



Full wwPDB X-ray Structure Validation Report ⓘ

Aug 7, 2023 – 12:17 PM EDT

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

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

MolProbity : 4.02b-467
Mogul : 1.8.5 (274361), CSD as541be (2020)
Xtrriage (Phenix) : **NOT EXECUTED**
EDS : **NOT EXECUTED**
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.35

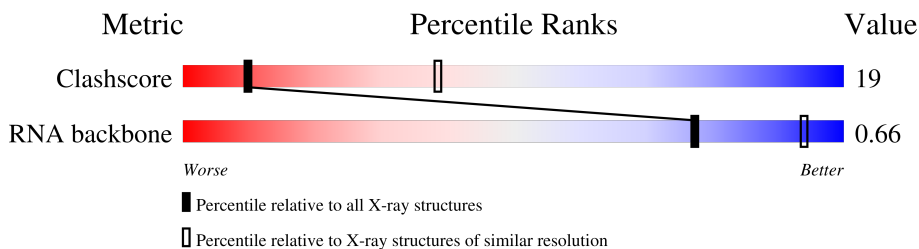
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.50 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
Clashscore	141614	1036 (3.58-3.42)
RNA backbone	3102	1002 (4.00-3.00)

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	

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 60249 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

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

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

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

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

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

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

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

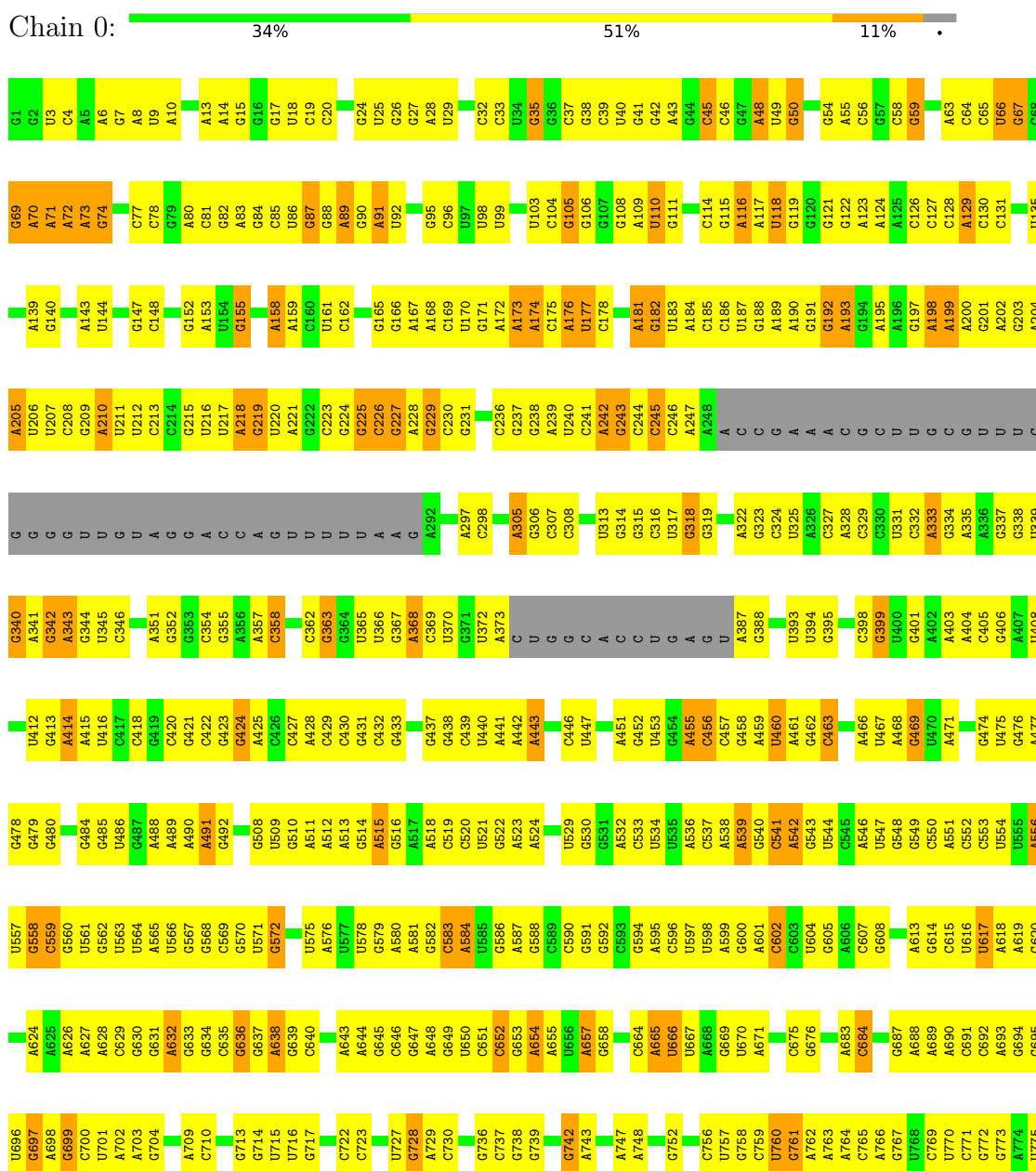
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf	Trace
			Total	C			
4	T	223	223	223	0	0	223

3 Residue-property plots

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

Note EDS was not executed.

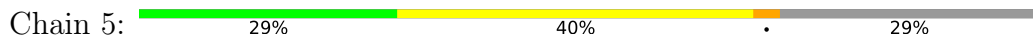
- Molecule 1: 23S ribosomal RNA

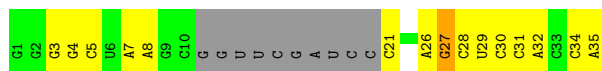


G176	A838	A	U1044	U1141	C1214	A1288	U1357	A1441	G1508	A1587	G1659	G1742	U1819
A177	U839	C	G1045	G1142	U1217	A1289	C1358	C1442	A1509	U1591	G1660	G1743	G1820
G178	U840	C	U1046	A1143	C1218	A1290	G1359	G1443	A1510	U1592	C1661	C1744	A1821
U179	G841	C	G1047	U1144	C1219	G1291	U1365	C1444	A1511	C1593	G1662	C1745	C1822
G181	A842	U916	C1052	G1145	C1220	A1292	U1366	U1445	A1512	U1594	G1663	C1746	C1825
U182	G844	U917	G1053	G1146	C1221	A1293	A1367	U1446	U1513	U1595	C1665	G1747	U1826
G183	U845	U918	G1054	G1147	G1222	G1288	G1368	A1448	C1514	A1596	G1666	U1748	
U184	A846	U919	A1055	G1148	G1223	U1301	G1373	A1449	A1515	A1597	A1667	G1749	C1829
U185	G847	U920	U1056	G1149	A1224	U1302	C1450	C1450	C1517	C1598	A1750	A1750	C1830
U186	U847	A921	A1057	U1151	G1225	U1303	G1451	C1451	C1518	A1599	A1669	G1751	G1831
G187	G848	A922	G1058	U1154	A1226	U1304	U1452	U1452	G1519	U1600	G1670	G1754	C1835
G188	U852	U925	U1059	A1155	A1227	C1307	U1455	C1455	G1520	U1601	A1671	G1755	C1836
G189	G854	U926	A1065	G1155	U1227	G1308	C1456	C1456	C1524	G1602	A1672	G1760	G1837
A190	G855	C926	U1066	U1156	A1231	G1389	A1457	A1457	U1524	A1603		G1761	G1838
G191	U856	C927	G1067	A994	U1232	C1310	C1458	C1458	G1527	A1604		C1762	G1839
U192	G857	G928	C996	A995	A1233	G1312	U1459	U1459	G1528	A1605		C1763	A1830
G193	G858	A929	C997	C163	C1234	U1313	A1386	A1386	C1529	A1606		A1764	G1841
A194	U859	G930	C998	C1164	C1235	A1314	G1387	U1467	C1530	A1607		C1765	
U195	U860	G931	C999	G1165	U1242	A1315	G1388	A1468	U1530	U1608		U1770	G1855
A196	G861	G932	G1000	G1166	A1243	A1316	C1389	U1469	C1531	A1609		U1771	G1856
G197	U864	G933	A1001	A1167	G1243	G1317	U1390	G1470	C1532	G1610		A1774	G1857
U198	G864	G934	C1002	G1168	G1244	A1318	A1391	A1471	G1542	A1611		A1775	C1858
G199	A865	C935	C1003	G1169	C1245	A1319	U1392	C1472	G1543	U1612		A1776	A1860
U800	U868	A936	C1004	C1169	G1248	A1320	U1393	U1474	G1544	G1613		A1777	A1861
			U1005	U1172	A1250	G1323	G1402	U1475	G1545	A1619		U1778	C1862
C803	C869	C939	U1006	G1173	G1251	G1324	U1403	U1476	C1552	C1621		C1779	C1865
C804	C870	G940	C1007	G1174	G1252	G1325	G1407	U1477	G1557	G1622		A1780	G1866
G805	U871	U941	G1008	U1177	C1253	G1331	G1408	U1478	C1558	G1623		A1785	G1871
A806	G872	U942	C1009	G1184	G1254	U1326	U1410	G1480	C1558	A1624		C1786	G1872
A807	U873	U943	U1010	G1185	U1261	U1327	C1411	U1481	A1561	A1625		U1787	G1880
C808	A874	A944	G1014	G1186	G1262	G1328	G1418	U1482	G1562	U1626		C1788	U1881
C809	G875	G945	U1015	C1187	G1263	A1328	U1419	U1483	G1562	C1627		U1789	G1882
U810	U876	U946	U1016	C1188	C1264	A1329	G1414	A1486	G1566	C1628		G1790	A1883
G811	G877	G949	C1017	U1189	G1265	G1330	C1415	A1487	A1567	G1629		C1791	C1884
G812	U878	U950	U1018	C1190	A1267	G1332	C1416	G1488	A1567	U1632		C1792	C1885
A813	A879	G951	U1019	C1191	U1268	G1333	C1418	U1489	A1568	A1633		A1793	G1886
G814	C880	A952	A1020	G1192	G1269	A1334	G1419	U1490	G1571	C1633		A1794	C1887
A815		G953	A1021	C1193	C1270	A1335	U1424	C1491	C1572	A1634		A1799	G1888
U816	G887	U954	A1022	G1194	G1271	G1336	G1425	A1492	G1573	G1635		A1800	C1889
A817	G888	G955	U1023	U1195	G1272	G1337	U1426	A1493	A1574	A1643		C1801	G1890
G818	C889	U956	G1024	C1196	G1273	U1338	U1427	G1494	G1575	G1644		A1802	
C819	U890	G957	A1025	U1197	C1274	G1339	G1428	G1495	G1576	U1648		A1807	G1893
U820	A891	C958	U1026	C1198	A1275	A1340	A1429	G1496	G1577	C1648		C1808	A1894
A821	G	C959	C1027	U1199	G1278	G1341	G1430	C1497	U1578	U1651		G1809	A1895
G822	G	U960	G1028	U1200	A1279	U1342	U1431	A1498	G1579	C1652		U1810	A1896
U823	G	G961	U1029	G1201	U1280	C1343	U1432	U1499	C1580	U1653		C1811	
G824	C	A964	U1030	C1031	A1281	G1344	U1433	U1501	C1581	C1654		U1812	A1899
C825	C	G965	A1032	U1038	G1284	G1345	U1434	G1502	A1582	U1655		A1813	U1900
U826	C	C966	U1033	U1038	A1285	U1346	U1435	G1503	A1583	G1656		G1814	
C827	C	U967	G1034	U1039	A1286	C1347	G1436	U1504	G1584	U1657		A1814	
C828	U	G968	U1034	A1039	U1287	C1348	A1437	U1505	A1586	A1658		G1818	
C829	A	C969	G1035	A1040	U1288	G1349	U1438	U1506					
C830	C	U969	U1036	G1041	U1289	A1350	U1439						
G831	C	A970	G1036	U1038	A1289	G1351	U1440						
A832	A	A971	U1037	U1038	G1284	G1352	U1441						
A833	C	C972	U1038	A1039	A1285	A1353	G1435						
A834	C	U973	U1039	A1040	U1286	A1354	G1436						
U837	U	C975	G1041	A1041	U1287	A1355	G1437						

U1909	C1979	G2050	U2051	U2070	U	C2199	U2720	G2353	C2420	G2484	G2553	G2621	U2778	A2861	U1909
A1910	A1980	G2052	A1911	G2055	U	G2200	C2271	A2356	C2421	U2485	C2554	G2622	G2782	G2862	A1910
G1912	C1982	G2056	G1913	U2057	C	G1912	A2272	A2357	C2422	C2486	G2555	G2623	G2783	U2863	G1912
U1914	G1985	C2055	U1914	C2056	G2132	G2056	C2274	C2358	G2423	C2491	C2558	U2625	A2784	G2867	U1914
A1915	G1986	U2058	A1915	U2059	U2133	U2058	U2275	G2361	G2424	U2492	U2559	C2628	A2785	U2871	A1915
C1917	G1993	U2059	C1917	U2059	U2134	U2059	C2276	G2362	G2425	C2493	G2560	U2829	G2786	U2872	C1917
U1918	U1994	C2060	U1918	A2060	U2136	U1994	A2277	G2363	A2427	C2494	G2561	A2633	A2787	U2873	U1918
G1995	U1995	G2061	G1995	C2061	U2136	U1995	G2279	C2364	A2428	C2495	U2562	A2634	G2794	C2873	G1995
A1919	U1996	C2062	A1919	C2062	U2138	U1996	U2285	C2365	A2429	C2496	U2563	G2634	A2795	C2874	A1919
U1920	A1996	U2062	U1920	U2062	U2138	A1996	U2286	C2366	A2430	U2498	C2565	U2635	A2796	C2875	U1920
A1921	A1997	U2062	A1921	U2062	G2139	A1997	G2287	U2366	A2431	U2499	A2566	A2636	G2797	A2877	A1921
U1922	U2001	U2069	U1922	U2069	G2140	U2001	G2288	G2368	G2432	C2500	A2567	A2637	A2798	C	U1922
U1923	G2002	G2070	U1923	G2070	A	G2002	A2288	U2369	G2433	U2501	C2570	A2639	A2799	U	U1923
C1924	A2002	G2070	C1924	G2070	G	A2002	G2289	G2370	G2434	U2502	C2571	G2640	C2799	C	C1924
U1925	U2003	U2075	U1925	U2075	G	U2003	G2290	G2371	U2435	G2503	U2572	A2641	A2801	U	U1925
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U1927	U2005	G2077	U1927	G2077	A	U2005	G2293	A2372	U2437	G2505	G2574	G2643	G2805	U	U1927
G1928	G2006	G2078	G1928	G2078	C	G1928	U2298	U2372	U2438	G2508	U2575	U2644	G2806	U	G1928
U1929	G2007	A2079	U1929	A2079	G	U1929	A2299	G2376	C2440	G2509	U2576	C2646	G2807	U	U1929
C1930	C2008	U2080	C1930	U2080	C	C1930	G2300	G2377	C2441	A2509	A2577	U2647	U2808	U	C1930
G1931	U2009	U2081	G1931	U2081	G	U2009	A2301	G2378	C2442	A2510	G2578	U2648	A2809	U	G1931
U1937	U2011	C2082	U1937	C2082	C	U1937	G2302	G2379	C2443	G2511	A2579	G2649	A2810	U	U1937
U1858	A2012	G2084	U1858	G2084	A	U1858	A2307	U2380	C2444	A2512	C2580	A2658	G2811	U	U1858
U1939	A2013	U2086	U1939	U2086	A	U1939	A2308	C2382	A2448	G2514	G2582	C2659	A2812	U	U1939
U1946	A2014	U2086	U1946	U2086	U	U1946	A2309	C2383	C2449	G2515	C2583	C2660	C2815	U	U1946
G2015	G2015	G2093	G2015	G2093	A	G2015	G2309	U2377	C2450	G2516	C2584	G2661	C2816	U	G2015
C1948	U2017	C2094	C1948	C2094	C	C1948	U2310	G2378	G2451	U2517	C2585	U2662	C2817	U	C1948
A1949	G2018	G2095	A1949	G2095	C	A1949	U2311	G2379	C2452	U2518	C2586	U2663	G2818	U	A1949
C1950	C2019	U2096	C1950	U2096	C	C1950	U2312	G2380	C2453	A2521	U2587	U2664	G2819	U	C1950
G1951	G2020	A2097	G1951	A2097	G	G1951	U2313	G2381	C2454	G2522	U2588	C2665	U2820	U	G1951
A1952	G2021	G	A1952	G	C	A1952	U2314	G2382	A2455	G2523	C2589	C2666	C2821	U	A1952
A1953	C2022	A	A1953	A	C	A1953	U2315	G2383	U2456	G2524	U2590	C2667	U2822	U	A1953
G1954	C2023	A	G1954	A	C	G1954	U2316	G2384	A2457	U2525	C2591	C2668	U2823	U	G1954
G1955	U2024	U	G1955	U	C	G1955	U2317	G2385	U2458	U2526	U2592	C2669	A2824	U	G1955
G1956	A2025	A	G1956	A	C	G1956	U2318	C2386	C2459	G2527	U2593	U2670	G2825	U	G1956
C1957	C2026	G	C1957	G	C	C1957	U2319	C2387	G2460	G2528	U2594	U2671	U2826	U	C1957
G1958	C2027	A	G1958	A	C	G1958	G2320	A2388	G2461	G2529	C2595	U2672	C2827	U	G1958
A1961	G2028	G2106	A1961	G2106	C	A1961	U2321	U2398	G2462	G2530	C2596	U2673	U2828	U	A1961
C1962	C2028	G2107	C1962	G2107	C	C1962	U2322	U2399	G2463	U2533	U2599	U2674	U2829	U	C1962
U1964	G2032	G2110	U1964	G2110	C	U1964	U2323	U2401	G2464	U2534	U2600	U2675	U2830	U	U1964
U1965	A2034	C	U1965	C	C	U1965	U2324	U2402	G2465	U2535	C2601	C2686	C2831	U	U1965
C1966	G2035	U	C1966	U	C	C1966	U2325	U2403	U2466	C2536	G2602	C2687	U2832	U	C1966
U1967	G2036	U	U1967	U	C	U1967	U2326	U2404	G2467	U2537	G2603	U2688	U2833	U	U1967
G1968	A2037	C	G1968	C	C	G1968	U2327	U2405	U2468	C2538	C2604	G2689	U2834	U	G1968
G1969	C2038	G	G1969	G	C	G1969	U2328	U2406	G2469	U2539	G2605	U2690	U2835	U	G1969
G1970	G2039	A2117	G1970	A2117	C	G1970	U2329	U2407	U2470	U2540	G2606	U2691	U2836	U	G1970
C1971	A2043	A2118	C1971	A2118	C	C1971	U2330	U2408	G2471	A2544	A2607	C2692	U2837	U	C1971
G1972	A2044	A2119	G1972	A2119	C	G1972	U2331	U2409	G2472	A2545	G2608	U2693	U2838	U	G1972
C1973	G2045	C2120	C1973	C2120	C	C1973	U2332	U2410	U2473	G2546	C2609	U2694	U2839	U	C1973
U1974	A2045	U2121	U1974	U2121	C	U1974	U2333	U2411	U2474	C2547	U2610	G2695	G2840	U	U1974
G1975	G2046	U	G1975	U	C	G1975	U2334	U2412	G2475	C2548	U2611	U2696	U2841	U	G1975
U1976	C2047	C2125	U1976	C2125	C	U1976	U2335	U2413	G2476	G2549	G2612	U2697	U2842	U	U1976
C1977	C2048	U	C1977	U	C	C1977	U2336	U2414	U2477	C2550	A2613	U2698	U2843	U	C1977
U1978	C2049	U	U1978	U	C	U1978	U2337	U2415	U2478	C2551	A2614	U2699	U2844	U	U1978

