



Full wwPDB X-ray Structure Validation Report ⓘ

Aug 7, 2023 – 03:58 PM EDT

PDB ID : 1NJO
Title : The crystal structure of the 50S Large ribosomal subunit from *Deinococcus radiodurans* complexed with a short substrate analog ACCPuromycin (ACCP)
Authors : Bashan, A.; Agmon, I.; Zarivatch, R.; Schluenzen, F.; Harms, J.M.; Berisio, R.; Bartels, H.; Hansen, H.A.; Yonath, A.
Deposited on : 2003-01-02
Resolution : 3.70 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 : 1.8.5 (274361), CSD as541be (2020)
Xtrriage (Phenix) : **NOT EXECUTED**
EDS : **NOT EXECUTED**
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) : 2.35

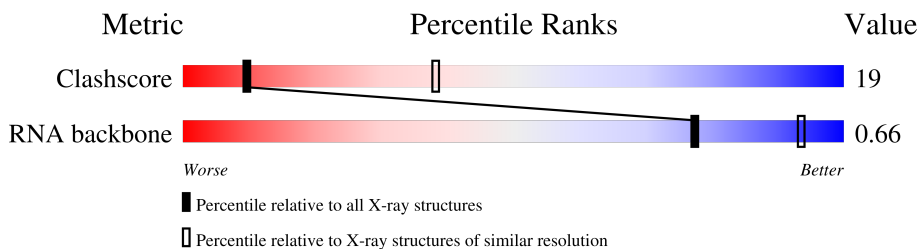
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.70 Å.

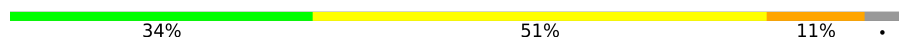
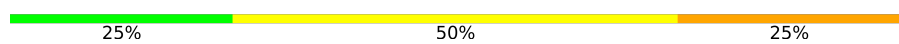
Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
Clashscore	141614	1027 (3.86-3.54)
RNA backbone	3102	1027 (4.40-3.00)

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	0	2880	
2	5	4	

2 Entry composition

There are 2 unique types of molecules in this entry. The entry contains 59455 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	0	2766	59359	26479	10949	19166	2765	0	0	0

- Molecule 2 is a RNA chain called RNA ACC(Puromycin).

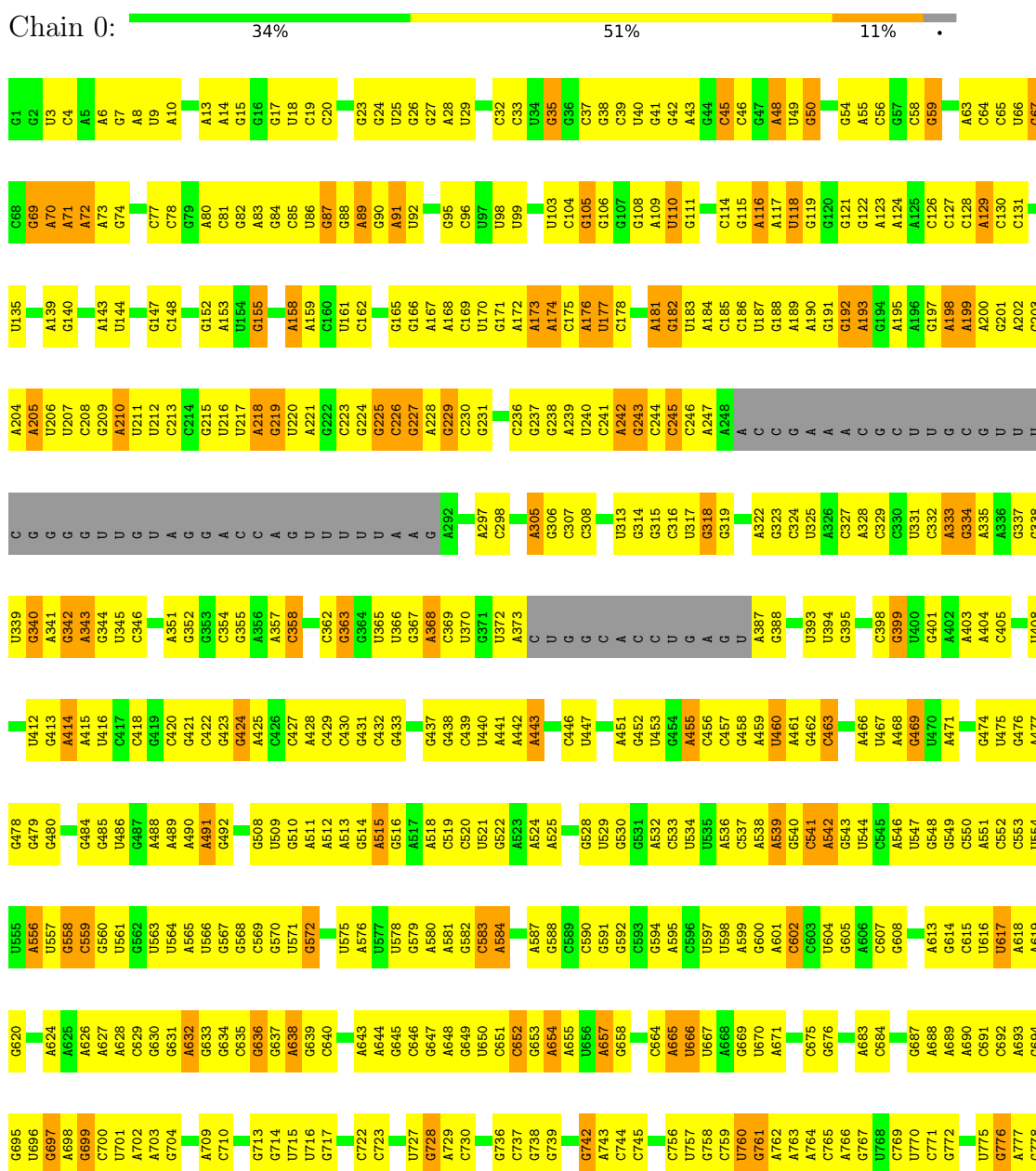
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
2	5	4	96	50	18	25	3	0	0	0

3 Residue-property plots

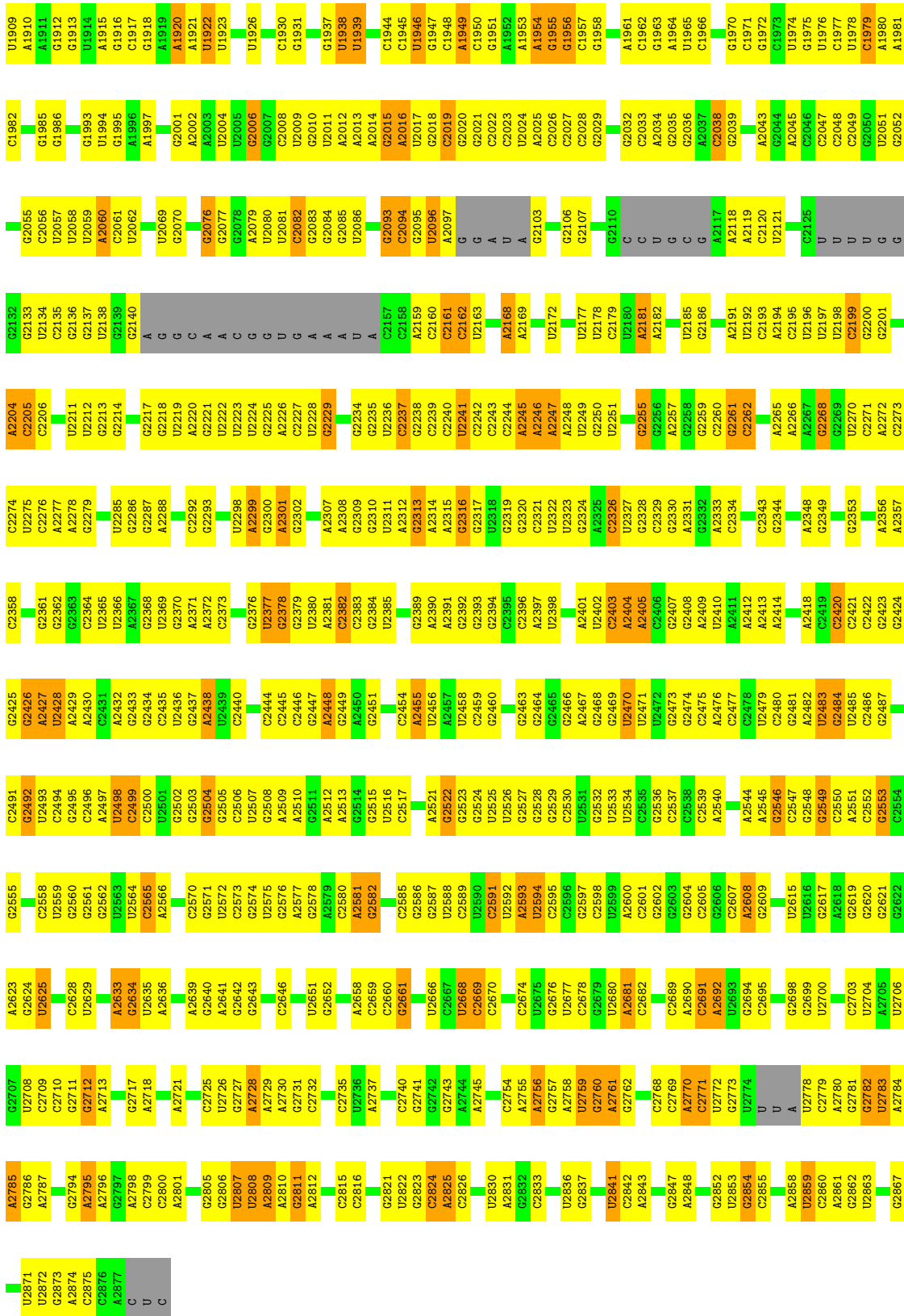
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. Residues are color-coded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



G1818	U1782	G1855	A1582	G1436	U1957	A1290	U1144	G1047	G980	A911	G841	U179
U1819	U1783	U1656	A1583	A1437	C1358	G1291	C1145	C1052	C981	U916	A842	U180
G1820	A1657	A1657	G1584	A1441	G1359	A1292	G1146	G1053	G884	U917	G843	G781
C1822	G1742	A1658	A1585	A1442	A1365	A1293	G1147	C1054	A984	U918	G844	G782
C1825	G1743	G1659	A1586	C1442	U1366	G1443	G1148	C1055	G985	A919	A845	G783
U1826	G1744	G1660	A1587	G1443	A1366	G1443	G1149	A1055	A986	U919	A846	G784
U1826	C1745	C1661	A1511	C1444	A1367	A1224	C1150	U1056	G987	G920	C847	U785
C1829	A1746	G1662	A1512	A1445	U1301	G1225	U1151	A1057	G988	A921	U852	U786
U1829	G1747	C1663	A1513	A1446	C1302	A1226	A1154	G1058	A991	A922	A787	G788
C1830	U1748	C1593	U1513	U1447	C1302	A1226	A1155	A1065	G994	U925	G853	G789
G1830	G1749	C1665	U1514	U1447	U1370	A1226	U1156	G1066	A994	C926	G854	A790
G1831	A1750	U1515	G1371	U1448	G1371	A1226	U1156	G1067	A995	C927	G855	G791
C1835	G1754	A1516	A1373	C1449	A1372	A1227	A1154	A1068	C996	G928	G856	U792
C1836	G1755	C1517	G1373	C1450	G1373	A1227	A1155	G1069	C997	A929	G857	U793
G1838	A1671	U1518	G1380	C1455	C1380	A1227	A1155	G1070	A999	A930	G858	G794
A1840	A1672	G1519	G1381	C1456	U1310	A1227	A1155	G1071	A1001	A931	U860	A795
G1841	A1673	G1520	G1382	A1457	C1311	A1227	A1155	C1072	C1002	G932	G861	A796
C1850	U1676	C1524	A1458	U1459	C1312	A1242	A1154	G1073	A1003	G933	G862	A797
A1851	U1677	G1528	A1459	A1463	U1313	G1243	A1154	C1074	C1004	G934	C864	G798
G1855	U1678	C1529	U1464	A1464	U1313	G1244	A1154	C1075	C1005	G935	A865	U800
U1856	U1679	U1530	C1465	A1465	U1313	U1244	A1154	U1076	A1006	G936	U868	C803
C1858	U1680	C1532	C1466	U1467	U1313	G1245	A1154	U1081	A1007	C939	C869	C804
A1859	A1681	G1533	U1467	A1468	U1313	G1245	A1154	A1084	C1007	G940	C870	G805
A1860	A1682	U1539	U1468	A1469	U1313	G1245	A1154	G1085	C1008	U941	U871	A806
G1861	A1683	C1540	C1469	G1470	U1325	A1251	A1154	G1086	C1009	U942	G872	A807
C1862	C1684	G1543	G1471	G1471	A1397	G1252	A1154	C1087	G1014	U943	U873	C808
C1865	U1691	G1544	C1472	U1473	U1398	G1253	A1154	C1088	U1015	U944	A874	C809
U1866	C1692	U1545	C1473	U1474	G1398	A1259	A1154	C1089	C1016	G945	G875	U810
G1871	C1696	G1547	U1474	U1475	C1399	A1260	A1154	G1090	C1017	G849	G877	G811
U1880	C1703	U1548	U1478	U1478	G1402	A1260	A1154	U1092	C1018	G950	C878	G812
C1786	G1704	C1552	G1479	G1479	U1403	A1261	A1154	U1093	A1020	G951	A879	A813
U1788	C1708	G1557	G1480	G1480	G1407	G1266	A1154	G1098	A1021	G953	G880	A814
G1788	C1709	C1558	U1481	U1482	U1410	G1267	A1154	A1099	A1022	G954	G887	U816
G1790	A1625	A1561	A1486	A1486	C1411	A1267	A1154	G1100	A1023	G955	G888	U817
C1791	A1626	G1562	C1487	C1487	G1414	A1268	A1154	G1101	G1024	A956	C889	G818
A1793	C1627	U1566	G1488	G1488	G1415	G1269	A1154	C1120	A1026	G957	U890	C819
U1794	C1628	G1566	C1489	C1489	A1416	C1270	A1154	G1121	C1027	G958	U820	U820
A1799	G1629	A1568	U1490	U1490	C1417	C1271	A1154	A1122	U1028	U960	A821	G822
A1800	A1632	A1568	C1491	C1491	U1341	G1272	A1154	U1030	C1029	G961	G	U824
C1801	A1634	G1571	A1492	A1493	U1342	G1273	A1154	C1127	U1031	A964	C	C825
A1802	G1635	G1572	A1494	G1494	U1342	C1274	A1154	G1128	A1032	G965	C	U826
A1807	A1643	G1573	G1496	G1496	C1347	A1275	A1154	U1130	G1033	A971	C	A832
C1808	U1723	A1574	C1497	C1497	U1425	A1281	A1154	U1131	A1034	A971	A	A833
G1809	C1724	C1575	C1497	C1497	U1426	A1281	A1154	G1132	G1035	A971	C	A834
U1900	G1644	G1576	G1498	G1498	G1427	A1281	A1154	G1133	G1036	A970	C	G
A1901	U1648	U1578	U1500	U1500	U1428	A1281	A1154	U1133	U1037	A970	C	G
U1812	C1648	U1578	C1501	C1501	U1428	A1281	A1154	U1133	G1038	A971	A	G
U1812	A1728	G1579	U1501	U1501	U1428	A1281	A1154	U1133	A1039	A971	A	G
A1814	C1729	G1580	C1501	C1501	U1428	A1281	A1154	U1133	A1040	A971	A	G
G1814	C1730	C1731	U1501	U1501	U1428	A1281	A1154	U1133	A1041	A971	A	G
C1908	C1731	A1654	G1503	G1503	U1435	A1289	A1154	U1133	U1044	A971	A	G



- Molecule 2: RNA ACC(Puromycin)

Chain 5: 25% 50% 25%



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	169.90Å 410.40Å 697.10Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	15.00 – 3.70	Depositor
% Data completeness (in resolution range)	(Not available) (15.00-3.70)	Depositor
R_{merge}	(Not available)	Depositor
R_{sym}	0.16	Depositor
Refinement program	CNS	Depositor
R, R_{free}	0.283 , 0.297	Depositor
Estimated twinning fraction	No twinning to report.	Xtrriage
Total number of atoms	59455	wwPDB-VP
Average B, all atoms (Å ²)	77.0	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: PPU

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	0	0.14	0/66467	0.63	0/103673
2	5	0.21	0/65	0.56	0/99
All	All	0.14	0/66532	0.63	0/103772

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	0	0	1

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	0	873	U	Sidechain

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	0	59359	0	29917	1732	0
2	5	96	0	62	1	0
All	All	59455	0	29979	1732	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 19.

All (1732) 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)
1:0:940:G:H3'	1:0:941:U:H5''	1.22	1.14
1:0:1141:U:H3	1:0:2008:C:H5''	1.20	1.05
1:0:1073:G:H2'	1:0:1074:G:H4'	1.40	1.00
1:0:2769:C:H2'	1:0:2867:G:H22	1.21	0.99
1:0:2668:U:H4'	1:0:2669:C:H5'	1.45	0.97
1:0:688:A:H62	1:0:816:U:H3	1.09	0.97
1:0:1252:C:H2'	1:0:1253:C:H5''	1.47	0.96
1:0:2636:A:H62	1:0:2643:G:H21	1.12	0.96
1:0:58:C:H3'	1:0:59:G:H5''	1.48	0.96
1:0:1182:U:H2'	1:0:1183:C:H5''	1.47	0.95
1:0:1086:C:H2'	1:0:1087:C:H5''	1.49	0.94
1:0:1496:G:H1	1:0:1527:G:H1	1.14	0.94
1:0:1572:C:H2'	1:0:1573:G:H5''	1.48	0.94
1:0:471:A:H62	1:0:480:G:H21	1.13	0.94
1:0:1747:G:H4'	1:0:1749:G:H1'	1.48	0.94
1:0:221:A:H62	1:0:231:G:H21	1.15	0.94
1:0:225:G:H3'	1:0:226:C:H5'	1.47	0.93
1:0:1953:A:H1'	1:0:1955:G:H1'	1.52	0.92
1:0:847:C:H41	1:0:955:G:H21	1.17	0.92
1:0:1312:G:H5''	1:0:1313:U:H5'	1.52	0.91
1:0:166:G:H21	1:0:184:A:H62	1.12	0.91
1:0:1223:G:H21	1:0:1225:G:H21	0.92	0.91
1:0:831:G:H21	1:0:1203:A:H62	1.16	0.90
1:0:929:A:H3'	1:0:930:A:H5''	1.52	0.90
1:0:789:G:H21	1:0:806:A:H62	1.13	0.89
1:0:1915:A:H62	1:0:1951:G:H21	1.20	0.89
1:0:104:C:H2'	1:0:105:G:H5''	1.56	0.88
1:0:1656:U:H2'	1:0:1657:A:H5''	1.56	0.87
1:0:2633:A:H4'	1:0:2634:G:H4'	1.57	0.87
1:0:1199:U:H3'	1:0:1200:G:H5''	1.55	0.87
1:0:367:G:H2'	1:0:368:A:H5''	1.55	0.87
1:0:403:A:H4'	1:0:425:A:H5'	1.57	0.86

