



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 5, 2026 – 05:09 PM UTC

PDB ID : 1NJM / pdb_00001njm
Title : The crystal structure of the 50S Large ribosomal subunit from *Deinococcus radiodurans* complexed with a tRNA acceptor stem mimic (ASM) and the antibiotic sparsomycin
Authors : Bashan, A.; Agmon, I.; Zarivatch, R.; Schlutzen, F.; Harms, J.M.; Berisio, R.; Bartels, H.; Hansen, H.A.; Yonath, A.
Deposited on : 2003-01-02
Resolution : 3.60 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	2022.3.0, CSD as543be (2022)
Xtrriage (Phenix)	:	NOT EXECUTED
EDS	:	NOT EXECUTED
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

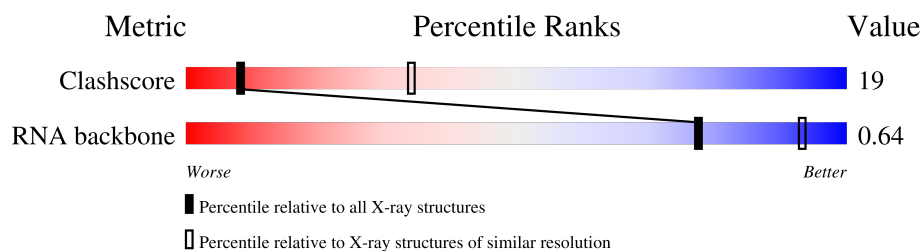
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.60 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
Clashscore	190562	1827 (3.70-3.50)
RNA backbone	3983	1014 (4.14-3.06)

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

Note EDS was not executed.

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

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
5	SPS	0	2881	X	X	-	-

2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 60271 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

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

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

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

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

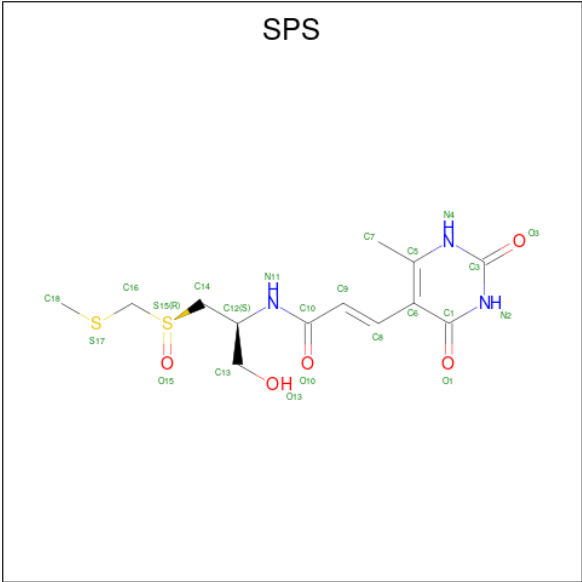
- Molecule 3 is a protein called 50S ribosomal protein L16.

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

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

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

- Molecule 5 is SPARSOMYCIN (CCD ID: SPS) (formula: C₁₃H₁₉N₃O₅S₂).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
5	0	1	Total	C	N	O	S	0	0
			22	13	3	4	2		



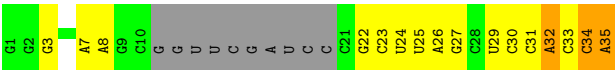
G1818	G1737	A1558	A1441	G1359	A1289	U1217	G1142	G1045	U878	C	U840	G778
U1819	G1742	G1659	C1442	U1365	A1290	C1218	A1143	U1046	A979	A911	G841	U779
A1820	C1743	A1510	C1443	U1366	G1291	C1219	U1144	G1047	G980	U916	A842	U780
C1822	G1744	C1661	C1444	A1366	A1292	G1220	C1145	C1053	C981	U917	G843	G781
	C1745	G1592	U1445	A1367	A1293	G1221	G1146	G1052	A984	U918	G844	U782
C1825	G1746	C1593	U1446	A1368	G1298	G1222	G1147	G1054	G985	U919	U845	G783
U1826	G1747	U1594	U1447	A1369	U1301	G1223	G1148	A1055	A986	G920	A846	U784
	U1748	A1595	A1448	A1370	U1307	A1224	G1149	U1056	G987	A921	C847	U785
C1829	G1749	A1596	U1449	G1371	U1308	G1225	G1150	A1057	G988	A922	U852	U786
C1830	A1750	C1597	G1450	U1372	U1309	G1226	U1151	A1057	G987	A922	G853	U787
G1831	U1750	G1598	G1451	G1373	U1307	A1226	U1151	A1057	G988	A922	G854	U788
	G1754	G1599	U1452	G1377	C1308	A1227	A1154	G1058	A991	U925	G855	G789
C1835	G1755	U1600	C1455	U1377	G1309		G1155	A1065	U926	U925	G856	G790
C1836	U1601	U1521	C1456	C1380	C1310	A1231	U1156	G1066	C927	C927	A856	G791
G1837	G1602	C1522	C1457	G1381	C1312	U1232	A1162	G1067	G928	G928	U857	U792
C1838	A1603	A1523	A1458	A1382	G1312	A1233	A1163	A1068	G929	G929	G858	U793
A1839	G1604	C1524	U1459	A1386	A1313	G1234	C1163	G1069	A930	A930	G794	A794
A1840	A1605			A1387	A1314	C1235	C1164	G1070	G931	G931	U860	A795
G1841	C1606	G1527		G1387	A1315	A1249	G1165		G932	G932	G861	A796
	A1607	C1528	A1463	C1388	G1316	A1242	A1166	G1073	G933	G933		A797
U1841	U1608	C1529	A1464	C1389	G1317	G1243	A1167	G1074	G934	G934	C864	G798
	G1609	U1530	G1465	G1390	A1318		G1168	G1075	C935	C935	A865	U799
C1850	A1610	C1531	G1466	A1391	C1319	G1248	C1169	U1076	C936	C936		U800
A1851	U1611	A1532	U1467	U1392	A1320	G1249	C1169		U868	U868	U868	C803
	G1612	G1533	A1468	G1393		A1250	U1172	A1081	C870	C870	C870	C804
G1855	G1613		U1469		G1323	G1251	G1173		G805	G805	G805	A806
U1856	C1614	U1539	G1470	A1397	G1324	C1252	U1177	A1084	U871	U871	U871	A807
C1857	C1615	C1540	G1471	G1398	U1325	C1253	G1178	G1085	G872	G872	G872	C808
G1858	G1616	C1541	C1472	C1399	U1326	G1254	A1179	G1086	A873	A873	A873	A874
C1859	G1617	G1543	U1473		C1327		A1180	G1087	G875	G875	G875	C809
A1860	U1618	A1544	A1474	G1402	C1328	U1257	A1181	A1088	U876	U876	U876	U810
G1861	A1619	G1545	U1475	U1403	U1329	G1258	U1182	C1089	G877	G877	G877	G811
C1862	C1620			G1407	G1330	A1259	G1183	C1090	C878	C878	C878	G812
	G1621	C1552	U1478	G1410	G1331	A1260	G1184	G1091	A879	A879	A879	A813
C1865	G1622	G1557	G1479	C1411	G1332	U1261	G1185	U1093	C880	C880	C880	G814
G1866	C1623	C1558	U1481		A1334	G1263	G1186		A815	A815	A815	A815
G1871	A1624		U1482	G1414		C1264	A1187	G1098	U816	U816	U816	U816
	U1695	A1561	A1486	C1415	G1337	G1265	A1188	A1099	G887	G887	G887	A817
G1880	A1626	G1562	C1487	C1416	G1338	G1266	G1189	U1022	G888	G888	G888	G818
U1881	C1627	G1566	G1488	C1417	U1339	A1267	C1190	G1023	C889	C889	C889	G819
C1882	G1628	G1567	U1489	C1418	C1340	U1268	G1191	G1024	U890	U890	U890	U820
A1883	C1629	A1567	C1490	G1419	G1341	G1269	A1192	A1025	A891	A891	A891	A821
C1884		A1568	U1490		U1342	C1270	G1193	U1026	G	G	G	G822
C1885	A1632		C1491	G1424	C1343	G1271	U1194	C1027	G	G	G	U823
G1886	C1633	G1571	A1492	U1424	C1344	G1272	G1195	G1028	G	G	G	U824
C1887	A1634	C1572	C1493	G1425	G1345	G1273	G1196	U1030	G	G	G	C825
C1888	G1635	G1573	G1494	U1426	G1346	C1274	C1197	A1032	C	C	C	U826
G1889	A1643	A1574	G1495	G1427	C1347	A1275	G1198	G1037	A	A	A	A832
A1890	G1644	C1575	G1496	G1428	C1348		U1199	U1038	G	G	G	A833
		G1576	C1497	A1429	G1349	A1278	A1129	G1033	U	U	U	A834
G1895	C1648	G1577	G1498	G1430	A1349	G1279	U1130	U1034	A	A	A	C829
A1896	U1728	U1578	A1499	U1431	G1350	U1280	G1131	G1035	C	C	C	C830
	C1651	G1579	U1500	G1432	G1352	A1281	G1132	G1036	C	C	C	G831
A1899	G1652	C1581	C1501	G1433	A1353		G1133	G1037	A	A	A	A832
U1900	A1653	C1582	G1502	U1434	A1354	G1284	G1205	U1038	G	G	G	A833
	A1654	A1582	G1503	G1435	A1355	A1285	A1137	A1039	C	C	C	A834
U1906	C1655	G1584	U1504	G1436	A1356	U1286	A1138	A1040	U	U	U	C972
C1907	A1657	G1585	U1505	A1437	U1357	A1287	A1139	G1041	U	U	U	U973
C1908							A1140		A	A	A	U974
U1909							C1214	U1141	C	C	C	C975

C2855	U	G2699	G2619	C2550	U2483	C2419	G2353	G2266	U2198	U	G2050	C1982
A2858	A	U2700	G2620	A2551	G2494	C2420	G2353	U2270	C2199	U	U2051	G1983
U2859	C2779	G2621	G2620	G2552	U2485	C2421		C2271	G2200	G	G2052	G1912
C2860	A2623	G2622	G2622	G2553	C2486	G2422	A2356	A2272	G2201			G1985
A2861	U2704	A2623	U2704	G2554	G2487	G2423	A2357	C2273				G1914
G2862	G2624	G2624	U2624	G2555	G2488	G2424	C2358	C2274	A2204	G2132	G2056	G1986
U2863	U2625	U2625				G2425		U2275	C2205	G2133	C2056	A1915
G2782	U2625	G2707		C2568	C2491	G2426	G2361	U2276	C2206	U2134	U2057	G1916
U2783	C2628	U2708	C2628	U2559	G2492	A2427	G2362	A2277		G2135	U2058	G1917
A2784	G2629	C2709	G2629	G2560	U2493	U2428	G2363	A2278	U2211	G2136	U2059	G1918
G2786	C2710	C2710		G2561	C2494	A2429	C2364	C2279	U2212	A2260	A1996	A1919
A2787	G2711	G2711	A2633	G2495	C2495	A2430	U2365	G2279	U2213	U2138	C2061	A1997
G2712	G2634	G2712	G2634	C2496	C2496	C2431	U2366		G2213	U2139	U2062	A1998
A2713	U2635	A2713	U2635	U2564	C2497	A2432	U2366	U2285	G2214	G2140	U2062	A1920
U2795	A2636	U2636	A2636	A2566	U2498	G2433	A2367	G2286		A	U2069	U1922
G2796	U2637	U2637			U2499	G2434	U2369	G2287	G	G	G2070	U1923
G2797	G2717	G2717	A2639	G2570	C2500	G2435	G2370	A2288	U2219	C	U2075	C2002
A2718	A2718		G2640	G2571	U2501	U2436	A2371	C2292	A2220	A	G2076	A2003
U2798			A2641	U2572	G2502	U2437	A2372	G2293	G2221	A	G2077	U2004
C2799			G2642	C2573	G2503	A2438	C2373		U2222	C	G2078	U2005
U2800		C2725	G2643	U2574	G2504	C2440		U2298	U2223	G	A2209	G2006
A2801		G2726	C2646	G2575	G2505		G2376		U2224	G	U2080	C2007
G2805		A2727		A2576			U2377	A2301	G2225	U	U2081	U2009
C2806		G2727	C2646	G2577	U2508	C2444	G2378	U2377	A2226	U	C2082	G2010
U2807		A2728	U2651	G2578	A2509	C2445	G2379	G2379	G2227	A	G2083	U2011
U2808		A2730	G2652	U2579	C2510	G2446	U2380	U2380	U2228	A	G2084	U2012
A2809		G2731		C2580	G2511	G2447	A2381	U2381		A	G2085	A2013
A2810		C2732	A2658	A2581	A2512	A2448	C2382	A2308	G2234	A	U2086	A2014
G2811			C2659	A2513	A2513	G2449	C2383	G2309	G2235	A	U2086	G2015
A2812			C2660	G2582	G2514	A2450	G2384	G2310	U2236	A	G2093	A2016
		C2735	C2660		G2515	G2451	U2385	U2312	G2236		C2094	U2017
U2736		U2736	U2661	C2585	U2516			G2313	C2237		C2095	A1949
A2737		A2737		G2586	C2517			G2314	U2238		C2157	G1950
			U2666	U2587				G2315	C2239		C2160	C2019
C2740		C2740	G2667	G2588	A2521	A2455	A2390	A2315	G2240		C2161	A1952
G2742		U2668	C2668	C2589	G2522	A2456	A2391	G2316	U2241		C2162	G2021
G2743		G2742	C2669	U2590	G2522	A2457	G2392	G2317	U2242		G	G2022
A2823		C2743		C2591	G2523	U2458	G2393	U2318	C2242		A	C2023
C2824		A2744		U2592	G2524	C2459	C2394	C2319	C2243		U	C2024
A2825		A2745		U2593	G2525	G2460	C2395	G2320	A2245		A	A2025
C2826			C2674	U2594	U2526	C2396	C2396	C2321	A2246		G2103	C2026
		C2754	U2675	C2595	U2526	C2397	A2397	C2322	A2247		U2171	C2027
A2755		A2755	G2676	G2596	G2527	G2463	U2397	U2322	A2247		G2106	C2028
A2756		G2757	U2677	C2597	G2528	G2464	U2398	U2323	A2248		G2107	G2029
U2757		U2678	C2678	G2598	G2529	G2465		U2324	A2249		U2177	G1962
G2832		G2679	C2679	C2599	G2600	G2466	A2401	G2324	G2250		U2178	C1963
C2833		U2758	U2680	U2599	U2531	A2467	U2402	G2330	G2251		C1110	A1964
U2681		A2681	A2681	A2600	G2532	C2468	C2403	C2326	G2251		C	C2033
C2681		C2681	C2682	G2601	U2533	G2469	A2404	U2327	U2180		U	C2034
U2836		G2760		C2602	G2603	U2470	A2405	G2328	C2255		U	G2035
G2837		A2761		C2603	G2603	U2471	C2406	C2329	G2256		G	G2036
		G2762		U2602	U2471	U2472	C2406	G2329	G2257		U	C2037
U2841			G2687	C2604	C2537	U2472	G2330	G2324	C2258		C	C2038
C2842		U2766	G2688	C2605	G2538	G2473	G2408	A2331	U2185		G	G2039
A2843		C2689	G2689	G2606	C2539	G2474	A2409	G2323	C2259		C	G2039
C2768		C2768	A2690	G2607	U2540	C2475	U2410	A2333	G2260		A2117	U1974
								A2333	G2260		A2118	G1975
G2847		C2769	C2691	A2608	A2544	A2476	G2411	C2334	G2261		A2119	G2043
A2948		A2770	A2692	G2609	U2544	A2477	A2412	C2343	U2192		U2121	G2044
		U2693	U2693	A2545	C2478	U2479	A2414	G2344	A2194		U2121	A2045
G2851		G2772	G2694	U2615	G2546	U2479	A2414	A2344	A2265		U	G2046
C2852		U2773	G2773	U2616	C2547	C2480	A2414	G2344	A2266		C	C2047
U2853		G2774	G2774	G2617	G2548	G2481	A2414	A2344	A2267		U	C2048
C2854		U2774		G2617	G2549	G2482	U2419	C2340	C2268		U	C2049
		U										

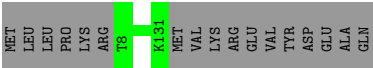
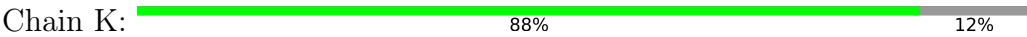
- Molecule 2: tRNA acceptor stem mimic

Chain 5:

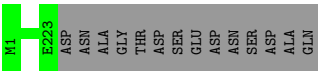




- Molecule 3: 50S ribosomal protein L16



- Molecule 4: GENERAL STRESS PROTEIN CTC



4 Data and refinement statistics

Xtriage (Phenix) and EDS were not executed - this section is therefore incomplete.

Property	Value	Source
Space group	I 2 2 2	Depositor
Cell constants a, b, c, α , β , γ	169.60 Å 409.40 Å 695.10 Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	15.00 – 3.60	Depositor
% Data completeness (in resolution range)	(Not available) (15.00-3.60)	Depositor
R_{merge}	(Not available)	Depositor
R_{sym}	0.17	Depositor
Refinement program	CNS	Depositor
R, R_{free}	0.284 , 0.308	Depositor
Estimated twinning fraction	No twinning to report.	Xtriage
Total number of atoms	60271	wwPDB-VP
Average B, all atoms (Å ²)	74.0	wwPDB-VP

5 Model quality

5.1 Standard geometry

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

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	0	0.25	0/66467	0.50	7/103673 (0.0%)
2	5	0.26	0/563	0.49	0/873
All	All	0.25	0/67030	0.50	7/104546 (0.0%)

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

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

There are no bond length outliers.

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	0	71	A	C2'-C3'-O3'	6.04	118.55	109.50
1	0	2426	G	C2'-C3'-O3'	6.02	118.54	109.50
1	0	192	G	C2'-C3'-O3'	5.84	118.25	109.50
1	0	242	A	C2'-C3'-O3'	5.76	118.14	109.50
1	0	583	C	C2'-C3'-O3'	5.61	117.91	109.50
1	0	198	A	C2'-C3'-O3'	5.25	117.37	109.50
1	0	173	A	C2'-C3'-O3'	5.19	117.28	109.50

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	0	873	U	Sidechain

5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	0	59359	0	29917	1733	0
2	5	543	0	290	17	0
3	K	124	0	0	0	0
4	T	223	0	0	0	0
5	0	22	0	19	0	0
All	All	60271	0	30226	1745	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 19.