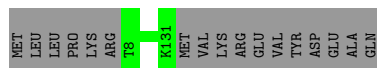
● Molecule 2: tRNA acceptor stem mimic





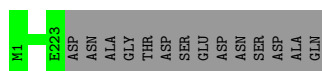
- Molecule 3: 50S ribosomal protein L16

Chain K: 88% 12%



- Molecule 4: GENERAL STRESS PROTEIN CTC

Chain T: 94% 6%



4 Data and refinement statistics

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

Property	Value	Source
Space group	I 2 2 2	Depositor
Cell constants a, b, c, α , β , γ	169.90Å 409.90Å 695.90Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	15.00 – 3.50	Depositor
% Data completeness (in resolution range)	(Not available) (15.00-3.50)	Depositor
R_{merge}	(Not available)	Depositor
R_{sym}	0.12	Depositor
Refinement program	CNS	Depositor
R, R_{free}	0.244 , 0.295	Depositor
Estimated twinning fraction	No twinning to report.	Xtrriage
Total number of atoms	60249	wwPDB-VP
Average B, all atoms (Å ²)	81.0	wwPDB-VP

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	0	0.14	0/66467	0.63	0/103673
2	5	0.15	0/563	0.63	0/873
All	All	0.14	0/67030	0.63	0/104546

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

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

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	0	873	U	Sidechain

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	0	59359	0	29917	1724	0
2	5	543	0	290	11	0
3	K	124	0	0	0	0
4	T	223	0	0	0	0
All	All	60249	0	30207	1731	0

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

All (1731) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:940:G:H3'	1:0:941:U:H5''	1.22	1.14
1:0:1141:U:H3	1:0:2008:C:H5''	1.20	1.04
1:0:1073:G:H2'	1:0:1074:G:H4'	1.40	1.01
1:0:2548:G:H2'	1:0:2549:G:H5''	1.44	1.00
1:0:2769:C:H2'	1:0:2867:G:H22	1.21	0.99
1:0:2636:A:H62	1:0:2643:G:H21	1.11	0.97
1:0:1252:C:H2'	1:0:1253:C:H5''	1.47	0.96
1:0:2668:U:H4'	1:0:2669:C:H5'	1.47	0.96
1:0:688:A:H62	1:0:816:U:H3	1.09	0.96
1:0:1182:U:H2'	1:0:1183:C:H5''	1.47	0.95
1:0:1496:G:H1	1:0:1527:G:H1	1.13	0.95
1:0:1893:G:H5''	2:5:21:C:H4'	1.47	0.95
1:0:58:C:H3'	1:0:59:G:H5''	1.47	0.94
1:0:1086:C:H2'	1:0:1087:C:H5''	1.49	0.94
1:0:221:A:H62	1:0:231:G:H21	1.15	0.94
1:0:1572:C:H2'	1:0:1573:G:H5''	1.48	0.94
1:0:1747:G:H4'	1:0:1749:G:H1'	1.48	0.94
1:0:471:A:H62	1:0:480:G:H21	1.13	0.94
1:0:1953:A:H1'	1:0:1955:G:H1'	1.51	0.92
1:0:1223:G:H21	1:0:1225:G:H21	0.93	0.92
1:0:1312:G:H5''	1:0:1313:U:H5'	1.52	0.92
1:0:847:C:H41	1:0:955:G:H21	1.17	0.91
1:0:166:G:H21	1:0:184:A:H62	1.11	0.90
1:0:789:G:H21	1:0:806:A:H62	1.13	0.90
1:0:929:A:H3'	1:0:930:A:H5''	1.52	0.90
1:0:225:G:H3'	1:0:226:C:H5'	1.51	0.89
1:0:831:G:H21	1:0:1203:A:H62	1.17	0.89
1:0:1915:A:H62	1:0:1951:G:H21	1.20	0.89
1:0:104:C:H2'	1:0:105:G:H5''	1.56	0.88
1:0:1656:U:H2'	1:0:1657:A:H5''	1.56	0.87

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2633:A:H4'	1:0:2634:G:H4'	1.57	0.87
1:0:367:G:H2'	1:0:368:A:H5''	1.55	0.87
1:0:403:A:H4'	1:0:425:A:H5'	1.57	0.86
1:0:128:C:H2'	1:0:129:A:H5''	1.58	0.86
1:0:1199:U:H3'	1:0:1200:G:H5''	1.56	0.85
1:0:1223:G:H21	1:0:1225:G:N2	1.75	0.85
1:0:1436:G:H1'	1:0:1508:G:H21	1.41	0.84
1:0:1034:U:H1'	1:0:1133:G:H5''	1.59	0.84
1:0:1964:A:H3'	1:0:1965:U:H5'	1.60	0.84
1:0:2426:G:H5'	1:0:2480:C:H41	1.43	0.83
1:0:2794:G:H3'	1:0:2796:A:H62	1.43	0.82
1:0:2607:C:H3'	1:0:2608:A:H5'	1.59	0.82
1:0:109:A:H3'	1:0:110:U:H5''	1.61	0.81
1:0:26:G:H21	1:0:524:A:H62	1.25	0.81
1:0:88:G:H3'	1:0:89:A:H5''	1.60	0.81
1:0:2769:C:H2'	1:0:2867:G:N2	1.95	0.81
1:0:2806:G:H1'	1:0:2858:A:H2'	1.62	0.81
1:0:2081:U:H2'	1:0:2082:C:H5''	1.62	0.81
1:0:2522:G:H21	1:0:2625:U:H5''	1.45	0.81
1:0:2059:U:H5	1:0:2575:U:H3	1.26	0.81
1:0:2198:U:H3'	1:0:2199:C:H5''	1.62	0.81
1:0:940:G:H3'	1:0:941:U:C5'	2.09	0.80
1:0:2700:U:H3	1:0:2848:A:N6	1.79	0.80
1:0:9:U:H3	1:0:2608:A:H62	1.29	0.80
1:0:2491:C:H2'	1:0:2492:G:H5''	1.64	0.80
1:0:176:A:H1'	1:0:2221:G:H21	1.47	0.79
1:0:460:U:H3	1:0:592:G:H1'	1.46	0.79
1:0:1141:U:N3	1:0:2008:C:H5''	1.97	0.79
1:0:1223:G:N2	1:0:1225:G:H21	1.77	0.79
1:0:542:A:H2'	1:0:543:G:H5'	1.65	0.79
1:0:70:A:O3'	1:0:71:A:H3'	1.83	0.79
1:0:1811:A:O2'	1:0:1812:U:H5''	1.82	0.79
1:0:2548:G:C2'	1:0:2549:G:H5''	2.10	0.79
1:0:1432:G:H21	1:0:1596:A:H62	1.27	0.78
1:0:918:A:H2'	1:0:919:U:H5''	1.64	0.78
1:0:2227:C:H2'	1:0:2228:U:H5'	1.66	0.78
1:0:26:G:N2	1:0:524:A:H62	1.81	0.78
1:0:2480:C:H5''	1:0:2482:A:H5'	1.66	0.78
1:0:1188:A:H62	1:0:1189:G:H21	1.30	0.77
1:0:2770:A:H5'	1:0:2867:G:H22	1.48	0.77
1:0:181:A:H5''	1:0:182:G:OP1	1.84	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:652:C:H42	1:0:657:A:H61	1.31	0.77
1:0:689:A:H61	1:0:815:A:H61	1.31	0.76
1:0:2261:G:H4'	1:0:2262:C:OP2	1.86	0.76
1:0:688:A:N6	1:0:816:U:H3	1.84	0.76
1:0:65:C:H2'	1:0:66:U:H5'	1.68	0.75
1:0:1807:A:O2'	1:0:1808:C:H4'	1.86	0.75
1:0:2624:G:H4'	1:0:2712:G:H2'	1.69	0.75
1:0:2503:G:H3'	1:0:2504:G:H5''	1.69	0.75
2:5:3:G:H1	2:5:29:U:H3	1.32	0.75
1:0:2096:U:H2'	1:0:2097:A:H5''	1.69	0.74
1:0:218:A:O2'	1:0:219:G:H4'	1.87	0.74
1:0:1001:A:H62	1:0:1200:G:H1'	1.53	0.74
1:0:1252:C:C2'	1:0:1253:C:H5''	2.18	0.73
1:0:2241:U:H1'	1:0:2307:A:H1'	1.69	0.73
1:0:1182:U:C2'	1:0:1183:C:H5''	2.17	0.73
1:0:1473:U:H4'	1:0:1474:A:C8	2.23	0.73
1:0:2700:U:H3	1:0:2848:A:H62	1.35	0.73
1:0:109:A:C3'	1:0:110:U:H5''	2.19	0.72
1:0:2721:A:H62	1:0:2743:G:H21	1.37	0.72
1:0:1021:A:H1'	1:0:1164:C:H1'	1.71	0.72
1:0:1572:C:C2'	1:0:1573:G:H5''	2.18	0.72
1:0:65:C:C2'	1:0:66:U:H5'	2.19	0.72
1:0:471:A:H62	1:0:480:G:N2	1.86	0.72
1:0:795:A:H4'	1:0:796:A:N7	2.03	0.72
1:0:59:G:H1'	1:0:73:A:N1	2.04	0.72
1:0:616:U:H2'	1:0:617:U:H5''	1.70	0.72
1:0:202:A:H2'	1:0:203:G:O4'	1.88	0.71
1:0:1528:C:H2'	1:0:1529:C:H5''	1.71	0.71
1:0:1373:G:H22	1:0:2192:U:H3	1.36	0.71
1:0:1479:G:N2	1:0:1543:G:H21	1.87	0.71
1:0:1196:G:H2'	1:0:1197:U:O4'	1.91	0.71
1:0:2426:G:H22	1:0:2431:C:H41	1.38	0.71
1:0:2691:C:H3'	1:0:2692:A:H5''	1.73	0.71
1:0:1908:C:H2'	1:0:1909:U:H4'	1.72	0.71
1:0:2503:G:C3'	1:0:2504:G:H5''	2.21	0.71
1:0:2552:C:N3	2:5:34:C:H4'	2.04	0.71
1:0:69:G:H4'	1:0:70:A:O5'	1.90	0.71
1:0:1047:G:H1	1:0:1130:U:H3	1.36	0.71
1:0:1882:G:H21	1:0:1885:C:N4	1.88	0.71
1:0:2045:A:H4'	1:0:2421:C:OP2	1.89	0.71
1:0:1621:C:H4'	1:0:1626:A:H61	1.56	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1139:A:H1'	1:0:2496:C:H5'	1.72	0.71
1:0:2380:U:H2'	1:0:2381:A:H5'	1.71	0.70
1:0:319:G:H21	1:0:340:G:H21	1.40	0.70
1:0:514:G:N3	1:0:514:G:H2'	2.06	0.70
1:0:1809:G:H2'	1:0:1810:U:O4'	1.91	0.70
1:0:2522:G:N2	1:0:2625:U:H5''	2.05	0.70
1:0:2759:U:H4'	1:0:2760:G:OP2	1.89	0.70
1:0:515:A:H2'	1:0:516:G:H5'	1.72	0.70
1:0:181:A:H4'	1:0:182:G:H4'	1.74	0.70
1:0:576:A:H2	1:0:580:A:H62	1.40	0.70
1:0:1529:C:H2'	1:0:1530:U:O4'	1.92	0.70
1:0:2510:A:H61	1:0:2641:A:N6	1.89	0.70
1:0:1023:U:H1'	1:0:1154:A:N7	2.06	0.69
1:0:588:G:H4'	1:0:2001:G:H5''	1.74	0.69
1:0:323:G:H5'	1:0:342:G:C6	2.27	0.69
1:0:33:C:H42	1:0:466:A:H61	1.39	0.69
1:0:1188:A:N6	1:0:1189:G:H21	1.89	0.69
1:0:800:U:H3'	1:0:804:C:N4	2.08	0.69
1:0:951:G:H2'	1:0:952:A:H5''	1.73	0.69
1:0:1838:G:H2'	1:0:1839:A:H5'	1.75	0.69
1:0:2808:U:H3'	1:0:2809:A:H5'	1.75	0.69
1:0:878:C:H42	1:0:921:A:H62	1.41	0.69
1:0:2510:A:H61	1:0:2641:A:H61	1.41	0.69
1:0:2727:G:H1	1:0:2735:C:H5''	1.58	0.69
1:0:2058:U:H5'	1:0:2576:G:H1'	1.74	0.68
1:0:1978:U:H3'	1:0:1979:C:H5''	1.74	0.68
1:0:1774:A:H1'	1:0:2586:G:H21	1.58	0.68
1:0:2607:C:H1'	1:0:2761:A:H2'	1.76	0.68
1:0:67:G:N2	1:0:72:A:H2'	2.08	0.68
1:0:1955:G:H2'	1:0:1956:G:H5'	1.75	0.68
1:0:2245:A:H4'	1:0:2246:A:C8	2.29	0.68
1:0:941:U:H2'	1:0:942:U:O4'	1.94	0.68
1:0:813:A:O2'	1:0:815:A:H5'	1.94	0.68
1:0:1791:C:O2'	1:0:1793:A:H5'	1.94	0.67
1:0:1915:A:H62	1:0:1951:G:N2	1.91	0.67
1:0:2495:G:H2'	1:0:2496:C:C6	2.30	0.67
1:0:584:A:H4'	1:0:2479:U:H5'	1.77	0.67
1:0:1923:U:H4'	1:0:1948:C:H41	1.59	0.67
1:0:653:G:H2'	1:0:654:A:H4'	1.76	0.67
1:0:1953:A:H1'	1:0:1955:G:C1'	2.21	0.67
1:0:974:U:H1'	1:0:2229:G:H21	1.58	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1086:C:C2'	1:0:1087:C:H5''	2.24	0.67
1:0:2095:G:H2'	1:0:2096:U:H5''	1.75	0.67
1:0:2499:C:H41	1:0:2521:A:H2	1.41	0.67
1:0:367:G:C2'	1:0:368:A:H5''	2.24	0.67
1:0:1749:G:O6	1:0:2674:C:H4'	1.95	0.67
1:0:1191:G:H2'	1:0:1192:A:H8	1.60	0.67
1:0:2491:C:C2'	1:0:2492:G:H5''	2.25	0.67
1:0:2680:U:H3'	1:0:2681:A:H5'	1.76	0.67
1:0:45:C:H5''	1:0:192:G:N7	2.10	0.66
1:0:1312:G:H5'	1:0:1314:A:H1'	1.76	0.66
1:0:1474:A:H2'	1:0:1475:U:H5'	1.77	0.66
1:0:583:C:N3	1:0:2016:A:H4'	2.10	0.66
1:0:1188:A:H62	1:0:1189:G:N2	1.92	0.66
1:0:1199:U:H3'	1:0:1200:G:C5'	2.24	0.66
1:0:805:G:H5''	1:0:806:A:O5'	1.95	0.66
1:0:1352:G:H2'	1:0:1353:A:H8	1.60	0.66
1:0:1181:C:H2'	1:0:1182:U:H5''	1.77	0.66
1:0:1685:A:H1'	1:0:1686:A:C5	2.30	0.66
1:0:1746:A:H2'	1:0:1747:G:H5'	1.77	0.66
1:0:2768:C:H2'	1:0:2769:C:O4'	1.95	0.66
1:0:58:C:H3'	1:0:59:G:C5'	2.21	0.66
1:0:1487:C:H2'	1:0:1488:G:H8	1.61	0.66
1:0:652:C:H42	1:0:657:A:N6	1.94	0.66
1:0:2324:G:H4'	1:0:2326:C:H5''	1.78	0.66
1:0:651:C:H2'	1:0:652:C:H5''	1.78	0.65
1:0:805:G:H4'	1:0:806:A:OP2	1.96	0.65
1:0:2418:A:H4'	1:0:2420:C:OP2	1.96	0.65
1:0:1686:A:N3	1:0:1686:A:H2'	2.11	0.65
