



## wwPDB EM Map/Model Validation Report ⓘ

Apr 10, 2016 – 02:07 PM BST

PDB ID : 4ADV  
EMDB ID: : EMD-2017  
Title : Structure of the E. coli methyltransferase KsgA bound to the E. coli 30S ribosomal subunit  
Authors : Boehringer, D.; O'Farrell, H.C.; Rife, J.P.; Ban, N.  
Deposited on : 2012-01-03  
Resolution : 13.50 Å(reported)  
Based on PDB ID : 2AVY, 1QYR

This is a wwPDB EM Map/Model Validation Report for a publicly released PDB/EMDB entry.  
For rigid body fitted models, validation errors reported here could stem from errors in the original structure(s) used in the fitting.  
We welcome your comments at [validation@mail.wwpdb.org](mailto:validation@mail.wwpdb.org)  
A user guide is available at  
<http://wwpdb.org/validation/2016/EMValidationReportHelp>

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MolProbity : 4.02b-467  
Mogul : unknown  
Percentile statistics : 20151230.v01 (using entries in the PDB archive December 30th 2015)  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et. al. (1996)  
Validation Pipeline (wwPDB-VP) : trunk27241

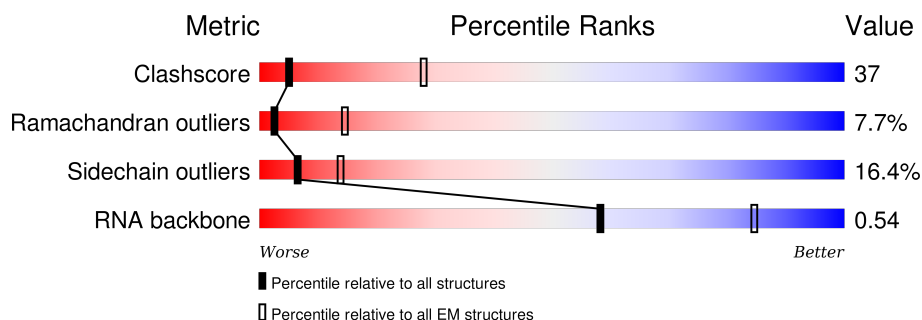
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 13.50 Å.

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



Metric	Whole archive (#Entries)	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  $\geq 3$ , 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	1542	23% 55% 13% 9%
2	B	240	19% 52% 19% • 9%
3	C	232	27% 48% 13% • 11%
4	D	205	27% 53% 19% •
5	E	166	28% 50% 11% • 10%
6	F	135	24% 37% 11% • 26%
7	G	178	26% 46% 11% • 16%
8	H	129	40% 50% 10%

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Mol	Chain	Length	Quality of chain
9	I	129	
10	J	103	
11	K	128	
12	L	123	
13	M	117	
14	N	100	
15	O	89	
16	P	82	
17	Q	83	
18	R	74	
19	S	91	
20	T	86	
21	U	71	
22	V	252	

## 2 Entry composition

There are 23 unique types of molecules in this entry. The entry contains 50888 atoms, of which 0 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 16S RIBOSOMAL RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	1410	Total	C	N	O	P	0	0
			30262	13496	5559	9797	1410		

- Molecule 2 is a protein called 30S RIBOSOMAL PROTEIN S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	218	Total	C	N	O	S	0	0
			1704	1081	305	311	7		

- Molecule 3 is a protein called 30S RIBOSOMAL PROTEIN S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	C	206	Total	C	N	O	S	0	0
			1624	1028	305	288	3		

- Molecule 4 is a protein called 30S RIBOSOMAL PROTEIN S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	D	205	Total	C	N	O	S	0	0
			1643	1026	315	298	4		

- Molecule 5 is a protein called 30S RIBOSOMAL PROTEIN S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	E	150	Total	C	N	O	S	0	0
			1105	687	211	201	6		

- Molecule 6 is a protein called 30S RIBOSOMAL PROTEIN S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	F	100	Total	C	N	O	S	0	0
			817	515	148	148	6		

- Molecule 7 is a protein called 30S RIBOSOMAL PROTEIN S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	G	150	Total	C	N	O	S	0	0
			1174	730	226	214	4		

- Molecule 8 is a protein called 30S RIBOSOMAL PROTEIN S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	H	129	Total	C	N	O	S	0	0
			979	616	173	184	6		

- Molecule 9 is a protein called 30S RIBOSOMAL PROTEIN S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	I	127	Total	C	N	O	S	0	0
			1022	634	206	179	3		

- Molecule 10 is a protein called 30S RIBOSOMAL PROTEIN S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	J	98	Total	C	N	O	S	0	0
			786	493	150	142	1		

- Molecule 11 is a protein called 30S RIBOSOMAL PROTEIN S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	K	117	Total	C	N	O	S	0	0
			877	540	174	160	3		

- Molecule 12 is a protein called 30S RIBOSOMAL PROTEIN S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	L	123	Total	C	N	O	S	0	0
			955	590	196	165	4		

- Molecule 13 is a protein called 30S RIBOSOMAL PROTEIN S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	M	114	Total	C	N	O	S	0	0
			883	546	178	156	3		

- Molecule 14 is a protein called 30S RIBOSOMAL PROTEIN S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	N	96	Total	C	N	O	S	0	0
			774	483	160	128	3		

- Molecule 15 is a protein called 30S RIBOSOMAL PROTEIN S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	O	88	Total	C	N	O	S	0	0
			716	440	146	129	1		

- Molecule 16 is a protein called 30S RIBOSOMAL PROTEIN S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	P	82	Total	C	N	O	S	0	0
			649	406	128	114	1		

- Molecule 17 is a protein called 30S RIBOSOMAL PROTEIN S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	Q	80	Total	C	N	O	S	0	0
			648	411	121	113	3		

- Molecule 18 is a protein called 30S RIBOSOMAL PROTEIN S18.

Mol	Chain	Residues	Atoms				AltConf	Trace
18	R	55	Total	C	N	O	0	0
			455	288	86	81		

- Molecule 19 is a protein called 30S RIBOSOMAL PROTEIN S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	S	79	Total	C	N	O	S	0	0
			637	408	120	107	2		

- Molecule 20 is a protein called 30S RIBOSOMAL PROTEIN S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	T	85	Total	C	N	O	S	0	0
			665	411	137	114	3		

- Molecule 21 is a protein called 30S RIBOSOMAL PROTEIN S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	U	51	Total	C	N	O	S	0	0
			425	265	86	73	1		

- Molecule 22 is a protein called RIBOSOMAL RNA SMALL SUBUNIT METHYLTRANSFERASE A.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	V	252	Total	C	N	O	S	0	0
			1949	1241	336	359	13		

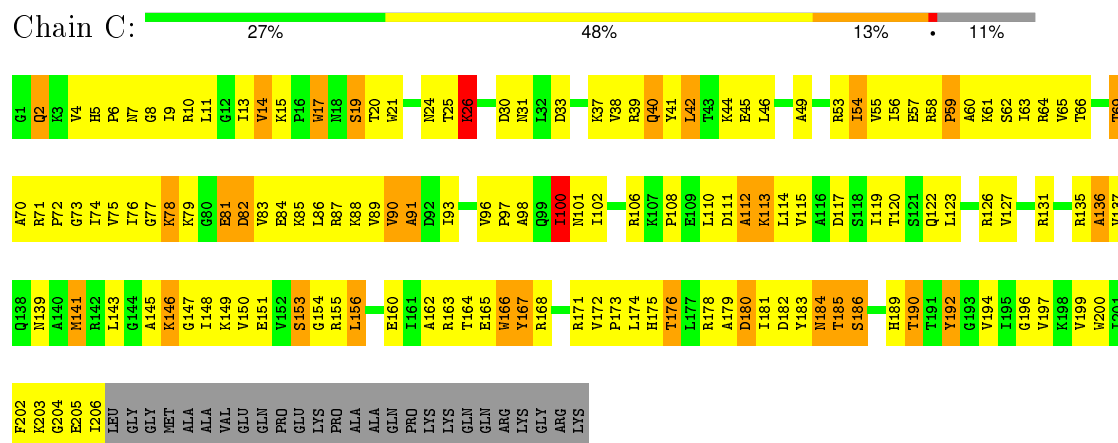
- Molecule 23 is water.

Mol	Chain	Residues	Atoms		AltConf
23	V	139	Total	O	0
			139	139	





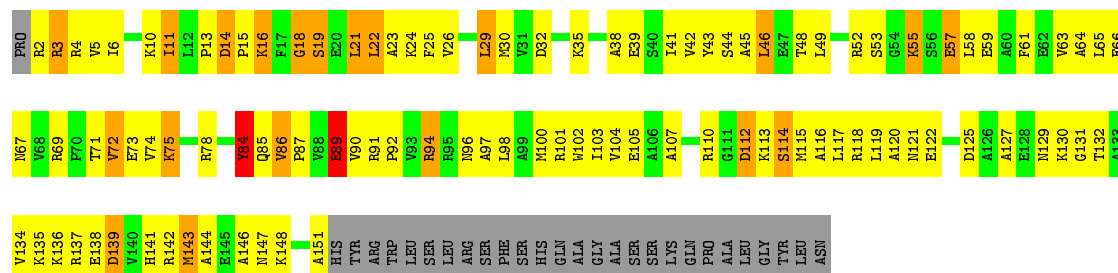
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6850	6851	6852	6853	6854	6855	6856	6857	6858	6859	6860	6861	6862	6863	6864	6865	6866	6867	6868	6869	6870
6871	6872	6873	6874	6875	6876	6877	6878	6879	6880	6881	6882	6883	6884	6885	6886	6887	6888	6889	6890	6891
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6934	6935	6936	6937	6938	6939	6940	6941	6942	6943	6944	6945	6946	6947	6948	6949	6950	6951	6952	6953	6954
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8131	8132	8133	8134	8135	8136	8137	8138	8139	8140	8141	8142	8143	8144	8145	8146	8147	8148	8149	8150	8151
8152	8153	8154																		



GLU

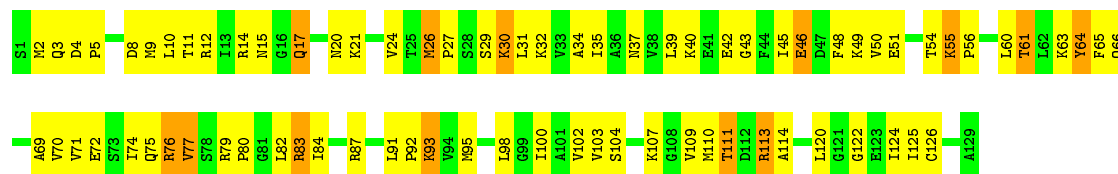
• Molecule 7: 30S RIBOSOMAL PROTEIN S7

Chain G:  26% 46% 11% 1% 16%



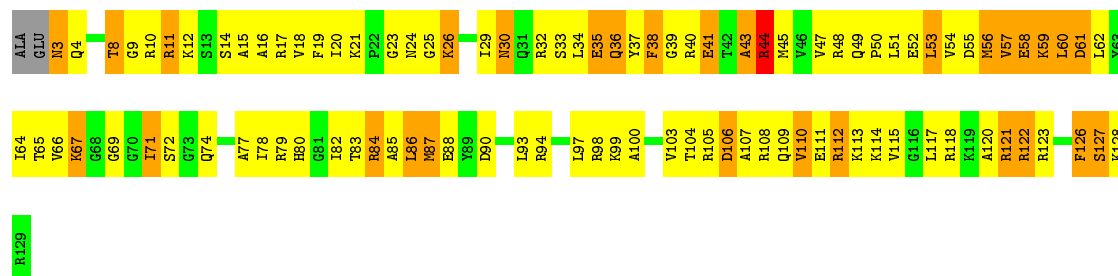
- Molecule 8: 30S RIBOSOMAL PROTEIN S8

Chain H:  40% 50% 10%



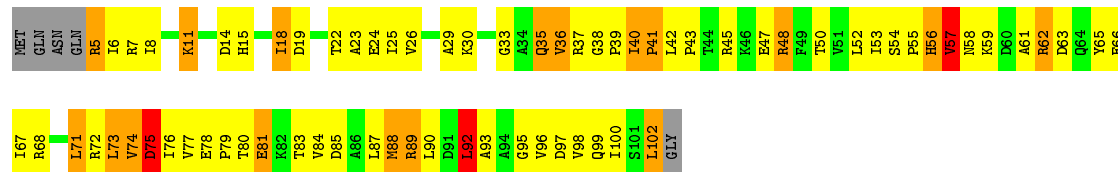
• Molecule 9: 30S RIBOSOMAL PROTEIN S9

Chain I:  22% 53% 22% ..



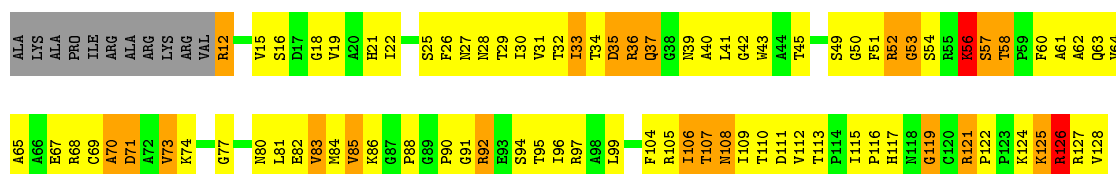
● Molecule 10: 30S RIBOSOMAL PROTEIN S10

Chain J:  25% 50% 17% • 5%

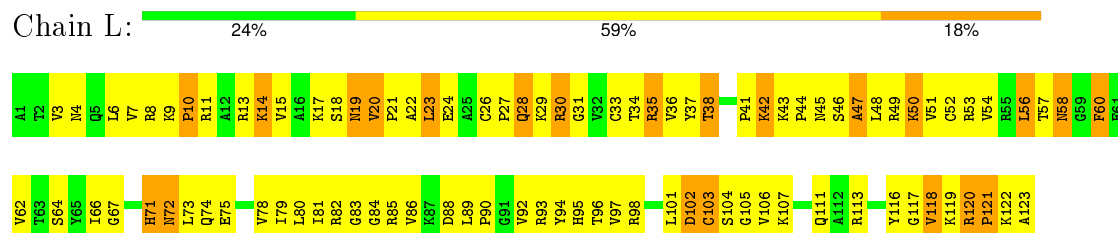


- Molecule 11: 30S RIBOSOMAL PROTEIN S11

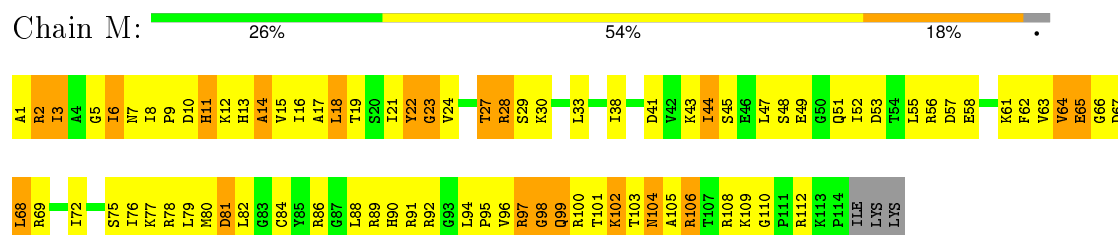
Chain K:  24% 49% 16% 9%



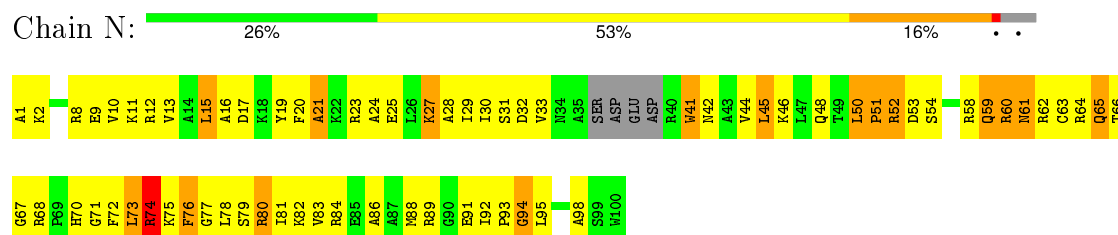
• Molecule 12: 30S RIBOSOMAL PROTEIN S12



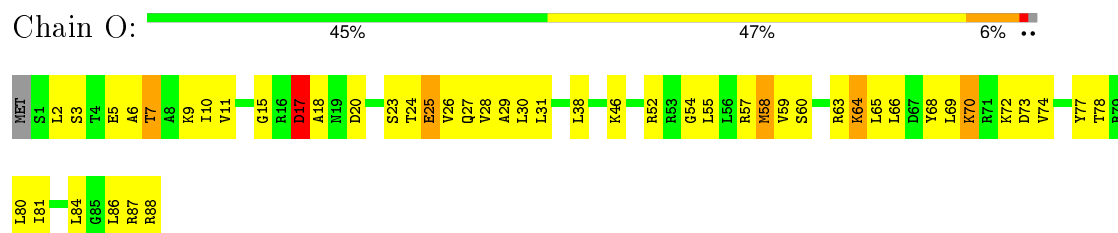
• Molecule 13: 30S RIBOSOMAL PROTEIN S13



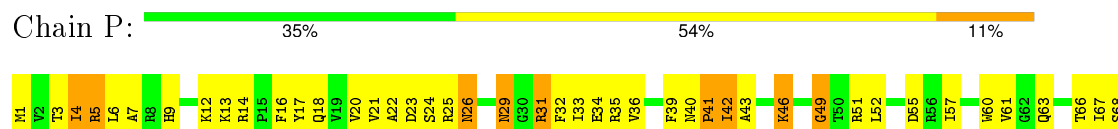
• Molecule 14: 30S RIBOSOMAL PROTEIN S14



• Molecule 15: 30S RIBOSOMAL PROTEIN S15

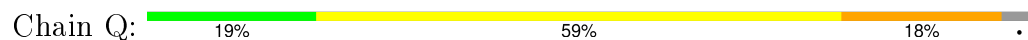


• Molecule 16: 30S RIBOSOMAL PROTEIN S16





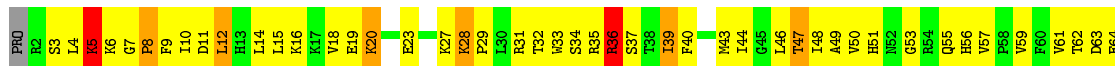
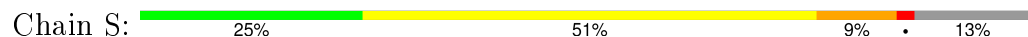
• Molecule 17: 30S RIBOSOMAL PROTEIN S17



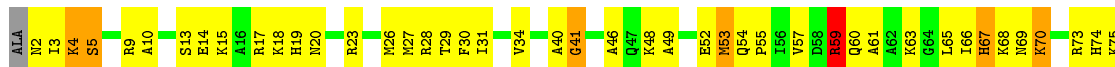
• Molecule 18: 30S RIBOSOMAL PROTEIN S18



• Molecule 19: 30S RIBOSOMAL PROTEIN S19




• Molecule 20: 30S RIBOSOMAL PROTEIN S20

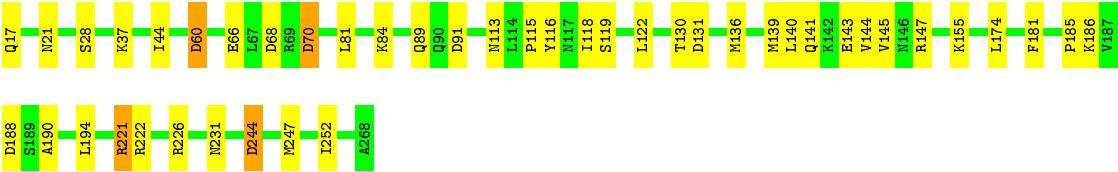


• Molecule 21: 30S RIBOSOMAL PROTEIN S21



● Molecule 22: RIBOSOMAL RNA SMALL SUBUNIT METHYLTRANSFERASE A

Chain V:  83% 16%



## 4 Experimental information

Property	Value	Source
Reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	Depositor
Number of images	Not provided	Depositor
Resolution determination method	Not provided	Depositor
CTF correction method	PER IMAGE, CTFFIND3	Depositor
Microscope	FEI TECNAI 20	Depositor
Voltage (kV)	200	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	20	Depositor
Minimum defocus (nm)	2000	Depositor
Maximum defocus (nm)	4000	Depositor
Magnification	62000	Depositor
Image detector	GATAN US4000	Depositor

## 5 Model quality [i](#)

### 5.1 Standard geometry [i](#)

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	0.27	2/33885 (0.0%)	0.75	7/52858 (0.0%)
10	J	0.23	0/796	0.49	0/1077
11	K	0.24	0/893	0.46	0/1205
12	L	0.22	0/969	0.47	0/1300
13	M	0.21	0/892	0.48	0/1193
14	N	0.25	0/785	0.46	0/1043
15	O	0.23	0/724	0.45	0/966
16	P	0.26	0/659	0.44	0/884
17	Q	0.24	0/657	0.46	0/881
18	R	0.23	0/462	0.46	0/621
19	S	0.25	0/652	0.46	0/877
2	B	0.25	0/1735	0.47	0/2338
20	T	0.24	0/671	0.41	0/888
21	U	1.01	4/430 (0.9%)	0.74	2/570 (0.4%)
22	V	0.62	0/1991	0.80	7/2710 (0.3%)
3	C	0.23	0/1651	0.45	0/2225
4	D	0.23	0/1665	0.46	0/2227
5	E	0.23	0/1118	0.45	0/1504
6	F	0.25	0/835	0.48	0/1128
7	G	0.23	0/1187	0.44	0/1591
8	H	0.23	0/989	0.45	0/1326
9	I	0.24	0/1034	0.45	0/1375
All	All	0.29	6/54680 (0.0%)	0.68	16/80787 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	15
21	U	0	1
All	All	0	16



All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
21	U	15	LEU	C-N	-15.01	0.99	1.34
21	U	25	ALA	C-N	-9.28	1.16	1.33
1	A	463	U	O3'-P	-6.70	1.53	1.61
21	U	29	ALA	C-N	6.63	1.49	1.34
21	U	11	PHE	C-N	-5.36	1.21	1.34
1	A	495	A	N3-C4	-5.07	1.31	1.34

All (16) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	765	G	N9-C1'-C2'	-8.16	103.02	112.00
22	V	221	ARG	NE-CZ-NH2	-6.96	116.82	120.30
1	A	438	U	N1-C1'-C2'	-6.29	105.08	112.00
22	V	221	ARG	NE-CZ-NH1	6.22	123.41	120.30
1	A	232	G	C5'-C4'-C3'	-6.21	106.07	116.00
1	A	66	A	N9-C1'-C2'	-5.98	105.42	112.00
22	V	244	ASP	CB-CG-OD1	5.93	123.64	118.30
22	V	60	ASP	CB-CG-OD1	5.90	123.61	118.30
21	U	15	LEU	C-N-CA	5.77	136.12	121.70
1	A	328	C	C2'-C3'-O3'	5.49	122.48	113.70
21	U	11	PHE	CA-C-N	-5.46	105.19	117.20
22	V	70	ASP	CB-CG-OD2	5.43	123.19	118.30
1	A	1118	U	C5'-C4'-C3'	-5.23	107.63	116.00
22	V	131	ASP	CB-CG-OD2	5.21	122.99	118.30
22	V	188	ASP	CB-CG-OD2	5.01	122.81	118.30
1	A	576	C	C5'-C4'-O4'	5.00	115.10	109.10

There are no chirality outliers.

