



# Full wwPDB X-ray Structure Validation Report ⓘ

May 13, 2020 – 08:58 am BST

PDB ID : 1SM1  
Title : COMPLEX OF THE LARGE RIBOSOMAL SUBUNIT FROM DEINOCOC-  
CUS RADIODURANS WITH QUINUPRISTIN AND DALFOPRISTIN  
Authors : Harms, J.M.; Schlutzen, F.; Fucini, P.; Bartels, H.; Yonath, A.  
Deposited on : 2004-03-08  
Resolution : 3.42 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](mailto: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.

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

MolProbity : 4.02b-467  
Mogul : 1.8.5 (274361), CSD as541be (2020)  
Xtriage (Phenix) : **NOT EXECUTED**  
EDS : **NOT EXECUTED**  
buster-report : 1.1.7 (2018)  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.11

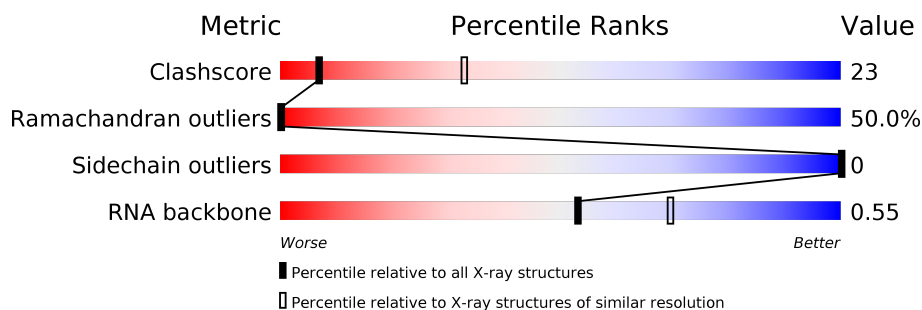
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 3.42 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
Clashscore	141614	1572 (3.50-3.34)
Ramachandran outliers	138981	1534 (3.50-3.34)
Sidechain outliers	138945	1535 (3.50-3.34)
RNA backbone	3102	1012 (3.88-2.96)



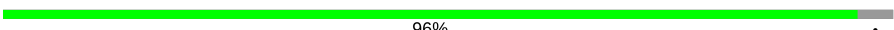
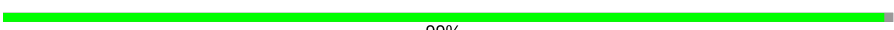











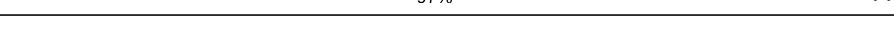
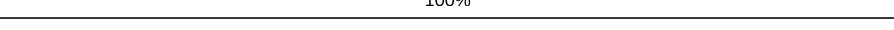
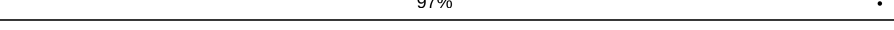
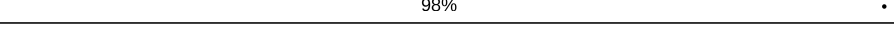
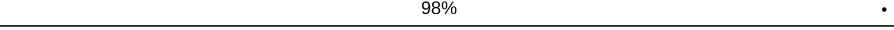

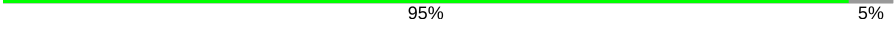
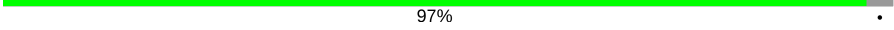

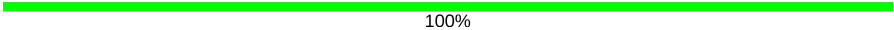
The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments on the lower bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria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

Note EDS was not executed.

Mol	Chain	Length	Quality of chain
1	0	2880	
2	1	82	
3	2	47	
4	3	66	
5	4	37	
6	5	8	
7	9	124	

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Mol	Chain	Length	Quality of chain
8	A	275	 98%
9	B	211	 97%
10	C	205	 96%
11	D	180	 99%
12	E	212	 83%17%
13	F	146	 36%64%
14	G	144	 99%
15	H	174	 82%18%
16	I	134	 99%
17	J	156	 90%10%
18	K	142	 87%13%
19	L	116	 97%
20	M	114	 97%
21	N	166	 75%25%
22	O	118	 97%
23	P	100	 100%
24	Q	134	 97%
25	R	95	 98%
26	S	115	 98%
27	T	253	 88%12%
28	U	91	 95%5%
29	W	67	 97%
30	X	55	 100%
31	Y	73	 100%
32	Z	60	 95%

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
33	DOL	0	2882	X	-	-	-
6	DBB	5	3	-	-	X	-

## 2 Entry composition

There are 33 unique types of molecules in this entry. The entry contains 65418 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

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

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

- Molecule 2 is a protein called 50S RIBOSOMAL PROTEIN L33.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
2	1	53	Total	C	0	0	53
			53	53			

- Molecule 3 is a protein called 50S RIBOSOMAL PROTEIN L34.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
3	2	46	Total	C	0	0	46
			46	46			

- Molecule 4 is a protein called 50S RIBOSOMAL PROTEIN L35.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
4	3	63	Total	C	0	0	63
			63	63			

- Molecule 5 is a protein called 50S RIBOSOMAL PROTEIN L36.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
5	4	35	Total	C	0	0	35
			35	35			

- Molecule 6 is a protein called QUINUPRISTIN.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
6	5	8	Total	C	N	O	S	0	0	0
			73	53	9	10	1			

- Molecule 7 is a RNA chain called 5S RIBOSOMAL RNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
7	9	118	Total	C	N	O	P	0	0	0
			2516	1124	464	811	117			

- Molecule 8 is a protein called 50S RIBOSOMAL PROTEIN L2.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
8	A	270	Total	C	0	0	270
			270	270			

- Molecule 9 is a protein called 50S RIBOSOMAL PROTEIN L3.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
9	B	205	Total	C	0	0	205
			205	205			

- Molecule 10 is a protein called 50S RIBOSOMAL PROTEIN L4.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
10	C	197	Total	C	0	0	197
			197	197			

- Molecule 11 is a protein called 50S RIBOSOMAL PROTEIN L5.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
11	D	178	Total	C	0	0	178
			178	178			

- Molecule 12 is a protein called 50S RIBOSOMAL PROTEIN L6.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
12	E	177	Total	C	0	0	177
			177	177			

- Molecule 13 is a protein called 50S RIBOSOMAL PROTEIN L9.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
13	F	52	Total	C	0	0	52
			52	52			

- Molecule 14 is a protein called 50S RIBOSOMAL PROTEIN L11.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf	Trace
14	G	143	Total C 143 143	0	0	143

- Molecule 15 is a protein called 50S RIBOSOMAL PROTEIN L13.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf	Trace
15	H	143	Total C 143 143	0	0	143

- Molecule 16 is a protein called 50S RIBOSOMAL PROTEIN L14.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf	Trace
16	I	132	Total C 132 132	0	0	132

- Molecule 17 is a protein called 50S RIBOSOMAL PROTEIN L15.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf	Trace
17	J	141	Total C 141 141	0	0	141

- Molecule 18 is a protein called 50S RIBOSOMAL PROTEIN L16.

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

- Molecule 19 is a protein called 50S RIBOSOMAL PROTEIN L17.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf	Trace
19	L	114	Total C 114 114	0	0	114

- Molecule 20 is a protein called 50S RIBOSOMAL PROTEIN L18.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf	Trace
20	M	111	Total C 111 111	8	0	111

- Molecule 21 is a protein called 50S RIBOSOMAL PROTEIN L19.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf	Trace
21	N	125	Total C 125 125	0	0	125

- Molecule 22 is a protein called 50S RIBOSOMAL PROTEIN L20.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf	Trace
22	O	117	Total C 117 117	16	0	117

- Molecule 23 is a protein called 50S RIBOSOMAL PROTEIN L21.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf	Trace
23	P	100	Total C 100 100	0	0	100

- Molecule 24 is a protein called 50S RIBOSOMAL PROTEIN L22.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf	Trace
24	Q	130	Total C 130 130	0	0	130

- Molecule 25 is a protein called 50S RIBOSOMAL PROTEIN L23.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf	Trace
25	R	93	Total C 93 93	0	0	93

- Molecule 26 is a protein called 50S RIBOSOMAL PROTEIN L24.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf	Trace
26	S	113	Total C 113 113	0	0	113

- Molecule 27 is a protein called GENERAL STRESS PROTEIN CTC.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf	Trace
27	T	223	Total C 223 223	43	0	223

- Molecule 28 is a protein called 50S RIBOSOMAL PROTEIN L27.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf	Trace
28	U	86	Total C 86 86	0	0	86

- Molecule 29 is a protein called 50S RIBOSOMAL PROTEIN L29.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf	Trace
29	W	65	Total C 65 65	0	0	65

- Molecule 30 is a protein called 50S RIBOSOMAL PROTEIN L30.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf	Trace
30	X	55	Total C 55 55	4	0	55

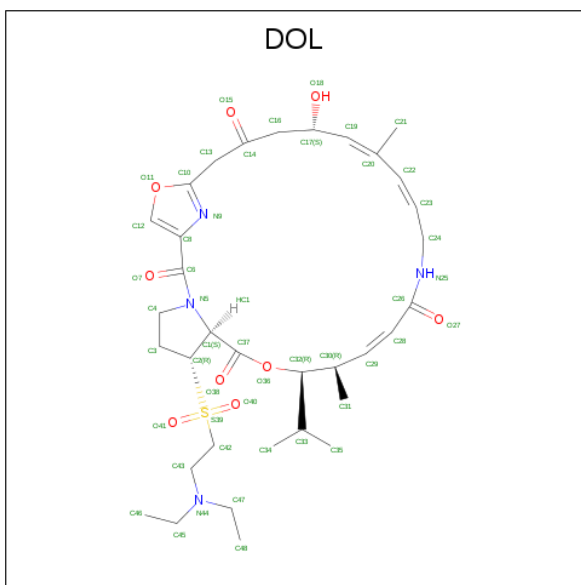
- Molecule 31 is a protein called 50S RIBOSOMAL PROTEIN L31.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf	Trace
31	Y	73	Total C 73 73	0	0	73

- Molecule 32 is a protein called 50S RIBOSOMAL PROTEIN L32.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf	Trace
32	Z	58	Total C 58 58	0	0	58

- Molecule 33 is 5-(2-DIETHYLAMINO-ETHANESULFONYL)-21-HYDROXY-10-ISOPROPYL-11,19-DIMETHYL-9,26-DIOXA-3,15,28-TRIAZA-TRICYCLO[23.2.1.00,255]OCTACOSA-1(27),12,17,19,25(28)-PENTAENE-2,8,14,23-TETRAONE (three-letter code: DOL) (formula: C<sub>34</sub>H<sub>50</sub>N<sub>4</sub>O<sub>9</sub>S).



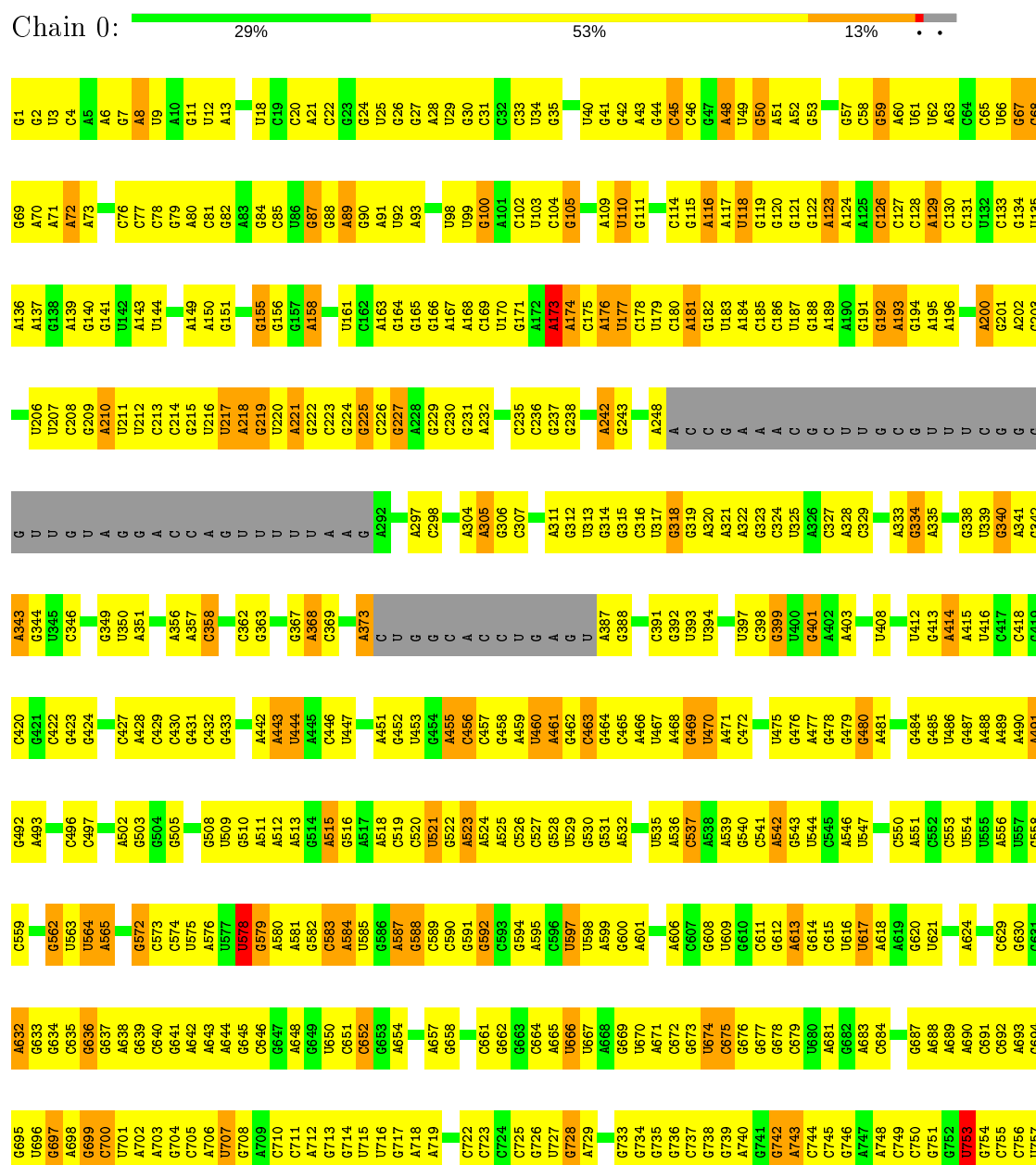
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
33	0	1	Total	C	N	O	S	0	0
			48	34	4	9	1		

### 3 Residue-property plots

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

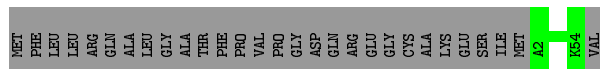


U1770	C1698	U1637	G1398	G1331	A1267	U1199	A1126	C1013	G957	G	A821	G758
A1771	A1699	G1638	C1399	G1332	U1268	G1200	G1131	A1022	G958	G	G822	C759
C1772	C1702	U1639	A1400	G1333	G1269	G1201	G1132	U1023	C959	G	U823	U760
A1773	G1702	C1640	A1560	A1334	C1270	U1202	G1133	G1024	U960	G	U824	G761
A1774	A1706	C1641	G1402	G1338	G1271	G1203	G1133	A1025	C962	C	G825	A762
A1775	A1707	G1642	U1403	U1339	G1272	G1204	G1136	U1026	C963	C	U826	A763
U1776	C1708	A1643	A1406	C1340	G1273	G1205	G1137	U1027	A964	U	C827	A764
C1779	U1709	U1645	A1407	G1341	C1274	G1206	A1138	C1027	G965	A	C828	C765
A1782	G1712	G1646	U1408	U1342	U1275	A1208	A1139	U1028	A966	C	C829	
G1783	G1713	U1647	U1409	C1343	U1276	G1209	A1140	U1030	G967	C	C830	
C1784	G1714	U1648	U1410	G1344	U1277	G1210	U1141	C1031	C968	A	G831	
A1785	A1714	U1649	U1411	G1345	A1278	U1212	U1142	C1032	U969	G	A832	G772
G1786	G1715	U1651	G1414	C1346	U1280	U1213	A1143	G1033	A970	C	A833	G773
U1787	G1716	U1652	C1417	C1347	A1281	G1214	U1144	U1034	A971	U	A834	A774
C1788	A1717	C1481	C1418	U1348	A1282	A1215	U1145	G1035	C972	U	G835	G775
U1789	G1718	U1488	C1418	A1349	A1283	G1218	U1146	G1036	U973	A	U837	A777
G1790	G1719	U1489	U1426	G1352	G1284	C1219	G1147	U1037	U974	C	A838	G778
C1791	G1720	C1489	G1427	G1353	A1285	G1219	G1148	U1038	C975	C	U839	U779
U1792	A1657	U1490	G1428	A1353	U1286	G1222	G1149	A1039	C976	A911	U840	U780
C1793	G1721	A1493	A1429	A1354	U1287	G1223	C1150	A1040	G977	G	G841	G781
A1794	U1723	G1658	G1430	G1355	A1288	G1224	U1151	G1041	U978	C	A842	U782
C1795	G1724	G1496	U1431	G1356	A1289	A1224	C1152	G1042	A979	C	G843	G783
U1796	C1725	G1432	G1432	U1357	A1290	G1225	A1153	U1044	G980	U	U844	U784
C1797	C1726	C1661	A1433	C1358	G1291	A1226	A1154	G1045	C981	U	U845	U785
G1798	C1727	G1662	A1433	G1359	A1282	A1227	G1155	U1046	C982	A	A846	U786
A1799	C1727	C1663	U1434	G1360	A1283	G1228	A1158	G1047	G983	C	C847	U787
U1799	G1730	G1664	G1435	G1363	A1293	C1229	U1159	C1052	A984	A	A848	G788
C1800	G1731	G1665	G1436	C1364	A1299	G1230	U1160	G1053	G985	A	U852	U789
A1801	G1731	G1666	A1437	C1365	A1300	A1231	U1161	C1054	A986	C	G853	A790
U1802	G1736	G1667	G1438	U1365	U1301	U1232	U1162	A1055	G987	C	G854	G791
G1803	G1737	G1668	A1441	A1366	U1302	A1233	A1163	U1056	G988	C	G855	U792
U1804	U1737	A1669	C1442	A1367	U1303	C1235	C1164	A1057	A991	C	U856	G793
G1805	G1744	A1670	G1443	G1368	A1304	G1241	U1172	G1058	A992	C	A857	A794
A1807	C1745	A1671	C1444	U1370	U1306	A1242	G1174	A1059	A993	C	G858	U795
U1808	A1746	U1445	U1445	G1371	U1307	U1243	A1175	G1066	A994	C	U859	A796
G1809	G1747	U1446	U1447	A1372	C1308	G1243	U1176	G1067	A995	C	U860	U797
U1810	U1748	C1615	U1448	G1373	G1309	U1244	G1177	C1068	C996	C	C861	G798
A1811	G1749	G1616	A1449	G1374	C1310	U1244	U1178	A1068	C997	C	U862	U800
U1812	A1750	U1515	C1449	U1374	C1311	U1247	G1174	G1069	C998	C	A865	A801
A1813	U1751	A1516	G1450	U1379	G1312	G1248	A1175	G1073	A999	C	U866	A802
G1816	G1752	G1619	U1450	C1380	U1313	G1249	U1176	G1074	G1000	C	G867	C803
U1817	A1753	C1620	A1453	G1381	A1314	A1250	U1177	A1081	A1001	C	U868	C804
G1818	G1754	C1621	U1454	G1382	A1315	G1251	C1178	U1082	A1002	C	C869	G805
U1819	G1755	G1622	C1455	C1383	G1316	C1252	A1179	G1083	A1003	C	U870	A806
C1820	C1756	C1623	C1456	G1384	G1317	C1253	U1180	U1084	A1004	C	G871	C808
A1821	G1757	A1624	A1457	C1385	A1318	G1254	A1181	C1086	U1005	C	U872	U810
U1822	C1758	A1625	A1458	C1386	C1319	A1255	G1182	G1087	A944	C	U873	C809
G1823	A1759	A1626	U1459	G1387	A1320	C1256	U1183	G945	A1007	C	A874	G811
C1824	G1760	C1627	G1460	C1388	A1321	U1257	G1184	C1090	G1008	C	G875	A812
U1825	G1761	C1628	C1461	G1389	G1322	G1258	C1185	C1091	C1009	C	A876	A813
C1826	C1762	G1629	C1462	U1390	G1323	A1259	G1186	U1092	U1010	C	G877	G814
U1826	G1763	A1630	A1463	A1391	G1324	A1260	G1187	G1088	A1011	C	U878	A815
A1827	A1764	C1631	A1464	U1392	U1325	G1261	A1188	A1099	A1012	C	A883	U816
G1831	C1765	G1632	G1465	G1393	U1326	U1262	A1189	G951	A952	C	C884	A817
C1832	U1766	C1633	C1466	G1394	C1327	G1263	A1190	G953	U1015	C	U889	G818
U1837	G1767	U1695	U1467	A1395	C1328	G1264	G1196	G1123	U1016	C	U890	U820
G1838	U1768	C1696	A1468	C1396	U1329	G1265	U1197	U1124	G955	C	A891	
	U1769	U1697	U1469	A1397	G1330	G1266	C1198	G1125	C1017	C		



- Molecule 2: 50S RIBOSOMAL PROTEIN L33

Chain 1: 



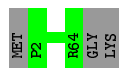
- Molecule 3: 50S RIBOSOMAL PROTEIN L34

Chain 2: 



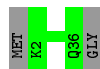
- Molecule 4: 50S RIBOSOMAL PROTEIN L35

Chain 3: 



- Molecule 5: 50S RIBOSOMAL PROTEIN L36

Chain 4: 



- Molecule 6: QUINUPRISTIN

Chain 5: 



- Molecule 7: 5S RIBOSOMAL RNA

Chain 9: 



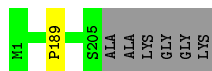
- Molecule 8: 50S RIBOSOMAL PROTEIN L2

Chain A: 



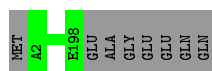
• Molecule 9: 50S RIBOSOMAL PROTEIN L3

Chain B: 97%



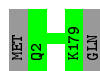
• Molecule 10: 50S RIBOSOMAL PROTEIN L4

Chain C: 96%



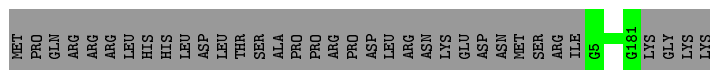
• Molecule 11: 50S RIBOSOMAL PROTEIN L5

Chain D: 99%



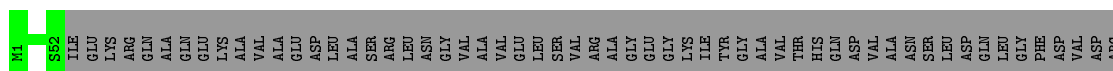
• Molecule 12: 50S RIBOSOMAL PROTEIN L6

Chain E: 83% 17%



• Molecule 13: 50S RIBOSOMAL PROTEIN L9

Chain F: 36% 64%



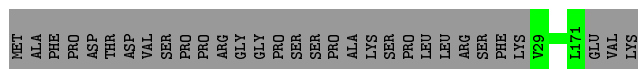
• Molecule 14: 50S RIBOSOMAL PROTEIN L11

Chain G: 99%



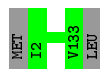
• Molecule 15: 50S RIBOSOMAL PROTEIN L13

Chain H: 82% 18%



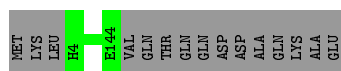
- Molecule 16: 50S RIBOSOMAL PROTEIN L14

Chain I: 99%



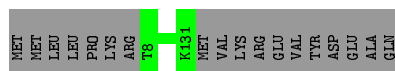
- Molecule 17: 50S RIBOSOMAL PROTEIN L15

Chain J: 90% 10%



- Molecule 18: 50S RIBOSOMAL PROTEIN L16

Chain K: 87% 13%



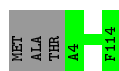
- Molecule 19: 50S RIBOSOMAL PROTEIN L17

Chain L: 97% ..



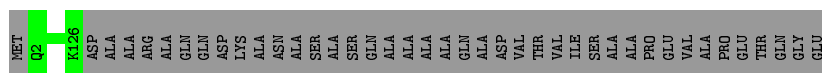
- Molecule 20: 50S RIBOSOMAL PROTEIN L18

Chain M: 97%



- Molecule 21: 50S RIBOSOMAL PROTEIN L19

Chain N: 75% 25%



- Molecule 22: 50S RIBOSOMAL PROTEIN L20

Chain O: 97% ..



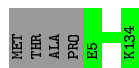
- Molecule 23: 50S RIBOSOMAL PROTEIN L21

Chain P: 100%

There are no outlier residues recorded for this chain.

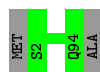
- Molecule 24: 50S RIBOSOMAL PROTEIN L22

Chain Q: 97%



- Molecule 25: 50S RIBOSOMAL PROTEIN L23

Chain R: 98%



- Molecule 26: 50S RIBOSOMAL PROTEIN L24

Chain S: 98%



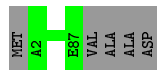
- Molecule 27: GENERAL STRESS PROTEIN CTC

Chain T: 88% 12%



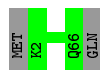
- Molecule 28: 50S RIBOSOMAL PROTEIN L27

Chain U: 95% 5%



- Molecule 29: 50S RIBOSOMAL PROTEIN L29

Chain W: 97%



- Molecule 30: 50S RIBOSOMAL PROTEIN L30

Chain X:  100%

There are no outlier residues recorded for this chain.

- Molecule 31: 50S RIBOSOMAL PROTEIN L31

Chain Y:  100%

There are no outlier residues recorded for this chain.

