



Full wwPDB EM Validation Report ⓘ

Mar 24, 2026 – 11:55 AM UTC

PDB ID : 1FOQ / pdb_00001foq
Title : PENTAMERIC MODEL OF THE BACTERIOPHAGE PHI29 PROHEAD
RNA
Authors : Simpson, A.A.; Tao, Y.; Leiman, P.G.; Badasso, M.O.; He, Y.; Jardine, P.J.;
Olson, N.H.; Morais, M.C.; Grimes, S.; Anderson, D.L.; Baker, T.S.; Ross-
mann, M.G.
Deposited on : 2000-08-28
Resolution : 20.00 Å(reported)

This is a Full wwPDB EM Validation Report for a publicly released PDB/EMDB entry.

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

A user guide is available at

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

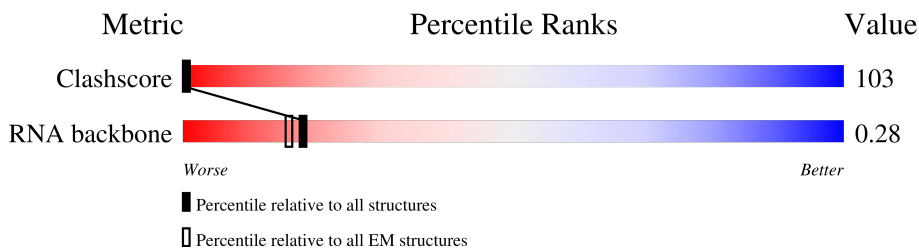
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 20.00 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)	EM structures (#Entries)
Clashscore	229148	23984
RNA backbone	8273	3508

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the 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 $\leq 5\%$.

Mol	Chain	Length	Quality of chain
1	A	120	
1	B	120	
1	C	120	
1	D	120	
1	E	120	

2 Entry composition

There is only 1 type of molecule in this entry. The entry contains 12095 atoms, of which 545 are hydrogens and 0 are deuteriums.

In the tables below, 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.

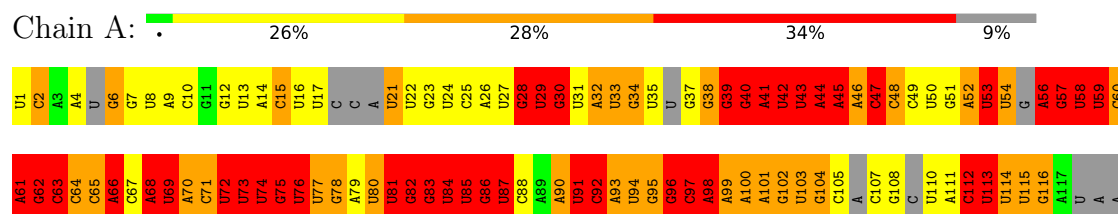
- Molecule 1 is a RNA chain called BACTERIOPHAGE PHI29 PROHEAD RNA.

Mol	Chain	Residues	Atoms						AltConf	Trace
1	A	109	Total	C	H	N	O	P	0	0
			2419	1033	109	393	775	109		
1	B	109	Total	C	H	N	O	P	0	0
			2419	1033	109	393	775	109		
1	C	109	Total	C	H	N	O	P	0	0
			2419	1033	109	393	775	109		
1	D	109	Total	C	H	N	O	P	0	0
			2419	1033	109	393	775	109		
1	E	109	Total	C	H	N	O	P	0	0
			2419	1033	109	393	775	109		

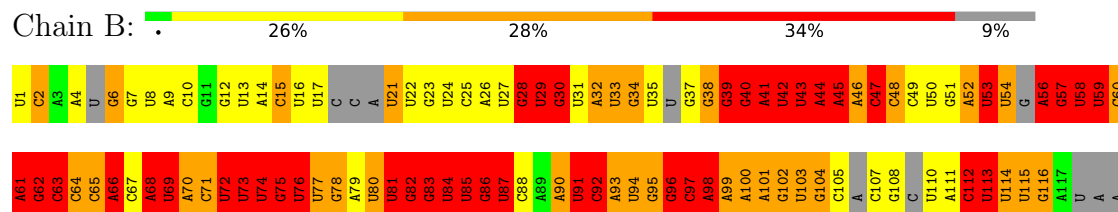
3 Residue-property plots [i](#)

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.

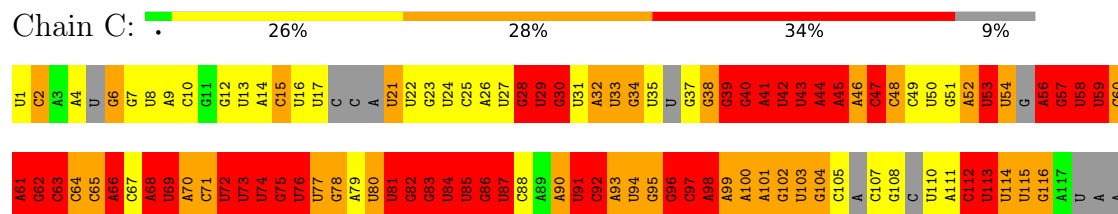
- Molecule 1: BACTERIOPHAGE PHI29 PROHEAD RNA



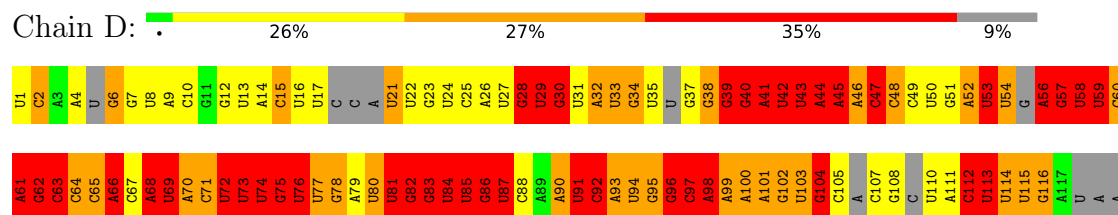
- Molecule 1: BACTERIOPHAGE PHI29 PROHEAD RNA



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- Molecule 1: BACTERIOPHAGE PHI29 PROHEAD RNA



- Molecule 1: BACTERIOPHAGE PHI29 PROHEAD RNA



U1	C2	A3	A4	U	G6	G7	U8	A9	C10	G11	G12	U13	A14	C15	U16	U17	C	C	A	U21	U22	G23	U24	C25	A26	U27	G28	U29	G30	U31	A32	U33	G34	U35	U	G37	G38	G39	G40	A41	U42	U43	A44	A45	A46	C47	C48	C49	U50	G51	A52	U53	U54	G	A56	G57	U58	U59	C60
A61	G62	C63	C64	C65	A66	C67	A68	U69	A70	C71	U72	U73	U74	G75	U76	U77	G78	A79	U80	U81	G82	G83	U84	U85	G86	U87	C88	A89	A90	U91	C92	A93	U94	G95	G96	C97	A98	A99	A100	A101	G102	U103	G104	C105	A	C107	G108	C	U110	A111	C112	U113	U114	U115	G116	A117	U	A	A

4 Data and refinement statistics

Xtriage (Phenix) and EDS failed to run properly - this section is therefore incomplete.

Property	Value	Source
Space group	P 1	Depositor
Cell constants a, b, c, α , β , γ	1.00Å 1.00Å 1.00Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	(Not available) – 20.00	Depositor
% Data completeness (in resolution range)	(Not available) ((Not available)-20.00)	Depositor
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
Refinement program	unknown	Depositor
R, R_{free}	(Not available) , (Not available)	Depositor
Estimated twinning fraction	No twinning to report.	Xtriage
Total number of atoms	12095	wwPDB-VP
Average B, all atoms (Å ²)	0.0	wwPDB-VP

5 Model quality

5.1 Standard geometry

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	A	3.48	71/2567 (2.8%)	3.30	215/3966 (5.4%)
1	B	3.48	71/2567 (2.8%)	3.30	216/3966 (5.4%)
1	C	3.48	71/2567 (2.8%)	3.30	216/3966 (5.4%)
1	D	3.48	71/2567 (2.8%)	3.30	215/3966 (5.4%)
1	E	3.48	71/2567 (2.8%)	3.30	215/3966 (5.4%)
All	All	3.48	355/12835 (2.8%)	3.30	1077/19830 (5.4%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	1	1
1	B	1	1
1	C	1	1
1	D	1	1
1	E	1	1
All	All	5	5

All (355) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	44	A	O3'-P	39.51	2.20	1.61
1	C	44	A	O3'-P	39.50	2.20	1.61
1	A	44	A	O3'-P	39.49	2.20	1.61
1	E	44	A	O3'-P	39.48	2.20	1.61
1	D	44	A	O3'-P	39.45	2.20	1.61
1	B	34	G	O3'-P	35.70	2.14	1.61
1	E	34	G	O3'-P	35.68	2.14	1.61
1	A	34	G	O3'-P	35.66	2.14	1.61
1	D	34	G	O3'-P	35.64	2.14	1.61
1	C	34	G	O3'-P	35.59	2.14	1.61

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	D	53	U	O3'-P	33.64	2.11	1.61
1	A	53	U	O3'-P	33.60	2.11	1.61
1	C	53	U	O3'-P	33.59	2.11	1.61
1	B	53	U	O3'-P	33.58	2.11	1.61
1	E	53	U	O3'-P	33.56	2.11	1.61
1	E	98	A	O3'-P	32.60	2.10	1.61
1	D	98	A	O3'-P	32.60	2.10	1.61
1	A	98	A	O3'-P	32.60	2.10	1.61
1	C	98	A	O3'-P	32.60	2.10	1.61
1	B	98	A	O3'-P	32.60	2.10	1.61
1	E	48	C	O3'-P	32.30	2.09	1.61
1	D	39	G	O3'-P	-32.26	1.12	1.61
1	A	48	C	O3'-P	32.26	2.09	1.61
1	B	48	C	O3'-P	32.26	2.09	1.61
1	D	48	C	O3'-P	32.24	2.09	1.61
1	C	48	C	O3'-P	32.24	2.09	1.61
1	A	39	G	O3'-P	-32.23	1.12	1.61
1	E	39	G	O3'-P	-32.22	1.12	1.61
1	C	39	G	O3'-P	-32.22	1.12	1.61
1	B	39	G	O3'-P	-32.19	1.12	1.61
1	D	112	C	O3'-P	30.50	2.06	1.61
1	C	112	C	O3'-P	30.48	2.06	1.61
1	B	112	C	O3'-P	30.46	2.06	1.61
1	A	112	C	O3'-P	30.44	2.06	1.61
1	E	112	C	O3'-P	30.41	2.06	1.61
1	C	81	U	O3'-P	29.88	2.06	1.61
1	B	81	U	O3'-P	29.86	2.06	1.61
1	A	81	U	O3'-P	29.84	2.06	1.61
1	D	81	U	O3'-P	29.81	2.05	1.61
1	E	81	U	O3'-P	29.80	2.05	1.61
1	D	99	A	O3'-P	29.07	2.04	1.61
1	B	99	A	O3'-P	29.05	2.04	1.61
1	E	99	A	O3'-P	29.05	2.04	1.61
1	A	99	A	O3'-P	29.05	2.04	1.61
1	C	99	A	O3'-P	29.04	2.04	1.61
1	D	90	A	O3'-P	28.43	2.03	1.61
1	E	90	A	O3'-P	28.41	2.03	1.61
1	C	90	A	O3'-P	28.39	2.03	1.61
1	B	90	A	O3'-P	28.38	2.03	1.61
1	A	90	A	O3'-P	28.37	2.03	1.61
1	C	56	A	O3'-P	27.55	2.02	1.61
1	A	56	A	O3'-P	27.50	2.02	1.61

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	D	56	A	O3'-P	27.49	2.02	1.61
1	E	56	A	O3'-P	27.45	2.02	1.61
1	B	56	A	O3'-P	27.43	2.02	1.61
1	C	100	A	O3'-P	27.30	2.02	1.61
1	B	100	A	O3'-P	27.27	2.02	1.61
1	D	100	A	O3'-P	27.25	2.02	1.61
1	A	100	A	O3'-P	27.25	2.02	1.61
1	E	100	A	O3'-P	27.22	2.02	1.61
1	B	70	A	O3'-P	-26.91	1.20	1.61
1	C	70	A	O3'-P	-26.89	1.20	1.61
1	A	70	A	O3'-P	-26.87	1.20	1.61
1	E	70	A	O3'-P	-26.86	1.20	1.61
1	D	70	A	O3'-P	-26.85	1.20	1.61
1	C	93	A	O3'-P	26.56	2.00	1.61
1	E	93	A	O3'-P	26.55	2.00	1.61
1	A	93	A	O3'-P	26.52	2.00	1.61
1	D	93	A	O3'-P	26.51	2.00	1.61
1	B	93	A	O3'-P	26.49	2.00	1.61
1	C	60	C	O3'-P	-25.45	1.23	1.61
1	D	60	C	O3'-P	-25.43	1.23	1.61
1	B	60	C	O3'-P	-25.41	1.23	1.61
1	A	60	C	O3'-P	-25.40	1.23	1.61
1	E	60	C	O3'-P	-25.40	1.23	1.61
1	D	40	G	O3'-P	24.53	1.98	1.61
1	E	40	G	O3'-P	24.51	1.98	1.61
1	A	40	G	O3'-P	24.50	1.97	1.61
1	B	40	G	O3'-P	24.48	1.97	1.61
1	C	87	U	O3'-P	24.48	1.97	1.61
1	C	40	G	O3'-P	24.46	1.97	1.61
1	E	87	U	O3'-P	24.45	1.97	1.61
1	A	87	U	O3'-P	24.44	1.97	1.61
1	B	87	U	O3'-P	24.42	1.97	1.61
1	D	87	U	O3'-P	24.41	1.97	1.61
1	E	67	C	O3'-P	-24.05	1.25	1.61
1	B	67	C	O3'-P	-24.00	1.25	1.61
1	A	67	C	O3'-P	-23.99	1.25	1.61
1	C	67	C	O3'-P	-23.98	1.25	1.61
1	E	81	U	P-OP2	23.97	1.96	1.49
1	D	81	U	P-OP2	23.97	1.96	1.49
1	D	67	C	O3'-P	-23.97	1.25	1.61
1	B	81	U	P-OP2	23.96	1.96	1.49
1	A	81	U	P-OP2	23.96	1.96	1.49

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	81	U	P-OP2	23.95	1.96	1.49
1	E	95	G	O3'-P	23.74	1.96	1.61
1	A	95	G	O3'-P	23.70	1.96	1.61
1	D	95	G	O3'-P	23.70	1.96	1.61
1	C	95	G	O3'-P	23.69	1.96	1.61
1	B	95	G	O3'-P	23.68	1.96	1.61
1	B	64	C	O3'-P	-22.90	1.26	1.61
1	E	64	C	O3'-P	-22.90	1.26	1.61
1	A	64	C	O3'-P	-22.88	1.26	1.61
1	D	64	C	O3'-P	-22.88	1.26	1.61
1	C	64	C	O3'-P	-22.86	1.26	1.61
1	A	96	G	O3'-P	22.80	1.95	1.61
1	E	96	G	O3'-P	22.80	1.95	1.61
1	C	96	G	O3'-P	22.78	1.95	1.61
1	D	81	U	O5'-C5'	22.77	1.76	1.42
1	E	45	A	O3'-P	22.77	1.95	1.61
1	B	45	A	O3'-P	22.77	1.95	1.61
1	E	81	U	O5'-C5'	22.76	1.76	1.42
1	B	96	G	O3'-P	22.75	1.95	1.61
1	B	81	U	O5'-C5'	22.74	1.76	1.42
1	D	96	G	O3'-P	22.74	1.95	1.61
1	A	45	A	O3'-P	22.74	1.95	1.61
1	C	45	A	O3'-P	22.73	1.95	1.61
1	A	81	U	O5'-C5'	22.73	1.76	1.42
1	D	45	A	O3'-P	22.72	1.95	1.61
1	C	81	U	O5'-C5'	22.70	1.76	1.42
1	D	84	U	O3'-P	-22.13	1.27	1.61
1	C	63	C	O3'-P	22.09	1.94	1.61
1	B	63	C	O3'-P	22.09	1.94	1.61
1	A	84	U	O3'-P	-22.08	1.28	1.61
1	E	63	C	O3'-P	22.08	1.94	1.61
1	C	84	U	O3'-P	-22.07	1.28	1.61
1	A	63	C	O3'-P	22.06	1.94	1.61
1	E	84	U	O3'-P	-22.04	1.28	1.61
1	D	63	C	O3'-P	22.04	1.94	1.61
1	B	84	U	O3'-P	-22.02	1.28	1.61
1	C	92	C	O3'-P	21.85	1.94	1.61
1	A	92	C	O3'-P	21.81	1.93	1.61
1	D	92	C	O3'-P	21.80	1.93	1.61
1	E	92	C	O3'-P	21.79	1.93	1.61
1	B	92	C	O3'-P	21.75	1.93	1.61
1	E	101	A	O3'-P	21.61	1.93	1.61

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	101	A	O3'-P	21.60	1.93	1.61
1	D	101	A	O3'-P	21.59	1.93	1.61
1	B	101	A	O3'-P	21.59	1.93	1.61
1	A	101	A	O3'-P	21.58	1.93	1.61
1	E	103	U	O3'-P	21.17	1.93	1.61
1	A	103	U	O3'-P	21.17	1.92	1.61
1	D	103	U	O3'-P	21.15	1.92	1.61
1	B	103	U	O3'-P	21.14	1.92	1.61
1	C	103	U	O3'-P	21.13	1.92	1.61
1	E	59	U	O3'-P	-20.99	1.29	1.61
1	B	94	U	O3'-P	20.95	1.92	1.61
1	A	59	U	O3'-P	-20.93	1.29	1.61
1	D	94	U	O3'-P	20.93	1.92	1.61
1	B	59	U	O3'-P	-20.93	1.29	1.61
1	D	59	U	O3'-P	-20.92	1.29	1.61
1	A	94	U	O3'-P	20.91	1.92	1.61
1	C	59	U	O3'-P	-20.91	1.29	1.61
1	E	94	U	O3'-P	20.88	1.92	1.61
1	C	94	U	O3'-P	20.88	1.92	1.61
1	C	41	A	O3'-P	-20.69	1.30	1.61
1	B	41	A	O3'-P	-20.69	1.30	1.61
1	E	41	A	O3'-P	-20.68	1.30	1.61
1	A	41	A	O3'-P	-20.67	1.30	1.61
1	D	41	A	O3'-P	-20.64	1.30	1.61
1	D	57	G	C3'-O3'	20.21	1.72	1.42
1	E	57	G	C3'-O3'	20.17	1.72	1.42
1	B	57	G	C3'-O3'	20.17	1.72	1.42
1	A	57	G	C3'-O3'	20.16	1.72	1.42
1	C	57	G	C3'-O3'	20.14	1.72	1.42
1	D	105	C	P-O5'	20.03	1.89	1.59
1	E	105	C	P-O5'	20.02	1.89	1.59
1	A	105	C	P-O5'	20.01	1.89	1.59
1	C	105	C	P-O5'	20.00	1.89	1.59
1	B	105	C	P-O5'	20.00	1.89	1.59
1	A	110	U	O3'-P	19.90	1.91	1.61
1	E	110	U	O3'-P	19.90	1.91	1.61
1	C	58	U	O3'-P	19.90	1.91	1.61
1	B	110	U	O3'-P	19.89	1.91	1.61
1	C	110	U	O3'-P	19.89	1.91	1.61
1	D	110	U	O3'-P	19.88	1.91	1.61
1	D	58	U	O3'-P	19.87	1.91	1.61
1	A	58	U	O3'-P	19.86	1.91	1.61

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	58	U	O3'-P	19.84	1.91	1.61
1	E	58	U	O3'-P	19.83	1.90	1.61
1	B	105	C	P-OP1	18.82	1.86	1.49
1	C	105	C	P-OP1	18.82	1.86	1.49
1	A	105	C	P-OP1	18.81	1.86	1.49
1	E	105	C	P-OP1	18.80	1.86	1.49
1	D	105	C	P-OP1	18.77	1.86	1.49
1	E	33	U	O3'-P	-18.62	1.33	1.61
1	A	33	U	O3'-P	-18.59	1.33	1.61
1	D	33	U	O3'-P	-18.58	1.33	1.61
1	B	33	U	O3'-P	-18.56	1.33	1.61
1	C	33	U	O3'-P	-18.54	1.33	1.61
1	C	74	U	O3'-P	18.48	1.88	1.61
1	A	74	U	O3'-P	18.44	1.88	1.61
1	E	74	U	O3'-P	18.43	1.88	1.61
1	D	74	U	O3'-P	18.42	1.88	1.61
1	B	74	U	O3'-P	18.39	1.88	1.61
1	D	103	U	C3'-O3'	-16.94	1.16	1.42
1	A	103	U	C3'-O3'	-16.92	1.16	1.42
1	C	103	U	C3'-O3'	-16.91	1.16	1.42
1	E	103	U	C3'-O3'	-16.89	1.16	1.42
1	B	103	U	C3'-O3'	-16.88	1.16	1.42
1	D	52	A	O3'-P	-16.79	1.35	1.61
1	E	52	A	O3'-P	-16.78	1.35	1.61
1	C	52	A	O3'-P	-16.77	1.36	1.61
1	A	52	A	O3'-P	-16.76	1.36	1.61
1	B	52	A	O3'-P	-16.75	1.36	1.61
1	E	73	U	O3'-P	16.48	1.85	1.61
1	C	73	U	O3'-P	16.46	1.85	1.61
1	A	73	U	O3'-P	16.42	1.85	1.61
1	D	73	U	O3'-P	16.41	1.85	1.61
1	B	73	U	O3'-P	16.40	1.85	1.61
1	D	61	A	O3'-P	-16.33	1.36	1.61
1	C	61	A	O3'-P	-16.32	1.36	1.61
1	E	61	A	O3'-P	-16.32	1.36	1.61
1	A	61	A	O3'-P	-16.31	1.36	1.61
1	B	61	A	O3'-P	-16.28	1.36	1.61
1	C	111	A	O3'-P	15.80	1.84	1.61
1	D	111	A	O3'-P	15.79	1.84	1.61
1	E	111	A	O3'-P	15.78	1.84	1.61
1	B	111	A	O3'-P	15.78	1.84	1.61
1	A	111	A	O3'-P	15.77	1.84	1.61

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	114	U	O3'-P	15.73	1.84	1.61
1	E	114	U	O3'-P	15.72	1.84	1.61
1	A	114	U	O3'-P	15.71	1.84	1.61
1	D	114	U	O3'-P	15.70	1.84	1.61
1	C	114	U	O3'-P	15.66	1.84	1.61
1	C	115	U	O3'-P	15.21	1.83	1.61
1	D	115	U	O3'-P	15.21	1.83	1.61
1	A	115	U	O3'-P	15.18	1.83	1.61
1	E	115	U	O3'-P	15.18	1.83	1.61
1	B	115	U	O3'-P	15.18	1.83	1.61
1	D	1	U	O3'-P	15.17	1.83	1.61
1	A	1	U	O3'-P	15.15	1.83	1.61
1	B	1	U	O3'-P	15.12	1.83	1.61
1	C	1	U	O3'-P	15.12	1.83	1.61
1	E	1	U	O3'-P	15.10	1.83	1.61
1	E	79	A	O3'-P	14.37	1.82	1.61
1	D	79	A	O3'-P	14.37	1.82	1.61
1	A	79	A	O3'-P	14.34	1.82	1.61
1	B	79	A	O3'-P	14.34	1.82	1.61
1	C	79	A	O3'-P	14.31	1.82	1.61
1	E	77	U	O3'-P	13.98	1.82	1.61
1	C	77	U	O3'-P	13.97	1.82	1.61
1	D	77	U	O3'-P	13.97	1.82	1.61
1	A	77	U	O3'-P	13.97	1.82	1.61
1	B	77	U	O3'-P	13.95	1.82	1.61
1	C	87	U	P-O5'	13.77	1.80	1.59
1	D	87	U	P-O5'	13.76	1.80	1.59
1	A	87	U	P-O5'	13.74	1.80	1.59
1	E	87	U	P-O5'	13.73	1.80	1.59
1	B	87	U	P-O5'	13.72	1.80	1.59
1	D	105	C	P-OP2	13.06	1.75	1.49
1	A	105	C	P-OP2	13.05	1.75	1.49
1	C	105	C	P-OP2	13.03	1.75	1.49
1	E	105	C	P-OP2	13.03	1.75	1.49
1	B	105	C	P-OP2	12.99	1.75	1.49
1	E	28	G	O3'-P	-12.14	1.43	1.61
1	A	28	G	O3'-P	-12.13	1.43	1.61
1	B	28	G	O3'-P	-12.11	1.43	1.61
1	C	28	G	O3'-P	-12.11	1.43	1.61
1	D	28	G	O3'-P	-12.07	1.43	1.61
1	C	47	C	O3'-P	-12.02	1.43	1.61
1	E	47	C	O3'-P	-12.01	1.43	1.61

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	D	47	C	O3'-P	-11.99	1.43	1.61
1	A	47	C	O3'-P	-11.99	1.43	1.61
1	B	47	C	O3'-P	-11.95	1.43	1.61
1	C	86	G	O3'-P	-11.67	1.43	1.61
1	D	86	G	O3'-P	-11.63	1.43	1.61
1	A	86	G	O3'-P	-11.63	1.43	1.61
1	B	86	G	O3'-P	-11.62	1.43	1.61
1	E	86	G	O3'-P	-11.60	1.43	1.61
1	D	104	G	O3'-P	11.56	1.78	1.61
1	B	104	G	O3'-P	11.55	1.78	1.61
1	A	104	G	O3'-P	11.55	1.78	1.61
1	E	104	G	O3'-P	11.52	1.78	1.61
1	C	104	G	O3'-P	11.51	1.78	1.61
1	C	87	U	P-OP1	10.78	1.70	1.49
1	A	87	U	P-OP1	10.77	1.70	1.49
1	B	87	U	P-OP1	10.75	1.70	1.49
1	D	91	U	O3'-P	10.74	1.77	1.61
1	E	91	U	O3'-P	10.74	1.77	1.61
1	E	87	U	P-OP1	10.73	1.70	1.49
1	D	87	U	P-OP1	10.73	1.70	1.49
1	A	91	U	O3'-P	10.71	1.77	1.61
1	B	91	U	O3'-P	10.70	1.77	1.61
1	C	91	U	O3'-P	10.64	1.77	1.61
1	D	81	U	P-OP1	10.32	1.69	1.49
1	E	81	U	P-OP1	10.31	1.69	1.49
1	A	81	U	P-OP1	10.31	1.69	1.49
1	B	81	U	P-OP1	10.31	1.69	1.49
1	C	81	U	P-OP1	10.30	1.69	1.49
1	C	38	G	O3'-P	10.15	1.76	1.61
1	D	38	G	O3'-P	10.13	1.76	1.61
1	E	38	G	O3'-P	10.13	1.76	1.61
1	B	38	G	O3'-P	10.13	1.76	1.61
1	A	38	G	O3'-P	10.13	1.76	1.61
1	D	57	G	O3'-P	10.02	1.76	1.61
1	B	57	G	O3'-P	9.99	1.76	1.61
1	C	57	G	O3'-P	9.99	1.76	1.61
1	E	57	G	O3'-P	9.99	1.76	1.61
1	A	57	G	O3'-P	9.99	1.76	1.61
1	B	87	U	P-OP2	9.75	1.68	1.49
1	D	87	U	P-OP2	9.74	1.68	1.49
1	A	87	U	P-OP2	9.74	1.68	1.49
1	C	87	U	P-OP2	9.74	1.68	1.49

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	E	87	U	P-OP2	9.74	1.68	1.49
1	D	32	A	O3'-P	9.01	1.74	1.61
1	C	32	A	O3'-P	9.01	1.74	1.61
1	E	32	A	O3'-P	9.00	1.74	1.61
1	A	32	A	O3'-P	8.98	1.74	1.61
1	B	32	A	O3'-P	8.96	1.74	1.61
1	B	43	U	O3'-P	-8.84	1.47	1.61
1	D	43	U	O3'-P	-8.84	1.47	1.61
1	A	43	U	O3'-P	-8.82	1.48	1.61
1	E	43	U	O3'-P	-8.79	1.48	1.61
1	C	43	U	O3'-P	-8.78	1.48	1.61
1	C	87	U	C2'-O2'	8.44	1.55	1.42
1	D	87	U	C2'-O2'	8.43	1.55	1.42
1	A	87	U	C2'-O2'	8.43	1.55	1.42
1	B	87	U	C2'-O2'	8.40	1.55	1.42
1	E	87	U	C2'-O2'	8.40	1.55	1.42
1	D	75	G	O3'-P	-8.20	1.48	1.61
1	E	75	G	O3'-P	-8.19	1.48	1.61
1	A	75	G	O3'-P	-8.19	1.48	1.61
1	C	75	G	O3'-P	-8.17	1.48	1.61
1	B	75	G	O3'-P	-8.16	1.49	1.61
1	E	82	G	O3'-P	-7.44	1.50	1.61
1	B	82	G	O3'-P	-7.41	1.50	1.61
1	C	82	G	O3'-P	-7.40	1.50	1.61
1	A	82	G	O3'-P	-7.39	1.50	1.61
1	D	82	G	O3'-P	-7.37	1.50	1.61
1	B	30	G	O3'-P	-6.93	1.50	1.61
1	A	30	G	O3'-P	-6.92	1.50	1.61
1	E	30	G	O3'-P	-6.91	1.50	1.61
1	D	30	G	O3'-P	-6.90	1.50	1.61
1	C	30	G	O3'-P	-6.88	1.50	1.61
1	C	66	A	O3'-P	6.87	1.71	1.61
1	A	66	A	O3'-P	6.85	1.71	1.61
1	B	66	A	O3'-P	6.84	1.71	1.61
1	E	66	A	O3'-P	6.81	1.71	1.61
1	D	66	A	O3'-P	6.80	1.71	1.61
1	C	85	U	O3'-P	-6.58	1.51	1.61
1	B	85	U	O3'-P	-6.58	1.51	1.61
1	A	85	U	O3'-P	-6.55	1.51	1.61
1	D	85	U	O3'-P	-6.52	1.51	1.61
1	E	85	U	O3'-P	-6.51	1.51	1.61
1	E	113	U	O3'-P	-6.12	1.51	1.61

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	80	U	O3'-P	6.11	1.70	1.61
1	B	80	U	O3'-P	6.11	1.70	1.61
1	D	80	U	O3'-P	6.11	1.70	1.61
1	C	80	U	O3'-P	6.09	1.70	1.61
1	D	113	U	O3'-P	-6.08	1.52	1.61
1	E	80	U	O3'-P	6.07	1.70	1.61
1	A	113	U	O3'-P	-6.06	1.52	1.61
1	B	113	U	O3'-P	-6.04	1.52	1.61
1	C	113	U	O3'-P	-6.01	1.52	1.61