1:0:1888:C:H5''	1:0:1889:G:H5''	1.79	0.65
1:0:1966:C:H4'	1:0:2585:C:H4'	1.78	0.65
1:0:66:U:H2'	1:0:67:G:N7	2.11	0.65
1:0:73:A:H3'	1:0:73:A:N3	2.12	0.65
1:0:175:C:H1'	1:0:2413:A:H61	1.62	0.65
1:0:1195:U:H2'	1:0:1196:G:C8	2.32	0.65
1:0:13:A:H1'	1:0:536:A:N6	2.12	0.65
1:0:225:G:H3'	1:0:226:C:C5'	2.26	0.65
1:0:1900:U:O2'	1:0:1946:U:H5'	1.97	0.65
1:0:1033:G:H22	1:0:1150:C:H2'	1.62	0.65
1:0:1427:G:H2'	1:0:1428:G:H5'	1.79	0.65
1:0:104:C:C2'	1:0:105:G:H5''	2.27	0.64
1:0:1500:U:H3	1:0:1520:G:H22	1.45	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1938:U:O2'	1:0:1939:U:OP1	2.13	0.64
1:0:2198:U:C3'	1:0:2199:C:H5''	2.27	0.64
1:0:2312:A:H4'	1:0:2313:G:N7	2.12	0.64
1:0:665:A:H3'	1:0:666:U:H5''	1.79	0.64
1:0:727:U:H2'	1:0:728:G:H5''	1.79	0.64
1:0:777:A:N6	1:0:1766:U:H3	1.94	0.64
1:0:317:U:H2'	1:0:318:G:H5''	1.78	0.64
1:0:1354:A:H62	1:0:1407:G:H22	1.45	0.64
1:0:2236:U:C3'	1:0:2237:C:H5''	2.28	0.64
1:0:2404:A:O2'	1:0:2405:A:OP2	2.15	0.64
1:0:571:U:H2'	1:0:581:A:H1'	1.79	0.64
1:0:2236:U:H2'	1:0:2237:C:H5''	1.77	0.64
1:0:1194:U:H2'	1:0:1195:U:C6	2.32	0.64
1:0:1679:U:C3'	1:0:1680:U:H5''	2.28	0.64
1:0:2426:G:N2	1:0:2431:C:H41	1.95	0.64
1:0:2822:U:H2'	1:0:2823:G:O4'	1.97	0.64
1:0:73:A:H4'	1:0:74:G:C1'	2.27	0.64
1:0:1341:G:H22	1:0:1664:G:H1	1.46	0.64
1:0:1679:U:H3'	1:0:1680:U:H5''	1.78	0.64
1:0:2080:U:H2'	1:0:2081:U:C6	2.33	0.64
1:0:2690:A:OP2	1:0:2694:G:H5'	1.97	0.64
1:0:83:A:H4'	1:0:84:G:O4'	1.97	0.64
1:0:2422:C:H2'	1:0:2423:G:H8	1.62	0.64
1:0:2426:G:O6	1:0:2479:U:H2'	1.97	0.64
1:0:2440:C:H1'	1:0:2471:U:H3	1.63	0.64
1:0:236:C:H1'	1:0:632:A:O2'	1.97	0.64
1:0:1198:C:H5''	1:0:1199:U:H5''	1.80	0.63
1:0:1580:C:H2'	1:0:1581:C:C6	2.33	0.63
1:0:653:G:N2	1:0:655:A:H1'	2.14	0.63
1:0:858:G:H5''	1:0:859:U:H5'	1.79	0.63
1:0:2636:A:H62	1:0:2643:G:N2	1.90	0.63
1:0:1250:A:O2'	1:0:1251:G:H4'	1.98	0.63
1:0:1715:A:H1'	1:0:1717:A:O4'	1.99	0.63
1:0:831:G:H21	1:0:1203:A:N6	1.93	0.63
1:0:952:A:O2'	1:0:1204:G:H4'	1.98	0.63
1:0:69:G:H5''	1:0:70:A:OP1	1.98	0.63
1:0:128:C:C2'	1:0:129:A:H5''	2.27	0.63
1:0:927:C:H2'	1:0:928:G:O4'	1.98	0.63
1:0:998:C:H2'	1:0:999:A:O4'	1.97	0.63
1:0:2261:G:H5''	1:0:2262:C:O5'	1.98	0.63
1:0:2617:G:H22	1:0:2755:A:H2'	1.64	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:167:A:H62	1:0:183:U:H3	1.46	0.62
1:0:1181:C:C3'	1:0:1182:U:H5''	2.29	0.62
1:0:614:G:H2'	1:0:615:C:C6	2.34	0.62
1:0:2770:A:H5'	1:0:2867:G:N2	2.14	0.62
1:0:542:A:C2'	1:0:543:G:H5'	2.30	0.62
1:0:942:U:H2'	1:0:943:U:O4'	2.00	0.62
1:0:1428:G:H5''	1:0:1429:A:H5'	1.80	0.62
1:0:2721:A:H62	1:0:2743:G:N2	1.98	0.62
1:0:221:A:H62	1:0:231:G:N2	1.91	0.62
1:0:362:C:H2'	1:0:363:G:H4'	1.80	0.62
1:0:852:U:H3	1:0:950:G:H1	1.47	0.62
1:0:1323:G:H2'	1:0:1324:G:H4'	1.81	0.62
1:0:1517:C:H2'	1:0:1518:C:C6	2.34	0.62
1:0:1807:A:H5'	1:0:1809:G:C1'	2.30	0.62
1:0:121:G:O2'	1:0:1389:C:H4'	2.00	0.62
1:0:414:A:H2'	1:0:415:A:O4'	1.99	0.62
1:0:1085:G:H2'	1:0:1086:C:C6	2.35	0.62
1:0:2015:G:O2'	1:0:2016:A:OP1	2.12	0.62
1:0:2755:A:O2'	1:0:2756:A:H5'	2.00	0.62
1:0:55:A:H2'	1:0:56:C:C6	2.35	0.62
1:0:439:C:H2'	1:0:440:U:O4'	2.00	0.62
1:0:455:A:H4'	1:0:1214:C:O2'	1.99	0.62
1:0:1976:U:H2'	1:0:1977:C:H5'	1.82	0.62
1:0:2508:G:H5''	1:0:2509:A:H5''	1.82	0.62
1:0:871:U:H1'	1:0:2248:A:H5''	1.82	0.62
1:0:1333:G:N2	1:0:1344:C:H41	1.96	0.62
1:0:1656:U:C2'	1:0:1657:A:H5''	2.29	0.61
1:0:2381:A:H4'	1:0:2382:C:C5	2.35	0.61
1:0:940:G:C3'	1:0:941:U:H5''	2.14	0.61
1:0:2357:A:H2'	1:0:2358:C:O4'	2.00	0.61
1:0:191:G:O2'	1:0:192:G:H5'	2.00	0.61
1:0:2268:G:H22	1:0:2323:U:H4'	1.65	0.61
1:0:2544:A:H2'	1:0:2545:A:H4'	1.82	0.61
1:0:2571:G:H2'	1:0:2572:U:C6	2.36	0.61
1:0:742:G:H2'	1:0:742:G:N3	2.13	0.61
1:0:1455:C:O2'	1:0:1644:G:H5''	2.00	0.61
1:0:81:C:H2'	1:0:82:G:O4'	2.00	0.61
1:0:860:U:C2'	1:0:861:G:H5'	2.31	0.61
1:0:974:U:H1'	1:0:2229:G:N2	2.15	0.61
1:0:2242:C:N4	1:0:2257:A:H61	1.98	0.61
1:0:2426:G:C5'	1:0:2480:C:H41	2.13	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:181:A:H4'	1:0:182:G:C5'	2.30	0.61
1:0:814:G:H3'	1:0:815:A:H5'	1.82	0.61
1:0:2035:G:H2'	1:0:2036:G:H8	1.65	0.61
1:0:1188:A:H2'	1:0:1189:G:O4'	2.00	0.61
1:0:1260:A:N6	1:0:1262:U:H1'	2.15	0.61
1:0:1871:G:H2'	1:0:1871:G:N3	2.16	0.61
1:0:1923:U:H4'	1:0:1948:C:N4	2.16	0.61
1:0:71:A:O2'	1:0:72:A:OP1	2.17	0.61
1:0:1426:U:H2'	1:0:1427:G:O4'	2.00	0.61
1:0:2223:U:H2'	1:0:2224:U:O4'	2.00	0.61
1:0:2246:A:H2'	1:0:2246:A:N3	2.16	0.61
1:0:1286:U:H5''	1:0:1663:C:H42	1.66	0.61
1:0:1380:C:H2'	1:0:1381:G:H5'	1.81	0.61
1:0:2185:U:H2'	1:0:2186:G:C8	2.36	0.61
1:0:1066:G:H2'	1:0:1067:G:H4'	1.83	0.60
1:0:1713:G:H2'	1:0:1714:A:O4'	2.00	0.60
1:0:800:U:H3'	1:0:804:C:H41	1.66	0.60
1:0:878:C:H42	1:0:921:A:N6	1.99	0.60
1:0:1811:A:H1'	1:0:1813:A:C5	2.35	0.60
1:0:2238:G:H2'	1:0:2239:C:C6	2.37	0.60
1:0:2604:G:H2'	1:0:2605:C:C6	2.37	0.60
1:0:2009:U:H3	1:0:2020:G:H1	1.50	0.60
1:0:2727:G:O2'	1:0:2728:A:H5''	2.02	0.60
1:0:1088:A:H2'	1:0:1089:C:O4'	2.02	0.60
1:0:2243:C:H2'	1:0:2244:C:O4'	2.02	0.60
1:0:192:G:O2'	1:0:193:A:OP2	2.18	0.60
1:0:1458:A:H3'	1:0:1459:U:C5'	2.32	0.60
1:0:2322:U:O2'	1:0:2323:U:H5'	2.01	0.60
1:0:2769:C:H2'	1:0:2770:A:H5'	1.84	0.60
1:0:2858:A:H3'	1:0:2859:U:H5'	1.84	0.60
1:0:669:G:H2'	1:0:670:U:C6	2.37	0.60
1:0:1073:G:C2'	1:0:1074:G:H4'	2.26	0.60
1:0:1625:A:H2'	1:0:1625:A:N3	2.16	0.60
1:0:1807:A:H5'	1:0:1809:G:O4'	2.01	0.60
1:0:2260:C:H4'	1:0:2368:G:H21	1.66	0.60
1:0:2370:G:HO2'	1:0:2371:A:H2	1.49	0.60
1:0:2759:U:H5''	1:0:2760:G:O5'	2.02	0.60
1:0:1289:A:O2'	1:0:1290:A:H5'	2.02	0.60
1:0:2549:G:H2'	1:0:2550:C:O4'	2.02	0.60
1:0:459:A:H1'	1:0:466:A:N7	2.16	0.59
1:0:2402:U:H5'	1:0:2404:A:C5	2.37	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1712:G:H2'	1:0:1713:G:O4'	2.01	0.59
1:0:2784:A:H3'	1:0:2785:A:H8	1.67	0.59
1:0:471:A:N6	1:0:480:G:H21	1.94	0.59
1:0:541:C:H2'	1:0:2002:A:N1	2.17	0.59
1:0:2377:U:H2'	1:0:2378:G:C8	2.37	0.59
1:0:73:A:H4'	1:0:74:G:H1'	1.83	0.59
1:0:412:U:H2'	1:0:413:G:O4'	2.03	0.59
1:0:653:G:H4'	1:0:2328:G:H4'	1.83	0.59
1:0:804:C:O2'	1:0:806:A:H4'	2.03	0.59
1:0:831:G:N2	1:0:1203:A:H62	1.96	0.59
1:0:366:U:H2'	1:0:367:G:H8	1.67	0.59
1:0:404:A:H5'	1:0:425:A:H4'	1.84	0.59
1:0:1298:G:N2	1:0:1341:G:H5''	2.18	0.59
1:0:2491:C:C3'	1:0:2492:G:H5''	2.33	0.59
1:0:17:G:H21	1:0:564:U:H5''	1.66	0.59
1:0:513:A:H4'	1:0:515:A:H5'	1.83	0.59
1:0:1747:G:H1'	1:0:1749:G:N3	2.18	0.59
1:0:2081:U:C2'	1:0:2082:C:H5''	2.32	0.59
2:5:29:U:H2'	2:5:30:C:C6	2.36	0.59
1:0:1634:A:O2'	1:0:1635:G:OP1	2.16	0.59
1:0:2205:C:H2'	1:0:2206:C:C6	2.38	0.59
1:0:1683:G:H2'	1:0:1684:G:O4'	2.03	0.59
1:0:2564:U:O2'	1:0:2565:C:O5'	2.16	0.59
1:0:2547:C:H2'	1:0:2548:G:H8	1.68	0.59
1:0:973:U:H2'	1:0:974:U:C6	2.38	0.59
1:0:242:A:O2'	1:0:243:G:O4'	2.21	0.58
1:0:242:A:O2'	1:0:243:G:P	2.61	0.58
1:0:357:A:H2'	1:0:358:C:H5'	1.85	0.58
1:0:368:A:H2'	1:0:369:C:O4'	2.03	0.58
1:0:1474:A:H3'	1:0:1474:A:N3	2.18	0.58
1:0:1664:G:O5'	1:0:1665:C:OP1	2.21	0.58
1:0:2236:U:C2'	1:0:2237:C:H5''	2.33	0.58
1:0:1180:A:H2'	1:0:1181:C:C6	2.38	0.58
1:0:2368:G:H5''	1:0:2369:U:O4'	2.03	0.58
1:0:1301:U:H3	1:0:1339:U:H3	1.50	0.58
1:0:1354:A:O2'	1:0:1355:A:OP1	2.18	0.58
1:0:1472:C:H2'	1:0:1473:U:H5'	1.85	0.58
1:0:1474:A:C2'	1:0:1475:U:H5'	2.33	0.58
1:0:1528:C:C2'	1:0:1529:C:H5''	2.33	0.58
1:0:2422:C:H2'	1:0:2423:G:C8	2.39	0.58
1:0:839:U:H5''	1:0:2408:G:OP2	2.03	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1354:A:H62	1:0:1407:G:N2	2.01	0.58
1:0:1916:G:H2'	1:0:1917:C:C6	2.39	0.58
1:0:2677:U:H2'	1:0:2678:C:C6	2.39	0.58
1:0:67:G:N2	1:0:73:A:O5'	2.36	0.58
1:0:521:U:H4'	1:0:1248:G:O2'	2.03	0.58
1:0:1251:G:H2'	1:0:1252:C:C6	2.38	0.58
1:0:1567:A:H2'	1:0:1568:A:O4'	2.04	0.58
1:0:1730:G:H2'	1:0:1731:C:C6	2.38	0.58
1:0:665:A:H3'	1:0:666:U:C5'	2.34	0.58
1:0:984:A:H2'	1:0:1200:G:H22	1.68	0.58
1:0:1392:U:H2'	1:0:1393:G:H5'	1.85	0.58
1:0:319:G:H21	1:0:340:G:N2	2.02	0.58
1:0:1779:C:H2'	1:0:1780:A:O4'	2.03	0.58
1:0:2547:C:H2'	1:0:2548:G:C8	2.38	0.58
1:0:2560:G:H4'	1:0:2561:G:N7	2.19	0.58
1:0:2758:A:H5''	1:0:2759:U:H5	1.68	0.58
1:0:2794:G:H2'	1:0:2796:A:N7	2.19	0.58
1:0:490:A:O2'	1:0:491:A:H5'	2.03	0.58
1:0:1181:C:C2'	1:0:1182:U:H5''	2.34	0.58
1:0:1994:U:H2'	1:0:1995:G:O4'	2.04	0.58
1:0:217:U:H5'	1:0:633:G:O2'	2.04	0.58
1:0:552:C:H2'	1:0:553:C:H4'	1.86	0.58
1:0:689:A:H2'	1:0:690:A:H5'	1.85	0.58
1:0:925:U:H4'	1:0:926:C:C5	2.39	0.58
1:0:2426:G:O2'	1:0:2427:A:OP2	2.19	0.58
1:0:839:U:H2'	1:0:841:G:O4'	2.04	0.57
1:0:2242:C:H42	1:0:2257:A:N6	2.02	0.57
1:0:2607:C:H3'	1:0:2608:A:C5'	2.31	0.57
1:0:2691:C:H3'	1:0:2692:A:C5'	2.33	0.57
1:0:59:G:N2	1:0:87:G:N7	2.52	0.57
1:0:929:A:H2'	1:0:930:A:H4'	1.86	0.57
1:0:766:A:H2'	1:0:767:G:C8	2.39	0.57
1:0:873:U:P	1:0:928:G:H1	2.27	0.57
1:0:605:G:H4'	1:0:949:G:O2'	2.04	0.57
1:0:1615:C:H2'	1:0:1616:C:C6	2.39	0.57
1:0:118:U:H1'	1:0:143:A:C8	2.40	0.57
1:0:1223:G:O2'	1:0:1224:A:OP2	2.21	0.57
1:0:1514:C:H2'	1:0:1515:U:O4'	2.04	0.57
1:0:2222:U:H2'	1:0:2223:U:C6	2.39	0.57
1:0:2426:G:H22	1:0:2431:C:N4	2.02	0.57
1:0:1137:A:H5''	1:0:1138:A:H5''	1.85	0.57

