



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 6, 2026 – 12:48 PM UTC

PDB ID : 1NJN / pdb_00001njn
Title : The crystal structure of the 50S Large ribosomal subunit from *Deinococcus radiodurans* complexed with the antibiotic sparsomycin
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 : 3.70 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	NOT EXECUTED
EDS	:	NOT EXECUTED
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
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

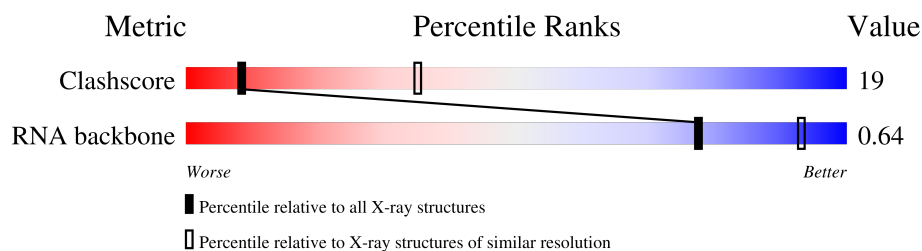
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.70 Å.

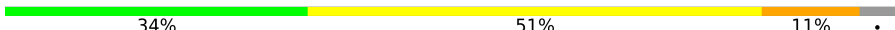
Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
Clashscore	190562	1171 (3.80-3.60)
RNA backbone	3983	1007 (4.30-3.08)

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% .

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
2	SPS	0	2881	X	X	-	-

2 Entry composition [i](#)

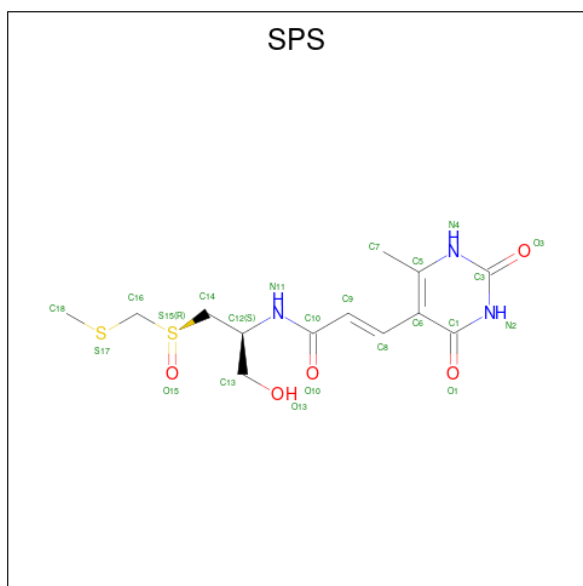
There are 2 unique types of molecules in this entry. The entry contains 59381 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a RNA chain called 23S ribosomal RNA.

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

- Molecule 2 is SPARSOMYCIN (CCD ID: SPS) (formula: $C_{13}H_{19}N_3O_5S_2$).



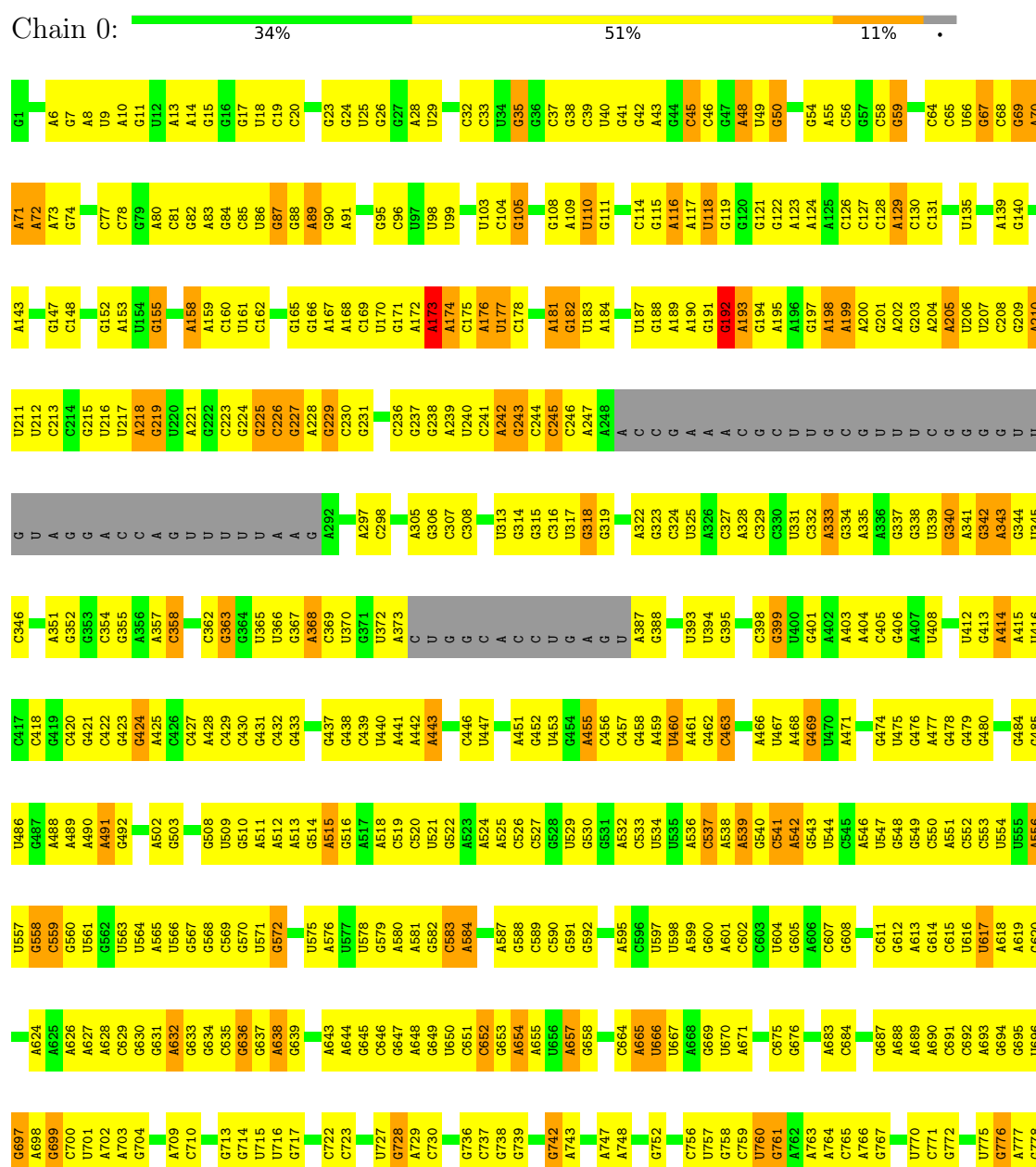
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
			Total	C	N	O	S		
2	0	1	22	13	3	4	2	0	0

3 Residue-property plots

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

Note EDS was not executed.

• Molecule 1: 23S ribosomal RNA



U1810	G1730	C1580	G1503	A1433	A1353	U1286	C1214	U1144	U1046	A979	C	A842	U779
A1811	C1731	C1581	G1504	U1494	A1354	A1287	A1215	C1145	G1047	G980	A911	G843	U780
U1812	U1732	A1582	U1505	G1436	A1355	A1288	G1216	G1146	C1052	C981	U916	U844	G781
A1813	U1733	A1583	G1506	A1437	A1356	A1289	U1217	G1147	C1053	A984	U917	U845	G782
C1814	A1657	A1584	G1508	U1437	U1357	A1290	C1218	G1148	C1054	G985	A918	C847	G783
G1818	C1736	A1585	A1509	A1441	C1358	A1291	C1219	G1149	C1055	A986	U919	U848	G784
U1819	G1737	A1586	A1510	C1442	U1359	A1292	G1220	C1150	A1055	A987	U920	U849	G785
C1820	C1737	A1587	A1511	C1443	U1365	A1293	G1221	U1151	U1056	G988	A921	U850	U786
A1821	G1742	U1591	A1512	C1444	U1366	G1298	G1222	A1154	U1057	A991	A922	U852	A787
C1822	C1743	U1592	U1513	C1445	A1367	G1299	A1223	G1155	G1058	A992	U925	U853	G789
G1825	C1744	A1593	C1514	U1446	A1368	U1302	A1224	U1156	A1065	A994	U926	G854	A790
U1826	C1745	U1594	C1515	U1447	G1369	U1303	G1225	U1157	G1067	A995	C927	G855	G791
C1829	C1747	A1595	A1517	U1447	U1370	U1307	A1226	A1158	C1067	C996	G928	A856	U792
U1830	U1748	A1596	C1518	C1451	G1371	U1308	G1227	C1163	A1068	C997	G929	U857	G793
C1831	C1749	A1597	G1519	U1452	A1372	C1309	U1232	C1164	G1069	C998	A930	U858	A794
G1835	A1750	C1598	G1520	U1453	G1373	G1310	A1233	A1166	G1070	A999	U931	U859	A795
C1836	G1754	U1600	C1524	C1455	G1377	C1311	C1234	A1167	G1073	G1000	G932	U860	A796
U1837	G1755	U1601	G1527	C1456	U1380	G1312	C1235	G1168	C1074	A1001	G933	G861	A797
C1838	C1760	A1602	C1528	A1458	C1381	U1313	A1242	C1169	C1075	A1002	G934	C864	G798
G1839	G1761	A1603	C1529	U1459	G1382	A1314	G1243	U1172	U1076	A1003	G935	A865	U800
A1840	C1762	A1604	U1530	A1463	A1386	A1315	U1244	G1173	A1081	U1005	G936	U868	C804
U1841	A1764	A1605	C1531	A1464	G1387	G1316	G1245	A1175	A1084	U1006	C939	C869	G805
C1844	U1765	U1606	A1532	G1465	C1388	G1317	G1246	U1176	G1085	A1007	G940	C870	A806
G1850	C1766	U1607	G1533	C1466	C1389	A1318	G1247	C1177	G1086	U1008	U941	C871	A807
A1851	G1767	A1608	U1534	U1467	G1390	C1319	G1248	C1178	C1087	G1009	U942	G872	C808
C1855	C1770	A1609	C1535	A1468	A1391	A1320	A1250	C1179	C1088	G1014	A944	U873	C809
U1856	A1771	U1610	G1541	U1469	U1392	G1323	G1251	A1180	A1088	U1015	A945	G874	U810
G1857	C1772	A1611	C1542	G1470	G1393	G1324	G1252	A1181	C1089	C1016	G945	G875	G811
C1858	C1773	U1612	G1543	G1471	A1397	U1325	C1253	U1182	C1090	U1017	G949	A876	G812
A1859	U1774	A1613	A1544	C1472	C1398	G1326	G1254	C1183	G1091	C1018	G950	C877	A813
U1860	A1775	C1615	G1545	U1473	C1399	U1327	U1257	G1184	U1092	U1019	A951	C878	G814
G1861	C1692	U1616	A1546	U1474	U1400	C1328	G1258	C1185	U1093	A1020	A952	A879	A815
C1862	U1776	U1617	U1547	U1475	G1402	G1329	C1259	G1186	A1099	A1021	G953	C880	U816
G1865	C1779	A1618	U1548	U1478	U1403	G1330	A1260	A1187	G1100	A1022	U954	G887	A817
U1866	A1780	U1619	C1552	G1479	G1407	G1331	G1261	A1188	A1114	U1023	G955	G888	C819
C1871	G1785	C1621	C1553	U1481	U1410	G1332	G1262	C1189	G1129	A1025	A956	C889	C819
G1880	U1787	A1622	G1557	U1482	C1411	A1334	G1263	C1190	C1120	G957	U960	U820	U820
U1881	C1788	A1623	C1558	A1486	G1414	G1335	G1264	C1191	G1121	G958	G961	A821	G822
C1882	U1789	A1624	A1561	C1487	U1415	G1336	G1265	A1192	A1122	C1027	U962	U823	U823
U1883	G1790	A1625	G1562	G1488	C1416	G1337	G1266	C1193	G1122	C1028	U963	U824	C825
A1884	C1791	A1626	G1563	C1489	A1417	G1338	G1267	U1194	C1127	U1030	A964	C826	C826
C1885	G1792	A1627	A1566	U1490	C1418	C1339	C1271	G1195	G1128	C1031	G965	U827	U827
U1886	A1793	A1628	A1567	C1491	C1419	G1340	C1272	C1196	A1129	A1032	A966	C828	C828
C1887	A1794	A1629	A1568	A1492	G1419	U1342	G1273	C1197	U1130	G1033	G967	C829	C829
G1888	U1799	A1630	G1571	A1493	U1424	C1343	C1274	U1199	G1131	G1034	C968	U830	C830
C1889	A1800	A1631	C1572	G1494	U1425	C1344	G1275	G1200	G1132	G1035	U969	A832	G831
G1890	U1723	A1632	A1573	G1495	U1426	G1345	A1278	G1201	G1133	U1036	A970	A833	A834
A1895	C1724	A1633	A1574	C1496	G1427	C1346	C1279	U1202	A1137	U1037	A971	A834	A834
U1896	U1725	A1634	G1575	U1497	G1428	C1347	U1280	G1204	A1138	A1039	C972	U837	U837
C1897	A1802	A1644	C1576	G1498	A1429	C1348	U1281	G1205	A1139	A1040	U973	A838	A838
A1898	A1807	C1648	G1577	A1499	U1430	A1349	A1282	U1210	U1140	G1041	U974	U839	U839
U1899	C1728	U1500	U1578	U1500	G1431	G1350	C1283	G1211	U1141	U1044	C975	U840	U840
C1900	C1729	A1501	G1579	G1502	G1432	G1352	A1285	G1211	A1143	G1045	U978	G841	G841



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	169.10 Å 409.90 Å 696.30 Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	15.00 – 3.70	Depositor
% Data completeness (in resolution range)	(Not available) (15.00-3.70)	Depositor
R_{merge}	(Not available)	Depositor
R_{sym}	0.13	Depositor
Refinement program	CNS	Depositor
R, R_{free}	0.284 , 0.308	Depositor
Estimated twinning fraction	No twinning to report.	Xtriage
Total number of atoms	59381	wwPDB-VP
Average B, all atoms (Å ²)	82.0	wwPDB-VP

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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

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	3/103673 (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 (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed($^{\circ}$)	Ideal($^{\circ}$)
1	0	2426	G	C2'-C3'-O3'	6.16	118.75	109.50
1	0	192	G	C2'-C3'-O3'	5.86	118.29	109.50
1	0	173	A	C2'-C3'-O3'	5.22	117.33	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 [i](#)

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

the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	0	59359	0	29917	1704	0
2	0	22	0	19	0	0
All	All	59381	0	29936	1704	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 (1704) 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''	1.24	1.14
1:0:1073:G:H2'	1:0:1074:G:H4'	1.39	1.02
1:0:2769:C:H2'	1:0:2867:G:H22	1.23	1.01
1:0:1141:U:H3	1:0:2008:C:H5''	1.22	1.01
1:0:2548:G:H2'	1:0:2549:G:H5''	1.44	0.99
1:0:2668:U:H4'	1:0:2669:C:H5'	1.46	0.97
1:0:1252:C:H2'	1:0:1253:C:H5''	1.47	0.97
1:0:2636:A:H62	1:0:2643:G:H21	1.11	0.96
1:0:1182:U:H2'	1:0:1183:C:H5''	1.46	0.96
1:0:1496:G:H1	1:0:1527:G:H1	1.10	0.95
1:0:688:A:H62	1:0:816:U:H3	1.11	0.95
1:0:1572:C:H2'	1:0:1573:G:H5''	1.47	0.95
1:0:847:C:H41	1:0:955:G:H21	1.14	0.94
1:0:1223:G:H21	1:0:1225:G:H21	0.98	0.93
1:0:1747:G:H4'	1:0:1749:G:H1'	1.50	0.93
1:0:789:G:H21	1:0:806:A:H62	1.11	0.93
1:0:1953:A:H1'	1:0:1955:G:H1'	1.51	0.93
1:0:1086:C:H2'	1:0:1087:C:H5''	1.49	0.92
1:0:221:A:H62	1:0:231:G:H21	1.17	0.92
1:0:1312:G:H5''	1:0:1313:U:H5'	1.52	0.92
1:0:166:G:H21	1:0:184:A:H62	1.10	0.92
1:0:1915:A:H62	1:0:1951:G:H21	1.19	0.90
1:0:471:A:H62	1:0:480:G:H21	1.17	0.90
1:0:65:C:H2'	1:0:66:U:H5'	1.54	0.89
1:0:929:A:H3'	1:0:930:A:H5''	1.53	0.89
1:0:104:C:H2'	1:0:105:G:H5''	1.55	0.88
1:0:403:A:H4'	1:0:425:A:H5'	1.56	0.87
1:0:1656:U:H2'	1:0:1657:A:H5''	1.56	0.87
1:0:225:G:H3'	1:0:226:C:H5'	1.54	0.87
1:0:367:G:H2'	1:0:368:A:H5''	1.56	0.87

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1436:G:H1'	1:0:1508:G:H21	1.40	0.86
1:0:128:C:H2'	1:0:129:A:H5''	1.58	0.86
1:0:831:G:H21	1:0:1203:A:H62	1.20	0.86
1:0:58:C:H3'	1:0:59:G:H5''	1.58	0.85
1:0:2633:A:H4'	1:0:2634:G:H4'	1.58	0.85
1:0:2579:A:H2'	1:0:2580:C:H5''	1.58	0.85
1:0:2047:C:H42	1:0:2425:G:H1	1.23	0.85
1:0:2607:C:H3'	1:0:2608:A:H5'	1.57	0.84
1:0:1964:A:H3'	1:0:1965:U:H5'	1.60	0.83
1:0:88:G:H3'	1:0:89:A:H5''	1.58	0.83
1:0:1034:U:H1'	1:0:1133:G:H5''	1.60	0.83
1:0:2491:C:H2'	1:0:2492:G:H5''	1.61	0.83
1:0:176:A:H1'	1:0:2221:G:H21	1.44	0.82
1:0:542:A:H2'	1:0:543:G:H5'	1.62	0.82
1:0:2522:G:H21	1:0:2625:U:H5''	1.44	0.82
1:0:460:U:H3	1:0:592:G:H1'	1.44	0.82
1:0:1001:A:H62	1:0:1200:G:H1'	1.45	0.82
1:0:2806:G:H1'	1:0:2858:A:H2'	1.62	0.81
1:0:1432:G:H21	1:0:1596:A:H62	1.27	0.81
1:0:2058:U:H5'	1:0:2576:G:H1'	1.62	0.81
1:0:109:A:H3'	1:0:110:U:H5''	1.61	0.81
1:0:2081:U:H2'	1:0:2082:C:H5''	1.62	0.81
1:0:9:U:H3	1:0:2608:A:H62	1.29	0.80
1:0:2794:G:H3'	1:0:2796:A:H62	1.45	0.80
1:0:2769:C:H2'	1:0:2867:G:N2	1.95	0.80
1:0:2770:A:H5'	1:0:2867:G:H22	1.44	0.80
1:0:918:A:H2'	1:0:919:U:H5''	1.63	0.80
1:0:181:A:H5''	1:0:182:G:OP1	1.82	0.79
1:0:940:G:H3'	1:0:941:U:C5'	2.10	0.79
1:0:67:G:N2	1:0:72:A:H2'	1.98	0.79
1:0:1811:A:O2'	1:0:1812:U:H5''	1.82	0.79
1:0:69:G:H4'	1:0:70:A:O5'	1.81	0.79
1:0:2198:U:H3'	1:0:2199:C:H5''	1.64	0.79
1:0:65:C:C2'	1:0:66:U:H5'	2.12	0.79
1:0:2548:G:C2'	1:0:2549:G:H5''	2.11	0.78
1:0:2426:G:H5'	1:0:2480:C:H41	1.48	0.78
1:0:1141:U:N3	1:0:2008:C:H5''	1.99	0.78
1:0:2227:C:H2'	1:0:2228:U:H5'	1.66	0.78
1:0:1188:A:H62	1:0:1189:G:H21	1.29	0.77
1:0:652:C:H42	1:0:657:A:H61	1.31	0.77
1:0:218:A:O2'	1:0:219:G:H4'	1.85	0.77

