



Full wwPDB/EMDatabank EM Map/Model Validation Report ⓘ

Nov 7, 2016 – 08:35 PM EST

PDB ID : 5T5H
EMDB ID: : EMD-8361
Title : Structure and assembly model for the Trypanosoma cruzi 60S ribosomal sub-unit
Authors : Liu, Z.; Gutierrez-Vargas, C.; Wei, J.; Grassucci, R.A.; Ramesh, M.; Espina, N.; Sun, M.; Tutuncuoglu, B.; Madison-Antenucci, S.; Woolford Jr., J.L.; Tong, L.; Frank, J.
Deposited on : 2016-08-31
Resolution : 2.54 Å(reported)

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

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

A user guide is available at

<http://wwpdb.org/validation/2016/EMValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

MolProbity : 4.02b-467
Mogul : 1.7.1 (RC1), CSD as537be (2016)
Percentile statistics : 20151230.v01 (using entries in the PDB archive December 30th 2015)
EM map analysis : **NOT EXECUTED**
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et. al. (1996)
Validation Pipeline (wwPDB-VP) : rb-20028320

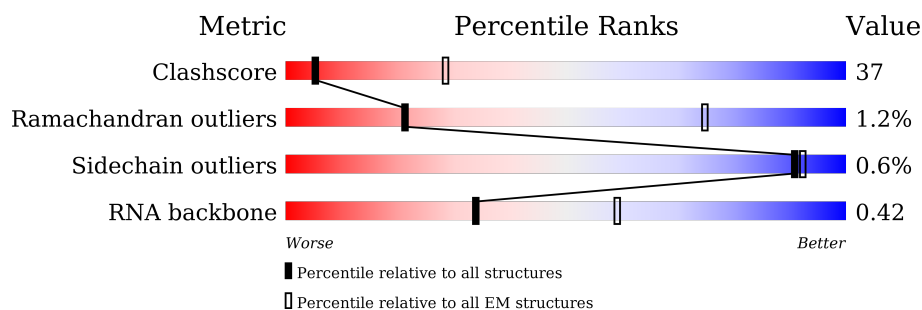
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 2.54 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.



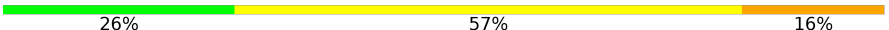



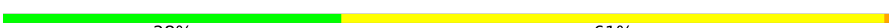
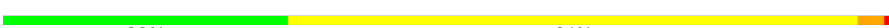







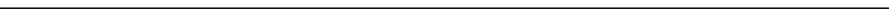




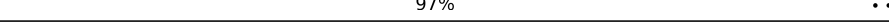
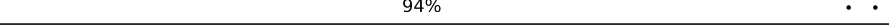
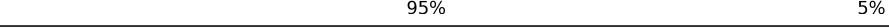
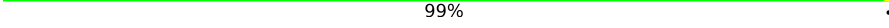
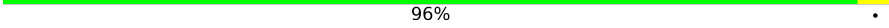
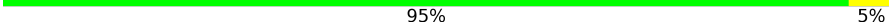

Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	114402	924
Ramachandran outliers	111179	726
Sidechain outliers	111093	686
RNA backbone	3027	244

The table below summarises the geometric issues observed across the polymeric chains. The red, orange, yellow and green segments on the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria. 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	1278	24% 52% 23% .
2	B	941	23% 55% 22%
3	C	169	20% 48% 18% . 13%
4	D	118	20% 61% 15% .
5	E	146	21% 59% 18% .
6	F	46	26% 33% 41%
7	G	123	27% 51% 19% . .

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Mol	Chain	Length	Quality of chain
8	H	91	
9	I	192	
10	L	65	
11	N	205	
12	O	203	
13	P	149	
14	Q	203	
15	R	152	
16	S	177	
17	T	150	
18	U	146	
19	V	99	
20	W	127	
21	X	116	
22	Y	61	
23	Z	113	
24	a	132	
25	b	144	
26	c	125	
27	d	63	
28	e	245	
29	f	397	
30	g	66	
31	h	169	
32	i	113	

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Mol	Chain	Length	Quality of chain
33	j	104	 100%
34	k	120	 93% 6%
35	l	136	 97%
36	m	95	 97%
37	n	81	 99%
38	o	85	 96%
39	p	58	 88% 10%
40	q	50	 98%
41	r	337	 96%
42	t	93	 99%
43	u	254	 75% 24%
44	v	171	 76% 23%
45	w	215	 99%
46	x	223	 93% 7%

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
1	OMC	A	1053	-	-	X	-
1	OMC	A	919	-	-	X	-

2 Entry composition

There are 49 unique types of molecules in this entry. The entry contains 105124 atoms, of which 12 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 RNA LARGE SUBUNIT ALPHA.

Mol	Chain	Residues	Atoms						AltConf	Trace
1	A	1278	Total	C	H	N	O	P	0	0
			27453	12272	12	5035	8856	1278		

- Molecule 2 is a RNA chain called RNA LARGE SUBUNIT BETA, RNA LARGE SUBUNIT BETA.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	941	Total	C	N	O	P	0	0
			20110	9007	3606	6556	941		

- Molecule 3 is a RNA chain called 5.8S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	C	147	Total	C	N	O	P	0	0
			3140	1408	557	1028	147		

- Molecule 4 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	D	114	Total	C	N	O	P	0	0
			2432	1084	435	799	114		

- Molecule 5 is a RNA chain called srRNA1, srRNA1.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	E	146	Total	C	N	O	P	0	0
			3110	1390	552	1022	146		

- Molecule 6 is a RNA chain called srRNA3.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	F	46	Total	C	N	O	P	0	0
			965	433	165	321	46		

- Molecule 7 is a RNA chain called srRNA2,srRNA2.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	G	121	Total	C	N	O	P	0	0
			2578	1150	455	852	121		

- Molecule 8 is a RNA chain called srRNA4,srRNA4.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	H	91	Total	C	N	O	P	0	0
			1946	867	354	634	91		

- Molecule 9 is a protein called 60S ribosomal protein L18.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	I	192	Total	C	N	O	S	0	0
			1515	951	308	250	6		

- Molecule 10 is a protein called 60S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	L	65	Total	C	N	O	S	0	0
			535	333	112	85	5		

- Molecule 11 is a protein called 60S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	N	172	Total	C	N	O	S	0	0
			1413	892	291	224	6		

- Molecule 12 is a protein called 60S ribosomal protein L13a.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	O	203	Total	C	N	O	S	0	1
			1642	1046	322	269	5		

- Molecule 13 is a protein called 40S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	P	149	Total	C	N	O	S	0	0
			1186	746	235	203	2		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
P	72	LYS	ARG	conflict	UNP Q4DQ35

- Molecule 14 is a protein called Ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	Q	203	Total	C	N	O	S	1	0
			1710	1076	365	263	6		

- Molecule 15 is a protein called 60S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	R	152	Total	C	N	O	S	0	0
			1226	768	243	205	10		

- Molecule 16 is a protein called 60S ribosomal protein L18a.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	S	177	Total	C	N	O	S	0	0
			1449	919	282	242	6		

- Molecule 17 is a protein called Ribosomal protein L19-like protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	T	150	Total	C	N	O	S	0	0
			1273	789	273	205	6		

- Molecule 18 is a protein called Ribosomal protein L21E (60S).

Mol	Chain	Residues	Atoms					AltConf	Trace
18	U	126	Total	C	N	O	S	0	0
			1016	642	207	163	4		

- Molecule 19 is a protein called 60S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	V	85	Total	C	N	O	S	0	0
			730	481	127	120	2		

- Molecule 20 is a protein called 60S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	W	127	Total	C	N	O	S	0	0
			960	611	180	166	3		

- Molecule 21 is a protein called 60S ribosomal protein L23a.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	X	109	Total	C	N	O	S	0	0
			890	565	164	157	4		

- Molecule 22 is a protein called Ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	Y	61	Total	C	N	O	S	0	0
			519	340	98	77	4		

- Molecule 23 is a protein called 60S ribosomal protein L26.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	Z	113	Total	C	N	O	S	0	0
			919	571	195	150	3		

- Molecule 24 is a protein called Ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	a	105	Total	C	N	O	S	0	0
			877	565	175	135	2		

- Molecule 25 is a protein called 60S ribosomal protein L27A/L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	b	144	Total	C	N	O	S	0	0
			1135	720	226	185	4		

- Molecule 26 is a protein called 60S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	c	120	Total	C	N	O	S	0	0
			935	583	187	161	4		

- Molecule 27 is a protein called Ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	d	63	Total	C	N	O	S	0	0
			518	314	122	81	1		

- Molecule 28 is a protein called 60S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	e	245	Total	C	N	O	S	0	0
			1874	1170	379	314	11		

- Molecule 29 is a protein called Ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	f	397	Total	C	N	O	S	0	0
			3189	2010	630	537	12		

- Molecule 30 is a protein called 60S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	g	66	Total	C	N	O	S	0	0
			523	335	91	93	4		

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
g	91	VAL	ALA	conflict	UNP Q4DIC9
g	92	LEU	GLY	conflict	UNP Q4DIC9
g	93	SER	ASN	conflict	UNP Q4DIC9
g	94	ILE	ASN	conflict	UNP Q4DIC9
g	95	THR	LEU	conflict	UNP Q4DIC9
g	97	VAL	LEU	conflict	UNP Q4DIC9

- Molecule 31 is a protein called 60S ribosomal subunit protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	h	150	Total	C	N	O	S	0	0
			1064	671	208	183	2		

- Molecule 32 is a protein called 60S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	i	113	Total	C	N	O	S	0	0
			928	585	185	154	4		

- Molecule 33 is a protein called 60S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	j	104	Total	C	N	O	S	0	0
			863	532	191	137	3		

- Molecule 34 is a protein called 60S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	k	113	Total	C	N	O	S	0	0
			967	602	212	150	3		

- Molecule 35 is a protein called Ribosomal protein L35A.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	l	136	Total	C	N	O	S	0	0
			1057	662	217	174	4		

- Molecule 36 is a protein called Ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	m	95	Total	C	N	O	S	0	0
			757	474	159	121	3		

- Molecule 37 is a protein called Ribosomal protein L37.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	n	81	Total	C	N	O	S	0	0
			679	413	154	106	6		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
n	64	MET	CYS	conflict	UNP Q4DXW6

- Molecule 38 is a protein called 60S ribosomal protein L37a.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	o	85	Total	C	N	O	S	0	0
			669	413	141	108	7		

- Molecule 39 is a protein called Ribosomal protein L38.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	p	52	Total	C	N	O	S	0	0
			432	277	82	71	2		

- Molecule 40 is a protein called Ribosomal protein L39.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	q	50	Total	C	N	O	S	0	0
			456	297	98	61			

- Molecule 41 is a protein called 60S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	r	325	Total	C	N	O	S	0	0
			2513	1575	489	434	15		

- Molecule 42 is a protein called 60S ribosomal protein L44.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	t	93	Total	C	N	O	S	0	0
			763	486	149	123	5		

- Molecule 43 is a protein called 60S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	u	193	Total	C	N	O	S	0	0
			1541	982	292	262	5		

- Molecule 44 is a protein called 60S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	v	132	Total	C	N	O	S	0	0
			1037	661	194	179	3		

- Molecule 45 is a protein called 60S ribosomal protein L7.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	w	215	Total	C	N	O	S	0	0
			1749	1110	342	288	9		

- Molecule 46 is a protein called Ribosomal protein L7a-like protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	x	208	Total	C	N	O	S	0	0
			1690	1062	338	284	6		

- Molecule 47 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
47	G	1	Total	Mg	0
			1	1	
47	D	1	Total	Mg	0
			1	1	
47	E	1	Total	Mg	0
			1	1	
47	H	1	Total	Mg	0
			1	1	
47	B	32	Total	Mg	0
			32	32	
47	C	2	Total	Mg	0
			2	2	
47	A	66	Total	Mg	0
			66	66	
47	F	1	Total	Mg	0
			1	1	

- Molecule 48 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
48	o	1	Total	Zn	0
			1	1	
48	t	1	Total	Zn	0
			1	1	
48	n	1	Total	Zn	0
			1	1	

- Molecule 49 is water.

Mol	Chain	Residues	Atoms		AltConf
49	A	38	Total	O	0
			38	38	
49	B	26	Total	O	0
			26	26	
49	C	1	Total	O	0
			1	1	

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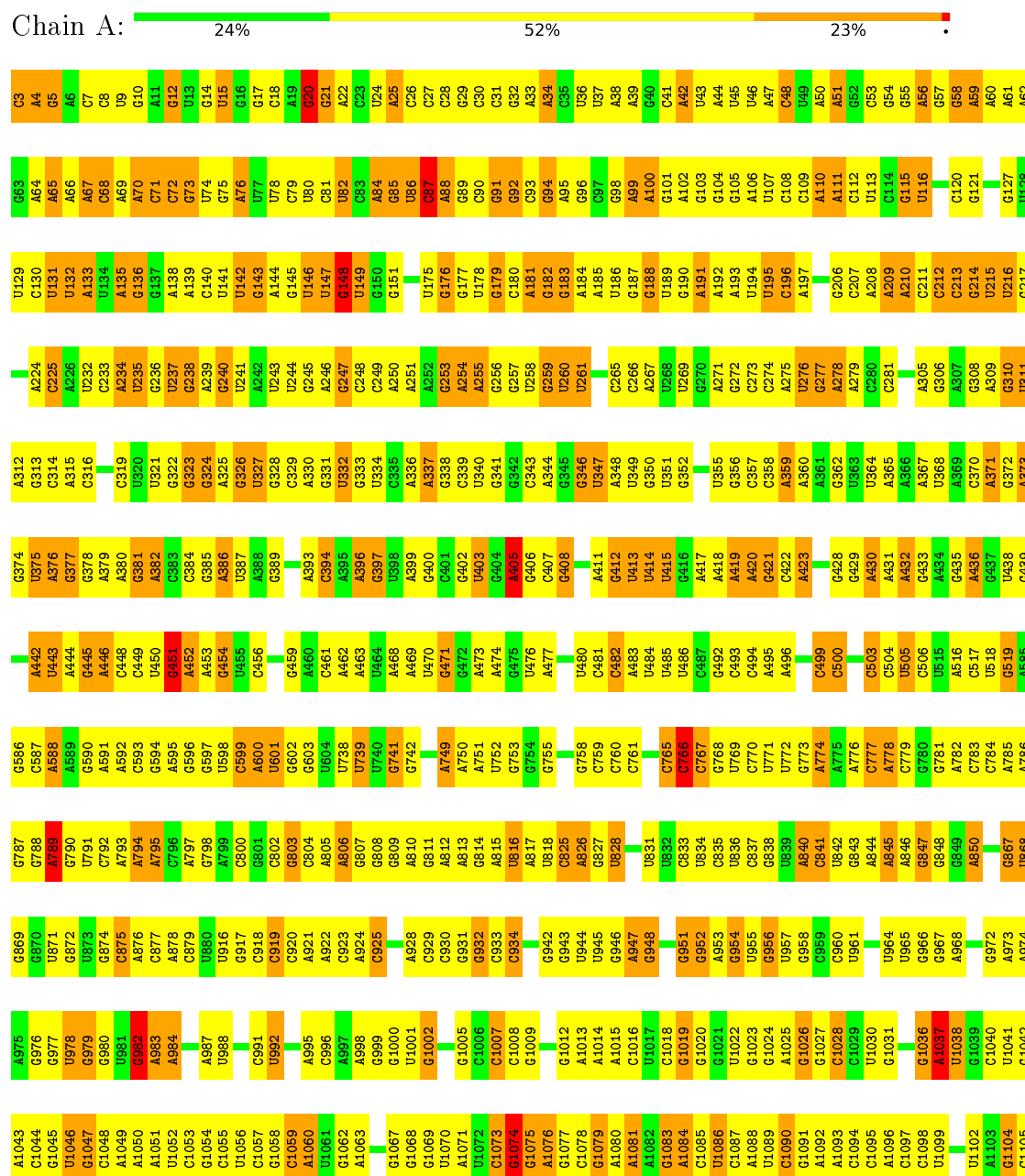
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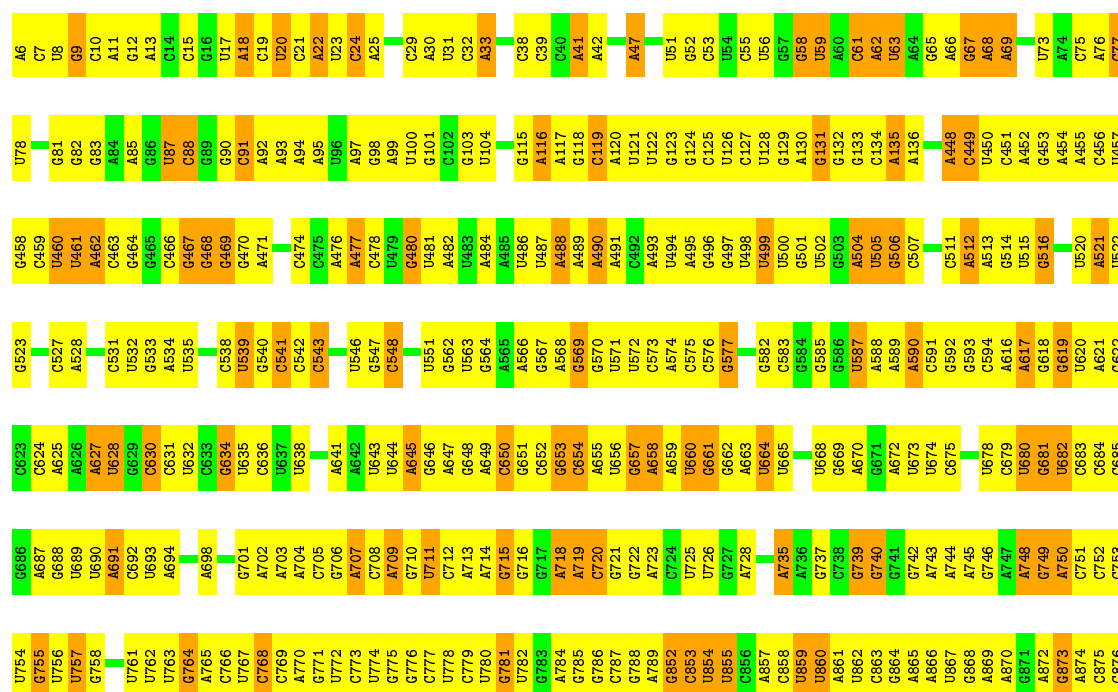
Mol	Chain	Residues	Atoms		AltConf
49	E	1	Total 1	O 1	0
49	G	3	Total 3	O 3	0
49	H	2	Total 2	O 2	0
49	I	1	Total 1	O 1	0
49	R	1	Total 1	O 1	0
49	a	1	Total 1	O 1	0
49	b	1	Total 1	O 1	0
49	e	2	Total 2	O 2	0
49	f	1	Total 1	O 1	0
49	j	1	Total 1	O 1	0
49	k	1	Total 1	O 1	0
49	n	1	Total 1	O 1	0
49	w	1	Total 1	O 1	0
49	x	1	Total 1	O 1	0

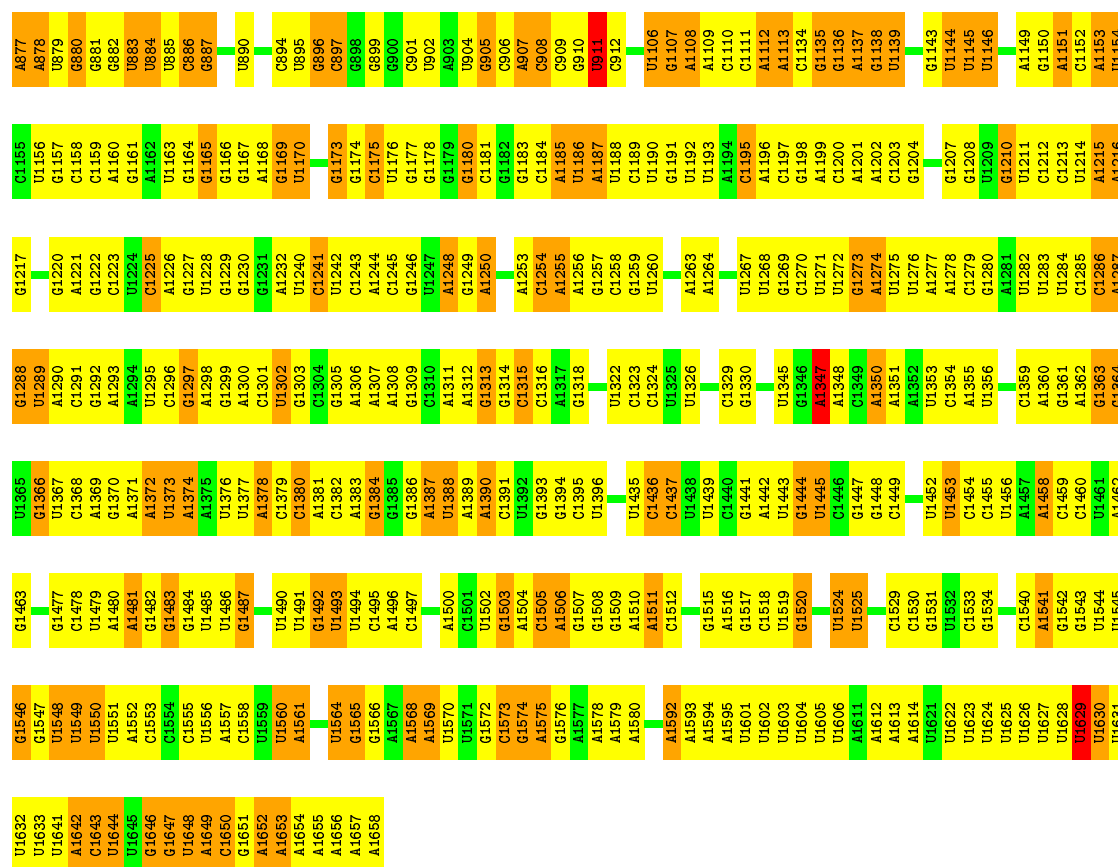
3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of errors 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: RNA LARGE SUBUNIT ALPHA

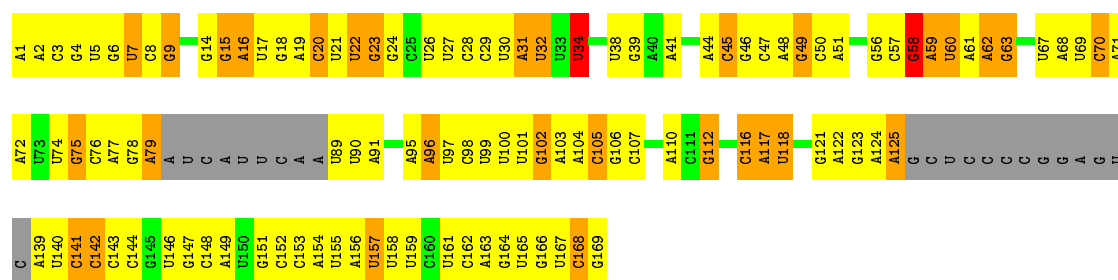






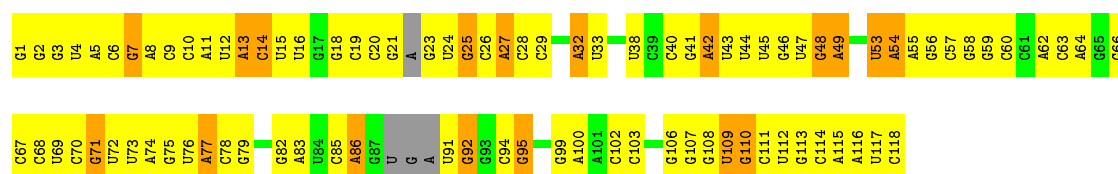
• Molecule 3: 5.8S rRNA

Chain C: 20% 48% 18% 13%



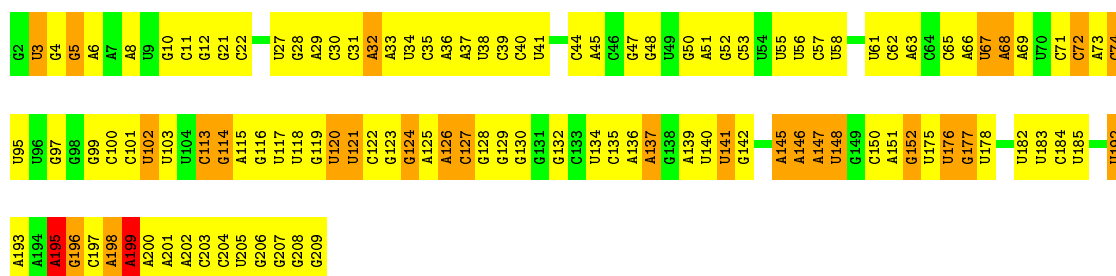
• Molecule 4: 5S rRNA

Chain D: 20% 61% 15%



• Molecule 5: srRNA1,srRNA1

Chain E: 21% 59% 18%



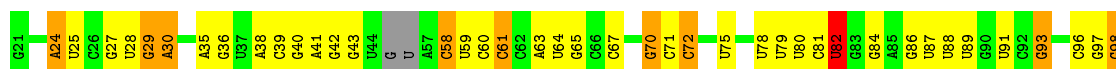
- Molecule 6: srRNA3

Chain F: 26% 33% 41%



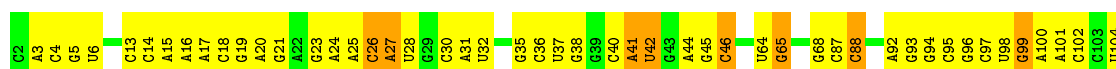
- Molecule 7: srRNA2,srRNA2

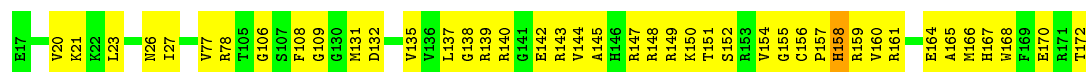
Chain G: 27% 51% 19% ..



- Molecule 8: srRNA4,srRNA4

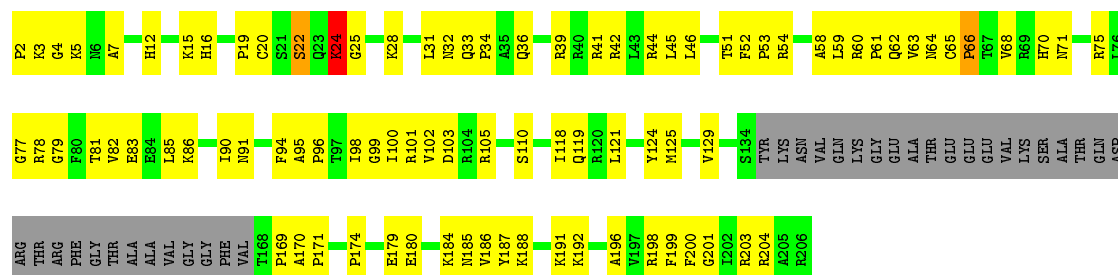
Chain H: 26% 57% 16%





• Molecule 11: 60S ribosomal protein L13

Chain N: 40% 42% 16%



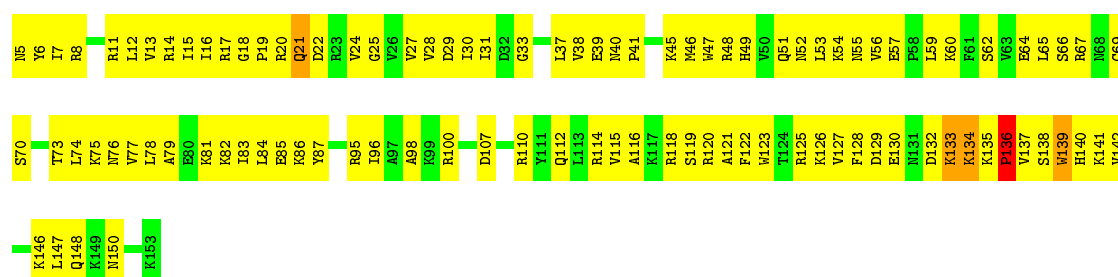
• Molecule 12: 60S ribosomal protein L13a

Chain O: 38% 61%



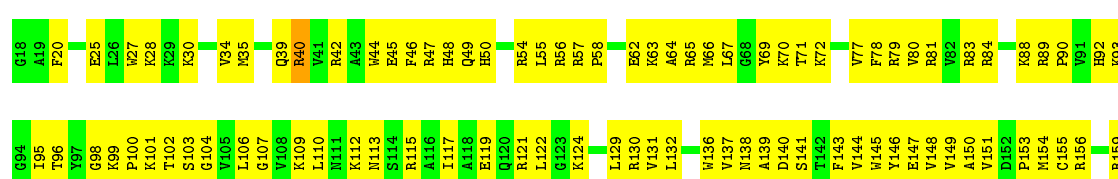
• Molecule 13: 40S ribosomal protein L14

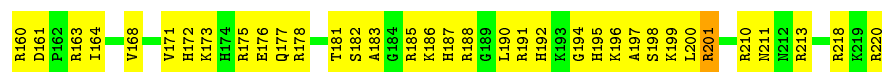
Chain P: 32% 64%



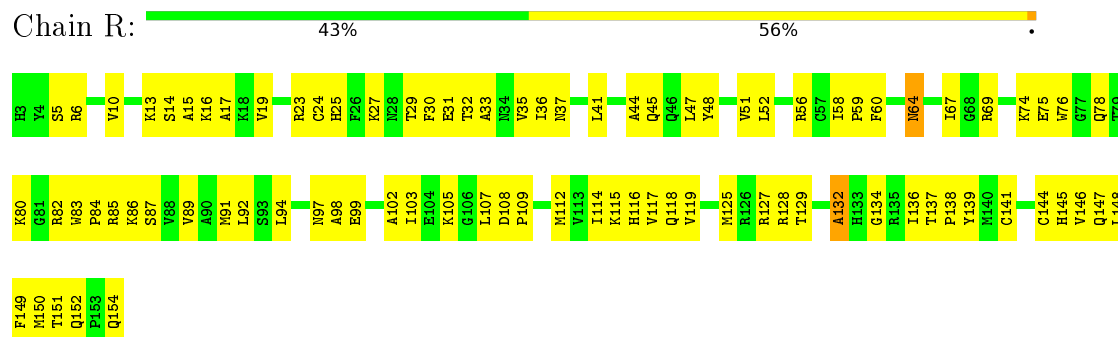
• Molecule 14: Ribosomal protein L15

Chain Q: 39% 60%

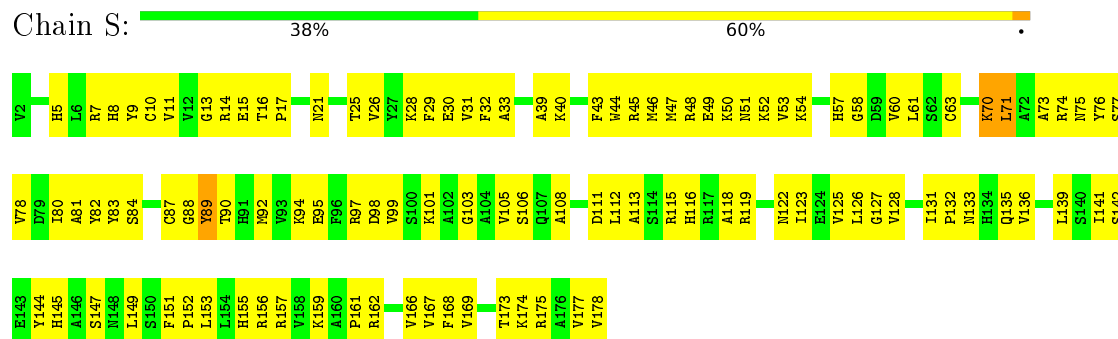




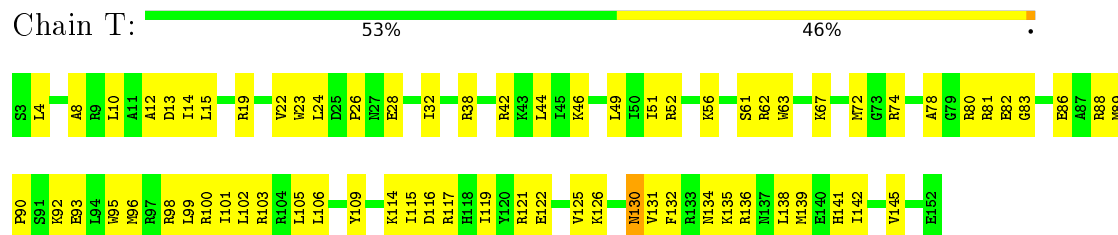
• Molecule 15: 60S ribosomal protein L17



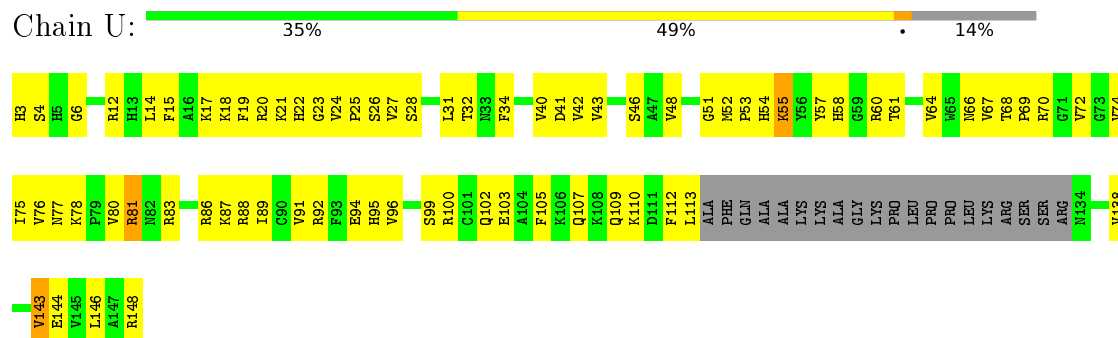
• Molecule 16: 60S ribosomal protein L18a



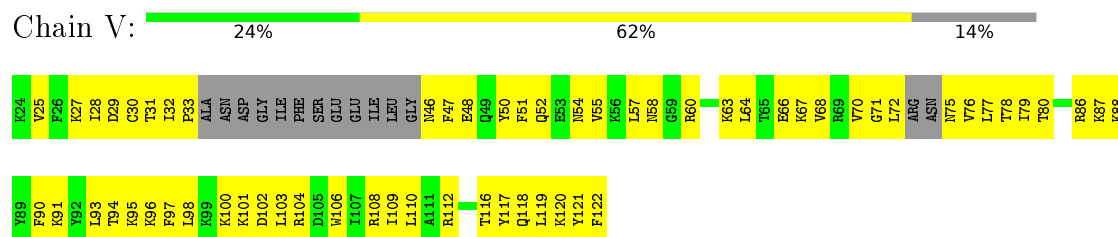
• Molecule 17: Ribosomal protein L19-like protein



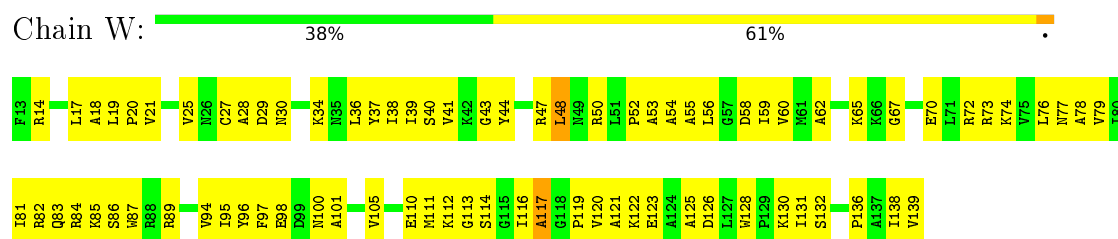
• Molecule 18: Ribosomal protein L21E (60S)

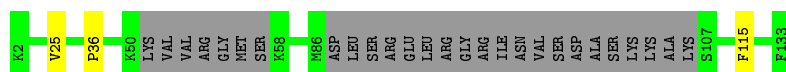


- Molecule 19: 60S ribosomal protein L22



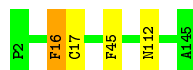
- Molecule 20: 60S ribosomal protein L23





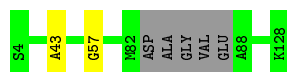
- Molecule 25: 60S ribosomal protein L27A/L29

Chain b: 97% ..



- Molecule 26: 60S ribosomal protein L28

Chain c: 94% . .



- Molecule 27: Ribosomal protein L29

Chain d: 95% 5%



- Molecule 28: 60S ribosomal protein L2

Chain e: 99% .



- Molecule 29: Ribosomal protein L13

Chain f: 96% .



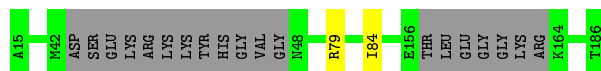
- Molecule 30: 60S ribosomal protein L30

Chain g: 95% 5%



- Molecule 31: 60S ribosomal subunit protein L31

Chain h: 88% . 11%



- Molecule 32: 60S ribosomal protein L32

Chain i:  99%



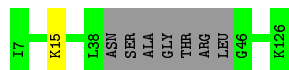
- Molecule 33: 60S ribosomal protein L34

Chain j:  100%

There are no outlier residues recorded for this chain.

- Molecule 34: 60S ribosomal protein L35

Chain k:  93% • 6%



- Molecule 35: Ribosomal protein L35A

Chain l:  97%



- Molecule 36: Ribosomal protein L36

Chain m:  97%



- Molecule 37: Ribosomal protein L37

Chain n:  99%




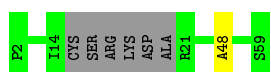
- Molecule 38: 60S ribosomal protein L37a

Chain o:  96%



- Molecule 39: Ribosomal protein L38

Chain p:  88% • 10%



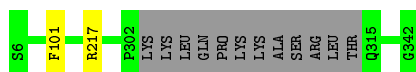
- Molecule 40: Ribosomal protein L39

Chain q: 98%



- Molecule 41: 60S ribosomal protein L4

Chain r: 96%



- Molecule 42: 60S ribosomal protein L44

Chain t: 99%



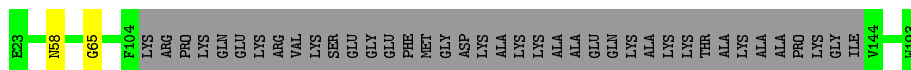
- Molecule 43: 60S ribosomal protein L5

Chain u: 75%



- Molecule 44: 60S ribosomal protein L6

Chain v: 76%



- Molecule 45: 60S ribosomal protein L7

Chain w: 99%



- Molecule 46: Ribosomal protein L7a-like protein

Chain x: 93%

R88	D169	VAL
		ALA
		THR
		GLU
		LYS
		LYS
		LYS
		ASN
		PRO
		GLU
		ALA
		SER
		LYS
		LYS
		A185
	P216	
		N310

4 Experimental information

Property	Value	Source
Reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	Depositor
Number of particles used	235000	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	Not provided	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	Not provided	Depositor
Minimum defocus (nm)	Not provided	Depositor
Maximum defocus (nm)	Not provided	Depositor
Magnification	Not provided	Depositor
Image detector	Not provided	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: OMC, ZN, OMG, OMU, MG, 5MC, 7MG, A2M

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	$\# Z > 2$	RMSZ	$\# Z > 2$
1	A	1.31	11/29897 (0.0%)	1.06	45/46554 (0.1%)
10	L	0.38	0/542	0.52	0/718
11	N	0.66	0/1442	0.65	1/1926 (0.1%)
12	O	0.67	0/1673	0.62	0/2244
13	P	0.51	0/1204	0.60	1/1618 (0.1%)
14	Q	0.82	0/1752	0.80	7/2341 (0.3%)
15	R	0.74	0/1251	0.67	0/1678
16	S	0.62	0/1484	0.60	0/1997
17	T	0.57	0/1292	0.58	0/1711
18	U	0.67	0/1037	0.62	0/1389
19	V	0.49	0/742	0.57	0/986
2	B	1.14	4/21699 (0.0%)	1.00	16/33776 (0.0%)
20	W	0.64	0/977	0.61	0/1318
21	X	0.65	0/905	0.65	0/1215
22	Y	0.69	0/539	0.66	0/728
23	Z	0.56	0/934	0.59	0/1249
24	a	0.45	0/895	0.55	0/1190
25	b	0.73	0/1164	0.69	2/1558 (0.1%)
26	c	0.55	0/946	0.58	0/1263
27	d	0.57	0/527	0.67	0/703
28	e	0.72	0/1915	0.66	0/2576
29	f	0.72	0/3257	0.69	3/4376 (0.1%)
3	C	1.23	0/3306	1.04	3/5144 (0.1%)
30	g	0.43	0/530	0.55	0/712
31	h	0.61	0/1076	0.60	0/1450
32	i	0.74	0/948	0.67	0/1265
33	j	0.62	0/879	0.62	0/1174
34	k	0.53	0/972	0.61	0/1283
35	l	0.77	0/1079	0.66	0/1451
36	m	0.53	0/767	0.62	0/1017
37	n	0.85	0/692	0.75	0/921
38	o	0.74	0/681	0.67	0/905

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >2	RMSZ	# Z >2
39	p	0.45	0/437	0.56	0/579
4	D	0.83	0/2715	0.90	0/4226
40	q	0.66	0/470	0.65	0/626
41	r	0.70	0/2560	0.63	0/3444
42	t	0.62	0/777	0.65	0/1030
43	u	0.52	0/1568	0.56	0/2104
44	v	0.51	0/1055	0.57	0/1420
45	w	0.68	0/1780	0.62	0/2384
46	x	0.60	0/1715	0.64	0/2306
5	E	0.95	2/3472 (0.1%)	0.92	1/5396 (0.0%)
6	F	0.88	0/1074	0.98	3/1665 (0.2%)
7	G	1.25	1/2849 (0.0%)	1.06	5/4431 (0.1%)
8	H	1.16	0/2171	1.01	1/3374 (0.0%)
9	I	0.67	0/1540	0.67	0/2058
All	All	1.02	18/111187 (0.0%)	0.90	88/163479 (0.1%)

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
14	Q	0	1
24	a	0	1
All	All	0	2

All (18) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1610	A	N9-C4	-6.70	1.33	1.37
1	A	1079	G	N9-C4	-6.39	1.32	1.38
2	B	1347	A	N9-C4	-6.00	1.34	1.37
1	A	20	G	N9-C4	-5.97	1.33	1.38
1	A	405	A	N9-C4	-5.83	1.34	1.37
2	B	18	A	N9-C4	-5.81	1.34	1.37
1	A	789	A	N9-C4	-5.81	1.34	1.37
5	E	199	A	N9-C4	-5.76	1.34	1.37
1	A	1120	G	N9-C4	-5.51	1.33	1.38
2	B	1592	A	O3'-P	-5.47	1.54	1.61
1	A	1074	G	C5-C4	-5.46	1.34	1.38
7	G	164	A	N9-C4	-5.44	1.34	1.37
1	A	1628	G	N9-C4	-5.32	1.33	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	982	G	C5-C4	-5.27	1.34	1.38
1	A	1060	A	N9-C4	-5.26	1.34	1.37
2	B	716	G	C5-C4	-5.22	1.34	1.38
5	E	195	A	N9-C4	-5.14	1.34	1.37
1	A	1110	U	C2-N3	-5.08	1.34	1.37

All (88) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1578	U	OP2-P-O3'	-10.15	82.87	105.20
1	A	1578	U	OP1-P-O3'	-9.94	83.34	105.20
14	Q	40[A]	ARG	CA-C-O	9.91	140.91	120.10
14	Q	40[B]	ARG	CA-C-O	9.91	140.91	120.10
1	A	20	G	N3-C4-C5	9.68	133.44	128.60
2	B	1629	U	O5'-P-OP2	9.65	122.28	110.70
1	A	1646	A	N1-C6-N6	8.05	123.43	118.60
1	A	1579	A	OP1-P-OP2	7.81	131.32	119.60
1	A	20	G	C4-C5-N7	7.72	113.89	110.80
1	A	1610	A	C2-N3-C4	-7.17	107.02	110.60
14	Q	40[A]	ARG	CA-C-N	-6.91	102.00	117.20
14	Q	40[B]	ARG	CA-C-N	-6.91	102.00	117.20
11	N	24	LYS	N-CA-C	-6.80	92.64	111.00
1	A	1089	U	C2-N1-C1'	6.49	125.49	117.70
2	B	1629	U	O5'-P-OP1	-6.41	99.94	105.70
2	B	1286	C	C6-N1-C2	-6.38	117.75	120.30
1	A	1735	U	C5-C6-N1	-6.34	119.53	122.70
1	A	825	C	C2-N1-C1'	6.26	125.69	118.80
1	A	1646	A	N9-C4-C5	-6.22	103.31	105.80
2	B	469	G	N3-C4-C5	6.19	131.69	128.60
1	A	20	G	N3-C4-N9	-6.18	122.29	126.00
1	A	1622	G	C4-N9-C1'	-6.14	118.52	126.50
2	B	1286	C	N3-C2-O2	-6.02	117.69	121.90
1	A	148	G	P-O3'-C3'	6.00	126.90	119.70
1	A	1933	C	N1-C2-O2	-6.00	115.30	118.90
6	F	49	C	C2-N1-C1'	6.00	125.39	118.80
1	A	1610	A	N3-C4-N9	-5.95	122.64	127.40
7	G	159	G	C4-C5-N7	5.90	113.16	110.80
1	A	1037	A	P-O3'-C3'	5.89	126.77	119.70
1	A	20	G	C5-N7-C8	-5.85	101.38	104.30
2	B	1520	G	O4'-C1'-N9	5.83	112.87	108.20
1	A	788	G	N3-C4-N9	5.83	129.50	126.00
7	G	159	G	C6-C5-N7	-5.83	126.90	130.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1364	C	N1-C2-O2	5.73	122.34	118.90
1	A	20	G	C4-N9-C1'	-5.72	119.06	126.50
1	A	1120	G	N3-C4-N9	-5.71	122.57	126.00
1	A	451	G	O4'-C1'-N9	5.71	112.77	108.20
29	f	203	LEU	CA-CB-CG	5.70	128.41	115.30
25	b	17	CYS	CA-CB-SG	-5.69	103.75	114.00
2	B	678	U	C2-N1-C1'	5.66	124.49	117.70
1	A	1646	A	C5-C6-N6	-5.66	119.17	123.70
1	A	1364	C	C2-N1-C1'	5.57	124.92	118.80
1	A	979	G	C4-C5-N7	5.54	113.02	110.80
2	B	585	G	N3-C4-N9	-5.52	122.69	126.00
1	A	1622	G	N3-C4-N9	-5.51	122.69	126.00
29	f	363	LEU	CB-CG-CD2	-5.50	101.66	111.00
8	H	104	U	C5-C6-N1	-5.49	119.96	122.70
25	b	16	PHE	N-CA-C	-5.48	96.21	111.00
3	C	102	G	N3-C4-C5	5.48	131.34	128.60
1	A	1943	U	N1-C2-O2	5.47	126.63	122.80
1	A	980	G	N9-C4-C5	-5.47	103.21	105.40
1	A	1368	U	C2-N1-C1'	5.46	124.26	117.70
1	A	1107	G	N3-C4-N9	-5.46	122.72	126.00
1	A	1079	G	N3-C4-C5	5.46	131.33	128.60
1	A	1943	U	N3-C2-O2	-5.44	118.39	122.20
1	A	1120	G	C4-N9-C1'	-5.43	119.45	126.50
1	A	1107	G	N3-C4-C5	5.39	131.30	128.60
7	G	72	C	N3-C2-O2	-5.36	118.15	121.90
1	A	1622	G	C8-N9-C1'	5.36	133.96	127.00
1	A	1135	G	N9-C4-C5	-5.31	103.28	105.40
3	C	58	G	N9-C4-C5	-5.31	103.28	105.40
2	B	718	A	C8-N9-C4	5.29	107.92	105.80
1	A	87	C	OP2-P-O3'	5.29	116.84	105.20
1	A	1120	G	N3-C4-C5	5.28	131.24	128.60
14	Q	201	ARG	C-N-CD	5.28	139.49	128.40
1	A	20	G	C8-N9-C1'	5.27	133.85	127.00
14	Q	40[A]	ARG	N-CA-C	5.26	125.20	111.00
14	Q	40[B]	ARG	N-CA-C	5.26	125.20	111.00
3	C	34	U	C5-C6-N1	-5.25	120.08	122.70
1	A	766	C	N1-C2-O2	-5.22	115.77	118.90
2	B	911	U	C2-N1-C1'	5.20	123.94	117.70
1	A	1135	G	N3-C4-N9	5.19	129.12	126.00
1	A	1768	G	N3-C4-C5	5.19	131.20	128.60
2	B	1195	C	C2-N1-C1'	5.19	124.51	118.80
2	B	587	U	C5-C4-O4	5.18	129.01	125.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	E	192	U	N1-C2-O2	-5.17	119.18	122.80
2	B	87	U	C2-N1-C1'	5.16	123.89	117.70
7	G	84	G	C6-C5-N7	5.14	133.48	130.40
1	A	454	G	C6-C5-N7	-5.13	127.32	130.40
6	F	49	C	N1-C2-O2	5.12	121.97	118.90
6	F	49	C	N3-C2-O2	-5.11	118.32	121.90
7	G	82	U	N1-C2-O2	5.10	126.37	122.80
29	f	8	HIS	C-N-CD	5.10	139.10	128.40
1	A	1622	G	N3-C4-C5	5.05	131.13	128.60
2	B	737	G	N9-C4-C5	-5.05	103.38	105.40
13	P	136	PRO	CA-N-CD	-5.05	104.43	111.50
2	B	20	U	N3-C4-C5	5.02	117.61	114.60
2	B	715	G	N3-C4-N9	-5.01	122.99	126.00

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
14	Q	200	LEU	Peptide
24	a	115	PHE	Peptide

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	27441	12	13883	1171	0
2	B	20110	0	10205	827	0
3	C	3140	0	1600	143	0
4	D	2432	0	1234	113	0
5	E	3110	0	1574	131	0
6	F	965	0	497	59	0
7	G	2578	0	1309	98	0
8	H	1946	0	991	76	0
9	I	1515	0	1619	116	0
10	L	535	0	547	51	0
11	N	1413	0	1518	98	0
12	O	1642	0	1763	155	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
13	P	1186	0	1212	140	0
14	Q	1710	0	1798	155	0
15	R	1226	0	1276	125	0
16	S	1449	0	1489	162	0
17	T	1273	0	1361	118	0
18	U	1016	0	1056	98	0
19	V	730	0	781	74	0
20	W	960	0	1017	102	0
21	X	890	0	932	78	0
22	Y	519	0	519	57	0
23	Z	919	0	981	96	0
24	a	877	0	933	0	0
25	b	1135	0	1175	0	0
26	c	935	0	1003	0	0
27	d	518	0	541	0	0
28	e	1874	0	1938	0	0
29	f	3189	0	3322	0	0
30	g	523	0	565	0	0
31	h	1064	0	1012	0	0
32	i	928	0	971	0	0
33	j	863	0	912	0	0
34	k	967	0	1092	0	0
35	l	1057	0	1072	0	0
36	m	757	0	834	0	0
37	n	679	0	694	0	0
38	o	669	0	690	0	0
39	p	432	0	473	0	0
40	q	456	0	495	0	0
41	r	2513	0	2582	0	0
42	t	763	0	821	0	0
43	u	1541	0	1596	0	0
44	v	1037	0	1106	0	0
45	w	1749	0	1845	0	0
46	x	1690	0	1805	0	0
47	A	66	0	0	0	0
47	B	32	0	0	0	0
47	C	2	0	0	0	0
47	D	1	0	0	0	0
47	E	1	0	0	0	0
47	F	1	0	0	0	0
47	G	1	0	0	0	0
47	H	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
48	n	1	0	0	0	0
48	o	1	0	0	0	0
48	t	1	0	0	0	0
49	A	38	0	0	1	0
49	B	26	0	0	1	0
49	C	1	0	0	0	0
49	E	1	0	0	0	0
49	G	3	0	0	0	0
49	H	2	0	0	0	0
49	I	1	0	0	0	0
49	R	1	0	0	0	0
49	a	1	0	0	0	0
49	b	1	0	0	0	0
49	e	2	0	0	0	0
49	f	1	0	0	0	0
49	j	1	0	0	0	0
49	k	1	0	0	0	0
49	n	1	0	0	0	0
49	w	1	0	0	0	0
49	x	1	0	0	0	0
All	All	105112	12	76639	3680	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 37.