All (1077) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	41	A	O3'-P-O5'	41.75	166.62	104.00
1	D	41	A	O3'-P-O5'	41.73	166.60	104.00
1	A	41	A	O3'-P-O5'	41.73	166.59	104.00
1	C	41	A	O3'-P-O5'	41.71	166.56	104.00
1	E	41	A	O3'-P-O5'	41.70	166.55	104.00
1	C	40	G	O3'-P-O5'	38.14	161.21	104.00
1	A	40	G	O3'-P-O5'	38.12	161.19	104.00
1	B	40	G	O3'-P-O5'	38.12	161.19	104.00
1	D	40	G	O3'-P-O5'	38.12	161.18	104.00
1	E	40	G	O3'-P-O5'	38.12	161.18	104.00
1	E	59	U	O3'-P-O5'	36.27	158.41	104.00
1	A	59	U	O3'-P-O5'	36.24	158.37	104.00
1	D	59	U	O3'-P-O5'	36.24	158.36	104.00
1	C	59	U	O3'-P-O5'	36.24	158.36	104.00
1	B	59	U	O3'-P-O5'	36.23	158.34	104.00
1	B	29	U	P-O3'-C3'	-33.83	69.46	120.20
1	C	29	U	P-O3'-C3'	-33.80	69.51	120.20
1	A	29	U	P-O3'-C3'	-33.79	69.51	120.20
1	E	29	U	P-O3'-C3'	-33.79	69.52	120.20
1	D	29	U	P-O3'-C3'	-33.77	69.54	120.20
1	C	39	G	O3'-P-O5'	33.65	154.48	104.00
1	D	39	G	O3'-P-O5'	33.63	154.45	104.00
1	E	39	G	O3'-P-O5'	33.63	154.45	104.00
1	A	39	G	O3'-P-O5'	33.63	154.45	104.00
1	B	39	G	O3'-P-O5'	33.60	154.41	104.00
1	D	112	C	P-O3'-C3'	-30.02	75.18	120.20
1	B	112	C	P-O3'-C3'	-30.00	75.19	120.20
1	A	112	C	P-O3'-C3'	-30.00	75.20	120.20
1	C	112	C	P-O3'-C3'	-30.00	75.20	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	112	C	P-O3'-C3'	-29.98	75.23	120.20
1	E	44	A	O3'-P-O5'	29.62	148.43	104.00
1	A	44	A	O3'-P-O5'	29.61	148.41	104.00
1	C	44	A	O3'-P-O5'	29.60	148.39	104.00
1	D	44	A	O3'-P-O5'	29.59	148.39	104.00
1	B	44	A	O3'-P-O5'	29.59	148.38	104.00
1	E	80	U	O3'-P-O5'	29.35	148.02	104.00
1	A	80	U	O3'-P-O5'	29.34	148.01	104.00
1	D	80	U	O3'-P-O5'	29.32	147.99	104.00
1	C	80	U	O3'-P-O5'	29.32	147.98	104.00
1	B	80	U	O3'-P-O5'	29.32	147.98	104.00
1	E	72	U	P-O3'-C3'	28.22	162.53	120.20
1	C	96	G	P-O3'-C3'	-28.21	77.88	120.20
1	E	96	G	P-O3'-C3'	-28.21	77.89	120.20
1	A	96	G	P-O3'-C3'	-28.20	77.89	120.20
1	D	96	G	P-O3'-C3'	-28.19	77.91	120.20
1	A	72	U	P-O3'-C3'	28.19	162.48	120.20
1	B	96	G	P-O3'-C3'	-28.19	77.92	120.20
1	D	72	U	P-O3'-C3'	28.19	162.48	120.20
1	C	72	U	P-O3'-C3'	28.18	162.47	120.20
1	B	72	U	P-O3'-C3'	28.17	162.46	120.20
1	A	57	G	O3'-P-O5'	27.54	145.31	104.00
1	E	57	G	O3'-P-O5'	27.53	145.30	104.00
1	B	85	U	P-O3'-C3'	27.53	161.50	120.20
1	D	57	G	O3'-P-O5'	27.53	145.29	104.00
1	C	57	G	O3'-P-O5'	27.53	145.29	104.00
1	B	57	G	O3'-P-O5'	27.51	145.27	104.00
1	A	85	U	P-O3'-C3'	27.50	161.45	120.20
1	D	85	U	P-O3'-C3'	27.50	161.45	120.20
1	C	85	U	P-O3'-C3'	27.50	161.44	120.20
1	E	85	U	P-O3'-C3'	27.48	161.42	120.20
1	D	91	U	O3'-P-O5'	27.13	144.69	104.00
1	E	91	U	O3'-P-O5'	27.12	144.68	104.00
1	C	91	U	O3'-P-O5'	27.11	144.67	104.00
1	A	91	U	O3'-P-O5'	27.11	144.67	104.00
1	B	91	U	O3'-P-O5'	27.11	144.66	104.00
1	B	34	G	O3'-P-O5'	-26.99	63.52	104.00
1	A	34	G	O3'-P-O5'	-26.98	63.53	104.00
1	C	34	G	O3'-P-O5'	-26.97	63.54	104.00
1	D	34	G	O3'-P-O5'	-26.97	63.54	104.00
1	E	34	G	O3'-P-O5'	-26.97	63.54	104.00
1	B	53	U	O3'-P-O5'	26.60	143.90	104.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	53	U	O3'-P-O5'	26.59	143.89	104.00
1	D	53	U	O3'-P-O5'	26.59	143.88	104.00
1	A	53	U	O3'-P-O5'	26.59	143.88	104.00
1	C	53	U	O3'-P-O5'	26.58	143.87	104.00
1	C	64	C	P-O3'-C3'	26.36	159.74	120.20
1	E	64	C	P-O3'-C3'	26.33	159.69	120.20
1	A	64	C	P-O3'-C3'	26.33	159.69	120.20
1	D	64	C	P-O3'-C3'	26.32	159.67	120.20
1	B	64	C	P-O3'-C3'	26.30	159.65	120.20
1	C	87	U	C1'-C2'-O2'	-25.89	69.57	108.40
1	A	87	U	C1'-C2'-O2'	-25.85	69.62	108.40
1	D	87	U	C1'-C2'-O2'	-25.84	69.64	108.40
1	B	87	U	C1'-C2'-O2'	-25.83	69.65	108.40
1	E	87	U	C1'-C2'-O2'	-25.82	69.67	108.40
1	B	75	G	P-O3'-C3'	-24.76	83.07	120.20
1	A	75	G	P-O3'-C3'	-24.74	83.09	120.20
1	D	75	G	P-O3'-C3'	-24.73	83.10	120.20
1	E	75	G	P-O3'-C3'	-24.73	83.11	120.20
1	C	75	G	P-O3'-C3'	-24.73	83.11	120.20
1	B	38	G	P-O3'-C3'	24.64	157.16	120.20
1	D	38	G	P-O3'-C3'	24.63	157.14	120.20
1	A	38	G	P-O3'-C3'	24.63	157.14	120.20
1	E	38	G	P-O3'-C3'	24.62	157.13	120.20
1	C	38	G	P-O3'-C3'	24.60	157.10	120.20
1	E	56	A	O3'-P-O5'	23.67	139.50	104.00
1	A	56	A	O3'-P-O5'	23.66	139.49	104.00
1	B	56	A	O3'-P-O5'	23.66	139.49	104.00
1	D	56	A	O3'-P-O5'	23.66	139.49	104.00
1	C	56	A	O3'-P-O5'	23.65	139.47	104.00
1	D	44	A	OP2-P-O3'	-23.20	38.40	108.00
1	A	44	A	OP2-P-O3'	-23.20	38.41	108.00
1	E	44	A	OP2-P-O3'	-23.20	38.41	108.00
1	B	44	A	OP2-P-O3'	-23.20	38.41	108.00
1	C	44	A	OP2-P-O3'	-23.20	38.41	108.00
1	C	64	C	OP2-P-O3'	-22.50	40.49	108.00
1	A	64	C	OP2-P-O3'	-22.50	40.49	108.00
1	D	64	C	OP2-P-O3'	-22.50	40.49	108.00
1	B	64	C	OP2-P-O3'	-22.50	40.50	108.00
1	E	64	C	OP2-P-O3'	-22.50	40.50	108.00
1	C	32	A	O3'-P-O5'	-21.12	72.32	104.00
1	D	32	A	O3'-P-O5'	-21.11	72.33	104.00
1	A	32	A	O3'-P-O5'	-21.10	72.35	104.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	32	A	O3'-P-O5'	-21.10	72.36	104.00
1	E	32	A	O3'-P-O5'	-21.08	72.38	104.00
1	C	70	A	P-O3'-C3'	-20.66	89.20	120.20
1	A	70	A	P-O3'-C3'	-20.64	89.24	120.20
1	D	70	A	P-O3'-C3'	-20.63	89.25	120.20
1	E	70	A	P-O3'-C3'	-20.62	89.27	120.20
1	B	70	A	P-O3'-C3'	-20.61	89.28	120.20
1	C	47	C	P-O3'-C3'	20.00	150.21	120.20
1	A	47	C	P-O3'-C3'	20.00	150.19	120.20
1	B	47	C	P-O3'-C3'	19.99	150.18	120.20
1	E	47	C	P-O3'-C3'	19.98	150.16	120.20
1	D	47	C	P-O3'-C3'	19.97	150.16	120.20
1	E	91	U	OP2-P-O3'	-19.95	48.16	108.00
1	B	91	U	OP2-P-O3'	-19.94	48.17	108.00
1	A	91	U	OP2-P-O3'	-19.94	48.19	108.00
1	D	91	U	OP2-P-O3'	-19.93	48.19	108.00
1	C	91	U	OP2-P-O3'	-19.93	48.21	108.00
1	E	29	U	OP2-P-O3'	19.81	167.44	108.00
1	C	29	U	OP2-P-O3'	19.81	167.42	108.00
1	A	29	U	OP2-P-O3'	19.80	167.41	108.00
1	D	29	U	OP2-P-O3'	19.80	167.40	108.00
1	B	29	U	OP2-P-O3'	19.80	167.38	108.00
1	B	63	C	O3'-P-O5'	-19.54	74.69	104.00
1	E	63	C	O3'-P-O5'	-19.54	74.69	104.00
1	A	63	C	O3'-P-O5'	-19.54	74.70	104.00
1	C	63	C	O3'-P-O5'	-19.53	74.70	104.00
1	D	63	C	O3'-P-O5'	-19.51	74.73	104.00
1	E	87	U	P-O3'-C3'	-19.34	91.19	120.20
1	C	87	U	P-O3'-C3'	-19.34	91.19	120.20
1	A	87	U	P-O3'-C3'	-19.33	91.21	120.20
1	B	87	U	P-O3'-C3'	-19.32	91.23	120.20
1	D	87	U	P-O3'-C3'	-19.31	91.23	120.20
1	D	74	U	O3'-P-O5'	19.15	132.72	104.00
1	E	74	U	O3'-P-O5'	19.14	132.72	104.00
1	A	74	U	O3'-P-O5'	19.14	132.71	104.00
1	C	74	U	O3'-P-O5'	19.12	132.69	104.00
1	B	74	U	O3'-P-O5'	19.11	132.67	104.00
1	E	69	U	P-O3'-C3'	-17.74	93.60	120.20
1	D	69	U	P-O3'-C3'	-17.73	93.61	120.20
1	B	69	U	P-O3'-C3'	-17.71	93.63	120.20
1	A	69	U	P-O3'-C3'	-17.70	93.65	120.20
1	C	69	U	P-O3'-C3'	-17.69	93.67	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	73	U	P-O3'-C3'	-17.12	94.52	120.20
1	C	73	U	P-O3'-C3'	-17.10	94.55	120.20
1	B	73	U	P-O3'-C3'	-17.09	94.56	120.20
1	A	73	U	P-O3'-C3'	-17.09	94.56	120.20
1	D	73	U	P-O3'-C3'	-17.09	94.57	120.20
1	E	41	A	OP1-P-O3'	-16.74	57.79	108.00
1	C	41	A	OP1-P-O3'	-16.73	57.82	108.00
1	A	41	A	OP1-P-O3'	-16.73	57.82	108.00
1	D	41	A	OP1-P-O3'	-16.73	57.82	108.00
1	B	41	A	OP1-P-O3'	-16.72	57.84	108.00
1	B	97	C	P-O3'-C3'	-16.61	95.28	120.20
1	C	97	C	P-O3'-C3'	-16.59	95.31	120.20
1	A	97	C	P-O3'-C3'	-16.58	95.33	120.20
1	D	97	C	P-O3'-C3'	-16.57	95.34	120.20
1	E	97	C	P-O3'-C3'	-16.57	95.34	120.20
1	C	102	G	P-O3'-C3'	-16.39	95.61	120.20
1	D	113	U	P-O3'-C3'	16.39	144.78	120.20
1	E	102	G	P-O3'-C3'	-16.39	95.62	120.20
1	A	102	G	P-O3'-C3'	-16.38	95.63	120.20
1	B	102	G	P-O3'-C3'	-16.37	95.65	120.20
1	B	113	U	P-O3'-C3'	16.37	144.75	120.20
1	A	113	U	P-O3'-C3'	16.36	144.74	120.20
1	E	113	U	P-O3'-C3'	16.36	144.73	120.20
1	D	102	G	P-O3'-C3'	-16.35	95.67	120.20
1	C	113	U	P-O3'-C3'	16.33	144.70	120.20
1	C	29	U	OP1-P-O3'	-16.20	59.39	108.00
1	D	29	U	OP1-P-O3'	-16.20	59.40	108.00
1	A	29	U	OP1-P-O3'	-16.20	59.41	108.00
1	B	29	U	OP1-P-O3'	-16.20	59.41	108.00
1	E	29	U	OP1-P-O3'	-16.20	59.41	108.00
1	D	84	U	O3'-P-O5'	16.06	128.09	104.00
1	C	84	U	O3'-P-O5'	16.05	128.07	104.00
1	B	84	U	O3'-P-O5'	16.04	128.05	104.00
1	A	84	U	O3'-P-O5'	16.03	128.04	104.00
1	E	84	U	O3'-P-O5'	16.02	128.03	104.00
1	D	103	U	C4'-C3'-O3'	15.67	136.50	113.00
1	B	103	U	C4'-C3'-O3'	15.65	136.48	113.00
1	C	103	U	C4'-C3'-O3'	15.65	136.48	113.00
1	A	103	U	C4'-C3'-O3'	15.64	136.46	113.00
1	E	103	U	C4'-C3'-O3'	15.60	136.41	113.00
1	A	95	G	O3'-P-O5'	15.45	127.17	104.00
1	C	95	G	O3'-P-O5'	15.45	127.17	104.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	95	G	O3'-P-O5'	15.44	127.16	104.00
1	E	95	G	O3'-P-O5'	15.43	127.15	104.00
1	D	95	G	O3'-P-O5'	15.42	127.13	104.00
1	D	53	U	P-O3'-C3'	-15.01	97.68	120.20
1	C	53	U	P-O3'-C3'	-15.01	97.68	120.20
1	A	53	U	P-O3'-C3'	-14.99	97.71	120.20
1	E	53	U	P-O3'-C3'	-14.98	97.72	120.20
1	B	53	U	P-O3'-C3'	-14.97	97.74	120.20
1	E	101	A	P-O3'-C3'	-14.83	97.96	120.20
1	B	101	A	P-O3'-C3'	-14.82	97.97	120.20
1	C	101	A	P-O3'-C3'	-14.82	97.97	120.20
1	D	101	A	P-O3'-C3'	-14.82	97.97	120.20
1	A	101	A	P-O3'-C3'	-14.81	97.98	120.20
1	C	71	C	P-O3'-C3'	-14.39	98.61	120.20
1	E	71	C	P-O3'-C3'	-14.39	98.62	120.20
1	A	71	C	P-O3'-C3'	-14.38	98.63	120.20
1	D	71	C	P-O3'-C3'	-14.38	98.63	120.20
1	B	71	C	P-O3'-C3'	-14.37	98.65	120.20
1	D	81	U	P-O3'-C3'	14.28	141.62	120.20
1	A	81	U	P-O3'-C3'	14.28	141.61	120.20
1	E	81	U	P-O3'-C3'	14.28	141.62	120.20
1	B	81	U	P-O3'-C3'	14.27	141.61	120.20
1	C	81	U	P-O3'-C3'	14.23	141.55	120.20
1	C	63	C	P-O3'-C3'	-14.07	99.10	120.20
1	E	63	C	P-O3'-C3'	-14.06	99.11	120.20
1	A	63	C	P-O3'-C3'	-14.06	99.11	120.20
1	D	63	C	P-O3'-C3'	-14.06	99.11	120.20
1	B	63	C	P-O3'-C3'	-14.06	99.11	120.20
1	D	74	U	OP1-P-O3'	-14.04	65.88	108.00
1	C	74	U	OP1-P-O3'	-14.04	65.89	108.00
1	A	74	U	OP1-P-O3'	-14.04	65.89	108.00
1	B	74	U	OP1-P-O3'	-14.03	65.92	108.00
1	E	74	U	OP1-P-O3'	-14.02	65.93	108.00
1	C	29	U	O3'-P-O5'	-13.97	83.05	104.00
1	A	29	U	O3'-P-O5'	-13.96	83.06	104.00
1	E	29	U	O3'-P-O5'	-13.96	83.06	104.00
1	B	29	U	O3'-P-O5'	-13.95	83.08	104.00
1	D	29	U	O3'-P-O5'	-13.94	83.09	104.00
1	A	103	U	OP1-P-O3'	-13.69	66.93	108.00
1	B	103	U	OP1-P-O3'	-13.69	66.93	108.00
1	E	103	U	OP1-P-O3'	-13.69	66.93	108.00
1	D	103	U	OP1-P-O3'	-13.69	66.94	108.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	103	U	OP1-P-O3'	-13.68	66.96	108.00
1	A	80	U	P-O3'-C3'	-13.29	100.26	120.20
1	E	80	U	P-O3'-C3'	-13.29	100.27	120.20
1	D	80	U	P-O3'-C3'	-13.28	100.28	120.20
1	C	80	U	P-O3'-C3'	-13.27	100.29	120.20
1	B	80	U	P-O3'-C3'	-13.27	100.30	120.20
1	D	68	A	P-O3'-C3'	13.24	140.06	120.20
1	C	68	A	P-O3'-C3'	13.23	140.04	120.20
1	E	68	A	P-O3'-C3'	13.22	140.03	120.20
1	A	68	A	P-O3'-C3'	13.21	140.02	120.20
1	B	68	A	P-O3'-C3'	13.20	140.00	120.20
1	E	38	G	OP1-P-O3'	13.13	147.40	108.00
1	D	38	G	OP1-P-O3'	13.13	147.39	108.00
1	A	38	G	OP1-P-O3'	13.13	147.39	108.00
1	C	38	G	OP1-P-O3'	13.13	147.38	108.00
1	B	38	G	OP1-P-O3'	13.12	147.35	108.00
1	B	39	G	OP2-P-O3'	-13.10	68.70	108.00
1	C	39	G	OP2-P-O3'	-13.09	68.73	108.00
1	A	39	G	OP2-P-O3'	-13.08	68.75	108.00
1	D	39	G	OP2-P-O3'	-13.08	68.75	108.00
1	E	39	G	OP2-P-O3'	-13.07	68.78	108.00
1	D	1	U	P-O3'-C3'	-13.05	100.62	120.20
1	A	1	U	P-O3'-C3'	-13.03	100.65	120.20
1	B	1	U	P-O3'-C3'	-13.02	100.67	120.20
1	C	1	U	P-O3'-C3'	-13.02	100.66	120.20
1	E	1	U	P-O3'-C3'	-13.02	100.67	120.20
1	B	110	U	P-O3'-C3'	-13.01	100.68	120.20
1	D	110	U	P-O3'-C3'	-13.00	100.70	120.20
1	A	110	U	P-O3'-C3'	-13.00	100.71	120.20
1	C	110	U	P-O3'-C3'	-13.00	100.71	120.20
1	E	110	U	P-O3'-C3'	-13.00	100.70	120.20
1	B	46	A	P-O3'-C3'	12.98	139.66	120.20
1	A	46	A	P-O3'-C3'	12.96	139.63	120.20
1	C	46	A	P-O3'-C3'	12.95	139.62	120.20
1	D	46	A	P-O3'-C3'	12.94	139.60	120.20
1	E	46	A	P-O3'-C3'	12.92	139.58	120.20
1	D	110	U	OP2-P-O3'	12.85	146.53	108.00
1	A	110	U	OP2-P-O3'	12.84	146.51	108.00
1	E	110	U	OP2-P-O3'	12.84	146.50	108.00
1	B	110	U	OP2-P-O3'	12.83	146.50	108.00
1	C	110	U	OP2-P-O3'	12.83	146.50	108.00
1	A	90	A	O3'-P-O5'	12.62	122.93	104.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	90	A	O3'-P-O5'	12.62	122.93	104.00
1	E	90	A	O3'-P-O5'	12.62	122.93	104.00
1	D	90	A	O3'-P-O5'	12.62	122.92	104.00
1	C	90	A	O3'-P-O5'	12.61	122.91	104.00
1	D	69	U	OP2-P-O3'	12.57	145.70	108.00
1	C	69	U	OP2-P-O3'	12.56	145.69	108.00
1	B	69	U	OP2-P-O3'	12.56	145.68	108.00
1	A	69	U	OP2-P-O3'	12.56	145.67	108.00
1	E	69	U	OP2-P-O3'	12.55	145.66	108.00
1	B	114	U	P-O3'-C3'	-12.54	101.39	120.20
1	D	114	U	P-O3'-C3'	-12.53	101.41	120.20
1	A	114	U	P-O3'-C3'	-12.52	101.43	120.20
1	C	114	U	P-O3'-C3'	-12.50	101.45	120.20
1	E	114	U	P-O3'-C3'	-12.49	101.47	120.20
1	B	76	U	P-O3'-C3'	-12.47	101.50	120.20
1	A	76	U	P-O3'-C3'	-12.45	101.52	120.20
1	D	76	U	P-O3'-C3'	-12.45	101.53	120.20
1	B	53	U	OP1-P-O3'	-12.44	70.68	108.00
1	C	76	U	P-O3'-C3'	-12.44	101.55	120.20
1	E	76	U	P-O3'-C3'	-12.43	101.55	120.20
1	E	53	U	OP1-P-O3'	-12.43	70.71	108.00
1	A	53	U	OP1-P-O3'	-12.43	70.72	108.00
1	D	53	U	OP1-P-O3'	-12.43	70.72	108.00
1	C	53	U	OP1-P-O3'	-12.42	70.73	108.00
1	C	39	G	P-O3'-C3'	12.30	138.65	120.20
1	B	39	G	P-O3'-C3'	12.30	138.65	120.20
1	B	102	G	OP1-P-O3'	12.30	144.89	108.00
1	D	39	G	P-O3'-C3'	12.29	138.63	120.20
1	A	39	G	P-O3'-C3'	12.29	138.63	120.20
1	A	102	G	OP1-P-O3'	12.29	144.86	108.00
1	D	102	G	OP1-P-O3'	12.28	144.85	108.00
1	E	102	G	OP1-P-O3'	12.28	144.84	108.00
1	C	102	G	OP1-P-O3'	12.28	144.84	108.00
1	C	83	G	OP2-P-O3'	-12.27	71.19	108.00
1	E	83	G	OP2-P-O3'	-12.27	71.19	108.00
1	A	83	G	OP2-P-O3'	-12.27	71.19	108.00
1	D	83	G	OP2-P-O3'	-12.27	71.19	108.00
1	B	83	G	OP2-P-O3'	-12.26	71.21	108.00
1	E	39	G	P-O3'-C3'	12.26	138.59	120.20
1	E	40	G	OP1-P-O3'	-12.26	71.23	108.00
1	A	40	G	OP1-P-O3'	-12.25	71.26	108.00
1	B	100	A	P-O3'-C3'	-12.25	101.83	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	100	A	P-O3'-C3'	-12.24	101.83	120.20
1	B	40	G	OP1-P-O3'	-12.24	71.28	108.00
1	D	100	A	P-O3'-C3'	-12.24	101.84	120.20
1	C	40	G	OP1-P-O3'	-12.24	71.28	108.00
1	D	40	G	OP1-P-O3'	-12.24	71.28	108.00
1	A	100	A	P-O3'-C3'	-12.24	101.85	120.20
1	C	83	G	O3'-P-O5'	12.24	122.35	104.00
1	D	83	G	O3'-P-O5'	12.24	122.36	104.00
1	E	83	G	O3'-P-O5'	12.24	122.35	104.00
1	C	100	A	P-O3'-C3'	-12.23	101.85	120.20
1	A	83	G	O3'-P-O5'	12.22	122.34	104.00
1	B	83	G	O3'-P-O5'	12.19	122.29	104.00
1	D	69	U	OP1-P-O3'	-12.14	71.57	108.00
1	B	69	U	OP1-P-O3'	-12.14	71.57	108.00
1	E	69	U	OP1-P-O3'	-12.14	71.57	108.00
1	C	69	U	OP1-P-O3'	-12.14	71.58	108.00
1	A	69	U	OP1-P-O3'	-12.14	71.58	108.00
1	D	33	U	O3'-P-O5'	-12.14	85.79	104.00
1	C	33	U	O3'-P-O5'	-12.13	85.80	104.00
1	A	33	U	O3'-P-O5'	-12.13	85.81	104.00
1	E	42	U	O3'-P-O5'	-12.12	85.81	104.00
1	B	33	U	O3'-P-O5'	-12.11	85.83	104.00
1	C	42	U	O3'-P-O5'	-12.11	85.83	104.00
1	E	33	U	O3'-P-O5'	-12.11	85.83	104.00
1	E	99	A	P-O3'-C3'	-12.11	102.03	120.20
1	A	42	U	O3'-P-O5'	-12.11	85.84	104.00
1	D	42	U	O3'-P-O5'	-12.11	85.84	104.00
1	B	42	U	O3'-P-O5'	-12.10	85.85	104.00
1	B	99	A	P-O3'-C3'	-12.10	102.05	120.20
1	D	99	A	P-O3'-C3'	-12.10	102.06	120.20
1	A	99	A	P-O3'-C3'	-12.09	102.06	120.20
1	C	99	A	P-O3'-C3'	-12.08	102.08	120.20
1	B	82	G	P-O3'-C3'	12.04	138.26	120.20
1	A	82	G	P-O3'-C3'	12.03	138.24	120.20
1	E	82	G	P-O3'-C3'	12.03	138.24	120.20
1	C	82	G	P-O3'-C3'	12.01	138.22	120.20
1	D	82	G	P-O3'-C3'	12.01	138.22	120.20
1	D	92	C	P-O3'-C3'	-12.00	102.21	120.20
1	E	92	C	P-O3'-C3'	-12.00	102.21	120.20
1	A	92	C	P-O3'-C3'	-11.99	102.21	120.20
1	B	92	C	P-O3'-C3'	-11.98	102.23	120.20
1	C	92	C	P-O3'-C3'	-11.98	102.23	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	98	A	P-O3'-C3'	-11.96	102.26	120.20
1	E	98	A	P-O3'-C3'	-11.96	102.26	120.20
1	A	98	A	P-O3'-C3'	-11.96	102.27	120.20
1	D	30	G	O3'-P-O5'	-11.95	86.07	104.00
1	C	98	A	P-O3'-C3'	-11.95	102.28	120.20
1	E	30	G	O3'-P-O5'	-11.94	86.09	104.00
1	B	30	G	O3'-P-O5'	-11.93	86.10	104.00
1	C	30	G	O3'-P-O5'	-11.93	86.10	104.00
1	A	30	G	O3'-P-O5'	-11.93	86.11	104.00
1	B	98	A	P-O3'-C3'	-11.92	102.33	120.20
1	B	75	G	OP2-P-O3'	11.86	143.58	108.00
1	D	75	G	OP2-P-O3'	11.85	143.55	108.00
1	A	75	G	OP2-P-O3'	11.85	143.54	108.00
1	C	75	G	OP2-P-O3'	11.84	143.53	108.00
1	E	75	G	OP2-P-O3'	11.84	143.51	108.00
1	D	57	G	P-O3'-C3'	-11.79	102.51	120.20
1	A	57	G	P-O3'-C3'	-11.79	102.52	120.20
1	E	57	G	P-O3'-C3'	-11.79	102.52	120.20
1	C	58	U	OP2-P-O3'	-11.78	72.67	108.00
1	B	58	U	OP2-P-O3'	-11.78	72.67	108.00
1	C	57	G	P-O3'-C3'	-11.78	102.53	120.20
1	D	58	U	OP2-P-O3'	-11.77	72.68	108.00
1	A	58	U	OP2-P-O3'	-11.77	72.68	108.00
1	B	57	G	P-O3'-C3'	-11.77	102.55	120.20
1	E	58	U	OP2-P-O3'	-11.77	72.70	108.00
1	E	112	C	O3'-P-O5'	11.75	121.62	104.00
1	A	112	C	O3'-P-O5'	11.74	121.62	104.00
1	D	112	C	O3'-P-O5'	11.74	121.61	104.00
1	C	112	C	O3'-P-O5'	11.74	121.61	104.00
1	B	112	C	O3'-P-O5'	11.73	121.59	104.00
1	C	87	U	O3'-P-O5'	-11.72	86.41	104.00
1	E	77	U	OP2-P-O3'	-11.72	72.84	108.00
1	B	77	U	OP2-P-O3'	-11.72	72.85	108.00
1	D	77	U	OP2-P-O3'	-11.71	72.86	108.00
1	A	77	U	OP2-P-O3'	-11.71	72.86	108.00
1	C	77	U	OP2-P-O3'	-11.71	72.88	108.00
1	D	87	U	O3'-P-O5'	-11.71	86.44	104.00
1	A	87	U	O3'-P-O5'	-11.70	86.45	104.00
1	E	87	U	O3'-P-O5'	-11.69	86.46	104.00
1	C	93	A	P-O3'-C3'	-11.69	102.67	120.20
1	E	93	A	P-O3'-C3'	-11.69	102.67	120.20
1	A	93	A	P-O3'-C3'	-11.67	102.69	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	87	U	O3'-P-O5'	-11.67	86.50	104.00
1	B	93	A	P-O3'-C3'	-11.67	102.70	120.20
1	D	93	A	P-O3'-C3'	-11.65	102.73	120.20
1	D	115	U	P-O3'-C3'	-11.61	102.79	120.20
1	C	115	U	P-O3'-C3'	-11.60	102.79	120.20
1	E	115	U	P-O3'-C3'	-11.60	102.81	120.20
1	A	115	U	P-O3'-C3'	-11.58	102.83	120.20
1	B	115	U	P-O3'-C3'	-11.58	102.83	120.20
1	D	73	U	OP2-P-O3'	-11.52	73.45	108.00
1	B	73	U	OP2-P-O3'	-11.51	73.46	108.00
1	A	73	U	OP2-P-O3'	-11.51	73.47	108.00
1	C	73	U	OP2-P-O3'	-11.51	73.47	108.00
1	E	73	U	OP2-P-O3'	-11.51	73.48	108.00
1	A	59	U	OP2-P-O3'	-11.48	73.56	108.00
1	E	59	U	OP2-P-O3'	-11.48	73.55	108.00
1	B	59	U	OP2-P-O3'	-11.47	73.57	108.00
1	D	59	U	OP2-P-O3'	-11.47	73.58	108.00
1	C	59	U	OP2-P-O3'	-11.47	73.60	108.00
1	E	90	A	P-O3'-C3'	-11.42	103.07	120.20
1	B	90	A	P-O3'-C3'	-11.40	103.10	120.20
1	D	90	A	P-O3'-C3'	-11.39	103.11	120.20
1	A	90	A	P-O3'-C3'	-11.39	103.12	120.20
1	C	90	A	P-O3'-C3'	-11.38	103.13	120.20
1	B	62	G	O3'-P-O5'	11.35	121.02	104.00
1	A	62	G	O3'-P-O5'	11.32	120.98	104.00
1	E	62	G	O3'-P-O5'	11.32	120.98	104.00
1	D	62	G	O3'-P-O5'	11.31	120.97	104.00
1	A	110	U	OP1-P-O3'	-11.30	74.09	108.00
1	C	110	U	OP1-P-O3'	-11.30	74.08	108.00
1	B	110	U	OP1-P-O3'	-11.30	74.10	108.00
1	C	62	G	O3'-P-O5'	11.30	120.95	104.00
1	D	110	U	OP1-P-O3'	-11.30	74.11	108.00
1	E	110	U	OP1-P-O3'	-11.29	74.12	108.00
1	E	64	C	OP1-P-O3'	11.25	141.75	108.00
1	D	64	C	OP1-P-O3'	11.24	141.71	108.00
1	A	64	C	OP1-P-O3'	11.23	141.70	108.00
1	C	64	C	OP1-P-O3'	11.23	141.70	108.00
1	D	40	G	P-O3'-C3'	-11.23	103.35	120.20
1	E	40	G	P-O3'-C3'	-11.22	103.36	120.20
1	B	64	C	OP1-P-O3'	11.22	141.66	108.00
1	C	40	G	P-O3'-C3'	-11.22	103.37	120.20
1	A	40	G	P-O3'-C3'	-11.21	103.38	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	40	G	P-O3'-C3'	-11.21	103.39	120.20
1	E	58	U	O3'-P-O5'	11.18	120.77	104.00
1	D	58	U	O3'-P-O5'	11.18	120.76	104.00
1	A	58	U	O3'-P-O5'	11.16	120.74	104.00
1	C	58	U	O3'-P-O5'	11.15	120.73	104.00
1	B	58	U	O3'-P-O5'	11.15	120.72	104.00
1	D	86	G	P-O3'-C3'	11.14	136.91	120.20
1	B	86	G	P-O3'-C3'	11.13	136.90	120.20
1	C	86	G	P-O3'-C3'	11.13	136.89	120.20
1	A	86	G	P-O3'-C3'	11.12	136.88	120.20
1	E	86	G	P-O3'-C3'	11.10	136.84	120.20
1	C	113	U	P-O5'-C5'	-11.04	104.34	120.90
1	D	113	U	P-O5'-C5'	-11.04	104.34	120.90
1	A	113	U	P-O5'-C5'	-11.04	104.35	120.90
1	E	113	U	P-O5'-C5'	-11.01	104.38	120.90
1	B	113	U	P-O5'-C5'	-11.01	104.39	120.90
1	C	56	A	P-O3'-C3'	-11.00	103.69	120.20
1	A	56	A	P-O3'-C3'	-11.00	103.70	120.20
1	B	56	A	P-O3'-C3'	-10.99	103.71	120.20
1	D	56	A	P-O3'-C3'	-10.99	103.71	120.20
1	E	56	A	P-O3'-C3'	-10.99	103.71	120.20
1	B	38	G	OP2-P-O3'	-10.99	75.03	108.00
1	A	38	G	OP2-P-O3'	-10.99	75.04	108.00
1	C	38	G	OP2-P-O3'	-10.98	75.05	108.00
1	D	38	G	OP2-P-O3'	-10.98	75.06	108.00
1	E	38	G	OP2-P-O3'	-10.98	75.06	108.00
1	E	97	C	OP2-P-O3'	10.58	139.74	108.00
1	C	97	C	OP2-P-O3'	10.57	139.72	108.00
1	C	56	A	OP1-P-O3'	-10.57	76.28	108.00
1	A	97	C	OP2-P-O3'	10.57	139.71	108.00
1	B	97	C	OP2-P-O3'	10.56	139.69	108.00
1	B	56	A	OP1-P-O3'	-10.56	76.32	108.00
1	D	97	C	OP2-P-O3'	10.56	139.68	108.00
1	E	56	A	OP1-P-O3'	-10.56	76.32	108.00
1	A	56	A	OP1-P-O3'	-10.56	76.32	108.00
1	D	56	A	OP1-P-O3'	-10.55	76.33	108.00
1	C	46	A	OP2-P-O3'	-10.50	76.51	108.00
1	B	46	A	OP2-P-O3'	-10.49	76.52	108.00
1	A	46	A	OP2-P-O3'	-10.49	76.53	108.00
1	D	46	A	OP2-P-O3'	-10.49	76.54	108.00
1	E	46	A	OP2-P-O3'	-10.48	76.55	108.00
1	E	87	U	P-O5'-C5'	-10.37	105.35	120.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	87	U	P-O5'-C5'	-10.36	105.36	120.90
1	C	87	U	P-O5'-C5'	-10.36	105.36	120.90
1	A	84	U	OP2-P-O3'	-10.36	76.93	108.00
1	B	84	U	OP2-P-O3'	-10.36	76.93	108.00
1	B	87	U	P-O5'-C5'	-10.36	105.37	120.90
1	E	84	U	OP2-P-O3'	-10.36	76.93	108.00
1	C	84	U	OP2-P-O3'	-10.35	76.95	108.00
1	D	84	U	OP2-P-O3'	-10.35	76.96	108.00
1	D	87	U	P-O5'-C5'	-10.34	105.39	120.90
1	B	75	G	OP1-P-O3'	-10.34	76.98	108.00
1	A	75	G	OP1-P-O3'	-10.32	77.03	108.00
1	D	75	G	OP1-P-O3'	-10.32	77.03	108.00
1	E	75	G	OP1-P-O3'	-10.32	77.03	108.00
1	C	75	G	OP1-P-O3'	-10.32	77.03	108.00
1	E	76	U	OP1-P-O3'	10.21	138.63	108.00
1	C	76	U	OP1-P-O3'	10.20	138.61	108.00
1	D	76	U	OP1-P-O3'	10.20	138.59	108.00
1	A	76	U	OP1-P-O3'	10.20	138.59	108.00
1	B	76	U	OP1-P-O3'	10.19	138.57	108.00
1	B	94	U	OP2-P-O3'	-10.14	77.58	108.00
1	A	94	U	OP2-P-O3'	-10.14	77.59	108.00
1	E	94	U	OP2-P-O3'	-10.14	77.59	108.00
1	C	94	U	OP2-P-O3'	-10.13	77.60	108.00
1	D	94	U	OP2-P-O3'	-10.13	77.60	108.00
1	E	48	C	OP1-P-O3'	-10.12	77.63	108.00
1	B	48	C	OP1-P-O3'	-10.12	77.65	108.00
1	D	48	C	OP1-P-O3'	-10.11	77.66	108.00
1	A	48	C	OP1-P-O3'	-10.11	77.66	108.00
1	C	48	C	OP1-P-O3'	-10.11	77.67	108.00
1	B	60	C	P-O3'-C3'	10.08	135.33	120.20
1	A	62	G	OP2-P-O3'	-10.08	77.75	108.00
1	C	62	G	OP2-P-O3'	-10.08	77.75	108.00
1	D	62	G	OP2-P-O3'	-10.08	77.75	108.00
1	E	62	G	OP2-P-O3'	-10.08	77.75	108.00
1	C	60	C	P-O3'-C3'	10.07	135.31	120.20
1	E	60	C	P-O3'-C3'	10.07	135.30	120.20
1	B	62	G	OP2-P-O3'	-10.06	77.81	108.00
1	D	60	C	P-O3'-C3'	10.06	135.29	120.20
1	A	60	C	P-O3'-C3'	10.06	135.29	120.20
1	E	86	G	C4'-C3'-O3'	9.95	127.92	113.00
1	D	86	G	C4'-C3'-O3'	9.95	127.92	113.00
