1:2:129:A:C5'	2.48	0.43
1:2:353:G:H2'	1:2:354:C:C6	2.54	0.43
1:2:649:G:H2'	1:2:650:U:H6	1.84	0.43
1:2:657:A:C2'	1:2:658:G:H5'	2.49	0.43
1:2:813:A:C2'	1:2:814:G:OP2	2.65	0.43
1:2:1326:U:H4'	1:2:1346:C:OP1	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1333:G:O6	1:2:1342:U:H5'	2.18	0.43
1:2:1441:A:H4'	1:2:1442:C:C5	2.53	0.43
1:2:1779:C:H2'	1:2:1780:A:O4'	2.18	0.43
1:2:1947:G:H4'	1:2:1948:C:H5	1.79	0.43
1:2:2455:A:H2'	1:2:2455:A:N3	2.33	0.43
1:2:2767:C:H2'	1:2:2768:C:C6	2.53	0.43
1:2:2824:C:C2'	1:2:2825:A:OP2	2.67	0.43
1:2:469:G:H2'	1:2:470:U:OP2	2.18	0.43
1:2:931:G:N2	1:2:2247:A:H3'	2.24	0.43
1:2:1162:A:O2'	1:2:1163:C:H5'	2.18	0.43
1:2:1260:A:HO2'	1:2:1261:G:P	2.42	0.43
1:2:1870:U:O5'	1:2:1870:U:H6	2.01	0.43
1:2:1922:U:O2	1:2:1922:U:H2'	2.19	0.43
1:2:2014:A:N7	1:2:2477:C:O2	2.51	0.43
1:2:2496:C:C5	1:2:2521:A:N6	2.86	0.43
1:2:2547:C:H2'	1:2:2548:G:O4'	2.18	0.43
1:2:2717:G:H1	1:2:2747:C:H42	1.65	0.43
1:2:162:C:O4'	1:2:195:A:H4'	2.17	0.43
1:2:491:A:OP2	1:2:492:G:H5'	2.19	0.43
1:2:526:C:H2'	1:2:527:C:C6	2.54	0.43
1:2:693:A:H2'	1:2:694:G:C8	2.54	0.43
1:2:709:A:H61	1:2:779:U:H3	1.66	0.43
1:2:1496:G:H2'	1:2:1497:C:H5''	2.00	0.43
1:2:1908:C:H2'	1:2:1909:U:C4'	2.37	0.43
1:2:1936:A:H4'	1:2:2539:C:H5'	1.99	0.43
1:2:1981:A:O2'	1:2:1982:C:H5'	2.19	0.43
1:2:2207:G:H2'	1:2:2208:U:O4'	2.18	0.43
1:2:2625:U:H2'	1:2:2626:U:O4'	2.18	0.43
1:2:2676:G:H2'	1:2:2677:U:C6	2.53	0.43
1:2:2688:G:H2'	1:2:2689:C:H6	1.84	0.43
1:2:2713:A:H2'	1:2:2714:A:H8	1.84	0.43
1:2:2795:A:N3	1:2:2795:A:C2'	2.78	0.43
1:2:2822:U:H2'	1:2:2823:G:O4'	2.17	0.43
1:2:108:G:H2'	1:2:109:A:C8	2.54	0.43
1:2:119:G:H2'	1:2:120:G:C8	2.53	0.43
1:2:490:A:O2'	1:2:491:A:C5'	2.67	0.43
1:2:575:U:H4'	1:2:822:G:P	2.59	0.43
1:2:614:G:O2'	1:2:615:C:H5'	2.18	0.43
1:2:657:A:N3	1:2:657:A:H2'	2.34	0.43
1:2:690:A:H2'	1:2:691:C:H6	1.83	0.43
1:2:810:U:H2'	1:2:811:G:O4'	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:930:A:H3'	1:2:931:G:C8	2.54	0.43
1:2:1514:C:O4'	1:2:1593:C:H5'	2.18	0.43
1:2:2316:G:H8	1:2:2316:G:O5'	2.02	0.43
1:2:2437:G:O2'	1:2:2438:A:C8	2.68	0.43
1:2:2661:G:H2'	1:2:2662:C:H5'	2.00	0.43
1:2:2717:G:H2'	1:2:2718:A:C8	2.53	0.43
1:2:246:C:H2'	1:2:373:A:H5'	2.01	0.43
1:2:323:G:O2'	1:2:324:C:H5'	2.19	0.43
1:2:413:G:C2'	1:2:414:A:H5''	2.48	0.43
1:2:635:C:O2'	1:2:670:U:H5''	2.18	0.43
1:2:1125:G:O2'	1:2:1126:A:H5'	2.19	0.43
1:2:1217:U:H2'	1:2:1218:C:C6	2.52	0.43
1:2:1355:A:N3	1:2:1410:U:O4'	2.52	0.43
1:2:1912:G:N3	1:2:1912:G:C3'	2.81	0.43
1:2:2500:C:H4'	1:2:2544:A:C4'	2.49	0.43
1:2:2679:G:H2'	1:2:2680:U:C6	2.53	0.43
1:2:2780:A:H2'	1:2:2781:G:N7	2.34	0.43
1:2:537:C:O5'	1:2:2759:U:O2	2.37	0.43
1:2:757:U:H2'	1:2:758:G:O4'	2.19	0.43
1:2:876:A:H2'	1:2:877:G:C8	2.54	0.43
1:2:947:C:H2'	1:2:948:C:C6	2.54	0.43
1:2:1233:A:C2'	1:2:1234:C:OP1	2.67	0.43
1:2:1379:A:H2'	1:2:1380:C:O4'	2.18	0.43
1:2:1440:G:H3'	1:2:1441:A:C5'	2.47	0.43
1:2:1871:G:N3	1:2:1871:G:C2'	2.81	0.43
1:2:2371:A:N3	1:2:2371:A:C2'	2.80	0.43
1:2:2554:C:H2'	1:2:2557:G:O6	2.19	0.43
1:2:2597:G:H2'	1:2:2598:C:O4'	2.18	0.43
1:2:116:A:OP2	1:2:117:A:H8	2.02	0.42
1:2:403:A:H5''	1:2:404:A:H5'	2.01	0.42
1:2:430:C:H2'	1:2:431:G:C8	2.55	0.42
1:2:595:A:H62	1:2:1264:C:H42	1.65	0.42
1:2:1014:G:O2'	1:2:1015:U:H5'	2.19	0.42
1:2:1233:A:H2'	1:2:1234:C:OP1	2.20	0.42
1:2:1313:U:H4'	1:2:1314:A:O5'	2.18	0.42
1:2:1453:A:H2'	1:2:1454:U:H5'	2.01	0.42
1:2:1756:C:O2'	1:2:1757:C:H5'	2.19	0.42
1:2:1913:G:H2'	1:2:1914:U:OP2	2.19	0.42
1:2:1976:U:O2'	1:2:1977:C:H5'	2.19	0.42
1:2:2390:A:H2'	1:2:2391:A:H8	1.84	0.42