All (16) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	1006	G	Sidechain
1	A	1028	C	Sidechain
1	A	1319	A	Sidechain
1	A	1331	G	Sidechain
1	A	187	G	Sidechain
1	A	281	G	Sidechain
1	A	437	U	Sidechain
1	A	438	U	Sidechain
1	A	454	G	Sidechain
1	A	481	G	Sidechain

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Mol	Chain	Res	Type	Group
1	A	496	A	Sidechain
1	A	521	G	Sidechain
1	A	575	G	Sidechain
1	A	58	C	Sidechain
1	A	703	G	Sidechain
21	U	11	PHE	Mainchain

## 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	30262	0	15198	1460	0
2	B	1704	0	1720	428	0
3	C	1624	0	1699	158	0
4	D	1643	0	1710	176	0
5	E	1105	0	1145	170	0
6	F	817	0	808	76	0
7	G	1174	0	1230	100	0
8	H	979	0	1032	81	0
9	I	1022	0	1070	141	0
10	J	786	0	828	96	0
11	K	877	0	887	107	0
12	L	955	0	1019	103	0
13	M	883	0	944	84	0
14	N	774	0	827	92	0
15	O	716	0	742	50	0
16	P	649	0	666	78	0
17	Q	648	0	691	81	0
18	R	455	0	478	39	0
19	S	637	0	665	78	0
20	T	665	0	714	53	0
21	U	425	0	447	102	0
22	V	1949	0	1949	46	0
23	V	139	0	0	11	0
All	All	50888	0	36469	3247	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 (3247) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:870:U:C6	2:B:27:LYS:HD3	1.28	1.64
1:A:829:G:C3'	2:B:30:ILE:HG12	1.18	1.62
1:A:830:G:C4	2:B:22:TRP:HB3	1.40	1.53
1:A:17:U:C5'	1:A:1079:G:H5'	1.39	1.49
1:A:830:G:C5	2:B:22:TRP:HB3	1.47	1.49
1:A:17:U:H5'	1:A:1079:G:C4'	1.00	1.47
1:A:17:U:H5'	1:A:1079:G:C5'	1.46	1.45
1:A:17:U:C5'	1:A:1079:G:C5'	1.94	1.44
1:A:829:G:C4'	2:B:30:ILE:HG12	1.24	1.43
1:A:829:G:C4'	2:B:30:ILE:CG1	1.91	1.43
1:A:17:U:C5'	1:A:1079:G:C4'	1.95	1.42
1:A:1082:A:H8	5:E:22:LYS:NZ	1.14	1.41
1:A:869:G:C3'	2:B:24:PRO:HB3	1.49	1.40
1:A:1081:A:C8	5:E:22:LYS:HB2	1.55	1.39
1:A:1081:A:C8	5:E:22:LYS:CD	1.97	1.38
1:A:1081:A:C8	5:E:22:LYS:HD2	1.26	1.38
21:U:14:ALA:HA	21:U:16:ARG:NH1	1.37	1.37
1:A:920:U:C2	1:A:1079:G:O6	1.78	1.37
21:U:14:ALA:O	21:U:16:ARG:NE	1.57	1.36
1:A:859:G:O3'	2:B:191:ASP:C	1.68	1.32
1:A:1517:G:OP2	22:V:147:ARG:NH2	1.61	1.31
21:U:14:ALA:CA	21:U:16:ARG:NH1	1.92	1.31
1:A:859:G:C1'	2:B:26:MET:HG2	1.63	1.29
1:A:870:U:O4	2:B:28:PRO:CD	1.79	1.28
1:A:829:G:C8	2:B:26:MET:O	1.87	1.28
1:A:870:U:O4	2:B:28:PRO:HD3	1.13	1.26
1:A:855:U:H3	2:B:20:ARG:NH2	1.33	1.25
1:A:870:U:C6	2:B:27:LYS:CD	2.17	1.25
1:A:1081:A:H8	5:E:22:LYS:CB	1.43	1.24
1:A:1080:A:O2'	5:E:28:ARG:HG3	1.30	1.24
1:A:827:U:H2'	2:B:28:PRO:CG	1.68	1.24
1:A:861:G:O6	2:B:25:LYS:CE	1.84	1.24
1:A:869:G:H2'	2:B:24:PRO:CB	1.68	1.23
1:A:18:C:C6	1:A:1078:U:C1'	2.22	1.23
1:A:17:U:C4'	1:A:1079:G:H5'	1.66	1.23
1:A:860:A:C3'	2:B:193:ASP:OD1	1.86	1.22
1:A:861:G:O6	2:B:25:LYS:HE2	1.36	1.22
1:A:1517:G:H4'	22:V:144:VAL:CG2	1.69	1.22
1:A:829:G:C3'	2:B:30:ILE:CG1	2.12	1.22
1:A:17:U:C4'	1:A:1079:G:C5'	2.20	1.20

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:830:G:C4'	2:B:17:HIS:O	1.89	1.20
21:U:14:ALA:N	21:U:16:ARG:NH1	1.88	1.20
1:A:855:U:N3	2:B:20:ARG:NH2	1.88	1.19
1:A:857:C:O2	2:B:22:TRP:O	1.60	1.19
1:A:870:U:N1	2:B:27:LYS:HD3	1.43	1.19
1:A:861:G:C6	2:B:25:LYS:HE2	1.78	1.18
1:A:920:U:C2	1:A:1079:G:C6	2.30	1.17
1:A:1081:A:O3'	5:E:24:VAL:CG1	1.93	1.17
1:A:1080:A:C8	5:E:22:LYS:HA	1.78	1.17
1:A:830:G:H3'	2:B:38:HIS:ND1	1.51	1.16
1:A:830:G:C5	2:B:22:TRP:CB	2.29	1.16
1:A:830:G:H3'	2:B:38:HIS:H	1.04	1.15
1:A:18:C:C6	1:A:1078:U:H1'	1.81	1.15
1:A:869:G:C2'	2:B:24:PRO:CB	2.25	1.15
1:A:827:U:C2'	2:B:28:PRO:CG	2.25	1.14
1:A:17:U:H4'	1:A:1079:G:H5'	1.30	1.14
1:A:921:U:H4'	1:A:1081:A:O2'	1.47	1.14
1:A:830:G:C3'	2:B:38:HIS:ND1	2.07	1.14
1:A:829:G:H3'	2:B:30:ILE:CG1	1.76	1.14
21:U:14:ALA:CA	21:U:16:ARG:CZ	2.24	1.14
1:A:860:A:OP2	2:B:191:ASP:OD1	1.66	1.14
1:A:870:U:C4	2:B:27:LYS:HB3	1.83	1.14
1:A:830:G:C2'	2:B:19:THR:O	1.92	1.13
1:A:860:A:C5'	2:B:192:PRO:O	1.84	1.13
1:A:1082:A:C8	5:E:22:LYS:NZ	2.04	1.13
1:A:859:G:O3'	2:B:192:PRO:N	1.63	1.13
1:A:830:G:H4'	2:B:17:HIS:O	0.95	1.13
2:B:156:LEU:HD13	5:E:68:ARG:HH12	1.06	1.13
1:A:859:G:H1'	2:B:26:MET:HG2	1.16	1.12
1:A:869:G:H3'	2:B:24:PRO:CB	1.80	1.12
1:A:829:G:H3'	2:B:30:ILE:HG12	1.11	1.11
1:A:830:G:C4'	2:B:38:HIS:HD1	1.64	1.11
2:B:156:LEU:HD13	5:E:68:ARG:NH1	1.65	1.11
1:A:830:G:C3'	2:B:38:HIS:HD1	1.63	1.10
1:A:830:G:C1'	2:B:19:THR:O	1.99	1.10
1:A:1080:A:O2'	5:E:28:ARG:CG	2.00	1.10
1:A:829:G:O4'	2:B:30:ILE:HG13	1.48	1.09
1:A:830:G:C4	2:B:22:TRP:CB	2.35	1.09
1:A:1517:G:H4'	22:V:144:VAL:HG23	1.15	1.09
1:A:869:G:C3'	2:B:24:PRO:CB	2.31	1.09
1:A:18:C:H5'	1:A:1078:U:H4'	1.09	1.08

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:17:U:C5'	1:A:1079:G:O4'	2.01	1.08
1:A:861:G:O6	2:B:25:LYS:NZ	1.87	1.08
2:B:156:LEU:CD1	5:E:68:ARG:HH12	1.67	1.08
1:A:827:U:O3'	2:B:28:PRO:HB3	0.92	1.08
1:A:860:A:N7	2:B:25:LYS:HB3	1.69	1.08
1:A:830:G:O5'	2:B:38:HIS:ND1	1.84	1.07
1:A:827:U:C2'	2:B:28:PRO:HG3	1.84	1.07
1:A:829:G:O4'	2:B:30:ILE:CG1	2.00	1.07
1:A:828:U:OP1	2:B:28:PRO:O	1.73	1.07
1:A:17:U:H4'	1:A:1079:G:C5'	1.82	1.07
3:C:78:LYS:HG2	3:C:81:GLU:HB2	1.36	1.07
1:A:860:A:H3'	2:B:193:ASP:OD1	0.91	1.06
1:A:869:G:H2'	2:B:24:PRO:HB2	1.33	1.06
1:A:17:U:H5''	1:A:1079:G:H5'	1.34	1.05
1:A:921:U:C4'	1:A:1081:A:O2'	2.04	1.05
1:A:827:U:C3'	2:B:28:PRO:HB3	1.87	1.05
1:A:1514:G:H5''	22:V:222:ARG:CZ	1.84	1.05
2:B:163:ILE:HG23	2:B:164:ASP:H	1.17	1.04
1:A:17:U:H5'	1:A:1079:G:H4'	1.05	1.04
1:A:829:G:OP1	2:B:41:ASN:HB3	1.56	1.04
1:A:1518:A:OP1	22:V:143:GLU:HB2	1.57	1.04
1:A:18:C:O4'	1:A:1078:U:O4'	1.76	1.03
10:J:35:GLN:HB3	10:J:77:VAL:HG23	1.34	1.03
1:A:855:U:C4	2:B:20:ARG:NH2	2.27	1.03
1:A:827:U:H2'	2:B:28:PRO:HG3	1.03	1.02
1:A:869:G:C2'	2:B:24:PRO:HB2	1.86	1.02
1:A:18:C:C5	1:A:1078:U:C2	2.47	1.01
1:A:857:C:O2	2:B:22:TRP:C	1.86	1.01
21:U:14:ALA:N	21:U:16:ARG:CZ	2.23	1.01
1:A:17:U:O4'	1:A:1079:G:O4'	1.78	1.01
1:A:18:C:C5'	1:A:1078:U:H4'	1.89	1.01
1:A:869:G:H3'	2:B:24:PRO:HB3	1.04	1.01
1:A:830:G:C5'	2:B:38:HIS:HD1	1.74	1.01
1:A:827:U:O3'	2:B:28:PRO:CB	1.85	1.01
1:A:830:G:N3	2:B:19:THR:O	1.93	1.00
1:A:870:U:O4	2:B:28:PRO:CG	2.09	1.00
7:G:125:ASP:HB3	7:G:130:LYS:HB3	1.39	1.00
1:A:17:U:H5'	1:A:1079:G:O4'	1.60	1.00
1:A:859:G:C5'	2:B:190:SER:O	1.84	0.99
1:A:919:A:C2	1:A:1078:U:O4	2.15	0.99
1:A:921:U:O2'	1:A:1081:A:O2'	1.81	0.99

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:U:29:ALA:HB1	21:U:32:ARG:HH21	1.26	0.98
1:A:830:G:C6	2:B:22:TRP:CG	2.51	0.98
1:A:1081:A:C8	5:E:22:LYS:CB	2.16	0.98
2:B:46:VAL:HG13	2:B:47:PRO:HD3	1.45	0.98
8:H:103:VAL:HG12	8:H:124:ILE:HA	1.46	0.97
1:A:829:G:N1	2:B:23:ASN:N	2.02	0.97
13:M:106:ARG:HE	13:M:112:ARG:HG2	1.29	0.97
1:A:376:G:H5''	16:P:5:ARG:HB2	1.45	0.97
1:A:870:U:C5	2:B:27:LYS:HD3	2.00	0.97
1:A:827:U:O2'	2:B:28:PRO:HG2	1.64	0.97
1:A:830:G:N3	2:B:22:TRP:N	2.12	0.97
1:A:828:U:P	2:B:28:PRO:O	2.20	0.97
1:A:1313:U:H5''	19:S:5:LYS:HG2	1.47	0.96
1:A:859:G:O5'	2:B:23:ASN:OD1	1.83	0.96
1:A:1081:A:O3'	5:E:24:VAL:HG11	1.64	0.96
1:A:870:U:C5	2:B:27:LYS:HB3	2.00	0.96
11:K:124:LYS:HA	21:U:34:ARG:HB3	1.47	0.96
14:N:63:CYS:HB3	14:N:67:GLY:H	1.30	0.95
1:A:869:G:C2'	2:B:24:PRO:HB3	1.93	0.95
1:A:859:G:H5'	2:B:190:SER:O	1.12	0.95
3:C:58:ARG:HG2	3:C:63:ILE:HG22	1.48	0.95
13:M:11:HIS:H	13:M:44:ILE:HD11	1.32	0.95
1:A:829:G:C4'	2:B:30:ILE:HG13	1.91	0.94
19:S:49:ALA:HB1	19:S:56:HIS:HB3	1.47	0.94
6:F:53:LYS:HD3	6:F:54:LEU:H	1.30	0.94
1:A:1517:G:N3	22:V:141:GLN:HG2	1.81	0.93
10:J:88:MET:HB2	10:J:89:ARG:HH12	1.32	0.93
1:A:859:G:C4'	2:B:190:SER:O	2.15	0.93
2:B:67:LEU:HD11	2:B:157:PRO:HB3	1.47	0.93
1:A:830:G:O4'	2:B:188:THR:HG21	1.69	0.93
1:A:18:C:O4'	1:A:1078:U:C4'	2.16	0.93
1:A:17:U:H4'	1:A:1079:G:P	2.00	0.93
21:U:14:ALA:HA	21:U:16:ARG:CZ	1.90	0.92
1:A:849:G:OP2	2:B:34:ARG:HD3	1.68	0.92
1:A:848:C:OP1	2:B:35:ASN:OD1	1.87	0.92
1:A:849:G:OP2	2:B:34:ARG:CD	2.18	0.92
1:A:859:G:C8	2:B:26:MET:N	2.23	0.92
17:Q:18:LYS:HG2	17:Q:48:GLU:HA	1.52	0.91
11:K:22:ILE:HG21	11:K:95:THR:HG21	1.53	0.91
1:A:830:G:C5'	2:B:188:THR:HG21	2.02	0.91
1:A:860:A:H62	2:B:25:LYS:HG2	1.36	0.90