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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2047:C:H42	1:0:2425:G:H1	1.54	0.56
1:0:2437:G:H2'	1:0:2469:G:C2	2.41	0.56
1:0:103:U:H2'	1:0:104:C:C6	2.40	0.56
1:0:1356:G:H1'	1:0:1613:G:C2	2.40	0.56
1:0:2270:U:H2'	1:0:2271:C:C6	2.41	0.56
1:0:2459:C:H2'	1:0:2460:G:H5'	1.88	0.56
1:0:758:G:O2'	1:0:761:G:H1'	2.06	0.56
1:0:876:A:H2'	1:0:877:G:C8	2.41	0.56
1:0:879:A:H2'	1:0:879:A:N3	2.21	0.56
1:0:1337:G:H1'	1:0:1632:A:N6	2.21	0.56
1:0:114:C:O2'	1:0:124:A:H1'	2.06	0.55
1:0:366:U:H2'	1:0:367:G:C8	2.41	0.55
1:0:2668:U:C4'	1:0:2669:C:H5'	2.30	0.55
1:0:69:G:H3'	1:0:111:G:O2'	2.06	0.55
1:0:173:A:H2'	1:0:173:A:N3	2.21	0.55
1:0:616:U:C2'	1:0:617:U:H5''	2.37	0.55
1:0:824:U:O2'	1:0:1264:C:H1'	2.06	0.55
1:0:1181:C:H3'	1:0:1182:U:H5''	1.89	0.55
1:0:2641:A:H2'	1:0:2642:G:O4'	2.07	0.55
1:0:2783:U:OP1	1:0:2783:U:O4'	2.24	0.55
1:0:618:A:H2'	1:0:619:A:O4'	2.07	0.55
1:0:1711:C:H4'	1:0:1712:G:C2	2.41	0.55
1:0:1949:A:H1'	1:0:2572:U:C4'	2.36	0.55
1:0:515:A:C2'	1:0:516:G:H5'	2.37	0.55
1:0:1258:G:H2'	1:0:1259:A:C8	2.42	0.55
1:0:1982:C:H1'	1:0:2666:U:O2'	2.06	0.55
1:0:2012:A:N7	1:0:2014:A:H5'	2.20	0.55
1:0:2162:C:H2'	1:0:2163:U:C6	2.41	0.55
1:0:2321:C:H2'	1:0:2322:U:O4'	2.06	0.55
1:0:2572:U:H2'	1:0:2573:C:C6	2.42	0.55
1:0:604:U:H2'	1:0:605:G:C8	2.41	0.55
1:0:775:U:O2	1:0:1445:A:H5''	2.06	0.55
1:0:791:G:H2'	1:0:792:U:C6	2.41	0.55
1:0:1669:A:H2'	1:0:1670:G:H4'	1.89	0.55
1:0:1947:G:H3'	1:0:1947:G:OP1	2.06	0.55
1:0:2061:C:H1'	1:0:2413:A:H1'	1.89	0.55
1:0:2095:G:C2'	1:0:2096:U:H5''	2.37	0.55
1:0:2381:A:H4'	1:0:2382:C:H5	1.70	0.55
1:0:67:G:H8	1:0:67:G:O5'	1.90	0.55
1:0:166:G:H21	1:0:184:A:N6	1.92	0.55
1:0:177:U:H2'	1:0:178:C:C6	2.42	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:241:C:O2'	1:0:242:A:H5''	2.06	0.55
1:0:558:G:H5''	1:0:559:C:C5	2.42	0.55
1:0:1791:C:H1'	1:0:1793:A:O4'	2.06	0.55
1:0:2204:A:O2'	1:0:2205:C:P	2.65	0.55
1:0:2492:G:H2'	1:0:2493:U:O4'	2.06	0.55
1:0:951:G:C2'	1:0:952:A:H5''	2.36	0.55
1:0:1789:U:C2'	1:0:1790:G:H5'	2.37	0.55
1:0:1829:C:H2'	1:0:1830:C:H5'	1.89	0.55
1:0:2470:U:O2'	1:0:2471:U:H5'	2.07	0.55
1:0:80:A:H2'	1:0:81:C:O4'	2.06	0.55
1:0:782:U:H2'	1:0:783:G:C8	2.42	0.55
1:0:1141:U:H5'	1:0:2549:G:N2	2.21	0.55
1:0:1288:A:O2'	1:0:1289:A:H5'	2.07	0.55
1:0:1921:A:H2'	1:0:1922:U:H5''	1.89	0.55
1:0:2854:G:H3'	1:0:2854:G:N3	2.22	0.55
1:0:1278:A:O2'	1:0:1279:G:P	2.65	0.54
1:0:1922:U:H1'	1:0:2570:C:O2'	2.07	0.54
1:0:2379:G:H2'	1:0:2380:U:O4'	2.06	0.54
1:0:77:C:H2'	1:0:78:C:C6	2.42	0.54
1:0:841:G:H3'	1:0:841:G:N3	2.21	0.54
1:0:394:U:H2'	1:0:395:G:H8	1.71	0.54
1:0:587:A:H2'	1:0:588:G:H5''	1.90	0.54
1:0:1356:G:H5'	1:0:1614:C:OP2	2.07	0.54
1:0:1429:A:H62	1:0:1601:U:H5''	1.72	0.54
1:0:1463:A:H2'	1:0:1464:A:C8	2.41	0.54
1:0:1926:U:O2'	1:0:1928:G:H5'	2.08	0.54
1:0:48:A:H4'	1:0:50:G:O4'	2.08	0.54
1:0:162:C:H4'	1:0:195:A:O2'	2.08	0.54
1:0:688:A:O2'	1:0:2422:C:H4'	2.07	0.54
1:0:847:C:N4	1:0:955:G:H21	1.95	0.54
1:0:1313:U:O2'	1:0:1314:A:P	2.66	0.54
1:0:1955:G:C2'	1:0:1956:G:H5'	2.37	0.54
1:0:468:A:H2'	1:0:469:G:H4'	1.90	0.54
1:0:564:U:H2'	1:0:565:A:C8	2.41	0.54
1:0:1210:C:H2'	1:0:1211:G:O4'	2.08	0.54
1:0:2249:U:H2'	1:0:2250:G:O4'	2.08	0.54
1:0:2319:G:H2'	1:0:2320:G:C8	2.42	0.54
1:0:67:G:H22	1:0:72:A:H2'	1.73	0.54
1:0:1459:U:H2'	1:0:1475:U:O2'	2.08	0.54
1:0:1818:G:H2'	1:0:1819:U:C6	2.42	0.54
1:0:2168:A:H2'	1:0:2169:A:H5'	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2432:A:H4'	1:0:2551:A:O2'	2.07	0.54
1:0:393:U:H2'	1:0:394:U:C6	2.43	0.54
1:0:541:C:N4	1:0:572:G:O4'	2.41	0.54
1:0:798:G:O2'	1:0:1770:U:H4'	2.08	0.54
1:0:942:U:O2'	1:0:943:U:H5'	2.07	0.54
1:0:1279:G:C2'	1:0:1280:U:OP2	2.56	0.54
1:0:1746:A:C2'	1:0:1747:G:H5'	2.37	0.54
1:0:2466:G:H2'	1:0:2467:A:C8	2.42	0.54
1:0:1974:U:H2'	1:0:1975:G:H5''	1.88	0.54
1:0:26:G:H21	1:0:524:A:N6	2.02	0.54
1:0:486:U:H4'	1:0:520:C:H5'	1.89	0.54
1:0:538:A:H2'	1:0:539:A:H5''	1.90	0.54
1:0:598:U:H2'	1:0:599:A:C8	2.42	0.54
1:0:646:C:H2'	1:0:647:G:O4'	2.07	0.54
1:0:1664:G:H4'	1:0:1665:C:O5'	2.07	0.54
1:0:1920:A:N6	1:0:1923:U:H6	2.06	0.54
1:0:2560:G:H3'	1:0:2560:G:N3	2.23	0.54
1:0:126:C:H2'	1:0:127:C:C6	2.42	0.54
1:0:242:A:O2'	1:0:243:G:O5'	2.25	0.54
1:0:484:G:O2'	1:0:485:G:H5'	2.08	0.54
1:0:2516:U:H2'	1:0:2517:C:C6	2.43	0.54
1:0:216:U:H2'	1:0:217:U:O4'	2.08	0.53
1:0:404:A:H2'	1:0:405:C:C6	2.43	0.53
1:0:1326:U:H2'	1:0:1327:C:H5'	1.89	0.53
1:0:1333:G:N2	1:0:1344:C:N4	2.56	0.53
1:0:2418:A:H1'	1:0:2565:C:H4'	1.90	0.53
1:0:2440:C:H1'	1:0:2471:U:N3	2.23	0.53
1:0:2700:U:N3	1:0:2848:A:N6	2.54	0.53
1:0:226:C:H4'	1:0:227:G:C8	2.43	0.53
1:0:775:U:H4'	1:0:776:G:C8	2.43	0.53
1:0:826:U:H2'	1:0:827:C:C6	2.44	0.53
1:0:1528:C:C3'	1:0:1529:C:H5''	2.38	0.53
1:0:1789:U:O2'	1:0:1790:G:H5'	2.08	0.53
1:0:1825:C:C2'	1:0:1826:U:H5'	2.38	0.53
1:0:728:G:H2'	1:0:729:A:O4'	2.08	0.53
1:0:832:A:H2'	1:0:833:A:O4'	2.07	0.53
1:0:1745:C:H2'	1:0:1746:A:O4'	2.09	0.53
1:0:2321:C:O2'	1:0:2353:G:H5''	2.09	0.53
1:0:173:A:O2'	1:0:174:A:OP1	2.20	0.53
1:0:737:C:H2'	1:0:738:G:O4'	2.09	0.53
1:0:776:G:H2'	1:0:776:G:N3	2.24	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:857:U:H2'	1:0:858:G:H5'	1.90	0.53
1:0:929:A:H3'	1:0:930:A:C5'	2.33	0.53
1:0:1273:G:H2'	1:0:1274:C:C6	2.44	0.53
1:0:1289:A:H62	1:0:1662:G:H1	1.56	0.53
1:0:1301:U:H2'	1:0:1664:G:H21	1.73	0.53
1:0:225:G:N2	1:0:2410:U:H1'	2.23	0.53
1:0:843:G:O2'	1:0:844:G:H5'	2.09	0.53
1:0:917:U:H2'	1:0:918:A:O4'	2.08	0.53
1:0:1358:C:H2'	1:0:1359:G:C5'	2.38	0.53
1:0:1976:U:C2'	1:0:1977:C:H5'	2.37	0.53
1:0:2312:A:H1'	1:0:2314:A:C8	2.44	0.53
1:0:824:U:H1'	1:0:1264:C:H1'	1.90	0.53
1:0:918:A:C2'	1:0:919:U:H5''	2.36	0.53
1:0:960:U:H2'	1:0:961:G:C8	2.43	0.53
1:0:1075:C:H2'	1:0:1076:U:O4'	2.09	0.53
1:0:1414:G:H2'	1:0:1415:C:C6	2.44	0.53
1:0:1838:G:C2'	1:0:1839:A:H5'	2.39	0.53
1:0:73:A:H4'	1:0:74:G:O4'	2.09	0.53
1:0:1365:U:H1'	1:0:1586:A:H2	1.74	0.53
1:0:1971:C:H2'	1:0:1972:G:C8	2.44	0.53
1:0:33:C:N4	1:0:466:A:H61	2.07	0.53
1:0:317:U:C3'	1:0:318:G:H5''	2.39	0.53
1:0:807:A:H2'	1:0:808:C:C6	2.43	0.53
1:0:830:C:O2'	1:0:852:U:H5''	2.09	0.53
1:0:1190:C:H2'	1:0:1191:G:C8	2.44	0.53
1:0:1497:C:O2'	1:0:1498:G:H5'	2.08	0.53
1:0:1502:G:O2'	1:0:1503:G:H5'	2.09	0.53
1:0:1763:G:H2'	1:0:1764:A:H4'	1.90	0.53
1:0:167:A:H2'	1:0:168:A:C8	2.44	0.53
1:0:578:U:C1'	1:0:957:G:H21	2.20	0.53
1:0:1004:A:H2'	1:0:1005:U:H5''	1.89	0.53
1:0:38:G:H2'	1:0:39:C:C6	2.44	0.53
1:0:45:C:H5''	1:0:192:G:C8	2.43	0.53
1:0:1313:U:O4	1:0:1651:U:H5'	2.09	0.53
1:0:1654:A:H2'	1:0:1655:C:C6	2.44	0.53
1:0:2498:U:H5''	1:0:2499:C:OP1	2.10	0.53
1:0:2536:G:H2'	1:0:2537:C:C6	2.44	0.53
1:0:2728:A:H2'	1:0:2729:A:O4'	2.09	0.53
1:0:2756:A:H1'	1:0:2758:A:N7	2.23	0.53
1:0:212:U:H2'	1:0:213:C:C6	2.44	0.52
1:0:788:G:H5'	1:0:790:A:H1'	1.90	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:870:C:H2'	1:0:871:U:C6	2.43	0.52
1:0:1200:G:OP1	1:0:1200:G:O4'	2.28	0.52
1:0:1566:G:H4'	1:0:1733:U:O4	2.09	0.52
1:0:2372:A:H2'	1:0:2373:C:C6	2.44	0.52
1:0:181:A:H4'	1:0:182:G:C4'	2.39	0.52
1:0:201:G:H2'	1:0:202:A:C8	2.44	0.52
1:0:599:A:H2'	1:0:600:G:C8	2.44	0.52
1:0:874:A:H62	1:0:928:G:N2	2.07	0.52
1:0:1162:A:H2'	1:0:1163:C:C6	2.44	0.52
1:0:1775:A:H4'	1:0:1776:A:C8	2.44	0.52
2:5:4:G:H2'	2:5:5:C:C6	2.45	0.52
1:0:158:A:H2'	1:0:159:A:C8	2.45	0.52
1:0:1029:C:H2'	1:0:1030:U:H5''	1.91	0.52
1:0:1263:G:O2'	1:0:1264:C:OP1	2.27	0.52
1:0:1312:G:C5'	1:0:1313:U:H5'	2.33	0.52
1:0:2244:C:N4	1:0:2245:A:N6	2.57	0.52
1:0:2483:U:H1'	1:0:2551:A:H2	1.74	0.52
1:0:2757:G:OP2	1:0:2761:A:H4'	2.09	0.52
1:0:2809:A:C2'	1:0:2810:A:H5'	2.39	0.52
1:0:394:U:H2'	1:0:395:G:C8	2.44	0.52
1:0:597:U:H3	1:0:683:A:H2'	1.74	0.52
1:0:638:A:O2'	1:0:639:G:H5'	2.09	0.52
1:0:658:G:H4'	1:0:2331:A:H5'	1.91	0.52
1:0:665:A:OP2	1:0:666:U:H5'	2.10	0.52
1:0:1217:U:H2'	1:0:1218:C:C6	2.45	0.52
1:0:1288:A:H2'	1:0:1289:A:O4'	2.09	0.52
1:0:1970:G:H2'	1:0:1971:C:C6	2.44	0.52
1:0:2401:A:H2'	1:0:2403:C:C5	2.44	0.52
1:0:2426:G:O2'	1:0:2427:A:P	2.67	0.52
1:0:2561:G:C2'	1:0:2562:G:H5'	2.40	0.52
1:0:9:U:H3	1:0:2608:A:N6	2.02	0.52
1:0:597:U:H2'	1:0:598:U:C6	2.44	0.52
1:0:688:A:HO2'	1:0:2422:C:H4'	1.74	0.52
1:0:939:C:H2'	1:0:940:G:C8	2.45	0.52
1:0:1234:C:H2'	1:0:1235:C:C6	2.45	0.52
1:0:1286:U:H5''	1:0:1663:C:N4	2.24	0.52
1:0:1899:A:O2'	1:0:1946:U:H1'	2.10	0.52
1:0:1964:A:H5''	1:0:1965:U:OP2	2.09	0.52
1:0:95:G:H2'	1:0:96:C:C6	2.44	0.52
1:0:127:C:H2'	1:0:128:C:C6	2.45	0.52
1:0:129:A:H2'	1:0:130:C:C6	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1900:U:H4'	1:0:1946:U:O4'	2.09	0.52
1:0:2059:U:H2'	1:0:2060:A:H5''	1.90	0.52
1:0:2451:G:H2'	1:0:2508:G:N2	2.25	0.52
1:0:341:A:H1'	1:0:1223:G:O6	2.09	0.52
1:0:629:C:H2'	1:0:630:G:H5'	1.91	0.52
1:0:757:U:O2'	1:0:758:G:H5'	2.09	0.52
1:0:2574:G:H1'	1:0:2576:G:O6	2.10	0.52
1:0:688:A:H1'	1:0:2423:G:H5'	1.92	0.52
1:0:795:A:H4'	1:0:796:A:C8	2.44	0.52
1:0:2083:G:H2'	1:0:2084:G:O4'	2.10	0.52
1:0:224:G:C5	1:0:226:C:H1'	2.44	0.52
1:0:230:C:H2'	1:0:231:G:O4'	2.10	0.52
1:0:333:A:H1'	1:0:351:A:C4	2.44	0.52
1:0:476:G:H2'	1:0:477:A:C8	2.45	0.52
1:0:689:A:H3'	1:0:689:A:N3	2.24	0.52
1:0:838:A:H2'	1:0:839:U:C6	2.45	0.52
1:0:1788:C:H2'	1:0:1789:U:C6	2.45	0.52
1:0:2160:C:H2'	1:0:2161:C:C6	2.45	0.52
1:0:2242:C:N4	1:0:2257:A:N6	2.57	0.52
1:0:2272:A:H2'	1:0:2273:C:C6	2.45	0.52
1:0:2504:G:H2'	1:0:2505:G:C8	2.45	0.52
1:0:168:A:H2'	1:0:169:C:C6	2.45	0.52
1:0:317:U:C2'	1:0:318:G:H5''	2.39	0.52
1:0:446:C:H2'	1:0:447:U:C6	2.45	0.52
1:0:491:A:N3	1:0:491:A:H2'	2.25	0.52
1:0:512:A:H2'	1:0:513:A:H5'	1.92	0.52
1:0:1377:G:H4'	1:0:1800:A:H5'	1.92	0.52
1:0:2057:U:H1'	1:0:2577:A:H1'	1.91	0.52
1:0:215:G:O2'	1:0:617:U:H1'	2.09	0.51
1:0:980:G:H2'	1:0:981:C:C6	2.45	0.51
1:0:1597:A:H2'	1:0:1598:C:C6	2.45	0.51
1:0:1889:G:H2'	1:0:1890:G:C8	2.45	0.51
1:0:1923:U:H1'	1:0:1947:G:H4'	1.92	0.51
1:0:1352:G:H2'	1:0:1353:A:C8	2.43	0.51
1:0:1358:C:H2'	1:0:1359:G:H5''	1.92	0.51
1:0:2320:G:H2'	1:0:2321:C:O4'	2.09	0.51
1:0:2623:A:H2'	1:0:2624:G:O4'	2.10	0.51
1:0:2703:C:H2'	1:0:2704:U:C6	2.45	0.51
1:0:243:G:H2'	1:0:244:C:O4'	2.11	0.51
1:0:332:C:H2'	1:0:333:A:H5'	1.93	0.51
1:0:476:G:H21	1:0:696:U:H1'	1.75	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1677:C:H2'	1:0:1678:G:C8	2.46	0.51
1:0:1860:A:H2'	1:0:1861:G:O4'	2.11	0.51
1:0:2177:U:H2'	1:0:2178:U:C6	2.45	0.51
1:0:18:U:H2'	1:0:19:C:C6	2.44	0.51
1:0:170:U:H2'	1:0:171:G:H8	1.75	0.51
1:0:878:C:N4	1:0:921:A:H62	2.06	0.51
1:0:941:U:H4'	1:0:941:U:OP1	2.10	0.51
1:0:1018:C:H2'	1:0:1019:U:C5	2.45	0.51
1:0:1198:C:C5'	1:0:1199:U:H5''	2.41	0.51
1:0:2213:G:H2'	1:0:2214:G:C8	2.46	0.51
1:0:590:C:H2'	1:0:591:G:C8	2.45	0.51
1:0:1092:U:H2'	1:0:1093:U:C6	2.45	0.51
1:0:1661:C:O2'	1:0:1662:G:H5'	2.10	0.51
1:0:451:A:H2'	1:0:452:G:C8	2.46	0.51
1:0:630:G:H2'	1:0:631:G:H5'	1.93	0.51
1:0:868:U:H2'	1:0:869:C:C6	2.45	0.51
1:0:991:A:H61	1:0:2020:G:H21	1.58	0.51
1:0:1068:A:H2'	1:0:1069:G:C8	2.45	0.51
1:0:1865:C:H2'	1:0:1866:G:O4'	2.10	0.51
1:0:223:C:H4'	1:0:398:C:H1'	1.92	0.51
1:0:1576:G:H2'	1:0:1577:G:O4'	2.11	0.51
1:0:1819:U:H5''	1:0:1954:A:O3'	2.11	0.51
1:0:1895:A:H2'	1:0:1896:A:O4'	2.11	0.51
1:0:457:C:H2'	1:0:458:G:O4'	2.10	0.51
1:0:619:A:H2'	1:0:620:G:C8	2.45	0.51
1:0:1912:G:H2'	1:0:1912:G:N3	2.25	0.51
1:0:2660:C:O2'	1:0:2661:G:H5'	2.11	0.51
1:0:583:C:O2'	1:0:584:A:OP2	2.28	0.51
1:0:1067:G:H2'	1:0:1114:A:H61	1.76	0.51
1:0:1611:U:H2'	1:0:1612:U:O4'	2.11	0.51
1:0:1727:C:H4'	1:0:2833:C:O2	2.10	0.51
1:0:1979:C:H42	1:0:2706:U:H6	1.59	0.51
1:0:2023:C:H2'	1:0:2024:U:C6	2.46	0.51
1:0:2426:G:H5'	1:0:2480:C:N4	2.19	0.51
1:0:2429:A:H5''	1:0:2476:A:C6	2.46	0.51
1:0:114:C:H2'	1:0:115:G:O4'	2.11	0.51
1:0:879:A:O2'	1:0:880:C:H5'	2.10	0.51
1:0:964:A:H2'	1:0:965:G:C8	2.46	0.51
1:0:1424:U:H2'	1:0:1425:G:C8	2.46	0.51
1:0:1881:U:H2'	1:0:1882:G:H5'	1.93	0.51
1:0:422:C:H2'	1:0:423:G:H8	1.77	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:959:C:H5''	1:0:972:C:O2'	2.11	0.50
1:0:1007:A:H2'	1:0:1008:G:C8	2.46	0.50
1:0:1038:U:O2	1:0:2466:G:H4'	2.10	0.50
1:0:1052:C:H2'	1:0:1053:G:C8	2.45	0.50
1:0:1683:G:C2'	1:0:1684:G:H5'	2.41	0.50
1:0:1938:U:C2'	1:0:1939:U:H5'	2.40	0.50
1:0:2238:G:H2'	1:0:2239:C:H6	1.76	0.50
1:0:2397:A:H2'	1:0:2398:U:O4'	2.11	0.50
1:0:173:A:H61	1:0:844:G:H21	1.57	0.50
1:0:534:U:H4'	1:0:564:U:O2'	2.12	0.50
1:0:1626:A:OP2	1:0:1627:C:H5	1.95	0.50
1:0:579:G:H2'	1:0:2013:A:N6	2.26	0.50
1:0:788:G:H5'	1:0:790:A:N3	2.26	0.50
1:0:841:G:N1	1:0:2226:A:H4'	2.26	0.50
1:0:1218:C:H2'	1:0:1219:C:C6	2.46	0.50
1:0:1667:A:H2'	1:0:1668:G:H8	1.76	0.50
1:0:2725:C:H2'	1:0:2726:U:C6	2.47	0.50
1:0:2756:A:H4'	1:0:2758:A:OP1	2.11	0.50
1:0:35:G:C1'	1:0:466:A:H1'	2.41	0.50
1:0:626:A:O2'	1:0:627:A:H5'	2.11	0.50
1:0:1861:G:O2'	1:0:1862:C:H5'	2.11	0.50
1:0:2010:G:H2'	1:0:2011:U:O4'	2.12	0.50
1:0:2727:G:C2'	1:0:2728:A:H5''	2.41	0.50
1:0:225:G:H21	1:0:2410:U:H1'	1.76	0.50
1:0:872:G:H2'	1:0:928:G:N1	2.27	0.50
1:0:991:A:N6	1:0:2020:G:H21	2.10	0.50
1:0:1057:A:H3'	1:0:1058:G:C5'	2.41	0.50
1:0:1127:C:H2'	1:0:1128:G:H8	1.77	0.50
1:0:1857:G:H2'	1:0:1859:A:OP2	2.12	0.50
1:0:2178:U:H2'	1:0:2179:C:C6	2.47	0.50
1:0:2229:G:H2'	1:0:2475:C:OP1	2.11	0.50
1:0:55:A:H2'	1:0:56:C:H6	1.77	0.50
1:0:236:C:O2	1:0:632:A:H1'	2.12	0.50
1:0:316:C:H2'	1:0:317:U:C6	2.47	0.50
1:0:1194:U:O2'	1:0:1195:U:P	2.70	0.50
1:0:1312:G:H2'	1:0:1643:A:N6	2.26	0.50
1:0:2426:G:N2	1:0:2430:A:H62	2.09	0.50
1:0:2446:C:H2'	1:0:2447:G:C8	2.47	0.50
1:0:215:G:H4'	1:0:617:U:O2'	2.12	0.50
1:0:338:G:O2'	1:0:339:U:H5'	2.12	0.50