1:2:2429:A:H5''	1:2:2476:A:C6	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:2507:U:O2'	1:2:2508:G:H3'	2.19	0.42
1:2:197:G:C2	1:2:440:U:H2'	2.54	0.42
1:2:577:U:O3'	1:2:956:A:N6	2.52	0.42
1:2:761:G:OP1	1:2:2591:C:N4	2.50	0.42
1:2:824:U:H2'	1:2:825:C:H5'	2.01	0.42
1:2:843:G:H1'	1:2:2427:A:C2	2.54	0.42
1:2:867:G:H2'	1:2:868:U:C6	2.55	0.42
1:2:1222:G:H4'	1:2:1225:G:H4'	2.00	0.42
1:2:1407:G:H1	1:2:1411:C:C1'	2.31	0.42
1:2:1479:G:H2'	1:2:1480:G:C8	2.55	0.42
1:2:1973:C:H2'	1:2:1974:U:O4'	2.19	0.42
1:2:2178:U:H2'	1:2:2179:C:H6	1.84	0.42
1:2:2300:G:H3'	1:2:2300:G:N3	2.33	0.42
1:2:2512:A:H2'	1:2:2513:A:O4'	2.18	0.42
1:2:2695:C:H2'	1:2:2696:A:H8	1.83	0.42
1:2:2740:C:O2'	1:2:2741:G:H5'	2.19	0.42
1:2:2830:U:H2'	1:2:2831:A:H8	1.85	0.42
1:2:460:U:C4	1:2:592:G:H1'	2.54	0.42
1:2:460:U:C2'	1:2:461:A:OP1	2.67	0.42
1:2:468:A:H1'	1:2:470:U:C1'	2.48	0.42
1:2:522:G:C2'	1:2:523:A:OP2	2.67	0.42
1:2:597:U:H2'	1:2:598:U:H6	1.84	0.42
1:2:622:U:O2	1:2:626:A:N6	2.50	0.42
1:2:1243:G:H2'	1:2:1244:U:C6	2.54	0.42
1:2:1674:C:H2'	1:2:1675:C:C6	2.54	0.42
1:2:1720:G:H2'	1:2:1721:G:C8	2.54	0.42
1:2:1934:U:H2'	1:2:1936:A:OP2	2.18	0.42
1:2:2076:G:H1'	1:2:2181:A:H61	1.84	0.42
1:2:2493:U:H2'	1:2:2494:C:H6	1.83	0.42
1:2:2657:G:H2'	1:2:2658:A:O4'	2.19	0.42
1:2:2663:U:H3	1:2:2705:A:N6	2.14	0.42
1:2:2691:C:C3'	1:2:2692:A:H5''	2.48	0.42
1:2:2749:A:O2'	1:2:2750:G:H5'	2.19	0.42
1:2:2765:C:H2'	1:2:2766:U:O4'	2.18	0.42
1:2:2867:G:O2'	1:2:2868:G:O4'	2.37	0.42
1:2:73:A:H4'	1:2:74:G:C4'	2.50	0.42
1:2:80:A:O2'	1:2:81:C:H5'	2.20	0.42
1:2:2238:G:O4'	1:2:2406:C:H2'	2.19	0.42
1:2:2340:C:C2'	1:2:2341:G:H5'	2.49	0.42
1:2:2446:C:H2'	1:2:2447:G:O4'	2.20	0.42
1:2:2578:G:O2'	1:2:2579:A:H5'	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1313:U:O2'	1:2:1314:A:OP2	2.38	0.42
1:2:1708:C:O2'	1:2:1709:U:H5'	2.19	0.42
1:2:1712:G:N3	1:2:1712:G:C3'	2.81	0.42
1:2:1820:G:HO2'	1:2:1821:A:P	2.43	0.42
1:2:1879:G:H2'	1:2:1880:G:O4'	2.20	0.42
1:2:2022:C:H2'	1:2:2023:C:C6	2.54	0.42
1:2:2093:G:H2'	1:2:2094:C:O5'	2.20	0.42
1:2:2514:G:H2'	1:2:2515:G:H8	1.85	0.42
1:2:2522:G:O2'	1:2:2523:G:H5'	2.19	0.42
1:2:2770:A:H5'	1:2:2867:G:H21	1.83	0.42
1:2:313:U:H2'	1:2:314:G:C8	2.54	0.42
1:2:340:G:H5'	1:2:341:A:P	2.59	0.42
1:2:455:A:H4'	1:2:1214:C:O2'	2.20	0.42
1:2:834:A:H3'	1:2:957:G:C8	2.55	0.42
1:2:872:G:O2'	1:2:2247:A:H1'	2.19	0.42
1:2:1029:C:C3'	1:2:1030:U:H5''	2.50	0.42
1:2:1776:A:HO2'	1:2:1777:A:H8	1.67	0.42
1:2:2005:U:C2	1:2:2595:C:H1'	2.55	0.42
1:2:2498:U:H4'	1:2:2499:C:OP1	2.17	0.42
1:2:2526:U:H2'	1:2:2527:G:C8	2.54	0.42
1:2:2605:C:H2'	1:2:2606:G:H8	1.83	0.42
1:2:2716:G:H2'	1:2:2717:G:H8	1.84	0.42
1:2:2788:C:O2'	1:2:2789:U:H5'	2.18	0.42
1:2:2823:G:O2'	1:2:2824:C:O4'	2.35	0.42
1:2:34:U:C6	1:2:466:A:C2	3.07	0.42
1:2:68:C:O2'	1:2:69:G:H5'	2.19	0.42
1:2:70:A:H2'	1:2:71:A:OP2	2.20	0.42
1:2:242:A:O2'	1:2:243:G:O5'	2.37	0.42
1:2:433:G:N2	1:2:434:C:H1'	2.34	0.42
1:2:503:G:O2'	1:2:504:G:H5'	2.20	0.42
1:2:605:G:H2'	1:2:606:A:C8	2.55	0.42
1:2:694:G:H2'	1:2:695:G:C8	2.55	0.42
1:2:963:G:O2'	1:2:2246:A:H1'	2.18	0.42
1:2:983:G:OP2	1:2:985:G:N2	2.46	0.42
1:2:1343:C:H2'	1:2:1344:C:H6	1.85	0.42
1:2:1377:G:H21	1:2:1380:C:H5	1.67	0.42
1:2:1408:A:H2	1:2:1411:C:N3	2.18	0.42
1:2:1607:A:H2'	1:2:1608:U:C6	2.54	0.42
1:2:1784:C:H2'	1:2:1785:A:C8	2.54	0.42
1:2:1956:G:H2'	1:2:1957:C:O4'	2.20	0.42
1:2:2235:G:O2'	1:2:2236:U:H5'	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:2287:G:N3	1:2:2287:G:C2'	2.80	0.42
1:2:2324:G:O2'	1:2:2325:A:H5''	2.18	0.42
1:2:2435:C:O2'	1:2:2436:U:H5'	2.19	0.42
1:2:2705:A:C2'	1:2:2706:U:O5'	2.66	0.42