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:828:U:H3'	2:B:27:LYS:O	1.70	0.90
19:S:18:VAL:HG21	19:S:43:MET:HG2	1.53	0.90
1:A:1086:U:H3	1:A:1099:G:H22	1.14	0.90
20:T:68:LYS:HG3	20:T:69:ASN:H	1.36	0.90
1:A:828:U:H3'	2:B:27:LYS:C	1.92	0.89
14:N:60:ARG:H	14:N:60:ARG:HD3	1.37	0.89
1:A:1517:G:C8	22:V:141:GLN:NE2	2.39	0.89
1:A:860:A:H5''	2:B:192:PRO:O	1.58	0.89
1:A:859:G:P	2:B:23:ASN:OD1	2.29	0.89
1:A:18:C:H6	1:A:1078:U:C1'	1.83	0.89
1:A:18:C:C6	1:A:1078:U:O4'	2.24	0.89
1:A:860:A:P	2:B:191:ASP:OD1	2.30	0.89
13:M:48:SER:H	13:M:51:GLN:HB2	1.38	0.88
1:A:857:C:C2	2:B:22:TRP:C	2.46	0.88
1:A:830:G:C3'	2:B:38:HIS:H	1.87	0.88
1:A:870:U:C4	2:B:28:PRO:HD3	2.07	0.88
7:G:112:ASP:HB2	7:G:118:ARG:HG2	1.55	0.88
1:A:860:A:N7	2:B:25:LYS:CB	2.36	0.88
16:P:46:LYS:HD3	16:P:46:LYS:H	1.38	0.88
1:A:829:G:OP2	2:B:30:ILE:O	1.88	0.87
13:M:78:ARG:HH21	13:M:79:LEU:HG	1.37	0.87
4:D:60:VAL:HA	4:D:63:ILE:HD12	1.57	0.87
19:S:4:LEU:HD13	19:S:9:PHE:H	1.37	0.87
2:B:131:LYS:HA	2:B:134:LEU:HD12	1.56	0.87
12:L:8:ARG:HG3	12:L:9:LYS:H	1.40	0.86
18:R:52:ARG:HH11	18:R:52:ARG:HB3	1.40	0.86
9:I:34:LEU:HD11	9:I:47:VAL:HG21	1.56	0.86
1:A:699:C:H2'	1:A:700:G:H5''	1.57	0.86
1:A:1517:G:P	22:V:147:ARG:NH2	2.48	0.86
1:A:1514:G:O4'	23:V:312:HOH:O	1.90	0.86
10:J:8:ILE:HD12	10:J:100:ILE:HG22	1.58	0.86
1:A:920:U:N3	1:A:1079:G:O6	2.08	0.86
1:A:829:G:N9	2:B:26:MET:O	2.08	0.86
1:A:1082:A:H8	5:E:22:LYS:HZ1	1.23	0.86
1:A:859:G:C1'	2:B:26:MET:CG	2.51	0.85
1:A:830:G:H1'	2:B:19:THR:O	1.74	0.85
21:U:14:ALA:HA	21:U:16:ARG:HH11	1.03	0.85
1:A:859:G:C3'	2:B:191:ASP:C	2.33	0.85
21:U:13:VAL:HG13	21:U:14:ALA:H	1.38	0.85
1:A:1101:A:H4'	1:A:1102:A:O5'	1.76	0.85
1:A:243:A:H4'	1:A:244:U:H5'	1.59	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:O:6:ALA:HA	15:O:9:LYS:HE3	1.59	0.85
9:I:29:ILE:HG22	9:I:64:ILE:HB	1.57	0.85
1:A:1081:A:N6	5:E:51:LYS:NZ	2.24	0.85
12:L:48:LEU:HD23	12:L:48:LEU:H	1.42	0.85
1:A:870:U:OP2	2:B:22:TRP:CH2	2.30	0.84
1:A:664:G:H22	1:A:741:G:H1	1.26	0.84
16:P:20:VAL:HG23	16:P:35:ARG:HA	1.57	0.84
21:U:14:ALA:C	21:U:16:ARG:NE	2.30	0.84
17:Q:27:PHE:HB3	17:Q:36:PHE:HB3	1.59	0.84
2:B:163:ILE:HG23	2:B:164:ASP:N	1.92	0.84
1:A:857:C:C2	2:B:22:TRP:O	2.28	0.84
1:A:830:G:C5	2:B:22:TRP:CG	2.66	0.84
21:U:13:VAL:C	21:U:16:ARG:HH12	1.81	0.84
21:U:14:ALA:O	21:U:16:ARG:CZ	2.25	0.84
2:B:33:ALA:HA	2:B:38:HIS:HA	1.58	0.84
21:U:14:ALA:O	21:U:16:ARG:CD	2.26	0.84
1:A:1514:G:C5'	22:V:222:ARG:CZ	2.39	0.84
2:B:67:LEU:HD12	2:B:153:MET:HE2	1.59	0.84
14:N:60:ARG:HH21	14:N:62:ARG:HE	1.21	0.84
1:A:18:C:C5	1:A:1078:U:H1'	2.12	0.83
1:A:18:C:H6	1:A:1078:U:H1'	1.33	0.83
1:A:1517:G:N9	22:V:141:GLN:NE2	2.26	0.83
11:K:126:ARG:HB2	21:U:33:ARG:HD2	1.61	0.83
15:O:25:GLU:HG3	15:O:80:LEU:HD12	1.58	0.83
2:B:202:ASN:HD22	2:B:204:ASP:H	1.26	0.83
12:L:56:LEU:HD11	12:L:81:ILE:HD12	1.60	0.83
1:A:830:G:O5'	2:B:38:HIS:CG	2.23	0.83
4:D:36:ALA:HA	4:D:41:GLY:HA3	1.61	0.83
1:A:921:U:C3'	1:A:1081:A:O2'	2.26	0.83
4:D:160:LEU:HD13	4:D:160:LEU:H	1.41	0.82
1:A:920:U:O2	1:A:1079:G:C6	2.33	0.82
13:M:33:LEU:HD22	13:M:38:ILE:HB	1.61	0.82
8:H:54:THR:HG23	8:H:55:LYS:HG2	1.59	0.82
1:A:17:U:C4'	1:A:1079:G:O4'	2.28	0.82
1:A:920:U:N1	1:A:1079:G:O6	2.11	0.82
3:C:146:LYS:HE3	3:C:202:PHE:HE2	1.42	0.82
1:A:1323:G:H2'	1:A:1324:A:C8	2.15	0.82
3:C:49:ALA:HB1	3:C:75:VAL:HG22	1.63	0.81
3:C:155:ARG:H	3:C:162:ALA:HA	1.45	0.81
15:O:7:THR:HG22	15:O:30:LEU:HD11	1.62	0.81
1:A:793:U:O4	22:V:116:TYR:O	1.97	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1082:A:P	5:E:24:VAL:HG11	2.20	0.81
4:D:159:GLU:HG3	4:D:160:LEU:N	1.94	0.81
1:A:830:G:C4	2:B:20:ARG:HA	2.15	0.81
6:F:64:VAL:HG12	6:F:65:GLU:H	1.45	0.81
1:A:859:G:H1'	2:B:26:MET:CG	2.06	0.81
1:A:921:U:C2'	1:A:1081:A:O2'	2.29	0.81
7:G:21:LEU:HD23	7:G:21:LEU:H	1.45	0.80
1:A:33:A:H1'	12:L:27:PRO:HG3	1.61	0.80
17:Q:16:MET:HB2	17:Q:19:SER:HB2	1.64	0.80
5:E:87:VAL:HG12	5:E:92:ARG:HA	1.64	0.80
1:A:830:G:H3'	2:B:38:HIS:N	1.89	0.80
1:A:870:U:C5	2:B:27:LYS:CB	2.65	0.80
21:U:3:ILE:HA	21:U:19:LYS:HG2	1.64	0.80
2:B:112:ARG:O	2:B:116:LEU:HB2	1.82	0.80
1:A:827:U:C2'	2:B:28:PRO:HG2	2.04	0.80
21:U:13:VAL:C	21:U:16:ARG:NH1	2.35	0.80
1:A:1211:U:H4'	1:A:1213:A:H1'	1.64	0.80
13:M:19:THR:HA	13:M:24:VAL:HG23	1.64	0.80
5:E:105:ILE:HB	5:E:123:LEU:HA	1.61	0.79
1:A:1005:A:H2'	1:A:1006:G:O4'	1.82	0.79
1:A:831:A:H3'	2:B:36:LYS:C	2.03	0.79
5:E:83:PRO:HB3	5:E:96:GLN:HG3	1.65	0.79
17:Q:10:ARG:CZ	17:Q:11:VAL:H	1.95	0.79
20:T:30:PHE:HB3	20:T:53:MET:HB3	1.63	0.79
1:A:829:G:C1'	2:B:30:ILE:CG1	2.60	0.79
2:B:61:SER:HA	2:B:224:ARG:HA	1.62	0.79
2:B:9:LEU:HD22	2:B:11:ALA:H	1.48	0.79
1:A:1517:G:H4'	22:V:144:VAL:HG21	1.62	0.79
1:A:1518:A:OP1	22:V:143:GLU:CB	2.31	0.79
4:D:187:ARG:HA	4:D:190:LEU:HD22	1.65	0.79
1:A:860:A:N7	2:B:25:LYS:CG	2.46	0.79
1:A:858:G:C4	2:B:23:ASN:ND2	2.50	0.78
17:Q:10:ARG:NH1	17:Q:56:ASP:H	1.79	0.78
10:J:35:GLN:HB2	10:J:78:GLU:HB2	1.64	0.78
14:N:12:ARG:HA	14:N:15:LEU:HD11	1.66	0.78
9:I:110:VAL:HG12	9:I:111:GLU:H	1.47	0.78
17:Q:11:VAL:HA	17:Q:22:VAL:HG22	1.66	0.78
2:B:150:ILE:HG13	2:B:153:MET:HE3	1.65	0.78
2:B:156:LEU:HD13	5:E:68:ARG:CZ	2.12	0.78
21:U:36:PHE:HB3	21:U:40:PRO:HD3	1.63	0.78
9:I:12:LYS:H	9:I:109:GLN:HE22	1.30	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:M:11:HIS:N	13:M:44:ILE:HD11	1.99	0.77
9:I:23:GLY:H	9:I:60:LEU:HA	1.48	0.77
10:J:56:HIS:H	14:N:80:ARG:HH22	1.30	0.77
1:A:65:A:H2'	1:A:65:A:N3	1.99	0.77
1:A:855:U:O4	2:B:20:ARG:NH2	2.12	0.77
1:A:830:G:O4'	2:B:188:THR:CG2	2.33	0.77
1:A:1080:A:O2'	5:E:28:ARG:CD	2.31	0.77
15:O:2:LEU:HD22	15:O:7:THR:HG23	1.65	0.77
19:S:35:ARG:HG2	19:S:50:VAL:HG13	1.66	0.77
1:A:859:G:O4'	2:B:190:SER:O	2.03	0.77
1:A:861:G:C8	2:B:193:ASP:OD1	2.38	0.77
1:A:17:U:H4'	1:A:1079:G:O5'	1.84	0.77
1:A:849:G:OP2	2:B:34:ARG:NE	2.16	0.77
15:O:81:ILE:HA	15:O:86:LEU:HD12	1.67	0.77
3:C:184:ASN:HD22	3:C:185:THR:H	1.32	0.77
13:M:18:LEU:HB3	13:M:29:SER:HB2	1.67	0.77
1:A:1074:G:OP1	5:E:65:LYS:HD3	1.85	0.77
13:M:23:GLY:HA3	13:M:64:VAL:HG13	1.67	0.77
6:F:38:ARG:HB3	6:F:63:ASN:HB2	1.65	0.77
2:B:120:SER:HA	2:B:125:PHE:HB3	1.67	0.76
1:A:830:G:C2	2:B:21:TYR:C	2.48	0.76
1:A:921:U:O3'	1:A:1082:A:H5'	1.85	0.76
15:O:70:LYS:HZ1	15:O:74:VAL:HG13	1.50	0.76
11:K:30:ILE:HG22	11:K:45:THR:HA	1.67	0.76
13:M:21:ILE:HG22	13:M:64:VAL:HG11	1.67	0.76
8:H:113:ARG:HH21	8:H:114:ALA:HA	1.49	0.76
1:A:830:G:C2	2:B:22:TRP:N	2.54	0.76
2:B:162:VAL:HG13	2:B:184:ALA:HB2	1.67	0.76
7:G:87:PRO:HG2	7:G:151:ALA:HB2	1.66	0.76
1:A:857:C:H1'	2:B:21:TYR:CA	2.15	0.76
16:P:42:ILE:HB	16:P:46:LYS:HD2	1.68	0.76
12:L:35:ARG:NH2	12:L:75:GLU:HB3	2.00	0.76
1:A:830:G:C4	2:B:19:THR:O	2.39	0.76
1:A:1103:C:H5''	2:B:96:LEU:HD12	1.68	0.76
1:A:437:U:H2'	1:A:438:U:O4'	1.85	0.76
14:N:30:ILE:HG21	14:N:41:TRP:HB2	1.65	0.76
1:A:764:C:H3'	1:A:765:G:H21	1.51	0.76
1:A:18:C:C5	1:A:1078:U:C1'	2.69	0.76
1:A:840:C:H2'	1:A:842:U:H5''	1.67	0.76
3:C:8:GLY:HA2	3:C:11:LEU:HG	1.67	0.75
1:A:1219:A:H2'	1:A:1220:G:C8	2.21	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1308:U:H2'	1:A:1309:G:H8	1.50	0.75
1:A:18:C:H5'	1:A:1078:U:C4'	2.05	0.75
1:A:78:A:H2'	1:A:79:G:C8	2.20	0.75
1:A:829:G:OP1	2:B:41:ASN:CB	2.33	0.75
1:A:859:G:O3'	2:B:192:PRO:CA	2.33	0.75
10:J:19:ASP:O	10:J:22:THR:HG22	1.87	0.75
21:U:14:ALA:N	21:U:16:ARG:HH12	1.81	0.75
2:B:41:ASN:HD22	2:B:44:LYS:HE2	1.50	0.75
16:P:71:VAL:HA	16:P:74:LEU:HG	1.69	0.75
1:A:869:G:H2'	2:B:24:PRO:C	2.06	0.75
16:P:52:LEU:HG	16:P:75:ILE:HG12	1.69	0.75
3:C:179:ALA:HB1	3:C:202:PHE:HE1	1.52	0.74
7:G:67:ASN:HD22	7:G:127:ALA:HA	1.51	0.74
13:M:44:ILE:HD12	13:M:45:SER:H	1.52	0.74
1:A:429:U:H3'	4:D:8:LEU:HD23	1.70	0.74
1:A:830:G:N9	2:B:22:TRP:HB3	2.01	0.74
21:U:14:ALA:C	21:U:16:ARG:CZ	2.56	0.74
21:U:14:ALA:HA	21:U:16:ARG:CD	2.16	0.74
1:A:812:G:N3	1:A:812:G:H2'	2.02	0.74
1:A:858:G:C1'	2:B:22:TRP:O	2.34	0.74
1:A:830:G:C6	2:B:22:TRP:CD1	2.76	0.74
11:K:86:LYS:HB2	11:K:112:VAL:HG23	1.68	0.74
1:A:921:U:C2'	1:A:1081:A:HO2'	2.00	0.74
12:L:66:ILE:HD13	12:L:73:LEU:HD12	1.69	0.74
21:U:40:PRO:HG2	21:U:41:THR:H	1.53	0.73
10:J:39:PRO:HA	10:J:74:VAL:HG22	1.70	0.73
1:A:1074:G:OP1	5:E:65:LYS:NZ	2.17	0.73
1:A:1081:A:O3'	5:E:24:VAL:HG12	1.88	0.73
2:B:67:LEU:HD22	2:B:67:LEU:H	1.52	0.73
13:M:15:VAL:HG23	13:M:33:LEU:HD12	1.70	0.73
1:A:870:U:C2	2:B:27:LYS:HD3	2.21	0.73
21:U:20:ARG:HA	21:U:24:LYS:HG3	1.70	0.73
1:A:135:C:O2	16:P:1:MET:HB2	1.88	0.73
4:D:10:LEU:HD21	4:D:62:ARG:HD3	1.70	0.73
1:A:830:G:H4'	2:B:17:HIS:C	2.03	0.73
1:A:830:G:H5'	2:B:188:THR:HG21	1.69	0.73
20:T:60:GLN:HE21	20:T:61:ALA:H	1.36	0.73
1:A:830:G:O4'	2:B:188:THR:CB	2.37	0.73
1:A:18:C:C5	1:A:1078:U:N1	2.57	0.73
1:A:1081:A:N6	5:E:51:LYS:HZ2	1.85	0.73
3:C:5:HIS:HD2	3:C:8:GLY:H	1.35	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:946:A:H2'	1:A:947:G:C8	2.24	0.73
2:B:163:ILE:HD11	2:B:209:VAL:HG12	1.70	0.73
1:A:1513:A:H2'	23:V:312:HOH:O	1.87	0.73
1:A:430:A:OP1	4:D:8:LEU:HB2	1.89	0.73
1:A:781:A:H2'	1:A:782:A:H5'	1.69	0.73
13:M:77:LYS:HA	13:M:80:MET:HB3	1.71	0.73
4:D:84:ASN:ND2	4:D:87:GLU:H	1.87	0.73
1:A:1080:A:H8	5:E:22:LYS:HA	1.45	0.72
1:A:1514:G:H8	23:V:312:HOH:O	1.72	0.72
1:A:829:G:H3'	2:B:30:ILE:CD1	2.17	0.72
1:A:1250:A:H4'	9:I:69:GLY:H	1.54	0.72
21:U:14:ALA:C	21:U:16:ARG:HD2	2.09	0.72
1:A:1125:U:H2'	1:A:1126:U:H5''	1.70	0.72
4:D:156:ALA:O	4:D:159:GLU:HG2	1.89	0.72
2:B:116:LEU:HD11	2:B:139:GLU:HB3	1.71	0.72
1:A:18:C:O4'	1:A:1078:U:H5'	1.89	0.72
6:F:53:LYS:HA	6:F:53:LYS:HZ3	1.55	0.72
11:K:110:THR:HG21	21:U:4:LYS:HD2	1.69	0.72
13:M:38:ILE:HG13	13:M:55:LEU:HD21	1.71	0.72
21:U:29:ALA:CB	21:U:32:ARG:HH21	2.03	0.72
11:K:56:LYS:O	11:K:58:THR:HG22	1.90	0.72
1:A:832:G:C8	2:B:20:ARG:HG3	2.25	0.72
1:A:830:G:H5'	2:B:188:THR:CG2	2.19	0.72
1:A:1517:G:C4'	22:V:144:VAL:CG2	2.59	0.72
1:A:1515:G:P	23:V:336:HOH:O	2.48	0.72
12:L:98:ARG:HA	12:L:98:ARG:HE	1.55	0.72
1:A:1081:A:C4'	5:E:24:VAL:HG13	2.19	0.71
1:A:1517:G:C4'	22:V:144:VAL:HG23	2.09	0.71
2:B:46:VAL:HA	2:B:49:PHE:HD2	1.55	0.71
1:A:921:U:H4'	1:A:1081:A:C2'	2.20	0.71
1:A:1218:C:H2'	1:A:1219:A:H8	1.54	0.71
1:A:501:C:H2'	1:A:502:A:H8	1.53	0.71
10:J:92:LEU:HD22	10:J:92:LEU:H	1.55	0.71
13:M:44:ILE:HA	13:M:47:LEU:HD13	1.71	0.71
16:P:67:ILE:HG13	16:P:71:VAL:HG13	1.71	0.71
4:D:94:GLU:HG3	4:D:103:ARG:HH12	1.55	0.71
1:A:278:G:H21	1:A:279:A:H62	1.36	0.71
17:Q:29:LYS:HD3	17:Q:35:LYS:N	2.06	0.71
1:A:1082:A:O5'	5:E:22:LYS:NZ	2.23	0.71
1:A:1308:U:H2'	1:A:1309:G:C8	2.24	0.71
5:E:131:ASN:HD21	5:E:133:ILE:HB	1.54	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:870:U:O4	2:B:28:PRO:HG3	1.88	0.71
1:A:18:C:O4'	1:A:1078:U:C5'	2.38	0.71
13:M:78:ARG:NH2	13:M:79:LEU:HG	2.05	0.71
11:K:92:ARG:HH11	11:K:92:ARG:HB3	1.55	0.71
1:A:780:A:O2'	1:A:781:A:H5''	1.91	0.71
1:A:920:U:N3	1:A:1079:G:C6	2.57	0.71
20:T:81:GLN:O	20:T:85:LEU:HB3	1.90	0.71
11:K:42:GLY:HA3	11:K:73:VAL:HG22	1.71	0.71
7:G:100:MET:HA	7:G:103:ILE:HD12	1.71	0.71
1:A:1057:G:H5''	3:C:153:SER:HB3	1.72	0.71
3:C:57:GLU:HB2	3:C:64:ARG:HB2	1.73	0.71
11:K:113:THR:HG21	21:U:28:LEU:HD11	1.72	0.71
9:I:71:ILE:HD12	9:I:71:ILE:H	1.55	0.71
1:A:17:U:C5'	1:A:1079:G:H4'	1.90	0.71
1:A:1218:C:H2'	1:A:1219:A:C8	2.25	0.71
19:S:48:ILE:HB	19:S:59:VAL:HB	1.73	0.71
1:A:1179:A:H4'	9:I:104:THR:HA	1.73	0.71
21:U:14:ALA:C	21:U:16:ARG:CD	2.58	0.70
17:Q:20:ILE:HG13	17:Q:45:VAL:HB	1.73	0.70
1:A:814:A:H5'	1:A:1511:G:H4'	1.73	0.70
1:A:1081:A:H8	5:E:22:LYS:HB2	0.98	0.70
14:N:63:CYS:HB3	14:N:67:GLY:N	2.04	0.70
3:C:153:SER:HB2	3:C:196:GLY:H	1.54	0.70
1:A:878:A:H5''	8:H:80:PRO:HG2	1.73	0.70
8:H:49:LYS:HG3	8:H:50:VAL:H	1.56	0.70
9:I:40:ARG:H	9:I:44:ARG:HE	1.39	0.70
10:J:56:HIS:O	10:J:57:VAL:HG12	1.92	0.70
3:C:72:PRO:O	3:C:76:ILE:HG12	1.91	0.70
4:D:194:ILE:HD13	4:D:195:ASN:N	2.06	0.70
14:N:30:ILE:HD12	14:N:30:ILE:H	1.56	0.70
1:A:1330:U:H2'	1:A:1331:G:H5'	1.72	0.70
1:A:860:A:C8	2:B:25:LYS:HB3	2.27	0.70
2:B:204:ASP:CG	2:B:205:ALA:H	1.95	0.70
1:A:922:G:H2'	1:A:923:A:C8	2.26	0.70
16:P:7:ALA:HB1	16:P:29:ASN:HB3	1.74	0.70
1:A:828:U:C4'	2:B:29:PHE:CG	2.68	0.70
7:G:13:PRO:HB2	7:G:18:GLY:HA2	1.72	0.70
11:K:88:PRO:HD3	21:U:28:LEU:HD13	1.73	0.70
1:A:239:U:OP1	1:A:239:U:H4'	1.90	0.70
11:K:19:VAL:HG12	11:K:82:GLU:HB2	1.74	0.70
1:A:673:A:H2'	1:A:674:G:C8	2.27	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:870:U:N1	2:B:27:LYS:CD	2.29	0.69
21:U:14:ALA:CA	21:U:16:ARG:HD2	2.22	0.69
16:P:42:ILE:HG22	16:P:43:ALA:H	1.55	0.69
9:I:112:ARG:HB2	9:I:112:ARG:NH1	2.07	0.69
1:A:1074:G:P	5:E:65:LYS:HZ2	2.15	0.69
1:A:279:A:H5''	1:A:280:C:H3'	1.74	0.69
7:G:38:ALA:O	7:G:41:ILE:HG22	1.92	0.69
1:A:412:A:H1'	1:A:413:G:H8	1.54	0.69
1:A:390:U:H2'	1:A:391:G:C8	2.27	0.69
2:B:96:LEU:HB2	2:B:99:MET:HE3	1.72	0.69
1:A:1182:G:H4'	1:A:1183:U:C5'	2.21	0.69
12:L:28:GLN:HG3	12:L:80:LEU:HD21	1.73	0.69
1:A:1081:A:H62	5:E:51:LYS:HZ2	1.39	0.69
1:A:1517:G:OP2	22:V:147:ARG:CZ	2.39	0.69
8:H:93:LYS:HZ2	8:H:93:LYS:H	1.40	0.69
1:A:541:G:O2'	4:D:39:GLN:HB2	1.92	0.69
9:I:56:MET:HA	9:I:59:LYS:HZ2	1.56	0.69
12:L:35:ARG:HG3	12:L:36:VAL:H	1.56	0.69
12:L:79:ILE:HD13	12:L:96:THR:HG22	1.74	0.69
1:A:1326:U:H2'	1:A:1327:C:C6	2.28	0.69
1:A:518:C:H2'	1:A:530:G:C8	2.28	0.69
6:F:86:ARG:HH11	18:R:63:TYR:HB3	1.55	0.69
1:A:473:U:H2'	1:A:474:G:H8	1.58	0.69
1:A:186:C:H4'	20:T:75:LYS:HB2	1.74	0.69
1:A:870:U:C4	2:B:27:LYS:CB	2.72	0.69
19:S:49:ALA:HA	19:S:57:VAL:O	1.93	0.69
1:A:1208:C:H2'	1:A:1209:C:O4'	1.93	0.69
1:A:1517:G:O4'	23:V:359:HOH:O	2.10	0.69
2:B:212:TYR:O	2:B:216:VAL:HG23	1.92	0.69
2:B:141:GLU:O	2:B:145:ASN:HB2	1.93	0.69
1:A:830:G:OP2	2:B:30:ILE:HG23	1.93	0.69
1:A:1320:C:H41	19:S:36:ARG:HG2	1.57	0.69
12:L:20:VAL:HG13	12:L:94:TYR:HH	1.58	0.69
1:A:860:A:H5'	2:B:192:PRO:O	1.40	0.68
10:J:52:LEU:HB2	14:N:80:ARG:HD2	1.74	0.68
18:R:46:THR:HG23	18:R:51:GLN:HB2	1.75	0.68
4:D:12:ARG:HD2	4:D:37:PRO:HA	1.75	0.68
14:N:50:LEU:HD23	14:N:51:PRO:HD3	1.73	0.68
3:C:154:GLY:HA3	3:C:162:ALA:HB1	1.76	0.68
10:J:71:LEU:H	10:J:71:LEU:HD12	1.58	0.68
1:A:18:C:C6	1:A:1078:U:N1	2.62	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:M:9:PRO:O	13:M:44:ILE:HG12	1.94	0.68
21:U:7:GLU:OE2	21:U:15:LEU:HD22	1.93	0.68
12:L:24:GLU:HB3	12:L:26:CYS:SG	2.34	0.68
16:P:26:ASN:CG	16:P:31:ARG:HB3	2.13	0.68
1:A:830:G:C4'	2:B:188:THR:HG21	2.24	0.68
8:H:111:THR:HG23	8:H:114:ALA:HB2	1.76	0.68
1:A:869:G:H2'	2:B:24:PRO:CA	2.22	0.68
5:E:101:GLY:H	5:E:121:ASN:HD21	1.41	0.68
1:A:901:A:H5'	1:A:902:G:OP2	1.94	0.68
10:J:40:ILE:HG13	10:J:73:LEU:HB3	1.75	0.68
3:C:9:ILE:HG23	3:C:10:ARG:HG3	1.76	0.68
12:L:80:LEU:HD23	12:L:97:VAL:HG21	1.74	0.68
1:A:619:U:N3	4:D:131:ILE:HD12	2.09	0.68
1:A:268:U:H2'	1:A:269:C:C6	2.28	0.68
1:A:1029:U:H5''	1:A:1030:U:H5	1.59	0.68
6:F:37:HIS:CE1	6:F:65:GLU:HB2	2.29	0.67
1:A:501:C:H2'	1:A:502:A:C8	2.30	0.67
8:H:92:PRO:HA	8:H:93:LYS:NZ	2.09	0.67
1:A:967:C:H3'	1:A:968:A:H5'	1.75	0.67
15:O:68:TYR:CZ	15:O:72:LYS:HG3	2.29	0.67
10:J:6:ILE:HG12	10:J:102:LEU:HD11	1.74	0.67
1:A:1241:G:H2'	1:A:1242:G:H8	1.59	0.67
1:A:1251:A:H2'	1:A:1252:A:C8	2.28	0.67
1:A:1021:A:H2'	1:A:1022:A:O4'	1.93	0.67
2:B:44:LYS:NZ	8:H:21:LYS:CE	2.37	0.67