All (3680) 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)
2:B:1516:A2M:H5''	2:B:1517:G:H5'	1.28	1.12
13:P:123:TRP:O	13:P:127:VAL:HG23	1.50	1.11
6:F:50:C:H5'	13:P:118:ARG:HH12	1.19	1.07
17:T:115:ILE:HB	17:T:119:ILE:HD11	1.13	1.07
2:B:62:A:H3'	2:B:63:U:H5'	1.30	1.06
13:P:132:ASP:OD1	13:P:139:TRP:NE1	1.89	1.06
1:A:20:G:N2	3:C:149:A:N1	2.04	1.05
2:B:1380:OMC:HM22	2:B:1381:A:H5'	1.37	1.05
14:Q:137:VAL:HG21	14:Q:147:GLU:HG3	1.34	1.05
6:F:9:C:O2'	6:F:10:A:H5''	1.55	1.05
15:R:19:VAL:HG23	15:R:94:LEU:HD13	1.37	1.03
1:A:1679:A:H2'	2:B:62:A:H61	1.24	1.02
13:P:126:LYS:O	13:P:130:GLU:HG3	1.60	1.01

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:P:12:LEU:HD23	13:P:59:LEU:HD12	1.42	1.01
1:A:442:A:H4'	1:A:443:U:H5'	1.43	1.01
2:B:755:OMG:HM21	2:B:757:U:H5''	1.42	1.01
16:S:173:THR:HG22	16:S:175:ARG:H	1.26	1.00
15:R:30:PHE:HA	15:R:119:VAL:HG11	1.41	1.00
17:T:136:ARG:HA	17:T:139:MET:HB3	1.44	1.00
5:E:21:G:N7	5:E:208:G:N2	2.11	0.98
20:W:19:LEU:HD13	20:W:25:VAL:HG11	1.39	0.98
1:A:371:A:C8	11:N:25:GLY:O	2.17	0.98
2:B:1356:U:H5''	17:T:38:ARG:HB2	112.45	0.97
2:B:718:A:H3'	2:B:719:A:H5'	1.46	0.97
1:A:20:G:H1	3:C:149:A:H61	0.97	0.97
1:A:1670:G:N2	2:B:704:A:N7	2.13	0.97
1:A:1024:G:O6	49:A:2101:HOH:O	1.81	0.96
2:B:1601:U:OP1	12:O:189:LYS:HE2	1.64	0.96
2:B:1601:U:OP1	12:O:189:LYS:CE	2.14	0.95
1:A:10:G:H21	1:A:1801:G:H1	1.02	0.95
1:A:442:A:H4'	1:A:443:U:C5'	1.96	0.95
4:D:3:G:H22	4:D:116:A:H2	1.15	0.95
2:B:566:A:N1	2:B:571:U:N3	2.15	0.95
12:O:80:LYS:HD2	12:O:86:LEU:HD11	1.49	0.94
22:Y:51:ARG:HH11	22:Y:51:ARG:HB2	1.28	0.94
1:A:755:G:HO2'	1:A:1623:A:HO2'	1.12	0.94
1:A:1043:A2M:HM'2	1:A:1044:C:H5'	1.46	0.94
22:Y:50:PRO:HB2	22:Y:58:THR:HG21	1.49	0.94
4:D:59:G:H2'	4:D:60:C:H6	1.32	0.93
13:P:134:LYS:HD2	13:P:135:LYS:N	1.84	0.93
2:B:882:G:H1	2:B:907:A:H61	0.97	0.93
8:H:26:C:H42	8:H:125:U:H2'	1.34	0.93
23:Z:28:MET:HG2	23:Z:98:PRO:HG3	1.48	0.93
18:U:80:VAL:HG11	18:U:83:ARG:HE	1.29	0.92
1:A:800:C:O2	1:A:958:OMG:N2	2.02	0.92
8:H:20:A:H2'	8:H:21:G:H5'	1.46	0.92
1:A:1042:G:H1	1:A:1053:OMC:H5	1.14	0.92
20:W:19:LEU:HD21	20:W:100:ASN:ND2	1.84	0.92
15:R:23:ARG:NH1	15:R:125:MET:SD	2.43	0.91
1:A:120:C:H2'	1:A:121:G:H5'	1.51	0.91
1:A:486:U:H4'	1:A:492:G:H1'	1.52	0.91
5:E:74:C:N3	5:E:139:A:N6	2.19	0.91
4:D:73:U:O2	4:D:102:C:N4	2.03	0.91
1:A:7:C:O2	3:C:166:OMG:N2	2.04	0.90

