



Full wwPDB X-ray Structure Validation Report ⓘ

Feb 15, 2017 – 05:03 am GMT

PDB ID : 1NJP
Title : The crystal structure of the 50S Large ribosomal subunit from *Deinococcus radiodurans* complexed with a tRNA acceptor stem mimic (ASM)
Authors : Bashan, A.; Agmon, I.; Zarivatch, R.; Schlutzen, F.; Harms, J.M.; Berisio, R.; Bartels, H.; Hansen, H.A.; Yonath, A.
Deposited on : 2003-01-02
Resolution : 3.50 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

<http://wwpdb.org/validation/2016/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

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

MolProbity	:	4.02b-467
Mogul	:	1.7.2 (RC1), CSD as538be (2017)
Xtriage (Phenix)	:	NOT EXECUTED
EDS	:	NOT EXECUTED
Percentile statistics	:	20161228.v01 (using entries in the PDB archive December 28th 2016)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	recalc28949

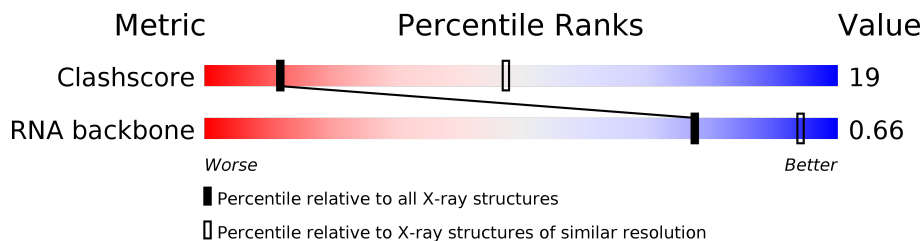
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.50 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	112137	1322 (3.60-3.40)
RNA backbone	2435	1024 (4.10-2.86)

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 on the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Note EDS was not executed.

Mol	Chain	Length	Quality of chain
1	0	2880	
2	5	35	
3	K	141	
4	T	237	

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 60249 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
1	0	2766	Total	C	N	O	P	0	0	0
			59359	26479	10949	19166	2765			

- Molecule 2 is a RNA chain called tRNA acceptor stem mimic.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	5	25	Total	C	N	O	P	0	0	0
			543	249	97	173	24			

- Molecule 3 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
3	K	124	Total	C	0	0	124
			124	124			

- Molecule 4 is a protein called GENERAL STRESS PROTEIN CTC.

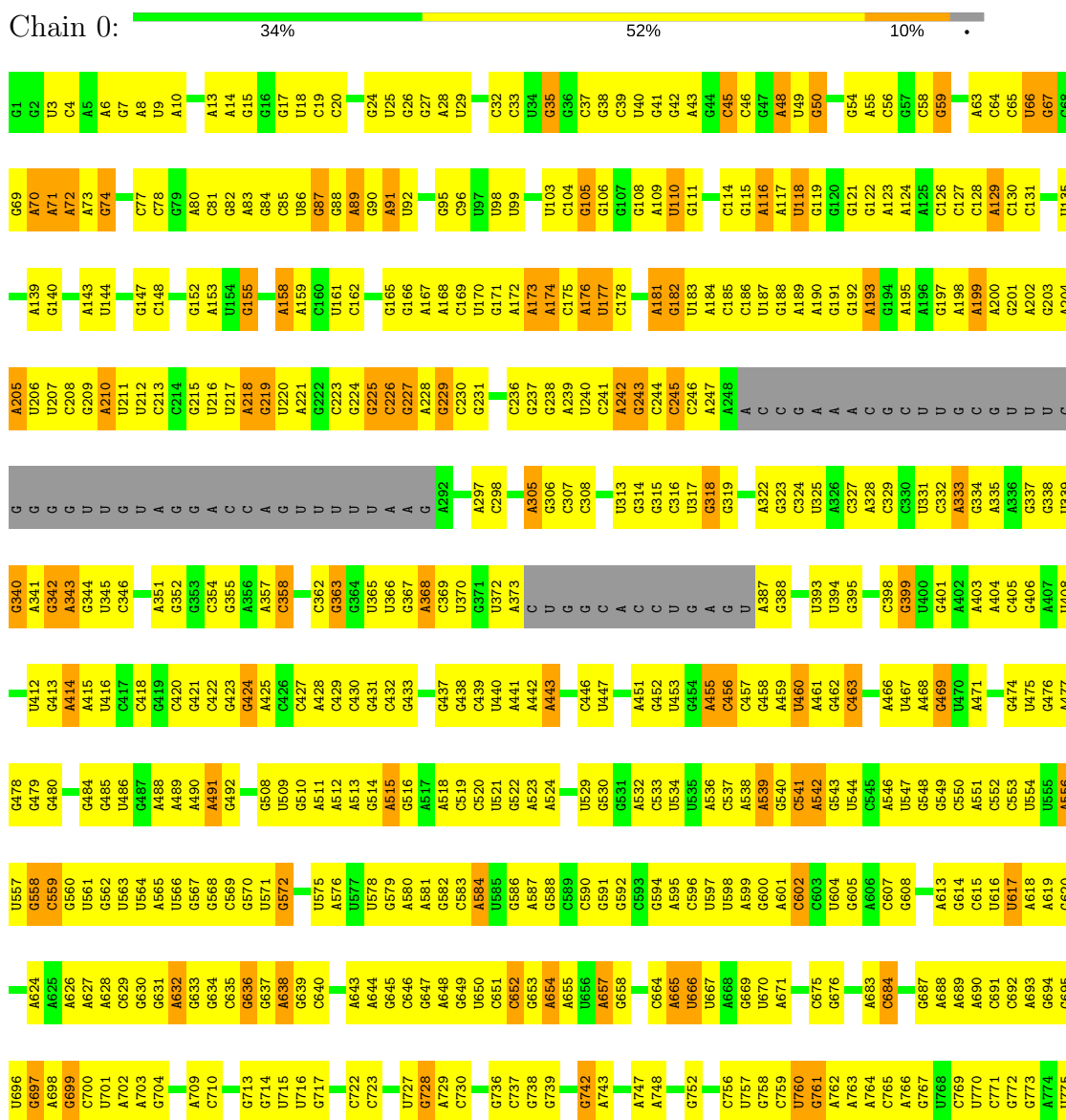
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
4	T	223	Total	C	0	0	223
			223	223			

3 Residue-property plots

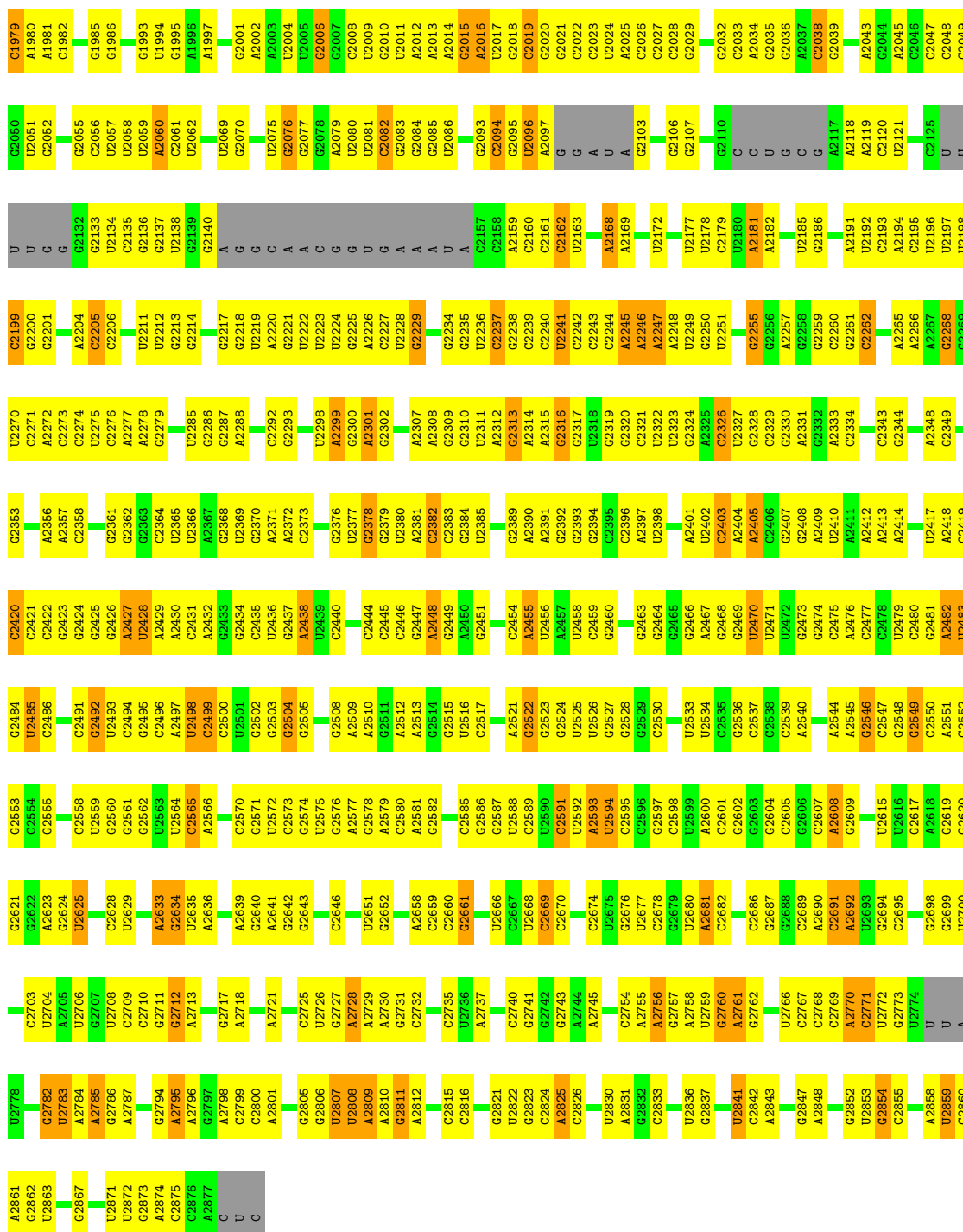
These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are 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. A red dot above a residue indicates a poor fit to the electron density ($RSRZ > 2$). 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

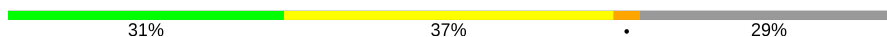


U1909	U1819	G1742	G1659	A1587	G1508	A1441	U1357	A1288	C1214	U1141	U1044	U978	A	A838	G776
A1910	G1820	C1743	G1660	U1591	A1509	C1442	C1358	A1289	U1217	G1142	G1045	U979	C	U839	A777
G1912	A1821	G1744	C1661	U1592	A1510	G1443	G1359	A1290	U1218	A1143	U1046	A979	C	U840	A778
G1913	C1822	C1745	G1662	U1593	A1511	G1444	G1365	G1291	C1219	U1144	G1047	C981		G841	U779
G1914	C1825	G1746	G1663	U1594	A1512	A1445	U1365	A1292	C1220	C1145	C1052	A984		G843	U780
A1915	U1826	G1747	C1665	A1595	U1513	U1446	A1366	A1293	G1221	G1146	G1053	A985		G844	G781
G1916		U1748	G1667	A1596	C1514	U1447	A1367	G1298	C1221	G1147	C1054	A986		U845	U782
C1829	C1917	G1749	A1667	A1597	A1516	A1448	G1368	U1301	G1222	G1148	C1055	A987		U846	G783
G1918	G1830	A1750	C1598	C1598	C1517	A1449	G1373	U1302	A1224	G1149	U1056	A988		U847	U784
G1919	G1831	A1668	C1518	C1518	C1518	C1451	G1377	U1303	G1225	C1150	U1057	A989		U852	U785
A1920	U1827	G1754	G1519	U1600	G1519	U1452	G1377	C1307	A1226	A1151	G1058	A991		U853	U786
A1921	C1835	A1671	G1601	U1601	G1601	U1455	C1380	C1308	A1227	A1154		A992		U854	A787
U1922	C1836	A1672	G1602	G1602	C1524	C1455	G1381	G1309		G1155	A1065	A994		G788	
U1923	G1837		A1603	A1603	C1524	C1456	G1382	C1310	A1231	U1156		A995		G854	G789
C1924	G1838	G1761	A1604	A1604	G1527	A1457	G1381	C1311	U1232	U1157	G1067	A996		A855	A790
C1925	A1839	C1762	A1605	A1605	C1528	U1458	A1386	U1312	A1233	C1162	A1068	A997		U857	G791
U1926	A1840	G1763	C1606	C1606	C1529	U1459	A1387	U1313	C1234	C1163	G1069	C997		G858	U792
U1927	G1841	A1764	U1680	U1607	C1529	A1460	G1387	A1314	C1235	C1164	G1070	C998		U859	G793
G1928		G1765	A1681	U1608	U1530	A1463	C1388	A1315		G1165		A999		U860	A794
U1929	G1850	U1766	G1682	U1609	U1531	A1464	C1389	G1316	A1242	G1073	G1000	A999		G861	A795
C1930	A1851	G1767	G1683	A1610	A1532	G1465	G1390	G1317	G1074	G1074	C1001	A1001		G862	A796
G1931			G1684	U1611	G1533	C1466	A1391	A1318	C1075	C1002	G934	C1002		C864	A797
		U1770	A1685	U1612	G1533	U1467	U1392	C1319	U1076	C1003	C935	C799		A865	G798
G1937	U1855	A1771	A1686	G1613	U1539	U1468	G1393	A1320		A1004	A936			U868	U800
U1938	G1857		C1687	C1614	C1540	U1469	U1397	G1323	U1172	U1172	U1005			C869	
U1939	C1858	A1774		C1615	G1541	U1470	G1398	G1324	G1173					C870	C803
U1946	A1859	A1775	G1691	C1616	G1542	G1471	C1399	G1325	A1084	U1177	G1085	A1007		U871	C804
G1947	A1860	A1776	C1692	U1617	G1543	C1472	C1399	U1326	G1085	C1178	G1086	C1009		G872	G805
C1948	G1861	A1777	U1618	U1618	A1544	U1473	G1402	C1327	C1087	U1179				U873	A806
A1949	C1862	U1778	C1696	U1619	G1545	U1474	U1403	G1328	U1257	A1180	U1088			A874	A807
		C1779		G1620	C1552	U1475	U1407	U1329	G1258	A1181	C1089			G875	C808
C1950	G1865	A1780	G1703	C1621	G1557	U1478	G1407	G1330	A1259	U1182	C1090			A876	U810
G1951	G1866		G1704	G1622	C1558	G1479	U1410	G1331	G1261	C1183	C1091			G877	G811
A1953	G1871		C1708	C1623	A1561	U1480	U1411	G1332	G1262	G1184	U1092			C878	G812
A1954	U1851	U1767	U1709	A1625	G1562	U1481	G1414	A1335	C1263	C1185	U1093			A879	A813
G1955	U1852	C1786	U1710	A1626	G1566	U1482	C1415	A1336	G1264	A1187				C880	G814
G1956	G1882	U1769	C1711	C1627	A1567	G1487	A1416	G1337	G1265	A1099	G1098			G887	A815
G1958	A1883	C1791	G1712	G1628	G1568	G1488	G1417	G1338	G1266	A1022	G1100			G888	U816
	C1884	C1792	A1714	G1629	A1568	U1489	C1418	U1339	A1267	G1102	A956			C889	A817
C1961	G1885	A1793	G1715	A1632	A1568	U1490	G1419	C1340	U1268	A1025	A957			U890	C818
C1962	G1886	A1794	G1716	C1633	G1571	U1491	U1424	G1341	G1269	U1026	G958			A891	C819
G1963	C1887		A1717	A1634	C1572	U1492	U1425	G1342	C1270	C1027				G	U820
A1964	C1888	A1799	G1722	G1635	C1573	A1493	G1425	C1343	G1271	G1028				G	A821
U1965	G1889	C1801	U1723	A1643	A1574	U1494	U1426	U1344	G1272	C1029				G	U822
C1966	G1890	G1724	C1724	G1644	C1575	G1495	G1427	G1345	C1273	U1030				G	U824
	G1893			G1648	G1576	U1496	G1428	C1346	A1275	A1032				C	U825
G1968	U1894	C1727		U1651	G1577	U1497	A1429	U1199		G1033				C	U826
G1969	A1895	A1728		U1652	U1578	G1498	G1430	C1348	A1278	U1130				U	C827
C1970	C1896	C1729		G1652	U1579	A1499	U1431	C1349	G1279	G1034				G	C828
G1972	U1810	G1730		G1653	C1580	U1500	G1432	G1350	U1280	G1035				A	C829
C1973	A1899	C1731		C1653	C1581	C1501	A1433	G1351	A1203	G1036				C	C830
U1974	U1811	U1732		A1654	C1582	G1502	U1434	G1352	G1204	U1037				A	C831
G1975	G1813	U1733		C1655	A1583	G1503	G1435	A1353	G1205	U1038				C	A832
U1976	U1906	G1814		U1656	G1584	U1504	G1436	A1354	A1039	U1039				G	A833
C1977	C1907	C1736		A1657	A1585	U1505	A1437	A1355	A1040	A1040				U	A834
U1978	C1908	G1818		A1658	A1586			G1356	G1211	G1041				U	U837



- Molecule 2: tRNA acceptor stem mimic

Chain 5:

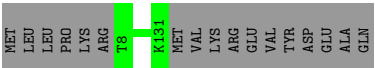


- Molecule 3: 50S ribosomal protein L16

Chain K:

88%

12%



● Molecule 4: GENERAL STRESS PROTEIN CTC

Chain T:

94%

6%



4 Data and refinement statistics

Xtriage (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	169.90 Å 409.90 Å 695.90 Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	15.00 – 3.50	Depositor
% Data completeness (in resolution range)	(Not available) (15.00-3.50)	Depositor
R_{merge}	(Not available)	Depositor
R_{sym}	0.12	Depositor
Refinement program	CNS	Depositor
R, R_{free}	0.244 , 0.295	Depositor
Estimated twinning fraction	No twinning to report.	Xtriage
Total number of atoms	60249	wwPDB-VP
Average B, all atoms (Å ²)	81.0	wwPDB-VP

5 Model quality

5.1 Standard geometry

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	0.15	0/563	0.63	0/873
All	All	0.14	0/67030	0.63	0/104546

