



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 17, 2026 – 11:20 PM UTC

PDB ID : 1NJP / pdb_00001njp
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

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	NOT EXECUTED
EDS	:	NOT EXECUTED
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

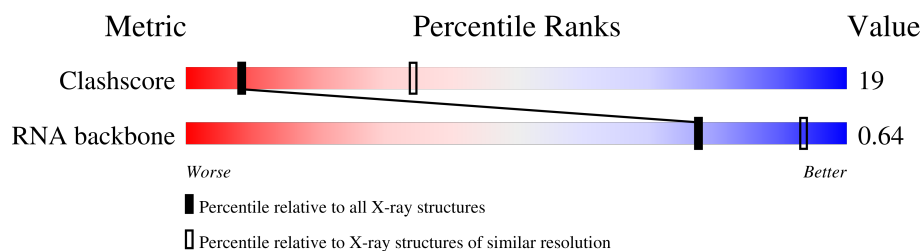
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.50 Å.

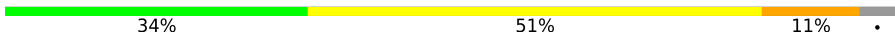
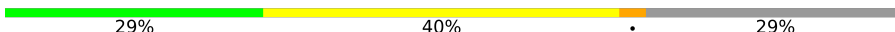
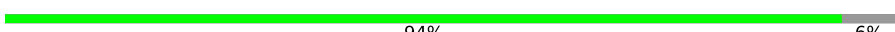
Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
Clashscore	190562	1140 (3.54-3.46)
RNA backbone	3983	1010 (3.98-3.02)

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

Note EDS was not executed.

Mol	Chain	Length	Quality of chain
1	0	2880	 34% 51% 11% .
2	5	35	 29% 40% . 29%
3	K	141	 88% 12%
4	T	237	 94% 6%

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.

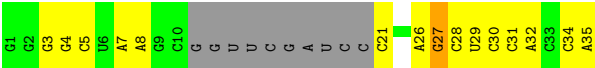
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
4	T	223	Total	C	0	0	223
			223	223			



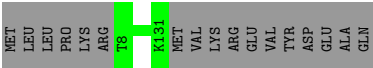
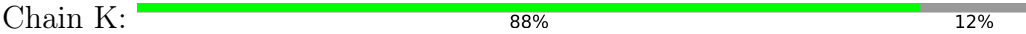
U1819	G1742	G1659	A1587	G1508	A1441	U1357	A1288	C1214	U1141	U1044	G976	A838
G1820	C1743	G1660	U1591	A1509	C1442	C1358	A1289	U1217	G1142	G1045	U978	U839
A1821	G1743	C1661	U1591	A1510	G1443	G1359	A1290	U1217	A1143	C	U840	G778
C1822	G1744	G1662	U1592	A1511	C1444	C1359	G1291	C1218	U1046	A911	G841	G779
G1825	C1745	G1663	G1593	A1512	A1445	U1365	A1292	C1219	C1145	G980	A842	U780
U1826	G1746	G1664	U1594	A1513	U1446	A1366	A1293	G1220	G1146	C1052	G843	G781
G1829	G1747	C1665	A1595	C1514	U1447	A1367	A1298	C1221	G844	U916	G843	G781
C1829	U1748	G1666	A1596	U1515	A1448	G1368	G1298	G1222	G1147	U917	U845	U782
G1830	A1749	A1667	A1597	A1516	C1449	U1368	G1298	G1223	G1148	A918	G783	G783
G1831	A1750	C1668	C1598	C1517	G1450	G1373	U1301	A1224	G1149	U919	U846	U784
		A1669	G1599	C1518	C1451	G1373	U1301	A1224	C1150	G920	U785	G785
		U1600	G1518	C1519	U1452	G1377	U1307	G1225	U1151	A921	U786	U786
		U1601	G1519	G1520	U1452	G1377	U1307	A1226	A922	A922	U852	A787
		G1602	G1520	C1524	U1455	C1380	C1308	A1227	A1154	A922	U853	A787
		G1603	C1524	C1524	C1456	G1381	G1309	A1227	U1155	U925	C853	G788
		C1677	C1524	C1524	C1456	G1381	G1309	A1227	U1155	U925	C853	G788
		G1677	C1524	C1524	C1456	G1381	G1309	A1227	U1155	U925	C853	G788
		C1677	C1524	C1524	C1456	G1381	G1309	A1227	U1155	U925	C853	G788
		G1678	A1605	G1527	A1458	G1382	G1312	A1233	A1162	G995	G856	G789
		C1679	A1606	C1528	U1459	A1386	U1313	C1234	C1163	G997	U857	U792
		U1680	A1607	C1529	U1459	G1387	A1314	C1235	C1164	G997	G858	G793
		G1608	U1608	C1530	A1463	C1389	A1315	G1242	G1165	G931	U859	G794
		A1609	A1609	C1531	A1464	G1390	A1316	A1243	A1166	G1073	U860	A795
		C1683	A1610	A1532	G1465	G1390	G1317	G1243	A1167	G1074	G861	A796
		G1684	U1611	G1533	C1466	A1391	A1318	G1248	G1168	C1075	C864	A797
		U1612	U1612	G1533	U1467	U1392	C1319	G1248	C1169	U1076	A865	G798
		A1685	G1613	U1539	U1468	G1393	A1320	G1249	U1172	A1081	C864	A799
		A1686	G1613	U1540	U1469	G1393	A1320	G1249	U1172	A1081	C864	A799
		C1687	C1614	C1541	U1470	A1397	G1323	G1250	G1173	U1005	U868	U800
		U1770	C1615	G1541	G1470	A1397	G1323	G1250	G1173	U1005	U868	U800
		A1771	C1615	G1541	G1470	A1397	G1323	G1250	G1173	U1005	U868	U800
		A1775	C1616	G1542	C1471	G1398	G1324	C1252	U1177	A1084	C869	C803
		A1776	G1616	A1542	C1472	C1399	U1326	G1254	U1177	A1084	C869	C803
		A1777	U1618	A1544	C1473	C1399	U1326	G1254	U1177	A1084	C869	C803
		C1862	U1619	U1545	U1474	G1402	C1327	U1257	U1178	A1085	C870	C804
		U1696	C1620	G1545	U1475	G1402	C1327	U1257	U1178	A1085	C870	C804
		C1703	G1621	C1552	U1475	U1403	C1328	G1261	U1179	A1087	U873	A806
		A1780	G1622	C1552	U1478	G1407	C1328	G1261	U1179	A1087	U873	A806
		G1704	C1623	G1557	G1479	G1407	C1328	G1261	U1179	A1087	U873	A806
		C1708	A1624	C1558	G1479	G1407	C1328	G1261	U1179	A1087	U873	A806
		U1709	A1625	C1558	G1479	G1407	C1328	G1261	U1179	A1087	U873	A806
		G1788	C1626	A1561	G1480	U1410	G1330	A1259	U1182	A1088	C875	C808
		U1881	C1627	G1562	U1481	G1411	G1331	C1260	U1182	A1088	C875	C808
		G1882	C1628	C1562	U1482	C1411	G1332	G1261	U1182	A1088	C875	C808
		A1883	G1629	G1566	A1486	G1414	A1335	C1263	U1183	A1099	C877	G811
		C1884	C1632	A1567	A1487	C1415	A1336	G1266	U1183	A1099	C877	G811
		G1885	C1633	A1568	G1488	C1416	A1337	A1267	U1189	G1100	C878	G812
		U1793	A1632	U1568	C1489	C1417	G1338	C1268	U1190	A1122	C878	G812
		A1794	G1634	A1568	U1490	C1418	G1339	U1268	U1191	A1122	C878	G812
		G1795	G1635	G1571	C1491	G1419	C1340	G1269	U1192	A1122	C878	G812
		A1799	G1635	C1572	A1492	U1424	G1341	C1270	U1193	A1122	C878	G812
		U1800	C1573	A1574	A1493	G1425	C1343	G1272	U1194	A1122	C878	G812
		G1801	G1574	C1575	G1494	U1426	C1344	G1273	U1194	A1122	C878	G812
		A1802	G1575	G1576	G1495	G1427	C1345	A1275	U1197	A1122	C878	G812
		C1727	C1548	C1577	G1496	G1428	C1347	G1274	U1197	A1122	C878	G812
		U1807	C1548	G1577	C1497	G1429	C1347	G1274	U1197	A1122	C878	G812
		A1808	U1651	G1578	U1498	G1430	C1348	A1278	U1199	A1122	C878	G812
		G1809	C1579	G1579	A1499	U1431	A1349	G1279	U1199	A1122	C878	G812
		U1810	C1580	C1581	U1500	U1432	G1350	U1280	U1199	A1122	C878	G812
		A1899	G1582	C1582	C1501	G1432	G1351	A1281	U1199	A1122	C878	G812
		U1900	C1653	A1583	G1502	U1433	G1352	A1281	U1199	A1122	C878	G812
		G1813	C1654	C1583	C1503	A1434	G1352	A1281	U1199	A1122	C878	G812
		U1906	U1732	G1584	G1504	U1434	G1352	A1281	U1199	A1122	C878	G812
		C1907	U1733	U1656	U1504	U1434	G1352	A1281	U1199	A1122	C878	G812
		G1814	C1736	A1657	U1505	A1437	G1356	A1287	U1211	A1140	C878	G812
		U1903	C1737	A1658	U1505	A1437	G1356	A1287	U1211	A1140	C878	G812