1:2:690:A:O2'	1:2:691:C:H5'	2.20	0.42
1:2:838:A:H4'	1:2:2407:G:N7	2.34	0.42
1:2:1545:G:H2'	1:2:1546:C:C6	2.55	0.42
1:2:1720:G:H2'	1:2:1721:G:H8	1.84	0.42
1:2:1773:C:C5	2:2:2881:RAP:C50	3.00	0.42
1:2:1911:A:H2'	1:2:1912:G:H5'	2.02	0.42
1:2:1984:A:H2'	1:2:1985:G:H8	1.83	0.42
1:2:2427:A:OP2	1:2:2478:C:OP1	2.38	0.42
1:2:2467:A:H2'	1:2:2468:G:H8	1.85	0.42
1:2:2524:G:H2'	1:2:2525:U:O4'	2.20	0.42
1:2:2610:G:H4'	1:2:2866:A:H5'	2.02	0.42
1:2:182:G:O2'	1:2:183:U:H5	2.03	0.42
1:2:403:A:H4'	1:2:404:A:H8	1.84	0.42
1:2:446:C:H2'	1:2:447:U:O4'	2.20	0.42
1:2:574:C:O2'	1:2:575:U:H5'	2.20	0.42
1:2:622:U:H3	1:2:627:A:H2	1.68	0.42
1:2:746:G:N2	1:2:747:A:H62	2.18	0.42
1:2:952:A:H1'	1:2:1204:G:O2'	2.20	0.42
1:2:1033:G:O2'	1:2:1034:U:P	2.78	0.42
1:2:1302:C:O2'	1:2:1343:C:H4'	2.19	0.42
1:2:1313:U:O2'	1:2:1314:A:O5'	2.36	0.42
1:2:1417:C:H2'	1:2:1418:C:C6	2.55	0.42
1:2:2007:G:O2'	1:2:2008:C:H5'	2.19	0.42
1:2:2875:C:H2'	1:2:2876:C:O4'	2.20	0.42
1:2:447:U:O2'	1:2:448:C:H6	2.03	0.42
1:2:958:G:H2'	1:2:959:C:C6	2.55	0.42
1:2:973:U:H2'	1:2:974:U:H6	1.85	0.42
1:2:1496:G:H1	1:2:1527:G:N2	2.17	0.42
1:2:1730:G:H2'	1:2:1731:C:O4'	2.20	0.42
1:2:1833:U:H2'	1:2:1834:G:H8	1.83	0.42
1:2:1870:U:N3	1:2:1871:G:N7	2.68	0.42
1:2:2038:C:H4'	1:2:2039:G:H5''	2.02	0.42
1:2:2481:G:H5''	1:2:2482:A:H5''	2.01	0.42
1:2:2589:C:O2	1:2:2589:C:C2'	2.65	0.42
1:2:431:G:H2'	1:2:432:C:C6	2.54	0.41
1:2:665:A:C3'	1:2:666:U:H5''	2.30	0.41
1:2:1181:C:C2'	1:2:1182:U:H4'	2.43	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1341:G:H2'	1:2:1343:C:C4	2.54	0.41
1:2:1436:G:O2'	1:2:1515:U:H1'	2.19	0.41
1:2:1526:U:H2'	1:2:1527:G:O4'	2.20	0.41
1:2:1544:A:H2'	1:2:1545:G:C8	2.55	0.41
1:2:1762:C:H2'	1:2:1763:G:H8	1.82	0.41
1:2:2246:A:H3'	1:2:2246:A:N3	2.35	0.41
1:2:2434:G:H2'	1:2:2435:C:C6	2.55	0.41
1:2:2498:U:C4'	1:2:2499:C:OP1	2.68	0.41
1:2:2770:A:H3'	1:2:2770:A:N3	2.35	0.41
1:2:522:G:H2'	1:2:523:A:OP2	2.19	0.41
1:2:592:G:C6	1:2:593:C:N4	2.88	0.41
1:2:914:C:H2'	1:2:915:C:C5	2.54	0.41
1:2:1249:G:HO2'	1:2:1250:A:P	2.42	0.41
1:2:1442:C:N4	1:2:1585:A:C8	2.88	0.41
1:2:1782:A:C2'	1:2:1783:G:O5'	2.68	0.41
1:2:2039:G:H2'	1:2:2039:G:N3	2.36	0.41
1:2:2228:U:H4'	1:2:2254:C:H41	1.85	0.41
1:2:2293:G:H2'	1:2:2294:U:C6	2.54	0.41
1:2:2396:C:H2'	1:2:2397:A:O4'	2.20	0.41
1:2:2555:G:H5'	1:2:2557:G:N7	2.36	0.41
1:2:2672:U:H2'	1:2:2673:G:C8	2.50	0.41
1:2:2725:C:H2'	1:2:2726:U:C6	2.55	0.41
1:2:236:C:H2'	1:2:237:G:H8	1.84	0.41
1:2:457:C:C2'	1:2:458:G:H5'	2.50	0.41
1:2:490:A:C6	1:2:492:G:H1'	2.55	0.41
1:2:857:U:H2'	1:2:858:G:H5'	2.02	0.41
1:2:920:G:H2'	1:2:921:A:C5'	2.50	0.41
1:2:935:C:O2'	1:2:936:A:H5'	2.20	0.41
1:2:1451:C:H2'	1:2:1452:U:H6	1.85	0.41
1:2:1763:G:N2	1:2:1765:C:H5''	2.35	0.41
1:2:2058:U:C1'	1:2:2576:G:H21	2.26	0.41
1:2:2067:U:H2'	1:2:2068:C:C6	2.55	0.41
1:2:490:A:H1'	1:2:491:A:C5	2.55	0.41
1:2:528:G:H2'	1:2:529:U:C6	2.55	0.41
1:2:651:C:N4	1:2:652:C:H41	2.19	0.41
1:2:1141:U:O5'	1:2:1141:U:H6	2.03	0.41
1:2:1455:C:H4'	1:2:1644:G:OP1	2.20	0.41
1:2:2437:G:C2'	1:2:2438:A:OP2	2.68	0.41
1:2:2675:U:H2'	1:2:2676:G:C8	2.55	0.41
1:2:41:G:O2'	1:2:42:G:H5'	2.20	0.41
1:2:459:A:C5	1:2:466:A:N7	2.89	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:584:A:H4'	1:2:2479:U:H4'	2.03	0.41
1:2:757:U:O2'	1:2:758:G:H5'	2.21	0.41
1:2:767:G:H2'	1:2:768:U:C6	2.55	0.41
1:2:838:A:H2'	1:2:839:U:C6	2.54	0.41
1:2:871:U:O2	1:2:2248:A:H5'	2.20	0.41
1:2:1255:A:H2'	1:2:1256:C:C6	2.55	0.41
1:2:1325:U:O2'	1:2:1326:U:P	2.78	0.41
1:2:1415:C:H2'	1:2:1416:A:H8	1.84	0.41
1:2:1513:U:OP2	1:2:1514:C:OP2	2.38	0.41
1:2:1684:G:N2	1:2:1977:C:N4	2.69	0.41