1:0:599:A:H2'	1:0:600:G:H8	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:792:U:H2'	1:0:793:G:O4'	2.11	0.50
1:0:1073:G:H2'	1:0:1074:G:C4'	2.29	0.50
1:0:1272:G:H2'	1:0:1273:G:C8	2.47	0.50
1:0:1686:A:O2'	1:0:2528:G:H5'	2.12	0.50
1:0:1747:G:C4'	1:0:1749:G:H1'	2.31	0.50
1:0:2079:A:H2'	1:0:2080:U:C6	2.47	0.50
1:0:2082:C:H2'	1:0:2083:G:O4'	2.11	0.50
1:0:2313:G:H2'	1:0:2314:A:H5'	1.93	0.50
1:0:2754:C:H2'	1:0:2755:A:O4'	2.12	0.50
1:0:210:A:N6	1:0:242:A:N7	2.59	0.50
1:0:742:G:H2'	1:0:1766:U:H1'	1.94	0.50
1:0:831:G:C2'	1:0:832:A:H5''	2.41	0.50
1:0:1055:A:N6	1:0:1122:A:H4'	2.27	0.50
1:0:2329:C:C2'	1:0:2330:G:H5'	2.42	0.50
1:0:2485:U:O2'	1:0:2486:C:H5'	2.11	0.50
1:0:1029:C:OP1	1:0:1047:G:H4'	2.11	0.50
1:0:2435:C:H2'	1:0:2436:U:C6	2.47	0.50
1:0:2561:G:O2'	1:0:2562:G:H5'	2.11	0.50
1:0:2726:U:H2'	1:0:2727:G:O4'	2.12	0.50
1:0:2821:G:H2'	1:0:2822:U:C6	2.47	0.50
1:0:459:A:H62	1:0:484:G:H1'	1.77	0.49
1:0:597:U:N3	1:0:683:A:H2'	2.27	0.49
1:0:689:A:N6	1:0:815:A:H61	2.06	0.49
1:0:1055:A:O2'	1:0:1058:G:H1'	2.12	0.49
1:0:1195:U:H2'	1:0:1196:G:H8	1.73	0.49
1:0:1259:A:H2'	1:0:1260:A:C8	2.47	0.49
1:0:1495:G:HO2'	1:0:1496:G:P	2.35	0.49
1:0:431:G:H2'	1:0:432:C:C6	2.47	0.49
1:0:460:U:N3	1:0:592:G:H1'	2.22	0.49
1:0:645:G:H2'	1:0:646:C:C6	2.47	0.49
1:0:703:A:H2'	1:0:704:G:H8	1.77	0.49
1:0:1164:C:H2'	1:0:1165:G:O4'	2.11	0.49
1:0:1820:G:O2'	1:0:1821:A:P	2.70	0.49
1:0:2181:A:H2'	1:0:2182:A:H5'	1.93	0.49
1:0:45:C:H2'	1:0:46:C:C6	2.46	0.49
1:0:1029:C:C3'	1:0:1030:U:H5''	2.43	0.49
1:0:1259:A:H2'	1:0:1260:A:O4'	2.12	0.49
1:0:1310:C:OP1	1:0:2689:C:H4'	2.12	0.49
1:0:2805:G:O2'	1:0:2806:G:H5'	2.12	0.49
1:0:165:G:H2'	1:0:166:G:O4'	2.12	0.49
1:0:181:A:H4'	1:0:182:G:O5'	2.11	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:780:U:H2'	1:0:781:G:C8	2.48	0.49
1:0:1435:G:H21	1:0:1511:A:N6	2.11	0.49
1:0:1785:A:H2'	1:0:1786:C:C6	2.46	0.49
1:0:2794:G:H3'	1:0:2796:A:N6	2.20	0.49
1:0:83:A:C6	1:0:98:U:H1'	2.46	0.49
1:0:213:C:H42	1:0:238:G:H22	1.59	0.49
1:0:216:U:H5''	1:0:601:A:N6	2.28	0.49
1:0:594:G:H21	1:0:1267:A:H62	1.61	0.49
1:0:810:U:H2'	1:0:811:G:C8	2.48	0.49
1:0:860:U:H2'	1:0:861:G:H5'	1.95	0.49
1:0:1016:C:H2'	1:0:1017:C:C6	2.47	0.49
1:0:1492:A:H2	1:0:1531:C:H41	1.58	0.49
1:0:1685:A:H1'	1:0:1686:A:N7	2.28	0.49
1:0:1791:C:H2'	1:0:1792:C:H5''	1.95	0.49
1:0:190:A:H2'	1:0:191:G:C8	2.47	0.49
1:0:203:G:O2'	1:0:204:A:H5'	2.13	0.49
1:0:689:A:C2'	1:0:690:A:H5'	2.43	0.49
1:0:860:U:O2'	1:0:861:G:H5'	2.13	0.49
1:0:1099:A:H5''	1:0:1100:G:N7	2.27	0.49
1:0:1354:A:H3'	1:0:1410:U:O2	2.12	0.49
1:0:1445:A:H2'	1:0:1446:U:O4'	2.13	0.49
1:0:1455:C:H2'	1:0:1456:C:C6	2.48	0.49
1:0:2161:C:O2'	1:0:2162:C:P	2.71	0.49
1:0:211:U:O2'	1:0:212:U:H5'	2.13	0.49
1:0:441:A:H2'	1:0:442:A:O4'	2.12	0.49
1:0:693:A:H2'	1:0:694:G:C8	2.47	0.49
1:0:930:A:H5'	1:0:931:G:C8	2.47	0.49
1:0:1038:U:H2'	1:0:1039:A:C8	2.48	0.49
1:0:1141:U:O2'	1:0:1142:G:OP1	2.26	0.49
1:0:2093:G:H2'	1:0:2094:C:C6	2.47	0.49
1:0:2404:A:H5''	1:0:2405:A:H3'	1.94	0.49
1:0:2533:U:H2'	1:0:2534:U:C6	2.47	0.49
1:0:2560:G:H4'	1:0:2561:G:C8	2.47	0.49
1:0:2799:C:H2'	1:0:2800:C:O4'	2.12	0.49
1:0:109:A:H3'	1:0:110:U:C5'	2.39	0.49
1:0:204:A:H4'	1:0:205:A:N7	2.28	0.49
1:0:338:G:H1	1:0:346:C:H42	1.61	0.49
1:0:951:G:C3'	1:0:952:A:H5''	2.43	0.49
1:0:820:U:H1'	1:0:2424:G:OP1	2.12	0.49
1:0:1380:C:N4	1:0:1799:A:N1	2.61	0.49
1:0:1678:G:H2'	1:0:1679:U:C6	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1685:A:C6	1:0:1691:G:H1'	2.48	0.49
1:0:1729:C:H2'	1:0:1730:G:C8	2.48	0.49
1:0:1793:A:H2'	1:0:1794:A:C8	2.48	0.49
1:0:1949:A:O2'	1:0:2572:U:H5'	2.13	0.49
1:0:2235:G:H2'	1:0:2236:U:C6	2.48	0.49
1:0:2417:U:H4'	1:0:2419:C:OP1	2.13	0.49
1:0:2503:G:C2'	1:0:2504:G:H5''	2.43	0.49
1:0:84:G:H2'	1:0:85:C:C6	2.48	0.49
1:0:210:A:N6	1:0:442:A:H61	2.10	0.49
1:0:756:C:H2'	1:0:757:U:C6	2.48	0.49
1:0:864:C:H2'	1:0:865:A:C8	2.46	0.49
1:0:1665:C:N4	1:0:1993:G:H1	2.11	0.49
1:0:1679:U:H2'	1:0:1680:U:H5''	1.94	0.49
1:0:2299:A:H2'	1:0:2299:A:N3	2.27	0.49
1:0:2570:C:H2'	1:0:2571:G:C8	2.48	0.49
1:0:2721:A:N6	1:0:2743:G:H21	2.09	0.49
1:0:763:A:C2	1:0:765:C:H1'	2.48	0.48
1:0:790:A:H2'	1:0:791:G:C8	2.48	0.48
1:0:830:C:O2	1:0:852:U:H4'	2.13	0.48
1:0:1046:U:H2'	1:0:1047:G:C8	2.48	0.48
1:0:1279:G:H1'	1:0:1280:U:H5	1.77	0.48
1:0:1349:A:H2'	1:0:1350:G:C8	2.48	0.48
1:0:1682:A:H2'	1:0:1683:G:C8	2.47	0.48
1:0:2301:A:H2'	1:0:2302:G:O4'	2.13	0.48
1:0:2852:G:H2'	1:0:2853:U:O4'	2.13	0.48
1:0:116:A:N3	1:0:155:G:H1'	2.28	0.48
1:0:1040:A:H2'	1:0:1041:G:H5'	1.93	0.48
1:0:1182:U:C3'	1:0:1183:C:H5''	2.43	0.48
1:0:1598:C:H2'	1:0:1599:G:O4'	2.13	0.48
1:0:1715:A:H1'	1:0:1717:A:C1'	2.42	0.48
1:0:1871:G:N3	1:0:1871:G:C2'	2.76	0.48
1:0:2026:C:H2'	1:0:2027:C:C6	2.48	0.48
1:0:2093:G:O2'	1:0:2094:C:P	2.71	0.48
1:0:2421:C:O2'	1:0:2422:C:H5'	2.12	0.48
1:0:521:U:H2'	1:0:522:G:H5'	1.95	0.48
1:0:548:G:H2'	1:0:549:G:C8	2.48	0.48
1:0:568:G:H5''	1:0:1019:U:H5'	1.95	0.48
1:0:942:U:C2'	1:0:943:U:H5'	2.43	0.48
1:0:1629:G:N1	1:0:1633:C:N4	2.62	0.48
1:0:2025:A:H2'	1:0:2026:C:H5''	1.94	0.48
1:0:2308:A:H2'	1:0:2309:G:C8	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2343:C:H2'	1:0:2344:G:O4'	2.14	0.48
1:0:2424:G:H2'	1:0:2425:G:O4'	2.13	0.48
1:0:2872:U:H2'	1:0:2873:G:C8	2.49	0.48
1:0:42:G:H2'	1:0:43:A:O4'	2.13	0.48
1:0:108:G:H2'	1:0:109:A:C8	2.49	0.48
1:0:109:A:C2'	1:0:110:U:H5''	2.44	0.48
1:0:173:A:N6	1:0:844:G:H21	2.12	0.48
1:0:367:G:C3'	1:0:368:A:H5''	2.43	0.48
1:0:427:C:H2'	1:0:428:A:C8	2.49	0.48
1:0:477:A:H2'	1:0:478:G:O4'	2.14	0.48
1:0:1686:A:H2'	1:0:1687:C:H5'	1.94	0.48
1:0:569:C:H2'	1:0:570:G:C8	2.48	0.48
1:0:941:U:H2'	1:0:942:U:C6	2.48	0.48
1:0:2559:U:C2'	1:0:2560:G:H5'	2.43	0.48
1:0:161:U:H2'	1:0:162:C:C6	2.48	0.48
1:0:172:A:H4'	1:0:228:A:H4'	1.95	0.48
1:0:429:C:H2'	1:0:430:C:O4'	2.13	0.48
1:0:478:G:O2'	1:0:479:G:H5'	2.14	0.48
1:0:583:C:O2'	1:0:584:A:P	2.71	0.48
1:0:845:U:H2'	1:0:846:A:C8	2.49	0.48
1:0:1429:A:H1'	1:0:1603:A:C6	2.49	0.48
1:0:1825:C:O2'	1:0:1826:U:H5'	2.14	0.48
1:0:2220:A:H2'	1:0:2221:G:C8	2.48	0.48
1:0:2503:G:H2'	1:0:2504:G:H5''	1.96	0.48
1:0:2784:A:H3'	1:0:2785:A:C8	2.46	0.48
1:0:632:A:C2'	1:0:633:G:H5'	2.44	0.48
1:0:742:G:N3	1:0:742:G:C2'	2.77	0.48
1:0:1141:U:O2'	1:0:1142:G:P	2.72	0.48
1:0:1742:G:H2'	1:0:1743:C:C6	2.48	0.48
1:0:2085:G:H2'	1:0:2086:U:C6	2.49	0.48
1:0:2428:U:O2'	1:0:2429:A:H5'	2.13	0.48
1:0:323:G:H2'	1:0:324:C:C6	2.48	0.48
1:0:979:A:H2'	1:0:980:G:C8	2.49	0.48
1:0:1033:G:H22	1:0:1150:C:C2'	2.26	0.48
1:0:1821:A:H5''	1:0:1822:C:H5	1.79	0.48
1:0:2212:U:H2'	1:0:2213:G:C8	2.49	0.48
1:0:2278:A:H2'	1:0:2279:G:C8	2.48	0.48
1:0:1391:A:H2'	1:0:1392:U:C5	2.49	0.48
1:0:1436:G:H2'	1:0:1437:A:C8	2.49	0.48
1:0:1809:G:O2'	1:0:1810:U:H5'	2.13	0.48
1:0:2015:G:OP2	1:0:2434:G:H5'	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2377:U:O2'	1:0:2378:G:P	2.72	0.48
1:0:2468:G:H2'	1:0:2469:G:O4'	2.14	0.48
1:0:2815:C:H2'	1:0:2816:C:C6	2.49	0.48
2:5:30:C:O2'	2:5:31:C:H5'	2.14	0.48
1:0:70:A:P	1:0:111:G:H4'	2.54	0.48
1:0:240:U:H4'	1:0:443:A:H5'	1.96	0.48
1:0:565:A:H2'	1:0:566:U:C6	2.49	0.48
1:0:864:C:H2'	1:0:865:A:H8	1.79	0.48
1:0:1436:G:H1'	1:0:1508:G:N2	2.18	0.48
1:0:1458:A:H3'	1:0:1459:U:H5'	1.96	0.48
1:0:1712:G:H3'	1:0:1712:G:N3	2.29	0.48
1:0:1793:A:H2'	1:0:1794:A:H8	1.79	0.48
1:0:2559:U:H2'	1:0:2560:G:H5'	1.95	0.48
1:0:2708:U:H2'	1:0:2709:C:C6	2.49	0.48
1:0:2830:U:H2'	1:0:2831:A:C8	2.49	0.48
1:0:84:G:O2'	1:0:85:C:H5'	2.14	0.47
1:0:239:A:H4'	1:0:620:G:H5'	1.95	0.47
1:0:780:U:H2'	1:0:781:G:H8	1.79	0.47
1:0:1036:G:H1'	1:0:1145:C:C4'	2.44	0.47
1:0:1354:A:N6	1:0:1407:G:H22	2.10	0.47
1:0:1436:G:C1'	1:0:1508:G:H21	2.21	0.47
1:0:1925:C:H4'	2:5:30:C:O2'	2.13	0.47
1:0:2048:C:H2'	1:0:2049:C:H6	1.79	0.47
1:0:2523:G:O2'	1:0:2524:G:H5'	2.14	0.47
1:0:108:G:H2'	1:0:109:A:H8	1.79	0.47
1:0:974:U:H2'	1:0:975:C:C6	2.49	0.47
1:0:1316:G:H2'	1:0:1317:G:C8	2.49	0.47
1:0:1774:A:H1'	1:0:2586:G:N2	2.28	0.47
1:0:2204:A:O2'	1:0:2205:C:OP2	2.32	0.47
1:0:1571:G:H2'	1:0:1572:C:C6	2.49	0.47
1:0:1821:A:H3'	1:0:1822:C:H6	1.79	0.47
1:0:2009:U:H2'	1:0:2010:G:C8	2.49	0.47
1:0:2137:G:H2'	1:0:2138:U:C6	2.49	0.47
1:0:2426:G:HO2'	1:0:2427:A:P	2.37	0.47
1:0:2434:G:H2'	1:0:2435:C:C6	2.50	0.47
1:0:2579:A:O2'	1:0:2580:C:H5'	2.14	0.47
1:0:2757:G:H5'	1:0:2761:A:H1'	1.96	0.47
1:0:670:U:H2'	1:0:671:A:C8	2.49	0.47
1:0:1031:C:H1'	1:0:1151:U:O2	2.15	0.47
1:0:1069:G:O2'	1:0:1070:G:H5'	2.14	0.47
1:0:1226:A:C6	1:0:1250:A:H1'	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1679:U:C2'	1:0:1680:U:H5''	2.44	0.47
1:0:2448:A:H2'	1:0:2449:G:O4'	2.14	0.47
1:0:2651:U:H2'	1:0:2652:G:C8	2.49	0.47
1:0:452:G:H2'	1:0:453:U:O4'	2.15	0.47
1:0:1028:G:H2'	1:0:1029:C:C6	2.50	0.47
1:0:1269:G:H2'	1:0:1270:C:C6	2.50	0.47
1:0:1344:C:H2'	1:0:1346:C:OP1	2.14	0.47
1:0:2057:U:H2'	1:0:2058:U:C6	2.50	0.47
1:0:2372:A:H2'	1:0:2373:C:H6	1.78	0.47
1:0:2526:U:H2'	1:0:2527:G:C8	2.50	0.47
1:0:664:C:H2'	1:0:665:A:C8	2.50	0.47
1:0:1016:C:H5''	1:0:1023:U:OP2	2.14	0.47
1:0:1039:A:H2'	1:0:1040:A:C8	2.48	0.47
1:0:1326:U:H1'	1:0:1626:A:N3	2.30	0.47
1:0:1496:G:H5'	1:0:1575:C:N4	2.29	0.47
1:0:2069:U:H2'	1:0:2070:G:C8	2.49	0.47
1:0:2211:U:H2'	1:0:2212:U:C6	2.49	0.47
1:0:2316:G:H2'	1:0:2317:G:H8	1.78	0.47
1:0:2378:G:H2'	1:0:2379:G:H8	1.80	0.47
1:0:2402:U:H5'	1:0:2404:A:N7	2.30	0.47
1:0:643:A:H2'	1:0:644:A:C8	2.49	0.47
1:0:701:U:H1'	1:0:800:U:H5'	1.97	0.47
1:0:760:U:O2	1:0:1997:A:H1'	2.15	0.47
1:0:926:C:H2'	1:0:927:C:H5'	1.95	0.47
1:0:1039:A:H2'	1:0:1040:A:H8	1.79	0.47
1:0:1184:G:H2'	1:0:1185:C:H5'	1.97	0.47
1:0:1316:G:H2'	1:0:1317:G:H8	1.79	0.47
1:0:1386:A:H2'	1:0:1387:G:O4'	2.15	0.47
1:0:2062:U:H4'	1:0:2412:A:H2	1.79	0.47
1:0:2329:C:N4	1:0:2361:G:H22	2.13	0.47
1:0:2403:C:H2'	1:0:2408:G:O2'	2.15	0.47
1:0:2494:C:H2'	1:0:2495:G:H8	1.80	0.47
1:0:2558:C:O2'	1:0:2559:U:H5'	2.15	0.47
1:0:2564:U:H4'	1:0:2565:C:OP1	2.14	0.47
1:0:2565:C:O2'	1:0:2566:A:H5'	2.15	0.47
1:0:2727:G:N1	1:0:2735:C:H5''	2.28	0.47
1:0:192:G:C4'	1:0:193:A:H4'	2.45	0.47
1:0:432:C:H2'	1:0:433:G:H8	1.80	0.47
1:0:776:G:N3	1:0:776:G:C2'	2.78	0.47
1:0:1981:A:H2'	1:0:1982:C:C6	2.49	0.47
1:0:2014:A:H62	1:0:2477:C:H1'	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2017:U:O2'	1:0:2018:G:H5'	2.14	0.47
1:0:2021:G:H2'	1:0:2022:C:C6	2.50	0.47
1:0:2168:A:C2'	1:0:2169:A:H5'	2.45	0.47
1:0:2499:C:N4	1:0:2521:A:H2	2.10	0.47
1:0:556:A:H2'	1:0:557:U:H5'	1.97	0.47
1:0:635:C:H3'	1:0:636:G:H5''	1.97	0.47
1:0:703:A:H2'	1:0:704:G:C8	2.50	0.47
1:0:873:U:O2	1:0:2246:A:H5''	2.15	0.47
1:0:1263:G:O2'	1:0:1264:C:P	2.73	0.47
1:0:1290:A:H2'	1:0:1291:G:C8	2.50	0.47
1:0:1480:G:H2'	1:0:1481:U:H5'	1.97	0.47
1:0:1684:G:H2'	1:0:1974:U:O4	2.15	0.47
1:0:1685:A:N6	1:0:1691:G:H1'	2.30	0.47
1:0:1993:G:H2'	1:0:1994:U:C6	2.50	0.47
1:0:198:A:O2'	1:0:199:A:P	2.73	0.47
1:0:241:C:C2'	1:0:242:A:H5''	2.44	0.47
1:0:819:C:H2'	1:0:820:U:C6	2.50	0.47
1:0:1578:U:H2'	1:0:1579:G:C8	2.51	0.47
1:0:2199:C:H2'	1:0:2200:G:C8	2.49	0.47
1:0:2276:C:O2	1:0:2301:A:H1'	2.15	0.47
1:0:2437:G:H4'	1:0:2438:A:N7	2.30	0.47
1:0:2564:U:HO2'	1:0:2565:C:P	2.37	0.47
1:0:2658:A:H2'	1:0:2659:C:C6	2.50	0.47
1:0:2771:C:H2'	1:0:2772:U:C6	2.49	0.47
1:0:152:G:O2'	1:0:153:A:H5'	2.15	0.46
1:0:546:A:H2'	1:0:547:U:C6	2.50	0.46
1:0:1418:C:H2'	1:0:1419:G:H8	1.80	0.46
1:0:2307:A:H2'	1:0:2308:A:C8	2.51	0.46
1:0:2393:G:H2'	1:0:2394:G:H8	1.80	0.46
1:0:2642:G:H2'	1:0:2643:G:O4'	2.15	0.46
1:0:2809:A:H2'	1:0:2810:A:H5'	1.97	0.46
1:0:697:G:C2'	1:0:698:A:H5'	2.45	0.46
1:0:771:C:H2'	1:0:772:G:H8	1.80	0.46
1:0:1301:U:H2'	1:0:1664:G:N2	2.29	0.46
1:0:1829:C:C2'	1:0:1830:C:H5'	2.45	0.46
1:0:1937:G:N3	1:0:2530:C:H5'	2.29	0.46
1:0:2204:A:H1'	1:0:2205:C:C5	2.50	0.46
1:0:2493:U:H2'	1:0:2494:C:C6	2.50	0.46
1:0:2504:G:H2'	1:0:2505:G:H8	1.79	0.46
1:0:337:G:H2'	1:0:338:G:C8	2.51	0.46
1:0:758:G:N2	1:0:763:A:N1	2.62	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:869:C:O2'	1:0:870:C:H5'	2.15	0.46
1:0:971:A:H2	1:0:2475:C:H1'	1.80	0.46
1:0:986:A:H2'	1:0:987:G:H5'	1.97	0.46
1:0:1452:U:H5'	1:0:1532:A:O2'	2.14	0.46
1:0:1471:G:H1	1:0:2682:C:H42	1.63	0.46
1:0:1495:G:H2'	1:0:1496:G:C8	2.51	0.46
1:0:1518:C:C2'	1:0:1519:G:O5'	2.64	0.46
1:0:1760:G:H2'	1:0:1761:G:C8	2.50	0.46
1:0:1888:C:H5''	1:0:1889:G:C5'	2.45	0.46
1:0:2574:G:H2'	1:0:2574:G:N3	2.31	0.46
1:0:85:C:O2'	1:0:86:U:H5'	2.16	0.46
1:0:689:A:C8	1:0:2422:C:H1'	2.50	0.46
1:0:932:G:H2'	1:0:933:G:C8	2.50	0.46
1:0:2278:A:H2'	1:0:2279:G:H8	1.81	0.46
1:0:2324:G:C4'	1:0:2326:C:H5''	2.43	0.46
1:0:2444:C:O2'	1:0:2445:C:H5'	2.16	0.46
1:0:54:G:H2'	1:0:55:A:C8	2.50	0.46
1:0:199:A:H61	1:0:209:G:H1'	1.81	0.46
1:0:387:A:H2'	1:0:388:G:O4'	2.16	0.46
1:0:738:G:H2'	1:0:739:G:O4'	2.14	0.46
1:0:1572:C:C3'	1:0:1573:G:H5''	2.45	0.46
1:0:1777:A:H5'	1:0:1963:G:H21	1.81	0.46
1:0:207:U:H2'	1:0:208:C:C6	2.51	0.46
1:0:675:C:H2'	1:0:676:G:C8	2.51	0.46
1:0:758:G:H2'	1:0:759:C:H5'	1.97	0.46
1:0:1279:G:H2'	1:0:1280:U:OP2	2.16	0.46
1:0:1962:C:O2'	1:0:1963:G:H5'	2.16	0.46
1:0:2555:G:H3'	1:0:2555:G:N3	2.31	0.46
1:0:27:G:N2	1:0:522:G:HO2'	2.14	0.46
1:0:324:C:H2'	1:0:325:U:O4'	2.15	0.46
1:0:567:G:H2'	1:0:568:G:C8	2.51	0.46
1:0:582:G:H2'	1:0:583:C:H3'	1.98	0.46
1:0:1014:G:O2'	1:0:1015:U:H5'	2.16	0.46
1:0:1029:C:H3'	1:0:1030:U:H5''	1.96	0.46
1:0:1223:G:O2'	1:0:1224:A:P	2.74	0.46
1:0:1429:A:N6	1:0:1602:G:H5'	2.31	0.46
1:0:1579:G:H2'	1:0:1580:C:C6	2.51	0.46
1:0:1836:C:H2'	1:0:1837:G:C8	2.50	0.46
1:0:2717:G:H2'	1:0:2718:A:C8	2.51	0.46
1:0:2800:C:H2'	1:0:2801:A:O4'	2.15	0.46
1:0:2825:A:H2'	1:0:2826:C:C6	2.51	0.46