- Molecule 2: tRNA acceptor stem mimic

Response	Percentage
Yes, the U.S. is a democracy	29%
No, the U.S. is not a democracy	40%
Don't know	1%
Refused to answer	29%



- Molecule 3: 50S ribosomal protein L16



- Molecule 4: GENERAL STRESS PROTEIN CTC



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	169.90Å 409.90Å 695.90Å 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	0.25	0/66467	0.50	7/103673 (0.0%)
2	5	0.25	0/563	0.50	0/873
All	All	0.25	0/67030	0.50	7/104546 (0.0%)

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.

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	0	2426	G	C2'-C3'-O3'	6.11	118.67	109.50
1	0	192	G	C2'-C3'-O3'	5.89	118.34	109.50
1	0	71	A	C2'-C3'-O3'	5.78	118.17	109.50
1	0	242	A	C2'-C3'-O3'	5.74	118.11	109.50
1	0	583	C	C2'-C3'-O3'	5.58	117.87	109.50
1	0	198	A	C2'-C3'-O3'	5.27	117.40	109.50
1	0	173	A	C2'-C3'-O3'	5.20	117.30	109.50

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	1715	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	1722	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 (1722) 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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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
1:0:940:G:H3'	1:0:941:U:C5'	2.09	0.80
1:0:2700:U:H3	1:0:2848:A:N6	1.79	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
1:0:70:A:O3'	1:0:71:A:H3'	1.83	0.79
1:0:1811:A:O2'	1:0:1812:U:H5''	1.82	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:918:A:H2'	1:0:919:U:H5''	1.64	0.78
1:0:2227:C:H2'	1:0:2228:U:H5'	1.66	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
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
1:0:65:C:C2'	1:0:66:U:H5'	2.19	0.72
1:0:471:A:H62	1:0:480:G:N2	1.86	0.72
1:0:795:A:H4'	1:0:796:A:N7	2.03	0.72
1:0:59:G:H1'	1:0:73:A:N1	2.04	0.72
1:0:616:U:H2'	1:0:617:U:H5''	1.70	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
1:0:69:G:H4'	1:0:70:A:O5'	1.90	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
1:0:2045: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
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
1:0:319: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
1:0:1809: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
1:0:515: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
1:0:800:U:H3'	1:0:804:C:N4	2.08	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
1:0:2808:U:H3'	1:0:2809:A:H5'	1.75	0.69
1:0:878:C:H42	1:0:921:A:H62	1.41	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
1:0:2058: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
1:0:67:G:N2	1:0:72:A:H2'	2.08	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
1:0:941: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
1:0:584:A:H4'	1:0:2479:U:H5'	1.77	0.67
1:0:1923:U:H4'	1:0:1948:C:H41	1.59	0.67
1:0:653:G:H2'	1:0:654:A:H4'	1.76	0.67
1:0:1953:A:H1'	1:0:1955:G:C1'	2.21	0.67
1:0:974:U:H1'	1:0:2229:G:H21	1.58	0.67
1:0:1086:C:C2'	1:0:1087:C:H5''	2.24	0.67
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
1:0:367:G:C2'	1:0:368:A:H5''	2.24	0.67
1:0:1749:G:O6	1:0:2674:C:H4'	1.95	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
1:0:45:C:H5''	1:0:192:G:N7	2.10	0.66
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
1:0:583: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
1:0:805:G:H5''	1:0:806:A:O5'	1.95	0.66
1:0:1352:G:H2'	1:0:1353:A:H8	1.60	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
1:0:652:C:H42	1:0:657:A:N6	1.94	0.66
1:0:2324:G:H4'	1:0:2326:C:H5''	1.78	0.66
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
1:0:2418:A:H4'	1:0:2420:C: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
1:0:175:C:H1'	1:0:2413:A:H61	1.62	0.65
1:0:1195:U:H2'	1:0:1196:G:C8	2.32	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:13:A:H1'	1:0:536:A:N6	2.12	0.65
1:0:225:G:H3'	1:0:226:C:C5'	2.26	0.65
1:0:1900:U:O2'	1:0:1946:U:H5'	1.97	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
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
1:0:317:U:H2'	1:0:318:G:H5''	1.78	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
1:0:571:U:H2'	1:0:581:A:H1'	1.79	0.64
1:0:2236:U:H2'	1:0:2237:C:H5''	1.77	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
1:0:73:A:H4'	1:0:74:G:C1'	2.27	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
1:0:2080: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
1:0:83:A:H4'	1:0:84:G:O4'	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
1:0:236: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
1:0:653: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
1:0:2636:A:H62	1:0:2643:G:N2	1.90	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:952:A:O2'	1:0:1204:G:H4'	1.98	0.63
1:0:69:G:H5''	1:0:70:A:OP1	1.98	0.63
1:0:128:C:C2'	1:0:129:A:H5''	2.27	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
1:0:167:A:H62	1:0:183:U:H3	1.46	0.62
1:0:1181:C:C3'	1:0:1182:U:H5''	2.29	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
1:0:542: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
1:0:1428: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
1:0:221: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
1:0:1323: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
1:0:121:G:O2'	1:0:1389:C:H4'	2.00	0.62
1:0:414:A:H2'	1:0:415:A:O4'	1.99	0.62
1:0:1085:G:H2'	1:0:1086:C:C6	2.35	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
1:0:55:A:H2'	1:0:56:C:C6	2.35	0.62
1:0:439:C:H2'	1:0:440:U:O4'	2.00	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
1:0:871:U:H1'	1:0:2248:A:H5''	1.82	0.62
1:0:1333:G:N2	1:0:1344:C:H41	1.96	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
1:0:940:G:C3'	1:0:941:U:H5''	2.14	0.61
1:0:2357:A:H2'	1:0:2358:C:O4'	2.00	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:742:G:H2'	1:0:742:G:N3	2.13	0.61
1:0:1455:C:O2'	1:0:1644:G:H5''	2.00	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
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
1:0:181:A:H4'	1:0:182:G:C5'	2.30	0.61
1:0:814:G:H3'	1:0:815:A:H5'	1.82	0.61
1:0:2035:G:H2'	1:0:2036:G:H8	1.65	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:H2'	1:0:1871:G:N3	2.16	0.61
1:0:1923:U:H4'	1:0:1948:C:N4	2.16	0.61
1:0:71:A:O2'	1:0:72:A:OP1	2.17	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
1:0:2426:G:O2'	1:0:2427:A:OP2	2.19	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
1:0:878:C:H42	1:0:921:A:N6	1.99	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
1:0:2009: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
1:0:192:G:O2'	1:0:193:A:OP2	2.18	0.60
1:0:1458:A:H3'	1:0:1459:U:C5'	2.32	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
