



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 8, 2026 – 07:52 AM UTC

PDB ID : 1Z58 / pdb_00001z58
Title : Crystal structure of a complex of the ribosome large subunit with rapamycin
Authors : Amit, M.; Berisio, R.; Baram, D.; Harms, J.; Bashan, A.; Yonath, A.
Deposited on : 2005-03-17
Resolution : 3.80 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

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

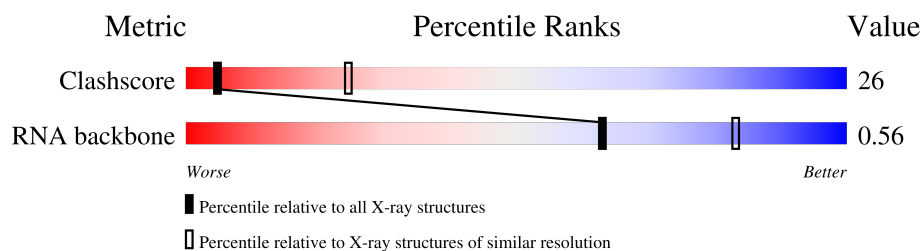
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.80 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
Clashscore	190562	1012 (3.94-3.66)
RNA backbone	3983	1007 (4.50-3.10)

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	2	2880	 24% 56% 15% .

2 Entry composition [i](#)

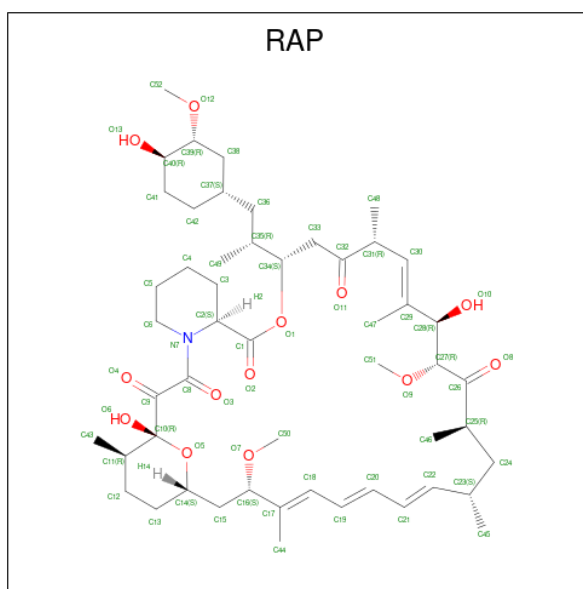
There are 2 unique types of molecules in this entry. The entry contains 59424 atoms, of which 0 are hydrogens and 0 are deuteriums.

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	2	2766	59359	26479	10949	19166	2765	0	0	0

- Molecule 2 is RAPAMYCIN IMMUNOSUPPRESSANT DRUG (CCD ID: RAP) (formula: $C_{51}H_{79}NO_{13}$).



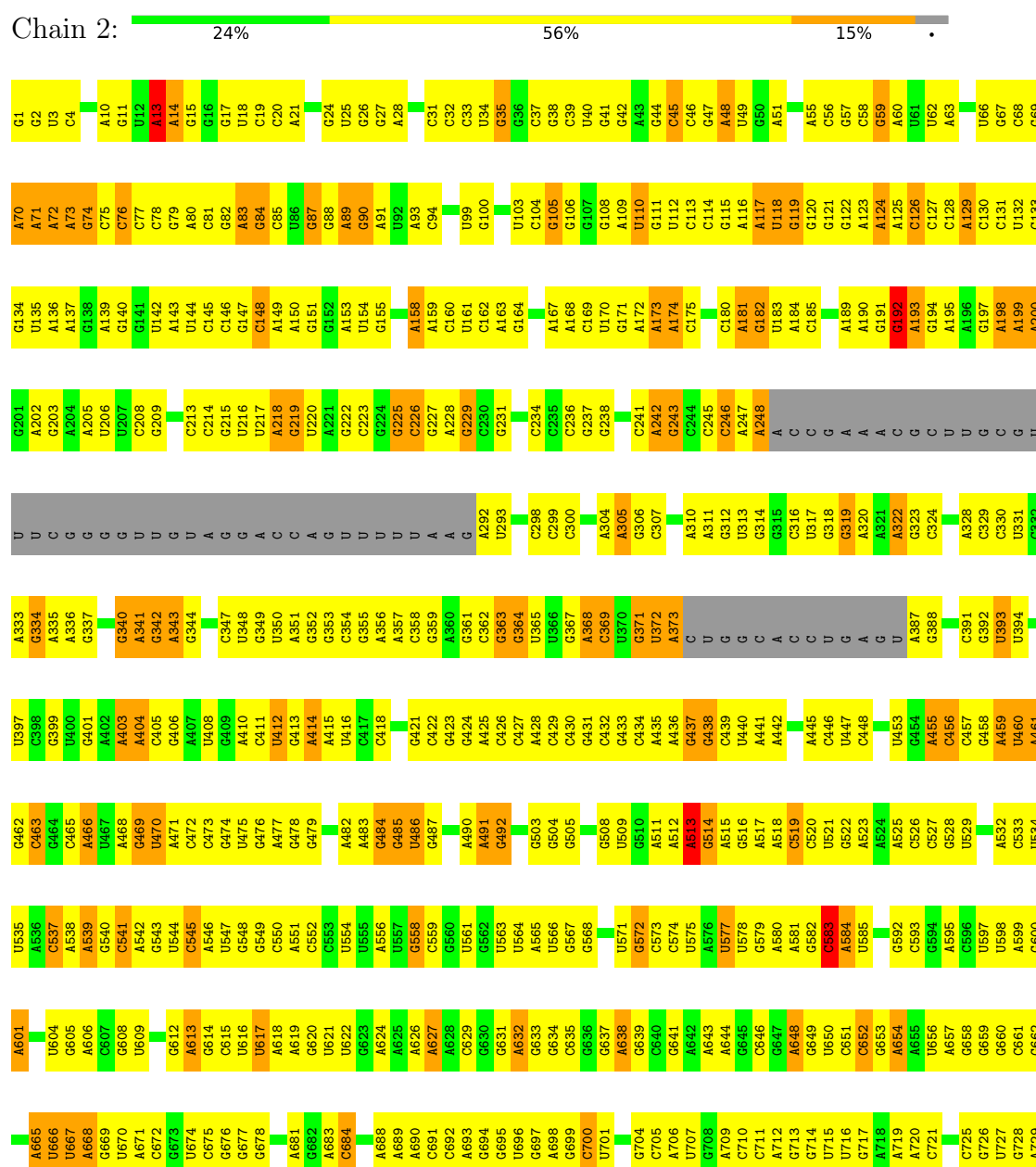
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	N	O		
2	2	1	65	51	1	13	0	0

3 Residue-property plots

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

Note EDS was not executed.

• Molecule 1: 23S RIBOSOMAL RNA







A2745	A2746	C2747	C2748	A2749	C2750	C2751	C2752	C2753	C2754	A2755	A2756	G2757	A2758	U2759	A2760	G2761	G2762		C2765	U2766	C2767	C2768	C2769	A2770	C2771	U2772	G2773	U2774	U	U	A	U2778	C2779	A2780	G2781	G2782	U2783	A2784	A2785	G2786	A2787	C2788	U2789	C2790	C2791	C2792	G2793	G2794	A2795	A2796	G2797		C2800	A2801		G2805	G2806	U2807	U2808
A2809	A2810	G2811	A2812	G2813		A2817	G2818	G2819	C2820	G2821	U2822	G2823	C2824	A2825	C2826	G2827	C2828	A2829	U2830	A2831		U2836	G2837	U2838	G2839	U2840	U2841	C2842	A2843	G2844	C2845	G2846	G2847	A2848	C2849		G2854		A2858	U2859	C2860	A2861	G2862	U2863	C2864	G2865	A2866	G2867	G2868	U2869	C2870		A2874	C2875	C2876	A2877	C	U	C

4 Data and refinement statistics

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

Property	Value	Source
Space group	I 2 2 2	Depositor
Cell constants a, b, c, α , β , γ	168.50 Å 404.00 Å 689.00 Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	8.00 – 3.80	Depositor
% Data completeness (in resolution range)	(Not available) (8.00-3.80)	Depositor
R_{merge}	0.16	Depositor
R_{sym}	(Not available)	Depositor
Refinement program	CNS	Depositor
R, R_{free}	0.273 , 0.368	Depositor
Estimated twinning fraction	No twinning to report.	Xtriage
Total number of atoms	59424	wwPDB-VP
Average B, all atoms (Å ²)	58.0	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: RAP

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	2	0.25	0/66467	0.53	13/103673 (0.0%)

There are no bond length outliers.

All (13) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed($^{\circ}$)	Ideal($^{\circ}$)
1	2	2018	G	C2'-C3'-O3'	6.88	119.82	109.50
1	2	513	A	C2'-C3'-O3'	6.50	123.44	113.70
1	2	192	G	C2'-C3'-O3'	5.40	117.60	109.50
1	2	2245	A	C2'-C3'-O3'	5.39	117.58	109.50
1	2	1154	A	C2'-C3'-O3'	5.38	117.56	109.50
1	2	1141	U	C2'-C3'-O3'	5.30	117.45	109.50
1	2	2204	A	C2'-C3'-O3'	5.22	117.34	109.50
1	2	1811	A	C2'-C3'-O3'	-5.20	105.90	113.70
1	2	1313	U	C2'-C3'-O3'	5.17	117.26	109.50
1	2	2482	A	C2'-C3'-O3'	-5.14	105.99	113.70
1	2	1354	A	C2'-C3'-O3'	5.08	117.11	109.50
1	2	583	C	C2'-C3'-O3'	5.06	117.09	109.50
1	2	13	A	C2'-C3'-O3'	-5.00	106.20	113.70

There are no chirality outliers.

There are no planarity outliers.

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	2	59359	0	29917	2270	0
2	2	65	0	79	20	0
All	All	59424	0	29996	2270	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 26.