- Molecule 32: 50S RIBOSOMAL PROTEIN L32

Chain Z:  95%



## 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, $\alpha$ , $\beta$ , $\gamma$	168.50 Å   406.00 Å   693.00 Å 90.00°   90.00°   90.00°	Depositor
Resolution (Å)	15.00 – 3.42	Depositor
% Data completeness (in resolution range)	(Not available) (15.00-3.42)	Depositor
$R_{merge}$	(Not available)	Depositor
$R_{sym}$	0.16	Depositor
Refinement program	CNS	Depositor
R, $R_{free}$	0.278 , 0.348	Depositor
Estimated twinning fraction	No twinning to report.	Xtriage
Total number of atoms	65418	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	80.0	wwPDB-VP

## 5 Model quality ⓘ

### 5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: DOL, DBB, 004, MHV, MHW, MHT, MHU

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	0.70	16/66467 (0.0%)	0.74	12/103673 (0.0%)
6	5	0.85	0/13	0.67	0/15
7	9	0.50	0/2813	0.65	0/4384
All	All	0.70	16/69293 (0.0%)	0.73	12/108072 (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	146
6	5	1	1
7	9	0	1
All	All	1	148

All (16) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	0	1962	C	N1-C2	-7.46	1.32	1.40
1	0	2255	G	C5-C6	-7.28	1.35	1.42
1	0	2789	U	N1-C2	6.94	1.44	1.38
1	0	868	U	N1-C2	6.93	1.44	1.38
1	0	806	A	C5-C6	6.88	1.47	1.41
1	0	564	U	N1-C2	6.81	1.44	1.38
1	0	2557	G	C5-C6	-6.47	1.35	1.42
1	0	2039	G	C5-C6	-6.38	1.35	1.42
1	0	1141	U	N1-C2	6.17	1.44	1.38
1	0	1201	G	C5-C6	-6.08	1.36	1.42
1	0	1629	G	C5-C6	-6.06	1.36	1.42
1	0	578	U	C4-O4	-5.88	1.19	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	0	530	G	C5-C6	-5.76	1.36	1.42
1	0	578	U	C4-C5	-5.35	1.38	1.43
1	0	823	U	C4-O4	5.15	1.27	1.23
1	0	833	A	C5-C6	-5.02	1.36	1.41

All (12) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	0	994	A	N9-C1'-C2'	-6.36	105.00	112.00
1	0	800	U	OP2-P-O3'	6.27	119.00	105.20
1	0	2056	C	N1-C1'-C2'	-6.04	105.36	112.00
1	0	1686	A	C5'-C4'-O4'	5.86	116.13	109.10
1	0	1938	U	C2'-C3'-O3'	5.75	122.90	113.70
1	0	173	A	C2'-C3'-O3'	5.37	122.30	113.70
1	0	1820	G	C2'-C3'-O3'	5.37	122.30	113.70
1	0	801	A	O5'-P-OP2	-5.26	100.97	105.70
1	0	823	U	N1-C1'-C2'	5.21	120.78	114.00
1	0	1927	U	O5'-P-OP1	-5.17	101.05	105.70
1	0	173	A	OP1-P-O3'	5.13	116.48	105.20
1	0	2044	G	N9-C1'-C2'	5.03	120.54	114.00

All (1) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
6	5	8	MHT	C3

All (148) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	0	1004	A	Sidechain
1	0	1133	G	Sidechain
1	0	1139	A	Sidechain
1	0	1141	U	Sidechain
1	0	1146	G	Sidechain
1	0	1197	U	Sidechain
1	0	1199	U	Sidechain
1	0	1201	G	Sidechain
1	0	1209	G	Sidechain
1	0	1222	G	Sidechain
1	0	1226	A	Sidechain
1	0	1232	U	Sidechain
1	0	1253	C	Sidechain

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Mol	Chain	Res	Type	Group
1	0	1257	U	Sidechain
1	0	126	C	Sidechain
1	0	1262	U	Sidechain
1	0	1263	G	Sidechain
1	0	1268	U	Sidechain
1	0	1269	G	Sidechain
1	0	1277	G	Sidechain
1	0	1280	U	Sidechain
1	0	1301	U	Sidechain
1	0	1326	U	Sidechain
1	0	1341	G	Sidechain
1	0	1467	U	Sidechain
1	0	1470	G	Sidechain
1	0	1629	G	Sidechain
1	0	1631	C	Sidechain
1	0	1637	U	Sidechain
1	0	1658	A	Sidechain
1	0	1664	G	Sidechain
1	0	1666	G	Sidechain
1	0	1680	U	Sidechain
1	0	1685	A	Sidechain
1	0	1706	A	Sidechain
1	0	1709	U	Sidechain
1	0	1710	U	Sidechain
1	0	1712	G	Sidechain
1	0	1720	G	Sidechain
1	0	174	A	Sidechain
1	0	1761	G	Sidechain
1	0	1922	U	Sidechain
1	0	1923	U	Sidechain
1	0	1947	G	Sidechain
1	0	1974	U	Sidechain
1	0	1977	C	Sidechain
1	0	1978	U	Sidechain
1	0	1980	A	Sidechain
1	0	1983	G	Sidechain
1	0	1989	C	Sidechain
1	0	1990	U	Sidechain
1	0	1996	A	Sidechain
1	0	2000	U	Sidechain
1	0	2003	A	Sidechain
1	0	2033	C	Sidechain

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Mol	Chain	Res	Type	Group
1	0	2038	C	Sidechain
1	0	2039	G	Sidechain
1	0	2044	G	Sidechain
1	0	2047	C	Sidechain
1	0	2050	G	Sidechain
1	0	2059	U	Sidechain
1	0	211	U	Sidechain
1	0	217	U	Sidechain
1	0	2241	U	Sidechain
1	0	2253	A	Sidechain
1	0	2255	G	Sidechain
1	0	2366	U	Sidechain
1	0	2369	U	Sidechain
1	0	2398	U	Sidechain
1	0	2428	U	Sidechain
1	0	2431	C	Sidechain
1	0	2432	A	Sidechain
1	0	2441	U	Sidechain
1	0	2479	U	Sidechain
1	0	2492	G	Sidechain
1	0	2512	A	Sidechain
1	0	2516	U	Sidechain
1	0	2526	U	Sidechain
1	0	2541	U	Sidechain
1	0	2549	G	Sidechain
1	0	2556	A	Sidechain
1	0	2566	A	Sidechain
1	0	2570	C	Sidechain
1	0	2572	U	Sidechain
1	0	2581	A	Sidechain
1	0	2592	U	Sidechain
1	0	2594	U	Sidechain
1	0	2599	U	Sidechain
1	0	2606	G	Sidechain
1	0	2614	A	Sidechain
1	0	2626	U	Sidechain
1	0	2629	U	Sidechain
1	0	2666	U	Sidechain
1	0	2677	U	Sidechain
1	0	2681	A	Sidechain
1	0	2687	G	Sidechain
1	0	2704	U	Sidechain

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Mol	Chain	Res	Type	Group
1	0	2786	G	Sidechain
1	0	2799	C	Sidechain
1	0	2822	U	Sidechain
1	0	2830	U	Sidechain
1	0	2840	U	Sidechain
1	0	2872	U	Sidechain
1	0	33	C	Sidechain
1	0	444	U	Sidechain
1	0	470	U	Sidechain
1	0	480	G	Sidechain
1	0	521	U	Sidechain
1	0	535	U	Sidechain
1	0	562	G	Sidechain
1	0	565	A	Sidechain
1	0	578	U	Sidechain
1	0	579	G	Sidechain
1	0	587	A	Sidechain
1	0	588	G	Sidechain
1	0	592	G	Sidechain
1	0	597	U	Sidechain
1	0	674	U	Sidechain
1	0	675	C	Sidechain
1	0	707	U	Sidechain
1	0	743	A	Sidechain
1	0	753	U	Sidechain
1	0	759	C	Sidechain
1	0	760	U	Sidechain
1	0	773	G	Sidechain
1	0	777	A	Sidechain
1	0	780	U	Sidechain
1	0	790	A	Sidechain
1	0	794	A	Sidechain
1	0	8	A	Sidechain
1	0	800	U	Sidechain
1	0	804	C	Sidechain
1	0	818	G	Sidechain
1	0	820	U	Sidechain
1	0	823	U	Sidechain
1	0	839	U	Sidechain
1	0	845	U	Sidechain
1	0	847	C	Sidechain
1	0	864	C	Sidechain

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Mol	Chain	Res	Type	Group
1	0	871	U	Sidechain
1	0	917	U	Sidechain
1	0	957	G	Sidechain
1	0	960	U	Sidechain
1	0	983	G	Sidechain
1	0	993	C	Sidechain
1	0	994	A	Sidechain
6	5	1	MHW	Peptide
7	9	94	G	Sidechain

## 5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	0	59359	0	29917	2138	0
2	1	53	0	0	0	0
3	2	46	0	0	0	0
4	3	63	0	0	0	0
5	4	35	0	0	0	0
6	5	73	0	64	6	0
7	9	2516	0	1286	66	0
8	A	270	0	0	1	0
9	B	205	0	0	1	0
10	C	197	0	0	0	0
11	D	178	0	0	0	0
12	E	177	0	0	0	0
13	F	52	0	0	0	0
14	G	143	0	0	0	0
15	H	143	0	0	0	0
16	I	132	0	0	0	0
17	J	141	0	0	0	0
18	K	124	0	0	0	0
19	L	114	0	0	1	0
20	M	111	0	0	0	0
21	N	125	0	0	0	0
22	O	117	0	0	2	0
23	P	100	0	0	0	0
24	Q	130	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
25	R	93	0	0	0	0
26	S	113	0	0	0	0
27	T	223	0	0	0	0
28	U	86	0	0	0	0
29	W	65	0	0	0	0
30	X	55	0	0	0	0
31	Y	73	0	0	0	0
32	Z	58	0	0	2	0
33	0	48	0	47	16	0
All	All	65418	0	31314	2213	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 23.

All (2213) 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)
1:0:1463:A:H1'	1:0:1543:G:H22	1.05	1.14
1:0:128:C:H2'	1:0:129:A:H5''	1.19	1.10
1:0:1656:U:H2'	1:0:1657:A:H5''	1.34	1.10
1:0:940:G:H3'	1:0:941:U:H5''	1.23	1.09
1:0:2607:C:H3'	1:0:2608:A:H5'	1.10	1.08
1:0:2548:G:H2'	1:0:2549:G:H5''	1.37	1.07
1:0:1572:C:H2'	1:0:1573:G:H5''	1.31	1.06
1:0:1747:G:H4'	1:0:1749:G:H1'	1.39	1.05
1:0:170:U:H2'	1:0:171:G:H8	1.20	1.04
1:0:104:C:H2'	1:0:105:G:H5''	1.36	1.03
1:0:58:C:H3'	1:0:59:G:H5''	1.39	1.03
1:0:1312:G:H5''	1:0:1313:U:H5'	1.04	1.02
1:0:1055:A:H4'	1:0:1058:G:H4'	1.41	1.01
1:0:1953:A:H1'	1:0:1955:G:H1'	1.39	1.00
1:0:1312:G:C5'	1:0:1313:U:H5'	1.91	0.99
1:0:2548:G:C2'	1:0:2549:G:H5''	1.92	0.99
1:0:1749:G:O6	1:0:2674:C:H4'	1.65	0.97
1:0:1289:A:H62	1:0:1662:G:H1	1.13	0.96
1:0:1312:G:H5''	1:0:1313:U:C5'	1.94	0.96
1:0:1250:A:O2'	1:0:1251:G:H4'	1.65	0.96
1:0:1888:C:H5''	1:0:1889:G:H5''	1.45	0.95
1:0:587:A:H2	1:0:1266:G:H21	1.14	0.95
1:0:2607:C:H3'	1:0:2608:A:C5'	1.96	0.94
1:0:579:G:H2'	1:0:2013:A:N6	1.82	0.94