1	A	86	G	C4'-C3'-O3'	9.93	127.90	113.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	86	G	C4'-C3'-O3'	9.92	127.89	113.00
1	B	86	G	C4'-C3'-O3'	9.90	127.85	113.00
1	D	28	G	OP2-P-O3'	-9.81	78.58	108.00
1	C	28	G	OP2-P-O3'	-9.80	78.59	108.00
1	A	28	G	OP2-P-O3'	-9.80	78.60	108.00
1	B	28	G	OP2-P-O3'	-9.80	78.61	108.00
1	E	28	G	OP2-P-O3'	-9.80	78.61	108.00
1	C	81	U	OP2-P-O3'	-9.48	79.56	108.00
1	D	81	U	OP2-P-O3'	-9.48	79.56	108.00
1	A	81	U	OP2-P-O3'	-9.48	79.57	108.00
1	B	81	U	OP2-P-O3'	-9.47	79.58	108.00
1	E	81	U	OP2-P-O3'	-9.47	79.58	108.00
1	B	107	C	P-O3'-C3'	-9.46	106.00	120.20
1	E	107	C	P-O3'-C3'	-9.44	106.04	120.20
1	D	107	C	P-O3'-C3'	-9.43	106.05	120.20
1	A	107	C	P-O3'-C3'	-9.43	106.06	120.20
1	C	74	U	P-O3'-C3'	-9.42	106.07	120.20
1	A	74	U	P-O3'-C3'	-9.42	106.08	120.20
1	E	74	U	P-O3'-C3'	-9.42	106.08	120.20
1	B	74	U	P-O3'-C3'	-9.41	106.08	120.20
1	D	74	U	P-O3'-C3'	-9.41	106.09	120.20
1	C	105	C	OP1-P-OP2	-9.39	91.42	119.60
1	C	107	C	P-O3'-C3'	-9.39	106.12	120.20
1	D	105	C	OP1-P-OP2	-9.39	91.43	119.60
1	E	105	C	OP1-P-OP2	-9.39	91.43	119.60
1	A	105	C	OP1-P-OP2	-9.39	91.44	119.60
1	D	114	U	OP2-P-O3'	9.38	136.14	108.00
1	B	105	C	OP1-P-OP2	-9.38	91.47	119.60
1	A	114	U	OP2-P-O3'	9.37	136.11	108.00
1	C	59	U	P-O3'-C3'	-9.37	106.14	120.20
1	B	114	U	OP2-P-O3'	9.37	136.11	108.00
1	C	114	U	OP2-P-O3'	9.37	136.11	108.00
1	E	114	U	OP2-P-O3'	9.36	136.08	108.00
1	D	59	U	P-O3'-C3'	-9.35	106.17	120.20
1	A	59	U	P-O3'-C3'	-9.33	106.20	120.20
1	B	59	U	P-O3'-C3'	-9.32	106.22	120.20
1	E	59	U	P-O3'-C3'	-9.31	106.24	120.20
1	C	103	U	O3'-P-O5'	9.29	117.93	104.00
1	D	103	U	O3'-P-O5'	9.29	117.93	104.00
1	A	103	U	O3'-P-O5'	9.27	117.90	104.00
1	B	103	U	O3'-P-O5'	9.27	117.90	104.00
1	E	103	U	O3'-P-O5'	9.27	117.90	104.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	76	U	OP2-P-O3'	-9.19	80.42	108.00
1	A	76	U	OP2-P-O3'	-9.18	80.45	108.00
1	D	76	U	OP2-P-O3'	-9.18	80.45	108.00
1	E	76	U	OP2-P-O3'	-9.18	80.46	108.00
1	B	76	U	OP2-P-O3'	-9.18	80.47	108.00
1	E	67	C	O3'-P-O5'	9.16	117.73	104.00
1	A	67	C	O3'-P-O5'	9.13	117.70	104.00
1	C	67	C	O3'-P-O5'	9.12	117.68	104.00
1	B	67	C	O3'-P-O5'	9.12	117.68	104.00
1	D	67	C	O3'-P-O5'	9.11	117.67	104.00
1	B	102	G	OP2-P-O3'	-9.00	81.00	108.00
1	A	102	G	OP2-P-O3'	-8.99	81.02	108.00
1	B	40	G	OP2-P-O3'	-8.99	81.02	108.00
1	D	102	G	OP2-P-O3'	-8.99	81.02	108.00
1	A	40	G	OP2-P-O3'	-8.99	81.04	108.00
1	D	40	G	OP2-P-O3'	-8.99	81.04	108.00
1	E	102	G	OP2-P-O3'	-8.99	81.04	108.00
1	C	102	G	OP2-P-O3'	-8.98	81.05	108.00
1	E	40	G	OP2-P-O3'	-8.98	81.05	108.00
1	C	40	G	OP2-P-O3'	-8.98	81.06	108.00
1	E	42	U	OP1-P-O3'	8.96	134.89	108.00
1	D	42	U	OP1-P-O3'	8.96	134.88	108.00
1	A	42	U	OP1-P-O3'	8.95	134.85	108.00
1	C	42	U	OP1-P-O3'	8.95	134.85	108.00
1	B	42	U	OP1-P-O3'	8.94	134.83	108.00
1	C	97	C	O3'-P-O5'	-8.91	90.63	104.00
1	A	97	C	O3'-P-O5'	-8.90	90.64	104.00
1	B	97	C	O3'-P-O5'	-8.88	90.67	104.00
1	E	97	C	O3'-P-O5'	-8.88	90.68	104.00
1	D	97	C	O3'-P-O5'	-8.87	90.69	104.00
1	E	66	A	O3'-P-O5'	-8.85	90.72	104.00
1	A	66	A	O3'-P-O5'	-8.85	90.73	104.00
1	C	66	A	O3'-P-O5'	-8.84	90.74	104.00
1	D	66	A	O3'-P-O5'	-8.83	90.75	104.00
1	B	102	G	O3'-P-O5'	-8.83	90.76	104.00
1	B	66	A	O3'-P-O5'	-8.82	90.76	104.00
1	C	102	G	O3'-P-O5'	-8.82	90.76	104.00
1	A	102	G	O3'-P-O5'	-8.82	90.77	104.00
1	D	102	G	O3'-P-O5'	-8.81	90.78	104.00
1	E	102	G	O3'-P-O5'	-8.81	90.78	104.00
1	E	77	U	OP1-P-O3'	8.79	134.38	108.00
1	D	77	U	OP1-P-O3'	8.79	134.37	108.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	77	U	OP1-P-O3'	8.79	134.36	108.00
1	B	77	U	OP1-P-O3'	8.78	134.35	108.00
1	A	77	U	OP1-P-O3'	8.78	134.33	108.00
1	C	47	C	OP1-P-O3'	8.75	134.26	108.00
1	B	47	C	OP1-P-O3'	8.74	134.23	108.00
1	D	47	C	OP1-P-O3'	8.74	134.24	108.00
1	E	47	C	OP1-P-O3'	8.74	134.22	108.00
1	A	47	C	OP1-P-O3'	8.74	134.22	108.00
1	B	48	C	OP2-P-O3'	8.72	134.16	108.00
1	C	48	C	OP2-P-O3'	8.71	134.14	108.00
1	A	48	C	OP2-P-O3'	8.71	134.14	108.00
1	E	48	C	OP2-P-O3'	8.71	134.13	108.00
1	D	48	C	OP2-P-O3'	8.70	134.11	108.00
1	B	41	A	OP2-P-O3'	-8.70	81.90	108.00
1	D	41	A	OP2-P-O3'	-8.70	81.92	108.00
1	E	41	A	OP2-P-O3'	-8.69	81.92	108.00
1	A	41	A	OP2-P-O3'	-8.69	81.94	108.00
1	C	41	A	OP2-P-O3'	-8.68	81.95	108.00
1	D	79	A	P-O3'-C3'	-8.62	107.27	120.20
1	E	79	A	P-O3'-C3'	-8.62	107.28	120.20
1	A	79	A	P-O3'-C3'	-8.61	107.29	120.20
1	C	79	A	P-O3'-C3'	-8.61	107.29	120.20
1	B	79	A	P-O3'-C3'	-8.59	107.31	120.20
1	E	68	A	OP2-P-O3'	-8.56	82.33	108.00
1	D	68	A	OP2-P-O3'	-8.55	82.36	108.00
1	B	68	A	OP2-P-O3'	-8.55	82.36	108.00
1	C	68	A	OP2-P-O3'	-8.55	82.36	108.00
1	A	68	A	OP2-P-O3'	-8.54	82.37	108.00
1	D	1	U	OP2-P-O3'	8.53	133.58	108.00
1	E	1	U	OP2-P-O3'	8.52	133.57	108.00
1	B	1	U	OP2-P-O3'	8.52	133.56	108.00
1	A	1	U	OP2-P-O3'	8.52	133.55	108.00
1	C	1	U	OP2-P-O3'	8.50	133.50	108.00
1	D	93	A	OP1-P-O3'	8.47	133.40	108.00
1	A	93	A	OP1-P-O3'	8.46	133.38	108.00
1	B	93	A	OP1-P-O3'	8.46	133.38	108.00
1	C	93	A	OP1-P-O3'	8.45	133.36	108.00
1	E	93	A	OP1-P-O3'	8.45	133.35	108.00
1	B	83	G	P-O3'-C3'	8.40	132.80	120.20
1	D	83	G	P-O3'-C3'	8.40	132.80	120.20
1	E	83	G	P-O3'-C3'	8.40	132.79	120.20
1	C	83	G	P-O3'-C3'	8.39	132.78	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	83	G	P-O3'-C3'	8.39	132.78	120.20
1	C	113	U	O3'-P-O5'	-8.38	91.43	104.00
1	B	58	U	P-O3'-C3'	8.38	132.77	120.20
1	D	58	U	P-O3'-C3'	8.36	132.74	120.20
1	C	104	G	O3'-P-O5'	8.36	116.53	104.00
1	C	58	U	P-O3'-C3'	8.35	132.73	120.20
1	B	101	A	OP1-P-O3'	8.35	133.05	108.00
1	E	113	U	O3'-P-O5'	-8.35	91.48	104.00
1	B	113	U	O3'-P-O5'	-8.35	91.48	104.00
1	A	58	U	P-O3'-C3'	8.34	132.71	120.20
1	A	113	U	O3'-P-O5'	-8.34	91.49	104.00
1	D	101	A	OP1-P-O3'	8.34	133.02	108.00
1	E	104	G	O3'-P-O5'	8.34	116.51	104.00
1	A	101	A	OP1-P-O3'	8.34	133.01	108.00
1	C	101	A	OP1-P-O3'	8.34	133.01	108.00
1	A	104	G	O3'-P-O5'	8.34	116.50	104.00
1	D	104	G	O3'-P-O5'	8.34	116.50	104.00
1	E	101	A	OP1-P-O3'	8.33	133.00	108.00
1	E	58	U	P-O3'-C3'	8.32	132.68	120.20
1	B	104	G	O3'-P-O5'	8.32	116.48	104.00
1	D	113	U	O3'-P-O5'	-8.31	91.53	104.00
1	C	112	C	OP1-P-O3'	-8.31	83.08	108.00
1	D	112	C	OP1-P-O3'	-8.30	83.08	108.00
1	B	112	C	OP1-P-O3'	-8.30	83.10	108.00
1	E	112	C	OP1-P-O3'	-8.30	83.10	108.00
1	A	112	C	OP1-P-O3'	-8.29	83.11	108.00
1	D	57	G	OP2-P-O3'	-8.28	83.16	108.00
1	E	94	U	OP1-P-O3'	8.28	132.84	108.00
1	C	57	G	OP2-P-O3'	-8.28	83.17	108.00
1	A	57	G	OP2-P-O3'	-8.28	83.17	108.00
1	B	57	G	OP2-P-O3'	-8.28	83.17	108.00
1	C	94	U	OP1-P-O3'	8.28	132.83	108.00
1	A	94	U	OP1-P-O3'	8.27	132.82	108.00
1	D	94	U	OP1-P-O3'	8.27	132.81	108.00
1	E	57	G	OP2-P-O3'	-8.27	83.19	108.00
1	B	94	U	OP1-P-O3'	8.27	132.81	108.00
1	D	73	U	OP1-P-O3'	8.25	132.75	108.00
1	C	73	U	OP1-P-O3'	8.24	132.73	108.00
1	E	73	U	OP1-P-O3'	8.24	132.73	108.00
1	A	73	U	OP1-P-O3'	8.24	132.72	108.00
1	B	73	U	OP1-P-O3'	8.24	132.72	108.00
1	C	42	U	P-O3'-C3'	-8.22	107.87	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	42	U	P-O3'-C3'	-8.22	107.87	120.20
1	E	42	U	P-O3'-C3'	-8.22	107.87	120.20
1	A	42	U	P-O3'-C3'	-8.21	107.89	120.20
1	B	42	U	P-O3'-C3'	-8.19	107.91	120.20
1	D	80	U	OP2-P-O3'	-8.18	83.45	108.00
1	A	80	U	OP2-P-O3'	-8.18	83.46	108.00
1	B	80	U	OP2-P-O3'	-8.18	83.46	108.00
1	E	80	U	OP2-P-O3'	-8.18	83.46	108.00
1	C	80	U	OP2-P-O3'	-8.17	83.48	108.00
1	B	72	U	OP2-P-O3'	8.17	132.51	108.00
1	E	72	U	OP2-P-O3'	8.16	132.49	108.00
1	D	72	U	OP2-P-O3'	8.16	132.47	108.00
1	A	72	U	OP2-P-O3'	8.15	132.47	108.00
1	C	72	U	OP2-P-O3'	8.15	132.44	108.00
1	B	47	C	O3'-P-O5'	-8.13	91.80	104.00
1	A	47	C	O3'-P-O5'	-8.12	91.82	104.00
1	D	47	C	O3'-P-O5'	-8.12	91.82	104.00
1	C	47	C	O3'-P-O5'	-8.11	91.83	104.00
1	E	47	C	O3'-P-O5'	-8.11	91.83	104.00
1	D	70	A	OP2-P-O3'	8.08	132.24	108.00
1	C	70	A	OP2-P-O3'	8.08	132.23	108.00
1	E	46	A	OP1-P-O3'	8.07	132.23	108.00
1	B	46	A	OP1-P-O3'	8.07	132.22	108.00
1	A	46	A	OP1-P-O3'	8.07	132.21	108.00
1	A	70	A	OP2-P-O3'	8.07	132.21	108.00
1	B	70	A	OP2-P-O3'	8.06	132.19	108.00
1	C	46	A	OP1-P-O3'	8.06	132.19	108.00
1	D	46	A	OP1-P-O3'	8.06	132.18	108.00
1	E	70	A	OP2-P-O3'	8.06	132.18	108.00
1	D	66	A	OP1-P-O3'	7.83	131.50	108.00
1	E	66	A	OP1-P-O3'	7.83	131.48	108.00
1	A	66	A	OP1-P-O3'	7.83	131.47	108.00
1	C	66	A	OP1-P-O3'	7.83	131.48	108.00
1	B	66	A	OP1-P-O3'	7.82	131.47	108.00
1	B	80	U	OP1-P-O3'	-7.79	84.64	108.00
1	A	80	U	OP1-P-O3'	-7.78	84.65	108.00
1	D	80	U	OP1-P-O3'	-7.78	84.65	108.00
1	E	80	U	OP1-P-O3'	-7.78	84.65	108.00
1	C	80	U	OP1-P-O3'	-7.77	84.68	108.00
1	D	90	A	OP1-P-O3'	-7.69	84.93	108.00
1	B	90	A	OP1-P-O3'	-7.68	84.95	108.00
1	E	90	A	OP1-P-O3'	-7.68	84.95	108.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	90	A	OP1-P-O3'	-7.68	84.96	108.00
1	C	90	A	OP1-P-O3'	-7.68	84.96	108.00
1	D	81	U	OP1-P-OP2	-7.56	96.91	119.60
1	B	81	U	OP1-P-OP2	-7.56	96.92	119.60
1	E	81	U	OP1-P-OP2	-7.56	96.92	119.60
1	A	81	U	OP1-P-OP2	-7.56	96.93	119.60
1	C	81	U	OP1-P-OP2	-7.54	96.97	119.60
1	D	45	A	P-O3'-C3'	7.49	131.43	120.20
1	A	45	A	P-O3'-C3'	7.48	131.41	120.20
1	B	45	A	P-O3'-C3'	7.47	131.40	120.20
1	C	45	A	P-O3'-C3'	7.46	131.39	120.20
1	E	45	A	P-O3'-C3'	7.45	131.38	120.20
1	E	95	G	OP2-P-O3'	-7.40	85.81	108.00
1	A	95	G	OP2-P-O3'	-7.39	85.82	108.00
1	B	95	G	OP2-P-O3'	-7.39	85.83	108.00
1	D	95	G	OP2-P-O3'	-7.39	85.84	108.00
1	C	95	G	OP2-P-O3'	-7.38	85.84	108.00
1	E	100	A	OP1-P-O3'	7.38	130.14	108.00
1	D	100	A	OP1-P-O3'	7.38	130.13	108.00
1	A	100	A	OP1-P-O3'	7.38	130.12	108.00
1	C	100	A	OP1-P-O3'	7.37	130.12	108.00
1	B	100	A	OP1-P-O3'	7.37	130.10	108.00
1	B	114	U	OP1-P-O3'	-7.33	86.01	108.00
1	A	114	U	OP1-P-O3'	-7.33	86.01	108.00
1	C	114	U	OP1-P-O3'	-7.33	86.02	108.00
1	D	114	U	OP1-P-O3'	-7.33	86.01	108.00
1	E	114	U	OP1-P-O3'	-7.33	86.02	108.00
1	B	33	U	P-O3'-C3'	-7.28	109.28	120.20
1	C	33	U	P-O3'-C3'	-7.28	109.28	120.20
1	C	59	U	OP1-P-O3'	-7.26	86.21	108.00
1	D	59	U	OP1-P-O3'	-7.26	86.21	108.00
1	A	111	A	P-O3'-C3'	-7.26	109.31	120.20
1	B	95	G	P-O3'-C3'	7.26	131.09	120.20
1	A	59	U	OP1-P-O3'	-7.26	86.23	108.00
1	D	33	U	P-O3'-C3'	-7.26	109.31	120.20
1	E	33	U	P-O3'-C3'	-7.26	109.31	120.20
1	E	111	A	P-O3'-C3'	-7.26	109.31	120.20
1	A	33	U	P-O3'-C3'	-7.26	109.31	120.20
1	B	59	U	OP1-P-O3'	-7.26	86.23	108.00
1	C	111	A	P-O3'-C3'	-7.26	109.31	120.20
1	D	95	G	P-O3'-C3'	7.25	131.08	120.20
1	B	111	A	P-O3'-C3'	-7.25	109.32	120.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	59	U	OP1-P-O3'	-7.25	86.24	108.00
1	A	95	G	P-O3'-C3'	7.25	131.07	120.20
1	C	95	G	P-O3'-C3'	7.25	131.07	120.20
1	C	99	A	OP1-P-O3'	7.24	129.73	108.00
1	D	111	A	P-O3'-C3'	-7.24	109.34	120.20
1	E	95	G	P-O3'-C3'	7.24	131.06	120.20
1	A	99	A	OP1-P-O3'	7.23	129.69	108.00
1	B	99	A	OP1-P-O3'	7.23	129.69	108.00
1	D	99	A	OP1-P-O3'	7.23	129.69	108.00
1	E	38	G	O3'-P-O5'	-7.23	93.16	104.00
1	E	99	A	OP1-P-O3'	7.22	129.67	108.00
1	A	38	G	O3'-P-O5'	-7.22	93.17	104.00
1	C	38	G	O3'-P-O5'	-7.22	93.17	104.00
1	B	38	G	O3'-P-O5'	-7.22	93.18	104.00
1	D	38	G	O3'-P-O5'	-7.20	93.19	104.00
1	B	94	U	P-O3'-C3'	-7.18	109.44	120.20
1	B	104	G	P-O3'-C3'	-7.16	109.46	120.20
1	D	94	U	P-O3'-C3'	-7.16	109.46	120.20
1	A	94	U	P-O3'-C3'	-7.16	109.47	120.20
1	C	104	G	P-O3'-C3'	-7.15	109.47	120.20
1	D	104	G	P-O3'-C3'	-7.15	109.47	120.20
1	A	104	G	P-O3'-C3'	-7.15	109.48	120.20
1	E	94	U	P-O3'-C3'	-7.14	109.49	120.20
1	C	94	U	P-O3'-C3'	-7.14	109.49	120.20
1	E	104	G	P-O3'-C3'	-7.14	109.49	120.20
1	A	32	A	OP2-P-O3'	7.10	129.30	108.00
1	B	32	A	OP2-P-O3'	7.10	129.29	108.00
1	C	32	A	OP2-P-O3'	7.09	129.28	108.00
1	D	32	A	OP2-P-O3'	7.09	129.27	108.00
1	E	32	A	OP2-P-O3'	7.08	129.25	108.00
1	C	77	U	P-O3'-C3'	-6.91	109.84	120.20
1	A	77	U	P-O3'-C3'	-6.91	109.84	120.20
1	B	77	U	P-O3'-C3'	-6.90	109.86	120.20
1	D	77	U	P-O3'-C3'	-6.89	109.86	120.20
1	E	77	U	P-O3'-C3'	-6.89	109.87	120.20
1	E	68	A	O3'-P-O5'	6.87	114.31	104.00
1	B	68	A	O3'-P-O5'	6.86	114.29	104.00
1	D	68	A	O3'-P-O5'	6.86	114.29	104.00
1	A	68	A	O3'-P-O5'	6.85	114.28	104.00
1	B	98	A	OP1-P-O3'	6.83	128.50	108.00
1	C	68	A	O3'-P-O5'	6.83	114.25	104.00
1	C	98	A	OP1-P-O3'	6.83	128.49	108.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	98	A	OP1-P-O3'	6.83	128.48	108.00
1	D	98	A	OP1-P-O3'	6.83	128.47	108.00
1	E	98	A	OP1-P-O3'	6.82	128.45	108.00
1	C	103	U	OP2-P-O3'	6.75	128.25	108.00
1	D	103	U	OP2-P-O3'	6.75	128.24	108.00
1	A	103	U	OP2-P-O3'	6.74	128.22	108.00
1	B	103	U	OP2-P-O3'	6.74	128.21	108.00
1	E	103	U	OP2-P-O3'	6.74	128.21	108.00
1	D	97	C	OP1-P-O3'	-6.73	87.81	108.00
1	A	97	C	OP1-P-O3'	-6.73	87.82	108.00
1	E	97	C	OP1-P-O3'	-6.73	87.82	108.00
1	C	97	C	OP1-P-O3'	-6.72	87.82	108.00
1	B	97	C	OP1-P-O3'	-6.72	87.84	108.00
1	E	81	U	OP1-P-O3'	6.70	128.09	108.00
1	B	81	U	OP1-P-O3'	6.70	128.09	108.00
1	A	81	U	OP1-P-O3'	6.69	128.07	108.00
1	D	81	U	OP1-P-O3'	6.69	128.08	108.00
1	C	81	U	OP1-P-O3'	6.69	128.07	108.00
1	E	43	U	OP2-P-O3'	-6.63	88.10	108.00
1	A	43	U	OP2-P-O3'	-6.62	88.12	108.00
1	B	43	U	OP2-P-O3'	-6.62	88.14	108.00
1	D	43	U	OP2-P-O3'	-6.62	88.14	108.00
1	C	43	U	OP2-P-O3'	-6.62	88.14	108.00
1	A	104	G	OP1-P-O3'	6.61	127.84	108.00
1	B	104	G	OP1-P-O3'	6.61	127.84	108.00
1	E	104	G	OP1-P-O3'	6.61	127.84	108.00
1	D	104	G	OP1-P-O3'	6.61	127.83	108.00
1	C	104	G	OP1-P-O3'	6.60	127.81	108.00
1	E	101	A	O3'-P-O5'	-6.57	94.15	104.00
1	D	101	A	O3'-P-O5'	-6.57	94.15	104.00
1	C	101	A	O3'-P-O5'	-6.57	94.15	104.00
1	A	101	A	O3'-P-O5'	-6.56	94.16	104.00
1	B	101	A	O3'-P-O5'	-6.56	94.16	104.00
1	B	107	C	OP1-P-O3'	-6.49	88.54	108.00
1	D	107	C	OP1-P-O3'	-6.48	88.55	108.00
1	A	107	C	OP1-P-O3'	-6.47	88.59	108.00
1	E	107	C	OP1-P-O3'	-6.47	88.59	108.00
1	C	107	C	OP1-P-O3'	-6.46	88.61	108.00
1	D	70	A	O3'-P-O5'	-6.43	94.36	104.00
1	A	70	A	O3'-P-O5'	-6.40	94.39	104.00
1	E	70	A	O3'-P-O5'	-6.39	94.41	104.00
1	B	70	A	O3'-P-O5'	-6.39	94.42	104.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	93	A	OP2-P-O3'	-6.39	88.84	108.00
1	A	93	A	OP2-P-O3'	-6.38	88.86	108.00
1	C	70	A	O3'-P-O5'	-6.38	94.43	104.00
1	E	93	A	OP2-P-O3'	-6.38	88.85	108.00
1	B	93	A	OP2-P-O3'	-6.38	88.87	108.00
1	C	93	A	OP2-P-O3'	-6.38	88.87	108.00
1	E	44	A	OP1-P-O3'	-6.38	88.87	108.00
1	B	44	A	OP1-P-O3'	-6.37	88.89	108.00
1	C	44	A	OP1-P-O3'	-6.37	88.89	108.00
1	A	44	A	OP1-P-O3'	-6.37	88.89	108.00
1	E	28	G	OP1-P-O3'	6.36	127.09	108.00
1	B	72	U	OP1-P-O3'	-6.36	88.91	108.00
1	B	28	G	OP1-P-O3'	6.36	127.08	108.00
1	D	44	A	OP1-P-O3'	-6.36	88.92	108.00
1	A	28	G	OP1-P-O3'	6.36	127.08	108.00
1	C	28	G	OP1-P-O3'	6.36	127.07	108.00
1	E	72	U	OP1-P-O3'	-6.35	88.94	108.00
1	A	72	U	OP1-P-O3'	-6.35	88.95	108.00
1	D	28	G	OP1-P-O3'	6.35	127.04	108.00
1	C	72	U	OP1-P-O3'	-6.34	88.97	108.00
1	D	72	U	OP1-P-O3'	-6.33	89.00	108.00
1	B	107	C	OP2-P-O3'	6.33	126.97	108.00
1	D	107	C	OP2-P-O3'	6.32	126.97	108.00
1	E	107	C	OP2-P-O3'	6.32	126.97	108.00
1	A	107	C	OP2-P-O3'	6.32	126.97	108.00
1	C	107	C	OP2-P-O3'	6.32	126.97	108.00
1	B	115	U	OP2-P-O3'	6.29	126.89	108.00
1	D	115	U	OP2-P-O3'	6.29	126.88	108.00
1	A	115	U	OP2-P-O3'	6.29	126.87	108.00
1	E	115	U	OP2-P-O3'	6.29	126.86	108.00
1	C	115	U	OP2-P-O3'	6.28	126.84	108.00
1	B	85	U	O3'-P-O5'	6.20	113.30	104.00
1	D	85	U	O3'-P-O5'	6.19	113.29	104.00
1	A	85	U	O3'-P-O5'	6.19	113.28	104.00
1	C	85	U	O3'-P-O5'	6.18	113.28	104.00
1	E	85	U	O3'-P-O5'	6.18	113.28	104.00
1	E	33	U	OP2-P-O3'	6.13	126.40	108.00
1	C	33	U	OP2-P-O3'	6.13	126.40	108.00
1	A	33	U	OP2-P-O3'	6.13	126.39	108.00
1	B	33	U	OP2-P-O3'	6.13	126.39	108.00
1	D	33	U	OP2-P-O3'	6.13	126.39	108.00
1	B	96	G	O3'-P-O5'	6.09	113.13	104.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	96	G	O3'-P-O5'	6.07	113.11	104.00
1	A	96	G	O3'-P-O5'	6.07	113.11	104.00
1	C	98	A	O3'-P-O5'	-6.07	94.89	104.00
1	B	98	A	O3'-P-O5'	-6.07	94.90	104.00
1	A	98	A	O3'-P-O5'	-6.07	94.90	104.00
1	E	98	A	O3'-P-O5'	-6.06	94.90	104.00
1	D	98	A	O3'-P-O5'	-6.06	94.91	104.00
1	E	40	G	C2'-C3'-O3'	6.06	122.79	113.70
1	E	96	G	O3'-P-O5'	6.05	113.08	104.00
1	C	96	G	O3'-P-O5'	6.05	113.07	104.00
1	B	78	G	O3'-P-O5'	-6.05	94.93	104.00
1	D	40	G	C2'-C3'-O3'	6.04	122.77	113.70
1	C	40	G	C2'-C3'-O3'	6.04	122.76	113.70
1	A	40	G	C2'-C3'-O3'	6.04	122.76	113.70
1	E	78	G	O3'-P-O5'	-6.04	94.94	104.00
1	A	78	G	O3'-P-O5'	-6.04	94.94	104.00
1	B	40	G	C2'-C3'-O3'	6.03	122.75	113.70
1	B	116	G	O3'-P-O5'	-6.03	94.95	104.00
1	C	78	G	O3'-P-O5'	-6.03	94.96	104.00
1	D	78	G	O3'-P-O5'	-6.03	94.96	104.00
1	E	116	G	O3'-P-O5'	-6.01	94.98	104.00
1	A	116	G	O3'-P-O5'	-6.01	94.99	104.00
1	C	116	G	O3'-P-O5'	-6.00	95.00	104.00
1	D	116	G	O3'-P-O5'	-5.99	95.01	104.00
1	D	85	U	OP1-P-O3'	-5.98	90.07	108.00
1	C	85	U	OP1-P-O3'	-5.97	90.09	108.00
1	E	85	U	OP1-P-O3'	-5.96	90.11	108.00
1	A	85	U	OP1-P-O3'	-5.96	90.11	108.00
1	B	85	U	OP1-P-O3'	-5.95	90.15	108.00
1	C	1	U	OP1-P-O3'	-5.91	90.26	108.00
1	B	1	U	OP1-P-O3'	-5.91	90.27	108.00
1	E	1	U	OP1-P-O3'	-5.91	90.27	108.00
1	A	1	U	OP1-P-O3'	-5.91	90.27	108.00
1	D	1	U	OP1-P-O3'	-5.91	90.28	108.00
1	B	81	U	O5'-C5'-C4'	5.89	120.33	111.50
1	D	86	G	OP1-P-O3'	5.89	125.67	108.00
1	E	81	U	O5'-C5'-C4'	5.88	120.32	111.50
1	B	86	G	OP1-P-O3'	5.88	125.63	108.00
1	A	86	G	OP1-P-O3'	5.88	125.63	108.00
1	D	1	U	O3'-P-O5'	-5.87	95.19	104.00
1	E	86	G	OP1-P-O3'	5.87	125.61	108.00
1	C	81	U	O5'-C5'-C4'	5.87	120.31	111.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	86	G	OP1-P-O3'	5.87	125.61	108.00
1	A	81	U	O5'-C5'-C4'	5.87	120.30	111.50
1	E	1	U	O3'-P-O5'	-5.86	95.21	104.00
1	A	1	U	O3'-P-O5'	-5.86	95.21	104.00
1	D	110	U	O3'-P-O5'	-5.85	95.22	104.00
1	C	110	U	O3'-P-O5'	-5.85	95.23	104.00
1	A	110	U	O3'-P-O5'	-5.85	95.23	104.00
1	E	110	U	O3'-P-O5'	-5.84	95.23	104.00
1	B	110	U	O3'-P-O5'	-5.84	95.24	104.00
1	D	81	U	O5'-C5'-C4'	5.84	120.26	111.50
1	C	1	U	O3'-P-O5'	-5.84	95.24	104.00
1	B	1	U	O3'-P-O5'	-5.84	95.24	104.00
1	B	99	A	O3'-P-O5'	-5.82	95.27	104.00
1	D	99	A	O3'-P-O5'	-5.81	95.28	104.00
1	A	99	A	O3'-P-O5'	-5.81	95.28	104.00
1	C	99	A	O3'-P-O5'	-5.81	95.28	104.00
1	E	99	A	O3'-P-O5'	-5.79	95.31	104.00
1	E	43	U	O3'-P-O5'	5.75	112.63	104.00
1	B	43	U	O3'-P-O5'	5.73	112.59	104.00
1	A	43	U	O3'-P-O5'	5.73	112.59	104.00
1	D	43	U	O3'-P-O5'	5.72	112.59	104.00
1	C	43	U	O3'-P-O5'	5.71	112.56	104.00
1	C	100	A	O3'-P-O5'	-5.67	95.49	104.00
1	B	100	A	O3'-P-O5'	-5.65	95.52	104.00
1	A	100	A	O3'-P-O5'	-5.65	95.53	104.00
1	D	100	A	O3'-P-O5'	-5.64	95.54	104.00
1	E	100	A	O3'-P-O5'	-5.63	95.55	104.00
1	E	111	A	OP1-P-O3'	-5.63	91.11	108.00
1	A	111	A	OP1-P-O3'	-5.62	91.14	108.00
1	C	111	A	OP1-P-O3'	-5.62	91.13	108.00
1	B	111	A	OP1-P-O3'	-5.62	91.14	108.00
1	D	111	A	OP1-P-O3'	-5.62	91.15	108.00
1	D	73	U	O4'-C1'-N1	5.61	116.91	108.50
1	E	73	U	O4'-C1'-N1	5.60	116.90	108.50
1	C	73	U	O4'-C1'-N1	5.59	116.89	108.50
1	A	73	U	O4'-C1'-N1	5.58	116.88	108.50
1	B	73	U	O4'-C1'-N1	5.58	116.87	108.50
1	E	57	G	OP1-P-O3'	-5.57	91.29	108.00
1	B	57	G	OP1-P-O3'	-5.57	91.31	108.00
1	D	57	G	OP1-P-O3'	-5.56	91.32	108.00
1	A	57	G	OP1-P-O3'	-5.56	91.33	108.00
1	C	57	G	OP1-P-O3'	-5.55	91.34	108.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	101	A	OP2-P-O3'	-5.53	91.41	108.00
1	B	101	A	OP2-P-O3'	-5.53	91.42	108.00
1	E	101	A	OP2-P-O3'	-5.53	91.42	108.00
1	A	101	A	OP2-P-O3'	-5.53	91.42	108.00
1	C	101	A	OP2-P-O3'	-5.52	91.43	108.00
1	B	71	C	O3'-P-O5'	5.45	112.18	104.00
1	E	71	C	O3'-P-O5'	5.45	112.18	104.00
1	C	86	G	C2'-C3'-O3'	5.45	121.88	113.70
1	C	71	C	O3'-P-O5'	5.45	112.17	104.00
1	D	71	C	O3'-P-O5'	5.45	112.17	104.00
1	A	71	C	O3'-P-O5'	5.44	112.16	104.00
1	B	86	G	C2'-C3'-O3'	5.43	121.84	113.70
1	A	86	G	C2'-C3'-O3'	5.42	121.83	113.70
1	D	86	G	C2'-C3'-O3'	5.42	121.83	113.70
1	E	86	G	OP2-P-O3'	-5.42	91.75	108.00
1	B	86	G	OP2-P-O3'	-5.41	91.76	108.00
1	A	86	G	OP2-P-O3'	-5.40	91.79	108.00
1	D	86	G	OP2-P-O3'	-5.40	91.80	108.00
1	C	86	G	OP2-P-O3'	-5.39	91.83	108.00
1	E	79	A	OP1-P-O3'	-5.39	91.83	108.00
1	D	79	A	OP1-P-O3'	-5.39	91.84	108.00
1	E	86	G	C2'-C3'-O3'	5.39	121.78	113.70
1	C	79	A	OP1-P-O3'	-5.38	91.85	108.00
1	A	79	A	OP1-P-O3'	-5.38	91.86	108.00
1	B	79	A	OP1-P-O3'	-5.38	91.85	108.00
1	D	30	G	OP2-P-O3'	5.38	124.14	108.00
1	A	30	G	OP2-P-O3'	5.38	124.13	108.00
1	C	30	G	OP2-P-O3'	5.38	124.13	108.00
1	E	30	G	OP2-P-O3'	5.38	124.12	108.00
1	B	30	G	OP2-P-O3'	5.36	124.09	108.00
1	C	115	U	OP1-P-O3'	-5.24	92.30	108.00
1	D	115	U	OP1-P-O3'	-5.24	92.29	108.00
1	E	115	U	OP1-P-O3'	-5.23	92.31	108.00
1	A	115	U	OP1-P-O3'	-5.23	92.32	108.00
1	B	115	U	OP1-P-O3'	-5.22	92.33	108.00
1	E	87	U	C3'-C2'-O2'	5.22	118.54	110.70
1	A	87	U	C3'-C2'-O2'	5.22	118.53	110.70
1	B	87	U	C3'-C2'-O2'	5.22	118.53	110.70
1	E	2	C	O3'-P-O5'	-5.21	96.18	104.00
1	D	2	C	O3'-P-O5'	-5.21	96.19	104.00
1	C	2	C	O3'-P-O5'	-5.21	96.19	104.00
1	C	87	U	C3'-C2'-O2'	5.21	118.51	110.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	87	U	C3'-C2'-O2'	5.21	118.51	110.70
1	C	15	C	O3'-P-O5'	-5.21	96.19	104.00
1	A	2	C	O3'-P-O5'	-5.20	96.19	104.00
1	B	15	C	O3'-P-O5'	-5.20	96.20	104.00
1	A	15	C	O3'-P-O5'	-5.19	96.21	104.00
1	D	15	C	O3'-P-O5'	-5.19	96.21	104.00
1	B	79	A	O3'-P-O5'	5.19	111.78	104.00
1	B	2	C	O3'-P-O5'	-5.19	96.22	104.00
1	A	79	A	O3'-P-O5'	5.18	111.76	104.00
1	E	15	C	O3'-P-O5'	-5.17	96.24	104.00
1	D	79	A	O3'-P-O5'	5.17	111.75	104.00
1	C	79	A	O3'-P-O5'	5.16	111.74	104.00
1	E	47	C	OP2-P-O3'	-5.16	92.53	108.00
1	B	47	C	OP2-P-O3'	-5.16	92.53	108.00
1	A	47	C	OP2-P-O3'	-5.15	92.55	108.00
1	C	70	A	OP1-P-O3'	-5.15	92.55	108.00
1	E	79	A	O3'-P-O5'	5.15	111.72	104.00
1	D	47	C	OP2-P-O3'	-5.14	92.57	108.00
1	D	70	A	OP1-P-O3'	-5.14	92.56	108.00
1	A	70	A	OP1-P-O3'	-5.14	92.57	108.00
1	C	47	C	OP2-P-O3'	-5.14	92.58	108.00
1	E	70	A	OP1-P-O3'	-5.14	92.59	108.00
1	B	70	A	OP1-P-O3'	-5.12	92.63	108.00
1	B	34	G	OP2-P-O3'	5.11	123.31	108.00
1	C	34	G	OP2-P-O3'	5.11	123.32	108.00
1	D	34	G	OP2-P-O3'	5.10	123.31	108.00
1	E	34	G	OP2-P-O3'	5.10	123.30	108.00
1	A	34	G	OP2-P-O3'	5.10	123.29	108.00
1	C	93	A	O3'-P-O5'	-5.08	96.39	104.00
1	A	93	A	O3'-P-O5'	-5.08	96.39	104.00
1	D	93	A	O3'-P-O5'	-5.08	96.39	104.00
1	B	93	A	O3'-P-O5'	-5.07	96.40	104.00
1	E	93	A	O3'-P-O5'	-5.07	96.40	104.00
1	C	75	G	O3'-P-O5'	-5.06	96.41	104.00
1	D	75	G	O3'-P-O5'	-5.06	96.41	104.00
1	A	75	G	O3'-P-O5'	-5.05	96.42	104.00
1	E	75	G	O3'-P-O5'	-5.05	96.42	104.00
1	B	75	G	O3'-P-O5'	-5.04	96.44	104.00
1	B	57	G	C4'-C3'-C2'	-5.01	97.59	102.60
1	C	57	G	C4'-C3'-C2'	-5.01	97.59	102.60