All (2270) 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)
1:2:1773:C:H41	2:2:2881:RAP:C15	1.42	1.32
1:2:1773:C:N4	2:2:2881:RAP:H151	1.54	1.20
1:2:700:C:H42	1:2:800:U:H4'	1.11	1.15
1:2:1663:C:H5'	1:2:1664:G:H5''	1.32	1.08
1:2:940:G:H3'	1:2:941:U:H5''	1.36	1.08
1:2:824:U:H4'	1:2:1264:C:H1'	1.31	1.06
1:2:1773:C:H41	2:2:2881:RAP:H151	1.11	1.04
1:2:2636:A:H62	1:2:2643:G:H21	1.05	1.04
1:2:1773:C:N4	2:2:2881:RAP:C15	2.15	1.03
1:2:109:A:H2'	1:2:110:U:H5''	1.40	1.02
1:2:462:G:H2'	1:2:463:C:H5''	1.43	1.01
1:2:619:A:H61	1:2:629:C:H42	1.07	1.01
1:2:665:A:H3'	1:2:666:U:H5''	1.43	0.98
1:2:2476:A:O2'	1:2:2477:C:H5'	1.63	0.98
1:2:1327:C:H42	1:2:1351:G:H1	1.11	0.97
1:2:2082:C:H42	1:2:2173:G:H1	1.14	0.94
1:2:1715:A:H2'	1:2:1716:G:H5''	1.50	0.93
1:2:1468:A:H3'	1:2:1469:U:H5''	1.51	0.93
1:2:1572:C:H2'	1:2:1573:G:H5''	1.51	0.93
1:2:2380:U:H2'	1:2:2381:A:H5'	1.50	0.93
1:2:890:U:H3'	1:2:891:A:H5''	1.48	0.92
1:2:2194:A:H2'	1:2:2195:C:H5''	1.49	0.92
1:2:1773:C:H5	2:2:2881:RAP:O7	1.53	0.92
1:2:2081:U:H2'	1:2:2082:C:H5''	1.47	0.92
1:2:1617:G:H2'	1:2:1618:U:H5'	1.49	0.91
1:2:362:C:H2'	1:2:363:G:H4'	1.51	0.91
1:2:1432:G:H21	1:2:1596:A:H62	1.19	0.90
1:2:1438:G:H2'	1:2:1439:G:H5'	1.54	0.90
1:2:88:G:H3'	1:2:89:A:H5''	1.51	0.90
1:2:1908:C:H2'	1:2:1909:U:H4'	1.53	0.89
1:2:1715:A:C2'	1:2:1716:G:H5''	2.01	0.89
1:2:2:G:H1	1:2:2875:C:H42	1.21	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1773:C:N4	2:2:2881:RAP:C14	2.35	0.89
1:2:1773:C:H41	2:2:2881:RAP:C14	1.86	0.88
1:2:2038:C:H2'	1:2:2483:U:H4'	1.54	0.88
1:2:2809:A:N6	1:2:2854:G:H1'	1.89	0.88
1:2:1442:C:H41	1:2:1585:A:H5''	1.39	0.87
1:2:1616:C:H2'	1:2:1617:G:H8	1.38	0.87
1:2:2281:C:H42	1:2:2293:G:H22	1.17	0.87
1:2:2299:A:H1'	1:2:2312:A:H62	1.39	0.87
1:2:545:C:H42	1:2:567:G:H1	1.18	0.87
1:2:2198:U:H3'	1:2:2199:C:H5''	1.53	0.87
1:2:436:A:H5'	1:2:437:G:H5''	1.53	0.87
1:2:58:C:H3'	1:2:59:G:H5''	1.58	0.86
1:2:1268:U:H5'	1:2:1269:G:H5''	1.58	0.86
1:2:1333:G:N2	1:2:1346:C:H42	1.73	0.86
1:2:13:A:H5''	1:2:14:A:OP1	1.75	0.86
1:2:1549:C:H2'	1:2:1550:C:H5'	1.58	0.85
1:2:821:A:O2'	1:2:1267:A:H4'	1.77	0.85
1:2:174:A:H4'	1:2:2051:U:H2'	1.56	0.85
1:2:1336:G:H2'	1:2:1337:G:H5''	1.58	0.85
1:2:2727:G:H2'	1:2:2728:A:H5''	1.58	0.85
1:2:468:A:O2'	1:2:469:G:H4'	1.76	0.84
1:2:1656:U:H2'	1:2:1657:A:H5''	1.57	0.84
1:2:492:G:H22	1:2:519:C:H42	1.24	0.84
1:2:1621:C:H4'	1:2:1626:A:N6	1.93	0.84
1:2:2404:A:H4'	1:2:2405:A:O5'	1.75	0.84
1:2:1773:C:C5	2:2:2881:RAP:O7	2.30	0.84
1:2:1854:G:H22	1:2:1863:U:H3	1.25	0.84
1:2:391:C:H42	1:2:410:A:H61	1.25	0.84
1:2:1466:C:H2'	1:2:1467:U:O4'	1.77	0.83
1:2:1374:G:H1	1:2:1383:C:H42	1.22	0.83
1:2:614:G:H1'	1:2:670:U:H1'	1.59	0.83
1:2:929:A:H3'	1:2:930:A:H5''	1.59	0.83
1:2:1265:G:H2'	1:2:1266:G:O4'	1.79	0.83
1:2:1036:G:H1'	1:2:1145:C:H4'	1.58	0.83
1:2:1495:G:H1	1:2:1528:C:N4	1.75	0.83
1:2:2432:A:H2'	1:2:2433:G:H8	1.42	0.82
1:2:1139:A:H1'	1:2:2495:G:O2'	1.77	0.82
1:2:1066:G:H3'	1:2:1067:G:H5''	1.60	0.82
1:2:181:A:H4'	1:2:182:G:H4'	1.61	0.82
1:2:1401:G:H1	1:2:1412:C:H42	1.26	0.82
1:2:931:G:H22	1:2:2247:A:H3'	1.45	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1373:G:H22	1:2:2192:U:H3	1.27	0.81
1:2:1483:G:H1	1:2:1539:U:H3	1.28	0.81
1:2:700:C:N4	1:2:800:U:H4'	1.95	0.81
1:2:1689:U:H2'	1:2:1690:U:H5''	1.62	0.81
1:2:2727:G:C2'	1:2:2728:A:H5''	2.11	0.81
1:2:890:U:H3'	1:2:891:A:C5'	2.10	0.81
1:2:1312:G:H4'	1:2:1314:A:N3	1.96	0.80
1:2:941:U:H2'	1:2:942:U:O4'	1.80	0.80
1:2:666:U:H2'	1:2:668:A:OP1	1.82	0.80
1:2:2633:A:H5''	1:2:2634:G:OP1	1.80	0.80
1:2:1102:G:H1	1:2:1112:U:H1'	1.46	0.79
1:2:561:U:H5'	1:2:1233:A:H1'	1.64	0.79
1:2:2194:A:C2'	1:2:2195:C:H5''	2.13	0.79
1:2:2321:C:H2'	1:2:2322:U:O4'	1.82	0.78
1:2:63:A:H61	1:2:89:A:H61	1.28	0.78
1:2:759:C:H5'	1:2:761:G:H1'	1.65	0.78
1:2:2809:A:H61	1:2:2854:G:H1'	1.48	0.78
1:2:323:G:OP2	1:2:342:G:H2'	1.84	0.78
1:2:1495:G:H1	1:2:1528:C:H42	1.31	0.78
1:2:689:A:H8	1:2:2052:G:H21	1.31	0.78
1:2:1459:U:O2	1:2:1475:U:H2'	1.84	0.78
1:2:1974:U:C2'	1:2:1975:G:H5'	2.13	0.78
1:2:2058:U:H1'	1:2:2576:G:H21	1.47	0.77
1:2:2261:G:H4'	1:2:2262:C:OP2	1.84	0.77
1:2:184:A:H4'	1:2:812:G:H4'	1.64	0.77
1:2:215:G:H21	1:2:632:A:H8	1.33	0.77
1:2:538:A:H2'	1:2:539:A:H5''	1.64	0.77
1:2:1354:A:O2'	1:2:1355:A:H5'	1.82	0.77
1:2:1304:U:H2'	1:2:1305:C:H5''	1.65	0.77
1:2:1029:C:H2'	1:2:1030:U:H5''	1.67	0.77
1:2:541:C:H2'	1:2:2002:A:H2	1.48	0.77
1:2:2378:G:H1	1:2:2396:C:H42	1.33	0.77
1:2:940:G:H3'	1:2:941:U:C5'	2.13	0.76
1:2:1807:A:H2'	1:2:1808:C:H4'	1.67	0.76
1:2:109:A:C2'	1:2:110:U:H5''	2.14	0.76
1:2:1401:G:H1	1:2:1412:C:N4	1.82	0.76
1:2:1714:A:H62	1:2:1715:A:N6	1.82	0.76
1:2:1772:C:H5''	1:2:1773:C:OP1	1.85	0.76
1:2:1102:G:N1	1:2:1112:U:H1'	2.01	0.76
1:2:1690:U:H2'	1:2:1691:G:H5'	1.68	0.76
1:2:2059:U:H5''	1:2:2217:G:H1	1.47	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:77:C:N4	1:2:106:G:H1	1.84	0.76
1:2:2756:A:H1'	1:2:2758:A:N7	2.00	0.76
1:2:245:C:H2'	1:2:246:C:H5	1.51	0.76
1:2:698:A:H1'	1:2:701:U:O4	1.86	0.76
1:2:1181:C:H2'	1:2:1182:U:H4'	1.65	0.76
1:2:1322:G:H21	1:2:1627:C:H5'	1.51	0.76
1:2:1291:G:H1	1:2:1305:C:H42	1.33	0.75
1:2:2418:A:O2'	1:2:2566:A:H5''	1.86	0.75
1:2:1312:G:H5''	1:2:1313:U:H5''	1.68	0.75
1:2:361:G:N2	1:2:362:C:H41	1.85	0.75
1:2:1496:G:H1	1:2:1527:G:H1	1.34	0.75
1:2:1144:U:O2	1:2:1147:G:H5''	1.87	0.75
1:2:1982:C:H5''	1:2:2703:C:O2'	1.87	0.75
1:2:1747:G:H4'	1:2:1749:G:H1'	1.68	0.75
1:2:684:C:H42	1:2:822:G:H1	1.34	0.74
1:2:1440:G:H1'	1:2:1588:A:H61	1.52	0.74
1:2:1327:C:N4	1:2:1351:G:H1	1.85	0.74
1:2:2549:G:H2'	1:2:2550:C:O4'	1.87	0.74
1:2:1357:U:O2'	1:2:1397:A:H2'	1.87	0.74
1:2:2475:C:H2'	1:2:2476:A:O4'	1.87	0.74
1:2:2227:C:H2'	1:2:2228:U:H5'	1.69	0.74
1:2:1111:C:H2'	1:2:1112:U:H5'	1.69	0.74
1:2:1289:A:H61	1:2:1307:U:H3	1.33	0.74
1:2:2691:C:H2'	1:2:2692:A:H5''	1.68	0.74
1:2:1226:A:N6	1:2:1249:G:H1'	2.02	0.74
1:2:1627:C:H3'	1:2:1627:C:OP2	1.88	0.74
1:2:245:C:H2'	1:2:246:C:C5	2.23	0.74
1:2:63:A:H61	1:2:89:A:N6	1.86	0.73
1:2:68:C:H2'	1:2:69:G:O4'	1.88	0.73
1:2:2380:U:C2'	1:2:2381:A:H5'	2.19	0.73
1:2:1656:U:C2'	1:2:1657:A:H5''	2.18	0.73
1:2:403:A:H5''	1:2:404:A:OP1	1.88	0.73
1:2:956:A:C2	1:2:2427:A:H1'	2.23	0.73
1:2:1141:U:O2	1:2:2008:C:H5''	1.87	0.73
1:2:1356:G:OP1	1:2:1356:G:H3'	1.87	0.73
1:2:871:U:H1'	1:2:2248:A:H4'	1.70	0.73
1:2:1185:C:H41	1:2:1189:G:H1	1.37	0.73
1:2:1195:U:H2'	1:2:1196:G:C8	2.24	0.73
1:2:1572:C:C2'	1:2:1573:G:H5''	2.18	0.73
1:2:1697:U:H2'	1:2:1698:C:H5'	1.71	0.73
1:2:2299:A:H1'	1:2:2312:A:N6	2.02	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:181:A:C4'	1:2:182:G:H4'	2.19	0.72
1:2:1772:C:O2'	2:2:2881:RAP:H502	1.89	0.72
1:2:821:A:H2'	1:2:822:G:H8	1.54	0.72
1:2:1386:A:H5''	1:2:2191:A:N6	2.04	0.72
1:2:1811:A:H1'	1:2:1813:A:C6	2.24	0.72
1:2:1501:C:H42	1:2:1519:G:H22	1.36	0.72
1:2:613:A:H2'	1:2:614:G:H8	1.53	0.72
1:2:715:U:H3	1:2:743:A:H61	1.37	0.72
1:2:1442:C:N4	1:2:1585:A:H5''	2.04	0.72
1:2:1882:G:H21	1:2:1885:C:N4	1.88	0.72
1:2:951:G:H2'	1:2:952:A:H5''	1.71	0.72
1:2:1183:C:N4	1:2:1191:G:H1	1.87	0.72
1:2:2783:U:H3	1:2:2866:A:H62	1.36	0.72
1:2:2429:A:OP2	1:2:2429:A:H8	1.73	0.72
1:2:1773:C:H41	2:2:2881:RAP:C16	2.03	0.71
1:2:2048:C:H1'	1:2:2428:U:O2	1.88	0.71
1:2:146:C:H2'	1:2:147:G:H8	1.55	0.71
1:2:2081:U:C2'	1:2:2082:C:H5''	2.20	0.71
1:2:1811:A:H5''	1:2:1812:U:OP1	1.91	0.71
1:2:119:G:H1	1:2:128:C:H42	1.38	0.71
1:2:1353:A:H4'	1:2:1407:G:H1'	1.72	0.71
1:2:1226:A:H62	1:2:1249:G:H1'	1.56	0.71
1:2:1458:A:H3'	1:2:1459:U:C5'	2.21	0.71
1:2:847:C:H41	1:2:955:G:N2	1.89	0.71
1:2:1373:G:N2	1:2:2192:U:H3	1.89	0.71
1:2:2379:G:H2'	1:2:2380:U:O4'	1.90	0.71
1:2:795:A:H4'	1:2:796:A:N7	2.06	0.70
1:2:2287:G:H2'	1:2:2287:G:N3	2.06	0.70
1:2:1001:A:H62	1:2:1200:G:H1'	1.56	0.70
1:2:2170:C:H2'	1:2:2171:U:H5'	1.73	0.70
1:2:538:A:C2'	1:2:539:A:H5''	2.20	0.70
1:2:1900:U:O2'	1:2:1946:U:H5'	1.92	0.70
1:2:2245:A:O2'	1:2:2246:A:OP2	2.09	0.70
1:2:1975:G:H1'	1:2:1977:C:H41	1.56	0.70
1:2:305:A:H2'	1:2:306:G:O4'	1.91	0.70
1:2:1541:G:H22	1:2:1561:A:H61	1.36	0.70
1:2:821:A:H2'	1:2:822:G:C8	2.26	0.70
1:2:1181:C:H3'	1:2:1182:U:H5''	1.73	0.70
1:2:2268:G:H5''	1:2:2363:G:O2'	1.91	0.70
1:2:2810:A:H4'	1:2:2811:G:C8	2.26	0.70
1:2:1055:A:N1	1:2:1122:A:H5'	2.06	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:2670:C:H42	1:2:2698:G:H22	1.37	0.70
1:2:1715:A:H1'	1:2:1717:A:O4'	1.92	0.70
1:2:1335:A:H2'	1:2:1336:G:H8	1.57	0.70
1:2:1947:G:H4'	1:2:1948:C:C5	2.27	0.70
1:2:2565:C:O2	2:2:2881:RAP:O4	2.09	0.70
1:2:2660:C:O2'	1:2:2661:G:H5'	1.91	0.70
1:2:2274:C:H2'	1:2:2275:U:H5'	1.74	0.70
1:2:411:C:H2'	1:2:412:U:H5''	1.74	0.69
1:2:912:A:H2'	1:2:913:A:O4'	1.92	0.69
1:2:2303:C:H5'	1:2:2304:G:H5''	1.75	0.69
1:2:1036:G:H1'	1:2:1145:C:C4'	2.22	0.69
1:2:1440:G:H1'	1:2:1588:A:N6	2.06	0.69
1:2:1673:C:H42	1:2:1987:G:H1	1.39	0.69
1:2:342:G:O2'	1:2:343:A:OP1	2.11	0.69
1:2:1184:G:C2'	1:2:1185:C:H5''	2.23	0.69
1:2:1198:C:OP1	1:2:1199:U:H1'	1.92	0.69
1:2:1495:G:H2'	1:2:1496:G:H8	1.57	0.69
1:2:2636:A:H62	1:2:2643:G:N2	1.86	0.69
1:2:158:A:H1'	1:2:448:C:H5'	1.74	0.69
1:2:55:A:N6	1:2:69:G:H1	1.91	0.69
1:2:579:G:H2'	1:2:2013:A:N7	2.08	0.69
1:2:721:C:H42	1:2:736:G:H22	1.39	0.69
1:2:1088:A:H2'	1:2:1089:C:O4'	1.91	0.69
1:2:2795:A:H2'	1:2:2795:A:N3	2.08	0.69
1:2:2082:C:H2'	1:2:2083:G:O4'	1.92	0.69
1:2:918:A:H2'	1:2:919:U:H5''	1.73	0.69
1:2:401:G:H2'	1:2:403:A:N7	2.07	0.68
1:2:616:U:H2'	1:2:617:U:H5''	1.74	0.68
1:2:688:A:N6	1:2:816:U:H3	1.91	0.68
1:2:712:A:H4'	1:2:1651:U:N3	2.07	0.68
1:2:1094:C:H2'	1:2:1096:A:OP2	1.94	0.68
1:2:1814:G:H2'	1:2:1815:G:H8	1.58	0.68
1:2:2204:A:O2'	1:2:2205:C:OP2	2.10	0.68
1:2:2320:G:H2'	1:2:2321:C:O4'	1.92	0.68
1:2:2378:G:H1	1:2:2396:C:N4	1.92	0.68
1:2:2668:U:O2	1:2:2693:U:H1'	1.93	0.68
1:2:2756:A:N6	1:2:2762:G:H1'	2.09	0.68
1:2:2823:G:H1'	1:2:2843:A:N6	2.08	0.68
1:2:70:A:O2'	1:2:71:A:H5'	1.94	0.68
1:2:765:C:C4	1:2:1772:C:H1'	2.29	0.68
1:2:2063:A:H61	1:2:2219:U:H3	1.41	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:413:G:O2'	1:2:414:A:H5''	1.94	0.68
1:2:459:A:N6	1:2:484:G:H1'	2.08	0.68
1:2:1712:G:H3'	1:2:1712:G:N3	2.09	0.68
1:2:246:C:H3'	1:2:373:A:O5'	1.93	0.68
1:2:247:A:H3'	1:2:373:A:H5''	1.76	0.68
1:2:1912:G:H3'	1:2:1912:G:N3	2.09	0.68
1:2:32:C:H5'	1:2:1251:G:OP1	1.94	0.68
1:2:2406:C:H4'	1:2:2408:G:N3	2.08	0.68
1:2:47:G:H2'	1:2:48:A:H5''	1.76	0.68
1:2:169:C:H2'	1:2:170:U:H5'	1.76	0.68
1:2:129:A:H2'	1:2:130:C:O4'	1.94	0.68
1:2:863:C:H42	1:2:939:C:N4	1.92	0.68
1:2:572:G:H5'	1:2:581:A:H4'	1.76	0.67
1:2:58:C:C3'	1:2:59:G:H5''	2.24	0.67
1:2:351:A:H2'	1:2:352:G:C8	2.30	0.67
1:2:1468:A:H3'	1:2:1469:U:C5'	2.23	0.67
1:2:2796:A:H2'	1:2:2797:G:H8	1.59	0.67
1:2:487:G:H4'	1:2:512:A:N1	2.09	0.67
1:2:1356:G:H5'	1:2:1614:C:OP2	1.94	0.67
1:2:2179:C:H2'	1:2:2180:U:O4'	1.94	0.67
1:2:2736:U:O2'	1:2:2737:A:H5'	1.94	0.67
1:2:57:G:H2'	1:2:72:A:N6	2.09	0.67
1:2:614:G:H1	1:2:634:G:H1	1.40	0.67
1:2:2503:G:H22	1:2:2721:A:H1'	1.58	0.67
1:2:47:G:C2'	1:2:48:A:H5''	2.24	0.67
1:2:175:C:H42	1:2:225:G:H1	1.41	0.67
1:2:840:U:H1'	1:2:2225:G:H1'	1.75	0.67
1:2:1465:G:H2'	1:2:1466:C:C6	2.30	0.67
1:2:2670:C:N4	1:2:2698:G:H22	1.92	0.67
1:2:347:C:H2'	1:2:348:U:C6	2.29	0.67
1:2:1174:G:H2'	1:2:1175:A:H8	1.59	0.67
1:2:1850:G:H22	1:2:1867:A:H1'	1.58	0.67
1:2:318:G:N2	1:2:320:A:H3'	2.10	0.67
1:2:351:A:H2'	1:2:352:G:H8	1.60	0.67
1:2:2810:A:H5''	1:2:2811:G:OP1	1.94	0.67
1:2:863:C:H42	1:2:939:C:H42	1.39	0.67
1:2:1670:G:H21	1:2:1988:A:H62	1.40	0.67
1:2:2245:A:H5'	1:2:2246:A:C8	2.30	0.67
1:2:2281:C:N4	1:2:2293:G:H22	1.92	0.67
1:2:117:A:H5'	1:2:118:U:OP1	1.95	0.67
1:2:411:C:C3'	1:2:412:U:H5''	2.25	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:2139:G:H2'	1:2:2139:G:N3	2.10	0.67
1:2:1184:G:O2'	1:2:1185:C:H5''	1.95	0.66
1:2:1252:C:O2'	1:2:1253:C:H5''	1.95	0.66
1:2:1325:U:H1'	1:2:1326:U:C5	2.30	0.66
1:2:1338:G:H5'	1:2:1339:U:OP2	1.94	0.66
1:2:2429:A:OP2	1:2:2429:A:C8	2.47	0.66
1:2:13:A:H4'	1:2:14:A:C5'	2.25	0.66
1:2:59:G:O6	1:2:62:U:H2'	1.94	0.66
1:2:104:C:H2'	1:2:105:G:H5'	1.75	0.66
1:2:1296:G:H1'	1:2:1342:U:H3	1.61	0.66
1:2:2168:A:H2'	1:2:2169:A:H5'	1.76	0.66
1:2:2198:U:H3'	1:2:2199:C:C5'	2.25	0.66
1:2:2213:G:H2'	1:2:2214:G:H8	1.60	0.66
1:2:1223:G:H4'	1:2:1224:A:O5'	1.96	0.66
1:2:1926:U:O2'	1:2:1928:G:H5'	1.95	0.66
1:2:462:G:C2'	1:2:463:C:H5''	2.23	0.66
1:2:1055:A:H1'	1:2:1058:G:H1'	1.77	0.66
1:2:2122:G:N3	1:2:2122:G:H2'	2.10	0.66
1:2:13:A:H4'	1:2:14:A:H5''	1.75	0.66
1:2:2092:U:H5''	1:2:2132:G:O2'	1.94	0.66
1:2:436:A:C5'	1:2:437:G:H5''	2.25	0.66
1:2:1952:A:H5'	1:2:1953:A:H5'	1.77	0.66
1:2:2593:A:O2'	1:2:2594:U:H5'	1.96	0.66
1:2:2023:C:H2'	1:2:2024:U:O4'	1.95	0.66
1:2:2432:A:H2'	1:2:2433:G:C8	2.28	0.66
1:2:511:A:O2'	1:2:512:A:H5'	1.96	0.66
1:2:653:G:H2'	1:2:654:A:H4'	1.78	0.66
1:2:1353:A:O2'	1:2:1619:A:H5'	1.96	0.66
1:2:1357:U:H5'	1:2:1358:C:OP2	1.96	0.66
1:2:1938:U:N3	1:2:2531:U:H1'	2.10	0.66
1:2:2133:G:H2'	1:2:2134:U:C6	2.31	0.66
1:2:2602:G:H2'	1:2:2603:G:H8	1.61	0.66
1:2:44:G:H21	1:2:192:G:H21	1.44	0.65
1:2:545:C:N4	1:2:567:G:H1	1.94	0.65
1:2:984:A:H2	1:2:1200:G:H1	1.42	0.65
1:2:2024:U:H2'	1:2:2025:A:H5'	1.77	0.65
1:2:2090:U:H3	1:2:2165:A:H2	1.43	0.65
1:2:128:C:H2'	1:2:129:A:H5''	1.78	0.65
1:2:191:G:O2'	1:2:192:G:H5'	1.96	0.65
1:2:1304:U:C2'	1:2:1305:C:H5''	2.26	0.65
1:2:2286:G:N2	1:2:2290:A:H61	1.93	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:27:G:H1'	1:2:523:A:H62	1.61	0.65
1:2:716:U:H2'	1:2:717:G:O4'	1.96	0.65
1:2:2249:U:H2'	1:2:2250:G:O4'	1.97	0.65
1:2:245:C:H1'	1:2:438:G:C2	2.31	0.65
1:2:762:A:H61	1:2:766:A:H2	1.44	0.65
1:2:1336:G:C2'	1:2:1337:G:H5''	2.27	0.65
1:2:1458:A:H3'	1:2:1459:U:H5''	1.77	0.65
1:2:1444:C:H2'	1:2:1445:A:C8	2.32	0.65
1:2:1616:C:H2'	1:2:1617:G:C8	2.25	0.65
1:2:1689:U:C2'	1:2:1690:U:H5''	2.27	0.65
1:2:2109:A:H2'	1:2:2109:A:N3	2.12	0.65
1:2:2422:C:OP1	2:2:2881:RAP:H40	1.95	0.65
1:2:2621:G:H2'	1:2:2622:G:H8	1.62	0.65
1:2:490:A:O2'	1:2:491:A:H3'	1.97	0.65
1:2:942:U:O2'	1:2:943:U:H5'	1.95	0.65
1:2:1640:C:H2'	1:2:1641:C:C6	2.31	0.65
1:2:2225:G:H1	1:2:2237:C:N4	1.95	0.65
1:2:2667:C:H1'	1:2:2702:G:H1	1.62	0.65
1:2:2781:G:H2'	1:2:2782:G:O4'	1.96	0.65
1:2:35:G:O4'	1:2:466:A:N3	2.30	0.65
1:2:1625:A:N3	1:2:1625:A:H2'	2.11	0.65
1:2:2283:G:H1	1:2:2291:U:H3	1.44	0.65
1:2:638:A:H2'	1:2:639:G:O4'	1.97	0.65
1:2:1066:G:H3'	1:2:1067:G:C5'	2.26	0.65
1:2:2425:G:H4'	1:2:2427:A:H62	1.62	0.65
1:2:633:G:H2'	1:2:634:G:H8	1.62	0.65
1:2:790:A:H2'	1:2:791:G:H8	1.62	0.65
1:2:1414:G:H21	1:2:1484:G:H21	1.43	0.65
1:2:1835:C:H2'	1:2:1836:C:C6	2.32	0.65
1:2:2616:U:H1'	1:2:2762:G:H22	1.62	0.65
1:2:813:A:H1'	1:2:815:A:H5'	1.79	0.64
1:2:1974:U:O2'	1:2:1975:G:H5'	1.97	0.64
1:2:2204:A:H4'	1:2:2205:C:O5'	1.97	0.64
1:2:427:C:H1'	1:2:1856:U:H1'	1.79	0.64
1:2:1333:G:H22	1:2:1346:C:H42	1.40	0.64
1:2:914:C:H2'	1:2:915:C:C6	2.33	0.64
1:2:1234:C:H2'	1:2:1235:C:C6	2.33	0.64
1:2:414:A:H2'	1:2:415:A:O4'	1.98	0.64
1:2:781:G:N2	1:2:1392:U:H1'	2.12	0.64
1:2:1386:A:H5''	1:2:2191:A:H62	1.62	0.64
1:2:1039:A:H62	1:2:1136:G:H2'	1.62	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1197:U:H2'	1:2:1198:C:O4'	1.97	0.64
1:2:1438:G:C2'	1:2:1439:G:H5'	2.27	0.64
1:2:2491:C:C3'	1:2:2492:G:H5''	2.28	0.64
1:2:44:G:H1	1:2:445:A:H61	1.46	0.64
1:2:843:G:H2'	1:2:843:G:N3	2.12	0.64
1:2:2372:A:H2'	1:2:2373:C:C6	2.33	0.64
1:2:2692:A:N3	1:2:2692:A:H2'	2.13	0.64
1:2:168:A:H2'	1:2:169:C:C6	2.32	0.64
1:2:879:A:H2'	1:2:880:C:H5'	1.78	0.64
1:2:999:A:H4'	1:2:1166:A:N1	2.12	0.64
1:2:1339:U:O2'	1:2:1340:C:H5'	1.98	0.64
1:2:2261:G:H5''	1:2:2262:C:O5'	1.98	0.64
1:2:2322:U:O2'	1:2:2323:U:H5'	1.98	0.64
1:2:860:U:H3	1:2:945:G:N2	1.96	0.64