All (1745) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:940:G:H3'	1:0:941:U:H5''	1.22	1.14
1:0:1141:U:H3	1:0:2008:C:H5''	1.20	1.05
1:0:1073:G:H2'	1:0:1074:G:H4'	1.40	1.00
1:0:2548:G:H2'	1:0:2549:G:H5''	1.44	1.00
1:0:2769:C:H2'	1:0:2867:G:H22	1.22	0.98
1:0:58:C:H3'	1:0:59:G:H5''	1.42	0.97
1:0:688:A:H62	1:0:816:U:H3	1.09	0.97
1:0:2668:U:H4'	1:0:2669:C:H5'	1.46	0.97
1:0:1252:C:H2'	1:0:1253:C:H5''	1.47	0.97
1:0:2636:A:H62	1:0:2643:G:H21	1.12	0.96
1:0:1086:C:H2'	1:0:1087:C:H5''	1.49	0.95
1:0:1182:U:H2'	1:0:1183:C:H5''	1.47	0.95
1:0:1496:G:H1	1:0:1527:G:H1	1.14	0.94
1:0:471:A:H62	1:0:480:G:H21	1.12	0.94
1:0:221:A:H62	1:0:231:G:H21	1.14	0.94
1:0:1572:C:H2'	1:0:1573:G:H5''	1.48	0.94
1:0:1747:G:H4'	1:0:1749:G:H1'	1.48	0.94
1:0:2579:A:H2'	1:0:2580:C:H5''	1.49	0.94
1:0:225:G:H3'	1:0:226:C:H5'	1.48	0.93
1:0:1953:A:H1'	1:0:1955:G:H1'	1.52	0.92
1:0:1312:G:H5''	1:0:1313:U:H5'	1.53	0.91
1:0:847:C:H41	1:0:955:G:H21	1.18	0.91