All (5) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
1	A	40	G	C3'
1	B	40	G	C3'
1	C	40	G	C3'
1	D	40	G	C3'
1	E	40	G	C3'

All (5) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	87	U	Sidechain
1	B	87	U	Sidechain
1	C	87	U	Sidechain
1	D	87	U	Sidechain
1	E	87	U	Sidechain

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2310	109	1181	364	0
1	B	2310	109	1183	372	0
1	C	2310	109	1182	367	0
1	D	2310	109	1182	367	0
1	E	2310	109	1181	367	0
All	All	11550	545	5909	1784	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 103.

All (1784) 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:A:29:U:C6	1:A:30:G:H4'	1.31	1.66
1:B:29:U:C6	1:B:30:G:H4'	1.31	1.66
1:D:29:U:C6	1:D:30:G:H4'	1.31	1.66
1:C:29:U:C6	1:C:30:G:H4'	1.31	1.65
1:C:28:G:H4'	1:C:29:U:C5'	1.22	1.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:29:U:C6	1:E:30:G:H4'	1.31	1.58
1:D:28:G:H4'	1:D:29:U:C5'	1.22	1.58
1:B:28:G:H4'	1:B:29:U:C5'	1.22	1.57
1:E:28:G:H4'	1:E:29:U:C5'	1.22	1.57
1:A:28:G:H4'	1:A:29:U:C5'	1.22	1.55
1:B:112:C:H3'	1:B:113:U:P	1.53	1.48
1:C:112:C:H3'	1:C:113:U:P	1.53	1.48
1:E:112:C:H3'	1:E:113:U:P	1.53	1.48
1:A:112:C:H3'	1:A:113:U:P	1.53	1.47
1:D:112:C:H3'	1:D:113:U:P	1.53	1.45
1:B:46:A:N6	1:C:84:U:H3	1.13	1.43
1:A:29:U:O5'	1:A:30:G:C8	1.74	1.41
1:D:29:U:O5'	1:D:30:G:C8	1.74	1.40
1:E:29:U:C6	1:E:30:G:C4'	2.05	1.40
1:C:29:U:O5'	1:C:30:G:C8	1.74	1.40
1:D:29:U:C6	1:D:30:G:C4'	2.05	1.40
1:B:29:U:O5'	1:B:30:G:C8	1.74	1.39
1:A:29:U:C6	1:A:30:G:C4'	2.05	1.38
1:B:29:U:C6	1:B:30:G:C4'	2.05	1.38
1:E:29:U:O5'	1:E:30:G:C8	1.74	1.38
1:C:57:G:O3'	1:C:57:G:C3'	1.72	1.38
1:C:29:U:C6	1:C:30:G:C4'	2.05	1.37
1:A:43:U:C5'	1:A:44:A:H5''	1.55	1.37
1:D:57:G:C3'	1:D:57:G:O3'	1.72	1.37
1:E:43:U:C5'	1:E:44:A:H5''	1.55	1.37
1:C:40:G:N2	1:C:62:G:N7	1.73	1.36
1:E:57:G:C3'	1:E:57:G:O3'	1.72	1.36
1:A:40:G:N2	1:A:62:G:N7	1.73	1.36
1:C:65:C:H2'	1:C:66:A:P	1.66	1.36
1:D:65:C:H2'	1:D:66:A:P	1.66	1.36
1:A:65:C:H2'	1:A:66:A:P	1.66	1.35
1:B:40:G:N2	1:B:62:G:N7	1.73	1.35
1:B:65:C:H2'	1:B:66:A:P	1.66	1.35
1:D:40:G:N2	1:D:62:G:N7	1.73	1.35
1:A:57:G:C3'	1:A:57:G:O3'	1.72	1.35
1:B:43:U:C5'	1:B:44:A:H5''	1.55	1.34
1:B:57:G:C3'	1:B:57:G:O3'	1.72	1.34
1:C:28:G:C4'	1:C:29:U:C5'	2.05	1.34
1:D:43:U:C5'	1:D:44:A:H5''	1.55	1.34
1:E:65:C:H2'	1:E:66:A:P	1.66	1.34
1:B:28:G:C4'	1:B:29:U:C5'	2.06	1.33

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:81:U:C5'	1:C:81:U:O5'	1.76	1.33
1:E:40:G:N2	1:E:62:G:N7	1.73	1.33
1:D:28:G:C4'	1:D:29:U:C5'	2.06	1.33
1:E:81:U:O5'	1:E:81:U:C5'	1.76	1.33
1:A:81:U:C5'	1:A:81:U:O5'	1.76	1.32
1:A:28:G:C4'	1:A:29:U:C5'	2.05	1.32
1:C:43:U:C5'	1:C:44:A:H5''	1.55	1.32
1:A:85:U:OP2	1:A:86:G:N7	1.62	1.32
1:B:65:C:C2'	1:B:66:A:P	2.18	1.32
1:E:85:U:OP2	1:E:86:G:N7	1.62	1.32
1:A:65:C:C2'	1:A:66:A:P	2.18	1.31
1:D:65:C:C2'	1:D:66:A:P	2.18	1.31
1:D:85:U:OP2	1:D:86:G:N7	1.62	1.31
1:E:28:G:C4'	1:E:29:U:C5'	2.05	1.31
1:B:81:U:O5'	1:B:81:U:C5'	1.76	1.31
1:B:112:C:C3'	1:B:113:U:P	2.19	1.31
1:D:81:U:C5'	1:D:81:U:O5'	1.76	1.31
1:A:30:G:H3'	1:A:30:G:OP2	1.20	1.30
1:E:65:C:C2'	1:E:66:A:P	2.18	1.30
1:C:85:U:OP2	1:C:86:G:N7	1.62	1.30
1:A:112:C:C3'	1:A:113:U:P	2.19	1.30
1:B:46:A:N6	1:C:84:U:N3	1.71	1.29
1:C:65:C:C2'	1:C:66:A:P	2.18	1.29
1:C:65:C:C3'	1:C:66:A:P	2.20	1.29
1:E:30:G:H3'	1:E:30:G:OP2	1.20	1.29
1:E:65:C:C3'	1:E:66:A:P	2.20	1.29
1:B:65:C:C3'	1:B:66:A:P	2.20	1.29
1:B:85:U:OP2	1:B:86:G:N7	1.62	1.29
1:D:30:G:H3'	1:D:30:G:OP2	1.20	1.29
1:E:112:C:C3'	1:E:113:U:P	2.19	1.29
1:A:65:C:C3'	1:A:66:A:P	2.20	1.29
1:C:112:C:C3'	1:C:113:U:P	2.19	1.29
1:C:30:G:H3'	1:C:30:G:OP2	1.20	1.28
1:D:65:C:C3'	1:D:66:A:P	2.20	1.28
1:D:71:C:H5''	1:D:72:U:OP2	1.27	1.28
1:D:112:C:C3'	1:D:113:U:P	2.19	1.28
1:B:71:C:H5''	1:B:72:U:OP2	1.27	1.27
1:B:30:G:H3'	1:B:30:G:OP2	1.20	1.27
1:C:71:C:H5''	1:C:72:U:OP2	1.27	1.26
1:E:71:C:H5''	1:E:72:U:OP2	1.27	1.26
1:E:43:U:H5'	1:E:44:A:C5'	1.65	1.25

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:43:U:H5'	1:A:44:A:C5'	1.65	1.25
1:A:44:A:C5'	1:A:46:A:OP1	1.85	1.25
1:B:43:U:H5'	1:B:44:A:C5'	1.65	1.25
1:B:44:A:C5'	1:B:46:A:OP1	1.85	1.25
1:C:44:A:C5'	1:C:46:A:OP1	1.85	1.25
1:D:43:U:H5'	1:D:44:A:C5'	1.65	1.25
1:D:47:C:N4	1:E:83:G:H1	1.32	1.25
1:A:81:U:O4	1:E:46:A:N7	1.68	1.24
1:A:29:U:N1	1:A:30:G:H4'	1.45	1.24
1:C:40:G:N2	1:C:62:G:C5	2.06	1.24
1:A:71:C:H5''	1:A:72:U:OP2	1.27	1.24
1:B:40:G:N2	1:B:62:G:C5	2.06	1.24
1:D:44:A:C5'	1:D:46:A:OP1	1.85	1.24
1:B:29:U:N1	1:B:30:G:H4'	1.45	1.24
1:C:43:U:H5'	1:C:44:A:C5'	1.65	1.24
1:E:81:U:P	1:E:81:U:OP2	1.96	1.24
1:B:81:U:P	1:B:81:U:OP2	1.96	1.23
1:D:65:C:O3'	1:D:66:A:OP1	1.57	1.23
1:E:95:G:O3'	1:E:96:G:P	1.96	1.23
1:C:65:C:O3'	1:C:66:A:OP1	1.57	1.23
1:A:65:C:O3'	1:A:66:A:OP1	1.57	1.23
1:D:95:G:O3'	1:D:96:G:P	1.96	1.23
1:E:41:A:OP1	1:E:48:C:OP2	1.57	1.23
1:A:40:G:N2	1:A:62:G:C5	2.06	1.23
1:B:87:U:O3'	1:B:88:C:P	1.97	1.23
1:D:40:G:N2	1:D:62:G:C5	2.06	1.23
1:B:95:G:O3'	1:B:96:G:P	1.96	1.23
1:C:95:G:O3'	1:C:96:G:P	1.96	1.23
1:E:44:A:C5'	1:E:46:A:OP1	1.85	1.22
1:E:65:C:O3'	1:E:66:A:OP1	1.57	1.22
1:E:87:U:O3'	1:E:88:C:P	1.97	1.22
1:B:65:C:O3'	1:B:66:A:OP1	1.57	1.22
1:D:40:G:O3'	1:D:41:A:P	1.97	1.22
1:E:29:U:N1	1:E:30:G:H4'	1.45	1.22
1:C:81:U:P	1:C:81:U:OP2	1.96	1.22
1:C:87:U:O3'	1:C:88:C:P	1.97	1.22
1:D:87:U:O3'	1:D:88:C:P	1.97	1.22
1:E:40:G:N2	1:E:62:G:C5	2.06	1.22
1:A:40:G:O3'	1:A:41:A:P	1.97	1.22
1:A:46:A:N7	1:B:81:U:O4	1.72	1.22
1:A:87:U:O3'	1:A:88:C:P	1.97	1.22

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:40:G:H8	1:B:40:G:OP2	1.23	1.22
1:E:40:G:O3'	1:E:41:A:P	1.97	1.22
1:A:81:U:OP2	1:A:81:U:P	1.96	1.22
1:B:40:G:O3'	1:B:41:A:P	1.97	1.22
1:D:81:U:OP2	1:D:81:U:P	1.96	1.22
1:C:29:U:N1	1:C:30:G:H4'	1.45	1.21
1:C:40:G:H8	1:C:40:G:OP2	1.23	1.21
1:A:95:G:O3'	1:A:96:G:P	1.96	1.21
1:C:41:A:OP1	1:C:48:C:OP2	1.57	1.21
1:E:40:G:H8	1:E:40:G:OP2	1.23	1.20
1:A:29:U:C3'	1:A:30:G:O4'	1.89	1.20
1:D:41:A:OP1	1:D:48:C:OP2	1.57	1.20
1:B:41:A:OP1	1:B:48:C:OP2	1.57	1.20
1:C:40:G:O3'	1:C:41:A:P	1.97	1.20
1:D:29:U:N1	1:D:30:G:H4'	1.45	1.20
1:E:80:U:N3	1:E:86:G:O6	1.75	1.20
1:A:44:A:H4'	1:A:46:A:OP1	1.42	1.19
1:D:93:A:O3'	1:D:94:U:P	2.00	1.19
1:E:93:A:O3'	1:E:94:U:P	2.01	1.19
1:A:29:U:OP1	1:A:30:G:C5	1.95	1.19
1:A:41:A:OP1	1:A:48:C:OP2	1.57	1.19
1:D:40:G:H8	1:D:40:G:OP2	1.23	1.19
1:B:29:U:C3'	1:B:30:G:O4'	1.88	1.19
1:B:29:U:OP1	1:B:30:G:C5	1.95	1.19
1:B:93:A:O3'	1:B:94:U:P	2.00	1.19
1:A:40:G:H8	1:A:40:G:OP2	1.23	1.19
1:E:29:U:C3'	1:E:30:G:O4'	1.88	1.19
1:E:29:U:OP1	1:E:30:G:C5	1.95	1.18
1:C:29:U:C3'	1:C:30:G:O4'	1.89	1.18
1:C:93:A:O3'	1:C:94:U:P	2.01	1.18
1:B:100:A:O3'	1:B:101:A:P	2.02	1.18
1:D:56:A:O3'	1:D:57:G:P	2.02	1.18
1:A:56:A:O3'	1:A:57:G:P	2.02	1.18
1:A:100:A:O3'	1:A:101:A:P	2.02	1.18
1:B:56:A:O3'	1:B:57:G:P	2.02	1.18
1:C:29:U:OP1	1:C:30:G:C5	1.95	1.18
1:C:80:U:N3	1:C:86:G:O6	1.75	1.18
1:A:93:A:O3'	1:A:94:U:P	2.00	1.17
1:C:56:A:O3'	1:C:57:G:P	2.02	1.17
1:E:56:A:O3'	1:E:57:G:P	2.02	1.17
1:E:63:C:P	1:E:63:C:O4'	2.02	1.17

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:28:G:H4'	1:C:29:U:O5'	1.21	1.17
1:C:100:A:O3'	1:C:101:A:P	2.02	1.17
1:D:63:C:P	1:D:63:C:O4'	2.02	1.17
1:D:100:A:O3'	1:D:101:A:P	2.02	1.17
1:B:46:A:N6	1:C:84:U:C4	2.13	1.17
1:D:29:U:OP1	1:D:30:G:C5	1.95	1.17
1:B:47:C:N4	1:C:83:G:H1	1.42	1.17
1:B:90:A:O3'	1:B:91:U:P	2.03	1.17
1:D:44:A:H4'	1:D:46:A:OP1	1.42	1.17
1:B:80:U:N3	1:B:86:G:O6	1.75	1.17
1:D:80:U:N3	1:D:86:G:O6	1.75	1.17
1:A:63:C:P	1:A:63:C:O4'	2.02	1.16
1:C:44:A:H4'	1:C:46:A:OP1	1.42	1.16
1:C:90:A:O3'	1:C:91:U:P	2.03	1.16
1:A:46:A:C5	1:B:81:U:O4	1.98	1.16
1:C:63:C:P	1:C:63:C:O4'	2.02	1.16
1:A:90:A:O3'	1:A:91:U:P	2.03	1.16
1:B:99:A:O3'	1:B:100:A:P	2.04	1.16
1:B:29:U:H3'	1:B:30:G:O4'	1.39	1.16
1:E:100:A:O3'	1:E:101:A:P	2.02	1.16
1:A:99:A:O3'	1:A:100:A:P	2.04	1.15
1:C:99:A:O3'	1:C:100:A:P	2.04	1.15
1:E:90:A:O3'	1:E:91:U:P	2.03	1.15
1:B:63:C:P	1:B:63:C:O4'	2.02	1.15
1:D:99:A:O3'	1:D:100:A:P	2.04	1.15
1:A:31:U:O3'	1:A:32:A:H5'	1.45	1.15
1:A:46:A:N6	1:B:81:U:O4	1.79	1.15
1:D:90:A:O3'	1:D:91:U:P	2.03	1.15
1:E:99:A:O3'	1:E:100:A:P	2.04	1.15
1:A:80:U:N3	1:A:86:G:O6	1.75	1.15
1:B:44:A:H4'	1:B:46:A:OP1	1.42	1.15
1:C:28:G:C4'	1:C:29:U:H5''	1.76	1.15
1:D:29:U:C3'	1:D:30:G:O4'	1.89	1.15
1:A:28:G:C4'	1:A:29:U:H5''	1.76	1.14
1:C:81:U:O3'	1:C:82:G:P	2.06	1.14
1:D:81:U:O3'	1:D:82:G:P	2.05	1.14
1:E:44:A:H4'	1:E:46:A:OP1	1.42	1.14
1:B:81:U:O3'	1:B:82:G:P	2.05	1.14
1:E:112:C:H3'	1:E:113:U:OP2	1.47	1.14
1:A:81:U:O3'	1:A:82:G:P	2.05	1.14
1:D:81:U:H5'	1:D:83:G:OP2	1.47	1.14

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:31:U:O3'	1:B:32:A:H5'	1.45	1.14
1:C:31:U:O3'	1:C:32:A:H5'	1.45	1.14
1:A:29:U:H3'	1:A:30:G:O4'	1.39	1.13
1:E:31:U:O3'	1:E:32:A:H5'	1.45	1.13
1:E:81:U:H5'	1:E:83:G:OP2	1.47	1.13
1:A:73:U:C5'	1:A:74:U:OP2	1.95	1.13
1:A:81:U:H5'	1:A:83:G:OP2	1.47	1.13
1:C:43:U:H5'	1:C:44:A:H5''	1.16	1.13
1:D:31:U:O3'	1:D:32:A:H5'	1.45	1.13
1:E:73:U:C5'	1:E:74:U:OP2	1.95	1.13
1:E:81:U:O3'	1:E:82:G:P	2.05	1.13
1:B:73:U:C5'	1:B:74:U:OP2	1.95	1.13
1:D:112:C:O3'	1:D:113:U:P	2.06	1.13
1:E:28:G:H4'	1:E:29:U:O5'	1.21	1.13
1:C:81:U:H5'	1:C:83:G:OP2	1.47	1.13
1:D:28:G:C4'	1:D:29:U:H5''	1.76	1.13
1:D:43:U:H5'	1:D:44:A:H5''	1.16	1.13
1:C:49:C:O3'	1:C:50:U:H5'	1.49	1.12
1:C:112:C:O3'	1:C:113:U:P	2.06	1.12
1:E:29:U:P	1:E:30:G:C5	2.42	1.12
1:B:81:U:H5'	1:B:83:G:OP2	1.47	1.12
1:D:44:A:C4'	1:D:46:A:OP1	1.97	1.12
1:D:73:U:C5'	1:D:74:U:OP2	1.95	1.12
1:A:29:U:P	1:A:30:G:C5	2.42	1.12
1:A:112:C:H3'	1:A:113:U:OP2	1.47	1.12
1:B:29:U:P	1:B:30:G:C5	2.42	1.12
1:C:44:A:C4'	1:C:46:A:OP1	1.97	1.12
1:B:112:C:H3'	1:B:113:U:OP2	1.47	1.12
1:B:112:C:O3'	1:B:113:U:P	2.06	1.12
1:D:49:C:O3'	1:D:50:U:H5'	1.49	1.12
1:E:44:A:C4'	1:E:46:A:OP1	1.97	1.12
1:E:112:C:O3'	1:E:113:U:P	2.06	1.12
1:A:112:C:O3'	1:A:113:U:P	2.06	1.11
1:C:29:U:P	1:C:30:G:C5	2.42	1.11
1:B:44:A:C4'	1:B:46:A:OP1	1.97	1.11
1:C:73:U:C5'	1:C:74:U:OP2	1.95	1.11
1:C:112:C:H3'	1:C:113:U:OP2	1.47	1.11
1:E:29:U:H3'	1:E:30:G:O4'	1.39	1.11
1:A:44:A:C4'	1:A:46:A:OP1	1.97	1.11
1:B:30:G:OP2	1:B:30:G:C3'	1.99	1.11
1:A:46:A:N1	1:B:84:U:N3	1.97	1.11

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:29:U:P	1:D:30:G:C5	2.42	1.11
1:E:30:G:OP2	1:E:30:G:C3'	1.99	1.11
1:D:29:U:H3'	1:D:30:G:O4'	1.39	1.10
1:D:112:C:H3'	1:D:113:U:OP2	1.47	1.10
1:A:30:G:OP2	1:A:30:G:C3'	1.99	1.10
1:A:48:C:O3'	1:A:49:C:P	2.09	1.10
1:B:49:C:O3'	1:B:50:U:H5'	1.49	1.10
1:D:48:C:O3'	1:D:49:C:P	2.09	1.10
1:E:57:G:OP1	1:E:57:G:O4'	1.70	1.10
1:E:98:A:O3'	1:E:99:A:P	2.10	1.10
1:A:98:A:O3'	1:A:99:A:P	2.10	1.10
1:B:28:G:C4'	1:B:29:U:H5''	1.76	1.10
1:C:43:U:H5''	1:C:44:A:H5''	1.33	1.10
1:E:49:C:O3'	1:E:50:U:H5'	1.49	1.10
1:A:84:U:N3	1:E:46:A:N1	1.73	1.10
1:A:49:C:O3'	1:A:50:U:H5'	1.49	1.09
1:B:98:A:O3'	1:B:99:A:P	2.10	1.09
1:E:48:C:O3'	1:E:49:C:P	2.09	1.09
1:C:30:G:OP2	1:C:30:G:C3'	1.99	1.09
1:B:48:C:O3'	1:B:49:C:P	2.09	1.09
1:C:48:C:O3'	1:C:49:C:P	2.09	1.09
1:C:98:A:O3'	1:C:99:A:P	2.10	1.09
1:D:30:G:OP2	1:D:30:G:C3'	1.99	1.09
1:B:43:U:H5'	1:B:44:A:H5''	1.16	1.09
1:C:57:G:OP1	1:C:57:G:O4'	1.70	1.09
1:D:57:G:OP1	1:D:57:G:O4'	1.70	1.09
1:D:98:A:O3'	1:D:99:A:P	2.10	1.09
1:A:57:G:O4'	1:A:57:G:OP1	1.70	1.08
1:B:57:G:O4'	1:B:57:G:OP1	1.70	1.08
1:E:53:U:O3'	1:E:54:U:P	2.11	1.08
1:A:53:U:O3'	1:A:54:U:P	2.11	1.08
1:B:43:U:H5''	1:B:44:A:H5''	1.33	1.08
1:E:73:U:C4'	1:E:74:U:OP2	1.97	1.08
1:C:29:U:H3'	1:C:30:G:O4'	1.39	1.07
1:C:53:U:O3'	1:C:54:U:P	2.11	1.07
1:A:28:G:H4'	1:A:29:U:O5'	1.21	1.07
1:D:53:U:O3'	1:D:54:U:P	2.11	1.07
1:E:28:G:O2'	1:E:29:U:H5''	1.54	1.07
1:B:53:U:O3'	1:B:54:U:P	2.11	1.07
1:C:28:G:O2'	1:C:29:U:H5''	1.54	1.07
1:E:28:G:C4'	1:E:29:U:H5''	1.75	1.07