1:2:1938:U:O2'	1:2:1939:U:OP1	2.16	0.64
1:2:2663:U:H3	1:2:2705:A:H61	1.44	0.64
1:2:38:G:H1	1:2:453:U:H3	1.45	0.63
1:2:368:A:C2'	1:2:369:C:H5'	2.28	0.63
1:2:413:G:H2'	1:2:413:G:N3	2.12	0.63
1:2:2821:G:H2'	1:2:2822:U:C6	2.33	0.63
1:2:1153:A:H5''	1:2:1154:A:N7	2.14	0.63
1:2:2315:A:H1'	1:2:2364:C:O4'	1.98	0.63
1:2:832:A:H2'	1:2:833:A:O4'	1.98	0.63
1:2:1151:U:H5''	1:2:1153:A:OP2	1.99	0.63
1:2:1826:U:H4'	1:2:1952:A:H2'	1.80	0.63
1:2:521:U:H4'	1:2:1248:G:H4'	1.81	0.63
1:2:1486:A:H2'	1:2:1487:C:C6	2.33	0.63
1:2:1827:G:H1'	1:2:1914:U:H3	1.63	0.63
1:2:2363:G:H3'	1:2:2365:U:OP2	1.98	0.63
1:2:1697:U:C2'	1:2:1698:C:H5'	2.29	0.63
1:2:146:C:H2'	1:2:147:G:C8	2.33	0.63
1:2:158:A:H61	1:2:192:G:H1	1.47	0.63
1:2:1525:A:N3	1:2:1525:A:H2'	2.13	0.63
1:2:1842:G:H1	1:2:1875:C:H42	1.46	0.63
1:2:108:G:H2'	1:2:109:A:O4'	1.99	0.63
1:2:1183:C:H2'	1:2:1184:G:O4'	1.98	0.63
1:2:492:G:H22	1:2:519:C:N4	1.94	0.63
1:2:1252:C:C2'	1:2:1253:C:H5''	2.29	0.63
1:2:2134:U:H2'	1:2:2135:C:O4'	1.99	0.63
1:2:32:C:H2'	1:2:33:C:C6	2.33	0.63
1:2:143:A:H2'	1:2:144:U:O4'	1.97	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:245:C:OP1	1:2:292:A:H5''	1.99	0.63
1:2:2264:C:H4'	1:2:2267:A:H62	1.64	0.63
1:2:2368:G:H5''	1:2:2369:U:O4'	1.99	0.63
1:2:474:G:N2	1:2:476:G:H3'	2.14	0.62
1:2:813:A:H1'	1:2:815:A:O4'	1.99	0.62
1:2:956:A:H2	1:2:2427:A:H1'	1.64	0.62
1:2:1608:U:H2'	1:2:1609:G:C8	2.33	0.62
1:2:38:G:H2'	1:2:39:C:C6	2.34	0.62
1:2:78:C:H42	1:2:105:G:H1	1.47	0.62
1:2:760:U:H3	1:2:1997:A:H2	1.47	0.62
1:2:777:A:N6	1:2:1766:U:H3	1.96	0.62
1:2:759:C:N3	1:2:2590:U:H5''	2.14	0.62
1:2:1656:U:H4'	1:2:2678:C:H4'	1.81	0.62
1:2:422:C:H2'	1:2:423:G:C8	2.34	0.62
1:2:1608:U:H2'	1:2:1609:G:H8	1.65	0.62
1:2:2516:U:H2'	1:2:2517:C:C6	2.35	0.62
1:2:684:C:N4	1:2:822:G:H1	1.97	0.62
1:2:759:C:C5'	1:2:761:G:H1'	2.30	0.62
1:2:775:U:O2	1:2:1445:A:H5''	2.00	0.62
1:2:1086:C:H2'	1:2:1087:C:H5''	1.80	0.62
1:2:2634:G:N3	1:2:2634:G:H2'	2.14	0.62
1:2:129:A:H61	1:2:142:U:H3	1.47	0.62
1:2:134:G:H2'	1:2:134:G:N3	2.14	0.62
1:2:1253:C:H2'	1:2:1254:G:O4'	1.99	0.62
1:2:1538:A:H2'	1:2:1539:U:C6	2.35	0.62
1:2:415:A:H2	1:2:435:A:H61	1.47	0.62
1:2:1773:C:N4	2:2:2881:RAP:H14	2.15	0.62
1:2:1967:U:H2'	1:2:1968:G:C8	2.35	0.62
1:2:583:C:O2'	1:2:584:A:OP2	2.15	0.62
1:2:1814:G:H2'	1:2:1815:G:C8	2.33	0.62
1:2:1030:U:C2'	1:2:1031:C:H5'	2.29	0.61
1:2:1670:G:H21	1:2:1988:A:N6	1.98	0.61
1:2:2672:U:H2'	1:2:2673:G:H8	1.65	0.61
1:2:2063:A:N6	1:2:2219:U:H3	1.98	0.61
1:2:2602:G:H2'	1:2:2603:G:C8	2.35	0.61
1:2:1886:G:H2'	1:2:1887:G:H8	1.65	0.61
1:2:202:A:H2'	1:2:203:G:O4'	2.00	0.61
1:2:391:C:H42	1:2:410:A:N6	1.97	0.61
1:2:619:A:H2'	1:2:620:G:C8	2.36	0.61
1:2:646:C:O2'	1:2:650:U:H5''	2.01	0.61
1:2:1032:A:H2'	1:2:1033:G:H4'	1.82	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1994:U:H2'	1:2:1995:G:O4'	1.99	0.61
1:2:2004:U:H5'	1:2:2005:U:OP1	2.01	0.61
1:2:2371:A:H2'	1:2:2371:A:N3	2.15	0.61
1:2:1154:A:O2'	1:2:1155:G:OP1	2.15	0.61
1:2:58:C:H3'	1:2:59:G:C5'	2.31	0.61
1:2:1323:G:H1'	1:2:1627:C:H5''	1.83	0.61
1:2:1333:G:N2	1:2:1346:C:N4	2.48	0.61
1:2:1807:A:H1'	1:2:1809:G:C8	2.36	0.61
1:2:1948:C:H2'	1:2:1949:A:C8	2.35	0.61
1:2:2860:C:H2'	1:2:2861:A:O4'	2.01	0.61
1:2:2088:U:H3	1:2:2167:A:H2	1.48	0.61
1:2:2404:A:O2'	1:2:2405:A:OP2	2.19	0.61
1:2:411:C:C2'	1:2:412:U:H5''	2.30	0.61
1:2:1034:U:H4'	1:2:1134:C:OP1	2.01	0.61
1:2:1456:C:H2'	1:2:1457:A:C8	2.36	0.61
1:2:1278:A:O2'	1:2:1279:G:O5'	2.19	0.61
1:2:1435:G:H21	1:2:1508:G:H22	1.49	0.61
1:2:2482:A:O5'	1:2:2483:U:OP1	2.19	0.61
1:2:334:G:N3	1:2:344:G:H1'	2.16	0.61
1:2:477:A:H2'	1:2:478:G:H5'	1.82	0.61
1:2:1195:U:H2'	1:2:1196:G:H8	1.64	0.61
1:2:1923:U:H1'	1:2:1948:C:C4	2.36	0.61
1:2:391:C:N4	1:2:410:A:H61	1.98	0.60
1:2:979:A:H2'	1:2:980:G:C8	2.36	0.60
1:2:1510:A:H2'	1:2:1511:A:H5'	1.83	0.60
1:2:2018:G:O2'	1:2:2019:C:OP1	2.13	0.60
1:2:2490:U:H2'	1:2:2491:C:H6	1.66	0.60
1:2:2491:C:H3'	1:2:2492:G:H5''	1.83	0.60
1:2:192:G:H4'	1:2:193:A:O5'	2.01	0.60
1:2:604:U:H2'	1:2:605:G:C8	2.36	0.60
1:2:466:A:H5'	1:2:483:A:N6	2.16	0.60
1:2:613:A:H2'	1:2:614:G:C8	2.36	0.60
1:2:1458:A:C3'	1:2:1459:U:H5''	2.32	0.60
1:2:2329:C:H2'	1:2:2330:G:O4'	2.01	0.60
1:2:312:G:H2'	1:2:313:U:O4'	2.02	0.60
1:2:538:A:N1	1:2:2025:A:H2'	2.16	0.60
1:2:1561:A:H2'	1:2:1562:G:O4'	2.01	0.60
1:2:1904:G:H2'	1:2:1905:G:O4'	2.02	0.60
1:2:2692:A:H5'	1:2:2693:U:H5'	1.83	0.60
1:2:939:C:H2'	1:2:940:G:C8	2.37	0.60
1:2:1360:G:H2'	1:2:1361:G:H8	1.65	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1456:C:H2'	1:2:1457:A:H8	1.65	0.60
1:2:1643:A:H61	1:2:1656:U:H3	1.47	0.60
1:2:2770:A:H5'	1:2:2867:G:N2	2.16	0.60
1:2:153:A:O2'	1:2:154:U:H5'	2.01	0.60
1:2:513:A:O2'	1:2:514:G:OP2	2.11	0.60
1:2:1064:C:H42	1:2:1117:G:H1	1.48	0.60
1:2:1124:U:H2'	1:2:1125:G:H8	1.66	0.60
1:2:1290:A:H2'	1:2:1291:G:C8	2.35	0.60
1:2:2175:A:H2'	1:2:2176:U:C6	2.37	0.60
1:2:459:A:O2'	1:2:461:A:N7	2.32	0.60
1:2:162:C:H2'	1:2:163:A:C8	2.37	0.60
1:2:889:C:H2'	1:2:890:U:C6	2.37	0.60
1:2:942:U:C2'	1:2:943:U:H5'	2.31	0.60
1:2:1179:A:H2'	1:2:1180:A:H8	1.67	0.60
1:2:1435:G:H21	1:2:1508:G:N2	1.99	0.60
1:2:1729:C:H2'	1:2:1730:G:C8	2.37	0.60
1:2:2324:G:O2'	1:2:2325:A:OP2	2.19	0.60
1:2:1773:C:H5	2:2:2881:RAP:C50	2.14	0.60
1:2:2666:U:H2'	1:2:2667:C:O4'	2.01	0.60
1:2:2841:U:H1'	1:2:2843:A:Cl'	2.32	0.60
1:2:482:A:H2'	1:2:483:A:O4'	2.00	0.59
1:2:930:A:H4'	1:2:930:A:OP1	2.02	0.59
1:2:1174:G:H2'	1:2:1175:A:C8	2.35	0.59
1:2:1380:C:H2'	1:2:1381:G:H5'	1.82	0.59
1:2:1955:G:H2'	1:2:1956:G:H5'	1.82	0.59
1:2:619:A:H2'	1:2:620:G:H8	1.67	0.59
1:2:1194:U:H2'	1:2:1195:U:C6	2.37	0.59
1:2:1495:G:H22	1:2:1528:C:H42	1.48	0.59
1:2:1532:A:H2'	1:2:1533:G:C8	2.36	0.59
1:2:2245:A:H1'	1:2:2251:U:O4	2.02	0.59
1:2:933:G:H2'	1:2:934:G:H8	1.67	0.59
1:2:941:U:OP1	1:2:941:U:H4'	2.02	0.59
1:2:1289:A:N6	1:2:1307:U:H3	2.00	0.59
1:2:1327:C:OP1	1:2:1345:G:H5'	2.02	0.59
1:2:1681:A:C2	1:2:2706:U:H1'	2.37	0.59
1:2:1857:G:N2	1:2:1859:A:H3'	2.18	0.59
1:2:2588:U:O4	2:2:2881:RAP:C44	2.50	0.59
1:2:247:A:H5''	1:2:248:A:OP2	2.01	0.59
1:2:717:G:H1'	1:2:740:A:N6	2.16	0.59
1:2:1074:G:H22	1:2:1086:C:H2'	1.67	0.59
1:2:1391:A:O2'	1:2:1392:U:C6	2.54	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1641:C:H2'	1:2:1642:G:H5'	1.84	0.59
1:2:1764:A:C5	1:2:1821:A:H1'	2.36	0.59
1:2:1894:U:H3	1:2:1901:A:H61	1.50	0.59
1:2:1310:C:OP1	1:2:2689:C:H4'	2.03	0.59
1:2:248:A:H5'	1:2:373:A:N7	2.17	0.59
1:2:392:G:O2'	1:2:2211:U:H5''	2.03	0.59
1:2:837:U:H2'	1:2:838:A:C8	2.37	0.59
1:2:1437:A:C2'	1:2:1438:G:H5'	2.31	0.59
1:2:1487:C:H2'	1:2:1488:G:H8	1.67	0.59
1:2:1790:G:C8	1:2:1811:A:N6	2.71	0.59
1:2:1840:A:H2'	1:2:1840:A:N3	2.16	0.59
1:2:2442:C:H2'	1:2:2443:C:C6	2.38	0.59
1:2:173:A:H61	1:2:818:G:N2	2.01	0.59
1:2:1274:C:H2'	1:2:1275:A:H8	1.68	0.59
1:2:1374:G:H1	1:2:1383:C:N4	1.95	0.59
1:2:649:G:H22	1:2:661:C:H1'	1.68	0.59
1:2:1804:U:H2'	1:2:1805:G:H8	1.66	0.59
1:2:170:U:H2'	1:2:171:G:H8	1.68	0.59
1:2:352:G:H2'	1:2:353:G:H5'	1.85	0.59
1:2:660:G:H2'	1:2:661:C:O4'	2.02	0.59
1:2:1441:A:H4'	1:2:1442:C:C6	2.38	0.59
1:2:2225:G:H1	1:2:2237:C:H42	1.48	0.59
1:2:422:C:H2'	1:2:423:G:H8	1.67	0.59
1:2:809:C:H2'	1:2:810:U:C6	2.38	0.59
1:2:1181:C:H3'	1:2:1182:U:C5'	2.33	0.59
1:2:1790:G:H1'	1:2:1791:C:C5	2.37	0.59
1:2:2220:A:H2'	1:2:2221:G:H8	1.67	0.59
1:2:2737:A:H2'	1:2:2738:A:H5'	1.84	0.59
1:2:1184:G:H2'	1:2:1185:C:H5''	1.85	0.58
1:2:1762:C:H2'	1:2:1763:G:C8	2.38	0.58
1:2:2110:G:H3'	1:2:2110:G:N3	2.18	0.58
1:2:167:A:H5''	1:2:181:A:N1	2.18	0.58
1:2:415:A:H2'	1:2:416:U:O4'	2.03	0.58
1:2:1291:G:H1	1:2:1305:C:N4	2.00	0.58
1:2:103:U:H2'	1:2:104:C:C6	2.38	0.58
1:2:119:G:H1'	1:2:129:A:N1	2.18	0.58
1:2:951:G:C2'	1:2:952:A:H5''	2.32	0.58
1:2:2496:C:N4	1:2:2546:G:H1	2.02	0.58
1:2:644:A:N3	1:2:2382:C:H4'	2.19	0.58
1:2:1540:C:H2'	1:2:1541:G:H8	1.69	0.58
1:2:1571:G:H2'	1:2:1572:C:C6	2.39	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:2169:A:O2'	1:2:2170:C:H5'	2.04	0.58
1:2:132:U:H2'	1:2:133:C:C6	2.38	0.58
1:2:490:A:O2'	1:2:491:A:H5'	2.03	0.58
1:2:1191:G:N3	1:2:1191:G:H2'	2.18	0.58
1:2:1200:G:H2'	1:2:1201:G:O4'	2.04	0.58
1:2:1359:G:N2	1:2:1617:G:H1'	2.19	0.58
1:2:2425:G:H4'	1:2:2427:A:N6	2.17	0.58
1:2:2589:C:O2	1:2:2589:C:H2'	2.03	0.58
1:2:198:A:O2'	1:2:199:A:OP2	2.21	0.58
1:2:231:G:H4'	1:2:397:U:H5'	1.85	0.58
1:2:935:C:H2'	1:2:936:A:C8	2.38	0.58
1:2:60:A:N3	1:2:60:A:H2'	2.18	0.58
1:2:78:C:N4	1:2:105:G:H1	2.02	0.58
1:2:208:C:H2'	1:2:209:G:O4'	2.03	0.58
1:2:367:G:H2'	1:2:368:A:H5''	1.86	0.58
1:2:1003:C:H2'	1:2:1004:A:C8	2.39	0.58
1:2:1353:A:H4'	1:2:1407:G:C1'	2.33	0.58
1:2:1716:G:O6	1:2:1754:G:H1'	2.03	0.58
1:2:2286:G:H21	1:2:2290:A:H61	1.52	0.58
1:2:57:G:H2'	1:2:72:A:H62	1.69	0.58
1:2:584:A:O2'	1:2:585:U:H5'	2.04	0.58
1:2:1459:U:H3'	1:2:1459:U:OP1	2.03	0.58
1:2:1789:U:H3	1:2:1813:A:H61	1.52	0.58
1:2:181:A:H4'	1:2:182:G:C5'	2.34	0.58
1:2:674:U:H2'	1:2:675:C:O4'	2.03	0.58
1:2:838:A:O2'	1:2:839:U:H5'	2.04	0.58
1:2:2038:C:H2'	1:2:2483:U:C4'	2.29	0.58
1:2:2607:C:H3'	1:2:2608:A:C5'	2.33	0.58
1:2:2722:C:H2'	1:2:2723:C:C6	2.39	0.58
1:2:826:U:H2'	1:2:827:C:C6	2.39	0.58
1:2:1223:G:O2'	1:2:1224:A:OP2	2.16	0.58
1:2:1949:A:H1'	1:2:2572:U:C5'	2.34	0.58
1:2:1974:U:H2'	1:2:1975:G:H5'	1.85	0.58
1:2:2490:U:H2'	1:2:2491:C:C6	2.39	0.58
1:2:2664:G:H21	1:2:2706:U:H3	1.52	0.58
1:2:879:A:H61	1:2:926:C:H1'	1.69	0.57
1:2:944:A:O2'	1:2:945:G:H5'	2.04	0.57
1:2:1055:A:H2	1:2:1121:G:H2'	1.69	0.57
1:2:1213:U:H2'	1:2:1214:C:C6	2.39	0.57
1:2:1769:U:C2'	1:2:1770:U:H5''	2.34	0.57
1:2:18:U:H2'	1:2:19:C:C6	2.39	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:139:A:H2'	1:2:140:G:H8	1.69	0.57
1:2:1066:G:H1'	1:2:1096:A:C2	2.39	0.57
1:2:1286:U:H4'	1:2:1288:A:OP1	2.03	0.57
1:2:1328:C:H42	1:2:1350:G:H1	1.52	0.57
1:2:1955:G:C2'	1:2:1956:G:H5'	2.33	0.57
1:2:2238:G:H4'	1:2:2407:G:OP2	2.03	0.57
1:2:371:G:H3'	1:2:371:G:N3	2.20	0.57
1:2:667:U:H2'	1:2:668:A:H5''	1.85	0.57
1:2:885:A:H2'	1:2:886:A:H8	1.69	0.57
1:2:929:A:C3'	1:2:930:A:H5''	2.30	0.57
1:2:1335:A:H2'	1:2:1336:G:C8	2.39	0.57
1:2:17:G:H2'	1:2:18:U:C6	2.39	0.57
1:2:411:C:OP1	1:2:2073:A:H1'	2.05	0.57
1:2:973:U:H2'	1:2:974:U:C6	2.39	0.57
1:2:1742:G:H2'	1:2:1743:C:C6	2.39	0.57
1:2:1769:U:O4	1:2:1775:A:H1'	2.04	0.57
1:2:364:G:H2'	1:2:365:U:C6	2.39	0.57
1:2:1066:G:H2'	1:2:1067:G:H4'	1.86	0.57
1:2:2208:U:H2'	1:2:2209:G:H8	1.68	0.57
1:2:2224:U:OP1	1:2:2225:G:H5'	2.04	0.57
1:2:118:U:H1'	1:2:143:A:C4	2.40	0.57
1:2:937:C:H2'	1:2:938:G:O4'	2.05	0.57
1:2:1899:A:H2'	1:2:1946:U:H1'	1.86	0.57
1:2:2070:G:H2'	1:2:2071:G:H8	1.70	0.57
1:2:2369:U:H2'	1:2:2370:G:C8	2.39	0.57
1:2:159:A:O2'	1:2:160:C:H5'	2.05	0.57
1:2:193:A:H2'	1:2:194:G:O4'	2.03	0.57
1:2:411:C:H3'	1:2:412:U:H5''	1.85	0.57
1:2:797:A:C6	1:2:805:G:H1'	2.39	0.57
1:2:1087:C:H2'	1:2:1088:A:O4'	2.05	0.57
1:2:1973:C:H2'	1:2:1974:U:C6	2.40	0.57
1:2:2658:A:O2'	1:2:2659:C:H5'	2.04	0.57
1:2:213:C:H42	1:2:238:G:H22	1.51	0.57
1:2:387:A:H5''	1:2:436:A:H8	1.69	0.57
1:2:1190:C:H2'	1:2:1191:G:C8	2.39	0.57
1:2:1775:A:O2'	1:2:1776:A:OP2	2.14	0.57
1:2:2227:C:C2'	1:2:2228:U:H5'	2.33	0.57
1:2:125:A:H5''	1:2:126:C:C6	2.40	0.57
1:2:456:C:H2'	1:2:457:C:C6	2.40	0.57
1:2:1564:U:H2'	1:2:1565:G:O4'	2.05	0.57
1:2:2045:A:H2'	1:2:2046:C:H5'	1.87	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:2753:C:H2'	1:2:2754:C:C6	2.40	0.57
1:2:427:C:H2'	1:2:428:A:C8	2.39	0.57
1:2:856:A:H2'	1:2:857:U:O4'	2.05	0.57
1:2:983:G:OP2	1:2:985:G:H5''	2.04	0.57
1:2:1177:U:H3	1:2:1197:U:H1'	1.68	0.57
1:2:1355:A:N6	1:2:1358:C:N3	2.53	0.57
1:2:1750:A:H2'	1:2:1751:A:H8	1.70	0.57
1:2:2104:G:H2'	1:2:2105:U:C6	2.40	0.57
1:2:2183:C:H42	1:2:2202:G:H1	1.52	0.57
1:2:2866:A:H2'	1:2:2867:G:O4'	2.05	0.57
1:2:197:G:N2	1:2:440:U:H2'	2.20	0.56
1:2:717:G:H1'	1:2:740:A:H61	1.70	0.56
1:2:1451:C:H2'	1:2:1452:U:C6	2.40	0.56
1:2:2492:G:H2'	1:2:2493:U:C6	2.40	0.56
1:2:1698:C:H4'	1:2:1754:G:C8	2.40	0.56
1:2:2132:G:H2'	1:2:2133:G:O4'	2.04	0.56
1:2:21:A:H61	1:2:529:U:H3	1.52	0.56
1:2:475:U:H1'	1:2:801:A:H61	1.70	0.56
1:2:951:G:C3'	1:2:952:A:H5''	2.35	0.56
1:2:1139:A:O2'	1:2:2495:G:H4'	2.03	0.56
1:2:1345:G:H5''	1:2:1346:C:OP2	2.04	0.56
1:2:1923:U:H1'	1:2:1948:C:N4	2.20	0.56
1:2:2307:A:H2'	1:2:2308:A:C8	2.40	0.56
1:2:2470:U:O2'	1:2:2471:U:H5'	2.06	0.56
1:2:2636:A:N6	1:2:2643:G:H21	1.89	0.56
1:2:2638:G:N2	1:2:2640:G:H5''	2.21	0.56
1:2:2667:C:H1'	1:2:2702:G:N1	2.20	0.56
1:2:2678:C:H2'	1:2:2679:G:C8	2.41	0.56
1:2:1450:G:H2'	1:2:1451:C:C6	2.41	0.56
1:2:1690:U:H2'	1:2:1691:G:C5'	2.35	0.56
1:2:2517:C:H2'	1:2:2518:C:C6	2.40	0.56
1:2:2633:A:H4'	1:2:2634:G:O5'	2.05	0.56
1:2:980:G:H2'	1:2:981:C:C6	2.40	0.56
1:2:1715:A:H2'	1:2:1716:G:C5'	2.32	0.56
1:2:1773:C:H3'	1:2:1773:C:OP2	2.06	0.56
1:2:2034:A:H5'	1:2:2557:G:H5''	1.86	0.56
1:2:200:A:C6	1:2:435:A:H1'	2.41	0.56
1:2:330:C:H2'	1:2:331:U:C6	2.40	0.56
1:2:546:A:H2'	1:2:547:U:C6	2.41	0.56
1:2:2824:C:H4'	1:2:2825:A:H5'	1.86	0.56
1:2:428:A:H2'	1:2:429:C:O4'	2.06	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:478:G:H2'	1:2:479:G:H8	1.71	0.56
1:2:918:A:C2'	1:2:919:U:H5''	2.36	0.56
1:2:1001:A:N6	1:2:1200:G:H1'	2.18	0.56
1:2:1261:G:H8	1:2:1261:G:OP1	1.88	0.56
1:2:1339:U:H2'	1:2:1340:C:H6	1.71	0.56
1:2:1860:A:H2'	1:2:1861:G:O4'	2.06	0.56
1:2:2359:U:H2'	1:2:2360:C:C6	2.41	0.56
1:2:931:G:N2	1:2:2247:A:H5'	2.20	0.56
1:2:952:A:O2'	1:2:1204:G:H4'	2.06	0.56
1:2:981:C:O2'	1:2:995:A:H4'	2.06	0.56
1:2:1326:U:O2'	1:2:1345:G:H4'	2.05	0.56
1:2:1356:G:O4'	1:2:1613:G:H2'	2.04	0.56
1:2:405:C:H2'	1:2:406:G:H8	1.71	0.56
1:2:706:A:H2'	1:2:707:U:C6	2.40	0.56
1:2:840:U:H4'	1:2:841:G:C2	2.41	0.56
1:2:1179:A:H61	1:2:1195:U:H3	1.54	0.56
1:2:1392:U:H2'	1:2:1392:U:O2	2.06	0.56
1:2:1437:A:O2'	1:2:1438:G:H5'	2.06	0.56
1:2:1694:A:H2'	1:2:1695:U:C6	2.41	0.56
1:2:2496:C:H41	1:2:2546:G:H1	1.53	0.56
1:2:721:C:N4	1:2:736:G:H22	2.04	0.56
1:2:1311:C:H2'	1:2:1312:G:O4'	2.06	0.56
1:2:1480:G:H2'	1:2:1481:U:O4'	2.06	0.56
1:2:1982:C:H4'	1:2:2703:C:O2	2.06	0.56
1:2:2014:A:H2'	1:2:2434:G:H4'	1.87	0.56
1:2:2383:C:H2'	1:2:2384:G:O4'	2.06	0.56
1:2:483:A:H2'	1:2:484:G:H5'	1.88	0.55
1:2:781:G:H5'	1:2:1638:G:H5'	1.88	0.55
1:2:1263:G:O2'	1:2:1264:C:OP1	2.24	0.55
1:2:1611:U:H2'	1:2:1612:U:O4'	2.06	0.55
1:2:2778:U:H5''	1:2:2779:C:C5	2.41	0.55
1:2:192:G:O2'	1:2:193:A:OP2	2.22	0.55
1:2:616:U:C2'	1:2:617:U:H5''	2.35	0.55
1:2:688:A:H62	1:2:816:U:H3	1.53	0.55
1:2:824:U:C4'	1:2:1264:C:H1'	2.20	0.55
1:2:888:G:H2'	1:2:889:C:O4'	2.06	0.55
1:2:1398:G:H2'	1:2:1399:C:C6	2.40	0.55
1:2:2670:C:H42	1:2:2698:G:N2	2.02	0.55
1:2:1654:A:H4'	1:2:2690:A:O2'	2.06	0.55
1:2:1859:A:H2'	1:2:1860:A:H8	1.71	0.55
1:2:328:A:H2'	1:2:329:C:C6	2.40	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:566:U:H2'	1:2:567:G:C8	2.42	0.55
1:2:614:G:H22	1:2:634:G:H1	1.54	0.55
1:2:677:G:H4'	1:2:951:G:O3'	2.06	0.55
1:2:789:G:C2'	1:2:790:A:OP2	2.54	0.55
1:2:1683:G:H2'	1:2:1684:G:O4'	2.06	0.55
1:2:1859:A:H2'	1:2:1860:A:C8	2.41	0.55
1:2:2621:G:H1	1:2:2752:C:H42	1.54	0.55
1:2:63:A:N6	1:2:89:A:H61	2.01	0.55
1:2:1279:G:H1'	1:2:1280:U:H5	1.71	0.55
1:2:1464:A:H2'	1:2:1465:G:C8	2.41	0.55
1:2:1537:U:H2'	1:2:1538:A:O4'	2.06	0.55
1:2:1563:U:H2'	1:2:1564:U:C6	2.42	0.55
1:2:1766:U:H2'	1:2:1767:G:O4'	2.07	0.55
1:2:2784:A:H5''	1:2:2865:G:H22	1.72	0.55
1:2:161:U:H2'	1:2:162:C:C6	2.42	0.55
1:2:245:C:H5'	1:2:292:A:H5'	1.87	0.55
1:2:1018:C:H5'	1:2:1019:U:OP2	2.06	0.55
1:2:2208:U:H2'	1:2:2209:G:C8	2.41	0.55
1:2:2271:C:H4'	1:2:2354:G:O4'	2.06	0.55
1:2:2705:A:C2	1:2:2706:U:H2'	2.42	0.55
1:2:44:G:H1	1:2:445:A:N6	2.04	0.55
1:2:77:C:H42	1:2:106:G:H1	1.52	0.55
1:2:658:G:H2'	1:2:659:G:H8	1.71	0.55
1:2:1466:C:O2'	1:2:1467:U:H5'	2.06	0.55