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:413:U:H4'	1:A:414:U:H5''	1.52	0.90
1:A:1673:U:H2'	1:A:1674:A2M:H8	1.54	0.90
5:E:124:G:H5''	5:E:126:A:H5'	1.54	0.90
1:A:310:G:H5''	14:Q:30:LYS:HE2	1.54	0.90
5:E:39:C:H42	5:E:182:U:H3	1.17	0.89
7:G:70:OMG:N2	7:G:119:C:O2	2.05	0.89
16:S:31:VAL:HG21	16:S:39:ALA:HB1	1.55	0.89
2:B:786:G:O6	2:B:853:C:N4	2.05	0.89
5:E:68:A:OP2	5:E:145:A:N6	2.04	0.89
16:S:77:SER:HB2	16:S:131:ILE:HD11	1.53	0.89
15:R:129:THR:HA	15:R:139:TYR:CE2	2.07	0.89
2:B:1149:A:H2'	2:B:1150:G:H5'	1.54	0.89
2:B:1210:OMG:N2	2:B:1368:C:O2	2.06	0.89
1:A:1804:A2M:H62	21:X:89:THR:H	1.17	0.89
2:B:461:U:H4'	2:B:462:A:H5''	1.53	0.88
16:S:77:SER:HB2	16:S:131:ILE:CD1	2.03	0.88
1:A:253:G:H4'	1:A:254:A:H3'	1.56	0.88
15:R:67:ILE:HG12	15:R:82:ARG:NH2	1.88	0.88
16:S:14:ARG:HH12	16:S:17:PRO:HG3	1.37	0.88
17:T:115:ILE:CB	17:T:119:ILE:HD11	2.01	0.87
16:S:142:SER:HA	16:S:145:HIS:CD2	2.09	0.87
1:A:1308:C:O2	1:A:1316:OMG:N2	2.08	0.87
20:W:122:LYS:N	20:W:139:VAL:OXT	2.07	0.87
2:B:1134:C:H2'	2:B:1135:G:O4'	1.74	0.87
4:D:7:G:H1	4:D:112:U:H3	1.14	0.87
2:B:101:G:H1	2:B:119:C:H42	1.23	0.86
17:T:32:ILE:HA	17:T:44:LEU:HD21	1.57	0.86
18:U:15:PHE:O	18:U:46:SER:OG	1.91	0.86
1:A:1800:A:OP2	14:Q:50:HIS:NE2	2.08	0.86
15:R:33:ALA:HB1	15:R:117:VAL:HG11	1.58	0.86
15:R:129:THR:HG22	15:R:139:TYR:CZ	2.11	0.86
2:B:1183:G:H2'	2:B:1184:C:O4'	1.76	0.86
7:G:123:G:O2'	7:G:124:U:O5'	1.93	0.86
23:Z:49:LYS:NZ	23:Z:68:THR:O	2.08	0.86
16:S:167:VAL:H	16:S:178:VAL:HG22	1.41	0.86
3:C:28:C:H5''	11:N:32:ASN:HB3	1.58	0.85
10:L:27:ILE:HG12	10:L:131:MET:HA	1.57	0.85
1:A:30:C:H4'	14:Q:112:LYS:HE3	1.56	0.85
1:A:1680:G:H1'	7:G:102:G:C2	2.11	0.85
11:N:179:GLU:HG3	11:N:180:GLU:H	1.41	0.85
16:S:136:VAL:HG11	16:S:141:ILE:HD11	1.56	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:V:55:VAL:HG13	19:V:64:LEU:HD21	1.56	0.85
1:A:182:G:H3'	1:A:183:G:H5''	1.57	0.85
2:B:1652:A:O2'	2:B:1653:A:C8	2.29	0.85
6:F:9:C:O2'	6:F:10:A:C5'	2.24	0.85
17:T:4:LEU:HD13	17:T:24:LEU:CD2	2.06	0.85
1:A:267:A:OP2	23:Z:43:ARG:NH2	2.10	0.85
2:B:131:G:N1	2:B:449:C:N3	2.25	0.85
10:L:156:CYS:SG	10:L:161:ARG:NH2	2.50	0.85
1:A:1689:G:O2'	1:A:1691:A:N7	2.09	0.85
15:R:36:ILE:HD12	15:R:44:ALA:HB1	1.58	0.85
16:S:92:MET:HE2	16:S:94:LYS:HD2	1.59	0.85
15:R:48:TYR:HA	15:R:51:VAL:HG12	1.59	0.84
2:B:460:U:OP1	22:Y:48:LYS:NZ	2.10	0.84
1:A:407:C:C2'	1:A:408:G:H5'	2.08	0.84
17:T:126:LYS:HB3	17:T:131:VAL:HG11	1.57	0.84
1:A:1002:G:O2'	1:A:1024:G:N2	2.10	0.84
1:A:428:G:N2	1:A:431:A:OP2	2.11	0.84
3:C:124:A:H2'	3:C:125:A:C8	2.13	0.84
17:T:132:PHE:CD2	17:T:138:LEU:HD12	2.13	0.84
9:I:154:GLU:HA	9:I:157:LYS:HE2	1.60	0.84
12:O:76:LEU:HD11	12:O:92:ARG:HH21	1.43	0.83
15:R:119:VAL:HG23	15:R:144:CYS:HB2	1.60	0.83
1:A:208:A:H5''	1:A:209:A:H5'	1.60	0.83
1:A:213:C:H2'	1:A:214:G:N2	1.93	0.83
1:A:516:A:H61	1:A:587:C:H42	1.21	0.83
1:A:421:G:O2'	1:A:445:G:N2	2.11	0.83
2:B:718:A:H5''	2:B:719:A:H8	1.43	0.83
1:A:1687:C:O2	1:A:1710:OMG:N2	2.10	0.83
1:A:468:A:N1	2:B:708:C:O2'	2.10	0.83
2:B:1223:C:OP2	10:L:148:ARG:NH2	2.11	0.83
3:C:123:G:H2'	3:C:124:A:C8	2.14	0.83
1:A:1785:U:O2	1:A:1789:A:N6	2.12	0.83
9:I:71:MET:CE	9:I:87:ALA:HB2	2.09	0.83
1:A:1953:A:H3'	1:A:1954:G:H5''	1.61	0.82
1:A:413:U:H4'	1:A:414:U:C5'	2.09	0.82
1:A:1326:A:H5'	1:A:1592:U:H1'	1.61	0.82
1:A:452:A:OP2	3:C:15:G:N2	2.12	0.82
2:B:904:U:H2'	2:B:905:G:C8	2.15	0.82
9:I:42:SER:HB2	9:I:139:THR:HG23	1.60	0.82
1:A:810:A:N6	1:A:834:U:O2	2.11	0.82
1:A:1073:5MC:O2'	1:A:1076:A:N3	2.11	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:W:27:CYS:SG	20:W:36:LEU:HG	2.19	0.82
1:A:407:C:H2'	1:A:408:G:H5'	1.60	0.82
2:B:886:C:H3'	2:B:887:G:H5'	1.58	0.82
1:A:1019:G:H2'	1:A:1020:G:H5'	1.60	0.82
1:A:1245:C:H2'	1:A:1246:U:C6	2.14	0.82
6:F:53:G:H1'	6:F:55:A:N6	1.95	0.82
5:E:6:A:N1	5:E:102:U:O2'	2.12	0.81
9:I:175:ASN:HD22	9:I:178:LYS:HB2	1.44	0.81
10:L:20:VAL:HA	10:L:137:LEU:HG	1.61	0.81
7:G:72:C:H5	7:G:115:A:H62	1.24	0.81
7:G:122:G:O2'	7:G:123:G:N2	2.13	0.81
13:P:16:ILE:O	13:P:21:GLN:NE2	2.13	0.81
2:B:1305:G:N2	2:B:1308:A:OP2	2.12	0.81
5:E:5:G:N2	5:E:8:A:OP2	2.10	0.81
8:H:20:A:C2'	8:H:21:G:H5'	2.10	0.81
23:Z:97:HIS:HB3	23:Z:100:ASN:HD22	1.46	0.81
2:B:1568:A:O2'	2:B:1569:A:OP1	1.98	0.81
1:A:20:G:H1	3:C:149:A:N6	1.78	0.81
2:B:720:C:H5	2:B:1393:G:H4'	1.46	0.81
4:D:59:G:H2'	4:D:60:C:C6	2.16	0.81
13:P:37:LEU:HD23	13:P:48:ARG:HD3	1.63	0.80
20:W:47:ARG:HG2	20:W:48:LEU:H	1.46	0.80
21:X:144:LYS:HE3	21:X:163:ASN:HA	1.63	0.80
2:B:634:OMG:N2	2:B:650:C:O2	2.13	0.80
12:O:102:VAL:HG11	12:O:120:LEU:CD2	2.10	0.80
1:A:1679:A:H2'	2:B:62:A:N6	1.97	0.80
15:R:125:MET:HB2	15:R:141:CYS:SG	2.21	0.80
23:Z:47:VAL:HG11	23:Z:77:ILE:CD1	2.11	0.80
3:C:29:C:OP1	11:N:36:GLN:NE2	2.15	0.80
16:S:153:LEU:HB3	16:S:156:ARG:HD3	1.64	0.80
2:B:98:G:N2	17:T:78:ALA:O	2.12	0.80
22:Y:20:ARG:HB3	22:Y:32:VAL:CG2	2.11	0.80
1:A:1163:C:C2'	1:A:1164:G:H5'	2.12	0.80
14:Q:137:VAL:HG21	14:Q:147:GLU:CG	2.11	0.80
2:B:29:C:N4	15:R:134:GLY:O	2.11	0.80
22:Y:54:PRO:HA	22:Y:59:TYR:CD2	2.16	0.80
1:A:277:G:H2'	1:A:278:A:H8	1.46	0.80
14:Q:110:LEU:CD2	14:Q:117:ILE:HD11	2.12	0.80
1:A:148:G:O2'	1:A:149:U:OP2	1.98	0.80
5:E:6:A:C2	5:E:102:U:H4'	2.16	0.80
9:I:64:LEU:HD11	9:I:120:ILE:HD13	1.61	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:P:135:LYS:HG3	13:P:141:LYS:CB	2.12	0.80
9:I:154:GLU:HG2	9:I:157:LYS:CE	2.13	0.79
8:H:41:A:H1'	8:H:100:A:N6	1.97	0.79
16:S:126:LEU:CD2	18:U:148:ARG:HB2	2.12	0.79
16:S:131:ILE:HG22	16:S:132:PRO:O	1.82	0.79
20:W:56:LEU:HD21	20:W:121:ALA:HB1	1.65	0.79
4:D:5:A:H61	4:D:114:C:H42	1.29	0.79
6:F:66:C:H2'	6:F:67:A:O4'	1.82	0.79
12:O:67:ARG:HG2	12:O:71:LYS:HE3	1.63	0.79
20:W:83:GLN:HA	20:W:100:ASN:HB3	1.65	0.79
1:A:1076:A:OP1	14:Q:93:LYS:NZ	2.12	0.79
2:B:882:G:N2	2:B:886:C:OP1	2.15	0.79
1:A:493:C:O2	1:A:742:G:N2	2.12	0.79
2:B:860:U:OP1	2:B:1144:U:N3	2.16	0.79
8:H:41:A:O2'	8:H:42:U:O5'	2.01	0.79
2:B:1435:U:C2'	2:B:1436:C:H5'	2.13	0.79
1:A:323:G:O2'	1:A:324:G:OP2	2.02	0.78
6:F:55:A:H2'	6:F:56:C:H5'	1.64	0.78
16:S:95:GLU:OE1	16:S:141:ILE:HG12	1.83	0.78
20:W:38:ILE:HG13	20:W:60:VAL:HG11	1.65	0.78
1:A:1042:G:N1	1:A:1053:OMC:H5	1.80	0.78
2:B:1356:U:C5'	17:T:38:ARG:HB2	113.08	0.78
1:A:1942:A:OP1	17:T:38:ARG:NH1	2.17	0.78
14:Q:93:LYS:HB2	14:Q:95:ILE:HD12	1.65	0.78
2:B:755:OMG:N2	2:B:1382:C:O2	2.12	0.78
22:Y:51:ARG:HH11	22:Y:51:ARG:CB	1.96	0.78
5:E:34:U:H2'	5:E:35:C:C6	2.18	0.78
2:B:1324:C:O2	2:B:1363:OMG:N2	2.17	0.78
12:O:94:PRO:HG3	12:O:161:CYS:SG	2.24	0.78
2:B:97:A:O2'	2:B:466:C:O2	2.02	0.78
3:C:154:A:P	14:Q:54:ARG:HH22	2.06	0.77
4:D:53:U:H5''	4:D:54:A:OP1	1.85	0.77
5:E:129:G:H2'	5:E:130:G:H8	1.49	0.77
1:A:112:C:O2	1:A:362:G:N2	2.17	0.77
15:R:32:THR:HG22	15:R:91:MET:HG3	1.64	0.77
17:T:126:LYS:HB3	17:T:131:VAL:CG1	2.14	0.77
1:A:1370:G:N2	1:A:1509:C:O2	2.16	0.77
2:B:883:U:H5'	2:B:886:C:H1'	1.64	0.77
1:A:18:C:H4'	14:Q:154:MET:SD	2.23	0.77
2:B:1648:U:H2'	2:B:1649:A:H5''	1.66	0.77
4:D:41:G:O2'	4:D:44:U:O4	2.02	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:35:C:N4	5:E:185:U:O4	2.17	0.77
1:A:1688:G:H1	1:A:1709:C:H42	1.32	0.77
2:B:1195:C:N4	2:B:1200:C:O2	2.15	0.77
11:N:85:LEU:HD11	11:N:102:VAL:HG22	1.65	0.77
1:A:972:OMG:N2	1:A:1105:C:O2	2.16	0.77
1:A:1791:C:O2'	1:A:1792:G:H5'	1.85	0.77
5:E:116:G:O6	17:T:121:ARG:NH2	2.18	0.77
16:S:47:MET:HB3	16:S:53:VAL:HG13	1.67	0.77
2:B:719:A:O2'	2:B:720:C:OP2	2.01	0.77
8:H:44:A:H2'	8:H:45:G:O4'	1.84	0.77
15:R:23:ARG:NH1	15:R:141:CYS:SG	2.57	0.77
5:E:113:C:O2	5:E:123:G:N2	2.14	0.76
1:A:1374:C:O2'	12:O:152:ARG:NH1	2.15	0.76
13:P:126:LYS:O	13:P:130:GLU:CG	2.33	0.76
1:A:930:C:C4	1:A:931:7MG:HM73	2.19	0.76
2:B:1492:OMG:H5''	2:B:1493:U:OP2	1.86	0.76
2:B:487:U:O2	2:B:1546:G:N2	2.17	0.76
15:R:129:THR:HA	15:R:139:TYR:HE2	1.47	0.76
1:A:234:A:O2'	1:A:235:U:O4'	2.01	0.76
2:B:62:A:H3'	2:B:63:U:C5'	2.14	0.76
17:T:13:ASP:OD2	17:T:38:ARG:NH2	2.13	0.76
7:G:28:U:C2'	7:G:29:G:H5'	2.16	0.76
20:W:89:ARG:NH2	20:W:139:VAL:O	2.18	0.76
1:A:506:C:O2	1:A:594:G:N2	2.17	0.76
1:A:777:OMC:H6	1:A:777:OMC:H5''	1.51	0.76
2:B:534:A:N6	2:B:665:U:O2	2.19	0.76
3:C:20:C:H2'	3:C:21:U:H5'	1.67	0.76
1:A:343:OMC:HM22	1:A:344:A:H5'	1.67	0.76
1:A:844:A:C2'	1:A:845:A:H5'	2.16	0.76
3:C:102:G:OP2	3:C:104:A:O2'	2.04	0.76
17:T:4:LEU:HD13	17:T:24:LEU:HD23	1.68	0.76
1:A:177:G:H2'	1:A:178:U:O4'	1.86	0.76
3:C:166:OMG:H2'	3:C:167:U:H5'	1.68	0.76
4:D:99:G:N7	16:S:54:LYS:NZ	2.33	0.76
9:I:187:ARG:NH1	9:I:189:ALA:HA	2.01	0.76
13:P:132:ASP:OD1	13:P:137:VAL:HG21	1.85	0.76
1:A:14:G:H5''	21:X:94:SER:HB2	1.67	0.76
9:I:187:ARG:HH12	9:I:189:ALA:HA	1.50	0.75
5:E:196:G:H4'	5:E:197:C:O4'	1.84	0.75
1:A:1327:U:OP1	1:A:1591:G:O2'	2.05	0.75
1:A:216:U:H2'	1:A:217:G:C8	2.21	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:886:C:H3'	2:B:887:G:C5'	2.14	0.75
1:A:979:G:N2	1:A:1095:C:O2	2.17	0.75
14:Q:185:ARG:HG2	14:Q:188:ARG:HH11	1.50	0.75
1:A:277:G:H2'	1:A:278:A:C8	2.21	0.75
1:A:810:A:H62	1:A:834:U:H3	1.34	0.75
8:H:93:G:C2'	8:H:94:G:H5'	2.16	0.75
11:N:19:PRO:O	15:R:105:LYS:NZ	69.44	0.75
16:S:5:HIS:HB3	16:S:106:SER:HB2	1.67	0.75
20:W:19:LEU:HD13	20:W:25:VAL:CG1	2.14	0.75
23:Z:45:MET:SD	23:Z:46:PRO:HD2	2.26	0.75
2:B:134:C:H2'	2:B:135:A:O4'	1.86	0.75
23:Z:77:ILE:HG23	23:Z:96:VAL:HG13	1.67	0.75
17:T:115:ILE:HB	17:T:119:ILE:CD1	2.07	0.75
1:A:275:A:O2'	1:A:276:U:H5'	1.86	0.75
6:F:14:C:OP2	12:O:136:ARG:NH2	2.20	0.75
1:A:433:G:H1'	15:R:97:ASN:HD21	1.52	0.74
2:B:1215:A:O2'	2:B:1216:A:H2'	1.87	0.74
16:S:44:TRP:CH2	16:S:58:GLY:HA3	2.22	0.74
1:A:772:U:O2'	1:A:1336:A:N1	2.20	0.74
1:A:1610:A:H2	1:A:1646:A:N1	1.85	0.74
1:A:185:A:N6	1:A:276:U:O4	2.19	0.74
1:A:452:A:N6	3:C:15:G:H1'	2.02	0.74
4:D:9:C:H2'	4:D:10:C:H5'	1.69	0.74
15:R:60:PHE:CE1	15:R:82:ARG:HB3	2.22	0.74
1:A:783:C:O2	1:A:1666:G:N2	2.20	0.74
1:A:503:C:O2	1:A:597:G:N2	2.15	0.74
2:B:1185:A:H5'	2:B:1186:U:H5''	1.70	0.74
10:L:137:LEU:HD22	10:L:168:TRP:CE2	2.22	0.74
1:A:1723:G:O2'	1:A:1725:7MG:OP2	2.03	0.74
3:C:1:A:H2'	3:C:2:A:H5'	1.69	0.74
10:L:154:VAL:HG23	10:L:159:ARG:HG2	1.69	0.74
1:A:84:A:H61	1:A:99:A:H3'	1.52	0.74
2:B:754:U:C2'	2:B:755:OMG:H5'	2.17	0.74
5:E:141:U:H2'	5:E:142:G:O4'	1.87	0.74
1:A:921:A:C2'	1:A:922:A:H5'	2.18	0.74
2:B:1324:C:N3	2:B:1363:OMG:N1	2.27	0.74
2:B:703:A:H4'	15:R:137:THR:HG21	1.69	0.74
1:A:1019:G:C2'	1:A:1020:G:H5'	2.17	0.74
5:E:3:U:O2	5:E:10:G:N1	2.17	0.74
1:A:1143:U:O4	9:I:13:ARG:NH1	2.20	0.74
13:P:51:GLN:OE1	13:P:55:ASN:ND2	2.18	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:O:68:ASN:ND2	12:O:155:THR:OG1	2.20	0.74
13:P:70:SER:O	13:P:73:THR:OG1	2.05	0.74
14:Q:20:PHE:CD1	14:Q:62:GLU:HB2	2.23	0.74
8:H:30:C:O2	8:H:123:G:N2	2.14	0.74
6:F:53:G:H5''	13:P:122:PHE:CZ	2.23	0.74
17:T:105:LEU:HD22	17:T:138:LEU:CD2	2.18	0.74
1:A:12:G:H5''	21:X:86:ARG:HH11	1.53	0.73
1:A:1328:G:N2	1:A:1527:U:O2	2.19	0.73
1:A:182:G:C3'	1:A:183:G:H5''	2.18	0.73
7:G:59:U:C2'	7:G:60:C:H5'	2.18	0.73
16:S:111:ASP:OD1	16:S:115:ARG:NH1	2.20	0.73
16:S:74:ARG:HD2	16:S:76:TYR:OH	1.87	0.73
1:A:1624:U:H2'	1:A:1625:G:C8	2.21	0.73
1:A:850:A:HO2'	1:A:929:C:HO2'	1.30	0.73
1:A:1681:A:N1	1:A:1716:U:O2'	2.21	0.73
1:A:463:A:O2'	1:A:758:G:H4'	1.89	0.73
1:A:773:G:H2'	2:B:718:A:N7	2.04	0.73
20:W:47:ARG:HG2	20:W:48:LEU:N	2.02	0.73
3:C:76:C:H2'	3:C:77:A:O4'	1.89	0.73
11:N:188:LYS:O	11:N:192:LYS:HG3	1.89	0.73
20:W:38:ILE:CG1	20:W:60:VAL:HG11	2.18	0.73
1:A:1762:U:OP2	21:X:173:LYS:NZ	2.15	0.73
2:B:1156:U:O2	14:Q:141:SER:OG	2.06	0.73
2:B:1285:C:O2	2:B:1290:A:N6	2.20	0.73
8:H:68:G:N1	8:H:87:C:N3	2.28	0.73
13:P:41:PRO:HB2	13:P:75:LYS:HD3	1.70	0.73
22:Y:50:PRO:HB2	22:Y:58:THR:CG2	2.18	0.73
1:A:1628:G:N2	1:A:1631:A:OP2	2.18	0.73
2:B:498:U:HO2'	2:B:589:A:HO2'	1.33	0.73
13:P:14:ARG:NH2	13:P:57:GLU:OE1	2.17	0.73
17:T:72:MET:O	17:T:74:ARG:NH1	2.22	0.73
1:A:370:C:H5''	1:A:371:A:H5''	1.68	0.73
2:B:1245:C:H2'	2:B:1246:G:O4'	1.88	0.73
17:T:15:LEU:HD12	17:T:22:VAL:HG12	1.70	0.73
18:U:107:GLN:NE2	18:U:110:LYS:HD3	2.04	0.73
1:A:931:7MG:N1	1:A:945:U:O2	2.20	0.73
2:B:1259:G:H5''	18:U:17:LYS:HG2	1.71	0.73
8:H:26:C:N4	8:H:125:U:H2'	2.04	0.73
1:A:1544:G:N2	1:A:1581:C:O2	2.17	0.73
7:G:59:U:H2'	7:G:60:C:H5'	1.71	0.73
1:A:1539:U:H1'	9:I:15:VAL:HG22	1.70	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:Q:131:VAL:O	14:Q:175:ARG:NH1	2.21	0.73
23:Z:47:VAL:HG11	23:Z:77:ILE:HD12	1.71	0.73
6:F:13:U:H2'	12:O:132:ARG:HA	1.69	0.72
11:N:59:LEU:HD22	11:N:124:TYR:CG	2.24	0.72
15:R:129:THR:HG22	15:R:139:TYR:CE2	2.23	0.72
23:Z:77:ILE:HG22	23:Z:96:VAL:O	1.89	0.72
1:A:1108:G:H5''	1:A:1659:OMG:HM21	1.71	0.72
2:B:1136:G:H5''	2:B:1137:A:H2'	1.70	0.72
20:W:30:ASN:ND2	20:W:114:SER:HB3	2.03	0.72
23:Z:51:ASP:HB2	23:Z:106:LEU:HA	1.71	0.72
12:O:65:GLU:OE2	12:O:163:HIS:ND1	2.22	0.72
16:S:8:HIS:NE2	16:S:30:GLU:OE1	2.22	0.72
2:B:1215:A:O2'	2:B:1216:A:O5'	2.02	0.72
3:C:4:G:C2'	3:C:5:U:H5'	2.20	0.72
6:F:12:U:OP1	12:O:194:ARG:HD3	1.88	0.72
6:F:54:U:C4	13:P:115:VAL:HG23	2.24	0.72
2:B:496:G:O2'	2:B:535:U:OP1	2.06	0.72
4:D:40:C:O2	10:L:78:ARG:NH1	2.23	0.72
1:A:14:G:C2'	1:A:15:U:H5'	2.20	0.72
1:A:1680:G:OP1	2:B:62:A:N6	2.23	0.72
12:O:126:ILE:HG23	12:O:179:ARG:CD	2.20	0.72
1:A:233:C:H2'	1:A:234:A:H5'	1.72	0.72
15:R:19:VAL:CG2	15:R:94:LEU:HD13	2.19	0.72
1:A:1002:G:H1'	1:A:1025:A:N6	2.05	0.72
1:A:1343:U:OP1	9:I:2:GLY:N	2.22	0.72
1:A:920:C:O2	9:I:147:ARG:NH1	2.23	0.72
1:A:964:U:C5'	11:N:2:PRO:HD3	2.20	0.72
2:B:894:C:H2'	2:B:895:U:H6	1.54	0.72
7:G:75:U:H4'	20:W:94:VAL:HG11	1.72	0.72
2:B:1502:U:O2'	2:B:1504:A:N7	2.19	0.71
2:B:454:A:H2'	2:B:455:A:C8	2.24	0.71
8:H:121:A:H2'	8:H:122:U:C6	2.25	0.71
12:O:72:TYR:CD2	12:O:164:VAL:HG11	2.24	0.71
4:D:67:C:O2	4:D:108:G:N2	2.16	0.71
5:E:97:G:N2	5:E:135:C:O2	2.17	0.71
23:Z:45:MET:HE1	23:Z:115:ILE:HG21	1.72	0.71
3:C:77:A:H2'	3:C:78:G:O4'	1.91	0.71
16:S:166:VAL:HG23	16:S:178:VAL:HG23	1.72	0.71
20:W:98:GLU:OE1	22:Y:21:TYR:OH	2.08	0.71
1:A:74:U:O2'	11:N:75:ARG:NH2	2.23	0.71
13:P:41:PRO:CB	13:P:75:LYS:HD3	2.20	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:R:116:HIS:HE1	15:R:147:GLN:HE21	1.39	0.71
1:A:195:U:O2'	23:Z:57:ARG:NH2	2.23	0.71
2:B:505:U:H2'	2:B:506:G:H5'	1.71	0.71
2:B:542:C:O2'	2:B:616:A:N3	2.23	0.71
1:A:951:G:H2'	1:A:951:G:N3	2.05	0.71
2:B:1273:G:H4'	2:B:1274:A:O5'	1.90	0.71
8:H:93:G:H2'	8:H:94:G:H5'	1.73	0.71
12:O:95:SER:N	12:O:124:GLU:OE2	2.22	0.71
16:S:29:PHE:CE2	16:S:31:VAL:HG12	2.25	0.71
2:B:132:G:H4'	17:T:101:ILE:HD13	1.72	0.71
2:B:749:G:O6	2:B:1390:A:N6	2.15	0.71
4:D:20:C:H2'	4:D:21:G:C8	2.26	0.71
1:A:132:U:H3	1:A:178:U:H4'	1.55	0.71
1:A:875:C:OP2	1:A:919:OMC:N4	2.23	0.71
6:F:10:A:H4'	6:F:13:U:O4	1.90	0.71
1:A:503:C:H2'	1:A:504:C:C6	2.26	0.71
3:C:78:G:H2'	3:C:79:A:H5'	1.72	0.71
19:V:29:ASP:HA	19:V:76:VAL:HG22	1.72	0.71
1:A:132:U:N3	1:A:178:U:H4'	2.05	0.70
1:A:145:G:OP1	14:Q:56:ARG:NH1	2.23	0.70
1:A:1684:U:H2'	1:A:1685:A:C8	2.26	0.70
1:A:766:C:O2	1:A:781:G:N2	2.17	0.70
2:B:551:U:H3	2:B:583:C:H42	1.39	0.70
4:D:13:A:OP2	4:D:66:G:N2	2.18	0.70
5:E:113:C:H2'	5:E:114:G:C8	2.26	0.70
6:F:8:C:C2'	6:F:9:C:H5'	2.21	0.70
11:N:51:THR:HG21	11:N:54:ARG:NE	2.06	0.70
1:A:211:C:O2'	1:A:212:C:H5'	1.92	0.70
1:A:92:G:OP1	17:T:46:LYS:NZ	113.88	0.70
1:A:1669:G:N2	2:B:705:C:O2	2.16	0.70
16:S:119:ARG:HG2	16:S:122:ASN:ND2	2.05	0.70
3:C:122:A:H2'	3:C:123:G:O4'	1.91	0.70
15:R:137:THR:HB	15:R:138:PRO:HD2	1.72	0.70
15:R:59:PRO:HB2	15:R:78:GLN:HE22	1.55	0.70
1:A:1014:A:H2'	1:A:1015:A:O4'	1.91	0.70
1:A:266:C:C2'	1:A:267:A:H5'	2.21	0.70
1:A:419:A:H4'	1:A:420:A:H5'	1.73	0.70
1:A:877:C:O2'	9:I:142:ASN:HA	1.90	0.70
13:P:135:LYS:HG3	13:P:141:LYS:HA	1.72	0.70
17:T:136:ARG:HA	17:T:139:MET:CB	2.19	0.70
19:V:60:ARG:HD3	19:V:63:LYS:NZ	2.05	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1775:G:O6	1:A:1924:A:H2'	1.90	0.70
1:A:62:A:OP1	14:Q:188:ARG:NH1	2.25	0.70
1:A:792:OMC:HM22	1:A:793:A:O4'	1.90	0.70
6:F:62:U:H4'	6:F:63:A:O5'	1.91	0.70
13:P:135:LYS:HG3	13:P:141:LYS:CA	2.21	0.70
17:T:4:LEU:HD13	17:T:24:LEU:HD22	1.74	0.70
1:A:115:G:C2'	1:A:116:U:H5'	2.22	0.70
1:A:131:U:H3'	1:A:132:U:C5'	2.20	0.70
1:A:1364:C:OP2	16:S:162:ARG:NH1	2.20	0.70
1:A:1764:G:N2	1:A:1945:U:O2'	2.24	0.70
12:O:79:ARG:HH11	12:O:84:PRO:HG3	1.57	0.70
14:Q:44:TRP:HA	14:Q:47:ARG:HH21	1.56	0.70
19:V:112:ARG:HD2	19:V:118:GLN:CD	2.11	0.70
1:A:266:C:O2'	1:A:267:A:H5'	1.92	0.70
2:B:498:U:O2'	2:B:499:U:H5'	1.92	0.70
2:B:564:OMG:HN1	2:B:573:C:H42	1.37	0.70
12:O:144:ARG:HG3	12:O:148:TYR:CD2	2.26	0.70
16:S:131:ILE:HG23	16:S:132:PRO:HD2	1.74	0.70
1:A:1051:A:OP2	11:N:4:GLY:HA3	61.13	0.70
1:A:115:G:H4'	14:Q:65:ARG:HG2	1.74	0.70
1:A:1301:C:O2	1:A:1323:G:N2	2.14	0.70
1:A:65:A:H5''	1:A:358:C:OP1	1.92	0.70
20:W:56:LEU:HD21	20:W:121:ALA:CB	2.22	0.70
2:B:1345:OMU:HM21	2:B:1347:A:N6	2.07	0.69
9:I:117:ARG:O	9:I:120:ILE:HG22	1.92	0.69
17:T:96:MET:CE	17:T:100:ARG:HH21	2.05	0.69
1:A:827:G:C2'	1:A:828:U:H5'	2.22	0.69
2:B:461:U:H4'	2:B:462:A:C5'	2.22	0.69
1:A:964:U:H5''	11:N:2:PRO:HD3	1.74	0.69
1:A:1046:U:O2	2:B:703:A:O2'	2.06	0.69
1:A:758:G:H2'	1:A:759:C:C6	2.28	0.69
12:O:99:LEU:HA	12:O:102:VAL:HG12	1.74	0.69
7:G:89:U:OP1	17:T:80:ARG:NH1	2.24	0.69
2:B:1240:U:H2'	2:B:1241:C:H6	1.56	0.69
13:P:24:VAL:O	13:P:46:MET:HE2	1.93	0.69
1:A:338:G:O6	14:Q:28:LYS:NZ	2.22	0.69
1:A:470:U:C2'	1:A:471:G:H5'	2.22	0.69
2:B:1439:U:O2'	2:B:1443:U:OP1	2.11	0.69
15:R:102:ALA:HB1	15:R:112:MET:CE	2.22	0.69
17:T:109:TYR:HD2	17:T:142:ILE:HD13	1.56	0.69
1:A:312:A:OP1	14:Q:186:LYS:HE3	1.92	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:L:138:GLY:HA2	10:L:160:VAL:HG21	1.74	0.69
20:W:125:ALA:HB2	20:W:138:ILE:HD12	1.75	0.69
2:B:719:A:N6	2:B:1437:C:H1'	2.08	0.69
7:G:123:G:HO2'	7:G:124:U:P	2.16	0.69
13:P:6:TYR:CE2	16:S:152:PRO:HD3	2.26	0.69
2:B:1156:U:H2'	2:B:1157:G:C8	2.28	0.69
1:A:974:A2M:HM'3	2:B:758:G:O2'	1.93	0.69
2:B:77:OMC:HM22	2:B:78:U:H5'	1.75	0.69
5:E:177:G:O2'	5:E:178:U:H5'	1.92	0.69
8:H:68:G:N2	8:H:87:C:O2	2.20	0.69
1:A:1771:U:H3'	1:A:1772:A:H5''	1.75	0.69
2:B:1444:G:HO2'	2:B:1445:U:C5'	2.06	0.69
5:E:27:U:H3	5:E:202:A:H62	1.40	0.69
1:A:80:U:OP1	14:Q:213:ARG:NH2	2.26	0.69
15:R:56:ARG:NH2	15:R:75:GLU:OE2	2.20	0.69
2:B:1150:G:H4'	2:B:1152:C:C2	2.28	0.69
16:S:84:SER:N	16:S:87:CYS:O	2.24	0.69
2:B:1356:U:H5''	17:T:38:ARG:CB	112.27	0.69
23:Z:56:LYS:HD2	23:Z:102:GLU:OE1	1.93	0.69
1:A:1085:C:C2'	1:A:1086:U:H5'	2.22	0.69
1:A:95:A:C5	1:A:96:G:H1'	2.28	0.69
2:B:1240:U:O2'	2:B:1241:C:H5'	1.92	0.69
2:B:720:C:C5	2:B:1393:G:H4'	2.27	0.69
2:B:1560:U:C2'	2:B:1561:A:H5'	2.23	0.69
1:A:1358:U:O2'	12:O:105:MET:O	2.03	0.69
1:A:833:C:H2'	1:A:834:U:O4'	1.93	0.68
21:X:117:TYR:CE1	21:X:137:ILE:HD13	2.28	0.68
1:A:1949:A:H2'	21:X:177:ARG:HH21	1.58	0.68
1:A:815:A:H2'	1:A:816:U:O4'	1.93	0.68
1:A:867:G:P	9:I:72:LYS:HE2	2.33	0.68
5:E:176:U:H2'	5:E:177:G:O4'	1.93	0.68
12:O:21:ARG:HE	12:O:24:ILE:HD12	1.57	0.68
2:B:1350:A:H2'	2:B:1351:A:C8	2.28	0.68
1:A:1132:A:OP1	11:N:3:LYS:HD2	1.92	0.68
23:Z:82:VAL:HG12	23:Z:94:VAL:CG1	2.23	0.68
1:A:1342:U:H5'	9:I:2:GLY:HA2	1.75	0.68
1:A:180:C:H5'	1:A:181:A:OP2	1.93	0.68
1:A:375:U:C2'	1:A:376:A:H5'	2.24	0.68
1:A:58:G:H4'	1:A:59:A:OP1	1.91	0.68
2:B:576:C:H3'	2:B:577:G:H5''	1.76	0.68
4:D:115:A:H2'	4:D:116:A:C8	2.28	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:124:G:C5'	5:E:126:A:H5'	2.23	0.68
5:E:33:A:O2'	5:E:34:U:H5'	1.93	0.68
6:F:53:G:O2'	6:F:54:U:O5'	2.10	0.68
1:A:1791:C:C2'	1:A:1792:G:H5'	2.22	0.68
2:B:88:C:H5''	2:B:1493:U:OP1	1.93	0.68
3:C:167:U:H2'	3:C:168:C:O4'	1.94	0.68
4:D:45:U:H2'	4:D:46:G:C8	2.28	0.68
1:A:308:G:H1'	14:Q:66:MET:HE3	1.76	0.68
2:B:701:G:H4'	15:R:139:TYR:CD1	2.29	0.68
16:S:116:HIS:O	16:S:118:ALA:N	2.25	0.68
16:S:142:SER:HA	16:S:145:HIS:HD2	1.58	0.68
1:A:1680:G:H5''	1:A:1681:A:OP2	1.94	0.68
1:A:494:C:N4	1:A:741:G:O6	2.17	0.68
9:I:64:LEU:HD21	9:I:102:ILE:HD13	1.74	0.68
10:L:106:GLY:HA3	10:L:160:VAL:HG12	1.76	0.68
13:P:29:ASP:OD2	16:S:73:ALA:HB3	1.93	0.68
2:B:1112:A:H4'	2:B:1113:A:OP1	1.92	0.68
2:B:681:G:O4'	2:B:683:OMC:N4	2.24	0.68
4:D:91:U:C2'	4:D:92:G:H5'	2.24	0.68
12:O:29:LEU:HD13	12:O:59:LEU:HD21	1.74	0.68
16:S:14:ARG:NH1	16:S:17:PRO:HG3	2.08	0.68
1:A:1517:U:O4	13:P:45:LYS:HD3	1.94	0.68
1:A:818:U:H2'	1:A:825:C:N3	2.09	0.68
5:E:67:U:H1'	5:E:68:A:OP2	1.93	0.68
2:B:1167:G:O2'	14:Q:95:ILE:HG12	1.94	0.68
18:U:25:PRO:HG3	18:U:94:GLU:HG2	1.76	0.68
23:Z:28:MET:CG	23:Z:98:PRO:HG3	2.23	0.68
2:B:656:U:H2'	2:B:657:7MG:H82	1.75	0.68
8:H:68:G:O6	8:H:87:C:N4	2.25	0.68
2:B:1243:C:O2'	2:B:1244:A:H5'	1.94	0.67
2:B:718:A:H3'	2:B:719:A:C5'	2.23	0.67
7:G:177:C:H5'	7:G:178:A:P	2.34	0.67
17:T:109:TYR:CD2	17:T:142:ILE:HD13	2.29	0.67
20:W:122:LYS:NZ	20:W:126:ASP:OD2	2.20	0.67
21:X:178:LEU:HD12	21:X:184:ALA:HA	1.76	0.67
4:D:21:G:H1	4:D:57:C:H42	1.43	0.67
21:X:131:ASN:O	21:X:177:ARG:NH1	2.27	0.67
23:Z:79:ILE:HG22	23:Z:81:LYS:H	1.58	0.67
1:A:87:C:H5'	9:I:175:ASN:OD1	1.94	0.67
2:B:1506:A:O2'	2:B:1507:G:H5'	1.95	0.67
3:C:20:C:C2'	3:C:21:U:H5'	2.24	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:8:A:N1	5:E:132:G:O2'	2.24	0.67
13:P:59:LEU:HD13	13:P:87:TYR:CE1	2.30	0.67
16:S:136:VAL:HG11	16:S:141:ILE:CD1	2.23	0.67
23:Z:16:HIS:CD2	23:Z:27:LEU:HD21	2.29	0.67
1:A:92:G:H5'	1:A:94:G:N7	2.09	0.67
2:B:135:A:H2'	2:B:136:A:H5'	1.77	0.67
3:C:57:C:C2'	3:C:58:G:H5'	2.23	0.67
2:B:1248:A:H2'	2:B:1248:A:N3	2.08	0.67
9:I:188:ARG:HH22	9:I:191:ARG:HH11	1.42	0.67
14:Q:100:PRO:O	14:Q:103:SER:OG	2.10	0.67
15:R:102:ALA:HB1	15:R:112:MET:HE3	1.75	0.67
16:S:173:THR:HG22	16:S:175:ARG:N	2.07	0.67
18:U:80:VAL:HG11	18:U:83:ARG:NE	2.08	0.67
1:A:12:G:H5''	21:X:86:ARG:NH1	2.09	0.67
1:A:1099:U:H3'	11:N:22:SER:OG	1.94	0.67
2:B:1322:U:O4	2:B:1364:G:N1	2.19	0.67
2:B:1444:G:H2'	2:B:1515:G:O6	1.94	0.67
2:B:451:C:O2'	2:B:452:A:H5'	1.94	0.67
13:P:20:ARG:HD3	13:P:46:MET:SD	2.35	0.67
2:B:482:A2M:H2	2:B:489:A:N7	2.10	0.67
4:D:102:C:H2'	4:D:103:C:H5'	1.76	0.67
10:L:106:GLY:CA	10:L:160:VAL:HG12	2.25	0.67
1:A:815:A:OP2	11:N:44:ARG:NH2	2.25	0.67
2:B:1460:C:H42	2:B:1483:G:H1	1.42	0.67
2:B:1496:A:O2'	2:B:1497:C:H5'	1.95	0.67
2:B:1560:U:H2'	2:B:1561:A:H5'	1.77	0.67
5:E:145:A:OP2	5:E:147:A:N6	2.28	0.67
9:I:92:ASP:OD2	9:I:111:ARG:NH1	2.27	0.67
12:O:21:ARG:NH1	12:O:133:THR:OG1	2.28	0.67
13:P:139:TRP:HD1	13:P:140:HIS:N	1.93	0.67
21:X:160:VAL:CG2	21:X:179:SER:HA	2.24	0.67
1:A:4:A:H2'	1:A:5:G:O4'	1.93	0.67
2:B:1309:G:H5'	18:U:70:ARG:HH21	1.60	0.67
2:B:1568:A:H5''	2:B:1575:A:OP2	1.94	0.67
1:A:1367:A:OP2	16:S:159:LYS:HE3	1.95	0.67
1:A:1668:U:H2'	1:A:1669:G:C8	2.30	0.67
2:B:1203:C:H5''	2:B:1204:G:O5'	1.94	0.67
1:A:463:A:H61	3:C:4:G:H1	1.43	0.67
1:A:1301:C:N3	1:A:1323:G:N1	2.35	0.66
1:A:350:G:H22	2:B:1351:A:H2	1.40	0.66
2:B:576:C:H2'	2:B:577:G:H4'	1.78	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:67:G:C2'	2:B:68:A:H5'	2.25	0.66
3:C:1:A:H3'	3:C:2:A:C2	2.30	0.66
8:H:4:C:H2'	8:H:5:G:O4'	1.95	0.66
4:D:94:C:OP1	16:S:45:ARG:NH2	2.27	0.66
18:U:28:SER:O	18:U:32:THR:HG23	1.94	0.66
1:A:274:C:H2'	1:A:275:A:C8	2.30	0.66
12:O:156:VAL:HG13	12:O:159:ASN:CB	2.26	0.66
19:V:55:VAL:CG1	19:V:64:LEU:HD21	2.25	0.66
23:Z:108:LEU:HA	23:Z:112:ARG:HD2	1.77	0.66
1:A:1067:G:H1'	1:A:1927:A:N6	2.09	0.66
1:A:1731:G:N1	2:B:20:U:O2	2.14	0.66
5:E:208:G:H2'	5:E:209:G:O4'	1.95	0.66
1:A:74:U:H5''	11:N:63:VAL:HB	1.77	0.66
2:B:1201:A:H2'	2:B:1202:A:C8	2.31	0.66
15:R:33:ALA:HB1	15:R:117:VAL:CG1	2.24	0.66
17:T:8:ALA:HB1	17:T:19:ARG:NE	2.10	0.66
16:S:46:MET:HE1	18:U:148:ARG:HD3	1.77	0.66
2:B:1213:C:O2'	2:B:1215:A:H1'	1.95	0.66
17:T:109:TYR:CD1	17:T:114:LYS:HD2	2.31	0.66
1:A:1374:C:H4'	1:A:1375:A:H5'	1.78	0.66
1:A:46:U:OP2	1:A:47:A:O2'	2.04	0.66
2:B:1516:A2M:H5''	2:B:1517:G:C5'	2.18	0.66
15:R:60:PHE:CZ	15:R:82:ARG:HB3	2.31	0.66
16:S:112:LEU:HD23	16:S:123:ILE:CD1	2.25	0.66
16:S:15:GLU:OE2	16:S:21:ASN:ND2	2.28	0.66
1:A:275:A:C2'	1:A:276:U:H5'	2.26	0.66
2:B:1203:C:H5''	2:B:1204:G:C5'	2.26	0.66
3:C:124:A:H2'	3:C:125:A:H8	1.57	0.66
11:N:170:ALA:HB1	11:N:171:PRO:HD2	1.77	0.66
16:S:84:SER:OG	16:S:87:CYS:N	2.29	0.66
2:B:1289:U:H2'	2:B:1290:A:O4'	1.96	0.66
20:W:111:MET:HB3	20:W:131:ILE:CD1	2.26	0.66
1:A:1113:C:H2'	1:A:1114:A:H8	1.60	0.66
1:A:214:G:H4'	1:A:215:U:O5'	1.95	0.66
1:A:438:U:O3'	23:Z:84:ARG:NH2	2.28	0.66
1:A:450:U:C2'	1:A:451:G:H5'	2.25	0.66
2:B:1493:U:H2'	2:B:1494:U:C6	2.30	0.66
2:B:490:A:H1'	2:B:627:A2M:N6	2.11	0.66
2:B:531:C:O2'	2:B:660:U:OP2	2.11	0.66
2:B:67:G:H22	2:B:694:A:N6	1.93	0.66
2:B:901:C:H2'	2:B:902:U:C6	2.31	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:95:U:H3	5:E:137:A:H61	1.42	0.66
6:F:51:A:O2'	6:F:52:A:H5''	1.96	0.66
10:L:108:PHE:HE1	10:L:168:TRP:HZ2	1.44	0.66
2:B:1193:U:H2'	2:B:1201:A:H61	1.61	0.66
12:O:123:TYR:CG	12:O:127:PRO:HG2	2.31	0.66
1:A:588:A:H61	16:S:63:CYS:HB2	1.60	0.66
1:A:1953:A:H2'	1:A:1954:G:O4'	1.96	0.65
4:D:13:A:O2'	4:D:14:C:OP1	2.12	0.65
1:A:1539:U:C1'	9:I:15:VAL:HG22	2.27	0.65
14:Q:58:PRO:HG3	14:Q:77:VAL:HG21	1.78	0.65
1:A:1245:C:H2'	1:A:1246:U:H6	1.61	0.65
1:A:1570:A:O2'	1:A:1571:G:H5'	1.96	0.65
2:B:1444:G:O2'	2:B:1445:U:O5'	2.09	0.65
4:D:69:U:H2'	4:D:70:C:C6	2.31	0.65
8:H:45:G:H2'	8:H:46:C:C1'	2.26	0.65
2:B:701:G:H4'	15:R:139:TYR:HD1	1.62	0.65
18:U:19:PHE:CE2	18:U:20:ARG:HD3	2.31	0.65
1:A:333:G:OP2	14:Q:84:ARG:NH2	2.28	0.65
2:B:538:C:O2'	2:B:658:A:N1	2.25	0.65
1:A:782:A:H5'	2:B:707:A:H5''	1.78	0.65
1:A:1037:A:O2'	1:A:1038:U:OP2	2.11	0.65
1:A:1512:A:HO2'	1:A:1515:A:H2	1.43	0.65
1:A:216:U:H2'	1:A:217:G:H8	1.61	0.65
2:B:67:G:O2'	2:B:68:A:H5'	1.97	0.65
5:E:140:U:H2'	5:E:141:U:H5'	1.78	0.65
1:A:1748:C:OP1	15:R:127:ARG:NH1	2.26	0.65
1:A:867:G:H2'	1:A:867:G:N3	2.09	0.65
1:A:943:G:H2'	1:A:944:U:O4'	1.96	0.65
1:A:1498:G:O2'	2:B:726:U:O2'	2.12	0.65
11:N:81:THR:HG22	11:N:83:GLU:H	1.60	0.65
17:T:32:ILE:HA	17:T:44:LEU:CD2	2.27	0.65
19:V:109:ILE:HG13	19:V:119:LEU:CD2	2.27	0.65
2:B:643:U:O2	2:B:1490:U:H5'	1.97	0.65
2:B:1444:G:H2'	2:B:1515:G:C6	2.32	0.65
12:O:205:LEU:HD23	13:P:120:ARG:HD2	1.78	0.65
14:Q:110:LEU:HD23	14:Q:117:ILE:HD11	1.79	0.65
20:W:29:ASP:OD1	20:W:113:GLY:HA3	1.97	0.65
1:A:1679:A:H5''	7:G:102:G:H1	1.61	0.65
2:B:624:5MC:C2'	2:B:625:A:H5''	2.27	0.65
1:A:816:U:OP2	11:N:41:ARG:NH1	2.29	0.65
2:B:1288:G:H5''	18:U:83:ARG:HH22	1.61	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:147:A:O2'	5:E:148:U:OP1	2.15	0.65
3:C:124:A:O2'	3:C:139:A:N6	2.29	0.65
2:B:1232:A:H4'	10:L:109:GLY:HA3	1.79	0.65
20:W:59:ILE:HD11	20:W:128:TRP:CH2	2.32	0.65
23:Z:97:HIS:HB3	23:Z:100:ASN:ND2	2.12	0.65
1:A:120:C:C2'	1:A:121:G:H5'	2.25	0.65
1:A:415:U:O2	1:A:419:A:N6	2.19	0.65
6:F:55:A:C2'	6:F:56:C:H5'	2.27	0.65
2:B:100:U:H2'	2:B:101:G:C8	2.32	0.64
11:N:51:THR:HG21	11:N:54:ARG:CZ	2.27	0.64
14:Q:89:ARG:NH2	14:Q:104:GLY:O	2.30	0.64
18:U:40:VAL:HB	18:U:96:VAL:HG13	1.78	0.64
20:W:37:TYR:HB2	20:W:65:LYS:CG	2.27	0.64
1:A:421:G:H2'	1:A:446:A:N6	2.12	0.64
1:A:1368:U:C5	13:P:18:GLY:HA2	2.32	0.64
17:T:63:TRP:CH2	17:T:67:LYS:HD3	2.32	0.64
1:A:308:G:H1'	14:Q:66:MET:CE	2.26	0.64
1:A:435:G:C2'	1:A:436:A:H5'	2.27	0.64
4:D:46:G:O2'	4:D:47:U:H5'	1.97	0.64
13:P:134:LYS:C	13:P:134:LYS:HD2	2.18	0.64
2:B:1380:OMC:HM22	2:B:1381:A:C5'	2.22	0.64
6:F:13:U:H5'	6:F:14:C:C5'	2.28	0.64
12:O:80:LYS:CD	12:O:86:LEU:HD11	2.24	0.64
15:R:19:VAL:HG23	15:R:94:LEU:CD1	2.23	0.64
1:A:1804:A2M:HM'3	21:X:91:ARG:HH11	1.61	0.64
1:A:1798:U:H5'	1:A:1799:U:OP2	1.97	0.64
1:A:224:A:H2'	1:A:225:C:O4'	1.98	0.64
2:B:593:G:O2'	2:B:617:A:N1	2.27	0.64
3:C:6:G:H2'	3:C:7:OMU:H6	1.77	0.64
13:P:147:LEU:O	13:P:150:ASN:N	2.30	0.64
14:Q:171:VAL:O	14:Q:178:ARG:NH2	2.20	0.64
15:R:36:ILE:HD12	15:R:44:ALA:CB	2.26	0.64
15:R:52:LEU:CD1	15:R:85:ARG:HG3	2.28	0.64
16:S:7:ARG:HB2	16:S:9:TYR:CE2	2.32	0.64
17:T:115:ILE:HG21	17:T:142:ILE:HG23	1.79	0.64
1:A:874:G:H3'	1:A:919:OMC:N4	2.13	0.64
2:B:1149:A:C2'	2:B:1150:G:H5'	2.25	0.64
2:B:1286:C:O2'	2:B:1287:A:H2'	1.98	0.64
2:B:83:G:O2'	2:B:680:U:O4	2.12	0.64
16:S:75:ASN:HD21	16:S:136:VAL:HG21	1.62	0.64
2:B:1309:G:H5'	18:U:70:ARG:NH2	2.13	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:W:81:ILE:HB	20:W:120:VAL:HG13	1.78	0.64
22:Y:54:PRO:HA	22:Y:59:TYR:CG	2.32	0.64
1:A:1163:C:O2'	1:A:1164:G:H5'	1.98	0.64
1:A:1622:G:H4'	1:A:1623:A:OP1	1.98	0.64
1:A:442:A:H4'	1:A:443:U:O5'	1.98	0.64
2:B:453:G:O2'	2:B:454:A:H5'	1.98	0.64
2:B:482:A2M:H8	2:B:482:A2M:O5'	1.97	0.64
2:B:708:C:H2'	2:B:709:A:O4'	1.98	0.64
3:C:26:U:O2'	3:C:27:U:H5'	1.98	0.64
4:D:102:C:C2'	4:D:103:C:H5'	2.28	0.64
9:I:49:HIS:O	9:I:53:LEU:HD13	1.98	0.64
12:O:156:VAL:HG13	12:O:159:ASN:HB3	1.80	0.64
6:F:50:C:C5'	13:P:118:ARG:HH12	2.04	0.64
15:R:16:LYS:HG2	15:R:149:PHE:HB3	1.79	0.64
21:X:162:VAL:HG13	21:X:176:ILE:HG22	1.79	0.64
1:A:257:G:OP1	23:Z:13:ARG:NH1	2.30	0.64
1:A:473:A:H2'	1:A:474:A:O4'	1.98	0.64
2:B:698:A:P	15:R:82:ARG:HD2	2.38	0.64
3:C:5:U:C2'	3:C:6:G:H5'	2.28	0.64
7:G:58:C:C2'	7:G:59:U:H5'	2.28	0.64
14:Q:172:HIS:HB3	14:Q:175:ARG:HD2	1.80	0.64
2:B:477:A:H2'	2:B:478:C:H5'	1.78	0.64
2:B:564:OMG:N2	2:B:573:C:N3	2.39	0.64
13:P:123:TRP:CZ3	13:P:126:LYS:HG2	2.33	0.64
14:Q:115:ARG:HG2	14:Q:146:TYR:CD1	2.33	0.64
20:W:111:MET:HB3	20:W:131:ILE:HD11	1.78	0.64
20:W:29:ASP:OD1	20:W:30:ASN:N	2.29	0.64
1:A:1325:G:OP2	1:A:1326:A:O2'	2.09	0.63
6:F:54:U:N3	13:P:115:VAL:HG23	2.13	0.63
8:H:96:G:H2'	8:H:97:C:C6	2.33	0.63
13:P:69:CYS:SG	13:P:73:THR:OG1	2.55	0.63
1:A:1526:A:H2'	1:A:1528:U:C5	2.33	0.63
1:A:1750:C:H2'	1:A:1752:C:C5	2.33	0.63
2:B:1217:G:C4'	2:B:1313:G:H21	2.11	0.63
4:D:113:G:H2'	4:D:114:C:C6	2.33	0.63
15:R:59:PRO:HB2	15:R:78:GLN:NE2	2.14	0.63
16:S:92:MET:CE	16:S:94:LYS:HD2	2.27	0.63
1:A:1792:G:H2'	1:A:1793:U:C6	2.32	0.63
9:I:89:ILE:HG22	9:I:109:ALA:HB2	1.78	0.63
12:O:158:GLY:HA2	12:O:161:CYS:SG	2.38	0.63
12:O:27:VAL:HG23	12:O:51:ILE:HG23	1.80	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:P:5:ASN:ND2	13:P:60:LYS:HA	2.13	0.63
8:H:19:G:H1'	15:R:69:ARG:HD3	1.80	0.63
16:S:10:CYS:SG	16:S:28:LYS:HE3	2.39	0.63
2:B:132:G:H4'	17:T:101:ILE:CD1	2.29	0.63
20:W:18:ALA:CB	20:W:85:LYS:HB3	2.29	0.63
1:A:130:C:H2'	1:A:131:U:C6	2.33	0.63
1:A:80:U:H2'	1:A:81:C:C6	2.33	0.63
1:A:91:G:OP2	1:A:93:C:N4	2.29	0.63
15:R:41:LEU:O	15:R:45:GLN:HG2	1.98	0.63
1:A:1074:G:H2'	1:A:1093:A:H62	1.63	0.63
1:A:376:A:H2'	1:A:377:G:O4'	1.99	0.63
1:A:921:A:H1'	9:I:147:ARG:HD2	1.81	0.63
2:B:1240:U:H2'	2:B:1241:C:O4'	1.99	0.63
2:B:1263:A:O2'	2:B:1264:A:H2'	1.99	0.63
2:B:1297:G:OP1	18:U:70:ARG:N	2.32	0.63
6:F:13:U:O2'	6:F:14:C:OP2	2.11	0.63
11:N:60:ARG:HD3	11:N:101:ARG:HG3	1.80	0.63
16:S:75:ASN:ND2	16:S:145:HIS:HE1	1.97	0.63
1:A:1941:U:OP2	17:T:38:ARG:HG3	1.99	0.63
2:B:1173:G:N1	2:B:1186:U:O2	2.20	0.63
2:B:1193:U:H2'	2:B:1201:A:N6	2.13	0.63
4:D:70:C:H2'	4:D:71:G:H8	1.64	0.63
1:A:310:G:OP1	14:Q:63:LYS:HE2	1.98	0.63
1:A:1014:A:C2	1:A:1015:A:H1'	2.34	0.63
1:A:1646:A:C2'	1:A:1647:G:H5'	2.27	0.63
1:A:782:A:H5''	2:B:707:A:H4'	1.81	0.63
2:B:1509:G:C2'	2:B:1510:A:H5'	2.29	0.63
4:D:41:G:O2'	4:D:42:A:OP2	2.17	0.63
10:L:154:VAL:CG2	10:L:159:ARG:HG2	2.28	0.63
1:A:371:A:H8	11:N:25:GLY:O	1.77	0.63
14:Q:84:ARG:HG2	14:Q:144:VAL:HG13	1.81	0.63
21:X:160:VAL:HG23	21:X:179:SER:HA	1.81	0.63
1:A:1096:A:H2'	1:A:1097:C:O4'	1.99	0.63
2:B:1215:A:HO2'	2:B:1216:A:P	2.22	0.63
2:B:883:U:H4'	2:B:884:U:C5'	2.29	0.63
8:H:101:A:H2'	8:H:102:C:O4'	1.98	0.63
19:V:50:TYR:OH	19:V:96:LYS:NZ	2.29	0.63
22:Y:7:GLU:CD	22:Y:33:LEU:HD22	2.18	0.63
2:B:572:U:H2'	2:B:573:C:C6	2.34	0.62
11:N:179:GLU:HG3	11:N:180:GLU:N	2.12	0.62
17:T:98:ARG:NH1	17:T:130:ASN:HB2	2.13	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1113:C:H2'	1:A:1114:A:C8	2.33	0.62
1:A:81:C:H2'	1:A:82:U:O4'	1.98	0.62
1:A:934:C:O2'	2:B:1278:A:H4'	1.99	0.62
6:F:50:C:H5'	13:P:118:ARG:NH1	2.04	0.62
6:F:8:C:O2'	6:F:9:C:H5'	1.99	0.62
9:I:108:CYS:HB2	9:I:128:LEU:HD11	1.81	0.62
1:A:92:G:O5'	1:A:93:C:H5'	1.99	0.62
2:B:1330:G:H2'	2:B:1330:G:N3	2.14	0.62
2:B:454:A:H2'	2:B:455:A:H8	1.64	0.62
2:B:775:G:H2'	2:B:776:G:C8	2.34	0.62
1:A:373:A:N1	3:C:34:U:H5	1.97	0.62
1:A:103:G:OP1	11:N:75:ARG:NE	2.32	0.62
1:A:1083:G:H5'	1:A:1084:A:OP1	1.99	0.62
1:A:272:G:H2'	1:A:273:C:O4'	1.99	0.62
2:B:1541:A:N3	2:B:1541:A:H3'	2.15	0.62
1:A:1735:U:H5	2:B:18:A:N1	1.96	0.62
1:A:1773:C:H4'	5:E:201:A:H1'	1.80	0.62
13:P:22:ASP:OD2	13:P:100:ARG:HD2	1.99	0.62
13:P:30:ILE:HG13	16:S:149:LEU:HD11	1.80	0.62
17:T:126:LYS:O	17:T:131:VAL:HG12	1.99	0.62
23:Z:92:VAL:HG23	23:Z:93:PRO:HD2	1.82	0.62
1:A:1368:U:OP1	13:P:17:ARG:NH2	2.32	0.62
2:B:1138:7MG:O2'	2:B:1139:U:OP1	2.10	0.62
2:B:131:G:O6	2:B:449:C:N4	2.19	0.62
2:B:1555:C:H2'	2:B:1556:U:C6	2.34	0.62
2:B:663:A:C2'	2:B:664:U:H5'	2.30	0.62
2:B:691:A2M:C8	2:B:691:A2M:H3'	2.29	0.62
5:E:182:U:C2'	5:E:183:U:H5'	2.29	0.62
5:E:62:C:H2'	5:E:63:A:C8	2.33	0.62
13:P:133:LYS:HD3	13:P:134:LYS:N	2.15	0.62
1:A:1688:G:N2	1:A:1709:C:N3	2.35	0.62
2:B:672:A:O2'	2:B:673:U:H5'	2.00	0.62
2:B:8:U:C2'	2:B:9:G:H5'	2.28	0.62
13:P:29:ASP:OD1	13:P:67:ARG:HB3	1.99	0.62
18:U:109:GLN:O	18:U:113:LEU:HD13	1.99	0.62
18:U:48:VAL:HG21	18:U:94:GLU:HG2	1.80	0.62
23:Z:92:VAL:CG2	23:Z:93:PRO:HD2	2.30	0.62
1:A:215:U:O2	1:A:215:U:H2'	1.99	0.62
2:B:1217:G:O6	2:B:1271:U:N3	2.20	0.62
2:B:1649:A:H2'	2:B:1650:C:C6	2.35	0.62
8:H:24:A:O2'	8:H:25:A:H5'	1.99	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:O:115:LYS:O	12:O:118:ARG:HG2	1.99	0.62
2:B:770:A:H5'	14:Q:106:LEU:CD1	2.30	0.62
17:T:88:ARG:O	17:T:89:MET:HG2	1.99	0.62
1:A:142:U:C1'	1:A:143:G:H5''	2.30	0.62
10:L:166:MET:O	10:L:170:GLU:HG3	2.00	0.62
12:O:128:THR:HA	12:O:131:VAL:HG12	1.82	0.62
1:A:1571:G:O2'	1:A:1572:A:H5'	2.00	0.62
2:B:1486:U:H2'	2:B:1487:G:C8	2.35	0.62
7:G:103:U:H3'	7:G:104:G:H5''	1.82	0.62
20:W:125:ALA:CB	20:W:138:ILE:HD12	2.29	0.62
1:A:208:A:C5'	1:A:209:A:H5'	2.30	0.62
1:A:31:C:H2'	1:A:32:G:O4'	2.00	0.62
7:G:88:U:H2'	7:G:89:U:C6	2.34	0.62
9:I:42:SER:CB	9:I:139:THR:HG23	2.28	0.62
8:H:20:A:OP1	15:R:74:LYS:HE3	2.00	0.62
16:S:44:TRP:HH2	16:S:58:GLY:HA3	1.65	0.62
21:X:115:ILE:HA	21:X:138:VAL:HG23	1.82	0.62
1:A:450:U:H2'	1:A:451:G:H5'	1.81	0.61
2:B:904:U:H2'	2:B:905:G:H8	1.65	0.61
3:C:47:C:H1'	3:C:61:A:H2'	1.82	0.61
1:A:463:A:N6	3:C:4:G:H1	1.98	0.61
4:D:75:G:H5''	16:S:48:ARG:O	2.00	0.61
10:L:138:GLY:HA2	10:L:160:VAL:CG2	2.30	0.61
20:W:117:ALA:O	20:W:136:PRO:HG3	2.00	0.61
23:Z:77:ILE:CG2	23:Z:96:VAL:HG13	2.28	0.61
1:A:184:A:C2'	1:A:185:A:H5'	2.29	0.61
11:N:51:THR:HG22	11:N:54:ARG:HB3	1.82	0.61
23:Z:114:ALA:O	23:Z:118:ARG:HG2	1.98	0.61
3:C:74:U:O4	23:Z:71:TYR:HA	2.00	0.61
1:A:1070:U:H2'	1:A:1071:A2M:H8	1.82	0.61
1:A:1499:A:H2'	1:A:1500:C:O4'	1.99	0.61
1:A:1614:A:N6	1:A:1643:A:O2'	2.32	0.61
1:A:1762:U:OP1	21:X:175:TYR:OH	2.17	0.61
1:A:191:A:OP1	23:Z:119:LYS:HG3	1.99	0.61
1:A:844:A:H2'	1:A:845:A:H5'	1.82	0.61
5:E:177:G:C2'	5:E:178:U:H5'	2.29	0.61
2:B:1561:A:N3	15:R:69:ARG:NH2	2.46	0.61
19:V:72:LEU:HD12	19:V:77:LEU:HD23	1.82	0.61
20:W:18:ALA:HB2	20:W:85:LYS:HB3	1.82	0.61
1:A:393:A:H3'	1:A:394:C:H5''	1.82	0.61
2:B:453:G:C2'	2:B:454:A:H5'	2.31	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:S:78:VAL:HG12	16:S:80:ILE:HG13	1.83	0.61
21:X:185:LEU:O	21:X:189:ASN:ND2	2.30	0.61
1:A:1015:A:H2'	1:A:1016:C:H5'	1.81	0.61
1:A:104:G:O2'	1:A:833:C:O2	2.19	0.61
1:A:184:A:O2'	1:A:185:A:H5'	2.01	0.61
1:A:461:C:H2'	1:A:462:A:C8	2.35	0.61
2:B:906:C:H5'	2:B:907:A:OP2	2.00	0.61
3:C:166:OMG:HM22	3:C:167:U:H5'	1.82	0.61
9:I:154:GLU:HG2	9:I:157:LYS:HE3	1.81	0.61
2:B:1601:U:OP1	12:O:189:LYS:NZ	2.34	0.61
16:S:157:ARG:O	16:S:157:ARG:HG3	2.00	0.61
12:O:139:ILE:HG12	16:S:168:PHE:CE1	2.35	0.61
23:Z:20:PRO:HD2	23:Z:23:VAL:CG2	2.31	0.61
23:Z:33:SER:HA	23:Z:102:GLU:OE2	2.01	0.61
1:A:1495:G:H4'	1:A:1496:A:O5'	2.01	0.61
2:B:1504:A:H5''	2:B:1505:C:OP2	1.99	0.61
1:A:1106:U:O2'	2:B:748:A:N1	2.33	0.61
6:F:12:U:HO2'	6:F:13:U:P	2.23	0.61
6:F:49:C:OP2	13:P:118:ARG:HD3	2.00	0.61
16:S:173:THR:HG22	16:S:174:LYS:N	2.16	0.61
1:A:1599:G:H3'	1:A:1599:G:N3	2.15	0.61
1:A:769:U:H2'	1:A:770:C:C6	2.36	0.61
2:B:100:U:O2'	2:B:101:G:H5'	2.01	0.61
2:B:1492:OMG:H3'	2:B:1493:U:H5''	1.82	0.61
4:D:28:C:H2'	4:D:29:C:H5'	1.82	0.61
4:D:70:C:H2'	4:D:71:G:C8	2.35	0.61
6:F:50:C:OP1	13:P:114:ARG:NH1	2.28	0.61
13:P:110:ARG:O	13:P:114:ARG:HG3	2.00	0.61
16:S:94:LYS:HE2	16:S:111:ASP:OD2	2.00	0.61
18:U:17:LYS:HB2	18:U:22:HIS:ND1	2.14	0.61
20:W:20:PRO:HA	20:W:53:ALA:HA	1.83	0.61
2:B:1386:G:H4'	2:B:1387:A:C5'	2.30	0.61
2:B:1643:C:H5''	2:B:1643:C:H6	1.66	0.61
2:B:745:A:O2'	2:B:746:G:H5'	2.01	0.61
2:B:883:U:H5'	2:B:886:C:C1'	2.31	0.61
3:C:89:U:H2'	3:C:90:U:C6	2.35	0.61
6:F:63:A:H4'	6:F:64:U:OP2	1.99	0.61
14:Q:20:PHE:HD1	14:Q:62:GLU:HB2	1.65	0.61
17:T:15:LEU:O	17:T:52:ARG:NH1	2.33	0.61
19:V:48:GLU:HA	19:V:77:LEU:HD21	1.82	0.61
1:A:1005:G:H1'	5:E:120:U:O2'	2.01	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1351:U:C5	1:A:1525:5MC:HM53	2.36	0.61
2:B:124:G:H2'	2:B:125:C:O4'	2.01	0.61
2:B:1529:OMC:HM22	2:B:1530:C:O4'	2.01	0.61
2:B:753:C:H2'	2:B:754:U:H6	1.66	0.61
3:C:164:G:OP1	21:X:79:TYR:OH	2.06	0.61
4:D:72:U:H2'	4:D:73:U:O4'	2.00	0.61
8:H:41:A:H1'	8:H:100:A:H62	1.64	0.61
8:H:24:A:H2'	8:H:25:A:O4'	2.01	0.61
9:I:175:ASN:ND2	9:I:178:LYS:HB2	2.15	0.61
15:R:52:LEU:HD11	15:R:85:ARG:HG3	1.82	0.61
1:A:1013:A:H2'	1:A:1014:A:C8	2.36	0.61
1:A:1142:C:C2'	1:A:1143:U:H5'	2.31	0.61
1:A:1364:C:OP1	1:A:1366:U:H5'	2.00	0.61
1:A:67:A:N6	1:A:356:G:O2'	2.26	0.61
2:B:1462:A:O2'	2:B:1463:G:H5'	2.01	0.61
1:A:373:A:C2	3:C:34:U:H5	2.19	0.61
14:Q:25:GLU:HG3	14:Q:28:LYS:HD2	1.83	0.61
19:V:57:LEU:HD12	19:V:58:ASN:N	2.16	0.61
5:E:129:G:H2'	5:E:130:G:C8	2.32	0.60
5:E:175:U:H2'	5:E:176:U:C6	2.36	0.60
7:G:102:G:OP1	7:G:104:G:H4'	2.00	0.60
13:P:5:ASN:ND2	13:P:59:LEU:O	2.34	0.60
20:W:41:VAL:HG21	20:W:54:ALA:N	2.15	0.60
23:Z:47:VAL:HG11	23:Z:77:ILE:HD11	1.82	0.60
1:A:332:U:H2'	1:A:333:G:H8	1.66	0.60
2:B:8:U:O2'	2:B:9:G:H5'	2.00	0.60
7:G:170:A:O2'	7:G:171:G:O5'	2.12	0.60
11:N:60:ARG:CD	11:N:101:ARG:HG3	2.30	0.60
11:N:85:LEU:HD23	11:N:121:LEU:HD13	1.83	0.60
12:O:190:THR:OG1	12:O:194:ARG:NH1	2.34	0.60
2:B:866:A:H2'	2:B:867:U:O4'	2.00	0.60
16:S:105:VAL:CG2	16:S:128:VAL:HG21	2.32	0.60
1:A:1301:C:O2'	1:A:1337:A:N1	2.28	0.60
2:B:1495:C:C2'	2:B:1496:A:H5'	2.30	0.60
2:B:1496:A:H2'	2:B:1497:C:O4'	2.01	0.60
2:B:1524:U:H5'	2:B:1525:U:OP1	2.02	0.60
2:B:51:U:O2'	2:B:464:G:O2'	2.09	0.60
2:B:69:A:O4'	8:H:17:A:H5'	2.01	0.60
6:F:13:U:H5'	6:F:14:C:H5'	1.82	0.60
13:P:7:ILE:HD13	13:P:53:LEU:HD22	1.84	0.60
19:V:46:ASN:O	19:V:50:TYR:N	2.33	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:W:59:ILE:HD11	20:W:128:TRP:HH2	1.66	0.60
21:X:142:ALA:O	21:X:172:LYS:NZ	2.35	0.60
1:A:1669:G:H2'	1:A:1670:G:O4'	2.01	0.60
2:B:1456:U:H2'	2:B:1481:A:N7	2.16	0.60
4:D:110:G:H2'	4:D:111:C:C6	2.36	0.60
4:D:54:A:H2'	4:D:55:A:O4'	2.02	0.60
13:P:134:LYS:HE2	13:P:135:LYS:O	2.00	0.60
13:P:137:VAL:HG11	13:P:139:TRP:CE2	2.36	0.60
15:R:119:VAL:CG2	15:R:144:CYS:HB2	2.30	0.60
1:A:1616:G:H1'	1:A:1643:A:N6	2.17	0.60
1:A:25:A:N3	1:A:370:C:O2'	2.34	0.60
1:A:504:C:H2'	1:A:505:U:C6	2.36	0.60
2:B:126:U:O3'	8:H:65:G:N2	2.25	0.60
2:B:882:G:O2'	2:B:883:U:OP2	2.19	0.60
3:C:57:C:O2'	3:C:58:G:H5'	2.02	0.60
10:L:21:LYS:HE2	10:L:142:GLU:HB2	1.83	0.60
14:Q:182:SER:OG	14:Q:191:ARG:NH2	2.29	0.60
1:A:468:A:C2	2:B:709:A:H4'	2.36	0.60
3:C:166:OMG:C2'	3:C:167:U:H5'	2.32	0.60
2:B:1360:A:OP2	9:I:184:SER:OG	2.19	0.60
14:Q:119:GLU:OE1	14:Q:181:THR:OG1	2.13	0.60
16:S:71:LEU:O	16:S:71:LEU:HD23	2.01	0.60
20:W:56:LEU:HD11	20:W:121:ALA:HB3	1.83	0.60
22:Y:27:LEU:O	22:Y:29:THR:N	2.32	0.60
1:A:115:G:H2'	1:A:116:U:H5'	1.82	0.60
1:A:393:A:H4'	1:A:394:C:OP2	2.02	0.60
2:B:6:A:H2'	2:B:7:C:H5'	1.84	0.60
13:P:15:ILE:CD1	13:P:51:GLN:HG3	2.32	0.60
16:S:80:ILE:CD1	16:S:108:ALA:HB1	2.32	0.60
16:S:9:TYR:HB2	16:S:31:VAL:CG2	2.30	0.60
19:V:60:ARG:HH11	19:V:63:LYS:HZ2	1.50	0.60
20:W:86:SER:HB3	20:W:96:TYR:HB3	1.84	0.60
1:A:142:U:H1'	1:A:143:G:H5''	1.83	0.60
1:A:14:G:H2'	1:A:15:U:H5'	1.84	0.60
1:A:809:G:H2'	1:A:810:A:O4'	2.02	0.60
2:B:1111:C:H5''	2:B:1112:A:OP2	2.02	0.60
2:B:1163:U:H2'	2:B:1164:G:O4'	2.02	0.60
2:B:1271:U:H2'	2:B:1272:U:C6	2.37	0.60
3:C:1:A:C2'	3:C:2:A:H5'	2.32	0.60
4:D:76:U:C2'	4:D:77:A:H5'	2.30	0.60
4:D:91:U:O2'	4:D:92:G:H5'	2.01	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:Q:156:ARG:HH21	14:Q:160:ARG:CZ	2.15	0.60
1:A:1719:U:C2'	1:A:1720:G:H5'	2.32	0.60
1:A:1722:A:H4'	1:A:1723:G:OP2	2.01	0.60
1:A:249:C:C2'	1:A:250:A:H5'	2.31	0.60
2:B:9:G:H2'	2:B:10:C:C6	2.37	0.60
2:B:131:G:N2	2:B:449:C:O2	2.22	0.60
16:S:136:VAL:HG11	16:S:141:ILE:CG1	2.30	0.60
12:O:150:SER:HB2	16:S:155:HIS:CE1	2.37	0.60
19:V:52:GLN:HA	19:V:64:LEU:HD11	1.84	0.60
7:G:116:U:O2'	20:W:14:ARG:NH2	2.35	0.60
1:A:1144:U:H1'	1:A:1151:A:H62	1.67	0.59
1:A:1357:G:O2'	1:A:1358:U:H5'	2.02	0.59
1:A:766:C:HO2'	1:A:767:C:P	2.25	0.59
2:B:1288:G:C5'	18:U:83:ARG:HH22	2.15	0.59
2:B:1447:G:H2'	2:B:1448:G:O4'	2.03	0.59
3:C:89:U:H2'	3:C:90:U:H6	1.67	0.59
5:E:115:A:N6	5:E:121:U:O4	2.20	0.59
13:P:7:ILE:HG22	16:S:151:PHE:O	2.01	0.59
14:Q:182:SER:O	14:Q:191:ARG:NH2	2.35	0.59
21:X:127:LYS:HB3	21:X:133:THR:HB	1.83	0.59
21:X:165:LEU:HD11	21:X:173:LYS:HE2	1.83	0.59
22:Y:51:ARG:HH11	22:Y:51:ARG:CG	2.13	0.59
1:A:373:A:H2'	1:A:374:G:O4'	2.01	0.59
1:A:418:A:H2'	1:A:419:A:H5'	1.84	0.59
2:B:76:A:H2'	2:B:77:OMC:O4'	2.02	0.59
5:E:192:U:O2	5:E:195:A:N6	2.35	0.59
7:G:91:U:OP2	17:T:62:ARG:NH1	2.29	0.59
12:O:57:GLU:HG3	12:O:58:GLN:HG2	1.83	0.59
18:U:26:SER:OG	18:U:27:VAL:N	2.35	0.59
21:X:183:ASP:OD2	21:X:186:GLU:HG2	2.02	0.59
1:A:1735:U:C5	2:B:18:A:N1	2.69	0.59
1:A:452:A:O5'	1:A:452:A:H8	1.85	0.59
2:B:784:A:H2'	2:B:785:G:O4'	2.02	0.59
3:C:69:U:H2'	3:C:70:C:O4'	2.02	0.59
5:E:29:A:H4'	5:E:30:C:H5'	1.83	0.59
16:S:125:VAL:HG22	16:S:127:GLY:H	1.66	0.59
17:T:138:LEU:HD21	17:T:142:ILE:HD11	1.85	0.59
5:E:47:G:OP2	19:V:86:ARG:NH2	2.35	0.59
20:W:83:GLN:HA	20:W:100:ASN:CB	2.32	0.59
20:W:98:GLU:HB2	22:Y:23:PRO:HA	1.84	0.59
1:A:1340:G:O2'	1:A:1341:C:H5'	2.02	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1737:C:H2'	1:A:1738:G:C8	2.38	0.59
2:B:1518:C:O2'	2:B:1519:U:H5'	2.02	0.59
2:B:1557:A:H2'	2:B:1558:C:O4'	2.02	0.59
2:B:570:G:H22	2:B:1354:C:C4'	2.15	0.59
3:C:116:C:C2'	3:C:117:A:H5'	2.32	0.59
16:S:166:VAL:HG23	16:S:178:VAL:CG2	2.32	0.59
1:A:482:C:O2	1:A:753:G:N2	2.19	0.59
2:B:1222:G:H2'	2:B:1223:C:O4'	2.03	0.59
5:E:3:U:H2'	5:E:4:G:H8	1.67	0.59
12:O:123:TYR:CD1	12:O:127:PRO:HG2	2.38	0.59
12:O:26:VAL:HG12	12:O:52:THR:HB	1.83	0.59
12:O:30:LYS:HD3	12:O:55:ARG:NH2	2.17	0.59
16:S:75:ASN:HD22	16:S:145:HIS:HE1	1.50	0.59
1:A:921:A:H2'	1:A:922:A:H5'	1.83	0.59
2:B:462:A:O2'	7:G:105:C:O2	2.18	0.59
10:L:144:VAL:HG22	10:L:152:SER:HB2	1.84	0.59
10:L:77:VAL:HG12	10:L:78:ARG:N	2.16	0.59
16:S:78:VAL:HG12	16:S:80:ILE:CG1	2.32	0.59
1:A:1153:A:C2'	1:A:1154:A:H5'	2.32	0.59
1:A:402:G:N2	1:A:405:A:OP2	2.29	0.59
1:A:758:G:H2'	1:A:759:C:H6	1.67	0.59
4:D:28:C:OP1	10:L:143:ARG:NH2	2.35	0.59
11:N:46:LEU:O	11:N:46:LEU:HD23	2.03	0.59
13:P:132:ASP:CG	13:P:139:TRP:HE1	2.01	0.59
14:Q:156:ARG:HE	14:Q:160:ARG:HE	1.49	0.59
16:S:74:ARG:HG3	16:S:76:TYR:CE2	2.37	0.59
17:T:109:TYR:OH	17:T:139:MET:SD	2.60	0.59
17:T:90:PRO:HD2	17:T:93:GLU:OE1	2.03	0.59
2:B:641:A:C2	20:W:39:ILE:HG23	2.37	0.59
1:A:33:A:H2'	1:A:34:A:O4'	2.02	0.59
1:A:423:A2M:H2'	1:A:423:A2M:N3	2.16	0.59
2:B:1390:A:H2'	2:B:1391:C:H5'	1.84	0.59
4:D:12:U:OP2	4:D:67:C:O2'	2.21	0.59
2:B:752:C:H2'	2:B:753:C:C6	2.38	0.59
3:C:142:C:H2'	3:C:143:C:C6	2.37	0.59
5:E:62:C:H2'	5:E:63:A:H8	1.66	0.59
13:P:7:ILE:HD13	13:P:53:LEU:CD2	2.33	0.59
14:Q:192:HIS:O	14:Q:201:ARG:NH1	2.36	0.59
14:Q:54:ARG:HG2	14:Q:55:LEU:N	2.18	0.59
17:T:106:LEU:HD21	17:T:138:LEU:HD11	1.84	0.59
18:U:17:LYS:HB2	18:U:22:HIS:CE1	2.38	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1760:A:H5'	21:X:121:THR:HG22	1.85	0.59
1:A:1093:A:H2'	1:A:1094:C:O4'	2.03	0.59
1:A:1164:G:N3	2:B:1196:A:H2'	2.17	0.59
1:A:1313:A:O2'	2:B:1395:C:O2'	2.20	0.59
2:B:542:C:H2'	2:B:588:A:H61	1.67	0.59
12:O:126:ILE:HD11	12:O:130:VAL:HG12	1.83	0.59
1:A:9:U:H2'	1:A:10:G:O4'	2.03	0.58
2:B:1258:C:H2'	2:B:1259:G:O4'	2.02	0.58
2:B:718:A:C3'	2:B:719:A:H5'	2.28	0.58
5:E:103:U:H3	5:E:129:G:H1	1.50	0.58
5:E:205:U:H2'	5:E:206:G:O4'	2.03	0.58
9:I:71:MET:HE1	9:I:87:ALA:HB2	1.83	0.58
1:A:148:G:H5''	14:Q:71:THR:HG21	1.85	0.58
16:S:144:TYR:HA	16:S:149:LEU:HD22	1.85	0.58
16:S:46:MET:CE	18:U:148:ARG:HD3	2.33	0.58
19:V:32:ILE:HB	19:V:33:PRO:HD3	1.84	0.58
20:W:119:PRO:HD3	22:Y:26:PHE:CE2	2.38	0.58
21:X:115:ILE:HD12	21:X:154:LEU:HD12	1.85	0.58
23:Z:98:PRO:O	23:Z:101:VAL:HG22	2.03	0.58
1:A:1782:A:H61	1:A:1793:U:H3	1.50	0.58
1:A:356:G:H2'	1:A:357:C:O4'	2.03	0.58
1:A:430:A:H2'	1:A:431:A:C8	2.38	0.58
9:I:71:MET:HE3	9:I:87:ALA:HB2	1.85	0.58
12:O:26:VAL:HG23	12:O:26:VAL:O	2.02	0.58
12:O:28:ASP:OD1	12:O:55:ARG:HD3	2.02	0.58
13:P:28:VAL:CG2	13:P:39:GLU:HB3	2.32	0.58
17:T:95:TRP:HZ3	17:T:130:ASN:HB3	1.67	0.58
20:W:56:LEU:HD11	20:W:121:ALA:CB	2.33	0.58
21:X:166:ILE:HA	21:X:172:LYS:HA	1.85	0.58
1:A:1012:G:N2	1:A:1015:A:OP2	2.36	0.58
2:B:1390:A:C2'	2:B:1391:C:H5'	2.32	0.58
5:E:52:G:O2'	5:E:53:C:H5'	2.02	0.58
8:H:93:G:H2'	8:H:94:G:C5'	2.33	0.58
6:F:53:G:H5''	13:P:122:PHE:CE2	2.39	0.58
15:R:5:SER:H	15:R:147:GLN:HE22	1.50	0.58
12:O:150:SER:HB2	16:S:155:HIS:NE2	2.18	0.58
18:U:42:VAL:HG21	18:U:89:ILE:HD11	1.84	0.58
1:A:1545:C:N4	1:A:1575:G:O6	2.19	0.58
1:A:755:G:H21	1:A:1623:A:H8	1.50	0.58
2:B:1648:U:C2'	2:B:1649:A:H5''	2.33	0.58
4:D:9:C:C2'	4:D:10:C:H5'	2.32	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:P:5:ASN:HD21	13:P:59:LEU:C	2.07	0.58
1:A:1232:A:O2'	18:U:102:GLN:HG2	2.03	0.58
3:C:71:A:H3'	23:Z:48:ARG:HG3	1.86	0.58
1:A:1312:A:H2'	1:A:1313:A:C8	2.38	0.58
1:A:1734:U:H4'	1:A:1735:U:O5'	2.04	0.58
1:A:505:U:O2'	1:A:506:C:H5'	2.03	0.58
2:B:495:A:N6	2:B:533:G:H1'	2.18	0.58
7:G:29:G:O2'	7:G:164:A:N1	2.25	0.58
9:I:188:ARG:HH22	9:I:191:ARG:NH1	2.01	0.58
1:A:1594:G:O2'	1:A:1595:A:H5'	2.03	0.58
1:A:505:U:C2'	1:A:506:C:H5'	2.34	0.58
2:B:1516:A2M:H8	2:B:1516:A2M:O5'	2.03	0.58
2:B:546:U:O3'	2:B:764:G:N2	2.36	0.58
9:I:48:VAL:O	9:I:52:LEU:HB2	2.04	0.58
14:Q:56:ARG:HG3	14:Q:57:ARG:HG3	1.86	0.58
16:S:50:LYS:NZ	18:U:148:ARG:HD2	2.18	0.58
2:B:99:A:H4'	17:T:83:GLY:O	2.03	0.58
1:A:1073:5MC:H2'	1:A:1074:G:C8	2.38	0.58
1:A:1350:A:H2'	1:A:1351:U:O4'	2.03	0.58
2:B:687:A:O2'	7:G:114:U:O2'	2.22	0.58
4:D:3:G:O2'	4:D:4:U:H5'	2.04	0.58
13:P:33:GLY:O	13:P:53:LEU:HD12	2.03	0.58
13:P:73:THR:O	13:P:76:ASN:HB3	2.04	0.58
19:V:31:THR:HG22	19:V:75:ASN:HB2	1.85	0.58
1:A:1165:G:N2	1:A:1166:U:O4	2.29	0.58
1:A:1962:A:O2'	1:A:1963:U:H5'	2.04	0.58
1:A:842:U:OP1	1:A:947:A:O2'	2.16	0.58
2:B:865:A:O2'	2:B:866:A:H5'	2.04	0.58
6:F:67:A:HO2'	6:F:68:C:P	2.27	0.58
16:S:166:VAL:HG11	16:S:169:VAL:CG1	2.34	0.58
1:A:133:A:H2	1:A:176:G:N3	2.02	0.58
2:B:1184:C:O2'	2:B:1185:A:H5''	2.03	0.58
2:B:1225:C:OP2	2:B:1246:G:N1	2.28	0.58
10:L:145:ALA:HA	10:L:152:SER:O	2.04	0.58
16:S:10:CYS:SG	16:S:28:LYS:HG3	2.43	0.58
19:V:66:GLU:OE2	19:V:67:LYS:HE3	2.04	0.58
1:A:1687:C:N3	1:A:1710:OMG:N1	2.47	0.58
1:A:503:C:H2'	1:A:504:C:H6	1.68	0.58
2:B:1509:G:O2'	2:B:1510:A:H5'	2.04	0.58
1:A:998:A:O2'	2:B:47:A:N3	2.37	0.58
2:B:494:U:H2'	2:B:495:A:C4	2.39	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:15:A:O2'	8:H:16:A:H5'	2.04	0.58
20:W:125:ALA:O	20:W:132:SER:HB3	2.03	0.58
20:W:18:ALA:HB2	20:W:83:GLN:NE2	2.19	0.58
1:A:1159:U:O2'	1:A:1160:G:H5'	2.04	0.57
1:A:599:C:H4'	1:A:600:A:O5'	2.03	0.57
7:G:169:C:H5'	7:G:170:A:OP1	2.04	0.57
8:H:26:C:H4'	8:H:27:A:O5'	2.03	0.57
8:H:87:C:H2'	8:H:88:C:O4'	2.04	0.57
9:I:44:PHE:CB	9:I:140:GLY:HA3	2.34	0.57
10:L:147:ARG:O	10:L:151:THR:OG1	2.18	0.57
16:S:43:PHE:O	16:S:47:MET:HG2	2.04	0.57
19:V:72:LEU:HA	19:V:76:VAL:O	2.03	0.57
2:B:1153:A:H4'	2:B:1154:U:OP1	2.03	0.57
7:G:28:U:O2'	7:G:29:G:H5'	2.04	0.57
12:O:131:VAL:HG23	12:O:136:ARG:NH2	2.18	0.57
12:O:201:ARG:HG2	13:P:120:ARG:NH2	2.19	0.57
13:P:5:ASN:HD22	13:P:60:LYS:HA	1.69	0.57
18:U:27:VAL:CG1	18:U:31:LEU:HD13	2.34	0.57
20:W:37:TYR:HB2	20:W:65:LYS:HG3	1.86	0.57
1:A:1052:U:H2'	1:A:1053:OMC:O2	2.03	0.57
1:A:1099:U:O5'	11:N:22:SER:OG	2.15	0.57
1:A:1375:A:H2'	12:O:67:ARG:HH12	1.69	0.57
1:A:1375:A:N3	1:A:1375:A:H2'	2.18	0.57
1:A:1949:A:H2'	21:X:177:ARG:NH2	2.17	0.57
1:A:232:U:H2'	1:A:233:C:O4'	2.04	0.57
2:B:1288:G:H5''	18:U:83:ARG:HH12	1.69	0.57
2:B:1500:A:O2'	20:W:40:SER:HB3	2.04	0.57
2:B:1556:U:H2'	2:B:1557:A:C8	2.38	0.57
2:B:543:OMC:N4	2:B:587:U:H2'	2.19	0.57
7:G:159:G:H2'	7:G:160:U:O4'	2.04	0.57
1:A:1027:G:H5'	1:A:1028:C:H5''	1.84	0.57
1:A:1291:A:O2'	1:A:1292:C:H5'	2.04	0.57
1:A:254:A:H1'	1:A:255:A:OP2	2.04	0.57
1:A:28:C:H4'	1:A:61:A:H4'	1.86	0.57
4:D:109:U:O2'	4:D:110:G:OP2	2.19	0.57
5:E:48:G:OP2	19:V:86:ARG:HG3	2.03	0.57
9:I:108:CYS:HB2	9:I:128:LEU:CD1	2.34	0.57
1:A:116:U:H4'	14:Q:20:PHE:CD2	2.40	0.57
16:S:78:VAL:HG22	16:S:128:VAL:HG13	1.86	0.57
20:W:86:SER:CB	20:W:96:TYR:HB3	2.34	0.57
1:A:1316:OMG:H2'	1:A:1317:G:H5'	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:461:C:H2'	1:A:462:A:H8	1.69	0.57
3:C:122:A:C2'	3:C:123:G:H5'	2.35	0.57
5:E:147:A:HO2'	5:E:148:U:P	2.27	0.57
11:N:98:ILE:HD11	11:N:100:ILE:HD12	1.85	0.57
9:I:172:PHE:HB3	11:N:7:ALA:HB2	1.85	0.57
13:P:139:TRP:CD1	13:P:140:HIS:N	2.73	0.57
14:Q:186:LYS:HD3	14:Q:191:ARG:HD2	1.86	0.57
14:Q:185:ARG:HG2	14:Q:188:ARG:NH1	2.18	0.57
16:S:153:LEU:HD23	16:S:156:ARG:NH2	2.20	0.57
19:V:48:GLU:HG3	19:V:72:LEU:HD11	1.86	0.57
20:W:119:PRO:HD3	22:Y:26:PHE:CD2	2.38	0.57
1:A:328:G:H2'	1:A:329:C:O4'	2.05	0.57
1:A:516:A:H61	1:A:587:C:N4	1.98	0.57
2:B:1111:C:N4	5:E:208:G:O2'	2.38	0.57
2:B:1326:U:H3	2:B:1361:OMG:HN1	1.51	0.57
2:B:582:G:H2'	2:B:583:C:O4'	2.04	0.57
3:C:30:U:O2'	3:C:31:A:H5'	2.05	0.57
9:I:188:ARG:NH2	9:I:191:ARG:HD2	2.20	0.57
1:A:794:A2M:H3'	1:A:794:A2M:C8	2.35	0.57
1:A:921:A:H2'	1:A:922:A:O4'	2.04	0.57
2:B:6:A:C2'	2:B:7:C:H5'	2.35	0.57
12:O:126:ILE:HG23	12:O:179:ARG:NE	2.18	0.57
12:O:42:ALA:O	12:O:46:LEU:HD13	2.03	0.57
13:P:83:ILE:HD13	13:P:86:LYS:NZ	2.19	0.57
1:A:44:A:OP2	14:Q:101:LYS:HD2	2.04	0.57
23:Z:77:ILE:O	23:Z:77:ILE:HG23	2.04	0.57
1:A:1514:U:O4	1:A:1522:G:H1'	2.05	0.57
1:A:278:A:H2'	1:A:279:A:H5'	1.86	0.57
2:B:1323:C:H2'	2:B:1324:C:O4'	2.05	0.57
2:B:1435:U:O2'	2:B:1436:C:H5'	2.04	0.57
2:B:570:G:N2	2:B:1354:C:O4'	2.38	0.57
2:B:62:A:H2'	2:B:62:A:N3	2.20	0.57
1:A:332:U:H2'	1:A:333:G:C8	2.39	0.57
1:A:845:A:H2'	1:A:846:A:C8	2.40	0.57
17:T:10:LEU:O	17:T:14:ILE:HG12	2.05	0.57
18:U:34:PHE:O	18:U:67:VAL:HG11	2.03	0.57
19:V:60:ARG:HD3	19:V:63:LYS:HZ2	1.68	0.57
1:A:1120:G:H1'	1:A:1298:G:H5''	1.87	0.57
1:A:1781:A:H2'	1:A:1782:A:O4'	2.05	0.57
2:B:117:A:H2'	2:B:118:G:H5'	1.85	0.57
2:B:1545:U:C2'	2:B:1546:G:H5'	2.35	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1579:A:H2'	2:B:1580:A:C8	2.39	0.57
2:B:490:A:H1'	2:B:627:A2M:H62	1.68	0.57
2:B:754:U:O2'	2:B:755:OMG:H5'	2.05	0.57
4:D:44:U:H2'	4:D:45:U:H6	1.70	0.57
7:G:35:A:N1	7:G:67:C:O2'	2.34	0.57
8:H:36:C:O2'	8:H:37:U:H5'	2.04	0.57
1:A:278:A:C2'	1:A:279:A:H5'	2.35	0.56
1:A:413:U:C4'	1:A:414:U:H5''	2.30	0.56
1:A:48:C:OP1	11:N:15:LYS:HE2	2.05	0.56
1:A:66:A:H2'	1:A:343:OMC:HM23	1.87	0.56
2:B:1493:U:H2'	2:B:1494:U:H6	1.70	0.56
13:P:119:SER:O	13:P:123:TRP:HD1	1.88	0.56
13:P:12:LEU:CD2	13:P:59:LEU:HD12	2.28	0.56
13:P:83:ILE:HA	13:P:86:LYS:HE3	1.87	0.56
1:A:47:A:H4'	1:A:48:C:H5'	1.86	0.56
1:A:983:A:N6	1:A:1077:G:O2'	2.39	0.56
1:A:805:A:OP2	9:I:113:SER:HA	2.06	0.56
10:L:155:GLY:O	10:L:159:ARG:HG3	2.06	0.56
11:N:121:LEU:O	11:N:125:MET:HG2	2.04	0.56
13:P:28:VAL:HG23	13:P:39:GLU:HB3	1.87	0.56
19:V:30:CYS:O	19:V:33:PRO:HD2	2.05	0.56
20:W:17:LEU:HD13	20:W:53:ALA:HB3	1.87	0.56
1:A:995:A:H2'	1:A:996:C:C6	2.40	0.56
7:G:125:G:H1	7:G:157:C:H42	1.51	0.56
20:W:83:GLN:HG2	20:W:85:LYS:O	2.05	0.56
20:W:94:VAL:HG13	22:Y:19:ARG:HB3	1.84	0.56
23:Z:32:LEU:HD21	23:Z:45:MET:HB3	1.88	0.56
1:A:355:U:O2'	1:A:356:G:H5'	2.04	0.56
1:A:588:A:H61	16:S:63:CYS:CB	2.18	0.56