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:166:G:H21	1:0:184:A:H62	1.12	0.91
1:0:929:A:H3'	1:0:930:A:H5''	1.52	0.90
1:0:1223:G:H21	1:0:1225:G:H21	0.92	0.90
2:5:31:C:H3'	2:5:32:A:H5''	1.54	0.90
1:0:1199:U:H3'	1:0:1200:G:H5''	1.52	0.90
1:0:831:G:H21	1:0:1203:A:H62	1.17	0.89
1:0:1915:A:H62	1:0:1951:G:H21	1.19	0.89
1:0:789:G:H21	1:0:806:A:H62	1.14	0.89
1:0:1656:U:H2'	1:0:1657:A:H5''	1.56	0.88
1:0:104:C:H2'	1:0:105:G:H5''	1.56	0.88
1:0:2633:A:H4'	1:0:2634:G:H4'	1.56	0.87
1:0:2059:U:H5	1:0:2575:U:H3	1.23	0.87
1:0:367:G:H2'	1:0:368:A:H5''	1.55	0.87
1:0:403:A:H4'	1:0:425:A:H5'	1.57	0.86
1:0:128:C:H2'	1:0:129:A:H5''	1.58	0.86
1:0:1223:G:H21	1:0:1225:G:N2	1.74	0.86
1:0:1964:A:H3'	1:0:1965:U:H5'	1.60	0.84
1:0:1034:U:H1'	1:0:1133:G:H5''	1.59	0.84
1:0:2047:C:H42	1:0:2425:G:H1	1.24	0.83
1:0:1436:G:H1'	1:0:1508:G:H21	1.41	0.83
1:0:2607:C:H3'	1:0:2608:A:H5'	1.58	0.82
1:0:2794:G:H3'	1:0:2796:A:H62	1.43	0.82
1:0:109:A:H3'	1:0:110:U:H5''	1.61	0.81
1:0:2081:U:H2'	1:0:2082:C:H5''	1.62	0.81
1:0:2806:G:H1'	1:0:2858:A:H2'	1.63	0.81
1:0:2198:U:H3'	1:0:2199:C:H5''	1.62	0.81
1:0:88:G:H3'	1:0:89:A:H5''	1.61	0.81
1:0:940:G:H3'	1:0:941:U:C5'	2.09	0.81
1:0:26:G:H21	1:0:524:A:H62	1.25	0.81
1:0:2491:C:H2'	1:0:2492:G:H5''	1.63	0.81
1:0:2522:G:H21	1:0:2625:U:H5''	1.45	0.80
1:0:2700:U:H3	1:0:2848:A:N6	1.79	0.80
1:0:9:U:H3	1:0:2608:A:H62	1.29	0.80
1:0:2426:G:H5'	1:0:2480:C:H41	1.47	0.80
1:0:1223:G:N2	1:0:1225:G:H21	1.76	0.79
1:0:542:A:H2'	1:0:543:G:H5'	1.65	0.79
1:0:460:U:H3	1:0:592:G:H1'	1.46	0.79
1:0:1141:U:N3	1:0:2008:C:H5''	1.97	0.79
1:0:2769:C:H2'	1:0:2867:G:N2	1.97	0.79
1:0:2548:G:C2'	1:0:2549:G:H5''	2.10	0.79
1:0:918:A:H2'	1:0:919:U:H5''	1.64	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:176:A:H1'	1:0:2221:G:H21	1.48	0.78
1:0:2227:C:H2'	1:0:2228:U:H5'	1.66	0.78
1:0:2564:U:H5''	1:0:2565:C:H5'	1.65	0.78
2:5:3:G:H1	2:5:29:U:H3	1.32	0.78
1:0:1811:A:O2'	1:0:1812:U:H5''	1.83	0.78
1:0:70:A:O3'	1:0:71:A:H3'	1.84	0.78
1:0:689:A:H61	1:0:815:A:H61	1.30	0.77
1:0:26:G:N2	1:0:524:A:H62	1.83	0.77
1:0:1432:G:H21	1:0:1596:A:H62	1.28	0.77
1:0:1188:A:H62	1:0:1189:G:H21	1.31	0.77
1:0:59:G:H1'	1:0:73:A:N1	2.01	0.76
1:0:181:A:H5''	1:0:182:G:OP1	1.84	0.76
1:0:652:C:H42	1:0:657:A:H61	1.31	0.76
1:0:2261:G:H4'	1:0:2262:C:OP2	1.86	0.76
1:0:2770:A:H5'	1:0:2867:G:H22	1.50	0.76
1:0:2624:G:H4'	1:0:2712:G:H2'	1.69	0.75
1:0:2096:U:H2'	1:0:2097:A:H5''	1.69	0.75
1:0:688:A:N6	1:0:816:U:H3	1.85	0.75
1:0:2503:G:H3'	1:0:2504:G:H5''	1.69	0.74
1:0:2700:U:H3	1:0:2848:A:H62	1.35	0.74
1:0:616:U:H2'	1:0:617:U:H5''	1.69	0.74
1:0:1252:C:C2'	1:0:1253:C:H5''	2.18	0.74
1:0:1473:U:H4'	1:0:1474:A:C8	2.23	0.73
1:0:218:A:O2'	1:0:219:G:H4'	1.87	0.73
1:0:67:G:N2	1:0:72:A:H2'	2.04	0.73
1:0:1182:U:C2'	1:0:1183:C:H5''	2.17	0.73
1:0:109:A:C3'	1:0:110:U:H5''	2.19	0.72
1:0:2241:U:H1'	1:0:2307:A:H1'	1.70	0.72
1:0:471:A:H62	1:0:480:G:N2	1.86	0.72
1:0:1882:G:H21	1:0:1885:C:N4	1.86	0.72
1:0:1572:C:C2'	1:0:1573:G:H5''	2.18	0.72
1:0:878:C:H42	1:0:921:A:H62	1.36	0.72
1:0:1021:A:H1'	1:0:1164:C:H1'	1.71	0.72
1:0:2721:A:H62	1:0:2743:G:H21	1.37	0.72
1:0:1199:U:H3'	1:0:1200:G:C5'	2.20	0.72
1:0:202:A:H2'	1:0:203:G:O4'	1.88	0.71
1:0:795:A:H4'	1:0:796:A:N7	2.04	0.71
1:0:1908:C:H2'	1:0:1909:U:H4'	1.72	0.71
1:0:1479:G:N2	1:0:1543:G:H21	1.87	0.71
1:0:1528:C:H2'	1:0:1529:C:H5''	1.71	0.71
1:0:1196:G:H2'	1:0:1197:U:O4'	1.91	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2691:C:H3'	1:0:2692:A:H5''	1.73	0.71
1:0:58:C:H3'	1:0:59:G:C5'	2.19	0.71
1:0:2503:G:C3'	1:0:2504:G:H5''	2.21	0.71
1:0:33:C:H42	1:0:466:A:H61	1.38	0.71
1:0:1001:A:H62	1:0:1200:G:H1'	1.55	0.71
1:0:1807:A:O2'	1:0:1808:C:H4'	1.90	0.71
1:0:65:C:H2'	1:0:66:U:H5'	1.73	0.71
1:0:319:G:H21	1:0:340:G:H21	1.39	0.71
1:0:1047:G:H1	1:0:1130:U:H3	1.37	0.71
1:0:1923:U:H4'	1:0:1948:C:H41	1.55	0.71
1:0:2380:U:H2'	1:0:2381:A:H5'	1.72	0.71
1:0:515:A:H2'	1:0:516:G:H5'	1.72	0.70
1:0:1373:G:H22	1:0:2192:U:H3	1.37	0.70
1:0:514:G:N3	1:0:514:G:H2'	2.06	0.70
1:0:1139:A:H1'	1:0:2496:C:H5'	1.72	0.70
1:0:1621:C:H4'	1:0:1626:A:H61	1.56	0.70
1:0:1809:G:H2'	1:0:1810:U:O4'	1.91	0.70
1:0:181:A:H4'	1:0:182:G:H4'	1.74	0.70
1:0:1529:C:H2'	1:0:1530:U:O4'	1.92	0.70
1:0:2759:U:H4'	1:0:2760:G:OP2	1.90	0.70
1:0:1023:U:H1'	1:0:1154:A:N7	2.06	0.69
1:0:2522:G:N2	1:0:2625:U:H5''	2.06	0.69
1:0:2510:A:H61	1:0:2641:A:H61	1.40	0.69
1:0:2510:A:H61	1:0:2641:A:N6	1.90	0.69
1:0:2808:U:H3'	1:0:2809:A:H5'	1.74	0.69
1:0:800:U:H3'	1:0:804:C:N4	2.08	0.69
1:0:951:G:H2'	1:0:952:A:H5''	1.73	0.69
1:0:1838:G:H2'	1:0:1839:A:H5'	1.75	0.69
1:0:65:C:C2'	1:0:66:U:H5'	2.23	0.69
1:0:2727:G:H1	1:0:2735:C:H5''	1.58	0.68
1:0:1188:A:N6	1:0:1189:G:H21	1.90	0.68
1:0:584:A:H4'	1:0:2479:U:H5'	1.74	0.68
1:0:653:G:H2'	1:0:654:A:H4'	1.75	0.68
1:0:2607:C:H1'	1:0:2761:A:H2'	1.76	0.68
1:0:1978:U:H3'	1:0:1979:C:H5''	1.74	0.68
1:0:576:A:H2	1:0:580:A:H62	1.42	0.68
1:0:1955:G:H2'	1:0:1956:G:H5'	1.75	0.68
1:0:941:U:H2'	1:0:942:U:O4'	1.94	0.68
1:0:1791:C:O2'	1:0:1793:A:H5'	1.94	0.67
1:0:2095:G:H2'	1:0:2096:U:H5''	1.74	0.67
1:0:2495:G:H2'	1:0:2496:C:C6	2.30	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:583:C:N3	1:0:2016:A:H4'	2.09	0.67
1:0:2491:C:C2'	1:0:2492:G:H5''	2.24	0.67
1:0:367:G:C2'	1:0:368:A:H5''	2.24	0.67
1:0:813:A:O2'	1:0:815:A:H5'	1.94	0.67
1:0:1181:C:H2'	1:0:1182:U:H5''	1.76	0.67
1:0:588:G:H4'	1:0:2001:G:H5''	1.77	0.67
1:0:1749:G:O6	1:0:2674:C:H4'	1.94	0.67
1:0:1915:A:H62	1:0:1951:G:N2	1.91	0.67
1:0:1953:A:H1'	1:0:1955:G:C1'	2.21	0.67
1:0:2680:U:H3'	1:0:2681:A:H5'	1.76	0.67
1:0:2768:C:H2'	1:0:2769:C:O4'	1.94	0.67
1:0:1086:C:C2'	1:0:1087:C:H5''	2.23	0.67
1:0:1500:U:H3	1:0:1520:G:H22	1.43	0.67
1:0:225:G:H3'	1:0:226:C:C5'	2.25	0.66
1:0:1191:G:H2'	1:0:1192:A:H8	1.60	0.66
1:0:73:A:H4'	1:0:74:G:C1'	2.24	0.66
1:0:1474:A:H2'	1:0:1475:U:H5'	1.77	0.66
1:0:1685:A:H1'	1:0:1686:A:C5	2.30	0.66
1:0:69:G:H4'	1:0:70:A:O5'	1.94	0.66
1:0:665:A:H3'	1:0:666:U:H5''	1.77	0.66
1:0:805:G:H5''	1:0:806:A:O5'	1.95	0.66
1:0:1746:A:H2'	1:0:1747:G:H5'	1.77	0.66
1:0:1923:U:H4'	1:0:1948:C:N4	2.11	0.66
1:0:45:C:H5''	1:0:192:G:N7	2.10	0.66
1:0:1774:A:H1'	1:0:2586:G:H21	1.61	0.66
1:0:66:U:H2'	1:0:67:G:N7	2.11	0.66
1:0:538:A:H2'	1:0:539:A:H5''	1.77	0.66
1:0:1487:C:H2'	1:0:1488:G:H8	1.60	0.66
1:0:652:C:H42	1:0:657:A:N6	1.94	0.66
1:0:1312:G:H5'	1:0:1314:A:H1'	1.76	0.66
1:0:1352:G:H2'	1:0:1353:A:H8	1.60	0.66
1:0:1686:A:N3	1:0:1686:A:H2'	2.10	0.66
1:0:651:C:H2'	1:0:652:C:H5''	1.77	0.65
1:0:805:G:H4'	1:0:806:A:OP2	1.96	0.65
1:0:1033:G:H22	1:0:1150:C:H2'	1.61	0.65
1:0:1188:A:H62	1:0:1189:G:N2	1.93	0.65
1:0:2324:G:H4'	1:0:2326:C:H5''	1.79	0.65
1:0:1888:C:H5''	1:0:1889:G:H5''	1.79	0.65
1:0:777:A:N6	1:0:1766:U:H3	1.93	0.65
1:0:1900:U:O2'	1:0:1946:U:H5'	1.96	0.65
1:0:175:C:H1'	1:0:2413:A:H61	1.62	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1679:U:C3'	1:0:1680:U:H5''	2.27	0.65
1:0:1679:U:H3'	1:0:1680:U:H5''	1.76	0.65
1:0:2499:C:H41	1:0:2521:A:H2	1.42	0.65
1:0:13:A:H1'	1:0:536:A:N6	2.12	0.65
1:0:727:U:H2'	1:0:728:G:H5''	1.79	0.65
1:0:1195:U:H2'	1:0:1196:G:C8	2.32	0.65
1:0:1938:U:O2'	1:0:1939:U:OP1	2.13	0.65
1:0:2822:U:H2'	1:0:2823:G:O4'	1.97	0.65
1:0:236:C:H1'	1:0:632:A:O2'	1.96	0.65
1:0:104:C:C2'	1:0:105:G:H5''	2.27	0.64
1:0:2312:A:H4'	1:0:2313:G:N7	2.12	0.64
1:0:317:U:H2'	1:0:318:G:H5''	1.78	0.64
1:0:1427:G:H2'	1:0:1428:G:H5'	1.80	0.64
1:0:2198:U:C3'	1:0:2199:C:H5''	2.28	0.64
1:0:2236:U:C3'	1:0:2237:C:H5''	2.27	0.64
1:0:2426:G:H22	1:0:2430:A:H62	1.45	0.64
1:0:2236:U:H2'	1:0:2237:C:H5''	1.77	0.64
1:0:1341:G:H22	1:0:1664:G:H1	1.46	0.64
1:0:2245:A:H4'	1:0:2246:A:C8	2.32	0.64
1:0:2404:A:O2'	1:0:2405:A:OP2	2.15	0.64
1:0:83:A:H4'	1:0:84:G:O4'	1.97	0.64
1:0:1194:U:H2'	1:0:1195:U:C6	2.32	0.64
1:0:2690:A:OP2	1:0:2694:G:H5'	1.97	0.64
1:0:614:G:H2'	1:0:615:C:C6	2.32	0.64
1:0:571:U:H2'	1:0:581:A:H1'	1.79	0.64
1:0:2080:U:H2'	1:0:2081:U:C6	2.33	0.64
1:0:1517:C:H2'	1:0:1518:C:C6	2.32	0.64
1:0:1807:A:H5'	1:0:1809:G:C1'	2.28	0.64
1:0:1580:C:H2'	1:0:1581:C:C6	2.32	0.63
1:0:73:A:H4'	1:0:74:G:H1'	1.80	0.63
1:0:974:U:H1'	1:0:2229:G:H21	1.60	0.63
2:5:29:U:H2'	2:5:30:C:C6	2.33	0.63
1:0:927:C:H2'	1:0:928:G:O4'	1.98	0.63
1:0:1250:A:O2'	1:0:1251:G:H4'	1.98	0.63
1:0:1715:A:H1'	1:0:1717:A:O4'	1.99	0.63
1:0:952:A:O2'	1:0:1204:G:H4'	1.98	0.63
1:0:55:A:H2'	1:0:56:C:C6	2.34	0.63
1:0:128:C:C2'	1:0:129:A:H5''	2.27	0.63
1:0:653:G:N2	1:0:655:A:H1'	2.14	0.63
1:0:1428:G:H5''	1:0:1429:A:H5'	1.79	0.63
1:0:221:A:H62	1:0:231:G:N2	1.91	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2261:G:H5''	1:0:2262:C:O5'	1.98	0.63
1:0:167:A:H62	1:0:183:U:H3	1.47	0.63
1:0:998:C:H2'	1:0:999:A:O4'	1.98	0.62
1:0:2570:C:H2'	1:0:2571:G:C8	2.34	0.62
1:0:1181:C:C3'	1:0:1182:U:H5''	2.29	0.62
1:0:2508:G:H5''	1:0:2509:A:H5''	1.82	0.62
1:0:2636:A:H62	1:0:2643:G:N2	1.90	0.62
1:0:2422:C:H2'	1:0:2423:G:H8	1.64	0.62
1:0:2617:G:H22	1:0:2755:A:H2'	1.65	0.62
1:0:439:C:H2'	1:0:440:U:O4'	1.99	0.62
1:0:542:A:C2'	1:0:543:G:H5'	2.29	0.62
1:0:1085:G:H2'	1:0:1086:C:C6	2.35	0.62
1:0:2015:G:O2'	1:0:2016:A:OP1	2.12	0.62
1:0:2381:A:H4'	1:0:2382:C:C5	2.34	0.62
1:0:323:G:H5'	1:0:342:G:C6	2.35	0.62
1:0:831:G:H21	1:0:1203:A:N6	1.94	0.62
1:0:1354:A:H62	1:0:1407:G:H22	1.47	0.62
1:0:2755:A:O2'	1:0:2756:A:H5'	2.00	0.62
1:0:121:G:O2'	1:0:1389:C:H4'	2.00	0.62
1:0:362:C:H2'	1:0:363:G:H4'	1.81	0.62
1:0:852:U:H3	1:0:950:G:H1	1.47	0.62
1:0:942:U:H2'	1:0:943:U:O4'	2.00	0.62
1:0:2440:C:H1'	1:0:2471:U:H3	1.64	0.62
1:0:73:A:H3'	1:0:73:A:N3	2.14	0.62
1:0:414:A:H2'	1:0:415:A:O4'	1.99	0.62
1:0:2035:G:H2'	1:0:2036:G:H8	1.64	0.62
1:0:2721:A:H62	1:0:2743:G:N2	1.98	0.62
1:0:858:G:H5''	1:0:859:U:H5'	1.80	0.62
1:0:1807:A:H5'	1:0:1809:G:O4'	2.00	0.62
1:0:2268:G:H22	1:0:2323:U:H4'	1.65	0.62
1:0:1656:U:C2'	1:0:1657:A:H5''	2.29	0.62
1:0:2246:A:H2'	1:0:2246:A:N3	2.15	0.62
1:0:2472:U:H5''	2:5:33:C:O2'	2.00	0.62
1:0:81:C:H2'	1:0:82:G:O4'	2.00	0.61
1:0:878:C:H42	1:0:921:A:N6	1.97	0.61
1:0:814:G:H3'	1:0:815:A:H5'	1.82	0.61
1:0:940:G:C3'	1:0:941:U:H5''	2.14	0.61
1:0:974:U:H1'	1:0:2229:G:N2	2.15	0.61
1:0:1333:G:N2	1:0:1344:C:H41	1.96	0.61
1:0:1455:C:O2'	1:0:1644:G:H5''	2.00	0.61
1:0:2418:A:H4'	1:0:2420:C:OP2	1.99	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2769:C:H2'	1:0:2770:A:H5'	1.83	0.61
1:0:860:U:C2'	1:0:861:G:H5'	2.31	0.61
1:0:1323:G:H2'	1:0:1324:G:H4'	1.82	0.61
1:0:669:G:H2'	1:0:670:U:C6	2.36	0.61
1:0:871:U:H1'	1:0:2248:A:H5''	1.83	0.61
1:0:1976:U:H2'	1:0:1977:C:H5'	1.82	0.61
1:0:1198:C:H5''	1:0:1199:U:H5''	1.82	0.61
1:0:1286:U:H5''	1:0:1663:C:H42	1.65	0.61
1:0:181:A:H4'	1:0:182:G:C5'	2.30	0.61
1:0:742:G:H2'	1:0:742:G:N3	2.14	0.61
1:0:1426:U:H2'	1:0:1427:G:O4'	2.00	0.61
1:0:2045:A:H4'	1:0:2421:C:OP2	2.01	0.61
1:0:455:A:H4'	1:0:1214:C:O2'	2.00	0.61
1:0:800:U:H3'	1:0:804:C:H41	1.65	0.61
1:0:1380:C:H2'	1:0:1381:G:H5'	1.81	0.61
1:0:1188:A:H2'	1:0:1189:G:O4'	2.01	0.61
1:0:2223:U:H2'	1:0:2224:U:O4'	2.00	0.61
1:0:2549:G:H2'	1:0:2550:C:O4'	2.01	0.61
1:0:1871:G:H2'	1:0:1871:G:N3	2.16	0.61
1:0:2185:U:H2'	1:0:2186:G:C8	2.36	0.61
1:0:2357:A:H2'	1:0:2358:C:O4'	2.01	0.61
1:0:2544:A:H2'	1:0:2545:A:H4'	1.83	0.61
1:0:1713:G:H2'	1:0:1714:A:O4'	2.00	0.60
1:0:2012:A:N7	1:0:2014:A:H5'	2.16	0.60
1:0:2242:C:N4	1:0:2257:A:H61	1.99	0.60
1:0:2426:G:O2'	1:0:2427:A:OP2	2.19	0.60
1:0:2727:G:O2'	1:0:2728:A:H5''	2.02	0.60
1:0:1066:G:H2'	1:0:1067:G:H4'	1.84	0.60
1:0:2238:G:H2'	1:0:2239:C:C6	2.37	0.60
1:0:1458:A:H3'	1:0:1459:U:C5'	2.32	0.60
1:0:2322:U:O2'	1:0:2323:U:H5'	2.00	0.60
1:0:471:A:N6	1:0:480:G:H21	1.93	0.60
1:0:2058:U:H5'	1:0:2576:G:H1'	1.83	0.60
1:0:2858:A:H3'	1:0:2859:U:H5'	1.84	0.60
1:0:1625:A:H2'	1:0:1625:A:N3	2.16	0.60
1:0:2009:U:H3	1:0:2020:G:H1	1.50	0.60
1:0:2402:U:H5'	1:0:2404:A:C5	2.37	0.60
1:0:191:G:O2'	1:0:192:G:H5'	2.02	0.60
1:0:192:G:O2'	1:0:193:A:OP2	2.18	0.60
1:0:1073:G:C2'	1:0:1074:G:H4'	2.26	0.60
1:0:1289:A:O2'	1:0:1290:A:H5'	2.02	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:357:A:H2'	1:0:358:C:H5'	1.84	0.59
1:0:1088:A:H2'	1:0:1089:C:O4'	2.02	0.59
1:0:2377:U:H2'	1:0:2378:G:C8	2.37	0.59
1:0:2759:U:H5''	1:0:2760:G:O5'	2.02	0.59
1:0:653:G:H4'	1:0:2328:G:H4'	1.83	0.59
1:0:1260:A:N6	1:0:1262:U:H1'	2.17	0.59
1:0:1298:G:N2	1:0:1341:G:H5''	2.17	0.59
1:0:2426:G:C5'	1:0:2480:C:H41	2.14	0.59
1:0:2491:C:C3'	1:0:2492:G:H5''	2.32	0.59
1:0:2604:G:H2'	1:0:2605:C:C6	2.37	0.59
1:0:69:G:H5''	1:0:70:A:OP1	2.02	0.59
1:0:2081:U:C2'	1:0:2082:C:H5''	2.32	0.59
1:0:2243:C:H2'	1:0:2244:C:O4'	2.02	0.59
1:0:1811:A:H1'	1:0:1813:A:C5	2.37	0.59
1:0:2770:A:H5'	1:0:2867:G:N2	2.17	0.59
1:0:412:U:H2'	1:0:413:G:O4'	2.03	0.59
1:0:804:C:O2'	1:0:806:A:H4'	2.03	0.59
1:0:824:U:O2'	1:0:1264:C:H1'	2.02	0.59
1:0:1140:A:H61	1:0:2470:U:H6	1.50	0.59
1:0:1634:A:O2'	1:0:1635:G:OP1	2.16	0.59
1:0:1683:G:H2'	1:0:1684:G:O4'	2.03	0.59
1:0:2260:C:H4'	1:0:2368:G:H21	1.67	0.59
1:0:1747:G:H1'	1:0:1749:G:N3	2.18	0.59
1:0:2368:G:H5''	1:0:2369:U:O4'	2.02	0.59
1:0:366:U:H2'	1:0:367:G:H8	1.67	0.59
1:0:2547:C:H2'	1:0:2548:G:H8	1.68	0.59
1:0:368:A:H2'	1:0:369:C:O4'	2.03	0.59
1:0:459:A:H1'	1:0:466:A:N7	2.17	0.59
1:0:1474:A:H3'	1:0:1474:A:N3	2.18	0.59
1:0:2205:C:H2'	1:0:2206:C:C6	2.38	0.59
1:0:1354:A:H62	1:0:1407:G:N2	2.01	0.59
1:0:513:A:H4'	1:0:515:A:H5'	1.83	0.59
1:0:552:C:H2'	1:0:553:C:H4'	1.85	0.59
1:0:973:U:H2'	1:0:974:U:C6	2.37	0.59
1:0:1472:C:H2'	1:0:1473:U:H5'	1.84	0.59
1:0:17:G:H21	1:0:564:U:H5''	1.66	0.58
1:0:242:A:O2'	1:0:243:G:P	2.61	0.58
1:0:665:A:H3'	1:0:666:U:C5'	2.33	0.58
1:0:2236:U:C2'	1:0:2237:C:H5''	2.33	0.58
1:0:1181:C:C2'	1:0:1182:U:H5''	2.33	0.58
1:0:1528:C:C2'	1:0:1529:C:H5''	2.33	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1664:G:O5'	1:0:1665:C:OP1	2.21	0.58
1:0:1918:G:H4'	1:0:1920:A:N3	2.18	0.58
1:0:1926:U:O2'	1:0:1928:G:H5'	2.03	0.58
1:0:1354:A:O2'	1:0:1355:A:OP1	2.19	0.58
1:0:1730:G:H2'	1:0:1731:C:C6	2.38	0.58
1:0:2426:G:O6	1:0:2479:U:H2'	2.02	0.58
1:0:242:A:O2'	1:0:243:G:O4'	2.21	0.58
1:0:689:A:H2'	1:0:690:A:H5'	1.84	0.58
1:0:1567:A:H2'	1:0:1568:A:O4'	2.04	0.58
1:0:1994:U:H2'	1:0:1995:G:O4'	2.04	0.58
1:0:2547:C:H2'	1:0:2548:G:C8	2.38	0.58
1:0:874:A:H62	1:0:928:G:H21	1.51	0.58
1:0:931:G:N2	1:0:2247:A:H5''	2.18	0.58