1:2:1532:A:H2'	1:2:1533:G:H8	1.72	0.55
1:2:1727:C:H2'	1:2:1728:A:C8	2.42	0.55
1:2:1817:U:H2'	1:2:1818:G:C8	2.41	0.55
1:2:2077:G:H1	1:2:2179:C:H1'	1.71	0.55
1:2:2092:U:OP1	1:2:2133:G:H4'	2.06	0.55
1:2:2463:G:O2'	1:2:2464:G:H5'	2.07	0.55
1:2:614:G:N2	1:2:634:G:H1	2.05	0.55
1:2:1473:U:H4'	1:2:1474:A:C8	2.42	0.55
1:2:1894:U:H3	1:2:1901:A:N6	2.05	0.55
1:2:2057:U:H2'	1:2:2058:U:C6	2.42	0.55
1:2:218:A:O2'	1:2:219:G:C4'	2.55	0.55
1:2:712:A:H4'	1:2:1651:U:H3	1.71	0.55
1:2:964:A:H2'	1:2:965:G:H8	1.70	0.55
1:2:1175:A:O2'	1:2:1176:U:H5'	2.07	0.55
1:2:2010:G:H1'	1:2:2020:G:H22	1.72	0.55
1:2:2680:U:H3'	1:2:2681:A:H5''	1.89	0.55
1:2:56:C:H2'	1:2:57:G:O4'	2.06	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:468:A:C2'	1:2:469:G:H4'	2.37	0.54
1:2:713:G:H2'	1:2:714:G:O4'	2.07	0.54
1:2:990:A:H2'	1:2:993:C:H42	1.72	0.54
1:2:1066:G:H1'	1:2:1096:A:N1	2.22	0.54
1:2:1772:C:H4'	1:2:1773:C:O5'	2.07	0.54
1:2:1819:U:H4'	1:2:1953:A:O2'	2.07	0.54
1:2:2213:G:H2'	1:2:2214:G:C8	2.41	0.54
1:2:2493:U:H2'	1:2:2494:C:C6	2.42	0.54
1:2:2592:U:O2'	1:2:2593:A:OP1	2.23	0.54
1:2:796:A:C2	1:2:798:G:H1'	2.42	0.54
1:2:952:A:H2'	1:2:953:G:C8	2.43	0.54
1:2:1029:C:C2'	1:2:1030:U:H5''	2.35	0.54
1:2:1865:C:H2'	1:2:1866:G:O4'	2.06	0.54
1:2:2088:U:H2'	1:2:2089:C:C6	2.42	0.54
1:2:26:G:H4'	1:2:1273:G:H4'	1.88	0.54
1:2:113:C:H2'	1:2:114:C:C6	2.42	0.54
1:2:150:A:H2'	1:2:151:G:H5'	1.89	0.54
1:2:1000:G:OP1	1:2:1168:G:H4'	2.08	0.54
1:2:1455:C:H2'	1:2:1456:C:C6	2.42	0.54
1:2:1538:A:H2'	1:2:1539:U:C5	2.42	0.54
1:2:2469:G:H5''	1:2:2470:U:OP1	2.06	0.54
1:2:2691:C:C2'	1:2:2692:A:H5''	2.35	0.54
1:2:216:U:H2'	1:2:217:U:C6	2.42	0.54
1:2:597:U:H2'	1:2:598:U:C6	2.43	0.54
1:2:632:A:H2'	1:2:633:G:H5'	1.89	0.54
1:2:1079:G:H4'	1:2:1081:A:N6	2.22	0.54
1:2:2082:C:N4	1:2:2173:G:H1	1.95	0.54
1:2:2217:G:H3'	1:2:2217:G:N3	2.22	0.54
1:2:2836:U:H2'	1:2:2837:G:H8	1.73	0.54
1:2:726:G:H2'	1:2:727:U:H5'	1.88	0.54
1:2:830:C:O2'	1:2:852:U:H5''	2.08	0.54
1:2:1218:C:H2'	1:2:1219:C:C6	2.43	0.54
1:2:1975:G:C1'	1:2:1977:C:H41	2.20	0.54
1:2:2085:G:O2'	1:2:2086:U:H5'	2.07	0.54
1:2:2548:G:H2'	1:2:2549:G:C5'	2.38	0.54
1:2:2548:G:H2'	1:2:2549:G:H5'	1.89	0.54
1:2:2667:C:H42	1:2:2699:G:H3'	1.72	0.54
1:2:2841:U:H1'	1:2:2843:A:H1'	1.89	0.54
1:2:439:C:H2'	1:2:440:U:O4'	2.07	0.54
1:2:1259:A:O2'	1:2:1260:A:H5'	2.07	0.54
1:2:1399:C:H2'	1:2:1400:A:C8	2.42	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1707:A:H2'	1:2:1708:C:O4'	2.07	0.54
1:2:2166:G:O2'	1:2:2167:A:H5'	2.07	0.54
1:2:2555:G:H3'	1:2:2555:G:N3	2.22	0.54
1:2:190:A:H2'	1:2:191:G:C8	2.43	0.54
1:2:617:U:H2'	1:2:618:A:H8	1.72	0.54
1:2:857:U:H2'	1:2:858:G:O4'	2.08	0.54
1:2:1007:A:H2'	1:2:1008:G:H8	1.72	0.54
1:2:1529:C:H2'	1:2:1530:U:O4'	2.08	0.54
1:2:1791:C:H1'	1:2:1793:A:O4'	2.07	0.54
1:2:2869:U:H2'	1:2:2870:C:C6	2.43	0.54
1:2:27:G:H1'	1:2:523:A:N6	2.21	0.54
1:2:104:C:H2'	1:2:105:G:C5'	2.37	0.54
1:2:203:G:H5'	1:2:234:C:H4'	1.89	0.54
1:2:671:A:H2'	1:2:672:C:C6	2.42	0.54
1:2:827:C:H2'	1:2:828:C:C6	2.43	0.54
1:2:1764:A:N7	1:2:1821:A:H1'	2.22	0.54
1:2:1980:A:H2'	1:2:1981:A:H8	1.71	0.54
1:2:890:U:O5'	1:2:891:A:H5''	2.08	0.54
1:2:1038:U:H2'	1:2:1039:A:O4'	2.08	0.54
1:2:1132:C:H2'	1:2:1133:G:H8	1.73	0.54
1:2:1141:U:O2'	1:2:1142:G:OP1	2.20	0.54
1:2:1313:U:O2'	1:2:1314:A:P	2.66	0.54
1:2:1355:A:C1'	1:2:1410:U:H1'	2.38	0.54
1:2:2496:C:N4	1:2:2546:G:H22	2.06	0.54
1:2:2579:A:O2'	1:2:2580:C:H5'	2.07	0.54
1:2:323:G:OP2	1:2:343:A:H5'	2.08	0.54
1:2:677:G:O2'	1:2:678:G:H5'	2.08	0.54
1:2:1376:C:O2'	1:2:1800:A:H1'	2.07	0.54
1:2:1684:G:N2	1:2:1977:C:H42	2.06	0.54
1:2:192:G:C1'	1:2:193:A:H4'	2.38	0.53
1:2:564:U:H2'	1:2:565:A:H8	1.73	0.53
1:2:931:G:H2'	1:2:932:G:O4'	2.08	0.53
1:2:1106:A:H2'	1:2:1107:A:H8	1.74	0.53
1:2:1572:C:C3'	1:2:1573:G:H5''	2.37	0.53
1:2:1787:U:H2'	1:2:1788:C:C6	2.43	0.53
1:2:1981:A:H4'	1:2:2704:U:H4'	1.89	0.53
1:2:2083:G:H2'	1:2:2084:G:H8	1.73	0.53
1:2:158:A:H2'	1:2:159:A:O4'	2.08	0.53
1:2:218:A:H5'	1:2:220:U:H1'	1.90	0.53
1:2:484:G:O2'	1:2:485:G:H5'	2.09	0.53
1:2:1189:G:H2'	1:2:1190:C:C6	2.44	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:2362:G:H2'	1:2:2363:G:O4'	2.08	0.53
1:2:31:C:H2'	1:2:32:C:C6	2.43	0.53
1:2:57:G:N2	1:2:69:G:N3	2.56	0.53
1:2:241:C:C2'	1:2:242:A:H5''	2.38	0.53
1:2:322:A:N1	1:2:341:A:OP2	2.41	0.53
1:2:533:C:H2'	1:2:534:U:O4'	2.09	0.53
1:2:790:A:H2'	1:2:791:G:C8	2.42	0.53
1:2:920:G:H2'	1:2:921:A:H5''	1.90	0.53
1:2:953:G:H2'	1:2:954:U:O4'	2.08	0.53
1:2:1245:G:H2'	1:2:1246:G:H8	1.73	0.53
1:2:1665:C:H2'	1:2:1666:G:C8	2.43	0.53
1:2:1685:A:H4'	1:2:1686:A:H5'	1.90	0.53
1:2:1713:G:H2'	1:2:1714:A:O4'	2.09	0.53
1:2:1755:G:H2'	1:2:1756:C:C6	2.44	0.53
1:2:2419:C:N3	1:2:2420:C:H1'	2.24	0.53
1:2:534:U:H4'	1:2:564:U:H4'	1.90	0.53
1:2:1626:A:O2'	1:2:1627:C:OP1	2.25	0.53
1:2:1645:U:H2'	1:2:1646:G:C8	2.43	0.53
1:2:2312:A:N3	1:2:2314:A:N6	2.56	0.53
1:2:2389:G:H2'	1:2:2390:A:O5'	2.09	0.53
1:2:2459:C:C2'	1:2:2460:G:H5'	2.38	0.53
1:2:242:A:O2'	1:2:243:G:O4'	2.24	0.53
1:2:695:G:H2'	1:2:696:U:C6	2.43	0.53
1:2:754:G:H2'	1:2:755:C:C6	2.44	0.53
1:2:1565:G:H2'	1:2:1566:G:C8	2.43	0.53
1:2:2441:U:H2'	1:2:2442:C:C6	2.44	0.53
1:2:547:U:H2'	1:2:548:G:H8	1.73	0.53
1:2:617:U:H2'	1:2:618:A:C8	2.44	0.53
1:2:777:A:N6	1:2:1767:G:H1'	2.23	0.53
1:2:889:C:H2'	1:2:890:U:H6	1.72	0.53
1:2:1687:C:O2'	1:2:1977:C:H4'	2.08	0.53
1:2:2170:C:C2'	1:2:2171:U:H5'	2.39	0.53
1:2:2674:C:H2'	1:2:2675:U:C6	2.44	0.53
1:2:242:A:O2'	1:2:243:G:P	2.66	0.53
1:2:364:G:H2'	1:2:365:U:C5	2.43	0.53
1:2:574:C:H2'	1:2:575:U:C6	2.44	0.53
1:2:981:C:H2'	1:2:982:C:C6	2.43	0.53
1:2:1654:A:H2'	1:2:1655:C:C6	2.44	0.53
1:2:2080:U:H2'	1:2:2081:U:C6	2.44	0.53
1:2:2793:G:H2'	1:2:2794:G:H8	1.74	0.53
1:2:26:G:H2'	1:2:27:G:O4'	2.08	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:329:C:O2'	1:2:330:C:H5'	2.09	0.53
1:2:877:G:H2'	1:2:878:C:C6	2.44	0.53
1:2:981:C:H2'	1:2:982:C:H6	1.74	0.53
1:2:1223:G:H22	1:2:1249:G:H2'	1.74	0.53
1:2:1261:G:OP1	1:2:1261:G:C8	2.62	0.53
1:2:1312:G:H5''	1:2:1313:U:C5'	2.36	0.53
1:2:2352:A:H2'	1:2:2353:G:C8	2.43	0.53
1:2:127:C:H5''	1:2:1615:C:O2'	2.08	0.53
1:2:681:A:H2'	1:2:683:A:N7	2.24	0.53
1:2:738:G:H2'	1:2:739:G:O4'	2.08	0.53
1:2:1354:A:O2'	1:2:1355:A:OP1	2.19	0.53
1:2:1651:U:H5''	1:2:1652:G:OP1	2.09	0.53
1:2:1685:A:O2'	1:2:1686:A:H3'	2.09	0.53
1:2:1806:G:P	1:2:1807:A:H5''	2.49	0.53
1:2:1967:U:H2'	1:2:1968:G:H8	1.73	0.53
1:2:2791:C:H2'	1:2:2792:C:C6	2.44	0.53
1:2:579:G:H2'	1:2:2013:A:C5	2.44	0.53
1:2:650:U:H3	1:2:659:G:H1	1.56	0.53
1:2:868:U:H2'	1:2:869:C:C6	2.44	0.53
1:2:1235:C:O2'	1:2:1236:G:H5'	2.09	0.53
1:2:1880:G:H2'	1:2:1881:U:C6	2.44	0.53
1:2:2745:A:H3'	1:2:2745:A:N3	2.24	0.53
1:2:2827:G:H2'	1:2:2828:C:O4'	2.08	0.53
1:2:59:G:H2'	1:2:62:U:O4	2.08	0.52
1:2:776:G:H3'	1:2:776:G:N3	2.23	0.52
1:2:841:G:N2	1:2:2226:A:H4'	2.24	0.52
1:2:1303:U:H2'	1:2:1304:U:C6	2.44	0.52
1:2:1606:C:H2'	1:2:1607:A:C8	2.43	0.52
1:2:2449:G:H2'	1:2:2450:A:H8	1.73	0.52
1:2:2686:C:H2'	1:2:2687:G:H8	1.74	0.52
1:2:333:A:O2'	1:2:350:U:H2'	2.09	0.52
1:2:1100:G:HO2'	1:2:1101:U:H5	1.56	0.52
1:2:1685:A:C6	1:2:1691:G:H1'	2.44	0.52
1:2:1804:U:H2'	1:2:1805:G:C8	2.43	0.52
1:2:1850:G:H22	1:2:1867:A:C1'	2.22	0.52
1:2:1917:C:H2'	1:2:1918:G:C8	2.44	0.52
1:2:2466:G:H2'	1:2:2467:A:C8	2.44	0.52
1:2:2558:C:O2'	1:2:2559:U:H5'	2.09	0.52
1:2:2759:U:H4'	1:2:2761:A:C5	2.43	0.52
1:2:1407:G:H2'	1:2:1408:A:O4'	2.09	0.52
1:2:1883:A:H2	1:2:1953:A:H62	1.57	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:37:C:H2'	1:2:38:G:C8	2.45	0.52
1:2:163:A:H2'	1:2:164:G:H8	1.75	0.52
1:2:1639:U:H2'	1:2:1640:C:C6	2.44	0.52
1:2:2103:G:H2'	1:2:2103:G:N3	2.23	0.52
1:2:1665:C:H2'	1:2:1666:G:H8	1.74	0.52
1:2:1842:G:H1	1:2:1875:C:N4	2.07	0.52
1:2:2237:C:C4	1:2:2405:A:H4'	2.44	0.52
1:2:2422:C:OP1	2:2:2881:RAP:C40	2.56	0.52
1:2:2858:A:H3'	1:2:2859:U:H5'	1.90	0.52
1:2:181:A:H4'	1:2:182:G:C4'	2.34	0.52
1:2:817:A:H2'	1:2:819:C:N4	2.23	0.52
1:2:1273:G:H2'	1:2:1274:C:C6	2.45	0.52
1:2:1304:U:H2'	1:2:1305:C:C5'	2.38	0.52
1:2:1402:G:H2'	1:2:1403:U:O4'	2.09	0.52
1:2:1686:A:H2'	1:2:1686:A:N3	2.23	0.52
1:2:2006:G:O5'	1:2:2596:C:H4'	2.09	0.52
1:2:2103:G:H3'	1:2:2104:G:H5'	1.92	0.52
1:2:2194:A:C3'	1:2:2195:C:H5''	2.40	0.52
1:2:2240:C:H1'	1:2:2367:A:H1'	1.92	0.52
1:2:2343:C:H2'	1:2:2344:G:O4'	2.10	0.52
1:2:2425:G:H2'	1:2:2426:G:H4'	1.91	0.52
1:2:35:G:H4'	1:2:466:A:O2'	2.09	0.52
1:2:81:C:H2'	1:2:82:G:O4'	2.09	0.52
1:2:762:A:H5'	1:2:1284:G:H1'	1.91	0.52
1:2:1067:G:O5'	1:2:1068:A:H5'	2.10	0.52
1:2:1621:C:H4'	1:2:1626:A:H62	1.70	0.52
1:2:1984:A:H2'	1:2:1985:G:C8	2.45	0.52
1:2:2422:C:H2'	1:2:2423:G:H8	1.75	0.52
1:2:2828:C:H2'	1:2:2829:A:H8	1.75	0.52
1:2:323:G:H4'	1:2:342:G:C6	2.45	0.52
1:2:964:A:H61	1:2:976:C:N4	2.07	0.52
1:2:1749:G:O6	1:2:2674:C:H4'	2.10	0.52
1:2:2205:C:H2'	1:2:2206:C:O4'	2.10	0.52
1:2:2787:A:O2'	1:2:2788:C:H5'	2.10	0.52
1:2:577:U:H5'	1:2:956:A:H62	1.74	0.52
1:2:986:A:H61	1:2:1000:G:H1'	1.75	0.52
1:2:175:C:N4	1:2:225:G:H1	2.06	0.52
1:2:415:A:O2'	1:2:416:U:H5'	2.10	0.52
1:2:796:A:N3	1:2:798:G:H1'	2.25	0.52
1:2:1274:C:H2'	1:2:1275:A:C8	2.45	0.52
1:2:1327:C:P	1:2:1345:G:H5'	2.50	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1760:G:H2'	1:2:1761:G:H8	1.74	0.52
1:2:575:U:H4'	1:2:822:G:OP2	2.10	0.51
1:2:621:U:H2'	1:2:622:U:C6	2.45	0.51
1:2:990:A:H3'	1:2:991:A:C5'	2.40	0.51
1:2:1092:U:H2'	1:2:1093:U:C6	2.45	0.51
1:2:1145:C:H5'	1:2:1146:G:OP2	2.10	0.51
1:2:1221:C:H2'	1:2:1222:G:H8	1.75	0.51
1:2:1454:U:H2'	1:2:1455:C:C6	2.44	0.51
1:2:1466:C:C2'	1:2:1467:U:H5'	2.40	0.51
1:2:2375:G:H2'	1:2:2376:G:H8	1.75	0.51
1:2:2649:A:H2'	1:2:2650:G:H8	1.76	0.51
1:2:34:U:H6	1:2:466:A:C2	2.28	0.51
1:2:471:A:H2'	1:2:472:C:O4'	2.10	0.51
1:2:540:G:C2'	1:2:541:C:H5'	2.40	0.51
1:2:1278:A:O2'	1:2:1279:G:P	2.68	0.51
1:2:2510:A:H61	1:2:2641:A:N6	2.08	0.51
1:2:2723:C:O2'	1:2:2724:G:H5'	2.11	0.51
1:2:3:U:H2'	1:2:4:C:C6	2.45	0.51
1:2:135:U:H2'	1:2:136:A:C8	2.45	0.51
1:2:336:A:N6	1:2:349:G:H21	2.09	0.51
1:2:367:G:C3'	1:2:368:A:H5''	2.39	0.51
1:2:670:U:H2'	1:2:671:A:C8	2.45	0.51
1:2:1429:A:N6	1:2:1600:U:H4'	2.25	0.51
1:2:1474:A:H3'	1:2:1474:A:N3	2.25	0.51
1:2:1686:A:H2'	1:2:1687:C:H5'	1.91	0.51
1:2:2266:A:H61	1:2:2323:U:H1'	1.75	0.51
1:2:2633:A:C2	1:2:2644:A:H5''	2.44	0.51
1:2:2791:C:H2'	1:2:2792:C:H6	1.75	0.51
1:2:2838:U:H2'	1:2:2839:G:H8	1.76	0.51
1:2:160:C:H42	1:2:190:A:H61	1.59	0.51
1:2:387:A:H2'	1:2:387:A:N3	2.24	0.51
1:2:578:U:H1'	1:2:958:G:O4'	2.10	0.51
1:2:641:G:H4'	1:2:651:C:O2'	2.11	0.51
1:2:1314:A:H5''	1:2:1623:C:N4	2.25	0.51
1:2:1882:G:H21	1:2:1885:C:H42	1.59	0.51
1:2:2212:U:H2'	1:2:2213:G:C8	2.46	0.51
1:2:2228:U:H5''	1:2:2229:G:OP1	2.10	0.51
1:2:2437:G:H2'	1:2:2469:G:H22	1.75	0.51
1:2:2732:C:H3'	1:2:2733:A:H8	1.75	0.51
1:2:19:C:H2'	1:2:20:C:C6	2.46	0.51
1:2:485:G:O2'	1:2:486:U:OP1	2.28	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1136:G:O6	1:2:1137:A:N6	2.44	0.51
1:2:1214:C:H2'	1:2:1215:A:H8	1.74	0.51
1:2:1279:G:C2'	1:2:1280:U:OP2	2.59	0.51
1:2:1380:C:C2'	1:2:1381:G:H5'	2.40	0.51
1:2:2220:A:H2'	1:2:2221:G:C8	2.46	0.51
1:2:2584:U:H2'	1:2:2585:C:C6	2.45	0.51
1:2:2668:U:O2'	1:2:2669:C:P	2.68	0.51
1:2:55:A:H61	1:2:112:U:H3	1.57	0.51
1:2:304:A:H62	1:2:355:G:N2	2.09	0.51
1:2:509:U:H3	1:2:513:A:H62	1.58	0.51
1:2:763:A:H2	1:2:765:C:H4'	1.76	0.51
1:2:787:A:H2'	1:2:788:G:C5	2.45	0.51
1:2:1030:U:H2'	1:2:1031:C:H5'	1.93	0.51
1:2:1699:A:H61	1:2:1723:U:H3	1.59	0.51
1:2:469:G:C2'	1:2:470:U:OP2	2.58	0.51
1:2:564:U:H2'	1:2:565:A:C8	2.45	0.51
1:2:1714:A:H62	1:2:1715:A:H61	1.56	0.51
1:2:2812:A:H2'	1:2:2813:G:C8	2.46	0.51
1:2:55:A:H2'	1:2:56:C:O4'	2.11	0.51
1:2:73:A:O2'	1:2:74:G:O5'	2.28	0.51
1:2:964:A:N6	1:2:976:C:H42	2.09	0.51
1:2:1294:G:H1	1:2:1302:C:N4	2.09	0.51
1:2:1422:C:H2'	1:2:1423:A:C8	2.46	0.51
1:2:1632:A:O2'	1:2:1633:C:OP1	2.27	0.51
1:2:1854:G:N2	1:2:1863:U:H3	2.02	0.51
1:2:2239:C:H2'	1:2:2240:C:C6	2.45	0.51
1:2:2780:A:H2'	1:2:2781:G:C8	2.46	0.51
1:2:132:U:H2'	1:2:133:C:C5	2.45	0.51
1:2:707:U:OP1	1:2:1585:A:H1'	2.11	0.51
1:2:785:U:H2'	1:2:786:U:C6	2.46	0.51
1:2:1026:U:H2'	1:2:1027:C:C6	2.45	0.51
1:2:1505:U:H2'	1:2:1507:A:OP1	2.11	0.51
1:2:1825:C:H2'	1:2:1826:U:O4'	2.11	0.51
1:2:2006:G:P	1:2:2596:C:H4'	2.51	0.51
1:2:2218:G:N2	1:2:2219:U:H1'	2.26	0.51
1:2:2263:C:H2'	1:2:2264:C:O4'	2.11	0.51
1:2:2471:U:H2'	1:2:2472:U:C6	2.46	0.51
1:2:228:A:C5	1:2:229:G:H1'	2.46	0.51
1:2:403:A:H5'	1:2:425:A:H4'	1.91	0.51
1:2:755:C:H2'	1:2:756:C:O4'	2.11	0.51
1:2:788:G:H5'	1:2:790:A:H1'	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1714:A:N6	1:2:1715:A:N6	2.54	0.51
1:2:1843:U:H2'	1:2:1844:C:C6	2.46	0.51
1:2:1849:G:H21	1:2:1868:A:N6	2.08	0.51
1:2:2013:A:C2'	1:2:2014:A:OP2	2.59	0.51
1:2:2070:G:H2'	1:2:2071:G:C8	2.45	0.51
1:2:2225:G:H22	1:2:2237:C:H42	1.58	0.51
1:2:2811:G:H2'	1:2:2812:A:C8	2.46	0.51
1:2:1296:G:H1'	1:2:1342:U:N3	2.24	0.50
1:2:306:G:O2'	1:2:307:C:H5'	2.11	0.50
1:2:543:G:H2'	1:2:544:U:O4'	2.12	0.50
1:2:653:G:H21	1:2:657:A:H61	1.57	0.50
1:2:788:G:H21	1:2:800:U:H2'	1.76	0.50
1:2:933:G:H2'	1:2:934:G:C8	2.47	0.50
1:2:959:C:H2'	1:2:960:U:C6	2.46	0.50
1:2:1293:A:H2'	1:2:1294:G:H8	1.75	0.50
1:2:1342:U:H5'	1:2:1343:C:H5	1.76	0.50
1:2:1430:G:H2'	1:2:1431:U:C6	2.47	0.50
1:2:2395:C:H2'	1:2:2396:C:H5'	1.94	0.50
1:2:490:A:N6	1:2:492:G:N3	2.59	0.50
1:2:580:A:H1'	1:2:582:G:N7	2.26	0.50
1:2:808:C:H2'	1:2:809:C:C6	2.46	0.50
1:2:985:G:H1'	1:2:1001:A:N6	2.26	0.50
1:2:1050:G:H1	1:2:1127:C:H42	1.59	0.50
1:2:1737:G:H2'	1:2:1738:U:C6	2.46	0.50
1:2:1953:A:O4'	1:2:1955:G:H1'	2.11	0.50
1:2:2688:G:H2'	1:2:2689:C:C6	2.46	0.50
1:2:218:A:O2'	1:2:219:G:O4'	2.29	0.50
1:2:1495:G:N2	1:2:1528:C:H42	2.09	0.50
1:2:1677:C:H2'	1:2:1678:G:C8	2.47	0.50
1:2:1980:A:H2'	1:2:1981:A:C8	2.46	0.50
1:2:2313:G:O2'	1:2:2314:A:OP1	2.20	0.50
1:2:2517:C:H2'	1:2:2518:C:H6	1.76	0.50
1:2:368:A:H2'	1:2:369:C:H5'	1.94	0.50
1:2:1033:G:O2'	1:2:1034:U:C6	2.64	0.50
1:2:1144:U:H2'	1:2:1147:G:OP1	2.12	0.50
1:2:1621:C:C4'	1:2:1626:A:N6	2.71	0.50
1:2:1820:G:OP1	1:2:1955:G:H5'	2.11	0.50
1:2:2217:G:H5'	1:2:2218:G:N7	2.25	0.50
1:2:2496:C:O2	1:2:2497:A:N3	2.44	0.50
1:2:2766:U:O2'	1:2:2767:C:H5'	2.12	0.50
1:2:1325:U:C2'	1:2:1326:U:OP2	2.59	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1441:A:H2'	1:2:1441:A:N3	2.27	0.50
1:2:1591:U:H2'	1:2:1592:U:O4'	2.11	0.50
1:2:2173:G:O2'	1:2:2174:G:H5'	2.11	0.50
1:2:45:C:H2'	1:2:46:C:C6	2.46	0.50
1:2:336:A:H2'	1:2:337:G:C8	2.47	0.50
1:2:470:U:H2'	1:2:471:A:C8	2.47	0.50
1:2:615:C:H2'	1:2:616:U:O4'	2.11	0.50
1:2:1510:A:C2'	1:2:1511:A:H5'	2.41	0.50
1:2:2001:G:H2'	1:2:2002:A:C8	2.47	0.50
1:2:181:A:H5''	1:2:182:G:OP1	2.12	0.50
1:2:781:G:H21	1:2:1392:U:H1'	1.77	0.50
1:2:1343:C:H2'	1:2:1344:C:C6	2.46	0.50
1:2:1855:G:O2'	1:2:2389:G:N2	2.44	0.50
1:2:1901:A:H3'	1:2:1901:A:N3	2.27	0.50
1:2:2299:A:H5'	1:2:2300:G:C5	2.46	0.50
1:2:2320:G:H22	1:2:2353:G:H4'	1.77	0.50
1:2:2629:U:H2'	1:2:2630:C:C6	2.47	0.50
1:2:87:G:H2'	1:2:87:G:N3	2.27	0.50
1:2:864:C:H2'	1:2:865:A:C8	2.47	0.50
1:2:918:A:C3'	1:2:919:U:H5''	2.42	0.50
1:2:991:A:N6	1:2:2020:G:H21	2.10	0.50
1:2:1263:G:O2'	1:2:1264:C:P	2.69	0.50
1:2:1314:A:H5''	1:2:1623:C:H42	1.77	0.50
1:2:1408:A:H2	1:2:1411:C:C2	2.29	0.50
1:2:1677:C:H2'	1:2:1678:G:H8	1.76	0.50
1:2:2060:A:P	1:2:2060:A:H3'	2.52	0.50
1:2:2230:G:H2'	1:2:2231:G:C8	2.46	0.50
1:2:2389:G:C2'	1:2:2390:A:O5'	2.60	0.50
1:2:2491:C:H2'	1:2:2492:G:H5''	1.93	0.50
1:2:218:A:H5'	1:2:220:U:C1'	2.41	0.49
1:2:827:C:H2'	1:2:828:C:H6	1.76	0.49
1:2:1790:G:N2	1:2:1811:A:OP2	2.45	0.49
1:2:2038:C:C2'	1:2:2483:U:H4'	2.36	0.49
1:2:2086:U:H2'	1:2:2087:U:C6	2.47	0.49
1:2:2701:A:H1'	1:2:2849:C:H5'	1.94	0.49