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

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	1724	0
2	5	543	0	290	11	0
3	K	124	0	0	0	0
4	T	223	0	0	0	0
All	All	60249	0	30207	1731	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 (1731) 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	1.04
1:0:1073:G:H2'	1:0:1074:G:H4'	1.40	1.01
1:0:2548:G:H2'	1:0:2549:G:H5''	1.44	1.00
1:0:2769:C:H2'	1:0:2867:G:H22	1.21	0.99
1:0:2636:A:H62	1:0:2643:G:H21	1.11	0.97
1:0:1252:C:H2'	1:0:1253:C:H5''	1.47	0.96
1:0:2668:U:H4'	1:0:2669:C:H5'	1.47	0.96
1:0:688:A:H62	1:0:816:U:H3	1.09	0.96
1:0:1182:U:H2'	1:0:1183:C:H5''	1.47	0.95
1:0:1496:G:H1	1:0:1527:G:H1	1.13	0.95
1:0:1893:G:H5''	2:5:21:C:H4'	1.47	0.95
1:0:58:C:H3'	1:0:59:G:H5''	1.47	0.94
1:0:1086:C:H2'	1:0:1087:C:H5''	1.49	0.94
1:0:221:A:H62	1:0:231:G:H21	1.15	0.94
1:0:1572:C:H2'	1:0:1573:G:H5''	1.48	0.94
1:0:1747:G:H4'	1:0:1749:G:H1'	1.48	0.94
1:0:471:A:H62	1:0:480:G:H21	1.13	0.94
1:0:1953:A:H1'	1:0:1955:G:H1'	1.51	0.92
1:0:1223:G:H21	1:0:1225:G:H21	0.93	0.92
1:0:1312:G:H5''	1:0:1313:U:H5'	1.52	0.92
1:0:847:C:H41	1:0:955:G:H21	1.17	0.91
1:0:166:G:H21	1:0:184:A:H62	1.11	0.90
1:0:789:G:H21	1:0:806:A:H62	1.13	0.90
1:0:929:A:H3'	1:0:930:A:H5''	1.52	0.90
1:0:225:G:H3'	1:0:226:C:H5'	1.51	0.89
1:0:831:G:H21	1:0:1203:A:H62	1.17	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2633:A:H4'	1:0:2634:G:H4'	1.57	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
1:0:128:C:H2'	1:0:129:A:H5''	1.58	0.86
1:0:1199:U:H3'	1:0:1200:G:H5''	1.56	0.85
1:0:1223:G:H21	1:0:1225:G:N2	1.75	0.85
1:0:1436:G:H1'	1:0:1508:G:H21	1.41	0.84
1:0:1034:U:H1'	1:0:1133:G:H5''	1.59	0.84
1:0:1964:A:H3'	1:0:1965:U:H5'	1.60	0.84
1:0:2426:G:H5'	1:0:2480:C:H41	1.43	0.83
1:0:2794:G:H3'	1:0:2796:A:H62	1.43	0.82
1:0:2607:C:H3'	1:0:2608:A:H5'	1.59	0.82
1:0:109:A:H3'	1:0:110:U:H5''	1.61	0.81
1:0:26:G:H21	1:0:524:A:H62	1.25	0.81
1:0:88:G:H3'	1:0:89:A:H5''	1.60	0.81
1:0:2769:C:H2'	1:0:2867:G:N2	1.95	0.81
1:0:2806:G:H1'	1:0:2858:A:H2'	1.62	0.81
1:0:2081:U:H2'	1:0:2082:C:H5''	1.62	0.81
1:0:2522:G:H21	1:0:2625:U:H5''	1.45	0.81
1:0:2059:U:H5	1:0:2575:U:H3	1.26	0.81
1:0:2198:U:H3'	1:0:2199:C:H5''	1.62	0.81
1:0:2700:U:H3	1:0:2848:A:N6	1.79	0.80
1:0:940:G:H3'	1:0:941:U:C5'	2.09	0.80
1:0:9:U:H3	1:0:2608:A:H62	1.29	0.80
1:0:2491:C:H2'	1:0:2492:G:H5''	1.64	0.80
1:0:176:A:H1'	1:0:2221:G:H21	1.47	0.79
1:0:460:U:H3	1:0:592:G:H1'	1.46	0.79
1:0:1141:U:N3	1:0:2008:C:H5''	1.97	0.79
1:0:1223:G:N2	1:0:1225:G:H21	1.77	0.79
1:0:542:A:H2'	1:0:543:G:H5'	1.65	0.79
1:0:1811:A:O2'	1:0:1812:U:H5''	1.82	0.79
1:0:70:A:O3'	1:0:71:A:H3'	1.83	0.79
1:0:2548:G:C2'	1:0:2549:G:H5''	2.10	0.79
1:0:1432:G:H21	1:0:1596:A:H62	1.27	0.78
1:0:2227:C:H2'	1:0:2228:U:H5'	1.66	0.78
1:0:918:A:H2'	1:0:919:U:H5''	1.64	0.78
1:0:26:G:N2	1:0:524:A:H62	1.81	0.78
1:0:2480:C:H5''	1:0:2482:A:H5'	1.66	0.78
1:0:1188:A:H62	1:0:1189:G:H21	1.30	0.77
1:0:2770:A:H5'	1:0:2867:G:H22	1.48	0.77
1:0:181:A:H5''	1:0:182:G:OP1	1.84	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:652:C:H42	1:0:657:A:H61	1.31	0.77
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
1:0:688:A:N6	1:0:816:U:H3	1.84	0.76
1:0:65:C:H2'	1:0:66:U:H5'	1.68	0.75
1:0:1807:A:O2'	1:0:1808:C:H4'	1.86	0.75
1:0:2624:G:H4'	1:0:2712:G:H2'	1.69	0.75
1:0:2503:G:H3'	1:0:2504:G:H5''	1.69	0.75
2:5:3:G:H1	2:5:29:U:H3	1.32	0.75
1:0:2096:U:H2'	1:0:2097:A:H5''	1.69	0.74
1:0:218:A:O2'	1:0:219:G:H4'	1.87	0.74
1:0:1001:A:H62	1:0:1200:G:H1'	1.53	0.74
1:0:1252:C:C2'	1:0:1253:C:H5''	2.18	0.73
1:0:2241:U:H1'	1:0:2307:A:H1'	1.69	0.73
1:0:1182:U:C2'	1:0:1183:C:H5''	2.17	0.73
1:0:1473:U:H4'	1:0:1474:A:C8	2.23	0.73
1:0:2700:U:H3	1:0:2848:A:H62	1.35	0.73
1:0:109:A:C3'	1:0:110:U:H5''	2.19	0.72
1:0:2721:A:H62	1:0:2743:G:H21	1.37	0.72
1:0:1021:A:H1'	1:0:1164:C:H1'	1.71	0.72
1:0:1572:C:C2'	1:0:1573:G:H5''	2.18	0.72
1:0:471:A:H62	1:0:480:G:N2	1.86	0.72
1:0:65:C:C2'	1:0:66:U:H5'	2.19	0.72
1:0:795:A:H4'	1:0:796:A:N7	2.03	0.72
1:0:616:U:H2'	1:0:617:U:H5''	1.70	0.72
1:0:59:G:H1'	1:0:73:A:N1	2.04	0.72
1:0:202:A:H2'	1:0:203:G:O4'	1.88	0.71
1:0:1528:C:H2'	1:0:1529:C:H5''	1.71	0.71
1:0:1373:G:H22	1:0:2192:U:H3	1.36	0.71
1:0:1479:G:N2	1:0:1543:G:H21	1.87	0.71
1:0:1196:G:H2'	1:0:1197:U:O4'	1.91	0.71
1:0:2426:G:H22	1:0:2431:C:H41	1.38	0.71
1:0:2691:C:H3'	1:0:2692:A:H5''	1.73	0.71
1:0:1908:C:H2'	1:0:1909:U:H4'	1.72	0.71
1:0:2503:G:C3'	1:0:2504:G:H5''	2.21	0.71
1:0:2552:C:N3	2:5:34:C:H4'	2.04	0.71
1:0:1047:G:H1	1:0:1130:U:H3	1.36	0.71
1:0:1882:G:H21	1:0:1885:C:N4	1.88	0.71
1:0:69:G:H4'	1:0:70:A:O5'	1.90	0.71
1:0:2045:A:H4'	1:0:2421:C:OP2	1.89	0.71
1:0:1621:C:H4'	1:0:1626:A:H61	1.56	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1139:A:H1'	1:0:2496:C:H5'	1.72	0.71
1:0:2380:U:H2'	1:0:2381:A:H5'	1.71	0.70
1:0:1809:G:H2'	1:0:1810:U:O4'	1.91	0.70
1:0:2522:G:N2	1:0:2625:U:H5''	2.05	0.70
1:0:2759:U:H4'	1:0:2760:G:OP2	1.89	0.70
1:0:319:G:H21	1:0:340:G:H21	1.40	0.70
1:0:514:G:N3	1:0:514:G:H2'	2.06	0.70
1:0:515:A:H2'	1:0:516:G:H5'	1.72	0.70
1:0:181:A:H4'	1:0:182:G:H4'	1.74	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
1:0:2510:A:H61	1:0:2641:A:N6	1.89	0.70
1:0:1023:U:H1'	1:0:1154:A:N7	2.06	0.69
1:0:588:G:H4'	1:0:2001:G:H5''	1.74	0.69
1:0:323:G:H5'	1:0:342:G:C6	2.27	0.69
1:0:33:C:H42	1:0:466:A:H61	1.39	0.69
1:0:1188:A:N6	1:0:1189:G:H21	1.89	0.69
1:0:951:G:H2'	1:0:952:A:H5''	1.73	0.69
1:0:1838:G:H2'	1:0:1839:A:H5'	1.75	0.69
1:0:800:U:H3'	1:0:804:C:N4	2.08	0.69
1:0:2808:U:H3'	1:0:2809:A:H5'	1.75	0.69
1:0:2510:A:H61	1:0:2641:A:H61	1.41	0.69
1:0:2727:G:H1	1:0:2735:C:H5''	1.58	0.69
1:0:878:C:H42	1:0:921:A:H62	1.41	0.69
1:0:2058:U:H5'	1:0:2576:G:H1'	1.74	0.68
1:0:1978:U:H3'	1:0:1979:C:H5''	1.74	0.68
1:0:1774:A:H1'	1:0:2586:G:H21	1.58	0.68
1:0:2607:C:H1'	1:0:2761:A:H2'	1.76	0.68
1:0:1955:G:H2'	1:0:1956:G:H5'	1.75	0.68
1:0:2245:A:H4'	1:0:2246:A:C8	2.29	0.68
1:0:67:G:N2	1:0:72:A:H2'	2.08	0.68
1:0:941:U:H2'	1:0:942:U:O4'	1.94	0.68
1:0:813:A:O2'	1:0:815:A:H5'	1.94	0.68
1:0:1791:C:O2'	1:0:1793:A:H5'	1.94	0.67
1:0:1915:A:H62	1:0:1951:G:N2	1.91	0.67
1:0:2495:G:H2'	1:0:2496:C:C6	2.30	0.67
1:0:1923:U:H4'	1:0:1948:C:H41	1.59	0.67
1:0:584:A:H4'	1:0:2479:U:H5'	1.77	0.67
1:0:1953:A:H1'	1:0:1955:G:C1'	2.21	0.67
1:0:653:G:H2'	1:0:654:A:H4'	1.76	0.67
1:0:1086:C:C2'	1:0:1087:C:H5''	2.24	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2095:G:H2'	1:0:2096:U:H5''	1.75	0.67
1:0:2499:C:H41	1:0:2521:A:H2	1.41	0.67
1:0:974:U:H1'	1:0:2229:G:H21	1.58	0.67
1:0:1749:G:O6	1:0:2674:C:H4'	1.95	0.67
1:0:367:G:C2'	1:0:368:A:H5''	2.24	0.67
1:0:1191:G:H2'	1:0:1192:A:H8	1.60	0.67
1:0:2491:C:C2'	1:0:2492:G:H5''	2.25	0.67
1:0:2680:U:H3'	1:0:2681:A:H5'	1.76	0.67
1:0:1312:G:H5'	1:0:1314:A:H1'	1.76	0.66
1:0:1474:A:H2'	1:0:1475:U:H5'	1.77	0.66
1:0:45:C:H5''	1:0:192:G:N7	2.10	0.66
1:0:583:C:N3	1:0:2016:A:H4'	2.10	0.66
1:0:1188:A:H62	1:0:1189:G:N2	1.92	0.66
1:0:1199:U:H3'	1:0:1200:G:C5'	2.24	0.66
1:0:1352:G:H2'	1:0:1353:A:H8	1.60	0.66
1:0:805:G:H5''	1:0:806:A:O5'	1.95	0.66
1:0:1181:C:H2'	1:0:1182:U:H5''	1.77	0.66
1:0:1685:A:H1'	1:0:1686:A:C5	2.30	0.66
1:0:1746:A:H2'	1:0:1747:G:H5'	1.77	0.66
1:0:2768:C:H2'	1:0:2769:C:O4'	1.95	0.66
1:0:58:C:H3'	1:0:59:G:C5'	2.21	0.66
1:0:1487:C:H2'	1:0:1488:G:H8	1.61	0.66
1:0:2324:G:H4'	1:0:2326:C:H5''	1.78	0.66
1:0:652:C:H42	1:0:657:A:N6	1.94	0.66
1:0:2418:A:H4'	1:0:2420:C:OP2	1.96	0.65
1:0:651:C:H2'	1:0:652:C:H5''	1.78	0.65
1:0:805:G:H4'	1:0:806:A:OP2	1.96	0.65
1:0:1686:A:N3	1:0:1686:A:H2'	2.11	0.65
1:0:1888:C:H5''	1:0:1889:G:H5''	1.79	0.65
1:0:1966:C:H4'	1:0:2585:C:H4'	1.78	0.65
1:0:66:U:H2'	1:0:67:G:N7	2.11	0.65
1:0:73:A:H3'	1:0:73:A:N3	2.12	0.65
1:0:1195:U:H2'	1:0:1196:G:C8	2.32	0.65
1:0:175:C:H1'	1:0:2413:A:H61	1.62	0.65
1:0:13:A:H1'	1:0:536:A:N6	2.12	0.65
1:0:1900:U:O2'	1:0:1946:U:H5'	1.97	0.65
1:0:225:G:H3'	1:0:226:C:C5'	2.26	0.65
1:0:1033:G:H22	1:0:1150:C:H2'	1.62	0.65
1:0:1427:G:H2'	1:0:1428:G:H5'	1.79	0.65
1:0:104:C:C2'	1:0:105:G:H5''	2.27	0.64
1:0:1500:U:H3	1:0:1520:G:H22	1.45	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1938:U:O2'	1:0:1939:U:OP1	2.13	0.64
1:0:2198:U:C3'	1:0:2199:C:H5''	2.27	0.64
1:0:2312:A:H4'	1:0:2313:G:N7	2.12	0.64
1:0:665:A:H3'	1:0:666:U:H5''	1.79	0.64
1:0:727:U:H2'	1:0:728:G:H5''	1.79	0.64
1:0:777:A:N6	1:0:1766:U:H3	1.94	0.64
1:0:1354:A:H62	1:0:1407:G:H22	1.45	0.64
1:0:2236:U:C3'	1:0:2237:C:H5''	2.28	0.64
1:0:2404:A:O2'	1:0:2405:A:OP2	2.15	0.64
1:0:317:U:H2'	1:0:318:G:H5''	1.78	0.64
1:0:2236:U:H2'	1:0:2237:C:H5''	1.77	0.64
1:0:571:U:H2'	1:0:581:A:H1'	1.79	0.64
1:0:1194:U:H2'	1:0:1195:U:C6	2.32	0.64
1:0:1679:U:C3'	1:0:1680:U:H5''	2.28	0.64
1:0:2426:G:N2	1:0:2431:C:H41	1.95	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
1:0:1679:U:H3'	1:0:1680:U:H5''	1.78	0.64
1:0:73:A:H4'	1:0:74:G:C1'	2.27	0.64
1:0:2080:U:H2'	1:0:2081:U:C6	2.33	0.64
1:0:2690:A:OP2	1:0:2694:G:H5'	1.97	0.64
1:0:2422:C:H2'	1:0:2423:G:H8	1.62	0.64
1:0:2426:G:O6	1:0:2479:U:H2'	1.97	0.64
1:0:2440:C:H1'	1:0:2471:U:H3	1.63	0.64
1:0:83:A:H4'	1:0:84:G:O4'	1.97	0.64
1:0:236:C:H1'	1:0:632:A:O2'	1.97	0.64
1:0:1198:C:H5''	1:0:1199:U:H5''	1.80	0.63
1:0:1580:C:H2'	1:0:1581:C:C6	2.33	0.63
1:0:2636:A:H62	1:0:2643:G:N2	1.90	0.63
1:0:653:G:N2	1:0:655:A:H1'	2.14	0.63
1:0:858:G:H5''	1:0:859:U:H5'	1.79	0.63
1:0:1250:A:O2'	1:0:1251:G:H4'	1.98	0.63
1:0:1715:A:H1'	1:0:1717:A:O4'	1.99	0.63
1:0:831:G:H21	1:0:1203:A:N6	1.93	0.63
1:0:952:A:O2'	1:0:1204:G:H4'	1.98	0.63
1:0:128:C:C2'	1:0:129:A:H5''	2.27	0.63
1:0:69:G:H5''	1:0:70:A:OP1	1.98	0.63
1:0:927:C:H2'	1:0:928:G:O4'	1.98	0.63
1:0:998:C:H2'	1:0:999:A:O4'	1.97	0.63
1:0:2261:G:H5''	1:0:2262:C:O5'	1.98	0.63
1:0:2617:G:H22	1:0:2755:A:H2'	1.64	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1181:C:C3'	1:0:1182:U:H5''	2.29	0.62
1:0:167:A:H62	1:0:183:U:H3	1.46	0.62
1:0:614:G:H2'	1:0:615:C:C6	2.34	0.62
1:0:2770:A:H5'	1:0:2867:G:N2	2.14	0.62
1:0:1428:G:H5''	1:0:1429:A:H5'	1.80	0.62
1:0:2721:A:H62	1:0:2743:G:N2	1.98	0.62
1:0:542:A:C2'	1:0:543:G:H5'	2.30	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'	1.81	0.62
1:0:1517:C:H2'	1:0:1518:C:C6	2.34	0.62
1:0:1807:A:H5'	1:0:1809:G:C1'	2.30	0.62
1:0:221:A:H62	1:0:231:G:N2	1.91	0.62
1:0:362:C:H2'	1:0:363:G:H4'	1.80	0.62
1:0:852:U:H3	1:0:950:G:H1	1.47	0.62
1:0:1085:G:H2'	1:0:1086:C:C6	2.35	0.62
1:0:121:G:O2'	1:0:1389:C:H4'	2.00	0.62
1:0:2015:G:O2'	1:0:2016:A:OP1	2.12	0.62
1:0:2755:A:O2'	1:0:2756:A:H5'	2.00	0.62
1:0:414:A:H2'	1:0:415:A:O4'	1.99	0.62
1:0:55:A:H2'	1:0:56:C:C6	2.35	0.62
1:0:455:A:H4'	1:0:1214:C:O2'	1.99	0.62
1:0:1976:U:H2'	1:0:1977:C:H5'	1.82	0.62
1:0:2508:G:H5''	1:0:2509:A:H5''	1.82	0.62
1:0:439:C:H2'	1:0:440:U:O4'	2.00	0.62
1:0:1333:G:N2	1:0:1344:C:H41	1.96	0.62
1:0:871:U:H1'	1:0:2248:A:H5''	1.82	0.62
1:0:1656:U:C2'	1:0:1657:A:H5''	2.29	0.61
1:0:2381:A:H4'	1:0:2382:C:C5	2.35	0.61
1:0:2357:A:H2'	1:0:2358:C:O4'	2.00	0.61
1:0:940:G:C3'	1:0:941:U:H5''	2.14	0.61
1:0:191:G:O2'	1:0:192:G:H5'	2.00	0.61
1:0:2268:G:H22	1:0:2323:U:H4'	1.65	0.61
1:0:2544:A:H2'	1:0:2545:A:H4'	1.82	0.61
1:0:2571:G:H2'	1:0:2572:U:C6	2.36	0.61
1:0:1455:C:O2'	1:0:1644:G:H5''	2.00	0.61
1:0:742:G:H2'	1:0:742:G:N3	2.13	0.61
1:0:974:U:H1'	1:0:2229:G:N2	2.15	0.61