1:A:868:U:H5'	1:A:869:G:H5''	1.87	0.56
1:A:94:G:H2'	1:A:95:A:C8	2.40	0.56
2:B:1329:C:O2'	2:B:1330:G:H5'	2.04	0.56
2:B:541:C:O2	2:B:593:G:N2	2.23	0.56
2:B:91:C:H3'	2:B:92:A:C8	2.39	0.56
3:C:77:A:C2	3:C:78:G:H1'	2.39	0.56
4:D:44:U:H2'	4:D:45:U:C6	2.40	0.56
7:G:38:A:H2'	7:G:39:C:C6	2.40	0.56
13:P:12:LEU:HD13	13:P:83:ILE:HG22	1.86	0.56
13:P:83:ILE:HD13	13:P:86:LYS:HZ1	1.69	0.56
15:R:13:LYS:HA	15:R:107:LEU:HD21	1.86	0.56
15:R:59:PRO:HB3	15:R:76:TRP:CG	2.40	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:T:4:LEU:O	17:T:4:LEU:HD12	2.06	0.56
1:A:988:U:H4'	1:A:1079:G:H5'	1.86	0.56
1:A:1722:A:H5''	2:B:41:A:C6	2.40	0.56
1:A:243:U:H2'	1:A:244:U:O4'	2.04	0.56
1:A:518:U:H2'	1:A:519:G:C8	2.40	0.56
2:B:719:A:H62	2:B:1437:C:H1'	1.69	0.56
2:B:1454:C:H2'	2:B:1455:C:H6	1.69	0.56
2:B:470:G:O2'	2:B:471:A:H5'	2.05	0.56
2:B:532:U:C2'	2:B:533:G:H5'	2.36	0.56
2:B:878:A:H2'	2:B:878:A:N3	2.19	0.56
9:I:65:SER:HB2	9:I:96:ASP:HB3	1.87	0.56
13:P:25:GLY:HA2	13:P:40:ASN:HB2	1.88	0.56
1:A:1364:C:O2	12:O:141:LYS:NZ	2.37	0.56
1:A:1571:G:H2'	1:A:1572:A:O4'	2.05	0.56
1:A:1792:G:H2'	1:A:1793:U:H6	1.70	0.56
1:A:587:C:OP1	16:S:7:ARG:NH1	2.36	0.56
2:B:1240:U:C2'	2:B:1241:C:H5'	2.36	0.56
7:G:128:U:N3	7:G:154:A:N1	2.44	0.56
2:B:462:A:H8	7:G:86:G:H21	1.52	0.56
16:S:14:ARG:HD3	16:S:61:LEU:HD11	1.88	0.56
17:T:105:LEU:HD21	17:T:109:TYR:CE2	2.41	0.56
21:X:160:VAL:HG23	21:X:179:SER:CA	2.36	0.56
1:A:370:C:H5'	1:A:371:A:C2	2.41	0.56
1:A:516:A:H2'	1:A:517:C:O4'	2.05	0.56
1:A:751:A:H2'	1:A:752:U:C6	2.41	0.56
2:B:9:G:H2'	2:B:10:C:H6	1.70	0.56
2:B:1183:G:H1'	2:B:1185:A:H61	1.71	0.56
2:B:10:C:C2'	2:B:11:A:H5'	2.35	0.56
2:B:458:G:O2'	2:B:459:C:H5'	2.06	0.56
5:E:135:C:H2'	5:E:136:A:C8	2.41	0.56
6:F:15:U:C2'	6:F:16:C:H5'	2.35	0.56
12:O:59:LEU:O	12:O:157:LEU:N	2.37	0.56
1:A:328:G:OP1	14:Q:196:LYS:HD3	2.05	0.56
18:U:64:VAL:HG13	18:U:72:VAL:HG13	1.87	0.56
18:U:80:VAL:CG1	18:U:83:ARG:HE	2.11	0.56
2:B:616:A:H2'	2:B:617:A:O4'	2.05	0.56
2:B:649:A:C2'	2:B:650:C:H5'	2.35	0.56
1:A:827:G:OP1	14:Q:218:ARG:NH1	2.36	0.56
15:R:36:ILE:CG2	15:R:114:ILE:HG13	2.36	0.56
1:A:1012:G:H2'	1:A:1014:A:OP2	2.05	0.56
1:A:1359:C:OP2	1:A:1360:A:O2'	2.19	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1593:A:H2'	1:A:1594:G:H5'	1.87	0.56
1:A:827:G:H2'	1:A:828:U:H5'	1.88	0.56
2:B:644:U:C3'	2:B:645:A:H5'	2.35	0.56
7:G:79:U:H1'	7:G:81:C:OP1	2.05	0.56
8:H:123:G:H2'	8:H:124:C:C6	2.41	0.56
13:P:17:ARG:HG3	16:S:161:PRO:HA	1.87	0.56
17:T:142:ILE:HA	17:T:145:VAL:HG12	1.88	0.56
5:E:56:U:OP1	19:V:100:LYS:NZ	2.39	0.56
1:A:470:U:H2'	1:A:471:G:O4'	2.05	0.56
2:B:99:A:O2'	2:B:100:U:H5'	2.06	0.56
2:B:1187:A:H2'	2:B:1188:U:O4'	2.06	0.56
2:B:1496:A:C2'	2:B:1497:C:H5'	2.35	0.56
5:E:182:U:O2'	5:E:183:U:H5'	2.06	0.56
13:P:15:ILE:HD12	13:P:51:GLN:HG3	1.88	0.56
17:T:141:HIS:O	17:T:145:VAL:N	2.37	0.56
18:U:92:ARG:HG2	18:U:94:GLU:OE1	2.06	0.56
21:X:178:LEU:HD12	21:X:184:ALA:CA	2.35	0.56
1:A:777:OMC:C6	1:A:777:OMC:H5''	2.39	0.56
2:B:24:C:H1'	2:B:31:U:C1'	2.35	0.56
3:C:62:A:H5''	3:C:62:A:N3	2.21	0.56
4:D:32:A:H2'	4:D:41:G:O6	2.06	0.56
16:S:80:ILE:HD11	16:S:108:ALA:HB1	1.88	0.56
1:A:1295:A:H2'	1:A:1296:G:C8	2.41	0.55
1:A:233:C:C2'	1:A:234:A:H5'	2.35	0.55
1:A:435:G:H2'	1:A:436:A:H5'	1.88	0.55
3:C:159:U:H2'	3:C:159:U:O2	2.06	0.55
9:I:29:LEU:HD11	9:I:130:PHE:HB2	1.88	0.55
12:O:102:VAL:HG11	12:O:120:LEU:HD21	1.84	0.55
12:O:140:PRO:HA	12:O:143:GLN:HG2	1.86	0.55
2:B:1506:A:H2'	2:B:1507:G:C8	2.41	0.55
1:A:389:G:H2'	3:C:24:G:O2'	2.06	0.55
8:H:111:C:O2'	8:H:112:U:H5''	2.05	0.55
8:H:131:A:C2'	8:H:132:C:H5'	2.37	0.55
9:I:86:ILE:O	9:I:144:PHE:N	2.35	0.55
11:N:24:LYS:NZ	11:N:24:LYS:HB2	2.21	0.55
13:P:8:ARG:NH2	13:P:62:SER:OG	2.40	0.55
16:S:131:ILE:HG23	16:S:135:GLN:HB2	1.89	0.55
18:U:27:VAL:HG12	18:U:31:LEU:HD13	1.87	0.55
19:V:87:LYS:HG2	19:V:117:TYR:OH	2.06	0.55
1:A:371:A:H2'	1:A:371:A:N3	2.21	0.55
1:A:916:U:O2'	1:A:917:G:H5'	2.06	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:117:U:H2'	5:E:119:G:OP2	2.07	0.55
11:N:185:ASN:HD21	11:N:188:LYS:HD2	1.69	0.55
13:P:14:ARG:HD2	13:P:96:ILE:HD13	1.87	0.55
14:Q:138:ASN:OD1	14:Q:139:ALA:N	2.39	0.55
18:U:43:VAL:HG23	18:U:58:HIS:CE1	2.41	0.55
22:Y:53:VAL:HG23	22:Y:56:THR:CG2	2.36	0.55
23:Z:29:SER:HA	23:Z:46:PRO:HA	1.87	0.55
1:A:1288:G:N7	9:I:13:ARG:NH2	2.54	0.55
1:A:266:C:H5'	23:Z:31:PRO:HD3	1.88	0.55
1:A:41:C:O2'	1:A:42:A:H5'	2.06	0.55
2:B:1185:A:H5'	2:B:1186:U:C5'	2.36	0.55
2:B:55:C:H2'	2:B:56:U:H5'	1.88	0.55
5:E:126:A:H1'	5:E:127:C:OP2	2.07	0.55
5:E:150:C:H2'	5:E:151:A:C8	2.41	0.55
17:T:109:TYR:CD2	17:T:142:ILE:HG21	2.41	0.55
16:S:126:LEU:HD22	18:U:148:ARG:HB2	1.89	0.55
19:V:52:GLN:HB2	19:V:64:LEU:HD12	1.88	0.55
2:B:1393:G:O2'	2:B:1394:G:H5'	2.07	0.55
12:O:107:PRO:HG2	12:O:112:ARG:NH2	2.22	0.55
13:P:12:LEU:HD13	13:P:83:ILE:CG2	2.36	0.55
16:S:149:LEU:O	16:S:149:LEU:HD12	2.06	0.55
17:T:116:ASP:OD1	17:T:117:ARG:N	2.40	0.55
17:T:15:LEU:HD13	17:T:52:ARG:HB2	1.88	0.55
1:A:1495:G:C4	12:O:78:LYS:HD3	2.41	0.55
1:A:1511:A:H2'	1:A:1512:A:O4'	2.07	0.55
1:A:1689:G:C2	1:A:1691:A:H3'	2.41	0.55
1:A:1740:G:H2'	1:A:1741:C:O4'	2.07	0.55
1:A:810:A:N6	1:A:834:U:C2	2.75	0.55
2:B:1107:7MG:O2'	2:B:1108:A:OP1	2.23	0.55
2:B:1572:G:H4'	2:B:1573:C:C6	2.42	0.55
2:B:498:U:C2'	2:B:499:U:H5'	2.37	0.55
2:B:630:C:H3'	2:B:631:C:C6	2.41	0.55
5:E:99:G:H2'	5:E:100:C:O4'	2.06	0.55
12:O:107:PRO:HB2	12:O:110:THR:CG2	2.36	0.55
13:P:66:SER:O	13:P:69:CYS:HB2	2.07	0.55
1:A:1326:A:H5'	1:A:1592:U:C1'	2.35	0.55
1:A:413:U:H5"	1:A:414:U:O5'	2.07	0.55
2:B:775:G:H2'	2:B:776:G:H8	1.71	0.55
7:G:115:A:N3	7:G:117:C:O2'	2.37	0.55
6:F:46:G:H4'	12:O:201:ARG:NH1	2.21	0.55
1:A:1748:C:P	15:R:127:ARG:HH12	2.30	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:S:40:LYS:HE2	16:S:63:CYS:SG	2.47	0.55
21:X:109:TRP:HH2	21:X:141:ASN:HB2	1.71	0.55
22:Y:57:ARG:CZ	22:Y:61:ARG:HH21	2.19	0.55
23:Z:25:ARG:HB3	23:Z:72:ARG:CZ	2.37	0.55
1:A:1537:G:O2'	1:A:1538:G:H5'	2.07	0.55
1:A:1747:G:H4'	15:R:127:ARG:NH1	2.22	0.55
1:A:1798:U:H2'	1:A:1800:A:C5'	2.37	0.55
1:A:21:G:H1'	3:C:103:A:N3	2.22	0.55
3:C:153:C:O2'	3:C:154:A:H5'	2.07	0.55
8:H:42:U:O2'	8:H:98:U:O2	2.22	0.55
6:F:14:C:P	12:O:136:ARG:HH22	2.29	0.55
8:H:93:G:O2'	8:H:94:G:H5'	2.06	0.55
13:P:74:LEU:O	13:P:78:LEU:HG	2.06	0.55
1:A:1646:A:H2'	1:A:1647:G:H5'	1.88	0.55
1:A:1804:A2M:H4'	1:A:1805:A:O5'	2.07	0.55
2:B:1145:U:H2'	2:B:1146:U:H6	1.72	0.55
2:B:1229:G:O2'	2:B:1230:G:H5'	2.07	0.55
2:B:1287:A:OP2	2:B:1288:G:N2	2.38	0.55
2:B:1643:C:H42	2:B:1647:G:H1	1.55	0.55
3:C:8:C:C2'	3:C:9:G:H5'	2.37	0.55
1:A:371:A:O2'	11:N:24:LYS:HE2	2.06	0.55
12:O:80:LYS:HD2	12:O:86:LEU:CD1	2.30	0.55
12:O:99:LEU:HA	12:O:102:VAL:CG1	2.36	0.55
14:Q:80:VAL:HG21	14:Q:122:LEU:HB2	1.89	0.55
15:R:129:THR:CA	15:R:139:TYR:CE2	2.86	0.55
15:R:30:PHE:HA	15:R:119:VAL:CG1	2.25	0.55
15:R:60:PHE:CE2	15:R:82:ARG:HG2	2.42	0.55
7:G:65:G:OP1	20:W:14:ARG:HD3	2.06	0.55
1:A:190:G:OP1	23:Z:118:ARG:NH1	2.40	0.55
1:A:100:A:H5''	14:Q:198:SER:HB2	1.89	0.54
1:A:1037:A:O2'	1:A:1038:U:P	2.65	0.54
1:A:88:A:H2'	1:A:89:G:O4'	2.07	0.54
1:A:967:G:H2'	1:A:968:A:N7	2.21	0.54
2:B:1135:G:H3'	2:B:1136:G:H8	1.71	0.54
2:B:1145:U:H2'	2:B:1146:U:C6	2.41	0.54
2:B:1277:A:O2'	2:B:1298:A:N1	2.33	0.54
2:B:1478:C:H2'	2:B:1479:U:C6	2.42	0.54
2:B:1525:U:OP2	2:B:1547:G:N2	2.35	0.54
2:B:1642:A:N6	2:B:1649:A:C4	2.75	0.54
2:B:488:A:H4'	2:B:489:A:O5'	2.07	0.54
2:B:520:U:H4'	2:B:521:A:O5'	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:635:U:H2'	2:B:636:C:C6	2.42	0.54
5:E:11:C:O2'	5:E:12:G:H5'	2.07	0.54
12:O:107:PRO:HB2	12:O:110:THR:HG22	1.89	0.54
14:Q:159:ARG:HD2	14:Q:168:VAL:HG21	1.89	0.54
18:U:14:LEU:HD11	18:U:58:HIS:HD2	1.72	0.54
1:A:1046:U:H2'	1:A:1046:U:O2	2.07	0.54
1:A:1524:C:O2'	1:A:1525:5MC:H5'	2.07	0.54
2:B:1296:C:H3'	2:B:1297:G:H5''	1.89	0.54
5:E:183:U:H2'	5:E:184:C:C6	2.42	0.54
8:H:131:A:O2'	8:H:132:C:H5'	2.08	0.54
1:A:847:G:H4'	11:N:198:ARG:NH1	2.21	0.54
14:Q:161:ASP:OD2	14:Q:164:ILE:HG22	2.07	0.54
15:R:51:VAL:HG21	15:R:58:ILE:HG12	1.89	0.54
17:T:4:LEU:CD1	17:T:24:LEU:HD22	2.36	0.54
1:A:1161:U:H4'	18:U:100:ARG:HB2	1.89	0.54
21:X:167:ARG:HB3	21:X:168:PRO:HD2	1.88	0.54
1:A:1599:G:H5'	1:A:1600:G:OP1	2.06	0.54
1:A:1689:G:N2	1:A:1691:A:H3'	2.22	0.54
1:A:1805:A:H2'	1:A:1805:A:OP2	2.08	0.54
1:A:877:C:H4'	9:I:140:GLY:O	2.07	0.54
1:A:916:U:C2'	1:A:917:G:H5'	2.38	0.54
1:A:934:C:O2	2:B:1278:A:O2'	2.25	0.54
1:A:805:A:O2'	1:A:953:A:N1	2.32	0.54
2:B:522:U:C2'	2:B:523:G:H5'	2.37	0.54
2:B:753:C:H2'	2:B:754:U:C6	2.41	0.54
4:D:3:G:N2	4:D:116:A:H2	1.96	0.54
12:O:191:GLU:OE1	12:O:194:ARG:NH2	2.38	0.54
1:A:1369:G:OP2	1:A:1369:G:H4'	2.08	0.54
1:A:146:U:O2'	21:X:192:GLY:HA2	88.73	0.54
1:A:151:G:OP1	14:Q:163:ARG:NH2	2.31	0.54
1:A:1636:C:C2'	1:A:1637:A:H5'	2.37	0.54
1:A:1937:G:O2'	1:A:1938:G:H3'	2.07	0.54
1:A:337:A:N1	1:A:359:A:N6	2.54	0.54
2:B:705:C:O2'	2:B:706:G:H5'	2.08	0.54
2:B:781:G:H4'	14:Q:40[B]:ARG:HH22	1.72	0.54
5:E:201:A:C2'	5:E:202:A:H5'	2.37	0.54
14:Q:172:HIS:HB3	14:Q:175:ARG:CD	2.37	0.54
22:Y:20:ARG:HB3	22:Y:32:VAL:HG22	1.89	0.54
1:A:1226:A:N3	4:D:79:G:O2'	2.38	0.54
1:A:1370:G:N1	1:A:1509:C:N3	2.38	0.54
1:A:232:U:O2'	1:A:233:C:H5'	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:367:A:H5''	1:A:368:U:OP2	2.08	0.54
2:B:647:A:O2'	2:B:648:G:H5'	2.08	0.54
12:O:100:ARG:HA	12:O:103:ARG:HG2	1.88	0.54
12:O:79:ARG:NH1	12:O:84:PRO:HG3	2.21	0.54
13:P:11:ARG:HD3	13:P:62:SER:HB3	1.89	0.54
16:S:7:ARG:HB2	16:S:9:TYR:HE2	1.72	0.54
17:T:135:LYS:O	17:T:139:MET:N	2.38	0.54
20:W:47:ARG:HB3	20:W:50:ARG:NH1	2.22	0.54
1:A:1918:A:H1'	21:X:83:GLN:NE2	2.22	0.54
1:A:504:C:H2'	1:A:505:U:H6	1.73	0.54
2:B:1383:A:H2'	2:B:1384:G:O4'	2.07	0.54
3:C:156:A:H4'	3:C:157:U:OP2	2.06	0.54
3:C:1:A:H3'	3:C:2:A:H2	1.73	0.54
6:F:62:U:H4'	6:F:63:A:H3'	1.88	0.54
8:H:24:A:C2'	8:H:25:A:H5'	2.37	0.54
17:T:12:ALA:HA	17:T:22:VAL:HG11	1.90	0.54
18:U:24:VAL:HB	18:U:25:PRO:HD2	1.90	0.54
19:V:110:LEU:O	19:V:117:TYR:HA	2.07	0.54
22:Y:53:VAL:HG23	22:Y:56:THR:HG23	1.89	0.54
1:A:1610:A:C2	1:A:1646:A:N6	2.72	0.54
1:A:249:C:O2'	1:A:250:A:H5'	2.08	0.54
1:A:413:U:C4'	1:A:414:U:C5'	2.85	0.54
1:A:782:A:H5'	2:B:707:A:C5'	2.38	0.54
1:A:1677:A:H1'	2:B:693:U:O5'	2.08	0.54
2:B:711:U:H3	2:B:728:A2M:C2	2.21	0.54
19:V:47:PHE:O	19:V:77:LEU:HD11	2.08	0.54
21:X:90:TYR:HE2	21:X:92:ARG:HG3	1.72	0.54
23:Z:82:VAL:HG12	23:Z:94:VAL:HG13	1.89	0.54
1:A:1104:G:H22	1:A:1127:OMU:H5''	1.72	0.54
1:A:840:A:H4'	1:A:841:C:OP1	2.07	0.54
2:B:1226:A:O2'	2:B:1250:A:OP1	2.16	0.54
2:B:1271:U:HO2'	2:B:1303:G:HO2'	1.34	0.54
2:B:1516:A2M:H1'	2:B:1551:U:C4	2.43	0.54
1:A:1680:G:N1	7:G:101:A:OP1	2.28	0.54
11:N:62:GLN:OE1	11:N:169:PRO:HD2	2.08	0.54
15:R:36:ILE:HG22	15:R:114:ILE:HG13	1.89	0.54
1:A:1319:G:O2'	1:A:1320:C:H5'	2.07	0.54
2:B:852:G:H1'	2:B:853:C:P	2.47	0.54
4:D:13:A:H5''	4:D:110:G:OP2	2.08	0.54
4:D:111:C:H2'	4:D:112:U:C6	2.43	0.54
5:E:101:C:H2'	5:E:102:U:O4'	2.08	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:39:C:H2'	5:E:40:C:O4'	2.08	0.54
9:I:92:ASP:CG	9:I:111:ARG:HH11	2.11	0.54
12:O:102:VAL:HG11	12:O:120:LEU:HD23	1.89	0.54
2:B:770:A:H5'	14:Q:106:LEU:HD11	1.89	0.54
8:H:18:C:O2	15:R:69:ARG:HD2	2.08	0.54
1:A:442:A:C4'	1:A:443:U:H5'	2.29	0.54
1:A:842:U:H5''	1:A:946:G:H1'	1.89	0.54
2:B:688:G:H5''	7:G:113:C:O2'	2.08	0.54
2:B:701:G:OP2	15:R:25:HIS:NE2	2.39	0.54
4:D:53:U:H4'	4:D:54:A:H8	1.72	0.54
7:G:24:A:H2'	7:G:25:U:C6	2.43	0.54
1:A:1539:U:O2'	9:I:15:VAL:HG22	2.07	0.54
18:U:100:ARG:NE	18:U:103:GLU:OE1	2.41	0.54
2:B:1282:U:O2'	18:U:88:ARG:O	2.24	0.54
1:A:1368:U:C6	13:P:18:GLY:HA2	2.43	0.53
1:A:419:A:H4'	1:A:420:A:OP1	2.06	0.53
2:B:100:U:H2'	2:B:101:G:H8	1.71	0.53
2:B:1214:U:H4'	2:B:1215:A:O4'	2.08	0.53
2:B:624:5MC:H2'	2:B:625:A:H5''	1.89	0.53
3:C:116:C:O2'	3:C:117:A:H5'	2.09	0.53
4:D:76:U:H2'	4:D:77:A:H5'	1.88	0.53
6:F:47:C:O2'	6:F:48:G:H5'	2.08	0.53
1:A:101:G:H2'	1:A:102:A:O4'	2.07	0.53
1:A:955:U:H2'	1:A:956:G:C8	2.42	0.53
10:L:167:HIS:O	10:L:170:GLU:HB2	2.08	0.53
13:P:128:PHE:O	13:P:132:ASP:N	2.41	0.53
15:R:27:LYS:O	15:R:31:GLU:HG2	2.08	0.53
2:B:104:U:O2'	2:B:116:A:N7	2.34	0.53
2:B:21:OMC:HM22	2:B:21:OMC:O3'	2.08	0.53
2:B:705:C:H2'	2:B:706:G:O4'	2.08	0.53
4:D:45:U:H2'	4:D:46:G:H8	1.70	0.53
5:E:123:G:H4'	5:E:127:C:H5'	1.90	0.53
5:E:29:A:H4'	5:E:30:C:C5'	2.38	0.53
6:F:45:G:O2'	6:F:46:G:H5'	2.08	0.53
7:G:24:A:H2'	7:G:25:U:H6	1.73	0.53
11:N:33:GLN:N	11:N:34:PRO:HD2	2.23	0.53
1:A:71:C:H1'	11:N:66:PRO:O	2.08	0.53
12:O:138:VAL:HG13	12:O:143:GLN:NE2	2.23	0.53
14:Q:110:LEU:HD21	14:Q:117:ILE:HD11	1.88	0.53
14:Q:45:GLU:OE2	14:Q:49:GLN:NE2	2.41	0.53
12:O:137:VAL:HG11	16:S:177:VAL:HG11	1.89	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:V:112:ARG:HB2	19:V:118:GLN:HG2	1.89	0.53
22:Y:3:THR:HG22	22:Y:14:HIS:ND1	2.22	0.53
1:A:1037:A:HO2'	1:A:1038:U:P	2.31	0.53
1:A:942:G:O2'	1:A:943:G:H5'	2.08	0.53
2:B:1313:G:C2'	2:B:1314:G:H5'	2.38	0.53
2:B:527:C:H2'	2:B:528:A:C8	2.43	0.53
2:B:714:A:H2'	2:B:715:G:O4'	2.09	0.53
9:I:35:PHE:CE1	9:I:39:ARG:HG3	2.43	0.53
10:L:26:ASN:O	10:L:132:ASP:N	2.40	0.53
11:N:199:PHE:O	11:N:203:ARG:HG3	2.08	0.53
18:U:43:VAL:HG13	18:U:43:VAL:O	2.08	0.53
18:U:57:TYR:OH	18:U:87:LYS:HE2	2.09	0.53
2:B:460:U:H5'	22:Y:46:ARG:HD3	1.90	0.53
1:A:1042:G:C2	1:A:1053:OMC:H5	2.25	0.53
1:A:1117:G:N1	1:A:1592:U:OP2	2.28	0.53
1:A:494:C:H2'	1:A:495:A:O4'	2.08	0.53
1:A:69:A:C2'	1:A:70:A:H5'	2.38	0.53
2:B:1136:G:H5'	2:B:1137:A:OP2	2.09	0.53
1:A:1085:C:H5"	2:B:484:A:N7	2.23	0.53
2:B:628:U:O4'	2:B:1530:C:O2'	2.20	0.53
5:E:192:U:O2	5:E:195:A:C6	2.62	0.53
14:Q:65:ARG:HH11	14:Q:71:THR:HG23	1.73	0.53
15:R:35:VAL:HG21	15:R:58:ILE:HG23	1.90	0.53
22:Y:46:ARG:HB2	22:Y:48:LYS:HG2	1.91	0.53
1:A:1804:A2M:N6	21:X:88:HIS:HA	2.24	0.53
1:A:308:G:O3'	14:Q:66:MET:HE1	2.09	0.53
1:A:463:A:N1	3:C:4:G:N2	2.52	0.53
11:N:200:PHE:O	11:N:204:ARG:HG3	2.08	0.53
11:N:78:ARG:O	11:N:103:ASP:HB2	2.09	0.53
11:N:82:VAL:HG12	11:N:86:LYS:HE2	1.90	0.53
15:R:85:ARG:O	15:R:89:VAL:HG13	2.07	0.53
1:A:1799:U:H3	14:Q:48:HIS:HD1	1.57	0.53
1:A:1943:U:O2	1:A:1943:U:H3'	2.08	0.53
2:B:1240:U:H2'	2:B:1241:C:C6	2.40	0.53
2:B:477:A:OP1	2:B:533:G:O2'	2.23	0.53
2:B:490:A:H62	2:B:1545:U:C4'	2.21	0.53
4:D:11:A:O2'	4:D:12:U:H3'	2.08	0.53
4:D:38:U:N3	4:D:41:G:OP2	2.33	0.53
9:I:154:GLU:HG2	9:I:157:LYS:HE2	1.89	0.53
13:P:41:PRO:HB3	13:P:75:LYS:HD3	1.91	0.53
1:A:8:C:OP1	14:Q:56:ARG:NH2	2.41	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:W:82:ARG:NH1	20:W:119:PRO:O	2.40	0.53
21:X:110:ASP:O	21:X:114:VAL:HG23	2.08	0.53
1:A:1001:U:H2'	1:A:1002:G:O4'	2.09	0.53
1:A:1105:C:OP1	1:A:1130:G:H5'	2.09	0.53
1:A:1669:G:C2'	1:A:1670:G:H5'	2.39	0.53
1:A:53:C:C2'	1:A:54:G:H5'	2.39	0.53
2:B:1269:G:H2'	2:B:1270:C:C6	2.43	0.53
2:B:1556:U:H2'	2:B:1557:A:H8	1.74	0.53
2:B:1641:U:O2'	2:B:1642:A:H2'	2.09	0.53
4:D:85:C:H2'	4:D:86:A:C8	2.44	0.53
9:I:44:PHE:CG	9:I:140:GLY:HA3	2.43	0.53
1:A:1539:U:O2	9:I:14:VAL:HA	2.09	0.53
14:Q:113:ASN:HD22	14:Q:183:ALA:HB1	1.74	0.53
1:A:1144:U:H2'	1:A:1145:G:O4'	2.08	0.53
1:A:1650:U:O2'	1:A:1651:C:H5'	2.09	0.53
1:A:1765:U:H5'	2:B:13:A:OP2	2.08	0.53
1:A:351:U:H2'	1:A:352:G:C8	2.44	0.53
1:A:596:G:O2'	1:A:597:G:H5'	2.09	0.53
1:A:998:A:H2'	1:A:999:G:O4'	2.09	0.53
2:B:1481:A:H4'	2:B:1482:G:H8	1.73	0.53
3:C:28:C:H5''	11:N:32:ASN:CB	2.35	0.53
5:E:50:G:H4'	5:E:152:G:H4'	1.91	0.53
6:F:12:U:O2'	6:F:13:U:OP1	2.20	0.53
14:Q:65:ARG:NH1	14:Q:71:THR:HG23	2.24	0.53
16:S:29:PHE:CE2	16:S:31:VAL:CG1	2.92	0.53
1:A:1509:C:C2'	1:A:1510:C:H5'	2.39	0.53
1:A:1719:U:H2'	1:A:1720:G:H5'	1.91	0.53
1:A:76:A:H5'	11:N:105:ARG:NH2	2.23	0.53
2:B:1511:A:H8	2:B:1511:A:OP2	1.91	0.53
1:A:1721:G:O2'	2:B:42:A:OP2	2.26	0.53
2:B:865:A:H2'	2:B:866:A:C8	2.43	0.53
3:C:151:G:H2'	3:C:152:C:O4'	2.09	0.53
13:P:39:GLU:OE1	13:P:48:ARG:N	2.42	0.53
1:A:1785:U:H5''	14:Q:83:ARG:HE	1.74	0.53
15:R:36:ILE:HG13	15:R:48:TYR:OH	2.09	0.53
1:A:1315:C:H4'	2:B:1435:U:O2'	2.08	0.52
1:A:953:A:H4'	1:A:954:G:H5'	1.90	0.52
2:B:19:C:O2'	2:B:25:A:N1	2.38	0.52
2:B:875:C:H2'	2:B:912:C:C5	2.44	0.52
3:C:154:A:O2'	3:C:155:U:H5'	2.08	0.52
3:C:4:G:H2'	3:C:5:U:H5'	1.90	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:P:64:GLU:OE1	13:P:81:LYS:HE3	2.09	0.52
16:S:136:VAL:CG1	16:S:141:ILE:HD11	2.33	0.52
19:V:51:PHE:CE1	19:V:93:LEU:HD12	2.44	0.52
22:Y:14:HIS:HB3	22:Y:15:PRO:HD2	1.91	0.52
23:Z:86:LYS:HG2	23:Z:87:ALA:H	1.73	0.52
1:A:1918:A:C2	1:A:1919:G:H1'	2.44	0.52
1:A:452:A:H2'	1:A:453:A:O4'	2.09	0.52
1:A:797:A:H2'	1:A:798:G:C8	2.45	0.52
1:A:90:C:C2'	1:A:91:G:H5'	2.39	0.52
2:B:1177:G:C8	2:B:1435:U:H5''	2.45	0.52
2:B:755:OMG:N1	2:B:1382:C:N3	2.51	0.52
2:B:682:U:H2'	2:B:683:OMC:O4'	2.09	0.52
3:C:100:U:H2'	3:C:101:U:O4'	2.08	0.52
4:D:53:U:H4'	4:D:54:A:C8	2.44	0.52
12:O:72:TYR:O	12:O:75:PHE:HB3	2.09	0.52
21:X:155:TYR:O	21:X:157:VAL:HG13	2.09	0.52
1:A:1719:U:C3'	1:A:1720:G:H5'	2.39	0.52
1:A:3:C:HO2'	1:A:4:A:H8	1.58	0.52
2:B:1113:A:H61	2:B:1136:G:C2'	2.21	0.52
1:A:934:C:HO2'	2:B:1278:A:H4'	1.73	0.52
3:C:62:A:H4'	3:C:63:G:O5'	2.10	0.52
7:G:70:OMG:N1	7:G:119:C:N3	2.45	0.52
7:G:158:A:C2'	7:G:159:G:H5'	2.39	0.52
9:I:108:CYS:SG	9:I:133:LEU:HB2	2.49	0.52
11:N:61:PRO:HG2	11:N:77:GLY:HA3	1.92	0.52
11:N:91:ASN:HB3	11:N:94:PHE:HB3	1.90	0.52
6:F:13:U:C2'	12:O:132:ARG:HA	2.39	0.52
12:O:156:VAL:HG13	12:O:159:ASN:HB2	1.91	0.52
13:P:135:LYS:N	13:P:135:LYS:HD2	2.24	0.52
19:V:27:LYS:HG2	19:V:78:THR:HG22	1.91	0.52
20:W:30:ASN:HB3	20:W:114:SER:H	1.74	0.52
1:A:1342:U:C5'	9:I:2:GLY:HA2	2.38	0.52
1:A:196:C:OP2	1:A:196:C:H3'	2.08	0.52
1:A:876:A:H4'	9:I:47:LEU:HD12	1.90	0.52
1:A:766:C:H5''	2:B:723:A:C2	2.44	0.52
3:C:15:G:O2'	3:C:16:A:H8	1.92	0.52
8:H:45:G:H2'	8:H:46:C:O4'	2.09	0.52
13:P:6:TYR:HE2	16:S:152:PRO:HD3	1.71	0.52
1:A:146:U:O2'	21:X:192:GLY:CA	88.02	0.52
23:Z:79:ILE:HB	23:Z:82:VAL:HB	1.90	0.52
1:A:110:A:H4'	1:A:111:A:OP1	2.09	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:129:U:O2'	1:A:130:C:H5'	2.09	0.52
1:A:1624:U:H2'	1:A:1625:G:N9	2.24	0.52
1:A:24:U:O2'	1:A:26:C:N4	2.23	0.52
1:A:595:A:O2'	1:A:596:G:H5'	2.09	0.52
1:A:933:C:O2	1:A:943:G:N2	2.25	0.52
2:B:15:C:OP1	21:X:172:LYS:NZ	2.37	0.52
2:B:24:C:H1'	2:B:31:U:H1'	1.92	0.52
3:C:59:A:OP2	3:C:97:U:O2'	2.16	0.52
8:H:124:C:H2'	8:H:125:U:O4'	2.10	0.52
9:I:172:PHE:HE2	11:N:5:LYS:HE3	1.74	0.52
12:O:160:MET:HG3	12:O:161:CYS:N	2.24	0.52
15:R:48:TYR:HA	15:R:51:VAL:CG1	2.35	0.52
17:T:95:TRP:CZ3	17:T:130:ASN:HB3	2.43	0.52
16:S:25:THR:HG21	18:U:144:GLU:OE1	2.09	0.52
23:Z:106:LEU:HD13	23:Z:112:ARG:HD3	1.90	0.52
1:A:1163:C:H2'	1:A:1164:G:H5'	1.92	0.52
1:A:178:U:C3'	1:A:179:G:H5''	2.40	0.52
2:B:1362:A:H5''	17:T:67:LYS:HD2	126.40	0.52
2:B:1568:A:HO2'	2:B:1569:A:P	2.29	0.52
2:B:547:G:C2'	2:B:548:C:H5'	2.40	0.52
2:B:911:U:O2	2:B:911:U:H2'	2.10	0.52
5:E:32:A:C2	5:E:33:A:H1'	2.44	0.52
8:H:107:A:H4'	8:H:108:G:O5'	2.10	0.52
8:H:109:G:O2'	8:H:110:C:H5'	2.09	0.52
8:H:129:G:H2'	8:H:130:G:O4'	2.10	0.52
1:A:109:C:N3	11:N:54:ARG:NH1	2.58	0.52
12:O:138:VAL:CG1	12:O:143:GLN:NE2	2.73	0.52
14:Q:79:ARG:HB2	14:Q:147:GLU:HG2	1.91	0.52
15:R:102:ALA:O	15:R:107:LEU:HB2	2.09	0.52
1:A:1046:U:H4'	15:R:132:ALA:CB	2.40	0.52
16:S:77:SER:CB	16:S:131:ILE:HD11	2.32	0.52
18:U:138:VAL:HG23	18:U:138:VAL:O	2.09	0.52
23:Z:85:GLU:OE2	23:Z:89:GLY:HA2	2.10	0.52
1:A:1027:G:H5'	1:A:1028:C:C5'	2.40	0.52
1:A:1599:G:H4'	1:A:1600:G:O5'	2.09	0.52
1:A:452:A:O2'	1:A:453:A:H5'	2.10	0.52
2:B:1516:A2M:C5'	2:B:1517:G:H5'	2.21	0.52
2:B:672:A:C2'	2:B:673:U:H5'	2.40	0.52
7:G:176:C:O2'	8:H:3:A:N3	2.40	0.52
14:Q:42:ARG:O	14:Q:46:PHE:N	2.37	0.52
1:A:1760:A:H5'	21:X:121:THR:CG2	2.40	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:Z:28:MET:HE1	23:Z:72:ARG:HG2	1.90	0.52
1:A:188:G:N2	1:A:273:C:O2	2.42	0.52
1:A:373:A:N1	3:C:34:U:C5	2.77	0.52
1:A:766:C:O2'	1:A:767:C:OP1	2.26	0.52
1:A:778:A2M:H2'	1:A:779:C:C6	2.45	0.52
7:G:109:G:H5'	8:H:40:C:OP1	2.10	0.52
19:V:118:GLN:HE21	19:V:120:LYS:NZ	2.08	0.52
20:W:128:TRP:HB3	20:W:131:ILE:HG12	1.91	0.52
1:A:1030:U:H2'	1:A:1031:G:O4'	2.09	0.52
1:A:1940:U:H2'	1:A:1942:A:OP2	2.09	0.52
1:A:59:A:H2'	1:A:60:A:O4'	2.10	0.52
1:A:85:G:H4'	1:A:86:U:H5'	1.92	0.52
1:A:87:C:H5''	1:A:88:A:OP2	2.10	0.52
1:A:977:G:C2'	1:A:978:U:H5'	2.39	0.52
1:A:991:C:H2'	1:A:992:U:O4'	2.08	0.52
2:B:1175:C:C2'	2:B:1176:U:H5'	2.39	0.52
2:B:576:C:H2'	2:B:577:G:C4'	2.39	0.52
2:B:861:A:C2'	2:B:862:U:H5'	2.39	0.52
5:E:121:U:C2'	5:E:122:C:H5'	2.40	0.52
11:N:85:LEU:HD23	11:N:121:LEU:CD1	2.39	0.52
13:P:40:ASN:OD1	13:P:84:LEU:HD11	2.10	0.52
15:R:5:SER:H	15:R:147:GLN:NE2	2.08	0.52
21:X:93:PRO:O	21:X:94:SER:HB3	2.09	0.52
1:A:439:G:P	23:Z:84:ARG:HH22	2.33	0.52
1:A:112:C:C2'	1:A:113:U:H5'	2.40	0.52
1:A:1316:OMG:C2'	1:A:1317:G:H5'	2.40	0.52
1:A:470:U:H2'	1:A:471:G:H5'	1.91	0.52
1:A:807:G:C2'	1:A:808:G:H5'	2.40	0.52
2:B:1455:C:C2'	2:B:1456:U:H5'	2.40	0.52
2:B:1541:A:H5''	2:B:1542:G:C5'	2.40	0.52
2:B:65:G:O2'	2:B:66:A:H5'	2.10	0.52
3:C:78:G:C2'	3:C:79:A:H5'	2.39	0.52
4:D:53:U:H4'	4:D:54:A:O5'	2.09	0.52
5:E:207:G:H2'	5:E:208:G:O4'	2.10	0.52
8:H:26:C:O5'	8:H:26:C:H6	1.92	0.52
17:T:106:LEU:HD23	17:T:142:ILE:HD11	1.92	0.52
17:T:138:LEU:HD21	17:T:142:ILE:CD1	2.40	0.52
19:V:71:GLY:O	19:V:77:LEU:HA	2.10	0.52
1:A:1367:A:H2	1:A:1511:A:C2	2.28	0.51
2:B:1376:U:H2'	2:B:1377:U:C6	2.45	0.51
2:B:1452:U:H2'	2:B:1453:U:O4'	2.10	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:489:A:O2'	2:B:490:A:H2'	2.10	0.51
2:B:571:U:H2'	2:B:572:U:C6	2.45	0.51
4:D:15:U:O2'	4:D:16:U:H5'	2.10	0.51
5:E:140:U:C2'	5:E:141:U:H5'	2.40	0.51
5:E:62:C:O2'	5:E:63:A:H5'	2.10	0.51
8:H:99:G:N3	8:H:99:G:H3'	2.25	0.51
11:N:82:VAL:O	11:N:86:LYS:HG3	2.09	0.51
12:O:27:VAL:HA	12:O:137:VAL:HG23	1.91	0.51
1:A:1495:G:H5'	12:O:78:LYS:HE3	1.92	0.51
17:T:99:LEU:O	17:T:103:ARG:HG3	2.10	0.51
1:A:1013:A:H2'	1:A:1014:A:O4'	2.09	0.51
1:A:1117:G:O2'	1:A:1593:A:N6	2.43	0.51
1:A:476:U:H2'	1:A:477:A:C8	2.45	0.51
2:B:497:G:O2'	2:B:589:A:N1	2.35	0.51
2:B:684:C:H2'	2:B:685:C:C5	2.45	0.51
3:C:123:G:H2'	3:C:124:A:H8	1.70	0.51
5:E:193:A:O2'	5:E:195:A:H2'	2.10	0.51
4:D:29:C:H5''	10:L:140:ARG:HD3	1.92	0.51
12:O:213:LEU:O	12:O:213:LEU:HD23	2.10	0.51
16:S:26:VAL:O	18:U:143:VAL:HA	2.11	0.51
1:A:1002:G:H1'	1:A:1025:A:H62	1.73	0.51
1:A:1059:C:H4'	2:B:480:G:OP1	2.10	0.51
1:A:1571:G:C2'	1:A:1572:A:H5'	2.39	0.51
1:A:1662:OMC:HM22	1:A:1663:U:H5'	1.92	0.51
1:A:1716:U:H2'	1:A:1717:A:O4'	2.10	0.51
1:A:1944:A:N1	1:A:1947:C:H1'	2.25	0.51
1:A:51:A:H1'	1:A:978:U:O2'	2.10	0.51
1:A:803:G:O4'	15:R:118:GLN:NE2	71.94	0.51
1:A:809:G:H2'	1:A:810:A:C1'	2.39	0.51
2:B:1301:C:H2'	2:B:1302:U:O4'	2.11	0.51
2:B:1435:U:H2'	2:B:1436:C:H5'	1.90	0.51
3:C:5:U:O2'	3:C:6:G:H5'	2.11	0.51
1:A:919:OMC:HM21	9:I:144:PHE:HE1	1.75	0.51
1:A:120:C:H2'	1:A:121:G:C5'	2.34	0.51
1:A:1798:U:H2'	1:A:1800:A:H5''	1.92	0.51
1:A:749:A:H2'	1:A:750:A:C8	2.45	0.51
1:A:988:U:C4'	1:A:1079:G:H5'	2.39	0.51
3:C:2:A:H2'	3:C:3:C:O4'	2.10	0.51
4:D:106:G:H2'	4:D:107:G:O4'	2.11	0.51
4:D:44:U:O2'	4:D:45:U:H5'	2.11	0.51
4:D:28:C:O2'	4:D:54:A:N1	2.41	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:79:U:O3'	7:G:80:U:H3'	2.10	0.51
9:I:96:ASP:OD2	9:I:98:ARG:NH2	2.42	0.51
11:N:78:ARG:O	11:N:78:ARG:HG2	2.10	0.51
12:O:131:VAL:HG23	12:O:136:ARG:HH21	1.76	0.51
16:S:131:ILE:CG2	16:S:135:GLN:HB2	2.41	0.51
18:U:80:VAL:HG12	18:U:83:ARG:HG3	1.93	0.51
1:A:1623:A:H5'	1:A:1624:U:P	2.50	0.51
1:A:1763:U:OP2	1:A:1943:U:O2'	2.18	0.51
1:A:185:A:H2'	1:A:186:U:O4'	2.10	0.51
1:A:1964:G:N7	2:B:6:A:N6	2.58	0.51
2:B:1313:G:H2'	2:B:1314:G:H5'	1.92	0.51
2:B:635:U:H2'	2:B:636:C:H6	1.74	0.51
2:B:861:A:H2'	2:B:862:U:H5'	1.92	0.51
2:B:908:C:O2'	2:B:909:C:H5'	2.11	0.51
7:G:177:C:H5'	7:G:178:A:O5'	2.10	0.51
12:O:99:LEU:CD1	12:O:122:ALA:HB2	2.40	0.51
13:P:133:LYS:CD	13:P:134:LYS:N	2.73	0.51
17:T:96:MET:HE3	17:T:100:ARG:HH21	1.76	0.51
1:A:310:G:H5''	14:Q:30:LYS:CE	2.35	0.51
1:A:932:G:N2	1:A:945:U:H1'	2.25	0.51
2:B:1299:G:C2'	2:B:1300:A:H5'	2.40	0.51
2:B:883:U:H4'	2:B:884:U:H5''	1.92	0.51
3:C:152:C:H2'	3:C:153:C:C6	2.45	0.51
3:C:5:U:H2'	3:C:6:G:H5'	1.93	0.51
5:E:201:A:H2'	5:E:202:A:O4'	2.11	0.51
16:S:70:LYS:HG3	16:S:71:LEU:N	2.26	0.51
1:A:1045:7MG:C2	2:B:1550:U:H5''	2.46	0.51
1:A:1939:A:H1'	1:A:1944:A:N6	2.26	0.51
1:A:206:G:H2'	1:A:207:C:C6	2.46	0.51
1:A:933:C:H2'	1:A:934:C:O4'	2.10	0.51
2:B:1445:U:H5''	2:B:1515:G:O6	2.10	0.51
2:B:1517:G:OP2	2:B:1517:G:H4'	2.10	0.51
3:C:31:A:C3'	3:C:32:U:H5''	2.40	0.51
4:D:24:U:H1'	4:D:118:C:H1'	1.90	0.51
6:F:46:G:H2'	6:F:47:C:O4'	2.11	0.51
9:I:3:VAL:HG12	9:I:4:ASP:O	2.11	0.51
12:O:76:LEU:HD11	12:O:92:ARG:NH2	2.20	0.51
15:R:32:THR:CG2	15:R:91:MET:HG3	2.38	0.51
22:Y:39:LYS:O	22:Y:43:MET:HB2	2.11	0.51
23:Z:28:MET:SD	23:Z:75:TRP:HA	2.51	0.51
1:A:1140:U:H2'	1:A:1141:G:O4'	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1593:A:C2'	1:A:1594:G:H5'	2.41	0.51
2:B:1220:G:O2'	2:B:1221:A:H5'	2.10	0.51
2:B:1517:G:OP1	2:B:1552:A:N6	2.33	0.51
3:C:68:A:H2'	3:C:69:U:O4'	2.11	0.51
11:N:42:ARG:O	11:N:46:LEU:HB2	2.10	0.51
12:O:218:LYS:O	12:O:219:PHE:HB2	2.10	0.51
12:O:67:ARG:O	12:O:71:LYS:HG3	2.11	0.51
12:O:72:TYR:CE2	12:O:164:VAL:HG11	2.45	0.51
15:R:47:LEU:HD11	15:R:76:TRP:CZ2	2.46	0.51
16:S:112:LEU:HD23	16:S:123:ILE:HG12	1.93	0.51
22:Y:42:ALA:O	22:Y:46:ARG:HG3	2.11	0.51
1:A:1313:A:C6	1:A:1315:C:H1'	2.46	0.51
1:A:758:G:O2'	1:A:759:C:H5'	2.11	0.51
1:A:871:U:O2'	1:A:872:G:H5'	2.10	0.51
2:B:493:A:C2'	2:B:494:U:H5'	2.41	0.51
2:B:654:C:OP1	2:B:655:A:O2'	2.19	0.51
3:C:4:G:O2'	3:C:5:U:H5'	2.11	0.51
14:Q:34:VAL:HG13	14:Q:35:MET:N	2.26	0.51
1:A:1747:G:C8	15:R:139:TYR:CE2	2.98	0.51
1:A:1291:A:H2'	1:A:1292:C:C6	2.45	0.51
1:A:1369:G:N2	1:A:1510:C:O2	2.19	0.51
1:A:1721:G:N3	2:B:41:A:O2'	2.42	0.51
1:A:184:A:H2'	1:A:185:A:C5'	2.41	0.51
1:A:208:A:H3'	1:A:209:A:C5'	2.41	0.51
1:A:42:A:H4'	2:B:1169:OMG:HM21	1.92	0.51
2:B:1267:U:C2'	2:B:1268:U:H5'	2.40	0.51
2:B:490:A:H62	2:B:1545:U:H4'	1.76	0.51
3:C:15:G:HO2'	3:C:16:A:P	2.34	0.51
4:D:18:G:H3'	4:D:19:C:H6	1.75	0.51
1:A:44:A:P	14:Q:101:LYS:HD2	2.51	0.51
15:R:29:THR:HA	15:R:87:SER:OG	2.11	0.51
16:S:144:TYR:HA	16:S:149:LEU:CD2	2.41	0.51
16:S:29:PHE:HB2	18:U:146:LEU:HB3	1.92	0.51
18:U:68:THR:HB	18:U:69:PRO:CD	2.41	0.51
20:W:41:VAL:HG21	20:W:53:ALA:C	2.31	0.51
21:X:138:VAL:HG21	21:X:147:ILE:HG12	1.93	0.51
1:A:1347:G:H1	1:A:1531:U:H3	1.57	0.50
1:A:1652:U:O2'	1:A:1653:A:H5'	2.11	0.50
1:A:1779:A:H2	1:A:1921:G:H1	1.58	0.50
1:A:249:C:H2'	1:A:250:A:H5'	1.93	0.50
1:A:439:G:H5'	23:Z:84:ARG:HH12	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:451:G:H1'	1:A:452:A:OP2	2.11	0.50
1:A:492:G:H2'	1:A:492:G:N3	2.26	0.50
1:A:741:G:H2'	1:A:742:G:H8	1.76	0.50
1:A:805:A:OP2	9:I:111:ARG:NH2	2.44	0.50
1:A:7:C:H2'	1:A:8:C:H6	1.76	0.50
2:B:1106:U:H3'	2:B:1107:7MG:C5'	2.41	0.50
2:B:1477:G:H2'	2:B:1478:C:H6	1.74	0.50
2:B:1642:A:H1'	2:B:1643:C:OP1	2.11	0.50
1:A:349:U:O2	2:B:569:G:N2	2.43	0.50
2:B:757:U:H3	2:B:1381:A:H2	1.58	0.50
3:C:15:G:O2'	3:C:16:A:O5'	2.29	0.50
12:O:181:GLU:O	12:O:185:ARG:HG3	2.11	0.50
12:O:214:GLU:O	12:O:218:LYS:HG2	2.11	0.50
13:P:15:ILE:HD13	13:P:56:VAL:HG12	1.92	0.50
13:P:6:TYR:O	13:P:11:ARG:NE	2.40	0.50
23:Z:106:LEU:HD11	23:Z:108:LEU:HD21	1.93	0.50
1:A:1047:G:H2'	1:A:1049:A:N7	2.26	0.50
1:A:1711:U:O2'	1:A:1712:U:H5'	2.10	0.50
1:A:34:A:C5'	14:Q:98:GLY:HA3	2.41	0.50
1:A:375:U:O2'	1:A:376:A:H5'	2.11	0.50
1:A:418:A:C2'	1:A:419:A:H5'	2.40	0.50
1:A:776:A:H4'	1:A:777:OMC:OP2	2.11	0.50
1:A:922:A:H2'	1:A:923:C:C6	2.46	0.50
1:A:952:G:H2'	1:A:952:G:N3	2.26	0.50
2:B:1212:C:O2	2:B:1314:G:N2	2.30	0.50
2:B:1227:G:O2'	2:B:1228:U:H5'	2.10	0.50
2:B:460:U:H5'	22:Y:46:ARG:NE	2.25	0.50
4:D:56:G:H2'	4:D:57:C:H5'	1.93	0.50
16:S:126:LEU:HD21	18:U:148:ARG:HB2	1.94	0.50
18:U:14:LEU:HD11	18:U:58:HIS:CD2	2.46	0.50
19:V:47:PHE:HB2	19:V:97:PHE:CZ	2.45	0.50
22:Y:20:ARG:HB3	22:Y:32:VAL:HG21	1.92	0.50
1:A:258:U:O2'	23:Z:100:ASN:ND2	2.43	0.50
1:A:1659:OMG:HM23	1:A:1659:OMG:C8	2.45	0.50
1:A:387:U:O2	1:A:1664:U:H1'	2.11	0.50
1:A:394:C:N3	1:A:412:G:H5'	2.27	0.50
1:A:449:C:C2'	1:A:450:U:H5'	2.41	0.50
2:B:1217:G:H5'	2:B:1314:G:H1'	1.92	0.50
2:B:698:A:H5'	15:R:83:TRP:O	2.11	0.50
7:G:80:U:O4'	7:G:82:U:H5'	2.11	0.50
9:I:188:ARG:HH22	9:I:191:ARG:HD2	1.74	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:47:LEU:O	9:I:51:ARG:HG3	2.11	0.50
13:P:65:LEU:HD23	13:P:66:SER:N	2.26	0.50
15:R:119:VAL:HA	15:R:145:HIS:O	2.11	0.50
18:U:41:ASP:OD1	18:U:99:SER:OG	2.28	0.50
20:W:110:GLU:HA	20:W:130:LYS:HD2	1.94	0.50
1:A:1040:C:H4'	2:B:92:A:H5'	1.93	0.50
1:A:1358:U:H2'	1:A:1359:C:O4'	2.11	0.50
1:A:178:U:H2'	1:A:179:G:H5''	1.94	0.50
1:A:378:G:C2'	1:A:379:A:H5'	2.41	0.50
2:B:1355:A:O2'	2:B:1356:U:H5'	2.11	0.50
12:O:72:TYR:OH	12:O:91:HIS:O	2.28	0.50
1:A:1075:OMG:N2	14:Q:92:HIS:CD2	2.80	0.50
1:A:324:G:O6	1:A:346:G:H1'	2.12	0.50
1:A:867:G:C5'	9:I:72:LYS:HE2	2.42	0.50
1:A:874:G:O2'	1:A:921:A:N6	2.45	0.50
2:B:1167:G:O2'	2:B:1168:A:H5'	2.12	0.50
2:B:1263:A:HO2'	2:B:1264:A:H2'	1.76	0.50
2:B:1482:G:H3'	2:B:1483:G:C8	2.47	0.50
1:A:1961:C:O2'	3:C:139:A:N3	2.36	0.50
7:G:116:U:O2'	7:G:118:G:OP2	2.26	0.50
7:G:119:C:H2'	7:G:120:A:C8	2.46	0.50
16:S:52:LYS:HG2	16:S:52:LYS:O	2.11	0.50
17:T:4:LEU:HD22	17:T:32:ILE:CG2	2.42	0.50
1:A:1126:C:H2'	2:B:756:U:C2	2.47	0.50
1:A:804:C:O2	1:A:808:G:H4'	2.11	0.50
2:B:1135:G:H3'	2:B:1136:G:C8	2.47	0.50
2:B:562:G:H2'	2:B:563:U:C6	2.47	0.50
2:B:653:G:O2'	2:B:656:U:OP2	2.29	0.50
1:A:1170:G:C5'	4:D:102:C:H1'	2.42	0.50
9:I:89:ILE:CG2	9:I:109:ALA:HB2	2.42	0.50
9:I:158:HIS:CD2	9:I:170:LYS:HB3	2.47	0.50
12:O:92:ARG:HD3	12:O:165:GLY:HA3	1.94	0.50
13:P:129:ASP:O	13:P:132:ASP:HB3	2.12	0.50
21:X:119:LEU:HD13	21:X:137:ILE:CD1	2.41	0.50
22:Y:43:MET:HE1	22:Y:55:TRP:HH2	1.76	0.50
1:A:1290:C:O2'	1:A:1291:A:H5'	2.12	0.50
1:A:429:G:C8	1:A:1690:A:H1'	2.47	0.50
2:B:123:G:N2	2:B:124:G:H1'	2.26	0.50
2:B:1276:U:H2'	2:B:1277:A:O4'	2.11	0.50
15:R:17:ALA:HB2	15:R:98:ALA:HB2	1.93	0.50
17:T:95:TRP:CZ2	17:T:99:LEU:HD22	2.47	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1666:G:O2'	1:A:1667:U:H5'	2.11	0.50
2:B:532:U:H2'	2:B:533:G:H5'	1.92	0.50
3:C:56:G:H2'	3:C:57:C:O4'	2.11	0.50
5:E:197:C:H5'	5:E:198:A:OP1	2.12	0.50
11:N:85:LEU:CD1	11:N:102:VAL:HG22	2.37	0.50
11:N:51:THR:CG2	11:N:54:ARG:HB3	2.42	0.50
6:F:53:G:O6	13:P:118:ARG:NH1	2.44	0.50
14:Q:153:PRO:O	14:Q:159:ARG:HD3	2.12	0.50
15:R:59:PRO:HB3	15:R:76:TRP:CB	2.42	0.50
18:U:143:VAL:O	18:U:143:VAL:HG13	2.11	0.50
2:B:1260:U:OP1	18:U:23:GLY:N	2.43	0.50
1:A:1757:A:H2'	1:A:1758:C:C6	2.46	0.50
1:A:1953:A:H3'	1:A:1954:G:C5'	2.37	0.50
1:A:206:G:H2'	1:A:207:C:H6	1.76	0.50
1:A:944:U:H2'	1:A:945:U:C6	2.47	0.50
2:B:1372:A:OP2	2:B:1372:A:H3'	2.12	0.50
2:B:1564:U:O2'	2:B:1565:G:O4'	2.30	0.50
5:E:176:U:H2'	5:E:177:G:C8	2.46	0.50
7:G:41:A:N1	7:G:61:C:N3	2.60	0.50
14:Q:186:LYS:HD3	14:Q:191:ARG:CD	2.42	0.50
14:Q:78:PHE:O	14:Q:147:GLU:HA	2.12	0.50
15:R:102:ALA:HB1	15:R:112:MET:HE2	1.93	0.50
16:S:46:MET:HE2	18:U:148:ARG:HG2	1.93	0.50
22:Y:57:ARG:NE	22:Y:61:ARG:HE	2.10	0.50
1:A:347:U:H3'	1:A:347:U:P	2.52	0.49
5:E:139:A:H2'	5:E:140:U:O4'	2.12	0.49
7:G:111:C:H2'	7:G:112:G:O4'	2.12	0.49
10:L:137:LEU:O	10:L:160:VAL:HG21	2.11	0.49
11:N:187:TYR:O	11:N:191:LYS:N	2.43	0.49
14:Q:93:LYS:HB2	14:Q:95:ILE:CD1	2.39	0.49
2:B:703:A:H5'	15:R:137:THR:HB	1.93	0.49
15:R:67:ILE:HG23	15:R:82:ARG:HH21	1.77	0.49
16:S:98:ASP:OD2	16:S:103:GLY:HA3	2.12	0.49
20:W:84:ARG:H	20:W:100:ASN:HB3	1.77	0.49
21:X:109:TRP:CH2	21:X:141:ASN:HB2	2.47	0.49
21:X:132:ASN:HA	21:X:184:ALA:HB3	1.93	0.49
1:A:192:A:H2'	1:A:193:A:O4'	2.12	0.49
1:A:789:A:N1	1:A:1108:G:O2'	2.36	0.49
2:B:690:U:H2'	2:B:691:A2M:C8	2.42	0.49
4:D:28:C:C2'	4:D:29:C:H5'	2.42	0.49
5:E:71:C:O2'	5:E:72:C:H5'	2.11	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:111:C:H4'	8:H:112:U:OP1	2.12	0.49
9:I:36:LEU:O	9:I:40:THR:OG1	2.18	0.49
13:P:13:VAL:HB	13:P:56:VAL:HB	1.94	0.49
16:S:31:VAL:HG21	16:S:39:ALA:CB	2.35	0.49
17:T:14:ILE:HD12	17:T:42:ARG:HG2	1.93	0.49
19:V:91:LYS:HB2	19:V:117:TYR:CE1	2.47	0.49
1:A:189:U:O3'	23:Z:118:ARG:NH1	2.45	0.49
1:A:1249:G:O6	1:A:1264:C:N4	2.26	0.49
1:A:1666:G:C2'	1:A:1667:U:H5'	2.42	0.49
1:A:379:A:H2'	1:A:380:A:O4'	2.12	0.49
2:B:1387:A:H3'	2:B:1388:U:H2'	1.93	0.49
5:E:36:A:H2'	5:E:37:A:C8	2.48	0.49
16:S:74:ARG:O	16:S:97:ARG:HG3	2.11	0.49
17:T:24:LEU:HD12	17:T:24:LEU:N	2.27	0.49
21:X:164:THR:HG22	21:X:174:ALA:HB2	1.94	0.49
1:A:979:G:N1	1:A:1095:C:N3	2.43	0.49
1:A:776:A:O2'	1:A:777:OMC:HM22	2.12	0.49
2:B:1192:U:O2'	2:B:1193:U:H5'	2.12	0.49
2:B:477:A:H2'	2:B:478:C:C5'	2.42	0.49
7:G:87:U:H2'	7:G:88:U:C6	2.47	0.49
8:H:92:A:H2'	8:H:93:G:O4'	2.13	0.49
1:A:30:C:C4'	14:Q:112:LYS:HE3	2.37	0.49
15:R:13:LYS:HE2	15:R:154:GLN:OE1	2.12	0.49
5:E:118:U:O4'	17:T:96:MET:HG2	2.13	0.49
23:Z:54:ARG:HB3	23:Z:64:GLU:HG2	1.94	0.49
1:A:1618:A:N3	3:C:18:G:O2'	2.40	0.49
1:A:421:G:H4'	1:A:421:G:OP1	2.12	0.49
1:A:807:G:O2'	1:A:808:G:H5'	2.13	0.49
1:A:348:A:H61	2:B:1353:U:H3	1.61	0.49
2:B:562:G:O2'	2:B:563:U:H5'	2.12	0.49
2:B:679:C:H2'	2:B:680:U:C6	2.47	0.49
2:B:764:G:H5'	2:B:1165:G:N2	2.27	0.49
2:B:781:G:H2'	2:B:782:U:O4'	2.12	0.49
5:E:101:C:C2'	5:E:102:U:H5'	2.43	0.49
5:E:4:G:C2'	5:E:5:G:H5'	2.43	0.49
9:I:16:ARG:NE	9:I:53:LEU:O	2.38	0.49
18:U:75:ILE:HG12	18:U:88:ARG:CD	2.41	0.49
19:V:88:LYS:HA	19:V:117:TYR:OH	2.12	0.49
23:Z:82:VAL:HG12	23:Z:94:VAL:HG12	1.91	0.49
1:A:36:U:O3'	1:A:1102:U:H4'	2.12	0.49
1:A:972:OMG:N1	1:A:1105:C:N3	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:138:A:H2'	1:A:139:A:C8	2.48	0.49
1:A:1689:G:H1'	1:A:1751:U:O2	2.13	0.49
1:A:1774:U:O2'	1:A:1775:G:H5'	2.13	0.49
1:A:311:U:O2'	1:A:360:A:H1'	2.12	0.49
1:A:422:C:O2'	1:A:436:A:N1	2.38	0.49
1:A:65:A:H3'	1:A:358:C:H5''	1.94	0.49
1:A:98:G:N7	11:N:12:HIS:NE2	2.60	0.49
2:B:1106:U:H3'	2:B:1107:7MG:H5'	1.94	0.49
1:A:453:A:H61	3:C:14:G:H1'	1.77	0.49
3:C:3:C:H2'	3:C:4:G:O4'	2.12	0.49
4:D:47:U:H2'	4:D:48:G:O4'	2.13	0.49
7:G:103:U:C3'	7:G:104:G:H5''	2.43	0.49
1:A:1367:A:OP1	13:P:17:ARG:NH1	2.45	0.49
13:P:38:VAL:O	13:P:48:ARG:HA	2.12	0.49
13:P:49:HIS:CD2	13:P:51:GLN:HG2	2.47	0.49
1:A:18:C:H5'	14:Q:154:MET:SD	2.53	0.49
18:U:40:VAL:O	18:U:61:THR:HG23	2.11	0.49
20:W:110:GLU:HG2	20:W:130:LYS:CE	2.43	0.49
20:W:94:VAL:HG13	22:Y:19:ARG:CB	2.43	0.49
1:A:213:C:H5'	1:A:214:G:OP2	2.12	0.49
1:A:319:C:H41	1:A:326:G:H22	1.60	0.49
2:B:499:U:O2'	2:B:500:U:H5'	2.13	0.49
2:B:539:U:H1'	2:B:661:G:N2	2.28	0.49
2:B:712:C:H2'	2:B:713:A:C8	2.48	0.49
5:E:71:C:C2'	5:E:72:C:H5'	2.43	0.49
16:S:47:MET:CE	16:S:53:VAL:HG11	2.43	0.49
17:T:96:MET:HE2	17:T:100:ARG:HH21	1.76	0.49
1:A:1253:A:O2'	1:A:1254:A:H5'	2.12	0.49
1:A:1588:G:O2'	1:A:1589:A:H5'	2.12	0.49
1:A:1666:G:H2'	1:A:1667:U:O4'	2.13	0.49
1:A:1785:U:O2'	2:B:513:A:H1'	2.13	0.49
1:A:921:A:O2'	1:A:922:A:H5'	2.13	0.49
2:B:1298:A:C2'	2:B:1299:G:H5'	2.43	0.49
2:B:1186:U:O2'	2:B:1368:C:OP2	2.13	0.49
2:B:754:U:H2'	2:B:755:OMG:H5'	1.94	0.49
4:D:2:G:H1	4:D:117:U:H3	1.60	0.49
7:G:58:C:H2'	7:G:59:U:H5'	1.95	0.49
12:O:99:LEU:CA	12:O:102:VAL:HG12	2.42	0.49
13:P:45:LYS:HA	13:P:47:TRP:CZ3	2.47	0.49
16:S:88:GLY:O	16:S:89:TYR:HB2	2.13	0.49
18:U:54:HIS:O	18:U:55:LYS:HB2	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:Z:48:ARG:HG2	23:Z:49:LYS:N	2.28	0.49
1:A:1319:G:C2'	1:A:1320:C:H5'	2.43	0.49
1:A:1801:G:H1'	21:X:86:ARG:HB3	1.94	0.49
1:A:428:G:N2	1:A:430:A:H3'	2.27	0.49
1:A:982:G:OP1	11:N:16:HIS:NE2	33.19	0.49
2:B:451:C:C2'	2:B:452:A:H5'	2.42	0.49
2:B:718:A:H5''	2:B:719:A:C8	2.33	0.49
2:B:722:G:H2'	2:B:723:A:C8	2.48	0.49
2:B:99:A:C2'	2:B:100:U:H5'	2.43	0.49
3:C:103:A:OP2	3:C:104:A:H2'	2.12	0.49
6:F:47:C:O3'	13:P:125:ARG:NH2	2.45	0.49
1:A:1511:A:H4'	16:S:5:HIS:CD2	2.48	0.49
17:T:28:GLU:OE1	17:T:49:LEU:HG	2.13	0.49
19:V:27:LYS:HE3	19:V:116:THR:HG22	1.95	0.49
1:A:1008:C:H2'	1:A:1009:G:O4'	2.13	0.49
1:A:1087:C:OP1	1:A:1090:C:N4	2.37	0.49
1:A:836:U:H2'	1:A:837:C:C6	2.48	0.49
2:B:1282:U:OP2	9:I:188:ARG:NH1	2.45	0.49
2:B:1506:A:H2'	2:B:1507:G:H8	1.77	0.49
2:B:705:C:C2'	2:B:706:G:H5'	2.43	0.49
2:B:73:OMU:H1'	2:B:73:OMU:HM23	1.54	0.49
2:B:778:U:H2'	2:B:779:C:O4'	2.12	0.49
4:D:77:A:H2'	4:D:78:C:O4'	2.13	0.49
5:E:136:A:H2'	5:E:137:A:O4'	2.13	0.49
5:E:145:A:H4'	5:E:146:A:O5'	2.13	0.49
6:F:58:U:C2'	6:F:59:U:H5''	2.42	0.49
12:O:30:LYS:HA	12:O:58:GLN:HB2	1.93	0.49
14:Q:47:ARG:HD3	14:Q:140:ASP:OD2	2.13	0.49
18:U:64:VAL:HG12	18:U:66:ASN:H	1.78	0.49
21:X:128:ILE:HG23	21:X:184:ALA:O	2.13	0.49
1:A:1085:C:H2'	1:A:1086:U:H5'	1.95	0.48
1:A:1918:A:H1'	21:X:83:GLN:HE22	1.78	0.48
1:A:1943:U:H4'	2:B:18:A:H4'	1.95	0.48
1:A:33:A:N3	1:A:977:G:O2'	2.37	0.48
1:A:494:C:N3	1:A:741:G:N1	2.49	0.48
2:B:476:A:H2'	2:B:477:A:O3'	2.13	0.48
4:D:18:G:H3'	4:D:19:C:C6	2.48	0.48
9:I:120:ILE:HG21	9:I:127:CYS:HB2	1.94	0.48
9:I:44:PHE:HZ	9:I:133:LEU:HD21	1.77	0.48
12:O:139:ILE:HG12	16:S:168:PHE:CD1	2.48	0.48
12:O:146:TYR:OH	16:S:159:LYS:HD3	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:S:76:TYR:O	16:S:95:GLU:HG2	2.12	0.48
20:W:96:TYR:CE2	22:Y:21:TYR:HD1	2.31	0.48
1:A:131:U:C5'	1:A:132:U:H5'	2.42	0.48
1:A:1638:G:H5'	1:A:1639:A:OP1	2.12	0.48
1:A:421:G:H1'	1:A:445:G:N2	2.28	0.48
1:A:930:C:C5	1:A:931:7MG:HM73	2.48	0.48
2:B:501:G:H2'	2:B:502:U:O4'	2.14	0.48
4:D:55:A:C2'	4:D:56:G:H5'	2.43	0.48
5:E:61:U:H5''	17:T:61:SER:HB3	1.95	0.48
1:A:1501:G:O3'	12:O:35:GLY:HA3	2.13	0.48
13:P:37:LEU:HD21	16:S:71:LEU:O	2.14	0.48
16:S:95:GLU:CD	16:S:141:ILE:HG12	2.33	0.48
17:T:99:LEU:HD21	17:T:103:ARG:NH2	2.27	0.48
17:T:98:ARG:NH1	17:T:130:ASN:CB	2.76	0.48
19:V:51:PHE:CE2	19:V:79:ILE:HG12	2.48	0.48
20:W:44:TYR:CE1	20:W:52:PRO:HA	2.48	0.48
1:A:1068:G:H2'	1:A:1069:G:O4'	2.12	0.48
1:A:112:C:O2'	1:A:113:U:H5'	2.13	0.48
1:A:384:C:N4	1:A:385:G:C6	2.81	0.48
1:A:774:A:H1'	1:A:776:A:OP2	2.12	0.48
2:B:547:G:O2'	2:B:548:C:H5'	2.14	0.48
2:B:551:U:H3	2:B:583:C:N4	2.06	0.48
2:B:647:A:C2'	2:B:648:G:H5'	2.43	0.48
2:B:7:C:H2'	2:B:8:U:O4'	2.13	0.48
2:B:883:U:H4'	2:B:884:U:O5'	2.13	0.48
2:B:91:C:H3'	2:B:92:A:H8	1.77	0.48
4:D:1:G:H2'	4:D:2:G:H8	1.78	0.48
6:F:48:G:H2'	6:F:49:C:O2	2.13	0.48
7:G:97:G:H2'	7:G:98:G:O4'	2.12	0.48
9:I:92:ASP:OD1	9:I:111:ARG:HB3	2.13	0.48
18:U:74:VAL:HG12	18:U:76:VAL:HG23	1.94	0.48
19:V:109:ILE:HG13	19:V:119:LEU:HD22	1.95	0.48
19:V:51:PHE:CZ	19:V:79:ILE:HG12	2.48	0.48
20:W:34:LYS:HG2	20:W:67:GLY:HA2	1.94	0.48
20:W:72:ARG:HG3	20:W:73:ARG:HG3	1.95	0.48
1:A:1080:A:H2	2:B:480:G:N3	2.10	0.48
1:A:1170:G:H5''	4:D:102:C:H1'	1.94	0.48
2:B:505:U:H5'	2:B:1154:U:H6	1.78	0.48
2:B:1177:G:HO2'	2:B:1435:U:P	2.35	0.48
2:B:1455:C:O2'	2:B:1456:U:H5'	2.13	0.48
2:B:679:C:H2'	2:B:680:U:C1'	2.43	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:711:U:O2	2:B:728:A2M:H2	2.13	0.48
3:C:141:C:C2'	3:C:142:C:H5'	2.43	0.48
3:C:19:A:C2'	3:C:20:C:H5'	2.43	0.48
4:D:11:A:O2'	4:D:13:A:OP2	2.17	0.48
7:G:82:U:H3'	7:G:82:U:O2	2.12	0.48
9:I:144:PHE:CE2	9:I:146:LEU:HD21	2.49	0.48
4:D:6:C:OP1	10:L:149:ARG:NH2	2.45	0.48
1:A:74:U:C5'	11:N:63:VAL:HB	2.42	0.48
14:Q:64:ALA:O	14:Q:69:TYR:HB3	2.13	0.48
16:S:77:SER:HB2	16:S:131:ILE:HD12	1.91	0.48
23:Z:71:TYR:HB3	23:Z:76:VAL:HG23	1.95	0.48
1:A:1284:U:H2'	1:A:1285:U:O4'	2.14	0.48
1:A:1289:G:O2'	1:A:1290:C:H5'	2.13	0.48
1:A:1797:U:C2'	1:A:1798:U:O5'	2.62	0.48
1:A:1944:A:C2	1:A:1947:C:H1'	2.49	0.48
2:B:1288:G:O6	18:U:78:LYS:HD3	2.13	0.48
2:B:61:C:H2'	2:B:62:A:O4'	2.14	0.48
2:B:852:G:H1'	2:B:853:C:O5'	2.14	0.48
3:C:112:G:N3	3:C:112:G:H3'	2.28	0.48
6:F:15:U:O2'	6:F:16:C:H5'	2.13	0.48
6:F:51:A:OP1	6:F:53:G:N2	2.41	0.48
8:H:5:G:H2'	8:H:6:U:C6	2.48	0.48
12:O:108:ARG:HG3	12:O:109:TYR:CE1	2.49	0.48
14:Q:67:LEU:O	14:Q:132:LEU:HD22	2.13	0.48
12:O:146:TYR:O	16:S:157:ARG:NH2	2.47	0.48
17:T:98:ARG:O	17:T:102:LEU:HG	2.13	0.48
20:W:58:ASP:O	20:W:79:VAL:HA	2.12	0.48
21:X:178:LEU:CD1	21:X:184:ALA:HA	2.42	0.48
1:A:462:A:H2'	1:A:463:A:O4'	2.14	0.48
1:A:600:A:H4'	1:A:601:U:H5'	1.96	0.48
2:B:65:G:C2'	2:B:66:A:H5'	2.44	0.48
4:D:23:G:H2'	4:D:24:U:C6	2.48	0.48
10:L:139:ARG:HD2	10:L:158:HIS:O	2.13	0.48
13:P:135:LYS:CB	13:P:136:PRO:HA	2.44	0.48
14:Q:156:ARG:HG2	14:Q:156:ARG:O	2.12	0.48
1:A:459:G:O4'	15:R:6:ARG:HD3	2.14	0.48
13:P:67:ARG:HD3	16:S:147:SER:HA	1.94	0.48
20:W:96:TYR:CE2	22:Y:21:TYR:CD1	3.01	0.48
23:Z:60:TYR:CE2	23:Z:94:VAL:HG11	2.49	0.48
1:A:188:G:H2'	1:A:189:U:C6	2.49	0.48
1:A:57:G:H4'	14:Q:171:VAL:HG22	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:593:C:O2'	1:A:594:G:H5'	2.13	0.48
8:H:64:U:H5''	8:H:65:G:OP2	2.14	0.48
12:O:177:THR:O	12:O:181:GLU:HG2	2.12	0.48
14:Q:107:GLY:O	14:Q:109:LYS:HD2	2.14	0.48
17:T:23:TRP:N	17:T:51:ILE:O	2.44	0.48
23:Z:47:VAL:HG12	23:Z:48:ARG:N	2.28	0.48
1:A:1042:G:N2	1:A:1053:OMC:H5	2.12	0.48
1:A:1361:A:O2'	1:A:1524:C:H4'	2.14	0.48
1:A:1367:A:H2	1:A:1511:A:H2	1.62	0.48
1:A:847:G:H2'	1:A:848:G:O4'	2.13	0.48
2:B:1308:A:C5	2:B:1309:G:H1'	2.49	0.48
2:B:131:G:O6	2:B:448:A:N6	2.47	0.48
11:N:102:VAL:HG12	11:N:103:ASP:N	2.29	0.48
12:O:98:PHE:O	12:O:102:VAL:HG12	2.13	0.48
2:B:728:A2M:HM'1	12:O:88:PRO:HD3	1.94	0.48
14:Q:84:ARG:CG	14:Q:144:VAL:HG13	2.44	0.48
18:U:14:LEU:CD2	18:U:55:LYS:HG3	2.43	0.48
20:W:112:LYS:O	20:W:112:LYS:HG2	2.13	0.48
20:W:82:ARG:HB2	20:W:97:PHE:CG	2.49	0.48
1:A:141:U:H5'	1:A:142:U:OP1	2.14	0.48
1:A:1750:C:H2'	1:A:1752:C:C4	2.49	0.48
1:A:1964:G:H5''	1:A:1964:G:N3	2.29	0.48
1:A:245:G:O2'	1:A:246:A:H5'	2.14	0.48
2:B:1454:C:H2'	2:B:1455:C:C6	2.47	0.48
3:C:165:U:H5''	3:C:166:OMG:OP1	2.14	0.48
5:E:22:C:H42	5:E:207:G:H1	1.62	0.48
12:O:187:HIS:O	12:O:194:ARG:NH2	2.31	0.48
12:O:29:LEU:HB3	12:O:59:LEU:HD21	1.96	0.48
1:A:1509:C:O2'	16:S:113:ALA:O	2.22	0.48
6:F:45:G:P	16:S:173:THR:HG23	2.54	0.48
1:A:1142:C:O2'	1:A:1143:U:H5'	2.14	0.48
1:A:72:C:H4'	1:A:73:G:OP2	2.14	0.48
1:A:741:G:H2'	1:A:742:G:C8	2.49	0.48
1:A:768:G:C2'	1:A:769:U:H5'	2.43	0.48
2:B:1494:U:H2'	2:B:1495:C:H5'	1.96	0.48
2:B:1649:A:C8	2:B:1649:A:H5'	2.49	0.48
2:B:489:A:C2'	2:B:490:A:H2'	2.44	0.48
3:C:154:A:C2'	3:C:155:U:H5'	2.44	0.48
1:A:452:A:H61	3:C:15:G:H1'	1.79	0.48
7:G:28:U:H2'	7:G:29:G:H5'	1.94	0.48
9:I:105:LEU:O	9:I:125:GLY:HA3	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:L:135:VAL:HG12	10:L:137:LEU:HD12	1.95	0.48
1:A:34:A:H5''	14:Q:98:GLY:CA	2.43	0.48
13:P:54:LYS:O	16:S:156:ARG:NH1	2.47	0.48
16:S:16:THR:HG22	16:S:57:HIS:O	2.14	0.48
16:S:75:ASN:ND2	16:S:136:VAL:HG21	2.29	0.48
21:X:140:SER:HA	21:X:172:LYS:HB2	1.94	0.48
22:Y:35:PHE:CE2	22:Y:41:PHE:HD1	2.31	0.48
1:A:1340:G:C2'	1:A:1341:C:H5'	2.44	0.47
1:A:184:A:H2'	1:A:185:A:H5'	1.94	0.47
1:A:31:C:OP1	14:Q:110:LEU:HD12	2.14	0.47
1:A:951:G:C2'	1:A:951:G:N3	2.77	0.47
2:B:1190:U:O4	18:U:3:HIS:HE1	1.97	0.47
2:B:1444:G:H22	2:B:1549:U:H3	1.62	0.47
2:B:1462:A:C2'	2:B:1463:G:H5'	2.43	0.47
1:A:350:G:H1'	2:B:568:A:N3	2.28	0.47
3:C:147:G:C2'	3:C:148:C:H5'	2.44	0.47
5:E:65:C:H5''	5:E:66:A:H5'	1.96	0.47
12:O:212:ASN:O	12:O:216:LEU:HG	2.14	0.47
15:R:128:ARG:NH2	15:R:136:ILE:HD13	2.29	0.47
15:R:129:THR:HG22	15:R:139:TYR:CE1	2.48	0.47
16:S:166:VAL:HG11	16:S:169:VAL:HG11	1.95	0.47
16:S:83:TYR:HD1	16:S:88:GLY:O	1.98	0.47
23:Z:20:PRO:HD2	23:Z:23:VAL:HG21	1.96	0.47
1:A:175:U:H2'	1:A:176:G:C8	2.50	0.47
1:A:310:G:H5'	14:Q:136:TRP:CE3	2.49	0.47
1:A:349:U:H1'	2:B:569:G:H21	1.79	0.47
2:B:132:G:O2'	2:B:133:G:H5'	2.14	0.47
2:B:1460:C:N4	2:B:1483:G:H1	2.09	0.47
2:B:619:G:N2	2:B:620:U:O4	2.30	0.47
2:B:771:G:O2'	2:B:772:U:H5'	2.14	0.47
2:B:907:A:H5''	2:B:908:C:OP2	2.14	0.47
7:G:42:G:H2'	7:G:43:G:C8	2.50	0.47
9:I:158:HIS:HD2	9:I:170:LYS:O	1.97	0.47
11:N:28:LYS:HB2	14:Q:213:ARG:HD2	1.95	0.47
12:O:164:VAL:HG12	12:O:164:VAL:O	2.13	0.47
2:B:1297:G:OP1	18:U:70:ARG:HB2	2.14	0.47
1:A:1805:A:H3'	1:A:1805:A:OP1	2.14	0.47
3:C:50:C:N4	3:C:75:OMG:HN1	2.12	0.47
4:D:13:A:HO2'	4:D:14:C:P	2.35	0.47
8:H:41:A:O2'	8:H:42:U:P	2.71	0.47
11:N:65:CYS:HB2	11:N:70:HIS:O	2.13	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:Q:115:ARG:CG	14:Q:146:TYR:CE1	2.98	0.47
19:V:51:PHE:CE2	19:V:70:VAL:HG11	2.50	0.47
2:B:460:U:H5'	22:Y:46:ARG:CD	2.44	0.47
22:Y:57:ARG:HE	22:Y:61:ARG:HE	1.62	0.47
23:Z:55:VAL:HA	23:Z:101:VAL:HG12	1.96	0.47
1:A:1056:U:H2'	1:A:1057:C:O4'	2.14	0.47
1:A:1509:C:O2'	1:A:1510:C:H5'	2.15	0.47
1:A:1923:C:O2'	1:A:1924:A:H5'	2.15	0.47
2:B:1160:A:H2'	2:B:1161:G:C8	2.49	0.47
2:B:1458:A:H2'	2:B:1480:A:H61	1.79	0.47
2:B:506:G:H2'	2:B:507:C:C6	2.50	0.47
5:E:95:U:H3	5:E:137:A:N6	2.11	0.47
9:I:65:SER:HB2	9:I:96:ASP:CB	2.44	0.47
1:A:1369:G:H5'	13:P:52:ASN:HD22	1.78	0.47
14:Q:81:ARG:HD2	14:Q:143:PHE:CD1	2.50	0.47
14:Q:115:ARG:HG2	14:Q:146:TYR:CE1	2.50	0.47
15:R:98:ALA:O	15:R:102:ALA:N	2.42	0.47
2:B:1189:C:OP1	18:U:6:GLY:HA2	2.14	0.47
1:A:1306:U:H2'	1:A:1307:U:O4'	2.15	0.47
1:A:1340:G:H2'	1:A:1341:C:O4'	2.13	0.47
1:A:1803:A:H4'	1:A:1804:A2M:OP2	2.12	0.47
1:A:211:C:O2'	1:A:212:C:OP2	2.24	0.47
1:A:234:A:H2'	1:A:235:U:C6	2.50	0.47
1:A:351:U:H2'	1:A:352:G:H8	1.77	0.47
1:A:378:G:O2'	1:A:379:A:H5'	2.13	0.47
1:A:417:A:H2'	1:A:418:A:C8	2.50	0.47
1:A:759:C:H2'	1:A:760:C:C6	2.49	0.47
2:B:103:G:H2'	2:B:104:U:O4'	2.14	0.47
2:B:1643:C:H5'	2:B:1644:U:OP2	2.14	0.47
2:B:460:U:H5'	22:Y:46:ARG:HE	1.78	0.47
2:B:95:A:H2	2:B:468:G:C8	2.32	0.47
2:B:574:A:H2'	2:B:575:C:H6	1.78	0.47
2:B:681:G:C1'	2:B:683:OMC:HN42	2.26	0.47
1:A:781:G:H2'	2:B:707:A:C4'	2.44	0.47
8:H:105:U:O2	8:H:108:G:H5'	2.14	0.47
8:H:15:A:C2'	8:H:16:A:H5'	2.44	0.47
10:L:138:GLY:HA3	10:L:142:GLU:OE2	2.15	0.47
15:R:107:LEU:HB3	15:R:112:MET:CE	2.43	0.47
15:R:10:VAL:HG11	15:R:13:LYS:HD3	1.96	0.47
15:R:31:GLU:OE1	15:R:60:PHE:HA	2.15	0.47
20:W:110:GLU:HG2	20:W:130:LYS:NZ	2.30	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:X:120:THR:O	21:X:120:THR:HG22	2.14	0.47
22:Y:51:ARG:CG	22:Y:51:ARG:NH1	2.73	0.47
1:A:110:A:N1	1:A:364:U:O2'	2.46	0.47
1:A:1773:C:H2'	1:A:1774:U:O4'	2.15	0.47
1:A:1922:G:O2'	1:A:1923:C:H5'	2.14	0.47
1:A:26:C:N4	1:A:56:A:N6	2.63	0.47
2:B:1254:C:H4'	2:B:1255:A:OP1	2.15	0.47
2:B:1393:G:C2'	2:B:1394:G:H5'	2.44	0.47
2:B:1508:G:C2'	2:B:1509:G:H5'	2.44	0.47
2:B:638:U:H3	2:B:646:G:H1	1.61	0.47
7:G:40:G:H2'	7:G:41:A:C8	2.50	0.47
4:D:42:A:H5''	10:L:78:ARG:HD2	1.96	0.47
13:P:49:HIS:CD2	13:P:51:GLN:HE21	2.31	0.47
15:R:116:HIS:O	15:R:148:LEU:HA	2.13	0.47
12:O:139:ILE:HG12	16:S:168:PHE:HE1	1.76	0.47
16:S:33:ALA:HB3	16:S:39:ALA:HB2	1.96	0.47
21:X:165:LEU:O	21:X:173:LYS:N	2.32	0.47
1:A:1030:U:C2'	1:A:1031:G:H5'	2.45	0.47
1:A:208:A:H2'	1:A:214:G:O6	2.15	0.47
1:A:419:A:H4'	1:A:420:A:C5'	2.43	0.47
1:A:837:C:O2'	1:A:955:U:OP1	2.24	0.47
2:B:1245:C:H2'	2:B:1246:G:C5'	2.44	0.47
2:B:538:C:O2	2:B:661:G:N2	2.33	0.47
2:B:657:7MG:O3'	2:B:658:A:C4'	2.63	0.47
3:C:39:G:H1'	3:C:104:A:N1	2.30	0.47
4:D:67:C:O5'	4:D:67:C:H6	1.98	0.47
5:E:72:C:H2'	5:E:73:A:C8	2.49	0.47
9:I:32:LEU:C	9:I:32:LEU:HD23	2.35	0.47
9:I:61:PRO:O	9:I:148:GLY:HA3	2.15	0.47
10:L:106:GLY:HA3	10:L:160:VAL:CG1	2.44	0.47
11:N:196:ALA:O	11:N:200:PHE:HB2	2.14	0.47
13:P:134:LYS:HD2	13:P:135:LYS:O	2.14	0.47
14:Q:69:TYR:HB2	14:Q:149:VAL:HG11	1.97	0.47
1:A:151:G:P	14:Q:163:ARG:HH22	2.37	0.47
16:S:95:GLU:OE1	16:S:141:ILE:HG21	2.15	0.47
5:E:115:A:OP2	17:T:121:ARG:HD3	2.14	0.47
20:W:116:ILE:HD11	20:W:131:ILE:HG23	1.96	0.47
21:X:119:LEU:HD13	21:X:137:ILE:HD11	1.97	0.47
1:A:1085:C:O2'	1:A:1086:U:H5'	2.14	0.47
1:A:1532:C:H2'	1:A:1533:C:C6	2.50	0.47
1:A:1669:G:O2'	1:A:1670:G:H5'	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1770:A:C2'	1:A:1771:U:H5'	2.45	0.47
1:A:1800:A:O2'	1:A:1801:G:OP2	2.25	0.47
1:A:439:G:C5'	23:Z:84:ARG:HH12	2.27	0.47
1:A:794:A2M:H8	1:A:794:A2M:H3'	1.97	0.47
1:A:977:G:O2'	1:A:978:U:H5'	2.15	0.47
2:B:1443:U:H5	2:B:1511:A:H2	1.62	0.47
2:B:1652:A:O2'	2:B:1653:A:H8	1.85	0.47
2:B:498:U:H2'	2:B:499:U:H6	1.79	0.47
2:B:511:C:O2'	2:B:513:A:N7	2.40	0.47
2:B:777:C:H2'	2:B:778:U:O4'	2.14	0.47
5:E:33:A:C2'	5:E:34:U:H5'	2.44	0.47
11:N:41:ARG:O	11:N:45:LEU:HD13	2.14	0.47
12:O:204:ALA:HA	12:O:207:LYS:HG2	1.97	0.47
1:A:1495:G:OP1	12:O:78:LYS:HE3	2.15	0.47
1:A:1636:C:O2'	1:A:1637:A:H5'	2.15	0.47
1:A:247:G:H2'	1:A:248:C:C5'	2.44	0.47
1:A:878:A:O2'	1:A:879:C:H5'	2.15	0.47
1:A:918:C:H2'	1:A:919:OMC:H4'	1.97	0.47
1:A:956:G:H2'	1:A:957:U:O4'	2.15	0.47
2:B:126:U:OP2	17:T:74:ARG:NE	2.33	0.47
2:B:742:G:C6	2:B:744:A:H1'	2.50	0.47
3:C:122:A:O2'	3:C:123:G:H5'	2.14	0.47
5:E:3:U:H2'	5:E:4:G:C8	2.48	0.47
10:L:106:GLY:HA2	10:L:160:VAL:HG12	1.95	0.47
12:O:61:ILE:N	12:O:155:THR:O	2.46	0.47
14:Q:117:ILE:O	14:Q:121:ARG:HG3	2.15	0.47
15:R:24:CYS:SG	15:R:86:LYS:HG2	2.55	0.47
4:D:95:G:OP1	16:S:45:ARG:HD2	2.15	0.47
16:S:47:MET:HE2	16:S:53:VAL:HG11	1.97	0.47
17:T:132:PHE:CE2	17:T:138:LEU:HD12	2.48	0.47
18:U:80:VAL:HG13	18:U:81:ARG:N	2.29	0.47
20:W:122:LYS:HA	20:W:138:ILE:CG2	2.45	0.47
23:Z:37:ARG:HG3	23:Z:42:VAL:O	2.15	0.47
1:A:1682:U:H2'	1:A:1683:C:C6	2.50	0.47
1:A:1772:A:OP1	1:A:1772:A:H8	1.98	0.47
1:A:323:G:O6	14:Q:199:LYS:HG2	2.15	0.47
1:A:483:A:H2'	1:A:484:U:O4'	2.14	0.47
2:B:1308:A:N7	2:B:1309:G:H1'	2.30	0.47
2:B:1540:C:H4'	2:B:1541:A:N1	2.30	0.47
2:B:513:A:OP1	14:Q:88:LYS:NZ	2.45	0.47
2:B:651:G:OP2	2:B:651:G:N2	2.35	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:745:A:C2'	2:B:746:G:H5'	2.45	0.47
2:B:880:G:O2'	2:B:881:G:H5'	2.15	0.47
5:E:113:C:H4'	5:E:114:G:OP1	2.14	0.47
5:E:203:C:H2'	5:E:204:C:H6	1.80	0.47
8:H:131:A:H2'	8:H:132:C:O4'	2.14	0.47
13:P:13:VAL:HG13	13:P:27:VAL:HG23	1.96	0.47
14:Q:93:LYS:HE2	14:Q:95:ILE:CD1	2.45	0.47
16:S:47:MET:SD	18:U:146:LEU:HD22	2.55	0.47
20:W:21:VAL:HA	20:W:38:ILE:HG22	1.96	0.47
1:A:1008:C:H5'	17:T:125:VAL:O	2.15	0.47
1:A:1022:U:H2'	1:A:1023:G:O4'	2.15	0.47
1:A:1112:A:H61	1:A:1598:U:H3	1.62	0.47
1:A:350:G:H5'	2:B:569:G:O2'	2.16	0.47
2:B:120:A:H2'	2:B:121:U:C6	2.49	0.47
2:B:1296:C:C3'	2:B:1297:G:H5''	2.44	0.47
2:B:460:U:O2	7:G:107:C:H1'	2.15	0.47
2:B:489:A:H2'	2:B:490:A:H2'	1.96	0.47
2:B:576:C:H3'	2:B:577:G:C5'	2.45	0.47
7:G:71:C:O2'	7:G:72:C:H5'	2.14	0.47
7:G:98:G:H2'	7:G:99:C:O4'	2.15	0.47
1:A:919:OMC:HM21	9:I:144:PHE:CE1	2.50	0.47
12:O:29:LEU:HD12	12:O:56:CYS:SG	2.55	0.47
2:B:1282:U:H4'	18:U:88:ARG:HB2	1.96	0.47
23:Z:106:LEU:O	23:Z:106:LEU:HD12	2.15	0.47
1:A:1053:OMC:HM23	1:A:1053:OMC:H1'	1.53	0.46
1:A:1152:A:O2'	1:A:1288:G:O2'	2.33	0.46
1:A:260:U:H4'	1:A:261:U:OP2	2.15	0.46
1:A:348:A:C2	2:B:1354:C:H1'	2.50	0.46
1:A:381:G:C3'	1:A:382:A:H5''	2.46	0.46
1:A:38:A:H2	1:A:43:U:O4	1.98	0.46
2:B:1180:G:H2'	2:B:1181:C:C5'	2.45	0.46
2:B:117:A:C2'	2:B:118:G:H5'	2.44	0.46
2:B:477:A:C2'	2:B:478:C:H5'	2.45	0.46
2:B:567:G:N1	2:B:570:G:OP2	2.41	0.46
3:C:50:C:H42	3:C:75:OMG:HN1	1.63	0.46
3:C:57:C:H2'	3:C:58:G:H5'	1.98	0.46
10:L:172:THR:HG22	10:L:172:THR:O	2.15	0.46
12:O:36:ARG:HD2	12:O:147:CYS:SG	2.55	0.46
18:U:75:ILE:CG2	18:U:86:ARG:HG2	2.45	0.46
21:X:132:ASN:OD1	21:X:184:ALA:N	2.48	0.46
23:Z:28:MET:CG	23:Z:98:PRO:CG	2.92	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1610:A:H2'	1:A:1611:A:O4'	2.16	0.46
1:A:1735:U:H5'	1:A:1755:A:OP1	2.15	0.46
1:A:413:U:C5'	1:A:414:U:H5''	2.44	0.46
1:A:413:U:H5''	1:A:414:U:C5'	2.45	0.46
2:B:1478:C:H2'	2:B:1479:U:O4'	2.16	0.46
2:B:1543:G:C2'	2:B:1544:U:H5'	2.45	0.46
2:B:1642:A:N3	2:B:1642:A:H2'	2.29	0.46
2:B:765:A:H2'	2:B:766:C:C6	2.51	0.46
12:O:215:VAL:HG11	13:P:112:GLN:O	2.16	0.46
14:Q:155:CYS:O	14:Q:159:ARG:HG2	2.15	0.46
15:R:51:VAL:HG22	15:R:51:VAL:O	2.15	0.46
20:W:70:GLU:O	20:W:74:LYS:NZ	2.48	0.46
21:X:109:TRP:CZ2	21:X:113:ARG:NH1	2.82	0.46
22:Y:57:ARG:O	22:Y:61:ARG:HG3	2.15	0.46
1:A:415:U:H4'	1:A:449:C:H5'	1.96	0.46
1:A:592:A:H2'	1:A:593:C:C6	2.50	0.46
1:A:74:U:H5'	11:N:64:ASN:O	2.15	0.46
2:B:11:A:H2'	2:B:12:G:O4'	2.15	0.46
2:B:662:G:H2'	2:B:663:A:O4'	2.15	0.46
4:D:46:G:C2'	4:D:47:U:H5'	2.46	0.46
4:D:57:C:H2'	4:D:58:G:C8	2.50	0.46
7:G:93:G:O2'	17:T:61:SER:OG	2.28	0.46
10:L:154:VAL:HG23	10:L:159:ARG:CG	2.43	0.46
11:N:90:ILE:HD11	11:N:125:MET:HG3	1.96	0.46
15:R:48:TYR:HB2	15:R:92:LEU:HD21	1.96	0.46
16:S:50:LYS:HZ3	18:U:148:ARG:HD2	1.79	0.46