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:128:C:H2'	1:0:129:A:H5''	1.58	0.86
1:0:2548:G:H2'	1:0:2549:G:H5''	1.58	0.86
1:0:1223:G:H21	1:0:1225:G:N2	1.74	0.85
1:0:1034:U:H1'	1:0:1133:G:H5''	1.60	0.84
1:0:1964:A:H3'	1:0:1965:U:H5'	1.60	0.84
1:0:2047:C:H42	1:0:2425:G:H1	1.25	0.83
1:0:1436:G:H1'	1:0:1508:G:H21	1.41	0.83
1:0:2607:C:H3'	1:0:2608:A:H5'	1.58	0.82
1:0:2794:G:H3'	1:0:2796:A:H62	1.43	0.82
1:0:460:U:H3	1:0:592:G:H1'	1.43	0.82
1:0:2081:U:H2'	1:0:2082:C:H5''	1.62	0.81
1:0:2806:G:H1'	1:0:2858:A:H2'	1.62	0.81
1:0:88:G:H3'	1:0:89:A:H5''	1.61	0.81
1:0:2198:U:H3'	1:0:2199:C:H5''	1.62	0.81
1:0:2522:G:H21	1:0:2625:U:H5''	1.45	0.81
1:0:940:G:H3'	1:0:941:U:C5'	2.09	0.81
1:0:2769:C:H2'	1:0:2867:G:N2	1.96	0.81
1:0:9:U:H3	1:0:2608:A:H62	1.29	0.80
1:0:109:A:H3'	1:0:110:U:H5''	1.62	0.80
1:0:2426:G:H5'	1:0:2480:C:H41	1.47	0.80
1:0:1223:G:N2	1:0:1225:G:H21	1.76	0.79
1:0:1141:U:N3	1:0:2008:C:H5''	1.97	0.79
1:0:2700:U:H3	1:0:2848:A:N6	1.81	0.79
1:0:2491:C:H2'	1:0:2492:G:H5''	1.64	0.79
1:0:918:A:H2'	1:0:919:U:H5''	1.64	0.79
1:0:1811:A:O2'	1:0:1812:U:H5''	1.82	0.79
1:0:176:A:H1'	1:0:2221:G:H21	1.48	0.78
1:0:2227:C:H2'	1:0:2228:U:H5'	1.66	0.78
1:0:70:A:O2'	1:0:72:A:H5''	1.84	0.78
1:0:1432:G:H21	1:0:1596:A:H62	1.28	0.77
1:0:1188:A:H62	1:0:1189:G:H21	1.31	0.77
1:0:181:A:H5''	1:0:182:G:OP1	1.84	0.77
1:0:2770:A:H5'	1:0:2867:G:H22	1.49	0.76
1:0:689:A:H61	1:0:815:A:H61	1.31	0.76
1:0:2261:G:H4'	1:0:2262:C:OP2	1.86	0.76
1:0:2059:U:H5	1:0:2575:U:H3	1.31	0.76
1:0:542:A:H2'	1:0:543:G:H5'	1.67	0.76
1:0:652:C:H42	1:0:657:A:H61	1.32	0.76
1:0:688:A:N6	1:0:816:U:H3	1.85	0.75
1:0:69:G:H5''	1:0:70:A:OP1	1.87	0.75
1:0:2624:G:H4'	1:0:2712:G:H2'	1.69	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2096:U:H2'	1:0:2097:A:H5''	1.69	0.75
1:0:2503:G:H3'	1:0:2504:G:H5''	1.69	0.75
1:0:2548:G:C2'	1:0:2549:G:H5''	2.17	0.74
1:0:616:U:H2'	1:0:617:U:H5''	1.68	0.74
1:0:109:A:C3'	1:0:110:U:H5''	2.18	0.74
1:0:218:A:O2'	1:0:219:G:H4'	1.87	0.74
1:0:1473:U:H4'	1:0:1474:A:C8	2.23	0.74
1:0:1252:C:C2'	1:0:1253:C:H5''	2.18	0.73
1:0:2700:U:H3	1:0:2848:A:H62	1.36	0.73
1:0:1182:U:C2'	1:0:1183:C:H5''	2.17	0.73
1:0:1001:A:H62	1:0:1200:G:H1'	1.53	0.73
1:0:1572:C:C2'	1:0:1573:G:H5''	2.18	0.72
1:0:2241:U:H1'	1:0:2307:A:H1'	1.70	0.72
1:0:26:G:N2	1:0:524:A:H62	1.88	0.72
1:0:69:G:H4'	1:0:70:A:O5'	1.87	0.72
1:0:795:A:H4'	1:0:796:A:N7	2.03	0.72
1:0:471:A:H62	1:0:480:G:N2	1.86	0.72
1:0:202:A:H2'	1:0:203:G:O4'	1.88	0.71
1:0:878:C:H42	1:0:921:A:H62	1.37	0.71
1:0:2721:A:H62	1:0:2743:G:H21	1.38	0.71
1:0:1528:C:H2'	1:0:1529:C:H5''	1.71	0.71
1:0:1908:C:H2'	1:0:1909:U:H4'	1.72	0.71
1:0:65:C:H2'	1:0:66:U:H5'	1.72	0.71
1:0:319:G:H21	1:0:340:G:H21	1.39	0.71
1:0:1807:A:O2'	1:0:1808:C:H4'	1.89	0.71
1:0:2691:C:H3'	1:0:2692:A:H5''	1.73	0.71
1:0:1479:G:N2	1:0:1543:G:H21	1.88	0.71
1:0:2503:G:C3'	1:0:2504:G:H5''	2.21	0.71
1:0:1196:G:H2'	1:0:1197:U:O4'	1.91	0.71
1:0:1023:U:H1'	1:0:1154:A:N7	2.06	0.71
1:0:2380:U:H2'	1:0:2381:A:H5'	1.72	0.71
1:0:1047:G:H1	1:0:1130:U:H3	1.37	0.70
1:0:1882:G:H21	1:0:1885:C:N4	1.89	0.70
1:0:2510:A:H61	1:0:2641:A:N6	1.89	0.70
1:0:1373:G:H22	1:0:2192:U:H3	1.37	0.70
1:0:1621:C:H4'	1:0:1626:A:H61	1.56	0.70
1:0:1953:A:H1'	1:0:1955:G:C1'	2.21	0.70
1:0:514:G:N3	1:0:514:G:H2'	2.06	0.70
1:0:1021:A:H1'	1:0:1164:C:H1'	1.72	0.70
1:0:33:C:H42	1:0:466:A:H61	1.39	0.70
1:0:181:A:H4'	1:0:182:G:H4'	1.74	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2510:A:H61	1:0:2641:A:H61	1.39	0.70
1:0:2522:G:N2	1:0:2625:U:H5''	2.05	0.70
1:0:515:A:H2'	1:0:516:G:H5'	1.73	0.70
1:0:2759:U:H4'	1:0:2760:G:OP2	1.89	0.70
1:0:576:A:H2	1:0:580:A:H62	1.40	0.70
1:0:1529:C:H2'	1:0:1530:U:O4'	1.92	0.70
1:0:1139:A:H1'	1:0:2496:C:H5'	1.73	0.69
1:0:1809:G:H2'	1:0:1810:U:O4'	1.92	0.69
1:0:2570:C:H2'	1:0:2571:G:C8	2.27	0.69
1:0:66:U:H2'	1:0:67:G:N7	2.07	0.69
1:0:2808:U:H3'	1:0:2809:A:H5'	1.74	0.69
1:0:538:A:H2'	1:0:539:A:H5''	1.74	0.69
1:0:800:U:H3'	1:0:804:C:N4	2.08	0.69
1:0:1838:G:H2'	1:0:1839:A:H5'	1.75	0.69
1:0:951:G:H2'	1:0:952:A:H5''	1.73	0.69
1:0:2486:C:H4'	2:5:34:C:O2'	1.93	0.69
1:0:65:C:C2'	1:0:66:U:H5'	2.23	0.69
1:0:1923:U:H4'	1:0:1948:C:H41	1.58	0.69
1:0:1199:U:H3'	1:0:1200:G:C5'	2.22	0.68
1:0:2727:G:H1	1:0:2735:C:H5''	1.59	0.68
1:0:1188:A:N6	1:0:1189:G:H21	1.90	0.68
1:0:2495:G:H2'	1:0:2496:C:C6	2.29	0.68
1:0:2570:C:H2'	1:0:2571:G:H8	1.58	0.68
1:0:2607:C:H1'	1:0:2761:A:H2'	1.76	0.68
1:0:653:G:H2'	1:0:654:A:H4'	1.76	0.68
1:0:1500:U:H3	1:0:1520:G:H22	1.42	0.68
1:0:1260:A:N6	1:0:1262:U:H1'	2.09	0.68
1:0:2015:G:O2'	1:0:2016:A:OP1	2.12	0.68
1:0:1791:C:O2'	1:0:1793:A:H5'	1.94	0.68
1:0:1955:G:H2'	1:0:1956:G:H5'	1.75	0.68
1:0:1978:U:H3'	1:0:1979:C:H5''	1.75	0.68
1:0:941:U:H2'	1:0:942:U:O4'	1.94	0.68
1:0:2095:G:H2'	1:0:2096:U:H5''	1.74	0.67
1:0:2058:U:H5'	1:0:2576:G:H1'	1.74	0.67
1:0:813:A:O2'	1:0:815:A:H5'	1.94	0.67
1:0:1749:G:O6	1:0:2674:C:H4'	1.94	0.67
1:0:225:G:H3'	1:0:226:C:C5'	2.24	0.67
1:0:367:G:C2'	1:0:368:A:H5''	2.24	0.67
1:0:58:C:H3'	1:0:59:G:C5'	2.22	0.67
1:0:2680:U:H3'	1:0:2681:A:H5'	1.76	0.67
1:0:584:A:H4'	1:0:2479:U:H5'	1.76	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1474:A:H2'	1:0:1475:U:H5'	1.77	0.67
1:0:1915:A:H62	1:0:1951:G:N2	1.91	0.67
1:0:1181:C:H2'	1:0:1182:U:H5''	1.76	0.67
1:0:1191:G:H2'	1:0:1192:A:H8	1.59	0.67
1:0:1086:C:C2'	1:0:1087:C:H5''	2.24	0.67
1:0:2768:C:H2'	1:0:2769:C:O4'	1.95	0.67
1:0:805:G:H5''	1:0:806:A:O5'	1.95	0.66
1:0:1685:A:H1'	1:0:1686:A:C5	2.29	0.66
1:0:323:G:H5'	1:0:342:G:C6	2.30	0.66
1:0:1746:A:H2'	1:0:1747:G:H5'	1.77	0.66
1:0:2491:C:C2'	1:0:2492:G:H5''	2.25	0.66
1:0:1312:G:H5'	1:0:1314:A:H1'	1.76	0.66
1:0:588:G:H4'	1:0:2001:G:H5''	1.78	0.66
1:0:665:A:H3'	1:0:666:U:H5''	1.78	0.66
1:0:1487:C:H2'	1:0:1488:G:H8	1.60	0.66
1:0:2324:G:H4'	1:0:2326:C:H5''	1.78	0.66
1:0:2483:U:H1'	1:0:2551:A:C2	2.31	0.66
1:0:805:G:H4'	1:0:806:A:OP2	1.96	0.66
1:0:1352:G:H2'	1:0:1353:A:H8	1.60	0.66
1:0:1686:A:N3	1:0:1686:A:H2'	2.10	0.66
1:0:583:C:N3	1:0:2016:A:H4'	2.11	0.66
1:0:2499:C:H41	1:0:2521:A:H2	1.41	0.65
1:0:1188:A:H62	1:0:1189:G:N2	1.93	0.65
1:0:1888:C:H5''	1:0:1889:G:H5''	1.79	0.65
1:0:45:C:H5''	1:0:192:G:N7	2.11	0.65
1:0:651:C:H2'	1:0:652:C:H5''	1.78	0.65
1:0:652:C:H42	1:0:657:A:N6	1.95	0.65
1:0:824:U:H1'	1:0:1264:C:H1'	1.77	0.65
1:0:1195:U:H2'	1:0:1196:G:C8	2.32	0.65
1:0:70:A:O2'	1:0:72:A:OP2	2.12	0.65
1:0:175:C:H1'	1:0:2413:A:H61	1.62	0.65
1:0:236:C:H1'	1:0:632:A:O2'	1.97	0.65
1:0:1938:U:O2'	1:0:1939:U:OP1	2.12	0.65
1:0:974:U:H1'	1:0:2229:G:H21	1.59	0.65
1:0:2245:A:H4'	1:0:2246:A:C8	2.32	0.65
1:0:13:A:H1'	1:0:536:A:N6	2.13	0.64
1:0:104:C:C2'	1:0:105:G:H5''	2.27	0.64
1:0:1679:U:C3'	1:0:1680:U:H5''	2.27	0.64
1:0:1679:U:H3'	1:0:1680:U:H5''	1.77	0.64
1:0:2198:U:C3'	1:0:2199:C:H5''	2.27	0.64
1:0:2404:A:O2'	1:0:2405:A:OP2	2.15	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1033:G:H22	1:0:1150:C:H2'	1.62	0.64
1:0:1427:G:H2'	1:0:1428:G:H5'	1.80	0.64
1:0:2236:U:C3'	1:0:2237:C:H5''	2.27	0.64
1:0:727:U:H2'	1:0:728:G:H5''	1.79	0.64
1:0:1194:U:H2'	1:0:1195:U:C6	2.32	0.64
1:0:2312:A:H4'	1:0:2313:G:N7	2.13	0.64
1:0:2440:C:H1'	1:0:2471:U:H3	1.63	0.64
1:0:67:G:H22	1:0:72:A:H2'	1.62	0.64
1:0:2236:U:H2'	1:0:2237:C:H5''	1.77	0.64
1:0:2822:U:H2'	1:0:2823:G:O4'	1.97	0.64
1:0:1341:G:H22	1:0:1664:G:H1	1.46	0.64
1:0:2080:U:H2'	1:0:2081:U:C6	2.32	0.64
1:0:317:U:H2'	1:0:318:G:H5''	1.79	0.64
1:0:777:A:N6	1:0:1766:U:H3	1.94	0.64
1:0:2690:A:OP2	1:0:2694:G:H5'	1.97	0.64
1:0:1807:A:H5'	1:0:1809:G:C1'	2.28	0.64
1:0:83:A:H4'	1:0:84:G:O4'	1.97	0.64
1:0:1900:U:O2'	1:0:1946:U:H5'	1.98	0.64
1:0:831:G:H21	1:0:1203:A:N6	1.93	0.64
1:0:1580:C:H2'	1:0:1581:C:C6	2.32	0.64
1:0:1428:G:H5''	1:0:1429:A:H5'	1.79	0.63
1:0:2035:G:H2'	1:0:2036:G:H8	1.63	0.63
1:0:26:G:H21	1:0:524:A:H62	1.46	0.63
1:0:191:G:O2'	1:0:192:G:H5'	1.98	0.63
1:0:1198:C:H5''	1:0:1199:U:H5''	1.80	0.63
1:0:1715:A:H1'	1:0:1717:A:O4'	1.98	0.63
1:0:998:C:H2'	1:0:999:A:O4'	1.97	0.63
1:0:927:C:H2'	1:0:928:G:O4'	1.98	0.63
1:0:1250:A:O2'	1:0:1251:G:H4'	1.99	0.63
1:0:2261:G:H5''	1:0:2262:C:O5'	1.98	0.63
1:0:128:C:C2'	1:0:129:A:H5''	2.27	0.63
1:0:653:G:N2	1:0:655:A:H1'	2.14	0.63
1:0:952:A:O2'	1:0:1204:G:H4'	1.98	0.63
1:0:2617:G:H22	1:0:2755:A:H2'	1.64	0.63
1:0:67:G:N2	1:0:72:A:H2'	2.13	0.63
1:0:614:G:H2'	1:0:615:C:C6	2.33	0.62
1:0:1181:C:C3'	1:0:1182:U:H5''	2.29	0.62
1:0:2268:G:H22	1:0:2323:U:H4'	1.64	0.62
1:0:2544:A:H2'	1:0:2545:A:H4'	1.81	0.62
1:0:1517:C:H2'	1:0:1518:C:C6	2.34	0.62
1:0:167:A:H62	1:0:183:U:H3	1.47	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2418:A:H4'	1:0:2420:C:OP2	1.99	0.62
1:0:2636:A:H62	1:0:2643:G:N2	1.90	0.62
1:0:59:G:H1'	1:0:73:A:N1	2.15	0.62
1:0:2508:G:H5''	1:0:2509:A:H5''	1.82	0.62
1:0:2755:A:O2'	1:0:2756:A:H5'	2.00	0.62
1:0:121:G:O2'	1:0:1389:C:H4'	2.00	0.62
1:0:439:C:H2'	1:0:440:U:O4'	1.99	0.62
1:0:1085:G:H2'	1:0:1086:C:C6	2.35	0.62
1:0:1354:A:H62	1:0:1407:G:H22	1.47	0.62
1:0:2422:C:H2'	1:0:2423:G:H8	1.64	0.62
1:0:852:U:H3	1:0:950:G:H1	1.47	0.62
1:0:2045:A:H4'	1:0:2421:C:OP2	2.00	0.62
1:0:362:C:H2'	1:0:363:G:H4'	1.81	0.62
1:0:414:A:H2'	1:0:415:A:O4'	1.99	0.62
1:0:542:A:C2'	1:0:543:G:H5'	2.29	0.62
1:0:814:G:H3'	1:0:815:A:H5'	1.81	0.62
1:0:858:G:H5''	1:0:859:U:H5'	1.80	0.62
1:0:974:U:H1'	1:0:2229:G:N2	2.15	0.62
1:0:2381:A:H4'	1:0:2382:C:C5	2.35	0.62
1:0:221:A:H62	1:0:231:G:N2	1.92	0.62
1:0:1333:G:N2	1:0:1344:C:H41	1.96	0.62
1:0:1922:U:H1'	1:0:2570:C:O2'	2.00	0.62
1:0:2057:U:O2'	1:0:2576:G:H1'	1.98	0.62
1:0:2769:C:H2'	1:0:2770:A:H5'	1.82	0.62
1:0:742:G:H2'	1:0:742:G:N3	2.13	0.62
1:0:824:U:O2'	1:0:1264:C:H1'	2.00	0.62
1:0:942:U:H2'	1:0:943:U:O4'	2.00	0.62
1:0:1323:G:H2'	1:0:1324:G:H4'	1.82	0.62
1:0:1656:U:C2'	1:0:1657:A:H5''	2.29	0.62
1:0:571:U:H2'	1:0:581:A:H1'	1.82	0.61
1:0:1976:U:H2'	1:0:1977:C:H5'	1.82	0.61
1:0:2721:A:H62	1:0:2743:G:N2	1.99	0.61
1:0:181:A:H4'	1:0:182:G:C5'	2.30	0.61
1:0:860:U:C2'	1:0:861:G:H5'	2.31	0.61
1:0:878:C:H42	1:0:921:A:N6	1.97	0.61
1:0:940:G:C3'	1:0:941:U:H5''	2.14	0.61
1:0:2246:A:H2'	1:0:2246:A:N3	2.15	0.61
1:0:81:C:H2'	1:0:82:G:O4'	2.01	0.61
1:0:1455:C:O2'	1:0:1644:G:H5''	2.00	0.61
1:0:1066:G:H2'	1:0:1067:G:H4'	1.83	0.61
1:0:1188:A:H2'	1:0:1189:G:O4'	2.00	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2357:A:H2'	1:0:2358:C:O4'	2.00	0.61
1:0:2770:A:H5'	1:0:2867:G:N2	2.16	0.61
1:0:1380:C:H2'	1:0:1381:G:H5'	1.81	0.61
1:0:2572:U:H2'	1:0:2573:C:C6	2.36	0.61
1:0:1923:U:H4'	1:0:1948:C:N4	2.16	0.61
1:0:800:U:H3'	1:0:804:C:H41	1.66	0.61
1:0:871:U:H1'	1:0:2248:A:H5''	1.83	0.61
1:0:1426:U:H2'	1:0:1427:G:O4'	2.00	0.61
1:0:2223:U:H2'	1:0:2224:U:O4'	2.01	0.61
1:0:2242:C:N4	1:0:2257:A:H61	1.99	0.61
1:0:2322:U:O2'	1:0:2323:U:H5'	2.00	0.61
1:0:1286:U:H5''	1:0:1663:C:H42	1.66	0.60
1:0:1871:G:H2'	1:0:1871:G:N3	2.16	0.60
1:0:2185:U:H2'	1:0:2186:G:C8	2.36	0.60
1:0:1713:G:H2'	1:0:1714:A:O4'	2.01	0.60
1:0:1807:A:H5'	1:0:1809:G:O4'	2.01	0.60
1:0:2604:G:H2'	1:0:2605:C:C6	2.36	0.60
1:0:1140:A:H61	1:0:2470:U:H6	1.49	0.60
1:0:2727:G:O2'	1:0:2728:A:H5''	2.02	0.60
1:0:831:G:N2	1:0:1203:A:H62	1.95	0.60
1:0:2238:G:H2'	1:0:2239:C:C6	2.37	0.60
1:0:70:A:O3'	1:0:71:A:H3'	2.01	0.60
1:0:1918:G:H4'	1:0:1920:A:N3	2.16	0.60
1:0:669:G:H2'	1:0:670:U:C6	2.37	0.60
1:0:1811:A:H1'	1:0:1813:A:C5	2.36	0.60
1:0:1458:A:H3'	1:0:1459:U:C5'	2.32	0.60
1:0:2858:A:H3'	1:0:2859:U:H5'	1.84	0.60
1:0:1774:A:H1'	1:0:2586:G:H21	1.67	0.60
1:0:2426:G:O6	1:0:2479:U:H2'	2.00	0.60
1:0:2012:A:N7	1:0:2014:A:H5'	2.16	0.60
1:0:2377:U:H2'	1:0:2378:G:C8	2.37	0.60
1:0:73:A:H3'	1:0:73:A:N3	2.17	0.60
1:0:1634:A:O2'	1:0:1635:G:OP1	2.16	0.60
1:0:2426:G:C5'	1:0:2480:C:H41	2.14	0.60
1:0:17:G:H21	1:0:564:U:H5''	1.66	0.59
1:0:357:A:H2'	1:0:358:C:H5'	1.84	0.59
1:0:1088:A:H2'	1:0:1089:C:O4'	2.02	0.59
1:0:1625:A:H2'	1:0:1625:A:N3	2.16	0.59
1:0:2759:U:H5''	1:0:2760:G:O5'	2.03	0.59
1:0:55:A:H2'	1:0:56:C:C6	2.37	0.59
1:0:455:A:H4'	1:0:1214:C:O2'	2.02	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:653:G:H4'	1:0:2328:G:H4'	1.83	0.59
1:0:2009:U:H3	1:0:2020:G:H1	1.51	0.59
1:0:2402:U:H5'	1:0:2404:A:C5	2.37	0.59
1:0:2547:C:H2'	1:0:2548:G:H8	1.67	0.59
1:0:1073:G:C2'	1:0:1074:G:H4'	2.26	0.59
1:0:1289:A:O2'	1:0:1290:A:H5'	2.02	0.59
1:0:1747:G:H1'	1:0:1749:G:N3	2.18	0.59
1:0:2260:C:H4'	1:0:2368:G:H21	1.66	0.59
1:0:471:A:N6	1:0:480:G:H21	1.94	0.59
1:0:2081:U:C2'	1:0:2082:C:H5''	2.32	0.59
1:0:2243:C:H2'	1:0:2244:C:O4'	2.02	0.59
1:0:1298:G:N2	1:0:1341:G:H5''	2.18	0.59
1:0:1474:A:H3'	1:0:1474:A:N3	2.17	0.59
1:0:1141:U:H5'	1:0:2549:G:N2	2.18	0.59
1:0:2491:C:C3'	1:0:2492:G:H5''	2.33	0.59
1:0:2565:C:O2'	1:0:2566:A:H5'	2.01	0.59
1:0:366:U:H2'	1:0:367:G:H8	1.67	0.59
1:0:2205:C:H2'	1:0:2206:C:C6	2.38	0.59
1:0:2547:C:H2'	1:0:2548:G:C8	2.38	0.59
1:0:192:G:O2'	1:0:193:A:OP2	2.19	0.59
1:0:412:U:H2'	1:0:413:G:O4'	2.03	0.59
1:0:459:A:H1'	1:0:466:A:N7	2.16	0.59
1:0:513:A:H4'	1:0:515:A:H5'	1.83	0.59
1:0:242:A:O2'	1:0:243:G:P	2.61	0.59
1:0:521:U:H4'	1:0:1248:G:O2'	2.02	0.59
1:0:804:C:O2'	1:0:806:A:H4'	2.03	0.59
1:0:1683:G:H2'	1:0:1684:G:O4'	2.03	0.59
1:0:242:A:O2'	1:0:243:G:O4'	2.21	0.59
1:0:552:C:H2'	1:0:553:C:H4'	1.85	0.59
1:0:1354:A:O2'	1:0:1355:A:OP1	2.18	0.59
1:0:1664:G:O5'	1:0:1665:C:OP1	2.21	0.59
1:0:25:U:H3	1:0:525:A:N6	2.01	0.58
1:0:665:A:H3'	1:0:666:U:C5'	2.33	0.58
1:0:973:U:H2'	1:0:974:U:C6	2.38	0.58
1:0:2236:U:C2'	1:0:2237:C:H5''	2.33	0.58
1:0:2549:G:H2'	1:0:2550:C:O4'	2.02	0.58
1:0:368:A:H2'	1:0:369:C:O4'	2.03	0.58
1:0:1180:A:H2'	1:0:1181:C:C6	2.38	0.58
1:0:2368:G:H5''	1:0:2369:U:O4'	2.03	0.58
1:0:1251:G:H2'	1:0:1252:C:C6	2.37	0.58
1:0:1528:C:C2'	1:0:1529:C:H5''	2.33	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1730:G:H2'	1:0:1731:C:C6	2.38	0.58
1:0:1994:U:H2'	1:0:1995:G:O4'	2.04	0.58
1:0:2677:U:H2'	1:0:2678:C:C6	2.39	0.58
1:0:1474:A:C2'	1:0:1475:U:H5'	2.33	0.58
1:0:1181:C:C2'	1:0:1182:U:H5''	2.33	0.58
1:0:1472:C:H2'	1:0:1473:U:H5'	1.85	0.58
1:0:984:A:H2'	1:0:1200:G:H22	1.68	0.58
1:0:1567:A:H2'	1:0:1568:A:O4'	2.04	0.58
1:0:2607:C:H3'	1:0:2608:A:C5'	2.31	0.58
1:0:689:A:H2'	1:0:690:A:H5'	1.85	0.58
1:0:1354:A:H62	1:0:1407:G:N2	2.02	0.58
1:0:404:A:H5'	1:0:425:A:H4'	1.85	0.58
1:0:766:A:H2'	1:0:767:G:C8	2.38	0.58
1:0:839:U:H2'	1:0:841:G:O4'	2.03	0.58
1:0:1916:G:H2'	1:0:1917:C:C6	2.39	0.58
1:0:2548:G:H2'	1:0:2549:G:C5'	2.33	0.58
1:0:490:A:O2'	1:0:491:A:H5'	2.03	0.58
1:0:874:A:H62	1:0:928:G:H21	1.51	0.58
1:0:2274:C:H2'	1:0:2275:U:H5'	1.86	0.58
1:0:2422:C:H2'	1:0:2423:G:C8	2.39	0.58
1:0:118:U:H1'	1:0:143:A:C8	2.39	0.58
1:0:319:G:H21	1:0:340:G:N2	2.02	0.58
1:0:1779:C:H2'	1:0:1780:A:O4'	2.04	0.58
1:0:1301:U:H3	1:0:1339:U:H3	1.51	0.57
1:0:1712:G:H2'	1:0:1713:G:O4'	2.02	0.57
1:0:2691:C:H3'	1:0:2692:A:C5'	2.33	0.57
1:0:1615:C:H2'	1:0:1616:C:C6	2.39	0.57
1:0:2222:U:H2'	1:0:2223:U:C6	2.38	0.57
1:0:605:G:H4'	1:0:949:G:O2'	2.04	0.57
1:0:925:U:H4'	1:0:926:C:C5	2.40	0.57
1:0:1514:C:H2'	1:0:1515:U:O4'	2.04	0.57
1:0:2784:A:H3'	1:0:2785:A:H8	1.70	0.57
1:0:217:U:H5'	1:0:633:G:O2'	2.05	0.57
1:0:486:U:H4'	1:0:520:C:H5'	1.86	0.57
1:0:929:A:H2'	1:0:930:A:H4'	1.86	0.57
1:0:1223:G:O2'	1:0:1224:A:OP2	2.21	0.57
1:0:2242:C:H42	1:0:2257:A:N6	2.03	0.57
1:0:2426:G:H22	1:0:2430:A:H62	1.51	0.57
1:0:2794:G:H2'	1:0:2796:A:N7	2.20	0.57
1:0:931:G:N2	1:0:2247:A:H5''	2.19	0.57
1:0:1137:A:H5''	1:0:1138:A:H5''	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1392:U:H2'	1:0:1393:G:H5'	1.87	0.57
1:0:2236:U:H3'	1:0:2237:C:H5''	1.85	0.57
1:0:2426:G:O2'	1:0:2427:A:OP2	2.19	0.57
1:0:628:A:H2'	1:0:629:C:C6	2.40	0.57
1:0:1472:C:C2'	1:0:1473:U:H5'	2.34	0.57
1:0:2459:C:H2'	1:0:2460:G:H5'	1.87	0.57
1:0:541:C:N4	1:0:572:G:O4'	2.38	0.57
1:0:839:U:H5''	1:0:2408:G:OP2	2.05	0.57
1:0:873:U:P	1:0:928:G:H1	2.28	0.57
1:0:1971:C:H2'	1:0:1972:G:H8	1.70	0.57
1:0:73:A:H4'	1:0:74:G:C1'	2.35	0.57
1:0:1464:A:H4'	1:0:1545:G:H4'	1.86	0.57
1:0:369:C:H2'	1:0:370:U:O4'	2.04	0.56
1:0:632:A:H2'	1:0:633:G:H5'	1.86	0.56
1:0:687:G:O2'	1:0:688:A:H5'	2.04	0.56
1:0:73:A:H4'	1:0:74:G:H1'	1.85	0.56
1:0:629:C:H2'	1:0:630:G:H5'	1.87	0.56
1:0:804:C:O2	1:0:807:A:H5'	2.05	0.56
1:0:1087:C:H2'	1:0:1088:A:O4'	2.05	0.56
1:0:1220:G:H2'	1:0:1221:C:C6	2.40	0.56
1:0:1431:U:H2'	1:0:1432:G:O4'	2.06	0.56
1:0:758:G:O2'	1:0:761:G:H1'	2.05	0.56
1:0:930:A:H4'	1:0:930:A:OP1	2.03	0.56
1:0:1337:G:H1'	1:0:1632:A:N6	2.20	0.56
1:0:1981:A:H4'	1:0:2704:U:O2'	2.06	0.56
1:0:2018:G:H3'	1:0:2019:C:C5'	2.36	0.56
1:0:2437:G:N2	1:0:2469:G:H2'	2.20	0.56
1:0:2494:C:H2'	1:0:2495:G:C8	2.40	0.56
1:0:2668:U:C4'	1:0:2669:C:H5'	2.29	0.56
1:0:784:U:H2'	1:0:785:U:C6	2.41	0.56
1:0:2329:C:H2'	1:0:2330:G:H5'	1.88	0.56
1:0:2560:G:H4'	1:0:2561:G:N7	2.20	0.56
1:0:843:G:O2'	1:0:844:G:OP1	2.15	0.56
1:0:1280:U:O2'	1:0:1281:A:H5'	2.06	0.56
1:0:1947:G:H3'	1:0:1947:G:OP1	2.05	0.56
1:0:103:U:H2'	1:0:104:C:C6	2.40	0.56
1:0:874:A:N6	1:0:928:G:H21	2.03	0.56
1:0:2636:A:N6	1:0:2643:G:H21	1.94	0.56
1:0:176:A:H5''	1:0:177:U:H5	1.71	0.56
1:0:1191:G:H2'	1:0:1192:A:C8	2.40	0.56
1:0:69:G:O2'	1:0:70:A:H8	1.89	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:114:C:O2'	1:0:124:A:H1'	2.06	0.56
1:0:158:A:H2'	1:0:159:A:O4'	2.05	0.56
1:0:876:A:H2'	1:0:877:G:C8	2.41	0.56
1:0:2008:C:H2'	1:0:2009:U:C6	2.41	0.56
1:0:2470:U:O2'	1:0:2471:U:H5'	2.06	0.56
1:0:2641:A:H2'	1:0:2642:G:O4'	2.06	0.56
1:0:59:G:N2	1:0:87:G:N7	2.53	0.56
1:0:77:C:H2'	1:0:78:C:C6	2.41	0.56
1:0:630:G:H2'	1:0:631:G:H5'	1.88	0.56
1:0:1711:C:H4'	1:0:1712:G:C2	2.41	0.56
1:0:2270:U:H2'	1:0:2271:C:C6	2.41	0.56
1:0:2437:G:H2'	1:0:2469:G:C2	2.41	0.56