1:2:1722:G:H2'	1:2:1723:U:H6	1.84	0.41
1:2:192:G:C4'	1:2:193:A:H4'	2.51	0.41
1:2:469:G:O2'	1:2:470:U:P	2.78	0.41
1:2:513:A:H1'	1:2:516:G:OP2	2.20	0.41
1:2:540:G:O2'	1:2:541:C:H5'	2.19	0.41
1:2:755:C:O2'	1:2:756:C:H5'	2.21	0.41
1:2:800:U:H5''	1:2:801:A:H5'	2.03	0.41
1:2:1188:A:H62	1:2:1189:G:N2	2.18	0.41
1:2:1280:U:O2'	1:2:1281:A:H5'	2.20	0.41
1:2:1496:G:H2'	1:2:1497:C:C5'	2.50	0.41
1:2:1501:C:O2'	1:2:1502:G:H5'	2.20	0.41
1:2:1688:U:N3	1:2:1691:G:OP2	2.44	0.41
1:2:1689:U:C3'	1:2:1690:U:H5''	2.51	0.41
1:2:1829:C:H2'	1:2:1882:G:O6	2.21	0.41
1:2:1833:U:H2'	1:2:1834:G:C8	2.56	0.41
1:2:1897:C:H2'	1:2:1898:U:C6	2.55	0.41
1:2:1984:A:O4'	1:2:2668:U:H5	2.04	0.41
1:2:2074:U:H3'	1:2:2075:U:H5''	2.01	0.41
1:2:2125:C:O2	1:2:2132:G:H5''	2.20	0.41
1:2:2705:A:N3	1:2:2706:U:C2	2.88	0.41
1:2:2713:A:O2'	1:2:2714:A:H5'	2.20	0.41
1:2:2824:C:H1'	1:2:2843:A:C4	2.55	0.41
1:2:2825:A:H2'	1:2:2826:C:C6	2.56	0.41
1:2:58:C:N4	1:2:73:A:H62	2.19	0.41
1:2:79:G:H2'	1:2:80:A:C8	2.56	0.41
1:2:241:C:O2'	1:2:242:A:H5''	2.20	0.41
1:2:247:A:OP2	1:2:372:U:H5'	2.20	0.41
1:2:482:A:C2'	1:2:483:A:H5'	2.51	0.41
1:2:742:G:H3'	1:2:742:G:N3	2.35	0.41
1:2:1251:G:O2'	1:2:1252:C:H5'	2.21	0.41
1:2:1302:C:OP2	1:2:1302:C:H6	2.04	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1316:G:H2'	1:2:1317:G:O4'	2.21	0.41
1:2:1458:A:H5''	1:2:1459:U:OP2	2.21	0.41
1:2:1517:C:H2'	1:2:1518:C:C6	2.55	0.41
1:2:1655:C:H2'	1:2:1656:U:C6	2.55	0.41
1:2:2710:C:O2'	1:2:2711:G:H5'	2.21	0.41
1:2:2824:C:O2'	1:2:2825:A:O5'	2.39	0.41
1:2:128:C:C3'	1:2:129:A:H5''	2.51	0.41
1:2:521:U:C4'	1:2:1248:G:H4'	2.47	0.41
1:2:710:C:H2'	1:2:711:C:C6	2.55	0.41
1:2:788:G:N2	1:2:800:U:H2'	2.35	0.41
1:2:1033:G:O2'	1:2:1034:U:H6	2.02	0.41
1:2:1178:C:O2	1:2:1196:G:N2	2.54	0.41
1:2:1277:G:C6	1:2:1278:A:N6	2.88	0.41
1:2:1310:C:P	1:2:2689:C:H4'	2.61	0.41
1:2:1408:A:O4'	1:2:1410:U:O4	2.38	0.41
1:2:1700:C:H2'	1:2:1701:C:C6	2.56	0.41
1:2:1787:U:H2'	1:2:1788:C:H6	1.85	0.41
1:2:1935:A:C6	1:2:1936:A:N1	2.89	0.41
1:2:1937:G:N3	1:2:2530:C:H5'	2.35	0.41
1:2:2093:G:HO2'	1:2:2094:C:P	2.44	0.41
1:2:2660:C:C2'	1:2:2661:G:OP2	2.69	0.41
1:2:75:C:H2'	1:2:76:C:H5''	2.03	0.41
1:2:104:C:C2'	1:2:105:G:C5'	2.99	0.41
1:2:184:A:H2'	1:2:185:C:O4'	2.21	0.41
1:2:306:G:H2'	1:2:307:C:O4'	2.21	0.41
1:2:436:A:C3'	1:2:437:G:H5''	2.51	0.41
1:2:573:C:H2'	1:2:574:C:O4'	2.20	0.41
1:2:638:A:O2'	1:2:639:G:H5'	2.21	0.41
1:2:690:A:H2'	1:2:691:C:C6	2.55	0.41
1:2:720:A:C6	1:2:721:C:N4	2.89	0.41
1:2:773:G:H2'	1:2:774:A:O4'	2.21	0.41
1:2:807:A:H2'	1:2:808:C:O5'	2.21	0.41
1:2:847:C:H2'	1:2:848:A:C8	2.56	0.41
1:2:1047:G:H2'	1:2:1048:U:C6	2.56	0.41
1:2:1050:G:H1	1:2:1127:C:N4	2.18	0.41
1:2:1069:G:N2	1:2:1091:C:N4	2.68	0.41
1:2:1300:A:H61	1:2:1339:U:H3	1.69	0.41
1:2:1305:C:H2'	1:2:1306:U:O4'	2.21	0.41
1:2:1427:G:H2'	1:2:1428:G:H5'	2.03	0.41
1:2:1458:A:C3'	1:2:1459:U:C5'	2.94	0.41
1:2:1626:A:HO2'	1:2:1627:C:P	2.43	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1663:C:C5'	1:2:1664:G:H5''	2.24	0.41
1:2:1676:U:H2'	1:2:1677:C:C6	2.56	0.41
1:2:1764:A:OP1	1:2:1820:G:H3'	2.20	0.41
1:2:2204:A:H5''	1:2:2205:C:H5'	2.03	0.41
1:2:2548:G:C2'	1:2:2549:G:H5''	2.50	0.41
1:2:2660:C:H2'	1:2:2661:G:OP2	2.21	0.41
1:2:2680:U:O5'	1:2:2681:A:H5''	2.21	0.41
1:2:2723:C:OP2	1:2:2735:C:N4	2.54	0.41
1:2:2736:U:HO2'	1:2:2737:A:H5'	1.85	0.41
1:2:2863:U:H2'	1:2:2864:C:H6	1.86	0.41
1:2:189:A:O2'	1:2:190:A:H5'	2.21	0.41
1:2:548:G:O2'	1:2:549:G:H5'	2.21	0.41
1:2:573:C:H1'	1:2:1266:G:H22	1.86	0.41
1:2:721:C:H42	1:2:736:G:N2	2.14	0.41
1:2:789:G:N3	1:2:806:A:N6	2.69	0.41