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2261:G:H4'	1:0:2262:C:OP2	1.87	0.75
1:0:1807:A:O2'	1:0:1808:C:H4'	1.87	0.75
1:0:2096:U:H2'	1:0:2097:A:H5''	1.69	0.74
1:0:2624:G:H4'	1:0:2712:G:H2'	1.69	0.74
1:0:2503:G:H3'	1:0:2504:G:H5''	1.69	0.74
1:0:2700:U:H3	1:0:2848:A:N6	1.85	0.74
1:0:688:A:N6	1:0:816:U:H3	1.86	0.74
1:0:689:A:H61	1:0:815:A:H61	1.35	0.74
1:0:66:U:H2'	1:0:67:G:N7	2.02	0.74
1:0:1252:C:C2'	1:0:1253:C:H5''	2.17	0.74
1:0:1572:C:C2'	1:0:1573:G:H5''	2.17	0.74
1:0:2241:U:H1'	1:0:2307:A:H1'	1.69	0.74
1:0:1182:U:C2'	1:0:1183:C:H5''	2.17	0.73
1:0:109:A:C3'	1:0:110:U:H5''	2.18	0.73
1:0:1047:G:H1	1:0:1130:U:H3	1.34	0.73
1:0:974:U:H1'	1:0:2229:G:H21	1.54	0.73
1:0:1223:G:H21	1:0:1225:G:N2	1.80	0.72
1:0:1373:G:H22	1:0:2192:U:H3	1.35	0.72
1:0:795:A:H4'	1:0:796:A:N7	2.03	0.72
1:0:824:U:H1'	1:0:1264:C:H1'	1.71	0.72
1:0:1621:C:H4'	1:0:1626:A:H61	1.55	0.72
1:0:616:U:H2'	1:0:617:U:H5''	1.70	0.72
1:0:1473:U:H4'	1:0:1474:A:C8	2.24	0.72
1:0:323:G:H5'	1:0:342:G:C6	2.24	0.72
1:0:2522:G:N2	1:0:2625:U:H5''	2.03	0.72
1:0:588:G:H4'	1:0:2001:G:H5''	1.71	0.72
1:0:1196:G:H2'	1:0:1197:U:O4'	1.90	0.72
1:0:202:A:H2'	1:0:203:G:O4'	1.88	0.71
1:0:2691:C:H3'	1:0:2692:A:H5''	1.72	0.71
1:0:1528:C:H2'	1:0:1529:C:H5''	1.71	0.71
1:0:2721:A:H62	1:0:2743:G:H21	1.38	0.71
1:0:1908:C:H2'	1:0:1909:U:H4'	1.73	0.71
1:0:2245:A:H4'	1:0:2246:A:C8	2.26	0.71
1:0:2499:C:H41	1:0:2521:A:H2	1.38	0.71
1:0:2503:G:C3'	1:0:2504:G:H5''	2.21	0.71
1:0:839:U:H5''	1:0:2408:G:OP2	1.91	0.71
1:0:181:A:H4'	1:0:182:G:H4'	1.73	0.71
1:0:1953:A:H1'	1:0:1955:G:C1'	2.21	0.71
1:0:514:G:N3	1:0:514:G:H2'	2.06	0.70
1:0:1139:A:H1'	1:0:2496:C:H5'	1.72	0.70
1:0:1479:G:N2	1:0:1543:G:H21	1.88	0.70

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2759:U:H4'	1:0:2760:G:OP2	1.90	0.70
1:0:515:A:H2'	1:0:516:G:H5'	1.73	0.70
1:0:1529:C:H2'	1:0:1530:U:O4'	1.92	0.70
1:0:2380:U:H2'	1:0:2381:A:H5'	1.72	0.70
1:0:576:A:H2	1:0:580:A:H62	1.38	0.69
1:0:1023:U:H1'	1:0:1154:A:N7	2.07	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
1:0:26:G:N2	1:0:524:A:H62	1.91	0.69
1:0:1188:A:N6	1:0:1189:G:H21	1.89	0.69
1:0:2808:U:H3'	1:0:2809:A:H5'	1.75	0.69
1:0:1021:A:H1'	1:0:1164:C:H1'	1.73	0.69
1:0:1354:A:H62	1:0:1407:G:H22	1.40	0.69
1:0:2607:C:H1'	1:0:2761:A:H2'	1.75	0.69
1:0:1033:G:H22	1:0:1150:C:H2'	1.57	0.69
1:0:1915:A:H62	1:0:1951:G:N2	1.90	0.69
1:0:319:G:H21	1:0:340:G:H21	1.40	0.69
1:0:2727:G:H1	1:0:2735:C:H5''	1.58	0.69
1:0:1260:A:N6	1:0:1262:U:H1'	2.08	0.68
1:0:2491:C:C2'	1:0:2492:G:H5''	2.23	0.68
1:0:2510:A:H61	1:0:2641:A:N6	1.90	0.68
1:0:941:U:H2'	1:0:942:U:O4'	1.93	0.68
1:0:1199:U:H3'	1:0:1200:G:H5''	1.75	0.68
1:0:191:G:O2'	1:0:192:G:H5'	1.93	0.68
1:0:800:U:H3'	1:0:804:C:N4	2.09	0.68
1:0:858:G:H5''	1:0:859:U:H5'	1.74	0.68
1:0:1791:C:O2'	1:0:1793:A:H5'	1.93	0.68
1:0:69:G:H5''	1:0:70:A:OP1	1.93	0.68
1:0:2495:G:H2'	1:0:2496:C:C6	2.29	0.68
1:0:471:A:H62	1:0:480:G:N2	1.90	0.68
1:0:1809:G:H2'	1:0:1810:U:O4'	1.93	0.68
1:0:1978:U:H3'	1:0:1979:C:H5''	1.75	0.68
1:0:166:G:H21	1:0:184:A:N6	1.90	0.68
1:0:1955:G:H2'	1:0:1956:G:H5'	1.75	0.68
1:0:584:A:H4'	1:0:2479:U:H5'	1.75	0.67
1:0:813:A:O2'	1:0:815:A:H5'	1.94	0.67
1:0:1500:U:H3	1:0:1520:G:H22	1.43	0.67
1:0:2324:G:H4'	1:0:2326:C:H5''	1.77	0.67
1:0:2700:U:H3	1:0:2848:A:H62	1.41	0.67
1:0:1191:G:H2'	1:0:1192:A:H8	1.59	0.67
1:0:1746:A:H2'	1:0:1747:G:H5'	1.76	0.67

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1086:C:C2'	1:0:1087:C:H5''	2.24	0.67
1:0:630:G:H2'	1:0:631:G:H5'	1.77	0.67
1:0:1888:C:H5''	1:0:1889:G:H5''	1.77	0.67
1:0:1188:A:H62	1:0:1189:G:N2	1.92	0.67
1:0:1312:G:H5'	1:0:1314:A:H1'	1.76	0.67
1:0:2418:A:H1'	1:0:2565:C:H4'	1.75	0.67
1:0:805:G:H5''	1:0:806:A:O5'	1.95	0.67
1:0:2680:U:H3'	1:0:2681:A:H5'	1.76	0.66
1:0:2095:G:H2'	1:0:2096:U:H5''	1.76	0.66
1:0:1685:A:H1'	1:0:1686:A:C5	2.30	0.66
1:0:542:A:C2'	1:0:543:G:H5'	2.25	0.66
1:0:998:C:H2'	1:0:999:A:O4'	1.94	0.66
1:0:1352:G:H2'	1:0:1353:A:H8	1.60	0.66
1:0:1474:A:H2'	1:0:1475:U:H5'	1.78	0.66
1:0:367:G:C2'	1:0:368:A:H5''	2.25	0.66
1:0:33:C:H42	1:0:466:A:H61	1.43	0.66
1:0:1686:A:N3	1:0:1686:A:H2'	2.10	0.65
1:0:651:C:H2'	1:0:652:C:H5''	1.78	0.65
1:0:1487:C:H2'	1:0:1488:G:H8	1.61	0.65
1:0:805:G:H4'	1:0:806:A:OP2	1.96	0.65
1:0:1195:U:H2'	1:0:1196:G:C8	2.31	0.65
1:0:104:C:C2'	1:0:105:G:H5''	2.27	0.65
1:0:1749:G:O6	1:0:2674:C:H4'	1.96	0.65
1:0:175:C:H1'	1:0:2413:A:H61	1.62	0.65
1:0:2758:A:H5''	1:0:2759:U:H5	1.61	0.65
1:0:2770:A:H5'	1:0:2867:G:N2	2.12	0.65
1:0:225:G:H3'	1:0:226:C:C5'	2.25	0.65
1:0:1923:U:H4'	1:0:1948:C:H41	1.61	0.65
1:0:2822:U:H2'	1:0:2823:G:O4'	1.96	0.65
1:0:653:G:H2'	1:0:654:A:H4'	1.79	0.65
1:0:727:U:H2'	1:0:728:G:H5''	1.79	0.65
1:0:1427:G:H2'	1:0:1428:G:H5'	1.79	0.65
1:0:1774:A:H1'	1:0:2586:G:H21	1.62	0.65
1:0:1323:G:H2'	1:0:1324:G:H4'	1.79	0.65
1:0:2009:U:H3	1:0:2020:G:H1	1.45	0.65
1:0:2755:A:O2'	1:0:2756:A:H5'	1.97	0.65
1:0:1194:U:H2'	1:0:1195:U:C6	2.31	0.65
1:0:2242:C:N4	1:0:2257:A:H61	1.95	0.65
1:0:652:C:H42	1:0:657:A:N6	1.95	0.65
1:0:1882:G:H21	1:0:1885:C:N4	1.94	0.65
1:0:2404:A:O2'	1:0:2405:A:OP2	2.15	0.65

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:45:C:H5''	1:0:192:G:N7	2.11	0.64
1:0:1938:U:O2'	1:0:1939:U:OP1	2.12	0.64
1:0:1580:C:H2'	1:0:1581:C:C6	2.32	0.64
1:0:2198:U:C3'	1:0:2199:C:H5''	2.28	0.64
1:0:2236:U:C3'	1:0:2237:C:H5''	2.28	0.64
1:0:2236:U:H2'	1:0:2237:C:H5''	1.78	0.64
1:0:317:U:H2'	1:0:318:G:H5''	1.79	0.64
1:0:1181:C:H2'	1:0:1182:U:H5''	1.79	0.64
1:0:2357:A:H2'	1:0:2358:C:O4'	1.98	0.64
1:0:2690:A:OP2	1:0:2694:G:H5'	1.97	0.64
1:0:2312:A:H4'	1:0:2313:G:N7	2.13	0.63
1:0:83:A:H4'	1:0:84:G:O4'	1.97	0.63
1:0:2617:G:H22	1:0:2755:A:H2'	1.64	0.63
1:0:2636:A:H62	1:0:2643:G:N2	1.90	0.63
1:0:2261:G:H5''	1:0:2262:C:O5'	1.97	0.63
1:0:1679:U:C3'	1:0:1680:U:H5''	2.28	0.63
1:0:2080:U:H2'	1:0:2081:U:C6	2.33	0.63
1:0:58:C:H3'	1:0:59:G:C5'	2.28	0.63
1:0:70:A:O2'	1:0:72:A:H5''	1.98	0.63
1:0:1181:C:C3'	1:0:1182:U:H5''	2.29	0.63
1:0:1976:U:H2'	1:0:1977:C:H5'	1.81	0.63
1:0:1250:A:O2'	1:0:1251:G:H4'	1.98	0.63
1:0:1811:A:H1'	1:0:1813:A:C5	2.33	0.63
1:0:927:C:H2'	1:0:928:G:O4'	1.98	0.63
1:0:1679:U:H3'	1:0:1680:U:H5''	1.79	0.63
1:0:2544:A:H2'	1:0:2545:A:H4'	1.81	0.63
1:0:128:C:C2'	1:0:129:A:H5''	2.28	0.63
1:0:362:C:H2'	1:0:363:G:H4'	1.80	0.63
1:0:653:G:N2	1:0:655:A:H1'	2.14	0.62
1:0:1715:A:H1'	1:0:1717:A:O4'	1.99	0.62
1:0:2510:A:H61	1:0:2641:A:H61	1.45	0.62
1:0:777:A:N6	1:0:1766:U:H3	1.96	0.62
1:0:1341:G:H22	1:0:1664:G:H1	1.48	0.62
1:0:852:U:H3	1:0:950:G:H1	1.47	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
1:0:2268:G:H22	1:0:2323:U:H4'	1.64	0.62
1:0:2422:C:H2'	1:0:2423:G:H8	1.64	0.62
1:0:2440:C:H1'	1:0:2471:U:H3	1.65	0.62
1:0:952:A:O2'	1:0:1204:G:H4'	1.99	0.62
1:0:1085:G:H2'	1:0:1086:C:C6	2.35	0.62

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2035:G:H2'	1:0:2036:G:H8	1.65	0.62
1:0:1223:G:N2	1:0:1225:G:H21	1.83	0.62
1:0:1871:G:H2'	1:0:1871:G:N3	2.15	0.62
1:0:942:U:H2'	1:0:943:U:O4'	2.00	0.62
1:0:1656:U:C2'	1:0:1657:A:H5''	2.29	0.61
1:0:2768:C:H2'	1:0:2769:C:O4'	1.99	0.61
1:0:665:A:H3'	1:0:666:U:H5''	1.82	0.61
1:0:1333:G:N2	1:0:1344:C:H41	1.96	0.61
1:0:1428:G:H5''	1:0:1429:A:H5'	1.80	0.61
1:0:2604:G:H2'	1:0:2605:C:C6	2.36	0.61
1:0:81:C:H2'	1:0:82:G:O4'	2.00	0.61
1:0:742:G:H2'	1:0:742:G:N3	2.13	0.61
1:0:1807:A:H5'	1:0:1809:G:C1'	2.30	0.61
1:0:1947:G:H3'	1:0:1947:G:OP1	2.00	0.61
1:0:1066:G:H2'	1:0:1067:G:H4'	1.82	0.61
1:0:1188:A:H2'	1:0:1189:G:O4'	2.00	0.61
1:0:13:A:H1'	1:0:536:A:N6	2.15	0.61
1:0:404:A:H5'	1:0:425:A:H4'	1.83	0.61
1:0:2759:U:H5''	1:0:2760:G:O5'	2.01	0.61
1:0:860:U:C2'	1:0:861:G:H5'	2.31	0.61
1:0:583:C:N3	1:0:2016:A:H4'	2.15	0.61
1:0:940:G:C3'	1:0:941:U:H5''	2.15	0.61
1:0:1900:U:O2'	1:0:1946:U:H5'	2.00	0.61
1:0:2045:A:H4'	1:0:2421:C:OP2	2.01	0.61
1:0:2242:C:H42	1:0:2257:A:N6	1.99	0.61
1:0:1713:G:H2'	1:0:1714:A:O4'	2.00	0.61
1:0:2059:U:H5	1:0:2575:U:H3	1.48	0.61
1:0:2426:G:O2'	1:0:2427:A:OP2	2.18	0.61
1:0:2721:A:H62	1:0:2743:G:N2	1.99	0.61
1:0:319:G:H21	1:0:340:G:N2	1.99	0.61
1:0:455:A:H4'	1:0:1214:C:O2'	2.00	0.61
1:0:2377:U:H2'	1:0:2378:G:C8	2.36	0.61
1:0:583:C:H41	1:0:2017:U:H5	1.47	0.61
1:0:2185:U:H2'	1:0:2186:G:C8	2.36	0.61
1:0:167:A:H62	1:0:183:U:H3	1.48	0.60
1:0:486:U:H4'	1:0:520:C:H5'	1.81	0.60
1:0:1712:G:H2'	1:0:1713:G:O4'	2.00	0.60
1:0:2223:U:H2'	1:0:2224:U:O4'	2.01	0.60
1:0:814:G:H3'	1:0:815:A:H5'	1.83	0.60
1:0:1380:C:H2'	1:0:1381:G:H5'	1.81	0.60
1:0:2260:C:H4'	1:0:2368:G:H21	1.66	0.60

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2574:G:N2	1:0:2576:G:OP2	2.34	0.60
1:0:831:G:H21	1:0:1203:A:N6	1.94	0.60
1:0:1455:C:O2'	1:0:1644:G:H5''	2.01	0.60
1:0:2508:G:H5''	1:0:2509:A:H5''	1.84	0.60
1:0:181:A:H4'	1:0:182:G:C5'	2.31	0.60
1:0:871:U:H1'	1:0:2248:A:H5''	1.83	0.60
1:0:439:C:H2'	1:0:440:U:O4'	2.01	0.60
1:0:2246:A:H2'	1:0:2246:A:N3	2.16	0.60
1:0:221:A:H62	1:0:231:G:N2	1.93	0.60
1:0:2727:G:O2'	1:0:2728:A:H5''	2.02	0.60
1:0:158:A:H2'	1:0:159:A:H8	1.66	0.60
1:0:579:G:H2'	1:0:2013:A:N6	2.17	0.60
1:0:1426:U:H2'	1:0:1427:G:O4'	2.01	0.60
1:0:2381:A:H4'	1:0:2382:C:C5	2.36	0.60
1:0:412:U:H2'	1:0:413:G:O4'	2.02	0.60
1:0:521:U:H4'	1:0:1248:G:O2'	2.01	0.60
1:0:632:A:H2'	1:0:633:G:H5'	1.82	0.60
1:0:1298:G:N2	1:0:1341:G:H5''	2.17	0.60
1:0:2418:A:H4'	1:0:2420:C:OP2	2.02	0.60
1:0:1286:U:H5''	1:0:1663:C:H42	1.67	0.59
1:0:1625:A:H2'	1:0:1625:A:N3	2.16	0.59
1:0:2015:G:O2'	1:0:2016:A:OP1	2.15	0.59
1:0:1918:G:H4'	1:0:1920:A:N3	2.16	0.59
1:0:925:U:H4'	1:0:926:C:C5	2.37	0.59
1:0:1458:A:H3'	1:0:1459:U:C5'	2.33	0.59
1:0:1289:A:O2'	1:0:1290:A:H5'	2.02	0.59
1:0:1634:A:O2'	1:0:1635:G:OP1	2.16	0.59
1:0:2547:C:H2'	1:0:2548:G:H8	1.67	0.59
1:0:2549:G:H2'	1:0:2550:C:O4'	2.02	0.59
1:0:242:A:O2'	1:0:243:G:O4'	2.21	0.59
1:0:459:A:H1'	1:0:466:A:N7	2.16	0.59
1:0:513:A:H4'	1:0:515:A:H5'	1.82	0.59
1:0:77:C:H2'	1:0:78:C:C6	2.38	0.59
1:0:2238:G:H2'	1:0:2239:C:C6	2.38	0.59
1:0:2607:C:H3'	1:0:2608:A:C5'	2.30	0.59
1:0:653:G:H4'	1:0:2328:G:H4'	1.83	0.59
1:0:1994:U:H2'	1:0:1995:G:O4'	2.03	0.59
1:0:2858:A:H3'	1:0:2859:U:H5'	1.85	0.59
1:0:689:A:H2'	1:0:690:A:H5'	1.84	0.59
1:0:1615:C:H2'	1:0:1616:C:C6	2.38	0.59
1:0:1923:U:H4'	1:0:1948:C:N4	2.18	0.59