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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:8:A:H2'	1:0:9:U:C6	2.51	0.45
1:0:489:A:N6	1:0:491:A:H62	2.14	0.45
1:0:595:A:H2	1:0:822:G:N3	2.15	0.45
1:0:635:C:C3'	1:0:636:G:H5''	2.46	0.45
1:0:872:G:O2'	1:0:2247:A:N3	2.48	0.45
1:0:1677:C:H2'	1:0:1678:G:H8	1.81	0.45
1:0:1888:C:C4'	1:0:1889:G:H5''	2.47	0.45
1:0:2059:U:H5	1:0:2575:U:N3	2.05	0.45
1:0:2106:G:H2'	1:0:2107:G:C8	2.51	0.45
1:0:2628:C:H2'	1:0:2629:U:C6	2.52	0.45
1:0:13:A:H1'	1:0:536:A:H62	1.81	0.45
1:0:187:U:H2'	1:0:188:G:C8	2.52	0.45
1:0:192:G:H4'	1:0:193:A:O5'	2.15	0.45
1:0:331:U:H2'	1:0:332:C:H5''	1.97	0.45
1:0:365:U:H2'	1:0:366:U:C6	2.52	0.45
1:0:421:G:H2'	1:0:422:C:C6	2.51	0.45
1:0:560:G:H2'	1:0:561:U:C6	2.51	0.45
1:0:575:U:H4'	1:0:822:G:OP2	2.16	0.45
1:0:628:A:H2'	1:0:629:C:H6	1.81	0.45
1:0:1147:G:H2'	1:0:1148:G:C8	2.52	0.45
1:0:1313:U:O2'	1:0:1314:A:O5'	2.32	0.45
1:0:1429:A:O2'	1:0:1430:G:H4'	2.16	0.45
1:0:2161:C:H2'	1:0:2162:C:C6	2.51	0.45
1:0:2193:C:H2'	1:0:2194:A:O4'	2.16	0.45
1:0:2429:A:O2'	1:0:2430:A:H5'	2.16	0.45
1:0:2668:U:O2'	1:0:2669:C:P	2.75	0.45
1:0:2809:A:N6	1:0:2854:G:H2'	2.31	0.45
1:0:40:U:H2'	1:0:41:G:C8	2.51	0.45
1:0:306:G:H2'	1:0:307:C:C6	2.52	0.45
1:0:529:U:H2'	1:0:530:G:C8	2.51	0.45
1:0:595:A:H62	1:0:1264:C:N4	2.14	0.45
1:0:1286:U:H4'	1:0:1288:A:OP1	2.16	0.45
1:0:1380:C:C2'	1:0:1381:G:H5'	2.45	0.45
1:0:2055:G:H2'	1:0:2056:C:C6	2.52	0.45
1:0:2709:C:H2'	1:0:2710:C:C6	2.51	0.45
1:0:81:C:H4'	1:0:307:C:H5'	1.98	0.45
1:0:297:A:H2'	1:0:298:C:C6	2.50	0.45
1:0:462:G:H2'	1:0:463:C:H5'	1.99	0.45
1:0:601:A:H3'	1:0:602:C:C5'	2.46	0.45
1:0:777:A:H62	1:0:1766:U:H3	1.60	0.45
1:0:1163:C:O2'	1:0:1164:C:H5'	2.15	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1659:G:H2'	1:0:1660:G:C8	2.51	0.45
1:0:1886:G:H2'	1:0:1887:G:C8	2.52	0.45
1:0:2474:G:O2'	1:0:2475:C:H5'	2.16	0.45
1:0:2600:A:H2'	1:0:2601:C:C6	2.52	0.45
1:0:307:C:H2'	1:0:308:C:C6	2.52	0.45
1:0:541:C:O2	1:0:2002:A:N1	2.50	0.45
1:0:653:G:H21	1:0:655:A:H1'	1.81	0.45
1:0:837:U:H2'	1:0:838:A:C8	2.52	0.45
1:0:1278:A:HO2'	1:0:1279:G:P	2.37	0.45
1:0:1628:C:H2'	1:0:1629:G:C8	2.51	0.45
1:0:1888:C:C5'	1:0:1889:G:H5''	2.44	0.45
1:0:2277:A:H2'	1:0:2278:A:O4'	2.16	0.45
1:0:2475:C:C2'	1:0:2476:A:H5'	2.47	0.45
1:0:2570:C:H2'	1:0:2571:G:H8	1.82	0.45
1:0:2668:U:HO2'	1:0:2669:C:P	2.40	0.45
1:0:916:U:H2'	1:0:917:U:C6	2.51	0.45
1:0:1855:G:H4'	1:0:2390:A:H4'	1.98	0.45
1:0:2204:A:O2'	1:0:2205:C:C6	2.69	0.45
1:0:2205:C:H2'	1:0:2206:C:H6	1.80	0.45
1:0:2259:G:H2'	1:0:2260:C:C6	2.52	0.45
1:0:2376:G:H2'	1:0:2377:U:C6	2.52	0.45
1:0:2459:C:C2'	1:0:2460:G:H5'	2.46	0.45
1:0:697:G:O2'	1:0:698:A:H5'	2.17	0.45
1:0:935:C:H2'	1:0:936:A:C8	2.52	0.45
1:0:1452:U:H5''	1:0:1533:G:H5'	1.99	0.45
1:0:1608:U:H2'	1:0:1609:G:C8	2.52	0.45
1:0:1747:G:H1'	1:0:1749:G:C2	2.51	0.45
1:0:1886:G:H2'	1:0:1887:G:H8	1.82	0.45
1:0:2120:C:H2'	1:0:2121:U:O4'	2.17	0.45
1:0:2235:G:H2'	1:0:2236:U:H6	1.81	0.45
1:0:2619:G:H2'	1:0:2620:G:C8	2.52	0.45
1:0:2694:G:H2'	1:0:2695:C:C6	2.52	0.45
1:0:2862:G:O2'	1:0:2863:U:H5'	2.17	0.45
1:0:32:C:H2'	1:0:33:C:C6	2.52	0.45
1:0:211:U:C2'	1:0:212:U:H5'	2.46	0.45
1:0:245:C:H5'	1:0:372:U:O2'	2.17	0.45
1:0:340:G:H1'	1:0:488:A:C4	2.52	0.45
1:0:709:A:H2'	1:0:710:C:C6	2.52	0.45
1:0:967:G:H1'	1:0:970:A:N7	2.32	0.45
1:0:1307:U:H2'	1:0:1308:C:O4'	2.17	0.45
1:0:1494:G:H2'	1:0:1495:G:C8	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1586:A:H2'	1:0:1587:A:C8	2.52	0.45
1:0:1906:U:H2'	1:0:1907:C:C6	2.52	0.45
1:0:2159:A:H2'	1:0:2160:C:C6	2.52	0.45
1:0:2475:C:H2'	1:0:2476:A:H5'	1.98	0.45
1:0:2591:C:O2'	1:0:2592:U:H5'	2.17	0.45
1:0:2639:A:H2'	1:0:2640:G:O4'	2.16	0.45
1:0:91:A:H2'	1:0:92:U:C6	2.52	0.45
1:0:811:G:O2'	1:0:812:G:H5'	2.17	0.45
1:0:831:G:H5'	1:0:852:U:OP1	2.17	0.45
1:0:1346:C:H2'	1:0:1347:C:C6	2.52	0.45
1:0:1912:G:N3	1:0:1912:G:C2'	2.79	0.45
1:0:2094:C:C4	1:0:2103:G:H1'	2.52	0.45
1:0:2136:G:H2'	1:0:2137:G:C8	2.51	0.45
1:0:2321:C:C2'	1:0:2322:U:H5'	2.46	0.45
1:0:2377:U:O2'	1:0:2378:G:OP1	2.33	0.45
1:0:2712:G:H5'	1:0:2713:A:C8	2.52	0.45
1:0:210:A:N6	1:0:442:A:N6	2.66	0.44
1:0:215:G:H1'	1:0:617:U:O2	2.17	0.44
1:0:317:U:H3'	1:0:318:G:H5''	1.98	0.44
1:0:878:C:HO2'	1:0:879:A:P	2.40	0.44
1:0:1367:A:H2'	1:0:1368:G:O4'	2.17	0.44
1:0:1712:G:C2'	1:0:1713:G:H5'	2.46	0.44
1:0:1821:A:H5''	1:0:1822:C:C5	2.52	0.44
1:0:1918:G:H4'	1:0:1920:A:C2	2.52	0.44
1:0:2524:G:H2'	1:0:2525:U:O4'	2.17	0.44
1:0:2757:G:H5'	1:0:2761:A:C1'	2.47	0.44
1:0:237:G:H2'	1:0:238:G:O4'	2.17	0.44
1:0:699:G:H3'	1:0:699:G:N3	2.33	0.44
1:0:736:G:H2'	1:0:737:C:O4'	2.17	0.44
1:0:1130:U:H2'	1:0:1131:G:C8	2.53	0.44
1:0:1204:G:H2'	1:0:1205:G:C8	2.52	0.44
1:0:1251:G:H2'	1:0:1252:C:H6	1.80	0.44
1:0:1319:C:H2'	1:0:1320:A:H8	1.82	0.44
1:0:604:U:H2'	1:0:605:G:H8	1.82	0.44
1:0:968:C:H2'	1:0:970:A:OP1	2.18	0.44
1:0:1227:A:H62	1:0:1248:G:H21	1.64	0.44
1:0:1257:U:H2'	1:0:1258:G:C8	2.52	0.44
1:0:2018:G:H3'	1:0:2019:C:H5'	2.00	0.44
1:0:2239:C:O2'	1:0:2240:C:H5'	2.17	0.44
1:0:2393:G:H2'	1:0:2394:G:C8	2.53	0.44
1:0:2512:A:H2'	1:0:2513:A:O4'	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:192:G:O2'	1:0:193:A:C5'	2.66	0.44
1:0:644:A:H2'	1:0:645:G:H5'	1.99	0.44
1:0:788:G:C5'	1:0:790:A:H1'	2.47	0.44
1:0:1614:C:H2'	1:0:1615:C:C6	2.52	0.44
1:0:1665:C:H2'	1:0:1666:G:C8	2.52	0.44
1:0:1859:A:H2'	1:0:1860:A:C8	2.53	0.44
1:0:2227:C:C2'	1:0:2228:U:H5'	2.41	0.44
1:0:2620:G:H2'	1:0:2621:G:H8	1.83	0.44
1:0:2635:U:H2'	1:0:2636:A:C8	2.52	0.44
1:0:2668:U:C2'	1:0:2669:C:OP2	2.66	0.44
1:0:117:A:H4'	1:0:118:U:C6	2.53	0.44
1:0:514:G:N3	1:0:514:G:C2'	2.79	0.44
1:0:520:C:O2'	1:0:1249:G:H5''	2.18	0.44
1:0:532:A:H2'	1:0:533:C:C6	2.53	0.44
1:0:616:U:C3'	1:0:617:U:H5''	2.48	0.44
1:0:1002:C:H2'	1:0:1003:C:C6	2.53	0.44
1:0:1140:A:N6	1:0:2469:G:H5''	2.33	0.44
1:0:1291:G:H2'	1:0:1292:A:C8	2.53	0.44
1:0:1917:C:H2'	1:0:1918:G:H5'	2.00	0.44
1:0:2022:C:H2'	1:0:2023:C:C6	2.52	0.44
1:0:2244:C:H1'	1:0:2255:G:N1	2.33	0.44
1:0:2356:A:H2'	1:0:2357:A:C8	2.53	0.44
1:0:2455:A:O2'	1:0:2456:U:H5'	2.18	0.44
1:0:2492:G:H2'	1:0:2493:U:C6	2.53	0.44
1:0:147:G:C2	1:0:148:C:H1'	2.53	0.44
1:0:403:A:H4'	1:0:425:A:C5'	2.39	0.44
1:0:539:A:N6	1:0:2024:U:H3	2.15	0.44
1:0:953:G:H4'	1:0:1203:A:O2'	2.17	0.44
1:0:1278:A:O2'	1:0:1279:G:O5'	2.36	0.44
1:0:1008:G:H2'	1:0:1009:C:C6	2.52	0.44
1:0:1312:G:H5''	1:0:1313:U:C5'	2.36	0.44
1:0:2292:C:H2'	1:0:2293:G:C8	2.53	0.44
1:0:2458:U:OP1	1:0:2516:U:H1'	2.18	0.44
1:0:2824:C:H2'	1:0:2825:A:OP2	2.17	0.44
1:0:415:A:C2'	1:0:416:U:H5'	2.47	0.44
1:0:437:G:O2'	1:0:438:G:H5'	2.17	0.44
1:0:475:U:H2'	1:0:476:G:O4'	2.17	0.44
1:0:701:U:H2'	1:0:702:A:O4'	2.18	0.44
1:0:715:U:H2'	1:0:716:U:C6	2.52	0.44
1:0:716:U:H2'	1:0:717:G:O4'	2.18	0.44
1:0:838:A:H4'	1:0:2407:G:C5	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1353:A:H1'	1:0:1619:A:O4'	2.17	0.44
1:0:1840:A:H2'	1:0:1841:G:H5'	2.00	0.44
1:0:1926:U:H4'	1:0:1927:U:H5	1.82	0.44
1:0:2782:G:H2'	1:0:2783:U:OP1	2.17	0.44
1:0:88:G:H3'	1:0:89:A:C5'	2.41	0.44
1:0:172:A:N3	1:0:227:G:N2	2.64	0.44
1:0:181:A:C4'	1:0:182:G:H4'	2.46	0.44
1:0:342:G:H2'	1:0:343:A:C5'	2.48	0.44
1:0:351:A:H2'	1:0:352:G:O4'	2.18	0.44
1:0:694:G:H2'	1:0:695:G:C8	2.53	0.44
1:0:1031:C:H4'	1:0:1032:A:C8	2.53	0.44
1:0:1075:C:H2'	1:0:1076:U:C6	2.53	0.44
1:0:1274:C:O2'	1:0:1275:A:H5'	2.17	0.44
1:0:1605:A:H2'	1:0:1606:C:C6	2.53	0.44
1:0:1949:A:H1'	1:0:2572:U:H4'	2.00	0.44
1:0:2161:C:O2'	1:0:2162:C:OP1	2.34	0.44
1:0:2497:A:O5'	1:0:2497:A:N3	2.51	0.44
1:0:2574:G:N3	1:0:2574:G:C2'	2.81	0.44
1:0:63:A:N6	1:0:89:A:N1	2.66	0.43
1:0:173:A:N3	1:0:173:A:C2'	2.81	0.43
1:0:871:U:H1'	1:0:2248:A:C5'	2.47	0.43
1:0:987:G:H2'	1:0:988:G:H8	1.82	0.43
1:0:1142:G:OP1	1:0:2494:C:H4'	2.18	0.43
1:0:1466:C:H2'	1:0:1467:U:O4'	2.17	0.43
1:0:1480:G:C2'	1:0:1481:U:H5'	2.47	0.43
1:0:1504:G:O2'	1:0:1505:U:H5'	2.18	0.43
1:0:2240:C:H2'	1:0:2241:U:H5'	1.99	0.43
1:0:2783:U:H2'	1:0:2784:A:O4'	2.17	0.43
1:0:2860:C:H2'	1:0:2861:A:O4'	2.18	0.43
1:0:55:A:N6	1:0:69:G:O6	2.51	0.43
1:0:1750:A:H1'	1:0:2690:A:C2	2.52	0.43
1:0:1961:A:H2'	1:0:1962:C:O4'	2.18	0.43
1:0:2758:A:H5''	1:0:2759:U:C5	2.52	0.43
1:0:114:C:H4'	1:0:124:A:O2'	2.17	0.43
1:0:187:U:H2'	1:0:188:G:H8	1.82	0.43
1:0:859:U:H4'	1:0:860:U:C5	2.54	0.43
1:0:959:C:H2'	1:0:960:U:C6	2.53	0.43
1:0:984:A:H2'	1:0:1200:G:N2	2.31	0.43
1:0:1155:G:H2'	1:0:1156:U:O4'	2.18	0.43
1:0:1790:G:O3'	1:0:1791:C:H6	2.01	0.43
1:0:2265:A:H5''	1:0:2266:A:O4'	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2564:U:H4'	1:0:2565:C:C5'	2.49	0.43
1:0:2615:U:H3	1:0:2762:G:H1	1.65	0.43
1:0:168:A:H2'	1:0:169:C:H6	1.82	0.43
1:0:192:G:H4'	1:0:193:A:H4'	2.00	0.43
1:0:420:C:H2'	1:0:421:G:C8	2.53	0.43
1:0:508:G:H2'	1:0:509:U:C6	2.52	0.43
1:0:547:U:H2'	1:0:548:G:C8	2.53	0.43
1:0:575:U:H2'	1:0:576:A:C8	2.53	0.43
1:0:841:G:H4'	1:0:844:G:N1	2.33	0.43
1:0:1880:G:H2'	1:0:1881:U:C6	2.54	0.43
1:0:2436:U:H2'	1:0:2437:G:O4'	2.19	0.43
1:0:242:A:N6	1:0:441:A:N7	2.66	0.43
1:0:457:C:O2'	1:0:458:G:H5'	2.18	0.43
1:0:758:G:N3	1:0:763:A:N6	2.64	0.43
1:0:2048:C:H1'	1:0:2428:U:O2	2.18	0.43
1:0:2276:C:O2'	1:0:2277:A:H5'	2.19	0.43
1:0:2310:G:H2'	1:0:2311:U:O4'	2.18	0.43
1:0:2561:G:N3	1:0:2561:G:H2'	2.32	0.43
1:0:2874:A:H2'	1:0:2875:C:C6	2.54	0.43
1:0:54:G:H2'	1:0:55:A:H8	1.83	0.43
1:0:192:G:O2'	1:0:193:A:P	2.76	0.43
1:0:509:U:H2'	1:0:510:G:O4'	2.18	0.43
1:0:591:G:H2'	1:0:592:G:C8	2.54	0.43
1:0:925:U:H4'	1:0:926:C:C6	2.54	0.43
1:0:1223:G:H4'	1:0:1224:A:O5'	2.19	0.43
1:0:1478:U:H2'	1:0:1479:G:C8	2.53	0.43
1:0:2033:C:H2'	1:0:2034:A:O4'	2.18	0.43
1:0:2680:U:H3'	1:0:2681:A:C5'	2.47	0.43
1:0:456:C:H2'	1:0:457:C:C6	2.54	0.43
1:0:652:C:N4	1:0:657:A:H61	2.08	0.43
1:0:1194:U:H2'	1:0:1195:U:H6	1.78	0.43
1:0:1326:U:H4'	1:0:1345:G:H4'	2.01	0.43
1:0:1561:A:H2'	1:0:1562:G:O4'	2.18	0.43
1:0:2034:A:N6	1:0:2593:A:N7	2.66	0.43
1:0:2213:G:H2'	1:0:2214:G:H8	1.83	0.43
1:0:2369:U:H2'	1:0:2370:G:C8	2.54	0.43
1:0:2392:G:H2'	1:0:2393:G:C8	2.54	0.43
1:0:2510:A:N6	1:0:2641:A:H61	2.11	0.43
1:0:2786:G:H2'	1:0:2787:A:C8	2.53	0.43
1:0:2795:A:N3	1:0:2795:A:H2'	2.32	0.43
1:0:181:A:C5'	1:0:182:G:OP1	2.62	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:242:A:O2'	1:0:243:G:OP2	2.37	0.43
1:0:338:G:H2'	1:0:339:U:O4'	2.19	0.43
1:0:840:U:H4'	1:0:841:G:C2	2.53	0.43
1:0:2083:G:H22	1:0:2172:U:H3	1.66	0.43
1:0:201:G:H2'	1:0:202:A:H8	1.84	0.43
1:0:653:G:C2	1:0:655:A:H1'	2.54	0.43
1:0:786:U:H2'	1:0:787:A:H5'	2.00	0.43
1:0:810:U:H2'	1:0:811:G:H8	1.83	0.43
1:0:1055:A:H2	1:0:1121:G:H2'	1.84	0.43
1:0:1604:A:H2'	1:0:1605:A:O4'	2.19	0.43
1:0:2002:A:H61	1:0:2018:G:H21	1.67	0.43
1:0:2056:C:H2'	1:0:2057:U:H6	1.84	0.43
1:0:2261:G:H4'	1:0:2368:G:O2'	2.19	0.43
1:0:2602:G:OP1	1:0:2801:A:H1'	2.19	0.43
1:0:2784:A:C8	1:0:2785:A:C8	3.06	0.43
1:0:128:C:C3'	1:0:129:A:H5''	2.49	0.43
1:0:211:U:H2'	1:0:212:U:O4'	2.19	0.43
1:0:319:G:H1'	1:0:511:A:H5'	2.00	0.43
1:0:594:G:N2	1:0:1267:A:H62	2.17	0.43
1:0:1046:U:H2'	1:0:1047:G:H8	1.84	0.43
1:0:1975:G:H1'	1:0:1977:C:N4	2.33	0.43
1:0:2483:U:H1'	1:0:2551:A:C2	2.54	0.43
1:0:2633:A:H61	1:0:2646:C:N4	2.17	0.43
2:5:7:A:H2'	2:5:8:A:C8	2.54	0.43
1:0:814:G:H3'	1:0:815:A:C5'	2.49	0.42
1:0:1016:C:H2'	1:0:1017:C:H6	1.84	0.42
1:0:1341:G:N2	1:0:1664:G:H1	2.15	0.42
1:0:1455:C:HO2'	1:0:1644:G:H5''	1.84	0.42
1:0:2380:U:C2'	1:0:2381:A:H5'	2.44	0.42
1:0:2658:A:H2'	1:0:2659:C:H6	1.84	0.42
1:0:37:C:H2'	1:0:38:G:C8	2.54	0.42
1:0:109:A:H2'	1:0:110:U:H5''	2.01	0.42
1:0:121:G:H2'	1:0:122:G:O4'	2.19	0.42
1:0:322:A:H2	1:0:342:G:OP2	2.02	0.42
1:0:722:C:H2'	1:0:723:C:C6	2.54	0.42
1:0:826:U:H2'	1:0:827:C:H6	1.84	0.42
1:0:1489:C:H3'	1:0:1490:U:H5'	2.00	0.42
1:0:1634:A:O2'	1:0:1635:G:H5'	2.19	0.42
1:0:1743:C:H2'	1:0:1744:G:C8	2.54	0.42
1:0:1770:U:H2'	1:0:1774:A:H62	1.83	0.42
1:0:1801:C:H3'	1:0:1802:A:H5'	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2225:G:O2'	1:0:2226:A:H5'	2.19	0.42
1:0:2473:G:O2'	1:0:2474:G:H5'	2.19	0.42
1:0:2500:C:H4'	1:0:2544:A:C4'	2.49	0.42
1:0:2772:U:H2'	1:0:2773:G:C8	2.54	0.42
1:0:2785:A:O2'	1:0:2786:G:H5'	2.19	0.42
1:0:65:C:H2'	1:0:66:U:C5'	2.44	0.42
1:0:189:A:H2'	1:0:190:A:C8	2.54	0.42
1:0:474:G:N2	1:0:476:G:H3'	2.35	0.42
1:0:752:G:H5'	1:0:1775:A:N6	2.35	0.42
1:0:820:U:H2'	1:0:821:A:C8	2.53	0.42