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:763:A:C2	1:0:766:A:H1'	2.02	0.94
1:0:1018:C:H1'	1:0:1147:G:N2	1.83	0.93
1:0:2783:U:H2'	1:0:2784:A:H4'	1.47	0.93
1:0:128:C:C2'	1:0:129:A:H5''	1.98	0.93
1:0:708:G:H1	1:0:780:U:H3	1.13	0.92
1:0:2809:A:N6	1:0:2854:G:H1'	1.83	0.92
1:0:1921:A:H2'	1:0:1922:U:H5''	1.51	0.92
1:0:1791:C:H2'	1:0:1792:C:H5''	1.51	0.92
1:0:1572:C:C2'	1:0:1573:G:H5''	1.99	0.92
1:0:1621:C:H2'	1:0:1622:G:O4'	1.72	0.90
1:0:867:G:H2'	1:0:868:U:H6	1.36	0.90
1:0:940:G:C3'	1:0:941:U:H5''	2.02	0.89
1:0:1242:A:H2'	1:0:1243:G:H8	1.37	0.89
1:0:2561:G:OP1	1:0:2561:G:H8	1.55	0.88
1:0:2012:A:N7	1:0:2014:A:H5'	1.87	0.88
1:0:1938:U:C2'	1:0:1939:U:H5'	2.03	0.88
1:0:1989:C:O5'	1:0:1989:C:H6	1.57	0.88
1:0:1408:A:H1'	1:0:1410:U:H5	1.38	0.87
1:0:1252:C:C2'	1:0:1253:C:H5''	2.04	0.87
1:0:1656:U:C2'	1:0:1657:A:H5''	2.04	0.87
1:0:941:U:H2'	1:0:942:U:O4'	1.75	0.87
1:0:176:A:H5''	1:0:177:U:H5	1.40	0.86
1:0:1818:G:H2'	1:0:1819:U:C6	2.09	0.86
1:0:929:A:H3'	1:0:930:A:H5''	1.56	0.86
1:0:1463:A:H1'	1:0:1543:G:N2	1.90	0.85
1:0:942:U:O2'	1:0:943:U:H5'	1.76	0.85
1:0:579:G:H2'	1:0:2013:A:H62	1.38	0.85
1:0:918:A:H2'	1:0:919:U:H5''	1.56	0.85
1:0:805:G:H2'	1:0:2419:C:N3	1.91	0.85
1:0:1715:A:H1'	1:0:1717:A:O4'	1.76	0.84
1:0:2526:U:C5	1:0:2545:A:N7	2.45	0.84
1:0:1791:C:H1'	1:0:1793:A:H5'	1.56	0.84
1:0:1458:A:H3'	1:0:1459:U:C5'	2.07	0.84
1:0:2033:C:H2'	1:0:2034:A:O4'	1.78	0.84
1:0:703:A:H2'	1:0:704:G:H8	1.42	0.83
1:0:392:G:H22	1:0:408:U:H3	1.23	0.83
1:0:796:A:H2	1:0:1770:U:O4'	1.62	0.83
1:0:2691:C:H3'	1:0:2692:A:H5''	1.58	0.83
1:0:951:G:H2'	1:0:952:A:H5''	1.59	0.83
1:0:170:U:H2'	1:0:171:G:C8	2.12	0.83
1:0:2447:G:O2'	1:0:2448:A:H5''	1.78	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1917:C:H2'	1:0:1918:G:O4'	1.79	0.83
1:0:2595:C:H2'	1:0:2596:C:C6	2.13	0.83
1:0:1455:C:H2'	1:0:1456:C:H6	1.44	0.82
1:0:871:U:O2	1:0:2247:A:H2'	1.78	0.82
1:0:1252:C:H2'	1:0:1253:C:H5''	1.62	0.82
1:0:2633:A:H4'	1:0:2634:G:H4'	1.59	0.82
1:0:1971:C:H2'	1:0:1972:G:H8	1.43	0.82
1:0:1938:U:H2'	1:0:1939:U:H5'	1.60	0.82
1:0:2319:G:H2'	1:0:2320:G:C8	2.15	0.82
1:0:2409:A:H2'	1:0:2410:U:H5'	1.61	0.81
1:0:2713:A:H2'	1:0:2714:A:H8	1.45	0.81
1:0:2503:G:H2'	1:0:2504:G:H5''	1.63	0.81
1:0:976:C:H5'	1:0:2252:A:H1'	1.62	0.81
1:0:1908:C:H2'	1:0:1909:U:H4'	1.61	0.81
1:0:109:A:H3'	1:0:110:U:H5''	1.63	0.80
1:0:1971:C:H2'	1:0:1972:G:C8	2.15	0.80
1:0:2433:G:O2'	1:0:2434:G:H5'	1.81	0.80
1:0:2841:U:O2	1:0:2843:A:H1'	1.81	0.80
1:0:1018:C:H1'	1:0:1147:G:H22	1.44	0.80
1:0:1289:A:O2'	1:0:1290:A:H5'	1.82	0.80
1:0:2594:U:H5'	1:0:2594:U:H6	1.46	0.80
1:0:2607:C:C3'	1:0:2608:A:H5'	2.05	0.80
1:0:2721:A:H62	1:0:2743:G:H21	1.30	0.80
1:0:1242:A:H2'	1:0:1243:G:C8	2.17	0.80
1:0:727:U:H2'	1:0:728:G:H5''	1.61	0.80
1:0:1414:G:H21	1:0:1484:G:H21	1.28	0.79
1:0:1692:C:O2'	1:0:1693:A:H5'	1.82	0.79
1:0:104:C:C2'	1:0:105:G:H5''	2.13	0.79
1:0:1692:C:C2'	1:0:1693:A:H5'	2.13	0.79
1:0:2548:G:H2'	1:0:2549:G:C5'	2.12	0.79
1:0:357:A:H3'	1:0:358:C:H5'	1.63	0.79
1:0:1964:A:H3'	1:0:1965:U:H5'	1.66	0.78
1:0:2058:U:H3'	1:0:2217:G:N1	1.98	0.78
1:0:2839:G:H2'	1:0:2840:U:O4'	1.83	0.78
1:0:2431:C:O2'	1:0:2432:A:H5'	1.83	0.78
1:0:317:U:H3'	1:0:318:G:H5''	1.64	0.78
1:0:195:A:H61	1:0:212:U:H4'	1.49	0.78
1:0:317:U:H3	1:0:321:A:N6	1.81	0.78
33:0:2882:DOL:H421	33:0:2882:DOL:H463	1.66	0.78
1:0:195:A:H2'	1:0:196:A:O4'	1.84	0.77
1:0:1924:C:H2'	1:0:1925:C:O4'	1.84	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2257:A:O2'	1:0:2258:G:H5'	1.84	0.77
1:0:1804:U:H2'	1:0:1805:G:H8	1.48	0.77
1:0:175:C:H1'	1:0:2413:A:H61	1.49	0.77
1:0:1922:U:O2	1:0:2571:G:H5'	1.85	0.77
1:0:573:C:H2'	1:0:574:C:O4'	1.85	0.77
1:0:455:A:H4'	1:0:1214:C:O2'	1.83	0.77
1:0:317:U:H3	1:0:321:A:H62	1.33	0.77
1:0:1964:A:C3'	1:0:1965:U:H5'	2.16	0.76
7:9:92:G:H2'	7:9:93:G:H5'	1.66	0.76
1:0:24:G:H2'	1:0:25:U:C6	2.21	0.76
1:0:2642:G:H2'	1:0:2643:G:O4'	1.84	0.76
1:0:216:U:H2'	1:0:217:U:O4'	1.85	0.76
1:0:2270:U:O2'	1:0:2353:G:H1'	1.84	0.76
1:0:2230:G:H1'	1:0:2429:A:O4'	1.85	0.76
1:0:2788:C:O2'	1:0:2789:U:H5'	1.85	0.76
1:0:590:C:H2'	1:0:591:G:H8	1.50	0.76
1:0:601:A:H61	1:0:633:G:N2	1.83	0.76
1:0:706:A:H2'	1:0:707:U:C6	2.20	0.76
1:0:1944:C:H2'	1:0:1945:C:O4'	1.86	0.75
1:0:753:U:H2'	1:0:754:G:H5'	1.66	0.75
1:0:88:G:H3'	1:0:89:A:H5''	1.69	0.75
1:0:940:G:H3'	1:0:941:U:C5'	2.09	0.75
1:0:1458:A:H3'	1:0:1459:U:H5''	1.67	0.75
1:0:703:A:H2'	1:0:704:G:C8	2.20	0.75
1:0:2468:G:H2'	1:0:2469:G:O4'	1.87	0.75
1:0:1640:C:H2'	1:0:1641:C:H6	1.52	0.75
1:0:2199:C:H2'	1:0:2200:G:C8	2.22	0.75
1:0:2523:G:O2'	1:0:2524:G:H5'	1.87	0.74
1:0:1818:G:H2'	1:0:1819:U:H6	1.49	0.74
1:0:2658:A:H2'	1:0:2659:C:H6	1.52	0.74
1:0:688:A:O2'	1:0:2422:C:H4'	1.87	0.74
1:0:2505:G:H5'	1:0:2722:C:O2'	1.86	0.74
1:0:2822:U:H2'	1:0:2823:G:H5'	1.69	0.74
1:0:867:G:H2'	1:0:868:U:C6	2.20	0.74
1:0:2484:G:H4'	33:0:2882:DOL:O15	1.86	0.74
1:0:2811:G:H2'	1:0:2812:A:C8	2.23	0.74
1:0:1254:G:H2'	1:0:1255:A:H8	1.51	0.73
1:0:1619:A:H2	1:0:1620:C:C5	2.07	0.73
1:0:608:G:O2'	1:0:609:U:H5'	1.87	0.73
1:0:1763:G:H2'	1:0:1764:A:H4'	1.70	0.73
1:0:1953:A:H1'	1:0:1955:G:C1'	2.16	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1974:U:H2'	1:0:1975:G:H5''	1.70	0.73
1:0:831:G:C2'	1:0:832:A:H5''	2.18	0.73
7:9:88:C:H2'	7:9:89:G:H8	1.52	0.73
1:0:161:U:H5'	1:0:193:A:H2	1.53	0.73
1:0:2058:U:H3'	1:0:2217:G:H1	1.54	0.73
1:0:2498:U:H2'	1:0:2520:A:N1	2.03	0.73
1:0:2464:G:O2'	1:0:2465:G:H5'	1.89	0.73
1:0:2691:C:H3'	1:0:2692:A:C5'	2.19	0.73
7:9:7:C:H2'	7:9:8:C:H6	1.54	0.73
1:0:1392:U:H2'	1:0:1393:G:H5'	1.70	0.73
1:0:2557:G:H2'	1:0:2558:C:C6	2.24	0.73
1:0:2872:U:H2'	1:0:2873:G:C8	2.23	0.73
1:0:304:A:H2'	1:0:305:A:H5''	1.69	0.73
7:9:45:C:H3'	7:9:46:G:H5'	1.70	0.73
1:0:2660:C:O2'	1:0:2661:G:H5'	1.89	0.73
1:0:1086:C:H2'	1:0:1087:C:H5''	1.69	0.72
33:0:2882:DOL:C42	33:0:2882:DOL:H463	2.19	0.72
1:0:688:A:H1'	1:0:2422:C:O2'	1.88	0.72
1:0:572:G:H1	1:0:587:A:H61	1.36	0.72
1:0:1014:G:N2	1:0:1015:U:C2	2.57	0.72
1:0:1198:C:H5''	1:0:1199:U:H4'	1.72	0.72
1:0:2678:C:O2'	1:0:2679:G:H5'	1.89	0.72
1:0:1922:U:H1'	1:0:2570:C:O2'	1.89	0.72
1:0:1401:G:O2'	1:0:1541:G:H5'	1.89	0.72
1:0:1981:A:H4'	1:0:2704:U:O2'	1.88	0.72
1:0:2436:U:O2'	1:0:2437:G:H5'	1.89	0.72
1:0:1745:C:O2	1:0:2697:G:H4'	1.90	0.72
1:0:1054:C:H2'	1:0:1055:A:H5'	1.71	0.72
1:0:1976:U:H2'	1:0:1977:C:H5'	1.71	0.72
33:0:2882:DOL:H313	6:5:3:DBB:HG1	1.72	0.72
1:0:2680:U:H3'	1:0:2681:A:H5'	1.72	0.72
1:0:753:U:H2'	1:0:754:G:C5'	2.20	0.72
1:0:2755:A:O2'	1:0:2756:A:H5'	1.89	0.72
1:0:1914:U:H3	1:0:1952:A:H62	1.37	0.71
1:0:215:G:O2'	1:0:617:U:H1'	1.89	0.71
1:0:1353:A:H4'	1:0:1410:U:H3	1.55	0.71
1:0:1288:A:H2'	1:0:1289:A:O4'	1.90	0.71
1:0:79:G:H2'	1:0:80:A:C8	2.24	0.71
1:0:236:C:H2'	1:0:237:G:H8	1.56	0.71
1:0:2818:G:N2	1:0:2850:U:C2	2.58	0.71
1:0:1007:A:H2'	1:0:1008:G:H8	1.55	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2217:G:H5''	1:0:2218:G:N7	2.05	0.71
1:0:776:G:O2'	1:0:778:G:H5''	1.90	0.71
1:0:930:A:H5'	1:0:931:G:C8	2.26	0.71
1:0:2480:C:H5''	1:0:2482:A:H5'	1.71	0.71
1:0:2499:C:H41	1:0:2521:A:H2	1.38	0.71
1:0:1747:G:C4'	1:0:1749:G:H1'	2.18	0.71
1:0:587:A:H2	1:0:1266:G:N2	1.87	0.71
1:0:1455:C:H2'	1:0:1456:C:C6	2.24	0.71
1:0:798:G:O2'	1:0:1770:U:H4'	1.91	0.71
1:0:2475:C:H2'	1:0:2476:A:H5'	1.72	0.71
33:0:2882:DOL:C46	33:0:2882:DOL:H421	2.21	0.71
1:0:248:A:H62	1:0:373:A:H2'	1.56	0.71
1:0:2516:U:H2'	1:0:2517:C:C6	2.26	0.71
1:0:2199:C:H2'	1:0:2200:G:H8	1.55	0.70
1:0:45:C:H2'	1:0:46:C:C6	2.26	0.70
1:0:1715:A:H1'	1:0:1717:A:C4'	2.21	0.70
1:0:2510:A:H61	1:0:2641:A:H61	1.39	0.70
1:0:2823:G:H5''	1:0:2824:C:OP1	1.91	0.70
1:0:1391:A:H2'	1:0:1392:U:H5	1.54	0.70
1:0:2055:G:H2'	1:0:2056:C:O4'	1.90	0.70
1:0:933:G:O2'	1:0:934:G:H5'	1.91	0.70
1:0:1692:C:H2'	1:0:1693:A:H5'	1.74	0.70
1:0:2713:A:H2'	1:0:2714:A:C8	2.27	0.70
1:0:2818:G:O2'	1:0:2819:G:H5'	1.91	0.70
1:0:464:G:H2'	1:0:465:C:C6	2.27	0.70
1:0:1321:A:H62	1:0:1622:G:H21	1.35	0.70
1:0:984:A:H2'	1:0:1200:G:N2	2.06	0.70
1:0:1284:G:H2'	1:0:1633:C:H4'	1.73	0.70
1:0:1823:G:C6	1:0:1824:C:N4	2.60	0.70
1:0:515:A:H2'	1:0:516:G:H5'	1.73	0.70
7:9:64:C:C3'	7:9:65:A:H5''	2.22	0.70
1:0:1345:G:N2	1:0:1625:A:H2'	2.07	0.70
1:0:158:A:H2	1:0:447:U:H4'	1.56	0.70
1:0:563:U:H2'	1:0:564:U:O4'	1.92	0.69
33:0:2882:DOL:H313	6:5:3:DBB:CG	2.22	0.69
1:0:1975:G:N2	1:0:1978:U:H5	1.89	0.69
1:0:1277:G:N7	1:0:1278:A:N7	2.41	0.69
1:0:1450:G:H1'	1:0:1493:A:N3	2.07	0.69
1:0:221:A:H62	1:0:231:G:H21	1.40	0.69
1:0:2437:G:C6	1:0:2469:G:H2'	2.27	0.69
1:0:2657:G:O2'	1:0:2658:A:H5'	1.92	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:857:U:H2'	1:0:858:G:H5'	1.74	0.69
1:0:1643:A:H1'	1:0:1657:A:C2	2.28	0.69
1:0:942:U:H2'	1:0:943:U:O4'	1.93	0.69
7:9:64:C:H3'	7:9:65:A:H5''	1.75	0.69
1:0:2319:G:H2'	1:0:2320:G:H8	1.56	0.69
1:0:2407:G:H5''	1:0:2408:G:OP1	1.93	0.69
1:0:2811:G:H2'	1:0:2812:A:H8	1.57	0.69
1:0:706:A:H2'	1:0:707:U:H6	1.57	0.69
1:0:1293:A:O2'	1:0:1294:G:H5'	1.93	0.69
1:0:1560:A:H2'	1:0:1561:A:O4'	1.92	0.69
1:0:2532:G:H21	1:0:2561:G:N2	1.90	0.69
1:0:1066:G:H2'	1:0:1067:G:H4'	1.73	0.69
1:0:788:G:H5''	1:0:790:A:H1'	1.75	0.69
1:0:1016:C:C6	1:0:1154:A:H1'	2.28	0.69
1:0:2532:G:H21	1:0:2561:G:H21	1.40	0.69
1:0:2613:A:H2'	1:0:2614:A:H8	1.57	0.69
1:0:1001:A:H4'	1:0:1168:G:OP2	1.93	0.69
1:0:176:A:H5''	1:0:177:U:C5	2.27	0.69
1:0:542:A:OP2	1:0:2003:A:H1'	1.92	0.69
1:0:931:G:H5''	7:9:83:C:O2'	1.92	0.69
1:0:1299:A:H2'	1:0:1301:U:OP2	1.93	0.68
1:0:2570:C:H2'	1:0:2571:G:C8	2.27	0.68
1:0:44:G:H21	1:0:192:G:H21	1.39	0.68
1:0:763:A:H2	1:0:766:A:H1'	1.54	0.68
1:0:1664:G:H4'	1:0:1665:C:OP1	1.92	0.68
1:0:191:G:O2'	1:0:192:G:H5'	1.92	0.68
1:0:161:U:H5'	1:0:193:A:C2	2.28	0.68
1:0:1618:U:O5'	1:0:1618:U:H6	1.76	0.68
1:0:590:C:H2'	1:0:591:G:C8	2.28	0.68
1:0:651:C:H2'	1:0:652:C:H5''	1.76	0.68
1:0:788:G:N2	1:0:801:A:OP2	2.26	0.68
1:0:2299:A:H5'	1:0:2300:G:C5	2.29	0.68
1:0:2474:G:C6	1:0:2475:C:C4	2.81	0.68
1:0:2652:G:H2'	1:0:2653:A:H8	1.59	0.68
1:0:763:A:H2'	1:0:764:A:H5''	1.76	0.68
7:9:24:U:H2'	7:9:25:G:H5''	1.75	0.68
1:0:1947:G:H2'	1:0:1950:C:OP1	1.94	0.68
1:0:831:G:H2'	1:0:832:A:H5''	1.75	0.68
1:0:2261:G:H4'	1:0:2262:C:OP2	1.94	0.67
7:9:7:C:H2'	7:9:8:C:C6	2.29	0.67
1:0:1200:G:C2'	1:0:1201:G:H5'	2.25	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2672:U:H2'	1:0:2673:G:H8	1.57	0.67
1:0:2872:U:H2'	1:0:2873:G:H8	1.59	0.67
1:0:581:A:C2	1:0:582:G:H1'	2.30	0.67
1:0:749:C:H2'	1:0:750:C:C6	2.29	0.67
1:0:785:U:H5'	1:0:1368:G:O2'	1.94	0.67
1:0:2052:G:O2'	1:0:2053:G:H5'	1.94	0.67
1:0:2802:C:H2'	1:0:2803:C:H6	1.59	0.67
1:0:1807:A:O2'	1:0:1808:C:H4'	1.94	0.67
1:0:2835:A:O5'	1:0:2835:A:H8	1.75	0.67
1:0:58:C:H3'	1:0:59:G:C5'	2.20	0.67
1:0:652:C:N4	1:0:657:A:H61	1.92	0.67
1:0:1800:A:H2'	1:0:1802:A:C6	2.29	0.67
1:0:1854:G:H1	1:0:1863:U:H3	1.43	0.67
1:0:2727:G:H22	1:0:2735:C:H5''	1.58	0.67
1:0:1486:A:H2'	1:0:1487:C:C6	2.30	0.67
1:0:1572:C:H2'	1:0:1573:G:C5'	2.17	0.67
1:0:1655:C:H4'	1:0:2689:C:O2	1.95	0.67
1:0:2409:A:C2'	1:0:2410:U:H5'	2.25	0.67
1:0:1572:C:C3'	1:0:1573:G:H5''	2.24	0.67
1:0:2076:G:H2'	1:0:2077:G:H8	1.58	0.67
1:0:2548:G:O2'	1:0:2549:G:H5''	1.94	0.67
1:0:456:C:O2'	1:0:457:C:H5'	1.94	0.67
1:0:1141:U:O2'	1:0:1142:G:P	2.52	0.67
1:0:1921:A:C2'	1:0:1922:U:H5''	2.25	0.67
1:0:2397:A:H2'	1:0:2398:U:O4'	1.94	0.67
1:0:1937:G:N3	1:0:2530:C:H5'	2.09	0.67
1:0:1785:A:H4'	1:0:1883:A:C2	2.29	0.67
1:0:2451:G:H2'	1:0:2508:G:N2	2.10	0.67
1:0:313:U:H2'	1:0:314:G:C8	2.29	0.67
1:0:452:G:H2'	1:0:453:U:O4'	1.95	0.67
1:0:70:A:OP1	1:0:111:G:H4'	1.94	0.67
1:0:1319:C:H2'	1:0:1320:A:H8	1.58	0.66
1:0:1640:C:H2'	1:0:1641:C:C6	2.29	0.66
1:0:1272:G:H2'	1:0:1273:G:C8	2.31	0.66
1:0:1558:C:H2'	1:0:1559:G:H5'	1.78	0.66
7:9:23:G:H2'	7:9:24:U:H6	1.60	0.66
1:0:1437:A:H2'	1:0:1438:G:H8	1.60	0.66
1:0:2463:G:O2'	1:0:2464:G:H5'	1.95	0.66
1:0:852:U:H2'	1:0:853:C:H6	1.61	0.66
1:0:918:A:H2'	1:0:919:U:C5'	2.25	0.66
1:0:1029:C:H3'	1:0:1030:U:H5''	1.78	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2684:A:C8	1:0:2685:A:C8	2.84	0.66
1:0:342:G:H2'	1:0:343:A:H5'	1.77	0.66
1:0:173:A:H61	1:0:844:G:H21	1.43	0.66
7:9:8:C:O2'	7:9:9:G:H5'	1.96	0.66
1:0:2324:G:N3	1:0:2326:C:H5	1.93	0.66
1:0:2847:G:O2'	1:0:2848:A:H5'	1.94	0.66
1:0:643:A:H2'	1:0:644:A:H8	1.59	0.66
1:0:672:C:O2'	1:0:673:G:H5'	1.95	0.66
1:0:1333:G:N2	1:0:1344:C:N4	2.44	0.66
1:0:464:G:H2'	1:0:465:C:H6	1.58	0.66
1:0:757:U:C2'	1:0:758:G:H5'	2.26	0.66
1:0:1408:A:H1'	1:0:1410:U:C5	2.26	0.66
1:0:1619:A:C2	1:0:1620:C:C5	2.83	0.66
1:0:2194:A:H2'	1:0:2195:C:H5''	1.78	0.66
1:0:2401:A:O2'	1:0:2403:C:H5''	1.95	0.66
1:0:2475:C:C2'	1:0:2476:A:H5'	2.26	0.66
1:0:2666:U:C4	1:0:2667:C:N4	2.64	0.66
1:0:215:G:HO2'	1:0:617:U:H1'	1.60	0.66
1:0:1254:G:H2'	1:0:1255:A:C8	2.31	0.66
1:0:1449:C:O2'	1:0:1450:G:H5'	1.96	0.66
1:0:2809:A:H61	1:0:2854:G:H1'	1.58	0.66
1:0:3:U:H2'	1:0:4:C:C6	2.31	0.66
1:0:797:A:H4'	1:0:798:G:C8	2.30	0.66
1:0:815:A:H2'	1:0:816:U:C6	2.30	0.66
1:0:951:G:C2'	1:0:952:A:H5''	2.24	0.66
1:0:1345:G:H22	1:0:1625:A:H2'	1.60	0.66
1:0:1699:A:C5	1:0:1748:U:H1'	2.31	0.66
1:0:1976:U:C2'	1:0:1977:C:H5'	2.26	0.66
1:0:367:G:H2'	1:0:368:A:H5''	1.78	0.66
1:0:584:A:O2'	1:0:585:U:H5'	1.96	0.66
1:0:1312:G:H8	1:0:1312:G:O5'	1.79	0.66
1:0:163:A:H2'	1:0:164:G:H8	1.61	0.66
1:0:1679:U:H3'	1:0:1680:U:H5''	1.78	0.66
1:0:1938:U:O2'	1:0:1939:U:H5'	1.96	0.66
1:0:2787:A:O2'	1:0:2788:C:H5'	1.96	0.66
1:0:1528:C:H2'	1:0:1529:C:H5''	1.77	0.65
1:0:2491:C:C3'	1:0:2492:G:H5''	2.26	0.65
1:0:1007:A:H2'	1:0:1008:G:C8	2.31	0.65
1:0:109:A:C3'	1:0:110:U:H5''	2.25	0.65
1:0:2053:G:C2	1:0:2054:A:C4	2.83	0.65
1:0:2324:G:H4'	1:0:2326:C:H5''	1.78	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2266:A:H2'	1:0:2268:G:C8	2.31	0.65
1:0:81:C:H2'	1:0:82:G:O4'	1.96	0.65
1:0:859:U:H4'	1:0:860:U:H5	1.60	0.65
1:0:875:G:H2'	1:0:876:A:O4'	1.96	0.65
1:0:1911:A:H2'	1:0:1912:G:H5'	1.79	0.65
1:0:687:G:O2'	1:0:688:A:H5'	1.96	0.65
1:0:776:G:H2'	1:0:777:A:H5''	1.79	0.65
1:0:1227:A:H62	1:0:1248:G:H21	1.45	0.65
1:0:1690:U:H2'	1:0:1691:G:H5'	1.79	0.65
1:0:2006:G:C2	1:0:2024:U:O2	2.49	0.65
1:0:2787:A:H2'	1:0:2788:C:H6	1.61	0.65
1:0:2279:G:H2'	1:0:2280:A:H8	1.61	0.65
1:0:2437:G:N1	1:0:2469:G:H2'	2.12	0.65
1:0:2503:G:C2'	1:0:2504:G:H5''	2.27	0.65
1:0:2555:G:H3'	1:0:2555:G:OP1	1.97	0.65
1:0:1380:C:H2'	1:0:1381:G:H5'	1.80	0.64
1:0:652:C:H42	1:0:657:A:H61	1.45	0.64
1:0:1800:A:H2'	1:0:1802:A:N6	2.12	0.64
1:0:521:U:C5	1:0:522:G:N3	2.65	0.64
1:0:1727:C:H4'	1:0:2833:C:O2	1.97	0.64
1:0:2446:C:H2'	1:0:2447:G:O4'	1.97	0.64
1:0:2593:A:H8	1:0:2593:A:H3'	1.62	0.64
1:0:1970:G:O2'	1:0:1971:C:H5'	1.97	0.64
1:0:2327:U:H6	1:0:2327:U:O5'	1.79	0.64
1:0:840:U:H4'	1:0:841:G:C2	2.32	0.64
1:0:128:C:H2'	1:0:129:A:C5'	2.12	0.64
1:0:1489:C:H3'	1:0:1490:U:H5'	1.78	0.64
1:0:26:G:C6	1:0:27:G:N1	2.66	0.64
1:0:1272:G:O2'	1:0:1273:G:H5'	1.98	0.64
1:0:1352:G:H2'	1:0:1353:A:C8	2.32	0.64
1:0:2213:G:H2'	1:0:2214:G:C8	2.33	0.64
1:0:643:A:H2'	1:0:644:A:C8	2.33	0.64
1:0:1273:G:H2'	1:0:1274:C:C6	2.33	0.64
1:0:1678:G:C4	1:0:1983:G:N2	2.66	0.64
1:0:1941:C:O2'	1:0:1942:G:H5'	1.98	0.64
1:0:1041:G:O2'	1:0:2445:C:H4'	1.98	0.63
1:0:1398:G:H2'	1:0:1399:C:C6	2.32	0.63
1:0:2273:C:H2'	1:0:2274:C:C6	2.33	0.63
1:0:614:G:H2'	1:0:615:C:C6	2.33	0.63
1:0:874:A:H62	1:0:928:G:H21	1.46	0.63
1:0:964:A:H2'	1:0:965:G:C8	2.33	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:9:64:C:H2'	7:9:65:A:H5''	1.80	0.63
1:0:1073:G:H2'	1:0:1074:G:H5''	1.80	0.63
1:0:579:G:O2'	1:0:580:A:H5'	1.99	0.63
1:0:1016:C:H5''	1:0:1023:U:P	2.39	0.63
1:0:1437:A:H2'	1:0:1438:G:C8	2.33	0.63
1:0:188:G:O2'	1:0:189:A:H5'	1.98	0.63
1:0:2059:U:P	1:0:2217:G:H1	2.21	0.63
1:0:521:U:H5	1:0:522:G:N3	1.96	0.63
1:0:1028:G:H2'	1:0:1029:C:H6	1.63	0.63
1:0:2825:A:H62	1:0:2841:U:H3	1.46	0.63
1:0:1881:U:H2'	1:0:1882:G:H5'	1.79	0.63
1:0:2310:G:H2'	1:0:2311:U:H5'	1.81	0.63
1:0:357:A:H3'	1:0:358:C:C5'	2.26	0.63
1:0:68:C:O2'	1:0:69:G:H5'	1.98	0.63
1:0:755:C:O2'	1:0:756:C:H5'	1.99	0.63
1:0:820:U:H2'	1:0:821:A:C8	2.34	0.63
1:0:1271:C:O2'	1:0:1272:G:H5'	1.99	0.63
1:0:1496:G:H1	1:0:1527:G:H1	1.47	0.63
1:0:1969:G:H2'	1:0:1970:G:H8	1.63	0.63
1:0:2185:U:H2'	1:0:2186:G:C8	2.33	0.63
1:0:536:A:O2'	1:0:2026:C:H1'	1.98	0.63
1:0:1175:A:O5'	1:0:1175:A:H8	1.82	0.63
1:0:1685:A:N6	1:0:1691:G:N3	2.47	0.63
1:0:1724:C:H2'	1:0:1725:C:C6	2.33	0.63
1:0:2059:U:H2'	1:0:2060:A:H5''	1.81	0.63
1:0:542:A:H2'	1:0:543:G:H5'	1.81	0.63
1:0:984:A:O2'	1:0:1201:G:H1'	1.99	0.63
1:0:1466:C:O2'	1:0:1467:U:H5'	1.98	0.62
1:0:207:U:H2'	1:0:208:C:C6	2.34	0.62
1:0:2627:G:H2'	1:0:2628:C:O4'	1.99	0.62
1:0:722:C:H2'	1:0:723:C:C6	2.34	0.62
1:0:629:C:C2'	1:0:630:G:H5'	2.30	0.62
1:0:88:G:H3'	1:0:89:A:C5'	2.28	0.62
1:0:962:C:H2'	1:0:963:G:H8	1.64	0.62
1:0:2250:G:O2'	1:0:2251:U:H5'	1.99	0.62
1:0:1182:U:H3'	1:0:1183:C:H5''	1.82	0.62
1:0:1196:G:H2'	1:0:1197:U:H5'	1.80	0.62
1:0:1198:C:C5'	1:0:1199:U:H4'	2.29	0.62
1:0:2634:G:H2'	1:0:2643:G:C6	2.35	0.62
1:0:2809:A:H62	1:0:2854:G:H1'	1.63	0.62
1:0:1436:G:H1'	1:0:1508:G:H21	1.63	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:697:G:O2'	1:0:698:A:H5'	1.99	0.62
7:9:111:C:H5''	7:9:112:A:H5''	1.81	0.62
1:0:2308:A:H2'	1:0:2309:G:C8	2.34	0.62
1:0:831:G:H21	1:0:1203:A:H62	1.47	0.62
1:0:12:U:H2'	1:0:13:A:O4'	2.00	0.62
1:0:1457:A:O2'	1:0:1458:A:H5'	1.99	0.62
1:0:2634:G:H2'	1:0:2643:G:O6	1.99	0.62
1:0:1014:G:O2'	1:0:1015:U:H5'	2.00	0.62
1:0:1197:U:H2'	1:0:1198:C:O4'	2.00	0.62
1:0:181:A:H5'	1:0:183:U:H1'	1.82	0.62
1:0:2405:A:OP1	1:0:2405:A:H8	1.82	0.62
1:0:2502:G:H2'	1:0:2503:G:H8	1.64	0.62
1:0:1989:C:H1'	1:0:2798:A:O2'	1.98	0.62
1:0:513:A:H4'	1:0:515:A:OP1	1.99	0.62
1:0:1200:G:O2'	1:0:1201:G:H5'	1.99	0.61
1:0:2046:C:H42	1:0:2429:A:H61	1.48	0.61
1:0:1466:C:H2'	1:0:1467:U:O4'	1.99	0.61
1:0:1938:U:O2'	1:0:1939:U:C5'	2.48	0.61
1:0:1826:U:O2'	1:0:1952:A:H2'	2.00	0.61
1:0:2313:G:H3'	1:0:2314:A:H5'	1.80	0.61
1:0:2515:G:H2'	1:0:2516:U:C6	2.34	0.61
1:0:999:A:H4'	1:0:1166:A:N1	2.16	0.61
1:0:1289:A:N7	1:0:1662:G:N2	2.48	0.61