22:Y:14:HIS:HB2	22:Y:17:HIS:HD2	1.80	0.46
23:Z:31:PRO:HA	23:Z:44:ALA:HA	1.96	0.46
1:A:1169:A:C2'	1:A:1170:G:H5'	2.46	0.46
1:A:1949:A:N1	21:X:160:VAL:HG11	2.31	0.46
1:A:235:U:O2'	1:A:236:G:H5'	2.15	0.46
1:A:330:A:H2'	1:A:331:G:C8	2.51	0.46
1:A:406:G:OP2	1:A:406:G:H8	1.98	0.46
1:A:476:U:H2'	1:A:477:A:H8	1.80	0.46
1:A:592:A:H2'	1:A:593:C:H6	1.80	0.46
1:A:928:A:H2'	1:A:929:C:O4'	2.16	0.46
2:B:1110:C:H2'	2:B:1111:C:H6	1.79	0.46
2:B:1395:C:H2'	2:B:1396:U:O4'	2.15	0.46
2:B:1518:C:C2'	2:B:1519:U:H5'	2.45	0.46
2:B:710:G:H1	2:B:742:G:H21	1.62	0.46
2:B:771:G:H2'	2:B:772:U:H6	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:775:G:O2'	2:B:776:G:H5'	2.15	0.46
1:A:1963:U:H3	2:B:7:C:H42	1.64	0.46
1:A:1960:G:O2'	3:C:140:U:O2'	2.16	0.46
8:H:92:A:H2'	8:H:93:G:H5'	1.97	0.46
1:A:32:G:OP1	14:Q:89:ARG:HD3	2.16	0.46
19:V:112:ARG:HD2	19:V:118:GLN:NE2	2.29	0.46
23:Z:55:VAL:HG22	23:Z:101:VAL:HG12	1.96	0.46
1:A:1049:A:O2'	1:A:1051:A:H5''	2.14	0.46
1:A:142:U:O4'	1:A:143:G:H5''	2.16	0.46
1:A:450:U:O4	1:A:451:G:N1	2.49	0.46
1:A:451:G:OP1	1:A:1640:U:O2'	2.30	0.46
2:B:1458:A:H2	2:B:1460:C:H41	1.64	0.46
2:B:750:A:H5'	2:B:751:C:OP2	2.15	0.46
2:B:862:U:O2'	2:B:863:C:H5'	2.16	0.46
3:C:143:C:O2'	3:C:144:C:H5'	2.16	0.46
5:E:101:C:O2'	5:E:102:U:H5'	2.16	0.46
5:E:32:A:C2'	5:E:33:A:H5'	2.46	0.46
13:P:135:LYS:HE3	13:P:140:HIS:C	2.35	0.46
13:P:28:VAL:HG11	13:P:48:ARG:CZ	2.45	0.46
13:P:6:TYR:CD2	16:S:152:PRO:HD3	2.49	0.46
20:W:97:PHE:HZ	20:W:139:VAL:HG23	1.79	0.46
1:A:1539:U:OP2	1:A:1540:A:H5''	2.16	0.46
1:A:1622:G:H1	1:A:1636:C:H42	1.63	0.46
1:A:421:G:OP2	23:Z:87:ALA:HB2	2.16	0.46
2:B:1149:A:H2'	2:B:1150:G:C5'	2.37	0.46
2:B:1242:U:H2'	2:B:1243:C:C6	2.51	0.46
2:B:1576:G:O6	12:O:119:GLN:HA	2.16	0.46
2:B:542:C:H2'	2:B:588:A:N6	2.30	0.46
3:C:44:A:C2'	3:C:45:C:H5'	2.45	0.46
5:E:115:A:H4'	5:E:128:G:H4'	1.97	0.46
2:B:78:U:O2'	7:G:78:U:OP1	2.18	0.46
9:I:129:THR:H	9:I:132:GLN:NE2	2.13	0.46
4:D:42:A:H5''	10:L:78:ARG:CD	2.46	0.46
12:O:70:ILE:O	12:O:74:GLN:HG3	2.16	0.46
14:Q:176:GLU:HG2	14:Q:177:GLN:N	2.31	0.46
20:W:47:ARG:CB	20:W:50:ARG:NH1	2.79	0.46
20:W:47:ARG:HB3	20:W:50:ARG:HH11	1.79	0.46
1:A:1007:C:H2'	1:A:1008:C:C6	2.51	0.46
1:A:1002:G:C2'	1:A:1024:G:H22	2.28	0.46
1:A:1291:A:H2'	1:A:1292:C:H6	1.79	0.46
1:A:254:A:N3	1:A:255:A:N7	2.64	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:452:A:C2'	1:A:453:A:H5'	2.46	0.46
1:A:500:C:C2	1:A:603:G:N2	2.84	0.46
2:B:1186:U:H4'	2:B:1187:A:OP1	2.14	0.46
2:B:1379:C:H2'	2:B:1380:OMC:O5'	2.15	0.46
2:B:498:U:H2'	2:B:499:U:C6	2.50	0.46
2:B:505:U:O2'	2:B:506:G:OP1	2.26	0.46
2:B:593:G:H2'	2:B:594:C:O4'	2.16	0.46
2:B:625:A:H2'	2:B:634:OMG:O6	2.16	0.46
7:G:169:C:O2'	7:G:171:G:OP1	2.34	0.46
2:B:127:C:P	8:H:65:G:H21	2.38	0.46
10:L:23:LEU:HB3	10:L:77:VAL:HB	1.96	0.46
13:P:107:ASP:HA	13:P:110:ARG:NH2	2.31	0.46
13:P:17:ARG:HH12	16:S:159:LYS:HE2	1.80	0.46
19:V:87:LYS:HZ1	19:V:116:THR:N	2.14	0.46
1:A:1512:A:O2'	1:A:1515:A:H2	1.98	0.46
1:A:211:C:O2'	1:A:212:C:H6	1.99	0.46
1:A:311:U:H2'	1:A:312:A:C8	2.51	0.46
1:A:800:C:OP1	9:I:55:SER:OG	2.24	0.46
2:B:668:U:C2'	2:B:669:G:H5'	2.46	0.46
5:E:124:G:N3	5:E:124:G:H2'	2.30	0.46
1:A:742:G:O4'	6:F:67:A:N6	2.48	0.46
12:O:218:LYS:HE2	12:O:219:PHE:CE2	2.50	0.46
12:O:86:LEU:HD12	12:O:86:LEU:C	2.36	0.46
13:P:16:ILE:HG22	13:P:17:ARG:N	2.31	0.46
21:X:160:VAL:HG21	21:X:179:SER:HA	1.97	0.46
1:A:1670:G:N2	2:B:704:A:H62	2.12	0.46
1:A:791:U:H2'	1:A:792:OMC:C6	2.51	0.46
2:B:1159:C:C2'	2:B:1160:A:H5'	2.45	0.46
2:B:1288:G:H5''	18:U:83:ARG:NH2	2.29	0.46
2:B:513:A:H2'	2:B:514:G:N3	2.31	0.46
2:B:574:A:H2'	2:B:575:C:C6	2.51	0.46
3:C:60:U:C5	3:C:97:U:H4'	2.51	0.46
4:D:1:G:H2'	4:D:2:G:C8	2.51	0.46
4:D:29:C:O3'	10:L:140:ARG:NH2	2.49	0.46
7:G:170:A:H4'	7:G:171:G:O5'	2.15	0.46
10:L:108:PHE:HE1	10:L:168:TRP:CZ2	2.28	0.46
10:L:77:VAL:O	10:L:78:ARG:HB3	2.16	0.46
11:N:36:GLN:OE1	11:N:39:ARG:NE	2.40	0.46
12:O:209:SER:O	12:O:213:LEU:HB2	2.16	0.46
12:O:66:ILE:O	12:O:70:ILE:HG12	2.16	0.46
1:A:136:G:OP2	14:Q:160:ARG:NH1	2.48	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:Q:188:ARG:NH1	14:Q:190:LEU:HD12	2.31	0.46
14:Q:81:ARG:HD2	14:Q:143:PHE:CG	2.51	0.46
21:X:146:GLU:OE2	21:X:149:LYS:NZ	2.40	0.46
1:A:325:A:N1	2:B:1354:C:O2'	2.40	0.46
1:A:375:U:H2'	1:A:376:A:H5'	1.97	0.46
1:A:41:C:C2'	1:A:42:A:H5'	2.45	0.46
1:A:446:A:H1'	1:A:448:C:C4	2.51	0.46
2:B:627:A2M:HM'2	2:B:628:U:C6	2.51	0.46
2:B:876:C:H3'	2:B:877:A:H5'	1.97	0.46
3:C:69:U:H2'	3:C:70:C:C1'	2.46	0.46
4:D:48:G:C6	4:D:49:A:C6	3.04	0.46
10:L:149:ARG:HG2	10:L:150:LYS:HG3	1.97	0.46
1:A:28:C:O2'	14:Q:178:ARG:O	2.30	0.46
14:Q:210:ARG:HA	14:Q:213:ARG:HH21	1.79	0.46
14:Q:89:ARG:NH2	14:Q:102:THR:O	2.49	0.46
16:S:139:LEU:O	16:S:142:SER:OG	2.32	0.46
5:E:115:A:OP2	17:T:121:ARG:CD	2.64	0.46
17:T:109:TYR:CE2	17:T:142:ILE:HG21	2.51	0.46
1:A:1000:G:OP1	17:T:86:GLU:HB3	2.16	0.46
17:T:89:MET:HA	17:T:90:PRO:HD3	1.81	0.46
21:X:122:ASP:O	21:X:126:LYS:HG3	2.15	0.46
22:Y:51:ARG:NH1	22:Y:51:ARG:HB2	2.12	0.46
1:A:1321:A:O2'	1:A:1322:G:H5'	2.16	0.45
1:A:142:U:H4'	1:A:143:G:O5'	2.14	0.45
1:A:236:G:H5''	1:A:237:U:OP1	2.16	0.45
1:A:71:C:H5'	11:N:68:VAL:CG1	2.46	0.45
2:B:1329:C:N4	2:B:1330:G:O6	2.49	0.45
2:B:1495:C:O2'	2:B:1496:A:H5'	2.16	0.45
8:H:15:A:H2'	8:H:16:A:O4'	2.16	0.45
8:H:16:A:O2'	8:H:18:C:OP2	2.17	0.45
13:P:147:LEU:O	13:P:148:GLN:C	2.51	0.45
14:Q:151:VAL:HG21	14:Q:164:ILE:HD11	1.98	0.45
14:Q:192:HIS:O	14:Q:197:ALA:HB3	2.16	0.45
23:Z:86:LYS:HG2	23:Z:87:ALA:N	2.30	0.45
23:Z:8:SER:OG	23:Z:11:LYS:HD2	2.15	0.45
1:A:1044:C:O2'	1:A:1047:G:O2'	2.10	0.45
1:A:210:A:N7	1:A:211:C:N4	2.64	0.45
1:A:412:G:HO2'	1:A:414:U:H5	1.63	0.45
1:A:768:G:H2'	1:A:769:U:H5'	1.97	0.45
2:B:1649:A:H5'	2:B:1649:A:H8	1.80	0.45
2:B:55:C:C2'	2:B:56:U:H5'	2.46	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:45:G:H2'	6:F:46:G:C8	2.52	0.45
8:H:92:A:C2'	8:H:93:G:H5'	2.46	0.45
1:A:1500:C:O2'	12:O:104:SER:HB2	2.15	0.45
13:P:83:ILE:HD13	13:P:86:LYS:CE	2.46	0.45
19:V:57:LEU:CD1	19:V:58:ASN:HD22	2.29	0.45
21:X:152:ARG:HH22	21:X:158:LYS:HD2	1.81	0.45
1:A:132:U:H2'	1:A:133:A:OP1	2.15	0.45
1:A:274:C:O5'	1:A:274:C:H6	1.99	0.45
1:A:921:A:H2'	1:A:922:A:C5'	2.46	0.45
2:B:1377:U:O3'	2:B:1378:A:H3'	2.17	0.45
2:B:668:U:O2'	2:B:669:G:H5'	2.16	0.45
2:B:739:G:O2'	2:B:740:G:P	2.74	0.45
4:D:110:G:H2'	4:D:111:C:O4'	2.16	0.45
4:D:24:U:O2'	4:D:118:C:O4'	2.32	0.45
6:F:13:U:H6	6:F:13:U:H5''	1.81	0.45
8:H:30:C:H2'	8:H:31:A:O4'	2.16	0.45
12:O:25:ILE:O	12:O:25:ILE:HG13	2.16	0.45
12:O:29:LEU:HB3	12:O:59:LEU:CD2	2.46	0.45
13:P:52:ASN:OD1	13:P:53:LEU:N	2.50	0.45
19:V:52:GLN:HB3	19:V:70:VAL:HG21	1.97	0.45
23:Z:28:MET:CE	23:Z:70:CYS:SG	3.04	0.45
1:A:129:U:H2'	1:A:130:C:O4'	2.16	0.45
1:A:1338:C:H1'	1:A:1385:C:O2	2.17	0.45
1:A:1496:A:N6	2:B:713:A:N3	2.64	0.45
1:A:1529:A:H2'	1:A:1530:U:C6	2.51	0.45
1:A:1652:U:C2'	1:A:1653:A:H5'	2.46	0.45
1:A:1922:G:H2'	1:A:1923:C:O4'	2.16	0.45
1:A:210:A:N3	1:A:210:A:H2'	2.32	0.45
1:A:212:C:HO2'	1:A:213:C:H6	1.61	0.45
1:A:321:U:O2	1:A:323:G:H3'	2.16	0.45
1:A:450:U:C3'	1:A:451:G:H5'	2.47	0.45
1:A:50:A:H2'	1:A:51:A:O4'	2.16	0.45
2:B:116:A:H2'	2:B:117:A:H5'	1.98	0.45
2:B:1492:OMG:H3'	2:B:1493:U:C5'	2.45	0.45
2:B:1503:G:H8	2:B:1503:G:O5'	1.99	0.45
1:A:1048:C:H1'	2:B:33:A:C8	2.51	0.45
5:E:36:A:H62	5:E:184:C:H42	1.63	0.45
7:G:63:A:C2'	7:G:64:U:H5'	2.46	0.45
7:G:96:C:H2'	7:G:97:G:O4'	2.17	0.45
9:I:100:ALA:O	9:I:119:ARG:NH1	2.50	0.45
12:O:124:GLU:HG3	12:O:166:TRP:CZ2	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:121:U:OP1	12:O:36:ARG:NH2	130.74	0.45
22:Y:43:MET:HE1	22:Y:55:TRP:CH2	2.52	0.45
1:A:1057:C:H2'	1:A:1058:G:H8	1.80	0.45
1:A:1323:G:H2'	1:A:1324:C:C6	2.52	0.45
1:A:1803:A:C3'	1:A:1804:A2M:H5''	2.46	0.45
1:A:7:C:O2'	1:A:8:C:H5'	2.17	0.45
1:A:920:C:C2	9:I:147:ARG:NH1	2.85	0.45
2:B:1326:U:O2	2:B:1361:OMG:N2	2.47	0.45
2:B:1495:C:H2'	2:B:1496:A:H5'	1.98	0.45
2:B:1564:U:H2'	2:B:1565:G:H8	1.82	0.45
5:E:115:A:OP1	17:T:117:ARG:HG3	2.17	0.45
5:E:52:G:OP2	19:V:104:ARG:NH2	2.49	0.45
7:G:41:A:H61	7:G:61:C:N4	2.15	0.45
18:U:146:LEU:O	18:U:146:LEU:HG	2.17	0.45
18:U:40:VAL:HB	18:U:96:VAL:CG1	2.45	0.45
18:U:91:VAL:HG12	18:U:92:ARG:O	2.17	0.45
18:U:91:VAL:HG13	18:U:95:HIS:HB2	1.99	0.45
19:V:60:ARG:NH1	19:V:63:LYS:HZ2	2.13	0.45
23:Z:53:VAL:CG2	23:Z:101:VAL:HB	2.46	0.45
1:A:1042:G:H22	1:A:1053:OMC:H5	1.61	0.45
1:A:1170:G:H1	1:A:1221:U:H3	1.64	0.45
1:A:1120:G:O2'	1:A:1299:G:H5'	2.16	0.45
1:A:1619:G:H2'	1:A:1620:C:O4'	2.16	0.45
1:A:393:A:C3'	1:A:394:C:H5''	2.47	0.45
1:A:518:U:H1'	1:A:586:G:N2	2.32	0.45
1:A:804:C:H3'	9:I:111:ARG:HH21	1.81	0.45
2:B:1220:G:H2'	2:B:1221:A:C8	2.51	0.45
2:B:684:C:H3'	2:B:685:C:H2'	1.98	0.45
2:B:735:A:H5''	15:R:80:LYS:HE2	1.99	0.45
6:F:13:U:HO2'	6:F:14:C:P	2.35	0.45
7:G:72:C:H5	7:G:115:A:N6	2.03	0.45
1:A:964:U:H5'	11:N:2:PRO:HD3	1.96	0.45
11:N:58:ALA:HB1	11:N:99:GLY:O	2.16	0.45
19:V:95:LYS:HD2	19:V:104:ARG:HE	1.82	0.45
19:V:86:ARG:HD3	19:V:88:LYS:HG2	1.99	0.45
1:A:1057:C:H2'	1:A:1058:G:C8	2.51	0.45
1:A:1119:A:H1'	1:A:1297:U:O2'	2.16	0.45
1:A:1666:G:O2'	3:C:14:G:H4'	2.17	0.45
1:A:445:G:H5''	1:A:448:C:O2'	2.17	0.45
1:A:738:U:C2'	1:A:739:U:H5'	2.47	0.45
1:A:809:G:H2'	1:A:810:A:H1'	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:874:G:H3'	1:A:919:OMC:HN42	1.82	0.45
2:B:1382:C:H2'	2:B:1383:A:C8	2.52	0.45
2:B:1447:G:O2'	2:B:1493:U:O2'	2.31	0.45
2:B:1533:C:C2'	2:B:1534:G:H5'	2.47	0.45
3:C:72:A:OP2	23:Z:49:LYS:HG3	2.16	0.45
4:D:13:A:OP1	4:D:109:U:O2'	2.34	0.45
4:D:77:A:H61	4:D:99:G:C2'	2.29	0.45
7:G:43:G:O5'	7:G:43:G:H8	2.00	0.45
8:H:20:A:H2'	8:H:21:G:C5'	2.33	0.45
13:P:12:LEU:O	13:P:59:LEU:HB2	2.17	0.45
14:Q:54:ARG:HB2	14:Q:78:PHE:CE1	2.52	0.45
15:R:150:MET:HG3	15:R:150:MET:O	2.17	0.45
16:S:11:VAL:HG13	16:S:60:VAL:CG2	2.46	0.45
22:Y:8:PHE:CE2	22:Y:53:VAL:HG21	2.52	0.45
1:A:1610:A:C2	1:A:1646:A:N1	2.76	0.45
1:A:1804:A2M:HM'3	21:X:91:ARG:NH1	2.29	0.45
1:A:315:A:O2'	1:A:316:C:H5'	2.16	0.45
1:A:811:G:H2'	1:A:812:A:C8	2.52	0.45
1:A:868:U:O2'	1:A:951:G:N2	2.49	0.45
2:B:1300:A:O2'	2:B:1301:C:H5'	2.17	0.45
5:E:128:G:H2'	5:E:128:G:N3	2.32	0.45
5:E:32:A:H2'	5:E:33:A:H5'	1.99	0.45
9:I:153:ARG:O	9:I:156:VAL:HG22	2.17	0.45
12:O:126:ILE:CD1	12:O:130:VAL:HG12	2.47	0.45
12:O:21:ARG:CG	12:O:22:PRO:HD2	2.46	0.45
16:S:32:PHE:HD2	16:S:125:VAL:HG11	1.82	0.45
18:U:43:VAL:HG23	18:U:58:HIS:HE1	1.82	0.45
20:W:25:VAL:HB	20:W:100:ASN:O	2.17	0.45
20:W:95:ILE:HG13	22:Y:20:ARG:HB2	1.99	0.45
1:A:127:G:OP2	14:Q:156:ARG:NH1	2.45	0.45
1:A:1342:U:H5'	9:I:2:GLY:CA	2.42	0.45
1:A:1779:A:HO2'	1:A:1780:C:P	2.37	0.45
1:A:29:G:H5''	14:Q:188:ARG:HD3	1.98	0.45
1:A:355:U:C2'	1:A:356:G:H5'	2.46	0.45
1:A:73:G:OP1	11:N:110:SER:OG	2.20	0.45
1:A:752:U:C2'	1:A:753:G:H5'	2.47	0.45
1:A:794:A2M:OP1	14:Q:220:ARG:NH1	2.49	0.45
2:B:627:A2M:H8	2:B:627:A2M:H2'	1.80	0.45
2:B:691:A2M:H1'	2:B:691:A2M:HM'3	1.63	0.45
5:E:68:A:H2'	5:E:69:A:C8	2.52	0.45
15:R:116:HIS:CE1	15:R:147:GLN:HE21	2.28	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:S:173:THR:CG2	16:S:174:LYS:N	2.80	0.45
18:U:77:ASN:OD1	18:U:86:ARG:HG3	2.17	0.45
21:X:109:TRP:CE2	21:X:113:ARG:NH1	2.85	0.45
23:Z:103:ILE:HG21	23:Z:106:LEU:HB3	1.98	0.45
1:A:1507:G:O2'	1:A:1508:C:H5'	2.17	0.45
1:A:1616:G:C1'	1:A:1643:A:N6	2.79	0.45
1:A:1798:U:H2'	1:A:1800:A:H5'	1.99	0.45
1:A:1799:U:H5'	1:A:1800:A:OP1	2.17	0.45
1:A:26:C:H42	1:A:56:A:N6	2.15	0.45
2:B:131:G:OP1	17:T:136:ARG:NE	2.42	0.45
1:A:1492:A:H1'	2:B:1455:C:H1'	1.98	0.45
2:B:725:U:H6	2:B:725:U:O5'	2.00	0.45
4:D:49:A:OP2	4:D:49:A:H8	2.00	0.45
8:H:41:A:O2'	8:H:42:U:O4'	2.35	0.45
10:L:77:VAL:CG1	10:L:78:ARG:N	2.80	0.45
15:R:48:TYR:CA	15:R:51:VAL:HG12	2.38	0.45
13:P:67:ARG:NH1	16:S:144:TYR:O	2.34	0.45
2:B:870:A:N7	21:X:82:PRO:HG3	2.32	0.45
22:Y:27:LEU:HG	22:Y:29:THR:HB	1.98	0.45
22:Y:6:CYS:SG	22:Y:35:PHE:HA	2.56	0.45
1:A:135:A:HO2'	1:A:136:G:P	2.39	0.44
1:A:188:G:H2'	1:A:189:U:H6	1.81	0.44
1:A:239:A:H2'	1:A:240:G:H5''	2.00	0.44
1:A:50:A:C2'	1:A:51:A:H5'	2.46	0.44
1:A:601:U:O2'	1:A:602:G:H5'	2.17	0.44
1:A:957:U:H2'	1:A:958:OMG:H8	1.82	0.44
2:B:1229:G:H2'	2:B:1230:G:H8	1.82	0.44
2:B:458:G:H2'	2:B:459:C:O2	2.17	0.44
2:B:702:A:O2'	15:R:129:THR:HG21	2.17	0.44
2:B:787:C:H6	2:B:787:C:O5'	2.00	0.44
3:C:146:U:O2'	3:C:147:G:H5'	2.17	0.44
3:C:8:C:O2'	3:C:9:G:H5'	2.17	0.44
7:G:166:G:H4'	7:G:167:A:O5'	2.16	0.44
9:I:44:PHE:CZ	9:I:133:LEU:HD21	2.52	0.44
12:O:212:ASN:HB3	13:P:116:ALA:CB	2.47	0.44
20:W:86:SER:HA	20:W:96:TYR:HB3	1.99	0.44
22:Y:8:PHE:CE2	22:Y:43:MET:HG2	2.52	0.44
1:A:105:G:O2'	1:A:813:A:H4'	2.18	0.44
1:A:1118:A:H5''	1:A:1326:A:N1	2.32	0.44
1:A:1618:A:C2'	1:A:1619:G:H5'	2.47	0.44
1:A:1640:U:H2'	1:A:1641:G:O4'	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1709:C:H2'	1:A:1710:OMG:H8	1.82	0.44
1:A:1711:U:C2'	1:A:1712:U:H5'	2.47	0.44
1:A:1921:G:C2'	1:A:1922:G:H5'	2.46	0.44
1:A:214:G:H1'	1:A:215:U:OP2	2.17	0.44
1:A:24:U:H5''	1:A:25:A:OP1	2.17	0.44
1:A:421:G:C2'	1:A:446:A:N6	2.81	0.44
1:A:1123:U:O2'	2:B:1287:A:N7	2.34	0.44
2:B:67:G:H22	2:B:694:A:H61	1.64	0.44
2:B:698:A:OP2	15:R:82:ARG:HD2	2.17	0.44
3:C:147:G:O2'	3:C:148:C:H5'	2.17	0.44
8:H:121:A:H2'	8:H:122:U:H6	1.80	0.44
10:L:137:LEU:HD22	10:L:168:TRP:CD2	2.52	0.44
12:O:60:THR:HG21	12:O:144:ARG:HD3	1.99	0.44
13:P:129:ASP:HA	13:P:132:ASP:HB2	1.99	0.44
14:Q:201:ARG:HA	14:Q:201:ARG:HD2	1.65	0.44
16:S:119:ARG:HH21	16:S:122:ASN:HD21	1.65	0.44
18:U:52:MET:HA	18:U:53:PRO:HD3	1.71	0.44
18:U:75:ILE:HG12	18:U:88:ARG:HD3	1.97	0.44
23:Z:85:GLU:CG	23:Z:89:GLY:HA2	2.47	0.44
1:A:1331:G:O2'	1:A:1332:A:H5'	2.17	0.44
1:A:139:A:H2'	1:A:140:C:O4'	2.16	0.44
1:A:34:A:H5''	14:Q:98:GLY:HA3	1.98	0.44
2:B:1197:C:O2	18:U:60:ARG:NH2	2.29	0.44
2:B:1366:G:OP2	2:B:1367:U:O2'	2.26	0.44
2:B:546:U:O4	49:B:1801:HOH:O	2.18	0.44
2:B:635:U:O2'	2:B:636:C:H5'	2.17	0.44
2:B:773:C:H2'	2:B:774:U:H6	1.82	0.44
2:B:87:U:H6	2:B:87:U:O5'	2.01	0.44
1:A:17:G:N2	3:C:153:C:C2	2.85	0.44
3:C:153:C:OP1	14:Q:54:ARG:HD2	2.17	0.44
4:D:109:U:O2'	4:D:110:G:P	2.75	0.44
9:I:108:CYS:HA	9:I:128:LEU:O	2.17	0.44
9:I:55:SER:HB2	9:I:58:ASN:HD22	1.83	0.44
15:R:35:VAL:CG2	15:R:59:PRO:HD2	2.48	0.44
19:V:68:VAL:HG12	19:V:68:VAL:O	2.17	0.44
20:W:17:LEU:HA	20:W:55:ALA:HB2	1.99	0.44
1:A:147:U:H3'	1:A:148:G:C5'	2.47	0.44
1:A:224:A:C2'	1:A:225:C:H5'	2.48	0.44
2:B:1289:U:C2'	2:B:1290:A:H5'	2.47	0.44
2:B:1306:A:H2'	2:B:1307:A:O4'	2.17	0.44
2:B:1540:C:HO2'	2:B:1541:A:H2	1.63	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:569:G:H8	2:B:569:G:OP2	1.99	0.44
2:B:663:A:H2'	2:B:664:U:H5'	1.98	0.44
2:B:680:U:H2'	2:B:681:G:H5'	2.00	0.44
4:D:24:U:H5''	4:D:25:G:OP2	2.17	0.44
5:E:199:A:H2'	5:E:200:A:C8	2.53	0.44
5:E:50:G:O2'	5:E:51:A:H5'	2.16	0.44
6:F:47:C:H5''	13:P:121:ALA:HB1	2.00	0.44
2:B:1561:A:O2'	8:H:19:G:N7	2.45	0.44
9:I:51:ARG:HG2	9:I:51:ARG:HH11	1.81	0.44
12:O:103:ARG:HB3	12:O:117:LEU:HD22	1.99	0.44
12:O:32:HIS:CE1	12:O:139:ILE:H	2.36	0.44
12:O:219:PHE:O	13:P:98:ALA:HB1	2.18	0.44
16:S:112:LEU:HA	16:S:112:LEU:HD12	1.72	0.44
21:X:86:ARG:HA	21:X:87:PRO:HD3	1.74	0.44
21:X:92:ARG:HA	21:X:93:PRO:HD3	1.76	0.44
22:Y:57:ARG:HG2	22:Y:61:ARG:HG3	1.98	0.44
1:A:1771:U:C3'	1:A:1772:A:H5''	2.46	0.44
1:A:266:C:OP1	23:Z:44:ALA:HB2	2.18	0.44
1:A:790:G:H4'	1:A:791:U:H6	1.83	0.44
1:A:1316:OMG:HM23	2:B:1177:G:C6	2.52	0.44
2:B:1361:OMG:HM23	2:B:1361:OMG:H1'	1.46	0.44
2:B:1502:U:OP1	20:W:43:GLY:N	2.48	0.44
2:B:656:U:O5'	2:B:656:U:H6	2.00	0.44
5:E:134:U:H2'	5:E:135:C:C6	2.53	0.44
10:L:20:VAL:CA	10:L:137:LEU:HG	2.39	0.44
10:L:139:ARG:HH12	10:L:160:VAL:HA	1.82	0.44
1:A:18:C:C4'	14:Q:154:MET:SD	3.02	0.44
17:T:98:ARG:O	17:T:98:ARG:HG2	2.17	0.44
19:V:108:ARG:NH1	19:V:122:PHE:HA	2.33	0.44
22:Y:51:ARG:HA	22:Y:58:THR:HG23	1.99	0.44
1:A:146:U:H5'	1:A:147:U:P	2.58	0.44
1:A:1528:U:H2'	1:A:1529:A:C8	2.52	0.44
1:A:1782:A:H2'	1:A:1783:C:O4'	2.17	0.44
2:B:1257:G:H5''	18:U:12:ARG:NH1	2.33	0.44
2:B:1484:G:H2'	2:B:1485:U:O4'	2.17	0.44
2:B:1530:C:H2'	2:B:1531:G:C8	2.53	0.44
2:B:1574:G:H4'	2:B:1575:A:H5''	2.00	0.44
2:B:785:G:O6	2:B:786:G:C6	2.70	0.44
3:C:49:G:H8	3:C:49:G:O5'	2.00	0.44
7:G:41:A:N6	7:G:61:C:H42	2.15	0.44
7:G:81:C:N3	7:G:109:G:N2	2.44	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:P:7:ILE:HG21	16:S:153:LEU:HD11	1.99	0.44
16:S:74:ARG:HD2	16:S:76:TYR:CZ	2.52	0.44
17:T:10:LEU:HD22	17:T:38:ARG:HG2	1.99	0.44
21:X:188:ALA:O	21:X:193:LEU:HB2	2.17	0.44
20:W:94:VAL:CG1	22:Y:19:ARG:HB3	2.47	0.44
1:A:1054:G:H2'	1:A:1055:C:C6	2.53	0.44
1:A:1616:G:C1'	1:A:1643:A:H61	2.31	0.44
1:A:54:G:H4'	14:Q:124:LYS:HZ2	1.82	0.44
1:A:7:C:N3	3:C:166:OMG:N1	2.58	0.44
2:B:21:OMC:H4'	2:B:22:A:N3	2.33	0.44
2:B:515:U:H5''	2:B:516:G:OP2	2.17	0.44
1:A:468:A:N3	2:B:709:A:H4'	2.33	0.44
3:C:96:A:C2'	3:C:97:U:H5'	2.48	0.44
5:E:50:G:O6	19:V:88:LYS:NZ	2.46	0.44
7:G:119:C:H2'	7:G:120:A:H8	1.83	0.44
7:G:63:A:H2'	7:G:64:U:O4'	2.17	0.44
9:I:139:THR:HG22	9:I:140:GLY:N	2.32	0.44
9:I:85:PRO:HA	9:I:142:ASN:O	2.18	0.44
12:O:124:GLU:HG3	12:O:166:TRP:HZ2	1.82	0.44
15:R:128:ARG:HE	15:R:136:ILE:HG21	1.81	0.44
1:A:1023:G:C6	1:A:1024:G:N1	2.86	0.44
1:A:1036:G:C2'	1:A:1037:A:H5'	2.48	0.44
1:A:144:A:H2'	1:A:145:G:C5'	2.48	0.44
1:A:1494:G:O6	2:B:712:C:O2'	2.36	0.44
1:A:1511:A:O2'	1:A:1512:A:H5'	2.18	0.44
1:A:1760:A:C2'	1:A:1761:G:H5'	2.48	0.44
1:A:386:A:N1	1:A:393:A:O2'	2.46	0.44
2:B:1273:G:H8	2:B:1311:A:H2'	1.82	0.44
2:B:709:A:C2'	2:B:710:G:H5'	2.47	0.44
1:A:452:A:H62	3:C:15:G:H1'	1.81	0.44
4:D:116:A:C2'	4:D:117:U:H5'	2.48	0.44
5:E:127:C:H2'	5:E:128:G:O4'	2.16	0.44
7:G:124:U:H6	7:G:124:U:OP2	2.00	0.44
2:B:69:A:OP2	8:H:107:A:N6	2.50	0.44
8:H:41:A:HO2'	8:H:42:U:H6	1.63	0.44
9:I:25:TYR:O	9:I:29:LEU:HB2	2.18	0.44
9:I:66:ARG:CZ	9:I:70:CYS:SG	3.06	0.44
11:N:184:LYS:NZ	11:N:186:VAL:HG12	2.33	0.44
12:O:93:SER:O	12:O:97:ILE:HG13	2.18	0.44
13:P:81:LYS:HB3	13:P:86:LYS:HZ1	1.82	0.44
1:A:1712:U:H5''	17:T:4:LEU:CD1	2.48	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:W:28:ALA:CB	20:W:81:ILE:HD11	2.47	0.44
21:X:147:ILE:CD1	21:X:164:THR:HG21	2.47	0.44
1:A:239:A:H1'	1:A:259:G:N3	2.33	0.44
1:A:27:C:H2'	1:A:28:C:C6	2.53	0.44
1:A:324:G:OP2	1:A:326:G:H4'	2.17	0.44
1:A:590:G:H2'	1:A:591:A:O4'	2.17	0.44
1:A:92:G:H4'	1:A:92:G:OP1	2.17	0.44
2:B:1299:G:O2'	2:B:1300:A:H5'	2.18	0.44
3:C:121:G:H2'	3:C:122:A:C8	2.53	0.44
5:E:115:A:C2'	5:E:116:G:H5'	2.48	0.44
7:G:115:A:O2'	7:G:117:C:H2'	2.18	0.44
7:G:39:C:O2'	7:G:40:G:H5'	2.18	0.44
12:O:27:VAL:HA	12:O:137:VAL:CG2	2.48	0.44
14:Q:99:LYS:HA	14:Q:100:PRO:HD3	1.76	0.44
23:Z:118:ARG:HG3	23:Z:118:ARG:O	2.18	0.44
1:A:347:U:H3'	1:A:347:U:OP1	2.17	0.43
1:A:107:U:O4'	1:A:367:A:H1'	2.17	0.43
2:B:68:A:H4'	2:B:69:A:OP1	2.15	0.43
4:D:68:C:O2'	4:D:69:U:H5'	2.18	0.43
12:O:24:ILE:HG23	12:O:50:LYS:O	2.18	0.43
14:Q:188:ARG:HH11	14:Q:190:LEU:HD12	1.83	0.43
16:S:29:PHE:HB3	16:S:43:PHE:HD1	1.82	0.43
17:T:92:LYS:O	17:T:96:MET:HG3	2.18	0.43
18:U:107:GLN:O	18:U:110:LYS:HB3	2.18	0.43
23:Z:83:ASN:HB2	23:Z:92:VAL:O	2.19	0.43
1:A:1023:G:OP1	17:T:92:LYS:NZ	2.51	0.43
1:A:1604:G:C6	1:A:1653:A:C2	3.06	0.43
1:A:1613:G:O2'	1:A:1643:A:N1	2.38	0.43
1:A:1740:G:C2	1:A:1741:C:H1'	2.53	0.43
1:A:1794:U:O5'	1:A:1794:U:H6	2.01	0.43
1:A:313:G:H2'	1:A:314:C:O4'	2.18	0.43
1:A:793:A:O3'	14:Q:220:ARG:NH1	2.51	0.43
1:A:794:A2M:HM'2	1:A:795:A:O4'	2.18	0.43
1:A:868:U:O2'	9:I:69:VAL:HG11	2.18	0.43
1:A:948:G:OP1	9:I:157:LYS:HD2	2.18	0.43
2:B:1174:G:H2'	2:B:1175:C:C6	2.54	0.43
2:B:1643:C:H6	2:B:1643:C:C5'	2.29	0.43
3:C:105:OMC:H5'	3:C:107:C:OP2	2.18	0.43
4:D:13:A:H5''	4:D:109:U:HO2'	1.83	0.43
7:G:38:A:H2'	7:G:39:C:H6	1.82	0.43
7:G:41:A:H61	7:G:61:C:H42	1.66	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:114:LYS:O	9:I:118:GLU:HG2	2.18	0.43
10:L:106:GLY:HA2	10:L:165:ALA:HB2	2.00	0.43
12:O:166:TRP:CZ3	12:O:169:SER:HA	2.53	0.43
12:O:219:PHE:C	13:P:98:ALA:HB1	2.38	0.43
13:P:76:ASN:O	13:P:79:ALA:HB3	2.18	0.43
14:Q:164:ILE:O	14:Q:164:ILE:HG13	2.18	0.43
15:R:15:ALA:HB2	15:R:102:ALA:HA	2.00	0.43
15:R:129:THR:OG1	15:R:137:THR:N	2.51	0.43
19:V:48:GLU:HG3	19:V:72:LEU:CD1	2.46	0.43
19:V:86:ARG:CD	19:V:88:LYS:HG2	2.47	0.43
20:W:81:ILE:HG12	20:W:101:ALA:O	2.18	0.43
1:A:131:U:H3'	1:A:132:U:H5''	1.99	0.43
1:A:1538:G:O2'	1:A:1540:A:O5'	2.34	0.43
1:A:45:U:H2'	1:A:46:U:O4'	2.18	0.43
1:A:842:U:H2'	1:A:843:G:C8	2.53	0.43
2:B:1268:U:H2'	2:B:1269:G:C8	2.53	0.43
2:B:1643:C:N4	2:B:1647:G:H1	2.16	0.43
5:E:182:U:H2'	5:E:183:U:H5'	2.00	0.43
7:G:100:A:O2'	7:G:101:A:H5'	2.18	0.43
12:O:205:LEU:O	12:O:213:LEU:HD12	2.18	0.43
19:V:72:LEU:CD1	19:V:77:LEU:HD23	2.48	0.43
20:W:62:ALA:O	20:W:76:LEU:HB2	2.18	0.43
20:W:81:ILE:HD12	20:W:120:VAL:HG22	2.00	0.43
1:A:1025:A:O2'	1:A:1026:G:H5'	2.18	0.43
1:A:305:A:H2'	1:A:306:G:O4'	2.18	0.43
1:A:431:A:C5	1:A:432:A:H1'	2.53	0.43
2:B:766:C:H2'	2:B:767:OMU:H6	1.99	0.43
2:B:93:A:H2'	2:B:94:A:O4'	2.19	0.43
3:C:22:U:H4'	23:Z:14:ARG:HB2	2.00	0.43
15:R:151:THR:HG22	15:R:152:GLN:N	2.33	0.43
16:S:9:TYR:HB2	16:S:31:VAL:HG23	1.99	0.43
17:T:119:ILE:O	17:T:122:GLU:HB3	2.19	0.43
1:A:1712:U:H5''	17:T:4:LEU:HD12	2.00	0.43
18:U:109:GLN:HA	18:U:112:PHE:HB3	2.00	0.43
1:A:1570:A:C2'	1:A:1571:G:H5'	2.49	0.43
1:A:1934:C:H2'	1:A:1935:U:C6	2.54	0.43
1:A:195:U:OP1	1:A:196:C:H5''	2.18	0.43
1:A:771:U:O5'	1:A:771:U:H6	2.01	0.43
1:A:804:C:H3'	9:I:111:ARG:NH2	2.33	0.43
2:B:10:C:O2'	2:B:11:A:H5'	2.19	0.43
2:B:1529:OMC:HM22	2:B:1530:C:C4'	2.47	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:43:U:OP1	10:L:143:ARG:HG3	2.17	0.43
9:I:158:HIS:O	11:N:5:LYS:NZ	2.48	0.43
12:O:99:LEU:CD1	12:O:122:ALA:CB	2.96	0.43
6:F:44:C:C5	13:P:95:ARG:HD2	2.54	0.43
14:Q:172:HIS:HB3	14:Q:175:ARG:CG	2.47	0.43
14:Q:44:TRP:HA	14:Q:47:ARG:NH2	2.29	0.43
15:R:151:THR:HG22	15:R:152:GLN:O	2.19	0.43
15:R:99:GLU:O	15:R:103:ILE:HG13	2.19	0.43
20:W:77:ASN:HB2	20:W:105:VAL:O	2.18	0.43
20:W:36:LEU:HD13	20:W:78:ALA:CB	2.48	0.43
22:Y:30:LYS:HE2	22:Y:30:LYS:HB2	1.80	0.43
23:Z:60:TYR:CZ	23:Z:94:VAL:HG11	2.53	0.43
1:A:18:C:C5'	14:Q:154:MET:SD	3.07	0.43
1:A:814:G:OP1	11:N:44:ARG:NH1	2.47	0.43
2:B:1288:G:H5''	18:U:83:ARG:NH1	2.34	0.43
3:C:104:A:H1'	3:C:105:OMC:HM23	2.00	0.43
5:E:203:C:H2'	5:E:204:C:C6	2.54	0.43
8:H:42:U:H1'	8:H:100:A:C4	2.53	0.43
13:P:81:LYS:O	13:P:86:LYS:HE2	2.18	0.43
14:Q:197:ALA:O	14:Q:201:ARG:HB2	2.19	0.43
14:Q:95:ILE:HG22	14:Q:96:THR:N	2.32	0.43
16:S:81:ALA:HB2	16:S:126:LEU:HD11	1.99	0.43
16:S:141:ILE:HD12	16:S:145:HIS:NE2	2.33	0.43
17:T:102:LEU:HD21	17:T:134:ASN:O	2.19	0.43
17:T:136:ARG:CA	17:T:139:MET:HB3	2.31	0.43
2:B:55:C:O3'	17:T:56:LYS:HB3	2.18	0.43
19:V:109:ILE:HD12	19:V:109:ILE:H	1.84	0.43
20:W:87:TRP:O	20:W:94:VAL:HA	2.19	0.43
1:A:1098:C:H3'	1:A:1099:U:H2'	2.00	0.43
1:A:1685:A:O2'	1:A:1686:A:H5'	2.18	0.43
1:A:960:C:H2'	1:A:961:U:O4'	2.19	0.43
2:B:1180:G:H2'	2:B:1181:C:H5'	2.01	0.43
2:B:504:A:OP1	2:B:505:U:H5	2.02	0.43
2:B:673:U:H2'	2:B:674:U:C6	2.54	0.43
2:B:709:A:O2'	2:B:710:G:H5'	2.18	0.43
2:B:761:U:C2'	2:B:762:U:H5'	2.49	0.43
8:H:41:A:O2'	8:H:42:U:H6	2.02	0.43
11:N:79:GLY:HA2	11:N:101:ARG:HB2	2.00	0.43
12:O:208:VAL:HG12	13:P:123:TRP:NE1	2.34	0.43
20:W:87:TRP:NE1	20:W:123:GLU:OE2	2.51	0.43
23:Z:51:ASP:CB	23:Z:106:LEU:HA	2.43	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1027:G:O2'	1:A:1062:G:H4'	2.19	0.43
1:A:1071:A2M:HM'3	1:A:1071:A2M:H1'	1.63	0.43
1:A:1623:A:H2	3:C:8:C:C4'	2.32	0.43
1:A:1681:A:H4'	1:A:1682:U:O5'	2.19	0.43
1:A:249:C:H2'	1:A:250:A:C5'	2.48	0.43
2:B:1267:U:H2'	2:B:1268:U:H5'	2.01	0.43
2:B:1177:G:O2'	2:B:1435:U:OP1	2.28	0.43
2:B:469:G:O2'	2:B:470:G:H5'	2.19	0.43
2:B:493:A:H2'	2:B:494:U:O4'	2.19	0.43
1:A:453:A:N6	3:C:14:G:H1'	2.34	0.43
3:C:155:U:O2'	3:C:156:A:H5'	2.18	0.43
5:E:121:U:H2'	5:E:122:C:O4'	2.18	0.43
6:F:8:C:H2'	6:F:9:C:H5'	2.00	0.43
11:N:61:PRO:CD	11:N:79:GLY:H	2.32	0.43
15:R:6:ARG:HE	15:R:116:HIS:HD2	1.66	0.43
15:R:118:GLN:OE1	15:R:147:GLN:NE2	2.51	0.43
15:R:35:VAL:CG2	15:R:58:ILE:HG23	2.48	0.43
16:S:99:VAL:HG12	16:S:99:VAL:O	2.19	0.43
2:B:1257:G:H5''	18:U:12:ARG:HH12	1.84	0.43
23:Z:53:VAL:HG21	23:Z:101:VAL:HG21	2.01	0.43
1:A:106:A:H5''	1:A:814:G:H5'	2.01	0.43
1:A:752:U:O2'	1:A:753:G:H5'	2.19	0.43
1:A:480:U:H1'	1:A:755:G:N2	2.33	0.43
1:A:78:U:H2'	1:A:79:C:O4'	2.19	0.43
2:B:1435:U:C3'	2:B:1436:C:H5'	2.48	0.43
2:B:1458:A:C2'	2:B:1480:A:H61	2.32	0.43
2:B:1642:A:N3	2:B:1642:A:C2'	2.82	0.43
2:B:763:U:C2'	2:B:764:G:H5''	2.48	0.43
2:B:82:G:H2'	2:B:83:G:O4'	2.19	0.43
2:B:909:C:H2'	2:B:910:G:C8	2.54	0.43
3:C:45:C:H2'	3:C:46:G:O4'	2.19	0.43
6:F:49:C:C5	13:P:114:ARG:HD2	2.53	0.43
13:P:73:THR:O	13:P:77:VAL:HG23	2.19	0.43
1:A:329:C:O3'	14:Q:187:HIS:HA	2.19	0.43
15:R:48:TYR:CE2	15:R:91:MET:HB3	2.53	0.43
16:S:119:ARG:NH2	16:S:122:ASN:HD21	2.16	0.43
21:X:108:LYS:HE2	21:X:108:LYS:HB2	1.59	0.43
1:A:1078:C:H2'	1:A:1079:G:C8	2.54	0.43
1:A:1921:G:O2'	1:A:1922:G:H5'	2.18	0.43
1:A:766:C:O2'	1:A:767:C:P	2.74	0.43
1:A:983:A:H4'	1:A:984:A:H5'	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1175:C:O2'	2:B:1176:U:H5'	2.19	0.43
2:B:1282:U:H2'	2:B:1283:U:C6	2.53	0.43
2:B:1379:C:H2'	2:B:1380:OMC:H4'	1.99	0.43
2:B:1649:A:C5'	2:B:1649:A:H8	2.32	0.43
2:B:1650:C:O5'	2:B:1650:C:H6	2.02	0.43
9:I:172:PHE:O	9:I:173:THR:HG23	2.19	0.43
9:I:32:LEU:HD21	9:I:36:LEU:HD22	2.00	0.43
12:O:205:LEU:CD2	13:P:120:ARG:HD2	2.46	0.43
14:Q:143:PHE:HB2	14:Q:145:TRP:CH2	2.54	0.43
15:R:64:ASN:O	15:R:67:ILE:HD12	2.18	0.43
18:U:14:LEU:HD23	18:U:55:LYS:HG3	2.00	0.43
18:U:91:VAL:HG11	18:U:96:VAL:HG23	2.01	0.43
1:A:1622:G:O2'	1:A:1624:U:OP2	2.37	0.42
1:A:1958:U:H2'	1:A:1959:U:C6	2.53	0.42
1:A:190:G:H1'	1:A:271:A:H61	1.84	0.42
1:A:459:G:OP1	15:R:37:ASN:ND2	2.52	0.42
1:A:587:C:O2'	1:A:588:A:H2'	2.19	0.42
1:A:778:A2M:HM'2	1:A:779:C:O4'	2.19	0.42
1:A:95:A:C4	1:A:96:G:H1'	2.52	0.42
2:B:1136:G:H3'	2:B:1137:A:C8	2.54	0.42
2:B:1541:A:H5''	2:B:1542:G:H5'	2.02	0.42
2:B:1556:U:O2'	2:B:1557:A:H5'	2.19	0.42
2:B:466:C:H6	2:B:466:C:O5'	2.02	0.42
2:B:853:C:C4	2:B:854:U:C4	3.06	0.42
3:C:18:G:H2'	3:C:19:A:C8	2.54	0.42
5:E:135:C:O2'	5:E:136:A:H5'	2.19	0.42
5:E:176:U:H2'	5:E:177:G:H8	1.84	0.42
7:G:163:C:H2'	7:G:164:A:O4'	2.19	0.42
1:A:921:A:P	9:I:66:ARG:HH21	2.42	0.42
15:R:91:MET:HE3	15:R:146:VAL:HG21	2.01	0.42
16:S:101:LYS:O	16:S:105:VAL:HG23	2.18	0.42
12:O:137:VAL:HA	16:S:169:VAL:O	2.18	0.42
1:A:1018:C:H2'	1:A:1019:G:H5''	2.01	0.42
1:A:1252:A:H2'	1:A:1253:A:C8	2.54	0.42
1:A:1597:G:H2'	1:A:1598:U:O4'	2.18	0.42
1:A:1672:G:N7	15:R:27:LYS:HB2	2.34	0.42
1:A:1713:G:H4'	17:T:26:PRO:HD3	2.01	0.42
1:A:1723:G:C8	1:A:1725:7MG:H82	2.54	0.42
1:A:1773:C:H2'	1:A:1774:U:C6	2.53	0.42
1:A:1961:C:H2'	1:A:1962:A:O4'	2.19	0.42
1:A:596:G:H2'	1:A:597:G:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:958:OMG:HM23	1:A:958:OMG:H1'	1.82	0.42
2:B:1153:A:O2'	2:B:1154:U:O5'	2.25	0.42
2:B:1345:OMU:H1'	2:B:1345:OMU:HM23	1.90	0.42
2:B:1516:A2M:H3'	2:B:1516:A2M:C8	2.49	0.42
2:B:38:C:H2'	2:B:39:C:C6	2.55	0.42
2:B:532:U:O2'	2:B:533:G:H5'	2.19	0.42
9:I:120:ILE:CG2	9:I:121:THR:HG23	2.49	0.42
11:N:32:ASN:O	11:N:36:GLN:HG2	2.18	0.42
16:S:112:LEU:HD23	16:S:123:ILE:HD13	1.98	0.42
18:U:48:VAL:HG21	18:U:94:GLU:CG	2.48	0.42
22:Y:27:LEU:C	22:Y:29:THR:N	2.73	0.42
23:Z:49:LYS:O	23:Z:50:ASP:HB2	2.19	0.42
1:A:1153:A:O2'	1:A:1154:A:H5'	2.19	0.42
1:A:1578:U:O2	1:A:1599:G:H2'	2.20	0.42
1:A:1689:G:C2'	1:A:1691:A:N7	2.82	0.42
1:A:1938:G:H5''	1:A:1939:A:N7	2.35	0.42
1:A:413:U:H5''	1:A:414:U:H5''	2.00	0.42
1:A:499:C:H2'	1:A:500:C:C6	2.53	0.42
1:A:847:G:N2	1:A:931:7MG:O3'	2.53	0.42
1:A:924:A:C2'	1:A:925:C:H5'	2.49	0.42
2:B:127:C:H2'	2:B:128:U:C6	2.54	0.42
2:B:1444:G:H4'	2:B:1445:U:OP1	2.19	0.42
2:B:690:U:H2'	2:B:691:A2M:H8	2.02	0.42
2:B:896:G:H4'	2:B:897:C:OP2	2.18	0.42
2:B:95:A:H2	2:B:468:G:H8	1.68	0.42
4:D:9:C:OP2	18:U:26:SER:OG	2.34	0.42
7:G:122:G:O3'	7:G:123:G:N2	2.53	0.42
7:G:40:G:H2'	7:G:41:A:H8	1.84	0.42
12:O:24:ILE:HG22	12:O:25:ILE:N	2.34	0.42
16:S:173:THR:HG22	16:S:174:LYS:H	1.82	0.42
16:S:13:GLY:HA2	16:S:61:LEU:HG	2.01	0.42
7:G:91:U:P	17:T:62:ARG:HH22	2.42	0.42
19:V:120:LYS:HB3	19:V:121:TYR:H	1.49	0.42
21:X:119:LEU:HA	21:X:119:LEU:HD12	1.83	0.42
1:A:1008:C:N3	1:A:1019:G:O6	2.52	0.42
1:A:1046:U:O3'	15:R:132:ALA:HB2	2.20	0.42
1:A:1233:A:H4'	18:U:105:PHE:CD1	2.55	0.42
1:A:1688:G:H1	1:A:1709:C:N4	2.07	0.42
1:A:22:A:OP1	11:N:44:ARG:N	42.65	0.42
1:A:484:U:H2'	1:A:485:U:C6	2.55	0.42
1:A:597:G:H2'	1:A:598:U:O4'	2.18	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:7:C:H2'	1:A:8:C:C6	2.53	0.42
1:A:806:A:N1	1:A:838:G:O2'	2.44	0.42
2:B:1183:G:H1'	2:B:1185:A:N6	2.35	0.42
2:B:1217:G:C5'	2:B:1314:G:H1'	2.49	0.42
2:B:1386:G:H4'	2:B:1387:A:O5'	2.19	0.42
2:B:1509:G:H2'	2:B:1510:A:H5'	2.01	0.42
2:B:756:U:H5'	2:B:757:U:OP1	2.19	0.42
2:B:858:C:H2'	2:B:859:U:C6	2.54	0.42
2:B:911:U:C2'	2:B:911:U:O2	2.67	0.42
3:C:17:U:H2'	3:C:18:G:C8	2.54	0.42
5:E:44:C:H2'	5:E:45:A:C8	2.54	0.42
6:F:62:U:C5'	6:F:63:A:H3'	2.49	0.42
8:H:19:G:N3	8:H:19:G:H5''	2.35	0.42
12:O:218:LYS:O	12:O:219:PHE:CB	2.67	0.42
15:R:107:LEU:HB3	15:R:112:MET:HE3	2.01	0.42
20:W:97:PHE:CZ	20:W:139:VAL:HG23	2.54	0.42
2:B:869:A:OP1	21:X:83:GLN:HB3	2.20	0.42
23:Z:45:MET:CE	23:Z:115:ILE:HG21	2.45	0.42
1:A:1634:C:H2'	1:A:1635:U:H6	1.85	0.42
1:A:182:G:C2'	1:A:183:G:H5''	2.49	0.42
1:A:53:C:O2'	1:A:54:G:H5'	2.19	0.42
1:A:867:G:C2'	1:A:867:G:N3	2.82	0.42
2:B:13:A:H4'	21:X:145:THR:HG23	2.01	0.42
2:B:882:G:H21	2:B:886:C:P	2.43	0.42
4:D:21:G:H1	4:D:57:C:N4	2.13	0.42
5:E:28:G:H2'	5:E:200:A:N6	2.35	0.42
8:H:128:G:N3	8:H:128:G:H2'	2.35	0.42
9:I:117:ARG:O	9:I:121:THR:HG23	2.19	0.42
12:O:42:ALA:HB2	12:O:102:VAL:HG23	2.01	0.42
12:O:138:VAL:CG1	12:O:143:GLN:HE21	2.31	0.42
14:Q:130:ARG:HH21	14:Q:173:LYS:HG2	1.85	0.42
17:T:122:GLU:O	17:T:126:LYS:HD3	2.20	0.42
17:T:56:LYS:HE2	17:T:56:LYS:HB2	1.87	0.42
21:X:111:ALA:O	21:X:154:LEU:HD11	2.19	0.42
22:Y:8:PHE:CZ	22:Y:53:VAL:HG21	2.55	0.42
1:A:1090:C:C2	1:A:1093:A:H5'	2.54	0.42
1:A:1516:G:OP1	13:P:19:PRO:HG2	2.19	0.42
1:A:1660:A:H5''	1:A:1661:U:H5''	2.02	0.42
1:A:483:A:H2'	1:A:484:U:C6	2.55	0.42
2:B:1191:G:H5''	18:U:12:ARG:HB2	2.01	0.42
2:B:1502:U:H2'	2:B:1504:A:OP2	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1529:OMC:HM22	2:B:1530:C:H5'	2.01	0.42
2:B:1642:A:H3'	2:B:1642:A:OP2	2.19	0.42
2:B:58:G:H3'	2:B:59:U:H5''	2.01	0.42
2:B:693:U:H2'	2:B:694:A:O4'	2.19	0.42
1:A:781:G:H2'	2:B:707:A:H4'	2.02	0.42
2:B:788:G:O6	2:B:789:A:N6	2.52	0.42
2:B:894:C:O2'	2:B:895:U:H5'	2.19	0.42
5:E:33:A:H2'	5:E:34:U:O4'	2.19	0.42
7:G:125:G:H1	7:G:157:C:N4	2.16	0.42
10:L:27:ILE:HG12	10:L:131:MET:CA	2.38	0.42
15:R:129:THR:OG1	15:R:137:THR:O	2.29	0.42
16:S:112:LEU:HD23	16:S:123:ILE:CG1	2.48	0.42
16:S:51:ASN:HB2	16:S:53:VAL:HG12	2.00	0.42
19:V:25:VAL:HG22	19:V:80:THR:HA	2.01	0.42
1:A:1144:U:H5''	1:A:1144:U:H6	1.85	0.42
1:A:1296:G:H2'	1:A:1297:U:O4'	2.19	0.42
1:A:1138:G:O2'	1:A:1595:A:H1'	2.20	0.42
1:A:1659:OMG:H4'	1:A:1660:A:OP2	2.20	0.42
1:A:784:C:H2'	1:A:785:A:C8	2.54	0.42
2:B:1157:G:O2'	2:B:1158:C:H5'	2.19	0.42
2:B:1254:C:O2	2:B:1318:G:N2	2.47	0.42
1:A:1122:U:O2'	2:B:1287:A:OP1	2.26	0.42
2:B:1629:U:O2'	2:B:1630:U:C6	2.66	0.42
2:B:532:U:H2'	2:B:533:G:C5'	2.49	0.42
2:B:894:C:O2	2:B:899:G:N2	2.44	0.42
2:B:908:C:C2'	2:B:909:C:H5'	2.49	0.42
7:G:63:A:O2'	7:G:64:U:H5'	2.20	0.42
9:I:88:VAL:HG21	9:I:133:LEU:HD21	2.02	0.42
14:Q:191:ARG:HG2	14:Q:191:ARG:HH11	1.85	0.42
14:Q:54:ARG:CG	14:Q:55:LEU:N	2.83	0.42
14:Q:70:LYS:O	14:Q:72:LYS:N	2.52	0.42
15:R:59:PRO:HG3	15:R:76:TRP:CD2	2.55	0.42
18:U:48:VAL:HG11	18:U:92:ARG:HD3	2.02	0.42
23:Z:53:VAL:HG22	23:Z:101:VAL:HB	2.01	0.42
23:Z:25:ARG:NH1	23:Z:26:ILE:HD11	2.34	0.42
23:Z:53:VAL:HG22	23:Z:54:ARG:N	2.35	0.42
1:A:106:A:C2'	1:A:107:U:H5'	2.49	0.42
1:A:1354:G:H2'	1:A:1355:G:O4'	2.20	0.42
1:A:1660:A:H5''	1:A:1661:U:C5'	2.50	0.42
1:A:178:U:C2'	1:A:179:G:H5''	2.49	0.42
1:A:411:A:C3'	1:A:412:G:H5''	2.50	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1165:G:N3	2:B:1165:G:H2'	2.34	0.42
2:B:1256:A:H2'	2:B:1257:G:C8	2.54	0.42
2:B:1377:U:HO2'	2:B:1379:C:H5	1.65	0.42
2:B:852:G:C1'	2:B:853:C:P	3.07	0.42
2:B:854:U:O2'	2:B:855:U:P	2.78	0.42
3:C:95:A:H2'	3:C:96:A:O4'	2.18	0.42
4:D:106:G:O2'	4:D:107:G:H5'	2.20	0.42
4:D:3:G:H1'	4:D:24:U:H3	1.85	0.42
5:E:57:C:C2'	5:E:58:U:H5'	2.50	0.42
1:A:1292:C:H5''	9:I:159:PHE:CD1	2.55	0.42
1:A:1788:C:O2'	14:Q:124:LYS:NZ	2.53	0.42
17:T:96:MET:O	17:T:100:ARG:HG3	2.20	0.42
19:V:98:LEU:HD22	19:V:103:LEU:HB2	2.00	0.42
23:Z:55:VAL:HB	23:Z:60:TYR:O	2.20	0.42
23:Z:74:ARG:HB2	23:Z:76:VAL:HG22	2.00	0.42
1:A:1070:U:H2'	1:A:1071:A2M:C8	2.49	0.42
1:A:1142:C:H2'	1:A:1143:U:O4'	2.20	0.42
1:A:181:A:N7	1:A:182:G:C8	2.87	0.42
1:A:1928:G:N3	1:A:1928:G:H2'	2.35	0.42
1:A:1963:U:H2'	1:A:1964:G:O4'	2.20	0.42
1:A:802:C:C2'	1:A:803:G:H5'	2.49	0.42
2:B:1145:U:C6	2:B:1145:U:C3'	3.03	0.42
2:B:1190:U:O2'	2:B:1256:A:H1'	2.19	0.42
2:B:1508:G:O2'	2:B:1509:G:H5'	2.20	0.42
2:B:718:A:C5'	2:B:719:A:H8	2.22	0.42
4:D:10:C:C4'	4:D:13:A:H61	2.33	0.42
5:E:32:A:H2'	5:E:33:A:O4'	2.20	0.42
9:I:103:PRO:O	9:I:105:LEU:N	2.52	0.42
1:A:109:C:O2'	11:N:96:PRO:O	2.24	0.42
12:O:215:VAL:HG12	12:O:215:VAL:O	2.20	0.42
12:O:78:LYS:O	12:O:88:PRO:HG2	2.20	0.42
13:P:137:VAL:HG11	13:P:139:TRP:NE1	2.34	0.42
16:S:50:LYS:HD2	18:U:146:LEU:CD1	2.50	0.42
19:V:86:ARG:HG2	19:V:88:LYS:HG2	2.01	0.42
20:W:41:VAL:HG22	20:W:54:ALA:HB2	2.02	0.42
23:Z:54:ARG:HA	23:Z:64:GLU:HA	2.02	0.42
23:Z:52:GLU:HA	23:Z:66:LYS:HA	2.02	0.42
1:A:1120:G:H1'	1:A:1298:G:C5'	2.49	0.42
1:A:1743:A:H61	1:A:1756:C:H4'	1.85	0.42
1:A:405:A:C8	1:A:406:G:H1'	2.55	0.42
1:A:600:A:H4'	1:A:601:U:C5'	2.50	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:818:U:H3'	1:A:825:C:H42	1.85	0.42
2:B:1138:7MG:H81	2:B:1138:7MG:O5'	2.20	0.42
2:B:1386:G:HO2'	2:B:1439:U:H5	1.66	0.42
2:B:621:A:H2'	2:B:622:G:O4'	2.20	0.42
3:C:51:A:N3	3:C:51:A:H2'	2.35	0.42
3:C:91:A:H5'	23:Z:20:PRO:HB3	2.00	0.42
11:N:184:LYS:HZ2	11:N:186:VAL:HG12	1.85	0.42
1:A:75:G:H3'	11:N:78:ARG:HD3	2.00	0.42
5:E:118:U:OP1	17:T:100:ARG:NH1	2.53	0.42
17:T:109:TYR:CE1	17:T:114:LYS:HD2	2.55	0.42
19:V:60:ARG:HD3	19:V:63:LYS:HZ1	1.79	0.42
19:V:77:LEU:O	19:V:79:ILE:HD12	2.19	0.42
20:W:47:ARG:CG	20:W:48:LEU:N	2.80	0.42
7:G:75:U:C4'	20:W:94:VAL:HG11	2.47	0.42
3:C:23:G:N7	23:Z:10:ARG:NE	2.68	0.42
1:A:1079:G:H2'	1:A:1081:A:N7	2.35	0.41
1:A:1367:A:P	16:S:159:LYS:HE3	2.59	0.41
1:A:1574:A:H4'	1:A:1575:G:O5'	2.20	0.41
1:A:1634:C:H2'	1:A:1635:U:C6	2.55	0.41
1:A:1938:G:H4'	1:A:1939:A:OP2	2.18	0.41
1:A:267:A:H4'	23:Z:27:LEU:HA	2.02	0.41
1:A:761:C:H5"	12:O:112:ARG:HB2	2.02	0.41
2:B:1190:U:H2'	2:B:1191:G:C8	2.55	0.41
2:B:1373:U:H4'	2:B:1374:A:OP1	2.19	0.41
2:B:1444:G:HO2'	2:B:1445:U:P	2.39	0.41
2:B:1579:A:O2'	2:B:1580:A:H5'	2.19	0.41
2:B:689:U:O2'	2:B:690:U:H5'	2.20	0.41
2:B:763:U:H2'	2:B:764:G:H5"	2.02	0.41
3:C:26:U:C2'	3:C:27:U:H5'	2.50	0.41
1:A:1170:G:H4'	4:D:102:C:O2'	2.19	0.41
4:D:27:A:H2'	4:D:28:C:C6	2.54	0.41
4:D:56:G:C2'	4:D:57:C:H5'	2.49	0.41
5:E:203:C:H2'	5:E:204:C:O4'	2.20	0.41
5:E:31:C:H4'	5:E:32:A:OP1	2.20	0.41
6:F:7:G:N2	6:F:47:C:O2	2.54	0.41
8:H:36:C:H2'	8:H:37:U:C6	2.55	0.41
9:I:175:ASN:HB3	9:I:178:LYS:HB2	2.01	0.41
11:N:52:PHE:N	11:N:53:PRO:HD2	2.35	0.41
12:O:208:VAL:O	12:O:208:VAL:HG22	2.20	0.41
17:T:115:ILE:HG21	17:T:142:ILE:CG2	2.48	0.41
7:G:93:G:HO2'	17:T:61:SER:HG	1.62	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:U:51:GLY:HA3	18:U:92:ARG:HB2	2.01	0.41
20:W:86:SER:CA	20:W:96:TYR:HB3	2.50	0.41
1:A:1037:A:O2'	1:A:1038:U:C5	2.74	0.41
1:A:1302:C:H2'	1:A:1303:U:O4'	2.20	0.41
1:A:1597:G:C2'	1:A:1598:U:H5'	2.50	0.41
1:A:257:G:C2'	1:A:258:U:H5'	2.50	0.41
1:A:469:A:H2'	1:A:470:U:C5'	2.50	0.41
1:A:785:A:C6	1:A:786:A:C6	3.09	0.41
1:A:844:A:O2'	1:A:845:A:H5'	2.19	0.41
1:A:95:A:O5'	1:A:95:A:H8	2.03	0.41
1:A:978:U:H2'	1:A:979:G:O4'	2.20	0.41
2:B:1163:U:C2'	2:B:1164:G:H5'	2.50	0.41
2:B:1282:U:O2'	2:B:1283:U:H5'	2.20	0.41
2:B:1300:A:C2'	2:B:1301:C:H5'	2.50	0.41
2:B:1394:G:O2'	2:B:1395:C:H5'	2.20	0.41
6:F:58:U:H2'	6:F:59:U:H5''	2.02	0.41
10:L:156:CYS:N	10:L:157:PRO:CD	2.83	0.41
10:L:161:ARG:O	10:L:164:GLU:HB2	2.20	0.41
2:B:1350:A:O3'	11:N:201:GLY:HA3	2.20	0.41
11:N:95:ALA:HB1	11:N:100:ILE:HB	2.02	0.41
12:O:94:PRO:HD3	12:O:166:TRP:CD2	2.54	0.41
15:R:14:SER:O	15:R:105:LYS:HE2	2.20	0.41
15:R:36:ILE:HG22	15:R:36:ILE:O	2.19	0.41
15:R:36:ILE:CG1	15:R:48:TYR:OH	2.67	0.41
16:S:108:ALA:O	16:S:112:LEU:HB2	2.20	0.41
21:X:134:LEU:HD21	21:X:188:ALA:HB2	2.01	0.41
7:G:107:C:O2'	22:Y:46:ARG:NH2	2.52	0.41
23:Z:106:LEU:HD12	23:Z:106:LEU:C	2.40	0.41
1:A:1374:C:O2	12:O:152:ARG:NH2	2.53	0.41
1:A:1646:A:H8	1:A:1646:A:O5'	2.04	0.41
1:A:1766:U:O2	1:A:1933:C:H5'	2.20	0.41
1:A:194:U:O2'	1:A:195:U:H4'	2.20	0.41
1:A:34:A:H5'	14:Q:98:GLY:HA3	2.02	0.41
1:A:396:A:H1'	1:A:397:G:OP2	2.20	0.41
1:A:399:A:H2'	1:A:400:G:O4'	2.19	0.41
1:A:48:C:OP1	11:N:15:LYS:CE	2.67	0.41
1:A:50:A:O2'	1:A:51:A:H5'	2.21	0.41
2:B:1282:U:H2'	2:B:1283:U:H6	1.85	0.41
2:B:1283:U:O2'	2:B:1284:U:H5'	2.20	0.41
2:B:58:G:C3'	2:B:59:U:H5''	2.50	0.41
2:B:771:G:H2'	2:B:772:U:O4'	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:864:G:O2'	2:B:865:A:H5'	2.19	0.41
3:C:23:G:H2'	3:C:24:G:O4'	2.20	0.41
3:C:27:U:H2'	3:C:28:C:O4'	2.20	0.41
3:C:48:A:H2	3:C:62:A:HO2'	1.63	0.41
3:C:67:U:H2'	3:C:68:A:C8	2.56	0.41
5:E:34:U:H2'	5:E:35:C:H6	1.76	0.41
14:Q:131:VAL:HA	14:Q:150:ALA:HA	2.02	0.41
14:Q:172:HIS:HB3	14:Q:175:ARG:HG3	2.02	0.41
15:R:60:PHE:N	15:R:60:PHE:CD1	2.88	0.41
17:T:98:ARG:HH12	17:T:130:ASN:HD22	1.67	0.41
20:W:34:LYS:HG2	20:W:67:GLY:CA	2.50	0.41
20:W:59:ILE:HD11	20:W:128:TRP:CZ2	2.54	0.41
1:A:1947:C:H5'	21:X:163:ASN:HD21	1.85	0.41
1:A:1167:A:N3	4:D:78:C:O2'	2.51	0.41
1:A:1316:OMG:H2'	1:A:1317:G:C5'	2.50	0.41
1:A:1731:G:H2'	1:A:1732:G:O4'	2.20	0.41
1:A:343:OMC:HM22	1:A:344:A:C5'	2.43	0.41
1:A:419:A:C4'	1:A:420:A:H5'	2.44	0.41
2:B:1267:U:O2'	2:B:1268:U:H5'	2.20	0.41
2:B:1315:C:H2'	2:B:1316:C:O4'	2.21	0.41
2:B:574:A:O2'	2:B:575:C:H5'	2.21	0.41
2:B:719:A:HO2'	2:B:720:C:P	2.37	0.41
2:B:767:OMU:H2'	2:B:768:C:O4'	2.20	0.41
4:D:82:G:C6	4:D:83:A:C6	3.08	0.41
12:O:107:PRO:CB	12:O:110:THR:HG22	2.50	0.41
2:B:1576:G:N2	12:O:52:THR:OG1	2.50	0.41
13:P:135:LYS:CG	13:P:141:LYS:HA	2.45	0.41
13:P:82:LYS:HB3	13:P:85:GLU:HB3	2.01	0.41
17:T:109:TYR:CB	17:T:115:ILE:HG12	2.51	0.41
2:B:122:U:H1'	17:T:78:ALA:HB3	2.02	0.41
18:U:18:LYS:HE2	18:U:21:LYS:HD3	2.02	0.41
19:V:94:THR:O	19:V:97:PHE:HB3	2.20	0.41
1:A:1298:G:H2'	1:A:1298:G:N3	2.34	0.41
1:A:129:U:C2'	1:A:130:C:H5'	2.50	0.41
1:A:1539:U:H1'	9:I:15:VAL:CG2	2.46	0.41
1:A:1623:A:H5'	1:A:1624:U:OP2	2.21	0.41
1:A:1939:A:H1'	1:A:1944:A:H62	1.85	0.41
1:A:232:U:C2'	1:A:233:C:H5'	2.50	0.41
1:A:247:G:C2'	1:A:248:C:H5'	2.51	0.41
1:A:257:G:O2'	1:A:258:U:H5'	2.21	0.41
1:A:394:C:N3	1:A:412:G:C5'	2.82	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:428:G:N2	1:A:431:A:C8	2.84	0.41
2:B:1291:C:H6	2:B:1291:C:O5'	2.03	0.41
3:C:96:A:H2'	3:C:97:U:H5'	2.02	0.41
9:I:62:ILE:HB	9:I:89:ILE:HD12	2.03	0.41
15:R:115:LYS:HB2	15:R:149:PHE:CE1	2.55	0.41
16:S:136:VAL:HG21	16:S:141:ILE:HD11	2.03	0.41
16:S:50:LYS:HD2	18:U:146:LEU:HD12	2.02	0.41
19:V:103:LEU:O	19:V:106:TRP:N	2.49	0.41
19:V:51:PHE:HE2	19:V:70:VAL:HG11	1.86	0.41
1:A:1074:G:H2'	1:A:1093:A:N6	2.32	0.41
1:A:1348:A:C2'	1:A:1349:U:H5'	2.51	0.41
1:A:1375:A:N3	12:O:67:ARG:NH1	2.69	0.41
1:A:1535:U:H2'	1:A:1536:U:C6	2.55	0.41
1:A:1642:G:O2'	1:A:1643:A:OP2	2.38	0.41
1:A:1603:U:O2	1:A:1655:U:H1'	2.21	0.41
1:A:435:G:H2'	1:A:436:A:O4'	2.20	0.41
1:A:452:A:H5'	1:A:1620:C:O2'	2.20	0.41
2:B:1285:C:H3'	2:B:1286:C:O2	2.20	0.41
2:B:1435:U:H2'	2:B:1436:C:O4'	2.21	0.41
2:B:1548:U:C3'	2:B:1549:U:H5'	2.50	0.41
2:B:462:A:H1'	7:G:106:U:H1'	2.02	0.41
2:B:498:U:H2'	2:B:499:U:O4'	2.21	0.41
2:B:576:C:C2'	2:B:577:G:H4'	2.49	0.41
2:B:630:C:H3'	2:B:631:C:H6	1.85	0.41
2:B:6:A:N3	2:B:6:A:H5'	2.36	0.41
2:B:785:G:C6	2:B:786:G:C6	3.09	0.41
3:C:118:OMU:HM23	3:C:118:OMU:H1'	1.86	0.41
5:E:200:A:H2'	5:E:201:A:C8	2.56	0.41
8:H:26:C:H1'	8:H:27:A:OP2	2.21	0.41
8:H:92:A:H2'	8:H:93:G:C5'	2.50	0.41
9:I:23:ASN:HB3	9:I:26:ILE:HG12	2.01	0.41
9:I:29:LEU:HD11	9:I:130:PHE:CB	2.49	0.41
10:L:165:ALA:O	10:L:168:TRP:NE1	2.53	0.41
1:A:71:C:H5'	11:N:68:VAL:HG12	2.03	0.41
12:O:131:VAL:HG22	12:O:132:ARG:N	2.35	0.41
13:P:12:LEU:HD23	13:P:12:LEU:O	2.20	0.41
13:P:17:ARG:HA	13:P:21:GLN:HE22	1.85	0.41
14:Q:161:ASP:HB3	14:Q:164:ILE:HG22	2.02	0.41
18:U:25:PRO:HG3	18:U:94:GLU:CG	2.48	0.41
1:A:1141:G:C2'	1:A:1142:C:H5'	2.50	0.41
1:A:1685:A:H2'	1:A:1686:A:C8	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:333:G:H2'	1:A:334:U:O4'	2.21	0.41
1:A:411:A:H2'	1:A:412:G:H5''	2.03	0.41
2:B:1169:OMG:H2'	2:B:1170:U:O4'	2.19	0.41
1:A:1225:A:H5''	2:B:1196:A:N1	2.36	0.41
2:B:1286:C:H3'	2:B:1288:G:H21	1.86	0.41
2:B:1295:U:O3'	18:U:51:GLY:HA2	2.21	0.41
2:B:38:C:H2'	2:B:39:C:H6	1.86	0.41
2:B:47:A:OP1	17:T:88:ARG:NH1	2.54	0.41
2:B:474:C:C2	2:B:672:A:C2	3.09	0.41
2:B:674:U:H2'	2:B:675:C:O4'	2.20	0.41
2:B:873:G:O2'	2:B:874:A:H5'	2.21	0.41
2:B:890:U:H6	2:B:890:U:O5'	2.04	0.41
4:D:5:A:H61	4:D:114:C:N4	2.07	0.41
9:I:84:ALA:HB1	9:I:85:PRO:HD2	2.03	0.41
12:O:107:PRO:HG2	12:O:112:ARG:HH21	1.85	0.41
12:O:41:VAL:O	12:O:45:LEU:HG	2.20	0.41
1:A:67:A:O3'	14:Q:194:GLY:HA3	2.21	0.41
1:A:588:A:N6	16:S:63:CYS:HB2	2.31	0.41
19:V:112:ARG:HD2	19:V:118:GLN:OE1	2.19	0.41
22:Y:14:HIS:HB3	22:Y:15:PRO:CD	2.50	0.41
1:A:131:U:H5'	1:A:132:U:H5'	2.02	0.41
1:A:1110:U:O2	1:A:1656:G:H2'	2.21	0.41
1:A:196:C:O2'	1:A:197:A:H5'	2.21	0.41
1:A:324:G:O2'	17:T:38:ARG:NH1	101.06	0.41
1:A:343:OMC:CM2	1:A:344:A:H5'	2.44	0.41
1:A:445:G:H1'	1:A:446:A:OP2	2.20	0.41
1:A:449:C:H2'	1:A:450:U:H5'	2.03	0.41
1:A:758:G:H2'	1:A:759:C:O4'	2.21	0.41
1:A:765:C:H4'	1:A:766:C:OP1	2.21	0.41
1:A:834:U:H2'	1:A:835:C:C6	2.55	0.41
2:B:1273:G:H5'	2:B:1275:U:C6	2.55	0.41
2:B:1541:A:H5''	2:B:1542:G:H5''	2.02	0.41
1:A:1080:A:C2	2:B:480:G:N3	2.89	0.41
2:B:480:G:N2	2:B:493:A:H1'	2.35	0.41
2:B:634:OMG:HM23	2:B:634:OMG:H1'	1.68	0.41
2:B:668:U:H2'	2:B:669:G:H5'	2.03	0.41
2:B:728:A2M:H1'	2:B:728:A2M:HM'3	1.51	0.41
2:B:98:G:P	2:B:115:G:H22	2.43	0.41
3:C:161:U:O2	21:X:89:THR:HB	2.21	0.41
3:C:71:A:H4'	3:C:72:A:O5'	2.21	0.41
4:D:25:G:H2'	4:D:26:C:O4'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:55:A:H2'	4:D:56:G:H5'	2.02	0.41
7:G:172:A:H2'	7:G:173:U:O4'	2.21	0.41
9:I:158:HIS:HD2	9:I:170:LYS:HB3	1.85	0.41
13:P:49:HIS:NE2	13:P:51:GLN:HG2	2.36	0.41
14:Q:130:ARG:NH2	14:Q:173:LYS:HG2	2.35	0.41
14:Q:27:TRP:CH2	14:Q:39:GLN:NE2	2.88	0.41
16:S:82:TYR:CE2	16:S:90:THR:HB	2.56	0.41
17:T:80:ARG:O	17:T:80:ARG:HG3	2.20	0.41
18:U:80:VAL:HG12	18:U:83:ARG:O	2.20	0.41
19:V:32:ILE:HB	19:V:33:PRO:CD	2.49	0.41
21:X:139:ASP:OD1	21:X:140:SER:N	2.54	0.41
22:Y:43:MET:HE3	22:Y:55:TRP:HZ2	1.85	0.41
23:Z:48:ARG:HD2	23:Z:112:ARG:HH21	1.85	0.41
1:A:1288:G:H2'	1:A:1289:G:O4'	2.21	0.41
1:A:1536:U:O2'	1:A:1537:G:H5'	2.21	0.41
1:A:1574:A:C2	9:I:35:PHE:HD1	2.39	0.41
1:A:1735:U:H5''	1:A:1736:U:OP2	2.19	0.41
1:A:1738:G:H2'	1:A:1739:U:C6	2.56	0.41
1:A:1783:C:H2'	1:A:1784:G:O4'	2.21	0.41
1:A:247:G:H2'	1:A:248:C:H5'	2.03	0.41
1:A:37:U:H2'	1:A:38:A:O4'	2.21	0.41
1:A:407:C:C3'	1:A:408:G:H5'	2.51	0.41
1:A:499:C:O2'	1:A:500:C:H5'	2.20	0.41
1:A:58:G:C4'	1:A:59:A:H4'	2.51	0.41
1:A:74:U:O3'	11:N:75:ARG:NH2	2.49	0.41
1:A:875:C:H3'	1:A:876:A:H8	1.86	0.41
2:B:780:U:C5	2:B:1151:A:O3'	2.73	0.41
2:B:117:A:OP1	2:B:467:G:N2	2.51	0.41
2:B:1273:G:H5'	2:B:1275:U:C5	2.55	0.41
2:B:570:G:N2	2:B:1354:C:C4'	2.84	0.41
2:B:52:G:H2'	2:B:53:C:O4'	2.20	0.41
1:A:1670:G:H21	2:B:704:A:H62	1.69	0.41
2:B:709:A:H1'	2:B:722:G:N2	2.36	0.41
2:B:85:A:N3	2:B:85:A:H2'	2.36	0.41
2:B:98:G:OP1	2:B:115:G:N1	2.54	0.41
4:D:5:A:N6	4:D:114:C:H42	2.07	0.41
6:F:67:A:O2'	6:F:68:C:P	2.77	0.41
8:H:35:G:C2'	8:H:36:C:H5'	2.51	0.41
11:N:118:ILE:HG13	11:N:119:GLN:N	2.36	0.41
15:R:103:ILE:HG13	15:R:109:PRO:HG3	2.02	0.41
16:S:29:PHE:HB3	16:S:43:PHE:CD1	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:V:101:LYS:O	19:V:102:ASP:HB2	2.21	0.41
20:W:44:TYR:CD2	20:W:52:PRO:HB3	2.55	0.41
20:W:38:ILE:HG12	20:W:60:VAL:HG11	1.96	0.41
1:A:1312:A:N3	2:B:1396:U:O2'	2.50	0.41
1:A:131:U:N3	1:A:135:A:C2	2.86	0.41
1:A:1622:G:H1	1:A:1636:C:N4	2.19	0.41
1:A:1797:U:O2'	1:A:1798:U:O5'	2.38	0.41
1:A:1957:A:H2'	1:A:1958:U:O4'	2.21	0.41
1:A:1959:U:O2'	1:A:1960:G:H5'	2.21	0.41
1:A:321:U:H1'	1:A:327:U:O2	2.21	0.41
1:A:238:G:N2	1:A:417:A:C8	2.89	0.41
1:A:982:G:H5'	11:N:16:HIS:CE1	32.05	0.41
2:B:1168:A:O2'	2:B:1169:OMG:H5'	2.21	0.41
2:B:1169:OMG:H1'	2:B:1169:OMG:HM23	1.83	0.41
2:B:103:G:C2'	2:B:117:A:H61	2.34	0.41
2:B:1646:G:H4'	2:B:1647:G:O4'	2.21	0.41
4:D:26:C:H2'	4:D:27:A:O4'	2.21	0.41
1:A:875:C:H2'	9:I:47:LEU:HD11	2.01	0.41
11:N:129:VAL:HG23	11:N:129:VAL:O	2.21	0.41
9:I:172:PHE:CE2	11:N:5:LYS:HE3	2.56	0.41
1:A:99:A:OP1	14:Q:211:ASN:HB3	2.21	0.41
14:Q:89:ARG:HG3	14:Q:90:PRO:HD2	2.03	0.41
20:W:55:ALA:N	20:W:58:ASP:OD2	2.45	0.41
1:A:1059:C:H2'	1:A:1060:A:O4'	2.20	0.41
1:A:1364:C:O2	1:A:1364:C:H2'	2.21	0.41
1:A:1720:G:H5''	1:A:1723:G:C4'	2.50	0.41
1:A:212:C:O2'	1:A:213:C:H6	2.03	0.41
1:A:403:U:O2	1:A:982:G:H4'	2.21	0.41
1:A:394:C:N3	1:A:411:A:H2'	2.36	0.41
2:B:1191:G:C2'	2:B:1192:U:H5'	2.50	0.41
2:B:1203:C:H5''	2:B:1204:G:H5''	2.00	0.41
2:B:1313:G:O2'	2:B:1314:G:H5'	2.21	0.41
2:B:512:A:C2'	2:B:513:A:H5'	2.50	0.41
2:B:543:OMC:O2	2:B:590:A:N6	2.54	0.41
2:B:656:U:C2'	2:B:657:7MG:O5'	2.68	0.41
2:B:1144:U:OP1	3:C:165:U:H5	2.04	0.41
1:A:389:G:O2'	3:C:24:G:N3	2.46	0.41
3:C:29:C:H2'	3:C:30:U:H6	1.86	0.41
6:F:49:C:C5	13:P:114:ARG:CD	3.04	0.41
7:G:28:U:H2'	7:G:29:G:O4'	2.20	0.41
1:A:148:G:H3'	14:Q:65:ARG:NH1	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:98:G:O2'	17:T:82:GLU:O	2.27	0.41
20:W:105:VAL:HG23	20:W:110:GLU:O	2.21	0.41
1:A:1594:G:H2'	1:A:1595:A:C8	2.57	0.40
1:A:778:A2M:O4'	2:B:1439:U:H5''	2.21	0.40
1:A:85:G:O6	11:N:12:HIS:HB2	2.21	0.40
1:A:919:OMC:H1'	1:A:919:OMC:HM23	1.80	0.40
2:B:1198:G:C2'	2:B:1199:A:H5'	2.51	0.40
2:B:1257:G:H2'	2:B:1258:C:O4'	2.21	0.40
2:B:58:G:H2'	2:B:59:U:O4'	2.21	0.40
2:B:8:U:H2'	2:B:9:G:H8	1.85	0.40
1:A:452:A:C2	3:C:16:A:H1'	2.56	0.40
3:C:72:A:P	23:Z:49:LYS:HG3	2.60	0.40
4:D:25:G:O2'	4:D:26:C:H5'	2.21	0.40
5:E:57:C:H2'	5:E:58:U:H5'	2.02	0.40
2:B:1566:G:H2'	7:G:168:C:N4	2.35	0.40
12:O:144:ARG:NH1	12:O:154:TYR:CZ	2.89	0.40
14:Q:129:LEU:O	14:Q:130:ARG:HG3	2.21	0.40
1:A:68:C:OP1	14:Q:195:HIS:HD2	2.04	0.40
17:T:14:ILE:HD12	17:T:42:ARG:CG	2.51	0.40
19:V:112:ARG:O	19:V:112:ARG:HG2	2.21	0.40
19:V:51:PHE:HE1	19:V:90:PHE:HD1	1.68	0.40
20:W:111:MET:SD	20:W:131:ILE:HD13	2.61	0.40
22:Y:27:LEU:O	22:Y:28:SER:CB	2.70	0.40
1:A:1048:C:H2'	1:A:1049:A:H8	1.85	0.40
1:A:1507:G:H2'	1:A:1508:C:H6	1.86	0.40
1:A:1515:A:HO2'	1:A:1516:G:C5'	2.31	0.40
1:A:26:C:N4	1:A:56:A:H61	2.19	0.40
1:A:319:C:N4	1:A:326:G:N2	2.69	0.40
1:A:826:A:H4'	11:N:34:PRO:HB2	2.03	0.40
2:B:1291:C:H2'	2:B:1292:G:O4'	2.21	0.40
2:B:1482:G:H3'	2:B:1483:G:H8	1.87	0.40
2:B:1515:G:H5'	2:B:1517:G:N7	2.37	0.40
2:B:1519:U:C5	2:B:1520:G:C6	3.09	0.40
2:B:456:C:H2'	2:B:457:U:O4'	2.20	0.40
5:E:34:U:O2'	5:E:35:C:H5'	2.21	0.40
7:G:173:U:H2'	7:G:174:G:H8	1.86	0.40
1:A:952:G:H1	9:I:96:ASP:HA	1.87	0.40
15:R:41:LEU:HD22	15:R:150:MET:SD	2.62	0.40
15:R:60:PHE:HZ	15:R:84:PRO:HG3	1.86	0.40
16:S:11:VAL:HG13	16:S:60:VAL:HG23	2.03	0.40
17:T:115:ILE:CG2	17:T:142:ILE:HG23	2.47	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:T:81:ARG:HG2	17:T:88:ARG:CZ	2.52	0.40
19:V:52:GLN:HB2	19:V:64:LEU:CD1	2.50	0.40
19:V:28:ILE:O	19:V:76:VAL:HA	2.20	0.40
23:Z:31:PRO:HA	23:Z:44:ALA:CB	2.51	0.40
1:A:1079:G:O2'	1:A:1081:A:OP1	2.34	0.40
1:A:1576:U:H1'	9:I:17:HIS:CD2	2.56	0.40
1:A:1576:U:H1'	9:I:17:HIS:NE2	2.37	0.40
1:A:1940:U:O2	1:A:1942:A:H8	2.04	0.40
1:A:1948:C:H3'	1:A:1949:A:C8	2.56	0.40
1:A:33:A:OP1	14:Q:102:THR:HB	2.22	0.40
2:B:1273:G:H4'	2:B:1274:A:C5'	2.52	0.40
1:A:348:A:N6	2:B:1353:U:H3	2.18	0.40
2:B:884:U:O2	2:B:884:U:H2'	2.22	0.40
3:C:41:A:N6	3:C:102:G:H1'	2.36	0.40
4:D:116:A:H2'	4:D:117:U:H5'	2.02	0.40
5:E:118:U:O2	17:T:92:LYS:NZ	2.49	0.40
7:G:86:G:H2'	7:G:87:U:O4'	2.21	0.40
3:C:27:U:H4'	11:N:31:LEU:HD13	2.03	0.40
1:A:375:U:H4'	11:N:71:ASN:ND2	58.54	0.40
11:N:90:ILE:HG22	11:N:91:ASN:N	2.37	0.40
12:O:144:ARG:HG3	12:O:148:TYR:CE2	2.57	0.40
18:U:89:ILE:O	18:U:89:ILE:HG13	2.20	0.40
19:V:29:ASP:OD1	19:V:31:THR:OG1	2.33	0.40
1:A:190:G:P	23:Z:118:ARG:NH1	2.95	0.40
1:A:1228:G:N2	2:B:1197:C:O4'	2.55	0.40
1:A:1750:C:O2'	1:A:1751:U:H2'	2.20	0.40
1:A:33:A:OP1	1:A:33:A:H4'	2.21	0.40
2:B:1176:U:C1'	2:B:1203:C:N4	2.84	0.40
2:B:129:G:H2'	2:B:130:A:O4'	2.21	0.40
2:B:481:U:H2'	2:B:482:A2M:C8	2.50	0.40
2:B:650:C:C2'	2:B:651:G:H5'	2.51	0.40
2:B:722:G:C6	2:B:723:A:N6	2.89	0.40
7:G:30:A:OP1	12:O:168:TYR:OH	2.27	0.40
13:P:142:VAL:O	13:P:146:LYS:CB	2.70	0.40
2:B:703:A:C4'	15:R:137:THR:HG21	2.44	0.40
15:R:35:VAL:HG21	15:R:58:ILE:HD12	2.02	0.40
21:X:152:ARG:NH2	21:X:158:LYS:CG	2.84	0.40
1:A:1495:G:O2'	2:B:713:A:O2'	2.22	0.40
1:A:191:A:O2'	1:A:192:A:H5'	2.22	0.40
1:A:453:A:H2'	1:A:454:G:O4'	2.21	0.40
2:B:1289:U:O2'	2:B:1290:A:H5'	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1315:C:O2'	2:B:1435:U:H4'	2.20	0.40
2:B:591:C:H2'	2:B:592:G:O4'	2.21	0.40
2:B:688:G:HO2'	7:G:78:U:C2'	2.28	0.40
7:G:173:U:H2'	7:G:174:G:C8	2.56	0.40
8:H:106:G:H2'	8:H:108:G:OP1	2.22	0.40
2:B:1575:A:O2'	12:O:20:HIS:HD2	2.04	0.40
2:B:1169:OMG:CM2	14:Q:100:PRO:HD3	2.51	0.40
14:Q:148:VAL:HG12	14:Q:149:VAL:N	2.37	0.40
14:Q:40[A]:ARG:HH11	14:Q:40[A]:ARG:HG2	1.87	0.40
15:R:108:ASP:HA	15:R:109:PRO:HD3	1.88	0.40
16:S:25:THR:HG22	16:S:26:VAL:O	2.21	0.40
16:S:45:ARG:O	16:S:49:GLU:HG2	2.22	0.40
5:E:119:G:OP1	17:T:103:ARG:NH2	2.55	0.40
5:E:114:G:H5"	17:T:121:ARG:HG3	2.04	0.40
19:V:50:TYR:O	19:V:54:ASN:HB2	2.22	0.40
19:V:95:LYS:HG3	19:V:109:ILE:HD13	2.04	0.40
20:W:30:ASN:HD22	20:W:114:SER:HB3	1.85	0.40
21:X:171:LEU:N	21:X:171:LEU:HD12	2.37	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
9	I	190/192 (99%)	177 (93%)	11 (6%)	2 (1%)	17	30
10	L	57/65 (88%)	51 (90%)	5 (9%)	1 (2%)	11	17
11	N	168/205 (82%)	154 (92%)	12 (7%)	2 (1%)	16	27
12	O	201/203 (99%)	191 (95%)	8 (4%)	2 (1%)	19	33
13	P	147/149 (99%)	133 (90%)	11 (8%)	3 (2%)	9	14
14	Q	202/203 (100%)	188 (93%)	14 (7%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
15	R	150/152 (99%)	138 (92%)	10 (7%)	2 (1%)	15	25
16	S	175/177 (99%)	158 (90%)	13 (7%)	4 (2%)	8	11
17	T	148/150 (99%)	144 (97%)	3 (2%)	1 (1%)	26	44
18	U	122/146 (84%)	111 (91%)	7 (6%)	4 (3%)	5	6
19	V	79/99 (80%)	70 (89%)	9 (11%)	0	100	100
20	W	125/127 (98%)	120 (96%)	3 (2%)	2 (2%)	12	20
21	X	105/116 (90%)	101 (96%)	3 (3%)	1 (1%)	19	33
22	Y	59/61 (97%)	57 (97%)	2 (3%)	0	100	100
23	Z	111/113 (98%)	100 (90%)	10 (9%)	1 (1%)	21	36
24	a	99/132 (75%)	92 (93%)	5 (5%)	2 (2%)	9	14
25	b	142/144 (99%)	130 (92%)	11 (8%)	1 (1%)	26	44
26	c	116/125 (93%)	108 (93%)	6 (5%)	2 (2%)	11	18
27	d	61/63 (97%)	56 (92%)	2 (3%)	3 (5%)	3	2
28	e	243/245 (99%)	225 (93%)	16 (7%)	2 (1%)	24	40
29	f	395/397 (100%)	372 (94%)	19 (5%)	4 (1%)	19	33
30	g	62/66 (94%)	59 (95%)	2 (3%)	1 (2%)	12	20
31	h	140/169 (83%)	133 (95%)	7 (5%)	0	100	100
32	i	111/113 (98%)	108 (97%)	2 (2%)	1 (1%)	21	36
33	j	102/104 (98%)	98 (96%)	4 (4%)	0	100	100
34	k	109/120 (91%)	105 (96%)	3 (3%)	1 (1%)	21	36
35	l	134/136 (98%)	123 (92%)	9 (7%)	2 (2%)	13	22
36	m	93/95 (98%)	87 (94%)	3 (3%)	3 (3%)	5	6
37	n	79/81 (98%)	71 (90%)	7 (9%)	1 (1%)	15	25
38	o	83/85 (98%)	76 (92%)	4 (5%)	3 (4%)	4	5
39	p	48/58 (83%)	44 (92%)	3 (6%)	1 (2%)	9	13
40	q	48/50 (96%)	43 (90%)	4 (8%)	1 (2%)	9	13
41	r	321/337 (95%)	309 (96%)	10 (3%)	2 (1%)	30	48
42	t	91/93 (98%)	86 (94%)	4 (4%)	1 (1%)	17	30
43	u	187/254 (74%)	176 (94%)	9 (5%)	2 (1%)	17	30
44	v	128/171 (75%)	119 (93%)	7 (6%)	2 (2%)	12	20
45	w	213/215 (99%)	194 (91%)	16 (8%)	3 (1%)	14	23