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1251:G:H2'	1:0:1252:C:C6	2.37	0.59
1:0:1474:A:H3'	1:0:1474:A:N3	2.18	0.59
1:0:1517:C:H2'	1:0:1518:C:C6	2.38	0.59
1:0:2081:U:C2'	1:0:2082:C:H5''	2.32	0.59
1:0:614:G:H2'	1:0:615:C:C6	2.37	0.58
1:0:800:U:H3'	1:0:804:C:H41	1.68	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
1:0:2426:G:C5'	1:0:2480:C:H41	2.15	0.58
1:0:1198:C:H5''	1:0:1199:U:H5''	1.85	0.58
1:0:2491:C:C3'	1:0:2492:G:H5''	2.33	0.58
1:0:1088:A:H2'	1:0:1089:C:O4'	2.04	0.58
1:0:1301:U:H3	1:0:1339:U:H3	1.49	0.58
1:0:1354:A:O2'	1:0:1355:A:OP1	2.18	0.58
1:0:2402:U:H5'	1:0:2404:A:C5	2.38	0.58
1:0:2426:G:O6	1:0:2479:U:H2'	2.02	0.58
1:0:25:U:H3	1:0:525:A:N6	2.02	0.58
1:0:366:U:H2'	1:0:367:G:H8	1.68	0.58
1:0:490:A:O2'	1:0:491:A:H5'	2.03	0.58
1:0:558:G:H5''	1:0:559:C:C5	2.38	0.58
1:0:973:U:H2'	1:0:974:U:C6	2.38	0.58
1:0:1528:C:C2'	1:0:1529:C:H5''	2.34	0.58
1:0:2422:C:H2'	1:0:2423:G:C8	2.39	0.58
1:0:2574:G:H2'	1:0:2574:G:N3	2.18	0.58
1:0:14:A:H2	1:0:2604:G:HO2'	1.51	0.58
1:0:974:U:H1'	1:0:2229:G:N2	2.17	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
1:0:1916:G:H2'	1:0:1917:C:C6	2.39	0.58
1:0:17:G:H21	1:0:564:U:H5''	1.67	0.58
1:0:1392:U:H2'	1:0:1393:G:H5'	1.85	0.58
1:0:1567:A:H2'	1:0:1568:A:O4'	2.04	0.58
1:0:2322:U:O2'	1:0:2323:U:H5'	2.03	0.58
1:0:114:C:O2'	1:0:124:A:H1'	2.04	0.58
1:0:1730:G:H2'	1:0:1731:C:C6	2.38	0.58
1:0:2636:A:N6	1:0:2643:G:H21	1.93	0.58
1:0:176:A:H5''	1:0:177:U:H5	1.69	0.58
1:0:368:A:H2'	1:0:369:C:O4'	2.04	0.58
1:0:1180:A:H2'	1:0:1181:C:C6	2.39	0.58
1:0:2008:C:H2'	1:0:2009:U:C6	2.39	0.58
1:0:2547:C:H2'	1:0:2548:G:C8	2.38	0.58

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:687:G:O2'	1:0:688:A:H5'	2.03	0.58
1:0:804:C:O2'	1:0:806:A:H4'	2.04	0.58
1:0:2205:C:H2'	1:0:2206:C:C6	2.39	0.58
1:0:2691:C:H3'	1:0:2692:A:C5'	2.33	0.58
1:0:173:A:H2'	1:0:173:A:N3	2.19	0.57
1:0:1354:A:H62	1:0:1407:G:N2	2.01	0.57
1:0:1514:C:H2'	1:0:1515:U:O4'	2.04	0.57
1:0:1747:G:H1'	1:0:1749:G:N3	2.19	0.57
1:0:2677:U:H2'	1:0:2678:C:C6	2.39	0.57
1:0:224:G:C5	1:0:226:C:H1'	2.39	0.57
1:0:322:A:H1'	1:0:343:A:N7	2.19	0.57
1:0:1915:A:N6	1:0:1951:G:H21	1.98	0.57
1:0:2057:U:O2'	1:0:2576:G:H1'	2.04	0.57
1:0:2769:C:H2'	1:0:2770:A:H5'	1.86	0.57
1:0:26:G:H21	1:0:524:A:H62	1.53	0.57
1:0:322:A:H2	1:0:342:G:OP2	1.87	0.57
1:0:118:U:H1'	1:0:143:A:C8	2.40	0.57
1:0:605:G:H4'	1:0:949:G:O2'	2.04	0.57
1:0:804:C:O2	1:0:807:A:H5'	2.04	0.57
1:0:930:A:OP1	1:0:930:A:H4'	2.02	0.57
1:0:1137:A:H5''	1:0:1138:A:H5''	1.85	0.57
1:0:1280:U:O2'	1:0:1281:A:H5'	2.05	0.57
1:0:2018:G:H3'	1:0:2019:C:C5'	2.35	0.57
1:0:236:C:H1'	1:0:632:A:O2'	2.04	0.57
1:0:1181:C:H3'	1:0:1182:U:H5''	1.87	0.57
1:0:177:U:H2'	1:0:178:C:C6	2.40	0.57
1:0:192:G:O2'	1:0:193:A:OP2	2.18	0.57
1:0:1200:G:O2'	1:0:1201:G:H5'	2.03	0.57
1:0:1779:C:H2'	1:0:1780:A:O4'	2.04	0.57
1:0:242:A:O2'	1:0:243:G:P	2.62	0.57
1:0:665:A:H3'	1:0:666:U:C5'	2.35	0.57
1:0:1971:C:H2'	1:0:1972:G:H8	1.70	0.57
1:0:2222:U:H2'	1:0:2223:U:C6	2.39	0.57
1:0:2236:U:H3'	1:0:2237:C:H5''	1.85	0.57
1:0:2244:C:N4	1:0:2245:A:N6	2.53	0.57
1:0:217:U:H5'	1:0:633:G:O2'	2.05	0.57
1:0:766:A:H2'	1:0:767:G:C8	2.40	0.57
1:0:847:C:N4	1:0:955:G:H21	1.93	0.57
1:0:984:A:H2'	1:0:1200:G:H22	1.69	0.57
1:0:1181:C:C2'	1:0:1182:U:H5''	2.35	0.57
1:0:1711:C:H4'	1:0:1712:G:C2	2.39	0.57

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1982:C:H1'	1:0:2666:U:O2'	2.05	0.57
1:0:357:A:H2'	1:0:358:C:H5'	1.87	0.57
1:0:1337:G:H1'	1:0:1632:A:N6	2.20	0.57
1:0:1683:G:H2'	1:0:1684:G:O4'	2.05	0.57
1:0:2494:C:H2'	1:0:2495:G:C8	2.40	0.57
1:0:2668:U:C4'	1:0:2669:C:H5'	2.29	0.57
1:0:843:G:O2'	1:0:844:G:OP1	2.15	0.56
1:0:2437:G:N2	1:0:2469:G:H2'	2.20	0.56
1:0:2492:G:H2'	1:0:2493:U:O4'	2.05	0.56
1:0:103:U:H2'	1:0:104:C:C6	2.39	0.56
1:0:225:G:N2	1:0:2410:U:H1'	2.20	0.56
1:0:369:C:H2'	1:0:370:U:O4'	2.04	0.56
1:0:791:G:H2'	1:0:792:U:C6	2.40	0.56
1:0:879:A:H2'	1:0:879:A:N3	2.20	0.56
1:0:1431:U:H2'	1:0:1432:G:O4'	2.06	0.56
1:0:1472:C:C2'	1:0:1473:U:H5'	2.34	0.56
1:0:55:A:H2'	1:0:56:C:C6	2.40	0.56
1:0:758:G:O2'	1:0:761:G:H1'	2.05	0.56
1:0:1140:A:H61	1:0:2470:U:H6	1.53	0.56
1:0:1191:G:H2'	1:0:1192:A:C8	2.40	0.56
1:0:1791:C:H1'	1:0:1793:A:O4'	2.04	0.56
1:0:2274:C:H2'	1:0:2275:U:H5'	1.88	0.56
1:0:2794:G:H2'	1:0:2796:A:N7	2.21	0.56
1:0:538:A:H2'	1:0:539:A:H5''	1.87	0.56
1:0:468:A:H2'	1:0:469:G:H4'	1.88	0.56
1:0:1981:A:H4'	1:0:2704:U:O2'	2.06	0.56
1:0:2368:G:H5''	1:0:2369:U:O4'	2.05	0.56
1:0:2459:C:H2'	1:0:2460:G:H5'	1.88	0.56
1:0:552:C:H2'	1:0:553:C:H4'	1.88	0.56
1:0:616:U:C2'	1:0:617:U:H5''	2.36	0.56
1:0:669:G:H2'	1:0:670:U:C6	2.41	0.56
1:0:776:G:H2'	1:0:776:G:N3	2.21	0.56
1:0:784:U:H2'	1:0:785:U:C6	2.41	0.56
1:0:876:A:H2'	1:0:877:G:C8	2.41	0.56
1:0:1073:G:C2'	1:0:1074:G:H4'	2.26	0.56
1:0:1220:G:H2'	1:0:1221:C:C6	2.41	0.56
1:0:1813:A:H2'	1:0:1814:G:C8	2.40	0.56
1:0:2243:C:H2'	1:0:2244:C:O4'	2.06	0.56
1:0:2321:C:H2'	1:0:2322:U:O4'	2.05	0.56
1:0:2854:G:H3'	1:0:2854:G:N3	2.21	0.56
1:0:197:G:H22	1:0:440:U:H2'	1.71	0.56

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:929:A:H2'	1:0:930:A:H4'	1.88	0.56
1:0:1263:G:O2'	1:0:1264:C:OP1	2.24	0.56
1:0:476:G:H21	1:0:696:U:H1'	1.70	0.55
1:0:873:U:P	1:0:928:G:H1	2.29	0.55
1:0:826:U:H2'	1:0:827:C:C6	2.41	0.55
1:0:831:G:N2	1:0:1203:A:H62	1.98	0.55
1:0:1356:G:H1'	1:0:1613:G:C2	2.41	0.55
1:0:1356:G:H5'	1:0:1614:C:OP2	2.06	0.55
1:0:1789:U:C2'	1:0:1790:G:H5'	2.36	0.55
1:0:1829:C:H2'	1:0:1830:C:H5'	1.88	0.55
1:0:2270:U:H2'	1:0:2271:C:C6	2.42	0.55
1:0:533:C:H2'	1:0:534:U:O4'	2.06	0.55
1:0:1464:A:H4'	1:0:1545:G:H4'	1.88	0.55
1:0:1326:U:H2'	1:0:1327:C:H5'	1.87	0.55
1:0:2329:C:H2'	1:0:2330:G:H5'	1.89	0.55
1:0:1278:A:O2'	1:0:1279:G:P	2.64	0.55
1:0:393:U:H2'	1:0:394:U:C6	2.42	0.55
1:0:515:A:C2'	1:0:516:G:H5'	2.37	0.55
1:0:541:C:H2'	1:0:2002:A:C2	2.41	0.55
1:0:1912:G:H2'	1:0:1912:G:N3	2.22	0.55
1:0:2012:A:N7	1:0:2014:A:H5'	2.20	0.55
1:0:2437:G:H2'	1:0:2469:G:C2	2.42	0.55
1:0:775:U:O2	1:0:1445:A:H5''	2.06	0.55
1:0:839:U:H2'	1:0:841:G:O4'	2.07	0.55
1:0:951:G:C2'	1:0:952:A:H5''	2.36	0.55
1:0:2319:G:H2'	1:0:2320:G:C8	2.42	0.55
1:0:126:C:H2'	1:0:127:C:C6	2.41	0.55
1:0:366:U:H2'	1:0:367:G:C8	2.42	0.55
1:0:1463:A:H2'	1:0:1464:A:C8	2.41	0.55
1:0:579:G:H2'	1:0:2013:A:H62	1.72	0.55
1:0:1746:A:C2'	1:0:1747:G:H5'	2.36	0.55
1:0:2095:G:C2'	1:0:2096:U:H5''	2.37	0.55
1:0:225:G:H21	1:0:2410:U:H1'	1.72	0.54
1:0:942:U:O2'	1:0:943:U:H5'	2.07	0.54
1:0:1087:C:H2'	1:0:1088:A:O4'	2.07	0.54
1:0:2581:A:H2'	1:0:2582:G:H5''	1.89	0.54
1:0:162:C:H4'	1:0:195:A:O2'	2.07	0.54
1:0:394:U:H2'	1:0:395:G:H8	1.71	0.54
1:0:578:U:C1'	1:0:957:G:H21	2.19	0.54
1:0:1313:U:O2'	1:0:1314:A:P	2.66	0.54
1:0:2204:A:O2'	1:0:2205:C:P	2.65	0.54

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2249:U:H2'	1:0:2250:G:O4'	2.08	0.54
1:0:2560:G:H3'	1:0:2560:G:N3	2.23	0.54
1:0:2641:A:H2'	1:0:2642:G:O4'	2.08	0.54
1:0:48:A:H4'	1:0:50:G:O4'	2.08	0.54
1:0:404:A:H2'	1:0:405:C:C6	2.42	0.54
1:0:2570:C:H2'	1:0:2571:G:C8	2.43	0.54
1:0:215:G:H4'	1:0:617:U:O2'	2.08	0.54
1:0:1279:G:C2'	1:0:1280:U:OP2	2.56	0.54
1:0:1949:A:H1'	1:0:2572:U:C4'	2.38	0.54
1:0:1955:G:C2'	1:0:1956:G:H5'	2.37	0.54
1:0:2162:C:H2'	1:0:2163:U:C6	2.42	0.54
1:0:58:C:O2	1:0:72:A:H3'	2.08	0.54
1:0:598:U:H2'	1:0:599:A:C8	2.42	0.54
1:0:2379:G:H2'	1:0:2380:U:O4'	2.07	0.54
1:0:2783:U:C6	1:0:2783:U:OP1	2.60	0.54
1:0:752:G:H5'	1:0:1775:A:N6	2.23	0.54
1:0:838:A:H2'	1:0:839:U:C6	2.43	0.54
1:0:843:G:O2'	1:0:844:G:H5'	2.08	0.54
1:0:1974:U:H2'	1:0:1975:G:H5''	1.88	0.54
1:0:2168:A:H2'	1:0:2169:A:H5'	1.89	0.54
1:0:2381:A:H4'	1:0:2382:C:H5	1.71	0.54
1:0:197:G:N2	1:0:440:U:H2'	2.23	0.54
1:0:918:A:C2'	1:0:919:U:H5''	2.35	0.54
1:0:2229:G:H2'	1:0:2475:C:OP1	2.08	0.54
1:0:2783:U:H2'	1:0:2784:A:O4'	2.07	0.54
1:0:213:C:H42	1:0:238:G:H22	1.54	0.54
1:0:1976:U:C2'	1:0:1977:C:H5'	2.37	0.54
1:0:2017:U:O2'	1:0:2018:G:H5'	2.07	0.54
1:0:173:A:O2'	1:0:174:A:OP1	2.19	0.54
1:0:243:G:H2'	1:0:244:C:O4'	2.08	0.54
1:0:688:A:O2'	1:0:2422:C:H4'	2.07	0.54
1:0:841:G:H3'	1:0:841:G:N3	2.22	0.54
1:0:1258:G:H2'	1:0:1259:A:C8	2.43	0.54
1:0:1745:C:H2'	1:0:1746:A:O4'	2.08	0.54
1:0:1825:C:C2'	1:0:1826:U:H5'	2.38	0.54
1:0:2245:A:H4'	1:0:2246:A:N7	2.23	0.54
1:0:2321:C:O2'	1:0:2353:G:H5''	2.08	0.54
1:0:2437:G:H2'	1:0:2469:G:N2	2.23	0.54
1:0:2466:G:H2'	1:0:2467:A:C8	2.43	0.54
1:0:216:U:H2'	1:0:217:U:O4'	2.08	0.54
1:0:242:A:O2'	1:0:243:G:O5'	2.25	0.54

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:604:U:H2'	1:0:605:G:C8	2.42	0.54
1:0:1210:C:H2'	1:0:1211:G:O4'	2.08	0.54
1:0:1528:C:C3'	1:0:1529:C:H5''	2.38	0.54
1:0:2023:C:H2'	1:0:2024:U:C6	2.43	0.54
1:0:241:C:O2'	1:0:242:A:H5''	2.07	0.53
1:0:832:A:H2'	1:0:833:A:O4'	2.07	0.53
1:0:939:C:H2'	1:0:940:G:C8	2.43	0.53
1:0:1272:G:H2'	1:0:1273:G:C8	2.43	0.53
1:0:1313:U:O4	1:0:1651:U:H5'	2.08	0.53
1:0:1333:G:N2	1:0:1344:C:N4	2.56	0.53
1:0:2242:C:N4	1:0:2257:A:N6	2.55	0.53
1:0:64:C:H2'	1:0:65:C:C6	2.42	0.53
1:0:167:A:H2'	1:0:168:A:C8	2.43	0.53
1:0:1288:A:O2'	1:0:1289:A:H5'	2.08	0.53
1:0:1669:A:H2'	1:0:1670:G:H4'	1.90	0.53
1:0:457:C:H2'	1:0:458:G:O4'	2.08	0.53
1:0:737:C:H2'	1:0:738:G:O4'	2.08	0.53
1:0:879:A:O2'	1:0:880:C:H5'	2.07	0.53
1:0:1068:A:H2'	1:0:1069:G:C8	2.42	0.53
1:0:2470:U:O2'	1:0:2471:U:H5'	2.08	0.53
1:0:2809:A:C2'	1:0:2810:A:H5'	2.38	0.53
1:0:236:C:O2	1:0:632:A:H1'	2.09	0.53
1:0:782:U:H2'	1:0:783:G:C8	2.43	0.53
1:0:824:U:H1'	1:0:1264:C:C1'	2.38	0.53
1:0:917:U:H2'	1:0:918:A:O4'	2.07	0.53
1:0:73:A:H4'	1:0:74:G:H1'	1.91	0.53
1:0:484:G:O2'	1:0:485:G:H5'	2.08	0.53
1:0:1838:G:C2'	1:0:1839:A:H5'	2.39	0.53
1:0:2483:U:H1'	1:0:2551:A:H2	1.74	0.53
1:0:181:A:H4'	1:0:182:G:C4'	2.38	0.53
1:0:798:G:O2'	1:0:1770:U:H4'	2.08	0.53
1:0:1654:A:H2'	1:0:1655:C:C6	2.43	0.53
1:0:1818:G:H2'	1:0:1819:U:C6	2.43	0.53
1:0:1900:U:H4'	1:0:1946:U:O4'	2.09	0.53
1:0:1971:C:H2'	1:0:1972:G:C8	2.44	0.53
1:0:2451:G:H2'	1:0:2508:G:N2	2.24	0.53
1:0:2516:U:H2'	1:0:2517:C:C6	2.43	0.53
1:0:960:U:H2'	1:0:961:G:C8	2.43	0.53
1:0:1459:U:H2'	1:0:1475:U:O2'	2.08	0.53
1:0:2841:U:O2	1:0:2843:A:H1'	2.08	0.53
1:0:161:U:H2'	1:0:162:C:C6	2.44	0.53