1:A:238:A:H2'	1:A:239:U:H5''	1.77	0.67
8:H:64:TYR:HB3	8:H:69:ALA:HA	1.77	0.67
1:A:71:A:H61	1:A:99:C:H1'	1.56	0.67
3:C:33:ASP:HB2	14:N:64:ARG:HD3	1.75	0.67
6:F:86:ARG:NH1	18:R:63:TYR:HB3	2.09	0.67
20:T:28:ARG:HA	20:T:31:ILE:HD12	1.77	0.67
2:B:102:ASN:O	2:B:106:VAL:HG23	1.93	0.67
2:B:198:VAL:HG22	2:B:200:PRO:HD3	1.76	0.67
1:A:1060:U:H2'	1:A:1061:G:H8	1.58	0.67
1:A:18:C:C5	1:A:1078:U:O2	2.48	0.67
1:A:1060:U:H5''	10:J:53:ILE:HG22	1.75	0.67
1:A:1071:C:H2'	1:A:1072:G:H8	1.59	0.67
10:J:65:TYR:HB3	14:N:95:LEU:HD11	1.77	0.67
1:A:1236:A:H4'	1:A:1304:G:H4'	1.76	0.67
1:A:1000:A:H2'	1:A:1001:C:C6	2.29	0.67
14:N:60:ARG:NH2	14:N:62:ARG:HE	1.92	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:176:THR:HB	3:C:179:ALA:HB2	1.77	0.67
3:C:46:LEU:HD11	3:C:86:LEU:HD21	1.76	0.67
1:A:919:A:C2	1:A:1078:U:C4	2.83	0.67
2:B:67:LEU:HD21	2:B:157:PRO:HG3	1.76	0.67
18:R:58:ILE:O	18:R:62:ARG:HG3	1.95	0.67
13:M:109:LYS:HG3	13:M:110:GLY:H	1.58	0.66
13:M:106:ARG:NE	13:M:112:ARG:HG2	2.08	0.66
1:A:1123:U:O2'	1:A:1124:G:H5'	1.96	0.66
3:C:13:ILE:O	3:C:14:VAL:HG22	1.96	0.66
1:A:858:G:H1'	2:B:22:TRP:O	1.95	0.66
1:A:1517:G:C1'	23:V:359:HOH:O	2.43	0.66
13:M:64:VAL:HA	13:M:68:LEU:HD12	1.76	0.66
21:U:3:ILE:HG12	21:U:19:LYS:HG2	1.77	0.66
8:H:102:VAL:HG12	8:H:125:ILE:HD12	1.76	0.66
1:A:1342:C:H2'	1:A:1343:G:H8	1.61	0.66
4:D:123:MET:HA	4:D:128:VAL:HA	1.78	0.66
1:A:860:A:N7	2:B:25:LYS:HD3	2.09	0.66
14:N:66:THR:HG23	14:N:67:GLY:H	1.59	0.66
3:C:178:ARG:O	3:C:178:ARG:HG2	1.96	0.66
14:N:30:ILE:HB	14:N:44:VAL:HG11	1.78	0.66
1:A:1080:A:OP1	5:E:20:VAL:C	2.34	0.66
3:C:77:GLY:HA3	3:C:82:ASP:H	1.59	0.66
16:P:51:ARG:HB3	16:P:51:ARG:NH1	2.10	0.66
1:A:1514:G:C8	23:V:312:HOH:O	2.47	0.66
1:A:1300:G:H1'	1:A:1301:U:H5	1.61	0.66
1:A:1026:G:H2'	1:A:1027:C:C6	2.31	0.66
1:A:1081:A:N7	5:E:22:LYS:HD2	2.03	0.66
1:A:1326:U:H2'	1:A:1327:C:H6	1.61	0.66
10:J:11:LYS:HG2	10:J:97:ASP:HB3	1.78	0.66
1:A:829:G:N3	2:B:188:THR:HG22	2.11	0.66
9:I:33:SER:HB3	9:I:36:GLN:HB2	1.76	0.66
2:B:202:ASN:ND2	2:B:204:ASP:H	1.92	0.66
2:B:156:LEU:HD13	5:E:68:ARG:NH2	2.10	0.66
5:E:109:ALA:HB3	5:E:135:VAL:HG23	1.77	0.66
4:D:159:GLU:HG3	4:D:160:LEU:H	1.59	0.65
17:Q:10:ARG:HH11	17:Q:55:GLY:H	1.43	0.65
1:A:832:G:C6	2:B:20:ARG:NH2	2.62	0.65
1:A:830:G:C8	2:B:22:TRP:HB3	2.31	0.65
1:A:859:G:O4'	2:B:26:MET:CG	2.44	0.65
1:A:17:U:C4'	1:A:1079:G:O5'	2.40	0.65
13:M:52:ILE:HD12	13:M:55:LEU:HD12	1.78	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:562:U:H1'	12:L:11:ARG:HB3	1.78	0.65
1:A:869:G:N9	2:B:24:PRO:HB2	2.10	0.65
10:J:53:ILE:HG12	10:J:63:ASP:HB2	1.78	0.65
10:J:37:ARG:NE	10:J:77:VAL:HG11	2.11	0.65
21:U:36:PHE:HB3	21:U:40:PRO:CD	2.25	0.65
14:N:60:ARG:HE	14:N:62:ARG:NE	1.93	0.65
6:F:40:GLU:HG3	6:F:42:TRP:HE1	1.60	0.65
8:H:111:THR:H	8:H:114:ALA:HB3	1.60	0.65
8:H:5:PRO:HB2	8:H:32:LYS:NZ	2.11	0.65
1:A:1225:A:H3'	1:A:1226:C:H6	1.61	0.65
2:B:202:ASN:HD22	2:B:204:ASP:N	1.95	0.65
1:A:922:G:H4'	5:E:24:VAL:HA	1.77	0.65
21:U:14:ALA:HA	21:U:16:ARG:HD2	1.76	0.65
2:B:53:LEU:HD21	2:B:212:TYR:HE1	1.60	0.65
6:F:10:VAL:HA	6:F:84:VAL:HA	1.77	0.65
14:N:60:ARG:N	14:N:60:ARG:HD3	2.12	0.65
6:F:3:HIS:HA	6:F:65:GLU:HA	1.77	0.65
17:Q:10:ARG:HA	17:Q:10:ARG:HE	1.62	0.65
2:B:119:GLN:HE22	2:B:127:LYS:HD3	1.60	0.65
10:J:15:HIS:HA	10:J:18:ILE:HG22	1.79	0.65
1:A:278:G:N2	1:A:279:A:H62	1.93	0.65
1:A:1182:G:H4'	1:A:1183:U:H5'	1.79	0.65
1:A:1062:U:H2'	1:A:1063:C:C6	2.31	0.65
1:A:188:C:H2'	1:A:189:A:O4'	1.97	0.65
1:A:559:A:H4'	1:A:560:A:H3'	1.77	0.65
15:O:31:LEU:HD12	15:O:58:MET:HB2	1.78	0.65
5:E:23:THR:HG23	5:E:28:ARG:HD3	1.78	0.65
1:A:270:A:H2'	1:A:271:C:C6	2.31	0.65
8:H:30:LYS:NZ	8:H:30:LYS:HA	2.12	0.65
2:B:52:ALA:O	2:B:56:LEU:HD22	1.96	0.65
1:A:1074:G:H5'	2:B:104:LYS:HZ1	1.62	0.65
1:A:441:A:H61	1:A:493:A:H62	1.44	0.65
4:D:84:ASN:HD22	4:D:87:GLU:H	1.43	0.65
4:D:19:PHE:HB2	4:D:110:ARG:HH12	1.60	0.65
1:A:87:C:H2'	1:A:88:U:H4'	1.79	0.65
1:A:859:G:H2'	1:A:860:A:C8	2.32	0.65
2:B:163:ILE:CG2	2:B:164:ASP:H	1.98	0.65
21:U:14:ALA:CA	21:U:16:ARG:NE	2.59	0.65
3:C:146:LYS:HD3	3:C:204:GLY:HA2	1.79	0.65
1:A:1221:G:H5''	19:S:35:ARG:HH11	1.62	0.64
1:A:36:C:H5''	12:L:119:LYS:HB3	1.79	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:Q:59:GLU:H	17:Q:74:LEU:HD23	1.62	0.64
4:D:88:ASN:O	4:D:92:LEU:HD23	1.97	0.64
1:A:1017:U:H2'	1:A:1018:G:C8	2.31	0.64
1:A:828:U:H4'	2:B:29:PHE:CD1	2.31	0.64
1:A:831:A:H3'	2:B:36:LYS:O	1.97	0.64
1:A:859:G:N9	2:B:26:MET:HG2	2.10	0.64
1:A:1513:A:H2'	1:A:1514:G:C8	2.32	0.64
1:A:1342:C:H2'	1:A:1343:G:C8	2.32	0.64
1:A:1302:C:O4'	13:M:16:ILE:HD11	1.96	0.64
14:N:12:ARG:HH11	14:N:60:ARG:NH1	1.95	0.64
20:T:59:ARG:HH11	20:T:59:ARG:HB2	1.62	0.64
2:B:41:ASN:ND2	2:B:44:LYS:HB2	2.13	0.64
1:A:1518:A:H2	22:V:186:LYS:H	1.45	0.64
14:N:51:PRO:HB2	14:N:54:SER:HB3	1.79	0.64
11:K:105:ARG:NH2	21:U:10:PRO:HG3	2.12	0.64
13:M:3:ILE:HG23	13:M:56:ARG:HG2	1.78	0.64
1:A:1515:G:OP2	23:V:336:HOH:O	2.15	0.64
1:A:269:C:H2'	1:A:270:A:H8	1.63	0.64
8:H:63:LYS:HG2	8:H:70:VAL:HG21	1.80	0.64
5:E:45:VAL:O	5:E:71:ILE:HG22	1.98	0.64
3:C:141:MET:HE1	3:C:147:GLY:H	1.61	0.64
1:A:205:A:H2'	1:A:206:C:H6	1.60	0.64
1:A:203:G:H1'	1:A:465:A:N6	2.13	0.64
20:T:48:LYS:O	20:T:52:GLU:HB2	1.96	0.64
3:C:113:LYS:HE2	3:C:117:ASP:OD2	1.97	0.64
3:C:185:THR:HG22	3:C:186:SER:H	1.62	0.64
7:G:148:LYS:HG3	7:G:151:ALA:HB3	1.80	0.64
1:A:875:U:O2'	8:H:14:ARG:HD2	1.97	0.64
1:A:1080:A:C8	5:E:22:LYS:CA	2.70	0.64
11:K:88:PRO:HA	11:K:92:ARG:HE	1.63	0.64
5:E:104:ILE:HD13	5:E:115:GLU:HG3	1.78	0.64
1:A:522:C:H41	12:L:49:ARG:HH22	1.45	0.64
1:A:827:U:C3'	2:B:28:PRO:CB	2.64	0.64
1:A:269:C:H2'	1:A:270:A:C8	2.32	0.64
1:A:539:A:H2'	1:A:540:G:C8	2.32	0.64
1:A:828:U:O4	2:B:23:ASN:O	2.15	0.64
19:S:31:ARG:HG3	19:S:56:HIS:NE2	2.13	0.64
4:D:2:ARG:HG3	4:D:114:ARG:CZ	2.28	0.64
14:N:71:GLY:O	14:N:79:SER:HA	1.98	0.64
6:F:53:LYS:HA	6:F:53:LYS:NZ	2.11	0.64
1:A:131:A:H2'	1:A:132:C:C6	2.32	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:T:15:LYS:HD3	20:T:18:LYS:HE3	1.79	0.64
20:T:4:LYS:HD2	20:T:5:SER:N	2.13	0.64
1:A:312:C:H2'	1:A:313:A:C8	2.33	0.64
1:A:1081:A:H61	5:E:51:LYS:HZ3	1.45	0.63
1:A:18:C:H5	1:A:1078:U:O2	1.81	0.63
2:B:65:LYS:HD2	2:B:157:PRO:HA	1.80	0.63
1:A:1081:A:H61	5:E:51:LYS:NZ	1.95	0.63
16:P:46:LYS:CD	16:P:46:LYS:H	2.10	0.63
9:I:20:ILE:HG23	9:I:60:LEU:HD13	1.79	0.63
17:Q:26:ARG:HE	17:Q:39:ARG:NH1	1.96	0.63
1:A:524:G:H2'	1:A:525:C:C6	2.34	0.63
13:M:106:ARG:HA	13:M:106:ARG:HH11	1.61	0.63
16:P:42:ILE:HG22	16:P:43:ALA:N	2.14	0.63
1:A:105:G:H2'	1:A:106:C:C6	2.33	0.63
1:A:919:A:H2	1:A:1078:U:O4	1.78	0.63
10:J:87:LEU:HD22	10:J:90:LEU:HD12	1.79	0.63
1:A:981:U:H4'	14:N:60:ARG:HG3	1.81	0.63
6:F:92:THR:HG23	6:F:93:LYS:H	1.64	0.63
12:L:85:ARG:HA	12:L:93:ARG:HA	1.80	0.63
12:L:20:VAL:HG13	12:L:94:TYR:OH	1.98	0.63
8:H:11:THR:HA	8:H:14:ARG:NH1	2.14	0.63
2:B:75:ALA:O	2:B:79:VAL:HB	1.98	0.63
1:A:10:A:OP2	5:E:130:THR:HB	1.99	0.63
1:A:1080:A:O3'	5:E:22:LYS:O	2.00	0.63
21:U:36:PHE:HB3	21:U:40:PRO:CG	2.29	0.63
10:J:88:MET:HB2	10:J:89:ARG:NH1	2.11	0.63
19:S:39:ILE:HG21	19:S:65:MET:HB3	1.80	0.63
9:I:51:LEU:HB3	9:I:56:MET:HG2	1.81	0.63
3:C:146:LYS:HE3	3:C:202:PHE:CE2	2.30	0.63
1:A:1118:U:H1'	1:A:1179:A:C4	2.34	0.63
5:E:104:ILE:HD11	5:E:114:LEU:HB2	1.79	0.63
2:B:118:THR:O	2:B:121:GLN:HB3	1.98	0.63
1:A:1082:A:P	5:E:22:LYS:NZ	2.72	0.63
19:S:4:LEU:HD13	19:S:9:PHE:N	2.13	0.63
11:K:105:ARG:HH21	21:U:10:PRO:HG3	1.63	0.63
13:M:1:ALA:O	13:M:8:ILE:HG22	1.98	0.63
1:A:9:G:H5'	5:E:107:GLY:HA3	1.81	0.63
1:A:870:U:C5	2:B:27:LYS:CD	2.72	0.63
2:B:148:GLY:O	2:B:151:LYS:HE2	1.99	0.63
1:A:620:C:H1'	4:D:131:ILE:HG21	1.79	0.63
1:A:678:U:H2'	1:A:679:C:C6	2.34	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:921:U:C6	1:A:1080:A:N6	2.66	0.63
13:M:68:LEU:O	13:M:72:ILE:HD13	1.99	0.63
1:A:662:U:H2'	1:A:663:A:C8	2.34	0.63
17:Q:10:ARG:HH11	17:Q:55:GLY:N	1.97	0.63
2:B:178:LEU:HD13	5:E:69:ASN:OD1	1.98	0.63
16:P:68:SER:HB3	16:P:71:VAL:HG12	1.80	0.63
16:P:9:HIS:HE1	16:P:29:ASN:HB2	1.64	0.63
10:J:67:ILE:HD11	14:N:95:LEU:HD22	1.81	0.62
2:B:163:ILE:O	2:B:185:ILE:HG13	1.99	0.62
1:A:921:U:C2	1:A:1080:A:C6	2.87	0.62
9:I:30:ASN:ND2	9:I:65:THR:HA	2.14	0.62
16:P:67:ILE:HD11	16:P:72:ALA:HA	1.81	0.62
12:L:43:LYS:N	12:L:44:PRO:HD2	2.14	0.62
7:G:44:SER:O	7:G:48:THR:HG23	1.99	0.62
1:A:60:A:H4'	1:A:61:G:O5'	1.99	0.62
1:A:69:G:H2'	1:A:70:U:C6	2.34	0.62
3:C:61:LYS:O	3:C:96:VAL:HB	1.98	0.62
6:F:9:MET:HA	6:F:58:HIS:O	1.99	0.62
1:A:1011:C:H2'	1:A:1012:A:H8	1.64	0.62
21:U:40:PRO:O	21:U:44:ARG:HB2	1.98	0.62
4:D:56:GLU:HG2	4:D:195:ASN:HD22	1.63	0.62
3:C:5:HIS:CD2	3:C:8:GLY:H	2.16	0.62
11:K:69:CYS:C	11:K:71:ASP:H	2.01	0.62
15:O:29:ALA:HA	15:O:84:LEU:HD21	1.80	0.62
15:O:11:VAL:HG23	15:O:26:VAL:HG11	1.82	0.62
1:A:121:U:H3'	1:A:121:U:OP1	2.00	0.62
1:A:918:A:H2'	1:A:919:A:C8	2.35	0.62
14:N:11:LYS:O	14:N:15:LEU:HG	1.99	0.62
14:N:15:LEU:HD12	14:N:16:ALA:N	2.14	0.62
1:A:79:G:H2'	1:A:80:A:C8	2.34	0.62
5:E:114:LEU:HD22	5:E:119:VAL:HG21	1.80	0.62
19:S:5:LYS:HE3	19:S:5:LYS:N	2.15	0.62
1:A:1101:A:H61	2:B:173:LYS:HD2	1.63	0.62
1:A:37:U:P	12:L:119:LYS:HB2	2.40	0.62
3:C:151:GLU:O	3:C:197:VAL:HA	1.99	0.62
1:A:78:A:H2'	1:A:79:G:H8	1.63	0.62
9:I:113:LYS:HA	9:I:120:ALA:HB2	1.81	0.62
1:A:531:U:H5'	1:A:531:U:H6	1.63	0.62
13:M:88:LEU:O	13:M:92:ARG:HG3	2.00	0.62
21:U:39:LYS:N	21:U:40:PRO:HD2	2.14	0.62
9:I:40:ARG:N	9:I:44:ARG:HE	1.96	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:64:SER:OG	12:L:96:THR:HG23	2.00	0.62
9:I:35:GLU:HA	9:I:39:GLY:HA3	1.82	0.62
2:B:17:HIS:HB2	2:B:202:ASN:OD1	2.00	0.62
1:A:1081:A:C5'	5:E:24:VAL:HG13	2.30	0.62
1:A:1081:A:H8	5:E:22:LYS:HB3	1.57	0.62
21:U:14:ALA:CA	21:U:16:ARG:CD	2.78	0.62
3:C:69:THR:HG21	3:C:75:VAL:HG21	1.81	0.62
1:A:501:C:H1'	1:A:549:C:H1'	1.81	0.62
1:A:763:G:H2'	1:A:764:C:H6	1.64	0.62
3:C:59:PRO:HG2	3:C:60:ALA:H	1.65	0.62
15:O:87:ARG:NH1	15:O:87:ARG:HA	2.15	0.62
5:E:33:THR:O	5:E:34:ALA:HB3	2.00	0.62
1:A:817:C:H1'	1:A:819:A:H5'	1.80	0.62
2:B:96:LEU:HD21	2:B:146:SER:HB2	1.82	0.61
4:D:163:GLN:HB2	4:D:164:ARG:NH1	2.14	0.61
1:A:882:C:O2'	1:A:883:C:H5'	1.99	0.61
5:E:140:ILE:HA	5:E:143:LEU:HD12	1.81	0.61
1:A:1074:G:H5'	2:B:104:LYS:NZ	2.15	0.61
1:A:8:A:H2'	4:D:205:LYS:O	2.00	0.61
6:F:99:ALA:O	6:F:100:SER:HB2	2.00	0.61
1:A:1038:C:H2'	1:A:1039:G:H8	1.64	0.61
1:A:1285:A:H4'	1:A:1286:U:C5	2.36	0.61
9:I:10:ARG:HB2	9:I:14:SER:O	2.00	0.61
13:M:103:THR:HG22	13:M:104:ASN:H	1.62	0.61
18:R:52:ARG:NH1	18:R:52:ARG:HB3	2.14	0.61
10:J:15:HIS:HD2	10:J:18:ILE:HG22	1.65	0.61
4:D:99:ASN:ND2	4:D:110:ARG:HE	1.97	0.61
10:J:80:THR:H	10:J:84:VAL:HG11	1.66	0.61
14:N:78:LEU:HB2	14:N:83:VAL:HG22	1.82	0.61
1:A:1060:U:H2'	1:A:1061:G:C8	2.35	0.61
5:E:35:LEU:HD11	5:E:136:VAL:HG11	1.81	0.61
1:A:590:U:H2'	1:A:591:U:C6	2.35	0.61
13:M:98:GLY:H	13:M:99:GLN:HE21	1.49	0.61
19:S:50:VAL:O	19:S:56:HIS:HA	2.00	0.61
4:D:7:LYS:HE2	4:D:20:LEU:HD22	1.83	0.61
11:K:69:CYS:O	11:K:73:VAL:HG23	2.01	0.61
1:A:505:G:H5'	1:A:534:U:H2'	1.81	0.61
7:G:49:LEU:HB2	7:G:57:GLU:HG3	1.82	0.61
22:V:44:ILE:HD13	22:V:122:LEU:HD21	1.83	0.61
2:B:27:LYS:HB3	2:B:28:PRO:HD3	1.82	0.61
1:A:919:A:C2	1:A:1079:G:O6	2.54	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:K:95:THR:HG23	11:K:96:ILE:H	1.65	0.61
1:A:1300:G:H1'	1:A:1301:U:C5	2.36	0.61
1:A:983:A:H5'	1:A:984:C:OP2	1.99	0.61
20:T:54:GLN:N	20:T:55:PRO:HD2	2.16	0.61
1:A:1225:A:H3'	1:A:1226:C:C6	2.35	0.61
1:A:1254:A:OP1	10:J:47:GLU:HG3	2.01	0.61
1:A:476:U:H2'	1:A:477:C:C6	2.35	0.61
1:A:699:C:C2'	1:A:700:G:H5''	2.30	0.61
4:D:94:GLU:HG3	4:D:103:ARG:NH1	2.16	0.61
5:E:155:LYS:HA	8:H:65:PHE:CD1	2.36	0.61
1:A:1225:A:H4'	19:S:77:ARG:NH2	2.16	0.61
1:A:194:C:O2'	1:A:195:A:H5'	2.01	0.61
1:A:1518:A:H2'	1:A:1519:A:C8	2.35	0.61
7:G:144:ALA:C	7:G:146:ALA:H	2.04	0.61
2:B:76:SER:O	2:B:79:VAL:HG12	2.01	0.61
7:G:117:LEU:HD22	7:G:120:ALA:HB3	1.83	0.61
1:A:1295:U:H2'	1:A:1296:C:C6	2.35	0.61
7:G:3:ARG:HB3	7:G:3:ARG:NH1	2.16	0.61
5:E:96:GLN:HB3	5:E:123:LEU:CD1	2.31	0.61
1:A:80:A:H2'	1:A:81:A:O4'	2.01	0.61
1:A:590:U:H2'	1:A:591:U:H6	1.66	0.61
9:I:15:ALA:O	9:I:66:VAL:HG23	2.01	0.61
1:A:1171:A:H2'	1:A:1172:C:H6	1.65	0.61
10:J:25:ILE:HG23	10:J:29:ALA:HB3	1.83	0.61
1:A:1513:A:H2'	1:A:1514:G:H8	1.65	0.60
14:N:63:CYS:SG	14:N:66:THR:HG22	2.41	0.60
3:C:30:ASP:O	3:C:33:ASP:HB3	2.01	0.60
5:E:110:MET:HB3	5:E:139:THR:HG21	1.82	0.60
8:H:30:LYS:HZ2	8:H:30:LYS:HA	1.65	0.60
1:A:1193:G:O2'	1:A:1194:U:H5'	2.01	0.60
13:M:5:GLY:O	13:M:6:ILE:HG12	2.00	0.60
6:F:40:GLU:HG3	6:F:42:TRP:NE1	2.16	0.60
1:A:1048:G:H4'	14:N:2:LYS:HZ2	1.66	0.60
22:V:181:PHE:HB2	22:V:185:PRO:HD3	1.83	0.60
1:A:801:U:H2'	1:A:802:A:H8	1.66	0.60
1:A:1257:A:H2'	1:A:1257:A:N3	2.16	0.60
13:M:98:GLY:H	13:M:99:GLN:NE2	1.99	0.60
2:B:53:LEU:HD21	2:B:212:TYR:CE1	2.37	0.60
9:I:18:VAL:HG11	9:I:82:ILE:HG12	1.83	0.60
5:E:85:LYS:HE2	5:E:92:ARG:NH1	2.16	0.60
11:K:86:LYS:HG3	11:K:113:THR:HA	1.82	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:T:60:GLN:NE2	20:T:61:ALA:H	1.99	0.60
1:A:1307:U:H2'	1:A:1308:U:C6	2.36	0.60
1:A:95:C:O2	1:A:95:C:H2'	2.02	0.60
1:A:1281:C:H5'	1:A:1282:C:H5	1.66	0.60
4:D:120:LYS:HB2	4:D:145:ARG:HH21	1.66	0.60
2:B:69:VAL:O	2:B:163:ILE:HG22	2.00	0.60
1:A:859:G:O4'	2:B:26:MET:HG2	2.02	0.60
1:A:132:C:H5''	20:T:68:LYS:HE3	1.82	0.60
1:A:429:U:H1'	1:A:430:A:H5''	1.84	0.60
8:H:79:ARG:HB2	8:H:80:PRO:HD2	1.84	0.60
4:D:20:LEU:H	4:D:20:LEU:HD12	1.65	0.60
17:Q:26:ARG:HH21	17:Q:39:ARG:CZ	2.13	0.60
1:A:858:G:O4'	2:B:22:TRP:O	2.18	0.60
1:A:858:G:O6	1:A:869:G:H3'	2.01	0.60
19:S:28:LYS:HB2	19:S:29:PRO:HD2	1.84	0.60
1:A:1090:U:H2'	1:A:1091:U:C6	2.37	0.60
1:A:370:C:H2'	1:A:371:A:H8	1.66	0.60
15:O:55:LEU:O	15:O:59:VAL:HG23	2.01	0.60
1:A:832:G:O2'	1:A:833:G:H5'	2.02	0.60
19:S:50:VAL:HB	19:S:57:VAL:HG22	1.84	0.60
4:D:191:SER:O	4:D:192:ALA:HB2	2.01	0.60
1:A:1074:G:H2'	1:A:1075:U:C6	2.35	0.60
1:A:783:C:O2'	1:A:784:A:H5'	2.02	0.60
12:L:78:VAL:HG12	12:L:101:LEU:HD23	1.82	0.60
1:A:105:G:H2'	1:A:106:C:H6	1.66	0.60
5:E:152:VAL:HG21	8:H:98:LEU:HD23	1.83	0.60
22:V:115:PRO:HD2	22:V:118:ILE:HD11	1.84	0.60
1:A:212:G:H2'	1:A:213:G:H8	1.65	0.60
7:G:59:GLU:O	7:G:63:VAL:HG23	2.01	0.60
2:B:31:PHE:HB3	2:B:39:ILE:HB	1.84	0.60
7:G:22:LEU:O	7:G:25:PHE:HB3	2.01	0.60
1:A:1278:G:H4'	1:A:1279:G:O5'	2.01	0.60
2:B:51:GLU:OE2	8:H:20:ASN:ND2	2.34	0.60
4:D:59:LYS:O	4:D:63:ILE:HG13	2.02	0.60
10:J:56:HIS:N	14:N:80:ARG:HH22	1.98	0.60
3:C:5:HIS:CD2	14:N:88:MET:HB3	2.37	0.60
14:N:20:PHE:HA	14:N:24:ALA:HB2	1.83	0.60
1:A:17:U:C4'	1:A:1079:G:P	2.84	0.59
17:Q:59:GLU:H	17:Q:74:LEU:CD2	2.14	0.59
1:A:1074:G:H2'	1:A:1075:U:H6	1.67	0.59
12:L:35:ARG:HA	12:L:35:ARG:HE	1.67	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:90:LEU:HA	4:D:93:LEU:HD12	1.83	0.59
1:A:829:G:C1'	2:B:30:ILE:HG12	2.30	0.59
11:K:83:VAL:HG23	11:K:109:ILE:HA	1.84	0.59
1:A:1109:C:H42	1:A:1110:A:N6	1.98	0.59
1:A:93:U:H3'	1:A:94:G:H5''	1.83	0.59
1:A:720:C:H5''	18:R:40:PRO:HA	1.84	0.59
1:A:118:U:O4	1:A:288:A:H2'	2.02	0.59
1:A:858:G:N9	2:B:23:ASN:ND2	2.46	0.59
1:A:920:U:H2'	1:A:921:U:C6	2.38	0.59
4:D:11:SER:OG	4:D:17:ASP:HA	2.02	0.59