1:0:2437:G:H2'	1:0:2469:G:N2	2.21	0.56
1:0:2783:U:OP1	1:0:2783:U:O4'	2.24	0.56
1:0:2841:U:O2	1:0:2843:A:H1'	2.05	0.56
1:0:1813:A:H2'	1:0:1814:G:C8	2.41	0.56
1:0:1356:G:H1'	1:0:1613:G:C2	2.40	0.55
1:0:197:G:N2	1:0:440:U:H2'	2.22	0.55
1:0:533:C:H2'	1:0:534:U:O4'	2.06	0.55
1:0:583:C:H41	1:0:2017:U:H5	1.53	0.55
1:0:775:U:O2	1:0:1445:A:H5''	2.06	0.55
1:0:879:A:H2'	1:0:879:A:N3	2.21	0.55
1:0:2162:C:H2'	1:0:2163:U:C6	2.41	0.55
1:0:366:U:H2'	1:0:367:G:C8	2.42	0.55
1:0:2061:C:H1'	1:0:2413:A:H1'	1.89	0.55
1:0:2095:G:C2'	1:0:2096:U:H5''	2.36	0.55
1:0:197:G:H22	1:0:440:U:H2'	1.71	0.55
1:0:1258:G:H2'	1:0:1259:A:C8	2.42	0.55
1:0:1263:G:O2'	1:0:1264:C:OP1	2.24	0.55
1:0:241:C:O2'	1:0:242:A:H5''	2.06	0.55
1:0:558:G:H5''	1:0:559:C:C5	2.41	0.55
1:0:1181:C:H3'	1:0:1182:U:H5''	1.89	0.55
1:0:1669:A:H2'	1:0:1670:G:H4'	1.88	0.55
1:0:2321:C:H2'	1:0:2322:U:O4'	2.06	0.55
1:0:2483:U:H2'	1:0:2484:G:H5'	1.88	0.55
1:0:2758:A:H5''	1:0:2759:U:H5	1.71	0.55
1:0:173:A:H2'	1:0:173:A:N3	2.22	0.55
1:0:618:A:H2'	1:0:619:A:O4'	2.07	0.55
1:0:1791:C:H1'	1:0:1793:A:O4'	2.05	0.55
1:0:2381:A:H4'	1:0:2382:C:H5	1.70	0.55
1:0:515:A:C2'	1:0:516:G:H5'	2.37	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1200:G:OP1	1:0:1200:G:O4'	2.25	0.55
1:0:1429:A:H62	1:0:1601:U:H5''	1.71	0.55
1:0:1789:U:C2'	1:0:1790:G:H5'	2.37	0.55
1:0:2204:A:O2'	1:0:2205:C:P	2.65	0.55
1:0:604:U:H2'	1:0:605:G:C8	2.41	0.55
1:0:2532:G:H1'	1:0:2561:G:N3	2.22	0.55
1:0:226:C:H4'	1:0:227:G:C8	2.42	0.55
1:0:791:G:H2'	1:0:792:U:C6	2.41	0.55
1:0:841:G:H3'	1:0:841:G:N3	2.21	0.55
1:0:1278:A:O2'	1:0:1279:G:P	2.65	0.55
1:0:2379:G:H2'	1:0:2380:U:O4'	2.06	0.55
1:0:166:G:H21	1:0:184:A:N6	1.93	0.55
1:0:951:G:C2'	1:0:952:A:H5''	2.36	0.55
1:0:80:A:H2'	1:0:81:C:O4'	2.06	0.54
1:0:177:U:H2'	1:0:178:C:C6	2.42	0.54
1:0:782:U:H2'	1:0:783:G:C8	2.42	0.54
1:0:847:C:N4	1:0:955:G:H21	1.95	0.54
1:0:1288:A:O2'	1:0:1289:A:H5'	2.07	0.54
1:0:1829:C:H2'	1:0:1830:C:H5'	1.89	0.54
1:0:2854:G:H3'	1:0:2854:G:N3	2.22	0.54
1:0:394:U:H2'	1:0:395:G:H8	1.71	0.54
1:0:468:A:H2'	1:0:469:G:H4'	1.90	0.54
1:0:798:G:O2'	1:0:1770:U:H4'	2.07	0.54
1:0:1955:G:C2'	1:0:1956:G:H5'	2.37	0.54
1:0:1982:C:H1'	1:0:2666:U:O2'	2.07	0.54
1:0:2168:A:H2'	1:0:2169:A:H5'	1.89	0.54
1:0:1313:U:O2'	1:0:1314:A:P	2.66	0.54
1:0:1459:U:H2'	1:0:1475:U:O2'	2.07	0.54
1:0:1818:G:H2'	1:0:1819:U:C6	2.42	0.54
1:0:2466:G:H2'	1:0:2467:A:C8	2.42	0.54
1:0:162:C:H4'	1:0:195:A:O2'	2.08	0.54
1:0:1746:A:C2'	1:0:1747:G:H5'	2.36	0.54
1:0:393:U:H2'	1:0:394:U:C6	2.43	0.54
1:0:1279:G:C2'	1:0:1280:U:OP2	2.56	0.54
1:0:1356:G:H5'	1:0:1614:C:OP2	2.08	0.54
1:0:2319:G:H2'	1:0:2320:G:C8	2.43	0.54
1:0:942:U:O2'	1:0:943:U:H5'	2.07	0.54
1:0:1210:C:H2'	1:0:1211:G:O4'	2.08	0.54
1:0:1289:A:H62	1:0:1662:G:H1	1.56	0.54
1:0:2249:U:H2'	1:0:2250:G:O4'	2.08	0.54
1:0:48:A:H4'	1:0:50:G:O4'	2.08	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:216:U:H2'	1:0:217:U:O4'	2.08	0.54
1:0:2516:U:H2'	1:0:2517:C:C6	2.42	0.54
1:0:564:U:H2'	1:0:565:A:C8	2.42	0.54
1:0:1463:A:H2'	1:0:1464:A:C8	2.42	0.54
1:0:2492:G:H2'	1:0:2493:U:O4'	2.07	0.54
1:0:242:A:O2'	1:0:243:G:O5'	2.26	0.54
1:0:484:G:O2'	1:0:485:G:H5'	2.07	0.54
1:0:775:U:H4'	1:0:776:G:C8	2.43	0.54
1:0:826:U:H2'	1:0:827:C:C6	2.43	0.54
1:0:2372:A:H2'	1:0:2373:C:C6	2.43	0.54
1:0:126:C:H2'	1:0:127:C:C6	2.42	0.53
1:0:598:U:H2'	1:0:599:A:C8	2.42	0.53
1:0:728:G:H2'	1:0:729:A:O4'	2.08	0.53
1:0:1273:G:H2'	1:0:1274:C:C6	2.44	0.53
1:0:1333:G:N2	1:0:1344:C:N4	2.55	0.53
1:0:2440:C:H1'	1:0:2471:U:N3	2.23	0.53
1:0:173:A:O2'	1:0:174:A:OP1	2.19	0.53
1:0:939:C:H2'	1:0:940:G:C8	2.43	0.53
1:0:1976:U:C2'	1:0:1977:C:H5'	2.37	0.53
1:0:67:G:H8	1:0:67:G:O5'	1.90	0.53
1:0:646:C:H2'	1:0:647:G:O4'	2.08	0.53
1:0:788:G:H5'	1:0:790:A:H1'	1.89	0.53
1:0:917:U:H2'	1:0:918:A:O4'	2.07	0.53
1:0:1528:C:C3'	1:0:1529:C:H5''	2.38	0.53
1:0:1974:U:H2'	1:0:1975:G:H5''	1.89	0.53
1:0:33:C:N4	1:0:466:A:H61	2.06	0.53
1:0:317:U:C3'	1:0:318:G:H5''	2.39	0.53
1:0:832:A:H2'	1:0:833:A:O4'	2.07	0.53
1:0:857:U:H2'	1:0:858:G:H5'	1.90	0.53
1:0:918:A:C2'	1:0:919:U:H5''	2.36	0.53
1:0:929:A:H3'	1:0:930:A:C5'	2.33	0.53
1:0:1664:G:H4'	1:0:1665:C:O5'	2.07	0.53
1:0:1838:G:C2'	1:0:1839:A:H5'	2.38	0.53
1:0:1921:A:H2'	1:0:1922:U:H5''	1.90	0.53
1:0:2321:C:O2'	1:0:2353:G:H5''	2.09	0.53
1:0:2498:U:H5''	1:0:2499:C:OP1	2.09	0.53
1:0:2571:G:H2'	1:0:2572:U:C6	2.42	0.53
1:0:225:G:N2	1:0:2410:U:H1'	2.23	0.53
1:0:404:A:H2'	1:0:405:C:C6	2.43	0.53
1:0:878:C:N4	1:0:921:A:H62	2.05	0.53
1:0:1326:U:H2'	1:0:1327:C:H5'	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1358:C:H2'	1:0:1359:G:C5'	2.38	0.53
1:0:1971:C:H2'	1:0:1972:G:C8	2.43	0.53
1:0:2312:A:H1'	1:0:2314:A:C8	2.44	0.53
1:0:688:A:O2'	1:0:2422:C:H4'	2.08	0.53
1:0:737:C:H2'	1:0:738:G:O4'	2.09	0.53
1:0:807:A:H2'	1:0:808:C:C6	2.43	0.53
1:0:960:U:H2'	1:0:961:G:C8	2.43	0.53
1:0:1414:G:H2'	1:0:1415:C:C6	2.44	0.53
1:0:1745:C:H2'	1:0:1746:A:O4'	2.09	0.53
1:0:1825:C:C2'	1:0:1826:U:H5'	2.38	0.53
1:0:2756:A:H1'	1:0:2758:A:N7	2.23	0.53
1:0:212:U:H2'	1:0:213:C:C6	2.44	0.53
1:0:830:C:O2'	1:0:852:U:H5''	2.09	0.53
1:0:1029:C:H2'	1:0:1030:U:H5''	1.91	0.53
1:0:1190:C:H2'	1:0:1191:G:C8	2.44	0.53
1:0:1301:U:H2'	1:0:1664:G:H21	1.73	0.53
1:0:1763:G:H2'	1:0:1764:A:H4'	1.90	0.53
1:0:1938:U:C2'	1:0:1939:U:H5'	2.38	0.53
1:0:341:A:H1'	1:0:1223:G:O6	2.08	0.53
1:0:597:U:H3	1:0:683:A:H2'	1.74	0.53
1:0:1497:C:O2'	1:0:1498:G:H5'	2.08	0.53
1:0:1789:U:O2'	1:0:1790:G:H5'	2.08	0.53
1:0:2780:A:O2'	1:0:2781:G:H5'	2.09	0.53
1:0:201:G:H2'	1:0:202:A:C8	2.44	0.53
1:0:521:U:H2'	1:0:522:G:H5'	1.91	0.53
1:0:1075:C:H2'	1:0:1076:U:O4'	2.09	0.53
1:0:1502:G:O2'	1:0:1503:G:H5'	2.09	0.53
1:0:1654:A:H2'	1:0:1655:C:C6	2.43	0.53
1:0:2757:G:OP2	1:0:2761:A:H4'	2.09	0.53
1:0:665:A:OP2	1:0:666:U:H5'	2.09	0.53
1:0:874:A:H62	1:0:928:G:N2	2.07	0.53
1:0:599:A:H2'	1:0:600:G:C8	2.44	0.52
1:0:1313:U:O4	1:0:1651:U:H5'	2.09	0.52
1:0:2536:G:H2'	1:0:2537:C:C6	2.44	0.52
1:0:2809:A:C2'	1:0:2810:A:H5'	2.39	0.52
1:0:38:G:H2'	1:0:39:C:C6	2.44	0.52
1:0:597:U:H2'	1:0:598:U:C6	2.43	0.52
1:0:638:A:O2'	1:0:639:G:H5'	2.09	0.52
1:0:843:G:O2'	1:0:844:G:H5'	2.10	0.52
1:0:1217:U:H2'	1:0:1218:C:C6	2.44	0.52
1:0:1900:U:H4'	1:0:1946:U:O4'	2.09	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:95:G:H2'	1:0:96:C:C6	2.44	0.52
1:0:181:A:H4'	1:0:182:G:C4'	2.39	0.52
1:0:215:G:O2'	1:0:617:U:H1'	2.08	0.52
1:0:394:U:H2'	1:0:395:G:C8	2.44	0.52
1:0:460:U:N3	1:0:592:G:H1'	2.20	0.52
1:0:538:A:C2'	1:0:539:A:H5''	2.38	0.52
1:0:578:U:C1'	1:0:957:G:H21	2.21	0.52
1:0:658:G:H4'	1:0:2331:A:H5'	1.91	0.52
1:0:757:U:O2'	1:0:758:G:H5'	2.09	0.52
1:0:870:C:H2'	1:0:871:U:C6	2.43	0.52
1:0:1004:A:H2'	1:0:1005:U:H5''	1.90	0.52
1:0:1566:G:H4'	1:0:1733:U:O4	2.10	0.52
1:0:1964:A:H5''	1:0:1965:U:OP2	2.09	0.52
1:0:127:C:H2'	1:0:128:C:C6	2.45	0.52
1:0:167:A:H2'	1:0:168:A:C8	2.44	0.52
1:0:1970:G:H2'	1:0:1971:C:C6	2.44	0.52
1:0:2401:A:H2'	1:0:2403:C:C5	2.44	0.52
1:0:2426:G:N2	1:0:2430:A:H62	2.07	0.52
1:0:2728:A:H2'	1:0:2729:A:O4'	2.09	0.52
1:0:616:U:C2'	1:0:617:U:H5''	2.36	0.52
1:0:776:G:H2'	1:0:776:G:N3	2.25	0.52
1:0:1234:C:H2'	1:0:1235:C:C6	2.45	0.52
1:0:689:A:H3'	1:0:689:A:N3	2.24	0.52
1:0:1286:U:H5''	1:0:1663:C:N4	2.24	0.52
1:0:1312:G:C5'	1:0:1313:U:H5'	2.34	0.52
1:0:2272:A:H2'	1:0:2273:C:C6	2.45	0.52
1:0:2700:U:N3	1:0:2848:A:N6	2.55	0.52
1:0:2756:A:H4'	1:0:2758:A:OP1	2.09	0.52
1:0:9:U:H3	1:0:2608:A:N6	2.02	0.52
1:0:45:C:H5''	1:0:192:G:C8	2.44	0.52
1:0:129:A:H2'	1:0:130:C:C6	2.44	0.52
1:0:230:C:H2'	1:0:231:G:O4'	2.10	0.52
1:0:333:A:H1'	1:0:351:A:C4	2.44	0.52
1:0:446:C:H2'	1:0:447:U:C6	2.45	0.52
1:0:476:G:H2'	1:0:477:A:C8	2.44	0.52
1:0:541:C:H2'	1:0:2002:A:C2	2.44	0.52
1:0:795:A:H4'	1:0:796:A:C8	2.44	0.52
1:0:1365:U:H1'	1:0:1586:A:H2	1.75	0.52
1:0:332:C:H2'	1:0:333:A:H5'	1.92	0.52
1:0:2083:G:H2'	1:0:2084:G:O4'	2.10	0.52
1:0:70:A:P	1:0:111:G:H4'	2.50	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:71:A:H5''	1:0:72:A:OP2	2.10	0.52
1:0:457:C:H2'	1:0:458:G:O4'	2.10	0.52
1:0:1259:A:H2'	1:0:1260:A:C8	2.45	0.52
1:0:1288:A:H2'	1:0:1289:A:O4'	2.09	0.52
1:0:1597:A:H2'	1:0:1598:C:C6	2.45	0.52
1:0:1923:U:H1'	1:0:1947:G:H4'	1.92	0.52
1:0:2504:G:H2'	1:0:2505:G:C8	2.45	0.52
1:0:2559:U:H2'	1:0:2560:G:H5'	1.91	0.52
1:0:688:A:H1'	1:0:2423:G:H5'	1.92	0.52
1:0:1198:C:C5'	1:0:1199:U:H5''	2.40	0.52
1:0:1788:C:H2'	1:0:1789:U:C6	2.45	0.52
1:0:1949:A:H1'	1:0:2572:U:C4'	2.40	0.52
1:0:2451:G:H2'	1:0:2508:G:N2	2.25	0.52
1:0:58:C:O2	1:0:72:A:H3'	2.10	0.51
1:0:1092:U:H2'	1:0:1093:U:C6	2.44	0.51
1:0:1576:G:H2'	1:0:1577:G:O4'	2.10	0.51
1:0:1775:A:H4'	1:0:1776:A:C8	2.45	0.51
1:0:35:G:C1'	1:0:466:A:H1'	2.39	0.51
1:0:158:A:H2'	1:0:159:A:C8	2.45	0.51
1:0:168:A:H2'	1:0:169:C:C6	2.45	0.51
1:0:317:U:C2'	1:0:318:G:H5''	2.39	0.51
1:0:838:A:H2'	1:0:839:U:C6	2.45	0.51
1:0:2177:U:H2'	1:0:2178:U:C6	2.45	0.51
1:0:2213:G:H2'	1:0:2214:G:C8	2.46	0.51
1:0:2552:C:H5''	1:0:2553:G:H5''	1.92	0.51
1:0:2623:A:H2'	1:0:2624:G:O4'	2.10	0.51
1:0:688:A:HO2'	1:0:2422:C:H4'	1.75	0.51
1:0:1018:C:H2'	1:0:1019:U:C5	2.44	0.51
1:0:2242:C:N4	1:0:2257:A:N6	2.57	0.51
1:0:2320:G:H2'	1:0:2321:C:O4'	2.09	0.51
1:0:491:A:N3	1:0:491:A:H2'	2.26	0.51
1:0:1352:G:H2'	1:0:1353:A:C8	2.43	0.51
1:0:1661:C:O2'	1:0:1662:G:H5'	2.10	0.51
1:0:2532:G:H1'	1:0:2561:G:N2	2.25	0.51
1:0:2703:C:H2'	1:0:2704:U:C6	2.45	0.51
1:0:109:A:C2'	1:0:110:U:H5''	2.41	0.51
1:0:451:A:H2'	1:0:452:G:C8	2.45	0.51
1:0:980:G:H2'	1:0:981:C:C6	2.46	0.51
1:0:1358:C:H2'	1:0:1359:G:H5''	1.92	0.51
1:0:1727:C:H4'	1:0:2833:C:O2	2.10	0.51
1:0:2160:C:H2'	1:0:2161:C:C6	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2426:G:O2'	1:0:2427:A:P	2.68	0.51
1:0:2483:U:H1'	1:0:2551:A:N1	2.26	0.51
1:0:512:A:H2'	1:0:513:A:H5'	1.93	0.51
1:0:868:U:H2'	1:0:869:C:C6	2.45	0.51
1:0:959:C:H5''	1:0:972:C:O2'	2.11	0.51
1:0:1683:G:C2'	1:0:1684:G:H5'	2.41	0.51
1:0:1860:A:H2'	1:0:1861:G:O4'	2.11	0.51
1:0:1865:C:H2'	1:0:1866:G:O4'	2.10	0.51
1:0:2532:G:H1'	1:0:2561:G:H21	1.76	0.51
1:0:223:C:H4'	1:0:398:C:H1'	1.92	0.51
1:0:459:A:H62	1:0:484:G:H1'	1.76	0.51
1:0:590:C:H2'	1:0:591:G:C8	2.45	0.51
1:0:941:U:H4'	1:0:941:U:OP1	2.10	0.51
1:0:1611:U:H2'	1:0:1612:U:O4'	2.11	0.51
1:0:2059:U:H2'	1:0:2060:A:H5''	1.91	0.51
1:0:69:G:H3'	1:0:111:G:O2'	2.11	0.51
1:0:422:C:H2'	1:0:423:G:H8	1.76	0.51
1:0:1068:A:H2'	1:0:1069:G:C8	2.45	0.51
1:0:1677:C:H2'	1:0:1678:G:C8	2.46	0.51
1:0:170:U:H2'	1:0:171:G:H8	1.76	0.51
1:0:243:G:H2'	1:0:244:C:O4'	2.11	0.51
1:0:579:G:H2'	1:0:2013:A:N6	2.26	0.51
1:0:1127:C:H2'	1:0:1128:G:H8	1.76	0.51
1:0:1218:C:H2'	1:0:1219:C:C6	2.45	0.51
1:0:1819:U:H5''	1:0:1954:A:O3'	2.11	0.51
1:0:742:G:H2'	1:0:1766:U:H1'	1.93	0.51
1:0:1057:A:H3'	1:0:1058:G:C5'	2.41	0.51
1:0:1377:G:H4'	1:0:1800:A:H5'	1.93	0.51
1:0:2660:C:O2'	1:0:2661:G:H5'	2.11	0.51
1:0:18:U:H2'	1:0:19:C:C6	2.46	0.50
1:0:587:A:H2'	1:0:588:G:H5''	1.93	0.50
1:0:619:A:H2'	1:0:620:G:C8	2.46	0.50
1:0:2023:C:H2'	1:0:2024:U:C6	2.46	0.50
1:0:2429:A:H5''	1:0:2476:A:C6	2.46	0.50
1:0:2727:G:C2'	1:0:2728:A:H5''	2.41	0.50
1:0:2872:U:H2'	1:0:2873:G:C8	2.47	0.50
1:0:114:C:H2'	1:0:115:G:O4'	2.11	0.50
1:0:1038:U:O2	1:0:2466:G:H4'	2.10	0.50
1:0:1052:C:H2'	1:0:1053:G:C8	2.45	0.50
1:0:2079:A:H2'	1:0:2080:U:C6	2.46	0.50
1:0:116:A:N3	1:0:155:G:H1'	2.26	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:216:U:H5'	1:0:601:A:N6	2.27	0.50
1:0:1354:A:H3'	1:0:1410:U:O2	2.11	0.50
1:0:1626:A:OP2	1:0:1627:C:H5	1.95	0.50
1:0:1861:G:O2'	1:0:1862:C:H5'	2.11	0.50
1:0:2178:U:H2'	1:0:2179:C:C6	2.47	0.50
1:0:2238:G:H2'	1:0:2239:C:H6	1.76	0.50
1:0:2725:C:H2'	1:0:2726:U:C6	2.47	0.50
1:0:2726:U:H2'	1:0:2727:G:O4'	2.11	0.50
1:0:25:U:H3	1:0:525:A:H61	1.56	0.50
1:0:583:C:O2'	1:0:584:A:OP2	2.29	0.50
1:0:599:A:H2'	1:0:600:G:H8	1.76	0.50
1:0:841:G:N1	1:0:2226:A:H4'	2.26	0.50
1:0:1194:U:O2'	1:0:1195:U:P	2.70	0.50
1:0:1272:G:H2'	1:0:1273:G:C8	2.47	0.50
1:0:1424:U:H2'	1:0:1425:G:C8	2.46	0.50
1:0:1857:G:H2'	1:0:1859:A:OP2	2.12	0.50
1:0:1881:U:H2'	1:0:1882:G:H5'	1.94	0.50
1:0:2057:U:H1'	1:0:2577:A:H1'	1.93	0.50
1:0:2397:A:H2'	1:0:2398:U:O4'	2.11	0.50
1:0:2446:C:H2'	1:0:2447:G:C8	2.47	0.50
1:0:879:A:O2'	1:0:880:C:H5'	2.11	0.50
1:0:964:A:H2'	1:0:965:G:C8	2.47	0.50
1:0:1747:G:C4'	1:0:1749:G:H1'	2.31	0.50
1:0:2244:C:N4	1:0:2245:A:N6	2.58	0.50
1:0:64:C:H2'	1:0:65:C:C6	2.46	0.50
1:0:210:A:N6	1:0:242:A:N7	2.59	0.50
1:0:316:C:H2'	1:0:317:U:C6	2.47	0.50
1:0:872:G:H2'	1:0:928:G:N1	2.27	0.50
1:0:1279:G:H1'	1:0:1280:U:H5	1.76	0.50
1:0:1979:C:H42	1:0:2706:U:H6	1.60	0.50
1:0:2010:G:H2'	1:0:2011:U:O4'	2.12	0.50
1:0:2329:C:C2'	1:0:2330:G:H5'	2.42	0.50
1:0:2560:G:H3'	1:0:2560:G:N3	2.27	0.50
1:0:2821:G:H2'	1:0:2822:U:C6	2.46	0.50
1:0:215:G:H4'	1:0:617:U:O2'	2.12	0.50
1:0:788:G:H5'	1:0:790:A:N3	2.26	0.50
1:0:991:A:H61	1:0:2020:G:H21	1.59	0.50
1:0:1067:G:H2'	1:0:1114:A:H61	1.77	0.50
1:0:1164:C:H2'	1:0:1165:G:O4'	2.11	0.50
1:0:2181:A:H2'	1:0:2182:A:H5'	1.92	0.50
1:0:2428:U:O2'	1:0:2429:A:H5'	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2435:C:H2'	1:0:2436:U:C6	2.47	0.50
1:0:338:G:O2'	1:0:339:U:H5'	2.12	0.50
1:0:594:G:H21	1:0:1267:A:H62	1.60	0.50
1:0:645:G:H2'	1:0:646:C:C6	2.47	0.50
1:0:831:G:C2'	1:0:832:A:H5''	2.41	0.50
1:0:2082:C:H2'	1:0:2083:G:O4'	2.11	0.50
1:0:703:A:H2'	1:0:704:G:H8	1.77	0.50
1:0:991:A:N6	1:0:2020:G:H21	2.10	0.50
1:0:1029:C:OP1	1:0:1047:G:H4'	2.11	0.50
1:0:1055:A:N6	1:0:1122:A:H4'	2.27	0.50
1:0:1073:G:H2'	1:0:1074:G:C4'	2.29	0.50
1:0:1312:G:H2'	1:0:1643:A:N6	2.26	0.50
1:0:1685:A:H1'	1:0:1686:A:N7	2.27	0.50
1:0:1920:A:N6	1:0:1923:U:H6	2.10	0.50
1:0:2299:A:H2'	1:0:2299:A:N3	2.26	0.50
1:0:2561:G:O2'	1:0:2562:G:H5'	2.12	0.50
1:0:864:C:H2'	1:0:865:A:C8	2.46	0.49
1:0:1667:A:H2'	1:0:1668:G:H8	1.77	0.49
1:0:1820:G:O2'	1:0:1821:A:P	2.70	0.49
1:0:109:A:H3'	1:0:110:U:C5'	2.39	0.49
1:0:792:U:H2'	1:0:793:G:O4'	2.12	0.49
1:0:860:U:H2'	1:0:861:G:H5'	1.94	0.49
1:0:1029:C:C3'	1:0:1030:U:H5''	2.43	0.49
1:0:1785:A:H2'	1:0:1786:C:C6	2.46	0.49
1:0:2229:G:H2'	1:0:2475:C:OP1	2.12	0.49
1:0:26:G:H21	1:0:524:A:N6	2.10	0.49
1:0:45:C:H2'	1:0:46:C:C6	2.46	0.49
1:0:431:G:H2'	1:0:432:C:C6	2.47	0.49
1:0:1492:A:H2	1:0:1531:C:H41	1.58	0.49
1:0:2580:C:N4	1:0:2582:G:O6	2.45	0.49
1:0:2754:C:H2'	1:0:2755:A:O4'	2.12	0.49
1:0:2805:G:O2'	1:0:2806:G:H5'	2.12	0.49
1:0:203:G:O2'	1:0:204:A:H5'	2.12	0.49
1:0:689:A:N6	1:0:815:A:H61	2.06	0.49
1:0:1055:A:O2'	1:0:1058:G:H1'	2.13	0.49
1:0:1162:A:H2'	1:0:1163:C:C6	2.47	0.49
1:0:1895:A:H2'	1:0:1896:A:O4'	2.13	0.49
1:0:2161:C:O2'	1:0:2162:C:P	2.71	0.49
1:0:2313:G:H2'	1:0:2314:A:H5'	1.94	0.49
1:0:2559:U:C2'	1:0:2560:G:H5'	2.41	0.49
1:0:165:G:H2'	1:0:166:G:O4'	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:597:U:N3	1:0:683:A:H2'	2.27	0.49
1:0:689:A:C2'	1:0:690:A:H5'	2.43	0.49
1:0:810:U:H2'	1:0:811:G:C8	2.48	0.49
1:0:1310:C:OP1	1:0:2689:C:H4'	2.12	0.49
1:0:1912:G:H2'	1:0:1912:G:N3	2.26	0.49
1:0:2404:A:H5''	1:0:2405:A:H3'	1.94	0.49
1:0:2771:C:H2'	1:0:2772:U:C6	2.47	0.49
1:0:2783:U:H2'	1:0:2784:A:O4'	2.12	0.49
1:0:84:G:H2'	1:0:85:C:C6	2.48	0.49
1:0:441:A:H2'	1:0:442:A:O4'	2.11	0.49
1:0:693:A:H2'	1:0:694:G:C8	2.47	0.49
1:0:777:A:H62	1:0:1766:U:H3	1.60	0.49
1:0:1031:C:H1'	1:0:1151:U:O2	2.13	0.49
1:0:1195:U:H2'	1:0:1196:G:H8	1.73	0.49
1:0:1445:A:H2'	1:0:1446:U:O4'	2.13	0.49
1:0:1791:C:H2'	1:0:1792:C:H5''	1.95	0.49
1:0:1889:G:H2'	1:0:1890:G:C8	2.48	0.49
1:0:83:A:C6	1:0:98:U:H1'	2.46	0.49
1:0:108:G:H2'	1:0:109:A:C8	2.48	0.49
1:0:1793:A:H2'	1:0:1794:A:C8	2.48	0.49
1:0:2093:G:H2'	1:0:2094:C:C6	2.47	0.49
1:0:2235:G:H2'	1:0:2236:U:C6	2.48	0.49
1:0:2494:C:H2'	1:0:2495:G:H8	1.78	0.49
1:0:2503:G:C2'	1:0:2504:G:H5''	2.43	0.49
1:0:108:G:H2'	1:0:109:A:H8	1.78	0.49
1:0:541:C:H2'	1:0:2002:A:N1	2.27	0.49
1:0:860:U:O2'	1:0:861:G:H5'	2.13	0.49
1:0:930:A:H5'	1:0:931:G:C8	2.47	0.49
1:0:1455:C:H2'	1:0:1456:C:C6	2.48	0.49
1:0:1629:G:N1	1:0:1633:C:N4	2.61	0.49
1:0:1665:C:N4	1:0:1993:G:H1	2.11	0.49
1:0:2301:A:H2'	1:0:2302:G:O4'	2.13	0.49
1:0:756:C:H2'	1:0:757:U:C6	2.48	0.49
1:0:951:G:C3'	1:0:952:A:H5''	2.43	0.49
1:0:1141:U:O2'	1:0:1142:G:OP1	2.26	0.49
1:0:1686:A:H2'	1:0:1687:C:H5'	1.94	0.49
1:0:2370:G:HO2'	1:0:2371:A:H2	1.61	0.49
1:0:2794:G:H3'	1:0:2796:A:N6	2.21	0.49
1:0:2799:C:H2'	1:0:2800:C:O4'	2.12	0.49
1:0:2852:G:H2'	1:0:2853:U:O4'	2.13	0.49
1:0:35:G:H1'	1:0:466:A:H1'	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:173:A:H61	1:0:844:G:H21	1.59	0.49
1:0:211:U:O2'	1:0:212:U:H5'	2.13	0.49
1:0:338:G:H1	1:0:346:C:H42	1.61	0.49
1:0:626:A:O2'	1:0:627:A:H5'	2.13	0.49
1:0:780:U:H2'	1:0:781:G:C8	2.48	0.49
1:0:790:A:H2'	1:0:791:G:C8	2.48	0.49
1:0:942:U:C2'	1:0:943:U:H5'	2.42	0.49
1:0:1016:C:H2'	1:0:1017:C:C6	2.48	0.49
1:0:1678:G:H2'	1:0:1679:U:C6	2.47	0.49
1:0:1685:A:C6	1:0:1691:G:H1'	2.48	0.49
1:0:1825:C:O2'	1:0:1826:U:H5'	2.13	0.49
1:0:213:C:H42	1:0:238:G:H22	1.60	0.48
1:0:1040:A:H2'	1:0:1041:G:H5'	1.93	0.48
1:0:1435:G:H21	1:0:1511:A:N6	2.12	0.48
1:0:1598:C:H2'	1:0:1599:G:O4'	2.13	0.48
1:0:1729:C:H2'	1:0:1730:G:C8	2.48	0.48
1:0:2026:C:H2'	1:0:2027:C:C6	2.48	0.48
1:0:2093:G:O2'	1:0:2094:C:P	2.71	0.48
1:0:2426:G:H5'	1:0:2480:C:N4	2.22	0.48
1:0:2564:U:H4'	1:0:2565:C:H5'	1.94	0.48
1:0:2574:G:H2'	1:0:2574:G:N3	2.28	0.48
1:0:172:A:H4'	1:0:228:A:H4'	1.94	0.48
1:0:181:A:H4'	1:0:182:G:O5'	2.12	0.48
1:0:429:C:H2'	1:0:430:C:O4'	2.13	0.48
1:0:941:U:H2'	1:0:942:U:C6	2.48	0.48
1:0:1349:A:H2'	1:0:1350:G:C8	2.48	0.48
1:0:1715:A:H1'	1:0:1717:A:C1'	2.43	0.48
1:0:2343:C:H2'	1:0:2344:G:O4'	2.13	0.48
1:0:2782:G:C2'	1:0:2783:U:OP1	2.61	0.48
1:0:476:G:H21	1:0:696:U:H1'	1.78	0.48