1:0:2242:C:N4	1:0:2257:A:H61	1.98	0.61
1:0:2426:G:C5'	1:0:2480:C:H41	2.13	0.61
1:0:81:C:H2'	1:0:82:G:O4'	2.00	0.61
1:0:860:U:C2'	1:0:861:G:H5'	2.31	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:181:A:H4'	1:0:182:G:C5'	2.30	0.61
1:0:2035:G:H2'	1:0:2036:G:H8	1.65	0.61
1:0:814:G:H3'	1:0:815:A:H5'	1.82	0.61
1:0:1188:A:H2'	1:0:1189:G:O4'	2.00	0.61
1:0:1260:A:N6	1:0:1262:U:H1'	2.15	0.61
1:0:1871:G:N3	1:0:1871:G:H2'	2.16	0.61
1:0:1923:U:H4'	1:0:1948:C:N4	2.16	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'	2.00	0.61
1:0:2246:A:H2'	1:0:2246:A:N3	2.16	0.61
1:0:71:A:O2'	1:0:72:A:OP1	2.17	0.61
1:0:1286:U:H5''	1:0:1663:C:H42	1.66	0.61
1:0:1380:C:H2'	1:0:1381:G:H5'	1.81	0.61
1:0:2185:U:H2'	1:0:2186:G:C8	2.36	0.61
1:0:1066:G:H2'	1:0:1067:G:H4'	1.83	0.60
1:0:1713:G:H2'	1:0:1714:A:O4'	2.00	0.60
1:0:800:U:H3'	1:0:804:C:H41	1.66	0.60
1:0:1811:A:H1'	1:0:1813:A:C5	2.35	0.60
1:0:2238:G:H2'	1:0:2239:C:C6	2.37	0.60
1:0:2604:G:H2'	1:0:2605:C:C6	2.37	0.60
1:0:878:C:H42	1:0:921:A:N6	1.99	0.60
1:0:2009:U:H3	1:0:2020:G:H1	1.50	0.60
1:0:2727:G:O2'	1:0:2728:A:H5''	2.02	0.60
1:0:1088:A:H2'	1:0:1089:C:O4'	2.02	0.60
1:0:2243:C:H2'	1:0:2244:C:O4'	2.02	0.60
1:0:1458:A:H3'	1:0:1459:U:C5'	2.32	0.60
1:0:192:G:O2'	1:0:193:A:OP2	2.18	0.60
1:0:2322:U:O2'	1:0:2323:U:H5'	2.01	0.60
1:0:2769:C:H2'	1:0:2770:A:H5'	1.84	0.60
1:0:2858:A:H3'	1:0:2859:U:H5'	1.84	0.60
1:0:1073:G:C2'	1:0:1074:G:H4'	2.26	0.60
1:0:1625:A:H2'	1:0:1625:A:N3	2.16	0.60
1:0:1807:A:H5'	1:0:1809:G:O4'	2.01	0.60
1:0:2260:C:H4'	1:0:2368:G:H21	1.66	0.60
1:0:2370:G:HO2'	1:0:2371:A:H2	1.49	0.60
1:0:2759:U:H5''	1:0:2760:G:O5'	2.02	0.60
1:0:669:G:H2'	1:0:670:U:C6	2.37	0.60
1:0:1289:A:O2'	1:0:1290:A:H5'	2.02	0.60
1:0:2549:G:H2'	1:0:2550:C:O4'	2.02	0.60
1:0:2402:U:H5'	1:0:2404:A:C5	2.37	0.59
1:0:459:A:H1'	1:0:466:A:N7	2.16	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1712:G:H2'	1:0:1713:G:O4'	2.01	0.59
1:0:2784:A:H3'	1:0:2785:A:H8	1.67	0.59
1:0:541:C:H2'	1:0:2002:A:N1	2.17	0.59
1:0:2377:U:H2'	1:0:2378:G:C8	2.37	0.59
1:0:471:A:N6	1:0:480:G:H21	1.94	0.59
1:0:831:G:N2	1:0:1203:A:H62	1.96	0.59
1:0:412:U:H2'	1:0:413:G:O4'	2.03	0.59
1:0:653:G:H4'	1:0:2328:G:H4'	1.83	0.59
1:0:73:A:H4'	1:0:74:G:H1'	1.83	0.59
1:0:804:C:O2'	1:0:806:A:H4'	2.03	0.59
1:0:1298:G:N2	1:0:1341:G:H5''	2.18	0.59
1:0:2491:C:C3'	1:0:2492:G:H5''	2.33	0.59
1:0:366:U:H2'	1:0:367:G:H8	1.67	0.59
1:0:404:A:H5'	1:0:425:A:H4'	1.84	0.59
1:0:1747:G:H1'	1:0:1749:G:N3	2.18	0.59
1:0:17:G:H21	1:0:564:U:H5''	1.66	0.59
1:0:2081:U:C2'	1:0:2082:C:H5''	2.32	0.59
1:0:513:A:H4'	1:0:515:A:H5'	1.83	0.59
2:5:29:U:H2'	2:5:30:C:C6	2.36	0.59
1:0:1634:A:O2'	1:0:1635:G:OP1	2.16	0.59
1:0:2205:C:H2'	1:0:2206:C:C6	2.38	0.59
1:0:1683:G:H2'	1:0:1684:G:O4'	2.03	0.59
1:0:2564:U:O2'	1:0:2565:C:O5'	2.16	0.59
1:0:2547:C:H2'	1:0:2548:G:H8	1.68	0.59
1:0:973:U:H2'	1:0:974:U:C6	2.38	0.59
1:0:1474:A:H3'	1:0:1474:A:N3	2.18	0.58
1:0:1664:G:O5'	1:0:1665:C:OP1	2.21	0.58
1:0:2236:U:C2'	1:0:2237:C:H5''	2.33	0.58
1:0:242:A:O2'	1:0:243:G:O4'	2.21	0.58
1:0:242:A:O2'	1:0:243:G:P	2.61	0.58
1:0:357:A:H2'	1:0:358:C:H5'	1.85	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
1:0:1301:U:H3	1:0:1339:U:H3	1.50	0.58
1:0:1354:A:O2'	1:0:1355:A:OP1	2.18	0.58
1:0:1472:C:H2'	1:0:1473:U:H5'	1.85	0.58
1:0:1474:A:C2'	1:0:1475:U:H5'	2.33	0.58
1:0:1528:C:C2'	1:0:1529:C:H5''	2.33	0.58
1:0:2422:C:H2'	1:0:2423:G:C8	2.39	0.58
1:0:1354:A:H62	1:0:1407:G:N2	2.01	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1916:G:H2'	1:0:1917:C:C6	2.39	0.58
1:0:839:U:H5''	1:0:2408:G:OP2	2.03	0.58
1:0:2677:U:H2'	1:0:2678:C:C6	2.39	0.58
1:0:1251:G:H2'	1:0:1252:C:C6	2.38	0.58
1:0:1567:A:H2'	1:0:1568:A:O4'	2.04	0.58
1:0:1730:G:H2'	1:0:1731:C:C6	2.38	0.58
1:0:521:U:H4'	1:0:1248:G:O2'	2.03	0.58
1:0:67:G:N2	1:0:73:A:O5'	2.36	0.58
1:0:984:A:H2'	1:0:1200:G:H22	1.68	0.58
1:0:1392:U:H2'	1:0:1393:G:H5'	1.85	0.58
1:0:665:A:H3'	1:0:666:U:C5'	2.34	0.58
1:0:1779:C:H2'	1:0:1780:A:O4'	2.03	0.58
1:0:2547:C:H2'	1:0:2548:G:C8	2.38	0.58
1:0:2560:G:H4'	1:0:2561:G:N7	2.19	0.58
1:0:2758:A:H5''	1:0:2759:U:H5	1.68	0.58
1:0:2794:G:H2'	1:0:2796:A:N7	2.19	0.58
1:0:319:G:H21	1:0:340:G:N2	2.02	0.58
1:0:1181:C:C2'	1:0:1182:U:H5''	2.34	0.58
1:0:1994:U:H2'	1:0:1995:G:O4'	2.04	0.58
1:0:490:A:O2'	1:0:491:A:H5'	2.03	0.58
1:0:217:U:H5'	1:0:633:G:O2'	2.04	0.58
1:0:2426:G:O2'	1:0:2427:A:OP2	2.19	0.58
1:0:552:C:H2'	1:0:553:C:H4'	1.86	0.58
1:0:689:A:H2'	1:0:690:A:H5'	1.85	0.58
1:0:925:U:H4'	1:0:926:C:C5	2.39	0.58
1:0:2242:C:H42	1:0:2257:A:N6	2.02	0.57
1:0:2607:C:H3'	1:0:2608:A:C5'	2.31	0.57
1:0:2691:C:H3'	1:0:2692:A:C5'	2.33	0.57
1:0:839:U:H2'	1:0:841:G:O4'	2.04	0.57
1:0:59:G:N2	1:0:87:G:N7	2.52	0.57
1:0:929:A:H2'	1:0:930:A:H4'	1.86	0.57
1:0:766:A:H2'	1:0:767:G:C8	2.39	0.57
1:0:873:U:P	1:0:928:G:H1	2.27	0.57
1:0:1615:C:H2'	1:0:1616:C:C6	2.39	0.57
1:0:605:G:H4'	1:0:949:G:O2'	2.04	0.57
1:0:1223:G:O2'	1:0:1224:A:OP2	2.21	0.57
1:0:118:U:H1'	1:0:143:A:C8	2.40	0.57
1:0:1514:C:H2'	1:0:1515:U:O4'	2.04	0.57
1:0:2222:U:H2'	1:0:2223:U:C6	2.39	0.57
1:0:2426:G:H22	1:0:2431:C:N4	2.02	0.57
1:0:1137:A:H5''	1:0:1138:A:H5''	1.85	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1918:G:H4'	1:0:1920:A:N3	2.20	0.57
1:0:2636:A:N6	1:0:2643:G:H21	1.93	0.57
1:0:2236:U:H3'	1:0:2237:C:H5''	1.85	0.57
1:0:583:C:H41	1:0:2017:U:H5	1.51	0.57
1:0:687:G:O2'	1:0:688:A:H5'	2.04	0.57
1:0:931:G:N2	1:0:2247:A:H5''	2.18	0.57
1:0:1140:A:H61	1:0:2470:U:H6	1.52	0.57
1:0:1981:A:H4'	1:0:2704:U:O2'	2.05	0.57
1:0:2274:C:H2'	1:0:2275:U:H5'	1.87	0.57
1:0:176:A:H5''	1:0:177:U:H5	1.70	0.57
1:0:1915:A:N6	1:0:1951:G:H21	1.99	0.57
1:0:632:A:H2'	1:0:633:G:H5'	1.85	0.57
1:0:1431:U:H2'	1:0:1432:G:O4'	2.05	0.56
1:0:1472:C:C2'	1:0:1473:U:H5'	2.34	0.56
1:0:1971:C:H2'	1:0:1972:G:H8	1.70	0.56
1:0:2057:U:O2'	1:0:2576:G:H1'	2.04	0.56
1:0:369:C:H2'	1:0:370:U:O4'	2.04	0.56
1:0:628:A:H2'	1:0:629:C:C6	2.40	0.56
1:0:1220:G:H2'	1:0:1221:C:C6	2.40	0.56
1:0:1464:A:H4'	1:0:1545:G:H4'	1.86	0.56
1:0:158:A:H2'	1:0:159:A:O4'	2.05	0.56
1:0:874:A:H62	1:0:928:G:H21	1.52	0.56
1:0:2437:G:N2	1:0:2469:G:H2'	2.20	0.56
1:0:804:C:O2	1:0:807:A:H5'	2.05	0.56
1:0:1280:U:O2'	1:0:1281:A:H5'	2.06	0.56
1:0:2841:U:O2	1:0:2843:A:H1'	2.05	0.56
1:0:197:G:H22	1:0:440:U:H2'	1.70	0.56
1:0:843:G:O2'	1:0:844:G:OP1	2.15	0.56
1:0:2008:C:H2'	1:0:2009:U:C6	2.40	0.56
1:0:2437:G:H2'	1:0:2469:G:N2	2.21	0.56
1:0:533:C:H2'	1:0:534:U:O4'	2.05	0.56
1:0:784:U:H2'	1:0:785:U:C6	2.41	0.56
1:0:930:A:H4'	1:0:930:A:OP1	2.03	0.56
1:0:1813:A:H2'	1:0:1814:G:C8	2.40	0.56
1:0:2018:G:H3'	1:0:2019:C:C5'	2.36	0.56
1:0:2494:C:H2'	1:0:2495:G:C8	2.41	0.56
1:0:1087:C:H2'	1:0:1088:A:O4'	2.06	0.56
1:0:2329:C:H2'	1:0:2330:G:H5'	1.88	0.56
1:0:197:G:N2	1:0:440:U:H2'	2.21	0.56
1:0:1191:G:H2'	1:0:1192:A:C8	2.40	0.56
1:0:2047:C:H42	1:0:2425:G:H1	1.54	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2437:G:H2'	1:0:2469:G:C2	2.41	0.56
1:0:874:A:N6	1:0:928:G:H21	2.04	0.56
1:0:103:U:H2'	1:0:104:C:C6	2.40	0.56
1:0:1356:G:H1'	1:0:1613:G:C2	2.40	0.56
1:0:2270:U:H2'	1:0:2271:C:C6	2.41	0.56
1:0:2459:C:H2'	1:0:2460:G:H5'	1.88	0.56
1:0:1337:G:H1'	1:0:1632:A:N6	2.21	0.56
1:0:758:G:O2'	1:0:761:G:H1'	2.06	0.56
1:0:876:A:H2'	1:0:877:G:C8	2.41	0.56
1:0:879:A:H2'	1:0:879:A:N3	2.21	0.56
1:0:114:C:O2'	1:0:124:A:H1'	2.06	0.55
1:0:2668:U:C4'	1:0:2669:C:H5'	2.30	0.55
1:0:366:U:H2'	1:0:367:G:C8	2.41	0.55
1:0:69:G:H3'	1:0:111:G:O2'	2.06	0.55
1:0:1181:C:H3'	1:0:1182:U:H5''	1.89	0.55
1:0:173:A:N3	1:0:173:A:H2'	2.21	0.55
1:0:2641:A:H2'	1:0:2642:G:O4'	2.07	0.55
1:0:2783:U:OP1	1:0:2783:U:O4'	2.24	0.55
1:0:616:U:C2'	1:0:617:U:H5''	2.37	0.55
1:0:824:U:O2'	1:0:1264:C:H1'	2.06	0.55
1:0:1711:C:H4'	1:0:1712:G:C2	2.41	0.55
1:0:1949:A:H1'	1:0:2572:U:C4'	2.36	0.55
1:0:618:A:H2'	1:0:619:A:O4'	2.07	0.55
1:0:1258:G:H2'	1:0:1259:A:C8	2.42	0.55
1:0:2012:A:N7	1:0:2014:A:H5'	2.20	0.55
1:0:1982:C:H1'	1:0:2666:U:O2'	2.06	0.55
1:0:515:A:C2'	1:0:516:G:H5'	2.37	0.55
1:0:2162:C:H2'	1:0:2163:U:C6	2.41	0.55
1:0:2321:C:H2'	1:0:2322:U:O4'	2.06	0.55
1:0:2572:U:H2'	1:0:2573:C:C6	2.42	0.55
1:0:775:U:O2	1:0:1445:A:H5''	2.06	0.55
1:0:1669:A:H2'	1:0:1670:G:H4'	1.89	0.55
1:0:1947:G:OP1	1:0:1947:G:H3'	2.06	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''	2.37	0.55
1:0:2381:A:H4'	1:0:2382:C:H5	1.70	0.55
1:0:604:U:H2'	1:0:605:G:C8	2.41	0.55
1:0:791:G:H2'	1:0:792:U:C6	2.41	0.55
1:0:166:G:H21	1:0:184:A:N6	1.92	0.55
1:0:177:U:H2'	1:0:178:C:C6	2.42	0.55
1:0:1791:C:H1'	1:0:1793:A:O4'	2.06	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:241:C:O2'	1:0:242:A:H5''	2.06	0.55
1:0:558:G:H5''	1:0:559:C:C5	2.42	0.55
1:0:67:G:H8	1:0:67:G:O5'	1.90	0.55
1:0:2204:A:O2'	1:0:2205:C:P	2.65	0.55
1:0:2492:G:H2'	1:0:2493:U:O4'	2.06	0.55
1:0:1789:U:C2'	1:0:1790:G:H5'	2.37	0.55
1:0:1829:C:H2'	1:0:1830:C:H5'	1.89	0.55
1:0:2470:U:O2'	1:0:2471:U:H5'	2.07	0.55
1:0:951:G:C2'	1:0:952:A:H5''	2.36	0.55
1:0:1141:U:H5'	1:0:2549:G:N2	2.21	0.55
1:0:1288:A:O2'	1:0:1289:A:H5'	2.07	0.55
1:0:1921:A:H2'	1:0:1922:U:H5''	1.89	0.55
1:0:2854:G:H3'	1:0:2854:G:N3	2.22	0.55
1:0:782:U:H2'	1:0:783:G:C8	2.42	0.55
1:0:80:A:H2'	1:0:81:C:O4'	2.06	0.55
1:0:1278:A:O2'	1:0:1279:G:P	2.65	0.54
1:0:1922:U:H1'	1:0:2570:C:O2'	2.07	0.54
1:0:2379:G:H2'	1:0:2380:U:O4'	2.06	0.54
1:0:77:C:H2'	1:0:78:C:C6	2.42	0.54
1:0:841:G:H3'	1:0:841:G:N3	2.21	0.54
1:0:1429:A:H62	1:0:1601:U:H5''	1.72	0.54
1:0:1463:A:H2'	1:0:1464:A:C8	2.41	0.54
1:0:1356:G:H5'	1:0:1614:C:OP2	2.07	0.54
1:0:1926:U:O2'	1:0:1928:G:H5'	2.08	0.54
1:0:394:U:H2'	1:0:395:G:H8	1.71	0.54
1:0:587:A:H2'	1:0:588:G:H5''	1.90	0.54
1:0:1313:U:O2'	1:0:1314:A:P	2.66	0.54
1:0:1955:G:C2'	1:0:1956:G:H5'	2.37	0.54
1:0:162:C:H4'	1:0:195:A:O2'	2.08	0.54
1:0:688:A:O2'	1:0:2422:C:H4'	2.07	0.54
1:0:48:A:H4'	1:0:50:G:O4'	2.08	0.54
1:0:847:C:N4	1:0:955:G:H21	1.95	0.54
1:0:1210:C:H2'	1:0:1211:G:O4'	2.08	0.54
1:0:2249:U:H2'	1:0:2250:G:O4'	2.08	0.54
1:0:2319:G:H2'	1:0:2320:G:C8	2.42	0.54
1:0:468:A:H2'	1:0:469:G:H4'	1.90	0.54
1:0:564:U:H2'	1:0:565:A:C8	2.41	0.54
1:0:1459:U:H2'	1:0:1475:U:O2'	2.08	0.54
1:0:1818:G:H2'	1:0:1819:U:C6	2.42	0.54
1:0:2168:A:H2'	1:0:2169:A:H5'	1.89	0.54
1:0:2432:A:H4'	1:0:2551:A:O2'	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:67:G:H22	1:0:72:A:H2'	1.73	0.54
1:0:1279:G:C2'	1:0:1280:U:OP2	2.56	0.54
1:0:1746:A:C2'	1:0:1747:G:H5'	2.37	0.54
1:0:798:G:O2'	1:0:1770:U:H4'	2.08	0.54
1:0:2466:G:H2'	1:0:2467:A:C8	2.42	0.54
1:0:393:U:H2'	1:0:394:U:C6	2.43	0.54
1:0:541:C:N4	1:0:572:G:O4'	2.41	0.54
1:0:942:U:O2'	1:0:943:U:H5'	2.07	0.54
1:0:1974:U:H2'	1:0:1975:G:H5''	1.88	0.54
1:0:1664:G:H4'	1:0:1665:C:O5'	2.07	0.54
1:0:1920:A:N6	1:0:1923:U:H6	2.06	0.54
1:0:2560:G:N3	1:0:2560:G:H3'	2.23	0.54
1:0:26:G:H21	1:0:524:A:N6	2.02	0.54
1:0:486:U:H4'	1:0:520:C:H5'	1.89	0.54
1:0:538:A:H2'	1:0:539:A:H5''	1.90	0.54
1:0:598:U:H2'	1:0:599:A:C8	2.42	0.54
1:0:646:C:H2'	1:0:647:G:O4'	2.07	0.54
1:0:126:C:H2'	1:0:127:C:C6	2.42	0.54
1:0:242:A:O2'	1:0:243:G:O5'	2.25	0.54
1:0:2516:U:H2'	1:0:2517:C:C6	2.43	0.54
1:0:484:G:O2'	1:0:485:G:H5'	2.08	0.54
1:0:1326:U:H2'	1:0:1327:C:H5'	1.89	0.53
1:0:1333:G:N2	1:0:1344:C:N4	2.56	0.53
1:0:216:U:H2'	1:0:217:U:O4'	2.08	0.53
1:0:2418:A:H1'	1:0:2565:C:H4'	1.90	0.53