1:0:669:G:H2'	1:0:670:U:C6	2.37	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
1:0:2759:U:H5''	1:0:2760:G:O5'	2.02	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
1:0:459:A:H1'	1:0:466:A:N7	2.16	0.59
1:0:2402:U:H5'	1:0:2404:A:C5	2.37	0.59
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
1:0:471:A:N6	1:0:480:G:H21	1.94	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
1:0:73:A:H4'	1:0:74:G:H1'	1.83	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
1:0:804:C:O2'	1:0:806:A:H4'	2.03	0.59
1:0:831:G:N2	1:0:1203:A:H62	1.96	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
1:0:1298: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
1:0:17:G:H21	1:0:564:U:H5''	1.66	0.59
1:0:513:A:H4'	1:0:515:A:H5'	1.83	0.59
1:0:1747:G:H1'	1:0:1749:G:N3	2.18	0.59
1:0:2081:U:C2'	1:0:2082:C:H5''	2.32	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
1:0:242: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
1:0:1474: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
1:0:1180: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
1:0:839:U:H5''	1:0:2408:G:OP2	2.03	0.58
1:0:1354:A:H62	1:0:1407:G:N2	2.01	0.58
1:0:1916:G:H2'	1:0:1917:C:C6	2.39	0.58
1:0:2677:U:H2'	1:0:2678:C:C6	2.39	0.58
1:0:67:G:N2	1:0:73:A:O5'	2.36	0.58
1:0:521:U:H4'	1:0:1248:G:O2'	2.03	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
1:0:665:A:H3'	1:0:666:U:C5'	2.34	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
1:0:319:G:H21	1:0:340:G:N2	2.02	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
1:0:490:A:O2'	1:0:491:A:H5'	2.03	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
1:0:217:U:H5'	1:0:633:G:O2'	2.04	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
1:0:839:U:H2'	1:0:841:G:O4'	2.04	0.57
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
1:0:59: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
1:0:605:G:H4'	1:0:949:G:O2'	2.04	0.57
1:0:1615:C:H2'	1:0:1616:C:C6	2.39	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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
1:0:583: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
1:0:2236:U:H3'	1:0:2237:C:H5''	1.85	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
1:0:632:A:H2'	1:0:633:G:H5'	1.85	0.57
1:0:1915:A:N6	1:0:1951:G:H21	1.99	0.57
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
1:0:1431: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
1:0:158: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
1:0:1220: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
1:0:197:G:H22	1:0:440:U:H2'	1.70	0.56
1:0:804:C:O2	1:0:807:A:H5'	2.05	0.56
1:0:843:G:O2'	1:0:844:G:OP1	2.15	0.56
1:0:1280:U:O2'	1:0:1281:A:H5'	2.06	0.56
1:0:2437:G:N2	1:0:2469:G:H2'	2.20	0.56
1:0:2841:U:O2	1:0:2843:A:H1'	2.05	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
1:0:2008: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
1:0:1813: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:197:G:N2	1:0:440:U:H2'	2.21	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
1:0:874:A:N6	1:0:928:G:H21	2.04	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
1:0:2437:G:H2'	1:0:2469:G:C2	2.41	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
1:0:758: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
1:0:1337:G:H1'	1:0:1632:A:N6	2.21	0.56
1:0:114:C:O2'	1:0:124:A:H1'	2.06	0.55
1:0:366:U:H2'	1:0:367:G:C8	2.41	0.55
1:0:2668:U:C4'	1:0:2669:C:H5'	2.30	0.55
1:0:69:G:H3'	1:0:111:G:O2'	2.06	0.55
1:0:173:A:H2'	1:0:173:A:N3	2.21	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
1:0:1181:C:H3'	1:0:1182:U:H5''	1.89	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
1:0:618:A:H2'	1:0:619:A:O4'	2.07	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
1:0:515:A:C2'	1:0:516:G:H5'	2.37	0.55
1:0:1258:G:H2'	1:0:1259:A:C8	2.42	0.55
1:0:1982:C:H1'	1:0:2666:U:O2'	2.06	0.55
1:0:2012:A:N7	1:0:2014:A:H5'	2.20	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
1:0:604:U:H2'	1:0:605:G:C8	2.41	0.55
1:0:775:U:O2	1:0:1445:A:H5''	2.06	0.55
1:0:791:G:H2'	1:0:792:U:C6	2.41	0.55
1:0:1669:A:H2'	1:0:1670:G:H4'	1.89	0.55
1:0:1947:G:H3'	1:0:1947:G:OP1	2.06	0.55
1:0:2061:C:H1'	1:0:2413:A:H1'	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
1:0:67:G:H8	1:0:67:G:O5'	1.90	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
1:0:241: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
1:0:1791:C:H1'	1:0:1793:A:O4'	2.06	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
1:0:951:G:C2'	1:0:952:A:H5''	2.36	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
1:0:80:A:H2'	1:0:81:C:O4'	2.06	0.55
1:0:782:U:H2'	1:0:783:G:C8	2.42	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
1:0:1278: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
1:0:394: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
1:0:1356:G:H5'	1:0:1614:C:OP2	2.07	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
1:0:1926:U:O2'	1:0:1928:G:H5'	2.08	0.54
1:0:48:A:H4'	1:0:50:G:O4'	2.08	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
1:0:847:C:N4	1:0:955:G:H21	1.95	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
1:0:468: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
1:0:1210: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2319:G:H2'	1:0:2320:G:C8	2.42	0.54
1:0:67:G:H22	1:0:72:A:H2'	1.73	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
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
1:0:798:G:O2'	1:0:1770:U:H4'	2.08	0.54
1:0:942:U:O2'	1:0:943:U:H5'	2.07	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
1:0:2466:G:H2'	1:0:2467:A:C8	2.42	0.54
1:0:1974:U:H2'	1:0:1975:G:H5''	1.88	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
1:0:1664: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:H3'	1:0:2560:G:N3	2.23	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
1:0:484:G:O2'	1:0:485:G:H5'	2.08	0.54
1:0:2516:U:H2'	1:0:2517:C:C6	2.43	0.54
1:0:216:U:H2'	1:0:217:U:O4'	2.08	0.53
1:0:404:A:H2'	1:0:405:C:C6	2.43	0.53
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
1:0:2418: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
1:0:226: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
1:0:1528: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
1:0:728: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
1:0:173: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:H2'	1:0:776:G:N3	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
1:0:1273:G:H2'	1:0:1274:C:C6	2.44	0.53
1:0:1289:A:H62	1:0:1662:G:H1	1.56	0.53
1:0:1301:U:H2'	1:0:1664:G:H21	1.73	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
1:0:1358: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