1:0:1251:G:H2'	1:0:1252:C:C6	2.38	0.58
1:0:404:A:H5'	1:0:425:A:H4'	1.85	0.58
1:0:984:A:H2'	1:0:1200:G:H22	1.68	0.58
1:0:1474:A:C2'	1:0:1475:U:H5'	2.33	0.58
1:0:2677:U:H2'	1:0:2678:C:C6	2.39	0.58
1:0:605:G:H4'	1:0:949:G:O2'	2.03	0.58
1:0:929:A:H2'	1:0:930:A:H4'	1.85	0.58
1:0:1180:A:H2'	1:0:1181:C:C6	2.39	0.58
1:0:2422:C:H2'	1:0:2423:G:C8	2.39	0.58
1:0:2579:A:C2'	1:0:2580:C:H5''	2.27	0.58
1:0:839:U:H2'	1:0:841:G:O4'	2.03	0.58
1:0:2607:C:H3'	1:0:2608:A:C5'	2.31	0.58
1:0:490:A:O2'	1:0:491:A:H5'	2.03	0.58
1:0:521:U:H4'	1:0:1248:G:O2'	2.04	0.58
1:0:628:A:H2'	1:0:629:C:C6	2.39	0.58
1:0:632:A:H2'	1:0:633:G:H5'	1.85	0.58
1:0:766:A:H2'	1:0:767:G:C8	2.38	0.58
1:0:1301:U:H3	1:0:1339:U:H3	1.51	0.58
1:0:1779:C:H2'	1:0:1780:A:O4'	2.04	0.58
1:0:2274:C:H2'	1:0:2275:U:H5'	1.86	0.58
1:0:2691:C:H3'	1:0:2692:A:C5'	2.33	0.58
1:0:118:U:H1'	1:0:143:A:C8	2.39	0.57
1:0:1615:C:H2'	1:0:1616:C:C6	2.39	0.57
1:0:67:G:H22	1:0:72:A:H2'	1.68	0.57
1:0:1712:G:H2'	1:0:1713:G:O4'	2.03	0.57
1:0:1916:G:H2'	1:0:1917:C:C6	2.39	0.57
1:0:2560:G:H4'	1:0:2561:G:N7	2.18	0.57
1:0:2579:A:H2'	1:0:2580:C:C5'	2.30	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2222:U:H2'	1:0:2223:U:C6	2.38	0.57
1:0:2794:G:H2'	1:0:2796:A:N7	2.20	0.57
1:0:873:U:P	1:0:928:G:H1	2.27	0.57
1:0:925:U:H4'	1:0:926:C:C5	2.40	0.57
1:0:1392:U:H2'	1:0:1393:G:H5'	1.87	0.57
1:0:2784:A:H3'	1:0:2785:A:H8	1.70	0.57
1:0:1514:C:H2'	1:0:1515:U:O4'	2.04	0.57
1:0:2236:U:H3'	1:0:2237:C:H5''	1.85	0.57
1:0:541:C:H2'	1:0:2002:A:N1	2.20	0.57
1:0:1223:G:O2'	1:0:1224:A:OP2	2.21	0.57
1:0:2581:A:H2'	1:0:2582:G:C5'	2.34	0.57
1:0:618:A:H2'	1:0:619:A:O4'	2.05	0.57
1:0:1971:C:H2'	1:0:1972:G:H8	1.70	0.57
1:0:587:A:H2'	1:0:588:G:H5''	1.87	0.57
1:0:1137:A:H5''	1:0:1138:A:H5''	1.86	0.57
1:0:1464:A:H4'	1:0:1545:G:H4'	1.86	0.57
1:0:2437:G:H2'	1:0:2469:G:N2	2.20	0.57
1:0:319:G:H21	1:0:340:G:N2	2.03	0.57
1:0:1200:G:OP1	1:0:1200:G:O4'	2.22	0.57
1:0:687:G:O2'	1:0:688:A:H5'	2.04	0.57
1:0:1087:C:H2'	1:0:1088:A:O4'	2.05	0.57
1:0:1472:C:C2'	1:0:1473:U:H5'	2.34	0.57
1:0:1947:G:H3'	1:0:1947:G:OP1	2.04	0.57
1:0:1220:G:H2'	1:0:1221:C:C6	2.40	0.56
1:0:2242:C:H42	1:0:2257:A:N6	2.03	0.56
1:0:2459:C:H2'	1:0:2460:G:H5'	1.87	0.56
1:0:73:A:H4'	1:0:74:G:O4'	2.05	0.56
1:0:1431:U:H2'	1:0:1432:G:O4'	2.06	0.56
1:0:2329:C:H2'	1:0:2330:G:H5'	1.87	0.56
1:0:2559:U:H2'	1:0:2560:G:H5'	1.88	0.56
1:0:217:U:H5'	1:0:633:G:O2'	2.06	0.56
1:0:369:C:H2'	1:0:370:U:O4'	2.05	0.56
1:0:533:C:H2'	1:0:534:U:O4'	2.05	0.56
1:0:874:A:N6	1:0:928:G:H21	2.03	0.56
1:0:1981:A:H4'	1:0:2704:U:O2'	2.05	0.56
1:0:2841:U:O2	1:0:2843:A:H1'	2.05	0.56
1:0:2494:C:H2'	1:0:2495:G:C8	2.40	0.56
1:0:2581:A:H2'	1:0:2582:G:H5''	1.86	0.56
1:0:2636:A:N6	1:0:2643:G:H21	1.93	0.56
1:0:197:G:N2	1:0:440:U:H2'	2.21	0.56
1:0:804:C:O2	1:0:807:A:H5'	2.05	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1280:U:O2'	1:0:1281:A:H5'	2.06	0.56
1:0:176:A:H5''	1:0:177:U:H5	1.71	0.56
1:0:197:G:H22	1:0:440:U:H2'	1.70	0.56
1:0:2437:G:N2	1:0:2469:G:H2'	2.21	0.56
1:0:2552:C:H42	2:5:35:PPU:P	2.28	0.56
1:0:2564:U:C5'	1:0:2565:C:H5'	2.34	0.56
1:0:2641:A:H2'	1:0:2642:G:O4'	2.06	0.56
1:0:2668:U:C4'	1:0:2669:C:H5'	2.29	0.56
1:0:103:U:H2'	1:0:104:C:C6	2.40	0.56
1:0:784:U:H2'	1:0:785:U:C6	2.41	0.56
1:0:876:A:H2'	1:0:877:G:C8	2.41	0.56
1:0:758:G:O2'	1:0:761:G:H1'	2.06	0.56
1:0:843:G:O2'	1:0:844:G:OP1	2.15	0.56
1:0:930:A:H4'	1:0:930:A:OP1	2.03	0.56
1:0:2492:G:H2'	1:0:2493:U:O4'	2.05	0.56
1:0:1191:G:H2'	1:0:1192:A:C8	2.40	0.56
1:0:1356:G:H1'	1:0:1613:G:C2	2.40	0.56
1:0:366:U:H2'	1:0:367:G:C8	2.41	0.55
1:0:1337:G:H1'	1:0:1632:A:N6	2.21	0.55
1:0:1813:A:H2'	1:0:1814:G:C8	2.41	0.55
1:0:1923:U:H1'	1:0:1947:G:H4'	1.88	0.55
1:0:2018:G:H3'	1:0:2019:C:C5'	2.36	0.55
1:0:2270:U:H2'	1:0:2271:C:C6	2.42	0.55
1:0:2381:A:H4'	1:0:2382:C:H5	1.69	0.55
1:0:1258:G:H2'	1:0:1259:A:C8	2.42	0.55
1:0:1273:G:H2'	1:0:1274:C:C6	2.42	0.55
1:0:241:C:O2'	1:0:242:A:H5''	2.06	0.55
1:0:630:G:H2'	1:0:631:G:H5'	1.89	0.55
1:0:775:U:O2	1:0:1445:A:H5''	2.06	0.55
1:0:1949:A:H1'	1:0:2572:U:C4'	2.37	0.55
1:0:2061:C:H1'	1:0:2413:A:H1'	1.89	0.55
1:0:2095:G:C2'	1:0:2096:U:H5''	2.36	0.55
1:0:515:A:C2'	1:0:516:G:H5'	2.37	0.55
1:0:604:U:H2'	1:0:605:G:C8	2.41	0.55
1:0:1920:A:N6	1:0:1923:U:H6	2.05	0.55
1:0:2008:C:H2'	1:0:2009:U:C6	2.41	0.55
1:0:226:C:H4'	1:0:227:G:C8	2.41	0.55
1:0:839:U:H5''	1:0:2408:G:OP2	2.06	0.55
1:0:1669:A:H2'	1:0:1670:G:H4'	1.88	0.55
1:0:173:A:H2'	1:0:173:A:N3	2.22	0.55
1:0:394:U:H2'	1:0:395:G:H8	1.71	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:879:A:H2'	1:0:879:A:N3	2.22	0.55
1:0:2162:C:H2'	1:0:2163:U:C6	2.42	0.55
1:0:2321:C:H2'	1:0:2322:U:O4'	2.06	0.55
1:0:162:C:H4'	1:0:195:A:O2'	2.07	0.55
1:0:583:C:H41	1:0:2017:U:H5	1.53	0.55
1:0:1181:C:H3'	1:0:1182:U:H5''	1.89	0.55
1:0:1429:A:H62	1:0:1601:U:H5''	1.72	0.55
1:0:1459:U:H2'	1:0:1475:U:O2'	2.07	0.55
1:0:1711:C:H4'	1:0:1712:G:C2	2.42	0.55
1:0:2168:A:H2'	1:0:2169:A:H5'	1.89	0.55
1:0:2379:G:H2'	1:0:2380:U:O4'	2.06	0.55
1:0:33:C:N4	1:0:466:A:H61	2.05	0.55
1:0:841:G:H3'	1:0:841:G:N3	2.21	0.55
1:0:2204:A:O2'	1:0:2205:C:P	2.65	0.55
1:0:114:C:O2'	1:0:124:A:H1'	2.07	0.55
1:0:775:U:H4'	1:0:776:G:C8	2.42	0.55
1:0:951:G:C2'	1:0:952:A:H5''	2.36	0.55
1:0:1288:A:O2'	1:0:1289:A:H5'	2.07	0.55
1:0:1789:U:C2'	1:0:1790:G:H5'	2.37	0.55
1:0:1791:C:H1'	1:0:1793:A:O4'	2.06	0.55
1:0:80:A:H2'	1:0:81:C:O4'	2.06	0.54
1:0:782:U:H2'	1:0:783:G:C8	2.42	0.54
1:0:831:G:N2	1:0:1203:A:H62	1.97	0.54
1:0:1922:U:H1'	1:0:2570:C:O2'	2.06	0.54
1:0:2571:G:H2'	1:0:2572:U:C6	2.42	0.54
1:0:2783:U:OP1	1:0:2783:U:O4'	2.25	0.54
1:0:67:G:H8	1:0:67:G:O5'	1.90	0.54
1:0:1141:U:H5'	1:0:2549:G:N2	2.22	0.54
1:0:1278:A:O2'	1:0:1279:G:P	2.65	0.54
1:0:1289:A:H62	1:0:1662:G:H1	1.55	0.54
1:0:166:G:H21	1:0:184:A:N6	1.93	0.54
1:0:791:G:H2'	1:0:792:U:C6	2.42	0.54
1:0:1982:C:H1'	1:0:2666:U:O2'	2.07	0.54
1:0:2854:G:H3'	1:0:2854:G:N3	2.22	0.54
1:0:1004:A:H2'	1:0:1005:U:H5''	1.88	0.54
1:0:1829:C:H2'	1:0:1830:C:H5'	1.90	0.54
1:0:1925:C:H5''	2:5:30:C:H4'	1.88	0.54
1:0:558:G:H5''	1:0:559:C:C5	2.42	0.54
1:0:646:C:H2'	1:0:647:G:O4'	2.07	0.54
1:0:1279:G:C2'	1:0:1280:U:OP2	2.56	0.54
1:0:1313:U:O2'	1:0:1314:A:P	2.66	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1746:A:C2'	1:0:1747:G:H5'	2.37	0.54
1:0:1921:A:H2'	1:0:1922:U:H5''	1.90	0.54
1:0:1955:G:C2'	1:0:1956:G:H5'	2.37	0.54
1:0:2758:A:H5''	1:0:2759:U:H5	1.72	0.54
1:0:69:G:H3'	1:0:111:G:O2'	2.08	0.54
1:0:564:U:H2'	1:0:565:A:C8	2.42	0.54
1:0:598:U:H2'	1:0:599:A:C8	2.42	0.54
1:0:1210:C:H2'	1:0:1211:G:O4'	2.08	0.54
1:0:1818:G:H2'	1:0:1819:U:C6	2.42	0.54
1:0:2426:G:N2	1:0:2430:A:H62	2.04	0.54
1:0:2516:U:H2'	1:0:2517:C:C6	2.42	0.54
1:0:177:U:H2'	1:0:178:C:C6	2.43	0.54
1:0:798:G:O2'	1:0:1770:U:H4'	2.08	0.54
1:0:1356:G:H5'	1:0:1614:C:OP2	2.08	0.54
1:0:1463:A:H2'	1:0:1464:A:C8	2.42	0.54
1:0:2249:U:H2'	1:0:2250:G:O4'	2.08	0.54
1:0:2466:G:H2'	1:0:2467:A:C8	2.43	0.54
1:0:2470:U:O2'	1:0:2471:U:H5'	2.08	0.54
1:0:67:G:N2	1:0:73:A:O5'	2.40	0.54
1:0:468:A:H2'	1:0:469:G:H4'	1.90	0.54
1:0:48:A:H4'	1:0:50:G:O4'	2.08	0.54
1:0:484:G:O2'	1:0:485:G:H5'	2.07	0.54
1:0:847:C:N4	1:0:955:G:H21	1.96	0.54
1:0:942:U:O2'	1:0:943:U:H5'	2.08	0.54
1:0:1664:G:H4'	1:0:1665:C:O5'	2.07	0.54
1:0:2319:G:H2'	1:0:2320:G:C8	2.43	0.54
1:0:2574:G:H1'	1:0:2576:G:O6	2.07	0.54
1:0:728:G:H2'	1:0:729:A:O4'	2.08	0.54
1:0:929:A:H3'	1:0:930:A:C5'	2.33	0.54
1:0:1789:U:O2'	1:0:1790:G:H5'	2.07	0.54
1:0:216:U:H2'	1:0:217:U:O4'	2.08	0.53
1:0:242:A:O2'	1:0:243:G:O5'	2.26	0.53
1:0:878:C:N4	1:0:921:A:H62	2.04	0.53
1:0:1333:G:N2	1:0:1344:C:N4	2.55	0.53
1:0:2437:G:H2'	1:0:2469:G:C2	2.43	0.53
1:0:2572:U:H2'	1:0:2573:C:C6	2.43	0.53
1:0:2780:A:O2'	1:0:2781:G:H5'	2.08	0.53
1:0:317:U:C3'	1:0:318:G:H5''	2.39	0.53
1:0:597:U:H3	1:0:683:A:H2'	1.73	0.53
1:0:857:U:H2'	1:0:858:G:H5'	1.90	0.53
1:0:1763:G:H2'	1:0:1764:A:H4'	1.89	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:830:C:O2'	1:0:852:U:H5''	2.08	0.53
1:0:1358:C:H2'	1:0:1359:G:C5'	2.38	0.53
1:0:1497:C:O2'	1:0:1498:G:H5'	2.08	0.53
1:0:1528:C:C3'	1:0:1529:C:H5''	2.38	0.53
1:0:126:C:H2'	1:0:127:C:C6	2.42	0.53
1:0:341:A:H1'	1:0:1223:G:O6	2.08	0.53
1:0:594:G:H21	1:0:1267:A:H62	1.57	0.53
1:0:832:A:H2'	1:0:833:A:O4'	2.07	0.53
1:0:917:U:H2'	1:0:918:A:O4'	2.08	0.53
1:0:1414:G:H2'	1:0:1415:C:C6	2.43	0.53
1:0:1900:U:H4'	1:0:1946:U:O4'	2.09	0.53
1:0:1971:C:H2'	1:0:1972:G:C8	2.43	0.53
1:0:2321:C:O2'	1:0:2353:G:H5''	2.09	0.53
1:0:173:A:O2'	1:0:174:A:OP1	2.20	0.53
1:0:393:U:H2'	1:0:394:U:C6	2.43	0.53
1:0:638:A:O2'	1:0:639:G:H5'	2.08	0.53
1:0:737:C:H2'	1:0:738:G:O4'	2.09	0.53
1:0:918:A:C2'	1:0:919:U:H5''	2.36	0.53
1:0:1301:U:H2'	1:0:1664:G:H21	1.73	0.53
1:0:1825:C:C2'	1:0:1826:U:H5'	2.38	0.53
1:0:1838:G:C2'	1:0:1839:A:H5'	2.39	0.53
1:0:1974:U:H2'	1:0:1975:G:H5''	1.89	0.53
1:0:2756:A:H1'	1:0:2758:A:N7	2.23	0.53
1:0:665:A:OP2	1:0:666:U:H5'	2.09	0.53
1:0:1976:U:C2'	1:0:1977:C:H5'	2.37	0.53
1:0:26:G:H21	1:0:524:A:N6	2.03	0.53
1:0:404:A:H2'	1:0:405:C:C6	2.43	0.53
1:0:1029:C:H2'	1:0:1030:U:H5''	1.91	0.53
1:0:1190:C:H2'	1:0:1191:G:C8	2.44	0.53
1:0:1326:U:H2'	1:0:1327:C:H5'	1.90	0.53
1:0:1576:G:H2'	1:0:1577:G:O4'	2.08	0.53
1:0:2498:U:H5''	1:0:2499:C:OP1	2.09	0.53
1:0:2700:U:N3	1:0:2848:A:N6	2.55	0.53
1:0:757:U:O2'	1:0:758:G:H5'	2.09	0.53
1:0:874:A:H62	1:0:928:G:N2	2.07	0.53
1:0:939:C:H2'	1:0:940:G:C8	2.44	0.53
1:0:1075:C:H2'	1:0:1076:U:O4'	2.09	0.53
1:0:77:C:H2'	1:0:78:C:C6	2.44	0.53
1:0:486:U:H4'	1:0:520:C:H5'	1.90	0.53
1:0:658:G:H4'	1:0:2331:A:H5'	1.91	0.53
1:0:960:U:H2'	1:0:961:G:C8	2.44	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1745:C:H2'	1:0:1746:A:O4'	2.09	0.53
1:0:2312:A:H1'	1:0:2314:A:C8	2.44	0.53
1:0:394:U:H2'	1:0:395:G:C8	2.44	0.53
1:0:541:C:N4	1:0:572:G:O4'	2.42	0.53
1:0:788:G:H5'	1:0:790:A:H1'	1.90	0.53
1:0:807:A:H2'	1:0:808:C:C6	2.44	0.53
1:0:843:G:O2'	1:0:844:G:H5'	2.09	0.53
1:0:1775:A:H4'	1:0:1776:A:C8	2.44	0.53
1:0:2728:A:H2'	1:0:2729:A:O4'	2.09	0.53
1:0:201:G:H2'	1:0:202:A:C8	2.44	0.52
1:0:1502:G:O2'	1:0:1503:G:H5'	2.09	0.52
1:0:2014:A:H62	1:0:2477:C:H1'	1.74	0.52
1:0:2229:G:H2'	1:0:2475:C:OP1	2.09	0.52
1:0:2483:U:H1'	1:0:2551:A:H2	1.74	0.52
1:0:55:A:H2'	1:0:56:C:H6	1.75	0.52
1:0:127:C:H2'	1:0:128:C:C6	2.44	0.52
1:0:1217:U:H2'	1:0:1218:C:C6	2.44	0.52
1:0:1566:G:H4'	1:0:1733:U:O4	2.09	0.52
1:0:1938:U:C2'	1:0:1939:U:H5'	2.39	0.52
2:5:31:C:H3'	2:5:32:A:C5'	2.34	0.52
1:0:870:C:H2'	1:0:871:U:C6	2.43	0.52
1:0:1365:U:H1'	1:0:1586:A:H2	1.74	0.52
1:0:1964:A:H5''	1:0:1965:U:OP2	2.08	0.52
1:0:167:A:H2'	1:0:168:A:C8	2.44	0.52
1:0:181:A:H4'	1:0:182:G:C4'	2.39	0.52
1:0:230:C:H2'	1:0:231:G:O4'	2.09	0.52
1:0:597:U:H2'	1:0:598:U:C6	2.44	0.52
1:0:599:A:H2'	1:0:600:G:C8	2.44	0.52
1:0:688:A:O2'	1:0:2422:C:H4'	2.09	0.52
1:0:1286:U:H5''	1:0:1663:C:N4	2.24	0.52
1:0:1313:U:O4	1:0:1651:U:H5'	2.09	0.52
1:0:1654:A:H2'	1:0:1655:C:C6	2.44	0.52
1:0:2401:A:H2'	1:0:2403:C:C5	2.44	0.52
1:0:2809:A:C2'	1:0:2810:A:H5'	2.40	0.52
1:0:9:U:H3	1:0:2608:A:N6	2.02	0.52
1:0:212:U:H2'	1:0:213:C:C6	2.45	0.52
1:0:225:G:N2	1:0:2410:U:H1'	2.24	0.52
1:0:689:A:H3'	1:0:689:A:N3	2.24	0.52
1:0:1970:G:H2'	1:0:1971:C:C6	2.44	0.52
1:0:2083:G:H2'	1:0:2084:G:O4'	2.10	0.52
1:0:38:G:H2'	1:0:39:C:C6	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:446:C:H2'	1:0:447:U:C6	2.45	0.52
1:0:1234:C:H2'	1:0:1235:C:C6	2.45	0.52
1:0:1312:G:C5'	1:0:1313:U:H5'	2.34	0.52
1:0:2057:U:O2'	1:0:2576:G:H1'	2.09	0.52
1:0:616:U:C2'	1:0:617:U:H5''	2.37	0.52
1:0:688:A:H1'	1:0:2423:G:H5'	1.92	0.52
1:0:1162:A:H2'	1:0:1163:C:C6	2.44	0.52
1:0:1288:A:H2'	1:0:1289:A:O4'	2.09	0.52
1:0:2059:U:H2'	1:0:2060:A:H5''	1.90	0.52
1:0:2372:A:H2'	1:0:2373:C:C6	2.44	0.52
1:0:2757:G:OP2	1:0:2761:A:H4'	2.10	0.52
1:0:95:G:H2'	1:0:96:C:C6	2.45	0.52
1:0:317:U:C2'	1:0:318:G:H5''	2.39	0.52
1:0:476:G:H2'	1:0:477:A:C8	2.45	0.52
1:0:776:G:H2'	1:0:776:G:N3	2.25	0.52
1:0:795:A:H4'	1:0:796:A:C8	2.44	0.52
1:0:1263:G:O2'	1:0:1264:C:OP1	2.27	0.52
1:0:2272:A:H2'	1:0:2273:C:C6	2.45	0.52
1:0:2440:C:H1'	1:0:2471:U:N3	2.25	0.52
2:5:33:C:H3'	2:5:34:C:H5'	1.92	0.52
1:0:45:C:H5''	1:0:192:G:C8	2.44	0.52
1:0:168:A:H2'	1:0:169:C:C6	2.45	0.52
1:0:215:G:O2'	1:0:617:U:H1'	2.09	0.52
1:0:333:A:H1'	1:0:351:A:C4	2.44	0.52
1:0:980:G:H2'	1:0:981:C:C6	2.45	0.52
1:0:2504:G:H2'	1:0:2505:G:C8	2.45	0.52
1:0:1597:A:H2'	1:0:1598:C:C6	2.45	0.52
1:0:2320:G:H2'	1:0:2321:C:O4'	2.09	0.52
1:0:2451:G:H2'	1:0:2508:G:N2	2.25	0.52
1:0:129:A:H2'	1:0:130:C:C6	2.45	0.51
1:0:2756:A:H4'	1:0:2758:A:OP1	2.09	0.51
1:0:491:A:N3	1:0:491:A:H2'	2.26	0.51
1:0:1677:C:H2'	1:0:1678:G:C8	2.45	0.51
1:0:2536:G:H2'	1:0:2537:C:C6	2.45	0.51
1:0:578:U:C1'	1:0:957:G:H21	2.22	0.51
1:0:590:C:H2'	1:0:591:G:C8	2.45	0.51
1:0:826:U:H2'	1:0:827:C:C6	2.46	0.51
1:0:959:C:H5''	1:0:972:C:O2'	2.11	0.51
1:0:1358:C:H2'	1:0:1359:G:H5''	1.92	0.51
1:0:1788:C:H2'	1:0:1789:U:C6	2.46	0.51
1:0:2160:C:H2'	1:0:2161:C:C6	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2623:A:H2'	1:0:2624:G:O4'	2.10	0.51
1:0:170:U:H2'	1:0:171:G:H8	1.75	0.51
1:0:1352:G:H2'	1:0:1353:A:C8	2.43	0.51
1:0:1661:C:O2'	1:0:1662:G:H5'	2.10	0.51
1:0:1819:U:H5''	1:0:1954:A:O3'	2.11	0.51
1:0:2213:G:H2'	1:0:2214:G:C8	2.46	0.51
1:0:2660:C:O2'	1:0:2661:G:H5'	2.11	0.51
1:0:223:C:H4'	1:0:398:C:H1'	1.92	0.51
1:0:451:A:H2'	1:0:452:G:C8	2.45	0.51
1:0:1018:C:H2'	1:0:1019:U:C5	2.45	0.51
1:0:1860:A:H2'	1:0:1861:G:O4'	2.11	0.51
1:0:1865:C:H2'	1:0:1866:G:O4'	2.10	0.51
1:0:2426:G:O2'	1:0:2427:A:P	2.69	0.51
1:0:2703:C:H2'	1:0:2704:U:C6	2.45	0.51
1:0:18:U:H2'	1:0:19:C:C6	2.45	0.51
1:0:512:A:H2'	1:0:513:A:H5'	1.93	0.51
1:0:2242:C:N4	1:0:2257:A:N6	2.58	0.51
1:0:2429:A:H5''	1:0:2476:A:C6	2.46	0.51
1:0:422:C:H2'	1:0:423:G:H8	1.76	0.51
1:0:742:G:H2'	1:0:1766:U:H1'	1.93	0.51
1:0:838:A:H2'	1:0:839:U:C6	2.46	0.51
1:0:1377:G:H4'	1:0:1800:A:H5'	1.93	0.51
1:0:158:A:H2'	1:0:159:A:O4'	2.10	0.51
1:0:868:U:H2'	1:0:869:C:C6	2.45	0.51
1:0:1727:C:H4'	1:0:2833:C:O2	2.10	0.51
1:0:1881:U:H2'	1:0:1882:G:H5'	1.93	0.51
1:0:1926:U:H1'	1:0:1928:G:H5'	1.93	0.51
1:0:210:A:N6	1:0:242:A:N7	2.59	0.51
1:0:689:A:N6	1:0:815:A:H61	2.05	0.51
1:0:703:A:H2'	1:0:704:G:H8	1.76	0.51
1:0:824:U:H1'	1:0:1264:C:H1'	1.92	0.51