1:0:2440:C:H1'	1:0:2471:U:N3	2.23	0.53
1:0:2700:U:N3	1:0:2848:A:N6	2.54	0.53
1:0:404:A:H2'	1:0:405:C:C6	2.43	0.53
1:0:1528:C:C3'	1:0:1529:C:H5''	2.38	0.53
1:0:1789:U:O2'	1:0:1790:G:H5'	2.08	0.53
1:0:1825:C:C2'	1:0:1826:U:H5'	2.38	0.53
1:0:226:C:H4'	1:0:227:G:C8	2.43	0.53
1:0:775:U:H4'	1:0:776:G:C8	2.43	0.53
1:0:826:U:H2'	1:0:827:C:C6	2.44	0.53
1:0:1745:C:H2'	1:0:1746:A:O4'	2.09	0.53
1:0:2321:C:O2'	1:0:2353:G:H5''	2.09	0.53
1:0:728:G:H2'	1:0:729:A:O4'	2.08	0.53
1:0:832:A:H2'	1:0:833:A:O4'	2.07	0.53
1:0:1273:G:H2'	1:0:1274:C:C6	2.44	0.53
1:0:1301:U:H2'	1:0:1664:G:H21	1.73	0.53
1:0:1289:A:H62	1:0:1662:G:H1	1.56	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:173:A:O2'	1:0:174:A:OP1	2.20	0.53
1:0:737:C:H2'	1:0:738:G:O4'	2.09	0.53
1:0:776:G:N3	1:0:776:G:H2'	2.24	0.53
1:0:857:U:H2'	1:0:858:G:H5'	1.90	0.53
1:0:929:A:H3'	1:0:930:A:C5'	2.33	0.53
1:0:1358:C:H2'	1:0:1359:G:C5'	2.38	0.53
1:0:1976:U:C2'	1:0:1977:C:H5'	2.37	0.53
1:0:2312:A:H1'	1:0:2314:A:C8	2.44	0.53
1:0:225:G:N2	1:0:2410:U:H1'	2.23	0.53
1:0:843:G:O2'	1:0:844:G:H5'	2.09	0.53
1:0:917:U:H2'	1:0:918:A:O4'	2.08	0.53
1:0:1075:C:H2'	1:0:1076:U:O4'	2.09	0.53
1:0:824:U:H1'	1:0:1264:C:H1'	1.90	0.53
1:0:1414:G:H2'	1:0:1415:C:C6	2.44	0.53
1:0:1838:G:C2'	1:0:1839:A:H5'	2.39	0.53
1:0:918:A:C2'	1:0:919:U:H5''	2.36	0.53
1:0:960:U:H2'	1:0:961:G:C8	2.43	0.53
1:0:1365:U:H1'	1:0:1586:A:H2	1.74	0.53
1:0:1971:C:H2'	1:0:1972:G:C8	2.44	0.53
1:0:73:A:H4'	1:0:74:G:O4'	2.09	0.53
1:0:1190:C:H2'	1:0:1191:G:C8	2.44	0.53
1:0:1497:C:O2'	1:0:1498:G:H5'	2.08	0.53
1:0:1502:G:O2'	1:0:1503:G:H5'	2.09	0.53
1:0:1763:G:H2'	1:0:1764:A:H4'	1.90	0.53
1:0:317:U:C3'	1:0:318:G:H5''	2.39	0.53
1:0:33:C:N4	1:0:466:A:H61	2.07	0.53
1:0:807:A:H2'	1:0:808:C:C6	2.43	0.53
1:0:830:C:O2'	1:0:852:U:H5''	2.09	0.53
1:0:1004:A:H2'	1:0:1005:U:H5''	1.89	0.53
1:0:167:A:H2'	1:0:168:A:C8	2.44	0.53
1:0:578:U:C1'	1:0:957:G:H21	2.20	0.53
1:0:1313:U:O4	1:0:1651:U:H5'	2.09	0.53
1:0:1654:A:H2'	1:0:1655:C:C6	2.44	0.53
1:0:45:C:H5''	1:0:192:G:C8	2.43	0.53
1:0:2498:U:H5''	1:0:2499:C:OP1	2.10	0.53
1:0:2536:G:H2'	1:0:2537:C:C6	2.44	0.53
1:0:2728:A:H2'	1:0:2729:A:O4'	2.09	0.53
1:0:2756:A:H1'	1:0:2758:A:N7	2.23	0.53
1:0:38:G:H2'	1:0:39:C:C6	2.44	0.53
1:0:1200:G:O4'	1:0:1200:G:OP1	2.28	0.52
1:0:1566:G:H4'	1:0:1733:U:O4	2.09	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:212:U:H2'	1:0:213:C:C6	2.44	0.52
1:0:2372:A:H2'	1:0:2373:C:C6	2.44	0.52
1:0:788:G:H5'	1:0:790:A:H1'	1.90	0.52
1:0:870:C:H2'	1:0:871:U:C6	2.43	0.52
1:0:1162:A:H2'	1:0:1163:C:C6	2.44	0.52
1:0:1775:A:H4'	1:0:1776:A:C8	2.44	0.52
1:0:181:A:H4'	1:0:182:G:C4'	2.39	0.52
1:0:201:G:H2'	1:0:202:A:C8	2.44	0.52
1:0:599:A:H2'	1:0:600:G:C8	2.44	0.52
1:0:874:A:H62	1:0:928:G:N2	2.07	0.52
2:5:4:G:H2'	2:5:5:C:C6	2.45	0.52
1:0:1029:C:H2'	1:0:1030:U:H5''	1.91	0.52
1:0:1263:G:O2'	1:0:1264:C:OP1	2.27	0.52
1:0:1312:G:C5'	1:0:1313:U:H5'	2.33	0.52
1:0:158:A:H2'	1:0:159:A:C8	2.45	0.52
1:0:2244:C:N4	1:0:2245:A:N6	2.57	0.52
1:0:2483:U:H1'	1:0:2551:A:H2	1.74	0.52
1:0:2757:G:OP2	1:0:2761:A:H4'	2.09	0.52
1:0:2809:A:C2'	1:0:2810:A:H5'	2.39	0.52
1:0:1217:U:H2'	1:0:1218:C:C6	2.45	0.52
1:0:1288:A:H2'	1:0:1289:A:O4'	2.09	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:O2'	1:0:2427:A:P	2.67	0.52
1:0:2561:G:C2'	1:0:2562:G:H5'	2.40	0.52
1:0:394:U:H2'	1:0:395:G:C8	2.44	0.52
1:0:638:A:O2'	1:0:639:G:H5'	2.09	0.52
1:0:658:G:H4'	1:0:2331:A:H5'	1.91	0.52
1:0:665:A:OP2	1:0:666:U:H5'	2.10	0.52
1:0:597:U:H3	1:0:683:A:H2'	1.74	0.52
1:0:1234:C:H2'	1:0:1235:C:C6	2.45	0.52
1:0:1286:U:H5''	1:0:1663:C:N4	2.24	0.52
1:0:1899:A:O2'	1:0:1946:U:H1'	2.10	0.52
1:0:1964:A:H5''	1:0:1965:U:OP2	2.09	0.52
1:0:597:U:H2'	1:0:598:U:C6	2.44	0.52
1:0:688:A:HO2'	1:0:2422:C:H4'	1.74	0.52
1:0:939:C:H2'	1:0:940:G:C8	2.45	0.52
1:0:9:U:H3	1:0:2608:A:N6	2.02	0.52
1:0:127:C:H2'	1:0:128:C:C6	2.45	0.52
1:0:129:A:H2'	1:0:130: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)
1:0:2059:U:H2'	1:0:2060:A:H5''	1.90	0.52
1:0:2451:G:H2'	1:0:2508:G:N2	2.25	0.52
1:0:95:G:H2'	1:0:96:C:C6	2.44	0.52
1:0:341:A:H1'	1:0:1223:G:O6	2.09	0.52
1:0:2574:G:H1'	1:0:2576:G:O6	2.10	0.52
1:0:629:C:H2'	1:0:630:G:H5'	1.91	0.52
1:0:757:U:O2'	1:0:758:G:H5'	2.09	0.52
1:0:2083:G:H2'	1:0:2084:G:O4'	2.10	0.52
1:0:688:A:H1'	1:0:2423:G:H5'	1.92	0.52
1:0:795:A:H4'	1:0:796:A:C8	2.44	0.52
1:0:1788:C:H2'	1:0:1789:U:C6	2.45	0.52
1:0:2160:C:H2'	1:0:2161:C:C6	2.45	0.52
1:0:224:G:C5	1:0:226:C:H1'	2.44	0.52
1:0:2242:C:N4	1:0:2257:A:N6	2.57	0.52
1:0:2272:A:H2'	1:0:2273:C:C6	2.45	0.52
1:0:230:C:H2'	1:0:231:G:O4'	2.10	0.52
1:0:2504:G:H2'	1:0:2505:G:C8	2.45	0.52
1:0:333:A:H1'	1:0:351:A:C4	2.44	0.52
1:0:476:G:H2'	1:0:477:A:C8	2.45	0.52
1:0:689:A:N3	1:0:689:A:H3'	2.24	0.52
1:0:838:A:H2'	1:0:839:U:C6	2.45	0.52
1:0:1377:G:H4'	1:0:1800:A:H5'	1.92	0.52
1:0:168:A:H2'	1:0:169:C:C6	2.45	0.52
1:0:2057:U:H1'	1:0:2577:A:H1'	1.91	0.52
1:0:317:U:C2'	1:0:318:G:H5''	2.39	0.52
1:0:446:C:H2'	1:0:447:U:C6	2.45	0.52
1:0:491:A:H2'	1:0:491:A:N3	2.25	0.52
1:0:512:A:H2'	1:0:513:A:H5'	1.92	0.52
1:0:1597:A:H2'	1:0:1598:C:C6	2.45	0.51
1:0:1889:G:H2'	1:0:1890:G:C8	2.45	0.51
1:0:1923:U:H1'	1:0:1947:G:H4'	1.92	0.51
1:0:215:G:O2'	1:0:617:U:H1'	2.09	0.51
1:0:980:G:H2'	1:0:981:C:C6	2.45	0.51
1:0:1352:G:H2'	1:0:1353:A:C8	2.43	0.51
1:0:1358:C:H2'	1:0:1359:G:H5''	1.92	0.51
1:0:2320:G:H2'	1:0:2321:C:O4'	2.09	0.51
1:0:2623:A:H2'	1:0:2624:G:O4'	2.10	0.51
1:0:2703:C:H2'	1:0:2704:U:C6	2.45	0.51
1:0:1677:C:H2'	1:0:1678:G:C8	2.46	0.51
1:0:1860:A:H2'	1:0:1861:G:O4'	2.11	0.51
1:0:2177:U:H2'	1:0:2178:U:C6	2.45	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:243:G:H2'	1:0:244:C:O4'	2.11	0.51
1:0:332:C:H2'	1:0:333:A:H5'	1.93	0.51
1:0:476:G:H21	1:0:696:U:H1'	1.75	0.51
1:0:1018:C:H2'	1:0:1019:U:C5	2.45	0.51
1:0:1198:C:C5'	1:0:1199:U:H5''	2.41	0.51
1:0:170:U:H2'	1:0:171:G:H8	1.75	0.51
1:0:18:U:H2'	1:0:19:C:C6	2.44	0.51
1:0:2213:G:H2'	1:0:2214:G:C8	2.46	0.51
1:0:878:C:N4	1:0:921:A:H62	2.06	0.51
1:0:941:U:H4'	1:0:941:U:OP1	2.10	0.51
1:0:1092:U:H2'	1:0:1093:U:C6	2.45	0.51
1:0:1661:C:O2'	1:0:1662:G:H5'	2.10	0.51
1:0:590:C:H2'	1:0:591:G:C8	2.45	0.51
1:0:1068:A:H2'	1:0:1069:G:C8	2.45	0.51
1:0:1865:C:H2'	1:0:1866:G:O4'	2.10	0.51
1:0:451:A:H2'	1:0:452:G:C8	2.46	0.51
1:0:630:G:H2'	1:0:631:G:H5'	1.93	0.51
1:0:868:U:H2'	1:0:869:C:C6	2.45	0.51
1:0:991:A:H61	1:0:2020:G:H21	1.58	0.51
1:0:1576:G:H2'	1:0:1577:G:O4'	2.11	0.51
1:0:1895:A:H2'	1:0:1896:A:O4'	2.11	0.51
1:0:1819:U:H5''	1:0:1954:A:O3'	2.11	0.51
1:0:223:C:H4'	1:0:398:C:H1'	1.92	0.51
1:0:1912:G:H2'	1:0:1912:G:N3	2.25	0.51
1:0:2660:C:O2'	1:0:2661:G:H5'	2.11	0.51
1:0:457:C:H2'	1:0:458:G:O4'	2.10	0.51
1:0:619:A:H2'	1:0:620:G:C8	2.45	0.51
1:0:1067:G:H2'	1:0:1114:A:H61	1.76	0.51
1:0:1611:U:H2'	1:0:1612:U:O4'	2.11	0.51
1:0:1727:C:H4'	1:0:2833:C:O2	2.10	0.51
1:0:1979:C:H42	1:0:2706:U:H6	1.59	0.51
1:0:2023:C:H2'	1:0:2024:U:C6	2.46	0.51
1:0:2426:G:H5'	1:0:2480:C:N4	2.19	0.51
1:0:2429:A:H5''	1:0:2476:A:C6	2.46	0.51
1:0:583:C:O2'	1:0:584:A:OP2	2.28	0.51
1:0:114:C:H2'	1:0:115:G:O4'	2.11	0.51
1:0:1424:U:H2'	1:0:1425:G:C8	2.46	0.51
1:0:1881:U:H2'	1:0:1882:G:H5'	1.93	0.51
1:0:879:A:O2'	1:0:880:C:H5'	2.10	0.51
1:0:964:A:H2'	1:0:965:G:C8	2.46	0.51
1:0:1007:A:H2'	1:0:1008:G:C8	2.46	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1052:C:H2'	1:0:1053:G:C8	2.45	0.50
1:0:1683:G:C2'	1:0:1684:G:H5'	2.41	0.50
1:0:1938:U:C2'	1:0:1939:U:H5'	2.40	0.50
1:0:2238:G:H2'	1:0:2239:C:H6	1.76	0.50
1:0:2397:A:H2'	1:0:2398:U:O4'	2.11	0.50
1:0:1038:U:O2	1:0:2466:G:H4'	2.10	0.50
1:0:422:C:H2'	1:0:423:G:H8	1.77	0.50
1:0:959:C:H5''	1:0:972:C:O2'	2.11	0.50
1:0:1626:A:OP2	1:0:1627:C:H5	1.95	0.50
1:0:534:U:H4'	1:0:564:U:O2'	2.12	0.50
1:0:173:A:H61	1:0:844:G:H21	1.57	0.50
1:0:1218:C:H2'	1:0:1219:C:C6	2.46	0.50
1:0:1667:A:H2'	1:0:1668:G:H8	1.76	0.50
1:0:579:G:H2'	1:0:2013:A:N6	2.26	0.50
1:0:2725:C:H2'	1:0:2726:U:C6	2.47	0.50
1:0:2756:A:H4'	1:0:2758:A:OP1	2.11	0.50
1:0:788:G:H5'	1:0:790:A:N3	2.26	0.50
1:0:841:G:N1	1:0:2226:A:H4'	2.26	0.50
1:0:1861:G:O2'	1:0:1862:C:H5'	2.11	0.50
1:0:2010:G:H2'	1:0:2011:U:O4'	2.12	0.50
1:0:2727:G:C2'	1:0:2728:A:H5''	2.41	0.50
1:0:35:G:C1'	1:0:466:A:H1'	2.41	0.50
1:0:626:A:O2'	1:0:627:A:H5'	2.11	0.50
1:0:1057:A:H3'	1:0:1058:G:C5'	2.41	0.50
1:0:1127:C:H2'	1:0:1128:G:H8	1.77	0.50
1:0:1857:G:H2'	1:0:1859:A:OP2	2.12	0.50
1:0:2178:U:H2'	1:0:2179:C:C6	2.47	0.50
1:0:2229:G:H2'	1:0:2475:C:OP1	2.11	0.50
1:0:225:G:H21	1:0:2410:U:H1'	1.76	0.50
1:0:872:G:H2'	1:0:928:G:N1	2.27	0.50
1:0:991:A:N6	1:0:2020:G:H21	2.10	0.50
1:0:1194:U:O2'	1:0:1195:U:P	2.70	0.50
1:0:1312:G:H2'	1:0:1643:A:N6	2.26	0.50
1:0:2426:G:N2	1:0:2430:A:H62	2.09	0.50
1:0:2446:C:H2'	1:0:2447:G:C8	2.47	0.50
1:0:316:C:H2'	1:0:317:U:C6	2.47	0.50
1:0:55:A:H2'	1:0:56:C:H6	1.77	0.50
1:0:236:C:O2	1:0:632:A:H1'	2.12	0.50
1:0:1073:G:H2'	1:0:1074:G:C4'	2.29	0.50
1:0:1272:G:H2'	1:0:1273:G:C8	2.47	0.50
1:0:1686:A:O2'	1:0:2528:G:H5'	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1747:G:C4'	1:0:1749:G:H1'	2.31	0.50
1:0:2079:A:H2'	1:0:2080:U:C6	2.47	0.50
1:0:2082:C:H2'	1:0:2083:G:O4'	2.11	0.50
1:0:2313:G:H2'	1:0:2314:A:H5'	1.93	0.50
1:0:2754:C:H2'	1:0:2755:A:O4'	2.12	0.50
1:0:338:G:O2'	1:0:339:U:H5'	2.12	0.50
1:0:599:A:H2'	1:0:600:G:H8	1.76	0.50
1:0:215:G:H4'	1:0:617:U:O2'	2.12	0.50
1:0:792:U:H2'	1:0:793:G:O4'	2.11	0.50
1:0:1055:A:N6	1:0:1122:A:H4'	2.27	0.50
1:0:742:G:H2'	1:0:1766:U:H1'	1.94	0.50
1:0:210:A:N6	1:0:242:A:N7	2.59	0.50
1:0:2329:C:C2'	1:0:2330:G:H5'	2.42	0.50
1:0:2485:U:O2'	1:0:2486:C:H5'	2.11	0.50
1:0:831:G:C2'	1:0:832:A:H5''	2.41	0.50
1:0:1029:C:OP1	1:0:1047:G:H4'	2.11	0.50
1:0:2435:C:H2'	1:0:2436:U:C6	2.47	0.50
1:0:2561:G:O2'	1:0:2562:G:H5'	2.11	0.50
1:0:2726:U:H2'	1:0:2727:G:O4'	2.12	0.50
1:0:2821:G:H2'	1:0:2822:U:C6	2.47	0.50
1:0:1055:A:O2'	1:0:1058:G:H1'	2.12	0.49
1:0:1195:U:H2'	1:0:1196:G:H8	1.73	0.49
1:0:1259:A:H2'	1:0:1260:A:C8	2.47	0.49
1:0:1495:G:HO2'	1:0:1496:G:P	2.35	0.49
1:0:459:A:H62	1:0:484:G:H1'	1.77	0.49
1:0:597:U:N3	1:0:683:A:H2'	2.27	0.49
1:0:689:A:N6	1:0:815:A:H61	2.06	0.49
1:0:1164:C:H2'	1:0:1165:G:O4'	2.11	0.49
1:0:1820:G:O2'	1:0:1821:A:P	2.70	0.49
1:0:2181:A:H2'	1:0:2182:A:H5'	1.93	0.49
1:0:431:G:H2'	1:0:432:C:C6	2.47	0.49
1:0:460:U:N3	1:0:592:G:H1'	2.22	0.49
1:0:645:G:H2'	1:0:646:C:C6	2.47	0.49
1:0:703:A:H2'	1:0:704:G:H8	1.77	0.49
1:0:1029:C:C3'	1:0:1030:U:H5''	2.43	0.49
1:0:1259:A:H2'	1:0:1260:A:O4'	2.12	0.49
1:0:1310:C:OP1	1:0:2689:C:H4'	2.12	0.49
1:0:2805:G:O2'	1:0:2806:G:H5'	2.12	0.49
1:0:45:C:H2'	1:0:46:C:C6	2.46	0.49
1:0:1435:G:H21	1:0:1511:A:N6	2.11	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)
1:0:1785:A:H2'	1:0:1786:C:C6	2.46	0.49
1:0:181:A:H4'	1:0:182:G:O5'	2.11	0.49
1:0:2794:G:H3'	1:0:2796:A:N6	2.20	0.49
1:0:780:U:H2'	1:0:781:G:C8	2.48	0.49
1:0:1016:C:H2'	1:0:1017:C:C6	2.47	0.49
1:0:594:G:H21	1:0:1267:A:H62	1.61	0.49
1:0:1492:A:H2	1:0:1531:C:H41	1.58	0.49
1:0:1685:A:H1'	1:0:1686:A:N7	2.28	0.49
1:0:1791:C:H2'	1:0:1792:C:H5''	1.95	0.49
1:0:216:U:H5''	1:0:601:A:N6	2.28	0.49
1:0:213:C:H42	1:0:238:G:H22	1.59	0.49
1:0:810:U:H2'	1:0:811:G:C8	2.48	0.49
1:0:860:U:H2'	1:0:861:G:H5'	1.95	0.49
1:0:83:A:C6	1:0:98:U:H1'	2.46	0.49
1:0:1099:A:H5''	1:0:1100:G:N7	2.27	0.49