1:0:1182:U:C3'	1:0:1183:C:H5''	2.43	0.48
1:0:1871:G:N3	1:0:1871:G:C2'	2.76	0.48
1:0:427:C:H2'	1:0:428:A:C8	2.49	0.48
1:0:873:U:O2	1:0:2246:A:H5''	2.13	0.48
1:0:1038:U:H2'	1:0:1039:A:C8	2.49	0.48
1:0:1380:C:N4	1:0:1799:A:N1	2.62	0.48
1:0:1495:G:HO2'	1:0:1496:G:P	2.36	0.48
1:0:1679:U:H2'	1:0:1680:U:H5''	1.94	0.48
1:0:1682:A:H2'	1:0:1683:G:C8	2.48	0.48
1:0:2085:G:H2'	1:0:2086:U:C6	2.49	0.48
1:0:2492:G:H2'	1:0:2493:U:C6	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2503:G:H2'	1:0:2504:G:H5''	1.96	0.48
1:0:204:A:H4'	1:0:205:A:N7	2.28	0.48
1:0:742:G:N3	1:0:742:G:C2'	2.77	0.48
1:0:1099:A:H5''	1:0:1100:G:N7	2.28	0.48
1:0:1458:A:H3'	1:0:1459:U:H5'	1.96	0.48
1:0:2308:A:H2'	1:0:2309:G:C8	2.48	0.48
1:0:2434:G:H2'	1:0:2435:C:C6	2.49	0.48
1:0:42:G:H2'	1:0:43:A:O4'	2.13	0.48
1:0:210:A:N6	1:0:442:A:H61	2.11	0.48
1:0:323:G:H2'	1:0:324:C:C6	2.48	0.48
1:0:367:G:C3'	1:0:368:A:H5''	2.44	0.48
1:0:1046:U:H2'	1:0:1047:G:C8	2.49	0.48
1:0:1141:U:O2'	1:0:1142:G:P	2.72	0.48
1:0:1807:A:HO2'	1:0:1808:C:P	2.36	0.48
1:0:2220:A:H2'	1:0:2221:G:C8	2.48	0.48
1:0:2421:C:O2'	1:0:2422:C:H5'	2.13	0.48
1:0:2708:U:H2'	1:0:2709:C:C6	2.49	0.48
1:0:477:A:H2'	1:0:478:G:O4'	2.14	0.48
1:0:830:C:O2	1:0:852:U:H4'	2.14	0.48
1:0:1391:A:H2'	1:0:1392:U:C5	2.49	0.48
1:0:1742:G:H2'	1:0:1743:C:C6	2.48	0.48
1:0:2025:A:H2'	1:0:2026:C:H5''	1.94	0.48
1:0:225:G:H21	1:0:2410:U:H1'	1.77	0.48
1:0:478:G:O2'	1:0:479:G:H5'	2.14	0.48
1:0:568:G:H5''	1:0:1019:U:H5'	1.95	0.48
1:0:569:C:H2'	1:0:570:G:C8	2.49	0.48
1:0:979:A:H2'	1:0:980:G:C8	2.49	0.48
1:0:1316:G:H2'	1:0:1317:G:C8	2.49	0.48
1:0:1429:A:H1'	1:0:1603:A:C6	2.49	0.48
1:0:1436:G:H2'	1:0:1437:A:C8	2.49	0.48
1:0:1686:A:O2'	1:0:2528:G:H5'	2.14	0.48
1:0:2377:U:O2'	1:0:2378:G:P	2.71	0.48
1:0:2424:G:H2'	1:0:2425:G:O4'	2.14	0.48
1:0:2815:C:H2'	1:0:2816:C:C6	2.49	0.48
1:0:239:A:H4'	1:0:620:G:H5'	1.95	0.48
1:0:1033:G:H22	1:0:1150:C:C2'	2.26	0.48
1:0:1571:G:H2'	1:0:1572:C:C6	2.49	0.48
1:0:2204:A:O2'	1:0:2205:C:OP2	2.32	0.48
1:0:2212:U:H2'	1:0:2213:G:C8	2.49	0.48
1:0:240:U:H4'	1:0:443:A:H5'	1.96	0.48
1:0:845:U:H2'	1:0:846:A:C8	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1326:U:H1'	1:0:1626:A:N3	2.29	0.48
1:0:1684:G:H2'	1:0:1974:U:O4	2.14	0.48
1:0:2372:A:H2'	1:0:2373:C:H6	1.77	0.48
1:0:2830:U:H2'	1:0:2831:A:C8	2.49	0.48
1:0:546:A:H2'	1:0:547:U:C6	2.49	0.47
1:0:670:U:H2'	1:0:671:A:C8	2.49	0.47
1:0:864:C:H2'	1:0:865:A:H8	1.79	0.47
1:0:1036:G:H1'	1:0:1145:C:C4'	2.44	0.47
1:0:1712:G:H3'	1:0:1712:G:N3	2.29	0.47
1:0:2721:A:N6	1:0:2743:G:H21	2.10	0.47
1:0:452:G:H2'	1:0:453:U:O4'	2.14	0.47
1:0:664:C:H2'	1:0:665:A:C8	2.49	0.47
1:0:974:U:H2'	1:0:975:C:C6	2.49	0.47
1:0:1028:G:H2'	1:0:1029:C:C6	2.50	0.47
1:0:1471:G:H1	1:0:2682:C:H42	1.62	0.47
1:0:2278:A:H2'	1:0:2279:G:C8	2.49	0.47
1:0:2316:G:H2'	1:0:2317:G:H8	1.78	0.47
1:0:190:A:H2'	1:0:191:G:C8	2.49	0.47
1:0:192:G:C4'	1:0:193:A:H4'	2.45	0.47
1:0:548:G:H2'	1:0:549:G:C8	2.49	0.47
1:0:595:A:H62	1:0:1264:C:N4	2.12	0.47
1:0:1014:G:O2'	1:0:1015:U:H5'	2.14	0.47
1:0:67:G:N2	1:0:73:A:O5'	2.47	0.47
1:0:583:C:O2'	1:0:584:A:P	2.71	0.47
1:0:1821:A:H5''	1:0:1822:C:H5	1.79	0.47
1:0:2009:U:H2'	1:0:2010:G:C8	2.49	0.47
1:0:2035:G:H2'	1:0:2036:G:C8	2.45	0.47
1:0:2168:A:C2'	1:0:2169:A:H5'	2.44	0.47
1:0:161:U:H2'	1:0:162:C:C6	2.49	0.47
1:0:224:G:C5	1:0:226:C:H1'	2.48	0.47
1:0:701:U:H1'	1:0:800:U:H5'	1.97	0.47
1:0:824:U:H1'	1:0:1264:C:C1'	2.43	0.47
1:0:1069:G:O2'	1:0:1070:G:H5'	2.14	0.47
1:0:1226:A:C6	1:0:1250:A:H1'	2.49	0.47
1:0:1316:G:H2'	1:0:1317:G:H8	1.79	0.47
1:0:1793:A:H2'	1:0:1794:A:H8	1.80	0.47
1:0:1821:A:H3'	1:0:1822:C:H6	1.80	0.47
1:0:2468:G:H2'	1:0:2469:G:O4'	2.15	0.47
1:0:2523:G:O2'	1:0:2524:G:H5'	2.14	0.47
1:0:1386:A:H2'	1:0:1387:G:O4'	2.14	0.47
1:0:1436:G:C1'	1:0:1508:G:H21	2.21	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2069:U:H2'	1:0:2070:G:C8	2.49	0.47
1:0:2211:U:H2'	1:0:2212:U:C6	2.49	0.47
1:0:2378:G:H2'	1:0:2379:G:H8	1.80	0.47
1:0:2402:U:H5'	1:0:2404:A:N7	2.30	0.47
1:0:84:G:O2'	1:0:85:C:H5'	2.15	0.47
1:0:246:C:N3	1:0:247:A:N6	2.63	0.47
1:0:565:A:H2'	1:0:566:U:C6	2.50	0.47
1:0:635:C:H3'	1:0:636:G:H5''	1.97	0.47
1:0:643:A:H2'	1:0:644:A:C8	2.49	0.47
1:0:703:A:H2'	1:0:704:G:C8	2.50	0.47
1:0:763:A:C2	1:0:765:C:H1'	2.49	0.47
1:0:780:U:H2'	1:0:781:G:H8	1.80	0.47
1:0:1039:A:H2'	1:0:1040:A:C8	2.48	0.47
1:0:1184:G:H2'	1:0:1185:C:H5'	1.97	0.47
1:0:1263:G:O2'	1:0:1264:C:P	2.73	0.47
1:0:1344:C:H2'	1:0:1346:C:OP1	2.14	0.47
1:0:1436:G:H1'	1:0:1508:G:N2	2.18	0.47
1:0:1679:U:C2'	1:0:1680:U:H5''	2.45	0.47
1:0:1809:G:O2'	1:0:1810:U:H5'	2.14	0.47
1:0:1981:A:H2'	1:0:1982:C:C6	2.49	0.47
1:0:2021:G:H2'	1:0:2022:C:C6	2.50	0.47
1:0:2062:U:H4'	1:0:2412:A:H2	1.79	0.47
1:0:2651:U:H2'	1:0:2652:G:C8	2.50	0.47
1:0:2658:A:H2'	1:0:2659:C:C6	2.50	0.47
1:0:109:A:H2'	1:0:110:U:H5''	1.97	0.47
1:0:926:C:H2'	1:0:927:C:H5'	1.95	0.47
1:0:1259:A:H2'	1:0:1260:A:O4'	2.14	0.47
1:0:1993:G:H2'	1:0:1994:U:C6	2.50	0.47
1:0:2204:A:H1'	1:0:2205:C:C5	2.49	0.47
1:0:2307:A:H2'	1:0:2308:A:C8	2.50	0.47
1:0:2560:G:H4'	1:0:2561:G:C8	2.50	0.47
1:0:2564:U:H5''	1:0:2565:C:H5'	1.96	0.47
1:0:2757:G:H5'	1:0:2761:A:H1'	1.97	0.47
1:0:432:C:H2'	1:0:433:G:H8	1.80	0.47
1:0:539:A:N6	1:0:2024:U:H3	2.12	0.47
1:0:556:A:H2'	1:0:557:U:H5'	1.97	0.47
1:0:629:C:C2'	1:0:630:G:H5'	2.44	0.47
1:0:1418:C:H2'	1:0:1419:G:H8	1.80	0.47
1:0:1578:U:H2'	1:0:1579:G:C8	2.50	0.47
1:0:1915:A:N6	1:0:1951:G:H21	1.99	0.47
1:0:2137:G:H2'	1:0:2138:U:C6	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2642:G:H2'	1:0:2643:G:O4'	2.15	0.47
1:0:173:A:N6	1:0:844:G:H21	2.13	0.47
1:0:241:C:C2'	1:0:242:A:H5''	2.44	0.47
1:0:534:U:H4'	1:0:564:U:O2'	2.15	0.47
1:0:758:G:H2'	1:0:759:C:H5'	1.96	0.47
1:0:1269:G:H2'	1:0:1270:C:C6	2.50	0.47
1:0:2199:C:H2'	1:0:2200:G:C8	2.49	0.47
1:0:2727:G:N1	1:0:2735:C:H5''	2.29	0.47
1:0:2809:A:H2'	1:0:2810:A:H5'	1.97	0.47
1:0:55:A:H2'	1:0:56:C:H6	1.80	0.46
1:0:207:U:H2'	1:0:208:C:C6	2.50	0.46
1:0:776:G:N3	1:0:776:G:C2'	2.79	0.46
1:0:819:C:H2'	1:0:820:U:C6	2.50	0.46
1:0:869:C:O2'	1:0:870:C:H5'	2.15	0.46
1:0:971:A:H2	1:0:2475:C:H1'	1.80	0.46
1:0:1039:A:H2'	1:0:1040:A:H8	1.80	0.46
1:0:1354:A:N6	1:0:1407:G:H22	2.11	0.46
1:0:1829:C:C2'	1:0:1830:C:H5'	2.45	0.46
1:0:2057:U:H2'	1:0:2058:U:C6	2.50	0.46
1:0:2324:G:C4'	1:0:2326:C:H5''	2.43	0.46
1:0:2393:G:H2'	1:0:2394:G:H8	1.80	0.46
1:0:2403:C:H2'	1:0:2408:G:O2'	2.15	0.46
1:0:2499:C:N4	1:0:2521:A:H2	2.10	0.46
1:0:2504:G:H2'	1:0:2505:G:H8	1.79	0.46
1:0:2782:G:H2'	1:0:2783:U:OP1	2.15	0.46
1:0:152:G:O2'	1:0:153:A:H5'	2.15	0.46
1:0:595:A:H2	1:0:822:G:N3	2.14	0.46
1:0:986:A:H2'	1:0:987:G:H5'	1.97	0.46
1:0:1572:C:C3'	1:0:1573:G:H5''	2.45	0.46
1:0:1975:G:H4'	1:0:1976:U:H5	1.80	0.46
1:0:2858:A:H3'	1:0:2859:U:C5'	2.44	0.46
1:0:198:A:O2'	1:0:199:A:P	2.74	0.46
1:0:236:C:O2	1:0:632:A:H1'	2.15	0.46
1:0:878:C:O2'	1:0:879:A:P	2.72	0.46
1:0:1480:G:H2'	1:0:1481:U:H5'	1.98	0.46
1:0:2437:G:H4'	1:0:2438:A:N7	2.30	0.46
1:0:2448:A:H2'	1:0:2449:G:O4'	2.14	0.46
1:0:387:A:H2'	1:0:388:G:O4'	2.16	0.46
1:0:697:G:C2'	1:0:698:A:H5'	2.46	0.46
1:0:798:G:H2'	1:0:799:C:H5'	1.97	0.46
1:0:1290:A:H2'	1:0:1291:G:C8	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1495:G:H2'	1:0:1496:G:C8	2.51	0.46
1:0:2717:G:H2'	1:0:2718:A:C8	2.51	0.46
1:0:2783:U:O2'	1:0:2784:A:H4'	2.16	0.46
1:0:2825:A:H2'	1:0:2826:C:C6	2.50	0.46
1:0:337:G:H2'	1:0:338:G:C8	2.51	0.46
1:0:771:C:H2'	1:0:772:G:H8	1.80	0.46
1:0:887:G:O2'	1:0:888:G:H5'	2.15	0.46
1:0:1486:A:H2'	1:0:1487:C:C6	2.50	0.46
1:0:1496:G:H5'	1:0:1575:C:N4	2.30	0.46
1:0:1579:G:H2'	1:0:1580:C:C6	2.51	0.46
1:0:2014:A:H62	1:0:2477:C:H1'	1.79	0.46
1:0:2276:C:O2	1:0:2301:A:H1'	2.16	0.46
1:0:2444:C:O2'	1:0:2445:C:H5'	2.16	0.46
1:0:2532:G:H1'	1:0:2561:G:C2	2.50	0.46
1:0:2698:G:H2'	1:0:2699:G:C8	2.51	0.46
1:0:9:U:H2'	1:0:10:A:C8	2.51	0.46
1:0:85:C:O2'	1:0:86:U:H5'	2.16	0.46
1:0:1140:A:N6	1:0:2469:G:H5''	2.31	0.46
1:0:1147:G:H2'	1:0:1148:G:C8	2.51	0.46
1:0:1452:U:H5'	1:0:1532:A:O2'	2.15	0.46
1:0:2526:U:H2'	1:0:2527:G:C8	2.51	0.46
1:0:2533:U:H2'	1:0:2534:U:C6	2.51	0.46
1:0:2784:A:H3'	1:0:2785:A:C8	2.48	0.46
1:0:324:C:H2'	1:0:325:U:O4'	2.15	0.46
1:0:365:U:H2'	1:0:366:U:C6	2.51	0.46
1:0:636:G:H2'	1:0:637:G:H5'	1.97	0.46
1:0:738:G:H2'	1:0:739:G:O4'	2.15	0.46
1:0:1223:G:H4'	1:0:1224:A:O5'	2.16	0.46
1:0:1301:U:H2'	1:0:1664:G:N2	2.30	0.46
1:0:1429:A:N6	1:0:1602:G:H5'	2.31	0.46
1:0:1760:G:H2'	1:0:1761:G:C8	2.50	0.46
1:0:1962:C:O2'	1:0:1963:G:H5'	2.16	0.46
1:0:2329:C:N4	1:0:2361:G:H22	2.14	0.46
1:0:2800:C:H2'	1:0:2801:A:O4'	2.15	0.46
1:0:313:U:H2'	1:0:314:G:C8	2.50	0.46
1:0:635:C:C3'	1:0:636:G:H5''	2.46	0.46
1:0:689:A:C8	1:0:2422:C:H1'	2.51	0.46
1:0:918:A:H2'	1:0:919:U:C5'	2.42	0.46
1:0:952:A:H2'	1:0:953:G:O4'	2.16	0.46
1:0:1068:A:H2'	1:0:1069:G:H8	1.81	0.46
1:0:1495:G:O2'	1:0:1496:G:P	2.73	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1835:C:H2'	1:0:1836:C:C6	2.50	0.46
1:0:1836:C:H2'	1:0:1837:G:C8	2.50	0.46
1:0:2055:G:H2'	1:0:2056:C:C6	2.51	0.46
1:0:2333:A:H2'	1:0:2334:C:C6	2.51	0.46
1:0:2426:G:HO2'	1:0:2427:A:P	2.39	0.46
1:0:2668:U:O2'	1:0:2669:C:P	2.74	0.46
1:0:2676:G:H2'	1:0:2677:U:C6	2.51	0.46
1:0:560:G:H2'	1:0:561:U:C6	2.50	0.46
1:0:932:G:H2'	1:0:933:G:C8	2.51	0.46
1:0:1278:A:H4'	1:0:1279:G:O5'	2.16	0.46
1:0:1279:G:H2'	1:0:1280:U:OP2	2.16	0.46
1:0:1427:G:C2'	1:0:1428:G:H5'	2.44	0.46
1:0:2093:G:H2'	1:0:2094:C:C5	2.51	0.46
1:0:2196:U:H2'	1:0:2197:U:C6	2.51	0.46
1:0:2278:A:H2'	1:0:2279:G:H8	1.81	0.46
1:0:2459:C:C2'	1:0:2460:G:H5'	2.46	0.46
1:0:8:A:H2'	1:0:9:U:C6	2.50	0.46
1:0:19:C:H2'	1:0:20:C:C6	2.50	0.46
1:0:32:C:H2'	1:0:33:C:C6	2.51	0.46
1:0:567:G:H2'	1:0:568:G:C8	2.51	0.46
1:0:760:U:O2	1:0:1997:A:H1'	2.16	0.46
1:0:1029:C:H3'	1:0:1030:U:H5''	1.96	0.46
1:0:1120:C:H2'	1:0:2731:G:N2	2.31	0.46
1:0:1619:A:H3'	1:0:1619:A:N3	2.31	0.46
1:0:2161:C:H2'	1:0:2162:C:C6	2.50	0.46
1:0:2633:A:N6	1:0:2646:C:N4	2.63	0.46
1:0:130:C:H2'	1:0:131:C:C6	2.51	0.45
1:0:632:A:C2'	1:0:633:G:H5'	2.46	0.45
1:0:758:G:N2	1:0:763:A:N1	2.63	0.45
1:0:1257:U:H2'	1:0:1258:G:C8	2.51	0.45
1:0:1313:U:O2'	1:0:1314:A:O5'	2.32	0.45
1:0:1331:G:H2'	1:0:1332:G:C8	2.51	0.45
1:0:1685:A:N6	1:0:1691:G:H1'	2.31	0.45
1:0:1966:C:H4'	1:0:2585:C:H4'	1.97	0.45
1:0:2093:G:O2'	1:0:2094:C:OP1	2.33	0.45
1:0:2106:G:H2'	1:0:2107:G:C8	2.51	0.45
1:0:2259:G:H2'	1:0:2260:C:C6	2.51	0.45
1:0:2558:C:O2'	1:0:2559:U:H5'	2.16	0.45
1:0:2628:C:H2'	1:0:2629:U:C6	2.51	0.45
1:0:931:G:O2'	1:0:932:G:H5'	2.16	0.45
1:0:1380:C:C2'	1:0:1381:G:H5'	2.45	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1888:C:H5''	1:0:1889:G:C5'	2.46	0.45
1:0:1937:G:N3	1:0:2530:C:H5'	2.31	0.45
1:0:2018:G:H3'	1:0:2019:C:H5'	1.98	0.45
1:0:2193:C:H2'	1:0:2194:A:O4'	2.16	0.45
1:0:187:U:H2'	1:0:188:G:C8	2.52	0.45
1:0:199:A:H61	1:0:209:G:H1'	1.82	0.45
1:0:601:A:H3'	1:0:602:C:C5'	2.46	0.45
1:0:694:G:H2'	1:0:695:G:H8	1.81	0.45
1:0:872:G:O2'	1:0:2247:A:N3	2.48	0.45
1:0:1259:A:H2'	1:0:1260:A:H8	1.80	0.45
1:0:1429:A:O2'	1:0:1430:G:H4'	2.16	0.45
1:0:1703:C:H2'	1:0:1704:G:O4'	2.16	0.45
1:0:1747:G:H1'	1:0:1749:G:C2	2.51	0.45
1:0:1886:G:H2'	1:0:1887:G:C8	2.51	0.45
1:0:1906:U:H2'	1:0:1907:C:C6	2.51	0.45
1:0:1949:A:O2'	1:0:2572:U:H5'	2.16	0.45
1:0:2022:C:H2'	1:0:2023:C:C6	2.51	0.45
1:0:2376:G:H2'	1:0:2377:U:C6	2.52	0.45
1:0:2418:A:H1'	1:0:2565:C:H4'	1.97	0.45
1:0:2493:U:H2'	1:0:2494:C:C6	2.52	0.45
1:0:2668:U:HO2'	1:0:2669:C:P	2.39	0.45
1:0:2824:C:H1'	1:0:2843:A:C2	2.51	0.45
1:0:2862:G:O2'	1:0:2863:U:H5'	2.16	0.45
1:0:40:U:H2'	1:0:41:G:C8	2.51	0.45
1:0:54:G:H2'	1:0:55:A:C8	2.51	0.45
1:0:307:C:H2'	1:0:308:C:C6	2.52	0.45
1:0:317:U:H3'	1:0:318:G:H5''	1.97	0.45
1:0:675:C:H2'	1:0:676:G:C8	2.52	0.45
1:0:2475:C:H2'	1:0:2476:A:H5'	1.98	0.45
1:0:2600:A:H2'	1:0:2601:C:C6	2.52	0.45
1:0:2807:U:C5	1:0:2859:U:H4'	2.52	0.45
1:0:297:A:H2'	1:0:298:C:C6	2.50	0.45
1:0:340:G:H1'	1:0:488:A:C4	2.52	0.45
1:0:462:G:H2'	1:0:463:C:H5'	1.99	0.45
1:0:489:A:N6	1:0:491:A:H62	2.14	0.45
1:0:697:G:O2'	1:0:698:A:H5'	2.17	0.45
1:0:831:G:H5'	1:0:852:U:OP1	2.17	0.45
1:0:845:U:H2'	1:0:846:A:H8	1.80	0.45
1:0:1223:G:O2'	1:0:1224:A:P	2.74	0.45
1:0:1278:A:HO2'	1:0:1279:G:P	2.37	0.45
1:0:1659:G:H2'	1:0:1660:G:C8	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2709:C:H2'	1:0:2710:C:C6	2.51	0.45
1:0:13:A:H1'	1:0:536:A:H62	1.82	0.45
1:0:81:C:H4'	1:0:307:C:H5'	1.98	0.45
1:0:306:G:H2'	1:0:307:C:C6	2.52	0.45
1:0:788:G:C5'	1:0:790:A:H1'	2.46	0.45
1:0:1586:A:H2'	1:0:1587:A:C8	2.52	0.45
1:0:1770:U:H2'	1:0:1774:A:H62	1.81	0.45
1:0:1886:G:H2'	1:0:1887:G:H8	1.82	0.45
1:0:1938:U:H2'	1:0:1939:U:H5'	1.97	0.45
1:0:2277:A:H2'	1:0:2278:A:O4'	2.16	0.45
1:0:2475:C:C2'	1:0:2476:A:H5'	2.46	0.45
1:0:2694:G:H2'	1:0:2695:C:C6	2.52	0.45
1:0:2809:A:N6	1:0:2854:G:H2'	2.31	0.45
1:0:421:G:H2'	1:0:422:C:C6	2.51	0.45
1:0:529:U:H2'	1:0:530:G:C8	2.51	0.45
1:0:709:A:H2'	1:0:710:C:C6	2.52	0.45
1:0:1225:G:H2'	1:0:1249:G:H1	1.82	0.45
1:0:1286:U:H4'	1:0:1288:A:OP1	2.17	0.45
1:0:2204:A:O2'	1:0:2205:C:C6	2.69	0.45
1:0:2474:G:O2'	1:0:2475:C:H5'	2.16	0.45
1:0:2524:G:H2'	1:0:2525:U:O4'	2.16	0.45
1:0:192:G:H4'	1:0:193:A:O5'	2.16	0.45
1:0:916:U:H2'	1:0:917:U:C6	2.52	0.45
1:0:1677:C:H2'	1:0:1678:G:H8	1.82	0.45
1:0:1712:G:C2'	1:0:1713:G:H5'	2.46	0.45
1:0:1888:C:C5'	1:0:1889:G:H5''	2.45	0.45
1:0:2321:C:C2'	1:0:2322:U:H5'	2.46	0.45
1:0:211:U:C2'	1:0:212:U:H5'	2.46	0.45
1:0:541:C:O2	1:0:2002:A:N1	2.50	0.45
1:0:811:G:O2'	1:0:812:G:H5'	2.17	0.45
1:0:1130:U:H2'	1:0:1131:G:C8	2.52	0.45
1:0:1163:C:O2'	1:0:1164:C:H5'	2.16	0.45
1:0:1251:G:H2'	1:0:1252:C:H6	1.80	0.45
1:0:1307:U:H2'	1:0:1308:C:O4'	2.17	0.45
1:0:1494:G:H2'	1:0:1495:G:C8	2.51	0.45
1:0:2205:C:H2'	1:0:2206:C:H6	1.80	0.45
1:0:2377:U:O2'	1:0:2378:G:OP1	2.33	0.45
1:0:2455:A:O2'	1:0:2456:U:H5'	2.17	0.45
1:0:2591:C:O2'	1:0:2592:U:H5'	2.17	0.45
1:0:2639:A:H2'	1:0:2640:G:O4'	2.16	0.45
1:0:58:C:O2	1:0:73:A:OP2	2.34	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:699:G:H3'	1:0:699:G:N3	2.32	0.45
1:0:1452:U:H5''	1:0:1533:G:H5'	1.99	0.45
1:0:1855:G:H4'	1:0:2390:A:H4'	1.99	0.45
1:0:2159:A:H2'	1:0:2160:C:C6	2.52	0.45
1:0:2235:G:H2'	1:0:2236:U:H6	1.81	0.45
1:0:1007:A:H2'	1:0:1008:G:C8	2.52	0.44
1:0:1346:C:H2'	1:0:1347:C:C6	2.52	0.44
1:0:1367:A:H2'	1:0:1368:G:O4'	2.17	0.44
1:0:1608:U:H2'	1:0:1609:G:C8	2.52	0.44
1:0:1628:C:H2'	1:0:1629:G:C8	2.52	0.44
1:0:1888:C:C4'	1:0:1889:G:H5''	2.47	0.44
1:0:1937:G:H4'	1:0:2529:G:H21	1.81	0.44
1:0:2512:A:H2'	1:0:2513:A:O4'	2.17	0.44
1:0:331:U:H2'	1:0:332:C:H5''	1.98	0.44
1:0:582:G:H2'	1:0:583:C:H3'	2.00	0.44
1:0:653:G:H21	1:0:655:A:H1'	1.81	0.44
1:0:837:U:H2'	1:0:838:A:C8	2.53	0.44
1:0:968:C:H2'	1:0:970:A:OP1	2.18	0.44
1:0:1204:G:H2'	1:0:1205:G:C8	2.52	0.44
1:0:1291:G:H2'	1:0:1292:A:C8	2.52	0.44
1:0:1777:A:H5'	1:0:1963:G:H21	1.82	0.44
1:0:1859:A:H2'	1:0:1860:A:C8	2.53	0.44
1:0:2120:C:H2'	1:0:2121:U:O4'	2.18	0.44
1:0:2239:C:O2'	1:0:2240:C:H5'	2.17	0.44
1:0:2429:A:O2'	1:0:2430:A:H5'	2.16	0.44
1:0:69:G:O2'	1:0:70:A:C8	2.66	0.44
1:0:117:A:H4'	1:0:118:U:C6	2.53	0.44
1:0:237:G:H2'	1:0:238:G:O4'	2.17	0.44
1:0:245:C:H5'	1:0:372:U:O2'	2.17	0.44
1:0:514:G:N3	1:0:514:G:C2'	2.79	0.44
1:0:736:G:H2'	1:0:737:C:O4'	2.17	0.44
1:0:935:C:H2'	1:0:936:A:C8	2.52	0.44
1:0:2510:A:N6	1:0:2641:A:H61	2.10	0.44
1:0:2668:U:C2'	1:0:2669:C:OP2	2.66	0.44
1:0:403:A:H4'	1:0:425:A:C5'	2.39	0.44
1:0:437:G:O2'	1:0:438:G:H5'	2.16	0.44
1:0:1002:C:H2'	1:0:1003:C:C6	2.53	0.44
1:0:2227:C:C2'	1:0:2228:U:H5'	2.41	0.44
1:0:2240:C:H2'	1:0:2241:U:H5'	1.98	0.44
1:0:2393:G:H2'	1:0:2394:G:C8	2.53	0.44
1:0:192:G:O2'	1:0:193:A:C5'	2.66	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:604:U:H2'	1:0:605:G:H8	1.82	0.44
1:0:644:A:H2'	1:0:645:G:H5'	1.99	0.44
1:0:1278:A:O2'	1:0:1279:G:O5'	2.35	0.44
1:0:1319:C:H2'	1:0:1320:A:H8	1.82	0.44
1:0:1821:A:H5''	1:0:1822:C:C5	2.52	0.44
1:0:2002:A:H61	1:0:2018:G:N2	2.16	0.44
1:0:2136:G:H2'	1:0:2137:G:C8	2.52	0.44
1:0:2619:G:H2'	1:0:2620:G:C8	2.53	0.44
1:0:2712:G:H5'	1:0:2713:A:C8	2.52	0.44
1:0:2860:C:H2'	1:0:2861:A:O4'	2.18	0.44
1:0:23:G:H2'	1:0:24:G:C8	2.53	0.44
1:0:210:A:N6	1:0:442:A:N6	2.66	0.44
1:0:575:U:H4'	1:0:822:G:OP2	2.17	0.44
1:0:715:U:H2'	1:0:716:U:C6	2.52	0.44
1:0:1008:G:H2'	1:0:1009:C:C6	2.52	0.44
1:0:1016:C:H5''	1:0:1023:U:OP2	2.18	0.44
1:0:1840:A:H2'	1:0:1841:G:H5'	2.00	0.44
1:0:2094:C:C4	1:0:2103:G:H1'	2.53	0.44
1:0:2161:C:O2'	1:0:2162:C:OP1	2.34	0.44
1:0:2824:C:H2'	1:0:2825:A:OP2	2.17	0.44
1:0:114:C:H4'	1:0:124:A:O2'	2.17	0.44
1:0:520:C:O2'	1:0:1249:G:H5''	2.18	0.44
1:0:1353:A:H1'	1:0:1619:A:O4'	2.17	0.44
1:0:1605:A:H2'	1:0:1606:C:C6	2.53	0.44
1:0:1614:C:H2'	1:0:1615:C:C6	2.52	0.44
1:0:1912:G:N3	1:0:1912:G:C2'	2.79	0.44
1:0:1917:C:H2'	1:0:1918:G:H5'	2.00	0.44
1:0:2574:G:N3	1:0:2574:G:C2'	2.80	0.44
1:0:37:C:H2'	1:0:38:G:C8	2.53	0.44
1:0:63:A:O2'	1:0:64:C:H5'	2.18	0.44
1:0:147:G:C2	1:0:148:C:H1'	2.53	0.44
1:0:351:A:H2'	1:0:352:G:O4'	2.18	0.44
1:0:475:U:H2'	1:0:476:G:O4'	2.17	0.44
1:0:701:U:H2'	1:0:702:A:O4'	2.18	0.44
1:0:841:G:H4'	1:0:844:G:N1	2.33	0.44
1:0:959:C:H2'	1:0:960:U:C6	2.53	0.44
1:0:1504:G:O2'	1:0:1505:U:H5'	2.18	0.44
1:0:2265:A:H5''	1:0:2266:A:O4'	2.18	0.44
1:0:2458:U:OP1	1:0:2516:U:H1'	2.18	0.44
1:0:67:G:C6	1:0:72:A:C2	3.05	0.44
1:0:91:A:H2'	1:0:92:U:C6	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:181:A:C4'	1:0:182:G:H4'	2.46	0.44
1:0:838:A:H4'	1:0:2407:G:C5	2.53	0.44
1:0:1155:G:H2'	1:0:1156:U:O4'	2.18	0.44
1:0:1750:A:H1'	1:0:2690:A:C2	2.52	0.44
1:0:1899:A:O2'	1:0:1946:U:H1'	2.18	0.44