1:0:941:U:H4'	1:0:941:U:OP1	2.10	0.51
1:0:1038:U:O2	1:0:2466:G:H4'	2.10	0.51
1:0:1067:G:H2'	1:0:1114:A:H61	1.76	0.51
1:0:1068:A:H2'	1:0:1069:G:C8	2.45	0.51
1:0:1092:U:H2'	1:0:1093:U:C6	2.45	0.51
1:0:1127:C:H2'	1:0:1128:G:H8	1.76	0.51
1:0:1611:U:H2'	1:0:1612:U:O4'	2.11	0.51
1:0:2574:G:N7	1:0:2578:G:N2	2.59	0.51
1:0:2725:C:H2'	1:0:2726:U:C6	2.46	0.51
1:0:114:C:H2'	1:0:115:G:O4'	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:243:G:H2'	1:0:244:C:O4'	2.12	0.50
1:0:457:C:H2'	1:0:458:G:O4'	2.11	0.50
1:0:788:G:H5'	1:0:790:A:N3	2.26	0.50
1:0:1052:C:H2'	1:0:1053:G:C8	2.45	0.50
1:0:1057:A:H3'	1:0:1058:G:C5'	2.41	0.50
1:0:1279:G:H1'	1:0:1280:U:H5	1.76	0.50
1:0:1626:A:OP2	1:0:1627:C:H5	1.95	0.50
1:0:2177:U:H2'	1:0:2178:U:C6	2.46	0.50
1:0:619:A:H2'	1:0:620:G:C8	2.46	0.50
1:0:1424:U:H2'	1:0:1425:G:C8	2.46	0.50
1:0:1861:G:O2'	1:0:1862:C:H5'	2.11	0.50
1:0:2178:U:H2'	1:0:2179:C:C6	2.46	0.50
1:0:2397:A:H2'	1:0:2398:U:O4'	2.11	0.50
1:0:2771:C:H2'	1:0:2772:U:C6	2.46	0.50
1:0:2821:G:H2'	1:0:2822:U:C6	2.46	0.50
1:0:116:A:N3	1:0:155:G:H1'	2.26	0.50
1:0:534:U:H4'	1:0:564:U:O2'	2.12	0.50
1:0:1198:C:C5'	1:0:1199:U:H5''	2.42	0.50
1:0:2727:G:C2'	1:0:2728:A:H5''	2.41	0.50
1:0:332:C:H2'	1:0:333:A:H5'	1.94	0.50
1:0:879:A:O2'	1:0:880:C:H5'	2.11	0.50
1:0:964:A:H2'	1:0:965:G:C8	2.46	0.50
1:0:1747:G:C4'	1:0:1749:G:H1'	2.31	0.50
1:0:1857:G:H2'	1:0:1859:A:OP2	2.12	0.50
1:0:2023:C:H2'	1:0:2024:U:C6	2.46	0.50
1:0:2238:G:H2'	1:0:2239:C:H6	1.76	0.50
1:0:2329:C:C2'	1:0:2330:G:H5'	2.42	0.50
1:0:2726:U:H2'	1:0:2727:G:O4'	2.12	0.50
1:0:1073:G:H2'	1:0:1074:G:C4'	2.29	0.50
1:0:2181:A:H2'	1:0:2182:A:H5'	1.92	0.50
1:0:216:U:H5''	1:0:601:A:N6	2.27	0.50
1:0:316:C:H2'	1:0:317:U:C6	2.47	0.50
1:0:841:G:N1	1:0:2226:A:H4'	2.27	0.50
1:0:872:G:H2'	1:0:928:G:N1	2.27	0.50
1:0:1029:C:OP1	1:0:1047:G:H4'	2.11	0.50
1:0:1218:C:H2'	1:0:1219:C:C6	2.46	0.50
1:0:1683:G:C2'	1:0:1684:G:H5'	2.42	0.50
1:0:35:G:C1'	1:0:466:A:H1'	2.41	0.50
1:0:158:A:H2'	1:0:159:A:C8	2.47	0.50
1:0:1007:A:H2'	1:0:1008:G:C8	2.47	0.50
1:0:1164:C:H2'	1:0:1165:G:O4'	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1194:U:O2'	1:0:1195:U:P	2.70	0.50
1:0:1259:A:H2'	1:0:1260:A:C8	2.47	0.50
1:0:1496:G:H5'	1:0:1575:C:N4	2.26	0.50
1:0:1667:A:H2'	1:0:1668:G:H8	1.77	0.50
1:0:2010:G:H2'	1:0:2011:U:O4'	2.12	0.50
1:0:2082:C:H2'	1:0:2083:G:O4'	2.11	0.50
1:0:2446:C:H2'	1:0:2447:G:C8	2.47	0.50
1:0:2754:C:H2'	1:0:2755:A:O4'	2.12	0.50
1:0:236:C:O2	1:0:632:A:H1'	2.11	0.50
1:0:1895:A:H2'	1:0:1896:A:O4'	2.12	0.50
1:0:2435:C:H2'	1:0:2436:U:C6	2.47	0.50
1:0:599:A:H2'	1:0:600:G:H8	1.76	0.50
1:0:860:U:H2'	1:0:861:G:H5'	1.94	0.50
1:0:2079:A:H2'	1:0:2080:U:C6	2.47	0.50
1:0:2404:A:H5''	1:0:2405:A:H3'	1.94	0.50
1:0:991:A:H61	1:0:2020:G:H21	1.59	0.49
1:0:1016:C:H2'	1:0:1017:C:C6	2.47	0.49
1:0:1029:C:C3'	1:0:1030:U:H5''	2.42	0.49
1:0:1310:C:OP1	1:0:2689:C:H4'	2.12	0.49
1:0:338:G:O2'	1:0:339:U:H5'	2.13	0.49
1:0:597:U:N3	1:0:683:A:H2'	2.27	0.49
1:0:689:A:C2'	1:0:690:A:H5'	2.42	0.49
1:0:1055:A:N6	1:0:1122:A:H4'	2.27	0.49
1:0:1380:C:N4	1:0:1799:A:N1	2.61	0.49
1:0:1492:A:H2	1:0:1531:C:H41	1.58	0.49
1:0:1791:C:H2'	1:0:1792:C:H5''	1.94	0.49
1:0:190:A:H2'	1:0:191:G:C8	2.47	0.49
1:0:460:U:N3	1:0:592:G:H1'	2.22	0.49
1:0:538:A:C2'	1:0:539:A:H5''	2.41	0.49
1:0:831:G:C2'	1:0:832:A:H5''	2.42	0.49
1:0:1312:G:H2'	1:0:1643:A:N6	2.27	0.49
1:0:1354:A:H3'	1:0:1410:U:O2	2.12	0.49
1:0:1820:G:O2'	1:0:1821:A:P	2.70	0.49
1:0:2313:G:H2'	1:0:2314:A:H5'	1.94	0.49
1:0:165:G:H2'	1:0:166:G:O4'	2.12	0.49
1:0:441:A:H2'	1:0:442:A:O4'	2.11	0.49
1:0:579:G:H2'	1:0:2013:A:N6	2.27	0.49
1:0:810:U:H2'	1:0:811:G:C8	2.48	0.49
1:0:991:A:N6	1:0:2020:G:H21	2.11	0.49
1:0:1055:A:O2'	1:0:1058:G:H1'	2.13	0.49
1:0:1195:U:H2'	1:0:1196:G:H8	1.73	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1889:G:H2'	1:0:1890:G:C8	2.48	0.49
1:0:1979:C:H42	1:0:2706:U:H6	1.60	0.49
1:0:2299:A:H2'	1:0:2299:A:N3	2.27	0.49
1:0:2532:G:H1'	1:0:2561:G:N3	2.28	0.49
1:0:2805:G:O2'	1:0:2806:G:H5'	2.12	0.49
1:0:215:G:H4'	1:0:617:U:O2'	2.12	0.49
1:0:645:G:H2'	1:0:646:C:C6	2.48	0.49
1:0:693:A:H2'	1:0:694:G:C8	2.47	0.49
1:0:792:U:H2'	1:0:793:G:O4'	2.12	0.49
1:0:1455:C:H2'	1:0:1456:C:C6	2.48	0.49
1:0:1685:A:H1'	1:0:1686:A:N7	2.28	0.49
1:0:45:C:H2'	1:0:46:C:C6	2.47	0.49
1:0:431:G:H2'	1:0:432:C:C6	2.47	0.49
1:0:459:A:H62	1:0:484:G:H1'	1.78	0.49
1:0:780:U:H2'	1:0:781:G:C8	2.48	0.49
1:0:1685:A:C6	1:0:1691:G:H1'	2.48	0.49
1:0:1686:A:H2'	1:0:1687:C:H5'	1.94	0.49
1:0:2235:G:H2'	1:0:2236:U:C6	2.48	0.49
1:0:2244:C:N4	1:0:2245:A:N6	2.59	0.49
1:0:338:G:H1	1:0:346:C:H42	1.60	0.49
1:0:1445:A:H2'	1:0:1446:U:O4'	2.13	0.49
1:0:1793:A:H2'	1:0:1794:A:C8	2.48	0.49
1:0:1912:G:H2'	1:0:1912:G:N3	2.27	0.49
1:0:2057:U:H1'	1:0:2577:A:H1'	1.93	0.49
1:0:2161:C:O2'	1:0:2162:C:P	2.71	0.49
1:0:2428:U:O2'	1:0:2429:A:H5'	2.12	0.49
1:0:2799:C:H2'	1:0:2800:C:O4'	2.12	0.49
1:0:1259:A:H2'	1:0:1260:A:O4'	2.12	0.49
1:0:1665:C:N4	1:0:1993:G:H1	2.11	0.49
1:0:1679:U:H2'	1:0:1680:U:H5''	1.94	0.49
1:0:1785:A:H2'	1:0:1786:C:C6	2.47	0.49
1:0:2026:C:H2'	1:0:2027:C:C6	2.47	0.49
1:0:2794:G:H3'	1:0:2796:A:N6	2.20	0.49
1:0:83:A:C6	1:0:98:U:H1'	2.47	0.49
1:0:109:A:H3'	1:0:110:U:C5'	2.39	0.49
1:0:172:A:H4'	1:0:228:A:H4'	1.94	0.49
1:0:203:G:O2'	1:0:204:A:H5'	2.13	0.49
1:0:211:U:O2'	1:0:212:U:H5'	2.13	0.49
1:0:860:U:O2'	1:0:861:G:H5'	2.13	0.49
1:0:930:A:H5'	1:0:931:G:C8	2.47	0.49
1:0:951:G:C3'	1:0:952:A:H5''	2.43	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1825:C:O2'	1:0:1826:U:H5'	2.13	0.49
1:0:2093:G:H2'	1:0:2094:C:C6	2.47	0.49
1:0:2503:G:C2'	1:0:2504:G:H5''	2.43	0.49
1:0:2574:G:H2'	1:0:2574:G:N3	2.28	0.49
1:0:58:C:N4	1:0:73:A:C6	2.81	0.49
1:0:476:G:H21	1:0:696:U:H1'	1.78	0.49
1:0:632:A:C2'	1:0:633:G:H5'	2.43	0.49
1:0:1038:U:H2'	1:0:1039:A:C8	2.48	0.49
1:0:1046:U:H2'	1:0:1047:G:C8	2.48	0.49
1:0:1141:U:O2'	1:0:1142:G:OP1	2.26	0.49
1:0:1182:U:C3'	1:0:1183:C:H5''	2.43	0.49
1:0:1272:G:H2'	1:0:1273:G:C8	2.48	0.49
1:0:1598:C:H2'	1:0:1599:G:O4'	2.13	0.49
1:0:1729:C:H2'	1:0:1730:G:C8	2.48	0.49
1:0:2783:U:H2'	1:0:2784:A:O4'	2.12	0.49
1:0:84:G:H2'	1:0:85:C:C6	2.48	0.48
1:0:173:A:H61	1:0:844:G:H21	1.59	0.48
1:0:790:A:H2'	1:0:791:G:C8	2.48	0.48
1:0:1040:A:H2'	1:0:1041:G:H5'	1.93	0.48
1:0:1349:A:H2'	1:0:1350:G:C8	2.48	0.48
1:0:1435:G:H21	1:0:1511:A:N6	2.12	0.48
1:0:1937:G:N3	1:0:2530:C:H5'	2.28	0.48
1:0:2308:A:H2'	1:0:2309:G:C8	2.47	0.48
1:0:2472:U:H5''	2:5:33:C:HO2'	1.78	0.48
1:0:2852:G:H2'	1:0:2853:U:O4'	2.13	0.48
1:0:109:A:C2'	1:0:110:U:H5''	2.43	0.48
1:0:521:U:H2'	1:0:522:G:H5'	1.95	0.48
1:0:565:A:H2'	1:0:566:U:C6	2.48	0.48
1:0:626:A:O2'	1:0:627:A:H5'	2.13	0.48
1:0:1629:G:N1	1:0:1633:C:N4	2.61	0.48
1:0:1715:A:H1'	1:0:1717:A:C1'	2.42	0.48
1:0:1871:G:N3	1:0:1871:G:C2'	2.76	0.48
1:0:2025:A:H2'	1:0:2026:C:H5''	1.94	0.48
1:0:427:C:H2'	1:0:428:A:C8	2.49	0.48
1:0:864:C:H2'	1:0:865:A:C8	2.47	0.48
1:0:942:U:C2'	1:0:943:U:H5'	2.43	0.48
1:0:1099:A:H5''	1:0:1100:G:N7	2.27	0.48
1:0:2872:U:H2'	1:0:2873:G:C8	2.49	0.48
1:0:367:G:C3'	1:0:368:A:H5''	2.43	0.48
1:0:429:C:H2'	1:0:430:C:O4'	2.13	0.48
1:0:756:C:H2'	1:0:757:U:C6	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1033:G:H22	1:0:1150:C:C2'	2.26	0.48
1:0:1495:G:HO2'	1:0:1496:G:P	2.36	0.48
1:0:1571:G:H2'	1:0:1572:C:C6	2.48	0.48
1:0:1712:G:H3'	1:0:1712:G:N3	2.29	0.48
1:0:2093:G:O2'	1:0:2094:C:P	2.72	0.48
1:0:2301:A:H2'	1:0:2302:G:O4'	2.14	0.48
1:0:2343:C:H2'	1:0:2344:G:O4'	2.14	0.48
1:0:2780:A:H2'	1:0:2781:G:C8	2.48	0.48
1:0:42:G:H2'	1:0:43:A:O4'	2.13	0.48
1:0:192:G:C4'	1:0:193:A:H4'	2.44	0.48
1:0:210:A:N6	1:0:442:A:H61	2.11	0.48
1:0:830:C:O2	1:0:852:U:H4'	2.13	0.48
1:0:1678:G:H2'	1:0:1679:U:C6	2.48	0.48
1:0:1742:G:H2'	1:0:1743:C:C6	2.48	0.48
1:0:2059:U:H5	1:0:2575:U:N3	2.02	0.48
1:0:2483:U:H2'	1:0:2484:G:H5'	1.94	0.48
1:0:71:A:O2'	1:0:72:A:OP1	2.21	0.48
1:0:181:A:H4'	1:0:182:G:O5'	2.12	0.48
1:0:477:A:H2'	1:0:478:G:O4'	2.14	0.48
1:0:548:G:H2'	1:0:549:G:C8	2.48	0.48
1:0:569:C:H2'	1:0:570:G:C8	2.49	0.48
1:0:635:C:H3'	1:0:636:G:H5''	1.95	0.48
1:0:742:G:N3	1:0:742:G:C2'	2.77	0.48
1:0:845:U:H2'	1:0:846:A:C8	2.49	0.48
1:0:1141:U:O2'	1:0:1142:G:P	2.72	0.48
1:0:1458:A:H3'	1:0:1459:U:H5'	1.96	0.48
1:0:1686:A:O2'	1:0:2528:G:H5'	2.14	0.48
1:0:2212:U:H2'	1:0:2213:G:C8	2.49	0.48
1:0:2721:A:N6	1:0:2743:G:H21	2.10	0.48
1:0:2815:C:H2'	1:0:2816:C:C6	2.49	0.48
1:0:64:C:H2'	1:0:65:C:C6	2.48	0.48
1:0:213:C:H42	1:0:238:G:H22	1.60	0.48
1:0:583:C:O2'	1:0:584:A:OP2	2.31	0.48
1:0:1391:A:H2'	1:0:1392:U:C5	2.49	0.48
1:0:1684:G:H2'	1:0:1974:U:O4	2.14	0.48
1:0:2085:G:H2'	1:0:2086:U:C6	2.49	0.48
1:0:2503:G:H2'	1:0:2504:G:H5''	1.96	0.48
1:0:240:U:H4'	1:0:443:A:H5'	1.96	0.48
1:0:478:G:O2'	1:0:479:G:H5'	2.14	0.48
1:0:1429:A:H1'	1:0:1603:A:C6	2.49	0.48
1:0:1436:G:H2'	1:0:1437:A:C8	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2580:C:N4	1:0:2582:G:O6	2.47	0.48
1:0:192:G:H4'	1:0:193:A:O5'	2.13	0.48
1:0:239:A:H4'	1:0:620:G:H5'	1.95	0.48
1:0:323:G:H2'	1:0:324:C:C6	2.48	0.48
1:0:568:G:H5''	1:0:1019:U:H5'	1.96	0.48
1:0:582:G:H2'	1:0:583:C:H3'	1.96	0.48
1:0:583:C:O2'	1:0:584:A:P	2.71	0.48
1:0:629:C:H2'	1:0:630:G:H5'	1.95	0.48
1:0:979:A:H2'	1:0:980:G:C8	2.49	0.48
1:0:1031:C:H1'	1:0:1151:U:O2	2.14	0.48
1:0:1036:G:H1'	1:0:1145:C:C4'	2.44	0.48
1:0:1316:G:H2'	1:0:1317:G:C8	2.49	0.48
1:0:1682:A:H2'	1:0:1683:G:C8	2.48	0.48
1:0:2316:G:H2'	1:0:2317:G:H8	1.78	0.48
1:0:2377:U:O2'	1:0:2378:G:P	2.72	0.48
1:0:2220:A:H2'	1:0:2221:G:C8	2.49	0.48
1:0:2437:G:H4'	1:0:2438:A:N7	2.28	0.48
1:0:664:C:H2'	1:0:665:A:C8	2.49	0.47
1:0:703:A:H2'	1:0:704:G:C8	2.49	0.47
1:0:941:U:H2'	1:0:942:U:C6	2.49	0.47
1:0:1471:G:H1	1:0:2682:C:H42	1.61	0.47
1:0:1679:U:C2'	1:0:1680:U:H5''	2.44	0.47
1:0:2204:A:O2'	1:0:2205:C:OP2	2.32	0.47
1:0:2424:G:H2'	1:0:2425:G:O4'	2.14	0.47
1:0:2483:U:H1'	1:0:2551:A:C2	2.49	0.47
1:0:2782:G:C2'	1:0:2783:U:OP1	2.62	0.47
1:0:204:A:H4'	1:0:205:A:N7	2.29	0.47
1:0:224:G:C5	1:0:226:C:H1'	2.48	0.47
1:0:780:U:H2'	1:0:781:G:H8	1.79	0.47
1:0:873:U:O2	1:0:2246:A:H5''	2.14	0.47
1:0:1793:A:H2'	1:0:1794:A:H8	1.79	0.47
1:0:1926:U:O2'	1:0:1927:U:H3'	2.14	0.47
1:0:2402:U:H5'	1:0:2404:A:N7	2.29	0.47
1:0:2830:U:H2'	1:0:2831:A:C8	2.49	0.47
1:0:2168:A:C2'	1:0:2169:A:H5'	2.44	0.47
1:0:2448:A:H2'	1:0:2449:G:O4'	2.13	0.47
1:0:2651:U:H2'	1:0:2652:G:C8	2.49	0.47
1:0:1016:C:H5''	1:0:1023:U:OP2	2.14	0.47
1:0:1147:G:H2'	1:0:1148:G:C8	2.50	0.47
1:0:2002:A:H61	1:0:2018:G:H21	1.62	0.47
1:0:2421:C:O2'	1:0:2422:C:H5'	2.13	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2523:G:O2'	1:0:2524:G:H5'	2.14	0.47
1:0:2708:U:H2'	1:0:2709:C:C6	2.49	0.47
1:0:974:U:H2'	1:0:975:C:C6	2.49	0.47
1:0:1226:A:C6	1:0:1250:A:H1'	2.49	0.47
1:0:1326:U:H1'	1:0:1626:A:N3	2.30	0.47
1:0:1344:C:H2'	1:0:1346:C:OP1	2.14	0.47
1:0:1386:A:H2'	1:0:1387:G:O4'	2.14	0.47
1:0:1436:G:C1'	1:0:1508:G:H21	2.21	0.47
1:0:1993:G:H2'	1:0:1994:U:C6	2.50	0.47
1:0:2009:U:H2'	1:0:2010:G:C8	2.49	0.47
1:0:2204:A:H1'	1:0:2205:C:C5	2.49	0.47
1:0:2432:A:H4'	1:0:2551:A:O2'	2.15	0.47
1:0:2434:G:H2'	1:0:2435:C:C6	2.50	0.47
1:0:108:G:H2'	1:0:109:A:C8	2.50	0.47
1:0:452:G:H2'	1:0:453:U:O4'	2.15	0.47
1:0:1316:G:H2'	1:0:1317:G:H8	1.79	0.47
1:0:1436:G:H1'	1:0:1508:G:N2	2.18	0.47
1:0:1809:G:O2'	1:0:1810:U:H5'	2.14	0.47
1:0:1915:A:N6	1:0:1951:G:H21	1.99	0.47
1:0:2278:A:H2'	1:0:2279:G:C8	2.49	0.47
1:0:2393:G:H2'	1:0:2394:G:H8	1.80	0.47
1:0:2494:C:H2'	1:0:2495:G:H8	1.80	0.47
1:0:2782:G:H2'	1:0:2783:U:OP1	2.15	0.47
1:0:70:A:P	1:0:111:G:H4'	2.55	0.47
1:0:225:G:H21	1:0:2410:U:H1'	1.78	0.47
1:0:635:C:C3'	1:0:636:G:H5''	2.45	0.47
1:0:670:U:H2'	1:0:671:A:C8	2.49	0.47
1:0:701:U:H1'	1:0:800:U:H5'	1.97	0.47
1:0:926:C:H2'	1:0:927:C:H5'	1.95	0.47
1:0:1028:G:H2'	1:0:1029:C:C6	2.50	0.47
1:0:1184:G:H2'	1:0:1185:C:H5'	1.97	0.47
1:0:1354:A:N6	1:0:1407:G:H22	2.11	0.47
1:0:1821:A:H5''	1:0:1822:C:H5	1.80	0.47
1:0:2021:G:H2'	1:0:2022:C:C6	2.50	0.47
1:0:2069:U:H2'	1:0:2070:G:C8	2.49	0.47
1:0:2199:C:H2'	1:0:2200:G:C8	2.48	0.47
1:0:2307:A:H2'	1:0:2308:A:C8	2.50	0.47
1:0:2378:G:H2'	1:0:2379:G:H8	1.80	0.47
1:0:2426:G:H5'	1:0:2480:C:N4	2.23	0.47
1:0:2486:C:H4'	2:5:34:C:O2'	2.15	0.47
1:0:432:C:H2'	1:0:433:G:H8	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:556:A:H2'	1:0:557:U:H5'	1.97	0.47
1:0:643:A:H2'	1:0:644:A:C8	2.49	0.47
1:0:763:A:C2	1:0:765:C:H1'	2.49	0.47
1:0:819:C:H2'	1:0:820:U:C6	2.50	0.47
1:0:1269:G:H2'	1:0:1270:C:C6	2.50	0.47
1:0:1290:A:H2'	1:0:1291:G:C8	2.50	0.47
1:0:1418:C:H2'	1:0:1419:G:H8	1.79	0.47
1:0:1495:G:H2'	1:0:1496:G:C8	2.50	0.47
1:0:1578:U:H2'	1:0:1579:G:C8	2.50	0.47
1:0:1821:A:H3'	1:0:1822:C:H6	1.80	0.47
1:0:2429:A:O2'	1:0:2430:A:H5'	2.14	0.47
1:0:2484:G:H21	1:0:2485:U:H5	1.63	0.47
1:0:2727:G:N1	1:0:2735:C:H5''	2.28	0.47
1:0:1039:A:H2'	1:0:1040:A:C8	2.49	0.47
1:0:1576:G:H8	1:0:1576:G:H5'	1.80	0.47
1:0:2062:U:H4'	1:0:2412:A:H2	1.79	0.47
1:0:2211:U:H2'	1:0:2212:U:C6	2.50	0.47
1:0:2329:C:N4	1:0:2361:G:H22	2.13	0.47
1:0:2658:A:H2'	1:0:2659:C:C6	2.50	0.47
1:0:84:G:O2'	1:0:85:C:H5'	2.15	0.47
1:0:1263:G:O2'	1:0:1264:C:P	2.73	0.47
1:0:2504:G:H2'	1:0:2505:G:H8	1.79	0.47
1:0:2559:U:C2'	1:0:2560:G:H5'	2.44	0.47
1:0:241:C:C2'	1:0:242:A:H5''	2.44	0.46
1:0:771:C:H2'	1:0:772:G:H8	1.80	0.46
1:0:2276:C:O2	1:0:2301:A:H1'	2.15	0.46
1:0:2444:C:O2'	1:0:2445:C:H5'	2.15	0.46
1:0:173:A:N6	1:0:844:G:H21	2.14	0.46
1:0:342:G:HO2'	1:0:343:A:P	2.38	0.46
1:0:758:G:N2	1:0:763:A:N1	2.62	0.46
1:0:776:G:N3	1:0:776:G:C2'	2.79	0.46
1:0:864:C:H2'	1:0:865:A:H8	1.80	0.46
1:0:869:C:O2'	1:0:870:C:H5'	2.15	0.46
1:0:971:A:H2	1:0:2475:C:H1'	1.80	0.46
1:0:986:A:H2'	1:0:987:G:H5'	1.97	0.46
1:0:1480:G:H2'	1:0:1481:U:H5'	1.97	0.46
1:0:2137:G:H2'	1:0:2138:U:C6	2.50	0.46
1:0:2324:G:C4'	1:0:2326:C:H5''	2.43	0.46
1:0:2858:A:H3'	1:0:2859:U:C5'	2.44	0.46
1:0:54:G:H2'	1:0:55:A:C8	2.50	0.46
1:0:152:G:O2'	1:0:153:A:H5'	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:878:C:O2'	1:0:879:A:P	2.72	0.46
1:0:1014:G:O2'	1:0:1015:U:H5'	2.15	0.46
1:0:1223:G:H4'	1:0:1224:A:O5'	2.15	0.46
1:0:1829:C:C2'	1:0:1830:C:H5'	2.45	0.46
1:0:1949:A:H1'	1:0:2572:U:H4'	1.98	0.46
1:0:1975:G:H4'	1:0:1976:U:H5	1.80	0.46
1:0:2526:U:H2'	1:0:2527:G:C8	2.50	0.46