1:0:1791:C:H2'	1:0:1792:C:C5'	2.29	0.61
1:0:1996:A:O2'	1:0:1997:A:H5'	1.99	0.61
1:0:2425:G:O2'	1:0:2426:G:H5'	1.99	0.61
1:0:2524:G:O2'	1:0:2525:U:H5'	2.01	0.61
1:0:2622:G:H2'	1:0:2623:A:C8	2.35	0.61
1:0:2861:A:H2'	1:0:2862:G:H8	1.66	0.61
1:0:2604:G:H8	1:0:2604:G:H5''	1.64	0.61
1:0:2624:G:H4'	1:0:2712:G:H2'	1.82	0.61
1:0:225:G:H5'	1:0:226:C:H5'	1.83	0.61
1:0:2476:A:HO2'	1:0:2477:C:H5	1.48	0.61
1:0:2664:G:O2'	1:0:2665:G:H5'	2.01	0.61
1:0:693:A:H2'	1:0:694:G:H8	1.64	0.61
1:0:956:A:C2	1:0:2427:A:O2'	2.54	0.61
7:9:23:G:H2'	7:9:24:U:C6	2.35	0.61
1:0:2633:A:H61	1:0:2646:C:H42	1.48	0.61
1:0:1004:A:H2'	1:0:1005:U:H5''	1.82	0.61
1:0:1226:A:N1	1:0:1250:A:H1'	2.16	0.61
1:0:1683:G:H2'	1:0:1684:G:H5'	1.82	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:222:G:O2'	1:0:223:C:H5'	2.00	0.61
1:0:2321:C:H2'	1:0:2322:U:O4'	2.01	0.61
1:0:616:U:H2'	1:0:617:U:H5''	1.83	0.61
1:0:675:C:H2'	1:0:676:G:C8	2.36	0.61
1:0:79:G:H2'	1:0:80:A:H8	1.66	0.61
1:0:964:A:H2'	1:0:965:G:H8	1.64	0.61
1:0:701:U:H2'	1:0:702:A:O4'	2.01	0.61
1:0:734:G:H2'	1:0:735:G:H8	1.66	0.61
1:0:946:U:H2'	1:0:947:C:H6	1.66	0.61
1:0:1719:G:H2'	1:0:1720:G:H8	1.66	0.61
1:0:1699:A:N7	1:0:1748:U:H1'	2.15	0.61
1:0:21:A:O2'	1:0:22:C:H5'	2.00	0.61
1:0:2598:C:O2'	1:0:2599:U:H5'	2.01	0.61
1:0:820:U:H2'	1:0:821:A:H8	1.64	0.61
1:0:830:C:O2'	1:0:852:U:H5''	2.00	0.61
1:0:765:C:C5	1:0:1772:C:H1'	2.36	0.60
1:0:2008:C:O5'	1:0:2008:C:H6	1.84	0.60
1:0:2026:C:N3	1:0:2757:G:N2	2.48	0.60
1:0:2198:U:C3'	1:0:2199:C:H5''	2.31	0.60
1:0:2701:A:O2'	1:0:2702:G:H5'	2.01	0.60
1:0:45:C:H2'	1:0:46:C:H6	1.66	0.60
1:0:675:C:H2'	1:0:676:G:H8	1.66	0.60
1:0:790:A:C2	1:0:791:G:C4	2.89	0.60
7:9:88:C:H2'	7:9:89:G:C8	2.35	0.60
1:0:2593:A:C8	1:0:2593:A:H3'	2.35	0.60
1:0:2736:U:O2'	1:0:2737:A:H5'	2.01	0.60
1:0:455:A:H5'	1:0:1215:A:H5'	1.84	0.60
1:0:959:C:O2'	1:0:960:U:H5'	2.00	0.60
1:0:718:A:O2'	1:0:719:A:H5'	2.01	0.60
1:0:2096:U:H2'	1:0:2097:A:H5''	1.81	0.60
1:0:2672:U:H2'	1:0:2673:G:C8	2.36	0.60
1:0:1707:A:H2'	1:0:1708:C:H5'	1.84	0.60
1:0:2476:A:H5''	1:0:2477:C:OP1	2.02	0.60
33:0:2882:DOL:H313	6:5:3:DBB:HB3	1.84	0.60
1:0:35:G:O4'	1:0:466:A:H1'	2.01	0.60
1:0:706:A:O2'	1:0:707:U:H5'	2.01	0.60
1:0:773:G:H2'	1:0:774:A:H5'	1.82	0.60
1:0:1223:G:C2	1:0:1250:A:N6	2.69	0.60
1:0:1235:C:O2	1:0:1241:G:N2	2.34	0.60
1:0:1665:C:O2'	1:0:1666:G:H5'	2.02	0.60
1:0:2012:A:C5	1:0:2014:A:H5'	2.36	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2431:C:HO2'	1:0:2432:A:H5'	1.64	0.60
1:0:2438:A:H2'	1:0:2438:A:N3	2.16	0.60
1:0:2717:G:H2'	1:0:2718:A:C8	2.37	0.60
1:0:833:A:O5'	1:0:833:A:H8	1.84	0.60
1:0:1391:A:H2'	1:0:1392:U:C5	2.36	0.60
1:0:2825:A:H2'	1:0:2826:C:H6	1.65	0.60
1:0:717:G:H21	1:0:739:G:H2'	1.67	0.60
1:0:788:G:H2'	1:0:807:A:C5	2.37	0.60
1:0:2235:G:O2'	1:0:2236:U:H5'	2.01	0.60
1:0:2466:G:O2'	1:0:2467:A:H5'	2.02	0.60
1:0:633:G:O2'	1:0:634:G:H5'	2.01	0.60
1:0:2198:U:H3'	1:0:2199:C:H5''	1.82	0.59
1:0:2605:C:H2'	1:0:2606:G:C8	2.36	0.59
1:0:2822:U:C2'	1:0:2823:G:H5'	2.31	0.59
1:0:674:U:H2'	1:0:675:C:C6	2.36	0.59
1:0:2245:A:H4'	1:0:2246:A:C5	2.37	0.59
1:0:2843:A:O2'	1:0:2844:G:H5'	2.01	0.59
1:0:798:G:H2'	1:0:798:G:N3	2.17	0.59
1:0:839:U:H2'	1:0:841:G:O4'	2.02	0.59
1:0:991:A:N7	1:0:1146:G:H5''	2.17	0.59
1:0:2749:A:O2'	1:0:2750:G:H5'	2.02	0.59
1:0:133:C:H2'	1:0:134:G:O4'	2.03	0.59
1:0:2658:A:H2'	1:0:2659:C:C6	2.35	0.59
1:0:2678:C:O2	1:0:2688:G:N2	2.36	0.59
1:0:1966:C:H4'	1:0:2585:C:H4'	1.84	0.59
1:0:225:G:C5'	1:0:226:C:H5'	2.33	0.59
1:0:2498:U:OP1	1:0:2498:U:H3'	2.02	0.59
1:0:2487:G:C2	1:0:2561:G:O6	2.56	0.59
1:0:2057:U:O2'	1:0:2576:G:H1'	2.02	0.59
1:0:2640:G:H2'	1:0:2641:A:C8	2.38	0.59
1:0:2678:C:C2	1:0:2688:G:N2	2.71	0.59
1:0:2814:G:O2'	1:0:2815:C:H5'	2.02	0.59
1:0:210:A:N6	1:0:442:A:H61	2.00	0.59
1:0:575:U:H2'	1:0:576:A:C8	2.38	0.59
1:0:689:A:H2'	1:0:690:A:H5'	1.85	0.59
1:0:1920:A:H2'	1:0:1921:A:C8	2.38	0.59
1:0:2757:G:OP2	1:0:2761:A:O2'	2.21	0.59
1:0:693:A:H2'	1:0:694:G:C8	2.38	0.59
1:0:870:C:H2'	1:0:871:U:C6	2.38	0.59
1:0:1352:G:H2'	1:0:1353:A:H8	1.68	0.59
1:0:2033:C:C2'	1:0:2034:A:O4'	2.50	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1141:U:H5''	1:0:2494:C:O2'	2.02	0.59
1:0:1773:C:N4	1:0:2566:A:H2	2.00	0.59
1:0:1982:C:H4'	1:0:2703:C:O2	2.03	0.59
1:0:1321:A:H62	1:0:1622:G:N2	2.00	0.59
1:0:1997:A:H2'	1:0:1998:A:C8	2.38	0.59
1:0:2245:A:H4'	1:0:2246:A:N7	2.18	0.59
1:0:2509:A:H2'	1:0:2510:A:H5''	1.83	0.59
1:0:2782:G:H3'	1:0:2783:U:H5''	1.84	0.59
33:0:2882:DOL:H313	6:5:3:DBB:CB	2.32	0.59
1:0:1198:C:H5''	1:0:1199:U:C4'	2.33	0.59
1:0:1332:G:O2'	1:0:1333:G:H5'	2.03	0.59
1:0:1765:C:O5'	1:0:1765:C:H6	1.85	0.59
1:0:24:G:H2'	1:0:25:U:H6	1.64	0.59
1:0:2769:C:H2'	1:0:2770:A:H5'	1.85	0.59
1:0:2827:G:H2'	1:0:2828:C:C6	2.37	0.59
1:0:311:A:H2	1:0:334:G:H21	1.51	0.59
1:0:789:G:N3	1:0:789:G:H2'	2.18	0.59
1:0:1300:A:H62	19:L:106:ASP:CA	2.15	0.58
1:0:1304:U:O2'	1:0:1305:C:H5'	2.03	0.58
1:0:1672:A:H2'	1:0:1673:C:O4'	2.03	0.58
1:0:202:A:H2'	1:0:203:G:O4'	2.03	0.58
1:0:698:A:H61	1:0:786:U:H3'	1.68	0.58
1:0:523:A:O2'	1:0:1230:C:OP1	2.21	0.58
1:0:2201:G:H2'	1:0:2202:G:H8	1.68	0.58
1:0:822:G:O2'	1:0:823:U:H5'	2.02	0.58
1:0:852:U:H2'	1:0:853:C:C6	2.37	0.58
1:0:1686:A:N3	1:0:1686:A:H2'	2.18	0.58
1:0:1920:A:C2	1:0:1922:U:C5	2.91	0.58
1:0:2491:C:H3'	1:0:2492:G:H5''	1.84	0.58
1:0:2832:G:N2	1:0:2835:A:OP2	2.36	0.58
1:0:305:A:H2'	1:0:306:G:O4'	2.03	0.58
1:0:564:U:H2'	1:0:565:A:C8	2.39	0.58
1:0:918:A:C2'	1:0:919:U:H5''	2.30	0.58
1:0:1514:C:H5'	1:0:1593:C:H4'	1.86	0.58
1:0:1952:A:H1'	1:0:1955:G:H21	1.67	0.58
1:0:2822:U:H2'	1:0:2823:G:C5'	2.33	0.58
1:0:1235:C:C2	1:0:1241:G:N2	2.72	0.58
1:0:1804:U:H2'	1:0:1805:G:C8	2.35	0.58
1:0:431:G:H2'	1:0:432:C:C6	2.39	0.58
1:0:859:U:H4'	1:0:860:U:C5	2.39	0.58
1:0:867:G:O2'	1:0:868:U:H5'	2.04	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1353:A:H4'	1:0:1410:U:N3	2.17	0.58
1:0:1778:U:H2'	1:0:1779:C:O4'	2.04	0.58
1:0:2611:A:C2	1:0:2767:C:N3	2.71	0.58
1:0:412:U:H2'	1:0:413:G:H5'	1.85	0.58
1:0:753:U:C2'	1:0:754:G:H5'	2.33	0.58
1:0:1764:A:C5	1:0:1821:A:H1'	2.39	0.58
1:0:2610:G:O2'	1:0:2785:A:C2	2.56	0.58
1:0:493:A:N3	1:0:516:G:C2	2.72	0.58
1:0:613:A:H2'	1:0:614:G:C8	2.38	0.58
1:0:1066:G:H3'	1:0:1067:G:H5''	1.84	0.58
1:0:118:U:H4'	1:0:120:G:OP2	2.03	0.58
1:0:1339:U:O2'	1:0:1993:G:H1'	2.03	0.58
1:0:92:U:H2'	1:0:93:A:C8	2.38	0.58
1:0:2318:U:H2'	1:0:2319:G:C8	2.39	0.57
1:0:951:G:C3'	1:0:952:A:H5''	2.34	0.57
1:0:847:C:H41	1:0:955:G:H21	1.51	0.57
1:0:2058:U:H2'	1:0:2217:G:O6	2.04	0.57
1:0:800:U:H3'	1:0:804:C:H41	1.68	0.57
1:0:788:G:N2	1:0:801:A:P	2.78	0.57
1:0:2038:C:H2'	1:0:2483:U:O4'	2.03	0.57
1:0:2500:C:H4'	1:0:2544:A:O4'	2.03	0.57
1:0:2691:C:H41	1:0:2693:U:H5	1.50	0.57
1:0:2830:U:H2'	1:0:2831:A:C8	2.39	0.57
1:0:2836:U:H2'	1:0:2837:G:H8	1.69	0.57
1:0:788:G:H21	1:0:801:A:P	2.27	0.57
1:0:712:A:H4'	1:0:1651:U:C4	2.38	0.57
1:0:103:U:H2'	1:0:104:C:C6	2.39	0.57
1:0:187:U:H1'	1:0:1379:A:N3	2.20	0.57
1:0:1881:U:C2'	1:0:1882:G:H5'	2.34	0.57
1:0:2081:U:H2'	1:0:2082:C:H5''	1.85	0.57
1:0:2299:A:H5''	1:0:2300:G:C4	2.39	0.57
1:0:2397:A:O2'	1:0:2398:U:H5'	2.04	0.57
1:0:2802:C:H2'	1:0:2803:C:C6	2.40	0.57
1:0:717:G:N2	1:0:739:G:H2'	2.19	0.57
1:0:749:C:O2'	1:0:750:C:H5'	2.04	0.57
1:0:870:C:H2'	1:0:871:U:H6	1.69	0.57
1:0:1883:A:H1'	1:0:1953:A:H62	1.69	0.57
1:0:632:A:C2'	1:0:633:G:H5'	2.34	0.57
1:0:773:G:C2'	1:0:774:A:H5'	2.34	0.57
1:0:815:A:H2'	1:0:816:U:H6	1.69	0.57
1:0:1052:C:H2'	1:0:1053:G:C8	2.40	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1621:C:C4'	1:0:1626:A:H62	2.17	0.57
1:0:1947:G:OP1	1:0:1947:G:H3'	2.03	0.57
1:0:2510:A:H61	1:0:2641:A:N6	2.03	0.57
1:0:318:G:H21	1:0:341:A:H62	1.51	0.57
1:0:874:A:H62	1:0:928:G:N2	2.02	0.57
1:0:2493:U:H2'	1:0:2494:C:C6	2.40	0.57
1:0:2687:G:O2'	1:0:2688:G:H5'	2.04	0.57
1:0:2785:A:O2'	1:0:2786:G:H5'	2.05	0.57
1:0:2861:A:O2'	1:0:2862:G:H5'	2.05	0.57
1:0:580:A:C2	1:0:582:G:N7	2.73	0.57
1:0:620:G:O2'	1:0:621:U:H5'	2.05	0.57
1:0:738:G:H2'	1:0:739:G:O4'	2.05	0.57
1:0:1679:U:H2'	1:0:1680:U:C4'	2.35	0.57
1:0:2661:G:C2'	1:0:2662:C:H5'	2.34	0.57
1:0:1016:C:H2'	1:0:1017:C:H6	1.70	0.57
1:0:1598:C:H2'	1:0:1599:G:O4'	2.05	0.57
1:0:1920:A:C2	1:0:1922:U:H5	2.22	0.57
1:0:1950:C:H2'	1:0:1951:G:O4'	2.05	0.57
1:0:2425:G:H2'	1:0:2480:C:C5	2.40	0.57
1:0:428:A:H2'	1:0:429:C:C6	2.40	0.57
1:0:944:A:H2'	1:0:945:G:O4'	2.05	0.57
1:0:977:G:H1'	1:0:2246:A:C5	2.40	0.57
1:0:1821:A:H3'	1:0:1822:C:H6	1.70	0.56
1:0:181:A:H5'	1:0:183:U:C1'	2.35	0.56
1:0:2027:C:H2'	1:0:2028:C:H6	1.70	0.56
1:0:2054:A:H2'	1:0:2055:G:H8	1.70	0.56
1:0:2277:A:H2'	1:0:2278:A:O4'	2.05	0.56
1:0:327:C:O2'	1:0:328:A:H5'	2.05	0.56
1:0:524:A:O2'	1:0:525:A:H5'	2.05	0.56
1:0:582:G:H2'	1:0:583:C:H3'	1.86	0.56
1:0:876:A:O2'	1:0:877:G:H5'	2.05	0.56
7:9:73:C:H2'	7:9:74:A:O4'	2.05	0.56
1:0:1028:G:H2'	1:0:1029:C:C6	2.40	0.56
1:0:1125:G:H2'	1:0:1126:A:H8	1.70	0.56
1:0:1399:C:O2'	1:0:1400:A:H5'	2.05	0.56
1:0:629:C:H2'	1:0:630:G:H5'	1.87	0.56
1:0:1199:U:H3'	1:0:1200:G:H5''	1.88	0.56
1:0:742:G:C4	1:0:1766:U:O2	2.58	0.56
1:0:25:U:H3	1:0:525:A:N6	2.03	0.56
1:0:2654:A:C2	1:0:2655:C:C2	2.93	0.56
1:0:315:G:H2'	1:0:316:C:C6	2.40	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:515:A:C2'	1:0:516:G:H5'	2.36	0.56
1:0:757:U:O2'	1:0:758:G:H5'	2.05	0.56
1:0:826:U:H2'	1:0:827:C:C6	2.39	0.56
1:0:1645:U:O2'	1:0:2677:U:H5''	2.04	0.56
1:0:1888:C:H5''	1:0:1889:G:C5'	2.30	0.56
1:0:44:G:N2	1:0:192:G:H21	2.03	0.56
1:0:2213:G:H2'	1:0:2214:G:H8	1.68	0.56
1:0:2490:U:H6	1:0:2490:U:O5'	1.88	0.56
1:0:2766:U:H2'	1:0:2767:C:C6	2.41	0.56
1:0:597:U:H2'	1:0:598:U:C6	2.41	0.56
1:0:640:C:H2'	1:0:641:G:C8	2.40	0.56
1:0:1141:U:O2'	1:0:1142:G:OP1	2.24	0.56
1:0:1621:C:C4'	1:0:1626:A:N6	2.68	0.56
1:0:1688:U:HO2'	1:0:1690:U:H5	1.53	0.56
1:0:1726:C:O5'	1:0:1726:C:H6	1.88	0.56
1:0:611:C:H2'	1:0:612:G:H5'	1.88	0.56
1:0:1268:U:H5'	1:0:1269:G:H5''	1.87	0.56
1:0:1668:G:C2	1:0:1990:U:C2	2.93	0.56
1:0:69:G:H5''	1:0:70:A:O5'	2.06	0.56
1:0:1789:U:C4	1:0:1811:A:H2	2.24	0.56
1:0:1825:C:O2'	1:0:1826:U:H5'	2.06	0.56
1:0:18:U:O2'	1:0:563:U:H5''	2.06	0.56
1:0:2032:G:O2'	1:0:2033:C:H5'	2.05	0.56
1:0:1125:G:H2'	1:0:1126:A:C8	2.41	0.56
1:0:1252:C:O2'	1:0:1253:C:H5''	2.05	0.56
1:0:1284:G:C2'	1:0:1633:C:H4'	2.36	0.56
1:0:1787:U:H2'	1:0:1788:C:C6	2.40	0.56
1:0:831:G:H21	1:0:1203:A:N6	2.03	0.56
1:0:104:C:H2'	1:0:105:G:C5'	2.24	0.56
1:0:1429:A:O2'	1:0:1430:G:H4'	2.05	0.56
1:0:1911:A:C2'	1:0:1912:G:H5'	2.35	0.56
1:0:2474:G:C5	1:0:2475:C:C4	2.94	0.56
1:0:30:G:O2'	1:0:31:C:H5'	2.05	0.56
1:0:804:C:O2	1:0:804:C:H2'	2.05	0.56
1:0:822:G:C2'	1:0:823:U:H5'	2.36	0.56
1:0:1183:C:H2'	1:0:1184:G:C8	2.41	0.56
1:0:1260:A:C6	1:0:1262:U:H1'	2.41	0.56
1:0:1724:C:H2'	1:0:1725:C:H6	1.70	0.56
1:0:2257:A:C2'	1:0:2258:G:H5'	2.36	0.56
1:0:825:C:O2'	1:0:826:U:H5'	2.05	0.56
1:0:44:G:H21	1:0:192:G:N2	2.03	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:962:C:H2'	1:0:963:G:C8	2.41	0.55
1:0:1277:G:C8	1:0:1278:A:N7	2.74	0.55
1:0:1301:U:H3	1:0:1339:U:H3	1.54	0.55
1:0:1666:G:H2'	1:0:1667:A:H8	1.71	0.55
1:0:1697:U:O4	1:0:1755:G:OP2	2.24	0.55
1:0:2520:A:H8	1:0:2520:A:O5'	1.89	0.55
1:0:1046:U:H2'	1:0:1047:G:C8	2.42	0.55
1:0:1975:G:H1'	1:0:1977:C:H5	1.70	0.55
1:0:2433:G:C2'	1:0:2434:G:H5'	2.36	0.55
1:0:1373:G:H2'	1:0:1374:G:H5'	1.88	0.55
1:0:1644:G:O2'	1:0:1645:U:H5'	2.06	0.55
1:0:1999:U:H2'	1:0:2000:U:O4'	2.07	0.55
1:0:2046:C:H3'	1:0:2046:C:OP1	2.06	0.55
1:0:2321:C:O2'	1:0:2353:G:H5''	2.06	0.55
1:0:2368:G:H5''	1:0:2369:U:O4'	2.06	0.55
1:0:28:A:C2	1:0:523:A:C8	2.95	0.55
1:0:665:A:H3'	1:0:666:U:C5'	2.37	0.55
1:0:947:C:H2'	1:0:948:C:C6	2.42	0.55
7:9:64:C:C2'	7:9:65:A:H5''	2.35	0.55
1:0:783:G:H1'	1:0:1391:A:C2	2.41	0.55
1:0:1474:A:N3	1:0:1474:A:H3'	2.21	0.55
1:0:2052:G:C2'	1:0:2053:G:H5'	2.36	0.55
1:0:2474:G:H2'	1:0:2475:C:O4'	2.07	0.55
1:0:2561:G:OP1	1:0:2561:G:C8	2.48	0.55
1:0:2782:G:H3'	1:0:2783:U:C5'	2.36	0.55
7:9:30:C:H2'	7:9:31:A:C8	2.41	0.55
7:9:31:A:H2'	7:9:32:C:H6	1.72	0.55
1:0:1480:G:H2'	1:0:1481:U:H5'	1.88	0.55
1:0:1783:G:O2'	1:0:1784:C:H5'	2.07	0.55
1:0:964:A:H1'	1:0:2245:A:OP2	2.07	0.55
1:0:2308:A:H2'	1:0:2309:G:H8	1.70	0.55
1:0:451:A:H2'	1:0:452:G:C8	2.41	0.55
1:0:651:C:C2'	1:0:652:C:H5''	2.36	0.55
1:0:977:G:H5'	1:0:2251:U:O2	2.05	0.55
7:9:24:U:C2'	7:9:25:G:H5''	2.36	0.55
1:0:1469:U:OP2	1:0:1471:G:N7	2.40	0.55
1:0:1643:A:C2	1:0:1644:G:C8	2.95	0.55
1:0:674:U:H2'	1:0:675:C:H6	1.72	0.55
1:0:714:G:O2'	1:0:715:U:H5'	2.06	0.55
1:0:742:G:H2'	1:0:742:G:N3	2.22	0.55
1:0:1474:A:H2'	1:0:1475:U:H5''	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2038:C:H2'	1:0:2483:U:C4'	2.36	0.55
1:0:2560:G:C4	1:0:2589:C:N4	2.67	0.55
7:9:18:G:N2	7:9:71:G:H1'	2.21	0.55
1:0:1346:C:H6	1:0:1346:C:O5'	1.89	0.55
1:0:362:C:H2'	1:0:363:G:H4'	1.89	0.55
1:0:412:U:C2'	1:0:413:G:H5'	2.36	0.55
1:0:521:U:OP2	1:0:522:G:C5	2.60	0.55
1:0:1653:C:H2'	1:0:1654:A:C8	2.42	0.55
1:0:1974:U:C2'	1:0:1975:G:H5''	2.37	0.55
1:0:2054:A:H2'	1:0:2055:G:C8	2.41	0.55
1:0:2491:C:H2'	1:0:2492:G:H5''	1.88	0.55
1:0:2843:A:H2'	1:0:2844:G:O4'	2.07	0.55
1:0:940:G:H8	1:0:940:G:O5'	1.90	0.55
1:0:1018:C:C1'	1:0:1147:G:H22	2.17	0.54
1:0:1921:A:H2'	1:0:1922:U:C5'	2.33	0.54
1:0:207:U:H2'	1:0:208:C:H6	1.70	0.54
1:0:214:C:H2'	1:0:215:G:H8	1.72	0.54
1:0:2310:G:N2	1:0:2364:C:N3	2.54	0.54
1:0:2592:U:H2'	1:0:2593:A:H5'	1.88	0.54
1:0:710:C:H2'	1:0:711:C:H6	1.72	0.54
1:0:979:A:H2'	1:0:980:G:C8	2.42	0.54
7:9:36:A:H1'	7:9:51:G:N2	2.22	0.54
1:0:1695:U:O2'	1:0:1696:C:H5'	2.07	0.54
1:0:2661:G:O2'	1:0:2662:C:H5'	2.07	0.54
1:0:2817:A:C2	1:0:2851:G:C2	2.96	0.54
1:0:644:A:H2'	1:0:645:G:H5'	1.88	0.54
1:0:98:U:OP1	1:0:100:G:H4'	2.06	0.54
1:0:998:C:H2'	1:0:999:A:O4'	2.07	0.54
1:0:1175:A:H2'	1:0:1176:U:C6	2.42	0.54
1:0:1654:A:H4'	1:0:2690:A:O2'	2.06	0.54
1:0:1768:U:O2'	1:0:1769:U:H5'	2.08	0.54
1:0:2217:G:H3'	1:0:2217:G:N3	2.22	0.54
1:0:883:A:H2'	1:0:884:C:O4'	2.08	0.54
1:0:1363:C:O2'	1:0:1364:C:H5'	2.08	0.54
1:0:2177:U:H2'	1:0:2178:U:C6	2.42	0.54
1:0:2034:A:N6	1:0:2593:A:N7	2.56	0.54
1:0:2756:A:C6	1:0:2762:G:H1'	2.42	0.54
1:0:2787:A:H2'	1:0:2788:C:C6	2.41	0.54
1:0:2526:U:C6	1:0:2545:A:N7	2.76	0.54
1:0:357:A:C3'	1:0:358:C:H5'	2.36	0.54
1:0:811:G:O2'	1:0:812:G:H5'	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2037:A:N6	1:0:2039:G:H1'	2.23	0.54
1:0:462:G:H2'	1:0:463:C:H5'	1.89	0.54
1:0:475:U:H1'	1:0:699:G:O6	2.06	0.54
1:0:695:G:O2'	1:0:696:U:H5'	2.08	0.54
1:0:1288:A:H62	1:0:1309:G:C4'	2.20	0.54
1:0:1661:C:O2'	1:0:1662:G:H5'	2.07	0.54
1:0:1782:A:C2	1:0:1821:A:H4'	2.43	0.54
1:0:1992:G:O2'	1:0:1993:G:H5'	2.08	0.54
1:0:1279:G:HO2'	1:0:1995:G:H1	1.56	0.54
1:0:2279:G:H2'	1:0:2280:A:C8	2.43	0.54
1:0:2436:U:H2'	1:0:2437:G:O4'	2.08	0.54
1:0:1141:U:H4'	1:0:2494:C:H4'	1.89	0.54
1:0:1247:U:H2'	1:0:1248:G:O4'	2.07	0.54
1:0:1317:G:O2'	1:0:1318:A:H5'	2.08	0.54
1:0:1502:G:H2'	1:0:1503:G:H8	1.72	0.54
1:0:2007:G:O2'	1:0:2008:C:H5'	2.08	0.54
1:0:2198:U:H2'	1:0:2199:C:H5''	1.89	0.54
1:0:2212:U:H2'	1:0:2213:G:C8	2.43	0.54
1:0:2396:C:H6	1:0:2396:C:H5'	1.73	0.54
1:0:2739:G:H8	1:0:2739:G:O5'	1.90	0.54
1:0:30:G:N2	1:0:521:U:H1'	2.22	0.54
1:0:617:U:H2'	1:0:618:A:O4'	2.08	0.54
1:0:1408:A:C1'	1:0:1410:U:H5	2.15	0.54
1:0:1624:A:O2'	1:0:1625:A:H5''	2.08	0.54
1:0:1636:G:H2'	1:0:1637:U:H6	1.72	0.54
1:0:1764:A:OP1	1:0:1820:G:H3'	2.08	0.54
1:0:2220:A:O2'	1:0:2221:G:H5'	2.07	0.54
1:0:639:G:H2'	1:0:640:C:C6	2.43	0.54
1:0:780:U:H2'	1:0:781:G:C8	2.43	0.54
1:0:1617:G:H2'	1:0:1618:U:H5'	1.90	0.53
1:0:796:A:C2	1:0:1770:U:O4'	2.53	0.53
1:0:2320:G:H2'	1:0:2321:C:O4'	2.08	0.53
1:0:2709:C:N4	1:0:2710:C:N4	2.56	0.53
1:0:2725:C:H2'	1:0:2726:U:C6	2.43	0.53
1:0:543:G:H2'	1:0:544:U:C6	2.43	0.53
1:0:713:G:O6	1:0:746:G:C2	2.61	0.53
1:0:1086:C:C2'	1:0:1087:C:H5''	2.38	0.53
1:0:1586:A:H2'	1:0:1587:A:C8	2.42	0.53
1:0:1778:U:H2'	1:0:1779:C:C6	2.42	0.53
1:0:2038:C:N4	1:0:2479:U:H4'	2.24	0.53
1:0:2222:U:H2'	1:0:2223:U:C6	2.43	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2549:G:O2'	1:0:2550:C:H5'	2.08	0.53
1:0:2812:A:H2'	1:0:2813:G:H8	1.73	0.53
1:0:716:U:H2'	1:0:717:G:O4'	2.08	0.53
1:0:749:C:H2'	1:0:750:C:H6	1.73	0.53
1:0:977:G:H1'	1:0:2246:A:C4	2.43	0.53
1:0:1715:A:C8	1:0:1717:A:H1'	2.42	0.53
1:0:236:C:H2'	1:0:237:G:C8	2.39	0.53
1:0:2038:C:H41	1:0:2479:U:H4'	1.73	0.53
1:0:2425:G:H2'	1:0:2480:C:H41	1.73	0.53
1:0:984:A:C2'	1:0:1200:G:N2	2.72	0.53
1:0:2593:A:C8	1:0:2593:A:C3'	2.92	0.53
33:0:2882:DOL:C42	33:0:2882:DOL:C46	2.83	0.53
1:0:632:A:H2'	1:0:633:G:H5'	1.91	0.53
1:0:103:U:H2'	1:0:104:C:H6	1.72	0.53
1:0:1621:C:O2'	1:0:1622:G:H5'	2.08	0.53
1:0:1861:G:O2'	1:0:1862:C:H5'	2.09	0.53
1:0:2713:A:O2'	1:0:2714:A:H5'	2.07	0.53
1:0:2862:G:O2'	1:0:2863:U:H5'	2.08	0.53
1:0:459:A:H62	1:0:484:G:H1'	1.73	0.53
1:0:1226:A:C6	1:0:1250:A:H1'	2.43	0.53
1:0:2225:G:H2'	1:0:2226:A:H8	1.73	0.53
1:0:2621:G:O2'	1:0:2622:G:H5'	2.09	0.53
1:0:591:G:H2'	1:0:592:G:H8	1.73	0.53
1:0:1010:U:O2'	1:0:1011:A:H5'	2.09	0.53
1:0:1046:U:H2'	1:0:1047:G:H8	1.73	0.53
1:0:1489:C:H3'	1:0:1490:U:C5'	2.38	0.53
1:0:1541:G:N2	1:0:1562:G:H22	2.06	0.53
1:0:181:A:O4'	1:0:183:U:C2	2.61	0.53
1:0:2246:A:H2'	1:0:2246:A:N3	2.24	0.53
1:0:2595:C:H2'	1:0:2596:C:H6	1.69	0.53
1:0:2785:A:H62	1:0:2865:G:H21	1.57	0.53
1:0:1543:G:H2'	1:0:1544:A:O4'	2.09	0.53
1:0:1989:C:O2'	1:0:1990:U:H5'	2.09	0.53
1:0:2491:C:C2'	1:0:2492:G:H5''	2.38	0.53
1:0:2628:C:H2'	1:0:2629:U:H6	1.73	0.53
1:0:2811:G:C6	1:0:2812:A:N6	2.77	0.53
1:0:2830:U:H2'	1:0:2831:A:H8	1.73	0.53
1:0:484:G:O2'	1:0:485:G:H5'	2.09	0.53
1:0:512:A:N6	1:0:515:A:C6	2.76	0.53
1:0:616:U:H5	1:0:630:G:C4	2.27	0.53
1:0:1040:A:H2'	1:0:1041:G:H5'	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2051:U:H3	1:0:2409:A:H61	1.57	0.53
1:0:2785:A:H2'	1:0:2786:G:C8	2.44	0.53
1:0:446:C:H2'	1:0:447:U:C6	2.44	0.53
7:9:67:C:H2'	7:9:68:A:H5'	1.91	0.53
1:0:1039:A:H61	1:0:1136:G:H2'	1.74	0.53
1:0:1196:G:C2'	1:0:1197:U:H5'	2.38	0.53
1:0:1649:A:N6	1:0:1650:A:N1	2.56	0.53
1:0:2007:G:H2'	1:0:2008:C:C6	2.44	0.53