1:0:824:U:H1'	1:0:1264:C:H1'	1.90	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
1:0:1075:C:H2'	1:0:1076:U:O4'	2.09	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
1:0:73:A:H4'	1:0:74:G:O4'	2.09	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
1:0:33:C:N4	1:0:466:A:H61	2.07	0.53
1:0:317:U:C3'	1:0:318:G:H5''	2.39	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
1:0:1190: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
1:0:167: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
1:0:1004:A:H2'	1:0:1005:U:H5''	1.89	0.53
1:0:38:G:H2'	1:0:39:C:C6	2.44	0.53
1:0:45:C:H5''	1:0:192:G:C8	2.43	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
1:0:2498:U:H5''	1:0:2499:C:OP1	2.10	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
1:0:212:U:H2'	1:0:213: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
1:0:1200:G:OP1	1:0:1200:G:O4'	2.28	0.52
1:0:1566:G:H4'	1:0:1733:U:O4	2.09	0.52
1:0:2372:A:H2'	1:0:2373:C:C6	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
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
2:5:4:G:H2'	2:5:5:C:C6	2.45	0.52
1:0:158:A:H2'	1:0:159:A:C8	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
1:0:2244: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
1:0:394:U:H2'	1:0:395:G:C8	2.44	0.52
1:0:597:U:H3	1:0:683:A:H2'	1.74	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
1:0:1217: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
1:0:9:U:H3	1:0:2608:A:N6	2.02	0.52
1:0:597:U:H2'	1:0:598:U:C6	2.44	0.52
1:0:939:C:H2'	1:0:940:G:C8	2.45	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1964:A:H5''	1:0:1965:U:OP2	2.09	0.52
1:0:95:G:H2'	1:0:96:C:C6	2.44	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
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
1:0:341:A:H1'	1:0:1223:G:O6	2.09	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
1:0:2574:G:H1'	1:0:2576:G:O6	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
1:0:2083:G:H2'	1:0:2084:G:O4'	2.10	0.52
1:0:224:G:C5	1:0:226:C:H1'	2.44	0.52
1:0:230:C:H2'	1:0:231:G:O4'	2.10	0.52
1:0:333:A:H1'	1:0:351:A:C4	2.44	0.52
1:0:476:G:H2'	1:0:477:A:C8	2.45	0.52
1:0:689:A:H3'	1:0:689:A:N3	2.24	0.52
1:0:838:A:H2'	1:0:839:U:C6	2.45	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
1:0:2242: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
1:0:2504:G:H2'	1:0:2505:G:C8	2.45	0.52
1:0:168:A:H2'	1:0:169:C:C6	2.45	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:N3	1:0:491:A:H2'	2.25	0.52
1:0:512:A:H2'	1:0:513:A:H5'	1.92	0.52
1:0:1377:G:H4'	1:0:1800:A:H5'	1.92	0.52
1:0:2057:U:H1'	1:0:2577:A:H1'	1.91	0.52
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
1:0:1597: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
1:0:1352: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2703:C:H2'	1:0:2704:U:C6	2.45	0.51
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
1:0:1677: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
1:0:18:U:H2'	1:0:19:C:C6	2.44	0.51
1:0:170:U:H2'	1:0:171:G:H8	1.75	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
1:0:1018: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
1:0:2213:G:H2'	1:0:2214:G:C8	2.46	0.51
1:0:590:C:H2'	1:0:591:G:C8	2.45	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
1:0:451: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
1:0:1068: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
1:0:223:C:H4'	1:0:398:C:H1'	1.92	0.51
1:0:1576:G:H2'	1:0:1577:G:O4'	2.11	0.51
1:0:1819:U:H5''	1:0:1954:A:O3'	2.11	0.51
1:0:1895:A:H2'	1:0:1896:A:O4'	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
1:0:1912: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
1:0:583:C:O2'	1:0:584:A:OP2	2.28	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
1:0:114:C:H2'	1:0:115:G:O4'	2.11	0.51
1:0:879:A:O2'	1:0:880:C:H5'	2.10	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:964:A:H2'	1:0:965:G:C8	2.46	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
1:0:422: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
1:0:1007:A:H2'	1:0:1008:G:C8	2.46	0.50
1:0:1038:U:O2	1:0:2466:G:H4'	2.10	0.50
1:0:1052:C:H2'	1:0:1053:G:C8	2.45	0.50
1:0:1683: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
1:0:173:A:H61	1:0:844:G:H21	1.57	0.50
1:0:534:U:H4'	1:0:564:U:O2'	2.12	0.50
1:0:1626:A:OP2	1:0:1627:C:H5	1.95	0.50
1:0:579:G:H2'	1:0:2013:A:N6	2.26	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
1:0:1218: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
1:0:2725: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
1:0:35: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
1:0:1223:G:O2'	1:0:1224:A:OP2	2.21	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
1:0:225: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
1:0:1057: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
1:0:55: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
1:0:316:C:H2'	1:0:317:U:C6	2.47	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
1:0:215:G:H4'	1:0:617:U:O2'	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
1:0:792:U:H2'	1:0:793:G:O4'	2.11	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
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
1:0:210:A:N6	1:0:242:A:N7	2.59	0.50
1:0:742:G:H2'	1:0:1766:U:H1'	1.94	0.50
1:0:831:G:C2'	1:0:832:A:H5''	2.41	0.50
1:0:1055:A:N6	1:0:1122:A:H4'	2.27	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
1:0:1029: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
1:0:459: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
1:0:1055: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
1:0:431: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
1:0:1164: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
1:0:45:C:H2'	1:0:46:C:C6	2.46	0.49
1:0:1029:C:C3'	1:0:1030:U:H5''	2.43	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
1:0:165:G:H2'	1:0:166:G:O4'	2.12	0.49
1:0:181:A:H4'	1:0:182:G:O5'	2.11	0.49
1:0:780:U:H2'	1:0:781:G:C8	2.48	0.49
1:0:1435:G:H21	1:0:1511:A:N6	2.11	0.49
1:0:1785:A:H2'	1:0:1786:C:C6	2.46	0.49
1:0:2794:G:H3'	1:0:2796:A:N6	2.20	0.49
1:0:83:A:C6	1:0:98:U:H1'	2.46	0.49
1:0:213:C:H42	1:0:238:G:H22	1.59	0.49
1:0:216:U:H5''	1:0:601:A:N6	2.28	0.49
1:0:594:G:H21	1:0:1267:A:H62	1.61	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
1:0:1016:C:H2'	1:0:1017:C:C6	2.47	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
1:0:190: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
1:0:689: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
1:0:1099: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
1:0:2161:C:O2'	1:0:2162:C:P	2.71	0.49
1:0:211:U:O2'	1:0:212:U:H5'	2.13	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