1:0:1354:A:H3'	1:0:1410:U:O2	2.12	0.49
1:0:1445:A:H2'	1:0:1446:U:O4'	2.13	0.49
1:0:1455:C:H2'	1:0:1456:C:C6	2.48	0.49
1:0:190:A:H2'	1:0:191:G:C8	2.47	0.49
1:0:203:G:O2'	1:0:204:A:H5'	2.13	0.49
1:0:2161:C:O2'	1:0:2162:C:P	2.71	0.49
1:0:689:A:C2'	1:0:690:A:H5'	2.43	0.49
1:0:860:U:O2'	1:0:861:G:H5'	2.13	0.49
1:0:1038:U:H2'	1:0:1039:A:C8	2.48	0.49
1:0:1141:U:O2'	1:0:1142:G:OP1	2.26	0.49
1:0:2093:G:H2'	1:0:2094:C:C6	2.47	0.49
1:0:211:U:O2'	1:0:212:U:H5'	2.13	0.49
1:0:2404:A:H5''	1:0:2405:A:H3'	1.94	0.49
1:0:2533:U:H2'	1:0:2534:U:C6	2.47	0.49
1:0:2560:G:H4'	1:0:2561:G:C8	2.47	0.49
1:0:2799:C:H2'	1:0:2800:C:O4'	2.12	0.49
1:0:441:A:H2'	1:0:442:A:O4'	2.12	0.49
1:0:693:A:H2'	1:0:694:G:C8	2.47	0.49
1:0:930:A:H5'	1:0:931:G:C8	2.47	0.49
1:0:109:A:H3'	1:0:110:U:C5'	2.39	0.49
1:0:204:A:H4'	1:0:205:A:N7	2.28	0.49
1:0:338:G:H1	1:0:346:C:H42	1.61	0.49
1:0:951:G:C3'	1:0:952:A:H5''	2.43	0.49
1:0:1380:C:N4	1:0:1799:A:N1	2.61	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1729:C:H2'	1:0:1730:G:C8	2.48	0.49
1:0:1793:A:H2'	1:0:1794:A:C8	2.48	0.49
1:0:2235:G:H2'	1:0:2236:U:C6	2.48	0.49
1:0:2417:U:H4'	1:0:2419:C:OP1	2.13	0.49
1:0:2503:G:C2'	1:0:2504:G:H5''	2.43	0.49
1:0:1949:A:O2'	1:0:2572:U:H5'	2.13	0.49
1:0:820:U:H1'	1:0:2424:G:OP1	2.12	0.49
1:0:1679:U:H2'	1:0:1680:U:H5''	1.94	0.49
1:0:1665:C:N4	1:0:1993:G:H1	2.11	0.49
1:0:2299:A:H2'	1:0:2299:A:N3	2.27	0.49
1:0:2570:C:H2'	1:0:2571:G:C8	2.48	0.49
1:0:2721:A:N6	1:0:2743:G:H21	2.09	0.49
1:0:210:A:N6	1:0:442:A:H61	2.10	0.49
1:0:756:C:H2'	1:0:757:U:C6	2.48	0.49
1:0:84:G:H2'	1:0:85:C:C6	2.48	0.49
1:0:864:C:H2'	1:0:865:A:C8	2.46	0.49
1:0:1046:U:H2'	1:0:1047:G:C8	2.48	0.48
1:0:1279:G:H1'	1:0:1280:U:H5	1.77	0.48
1:0:1349:A:H2'	1:0:1350:G:C8	2.48	0.48
1:0:1682:A:H2'	1:0:1683:G:C8	2.47	0.48
1:0:2301:A:H2'	1:0:2302:G:O4'	2.13	0.48
1:0:2852:G:H2'	1:0:2853:U:O4'	2.13	0.48
1:0:763:A:C2	1:0:765:C:H1'	2.48	0.48
1:0:790:A:H2'	1:0:791:G:C8	2.48	0.48
1:0:830:C:O2	1:0:852:U:H4'	2.13	0.48
1:0:1040:A:H2'	1:0:1041:G:H5'	1.93	0.48
1:0:116:A:N3	1:0:155:G:H1'	2.28	0.48
1:0:1182:U:C3'	1:0:1183:C:H5''	2.43	0.48
1:0:1598:C:H2'	1:0:1599:G:O4'	2.13	0.48
1:0:1715:A:H1'	1:0:1717:A:C1'	2.42	0.48
1:0:1871:G:C2'	1:0:1871:G:N3	2.76	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
1:0:2421:C:O2'	1:0:2422:C:H5'	2.12	0.48
1:0:568:G:H5''	1:0:1019:U:H5'	1.95	0.48
1:0:1629:G:N1	1:0:1633:C:N4	2.62	0.48
1:0:2025:A:H2'	1:0:2026:C:H5''	1.94	0.48
1:0:2308:A:H2'	1:0:2309:G:C8	2.47	0.48
1:0:2343:C:H2'	1:0:2344:G:O4'	2.14	0.48
1:0:2424:G:H2'	1:0:2425:G:O4'	2.13	0.48
1:0:2872:U:H2'	1:0:2873:G:C8	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:521:U:H2'	1:0:522:G:H5'	1.95	0.48
1:0:548:G:H2'	1:0:549:G:C8	2.48	0.48
1:0:942:U:C2'	1:0:943:U:H5'	2.43	0.48
1:0:109:A:C2'	1:0:110:U:H5''	2.44	0.48
1:0:108:G:H2'	1:0:109:A:C8	2.49	0.48
1:0:1686:A:H2'	1:0:1687:C:H5'	1.94	0.48
1:0:367:G:C3'	1:0:368:A:H5''	2.43	0.48
1:0:427:C:H2'	1:0:428:A:C8	2.49	0.48
1:0:42:G:H2'	1:0:43:A:O4'	2.13	0.48
1:0:477:A:H2'	1:0:478:G:O4'	2.14	0.48
1:0:173:A:N6	1:0:844:G:H21	2.12	0.48
1:0:2559:U:C2'	1:0:2560:G:H5'	2.43	0.48
1:0:569:C:H2'	1:0:570:G:C8	2.48	0.48
1:0:941:U:H2'	1:0:942:U:C6	2.48	0.48
1:0:1429:A:H1'	1:0:1603:A:C6	2.49	0.48
1:0:161:U:H2'	1:0:162:C:C6	2.48	0.48
1:0:1825:C:O2'	1:0:1826:U:H5'	2.14	0.48
1:0:2220:A:H2'	1:0:2221:G:C8	2.48	0.48
1:0:172:A:H4'	1:0:228:A:H4'	1.95	0.48
1:0:2503:G:H2'	1:0:2504:G:H5''	1.96	0.48
1:0:2784:A:H3'	1:0:2785:A:C8	2.46	0.48
1:0:429:C:H2'	1:0:430:C:O4'	2.13	0.48
1:0:478:G:O2'	1:0:479:G:H5'	2.14	0.48
1:0:583:C:O2'	1:0:584:A:P	2.71	0.48
1:0:845:U:H2'	1:0:846:A:C8	2.49	0.48
1:0:1141:U:O2'	1:0:1142:G:P	2.72	0.48
1:0:1742:G:H2'	1:0:1743:C:C6	2.48	0.48
1:0:2085:G:H2'	1:0:2086:U:C6	2.49	0.48
1:0:2428:U:O2'	1:0:2429:A:H5'	2.13	0.48
1:0:632:A:C2'	1:0:633:G:H5'	2.44	0.48
1:0:742:G:N3	1:0:742:G:C2'	2.77	0.48
1:0:1033:G:H22	1:0:1150:C:C2'	2.26	0.48
1:0:1821:A:H5''	1:0:1822:C:H5	1.79	0.48
1:0:2212:U:H2'	1:0:2213:G:C8	2.49	0.48
1:0:2278:A:H2'	1:0:2279:G:C8	2.48	0.48
1:0:323:G:H2'	1:0:324:C:C6	2.48	0.48
1:0:979:A:H2'	1:0:980:G:C8	2.49	0.48
1:0:1391:A:H2'	1:0:1392:U:C5	2.49	0.48
1:0:1436:G:H2'	1:0:1437:A:C8	2.49	0.48
1:0:1809:G:O2'	1:0:1810:U:H5'	2.13	0.48
1:0:2377:U:O2'	1:0:2378:G:P	2.72	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2015:G:OP2	1:0:2434:G:H5'	2.14	0.48
1:0:2468:G:H2'	1:0:2469:G:O4'	2.14	0.48
1:0:2815:C:H2'	1:0:2816:C:C6	2.49	0.48
2:5:30:C:O2'	2:5:31:C:H5'	2.14	0.48
1:0:1436:G:H1'	1:0:1508:G:N2	2.18	0.48
1:0:1458:A:H3'	1:0:1459:U:H5'	1.96	0.48
1:0:1712:G:N3	1:0:1712:G:H3'	2.29	0.48
1:0:1793:A:H2'	1:0:1794:A:H8	1.79	0.48
1:0:240:U:H4'	1:0:443:A:H5'	1.96	0.48
1:0:2559:U:H2'	1:0:2560:G:H5'	1.95	0.48
1:0:2708:U:H2'	1:0:2709:C:C6	2.49	0.48
1:0:2830:U:H2'	1:0:2831:A:C8	2.49	0.48
1:0:565:A:H2'	1:0:566:U:C6	2.49	0.48
1:0:70:A:P	1:0:111:G:H4'	2.54	0.48
1:0:864:C:H2'	1:0:865:A:H8	1.79	0.48
1:0:1036:G:H1'	1:0:1145:C:C4'	2.44	0.47
1:0:1354:A:N6	1:0:1407:G:H22	2.10	0.47
1:0:1436:G:C1'	1:0:1508:G:H21	2.21	0.47
1:0:1925:C:H4'	2:5:30:C:O2'	2.13	0.47
1:0:2048:C:H2'	1:0:2049:C:H6	1.79	0.47
1:0:2523:G:O2'	1:0:2524:G:H5'	2.14	0.47
1:0:239:A:H4'	1:0:620:G:H5'	1.95	0.47
1:0:780:U:H2'	1:0:781:G:H8	1.79	0.47
1:0:84:G:O2'	1:0:85:C:H5'	2.14	0.47
1:0:108:G:H2'	1:0:109:A:H8	1.79	0.47
1:0:1316:G:H2'	1:0:1317:G:C8	2.49	0.47
1:0:1774:A:H1'	1:0:2586:G:N2	2.28	0.47
1:0:2204:A:O2'	1:0:2205:C:OP2	2.32	0.47
1:0:974:U:H2'	1:0:975:C:C6	2.49	0.47
1:0:1571:G:H2'	1:0:1572:C:C6	2.49	0.47
1:0:1821:A:H3'	1:0:1822:C:H6	1.79	0.47
1:0:2009:U:H2'	1:0:2010:G:C8	2.49	0.47
1:0:2137:G:H2'	1:0:2138:U:C6	2.49	0.47
1:0:2426:G:HO2'	1:0:2427:A:P	2.37	0.47
1:0:2434:G:H2'	1:0:2435:C:C6	2.50	0.47
1:0:2579:A:O2'	1:0:2580:C:H5'	2.14	0.47
1:0:2757:G:H5'	1:0:2761:A:H1'	1.96	0.47
1:0:1031:C:H1'	1:0:1151:U:O2	2.15	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
1:0:1679:U:C2'	1:0:1680:U:H5''	2.44	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2448:A:H2'	1:0:2449:G:O4'	2.14	0.47
1:0:2651:U:H2'	1:0:2652:G:C8	2.49	0.47
1:0:670:U:H2'	1:0:671:A:C8	2.49	0.47
1:0:1028:G:H2'	1:0:1029:C:C6	2.50	0.47
1:0:1269:G:H2'	1:0:1270:C:C6	2.50	0.47
1:0:1344:C:H2'	1:0:1346:C:OP1	2.14	0.47
1:0:2057:U:H2'	1:0:2058:U:C6	2.50	0.47
1:0:2372:A:H2'	1:0:2373:C:H6	1.78	0.47
1:0:2526:U:H2'	1:0:2527:G:C8	2.50	0.47
1:0:452:G:H2'	1:0:453:U:O4'	2.15	0.47
1:0:1016:C:H5''	1:0:1023:U:OP2	2.14	0.47
1:0:1039:A:H2'	1:0:1040:A:C8	2.48	0.47
1:0:1496:G:H5'	1:0:1575:C:N4	2.29	0.47
1:0:1326:U:H1'	1:0:1626:A:N3	2.30	0.47
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
1:0:2316:G:H2'	1:0:2317:G:H8	1.78	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
1:0:664:C:H2'	1:0:665:A:C8	2.50	0.47
1:0:1039:A:H2'	1:0:1040:A:H8	1.79	0.47
1:0:1386:A:H2'	1:0:1387:G:O4'	2.15	0.47
1:0:760:U:O2	1:0:1997:A:H1'	2.15	0.47
1:0:2329:C:N4	1:0:2361:G:H22	2.13	0.47
1:0:2062:U:H4'	1:0:2412:A:H2	1.79	0.47
1:0:2558:C:O2'	1:0:2559:U:H5'	2.15	0.47
1:0:2564:U:H4'	1:0:2565:C:OP1	2.14	0.47
1:0:2565:C:O2'	1:0:2566:A:H5'	2.15	0.47
1:0:2727:G:N1	1:0:2735:C:H5''	2.28	0.47
1:0:643:A:H2'	1:0:644:A:C8	2.49	0.47
1:0:1184:G:H2'	1:0:1185:C:H5'	1.97	0.47
1:0:1316:G:H2'	1:0:1317:G:H8	1.79	0.47
1:0:2403:C:H2'	1:0:2408:G:O2'	2.15	0.47
1:0:2494:C:H2'	1:0:2495:G:H8	1.80	0.47
1:0:701:U:H1'	1:0:800:U:H5'	1.97	0.47
1:0:926:C:H2'	1:0:927:C:H5'	1.95	0.47
1:0:192:G:C4'	1:0:193:A:H4'	2.45	0.47
1:0:1981:A:H2'	1:0:1982:C:C6	2.49	0.47
1:0:2017:U:O2'	1:0:2018:G:H5'	2.14	0.47
1:0:2021:G:H2'	1:0:2022:C:C6	2.50	0.47
1:0:2168:A:C2'	1:0:2169:A:H5'	2.45	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2014:A:H62	1:0:2477:C:H1'	1.79	0.47
1:0:2499:C:N4	1:0:2521:A:H2	2.10	0.47
1:0:432:C:H2'	1:0:433:G:H8	1.80	0.47
1:0:776:G:N3	1:0:776:G:C2'	2.78	0.47
1:0:1263:G:O2'	1:0:1264:C:P	2.73	0.47
1:0:1290:A:H2'	1:0:1291:G:C8	2.50	0.47
1:0:1480:G:H2'	1:0:1481:U:H5'	1.97	0.47
1:0:1685:A:N6	1:0:1691:G:H1'	2.30	0.47
1:0:1684:G:H2'	1:0:1974:U:O4	2.15	0.47
1:0:1993:G:H2'	1:0:1994:U:C6	2.50	0.47
1:0:873:U:O2	1:0:2246:A:H5''	2.15	0.47
1:0:556:A:H2'	1:0:557:U:H5'	1.97	0.47
1:0:635:C:H3'	1:0:636:G:H5''	1.97	0.47
1:0:703:A:H2'	1:0:704:G:C8	2.50	0.47
1:0:1578:U:H2'	1:0:1579:G:C8	2.51	0.47
1:0:198:A:O2'	1:0:199:A:P	2.73	0.47
1:0:2199:C:H2'	1:0:2200:G:C8	2.49	0.47
1:0:2276:C:O2	1:0:2301:A:H1'	2.15	0.47
1:0:241:C:C2'	1:0:242:A:H5''	2.44	0.47
1:0:2437:G:H4'	1:0:2438:A:N7	2.30	0.47
1:0:2564:U:HO2'	1:0:2565:C:P	2.37	0.47
1:0:2658:A:H2'	1:0:2659:C:C6	2.50	0.47
1:0:2771:C:H2'	1:0:2772:U:C6	2.49	0.47
1:0:819:C:H2'	1:0:820:U:C6	2.50	0.47
1:0:1418:C:H2'	1:0:1419:G:H8	1.80	0.46
1:0:152:G:O2'	1:0:153:A:H5'	2.15	0.46
1:0:2307:A:H2'	1:0:2308:A:C8	2.51	0.46
1:0:2393:G:H2'	1:0:2394:G:H8	1.80	0.46
1:0:2642:G:H2'	1:0:2643:G:O4'	2.15	0.46
1:0:2809:A:H2'	1:0:2810:A:H5'	1.97	0.46
1:0:546:A:H2'	1:0:547:U:C6	2.50	0.46
1:0:1301:U:H2'	1:0:1664:G:N2	2.29	0.46
1:0:1829:C:C2'	1:0:1830:C:H5'	2.45	0.46
1:0:2204:A:H1'	1:0:2205:C:C5	2.50	0.46
1:0:2493:U:H2'	1:0:2494:C:C6	2.50	0.46
1:0:2504:G:H2'	1:0:2505:G:H8	1.79	0.46
1:0:1937:G:N3	1:0:2530:C:H5'	2.29	0.46
1:0:697:G:C2'	1:0:698:A:H5'	2.45	0.46
1:0:771:C:H2'	1:0:772:G:H8	1.80	0.46
1:0:1452:U:H5'	1:0:1532:A:O2'	2.14	0.46
1:0:1495:G:H2'	1:0:1496:G:C8	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1518:C:C2'	1:0:1519:G:O5'	2.64	0.46
1:0:1760:G:H2'	1:0:1761:G:C8	2.50	0.46
1:0:1888:C:H5''	1:0:1889:G:C5'	2.45	0.46
1:0:2574:G:H2'	1:0:2574:G:N3	2.31	0.46
1:0:1471:G:H1	1:0:2682:C:H42	1.63	0.46
1:0:337:G:H2'	1:0:338:G:C8	2.51	0.46
1:0:758:G:N2	1:0:763:A:N1	2.62	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
1:0:986:A:H2'	1:0:987:G:H5'	1.97	0.46
1:0:2278:A:H2'	1:0:2279:G:H8	1.81	0.46
1:0:2324:G:C4'	1:0:2326:C:H5''	2.43	0.46
1:0:2444:C:O2'	1:0:2445:C:H5'	2.16	0.46
1:0:689:A:C8	1:0:2422:C:H1'	2.50	0.46
1:0:85:C:O2'	1:0:86:U:H5'	2.16	0.46
1:0:932:G:H2'	1:0:933:G:C8	2.50	0.46
1:0:1572:C:C3'	1:0:1573:G:H5''	2.45	0.46
1:0:1777:A:H5'	1:0:1963:G:H21	1.81	0.46
1:0:199:A:H61	1:0:209:G:H1'	1.81	0.46
1:0:387:A:H2'	1:0:388:G:O4'	2.16	0.46
1:0:54:G:H2'	1:0:55:A:C8	2.50	0.46
1:0:738:G:H2'	1:0:739:G:O4'	2.14	0.46
1:0:1279:G:H2'	1:0:1280:U:OP2	2.16	0.46
1:0:1962:C:O2'	1:0:1963:G:H5'	2.16	0.46
1:0:207:U:H2'	1:0:208:C:C6	2.51	0.46
1:0:2555:G:N3	1:0:2555:G:H3'	2.31	0.46
1:0:675:C:H2'	1:0:676:G:C8	2.51	0.46
1:0:758:G:H2'	1:0:759:C:H5'	1.97	0.46
1:0:1014:G:O2'	1:0:1015:U:H5'	2.16	0.46
1:0:1029:C:H3'	1:0:1030:U:H5''	1.96	0.46
1:0:1223:G:O2'	1:0:1224:A:P	2.74	0.46
1:0:1579:G:H2'	1:0:1580:C:C6	2.51	0.46
1:0:1429:A:N6	1:0:1602:G:H5'	2.31	0.46
1:0:1836:C:H2'	1:0:1837:G:C8	2.50	0.46
1:0:2717:G:H2'	1:0:2718:A:C8	2.51	0.46
1:0:2800:C:H2'	1:0:2801:A:O4'	2.15	0.46
1:0:2825:A:H2'	1:0:2826:C:C6	2.51	0.46
1:0:324:C:H2'	1:0:325:U:O4'	2.15	0.46
1:0:27:G:N2	1:0:522:G:HO2'	2.14	0.46
1:0:567:G:H2'	1:0:568:G:C8	2.51	0.46
1:0:582:G:H2'	1:0:583:C:H3'	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1068:A:H2'	1:0:1069:G:H8	1.81	0.46
1:0:130:C:H2'	1:0:131:C:C6	2.51	0.46
1:0:1486:A:H2'	1:0:1487:C:C6	2.50	0.46
1:0:2333:A:H2'	1:0:2334:C:C6	2.51	0.46
1:0:2698:G:H2'	1:0:2699:G:C8	2.51	0.46
1:0:35:G:H1'	1:0:466:A:H1'	1.98	0.46
1:0:636:G:H2'	1:0:637:G:H5'	1.97	0.46