1:0:225:G:H3'	1:0:226:C:H5'	1.90	0.53
1:0:242:A:H2'	1:0:243:G:H4'	1.89	0.53
1:0:2717:G:H2'	1:0:2718:A:H8	1.73	0.53
1:0:2810:A:H5''	1:0:2811:G:OP1	2.08	0.53
1:0:313:U:H2'	1:0:314:G:H8	1.72	0.53
1:0:320:A:H2	1:0:340:G:HO2'	1.53	0.53
1:0:525:A:C2'	1:0:526:C:H5'	2.38	0.53
1:0:1662:G:O5'	1:0:1662:G:H8	1.91	0.52
1:0:2266:A:N6	1:0:2323:U:H1'	2.25	0.52
1:0:2615:U:H2'	1:0:2616:U:C6	2.43	0.52
1:0:2691:C:C3'	1:0:2692:A:H5''	2.35	0.52
1:0:2827:G:C5	1:0:2828:C:C4	2.96	0.52
1:0:701:U:O2'	1:0:702:A:H5'	2.09	0.52
1:0:980:G:C2	1:0:981:C:O2	2.62	0.52
1:0:2076:G:H2'	1:0:2077:G:C8	2.42	0.52
1:0:2829:A:H2'	1:0:2830:U:O4'	2.10	0.52
1:0:591:G:H2'	1:0:592:G:C8	2.43	0.52
1:0:763:A:H2	1:0:766:A:C1'	2.19	0.52
7:9:65:A:O2'	7:9:66:G:H5'	2.09	0.52
1:0:225:G:H3'	1:0:226:C:C5'	2.39	0.52
1:0:2437:G:O6	1:0:2469:G:H2'	2.08	0.52
1:0:2502:G:H2'	1:0:2503:G:C8	2.43	0.52
1:0:2689:C:N4	1:0:2690:A:N6	2.57	0.52
1:0:508:G:H2'	1:0:509:U:C6	2.43	0.52
1:0:984:A:H2'	1:0:1200:G:H22	1.74	0.52
1:0:2095:G:H2'	1:0:2096:U:H5''	1.91	0.52
1:0:2240:C:H2'	1:0:2241:U:H5''	1.91	0.52
1:0:2322:U:H2'	1:0:2323:U:H5'	1.90	0.52
1:0:733:G:H2'	1:0:734:G:H8	1.74	0.52
1:0:755:C:H2'	1:0:756:C:C6	2.43	0.52
1:0:1621:C:O4'	1:0:1626:A:N6	2.42	0.52
1:0:2797:G:O5'	1:0:2797:G:H8	1.92	0.52
7:9:51:G:H2'	7:9:52:G:H8	1.74	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1218:C:H2'	1:0:1219:C:C6	2.44	0.52
1:0:2534:U:C5	1:0:2535:C:C4	2.98	0.52
1:0:2748:C:H2'	1:0:2749:A:C8	2.44	0.52
1:0:639:G:O2'	1:0:640:C:H5'	2.09	0.52
1:0:772:G:O2'	1:0:773:G:H5'	2.10	0.52
1:0:807:A:O2'	1:0:808:C:H5'	2.09	0.52
1:0:1886:G:H2'	1:0:1887:G:H8	1.75	0.52
1:0:2587:G:O5'	1:0:2587:G:H8	1.93	0.52
1:0:2859:U:C5	1:0:2860:C:C4	2.97	0.52
1:0:819:C:C2	1:0:820:U:C5	2.98	0.52
7:9:92:G:C2'	7:9:93:G:H5'	2.36	0.52
1:0:1141:U:H3	1:0:2008:C:H5''	1.74	0.52
1:0:1001:A:H4'	1:0:1168:G:P	2.50	0.52
1:0:1242:A:O2'	1:0:1243:G:H5'	2.10	0.52
1:0:1687:C:C4	1:0:1688:U:C2	2.98	0.52
1:0:2016:A:N6	1:0:2019:C:C2	2.77	0.52
1:0:2039:G:P	1:0:2483:U:H5''	2.50	0.52
1:0:639:G:H2'	1:0:640:C:H6	1.74	0.52
1:0:65:C:H2'	1:0:66:U:O4'	2.10	0.52
1:0:953:G:C5	1:0:954:U:C4	2.98	0.52
1:0:1002:C:N4	1:0:1003:C:N4	2.57	0.52
1:0:1825:C:C2'	1:0:1826:U:H5'	2.40	0.52
1:0:2249:U:O2'	1:0:2250:G:H5'	2.10	0.52
1:0:2611:A:H2'	1:0:2612:G:H8	1.75	0.52
1:0:2661:G:H2'	1:0:2662:C:H5'	1.91	0.52
1:0:1013:G:C6	1:0:1165:G:N2	2.78	0.52
1:0:1471:G:C6	1:0:1472:C:C4	2.98	0.52
1:0:1615:C:H2'	1:0:1616:C:C6	2.44	0.52
1:0:1679:U:C3'	1:0:1680:U:H5''	2.40	0.52
1:0:2030:U:H2'	1:0:2031:A:H8	1.75	0.52
1:0:2299:A:C5'	1:0:2300:G:C4	2.92	0.52
1:0:2394:G:H2'	1:0:2395:C:C6	2.45	0.52
1:0:2602:G:O2'	1:0:2603:G:H5'	2.09	0.52
1:0:702:A:N6	1:0:703:A:C5	2.78	0.52
1:0:725:C:H2'	1:0:726:G:C8	2.45	0.52
1:0:818:G:O2'	1:0:844:G:H4'	2.10	0.52
7:9:117:G:H2'	7:9:118:G:C8	2.45	0.52
7:9:24:U:C3'	7:9:25:G:H5''	2.40	0.52
1:0:2058:U:H4'	1:0:2575:U:O2	2.09	0.51
1:0:2071:G:N2	1:0:2211:U:H1'	2.25	0.51
1:0:2181:A:H2'	1:0:2182:A:H5'	1.91	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:460:U:H3	1:0:592:G:H1'	1.75	0.51
1:0:757:U:H2'	1:0:758:G:H5'	1.92	0.51
7:9:79:U:H3	7:9:103:A:H62	1.58	0.51
1:0:1196:G:H2'	1:0:1197:U:C5'	2.40	0.51
1:0:1445:A:H2'	1:0:1446:U:O4'	2.10	0.51
1:0:167:A:C2	1:0:184:A:C2	2.98	0.51
1:0:2712:G:H3'	1:0:2713:A:H5'	1.93	0.51
1:0:2769:C:H2'	1:0:2867:G:H22	1.75	0.51
1:0:67:G:H21	1:0:72:A:H2'	1.75	0.51
1:0:1793:A:H62	1:0:1806:G:H2'	1.76	0.51
1:0:2262:C:C5	1:0:2263:C:C5	2.99	0.51
1:0:2570:C:H2'	1:0:2571:G:H8	1.71	0.51
1:0:2846:G:H2'	1:0:2847:G:H5''	1.92	0.51
1:0:193:A:N6	1:0:444:U:O2	2.43	0.51
1:0:930:A:H4'	1:0:930:A:OP1	2.10	0.51
1:0:1174:G:O2'	1:0:1175:A:H5'	2.11	0.51
1:0:1697:U:O2	1:0:1754:G:C8	2.63	0.51
1:0:1887:G:O2'	1:0:1911:A:H2	1.93	0.51
1:0:1956:G:H8	1:0:1956:G:H5'	1.75	0.51
1:0:217:U:N3	1:0:218:A:N6	2.58	0.51
1:0:2276:C:O2'	1:0:2277:A:H5'	2.09	0.51
1:0:2324:G:O2'	1:0:2325:A:H5''	2.11	0.51
1:0:342:G:H2'	1:0:343:A:C5'	2.40	0.51
1:0:644:A:C2'	1:0:645:G:H5'	2.41	0.51
1:0:722:C:H2'	1:0:723:C:H6	1.71	0.51
1:0:807:A:C6	1:0:808:C:C4	2.99	0.51
1:0:1241:G:O2'	1:0:1242:A:H5'	2.10	0.51
1:0:2324:G:N3	1:0:2326:C:C5	2.76	0.51
1:0:2549:G:H2'	1:0:2550:C:C5'	2.40	0.51
1:0:594:G:H2'	1:0:595:A:C8	2.45	0.51
1:0:763:A:C2	1:0:766:A:C1'	2.87	0.51
1:0:1212:U:H2'	1:0:1213:U:C6	2.46	0.51
1:0:1697:U:O2	1:0:1755:G:H4'	2.11	0.51
1:0:1764:A:H2'	1:0:1765:C:H5'	1.92	0.51
1:0:187:U:H2'	1:0:188:G:C8	2.46	0.51
1:0:1976:U:H2'	1:0:1977:C:C5'	2.40	0.51
1:0:2426:G:O6	1:0:2479:U:H2'	2.11	0.51
1:0:2825:A:H2'	1:0:2826:C:C6	2.45	0.51
1:0:562:G:C6	1:0:563:U:N3	2.79	0.51
1:0:580:A:N3	1:0:582:G:N7	2.59	0.51
1:0:594:G:N2	1:0:1269:G:C6	2.79	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:791:G:N2	1:0:800:U:C2	2.78	0.51
1:0:956:A:N1	1:0:2427:A:O2'	2.41	0.51
1:0:334:G:N3	1:0:344:G:H1'	2.25	0.51
1:0:710:C:H2'	1:0:711:C:C6	2.46	0.51
1:0:1010:U:H2'	1:0:1011:A:C8	2.46	0.51
1:0:2222:U:H2'	1:0:2223:U:H6	1.74	0.51
1:0:2549:G:C2'	1:0:2550:C:H5'	2.40	0.51
1:0:2677:U:H2'	1:0:2678:C:C6	2.46	0.51
1:0:414:A:H2'	1:0:415:A:O4'	2.10	0.51
1:0:734:G:H2'	1:0:735:G:C8	2.45	0.51
1:0:946:U:H2'	1:0:947:C:C6	2.44	0.51
1:0:1200:G:H2'	1:0:1201:G:H5'	1.93	0.51
1:0:1669:A:H2'	1:0:1670:G:H4'	1.93	0.51
1:0:2610:G:HO2'	1:0:2785:A:H2	1.50	0.51
1:0:367:G:C3'	1:0:368:A:H5''	2.41	0.51
1:0:502:A:H2'	1:0:503:G:O4'	2.11	0.51
1:0:589:C:N4	1:0:590:C:N4	2.59	0.51
1:0:778:G:O2'	1:0:779:U:H5'	2.11	0.51
1:0:1355:A:O4'	1:0:1410:U:H4'	2.10	0.51
1:0:1831:G:C2'	1:0:1832:G:H5'	2.41	0.51
1:0:1831:G:H2'	1:0:1832:G:H5'	1.93	0.51
1:0:2225:G:H2'	1:0:2226:A:C8	2.45	0.51
1:0:2243:C:H2'	1:0:2244:C:O4'	2.11	0.51
1:0:2340:C:C2'	1:0:2341:G:H5'	2.41	0.51
1:0:2721:A:H62	1:0:2743:G:N2	2.05	0.51
1:0:80:A:O2'	1:0:81:C:H5'	2.10	0.51
1:0:847:C:H2'	1:0:848:A:O4'	2.11	0.51
1:0:1213:U:H2'	1:0:1214:C:C6	2.46	0.50
1:0:129:A:H2'	1:0:130:C:C6	2.46	0.50
1:0:1403:U:H6	1:0:1403:U:O5'	1.93	0.50
1:0:1453:A:H2'	1:0:1454:U:H5'	1.94	0.50
1:0:1695:U:C2'	1:0:1696:C:H5'	2.40	0.50
1:0:2437:G:H1	1:0:2469:G:H2'	1.76	0.50
1:0:2628:C:H2'	1:0:2629:U:C6	2.46	0.50
1:0:2811:G:O6	1:0:2812:A:N6	2.44	0.50
1:0:691:C:O2'	1:0:692:C:H5'	2.11	0.50
1:0:1282:A:N6	1:0:1995:G:N2	2.59	0.50
1:0:2337:A:C6	1:0:2338:C:N3	2.79	0.50
1:0:323:G:H5''	1:0:342:G:O6	2.11	0.50
1:0:367:G:C2'	1:0:368:A:H5''	2.40	0.50
1:0:509:U:H2'	1:0:510:G:O4'	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:780:U:H2'	1:0:781:G:H8	1.76	0.50
1:0:2766:U:O2'	1:0:2767:C:H5'	2.12	0.50
1:0:2783:U:H2'	1:0:2784:A:C4'	2.33	0.50
7:9:56:G:H2'	7:9:57:U:C6	2.47	0.50
1:0:1398:G:H2'	1:0:1399:C:H6	1.75	0.50
1:0:1577:G:O5'	1:0:1577:G:H8	1.93	0.50
1:0:1621:C:C5	1:0:1622:G:C5	3.00	0.50
1:0:2491:C:H2'	1:0:2492:G:C4'	2.42	0.50
1:0:2645:C:O5'	1:0:2645:C:H6	1.95	0.50
1:0:1984:A:H1'	1:0:2668:U:C4	2.46	0.50
1:0:1746:A:H61	1:0:2674:C:C4'	2.24	0.50
1:0:475:U:H1'	1:0:699:G:C6	2.46	0.50
1:0:814:G:H3'	1:0:815:A:H5'	1.94	0.50
7:9:106:U:O2'	7:9:107:C:H5'	2.12	0.50
1:0:1380:C:C2'	1:0:1381:G:H5'	2.42	0.50
1:0:168:A:H2'	1:0:169:C:C6	2.47	0.50
1:0:2026:C:H2'	1:0:2027:C:C6	2.47	0.50
1:0:2061:C:C4	1:0:2062:U:C5	3.00	0.50
1:0:2080:U:H2'	1:0:2081:U:C6	2.47	0.50
1:0:2185:U:H2'	1:0:2186:G:H8	1.73	0.50
1:0:2355:A:H2'	1:0:2356:A:O4'	2.11	0.50
1:0:2825:A:O2'	1:0:2826:C:H5'	2.11	0.50
1:0:427:C:H2'	1:0:428:A:C8	2.47	0.50
1:0:578:U:H1'	1:0:958:G:O4'	2.12	0.50
1:0:985:G:H3'	1:0:985:G:N3	2.27	0.50
7:9:37:C:H2'	7:9:38:C:H5'	1.94	0.50
1:0:824:U:H5''	1:0:1264:C:C2	2.47	0.50
1:0:139:A:H2'	1:0:140:G:C8	2.47	0.50
1:0:1462:C:H1'	1:0:1561:A:H1'	1.94	0.50
1:0:1677:C:H2'	1:0:1678:G:H8	1.77	0.50
1:0:1698:C:H2'	1:0:1753:A:N3	2.26	0.50
1:0:1967:U:O2'	1:0:1968:G:H5'	2.12	0.50
1:0:1975:G:H2'	1:0:1980:A:N6	2.27	0.50
1:0:789:G:H1'	1:0:806:A:C8	2.46	0.50
1:0:883:A:O2'	1:0:884:C:H5'	2.11	0.50
1:0:946:U:C2	1:0:947:C:C5	2.99	0.50
1:0:997:C:N4	1:0:998:C:N4	2.59	0.50
1:0:1234:C:O2'	1:0:1235:C:H5'	2.11	0.50
1:0:1333:G:O2'	1:0:1334:A:H8	1.95	0.50
1:0:1392:U:C2'	1:0:1393:G:H5'	2.41	0.50
1:0:1459:U:O2	1:0:1476:G:OP2	2.30	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1469:U:H5'	1:0:1470:G:N7	2.26	0.50
1:0:175:C:H42	1:0:225:G:H1	1.60	0.50
1:0:180:C:N3	1:0:181:A:N6	2.58	0.50
1:0:218:A:H1'	1:0:220:U:C2	2.47	0.50
1:0:2542:U:C6	1:0:2544:A:OP2	2.65	0.50
1:0:2608:A:O2'	1:0:2609:G:H5'	2.11	0.50
1:0:2801:A:C2'	1:0:2802:C:H5'	2.41	0.50
1:0:2838:U:O2'	1:0:2839:G:H5'	2.10	0.50
1:0:497:C:C2	1:0:505:G:C2	3.00	0.50
1:0:50:G:H2'	1:0:117:A:H2	1.75	0.50
1:0:658:G:H4'	1:0:2331:A:H5'	1.94	0.50
1:0:661:C:O2'	1:0:662:G:H5'	2.12	0.50
1:0:951:G:H2'	1:0:952:A:C5'	2.38	0.50
1:0:1322:G:H2'	1:0:1323:G:C8	2.47	0.50
1:0:1356:G:H1'	1:0:1613:G:C2	2.46	0.50
1:0:1621:C:H4'	1:0:1626:A:N6	2.27	0.50
1:0:1755:G:C6	1:0:1972:G:C6	3.00	0.50
1:0:1816:G:O2'	1:0:1817:U:H5'	2.12	0.50
1:0:1947:G:O2'	1:0:1950:C:OP2	2.26	0.50
1:0:2426:G:N2	1:0:2430:A:H62	2.10	0.50
1:0:2559:U:H3'	1:0:2560:G:C4'	2.41	0.50
1:0:343:A:H62	1:0:346:C:H5	1.59	0.50
1:0:531:G:H2'	1:0:532:A:C8	2.47	0.50
1:0:821:A:O2'	1:0:1267:A:H4'	2.11	0.50
1:0:1054:C:C2'	1:0:1055:A:H5'	2.41	0.50
1:0:1182:U:C3'	1:0:1183:C:H5''	2.41	0.50
1:0:1435:G:H22	1:0:1512:A:H2	1.59	0.50
1:0:1587:A:H2'	1:0:1588:A:C8	2.47	0.50
1:0:224:G:N7	1:0:226:C:O2	2.45	0.50
1:0:2445:C:N4	1:0:2446:C:H41	2.09	0.50
1:0:1949:A:H1'	1:0:2572:U:H4'	1.93	0.50
1:0:601:A:H61	1:0:633:G:H21	1.59	0.50
1:0:67:G:N2	1:0:72:A:H2'	2.26	0.50
1:0:689:A:C2'	1:0:690:A:H5'	2.41	0.50
1:0:792:U:H2'	1:0:793:G:O4'	2.11	0.50
1:0:961:G:C6	1:0:962:C:C4	3.00	0.50
1:0:1141:U:HO2'	1:0:1142:G:P	2.31	0.49
1:0:1479:G:H2'	1:0:1480:G:O4'	2.12	0.49
1:0:1711:C:O5'	1:0:1711:C:H6	1.95	0.49
1:0:2806:G:H1'	1:0:2858:A:H2'	1.93	0.49
1:0:525:A:H2'	1:0:526:C:H5'	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:635:C:H3'	1:0:636:G:H5''	1.93	0.49
1:0:979:A:H2'	1:0:980:G:H8	1.77	0.49
1:0:1256:C:H2'	1:0:1257:U:O4'	2.12	0.49
1:0:587:A:C2	1:0:1266:G:N2	2.75	0.49
1:0:180:C:C4	1:0:181:A:C5	3.01	0.49
1:0:2240:C:HO2'	1:0:2306:A:H2	1.59	0.49
1:0:2652:G:H2'	1:0:2653:A:C8	2.45	0.49
1:0:26:G:H2'	1:0:27:G:O4'	2.12	0.49
7:9:33:C:O5'	7:9:33:C:H6	1.95	0.49
1:0:1323:G:H2'	1:0:1324:G:H4'	1.94	0.49
1:0:1358:C:H2'	1:0:1359:G:C5'	2.41	0.49
1:0:1479:G:H21	1:0:1543:G:N2	2.09	0.49
1:0:215:G:H2'	1:0:216:U:O4'	2.12	0.49
1:0:2235:G:N2	1:0:2254:C:C4	2.79	0.49
1:0:2418:A:H2	1:0:2564:U:H5'	1.77	0.49
1:0:2748:C:H2'	1:0:2749:A:H8	1.76	0.49
1:0:1:G:H2'	1:0:2:G:C8	2.47	0.49
1:0:468:A:O2'	1:0:469:G:H4'	2.12	0.49
1:0:788:G:C5'	1:0:790:A:H1'	2.40	0.49
7:9:42:U:H3	7:9:45:C:H5	1.59	0.49
1:0:1284:G:C4	1:0:1633:C:H5'	2.48	0.49
1:0:1757:C:O2'	1:0:1758:C:H5'	2.12	0.49
1:0:1958:G:H2'	1:0:1959:U:O4'	2.12	0.49
1:0:2560:G:H2'	1:0:2561:G:C8	2.47	0.49
1:0:57:G:N2	1:0:72:A:N7	2.60	0.49
1:0:981:C:OP1	1:0:1000:G:N2	2.45	0.49
1:0:1010:U:H2'	1:0:1011:A:H8	1.77	0.49
1:0:1528:C:C2'	1:0:1529:C:H5''	2.42	0.49
1:0:1773:C:C4	1:0:2566:A:H2	2.31	0.49
1:0:1793:A:H2'	1:0:1794:A:C8	2.47	0.49
1:0:2633:A:H5'	1:0:2635:U:O4'	2.12	0.49
1:0:324:C:O2'	1:0:325:U:H5'	2.11	0.49
1:0:460:U:C2'	1:0:461:A:OP1	2.61	0.49
1:0:490:A:O2'	1:0:491:A:H5'	2.12	0.49
1:0:675:C:O2'	1:0:676:G:H5'	2.12	0.49
1:0:701:U:H2'	1:0:702:A:H8	1.78	0.49
7:9:31:A:H2'	7:9:32:C:C6	2.48	0.49
7:9:42:U:N3	7:9:45:C:H5	2.10	0.49
1:0:1558:C:C2'	1:0:1559:G:H5'	2.42	0.49
1:0:166:G:H21	1:0:184:A:H62	1.60	0.49
1:0:2034:A:N6	1:0:2593:A:H62	2.09	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2079:A:H2'	1:0:2080:U:C6	2.47	0.49
1:0:217:U:H1'	1:0:235:C:H42	1.77	0.49
1:0:2499:C:C2	1:0:2546:G:C8	3.00	0.49
1:0:2498:U:H5''	1:0:2499:C:OP1	2.12	0.49
1:0:2550:C:C5	1:0:2553:G:O4'	2.65	0.49
1:0:2824:C:H6	1:0:2824:C:O5'	1.95	0.49
1:0:478:G:O2'	1:0:479:G:H5'	2.13	0.49
1:0:652:C:H42	1:0:657:A:N6	2.10	0.49
1:0:66:U:O2	1:0:67:G:N7	2.45	0.49
1:0:874:A:N6	1:0:928:G:H21	2.10	0.49
7:9:80:A:H2'	7:9:81:C:O4'	2.11	0.49
1:0:1159:U:H2'	1:0:1160:C:C6	2.47	0.49
1:0:171:G:C2	1:0:179:U:N3	2.80	0.49
1:0:2380:U:H2'	1:0:2381:A:H5'	1.94	0.49
1:0:2443:C:O2'	1:0:2444:C:H5'	2.13	0.49
1:0:2445:C:C4	1:0:2446:C:N4	2.80	0.49
1:0:2796:A:H8	1:0:2796:A:OP1	1.96	0.49
1:0:2836:U:H2'	1:0:2837:G:C8	2.46	0.49
1:0:807:A:H2'	1:0:808:C:C6	2.48	0.49
1:0:1162:A:H2'	1:0:1163:C:H6	1.77	0.49
1:0:2071:G:H22	1:0:2211:U:H1'	1.77	0.49
1:0:2198:U:C2'	1:0:2199:C:H5''	2.43	0.49
1:0:2240:C:H2'	1:0:2241:U:C5'	2.43	0.49
1:0:2377:U:H2'	1:0:2378:G:C8	2.48	0.49
1:0:1139:A:H1'	1:0:2496:C:H5'	1.94	0.49
1:0:2642:G:O2'	1:0:2643:G:H5'	2.12	0.49
1:0:2617:G:N2	1:0:2755:A:H2'	2.28	0.49
1:0:443:A:O2'	1:0:444:U:H5'	2.13	0.49
1:0:947:C:N3	1:0:948:C:C4	2.80	0.49
1:0:1809:G:P	1:0:1809:G:H8	2.36	0.49
1:0:2223:U:H2'	1:0:2224:U:O4'	2.13	0.49
1:0:2543:A:H5'	1:0:2627:G:H4'	1.94	0.49
1:0:931:G:H2'	1:0:932:G:O4'	2.13	0.49
1:0:1147:G:C4'	1:0:2022:C:H5'	2.43	0.49
1:0:1263:G:O2'	1:0:1264:C:P	2.71	0.49
1:0:1364:C:C2	1:0:1394:G:C2	3.01	0.49
1:0:1696:C:H2'	1:0:1697:U:C6	2.48	0.49
1:0:2717:G:O2'	1:0:2718:A:H5'	2.13	0.49
1:0:597:U:N3	1:0:683:A:O2'	2.44	0.49
7:9:36:A:H2'	7:9:46:G:O6	2.13	0.49
1:0:1145:C:C5	1:0:1147:G:OP2	2.66	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1272:G:O2'	1:0:1273:G:C5'	2.61	0.48
1:0:1340:C:C5	1:0:1341:G:N7	2.80	0.48
1:0:1548:U:H2'	1:0:1549:C:C6	2.48	0.48
1:0:177:U:H2'	1:0:178:C:C6	2.48	0.48
1:0:1998:A:C2	32:Z:6:VAL:CA	2.96	0.48
1:0:1142:G:O6	1:0:2008:C:H1'	2.12	0.48
1:0:2611:A:H2'	1:0:2612:G:C8	2.47	0.48
1:0:2768:C:H2'	1:0:2769:C:H4'	1.95	0.48
1:0:2847:G:C6	1:0:2848:A:N6	2.81	0.48
1:0:677:G:C1'	1:0:951:G:H5''	2.43	0.48
1:0:166:G:N2	1:0:185:C:N4	2.61	0.48
1:0:2093:G:H2'	1:0:2094:C:C6	2.48	0.48
1:0:210:A:H62	1:0:442:A:H61	1.61	0.48
1:0:2474:G:C5	1:0:2475:C:C5	3.01	0.48
1:0:2745:A:H2'	1:0:2745:A:N3	2.29	0.48
1:0:2788:C:O2'	1:0:2789:U:C5'	2.58	0.48
1:0:322:A:H1'	1:0:343:A:C5	2.49	0.48
1:0:864:C:O2'	1:0:865:A:H5'	2.13	0.48
7:9:77:G:O2'	7:9:78:A:H5'	2.13	0.48
1:0:1500:U:H3	1:0:1520:G:H22	1.60	0.48
1:0:173:A:H2'	1:0:173:A:N3	2.28	0.48
1:0:1754:G:OP1	1:0:1754:G:H4'	2.13	0.48
1:0:2051:U:H3	1:0:2409:A:N6	2.10	0.48
1:0:2425:G:H2'	1:0:2480:C:N4	2.29	0.48
1:0:2821:G:H2'	1:0:2822:U:C6	2.48	0.48
1:0:546:A:H2'	1:0:547:U:C6	2.48	0.48
1:0:633:G:H2'	1:0:634:G:O4'	2.13	0.48
7:9:102:A:H2'	7:9:103:A:H8	1.78	0.48
1:0:1187:A:H2'	1:0:1188:A:C8	2.48	0.48
1:0:1272:G:H2'	1:0:1273:G:H8	1.75	0.48
1:0:1720:G:N1	1:0:1721:G:C5	2.82	0.48
1:0:1755:G:C6	1:0:1972:G:N1	2.81	0.48
1:0:1994:U:H6	1:0:1994:U:O5'	1.96	0.48
1:0:2027:C:H2'	1:0:2028:C:C6	2.47	0.48
1:0:2403:C:H5'	1:0:2404:A:OP1	2.13	0.48
1:0:2594:U:H5'	1:0:2594:U:C6	2.37	0.48
1:0:2856:U:C4	1:0:2857:C:N4	2.82	0.48
1:0:401:G:N3	1:0:403:A:N7	2.62	0.48
1:0:563:U:O5'	1:0:563:U:H6	1.95	0.48
1:0:599:A:H2'	1:0:600:G:H8	1.78	0.48
1:0:1791:C:C1'	1:0:1793:A:H5'	2.36	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1807:A:H1'	1:0:1809:G:H1'	1.95	0.48
1:0:2209:G:C5	1:0:2210:C:C5	3.01	0.48
1:0:2470:U:C2'	1:0:2471:U:O5'	2.61	0.48
1:0:2559:U:C2'	1:0:2560:G:OP1	2.62	0.48
1:0:338:G:O2'	1:0:339:U:H5'	2.13	0.48
1:0:68:C:N3	1:0:69:G:C5	2.81	0.48
1:0:701:U:H2'	1:0:702:A:C8	2.49	0.48
7:9:85:G:O2'	7:9:86:A:H5'	2.12	0.48
1:0:2812:A:H2'	1:0:2813:G:C8	2.49	0.48
33:0:2882:DOL:H463	33:0:2882:DOL:HC33	1.95	0.48
1:0:612:G:O3'	1:0:613:A:H4'	2.13	0.48
1:0:674:U:O2'	1:0:675:C:H5'	2.13	0.48
1:0:835:U:O2'	1:0:836:G:H5'	2.13	0.48
1:0:1253:C:H2'	1:0:1254:G:H5'	1.96	0.48
1:0:992:A:H2	1:0:2010:G:N3	2.11	0.48
1:0:2024:U:H6	1:0:2024:U:O5'	1.96	0.48
1:0:2193:C:H2'	1:0:2194:A:O4'	2.12	0.48
1:0:2448:A:H2'	1:0:2449:G:H5'	1.96	0.48
1:0:2470:U:H2'	1:0:2471:U:O5'	2.14	0.48
1:0:328:A:O2'	1:0:329:C:H5'	2.14	0.48
1:0:699:G:H2'	1:0:699:G:N3	2.29	0.48
1:0:1339:U:C5'	1:0:1994:U:H1'	2.44	0.48
1:0:242:A:C2'	1:0:243:G:H4'	2.44	0.48
1:0:2560:G:N9	1:0:2589:C:N4	2.62	0.48
1:0:2702:G:H2'	1:0:2703:C:C6	2.48	0.48
1:0:2624:G:OP1	1:0:2712:G:N2	2.46	0.48
1:0:459:A:N7	1:0:484:G:N9	2.62	0.48
1:0:537:C:C2	1:0:2759:U:O2'	2.64	0.48
1:0:573:C:N4	1:0:582:G:OP1	2.47	0.48
1:0:1283:C:H5''	1:0:1284:G:O5'	2.14	0.48
1:0:155:G:O2'	1:0:156:G:H5'	2.14	0.48
1:0:1641:C:N4	1:0:1642:G:C2	2.82	0.48
1:0:2034:A:H2'	1:0:2035:G:C8	2.49	0.48
1:0:645:G:H2'	1:0:646:C:C6	2.49	0.48
1:0:665:A:H3'	1:0:666:U:H5'	1.95	0.48
1:0:690:A:O2'	1:0:691:C:H5'	2.14	0.48
1:0:712:A:C8	1:0:713:G:C8	3.02	0.48
1:0:1331:G:C6	1:0:1332:G:C6	3.01	0.48
1:0:1645:U:H2'	1:0:1646:G:C8	2.49	0.48
1:0:1666:G:O2'	1:0:1667:A:H5'	2.14	0.48
1:0:1692:C:H2'	1:0:1693:A:C5'	2.43	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:773:G:H4'	1:0:1767:G:OP1	2.13	0.48
1:0:2555:G:H5'	1:0:2558:C:H41	1.79	0.48
1:0:692:C:H2'	1:0:693:A:H8	1.79	0.48
1:0:727:U:C2'	1:0:728:G:H5''	2.39	0.48
1:0:1202:U:H2'	1:0:1203:A:H8	1.79	0.47
1:0:1348:C:H2'	1:0:1349:A:C8	2.49	0.47
1:0:2268:G:H5'	1:0:2363:G:O2'	2.14	0.47
1:0:2429:A:O2'	1:0:2430:A:H5'	2.13	0.47
1:0:2785:A:H2'	1:0:2786:G:O4'	2.14	0.47
1:0:2792:C:C2	1:0:2805:G:N2	2.82	0.47
1:0:306:G:O2'	1:0:307:C:H5'	2.14	0.47
1:0:1660:G:H2'	1:0:1661:C:O4'	2.14	0.47
1:0:1666:G:O2'	1:0:1667:A:C5'	2.62	0.47
1:0:2569:A:O2'	1:0:2570:C:H5'	2.13	0.47
1:0:2667:C:H2'	1:0:2699:G:N2	2.29	0.47
1:0:2788:C:H2'	1:0:2789:U:H6	1.79	0.47
1:0:349:G:H2'	1:0:350:U:C6	2.49	0.47
1:0:428:A:H2'	1:0:429:C:H6	1.79	0.47
1:0:698:A:C1'	1:0:700:C:H41	2.26	0.47
1:0:704:G:O2'	1:0:705:C:H5'	2.14	0.47
1:0:1683:G:C2'	1:0:1684:G:H5'	2.43	0.47
1:0:2276:C:H1'	1:0:2301:A:N3	2.29	0.47
1:0:2014:A:C2	1:0:2435:C:H5'	2.49	0.47
1:0:632:A:H3'	1:0:632:A:N3	2.29	0.47
1:0:858:G:H5''	1:0:859:U:H5'	1.96	0.47
1:0:929:A:H3'	1:0:930:A:C5'	2.36	0.47
1:0:1502:G:O2'	1:0:1503:G:H5'	2.14	0.47
1:0:1671:A:O4'	1:0:2798:A:H5'	2.15	0.47
1:0:1722:G:O2'	1:0:1723:U:H5'	2.15	0.47
1:0:1797:C:H2'	1:0:1798:G:O4'	2.13	0.47
1:0:1905:G:H2'	1:0:1906:U:C6	2.49	0.47
1:0:2238:G:H8	1:0:2238:G:OP1	1.97	0.47
1:0:2268:G:H2'	1:0:2269:G:C8	2.50	0.47
1:0:2468:G:H2'	1:0:2469:G:C5'	2.43	0.47
1:0:2658:A:O2'	9:B:189:PRO:CA	2.63	0.47
1:0:476:G:H2'	1:0:477:A:C8	2.49	0.47
1:0:550:C:O2'	1:0:551:A:H5'	2.14	0.47
1:0:728:G:H2'	1:0:729:A:O4'	2.13	0.47