1:0:2017:U:O2'	1:0:2018:G:H5'	2.17	0.44
1:0:2369:U:H2'	1:0:2370:G:C8	2.53	0.44
1:0:2635:U:H2'	1:0:2636:A:C8	2.52	0.44
1:0:192:G:H4'	1:0:193:A:H4'	1.99	0.43
1:0:415:A:C2'	1:0:416:U:H5'	2.47	0.43
1:0:508:G:H2'	1:0:509:U:C6	2.52	0.43
1:0:584:A:H4'	1:0:2479:U:C5'	2.46	0.43
1:0:716:U:H2'	1:0:717:G:O4'	2.18	0.43
1:0:1017:C:H2'	1:0:1018:C:O4'	2.17	0.43
1:0:1312:G:H5''	1:0:1313:U:C5'	2.36	0.43
1:0:1466:C:H2'	1:0:1467:U:O4'	2.17	0.43
1:0:1880:G:H2'	1:0:1881:U:C6	2.53	0.43
1:0:2484:G:H3'	1:0:2555:G:H1	1.83	0.43
1:0:2620:G:H2'	1:0:2621:G:H8	1.83	0.43
1:0:187:U:H2'	1:0:188:G:H8	1.82	0.43
1:0:694:G:H2'	1:0:695:G:C8	2.53	0.43
1:0:859:U:H4'	1:0:860:U:C5	2.54	0.43
1:0:925:U:H4'	1:0:926:C:C6	2.53	0.43
1:0:1480:G:C2'	1:0:1481:U:H5'	2.47	0.43
1:0:1961:A:H2'	1:0:1962:C:O4'	2.18	0.43
1:0:2310:G:H2'	1:0:2311:U:O4'	2.18	0.43
1:0:2392:G:H2'	1:0:2393:G:C8	2.53	0.43
1:0:242:A:O2'	1:0:243:G:OP2	2.37	0.43
1:0:634:G:H2'	1:0:635:C:C6	2.53	0.43
1:0:987:G:H2'	1:0:988:G:H8	1.83	0.43
1:0:1518:C:O2'	1:0:1519:G:P	2.76	0.43
1:0:2356:A:H2'	1:0:2357:A:C8	2.53	0.43
1:0:2680:U:H3'	1:0:2681:A:C5'	2.47	0.43
1:0:55:A:N6	1:0:69:G:O6	2.51	0.43
1:0:88:G:H3'	1:0:89:A:C5'	2.41	0.43
1:0:173:A:N3	1:0:173:A:C2'	2.81	0.43
1:0:420:C:H2'	1:0:421:G:C8	2.53	0.43
1:0:547:U:H2'	1:0:548:G:C8	2.53	0.43
1:0:575:U:H2'	1:0:576:A:C8	2.53	0.43
1:0:1055:A:H2	1:0:1121:G:H2'	1.84	0.43
1:0:2795:A:N3	1:0:2795:A:H2'	2.32	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:215:G:H1'	1:0:617:U:O2	2.19	0.43
1:0:543:G:H2'	1:0:544:U:C6	2.53	0.43
1:0:840:U:H4'	1:0:841:G:C2	2.53	0.43
1:0:1075:C:H2'	1:0:1076:U:C6	2.54	0.43
1:0:1326:U:H4'	1:0:1345:G:H4'	2.01	0.43
1:0:1561:A:H2'	1:0:1562:G:O4'	2.18	0.43
1:0:1975:G:H1'	1:0:1977:C:N4	2.33	0.43
1:0:2002:A:H61	1:0:2018:G:H21	1.67	0.43
1:0:2034:A:N6	1:0:2593:A:N7	2.66	0.43
1:0:2245:A:HO2'	1:0:2246:A:P	2.41	0.43
1:0:2785:A:H2'	1:0:2786:G:O4'	2.18	0.43
1:0:168:A:H2'	1:0:169:C:H6	1.83	0.43
1:0:338:G:H2'	1:0:339:U:O4'	2.19	0.43
1:0:520:C:H2'	1:0:521:U:O4'	2.19	0.43
1:0:594:G:N2	1:0:1267:A:H62	2.16	0.43
1:0:762:A:H5'	1:0:1284:G:H1'	1.99	0.43
1:0:814:G:H3'	1:0:815:A:C5'	2.49	0.43
1:0:871:U:H1'	1:0:2248:A:C5'	2.47	0.43
1:0:967:G:H1'	1:0:970:A:N7	2.34	0.43
1:0:984:A:H2'	1:0:1200:G:N2	2.32	0.43
1:0:1031:C:H4'	1:0:1032:A:C8	2.54	0.43
1:0:2276:C:O2'	1:0:2277:A:H5'	2.19	0.43
1:0:2757:G:H5'	1:0:2761:A:C1'	2.49	0.43
1:0:2874:A:H2'	1:0:2875:C:C6	2.54	0.43
1:0:3:U:H2'	1:0:4:C:C6	2.53	0.43
1:0:322:A:H1'	1:0:343:A:N7	2.33	0.43
1:0:457:C:O2'	1:0:458:G:H5'	2.19	0.43
1:0:878:C:HO2'	1:0:879:A:P	2.42	0.43
1:0:1187:A:HO2'	1:0:1188:A:P	2.40	0.43
1:0:1271:C:H2'	1:0:1272:G:C8	2.54	0.43
1:0:1918:G:H4'	1:0:1920:A:C2	2.54	0.43
1:0:2772:U:H2'	1:0:2773:G:C8	2.53	0.43
1:0:820:U:H2'	1:0:821:A:C8	2.53	0.43
1:0:1227:A:H62	1:0:1248:G:H21	1.66	0.43
1:0:1518:C:C2'	1:0:1519:G:O5'	2.67	0.43
1:0:1665:C:H2'	1:0:1666:G:C8	2.54	0.43
1:0:2213:G:H2'	1:0:2214:G:H8	1.84	0.43
1:0:2244:C:H1'	1:0:2255:G:N1	2.34	0.43
1:0:2572:U:C4	1:0:2573:C:N4	2.87	0.43
1:0:722:C:H2'	1:0:723:C:C6	2.54	0.43
1:0:820:U:H1'	1:0:2424:G:OP1	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:953:G:H4'	1:0:1203:A:O2'	2.19	0.43
1:0:1194:U:H2'	1:0:1195:U:H6	1.79	0.43
1:0:1478:U:H2'	1:0:1479:G:C8	2.54	0.43
1:0:1604:A:H2'	1:0:1605:A:O4'	2.19	0.43
1:0:2225:G:O2'	1:0:2226:A:H5'	2.19	0.43
1:0:2292:C:H2'	1:0:2293:G:C8	2.54	0.43
1:0:2436:U:H2'	1:0:2437:G:O4'	2.19	0.43
1:0:2497:A:O5'	1:0:2497:A:N3	2.52	0.43
1:0:2785:A:O2'	1:0:2786:G:H5'	2.19	0.43
1:0:2786:G:H2'	1:0:2787:A:C8	2.54	0.43
1:0:17:G:N2	1:0:564:U:H5''	2.33	0.43
1:0:181:A:C5'	1:0:182:G:OP1	2.62	0.43
1:0:201:G:H2'	1:0:202:A:H8	1.84	0.43
1:0:607:C:H2'	1:0:608:G:C8	2.54	0.43
1:0:653:G:C2	1:0:655:A:H1'	2.54	0.43
1:0:758:G:N3	1:0:763:A:N6	2.64	0.43
1:0:810:U:H2'	1:0:811:G:H8	1.83	0.43
1:0:1193:G:O2'	1:0:1194:U:P	2.76	0.43
1:0:1532:A:H2'	1:0:1533:G:C8	2.53	0.43
1:0:2033:C:H2'	1:0:2034:A:O4'	2.18	0.43
1:0:2602:G:OP1	1:0:2801:A:H1'	2.19	0.43
1:0:128:C:C3'	1:0:129:A:H5''	2.49	0.42
1:0:211:U:H2'	1:0:212:U:O4'	2.19	0.42
1:0:342:G:H2'	1:0:343:A:C5'	2.48	0.42
1:0:538:A:C3'	1:0:539:A:H5''	2.49	0.42
1:0:541:C:H42	1:0:572:G:C1'	2.32	0.42
1:0:1292:A:H2'	1:0:1293:A:H8	1.84	0.42
1:0:1341:G:N2	1:0:1664:G:H1	2.15	0.42
1:0:1591:U:H2'	1:0:1592:U:O4'	2.18	0.42
1:0:1743:C:H2'	1:0:1744:G:C8	2.54	0.42
1:0:1790:G:O3'	1:0:1791:C:H6	2.02	0.42
1:0:1938:U:H3'	1:0:2530:C:O2'	2.19	0.42
1:0:2808:U:H3'	1:0:2809:A:C5'	2.47	0.42
1:0:54:G:H2'	1:0:55:A:H8	1.84	0.42
1:0:63:A:N6	1:0:89:A:N1	2.68	0.42
1:0:121:G:H2'	1:0:122:G:O4'	2.19	0.42
1:0:242:A:N6	1:0:441:A:N7	2.66	0.42
1:0:944:A:H2'	1:0:945:G:O4'	2.19	0.42
1:0:1455:C:HO2'	1:0:1644:G:H5''	1.85	0.42
1:0:1489:C:H3'	1:0:1490:U:H5'	2.00	0.42
1:0:1634:A:O2'	1:0:1635:G:H5'	2.18	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2083:G:H22	1:0:2172:U:H3	1.66	0.42
1:0:189:A:H2'	1:0:190:A:C8	2.54	0.42
1:0:509:U:H2'	1:0:510:G:O4'	2.19	0.42
1:0:616:U:C3'	1:0:617:U:H5''	2.50	0.42
1:0:1500:U:H2'	1:0:1501:C:C6	2.55	0.42
1:0:1801:C:H3'	1:0:1802:A:H5'	2.01	0.42
1:0:2133:G:H2'	1:0:2134:U:C6	2.55	0.42
1:0:2615:U:H3	1:0:2762:G:H1	1.66	0.42
1:0:192:G:O2'	1:0:193:A:P	2.77	0.42
1:0:415:A:O2'	1:0:416:U:H5'	2.20	0.42
1:0:532:A:H2'	1:0:533:C:C6	2.55	0.42
1:0:764:A:H3'	1:0:764:A:N3	2.34	0.42
1:0:786:U:H2'	1:0:787:A:H5'	2.01	0.42
1:0:860:U:H2'	1:0:860:U:O2	2.18	0.42
1:0:1057:A:H3'	1:0:1058:G:H5'	2.00	0.42
1:0:1566:G:H2'	1:0:1567:A:C8	2.54	0.42
1:0:1762:C:H2'	1:0:1763:G:C8	2.54	0.42
1:0:2261:G:H4'	1:0:2368:G:O2'	2.20	0.42
1:0:2380:U:C2'	1:0:2381:A:H5'	2.44	0.42
1:0:2500:C:H4'	1:0:2544:A:C4'	2.49	0.42
1:0:192:G:O2'	1:0:193:A:H5''	2.19	0.42
1:0:879:A:C2'	1:0:880:C:H5'	2.49	0.42
1:0:1029:C:C2'	1:0:1030:U:H5''	2.49	0.42
1:0:1193:G:O2'	1:0:1194:U:OP1	2.36	0.42
1:0:1499:A:H2'	1:0:1500:U:C6	2.54	0.42
1:0:1626:A:H5''	1:0:1627:C:OP2	2.20	0.42
1:0:1917:C:C2'	1:0:1918:G:H5'	2.49	0.42
1:0:2473:G:O2'	1:0:2474:G:H5'	2.19	0.42
1:0:2640:G:H2'	1:0:2641:A:O4'	2.18	0.42
1:0:81:C:O2'	1:0:82:G:H5'	2.20	0.42
1:0:178:C:H4'	1:0:399:G:C2	2.55	0.42
1:0:198:A:O2'	1:0:199:A:OP2	2.30	0.42
1:0:404:A:H1'	1:0:424:G:O2'	2.19	0.42
1:0:521:U:C2'	1:0:522:G:H5'	2.50	0.42
1:0:652:C:N4	1:0:657:A:H61	2.09	0.42
1:0:878:C:O2'	1:0:879:A:OP1	2.35	0.42
1:0:1168:G:H2'	1:0:1169:C:C6	2.54	0.42
1:0:1274:C:O2'	1:0:1275:A:H5'	2.19	0.42
1:0:1358:C:H2'	1:0:1359:G:H5'	2.01	0.42
1:0:1451:C:H2'	1:0:1452:U:C6	2.54	0.42
1:0:1489:C:H3'	1:0:1490:U:C5'	2.50	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2217:G:N3	1:0:2217:G:C2'	2.83	0.42
1:0:2250:G:O2'	1:0:2251:U:H5'	2.20	0.42
1:0:2555:G:H3'	1:0:2555:G:N3	2.35	0.42
1:0:2594:U:H2'	1:0:2595:C:C6	2.55	0.42
1:0:2633:A:H61	1:0:2646:C:N4	2.18	0.42
1:0:2710:C:O2'	1:0:2711:G:H5'	2.19	0.42
1:0:1143:A:H2'	1:0:1144:U:C6	2.55	0.42
1:0:1332:G:H2'	1:0:1333:G:O4'	2.20	0.42
1:0:1343:C:H2'	1:0:1344:C:C6	2.55	0.42
1:0:1708:C:H2'	1:0:1709:U:O4'	2.19	0.42
1:0:1930:C:H2'	1:0:1931:G:C8	2.55	0.42
1:0:2161:C:H2'	1:0:2162:C:C5	2.55	0.42
1:0:2463:G:O2'	1:0:2464:G:H5'	2.20	0.42
1:0:2633:A:H5''	1:0:2634:G:OP1	2.20	0.42
1:0:2658:A:H2'	1:0:2659:C:H6	1.84	0.42
1:0:14:A:H2	1:0:2604:G:O2'	2.03	0.42
1:0:48:A:O5'	1:0:50:G:H4'	2.20	0.42
1:0:119:G:H1'	1:0:129:A:N1	2.35	0.42
1:0:172:A:N3	1:0:227:G:N2	2.66	0.42
1:0:319:G:H1'	1:0:511:A:H5'	2.01	0.42
1:0:579:G:H2'	1:0:2013:A:H62	1.85	0.42
1:0:871:U:O2	1:0:2247:A:H2'	2.19	0.42
1:0:987:G:H2'	1:0:988:G:C8	2.55	0.42
1:0:1016:C:H2'	1:0:1017:C:H6	1.85	0.42
1:0:1030:U:OP1	1:0:1046:U:H1'	2.20	0.42
1:0:1033:G:N2	1:0:1150:C:H2'	2.30	0.42
1:0:1225:G:H2'	1:0:1249:G:N1	2.34	0.42
1:0:1495:G:O2'	1:0:1496:G:OP1	2.35	0.42
1:0:1807:A:O2'	1:0:1808:C:C4'	2.64	0.42
1:0:1836:C:H2'	1:0:1837:G:H8	1.84	0.42
1:0:1957:C:O2'	1:0:1958:G:H5'	2.19	0.42
1:0:2027:C:H2'	1:0:2028:C:C6	2.55	0.42
1:0:2217:G:H5'	1:0:2219:U:O4	2.19	0.42
1:0:2581:A:H2'	1:0:2582:G:OP1	2.20	0.42
1:0:239:A:H5'	1:0:619:A:O2'	2.19	0.42
1:0:322:A:H2	1:0:342:G:OP2	2.02	0.42
1:0:566:U:H2'	1:0:567:G:C8	2.55	0.42
1:0:617:U:H2'	1:0:618:A:O4'	2.19	0.42
1:0:820:U:H5'	1:0:2424:G:H4'	2.00	0.42
1:0:1028:G:H2'	1:0:1029:C:H6	1.85	0.42
1:0:1046:U:H2'	1:0:1047:G:H8	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1065:A:H2'	1:0:1066:G:C8	2.55	0.42
1:0:2032:G:O2'	1:0:2033:C:H5'	2.20	0.42
1:0:2245:A:C2'	1:0:2246:A:OP2	2.67	0.42
1:0:2311:U:HO2'	1:0:2312:A:H8	1.63	0.42
1:0:2576:G:H2'	1:0:2577:A:C8	2.55	0.42
1:0:2633:A:H4'	1:0:2634:G:C4'	2.40	0.42
1:0:2778:U:O2'	1:0:2779:C:H5'	2.19	0.42
1:0:73:A:H4'	1:0:74:G:O4'	2.20	0.42
1:0:328:A:O2'	1:0:329:C:H5'	2.20	0.42
1:0:354:C:H2'	1:0:355:G:O4'	2.20	0.42
1:0:438:G:H2'	1:0:439:C:C6	2.54	0.42
1:0:644:A:H2'	1:0:645:G:O4'	2.20	0.42
1:0:1231:A:H2'	1:0:1232:U:O4'	2.19	0.42
1:0:1479:G:H2'	1:0:1480:G:C8	2.54	0.42
1:0:1671:A:H2'	1:0:1672:A:H8	1.85	0.42
1:0:327:C:O2'	1:0:328:A:H5'	2.20	0.41
1:0:430:C:H2'	1:0:431:G:C8	2.55	0.41
1:0:533:C:H1'	1:0:563:U:O2'	2.20	0.41
1:0:635:C:H2'	1:0:636:G:H5''	2.01	0.41
1:0:833:A:H2'	1:0:834:A:C8	2.54	0.41
1:0:956:A:H2'	1:0:956:A:N3	2.35	0.41
1:0:1448:A:H2'	1:0:1449:C:C6	2.55	0.41
1:0:1921:A:C3'	1:0:1922:U:H5''	2.50	0.41
1:0:2028:C:O2'	1:0:2029:G:H5'	2.20	0.41
1:0:2220:A:H2'	1:0:2221:G:H8	1.85	0.41
1:0:2768:C:H1'	1:0:2784:A:N7	2.35	0.41
1:0:65:C:C3'	1:0:66:U:H5'	2.49	0.41
1:0:315:G:H2'	1:0:316:C:C6	2.55	0.41
1:0:607:C:H2'	1:0:608:G:H8	1.84	0.41
1:0:646:C:O2'	1:0:650:U:H5''	2.20	0.41
1:0:649:G:H2'	1:0:650:U:C6	2.55	0.41
1:0:827:C:H2'	1:0:828:C:C6	2.55	0.41
1:0:1172:U:H2'	1:0:1173:G:C8	2.55	0.41
1:0:1829:C:O2'	1:0:1910:A:H1'	2.20	0.41
1:0:1962:C:H2'	1:0:1963:G:H8	1.85	0.41
1:0:2056:C:H2'	1:0:2057:U:H6	1.85	0.41
1:0:2320:G:H2'	1:0:2321:C:C6	2.55	0.41
1:0:2448:A:C2'	1:0:2449:G:H5'	2.49	0.41
1:0:2470:U:H1'	1:0:2548:G:O3'	2.19	0.41
1:0:1026:U:H2'	1:0:1027:C:C6	2.56	0.41
1:0:1354:A:C2	1:0:1411:C:H4'	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1557:G:H2'	1:0:1558:C:C6	2.55	0.41
1:0:1956:G:H2'	1:0:1957:C:O4'	2.20	0.41
1:0:2011:U:H2'	1:0:2012:A:C8	2.56	0.41
1:0:2348:A:H2'	1:0:2349:G:C8	2.54	0.41
1:0:2392:G:H2'	1:0:2393:G:H8	1.85	0.41
1:0:2502:G:H2'	1:0:2503:G:H8	1.85	0.41
1:0:2546:G:H2'	1:0:2547:C:C6	2.56	0.41
1:0:2836:U:H2'	1:0:2837:G:C8	2.55	0.41
1:0:591:G:H2'	1:0:592:G:C8	2.56	0.41
1:0:831:G:H2'	1:0:832:A:H5''	2.02	0.41
1:0:930:A:H3'	1:0:931:G:H8	1.85	0.41
1:0:1177:U:H2'	1:0:1178:C:C6	2.55	0.41
1:0:1281:A:N6	1:0:1995:G:O2'	2.53	0.41
1:0:1341:G:N2	1:0:1343:C:H1'	2.35	0.41
1:0:1594:U:H2'	1:0:1595:A:C8	2.56	0.41
1:0:1671:A:C1'	1:0:2798:A:H5'	2.50	0.41
1:0:1888:C:H2'	1:0:1913:G:C6	2.56	0.41
1:0:158:A:H2'	1:0:159:A:H8	1.85	0.41
1:0:488:A:H2'	1:0:489:A:C8	2.55	0.41
1:0:513:A:C4'	1:0:515:A:H5'	2.48	0.41
1:0:925:U:H5''	1:0:926:C:OP1	2.20	0.41
1:0:1193:G:HO2'	1:0:1194:U:P	2.43	0.41
1:0:1286:U:H2'	1:0:2692:A:H2	1.85	0.41
1:0:1329:U:H2'	1:0:1330:G:C8	2.56	0.41
1:0:1402:G:H2'	1:0:1403:U:O4'	2.21	0.41
1:0:1722:G:H2'	1:0:1723:U:C6	2.55	0.41
1:0:2057:U:H2'	1:0:2058:U:H6	1.86	0.41
1:0:2076:G:H2'	1:0:2077:G:C8	2.54	0.41
1:0:2217:G:H4'	1:0:2219:U:C5	2.56	0.41
1:0:2487:G:H4'	1:0:2533:U:O2'	2.20	0.41
1:0:28:A:H2'	1:0:29:U:C6	2.55	0.41
1:0:317:U:H3'	1:0:318:G:C5'	2.51	0.41
1:0:628:A:H2'	1:0:629:C:H6	1.82	0.41
1:0:669:G:H2'	1:0:670:U:H6	1.84	0.41
1:0:798:G:OP2	1:0:805:G:N7	2.53	0.41
1:0:1140:A:H2	1:0:2548:G:HO2'	1.67	0.41
1:0:1189:G:O2'	1:0:1190:C:H5'	2.21	0.41
1:0:1365:U:H5'	1:0:1587:A:H1'	2.03	0.41
1:0:1656:U:O2'	1:0:2678:C:H4'	2.21	0.41
1:0:2096:U:C2'	1:0:2097:A:H5''	2.44	0.41
1:0:2321:C:H2'	1:0:2322:U:H5'	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2515:G:H2'	1:0:2516:U:C6	2.55	0.41
1:0:2698:G:H2'	1:0:2699:G:O4'	2.20	0.41
1:0:2740:C:O2'	1:0:2741:G:H5'	2.20	0.41
1:0:2871:U:H2'	1:0:2872:U:H6	1.85	0.41
1:0:67:G:C4	1:0:73:A:C8	3.08	0.41
1:0:474:G:N2	1:0:476:G:H3'	2.36	0.41
1:0:639:G:O2'	1:0:640:C:H5'	2.21	0.41
1:0:690:A:O2'	1:0:691:C:H5'	2.21	0.41
1:0:964:A:H2'	1:0:965:G:H8	1.85	0.41
1:0:964:A:H1'	1:0:2245:A:OP2	2.20	0.41
1:0:1464:A:H4'	1:0:1545:G:C4'	2.51	0.41
1:0:2015:G:OP2	1:0:2434:G:H5'	2.21	0.41
1:0:2056:C:H2'	1:0:2057:U:C6	2.56	0.41
1:0:2058:U:H3'	1:0:2217:G:N1	2.36	0.41
1:0:2245:A:O2'	1:0:2246:A:P	2.79	0.41
1:0:2378:G:H2'	1:0:2379:G:C8	2.55	0.41
1:0:2586:G:H2'	1:0:2587:G:O4'	2.21	0.41
1:0:2780:A:H2'	1:0:2781:G:C8	2.56	0.41
1:0:2795:A:N3	1:0:2795:A:C2'	2.83	0.41
1:0:82:G:O2'	1:0:83:A:H5'	2.21	0.41
1:0:139:A:H2'	1:0:140:G:C8	2.55	0.41
1:0:307:C:H2'	1:0:308:C:H6	1.86	0.41
1:0:314:G:H2'	1:0:315:G:H8	1.86	0.41
1:0:688:A:H1'	1:0:2422:C:O2'	2.21	0.41
1:0:808:C:H2'	1:0:809:C:C6	2.56	0.41
1:0:857:U:C2'	1:0:858:G:H5'	2.50	0.41
1:0:873:U:C2	1:0:2246:A:H5''	2.55	0.41
1:0:874:A:H2'	1:0:875:G:H5'	2.03	0.41
1:0:1415:C:O2'	1:0:1416:A:H5'	2.21	0.41
1:0:1787:U:H2'	1:0:1788:C:C6	2.56	0.41
1:0:1900:U:H2'	1:0:1901:A:H5'	2.03	0.41
1:0:2083:G:N2	1:0:2172:U:H3	2.18	0.41
1:0:2226:A:H2'	1:0:2227:C:H6	1.86	0.41
1:0:2467:A:H2'	1:0:2468:G:C8	2.55	0.41
1:0:2597:G:H2'	1:0:2598:C:C6	2.56	0.41
1:0:40:U:H2'	1:0:41:G:H8	1.86	0.41
1:0:769:C:H2'	1:0:770:U:O4'	2.20	0.41
1:0:853:C:H2'	1:0:854:G:C8	2.56	0.41
1:0:868:U:H2'	1:0:869:C:H6	1.85	0.41
1:0:978:U:H2'	1:0:979:A:C8	2.55	0.41
1:0:1084:A:H4'	1:0:2454:C:OP1	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1098:G:H21	1:0:1100:G:H4'	1.86	0.41
1:0:1221:C:H2'	1:0:1222:G:H8	1.85	0.41
1:0:1313:U:O2'	1:0:1314:A:OP2	2.39	0.41
1:0:1621:C:C4'	1:0:1626:A:H61	2.31	0.41
1:0:1676:U:H2'	1:0:1677:C:C6	2.56	0.41
1:0:1685:A:O2'	1:0:1686:A:O5'	2.39	0.41
1:0:1887:G:O2'	1:0:1888:C:H5'	2.21	0.41
1:0:1944:C:H2'	1:0:1945:C:O4'	2.21	0.41
1:0:1985:G:H2'	1:0:1986:G:C8	2.56	0.41
1:0:2059:U:H5	1:0:2575:U:N3	2.08	0.41
1:0:2200:G:H2'	1:0:2201:G:C8	2.56	0.41
1:0:2312:A:H1'	1:0:2314:A:N9	2.35	0.41
1:0:2326:C:H2'	1:0:2327:U:C6	2.56	0.41
1:0:2383:C:H2'	1:0:2384:G:O4'	2.20	0.41
1:0:2390:A:H2'	1:0:2391:A:C8	2.56	0.41
1:0:2555:G:N3	1:0:2555:G:C2'	2.83	0.41
1:0:2564:U:C4'	1:0:2565:C:H5'	2.50	0.41
1:0:2651:U:H2'	1:0:2652:G:H8	1.86	0.41
1:0:2758:A:H5''	1:0:2759:U:C5	2.55	0.41
1:0:2811:G:H2'	1:0:2812:A:C8	2.56	0.41
1:0:2824:C:HO2'	1:0:2825:A:P	2.43	0.41
1:0:6:A:H2'	1:0:7:G:C8	2.56	0.41
1:0:218:A:H1'	1:0:220:U:C4	2.56	0.41
1:0:229:G:H2'	1:0:230:C:C6	2.56	0.41
1:0:314:G:H2'	1:0:315:G:C8	2.55	0.41
1:0:689:A:H8	1:0:2422:C:H1'	1.85	0.41
1:0:691:C:H2'	1:0:692:C:C6	2.56	0.41
1:0:729:A:O2'	1:0:730:C:H5'	2.21	0.41
1:0:1242:A:H2'	1:0:1243:G:C8	2.55	0.41
1:0:1302:C:H2'	1:0:1303:U:C6	2.56	0.41
1:0:1337:G:H1'	1:0:1632:A:C6	2.56	0.41
1:0:1586:A:H2'	1:0:1587:A:H8	1.86	0.41
1:0:2134:U:H2'	1:0:2135:C:C6	2.56	0.41
1:0:27:G:N2	1:0:522:G:HO2'	2.19	0.40
1:0:185:C:H2'	1:0:186:C:C6	2.56	0.40
1:0:305:A:H2'	1:0:306:G:O4'	2.21	0.40
1:0:432:C:H2'	1:0:433:G:C8	2.57	0.40
1:0:540:G:O6	1:0:2006:G:OP1	2.40	0.40
1:0:713:G:H2'	1:0:714:G:C8	2.56	0.40
1:0:1142:G:OP1	1:0:2494:C:H4'	2.21	0.40
1:0:1398:G:H2'	1:0:1399:C:C6	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1528:C:H3'	1:0:1529:C:H5''	2.03	0.40
1:0:1532:A:H2'	1:0:1533:G:H8	1.86	0.40
1:0:1594:U:H2'	1:0:1595:A:H8	1.86	0.40
1:0:1617:G:H2'	1:0:1618:U:H5'	2.03	0.40
1:0:1888:C:H4'	1:0:1889:G:H5''	2.02	0.40
1:0:2048:C:H2'	1:0:2049:C:H6	1.86	0.40
1:0:2241:U:H4'	1:0:2307:A:C2	2.56	0.40
1:0:2824:C:C2'	1:0:2825:A:OP2	2.70	0.40
1:0:477:A:H2'	1:0:478:G:H5'	2.02	0.40
1:0:550:C:H2'	1:0:551:A:H8	1.86	0.40
1:0:758:G:H2'	1:0:761:G:N3	2.36	0.40
1:0:838:A:H4'	1:0:2407:G:C6	2.57	0.40
1:0:856:A:H2'	1:0:857:U:O4'	2.20	0.40
1:0:930:A:H5'	1:0:931:G:N7	2.37	0.40
1:0:1446:U:H2'	1:0:1447:U:C6	2.55	0.40
1:0:1539:U:H2'	1:0:1540:C:C6	2.56	0.40
1:0:2383:C:C2'	1:0:2384:G:H5'	2.51	0.40
1:0:2389:G:H2'	1:0:2390:A:O4'	2.21	0.40
1:0:2432:A:H4'	1:0:2551:A:O2'	2.21	0.40
1:0:2432:A:O2'	1:0:2433:G:H5'	2.20	0.40
1:0:2500:C:H4'	1:0:2544:A:O4'	2.21	0.40
1:0:2506:C:H2'	1:0:2507:U:C6	2.56	0.40
1:0:334:G:N3	1:0:344:G:H1'	2.37	0.40
1:0:528:G:H2'	1:0:529:U:C6	2.57	0.40
1:0:854:G:H2'	1:0:855:G:C8	2.57	0.40
1:0:931:G:H2'	1:0:932:G:O4'	2.21	0.40
1:0:1040:A:C2'	1:0:1041:G:H5'	2.51	0.40
1:0:1147:G:H2'	1:0:1148:G:H8	1.86	0.40
1:0:1204:G:H2'	1:0:1205:G:H8	1.86	0.40
1:0:1625:A:C4	1:0:1632:A:H1'	2.56	0.40
1:0:2038:C:H5'	1:0:2039:G:C5'	2.51	0.40
1:0:344:G:O2'	1:0:345:U:H5'	2.21	0.40
1:0:744:C:H2'	1:0:745:C:C6	2.56	0.40
1:0:1162:A:H2'	1:0:1163:C:H6	1.86	0.40
1:0:1187:A:O2'	1:0:1188:A:P	2.79	0.40
1:0:1336:G:N2	1:0:1632:A:N6	2.69	0.40
1:0:1370:U:H2'	1:0:1371:G:O4'	2.22	0.40
1:0:1381:G:O2'	1:0:1382:G:H5'	2.21	0.40
1:0:1443:G:N3	1:0:1584:G:N1	2.69	0.40
1:0:1686:A:C2'	1:0:1687:C:H5'	2.51	0.40
1:0:1696:C:H42	1:0:1755:G:H5''	1.87	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1850:G:H2'	1:0:1851:A:C8	2.56	0.40
1:0:2234:G:H2'	1:0:2235:G:O4'	2.22	0.40
1:0:2378:G:O2'	1:0:2379:G:H5'	2.22	0.40
1:0:2502:G:H2'	1:0:2503:G:C8	2.56	0.40
1:0:2539:C:H2'	1:0:2540:A:C8	2.56	0.40
1:0:105:G:O2'	1:0:106:G:H5'	2.21	0.40
1:0:143:A:H2'	1:0:144:U:O4'	2.22	0.40
1:0:334:G:N2	1:0:344:G:N3	2.70	0.40
1:0:890:U:H2'	1:0:891:A:C8	2.57	0.40
1:0:953:G:H2'	1:0:954:U:O4'	2.21	0.40
1:0:1194:U:O2'	1:0:1195:U:O5'	2.40	0.40
1:0:1244:U:H2'	1:0:1245:G:C8	2.57	0.40
1:0:1418:C:H2'	1:0:1419:G:C8	2.55	0.40
1:0:1547:U:H2'	1:0:1548:U:C6	2.56	0.40
1:0:1671:A:H1'	1:0:2798:A:H5'	2.03	0.40
1:0:2081:U:H2'	1:0:2082:C:C5'	2.43	0.40
1:0:2217:G:N3	1:0:2217:G:H2'	2.36	0.40
1:0:2365:U:O2'	1:0:2366:U:H5'	2.22	0.40
1:0:2467:A:H2'	1:0:2468:G:H8	1.86	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	0	2757/2880 (95%)	411 (14%)	43 (1%)
2	5	2/4 (50%)	2 (100%)	0
All	All	2759/2884 (95%)	413 (14%)	43 (1%)