3:C:112:ALA:HB1	3:C:199:VAL:HG23	1.84	0.59
1:A:763:G:H2'	1:A:764:C:C6	2.36	0.59
7:G:64:ALA:HA	7:G:127:ALA:HB2	1.83	0.59
4:D:58:GLN:HA	4:D:61:ARG:HB2	1.83	0.59
4:D:94:GLU:HA	4:D:103:ARG:HH22	1.67	0.59
21:U:13:VAL:HG13	21:U:14:ALA:N	2.16	0.59
1:A:1361:G:H2'	1:A:1362:A:H5''	1.85	0.59
20:T:67:HIS:O	20:T:70:LYS:HG2	2.02	0.59
1:A:1243:C:H2'	1:A:1244:G:H8	1.67	0.59
1:A:451:A:H4'	1:A:452:A:O4'	2.03	0.59
1:A:107:G:O6	20:T:9:ARG:HD3	2.03	0.59
2:B:156:LEU:HD13	5:E:68:ARG:HH22	1.68	0.59
4:D:20:LEU:O	4:D:21:LYS:HE3	2.02	0.59
1:A:241:G:O2'	1:A:242:G:H5'	2.03	0.59
4:D:118:SER:HA	4:D:130:ASN:HB2	1.85	0.59
7:G:53:SER:HB2	7:G:55:LYS:NZ	2.18	0.59
1:A:57:G:H2'	1:A:58:C:C6	2.37	0.59
10:J:26:VAL:O	10:J:30:LYS:HB3	2.02	0.59
1:A:858:G:H1'	2:B:22:TRP:C	2.11	0.59
1:A:1517:G:N3	22:V:141:GLN:CG	2.51	0.59
10:J:38:GLY:O	10:J:74:VAL:HA	2.02	0.59
16:P:51:ARG:O	16:P:52:LEU:HD13	2.03	0.59
1:A:967:C:H3'	1:A:968:A:C5'	2.33	0.59
2:B:128:LEU:HG	2:B:132:GLU:HG2	1.83	0.59
1:A:829:G:C3'	2:B:30:ILE:CD1	2.78	0.59
1:A:830:G:C4'	2:B:38:HIS:ND1	2.34	0.59
21:U:26:GLY:C	21:U:28:LEU:H	2.05	0.59
5:E:156:ARG:HD2	8:H:42:GLU:O	2.03	0.59
1:A:1260:G:H4'	1:A:1284:C:H5'	1.84	0.59
1:A:398:U:H2'	1:A:399:G:H8	1.66	0.59
2:B:67:LEU:N	2:B:67:LEU:HD13	2.18	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:S:7:GLY:H	19:S:8:PRO:HD3	1.67	0.59
1:A:1219:A:H2'	1:A:1220:G:H8	1.64	0.59
13:M:48:SER:O	13:M:52:ILE:HG22	2.03	0.59
6:F:42:TRP:HB2	6:F:59:TYR:HB2	1.85	0.59
12:L:19:ASN:HB2	12:L:93:ARG:NH1	2.18	0.59
9:I:117:LEU:HD22	9:I:123:ARG:HG2	1.84	0.59
3:C:141:MET:HA	3:C:141:MET:HE2	1.84	0.59
15:O:60:SER:HA	15:O:63:ARG:NH1	2.17	0.59
1:A:626:G:H2'	1:A:627:G:C8	2.38	0.59
14:N:61:ASN:O	14:N:62:ARG:HB2	2.03	0.59
3:C:184:ASN:HD22	3:C:185:THR:N	1.98	0.59
10:J:30:LYS:HB2	10:J:36:VAL:HG21	1.85	0.59
1:A:1163:A:H2'	1:A:1164:G:H8	1.68	0.59
7:G:74:VAL:HG12	7:G:75:LYS:H	1.68	0.59
1:A:829:G:C8	2:B:27:LYS:HA	2.38	0.58
4:D:25:ARG:NH1	4:D:30:LYS:HG2	2.18	0.58
17:Q:46:HIS:HB2	17:Q:70:LYS:HE3	1.85	0.58
4:D:154:VAL:HG13	4:D:155:LYS:H	1.66	0.58
8:H:93:LYS:HZ2	8:H:93:LYS:N	2.01	0.58
12:L:19:ASN:O	12:L:20:VAL:HG23	2.03	0.58
1:A:1284:C:H3'	1:A:1285:A:H5''	1.84	0.58
1:A:272:C:H2'	1:A:273:U:H6	1.68	0.58
9:I:18:VAL:HG13	9:I:64:ILE:HG12	1.85	0.58
16:P:1:MET:N	16:P:24:SER:HB3	2.18	0.58
13:M:89:ARG:HB2	13:M:96:VAL:HG12	1.84	0.58
8:H:8:ASP:O	8:H:12:ARG:HG3	2.03	0.58
2:B:166:ASP:OD1	2:B:190:SER:HA	2.02	0.58
2:B:41:ASN:ND2	2:B:44:LYS:HE2	2.17	0.58
9:I:18:VAL:HG22	9:I:64:ILE:HG23	1.85	0.58
4:D:169:TRP:NE1	4:D:170:LEU:HD23	2.18	0.58
4:D:99:ASN:CG	4:D:103:ARG:HH21	2.06	0.58
17:Q:7:LEU:HD13	17:Q:24:ILE:HG12	1.84	0.58
1:A:1116:U:O2'	1:A:1117:A:H5'	2.03	0.58
1:A:827:U:O2'	2:B:28:PRO:CG	2.36	0.58
1:A:1081:A:H5''	5:E:24:VAL:HG13	1.84	0.58
1:A:1081:A:H4'	5:E:24:VAL:HG13	1.82	0.58
1:A:436:C:O2'	1:A:437:U:H5'	2.03	0.58
1:A:1172:C:H2'	1:A:1173:U:C6	2.39	0.58
7:G:11:ILE:HG12	7:G:24:LYS:HE2	1.85	0.58
1:A:830:G:C4	2:B:22:TRP:N	2.71	0.58
1:A:270:A:H2'	1:A:271:C:H6	1.68	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1241:G:H2'	1:A:1242:G:C8	2.39	0.58
8:H:42:GLU:HG3	8:H:100:ILE:HD13	1.84	0.58
1:A:450:G:H4'	16:P:41:PRO:HB2	1.85	0.58
9:I:17:ARG:O	9:I:64:ILE:HA	2.02	0.58
1:A:784:A:H2'	1:A:785:G:H8	1.69	0.58
1:A:1048:G:H4'	14:N:2:LYS:NZ	2.18	0.58
4:D:69:ARG:HA	4:D:69:ARG:HE	1.68	0.58
1:A:830:G:C5'	2:B:17:HIS:O	2.51	0.58
1:A:1517:G:C4	22:V:141:GLN:NE2	2.72	0.58
1:A:376:G:H5''	16:P:5:ARG:CB	2.28	0.58
1:A:1217:C:OP1	14:N:8:ARG:HD3	2.03	0.58
9:I:118:ARG:HH22	9:I:122:ARG:HH21	1.52	0.58
1:A:555:U:H2'	1:A:556:C:C6	2.39	0.58
1:A:384:G:H2'	1:A:385:C:C6	2.39	0.58
12:L:42:LYS:HE3	12:L:90:PRO:HD3	1.84	0.58
1:A:1011:C:H2'	1:A:1012:A:C8	2.37	0.58
6:F:17:GLN:HG2	6:F:21:MET:HG3	1.86	0.58
1:A:987:G:H2'	1:A:988:G:H8	1.69	0.58
4:D:137:SER:HB2	4:D:138:PRO:HD2	1.85	0.58
1:A:1329:A:OP1	13:M:28:ARG:HB2	2.04	0.58
1:A:560:A:H4'	1:A:561:U:H5''	1.86	0.58
1:A:676:A:H1'	11:K:116:PRO:HB3	1.86	0.58
1:A:1163:A:H2'	1:A:1164:G:C8	2.39	0.58
5:E:13:LYS:HD2	5:E:112:ALA:HB1	1.85	0.58
1:A:1338:G:H2'	1:A:1339:A:C8	2.39	0.58
1:A:1100:C:OP2	2:B:94:ARG:HD3	2.04	0.58
4:D:24:VAL:HG23	4:D:25:ARG:HD2	1.86	0.58
3:C:46:LEU:HD23	3:C:75:VAL:HG13	1.86	0.58
15:O:78:THR:HA	15:O:81:ILE:HG12	1.84	0.58
7:G:97:ALA:HA	7:G:100:MET:HE3	1.84	0.58
1:A:1238:A:C2	1:A:1241:G:H1'	2.38	0.58
1:A:1091:U:H2'	1:A:1093:A:OP2	2.04	0.58
1:A:1380:U:O4	7:G:2:ARG:HA	2.04	0.58
1:A:870:U:OP2	2:B:24:PRO:HA	2.03	0.57
11:K:126:ARG:HB2	21:U:33:ARG:CD	2.32	0.57
19:S:44:ILE:HA	19:S:61:VAL:HB	1.86	0.57
4:D:25:ARG:HH12	4:D:30:LYS:HG2	1.69	0.57
9:I:18:VAL:HG22	9:I:64:ILE:HG12	1.85	0.57
6:F:18:VAL:N	6:F:19:PRO:HD2	2.19	0.57
1:A:57:G:H2'	1:A:58:C:H6	1.68	0.57
8:H:26:MET:HB2	8:H:27:PRO:HD2	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:829:G:C4	2:B:188:THR:HG22	2.37	0.57
1:A:860:A:N7	2:B:25:LYS:CD	2.66	0.57
1:A:919:A:N1	1:A:1078:U:O4	2.36	0.57
2:B:147:LEU:O	2:B:150:ILE:HG22	2.03	0.57
12:L:22:ALA:HB2	12:L:56:LEU:HD21	1.85	0.57
5:E:156:ARG:HB2	8:H:43:GLY:HA3	1.85	0.57
1:A:678:U:H2'	1:A:679:C:H6	1.69	0.57
4:D:138:PRO:HA	4:D:181:PHE:HD2	1.67	0.57
3:C:90:VAL:CG2	3:C:98:ALA:HB3	2.34	0.57
11:K:18:GLY:O	11:K:81:LEU:HB2	2.03	0.57
1:A:1077:G:N2	1:A:1079:G:H3'	2.19	0.57
4:D:196:GLU:HA	4:D:199:ILE:HD12	1.85	0.57
1:A:1129:C:H5''	9:I:17:ARG:HH22	1.70	0.57
4:D:170:LEU:HB2	4:D:180:THR:O	2.04	0.57
4:D:99:ASN:HD21	4:D:110:ARG:HE	1.52	0.57
5:E:90:GLY:O	5:E:128:GLY:HA3	2.04	0.57
1:A:390:U:H2'	1:A:391:G:H8	1.66	0.57
8:H:5:PRO:HB2	8:H:32:LYS:HZ1	1.68	0.57
1:A:312:C:H2'	1:A:313:A:H8	1.68	0.57
1:A:1142:G:H2'	1:A:1143:G:O4'	2.03	0.57
17:Q:10:ARG:HA	17:Q:10:ARG:NE	2.18	0.57
11:K:25:SER:HB3	11:K:28:ASN:O	2.04	0.57
1:A:91:U:H2'	1:A:92:U:C6	2.40	0.57
1:A:1055:A:H4'	3:C:160:GLU:CG	2.35	0.57
1:A:1201:A:H1'	1:A:1202:U:OP2	2.04	0.57
21:U:13:VAL:O	21:U:14:ALA:HB2	2.05	0.57
9:I:51:LEU:HD11	9:I:82:ILE:HG21	1.87	0.57
11:K:52:ARG:HD2	11:K:53:GLY:N	2.19	0.57
11:K:58:THR:HG23	11:K:61:ALA:HB2	1.85	0.57
1:A:672:U:H2'	1:A:673:A:C8	2.39	0.57
8:H:64:TYR:HA	8:H:70:VAL:HG23	1.85	0.57
8:H:29:SER:CB	8:H:32:LYS:HZ2	2.18	0.57
14:N:24:ALA:HB1	14:N:27:LYS:HE3	1.87	0.57
1:A:160:A:H2'	1:A:161:A:O4'	2.04	0.57
1:A:869:G:C1'	2:B:24:PRO:HB2	2.35	0.57
11:K:95:THR:HG23	11:K:96:ILE:N	2.20	0.57
20:T:60:GLN:H	20:T:60:GLN:CD	2.07	0.57
13:M:95:PRO:HD3	13:M:108:ARG:HG2	1.87	0.57
1:A:239:U:C5'	1:A:239:U:H6	2.18	0.57
1:A:203:G:H1'	1:A:465:A:H62	1.69	0.57
1:A:677:U:H3	1:A:713:G:H22	1.51	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:625:U:H4'	16:P:16:PHE:CE2	2.39	0.57
1:A:586:C:O2'	1:A:587:G:H5'	2.04	0.57
1:A:72:A:H2'	1:A:73:C:H6	1.70	0.57
4:D:111:ALA:O	4:D:114:ARG:HB3	2.04	0.57
11:K:92:ARG:NH1	11:K:92:ARG:HB3	2.19	0.57
3:C:183:TYR:HA	3:C:199:VAL:O	2.03	0.57
1:A:967:C:OP1	1:A:969:A:H5'	2.04	0.57
1:A:1111:A:HO2'	1:A:1112:C:H6	1.53	0.57
1:A:1026:G:H2'	1:A:1027:C:H6	1.67	0.57
9:I:118:ARG:NH1	9:I:122:ARG:HE	2.03	0.57
4:D:173:ASP:HB3	4:D:178:GLU:HB3	1.85	0.57
1:A:796:C:H5'	11:K:128:VAL:HG13	1.86	0.57
1:A:168:G:O2'	1:A:169:C:H5'	2.04	0.57
7:G:4:ARG:CZ	7:G:5:VAL:H	2.18	0.57
1:A:827:U:C3'	2:B:28:PRO:CG	2.82	0.57
21:U:14:ALA:HA	21:U:16:ARG:NE	2.18	0.57
6:F:53:LYS:CD	6:F:54:LEU:H	2.11	0.57
1:A:1102:A:H2'	1:A:1103:C:C6	2.40	0.57
9:I:82:ILE:O	9:I:86:LEU:HD22	2.03	0.57
1:A:1074:G:OP1	5:E:65:LYS:CD	2.52	0.57
4:D:117:VAL:O	4:D:130:ASN:HA	2.05	0.57
1:A:190:A:O5'	1:A:190:A:H8	1.87	0.57
20:T:34:VAL:HG22	20:T:49:ALA:HB1	1.87	0.57
1:A:883:C:O2'	1:A:884:U:H5'	2.05	0.57
7:G:132:THR:HG22	7:G:136:LYS:HG3	1.87	0.57
1:A:129:A:H1'	1:A:130:A:C8	2.40	0.57
13:M:21:ILE:CG2	13:M:64:VAL:HG11	2.32	0.57
1:A:973:G:H1'	10:J:56:HIS:ND1	2.20	0.57
14:N:30:ILE:CG2	14:N:41:TRP:HB2	2.34	0.57
1:A:674:G:H2'	1:A:675:A:H8	1.70	0.57
1:A:528:C:H41	12:L:45:ASN:CG	2.07	0.57
1:A:940:C:H2'	1:A:941:G:H8	1.69	0.57
4:D:60:VAL:HB	4:D:194:ILE:HG13	1.86	0.57
9:I:80:HIS:O	9:I:84:ARG:HB2	2.04	0.57
6:F:3:HIS:HB2	6:F:92:THR:CB	2.35	0.57
17:Q:75:VAL:HG23	17:Q:76:ARG:H	1.70	0.57
1:A:1508:A:H2'	1:A:1509:C:C6	2.40	0.57
16:P:12:LYS:HD2	16:P:13:LYS:HE3	1.87	0.57
14:N:9:GLU:HB2	14:N:60:ARG:NH2	2.20	0.56
9:I:56:MET:HE2	9:I:57:VAL:H	1.70	0.56
7:G:13:PRO:HB2	7:G:18:GLY:CA	2.35	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:96:ASN:O	7:G:100:MET:HG3	2.04	0.56
16:P:23:ASP:O	16:P:26:ASN:HB2	2.05	0.56
1:A:1027:C:H2'	1:A:1028:C:H6	1.70	0.56
1:A:202:G:H2'	1:A:203:G:C8	2.39	0.56
1:A:1294:G:H2'	1:A:1295:U:C6	2.40	0.56
1:A:987:G:H2'	1:A:988:G:C8	2.40	0.56
1:A:940:C:H2'	1:A:941:G:C8	2.40	0.56
1:A:1053:G:H4'	1:A:1054:C:H5'	1.87	0.56
1:A:1035:A:H2'	1:A:1036:A:H8	1.69	0.56
1:A:978:A:H5'	1:A:1362:A:N6	2.19	0.56
1:A:985:C:H2'	1:A:986:U:C6	2.41	0.56
9:I:56:MET:CE	9:I:57:VAL:H	2.17	0.56
9:I:61:ASP:O	9:I:62:LEU:HD13	2.06	0.56
13:M:22:TYR:HB3	13:M:69:ARG:NH2	2.20	0.56
14:N:42:ASN:O	14:N:46:LYS:HG3	2.05	0.56
1:A:978:A:HO2'	1:A:1322:C:H5	1.51	0.56
19:S:59:VAL:HG11	19:S:70:LEU:HD11	1.87	0.56
6:F:54:LEU:CD1	6:F:55:HIS:H	2.18	0.56
4:D:25:ARG:HH11	4:D:30:LYS:HE3	1.70	0.56
9:I:30:ASN:N	9:I:30:ASN:HD22	2.04	0.56
1:A:764:C:H2'	1:A:765:G:H5'	1.87	0.56
16:P:51:ARG:HB3	16:P:51:ARG:HH11	1.71	0.56
11:K:61:ALA:O	11:K:64:VAL:HG12	2.06	0.56
1:A:1330:U:C2'	1:A:1331:G:H5'	2.35	0.56
1:A:1225:A:O5'	13:M:102:LYS:HB3	2.06	0.56
1:A:176:C:H2'	1:A:177:G:N3	2.20	0.56
1:A:177:G:H5''	20:T:59:ARG:HH21	1.70	0.56
5:E:104:ILE:CD1	5:E:114:LEU:HB2	2.34	0.56
1:A:1171:A:H2'	1:A:1172:C:C6	2.40	0.56
15:O:60:SER:HA	15:O:63:ARG:HH12	1.69	0.56
1:A:1008:U:H2'	1:A:1009:U:H4'	1.87	0.56
1:A:372:C:H1'	1:A:373:A:OP2	2.05	0.56
16:P:41:PRO:O	16:P:42:ILE:HD13	2.06	0.56
2:B:119:GLN:O	2:B:124:THR:HG23	2.04	0.56
12:L:105:GLY:HA3	12:L:117:GLY:HA3	1.88	0.56
1:A:1246:A:H2'	1:A:1247:U:C6	2.41	0.56
1:A:810:C:O2'	1:A:811:C:H5'	2.06	0.56
7:G:4:ARG:NE	7:G:5:VAL:H	2.03	0.56
11:K:32:THR:HA	11:K:43:TRP:HA	1.88	0.56
1:A:829:G:H1'	2:B:188:THR:HA	1.86	0.56
19:S:32:THR:HB	19:S:49:ALA:O	2.06	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:Q:45:VAL:HG12	17:Q:46:HIS:H	1.70	0.56
14:N:50:LEU:CD2	14:N:51:PRO:HD3	2.36	0.56
1:A:85:U:H4'	1:A:86:G:H4'	1.86	0.56
2:B:38:HIS:O	2:B:39:ILE:HD13	2.06	0.56
20:T:68:LYS:CG	20:T:69:ASN:H	2.12	0.56
16:P:18:GLN:NE2	16:P:35:ARG:HD2	2.20	0.56
7:G:67:ASN:ND2	7:G:127:ALA:HA	2.21	0.56
1:A:278:G:H21	1:A:279:A:N6	2.04	0.56
5:E:95:MET:HE2	5:E:114:LEU:HD11	1.87	0.56
1:A:335:C:H2'	1:A:336:A:C8	2.41	0.56
11:K:97:ARG:HB3	11:K:97:ARG:NH1	2.21	0.56
6:F:4:TYR:O	6:F:63:ASN:HA	2.04	0.56
1:A:1244:G:H2'	1:A:1245:C:C6	2.41	0.56
1:A:372:C:H4'	1:A:373:A:H5'	1.87	0.56
12:L:37:TYR:HB2	12:L:51:VAL:HG23	1.88	0.56
14:N:12:ARG:HH21	14:N:58:ARG:HH12	1.53	0.56
11:K:88:PRO:HD3	21:U:28:LEU:CD1	2.34	0.56
7:G:72:VAL:HA	7:G:89:GLU:HA	1.87	0.56
1:A:1027:C:H2'	1:A:1028:C:C6	2.41	0.56
1:A:1170:A:O5'	1:A:1170:A:H8	1.88	0.56
1:A:629:A:H2'	1:A:630:A:O4'	2.06	0.56
19:S:11:ASP:CG	19:S:34:SER:HB2	2.26	0.56
1:A:521:G:OP2	12:L:50:LYS:HE3	2.06	0.56
14:N:15:LEU:HD12	14:N:16:ALA:H	1.71	0.56
9:I:50:PRO:HG2	9:I:51:LEU:HD12	1.88	0.56
16:P:20:VAL:HG22	16:P:21:VAL:N	2.21	0.56
10:J:55:PRO:HA	14:N:80:ARG:NH2	2.21	0.56
22:V:226:ARG:HD2	23:V:341:HOH:O	2.06	0.56
1:A:861:G:H8	2:B:193:ASP:OD1	1.84	0.56
1:A:829:G:C2'	2:B:30:ILE:HG12	2.22	0.56
13:M:106:ARG:NH1	13:M:109:LYS:HD2	2.21	0.56
1:A:449:G:H2'	1:A:450:G:C8	2.40	0.56
1:A:313:A:H2'	1:A:314:C:C6	2.40	0.56
6:F:100:SER:HA	18:R:23:LYS:NZ	2.21	0.56
1:A:163:C:H2'	1:A:164:G:O4'	2.06	0.56
10:J:87:LEU:HB3	10:J:88:MET:HE3	1.88	0.55
1:A:1320:C:N4	19:S:36:ARG:HG2	2.21	0.55
17:Q:16:MET:CB	17:Q:19:SER:HB2	2.35	0.55
1:A:389:A:H3'	1:A:390:U:H6	1.71	0.55
13:M:2:ARG:HB3	13:M:6:ILE:O	2.06	0.55
1:A:1115:U:H2'	1:A:1116:U:C6	2.41	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:555:U:H2'	1:A:556:C:H6	1.71	0.55
11:K:124:LYS:CA	21:U:34:ARG:HB3	2.29	0.55
10:J:53:ILE:HG23	14:N:84:ARG:CZ	2.37	0.55
10:J:24:GLU:OE2	10:J:90:LEU:HD22	2.06	0.55
3:C:45:GLU:C	3:C:46:LEU:HD12	2.25	0.55
7:G:19:SER:OG	7:G:22:LEU:HB2	2.06	0.55
11:K:113:THR:CG2	21:U:28:LEU:HD21	2.36	0.55
11:K:113:THR:HG21	21:U:28:LEU:HD21	1.88	0.55
2:B:138:ARG:HA	2:B:141:GLU:OE2	2.06	0.55
1:A:1522:U:O2'	1:A:1523:G:H5'	2.06	0.55
1:A:803:G:H2'	1:A:804:U:C6	2.40	0.55
1:A:844:G:N2	1:A:845:A:H62	2.03	0.55
21:U:36:PHE:CB	21:U:40:PRO:HD3	2.35	0.55
14:N:66:THR:HG23	14:N:67:GLY:N	2.20	0.55
13:M:64:VAL:HG12	13:M:65:GLU:H	1.71	0.55
3:C:71:ARG:HB3	3:C:74:ILE:HG22	1.87	0.55
17:Q:74:LEU:HD22	17:Q:75:VAL:N	2.21	0.55
5:E:82:HIS:HB2	5:E:83:PRO:HD2	1.88	0.55
2:B:125:PHE:HD1	2:B:125:PHE:H	1.53	0.55
1:A:878:A:H1'	8:H:3:GLN:HE22	1.70	0.55
1:A:924:C:O2'	1:A:925:G:H5'	2.05	0.55
21:U:14:ALA:N	21:U:16:ARG:NH2	2.55	0.55
2:B:112:ARG:HA	2:B:115:ASP:OD2	2.07	0.55
11:K:58:THR:HG23	11:K:61:ALA:CB	2.36	0.55
12:L:83:GLY:HA2	12:L:94:TYR:HD1	1.70	0.55
13:M:13:HIS:HB2	13:M:16:ILE:CG2	2.37	0.55
1:A:6:G:H4'	1:A:298:A:H4'	1.88	0.55
1:A:332:G:OP2	20:T:2:ASN:HB3	2.06	0.55
1:A:1517:G:C4'	22:V:144:VAL:HG21	2.29	0.55
1:A:1513:A:C2'	23:V:312:HOH:O	2.50	0.55
21:U:39:LYS:N	21:U:40:PRO:CD	2.69	0.55
1:A:408:A:H5'	4:D:21:LYS:HE2	1.88	0.55
9:I:51:LEU:HD11	9:I:82:ILE:HD13	1.87	0.55
3:C:42:LEU:O	3:C:46:LEU:HB2	2.07	0.55
4:D:117:VAL:HG12	4:D:130:ASN:HA	1.88	0.55
1:A:370:C:H2'	1:A:371:A:C8	2.42	0.55
1:A:845:A:H3'	1:A:846:G:O4'	2.06	0.55
6:F:46:GLN:HA	6:F:56:LYS:HG3	1.89	0.55
14:N:17:ASP:HA	14:N:21:ALA:CB	2.37	0.55
1:A:1324:A:H2'	1:A:1325:C:H6	1.72	0.55
1:A:1280:A:O4'	10:J:43:PRO:HG3	2.06	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:45:VAL:CG1	5:E:116:VAL:HG23	2.37	0.55
1:A:1332:A:H2'	1:A:1333:A:C8	2.42	0.55
12:L:30:ARG:CB	12:L:30:ARG:HH11	2.19	0.55
3:C:166:TRP:CE3	3:C:166:TRP:HA	2.42	0.55
1:A:218:U:H2'	1:A:219:U:C6	2.41	0.55
1:A:918:A:N1	1:A:1078:U:C5	2.74	0.55
1:A:1512:U:O2'	1:A:1513:A:H5'	2.07	0.55
2:B:148:GLY:HA2	2:B:151:LYS:HD3	1.89	0.55
12:L:3:VAL:O	12:L:7:VAL:HG23	2.07	0.55
1:A:32:A:H2'	1:A:33:A:C8	2.42	0.55
17:Q:10:ARG:CZ	17:Q:56:ASP:H	2.20	0.55
3:C:151:GLU:HB2	3:C:200:TRP:HZ3	1.71	0.55
3:C:39:ARG:HG3	3:C:54:ILE:HG21	1.87	0.55
10:J:67:ILE:HG13	14:N:95:LEU:HD13	1.87	0.55
7:G:45:ALA:HB1	7:G:120:ALA:HB2	1.88	0.55
14:N:65:GLN:HB2	14:N:78:LEU:HD22	1.87	0.55
1:A:921:U:O3'	1:A:1082:A:C5'	2.54	0.55
1:A:1517:G:H1'	22:V:141:GLN:H	1.71	0.55
9:I:38:PHE:O	9:I:44:ARG:HG2	2.07	0.55
8:H:50:VAL:HG22	8:H:51:GLU:N	2.22	0.55
4:D:32:LYS:O	4:D:35:GLN:HB2	2.05	0.55
1:A:97:G:H2'	1:A:98:A:O4'	2.07	0.55
1:A:18:C:C4'	1:A:1078:U:H5'	2.37	0.55
19:S:49:ALA:HB1	19:S:56:HIS:CB	2.29	0.55
8:H:46:GLU:HA	8:H:63:LYS:HZ3	1.71	0.55
5:E:132:PRO:HA	5:E:135:VAL:HG22	1.88	0.55
1:A:1243:C:H2'	1:A:1244:G:C8	2.41	0.55
20:T:82:ILE:HG13	20:T:83:ASN:N	2.22	0.55
1:A:173:U:H5'	1:A:197:A:O4'	2.07	0.55
1:A:769:G:H4'	1:A:1513:A:H4'	1.87	0.55
2:B:67:LEU:N	2:B:67:LEU:HD22	2.21	0.55
3:C:21:TRP:CB	3:C:58:ARG:HB2	2.37	0.55
1:A:1101:A:N6	2:B:173:LYS:HD2	2.22	0.55
1:A:1112:C:O2	3:C:178:ARG:N	2.40	0.55
1:A:190:A:H2'	1:A:191:G:O4'	2.07	0.55
1:A:393:A:H5'	1:A:483:C:O2'	2.07	0.55
3:C:77:GLY:HA3	3:C:81:GLU:HB3	1.89	0.54
2:B:216:VAL:O	2:B:220:VAL:HG23	2.06	0.54