1:0:878:C:O2'	1:0:879:A:P	2.73	0.46
1:0:887:G:O2'	1:0:888:G:H5'	2.15	0.46
1:0:9:U:H2'	1:0:10:A:C8	2.51	0.46
1:0:1427:G:C2'	1:0:1428:G:H5'	2.44	0.46
1:0:1619:A:H3'	1:0:1619:A:N3	2.31	0.46
1:0:2572:U:C4	1:0:2573:C:N4	2.84	0.46
1:0:1120:C:H2'	1:0:2731:G:N2	2.31	0.46
1:0:2824:C:H1'	1:0:2843:A:C2	2.50	0.46
1:0:2807:U:C5	1:0:2859:U:H4'	2.51	0.46
1:0:1225:G:H2'	1:0:1249:G:H1	1.81	0.46
1:0:1278:A:H4'	1:0:1279:G:O5'	2.16	0.46
1:0:1835:C:H2'	1:0:1836:C:C6	2.51	0.46
1:0:1975:G:H4'	1:0:1976:U:H5	1.81	0.46
1:0:2633:A:N6	1:0:2646:C:N4	2.63	0.46
1:0:2676:G:H2'	1:0:2677:U:C6	2.51	0.46
1:0:313:U:H2'	1:0:314:G:C8	2.50	0.46
1:0:322:A:H1'	1:0:343:A:N7	2.31	0.46
1:0:64:C:H2'	1:0:65:C:C6	2.50	0.46
1:0:694:G:H2'	1:0:695:G:H8	1.81	0.46
1:0:952:A:H2'	1:0:953:G:O4'	2.16	0.46
1:0:1331:G:H2'	1:0:1332:G:C8	2.51	0.45
1:0:1495:G:O2'	1:0:1496:G:P	2.74	0.45
1:0:1703:C:H2'	1:0:1704:G:O4'	2.16	0.45
1:0:19:C:H2'	1:0:20:C:C6	2.50	0.45
1:0:2035:G:H2'	1:0:2036:G:C8	2.47	0.45
1:0:2093:G:H2'	1:0:2094:C:C5	2.51	0.45
1:0:2093:G:O2'	1:0:2094:C:OP1	2.33	0.45
1:0:2196:U:H2'	1:0:2197:U:C6	2.51	0.45
1:0:246:C:N3	1:0:247:A:N6	2.64	0.45
1:0:2858:A:H3'	1:0:2859:U:C5'	2.44	0.45
1:0:798:G:H2'	1:0:799:C:H5'	1.98	0.45
1:0:845:U:H2'	1:0:846:A:H8	1.80	0.45
1:0:918:A:H2'	1:0:919:U:C5'	2.42	0.45
1:0:931:G:O2'	1:0:932:G:H5'	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1677:C:H2'	1:0:1678:G:H8	1.81	0.45
1:0:1888:C:C4'	1:0:1889:G:H5''	2.47	0.45
1:0:2059:U:H5	1:0:2575:U:N3	2.05	0.45
1:0:2106:G:H2'	1:0:2107:G:C8	2.51	0.45
1:0:2628:C:H2'	1:0:2629:U:C6	2.52	0.45
1:0:489:A:N6	1:0:491:A:H62	2.14	0.45
1:0:595:A:H2	1:0:822:G:N3	2.15	0.45
1:0:635:C:C3'	1:0:636:G:H5''	2.46	0.45
1:0:872:G:O2'	1:0:2247:A:N3	2.48	0.45
1:0:8:A:H2'	1:0:9:U:C6	2.51	0.45
1:0:1147:G:H2'	1:0:1148:G:C8	2.52	0.45
1:0:1313:U:O2'	1:0:1314:A:O5'	2.32	0.45
1:0:13:A:H1'	1:0:536:A:H62	1.81	0.45
1:0:1429:A:O2'	1:0:1430:G:H4'	2.16	0.45
1:0:187:U:H2'	1:0:188:G:C8	2.52	0.45
1:0:192:G:H4'	1:0:193:A:O5'	2.15	0.45
1:0:2161:C:H2'	1:0:2162:C:C6	2.51	0.45
1:0:2193:C:H2'	1:0:2194:A:O4'	2.16	0.45
1:0:2429:A:O2'	1:0:2430:A:H5'	2.16	0.45
1:0:2668:U:O2'	1:0:2669:C:P	2.75	0.45
1:0:2809:A:N6	1:0:2854:G:H2'	2.31	0.45
1:0:331:U:H2'	1:0:332:C:H5''	1.97	0.45
1:0:365:U:H2'	1:0:366:U:C6	2.52	0.45
1:0:421:G:H2'	1:0:422:C:C6	2.51	0.45
1:0:560:G:H2'	1:0:561:U:C6	2.51	0.45
1:0:575:U:H4'	1:0:822:G:OP2	2.16	0.45
1:0:628:A:H2'	1:0:629:C:H6	1.81	0.45
1:0:595:A:H62	1:0:1264:C:N4	2.14	0.45
1:0:1286:U:H4'	1:0:1288:A:OP1	2.16	0.45
1:0:1380:C:C2'	1:0:1381:G:H5'	2.45	0.45
1:0:2055:G:H2'	1:0:2056:C:C6	2.52	0.45
1:0:2709:C:H2'	1:0:2710:C:C6	2.51	0.45
1:0:306:G:H2'	1:0:307:C:C6	2.52	0.45
1:0:40:U:H2'	1:0:41:G:C8	2.51	0.45
1:0:529:U:H2'	1:0:530:G:C8	2.51	0.45
1:0:1163:C:O2'	1:0:1164:C:H5'	2.15	0.45
1:0:1659:G:H2'	1:0:1660:G:C8	2.51	0.45
1:0:777:A:H62	1:0:1766:U:H3	1.60	0.45
1:0:1886:G:H2'	1:0:1887:G:C8	2.52	0.45
1:0:2474:G:O2'	1:0:2475:C:H5'	2.16	0.45
1:0:2600:A:H2'	1:0:2601:C:C6	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:297:A:H2'	1:0:298:C:C6	2.50	0.45
1:0:462:G:H2'	1:0:463:C:H5'	1.99	0.45
1:0:601:A:H3'	1:0:602:C:C5'	2.46	0.45
1:0:81:C:H4'	1:0:307:C:H5'	1.98	0.45
1:0:1278:A:HO2'	1:0:1279:G:P	2.37	0.45
1:0:1628:C:H2'	1:0:1629:G:C8	2.51	0.45
1:0:1888:C:C5'	1:0:1889:G:H5''	2.44	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'	2.47	0.45
1:0:2570:C:H2'	1:0:2571:G:H8	1.82	0.45
1:0:2668:U:HO2'	1:0:2669:C:P	2.40	0.45
1:0:307:C:H2'	1:0:308:C:C6	2.52	0.45
1:0:541:C:O2	1:0:2002:A:N1	2.50	0.45
1:0:653:G:H21	1:0:655:A:H1'	1.81	0.45
1:0:837:U:H2'	1:0:838:A:C8	2.52	0.45
1:0:1855:G:H4'	1:0:2390:A:H4'	1.98	0.45
1:0:2204:A:O2'	1:0:2205:C:C6	2.69	0.45
1:0:2205:C:H2'	1:0:2206:C:H6	1.80	0.45
1:0:2259:G:H2'	1:0:2260:C:C6	2.52	0.45
1:0:2376:G:H2'	1:0:2377:U:C6	2.52	0.45
1:0:2459:C:C2'	1:0:2460:G:H5'	2.46	0.45
1:0:916:U:H2'	1:0:917:U:C6	2.51	0.45
1:0:1452:U:H5''	1:0:1533:G:H5'	1.99	0.45
1:0:1608:U:H2'	1:0:1609:G:C8	2.52	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:H8	1.82	0.45
1:0:2120:C:H2'	1:0:2121:U:O4'	2.17	0.45
1:0:2235:G:H2'	1:0:2236:U:H6	1.81	0.45
1:0:2619:G:H2'	1:0:2620:G:C8	2.52	0.45
1:0:2694:G:H2'	1:0:2695:C:C6	2.52	0.45
1:0:2862:G:O2'	1:0:2863:U:H5'	2.17	0.45
1:0:697:G:O2'	1:0:698:A:H5'	2.17	0.45
1:0:935:C:H2'	1:0:936:A:C8	2.52	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
1:0:1586:A:H2'	1:0:1587:A:C8	2.52	0.45
1:0:1906:U:H2'	1:0:1907:C:C6	2.52	0.45
1:0:211:U:C2'	1:0:212:U:H5'	2.46	0.45
1:0:2159:A:H2'	1:0:2160:C:C6	2.52	0.45
1:0:2475:C:H2'	1:0:2476:A:H5'	1.98	0.45
1:0:2591:C:O2'	1:0:2592:U:H5'	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2639:A:H2'	1:0:2640:G:O4'	2.16	0.45
1:0:32:C:H2'	1:0:33:C:C6	2.52	0.45
1:0:340:G:H1'	1:0:488:A:C4	2.52	0.45
1:0:245:C:H5'	1:0:372:U:O2'	2.17	0.45
1:0:709:A:H2'	1:0:710:C:C6	2.52	0.45
1:0:967:G:H1'	1:0:970:A:N7	2.32	0.45
1:0:1346:C:H2'	1:0:1347:C:C6	2.52	0.45
1:0:1912:G:C2'	1:0:1912:G:N3	2.79	0.45
1:0:2094:C:C4	1:0:2103:G:H1'	2.52	0.45
1:0:2136:G:H2'	1:0:2137:G:C8	2.51	0.45
1:0:2321:C:C2'	1:0:2322:U:H5'	2.46	0.45
1:0:2377:U:O2'	1:0:2378:G:OP1	2.33	0.45
1:0:2712:G:H5'	1:0:2713:A:C8	2.52	0.45
1:0:811:G:O2'	1:0:812:G:H5'	2.17	0.45
1:0:831:G:H5'	1:0:852:U:OP1	2.17	0.45
1:0:91:A:H2'	1:0:92:U:C6	2.52	0.45
1:0:1367:A:H2'	1:0:1368:G:O4'	2.17	0.44
1:0:1712:G:C2'	1:0:1713:G:H5'	2.46	0.44
1:0:1821:A:H5''	1:0:1822:C:C5	2.52	0.44
1:0:1918:G:H4'	1:0:1920:A:C2	2.52	0.44
1:0:210:A:N6	1:0:442:A:N6	2.66	0.44
1:0:215:G:H1'	1:0:617:U:O2	2.17	0.44
1:0:2524:G:H2'	1:0:2525:U:O4'	2.17	0.44
1:0:2757:G:H5'	1:0:2761:A:C1'	2.47	0.44
1:0:317:U:H3'	1:0:318:G:H5''	1.98	0.44
1:0:878:C:HO2'	1:0:879:A:P	2.40	0.44
1:0:1130:U:H2'	1:0:1131:G:C8	2.53	0.44
1:0:1204:G:H2'	1:0:1205:G:C8	2.52	0.44
1:0:1251:G:H2'	1:0:1252:C:H6	1.80	0.44
1:0:1319:C:H2'	1:0:1320:A:H8	1.82	0.44
1:0:237:G:H2'	1:0:238:G:O4'	2.17	0.44
1:0:699:G:H3'	1:0:699:G:N3	2.33	0.44
1:0:736:G:H2'	1:0:737:C:O4'	2.17	0.44
1:0:1227:A:H62	1:0:1248:G:H21	1.64	0.44
1:0:1257:U:H2'	1:0:1258:G:C8	2.52	0.44
1:0:2018:G:H3'	1:0:2019:C:H5'	2.00	0.44
1:0:2239:C:O2'	1:0:2240:C:H5'	2.17	0.44
1:0:2393:G:H2'	1:0:2394:G:C8	2.53	0.44
1:0:2512:A:H2'	1:0:2513:A:O4'	2.18	0.44
1:0:604:U:H2'	1:0:605:G:H8	1.82	0.44
1:0:968:C:H2'	1:0:970:A:OP1	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1614:C:H2'	1:0:1615:C:C6	2.52	0.44
1:0:1665:C:H2'	1:0:1666:G:C8	2.52	0.44
1:0:1859:A:H2'	1:0:1860:A:C8	2.53	0.44
1:0:192:G:O2'	1:0:193:A:C5'	2.66	0.44
1:0:2227:C:C2'	1:0:2228:U:H5'	2.41	0.44
1:0:2620:G:H2'	1:0:2621:G:H8	1.83	0.44
1:0:2635:U:H2'	1:0:2636:A:C8	2.52	0.44
1:0:2668:U:C2'	1:0:2669:C:OP2	2.66	0.44
1:0:644:A:H2'	1:0:645:G:H5'	1.99	0.44
1:0:788:G:C5'	1:0:790:A:H1'	2.47	0.44
1:0:1002:C:H2'	1:0:1003:C:C6	2.53	0.44
1:0:117:A:H4'	1:0:118:U:C6	2.53	0.44
1:0:1291:G:H2'	1:0:1292:A:C8	2.53	0.44
1:0:1917:C:H2'	1:0:1918:G:H5'	2.00	0.44
1:0:2022:C:H2'	1:0:2023:C:C6	2.52	0.44
1:0:2244:C:H1'	1:0:2255:G:N1	2.33	0.44
1:0:2356:A:H2'	1:0:2357:A:C8	2.53	0.44
1:0:2455:A:O2'	1:0:2456:U:H5'	2.18	0.44
1:0:1140:A:N6	1:0:2469:G:H5''	2.33	0.44
1:0:2492:G:H2'	1:0:2493:U:C6	2.53	0.44
1:0:514:G:C2'	1:0:514:G:N3	2.79	0.44
1:0:520:C:O2'	1:0:1249:G:H5''	2.18	0.44
1:0:532:A:H2'	1:0:533:C:C6	2.53	0.44
1:0:616:U:C3'	1:0:617:U:H5''	2.48	0.44
1:0:953:G:H4'	1:0:1203:A:O2'	2.17	0.44
1:0:1278:A:O2'	1:0:1279:G:O5'	2.36	0.44
1:0:147:G:C2	1:0:148:C:H1'	2.53	0.44
1:0:403:A:H4'	1:0:425:A:C5'	2.39	0.44
1:0:539:A:N6	1:0:2024:U:H3	2.15	0.44
1:0:1008:G:H2'	1:0:1009:C:C6	2.52	0.44
1:0:1312:G:H5''	1:0:1313:U:C5'	2.36	0.44
1:0:2292:C:H2'	1:0:2293:G:C8	2.53	0.44
1:0:2458:U:OP1	1:0:2516:U:H1'	2.18	0.44
1:0:2824:C:H2'	1:0:2825:A:OP2	2.17	0.44
1:0:1353:A:H1'	1:0:1619:A:O4'	2.17	0.44
1:0:1840:A:H2'	1:0:1841:G:H5'	2.00	0.44
1:0:1926:U:H4'	1:0:1927:U:H5	1.82	0.44
1:0:2782:G:H2'	1:0:2783:U:OP1	2.17	0.44
1:0:415:A:C2'	1:0:416:U:H5'	2.47	0.44
1:0:437:G:O2'	1:0:438:G:H5'	2.17	0.44
1:0:475:U:H2'	1:0:476:G:O4'	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:701:U:H2'	1:0:702:A:O4'	2.18	0.44
1:0:715:U:H2'	1:0:716:U:C6	2.52	0.44
1:0:716:U:H2'	1:0:717:G:O4'	2.18	0.44
1:0:838:A:H4'	1:0:2407:G:C5	2.53	0.44
1:0:1031:C:H4'	1:0:1032:A:C8	2.53	0.44
1:0:1075:C:H2'	1:0:1076:U:C6	2.53	0.44
1:0:1274:C:O2'	1:0:1275:A:H5'	2.17	0.44
1:0:1605:A:H2'	1:0:1606:C:C6	2.53	0.44
1:0:181:A:C4'	1:0:182:G:H4'	2.46	0.44
1:0:2161:C:O2'	1:0:2162:C:OP1	2.34	0.44
1:0:172:A:N3	1:0:227:G:N2	2.64	0.44
1:0:2497:A:O5'	1:0:2497:A:N3	2.51	0.44
1:0:1949:A:H1'	1:0:2572:U:H4'	2.00	0.44
1:0:2574:G:C2'	1:0:2574:G:N3	2.81	0.44
1:0:342:G:H2'	1:0:343:A:C5'	2.48	0.44
1:0:351:A:H2'	1:0:352:G:O4'	2.18	0.44
1:0:694:G:H2'	1:0:695:G:C8	2.53	0.44
1:0:88:G:H3'	1:0:89:A:C5'	2.41	0.44
1:0:1466:C:H2'	1:0:1467:U:O4'	2.17	0.43
1:0:1480:G:C2'	1:0:1481:U:H5'	2.47	0.43
1:0:1504:G:O2'	1:0:1505:U:H5'	2.18	0.43
1:0:173:A:N3	1:0:173:A:C2'	2.81	0.43
1:0:2240:C:H2'	1:0:2241:U:H5'	1.99	0.43
1:0:1142:G:OP1	1:0:2494:C:H4'	2.18	0.43
1:0:2783:U:H2'	1:0:2784:A:O4'	2.17	0.43
1:0:2860:C:H2'	1:0:2861:A:O4'	2.18	0.43
1:0:871:U:H1'	1:0:2248:A:C5'	2.47	0.43
1:0:63:A:N6	1:0:89:A:N1	2.66	0.43
1:0:987:G:H2'	1:0:988:G:H8	1.82	0.43
1:0:1750:A:H1'	1:0:2690:A:C2	2.52	0.43
1:0:1961:A:H2'	1:0:1962:C:O4'	2.18	0.43
1:0:2758:A:H5''	1:0:2759:U:C5	2.52	0.43
1:0:55:A:N6	1:0:69:G:O6	2.51	0.43
1:0:1155:G:H2'	1:0:1156:U:O4'	2.18	0.43
1:0:114:C:H4'	1:0:124:A:O2'	2.17	0.43
1:0:1790:G:O3'	1:0:1791:C:H6	2.01	0.43
1:0:187:U:H2'	1:0:188:G:H8	1.82	0.43
1:0:2265:A:H5''	1:0:2266:A:O4'	2.18	0.43
1:0:2564:U:H4'	1:0:2565:C:C5'	2.49	0.43
1:0:2615:U:H3	1:0:2762:G:H1	1.65	0.43
1:0:859:U:H4'	1:0:860:U:C5	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:959:C:H2'	1:0:960:U:C6	2.53	0.43
1:0:984:A:H2'	1:0:1200:G:N2	2.31	0.43
1:0:168:A:H2'	1:0:169:C:H6	1.82	0.43
1:0:1880:G:H2'	1:0:1881:U:C6	2.54	0.43
1:0:192:G:H4'	1:0:193:A:H4'	2.00	0.43
1:0:2436:U:H2'	1:0:2437:G:O4'	2.19	0.43
1:0:420:C:H2'	1:0:421:G:C8	2.53	0.43
1:0:508:G:H2'	1:0:509:U:C6	2.52	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
1:0:841:G:H4'	1:0:844:G:N1	2.33	0.43
1:0:2048:C:H1'	1:0:2428:U:O2	2.18	0.43
1:0:2276:C:O2'	1:0:2277:A:H5'	2.19	0.43
1:0:2310:G:H2'	1:0:2311:U:O4'	2.18	0.43
1:0:242:A:N6	1:0:441:A:N7	2.66	0.43
1:0:2561:G:N3	1:0:2561:G:H2'	2.32	0.43
1:0:2874:A:H2'	1:0:2875:C:C6	2.54	0.43
1:0:457:C:O2'	1:0:458:G:H5'	2.18	0.43
1:0:758:G:N3	1:0:763:A:N6	2.64	0.43
1:0:1223:G:H4'	1:0:1224:A:O5'	2.19	0.43
1:0:1478:U:H2'	1:0:1479:G:C8	2.53	0.43
1:0:192:G:O2'	1:0:193:A:P	2.76	0.43
1:0:2033:C:H2'	1:0:2034:A:O4'	2.18	0.43
1:0:2680:U:H3'	1:0:2681:A:C5'	2.47	0.43
1:0:509:U:H2'	1:0:510:G:O4'	2.18	0.43
1:0:54:G:H2'	1:0:55:A:H8	1.83	0.43
1:0:591:G:H2'	1:0:592:G:C8	2.54	0.43
1:0:925:U:H4'	1:0:926:C:C6	2.54	0.43
1:0:1194:U:H2'	1:0:1195:U:H6	1.78	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
1:0:2213:G:H2'	1:0:2214:G:H8	1.83	0.43
1:0:2369:U:H2'	1:0:2370:G:C8	2.54	0.43
1:0:2392:G:H2'	1:0:2393:G:C8	2.54	0.43
1:0:2034:A:N6	1:0:2593:A:N7	2.66	0.43
1:0:2510:A:N6	1:0:2641:A:H61	2.11	0.43
1:0:2786:G:H2'	1:0:2787:A:C8	2.53	0.43
1:0:2795:A:N3	1:0:2795:A:H2'	2.32	0.43
1:0:456:C:H2'	1:0:457:C:C6	2.54	0.43
1:0:652:C:N4	1:0:657:A:H61	2.08	0.43
1:0:181:A:C5'	1:0:182:G:OP1	2.62	0.43