1:2:1151:U:H4'	1:2:1153:A:OP1	2.21	0.41
1:2:1336:G:C2	1:2:1346:C:H1'	2.56	0.41
1:2:1488:G:H1	1:2:1534:A:H61	1.69	0.41
1:2:1496:G:H1	1:2:1527:G:H22	1.68	0.41
1:2:1563:U:H2'	1:2:1564:U:C5	2.57	0.41
1:2:1579:G:H2'	1:2:1580:C:C6	2.55	0.41
1:2:2010:G:H2'	1:2:2011:U:C6	2.56	0.41
1:2:2084:G:HO2'	1:2:2085:G:H8	1.62	0.41
1:2:2308:A:N1	1:2:2365:U:O4	2.54	0.41
1:2:2466:G:H2'	1:2:2467:A:H8	1.83	0.41
1:2:2633:A:C5'	1:2:2634:G:OP1	2.61	0.41
1:2:215:G:O2'	1:2:617:U:H1'	2.20	0.40
1:2:248:A:OP2	1:2:373:A:OP1	2.39	0.40
1:2:462:G:H2'	1:2:463:C:C5'	2.31	0.40
1:2:813:A:O2'	1:2:814:G:H3'	2.21	0.40
1:2:877:G:H2'	1:2:878:C:H6	1.84	0.40
1:2:986:A:H2'	1:2:987:G:O4'	2.20	0.40
1:2:1218:C:H2'	1:2:1219:C:H6	1.85	0.40
1:2:1311:C:H5'	1:2:1315:A:N6	2.37	0.40
1:2:1697:U:O2	1:2:1755:G:H4'	2.21	0.40
1:2:1744:G:N2	1:2:1746:A:H3'	2.36	0.40
1:2:1845:A:N6	1:2:1871:G:O2'	2.54	0.40
1:2:1991:C:H2'	1:2:1992:G:C8	2.55	0.40
1:2:2010:G:O2'	1:2:2011:U:H5'	2.21	0.40
1:2:2511:G:N2	1:2:2642:G:H1'	2.35	0.40
1:2:2691:C:H41	1:2:2693:U:H6	1.67	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:2876:C:H2'	1:2:2877:A:C8	2.56	0.40
1:2:14:A:N7	1:2:15:G:H1'	2.35	0.40
1:2:425:A:H2'	1:2:426:C:O4'	2.21	0.40
1:2:839:U:H2'	1:2:841:G:O4'	2.21	0.40
1:2:959:C:H5''	1:2:972:C:O2'	2.21	0.40
1:2:1258:G:H2'	1:2:1259:A:H8	1.85	0.40
1:2:1565:G:H2'	1:2:1566:G:H8	1.86	0.40
1:2:1583:A:H4'	1:2:1584:G:C4	2.56	0.40
1:2:1705:U:O2'	1:2:1717:A:N7	2.52	0.40
1:2:1941:C:O2'	1:2:1942:G:H5'	2.20	0.40
1:2:1996:A:H2'	1:2:1997:A:C8	2.56	0.40
1:2:2026:C:H42	1:2:2604:G:H1	1.68	0.40
1:2:2062:U:H2'	1:2:2063:A:O4'	2.21	0.40
1:2:2420:C:H2'	1:2:2421:C:C6	2.56	0.40
1:2:2482:A:O5'	1:2:2483:U:P	2.79	0.40
1:2:2573:C:N4	1:2:2574:G:O6	2.55	0.40
1:2:216:U:H5''	1:2:601:A:N6	2.36	0.40
1:2:551:A:O2'	1:2:552:C:H5'	2.22	0.40
1:2:1293:A:H2'	1:2:1294:G:C8	2.56	0.40
1:2:1849:G:N2	1:2:1868:A:H62	2.19	0.40
1:2:2398:U:H2'	1:2:2399:C:C6	2.56	0.40
1:2:2548:G:C2'	1:2:2549:G:C5'	3.00	0.40
1:2:2598:C:H2'	1:2:2599:U:C6	2.56	0.40
1:2:2652:G:H2'	1:2:2653:A:C8	2.56	0.40
1:2:28:A:H1'	1:2:523:A:C2	2.56	0.40
1:2:70:A:P	1:2:111:G:H4'	2.62	0.40
1:2:73:A:H4'	1:2:74:G:H4'	2.03	0.40
1:2:180:C:H5''	1:2:181:A:OP2	2.22	0.40
1:2:248:A:O5'	1:2:373:A:OP1	2.40	0.40
1:2:491:A:H2'	1:2:491:A:N3	2.36	0.40
1:2:683:A:H5''	1:2:684:C:OP1	2.21	0.40
1:2:813:A:C1'	1:2:815:A:O4'	2.69	0.40
1:2:964:A:H61	1:2:976:C:H42	1.66	0.40
1:2:1087:C:O2'	1:2:1088:A:H5'	2.22	0.40
1:2:1268:U:H5'	1:2:1269:G:C5'	2.39	0.40
1:2:1272:G:H2'	1:2:1273:G:C8	2.56	0.40
1:2:1356:G:OP1	1:2:1357:U:OP2	2.39	0.40
1:2:1428:G:H2'	1:2:1602:G:H21	1.85	0.40
1:2:2010:G:H2'	1:2:2011:U:H6	1.86	0.40
1:2:2018:G:O2'	1:2:2019:C:P	2.79	0.40
1:2:2060:A:H3'	1:2:2060:A:OP2	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:2178:U:H2'	1:2:2179:C:C6	2.57	0.40
1:2:2695:C:H2'	1:2:2696:A:C8	2.55	0.40
1:2:79:G:H2'	1:2:80:A:H8	1.86	0.40
1:2:414:A:H2'	1:2:415:A:C8	2.57	0.40
1:2:504:G:O2'	1:2:505:G:H5'	2.21	0.40
1:2:862:A:H2'	1:2:863:C:C6	2.57	0.40
1:2:1096:A:H2'	1:2:1097:A:O4'	2.22	0.40
1:2:1302:C:OP2	1:2:1302:C:C6	2.75	0.40
1:2:1358:C:C4	1:2:1359:G:N7	2.90	0.40
1:2:1443:G:H2'	1:2:1444:C:H6	1.86	0.40
1:2:1495:G:O2'	1:2:1496:G:OP1	2.37	0.40
1:2:1966:C:H4'	1:2:2585:C:H4'	2.02	0.40
1:2:2065:A:H2'	1:2:2066:G:O4'	2.21	0.40
1:2:2077:G:N1	1:2:2179:C:H1'	2.35	0.40
1:2:2109:A:N3	1:2:2109:A:C2'	2.83	0.40
1:2:2299:A:H5'	1:2:2300:G:N7	2.36	0.40
1:2:2674:C:H2'	1:2:2675:U:C5	2.56	0.40
1:2:2692:A:H5'	1:2:2693:U:C5'	2.50	0.40
1:2:2830:U:H2'	1:2:2831:A:C8	2.56	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