1:2:2772:U:H3	1:2:2780:A:H61	1.59	0.49
1:2:864:C:H2'	1:2:865:A:H8	1.77	0.49
1:2:1278:A:H4'	1:2:1279:G:O5'	2.11	0.49
1:2:1308:C:H2'	1:2:1309:G:C8	2.47	0.49
1:2:1663:C:H5'	1:2:1664:G:C5'	2.23	0.49
1:2:1790:G:C2'	1:2:1791:C:OP2	2.60	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:2140:G:H3'	1:2:2140:G:N3	2.27	0.49
1:2:2618:A:H1'	1:2:2758:A:C2	2.45	0.49
1:2:25:U:H2'	1:2:26:G:O4'	2.11	0.49
1:2:174:A:C4'	1:2:2051:U:H2'	2.36	0.49
1:2:541:C:N4	1:2:572:G:H4'	2.28	0.49
1:2:551:A:H2'	1:2:552:C:H6	1.78	0.49
1:2:598:U:H2'	1:2:599:A:C8	2.47	0.49
1:2:692:C:H2'	1:2:693:A:C8	2.47	0.49
1:2:808:C:H2'	1:2:809:C:H6	1.77	0.49
1:2:841:G:H3'	1:2:841:G:N3	2.27	0.49
1:2:1205:G:H2'	1:2:1206:G:C8	2.47	0.49
1:2:1223:G:H1'	1:2:1225:G:N3	2.27	0.49
1:2:1364:C:H2'	1:2:1365:U:C6	2.47	0.49
1:2:1435:G:N2	1:2:1514:C:N3	2.60	0.49
1:2:2399:C:O2'	1:2:2400:G:H5'	2.13	0.49
1:2:2841:U:O2	1:2:2843:A:H1'	2.12	0.49
1:2:10:A:H2'	1:2:11:G:O4'	2.12	0.49
1:2:136:A:H2'	1:2:137:A:H5'	1.94	0.49
1:2:225:G:O5'	1:2:226:C:H5''	2.12	0.49
1:2:1194:U:H2'	1:2:1195:U:H6	1.77	0.49
1:2:1328:C:H2'	1:2:1329:U:C6	2.47	0.49
1:2:1619:A:O5'	1:2:1619:A:N3	2.45	0.49
1:2:2510:A:H61	1:2:2641:A:H61	1.60	0.49
1:2:131:C:H2'	1:2:132:U:C6	2.47	0.49
1:2:134:G:H21	1:2:136:A:P	2.35	0.49
1:2:135:U:H2'	1:2:136:A:H8	1.77	0.49
1:2:198:A:H5''	1:2:199:A:H4'	1.93	0.49
1:2:632:A:H2'	1:2:633:G:C5'	2.42	0.49
1:2:632:A:C2'	1:2:633:G:H5'	2.43	0.49
1:2:839:U:H5''	1:2:2408:G:OP2	2.11	0.49
1:2:978:U:H2'	1:2:979:A:C8	2.48	0.49
1:2:1245:G:H2'	1:2:1246:G:C8	2.48	0.49
1:2:1454:U:H3	1:2:1567:A:H61	1.60	0.49
1:2:1569:A:HO2'	1:2:1570:C:H5	1.60	0.49
1:2:1610:A:H2'	1:2:1611:U:C6	2.47	0.49
1:2:2009:U:H2'	1:2:2010:G:H8	1.78	0.49
1:2:2264:C:H1'	1:2:2363:G:N2	2.27	0.49
1:2:2468:G:H2'	1:2:2469:G:O4'	2.11	0.49
1:2:2638:G:N2	1:2:2640:G:H3'	2.26	0.49
1:2:147:G:C6	1:2:148:C:H1'	2.48	0.49
1:2:197:G:H22	1:2:440:U:H2'	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1196:G:O2'	1:2:1197:U:H5'	2.11	0.49
1:2:2269:G:H4'	1:2:2360:C:O2'	2.13	0.49
1:2:70:A:C2'	1:2:71:A:OP2	2.60	0.49
1:2:130:C:H2'	1:2:131:C:C6	2.48	0.49
1:2:837:U:H2'	1:2:838:A:H8	1.75	0.49
1:2:986:A:N6	1:2:1000:G:H1'	2.27	0.49
1:2:1058:G:H2'	1:2:1121:G:C6	2.47	0.49
1:2:1391:A:O2'	1:2:1392:U:O5'	2.31	0.49
1:2:1495:G:O2'	1:2:1496:G:P	2.71	0.49
1:2:1496:G:N1	1:2:1527:G:N1	2.57	0.49
1:2:1622:G:H5''	1:2:1624:A:O4'	2.13	0.49
1:2:1856:U:H2'	1:2:1857:G:C8	2.47	0.49
1:2:2015:G:O2'	1:2:2016:A:P	2.71	0.49
1:2:2677:U:H2'	1:2:2678:C:C6	2.48	0.49
1:2:485:G:O2'	1:2:486:U:P	2.70	0.49
1:2:1541:G:H22	1:2:1561:A:N6	2.08	0.49
1:2:1915:A:H2'	1:2:1916:G:O4'	2.12	0.49
1:2:1938:U:H3'	1:2:2530:C:O2'	2.12	0.49
1:2:2010:G:N2	1:2:2019:C:N3	2.60	0.49
1:2:2390:A:H2'	1:2:2391:A:C8	2.47	0.49
1:2:2667:C:O2'	1:2:2701:A:N6	2.46	0.49
1:2:88:G:H3'	1:2:89:A:C5'	2.35	0.49
1:2:875:G:H2'	1:2:876:A:O4'	2.13	0.49
1:2:1047:G:H22	1:2:1130:U:H3	1.60	0.49
1:2:1194:U:O2'	1:2:1195:U:P	2.71	0.49
1:2:1214:C:H2'	1:2:1215:A:C8	2.48	0.49
1:2:1257:U:H2'	1:2:1258:G:C8	2.48	0.49
1:2:1312:G:N2	1:2:1657:A:H5'	2.28	0.49
1:2:1332:G:H2'	1:2:1333:G:O4'	2.13	0.49
1:2:1452:U:H5''	1:2:1533:G:H5'	1.95	0.49
1:2:1487:C:H2'	1:2:1488:G:C8	2.46	0.49
1:2:1861:G:O2'	1:2:1862:C:H5'	2.11	0.49
1:2:2708:U:H2'	1:2:2709:C:C6	2.47	0.49
1:2:2811:G:H2'	1:2:2812:A:H8	1.78	0.49
1:2:363:G:H2'	1:2:363:G:N3	2.28	0.49
1:2:719:A:H2'	1:2:720:A:O4'	2.13	0.49
1:2:762:A:H2'	1:2:763:A:H8	1.77	0.49
1:2:991:A:H61	1:2:2020:G:H21	1.60	0.49
1:2:1286:U:H4'	1:2:1288:A:P	2.53	0.49
1:2:2009:U:H2'	1:2:2010:G:C8	2.47	0.49
1:2:170:U:H2'	1:2:171:G:C8	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:706:A:H4'	1:2:1366:A:O2'	2.14	0.48
1:2:853:C:H2'	1:2:854:G:C8	2.48	0.48
1:2:1680:U:O2'	1:2:2665:G:H4'	2.12	0.48
1:2:1686:A:C2	1:2:1977:C:H1'	2.48	0.48
1:2:1923:U:O2'	1:2:1924:C:H5	1.95	0.48
1:2:1993:G:H2'	1:2:1994:U:C6	2.48	0.48
1:2:2204:A:H4'	1:2:2205:C:H6	1.78	0.48
1:2:2571:G:H2'	1:2:2572:U:O4'	2.12	0.48
1:2:688:A:N6	1:2:816:U:N3	2.61	0.48
1:2:1681:A:N3	1:2:1681:A:H2'	2.28	0.48
1:2:1694:A:H2'	1:2:1695:U:H6	1.78	0.48
1:2:1849:G:H2'	1:2:1850:G:C8	2.48	0.48
1:2:2184:C:C2'	1:2:2185:U:H5'	2.43	0.48
1:2:2225:G:N1	1:2:2405:A:H1'	2.29	0.48
1:2:2358:C:H2'	1:2:2359:U:C6	2.49	0.48
1:2:2417:U:O3'	1:2:2419:C:OP1	2.30	0.48
1:2:2638:G:C2	1:2:2640:G:H5''	2.48	0.48
1:2:427:C:H4'	1:2:1862:C:O2	2.12	0.48
1:2:525:A:H2'	1:2:525:A:N3	2.28	0.48
1:2:720:A:H2'	1:2:721:C:C6	2.48	0.48
1:2:1270:C:H2'	1:2:1271:C:C6	2.48	0.48
1:2:2783:U:H2'	1:2:2784:A:O4'	2.13	0.48
1:2:550:C:H2'	1:2:551:A:C8	2.48	0.48
1:2:726:G:C2'	1:2:727:U:H5'	2.43	0.48
1:2:1100:G:O2'	1:2:1101:U:H5	1.95	0.48
1:2:1143:A:H2'	1:2:1144:U:C6	2.49	0.48
1:2:1333:G:H22	1:2:1346:C:N4	2.08	0.48
1:2:1790:G:O2'	1:2:1791:C:P	2.71	0.48
1:2:121:G:O2'	1:2:122:G:H5'	2.13	0.48
1:2:1160:C:H2'	1:2:1161:U:C6	2.48	0.48
1:2:1358:C:H1'	1:2:1409:U:H3	1.78	0.48
1:2:1533:G:H2'	1:2:1534:A:H8	1.78	0.48
1:2:2828:C:H2'	1:2:2829:A:C8	2.48	0.48
1:2:74:G:H22	1:2:110:U:H3	1.62	0.48
1:2:1455:C:H2'	1:2:1456:C:H6	1.79	0.48
1:2:1549:C:C2'	1:2:1550:C:H5'	2.37	0.48
1:2:1672:A:C2	1:2:2032:G:H5''	2.48	0.48
1:2:1948:C:H2'	1:2:1949:A:N7	2.28	0.48
1:2:2786:G:H2'	1:2:2787:A:C8	2.49	0.48
1:2:1:G:H2'	1:2:2:G:C8	2.49	0.48
1:2:508:G:H22	1:2:516:G:H1	1.61	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:608:G:H2'	1:2:609:U:C6	2.48	0.48
1:2:616:U:H2'	1:2:617:U:C5'	2.41	0.48
1:2:1257:U:H2'	1:2:1258:G:H8	1.77	0.48
1:2:1322:G:N2	1:2:1627:C:H5'	2.26	0.48
1:2:1326:U:O3'	1:2:1345:G:H5'	2.13	0.48
1:2:1655:C:H5''	1:2:2689:C:O2'	2.12	0.48
1:2:2627:G:H2'	1:2:2628:C:O4'	2.13	0.48
1:2:2793:G:H2'	1:2:2794:G:C8	2.48	0.48
1:2:648:A:H4'	1:2:649:G:O4'	2.13	0.48
1:2:704:G:H2'	1:2:705:C:C6	2.49	0.48
1:2:964:A:H2'	1:2:965:G:C8	2.48	0.48
1:2:1251:G:H2'	1:2:1252:C:O4'	2.14	0.48
1:2:1252:C:H2'	1:2:1253:C:H5''	1.96	0.48
1:2:1386:A:H2'	1:2:1387:G:O4'	2.14	0.48
1:2:1490:U:H3'	1:2:1490:U:OP1	2.13	0.48
1:2:2228:U:H4'	1:2:2254:C:N4	2.29	0.48
1:2:2459:C:H2'	1:2:2460:G:H5'	1.94	0.48
1:2:2560:G:H2'	1:2:2560:G:N3	2.28	0.48
1:2:2838:U:H2'	1:2:2839:G:C8	2.48	0.48
1:2:139:A:H2'	1:2:140:G:C8	2.48	0.48
1:2:333:A:H1'	1:2:351:A:C8	2.48	0.48
1:2:534:U:H2'	1:2:535:U:C6	2.49	0.48
1:2:852:U:H2'	1:2:853:C:C6	2.48	0.48
1:2:1728:A:H2'	1:2:1729:C:C6	2.49	0.48
1:2:1785:A:H2'	1:2:1786:C:C6	2.49	0.48
1:2:1828:C:H42	1:2:1887:G:H1	1.60	0.48
1:2:1917:C:H2'	1:2:1918:G:H8	1.78	0.48
1:2:2225:G:O2'	1:2:2226:A:H5'	2.13	0.48
1:2:37:C:H4'	1:2:463:C:OP1	2.14	0.48
1:2:121:G:H1	1:2:126:C:N4	2.12	0.48
1:2:128:C:C2'	1:2:129:A:H5''	2.44	0.48
1:2:516:G:O2'	1:2:517:A:O4'	2.31	0.48
1:2:532:A:H2'	1:2:533:C:C6	2.49	0.48
1:2:592:G:H2'	1:2:593:C:C6	2.49	0.48
1:2:1196:G:H2'	1:2:1197:U:O4'	2.14	0.48
1:2:1308:C:H2'	1:2:1309:G:H8	1.77	0.48
1:2:1743:C:H2'	1:2:1744:G:C8	2.48	0.48
1:2:2048:C:H2'	1:2:2049:C:H6	1.79	0.48
1:2:2265:A:OP1	1:2:2266:A:H5'	2.14	0.48
1:2:2312:A:H1'	1:2:2314:A:C5	2.49	0.48
1:2:2476:A:O2'	1:2:2477:C:C6	2.63	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:24:G:N2	1:2:526:C:O2	2.46	0.47
1:2:429:C:H2'	1:2:430:C:C6	2.48	0.47
1:2:637:G:H5'	1:2:668:A:O2'	2.13	0.47
1:2:811:G:H2'	1:2:812:G:C8	2.49	0.47
1:2:1168:G:H2'	1:2:1169:C:C6	2.48	0.47
1:2:1283:C:H4'	1:2:1284:G:C8	2.49	0.47
1:2:1460:G:O2'	1:2:1461:C:H5'	2.14	0.47
1:2:1699:A:H2'	1:2:1700:C:C6	2.49	0.47
1:2:1926:U:O2'	1:2:1927:U:O5'	2.30	0.47
1:2:1949:A:H1'	1:2:2572:U:H5'	1.95	0.47
1:2:2491:C:C2'	1:2:2492:G:H5''	2.44	0.47
1:2:2559:U:O2'	1:2:2560:G:H5'	2.14	0.47
1:2:2641:A:H2'	1:2:2642:G:O4'	2.14	0.47
1:2:246:C:C2	1:2:373:A:H4'	2.49	0.47
1:2:581:A:C2	1:2:582:G:H1'	2.49	0.47
1:2:618:A:H2'	1:2:619:A:H5'	1.95	0.47
1:2:631:G:H4'	1:2:632:A:C2	2.50	0.47
1:2:990:A:H3'	1:2:991:A:H5''	1.95	0.47
1:2:1446:U:H3	1:2:1577:G:H1	1.60	0.47
1:2:1500:U:H2'	1:2:1501:C:C6	2.49	0.47
1:2:1768:U:H2'	1:2:1769:U:C6	2.49	0.47
1:2:1939:U:H1'	1:2:2531:U:OP1	2.14	0.47
1:2:2054:A:H2'	1:2:2055:G:H8	1.78	0.47
1:2:2083:G:H2'	1:2:2084:G:C8	2.49	0.47
1:2:2122:G:N3	1:2:2122:G:C2'	2.75	0.47
1:2:2422:C:H2'	1:2:2423:G:C8	2.50	0.47
1:2:2618:A:C2	1:2:2619:G:H1'	2.49	0.47
1:2:2621:G:H2'	1:2:2622:G:C8	2.47	0.47
1:2:2790:C:H2'	1:2:2791:C:C6	2.48	0.47
1:2:2:G:H2'	1:2:3:U:C6	2.50	0.47
1:2:247:A:C8	1:2:373:A:H5'	2.49	0.47
1:2:367:G:H3'	1:2:368:A:H5''	1.95	0.47
1:2:571:U:H2'	1:2:581:A:H1'	1.95	0.47
1:2:777:A:N6	1:2:1766:U:N3	2.61	0.47
1:2:804:C:O2	1:2:806:A:O2'	2.33	0.47
1:2:1438:G:H2'	1:2:1439:G:C5'	2.34	0.47
1:2:1498:G:O2'	1:2:1499:A:H5'	2.14	0.47
1:2:1625:A:N3	1:2:1632:A:O4'	2.47	0.47
1:2:1685:A:C2'	1:2:1686:A:OP2	2.62	0.47
1:2:1888:C:H2'	1:2:1913:G:C6	2.50	0.47
1:2:2324:G:O2'	1:2:2325:A:P	2.72	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:2484:G:O2'	1:2:2485:U:H5'	2.14	0.47
1:2:2712:G:H5'	1:2:2713:A:C8	2.49	0.47
1:2:118:U:H1'	1:2:143:A:N9	2.29	0.47
1:2:465:C:H4'	1:2:468:A:N6	2.29	0.47
1:2:696:U:H2'	1:2:697:G:C8	2.49	0.47
1:2:1030:U:O2'	1:2:1031:C:H5'	2.14	0.47
1:2:1355:A:O2'	1:2:1356:G:P	2.71	0.47
1:2:2552:C:OP1	1:2:2553:G:H5''	2.15	0.47
1:2:2563:U:O2'	1:2:2564:U:H5'	2.14	0.47
1:2:2633:A:H2	1:2:2644:A:H5''	1.78	0.47
1:2:28:A:N6	1:2:522:G:H1'	2.29	0.47
1:2:40:U:H2'	1:2:41:G:C8	2.49	0.47
1:2:73:A:O2'	1:2:74:G:P	2.72	0.47
1:2:736:G:H2'	1:2:737:C:O4'	2.14	0.47
1:2:1205:G:H2'	1:2:1206:G:H8	1.78	0.47
1:2:1471:G:O2'	1:2:1472:C:H5'	2.15	0.47
1:2:1722:G:H2'	1:2:1723:U:C6	2.49	0.47
1:2:1846:A:H2'	1:2:1847:G:O4'	2.15	0.47
1:2:2245:A:H4'	1:2:2246:A:O5'	2.15	0.47
1:2:2262:C:C5	1:2:2368:G:H2'	2.50	0.47
1:2:2769:C:H2'	1:2:2770:A:H5'	1.95	0.47
1:2:544:U:H2'	1:2:545:C:C6	2.49	0.47
1:2:725:C:H2'	1:2:726:G:C8	2.50	0.47
1:2:1004:A:H2'	1:2:1005:U:H5''	1.96	0.47
1:2:1349:A:H2'	1:2:1350:G:C8	2.49	0.47
1:2:1357:U:HO2'	1:2:1397:A:H2'	1.78	0.47
1:2:1776:A:H4'	1:2:1965:U:O2'	2.15	0.47
1:2:1880:G:H2'	1:2:1881:U:H6	1.79	0.47
1:2:2032:G:H2'	1:2:2033:C:C6	2.50	0.47
1:2:2299:A:C1'	1:2:2312:A:H62	2.18	0.47
1:2:181:A:H4'	1:2:182:G:OP1	2.14	0.47
1:2:298:C:H42	1:2:364:G:H1	1.62	0.47
1:2:387:A:H5''	1:2:436:A:C8	2.48	0.47
1:2:643:A:N3	1:2:2382:C:H1'	2.30	0.47
1:2:940:G:C3'	1:2:941:U:H5''	2.26	0.47
1:2:1106:A:H2'	1:2:1107:A:C8	2.49	0.47
1:2:1183:C:N4	1:2:1191:G:N1	2.60	0.47
1:2:1388:C:H2'	1:2:1389:C:C6	2.50	0.47
1:2:1501:C:H2'	1:2:1502:G:O4'	2.14	0.47
1:2:1605:A:O2'	1:2:1606:C:H5'	2.15	0.47
1:2:1609:G:O2'	1:2:1610:A:H5'	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1724:C:H2'	1:2:1725:C:C6	2.50	0.47
1:2:1747:G:H1'	1:2:1749:G:N3	2.30	0.47
1:2:1782:A:H2'	1:2:1783:G:O5'	2.15	0.47
1:2:1783:G:H2'	1:2:1784:C:O4'	2.14	0.47
1:2:1807:A:C2'	1:2:1808:C:H4'	2.41	0.47
1:2:1861:G:H2'	1:2:1862:C:C6	2.50	0.47
1:2:2034:A:N3	1:2:2035:G:N7	2.62	0.47
1:2:2042:A:N3	1:2:2482:A:N6	2.63	0.47
1:2:2230:G:H2'	1:2:2231:G:H8	1.79	0.47
1:2:2270:U:O2'	1:2:2353:G:H1'	2.15	0.47
1:2:2325:A:H4'	1:2:2362:G:O4'	2.15	0.47
1:2:2408:G:OP1	1:2:2408:G:O4'	2.32	0.47
1:2:2520:A:H4'	1:2:2744:A:N1	2.30	0.47
1:2:2616:U:H1'	1:2:2762:G:N2	2.27	0.47
1:2:2680:U:H3'	1:2:2681:A:C5'	2.44	0.47
1:2:2800:C:H2'	1:2:2801:A:O4'	2.15	0.47
1:2:2863:U:H2'	1:2:2864:C:C6	2.49	0.47
1:2:238:G:H4'	1:2:618:A:C2	2.50	0.47
1:2:367:G:C2'	1:2:368:A:H5''	2.44	0.47
1:2:403:A:H4'	1:2:404:A:O5'	2.14	0.47
1:2:1110:G:H2'	1:2:1111:C:C6	2.49	0.47
1:2:1151:U:H5''	1:2:1153:A:P	2.55	0.47
1:2:1314:A:N6	1:2:1316:G:C5	2.83	0.47
1:2:1818:G:H2'	1:2:1819:U:C6	2.50	0.47
1:2:1871:G:N3	1:2:1871:G:H2'	2.28	0.47
1:2:2370:G:C2'	1:2:2371:A:OP2	2.61	0.47
1:2:2786:G:H2'	1:2:2787:A:H8	1.80	0.47
1:2:66:U:H2'	1:2:67:G:H8	1.79	0.47
1:2:198:A:O2'	1:2:199:A:P	2.73	0.47
1:2:298:C:H2'	1:2:299:C:O4'	2.14	0.47
1:2:352:G:C2'	1:2:353:G:H5'	2.45	0.47
1:2:421:G:H2'	1:2:422:C:C6	2.50	0.47
1:2:1039:A:H2'	1:2:1040:A:C8	2.49	0.47
1:2:1246:G:O2'	1:2:1247:U:H5'	2.14	0.47
1:2:1258:G:H2'	1:2:1259:A:C8	2.50	0.47
1:2:1398:G:H2'	1:2:1399:C:O4'	2.15	0.47
1:2:1452:U:H5'	1:2:1532:A:O2'	2.13	0.47
1:2:1944:C:H2'	1:2:1945:C:O4'	2.14	0.47
1:2:1975:G:H1'	1:2:1977:C:C5	2.50	0.47
1:2:2048:C:H2'	1:2:2049:C:C6	2.50	0.47
1:2:2705:A:N6	1:2:2707:G:H1'	2.30	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:2812:A:H2'	1:2:2813:G:H8	1.79	0.47
1:2:39:C:H2'	1:2:40:U:C6	2.49	0.47
1:2:172:A:OP2	1:2:173:A:O2'	2.33	0.47
1:2:328:A:H2'	1:2:329:C:H6	1.80	0.47
1:2:577:U:H5'	1:2:956:A:N6	2.29	0.47
1:2:715:U:H3	1:2:743:A:N6	2.10	0.47
1:2:797:A:C5	1:2:805:G:H1'	2.50	0.47
1:2:840:U:H5'	1:2:841:G:O5'	2.15	0.47
1:2:885:A:H2'	1:2:886:A:C8	2.47	0.47
1:2:1161:U:H2'	1:2:1162:A:H8	1.80	0.47
1:2:1482:U:H2'	1:2:1483:G:H8	1.79	0.47
1:2:2058:U:H1'	1:2:2576:G:N2	2.24	0.47
1:2:2379:G:C2	1:2:2380:U:H1'	2.50	0.47
1:2:2500:C:H2'	1:2:2501:U:C6	2.50	0.47
1:2:93:A:H2'	1:2:94:C:C6	2.50	0.46
1:2:1321:A:H2'	1:2:1322:G:O4'	2.15	0.46
1:2:1416:A:O2'	1:2:1417:C:H5'	2.14	0.46
1:2:1557:G:H2'	1:2:1558:C:C6	2.50	0.46
1:2:1821:A:H3'	1:2:1822:C:C6	2.50	0.46
1:2:2280:A:H2'	1:2:2281:C:C6	2.50	0.46
1:2:2447:G:N2	1:2:2461:G:OP2	2.47	0.46
1:2:2605:C:O2'	1:2:2606:G:H5'	2.15	0.46
1:2:117:A:O5'	1:2:118:U:H5	1.98	0.46
1:2:162:C:H2'	1:2:163:A:H8	1.79	0.46
1:2:356:A:H2'	1:2:357:A:C8	2.50	0.46
1:2:550:C:H2'	1:2:551:A:H8	1.80	0.46
1:2:653:G:H21	1:2:657:A:N6	2.14	0.46
1:2:1086:C:C2'	1:2:1087:C:H5''	2.45	0.46
1:2:1325:U:H2'	1:2:1326:U:OP2	2.15	0.46
1:2:1763:G:H2'	1:2:1764:A:H4'	1.98	0.46
1:2:1811:A:H1'	1:2:1813:A:C5	2.50	0.46
1:2:1821:A:H3'	1:2:1822:C:H6	1.80	0.46
1:2:2817:A:H2'	1:2:2818:G:C8	2.51	0.46
1:2:2844:G:H2'	1:2:2845:C:O4'	2.15	0.46
1:2:310:A:N6	1:2:311:A:N6	2.63	0.46
1:2:632:A:H2'	1:2:633:G:O4'	2.15	0.46
1:2:1087:C:H2'	1:2:1088:A:C8	2.51	0.46
1:2:1326:U:O2'	1:2:1345:G:C4'	2.64	0.46
1:2:2312:A:H1'	1:2:2314:A:C6	2.49	0.46
1:2:2342:U:H2'	1:2:2343:C:C6	2.49	0.46
1:2:2686:C:H2'	1:2:2687:G:C8	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:83:A:O3'	1:2:84:G:O4'	2.33	0.46
1:2:144:U:H2'	1:2:145:C:C6	2.50	0.46
1:2:470:U:H2'	1:2:471:A:H8	1.81	0.46
1:2:714:G:O2'	1:2:715:U:H5'	2.15	0.46
1:2:857:U:C2'	1:2:858:G:H5'	2.46	0.46
1:2:1161:U:H2'	1:2:1162:A:C8	2.50	0.46
1:2:1452:U:C5'	1:2:1533:G:H5'	2.46	0.46
1:2:1686:A:N3	1:2:1686:A:C2'	2.77	0.46
1:2:1820:G:O2'	1:2:1821:A:P	2.74	0.46
1:2:2044:G:C8	1:2:2480:C:O2'	2.68	0.46
1:2:2074:U:H3'	1:2:2075:U:C5'	2.44	0.46
1:2:2340:C:H2'	1:2:2341:G:H5'	1.97	0.46
1:2:2370:G:H2'	1:2:2371:A:OP2	2.15	0.46
1:2:2644:A:H2'	1:2:2645:C:C6	2.51	0.46
1:2:225:G:N3	1:2:2410:U:H4'	2.30	0.46
1:2:577:U:O2'	1:2:579:G:N7	2.47	0.46
1:2:681:A:C2'	1:2:683:A:H62	2.28	0.46
1:2:988:G:O2'	1:2:989:G:H5'	2.16	0.46
1:2:1316:G:H1'	1:2:1658:A:N1	2.31	0.46
1:2:1698:C:H2'	1:2:1753:A:H2'	1.98	0.46
1:2:2406:C:O2'	1:2:2408:G:N2	2.49	0.46
1:2:129:A:N6	1:2:142:U:H3	2.12	0.46
1:2:558:G:H3'	1:2:558:G:OP2	2.15	0.46
1:2:1041:G:O2'	1:2:2445:C:H4'	2.16	0.46
1:2:1223:G:N3	1:2:1225:G:N3	2.63	0.46
1:2:1294:G:N1	1:2:1302:C:N4	2.62	0.46
1:2:1413:U:H2'	1:2:1414:G:H8	1.80	0.46
1:2:1414:G:H2'	1:2:1415:C:O4'	2.16	0.46
1:2:1466:C:H2'	1:2:1467:U:C4'	2.46	0.46
1:2:1541:G:N2	1:2:1562:G:N2	2.64	0.46
1:2:2225:G:N2	1:2:2237:C:H42	2.13	0.46
1:2:2270:U:H2'	1:2:2271:C:C6	2.51	0.46
1:2:2356:A:O2'	1:2:2357:A:H5'	2.16	0.46
1:2:2702:G:H2'	1:2:2703:C:C6	2.51	0.46
1:2:2721:A:H2'	1:2:2722:C:O4'	2.15	0.46
1:2:551:A:H2'	1:2:552:C:C6	2.51	0.46
1:2:643:A:H2'	1:2:644:A:C8	2.51	0.46
1:2:926:C:OP2	1:2:927:C:H5	1.99	0.46
1:2:926:C:H2'	1:2:927:C:H5'	1.97	0.46
1:2:1008:G:H2'	1:2:1009:C:C6	2.50	0.46
1:2:1124:U:H5''	1:2:2730:A:H5'	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1182:U:O2	1:2:1192:A:N1	2.48	0.46
1:2:1302:C:H5''	1:2:1664:G:N2	2.30	0.46
1:2:1621:C:H2'	1:2:1622:G:O4'	2.16	0.46
1:2:1849:G:H21	1:2:1868:A:H62	1.64	0.46
1:2:2526:U:C2	1:2:2545:A:N6	2.83	0.46