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:28:G:O2'	1:A:29:U:H5''	1.54	1.06
1:B:28:G:H4'	1:B:29:U:C4'	1.84	1.06
1:B:28:G:O2'	1:B:29:U:H5''	1.54	1.06
1:A:28:G:H4'	1:A:29:U:C4'	1.84	1.06
1:C:28:G:H4'	1:C:29:U:C4'	1.85	1.06
1:D:43:U:H5''	1:D:44:A:H5''	1.33	1.06
1:C:34:G:O3'	1:C:35:U:P	2.14	1.06
1:C:56:A:O2'	1:C:57:G:C8	2.09	1.06
1:D:28:G:H4'	1:D:29:U:C4'	1.84	1.06
1:D:28:G:H4'	1:D:29:U:O5'	1.21	1.06
1:E:34:G:O3'	1:E:35:U:P	2.14	1.06
1:D:28:G:O2'	1:D:29:U:H5''	1.54	1.05
1:B:28:G:H4'	1:B:29:U:O5'	1.21	1.05
1:B:34:G:O3'	1:B:35:U:P	2.14	1.05
1:D:29:U:OP1	1:D:30:G:C6	2.10	1.05
1:D:34:G:O3'	1:D:35:U:P	2.14	1.05
1:A:45:A:N1	1:B:85:U:O4	1.89	1.05
1:B:29:U:OP1	1:B:30:G:C6	2.10	1.05
1:D:56:A:O2'	1:D:57:G:C8	2.09	1.05
1:E:29:U:OP1	1:E:30:G:C6	2.09	1.05
1:A:29:U:OP1	1:A:30:G:C6	2.10	1.05
1:B:56:A:O2'	1:B:57:G:C8	2.09	1.05
1:E:28:G:H4'	1:E:29:U:C4'	1.84	1.05
1:A:46:A:C6	1:B:81:U:O4	2.09	1.04
1:A:34:G:O3'	1:A:35:U:P	2.14	1.04
1:C:87:U:C3'	1:C:88:C:P	2.46	1.04
1:E:40:G:OP2	1:E:40:G:C8	2.10	1.04
1:E:56:A:O2'	1:E:57:G:C8	2.09	1.04
1:A:56:A:O2'	1:A:57:G:C8	2.09	1.04
1:C:29:U:OP1	1:C:30:G:C6	2.10	1.04
1:C:40:G:OP2	1:C:40:G:C8	2.10	1.04
1:D:40:G:OP2	1:D:40:G:C8	2.10	1.04
1:A:40:G:OP2	1:A:40:G:C8	2.10	1.04
1:D:81:U:C5'	1:D:83:G:OP2	2.06	1.04
1:B:40:G:OP2	1:B:40:G:C8	2.10	1.03
1:C:48:C:N4	1:D:82:G:O6	1.91	1.03
1:E:73:U:H4'	1:E:74:U:OP1	1.21	1.03
1:A:81:U:C5'	1:A:83:G:OP2	2.06	1.03
1:B:81:U:C5'	1:B:83:G:OP2	2.06	1.03
1:C:81:U:C5'	1:C:83:G:OP2	2.06	1.03
1:E:81:U:C5'	1:E:83:G:OP2	2.06	1.03

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:87:U:C3'	1:E:88:C:P	2.46	1.03
1:A:87:U:C3'	1:A:88:C:P	2.46	1.03
1:B:87:U:C3'	1:B:88:C:P	2.46	1.03
1:E:43:U:H5''	1:E:44:A:H5''	1.33	1.03
1:A:43:U:H5''	1:A:44:A:H5''	1.33	1.02
1:D:87:U:C3'	1:D:88:C:P	2.46	1.02
1:B:29:U:C5	1:B:30:G:H4'	1.95	1.02
1:E:43:U:H5'	1:E:44:A:H5''	1.16	1.02
1:A:28:G:C4'	1:A:29:U:O5'	2.04	1.01
1:A:44:A:O5'	1:A:46:A:OP1	1.78	1.01
1:B:34:G:O3'	1:B:35:U:H5'	1.60	1.01
1:E:29:U:C5	1:E:30:G:H4'	1.95	1.01
1:E:34:G:O3'	1:E:35:U:H5'	1.60	1.01
1:E:44:A:O5'	1:E:46:A:OP1	1.78	1.01
1:B:73:U:C4'	1:B:74:U:OP2	1.97	1.01
1:B:93:A:H3'	1:B:94:U:OP2	1.61	1.01
1:C:29:U:C5	1:C:30:G:H4'	1.95	1.01
1:C:75:G:OP1	1:C:76:U:OP2	1.78	1.01
1:E:28:G:C4'	1:E:29:U:O5'	2.04	1.01
1:A:73:U:C4'	1:A:74:U:OP2	1.97	1.01
1:A:93:A:H3'	1:A:94:U:OP2	1.61	1.00
1:C:93:A:H3'	1:C:94:U:OP2	1.61	1.00
1:A:34:G:O3'	1:A:35:U:H5'	1.60	1.00
1:D:75:G:OP1	1:D:76:U:OP2	1.78	1.00
1:C:34:G:O3'	1:C:35:U:H5'	1.60	1.00
1:D:34:G:O3'	1:D:35:U:H5'	1.60	1.00
1:B:73:U:H4'	1:B:74:U:OP1	1.21	1.00
1:D:29:U:C5	1:D:30:G:H4'	1.95	1.00
1:D:73:U:C4'	1:D:74:U:OP2	1.97	1.00
1:D:93:A:H3'	1:D:94:U:OP2	1.61	1.00
1:A:29:U:C5	1:A:30:G:H4'	1.95	1.00
1:A:75:G:H1	1:A:91:U:H3	1.00	1.00
1:D:44:A:O5'	1:D:46:A:OP1	1.78	1.00
1:E:75:G:H1	1:E:91:U:H3	1.00	1.00
1:B:44:A:O5'	1:B:46:A:OP1	1.78	0.99
1:C:46:A:N6	1:D:84:U:O4	1.95	0.99
1:C:28:G:H4'	1:C:29:U:H5''	1.36	0.99
1:E:47:C:H2'	1:E:48:C:C6	1.98	0.99
1:A:47:C:N3	1:B:83:G:N1	2.10	0.99
1:D:28:G:C4'	1:D:29:U:O5'	2.04	0.99
1:A:47:C:H2'	1:A:48:C:C6	1.98	0.99

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:29:U:C4'	1:B:30:G:O4'	2.11	0.99
1:A:38:G:H2'	1:A:39:G:C8	1.98	0.98
1:B:38:G:H2'	1:B:39:G:C8	1.98	0.98
1:C:73:U:C4'	1:C:74:U:OP2	1.97	0.98
1:C:47:C:H2'	1:C:48:C:C6	1.98	0.98
1:D:75:G:H1	1:D:91:U:H3	1.00	0.98
1:B:47:C:H2'	1:B:48:C:C6	1.98	0.98
1:D:47:C:N4	1:E:83:G:N1	1.99	0.98
1:C:29:U:H5'	1:C:30:G:C1'	1.94	0.98
1:E:38:G:H2'	1:E:39:G:C8	1.98	0.98
1:E:29:U:C4'	1:E:30:G:O4'	2.11	0.98
1:E:93:A:H3'	1:E:94:U:OP2	1.61	0.98
1:A:29:U:C4'	1:A:30:G:O4'	2.11	0.98
1:C:44:A:O5'	1:C:46:A:OP1	1.78	0.97
1:D:47:C:H2'	1:D:48:C:C6	1.97	0.97
1:D:29:U:C4'	1:D:30:G:O4'	2.11	0.97
1:A:44:A:O5'	1:A:46:A:P	2.23	0.97
1:C:44:A:O5'	1:C:46:A:P	2.23	0.97
1:D:29:U:H5'	1:D:30:G:C1'	1.94	0.97
1:D:37:G:OP2	1:D:60:C:O3'	1.83	0.97
1:D:40:G:H5'	1:D:47:C:H5''	1.47	0.97
1:D:44:A:O5'	1:D:46:A:P	2.23	0.97
1:B:29:U:H5'	1:B:30:G:C1'	1.94	0.97
1:B:75:G:OP1	1:B:76:U:OP2	1.78	0.97
1:A:37:G:OP2	1:A:60:C:O3'	1.83	0.97
1:C:29:U:C4'	1:C:30:G:O4'	2.11	0.97
1:E:75:G:OP1	1:E:76:U:OP2	1.78	0.97
1:C:37:G:OP2	1:C:60:C:O3'	1.83	0.97
1:C:40:G:H5'	1:C:47:C:H5''	1.46	0.97
1:B:44:A:O5'	1:B:46:A:P	2.23	0.97
1:D:38:G:H2'	1:D:39:G:C8	1.98	0.97
1:A:29:U:H5'	1:A:30:G:C1'	1.94	0.97
1:D:112:C:HO3'	1:D:113:U:P	1.87	0.97
1:B:28:G:C4'	1:B:29:U:O5'	2.04	0.96
1:C:38:G:H2'	1:C:39:G:C8	1.98	0.96
1:A:87:U:H3'	1:A:88:C:P	2.05	0.96
1:E:29:U:H5'	1:E:30:G:C1'	1.94	0.96
1:B:75:G:H1	1:B:91:U:H3	1.00	0.96
1:E:37:G:OP2	1:E:60:C:O3'	1.83	0.96
1:C:34:G:O3'	1:C:35:U:C5'	2.14	0.96
1:A:34:G:O3'	1:A:35:U:C5'	2.14	0.96

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:34:G:O3'	1:B:35:U:C5'	2.14	0.96
1:B:28:G:C4'	1:B:29:U:H4'	1.96	0.96
1:D:28:G:C4'	1:D:29:U:H4'	1.96	0.96
1:D:45:A:N6	1:E:85:U:O4	1.99	0.95
1:E:87:U:H3'	1:E:88:C:P	2.05	0.95
1:B:37:G:OP2	1:B:60:C:O3'	1.83	0.95
1:D:34:G:O3'	1:D:35:U:C5'	2.14	0.95
1:E:28:G:C4'	1:E:29:U:H4'	1.96	0.95
1:E:28:G:C2'	1:E:29:U:H5''	1.97	0.95
1:E:34:G:O3'	1:E:35:U:C5'	2.14	0.95
1:E:44:A:O5'	1:E:46:A:P	2.23	0.95
1:A:28:G:C4'	1:A:29:U:H4'	1.96	0.95
1:A:28:G:C2'	1:A:29:U:H5''	1.97	0.95
1:A:40:G:H5'	1:A:47:C:H5''	1.46	0.95
1:D:87:U:H3'	1:D:88:C:P	2.05	0.95
1:B:87:U:H3'	1:B:88:C:P	2.05	0.94
1:D:46:A:N1	1:E:84:U:N3	2.14	0.94
1:E:40:G:H5'	1:E:47:C:H5''	1.46	0.94
1:C:28:G:C4'	1:C:29:U:H4'	1.96	0.94
1:C:87:U:H3'	1:C:88:C:P	2.05	0.94
1:B:40:G:H5'	1:B:47:C:H5''	1.46	0.94
1:A:47:C:H2'	1:A:48:C:H6	1.33	0.94
1:A:75:G:OP1	1:A:76:U:OP2	1.78	0.94
1:B:81:U:O4'	1:B:81:U:OP1	1.86	0.94
1:C:81:U:O4'	1:C:81:U:OP1	1.86	0.94
1:D:81:U:O4'	1:D:81:U:OP1	1.86	0.94
1:B:56:A:O2'	1:B:57:G:N7	2.00	0.94
1:C:28:G:C2'	1:C:29:U:H5''	1.97	0.94
1:E:56:A:O2'	1:E:57:G:N7	2.00	0.94
1:C:56:A:O2'	1:C:57:G:N7	2.00	0.93
1:D:28:G:C2'	1:D:29:U:H5''	1.97	0.93
1:E:81:U:O4'	1:E:81:U:OP1	1.86	0.93
1:A:56:A:O2'	1:A:57:G:N7	2.00	0.93
1:E:65:C:O3'	1:E:66:A:P	2.23	0.93
1:B:28:G:C2'	1:B:29:U:H5''	1.97	0.93
1:E:29:U:C2	1:E:30:G:H5''	2.04	0.93
1:E:47:C:H2'	1:E:48:C:H6	1.33	0.93
1:C:75:G:H1	1:C:91:U:H3	1.00	0.93
1:C:71:C:C5'	1:C:72:U:OP2	2.17	0.93
1:D:71:C:C5'	1:D:72:U:OP2	2.17	0.93
1:A:65:C:O3'	1:A:66:A:P	2.23	0.93

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:65:C:O3'	1:C:66:A:P	2.23	0.92
1:D:47:C:N4	1:E:83:G:C6	2.37	0.92
1:B:29:U:C2	1:B:30:G:H5''	2.04	0.92
1:A:73:U:H4'	1:A:74:U:OP1	1.21	0.92
1:D:29:U:C2	1:D:30:G:H5''	2.04	0.92
1:D:43:U:H5'	1:D:44:A:H5'	1.52	0.92
1:E:43:U:H5'	1:E:44:A:H5'	1.52	0.92
1:A:29:U:C2	1:A:30:G:C5'	2.45	0.92
1:A:81:U:OP1	1:A:81:U:O4'	1.86	0.92
1:C:31:U:O3'	1:C:32:A:C5'	2.18	0.92
1:D:65:C:O3'	1:D:66:A:P	2.23	0.92
1:A:39:G:H2'	1:A:40:G:C1'	2.00	0.92
1:B:47:C:H2'	1:B:48:C:H6	1.33	0.92
1:B:100:A:H3'	1:B:101:A:OP2	1.70	0.92
1:D:31:U:O3'	1:D:32:A:C5'	2.18	0.92
1:B:39:G:H2'	1:B:40:G:O4'	1.70	0.92
1:B:43:U:H5'	1:B:44:A:H5'	1.52	0.92
1:E:39:G:H2'	1:E:40:G:C1'	2.00	0.92
1:A:43:U:H5'	1:A:44:A:H5'	1.52	0.92
1:A:85:U:O4	1:E:45:A:N1	2.03	0.92
1:B:49:C:O3'	1:B:50:U:C5'	2.18	0.92
1:E:49:C:O3'	1:E:50:U:C5'	2.18	0.92
1:C:39:G:H2'	1:C:40:G:O4'	1.70	0.91
1:A:39:G:H2'	1:A:40:G:O4'	1.70	0.91
1:A:50:U:O3'	1:A:51:G:H5'	1.70	0.91
1:C:28:G:C4'	1:C:29:U:O5'	2.04	0.91
1:C:49:C:O3'	1:C:50:U:C5'	2.18	0.91
1:D:39:G:H2'	1:D:40:G:C1'	2.00	0.91
1:E:39:G:H2'	1:E:40:G:O4'	1.70	0.91
1:D:39:G:H2'	1:D:40:G:O4'	1.70	0.91
1:D:50:U:O3'	1:D:51:G:H5'	1.70	0.91
1:D:56:A:O2'	1:D:57:G:N7	2.00	0.91
1:E:29:U:C2	1:E:30:G:C5'	2.45	0.91
1:C:39:G:H2'	1:C:40:G:C1'	2.00	0.91
1:A:42:U:H5''	1:A:43:U:OP1	1.71	0.91
1:A:49:C:O3'	1:A:50:U:C5'	2.18	0.91
1:B:31:U:H3'	1:B:32:A:P	2.11	0.91
1:D:49:C:O3'	1:D:50:U:C5'	2.18	0.91
1:A:29:U:C2	1:A:30:G:H5''	2.04	0.91
1:A:31:U:O3'	1:A:32:A:C5'	2.18	0.91
1:E:71:C:C5'	1:E:72:U:OP2	2.17	0.91

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:39:G:H2'	1:B:40:G:C1'	2.00	0.91
1:C:31:U:H3'	1:C:32:A:P	2.11	0.91
1:C:100:A:H3'	1:C:101:A:OP2	1.70	0.91
1:B:31:U:O3'	1:B:32:A:C5'	2.18	0.91
1:C:73:U:H4'	1:C:74:U:OP1	1.20	0.91
1:D:47:C:H2'	1:D:48:C:H6	1.32	0.91
1:E:42:U:H5''	1:E:43:U:OP1	1.71	0.91
1:B:71:C:C5'	1:B:72:U:OP2	2.17	0.91
1:A:43:U:H5'	1:A:44:A:H5''	1.16	0.90
1:D:31:U:H3'	1:D:32:A:P	2.11	0.90
1:B:50:U:O3'	1:B:51:G:H5'	1.70	0.90
1:A:71:C:C5'	1:A:72:U:OP2	2.17	0.90
1:C:50:U:O3'	1:C:51:G:H5'	1.70	0.90
1:D:42:U:H5''	1:D:43:U:OP1	1.71	0.90
1:B:49:C:O3'	1:B:50:U:P	2.30	0.90
1:E:100:A:H3'	1:E:101:A:OP2	1.70	0.90
1:D:65:C:H3'	1:D:66:A:P	2.10	0.90
1:A:31:U:H3'	1:A:32:A:P	2.11	0.90
1:C:42:U:H5''	1:C:43:U:OP1	1.71	0.90
1:E:31:U:H3'	1:E:32:A:P	2.11	0.90
1:C:43:U:H5'	1:C:44:A:H5'	1.52	0.90
1:E:31:U:O3'	1:E:32:A:C5'	2.18	0.90
1:B:65:C:O3'	1:B:66:A:P	2.23	0.90
1:D:100:A:H3'	1:D:101:A:OP2	1.70	0.90
1:E:50:U:O3'	1:E:51:G:H5'	1.70	0.90
1:A:100:A:H3'	1:A:101:A:OP2	1.70	0.90
1:C:49:C:O3'	1:C:50:U:P	2.30	0.90
1:A:28:G:C4'	1:A:29:U:C4'	2.47	0.90
1:E:65:C:H3'	1:E:66:A:P	2.10	0.89
1:A:49:C:O3'	1:A:50:U:P	2.30	0.89
1:A:65:C:H3'	1:A:66:A:P	2.10	0.89
1:D:49:C:O3'	1:D:50:U:P	2.30	0.89
1:B:42:U:H5''	1:B:43:U:OP1	1.71	0.89
1:C:65:C:H3'	1:C:66:A:P	2.10	0.89
1:B:40:G:N2	1:B:62:G:C6	2.39	0.89
1:D:73:U:H4'	1:D:74:U:OP1	1.21	0.89
1:C:29:U:C2	1:C:30:G:C5'	2.45	0.89
1:C:112:C:HO3'	1:C:113:U:P	1.90	0.89
1:E:72:U:H5'	1:E:74:U:H5	1.38	0.89
1:E:49:C:O3'	1:E:50:U:P	2.30	0.88
1:C:29:U:C2	1:C:30:G:H5''	2.04	0.88