All (413) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	0	15	G
1	0	35	G
1	0	45	C
1	0	48	A
1	0	49	U
1	0	50	G
1	0	59	G
1	0	67	G
1	0	70	A
1	0	71	A
1	0	72	A
1	0	87	G
1	0	89	A
1	0	90	G
1	0	91	A
1	0	99	U
1	0	105	G
1	0	110	U
1	0	116	A
1	0	118	U
1	0	123	A
1	0	129	A
1	0	135	U
1	0	155	G
1	0	158	A
1	0	173	A
1	0	174	A
1	0	176	A
1	0	177	U
1	0	181	A
1	0	182	G
1	0	193	A
1	0	199	A
1	0	200	A
1	0	205	A
1	0	206	U
1	0	210	A
1	0	218	A
1	0	219	G
1	0	225	G
1	0	226	C
1	0	227	G

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Mol	Chain	Res	Type
1	0	229	G
1	0	242	A
1	0	243	G
1	0	245	C
1	0	305	A
1	0	318	G
1	0	333	A
1	0	334	G
1	0	335	A
1	0	340	G
1	0	342	G
1	0	343	A
1	0	358	C
1	0	363	G
1	0	368	A
1	0	373	A
1	0	399	G
1	0	401	G
1	0	408	U
1	0	414	A
1	0	418	C
1	0	424	G
1	0	443	A
1	0	455	A
1	0	456	C
1	0	460	U
1	0	461	A
1	0	463	C
1	0	467	U
1	0	469	G
1	0	491	A
1	0	492	G
1	0	515	A
1	0	518	A
1	0	519	C
1	0	537	C
1	0	539	A
1	0	541	C
1	0	542	A
1	0	554	U
1	0	556	A
1	0	558	G