11:K:54:SER:HA	11:K:56:LYS:HE3	1.90	0.54
10:J:11:LYS:NZ	10:J:99:GLN:H	2.05	0.54
1:A:801:U:H2'	1:A:802:A:C8	2.42	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1035:A:H2'	1:A:1036:A:C8	2.43	0.54
2:B:87:ASP:O	2:B:88:GLN:HG3	2.07	0.54
1:A:1346:A:N1	1:A:1374:A:H5''	2.22	0.54
1:A:1160:G:H2'	1:A:1161:C:H6	1.72	0.54
1:A:1135:U:O2	1:A:1135:U:H2'	2.06	0.54
2:B:144:GLU:O	2:B:148:GLY:HA3	2.06	0.54
9:I:49:GLN:NE2	9:I:79:ARG:HD2	2.21	0.54
3:C:156:LEU:H	3:C:156:LEU:HD12	1.72	0.54
15:O:84:LEU:HD22	15:O:86:LEU:HD11	1.90	0.54
14:N:30:ILE:HG21	14:N:44:VAL:HG21	1.88	0.54
1:A:1117:A:H5''	9:I:105:ARG:HH12	1.73	0.54
5:E:56:PRO:O	5:E:60:GLN:HG3	2.07	0.54
11:K:70:ALA:HB1	11:K:74:LYS:HE3	1.89	0.54
17:Q:32:ILE:HG13	17:Q:33:TYR:N	2.21	0.54
1:A:930:C:H2'	1:A:931:C:O4'	2.08	0.54
1:A:1221:G:H5''	19:S:35:ARG:NH1	2.23	0.54
3:C:154:GLY:HA2	3:C:163:ARG:O	2.06	0.54
6:F:64:VAL:HG12	6:F:65:GLU:N	2.17	0.54
6:F:61:LEU:HD12	6:F:63:ASN:OD1	2.07	0.54
1:A:398:U:H2'	1:A:399:G:C8	2.42	0.54
7:G:110:ARG:HH22	7:G:121:ASN:HB3	1.73	0.54
1:A:921:U:H2'	1:A:922:G:O4'	2.06	0.54
17:Q:44:HIS:O	17:Q:72:TRP:HB2	2.07	0.54
11:K:51:PHE:CE1	11:K:61:ALA:HB1	2.43	0.54
15:O:54:GLY:O	15:O:58:MET:HG2	2.07	0.54
6:F:6:ILE:HD13	6:F:89:VAL:HB	1.90	0.54
1:A:1363:A:H2'	1:A:1363:A:N3	2.22	0.54
1:A:830:G:O4'	2:B:188:THR:HB	2.08	0.54
1:A:830:G:N1	2:B:22:TRP:CD1	2.75	0.54
2:B:46:VAL:O	2:B:49:PHE:HB2	2.07	0.54
2:B:67:LEU:HA	2:B:89:PHE:O	2.07	0.54
9:I:23:GLY:O	9:I:24:ASN:HB2	2.06	0.54
11:K:110:THR:CG2	21:U:4:LYS:HA	2.37	0.54
11:K:15:VAL:HG21	11:K:41:LEU:HD11	1.88	0.54
1:A:415:A:H3'	1:A:416:G:H8	1.72	0.54
19:S:20:LYS:O	19:S:23:GLU:HB3	2.07	0.54
1:A:621:A:H2'	1:A:622:A:C8	2.43	0.54
1:A:1307:U:H2'	1:A:1308:U:H6	1.72	0.54
10:J:11:LYS:HZ3	10:J:99:GLN:H	1.55	0.54
2:B:113:LEU:HG	2:B:143:LEU:HB3	1.90	0.54
1:A:859:G:H2'	1:A:860:A:H8	1.71	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:87:LEU:H	10:J:88:MET:HE1	1.72	0.54
17:Q:17:GLU:C	17:Q:19:SER:H	2.11	0.54
17:Q:45:VAL:HG11	17:Q:74:LEU:HB2	1.89	0.54
8:H:92:PRO:HA	8:H:93:LYS:HZ2	1.73	0.54
1:A:86:G:OP1	1:A:86:G:H4'	2.05	0.54
18:R:33:THR:HG23	18:R:35:SER:H	1.73	0.54
1:A:18:C:C5'	1:A:1078:U:C4'	2.74	0.54
2:B:67:LEU:HD11	2:B:157:PRO:CB	2.30	0.54
1:A:1100:C:O2'	1:A:1101:A:H5'	2.07	0.54
1:A:37:U:OP1	12:L:119:LYS:HE3	2.07	0.54
1:A:764:C:C2'	1:A:765:G:H5'	2.37	0.54
1:A:1111:A:O2'	1:A:1112:C:H6	1.90	0.54
16:P:12:LYS:HD2	16:P:13:LYS:HG3	1.89	0.54
3:C:111:ASP:O	3:C:115:VAL:HG23	2.08	0.54
1:A:865:A:H2'	1:A:866:C:C6	2.43	0.54
16:P:40:ASN:HB3	16:P:49:GLY:O	2.08	0.54
4:D:144:ILE:CD1	4:D:154:VAL:HG21	2.38	0.54
3:C:38:VAL:HG23	3:C:39:ARG:N	2.23	0.54
3:C:55:VAL:HG12	3:C:56:ILE:N	2.23	0.54
1:A:477:C:H2'	1:A:478:A:C8	2.42	0.54
1:A:399:G:H2'	1:A:400:C:C6	2.43	0.54
1:A:638:U:H2'	1:A:639:G:O4'	2.08	0.54
2:B:163:ILE:CD1	2:B:209:VAL:HG12	2.38	0.54
14:N:81:ILE:HD12	14:N:82:LYS:H	1.72	0.54
3:C:156:LEU:HD11	3:C:163:ARG:O	2.08	0.54
3:C:53:ARG:HG2	3:C:54:ILE:H	1.72	0.54
8:H:49:LYS:HG3	8:H:50:VAL:N	2.21	0.54
1:A:189:A:H2'	1:A:190:A:C8	2.43	0.54
1:A:513:C:H2'	1:A:514:C:H6	1.73	0.54
1:A:1310:G:H2'	1:A:1311:A:O4'	2.07	0.54
1:A:403:C:O2'	1:A:404:G:H5'	2.08	0.54
2:B:185:ILE:HA	2:B:199:ILE:HB	1.90	0.53
2:B:67:LEU:HD21	2:B:157:PRO:CG	2.37	0.53
17:Q:18:LYS:HA	17:Q:47:ASP:O	2.08	0.53
4:D:17:ASP:OD2	4:D:27:ILE:HG12	2.08	0.53
1:A:1323:G:H2'	1:A:1324:A:H8	1.65	0.53
5:E:84:VAL:HG22	5:E:85:LYS:H	1.73	0.53
5:E:134:ASN:O	5:E:137:ARG:HG2	2.07	0.53
7:G:100:MET:O	7:G:104:VAL:HG23	2.08	0.53
9:I:113:LYS:HG2	9:I:114:LYS:N	2.22	0.53
7:G:16:LYS:HG3	7:G:43:TYR:OH	2.08	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:Q:64:ARG:HG3	17:Q:65:PRO:HD2	1.89	0.53
1:A:828:U:C4'	2:B:29:PHE:CD1	2.90	0.53
12:L:58:ASN:ND2	12:L:58:ASN:H	2.06	0.53
7:G:45:ALA:HA	7:G:48:THR:OG1	2.08	0.53
6:F:18:VAL:O	6:F:22:ILE:HG13	2.07	0.53
14:N:42:ASN:HB3	14:N:46:LYS:HE2	1.89	0.53
17:Q:4:ILE:HD12	17:Q:5:ARG:H	1.73	0.53
1:A:636:U:H2'	1:A:637:C:C6	2.43	0.53
1:A:956:U:O2'	1:A:957:U:H5'	2.09	0.53
1:A:1082:A:OP2	5:E:22:LYS:NZ	2.40	0.53
19:S:69:LYS:O	19:S:72:GLU:HB2	2.08	0.53
12:L:8:ARG:HG3	12:L:9:LYS:N	2.17	0.53
9:I:44:ARG:HH11	9:I:44:ARG:N	2.06	0.53
9:I:24:ASN:O	9:I:61:ASP:HA	2.09	0.53
17:Q:28:VAL:C	17:Q:36:PHE:HA	2.28	0.53
12:L:20:VAL:O	12:L:23:LEU:HG	2.08	0.53
1:A:476:U:H2'	1:A:477:C:H6	1.73	0.53
1:A:716:A:N3	11:K:119:GLY:HA2	2.22	0.53
1:A:53:A:C2	1:A:54:C:H1'	2.43	0.53
1:A:1042:A:H2'	1:A:1043:G:O4'	2.08	0.53
1:A:870:U:OP2	2:B:22:TRP:CZ2	2.61	0.53
1:A:1517:G:H1'	23:V:359:HOH:O	2.04	0.53
7:G:112:ASP:CB	7:G:118:ARG:HG2	2.33	0.53
3:C:155:ARG:N	3:C:162:ALA:HA	2.21	0.53
9:I:113:LYS:HG2	9:I:114:LYS:H	1.74	0.53
10:J:81:GLU:HA	10:J:84:VAL:HG22	1.89	0.53
1:A:520:A:OP2	12:L:47:ALA:HB1	2.09	0.53
1:A:1517:G:P	22:V:147:ARG:HH21	2.25	0.53
16:P:42:ILE:HB	16:P:46:LYS:CD	2.36	0.53
4:D:25:ARG:HD3	4:D:26:ALA:H	1.73	0.53
12:L:56:LEU:HB3	12:L:58:ASN:ND2	2.24	0.53
8:H:43:GLY:O	8:H:63:LYS:HE3	2.09	0.53
1:A:1299:A:H62	1:A:1302:C:H5	1.57	0.53
17:Q:4:ILE:H	17:Q:4:ILE:HD12	1.74	0.53
1:A:742:G:O2'	1:A:743:A:H5'	2.08	0.53
1:A:1130:A:H5'	9:I:19:PHE:CE2	2.44	0.53
1:A:405:U:O4	4:D:1:ALA:HA	2.09	0.53
10:J:7:ARG:HA	10:J:75:ASP:HB2	1.90	0.53
11:K:110:THR:HG22	21:U:4:LYS:HA	1.90	0.53
12:L:20:VAL:HG12	12:L:20:VAL:O	2.08	0.53
8:H:5:PRO:O	8:H:32:LYS:HE3	2.09	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1039:G:H2'	1:A:1040:U:C6	2.43	0.53
1:A:1040:U:H2'	1:A:1041:G:H8	1.74	0.53
9:I:11:ARG:HA	9:I:105:ARG:NE	2.23	0.53
1:A:602:A:O2'	1:A:603:U:H5'	2.07	0.53
16:P:57:ILE:O	16:P:61:VAL:HG22	2.09	0.53
1:A:824:G:O2'	1:A:825:A:H5'	2.08	0.53
1:A:860:A:N6	2:B:25:LYS:HG2	2.16	0.53
1:A:859:G:O4'	2:B:26:MET:HG3	2.08	0.53
1:A:18:C:C4'	1:A:1078:U:C4'	2.87	0.53
1:A:919:A:H2	1:A:1079:G:C6	2.26	0.53
3:C:78:LYS:CG	3:C:81:GLU:HB2	2.24	0.53
14:N:81:ILE:O	14:N:84:ARG:HB3	2.09	0.53
1:A:263:A:P	20:T:73:ARG:HH22	2.32	0.53
1:A:973:G:H3'	1:A:974:A:H5''	1.90	0.53
1:A:1250:A:H4'	9:I:69:GLY:N	2.22	0.53
11:K:33:ILE:O	11:K:41:LEU:HB2	2.08	0.53
1:A:71:A:N6	1:A:99:C:H1'	2.24	0.53
18:R:62:ARG:HD3	18:R:69:TYR:HA	1.90	0.53
1:A:1040:U:H2'	1:A:1041:G:C8	2.43	0.53
1:A:1508:A:H2'	1:A:1509:C:H6	1.73	0.53
5:E:55:VAL:N	5:E:56:PRO:HD2	2.23	0.53
6:F:47:LEU:HD13	6:F:51:ILE:HG22	1.91	0.53
1:A:196:A:O5'	20:T:63:LYS:HE2	2.09	0.53
15:O:15:GLY:HA3	15:O:20:ASP:OD1	2.09	0.53
1:A:1514:G:H5'	22:V:222:ARG:CZ	2.36	0.53
3:C:186:SER:HB3	3:C:197:VAL:CG1	2.38	0.53
6:F:100:SER:HA	18:R:23:LYS:HD2	1.91	0.53
9:I:90:ASP:O	9:I:93:LEU:HG	2.09	0.53
12:L:86:VAL:HG11	12:L:89:LEU:HD23	1.90	0.53
20:T:74:HIS:O	20:T:78:LEU:HD12	2.08	0.53
1:A:317:U:H2'	1:A:318:G:H8	1.74	0.53
20:T:53:MET:O	20:T:57:VAL:HG23	2.08	0.53
6:F:40:GLU:CG	6:F:42:TRP:HE1	2.22	0.53
6:F:43:GLY:O	6:F:58:HIS:HA	2.09	0.53
1:A:626:G:H2'	1:A:627:G:H8	1.74	0.53
4:D:138:PRO:HA	4:D:181:PHE:CD2	2.43	0.53
1:A:128:G:H2'	1:A:129:A:C8	2.44	0.53
1:A:1507:A:H2'	1:A:1508:A:C8	2.44	0.53
11:K:36:ARG:HG2	11:K:37:GLN:H	1.74	0.53
1:A:252:U:H2'	1:A:253:A:H8	1.74	0.53
2:B:185:ILE:HG22	2:B:199:ILE:HB	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:55:HIS:O	6:F:56:LYS:HG3	2.09	0.53
15:O:6:ALA:O	15:O:9:LYS:HB3	2.09	0.53
15:O:2:LEU:HD23	15:O:3:SER:N	2.24	0.53
3:C:6:PRO:HG3	3:C:200:TRP:HE1	1.73	0.53
19:S:29:PRO:HA	19:S:47:THR:HB	1.89	0.53
1:A:960:U:O2'	1:A:1223:C:H4'	2.08	0.53
1:A:600:A:H2'	1:A:601:G:H8	1.74	0.53
3:C:126:ARG:HH22	3:C:190:THR:HG22	1.72	0.53
1:A:275:G:C5'	17:Q:15:LYS:HG2	2.39	0.53
1:A:997:U:O2'	1:A:998:C:H5'	2.09	0.53
1:A:746:A:H2'	1:A:747:A:C8	2.44	0.53
1:A:1517:G:P	22:V:147:ARG:HH22	2.31	0.52
1:A:77:A:H2'	1:A:78:A:C8	2.43	0.52
4:D:96:ARG:O	4:D:100:VAL:HG23	2.09	0.52
1:A:766:A:H2'	1:A:767:A:O4'	2.08	0.52
1:A:1381:U:O2'	1:A:1382:C:H5'	2.08	0.52
1:A:860:A:H2'	1:A:861:G:O4'	2.09	0.52
21:U:14:ALA:H	21:U:16:ARG:NH2	2.07	0.52
1:A:408:A:H3'	1:A:409:U:H6	1.74	0.52
1:A:664:G:N2	1:A:741:G:H1	2.02	0.52
4:D:183:ARG:HH22	4:D:186:GLU:H	1.58	0.52
2:B:95:TRP:HH2	2:B:100:LEU:HB2	1.75	0.52
14:N:30:ILE:C	14:N:32:ASP:H	2.13	0.52
1:A:1308:U:OP1	13:M:95:PRO:HA	2.09	0.52
1:A:1309:G:N7	13:M:97:ARG:NH2	2.58	0.52
1:A:411:A:O2'	1:A:412:A:H4'	2.09	0.52
5:E:109:ALA:CB	5:E:135:VAL:HG23	2.39	0.52
1:A:177:G:P	20:T:59:ARG:HE	2.33	0.52
1:A:1170:A:H2'	1:A:1171:A:O4'	2.09	0.52
1:A:499:A:H4'	1:A:500:G:OP1	2.09	0.52
1:A:17:U:O4'	1:A:1079:G:C8	2.63	0.52
19:S:62:THR:HB	19:S:64:GLU:OE2	2.10	0.52
15:O:7:THR:CG2	15:O:30:LEU:HD11	2.38	0.52
2:B:101:THR:HG23	2:B:102:ASN:H	1.75	0.52
1:A:279:A:H4'	1:A:280:C:OP2	2.10	0.52
17:Q:35:LYS:O	17:Q:37:ILE:HG13	2.10	0.52
1:A:120:A:H2'	1:A:121:U:H5''	1.90	0.52
1:A:1283:U:H2'	1:A:1284:C:C6	2.44	0.52
1:A:1132:C:H2'	1:A:1133:G:O4'	2.09	0.52
7:G:143:MET:O	7:G:147:ASN:HB2	2.09	0.52
4:D:54:LEU:HD22	4:D:54:LEU:O	2.09	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:889:A:H61	1:A:907:A:H3'	1.74	0.52
1:A:187:G:H4'	20:T:79:THR:HG21	1.90	0.52
1:A:919:A:O2'	1:A:1077:G:H4'	2.08	0.52
1:A:1103:C:C5'	2:B:96:LEU:HD12	2.37	0.52
12:L:35:ARG:CZ	12:L:75:GLU:HB3	2.39	0.52
12:L:30:ARG:HH11	12:L:30:ARG:HB3	1.75	0.52
1:A:214:C:H2'	1:A:215:C:C6	2.44	0.52
4:D:98:ASP:CG	4:D:132:ALA:HB1	2.30	0.52
21:U:36:PHE:HB3	21:U:40:PRO:HG3	1.90	0.52
19:S:50:VAL:H	19:S:57:VAL:H	1.57	0.52
11:K:109:ILE:H	21:U:5:VAL:HB	1.75	0.52
11:K:111:ASP:HB3	21:U:3:ILE:HD13	1.92	0.52
5:E:14:LEU:HA	5:E:36:THR:HG22	1.92	0.52
7:G:110:ARG:HH22	7:G:121:ASN:CB	2.23	0.52
1:A:936:C:H1'	1:A:1382:C:H42	1.74	0.52
1:A:830:G:N9	2:B:19:THR:O	2.42	0.52
1:A:1080:A:O2'	5:E:28:ARG:HD2	2.07	0.52
13:M:106:ARG:CZ	13:M:109:LYS:HD2	2.40	0.52
19:S:18:VAL:CG2	19:S:43:MET:HG2	2.32	0.52
2:B:95:TRP:CZ3	2:B:171:ALA:HA	2.44	0.52
11:K:28:ASN:ND2	11:K:29:THR:N	2.58	0.52
3:C:39:ARG:HG3	3:C:54:ILE:HD13	1.91	0.52
10:J:22:THR:HG23	10:J:23:ALA:N	2.23	0.52
11:K:56:LYS:O	11:K:58:THR:N	2.43	0.52
1:A:472:U:H2'	1:A:473:U:C6	2.44	0.52
19:S:29:PRO:CA	19:S:47:THR:HB	2.39	0.52
1:A:1376:U:H2'	1:A:1377:A:H8	1.75	0.52
5:E:74:ALA:HB1	5:E:148:SER:HB3	1.91	0.52
1:A:861:G:C6	2:B:25:LYS:CE	2.62	0.52
2:B:46:VAL:CG1	2:B:47:PRO:HD3	2.31	0.52
2:B:53:LEU:HA	2:B:56:LEU:HD23	1.92	0.52
1:A:1247:U:O2'	1:A:1248:A:H5'	2.10	0.52
3:C:141:MET:CE	3:C:147:GLY:H	2.23	0.52
5:E:149:PRO:HA	8:H:98:LEU:HD21	1.91	0.52
1:A:736:C:H2'	1:A:737:C:C6	2.45	0.52
1:A:1289:A:H2'	1:A:1290:G:H5'	1.91	0.52
8:H:76:ARG:HG3	8:H:76:ARG:HH11	1.74	0.52
1:A:860:A:N7	2:B:25:LYS:HG2	2.25	0.52
13:M:106:ARG:HD3	13:M:110:GLY:O	2.09	0.52
9:I:56:MET:SD	9:I:57:VAL:N	2.82	0.52
1:A:266:G:O2'	1:A:267:C:H3'	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:58:GLN:OE1	4:D:62:ARG:HG3	2.09	0.52
4:D:122:ILE:O	4:D:128:VAL:HG23	2.10	0.52
1:A:1225:A:H4'	19:S:77:ARG:HH22	1.75	0.52
1:A:815:A:H4'	1:A:817:C:C4	2.45	0.52
9:I:11:ARG:HA	9:I:105:ARG:HE	1.75	0.52
1:A:1521:C:O2'	1:A:1522:U:H5'	2.09	0.52
9:I:93:LEU:HD13	9:I:97:LEU:HD23	1.92	0.52
8:H:104:SER:O	8:H:122:GLY:HA3	2.10	0.52
17:Q:80:LYS:O	17:Q:80:LYS:HE3	2.09	0.52
1:A:18:C:C1'	1:A:1078:U:O4'	2.57	0.52
4:D:107:GLY:HA2	4:D:112:GLU:OE1	2.10	0.52
4:D:186:GLU:O	4:D:190:LEU:HD13	2.09	0.52
5:E:71:ILE:HG12	5:E:72:ASN:N	2.24	0.52
2:B:55:GLU:HG3	2:B:197:PHE:CZ	2.45	0.52
1:A:1517:G:H1'	22:V:141:GLN:N	2.24	0.52
1:A:1060:U:H5''	10:J:53:ILE:CG2	2.40	0.52
14:N:9:GLU:O	14:N:13:VAL:HG23	2.10	0.52
9:I:38:PHE:O	9:I:41:GLU:HB2	2.09	0.52
9:I:30:ASN:N	9:I:30:ASN:ND2	2.56	0.52
1:A:1071:C:H2'	1:A:1072:G:C8	2.41	0.52
15:O:66:LEU:HB3	15:O:77:TYR:HE1	1.74	0.52
1:A:195:A:H1'	1:A:222:C:O2'	2.09	0.52
2:B:76:SER:OG	2:B:92:ASN:HB2	2.10	0.52
1:A:320:A:H2'	1:A:321:A:C8	2.44	0.52
1:A:975:A:H5''	1:A:976:G:O5'	2.10	0.52
1:A:423:G:H2'	1:A:424:G:O4'	2.09	0.52
4:D:115:GLN:HE21	4:D:119:HIS:CE1	2.28	0.52
9:I:99:LYS:HD3	9:I:100:ALA:N	2.25	0.52
1:A:828:U:OP1	2:B:44:LYS:HE3	2.10	0.51
1:A:1122:U:H2'	1:A:1123:U:C6	2.45	0.51
10:J:39:PRO:CA	10:J:74:VAL:HG22	2.39	0.51
21:U:5:VAL:HG12	21:U:6:ARG:N	2.25	0.51
18:R:44:THR:HG22	18:R:46:THR:HB	1.91	0.51
1:A:492:C:H2'	1:A:493:A:H5''	1.92	0.51
5:E:81:GLN:HG2	5:E:148:SER:HA	1.92	0.51
12:L:103:CYS:SG	12:L:104:SER:N	2.83	0.51
1:A:1190:G:O2'	3:C:2:GLN:HB2	2.10	0.51
1:A:939:G:H4'	7:G:101:ARG:NH2	2.25	0.51
7:G:85:GLN:O	7:G:86:VAL:C	2.49	0.51
3:C:100:ILE:HG23	3:C:100:ILE:O	2.10	0.51
1:A:920:U:H2'	1:A:921:U:H6	1.75	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1098:C:C2'	1:A:1099:G:H5'	2.40	0.51
17:Q:60:ILE:HD13	17:Q:60:ILE:N	2.25	0.51
11:K:88:PRO:HD3	21:U:28:LEU:HD22	1.91	0.51
17:Q:56:ASP:HB3	17:Q:79:GLU:O	2.09	0.51
11:K:80:ASN:HD21	11:K:107:THR:CG2	2.23	0.51
1:A:474:G:H2'	1:A:475:C:C6	2.45	0.51
18:R:25:ILE:HG13	18:R:67:LEU:HD11	1.91	0.51
1:A:300:A:H2'	1:A:301:G:O4'	2.11	0.51
1:A:642:A:H2'	1:A:643:C:C6	2.45	0.51
3:C:77:GLY:CA	3:C:81:GLU:HB3	2.40	0.51
18:R:52:ARG:CB	18:R:52:ARG:HH11	2.15	0.51
12:L:22:ALA:HB2	12:L:56:LEU:CD2	2.40	0.51
11:K:88:PRO:HA	11:K:92:ARG:NE	2.23	0.51
1:A:838:G:H2'	1:A:839:C:O4'	2.11	0.51
12:L:95:HIS:HD1	12:L:96:THR:N	2.09	0.51
1:A:1172:C:H2'	1:A:1173:U:H6	1.76	0.51
1:A:56:U:H2'	1:A:57:G:C8	2.44	0.51
1:A:1524:C:H2'	1:A:1525:G:C8	2.46	0.51
1:A:731:G:OP1	1:A:766:A:H1'	2.10	0.51
1:A:846:G:H2'	1:A:846:G:N3	2.23	0.51
4:D:197:HIS:HA	4:D:200:VAL:HG22	1.91	0.51
11:K:63:GLN:HB3	11:K:94:SER:OG	2.10	0.51
7:G:30:MET:SD	7:G:35:LYS:HB2	2.50	0.51
1:A:1366:C:H2'	1:A:1367:C:H6	1.76	0.51
1:A:857:C:H2'	1:A:858:G:O4'	2.10	0.51
1:A:958:A:N1	19:S:53:GLY:HA3	2.25	0.51
14:N:11:LYS:HZ2	14:N:11:LYS:HA	1.75	0.51
7:G:114:SER:C	7:G:118:ARG:HG3	2.30	0.51
16:P:40:ASN:HD21	16:P:42:ILE:HG13	1.76	0.51
1:A:1320:C:H41	19:S:36:ARG:HE	1.57	0.51
12:L:48:LEU:CD2	12:L:48:LEU:H	2.18	0.51
7:G:14:ASP:OD1	7:G:22:LEU:HD12	2.10	0.51
11:K:110:THR:CG2	21:U:4:LYS:HD2	2.40	0.51
1:A:1005:A:H3'	1:A:1006:G:H8	1.74	0.51
3:C:186:SER:O	3:C:197:VAL:HG12	2.11	0.51
9:I:32:ARG:NH2	9:I:36:GLN:HG2	2.25	0.51
5:E:37:VAL:HG11	5:E:113:VAL:HG12	1.93	0.51
1:A:205:A:H2'	1:A:206:C:C6	2.43	0.51
1:A:712:A:O2'	1:A:713:G:H5'	2.10	0.51
14:N:27:LYS:HD2	14:N:28:ALA:N	2.26	0.51
9:I:11:ARG:O	9:I:11:ARG:HG3	2.10	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1332:A:H2'	1:A:1333:A:H8	1.75	0.51
1:A:275:G:O5'	17:Q:15:LYS:HG2	2.11	0.51
1:A:275:G:H5'	17:Q:15:LYS:HG2	1.92	0.51
1:A:693:G:H2'	1:A:694:A:O4'	2.10	0.51
3:C:110:LEU:O	3:C:203:LYS:HE2	2.11	0.51
2:B:68:PHE:HA	2:B:161:PHE:O	2.10	0.51
1:A:909:A:H2'	1:A:910:C:O4'	2.11	0.51
1:A:1197:A:O2'	1:A:1198:G:H5'	2.10	0.51
1:A:1080:A:N9	5:E:22:LYS:HA	2.04	0.51
1:A:36:C:H2'	1:A:37:U:O4'	2.09	0.51
11:K:83:VAL:HG21	11:K:109:ILE:HG12	1.92	0.51
7:G:72:VAL:HB	7:G:144:ALA:HB3	1.92	0.51
11:K:80:ASN:HD21	11:K:107:THR:HG23	1.76	0.51
18:R:60:ARG:HG3	18:R:61:ALA:N	2.25	0.51
1:A:202:G:H2'	1:A:203:G:H8	1.74	0.51
7:G:3:ARG:HB3	7:G:3:ARG:CZ	2.40	0.51
1:A:251:G:H4'	1:A:252:U:H5'	1.93	0.51
1:A:1033:G:H2'	1:A:1034:G:O4'	2.10	0.51
1:A:545:C:O2'	1:A:546:A:H5'	2.10	0.51
1:A:857:C:H1'	2:B:21:TYR:HA	1.91	0.51
2:B:49:PHE:O	2:B:53:LEU:HD23	2.10	0.51
11:K:111:ASP:O	18:R:72:ARG:HD3	2.09	0.51
16:P:9:HIS:CE1	16:P:29:ASN:HB2	2.44	0.51
5:E:108:GLY:H	5:E:110:MET:HE1	1.75	0.51
1:A:272:C:H2'	1:A:273:U:C6	2.45	0.51