1:0:2717:G:H2'	1:0:2718:A:C8	2.51	0.46
1:0:387:A:H2'	1:0:388:G:O4'	2.15	0.46
1:0:546:A:H2'	1:0:547:U:C6	2.51	0.46
1:0:758:G:H2'	1:0:759:C:H5'	1.97	0.46
1:0:760:U:O2	1:0:1997:A:H1'	2.16	0.46
1:0:887:G:O2'	1:0:888:G:H5'	2.15	0.46
1:0:1039:A:H2'	1:0:1040:A:H8	1.80	0.46
1:0:1301:U:H2'	1:0:1664:G:N2	2.30	0.46
1:0:2035:G:H2'	1:0:2036:G:C8	2.46	0.46
1:0:2372:A:H2'	1:0:2373:C:H6	1.79	0.46
1:0:2642:G:H2'	1:0:2643:G:O4'	2.16	0.46
1:0:2757:G:H5'	1:0:2761:A:H1'	1.97	0.46
1:0:198:A:O2'	1:0:199:A:P	2.74	0.46
1:0:337:G:H2'	1:0:338:G:C8	2.51	0.46
1:0:738:G:H2'	1:0:739:G:O4'	2.14	0.46
1:0:2809:A:H2'	1:0:2810:A:H5'	1.98	0.46
1:0:2825:A:H2'	1:0:2826:C:C6	2.50	0.46
1:0:9:U:H2'	1:0:10:A:C8	2.51	0.46
1:0:108:G:H2'	1:0:109:A:H8	1.81	0.46
1:0:324:C:H2'	1:0:325:U:O4'	2.15	0.46
1:0:798:G:H2'	1:0:799:C:H5'	1.97	0.46
1:0:1069:G:O2'	1:0:1070:G:H5'	2.16	0.46
1:0:1452:U:H5'	1:0:1532:A:O2'	2.15	0.46
1:0:1760:G:H2'	1:0:1761:G:C8	2.50	0.46
1:0:584:A:H4'	1:0:2479:U:C5'	2.43	0.46
1:0:1029:C:H3'	1:0:1030:U:H5''	1.96	0.46
1:0:1279:G:H2'	1:0:1280:U:OP2	2.16	0.46
1:0:1572:C:C3'	1:0:1573:G:H5''	2.45	0.46
1:0:1836:C:H2'	1:0:1837:G:C8	2.50	0.46
1:0:1981:A:H2'	1:0:1982:C:C6	2.50	0.46
1:0:2459:C:C2'	1:0:2460:G:H5'	2.45	0.46
1:0:2475:C:H2'	1:0:2476:A:H5'	1.97	0.46
1:0:2499:C:N4	1:0:2521:A:H2	2.11	0.46
1:0:2800:C:H2'	1:0:2801:A:O4'	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2807:U:C5	1:0:2859:U:H4'	2.51	0.46
1:0:636:G:H2'	1:0:637:G:H5'	1.97	0.46
1:0:694:G:H2'	1:0:695:G:H8	1.81	0.46
1:0:697:G:C2'	1:0:698:A:H5'	2.46	0.46
1:0:845:U:H2'	1:0:846:A:H8	1.80	0.46
1:0:1962:C:O2'	1:0:1963:G:H5'	2.16	0.46
1:0:19:C:H2'	1:0:20:C:C6	2.49	0.46
1:0:85:C:O2'	1:0:86:U:H5'	2.16	0.46
1:0:462:G:H2'	1:0:463:C:H5'	1.98	0.46
1:0:777:A:H62	1:0:1766:U:H3	1.59	0.46
1:0:918:A:H2'	1:0:919:U:C5'	2.42	0.46
1:0:932:G:H2'	1:0:933:G:C8	2.51	0.46
1:0:1427:G:C2'	1:0:1428:G:H5'	2.44	0.46
1:0:1429:A:N6	1:0:1602:G:H5'	2.31	0.46
1:0:2245:A:HO2'	1:0:2246:A:P	2.39	0.46
1:0:2698:G:H2'	1:0:2699:G:C8	2.51	0.46
1:0:161:U:H2'	1:0:162:C:C6	2.51	0.46
1:0:313:U:H2'	1:0:314:G:C8	2.50	0.46
1:0:952:A:H2'	1:0:953:G:O4'	2.16	0.46
1:0:1331:G:H2'	1:0:1332:G:C8	2.51	0.46
1:0:1495:G:O2'	1:0:1496:G:P	2.73	0.46
1:0:1703:C:H2'	1:0:1704:G:O4'	2.16	0.46
1:0:2161:C:H2'	1:0:2162:C:C6	2.50	0.46
1:0:2488:G:N2	1:0:2559:U:H1'	2.31	0.46
1:0:2493:U:H2'	1:0:2494:C:C6	2.51	0.46
1:0:2570:C:H2'	1:0:2571:G:H8	1.81	0.46
2:5:26:A:H2'	2:5:27:G:H8	1.80	0.46
1:0:207:U:H2'	1:0:208:C:C6	2.51	0.45
1:0:331:U:H2'	1:0:332:C:H5''	1.97	0.45
1:0:595:A:H2	1:0:822:G:N3	2.15	0.45
1:0:697:G:O2'	1:0:698:A:H5'	2.16	0.45
1:0:831:G:H5'	1:0:852:U:OP1	2.16	0.45
1:0:1380:C:C2'	1:0:1381:G:H5'	2.45	0.45
1:0:1677:C:H2'	1:0:1678:G:H8	1.81	0.45
1:0:1685:A:N6	1:0:1691:G:H1'	2.31	0.45
1:0:1835:C:H2'	1:0:1836:C:C6	2.51	0.45
1:0:2093:G:H2'	1:0:2094:C:C5	2.51	0.45
1:0:2106:G:H2'	1:0:2107:G:C8	2.51	0.45
1:0:2193:C:H2'	1:0:2194:A:O4'	2.16	0.45
1:0:2333:A:H2'	1:0:2334:C:C6	2.52	0.45
1:0:2574:G:N3	1:0:2574:G:C2'	2.79	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:199:A:H61	1:0:209:G:H1'	1.81	0.45
1:0:246:C:N3	1:0:247:A:N6	2.64	0.45
1:0:689:A:C8	1:0:2422:C:H1'	2.51	0.45
1:0:1068:A:H2'	1:0:1069:G:H8	1.81	0.45
1:0:1120:C:H2'	1:0:2731:G:N2	2.31	0.45
1:0:1163:C:O2'	1:0:1164:C:H5'	2.15	0.45
1:0:1278:A:H4'	1:0:1279:G:O5'	2.17	0.45
1:0:1313:U:O2'	1:0:1314:A:O5'	2.32	0.45
1:0:1486:A:H2'	1:0:1487:C:C6	2.50	0.45
1:0:1888:C:H5''	1:0:1889:G:C5'	2.46	0.45
1:0:2017:U:O2'	1:0:2018:G:H5'	2.16	0.45
1:0:2136:G:H2'	1:0:2137:G:C8	2.51	0.45
1:0:2560:G:H3'	1:0:2560:G:N3	2.31	0.45
1:0:2633:A:N6	1:0:2646:C:N4	2.63	0.45
1:0:2668:U:O2'	1:0:2669:C:P	2.74	0.45
1:0:931:G:O2'	1:0:932:G:H5'	2.16	0.45
1:0:2120:C:H2'	1:0:2121:U:O4'	2.17	0.45
1:0:2474:G:O2'	1:0:2475:C:H5'	2.15	0.45
1:0:2628:C:H2'	1:0:2629:U:C6	2.52	0.45
1:0:2784:A:H3'	1:0:2785:A:C8	2.49	0.45
1:0:40:U:H2'	1:0:41:G:C8	2.51	0.45
1:0:130:C:H2'	1:0:131:C:C6	2.51	0.45
1:0:307:C:H2'	1:0:308:C:C6	2.52	0.45
1:0:317:U:H3'	1:0:318:G:H5''	1.97	0.45
1:0:489:A:N6	1:0:491:A:H62	2.14	0.45
1:0:560:G:H2'	1:0:561:U:C6	2.51	0.45
1:0:1429:A:O2'	1:0:1430:G:H4'	2.17	0.45
1:0:1659:G:H2'	1:0:1660:G:C8	2.51	0.45
1:0:1886:G:H2'	1:0:1887:G:C8	2.51	0.45
1:0:1949:A:O2'	1:0:2572:U:H5'	2.17	0.45
1:0:2057:U:H2'	1:0:2058:U:C6	2.51	0.45
1:0:2259:G:H2'	1:0:2260:C:C6	2.52	0.45
1:0:2403:C:H2'	1:0:2408:G:O2'	2.17	0.45
1:0:2455:A:O2'	1:0:2456:U:H5'	2.17	0.45
1:0:2468:G:H2'	1:0:2469:G:O4'	2.17	0.45
1:0:2475:C:C2'	1:0:2476:A:H5'	2.46	0.45
1:0:2487:G:H4'	1:0:2533:U:O2'	2.15	0.45
1:0:2639:A:H2'	1:0:2640:G:O4'	2.16	0.45
1:0:2824:C:H1'	1:0:2843:A:C2	2.51	0.45
1:0:601:A:H3'	1:0:602:C:C5'	2.46	0.45
1:0:872:G:O2'	1:0:2247:A:N3	2.48	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2196:U:H2'	1:0:2197:U:C6	2.51	0.45
1:0:2277:A:H2'	1:0:2278:A:O4'	2.16	0.45
1:0:2278:A:H2'	1:0:2279:G:H8	1.82	0.45
1:0:2558:C:O2'	1:0:2559:U:H5'	2.17	0.45
1:0:2676:G:H2'	1:0:2677:U:C6	2.51	0.45
1:0:8:A:H2'	1:0:9:U:C6	2.51	0.45
1:0:35:G:H1'	1:0:466:A:H1'	1.98	0.45
1:0:365:U:H2'	1:0:366:U:C6	2.52	0.45
1:0:421:G:H2'	1:0:422:C:C6	2.51	0.45
1:0:529:U:H2'	1:0:530:G:C8	2.51	0.45
1:0:594:G:N2	1:0:1267:A:H62	2.14	0.45
1:0:675:C:H2'	1:0:676:G:C8	2.52	0.45
1:0:1579:G:H2'	1:0:1580:C:C6	2.52	0.45
1:0:1586:A:H2'	1:0:1587:A:C8	2.52	0.45
1:0:1747:G:H1'	1:0:1749:G:C2	2.51	0.45
1:0:2552:C:OP1	1:0:2553:G:H5''	2.17	0.45
1:0:297:A:H2'	1:0:298:C:C6	2.51	0.45
1:0:1140:A:N6	1:0:2469:G:H5''	2.32	0.45
1:0:1307:U:H2'	1:0:1308:C:O4'	2.17	0.45
1:0:1619:A:H3'	1:0:1619:A:N3	2.32	0.45
1:0:1777:A:H5'	1:0:1963:G:H21	1.82	0.45
1:0:2055:G:H2'	1:0:2056:C:C6	2.52	0.45
1:0:2205:C:H2'	1:0:2206:C:H6	1.80	0.45
2:5:30:C:H2'	2:5:31:C:H6	1.81	0.45
1:0:13:A:H1'	1:0:536:A:H62	1.82	0.45
1:0:81:C:H4'	1:0:307:C:H5'	1.98	0.45
1:0:340:G:H1'	1:0:488:A:C4	2.52	0.45
1:0:567:G:H2'	1:0:568:G:C8	2.52	0.45
1:0:595:A:H62	1:0:1264:C:N4	2.14	0.45
1:0:935:C:H2'	1:0:936:A:C8	2.51	0.45
1:0:1223:G:O2'	1:0:1224:A:P	2.75	0.45
1:0:1452:U:H5''	1:0:1533:G:H5'	1.99	0.45
1:0:2022:C:H2'	1:0:2023:C:C6	2.52	0.45
1:0:2393:G:H2'	1:0:2394:G:C8	2.52	0.45
1:0:211:U:C2'	1:0:212:U:H5'	2.46	0.45
1:0:916:U:H2'	1:0:917:U:C6	2.52	0.45
1:0:968:C:H2'	1:0:970:A:OP1	2.17	0.45
1:0:1257:U:H2'	1:0:1258:G:C8	2.52	0.45
1:0:1886:G:H2'	1:0:1887:G:H8	1.82	0.45
1:0:1888:C:C5'	1:0:1889:G:H5''	2.45	0.45
1:0:2239:C:O2'	1:0:2240:C:H5'	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2376:G:H2'	1:0:2377:U:C6	2.52	0.45
1:0:2600:A:H2'	1:0:2601:C:C6	2.52	0.45
1:0:187:U:H2'	1:0:188:G:C8	2.52	0.45
1:0:306:G:H2'	1:0:307:C:C6	2.52	0.45
1:0:342:G:O2'	1:0:343:A:OP1	2.34	0.45
1:0:1494:G:H2'	1:0:1495:G:C8	2.51	0.45
1:0:1608:U:H2'	1:0:1609:G:C8	2.52	0.45
1:0:1888:C:C4'	1:0:1889:G:H5''	2.47	0.45
1:0:1966:C:H4'	1:0:2585:C:H4'	1.97	0.45
1:0:2204:A:O2'	1:0:2205:C:C6	2.70	0.45
1:0:2235:G:H2'	1:0:2236:U:H6	1.81	0.45
1:0:2512:A:H2'	1:0:2513:A:O4'	2.17	0.45
1:0:2572:U:C4	1:0:2573:C:N4	2.85	0.45
1:0:91:A:H2'	1:0:92:U:C6	2.53	0.44
1:0:736:G:H2'	1:0:737:C:O4'	2.16	0.44
1:0:811:G:O2'	1:0:812:G:H5'	2.18	0.44
1:0:1346:C:H2'	1:0:1347:C:C6	2.52	0.44
1:0:1367:A:H2'	1:0:1368:G:O4'	2.17	0.44
1:0:1628:C:H2'	1:0:1629:G:C8	2.52	0.44
1:0:1855:G:H4'	1:0:2390:A:H4'	1.99	0.44
1:0:1906:U:H2'	1:0:1907:C:C6	2.52	0.44
1:0:2094:C:C4	1:0:2103:G:H1'	2.52	0.44
1:0:2377:U:O2'	1:0:2378:G:OP1	2.33	0.44
1:0:2619:G:H2'	1:0:2620:G:C8	2.52	0.44
1:0:2694:G:H2'	1:0:2695:C:C6	2.52	0.44
1:0:237:G:H2'	1:0:238:G:O4'	2.17	0.44
1:0:709:A:H2'	1:0:710:C:C6	2.53	0.44
1:0:1130:U:H2'	1:0:1131:G:C8	2.53	0.44
1:0:1225:G:H2'	1:0:1249:G:H1	1.82	0.44
1:0:1921:A:C3'	1:0:1922:U:H5''	2.47	0.44
1:0:2240:C:H2'	1:0:2241:U:H5'	1.98	0.44
1:0:2524:G:H2'	1:0:2525:U:O4'	2.17	0.44
1:0:2591:C:O2'	1:0:2592:U:H5'	2.17	0.44
1:0:210:A:N6	1:0:442:A:N6	2.66	0.44
1:0:403:A:H4'	1:0:425:A:C5'	2.39	0.44
1:0:514:G:N3	1:0:514:G:C2'	2.79	0.44
1:0:644:A:H2'	1:0:645:G:H5'	1.99	0.44
1:0:788:G:C5'	1:0:790:A:H1'	2.47	0.44
1:0:987:G:H2'	1:0:988:G:H8	1.82	0.44
1:0:1204:G:H2'	1:0:1205:G:C8	2.52	0.44
1:0:1712:G:C2'	1:0:1713:G:H5'	2.46	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1859:A:H2'	1:0:1860:A:C8	2.53	0.44
1:0:2159:A:H2'	1:0:2160:C:C6	2.52	0.44
1:0:2426:G:H22	1:0:2431:C:N4	2.15	0.44
1:0:2809:A:N6	1:0:2854:G:H2'	2.32	0.44
1:0:2862:G:O2'	1:0:2863:U:H5'	2.17	0.44
1:0:351:A:H2'	1:0:352:G:O4'	2.18	0.44
1:0:653:G:H21	1:0:655:A:H1'	1.82	0.44
1:0:701:U:H2'	1:0:702:A:O4'	2.18	0.44
1:0:1251:G:H2'	1:0:1252:C:H6	1.80	0.44
1:0:1286:U:H4'	1:0:1288:A:OP1	2.17	0.44
1:0:1292:A:H2'	1:0:1293:A:H8	1.83	0.44
1:0:2227:C:C2'	1:0:2228:U:H5'	2.41	0.44
1:0:2292:C:H2'	1:0:2293:G:C8	2.53	0.44
1:0:2860:C:H2'	1:0:2861:A:O4'	2.18	0.44
1:0:117:A:H4'	1:0:118:U:C6	2.53	0.44
1:0:192:G:O2'	1:0:193:A:C5'	2.66	0.44
1:0:520:C:O2'	1:0:1249:G:H5''	2.18	0.44
1:0:532:A:H2'	1:0:533:C:C6	2.53	0.44
1:0:540:G:O6	1:0:2006:G:OP1	2.36	0.44
1:0:699:G:H3'	1:0:699:G:N3	2.33	0.44
1:0:716:U:H2'	1:0:717:G:O4'	2.18	0.44
1:0:837:U:H2'	1:0:838:A:C8	2.53	0.44
1:0:1319:C:H2'	1:0:1320:A:H8	1.82	0.44
1:0:1518:C:C2'	1:0:1519:G:O5'	2.66	0.44
1:0:2709:C:H2'	1:0:2710:C:C6	2.52	0.44
1:0:2785:A:H2'	1:0:2786:G:O4'	2.17	0.44
1:0:245:C:H5'	1:0:372:U:O2'	2.17	0.44
1:0:575:U:H2'	1:0:576:A:C8	2.53	0.44
1:0:604:U:H2'	1:0:605:G:H8	1.82	0.44
1:0:634:G:H2'	1:0:635:C:C6	2.52	0.44
1:0:925:U:H4'	1:0:926:C:C6	2.53	0.44
1:0:1002:C:H2'	1:0:1003:C:C6	2.53	0.44
1:0:2635:U:H2'	1:0:2636:A:C8	2.52	0.44
1:0:2668:U:C2'	1:0:2669:C:OP2	2.66	0.44
1:0:55:A:N6	1:0:69:G:O6	2.50	0.44
1:0:575:U:H4'	1:0:822:G:OP2	2.17	0.44
1:0:1840:A:H2'	1:0:1841:G:H5'	2.00	0.44
1:0:32:C:H2'	1:0:33:C:C6	2.53	0.44
1:0:54:G:H2'	1:0:55:A:H8	1.83	0.44
1:0:69:G:OP1	1:0:110:U:N3	2.51	0.44
1:0:147:G:C2	1:0:148:C:H1'	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:508:G:H2'	1:0:509:U:C6	2.52	0.44
1:0:694:G:H2'	1:0:695:G:C8	2.53	0.44
1:0:1466:C:H2'	1:0:1467:U:O4'	2.17	0.44
1:0:1821:A:H5''	1:0:1822:C:C5	2.52	0.44
1:0:1912:G:N3	1:0:1912:G:C2'	2.79	0.44
1:0:2458:U:OP1	1:0:2516:U:H1'	2.18	0.44
1:0:2492:G:H2'	1:0:2493:U:C6	2.53	0.44
1:0:1031:C:H4'	1:0:1032:A:C8	2.53	0.44
1:0:1353:A:H1'	1:0:1619:A:O4'	2.17	0.44
1:0:2018:G:H3'	1:0:2019:C:H5'	2.00	0.44
1:0:2356:A:H2'	1:0:2357:A:C8	2.53	0.44
1:0:2668:U:HO2'	1:0:2669:C:P	2.41	0.44
1:0:2824:C:H2'	1:0:2825:A:OP2	2.17	0.44
1:0:181:A:C4'	1:0:182:G:H4'	2.46	0.43
1:0:415:A:C2'	1:0:416:U:H5'	2.47	0.43
1:0:543:G:H2'	1:0:544:U:C6	2.53	0.43
1:0:1008:G:H2'	1:0:1009:C:C6	2.53	0.43
1:0:1055:A:H2	1:0:1121:G:H2'	1.83	0.43
1:0:1480:G:C2'	1:0:1481:U:H5'	2.47	0.43
1:0:1504:G:O2'	1:0:1505:U:H5'	2.18	0.43
1:0:1665:C:H2'	1:0:1666:G:C8	2.53	0.43
1:0:2276:C:O2'	1:0:2277:A:H5'	2.18	0.43
1:0:2436:U:H2'	1:0:2437:G:O4'	2.18	0.43
1:0:2712:G:H5'	1:0:2713:A:C8	2.53	0.43
1:0:2783:U:O2'	1:0:2784:A:H4'	2.18	0.43
1:0:168:A:H2'	1:0:169:C:H6	1.82	0.43
1:0:437:G:O2'	1:0:438:G:H5'	2.17	0.43
1:0:457:C:O2'	1:0:458:G:H5'	2.18	0.43
1:0:715:U:H2'	1:0:716:U:C6	2.53	0.43
1:0:841:G:H4'	1:0:844:G:N1	2.33	0.43
1:0:859:U:H4'	1:0:860:U:C5	2.53	0.43
1:0:1155:G:H2'	1:0:1156:U:O4'	2.18	0.43
1:0:1274:C:O2'	1:0:1275:A:H5'	2.18	0.43
1:0:1291:G:H2'	1:0:1292:A:C8	2.53	0.43
1:0:1312:G:H5''	1:0:1313:U:C5'	2.36	0.43
1:0:1750:A:H1'	1:0:2690:A:C2	2.52	0.43
1:0:1899:A:O2'	1:0:1946:U:H1'	2.18	0.43
1:0:2321:C:C2'	1:0:2322:U:H5'	2.47	0.43
1:0:2620:G:H2'	1:0:2621:G:H8	1.83	0.43
1:0:2772:U:H2'	1:0:2773:G:C8	2.53	0.43
1:0:67:G:C4	1:0:73:A:C8	3.06	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:192:G:H4'	1:0:193:A:H4'	1.99	0.43
1:0:538:A:C3'	1:0:539:A:H5''	2.48	0.43
1:0:1227:A:H62	1:0:1248:G:H21	1.65	0.43
1:0:1518:C:O2'	1:0:1519:G:P	2.76	0.43
1:0:1561:A:H2'	1:0:1562:G:O4'	2.18	0.43
1:0:2161:C:O2'	1:0:2162:C:OP1	2.34	0.43
1:0:2392:G:H2'	1:0:2393:G:C8	2.54	0.43
1:0:2485:U:O2'	1:0:2486:C:H5'	2.17	0.43
1:0:2510:A:N6	1:0:2641:A:H61	2.11	0.43
1:0:2680:U:H3'	1:0:2681:A:C5'	2.47	0.43
2:5:24:U:H2'	2:5:25:U:C6	2.54	0.43
1:0:242:A:O2'	1:0:243:G:OP2	2.37	0.43
1:0:420:C:H2'	1:0:421:G:C8	2.53	0.43
1:0:475:U:H2'	1:0:476:G:O4'	2.18	0.43
1:0:1016:C:H2'	1:0:1017:C:H6	1.83	0.43
1:0:1278:A:O2'	1:0:1279:G:O5'	2.36	0.43
1:0:1605:A:H2'	1:0:1606:C:C6	2.54	0.43
1:0:173:A:N3	1:0:173:A:C2'	2.81	0.43
1:0:456:C:H2'	1:0:457:C:C6	2.54	0.43
1:0:871:U:H1'	1:0:2248:A:C5'	2.47	0.43
1:0:1614:C:H2'	1:0:1615:C:C6	2.53	0.43
1:0:1774:A:N1	1:0:2566:A:H2'	2.34	0.43
1:0:1938:U:H2'	1:0:1939:U:H5'	1.99	0.43
1:0:2497:A:O5'	1:0:2497:A:N3	2.52	0.43
1:0:2780:A:H2'	1:0:2781:G:H8	1.83	0.43
1:0:2874:A:H2'	1:0:2875:C:C6	2.54	0.43
1:0:114:C:H4'	1:0:124:A:O2'	2.17	0.43
1:0:810:U:H2'	1:0:811:G:H8	1.83	0.43
1:0:838:A:H4'	1:0:2407:G:C5	2.54	0.43
1:0:1478:U:H2'	1:0:1479:G:C8	2.53	0.43
1:0:1518:C:HO2'	1:0:1519:G:P	2.41	0.43
1:0:1975:G:H1'	1:0:1977:C:N4	2.33	0.43
1:0:2033:C:H2'	1:0:2034:A:O4'	2.18	0.43
1:0:88:G:H3'	1:0:89:A:C5'	2.42	0.43
1:0:109:A:H2'	1:0:110:U:H5''	2.00	0.43
1:0:192:G:O2'	1:0:193:A:P	2.76	0.43
1:0:215:G:H1'	1:0:617:U:O2	2.19	0.43
1:0:547:U:H2'	1:0:548:G:C8	2.53	0.43
1:0:959:C:H2'	1:0:960:U:C6	2.54	0.43
1:0:1075:C:H2'	1:0:1076:U:C6	2.54	0.43
1:0:1500:U:H2'	1:0:1501:C:C6	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1518:C:H2'	1:0:1519:G:H8	1.84	0.43
1:0:1961:A:H2'	1:0:1962:C:O4'	2.18	0.43
2:5:32:A:C5	2:5:33:C:H1'	2.54	0.43
1:0:201:G:H2'	1:0:202:A:H8	1.84	0.43
1:0:653:G:C2	1:0:655:A:H1'	2.53	0.43
1:0:820:U:H2'	1:0:821:A:C8	2.53	0.43
1:0:840:U:H4'	1:0:841:G:C2	2.53	0.43
1:0:967:G:H1'	1:0:970:A:N7	2.34	0.43
1:0:1033:G:N2	1:0:1150:C:H2'	2.29	0.43
1:0:1326:U:H4'	1:0:1345:G:H4'	2.01	0.43
1:0:2002:A:H61	1:0:2018:G:N2	2.16	0.43
1:0:2056:C:H2'	1:0:2057:U:H6	1.84	0.43
1:0:2244:C:H1'	1:0:2255:G:N1	2.34	0.43
1:0:2265:A:H5''	1:0:2266:A:O4'	2.19	0.43
1:0:2602:G:OP1	1:0:2801:A:H1'	2.19	0.43
1:0:338:G:H2'	1:0:339:U:O4'	2.19	0.43
1:0:722:C:H2'	1:0:723:C:C6	2.54	0.43
1:0:814:G:H3'	1:0:815:A:C5'	2.49	0.43
1:0:878:C:HO2'	1:0:879:A:P	2.42	0.43
1:0:1341:G:N2	1:0:1664:G:H1	2.15	0.43
1:0:1880:G:H2'	1:0:1881:U:C6	2.54	0.43
1:0:2213:G:H2'	1:0:2214:G:H8	1.84	0.43
1:0:2369:U:H2'	1:0:2370:G:C8	2.54	0.43
1:0:2586:G:H2'	1:0:2587:G:O4'	2.18	0.43
1:0:2785:A:O2'	1:0:2786:G:H5'	2.19	0.43
1:0:2795:A:N3	1:0:2795:A:H2'	2.32	0.43