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
46	x	204/223 (92%)	196 (96%)	7 (3%)	1 (0%)	34	54
All	All	5248/5634 (93%)	4903 (93%)	281 (5%)	64 (1%)	21	27

All (64) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
9	I	142	ASN
11	N	66	PRO
11	N	174	PRO
13	P	21	GLN
15	R	132	ALA
16	S	70	LYS
18	U	55	LYS
18	U	81	ARG
18	U	143	VAL
25	b	112	ASN
29	f	372	ILE
35	l	67	ASN
36	m	36	ALA
37	n	32	GLU
38	o	51	ALA
44	v	58	ASN
45	w	111	ILE
16	S	71	LEU
17	T	130	ASN
20	W	48	LEU
28	e	19	HIS
28	e	153	GLY
29	f	172	ARG
34	k	15	LYS
35	l	27	SER
36	m	39	SER
38	o	46	ALA
39	p	48	ALA
40	q	50	HIS
41	r	217	ARG
45	w	192	GLY
9	I	104	ALA
10	L	158	HIS
15	R	64	ASN
16	S	89	TYR
20	W	117	ALA

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Mol	Chain	Res	Type
27	d	30	HIS
41	r	101	PHE
12	O	207	LYS
16	S	133	ASN
18	U	4	SER
21	X	114	VAL
27	d	33	LYS
29	f	365	PHE
24	a	36	PRO
26	c	43	ALA
27	d	34	ARG
29	f	375	GLY
30	g	43	LEU
36	m	38	SER
42	t	52	GLY
43	u	193	LYS
32	i	13	LYS
45	w	164	VAL
46	x	216	PRO
12	O	107	PRO
43	u	45	GLY
13	P	31	ILE
24	a	25	VAL
44	v	65	GLY
23	Z	77	ILE
26	c	57	GLY
38	o	59	GLY
13	P	136	PRO