19:S:20:LYS:HB3	19:S:20:LYS:HZ2	1.75	0.51
7:G:91:ARG:HB3	7:G:92:PRO:HD2	1.91	0.51
1:A:208:U:H2'	1:A:210:C:C5	2.45	0.51
11:K:125:LYS:O	11:K:126:ARG:O	2.29	0.51
19:S:35:ARG:HG2	19:S:50:VAL:CG1	2.39	0.51
1:A:979:C:H2'	1:A:980:C:O4'	2.10	0.51
13:M:78:ARG:HH12	19:S:64:GLU:HG2	1.76	0.51
1:A:663:A:O2'	1:A:664:G:H5'	2.11	0.51
9:I:51:LEU:HD23	9:I:56:MET:CE	2.40	0.51
12:L:31:GLY:HA3	12:L:54:VAL:CG1	2.41	0.51
1:A:1110:A:N7	1:A:1111:A:N6	2.58	0.51
1:A:590:U:OP1	8:H:30:LYS:HE2	2.10	0.51
1:A:711:G:O2'	1:A:712:A:H5'	2.11	0.51
1:A:1285:A:N6	1:A:1355:G:H4'	2.26	0.51
1:A:1051:C:H2'	1:A:1052:U:C6	2.46	0.51
1:A:219:U:H2'	1:A:220:G:C8	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:857:C:N3	2:B:22:TRP:C	2.63	0.51
1:A:830:G:N7	2:B:22:TRP:CB	2.73	0.51
13:M:18:LEU:O	13:M:21:ILE:HG13	2.10	0.51
9:I:34:LEU:HD11	9:I:47:VAL:CG2	2.35	0.51
7:G:23:ALA:O	7:G:26:VAL:HG22	2.11	0.51
13:M:13:HIS:O	13:M:16:ILE:HG22	2.11	0.51
14:N:27:LYS:HD2	14:N:27:LYS:C	2.30	0.51
7:G:11:ILE:H	7:G:11:ILE:HD12	1.75	0.51
11:K:81:LEU:HD22	11:K:104:PHE:HB3	1.92	0.51
13:M:27:THR:O	13:M:30:LYS:HB3	2.11	0.51
4:D:71:PHE:O	4:D:74:TYR:HB2	2.11	0.51
2:B:10:LYS:C	2:B:12:GLY:H	2.14	0.51
6:F:32:ALA:HB1	6:F:70:VAL:HG11	1.93	0.51
22:V:28:SER:OG	22:V:174:LEU:HD11	2.11	0.51
1:A:859:G:C4'	2:B:190:SER:C	2.56	0.51
1:A:1081:A:H4'	5:E:23:THR:O	2.11	0.51
14:N:17:ASP:HA	14:N:21:ALA:HB2	1.92	0.51
12:L:54:VAL:HG12	12:L:56:LEU:HD12	1.93	0.51
1:A:255:G:H5'	17:Q:17:GLU:O	2.10	0.51
11:K:88:PRO:HA	11:K:92:ARG:HD2	1.93	0.51
1:A:840:C:C2'	1:A:842:U:H5''	2.38	0.51
4:D:116:LEU:HB3	4:D:122:ILE:HD11	1.93	0.51
5:E:110:MET:O	5:E:113:VAL:HG22	2.10	0.51
5:E:17:VAL:HA	5:E:34:ALA:HA	1.93	0.51
1:A:529:G:H22	12:L:47:ALA:CB	2.24	0.51
3:C:83:VAL:HG12	3:C:87:ARG:HE	1.75	0.51
1:A:644:U:H4'	8:H:83:ARG:HH22	1.75	0.51
21:U:43:GLU:HA	21:U:43:GLU:OE1	2.10	0.51
1:A:919:A:C2	1:A:1079:G:C6	2.99	0.51
13:M:44:ILE:HD12	13:M:45:SER:N	2.23	0.51
1:A:1324:A:H2'	1:A:1325:C:C6	2.46	0.51
1:A:1206:G:H4'	3:C:192:TYR:HA	1.93	0.51
6:F:37:HIS:HE1	6:F:65:GLU:HB2	1.73	0.51
7:G:19:SER:OG	7:G:21:LEU:HG	2.10	0.51
10:J:55:PRO:O	10:J:56:HIS:HB3	2.10	0.51
1:A:413:G:O6	4:D:32:LYS:HE3	2.11	0.51
1:A:337:G:H2'	1:A:338:A:C8	2.45	0.51
8:H:60:LEU:HD12	8:H:60:LEU:N	2.26	0.51
1:A:841:C:H3'	1:A:843:U:OP2	2.11	0.51
1:A:921:U:N3	1:A:1080:A:N1	2.59	0.50
2:B:150:ILE:HG13	2:B:153:MET:CE	2.39	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:M:10:ASP:HA	13:M:44:ILE:CD1	2.41	0.50
6:F:53:LYS:HZ2	6:F:54:LEU:N	2.09	0.50
4:D:2:ARG:O	4:D:3:TYR:HB2	2.11	0.50
9:I:49:GLN:HE21	9:I:79:ARG:HD2	1.75	0.50
3:C:71:ARG:NH2	3:C:74:ILE:HB	2.26	0.50
3:C:71:ARG:O	3:C:74:ILE:HG22	2.11	0.50
11:K:92:ARG:HH11	11:K:92:ARG:CB	2.23	0.50
18:R:62:ARG:HD2	18:R:69:TYR:CD1	2.46	0.50
6:F:6:ILE:HB	6:F:89:VAL:HB	1.93	0.50
1:A:824:G:H2'	1:A:825:A:H8	1.75	0.50
2:B:31:PHE:HA	2:B:41:ASN:HB2	1.94	0.50
1:A:1101:A:N7	2:B:170:ILE:HD12	2.26	0.50
16:P:51:ARG:C	16:P:52:LEU:HD22	2.31	0.50
12:L:20:VAL:HG22	12:L:94:TYR:CE1	2.46	0.50
7:G:45:ALA:HB2	7:G:116:ALA:O	2.10	0.50
18:R:23:LYS:C	18:R:25:ILE:H	2.14	0.50
1:A:1169:A:H2'	1:A:1170:A:C8	2.47	0.50
4:D:172:VAL:HA	4:D:178:GLU:O	2.11	0.50
1:A:751:U:H2'	1:A:752:G:O4'	2.11	0.50
7:G:66:GLU:HA	7:G:69:ARG:HE	1.75	0.50
6:F:12:PRO:HG3	6:F:54:LEU:HG	1.94	0.50
4:D:17:ASP:HB2	4:D:27:ILE:HG23	1.94	0.50
12:L:3:VAL:HG23	12:L:4:ASN:OD1	2.11	0.50
1:A:33:A:H2'	1:A:34:C:C6	2.46	0.50
9:I:110:VAL:HG12	9:I:111:GLU:N	2.20	0.50
15:O:70:LYS:HZ1	15:O:74:VAL:HA	1.76	0.50
11:K:56:LYS:HD3	11:K:56:LYS:H	1.75	0.50
4:D:131:ILE:O	4:D:134:TYR:HB2	2.10	0.50
1:A:1343:G:H2'	1:A:1344:C:C6	2.47	0.50
4:D:77:GLU:O	4:D:81:LEU:HG	2.11	0.50
6:F:98:GLU:HG2	6:F:99:ALA:H	1.76	0.50
17:Q:24:ILE:HB	17:Q:41:THR:HB	1.92	0.50
1:A:1142:G:H3'	1:A:1143:G:H8	1.76	0.50
6:F:67:PRO:HG2	6:F:70:VAL:HG22	1.92	0.50
1:A:830:G:H3'	2:B:38:HIS:CG	2.39	0.50
1:A:919:A:C2	1:A:1078:U:C5	2.99	0.50
11:K:122:PRO:HG2	21:U:35:GLU:HG2	1.93	0.50
3:C:21:TRP:HB3	3:C:58:ARG:HB2	1.93	0.50
3:C:154:GLY:HA2	3:C:163:ARG:H	1.77	0.50
12:L:106:VAL:CG2	12:L:116:TYR:HB3	2.40	0.50
1:A:412:A:H1'	1:A:413:G:C8	2.43	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:132:GLU:O	2:B:136:ARG:HG3	2.11	0.50
8:H:8:ASP:OD2	8:H:12:ARG:HD2	2.11	0.50
1:A:90:C:H2'	1:A:91:U:H6	1.76	0.50
1:A:1007:U:H2'	1:A:1008:U:H6	1.77	0.50
2:B:113:LEU:O	2:B:117:GLU:HG3	2.12	0.50
1:A:1366:C:H2'	1:A:1367:C:C6	2.45	0.50
1:A:807:A:H2'	1:A:808:C:C6	2.47	0.50
2:B:156:LEU:CD1	5:E:68:ARG:HH22	2.25	0.50
3:C:78:LYS:HE3	3:C:81:GLU:OE2	2.11	0.50
4:D:11:SER:HB2	4:D:20:LEU:HD11	1.92	0.50
2:B:100:LEU:O	2:B:178:LEU:HG	2.12	0.50
1:A:837:U:H2'	1:A:838:G:H8	1.77	0.50
1:A:840:C:C2	1:A:842:U:H4'	2.47	0.50
10:J:41:PRO:O	10:J:42:LEU:HB2	2.12	0.50
10:J:67:ILE:HG12	14:N:94:GLY:O	2.11	0.50
18:R:40:PRO:HD2	18:R:43:ILE:HD11	1.94	0.50
2:B:107:ARG:HA	2:B:110:ILE:CD1	2.42	0.50
1:A:633:G:H2'	1:A:634:C:C6	2.47	0.50
4:D:51:GLY:O	4:D:55:ARG:HB2	2.12	0.50
1:A:16:A:H4'	5:E:21:SER:H	1.76	0.50
1:A:1081:A:H62	5:E:51:LYS:NZ	2.02	0.50
9:I:56:MET:HA	9:I:59:LYS:HB2	1.94	0.50
3:C:146:LYS:HG3	3:C:202:PHE:HD2	1.74	0.50
1:A:33:A:H2'	1:A:34:C:H6	1.77	0.50
6:F:100:SER:HA	18:R:23:LYS:CE	2.42	0.50
1:A:848:C:P	2:B:35:ASN:OD1	2.70	0.50
2:B:156:LEU:HD11	5:E:68:ARG:HH12	1.67	0.50
2:B:53:LEU:HD12	2:B:219:THR:HG21	1.92	0.50
17:Q:18:LYS:HE3	17:Q:48:GLU:HG2	1.93	0.50
1:A:556:C:O2'	1:A:557:G:H5'	2.11	0.50
1:A:1080:A:HO2'	5:E:28:ARG:CD	2.24	0.50
2:B:71:THR:CG2	2:B:94:ARG:HH21	2.25	0.50
4:D:18:LEU:HB2	4:D:20:LEU:HD11	1.92	0.50
10:J:57:VAL:HG13	10:J:58:ASN:N	2.27	0.50
15:O:70:LYS:NZ	15:O:74:VAL:HG13	2.22	0.50
1:A:1110:A:C2'	1:A:1111:A:H5'	2.42	0.50
1:A:90:C:H2'	1:A:91:U:C6	2.47	0.50
1:A:220:G:O2'	1:A:221:C:H5'	2.12	0.50
1:A:1108:G:H5'	3:C:175:HIS:CD2	2.47	0.50
7:G:61:PHE:O	7:G:65:LEU:HD13	2.11	0.50
1:A:723:U:O4'	21:U:48:LYS:HD3	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:64:TYR:H	4:D:64:TYR:HD1	1.59	0.50
1:A:1137:C:O2'	1:A:1138:G:H5''	2.12	0.50
2:B:59:ILE:HD12	2:B:60:ALA:N	2.27	0.50
4:D:112:GLU:OE2	4:D:153:ARG:HD3	2.11	0.50
5:E:92:ARG:HB3	5:E:127:TYR:HB2	1.94	0.50
17:Q:10:ARG:NH2	17:Q:11:VAL:HG23	2.27	0.50
7:G:72:VAL:HB	7:G:144:ALA:CB	2.41	0.50
1:A:235:C:H2'	1:A:236:A:C8	2.47	0.50
5:E:155:LYS:HE3	8:H:70:VAL:HG13	1.94	0.50
7:G:94:ARG:HD3	7:G:98:LEU:HD11	1.93	0.50
1:A:613:C:H2'	1:A:614:C:C6	2.46	0.50
1:A:216:U:H2'	1:A:217:C:C6	2.46	0.50
1:A:49:U:O2'	1:A:50:A:H2'	2.11	0.50
1:A:869:G:C6	2:B:23:ASN:ND2	2.76	0.49
1:A:859:G:O3'	2:B:191:ASP:OD1	2.29	0.49
1:A:18:C:C4'	1:A:1078:U:H4'	2.41	0.49
1:A:1082:A:O5'	5:E:22:LYS:CE	2.60	0.49
21:U:38:GLU:C	21:U:40:PRO:HD2	2.31	0.49
1:A:664:G:H5''	18:R:52:ARG:NH2	2.27	0.49
12:L:113:ARG:HA	12:L:118:VAL:HG23	1.93	0.49
1:A:98:A:H2'	1:A:99:C:C6	2.47	0.49
1:A:370:C:O2'	1:A:371:A:H5'	2.13	0.49
13:M:89:ARG:NH1	13:M:94:LEU:HD13	2.27	0.49
2:B:114:LYS:HA	2:B:117:GLU:OE1	2.12	0.49
5:E:41:GLY:HA2	5:E:118:GLY:HA2	1.94	0.49
2:B:36:LYS:N	2:B:36:LYS:HE3	2.28	0.49
1:A:1313:U:H5''	19:S:5:LYS:CG	2.33	0.49
6:F:54:LEU:HD13	6:F:55:HIS:H	1.77	0.49
7:G:103:ILE:O	7:G:107:ALA:HB2	2.11	0.49
5:E:110:MET:N	5:E:110:MET:SD	2.85	0.49
1:A:537:G:H2'	1:A:538:G:C8	2.47	0.49
1:A:1284:C:H3'	1:A:1285:A:C5'	2.42	0.49
13:M:89:ARG:HH11	13:M:94:LEU:HD13	1.76	0.49
1:A:600:A:H2'	1:A:601:G:C8	2.48	0.49
2:B:218:ALA:HA	2:B:221:ARG:HE	1.76	0.49
1:A:1096:C:O2'	1:A:1097:C:H5'	2.12	0.49
1:A:685:G:O4'	11:K:40:ALA:HB3	2.11	0.49
1:A:110:C:H2'	1:A:111:G:O4'	2.12	0.49
1:A:830:G:C8	2:B:22:TRP:CB	2.95	0.49
1:A:859:G:O3'	2:B:191:ASP:O	2.22	0.49
1:A:830:G:N7	2:B:22:TRP:HB3	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:78:LYS:H	3:C:81:GLU:CB	2.25	0.49
21:U:37:TYR:C	21:U:40:PRO:HD2	2.33	0.49
20:T:68:LYS:HG3	20:T:69:ASN:ND2	2.27	0.49
13:M:38:ILE:HG13	13:M:55:LEU:CD2	2.41	0.49
4:D:169:TRP:HB3	4:D:183:ARG:HH21	1.77	0.49
2:B:95:TRP:CE3	2:B:171:ALA:HA	2.47	0.49
1:A:237:G:O2'	1:A:238:A:H5'	2.11	0.49
1:A:72:A:H2'	1:A:73:C:C6	2.47	0.49
1:A:218:U:H2'	1:A:219:U:H6	1.77	0.49
2:B:113:LEU:C	2:B:113:LEU:HD23	2.33	0.49
1:A:642:A:H2'	1:A:643:C:H6	1.76	0.49
3:C:119:ILE:O	3:C:123:LEU:HG	2.12	0.49
9:I:53:LEU:HD13	9:I:53:LEU:O	2.12	0.49
1:A:309:A:H2'	1:A:310:G:H8	1.76	0.49
19:S:64:GLU:OE2	19:S:65:MET:HG3	2.12	0.49
4:D:7:LYS:HG3	4:D:20:LEU:HB2	1.94	0.49
3:C:49:ALA:HB1	3:C:75:VAL:CG2	2.40	0.49
3:C:149:LYS:HB3	3:C:200:TRP:HB2	1.94	0.49
1:A:764:C:H3'	1:A:765:G:N2	2.25	0.49
1:A:969:A:N3	1:A:970:C:O2	2.45	0.49
1:A:546:A:H4'	1:A:548:G:O3'	2.12	0.49
1:A:685:G:O2'	1:A:686:U:H5'	2.12	0.49
10:J:48:ARG:HA	10:J:66:GLU:HA	1.95	0.49
1:A:915:A:H2'	1:A:916:U:H5'	1.94	0.49
1:A:971:G:OP1	1:A:971:G:H3'	2.12	0.49
13:M:84:CYS:HA	19:S:72:GLU:O	2.13	0.49
9:I:51:LEU:CD1	9:I:82:ILE:HG21	2.42	0.49
15:O:78:THR:HA	15:O:81:ILE:CD1	2.42	0.49
12:L:35:ARG:O	12:L:52:CYS:HB2	2.13	0.49
1:A:957:U:H3	1:A:960:U:H5''	1.77	0.49
17:Q:10:ARG:NE	17:Q:10:ARG:CA	2.76	0.49
4:D:10:LEU:HD21	4:D:62:ARG:CD	2.41	0.49
5:E:89:THR:HG21	5:E:134:ASN:ND2	2.27	0.49
1:A:677:U:H2'	1:A:678:U:C6	2.48	0.49
1:A:636:U:H2'	1:A:637:C:H6	1.78	0.49
21:U:8:ASN:O	21:U:9:GLU:HB2	2.12	0.49
2:B:45:THR:HA	2:B:48:MET:HG3	1.95	0.49
16:P:5:ARG:HD2	16:P:5:ARG:H	1.77	0.49
1:A:1220:G:H2'	1:A:1221:G:H8	1.77	0.49
13:M:15:VAL:HG13	13:M:29:SER:OG	2.13	0.49
4:D:29:THR:O	4:D:30:LYS:HB2	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:34:C:H2'	1:A:35:G:C8	2.47	0.49
11:K:52:ARG:O	11:K:54:SER:N	2.46	0.49
1:A:1285:A:H62	1:A:1355:G:H4'	1.76	0.49
1:A:212:G:H2'	1:A:213:G:C8	2.47	0.49
1:A:806:C:H2'	1:A:807:A:H8	1.77	0.49
2:B:15:PHE:HD1	2:B:16:GLY:H	1.61	0.49
22:V:244:ASP:HB3	22:V:247:MET:HG3	1.94	0.49
1:A:610:U:O4'	1:A:610:U:O2	2.28	0.49
1:A:830:G:N3	2:B:19:THR:C	2.65	0.49
1:A:16:A:N1	1:A:919:A:H2	2.10	0.49
16:P:42:ILE:CB	16:P:46:LYS:HD2	2.42	0.49
1:A:254:G:O2'	1:A:255:G:H5'	2.13	0.49
17:Q:60:ILE:HB	17:Q:72:TRP:HE3	1.78	0.49
2:B:9:LEU:H	2:B:9:LEU:HD12	1.78	0.49
1:A:79:G:H2'	1:A:80:A:O4'	2.13	0.49
11:K:15:VAL:HG11	11:K:35:ASP:HB2	1.94	0.49
1:A:1372:U:OP1	9:I:72:SER:HB2	2.12	0.49
9:I:32:ARG:HD3	9:I:37:TYR:HD1	1.77	0.49
1:A:327:A:H1'	1:A:329:A:O4'	2.13	0.49
11:K:49:SER:HA	11:K:68:ARG:HH21	1.77	0.49
1:A:1271:A:H2'	1:A:1272:G:H8	1.78	0.49
1:A:870:U:O4	2:B:27:LYS:HB3	2.06	0.49
1:A:1081:A:C3'	5:E:24:VAL:CG1	2.89	0.49
1:A:1514:G:H5'	22:V:222:ARG:NH1	2.28	0.49
21:U:29:ALA:HA	21:U:32:ARG:HB2	1.94	0.49
2:B:9:LEU:HD11	2:B:11:ALA:HB3	1.93	0.49
16:P:52:LEU:HG	16:P:75:ILE:CG1	2.40	0.49
1:A:1329:A:O2'	1:A:1330:U:H5'	2.13	0.49
9:I:112:ARG:HB2	9:I:112:ARG:HH11	1.77	0.49
1:A:677:U:H2'	1:A:678:U:H6	1.77	0.49
3:C:115:VAL:CG1	3:C:137:VAL:HG13	2.43	0.49
1:A:214:C:H2'	1:A:215:C:H6	1.76	0.49
1:A:22:G:H4'	1:A:885:G:C8	2.47	0.49
1:A:755:G:OP2	15:O:64:LYS:HG2	2.13	0.49
14:N:74:ARG:O	14:N:74:ARG:HD3	2.13	0.49
6:F:88:MET:CE	6:F:90:MET:HG3	2.43	0.49
19:S:51:HIS:HA	19:S:55:GLN:O	2.12	0.49
4:D:194:ILE:HD11	4:D:199:ILE:HD11	1.95	0.49
21:U:26:GLY:C	21:U:28:LEU:N	2.66	0.49
2:B:162:VAL:HG13	2:B:184:ALA:CB	2.39	0.49
16:P:29:ASN:ND2	16:P:29:ASN:N	2.60	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:560:A:H5'	1:A:566:G:N2	2.28	0.49
1:A:1018:G:H2'	1:A:1019:A:C8	2.48	0.49
1:A:1281:C:H5'	1:A:1282:C:C5	2.48	0.49
17:Q:23:ALA:HB1	17:Q:40:THR:HG23	1.94	0.49
1:A:1506:U:H4'	11:K:128:VAL:OXT	2.13	0.49
2:B:195:VAL:HG12	2:B:197:PHE:H	1.78	0.49
19:S:12:LEU:O	19:S:15:LEU:HB3	2.13	0.49
1:A:708:C:H2'	1:A:709:U:C6	2.47	0.49
11:K:125:LYS:O	21:U:33:ARG:NH2	2.45	0.48
9:I:4:GLN:NE2	9:I:21:LYS:HE3	2.28	0.48
17:Q:68:LYS:O	17:Q:69:THR:CB	2.61	0.48
3:C:150:VAL:HG12	3:C:151:GLU:N	2.27	0.48
6:F:39:LEU:HD13	6:F:40:GLU:H	1.77	0.48
12:L:35:ARG:HG3	12:L:36:VAL:N	2.26	0.48
8:H:29:SER:HB3	8:H:32:LYS:HG3	1.95	0.48
1:A:335:C:H2'	1:A:336:A:H8	1.78	0.48
1:A:806:C:H2'	1:A:807:A:C8	2.48	0.48
1:A:920:U:C6	1:A:1079:G:O6	2.65	0.48
2:B:71:THR:HG23	2:B:93:HIS:C	2.33	0.48
9:I:64:ILE:HG22	9:I:65:THR:N	2.28	0.48
2:B:162:VAL:HG21	2:B:168:GLU:HB2	1.95	0.48
1:A:878:A:C5'	8:H:80:PRO:HG2	2.43	0.48
1:A:900:A:H2'	1:A:901:A:C8	2.47	0.48
2:B:76:SER:HA	2:B:92:ASN:HB2	1.94	0.48
5:E:150:GLU:C	5:E:152:VAL:H	2.16	0.48
1:A:1234:C:H2'	1:A:1235:U:C6	2.48	0.48
5:E:40:ASP:C	5:E:42:ASN:H	2.17	0.48
1:A:1178:G:H2'	1:A:1180:A:OP2	2.13	0.48
1:A:182:A:H1'	1:A:183:C:C5	2.47	0.48
18:R:70:THR:OG1	18:R:71:ASP:N	2.46	0.48
1:A:575:G:H4'	1:A:576:C:O5'	2.13	0.48
2:B:13:VAL:HG11	2:B:207:ARG:HB2	1.95	0.48
3:C:77:GLY:O	3:C:79:LYS:N	2.46	0.48
10:J:55:PRO:HA	14:N:80:ARG:HH22	1.77	0.48
3:C:150:VAL:HG12	3:C:151:GLU:H	1.77	0.48
1:A:239:U:H5''	1:A:239:U:H6	1.78	0.48
5:E:33:THR:O	5:E:34:ALA:CB	2.61	0.48
8:H:24:VAL:CG1	8:H:60:LEU:HB2	2.43	0.48
3:C:122:GLN:HE22	3:C:136:ALA:HB1	1.78	0.48
1:A:1002:G:N3	1:A:1002:G:H2'	2.27	0.48
1:A:1314:C:H2'	1:A:1315:U:C6	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:919:A:H2	1:A:1078:U:C4	2.28	0.48
9:I:18:VAL:HG21	9:I:82:ILE:HG13	1.95	0.48
16:P:20:VAL:HG21	16:P:32:PHE:CD2	2.48	0.48
1:A:265:G:H2'	1:A:267:C:H5	1.78	0.48
17:Q:20:ILE:HG21	17:Q:52:CYS:SG	2.54	0.48
21:U:3:ILE:HA	21:U:19:LYS:CG	2.37	0.48
20:T:61:ALA:HA	20:T:66:ILE:O	2.13	0.48
15:O:70:LYS:HZ1	15:O:74:VAL:CG1	2.22	0.48
16:P:71:VAL:HA	16:P:74:LEU:CG	2.39	0.48
1:A:946:A:H2'	1:A:947:G:H8	1.75	0.48
8:H:11:THR:HG22	8:H:15:ASN:ND2	2.29	0.48
1:A:56:U:H2'	1:A:57:G:H8	1.77	0.48
1:A:208:U:C2'	1:A:209:U:H5''	2.43	0.48
1:A:157:U:O2'	1:A:158:G:H5'	2.13	0.48
9:I:87:MET:SD	9:I:94:ARG:HG3	2.53	0.48
1:A:15:G:C6	1:A:1079:G:C2	3.01	0.48
5:E:19:ARG:O	5:E:20:VAL:HB	2.14	0.48
2:B:60:ALA:HB3	2:B:223:GLY:HA3	1.95	0.48
13:M:106:ARG:CA	13:M:106:ARG:HH11	2.24	0.48
19:S:4:LEU:CD1	19:S:9:PHE:H	2.17	0.48
11:K:22:ILE:CG2	11:K:95:THR:HG21	2.35	0.48
9:I:18:VAL:HG21	9:I:82:ILE:CG1	2.43	0.48
11:K:69:CYS:C	11:K:71:ASP:N	2.66	0.48
1:A:87:C:N3	1:A:88:U:H1'	2.28	0.48
5:E:111:ARG:O	5:E:115:GLU:HG3	2.13	0.48
3:C:66:THR:HA	3:C:101:ASN:O	2.14	0.48
1:A:333:U:H2'	1:A:334:C:H6	1.79	0.48
8:H:87:ARG:O	8:H:91:LEU:HG	2.14	0.48
8:H:10:LEU:HA	8:H:74:ILE:HD11	1.95	0.48
1:A:911:U:H2'	1:A:912:C:C6	2.49	0.48
1:A:1081:A:O2'	1:A:1082:A:H5'	2.14	0.48
20:T:60:GLN:N	20:T:60:GLN:CD	2.67	0.48
3:C:113:LYS:HG3	3:C:117:ASP:OD2	2.13	0.48
1:A:782:A:H2'	1:A:783:C:O4'	2.13	0.48
8:H:17:GLN:NE2	8:H:69:ALA:HB1	2.28	0.48
1:A:591:U:H2'	1:A:592:G:H8	1.79	0.48
3:C:135:ARG:C	3:C:137:VAL:H	2.17	0.48
1:A:1130:A:O2'	1:A:1131:G:H5'	2.13	0.48
3:C:85:LYS:O	3:C:89:VAL:HG23	2.13	0.48
1:A:31:G:H2'	1:A:48:C:H5	1.77	0.48
6:F:75:GLU:O	6:F:79:ARG:HG2	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:35:ASN:O	2:B:36:LYS:HB2	2.13	0.48
11:K:121:ARG:NH1	11:K:121:ARG:HG3	2.29	0.48
1:A:1220:G:H4'	19:S:33:TRP:O	2.14	0.48
13:M:78:ARG:HH22	13:M:82:LEU:HD11	1.78	0.48
21:U:3:ILE:CA	21:U:19:LYS:HG2	2.38	0.48
1:A:65:A:C2'	1:A:65:A:N3	2.74	0.48
18:R:64:LEU:CB	18:R:66:LEU:HG	2.44	0.48
1:A:812:G:N3	1:A:812:G:C2'	2.75	0.48
1:A:238:A:C2'	1:A:239:U:H5''	2.42	0.48
11:K:82:GLU:HG3	11:K:107:THR:OG1	2.13	0.48
1:A:734:G:H2'	1:A:735:C:C6	2.49	0.48
8:H:29:SER:HB3	8:H:32:LYS:HZ2	1.77	0.48
1:A:522:C:H41	12:L:49:ARG:NH2	2.10	0.48
1:A:537:G:H2'	1:A:538:G:H8	1.78	0.48
1:A:1376:U:H2'	1:A:1377:A:C8	2.49	0.48