1:2:460:U:O2'	1:2:461:A:P	2.73	0.46
1:2:558:G:H2'	1:2:558:G:N3	2.31	0.46
1:2:1602:G:O3'	1:2:1603:A:H8	1.99	0.46
1:2:1685:A:H2'	1:2:1686:A:OP2	2.16	0.46
1:2:1758:C:H2'	1:2:1759:A:C8	2.50	0.46
1:2:1778:U:H4'	1:2:2568:A:H4'	1.97	0.46
1:2:2045:A:C2	2:2:2881:RAP:H41	2.51	0.46
1:2:2096:U:C4	1:2:2104:G:H4'	2.51	0.46
1:2:2697:G:H2'	1:2:2698:G:O4'	2.16	0.46
1:2:2810:A:H4'	1:2:2811:G:H8	1.75	0.46
1:2:216:U:H5''	1:2:601:A:H62	1.79	0.46
1:2:1587:A:H2'	1:2:1588:A:C8	2.51	0.46
1:2:2005:U:H4'	1:2:2017:U:O2	2.16	0.46
1:2:2015:G:O2'	1:2:2016:A:OP1	2.34	0.46
1:2:2274:C:C2'	1:2:2275:U:H5'	2.42	0.46
1:2:2305:C:N3	1:2:2367:A:N6	2.64	0.46
1:2:2370:G:N2	1:2:2403:C:C5	2.84	0.46
1:2:2692:A:OP1	1:2:2692:A:O4'	2.34	0.46
1:2:117:A:O5'	1:2:118:U:C5	2.69	0.46
1:2:319:G:O4'	1:2:511:A:O4'	2.34	0.46
1:2:405:C:H2'	1:2:406:G:C8	2.50	0.46
1:2:781:G:H2'	1:2:782:U:C6	2.51	0.46
1:2:935:C:H2'	1:2:936:A:H8	1.81	0.46
1:2:1033:G:C2'	1:2:1034:U:OP2	2.64	0.46
1:2:1166:A:C2'	1:2:1167:A:H5''	2.45	0.46
1:2:1347:C:H2'	1:2:1348:C:C6	2.51	0.46
1:2:1375:C:H42	1:2:1382:G:H1	1.64	0.46
1:2:1462:C:O2'	1:2:1560:A:H1'	2.15	0.46
1:2:1468:A:H2'	1:2:1468:A:N3	2.30	0.46
1:2:1985:G:H2'	1:2:1986:G:H8	1.80	0.46
1:2:2215:C:H2'	1:2:2216:G:O4'	2.16	0.46
1:2:2522:G:H2'	1:2:2523:G:C8	2.52	0.46
1:2:2569:A:H2'	1:2:2570:C:C6	2.50	0.46
1:2:2604:G:H2'	1:2:2605:C:O4'	2.15	0.46
1:2:2874:A:H2'	1:2:2875:C:C6	2.51	0.46
1:2:393:U:H2'	1:2:394:U:C6	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1655:C:H2'	1:2:1656:U:O4'	2.15	0.45
1:2:1878:C:H2'	1:2:1879:G:C8	2.51	0.45
1:2:2056:C:O2'	1:2:2057:U:H5'	2.16	0.45
1:2:2058:U:H5'	1:2:2576:G:H1'	1.98	0.45
1:2:2485:U:O2'	1:2:2486:C:H5'	2.16	0.45
1:2:2495:G:H2'	1:2:2496:C:C6	2.51	0.45
1:2:2819:G:H2'	1:2:2820:C:O4'	2.15	0.45
1:2:198:A:H4'	1:2:199:A:O4'	2.15	0.45
1:2:567:G:H2'	1:2:568:G:C8	2.50	0.45
1:2:612:G:O3'	1:2:613:A:H4'	2.16	0.45
1:2:618:A:C2'	1:2:619:A:H5'	2.46	0.45
1:2:658:G:H2'	1:2:659:G:C8	2.50	0.45
1:2:757:U:H5''	1:2:1675:C:H5''	1.97	0.45
1:2:1280:U:H3	1:2:1996:A:H62	1.63	0.45
1:2:1456:C:H42	1:2:1565:G:H22	1.65	0.45
1:2:1775:A:HO2'	1:2:1776:A:P	2.34	0.45
1:2:1939:U:H2'	1:2:1940:C:O4'	2.16	0.45
1:2:2805:G:H2'	1:2:2806:G:O4'	2.15	0.45
1:2:215:G:H2'	1:2:216:U:O4'	2.16	0.45
1:2:403:A:OP1	1:2:404:A:OP1	2.35	0.45
1:2:1437:A:H2'	1:2:1438:G:H5'	1.97	0.45
1:2:1782:A:OP2	1:2:1820:G:N2	2.49	0.45
1:2:1962:C:O2'	1:2:1963:G:H5'	2.16	0.45
1:2:2013:A:N3	1:2:2478:C:H4'	2.31	0.45
1:2:2289:A:H2'	1:2:2290:A:H5'	1.99	0.45
1:2:2342:U:H2'	1:2:2343:C:H6	1.80	0.45
1:2:2524:G:O2'	1:2:2525:U:H5'	2.16	0.45
1:2:2633:A:N6	1:2:2646:C:N4	2.64	0.45
1:2:73:A:H2'	1:2:73:A:N3	2.32	0.45
1:2:690:A:H4'	1:2:2053:G:O2'	2.17	0.45
1:2:697:G:C6	1:2:807:A:N6	2.85	0.45
1:2:787:A:H8	1:2:787:A:O5'	1.99	0.45
1:2:799:C:H2'	1:2:800:U:C6	2.51	0.45
1:2:1210:C:H2'	1:2:1211:G:C8	2.52	0.45
1:2:1294:G:H22	1:2:1299:A:N6	2.13	0.45
1:2:1689:U:H4'	1:2:2532:G:O3'	2.15	0.45
1:2:1820:G:H4'	1:2:1821:A:OP1	2.16	0.45
1:2:1886:G:H2'	1:2:1887:G:C8	2.50	0.45
1:2:2166:G:C2'	1:2:2167:A:H5'	2.46	0.45
1:2:2210:C:H2'	1:2:2211:U:O4'	2.16	0.45
1:2:2438:A:H2'	1:2:2438:A:N3	2.30	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:2449:G:H2'	1:2:2450:A:C8	2.51	0.45
1:2:2459:C:H2'	1:2:2460:G:O4'	2.16	0.45
1:2:44:G:H22	1:2:445:A:H61	1.65	0.45
1:2:300:C:N4	1:2:363:G:N2	2.64	0.45
1:2:473:C:H2'	1:2:474:G:H8	1.82	0.45
1:2:491:A:H2	1:2:509:U:O2	1.99	0.45
1:2:931:G:O2'	1:2:932:G:H5'	2.16	0.45
1:2:1043:A:H2'	1:2:1044:U:H5'	1.97	0.45
1:2:1215:A:O2'	1:2:1216:G:H5'	2.16	0.45
1:2:1312:G:O2'	1:2:1314:A:H2	1.99	0.45
1:2:1316:G:H5'	1:2:1659:G:H21	1.81	0.45
1:2:1333:G:N2	1:2:1344:C:N4	2.64	0.45
1:2:1399:C:H2'	1:2:1400:A:H8	1.81	0.45
1:2:1420:A:H2'	1:2:1421:U:C6	2.52	0.45
1:2:1495:G:H2'	1:2:1496:G:C8	2.44	0.45
1:2:1502:G:O2'	1:2:1503:G:H5'	2.17	0.45
1:2:1522:C:H2'	1:2:1523:A:O4'	2.16	0.45
1:2:1569:A:O2'	1:2:1570:C:H5	1.99	0.45
1:2:2036:G:O2'	1:2:2037:A:H5'	2.16	0.45
1:2:2406:C:H4'	1:2:2408:G:C2	2.50	0.45
1:2:2498:U:H5''	1:2:2499:C:OP1	2.17	0.45
1:2:2785:A:H2'	1:2:2786:G:O4'	2.16	0.45
1:2:82:G:O2'	1:2:83:A:H5'	2.16	0.45
1:2:84:G:O2'	1:2:85:C:H5'	2.16	0.45
1:2:89:A:O2'	1:2:90:G:C8	2.69	0.45
1:2:119:G:H2'	1:2:120:G:H8	1.80	0.45
1:2:222:G:H2'	1:2:223:C:C6	2.52	0.45
1:2:1166:A:C3'	1:2:1167:A:H5''	2.46	0.45
1:2:1444:C:H2'	1:2:1445:A:H8	1.78	0.45
1:2:1715:A:O2'	1:2:1717:A:H4'	2.16	0.45
1:2:1975:G:H1'	1:2:1977:C:N4	2.27	0.45
1:2:2019:C:OP2	1:2:2020:G:OP2	2.35	0.45
1:2:2258:G:O2'	1:2:2306:A:H4'	2.17	0.45
1:2:2541:U:O2'	1:2:2542:U:H5'	2.16	0.45
1:2:2633:A:H5'	1:2:2635:U:O4'	2.16	0.45
1:2:2691:C:C5	1:2:2693:U:H5''	2.51	0.45
1:2:192:G:O2'	1:2:193:A:P	2.75	0.45
1:2:657:A:O2'	1:2:658:G:H5'	2.16	0.45
1:2:806:A:O2'	1:2:807:A:H5''	2.17	0.45
1:2:984:A:H1'	1:2:1202:U:C6	2.52	0.45
1:2:1132:C:H2'	1:2:1133:G:C8	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1187:A:H2'	1:2:1188:A:H8	1.82	0.45
1:2:1298:G:N2	1:2:1341:G:H5''	2.31	0.45
1:2:1336:G:C3'	1:2:1337:G:H5''	2.46	0.45
1:2:1764:A:H2'	1:2:1765:C:H5'	1.98	0.45
1:2:1856:U:H5'	1:2:2389:G:N3	2.32	0.45
1:2:2124:C:H2'	1:2:2125:C:C6	2.52	0.45
1:2:2572:U:H2'	1:2:2573:C:C6	2.52	0.45
1:2:2772:U:H3	1:2:2780:A:N6	2.15	0.45
1:2:2782:G:H3'	1:2:2783:U:C5'	2.46	0.45
1:2:70:A:OP1	1:2:111:G:H4'	2.16	0.45
1:2:171:G:H2'	1:2:172:A:O4'	2.17	0.45
1:2:423:G:H1	1:2:430:C:H42	1.64	0.45
1:2:539:A:H2'	1:2:540:G:OP2	2.16	0.45
1:2:558:G:H5''	1:2:559:C:C5	2.52	0.45
1:2:608:G:H2'	1:2:609:U:H6	1.82	0.45
1:2:661:C:H2'	1:2:662:G:C8	2.52	0.45
1:2:676:G:H2'	1:2:677:G:O4'	2.17	0.45
1:2:1470:G:O6	1:2:2684:A:H2	2.00	0.45
1:2:1699:A:H5'	1:2:1753:A:O2'	2.17	0.45
1:2:1899:A:C2'	1:2:1946:U:H1'	2.47	0.45
1:2:2239:C:H2'	1:2:2240:C:H6	1.80	0.45
1:2:2297:G:O2'	1:2:2300:G:N7	2.50	0.45
1:2:2469:G:H4'	1:2:2470:U:C5	2.52	0.45
1:2:2705:A:H2'	1:2:2706:U:O5'	2.17	0.45
1:2:520:C:O5'	1:2:520:C:H6	2.00	0.45
1:2:709:A:O2'	1:2:1639:U:H5''	2.17	0.45
1:2:991:A:H2'	1:2:992:A:O5'	2.17	0.45
1:2:1115:C:O5'	1:2:1115:C:H6	2.00	0.45
1:2:1474:A:H2'	1:2:1475:U:C5'	2.47	0.45
1:2:1773:C:C5	2:2:2881:RAP:H442	2.52	0.45
1:2:1853:C:H2'	1:2:1854:G:C8	2.52	0.45
1:2:1886:G:O2'	1:2:1887:G:H5'	2.16	0.45
1:2:2343:C:O2'	1:2:2344:G:H5'	2.17	0.45
1:2:2488:G:H2'	1:2:2489:C:C6	2.51	0.45
1:2:2605:C:H2'	1:2:2606:G:C8	2.52	0.45
1:2:34:U:H5'	1:2:35:G:OP2	2.17	0.45
1:2:1166:A:H2'	1:2:1167:A:H5''	1.99	0.45
1:2:2326:C:H2'	1:2:2327:U:C6	2.52	0.45
1:2:2355:A:H2'	1:2:2356:A:O4'	2.17	0.45
1:2:2425:G:C2'	1:2:2426:G:H4'	2.47	0.45
1:2:2432:A:H4'	1:2:2551:A:O2'	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:2578:G:H2'	1:2:2579:A:O4'	2.17	0.45
1:2:2667:C:N3	1:2:2700:U:OP2	2.50	0.45
1:2:238:G:H4'	1:2:618:A:N1	2.32	0.44
1:2:391:C:N3	1:2:410:A:N1	2.65	0.44
1:2:781:G:H5'	1:2:1638:G:C5'	2.47	0.44
1:2:997:C:H2'	1:2:998:C:C6	2.52	0.44
1:2:1313:U:H4'	1:2:1314:A:O4'	2.16	0.44
1:2:1821:A:H5''	1:2:1822:C:H5	1.82	0.44
1:2:1856:U:H2'	1:2:1857:G:H8	1.81	0.44
1:2:2206:C:H2'	1:2:2207:G:O4'	2.17	0.44
1:2:2352:A:H2'	1:2:2353:G:H8	1.82	0.44
1:2:2442:C:H2'	1:2:2443:C:H6	1.81	0.44
1:2:2675:U:H2'	1:2:2676:G:H8	1.82	0.44
1:2:2861:A:H2'	1:2:2862:G:C8	2.53	0.44
1:2:689:A:H61	1:2:815:A:H61	1.66	0.44
1:2:1180:A:O2'	1:2:1181:C:H5'	2.17	0.44
1:2:1194:U:O2'	1:2:1195:U:OP1	2.35	0.44
1:2:1281:A:H2'	1:2:1282:A:O4'	2.17	0.44
1:2:2299:A:H5'	1:2:2300:G:C8	2.52	0.44
1:2:574:C:H2'	1:2:575:U:O4'	2.18	0.44
1:2:982:C:H2'	1:2:983:G:O4'	2.17	0.44
1:2:1052:C:H2'	1:2:1053:G:C8	2.52	0.44
1:2:1337:G:H1'	1:2:1632:A:N6	2.32	0.44
1:2:1519:G:O2'	1:2:1520:G:H5'	2.18	0.44
1:2:1790:G:H1'	1:2:1791:C:H5	1.80	0.44
1:2:1819:U:H2'	1:2:1820:G:O4'	2.16	0.44
1:2:2020:G:H2'	1:2:2021:G:C8	2.52	0.44
1:2:2033:C:H2'	1:2:2034:A:O4'	2.17	0.44
1:2:2396:C:O2'	1:2:2397:A:H5'	2.17	0.44
1:2:172:A:H3'	1:2:173:A:H4'	2.00	0.44
1:2:772:G:H2'	1:2:773:G:H8	1.82	0.44
1:2:789:G:O2'	1:2:790:A:OP2	2.31	0.44
1:2:1008:G:H2'	1:2:1009:C:H6	1.83	0.44
1:2:1033:G:H22	1:2:1150:C:H2'	1.81	0.44
1:2:1054:C:H2'	1:2:1055:A:H5'	1.98	0.44
1:2:1196:G:C2'	1:2:1197:U:H5'	2.47	0.44
1:2:1365:U:H1'	1:2:1586:A:C2	2.52	0.44
1:2:1681:A:N1	1:2:2706:U:H1'	2.31	0.44
1:2:1774:A:HO2'	1:2:2586:G:HO2'	1.63	0.44
1:2:2013:A:H2'	1:2:2014:A:OP2	2.18	0.44
1:2:2105:U:H2'	1:2:2106:G:H8	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:2241:U:O2'	1:2:2307:A:H1'	2.18	0.44
1:2:2617:G:N2	1:2:2756:A:O4'	2.49	0.44
1:2:70:A:O2'	1:2:71:A:C5'	2.64	0.44
1:2:115:G:H4'	1:2:124:A:C2	2.52	0.44
1:2:213:C:H2'	1:2:214:C:C6	2.52	0.44
1:2:547:U:H2'	1:2:548:G:C8	2.53	0.44
1:2:665:A:H3'	1:2:666:U:C5'	2.31	0.44
1:2:688:A:H1'	1:2:2423:G:H5'	1.99	0.44
1:2:728:G:H2'	1:2:729:A:H5'	2.00	0.44
1:2:831:G:H5'	1:2:852:U:OP1	2.17	0.44
1:2:1227:A:H5'	1:2:1252:C:H4'	2.00	0.44
1:2:1294:G:H1	1:2:1302:C:H42	1.62	0.44
1:2:1364:C:O2'	1:2:1587:A:H1'	2.18	0.44
1:2:1381:G:O2'	1:2:1382:G:H5'	2.17	0.44
1:2:1476:G:H3'	1:2:1476:G:OP2	2.17	0.44
1:2:1573:G:N7	1:2:1574:A:C6	2.86	0.44
1:2:1865:C:C2'	1:2:1866:G:H5'	2.47	0.44
1:2:2021:G:H2'	1:2:2022:C:C6	2.52	0.44
1:2:2492:G:H2'	1:2:2493:U:O4'	2.17	0.44
1:2:2691:C:H5''	1:2:2694:G:C5'	2.47	0.44
1:2:2713:A:H2'	1:2:2714:A:C8	2.51	0.44
1:2:33:C:H2'	1:2:34:U:O5'	2.18	0.44
1:2:44:G:H2'	1:2:192:G:H2'	2.00	0.44
1:2:164:G:H21	1:2:1378:A:H2	1.66	0.44
1:2:170:U:H5'	1:2:815:A:H2	1.82	0.44
1:2:192:G:O2'	1:2:193:A:C5'	2.65	0.44
1:2:316:C:H2'	1:2:317:U:C6	2.53	0.44
1:2:320:A:N3	1:2:340:G:H2'	2.32	0.44
1:2:525:A:H2	1:2:526:C:C1'	2.31	0.44
1:2:605:G:H2'	1:2:606:A:H8	1.83	0.44
1:2:1357:U:C5'	1:2:1358:C:OP2	2.63	0.44
1:2:1370:U:H2'	1:2:1371:G:O4'	2.18	0.44
1:2:1432:G:O6	1:2:1594:U:H5''	2.18	0.44
1:2:1465:G:O2'	1:2:1466:C:O4'	2.34	0.44
1:2:1501:C:N4	1:2:1519:G:H22	2.11	0.44
1:2:1622:G:H4'	1:2:1624:A:C4	2.52	0.44
1:2:2310:G:H2'	1:2:2311:U:C6	2.52	0.44
1:2:2739:G:H2'	1:2:2740:C:C6	2.52	0.44
1:2:521:U:O3'	1:2:1248:G:H4'	2.18	0.44
1:2:881:U:H2'	1:2:882:C:C6	2.52	0.44
1:2:1323:G:N2	1:2:1326:U:H3	2.16	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1778:U:H2'	1:2:1779:C:C6	2.53	0.44
1:2:1985:G:H2'	1:2:1986:G:C8	2.52	0.44
1:2:2029:G:O2'	1:2:2030:U:H5'	2.17	0.44
1:2:2139:G:N3	1:2:2139:G:C2'	2.80	0.44
1:2:2559:U:C2'	1:2:2560:G:H5'	2.47	0.44
1:2:599:A:H2'	1:2:600:G:C8	2.52	0.44
1:2:841:G:C2	1:2:2226:A:H4'	2.53	0.44
1:2:1033:G:H1'	1:2:1034:U:H5	1.81	0.44
1:2:1345:G:H5''	1:2:1346:C:P	2.57	0.44
1:2:1427:G:C2'	1:2:1428:G:H5'	2.48	0.44
1:2:1443:G:H2'	1:2:1444:C:C6	2.53	0.44
1:2:1452:U:H4'	1:2:1532:A:O3'	2.18	0.44
1:2:1617:G:H2'	1:2:1618:U:C5'	2.35	0.44
1:2:1750:A:H1'	1:2:2690:A:C2	2.52	0.44
1:2:1769:U:H2'	1:2:1770:U:H5''	1.99	0.44
1:2:1972:G:H2'	1:2:1973:C:C6	2.53	0.44
1:2:2252:A:H2'	1:2:2253:A:C8	2.53	0.44
1:2:51:A:N7	1:2:117:A:N6	2.66	0.44
1:2:150:A:C2'	1:2:151:G:H5'	2.48	0.44
1:2:311:A:O4'	1:2:330:C:H4'	2.18	0.44
1:2:460:U:O4	1:2:592:G:H1'	2.18	0.44
1:2:539:A:C2'	1:2:540:G:OP2	2.66	0.44
1:2:540:G:H2'	1:2:541:C:H5'	1.99	0.44
1:2:648:A:H5'	1:2:649:G:O5'	2.18	0.44
1:2:701:U:O5'	1:2:701:U:H6	2.01	0.44
1:2:929:A:H5''	1:2:2247:A:H61	1.83	0.44
1:2:930:A:H2'	1:2:931:G:H5'	1.98	0.44
1:2:1202:U:H2'	1:2:1203:A:H8	1.82	0.44
1:2:1249:G:O2'	1:2:1250:A:O5'	2.35	0.44
1:2:1639:U:H2'	1:2:1640:C:H6	1.83	0.44
1:2:1775:A:H4'	1:2:1776:A:O5'	2.18	0.44
1:2:1878:C:H2'	1:2:1879:G:H8	1.83	0.44
1:2:1922:U:H1'	1:2:2570:C:O2'	2.18	0.44
1:2:2404:A:C4'	1:2:2405:A:O5'	2.58	0.44
1:2:2454:C:H42	1:2:2508:G:H22	1.66	0.44
1:2:2861:A:H2'	1:2:2862:G:H8	1.83	0.44
1:2:604:U:H2'	1:2:605:G:H8	1.81	0.43
1:2:865:A:H2'	1:2:866:U:C6	2.53	0.43
1:2:874:A:H2'	1:2:875:G:O4'	2.18	0.43
1:2:1302:C:H5''	1:2:1664:G:H22	1.81	0.43
1:2:1482:U:H2'	1:2:1483:G:C8	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1502:G:H2'	1:2:1503:G:H8	1.83	0.43
1:2:1632:A:H4'	1:2:1633:C:OP1	2.18	0.43
1:2:1638:G:H2'	1:2:1639:U:C6	2.53	0.43
1:2:1715:A:C3'	1:2:1716:G:H5''	2.47	0.43
1:2:1757:C:H1'	1:2:1970:G:N2	2.33	0.43
1:2:1964:A:H3'	1:2:1965:U:H5'	1.99	0.43
1:2:2201:G:H2'	1:2:2202:G:H8	1.83	0.43
1:2:2225:G:C2	1:2:2405:A:H1'	2.53	0.43
1:2:2301:A:H2'	1:2:2302:G:O4'	2.18	0.43
1:2:2491:C:H2'	1:2:2492:G:C4'	2.48	0.43
1:2:2560:G:H2'	1:2:2561:G:OP2	2.18	0.43
1:2:2586:G:O2'	1:2:2587:G:H5'	2.17	0.43
1:2:2668:U:O2'	1:2:2669:C:O5'	2.34	0.43
1:2:44:G:H22	1:2:445:A:N6	2.15	0.43
1:2:77:C:H42	1:2:106:G:H22	1.66	0.43
1:2:149:A:H2'	1:2:150:A:C8	2.52	0.43
1:2:845:U:H2'	1:2:846:A:C8	2.53	0.43
1:2:1279:G:H2'	1:2:1280:U:OP2	2.17	0.43
1:2:1333:G:C6	1:2:1342:U:H5'	2.54	0.43
1:2:1374:G:N2	1:2:1384:G:H1'	2.33	0.43
1:2:1643:A:H1'	1:2:1657:A:C2	2.53	0.43
1:2:1681:A:N6	1:2:1979:C:H42	2.17	0.43
1:2:1772:C:O2'	2:2:2881:RAP:C50	2.64	0.43
1:2:1927:U:H3'	1:2:1928:G:C5'	2.48	0.43
1:2:2508:G:H5''	1:2:2509:A:H5''	2.00	0.43
1:2:1004:A:H2'	1:2:1005:U:C5'	2.48	0.43
1:2:1750:A:H2'	1:2:1751:A:C8	2.52	0.43
1:2:2134:U:H2'	1:2:2135:C:C6	2.53	0.43
1:2:27:G:H22	1:2:522:G:C2'	2.31	0.43
1:2:109:A:C3'	1:2:110:U:H5''	2.48	0.43
1:2:411:C:H4'	1:2:2072:C:O2'	2.17	0.43
1:2:563:U:H2'	1:2:564:U:C6	2.54	0.43
1:2:707:U:H5''	1:2:1585:A:C4	2.54	0.43
1:2:831:G:O2'	1:2:851:C:H4'	2.18	0.43
1:2:839:U:OP1	1:2:2408:G:OP2	2.37	0.43
1:2:1094:C:H2'	1:2:1095:A:H3'	2.01	0.43
1:2:2315:A:O2'	1:2:2364:C:H5''	2.18	0.43
1:2:27:G:O5'	1:2:27:G:H8	2.01	0.43
1:2:128:C:H2'	1:2:129:A:C5'	2.48	0.43
1:2:353:G:H2'	1:2:354:C:C6	2.54	0.43
1:2:649:G:H2'	1:2:650:U:H6	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:657:A:C2'	1:2:658:G:H5'	2.49	0.43
1:2:813:A:C2'	1:2:814:G:OP2	2.65	0.43
1:2:1326:U:H4'	1:2:1346:C:OP1	2.19	0.43
1:2:1333:G:O6	1:2:1342:U:H5'	2.18	0.43
1:2:1441:A:H4'	1:2:1442:C:C5	2.53	0.43
1:2:1779:C:H2'	1:2:1780:A:O4'	2.18	0.43
1:2:1947:G:H4'	1:2:1948:C:H5	1.79	0.43
1:2:2455:A:H2'	1:2:2455:A:N3	2.33	0.43
1:2:2767:C:H2'	1:2:2768:C:C6	2.53	0.43
1:2:2824:C:C2'	1:2:2825:A:OP2	2.67	0.43
1:2:469:G:H2'	1:2:470:U:OP2	2.18	0.43
1:2:931:G:N2	1:2:2247:A:H3'	2.24	0.43
1:2:1162:A:O2'	1:2:1163:C:H5'	2.18	0.43
1:2:1260:A:HO2'	1:2:1261:G:P	2.42	0.43
1:2:1870:U:O5'	1:2:1870:U:H6	2.01	0.43
1:2:1922:U:O2	1:2:1922:U:H2'	2.19	0.43
1:2:2014:A:N7	1:2:2477:C:O2	2.51	0.43
1:2:2496:C:C5	1:2:2521:A:N6	2.86	0.43
1:2:2547:C:H2'	1:2:2548:G:O4'	2.18	0.43
1:2:2717:G:H1	1:2:2747:C:H42	1.65	0.43
1:2:162:C:O4'	1:2:195:A:H4'	2.17	0.43
1:2:491:A:OP2	1:2:492:G:H5'	2.19	0.43
1:2:526:C:H2'	1:2:527:C:C6	2.54	0.43
1:2:693:A:H2'	1:2:694:G:C8	2.54	0.43
1:2:709:A:H61	1:2:779:U:H3	1.66	0.43
1:2:1496:G:H2'	1:2:1497:C:H5''	2.00	0.43
1:2:1908:C:H2'	1:2:1909:U:C4'	2.37	0.43
1:2:1936:A:H4'	1:2:2539:C:H5'	1.99	0.43
1:2:1981:A:O2'	1:2:1982:C:H5'	2.19	0.43
1:2:2093:G:HO2'	1:2:2094:C:P	2.42	0.43
1:2:2207:G:H2'	1:2:2208:U:O4'	2.18	0.43
1:2:2625:U:H2'	1:2:2626:U:O4'	2.18	0.43
1:2:2676:G:H2'	1:2:2677:U:C6	2.53	0.43
1:2:2688:G:H2'	1:2:2689:C:H6	1.84	0.43
1:2:2713:A:H2'	1:2:2714:A:H8	1.84	0.43
1:2:2795:A:N3	1:2:2795:A:C2'	2.78	0.43
1:2:2822:U:H2'	1:2:2823:G:O4'	2.17	0.43
1:2:108:G:H2'	1:2:109:A:C8	2.54	0.43
1:2:119:G:H2'	1:2:120:G:C8	2.53	0.43
1:2:490:A:O2'	1:2:491:A:C5'	2.67	0.43
1:2:575:U:H4'	1:2:822:G:P	2.59	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:614:G:O2'	1:2:615:C:H5'	2.18	0.43
1:2:657:A:N3	1:2:657:A:H2'	2.34	0.43
1:2:690:A:H2'	1:2:691:C:H6	1.83	0.43
1:2:810:U:H2'	1:2:811:G:O4'	2.18	0.43
1:2:930:A:H3'	1:2:931:G:C8	2.54	0.43
1:2:1514:C:O4'	1:2:1593:C:H5'	2.18	0.43
1:2:2316:G:H8	1:2:2316:G:O5'	2.02	0.43
1:2:2437:G:O2'	1:2:2438:A:C8	2.68	0.43
1:2:2661:G:H2'	1:2:2662:C:H5'	2.00	0.43
1:2:2717:G:H2'	1:2:2718:A:C8	2.53	0.43
1:2:246:C:H2'	1:2:373:A:H5'	2.01	0.43
1:2:323:G:O2'	1:2:324:C:H5'	2.19	0.43
1:2:413:G:C2'	1:2:414:A:H5''	2.48	0.43
1:2:635:C:O2'	1:2:670:U:H5''	2.18	0.43
1:2:973:U:HO2'	1:2:2475:C:HO2'	1.66	0.43