5.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
9	I	160/160 (100%)	160 (100%)	0	100	100
10	L	57/57 (100%)	57 (100%)	0	100	100
11	N	153/178 (86%)	150 (98%)	3 (2%)	63	85

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
12	O	175/175 (100%)	175 (100%)	0	100	100
13	P	119/131 (91%)	115 (97%)	4 (3%)	44	70
14	Q	177/176 (101%)	177 (100%)	0	100	100
15	R	131/131 (100%)	131 (100%)	0	100	100
16	S	158/158 (100%)	158 (100%)	0	100	100
17	T	134/134 (100%)	134 (100%)	0	100	100
18	U	108/123 (88%)	108 (100%)	0	100	100
19	V	79/90 (88%)	79 (100%)	0	100	100
20	W	99/99 (100%)	99 (100%)	0	100	100
21	X	96/103 (93%)	96 (100%)	0	100	100
22	Y	55/55 (100%)	52 (94%)	3 (6%)	27	46
23	Z	97/97 (100%)	97 (100%)	0	100	100
24	a	93/116 (80%)	93 (100%)	0	100	100
25	b	116/116 (100%)	114 (98%)	2 (2%)	68	88
26	c	99/102 (97%)	99 (100%)	0	100	100
27	d	52/52 (100%)	52 (100%)	0	100	100
28	e	194/194 (100%)	194 (100%)	0	100	100
29	f	339/339 (100%)	332 (98%)	7 (2%)	61	84
30	g	62/62 (100%)	60 (97%)	2 (3%)	46	72
31	h	91/144 (63%)	89 (98%)	2 (2%)	60	83
32	i	100/100 (100%)	100 (100%)	0	100	100
33	j	90/90 (100%)	90 (100%)	0	100	100
34	k	103/108 (95%)	103 (100%)	0	100	100
35	l	102/112 (91%)	100 (98%)	2 (2%)	63	85
36	m	77/77 (100%)	77 (100%)	0	100	100
37	n	69/69 (100%)	69 (100%)	0	100	100
38	o	68/68 (100%)	68 (100%)	0	100	100
39	p	48/53 (91%)	48 (100%)	0	100	100
40	q	46/46 (100%)	46 (100%)	0	100	100
41	r	262/273 (96%)	262 (100%)	0	100	100
42	t	82/82 (100%)	82 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
43	u	155/207 (75%)	155 (100%)	0	100	100
44	v	112/141 (79%)	112 (100%)	0	100	100
45	w	180/180 (100%)	180 (100%)	0	100	100
46	x	182/194 (94%)	182 (100%)	0	100	100
All	All	4520/4792 (94%)	4495 (99%)	25 (1%)	91	97

All (25) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
11	N	20	CYS
11	N	22	SER
11	N	24	LYS
13	P	133	LYS
13	P	134	LYS
13	P	138	SER
13	P	139	TRP
22	Y	28	SER
22	Y	30	LYS
22	Y	51	ARG
25	b	16	PHE
25	b	45	PHE
29	f	65	SER
29	f	66	LYS
29	f	67	VAL
29	f	69	LYS
29	f	71	GLU
29	f	209	ARG
29	f	396	ARG
30	g	42	LYS
30	g	95	THR
31	h	79	ARG
31	h	84	ILE
35	l	25	LYS
35	l	149	ILE

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (80) such sidechains are listed below:

Mol	Chain	Res	Type
9	I	45	ASN
9	I	158	HIS

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Mol	Chain	Res	Type
10	L	167	HIS
11	N	6	ASN
11	N	23	GLN
12	O	20	HIS
12	O	68	ASN
12	O	119	GLN
12	O	143	GLN
13	P	5	ASN
13	P	21	GLN
14	Q	39	GLN
14	Q	92	HIS
14	Q	113	ASN
14	Q	133	ASN
14	Q	195	HIS
15	R	28	ASN
15	R	97	ASN
15	R	116	HIS
15	R	147	GLN
16	S	57	HIS
16	S	121	HIS
16	S	122	ASN
16	S	145	HIS
18	U	3	HIS
18	U	33	ASN
18	U	54	HIS
18	U	107	GLN
19	V	58	ASN
19	V	118	GLN
20	W	30	ASN
20	W	49	ASN
20	W	106	ASN
21	X	83	GLN
21	X	163	ASN
22	Y	17	HIS
23	Z	97	HIS
23	Z	100	ASN
24	a	124	ASN
25	b	49	HIS
25	b	60	HIS
26	c	34	ASN
27	d	7	HIS
27	d	9	ASN

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Mol	Chain	Res	Type
27	d	30	HIS
28	e	17	GLN
28	e	38	HIS
28	e	100	ASN
28	e	194	ASN
28	e	211	HIS
28	e	217	GLN
28	e	221	HIS
29	f	11	HIS
29	f	109	HIS
29	f	173	ASN
29	f	182	HIS
29	f	189	ASN
29	f	248	HIS
29	f	279	HIS
29	f	289	GLN
31	h	125	ASN
31	h	137	HIS
32	i	21	HIS
32	i	28	GLN
33	j	13	HIS
33	j	51	HIS
34	k	37	GLN
35	l	116	HIS
37	n	10	GLN
38	o	21	ASN
41	r	33	HIS
41	r	42	ASN
42	t	83	ASN
43	u	201	HIS
45	w	104	GLN
45	w	110	GLN
45	w	120	ASN
45	w	159	GLN
45	w	177	ASN
46	x	117	GLN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	1249/1278 (97%)	348 (27%)	33 (2%)

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Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
2	B	925/941 (98%)	275 (29%)	18 (1%)
3	C	144/169 (85%)	39 (27%)	2 (1%)
4	D	111/118 (94%)	23 (20%)	4 (3%)
5	E	141/146 (96%)	30 (21%)	4 (2%)
6	F	44/46 (95%)	21 (47%)	7 (15%)
7	G	117/123 (95%)	28 (23%)	2 (1%)
8	H	86/91 (94%)	20 (23%)	3 (3%)
All	All	2817/2912 (96%)	784 (27%)	73 (2%)

All (784) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	4	A
1	A	5	G
1	A	12	G
1	A	15	U
1	A	20	G
1	A	21	G
1	A	25	A
1	A	34	A
1	A	39	A
1	A	42	A
1	A	48	C
1	A	51	A
1	A	55	G
1	A	56	A
1	A	59	A
1	A	64	A
1	A	65	A
1	A	67	A
1	A	68	C
1	A	70	A
1	A	71	C
1	A	72	C
1	A	73	G
1	A	76	A
1	A	82	U
1	A	84	A
1	A	85	G
1	A	86	U
1	A	88	A
1	A	91	G

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Mol	Chain	Res	Type
1	A	92	G
1	A	94	G
1	A	99	A
1	A	100	A
1	A	108	C
1	A	110	A
1	A	111	A
1	A	115	G
1	A	116	U
1	A	131	U
1	A	132	U
1	A	133	A
1	A	135	A
1	A	136	G
1	A	142	U
1	A	143	G
1	A	147	U
1	A	148	G
1	A	149	U
1	A	176	G
1	A	179	G
1	A	181	A
1	A	182	G
1	A	183	G
1	A	187	G
1	A	188	G
1	A	191	A
1	A	195	U
1	A	196	C
1	A	209	A
1	A	210	A
1	A	212	C
1	A	213	C
1	A	214	G
1	A	215	U
1	A	216	U
1	A	225	C
1	A	234	A
1	A	235	U
1	A	237	U
1	A	238	G
1	A	240	G

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Mol	Chain	Res	Type
1	A	241	U
1	A	247	G
1	A	251	A
1	A	253	G
1	A	254	A
1	A	255	A
1	A	256	G
1	A	259	G
1	A	260	U
1	A	261	U
1	A	265	C
1	A	269	U
1	A	276	U
1	A	277	G
1	A	278	A
1	A	281	C
1	A	309	A
1	A	310	G
1	A	311	U
1	A	322	G
1	A	324	G
1	A	326	G
1	A	327	U
1	A	332	U
1	A	336	A
1	A	337	A
1	A	339	C
1	A	340	U
1	A	341	G
1	A	346	G
1	A	347	U
1	A	359	A
1	A	365	A
1	A	371	A
1	A	372	G
1	A	373	A
1	A	375	U
1	A	376	A
1	A	377	G
1	A	381	G
1	A	382	A
1	A	386	A

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Mol	Chain	Res	Type
1	A	394	C
1	A	396	A
1	A	397	G
1	A	403	U
1	A	405	A
1	A	408	G
1	A	412	G
1	A	413	U
1	A	414	U
1	A	415	U
1	A	420	A
1	A	421	G
1	A	423	A2M
1	A	430	A
1	A	432	A
1	A	436	A
1	A	443	U
1	A	444	A
1	A	446	A
1	A	451	G
1	A	452	A
1	A	456	C
1	A	471	G
1	A	481	C
1	A	482	C
1	A	496	A
1	A	499	C
1	A	500	C
1	A	503	C
1	A	505	U
1	A	519	G
1	A	588	A
1	A	600	A
1	A	601	U
1	A	739	U
1	A	741	G
1	A	749	A
1	A	765	C
1	A	766	C
1	A	767	C
1	A	774	A
1	A	777	OMC

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Mol	Chain	Res	Type
1	A	778	A2M
1	A	787	G
1	A	789	A
1	A	794	A2M
1	A	795	A
1	A	803	G
1	A	806	A
1	A	816	U
1	A	817	A
1	A	826	A
1	A	828	U
1	A	831	U
1	A	840	A
1	A	841	C
1	A	845	A
1	A	847	G
1	A	850	A
1	A	867	G
1	A	868	U
1	A	875	C
1	A	919	OMC
1	A	925	C
1	A	932	G
1	A	934	C
1	A	947	A
1	A	948	G
1	A	951	G
1	A	952	G
1	A	954	G
1	A	956	G
1	A	965	U
1	A	966	G
1	A	973	A
1	A	976	G
1	A	978	U
1	A	982	G
1	A	983	A
1	A	984	A
1	A	987	A
1	A	992	U
1	A	1002	G
1	A	1007	C

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Mol	Chain	Res	Type
1	A	1019	G
1	A	1026	G
1	A	1028	C
1	A	1036	G
1	A	1037	A
1	A	1038	U
1	A	1041	U
1	A	1046	U
1	A	1047	G
1	A	1050	A
1	A	1059	C
1	A	1063	A
1	A	1073	5MC
1	A	1074	G
1	A	1075	OMG
1	A	1076	A
1	A	1081	A
1	A	1083	G
1	A	1084	A
1	A	1086	U
1	A	1088	A
1	A	1090	C
1	A	1091	G
1	A	1092	A
1	A	1104	G
1	A	1111	C
1	A	1126	C
1	A	1132	A
1	A	1141	G
1	A	1151	A
1	A	1154	A
1	A	1157	A
1	A	1161	U
1	A	1162	G
1	A	1164	G
1	A	1166	U
1	A	1222	U
1	A	1223	U
1	A	1227	OMU
1	A	1228	G
1	A	1269	U
1	A	1287	A

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Mol	Chain	Res	Type
1	A	1298	G
1	A	1300	G
1	A	1307	U
1	A	1314	G
1	A	1315	C
1	A	1318	A
1	A	1327	U
1	A	1335	G
1	A	1338	C
1	A	1339	C
1	A	1342	U
1	A	1343	U
1	A	1351	U
1	A	1362	A
1	A	1364	C
1	A	1368	U
1	A	1375	A
1	A	1494	G
1	A	1495	G
1	A	1496	A
1	A	1497	OMU
1	A	1498	G
1	A	1499	A
1	A	1504	C
1	A	1508	C
1	A	1515	A
1	A	1516	G
1	A	1525	5MC
1	A	1526	A
1	A	1527	U
1	A	1528	U
1	A	1530	U
1	A	1539	U
1	A	1542	G
1	A	1573	A
1	A	1574	A
1	A	1576	U
1	A	1580	G
1	A	1590	U
1	A	1598	U
1	A	1599	G
1	A	1600	G

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Mol	Chain	Res	Type
1	A	1608	G
1	A	1616	G
1	A	1623	A
1	A	1624	U
1	A	1625	G
1	A	1637	A
1	A	1639	A
1	A	1640	U
1	A	1643	A
1	A	1647	G
1	A	1650	U
1	A	1653	A
1	A	1654	G
1	A	1655	U
1	A	1658	A
1	A	1661	U
1	A	1662	OMC
1	A	1669	G
1	A	1670	G
1	A	1671	C
1	A	1672	G
1	A	1675	OMG
1	A	1680	G
1	A	1681	A
1	A	1685	A
1	A	1690	A
1	A	1712	U
1	A	1720	G
1	A	1721	G
1	A	1722	A
1	A	1723	G
1	A	1725	7MG
1	A	1734	U
1	A	1735	U
1	A	1743	A
1	A	1748	C
1	A	1751	U
1	A	1755	A
1	A	1761	G
1	A	1766	U
1	A	1769	G
1	A	1772	A

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Mol	Chain	Res	Type
1	A	1773	C
1	A	1777	G
1	A	1780	C
1	A	1789	A
1	A	1790	C
1	A	1792	G
1	A	1798	U
1	A	1799	U
1	A	1800	A
1	A	1801	G
1	A	1804	A2M
1	A	1805	A
1	A	1927	A
1	A	1929	A
1	A	1932	A
1	A	1939	A
1	A	1940	U
1	A	1944	A
1	A	1946	U
1	A	1947	C
1	A	1951	A
1	A	1952	A
1	A	1954	G
1	A	1964	G
2	B	9	G
2	B	17	U
2	B	22	A
2	B	23	U
2	B	24	C
2	B	30	A
2	B	32	C
2	B	33	A
2	B	41	A
2	B	47	A
2	B	58	G
2	B	59	U
2	B	61	C
2	B	62	A
2	B	63	U
2	B	67	G
2	B	68	A
2	B	69	A

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Mol	Chain	Res	Type
2	B	75	C
2	B	77	OMC
2	B	81	G
2	B	88	C
2	B	90	G
2	B	91	C
2	B	116	A
2	B	119	C
2	B	131	G
2	B	135	A
2	B	448	A
2	B	449	C
2	B	450	U
2	B	460	U
2	B	461	U
2	B	462	A
2	B	463	C
2	B	467	G
2	B	468	G
2	B	477	A
2	B	480	G
2	B	486	U
2	B	488	A
2	B	490	A
2	B	491	A
2	B	499	U
2	B	504	A
2	B	505	U
2	B	506	G
2	B	512	A
2	B	516	G
2	B	521	A
2	B	539	U
2	B	540	G
2	B	541	C
2	B	543	OMC
2	B	548	C
2	B	569	G
2	B	577	G
2	B	590	A
2	B	617	A
2	B	618	G

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Mol	Chain	Res	Type
2	B	619	G
2	B	627	A2M
2	B	628	U
2	B	630	C
2	B	632	U
2	B	634	OMG
2	B	645	A
2	B	650	C
2	B	652	C
2	B	653	G
2	B	654	C
2	B	657	7MG
2	B	658	A
2	B	659	A
2	B	660	U
2	B	661	G
2	B	664	U
2	B	670	A
2	B	680	U
2	B	681	G
2	B	682	U
2	B	691	A2M
2	B	692	C
2	B	707	A
2	B	709	A
2	B	711	U
2	B	719	A
2	B	720	C
2	B	721	G
2	B	735	A
2	B	740	G
2	B	743	A
2	B	748	A
2	B	749	G
2	B	750	A
2	B	755	OMG
2	B	757	U
2	B	764	G
2	B	768	C
2	B	769	C
2	B	781	G
2	B	853	C

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Mol	Chain	Res	Type
2	B	855	U
2	B	857	A
2	B	859	U
2	B	860	U
2	B	868	G
2	B	872	A
2	B	873	G
2	B	877	A
2	B	878	A
2	B	879	U
2	B	880	G
2	B	883	U
2	B	884	U
2	B	885	U
2	B	886	C
2	B	887	G
2	B	896	G
2	B	897	C
2	B	905	G
2	B	907	A
2	B	908	C
2	B	911	U
2	B	1106	U
2	B	1108	A
2	B	1109	A
2	B	1112	A
2	B	1113	A
2	B	1135	G
2	B	1136	G
2	B	1137	A
2	B	1138	7MG
2	B	1139	U
2	B	1143	G
2	B	1144	U
2	B	1145	U
2	B	1146	U
2	B	1151	A
2	B	1153	A
2	B	1154	U
2	B	1165	G
2	B	1166	G
2	B	1169	OMG

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Mol	Chain	Res	Type
2	B	1170	U
2	B	1173	G
2	B	1175	C
2	B	1178	G
2	B	1180	G
2	B	1185	A
2	B	1187	A
2	B	1207	G
2	B	1208	G
2	B	1210	OMG
2	B	1211	U
2	B	1216	A
2	B	1225	C
2	B	1241	C
2	B	1248	A
2	B	1249	G
2	B	1250	A
2	B	1253	A
2	B	1255	A
2	B	1273	G
2	B	1274	A
2	B	1279	C
2	B	1280	G
2	B	1287	A
2	B	1288	G
2	B	1289	U
2	B	1293	A
2	B	1297	G
2	B	1302	U
2	B	1312	A
2	B	1313	G
2	B	1315	C
2	B	1347	A
2	B	1348	A
2	B	1350	A
2	B	1359	C
2	B	1363	OMG
2	B	1364	G
2	B	1366	G
2	B	1369	A
2	B	1370	G
2	B	1371	A

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Mol	Chain	Res	Type
2	B	1372	A
2	B	1373	U
2	B	1374	A
2	B	1378	A
2	B	1380	OMC
2	B	1384	G
2	B	1387	A
2	B	1388	U
2	B	1389	A
2	B	1390	A
2	B	1436	C
2	B	1437	C
2	B	1441	G
2	B	1442	A
2	B	1445	U
2	B	1449	OMC
2	B	1453	U
2	B	1458	A
2	B	1459	C
2	B	1481	A
2	B	1483	G
2	B	1487	G
2	B	1491	OMU
2	B	1492	OMG
2	B	1493	U
2	B	1503	G
2	B	1505	C
2	B	1506	A
2	B	1511	A
2	B	1512	C
2	B	1524	U
2	B	1525	U
2	B	1541	A
2	B	1546	G
2	B	1548	U
2	B	1549	U
2	B	1550	U
2	B	1553	C
2	B	1560	U
2	B	1561	A
2	B	1564	U
2	B	1565	G

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Mol	Chain	Res	Type
2	B	1568	A
2	B	1569	A
2	B	1570	U
2	B	1573	C
2	B	1574	G
2	B	1575	A
2	B	1578	A
2	B	1592	A
2	B	1593	A
2	B	1594	A
2	B	1595	A
2	B	1602	U
2	B	1603	U
2	B	1604	U
2	B	1605	U
2	B	1606	U
2	B	1612	A
2	B	1613	A
2	B	1614	A
2	B	1622	U
2	B	1623	U
2	B	1624	U
2	B	1625	U
2	B	1626	U
2	B	1627	U
2	B	1628	U
2	B	1629	U
2	B	1630	U
2	B	1631	U
2	B	1632	U
2	B	1633	U
2	B	1642	A
2	B	1643	C
2	B	1644	U
2	B	1646	G
2	B	1647	G
2	B	1648	U
2	B	1649	A
2	B	1650	C
2	B	1651	G
2	B	1652	A
2	B	1653	A

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Mol	Chain	Res	Type
2	B	1654	A
2	B	1655	A
2	B	1656	A
2	B	1657	A
2	B	1658	A
3	C	7	OMU
3	C	9	G
3	C	16	A
3	C	20	C
3	C	22	U
3	C	23	G
3	C	31	A
3	C	32	U
3	C	34	U
3	C	38	U
3	C	45	C
3	C	49	G
3	C	58	G
3	C	59	A
3	C	60	U
3	C	62	A
3	C	63	G
3	C	70	C
3	C	75	OMG
3	C	79	A
3	C	96	A
3	C	98	C
3	C	99	U
3	C	105	OMC
3	C	106	G
3	C	110	A
3	C	112	G
3	C	116	C
3	C	117	A
3	C	118	OMU
3	C	125	A
3	C	141	C
3	C	142	C
3	C	157	U
3	C	158	U
3	C	162	C
3	C	163	A2M

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Mol	Chain	Res	Type
3	C	168	C
3	C	169	G
4	D	7	G
4	D	8	A
4	D	13	A
4	D	14	C
4	D	25	G
4	D	27	A
4	D	32	A
4	D	33	U
4	D	42	A
4	D	48	G
4	D	49	A
4	D	54	A
4	D	62	A
4	D	63	C
4	D	64	A
4	D	71	G
4	D	74	A
4	D	77	A
4	D	86	A
4	D	92	G
4	D	95	G
4	D	100	A
4	D	110	G
5	E	3	U
5	E	5	G
5	E	32	A
5	E	38	U
5	E	41	U
5	E	55	U
5	E	67	U
5	E	68	A
5	E	72	C
5	E	74	C
5	E	102	U
5	E	114	G
5	E	120	U
5	E	121	U
5	E	124	G
5	E	125	A
5	E	127	C

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Mol	Chain	Res	Type
5	E	137	A
5	E	141	U
5	E	145	A
5	E	146	A
5	E	147	A
5	E	148	U
5	E	152	G
5	E	176	U
5	E	177	G
5	E	195	A
5	E	196	G
5	E	198	A
5	E	199	A
6	F	7	G
6	F	9	C
6	F	10	A
6	F	11	C
6	F	12	U
6	F	13	U
6	F	14	C
6	F	16	C
6	F	50	C
6	F	52	A
6	F	53	G
6	F	54	U
6	F	56	C
6	F	59	U
6	F	63	A
6	F	64	U
6	F	65	U
6	F	67	A
6	F	68	C
6	F	69	A
6	F	70	A
7	G	24	A
7	G	27	G
7	G	29	G
7	G	30	A
7	G	36	G
7	G	58	C
7	G	61	C
7	G	70	OMG

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Mol	Chain	Res	Type
7	G	82	U
7	G	93	G
7	G	98	G
7	G	102	G
7	G	103	U
7	G	110	A
7	G	116	U
7	G	117	C
7	G	119	C
7	G	123	G
7	G	124	U
7	G	155	G
7	G	164	A
7	G	165	A
7	G	166	G
7	G	167	A
7	G	169	C
7	G	170	A
7	G	171	G
7	G	174	G
8	H	13	C
8	H	14	C
8	H	23	G
8	H	26	C
8	H	27	A
8	H	28	U
8	H	32	U
8	H	38	G
8	H	42	U
8	H	46	C
8	H	65	G
8	H	88	C
8	H	95	C
8	H	99	G
8	H	105	U
8	H	107	A
8	H	108	G
8	H	109	G
8	H	112	U
8	H	122	U

All (73) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	A	3	C
1	A	4	A
1	A	20	G
1	A	58	G
1	A	87	C
1	A	110	A
1	A	132	U
1	A	142	U
1	A	146	U
1	A	148	G
1	A	214	G
1	A	254	A
1	A	323	G
1	A	394	C
1	A	396	A
1	A	412	G
1	A	419	A
1	A	442	A
1	A	445	G
1	A	451	G
1	A	599	C
1	A	766	C
1	A	1037	A
1	A	1075	OMG
1	A	1083	G
1	A	1326	A
1	A	1515	A
1	A	1599	G
1	A	1622	G
1	A	1722	A
1	A	1779	A
1	A	1797	U
1	A	1938	G
2	B	68	A
2	B	719	A
2	B	739	G
2	B	852	G
2	B	854	U
2	B	884	U
2	B	1107	7MG
2	B	1112	A
2	B	1138	7MG
2	B	1153	A

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Mol	Chain	Res	Type
2	B	1186	U
2	B	1215	A
2	B	1254	C
2	B	1273	G
2	B	1444	G
2	B	1568	A
2	B	1642	A
2	B	1649	A
3	C	15	G
3	C	105	OMC
4	D	13	A
4	D	32	A
4	D	53	U
4	D	109	U
5	E	67	U
5	E	113	C
5	E	126	A
5	E	147	A
6	F	10	A
6	F	12	U
6	F	13	U
6	F	53	G
6	F	62	U
6	F	63	A
6	F	67	A
7	G	123	G
7	G	170	A
8	H	26	C
8	H	41	A
8	H	111	C

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

72 non-standard protein/DNA/RNA residues are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
1	A2M	A	1043	1	18,25,26	4.39	7 (38%)	18,36,39	3.58	2 (11%)
1	7MG	A	1045	1	20,26,27	3.07	6 (30%)	23,39,42	1.81	6 (26%)
1	OMC	A	1053	1	15,22,23	1.95	6 (40%)	20,31,34	3.32	1 (5%)
1	A2M	A	1071	1	18,25,26	4.51	7 (38%)	18,36,39	3.26	4 (22%)
1	5MC	A	1073	1	14,22,23	1.98	5 (35%)	17,32,35	0.98	1 (5%)
1	OMG	A	1075	1	18,26,27	2.34	6 (33%)	21,38,41	6.88	5 (23%)
1	OMU	A	1127	1	13,22,23	2.41	4 (30%)	17,31,34	0.72	0
1	OMU	A	1227	1	14,22,23	2.81	5 (35%)	19,31,34	1.31	1 (5%)
1	OMG	A	1316	1	18,26,27	2.37	6 (33%)	21,38,41	5.61	6 (28%)
1	OMU	A	1497	1	14,22,23	2.75	5 (35%)	19,31,34	1.46	1 (5%)
1	5MC	A	1525	1	14,22,23	1.97	5 (35%)	17,32,35	0.85	0
1	OMG	A	1659	1	18,26,27	2.22	6 (33%)	21,38,41	5.55	6 (28%)
1	OMC	A	1662	1	15,22,23	2.25	5 (33%)	20,31,34	1.37	1 (5%)
1	A2M	A	1674	1,47,2	18,25,26	4.42	8 (44%)	18,36,39	3.17	3 (16%)
1	OMG	A	1675	1,2	18,26,27	2.17	6 (33%)	21,38,41	5.71	6 (28%)
1	OMG	A	1710	1	18,26,27	2.37	6 (33%)	21,38,41	6.30	5 (23%)
1	7MG	A	1725	1,2	20,26,27	2.97	7 (35%)	23,39,42	1.98	5 (21%)
1	A2M	A	1804	1	18,25,26	4.35	8 (44%)	18,36,39	3.48	5 (27%)
1	OMC	A	343	1	15,22,23	2.42	5 (33%)	20,31,34	2.09	2 (10%)
1	A2M	A	423	1	18,25,26	4.34	8 (44%)	18,36,39	3.30	4 (22%)
1	A2M	A	775	1,2	18,25,26	4.47	8 (44%)	18,36,39	3.04	3 (16%)
1	OMC	A	777	1	15,22,23	2.54	6 (40%)	20,31,34	1.61	1 (5%)
1	A2M	A	778	1	18,25,26	4.30	7 (38%)	18,36,39	2.87	3 (16%)
1	OMC	A	792	1	15,22,23	2.34	5 (33%)	20,31,34	1.26	1 (5%)
1	A2M	A	794	1	18,25,26	4.45	6 (33%)	18,36,39	3.87	7 (38%)
1	OMC	A	919	1	15,22,23	2.43	6 (40%)	20,31,34	1.72	2 (10%)
1	OMG	A	927	1	18,26,27	2.33	6 (33%)	21,38,41	5.88	6 (28%)
1	7MG	A	931	1	20,26,27	2.88	7 (35%)	23,39,42	2.09	7 (30%)
1	OMG	A	958	1	18,26,27	2.23	6 (33%)	21,38,41	5.60	6 (28%)
1	OMU	A	963	1	14,22,23	2.80	5 (35%)	19,31,34	1.37	1 (5%)
1	OMG	A	972	1	18,26,27	2.32	6 (33%)	21,38,41	5.07	7 (33%)
1	A2M	A	974	1	18,25,26	4.26	7 (38%)	18,36,39	3.50	6 (33%)
2	7MG	B	1107	2	20,26,27	3.17	7 (35%)	23,39,42	2.08	7 (30%)
2	7MG	B	1138	2	20,26,27	3.28	7 (35%)	23,39,42	2.03	8 (34%)
2	OMG	B	1169	2	18,26,27	2.24	6 (33%)	21,38,41	5.77	6 (28%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	OMG	B	1210	2	18,26,27	2.25	6 (33%)	21,38,41	5.32	8 (38%)
2	OMU	B	1345	2	14,22,23	2.77	5 (35%)	19,31,34	1.42	1 (5%)
2	OMG	B	1361	2	18,26,27	2.31	6 (33%)	21,38,41	5.76	5 (23%)
2	OMG	B	1363	2	18,26,27	2.43	6 (33%)	21,38,41	5.36	6 (28%)
2	OMC	B	1380	2	15,22,23	2.38	6 (40%)	20,31,34	1.78	1 (5%)
2	OMG	B	1385	2	18,26,27	2.29	6 (33%)	21,38,41	5.67	6 (28%)
2	OMC	B	1449	2	15,22,23	2.34	5 (33%)	20,31,34	1.92	1 (5%)
2	OMU	B	1491	2	14,22,23	2.68	5 (35%)	19,31,34	1.11	1 (5%)
2	OMG	B	1492	2	18,26,27	2.38	6 (33%)	21,38,41	6.37	5 (23%)
2	A2M	B	1516	47,2	18,25,26	4.48	8 (44%)	18,36,39	3.45	5 (27%)
2	OMC	B	1529	2	15,22,23	2.31	5 (33%)	20,31,34	1.66	1 (5%)
2	OMC	B	21	1,2	15,22,23	2.34	5 (33%)	20,31,34	1.93	2 (10%)
2	A2M	B	482	2	18,25,26	4.33	8 (44%)	18,36,39	3.31	2 (11%)
2	A2M	B	50	47,2	18,25,26	4.34	8 (44%)	18,36,39	2.97	2 (11%)
2	OMC	B	543	2	15,22,23	2.34	6 (40%)	20,31,34	1.71	1 (5%)
2	OMG	B	564	2	18,26,27	2.48	6 (33%)	21,38,41	6.05	5 (23%)
2	5MC	B	624	2	14,22,23	2.01	5 (35%)	17,32,35	0.79	1 (5%)
2	A2M	B	627	2	18,25,26	4.23	8 (44%)	18,36,39	3.21	6 (33%)
2	OMG	B	634	2	18,26,27	2.25	6 (33%)	21,38,41	6.15	6 (28%)
2	7MG	B	657	47,2	20,26,27	3.06	7 (35%)	23,39,42	1.98	7 (30%)
2	OMC	B	683	2	15,22,23	2.30	5 (33%)	20,31,34	1.79	3 (15%)
2	A2M	B	691	2	18,25,26	4.47	8 (44%)	18,36,39	4.01	8 (44%)
2	OMG	B	71	2	18,26,27	2.44	6 (33%)	21,38,41	5.26	5 (23%)
2	A2M	B	728	2	18,25,26	4.35	7 (38%)	18,36,39	3.04	4 (22%)
2	OMU	B	73	2	14,22,23	2.77	5 (35%)	19,31,34	1.36	1 (5%)
2	OMG	B	755	2	18,26,27	2.30	6 (33%)	21,38,41	5.82	5 (23%)
2	OMU	B	767	2	14,22,23	2.65	5 (35%)	19,31,34	1.45	1 (5%)
2	OMC	B	77	2	15,22,23	2.50	6 (40%)	20,31,34	1.98	1 (5%)
3	OMC	C	105	47,3	15,22,23	2.40	6 (40%)	20,31,34	2.13	2 (10%)
3	OMU	C	118	3	14,22,23	2.67	5 (35%)	19,31,34	1.36	2 (10%)
3	A2M	C	163	1,3	18,25,26	4.35	8 (44%)	18,36,39	3.10	3 (16%)
3	OMG	C	166	1,3	18,26,27	2.25	6 (33%)	21,38,41	5.75	5 (23%)
3	7MG	C	42	3	20,26,27	2.94	7 (35%)	23,39,42	2.04	7 (30%)
3	A2M	C	43	3	18,25,26	4.41	7 (38%)	18,36,39	3.30	4 (22%)
3	OMU	C	7	1,3	14,22,23	2.94	5 (35%)	19,31,34	1.34	1 (5%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
3	OMG	C	75	3	18,26,27	2.35	6 (33%)	21,38,41	5.78	6 (28%)
7	OMG	G	70	7	18,26,27	2.20	6 (33%)	21,38,41	5.38	6 (28%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	A2M	A	1043	1	-	0/5/27/28	0/3/3/3
1	7MG	A	1045	1	-	0/7/37/38	0/3/3/3
1	OMC	A	1053	1	-	0/5/27/28	0/2/2/2
1	A2M	A	1071	1	-	0/5/27/28	0/3/3/3
1	5MC	A	1073	1	-	0/3/25/26	0/2/2/2
1	OMG	A	1075	1	-	0/5/27/28	0/3/3/3
1	OMU	A	1127	1	-	0/5/27/28	0/2/2/2
1	OMU	A	1227	1	-	0/5/27/28	0/2/2/2
1	OMG	A	1316	1	-	0/5/27/28	0/3/3/3
1	OMU	A	1497	1	-	0/5/27/28	0/2/2/2
1	5MC	A	1525	1	-	0/3/25/26	0/2/2/2
1	OMG	A	1659	1	-	0/5/27/28	0/3/3/3
1	OMC	A	1662	1	-	0/5/27/28	0/2/2/2
1	A2M	A	1674	1,47,2	-	0/5/27/28	0/3/3/3
1	OMG	A	1675	1,2	-	0/5/27/28	0/3/3/3
1	OMG	A	1710	1	-	0/5/27/28	0/3/3/3
1	7MG	A	1725	1,2	-	0/7/37/38	0/3/3/3
1	A2M	A	1804	1	-	0/5/27/28	0/3/3/3
1	OMC	A	343	1	-	0/5/27/28	0/2/2/2
1	A2M	A	423	1	-	0/5/27/28	0/3/3/3
1	A2M	A	775	1,2	-	0/5/27/28	0/3/3/3
1	OMC	A	777	1	-	0/5/27/28	0/2/2/2
1	A2M	A	778	1	-	0/5/27/28	0/3/3/3
1	OMC	A	792	1	-	0/5/27/28	0/2/2/2
1	A2M	A	794	1	-	0/5/27/28	0/3/3/3
1	OMC	A	919	1	-	0/5/27/28	0/2/2/2
1	OMG	A	927	1	-	0/5/27/28	0/3/3/3
1	7MG	A	931	1	-	0/7/37/38	0/3/3/3
1	OMG	A	958	1	-	0/5/27/28	0/3/3/3
1	OMU	A	963	1	-	0/5/27/28	0/2/2/2
1	OMG	A	972	1	-	0/5/27/28	0/3/3/3
1	A2M	A	974	1	-	0/5/27/28	0/3/3/3
2	7MG	B	1107	2	-	0/7/37/38	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	7MG	B	1138	2	-	0/7/37/38	0/3/3/3
2	OMG	B	1169	2	-	0/5/27/28	0/3/3/3
2	OMG	B	1210	2	-	0/5/27/28	0/3/3/3
2	OMU	B	1345	2	-	0/5/27/28	0/2/2/2
2	OMG	B	1361	2	-	0/5/27/28	0/3/3/3
2	OMG	B	1363	2	-	0/5/27/28	0/3/3/3
2	OMC	B	1380	2	-	0/5/27/28	0/2/2/2
2	OMG	B	1385	2	-	0/5/27/28	0/3/3/3
2	OMC	B	1449	2	-	0/5/27/28	0/2/2/2
2	OMU	B	1491	2	-	0/5/27/28	0/2/2/2
2	OMG	B	1492	2	-	0/5/27/28	0/3/3/3
2	A2M	B	1516	47,2	-	0/5/27/28	0/3/3/3
2	OMC	B	1529	2	-	0/5/27/28	0/2/2/2
2	OMC	B	21	1,2	-	0/5/27/28	0/2/2/2
2	A2M	B	482	2	-	0/5/27/28	0/3/3/3
2	A2M	B	50	47,2	-	0/5/27/28	0/3/3/3
2	OMC	B	543	2	-	0/5/27/28	0/2/2/2
2	OMG	B	564	2	-	0/5/27/28	0/3/3/3
2	5MC	B	624	2	-	0/3/25/26	0/2/2/2
2	A2M	B	627	2	-	0/5/27/28	0/3/3/3
2	OMG	B	634	2	-	0/5/27/28	0/3/3/3
2	7MG	B	657	47,2	-	0/7/37/38	0/3/3/3
2	OMC	B	683	2	-	0/5/27/28	0/2/2/2
2	A2M	B	691	2	-	0/5/27/28	0/3/3/3
2	OMG	B	71	2	-	0/5/27/28	0/3/3/3
2	A2M	B	728	2	-	0/5/27/28	0/3/3/3
2	OMU	B	73	2	-	0/5/27/28	0/2/2/2
2	OMG	B	755	2	-	0/5/27/28	0/3/3/3
2	OMU	B	767	2	-	0/5/27/28	0/2/2/2
2	OMC	B	77	2	-	0/5/27/28	0/2/2/2
3	OMC	C	105	47,3	-	0/5/27/28	0/2/2/2
3	OMU	C	118	3	-	0/5/27/28	0/2/2/2
3	A2M	C	163	1,3	-	0/5/27/28	0/3/3/3
3	OMG	C	166	1,3	-	0/5/27/28	0/3/3/3
3	7MG	C	42	3	-	0/7/37/38	0/3/3/3
3	A2M	C	43	3	-	0/5/27/28	0/3/3/3
3	OMU	C	7	1,3	-	0/5/27/28	0/2/2/2
3	OMG	C	75	3	-	0/5/27/28	0/3/3/3
7	OMG	G	70	7	-	0/5/27/28	0/3/3/3