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Mol	Chain	Res	Type
1	0	559	C
1	0	572	G
1	0	584	A
1	0	602	C
1	0	613	A
1	0	617	U
1	0	624	A
1	0	632	A
1	0	636	G
1	0	638	A
1	0	648	A
1	0	652	C
1	0	654	A
1	0	657	A
1	0	665	A
1	0	666	U
1	0	667	U
1	0	684	C
1	0	697	G
1	0	699	G
1	0	700	C
1	0	728	G
1	0	742	G
1	0	743	A
1	0	760	U
1	0	761	G
1	0	776	G
1	0	778	G
1	0	789	G
1	0	794	A
1	0	796	A
1	0	797	A
1	0	798	G
1	0	803	C
1	0	806	A
1	0	813	A
1	0	818	G
1	0	825	C
1	0	832	A
1	0	840	U
1	0	841	G
1	0	844	G

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Mol	Chain	Res	Type
1	0	860	U
1	0	873	U
1	0	879	A
1	0	919	U
1	0	922	A
1	0	926	C
1	0	930	A
1	0	931	G
1	0	941	U
1	0	944	A
1	0	952	A
1	0	957	G
1	0	969	U
1	0	970	A
1	0	972	C
1	0	973	U
1	0	984	A
1	0	994	A
1	0	996	C
1	0	1005	U
1	0	1006	C
1	0	1023	U
1	0	1024	G
1	0	1030	U
1	0	1032	A
1	0	1033	G
1	0	1036	G
1	0	1037	U
1	0	1044	U
1	0	1055	A
1	0	1056	U
1	0	1057	A
1	0	1067	G
1	0	1073	G
1	0	1074	G
1	0	1075	C
1	0	1081	A
1	0	1087	C
1	0	1090	C
1	0	1099	A
1	0	1122	A
1	0	1137	A