1:0:121:G:H2'	1:0:122:G:O4'	2.19	0.43
1:0:128:C:C3'	1:0:129:A:H5''	2.49	0.43
1:0:187:U:H2'	1:0:188:G:H8	1.83	0.43
1:0:211:U:H2'	1:0:212:U:O4'	2.19	0.43
1:0:762:A:H5'	1:0:1284:G:H1'	1.99	0.43
1:0:1194:U:H2'	1:0:1195:U:H6	1.79	0.43
1:0:1604:A:H2'	1:0:1605:A:O4'	2.19	0.43
1:0:1937:G:H4'	1:0:2529:G:H21	1.83	0.43
1:0:2034:A:N6	1:0:2593:A:N7	2.66	0.43
1:0:2310:G:H2'	1:0:2311:U:O4'	2.18	0.43
2:5:7:A:H2'	2:5:8:A:C8	2.54	0.43
1:0:192:G:O2'	1:0:193:A:H5''	2.19	0.42
1:0:242:A:N6	1:0:441:A:N7	2.66	0.42
1:0:539:A:N6	1:0:2024:U:H3	2.16	0.42
1:0:591:G:H2'	1:0:592:G:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:628:A:H2'	1:0:629:C:H6	1.81	0.42
1:0:652:C:N4	1:0:657:A:H61	2.09	0.42
1:0:1046:U:H2'	1:0:1047:G:H8	1.84	0.42
1:0:1193:G:O2'	1:0:1194:U:P	2.76	0.42
1:0:1591:U:H2'	1:0:1592:U:O4'	2.18	0.42
1:0:1917:C:H2'	1:0:1918:G:H5'	2.01	0.42
1:0:2083:G:H22	1:0:2172:U:H3	1.66	0.42
1:0:2808:U:H3'	1:0:2809:A:C5'	2.47	0.42
1:0:81:C:O2'	1:0:82:G:H5'	2.19	0.42
1:0:172:A:N3	1:0:227:G:N2	2.65	0.42
1:0:758:G:N3	1:0:763:A:N6	2.64	0.42
1:0:820:U:H1'	1:0:2424:G:OP1	2.18	0.42
1:0:944:A:H2'	1:0:945:G:O4'	2.19	0.42
1:0:987:G:H2'	1:0:988:G:C8	2.54	0.42
1:0:1743:C:H2'	1:0:1744:G:C8	2.54	0.42
1:0:2473:G:O2'	1:0:2474:G:H5'	2.19	0.42
1:0:2615:U:H3	1:0:2762:G:H1	1.66	0.42
1:0:2786:G:H2'	1:0:2787:A:C8	2.54	0.42
1:0:37:C:H2'	1:0:38:G:C8	2.54	0.42
1:0:181:A:C5'	1:0:182:G:OP1	2.62	0.42
1:0:953:G:H4'	1:0:1203:A:O2'	2.19	0.42
1:0:1017:C:H2'	1:0:1018:C:O4'	2.18	0.42
1:0:1147:G:H2'	1:0:1148:G:H8	1.84	0.42
1:0:1259:A:H2'	1:0:1260:A:H8	1.83	0.42
1:0:1489:C:H3'	1:0:1490:U:H5'	2.00	0.42
1:0:1532:A:H2'	1:0:1533:G:C8	2.53	0.42
1:0:2225:G:O2'	1:0:2226:A:H5'	2.20	0.42
1:0:2380:U:C2'	1:0:2381:A:H5'	2.44	0.42
1:0:2564:U:C4'	1:0:2565:C:H5'	2.49	0.42
1:0:2658:A:H2'	1:0:2659:C:H6	1.84	0.42
1:0:178:C:H4'	1:0:399:G:C2	2.54	0.42
1:0:523:A:H2	1:0:591:G:H4'	1.83	0.42
1:0:541:C:H42	1:0:572:G:C1'	2.33	0.42
1:0:1057:A:H3'	1:0:1058:G:H5'	2.00	0.42
1:0:1626:A:H5''	1:0:1627:C:OP2	2.20	0.42
1:0:2038:C:H5'	1:0:2039:G:C5'	2.49	0.42
1:0:2161:C:H2'	1:0:2162:C:C5	2.55	0.42
1:0:2261:G:H4'	1:0:2368:G:O2'	2.20	0.42
1:0:2426:G:H22	1:0:2431:C:H41	1.67	0.42
1:0:63:A:O2'	1:0:64:C:H5'	2.19	0.42
1:0:415:A:O2'	1:0:416:U:H5'	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:764:A:H3'	1:0:764:A:N3	2.35	0.42
1:0:1029:C:C2'	1:0:1030:U:H5''	2.49	0.42
1:0:1358:C:H2'	1:0:1359:G:H5'	2.01	0.42
1:0:1708:C:H2'	1:0:1709:U:O4'	2.19	0.42
1:0:2757:G:H5'	1:0:2761:A:C1'	2.50	0.42
2:5:33:C:H3'	2:5:34:C:C5'	2.48	0.42
1:0:3:U:H2'	1:0:4:C:C6	2.54	0.42
1:0:404:A:H1'	1:0:424:G:O2'	2.19	0.42
1:0:509:U:H2'	1:0:510:G:O4'	2.19	0.42
1:0:860:U:H2'	1:0:860:U:O2	2.19	0.42
1:0:984:A:H2'	1:0:1200:G:N2	2.33	0.42
1:0:1343:C:H2'	1:0:1344:C:C6	2.55	0.42
1:0:1489:C:H3'	1:0:1490:U:C5'	2.50	0.42
1:0:1762:C:H2'	1:0:1763:G:C8	2.54	0.42
1:0:1957:C:O2'	1:0:1958:G:H5'	2.19	0.42
1:0:2633:A:H4'	1:0:2634:G:C4'	2.40	0.42
1:0:119:G:H1'	1:0:129:A:N1	2.35	0.42
1:0:354:C:H2'	1:0:355:G:O4'	2.20	0.42
1:0:644:A:H2'	1:0:645:G:O4'	2.19	0.42
1:0:646:C:O2'	1:0:650:U:H5''	2.19	0.42
1:0:649:G:H2'	1:0:650:U:C6	2.54	0.42
1:0:786:U:H2'	1:0:787:A:H5'	2.01	0.42
1:0:879:A:C2'	1:0:880:C:H5'	2.49	0.42
1:0:1065:A:H2'	1:0:1066:G:C8	2.55	0.42
1:0:1187:A:HO2'	1:0:1188:A:P	2.41	0.42
1:0:1193:G:O2'	1:0:1194:U:OP1	2.36	0.42
1:0:1281:A:N6	1:0:1995:G:O2'	2.52	0.42
1:0:1451:C:H2'	1:0:1452:U:C6	2.54	0.42
1:0:1566:G:H2'	1:0:1567:A:C8	2.55	0.42
1:0:1634:A:O2'	1:0:1635:G:H5'	2.19	0.42
1:0:1790:G:O3'	1:0:1791:C:H6	2.02	0.42
1:0:1836:C:H2'	1:0:1837:G:H8	1.84	0.42
1:0:2217:G:H5'	1:0:2219:U:O4	2.19	0.42
1:0:2555:G:N3	1:0:2555:G:C2'	2.83	0.42
1:0:48:A:O5'	1:0:50:G:H4'	2.20	0.42
1:0:562:G:H2'	1:0:563:U:O4'	2.20	0.42
1:0:964:A:H1'	1:0:2245:A:OP2	2.19	0.42
1:0:1030:U:OP1	1:0:1046:U:H1'	2.20	0.42
1:0:1499:A:H2'	1:0:1500:U:C6	2.54	0.42
1:0:1671:A:C1'	1:0:2798:A:H5'	2.50	0.42
1:0:2133:G:H2'	1:0:2134:U:C6	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2217:G:N3	1:0:2217:G:C2'	2.83	0.42
1:0:2245:A:C2'	1:0:2246:A:OP2	2.67	0.42
1:0:2633:A:H5''	1:0:2634:G:OP1	2.20	0.42
1:0:198:A:O2'	1:0:199:A:OP2	2.30	0.42
1:0:327:C:O2'	1:0:328:A:H5'	2.20	0.42
1:0:430:C:H2'	1:0:431:G:C8	2.54	0.42
1:0:617:U:H2'	1:0:618:A:O4'	2.20	0.42
1:0:669:G:H2'	1:0:670:U:H6	1.83	0.42
1:0:956:A:H2'	1:0:956:A:N3	2.34	0.42
1:0:1332:G:H2'	1:0:1333:G:O4'	2.20	0.42
1:0:1801:C:H3'	1:0:1802:A:H5'	2.02	0.42
1:0:2027:C:H2'	1:0:2028:C:C6	2.55	0.42
1:0:2500:C:H4'	1:0:2544:A:C4'	2.50	0.42
1:0:2633:A:H61	1:0:2646:C:N4	2.18	0.42
1:0:2766:U:O2'	1:0:2767:C:H5'	2.19	0.42
1:0:520:C:H2'	1:0:521:U:O4'	2.20	0.42
1:0:878:C:O2'	1:0:879:A:OP1	2.35	0.42
1:0:1143:A:H2'	1:0:1144:U:C6	2.55	0.42
1:0:1479:G:H2'	1:0:1480:G:C8	2.54	0.42
1:0:1917:C:C2'	1:0:1918:G:H5'	2.49	0.42
1:0:2463:G:O2'	1:0:2464:G:H5'	2.20	0.42
1:0:2651:U:H2'	1:0:2652:G:H8	1.85	0.42
1:0:2784:A:C8	1:0:2785:A:C8	3.07	0.42
1:0:2836:U:H2'	1:0:2837:G:C8	2.55	0.42
1:0:65:C:C3'	1:0:66:U:H5'	2.49	0.41
1:0:314:G:H2'	1:0:315:G:H8	1.85	0.41
1:0:616:U:C3'	1:0:617:U:H5''	2.50	0.41
1:0:635:C:H2'	1:0:636:G:H5''	2.02	0.41
1:0:1594:U:H2'	1:0:1595:A:C8	2.55	0.41
1:0:1949:A:H1'	1:0:2572:U:H5'	2.01	0.41
1:0:1962:C:H2'	1:0:1963:G:H8	1.85	0.41
1:0:2028:C:O2'	1:0:2029:G:H5'	2.20	0.41
1:0:2217:G:H4'	1:0:2219:U:C5	2.55	0.41
1:0:2250:G:O2'	1:0:2251:U:H5'	2.20	0.41
1:0:2470:U:H1'	1:0:2548:G:O3'	2.20	0.41
1:0:2698:G:H2'	1:0:2699:G:O4'	2.19	0.41
1:0:63:A:N6	1:0:89:A:N1	2.69	0.41
1:0:319:G:H1'	1:0:511:A:H5'	2.02	0.41
1:0:438:G:H2'	1:0:439:C:C6	2.54	0.41
1:0:873:U:C2	1:0:2246:A:H5''	2.55	0.41
1:0:1142:G:OP1	1:0:2494:C:H4'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1402:G:H2'	1:0:1403:U:O4'	2.21	0.41
1:0:1930:C:H2'	1:0:1931:G:C8	2.55	0.41
1:0:1938:U:O2'	1:0:1939:U:H5'	2.20	0.41
1:0:2710:C:O2'	1:0:2711:G:H5'	2.20	0.41
1:0:239:A:H5'	1:0:619:A:O2'	2.20	0.41
1:0:579:G:H2'	1:0:2013:A:C5	2.55	0.41
1:0:820:U:H5'	1:0:2424:G:H4'	2.01	0.41
1:0:871:U:O2	1:0:2247:A:H2'	2.20	0.41
1:0:1177:U:H2'	1:0:1178:C:C6	2.55	0.41
1:0:1225:G:H2'	1:0:1249:G:N1	2.35	0.41
1:0:1231:A:H2'	1:0:1232:U:O4'	2.20	0.41
1:0:1807:A:O2'	1:0:1808:C:C4'	2.64	0.41
1:0:1829:C:O2'	1:0:1910:A:H1'	2.20	0.41
1:0:1888:C:H2'	1:0:1913:G:C6	2.55	0.41
1:0:2096:U:C2'	1:0:2097:A:H5''	2.44	0.41
1:0:2392:G:H2'	1:0:2393:G:H8	1.85	0.41
1:0:2502:G:H2'	1:0:2503:G:H8	1.85	0.41
1:0:2564:U:H4'	1:0:2565:C:H5'	2.02	0.41
1:0:2640:G:H2'	1:0:2641:A:O4'	2.19	0.41
1:0:328:A:O2'	1:0:329:C:H5'	2.21	0.41
1:0:334:G:N3	1:0:344:G:H1'	2.36	0.41
1:0:833:A:H2'	1:0:834:A:C8	2.55	0.41
1:0:1172:U:H2'	1:0:1173:G:C8	2.55	0.41
1:0:1189:G:O2'	1:0:1190:C:H5'	2.21	0.41
1:0:1354:A:C2	1:0:1411:C:H4'	2.55	0.41
1:0:1495:G:O2'	1:0:1496:G:OP1	2.35	0.41
1:0:1671:A:H2'	1:0:1672:A:H8	1.86	0.41
1:0:1956:G:H2'	1:0:1957:C:O4'	2.20	0.41
1:0:2032:G:O2'	1:0:2033:C:H5'	2.20	0.41
1:0:2320:G:H2'	1:0:2321:C:C6	2.56	0.41
1:0:159:A:H2'	1:0:160:C:H5'	2.02	0.41
1:0:317:U:H3'	1:0:318:G:C5'	2.51	0.41
1:0:474:G:N2	1:0:476:G:H3'	2.36	0.41
1:0:827:C:H2'	1:0:828:C:C6	2.55	0.41
1:0:853:C:H2'	1:0:854:G:C8	2.56	0.41
1:0:930:A:H3'	1:0:931:G:H8	1.85	0.41
1:0:1365:U:H5'	1:0:1587:A:H1'	2.03	0.41
1:0:1448:A:H2'	1:0:1449:C:C6	2.55	0.41
1:0:1557:G:H2'	1:0:1558:C:C6	2.56	0.41
1:0:2093:G:O2'	1:0:2094:C:OP1	2.34	0.41
1:0:2245:A:O2'	1:0:2246:A:P	2.78	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:155:G:O2'	1:0:156:G:H5'	2.21	0.41
1:0:314:G:H2'	1:0:315:G:C8	2.54	0.41
1:0:315:G:H2'	1:0:316:C:C6	2.55	0.41
1:0:639:G:O2'	1:0:640:C:H5'	2.21	0.41
1:0:769:C:H2'	1:0:770:U:O4'	2.20	0.41
1:0:857:U:C2'	1:0:858:G:H5'	2.50	0.41
1:0:1329:U:H2'	1:0:1330:G:C8	2.56	0.41
1:0:1341:G:N2	1:0:1343:C:H1'	2.36	0.41
1:0:1415:C:O2'	1:0:1416:A:H5'	2.21	0.41
1:0:1464:A:H4'	1:0:1545:G:C4'	2.51	0.41
1:0:1656:U:O2'	1:0:2678:C:H4'	2.21	0.41
1:0:1774:A:H1'	1:0:2586:G:N2	2.31	0.41
1:0:2076:G:H2'	1:0:2077:G:C8	2.54	0.41
1:0:2134:U:H2'	1:0:2135:C:C6	2.55	0.41
1:0:2220:A:H2'	1:0:2221:G:H8	1.85	0.41
1:0:2348:A:H2'	1:0:2349:G:C8	2.55	0.41
1:0:2546:G:H2'	1:0:2547:C:C6	2.56	0.41
1:0:2740:C:O2'	1:0:2741:G:H5'	2.20	0.41
1:0:69:G:O3'	1:0:111:G:H4'	2.20	0.41
1:0:189:A:H2'	1:0:190:A:C8	2.55	0.41
1:0:307:C:H2'	1:0:308:C:H6	1.85	0.41
1:0:1028:G:H2'	1:0:1029:C:H6	1.86	0.41
1:0:2083:G:N2	1:0:2172:U:H3	2.18	0.41
1:0:139:A:H2'	1:0:140:G:C8	2.55	0.41
1:0:488:A:H2'	1:0:489:A:C8	2.55	0.41
1:0:513:A:C4'	1:0:515:A:H5'	2.48	0.41
1:0:690:A:O2'	1:0:691:C:H5'	2.21	0.41
1:0:691:C:H2'	1:0:692:C:C6	2.56	0.41
1:0:831:G:H2'	1:0:832:A:H5''	2.03	0.41
1:0:874:A:H2'	1:0:875:G:H5'	2.03	0.41
1:0:964:A:H2'	1:0:965:G:H8	1.85	0.41
1:0:1286:U:H2'	1:0:2692:A:H2	1.85	0.41
1:0:1521:U:H2'	1:0:1522:C:C6	2.56	0.41
1:0:1888:C:H4'	1:0:1889:G:H5''	2.02	0.41
1:0:1928:G:H2'	1:0:1929:U:C6	2.55	0.41
1:0:1985:G:H2'	1:0:1986:G:C8	2.56	0.41
1:0:2011:U:H2'	1:0:2012:A:C8	2.56	0.41
1:0:2445:C:H2'	1:0:2446:C:O4'	2.20	0.41
1:0:2795:A:N3	1:0:2795:A:C2'	2.84	0.41
1:0:6:A:H2'	1:0:7:G:C8	2.56	0.41
1:0:40:U:H2'	1:0:41:G:H8	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:229:G:H2'	1:0:230:C:C6	2.56	0.41
1:0:305:A:H2'	1:0:306:G:O4'	2.21	0.41
1:0:344:G:O2'	1:0:345:U:H5'	2.21	0.41
1:0:713:G:H2'	1:0:714:G:C8	2.56	0.41
1:0:925:U:H5''	1:0:926:C:OP1	2.21	0.41
1:0:1084:A:H4'	1:0:2454:C:OP1	2.20	0.41
1:0:1098:G:H21	1:0:1100:G:H4'	1.86	0.41
1:0:1168:G:H2'	1:0:1169:C:C6	2.55	0.41
1:0:1221:C:H2'	1:0:1222:G:H8	1.85	0.41
1:0:1242:A:H2'	1:0:1243:G:C8	2.55	0.41
1:0:1352:G:N2	1:0:1619:A:H8	2.19	0.41
1:0:1586:A:H2'	1:0:1587:A:H8	1.86	0.41
1:0:1594:U:H2'	1:0:1595:A:H8	1.85	0.41
1:0:1671:A:H1'	1:0:2798:A:H5'	2.02	0.41
1:0:1722:G:H2'	1:0:1723:U:C6	2.55	0.41
1:0:1887:G:O2'	1:0:1888:C:H5'	2.21	0.41
1:0:1998:A:H2'	1:0:1999:U:H5'	2.02	0.41
1:0:2200:G:H2'	1:0:2201:G:C8	2.56	0.41
1:0:2226:A:H2'	1:0:2227:C:H6	1.86	0.41
1:0:2365:U:O2'	1:0:2366:U:H5'	2.21	0.41
1:0:2378:G:H2'	1:0:2379:G:C8	2.55	0.41
1:0:2383:C:H2'	1:0:2384:G:O4'	2.20	0.41
1:0:2404:A:OP1	1:0:2406:C:H5'	2.21	0.41
1:0:2448:A:C2'	1:0:2449:G:H5'	2.50	0.41
1:0:2555:G:N3	1:0:2555:G:H2'	2.36	0.41
1:0:2560:G:H4'	1:0:2561:G:C8	2.56	0.41
1:0:24:G:H2'	1:0:25:U:C6	2.55	0.41
1:0:170:U:H5'	1:0:815:A:H2	1.86	0.41
1:0:218:A:H1'	1:0:220:U:C4	2.56	0.41
1:0:729:A:O2'	1:0:730:C:H5'	2.21	0.41
1:0:1313:U:O2'	1:0:1314:A:OP2	2.39	0.41
1:0:1685:A:O2'	1:0:1686:A:O5'	2.39	0.41
1:0:2014:A:H8	1:0:2014:A:O5'	2.04	0.41
1:0:2056:C:H2'	1:0:2057:U:C6	2.56	0.41
1:0:2390:A:H2'	1:0:2391:A:C8	2.56	0.41
1:0:2548:G:H2'	1:0:2549:G:C5'	2.33	0.41
1:0:2686:C:H2'	1:0:2687:G:H8	1.86	0.41
1:0:2811:G:H2'	1:0:2812:A:C8	2.56	0.41
1:0:82:G:O2'	1:0:83:A:H5'	2.21	0.40
1:0:322:A:H1'	1:0:343:A:N7	2.36	0.40
1:0:322:A:H2	1:0:342:G:OP2	2.04	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:432:C:H2'	1:0:433:G:C8	2.57	0.40
1:0:1686:A:C2'	1:0:1687:C:H5'	2.51	0.40
1:0:2058:U:H3'	1:0:2217:G:N1	2.36	0.40
1:0:2539:C:H2'	1:0:2540:A:C8	2.56	0.40
1:0:2597:G:H2'	1:0:2598:C:C6	2.56	0.40
1:0:14:A:H2	1:0:2604:G:O2'	2.04	0.40
1:0:28:A:H2'	1:0:29:U:C6	2.56	0.40
1:0:44:G:N2	1:0:192:G:N2	2.69	0.40
1:0:67:G:N2	1:0:73:A:O4'	2.54	0.40
1:0:204:A:HO2'	1:0:205:A:H8	1.66	0.40
1:0:477:A:H2'	1:0:478:G:H5'	2.02	0.40
1:0:607:C:H2'	1:0:608:G:C8	2.57	0.40
1:0:747:A:H2'	1:0:748:A:H8	1.85	0.40
1:0:808:C:H2'	1:0:809:C:C6	2.57	0.40
1:0:1026:U:H2'	1:0:1027:C:C6	2.56	0.40
1:0:1528:C:H3'	1:0:1529:C:H5''	2.03	0.40
1:0:1621:C:C4'	1:0:1626:A:H61	2.31	0.40
1:0:1850:G:H2'	1:0:1851:A:C8	2.55	0.40
1:0:1915:A:H2'	1:0:1916:G:O4'	2.21	0.40
1:0:2169:A:O2'	1:0:2170:C:H5'	2.21	0.40
1:0:2312:A:H1'	1:0:2314:A:N9	2.36	0.40
1:0:2329:C:H41	1:0:2361:G:N2	2.18	0.40
1:0:2389:G:H2'	1:0:2390:A:O4'	2.21	0.40
1:0:2515:G:H2'	1:0:2516:U:C6	2.56	0.40
1:0:2824:C:C2'	1:0:2825:A:OP2	2.70	0.40
2:5:22:G:H2'	2:5:23:C:C6	2.57	0.40
1:0:105:G:O2'	1:0:106:G:H5'	2.20	0.40
1:0:185:C:H2'	1:0:186:C:C6	2.56	0.40
1:0:198:A:H4'	1:0:199:A:OP2	2.21	0.40
1:0:688:A:H1'	1:0:2422:C:O2'	2.21	0.40
1:0:854:G:H2'	1:0:855:G:C8	2.57	0.40
1:0:868:U:H2'	1:0:869:C:H6	1.86	0.40
1:0:890:U:H2'	1:0:891:A:C8	2.57	0.40
1:0:930:A:H5'	1:0:931:G:N7	2.37	0.40
1:0:931:G:H2'	1:0:932:G:O4'	2.21	0.40
1:0:953:G:H2'	1:0:954:U:O4'	2.21	0.40
1:0:978:U:H2'	1:0:979:A:C8	2.56	0.40
1:0:1040:A:C2'	1:0:1041:G:H5'	2.51	0.40
1:0:1162:A:H2'	1:0:1163:C:H6	1.87	0.40
1:0:1187:A:O2'	1:0:1188:A:P	2.79	0.40
1:0:1466:C:O2'	1:0:1467:U:H5'	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1653:C:H2'	1:0:1654:A:C8	2.56	0.40
1:0:1696:C:H42	1:0:1755:G:H5''	1.87	0.40
1:0:2081:U:H2'	1:0:2082:C:C5'	2.43	0.40
1:0:2234:G:H2'	1:0:2235:G:O4'	2.22	0.40
1:0:2241:U:H4'	1:0:2307:A:C2	2.56	0.40
1:0:2417:U:H4'	1:0:2419:C:OP1	2.22	0.40
1:0:2437:G:C2	1:0:2469:G:H2'	2.55	0.40
1:0:2594:U:H2'	1:0:2595:C:C6	2.57	0.40
1:0:105:G:H21	1:0:357:A:N6	2.19	0.40
1:0:528:G:H2'	1:0:529:U:C6	2.57	0.40
1:0:550:C:H2'	1:0:551:A:H8	1.86	0.40
1:0:579:G:H2'	1:0:2013:A:C6	2.56	0.40
1:0:633:G:O2'	1:0:634:G:H5'	2.22	0.40
1:0:798:G:OP2	1:0:805:G:N7	2.54	0.40
1:0:1370:U:H2'	1:0:1371:G:O4'	2.22	0.40
1:0:1418:C:H2'	1:0:1419:G:C8	2.55	0.40
1:0:1532:A:H2'	1:0:1533:G:H8	1.86	0.40
1:0:1625:A:C4	1:0:1632:A:H1'	2.56	0.40
1:0:1736:C:H2'	1:0:1737:G:C8	2.57	0.40
1:0:1787:U:H2'	1:0:1788:C:C6	2.57	0.40
1:0:1982:C:H2'	1:0:1983:G:H8	1.86	0.40
1:0:2048:C:H2'	1:0:2049:C:H6	1.86	0.40
1:0:2378:G:O2'	1:0:2379:G:H5'	2.21	0.40
1:0:2383:C:C2'	1:0:2384:G:H5'	2.51	0.40
1:0:2418:A:N6	1:0:2581:A:OP1	2.54	0.40
1:0:2553:G:H2'	1:0:2554:C:O4'	2.21	0.40
1:0:2851:G:H2'	1:0:2852:G:C8	2.56	0.40
1:0:689:A:H8	1:0:2422:C:H1'	1.86	0.40
1:0:744:C:H2'	1:0:745:C:C6	2.56	0.40
1:0:948:C:H2'	1:0:949:G:C8	2.57	0.40
1:0:1036:G:H1'	1:0:1145:C:H4'	2.03	0.40
1:0:1253:C:H2'	1:0:1254:G:O4'	2.21	0.40
1:0:1337:G:H1'	1:0:1632:A:C6	2.56	0.40
1:0:1358:C:C2'	1:0:1359:G:H5''	2.52	0.40
1:0:1369:G:H2'	1:0:1370:U:O4'	2.21	0.40
1:0:1398:G:H2'	1:0:1399:C:C6	2.56	0.40
1:0:1539:U:H2'	1:0:1540:C:C6	2.56	0.40
1:0:1806:G:O6	1:0:1807:A:N6	2.54	0.40
1:0:1918:G:H4'	1:0:1920:A:C2	2.57	0.40
1:0:2015:G:OP2	1:0:2434:G:H5'	2.22	0.40
1:0:2075:U:H1'	1:0:2204:A:C2	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2502:G:H2'	1:0:2503:G:C8	2.56	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