1:0:1038: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
1:0:2404: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
1:0:109: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
1:0:820:U:H1'	1:0:2424:G:OP1	2.12	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
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
1:0:1949:A:O2'	1:0:2572:U:H5'	2.13	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
1:0:84:G:H2'	1:0:85:C:C6	2.48	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
1:0:864:C:H2'	1:0:865:A:C8	2.46	0.49
1:0:1665:C:N4	1:0:1993:G:H1	2.11	0.49
1:0:1679:U:H2'	1:0:1680:U:H5''	1.94	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
1:0:763: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
1:0:1046: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
1:0:116:A:N3	1:0:155:G:H1'	2.28	0.48
1:0:1040:A:H2'	1:0:1041:G:H5'	1.93	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:N3	1:0:1871:G:C2'	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
1:0:521: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:568:G:H5''	1:0:1019:U:H5'	1.95	0.48
1:0:942:U:C2'	1:0:943:U:H5'	2.43	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
1:0:42:G:H2'	1:0:43:A:O4'	2.13	0.48
1:0:108:G:H2'	1:0:109:A:C8	2.49	0.48
1:0:109:A:C2'	1:0:110:U:H5''	2.44	0.48
1:0:173:A:N6	1:0:844:G:H21	2.12	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
1:0:477:A:H2'	1:0:478:G:O4'	2.14	0.48
1:0:1686:A:H2'	1:0:1687:C:H5'	1.94	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
1:0:2559:U:C2'	1:0:2560:G:H5'	2.43	0.48
1:0:161:U:H2'	1:0:162:C:C6	2.48	0.48
1:0:172:A:H4'	1:0:228:A:H4'	1.95	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
1:0:1429:A:H1'	1:0:1603:A:C6	2.49	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
1:0:2503: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
1:0:632: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
1:0:1141: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
1:0:323: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
1:0:1033: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2278:A:H2'	1:0:2279:G:C8	2.48	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
1:0:2015:G:OP2	1:0:2434:G:H5'	2.14	0.48
1:0:2377:U:O2'	1:0:2378:G:P	2.72	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
1:0:70:A:P	1:0:111:G:H4'	2.54	0.48
1:0:240:U:H4'	1:0:443:A:H5'	1.96	0.48
1:0:565:A:H2'	1:0:566:U:C6	2.49	0.48
1:0:864:C:H2'	1:0:865:A:H8	1.79	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:H3'	1:0:1712:G:N3	2.29	0.48
1:0:1793:A:H2'	1:0:1794:A:H8	1.79	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
1:0:84:G:O2'	1:0:85:C: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
1:0:1036: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
1:0:108:G:H2'	1:0:109:A:H8	1.79	0.47
1:0:974:U:H2'	1:0:975:C:C6	2.49	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
1:0:1571: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
1:0:2434: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:670:U:H2'	1:0:671:A:C8	2.49	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
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
1:0:452:G:H2'	1:0:453:U:O4'	2.15	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
1:0:664:C:H2'	1:0:665:A:C8	2.50	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
1:0:1326:U:H1'	1:0:1626:A:N3	2.30	0.47
1:0:1496:G:H5'	1:0:1575:C:N4	2.29	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
1:0:643:A:H2'	1:0:644:A:C8	2.49	0.47
1:0:701:U:H1'	1:0:800:U:H5'	1.97	0.47
1:0:760:U:O2	1:0:1997:A:H1'	2.15	0.47
1:0:926:C:H2'	1:0:927:C:H5'	1.95	0.47
1:0:1039:A:H2'	1:0:1040:A:H8	1.79	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
1:0:1386:A:H2'	1:0:1387:G:O4'	2.15	0.47
1:0:2062:U:H4'	1:0:2412:A:H2	1.79	0.47
1:0:2329:C:N4	1:0:2361:G:H22	2.13	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
1:0:2558: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
1:0:192:G:C4'	1:0:193:A:H4'	2.45	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
1:0:1981:A:H2'	1:0:1982:C:C6	2.49	0.47
1:0:2014:A:H62	1:0:2477:C:H1'	1.79	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
1:0:2499:C:N4	1:0:2521:A:H2	2.10	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
1:0:873:U:O2	1:0:2246:A:H5''	2.15	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
1:0:1684:G:H2'	1:0:1974:U:O4	2.15	0.47
1:0:1685:A:N6	1:0:1691:G:H1'	2.30	0.47
1:0:1993:G:H2'	1:0:1994:U:C6	2.50	0.47
1:0:198:A:O2'	1:0:199:A:P	2.73	0.47
1:0:241:C:C2'	1:0:242:A:H5''	2.44	0.47
1:0:819:C:H2'	1:0:820:U:C6	2.50	0.47
1:0:1578:U:H2'	1:0:1579:G:C8	2.51	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
1:0:2437:G:H4'	1:0:2438:A:N7	2.30	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
1:0:152:G:O2'	1:0:153:A:H5'	2.15	0.46
1:0:546:A:H2'	1:0:547:U:C6	2.50	0.46
1:0:1418:C:H2'	1:0:1419:G:H8	1.80	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
1:0:697: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
1:0:1301: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
1:0:1937:G:N3	1:0:2530:C:H5'	2.29	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2504:G:H2'	1:0:2505:G:H8	1.79	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
1:0:1452:U:H5'	1:0:1532:A:O2'	2.14	0.46
1:0:1471:G:H1	1:0:2682:C:H42	1.63	0.46
1:0:1495:G:H2'	1:0:1496:G:C8	2.51	0.46
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
1:0:85:C:O2'	1:0:86:U:H5'	2.16	0.46
1:0:689:A:C8	1:0:2422:C:H1'	2.50	0.46
1:0:932:G:H2'	1:0:933:G:C8	2.50	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
1:0:54:G:H2'	1:0:55:A:C8	2.50	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
1:0:738:G:H2'	1:0:739:G:O4'	2.14	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
1:0:207:U:H2'	1:0:208:C:C6	2.51	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
1:0:1279: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
1:0:2555:G:H3'	1:0:2555:G:N3	2.31	0.46
1:0:324:C:H2'	1:0:325:U:O4'	2.15	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
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
1:0:1429:A:N6	1:0:1602:G:H5'	2.31	0.46
1:0:1579:G:H2'	1:0:1580:C:C6	2.51	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
1:0:35:G:H1'	1:0:466:A:H1'	1.98	0.46
1:0:130:C:H2'	1:0:131:C:C6	2.51	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
1:0:1068:A:H2'	1:0:1069:G:H8	1.81	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
1:0:9:U:H2'	1:0:10:A:C8	2.51	0.46
1:0:1120:C:H2'	1:0:2731:G:N2	2.31	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
1:0:2807:U:C5	1:0:2859:U:H4'	2.51	0.46
1:0:2824:C:H1'	1:0:2843:A:C2	2.50	0.46