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Mol	Chain	Res	Type
1	0	1138	A
1	0	1142	G
1	0	1145	C
1	0	1146	G
1	0	1155	G
1	0	1167	A
1	0	1182	U
1	0	1183	C
1	0	1185	C
1	0	1188	A
1	0	1194	U
1	0	1195	U
1	0	1199	U
1	0	1200	G
1	0	1224	A
1	0	1253	C
1	0	1262	U
1	0	1264	C
1	0	1266	G
1	0	1269	G
1	0	1278	A
1	0	1279	G
1	0	1280	U
1	0	1284	G
1	0	1285	A
1	0	1288	A
1	0	1314	A
1	0	1324	G
1	0	1334	A
1	0	1338	G
1	0	1342	U
1	0	1343	C
1	0	1355	A
1	0	1356	G
1	0	1359	G
1	0	1391	A
1	0	1392	U
1	0	1397	A
1	0	1398	G
1	0	1433	A
1	0	1441	A
1	0	1442	C

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Mol	Chain	Res	Type
1	0	1443	G
1	0	1459	U
1	0	1465	G
1	0	1468	A
1	0	1469	U
1	0	1470	G
1	0	1475	U
1	0	1482	U
1	0	1490	U
1	0	1496	G
1	0	1505	U
1	0	1508	G
1	0	1509	A
1	0	1513	U
1	0	1519	G
1	0	1524	C
1	0	1529	C
1	0	1552	C
1	0	1571	G
1	0	1573	G
1	0	1574	A
1	0	1576	G
1	0	1582	A
1	0	1583	A
1	0	1585	A
1	0	1618	U
1	0	1623	C
1	0	1624	A
1	0	1625	A
1	0	1632	A
1	0	1633	C
1	0	1634	A
1	0	1635	G
1	0	1648	C
1	0	1651	U
1	0	1657	A
1	0	1664	G
1	0	1665	C
1	0	1670	G
1	0	1671	A
1	0	1680	U
1	0	1685	A

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Mol	Chain	Res	Type
1	0	1691	G
1	0	1692	C
1	0	1710	U
1	0	1712	G
1	0	1715	A
1	0	1717	A
1	0	1724	C
1	0	1733	U
1	0	1748	U
1	0	1749	G
1	0	1750	A
1	0	1754	G
1	0	1755	G
1	0	1764	A
1	0	1771	A
1	0	1778	U
1	0	1800	A
1	0	1801	C
1	0	1802	A
1	0	1807	A
1	0	1808	C
1	0	1821	A
1	0	1831	G
1	0	1884	A
1	0	1889	G
1	0	1920	A
1	0	1922	U
1	0	1926	U
1	0	1938	U
1	0	1939	U
1	0	1946	U
1	0	1949	A
1	0	1950	C
1	0	1954	A
1	0	1955	G
1	0	1956	G
1	0	1979	C
1	0	1980	A
1	0	2004	U
1	0	2006	G
1	0	2015	G
1	0	2016	A

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Mol	Chain	Res	Type
1	0	2019	C
1	0	2038	C
1	0	2043	A
1	0	2051	U
1	0	2052	G
1	0	2060	A
1	0	2076	G
1	0	2082	C
1	0	2094	C
1	0	2096	U
1	0	2118	A
1	0	2119	A
1	0	2140	G
1	0	2162	C
1	0	2168	A
1	0	2181	A
1	0	2191	A
1	0	2195	C
1	0	2199	C
1	0	2205	C
1	0	2218	G
1	0	2229	G
1	0	2237	C
1	0	2241	U
1	0	2245	A
1	0	2246	A
1	0	2247	A
1	0	2255	G
1	0	2262	C
1	0	2268	G
1	0	2285	U
1	0	2286	G
1	0	2287	G
1	0	2288	A
1	0	2298	U
1	0	2299	A
1	0	2300	G
1	0	2301	A
1	0	2313	G
1	0	2315	A
1	0	2316	G
1	0	2326	C

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Mol	Chain	Res	Type
1	0	2362	G
1	0	2364	C
1	0	2378	G
1	0	2382	C
1	0	2385	U
1	0	2396	C
1	0	2403	C
1	0	2405	A
1	0	2409	A
1	0	2414	A
1	0	2420	C
1	0	2427	A
1	0	2428	U
1	0	2438	A
1	0	2448	A
1	0	2455	A
1	0	2470	U
1	0	2481	G
1	0	2482	A
1	0	2483	U
1	0	2484	G
1	0	2485	U
1	0	2492	G
1	0	2498	U
1	0	2499	C
1	0	2504	G
1	0	2522	G
1	0	2546	G
1	0	2549	G
1	0	2553	G
1	0	2565	C
1	0	2578	G
1	0	2581	A
1	0	2582	G
1	0	2588	U
1	0	2589	C
1	0	2591	C
1	0	2593	A
1	0	2594	U
1	0	2608	A
1	0	2609	G
1	0	2625	U

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Mol	Chain	Res	Type
1	0	2633	A
1	0	2634	G
1	0	2661	G
1	0	2669	C
1	0	2670	C
1	0	2681	A
1	0	2691	C
1	0	2692	A
1	0	2712	G
1	0	2728	A
1	0	2730	A
1	0	2732	C
1	0	2737	A
1	0	2745	A
1	0	2756	A
1	0	2760	G
1	0	2761	A
1	0	2770	A
1	0	2771	C
1	0	2783	U
1	0	2785	A
1	0	2795	A
1	0	2807	U
1	0	2808	U
1	0	2809	A
1	0	2811	G
1	0	2825	A
1	0	2841	U
1	0	2842	C
1	0	2847	G
1	0	2854	G
1	0	2855	C
1	0	2859	U
2	5	33	C
2	5	34	C

All (43) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	0	69	G
1	0	71	A
1	0	173	A

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Mol	Chain	Res	Type
1	0	181	A
1	0	192	G
1	0	198	A
1	0	242	A
1	0	342	G
1	0	583	C
1	0	805	G
1	0	843	G
1	0	878	C
1	0	1074	G
1	0	1141	U
1	0	1187	A
1	0	1193	G
1	0	1194	U
1	0	1223	G
1	0	1263	G
1	0	1278	A
1	0	1279	G
1	0	1313	U
1	0	1354	A
1	0	1495	G
1	0	1518	C
1	0	1634	A
1	0	1664	G
1	0	1807	A
1	0	1820	G
1	0	1938	U
1	0	2015	G
1	0	2093	G
1	0	2161	C
1	0	2204	A
1	0	2245	A
1	0	2261	G
1	0	2377	U
1	0	2404	A
1	0	2426	G
1	0	2668	U
1	0	2759	U
1	0	2782	G
1	0	2824	C

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

1 non-standard protein/DNA/RNA residue is modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	PPU	5	35	2	32,40,41	2.80	7 (21%)	33,57,60	0.98	3 (9%)

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	PPU	5	35	2	-	1/21/43/44	0/4/4/4

All (7) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	5	35	PPU	C-N3'	12.44	1.61	1.34
2	5	35	PPU	OC-CM	-4.93	1.27	1.42
2	5	35	PPU	C6-N1	3.79	1.38	1.33
2	5	35	PPU	CE1-CZ	3.77	1.46	1.38
2	5	35	PPU	CE2-CZ	2.68	1.44	1.38
2	5	35	PPU	CD2-CG	2.65	1.44	1.38
2	5	35	PPU	C3'-N3'	-2.02	1.42	1.45

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	5	35	PPU	CM-OC-CZ	2.99	123.99	117.51
2	5	35	PPU	C9-N6-C6	2.24	126.28	119.51
2	5	35	PPU	C-CA-N	2.18	117.83	109.40

There are no chirality outliers.

All (1) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	5	35	PPU	C4'-C5'-O5'-P

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

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.