1:0:944:A:H2'	1:0:945:G:O4'	2.19	0.42
1:0:1141:U:HO2'	1:0:1142:G:P	2.41	0.42
1:0:1451:C:H2'	1:0:1452:U:C6	2.54	0.42
1:0:1591:U:H2'	1:0:1592:U:O4'	2.18	0.42
1:0:2311:U:HO2'	1:0:2312:A:H8	1.63	0.42
1:0:14:A:H2	1:0:2604:G:O2'	2.02	0.42
1:0:158:A:H2'	1:0:159:A:H8	1.83	0.42
1:0:523:A:H2	1:0:591:G:H4'	1.84	0.42
1:0:1017:C:H2'	1:0:1018:C:O4'	2.19	0.42
1:0:1030:U:OP1	1:0:1046:U:H1'	2.19	0.42
1:0:1225:G:H2'	1:0:1249:G:N1	2.34	0.42
1:0:1292:A:H2'	1:0:1293:A:H8	1.85	0.42
1:0:1532:A:H2'	1:0:1533:G:C8	2.53	0.42
1:0:1917:C:C2'	1:0:1918:G:H5'	2.49	0.42
1:0:2217:G:H5'	1:0:2219:U:O4	2.18	0.42
1:0:2808:U:H3'	1:0:2809:A:C5'	2.47	0.42
1:0:404:A:H1'	1:0:424:G:O2'	2.19	0.42
1:0:520:C:H2'	1:0:521:U:O4'	2.20	0.42
1:0:543:G:H2'	1:0:544:U:C6	2.55	0.42
1:0:964:A:H2'	1:0:965:G:H8	1.83	0.42
1:0:1762:C:H2'	1:0:1763:G:C8	2.54	0.42
1:0:2594:U:H2'	1:0:2595:C:C6	2.55	0.42
2:5:26:A:H2'	2:5:27:G:H5'	2.01	0.42
1:0:178:C:H4'	1:0:399:G:C2	2.55	0.42
1:0:415:A:O2'	1:0:416:U:H5'	2.20	0.42
1:0:688:A:H1'	1:0:2422:C:O2'	2.19	0.42
1:0:764:A:H3'	1:0:764:A:N3	2.35	0.42
1:0:824:U:H1'	1:0:1264:C:C1'	2.49	0.42
1:0:1033:G:N2	1:0:1150:C:H2'	2.30	0.42
1:0:1566:G:H2'	1:0:1567:A:C8	2.55	0.42
1:0:1836:C:H2'	1:0:1837:G:H8	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:1930:C:H2'	1:0:1931:G:C8	2.55	0.42
1:0:48:A:O5'	1:0:50:G:H4'	2.20	0.42
1:0:119:G:H1'	1:0:129:A:N1	2.35	0.42
1:0:430:C:H2'	1:0:431:G:C8	2.54	0.42
1:0:586:G:OP1	1:0:2481:G:H2'	2.19	0.42
1:0:629:C:C2'	1:0:630:G:H5'	2.49	0.42
1:0:860:U:H2'	1:0:860:U:O2	2.19	0.42
1:0:879:A:C2'	1:0:880:C:H5'	2.49	0.42
1:0:956:A:H2'	1:0:956:A:N3	2.34	0.42
1:0:1259:A:H2'	1:0:1260:A:H8	1.84	0.42
1:0:1332:G:H2'	1:0:1333:G:O4'	2.20	0.42
1:0:1489:C:H3'	1:0:1490:U:C5'	2.50	0.42
1:0:1594:U:H2'	1:0:1595:A:C8	2.55	0.42
1:0:2083:G:N2	1:0:2172:U:H3	2.17	0.42
1:0:2250:G:O2'	1:0:2251:U:H5'	2.20	0.42
1:0:2552:C:OP1	1:0:2553:G:H5''	2.18	0.42
2:5:27:G:O2'	2:5:28:C:H5'	2.19	0.42
1:0:3:U:H2'	1:0:4:C:C6	2.54	0.42
1:0:65:C:C3'	1:0:66:U:H5'	2.49	0.42
1:0:81:C:O2'	1:0:82:G:H5'	2.20	0.42
1:0:634:G:H2'	1:0:635:C:C6	2.54	0.42
1:0:644:A:H2'	1:0:645:G:O4'	2.20	0.42
1:0:827:C:H2'	1:0:828:C:C6	2.54	0.42
1:0:987:G:H2'	1:0:988:G:C8	2.55	0.42
1:0:1029:C:C2'	1:0:1030:U:H5''	2.49	0.42
1:0:2057:U:H2'	1:0:2058:U:H6	1.85	0.42
1:0:2217:G:N3	1:0:2217:G:C2'	2.83	0.42
1:0:2220:A:H2'	1:0:2221:G:H8	1.85	0.42
1:0:198:A:O2'	1:0:199:A:OP2	2.30	0.42
1:0:488:A:H2'	1:0:489:A:C8	2.54	0.42
1:0:1065:A:H2'	1:0:1066:G:C8	2.55	0.42
1:0:1193:G:O2'	1:0:1194:U:P	2.77	0.42
1:0:1341:G:N2	1:0:1343:C:H1'	2.35	0.42
1:0:1358:C:H2'	1:0:1359:G:H5'	2.02	0.42
1:0:1499:A:H2'	1:0:1500:U:C6	2.54	0.42
1:0:1671:A:H2'	1:0:1672:A:H8	1.85	0.42
1:0:1708:C:H2'	1:0:1709:U:O4'	2.19	0.42
1:0:1807:A:O2'	1:0:1808:C:C4'	2.63	0.42
1:0:1957:C:O2'	1:0:1958:G:H5'	2.19	0.42
1:0:2133:G:H2'	1:0:2134:U:C6	2.55	0.42
1:0:2161:C:H2'	1:0:2162:C:C5	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2470:U:H1'	1:0:2548:G:O3'	2.20	0.42
1:0:2586:G:H2'	1:0:2587:G:O4'	2.19	0.42
1:0:2633:A:H4'	1:0:2634:G:C4'	2.41	0.42
1:0:2710:C:O2'	1:0:2711:G:H5'	2.19	0.42
1:0:82:G:O2'	1:0:83:A:H5'	2.20	0.42
1:0:192:G:O2'	1:0:193:A:H5''	2.19	0.42
1:0:562:G:H2'	1:0:563:U:O4'	2.20	0.42
1:0:617:U:H2'	1:0:618:A:O4'	2.20	0.42
1:0:646:C:O2'	1:0:650:U:H5''	2.19	0.42
1:0:649:G:H2'	1:0:650:U:C6	2.54	0.42
1:0:833:A:H2'	1:0:834:A:C8	2.54	0.42
1:0:871:U:O2	1:0:2247:A:H2'	2.19	0.42
1:0:1221:C:H2'	1:0:1222:G:H8	1.84	0.42
1:0:1479:G:H2'	1:0:1480:G:C8	2.54	0.42
1:0:1500:U:H2'	1:0:1501:C:C6	2.55	0.42
1:0:1626:A:H5''	1:0:1627:C:OP2	2.20	0.42
1:0:2027:C:H2'	1:0:2028:C:C6	2.55	0.42
1:0:2633:A:H5''	1:0:2634:G:OP1	2.20	0.42
1:0:2640:G:H2'	1:0:2641:A:O4'	2.19	0.42
1:0:239:A:H5'	1:0:619:A:O2'	2.19	0.41
1:0:669:G:H2'	1:0:670:U:H6	1.84	0.41
1:0:831:G:H2'	1:0:832:A:H5''	2.02	0.41
1:0:1028:G:H2'	1:0:1029:C:H6	1.85	0.41
1:0:1143:A:H2'	1:0:1144:U:C6	2.55	0.41
1:0:1172:U:H2'	1:0:1173:G:C8	2.55	0.41
1:0:1343:C:H2'	1:0:1344:C:C6	2.55	0.41
1:0:1402:G:H2'	1:0:1403:U:O4'	2.20	0.41
1:0:1888:C:H4'	1:0:1889:G:H5''	2.01	0.41
1:0:2320:G:H2'	1:0:2321:C:C6	2.55	0.41
1:0:2836:U:H2'	1:0:2837:G:C8	2.55	0.41
1:0:73:A:N3	1:0:73:A:C3'	2.82	0.41
1:0:314:G:H2'	1:0:315:G:H8	1.85	0.41
1:0:354:C:H2'	1:0:355:G:O4'	2.20	0.41
1:0:1057:A:H3'	1:0:1058:G:H5'	2.01	0.41
1:0:1518:C:O2'	1:0:1519:G:P	2.78	0.41
1:0:1594:U:H2'	1:0:1595:A:H8	1.85	0.41
1:0:1921:A:C3'	1:0:1922:U:H5''	2.50	0.41
1:0:2028:C:O2'	1:0:2029:G:H5'	2.20	0.41
1:0:2502:G:H2'	1:0:2503:G:H8	1.85	0.41
1:0:2651:U:H2'	1:0:2652:G:H8	1.85	0.41
1:0:315:G:H2'	1:0:316:C:C6	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:327:C:O2'	1:0:328:A:H5'	2.20	0.41
1:0:540:G:O6	1:0:2006:G:OP1	2.38	0.41
1:0:607:C:H2'	1:0:608:G:C8	2.55	0.41
1:0:762:A:H5'	1:0:1284:G:H1'	2.01	0.41
1:0:1354:A:C2	1:0:1411:C:H4'	2.55	0.41
1:0:1829:C:O2'	1:0:1910:A:H1'	2.20	0.41
1:0:1956:G:H2'	1:0:1957:C:O4'	2.20	0.41
1:0:2348:A:H2'	1:0:2349:G:C8	2.55	0.41
1:0:2597:G:H2'	1:0:2598:C:C6	2.55	0.41
1:0:2766:U:O2'	1:0:2767:C:H5'	2.20	0.41
1:0:438:G:H2'	1:0:439:C:C6	2.55	0.41
1:0:820:U:H5'	1:0:2424:G:H4'	2.02	0.41
1:0:853:C:H2'	1:0:854:G:C8	2.56	0.41
1:0:1084:A:H4'	1:0:2454:C:OP1	2.20	0.41
1:0:1177:U:H2'	1:0:1178:C:C6	2.55	0.41
1:0:1495:G:O2'	1:0:1496:G:OP1	2.35	0.41
1:0:1518:C:HO2'	1:0:1519:G:P	2.44	0.41
1:0:1557:G:H2'	1:0:1558:C:C6	2.55	0.41
1:0:2463:G:O2'	1:0:2464:G:H5'	2.20	0.41
1:0:2546:G:H2'	1:0:2547:C:C6	2.56	0.41
1:0:28:A:H2'	1:0:29:U:C6	2.55	0.41
1:0:328:A:O2'	1:0:329:C:H5'	2.20	0.41
1:0:579:G:H2'	1:0:2013:A:H62	1.86	0.41
1:0:690:A:O2'	1:0:691:C:H5'	2.21	0.41
1:0:878:C:O2'	1:0:879:A:OP1	2.35	0.41
1:0:930:A:H3'	1:0:931:G:H8	1.85	0.41
1:0:1281:A:N6	1:0:1995:G:O2'	2.53	0.41
1:0:1656:U:O2'	1:0:2678:C:H4'	2.21	0.41
1:0:1671:A:C1'	1:0:2798:A:H5'	2.50	0.41
1:0:1887:G:O2'	1:0:1888:C:H5'	2.20	0.41
1:0:2011:U:H2'	1:0:2012:A:C8	2.56	0.41
1:0:2076:G:H2'	1:0:2077:G:C8	2.54	0.41
1:0:314:G:H2'	1:0:315:G:C8	2.54	0.41
1:0:635:C:H2'	1:0:636:G:H5''	2.02	0.41
1:0:890:U:H2'	1:0:891:A:C8	2.56	0.41
1:0:1162:A:H2'	1:0:1163:C:H6	1.86	0.41
1:0:1231:A:H2'	1:0:1232:U:O4'	2.20	0.41
1:0:1242:A:H2'	1:0:1243:G:C8	2.55	0.41
1:0:2200:G:H2'	1:0:2201:G:C8	2.56	0.41
1:0:2245:A:HO2'	1:0:2246:A:P	2.43	0.41
1:0:2365:U:O2'	1:0:2366:U:H5'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2392:G:H2'	1:0:2393:G:H8	1.85	0.41
1:0:2486:C:H4'	2:5:34:C:O2'	2.21	0.41
1:0:2698:G:H2'	1:0:2699:G:O4'	2.20	0.41
1:0:307:C:H2'	1:0:308:C:H6	1.86	0.41
1:0:691:C:H2'	1:0:692:C:C6	2.56	0.41
1:0:798:G:OP2	1:0:805:G:N7	2.53	0.41
1:0:868:U:H2'	1:0:869:C:H6	1.85	0.41
1:0:873:U:C2	1:0:2246:A:H5''	2.55	0.41
1:0:1530:U:HO2'	1:0:1531:C:H6	1.65	0.41
1:0:1962:C:H2'	1:0:1963:G:H8	1.86	0.41
1:0:2096:U:C2'	1:0:2097:A:H5''	2.44	0.41
1:0:2134:U:H2'	1:0:2135:C:C6	2.55	0.41
1:0:2226:A:H2'	1:0:2227:C:H6	1.86	0.41
1:0:2321:C:H2'	1:0:2322:U:H5'	2.02	0.41
1:0:2378:G:H2'	1:0:2379:G:C8	2.55	0.41
1:0:2390:A:H2'	1:0:2391:A:C8	2.56	0.41
1:0:2740:C:O2'	1:0:2741:G:H5'	2.20	0.41
1:0:58:C:N4	1:0:73:A:C6	2.89	0.41
1:0:63:A:O2'	1:0:64:C:H5'	2.20	0.41
1:0:139:A:H2'	1:0:140:G:C8	2.55	0.41
1:0:1168:G:H2'	1:0:1169:C:C6	2.55	0.41
1:0:1189:G:O2'	1:0:1190:C:H5'	2.21	0.41
1:0:1193:G:O2'	1:0:1194:U:OP1	2.37	0.41
1:0:1193:G:HO2'	1:0:1194:U:P	2.43	0.41
1:0:1286:U:H2'	1:0:2692:A:H2	1.85	0.41
1:0:1415:C:O2'	1:0:1416:A:H5'	2.21	0.41
1:0:1448:A:H2'	1:0:1449:C:C6	2.56	0.41
1:0:2038:C:H5'	1:0:2039:G:C5'	2.51	0.41
1:0:2217:G:H4'	1:0:2219:U:C5	2.56	0.41
1:0:2500:C:H4'	1:0:2544:A:O4'	2.20	0.41
1:0:2515:G:H2'	1:0:2516:U:C6	2.55	0.41
1:0:2785:A:H2'	1:0:2786:G:O4'	2.21	0.41
1:0:2795:A:N3	1:0:2795:A:C2'	2.84	0.41
1:0:24:G:H2'	1:0:25:U:C6	2.55	0.41
1:0:40:U:H2'	1:0:41:G:H8	1.86	0.41
1:0:229:G:H2'	1:0:230:C:C6	2.56	0.41
1:0:317:U:H3'	1:0:318:G:C5'	2.51	0.41
1:0:584:A:H4'	1:0:2479:U:C5'	2.48	0.41
1:0:639:G:O2'	1:0:640:C:H5'	2.21	0.41
1:0:689:A:H8	1:0:2422:C:H1'	1.85	0.41
1:0:747:A:H2'	1:0:748:A:H8	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:857:U:C2'	1:0:858:G:H5'	2.50	0.41
1:0:874:A:H2'	1:0:875:G:H5'	2.03	0.41
1:0:1026:U:H2'	1:0:1027:C:C6	2.56	0.41
1:0:1313:U:O2'	1:0:1314:A:OP2	2.39	0.41
1:0:1329:U:H2'	1:0:1330:G:C8	2.56	0.41
1:0:1365:U:H5'	1:0:1587:A:H1'	2.03	0.41
1:0:1621:C:C4'	1:0:1626:A:H61	2.31	0.41
1:0:1671:A:H1'	1:0:2798:A:H5'	2.02	0.41
1:0:1686:A:C2'	1:0:1687:C:H5'	2.51	0.41
1:0:1722:G:H2'	1:0:1723:U:C6	2.55	0.41
1:0:1938:U:H2'	1:0:1939:U:H5'	2.01	0.41
1:0:2032:G:O2'	1:0:2033:C:H5'	2.21	0.41
1:0:2245:A:C2'	1:0:2246:A:OP2	2.68	0.41
1:0:2467:A:H2'	1:0:2468:G:C8	2.56	0.41
1:0:2498:U:H1'	1:0:2500:C:H41	1.86	0.41
1:0:2539:C:H2'	1:0:2540:A:C8	2.56	0.41
1:0:2811:G:H2'	1:0:2812:A:C8	2.56	0.41
1:0:2824:C:HO2'	1:0:2825:A:P	2.43	0.41
1:0:6:A:H2'	1:0:7:G:C8	2.56	0.41
1:0:69:G:O3'	1:0:111:G:H4'	2.20	0.41
1:0:185:C:H2'	1:0:186:C:C6	2.56	0.41
1:0:713:G:H2'	1:0:714:G:C8	2.56	0.41
1:0:808:C:H2'	1:0:809:C:C6	2.56	0.41
1:0:854:G:H2'	1:0:855:G:C8	2.56	0.41
1:0:1187:A:HO2'	1:0:1188:A:P	2.43	0.41
1:0:1443:G:N3	1:0:1584:G:N1	2.69	0.41
1:0:1464:A:H4'	1:0:1545:G:C4'	2.51	0.41
1:0:1528:C:H3'	1:0:1529:C:H5''	2.03	0.41
1:0:1696:C:H42	1:0:1755:G:H5''	1.86	0.41
1:0:2137:G:H2'	1:0:2138:U:H6	1.86	0.41
1:0:2389:G:H2'	1:0:2390:A:O4'	2.21	0.41
1:0:2448:A:C2'	1:0:2449:G:H5'	2.50	0.41
1:0:2871:U:H2'	1:0:2872:U:H6	1.85	0.41
1:0:105:G:H21	1:0:357:A:N6	2.18	0.40
1:0:305:A:H2'	1:0:306:G:O4'	2.21	0.40
1:0:344:G:O2'	1:0:345:U:H5'	2.21	0.40
1:0:405:C:H2'	1:0:406:G:C8	2.56	0.40
1:0:432:C:H2'	1:0:433:G:C8	2.57	0.40
1:0:729:A:O2'	1:0:730:C:H5'	2.21	0.40
1:0:769:C:H2'	1:0:770:U:O4'	2.20	0.40
1:0:925:U:H5''	1:0:926:C:OP1	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:931:G:H2'	1:0:932:G:O4'	2.21	0.40
1:0:1253:C:H2'	1:0:1254:G:O4'	2.21	0.40
1:0:1336:G:N2	1:0:1632:A:N6	2.69	0.40
1:0:1539:U:H2'	1:0:1540:C:C6	2.56	0.40
1:0:1586:A:H2'	1:0:1587:A:H8	1.86	0.40
1:0:1747:G:N3	1:0:1749:G:N2	2.69	0.40
1:0:1850:G:H2'	1:0:1851:A:C8	2.55	0.40
1:0:2312:A:H1'	1:0:2314:A:N9	2.35	0.40
1:0:2326:C:H2'	1:0:2327:U:C6	2.56	0.40
1:0:2329:C:H41	1:0:2361:G:N2	2.18	0.40
1:0:579:G:H2'	1:0:2013:A:C5	2.56	0.40
1:0:838:A:H4'	1:0:2407:G:C6	2.57	0.40
1:0:1098:G:H21	1:0:1100:G:H4'	1.86	0.40
1:0:1463:A:H2'	1:0:1464:A:H8	1.83	0.40
1:0:1685:A:O2'	1:0:1686:A:O5'	2.39	0.40
1:0:1736:C:H2'	1:0:1737:G:C8	2.57	0.40
1:0:1985:G:H2'	1:0:1986:G:C8	2.57	0.40
1:0:2383:C:C2'	1:0:2384:G:H5'	2.51	0.40
1:0:73:A:H2'	1:0:74:G:OP2	2.22	0.40
1:0:550:C:H2'	1:0:551:A:H8	1.86	0.40
1:0:930:A:H5'	1:0:931:G:N7	2.37	0.40
1:0:950:G:H2'	1:0:951:G:C8	2.56	0.40
1:0:1204:G:H2'	1:0:1205:G:H8	1.86	0.40
1:0:1398:G:H2'	1:0:1399:C:C6	2.56	0.40
1:0:1653:C:H2'	1:0:1654:A:C8	2.56	0.40
1:0:1787:U:H2'	1:0:1788:C:C6	2.57	0.40
1:0:2047:C:H2'	1:0:2048:C:C6	2.56	0.40
1:0:2075:U:H1'	1:0:2204:A:C2	2.56	0.40
1:0:2234:G:H2'	1:0:2235:G:O4'	2.22	0.40
1:0:2241:U:H4'	1:0:2307:A:C2	2.56	0.40
1:0:2383:C:H2'	1:0:2384:G:O4'	2.20	0.40
1:0:2548:G:H2'	1:0:2549:G:C5'	2.33	0.40
1:0:67:G:C6	1:0:72:A:C2	3.10	0.40
1:0:143:A:H2'	1:0:144:U:O4'	2.22	0.40
1:0:218:A:H1'	1:0:220:U:C4	2.57	0.40
1:0:953:G:H2'	1:0:954:U:O4'	2.21	0.40
1:0:1532:A:H2'	1:0:1533:G:H8	1.86	0.40
1:0:1888:C:H2'	1:0:1913:G:C6	2.57	0.40
1:0:1915:A:H2'	1:0:1916:G:O4'	2.21	0.40
1:0:1939:U:O2	1:0:1968:G:H4'	2.21	0.40
1:0:2056:C:H2'	1:0:2057:U:C6	2.57	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:2244:C:H1'	1:0:2255:G:H1	1.86	0.40
1:0:2686:C:H2'	1:0:2687:G:H8	1.87	0.40
1:0:2824:C:C2'	1:0:2825:A:OP2	2.70	0.40
1:0:105:G:O2'	1:0:106:G:H5'	2.21	0.40
1:0:217:U:H5'	1:0:633:G:HO2'	1.87	0.40
1:0:529:U:H2'	1:0:530:G:H8	1.86	0.40
1:0:596:C:H1'	1:0:684:C:O4'	2.22	0.40
1:0:758:G:H2'	1:0:761:G:N3	2.37	0.40
1:0:765:C:O2	1:0:765:C:H2'	2.21	0.40
1:0:773:G:H4'	1:0:1767:G:OP1	2.22	0.40
1:0:856:A:H2'	1:0:857:U:O4'	2.20	0.40
1:0:978:U:H2'	1:0:979:A:C8	2.56	0.40
1:0:1337:G:H1'	1:0:1632:A:C6	2.56	0.40
1:0:1358:C:C2'	1:0:1359:G:H5''	2.52	0.40
1:0:1381:G:O2'	1:0:1382:G:H5'	2.21	0.40
1:0:1466:C:O2'	1:0:1467:U:H5'	2.21	0.40
1:0:1542:G:H21	1:0:1561:A:H62	1.70	0.40
1:0:1625:A:C4	1:0:1632:A:H1'	2.57	0.40
1:0:1821:A:H3'	1:0:1822:C:C6	2.56	0.40
1:0:2378:G:O2'	1:0:2379:G:H5'	2.22	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