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:47:C:H2'	1:C:48:C:H6	1.33	0.88
1:B:65:C:H3'	1:B:66:A:P	2.10	0.88
1:A:72:U:H5'	1:A:74:U:H5	1.38	0.88
1:A:73:U:C4'	1:A:74:U:OP1	2.16	0.87
1:E:73:U:C4'	1:E:74:U:OP1	2.16	0.87
1:A:29:U:P	1:A:30:G:C4	2.68	0.86
1:A:46:A:H2'	1:A:47:C:C6	2.10	0.86
1:B:29:U:P	1:B:30:G:C4	2.68	0.86
1:B:46:A:N6	1:C:84:U:O4	2.07	0.86
1:C:72:U:H5'	1:C:74:U:H5	1.38	0.86
1:D:40:G:N2	1:D:62:G:C6	2.39	0.86
1:E:54:U:C4	1:E:56:A:H1'	2.10	0.86
1:D:54:U:C4	1:D:56:A:H1'	2.10	0.86
1:E:29:U:P	1:E:30:G:C4	2.68	0.86
1:B:28:G:C3'	1:B:29:U:H5''	2.05	0.86
1:B:28:G:C4'	1:B:29:U:C4'	2.47	0.86
1:B:46:A:H2'	1:B:47:C:C6	2.10	0.86
1:B:54:U:C4	1:B:56:A:H1'	2.11	0.86
1:C:46:A:H2'	1:C:47:C:C6	2.10	0.86
1:D:46:A:H2'	1:D:47:C:C6	2.10	0.86
1:A:54:U:C4	1:A:56:A:H1'	2.11	0.86
1:B:56:A:HO3'	1:B:57:G:P	1.96	0.86
1:C:56:A:HO3'	1:C:57:G:P	1.97	0.86
1:C:54:U:C4	1:C:56:A:H1'	2.11	0.86
1:C:99:A:H3'	1:C:100:A:OP2	1.76	0.86
1:D:72:U:H5'	1:D:74:U:H5	1.38	0.86
1:E:46:A:H2'	1:E:47:C:C6	2.10	0.86
1:B:47:C:H42	1:C:83:G:H1	0.85	0.85
1:B:99:A:H3'	1:B:100:A:OP2	1.76	0.85
1:C:40:G:N2	1:C:62:G:C6	2.39	0.85
1:A:28:G:C3'	1:A:29:U:H5''	2.05	0.85
1:C:29:U:P	1:C:30:G:C4	2.68	0.85
1:D:28:G:C3'	1:D:29:U:H5''	2.05	0.85
1:D:29:U:P	1:D:30:G:C4	2.68	0.85
1:E:46:A:H2'	1:E:47:C:H6	1.42	0.85
1:B:72:U:H5'	1:B:74:U:H5	1.38	0.85
1:E:28:G:C3'	1:E:29:U:H5''	2.05	0.85
1:E:58:U:H6	1:E:58:U:H3'	1.41	0.85
1:A:40:G:N2	1:A:62:G:C6	2.39	0.85
1:A:99:A:H3'	1:A:100:A:OP2	1.76	0.85
1:B:42:U:H3'	1:B:42:U:H6	1.41	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:58:U:H3'	1:B:58:U:H6	1.41	0.85
1:D:42:U:H3'	1:D:42:U:H6	1.41	0.85
1:D:46:A:H2'	1:D:47:C:H6	1.42	0.85
1:C:28:G:C3'	1:C:29:U:H5''	2.05	0.85
1:C:42:U:H3'	1:C:42:U:H6	1.41	0.85
1:D:63:C:O4'	1:D:63:C:OP2	1.94	0.85
1:B:112:C:HO3'	1:B:113:U:P	1.97	0.84
1:C:63:C:O4'	1:C:63:C:OP2	1.95	0.84
1:A:58:U:H3'	1:A:58:U:H6	1.41	0.84
1:D:58:U:H3'	1:D:58:U:H6	1.41	0.84
1:C:46:A:H2'	1:C:47:C:H6	1.42	0.84
1:E:63:C:O4'	1:E:63:C:OP2	1.95	0.84
1:E:99:A:H3'	1:E:100:A:OP2	1.76	0.84
1:A:46:A:N6	1:B:81:U:C4	2.38	0.84
1:C:58:U:H3'	1:C:58:U:H6	1.41	0.84
1:B:46:A:H2'	1:B:47:C:H6	1.42	0.84
1:E:112:C:HO3'	1:E:113:U:P	1.96	0.84
1:A:63:C:O4'	1:A:63:C:OP2	1.95	0.84
1:B:81:U:HO3'	1:B:82:G:P	2.01	0.84
1:D:99:A:H3'	1:D:100:A:OP2	1.76	0.84
1:A:46:A:N1	1:B:84:U:C4	2.34	0.84
1:A:46:A:H2'	1:A:47:C:H6	1.42	0.84
1:D:81:U:HO3'	1:D:82:G:P	1.98	0.84
1:E:56:A:HO3'	1:E:57:G:P	1.94	0.84
1:D:53:U:H6	1:D:53:U:H3'	1.41	0.84
1:A:53:U:H3'	1:A:53:U:H6	1.41	0.84
1:B:32:A:H2'	1:B:33:U:O4'	1.78	0.84
1:C:28:G:C4'	1:C:29:U:C4'	2.47	0.84
1:C:53:U:H3'	1:C:53:U:H6	1.41	0.84
1:E:42:U:H3'	1:E:42:U:H6	1.41	0.84
1:C:32:A:H2'	1:C:33:U:O4'	1.78	0.83
1:A:32:A:H2'	1:A:33:U:O4'	1.78	0.83
1:D:32:A:H2'	1:D:33:U:O4'	1.78	0.83
1:A:42:U:H3'	1:A:42:U:H6	1.41	0.83
1:E:53:U:H3'	1:E:53:U:H6	1.41	0.83
1:B:63:C:O4'	1:B:63:C:OP2	1.95	0.83
1:B:73:U:H5'	1:B:74:U:OP2	1.79	0.83
1:D:28:G:C4'	1:D:29:U:C4'	2.47	0.83
1:E:32:A:H2'	1:E:33:U:O4'	1.78	0.83
1:B:53:U:H3'	1:B:53:U:H6	1.41	0.82
1:D:37:G:OP2	1:D:61:A:P	2.36	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:56:A:HO3'	1:A:57:G:P	2.03	0.82
1:B:41:A:P	1:B:48:C:OP2	2.37	0.82
1:C:37:G:OP2	1:C:61:A:P	2.37	0.82
1:C:41:A:P	1:C:48:C:OP2	2.37	0.82
1:A:41:A:P	1:A:48:C:OP2	2.37	0.82
1:D:41:A:P	1:D:48:C:OP2	2.37	0.82
1:D:30:G:H3'	1:D:30:G:P	2.19	0.82
1:C:29:U:O5'	1:C:30:G:N9	2.13	0.82
1:B:37:G:OP2	1:B:61:A:P	2.37	0.82
1:D:47:C:N4	1:E:83:G:O6	2.12	0.82
1:B:29:U:C2	1:B:30:G:C5'	2.45	0.82
1:D:29:U:O5'	1:D:30:G:N9	2.13	0.82
1:E:29:U:O5'	1:E:30:G:N9	2.13	0.82
1:C:73:U:H5'	1:C:74:U:OP2	1.79	0.82
1:A:37:G:OP2	1:A:61:A:P	2.37	0.81
1:A:40:G:C3'	1:A:41:A:P	2.68	0.81
1:C:53:U:HO3'	1:C:54:U:P	2.03	0.81
1:E:37:G:OP2	1:E:61:A:P	2.37	0.81
1:A:29:U:O5'	1:A:30:G:N9	2.13	0.81
1:D:29:U:C2	1:D:30:G:C5'	2.45	0.81
1:B:40:G:C3'	1:B:41:A:P	2.68	0.81
1:B:40:G:H3'	1:B:41:A:P	2.21	0.81
1:B:43:U:C5'	1:B:44:A:C5'	2.36	0.81
1:B:73:U:C4'	1:B:74:U:OP1	2.16	0.81
1:C:41:A:OP1	1:C:48:C:P	2.39	0.81
1:D:29:U:C5'	1:D:30:G:C8	2.64	0.81
1:D:40:G:C3'	1:D:41:A:P	2.68	0.81
1:E:30:G:H3'	1:E:30:G:P	2.19	0.81
1:A:46:A:N6	1:B:81:U:C5	2.47	0.81
1:B:30:G:H3'	1:B:30:G:P	2.19	0.81
1:E:43:U:C5'	1:E:44:A:C5'	2.36	0.81
1:A:40:G:H3'	1:A:41:A:P	2.20	0.81
1:A:41:A:OP1	1:A:48:C:P	2.39	0.81
1:E:28:G:C4'	1:E:29:U:C4'	2.47	0.81
1:A:30:G:H3'	1:A:30:G:P	2.19	0.81
1:B:29:U:O5'	1:B:30:G:N9	2.13	0.81
1:C:30:G:H3'	1:C:30:G:P	2.19	0.81
1:E:73:U:H5'	1:E:74:U:OP2	1.79	0.81
1:C:29:U:C5'	1:C:30:G:C8	2.64	0.81
1:E:40:G:C3'	1:E:41:A:P	2.68	0.81
1:D:41:A:OP1	1:D:48:C:P	2.39	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:38:G:H2'	1:A:39:G:H8	1.46	0.81
1:B:29:U:C5'	1:B:30:G:C8	2.64	0.81
1:E:41:A:P	1:E:48:C:OP2	2.37	0.81
1:B:49:C:HO3'	1:B:50:U:H5'	1.46	0.81
1:A:73:U:H5'	1:A:74:U:OP2	1.79	0.80
1:C:40:G:C3'	1:C:41:A:P	2.68	0.80
1:D:40:G:H3'	1:D:41:A:P	2.20	0.80
1:D:73:U:H5'	1:D:74:U:OP2	1.79	0.80
1:B:41:A:OP1	1:B:48:C:P	2.39	0.80
1:B:53:U:C3'	1:B:54:U:P	2.70	0.80
1:C:40:G:H3'	1:C:41:A:P	2.20	0.80
1:E:44:A:H2'	1:E:44:A:N3	1.97	0.80
1:E:100:A:C3'	1:E:101:A:P	2.69	0.80
1:A:100:A:C3'	1:A:101:A:P	2.69	0.80
1:B:93:A:C3'	1:B:94:U:P	2.70	0.80
1:C:30:G:H2'	1:C:31:U:H6	1.46	0.80
1:D:41:A:H2'	1:D:41:A:N3	1.97	0.80
1:E:40:G:H3'	1:E:41:A:P	2.20	0.80
1:C:53:U:C3'	1:C:54:U:P	2.69	0.80
1:E:30:G:H2'	1:E:31:U:H6	1.46	0.80
1:A:93:A:C3'	1:A:94:U:P	2.70	0.80
1:D:100:A:C3'	1:D:101:A:P	2.69	0.80
1:E:41:A:OP1	1:E:48:C:P	2.39	0.80
1:A:53:U:C3'	1:A:54:U:P	2.70	0.80
1:C:47:C:N3	1:D:83:G:N1	2.29	0.80
1:B:100:A:C3'	1:B:101:A:P	2.69	0.79
1:C:41:A:N3	1:C:41:A:H2'	1.97	0.79
1:C:93:A:C3'	1:C:94:U:P	2.70	0.79
1:D:30:G:H2'	1:D:31:U:H6	1.46	0.79
1:A:29:U:C5'	1:A:30:G:C8	2.64	0.79
1:C:100:A:C3'	1:C:101:A:P	2.69	0.79
1:D:53:U:C3'	1:D:54:U:P	2.69	0.79
1:A:56:A:N3	1:A:56:A:H2'	1.96	0.79
1:E:53:U:C3'	1:E:54:U:P	2.70	0.79
1:E:93:A:C3'	1:E:94:U:P	2.70	0.79
1:C:56:A:H2'	1:C:56:A:N3	1.96	0.79
1:D:73:U:C4'	1:D:74:U:OP1	2.16	0.79
1:E:38:G:H2'	1:E:39:G:H8	1.46	0.79
1:C:73:U:C4'	1:C:74:U:OP1	2.16	0.79
1:D:93:A:C3'	1:D:94:U:P	2.70	0.79
1:E:56:A:H2'	1:E:56:A:N3	1.96	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:30:G:H2'	1:A:31:U:H6	1.46	0.79
1:B:41:A:H2'	1:B:41:A:N3	1.97	0.79
1:D:43:U:C5'	1:D:44:A:C5'	2.36	0.79
1:B:47:C:N4	1:C:83:G:N1	2.15	0.79
1:B:57:G:C3'	1:B:58:U:P	2.71	0.79
1:D:44:A:N3	1:D:44:A:H2'	1.97	0.79
1:B:30:G:H2'	1:B:31:U:H6	1.46	0.78
1:B:56:A:H2'	1:B:56:A:N3	1.96	0.78
1:A:44:A:N3	1:A:44:A:H2'	1.96	0.78
1:B:53:U:HO3'	1:B:54:U:P	2.06	0.78
1:D:57:G:P	1:D:57:G:O4'	2.41	0.78
1:A:57:G:C3'	1:A:58:U:P	2.71	0.78
1:D:53:U:HO3'	1:D:54:U:P	2.06	0.78
1:D:56:A:N3	1:D:56:A:H2'	1.96	0.78
1:C:29:U:P	1:C:30:G:N7	2.57	0.78
1:C:44:A:H2'	1:C:44:A:N3	1.97	0.78
1:B:57:G:P	1:B:57:G:O4'	2.42	0.78
1:A:41:A:H2'	1:A:41:A:N3	1.97	0.78
1:C:34:G:O3'	1:C:35:U:O5'	2.02	0.78
1:C:57:G:P	1:C:57:G:O4'	2.42	0.78
1:B:34:G:O3'	1:B:35:U:O5'	2.02	0.78
1:C:57:G:C3'	1:C:58:U:P	2.71	0.78
1:D:34:G:O3'	1:D:35:U:O5'	2.02	0.78
1:B:29:U:P	1:B:30:G:N7	2.57	0.78
1:D:29:U:P	1:D:30:G:N7	2.57	0.78
1:D:57:G:C3'	1:D:58:U:P	2.71	0.78
1:E:29:U:P	1:E:30:G:N7	2.56	0.78
1:E:57:G:C3'	1:E:58:U:P	2.71	0.78
1:A:57:G:P	1:A:57:G:O4'	2.42	0.77
1:B:38:G:H2'	1:B:39:G:H8	1.46	0.77
1:B:44:A:H2'	1:B:44:A:N3	1.96	0.77
1:D:85:U:P	1:D:86:G:N7	2.58	0.77
1:A:85:U:P	1:A:86:G:N7	2.58	0.77
1:C:99:A:C3'	1:C:100:A:P	2.72	0.77
1:A:49:C:H2'	1:A:50:U:O4'	1.85	0.77
1:C:85:U:P	1:C:86:G:N7	2.58	0.77
1:D:38:G:H2'	1:D:39:G:H8	1.46	0.77
1:D:99:A:C3'	1:D:100:A:P	2.72	0.77
1:A:34:G:O3'	1:A:35:U:O5'	2.02	0.77
1:A:99:A:C3'	1:A:100:A:P	2.72	0.77
1:A:54:U:HO3'	1:A:56:A:P	2.08	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:54:U:O3'	1:B:56:A:P	2.43	0.77
1:B:85:U:P	1:B:86:G:N7	2.57	0.77
1:E:49:C:H2'	1:E:50:U:O4'	1.85	0.77
1:E:99:A:C3'	1:E:100:A:P	2.72	0.77
1:B:99:A:C3'	1:B:100:A:P	2.72	0.77
1:D:49:C:H2'	1:D:50:U:O4'	1.85	0.77
1:E:41:A:H2'	1:E:41:A:N3	1.97	0.77
1:B:49:C:H2'	1:B:50:U:O4'	1.85	0.77
1:B:90:A:C3'	1:B:91:U:P	2.73	0.77
1:E:29:U:C5'	1:E:30:G:C8	2.64	0.77
1:B:29:U:H3'	1:B:30:G:C1'	2.15	0.77
1:E:57:G:P	1:E:57:G:O4'	2.42	0.77
1:C:49:C:H2'	1:C:50:U:O4'	1.85	0.76
1:E:40:G:N2	1:E:62:G:C6	2.39	0.76
1:E:54:U:O3'	1:E:56:A:P	2.43	0.76
1:C:54:U:O3'	1:C:56:A:P	2.43	0.76
1:D:29:U:C2	1:D:30:G:H4'	2.21	0.76
1:B:56:A:C3'	1:B:57:G:P	2.74	0.76
1:E:29:U:C2	1:E:30:G:H4'	2.21	0.76
1:E:85:U:P	1:E:86:G:N7	2.57	0.76
1:A:29:U:P	1:A:30:G:N7	2.57	0.76
1:B:98:A:H3'	1:B:99:A:OP2	1.86	0.76
1:C:90:A:C3'	1:C:91:U:P	2.73	0.76
1:A:29:U:H3'	1:A:30:G:C1'	2.15	0.76
1:C:29:U:H3'	1:C:30:G:C1'	2.15	0.76
1:C:43:U:C5'	1:C:44:A:C5'	2.36	0.76
1:D:54:U:O3'	1:D:56:A:P	2.43	0.76
1:A:30:G:H2'	1:A:31:U:C6	2.21	0.76
1:A:98:A:H3'	1:A:99:A:OP2	1.86	0.76
1:C:31:U:C3'	1:C:32:A:H5'	2.16	0.76
1:C:72:U:H5'	1:C:74:U:C5	2.21	0.76
1:C:80:U:C2	1:C:86:G:O6	2.39	0.76
1:A:90:A:C3'	1:A:91:U:P	2.73	0.76
1:C:98:A:H3'	1:C:99:A:OP2	1.86	0.76
1:E:75:G:O6	1:E:91:U:O4	2.04	0.76
1:B:80:U:C2	1:B:86:G:O6	2.39	0.76
1:D:72:U:H5'	1:D:74:U:C5	2.21	0.76
1:D:90:A:C3'	1:D:91:U:P	2.73	0.76
1:A:54:U:O3'	1:A:56:A:P	2.43	0.75
1:D:30:G:H2'	1:D:31:U:C6	2.21	0.75
1:D:75:G:O6	1:D:91:U:O4	2.04	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:80:U:C2	1:A:86:G:O6	2.39	0.75
1:B:31:U:C3'	1:B:32:A:H5'	2.16	0.75
1:B:72:U:H5'	1:B:74:U:C5	2.21	0.75
1:D:56:A:C3'	1:D:57:G:P	2.74	0.75
1:A:75:G:O6	1:A:91:U:O4	2.04	0.75
1:A:81:U:HO3'	1:A:82:G:P	2.10	0.75
1:C:38:G:H2'	1:C:39:G:H8	1.46	0.75
1:E:56:A:C3'	1:E:57:G:P	2.74	0.75
1:E:90:A:C3'	1:E:91:U:P	2.73	0.75
1:E:72:U:H5'	1:E:74:U:C5	2.21	0.75
1:E:34:G:O3'	1:E:35:U:O5'	2.02	0.75
1:E:98:A:H3'	1:E:99:A:OP2	1.86	0.75
1:B:29:U:O5'	1:B:30:G:N7	2.20	0.75
1:B:29:U:C2	1:B:30:G:H4'	2.21	0.75
1:D:31:U:C3'	1:D:32:A:H5'	2.16	0.75
1:C:29:U:C2	1:C:30:G:H4'	2.21	0.75
1:D:80:U:C2	1:D:86:G:O6	2.39	0.75
1:A:29:U:C2	1:A:30:G:H4'	2.21	0.75
1:B:75:G:O6	1:B:91:U:O4	2.04	0.75
1:C:75:G:O6	1:C:91:U:O4	2.04	0.75
1:D:98:A:H3'	1:D:99:A:OP2	1.86	0.75
1:C:56:A:C3'	1:C:57:G:P	2.74	0.75
1:D:29:U:H3'	1:D:30:G:C1'	2.15	0.75
1:E:40:G:O3'	1:E:41:A:OP1	2.05	0.74
1:A:56:A:C3'	1:A:57:G:P	2.74	0.74
1:C:29:U:O5'	1:C:30:G:N7	2.20	0.74
1:D:29:U:O5'	1:D:30:G:N7	2.20	0.74
1:C:30:G:H2'	1:C:31:U:C6	2.21	0.74
1:E:29:U:C5'	1:E:30:G:O4'	2.35	0.74
1:B:30:G:H2'	1:B:31:U:C6	2.21	0.74
1:B:43:U:OP1	1:B:43:U:O4'	2.05	0.74
1:C:29:U:C5'	1:C:30:G:O4'	2.35	0.74
1:C:81:U:HO3'	1:C:82:G:P	2.09	0.74
1:D:29:U:C5'	1:D:30:G:O4'	2.35	0.74
1:D:30:G:C3'	1:D:30:G:P	2.76	0.74
1:E:28:G:O4'	1:E:29:U:H4'	1.88	0.74
1:E:30:G:H2'	1:E:31:U:C6	2.21	0.74
1:A:31:U:C3'	1:A:32:A:H5'	2.16	0.74
1:A:72:U:H5'	1:A:74:U:C5	2.21	0.74
1:A:81:U:O4	1:E:46:A:C5	2.40	0.74
1:B:29:U:OP1	1:B:30:G:N7	2.21	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:80:U:C2	1:E:86:G:O6	2.39	0.74
1:A:29:U:OP1	1:A:30:G:N7	2.21	0.74
1:B:29:U:C5'	1:B:30:G:C1'	2.66	0.74
1:B:31:U:C3'	1:B:32:A:P	2.76	0.74
1:D:31:U:C3'	1:D:32:A:P	2.76	0.74
1:E:31:U:C3'	1:E:32:A:P	2.76	0.74
1:B:29:U:C5'	1:B:30:G:O4'	2.35	0.74
1:E:31:U:C3'	1:E:32:A:H5'	2.16	0.74
1:D:40:G:C5'	1:D:47:C:H5''	2.18	0.74
1:A:40:G:O3'	1:A:41:A:OP1	2.05	0.73
1:D:28:G:O4'	1:D:29:U:H4'	1.88	0.73
1:D:29:U:OP1	1:D:30:G:N7	2.21	0.73
1:D:43:U:OP1	1:D:43:U:O4'	2.05	0.73
1:E:40:G:C5'	1:E:47:C:H5''	2.18	0.73
1:C:43:U:OP1	1:C:43:U:O4'	2.05	0.73
1:C:28:G:O4'	1:C:29:U:H4'	1.88	0.73
1:B:40:G:C5'	1:B:47:C:H5''	2.18	0.73
1:B:44:A:H5''	1:B:46:A:OP1	1.88	0.73
1:C:40:G:O3'	1:C:41:A:OP1	2.05	0.73
1:E:29:U:P	1:E:30:G:C8	2.81	0.73
1:A:43:U:C5'	1:A:44:A:C5'	2.36	0.73
1:E:43:U:OP1	1:E:43:U:O4'	2.05	0.73
1:A:29:U:C5'	1:A:30:G:O4'	2.35	0.73
1:A:43:U:OP1	1:A:43:U:O4'	2.05	0.73
1:B:28:G:O4'	1:B:29:U:H4'	1.87	0.73
1:D:40:G:O3'	1:D:41:A:OP1	2.06	0.73
1:B:30:G:C3'	1:B:30:G:P	2.76	0.73
1:C:44:A:H5''	1:C:46:A:OP1	1.88	0.73
1:C:29:U:OP1	1:C:30:G:N7	2.21	0.73
1:D:29:U:P	1:D:30:G:C8	2.81	0.73
1:A:30:G:C3'	1:A:30:G:P	2.76	0.73
1:C:31:U:C3'	1:C:32:A:P	2.76	0.73
1:D:86:G:H5''	1:D:87:U:O5'	1.89	0.73
1:E:29:U:H3'	1:E:30:G:C1'	2.15	0.73
1:C:29:U:P	1:C:30:G:C8	2.81	0.73
1:D:29:U:C5'	1:D:30:G:C1'	2.66	0.73
1:A:29:U:O5'	1:A:30:G:N7	2.20	0.72
1:B:86:G:H5''	1:B:87:U:O5'	1.89	0.72
1:C:86:G:H5''	1:C:87:U:O5'	1.89	0.72
1:E:29:U:C5'	1:E:30:G:C1'	2.66	0.72
1:B:40:G:O3'	1:B:41:A:OP1	2.05	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:34:G:H2'	1:E:35:U:C6	2.25	0.72
1:A:31:U:C3'	1:A:32:A:P	2.76	0.72
1:A:86:G:H5''	1:A:87:U:O5'	1.89	0.72
1:E:30:G:C3'	1:E:30:G:P	2.76	0.72
1:A:98:A:C3'	1:A:99:A:P	2.77	0.72
1:C:98:A:C3'	1:C:99:A:P	2.77	0.72
1:E:81:U:HO3'	1:E:82:G:P	2.11	0.72
1:A:75:G:OP1	1:A:75:G:H3'	1.88	0.72
1:B:29:U:C6	1:B:30:G:O4'	2.43	0.72
1:C:29:U:C5'	1:C:30:G:C1'	2.66	0.72
1:E:29:U:OP1	1:E:30:G:N7	2.21	0.72
1:E:53:U:HO3'	1:E:54:U:P	2.08	0.72
1:E:98:A:C3'	1:E:99:A:P	2.77	0.72
1:A:28:G:O4'	1:A:29:U:H4'	1.88	0.72
1:A:34:G:H2'	1:A:35:U:C6	2.25	0.72
1:A:29:U:C5'	1:A:30:G:C1'	2.66	0.72
1:A:40:G:C5'	1:A:47:C:H5''	2.18	0.72
1:C:30:G:C3'	1:C:30:G:P	2.76	0.72
1:C:40:G:C5'	1:C:47:C:H5''	2.18	0.72
1:D:34:G:H2'	1:D:35:U:C6	2.24	0.72
1:D:98:A:C3'	1:D:99:A:P	2.77	0.72
1:E:29:U:O5'	1:E:30:G:N7	2.20	0.72
1:E:86:G:H5''	1:E:87:U:O5'	1.89	0.72
1:A:29:U:P	1:A:30:G:C8	2.81	0.71
1:C:29:U:C6	1:C:30:G:O4'	2.43	0.71
1:D:75:G:OP1	1:D:75:G:H3'	1.88	0.71
1:B:29:U:P	1:B:30:G:C8	2.81	0.71
1:B:98:A:C3'	1:B:99:A:P	2.77	0.71
1:D:31:U:O3'	1:D:32:A:P	2.49	0.71
1:B:31:U:O3'	1:B:32:A:P	2.49	0.71
1:B:34:G:H2'	1:B:35:U:C6	2.25	0.71
1:C:31:U:O3'	1:C:32:A:P	2.49	0.71
1:A:31:U:O3'	1:A:32:A:P	2.49	0.71
1:E:54:U:HO3'	1:E:56:A:P	2.13	0.71
1:E:29:U:C6	1:E:30:G:O4'	2.43	0.71
1:B:86:G:C5'	1:B:87:U:O5'	2.39	0.71
1:D:29:U:C6	1:D:30:G:O4'	2.43	0.71
1:C:34:G:H2'	1:C:35:U:C6	2.25	0.71
1:A:29:U:C6	1:A:30:G:O4'	2.43	0.71
1:E:31:U:O3'	1:E:32:A:P	2.49	0.71
1:E:86:G:C5'	1:E:87:U:O5'	2.39	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:75:G:OP1	1:C:75:G:H3'	1.88	0.70
1:E:75:G:OP1	1:E:75:G:H3'	1.88	0.70
1:A:53:U:HO3'	1:A:54:U:P	2.08	0.70
1:A:86:G:C5'	1:A:87:U:O5'	2.39	0.70
1:D:39:G:C2'	1:D:40:G:O4'	2.39	0.70
1:A:39:G:C2'	1:A:40:G:O4'	2.39	0.70
1:D:86:G:C5'	1:D:87:U:O5'	2.39	0.70
1:A:28:G:O2'	1:A:29:U:C5'	2.37	0.70
1:A:42:U:H3'	1:A:42:U:C6	2.26	0.70
1:B:28:G:O2'	1:B:29:U:C5'	2.37	0.70
1:A:44:A:H5''	1:A:46:A:OP1	1.88	0.70
1:B:42:U:H3'	1:B:42:U:C6	2.26	0.70
1:A:29:U:C5'	1:A:30:G:N9	2.55	0.69
1:C:39:G:C2'	1:C:40:G:O4'	2.39	0.69
1:C:86:G:C5'	1:C:87:U:O5'	2.39	0.69
1:B:29:U:C5'	1:B:30:G:N9	2.55	0.69
1:D:44:A:H5''	1:D:46:A:OP1	1.88	0.69
1:C:53:U:H3'	1:C:53:U:C6	2.27	0.69
1:B:75:G:OP1	1:B:75:G:H3'	1.88	0.69
1:D:29:U:C5'	1:D:30:G:N9	2.55	0.69
1:C:49:C:HO3'	1:C:50:U:H5'	1.57	0.69
1:D:28:G:O2'	1:D:29:U:C5'	2.37	0.69
1:C:28:G:O2'	1:C:29:U:C5'	2.37	0.69
1:E:44:A:H5''	1:E:46:A:OP1	1.88	0.69
1:A:29:U:H5'	1:A:30:G:O4'	1.93	0.69
1:B:39:G:C2'	1:B:40:G:O4'	2.39	0.69
1:C:29:U:C5'	1:C:30:G:N9	2.55	0.69
1:E:64:C:H2'	1:E:65:C:C6	2.28	0.69
1:D:42:U:H3'	1:D:42:U:C6	2.26	0.69
1:D:46:A:C6	1:E:84:U:N3	2.34	0.69
1:E:29:U:C5'	1:E:30:G:N9	2.55	0.69
1:E:63:C:O4'	1:E:63:C:OP1	1.97	0.69
1:E:28:G:O2'	1:E:29:U:C5'	2.37	0.69
1:C:64:C:H2'	1:C:65:C:C6	2.28	0.68
1:D:63:C:O4'	1:D:63:C:OP1	1.97	0.68
1:A:64:C:H2'	1:A:65:C:C6	2.28	0.68
1:A:86:G:OP1	1:A:86:G:C4'	2.41	0.68
1:C:42:U:H3'	1:C:42:U:C6	2.26	0.68
1:E:86:G:C4'	1:E:86:G:OP1	2.41	0.68
1:C:40:G:C2	1:C:62:G:C5	2.72	0.68
1:C:86:G:OP1	1:C:86:G:C4'	2.41	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:64:C:H2'	1:B:65:C:C6	2.28	0.68
1:B:93:A:C3'	1:B:94:U:OP2	2.41	0.68
1:E:39:G:C2'	1:E:40:G:O4'	2.39	0.68
1:A:53:U:H3'	1:A:53:U:C6	2.27	0.68
1:C:58:U:H3'	1:C:58:U:C6	2.26	0.68
1:D:64:C:H2'	1:D:65:C:C6	2.28	0.68
1:C:100:A:H3'	1:C:101:A:P	2.34	0.68
1:D:86:G:C4'	1:D:86:G:OP1	2.41	0.68
1:B:53:U:H3'	1:B:53:U:C6	2.27	0.68
1:D:58:U:H3'	1:D:58:U:C6	2.27	0.68
1:A:47:C:N3	1:B:83:G:C6	2.53	0.68
1:C:30:G:O2'	1:C:31:U:H5'	1.94	0.68
1:E:30:G:O2'	1:E:31:U:H5'	1.94	0.68
1:E:40:G:C5	1:E:49:C:N4	2.62	0.68
1:C:93:A:C3'	1:C:94:U:OP2	2.41	0.68
1:A:54:U:O3'	1:A:56:A:OP1	2.12	0.67
1:D:54:U:O3'	1:D:56:A:OP1	2.12	0.67
1:E:53:U:H3'	1:E:53:U:C6	2.27	0.67
1:A:58:U:H3'	1:A:58:U:C6	2.26	0.67
1:B:29:U:H5'	1:B:30:G:O4'	1.93	0.67
1:B:30:G:O2'	1:B:31:U:H5'	1.94	0.67
1:B:63:C:O4'	1:B:63:C:OP1	1.97	0.67
1:D:40:G:C5	1:D:49:C:N4	2.62	0.67
1:A:40:G:C5	1:A:49:C:N4	2.62	0.67
1:B:100:A:H3'	1:B:101:A:P	2.34	0.67
1:B:86:G:C4'	1:B:86:G:OP1	2.41	0.67
1:B:54:U:O3'	1:B:56:A:OP1	2.12	0.67
1:E:29:U:H5'	1:E:30:G:O4'	1.93	0.67
1:C:40:G:C5	1:C:49:C:N4	2.62	0.67
1:D:100:A:H3'	1:D:101:A:P	2.34	0.67
1:E:58:U:H3'	1:E:58:U:C6	2.27	0.67
1:E:100:A:H3'	1:E:101:A:P	2.34	0.67
1:A:30:G:O2'	1:A:31:U:H5'	1.94	0.67
1:B:58:U:H3'	1:B:58:U:C6	2.27	0.67
1:C:29:U:H5'	1:C:30:G:H1'	1.76	0.67
1:C:87:U:H3'	1:C:88:C:OP2	1.95	0.67
1:D:87:U:H3'	1:D:88:C:OP2	1.95	0.67
1:C:54:U:O3'	1:C:56:A:OP1	2.12	0.67
1:C:90:A:HO3'	1:C:91:U:P	2.15	0.67
1:D:29:U:H5'	1:D:30:G:O4'	1.93	0.67
1:D:30:G:O2'	1:D:31:U:H5'	1.94	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:54:U:O3'	1:E:56:A:OP1	2.12	0.67
1:A:80:U:O4	1:A:84:U:H5''	1.95	0.66
1:D:45:A:C6	1:E:85:U:O4	2.47	0.66
1:D:80:U:O4	1:D:84:U:H5''	1.95	0.66
1:A:29:U:H5'	1:A:30:G:H1'	1.76	0.66
1:A:87:U:H3'	1:A:88:C:OP2	1.95	0.66
1:E:42:U:H3'	1:E:42:U:C6	2.26	0.66
1:B:40:G:C5	1:B:49:C:N4	2.62	0.66
1:B:93:A:H3'	1:B:94:U:P	2.36	0.66
1:C:80:U:O4	1:C:84:U:H5''	1.95	0.66
1:C:29:U:H5'	1:C:30:G:O4'	1.93	0.66
1:A:100:A:H3'	1:A:101:A:P	2.34	0.66
1:B:80:U:O4	1:B:84:U:H5''	1.95	0.66
1:D:53:U:H3'	1:D:53:U:C6	2.27	0.66
1:E:80:U:O4	1:E:84:U:H5''	1.95	0.66
1:E:87:U:H3'	1:E:88:C:OP2	1.95	0.66
1:D:93:A:H3'	1:D:94:U:P	2.36	0.66
1:E:29:U:H5'	1:E:30:G:H1'	1.76	0.66
1:A:34:G:HO3'	1:A:35:U:H5'	1.59	0.66
1:C:53:U:H3'	1:C:54:U:OP2	1.96	0.65
1:E:93:A:H3'	1:E:94:U:P	2.36	0.65
1:D:45:A:N1	1:E:85:U:O4	2.28	0.65
1:B:53:U:H3'	1:B:54:U:OP2	1.97	0.65
1:C:31:U:HO3'	1:C:32:A:H5'	1.62	0.65
1:C:99:A:H3'	1:C:100:A:P	2.36	0.65
1:B:87:U:H3'	1:B:88:C:OP2	1.95	0.65
1:D:99:A:H3'	1:D:100:A:P	2.36	0.65
1:D:53:U:H3'	1:D:54:U:OP2	1.96	0.65
1:A:53:U:H3'	1:A:54:U:OP2	1.97	0.65
1:A:93:A:C3'	1:A:94:U:OP2	2.41	0.65
1:E:53:U:H3'	1:E:54:U:OP2	1.97	0.65
1:A:29:U:OP2	1:A:30:G:C4	2.51	0.64
1:C:29:U:OP2	1:C:30:G:C4	2.51	0.64
1:C:93:A:H3'	1:C:94:U:P	2.36	0.64
1:D:29:U:H5'	1:D:30:G:H1'	1.76	0.64
1:C:33:U:C2	1:C:34:G:C8	2.86	0.64
1:E:29:U:OP2	1:E:30:G:C4	2.51	0.64
1:B:57:G:H2'	1:B:58:U:H5'	1.80	0.64
1:C:57:G:H2'	1:C:58:U:H5'	1.80	0.64
1:D:33:U:C2	1:D:34:G:C8	2.86	0.64
1:D:49:C:C3'	1:D:50:U:H5'	2.27	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:57:G:H2'	1:D:58:U:H5'	1.80	0.64
1:B:41:A:C1'	1:B:49:C:H1'	2.28	0.64
1:B:100:A:HO3'	1:B:101:A:P	2.21	0.64
1:C:49:C:C3'	1:C:50:U:H5'	2.27	0.64
1:D:41:A:C1'	1:D:49:C:H1'	2.28	0.64
1:A:93:A:H3'	1:A:94:U:P	2.36	0.64
1:B:33:U:C2	1:B:34:G:C8	2.86	0.64
1:C:46:A:C6	1:D:84:U:O4	2.50	0.64
1:B:58:U:C6	1:B:58:U:C3'	2.81	0.64
1:B:71:C:H5	1:B:72:U:C5	2.16	0.64
1:B:99:A:H3'	1:B:100:A:P	2.36	0.64
1:D:71:C:H5	1:D:72:U:C5	2.16	0.64
1:E:53:U:C3'	1:E:53:U:C6	2.81	0.64
1:B:29:U:OP2	1:B:30:G:C4	2.51	0.64
1:C:71:C:H5	1:C:72:U:C5	2.16	0.64
1:D:29:U:OP2	1:D:30:G:C4	2.51	0.64
1:C:58:U:C6	1:C:58:U:C3'	2.81	0.64
1:E:41:A:C1'	1:E:49:C:H1'	2.28	0.64
1:A:71:C:H5	1:A:72:U:C5	2.16	0.64
1:A:49:C:C3'	1:A:50:U:H5'	2.27	0.63
1:A:58:U:C6	1:A:58:U:C3'	2.81	0.63
1:B:46:A:C2	1:C:85:U:C2	2.86	0.63
1:B:54:U:O2	1:B:57:G:O6	2.16	0.63
1:C:40:G:H5'	1:C:47:C:C5'	2.27	0.63
1:E:57:G:H2'	1:E:58:U:H5'	1.80	0.63
1:A:33:U:C2	1:A:34:G:C8	2.86	0.63
1:C:41:A:C1'	1:C:49:C:H1'	2.28	0.63
1:E:42:U:C6	1:E:42:U:C3'	2.81	0.63
1:E:99:A:H3'	1:E:100:A:P	2.36	0.63
1:D:42:U:C6	1:D:42:U:C3'	2.81	0.63
1:E:33:U:C2	1:E:34:G:C8	2.86	0.63
1:A:53:U:C3'	1:A:53:U:C6	2.81	0.63
1:C:54:U:O2	1:C:57:G:O6	2.16	0.63
1:D:54:U:O2	1:D:57:G:O6	2.17	0.63
1:E:54:U:O2	1:E:57:G:O6	2.17	0.63
1:A:41:A:C1'	1:A:49:C:H1'	2.28	0.63
1:A:42:U:C6	1:A:42:U:C3'	2.81	0.63
1:D:53:U:C3'	1:D:53:U:C6	2.81	0.63
1:E:58:U:C6	1:E:58:U:C3'	2.81	0.63
1:B:53:U:C3'	1:B:53:U:C6	2.81	0.63
1:B:80:U:H5''	1:B:81:U:OP2	1.99	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:58:U:C6	1:D:58:U:C3'	2.81	0.63
1:E:71:C:H5	1:E:72:U:C5	2.16	0.63
1:B:29:U:H5'	1:B:30:G:H1'	1.76	0.63
1:B:49:C:C3'	1:B:50:U:H5'	2.27	0.63
1:C:54:U:HO3'	1:C:56:A:P	2.22	0.63
1:E:49:C:C3'	1:E:50:U:H5'	2.27	0.63
1:A:54:U:N3	1:A:56:A:H1'	2.14	0.62
1:D:80:U:H5''	1:D:81:U:OP2	1.99	0.62
1:E:40:G:H5'	1:E:47:C:C5'	2.27	0.62
1:D:74:U:O2'	1:D:76:U:OP1	2.16	0.62
1:E:54:U:N3	1:E:56:A:H1'	2.14	0.62
1:A:57:G:H2'	1:A:58:U:H5'	1.80	0.62
1:E:56:A:H3'	1:E:57:G:P	2.39	0.62
1:A:54:U:O2	1:A:57:G:O6	2.17	0.62
1:A:63:C:O4'	1:A:63:C:OP1	1.97	0.62
1:B:40:G:H5'	1:B:47:C:C5'	2.27	0.62
1:C:53:U:C3'	1:C:53:U:C6	2.81	0.62
1:A:86:G:OP1	1:A:86:G:H4'	1.99	0.62
1:A:98:A:H3'	1:A:99:A:P	2.40	0.62
1:D:40:G:H5'	1:D:47:C:C5'	2.27	0.62
1:D:54:U:HO3'	1:D:56:A:P	2.21	0.62
1:C:80:U:H5''	1:C:81:U:OP2	1.99	0.62
1:B:54:U:N3	1:B:56:A:H1'	2.14	0.62
1:D:54:U:N3	1:D:56:A:H1'	2.14	0.62
1:E:98:A:H3'	1:E:99:A:P	2.40	0.62
1:C:86:G:OP1	1:C:86:G:H4'	1.99	0.62
1:A:80:U:H5''	1:A:81:U:OP2	1.99	0.62
1:A:99:A:H3'	1:A:100:A:P	2.36	0.62
1:B:56:A:H3'	1:B:57:G:P	2.39	0.62
1:C:54:U:N3	1:C:56:A:H1'	2.14	0.62
1:C:56:A:H3'	1:C:57:G:P	2.39	0.61
1:A:32:A:H2'	1:A:33:U:C6	2.35	0.61
1:A:56:A:H3'	1:A:57:G:P	2.39	0.61
1:E:86:G:OP1	1:E:86:G:H4'	1.99	0.61
1:B:32:A:H2'	1:B:33:U:C6	2.35	0.61
1:B:42:U:H6	1:B:42:U:C3'	2.14	0.61
1:E:80:U:H5''	1:E:81:U:OP2	1.99	0.61
1:B:82:G:P	1:B:82:G:H3'	2.41	0.61
1:D:82:G:P	1:D:82:G:H3'	2.41	0.61
1:A:82:G:P	1:A:82:G:H3'	2.41	0.61
1:D:56:A:H3'	1:D:57:G:P	2.39	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:86:G:OP1	1:D:86:G:H4'	1.99	0.61
1:B:42:U:C6	1:B:42:U:C3'	2.81	0.61
1:C:42:U:C6	1:C:42:U:C3'	2.81	0.61
1:D:98:A:H3'	1:D:99:A:P	2.40	0.61
1:E:82:G:P	1:E:82:G:H3'	2.41	0.61
1:E:87:U:H4'	1:E:87:U:OP1	2.01	0.61
1:C:70:A:H2'	1:C:71:C:O4'	2.01	0.61
1:C:82:G:P	1:C:82:G:H3'	2.41	0.61
1:E:32:A:H2'	1:E:33:U:C6	2.35	0.61
1:B:86:G:OP1	1:B:86:G:H4'	1.99	0.60
1:C:32:A:H2'	1:C:33:U:C6	2.35	0.60
1:C:98:A:H3'	1:C:99:A:P	2.40	0.60
1:D:70:A:H2'	1:D:71:C:O4'	2.01	0.60
1:A:56:A:O3'	1:A:57:G:OP1	2.20	0.60
1:B:70:A:H2'	1:B:71:C:O4'	2.01	0.60
1:D:32:A:H2'	1:D:33:U:C6	2.35	0.60
1:D:75:G:OP1	1:D:75:G:C3'	2.47	0.60
1:B:71:C:C5	1:B:72:U:C5	2.89	0.60
1:E:81:U:C5'	1:E:81:U:P	2.90	0.60
1:A:28:G:C3'	1:A:29:U:C5'	2.73	0.60
1:A:70:A:H2'	1:A:71:C:O4'	2.01	0.60
1:A:58:U:H6	1:A:58:U:C3'	2.13	0.60
1:C:71:C:C5	1:C:72:U:C5	2.89	0.60
1:D:56:A:O3'	1:D:57:G:OP1	2.20	0.60
1:D:87:U:OP1	1:D:87:U:H4'	2.01	0.60
1:B:29:U:O4'	1:B:30:G:O4'	2.20	0.60
1:A:71:C:C5	1:A:72:U:C5	2.89	0.60
1:A:87:U:OP1	1:A:87:U:H4'	2.01	0.60
1:C:56:A:O3'	1:C:57:G:OP1	2.20	0.60
1:D:29:U:O4'	1:D:30:G:O4'	2.20	0.60
1:D:71:C:C5	1:D:72:U:C5	2.89	0.60
1:E:71:C:C5	1:E:72:U:C5	2.89	0.60
1:A:75:G:OP1	1:A:75:G:C3'	2.47	0.59
1:B:98:A:H3'	1:B:99:A:P	2.40	0.59
1:D:58:U:H2'	1:D:59:U:C6	2.37	0.59
1:E:49:C:HO3'	1:E:50:U:H5'	1.64	0.59
1:B:74:U:O2'	1:B:76:U:OP1	2.16	0.59
1:C:58:U:H2'	1:C:59:U:C6	2.38	0.59
1:E:70:A:H2'	1:E:71:C:O4'	2.01	0.59
1:B:87:U:OP1	1:B:87:U:H4'	2.01	0.59
1:A:31:U:H2'	1:A:32:A:O4'	2.03	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:31:U:H2'	1:B:32:A:O4'	2.03	0.59
1:D:31:U:H2'	1:D:32:A:O4'	2.03	0.59
1:E:29:U:C1'	1:E:30:G:O4'	2.50	0.59
1:A:29:U:O4'	1:A:30:G:O4'	2.20	0.59
1:A:53:U:C3'	1:A:54:U:OP2	2.51	0.59
1:B:53:U:H6	1:B:53:U:C3'	2.13	0.59
1:B:58:U:H2'	1:B:59:U:C6	2.37	0.59
1:C:87:U:H4'	1:C:87:U:OP1	2.01	0.59
1:C:53:U:H6	1:C:53:U:C3'	2.13	0.59
1:D:53:U:C3'	1:D:54:U:OP2	2.51	0.59
1:E:56:A:O3'	1:E:57:G:OP1	2.20	0.59