1:0:64:C:H2'	1:0:65:C:C6	2.50	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
1:0:694: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
1:0:1225: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
1:0:19:C:H2'	1:0:20:C:C6	2.50	0.45
1:0:246:C:N3	1:0:247:A:N6	2.64	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
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
1:0:2035: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2196:U:H2'	1:0:2197:U:C6	2.51	0.45
1:0:2858:A:H3'	1:0:2859:U:C5'	2.44	0.45
1:0:8:A:H2'	1:0:9:U:C6	2.51	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
1:0:1677: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
1:0:13:A:H1'	1:0:536:A:H62	1.81	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
1:0:331: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
1:0:1147: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
1:0:1429:A:O2'	1:0:1430:G:H4'	2.16	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
1:0:40:U:H2'	1:0:41:G:C8	2.51	0.45
1:0:306:G:H2'	1:0:307:C:C6	2.52	0.45
1:0:529:U:H2'	1:0:530:G:C8	2.51	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
1:0:81:C:H4'	1:0:307:C:H5'	1.98	0.45
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:777:A:H62	1:0:1766:U:H3	1.60	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
1:0:1886: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
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
1:0:1278: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
1:0:916:U:H2'	1:0:917:U:C6	2.51	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
1:0:697: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
1:0:1452: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
1:0:32:C:H2'	1:0:33:C:C6	2.52	0.45
1:0:211:U:C2'	1:0:212:U:H5'	2.46	0.45
1:0:245:C:H5'	1:0:372:U:O2'	2.17	0.45
1:0:340:G:H1'	1:0:488:A:C4	2.52	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
1:0:1307:U:H2'	1:0:1308:C:O4'	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
1:0:2159: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
1:0:2639:A:H2'	1:0:2640:G:O4'	2.16	0.45
1:0:91:A:H2'	1:0:92:U:C6	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
1:0:1346:C:H2'	1:0:1347:C:C6	2.52	0.45
1:0:1912:G:N3	1:0:1912:G:C2'	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
1:0:210: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
1:0:317:U:H3'	1:0:318:G:H5''	1.98	0.44
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
1:0:2524: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
1:0:237: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
1:0:1130: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
1:0:604: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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:192:G:O2'	1:0:193:A:C5'	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
1:0:1614: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
1:0:2227: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
1:0:117:A:H4'	1:0:118:U:C6	2.53	0.44
1:0:514:G:N3	1:0:514:G:C2'	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
1:0:1002:C:H2'	1:0:1003:C:C6	2.53	0.44
1:0:1140:A:N6	1:0:2469:G:H5''	2.33	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
1:0:2492:G:H2'	1:0:2493:U:C6	2.53	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
1:0:953: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
1:0:2564:U:HO2'	1:0:2565:C:P	2.40	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
1:0:415: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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:838:A:H4'	1:0:2407:G:C5	2.53	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
1:0:88:G:H3'	1:0:89:A:C5'	2.41	0.44
1:0:172:A:N3	1:0:227:G:N2	2.64	0.44
1:0:181:A:C4'	1:0:182:G:H4'	2.46	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
1:0:1031: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
1:0:1949:A:H1'	1:0:2572:U:H4'	2.00	0.44
1:0:2161:C:O2'	1:0:2162:C:OP1	2.34	0.44
1:0:2497:A:O5'	1:0:2497:A:N3	2.51	0.44
1:0:2574:G:N3	1:0:2574:G:C2'	2.81	0.44
1:0:63:A:N6	1:0:89:A:N1	2.66	0.43
1:0:173:A:N3	1:0:173:A:C2'	2.81	0.43
1:0:871:U:H1'	1:0:2248:A:C5'	2.47	0.43
1:0:987:G:H2'	1:0:988:G:H8	1.82	0.43
1:0:1142:G:OP1	1:0:2494:C:H4'	2.18	0.43
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
1:0:2240:C:H2'	1:0:2241:U:H5'	1.99	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
1:0:55:A:N6	1:0:69:G:O6	2.51	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
1:0:114:C:H4'	1:0:124:A:O2'	2.17	0.43
1:0:187:U:H2'	1:0:188:G:H8	1.82	0.43
1:0:859:U:H4'	1:0:860:U:C5	2.54	0.43
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
1:0:1155:G:H2'	1:0:1156:U:O4'	2.18	0.43
1:0:1790:G:O3'	1:0:1791:C:H6	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
1:0:168:A:H2'	1:0:169:C:H6	1.82	0.43
1:0:192:G:H4'	1:0:193:A:H4'	2.00	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
1:0:1880:G:H2'	1:0:1881:U:C6	2.54	0.43
1:0:2436:U:H2'	1:0:2437:G:O4'	2.19	0.43
1:0:242:A:N6	1:0:441:A:N7	2.66	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
1:0:878:C:HO2'	1:0:879:A:P	2.41	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
1:0:2561: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
1:0:54:G:H2'	1:0:55:A:H8	1.83	0.43
1:0:192:G:O2'	1:0:193:A:P	2.76	0.43
1:0:509:U:H2'	1:0:510:G:O4'	2.18	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
1:0:1223: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
1:0:2033: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
1:0:456: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
1:0:1194: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
1:0:2034:A:N6	1:0:2593:A:N7	2.66	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
1:0:2510: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2795:A:N3	1:0:2795:A:H2'	2.32	0.43
1:0:181:A:C5'	1:0:182:G:OP1	2.62	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
1:0:2083:G:H22	1:0:2172:U:H3	1.66	0.43
1:0:201:G:H2'	1:0:202:A:H8	1.84	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
1:0:1055: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
1:0:2056: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
1:0:2602:G:OP1	1:0:2801:A:H1'	2.19	0.43
1:0:2784:A:C8	1:0:2785:A:C8	3.06	0.43
1:0:128:C:C3'	1:0:129:A:H5''	2.49	0.43
1:0:211:U:H2'	1:0:212:U:O4'	2.19	0.43
1:0:319:G:H1'	1:0:511:A:H5'	2.00	0.43
1:0:594:G:N2	1:0:1267:A:H62	2.17	0.43
1:0:1046:U:H2'	1:0:1047:G:H8	1.84	0.43
1:0:1975:G:H1'	1:0:1977:C:N4	2.33	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
2:5:7:A:H2'	2:5:8:A:C8	2.54	0.43
1:0:814:G:H3'	1:0:815:A:C5'	2.49	0.42