1:0:958:G:H2'	1:0:959:C:H6	1.78	0.47
1:0:1031:C:H4'	1:0:1032:A:C8	2.50	0.47
1:0:1314:A:N7	1:0:1316:G:N7	2.62	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1341:G:N2	1:0:1343:C:O2	2.47	0.47
1:0:163:A:H2'	1:0:164:G:C8	2.45	0.47
1:0:1676:U:O2'	1:0:1677:C:H5'	2.14	0.47
1:0:1712:G:N2	1:0:1713:G:C4	2.82	0.47
1:0:1985:G:O2'	1:0:1986:G:H5'	2.14	0.47
1:0:2240:C:C2'	1:0:2241:U:H5''	2.44	0.47
1:0:2313:G:C3'	1:0:2314:A:H5'	2.44	0.47
1:0:2335:U:O2'	1:0:2336:G:H5'	2.15	0.47
1:0:2371:A:C2	1:0:2408:G:C6	3.02	0.47
1:0:2593:A:H2'	1:0:2594:U:H5'	1.95	0.47
1:0:30:G:N1	1:0:521:U:O2	2.48	0.47
1:0:368:A:H2'	1:0:369:C:O4'	2.15	0.47
1:0:658:G:H1'	1:0:2330:G:OP1	2.14	0.47
1:0:929:A:HO2'	7:9:101:A:HO2'	1.59	0.47
7:9:9:G:H2'	7:9:10:U:O4'	2.14	0.47
1:0:1141:U:H6	1:0:1141:U:O5'	1.97	0.47
1:0:1299:A:C5	1:0:1342:U:O4	2.67	0.47
1:0:1370:U:O2'	1:0:1371:G:H5'	2.15	0.47
1:0:1789:U:C4	1:0:1811:A:C2	3.03	0.47
1:0:2231:G:O2'	1:0:2232:G:H5'	2.14	0.47
1:0:2245:A:O3'	1:0:2246:A:C8	2.67	0.47
1:0:333:A:H1'	1:0:351:A:C1'	2.44	0.47
1:0:595:A:N6	1:0:1264:C:H41	2.12	0.47
1:0:1348:C:H2'	1:0:1349:A:H8	1.78	0.47
1:0:1386:A:H2'	1:0:1387:G:O4'	2.14	0.47
1:0:1596:A:H2'	1:0:1597:A:O4'	2.15	0.47
1:0:1683:G:N7	1:0:1684:G:N2	2.62	0.47
1:0:2034:A:C2	1:0:2035:G:O6	2.68	0.47
1:0:2194:A:C2'	1:0:2195:C:H5''	2.44	0.47
1:0:2262:C:C4	1:0:2368:G:C2	3.03	0.47
1:0:2633:A:H5''	1:0:2634:G:OP1	2.14	0.47
1:0:43:A:O2'	1:0:44:G:H5'	2.15	0.47
1:0:762:A:H61	1:0:766:A:H2	1.63	0.47
1:0:80:A:H2'	1:0:81:C:O4'	2.15	0.47
1:0:916:U:N3	1:0:917:U:C4	2.83	0.47
1:0:1981:A:O2'	1:0:1982:C:H5'	2.14	0.47
1:0:2006:G:N2	1:0:2024:U:O2	2.47	0.47
1:0:217:U:H3	1:0:218:A:N6	2.13	0.47
1:0:2039:G:OP2	1:0:2483:U:H5''	2.14	0.47
1:0:2624:G:H4'	1:0:2712:G:C2'	2.44	0.47
1:0:2610:G:O2'	1:0:2785:A:H2	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:415:A:H2'	1:0:416:U:H5'	1.97	0.47
1:0:459:A:C2	1:0:466:A:C8	3.02	0.47
1:0:588:G:C2	1:0:1275:A:C6	3.03	0.47
1:0:889:C:O2'	1:0:890:U:H5'	2.15	0.47
1:0:985:G:N3	1:0:985:G:H5''	2.30	0.47
1:0:579:G:N2	1:0:2013:A:O4'	2.48	0.47
1:0:2181:A:C2'	1:0:2182:A:H5'	2.44	0.47
1:0:761:G:C2	1:0:763:A:N6	2.82	0.47
1:0:958:G:H2'	1:0:959:C:C6	2.50	0.47
1:0:2565:C:N3	6:5:2:THR:HB	2.29	0.47
1:0:1073:G:C3'	1:0:1074:G:H5''	2.45	0.47
1:0:1002:C:C6	1:0:1198:C:N3	2.83	0.47
1:0:1333:G:HO2'	1:0:1334:A:H8	1.63	0.47
1:0:1782:A:N6	1:0:1820:G:H2'	2.30	0.47
1:0:2019:C:N3	1:0:2020:G:N7	2.63	0.47
1:0:2408:G:H3'	1:0:2409:A:C5'	2.45	0.47
1:0:2559:U:H3'	1:0:2560:G:H4'	1.96	0.47
1:0:158:A:C2	1:0:447:U:H4'	2.44	0.47
1:0:974:U:O2'	1:0:975:C:H5'	2.15	0.47
1:0:1004:A:C2'	1:0:1005:U:H5''	2.44	0.47
1:0:1273:G:H2'	1:0:1274:C:H6	1.78	0.47
1:0:1736:C:H2'	1:0:1737:G:C8	2.50	0.47
1:0:1939:U:O2	1:0:1968:G:H4'	2.15	0.47
1:0:2331:A:C5	1:0:2345:A:N1	2.83	0.47
1:0:2038:C:N4	1:0:2479:U:C4'	2.78	0.47
1:0:2497:A:N6	1:0:2547:C:H1'	2.30	0.47
1:0:2664:G:C2'	1:0:2665:G:H5'	2.44	0.47
1:0:469:G:H2'	1:0:480:G:C6	2.50	0.47
1:0:520:C:H2'	1:0:520:C:O2	2.13	0.47
1:0:528:G:O2'	1:0:529:U:H5'	2.15	0.47
1:0:669:G:H2'	1:0:670:U:C6	2.50	0.47
7:9:7:C:O2'	7:9:8:C:H5'	2.15	0.47
1:0:115:G:C2	1:0:117:A:N6	2.83	0.46
1:0:1269:G:C6	1:0:1270:C:C4	3.03	0.46
1:0:140:G:H2'	1:0:141:G:C8	2.50	0.46
1:0:1690:U:C2'	1:0:1691:G:H5'	2.44	0.46
1:0:2394:G:H2'	1:0:2395:C:H6	1.79	0.46
1:0:2688:G:O2'	1:0:2689:C:H5'	2.14	0.46
1:0:2815:C:H2'	1:0:2816:C:O4'	2.15	0.46
33:0:2882:DOL:C46	33:0:2882:DOL:HC33	2.45	0.46
1:0:333:A:O2'	1:0:350:U:H2'	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1073:G:C2'	1:0:1074:G:H5''	2.44	0.46
1:0:119:G:H1'	1:0:129:A:C2	2.50	0.46
1:0:1202:U:C2	1:0:1203:A:C8	3.03	0.46
1:0:1407:G:O2'	1:0:1408:A:H5'	2.15	0.46
1:0:2550:C:C6	1:0:2553:G:O4'	2.68	0.46
1:0:2564:U:H3'	1:0:2565:C:H5''	1.98	0.46
1:0:841:G:H2'	1:0:842:A:C8	2.50	0.46
1:0:1008:G:O2'	1:0:1009:C:H5'	2.13	0.46
1:0:1385:C:C2	1:0:1386:A:C8	3.03	0.46
1:0:1666:G:H2'	1:0:1667:A:C8	2.49	0.46
1:0:1816:G:H2'	1:0:1817:U:C6	2.50	0.46
1:0:1860:A:H2'	1:0:1861:G:O4'	2.16	0.46
1:0:1764:A:H2	1:0:1960:A:N1	2.14	0.46
1:0:2322:U:C2'	1:0:2323:U:H5'	2.46	0.46
1:0:2340:C:H2'	1:0:2341:G:O4'	2.15	0.46
1:0:2611:A:C2	1:0:2767:C:C2	3.03	0.46
1:0:200:A:H2	1:0:420:C:HO2'	1.59	0.46
1:0:613:A:H2'	1:0:614:G:H8	1.79	0.46
1:0:617:U:O2'	1:0:618:A:H5'	2.16	0.46
1:0:597:U:H3	1:0:683:A:C2'	2.28	0.46
1:0:12:U:H3	1:0:536:A:H62	1.63	0.46
1:0:1311:C:H4'	1:0:1315:A:C6	2.50	0.46
1:0:1328:C:H4'	1:0:1406:A:C4'	2.45	0.46
1:0:1460:G:O2'	1:0:1461:C:H5'	2.15	0.46
1:0:1646:G:C4'	1:0:2677:U:OP1	2.64	0.46
1:0:1652:G:C2	1:0:1653:C:C2	3.04	0.46
1:0:1720:G:O2'	1:0:1721:G:H5'	2.16	0.46
1:0:1969:G:H2'	1:0:1970:G:C8	2.47	0.46
1:0:2006:G:H2'	1:0:2007:G:C8	2.50	0.46
1:0:2217:G:C2'	1:0:2217:G:N3	2.79	0.46
1:0:2503:G:C3'	1:0:2504:G:H5''	2.46	0.46
1:0:2544:A:H2'	1:0:2545:A:O4'	2.15	0.46
1:0:43:A:H8	1:0:43:A:O5'	1.97	0.46
1:0:712:A:N7	1:0:713:G:C5	2.83	0.46
1:0:813:A:N3	1:0:813:A:H2'	2.30	0.46
1:0:835:U:OP2	1:0:957:G:OP2	2.34	0.46
1:0:1016:C:H6	1:0:1154:A:H1'	1.75	0.46
1:0:1482:U:O2	1:0:1541:G:N2	2.49	0.46
1:0:1865:C:H2'	1:0:1866:G:O4'	2.15	0.46
1:0:20:C:O2'	1:0:21:A:H5'	2.15	0.46
1:0:2560:G:H2'	1:0:2561:G:N7	2.30	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2058:U:H1'	1:0:2576:G:H21	1.81	0.46
1:0:460:U:H2'	1:0:461:A:OP1	2.15	0.46
1:0:736:G:O2'	1:0:737:C:H5'	2.15	0.46
1:0:977:G:O2'	1:0:978:U:H5'	2.15	0.46
7:9:16:U:O2'	7:9:110:U:H1'	2.16	0.46
1:0:1312:G:O4'	1:0:1314:A:H2	1.99	0.46
1:0:1453:A:C2'	1:0:1454:U:H5'	2.46	0.46
1:0:1679:U:H2'	1:0:1680:U:O4'	2.16	0.46
1:0:170:U:O2'	1:0:171:G:H5'	2.16	0.46
1:0:2063:A:C2	1:0:2064:U:C2	3.04	0.46
1:0:2541:U:H2'	1:0:2542:U:O4'	2.15	0.46
1:0:2495:G:C2	1:0:2548:G:C2	3.04	0.46
1:0:2627:G:O2'	1:0:2628:C:H5'	2.16	0.46
1:0:2791:C:O2'	1:0:2792:C:H5'	2.15	0.46
1:0:468:A:H1'	1:0:470:U:C2	2.51	0.46
1:0:856:A:H2'	1:0:857:U:O4'	2.16	0.46
1:0:859:U:H2'	1:0:860:U:OP2	2.15	0.46
1:0:997:C:N4	1:0:998:C:H41	2.13	0.46
1:0:1837:G:O2'	1:0:1838:G:H5'	2.15	0.46
1:0:1947:G:OP1	1:0:1947:G:H8	1.99	0.46
1:0:2427:A:O5'	1:0:2477:C:OP2	2.34	0.46
1:0:2495:G:H2'	1:0:2496:C:O4'	2.15	0.46
1:0:1686:A:O2'	1:0:2528:G:OP1	2.27	0.46
1:0:2586:G:O5'	1:0:2586:G:H8	1.99	0.46
1:0:2762:G:C2	1:0:2763:U:C2	3.03	0.46
1:0:2764:U:O2'	1:0:2765:C:H5'	2.16	0.46
1:0:34:U:H2'	1:0:35:G:H5'	1.98	0.46
1:0:693:A:O2'	1:0:694:G:H5'	2.15	0.46
1:0:953:G:H2'	1:0:954:U:C6	2.51	0.46
1:0:987:G:H2'	1:0:988:G:H8	1.81	0.46
1:0:1199:U:O5'	1:0:1200:G:H5'	2.16	0.46
1:0:526:C:H1'	1:0:1274:C:O2'	2.16	0.46
1:0:1509:A:O2'	1:0:1510:A:H5'	2.16	0.46
1:0:2468:G:C2'	1:0:2469:G:H5'	2.46	0.46
1:0:2510:A:N6	1:0:2641:A:H61	2.09	0.46
1:0:2658:A:C5	1:0:2659:C:C5	3.04	0.46
33:0:2882:DOL:H311	33:0:2882:DOL:C46	2.45	0.46
1:0:62:U:H2'	1:0:63:A:C8	2.51	0.46
1:0:8:A:H2'	1:0:9:U:C6	2.51	0.46
1:0:1225:G:H2'	1:0:1249:G:N2	2.31	0.46
1:0:1343:C:H2'	1:0:1344:C:H6	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1665:C:H2'	1:0:1666:G:H8	1.80	0.46
1:0:1970:G:C2	1:0:1971:C:C2	3.03	0.46
1:0:201:G:H2'	1:0:202:A:C8	2.51	0.46
1:0:2740:C:O2'	1:0:2741:G:H5'	2.16	0.46
1:0:2046:C:H1'	33:0:2882:DOL:HC32	1.97	0.46
1:0:733:G:H2'	1:0:734:G:C8	2.51	0.46
1:0:6:A:H2'	1:0:7:G:C8	2.50	0.46
1:0:941:U:O2'	1:0:942:U:H5'	2.15	0.46
1:0:1178:C:O2'	1:0:1179:A:H5'	2.16	0.46
1:0:1206:G:O2'	1:0:1207:G:H5'	2.16	0.46
1:0:1319:C:H2'	1:0:1320:A:C8	2.46	0.46
1:0:1359:G:O2'	1:0:1360:G:H5'	2.16	0.46
1:0:136:A:N6	1:0:137:A:C2	2.84	0.46
1:0:2006:G:O2'	1:0:2007:G:H5'	2.15	0.46
1:0:2230:G:O4'	1:0:2429:A:H5'	2.16	0.46
1:0:2549:G:H2'	1:0:2550:C:H5'	1.97	0.46
1:0:391:C:H2'	1:0:392:G:C8	2.51	0.46
1:0:193:A:N7	1:0:444:U:C4	2.84	0.46
1:0:692:C:H2'	1:0:693:A:C8	2.51	0.46
1:0:742:G:C1'	1:0:777:A:OP1	2.64	0.46
7:9:65:A:H2'	7:9:66:G:O4'	2.16	0.46
1:0:1159:U:H2'	1:0:1160:C:H6	1.81	0.45
1:0:1448:A:H2'	1:0:1449:C:C6	2.51	0.45
1:0:1635:G:C2'	1:0:1636:G:H5'	2.46	0.45
1:0:1635:G:O2'	1:0:1636:G:H5'	2.15	0.45
1:0:165:G:H2'	1:0:166:G:O4'	2.16	0.45
1:0:1749:G:O6	1:0:2674:C:C4'	2.51	0.45
1:0:1936:A:H2'	1:0:1937:G:H5'	1.98	0.45
1:0:2012:A:C8	1:0:2014:A:OP1	2.69	0.45
1:0:2015:G:O2'	1:0:2016:A:OP1	2.25	0.45
1:0:976:C:C5'	1:0:2252:A:H1'	2.41	0.45
1:0:2333:A:C6	1:0:2343:C:N4	2.84	0.45
1:0:2498:U:H2'	1:0:2520:A:C6	2.50	0.45
1:0:3:U:H2'	1:0:4:C:H6	1.77	0.45
1:0:459:A:N3	1:0:466:A:C8	2.85	0.45
1:0:587:A:H2'	1:0:588:G:H5''	1.98	0.45
1:0:67:G:C4	1:0:73:A:H8	2.34	0.45
1:0:936:A:H2'	1:0:937:C:O4'	2.16	0.45
1:0:1313:U:P	1:0:1313:U:H6	2.39	0.45
1:0:1856:U:OP1	1:0:2389:G:O2'	2.34	0.45
1:0:2475:C:C3'	1:0:2476:A:H5'	2.46	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2559:U:O2'	1:0:2560:G:OP1	2.28	0.45
1:0:2589:C:H5''	1:0:2590:U:H5''	1.97	0.45
1:0:477:A:H2'	1:0:478:G:H5'	1.99	0.45
1:0:800:U:H3'	1:0:804:C:N4	2.31	0.45
1:0:931:G:N2	1:0:932:G:H1'	2.30	0.45
1:0:935:C:O2'	1:0:936:A:H5'	2.16	0.45
1:0:966:A:N6	1:0:967:G:C2	2.84	0.45
1:0:126:C:H2'	1:0:127:C:C6	2.52	0.45
1:0:1329:U:H2'	1:0:1330:G:H8	1.81	0.45
1:0:1470:G:C6	1:0:2684:A:C2	3.04	0.45
1:0:1749:G:O6	1:0:2674:C:O3'	2.33	0.45
1:0:218:A:O2'	1:0:219:G:H4'	2.16	0.45
1:0:2499:C:N4	1:0:2521:A:H2	2.11	0.45
1:0:2563:U:N3	33:0:2882:DOL:H471	2.30	0.45
1:0:297:A:H2'	1:0:298:C:C6	2.52	0.45
1:0:393:U:H2'	1:0:394:U:C6	2.51	0.45
1:0:41:G:O2'	1:0:42:G:H5'	2.16	0.45
1:0:319:G:H1'	1:0:511:A:O4'	2.16	0.45
1:0:594:G:H1'	1:0:1267:A:H61	1.82	0.45
1:0:636:G:H2'	1:0:637:G:H5'	1.98	0.45
1:0:791:G:H2'	1:0:792:U:O4'	2.16	0.45
1:0:1794:A:C2'	1:0:1795:C:H5'	2.46	0.45
1:0:2820:C:H2'	1:0:2821:G:C8	2.51	0.45
1:0:651:C:C3'	1:0:652:C:H5''	2.45	0.45
1:0:783:G:H1'	1:0:1391:A:H2	1.81	0.45
1:0:59:G:N2	1:0:87:G:N7	2.65	0.45
1:0:931:G:C2	1:0:932:G:H1'	2.52	0.45
1:0:947:C:O2'	1:0:948:C:H5'	2.16	0.45
1:0:1436:G:H21	1:0:1514:C:H1'	1.82	0.45
1:0:167:A:C2	1:0:184:A:H2	2.34	0.45
1:0:195:A:H3'	1:0:196:A:C8	2.52	0.45
1:0:1974:U:C3'	1:0:1975:G:C5'	2.94	0.45
1:0:1980:A:O2'	1:0:1981:A:H5'	2.17	0.45
1:0:2506:C:H2'	1:0:2507:U:C6	2.52	0.45
1:0:2026:C:C4	1:0:2757:G:N3	2.85	0.45
1:0:327:C:C2'	1:0:328:A:H5'	2.47	0.45
1:0:471:A:H2'	1:0:472:C:H5'	1.97	0.45
1:0:526:C:H2'	1:0:527:C:C6	2.52	0.45
1:0:822:G:H2'	1:0:823:U:O4'	2.17	0.45
1:0:873:U:H3'	1:0:874:A:C5'	2.45	0.45
1:0:883:A:H2'	1:0:884:C:C6	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:860:U:H3	1:0:945:G:N2	2.14	0.45
1:0:1228:G:C6	1:0:1229:C:C4	3.04	0.45
1:0:1243:G:C6	1:0:1244:U:C4	3.04	0.45
1:0:1502:G:H2'	1:0:1503:G:C8	2.51	0.45
1:0:1563:U:H2'	1:0:1564:U:C6	2.52	0.45
1:0:1467:U:O2'	1:0:2681:A:N7	2.50	0.45
1:0:914:C:O2'	1:0:915:C:H5'	2.17	0.45
1:0:1068:A:H2'	1:0:1069:G:C8	2.52	0.45
1:0:1131:G:C6	1:0:1132:C:N4	2.85	0.45
1:0:1282:A:C6	1:0:1283:C:N4	2.85	0.45
1:0:1329:U:N3	1:0:1330:G:N7	2.64	0.45
1:0:1459:U:C2	1:0:1476:G:OP2	2.70	0.45
1:0:1686:A:C2'	1:0:1686:A:N3	2.80	0.45
1:0:1961:A:O2'	1:0:1962:C:H5'	2.16	0.45
1:0:2325:A:O4'	1:0:2362:G:H1'	2.16	0.45
1:0:2875:C:H2'	1:0:2876:C:C6	2.51	0.45
1:0:173:A:C2	1:0:818:G:N2	2.84	0.45
1:0:839:U:OP1	1:0:2408:G:OP2	2.35	0.45
1:0:980:G:C2	1:0:981:C:C2	3.05	0.45
1:0:1248:G:C6	1:0:1249:G:N1	2.85	0.45
1:0:1652:G:H8	1:0:1652:G:OP1	2.00	0.45
1:0:1677:C:N3	1:0:1984:A:N1	2.65	0.45
1:0:1884:A:O2'	1:0:1885:C:H5'	2.16	0.45
1:0:2502:G:C1'	1:0:2745:A:N7	2.79	0.45
1:0:2702:G:C5	1:0:2703:C:C4	3.04	0.45
1:0:2817:A:C2	1:0:2851:G:C4	3.05	0.45
1:0:562:G:C6	1:0:563:U:C2	3.05	0.45
1:0:829:C:H2'	1:0:830:C:C6	2.51	0.45
1:0:1144:U:O5'	1:0:1144:U:H6	2.00	0.45
1:0:455:A:H5'	1:0:1215:A:C5'	2.47	0.45
1:0:1322:G:C6	1:0:1323:G:C6	3.05	0.45
1:0:1566:G:O2'	1:0:1567:A:H5'	2.17	0.45
1:0:1586:A:H2'	1:0:1587:A:H8	1.82	0.45
1:0:763:A:H5''	1:0:1631:C:H41	1.82	0.45
1:0:1811:A:H1'	1:0:1813:A:C5	2.52	0.45
1:0:1280:U:H3	1:0:1996:A:N6	2.14	0.45
1:0:2093:G:H2'	1:0:2094:C:H6	1.81	0.45
1:0:26:G:C5	1:0:27:G:C6	3.05	0.45
1:0:2817:A:C2	1:0:2851:G:N3	2.85	0.45
1:0:40:U:H2'	1:0:41:G:C8	2.51	0.45
1:0:830:C:H2'	1:0:831:G:O4'	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:831:G:O2'	1:0:832:A:H5''	2.17	0.45
1:0:931:G:O2'	1:0:932:G:H5'	2.17	0.45
1:0:168:A:OP2	1:0:181:A:N1	2.50	0.45
1:0:1713:G:O6	1:0:1714:A:C6	2.70	0.45
1:0:2030:U:H2'	1:0:2031:A:C8	2.52	0.45
1:0:2105:U:H2'	1:0:2106:G:C8	2.52	0.45
1:0:214:C:H2'	1:0:215:G:C8	2.52	0.45
1:0:977:G:H4'	1:0:2246:A:C2	2.52	0.45
1:0:2694:G:C6	1:0:2695:C:C4	3.05	0.45
1:0:2756:A:N6	1:0:2762:G:N3	2.65	0.45
1:0:2786:G:O2'	1:0:2787:A:H5'	2.18	0.45
1:0:2861:A:H2'	1:0:2862:G:C8	2.49	0.45
1:0:1131:G:C6	1:0:1132:C:C4	3.05	0.44
1:0:1352:G:N2	1:0:1619:A:C8	2.85	0.44
1:0:180:C:H6	1:0:180:C:O5'	2.00	0.44
1:0:2053:G:N2	1:0:2054:A:N3	2.64	0.44
1:0:2093:G:HO2'	1:0:2094:C:P	2.40	0.44
1:0:2268:G:H2'	1:0:2269:G:H8	1.81	0.44
1:0:2542:U:H2'	1:0:2544:A:OP2	2.17	0.44
1:0:2764:U:H2'	1:0:2765:C:C6	2.52	0.44
1:0:334:G:C2	1:0:344:G:H1'	2.52	0.44
6:5:1:MHW:C	6:5:3:DBB:N	2.79	0.44
7:9:113:G:H2'	7:9:114:C:C6	2.52	0.44
7:9:30:C:H2'	7:9:31:A:H8	1.81	0.44
1:0:123:A:H3'	1:0:124:A:C5'	2.47	0.44
1:0:1644:G:C2	1:0:1645:U:C2	3.06	0.44
1:0:1944:C:O2'	1:0:1945:C:H5'	2.17	0.44
1:0:1972:G:C2'	1:0:1973:C:H5'	2.46	0.44
1:0:2324:G:C4	1:0:2326:C:C5	3.05	0.44
1:0:2331:A:C6	1:0:2345:A:C2	3.05	0.44
1:0:2502:G:C4	1:0:2745:A:N6	2.85	0.44
1:0:2655:C:O2'	1:0:2656:G:H5'	2.17	0.44
1:0:525:A:H2'	1:0:526:C:C5'	2.47	0.44
1:0:805:G:H4'	1:0:806:A:OP2	2.18	0.44
1:0:980:G:N2	1:0:981:C:O2	2.50	0.44
7:9:117:G:H2'	7:9:118:G:H8	1.82	0.44
7:9:45:C:H3'	7:9:46:G:C5'	2.45	0.44
1:0:1091:C:O2'	1:0:1092:U:H5'	2.17	0.44
1:0:1340:C:N4	1:0:1341:G:C6	2.85	0.44
1:0:1504:G:H1	1:0:1516:A:H61	1.65	0.44
1:0:1614:C:H2'	1:0:1615:C:C6	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1682:A:H61	1:0:1977:C:H42	1.66	0.44
1:0:1715:A:O2'	1:0:1716:G:H3'	2.17	0.44
1:0:1763:G:H2'	1:0:1764:A:C4'	2.41	0.44
1:0:1811:A:O2'	1:0:1813:A:N7	2.46	0.44
1:0:1936:A:C2'	1:0:1937:G:H5'	2.47	0.44
1:0:2173:G:H2'	1:0:2174:G:O4'	2.17	0.44
1:0:2184:C:H2'	1:0:2185:U:C6	2.52	0.44
1:0:2491:C:H2'	1:0:2492:G:C5'	2.47	0.44
1:0:2661:G:H2'	1:0:2662:C:C5'	2.48	0.44
1:0:1655:C:H5''	1:0:2689:C:O2'	2.17	0.44
1:0:401:G:H2'	1:0:403:A:N7	2.33	0.44
1:0:736:G:H2'	1:0:737:C:O4'	2.17	0.44
1:0:775:U:N3	1:0:1446:U:OP1	2.47	0.44
1:0:1793:A:C8	1:0:1806:G:N2	2.85	0.44
1:0:180:C:C4	1:0:181:A:C6	3.05	0.44
1:0:2019:C:C2	1:0:2020:G:N7	2.85	0.44
1:0:356:A:H2'	1:0:357:A:C8	2.52	0.44
1:0:48:A:H2	1:0:118:U:O4	2.00	0.44
1:0:800:U:C6	1:0:804:C:N4	2.85	0.44
1:0:805:G:C5	1:0:2419:C:H1'	2.52	0.44
1:0:1355:A:C1'	1:0:1410:U:H4'	2.47	0.44
1:0:1883:A:H1'	1:0:1953:A:N6	2.32	0.44
1:0:1956:G:H2'	1:0:1957:C:O4'	2.17	0.44
1:0:992:A:H1'	1:0:2020:G:H1'	2.00	0.44
1:0:2033:C:C4	1:0:2034:A:C2	3.05	0.44
1:0:2033:C:N3	1:0:2034:A:C2	2.86	0.44
1:0:2407:G:H4'	1:0:2408:G:C8	2.53	0.44
1:0:2523:G:H2'	1:0:2524:G:H8	1.83	0.44
1:0:2649:A:O2'	1:0:2650:G:H5'	2.18	0.44
1:0:488:A:H2'	1:0:489:A:C8	2.53	0.44
1:0:531:G:O2'	1:0:532:A:H5'	2.16	0.44
1:0:646:C:O2'	1:0:650:U:H5''	2.18	0.44
1:0:703:A:C2	1:0:704:G:C5	3.06	0.44
1:0:748:A:C6	1:0:749:C:O2	2.71	0.44
1:0:1671:A:N1	1:0:2031:A:O2'	2.51	0.44
1:0:1821:A:H3'	1:0:1822:C:C6	2.51	0.44
1:0:1998:A:H2	32:Z:6:VAL:CA	2.31	0.44
1:0:2494:C:H2'	1:0:2495:G:C8	2.53	0.44
1:0:2534:U:C4	1:0:2535:C:C2	3.05	0.44
1:0:2613:A:H2'	1:0:2614:A:C8	2.45	0.44
1:0:2618:A:N7	1:0:2758:A:C6	2.86	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:635:C:H2'	1:0:636:G:H5''	1.98	0.44
1:0:642:A:N1	1:0:643:A:C2	2.86	0.44
1:0:796:A:H2'	1:0:797:A:H5'	2.00	0.44
1:0:929:A:C2	1:0:930:A:H1'	2.52	0.44
1:0:1068:A:H2'	1:0:1069:G:H8	1.81	0.44
1:0:1625:A:HO2'	1:0:1632:A:C4'	2.30	0.44
1:0:2225:G:H2'	1:0:2226:A:O4'	2.17	0.44
1:0:2714:A:H2'	1:0:2715:C:O4'	2.18	0.44
1:0:2817:A:N1	1:0:2851:G:C6	2.86	0.44
1:0:2856:U:C4	1:0:2857:C:C4	3.05	0.44
1:0:2855:C:O2'	1:0:2856:U:H5'	2.17	0.44
1:0:443:A:OP2	1:0:443:A:H3'	2.18	0.44
1:0:1381:G:O2'	1:0:1382:G:H5'	2.18	0.44
1:0:2196:U:H2'	1:0:2197:U:C6	2.52	0.44
1:0:213:C:H42	1:0:238:G:H22	1.66	0.44
1:0:2768:C:H6	1:0:2768:C:O5'	2.01	0.44
1:0:2817:A:C6	1:0:2851:G:C6	3.06	0.44
1:0:597:U:H2'	1:0:598:U:H6	1.81	0.44
1:0:599:A:H2'	1:0:600:G:C8	2.53	0.44
1:0:635:C:C3'	1:0:636:G:H5''	2.48	0.44
1:0:702:A:N6	1:0:703:A:C6	2.86	0.44
1:0:876:A:H4'	7:9:103:A:N3	2.33	0.44
1:0:1010:U:O2'	1:0:1011:A:C5'	2.66	0.44
1:0:114:C:H2'	1:0:115:G:O4'	2.18	0.44
1:0:1325:U:H5''	1:0:1326:U:C4	2.53	0.44
1:0:1342:U:OP2	1:0:1343:C:N4	2.51	0.44
1:0:1358:C:H2'	1:0:1359:G:H5'	1.99	0.44
1:0:1358:C:H2'	1:0:1359:G:H5''	2.00	0.44
1:0:1289:A:N6	1:0:1662:G:H1	1.97	0.44
1:0:1715:A:H1'	1:0:1717:A:H4'	2.00	0.44
1:0:1722:G:H2'	1:0:1723:U:C6	2.53	0.44
1:0:818:G:N1	1:0:2051:U:OP1	2.51	0.44
1:0:2445:C:H2'	1:0:2446:C:C6	2.53	0.44
1:0:2451:G:H2'	1:0:2508:G:H21	1.81	0.44
1:0:2594:U:H2'	1:0:2595:C:O4'	2.18	0.44
1:0:575:U:O2'	1:0:576:A:H5'	2.17	0.44
1:0:708:G:H1'	1:0:1392:U:O2	2.17	0.44
1:0:1200:G:H2'	1:0:1201:G:O4'	2.18	0.43
1:0:1379:A:C8	1:0:1380:C:C5	3.06	0.43
1:0:1480:G:C2'	1:0:1481:U:H5'	2.48	0.43
1:0:1529:C:H2'	1:0:1530:U:O4'	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2318:U:H2'	1:0:2319:G:H8	1.81	0.43
1:0:2658:A:O2'	1:0:2659:C:H5'	2.18	0.43
1:0:2785:A:N6	1:0:2865:G:H21	2.14	0.43
1:0:717:G:O2'	1:0:740:A:N6	2.51	0.43
1:0:867:G:H2'	1:0:868:U:O4'	2.17	0.43
1:0:1328:C:H4'	1:0:1406:A:O4'	2.18	0.43
1:0:1621:C:C2'	1:0:1622:G:O4'	2.56	0.43
1:0:1794:A:H2'	1:0:1795:C:O4'	2.18	0.43
1:0:181:A:H4'	1:0:183:U:C6	2.53	0.43
1:0:1142:G:O6	1:0:2008:C:C1'	2.66	0.43
1:0:2307:A:H2'	1:0:2308:A:C8	2.53	0.43
1:0:2333:A:N1	1:0:2343:C:C4	2.86	0.43
1:0:2610:G:H5'	1:0:2866:A:H1'	2.00	0.43
1:0:2813:G:O6	1:0:2814:G:C6	2.71	0.43
1:0:614:G:H2'	1:0:615:C:H6	1.82	0.43
1:0:706:A:H2'	1:0:707:U:O4'	2.18	0.43
1:0:742:G:H4'	1:0:776:G:H5'	1.99	0.43
1:0:952:A:O2'	1:0:1204:G:H4'	2.17	0.43
1:0:1215:A:N3	1:0:1258:G:C2	2.86	0.43
1:0:1707:A:C2'	1:0:1708:C:H5'	2.47	0.43
1:0:1697:U:C2	1:0:1755:G:H4'	2.53	0.43
1:0:1668:G:C2	1:0:1990:U:O2	2.71	0.43
1:0:2006:G:H2'	1:0:2007:G:H8	1.83	0.43
1:0:2015:G:O2'	1:0:2016:A:H5'	2.18	0.43
1:0:2185:U:H3	1:0:2200:G:H1	1.67	0.43
1:0:2414:A:H2'	1:0:2415:G:H5''	2.00	0.43