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:646:C:H2'	1:0:647:G:O4'	2.08	0.53
1:0:688:A:H1'	1:0:2423:G:H5'	1.91	0.53
1:0:878:C:H42	1:0:921:A:N6	2.06	0.53
1:0:931:G:N2	1:0:2247:A:H5''	2.23	0.53
1:0:1190:C:H2'	1:0:1191:G:C8	2.44	0.53
1:0:1312:G:C5'	1:0:1313:U:H5'	2.33	0.53
1:0:1429:A:H62	1:0:1601:U:H5''	1.73	0.53
1:0:73:A:H4'	1:0:74:G:C1'	2.38	0.53
1:0:80:A:H2'	1:0:81:C:O4'	2.08	0.53
1:0:108:G:H2'	1:0:109:A:H8	1.73	0.53
1:0:127:C:H2'	1:0:128:C:C6	2.44	0.53
1:0:201:G:H2'	1:0:202:A:C8	2.44	0.53
1:0:728:G:H2'	1:0:729:A:O4'	2.09	0.53
1:0:857:U:H2'	1:0:858:G:H5'	1.90	0.53
1:0:2571:G:H2'	1:0:2572:U:C6	2.44	0.53
1:0:129:A:H2'	1:0:130:C:C6	2.43	0.53
1:0:788:G:H5'	1:0:790:A:H1'	1.90	0.53
1:0:941:U:H4'	1:0:941:U:OP1	2.08	0.53
1:0:1075:C:H2'	1:0:1076:U:O4'	2.09	0.53
1:0:1234:C:H2'	1:0:1235:C:C6	2.44	0.53
1:0:1259:A:H2'	1:0:1260:A:C8	2.44	0.53
1:0:2565:C:O2'	1:0:2566:A:H5'	2.08	0.53
1:0:70:A:P	1:0:111:G:H4'	2.49	0.52
1:0:824:U:O2'	1:0:1264:C:H1'	2.09	0.52
1:0:2061:C:H1'	1:0:2413:A:H1'	1.91	0.52
1:0:2504:G:H2'	1:0:2505:G:C8	2.44	0.52
1:0:212:U:H2'	1:0:213:C:C6	2.44	0.52
1:0:512:A:H2'	1:0:513:A:H5'	1.91	0.52
1:0:870:C:H2'	1:0:871:U:C6	2.44	0.52
1:0:929:A:H3'	1:0:930:A:C5'	2.34	0.52
1:0:1358:C:H2'	1:0:1359:G:C5'	2.39	0.52
1:0:1497:C:O2'	1:0:1498:G:H5'	2.08	0.52
1:0:2177:U:H2'	1:0:2178:U:C6	2.44	0.52
1:0:2440:C:H1'	1:0:2471:U:N3	2.25	0.52
1:0:38:G:H2'	1:0:39:C:C6	2.44	0.52
1:0:45:C:H5''	1:0:192:G:C8	2.43	0.52
1:0:1004:A:H2'	1:0:1005:U:H5''	1.90	0.52
1:0:1223:G:O2'	1:0:1224:A:OP2	2.22	0.52
1:0:1414:G:H2'	1:0:1415:C:C6	2.44	0.52
1:0:1566:G:H4'	1:0:1733:U:O4	2.10	0.52
1:0:1683:G:C2'	1:0:1684:G:H5'	2.39	0.52

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1938:U:C2'	1:0:1939:U:H5'	2.39	0.52
1:0:590:C:H2'	1:0:591:G:C8	2.43	0.52
1:0:1365:U:H1'	1:0:1586:A:H2	1.74	0.52
1:0:1502:G:O2'	1:0:1503:G:H5'	2.09	0.52
1:0:1964:A:H5''	1:0:1965:U:OP2	2.09	0.52
1:0:2372:A:H2'	1:0:2373:C:C6	2.44	0.52
1:0:476:G:H2'	1:0:477:A:C8	2.44	0.52
1:0:521:U:H2'	1:0:522:G:H5'	1.91	0.52
1:0:583:C:O2'	1:0:584:A:OP2	2.26	0.52
1:0:597:U:H3	1:0:683:A:H2'	1.74	0.52
1:0:599:A:H2'	1:0:600:G:C8	2.44	0.52
1:0:2498:U:H5''	1:0:2499:C:OP1	2.10	0.52
1:0:204:A:H4'	1:0:205:A:N7	2.25	0.52
1:0:628:A:H2'	1:0:629:C:C6	2.45	0.52
1:0:874:A:N6	1:0:928:G:H21	2.08	0.52
1:0:1018:C:H2'	1:0:1019:U:C5	2.44	0.52
1:0:1288:A:H2'	1:0:1289:A:O4'	2.09	0.52
1:0:1789:U:O2'	1:0:1790:G:H5'	2.09	0.52
1:0:35:G:C1'	1:0:466:A:H1'	2.39	0.52
1:0:55:A:N6	1:0:69:G:O6	2.42	0.52
1:0:95:G:H2'	1:0:96:C:C6	2.44	0.52
1:0:317:U:C3'	1:0:318:G:H5''	2.40	0.52
1:0:1763:G:H2'	1:0:1764:A:H4'	1.91	0.52
1:0:1788:C:H2'	1:0:1789:U:C6	2.45	0.52
1:0:2312:A:H1'	1:0:2314:A:C8	2.45	0.52
1:0:2623:A:H2'	1:0:2624:G:O4'	2.09	0.52
1:0:2728:A:H2'	1:0:2729:A:O4'	2.10	0.52
1:0:541:C:H2'	1:0:2002:A:N1	2.24	0.52
1:0:638:A:O2'	1:0:639:G:H5'	2.10	0.52
1:0:830:C:O2'	1:0:852:U:H5''	2.10	0.52
1:0:841:G:N1	1:0:2226:A:H4'	2.25	0.52
1:0:1217:U:H2'	1:0:1218:C:C6	2.45	0.52
1:0:1970:G:H2'	1:0:1971:C:C6	2.44	0.52
1:0:226:C:H4'	1:0:227:G:C8	2.45	0.52
1:0:394:U:H2'	1:0:395:G:C8	2.45	0.52
1:0:597:U:H2'	1:0:598:U:C6	2.44	0.52
1:0:757:U:O2'	1:0:758:G:H5'	2.10	0.52
1:0:807:A:H2'	1:0:808:C:C6	2.44	0.52
1:0:1029:C:H2'	1:0:1030:U:H5''	1.92	0.52
1:0:1611:U:H2'	1:0:1612:U:O4'	2.10	0.52
1:0:1664:G:H4'	1:0:1665:C:O5'	2.09	0.52

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:9:U:H3	1:0:2608:A:N6	2.03	0.52
1:0:68:C:O2'	1:0:69:G:H5'	2.09	0.52
1:0:1597:A:H2'	1:0:1598:C:C6	2.45	0.52
1:0:1775:A:H4'	1:0:1776:A:C8	2.45	0.52
1:0:1807:A:H5'	1:0:1809:G:O4'	2.10	0.52
1:0:2160:C:H2'	1:0:2161:C:C6	2.45	0.52
1:0:658:G:H4'	1:0:2331:A:H5'	1.92	0.51
1:0:795:A:H4'	1:0:796:A:C8	2.45	0.51
1:0:991:A:H61	1:0:2020:G:H21	1.58	0.51
1:0:1377:G:H4'	1:0:1800:A:H5'	1.93	0.51
1:0:2213:G:H2'	1:0:2214:G:C8	2.45	0.51
1:0:108:G:H2'	1:0:109:A:C8	2.46	0.51
1:0:564:U:H2'	1:0:565:A:C8	2.44	0.51
1:0:1301:U:H2'	1:0:1664:G:H21	1.74	0.51
1:0:1352:G:H2'	1:0:1353:A:C8	2.43	0.51
1:0:1979:C:H42	1:0:2706:U:H6	1.58	0.51
1:0:2320:G:H2'	1:0:2321:C:O4'	2.09	0.51
1:0:2559:U:H2'	1:0:2560:G:H5'	1.93	0.51
1:0:2560:G:H4'	1:0:2561:G:N7	2.24	0.51
1:0:460:U:N3	1:0:592:G:H1'	2.21	0.51
1:0:1286:U:H5''	1:0:1663:C:N4	2.25	0.51
1:0:1358:C:H2'	1:0:1359:G:H5''	1.92	0.51
1:0:1727:C:H4'	1:0:2833:C:O2	2.09	0.51
1:0:1860:A:H2'	1:0:1861:G:O4'	2.11	0.51
1:0:65:C:H2'	1:0:66:U:C5'	2.36	0.51
1:0:451:A:H2'	1:0:452:G:C8	2.45	0.51
1:0:491:A:N3	1:0:491:A:H2'	2.26	0.51
1:0:597:U:N3	1:0:683:A:H2'	2.26	0.51
1:0:984:A:H2'	1:0:1200:G:N2	2.24	0.51
1:0:1921:A:H2'	1:0:1922:U:H5''	1.92	0.51
1:0:2083:G:H2'	1:0:2084:G:O4'	2.11	0.51
1:0:2401:A:H2'	1:0:2403:C:C5	2.45	0.51
1:0:333:A:H1'	1:0:351:A:C4	2.45	0.51
1:0:1033:G:H22	1:0:1150:C:C2'	2.24	0.51
1:0:1199:U:O4	1:0:1201:G:N7	2.43	0.51
1:0:1218:C:H2'	1:0:1219:C:C6	2.45	0.51
1:0:1861:G:O2'	1:0:1862:C:H5'	2.10	0.51
1:0:1865:C:H2'	1:0:1866:G:O4'	2.10	0.51
1:0:2272:A:H2'	1:0:2273:C:C6	2.46	0.51
1:0:2426:G:O2'	1:0:2427:A:P	2.68	0.51
1:0:168:A:H2'	1:0:169:C:C6	2.46	0.51

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:446:C:H2'	1:0:447:U:C6	2.46	0.51
1:0:539:A:N6	1:0:2024:U:H3	2.08	0.51
1:0:629:C:H2'	1:0:630:G:H5'	1.93	0.51
1:0:689:A:H3'	1:0:689:A:N3	2.25	0.51
1:0:763:A:C2	1:0:765:C:H1'	2.46	0.51
1:0:1001:A:N6	1:0:1200:G:H1'	2.22	0.51
1:0:1661:C:O2'	1:0:1662:G:H5'	2.10	0.51
1:0:2059:U:H2'	1:0:2060:A:H5''	1.91	0.51
1:0:2428:U:O2'	1:0:2429:A:H5'	2.10	0.51
1:0:2536:G:H2'	1:0:2537:C:C6	2.46	0.51
1:0:215:G:O2'	1:0:617:U:H1'	2.09	0.51
1:0:317:U:C2'	1:0:318:G:H5''	2.40	0.51
1:0:587:A:H2'	1:0:588:G:H5''	1.92	0.51
1:0:831:G:C2'	1:0:832:A:H5''	2.40	0.51
1:0:980:G:H2'	1:0:981:C:C6	2.46	0.51
1:0:1092:U:H2'	1:0:1093:U:C6	2.45	0.51
1:0:230:C:H2'	1:0:231:G:O4'	2.11	0.51
1:0:1312:G:H2'	1:0:1643:A:N6	2.25	0.51
1:0:1791:C:H2'	1:0:1792:C:H5''	1.93	0.51
1:0:2079:A:H2'	1:0:2080:U:C6	2.46	0.51
1:0:2397:A:H2'	1:0:2398:U:O4'	2.11	0.51
1:0:25:U:H3	1:0:525:A:H61	1.56	0.51
1:0:1777:A:H5'	1:0:1963:G:H21	1.76	0.51
1:0:1819:U:H5''	1:0:1954:A:O3'	2.11	0.51
1:0:2757:G:OP2	1:0:2761:A:H4'	2.10	0.51
1:0:35:G:H1'	1:0:466:A:H1'	1.93	0.51
1:0:67:G:H22	1:0:72:A:H2'	1.76	0.51
1:0:173:A:H61	1:0:844:G:H21	1.57	0.51
1:0:788:G:H5'	1:0:790:A:N3	2.26	0.51
1:0:1677:C:H2'	1:0:1678:G:C8	2.46	0.51
1:0:1793:A:H2'	1:0:1794:A:C8	2.46	0.51
1:0:2756:A:H1'	1:0:2758:A:N7	2.26	0.51
1:0:2758:A:H5''	1:0:2759:U:C5	2.44	0.51
1:0:173:A:N6	1:0:844:G:H21	2.09	0.50
1:0:1127:C:H2'	1:0:1128:G:H8	1.76	0.50
1:0:1141:U:H5'	1:0:2549:G:N2	2.26	0.50
1:0:2727:G:C2'	1:0:2728:A:H5''	2.41	0.50
1:0:571:U:H2'	1:0:581:A:H1'	1.93	0.50
1:0:645:G:H2'	1:0:646:C:C6	2.46	0.50
1:0:878:C:H42	1:0:921:A:H62	1.58	0.50
1:0:1052:C:H2'	1:0:1053:G:C8	2.45	0.50

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1055:A:N6	1:0:1122:A:H4'	2.26	0.50
1:0:1881:U:H2'	1:0:1882:G:H5'	1.94	0.50
1:0:2532:G:H1'	1:0:2561:G:N3	2.26	0.50
1:0:2783:U:O2'	1:0:2784:A:H4'	2.10	0.50
1:0:338:G:O2'	1:0:339:U:H5'	2.12	0.50
1:0:792:U:H2'	1:0:793:G:O4'	2.11	0.50
1:0:872:G:H2'	1:0:928:G:N1	2.27	0.50
1:0:1141:U:O2'	1:0:1142:G:OP1	2.25	0.50
1:0:1435:G:H21	1:0:1511:A:N6	2.10	0.50
1:0:1793:A:H2'	1:0:1794:A:H8	1.77	0.50
1:0:1424:U:H2'	1:0:1425:G:C8	2.46	0.50
1:0:2432:A:H4'	1:0:2551:A:O2'	2.12	0.50
1:0:2579:A:C2'	1:0:2580:C:H5''	2.34	0.50
1:0:2703:C:H2'	1:0:2704:U:C6	2.46	0.50
1:0:170:U:H2'	1:0:171:G:H8	1.77	0.50
1:0:223:C:H4'	1:0:398:C:H1'	1.93	0.50
1:0:665:A:OP2	1:0:666:U:H5'	2.12	0.50
1:0:689:A:C2'	1:0:690:A:H5'	2.42	0.50
1:0:1038:U:O2	1:0:2466:G:H4'	2.10	0.50
1:0:1495:G:HO2'	1:0:1496:G:P	2.34	0.50
1:0:84:G:H2'	1:0:85:C:C6	2.47	0.50
1:0:109:A:H3'	1:0:110:U:C5'	2.38	0.50
1:0:158:A:H2'	1:0:159:A:C8	2.44	0.50
1:0:599:A:H2'	1:0:600:G:H8	1.76	0.50
1:0:618:A:H2'	1:0:619:A:O4'	2.12	0.50
1:0:632:A:C2'	1:0:633:G:H5'	2.42	0.50
1:0:860:U:O2'	1:0:861:G:H5'	2.12	0.50
1:0:1194:U:O2'	1:0:1195:U:P	2.70	0.50
1:0:1923:U:H1'	1:0:1947:G:H4'	1.94	0.50
1:0:18:U:H2'	1:0:19:C:C6	2.46	0.50
1:0:864:C:H2'	1:0:865:A:H8	1.77	0.50
1:0:964:A:H2'	1:0:965:G:C8	2.47	0.50
1:0:1055:A:O2'	1:0:1058:G:H1'	2.12	0.50
1:0:1067:G:H2'	1:0:1114:A:H61	1.77	0.50
1:0:1289:A:H62	1:0:1662:G:H1	1.60	0.50
1:0:1922:U:H1'	1:0:2570:C:O2'	2.11	0.50
1:0:2178:U:H2'	1:0:2179:C:C6	2.47	0.50
1:0:45:C:H2'	1:0:46:C:C6	2.46	0.50
1:0:775:U:H4'	1:0:776:G:C8	2.47	0.50
1:0:1057:A:H3'	1:0:1058:G:C5'	2.41	0.50
1:0:1073:G:H2'	1:0:1074:G:C4'	2.28	0.50