There are no protein molecules in this entry.

5.3.2 Protein sidechains [i](#)

There are no protein molecules in this entry.

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	2	2757/2880 (95%)	529 (19%)	65 (2%)

All (529) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	2	14	A
1	2	35	G
1	2	45	C
1	2	48	A
1	2	49	U
1	2	59	G
1	2	70	A
1	2	71	A
1	2	72	A
1	2	73	A
1	2	74	G
1	2	76	C
1	2	83	A
1	2	84	G
1	2	87	G
1	2	89	A
1	2	90	G
1	2	91	A
1	2	99	U
1	2	100	G
1	2	105	G
1	2	110	U
1	2	117	A
1	2	118	U
1	2	119	G
1	2	123	A
1	2	124	A
1	2	126	C
1	2	129	A
1	2	148	C
1	2	155	G
1	2	158	A
1	2	173	A
1	2	174	A
1	2	182	G
1	2	193	A
1	2	199	A
1	2	200	A
1	2	205	A
1	2	206	U
1	2	218	A
1	2	219	G
1	2	225	G

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Mol	Chain	Res	Type
1	2	226	C
1	2	227	G
1	2	229	G
1	2	242	A
1	2	243	G
1	2	246	C
1	2	248	A
1	2	293	U
1	2	305	A
1	2	319	G
1	2	322	A
1	2	334	G
1	2	335	A
1	2	340	G
1	2	341	A
1	2	342	G
1	2	343	A
1	2	358	C
1	2	359	G
1	2	363	G
1	2	364	G
1	2	368	A
1	2	369	C
1	2	371	G
1	2	372	U
1	2	373	A
1	2	388	G
1	2	393	U
1	2	399	G
1	2	403	A
1	2	404	A
1	2	408	U
1	2	412	U
1	2	414	A
1	2	418	C
1	2	424	G
1	2	437	G
1	2	438	G
1	2	441	A
1	2	442	A
1	2	455	A
1	2	456	C

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Mol	Chain	Res	Type
1	2	459	A
1	2	461	A
1	2	463	C
1	2	466	A
1	2	469	G
1	2	470	U
1	2	484	G
1	2	486	U
1	2	491	A
1	2	492	G
1	2	514	G
1	2	515	A
1	2	518	A
1	2	519	C
1	2	537	C
1	2	539	A
1	2	541	C
1	2	542	A
1	2	545	C
1	2	554	U
1	2	556	A
1	2	558	G
1	2	572	G
1	2	577	U
1	2	583	C
1	2	584	A
1	2	601	A
1	2	613	A
1	2	617	U
1	2	624	A
1	2	627	A
1	2	632	A
1	2	638	A
1	2	648	A
1	2	652	C
1	2	654	A
1	2	656	U
1	2	665	A
1	2	666	U
1	2	667	U
1	2	668	A
1	2	669	G

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Mol	Chain	Res	Type
1	2	684	C
1	2	699	G
1	2	700	C
1	2	742	G
1	2	743	A
1	2	760	U
1	2	761	G
1	2	775	U
1	2	778	G
1	2	789	G
1	2	790	A
1	2	795	A
1	2	796	A
1	2	797	A
1	2	798	G
1	2	803	C
1	2	807	A
1	2	808	C
1	2	813	A
1	2	814	G
1	2	818	G
1	2	819	C
1	2	825	C
1	2	832	A
1	2	840	U
1	2	841	G
1	2	844	G
1	2	859	U
1	2	873	U
1	2	891	A
1	2	919	U
1	2	921	A
1	2	922	A
1	2	926	C
1	2	930	A
1	2	931	G
1	2	941	U
1	2	943	U
1	2	944	A
1	2	952	A
1	2	956	A
1	2	957	G

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Mol	Chain	Res	Type
1	2	969	U
1	2	970	A
1	2	972	C
1	2	973	U
1	2	984	A
1	2	985	G
1	2	988	G
1	2	992	A
1	2	994	A
1	2	996	C
1	2	1005	U
1	2	1006	C
1	2	1007	A
1	2	1019	U
1	2	1023	U
1	2	1024	G
1	2	1030	U
1	2	1032	A
1	2	1033	G
1	2	1034	U
1	2	1036	G
1	2	1037	U
1	2	1044	U
1	2	1055	A
1	2	1056	U
1	2	1057	A
1	2	1067	G
1	2	1073	G
1	2	1074	G
1	2	1081	A
1	2	1082	G
1	2	1084	A
1	2	1087	C
1	2	1090	C
1	2	1094	C
1	2	1095	A
1	2	1102	G
1	2	1108	U
1	2	1112	U
1	2	1137	A
1	2	1138	A
1	2	1139	A

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Mol	Chain	Res	Type
1	2	1142	G
1	2	1145	C
1	2	1146	G
1	2	1152	C
1	2	1153	A
1	2	1154	A
1	2	1155	G
1	2	1167	A
1	2	1168	G
1	2	1182	U
1	2	1183	C
1	2	1185	C
1	2	1186	G
1	2	1195	U
1	2	1199	U
1	2	1200	G
1	2	1224	A
1	2	1225	G
1	2	1233	A
1	2	1234	C
1	2	1250	A
1	2	1253	C
1	2	1261	G
1	2	1262	U
1	2	1264	C
1	2	1268	U
1	2	1269	G
1	2	1278	A
1	2	1279	G
1	2	1280	U
1	2	1284	G
1	2	1285	A
1	2	1288	A
1	2	1289	A
1	2	1302	C
1	2	1305	C
1	2	1314	A
1	2	1324	G
1	2	1326	U
1	2	1327	C
1	2	1334	A
1	2	1337	G

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Mol	Chain	Res	Type
1	2	1338	G
1	2	1342	U
1	2	1343	C
1	2	1346	C
1	2	1354	A
1	2	1355	A
1	2	1356	G
1	2	1358	C
1	2	1359	G
1	2	1391	A
1	2	1392	U
1	2	1397	A
1	2	1398	G
1	2	1411	C
1	2	1429	A
1	2	1433	A
1	2	1438	G
1	2	1441	A
1	2	1442	C
1	2	1443	G
1	2	1459	U
1	2	1468	A
1	2	1469	U
1	2	1470	G
1	2	1473	U
1	2	1475	U
1	2	1476	G
1	2	1482	U
1	2	1489	C
1	2	1496	G
1	2	1497	C
1	2	1505	U
1	2	1506	C
1	2	1508	G
1	2	1510	A
1	2	1514	C
1	2	1524	C
1	2	1526	U
1	2	1550	C
1	2	1551	U
1	2	1552	C
1	2	1571	G