5.3.2 Protein sidechains [i](#)

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

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	0	2757/2880 (95%)	413 (14%)	44 (1%)
2	5	22/35 (62%)	2 (9%)	0
All	All	2779/2915 (95%)	415 (14%)	44 (1%)

All (415) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	0	15	G
1	0	35	G
1	0	45	C
1	0	48	A
1	0	49	U
1	0	50	G
1	0	59	G
1	0	66	U
1	0	67	G
1	0	70	A
1	0	71	A
1	0	72	A
1	0	74	G
1	0	87	G
1	0	89	A
1	0	90	G
1	0	91	A
1	0	99	U
1	0	105	G
1	0	110	U
1	0	116	A
1	0	118	U
1	0	123	A
1	0	129	A
1	0	135	U
1	0	155	G
1	0	158	A
1	0	173	A
1	0	174	A
1	0	176	A
1	0	177	U
1	0	181	A
1	0	182	G
1	0	193	A
1	0	199	A
1	0	200	A
1	0	205	A
1	0	206	U
1	0	210	A
1	0	218	A
1	0	219	G
1	0	225	G

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Mol	Chain	Res	Type
1	0	226	C
1	0	227	G
1	0	229	G
1	0	242	A
1	0	243	G
1	0	245	C
1	0	305	A
1	0	318	G
1	0	333	A
1	0	334	G
1	0	335	A
1	0	340	G
1	0	342	G
1	0	343	A
1	0	358	C
1	0	363	G
1	0	368	A
1	0	373	A
1	0	399	G
1	0	401	G
1	0	408	U
1	0	414	A
1	0	418	C
1	0	424	G
1	0	443	A
1	0	455	A
1	0	456	C
1	0	460	U
1	0	461	A
1	0	463	C
1	0	467	U
1	0	469	G
1	0	491	A
1	0	492	G
1	0	515	A
1	0	518	A
1	0	519	C
1	0	537	C
1	0	539	A
1	0	541	C
1	0	542	A
1	0	554	U

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Mol	Chain	Res	Type
1	0	556	A
1	0	558	G
1	0	559	C
1	0	572	G
1	0	584	A
1	0	602	C
1	0	613	A
1	0	617	U
1	0	624	A
1	0	632	A
1	0	636	G
1	0	638	A
1	0	648	A
1	0	652	C
1	0	654	A
1	0	657	A
1	0	665	A
1	0	666	U
1	0	667	U
1	0	684	C
1	0	697	G
1	0	699	G
1	0	700	C
1	0	728	G
1	0	742	G
1	0	743	A
1	0	760	U
1	0	761	G
1	0	776	G
1	0	778	G
1	0	789	G
1	0	794	A
1	0	796	A
1	0	797	A
1	0	798	G
1	0	803	C
1	0	806	A
1	0	813	A
1	0	818	G
1	0	825	C
1	0	832	A
1	0	840	U

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Mol	Chain	Res	Type
1	0	841	G
1	0	844	G
1	0	860	U
1	0	873	U
1	0	879	A
1	0	919	U
1	0	922	A
1	0	926	C
1	0	930	A
1	0	931	G
1	0	941	U
1	0	944	A
1	0	952	A
1	0	957	G
1	0	969	U
1	0	970	A
1	0	972	C
1	0	973	U
1	0	984	A
1	0	994	A
1	0	996	C
1	0	1005	U
1	0	1006	C
1	0	1023	U
1	0	1024	G
1	0	1030	U
1	0	1032	A
1	0	1033	G
1	0	1036	G
1	0	1037	U
1	0	1044	U
1	0	1055	A
1	0	1056	U
1	0	1057	A
1	0	1067	G
1	0	1073	G
1	0	1074	G
1	0	1075	C
1	0	1081	A
1	0	1087	C
1	0	1090	C
1	0	1099	A

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Mol	Chain	Res	Type
1	0	1122	A
1	0	1137	A
1	0	1138	A
1	0	1142	G
1	0	1145	C
1	0	1146	G
1	0	1155	G
1	0	1167	A
1	0	1182	U
1	0	1183	C
1	0	1185	C
1	0	1188	A
1	0	1194	U
1	0	1195	U
1	0	1199	U
1	0	1200	G
1	0	1224	A
1	0	1253	C
1	0	1262	U
1	0	1264	C
1	0	1266	G
1	0	1269	G
1	0	1278	A
1	0	1279	G
1	0	1280	U
1	0	1284	G
1	0	1285	A
1	0	1288	A
1	0	1314	A
1	0	1324	G
1	0	1334	A
1	0	1338	G
1	0	1342	U
1	0	1343	C
1	0	1355	A
1	0	1356	G
1	0	1359	G
1	0	1391	A
1	0	1392	U
1	0	1397	A
1	0	1398	G
1	0	1433	A

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Mol	Chain	Res	Type
1	0	1441	A
1	0	1442	C
1	0	1443	G
1	0	1459	U
1	0	1465	G
1	0	1468	A
1	0	1469	U
1	0	1470	G
1	0	1475	U
1	0	1482	U
1	0	1490	U
1	0	1496	G
1	0	1505	U
1	0	1508	G
1	0	1509	A
1	0	1513	U
1	0	1519	G
1	0	1524	C
1	0	1529	C
1	0	1552	C
1	0	1571	G
1	0	1573	G
1	0	1574	A
1	0	1576	G
1	0	1582	A
1	0	1583	A
1	0	1585	A
1	0	1618	U
1	0	1623	C
1	0	1624	A
1	0	1625	A
1	0	1632	A
1	0	1633	C
1	0	1634	A
1	0	1635	G
1	0	1648	C
1	0	1651	U
1	0	1657	A
1	0	1664	G
1	0	1665	C
1	0	1670	G
1	0	1671	A

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Mol	Chain	Res	Type
1	0	1680	U
1	0	1685	A
1	0	1691	G
1	0	1692	C
1	0	1710	U
1	0	1712	G
1	0	1715	A
1	0	1717	A
1	0	1724	C
1	0	1733	U
1	0	1748	U
1	0	1749	G
1	0	1750	A
1	0	1754	G
1	0	1755	G
1	0	1764	A
1	0	1771	A
1	0	1778	U
1	0	1800	A
1	0	1801	C
1	0	1802	A
1	0	1807	A
1	0	1808	C
1	0	1821	A
1	0	1831	G
1	0	1884	A
1	0	1889	G
1	0	1920	A
1	0	1922	U
1	0	1926	U
1	0	1927	U
1	0	1938	U
1	0	1939	U
1	0	1946	U
1	0	1949	A
1	0	1950	C
1	0	1954	A
1	0	1955	G
1	0	1956	G
1	0	1979	C
1	0	1980	A
1	0	2004	U

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Mol	Chain	Res	Type
1	0	2006	G
1	0	2015	G
1	0	2016	A
1	0	2019	C
1	0	2038	C
1	0	2043	A
1	0	2051	U
1	0	2052	G
1	0	2060	A
1	0	2076	G
1	0	2082	C
1	0	2094	C
1	0	2096	U
1	0	2118	A
1	0	2119	A
1	0	2140	G
1	0	2162	C
1	0	2168	A
1	0	2181	A
1	0	2191	A
1	0	2195	C
1	0	2199	C
1	0	2205	C
1	0	2218	G
1	0	2229	G
1	0	2237	C
1	0	2241	U
1	0	2245	A
1	0	2246	A
1	0	2247	A
1	0	2255	G
1	0	2262	C
1	0	2268	G
1	0	2285	U
1	0	2286	G
1	0	2287	G
1	0	2288	A
1	0	2298	U
1	0	2299	A
1	0	2300	G
1	0	2301	A
1	0	2313	G

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Mol	Chain	Res	Type
1	0	2315	A
1	0	2316	G
1	0	2326	C
1	0	2362	G
1	0	2364	C
1	0	2378	G
1	0	2382	C
1	0	2385	U
1	0	2396	C
1	0	2403	C
1	0	2405	A
1	0	2409	A
1	0	2414	A
1	0	2420	C
1	0	2427	A
1	0	2428	U
1	0	2438	A
1	0	2448	A
1	0	2455	A
1	0	2470	U
1	0	2482	A
1	0	2483	U
1	0	2484	G
1	0	2485	U
1	0	2492	G
1	0	2498	U
1	0	2499	C
1	0	2504	G
1	0	2522	G
1	0	2546	G
1	0	2549	G
1	0	2565	C
1	0	2578	G
1	0	2581	A
1	0	2582	G
1	0	2588	U
1	0	2589	C
1	0	2591	C
1	0	2593	A
1	0	2594	U
1	0	2608	A
1	0	2609	G

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Mol	Chain	Res	Type
1	0	2625	U
1	0	2633	A
1	0	2634	G
1	0	2661	G
1	0	2669	C
1	0	2670	C
1	0	2681	A
1	0	2691	C
1	0	2692	A
1	0	2712	G
1	0	2728	A
1	0	2730	A
1	0	2732	C
1	0	2737	A
1	0	2745	A
1	0	2756	A
1	0	2760	G
1	0	2761	A
1	0	2770	A
1	0	2771	C
1	0	2782	G
1	0	2783	U
1	0	2785	A
1	0	2795	A
1	0	2807	U
1	0	2808	U
1	0	2809	A
1	0	2811	G
1	0	2825	A
1	0	2841	U
1	0	2842	C
1	0	2847	G
1	0	2854	G
1	0	2855	C
1	0	2859	U
2	5	27	G
2	5	32	A

All (44) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	0	69	G

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Mol	Chain	Res	Type
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
1	0	1074	G
1	0	1141	U
1	0	1187	A
1	0	1193	G
1	0	1194	U
1	0	1223	G
1	0	1263	G
1	0	1278	A
1	0	1279	G
1	0	1313	U
1	0	1354	A
1	0	1495	G
1	0	1518	C
1	0	1634	A
1	0	1664	G
1	0	1807	A
1	0	1820	G
1	0	1938	U
1	0	2015	G
1	0	2093	G
1	0	2161	C
1	0	2204	A
1	0	2245	A
1	0	2261	G
1	0	2377	U
1	0	2404	A
1	0	2426	G
1	0	2564	U
1	0	2668	U
1	0	2759	U

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Mol	Chain	Res	Type
1	0	2824	C

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

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	32,40,41	2.78	7 (21%)	33,57,60	1.01	3 (9%)

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	-	1/21/43/44	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'	12.42	1.61	1.34
2	5	35	PPU	OC-CM	-4.87	1.28	1.42
2	5	35	PPU	C6-N1	3.91	1.38	1.33
2	5	35	PPU	CE1-CZ	3.69	1.46	1.38
2	5	35	PPU	CE2-CZ	2.73	1.44	1.38
2	5	35	PPU	CD2-CG	2.55	1.44	1.38
2	5	35	PPU	C3'-N3'	-2.07	1.42	1.45

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	5	35	PPU	CM-OC-CZ	2.87	123.75	117.51
2	5	35	PPU	C9-N6-C6	2.30	126.49	119.51

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	5	35	PPU	C-CA-N	2.21	117.94	109.40

There are no chirality outliers.

All (1) torsion outliers are listed below:

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

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

EDS was not executed - this section is therefore empty.

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

EDS was not executed - this section is therefore empty.

6.3 Carbohydrates

EDS was not executed - this section is therefore empty.

6.4 Ligands

EDS was not executed - this section is therefore empty.

6.5 Other polymers

EDS was not executed - this section is therefore empty.