1:0:1016:C:H2'	1:0:1017:C:H6	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
1:0:37:C:H2'	1:0:38:G:C8	2.54	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
1:0:322:A:H2	1:0:342:G:OP2	2.02	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
1:0:1489: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
1:0:2785:A:O2'	1:0:2786:G:H5'	2.19	0.42
1:0:65:C:H2'	1:0:66:U:C5'	2.44	0.42
1:0:189:A:H2'	1:0:190:A:C8	2.54	0.42
1:0:474:G:N2	1:0:476:G:H3'	2.35	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
1:0:1141: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
1:0:14:A:H2	1:0:2604:G:O2'	2.02	0.42
1:0:158:A:H2'	1:0:159:A:H8	1.83	0.42
1:0:523:A:H2	1:0:591:G:H4'	1.84	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
1:0:1532:A:H2'	1:0:1533:G:C8	2.53	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
1:0:404: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
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
2:5:26:A:H2'	2:5:27:G:H5'	2.01	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
1:0:824:U:H1'	1:0:1264:C:C1'	2.49	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1930:C:H2'	1:0:1931:G:C8	2.55	0.42
1:0:48:A:O5'	1:0:50:G:H4'	2.20	0.42
1:0:119:G:H1'	1:0:129:A:N1	2.35	0.42
1:0:430:C:H2'	1:0:431:G:C8	2.54	0.42
1:0:586:G:OP1	1:0:2481:G:H2'	2.19	0.42
1:0:629:C:C2'	1:0:630:G:H5'	2.49	0.42
1:0:860:U:H2'	1:0:860:U:O2	2.19	0.42
1:0:879:A:C2'	1:0:880:C:H5'	2.49	0.42
1:0:956:A:H2'	1:0:956:A:N3	2.34	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
1:0:2552:C:OP1	1:0:2553:G:H5''	2.18	0.42
2:5:27:G:O2'	2:5:28:C:H5'	2.19	0.42
1:0:3:U:H2'	1:0:4:C:C6	2.54	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
1:0:634: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
1:0:827: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
1:0:1029: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:N3	1:0:2217:G:C2'	2.83	0.42
1:0:2220:A:H2'	1:0:2221:G:H8	1.85	0.42
1:0:198:A:O2'	1:0:199:A:OP2	2.30	0.42
1:0:488:A:H2'	1:0:489:A:C8	2.54	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
1:0:2133: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2470:U:H1'	1:0:2548:G:O3'	2.20	0.42
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
1:0:82:G:O2'	1:0:83:A:H5'	2.20	0.42
1:0:192:G:O2'	1:0:193:A:H5''	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
1:0:833:A:H2'	1:0:834:A:C8	2.54	0.42
1:0:871:U:O2	1:0:2247:A:H2'	2.19	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
1:0:2027:C:H2'	1:0:2028:C:C6	2.55	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
1:0:239: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
1:0:1028: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
1:0:73:A:N3	1:0:73:A:C3'	2.82	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
1:0:1057: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
1:0:242:A:N1	1:0:440:U:O2'	2.50	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
1:0:762:A:H5'	1:0:1284:G:H1'	2.01	0.41
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
1:0:438:G:H2'	1:0:439:C:C6	2.55	0.41
1:0:820:U:H5'	1:0:2424:G:H4'	2.02	0.41
1:0:853:C:H2'	1:0:854:G:C8	2.56	0.41
1:0:1084:A:H4'	1:0:2454:C:OP1	2.20	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
1:0:2463: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
1:0:28: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
1:0:1281:A:N6	1:0:1995:G:O2'	2.53	0.41
1:0:1656:U:O2'	1:0:2678:C:H4'	2.21	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
1:0:314: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
1:0:1162: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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
1:0:873:U:C2	1:0:2246:A:H5''	2.55	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
1:0:2321: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
1:0:58:C:N4	1:0:73:A:C6	2.89	0.41
1:0:63:A:O2'	1:0:64:C:H5'	2.20	0.41
1:0:139:A:H2'	1:0:140:G:C8	2.55	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:O2'	1:0:1194:U:OP1	2.37	0.41
1:0:1286:U:H2'	1:0:2692:A:H2	1.85	0.41
1:0:1415: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
1:0:24:G:H2'	1:0:25:U:C6	2.55	0.41
1:0:40:U:H2'	1:0:41:G:H8	1.86	0.41
1:0:198:A:HO2'	1:0:199:A:P	2.44	0.41
1:0:229:G:H2'	1:0:230:C:C6	2.56	0.41
1:0:317:U:H3'	1:0:318:G:C5'	2.51	0.41
1:0:584:A:H4'	1:0:2479:U:C5'	2.48	0.41
1:0:639:G:O2'	1:0:640:C:H5'	2.21	0.41
1:0:689:A:H8	1:0:2422:C:H1'	1.85	0.41
1:0:747:A:H2'	1:0:748:A:H8	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
1:0:1026:U:H2'	1:0:1027:C:C6	2.56	0.41
1:0:1313:U:O2'	1:0:1314:A:OP2	2.39	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
1:0:1686: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
1:0:2245:A:C2'	1:0:2246:A:OP2	2.68	0.41
1:0:2467:A:H2'	1:0:2468:G:C8	2.56	0.41
1:0:2498:U:H1'	1:0:2500:C:H41	1.86	0.41
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
1:0:6:A:H2'	1:0:7:G:C8	2.56	0.41
1:0:69:G:O3'	1:0:111:G:H4'	2.20	0.41
1:0:185:C:H2'	1:0:186:C:C6	2.56	0.41
1:0:713:G:H2'	1:0:714: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
1:0:1187:A:HO2'	1:0:1188:A:P	2.43	0.41
1:0:1443:G:N3	1:0:1584:G:N1	2.69	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
1:0:1696:C:H42	1:0:1755:G:H5''	1.86	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
1:0:105:G:H21	1:0:357:A:N6	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
1:0:405: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1253:C:H2'	1:0:1254:G:O4'	2.21	0.40
1:0:1336:G:N2	1:0:1632:A:N6	2.69	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
1:0:1747: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
1:0:2329:C:H41	1:0:2361:G:N2	2.18	0.40
1:0:579:G:H2'	1:0:2013:A:C5	2.56	0.40
1:0:838:A:H4'	1:0:2407:G:C6	2.57	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
1:0:2383:C:C2'	1:0:2384:G:H5'	2.51	0.40
1:0:73:A:H2'	1:0:74:G:OP2	2.22	0.40
1:0:550:C:H2'	1:0:551:A:H8	1.86	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
1:0:1204: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
1:0:67:G:C6	1:0:72:A:C2	3.10	0.40
1:0:143:A:H2'	1:0:144:U:O4'	2.22	0.40
1:0:218:A:H1'	1:0:220:U:C4	2.57	0.40
1:0:953:G:H2'	1:0:954:U:O4'	2.21	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
1:0:2244:C:H1'	1:0:2255:G:H1	1.86	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2686:C:H2'	1:0:2687:G:H8	1.87	0.40
1:0:2824:C:C2'	1:0:2825:A:OP2	2.70	0.40
1:0:105:G:O2'	1:0:106:G:H5'	2.21	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
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
1:0:2378:G:O2'	1:0:2379:G:H5'	2.22	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%)	44 (1%)
2	5	22/35 (62%)	2 (9%)	0
All	All	2779/2915 (95%)	415 (14%)	44 (1%)