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1162:A:H2'	1:0:1163:C:C6	2.47	0.50
1:0:1195:U:H2'	1:0:1196:G:H8	1.73	0.50
1:0:1225:G:H2'	1:0:1249:G:H1	1.77	0.50
1:0:1770:U:H2'	1:0:1774:A:H62	1.76	0.50
1:0:69:G:O2'	1:0:70:A:C8	2.65	0.50
1:0:165:G:H2'	1:0:166:G:O4'	2.12	0.50
1:0:316:C:H2'	1:0:317:U:C6	2.47	0.50
1:0:431:G:H2'	1:0:432:C:C6	2.47	0.50
1:0:1099:A:H5''	1:0:1100:G:N7	2.26	0.50
1:0:1354:A:H3'	1:0:1410:U:O2	2.11	0.50
1:0:1785:A:H2'	1:0:1786:C:C6	2.46	0.50
1:0:2757:G:H5'	1:0:2761:A:H1'	1.94	0.50
1:0:868:U:H2'	1:0:869:C:C6	2.46	0.49
1:0:1432:G:N2	1:0:1596:A:H62	2.05	0.49
1:0:1455:C:H2'	1:0:1456:C:C6	2.47	0.49
1:0:1679:U:H2'	1:0:1680:U:H5''	1.93	0.49
1:0:2754:C:H2'	1:0:2755:A:O4'	2.12	0.49
1:0:181:A:H4'	1:0:182:G:O5'	2.11	0.49
1:0:211:U:O2'	1:0:212:U:H5'	2.12	0.49
1:0:1820:G:O2'	1:0:1821:A:P	2.70	0.49
1:0:2010:G:H2'	1:0:2011:U:O4'	2.12	0.49
1:0:2435:C:H2'	1:0:2436:U:C6	2.47	0.49
1:0:2821:G:H2'	1:0:2822:U:C6	2.47	0.49
1:0:189:A:H2'	1:0:190:A:C8	2.47	0.49
1:0:203:G:O2'	1:0:204:A:H5'	2.12	0.49
1:0:830:C:O2	1:0:852:U:H4'	2.12	0.49
1:0:864:C:H2'	1:0:865:A:C8	2.46	0.49
1:0:1269:G:H2'	1:0:1270:C:C6	2.48	0.49
1:0:1678:G:H2'	1:0:1679:U:C6	2.46	0.49
1:0:1715:A:H1'	1:0:1717:A:C1'	2.42	0.49
1:0:2220:A:H2'	1:0:2221:G:C8	2.47	0.49
1:0:2805:G:O2'	1:0:2806:G:H5'	2.11	0.49
1:0:114:C:H2'	1:0:115:G:O4'	2.13	0.49
1:0:874:A:H62	1:0:928:G:H21	1.58	0.49
1:0:874:A:H62	1:0:928:G:N2	2.11	0.49
1:0:1857:G:H2'	1:0:1859:A:OP2	2.13	0.49
1:0:2446:C:H2'	1:0:2447:G:C8	2.47	0.49
1:0:422:C:H2'	1:0:423:G:H8	1.78	0.49
1:0:459:A:H62	1:0:484:G:H1'	1.78	0.49
1:0:780:U:H2'	1:0:781:G:C8	2.48	0.49
1:0:1029:C:C3'	1:0:1030:U:H5''	2.43	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1354:A:N6	1:0:1407:G:H22	2.09	0.49
1:0:1626:A:OP2	1:0:1627:C:H5	1.95	0.49
1:0:2093:G:H2'	1:0:2094:C:C6	2.47	0.49
1:0:2343:C:H2'	1:0:2344:G:O4'	2.13	0.49
1:0:2487:G:H4'	1:0:2533:U:O2'	2.11	0.49
1:0:477:A:H2'	1:0:478:G:O4'	2.13	0.49
1:0:1446:U:H2'	1:0:1447:U:C6	2.46	0.49
1:0:1492:A:H2	1:0:1531:C:H41	1.59	0.49
1:0:1667:A:H2'	1:0:1668:G:H8	1.78	0.49
1:0:1682:A:H2'	1:0:1683:G:C8	2.47	0.49
1:0:2082:C:H2'	1:0:2083:G:O4'	2.12	0.49
1:0:2161:C:O2'	1:0:2162:C:P	2.71	0.49
1:0:2329:C:C2'	1:0:2330:G:H5'	2.43	0.49
1:0:66:U:H2'	1:0:67:G:C8	2.48	0.49
1:0:568:G:H5''	1:0:1019:U:H5'	1.95	0.49
1:0:790:A:H2'	1:0:791:G:C8	2.48	0.49
1:0:1029:C:OP1	1:0:1047:G:H4'	2.12	0.49
1:0:1436:G:H1'	1:0:1508:G:N2	2.18	0.49
1:0:1729:C:H2'	1:0:1730:G:C8	2.47	0.49
1:0:2725:C:H2'	1:0:2726:U:C6	2.48	0.49
1:0:619:A:H2'	1:0:620:G:C8	2.47	0.49
1:0:1518:C:HO2'	1:0:1519:G:P	2.36	0.49
1:0:1685:A:N6	1:0:1691:G:H1'	2.28	0.49
1:0:2313:G:H2'	1:0:2314:A:H5'	1.95	0.49
1:0:427:C:H2'	1:0:428:A:C8	2.48	0.49
1:0:942:U:C2'	1:0:943:U:H5'	2.42	0.49
1:0:1436:G:C1'	1:0:1508:G:H21	2.20	0.49
1:0:1747:G:C4'	1:0:1749:G:H1'	2.32	0.49
1:0:1821:A:H5''	1:0:1822:C:H5	1.78	0.49
1:0:1871:G:N3	1:0:1871:G:C2'	2.76	0.49
1:0:1895:A:H2'	1:0:1896:A:O4'	2.13	0.49
1:0:2278:A:H2'	1:0:2279:G:C8	2.48	0.49
1:0:2301:A:H2'	1:0:2302:G:O4'	2.13	0.49
1:0:2426:G:H22	1:0:2430:A:H62	1.61	0.49
1:0:2726:U:H2'	1:0:2727:G:O4'	2.13	0.49
1:0:338:G:H1	1:0:346:C:H42	1.61	0.49
1:0:873:U:O2	1:0:2246:A:H5''	2.13	0.49
1:0:959:C:H5''	1:0:972:C:O2'	2.13	0.49
1:0:1164:C:H2'	1:0:1165:G:O4'	2.12	0.49
1:0:2093:G:O2'	1:0:2094:C:P	2.71	0.49
1:0:2503:G:C2'	1:0:2504:G:H5''	2.43	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2757:G:H5'	1:0:2761:A:C1'	2.43	0.49
1:0:332:C:H2'	1:0:333:A:H5'	1.94	0.48
1:0:441:A:H2'	1:0:442:A:O4'	2.12	0.48
1:0:951:G:C3'	1:0:952:A:H5''	2.43	0.48
1:0:1686:A:O2'	1:0:2528:G:H5'	2.13	0.48
1:0:1889:G:H2'	1:0:1890:G:C8	2.48	0.48
1:0:2235:G:H2'	1:0:2236:U:C6	2.48	0.48
1:0:2468:G:H2'	1:0:2469:G:O4'	2.13	0.48
1:0:2499:C:N4	1:0:2521:A:H2	2.09	0.48
1:0:2809:A:H2'	1:0:2810:A:H5'	1.95	0.48
1:0:83:A:C6	1:0:98:U:H1'	2.47	0.48
1:0:1141:U:O2'	1:0:1142:G:P	2.71	0.48
1:0:1429:A:H1'	1:0:1603:A:C6	2.48	0.48
1:0:2424:G:H2'	1:0:2425:G:O4'	2.13	0.48
1:0:342:G:N2	1:0:1222:G:H1	2.10	0.48
1:0:367:G:C3'	1:0:368:A:H5''	2.43	0.48
1:0:756:C:H2'	1:0:757:U:C6	2.48	0.48
1:0:1038:U:H2'	1:0:1039:A:C8	2.48	0.48
1:0:1349:A:H2'	1:0:1350:G:C8	2.48	0.48
1:0:1445:A:H2'	1:0:1446:U:O4'	2.14	0.48
1:0:2493:U:H2'	1:0:2494:C:C6	2.48	0.48
1:0:2494:C:H2'	1:0:2495:G:H8	1.79	0.48
1:0:2712:G:H5'	1:0:2713:A:C8	2.48	0.48
1:0:2783:U:H2'	1:0:2784:A:C4'	2.42	0.48
1:0:109:A:C2'	1:0:110:U:H5''	2.44	0.48
1:0:159:A:C2'	1:0:160:C:H5'	2.44	0.48
1:0:323:G:H2'	1:0:324:C:C6	2.48	0.48
1:0:860:U:H2'	1:0:861:G:H5'	1.96	0.48
1:0:930:A:H5'	1:0:931:G:C8	2.48	0.48
1:0:1046:U:H2'	1:0:1047:G:C8	2.49	0.48
1:0:1068:A:H2'	1:0:1069:G:H8	1.78	0.48
1:0:1226:A:C6	1:0:1250:A:H1'	2.48	0.48
1:0:1629:G:N1	1:0:1633:C:N4	2.61	0.48
1:0:1742:G:H2'	1:0:1743:C:C6	2.48	0.48
1:0:2238:G:H2'	1:0:2239:C:H6	1.78	0.48
1:0:2421:C:O2'	1:0:2422:C:H5'	2.12	0.48
1:0:2426:G:H5'	1:0:2480:C:N4	2.23	0.48
1:0:2872:U:H2'	1:0:2873:G:C8	2.49	0.48
1:0:32:C:H2'	1:0:33:C:C6	2.48	0.48
1:0:42:G:H2'	1:0:43:A:O4'	2.13	0.48
1:0:595:A:H62	1:0:1264:C:N4	2.11	0.48