1:E:73:U:O5'	1:E:74:U:OP2	2.21	0.59
1:C:29:U:O4'	1:C:30:G:O4'	2.20	0.59
1:C:53:U:C3'	1:C:54:U:OP2	2.51	0.59
1:A:58:U:H2'	1:A:59:U:C6	2.37	0.59
1:C:74:U:O2'	1:C:76:U:OP1	2.16	0.59
1:D:29:U:C1'	1:D:30:G:O4'	2.50	0.59
1:D:73:U:O5'	1:D:74:U:OP2	2.21	0.59
1:E:53:U:C3'	1:E:54:U:OP2	2.51	0.59
1:B:81:U:C5'	1:B:81:U:P	2.90	0.58
1:A:73:U:O5'	1:A:74:U:OP2	2.21	0.58
1:C:31:U:H2'	1:C:32:A:O4'	2.03	0.58
1:E:31:U:H2'	1:E:32:A:O4'	2.03	0.58
1:E:58:U:H2'	1:E:59:U:C6	2.37	0.58
1:E:74:U:O2'	1:E:76:U:OP1	2.16	0.58
1:B:53:U:C3'	1:B:54:U:OP2	2.51	0.58
1:B:54:U:H3'	1:B:56:A:OP2	2.04	0.58
1:C:73:U:O5'	1:C:74:U:OP2	2.21	0.58
1:B:56:A:O3'	1:B:57:G:OP1	2.20	0.58
1:E:54:U:H3'	1:E:56:A:OP2	2.04	0.58
1:A:81:U:C5'	1:A:81:U:P	2.90	0.58
1:A:54:U:H3'	1:A:56:A:OP2	2.04	0.58
1:D:93:A:C3'	1:D:94:U:OP2	2.41	0.58
1:E:29:U:O4'	1:E:30:G:O4'	2.20	0.58
1:D:81:U:C5'	1:D:81:U:P	2.90	0.57
1:A:40:G:H5'	1:A:47:C:C5'	2.27	0.57
1:B:65:C:H2'	1:B:66:A:O5'	2.05	0.57
1:C:54:U:H3'	1:C:56:A:OP2	2.04	0.57
1:D:65:C:H2'	1:D:66:A:O5'	2.05	0.57
1:A:74:U:O2'	1:A:76:U:OP1	2.16	0.57
1:C:65:C:H2'	1:C:66:A:O5'	2.05	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:81:U:C5'	1:C:81:U:P	2.90	0.57
1:D:54:U:H3'	1:D:56:A:OP2	2.04	0.57
1:D:54:U:C5	1:D:56:A:H1'	2.39	0.57
1:A:54:U:C5	1:A:56:A:H1'	2.40	0.57
1:B:28:G:HO2'	1:B:29:U:H5''	1.68	0.57
1:B:73:U:O5'	1:B:74:U:OP2	2.21	0.57
1:C:42:U:H6	1:C:42:U:C3'	2.13	0.57
1:C:54:U:C5	1:C:56:A:H1'	2.40	0.57
1:B:29:U:C1'	1:B:30:G:O4'	2.50	0.57
1:E:54:U:C5	1:E:56:A:H1'	2.40	0.57
1:E:65:C:H2'	1:E:66:A:O5'	2.05	0.57
1:B:75:G:OP1	1:B:75:G:C3'	2.47	0.56
1:A:45:A:C6	1:B:85:U:O4	2.57	0.56
1:D:53:U:H6	1:D:53:U:C3'	2.13	0.56
1:E:54:U:C4	1:E:56:A:C1'	2.88	0.56
1:C:46:A:N1	1:D:84:U:O4	2.37	0.56
1:D:90:A:HO3'	1:D:91:U:P	2.25	0.56
1:A:47:C:O2'	1:A:48:C:H5'	2.06	0.56
1:A:65:C:H2'	1:A:66:A:O5'	2.05	0.56
1:A:46:A:N6	1:B:81:U:H5	2.04	0.56
1:B:54:U:C5	1:B:56:A:H1'	2.40	0.56
1:D:47:C:H42	1:E:83:G:H1	0.59	0.56
1:B:54:U:HO3'	1:B:56:A:P	2.27	0.56
1:B:43:U:O2	1:B:43:U:H2'	2.06	0.56
1:A:91:U:H2'	1:A:92:C:H6	1.71	0.56
1:C:43:U:O2	1:C:43:U:H2'	2.06	0.56
1:C:47:C:O2'	1:C:48:C:H5'	2.06	0.56
1:D:43:U:O2	1:D:43:U:H2'	2.06	0.55
1:E:43:U:O2	1:E:43:U:H2'	2.06	0.55
1:B:91:U:H2'	1:B:92:C:H6	1.71	0.55
1:C:29:U:C1'	1:C:30:G:O4'	2.50	0.55
1:B:47:C:O2'	1:B:48:C:H5'	2.06	0.55
1:A:43:U:H2'	1:A:43:U:O2	2.06	0.55
1:C:91:U:H2'	1:C:92:C:H6	1.72	0.55
1:A:29:U:O2	1:A:30:G:H5''	2.07	0.55
1:B:30:G:OP2	1:B:30:G:C2'	2.55	0.55
1:A:63:C:H2'	1:A:64:C:O4'	2.07	0.55
1:D:30:G:OP2	1:D:30:G:C2'	2.55	0.55
1:E:47:C:O2'	1:E:48:C:H5'	2.06	0.55
1:E:63:C:H2'	1:E:64:C:O4'	2.07	0.55
1:A:53:U:H6	1:A:53:U:C3'	2.13	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:47:C:O2'	1:D:48:C:H5'	2.06	0.55
1:D:63:C:H2'	1:D:64:C:O4'	2.07	0.55
1:D:91:U:H2'	1:D:92:C:H6	1.72	0.55
1:D:96:G:H2'	1:D:97:C:O5'	2.07	0.55
1:E:91:U:H2'	1:E:92:C:H6	1.72	0.55
1:C:30:G:OP2	1:C:30:G:C2'	2.55	0.55
1:B:29:U:O2	1:B:30:G:H5''	2.07	0.54
1:E:32:A:H2'	1:E:33:U:H6	1.72	0.54
1:B:96:G:H2'	1:B:97:C:O5'	2.07	0.54
1:C:41:A:H1'	1:C:49:C:H1'	1.90	0.54
1:D:41:A:H1'	1:D:49:C:H1'	1.90	0.54
1:D:54:U:C4	1:D:56:A:C1'	2.88	0.54
1:E:81:U:H5''	1:E:83:G:OP2	2.03	0.54
1:B:63:C:H2'	1:B:64:C:O4'	2.07	0.54
1:C:96:G:H2'	1:C:97:C:O5'	2.07	0.54
1:E:96:G:H2'	1:E:97:C:O5'	2.07	0.54
1:C:47:C:N3	1:D:83:G:C6	2.68	0.54
1:A:53:U:O3'	1:A:54:U:OP1	2.14	0.54
1:A:96:G:H2'	1:A:97:C:O5'	2.07	0.54
1:C:75:G:OP1	1:C:75:G:C3'	2.47	0.54
1:A:34:G:H2'	1:A:35:U:O4'	2.08	0.54
1:B:34:G:H2'	1:B:35:U:O4'	2.08	0.54
1:B:47:C:N4	1:C:83:G:C6	2.76	0.54
1:C:42:U:H5''	1:C:43:U:P	2.48	0.54
1:C:54:U:C4	1:C:56:A:C1'	2.88	0.54
1:C:63:C:H2'	1:C:64:C:O4'	2.07	0.54
1:D:42:U:H5''	1:D:43:U:P	2.48	0.54
1:E:34:G:H2'	1:E:35:U:O4'	2.08	0.54
1:B:54:U:C4	1:B:56:A:C1'	2.88	0.54
1:D:29:U:O2	1:D:30:G:H5''	2.07	0.54
1:E:30:G:OP2	1:E:30:G:C2'	2.55	0.54
1:A:42:U:H5''	1:A:43:U:P	2.48	0.53
1:B:42:U:H5''	1:B:43:U:P	2.48	0.53
1:E:41:A:H1'	1:E:49:C:H1'	1.90	0.53
1:A:29:U:C1'	1:A:30:G:O4'	2.50	0.53
1:E:75:G:OP1	1:E:75:G:C3'	2.47	0.53
1:B:46:A:C2	1:C:85:U:O2	2.61	0.53
1:C:29:U:O2	1:C:30:G:H5''	2.07	0.53
1:E:29:U:O2	1:E:30:G:H5''	2.07	0.53
1:C:34:G:H2'	1:C:35:U:O4'	2.08	0.53
1:D:34:G:H2'	1:D:35:U:O4'	2.08	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:37:G:OP2	1:A:61:A:OP1	2.27	0.53
1:C:49:C:C2'	1:C:50:U:H5'	2.39	0.53
1:C:84:U:H2'	1:C:85:U:C6	2.44	0.53
1:E:42:U:H5''	1:E:43:U:P	2.48	0.53
1:A:84:U:H2'	1:A:85:U:C6	2.44	0.53
1:B:84:U:H2'	1:B:85:U:C6	2.44	0.53
1:D:32:A:H2'	1:D:33:U:H6	1.72	0.53
1:A:81:U:H5'	1:A:83:G:P	2.48	0.53
1:B:41:A:H1'	1:B:49:C:H1'	1.90	0.53
1:A:32:A:H2'	1:A:33:U:H6	1.72	0.53
1:C:32:A:H2'	1:C:33:U:H6	1.72	0.53
1:C:37:G:OP2	1:C:61:A:OP1	2.27	0.53
1:D:37:G:OP2	1:D:61:A:OP1	2.27	0.53
1:B:32:A:H2'	1:B:33:U:H6	1.72	0.52
1:B:81:U:H5'	1:B:83:G:P	2.48	0.52
1:A:50:U:O3'	1:A:51:G:C5'	2.53	0.52
1:B:49:C:C2'	1:B:50:U:H5'	2.39	0.52
1:D:49:C:C2'	1:D:50:U:H5'	2.39	0.52
1:D:84:U:H2'	1:D:85:U:C6	2.44	0.52
1:E:28:G:C1'	1:E:29:U:H5''	2.39	0.52
1:C:40:G:OP2	1:C:40:G:O4'	2.28	0.52
1:C:81:U:H5'	1:C:83:G:P	2.48	0.52
1:D:28:G:C1'	1:D:29:U:H5''	2.39	0.52
1:E:49:C:C2'	1:E:50:U:H5'	2.39	0.52
1:E:83:G:H2'	1:E:84:U:C6	2.45	0.52
1:B:54:U:C2	1:B:56:A:H1'	2.45	0.52
1:D:40:G:OP2	1:D:40:G:O4'	2.28	0.52
1:E:37:G:OP2	1:E:61:A:OP1	2.27	0.52
1:A:40:G:OP2	1:A:40:G:O4'	2.28	0.52
1:A:54:U:C2	1:A:56:A:H1'	2.45	0.52
1:B:37:G:OP2	1:B:61:A:OP1	2.27	0.52
1:E:33:U:O2'	1:E:34:G:H5'	2.09	0.52
1:A:54:U:C4	1:A:56:A:C1'	2.88	0.52
1:A:83:G:H2'	1:A:84:U:C6	2.45	0.52
1:C:39:G:N3	1:C:40:G:H1'	2.25	0.52
1:C:83:G:H2'	1:C:84:U:C6	2.45	0.52
1:D:54:U:C2	1:D:56:A:H1'	2.45	0.52
1:E:54:U:C2	1:E:56:A:H1'	2.45	0.52
1:A:41:A:H1'	1:A:49:C:H1'	1.90	0.52
1:B:28:G:C1'	1:B:29:U:H5''	2.39	0.52
1:B:40:G:OP2	1:B:40:G:O4'	2.28	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:93:A:C3'	1:E:94:U:OP2	2.41	0.52
1:A:49:C:C2'	1:A:50:U:H5'	2.39	0.52
1:C:54:U:C2	1:C:56:A:H1'	2.45	0.52
1:D:39:G:N3	1:D:40:G:H1'	2.25	0.52
1:D:83:G:H2'	1:D:84:U:C6	2.45	0.52
1:B:39:G:N3	1:B:40:G:H1'	2.25	0.52
1:B:41:A:O4'	1:B:49:C:H1'	2.10	0.52
1:B:83:G:H2'	1:B:84:U:C6	2.45	0.52
1:D:41:A:O4'	1:D:49:C:H1'	2.10	0.52
1:E:81:U:H5'	1:E:83:G:P	2.48	0.52
1:E:84:U:H2'	1:E:85:U:C6	2.44	0.52
1:A:30:G:OP2	1:A:30:G:C2'	2.55	0.52
1:A:31:U:C3'	1:A:32:A:C5'	2.86	0.52
1:A:33:U:O2'	1:A:34:G:H5'	2.10	0.51
1:A:28:G:C1'	1:A:29:U:H5''	2.39	0.51
1:B:40:G:O3'	1:B:41:A:OP2	2.28	0.51
1:C:28:G:C1'	1:C:29:U:H5''	2.39	0.51
1:D:33:U:H2'	1:D:34:G:H8	1.76	0.51
1:E:39:G:N3	1:E:40:G:H1'	2.25	0.51
1:C:33:U:O2'	1:C:34:G:H5'	2.09	0.51
1:E:41:A:O4'	1:E:49:C:H1'	2.10	0.51
1:A:39:G:N3	1:A:40:G:H1'	2.25	0.51
1:A:46:A:C4	1:A:47:C:C5	2.99	0.51
1:B:46:A:C4	1:B:47:C:C5	2.99	0.51
1:B:50:U:O3'	1:B:51:G:C5'	2.53	0.51
1:D:46:A:C4	1:D:47:C:C5	2.99	0.51
1:E:32:A:C2'	1:E:33:U:O4'	2.56	0.51
1:E:50:U:O3'	1:E:51:G:C5'	2.53	0.51
1:A:28:G:O4'	1:A:29:U:C4'	2.58	0.51
1:A:33:U:H2'	1:A:34:G:H8	1.75	0.51
1:B:33:U:O2'	1:B:34:G:H5'	2.10	0.51
1:D:33:U:O2'	1:D:34:G:H5'	2.10	0.51
1:D:50:U:O3'	1:D:51:G:C5'	2.53	0.51
1:E:33:U:H2'	1:E:34:G:H8	1.75	0.51
1:E:40:G:OP2	1:E:40:G:O4'	2.28	0.51
1:B:58:U:H6	1:B:58:U:C3'	2.13	0.51
1:C:41:A:O4'	1:C:49:C:H1'	2.10	0.51
1:C:71:C:C5	1:C:72:U:C4	2.99	0.51
1:D:71:C:C5	1:D:72:U:C4	2.99	0.51
1:D:40:G:O3'	1:D:41:A:OP2	2.28	0.51
1:E:41:A:C5'	1:E:42:U:P	2.99	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:33:U:H2'	1:A:34:G:O4'	2.11	0.50
1:B:71:C:C5	1:B:72:U:C4	2.99	0.50
1:C:46:A:C4	1:C:47:C:C5	2.99	0.50
1:A:33:U:H2'	1:A:34:G:C8	2.47	0.50
1:A:41:A:O4'	1:A:49:C:H1'	2.10	0.50
1:A:71:C:C5	1:A:72:U:C4	2.99	0.50
1:A:40:G:O3'	1:A:41:A:OP2	2.28	0.50
1:E:48:C:O3'	1:E:49:C:OP1	2.29	0.50
1:B:33:U:H2'	1:B:34:G:O4'	2.11	0.50
1:B:46:A:N1	1:C:85:U:C2	2.79	0.50
1:C:31:U:C3'	1:C:32:A:C5'	2.85	0.50
1:E:33:U:H2'	1:E:34:G:O4'	2.11	0.50
1:E:71:C:C5	1:E:72:U:C4	2.99	0.50
1:C:33:U:H2'	1:C:34:G:H8	1.75	0.50
1:D:48:C:O3'	1:D:49:C:OP1	2.29	0.50
1:D:81:U:H5'	1:D:83:G:P	2.48	0.50
1:E:32:A:O2'	1:E:33:U:H5'	2.12	0.50
1:E:46:A:C4	1:E:47:C:C5	2.99	0.50
1:C:15:C:H2'	1:C:16:U:H6	1.77	0.50
1:D:58:U:H6	1:D:58:U:C3'	2.13	0.50
1:E:15:C:H2'	1:E:16:U:H6	1.77	0.50
1:E:33:U:H2'	1:E:34:G:C8	2.47	0.50
1:A:83:G:N1	1:E:47:C:C4	2.53	0.50
1:B:33:U:H2'	1:B:34:G:H8	1.75	0.50
1:C:50:U:H2'	1:C:51:G:O4'	2.12	0.50
1:A:41:A:OP1	1:A:49:C:C6	2.65	0.49
1:B:41:A:OP1	1:B:49:C:C6	2.65	0.49
1:D:41:A:OP1	1:D:49:C:C6	2.65	0.49
1:D:41:A:C5'	1:D:42:U:P	2.99	0.49
1:D:53:U:O3'	1:D:54:U:OP1	2.14	0.49
1:E:40:G:O3'	1:E:41:A:OP2	2.28	0.49
1:B:31:U:C3'	1:B:32:A:C5'	2.86	0.49
1:B:41:A:C5'	1:B:42:U:P	2.99	0.49
1:D:33:U:H2'	1:D:34:G:O4'	2.11	0.49
1:D:33:U:H2'	1:D:34:G:C8	2.47	0.49
1:A:15:C:H2'	1:A:16:U:H6	1.77	0.49
1:B:33:U:H2'	1:B:34:G:C8	2.47	0.49
1:B:50:U:H2'	1:B:51:G:O4'	2.12	0.49
1:C:33:U:H2'	1:C:34:G:C8	2.47	0.49
1:C:48:C:O3'	1:C:49:C:OP1	2.29	0.49
1:E:58:U:H6	1:E:58:U:C3'	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:15:C:H2'	1:B:16:U:H6	1.77	0.49
1:B:32:A:O2'	1:B:33:U:H5'	2.12	0.49
1:C:33:U:H2'	1:C:34:G:O4'	2.11	0.49
1:E:31:U:C3'	1:E:32:A:C5'	2.86	0.49
1:A:41:A:C5'	1:A:42:U:P	2.99	0.49
1:C:41:A:OP1	1:C:49:C:C6	2.65	0.49
1:C:43:U:OP1	1:C:43:U:H6	1.96	0.49
1:D:15:C:H2'	1:D:16:U:H6	1.77	0.49
1:A:57:G:OP1	1:A:57:G:C4'	2.61	0.49
1:B:48:C:O3'	1:B:49:C:OP1	2.29	0.49
1:A:28:G:C5'	1:A:29:U:O5'	2.61	0.49
1:E:48:C:HO3'	1:E:49:C:P	2.27	0.49
1:E:50:U:H2'	1:E:51:G:O4'	2.12	0.49
1:A:54:U:C3'	1:A:56:A:P	3.01	0.49
1:C:50:U:O3'	1:C:51:G:C5'	2.53	0.49
1:D:43:U:OP1	1:D:43:U:H6	1.96	0.49
1:E:41:A:OP1	1:E:49:C:C6	2.65	0.49
1:A:32:A:O2'	1:A:33:U:H5'	2.12	0.49
1:A:50:U:H2'	1:A:51:G:O4'	2.12	0.49
1:D:12:G:H2'	1:D:13:U:H6	1.78	0.49
1:D:31:U:C3'	1:D:32:A:C5'	2.86	0.49
1:D:54:U:C3'	1:D:56:A:P	3.01	0.49
1:A:81:U:H5''	1:A:83:G:OP2	2.03	0.49
1:B:21:U:H2'	1:B:22:U:H6	1.78	0.49
1:D:50:U:H2'	1:D:51:G:O4'	2.12	0.49
1:E:26:A:H2'	1:E:27:U:H6	1.78	0.49
1:A:32:A:C2'	1:A:33:U:O4'	2.56	0.48
1:A:43:U:OP1	1:A:43:U:H6	1.96	0.48
1:A:100:A:C3'	1:A:101:A:OP2	2.51	0.48
1:C:16:U:H2'	1:C:17:U:H6	1.78	0.48
1:C:32:A:O2'	1:C:33:U:H5'	2.12	0.48
1:D:21:U:H2'	1:D:22:U:H6	1.78	0.48
1:D:32:A:O2'	1:D:33:U:H5'	2.12	0.48
1:E:16:U:H2'	1:E:17:U:H6	1.78	0.48
1:B:43:U:OP1	1:B:43:U:H6	1.96	0.48
1:B:54:U:C3'	1:B:56:A:P	3.01	0.48
1:B:81:U:H5''	1:B:83:G:OP2	2.03	0.48
1:C:28:G:C5'	1:C:29:U:O5'	2.60	0.48
1:C:23:G:H2'	1:C:24:U:H6	1.78	0.48
1:C:54:U:C3'	1:C:56:A:P	3.01	0.48
1:E:43:U:OP1	1:E:43:U:H6	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:26:A:H2'	1:B:27:U:H6	1.78	0.48
1:C:7:G:H2'	1:C:8:U:H6	1.78	0.48
1:E:12:G:H2'	1:E:13:U:H6	1.78	0.48
1:E:54:U:C3'	1:E:56:A:P	3.01	0.48
1:A:48:C:O3'	1:A:49:C:OP1	2.29	0.48
1:B:12:G:H2'	1:B:13:U:H6	1.78	0.48
1:B:16:U:H2'	1:B:17:U:H6	1.78	0.48
1:B:86:G:H5'	1:B:87:U:O5'	2.14	0.48
1:E:28:G:C5'	1:E:29:U:O5'	2.60	0.48
1:A:16:U:H2'	1:A:17:U:H6	1.78	0.48
1:A:23:G:H2'	1:A:24:U:H6	1.78	0.48
1:C:21:U:H2'	1:C:22:U:H6	1.78	0.48
1:D:7:G:H2'	1:D:8:U:H6	1.78	0.48
1:D:26:A:H2'	1:D:27:U:H6	1.78	0.48
1:E:17:U:H2'	1:E:21:U:H6	1.79	0.48
1:A:41:A:C8	1:A:49:C:O4'	2.67	0.48
1:B:7:G:H2'	1:B:8:U:H6	1.78	0.48
1:B:41:A:C8	1:B:49:C:O4'	2.67	0.48
1:E:41:A:C8	1:E:49:C:O4'	2.67	0.48
1:C:17:U:H2'	1:C:21:U:H6	1.79	0.48
1:D:16:U:H2'	1:D:17:U:H6	1.78	0.48
1:D:32:A:C2'	1:D:33:U:O4'	2.56	0.48
1:D:86:G:H5'	1:D:87:U:O5'	2.14	0.48
1:D:91:U:C2	1:D:92:C:C5	3.02	0.48
1:E:21:U:H2'	1:E:22:U:H6	1.78	0.48
1:B:17:U:H2'	1:B:21:U:H6	1.79	0.48
1:C:32:A:C2'	1:C:33:U:O4'	2.56	0.48
1:C:41:A:C5'	1:C:42:U:P	2.99	0.48
1:E:57:G:OP1	1:E:57:G:C4'	2.61	0.48
1:A:26:A:H2'	1:A:27:U:H6	1.78	0.48
1:B:82:G:OP1	1:B:82:G:C8	2.67	0.48
1:D:17:U:H2'	1:D:21:U:H6	1.79	0.48
1:D:82:G:C8	1:D:82:G:OP1	2.67	0.48
1:B:28:G:C5'	1:B:29:U:O5'	2.61	0.47
1:C:91:U:C2	1:C:92:C:C5	3.02	0.47
1:E:71:C:H5	1:E:72:U:C4	2.33	0.47
1:B:91:U:C2	1:B:92:C:C5	3.02	0.47
1:C:40:G:O3'	1:C:41:A:OP2	2.28	0.47
1:D:39:G:H2'	1:D:40:G:N9	2.29	0.47
1:E:23:G:H2'	1:E:24:U:H6	1.78	0.47
1:E:82:G:OP1	1:E:82:G:C8	2.67	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:112:C:C3'	1:E:113:U:OP2	2.39	0.47
1:A:7:G:H2'	1:A:8:U:H6	1.78	0.47
1:A:71:C:H5	1:A:72:U:C4	2.33	0.47
1:D:52:A:H3'	1:D:53:U:C5'	2.38	0.47
1:D:81:U:H5''	1:D:83:G:OP2	2.03	0.47
1:A:12:G:H2'	1:A:13:U:H6	1.78	0.47
1:B:57:G:OP1	1:B:57:G:C4'	2.61	0.47
1:B:71:C:H5	1:B:72:U:C4	2.33	0.47
1:C:82:G:OP1	1:C:82:G:C8	2.67	0.47
1:C:86:G:H5'	1:C:87:U:O5'	2.14	0.47
1:E:7:G:H2'	1:E:8:U:H6	1.78	0.47
1:E:53:U:H3'	1:E:54:U:P	2.53	0.47
1:E:86:G:H5'	1:E:87:U:O5'	2.14	0.47
1:A:14:A:H2'	1:A:15:C:H6	1.80	0.47
1:C:12:G:H2'	1:C:13:U:H6	1.78	0.47
1:E:91:U:C2	1:E:92:C:C5	3.02	0.47
1:A:24:U:H2'	1:A:25:C:H6	1.80	0.47
1:B:68:A:H2'	1:B:69:U:C6	2.50	0.47
1:C:26:A:H2'	1:C:27:U:H6	1.78	0.47
1:C:31:U:C2'	1:C:32:A:H5'	2.45	0.47
1:D:23:G:H2'	1:D:24:U:H6	1.78	0.47
1:D:41:A:C8	1:D:49:C:O4'	2.67	0.47
1:D:45:A:O2'	1:D:46:A:H5'	2.15	0.47
1:D:71:C:H5	1:D:72:U:C4	2.33	0.47
1:D:98:A:HO3'	1:D:99:A:P	2.30	0.47
1:E:39:G:H2'	1:E:40:G:N9	2.29	0.47
1:B:23:G:H2'	1:B:24:U:H6	1.78	0.47
1:B:28:G:O4'	1:B:29:U:C4'	2.58	0.47
1:C:39:G:H2'	1:C:40:G:N9	2.29	0.47
1:C:29:U:H5'	1:C:30:G:N9	2.23	0.47
1:D:9:A:H2'	1:D:10:C:H6	1.80	0.47
1:D:42:U:H6	1:D:42:U:C3'	2.13	0.47
1:E:34:G:HO3'	1:E:35:U:P	2.32	0.47
1:A:68:A:H2'	1:A:69:U:C6	2.50	0.47
1:A:82:G:OP1	1:A:82:G:C8	2.67	0.47
1:A:91:U:C2	1:A:92:C:C5	3.02	0.47
1:C:41:A:C8	1:C:49:C:O4'	2.67	0.47
1:A:21:U:H2'	1:A:22:U:H6	1.78	0.46
1:C:9:A:H2'	1:C:10:C:H6	1.80	0.46
1:C:71:C:H5	1:C:72:U:C4	2.33	0.46
1:D:31:U:C2'	1:D:32:A:H5'	2.45	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:14:A:H2'	1:E:15:C:H6	1.80	0.46
1:E:31:U:C2'	1:E:32:A:H5'	2.45	0.46
1:A:85:U:H3'	1:A:86:G:C8	2.50	0.46
1:B:31:U:C2'	1:B:32:A:H5'	2.45	0.46
1:B:48:C:C3'	1:B:49:C:P	3.03	0.46
1:E:68:A:H2'	1:E:69:U:C6	2.50	0.46
1:A:17:U:H2'	1:A:21:U:H6	1.79	0.46
1:C:68:A:H2'	1:C:69:U:C6	2.50	0.46
1:D:28:G:C5'	1:D:29:U:O5'	2.61	0.46
1:E:24:U:H2'	1:E:25:C:H6	1.80	0.46
1:A:45:A:O2'	1:A:46:A:H5'	2.15	0.46
1:B:9:A:H2'	1:B:10:C:H6	1.80	0.46
1:B:14:A:H2'	1:B:15:C:H6	1.80	0.46
1:A:53:U:H2'	1:A:54:U:O4'	2.16	0.46
1:C:63:C:O4'	1:C:63:C:OP1	1.97	0.46
1:C:81:U:H5''	1:C:83:G:OP2	2.03	0.46
1:A:53:U:C6	1:A:54:U:OP2	2.69	0.46
1:B:39:G:H2'	1:B:40:G:N9	2.29	0.46
1:C:112:C:C3'	1:C:113:U:OP2	2.39	0.46
1:D:85:U:H3'	1:D:86:G:C8	2.50	0.46
1:E:9:A:H2'	1:E:10:C:H6	1.80	0.46
1:E:85:U:H3'	1:E:86:G:C8	2.50	0.46
1:A:39:G:H2'	1:A:40:G:N9	2.29	0.46
1:B:15:C:H2'	1:B:16:U:C6	2.51	0.46
1:C:24:U:H2'	1:C:25:C:H6	1.80	0.46
1:C:85:U:H3'	1:C:86:G:C8	2.50	0.46
1:D:15:C:H2'	1:D:16:U:C6	2.51	0.46
1:D:24:U:H2'	1:D:25:C:H6	1.80	0.46
1:E:56:A:O2'	1:E:57:G:C5	2.69	0.46
1:E:86:G:H2'	1:E:86:G:N3	2.31	0.46
1:B:29:U:H5'	1:B:30:G:N9	2.23	0.46
1:B:32:A:C2'	1:B:33:U:O4'	2.56	0.46
1:D:14:A:H2'	1:D:15:C:H6	1.80	0.46
1:E:37:G:H5''	1:E:60:C:OP1	2.16	0.46
1:A:31:U:C2'	1:A:32:A:H5'	2.45	0.46
1:B:53:U:H2'	1:B:54:U:O4'	2.16	0.46
1:B:85:U:H3'	1:B:86:G:C8	2.50	0.46
1:C:53:U:H2'	1:C:54:U:O4'	2.16	0.46
1:E:90:A:HO3'	1:E:91:U:P	2.30	0.46
1:B:86:G:H2'	1:B:86:G:N3	2.31	0.46
1:D:53:U:H2'	1:D:54:U:O4'	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:68:A:H2'	1:D:69:U:C6	2.50	0.46
1:A:9:A:H2'	1:A:10:C:H6	1.80	0.45
1:A:86:G:H5'	1:A:87:U:O5'	2.14	0.45
1:C:37:G:H5''	1:C:60:C:OP1	2.16	0.45
1:E:53:U:C6	1:E:54:U:OP2	2.69	0.45
1:A:81:U:C4'	1:A:83:G:OP2	2.64	0.45
1:A:86:G:N3	1:A:86:G:H2'	2.31	0.45
1:C:14:A:H2'	1:C:15:C:H6	1.80	0.45
1:C:15:C:H2'	1:C:16:U:C6	2.51	0.45
1:E:81:U:C4'	1:E:83:G:OP2	2.64	0.45
1:B:24:U:H2'	1:B:25:C:H6	1.80	0.45
1:C:53:U:C6	1:C:54:U:OP2	2.69	0.45
1:E:26:A:H2'	1:E:27:U:C6	2.52	0.45
1:E:45:A:O2'	1:E:46:A:H5'	2.15	0.45
1:E:54:U:C3'	1:E:56:A:OP2	2.65	0.45
1:A:23:G:H2'	1:A:24:U:C6	2.52	0.45
1:B:45:A:O2'	1:B:46:A:H5'	2.15	0.45
1:C:45:A:O2'	1:C:46:A:H5'	2.15	0.45
1:D:53:U:C6	1:D:54:U:OP2	2.69	0.45
1:A:12:G:H2'	1:A:13:U:C6	2.52	0.45
1:A:37:G:H5''	1:A:60:C:OP1	2.16	0.45
1:B:53:U:C6	1:B:54:U:OP2	2.69	0.45
1:E:12:G:H2'	1:E:13:U:C6	2.52	0.45
1:E:16:U:H2'	1:E:17:U:C6	2.52	0.45
1:E:21:U:H2'	1:E:22:U:C6	2.52	0.45
1:A:15:C:H2'	1:A:16:U:C6	2.51	0.45
1:A:85:U:H3'	1:A:86:G:O4'	2.17	0.45
1:B:37:G:H5''	1:B:60:C:OP1	2.16	0.45
1:C:16:U:H2'	1:C:17:U:C6	2.52	0.45
1:B:7:G:H2'	1:B:8:U:C6	2.52	0.45
1:B:17:U:H2'	1:B:21:U:C6	2.52	0.45
1:B:49:C:C3'	1:B:50:U:P	3.05	0.45
1:C:58:U:H6	1:C:58:U:C3'	2.13	0.45
1:D:37:G:H5''	1:D:60:C:OP1	2.16	0.45
1:D:57:G:OP1	1:D:57:G:C4'	2.61	0.45
1:D:85:U:H3'	1:D:86:G:O4'	2.17	0.45
1:E:17:U:H2'	1:E:21:U:C6	2.52	0.45
1:E:23:G:H2'	1:E:24:U:C6	2.52	0.45
1:E:49:C:C3'	1:E:50:U:P	3.05	0.45
1:A:7:G:H2'	1:A:8:U:C6	2.52	0.45
1:A:16:U:H2'	1:A:17:U:C6	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:21:U:H2'	1:A:22:U:C6	2.52	0.45
1:A:56:A:O2'	1:A:57:G:C5	2.69	0.45
1:B:21:U:H2'	1:B:22:U:C6	2.52	0.45
1:B:26:A:H2'	1:B:27:U:C6	2.52	0.45
1:B:85:U:H3'	1:B:86:G:O4'	2.17	0.45
1:C:26:A:H2'	1:C:27:U:C6	2.52	0.45
1:C:32:A:C2'	1:C:33:U:H5'	2.47	0.45
1:D:32:A:C2'	1:D:33:U:H5'	2.47	0.45
1:E:15:C:H2'	1:E:16:U:C6	2.51	0.45
1:E:32:A:C2'	1:E:33:U:H5'	2.47	0.45
1:E:53:U:H2'	1:E:54:U:O4'	2.16	0.45
1:B:12:G:H2'	1:B:13:U:C6	2.52	0.45
1:C:7:G:H2'	1:C:8:U:C6	2.52	0.45
1:C:21:U:H2'	1:C:22:U:C6	2.52	0.45
1:D:43:U:H3'	1:D:46:A:OP2	2.17	0.45
1:E:48:C:C3'	1:E:49:C:P	3.03	0.45
1:A:43:U:H3'	1:A:46:A:OP2	2.17	0.45
1:B:32:A:C2'	1:B:33:U:H5'	2.47	0.45
1:D:26:A:H2'	1:D:27:U:C6	2.52	0.45
1:E:7:G:H2'	1:E:8:U:C6	2.52	0.45
1:A:49:C:C3'	1:A:50:U:P	3.05	0.44
1:B:23:G:H2'	1:B:24:U:C6	2.52	0.44
1:B:54:U:C3'	1:B:56:A:OP2	2.65	0.44
1:C:48:C:C3'	1:C:49:C:P	3.03	0.44
1:D:54:U:C3'	1:D:56:A:OP2	2.65	0.44
1:E:85:U:H3'	1:E:86:G:O4'	2.17	0.44
1:C:86:G:N3	1:C:86:G:H2'	2.31	0.44
1:D:56:A:O2'	1:D:57:G:C5	2.69	0.44
1:A:17:U:H2'	1:A:21:U:C6	2.52	0.44
1:C:48:C:C2	1:D:83:G:N2	2.85	0.44
1:C:56:A:O2'	1:C:57:G:C5	2.69	0.44
1:D:16:U:H2'	1:D:17:U:C6	2.52	0.44
1:D:21:U:H2'	1:D:22:U:C6	2.52	0.44
1:A:54:U:C3'	1:A:56:A:OP2	2.65	0.44
1:C:43:U:H3'	1:C:46:A:OP2	2.17	0.44
1:D:7:G:H2'	1:D:8:U:C6	2.52	0.44
1:E:84:U:H2'	1:E:85:U:H6	1.83	0.44
1:A:26:A:H2'	1:A:27:U:C6	2.52	0.44
1:C:54:U:C3'	1:C:56:A:OP2	2.65	0.44
1:C:85:U:H3'	1:C:86:G:O4'	2.17	0.44
1:D:23:G:H2'	1:D:24:U:C6	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:43:U:H3'	1:B:46:A:OP2	2.17	0.44
1:C:23:G:H2'	1:C:24:U:C6	2.52	0.44
1:C:81:U:C4'	1:C:83:G:OP2	2.64	0.44
1:D:49:C:C3'	1:D:50:U:P	3.05	0.44
1:E:91:U:O2'	1:E:92:C:P	2.76	0.44
1:A:32:A:C2'	1:A:33:U:H5'	2.47	0.44
1:B:81:U:C4'	1:B:83:G:OP2	2.64	0.44
1:C:49:C:C3'	1:C:50:U:P	3.05	0.44
1:D:17:U:H2'	1:D:21:U:C6	2.52	0.44
1:A:39:G:H3'	1:A:40:G:C8	2.53	0.44
1:B:16:U:H2'	1:B:17:U:C6	2.52	0.44
1:C:17:U:H2'	1:C:21:U:C6	2.52	0.44
1:D:48:C:C3'	1:D:49:C:P	3.03	0.44
1:D:91:U:O2'	1:D:92:C:P	2.76	0.44
1:A:9:A:H2'	1:A:10:C:C6	2.53	0.44
1:A:48:C:N3	1:B:82:G:N1	2.53	0.44
1:B:46:A:N1	1:C:85:U:N3	2.66	0.44
1:B:84:U:H2'	1:B:85:U:H6	1.83	0.43
1:C:39:G:H3'	1:C:40:G:C8	2.53	0.43
1:C:91:U:O2'	1:C:92:C:P	2.76	0.43
1:E:28:G:O4'	1:E:29:U:C4'	2.58	0.43
1:A:71:C:H5''	1:A:72:U:P	2.46	0.43
1:B:14:A:H2'	1:B:15:C:C6	2.54	0.43
1:C:24:U:H2'	1:C:25:C:C6	2.53	0.43
1:D:81:U:C4'	1:D:83:G:OP2	2.64	0.43
1:D:86:G:H2'	1:D:86:G:N3	2.31	0.43
1:E:14:A:H2'	1:E:15:C:C6	2.53	0.43
1:B:86:G:O4'	1:B:86:G:P	2.76	0.43
1:C:57:G:OP1	1:C:57:G:C4'	2.61	0.43
1:D:39:G:H3'	1:D:40:G:C8	2.53	0.43
1:A:91:U:O2'	1:A:92:C:P	2.76	0.43
1:B:52:A:H3'	1:B:53:U:C5'	2.38	0.43
1:B:71:C:H5''	1:B:72:U:P	2.46	0.43
1:D:14:A:H2'	1:D:15:C:C6	2.53	0.43
1:D:28:G:O4'	1:D:29:U:C4'	2.58	0.43
1:D:84:U:H2'	1:D:85:U:H6	1.83	0.43
1:E:9:A:H2'	1:E:10:C:C6	2.53	0.43
1:A:29:U:H5'	1:A:30:G:N9	2.23	0.43
1:B:24:U:H2'	1:B:25:C:C6	2.53	0.43
1:B:29:U:O2	1:B:30:G:C5'	2.64	0.43
1:C:9:A:H2'	1:C:10:C:C6	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:29:U:H5'	1:D:30:G:N9	2.22	0.43
1:D:86:G:O4'	1:D:86:G:P	2.77	0.43
1:E:43:U:H3'	1:E:46:A:OP2	2.17	0.43
1:A:14:A:H2'	1:A:15:C:C6	2.53	0.43
1:A:24:U:H2'	1:A:25:C:C6	2.53	0.43
1:D:12:G:H2'	1:D:13:U:C6	2.52	0.43
1:D:53:U:H3'	1:D:54:U:P	2.53	0.43
1:E:52:A:H3'	1:E:53:U:C5'	2.38	0.43
1:B:39:G:H3'	1:B:40:G:C8	2.53	0.43
1:E:39:G:H3'	1:E:40:G:C8	2.53	0.43
1:E:42:U:H6	1:E:42:U:C3'	2.13	0.43
1:E:100:A:C3'	1:E:101:A:OP2	2.51	0.43
1:C:12:G:H2'	1:C:13:U:C6	2.52	0.43
1:A:52:A:H3'	1:A:53:U:C5'	2.38	0.43
1:A:86:G:O4'	1:A:86:G:P	2.77	0.43
1:C:86:G:O4'	1:C:86:G:P	2.77	0.43
1:A:81:U:C4	1:E:45:A:N7	2.87	0.43
1:B:91:U:O2'	1:B:92:C:P	2.76	0.43
1:C:53:U:H3'	1:C:54:U:P	2.53	0.43
1:B:34:G:HO3'	1:B:35:U:P	2.35	0.42
1:E:24:U:H2'	1:E:25:C:C6	2.54	0.42
1:E:53:U:H6	1:E:54:U:OP2	2.02	0.42
1:B:91:U:H2'	1:B:92:C:C6	2.54	0.42
1:C:52:A:H3'	1:C:53:U:C5'	2.38	0.42
1:D:91:U:H2'	1:D:92:C:C6	2.54	0.42
1:B:56:A:O2'	1:B:57:G:C5	2.69	0.42
1:C:84:U:H2'	1:C:85:U:H6	1.83	0.42
1:E:29:U:O2	1:E:30:G:C5'	2.64	0.42
1:C:39:G:C2'	1:C:40:G:P	2.96	0.42
1:A:84:U:H2'	1:A:85:U:H6	1.83	0.42
1:B:9:A:H2'	1:B:10:C:C6	2.53	0.42
1:D:24:U:H2'	1:D:25:C:C6	2.54	0.42
1:D:53:U:H6	1:D:54:U:OP2	2.02	0.42
1:D:112:C:C3'	1:D:113:U:OP2	2.39	0.42
1:E:53:U:O3'	1:E:54:U:OP1	2.14	0.42
1:A:48:C:C3'	1:A:49:C:P	3.03	0.42
1:C:53:U:H6	1:C:54:U:OP2	2.02	0.42
1:E:86:G:O4'	1:E:86:G:P	2.77	0.42
1:A:85:U:O4	1:E:45:A:C6	2.69	0.42
1:B:53:U:H6	1:B:54:U:OP2	2.02	0.42
1:D:34:G:HO3'	1:D:35:U:P	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:65:C:H3'	1:A:66:A:OP2	2.20	0.42
1:B:53:U:H3'	1:B:54:U:P	2.53	0.42
1:D:46:A:N1	1:E:84:U:C2	2.86	0.42
1:D:72:U:C5'	1:D:74:U:C5	3.00	0.42
1:C:14:A:H2'	1:C:15:C:C6	2.53	0.42
1:D:39:G:H2'	1:D:40:G:C8	2.55	0.42
1:D:41:A:N3	1:D:41:A:C2'	2.78	0.41
1:E:39:G:H2'	1:E:40:G:C8	2.55	0.41
1:A:29:U:O2	1:A:30:G:C5'	2.64	0.41
1:A:53:U:H6	1:A:54:U:OP2	2.02	0.41
1:C:39:G:H2'	1:C:40:G:C8	2.55	0.41
1:C:33:U:C2'	1:C:34:G:H5'	2.51	0.41
1:A:39:G:H2'	1:A:40:G:C8	2.55	0.41
1:A:81:U:N3	1:E:45:A:C8	2.88	0.41
1:C:91:U:H2'	1:C:92:C:C6	2.54	0.41
1:C:100:A:C3'	1:C:101:A:OP2	2.51	0.41
1:D:4:A:O3'	1:D:6:G:P	2.79	0.41
1:D:9:A:H2'	1:D:10:C:C6	2.53	0.41
1:D:33:U:N3	1:D:34:G:N7	2.69	0.41
1:A:33:U:C2'	1:A:34:G:H5'	2.51	0.41
1:A:53:U:H3'	1:A:54:U:P	2.53	0.41
1:B:4:A:O3'	1:B:6:G:P	2.79	0.41
1:B:33:U:C2'	1:B:34:G:H5'	2.51	0.41
1:B:39:G:H2'	1:B:40:G:C8	2.55	0.41
1:D:80:U:O2	1:D:86:G:O6	2.39	0.41
1:E:4:A:O3'	1:E:6:G:P	2.79	0.41
1:A:33:U:N3	1:A:34:G:N7	2.69	0.41
1:B:33:U:N3	1:B:34:G:N7	2.69	0.41
1:B:80:U:O2	1:B:86:G:O6	2.39	0.41
1:E:71:C:H5''	1:E:72:U:P	2.46	0.41
1:A:4:A:O3'	1:A:6:G:P	2.79	0.41
1:A:87:U:O3'	1:A:88:C:H5'	2.21	0.41
1:B:65:C:H3'	1:B:66:A:OP2	2.20	0.41
1:C:4:A:O3'	1:C:6:G:P	2.79	0.41
1:C:29:U:O2	1:C:30:G:C5'	2.64	0.41
1:C:80:U:O2	1:C:86:G:O6	2.39	0.41
1:D:29:U:O2	1:D:30:G:C5'	2.64	0.41
1:D:87:U:O3'	1:D:88:C:H5'	2.21	0.41
1:E:33:U:N3	1:E:34:G:N7	2.69	0.41
1:E:80:U:O2	1:E:86:G:O6	2.39	0.41
1:E:87:U:O3'	1:E:88:C:H5'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:87:U:O3'	1:C:88:C:H5'	2.21	0.41
1:E:85:U:O5'	1:E:86:G:C8	2.74	0.41
1:B:87:U:O3'	1:B:88:C:H5'	2.21	0.40
1:A:83:G:C6	1:E:46:A:N6	2.89	0.40
1:D:33:U:C2'	1:D:34:G:H5'	2.51	0.40
1:D:85:U:O5'	1:D:86:G:C8	2.75	0.40
1:C:65:C:H3'	1:C:66:A:OP2	2.20	0.40
1:E:33:U:C2'	1:E:34:G:H5'	2.51	0.40
1:E:62:G:H3'	1:E:63:C:C6	2.57	0.40
1:B:42:U:C5'	1:B:43:U:P	3.09	0.40
1:C:33:U:N3	1:C:34:G:N7	2.69	0.40
1:C:85:U:O5'	1:C:86:G:C8	2.74	0.40
1:D:14:A:C2	1:D:104:G:C5	3.10	0.40
1:D:43:U:O2	1:D:43:U:C2'	2.70	0.40
1:D:45:A:H2'	1:D:46:A:C8	2.57	0.40
1:E:65:C:H3'	1:E:66:A:OP2	2.20	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	A	108/120 (90%)	53 (49%)	12 (11%)
1	B	108/120 (90%)	53 (49%)	14 (12%)
1	C	108/120 (90%)	53 (49%)	14 (12%)
1	D	108/120 (90%)	53 (49%)	14 (12%)
1	E	108/120 (90%)	53 (49%)	14 (12%)
All	All	540/600 (90%)	265 (49%)	68 (12%)