1:0:2493:U:H2'	1:0:2494:C:H6	1.83	0.43
1:0:2566:A:H61	1:0:2587:G:H1'	1.84	0.43
1:0:223:C:H4'	1:0:398:C:H1'	2.00	0.43
1:0:40:U:H2'	1:0:41:G:H8	1.83	0.43
7:9:42:U:C2	7:9:45:C:H5	2.36	0.43
1:0:588:G:C4	1:0:1275:A:N1	2.87	0.43
1:0:1528:C:C3'	1:0:1529:C:H5''	2.48	0.43
1:0:1774:A:O5'	1:0:1774:A:H8	2.00	0.43
1:0:1807:A:C1'	1:0:1809:G:H1'	2.48	0.43
1:0:1973:C:O5'	1:0:1973:C:H6	2.01	0.43
1:0:2067:U:H2'	1:0:2068:C:C6	2.52	0.43
1:0:2480:C:C5'	1:0:2482:A:H5'	2.43	0.43
1:0:2859:U:C4	1:0:2860:C:C2	3.06	0.43
1:0:640:C:H2'	1:0:641:G:H8	1.81	0.43
1:0:695:G:N2	1:0:809:C:O2	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:799:C:H2'	1:0:800:U:C6	2.54	0.43
1:0:677:G:H1'	1:0:951:G:H5''	2.00	0.43
1:0:1172:U:H2'	1:0:1173:G:H8	1.83	0.43
1:0:1417:C:O2'	1:0:1418:C:H5'	2.18	0.43
1:0:1469:U:OP2	1:0:1472:C:N4	2.50	0.43
1:0:1463:A:C1'	1:0:1543:G:H22	1.98	0.43
1:0:2564:U:H3'	1:0:2565:C:C5'	2.49	0.43
1:0:2573:C:O5'	1:0:2573:C:H6	2.01	0.43
1:0:2800:C:O5'	1:0:2800:C:H6	2.01	0.43
1:0:343:A:N6	1:0:346:C:C5	2.85	0.43
1:0:422:C:H2'	1:0:423:G:C8	2.53	0.43
1:0:459:A:N7	1:0:484:G:C4	2.86	0.43
1:0:485:G:O6	1:0:520:C:C4	2.72	0.43
1:0:742:G:H1'	1:0:777:A:OP1	2.18	0.43
1:0:953:G:C6	1:0:954:U:N3	2.87	0.43
7:9:31:A:C4	7:9:58:G:N2	2.87	0.43
1:0:1312:G:O4'	1:0:1314:A:C2	2.72	0.43
1:0:1639:U:H2'	1:0:1640:C:H6	1.83	0.43
1:0:1665:C:C2	1:0:1666:G:C8	3.07	0.43
1:0:1751:A:H4'	1:0:2691:C:OP1	2.19	0.43
1:0:1677:C:N4	1:0:1984:A:H61	2.16	0.43
1:0:2106:G:H2'	1:0:2107:G:C8	2.53	0.43
1:0:2241:U:H5'	1:0:2241:U:H6	1.83	0.43
1:0:230:C:H2'	1:0:231:G:O4'	2.19	0.43
1:0:2271:C:P	1:0:2353:G:H21	2.42	0.43
1:0:2597:G:C2	1:0:2598:C:C2	3.06	0.43
1:0:2785:A:H62	1:0:2865:G:N2	2.15	0.43
1:0:802:A:O5'	1:0:802:A:H8	2.00	0.43
1:0:150:A:C2'	1:0:151:G:H5'	2.48	0.43
1:0:1636:G:C5	1:0:1637:U:C5	3.06	0.43
1:0:1802:A:O2'	1:0:1803:G:H5'	2.19	0.43
1:0:1928:G:C2	1:0:1929:U:C2	3.07	0.43
1:0:1953:A:C1'	1:0:1955:G:H1'	2.30	0.43
1:0:2329:C:O2'	1:0:2330:G:H5'	2.18	0.43
1:0:2490:U:H2'	1:0:2491:C:H6	1.84	0.43
1:0:1640:C:C2	1:0:1641:C:C5	3.07	0.43
1:0:2230:G:C1'	1:0:2429:A:O4'	2.62	0.43
1:0:2543:A:C6	1:0:2626:U:H4'	2.54	0.43
1:0:2555:G:C3'	1:0:2555:G:OP1	2.66	0.43
1:0:2636:A:H62	1:0:2643:G:H21	1.67	0.43
1:0:2769:C:H2'	1:0:2867:G:N2	2.34	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2788:C:HO2'	1:0:2789:U:H5'	1.80	0.43
1:0:2813:G:C6	1:0:2814:G:C5	3.07	0.43
1:0:317:U:H3'	1:0:318:G:C5'	2.41	0.43
1:0:457:C:O2'	1:0:458:G:H5'	2.19	0.43
1:0:575:U:C4	1:0:576:A:C6	3.07	0.43
1:0:588:G:H2'	1:0:589:C:C6	2.53	0.43
1:0:702:A:C6	1:0:703:A:C5	3.07	0.43
1:0:787:A:H2'	1:0:788:G:C8	2.53	0.43
1:0:958:G:C2	1:0:982:C:C2	3.07	0.43
1:0:1267:A:OP2	1:0:1269:G:H5''	2.18	0.43
1:0:1300:A:C2	1:0:1301:U:C2	3.06	0.43
1:0:139:A:H2'	1:0:140:G:H8	1.84	0.43
1:0:1460:G:C6	1:0:1461:C:C4	3.07	0.43
1:0:1686:A:H2'	1:0:1687:C:H5'	2.00	0.43
1:0:1773:C:H6	1:0:1773:C:O5'	2.00	0.43
1:0:2442:C:C2	1:0:2467:A:C2	3.07	0.43
1:0:2474:G:C6	1:0:2475:C:N3	2.87	0.43
1:0:2432:A:H4'	1:0:2551:A:O3'	2.19	0.43
1:0:2564:U:H3	1:0:2568:A:H62	1.65	0.43
1:0:2645:C:OP2	1:0:2646:C:N4	2.51	0.43
1:0:2709:C:C4	1:0:2710:C:C4	3.06	0.43
1:0:343:A:N6	1:0:346:C:H5	2.17	0.43
1:0:646:C:O2	1:0:650:U:H4'	2.18	0.43
1:0:786:U:H4'	8:A:48:ARG:CA	2.49	0.43
1:0:1016:C:H2'	1:0:1017:C:C6	2.53	0.43
1:0:1306:U:H2'	1:0:1307:U:O5'	2.19	0.43
1:0:1339:U:O5'	1:0:1339:U:H6	2.02	0.43
1:0:165:G:N2	1:0:186:C:C2	2.87	0.43
1:0:1679:U:C4	1:0:1680:U:C6	3.06	0.43
1:0:1793:A:N6	1:0:1806:G:H2'	2.34	0.43
1:0:1975:G:H2'	1:0:1980:A:H62	1.81	0.43
1:0:2005:U:H6	1:0:2005:U:O5'	2.01	0.43
1:0:1147:G:O4'	1:0:2022:C:H5'	2.19	0.43
1:0:2378:G:O2'	1:0:2379:G:H5'	2.19	0.43
1:0:2686:C:O2'	1:0:2687:G:H5'	2.19	0.43
1:0:521:U:C5	1:0:522:G:C4	3.06	0.43
1:0:562:G:H2'	1:0:563:U:O4'	2.18	0.43
1:0:681:A:C4	1:0:683:A:N7	2.87	0.43
7:9:37:C:C2'	7:9:38:C:H5'	2.48	0.43
1:0:1312:G:C4'	1:0:1313:U:H5'	2.45	0.42
1:0:1414:G:N2	1:0:1484:G:H21	2.05	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1974:U:H3'	1:0:1975:G:C5'	2.49	0.42
1:0:2082:C:C4	1:0:2174:G:N2	2.87	0.42
1:0:2422:C:O2'	1:0:2423:G:H5'	2.19	0.42
1:0:2563:U:C4	33:0:2882:DOL:H471	2.53	0.42
1:0:2663:U:C4	1:0:2664:G:N7	2.87	0.42
1:0:367:G:H3'	1:0:368:A:H5''	2.01	0.42
1:0:542:A:OP2	1:0:2003:A:C1'	2.65	0.42
1:0:1281:A:N6	1:0:1282:A:C6	2.88	0.42
1:0:1379:A:C5	1:0:1380:C:C4	3.06	0.42
1:0:1888:C:C5'	1:0:1889:G:H5''	2.32	0.42
1:0:2022:C:N4	1:0:2023:C:N4	2.68	0.42
1:0:2727:G:O5'	1:0:2727:G:H8	2.02	0.42
1:0:2816:C:C2	1:0:2852:G:N2	2.87	0.42
1:0:2858:A:H3'	1:0:2859:U:H5'	2.01	0.42
1:0:446:C:H2'	1:0:447:U:O4'	2.19	0.42
1:0:471:A:C2	1:0:481:A:C5	3.07	0.42
1:0:575:U:H2'	1:0:576:A:O4'	2.19	0.42
1:0:742:G:O4'	1:0:777:A:OP1	2.37	0.42
1:0:1778:U:H2'	1:0:1779:C:H6	1.83	0.42
1:0:1787:U:H2'	1:0:1788:C:H6	1.84	0.42
1:0:1791:C:O2'	1:0:1793:A:H5'	2.18	0.42
1:0:180:C:N4	1:0:181:A:C6	2.86	0.42
1:0:180:C:C4	1:0:181:A:N7	2.87	0.42
1:0:1931:G:N2	1:0:1942:G:C4	2.87	0.42
1:0:2468:G:O2'	1:0:2469:G:H5'	2.19	0.42
1:0:2818:G:C2	1:0:2850:U:C2	3.06	0.42
1:0:304:A:C2'	1:0:305:A:H5''	2.45	0.42
1:0:25:U:H3	1:0:525:A:H61	1.66	0.42
1:0:643:A:O2'	1:0:644:A:H5'	2.19	0.42
1:0:867:G:C8	1:0:868:U:C5	3.07	0.42
1:0:1025:A:H2'	1:0:1026:U:C6	2.53	0.42
1:0:1309:G:H2'	1:0:1310:C:C6	2.55	0.42
1:0:1401:G:HO2'	1:0:1541:G:H5'	1.79	0.42
1:0:2169:A:O2'	1:0:2170:C:H5'	2.19	0.42
1:0:2357:A:H2'	1:0:2358:C:H5'	2.01	0.42
1:0:2677:U:H2'	1:0:2678:C:H6	1.81	0.42
1:0:576:A:H2	1:0:580:A:H62	1.67	0.42
1:0:594:G:H2'	1:0:595:A:N7	2.34	0.42
1:0:717:G:H1'	1:0:740:A:H62	1.84	0.42
1:0:771:C:H2'	1:0:772:G:H8	1.83	0.42
1:0:954:U:O5'	1:0:954:U:H6	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1367:A:H62	1:0:1390:G:H21	1.68	0.42
1:0:221:A:H62	1:0:231:G:N2	2.14	0.42
1:0:2570:C:N4	1:0:2571:G:O6	2.52	0.42
1:0:2700:U:O5'	1:0:2700:U:H6	2.03	0.42
1:0:51:A:N6	1:0:116:A:N7	2.67	0.42
1:0:52:A:C2'	1:0:53:G:H5'	2.49	0.42
1:0:575:U:O4	1:0:576:A:C6	2.73	0.42
1:0:575:U:O4	1:0:576:A:N6	2.53	0.42
7:9:71:G:N2	7:9:72:C:H1'	2.35	0.42
1:0:1012:A:H2'	1:0:1013:G:O4'	2.20	0.42
1:0:1327:C:O5'	1:0:1327:C:H6	2.02	0.42
1:0:1624:A:C2'	1:0:1625:A:H5''	2.49	0.42
1:0:1744:G:N1	1:0:1747:G:C6	2.88	0.42
1:0:1956:G:O2'	1:0:1957:C:H5'	2.19	0.42
1:0:2219:U:C6	1:0:2219:U:H3'	2.55	0.42
1:0:2249:U:C2'	1:0:2250:G:H5'	2.50	0.42
1:0:225:G:C3'	1:0:226:C:H5'	2.50	0.42
1:0:2447:G:C2'	1:0:2448:A:H5''	2.50	0.42
1:0:2006:G:H5'	1:0:2596:C:H4'	2.02	0.42
1:0:2751:C:H2'	1:0:2752:C:C6	2.55	0.42
1:0:340:G:C4	1:0:488:A:C2	3.07	0.42
1:0:696:U:H6	1:0:696:U:O5'	2.02	0.42
1:0:839:U:C5	1:0:841:G:H1'	2.54	0.42
1:0:940:G:C3'	1:0:941:U:C5'	2.83	0.42
1:0:102:C:H2'	1:0:103:U:O4'	2.20	0.42
1:0:140:G:O2'	1:0:141:G:H5'	2.19	0.42
1:0:149:A:O2'	1:0:150:A:H5'	2.20	0.42
1:0:224:G:HO2'	1:0:399:G:H1	1.68	0.42
1:0:24:G:C4	1:0:25:U:C5	3.07	0.42
1:0:2817:A:N1	1:0:2851:G:C5	2.87	0.42
1:0:664:C:H2'	1:0:665:A:C8	2.54	0.42
1:0:778:G:H2'	1:0:779:U:C6	2.55	0.42
1:0:943:U:H6	1:0:943:U:O5'	2.03	0.42
1:0:999:A:H1'	1:0:1166:A:H2	1.85	0.42
7:9:108:G:O2'	7:9:109:G:H5'	2.20	0.42
7:9:9:G:C2	7:9:117:G:C2	3.07	0.42
1:0:1287:A:N1	1:0:1661:C:O2'	2.41	0.42
1:0:2394:G:H2'	1:0:2395:C:O4'	2.19	0.42
1:0:24:G:H2'	1:0:25:U:C5	2.53	0.42
1:0:2818:G:C2'	1:0:2819:G:H5'	2.49	0.42
1:0:525:A:O2'	1:0:526:C:H5'	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:573:C:C4	1:0:574:C:C5	3.07	0.42
1:0:745:C:H2'	1:0:746:G:H5'	2.02	0.42
1:0:80:A:H2'	1:0:81:C:C6	2.55	0.42
1:0:938:G:C2	1:0:939:C:C4	3.07	0.42
1:0:1198:C:O5'	1:0:1199:U:H4'	2.20	0.42
1:0:1319:C:O2'	1:0:1320:A:H5'	2.20	0.42
1:0:1730:G:H2'	1:0:1731:C:C6	2.55	0.42
1:0:1339:U:H5''	1:0:1994:U:H1'	2.01	0.42
1:0:688:A:HO2'	1:0:2422:C:H4'	1.82	0.42
1:0:2699:G:H2'	1:0:2700:U:H5	1.85	0.42
1:0:2714:A:O2'	1:0:2715:C:H5'	2.20	0.42
1:0:59:G:N7	1:0:61:U:H5	2.18	0.42
1:0:616:U:H5	1:0:630:G:C5	2.38	0.42
1:0:763:A:H5''	1:0:1631:C:N4	2.35	0.42
1:0:1223:G:H1'	1:0:1225:G:O4'	2.19	0.42
1:0:1333:G:N2	1:0:1344:C:H41	2.18	0.42
1:0:1628:C:C2	1:0:1636:G:N2	2.88	0.42
1:0:1775:A:P	1:0:1775:A:C8	3.13	0.42
1:0:2499:C:C2'	1:0:2500:C:O5'	2.68	0.42
1:0:2586:G:C6	1:0:2587:G:C6	3.08	0.42
1:0:2813:G:C6	1:0:2814:G:C6	3.08	0.42
1:0:339:U:H3'	1:0:340:G:C5'	2.50	0.42
1:0:387:A:H2'	1:0:388:G:O4'	2.19	0.42
1:0:940:G:N7	1:0:941:U:C6	2.88	0.42
1:0:942:U:C2'	1:0:943:U:H5'	2.48	0.42
7:9:77:G:H1	7:9:105:G:H22	1.68	0.42
7:9:26:G:C4	7:9:58:G:C6	3.08	0.42
1:0:1333:G:O6	1:0:1342:U:H5'	2.19	0.41
1:0:1343:C:H2'	1:0:1344:C:C6	2.54	0.41
1:0:1358:C:C2'	1:0:1359:G:H5''	2.49	0.41
1:0:1389:C:H2'	1:0:1390:G:O4'	2.20	0.41
1:0:140:G:H2'	1:0:141:G:H8	1.84	0.41
1:0:1619:A:C2	1:0:1620:C:C6	3.08	0.41
1:0:762:A:C8	1:0:1634:A:N6	2.88	0.41
1:0:1677:C:H2'	1:0:1678:G:C8	2.55	0.41
1:0:177:U:H6	1:0:177:U:O5'	2.03	0.41
1:0:191:G:O2'	1:0:194:G:OP1	2.38	0.41
1:0:1953:A:H2'	1:0:1954:A:OP2	2.20	0.41
1:0:2239:C:O2'	1:0:2240:C:H5'	2.19	0.41
1:0:2629:U:O2'	1:0:2630:C:H5'	2.20	0.41
1:0:581:A:H2'	1:0:581:A:N3	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:615:C:H1'	1:0:671:A:H4'	2.01	0.41
1:0:960:U:H2'	1:0:961:G:H8	1.84	0.41
1:0:1248:G:N1	1:0:1249:G:N2	2.68	0.41
1:0:1279:G:O2'	1:0:1995:G:N1	2.53	0.41
1:0:1284:G:C5	1:0:1633:C:H5'	2.55	0.41
1:0:1288:A:O2'	1:0:1289:A:H5'	2.20	0.41
1:0:1364:C:H2'	1:0:1365:U:C6	2.54	0.41
1:0:1396:C:O5'	1:0:1396:C:H6	2.03	0.41
1:0:1455:C:O2'	1:0:1644:G:H5''	2.20	0.41
1:0:1463:A:H2'	1:0:1464:A:C8	2.55	0.41
1:0:1982:C:O2'	1:0:1983:G:H5'	2.21	0.41
1:0:1666:G:C6	1:0:1992:G:O6	2.74	0.41
1:0:2266:A:N6	1:0:2323:U:C1'	2.83	0.41
1:0:226:C:H4'	1:0:227:G:C8	2.55	0.41
1:0:692:C:O2'	1:0:693:A:H5'	2.19	0.41
1:0:69:G:H5''	1:0:70:A:P	2.60	0.41
1:0:742:G:N3	1:0:742:G:C2'	2.83	0.41
1:0:860:U:N3	1:0:945:G:N2	2.68	0.41
1:0:1352:G:N2	1:0:1619:A:H1'	2.35	0.41
1:0:1511:A:H2'	1:0:1512:A:O4'	2.20	0.41
1:0:1901:A:H2'	1:0:1902:A:O4'	2.20	0.41
1:0:1981:A:H2'	1:0:1982:C:C6	2.55	0.41
1:0:2840:U:C4	1:0:2841:U:C5	3.08	0.41
1:0:429:C:H2'	1:0:430:C:C6	2.54	0.41
1:0:1034:U:H2'	1:0:1035:G:H5'	2.02	0.41
1:0:1073:G:H2'	1:0:1074:G:C5'	2.49	0.41
1:0:1281:A:C2	1:0:1996:A:C2	3.08	0.41
1:0:1291:G:H2'	1:0:1292:A:H8	1.85	0.41
1:0:11:G:O2'	1:0:12:U:H5'	2.20	0.41
1:0:1987:G:H2'	1:0:1988:A:H5'	2.01	0.41
1:0:2058:U:O2	1:0:2414:A:C2	2.73	0.41
1:0:2299:A:C5'	1:0:2300:G:C5	3.03	0.41
1:0:2431:C:O2'	1:0:2432:A:C5'	2.63	0.41
1:0:476:G:N2	1:0:697:G:N2	2.68	0.41
1:0:600:G:H2'	1:0:601:A:OP1	2.19	0.41
1:0:854:G:H2'	1:0:855:G:C8	2.56	0.41
1:0:1223:G:N3	1:0:1250:A:N6	2.69	0.41
1:0:1393:G:H8	1:0:1393:G:O5'	2.03	0.41
1:0:1431:U:H2'	1:0:1432:G:O4'	2.21	0.41
1:0:1543:G:H8	1:0:1543:G:O5'	2.04	0.41
1:0:1820:G:HO2'	1:0:1821:A:P	2.44	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1869:A:H2'	1:0:1870:U:O4'	2.20	0.41
1:0:839:U:H5'	1:0:2407:G:H2'	2.00	0.41
1:0:2426:G:N7	1:0:2479:U:C6	2.88	0.41
1:0:2591:C:O2'	1:0:2592:U:H5'	2.21	0.41
1:0:543:G:H2'	1:0:544:U:H6	1.84	0.41
1:0:597:U:H3	1:0:683:A:HO2'	1.61	0.41
1:0:692:C:N4	1:0:693:A:H62	2.18	0.41
1:0:738:G:H8	1:0:738:G:O5'	2.04	0.41
1:0:695:G:N2	1:0:809:C:C2	2.88	0.41
1:0:864:C:H3'	1:0:864:C:H6	1.86	0.41
7:9:88:C:H2'	7:9:89:G:O4'	2.21	0.41
1:0:1125:G:O2'	1:0:1126:A:H5'	2.21	0.41
1:0:1253:C:H2'	1:0:1254:G:C5'	2.51	0.41
1:0:130:C:H2'	1:0:131:C:C6	2.55	0.41
1:0:143:A:H2'	1:0:144:U:O4'	2.20	0.41
1:0:1656:U:H2'	1:0:1657:A:C5'	2.26	0.41
1:0:1702:C:C2	1:0:1721:G:C2	3.09	0.41
1:0:1760:G:O2'	1:0:1761:G:H5'	2.20	0.41
1:0:1798:G:O5'	1:0:1798:G:H8	2.04	0.41
1:0:2379:G:H2'	1:0:2380:U:O4'	2.20	0.41
1:0:2466:G:H2'	1:0:2467:A:H8	1.85	0.41
1:0:2597:G:O2'	1:0:2598:C:H5'	2.21	0.41
1:0:2800:C:C2'	1:0:2801:A:H5'	2.51	0.41
1:0:2829:A:C2	1:0:2839:G:C2	3.08	0.41
1:0:443:A:P	1:0:443:A:H3'	2.60	0.41
1:0:50:G:H2'	1:0:117:A:C2	2.56	0.41
1:0:238:G:O4'	1:0:618:A:H2	2.03	0.41
1:0:713:G:H2'	1:0:714:G:O4'	2.21	0.41
1:0:774:A:H8	1:0:774:A:O5'	2.03	0.41
1:0:84:G:O2'	1:0:85:C:H5'	2.21	0.41
1:0:1333:G:C6	1:0:1342:U:H5'	2.55	0.41
1:0:1566:G:H2'	1:0:1567:A:H8	1.85	0.41
1:0:1761:G:O5'	1:0:1761:G:H8	2.02	0.41
1:0:1919:A:H5''	1:0:1920:A:O5'	2.21	0.41
1:0:1972:G:H2'	1:0:1973:C:H5'	2.02	0.41
1:0:1993:G:H2'	1:0:1994:U:C6	2.55	0.41
1:0:2058:U:C5	1:0:2217:G:C4	3.09	0.41
1:0:2091:C:H2'	1:0:2092:U:O4'	2.21	0.41
1:0:2158:C:H2'	1:0:2159:A:C8	2.55	0.41
1:0:2201:G:H2'	1:0:2202:G:C8	2.51	0.41
1:0:2218:G:O5'	1:0:2218:G:H8	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:242:A:H2'	1:0:243:G:C4'	2.50	0.41
1:0:2769:C:HO2'	1:0:2784:A:H2	1.67	0.41
1:0:29:U:H5''	22:O:7:GLY:CA	2.50	0.41
1:0:232:A:H1'	1:0:397:U:C6	2.55	0.41
1:0:496:C:O2'	1:0:497:C:H5'	2.21	0.41
1:0:525:A:C8	1:0:526:C:C6	3.09	0.41
1:0:936:A:O2'	1:0:937:C:H5'	2.21	0.41
7:9:77:G:H1	7:9:105:G:N2	2.19	0.41
1:0:1181:C:H2'	1:0:1182:U:H5''	2.02	0.41
1:0:1280:U:O2'	1:0:1281:A:H5'	2.20	0.41
1:0:1333:G:N2	1:0:1346:C:C2	2.89	0.41
1:0:1445:A:H2'	1:0:1446:U:H6	1.85	0.41
1:0:1604:A:H2'	1:0:1605:A:O4'	2.21	0.41
1:0:200:A:H1'	1:0:433:G:H21	1.86	0.41
1:0:2164:G:H2'	1:0:2165:A:C8	2.56	0.41
1:0:218:A:OP1	1:0:218:A:H8	2.03	0.41
1:0:2817:A:O2'	1:0:2818:G:H5'	2.21	0.41
1:0:616:U:H5''	1:0:630:G:O6	2.21	0.41
1:0:845:U:OP2	1:0:955:G:O6	2.39	0.41
7:9:118:G:O2'	7:9:119:G:H5'	2.21	0.41
7:9:59:A:H2'	7:9:60:A:H5'	2.02	0.41
1:0:1307:U:H2'	1:0:1308:C:O4'	2.21	0.41
1:0:1312:G:H4'	1:0:1314:A:N3	2.36	0.41
1:0:1313:U:O2'	1:0:1314:A:O5'	2.30	0.41
1:0:165:G:O6	1:0:166:G:C2	2.73	0.41
1:0:2340:C:H2'	1:0:2341:G:H5'	2.03	0.41
1:0:2333:A:N1	1:0:2343:C:N4	2.69	0.41
1:0:2430:A:C5	33:0:2882:DOL:HC12	2.56	0.41
1:0:2505:G:H5'	1:0:2722:C:HO2'	1.84	0.41
1:0:2814:G:H2'	1:0:2815:C:C6	2.56	0.41
1:0:401:G:C2'	1:0:403:A:N7	2.84	0.41
1:0:575:U:C4	1:0:576:A:C5	3.09	0.41
1:0:606:A:C2	1:0:675:C:C2	3.08	0.41
1:0:475:U:H1'	1:0:699:G:N1	2.35	0.41
1:0:837:U:H2'	1:0:838:A:O4'	2.21	0.41
1:0:873:U:C3'	1:0:874:A:H5'	2.51	0.41
7:9:40:C:H2'	7:9:41:A:H5'	2.03	0.41
1:0:1151:U:H5''	1:0:1153:A:OP1	2.20	0.41
1:0:1027:C:H42	1:0:1158:A:N6	2.19	0.41
1:0:1200:G:H2'	1:0:1201:G:C5'	2.51	0.41
1:0:1286:U:O3'	1:0:1288:A:OP1	2.39	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1383:C:H2'	1:0:1384:G:H8	1.86	0.41
1:0:1794:A:H2'	1:0:1795:C:H5'	2.03	0.41
1:0:1984:A:O2'	1:0:1985:G:H5'	2.21	0.41
1:0:2015:G:O6	1:0:2038:C:O2	2.39	0.41
1:0:9:U:H3	1:0:2608:A:H62	1.69	0.41
1:0:789:G:N3	1:0:806:A:N7	2.69	0.41
1:0:121:G:H2'	1:0:122:G:O4'	2.21	0.41
1:0:1232:U:O5'	1:0:1232:U:H6	2.04	0.41
1:0:2271:C:N4	1:0:2272:A:N6	2.69	0.41
1:0:2651:U:O2'	1:0:2652:G:H5'	2.21	0.41
1:0:2679:G:C2	1:0:2687:G:C2	3.08	0.41
1:0:2696:A:O2'	1:0:2697:G:H5'	2.21	0.41
1:0:2668:U:P	1:0:2699:G:H22	2.43	0.41
1:0:422:C:H2'	1:0:423:G:H8	1.86	0.41
1:0:583:C:O2'	1:0:584:A:P	2.79	0.41
1:0:750:C:H2'	1:0:751:G:O4'	2.21	0.41
1:0:77:C:H2'	1:0:78:C:C6	2.55	0.41
1:0:1624:A:H2'	1:0:1625:A:H5'	2.03	0.40
1:0:1949:A:H1'	1:0:2572:U:C5'	2.51	0.40
1:0:1984:A:H2'	1:0:1985:G:H8	1.85	0.40
1:0:2516:U:O5'	1:0:2516:U:H6	2.05	0.40
1:0:2578:G:H2'	1:0:2579:A:O4'	2.21	0.40
1:0:24:G:C6	1:0:25:U:O4	2.74	0.40
1:0:2676:G:C5	1:0:2677:U:C4	3.10	0.40
1:0:2808:U:H3'	1:0:2809:A:H5'	2.03	0.40
1:0:356:A:H2'	1:0:357:A:H8	1.86	0.40
1:0:488:A:O5'	1:0:488:A:H8	2.04	0.40
1:0:589:C:C4	1:0:590:C:N4	2.89	0.40
1:0:742:G:OP2	1:0:776:G:OP2	2.38	0.40
1:0:938:G:N2	1:0:939:C:C4	2.90	0.40
7:9:23:G:C6	7:9:24:U:C4	3.09	0.40
1:0:1013:G:C6	1:0:1014:G:C5	3.09	0.40
1:0:1287:A:H1'	1:0:1310:C:O2'	2.21	0.40
1:0:1486:A:H2'	1:0:1487:C:H6	1.82	0.40
1:0:1672:A:C2	1:0:2032:G:H5''	2.56	0.40
1:0:1702:C:C2	1:0:1721:G:N2	2.89	0.40
1:0:2036:G:O2'	1:0:2037:A:H5'	2.21	0.40
1:0:2518:C:N3	1:0:2519:C:C4	2.89	0.40
1:0:2695:C:H2'	1:0:2696:A:H8	1.87	0.40
1:0:797:A:H4'	1:0:798:G:H8	1.79	0.40
1:0:92:U:H2'	1:0:93:A:H8	1.83	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1016:C:N4	1:0:1149:G:N2	2.69	0.40
1:0:1426:U:H2'	1:0:1427:G:O4'	2.21	0.40
1:0:1446:U:H2'	1:0:1447:U:C6	2.56	0.40
1:0:1587:A:H2'	1:0:1588:A:H8	1.86	0.40
1:0:180:C:C4	1:0:181:A:N6	2.89	0.40
1:0:208:C:H2'	1:0:209:G:H5'	2.03	0.40
1:0:2219:U:C3'	1:0:2219:U:C6	3.05	0.40
1:0:2238:G:C8	1:0:2238:G:OP1	2.74	0.40
1:0:2293:G:O2'	1:0:2294:U:H5'	2.21	0.40
1:0:2369:U:H2'	1:0:2370:G:C8	2.56	0.40
1:0:2376:G:H2'	1:0:2377:U:C6	2.56	0.40
1:0:2391:A:H2'	1:0:2392:G:O4'	2.22	0.40
1:0:2490:U:H2'	1:0:2491:C:C6	2.57	0.40
1:0:2579:A:C5	1:0:2580:C:C5	3.09	0.40
1:0:2800:C:H2'	1:0:2801:A:H5'	2.03	0.40
1:0:333:A:H2'	1:0:350:U:O2	2.20	0.40
1:0:322:A:N6	1:0:339:U:H3	2.19	0.40
1:0:744:C:C2	1:0:745:C:C5	3.09	0.40
1:0:788:G:N2	1:0:800:U:O3'	2.54	0.40
1:0:953:G:O5'	1:0:953:G:H8	2.04	0.40
1:0:1005:U:H3	1:0:1007:A:H62	1.68	0.40
1:0:991:A:C8	1:0:1146:G:H5''	2.56	0.40
1:0:1223:G:H1'	1:0:1225:G:C1'	2.51	0.40
1:0:1347:C:O5'	1:0:1347:C:H6	2.05	0.40
1:0:1887:G:O2'	1:0:1888:C:H5'	2.22	0.40
1:0:1916:G:H8	1:0:1916:G:O5'	2.05	0.40
1:0:1928:G:H2'	1:0:1929:U:C6	2.57	0.40
1:0:2019:C:H2'	1:0:2020:G:H8	1.86	0.40
1:0:213:C:N4	1:0:238:G:H22	2.19	0.40
1:0:2391:A:N6	1:0:2392:G:C2	2.89	0.40
1:0:2538:C:O2'	1:0:2539:C:H5'	2.21	0.40
1:0:2753:C:N4	1:0:2754:C:N4	2.69	0.40
1:0:2762:G:N2	1:0:2763:U:H1'	2.37	0.40
1:0:324:C:H2'	1:0:325:U:O4'	2.22	0.40
1:0:540:G:N2	1:0:2005:U:H5''	2.36	0.40
1:0:543:G:OP1	22:O:24:PHE:CA	2.69	0.40
1:0:814:G:O5'	1:0:814:G:H8	2.05	0.40
1:0:831:G:O2'	1:0:832:A:C4'	2.70	0.40
1:0:852:U:O2'	1:0:853:C:H5'	2.21	0.40
1:0:976:C:O2'	1:0:977:G:H5'	2.22	0.40
1:0:51:A:OP2	1:0:117:A:N1	2.55	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1339:U:C4	1:0:1340:C:N4	2.89	0.40
1:0:1624:A:N6	1:0:1627:C:H1'	2.37	0.40
1:0:168:A:O2'	1:0:169:C:H5'	2.21	0.40
1:0:1864:G:H2'	1:0:1865:C:C6	2.56	0.40
1:0:2026:C:N3	1:0:2757:G:C2	2.90	0.40
1:0:2039:G:P	1:0:2483:U:C5'	3.09	0.40
1:0:2040:A:C2'	1:0:2041:A:H5'	2.51	0.40
1:0:2054:A:O5'	1:0:2054:A:H8	2.04	0.40
1:0:2218:G:C6	1:0:2219:U:N3	2.90	0.40
1:0:2218:G:C2	1:0:2219:U:C2	3.10	0.40
1:0:2605:C:N4	1:0:2606:G:O6	2.55	0.40
1:0:2700:U:C2'	1:0:2701:A:H5'	2.52	0.40
1:0:678:G:H2'	1:0:679:C:H6	1.85	0.40
1:0:827:C:O2'	1:0:828:C:H5'	2.21	0.40
1:0:933:G:HO2'	1:0:934:G:H5'	1.83	0.40
7:9:36:A:H1'	7:9:51:G:H22	1.86	0.40