5.3.2 Protein sidechains [i](#)

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

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	0	2757/2880 (95%)	416 (15%)	44 (1%)
2	5	22/35 (62%)	2 (9%)	0
All	All	2779/2915 (95%)	418 (15%)	44 (1%)

All (418) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	0	15	G
1	0	35	G
1	0	45	C
1	0	48	A
1	0	49	U
1	0	50	G
1	0	59	G
1	0	66	U
1	0	67	G
1	0	70	A
1	0	71	A
1	0	72	A
1	0	74	G
1	0	87	G
1	0	89	A

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Mol	Chain	Res	Type
1	0	90	G
1	0	91	A
1	0	99	U
1	0	105	G
1	0	110	U
1	0	116	A
1	0	118	U
1	0	123	A
1	0	129	A
1	0	135	U
1	0	155	G
1	0	158	A
1	0	173	A
1	0	174	A
1	0	176	A
1	0	177	U
1	0	181	A
1	0	182	G
1	0	193	A
1	0	199	A
1	0	200	A
1	0	205	A
1	0	206	U
1	0	210	A
1	0	218	A
1	0	219	G
1	0	225	G
1	0	226	C
1	0	227	G
1	0	229	G
1	0	242	A
1	0	243	G
1	0	245	C
1	0	305	A
1	0	318	G
1	0	333	A
1	0	334	G
1	0	335	A
1	0	340	G
1	0	342	G
1	0	343	A
1	0	358	C

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Mol	Chain	Res	Type
1	0	363	G
1	0	368	A
1	0	373	A
1	0	399	G
1	0	401	G
1	0	408	U
1	0	414	A
1	0	418	C
1	0	424	G
1	0	443	A
1	0	455	A
1	0	456	C
1	0	460	U
1	0	461	A
1	0	463	C
1	0	467	U
1	0	469	G
1	0	491	A
1	0	492	G
1	0	515	A
1	0	518	A
1	0	519	C
1	0	537	C
1	0	539	A
1	0	541	C
1	0	542	A
1	0	554	U
1	0	556	A
1	0	558	G
1	0	559	C
1	0	572	G
1	0	584	A
1	0	602	C
1	0	613	A
1	0	617	U
1	0	624	A
1	0	632	A
1	0	636	G
1	0	638	A
1	0	648	A
1	0	652	C
1	0	654	A

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Mol	Chain	Res	Type
1	0	657	A
1	0	665	A
1	0	666	U
1	0	667	U
1	0	684	C
1	0	697	G
1	0	699	G
1	0	700	C
1	0	728	G
1	0	742	G
1	0	743	A
1	0	760	U
1	0	761	G
1	0	776	G
1	0	778	G
1	0	789	G
1	0	794	A
1	0	796	A
1	0	797	A
1	0	798	G
1	0	803	C
1	0	806	A
1	0	813	A
1	0	818	G
1	0	825	C
1	0	832	A
1	0	840	U
1	0	841	G
1	0	844	G
1	0	860	U
1	0	873	U
1	0	879	A
1	0	919	U
1	0	922	A
1	0	926	C
1	0	930	A
1	0	931	G
1	0	941	U
1	0	944	A
1	0	952	A
1	0	957	G
1	0	969	U

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Mol	Chain	Res	Type
1	0	970	A
1	0	972	C
1	0	973	U
1	0	984	A
1	0	994	A
1	0	996	C
1	0	1005	U
1	0	1006	C
1	0	1023	U
1	0	1024	G
1	0	1030	U
1	0	1032	A
1	0	1033	G
1	0	1036	G
1	0	1037	U
1	0	1044	U
1	0	1055	A
1	0	1056	U
1	0	1057	A
1	0	1067	G
1	0	1073	G
1	0	1074	G
1	0	1075	C
1	0	1081	A
1	0	1087	C
1	0	1090	C
1	0	1099	A
1	0	1122	A
1	0	1137	A
1	0	1138	A
1	0	1142	G
1	0	1145	C
1	0	1146	G
1	0	1155	G
1	0	1167	A
1	0	1182	U
1	0	1183	C
1	0	1185	C
1	0	1188	A
1	0	1194	U
1	0	1195	U
1	0	1199	U

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Mol	Chain	Res	Type
1	0	1200	G
1	0	1224	A
1	0	1253	C
1	0	1262	U
1	0	1264	C
1	0	1266	G
1	0	1269	G
1	0	1278	A
1	0	1279	G
1	0	1280	U
1	0	1284	G
1	0	1285	A
1	0	1288	A
1	0	1314	A
1	0	1324	G
1	0	1334	A
1	0	1338	G
1	0	1342	U
1	0	1343	C
1	0	1355	A
1	0	1356	G
1	0	1359	G
1	0	1391	A
1	0	1392	U
1	0	1397	A
1	0	1398	G
1	0	1433	A
1	0	1441	A
1	0	1442	C
1	0	1443	G
1	0	1459	U
1	0	1465	G
1	0	1468	A
1	0	1469	U
1	0	1470	G
1	0	1475	U
1	0	1482	U
1	0	1490	U
1	0	1496	G
1	0	1505	U
1	0	1508	G
1	0	1509	A

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Mol	Chain	Res	Type
1	0	1513	U
1	0	1519	G
1	0	1524	C
1	0	1529	C
1	0	1552	C
1	0	1571	G
1	0	1573	G
1	0	1574	A
1	0	1576	G
1	0	1582	A
1	0	1583	A
1	0	1585	A
1	0	1618	U
1	0	1623	C
1	0	1624	A
1	0	1625	A
1	0	1632	A
1	0	1633	C
1	0	1634	A
1	0	1635	G
1	0	1648	C
1	0	1651	U
1	0	1657	A
1	0	1664	G
1	0	1665	C
1	0	1670	G
1	0	1671	A
1	0	1680	U
1	0	1685	A
1	0	1691	G
1	0	1692	C
1	0	1710	U
1	0	1712	G
1	0	1715	A
1	0	1717	A
1	0	1724	C
1	0	1733	U
1	0	1748	U
1	0	1749	G
1	0	1750	A
1	0	1754	G
1	0	1755	G

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Mol	Chain	Res	Type
1	0	1764	A
1	0	1771	A
1	0	1778	U
1	0	1800	A
1	0	1801	C
1	0	1802	A
1	0	1807	A
1	0	1808	C
1	0	1821	A
1	0	1831	G
1	0	1884	A
1	0	1889	G
1	0	1920	A
1	0	1922	U
1	0	1924	C
1	0	1926	U
1	0	1927	U
1	0	1938	U
1	0	1939	U
1	0	1946	U
1	0	1949	A
1	0	1950	C
1	0	1954	A
1	0	1955	G
1	0	1956	G
1	0	1979	C
1	0	1980	A
1	0	2004	U
1	0	2006	G
1	0	2015	G
1	0	2016	A
1	0	2019	C
1	0	2038	C
1	0	2043	A
1	0	2051	U
1	0	2052	G
1	0	2060	A
1	0	2076	G
1	0	2082	C
1	0	2094	C
1	0	2096	U
1	0	2118	A

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Mol	Chain	Res	Type
1	0	2119	A
1	0	2140	G
1	0	2162	C
1	0	2168	A
1	0	2181	A
1	0	2191	A
1	0	2195	C
1	0	2199	C
1	0	2205	C
1	0	2218	G
1	0	2229	G
1	0	2237	C
1	0	2241	U
1	0	2245	A
1	0	2246	A
1	0	2247	A
1	0	2255	G
1	0	2262	C
1	0	2268	G
1	0	2285	U
1	0	2286	G
1	0	2287	G
1	0	2288	A
1	0	2298	U
1	0	2299	A
1	0	2300	G
1	0	2301	A
1	0	2313	G
1	0	2315	A
1	0	2316	G
1	0	2326	C
1	0	2362	G
1	0	2364	C
1	0	2378	G
1	0	2382	C
1	0	2385	U
1	0	2396	C
1	0	2403	C
1	0	2405	A
1	0	2409	A
1	0	2414	A
1	0	2420	C

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Mol	Chain	Res	Type
1	0	2427	A
1	0	2428	U
1	0	2438	A
1	0	2448	A
1	0	2455	A
1	0	2470	U
1	0	2481	G
1	0	2482	A
1	0	2483	U
1	0	2484	G
1	0	2485	U
1	0	2492	G
1	0	2498	U
1	0	2499	C
1	0	2504	G
1	0	2522	G
1	0	2546	G
1	0	2549	G
1	0	2561	G
1	0	2565	C
1	0	2578	G
1	0	2580	C
1	0	2581	A
1	0	2582	G
1	0	2588	U
1	0	2589	C
1	0	2591	C
1	0	2593	A
1	0	2594	U
1	0	2608	A
1	0	2609	G
1	0	2625	U
1	0	2633	A
1	0	2634	G
1	0	2661	G
1	0	2669	C
1	0	2670	C
1	0	2681	A
1	0	2691	C
1	0	2692	A
1	0	2712	G
1	0	2728	A

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Mol	Chain	Res	Type
1	0	2730	A
1	0	2732	C
1	0	2737	A
1	0	2745	A
1	0	2756	A
1	0	2760	G
1	0	2761	A
1	0	2770	A
1	0	2771	C
1	0	2783	U
1	0	2785	A
1	0	2795	A
1	0	2807	U
1	0	2808	U
1	0	2809	A
1	0	2811	G
1	0	2825	A
1	0	2841	U
1	0	2842	C
1	0	2847	G
1	0	2854	G
1	0	2855	C
1	0	2859	U
2	5	32	A
2	5	34	C

All (44) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	0	69	G
1	0	71	A
1	0	73	A
1	0	173	A
1	0	181	A
1	0	192	G
1	0	198	A
1	0	242	A
1	0	342	G
1	0	583	C
1	0	805	G
1	0	843	G
1	0	878	C

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

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

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	PPU	5	35	2,1	37,40,41	2.65	7 (18%)	47,57,60	0.98	4 (8%)

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

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

All (7) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	5	35	PPU	C-N3'	12.98	1.61	1.34
2	5	35	PPU	OC-CM	-5.36	1.27	1.42
2	5	35	PPU	CE1-CZ	3.91	1.46	1.38
2	5	35	PPU	CE2-CZ	2.84	1.44	1.38
2	5	35	PPU	CD2-CG	2.73	1.44	1.38
2	5	35	PPU	C6-N1	2.33	1.38	1.34
2	5	35	PPU	CD1-CG	2.02	1.42	1.38

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	5	35	PPU	C2-N1-C6	3.26	119.79	111.83
2	5	35	PPU	CM-OC-CZ	2.97	123.86	117.50
2	5	35	PPU	C-CA-N	2.28	117.97	109.37
2	5	35	PPU	C9-N6-C6	2.25	126.26	120.52

There are no chirality outliers.

All (1) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	5	35	PPU	C3'-C4'-C5'-O5'

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	5	35	PPU	1	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

1 ligand is modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# $ Z > 2$	Counts	RMSZ	# $ Z > 2$
5	SPS	0	2881	-	19,22,23	4.95	11 (57%)	23,28,30	3.31	13 (56%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	SPS	0	2881	-	1/1/2/6	8/15/16/18	0/1/1/1

All (11) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	0	2881	SPS	O1-C1	10.69	1.43	1.23
5	0	2881	SPS	O10-C10	9.78	1.43	1.24
5	0	2881	SPS	O3-C3	9.44	1.43	1.23
5	0	2881	SPS	C9-C8	7.32	1.54	1.33
5	0	2881	SPS	C10-N11	7.17	1.50	1.34
5	0	2881	SPS	C7-C5	3.23	1.55	1.49
5	0	2881	SPS	C8-C6	3.19	1.56	1.46
5	0	2881	SPS	C5-N4	3.05	1.42	1.38
5	0	2881	SPS	C9-C10	2.93	1.54	1.48
5	0	2881	SPS	C3-N4	2.52	1.41	1.37
5	0	2881	SPS	C3-N2	2.46	1.41	1.37

All (13) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	0	2881	SPS	C9-C10-N11	6.29	125.37	114.61
5	0	2881	SPS	C14-S15-C16	6.14	109.42	101.04
5	0	2881	SPS	O10-C10-C9	-5.86	109.44	122.95
5	0	2881	SPS	C7-C5-N4	4.58	118.74	113.42
5	0	2881	SPS	C1-N2-C3	-4.23	120.55	126.37
5	0	2881	SPS	C7-C5-C6	-4.03	121.24	126.47
5	0	2881	SPS	C5-N4-C3	-3.96	120.64	123.70
5	0	2881	SPS	C8-C9-C10	-3.95	109.55	125.43
5	0	2881	SPS	C9-C8-C6	-3.76	110.36	125.45
5	0	2881	SPS	C6-C1-N2	3.35	120.31	114.45
5	0	2881	SPS	O1-C1-C6	-2.50	120.46	125.98
5	0	2881	SPS	N4-C3-N2	2.48	119.64	115.74
5	0	2881	SPS	O10-C10-N11	2.11	125.19	122.44

All (1) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
5	0	2881	SPS	C12

All (8) torsion outliers are listed below:

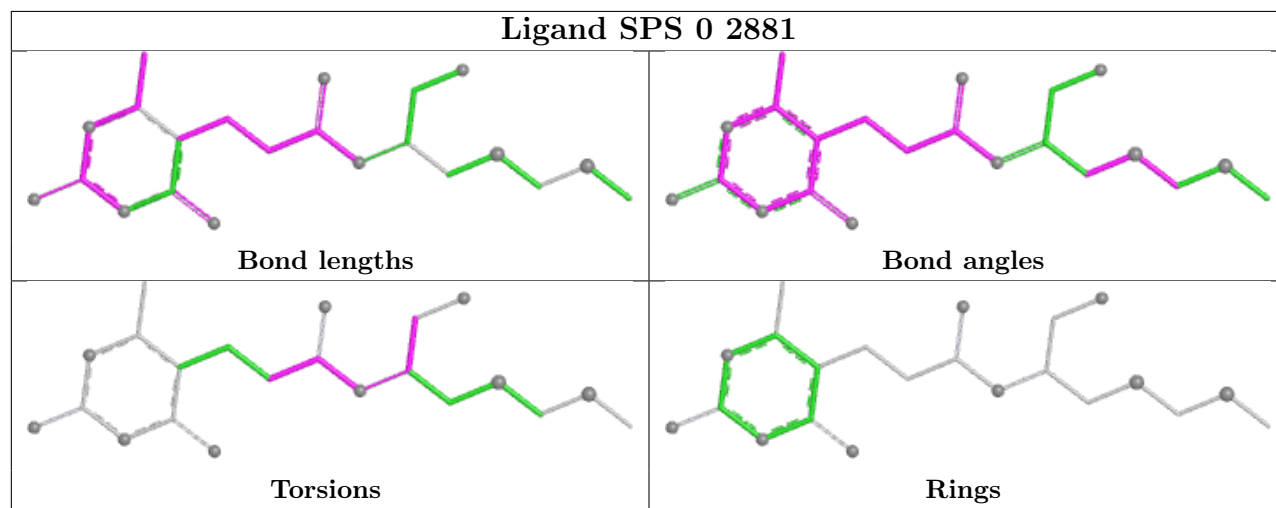
Mol	Chain	Res	Type	Atoms
5	0	2881	SPS	C9-C10-N11-C12
5	0	2881	SPS	O10-C10-N11-C12
5	0	2881	SPS	C14-C12-C13-O13
5	0	2881	SPS	N11-C12-C13-O13
5	0	2881	SPS	C13-C12-N11-C10
5	0	2881	SPS	O10-C10-C9-C8
5	0	2881	SPS	N11-C10-C9-C8
5	0	2881	SPS	C14-C12-N11-C10

There are no ring outliers.

No monomer is involved in short contacts.

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and

any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.



5.7 Other polymers [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.