All (443) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1071	A2M	C2'-C1'	-9.46	1.27	1.53
3	C	43	A2M	C2'-C1'	-9.28	1.27	1.53
1	A	1043	A2M	C2'-C1'	-9.20	1.28	1.53
3	C	163	A2M	C2'-C1'	-9.19	1.28	1.53
2	B	1516	A2M	C2'-C1'	-9.17	1.28	1.53
1	A	1674	A2M	C2'-C1'	-9.12	1.28	1.53
1	A	794	A2M	C2'-C1'	-9.10	1.28	1.53
1	A	775	A2M	C2'-C1'	-9.10	1.28	1.53
2	B	728	A2M	C2'-C1'	-9.02	1.28	1.53
2	B	691	A2M	C2'-C1'	-8.95	1.28	1.53
2	B	50	A2M	C2'-C1'	-8.88	1.28	1.53
2	B	482	A2M	C2'-C1'	-8.83	1.29	1.53
1	A	778	A2M	C2'-C1'	-8.81	1.29	1.53
2	B	627	A2M	C2'-C1'	-8.73	1.29	1.53
1	A	974	A2M	C2'-C1'	-8.56	1.29	1.53
1	A	423	A2M	C2'-C1'	-8.52	1.29	1.53
1	A	1804	A2M	C2'-C1'	-8.51	1.29	1.53
1	A	1071	A2M	O4'-C4'	-6.72	1.29	1.45
2	B	728	A2M	O4'-C4'	-6.69	1.29	1.45
1	A	1674	A2M	O4'-C4'	-6.59	1.29	1.45
1	A	974	A2M	O4'-C4'	-6.52	1.30	1.45
1	A	775	A2M	O4'-C4'	-6.51	1.30	1.45
2	B	482	A2M	O4'-C4'	-6.37	1.30	1.45
3	C	163	A2M	O4'-C4'	-6.35	1.30	1.45
3	C	43	A2M	O4'-C4'	-6.33	1.30	1.45
1	A	1043	A2M	O4'-C4'	-6.31	1.30	1.45
2	B	50	A2M	O4'-C4'	-6.24	1.30	1.45
2	B	691	A2M	O4'-C4'	-6.20	1.30	1.45
2	B	1516	A2M	O4'-C4'	-6.15	1.30	1.45
1	A	778	A2M	O4'-C4'	-6.14	1.31	1.45
1	A	1804	A2M	O4'-C4'	-6.10	1.31	1.45
2	B	627	A2M	O4'-C4'	-6.02	1.31	1.45
1	A	423	A2M	O4'-C4'	-5.97	1.31	1.45
1	A	794	A2M	O4'-C4'	-5.94	1.31	1.45
1	A	963	OMU	O4-C4	-4.21	1.13	1.24
1	A	1071	A2M	O3'-C3'	-4.16	1.33	1.43
2	B	767	OMU	O4-C4	-4.09	1.14	1.24
2	B	1345	OMU	O4-C4	-4.08	1.14	1.24
1	A	775	A2M	O3'-C3'	-4.04	1.33	1.43
3	C	118	OMU	O4-C4	-3.99	1.14	1.24
2	B	1516	A2M	O3'-C3'	-3.97	1.33	1.43
2	B	73	OMU	O4-C4	-3.97	1.14	1.24
1	A	1043	A2M	O3'-C3'	-3.96	1.33	1.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	C	7	OMU	O4-C4	-3.95	1.14	1.24
2	B	1491	OMU	O4-C4	-3.89	1.14	1.24
3	C	163	A2M	O3'-C3'	-3.89	1.33	1.43
3	C	43	A2M	O3'-C3'	-3.88	1.33	1.43
1	A	1497	OMU	O4-C4	-3.88	1.14	1.24
1	A	1227	OMU	O4-C4	-3.85	1.14	1.24
1	A	1127	OMU	O4-C4	-3.76	1.15	1.24
2	B	728	A2M	O3'-C3'	-3.70	1.34	1.43
1	A	423	A2M	O3'-C3'	-3.61	1.34	1.43
2	B	482	A2M	O3'-C3'	-3.61	1.34	1.43
1	A	1674	A2M	O3'-C3'	-3.57	1.34	1.43
1	A	778	A2M	O3'-C3'	-3.43	1.34	1.43
1	A	974	A2M	O3'-C3'	-3.38	1.35	1.43
2	B	50	A2M	O3'-C3'	-3.33	1.35	1.43
2	B	627	A2M	O3'-C3'	-3.02	1.35	1.43
1	A	1071	A2M	C5-C4	-3.01	1.33	1.40
2	B	71	OMG	C5-C4	-2.97	1.33	1.40
2	B	1210	OMG	C5-C4	-2.97	1.33	1.40
2	B	691	A2M	O3'-C3'	-2.97	1.36	1.43
2	B	755	OMG	C5-C4	-2.96	1.33	1.40
2	B	1363	OMG	C5-C4	-2.95	1.33	1.40
1	A	972	OMG	C5-C4	-2.92	1.33	1.40
1	A	958	OMG	C5-C4	-2.91	1.33	1.40
3	C	166	OMG	C5-C4	-2.90	1.34	1.40
7	G	70	OMG	C5-C4	-2.89	1.34	1.40
1	A	1804	A2M	O3'-C3'	-2.88	1.36	1.43
1	A	1675	OMG	C5-C4	-2.85	1.34	1.40
1	A	1659	OMG	C5-C4	-2.84	1.34	1.40
1	A	927	OMG	C5-C4	-2.82	1.34	1.40
1	A	1316	OMG	C5-C4	-2.78	1.34	1.40
2	B	1385	OMG	C5-C4	-2.77	1.34	1.40
1	A	1043	A2M	C5-C4	-2.74	1.34	1.40
1	A	794	A2M	O3'-C3'	-2.72	1.36	1.43
2	B	691	A2M	C5-C4	-2.68	1.34	1.40
3	C	43	A2M	C5-C4	-2.65	1.34	1.40
2	B	1169	OMG	C5-C4	-2.62	1.34	1.40
2	B	1361	OMG	C5-C4	-2.61	1.34	1.40
1	A	1674	A2M	C5-C4	-2.60	1.34	1.40
2	B	482	A2M	C5-C4	-2.56	1.34	1.40
2	B	634	OMG	C5-C4	-2.47	1.34	1.40
1	A	794	A2M	C5-C4	-2.45	1.35	1.40
3	C	75	OMG	C5-C4	-2.45	1.35	1.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	728	A2M	C5-C4	-2.42	1.35	1.40
1	A	1710	OMG	C5-C4	-2.40	1.35	1.40
1	A	778	A2M	C5-C4	-2.36	1.35	1.40
2	B	50	A2M	C5-C4	-2.35	1.35	1.40
3	C	42	7MG	O6-C6	-2.34	1.18	1.24
1	A	1075	OMG	C5-C4	-2.29	1.35	1.40
2	B	627	A2M	C5-C4	-2.25	1.35	1.40
2	B	564	OMG	C5-C4	-2.23	1.35	1.40
2	B	1516	A2M	C5-C4	-2.23	1.35	1.40
1	A	1804	A2M	C5-C4	-2.22	1.35	1.40
1	A	931	7MG	O6-C6	-2.22	1.19	1.24
2	B	1492	OMG	C5-C4	-2.20	1.35	1.40
2	B	657	7MG	O6-C6	-2.17	1.19	1.24
3	C	163	A2M	C5-C4	-2.16	1.35	1.40
1	A	1725	7MG	O6-C6	-2.16	1.19	1.24
1	A	423	A2M	C5-C4	-2.15	1.35	1.40
1	A	775	A2M	C5-C4	-2.13	1.35	1.40
1	A	1804	A2M	C2-N3	2.06	1.35	1.32
1	A	778	A2M	O2'-C2'	2.06	1.48	1.42
2	B	1380	OMC	C5-C4	2.10	1.46	1.41
3	C	105	OMC	C5-C4	2.11	1.46	1.41
2	B	543	OMC	C5-C4	2.13	1.46	1.41
2	B	691	A2M	O2'-C2'	2.14	1.48	1.42
1	A	1053	OMC	C5-C4	2.17	1.46	1.41
2	B	624	5MC	C5-C4	2.19	1.44	1.41
3	C	163	A2M	C2-N3	2.21	1.36	1.32
1	A	1071	A2M	O2'-C2'	2.21	1.48	1.42
2	B	624	5MC	C6-C5	2.21	1.45	1.40
1	A	919	OMC	C5-C4	2.22	1.46	1.41
2	B	1138	7MG	C8-N9	2.26	1.48	1.45
2	B	1516	A2M	C2-N3	2.26	1.36	1.32
1	A	1043	A2M	O2'-C2'	2.28	1.48	1.42
2	B	1516	A2M	O2'-C2'	2.29	1.48	1.42
2	B	624	5MC	C4-N4	2.29	1.40	1.34
1	A	775	A2M	O2'-C2'	2.31	1.49	1.42
1	A	1073	5MC	C6-C5	2.31	1.46	1.40
2	B	691	A2M	C2-N3	2.32	1.36	1.32
1	A	775	A2M	C2-N3	2.34	1.36	1.32
2	B	482	A2M	O2'-C2'	2.34	1.49	1.42
2	B	627	A2M	O2'-C2'	2.35	1.49	1.42
1	A	1674	A2M	C2-N3	2.35	1.36	1.32
3	C	43	A2M	O2'-C2'	2.36	1.49	1.42

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	77	OMC	C5-C4	2.36	1.46	1.41
1	A	1053	OMC	C4-N3	2.36	1.39	1.35
2	B	1107	7MG	C8-N9	2.37	1.48	1.45
1	A	1674	A2M	O2'-C2'	2.38	1.49	1.42
3	C	163	A2M	O2'-C2'	2.38	1.49	1.42
1	A	1073	5MC	C4-N4	2.38	1.40	1.34
1	A	974	A2M	O2'-C2'	2.38	1.49	1.42
2	B	50	A2M	O2'-C2'	2.43	1.49	1.42
1	A	1525	5MC	C6-C5	2.44	1.46	1.40
1	A	777	OMC	C5-C4	2.45	1.46	1.41
2	B	627	A2M	C2-N3	2.46	1.36	1.32
1	A	1674	A2M	C6-N6	2.47	1.44	1.34
2	B	728	A2M	O2'-C2'	2.49	1.49	1.42
1	A	1525	5MC	C4-N4	2.51	1.40	1.34
1	A	423	A2M	O2'-C2'	2.52	1.49	1.42
2	B	482	A2M	C6-N6	2.57	1.44	1.34
1	A	1071	A2M	C6-N6	2.58	1.44	1.34
1	A	974	A2M	C2-N3	2.58	1.36	1.32
1	A	778	A2M	C6-N6	2.60	1.44	1.34
3	C	43	A2M	C6-N6	2.61	1.44	1.34
1	A	1053	OMC	C6-C5	2.62	1.43	1.38
2	B	482	A2M	C2-N3	2.62	1.36	1.32
2	B	691	A2M	C6-N6	2.66	1.45	1.34
3	C	163	A2M	C6-N6	2.68	1.45	1.34
2	B	50	A2M	C6-N6	2.69	1.45	1.34
2	B	728	A2M	C6-N6	2.71	1.45	1.34
1	A	423	A2M	C2-N3	2.75	1.37	1.32
2	B	50	A2M	C2-N3	2.76	1.37	1.32
1	A	775	A2M	C6-N6	2.78	1.45	1.34
1	A	794	A2M	C6-N6	2.79	1.45	1.34
1	A	974	A2M	C6-N6	2.79	1.45	1.34
2	B	627	A2M	C6-N6	2.79	1.45	1.34
1	A	1043	A2M	C6-N6	2.80	1.45	1.34
2	B	1516	A2M	C6-N6	2.81	1.45	1.34
1	A	1804	A2M	O2'-C2'	2.82	1.50	1.42
1	A	1804	A2M	C6-N6	2.83	1.45	1.34
3	C	105	OMC	C2-N3	2.92	1.44	1.38
1	A	423	A2M	C6-N6	2.96	1.46	1.34
1	A	1053	OMC	C2-N3	2.97	1.44	1.38
2	B	1449	OMC	C2-N3	2.99	1.44	1.38
2	B	1169	OMG	C6-N1	3.02	1.38	1.33
1	A	1525	5MC	C5-C4	3.05	1.46	1.41

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	683	OMC	C4-N3	3.06	1.41	1.35
1	A	1662	OMC	C2-N3	3.08	1.44	1.38
1	A	1725	7MG	C2-N2	3.08	1.40	1.34
2	B	1529	OMC	C2-N3	3.13	1.44	1.38
2	B	73	OMU	C6-C5	3.19	1.45	1.38
1	A	958	OMG	C6-N1	3.21	1.38	1.33
2	B	543	OMC	C4-N3	3.21	1.41	1.35
2	B	1385	OMG	C6-N1	3.23	1.38	1.33
1	A	1075	OMG	C6-C5	3.23	1.47	1.41
3	C	42	7MG	C2-N2	3.24	1.40	1.34
3	C	118	OMU	C6-C5	3.25	1.45	1.38
1	A	1662	OMC	C6-C5	3.26	1.45	1.38
2	B	1529	OMC	C4-N3	3.26	1.41	1.35
1	A	1675	OMG	C6-N1	3.27	1.38	1.33
2	B	21	OMC	C6-C5	3.29	1.45	1.38
2	B	1491	OMU	C6-C5	3.30	1.45	1.38
2	B	767	OMU	C6-C5	3.30	1.45	1.38
2	B	1210	OMG	C2-N2	3.30	1.41	1.34
3	C	166	OMG	C6-N1	3.31	1.39	1.33
1	A	1525	5MC	C2-N3	3.32	1.45	1.38
1	A	931	7MG	C2-N2	3.33	1.41	1.34
2	B	1385	OMG	C6-C5	3.34	1.48	1.41
1	A	963	OMU	C6-C5	3.34	1.45	1.38
1	A	343	OMC	C6-C5	3.35	1.45	1.38
1	A	792	OMC	C6-C5	3.36	1.45	1.38
1	A	1127	OMU	C6-C5	3.36	1.45	1.38
2	B	543	OMC	C2-N3	3.36	1.45	1.38
1	A	1073	5MC	C2-N3	3.36	1.45	1.38
2	B	1361	OMG	C6-C5	3.37	1.48	1.41
2	B	634	OMG	C6-N1	3.37	1.39	1.33
2	B	755	OMG	C6-N1	3.37	1.39	1.33
1	A	1045	7MG	C2-N2	3.37	1.41	1.34
1	A	1073	5MC	C5-C4	3.38	1.46	1.41
3	C	105	OMC	C4-N3	3.39	1.41	1.35
1	A	972	OMG	C6-N1	3.40	1.39	1.33
1	A	792	OMC	C4-N3	3.40	1.41	1.35
2	B	1210	OMG	C6-N1	3.41	1.39	1.33
2	B	1529	OMC	C6-C5	3.42	1.45	1.38
1	A	1227	OMU	C6-C5	3.42	1.45	1.38
2	B	543	OMC	C6-C5	3.43	1.45	1.38
1	A	1662	OMC	C4-N3	3.43	1.41	1.35
2	B	683	OMC	C2-N3	3.45	1.45	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	792	OMC	C2-N3	3.46	1.45	1.38
1	A	777	OMC	C6-C5	3.46	1.45	1.38
2	B	1345	OMU	C6-C5	3.47	1.45	1.38
2	B	683	OMC	C6-C5	3.48	1.45	1.38
1	A	958	OMG	C2-N2	3.49	1.41	1.34
2	B	1449	OMC	C4-N3	3.49	1.41	1.35
7	G	70	OMG	C2-N2	3.52	1.41	1.34
1	A	1659	OMG	C6-C5	3.52	1.48	1.41
1	A	927	OMG	C6-N1	3.52	1.39	1.33
1	A	1075	OMG	C6-N1	3.54	1.39	1.33
7	G	70	OMG	C6-N1	3.55	1.39	1.33
2	B	1449	OMC	C6-C5	3.55	1.45	1.38
2	B	1380	OMC	C2-N3	3.57	1.45	1.38
2	B	634	OMG	C2-N2	3.57	1.41	1.34
7	G	70	OMG	C6-C5	3.59	1.48	1.41
2	B	77	OMC	C2-N3	3.59	1.45	1.38
2	B	683	OMC	C4-N4	3.59	1.45	1.35
3	C	166	OMG	C2-N2	3.60	1.41	1.34
1	A	919	OMC	C2-N3	3.60	1.45	1.38
2	B	1380	OMC	C6-C5	3.60	1.45	1.38
1	A	919	OMC	C6-C5	3.60	1.45	1.38
1	A	1675	OMG	C6-C5	3.60	1.48	1.41
2	B	71	OMG	C2-N2	3.61	1.41	1.34
1	A	1710	OMG	C6-N1	3.61	1.39	1.33
2	B	21	OMC	C4-N4	3.61	1.45	1.35
2	B	1363	OMG	C6-N1	3.61	1.39	1.33
1	A	919	OMC	C4-N3	3.62	1.42	1.35
2	B	1380	OMC	C4-N3	3.62	1.42	1.35
2	B	1449	OMC	C4-N4	3.62	1.45	1.35
1	A	1659	OMG	C2-N2	3.62	1.41	1.34
2	B	624	5MC	C2-N3	3.62	1.45	1.38
2	B	1107	7MG	C2-N2	3.63	1.41	1.34
2	B	1529	OMC	C4-N4	3.63	1.45	1.35
2	B	71	OMG	C6-N1	3.63	1.39	1.33
2	B	755	OMG	C6-C5	3.64	1.48	1.41
1	A	927	OMG	C6-C5	3.64	1.48	1.41
2	B	1169	OMG	C6-C5	3.64	1.48	1.41
2	B	1361	OMG	C6-N1	3.65	1.39	1.33
2	B	1492	OMG	C6-C5	3.66	1.48	1.41
1	A	1662	OMC	C4-N4	3.66	1.45	1.35
1	A	777	OMC	C2-N3	3.66	1.45	1.38
1	A	792	OMC	C4-N4	3.66	1.45	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	755	OMG	C2-N2	3.67	1.41	1.34
3	C	75	OMG	C6-N1	3.68	1.39	1.33
3	C	166	OMG	C6-C5	3.68	1.48	1.41
2	B	21	OMC	C2-N3	3.68	1.45	1.38
1	A	972	OMG	C2-N1	3.68	1.42	1.35
1	A	1053	OMC	C4-N4	3.68	1.45	1.35
2	B	657	7MG	C2-N2	3.69	1.41	1.34
3	C	7	OMU	C6-C5	3.69	1.46	1.38
1	A	1497	OMU	C6-C5	3.69	1.46	1.38
1	A	1675	OMG	C2-N2	3.69	1.41	1.34
1	A	343	OMC	C4-N3	3.70	1.42	1.35
1	A	1316	OMG	C2-N2	3.72	1.42	1.34
2	B	21	OMC	C4-N3	3.72	1.42	1.35
3	C	105	OMC	C4-N4	3.72	1.45	1.35
2	B	1169	OMG	C2-N2	3.72	1.42	1.34
1	A	958	OMG	C6-C5	3.73	1.48	1.41
2	B	77	OMC	C4-N3	3.73	1.42	1.35
1	A	972	OMG	C2-N2	3.74	1.42	1.34
1	A	1316	OMG	C6-N1	3.74	1.39	1.33
2	B	1210	OMG	C6-C5	3.74	1.48	1.41
2	B	1492	OMG	C6-N1	3.75	1.39	1.33
1	A	1075	OMG	C2-N2	3.76	1.42	1.34
2	B	1380	OMC	C4-N4	3.76	1.45	1.35
7	G	70	OMG	C2-N1	3.77	1.42	1.35
3	C	75	OMG	C6-C5	3.77	1.48	1.41
2	B	1385	OMG	C2-N2	3.77	1.42	1.34
1	A	343	OMC	C2-N3	3.78	1.46	1.38
2	B	1361	OMG	C2-N2	3.79	1.42	1.34
1	A	919	OMC	C4-N4	3.79	1.45	1.35
1	A	1675	OMG	C2-N1	3.79	1.42	1.35
2	B	543	OMC	C4-N4	3.79	1.45	1.35
2	B	77	OMC	C6-C5	3.80	1.46	1.38
1	A	1659	OMG	C6-N1	3.80	1.39	1.33
1	A	777	OMC	C4-N4	3.81	1.46	1.35
1	A	1316	OMG	C6-C5	3.83	1.49	1.41
1	A	343	OMC	C4-N4	3.83	1.46	1.35
1	A	972	OMG	C6-C5	3.83	1.49	1.41
2	B	77	OMC	C4-N4	3.84	1.46	1.35
2	B	634	OMG	C6-C5	3.84	1.49	1.41
1	A	958	OMG	C2-N1	3.86	1.42	1.35
2	B	1138	7MG	C2-N2	3.87	1.42	1.34
3	C	105	OMC	C6-C5	3.87	1.46	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	C	166	OMG	C2-N1	3.87	1.42	1.35
2	B	1492	OMG	C2-N2	3.88	1.42	1.34
2	B	564	OMG	C2-N2	3.88	1.42	1.34
1	A	1710	OMG	C6-C5	3.89	1.49	1.41
2	B	755	OMG	C2-N1	3.91	1.42	1.35
1	A	777	OMC	C4-N3	3.92	1.42	1.35
2	B	1169	OMG	C2-N1	3.93	1.42	1.35
2	B	1363	OMG	C6-C5	3.95	1.49	1.41
1	A	1710	OMG	C2-N2	3.95	1.42	1.34
1	A	931	7MG	C2-N3	3.96	1.42	1.35
3	C	42	7MG	C6-N1	3.99	1.40	1.33
2	B	564	OMG	C6-N1	3.99	1.40	1.33
2	B	634	OMG	C2-N1	4.00	1.42	1.35
1	A	1659	OMG	C2-N1	4.00	1.42	1.35
2	B	1363	OMG	C2-N2	4.01	1.42	1.34
1	A	1053	OMC	C6-N1	4.02	1.41	1.35
1	A	1045	7MG	C2-N3	4.05	1.43	1.35
1	A	1725	7MG	C2-N3	4.05	1.43	1.35
1	A	927	OMG	C2-N2	4.05	1.42	1.34
2	B	1210	OMG	C2-N1	4.07	1.43	1.35
2	B	71	OMG	C2-N1	4.08	1.43	1.35
2	B	71	OMG	C6-C5	4.09	1.49	1.41
3	C	75	OMG	C2-N2	4.11	1.42	1.34
3	C	42	7MG	C2-N3	4.12	1.43	1.35
2	B	1363	OMG	C2-N1	4.13	1.43	1.35
1	A	927	OMG	C2-N1	4.14	1.43	1.35
2	B	564	OMG	C6-C5	4.19	1.49	1.41
2	B	657	7MG	C2-N3	4.21	1.43	1.35
2	B	1361	OMG	C2-N1	4.21	1.43	1.35
3	C	75	OMG	C2-N1	4.22	1.43	1.35
1	A	1710	OMG	C2-N1	4.29	1.43	1.35
2	B	1385	OMG	C2-N1	4.30	1.43	1.35
2	B	1491	OMU	C2-N3	4.31	1.47	1.38
1	A	1316	OMG	C2-N1	4.34	1.43	1.35
1	A	1073	5MC	C4-N3	4.37	1.41	1.35
1	A	1525	5MC	C4-N3	4.40	1.41	1.35
2	B	564	OMG	C2-N1	4.43	1.43	1.35
2	B	1492	OMG	C2-N1	4.44	1.43	1.35
1	A	1127	OMU	C4-N3	4.44	1.43	1.36
1	A	1675	OMG	C4-N3	4.44	1.42	1.35
1	A	1725	7MG	C6-N1	4.46	1.41	1.33
1	A	931	7MG	C2-N1	4.47	1.43	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	1107	7MG	C2-N3	4.48	1.43	1.35
1	A	1659	OMG	C4-N3	4.52	1.42	1.35
1	A	1075	OMG	C2-N1	4.53	1.43	1.35
7	G	70	OMG	C4-N3	4.54	1.42	1.35
2	B	657	7MG	C6-N1	4.55	1.41	1.33
3	C	118	OMU	C6-N1	4.57	1.41	1.35
2	B	767	OMU	C4-N3	4.59	1.41	1.33
1	A	931	7MG	C6-N1	4.59	1.41	1.33
2	B	1138	7MG	C2-N3	4.61	1.44	1.35
3	C	42	7MG	C2-N1	4.71	1.44	1.35
1	A	1497	OMU	C2-N3	4.75	1.48	1.38
1	A	1497	OMU	C4-N3	4.76	1.41	1.33
2	B	1107	7MG	C6-N1	4.82	1.41	1.33
1	A	958	OMG	C4-N3	4.82	1.43	1.35
3	C	118	OMU	C4-N3	4.85	1.41	1.33
2	B	767	OMU	C2-N3	4.86	1.48	1.38
2	B	1210	OMG	C4-N3	4.90	1.43	1.35
2	B	1107	7MG	C2-N1	4.91	1.44	1.35
1	A	1045	7MG	C6-N1	4.92	1.41	1.33
1	A	1725	7MG	C2-N1	4.93	1.44	1.35
2	B	767	OMU	C6-N1	4.94	1.42	1.35
2	B	1385	OMG	C4-N3	4.95	1.43	1.35
3	C	166	OMG	C4-N3	4.96	1.43	1.35
2	B	1491	OMU	C4-N3	4.96	1.42	1.33
2	B	657	7MG	C2-N1	4.98	1.44	1.35
2	B	1345	OMU	C6-N1	4.99	1.42	1.35
2	B	73	OMU	C6-N1	5.02	1.42	1.35
2	B	21	OMC	C6-N1	5.02	1.42	1.35
2	B	1345	OMU	C4-N3	5.02	1.42	1.33
2	B	73	OMU	C2-N3	5.03	1.48	1.38
1	A	1227	OMU	C2-N3	5.04	1.48	1.38
1	A	963	OMU	C4-N3	5.06	1.42	1.33
2	B	1138	7MG	C6-N1	5.08	1.42	1.33
1	A	927	OMG	C4-N3	5.10	1.43	1.35
2	B	1169	OMG	C4-N3	5.10	1.43	1.35
3	C	118	OMU	C2-N3	5.10	1.48	1.38
2	B	634	OMG	C4-N3	5.11	1.43	1.35
2	B	624	5MC	C4-N3	5.13	1.42	1.35
3	C	75	OMG	C4-N3	5.13	1.43	1.35
1	A	963	OMU	C6-N1	5.14	1.42	1.35
1	A	1127	OMU	C6-N1	5.15	1.42	1.35
2	B	1380	OMC	C6-N1	5.15	1.42	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1316	OMG	C4-N3	5.17	1.43	1.35
2	B	1345	OMU	C2-N3	5.21	1.49	1.38
1	A	1045	7MG	C2-N1	5.22	1.45	1.35
2	B	1138	7MG	C2-N1	5.23	1.45	1.35
1	A	963	OMU	C2-N3	5.24	1.49	1.38
1	A	1227	OMU	C4-N3	5.24	1.42	1.33
3	C	7	OMU	C2-N3	5.24	1.49	1.38
1	A	931	7MG	C6-C5	5.25	1.48	1.41
1	A	1662	OMC	C6-N1	5.26	1.42	1.35
2	B	683	OMC	C6-N1	5.26	1.42	1.35
2	B	755	OMG	C4-N3	5.28	1.44	1.35
1	A	792	OMC	C6-N1	5.31	1.42	1.35
2	B	1361	OMG	C4-N3	5.32	1.44	1.35
1	A	919	OMC	C6-N1	5.33	1.42	1.35
1	A	972	OMG	C4-N3	5.33	1.44	1.35
1	A	1710	OMG	C4-N3	5.34	1.44	1.35
1	A	343	OMC	C6-N1	5.34	1.42	1.35
3	C	7	OMU	C4-N3	5.35	1.42	1.33
2	B	543	OMC	C6-N1	5.35	1.42	1.35
1	A	1075	OMG	C4-N3	5.38	1.44	1.35
2	B	73	OMU	C4-N3	5.38	1.42	1.33
1	A	1227	OMU	C6-N1	5.39	1.42	1.35
2	B	1529	OMC	C6-N1	5.40	1.42	1.35
2	B	1491	OMU	C6-N1	5.41	1.42	1.35
1	A	1497	OMU	C6-N1	5.50	1.42	1.35
2	B	1449	OMC	C6-N1	5.52	1.42	1.35
2	B	1492	OMG	C4-N3	5.54	1.44	1.35
2	B	77	OMC	C6-N1	5.55	1.42	1.35
2	B	1363	OMG	C4-N3	5.58	1.44	1.35
2	B	657	7MG	C6-C5	5.58	1.49	1.41
2	B	71	OMG	C4-N3	5.60	1.44	1.35
3	C	105	OMC	C6-N1	5.65	1.43	1.35
1	A	1725	7MG	C6-C5	5.67	1.49	1.41
2	B	564	OMG	C4-N3	5.76	1.44	1.35
3	C	7	OMU	C6-N1	5.77	1.43	1.35
1	A	777	OMC	C6-N1	5.81	1.43	1.35
3	C	42	7MG	C6-C5	5.98	1.49	1.41
2	B	1138	7MG	C6-C5	6.23	1.50	1.41
1	A	1045	7MG	C6-C5	6.27	1.50	1.41
2	B	1107	7MG	C6-C5	6.42	1.50	1.41
1	A	931	7MG	C4-N3	7.65	1.44	1.34
3	C	42	7MG	C4-N3	7.68	1.44	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1045	7MG	C4-N3	7.75	1.44	1.34
1	A	1725	7MG	C4-N3	7.77	1.44	1.34
2	B	1107	7MG	C4-N3	8.08	1.44	1.34
2	B	657	7MG	C4-N3	8.24	1.44	1.34
2	B	1138	7MG	C4-N3	8.55	1.45	1.34
1	A	974	A2M	O4'-C1'	12.91	1.59	1.41
2	B	728	A2M	O4'-C1'	12.98	1.59	1.41
2	B	627	A2M	O4'-C1'	13.05	1.59	1.41
3	C	163	A2M	O4'-C1'	13.10	1.59	1.41
2	B	482	A2M	O4'-C1'	13.10	1.59	1.41
1	A	1043	A2M	O4'-C1'	13.26	1.60	1.41
2	B	50	A2M	O4'-C1'	13.27	1.60	1.41
1	A	778	A2M	O4'-C1'	13.30	1.60	1.41
3	C	43	A2M	O4'-C1'	13.35	1.60	1.41
1	A	1674	A2M	O4'-C1'	13.43	1.60	1.41
1	A	1071	A2M	O4'-C1'	13.53	1.60	1.41
1	A	423	A2M	O4'-C1'	13.60	1.60	1.41
1	A	775	A2M	O4'-C1'	13.67	1.60	1.41
1	A	1804	A2M	O4'-C1'	13.78	1.60	1.41
2	B	1516	A2M	O4'-C1'	13.89	1.61	1.41
2	B	691	A2M	O4'-C1'	14.12	1.61	1.41
1	A	794	A2M	O4'-C1'	14.23	1.61	1.41

All (271) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1043	A2M	N3-C2-N1	-12.97	118.68	128.87
2	B	691	A2M	N3-C2-N1	-12.56	119.00	128.87
2	B	1516	A2M	N3-C2-N1	-12.34	119.18	128.87
1	A	1804	A2M	N3-C2-N1	-12.17	119.31	128.87
3	C	43	A2M	N3-C2-N1	-12.06	119.40	128.87
2	B	482	A2M	N3-C2-N1	-12.02	119.43	128.87
1	A	794	A2M	N3-C2-N1	-11.82	119.59	128.87
1	A	1071	A2M	N3-C2-N1	-11.53	119.81	128.87
1	A	423	A2M	N3-C2-N1	-11.50	119.84	128.87
1	A	1674	A2M	N3-C2-N1	-11.37	119.94	128.87
3	C	163	A2M	N3-C2-N1	-10.87	120.33	128.87
2	B	50	A2M	N3-C2-N1	-10.84	120.36	128.87
1	A	775	A2M	N3-C2-N1	-10.73	120.44	128.87
1	A	778	A2M	N3-C2-N1	-10.46	120.66	128.87
2	B	627	A2M	N3-C2-N1	-10.40	120.70	128.87
1	A	974	A2M	N3-C2-N1	-9.95	121.05	128.87

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	728	A2M	N3-C2-N1	-9.80	121.18	128.87
1	A	794	A2M	N6-C6-N1	-7.38	106.13	118.52
1	A	1043	A2M	N6-C6-N1	-7.01	106.75	118.52
2	B	691	A2M	N6-C6-N1	-6.78	107.14	118.52
3	C	42	7MG	C5-C4-N3	-6.77	119.84	126.74
2	B	728	A2M	N6-C6-N1	-6.59	107.45	118.52
2	B	482	A2M	N6-C6-N1	-6.59	107.46	118.52
7	G	70	OMG	N3-C2-N1	-6.54	118.66	127.56
1	A	974	A2M	C4'-O4'-C1'	-6.51	102.74	109.64
1	A	927	OMG	N3-C2-N1	-6.38	118.87	127.56
2	B	627	A2M	N6-C6-N1	-6.21	108.10	118.52
2	B	71	OMG	N3-C2-N1	-6.13	119.21	127.56
3	C	75	OMG	N3-C2-N1	-6.12	119.23	127.56
2	B	1385	OMG	N3-C2-N1	-6.10	119.25	127.56
1	A	423	A2M	N6-C6-N1	-6.05	108.37	118.52
1	A	974	A2M	N6-C6-N1	-5.98	108.49	118.52
3	C	163	A2M	N6-C6-N1	-5.96	108.52	118.52
1	A	1659	OMG	N3-C2-N1	-5.96	119.45	127.56
2	B	50	A2M	N6-C6-N1	-5.95	108.53	118.52
1	A	1675	OMG	N3-C2-N1	-5.95	119.47	127.56
1	A	1725	7MG	C5-C4-N3	-5.93	120.70	126.74
2	B	1516	A2M	N6-C6-N1	-5.93	108.57	118.52
2	B	1138	7MG	C5-C4-N3	-5.88	120.75	126.74
1	A	958	OMG	N3-C2-N1	-5.85	119.60	127.56
2	B	1363	OMG	N3-C2-N1	-5.85	119.60	127.56
1	A	1071	A2M	N6-C6-N1	-5.81	108.77	118.52
2	B	1169	OMG	N3-C2-N1	-5.75	119.73	127.56
2	B	1492	OMG	N3-C2-N1	-5.72	119.78	127.56
1	A	1316	OMG	N3-C2-N1	-5.70	119.80	127.56
2	B	1107	7MG	C5-C4-N3	-5.70	120.93	126.74
1	A	972	OMG	N3-C2-N1	-5.69	119.81	127.56
2	B	755	OMG	N3-C2-N1	-5.65	119.88	127.56
1	A	1674	A2M	N6-C6-N1	-5.62	109.09	118.52
2	B	634	OMG	N3-C2-N1	-5.61	119.92	127.56
3	C	166	OMG	N3-C2-N1	-5.60	119.93	127.56
1	A	775	A2M	N6-C6-N1	-5.58	109.15	118.52
2	B	657	7MG	C5-C4-N3	-5.58	121.06	126.74
1	A	1804	A2M	N6-C6-N1	-5.55	109.21	118.52
2	B	564	OMG	N3-C2-N1	-5.47	120.11	127.56
2	B	1361	OMG	N3-C2-N1	-5.45	120.15	127.56
1	A	1075	OMG	N3-C2-N1	-5.38	120.23	127.56
1	A	1710	OMG	N3-C2-N1	-5.25	120.42	127.56

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	1210	OMG	N3-C2-N1	-5.14	120.56	127.56
3	C	43	A2M	N6-C6-N1	-5.13	109.90	118.52
2	B	691	A2M	C1'-N9-C4	-5.13	121.08	126.81
1	A	1045	7MG	C5-C4-N3	-5.13	121.52	126.74
1	A	931	7MG	C5-C4-N3	-4.96	121.69	126.74
1	A	778	A2M	N6-C6-N1	-4.94	110.23	118.52
1	A	794	A2M	C1'-N9-C4	-4.59	121.69	126.81
1	A	1804	A2M	C1'-N9-C4	-4.32	121.98	126.81
1	A	931	7MG	N1-C2-N3	-3.87	119.18	125.51
2	B	657	7MG	N1-C2-N3	-3.81	119.28	125.51
2	B	1138	7MG	N1-C2-N3	-3.54	119.72	125.51
1	A	974	A2M	O4'-C4'-C3'	-3.49	98.09	105.16
1	A	423	A2M	C1'-N9-C4	-3.48	122.92	126.81
2	B	1107	7MG	N1-C2-N3	-3.43	119.90	125.51
1	A	1071	A2M	C1'-N9-C4	-3.27	123.15	126.81
1	A	972	OMG	C6-C5-C4	-3.18	117.23	120.86
1	A	1659	OMG	C6-C5-C4	-3.14	117.27	120.86
7	G	70	OMG	C6-C5-C4	-3.11	117.30	120.86
2	B	691	A2M	O4'-C4'-C3'	-3.10	98.88	105.16
1	A	1725	7MG	N1-C2-N3	-3.09	120.46	125.51
2	B	71	OMG	C6-C5-C4	-3.09	117.33	120.86
3	C	42	7MG	N1-C2-N3	-3.09	120.47	125.51
1	A	1045	7MG	N1-C2-N3	-3.08	120.48	125.51
2	B	691	A2M	C3'-C2'-C1'	-3.03	96.84	102.63
1	A	1725	7MG	C5-C6-N1	-3.02	118.90	123.39
2	B	627	A2M	C2'-C1'-N9	-2.97	104.98	113.48
2	B	564	OMG	C5-C6-N1	-2.95	119.66	123.52
2	B	634	OMG	C5-C6-N1	-2.95	119.66	123.52
2	B	1516	A2M	C1'-N9-C4	-2.95	123.52	126.81
3	C	166	OMG	C5-C6-N1	-2.94	119.67	123.52
2	B	1492	OMG	C5-C6-N1	-2.90	119.73	123.52
1	A	1675	OMG	C6-C5-C4	-2.89	117.55	120.86
2	B	1361	OMG	C5-C6-N1	-2.88	119.76	123.52
1	A	931	7MG	C4-N9-C1'	-2.80	120.01	126.65
3	C	75	OMG	C5-C6-N1	-2.79	119.88	123.52
2	B	691	A2M	C4'-O4'-C1'	-2.77	106.70	109.64
3	C	43	A2M	C1'-N9-C4	-2.76	123.72	126.81
1	A	958	OMG	C6-C5-C4	-2.76	117.70	120.86
2	B	755	OMG	C6-C5-C4	-2.70	117.77	120.86
1	A	794	A2M	O4'-C4'-C3'	-2.70	99.68	105.16
1	A	1045	7MG	C5-C6-N1	-2.70	119.37	123.39
1	A	775	A2M	C5'-C4'-C3'	-2.67	104.86	115.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	1169	OMG	C5-C6-N1	-2.66	120.04	123.52
1	A	927	OMG	C5-C6-N1	-2.66	120.05	123.52
1	A	1659	OMG	C5-C6-N1	-2.65	120.06	123.52
1	A	974	A2M	O5'-C5'-C4'	-2.63	99.68	109.09
2	B	1385	OMG	C5-C6-N1	-2.59	120.14	123.52
1	A	1674	A2M	C1'-N9-C4	-2.59	123.92	126.81
2	B	627	A2M	O4'-C1'-C2'	-2.57	101.98	106.60
1	A	1316	OMG	C5-C6-N1	-2.54	120.20	123.52
2	B	1210	OMG	C5-C6-N1	-2.54	120.20	123.52
1	A	958	OMG	C5-C6-N1	-2.53	120.22	123.52
1	A	1675	OMG	C5-C6-N1	-2.52	120.23	123.52
2	B	1210	OMG	C3'-C2'-C1'	-2.51	97.82	102.63
2	B	1169	OMG	C6-C5-C4	-2.50	118.00	120.86
2	B	728	A2M	O4'-C1'-N9	-2.50	103.39	108.11
2	B	691	A2M	C2'-C1'-N9	-2.49	106.37	113.48
3	C	163	A2M	C1'-N9-C4	-2.48	124.03	126.81
2	B	728	A2M	C4'-O4'-C1'	-2.46	107.03	109.64
1	A	1075	OMG	C5-C6-N1	-2.44	120.34	123.52
1	A	927	OMG	C6-C5-C4	-2.41	118.10	120.86
2	B	1210	OMG	C6-C5-C4	-2.41	118.11	120.86
2	B	1107	7MG	C5-C6-N1	-2.40	119.81	123.39
7	G	70	OMG	C5-C6-N1	-2.40	120.38	123.52
1	A	972	OMG	C5-C6-N1	-2.39	120.39	123.52
2	B	1516	A2M	C4'-O4'-C1'	-2.39	107.11	109.64
2	B	1385	OMG	C6-C5-C4	-2.38	118.14	120.86
1	A	931	7MG	C5-C6-N1	-2.37	119.87	123.39
1	A	1710	OMG	C5-C6-N1	-2.35	120.45	123.52
2	B	627	A2M	C4'-O4'-C1'	-2.33	107.17	109.64
2	B	1138	7MG	C5-C6-N1	-2.28	120.00	123.39
1	A	1071	A2M	C4'-O4'-C1'	-2.18	107.33	109.64
2	B	1210	OMG	O3'-C3'-C2'	-2.18	104.84	111.13
1	A	778	A2M	C4'-O4'-C1'	-2.17	107.35	109.64
2	B	1363	OMG	C5-C6-N1	-2.16	120.70	123.52
2	B	683	OMC	C6-N1-C2	-2.14	117.85	121.33
3	C	75	OMG	C6-C5-C4	-2.13	118.42	120.86
2	B	1516	A2M	C2'-C1'-N9	-2.12	107.42	113.48
1	A	423	A2M	C4'-O4'-C1'	-2.11	107.41	109.64
2	B	683	OMC	C5-C4-N3	-2.09	119.14	121.79
1	A	794	A2M	C2'-C1'-N9	-2.07	107.57	113.48
1	A	1316	OMG	C6-C5-C4	-2.06	118.50	120.86
2	B	657	7MG	C5-C6-N1	-2.03	120.37	123.39
2	B	634	OMG	C6-C5-C4	-2.01	118.56	120.86

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	C	43	A2M	C2'-C1'-N9	-2.01	107.74	113.48
2	B	1363	OMG	C6-C5-C4	-2.01	118.57	120.86
1	A	1804	A2M	C5'-C4'-C3'	-2.00	107.45	115.20
3	C	42	7MG	C5-C6-N1	-2.00	120.41	123.39
2	B	1138	7MG	C8-N9-C1'	2.03	128.51	122.43
2	B	1107	7MG	C2-N3-C4	2.03	120.27	114.50
2	B	1107	7MG	N2-C2-N1	2.07	120.62	117.20
2	B	1138	7MG	C2-N3-C4	2.08	120.42	114.50
2	B	657	7MG	N3-C4-N9	2.08	129.68	126.98
1	A	919	OMC	N4-C4-N3	2.09	120.15	116.50
1	A	972	OMG	O4'-C1'-N9	2.10	112.06	108.11
2	B	657	7MG	C2-N3-C4	2.10	120.48	114.50
3	C	118	OMU	C6-C5-C4	2.12	121.22	117.30
2	B	1138	7MG	N2-C2-N1	2.12	120.70	117.20
3	C	42	7MG	C2-N3-C4	2.14	120.59	114.50
1	A	1045	7MG	C5-C4-N9	2.15	109.72	106.25
1	A	1804	A2M	C3'-C2'-C1'	2.16	106.76	102.63
3	C	42	7MG	N3-C4-N9	2.17	129.79	126.98
2	B	21	OMC	N4-C4-N3	2.18	120.31	116.50
1	A	1725	7MG	C5-C4-N9	2.19	109.78	106.25
1	A	1045	7MG	N2-C2-N1	2.20	120.84	117.20
3	C	105	OMC	N4-C4-N3	2.21	120.36	116.50
1	A	931	7MG	C5-C4-N9	2.24	109.86	106.25
1	A	343	OMC	N4-C4-N3	2.24	120.42	116.50
2	B	657	7MG	N2-C2-N1	2.28	120.95	117.20
2	B	624	5MC	N4-C4-N3	2.29	120.28	116.92
2	B	71	OMG	N2-C2-N1	2.48	121.29	117.20
3	C	42	7MG	C5-C4-N9	2.55	110.36	106.25
1	A	1710	OMG	C6-N1-C2	2.55	118.87	115.88
2	B	1138	7MG	C5-C4-N9	2.55	110.37	106.25
2	B	564	OMG	N2-C2-N1	2.57	121.44	117.20
2	B	1363	OMG	N2-C2-N1	2.66	121.60	117.20
1	A	1073	5MC	N4-C4-N3	2.68	120.85	116.92
2	B	1492	OMG	N2-C2-N1	2.70	121.66	117.20
1	A	1710	OMG	N2-C2-N1	2.80	121.81	117.20
3	C	42	7MG	C6-N1-C2	2.80	119.17	115.88
1	A	1075	OMG	C6-N1-C2	2.83	119.20	115.88
2	B	755	OMG	C6-N1-C2	2.84	119.22	115.88
2	B	1210	OMG	C6-N1-C2	2.85	119.23	115.88
2	B	1361	OMG	N2-C2-N1	2.88	121.96	117.20
2	B	1107	7MG	C5-C4-N9	2.89	110.91	106.25
2	B	1169	OMG	N2-C2-N1	2.90	121.98	117.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	1363	OMG	C6-N1-C2	2.92	119.30	115.88
1	A	927	OMG	N2-C2-N1	2.96	122.09	117.20
1	A	931	7MG	C8-N9-C1'	2.99	131.41	122.43
2	B	71	OMG	C6-N1-C2	3.05	119.45	115.88
2	B	1385	OMG	N2-C2-N1	3.07	122.27	117.20
1	A	1316	OMG	C6-N1-C2	3.08	119.49	115.88
2	B	627	A2M	O4'-C1'-N9	3.08	113.92	108.11
1	A	972	OMG	N2-C2-N1	3.08	122.29	117.20
3	C	75	OMG	N2-C2-N1	3.17	122.42	117.20
2	B	755	OMG	N2-C2-N1	3.22	122.51	117.20
1	A	1075	OMG	N2-C2-N1	3.25	122.56	117.20
2	B	564	OMG	C6-N1-C2	3.26	119.70	115.88
1	A	1675	OMG	N2-C2-N1	3.27	122.60	117.20
1	A	1316	OMG	N2-C2-N1	3.28	122.61	117.20
3	C	166	OMG	N2-C2-N1	3.29	122.63	117.20
2	B	634	OMG	N2-C2-N1	3.36	122.75	117.20
7	G	70	OMG	N2-C2-N1	3.38	122.77	117.20
2	B	1361	OMG	C6-N1-C2	3.38	119.84	115.88
3	C	166	OMG	C6-N1-C2	3.45	119.93	115.88
1	A	958	OMG	C6-N1-C2	3.46	119.94	115.88
2	B	1491	OMU	C4-N3-C2	3.47	117.87	114.21
2	B	1210	OMG	N2-C2-N1	3.50	122.98	117.20
1	A	972	OMG	C6-N1-C2	3.54	120.04	115.88
1	A	1675	OMG	C6-N1-C2	3.55	120.04	115.88
2	B	1492	OMG	C6-N1-C2	3.55	120.05	115.88
1	A	1045	7MG	C6-N1-C2	3.57	120.06	115.88
2	B	691	A2M	O3'-C3'-C2'	3.58	121.46	111.13
1	A	1659	OMG	C6-N1-C2	3.58	120.07	115.88
2	B	1138	7MG	C6-N1-C2	3.59	120.09	115.88
1	A	794	A2M	O3'-C3'-C2'	3.61	121.54	111.13
2	B	1385	OMG	C6-N1-C2	3.62	120.13	115.88
2	B	634	OMG	C6-N1-C2	3.66	120.17	115.88
7	G	70	OMG	C6-N1-C2	3.70	120.22	115.88
2	B	1169	OMG	C6-N1-C2	3.71	120.23	115.88
2	B	657	7MG	C6-N1-C2	3.71	120.23	115.88
1	A	794	A2M	O4'-C1'-N9	3.72	115.14	108.11
3	C	75	OMG	C6-N1-C2	3.74	120.27	115.88
2	B	1107	7MG	C6-N1-C2	3.75	120.28	115.88
1	A	958	OMG	N2-C2-N1	3.81	123.48	117.20
1	A	927	OMG	C6-N1-C2	3.85	120.39	115.88
1	A	974	A2M	O4'-C1'-N9	3.87	115.42	108.11
1	A	1725	7MG	C6-N1-C2	3.95	120.51	115.88

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	931	7MG	C6-N1-C2	4.05	120.62	115.88
1	A	1659	OMG	N2-C2-N1	4.15	124.05	117.20
3	C	118	OMU	C4-N3-C2	4.33	118.78	114.21
1	A	1227	OMU	C4-N3-C2	4.55	119.00	114.21
1	A	1497	OMU	C4-N3-C2	4.65	119.11	114.21
1	A	792	OMC	C6-C5-C4	4.75	119.30	117.44
3	C	7	OMU	C4-N3-C2	4.77	119.23	114.21
1	A	963	OMU	C4-N3-C2	4.88	119.35	114.21
2	B	1345	OMU	C4-N3-C2	4.99	119.47	114.21
2	B	767	OMU	C4-N3-C2	5.14	119.62	114.21
2	B	73	OMU	C4-N3-C2	5.17	119.66	114.21
1	A	1662	OMC	C6-C5-C4	5.33	119.53	117.44
1	A	777	OMC	C6-C5-C4	6.48	119.98	117.44
2	B	1529	OMC	C6-C5-C4	6.60	120.02	117.44
1	A	919	OMC	C6-C5-C4	6.71	120.07	117.44
2	B	1380	OMC	C6-C5-C4	6.91	120.14	117.44
2	B	543	OMC	C6-C5-C4	6.95	120.16	117.44
2	B	683	OMC	C6-C5-C4	7.02	120.19	117.44
2	B	1449	OMC	C6-C5-C4	7.77	120.48	117.44
2	B	21	OMC	C6-C5-C4	7.86	120.52	117.44
2	B	77	OMC	C6-C5-C4	8.15	120.63	117.44
3	C	105	OMC	C6-C5-C4	8.22	120.66	117.44
1	A	343	OMC	C6-C5-C4	8.40	120.73	117.44
1	A	1053	OMC	C6-C5-C4	14.45	123.10	117.44
1	A	972	OMG	C1'-N9-C4	21.25	150.52	126.81
2	B	71	OMG	C1'-N9-C4	22.30	151.69	126.81
2	B	1210	OMG	C1'-N9-C4	22.62	152.05	126.81
7	G	70	OMG	C1'-N9-C4	22.71	152.15	126.81
2	B	1363	OMG	C1'-N9-C4	23.04	152.52	126.81
1	A	1659	OMG	C1'-N9-C4	23.45	152.98	126.81
1	A	958	OMG	C1'-N9-C4	23.90	153.48	126.81
1	A	1316	OMG	C1'-N9-C4	24.12	153.72	126.81
2	B	1385	OMG	C1'-N9-C4	24.36	153.99	126.81
1	A	1675	OMG	C1'-N9-C4	24.55	154.20	126.81
3	C	166	OMG	C1'-N9-C4	24.84	154.52	126.81
2	B	1169	OMG	C1'-N9-C4	24.87	154.56	126.81
3	C	75	OMG	C1'-N9-C4	24.89	154.58	126.81
2	B	1361	OMG	C1'-N9-C4	25.01	154.72	126.81
1	A	927	OMG	C1'-N9-C4	25.26	155.00	126.81
2	B	755	OMG	C1'-N9-C4	25.27	155.00	126.81
2	B	564	OMG	C1'-N9-C4	26.49	156.37	126.81
2	B	634	OMG	C1'-N9-C4	26.80	156.71	126.81

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1710	OMG	C1'-N9-C4	27.87	157.91	126.81
2	B	1492	OMG	C1'-N9-C4	28.03	158.08	126.81
1	A	1075	OMG	C1'-N9-C4	30.53	160.88	126.81

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

58 monomers are involved in 166 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	A	1043	A2M	1	0
1	A	1045	7MG	1	0
1	A	1053	OMC	7	0
1	A	1071	A2M	3	0
1	A	1073	5MC	2	0
1	A	1075	OMG	1	0
1	A	1127	OMU	1	0
1	A	1316	OMG	5	0
1	A	1525	5MC	2	0
1	A	1659	OMG	3	0
1	A	1662	OMC	1	0
1	A	1674	A2M	1	0
1	A	1710	OMG	3	0
1	A	1725	7MG	2	0
1	A	1804	A2M	7	0
1	A	343	OMC	4	0
1	A	423	A2M	1	0
1	A	777	OMC	4	0
1	A	778	A2M	3	0
1	A	792	OMC	2	0
1	A	794	A2M	4	0
1	A	919	OMC	7	0
1	A	931	7MG	4	0
1	A	958	OMG	3	0
1	A	972	OMG	2	0
1	A	974	A2M	1	0
2	B	1107	7MG	3	0
2	B	1138	7MG	2	0
2	B	1169	OMG	5	0
2	B	1210	OMG	1	0
2	B	1345	OMU	2	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	1361	OMG	3	0
2	B	1363	OMG	2	0
2	B	1380	OMC	4	0
2	B	1492	OMG	3	0
2	B	1516	A2M	6	0
2	B	1529	OMC	3	0
2	B	21	OMC	2	0
2	B	482	A2M	3	0
2	B	543	OMC	2	0
2	B	564	OMG	2	0
2	B	624	5MC	2	0
2	B	627	A2M	4	0
2	B	634	OMG	3	0
2	B	657	7MG	3	0
2	B	683	OMC	3	0
2	B	691	A2M	4	0
2	B	728	A2M	4	0
2	B	73	OMU	1	0
2	B	755	OMG	6	0
2	B	767	OMU	2	0
2	B	77	OMC	2	0
3	C	105	OMC	2	0
3	C	118	OMU	1	0
3	C	166	OMG	6	0
3	C	7	OMU	1	0
3	C	75	OMG	2	0
7	G	70	OMG	2	0

5.5 Carbohydrates [i](#)

There are no carbohydrates in this entry.

5.6 Ligand geometry [i](#)

Of 108 ligands modelled in this entry, 108 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

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	30
2	B	16
5	E	5
8	H	4
10	L	3
7	G	2
31	h	2
30	g	1
6	F	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	A	282:U	O3'	304:A	P	49.48
1	A	1269:U	O3'	1283:A	P	36.80
1	B	913:U	O3'	1105:C	P	35.79
1	A	1233:A	O3'	1245:C	P	34.48
1	A	154:A	O3'	175:U	P	29.48
1	B	551:U	O3'	562:G	P	29.28
1	A	1385:C	O3'	1491:A	P	24.19
1	E	12:G	O3'	21:G	P	24.03
1	E	104:U	O3'	113:C	P	23.15
1	A	1545:C	O3'	1569:G	P	22.63
1	L	78:ARG	C	105:THR	N	20.48
1	A	506:C	O3'	515:U	P	20.44
1	B	1113:A	O3'	1134:C	P	19.75
1	A	1805:A	O3'	1918:A	P	19.24
1	E	152:G	O3'	175:U	P	18.88
1	B	1595:A	O3'	1601:U	P	16.94
1	A	226:A	O3'	232:U	P	16.86
1	B	1633:U	O3'	1641:U	P	16.77

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	A	219:U	O3'	224:A	P	16.61
1	F	17:U	O3'	44:C	P	16.06
1	A	936:C	O3'	941:G	P	15.93
1	E	185:U	O3'	190:A	P	15.65
1	B	1232:A	O3'	1240:U	P	15.59
1	A	1171:C	O3'	1221:U	P	15.47
1	H	68:G	O3'	87:C	P	15.09
1	B	136:A	O3'	446:C	P	15.00
1	G	128:U	O3'	154:A	P	14.98
1	B	1465:G	O3'	1477:G	P	14.92
1	A	519:G	O3'	585:A	P	14.88
1	B	1614:A	O3'	1621:U	P	14.82
1	B	789:A	O3'	852:G	P	14.50
1	A	1517:U	O3'	1522:G	P	14.31
1	L	109:GLY	C	130:GLY	N	14.03
1	B	594:C	O3'	616:A	P	13.93
1	A	853:U	O3'	866:U	P	13.58
1	B	1397:U	O3'	1434:A	P	13.52
1	B	577:G	O3'	580:G	P	13.36
1	A	744:G	O3'	748:G	P	12.66
1	A	487:C	O3'	492:G	P	11.73
1	B	1581:A	O3'	1591:A	P	11.70
1	A	464:U	O3'	468:A	P	11.67
1	A	198:A	O3'	205:A	P	11.65
1	A	880:U	O3'	916:U	P	11.06
1	H	47:G	O3'	62:C	P	10.99
1	E	74:C	O3'	95:U	P	10.78
1	A	1691:A	O3'	1709:C	P	10.06
1	A	818:U	O3'	825:C	P	9.59
1	g	72:TYR	C	91:VAL	N	9.54
1	h	74:THR	C	78:GLY	N	9.37
1	H	125:U	O3'	128:G	P	8.75
1	A	1375:A	O3'	1380:C	P	7.78
1	A	1254:A	O3'	1263:G	P	7.61
1	A	604:U	O3'	738:U	P	7.07
1	A	1794:U	O3'	1797:U	P	6.68
1	A	446:A	O3'	448:C	P	5.86
1	A	1382:A	O3'	1384:A	P	5.70
1	H	112:U	O3'	120:C	P	5.37
1	B	1330:G	O3'	1343:U	P	5.26
1	B	1606:U	O3'	1611:A	P	5.09
1	h	56:ARG	C	64:GLY	N	4.76

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	L	27:ILE	C	73:VAL	N	4.66
1	A	1145:G	O3'	1150:A	P	3.85
1	A	1247:U	O3'	1249:G	P	3.62
1	G	177:C	O3'	178:A	P	3.32