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:810:U:H2'	1:0:811:G:C8	2.49	0.48
1:0:1310:C:OP1	1:0:2689:C:H4'	2.13	0.48
1:0:2429:A:H5''	1:0:2476:A:C6	2.48	0.48
1:0:2503:G:H2'	1:0:2504:G:H5''	1.96	0.48
1:0:2721:A:N6	1:0:2743:G:H21	2.10	0.48
1:0:2852:G:H2'	1:0:2853:U:O4'	2.13	0.48
1:0:703:A:H2'	1:0:704:G:H8	1.79	0.48
1:0:845:U:H2'	1:0:846:A:C8	2.49	0.48
1:0:926:C:H2'	1:0:927:C:H5'	1.95	0.48
1:0:2085:G:H2'	1:0:2086:U:C6	2.49	0.48
1:0:2212:U:H2'	1:0:2213:G:C8	2.48	0.48
1:0:2299:A:H2'	1:0:2299:A:N3	2.28	0.48
1:0:2799:C:H2'	1:0:2800:C:O4'	2.13	0.48
1:0:2809:A:N6	1:0:2854:G:H2'	2.29	0.48
1:0:1040:A:H2'	1:0:1041:G:H5'	1.94	0.48
1:0:1458:A:H3'	1:0:1459:U:H5'	1.96	0.48
1:0:1685:A:H1'	1:0:1686:A:N7	2.28	0.48
1:0:2009:U:H2'	1:0:2010:G:C8	2.48	0.48
1:0:2378:G:H2'	1:0:2379:G:H8	1.79	0.48
1:0:2523:G:O2'	1:0:2524:G:H5'	2.13	0.48
1:0:2794:G:H3'	1:0:2796:A:N6	2.22	0.48
1:0:2830:U:H2'	1:0:2831:A:C8	2.49	0.48
1:0:626:A:O2'	1:0:627:A:H5'	2.13	0.48
1:0:643:A:H2'	1:0:644:A:C8	2.48	0.48
1:0:1200:G:H2'	1:0:1201:G:O4'	2.14	0.48
1:0:1436:G:H2'	1:0:1437:A:C8	2.49	0.48
1:0:1937:G:N3	1:0:2530:C:H5'	2.29	0.48
1:0:452:G:H2'	1:0:453:U:O4'	2.14	0.48
1:0:471:A:N6	1:0:480:G:H21	1.99	0.48
1:0:1821:A:H3'	1:0:1822:C:H6	1.79	0.48
1:0:1981:A:H2'	1:0:1982:C:C6	2.48	0.48
1:0:2181:A:H2'	1:0:2182:A:H5'	1.94	0.48
1:0:2572:U:H2'	1:0:2573:C:C6	2.49	0.48
1:0:583:C:O2'	1:0:584:A:P	2.71	0.48
1:0:693:A:H2'	1:0:694:G:C8	2.48	0.48
1:0:1014:G:O2'	1:0:1015:U:H5'	2.14	0.48
1:0:1031:C:H1'	1:0:1151:U:O2	2.14	0.48
1:0:2700:U:N3	1:0:2848:A:N6	2.60	0.48
1:0:429:C:H2'	1:0:430:C:O4'	2.14	0.47
1:0:546:A:H2'	1:0:547:U:C6	2.49	0.47
1:0:697:G:C2'	1:0:698:A:H5'	2.44	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:701:U:H1'	1:0:800:U:H5'	1.96	0.47
1:0:760:U:O2	1:0:1997:A:H1'	2.14	0.47
1:0:776:G:N3	1:0:776:G:C2'	2.77	0.47
1:0:2055:G:H2'	1:0:2056:C:C6	2.49	0.47
1:0:2377:U:O2'	1:0:2378:G:P	2.72	0.47
1:0:2404:A:H5''	1:0:2405:A:H3'	1.96	0.47
1:0:2429:A:O2'	1:0:2430:A:H5'	2.14	0.47
1:0:2574:G:N3	1:0:2574:G:C2'	2.76	0.47
1:0:2756:A:H4'	1:0:2758:A:OP1	2.13	0.47
1:0:2795:A:N3	1:0:2795:A:H2'	2.28	0.47
1:0:324:C:H2'	1:0:325:U:O4'	2.14	0.47
1:0:541:C:N4	1:0:572:G:O4'	2.47	0.47
1:0:548:G:H2'	1:0:549:G:C8	2.49	0.47
1:0:675:C:H2'	1:0:676:G:C8	2.49	0.47
1:0:878:C:N4	1:0:921:A:H62	2.12	0.47
1:0:953:G:H4'	1:0:1203:A:O2'	2.14	0.47
1:0:974:U:H2'	1:0:975:C:C6	2.49	0.47
1:0:1223:G:O2'	1:0:1224:A:P	2.73	0.47
1:0:1598:C:H2'	1:0:1599:G:O4'	2.14	0.47
1:0:1679:U:C2'	1:0:1680:U:H5''	2.44	0.47
1:0:187:U:H2'	1:0:188:G:C8	2.50	0.47
1:0:582:G:H2'	1:0:583:C:H3'	1.95	0.47
1:0:1182:U:C3'	1:0:1183:C:H5''	2.44	0.47
1:0:1263:G:O2'	1:0:1264:C:P	2.72	0.47
1:0:1572:C:C3'	1:0:1573:G:H5''	2.44	0.47
1:0:1937:G:H4'	1:0:2529:G:H21	1.78	0.47
1:0:2026:C:H2'	1:0:2027:C:C6	2.49	0.47
1:0:2504:G:H2'	1:0:2505:G:H8	1.78	0.47
1:0:2660:C:O2'	1:0:2661:G:H5'	2.14	0.47
1:0:210:A:N6	1:0:242:A:N7	2.62	0.47
1:0:240:U:H4'	1:0:443:A:H5'	1.97	0.47
1:0:780:U:H2'	1:0:781:G:H8	1.79	0.47
1:0:1344:C:H2'	1:0:1346:C:OP1	2.14	0.47
1:0:1685:A:C6	1:0:1691:G:H1'	2.50	0.47
1:0:2168:A:C2'	1:0:2169:A:H5'	2.44	0.47
1:0:2308:A:H2'	1:0:2309:G:C8	2.48	0.47
1:0:70:A:O3'	1:0:71:A:H3'	2.14	0.47
1:0:199:A:H61	1:0:209:G:H1'	1.80	0.47
1:0:245:C:H5'	1:0:372:U:O2'	2.15	0.47
1:0:569:C:H2'	1:0:570:G:C8	2.50	0.47
1:0:869:C:O2'	1:0:870:C:H5'	2.15	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:991:A:N6	1:0:2020:G:H21	2.13	0.47
1:0:1039:A:H2'	1:0:1040:A:H8	1.79	0.47
1:0:1326:U:H1'	1:0:1626:A:N3	2.30	0.47
1:0:1480:G:H2'	1:0:1481:U:H5'	1.97	0.47
1:0:1619:A:H3'	1:0:1619:A:N3	2.30	0.47
1:0:1684:G:H2'	1:0:1974:U:O4	2.15	0.47
1:0:2057:U:H1'	1:0:2577:A:H1'	1.95	0.47
1:0:2204:A:O2'	1:0:2205:C:OP2	2.32	0.47
1:0:2483:U:H1'	1:0:2551:A:C2	2.50	0.47
1:0:2642:G:H2'	1:0:2643:G:O4'	2.15	0.47
1:0:2651:U:H2'	1:0:2652:G:C8	2.49	0.47
1:0:152:G:O2'	1:0:153:A:H5'	2.15	0.47
1:0:198:A:O2'	1:0:199:A:P	2.73	0.47
1:0:560:G:H2'	1:0:561:U:C6	2.49	0.47
1:0:742:G:H2'	1:0:1766:U:H1'	1.96	0.47
1:0:941:U:H2'	1:0:942:U:C6	2.49	0.47
1:0:986:A:H2'	1:0:987:G:H5'	1.96	0.47
1:0:1036:G:H1'	1:0:1145:C:C4'	2.44	0.47
1:0:1316:G:H2'	1:0:1317:G:C8	2.49	0.47
1:0:1579:G:H2'	1:0:1580:C:C6	2.50	0.47
1:0:2062:U:H4'	1:0:2412:A:H2	1.78	0.47
1:0:2069:U:H2'	1:0:2070:G:C8	2.49	0.47
1:0:8:A:H2'	1:0:9:U:C6	2.49	0.47
1:0:216:U:H5''	1:0:601:A:N6	2.30	0.47
1:0:246:C:N3	1:0:247:A:N6	2.62	0.47
1:0:432:C:H2'	1:0:433:G:H8	1.79	0.47
1:0:478:G:O2'	1:0:479:G:H5'	2.15	0.47
1:0:542:A:OP2	1:0:2003:A:H1'	2.15	0.47
1:0:689:A:N6	1:0:815:A:H61	2.08	0.47
1:0:742:G:N3	1:0:742:G:C2'	2.78	0.47
1:0:1039:A:H2'	1:0:1040:A:C8	2.48	0.47
1:0:1286:U:H4'	1:0:1288:A:OP1	2.15	0.47
1:0:1316:G:H2'	1:0:1317:G:H8	1.79	0.47
1:0:1391:A:H2'	1:0:1392:U:C5	2.50	0.47
1:0:1686:A:H2'	1:0:1687:C:H5'	1.96	0.47
1:0:2276:C:O2	1:0:2301:A:H1'	2.15	0.47
1:0:2782:G:H2'	1:0:2783:U:OP1	2.15	0.47
1:0:758:G:H2'	1:0:759:C:H5'	1.97	0.47
1:0:1028:G:H2'	1:0:1029:C:C6	2.50	0.47
1:0:1184:G:H2'	1:0:1185:C:H5'	1.97	0.47
1:0:1259:A:H2'	1:0:1260:A:O4'	2.14	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1273:G:H2'	1:0:1274:C:C6	2.50	0.47
1:0:1486:A:H2'	1:0:1487:C:C6	2.49	0.47
1:0:2015:G:OP2	1:0:2434:G:H5'	2.15	0.47
1:0:2244:C:H1'	1:0:2255:G:N1	2.30	0.47
1:0:2324:G:C4'	1:0:2326:C:H5''	2.42	0.47
1:0:595:A:H2	1:0:822:G:N3	2.13	0.47
1:0:601:A:H3'	1:0:602:C:C5'	2.44	0.47
1:0:664:C:H2'	1:0:665:A:C8	2.50	0.47
1:0:738:G:H2'	1:0:739:G:O4'	2.14	0.47
1:0:931:G:O2'	1:0:932:G:H5'	2.15	0.47
1:0:979:A:H2'	1:0:980:G:C8	2.50	0.47
1:0:1033:G:N2	1:0:1150:C:H2'	2.26	0.47
1:0:1120:C:H2'	1:0:2731:G:N2	2.30	0.47
1:0:1279:G:H2'	1:0:1280:U:OP2	2.15	0.47
1:0:1825:C:O2'	1:0:1826:U:H5'	2.15	0.47
1:0:2196:U:H2'	1:0:2197:U:C6	2.50	0.47
1:0:2211:U:H2'	1:0:2212:U:C6	2.50	0.47
1:0:2329:C:N4	1:0:2361:G:H22	2.13	0.47
1:0:2448:A:H2'	1:0:2449:G:O4'	2.14	0.47
1:0:2727:G:N1	1:0:2735:C:H5''	2.29	0.47
1:0:567:G:H2'	1:0:568:G:C8	2.50	0.47
1:0:699:G:H3'	1:0:699:G:N3	2.31	0.47
1:0:932:G:H2'	1:0:933:G:C8	2.50	0.47
1:0:952:A:H2'	1:0:953:G:O4'	2.15	0.47
1:0:1998:A:H2'	1:0:1999:U:H5'	1.97	0.47
1:0:9:U:H2'	1:0:10:A:C8	2.50	0.46
1:0:210:A:N6	1:0:442:A:H61	2.12	0.46
1:0:341:A:H1'	1:0:1223:G:O6	2.15	0.46
1:0:534:U:H4'	1:0:564:U:O2'	2.15	0.46
1:0:2316:G:H2'	1:0:2317:G:H8	1.79	0.46
1:0:1578:U:H2'	1:0:1579:G:C8	2.51	0.46
1:0:207:U:H2'	1:0:208:C:C6	2.50	0.46
1:0:918:A:H2'	1:0:919:U:C5'	2.41	0.46
1:0:967:G:H1'	1:0:970:A:N7	2.30	0.46
1:0:1016:C:H2'	1:0:1017:C:C6	2.50	0.46
1:0:1418:C:H2'	1:0:1419:G:H8	1.80	0.46
1:0:1452:U:H5'	1:0:1532:A:O2'	2.14	0.46
1:0:1912:G:N3	1:0:1912:G:C2'	2.78	0.46
1:0:1920:A:N6	1:0:1923:U:H6	2.13	0.46
1:0:1962:C:O2'	1:0:1963:G:H5'	2.16	0.46
1:0:2278:A:H2'	1:0:2279:G:H8	1.81	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2676:G:H2'	1:0:2677:U:C6	2.50	0.46
1:0:2800:C:H2'	1:0:2801:A:O4'	2.14	0.46
1:0:88:G:H3'	1:0:89:A:C5'	2.38	0.46
1:0:689:A:C8	1:0:2422:C:H1'	2.51	0.46
1:0:1829:C:C2'	1:0:1830:C:H5'	2.45	0.46
1:0:1966:C:H4'	1:0:2585:C:H4'	1.96	0.46
1:0:2058:U:H3'	1:0:2217:G:N1	2.31	0.46
1:0:2526:U:H2'	1:0:2527:G:C8	2.50	0.46
1:0:2658:A:H2'	1:0:2659:C:C6	2.51	0.46
1:0:2785:A:H2'	1:0:2786:G:O4'	2.15	0.46
1:0:2815:C:H2'	1:0:2816:C:C6	2.51	0.46
1:0:241:C:C2'	1:0:242:A:H5''	2.45	0.46
1:0:1029:C:H3'	1:0:1030:U:H5''	1.96	0.46
1:0:1429:A:N6	1:0:1602:G:H5'	2.31	0.46
1:0:1495:G:O2'	1:0:1496:G:P	2.73	0.46
1:0:1918:G:H4'	1:0:1920:A:C2	2.51	0.46
1:0:2708:U:H2'	1:0:2709:C:C6	2.51	0.46
1:0:306:G:H2'	1:0:307:C:C6	2.51	0.46
1:0:387:A:H2'	1:0:388:G:O4'	2.16	0.46
1:0:1386:A:H2'	1:0:1387:G:O4'	2.16	0.46
1:0:2057:U:H2'	1:0:2058:U:C6	2.50	0.46
1:0:2437:G:H4'	1:0:2438:A:N7	2.30	0.46
1:0:2717:G:H2'	1:0:2718:A:C8	2.51	0.46
1:0:187:U:H2'	1:0:188:G:H8	1.80	0.46
1:0:1142:G:OP1	1:0:2494:C:H4'	2.16	0.46
1:0:1278:A:O2'	1:0:1279:G:O5'	2.34	0.46
1:0:1427:G:C2'	1:0:1428:G:H5'	2.44	0.46
1:0:1836:C:H2'	1:0:1837:G:C8	2.50	0.46
1:0:1855:G:H4'	1:0:2390:A:H4'	1.97	0.46
1:0:1888:C:H5''	1:0:1889:G:C5'	2.45	0.46
1:0:2199:C:H2'	1:0:2200:G:C8	2.49	0.46
1:0:2600:A:H2'	1:0:2601:C:C6	2.51	0.46
1:0:84:G:O2'	1:0:85:C:H5'	2.15	0.46
1:0:239:A:H4'	1:0:620:G:H5'	1.97	0.46
1:0:313:U:H2'	1:0:314:G:C8	2.50	0.46
1:0:421:G:H2'	1:0:422:C:C6	2.51	0.46
1:0:1571:G:H2'	1:0:1572:C:C6	2.51	0.46
1:0:1888:C:C5'	1:0:1889:G:H5''	2.44	0.46
1:0:1993:G:H2'	1:0:1994:U:C6	2.51	0.46
1:0:2035:G:H2'	1:0:2036:G:C8	2.47	0.46
1:0:2369:U:H2'	1:0:2370:G:C8	2.51	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2633:A:N6	1:0:2646:C:N4	2.63	0.46
1:0:337:G:H2'	1:0:338:G:C8	2.51	0.46
1:0:343:A:H3'	1:0:343:A:P	2.55	0.46
1:0:635:C:H3'	1:0:636:G:H5''	1.98	0.46
1:0:771:C:H2'	1:0:772:G:H8	1.80	0.46
1:0:1069:G:O2'	1:0:1070:G:H5'	2.16	0.46
1:0:1429:A:O2'	1:0:1430:G:H4'	2.16	0.46
1:0:1760:G:H2'	1:0:1761:G:C8	2.51	0.46
1:0:2307:A:H2'	1:0:2308:A:C8	2.51	0.46
1:0:2402:U:H5'	1:0:2404:A:N7	2.31	0.46
1:0:2620:G:H2'	1:0:2621:G:H8	1.81	0.46
1:0:2628:C:H2'	1:0:2629:U:C6	2.51	0.46
1:0:2635:U:H2'	1:0:2636:A:C8	2.51	0.46
1:0:2668:U:O2'	1:0:2669:C:P	2.74	0.46
1:0:26:G:H21	1:0:524:A:N6	2.13	0.46
1:0:462:G:H2'	1:0:463:C:H5'	1.98	0.46
1:0:819:C:H2'	1:0:820:U:C6	2.51	0.46
1:0:1290:A:H2'	1:0:1291:G:C8	2.51	0.46
1:0:1712:G:H3'	1:0:1712:G:N3	2.31	0.46
1:0:1949:A:H1'	1:0:2572:U:H4'	1.98	0.46
1:0:2204:A:H1'	1:0:2205:C:C5	2.51	0.46
1:0:2372:A:H2'	1:0:2373:C:H6	1.80	0.46
1:0:2483:U:H2'	1:0:2484:G:H5'	1.96	0.46
1:0:636:G:H2'	1:0:637:G:H5'	1.97	0.45
1:0:653:G:H21	1:0:655:A:H1'	1.80	0.45
1:0:1200:G:OP1	1:0:1200:G:C8	2.69	0.45
1:0:1259:A:H2'	1:0:1260:A:H8	1.80	0.45
1:0:1495:G:H2'	1:0:1496:G:C8	2.52	0.45
1:0:1790:G:O3'	1:0:1791:C:H6	1.99	0.45
1:0:2277:A:H2'	1:0:2278:A:O4'	2.16	0.45
1:0:2310:G:H2'	1:0:2311:U:O4'	2.15	0.45
1:0:2694:G:H2'	1:0:2695:C:C6	2.51	0.45
1:0:365:U:H2'	1:0:366:U:C6	2.52	0.45
1:0:556:A:H2'	1:0:557:U:H5'	1.98	0.45
1:0:1301:U:H2'	1:0:1664:G:N2	2.31	0.45
1:0:1313:U:O2'	1:0:1314:A:O5'	2.30	0.45
1:0:2106:G:H2'	1:0:2107:G:C8	2.51	0.45
1:0:2376:G:H2'	1:0:2377:U:C6	2.52	0.45
1:0:2581:A:H2'	1:0:2582:G:C5'	2.46	0.45
1:0:192:G:O2'	1:0:193:A:C5'	2.65	0.45
1:0:703:A:H2'	1:0:704:G:C8	2.51	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:859:U:H4'	1:0:860:U:C5	2.52	0.45
1:0:872:G:O2'	1:0:2247:A:N3	2.49	0.45
1:0:1007:A:H2'	1:0:1008:G:C8	2.51	0.45
1:0:1140:A:N6	1:0:2469:G:H5''	2.32	0.45
1:0:1257:U:H2'	1:0:1258:G:C8	2.52	0.45
1:0:1504:G:O2'	1:0:1505:U:H5'	2.16	0.45
1:0:1665:C:N4	1:0:1993:G:H1	2.14	0.45
1:0:1703:C:H2'	1:0:1704:G:O4'	2.16	0.45
1:0:1821:A:H5''	1:0:1822:C:C5	2.51	0.45
1:0:2784:A:H3'	1:0:2785:A:C8	2.51	0.45
1:0:616:U:C3'	1:0:617:U:H5''	2.47	0.45
1:0:837:U:H2'	1:0:838:A:C8	2.52	0.45
1:0:968:C:H2'	1:0:970:A:OP1	2.17	0.45
1:0:1251:G:H2'	1:0:1252:C:H6	1.80	0.45
1:0:2025:A:H2'	1:0:2026:C:H5''	1.97	0.45
1:0:2093:G:H2'	1:0:2094:C:C5	2.51	0.45
1:0:2235:G:H2'	1:0:2236:U:H6	1.81	0.45
1:0:319:G:H1'	1:0:511:A:H5'	1.98	0.45
1:0:529:U:H2'	1:0:530:G:C8	2.51	0.45
1:0:845:U:H2'	1:0:846:A:H8	1.80	0.45
1:0:971:A:H2	1:0:2475:C:H1'	1.81	0.45
1:0:1319:C:H2'	1:0:1320:A:H8	1.81	0.45
1:0:1447:U:O2	1:0:1576:G:O6	2.34	0.45
1:0:1906:U:H2'	1:0:1907:C:C6	2.51	0.45
1:0:1949:A:H1'	1:0:2572:U:H5'	1.97	0.45
1:0:2159:A:H2'	1:0:2160:C:C6	2.51	0.45
1:0:2204:A:O2'	1:0:2205:C:C6	2.69	0.45
1:0:2356:A:H2'	1:0:2357:A:C8	2.52	0.45
1:0:2698:G:H2'	1:0:2699:G:C8	2.52	0.45
1:0:297:A:H2'	1:0:298:C:C6	2.50	0.45
1:0:437:G:O2'	1:0:438:G:H5'	2.15	0.45
1:0:887:G:O2'	1:0:888:G:H5'	2.16	0.45
1:0:1227:A:H62	1:0:1248:G:H21	1.64	0.45
1:0:1291:G:H2'	1:0:1292:A:C8	2.52	0.45
1:0:1380:C:C2'	1:0:1381:G:H5'	2.46	0.45
1:0:1519:G:H2'	1:0:1520:G:C8	2.51	0.45
1:0:1659:G:H2'	1:0:1660:G:C8	2.51	0.45
1:0:19:C:H2'	1:0:20:C:C6	2.50	0.45
1:0:81:C:H4'	1:0:307:C:H5'	1.98	0.45
1:0:117:A:H4'	1:0:118:U:C6	2.52	0.45
1:0:130:C:H2'	1:0:131:C:C6	2.52	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:172:A:H4'	1:0:228:A:H4'	1.98	0.45
1:0:509:U:H2'	1:0:510:G:O4'	2.16	0.45
1:0:788:G:C5'	1:0:790:A:H1'	2.46	0.45
1:0:935:C:H2'	1:0:936:A:C8	2.52	0.45
1:0:1008:G:H2'	1:0:1009:C:C6	2.51	0.45
1:0:1204:G:H2'	1:0:1205:G:C8	2.51	0.45
1:0:2393:G:H2'	1:0:2394:G:H8	1.82	0.45
1:0:2403:C:H2'	1:0:2408:G:O2'	2.17	0.45
1:0:37:C:H2'	1:0:38:G:C8	2.52	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
1:0:1278:A:H4'	1:0:1279:G:O5'	2.17	0.45
1:0:1586:A:H2'	1:0:1587:A:C8	2.52	0.45
1:0:1605:A:H2'	1:0:1606:C:C6	2.52	0.45
1:0:2021:G:H2'	1:0:2022:C:C6	2.52	0.45
1:0:2444:C:O2'	1:0:2445:C:H5'	2.17	0.45
1:0:2824:C:H1'	1:0:2843:A:C2	2.51	0.45
1:0:40:U:H2'	1:0:41:G:C8	2.51	0.45
1:0:211:U:C2'	1:0:212:U:H5'	2.46	0.45
1:0:520:C:H2'	1:0:521:U:O4'	2.17	0.45
1:0:547:U:H2'	1:0:548:G:C8	2.51	0.45
1:0:798:G:H2'	1:0:799:C:H5'	1.99	0.45
1:0:838:A:H4'	1:0:2407:G:C5	2.52	0.45
1:0:1130:U:H2'	1:0:1131:G:C8	2.52	0.45
1:0:1367:A:H2'	1:0:1368:G:O4'	2.17	0.45
1:0:1452:U:H5''	1:0:1533:G:H5'	1.99	0.45
1:0:1859:A:H2'	1:0:1860:A:C8	2.52	0.45
1:0:2161:C:H2'	1:0:2162:C:C6	2.51	0.45
1:0:2434:G:H2'	1:0:2435:C:C6	2.52	0.45
1:0:2459:C:C2'	1:0:2460:G:H5'	2.46	0.45
1:0:2591:C:O2'	1:0:2592:U:H5'	2.17	0.45
1:0:2710:C:O2'	1:0:2711:G:H5'	2.17	0.45
1:0:2784:A:H3'	1:0:2785:A:H8	1.80	0.45
1:0:2858:A:H3'	1:0:2859:U:C5'	2.45	0.45
1:0:215:G:H1'	1:0:617:U:O2	2.17	0.45
1:0:811:G:O2'	1:0:812:G:H5'	2.17	0.45
1:0:841:G:H4'	1:0:844:G:N1	2.32	0.45
1:0:1307:U:H2'	1:0:1308:C:O4'	2.17	0.45
1:0:1712:G:C2'	1:0:1713:G:H5'	2.46	0.45
1:0:1835:C:H2'	1:0:1836:C:C6	2.52	0.45
1:0:2418:A:N6	1:0:2581:A:OP1	2.50	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2475:C:H2'	1:0:2476:A:H5'	1.99	0.45
1:0:2825:A:H2'	1:0:2826:C:C6	2.52	0.45
1:0:959:C:H2'	1:0:960:U:C6	2.52	0.44
1:0:1353:A:H1'	1:0:1619:A:O4'	2.16	0.44
1:0:1494:G:H2'	1:0:1495:G:C8	2.52	0.44
1:0:1608:U:H2'	1:0:1609:G:C8	2.52	0.44
1:0:1938:U:H2'	1:0:1939:U:H5'	1.98	0.44
1:0:2137:G:H2'	1:0:2138:U:C6	2.52	0.44
1:0:2193:C:H2'	1:0:2194:A:O4'	2.17	0.44
1:0:2333:A:H2'	1:0:2334:C:C6	2.53	0.44
1:0:2559:U:C2'	1:0:2560:G:H5'	2.46	0.44
1:0:2639:A:H2'	1:0:2640:G:O4'	2.16	0.44
1:0:307:C:H2'	1:0:308:C:C6	2.53	0.44
1:0:328:A:O2'	1:0:329:C:H5'	2.17	0.44
1:0:635:C:C3'	1:0:636:G:H5''	2.47	0.44
1:0:786:U:H2'	1:0:787:A:H5'	1.98	0.44
1:0:1031:C:H4'	1:0:1032:A:C8	2.52	0.44
1:0:1221:C:H2'	1:0:1222:G:H8	1.81	0.44
1:0:2594:U:H2'	1:0:2595:C:C6	2.52	0.44
1:0:158:A:O2'	1:0:159:A:H5'	2.17	0.44
1:0:403:A:H4'	1:0:425:A:C5'	2.39	0.44
1:0:415:A:C2'	1:0:416:U:H5'	2.46	0.44
1:0:736:G:H2'	1:0:737:C:O4'	2.17	0.44
1:0:1279:G:H1'	1:0:1280:U:H5	1.82	0.44
1:0:1331:G:H2'	1:0:1332:G:C8	2.53	0.44
1:0:1917:C:H2'	1:0:1918:G:H5'	2.00	0.44
1:0:1921:A:C3'	1:0:1922:U:H5''	2.47	0.44
1:0:2018:G:H3'	1:0:2019:C:H5'	1.99	0.44
1:0:489:A:N6	1:0:491:A:H62	2.15	0.44
1:0:694:G:H2'	1:0:695:G:H8	1.82	0.44
1:0:827:C:H2'	1:0:828:C:C6	2.52	0.44
1:0:1016:C:H5''	1:0:1023:U:OP2	2.18	0.44
1:0:1278:A:O2'	1:0:1279:G:OP2	2.36	0.44
1:0:1283:C:OP1	1:0:1284:G:H5'	2.18	0.44
1:0:1975:G:H4'	1:0:1976:U:H5	1.82	0.44
1:0:2220:A:H2'	1:0:2221:G:H8	1.82	0.44
1:0:2239:C:O2'	1:0:2240:C:H5'	2.17	0.44
1:0:2321:C:C2'	1:0:2322:U:H5'	2.47	0.44
1:0:2555:G:H2'	1:0:2555:G:N3	2.32	0.44
1:0:2772:U:H2'	1:0:2773:G:C8	2.52	0.44
1:0:2807:U:C5	1:0:2859:U:H4'	2.52	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:173:A:N3	1:0:173:A:C2'	2.81	0.44
1:0:181:A:C5'	1:0:182:G:OP1	2.61	0.44
1:0:420:C:H2'	1:0:421:G:C8	2.53	0.44
1:0:575:U:H2'	1:0:576:A:C8	2.53	0.44
1:0:644:A:H2'	1:0:645:G:H5'	1.99	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
1:0:1225:G:H2'	1:0:1249:G:N1	2.32	0.44
1:0:1380:C:N4	1:0:1799:A:N1	2.66	0.44
1:0:2244:C:H1'	1:0:2255:G:H1	1.83	0.44
1:0:2512:A:H2'	1:0:2513:A:O4'	2.18	0.44
1:0:2555:G:N3	1:0:2555:G:C2'	2.81	0.44
1:0:2668:U:C2'	1:0:2669:C:OP2	2.66	0.44
1:0:2709:C:H2'	1:0:2710:C:C6	2.52	0.44
1:0:192:G:H4'	1:0:193:A:O5'	2.17	0.44
1:0:617:U:H2'	1:0:618:A:O4'	2.18	0.44
1:0:1147:G:H2'	1:0:1148:G:C8	2.53	0.44
1:0:1163:C:O2'	1:0:1164:C:H5'	2.16	0.44
1:0:1346:C:H2'	1:0:1347:C:C6	2.52	0.44
1:0:1677:C:H2'	1:0:1678:G:H8	1.82	0.44
1:0:1840:A:H2'	1:0:1841:G:H5'	2.00	0.44
1:0:1949:A:O2'	1:0:2572:U:H5'	2.17	0.44
1:0:1961:A:H2'	1:0:1962:C:O4'	2.17	0.44
1:0:2377:U:O2'	1:0:2378:G:OP1	2.33	0.44
1:0:2474:G:O2'	1:0:2475:C:H5'	2.17	0.44
1:0:317:U:H3'	1:0:318:G:H5''	1.98	0.44
1:0:611:C:C2'	1:0:612:G:H5'	2.48	0.44
1:0:820:U:H1'	1:0:2424:G:OP1	2.17	0.44
1:0:1075:C:H2'	1:0:1076:U:C6	2.53	0.44
1:0:1518:C:O2'	1:0:1519:G:P	2.75	0.44
1:0:1519:G:H2'	1:0:1520:G:O4'	2.18	0.44
1:0:1614:C:H2'	1:0:1615:C:C6	2.52	0.44
1:0:1634:A:O2'	1:0:1635:G:H5'	2.17	0.44
1:0:2261:G:H4'	1:0:2368:G:O2'	2.18	0.44
1:0:2524:G:H2'	1:0:2525:U:O4'	2.17	0.44
1:0:181:A:C4'	1:0:182:G:H4'	2.46	0.44
1:0:475:U:H2'	1:0:476:G:O4'	2.17	0.44
1:0:520:C:O2'	1:0:1249:G:H5''	2.18	0.44
1:0:820:U:H2'	1:0:821:A:C8	2.52	0.44
1:0:879:A:C2'	1:0:880:C:H5'	2.47	0.44
1:0:1880:G:H2'	1:0:1881:U:C6	2.53	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1888:C:C4'	1:0:1889:G:H5''	2.48	0.44
1:0:2022:C:H2'	1:0:2023:C:C6	2.53	0.44
1:0:2213:G:H2'	1:0:2214:G:H8	1.83	0.44
1:0:2259:G:H2'	1:0:2260:C:C6	2.53	0.44
1:0:2475:C:C2'	1:0:2476:A:H5'	2.48	0.44
1:0:514:G:N3	1:0:514:G:C2'	2.79	0.44
1:0:1312:G:H5''	1:0:1313:U:C5'	2.36	0.44
1:0:2217:G:H5'	1:0:2219:U:O4	2.17	0.44
1:0:2227:C:C2'	1:0:2228:U:H5'	2.41	0.44
1:0:338:G:H2'	1:0:339:U:O4'	2.18	0.43
1:0:575:U:H4'	1:0:822:G:OP2	2.18	0.43
1:0:607:C:H2'	1:0:608:G:C8	2.53	0.43
1:0:1194:U:H2'	1:0:1195:U:H6	1.78	0.43
1:0:1886:G:H2'	1:0:1887:G:C8	2.53	0.43
1:0:67:G:H8	1:0:67:G:O5'	2.02	0.43
1:0:192:G:O2'	1:0:193:A:P	2.75	0.43
1:0:430:C:H2'	1:0:431:G:C8	2.53	0.43
1:0:697:G:O2'	1:0:698:A:H5'	2.18	0.43
1:0:878:C:O2'	1:0:879:A:P	2.75	0.43
1:0:916:U:H2'	1:0:917:U:C6	2.53	0.43
1:0:1478:U:H2'	1:0:1479:G:C8	2.53	0.43
1:0:1480:G:C2'	1:0:1481:U:H5'	2.47	0.43
1:0:1801:C:H3'	1:0:1802:A:H5'	2.00	0.43
1:0:2161:C:O2'	1:0:2162:C:OP1	2.34	0.43
1:0:2602:G:OP1	1:0:2801:A:H1'	2.19	0.43
1:0:2824:C:H2'	1:0:2825:A:OP2	2.18	0.43
1:0:116:A:N3	1:0:155:G:H1'	2.34	0.43
1:0:215:G:H2'	1:0:216:U:O4'	2.18	0.43
1:0:1451:C:H2'	1:0:1452:U:C6	2.53	0.43
1:0:1532:A:H2'	1:0:1533:G:C8	2.53	0.43
1:0:2497:A:O5'	1:0:2497:A:N3	2.51	0.43
1:0:2569:A:H2'	1:0:2570:C:C6	2.53	0.43
1:0:2862:G:O2'	1:0:2863:U:H5'	2.18	0.43
1:0:33:C:N4	1:0:466:A:H61	2.12	0.43
1:0:201:G:H2'	1:0:202:A:H8	1.83	0.43
1:0:351:A:H2'	1:0:352:G:O4'	2.19	0.43
1:0:457:C:O2'	1:0:458:G:H5'	2.18	0.43
1:0:652:C:N4	1:0:657:A:H61	2.08	0.43
1:0:777:A:H62	1:0:1766:U:H3	1.62	0.43
1:0:789:G:N2	1:0:806:A:H62	1.95	0.43
1:0:831:G:H2'	1:0:832:A:H5''	2.00	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1604:A:H2'	1:0:1605:A:O4'	2.19	0.43
1:0:1750:A:H1'	1:0:2690:A:C2	2.53	0.43
1:0:1886:G:H2'	1:0:1887:G:H8	1.83	0.43
1:0:2058:U:H3'	1:0:2217:G:H1	1.83	0.43
1:0:2083:G:N2	1:0:2172:U:H3	2.16	0.43
1:0:2240:C:H2'	1:0:2241:U:H5'	1.99	0.43
1:0:2615:U:H3	1:0:2762:G:H1	1.65	0.43
1:0:2633:A:H61	1:0:2646:C:N4	2.15	0.43
1:0:54:G:H2'	1:0:55:A:C8	2.53	0.43
1:0:242:A:N6	1:0:441:A:N7	2.67	0.43
1:0:474:G:N2	1:0:476:G:H3'	2.34	0.43
1:0:831:G:H5'	1:0:852:U:OP1	2.19	0.43
1:0:1172:U:H2'	1:0:1173:G:C8	2.53	0.43
1:0:1463:A:H2'	1:0:1464:A:H8	1.82	0.43
1:0:1773:C:H1'	1:0:2588:U:H5''	2.01	0.43
1:0:1919:A:H5''	1:0:1920:A:O5'	2.18	0.43
1:0:2426:G:H22	1:0:2431:C:N4	2.16	0.43
1:0:2473:G:O2'	1:0:2474:G:H5'	2.18	0.43
1:0:2574:G:H1'	1:0:2576:G:O6	2.17	0.43
1:0:2619:G:H2'	1:0:2620:G:C8	2.53	0.43
1:0:23:G:H2'	1:0:24:G:C8	2.54	0.43
1:0:147:G:C2	1:0:148:C:H1'	2.54	0.43
1:0:237:G:H2'	1:0:238:G:O4'	2.18	0.43
1:0:565:A:H2'	1:0:566:U:C6	2.54	0.43
1:0:591:G:H2'	1:0:592:G:C8	2.54	0.43
1:0:1030:U:OP1	1:0:1046:U:H1'	2.18	0.43
1:0:2133:G:H2'	1:0:2134:U:C6	2.54	0.43
1:0:2436:U:H2'	1:0:2437:G:O4'	2.19	0.43
1:0:2458:U:OP1	1:0:2516:U:H1'	2.19	0.43
1:0:10:A:O2'	1:0:11:G:H5'	2.18	0.43
1:0:59:G:N2	1:0:87:G:N7	2.65	0.43
1:0:69:G:O2'	1:0:70:A:H8	2.02	0.43
1:0:73:A:H4'	1:0:74:G:O4'	2.19	0.43
1:0:109:A:H2'	1:0:110:U:H5''	2.01	0.43
1:0:2094:C:C4	1:0:2103:G:H1'	2.54	0.43
1:0:2136:G:H2'	1:0:2137:G:C8	2.53	0.43
1:0:2500:C:H4'	1:0:2544:A:C4'	2.49	0.43
1:0:2680:U:H3'	1:0:2681:A:C5'	2.47	0.43
1:0:2860:C:H2'	1:0:2861:A:O4'	2.19	0.43
1:0:69:G:H3'	1:0:111:G:O2'	2.19	0.43
1:0:192:G:O2'	1:0:193:A:H5''	2.18	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:488:A:H2'	1:0:489:A:C8	2.53	0.43
1:0:508:G:H2'	1:0:509:U:C6	2.53	0.43
1:0:604:U:H2'	1:0:605:G:H8	1.82	0.43
1:0:871:U:H1'	1:0:2248:A:C5'	2.48	0.43
1:0:878:C:O2'	1:0:879:A:OP1	2.36	0.43
1:0:1489:C:H3'	1:0:1490:U:H5'	2.00	0.43
1:0:1566:G:H2'	1:0:1567:A:C8	2.54	0.43
1:0:1628:C:H2'	1:0:1629:G:C8	2.53	0.43
1:0:1665:C:H2'	1:0:1666:G:C8	2.54	0.43
1:0:2033:C:H2'	1:0:2034:A:O4'	2.18	0.43
1:0:2083:G:H22	1:0:2172:U:H3	1.65	0.43
1:0:2225:G:O2'	1:0:2226:A:H5'	2.19	0.43
1:0:584:A:H4'	1:0:2479:U:C5'	2.47	0.43
1:0:716:U:H2'	1:0:717:G:O4'	2.19	0.43
1:0:833:A:H2'	1:0:834:A:C8	2.53	0.43
1:0:1155:G:H2'	1:0:1156:U:O4'	2.19	0.43
1:0:1271:C:H2'	1:0:1272:G:C8	2.54	0.43
1:0:1326:U:H4'	1:0:1345:G:H4'	2.00	0.43
1:0:1332:G:H2'	1:0:1333:G:O4'	2.19	0.43
1:0:1975:G:H1'	1:0:1977:C:N4	2.33	0.43
1:0:2217:G:N3	1:0:2217:G:C2'	2.82	0.43
1:0:2292:C:H2'	1:0:2293:G:C8	2.54	0.43
1:0:121:G:H2'	1:0:122:G:O4'	2.19	0.43
1:0:859:U:H4'	1:0:860:U:H5	1.84	0.43
1:0:1466:C:H2'	1:0:1467:U:O4'	2.18	0.43
1:0:1471:G:H1	1:0:2682:C:H42	1.66	0.43
1:0:1594:U:H2'	1:0:1595:A:H8	1.84	0.43
1:0:2265:A:H5''	1:0:2266:A:O4'	2.19	0.43
1:0:2392:G:H2'	1:0:2393:G:C8	2.54	0.43
1:0:2808:U:H3'	1:0:2809:A:C5'	2.46	0.43
1:0:168:A:H2'	1:0:169:C:H6	1.83	0.42
1:0:192:G:C4'	1:0:193:A:H4'	2.49	0.42
1:0:239:A:H5'	1:0:619:A:O2'	2.18	0.42
1:0:404:A:H1'	1:0:424:G:O2'	2.18	0.42
1:0:764:A:H3'	1:0:764:A:N3	2.34	0.42
1:0:1046:U:H2'	1:0:1047:G:H8	1.84	0.42
1:0:1341:G:N2	1:0:1343:C:H1'	2.34	0.42
1:0:1594:U:H2'	1:0:1595:A:C8	2.54	0.42
1:0:1747:G:H1'	1:0:1749:G:C2	2.53	0.42
1:0:1944:C:H2'	1:0:1945:C:O4'	2.19	0.42
1:0:2380:U:C2'	1:0:2381:A:H5'	2.44	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2640:G:H2'	1:0:2641:A:O4'	2.18	0.42
1:0:28:A:H2'	1:0:29:U:C6	2.54	0.42
1:0:128:C:C3'	1:0:129:A:H5''	2.49	0.42
1:0:172:A:N3	1:0:227:G:N2	2.67	0.42
1:0:190:A:H2'	1:0:191:G:C8	2.53	0.42
1:0:694:G:H2'	1:0:695:G:C8	2.54	0.42
1:0:944:A:H2'	1:0:945:G:O4'	2.19	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
1:0:2558:C:O2'	1:0:2559:U:H5'	2.19	0.42
1:0:85:C:O2'	1:0:86:U:H5'	2.20	0.42
1:0:533:C:H1'	1:0:563:U:O2'	2.19	0.42
1:0:722:C:H2'	1:0:723:C:C6	2.54	0.42
1:0:1561:A:H2'	1:0:1562:G:O4'	2.19	0.42
1:0:1888:C:H2'	1:0:1913:G:C6	2.54	0.42
1:0:1899:A:O2'	1:0:1946:U:H1'	2.19	0.42
1:0:2393:G:H2'	1:0:2394:G:C8	2.54	0.42
1:0:2661:G:O2'	1:0:2662:C:H5'	2.19	0.42
1:0:607:C:H2'	1:0:608:G:H8	1.84	0.42
1:0:1200:G:C2'	1:0:1201:G:H5'	2.50	0.42
1:0:2390:A:H2'	1:0:2391:A:C8	2.55	0.42
1:0:2498:U:H1'	1:0:2500:C:H41	1.84	0.42
1:0:2500:C:H4'	1:0:2544:A:O4'	2.19	0.42
1:0:65:C:C3'	1:0:66:U:H5'	2.50	0.42
1:0:119:G:H1'	1:0:129:A:N1	2.34	0.42
1:0:629:C:C2'	1:0:630:G:H5'	2.49	0.42
1:0:1312:G:H2'	1:0:1643:A:H61	1.84	0.42
1:0:1446:U:H2'	1:0:1447:U:H6	1.83	0.42
1:0:1489:C:H3'	1:0:1490:U:C5'	2.49	0.42
1:0:1722:G:H2'	1:0:1723:U:C6	2.54	0.42
1:0:2205:C:H2'	1:0:2206:C:H6	1.83	0.42
1:0:2455:A:O2'	1:0:2456:U:H5'	2.20	0.42
1:0:2766:U:O2'	1:0:2767:C:H5'	2.19	0.42
1:0:211:U:H2'	1:0:212:U:O4'	2.20	0.42
1:0:331:U:H2'	1:0:332:C:H5''	2.00	0.42
1:0:543:G:H2'	1:0:544:U:C6	2.55	0.42
1:0:1026:U:H2'	1:0:1027:C:C6	2.55	0.42
1:0:1175:A:H2'	1:0:1176:U:C6	2.55	0.42
1:0:1591:U:H2'	1:0:1592:U:O4'	2.19	0.42
1:0:1917:C:C2'	1:0:1918:G:H5'	2.49	0.42
1:0:2250:G:O2'	1:0:2251:U:H5'	2.20	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2463:G:O2'	1:0:2464:G:H5'	2.19	0.42
1:0:114:C:H4'	1:0:124:A:O2'	2.19	0.42
1:0:210:A:N6	1:0:442:A:N6	2.68	0.42
1:0:611:C:H2'	1:0:612:G:H5'	2.02	0.42
1:0:670:U:H2'	1:0:671:A:C8	2.54	0.42
1:0:689:A:H8	1:0:2422:C:H1'	1.84	0.42
1:0:1002:C:H2'	1:0:1003:C:C6	2.55	0.42
1:0:1354:A:C2	1:0:1411:C:H4'	2.55	0.42
1:0:1621:C:C4'	1:0:1626:A:H61	2.30	0.42
1:0:1743:C:H2'	1:0:1744:G:C8	2.55	0.42
1:0:1836:C:H2'	1:0:1837:G:H8	1.84	0.42
1:0:1930:C:H2'	1:0:1931:G:C8	2.54	0.42
1:0:2034:A:N6	1:0:2593:A:N7	2.67	0.42
1:0:2245:A:H2'	1:0:2246:A:OP2	2.19	0.42
1:0:2506:C:H2'	1:0:2507:U:C6	2.54	0.42
1:0:2515:G:H2'	1:0:2516:U:C6	2.54	0.42
1:0:2795:A:N3	1:0:2795:A:C2'	2.82	0.42
1:0:59:G:H1'	1:0:73:A:N1	2.35	0.42
1:0:161:U:H4'	1:0:194:G:H21	1.85	0.42
1:0:537:C:C6	1:0:2759:U:H2'	2.55	0.42
1:0:1242:A:H2'	1:0:1243:G:C8	2.54	0.42
1:0:2378:G:H2'	1:0:2379:G:C8	2.54	0.42
1:0:2470:U:H1'	1:0:2548:G:O3'	2.19	0.42
1:0:48:A:O5'	1:0:50:G:H4'	2.20	0.42
1:0:688:A:H1'	1:0:2422:C:O2'	2.20	0.42
1:0:820:U:H5'	1:0:2424:G:H4'	2.01	0.42
1:0:860:U:H2'	1:0:860:U:O2	2.19	0.42
1:0:930:A:H3'	1:0:931:G:H8	1.84	0.42
1:0:1168:G:H2'	1:0:1169:C:C6	2.54	0.42
1:0:1811:A:H1'	1:0:1813:A:C4	2.55	0.42
1:0:1829:C:O2'	1:0:1910:A:H1'	2.20	0.42
1:0:2276:C:O2'	1:0:2277:A:H5'	2.20	0.42
1:0:2811:G:H2'	1:0:2812:A:C8	2.55	0.42
1:0:17:G:N2	1:0:564:U:H5''	2.34	0.42
1:0:405:C:H2'	1:0:406:G:C8	2.55	0.42
1:0:873:U:C2	1:0:2246:A:H5''	2.54	0.42
1:0:890:U:H2'	1:0:891:A:C8	2.55	0.42
1:0:1292:A:H2'	1:0:1293:A:H8	1.85	0.42
1:0:1302:C:H2'	1:0:1303:U:C6	2.55	0.42
1:0:1324:G:O2'	1:0:1325:U:H5'	2.19	0.42
1:0:2028:C:O2'	1:0:2029:G:H5'	2.19	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2038:C:H5'	1:0:2039:G:C5'	2.50	0.42
1:0:2502:G:H2'	1:0:2503:G:H8	1.85	0.42
1:0:521:U:C2'	1:0:522:G:H5'	2.50	0.41
1:0:838:A:H4'	1:0:2407:G:C6	2.55	0.41
1:0:1671:A:H1'	1:0:2798:A:H5'	2.01	0.41
1:0:1956:G:H2'	1:0:1957:C:O4'	2.20	0.41
1:0:2740:C:O2'	1:0:2741:G:H5'	2.20	0.41
1:0:2836:U:H2'	1:0:2837:G:C8	2.55	0.41
1:0:2874:A:H2'	1:0:2875:C:C6	2.55	0.41
1:0:198:A:O2'	1:0:199:A:OP2	2.30	0.41
1:0:476:G:H2'	1:0:477:A:H8	1.85	0.41
1:0:526:C:H2'	1:0:527:C:C6	2.55	0.41
1:0:824:U:C1'	1:0:1264:C:H1'	2.47	0.41
1:0:1029:C:C2'	1:0:1030:U:H5''	2.50	0.41
1:0:1204:G:H2'	1:0:1205:G:H8	1.85	0.41
1:0:1532:A:H2'	1:0:1533:G:H8	1.85	0.41
1:0:1539:U:H2'	1:0:1540:C:C6	2.55	0.41
1:0:1671:A:H2'	1:0:1672:A:H8	1.85	0.41
1:0:2404:A:H4'	1:0:2405:A:O5'	2.19	0.41
1:0:6:A:H2'	1:0:7:G:C8	2.56	0.41
1:0:105:G:H21	1:0:357:A:N6	2.18	0.41
1:0:649:G:H2'	1:0:650:U:C6	2.55	0.41
1:0:690:A:O2'	1:0:691:C:H5'	2.21	0.41
1:0:691:C:H2'	1:0:692:C:C6	2.56	0.41
1:0:1343:C:H2'	1:0:1344:C:C6	2.56	0.41
1:0:2120:C:H2'	1:0:2121:U:O4'	2.21	0.41
1:0:2204:A:HO2'	1:0:2205:C:H6	1.63	0.41
1:0:2242:C:H2'	1:0:2243:C:C6	2.55	0.41
1:0:2320:G:H2'	1:0:2321:C:C6	2.56	0.41
1:0:2348:A:H2'	1:0:2349:G:C8	2.54	0.41
1:0:2627:G:H2'	1:0:2628:C:C6	2.54	0.41
1:0:2784:A:H5''	1:0:2785:A:N7	2.36	0.41
1:0:178:C:H4'	1:0:399:G:C2	2.55	0.41
1:0:315:G:H2'	1:0:316:C:C6	2.55	0.41
1:0:415:A:O2'	1:0:416:U:H5'	2.20	0.41
1:0:539:A:N6	1:0:2024:U:N3	2.68	0.41
1:0:630:G:C2'	1:0:631:G:H5'	2.49	0.41
1:0:810:U:H2'	1:0:811:G:H8	1.85	0.41
1:0:1017:C:H2'	1:0:1018:C:O4'	2.19	0.41
1:0:1028:G:H2'	1:0:1029:C:H6	1.85	0.41
1:0:1557:G:H2'	1:0:1558:C:C6	2.55	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2027:C:H2'	1:0:2028:C:C6	2.55	0.41
1:0:2093:G:O2'	1:0:2094:C:OP1	2.33	0.41
1:0:2597:G:H2'	1:0:2598:C:C6	2.55	0.41
1:0:438:G:H2'	1:0:439:C:C6	2.55	0.41
1:0:539:A:O2'	1:0:540:G:C4	2.70	0.41
1:0:653:G:C2	1:0:655:A:H1'	2.55	0.41
1:0:747:A:H2'	1:0:748:A:H8	1.85	0.41
1:0:871:U:O2	1:0:2247:A:H2'	2.19	0.41
1:0:950:G:H2'	1:0:951:G:H8	1.84	0.41
1:0:1084:A:H4'	1:0:2454:C:OP1	2.20	0.41
1:0:1415:C:O2'	1:0:1416:A:H5'	2.21	0.41
1:0:1495:G:O2'	1:0:1496:G:OP1	2.35	0.41
1:0:1499:A:H2'	1:0:1500:U:C6	2.55	0.41
1:0:1542:G:H21	1:0:1561:A:H62	1.69	0.41
1:0:1809:G:O2'	1:0:1810:U:H5'	2.20	0.41
1:0:2451:G:H2'	1:0:2508:G:H21	1.85	0.41
1:0:2651:U:H2'	1:0:2652:G:H8	1.86	0.41
1:0:327:C:O2'	1:0:328:A:H5'	2.20	0.41
1:0:532:A:H2'	1:0:533:C:C6	2.56	0.41
1:0:579:G:H2'	1:0:2013:A:C6	2.55	0.41
1:0:581:A:H61	1:0:2012:A:H2	1.68	0.41
1:0:635:C:H2'	1:0:636:G:H5''	2.02	0.41
1:0:854:G:H2'	1:0:855:G:C8	2.56	0.41
1:0:1041:G:O2'	1:0:2445:C:H4'	2.20	0.41
1:0:1189:G:O2'	1:0:1190:C:H5'	2.21	0.41
1:0:1341:G:N2	1:0:1664:G:H1	2.17	0.41
1:0:1402:G:H2'	1:0:1403:U:O4'	2.21	0.41
1:0:1586:A:H2'	1:0:1587:A:H8	1.86	0.41
1:0:1825:C:H2'	1:0:1826:U:H5'	2.01	0.41
1:0:2772:U:H2'	1:0:2773:G:H8	1.86	0.41
1:0:818:G:H5'	1:0:819:C:OP2	2.21	0.41
1:0:1065:A:H2'	1:0:1066:G:C8	2.56	0.41
1:0:1193:G:O2'	1:0:1194:U:P	2.78	0.41
1:0:1200:G:OP1	1:0:1200:G:H8	2.03	0.41
1:0:1231:A:H2'	1:0:1232:U:O4'	2.20	0.41
1:0:1253:C:H2'	1:0:1254:G:O4'	2.21	0.41
1:0:1479:G:H2'	1:0:1480:G:C8	2.55	0.41
1:0:2200:G:H2'	1:0:2201:G:C8	2.56	0.41
1:0:2217:G:N3	1:0:2217:G:H2'	2.35	0.41
1:0:2270:U:O2'	1:0:2353:G:H1'	2.20	0.41
1:0:2539:C:H2'	1:0:2540:A:C8	2.55	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2546:G:H2'	1:0:2547:C:C6	2.56	0.41
1:0:2756:A:H1'	1:0:2758:A:C5	2.56	0.41
1:0:2861:A:O2'	1:0:2862:G:H5'	2.21	0.41
1:0:550:C:H2'	1:0:551:A:H8	1.86	0.41
1:0:634:G:H2'	1:0:635:C:C6	2.55	0.41
1:0:675:C:H2'	1:0:676:G:H8	1.85	0.41
1:0:713:G:H2'	1:0:714:G:C8	2.56	0.41
1:0:925:U:H4'	1:0:926:C:C6	2.56	0.41
1:0:1443:G:N3	1:0:1584:G:N1	2.69	0.41
1:0:1528:C:H3'	1:0:1529:C:H5''	2.03	0.41
1:0:1676:U:H2'	1:0:1677:C:C6	2.56	0.41
1:0:1791:C:H1'	1:0:1793:A:C4'	2.51	0.41
1:0:1957:C:O2'	1:0:1958:G:H5'	2.20	0.41
1:0:2161:C:H2'	1:0:2162:C:C5	2.56	0.41
1:0:139:A:H2'	1:0:140:G:C8	2.55	0.41
1:0:314:G:H2'	1:0:315:G:C8	2.55	0.41
1:0:589:C:H2'	1:0:590:C:C6	2.55	0.41
1:0:644:A:H2'	1:0:645:G:O4'	2.21	0.41
1:0:840:U:H4'	1:0:841:G:C2	2.55	0.41
1:0:956:A:H2'	1:0:956:A:N3	2.35	0.41
1:0:987:G:H2'	1:0:988:G:H8	1.85	0.41
1:0:1143:A:H2'	1:0:1144:U:C6	2.56	0.41
1:0:1187:A:C2'	1:0:1188:A:O5'	2.69	0.41
1:0:1336:G:N2	1:0:1632:A:N6	2.69	0.41
1:0:1358:C:H2'	1:0:1359:G:H5'	2.03	0.41
1:0:1696:C:H42	1:0:1755:G:H5''	1.86	0.41
1:0:1850:G:H2'	1:0:1851:A:C8	2.55	0.41
1:0:1900:U:H2'	1:0:1901:A:H5'	2.03	0.41
1:0:2048:C:H2'	1:0:2049:C:H6	1.85	0.41
1:0:2076:G:H2'	1:0:2077:G:C8	2.55	0.41
1:0:2096:U:C2'	1:0:2097:A:H5''	2.44	0.41
1:0:2234:G:H2'	1:0:2235:G:O4'	2.21	0.41
1:0:2241:U:H4'	1:0:2307:A:C2	2.55	0.41
1:0:2365:U:O2'	1:0:2366:U:H5'	2.21	0.41
1:0:2392:G:H2'	1:0:2393:G:H8	1.85	0.41
1:0:2492:G:H2'	1:0:2493:U:C6	2.56	0.41
1:0:2782:G:C2'	1:0:2783:U:OP1	2.69	0.41
1:0:344:G:O2'	1:0:345:U:H5'	2.21	0.41
1:0:808:C:H2'	1:0:809:C:C6	2.56	0.41
1:0:827:C:H2'	1:0:828:C:H6	1.87	0.41
1:0:856:A:H2'	1:0:857:U:O4'	2.20	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1055:A:H61	1:0:1122:A:H4'	1.86	0.41
1:0:1286:U:H2'	1:0:2692:A:H2	1.85	0.41
1:0:1947:G:H8	1:0:1947:G:P	2.44	0.41
1:0:1949:A:H1'	1:0:2572:U:C5'	2.51	0.41
1:0:2321:C:H2'	1:0:2322:U:H5'	2.02	0.41
1:0:2383:C:C2'	1:0:2384:G:H5'	2.51	0.41
1:0:2389:G:H2'	1:0:2390:A:O4'	2.21	0.41
1:0:2485:U:O2'	1:0:2486:C:H5'	2.21	0.41
1:0:314:G:H2'	1:0:315:G:H8	1.86	0.40
1:0:354:C:H2'	1:0:355:G:O4'	2.21	0.40
1:0:502:A:H2'	1:0:503:G:O4'	2.21	0.40
1:0:848:A:H2'	1:0:849:G:H8	1.85	0.40
1:0:978:U:H2'	1:0:979:A:C8	2.56	0.40
1:0:1054:C:H2'	1:0:1055:A:H5'	2.02	0.40
1:0:1162:A:H2'	1:0:1163:C:H6	1.86	0.40
1:0:1177:U:H2'	1:0:1178:C:C6	2.56	0.40
1:0:1398:G:H2'	1:0:1399:C:C6	2.56	0.40
1:0:1463:A:H1'	1:0:1543:G:N2	2.37	0.40
1:0:1518:C:C2'	1:0:1519:G:O5'	2.70	0.40
1:0:1821:A:H3'	1:0:1822:C:C6	2.56	0.40
1:0:2058:U:H5'	1:0:2576:G:C1'	2.41	0.40
1:0:2326:C:H2'	1:0:2327:U:C6	2.56	0.40
1:0:2573:C:O5'	1:0:2573:C:H6	2.04	0.40
1:0:2586:G:H2'	1:0:2587:G:O4'	2.21	0.40
1:0:2633:A:H5''	1:0:2634:G:OP1	2.21	0.40
1:0:14:A:H2	1:0:2604:G:O2'	2.04	0.40
1:0:82:G:O2'	1:0:83:A:H5'	2.21	0.40
1:0:317:U:H3'	1:0:318:G:C5'	2.52	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
1:0:878:C:HO2'	1:0:879:A:P	2.44	0.40
1:0:1055:A:H2	1:0:1121:G:H2'	1.87	0.40
1:0:1215:A:H2'	1:0:1216:G:H8	1.85	0.40
1:0:1329:U:H2'	1:0:1330:G:C8	2.57	0.40
1:0:1547:U:H2'	1:0:1548:U:C6	2.56	0.40
1:0:1671:A:C1'	1:0:2798:A:H5'	2.51	0.40
1:0:1708:C:H2'	1:0:1709:U:O4'	2.21	0.40
1:0:1736:C:H2'	1:0:1737:G:C8	2.57	0.40
1:0:2204:A:C2'	1:0:2205:C:OP2	2.69	0.40
1:0:13:A:H1'	1:0:536:A:H62	1.86	0.40
1:0:229:G:H2'	1:0:230:C:C6	2.56	0.40