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
1	0	226	C

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Mol	Chain	Res	Type
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
1	0	556	A

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Mol	Chain	Res	Type
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
1	0	841	G

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Mol	Chain	Res	Type
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
1	0	1122	A

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Mol	Chain	Res	Type
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
1	0	1441	A

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Mol	Chain	Res	Type
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
1	0	1680	U

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Mol	Chain	Res	Type
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
1	0	2006	G

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Mol	Chain	Res	Type
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
1	0	2315	A

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Mol	Chain	Res	Type
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
1	0	2625	U

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Mol	Chain	Res	Type
1	0	2633	A
1	0	2634	G
1	0	2661	G
1	0	2669	C
1	0	2670	C
1	0	2681	A
1	0	2691	C
1	0	2692	A
1	0	2712	G
1	0	2728	A
1	0	2730	A
1	0	2732	C
1	0	2737	A
1	0	2745	A
1	0	2756	A
1	0	2760	G
1	0	2761	A
1	0	2770	A
1	0	2771	C
1	0	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

All (44) RNA pucker outliers are listed below:

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

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Mol	Chain	Res	Type
1	0	73	A
1	0	173	A
1	0	181	A
1	0	192	G
1	0	198	A
1	0	242	A
1	0	342	G
1	0	583	C
1	0	805	G
1	0	843	G
1	0	878	C
1	0	1074	G
1	0	1141	U
1	0	1187	A
1	0	1193	G
1	0	1194	U
1	0	1223	G
1	0	1263	G
1	0	1278	A
1	0	1279	G
1	0	1313	U
1	0	1354	A
1	0	1495	G
1	0	1518	C
1	0	1634	A
1	0	1664	G
1	0	1807	A
1	0	1820	G
1	0	1938	U
1	0	2015	G
1	0	2093	G
1	0	2161	C
1	0	2204	A
1	0	2245	A
1	0	2261	G
1	0	2377	U
1	0	2404	A
1	0	2426	G
1	0	2564	U
1	0	2668	U
1	0	2759	U
1	0	2824	C

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

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	PPU	5	35	2	37,40,41	2.63	7 (18%)	47,57,60	0.99	4 (8%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	PPU	5	35	2	-	1/25/43/44	0/4/4/4

All (7) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	5	35	PPU	C-N3'	12.76	1.61	1.34
2	5	35	PPU	OC-CM	-5.27	1.28	1.42
2	5	35	PPU	CE1-CZ	3.90	1.46	1.38
2	5	35	PPU	CE2-CZ	2.86	1.44	1.38
2	5	35	PPU	CD2-CG	2.75	1.44	1.38
2	5	35	PPU	C6-N1	2.37	1.38	1.34
2	5	35	PPU	C3'-N3'	-2.12	1.42	1.45

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	5	35	PPU	C2-N1-C6	3.30	119.89	111.83
2	5	35	PPU	CM-OC-CZ	2.91	123.75	117.50
2	5	35	PPU	C9-N6-C6	2.35	126.49	120.52
2	5	35	PPU	C-CA-N	2.27	117.94	109.37

There are no chirality outliers.

All (1) torsion outliers are listed below:

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

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates [i](#)

There are no oligosaccharides 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.