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Mol	Chain	Res	Type
1	2	1573	G
1	2	1574	A
1	2	1583	A
1	2	1585	A
1	2	1601	U
1	2	1618	U
1	2	1623	C
1	2	1624	A
1	2	1625	A
1	2	1626	A
1	2	1627	C
1	2	1632	A
1	2	1633	C
1	2	1635	G
1	2	1648	C
1	2	1652	G
1	2	1657	A
1	2	1664	G
1	2	1665	C
1	2	1670	G
1	2	1685	A
1	2	1686	A
1	2	1690	U
1	2	1691	G
1	2	1711	C
1	2	1712	G
1	2	1715	A
1	2	1716	G
1	2	1717	A
1	2	1724	C
1	2	1732	U
1	2	1748	U
1	2	1749	G
1	2	1750	A
1	2	1755	G
1	2	1764	A
1	2	1770	U
1	2	1771	A
1	2	1772	C
1	2	1773	C
1	2	1774	A
1	2	1776	A

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Mol	Chain	Res	Type
1	2	1778	U
1	2	1783	G
1	2	1791	C
1	2	1792	C
1	2	1801	C
1	2	1802	A
1	2	1807	A
1	2	1808	C
1	2	1812	U
1	2	1821	A
1	2	1827	G
1	2	1831	G
1	2	1840	A
1	2	1863	U
1	2	1867	A
1	2	1889	G
1	2	1909	U
1	2	1913	G
1	2	1919	A
1	2	1920	A
1	2	1922	U
1	2	1924	C
1	2	1926	U
1	2	1927	U
1	2	1938	U
1	2	1939	U
1	2	1946	U
1	2	1948	C
1	2	1950	C
1	2	1952	A
1	2	1954	A
1	2	1955	G
1	2	1956	G
1	2	1964	A
1	2	1975	G
1	2	1976	U
1	2	1979	C
1	2	2004	U
1	2	2005	U
1	2	2006	G
1	2	2013	A
1	2	2014	A

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Mol	Chain	Res	Type
1	2	2015	G
1	2	2016	A
1	2	2019	C
1	2	2025	A
1	2	2026	C
1	2	2038	C
1	2	2039	G
1	2	2044	G
1	2	2050	G
1	2	2051	U
1	2	2052	G
1	2	2060	A
1	2	2075	U
1	2	2076	G
1	2	2082	C
1	2	2094	C
1	2	2095	G
1	2	2096	U
1	2	2097	A
1	2	2104	G
1	2	2109	A
1	2	2118	A
1	2	2137	G
1	2	2139	G
1	2	2140	G
1	2	2159	A
1	2	2162	C
1	2	2165	A
1	2	2168	A
1	2	2189	A
1	2	2190	A
1	2	2191	A
1	2	2192	U
1	2	2195	C
1	2	2199	C
1	2	2205	C
1	2	2218	G
1	2	2225	G
1	2	2229	G
1	2	2242	C
1	2	2245	A
1	2	2246	A

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Mol	Chain	Res	Type
1	2	2247	A
1	2	2255	G
1	2	2262	C
1	2	2265	A
1	2	2268	G
1	2	2284	U
1	2	2285	U
1	2	2286	G
1	2	2287	G
1	2	2288	A
1	2	2298	U
1	2	2300	G
1	2	2301	A
1	2	2306	A
1	2	2312	A
1	2	2313	G
1	2	2314	A
1	2	2315	A
1	2	2325	A
1	2	2326	C
1	2	2358	C
1	2	2362	G
1	2	2364	C
1	2	2371	A
1	2	2386	G
1	2	2390	A
1	2	2396	C
1	2	2402	U
1	2	2405	A
1	2	2406	C
1	2	2407	G
1	2	2408	G
1	2	2419	C
1	2	2420	C
1	2	2426	G
1	2	2427	A
1	2	2428	U
1	2	2429	A
1	2	2438	A
1	2	2455	A
1	2	2470	U
1	2	2477	C

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Mol	Chain	Res	Type
1	2	2480	C
1	2	2481	G
1	2	2482	A
1	2	2483	U
1	2	2484	G
1	2	2485	U
1	2	2492	G
1	2	2498	U
1	2	2499	C
1	2	2508	G
1	2	2522	G
1	2	2546	G
1	2	2548	G
1	2	2549	G
1	2	2557	G
1	2	2561	G
1	2	2564	U
1	2	2565	C
1	2	2581	A
1	2	2582	G
1	2	2588	U
1	2	2589	C
1	2	2591	C
1	2	2593	A
1	2	2594	U
1	2	2608	A
1	2	2609	G
1	2	2617	G
1	2	2619	G
1	2	2624	G
1	2	2625	U
1	2	2633	A
1	2	2634	G
1	2	2661	G
1	2	2669	C
1	2	2670	C
1	2	2691	C
1	2	2692	A
1	2	2693	U
1	2	2694	G
1	2	2706	U
1	2	2712	G

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Mol	Chain	Res	Type
1	2	2713	A
1	2	2728	A
1	2	2729	A
1	2	2730	A
1	2	2732	C
1	2	2737	A
1	2	2745	A
1	2	2758	A
1	2	2771	C
1	2	2773	G
1	2	2774	U
1	2	2779	C
1	2	2783	U
1	2	2795	A
1	2	2808	U
1	2	2809	A
1	2	2811	G
1	2	2825	A
1	2	2841	U
1	2	2842	C
1	2	2847	G
1	2	2854	G
1	2	2858	A
1	2	2868	G

All (65) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	2	13	A
1	2	70	A
1	2	73	A
1	2	117	A
1	2	181	A
1	2	192	G
1	2	198	A
1	2	242	A
1	2	342	G
1	2	372	U
1	2	403	A
1	2	460	U
1	2	469	G
1	2	485	G

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Mol	Chain	Res	Type
1	2	513	A
1	2	583	C
1	2	789	G
1	2	813	A
1	2	1033	G
1	2	1141	U
1	2	1154	A
1	2	1194	U
1	2	1223	G
1	2	1249	G
1	2	1260	A
1	2	1263	G
1	2	1278	A
1	2	1279	G
1	2	1313	U
1	2	1325	U
1	2	1345	G
1	2	1354	A
1	2	1355	A
1	2	1410	U
1	2	1495	G
1	2	1626	A
1	2	1632	A
1	2	1685	A
1	2	1772	C
1	2	1775	A
1	2	1790	G
1	2	1820	G
1	2	1926	U
1	2	1938	U
1	2	2013	A
1	2	2015	G
1	2	2018	G
1	2	2093	G
1	2	2204	A
1	2	2245	A
1	2	2261	G
1	2	2313	G
1	2	2324	G
1	2	2370	G
1	2	2389	G
1	2	2404	A