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
1:0:1365:U:H5'	1:0:1587:A:H1'	2.04	0.40
1:0:1370:U:H2'	1:0:1371:G:O4'	2.22	0.40
1:0:1429:A:H1'	1:0:1603:A:N1	2.36	0.40
1:0:1466:C:O2'	1:0:1467:U:H5'	2.21	0.40
1:0:2054:A:H2'	1:0:2055:G:C8	2.57	0.40
1:0:2448:A:C2'	1:0:2449:G:H5'	2.51	0.40
1:0:2522:G:O2'	1:0:2523:G:H5'	2.21	0.40
1:0:2678:C:H2'	1:0:2679:G:H8	1.87	0.40
1:0:770:U:H2'	1:0:771:C:C6	2.57	0.40
1:0:949:G:H2'	1:0:950:G:C8	2.57	0.40
1:0:950:G:H2'	1:0:951:G:C8	2.56	0.40
1:0:1008:G:H2'	1:0:1009:C:H6	1.85	0.40
1:0:1223:G:O2'	1:0:1224:A:H5''	2.22	0.40
1:0:1244:U:H2'	1:0:1245:G:C8	2.57	0.40
1:0:1656:U:O2'	1:0:2678:C:H4'	2.22	0.40
1:0:1787:U:H2'	1:0:1788:C:C6	2.57	0.40
1:0:2329:C:H41	1:0:2361:G:N2	2.19	0.40
1:0:2467:A:H2'	1:0:2468:G:C8	2.56	0.40
1:0:2484:G:H21	1:0:2485:U:H5	1.69	0.40
1:0:2698:G:H2'	1:0:2699:G:O4'	2.21	0.40
1:0:69:G:O2'	1:0:70:A:O4'	2.36	0.40
1:0:646:C:O2'	1:0:650:U:H5''	2.21	0.40
1:0:931:G:H2'	1:0:932:G:O4'	2.22	0.40
1:0:1451:C:H2'	1:0:1452:U:H6	1.87	0.40
1:0:1685:A:O2'	1:0:1686:A:O5'	2.40	0.40
1:0:1778:U:H4'	1:0:2568:A:O2'	2.22	0.40
1:0:1939:U:O2	1:0:1968:G:H4'	2.21	0.40
1:0:1962:C:H2'	1:0:1963:G:H8	1.87	0.40
1:0:2075:U:H1'	1:0:2204:A:C2	2.56	0.40
1:0:2300:G:N3	1:0:2300:G:H3'	2.36	0.40
1:0:2552:C:OP1	1:0:2553:G:H5''	2.21	0.40
1:0:2653:A:H2'	1:0:2654:A:C8	2.57	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