1:2:1125:G:O2'	1:2:1126:A:H5'	2.19	0.43
1:2:1217:U:H2'	1:2:1218:C:C6	2.52	0.43
1:2:1355:A:N3	1:2:1410:U:O4'	2.52	0.43
1:2:1912:G:N3	1:2:1912:G:C3'	2.81	0.43
1:2:2500:C:H4'	1:2:2544:A:C4'	2.49	0.43
1:2:2679:G:H2'	1:2:2680:U:C6	2.53	0.43
1:2:2780:A:H2'	1:2:2781:G:N7	2.34	0.43
1:2:537:C:O5'	1:2:2759:U:O2	2.37	0.43
1:2:757:U:H2'	1:2:758:G:O4'	2.19	0.43
1:2:876:A:H2'	1:2:877:G:C8	2.54	0.43
1:2:947:C:H2'	1:2:948:C:C6	2.54	0.43
1:2:1233:A:C2'	1:2:1234:C:OP1	2.67	0.43
1:2:1379:A:H2'	1:2:1380:C:O4'	2.18	0.43
1:2:1440:G:H3'	1:2:1441:A:C5'	2.47	0.43
1:2:1871:G:N3	1:2:1871:G:C2'	2.81	0.43
1:2:2371:A:N3	1:2:2371:A:C2'	2.80	0.43
1:2:2554:C:H2'	1:2:2557:G:O6	2.19	0.43
1:2:2597:G:H2'	1:2:2598:C:O4'	2.18	0.43
1:2:116:A:OP2	1:2:117:A:H8	2.02	0.42
1:2:403:A:H5''	1:2:404:A:H5'	2.01	0.42
1:2:430:C:H2'	1:2:431:G:C8	2.55	0.42
1:2:595:A:H62	1:2:1264:C:H42	1.65	0.42
1:2:1014:G:O2'	1:2:1015:U:H5'	2.19	0.42
1:2:1233:A:H2'	1:2:1234:C:OP1	2.20	0.42
1:2:1313:U:H4'	1:2:1314:A:O5'	2.18	0.42
1:2:1453:A:H2'	1:2:1454:U:H5'	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1756:C:O2'	1:2:1757:C:H5'	2.19	0.42
1:2:1913:G:H2'	1:2:1914:U:OP2	2.19	0.42
1:2:1976:U:O2'	1:2:1977:C:H5'	2.19	0.42
1:2:2390:A:H2'	1:2:2391:A:H8	1.84	0.42
1:2:2429:A:H5''	1:2:2476:A:C6	2.54	0.42
1:2:2507:U:O2'	1:2:2508:G:H3'	2.19	0.42
1:2:197:G:C2	1:2:440:U:H2'	2.54	0.42
1:2:577:U:O3'	1:2:956:A:N6	2.52	0.42
1:2:761:G:OP1	1:2:2591:C:N4	2.50	0.42
1:2:824:U:H2'	1:2:825:C:H5'	2.01	0.42
1:2:843:G:H1'	1:2:2427:A:C2	2.54	0.42
1:2:867:G:H2'	1:2:868:U:C6	2.55	0.42
1:2:1222:G:H4'	1:2:1225:G:H4'	2.00	0.42
1:2:1407:G:H1	1:2:1411:C:C1'	2.31	0.42
1:2:1479:G:H2'	1:2:1480:G:C8	2.55	0.42
1:2:1747:G:O2'	1:2:1749:G:N3	2.48	0.42
1:2:1973:C:H2'	1:2:1974:U:O4'	2.19	0.42
1:2:2178:U:H2'	1:2:2179:C:H6	1.84	0.42
1:2:2300:G:H3'	1:2:2300:G:N3	2.33	0.42
1:2:2512:A:H2'	1:2:2513:A:O4'	2.18	0.42
1:2:2695:C:H2'	1:2:2696:A:H8	1.83	0.42
1:2:2740:C:O2'	1:2:2741:G:H5'	2.19	0.42
1:2:2830:U:H2'	1:2:2831:A:H8	1.85	0.42
1:2:460:U:C4	1:2:592:G:H1'	2.54	0.42
1:2:460:U:C2'	1:2:461:A:OP1	2.67	0.42
1:2:468:A:H1'	1:2:470:U:C1'	2.48	0.42
1:2:522:G:C2'	1:2:523:A:OP2	2.67	0.42
1:2:597:U:H2'	1:2:598:U:H6	1.84	0.42
1:2:622:U:O2	1:2:626:A:N6	2.50	0.42
1:2:1243:G:H2'	1:2:1244:U:C6	2.54	0.42
1:2:1674:C:H2'	1:2:1675:C:C6	2.54	0.42
1:2:1720:G:H2'	1:2:1721:G:C8	2.54	0.42
1:2:1934:U:H2'	1:2:1936:A:OP2	2.18	0.42
1:2:2076:G:H1'	1:2:2181:A:H61	1.84	0.42
1:2:2493:U:H2'	1:2:2494:C:H6	1.83	0.42
1:2:2657:G:H2'	1:2:2658:A:O4'	2.19	0.42
1:2:2663:U:H3	1:2:2705:A:N6	2.14	0.42
1:2:2691:C:C3'	1:2:2692:A:H5''	2.48	0.42
1:2:2749:A:O2'	1:2:2750:G:H5'	2.19	0.42
1:2:2765:C:H2'	1:2:2766:U:O4'	2.18	0.42
1:2:73:A:H4'	1:2:74:G:C4'	2.50	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:80:A:O2'	1:2:81:C:H5'	2.20	0.42
1:2:2238:G:O4'	1:2:2406:C:H2'	2.19	0.42
1:2:2340:C:C2'	1:2:2341:G:H5'	2.49	0.42
1:2:2446:C:H2'	1:2:2447:G:O4'	2.20	0.42
1:2:2578:G:O2'	1:2:2579:A:H5'	2.20	0.42
1:2:1313:U:O2'	1:2:1314:A:OP2	2.38	0.42
1:2:1708:C:O2'	1:2:1709:U:H5'	2.19	0.42
1:2:1712:G:N3	1:2:1712:G:C3'	2.81	0.42
1:2:1879:G:H2'	1:2:1880:G:O4'	2.20	0.42
1:2:2022:C:H2'	1:2:2023:C:C6	2.54	0.42
1:2:2093:G:H2'	1:2:2094:C:O5'	2.20	0.42
1:2:2514:G:H2'	1:2:2515:G:H8	1.85	0.42
1:2:2522:G:O2'	1:2:2523:G:H5'	2.19	0.42
1:2:2770:A:H5'	1:2:2867:G:H21	1.83	0.42
1:2:313:U:H2'	1:2:314:G:C8	2.54	0.42
1:2:340:G:H5'	1:2:341:A:P	2.59	0.42
1:2:455:A:H4'	1:2:1214:C:O2'	2.20	0.42
1:2:834:A:H3'	1:2:957:G:C8	2.55	0.42
1:2:872:G:O2'	1:2:2247:A:H1'	2.19	0.42
1:2:1029:C:C3'	1:2:1030:U:H5''	2.50	0.42
1:2:2005:U:C2	1:2:2595:C:H1'	2.55	0.42
1:2:2498:U:H4'	1:2:2499:C:OP1	2.17	0.42
1:2:2526:U:H2'	1:2:2527:G:C8	2.54	0.42
1:2:2605:C:H2'	1:2:2606:G:H8	1.83	0.42
1:2:2716:G:H2'	1:2:2717:G:H8	1.84	0.42
1:2:2788:C:O2'	1:2:2789:U:H5'	2.18	0.42
1:2:2823:G:O2'	1:2:2824:C:O4'	2.35	0.42
1:2:34:U:C6	1:2:466:A:C2	3.07	0.42
1:2:68:C:O2'	1:2:69:G:H5'	2.19	0.42
1:2:70:A:H2'	1:2:71:A:OP2	2.20	0.42
1:2:242:A:O2'	1:2:243:G:O5'	2.37	0.42
1:2:433:G:N2	1:2:434:C:H1'	2.34	0.42
1:2:503:G:O2'	1:2:504:G:H5'	2.20	0.42
1:2:605:G:H2'	1:2:606:A:C8	2.55	0.42
1:2:694:G:H2'	1:2:695:G:C8	2.55	0.42
1:2:963:G:O2'	1:2:2246:A:H1'	2.18	0.42
1:2:983:G:OP2	1:2:985:G:N2	2.46	0.42
1:2:1343:C:H2'	1:2:1344:C:H6	1.85	0.42
1:2:1377:G:H21	1:2:1380:C:H5	1.67	0.42
1:2:1408:A:H2	1:2:1411:C:N3	2.18	0.42
1:2:1607:A:H2'	1:2:1608:U:C6	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1784:C:H2'	1:2:1785:A:C8	2.54	0.42
1:2:1956:G:H2'	1:2:1957:C:O4'	2.20	0.42
1:2:2235:G:O2'	1:2:2236:U:H5'	2.19	0.42
1:2:2287:G:N3	1:2:2287:G:C2'	2.80	0.42
1:2:2324:G:O2'	1:2:2325:A:H5''	2.18	0.42
1:2:2435:C:O2'	1:2:2436:U:H5'	2.19	0.42
1:2:2705:A:C2'	1:2:2706:U:O5'	2.66	0.42
1:2:690:A:O2'	1:2:691:C:H5'	2.20	0.42
1:2:838:A:H4'	1:2:2407:G:N7	2.34	0.42
1:2:1033:G:O2'	1:2:1034:U:H6	2.02	0.42
1:2:1545:G:H2'	1:2:1546:C:C6	2.55	0.42
1:2:1720:G:H2'	1:2:1721:G:H8	1.84	0.42
1:2:1773:C:C5	2:2:2881:RAP:C50	3.00	0.42
1:2:1790:G:HO2'	1:2:1791:C:P	2.42	0.42
1:2:1911:A:H2'	1:2:1912:G:H5'	2.02	0.42
1:2:1984:A:H2'	1:2:1985:G:H8	1.83	0.42
1:2:2427:A:OP2	1:2:2478:C:OP1	2.38	0.42
1:2:2467:A:H2'	1:2:2468:G:H8	1.85	0.42
1:2:2524:G:H2'	1:2:2525:U:O4'	2.20	0.42
1:2:2610:G:H4'	1:2:2866:A:H5'	2.02	0.42
1:2:182:G:O2'	1:2:183:U:H5	2.03	0.42
1:2:403:A:H4'	1:2:404:A:H8	1.84	0.42
1:2:446:C:H2'	1:2:447:U:O4'	2.20	0.42
1:2:574:C:O2'	1:2:575:U:H5'	2.20	0.42
1:2:622:U:H3	1:2:627:A:H2	1.68	0.42
1:2:746:G:N2	1:2:747:A:H62	2.18	0.42
1:2:952:A:H1'	1:2:1204:G:O2'	2.20	0.42
1:2:1033:G:O2'	1:2:1034:U:P	2.78	0.42
1:2:1302:C:O2'	1:2:1343:C:H4'	2.19	0.42
1:2:1313:U:O2'	1:2:1314:A:O5'	2.36	0.42
1:2:1417:C:H2'	1:2:1418:C:C6	2.55	0.42
1:2:2007:G:O2'	1:2:2008:C:H5'	2.19	0.42
1:2:2875:C:H2'	1:2:2876:C:O4'	2.20	0.42
1:2:447:U:O2'	1:2:448:C:H6	2.03	0.42
1:2:958:G:H2'	1:2:959:C:C6	2.55	0.42
1:2:973:U:H2'	1:2:974:U:H6	1.85	0.42
1:2:1496:G:H1	1:2:1527:G:N2	2.17	0.42
1:2:1730:G:H2'	1:2:1731:C:O4'	2.20	0.42
1:2:1833:U:H2'	1:2:1834:G:H8	1.83	0.42
1:2:1870:U:N3	1:2:1871:G:N7	2.68	0.42
1:2:2038:C:H4'	1:2:2039:G:H5''	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:2481:G:H5''	1:2:2482:A:H5''	2.01	0.42
1:2:2589:C:O2	1:2:2589:C:C2'	2.65	0.42
1:2:431:G:H2'	1:2:432:C:C6	2.54	0.41
1:2:665:A:C3'	1:2:666:U:H5''	2.30	0.41
1:2:1181:C:C2'	1:2:1182:U:H4'	2.43	0.41
1:2:1341:G:H2'	1:2:1343:C:C4	2.54	0.41
1:2:1436:G:O2'	1:2:1515:U:H1'	2.19	0.41
1:2:1526:U:H2'	1:2:1527:G:O4'	2.20	0.41
1:2:1544:A:H2'	1:2:1545:G:C8	2.55	0.41
1:2:1762:C:H2'	1:2:1763:G:H8	1.82	0.41
1:2:2246:A:H3'	1:2:2246:A:N3	2.35	0.41
1:2:2434:G:H2'	1:2:2435:C:C6	2.55	0.41
1:2:2498:U:C4'	1:2:2499:C:OP1	2.68	0.41
1:2:2770:A:H3'	1:2:2770:A:N3	2.35	0.41
1:2:522:G:H2'	1:2:523:A:OP2	2.19	0.41
1:2:592:G:C6	1:2:593:C:N4	2.88	0.41
1:2:914:C:H2'	1:2:915:C:C5	2.54	0.41
1:2:1325:U:O2'	1:2:1326:U:C6	2.69	0.41
1:2:1442:C:N4	1:2:1585:A:C8	2.88	0.41
1:2:1782:A:C2'	1:2:1783:G:O5'	2.68	0.41
1:2:2039:G:H2'	1:2:2039:G:N3	2.36	0.41
1:2:2228:U:H4'	1:2:2254:C:H41	1.85	0.41
1:2:2293:G:H2'	1:2:2294:U:C6	2.54	0.41
1:2:2396:C:H2'	1:2:2397:A:O4'	2.20	0.41
1:2:2555:G:H5'	1:2:2557:G:N7	2.36	0.41
1:2:2672:U:H2'	1:2:2673:G:C8	2.50	0.41
1:2:2725:C:H2'	1:2:2726:U:C6	2.55	0.41
1:2:236:C:H2'	1:2:237:G:H8	1.84	0.41
1:2:248:A:HO3'	1:2:373:A:P	2.42	0.41
1:2:457:C:C2'	1:2:458:G:H5'	2.50	0.41
1:2:490:A:C6	1:2:492:G:H1'	2.55	0.41
1:2:857:U:H2'	1:2:858:G:H5'	2.02	0.41
1:2:920:G:H2'	1:2:921:A:C5'	2.50	0.41
1:2:935:C:O2'	1:2:936:A:H5'	2.20	0.41
1:2:1339:U:O2'	1:2:1993:G:O2'	2.36	0.41
1:2:1451:C:H2'	1:2:1452:U:H6	1.85	0.41
1:2:1763:G:N2	1:2:1765:C:H5''	2.35	0.41
1:2:2058:U:C1'	1:2:2576:G:H21	2.26	0.41
1:2:2067:U:H2'	1:2:2068:C:C6	2.55	0.41
1:2:490:A:H1'	1:2:491:A:C5	2.55	0.41
1:2:528:G:H2'	1:2:529:U:C6	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:651:C:N4	1:2:652:C:H41	2.19	0.41
1:2:1141:U:O5'	1:2:1141:U:H6	2.03	0.41
1:2:1455:C:H4'	1:2:1644:G:OP1	2.20	0.41
1:2:2437:G:C2'	1:2:2438:A:OP2	2.68	0.41
1:2:2675:U:H2'	1:2:2676:G:C8	2.55	0.41
1:2:41:G:O2'	1:2:42:G:H5'	2.20	0.41
1:2:459:A:C5	1:2:466:A:N7	2.89	0.41
1:2:584:A:H4'	1:2:2479:U:H4'	2.03	0.41
1:2:757:U:O2'	1:2:758:G:H5'	2.21	0.41
1:2:767:G:H2'	1:2:768:U:C6	2.55	0.41
1:2:838:A:H2'	1:2:839:U:C6	2.54	0.41
1:2:871:U:O2	1:2:2248:A:H5'	2.20	0.41
1:2:1255:A:H2'	1:2:1256:C:C6	2.55	0.41
1:2:1325:U:O2'	1:2:1326:U:P	2.78	0.41
1:2:1415:C:H2'	1:2:1416:A:H8	1.84	0.41
1:2:1513:U:OP2	1:2:1514:C:OP2	2.38	0.41
1:2:1684:G:N2	1:2:1977:C:N4	2.69	0.41
1:2:1722:G:H2'	1:2:1723:U:H6	1.84	0.41
1:2:192:G:C4'	1:2:193:A:H4'	2.51	0.41
1:2:469:G:O2'	1:2:470:U:P	2.78	0.41
1:2:513:A:H1'	1:2:516:G:OP2	2.20	0.41
1:2:540:G:O2'	1:2:541:C:H5'	2.19	0.41
1:2:755:C:O2'	1:2:756:C:H5'	2.21	0.41
1:2:800:U:H5''	1:2:801:A:H5'	2.03	0.41
1:2:1188:A:H62	1:2:1189:G:N2	2.18	0.41
1:2:1280:U:O2'	1:2:1281:A:H5'	2.20	0.41
1:2:1496:G:H2'	1:2:1497:C:C5'	2.50	0.41
1:2:1501:C:O2'	1:2:1502:G:H5'	2.20	0.41
1:2:1688:U:N3	1:2:1691:G:OP2	2.44	0.41
1:2:1689:U:C3'	1:2:1690:U:H5''	2.51	0.41
1:2:1829:C:H2'	1:2:1882:G:O6	2.21	0.41
1:2:1833:U:H2'	1:2:1834:G:C8	2.56	0.41
1:2:1897:C:H2'	1:2:1898:U:C6	2.55	0.41
1:2:1984:A:O4'	1:2:2668:U:H5	2.04	0.41
1:2:2074:U:H3'	1:2:2075:U:H5''	2.01	0.41
1:2:2125:C:O2	1:2:2132:G:H5''	2.20	0.41
1:2:2705:A:N3	1:2:2706:U:C2	2.88	0.41
1:2:2713:A:O2'	1:2:2714:A:H5'	2.20	0.41
1:2:2824:C:H1'	1:2:2843:A:C4	2.55	0.41
1:2:2825:A:H2'	1:2:2826:C:C6	2.56	0.41
1:2:58:C:N4	1:2:73:A:H62	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:79:G:H2'	1:2:80:A:C8	2.56	0.41
1:2:241:C:O2'	1:2:242:A:H5''	2.20	0.41
1:2:247:A:OP2	1:2:372:U:H5'	2.20	0.41
1:2:482:A:C2'	1:2:483:A:H5'	2.51	0.41
1:2:742:G:H3'	1:2:742:G:N3	2.35	0.41
1:2:1251:G:O2'	1:2:1252:C:H5'	2.21	0.41
1:2:1302:C:OP2	1:2:1302:C:H6	2.04	0.41
1:2:1316:G:H2'	1:2:1317:G:O4'	2.21	0.41
1:2:1458:A:H5''	1:2:1459:U:OP2	2.21	0.41
1:2:1517:C:H2'	1:2:1518:C:C6	2.55	0.41
1:2:1655:C:H2'	1:2:1656:U:C6	2.55	0.41
1:2:2710:C:O2'	1:2:2711:G:H5'	2.21	0.41
1:2:2824:C:O2'	1:2:2825:A:O5'	2.39	0.41
1:2:128:C:C3'	1:2:129:A:H5''	2.51	0.41
1:2:521:U:C4'	1:2:1248:G:H4'	2.47	0.41
1:2:710:C:H2'	1:2:711:C:C6	2.55	0.41
1:2:788:G:N2	1:2:800:U:H2'	2.35	0.41
1:2:1178:C:O2	1:2:1196:G:N2	2.54	0.41
1:2:1277:G:C6	1:2:1278:A:N6	2.88	0.41
1:2:1310:C:P	1:2:2689:C:H4'	2.61	0.41
1:2:1408:A:O4'	1:2:1410:U:O4	2.38	0.41
1:2:1700:C:H2'	1:2:1701:C:C6	2.56	0.41
1:2:1787:U:H2'	1:2:1788:C:H6	1.85	0.41
1:2:1935:A:C6	1:2:1936:A:N1	2.89	0.41
1:2:1937:G:N3	1:2:2530:C:H5'	2.35	0.41
1:2:2660:C:C2'	1:2:2661:G:OP2	2.69	0.41
1:2:75:C:H2'	1:2:76:C:H5''	2.03	0.41
1:2:104:C:C2'	1:2:105:G:C5'	2.99	0.41
1:2:184:A:H2'	1:2:185:C:O4'	2.21	0.41
1:2:306:G:H2'	1:2:307:C:O4'	2.21	0.41
1:2:436:A:C3'	1:2:437:G:H5''	2.51	0.41
1:2:573:C:H2'	1:2:574:C:O4'	2.20	0.41
1:2:638:A:O2'	1:2:639:G:H5'	2.21	0.41
1:2:690:A:H2'	1:2:691:C:C6	2.55	0.41
1:2:720:A:C6	1:2:721:C:N4	2.89	0.41
1:2:773:G:H2'	1:2:774:A:O4'	2.21	0.41
1:2:807:A:H2'	1:2:808:C:O5'	2.21	0.41
1:2:847:C:H2'	1:2:848:A:C8	2.56	0.41
1:2:1047:G:H2'	1:2:1048:U:C6	2.56	0.41
1:2:1050:G:H1	1:2:1127:C:N4	2.18	0.41
1:2:1069:G:N2	1:2:1091:C:N4	2.68	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1300:A:H61	1:2:1339:U:H3	1.69	0.41
1:2:1305:C:H2'	1:2:1306:U:O4'	2.21	0.41
1:2:1427:G:H2'	1:2:1428:G:H5'	2.03	0.41
1:2:1458:A:C3'	1:2:1459:U:C5'	2.94	0.41
1:2:1626:A:HO2'	1:2:1627:C:P	2.43	0.41
1:2:1663:C:C5'	1:2:1664:G:H5''	2.24	0.41
1:2:1676:U:H2'	1:2:1677:C:C6	2.56	0.41
1:2:1764:A:OP1	1:2:1820:G:H3'	2.20	0.41
1:2:1926:U:HO2'	1:2:1927:U:P	2.43	0.41
1:2:2204:A:H5''	1:2:2205:C:H5'	2.03	0.41
1:2:2548:G:C2'	1:2:2549:G:H5''	2.50	0.41
1:2:2660:C:H2'	1:2:2661:G:OP2	2.21	0.41
1:2:2680:U:O5'	1:2:2681:A:H5''	2.21	0.41
1:2:2723:C:OP2	1:2:2735:C:N4	2.54	0.41
1:2:2863:U:H2'	1:2:2864:C:H6	1.86	0.41
1:2:189:A:O2'	1:2:190:A:H5'	2.21	0.41
1:2:548:G:O2'	1:2:549:G:H5'	2.21	0.41
1:2:573:C:H1'	1:2:1266:G:H22	1.86	0.41
1:2:721:C:H42	1:2:736:G:N2	2.14	0.41
1:2:789:G:N3	1:2:806:A:N6	2.69	0.41
1:2:1151:U:H4'	1:2:1153:A:OP1	2.21	0.41
1:2:1336:G:C2	1:2:1346:C:H1'	2.56	0.41
1:2:1488:G:H1	1:2:1534:A:H61	1.69	0.41
1:2:1496:G:H1	1:2:1527:G:H22	1.68	0.41
1:2:1563:U:H2'	1:2:1564:U:C5	2.57	0.41
1:2:1579:G:H2'	1:2:1580:C:C6	2.55	0.41
1:2:2010:G:H2'	1:2:2011:U:C6	2.56	0.41
1:2:2308:A:N1	1:2:2365:U:O4	2.54	0.41
1:2:2466:G:H2'	1:2:2467:A:H8	1.83	0.41
1:2:2633:A:C5'	1:2:2634:G:OP1	2.61	0.41
1:2:215:G:O2'	1:2:617:U:H1'	2.20	0.40
1:2:248:A:OP2	1:2:373:A:OP1	2.39	0.40
1:2:462:G:H2'	1:2:463:C:C5'	2.31	0.40
1:2:813:A:O2'	1:2:814:G:H3'	2.21	0.40
1:2:877:G:H2'	1:2:878:C:H6	1.84	0.40
1:2:986:A:H2'	1:2:987:G:O4'	2.20	0.40
1:2:1218:C:H2'	1:2:1219:C:H6	1.85	0.40
1:2:1311:C:H5'	1:2:1315:A:N6	2.37	0.40
1:2:1697:U:O2	1:2:1755:G:H4'	2.21	0.40
1:2:1744:G:N2	1:2:1746:A:H3'	2.36	0.40
1:2:1845:A:N6	1:2:1871:G:O2'	2.54	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1991:C:H2'	1:2:1992:G:C8	2.55	0.40
1:2:2010:G:O2'	1:2:2011:U:H5'	2.21	0.40
1:2:2511:G:N2	1:2:2642:G:H1'	2.35	0.40
1:2:2691:C:H41	1:2:2693:U:H6	1.67	0.40
1:2:2876:C:H2'	1:2:2877:A:C8	2.56	0.40
1:2:14:A:N7	1:2:15:G:H1'	2.35	0.40
1:2:425:A:H2'	1:2:426:C:O4'	2.21	0.40
1:2:839:U:H2'	1:2:841:G:O4'	2.21	0.40
1:2:959:C:H5''	1:2:972:C:O2'	2.21	0.40
1:2:1258:G:H2'	1:2:1259:A:H8	1.85	0.40
1:2:1565:G:H2'	1:2:1566:G:H8	1.86	0.40
1:2:1583:A:H4'	1:2:1584:G:C4	2.56	0.40
1:2:1705:U:O2'	1:2:1717:A:N7	2.52	0.40
1:2:1941:C:O2'	1:2:1942:G:H5'	2.20	0.40
1:2:1996:A:H2'	1:2:1997:A:C8	2.56	0.40
1:2:2026:C:H42	1:2:2604:G:H1	1.68	0.40
1:2:2062:U:H2'	1:2:2063:A:O4'	2.21	0.40
1:2:2420:C:H2'	1:2:2421:C:C6	2.56	0.40
1:2:2482:A:O5'	1:2:2483:U:P	2.79	0.40
1:2:2573:C:N4	1:2:2574:G:O6	2.55	0.40
1:2:216:U:H5''	1:2:601:A:N6	2.36	0.40
1:2:551:A:O2'	1:2:552:C:H5'	2.22	0.40
1:2:1293:A:H2'	1:2:1294:G:C8	2.56	0.40
1:2:1849:G:N2	1:2:1868:A:H62	2.19	0.40
1:2:2398:U:H2'	1:2:2399:C:C6	2.56	0.40
1:2:2548:G:C2'	1:2:2549:G:C5'	3.00	0.40
1:2:2598:C:H2'	1:2:2599:U:C6	2.56	0.40
1:2:2652:G:H2'	1:2:2653:A:C8	2.56	0.40
1:2:28:A:H1'	1:2:523:A:C2	2.56	0.40
1:2:70:A:P	1:2:111:G:H4'	2.62	0.40
1:2:73:A:H4'	1:2:74:G:H4'	2.03	0.40
1:2:73:A:HO2'	1:2:74:G:P	2.44	0.40
1:2:180:C:H5''	1:2:181:A:OP2	2.22	0.40
1:2:248:A:O5'	1:2:373:A:OP1	2.40	0.40
1:2:491:A:H2'	1:2:491:A:N3	2.36	0.40
1:2:683:A:H5''	1:2:684:C:OP1	2.21	0.40
1:2:813:A:C1'	1:2:815:A:O4'	2.69	0.40
1:2:964:A:H61	1:2:976:C:H42	1.66	0.40
1:2:1087:C:O2'	1:2:1088:A:H5'	2.22	0.40
1:2:1268:U:H5'	1:2:1269:G:C5'	2.39	0.40
1:2:1272:G:H2'	1:2:1273:G:C8	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1356:G:OP1	1:2:1357:U:OP2	2.39	0.40
1:2:1428:G:H2'	1:2:1602:G:H21	1.85	0.40
1:2:2010:G:H2'	1:2:2011:U:H6	1.86	0.40
1:2:2018:G:O2'	1:2:2019:C:P	2.79	0.40
1:2:2060:A:H3'	1:2:2060:A:OP2	2.22	0.40
1:2:2178:U:H2'	1:2:2179:C:C6	2.57	0.40
1:2:2695:C:H2'	1:2:2696:A:C8	2.55	0.40
1:2:79:G:H2'	1:2:80:A:H8	1.86	0.40
1:2:414:A:H2'	1:2:415:A:C8	2.57	0.40
1:2:504:G:O2'	1:2:505:G:H5'	2.21	0.40
1:2:862:A:H2'	1:2:863:C:C6	2.57	0.40
1:2:1096:A:H2'	1:2:1097:A:O4'	2.22	0.40
1:2:1302:C:OP2	1:2:1302:C:C6	2.75	0.40
1:2:1358:C:C4	1:2:1359:G:N7	2.90	0.40
1:2:1443:G:H2'	1:2:1444:C:H6	1.86	0.40
1:2:1495:G:O2'	1:2:1496:G:OP1	2.37	0.40
1:2:1966:C:H4'	1:2:2585:C:H4'	2.02	0.40
1:2:2065:A:H2'	1:2:2066:G:O4'	2.21	0.40
1:2:2077:G:N1	1:2:2179:C:H1'	2.35	0.40
1:2:2109:A:N3	1:2:2109:A:C2'	2.83	0.40
1:2:2299:A:H5'	1:2:2300:G:N7	2.36	0.40
1:2:2674:C:H2'	1:2:2675:U:C5	2.56	0.40
1:2:2692:A:H5'	1:2:2693:U:C5'	2.50	0.40
1:2:2830:U:H2'	1:2:2831:A:C8	2.56	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