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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	0.43
1:0:242:A:O2'	1:0:243:G:OP2	2.37	0.43
1:0:338:G:H2'	1:0:339:U:O4'	2.19	0.43
1:0:840:U:H4'	1:0:841:G:C2	2.53	0.43
1:0:1055:A:H2	1:0:1121:G:H2'	1.84	0.43
1:0:1604:A:H2'	1:0:1605:A:O4'	2.19	0.43
1:0:2002:A:H61	1:0:2018:G:H21	1.67	0.43
1:0:201:G:H2'	1:0:202:A:H8	1.84	0.43
1:0:2056:C:H2'	1:0:2057:U:H6	1.84	0.43
1:0:2261:G:H4'	1:0:2368:G:O2'	2.19	0.43
1:0:2784:A:C8	1:0:2785:A:C8	3.06	0.43
1:0:2602:G:OP1	1:0:2801:A:H1'	2.19	0.43
1:0:653:G:C2	1:0:655:A:H1'	2.54	0.43
1:0:786:U:H2'	1:0:787:A:H5'	2.00	0.43
1:0:810:U:H2'	1:0:811:G:H8	1.83	0.43
1:0:1046:U:H2'	1:0:1047:G:H8	1.84	0.43
1:0:594:G:N2	1:0:1267:A:H62	2.17	0.43
1:0:128:C:C3'	1:0:129:A:H5''	2.49	0.43
1:0:1975:G:H1'	1:0:1977:C:N4	2.33	0.43
1:0:211:U:H2'	1:0:212:U:O4'	2.19	0.43
1:0:2483:U:H1'	1:0:2551:A:C2	2.54	0.43
1:0:2633:A:H61	1:0:2646:C:N4	2.17	0.43
1:0:319:G:H1'	1:0:511:A:H5'	2.00	0.43
2:5:7:A:H2'	2:5:8:A:C8	2.54	0.43
1:0:1016:C:H2'	1:0:1017:C:H6	1.84	0.42
1:0:1455:C:HO2'	1:0:1644:G:H5''	1.84	0.42
1:0:1341:G:N2	1:0:1664:G:H1	2.15	0.42
1:0:2380:U:C2'	1:0:2381:A:H5'	2.44	0.42
1:0:2658:A:H2'	1:0:2659:C:H6	1.84	0.42
1:0:814:G:H3'	1:0:815:A:C5'	2.49	0.42
1:0:109:A:H2'	1:0:110:U:H5''	2.01	0.42
1:0:121:G:H2'	1:0:122:G:O4'	2.19	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'	2.19	0.42
1:0:1743:C:H2'	1:0:1744:G:C8	2.54	0.42
1:0:1770:U:H2'	1:0:1774:A:H62	1.83	0.42
1:0:1801:C:H3'	1:0:1802:A:H5'	2.01	0.42
1:0:2225:G:O2'	1:0:2226:A:H5'	2.19	0.42
1:0:2473:G:O2'	1:0:2474:G:H5'	2.19	0.42
1:0:2500:C:H4'	1:0:2544:A:C4'	2.49	0.42
1:0:2772:U:H2'	1:0:2773:G:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2785:A:O2'	1:0:2786:G:H5'	2.19	0.42
1:0:322:A:H2	1:0:342:G:OP2	2.02	0.42
1:0:37:C:H2'	1:0:38:G:C8	2.54	0.42
1:0:722:C:H2'	1:0:723:C:C6	2.54	0.42
1:0:826:U:H2'	1:0:827:C:H6	1.84	0.42
1:0:1141:U:HO2'	1:0:1142:G:P	2.41	0.42
1:0:1451:C:H2'	1:0:1452:U:C6	2.54	0.42
1:0:1591:U:H2'	1:0:1592:U:O4'	2.18	0.42
1:0:189:A:H2'	1:0:190:A:C8	2.54	0.42
1:0:2311:U:HO2'	1:0:2312:A:H8	1.63	0.42
1:0:474:G:N2	1:0:476:G:H3'	2.35	0.42
1:0:65:C:H2'	1:0:66:U:C5'	2.44	0.42
1:0:752:G:H5'	1:0:1775:A:N6	2.35	0.42
1:0:820:U:H2'	1:0:821:A:C8	2.53	0.42
1:0:944:A:H2'	1:0:945:G:O4'	2.19	0.42
1:0:1017:C:H2'	1:0:1018:C:O4'	2.19	0.42
1:0:1030:U:OP1	1:0:1046:U:H1'	2.19	0.42
1:0:1225:G:H2'	1:0:1249:G:N1	2.34	0.42
1:0:1292:A:H2'	1:0:1293:A:H8	1.85	0.42
1:0:14:A:H2	1:0:2604:G:O2'	2.02	0.42
1:0:1532:A:H2'	1:0:1533:G:C8	2.53	0.42
1:0:158:A:H2'	1:0:159:A:H8	1.83	0.42
1:0:1917:C:C2'	1:0:1918:G:H5'	2.49	0.42
1:0:2217:G:H5'	1:0:2219:U:O4	2.18	0.42
1:0:2808:U:H3'	1:0:2809:A:C5'	2.47	0.42
1:0:523:A:H2	1:0:591:G:H4'	1.84	0.42
1:0:1762:C:H2'	1:0:1763:G:C8	2.54	0.42
1:0:2594:U:H2'	1:0:2595:C:C6	2.55	0.42
1:0:404:A:H1'	1:0:424:G:O2'	2.19	0.42
1:0:520:C:H2'	1:0:521:U:O4'	2.20	0.42
1:0:543:G:H2'	1:0:544:U:C6	2.55	0.42
1:0:964:A:H2'	1:0:965:G:H8	1.83	0.42
2:5:26:A:H2'	2:5:27:G:H5'	2.01	0.42
1:0:1033:G:N2	1:0:1150:C:H2'	2.30	0.42
1:0:1566:G:H2'	1:0:1567:A:C8	2.55	0.42
1:0:1836:C:H2'	1:0:1837:G:H8	1.84	0.42
1:0:1930:C:H2'	1:0:1931:G:C8	2.55	0.42
1:0:178:C:H4'	1:0:399:G:C2	2.55	0.42
1:0:415:A:O2'	1:0:416:U:H5'	2.20	0.42
1:0:688:A:H1'	1:0:2422:C:O2'	2.19	0.42
1:0:764:A:H3'	1:0:764:A:N3	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:824:U:H1'	1:0:1264:C:C1'	2.49	0.42
1:0:119:G:H1'	1:0:129:A:N1	2.35	0.42
1:0:1259:A:H2'	1:0:1260:A:H8	1.84	0.42
1:0:1332:G:H2'	1:0:1333:G:O4'	2.20	0.42
1:0:1489:C:H3'	1:0:1490:U:C5'	2.50	0.42
1:0:1594:U:H2'	1:0:1595:A:C8	2.55	0.42
1:0:2083:G:N2	1:0:2172:U:H3	2.17	0.42
1:0:2250:G:O2'	1:0:2251:U:H5'	2.20	0.42
1:0:586:G:OP1	1:0:2481:G:H2'	2.19	0.42
1:0:2552:C:OP1	1:0:2553:G:H5''	2.18	0.42
1:0:430:C:H2'	1:0:431:G:C8	2.54	0.42
1:0:48:A:O5'	1:0:50:G:H4'	2.20	0.42
1:0:629:C:C2'	1:0:630:G:H5'	2.49	0.42
1:0:860:U:O2	1:0:860:U:H2'	2.19	0.42
1:0:879:A:C2'	1:0:880:C:H5'	2.49	0.42
1:0:956:A:N3	1:0:956:A:H2'	2.34	0.42
2:5:27:G:O2'	2:5:28:C:H5'	2.19	0.42
1:0:1029:C:C2'	1:0:1030:U:H5''	2.49	0.42
1:0:2057:U:H2'	1:0:2058:U:H6	1.85	0.42
1:0:2217:G:C2'	1:0:2217:G:N3	2.83	0.42
1:0:2220:A:H2'	1:0:2221:G:H8	1.85	0.42
1:0:3:U:H2'	1:0:4:C:C6	2.54	0.42
1:0:634:G:H2'	1:0:635:C:C6	2.54	0.42
1:0:644:A:H2'	1:0:645:G:O4'	2.20	0.42
1:0:65:C:C3'	1:0:66:U:H5'	2.49	0.42
1:0:81:C:O2'	1:0:82:G:H5'	2.20	0.42
1:0:827:C:H2'	1:0:828:C:C6	2.54	0.42
1:0:987:G:H2'	1:0:988:G:C8	2.55	0.42
1:0:1065:A:H2'	1:0:1066:G:C8	2.55	0.42
1:0:1193:G:O2'	1:0:1194:U:P	2.77	0.42
1:0:1341:G:N2	1:0:1343:C:H1'	2.35	0.42
1:0:1358:C:H2'	1:0:1359:G:H5'	2.02	0.42
1:0:1499:A:H2'	1:0:1500:U:C6	2.54	0.42
1:0:1671:A:H2'	1:0:1672:A:H8	1.85	0.42
1:0:1708:C:H2'	1:0:1709:U:O4'	2.19	0.42
1:0:1807:A:O2'	1:0:1808:C:C4'	2.63	0.42
1:0:1957:C:O2'	1:0:1958:G:H5'	2.19	0.42
1:0:198:A:O2'	1:0:199:A:OP2	2.30	0.42
1:0:2133:G:H2'	1:0:2134:U:C6	2.55	0.42
1:0:2161:C:H2'	1:0:2162:C:C5	2.55	0.42
1:0:2470:U:H1'	1:0:2548:G:O3'	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2586:G:H2'	1:0:2587:G:O4'	2.19	0.42
1:0:2633:A:H4'	1:0:2634:G:C4'	2.41	0.42
1:0:2710:C:O2'	1:0:2711:G:H5'	2.19	0.42
1:0:488:A:H2'	1:0:489:A:C8	2.54	0.42
1:0:1221:C:H2'	1:0:1222:G:H8	1.84	0.42
1:0:1479:G:H2'	1:0:1480:G:C8	2.54	0.42
1:0:1500:U:H2'	1:0:1501:C:C6	2.55	0.42
1:0:1626:A:H5''	1:0:1627:C:OP2	2.20	0.42
1:0:192:G:O2'	1:0:193:A:H5''	2.19	0.42
1:0:2027:C:H2'	1:0:2028:C:C6	2.55	0.42
1:0:871:U:O2	1:0:2247:A:H2'	2.19	0.42
1:0:2633:A:H5''	1:0:2634:G:OP1	2.20	0.42
1:0:2640:G:H2'	1:0:2641:A:O4'	2.19	0.42
1:0:562:G:H2'	1:0:563:U:O4'	2.20	0.42
1:0:617:U:H2'	1:0:618:A:O4'	2.20	0.42
1:0:646:C:O2'	1:0:650:U:H5''	2.19	0.42
1:0:649:G:H2'	1:0:650:U:C6	2.54	0.42
1:0:82:G:O2'	1:0:83:A:H5'	2.20	0.42
1:0:833:A:H2'	1:0:834:A:C8	2.54	0.42
1:0:1028:G:H2'	1:0:1029:C:H6	1.85	0.41
1:0:1143:A:H2'	1:0:1144:U:C6	2.55	0.41
1:0:1172:U:H2'	1:0:1173:G:C8	2.55	0.41
1:0:1343:C:H2'	1:0:1344:C:C6	2.55	0.41
1:0:1402:G:H2'	1:0:1403:U:O4'	2.20	0.41
1:0:1888:C:H4'	1:0:1889:G:H5''	2.01	0.41
1:0:2320:G:H2'	1:0:2321:C:C6	2.55	0.41
1:0:2836:U:H2'	1:0:2837:G:C8	2.55	0.41
1:0:239:A:H5'	1:0:619:A:O2'	2.19	0.41
1:0:669:G:H2'	1:0:670:U:H6	1.84	0.41
1:0:831:G:H2'	1:0:832:A:H5''	2.02	0.41
1:0:1057:A:H3'	1:0:1058:G:H5'	2.01	0.41
1:0:1518:C:O2'	1:0:1519:G:P	2.78	0.41
1:0:1594:U:H2'	1:0:1595:A:H8	1.85	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
1:0:2502:G:H2'	1:0:2503:G:H8	1.85	0.41
1:0:2651:U:H2'	1:0:2652:G:H8	1.85	0.41
1:0:314:G:H2'	1:0:315:G:H8	1.85	0.41
1:0:354:C:H2'	1:0:355:G:O4'	2.20	0.41
1:0:73:A:C3'	1:0:73:A:N3	2.82	0.41
1:0:762:A:H5'	1:0:1284:G:H1'	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1354:A:C2	1:0:1411:C:H4'	2.55	0.41
1:0:1829:C:O2'	1:0:1910:A:H1'	2.20	0.41
1:0:1956:G:H2'	1:0:1957:C:O4'	2.20	0.41
1:0:2348:A:H2'	1:0:2349:G:C8	2.55	0.41
1:0:2597:G:H2'	1:0:2598:C:C6	2.55	0.41
1:0:2766:U:O2'	1:0:2767:C:H5'	2.20	0.41
1:0:315:G:H2'	1:0:316:C:C6	2.55	0.41
1:0:327:C:O2'	1:0:328:A:H5'	2.20	0.41
1:0:540:G:O6	1:0:2006:G:OP1	2.38	0.41
1:0:607:C:H2'	1:0:608:G:C8	2.55	0.41
1:0:1177:U:H2'	1:0:1178:C:C6	2.55	0.41
1:0:1495:G:O2'	1:0:1496:G:OP1	2.35	0.41
1:0:1518:C:HO2'	1:0:1519:G:P	2.44	0.41
1:0:1557:G:H2'	1:0:1558:C:C6	2.55	0.41
1:0:820:U:H5'	1:0:2424:G:H4'	2.02	0.41
1:0:1084:A:H4'	1:0:2454:C:OP1	2.20	0.41
1:0:2463:G:O2'	1:0:2464:G:H5'	2.20	0.41
1:0:2546:G:H2'	1:0:2547:C:C6	2.56	0.41
1:0:438:G:H2'	1:0:439:C:C6	2.55	0.41
1:0:853:C:H2'	1:0:854:G:C8	2.56	0.41
1:0:1281:A:N6	1:0:1995:G:O2'	2.53	0.41
1:0:1671:A:C1'	1:0:2798:A:H5'	2.50	0.41
1:0:1887:G:O2'	1:0:1888:C:H5'	2.20	0.41
1:0:2011:U:H2'	1:0:2012:A:C8	2.56	0.41
1:0:2076:G:H2'	1:0:2077:G:C8	2.54	0.41
1:0:1656:U:O2'	1:0:2678:C:H4'	2.21	0.41
1:0:28:A:H2'	1:0:29:U:C6	2.55	0.41
1:0:328:A:O2'	1:0:329:C:H5'	2.20	0.41
1:0:579:G:H2'	1:0:2013:A:H62	1.86	0.41
1:0:690:A:O2'	1:0:691:C:H5'	2.21	0.41
1:0:878:C:O2'	1:0:879:A:OP1	2.35	0.41
1:0:930:A:H3'	1:0:931:G:H8	1.85	0.41
1:0:1162:A:H2'	1:0:1163:C:H6	1.86	0.41
1:0:1231:A:H2'	1:0:1232:U:O4'	2.20	0.41
1:0:1242:A:H2'	1:0:1243:G:C8	2.55	0.41
1:0:2200:G:H2'	1:0:2201:G:C8	2.56	0.41
1:0:2245:A:HO2'	1:0:2246:A:P	2.43	0.41
1:0:2365:U:O2'	1:0:2366:U:H5'	2.21	0.41
1:0:2392:G:H2'	1:0:2393:G:H8	1.85	0.41
1:0:2486:C:H4'	2:5:34:C:O2'	2.21	0.41
1:0:2698:G:H2'	1:0:2699:G:O4'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:314:G:H2'	1:0:315:G:C8	2.54	0.41
1:0:635:C:H2'	1:0:636:G:H5''	2.02	0.41
1:0:890:U:H2'	1:0:891:A:C8	2.56	0.41
1:0:1530:U:HO2'	1:0:1531:C:H6	1.65	0.41
1:0:1962:C:H2'	1:0:1963:G:H8	1.86	0.41
1:0:2096:U:C2'	1:0:2097:A:H5''	2.44	0.41
1:0:2134:U:H2'	1:0:2135:C:C6	2.55	0.41
1:0:2226:A:H2'	1:0:2227:C:H6	1.86	0.41
1:0:873:U:C2	1:0:2246:A:H5''	2.55	0.41
1:0:2321:C:H2'	1:0:2322:U:H5'	2.02	0.41
1:0:2378:G:H2'	1:0:2379:G:C8	2.55	0.41
1:0:2390:A:H2'	1:0:2391:A:C8	2.56	0.41
1:0:2740:C:O2'	1:0:2741:G:H5'	2.20	0.41
1:0:307:C:H2'	1:0:308:C:H6	1.86	0.41
1:0:691:C:H2'	1:0:692:C:C6	2.56	0.41
1:0:798:G:OP2	1:0:805:G:N7	2.53	0.41
1:0:868:U:H2'	1:0:869:C:H6	1.85	0.41
1:0:1168:G:H2'	1:0:1169:C:C6	2.55	0.41
1:0:1189:G:O2'	1:0:1190:C:H5'	2.21	0.41
1:0:1193:G:HO2'	1:0:1194:U:P	2.43	0.41
1:0:1193:G:O2'	1:0:1194:U:OP1	2.37	0.41
1:0:1286:U:H2'	1:0:2692:A:H2	1.85	0.41
1:0:139:A:H2'	1:0:140:G:C8	2.55	0.41
1:0:1415:C:O2'	1:0:1416:A:H5'	2.21	0.41
1:0:1448:A:H2'	1:0:1449:C:C6	2.56	0.41
1:0:2038:C:H5'	1:0:2039:G:C5'	2.51	0.41
1:0:2217:G:H4'	1:0:2219:U:C5	2.56	0.41
1:0:2500:C:H4'	1:0:2544:A:O4'	2.20	0.41
1:0:2515:G:H2'	1:0:2516:U:C6	2.55	0.41
1:0:2785:A:H2'	1:0:2786:G:O4'	2.21	0.41
1:0:2795:A:N3	1:0:2795:A:C2'	2.84	0.41
1:0:63:A:O2'	1:0:64:C:H5'	2.20	0.41
1:0:58:C:N4	1:0:73:A:C6	2.89	0.41
1:0:1313:U:O2'	1:0:1314:A:OP2	2.39	0.41
1:0:1686:A:C2'	1:0:1687:C:H5'	2.51	0.41
1:0:1722:G:H2'	1:0:1723:U:C6	2.55	0.41
1:0:1938:U:H2'	1:0:1939:U:H5'	2.01	0.41
1:0:2032:G:O2'	1:0:2033:C:H5'	2.21	0.41
1:0:689:A:H8	1:0:2422:C:H1'	1.85	0.41
1:0:2498:U:H1'	1:0:2500:C:H41	1.86	0.41
1:0:24:G:H2'	1:0:25:U:C6	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2539:C:H2'	1:0:2540:A:C8	2.56	0.41
1:0:2811:G:H2'	1:0:2812:A:C8	2.56	0.41
1:0:639:G:O2'	1:0:640:C:H5'	2.21	0.41
1:0:747:A:H2'	1:0:748:A:H8	1.85	0.41
1:0:1026:U:H2'	1:0:1027:C:C6	2.56	0.41
1:0:1329:U:H2'	1:0:1330:G:C8	2.56	0.41
1:0:1365:U:H5'	1:0:1587:A:H1'	2.03	0.41
1:0:1621:C:C4'	1:0:1626:A:H61	2.31	0.41
1:0:1671:A:H1'	1:0:2798:A:H5'	2.02	0.41
1:0:2245:A:C2'	1:0:2246:A:OP2	2.68	0.41
1:0:229:G:H2'	1:0:230:C:C6	2.56	0.41
1:0:2467:A:H2'	1:0:2468:G:C8	2.56	0.41
1:0:2824:C:HO2'	1:0:2825:A:P	2.43	0.41
1:0:317:U:H3'	1:0:318:G:C5'	2.51	0.41
1:0:40:U:H2'	1:0:41:G:H8	1.86	0.41
1:0:584:A:H4'	1:0:2479:U:C5'	2.48	0.41
1:0:857:U:C2'	1:0:858:G:H5'	2.50	0.41
1:0:874:A:H2'	1:0:875:G:H5'	2.03	0.41
1:0:69:G:O3'	1:0:111:G:H4'	2.20	0.41
1:0:1187:A:HO2'	1:0:1188:A:P	2.43	0.41
1:0:1464:A:H4'	1:0:1545:G:C4'	2.51	0.41
1:0:1528:C:H3'	1:0:1529:C:H5''	2.03	0.41
1:0:1443:G:N3	1:0:1584:G:N1	2.69	0.41
1:0:1696:C:H42	1:0:1755:G:H5''	1.86	0.41
1:0:185:C:H2'	1:0:186:C:C6	2.56	0.41
1:0:2137:G:H2'	1:0:2138:U:H6	1.86	0.41
1:0:2389:G:H2'	1:0:2390:A:O4'	2.21	0.41
1:0:2448:A:C2'	1:0:2449:G:H5'	2.50	0.41
1:0:2871:U:H2'	1:0:2872:U:H6	1.85	0.41
1:0:713:G:H2'	1:0:714:G:C8	2.56	0.41
1:0:6:A:H2'	1:0:7:G:C8	2.56	0.41
1:0:808:C:H2'	1:0:809:C:C6	2.56	0.41
1:0:854:G:H2'	1:0:855:G:C8	2.56	0.41
1:0:1253:C:H2'	1:0:1254:G:O4'	2.21	0.40
1:0:1539:U:H2'	1:0:1540:C:C6	2.56	0.40
1:0:1586:A:H2'	1:0:1587:A:H8	1.86	0.40
1:0:1336:G:N2	1:0:1632:A:N6	2.69	0.40
1:0:1747:G:N3	1:0:1749:G:N2	2.69	0.40
1:0:1850:G:H2'	1:0:1851:A:C8	2.55	0.40
1:0:2312:A:H1'	1:0:2314:A:N9	2.35	0.40
1:0:2326:C:H2'	1:0:2327:U:C6	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2329:C:H41	1:0:2361:G:N2	2.18	0.40
1:0:305:A:H2'	1:0:306:G:O4'	2.21	0.40
1:0:344:G:O2'	1:0:345:U:H5'	2.21	0.40
1:0:105:G:H21	1:0:357:A:N6	2.18	0.40
1:0:405:C:H2'	1:0:406:G:C8	2.56	0.40
1:0:432:C:H2'	1:0:433:G:C8	2.57	0.40
1:0:729:A:O2'	1:0:730:C:H5'	2.21	0.40
1:0:769:C:H2'	1:0:770:U:O4'	2.20	0.40
1:0:925:U:H5''	1:0:926:C:OP1	2.21	0.40
1:0:931:G:H2'	1:0:932:G:O4'	2.21	0.40
1:0:1098:G:H21	1:0:1100:G:H4'	1.86	0.40
1:0:1463:A:H2'	1:0:1464:A:H8	1.83	0.40
1:0:1685:A:O2'	1:0:1686:A:O5'	2.39	0.40
1:0:1736:C:H2'	1:0:1737:G:C8	2.57	0.40
1:0:1985:G:H2'	1:0:1986:G:C8	2.57	0.40
1:0:579:G:H2'	1:0:2013:A:C5	2.56	0.40
1:0:2383:C:C2'	1:0:2384:G:H5'	2.51	0.40
1:0:838:A:H4'	1:0:2407:G:C6	2.57	0.40
1:0:1204:G:H2'	1:0:1205:G:H8	1.86	0.40
1:0:1398:G:H2'	1:0:1399:C:C6	2.56	0.40
1:0:1653:C:H2'	1:0:1654:A:C8	2.56	0.40
1:0:1787:U:H2'	1:0:1788:C:C6	2.57	0.40
1:0:2047:C:H2'	1:0:2048:C:C6	2.56	0.40
1:0:2075:U:H1'	1:0:2204:A:C2	2.56	0.40
1:0:2234:G:H2'	1:0:2235:G:O4'	2.22	0.40
1:0:2241:U:H4'	1:0:2307:A:C2	2.56	0.40
1:0:2383:C:H2'	1:0:2384:G:O4'	2.20	0.40
1:0:2548:G:H2'	1:0:2549:G:C5'	2.33	0.40
1:0:550:C:H2'	1:0:551:A:H8	1.86	0.40
1:0:73:A:H2'	1:0:74:G:OP2	2.22	0.40
1:0:930:A:H5'	1:0:931:G:N7	2.37	0.40
1:0:950:G:H2'	1:0:951:G:C8	2.56	0.40
1:0:143:A:H2'	1:0:144:U:O4'	2.22	0.40
1:0:1532:A:H2'	1:0:1533:G:H8	1.86	0.40
1:0:1888:C:H2'	1:0:1913:G:C6	2.57	0.40
1:0:1915:A:H2'	1:0:1916:G:O4'	2.21	0.40
1:0:1939:U:O2	1:0:1968:G:H4'	2.21	0.40
1:0:2056:C:H2'	1:0:2057:U:C6	2.57	0.40
1:0:218:A:H1'	1:0:220:U:C4	2.57	0.40
1:0:2244:C:H1'	1:0:2255:G:H1	1.86	0.40
1:0:2686:C:H2'	1:0:2687:G:H8	1.87	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2824:C:C2'	1:0:2825:A:OP2	2.70	0.40
1:0:67:G:C6	1:0:72:A:C2	3.10	0.40
1:0:953:G:H2'	1:0:954:U:O4'	2.21	0.40
1:0:105:G:O2'	1:0:106:G:H5'	2.21	0.40
1:0:1337:G:H1'	1:0:1632:A:C6	2.56	0.40
1:0:1358:C:C2'	1:0:1359:G:H5''	2.52	0.40
1:0:1381:G:O2'	1:0:1382:G:H5'	2.21	0.40
1:0:1466:C:O2'	1:0:1467:U:H5'	2.21	0.40
1:0:1542:G:H21	1:0:1561:A:H62	1.70	0.40
1:0:1625:A:C4	1:0:1632:A:H1'	2.57	0.40
1:0:1821:A:H3'	1:0:1822:C:C6	2.56	0.40
1:0:217:U:H5'	1:0:633:G:HO2'	1.87	0.40
1:0:2378:G:O2'	1:0:2379:G:H5'	2.22	0.40
1:0:529:U:H2'	1:0:530:G:H8	1.86	0.40
1:0:596:C:H1'	1:0:684:C:O4'	2.22	0.40
1:0:758:G:H2'	1:0:761:G:N3	2.37	0.40
1:0:765:C:O2	1:0:765:C:H2'	2.21	0.40
1:0:773:G:H4'	1:0:1767:G:OP1	2.22	0.40
1:0:856:A:H2'	1:0:857:U:O4'	2.20	0.40
1:0:978:U:H2'	1:0:979:A:C8	2.56	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