There are no protein molecules in this entry.

5.3.2 Protein sidechains [i](#)

There are no protein molecules in this entry.

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	0	2757/2880 (95%)	413 (14%)	39 (1%)

All (413) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	0	15	G
1	0	35	G
1	0	45	C
1	0	48	A
1	0	49	U
1	0	50	G
1	0	59	G
1	0	67	G
1	0	70	A
1	0	71	A
1	0	72	A
1	0	87	G
1	0	89	A
1	0	90	G
1	0	91	A
1	0	99	U
1	0	105	G
1	0	110	U
1	0	116	A
1	0	118	U
1	0	123	A
1	0	129	A
1	0	135	U
1	0	155	G
1	0	158	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	0	173	A
1	0	174	A
1	0	176	A
1	0	177	U
1	0	181	A
1	0	182	G
1	0	193	A
1	0	199	A
1	0	200	A
1	0	205	A
1	0	206	U
1	0	210	A
1	0	218	A
1	0	219	G
1	0	225	G
1	0	226	C
1	0	227	G
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

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	0	460	U
1	0	461	A
1	0	463	C
1	0	467	U
1	0	469	G
1	0	491	A
1	0	492	G
1	0	515	A
1	0	518	A
1	0	519	C
1	0	537	C
1	0	539	A
1	0	541	C
1	0	542	A
1	0	554	U
1	0	556	A
1	0	558	G
1	0	559	C
1	0	572	G
1	0	584	A
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

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
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	806	A
1	0	813	A
1	0	818	G
1	0	825	C
1	0	832	A
1	0	840	U
1	0	841	G
1	0	844	G
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

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	0	1037	U
1	0	1044	U
1	0	1055	A
1	0	1056	U
1	0	1057	A
1	0	1067	G
1	0	1073	G
1	0	1074	G
1	0	1075	C
1	0	1081	A
1	0	1087	C
1	0	1090	C
1	0	1099	A
1	0	1122	A
1	0	1137	A
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

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	0	1324	G
1	0	1325	U
1	0	1334	A
1	0	1338	G
1	0	1342	U
1	0	1343	C
1	0	1355	A
1	0	1356	G
1	0	1359	G
1	0	1391	A
1	0	1392	U
1	0	1397	A
1	0	1398	G
1	0	1433	A
1	0	1441	A
1	0	1442	C
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

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	0	1623	C
1	0	1624	A
1	0	1625	A
1	0	1632	A
1	0	1633	C
1	0	1634	A
1	0	1635	G
1	0	1648	C
1	0	1651	U
1	0	1657	A
1	0	1664	G
1	0	1665	C
1	0	1670	G
1	0	1671	A
1	0	1680	U
1	0	1685	A
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	1772	C
1	0	1778	U
1	0	1792	C
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

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	0	1889	G
1	0	1920	A
1	0	1922	U
1	0	1926	U
1	0	1938	U
1	0	1939	U
1	0	1946	U
1	0	1949	A
1	0	1950	C
1	0	1954	A
1	0	1955	G
1	0	1956	G
1	0	1979	C
1	0	1980	A
1	0	2004	U
1	0	2006	G
1	0	2014	A
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	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

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	0	2245	A
1	0	2246	A
1	0	2247	A
1	0	2255	G
1	0	2262	C
1	0	2268	G
1	0	2285	U
1	0	2286	G
1	0	2287	G
1	0	2288	A
1	0	2298	U
1	0	2299	A
1	0	2300	G
1	0	2301	A
1	0	2313	G
1	0	2315	A
1	0	2316	G
1	0	2326	C
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	2408	G
1	0	2409	A
1	0	2414	A
1	0	2420	C
1	0	2427	A
1	0	2428	U
1	0	2438	A
1	0	2448	A
1	0	2455	A
1	0	2470	U
1	0	2481	G
1	0	2482	A
1	0	2483	U
1	0	2484	G
1	0	2485	U
1	0	2492	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
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	2561	G
1	0	2578	G
1	0	2580	C
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
1	0	2633	A
1	0	2634	G
1	0	2661	G
1	0	2669	C
1	0	2670	C
1	0	2681	A
1	0	2691	C
1	0	2692	A
1	0	2712	G
1	0	2728	A
1	0	2730	A
1	0	2732	C
1	0	2737	A
1	0	2745	A
1	0	2756	A
1	0	2760	G
1	0	2761	A
1	0	2770	A
1	0	2771	C
1	0	2783	U
1	0	2785	A
1	0	2795	A
1	0	2807	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
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

All (39) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	0	69	G
1	0	173	A
1	0	181	A
1	0	192	G
1	0	198	A
1	0	242	A
1	0	583	C
1	0	805	G
1	0	843	G
1	0	878	C
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

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	0	2093	G
1	0	2161	C
1	0	2204	A
1	0	2245	A
1	0	2261	G
1	0	2377	U
1	0	2404	A
1	0	2426	G
1	0	2668	U
1	0	2759	U
1	0	2824	C

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

1 ligand is modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
2	SPS	0	2881	-	19,22,23	4.92	11 (57%)	23,28,30	3.31	13 (56%)

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	SPS	0	2881	-	1/1/2/6	8/15/16/18	0/1/1/1

All (11) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	0	2881	SPS	O1-C1	10.62	1.43	1.23
2	0	2881	SPS	O10-C10	9.73	1.43	1.24
2	0	2881	SPS	O3-C3	9.55	1.43	1.23
2	0	2881	SPS	C9-C8	7.29	1.54	1.33
2	0	2881	SPS	C10-N11	7.14	1.50	1.34
2	0	2881	SPS	C7-C5	3.24	1.55	1.49
2	0	2881	SPS	C8-C6	3.13	1.55	1.46
2	0	2881	SPS	C5-N4	2.96	1.42	1.38
2	0	2881	SPS	C9-C10	2.85	1.54	1.48
2	0	2881	SPS	C3-N2	2.30	1.41	1.37
2	0	2881	SPS	C3-N4	2.26	1.41	1.37

All (13) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	0	2881	SPS	C14-S15-C16	6.41	109.79	101.04
2	0	2881	SPS	C9-C10-N11	6.00	124.88	114.61
2	0	2881	SPS	O10-C10-C9	-5.75	109.69	122.95
2	0	2881	SPS	C7-C5-N4	4.65	118.83	113.42
2	0	2881	SPS	C1-N2-C3	-4.27	120.49	126.37
2	0	2881	SPS	C7-C5-C6	-4.06	121.20	126.47
2	0	2881	SPS	C8-C9-C10	-3.92	109.64	125.43
2	0	2881	SPS	C9-C8-C6	-3.86	109.95	125.45
2	0	2881	SPS	C5-N4-C3	-3.67	120.86	123.70
2	0	2881	SPS	C6-C1-N2	3.36	120.33	114.45
2	0	2881	SPS	O1-C1-C6	-2.56	120.34	125.98
2	0	2881	SPS	N4-C3-N2	2.41	119.52	115.74
2	0	2881	SPS	O10-C10-N11	2.29	125.43	122.44

All (1) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
2	0	2881	SPS	C12

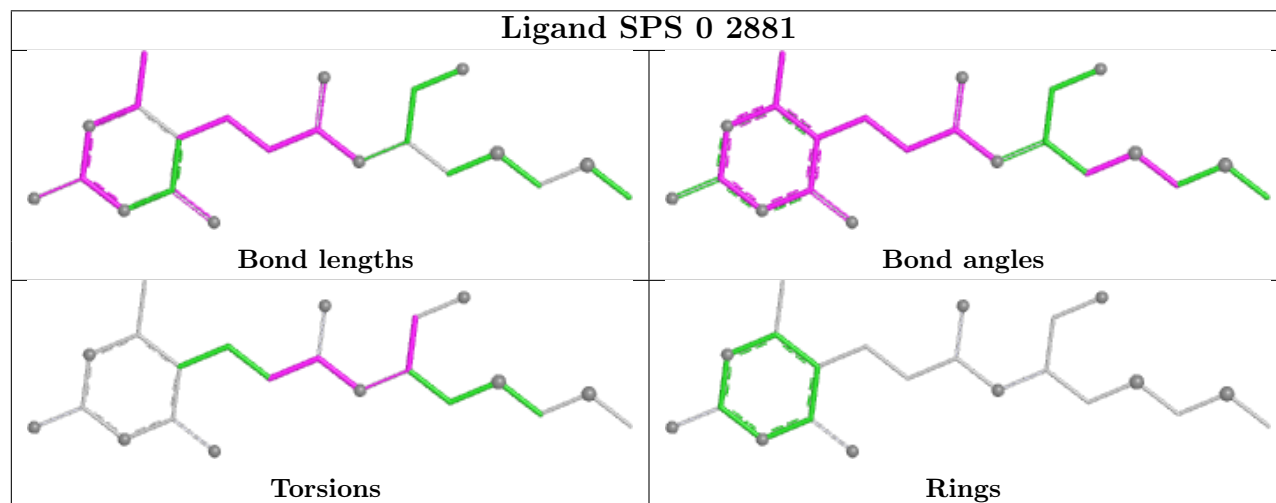
All (8) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	0	2881	SPS	C9-C10-N11-C12
2	0	2881	SPS	O10-C10-N11-C12
2	0	2881	SPS	C14-C12-C13-O13
2	0	2881	SPS	N11-C12-C13-O13
2	0	2881	SPS	C13-C12-N11-C10
2	0	2881	SPS	O10-C10-C9-C8
2	0	2881	SPS	N11-C10-C9-C8
2	0	2881	SPS	C14-C12-N11-C10

There are no ring outliers.

No monomer is involved in short contacts.

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



5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

EDS was not executed - this section is therefore empty.

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

EDS was not executed - this section is therefore empty.

6.3 Carbohydrates

EDS was not executed - this section is therefore empty.

6.4 Ligands

EDS was not executed - this section is therefore empty.

6.5 Other polymers

EDS was not executed - this section is therefore empty.