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
6	5	2/8 (25%)	1 (50%)	0	1 (50%)	<b>0</b> <b>0</b>

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
6	5	2	THR

### 5.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
6	5	2/2 (100%)	2 (100%)	0	100	100

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

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

### 5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	0	2757/2880 (95%)	433 (15%)	19 (0%)
7	9	117/124 (94%)	12 (10%)	0
All	All	2874/3004 (95%)	445 (15%)	19 (0%)

All (445) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	0	45	C
1	0	48	A
1	0	49	U
1	0	50	G
1	0	59	G
1	0	60	A
1	0	67	G
1	0	68	C
1	0	71	A
1	0	72	A
1	0	76	C
1	0	87	G
1	0	89	A
1	0	90	G
1	0	91	A
1	0	99	U
1	0	100	G

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Mol	Chain	Res	Type
1	0	105	G
1	0	110	U
1	0	116	A
1	0	118	U
1	0	123	A
1	0	129	A
1	0	135	U
1	0	155	G
1	0	158	A
1	0	173	A
1	0	174	A
1	0	176	A
1	0	177	U
1	0	181	A
1	0	182	G
1	0	193	A
1	0	200	A
1	0	206	U
1	0	210	A
1	0	218	A
1	0	219	G
1	0	221	A
1	0	225	G
1	0	227	G
1	0	229	G
1	0	242	A
1	0	305	A
1	0	312	G
1	0	318	G
1	0	334	G
1	0	335	A
1	0	340	G
1	0	343	A
1	0	358	C
1	0	368	A
1	0	373	A
1	0	399	G
1	0	401	G
1	0	414	A
1	0	418	C
1	0	424	G
1	0	443	A

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Mol	Chain	Res	Type
1	0	455	A
1	0	456	C
1	0	460	U
1	0	461	A
1	0	463	C
1	0	467	U
1	0	469	G
1	0	486	U
1	0	487	G
1	0	491	A
1	0	492	G
1	0	515	A
1	0	518	A
1	0	519	C
1	0	523	A
1	0	537	C
1	0	539	A
1	0	541	C
1	0	542	A
1	0	553	C
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	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

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Mol	Chain	Res	Type
1	0	742	G
1	0	743	A
1	0	753	U
1	0	760	U
1	0	761	G
1	0	778	G
1	0	789	G
1	0	794	A
1	0	795	A
1	0	796	A
1	0	797	A
1	0	798	G
1	0	806	A
1	0	813	A
1	0	815	A
1	0	818	G
1	0	819	C
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	874	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	955	G
1	0	957	G
1	0	968	C
1	0	969	U
1	0	970	A
1	0	972	C
1	0	973	U
1	0	984	A
1	0	994	A

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Mol	Chain	Res	Type
1	0	996	C
1	0	1000	G
1	0	1005	U
1	0	1006	C
1	0	1022	A
1	0	1023	U
1	0	1024	G
1	0	1030	U
1	0	1032	A
1	0	1033	G
1	0	1036	G
1	0	1037	U
1	0	1044	U
1	0	1055	A
1	0	1056	U
1	0	1057	A
1	0	1059	A
1	0	1067	G
1	0	1073	G
1	0	1074	G
1	0	1081	A
1	0	1082	G
1	0	1087	C
1	0	1090	C
1	0	1099	A
1	0	1123	G
1	0	1137	A
1	0	1138	A
1	0	1142	G
1	0	1145	C
1	0	1146	G
1	0	1152	C
1	0	1155	G
1	0	1167	A
1	0	1182	U
1	0	1183	C
1	0	1185	C
1	0	1199	U
1	0	1200	G
1	0	1233	A
1	0	1250	A
1	0	1253	C

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Mol	Chain	Res	Type
1	0	1262	U
1	0	1264	C
1	0	1266	G
1	0	1267	A
1	0	1268	U
1	0	1269	G
1	0	1271	C
1	0	1278	A
1	0	1279	G
1	0	1284	G
1	0	1285	A
1	0	1288	A
1	0	1313	U
1	0	1314	A
1	0	1324	G
1	0	1327	C
1	0	1334	A
1	0	1338	G
1	0	1342	U
1	0	1343	C
1	0	1346	C
1	0	1355	A
1	0	1356	G
1	0	1359	G
1	0	1391	A
1	0	1392	U
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	1468	A
1	0	1469	U
1	0	1470	G
1	0	1475	U
1	0	1482	U
1	0	1490	U
1	0	1505	U
1	0	1508	G
1	0	1509	A
1	0	1513	U

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Mol	Chain	Res	Type
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	1583	A
1	0	1585	A
1	0	1618	U
1	0	1623	C
1	0	1624	A
1	0	1625	A
1	0	1626	A
1	0	1635	G
1	0	1648	C
1	0	1651	U
1	0	1652	G
1	0	1657	A
1	0	1664	G
1	0	1665	C
1	0	1671	A
1	0	1680	U
1	0	1681	A
1	0	1685	A
1	0	1686	A
1	0	1691	G
1	0	1712	G
1	0	1717	A
1	0	1724	C
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	1773	C
1	0	1775	A
1	0	1778	U
1	0	1793	A
1	0	1800	A
1	0	1801	C

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Mol	Chain	Res	Type
1	0	1802	A
1	0	1807	A
1	0	1808	C
1	0	1821	A
1	0	1831	G
1	0	1884	A
1	0	1889	G
1	0	1909	U
1	0	1920	A
1	0	1922	U
1	0	1924	C
1	0	1926	U
1	0	1927	U
1	0	1928	G
1	0	1938	U
1	0	1939	U
1	0	1949	A
1	0	1950	C
1	0	1953	A
1	0	1954	A
1	0	1955	G
1	0	1956	G
1	0	1964	A
1	0	1966	C
1	0	1976	U
1	0	1979	C
1	0	1980	A
1	0	2004	U
1	0	2015	G
1	0	2016	A
1	0	2019	C
1	0	2038	C
1	0	2044	G
1	0	2045	A
1	0	2047	C
1	0	2051	U
1	0	2052	G
1	0	2060	A
1	0	2063	A
1	0	2076	G
1	0	2082	C
1	0	2094	C

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Mol	Chain	Res	Type
1	0	2096	U
1	0	2118	A
1	0	2119	A
1	0	2140	G
1	0	2168	A
1	0	2181	A
1	0	2191	A
1	0	2192	U
1	0	2195	C
1	0	2199	C
1	0	2218	G
1	0	2229	G
1	0	2241	U
1	0	2245	A
1	0	2246	A
1	0	2247	A
1	0	2255	G
1	0	2262	C
1	0	2267	A
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	2306	A
1	0	2314	A
1	0	2316	G
1	0	2325	A
1	0	2326	C
1	0	2362	G
1	0	2364	C
1	0	2378	G
1	0	2385	U
1	0	2396	C
1	0	2403	C
1	0	2405	A
1	0	2406	C
1	0	2407	G

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Mol	Chain	Res	Type
1	0	2408	G
1	0	2409	A
1	0	2414	A
1	0	2415	G
1	0	2419	C
1	0	2420	C
1	0	2427	A
1	0	2428	U
1	0	2448	A
1	0	2455	A
1	0	2470	U
1	0	2471	U
1	0	2477	C
1	0	2481	G
1	0	2482	A
1	0	2483	U
1	0	2484	G
1	0	2485	U
1	0	2492	G
1	0	2499	C
1	0	2500	C
1	0	2504	G
1	0	2522	G
1	0	2545	A
1	0	2546	G
1	0	2549	G
1	0	2559	U
1	0	2560	G
1	0	2561	G
1	0	2564	U
1	0	2565	C
1	0	2578	G
1	0	2581	A
1	0	2582	G
1	0	2588	U
1	0	2589	C
1	0	2590	U
1	0	2591	C
1	0	2593	A
1	0	2594	U
1	0	2608	A
1	0	2609	G

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Mol	Chain	Res	Type
1	0	2625	U
1	0	2632	U
1	0	2633	A
1	0	2634	G
1	0	2661	G
1	0	2668	U
1	0	2670	C
1	0	2681	A
1	0	2692	A
1	0	2693	U
1	0	2700	U
1	0	2707	G
1	0	2712	G
1	0	2713	A
1	0	2728	A
1	0	2730	A
1	0	2732	C
1	0	2737	A
1	0	2745	A
1	0	2760	G
1	0	2761	A
1	0	2770	A
1	0	2771	C
1	0	2783	U
1	0	2784	A
1	0	2785	A
1	0	2795	A
1	0	2807	U
1	0	2808	U
1	0	2809	A
1	0	2811	G
1	0	2823	G
1	0	2841	U
1	0	2842	C
1	0	2847	G
1	0	2849	C
1	0	2854	G
1	0	2859	U
7	9	16	U
7	9	17	A
7	9	18	G
7	9	25	G

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Mol	Chain	Res	Type
7	9	27	A
7	9	47	A
7	9	54	U
7	9	55	C
7	9	59	A
7	9	65	A
7	9	84	G
7	9	112	A

All (19) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	0	173	A
1	0	192	G
1	0	583	C
1	0	805	G
1	0	1141	U
1	0	1249	G
1	0	1263	G
1	0	1313	U
1	0	1354	A
1	0	1634	A
1	0	1664	G
1	0	1685	A
1	0	1820	G
1	0	1938	U
1	0	2015	G
1	0	2093	G
1	0	2261	G
1	0	2377	U
1	0	2404	A

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

5 non-standard protein/DNA/RNA residues are 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
6	DBB	5	3	6	4,5,6	0.58	0	1,5,7	0.06	0
6	MHW	5	1	6	9,9,10	0.76	0	10,11,13	1.56	1 (10%)
6	004	5	7	6	9,10,11	1.69	2 (22%)	9,12,14	1.27	1 (11%)
6	MHU	5	5	6	14,15,16	1.14	1 (7%)	18,19,21	1.11	1 (5%)
6	MHV	5	6	6	7,9,10	0.67	0	7,11,13	1.68	2 (28%)

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
6	DBB	5	3	6	-	1/3/4/6	-
6	MHW	5	1	6	-	2/2/2/4	0/1/1/1
6	004	5	7	6	-	2/4/6/8	0/1/1/1
6	MHU	5	5	6	-	2/9/12/14	0/1/1/1
6	MHV	5	6	6	-	0/1/12/14	0/1/1/1

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	5	7	004	CB-CA	3.12	1.55	1.52
6	5	7	004	CG2-CB	-2.70	1.34	1.39
6	5	5	MHU	CZ1-NZ	-2.59	1.39	1.45

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	5	1	MHW	O-C-CA	-4.20	120.24	124.22
6	5	6	MHV	CE-CD2-CG	3.22	117.29	111.89
6	5	5	MHU	O-C-CA	-2.83	117.37	124.78
6	5	7	004	CG2-CB-CA	2.31	124.38	120.65
6	5	6	MHV	CB-CA-N	-2.02	108.33	112.50

There are no chirality outliers.

All (7) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	5	3	DBB	O-C-CA-CB
6	5	1	MHW	O-C-CA-N
6	5	1	MHW	O-C-CA-CB
6	5	5	MHU	N-CA-CB-CG
6	5	5	MHU	C-CA-CB-CG
6	5	7	004	C-CA-CB-CG1
6	5	7	004	C-CA-CB-CG2

There are no ring outliers.

2 monomers are involved in 5 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	5	3	DBB	5	0
6	5	1	MHW	1	0

## 5.5 Carbohydrates [i](#)

There are no carbohydrates 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	$\# Z  > 2$
33	DOL	0	2882	-	43,50,50	4.58	11 (25%)	51,70,70	3.94	18 (35%)

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
33	DOL	0	2882	-	2/2/14/20	20/58/77/77	0/2/3/3

All (11) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
33	0	2882	DOL	O40-S39	18.61	1.77	1.44
33	0	2882	DOL	O41-S39	18.41	1.76	1.44
33	0	2882	DOL	C28-C29	-8.71	1.11	1.32
33	0	2882	DOL	C1-C37	4.83	1.62	1.52
33	0	2882	DOL	C8-C6	-4.51	1.42	1.50
33	0	2882	DOL	C28-C26	4.51	1.57	1.48
33	0	2882	DOL	C30-C29	3.66	1.60	1.51
33	0	2882	DOL	C1-N5	3.56	1.50	1.46
33	0	2882	DOL	O36-C32	3.15	1.49	1.44
33	0	2882	DOL	C30-C32	2.73	1.61	1.54
33	0	2882	DOL	C22-C23	2.59	1.38	1.32

All (18) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
33	0	2882	DOL	C4-N5-C1	-14.71	94.37	112.45
33	0	2882	DOL	O18-C17-C16	13.82	145.78	109.73
33	0	2882	DOL	C28-C26-N25	-9.38	97.30	114.97
33	0	2882	DOL	O40-S39-O41	-7.23	109.95	118.19
33	0	2882	DOL	O27-C26-C28	6.58	138.02	123.03
33	0	2882	DOL	C23-C22-C20	-4.90	118.48	125.89
33	0	2882	DOL	O36-C32-C30	4.73	115.00	107.09
33	0	2882	DOL	C30-C29-C28	4.73	139.36	126.44
33	0	2882	DOL	C3-C4-N5	4.61	108.08	103.33
33	0	2882	DOL	C16-C17-C19	-3.78	103.99	111.10
33	0	2882	DOL	O15-C14-C13	-3.36	115.75	120.77
33	0	2882	DOL	O36-C32-C33	-3.08	101.99	107.31
33	0	2882	DOL	C4-N5-C6	-2.80	114.60	125.48
33	0	2882	DOL	O7-C6-N5	-2.78	117.08	121.59
33	0	2882	DOL	C3-C2-C1	-2.71	98.63	103.13
33	0	2882	DOL	C1-N5-C6	-2.32	112.43	120.88
33	0	2882	DOL	C31-C30-C32	-2.27	106.90	111.11
33	0	2882	DOL	C43-N44-C45	2.14	120.88	111.69

All (2) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
33	0	2882	DOL	C2
33	0	2882	DOL	C17

All (20) torsion outliers are listed below:

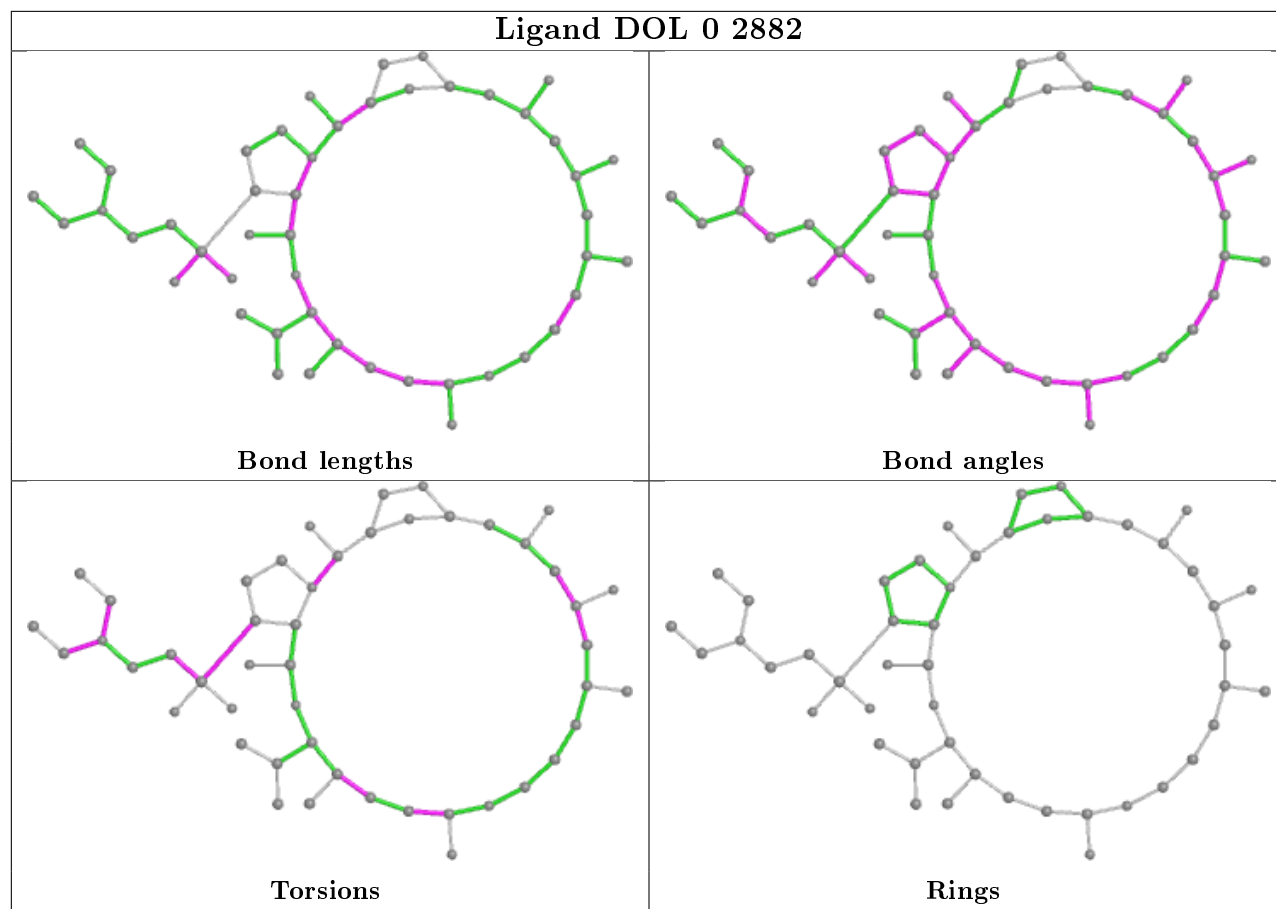
Mol	Chain	Res	Type	Atoms
33	0	2882	DOL	O7-C6-N5-C1
33	0	2882	DOL	C8-C6-N5-C1
33	0	2882	DOL	C1-C2-S39-O41
33	0	2882	DOL	C1-C2-S39-O40
33	0	2882	DOL	C1-C2-S39-C42
33	0	2882	DOL	C43-C42-S39-C2
33	0	2882	DOL	C43-C42-S39-O41
33	0	2882	DOL	C43-C42-S39-O40
33	0	2882	DOL	C14-C16-C17-C19
33	0	2882	DOL	N25-C26-C28-C29
33	0	2882	DOL	O27-C26-C28-C29
33	0	2882	DOL	C48-C47-N44-C43
33	0	2882	DOL	C3-C2-S39-O41
33	0	2882	DOL	C46-C45-N44-C47
33	0	2882	DOL	C3-C2-S39-O40
33	0	2882	DOL	C3-C2-S39-C42
33	0	2882	DOL	C28-C29-C30-C31
33	0	2882	DOL	O18-C17-C19-C20
33	0	2882	DOL	C8-C6-N5-C4
33	0	2882	DOL	O7-C6-N5-C4

There are no ring outliers.

1 monomer is involved in 16 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
33	0	2882	DOL	16	0

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



## 5.7 Other polymers [i](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

## 6 Fit of model and data ⓘ

### 6.1 Protein, DNA and RNA chains ⓘ

EDS was not executed - this section is therefore empty.

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

EDS was not executed - this section is therefore empty.

### 6.3 Carbohydrates ⓘ

EDS was not executed - this section is therefore empty.

### 6.4 Ligands ⓘ

EDS was not executed - this section is therefore empty.

### 6.5 Other polymers ⓘ

EDS was not executed - this section is therefore empty.