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Mol	Chain	Res	Type
1	2	2437	G
1	2	2498	U
1	2	2560	G
1	2	2592	U
1	2	2633	A
1	2	2668	U
1	2	2705	A
1	2	2824	C
1	2	2867	G

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides 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
2	RAP	2	2881	-	65,68,68	1.89	14 (21%)	77,96,96	1.47	8 (10%)

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
2	RAP	2	2881	-	-	3/81/124/124	0/3/4/4

All (14) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	2	2881	RAP	C8-C9	-8.41	1.42	1.53
2	2	2881	RAP	C40-C39	4.54	1.60	1.52
2	2	2881	RAP	O1-C1	3.94	1.43	1.34
2	2	2881	RAP	O1-C34	-3.37	1.40	1.46
2	2	2881	RAP	C44-C17	3.03	1.56	1.50
2	2	2881	RAP	O6-C10	2.97	1.44	1.39
2	2	2881	RAP	C35-C34	2.89	1.56	1.53
2	2	2881	RAP	C41-C40	2.86	1.56	1.52
2	2	2881	RAP	C38-C39	2.61	1.57	1.52
2	2	2881	RAP	C27-C28	2.55	1.58	1.52
2	2	2881	RAP	C2-N7	2.37	1.50	1.47
2	2	2881	RAP	C31-C30	2.28	1.54	1.50
2	2	2881	RAP	C6-N7	2.22	1.50	1.47
2	2	2881	RAP	C13-C14	2.01	1.56	1.51

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	2	2881	RAP	O1-C1-C2	5.29	121.78	110.80
2	2	2881	RAP	C34-O1-C1	4.46	124.60	117.85
2	2	2881	RAP	C9-C8-N7	3.91	123.72	119.25
2	2	2881	RAP	O1-C1-O2	-3.16	118.24	123.95
2	2	2881	RAP	C3-C2-N7	-3.04	106.49	110.55
2	2	2881	RAP	C28-C27-C26	2.81	115.24	111.25
2	2	2881	RAP	C52-O12-C39	2.38	120.27	114.01
2	2	2881	RAP	O2-C1-C2	-2.03	119.98	124.46

There are no chirality outliers.

All (3) torsion outliers are listed below:

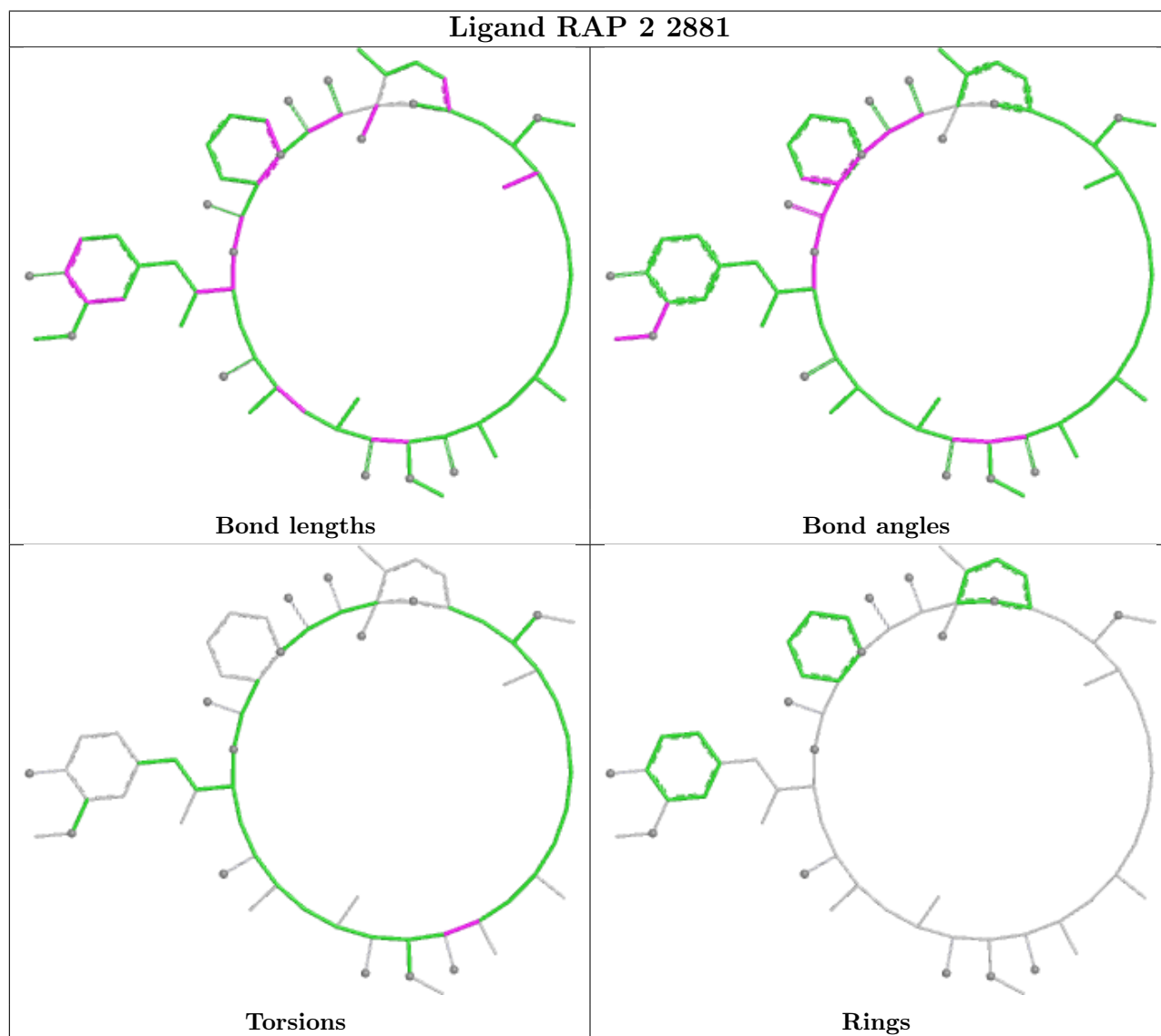
Mol	Chain	Res	Type	Atoms
2	2	2881	RAP	C46-C25-C26-O8
2	2	2881	RAP	C24-C25-C26-O8
2	2	2881	RAP	C24-C25-C26-C27

There are no ring outliers.

1 monomer is involved in 20 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	2	2881	RAP	20	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.



5.7 Other polymers [\(i\)](#)

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

EDS was not executed - this section is therefore empty.

6.2 Non-standard residues in protein, DNA, RNA chains

EDS was not executed - this section is therefore empty.

6.3 Carbohydrates

EDS was not executed - this section is therefore empty.

6.4 Ligands

EDS was not executed - this section is therefore empty.

6.5 Other polymers

EDS was not executed - this section is therefore empty.