There are no protein molecules in this entry.

5.3.2 Protein sidechains [i](#)

There are no protein molecules in this entry.

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	2	2757/2880 (95%)	529 (19%)	66 (2%)

All (529) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	2	14	A
1	2	35	G
1	2	45	C
1	2	48	A
1	2	49	U
1	2	59	G
1	2	70	A
1	2	71	A
1	2	72	A
1	2	73	A
1	2	74	G
1	2	76	C
1	2	83	A
1	2	84	G
1	2	87	G
1	2	89	A
1	2	90	G
1	2	91	A
1	2	99	U
1	2	100	G
1	2	105	G
1	2	110	U
1	2	117	A
1	2	118	U
1	2	119	G
1	2	123	A
1	2	124	A
1	2	126	C
1	2	129	A
1	2	148	C
1	2	155	G
1	2	158	A
1	2	173	A
1	2	174	A
1	2	182	G
1	2	193	A
1	2	199	A
1	2	200	A

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Mol	Chain	Res	Type
1	2	205	A
1	2	206	U
1	2	218	A
1	2	219	G
1	2	225	G
1	2	226	C
1	2	227	G
1	2	229	G
1	2	242	A
1	2	243	G
1	2	246	C
1	2	248	A
1	2	293	U
1	2	305	A
1	2	319	G
1	2	322	A
1	2	334	G
1	2	335	A
1	2	340	G
1	2	341	A
1	2	342	G
1	2	343	A
1	2	358	C
1	2	359	G
1	2	363	G
1	2	364	G
1	2	368	A
1	2	369	C
1	2	371	G
1	2	372	U
1	2	373	A
1	2	388	G
1	2	393	U
1	2	399	G
1	2	403	A
1	2	404	A
1	2	408	U
1	2	412	U
1	2	414	A
1	2	418	C
1	2	424	G
1	2	437	G

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Mol	Chain	Res	Type
1	2	438	G
1	2	441	A
1	2	442	A
1	2	455	A
1	2	456	C
1	2	459	A
1	2	461	A
1	2	463	C
1	2	466	A
1	2	469	G
1	2	470	U
1	2	484	G
1	2	486	U
1	2	491	A
1	2	492	G
1	2	514	G
1	2	515	A
1	2	518	A
1	2	519	C
1	2	537	C
1	2	539	A
1	2	541	C
1	2	542	A
1	2	545	C
1	2	554	U
1	2	556	A
1	2	558	G
1	2	572	G
1	2	577	U
1	2	583	C
1	2	584	A
1	2	601	A
1	2	613	A
1	2	617	U
1	2	624	A
1	2	627	A
1	2	632	A
1	2	638	A
1	2	648	A
1	2	652	C
1	2	654	A
1	2	656	U

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Mol	Chain	Res	Type
1	2	665	A
1	2	666	U
1	2	667	U
1	2	668	A
1	2	669	G
1	2	684	C
1	2	699	G
1	2	700	C
1	2	742	G
1	2	743	A
1	2	760	U
1	2	761	G
1	2	775	U
1	2	778	G
1	2	789	G
1	2	790	A
1	2	795	A
1	2	796	A
1	2	797	A
1	2	798	G
1	2	803	C
1	2	807	A
1	2	808	C
1	2	813	A
1	2	814	G
1	2	818	G
1	2	819	C
1	2	825	C
1	2	832	A
1	2	840	U
1	2	841	G
1	2	844	G
1	2	859	U
1	2	873	U
1	2	891	A
1	2	919	U
1	2	921	A
1	2	922	A
1	2	926	C
1	2	930	A
1	2	931	G
1	2	941	U

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Mol	Chain	Res	Type
1	2	943	U
1	2	944	A
1	2	952	A
1	2	956	A
1	2	957	G
1	2	969	U
1	2	970	A
1	2	972	C
1	2	973	U
1	2	984	A
1	2	985	G
1	2	988	G
1	2	992	A
1	2	994	A
1	2	996	C
1	2	1005	U
1	2	1006	C
1	2	1007	A
1	2	1019	U
1	2	1023	U
1	2	1024	G
1	2	1030	U
1	2	1032	A
1	2	1033	G
1	2	1034	U
1	2	1036	G
1	2	1037	U
1	2	1044	U
1	2	1055	A
1	2	1056	U
1	2	1057	A
1	2	1067	G
1	2	1073	G
1	2	1074	G
1	2	1081	A
1	2	1082	G
1	2	1084	A
1	2	1087	C
1	2	1090	C
1	2	1094	C
1	2	1095	A
1	2	1102	G

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Mol	Chain	Res	Type
1	2	1108	U
1	2	1112	U
1	2	1137	A
1	2	1138	A
1	2	1139	A
1	2	1142	G
1	2	1145	C
1	2	1146	G
1	2	1152	C
1	2	1153	A
1	2	1154	A
1	2	1155	G
1	2	1167	A
1	2	1168	G
1	2	1182	U
1	2	1183	C
1	2	1185	C
1	2	1186	G
1	2	1195	U
1	2	1199	U
1	2	1200	G
1	2	1224	A
1	2	1225	G
1	2	1233	A
1	2	1234	C
1	2	1250	A
1	2	1253	C
1	2	1261	G
1	2	1262	U
1	2	1264	C
1	2	1268	U
1	2	1269	G
1	2	1278	A
1	2	1279	G
1	2	1280	U
1	2	1284	G
1	2	1285	A
1	2	1288	A
1	2	1289	A
1	2	1302	C
1	2	1305	C
1	2	1314	A

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Mol	Chain	Res	Type
1	2	1324	G
1	2	1326	U
1	2	1327	C
1	2	1334	A
1	2	1337	G
1	2	1338	G
1	2	1342	U
1	2	1343	C
1	2	1346	C
1	2	1354	A
1	2	1355	A
1	2	1356	G
1	2	1358	C
1	2	1359	G
1	2	1391	A
1	2	1392	U
1	2	1397	A
1	2	1398	G
1	2	1411	C
1	2	1429	A
1	2	1433	A
1	2	1438	G
1	2	1441	A
1	2	1442	C
1	2	1443	G
1	2	1459	U
1	2	1468	A
1	2	1469	U
1	2	1470	G
1	2	1473	U
1	2	1475	U
1	2	1476	G
1	2	1482	U
1	2	1489	C
1	2	1496	G
1	2	1497	C
1	2	1505	U
1	2	1506	C
1	2	1508	G
1	2	1510	A
1	2	1514	C
1	2	1524	C

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Mol	Chain	Res	Type
1	2	1526	U
1	2	1550	C
1	2	1551	U
1	2	1552	C
1	2	1571	G
1	2	1573	G
1	2	1574	A
1	2	1583	A
1	2	1585	A
1	2	1601	U
1	2	1618	U
1	2	1623	C
1	2	1624	A
1	2	1625	A
1	2	1626	A
1	2	1627	C
1	2	1632	A
1	2	1633	C
1	2	1635	G
1	2	1648	C
1	2	1652	G
1	2	1657	A
1	2	1664	G
1	2	1665	C
1	2	1670	G
1	2	1685	A
1	2	1686	A
1	2	1690	U
1	2	1691	G
1	2	1711	C
1	2	1712	G
1	2	1715	A
1	2	1716	G
1	2	1717	A
1	2	1724	C
1	2	1732	U
1	2	1748	U
1	2	1749	G
1	2	1750	A
1	2	1755	G
1	2	1764	A
1	2	1770	U

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Mol	Chain	Res	Type
1	2	1771	A
1	2	1772	C
1	2	1773	C
1	2	1774	A
1	2	1776	A
1	2	1778	U
1	2	1783	G
1	2	1791	C
1	2	1792	C
1	2	1801	C
1	2	1802	A
1	2	1807	A
1	2	1808	C
1	2	1812	U
1	2	1821	A
1	2	1827	G
1	2	1831	G
1	2	1840	A
1	2	1863	U
1	2	1867	A
1	2	1889	G
1	2	1909	U
1	2	1913	G
1	2	1919	A
1	2	1920	A
1	2	1922	U
1	2	1924	C
1	2	1926	U
1	2	1927	U
1	2	1938	U
1	2	1939	U
1	2	1946	U
1	2	1948	C
1	2	1950	C
1	2	1952	A
1	2	1954	A
1	2	1955	G
1	2	1956	G
1	2	1964	A
1	2	1975	G
1	2	1976	U
1	2	1979	C

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Mol	Chain	Res	Type
1	2	2004	U
1	2	2005	U
1	2	2006	G
1	2	2013	A
1	2	2014	A
1	2	2015	G
1	2	2016	A
1	2	2019	C
1	2	2025	A
1	2	2026	C
1	2	2038	C
1	2	2039	G
1	2	2044	G
1	2	2050	G
1	2	2051	U
1	2	2052	G
1	2	2060	A
1	2	2075	U
1	2	2076	G
1	2	2082	C
1	2	2094	C
1	2	2095	G
1	2	2096	U
1	2	2097	A
1	2	2104	G
1	2	2109	A
1	2	2118	A
1	2	2137	G
1	2	2139	G
1	2	2140	G
1	2	2159	A
1	2	2162	C
1	2	2165	A
1	2	2168	A
1	2	2189	A
1	2	2190	A
1	2	2191	A
1	2	2192	U
1	2	2195	C
1	2	2199	C
1	2	2205	C
1	2	2218	G

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Mol	Chain	Res	Type
1	2	2225	G
1	2	2229	G
1	2	2242	C
1	2	2245	A
1	2	2246	A
1	2	2247	A
1	2	2255	G
1	2	2262	C
1	2	2265	A
1	2	2268	G
1	2	2284	U
1	2	2285	U
1	2	2286	G
1	2	2287	G
1	2	2288	A
1	2	2298	U
1	2	2300	G
1	2	2301	A
1	2	2306	A
1	2	2312	A
1	2	2313	G
1	2	2314	A
1	2	2315	A
1	2	2325	A
1	2	2326	C
1	2	2358	C
1	2	2362	G
1	2	2364	C
1	2	2371	A
1	2	2386	G
1	2	2390	A
1	2	2396	C
1	2	2402	U
1	2	2405	A
1	2	2406	C
1	2	2407	G
1	2	2408	G
1	2	2419	C
1	2	2420	C
1	2	2426	G
1	2	2427	A
1	2	2428	U

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Mol	Chain	Res	Type
1	2	2429	A
1	2	2438	A
1	2	2455	A
1	2	2470	U
1	2	2477	C
1	2	2480	C
1	2	2481	G
1	2	2482	A
1	2	2483	U
1	2	2484	G
1	2	2485	U
1	2	2492	G
1	2	2498	U
1	2	2499	C
1	2	2508	G
1	2	2522	G
1	2	2546	G
1	2	2548	G
1	2	2549	G
1	2	2557	G
1	2	2561	G
1	2	2564	U
1	2	2565	C
1	2	2581	A
1	2	2582	G
1	2	2588	U
1	2	2589	C
1	2	2591	C
1	2	2593	A
1	2	2594	U
1	2	2608	A
1	2	2609	G
1	2	2617	G
1	2	2619	G
1	2	2624	G
1	2	2625	U
1	2	2633	A
1	2	2634	G
1	2	2661	G
1	2	2669	C
1	2	2670	C
1	2	2691	C

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Mol	Chain	Res	Type
1	2	2692	A
1	2	2693	U
1	2	2694	G
1	2	2706	U
1	2	2712	G
1	2	2713	A
1	2	2728	A
1	2	2729	A
1	2	2730	A
1	2	2732	C
1	2	2737	A
1	2	2745	A
1	2	2758	A
1	2	2771	C
1	2	2773	G
1	2	2774	U
1	2	2779	C
1	2	2783	U
1	2	2795	A
1	2	2808	U
1	2	2809	A
1	2	2811	G
1	2	2825	A
1	2	2841	U
1	2	2842	C
1	2	2847	G
1	2	2854	G
1	2	2858	A
1	2	2868	G

All (66) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	2	13	A
1	2	70	A
1	2	73	A
1	2	117	A
1	2	181	A
1	2	192	G
1	2	198	A
1	2	242	A
1	2	342	G

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Mol	Chain	Res	Type
1	2	372	U
1	2	403	A
1	2	460	U
1	2	469	G
1	2	485	G
1	2	513	A
1	2	583	C
1	2	789	G
1	2	813	A
1	2	1033	G
1	2	1141	U
1	2	1154	A
1	2	1194	U
1	2	1223	G
1	2	1231	A
1	2	1249	G
1	2	1260	A
1	2	1263	G
1	2	1278	A
1	2	1279	G
1	2	1313	U
1	2	1325	U
1	2	1345	G
1	2	1354	A
1	2	1355	A
1	2	1410	U
1	2	1495	G
1	2	1626	A
1	2	1632	A
1	2	1685	A
1	2	1772	C
1	2	1775	A
1	2	1790	G
1	2	1820	G
1	2	1926	U
1	2	1938	U
1	2	2013	A
1	2	2015	G
1	2	2018	G
1	2	2093	G
1	2	2204	A
1	2	2245	A

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Mol	Chain	Res	Type
1	2	2261	G
1	2	2313	G
1	2	2324	G
1	2	2370	G
1	2	2389	G
1	2	2404	A
1	2	2437	G
1	2	2498	U
1	2	2560	G
1	2	2592	U
1	2	2633	A
1	2	2668	U
1	2	2705	A
1	2	2824	C
1	2	2867	G

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

1 ligand is modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	RAP	2	2881	-	65,68,68	1.89	14 (21%)	77,96,96	1.47	8 (10%)

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	RAP	2	2881	-	-	3/81/124/124	0/3/4/4

All (14) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	2	2881	RAP	C8-C9	-8.41	1.42	1.53
2	2	2881	RAP	C40-C39	4.54	1.60	1.52
2	2	2881	RAP	O1-C1	3.94	1.43	1.34
2	2	2881	RAP	O1-C34	-3.37	1.40	1.46
2	2	2881	RAP	C44-C17	3.03	1.56	1.50
2	2	2881	RAP	O6-C10	2.97	1.44	1.39
2	2	2881	RAP	C35-C34	2.89	1.56	1.53
2	2	2881	RAP	C41-C40	2.86	1.56	1.52
2	2	2881	RAP	C38-C39	2.61	1.57	1.52
2	2	2881	RAP	C27-C28	2.55	1.58	1.52
2	2	2881	RAP	C2-N7	2.37	1.50	1.47
2	2	2881	RAP	C31-C30	2.28	1.54	1.50
2	2	2881	RAP	C6-N7	2.22	1.50	1.47
2	2	2881	RAP	C13-C14	2.01	1.56	1.51

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	2	2881	RAP	O1-C1-C2	5.29	121.78	110.80
2	2	2881	RAP	C34-O1-C1	4.46	124.60	117.85
2	2	2881	RAP	C9-C8-N7	3.91	123.72	119.25
2	2	2881	RAP	O1-C1-O2	-3.16	118.24	123.95
2	2	2881	RAP	C3-C2-N7	-3.04	106.49	110.55
2	2	2881	RAP	C28-C27-C26	2.81	115.24	111.25
2	2	2881	RAP	C52-O12-C39	2.38	120.27	114.01
2	2	2881	RAP	O2-C1-C2	-2.03	119.98	124.46

There are no chirality outliers.

All (3) torsion outliers are listed below:

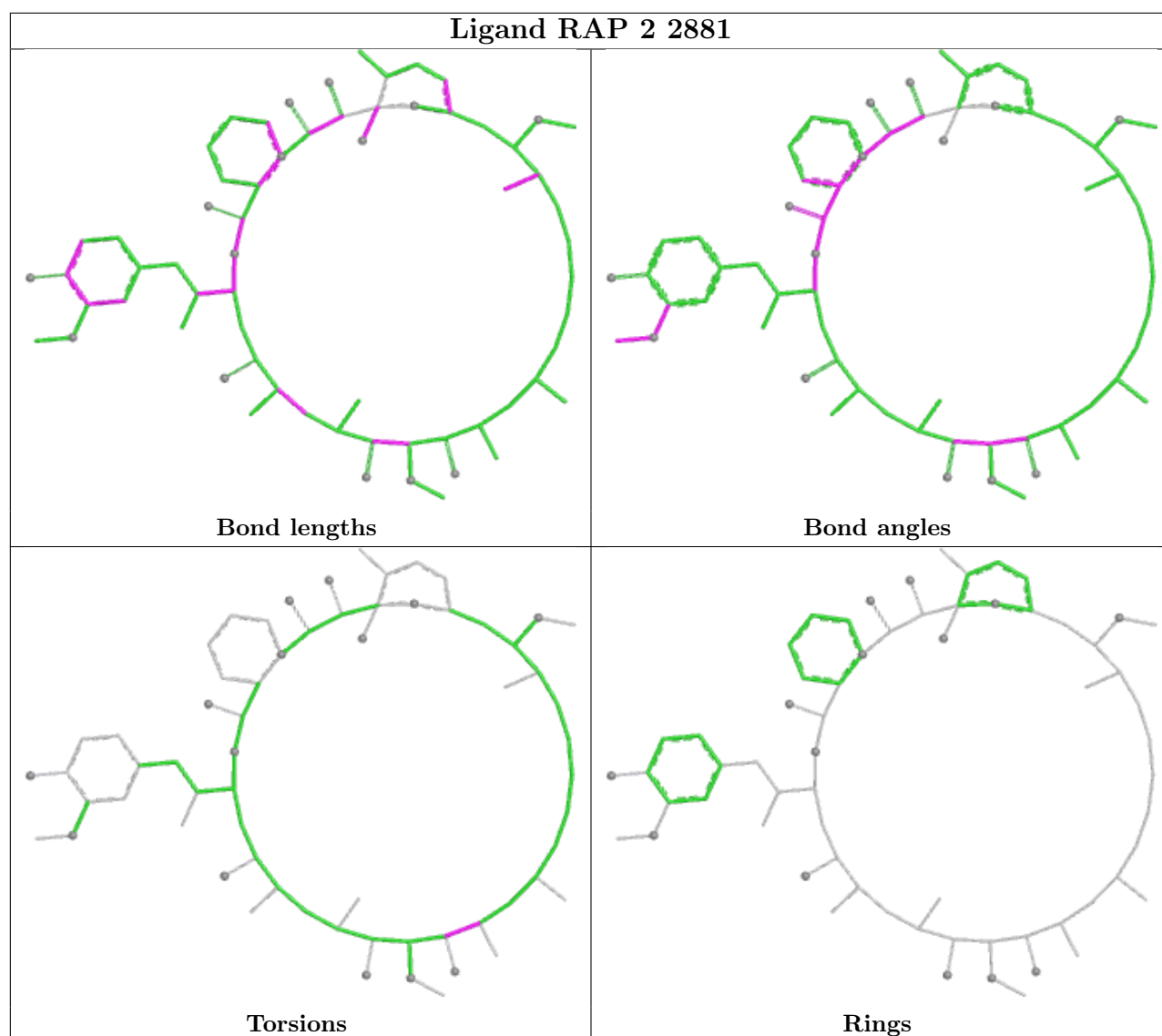
Mol	Chain	Res	Type	Atoms
2	2	2881	RAP	C46-C25-C26-O8
2	2	2881	RAP	C24-C25-C26-O8
2	2	2881	RAP	C24-C25-C26-C27

There are no ring outliers.

1 monomer is involved in 20 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	2	2881	RAP	20	0

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



5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

EDS was not executed - this section is therefore empty.

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

EDS was not executed - this section is therefore empty.

6.3 Carbohydrates

EDS was not executed - this section is therefore empty.

6.4 Ligands

EDS was not executed - this section is therefore empty.

6.5 Other polymers

EDS was not executed - this section is therefore empty.