All (265) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	2	C
1	A	6	G
1	A	21	U
1	A	29	U
1	A	30	G
1	A	40	G
1	A	41	A
1	A	42	U
1	A	43	U
1	A	44	A
1	A	45	A
1	A	47	C
1	A	53	U
1	A	54	U
1	A	56	A
1	A	57	G
1	A	58	U
1	A	59	U
1	A	61	A
1	A	62	G
1	A	63	C
1	A	65	C
1	A	66	A
1	A	68	A
1	A	69	U
1	A	72	U
1	A	73	U
1	A	74	U
1	A	75	G
1	A	76	U
1	A	77	U
1	A	78	G
1	A	81	U
1	A	82	G
1	A	83	G
1	A	84	U
1	A	85	U
1	A	86	G
1	A	87	U
1	A	91	U
1	A	92	C
1	A	96	G

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Mol	Chain	Res	Type
1	A	97	C
1	A	98	A
1	A	102	G
1	A	103	U
1	A	104	G
1	A	108	G
1	A	112	C
1	A	113	U
1	A	114	U
1	A	115	U
1	A	116	G
1	B	2	C
1	B	6	G
1	B	21	U
1	B	29	U
1	B	30	G
1	B	40	G
1	B	41	A
1	B	42	U
1	B	43	U
1	B	44	A
1	B	45	A
1	B	47	C
1	B	53	U
1	B	54	U
1	B	56	A
1	B	57	G
1	B	58	U
1	B	59	U
1	B	61	A
1	B	62	G
1	B	63	C
1	B	65	C
1	B	66	A
1	B	68	A
1	B	69	U
1	B	72	U
1	B	73	U
1	B	74	U
1	B	75	G
1	B	76	U
1	B	77	U

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Mol	Chain	Res	Type
1	B	78	G
1	B	81	U
1	B	82	G
1	B	83	G
1	B	84	U
1	B	85	U
1	B	86	G
1	B	87	U
1	B	91	U
1	B	92	C
1	B	96	G
1	B	97	C
1	B	98	A
1	B	102	G
1	B	103	U
1	B	104	G
1	B	108	G
1	B	112	C
1	B	113	U
1	B	114	U
1	B	115	U
1	B	116	G
1	C	2	C
1	C	6	G
1	C	21	U
1	C	29	U
1	C	30	G
1	C	40	G
1	C	41	A
1	C	42	U
1	C	43	U
1	C	44	A
1	C	45	A
1	C	47	C
1	C	53	U
1	C	54	U
1	C	56	A
1	C	57	G
1	C	58	U
1	C	59	U
1	C	61	A
1	C	62	G

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Mol	Chain	Res	Type
1	C	63	C
1	C	65	C
1	C	66	A
1	C	68	A
1	C	69	U
1	C	72	U
1	C	73	U
1	C	74	U
1	C	75	G
1	C	76	U
1	C	77	U
1	C	78	G
1	C	81	U
1	C	82	G
1	C	83	G
1	C	84	U
1	C	85	U
1	C	86	G
1	C	87	U
1	C	91	U
1	C	92	C
1	C	96	G
1	C	97	C
1	C	98	A
1	C	102	G
1	C	103	U
1	C	104	G
1	C	108	G
1	C	112	C
1	C	113	U
1	C	114	U
1	C	115	U
1	C	116	G
1	D	2	C
1	D	6	G
1	D	21	U
1	D	29	U
1	D	30	G
1	D	40	G
1	D	41	A
1	D	42	U
1	D	43	U

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Mol	Chain	Res	Type
1	D	44	A
1	D	45	A
1	D	47	C
1	D	53	U
1	D	54	U
1	D	56	A
1	D	57	G
1	D	58	U
1	D	59	U
1	D	61	A
1	D	62	G
1	D	63	C
1	D	65	C
1	D	66	A
1	D	68	A
1	D	69	U
1	D	72	U
1	D	73	U
1	D	74	U
1	D	75	G
1	D	76	U
1	D	77	U
1	D	78	G
1	D	81	U
1	D	82	G
1	D	83	G
1	D	84	U
1	D	85	U
1	D	86	G
1	D	87	U
1	D	91	U
1	D	92	C
1	D	96	G
1	D	97	C
1	D	98	A
1	D	102	G
1	D	103	U
1	D	104	G
1	D	108	G
1	D	112	C
1	D	113	U
1	D	114	U

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Mol	Chain	Res	Type
1	D	115	U
1	D	116	G
1	E	2	C
1	E	6	G
1	E	21	U
1	E	29	U
1	E	30	G
1	E	40	G
1	E	41	A
1	E	42	U
1	E	43	U
1	E	44	A
1	E	45	A
1	E	47	C
1	E	53	U
1	E	54	U
1	E	56	A
1	E	57	G
1	E	58	U
1	E	59	U
1	E	61	A
1	E	62	G
1	E	63	C
1	E	65	C
1	E	66	A
1	E	68	A
1	E	69	U
1	E	72	U
1	E	73	U
1	E	74	U
1	E	75	G
1	E	76	U
1	E	77	U
1	E	78	G
1	E	81	U
1	E	82	G
1	E	83	G
1	E	84	U
1	E	85	U
1	E	86	G
1	E	87	U
1	E	91	U

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Mol	Chain	Res	Type
1	E	92	C
1	E	96	G
1	E	97	C
1	E	98	A
1	E	102	G
1	E	103	U
1	E	104	G
1	E	108	G
1	E	112	C
1	E	113	U
1	E	114	U
1	E	115	U
1	E	116	G

All (68) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	A	28	G
1	A	39	G
1	A	40	G
1	A	41	A
1	A	58	U
1	A	72	U
1	A	73	U
1	A	83	G
1	A	84	U
1	A	86	G
1	A	91	U
1	A	103	U
1	B	28	G
1	B	39	G
1	B	40	G
1	B	41	A
1	B	56	A
1	B	58	U
1	B	72	U
1	B	73	U
1	B	83	G
1	B	84	U
1	B	86	G
1	B	91	U
1	B	103	U

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Mol	Chain	Res	Type
1	B	112	C
1	C	28	G
1	C	39	G
1	C	40	G
1	C	41	A
1	C	56	A
1	C	58	U
1	C	72	U
1	C	73	U
1	C	83	G
1	C	84	U
1	C	86	G
1	C	91	U
1	C	103	U
1	C	112	C
1	D	28	G
1	D	39	G
1	D	40	G
1	D	41	A
1	D	58	U
1	D	72	U
1	D	73	U
1	D	81	U
1	D	83	G
1	D	84	U
1	D	86	G
1	D	91	U
1	D	103	U
1	D	112	C
1	E	28	G
1	E	39	G
1	E	40	G
1	E	41	A
1	E	56	A
1	E	58	U
1	E	72	U
1	E	73	U
1	E	83	G
1	E	84	U
1	E	86	G
1	E	91	U
1	E	103	U

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Mol	Chain	Res	Type
1	E	112	C

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	A	53
1	B	53
1	C	53
1	D	53
1	E	53

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	A	51:G	O3'	52:A	P	3.32
1	B	51:G	O3'	52:A	P	3.32
1	C	51:G	O3'	52:A	P	3.32
1	D	51:G	O3'	52:A	P	3.32
1	E	51:G	O3'	52:A	P	3.32
1	A	37:G	O3'	38:G	P	2.94
1	B	37:G	O3'	38:G	P	2.94

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	C	37:G	O3'	38:G	P	2.94
1	D	37:G	O3'	38:G	P	2.94
1	E	37:G	O3'	38:G	P	2.94
1	A	50:U	O3'	51:G	P	2.82
1	B	50:U	O3'	51:G	P	2.82
1	C	50:U	O3'	51:G	P	2.82
1	D	50:U	O3'	51:G	P	2.82
1	E	50:U	O3'	51:G	P	2.82
1	A	31:U	O3'	32:A	P	2.49
1	B	31:U	O3'	32:A	P	2.49
1	C	31:U	O3'	32:A	P	2.49
1	D	31:U	O3'	32:A	P	2.49
1	E	31:U	O3'	32:A	P	2.49
1	A	49:C	O3'	50:U	P	2.30
1	B	49:C	O3'	50:U	P	2.30
1	C	49:C	O3'	50:U	P	2.30
1	D	49:C	O3'	50:U	P	2.30
1	E	49:C	O3'	50:U	P	2.30
1	A	65:C	O3'	66:A	P	2.23
1	B	65:C	O3'	66:A	P	2.23
1	C	65:C	O3'	66:A	P	2.23
1	D	65:C	O3'	66:A	P	2.23
1	E	65:C	O3'	66:A	P	2.23
1	A	44:A	O3'	45:A	P	2.20
1	B	44:A	O3'	45:A	P	2.20
1	C	44:A	O3'	45:A	P	2.20
1	D	44:A	O3'	45:A	P	2.20
1	E	44:A	O3'	45:A	P	2.20
1	A	34:G	O3'	35:U	P	2.14
1	B	34:G	O3'	35:U	P	2.14
1	C	34:G	O3'	35:U	P	2.14
1	D	34:G	O3'	35:U	P	2.14
1	E	34:G	O3'	35:U	P	2.14
1	A	53:U	O3'	54:U	P	2.11
1	B	53:U	O3'	54:U	P	2.11
1	C	53:U	O3'	54:U	P	2.11
1	D	53:U	O3'	54:U	P	2.11
1	E	53:U	O3'	54:U	P	2.11
1	A	98:A	O3'	99:A	P	2.10
1	B	98:A	O3'	99:A	P	2.10
1	C	98:A	O3'	99:A	P	2.10
1	D	98:A	O3'	99:A	P	2.10

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	E	98:A	O3'	99:A	P	2.10
1	A	48:C	O3'	49:C	P	2.09
1	B	48:C	O3'	49:C	P	2.09
1	C	48:C	O3'	49:C	P	2.09
1	D	48:C	O3'	49:C	P	2.09
1	E	48:C	O3'	49:C	P	2.09
1	A	112:C	O3'	113:U	P	2.06
1	B	112:C	O3'	113:U	P	2.06
1	C	81:U	O3'	82:G	P	2.06
1	C	112:C	O3'	113:U	P	2.06
1	D	112:C	O3'	113:U	P	2.06
1	E	112:C	O3'	113:U	P	2.06
1	A	81:U	O3'	82:G	P	2.05
1	B	81:U	O3'	82:G	P	2.05
1	D	81:U	O3'	82:G	P	2.05
1	E	81:U	O3'	82:G	P	2.05
1	A	99:A	O3'	100:A	P	2.04
1	B	99:A	O3'	100:A	P	2.04
1	C	99:A	O3'	100:A	P	2.04
1	D	99:A	O3'	100:A	P	2.04
1	E	99:A	O3'	100:A	P	2.04
1	A	90:A	O3'	91:U	P	2.03
1	B	90:A	O3'	91:U	P	2.03
1	C	90:A	O3'	91:U	P	2.03
1	D	90:A	O3'	91:U	P	2.03
1	E	90:A	O3'	91:U	P	2.03
1	A	56:A	O3'	57:G	P	2.02
1	A	100:A	O3'	101:A	P	2.02
1	B	56:A	O3'	57:G	P	2.02
1	B	100:A	O3'	101:A	P	2.02
1	C	56:A	O3'	57:G	P	2.02
1	C	100:A	O3'	101:A	P	2.02
1	D	56:A	O3'	57:G	P	2.02
1	D	100:A	O3'	101:A	P	2.02
1	E	56:A	O3'	57:G	P	2.02
1	E	100:A	O3'	101:A	P	2.02
1	C	93:A	O3'	94:U	P	2.01
1	E	93:A	O3'	94:U	P	2.01
1	A	93:A	O3'	94:U	P	2.00
1	B	93:A	O3'	94:U	P	2.00
1	D	93:A	O3'	94:U	P	2.00
1	A	40:G	O3'	41:A	P	1.97

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	A	87:U	O3'	88:C	P	1.97
1	B	40:G	O3'	41:A	P	1.97
1	B	87:U	O3'	88:C	P	1.97
1	C	40:G	O3'	41:A	P	1.97
1	C	87:U	O3'	88:C	P	1.97
1	D	40:G	O3'	41:A	P	1.97
1	D	87:U	O3'	88:C	P	1.97
1	E	40:G	O3'	41:A	P	1.97
1	E	87:U	O3'	88:C	P	1.97
1	A	95:G	O3'	96:G	P	1.96
1	B	95:G	O3'	96:G	P	1.96
1	C	95:G	O3'	96:G	P	1.96
1	D	95:G	O3'	96:G	P	1.96
1	E	95:G	O3'	96:G	P	1.96
1	A	45:A	O3'	46:A	P	1.95
1	A	96:G	O3'	97:C	P	1.95
1	B	45:A	O3'	46:A	P	1.95
1	B	96:G	O3'	97:C	P	1.95
1	C	45:A	O3'	46:A	P	1.95
1	C	96:G	O3'	97:C	P	1.95
1	D	45:A	O3'	46:A	P	1.95
1	D	96:G	O3'	97:C	P	1.95
1	E	45:A	O3'	46:A	P	1.95
1	E	96:G	O3'	97:C	P	1.95
1	A	63:C	O3'	64:C	P	1.94
1	B	63:C	O3'	64:C	P	1.94
1	C	63:C	O3'	64:C	P	1.94
1	D	63:C	O3'	64:C	P	1.94
1	E	63:C	O3'	64:C	P	1.94
1	A	92:C	O3'	93:A	P	1.93
1	A	101:A	O3'	102:G	P	1.93
1	B	92:C	O3'	93:A	P	1.93
1	B	101:A	O3'	102:G	P	1.93
1	C	92:C	O3'	93:A	P	1.93
1	C	101:A	O3'	102:G	P	1.93
1	D	92:C	O3'	93:A	P	1.93
1	D	101:A	O3'	102:G	P	1.93
1	E	92:C	O3'	93:A	P	1.93
1	E	101:A	O3'	102:G	P	1.93
1	A	94:U	O3'	95:G	P	1.92
1	A	103:U	O3'	104:G	P	1.92
1	B	94:U	O3'	95:G	P	1.92

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	B	103:U	O3'	104:G	P	1.92
1	C	94:U	O3'	95:G	P	1.92
1	C	103:U	O3'	104:G	P	1.92
1	D	94:U	O3'	95:G	P	1.92
1	D	103:U	O3'	104:G	P	1.92
1	E	94:U	O3'	95:G	P	1.92
1	E	103:U	O3'	104:G	P	1.92
1	A	110:U	O3'	111:A	P	1.91
1	B	110:U	O3'	111:A	P	1.91
1	C	58:U	O3'	59:U	P	1.91
1	C	110:U	O3'	111:A	P	1.91
1	D	110:U	O3'	111:A	P	1.91
1	E	110:U	O3'	111:A	P	1.91
1	A	58:U	O3'	59:U	P	1.90
1	B	58:U	O3'	59:U	P	1.90
1	D	58:U	O3'	59:U	P	1.90
1	E	58:U	O3'	59:U	P	1.90
1	A	74:U	O3'	75:G	P	1.88
1	B	74:U	O3'	75:G	P	1.88
1	C	74:U	O3'	75:G	P	1.88
1	D	74:U	O3'	75:G	P	1.88
1	E	74:U	O3'	75:G	P	1.88
1	A	73:U	O3'	74:U	P	1.85
1	B	73:U	O3'	74:U	P	1.85
1	C	73:U	O3'	74:U	P	1.85
1	D	73:U	O3'	74:U	P	1.85
1	E	73:U	O3'	74:U	P	1.85
1	A	111:A	O3'	112:C	P	1.84
1	A	114:U	O3'	115:U	P	1.84
1	B	111:A	O3'	112:C	P	1.84
1	B	114:U	O3'	115:U	P	1.84
1	C	111:A	O3'	112:C	P	1.84
1	C	114:U	O3'	115:U	P	1.84
1	C	115:U	O3'	116:G	P	1.84
1	D	111:A	O3'	112:C	P	1.84
1	D	114:U	O3'	115:U	P	1.84
1	D	115:U	O3'	116:G	P	1.84
1	E	111:A	O3'	112:C	P	1.84
1	E	114:U	O3'	115:U	P	1.84
1	A	1:U	O3'	2:C	P	1.83
1	A	115:U	O3'	116:G	P	1.83
1	B	1:U	O3'	2:C	P	1.83

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	B	115:U	O3'	116:G	P	1.83
1	C	1:U	O3'	2:C	P	1.83
1	D	1:U	O3'	2:C	P	1.83
1	E	1:U	O3'	2:C	P	1.83
1	E	115:U	O3'	116:G	P	1.83
1	A	77:U	O3'	78:G	P	1.82
1	A	79:A	O3'	80:U	P	1.82
1	B	77:U	O3'	78:G	P	1.82
1	B	79:A	O3'	80:U	P	1.82
1	C	77:U	O3'	78:G	P	1.82
1	C	79:A	O3'	80:U	P	1.82
1	D	77:U	O3'	78:G	P	1.82
1	D	79:A	O3'	80:U	P	1.82
1	E	77:U	O3'	78:G	P	1.82
1	E	79:A	O3'	80:U	P	1.82
1	A	104:G	O3'	105:C	P	1.78
1	B	104:G	O3'	105:C	P	1.78
1	C	104:G	O3'	105:C	P	1.78
1	D	104:G	O3'	105:C	P	1.78
1	E	104:G	O3'	105:C	P	1.78
1	A	91:U	O3'	92:C	P	1.77
1	B	91:U	O3'	92:C	P	1.77
1	C	91:U	O3'	92:C	P	1.77
1	D	91:U	O3'	92:C	P	1.77
1	E	91:U	O3'	92:C	P	1.77
1	A	38:G	O3'	39:G	P	1.76
1	A	57:G	O3'	58:U	P	1.76
1	B	38:G	O3'	39:G	P	1.76
1	B	57:G	O3'	58:U	P	1.76
1	C	38:G	O3'	39:G	P	1.76
1	C	57:G	O3'	58:U	P	1.76
1	D	38:G	O3'	39:G	P	1.76
1	D	57:G	O3'	58:U	P	1.76
1	E	38:G	O3'	39:G	P	1.76
1	E	57:G	O3'	58:U	P	1.76
1	A	52:A	O3'	53:U	P	1.36
1	A	61:A	O3'	62:G	P	1.36
1	B	52:A	O3'	53:U	P	1.36
1	B	61:A	O3'	62:G	P	1.36
1	C	52:A	O3'	53:U	P	1.36
1	C	61:A	O3'	62:G	P	1.36
1	D	52:A	O3'	53:U	P	1.36

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	D	61:A	O3'	62:G	P	1.36
1	E	52:A	O3'	53:U	P	1.36
1	E	61:A	O3'	62:G	P	1.36
1	A	33:U	O3'	34:G	P	1.33
1	B	33:U	O3'	34:G	P	1.33
1	C	33:U	O3'	34:G	P	1.33
1	D	33:U	O3'	34:G	P	1.33
1	E	33:U	O3'	34:G	P	1.33
1	A	41:A	O3'	42:U	P	1.30
1	B	41:A	O3'	42:U	P	1.30
1	C	41:A	O3'	42:U	P	1.30
1	D	41:A	O3'	42:U	P	1.30
1	E	41:A	O3'	42:U	P	1.30
1	A	59:U	O3'	60:C	P	1.29
1	B	59:U	O3'	60:C	P	1.29
1	C	59:U	O3'	60:C	P	1.29
1	D	59:U	O3'	60:C	P	1.29
1	E	59:U	O3'	60:C	P	1.29
1	A	84:U	O3'	85:U	P	1.28
1	B	84:U	O3'	85:U	P	1.28
1	C	84:U	O3'	85:U	P	1.28
1	D	84:U	O3'	85:U	P	1.28
1	E	84:U	O3'	85:U	P	1.28
1	A	64:C	O3'	65:C	P	1.26
1	B	64:C	O3'	65:C	P	1.26
1	C	64:C	O3'	65:C	P	1.26
1	D	64:C	O3'	65:C	P	1.26
1	E	64:C	O3'	65:C	P	1.26
1	A	67:C	O3'	68:A	P	1.25
1	B	67:C	O3'	68:A	P	1.25
1	C	67:C	O3'	68:A	P	1.25
1	D	67:C	O3'	68:A	P	1.25
1	E	67:C	O3'	68:A	P	1.25
1	A	60:C	O3'	61:A	P	1.23
1	B	60:C	O3'	61:A	P	1.23
1	C	60:C	O3'	61:A	P	1.23
1	D	60:C	O3'	61:A	P	1.23
1	E	60:C	O3'	61:A	P	1.23
1	A	70:A	O3'	71:C	P	1.20
1	B	70:A	O3'	71:C	P	1.20
1	C	70:A	O3'	71:C	P	1.20
1	D	70:A	O3'	71:C	P	1.20

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	E	70:A	O3'	71:C	P	1.20
1	A	39:G	O3'	40:G	P	1.12
1	B	39:G	O3'	40:G	P	1.12
1	C	39:G	O3'	40:G	P	1.12
1	D	39:G	O3'	40:G	P	1.12
1	E	39:G	O3'	40:G	P	1.12