There are no protein backbone outliers to report in this entry.

5.3.2 Protein sidechains [i](#)

There are no protein residues with a non-rotameric sidechain to report in this entry.

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	0	2757/2880 (95%)	413 (14%)	0
2	5	22/35 (62%)	2 (9%)	0
All	All	2779/2915 (95%)	415 (14%)	0

All (415) 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	66	U
1	0	67	G
1	0	70	A
1	0	71	A
1	0	72	A
1	0	74	G
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

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Mol	Chain	Res	Type
1	0	226	C
1	0	227	G
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

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Mol	Chain	Res	Type
1	0	556	A
1	0	558	G
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

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Mol	Chain	Res	Type
1	0	841	G
1	0	844	G
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

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Mol	Chain	Res	Type
1	0	1122	A
1	0	1137	A
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

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Mol	Chain	Res	Type
1	0	1441	A
1	0	1442	C
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

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Mol	Chain	Res	Type
1	0	1680	U
1	0	1685	A
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	1927	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

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Mol	Chain	Res	Type
1	0	2006	G
1	0	2015	G
1	0	2016	A
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

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Mol	Chain	Res	Type
1	0	2315	A
1	0	2316	G
1	0	2326	C
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	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	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

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Mol	Chain	Res	Type
1	0	2625	U
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	2782	G
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	27	G
2	5	32	A

There are no RNA pucker outliers to report.

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	31,40,41	2.69	5 (16%)	34,57,60	1.18	4 (11%)

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	-	0/21/43/44	0/4/4/4

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	5	35	PPU	OC-CM	-4.94	1.28	1.42
2	5	35	PPU	CE2-CZ	2.63	1.44	1.38
2	5	35	PPU	CD2-CG	2.64	1.44	1.38
2	5	35	PPU	CE1-CZ	3.56	1.46	1.38
2	5	35	PPU	C-N3'	12.16	1.61	1.34

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	5	35	PPU	C-CA-N	2.19	117.94	109.10
2	5	35	PPU	C9-N6-C6	2.30	126.49	119.51
2	5	35	PPU	CM-OC-CZ	2.85	123.75	117.50
2	5	35	PPU	C2-N1-C6	3.29	119.89	111.82

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates [i](#)

There are no carbohydrates in this entry.

5.6 Ligand geometry [i](#)

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.