9:I:118:ARG:HH22	9:I:122:ARG:NH2	2.10	0.48
5:E:81:GLN:HE21	5:E:147:ASN:C	2.17	0.48
6:F:67:PRO:O	6:F:70:VAL:HG22	2.13	0.48
1:A:1526:G:O2'	1:A:1527:U:H5'	2.13	0.48
14:N:59:GLN:N	14:N:59:GLN:NE2	2.62	0.48
7:G:131:GLY:O	7:G:134:VAL:HG12	2.13	0.48
17:Q:10:ARG:NH1	17:Q:11:VAL:HB	2.28	0.48
17:Q:8:GLN:HB3	17:Q:57:VAL:HG13	1.95	0.48
4:D:94:GLU:CA	4:D:103:ARG:HH22	2.27	0.48
10:J:41:PRO:O	10:J:71:LEU:HD13	2.13	0.48
5:E:104:ILE:HG23	5:E:104:ILE:O	2.14	0.48
1:A:720:C:C5'	18:R:40:PRO:HA	2.43	0.48
16:P:12:LYS:C	16:P:14:ARG:H	2.17	0.48
1:A:864:A:H2'	1:A:865:A:C8	2.49	0.48
1:A:147:G:H2'	1:A:148:G:C8	2.49	0.48
5:E:63:MET:O	5:E:66:ALA:HB3	2.14	0.48
22:V:113:ASN:HA	22:V:139:MET:HB3	1.96	0.48
1:A:829:G:H5'	2:B:39:ILE:O	2.13	0.48
2:B:160:LEU:O	2:B:182:VAL:HA	2.14	0.48
2:B:66:ILE:C	2:B:67:LEU:HD13	2.34	0.48
1:A:1072:G:H2'	1:A:1073:U:C6	2.48	0.48
2:B:162:VAL:O	2:B:184:ALA:HA	2.14	0.48
11:K:15:VAL:HG21	11:K:41:LEU:CD1	2.44	0.48
12:L:80:LEU:O	12:L:97:VAL:HG23	2.14	0.48
7:G:53:SER:HB2	7:G:55:LYS:HZ2	1.77	0.48
1:A:5:U:H1'	1:A:6:G:C2	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:215:ALA:O	2:B:218:ALA:HB3	2.13	0.48
1:A:21:G:H2'	1:A:22:G:C8	2.49	0.48
1:A:182:A:H1'	1:A:183:C:H5	1.79	0.48
1:A:179:A:H2'	1:A:180:U:C6	2.48	0.48
16:P:36:VAL:HG13	16:P:36:VAL:O	2.14	0.48
1:A:434:U:H2'	1:A:434:U:O2	2.14	0.48
1:A:830:G:C6	2:B:22:TRP:CD2	3.02	0.48
1:A:870:U:P	2:B:24:PRO:HB3	2.54	0.48
1:A:922:G:H2'	1:A:923:A:H8	1.75	0.48
21:U:14:ALA:H	21:U:16:ARG:CZ	2.15	0.48
11:K:121:ARG:HG3	11:K:121:ARG:HH11	1.79	0.48
1:A:1014:A:C2	1:A:1219:A:H1'	2.49	0.48
7:G:14:ASP:OD2	7:G:15:PRO:HD2	2.14	0.48
4:D:84:ASN:HD22	4:D:87:GLU:N	2.10	0.48
4:D:93:LEU:O	4:D:96:ARG:HB3	2.14	0.48
12:L:90:PRO:C	12:L:92:VAL:H	2.17	0.48
1:A:252:U:H2'	1:A:253:A:C8	2.48	0.48
1:A:1137:C:H1'	1:A:1138:G:N2	2.28	0.48
1:A:684:U:O2'	11:K:39:ASN:HB3	2.14	0.48
1:A:608:A:H2'	1:A:609:A:O4'	2.14	0.48
16:P:33:ILE:H	16:P:33:ILE:HD12	1.79	0.48
1:A:1080:A:H8	5:E:22:LYS:CA	2.18	0.47
1:A:1081:A:C5	5:E:22:LYS:HD2	2.37	0.47
7:G:125:ASP:HB3	7:G:130:LYS:CB	2.27	0.47
1:A:1060:U:C5'	10:J:53:ILE:HG22	2.42	0.47
12:L:58:ASN:HD22	12:L:58:ASN:N	2.11	0.47
1:A:437:U:H5''	4:D:151:GLN:NE2	2.29	0.47
10:J:22:THR:CG2	10:J:23:ALA:N	2.77	0.47
16:P:6:LEU:HD11	16:P:71:VAL:HB	1.96	0.47
1:A:235:C:H2'	1:A:236:A:H8	1.78	0.47
1:A:174:A:O2'	1:A:175:C:H5'	2.13	0.47
2:B:80:LYS:O	2:B:84:LEU:N	2.47	0.47
6:F:18:VAL:HG21	6:F:58:HIS:CG	2.49	0.47
1:A:1258:G:C4	1:A:1278:G:N2	2.82	0.47
6:F:70:VAL:HA	6:F:73:GLU:HG3	1.96	0.47
1:A:109:A:H4'	1:A:110:C:OP2	2.14	0.47
15:O:28:VAL:HG22	15:O:65:LEU:HB3	1.96	0.47
1:A:953:G:H2'	1:A:954:G:O4'	2.14	0.47
19:S:3:SER:O	19:S:4:LEU:HG	2.14	0.47
10:J:88:MET:CE	10:J:88:MET:H	2.27	0.47
14:N:12:ARG:HH11	14:N:60:ARG:HH12	1.62	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:22:LEU:O	7:G:26:VAL:HG13	2.14	0.47
1:A:34:C:H2'	1:A:35:G:H8	1.79	0.47
4:D:117:VAL:HG12	4:D:130:ASN:C	2.35	0.47
1:A:193:C:H2'	1:A:194:C:C6	2.49	0.47
20:T:4:LYS:HD2	20:T:5:SER:H	1.79	0.47
7:G:16:LYS:C	7:G:16:LYS:HD3	2.34	0.47
11:K:60:PHE:HA	11:K:63:GLN:OE1	2.14	0.47
19:S:10:ILE:HD11	19:S:15:LEU:HD13	1.96	0.47
1:A:333:U:H2'	1:A:334:C:C6	2.49	0.47
9:I:43:ALA:C	9:I:45:MET:H	2.16	0.47
1:A:659:U:H2'	1:A:660:C:C6	2.49	0.47
7:G:137:ARG:HG2	7:G:141:HIS:CE1	2.48	0.47
7:G:71:THR:HA	7:G:90:VAL:HG22	1.96	0.47
1:A:672:U:H2'	1:A:673:A:H8	1.78	0.47
3:C:178:ARG:O	3:C:206:ILE:HA	2.14	0.47
1:A:513:C:H2'	1:A:514:C:C6	2.49	0.47
1:A:317:U:H2'	1:A:318:G:C8	2.49	0.47
1:A:321:A:O2'	1:A:322:C:H5'	2.14	0.47
3:C:120:THR:HA	3:C:123:LEU:HD12	1.96	0.47
1:A:426:U:H2'	1:A:427:U:C6	2.48	0.47
1:A:1352:C:H2'	1:A:1353:G:C8	2.50	0.47
1:A:577:G:O2'	1:A:578:C:H5'	2.14	0.47
1:A:986:U:H1'	19:S:53:GLY:O	2.14	0.47
4:D:160:LEU:H	4:D:160:LEU:CD1	2.20	0.47
3:C:46:LEU:CD2	3:C:75:VAL:HG13	2.44	0.47
11:K:83:VAL:CG2	11:K:109:ILE:HG12	2.44	0.47
3:C:11:LEU:HD22	3:C:17:TRP:CD1	2.50	0.47
5:E:45:VAL:HG23	5:E:71:ILE:CG2	2.43	0.47
4:D:69:ARG:HE	4:D:69:ARG:CA	2.25	0.47
1:A:1369:C:H2'	1:A:1370:G:C8	2.49	0.47
22:V:60:ASP:O	22:V:84:LYS:HG2	2.14	0.47
1:A:343:U:O2'	1:A:344:A:H2'	2.14	0.47
6:F:71:ILE:HG13	6:F:72:ASP:N	2.29	0.47
1:A:1215:G:H8	1:A:1215:G:H5'	1.78	0.47
21:U:29:ALA:HB1	21:U:32:ARG:NH2	2.10	0.47
9:I:30:ASN:HD21	9:I:65:THR:HA	1.80	0.47
17:Q:20:ILE:CG1	17:Q:45:VAL:HB	2.43	0.47
3:C:5:HIS:CD2	3:C:7:ASN:HB2	2.49	0.47
1:A:389:A:N3	1:A:389:A:H2'	2.30	0.47
1:A:1343:G:H2'	1:A:1344:C:H6	1.78	0.47
7:G:58:LEU:HB3	7:G:59:GLU:OE2	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1367:C:O2'	1:A:1368:A:H5'	2.14	0.47
2:B:158:ASP:O	2:B:181:PRO:HD2	2.15	0.47
1:A:462:G:H3'	1:A:463:U:H5''	1.95	0.47
13:M:58:GLU:HA	13:M:61:LYS:HE2	1.95	0.47
2:B:163:ILE:HG13	2:B:185:ILE:HD11	1.96	0.47
1:A:1518:A:C2	22:V:186:LYS:HB2	2.50	0.47
13:M:109:LYS:HG3	13:M:110:GLY:N	2.28	0.47
10:J:88:MET:C	10:J:90:LEU:H	2.17	0.47
13:M:33:LEU:HB3	13:M:38:ILE:O	2.14	0.47
6:F:38:ARG:HH21	6:F:96:VAL:CG1	2.28	0.47
2:B:172:ILE:O	2:B:175:ALA:HB3	2.13	0.47
7:G:87:PRO:CG	7:G:151:ALA:HB2	2.41	0.47
1:A:901:A:H3'	1:A:902:G:O4'	2.15	0.47
8:H:64:TYR:CB	8:H:69:ALA:HA	2.44	0.47
17:Q:24:ILE:O	17:Q:40:THR:HA	2.14	0.47
14:N:72:PHE:CE1	14:N:77:GLY:HA2	2.49	0.47
2:B:206:ILE:O	2:B:209:VAL:HG23	2.13	0.47
21:U:40:PRO:O	21:U:42:THR:N	2.48	0.47
1:A:1060:U:H4'	10:J:54:SER:HB2	1.95	0.47
3:C:21:TRP:CD1	3:C:58:ARG:HD2	2.49	0.47
13:M:11:HIS:O	13:M:12:LYS:HG2	2.14	0.47
19:S:37:SER:O	19:S:69:LYS:HG2	2.15	0.47
1:A:1121:U:H2'	1:A:1122:U:O4'	2.15	0.47
3:C:75:VAL:O	3:C:75:VAL:HG12	2.14	0.47
1:A:255:G:H2'	1:A:256:U:C6	2.48	0.47
11:K:92:ARG:NH2	11:K:111:ASP:OD1	2.47	0.47
17:Q:22:VAL:HG21	17:Q:58:VAL:HG21	1.96	0.47
8:H:111:THR:HG23	8:H:114:ALA:CB	2.44	0.47
7:G:142:ARG:C	7:G:146:ALA:HB3	2.34	0.47
16:P:39:PHE:CE1	16:P:74:LEU:HD22	2.49	0.47
16:P:67:ILE:HG13	16:P:71:VAL:CG1	2.41	0.47
13:M:77:LYS:O	13:M:81:ASP:N	2.44	0.47
8:H:49:LYS:CG	8:H:50:VAL:H	2.27	0.47
1:A:232:G:H1'	1:A:262:A:N1	2.29	0.47
1:A:1109:C:N4	1:A:1110:A:N6	2.62	0.47
4:D:81:LEU:HD11	4:D:92:LEU:HD21	1.97	0.47
3:C:61:LYS:O	3:C:97:PRO:HD2	2.14	0.47
1:A:1171:A:O2'	1:A:1172:C:H5'	2.15	0.47
1:A:301:G:H2'	1:A:302:G:H8	1.79	0.47
11:K:63:GLN:O	11:K:67:GLU:HB3	2.14	0.47
7:G:94:ARG:CD	7:G:98:LEU:HD11	2.44	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1272:G:H2'	1:A:1273:C:C6	2.50	0.47
10:J:5:ARG:N	10:J:5:ARG:HD3	2.29	0.47
1:A:588:G:H5'	8:H:2:MET:O	2.14	0.47
21:U:35:GLU:HB2	21:U:37:TYR:CZ	2.50	0.47
19:S:4:LEU:N	19:S:5:LYS:HE3	2.29	0.47
10:J:8:ILE:H	10:J:75:ASP:HB2	1.80	0.47
21:U:3:ILE:HA	21:U:19:LYS:HE3	1.97	0.47
1:A:1348:U:H2'	1:A:1349:A:H8	1.80	0.47
1:A:78:A:O2'	1:A:79:G:H5'	2.14	0.47
1:A:812:G:HO2'	1:A:813:U:H6	1.55	0.47
1:A:471:U:H2'	1:A:472:U:H6	1.80	0.47
13:M:13:HIS:HB2	13:M:16:ILE:HG22	1.97	0.47
20:T:49:ALA:HA	20:T:52:GLU:HB3	1.96	0.47
15:O:87:ARG:HA	15:O:87:ARG:HH11	1.78	0.47
1:A:746:A:H2'	1:A:747:A:H8	1.80	0.47
3:C:139:ASN:O	3:C:143:LEU:HD22	2.14	0.47
22:V:136:MET:HB2	22:V:194:LEU:HB2	1.96	0.47
1:A:827:U:C2'	2:B:28:PRO:CB	2.86	0.47
2:B:156:LEU:HD12	2:B:156:LEU:H	1.80	0.47
1:A:1085:U:H3'	1:A:1086:U:H5	1.80	0.47
14:N:60:ARG:HE	14:N:62:ARG:CZ	2.28	0.47
1:A:1124:G:H5''	10:J:38:GLY:HA3	1.97	0.47
9:I:51:LEU:HD23	9:I:56:MET:HE3	1.97	0.47
2:B:162:VAL:HG11	2:B:172:ILE:HG12	1.96	0.47
1:A:674:G:H2'	1:A:675:A:C8	2.49	0.47
4:D:117:VAL:HG12	4:D:130:ASN:CA	2.45	0.47
1:A:167:A:O2'	1:A:168:G:H5'	2.15	0.47
1:A:1198:G:H2'	1:A:1199:U:C6	2.50	0.47
1:A:751:U:H4'	15:O:23:SER:HA	1.97	0.47
11:K:21:HIS:CE1	11:K:34:THR:HG21	2.50	0.47
1:A:719:C:H1'	18:R:37:LYS:HE3	1.96	0.47
1:A:552:U:H2'	1:A:553:A:C8	2.50	0.47
10:J:35:GLN:H	10:J:78:GLU:HB3	1.80	0.47
13:M:72:ILE:O	13:M:76:ILE:HG13	2.15	0.47
10:J:18:ILE:HD12	10:J:72:ARG:HG3	1.97	0.47
11:K:52:ARG:HD2	11:K:53:GLY:H	1.80	0.47
12:L:106:VAL:HG22	12:L:117:GLY:H	1.79	0.47
16:P:29:ASN:HD22	16:P:29:ASN:N	2.11	0.47
1:A:1018:G:H2'	1:A:1019:A:H8	1.80	0.47
6:F:43:GLY:HA2	6:F:58:HIS:CE1	2.49	0.47
4:D:147:LYS:HE3	4:D:147:LYS:H	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:975:A:H4'	1:A:976:G:OP2	2.14	0.47
16:P:33:ILE:N	16:P:33:ILE:HD12	2.29	0.47
11:K:12:ARG:N	11:K:12:ARG:HD2	2.30	0.47
16:P:3:THR:HG22	16:P:66:THR:HB	1.98	0.46
4:D:163:GLN:HB2	4:D:164:ARG:HH12	1.80	0.46
6:F:64:VAL:CG1	6:F:65:GLU:H	2.15	0.46
10:J:57:VAL:HG22	10:J:58:ASN:H	1.80	0.46
6:F:5:GLU:HG3	6:F:63:ASN:OD1	2.15	0.46
16:P:26:ASN:OD1	16:P:31:ARG:HB3	2.14	0.46
5:E:45:VAL:HG12	5:E:116:VAL:HG23	1.98	0.46
1:A:1294:G:H2'	1:A:1295:U:H6	1.79	0.46
12:L:50:LYS:HE2	12:L:50:LYS:N	2.30	0.46
1:A:767:A:H2'	1:A:768:A:C8	2.51	0.46
6:F:66:ALA:HB1	6:F:67:PRO:HD2	1.96	0.46
3:C:84:GLU:HA	3:C:87:ARG:NH2	2.30	0.46
2:B:204:ASP:CG	2:B:205:ALA:N	2.63	0.46
1:A:18:C:C4	1:A:1078:U:C2	3.02	0.46
3:C:78:LYS:H	3:C:81:GLU:HB3	1.79	0.46
1:A:1016:A:H5'	1:A:1218:C:H4'	1.97	0.46
16:P:4:ILE:HA	16:P:20:VAL:O	2.15	0.46
5:E:84:VAL:HG21	5:E:142:GLY:O	2.15	0.46
11:K:109:ILE:O	11:K:110:THR:HG23	2.16	0.46
12:L:35:ARG:HH21	12:L:75:GLU:HB3	1.78	0.46
1:A:1057:G:H4'	3:C:194:VAL:O	2.15	0.46
7:G:35:LYS:O	7:G:39:GLU:HG2	2.16	0.46
1:A:916:U:H2'	1:A:917:G:H8	1.80	0.46
1:A:1180:A:P	9:I:98:ARG:HH22	2.38	0.46
1:A:303:A:H2'	1:A:304:U:O4'	2.14	0.46
22:V:119:SER:HB2	22:V:140:LEU:HD22	1.97	0.46
1:A:649:A:H2'	1:A:650:G:O4'	2.15	0.46
10:J:89:ARG:HA	10:J:89:ARG:NE	2.31	0.46
19:S:43:MET:O	19:S:46:LEU:HB2	2.14	0.46
9:I:40:ARG:HA	9:I:44:ARG:HH21	1.81	0.46
3:C:71:ARG:O	3:C:75:VAL:HG23	2.15	0.46
20:T:70:LYS:HB2	20:T:70:LYS:NZ	2.31	0.46
4:D:167:PRO:HB2	4:D:170:LEU:HG	1.97	0.46
1:A:1118:U:H1'	1:A:1179:A:C5	2.50	0.46
8:H:92:PRO:HA	8:H:93:LYS:HZ1	1.78	0.46
4:D:81:LEU:CD1	4:D:92:LEU:HD21	2.45	0.46
13:M:22:TYR:HB3	13:M:69:ARG:HH22	1.78	0.46
1:A:844:G:H21	1:A:845:A:H62	1.61	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:692:U:H2'	1:A:694:A:OP2	2.16	0.46
1:A:1527:U:O2'	1:A:1528:U:H5'	2.16	0.46
1:A:607:A:H2'	1:A:608:A:C8	2.49	0.46
2:B:82:ALA:O	2:B:217:ALA:HB2	2.15	0.46
1:A:894:G:O2'	1:A:895:G:H5'	2.15	0.46
3:C:171:ARG:NH1	3:C:173:PRO:HG3	2.31	0.46
19:S:4:LEU:O	19:S:6:LYS:N	2.48	0.46
14:N:79:SER:O	14:N:81:ILE:HD12	2.14	0.46
9:I:49:GLN:N	9:I:50:PRO:HD2	2.30	0.46
9:I:64:ILE:HD13	9:I:78:ILE:HG21	1.98	0.46
2:B:119:GLN:HA	2:B:124:THR:HG23	1.97	0.46
1:A:541:G:H2'	1:A:542:G:H8	1.79	0.46
1:A:950:U:H2'	1:A:951:G:C8	2.50	0.46
8:H:64:TYR:CA	8:H:70:VAL:HG23	2.45	0.46
5:E:108:GLY:N	5:E:110:MET:SD	2.89	0.46
1:A:26:A:H61	1:A:558:G:H1'	1.81	0.46
3:C:131:ARG:CZ	3:C:131:ARG:HB3	2.45	0.46
3:C:126:ARG:HH22	3:C:190:THR:CG2	2.28	0.46
1:A:1096:C:H2'	1:A:1097:C:C6	2.50	0.46
1:A:418:C:H2'	1:A:419:C:H6	1.79	0.46
15:O:24:THR:HB	15:O:69:LEU:HD21	1.98	0.46
3:C:24:ASN:O	3:C:26:LYS:N	2.49	0.46
13:M:106:ARG:HE	13:M:112:ARG:CG	2.14	0.46
1:A:1320:C:P	19:S:69:LYS:HZ2	2.38	0.46
7:G:14:ASP:CG	7:G:15:PRO:HD2	2.36	0.46
2:B:9:LEU:HD22	2:B:11:ALA:N	2.24	0.46
2:B:178:LEU:CD1	5:E:69:ASN:HD21	2.28	0.46
4:D:117:VAL:HG22	4:D:122:ILE:HG13	1.97	0.46
2:B:79:VAL:HG13	2:B:90:PHE:HD2	1.79	0.46
10:J:80:THR:N	10:J:84:VAL:HG11	2.29	0.46
1:A:301:G:H2'	1:A:302:G:C8	2.50	0.46
4:D:43:ARG:HB3	4:D:44:LYS:H	1.49	0.46
1:A:829:G:OP1	2:B:41:ASN:N	2.49	0.46
3:C:76:ILE:C	3:C:82:ASP:HB2	2.36	0.46
14:N:10:VAL:HG12	14:N:11:LYS:NZ	2.31	0.46
4:D:25:ARG:HD3	4:D:26:ALA:N	2.31	0.46
1:A:1348:U:H4'	9:I:121:ARG:NH1	2.31	0.46
1:A:1071:C:O2'	1:A:1072:G:H5'	2.15	0.46
1:A:948:C:O2'	1:A:949:A:H5'	2.15	0.46
8:H:65:PHE:CD2	8:H:66:GLN:HG3	2.51	0.46
3:C:33:ASP:O	3:C:37:LYS:HE2	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1256:A:O4'	1:A:1278:G:N2	2.49	0.46
1:A:230:G:O2'	1:A:231:U:H5'	2.15	0.46
17:Q:66:LEU:HD11	17:Q:73:THR:HG22	1.98	0.46
7:G:42:VAL:O	7:G:46:LEU:HB2	2.15	0.46
1:A:829:G:O3'	2:B:39:ILE:O	2.33	0.46
1:A:920:U:N3	1:A:1079:G:N1	2.63	0.46
4:D:160:LEU:HD22	4:D:161:ALA:N	2.31	0.46
17:Q:19:SER:O	17:Q:20:ILE:HG23	2.16	0.46
3:C:112:ALA:HB2	3:C:182:ASP:O	2.16	0.46
16:P:39:PHE:HE2	16:P:70:ARG:HH21	1.63	0.46
16:P:71:VAL:CA	16:P:74:LEU:HG	2.41	0.46
1:A:947:G:H2'	1:A:948:C:C6	2.51	0.46
4:D:94:GLU:HA	4:D:94:GLU:OE1	2.14	0.46
5:E:108:GLY:H	5:E:110:MET:CE	2.28	0.46
1:A:982:U:H4'	1:A:983:A:O4'	2.16	0.46
3:C:131:ARG:HH22	3:C:135:ARG:NH1	2.14	0.46
1:A:1131:G:O2'	1:A:1132:C:H5'	2.15	0.46
1:A:841:C:H6	1:A:843:U:OP1	1.99	0.46
11:K:22:ILE:HD13	11:K:95:THR:CG2	2.46	0.46
1:A:981:U:H4'	14:N:60:ARG:CG	2.45	0.46
13:M:21:ILE:HG22	13:M:64:VAL:CG1	2.41	0.46
1:A:1320:C:H2'	1:A:1321:U:O4'	2.16	0.46
2:B:95:TRP:CH2	2:B:100:LEU:HB2	2.50	0.46
6:F:42:TRP:CZ2	6:F:61:LEU:HD23	2.51	0.46
7:G:132:THR:HA	7:G:135:LYS:HB3	1.97	0.46
1:A:1315:U:H3'	1:A:1316:G:C8	2.51	0.46
1:A:792:A:H1'	1:A:794:A:N7	2.31	0.46
1:A:664:G:H5''	18:R:52:ARG:CZ	2.46	0.46
1:A:890:G:O2'	1:A:906:A:N6	2.49	0.46
1:A:1211:U:H1'	1:A:1213:A:C2	2.51	0.46
17:Q:10:ARG:NE	17:Q:11:VAL:H	2.12	0.46
16:P:1:MET:H2	16:P:24:SER:HB3	1.80	0.46
1:A:947:G:H2'	1:A:948:C:H6	1.81	0.46
18:R:46:THR:CG2	18:R:51:GLN:HB2	2.43	0.46
3:C:166:TRP:HB3	3:C:167:TYR:H	1.49	0.46
7:G:110:ARG:HH12	7:G:122:GLU:N	2.13	0.46
1:A:512:U:H2'	1:A:513:C:C6	2.51	0.46
1:A:601:G:H2'	1:A:602:A:C8	2.51	0.46
20:T:74:HIS:O	20:T:78:LEU:HB2	2.16	0.46
1:A:114:U:H2'	1:A:115:G:C8	2.50	0.46
1:A:131:A:H2'	1:A:132:C:H6	1.75	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:T:68:LYS:HG3	20:T:69:ASN:N	2.19	0.46
9:I:44:ARG:O	9:I:47:VAL:HG22	2.15	0.46
15:O:6:ALA:O	15:O:10:ILE:HG22	2.16	0.46
4:D:170:LEU:HD12	4:D:170:LEU:O	2.15	0.46
6:F:5:GLU:HA	6:F:63:ASN:HA	1.97	0.46
7:G:139:ASP:HA	7:G:142:ARG:HH12	1.81	0.46
12:L:121:PRO:C	12:L:123:ALA:H	2.18	0.46
12:L:98:ARG:CB	12:L:116:TYR:HA	2.46	0.46
4:D:32:LYS:HB3	4:D:35:GLN:HE21	1.81	0.46
18:R:63:TYR:C	18:R:65:SER:H	2.19	0.46
4:D:123:MET:HG3	4:D:127:ARG:C	2.36	0.46
13:M:53:ASP:OD1	13:M:56:ARG:HD2	2.15	0.46
12:L:49:ARG:HH12	12:L:88:ASP:CB	2.29	0.46
1:A:1038:C:H2'	1:A:1039:G:C8	2.47	0.46
9:I:10:ARG:HA	9:I:77:ALA:HB1	1.98	0.46
10:J:80:THR:HG22	10:J:81:GLU:H	1.81	0.46
9:I:15:ALA:O	9:I:66:VAL:HA	2.16	0.46
2:B:128:LEU:CG	2:B:132:GLU:HG2	2.46	0.46
3:C:90:VAL:HA	3:C:93:ILE:HG21	1.97	0.46
3:C:90:VAL:HG21	3:C:98:ALA:HB3	1.97	0.46
1:A:844:G:N7	1:A:846:G:N3	2.63	0.46
8:H:34:ALA:HB1	8:H:109:VAL:HG21	1.97	0.46
1:A:16:A:O3'	1:A:1079:G:H4'	2.17	0.45
2:B:102:ASN:OD1	2:B:105:THR:HG22	2.16	0.45
1:A:136:C:H1'	16:P:1:MET:HE1	1.99	0.45
15:O:27:GLN:O	15:O:31:LEU:HD23	2.16	0.45
1:A:491:G:H2'	1:A:492:C:C6	2.51	0.45
2:B:128:LEU:HD13	2:B:129:THR:H	1.80	0.45
14:N:45:LEU:O	14:N:48:GLN:HB3	2.16	0.45
1:A:299:G:H2'	1:A:300:A:C8	2.51	0.45
1:A:22:G:O2'	1:A:23:C:H5'	2.16	0.45
1:A:927:G:O2'	1:A:928:G:H5'	2.16	0.45
8:H:31:LEU:O	8:H:35:ILE:HG13	2.15	0.45
1:A:489:C:H2'	1:A:490:C:C6	2.51	0.45
2:B:33:ALA:HA	2:B:38:HIS:CA	2.39	0.45
21:U:40:PRO:C	21:U:42:THR:N	2.69	0.45
1:A:1085:U:H3'	1:A:1086:U:C5	2.51	0.45
11:K:88:PRO:HA	11:K:92:ARG:CD	2.47	0.45
2:B:174:GLU:O	2:B:178:LEU:HD23	2.16	0.45
1:A:812:G:OP1	1:A:812:G:H4'	2.16	0.45
1:A:234:C:H2'	1:A:235:C:C6	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:968:A:H5'	1:A:968:A:N3	2.31	0.45
10:J:67:ILE:CG1	14:N:95:LEU:HD13	2.45	0.45
4:D:113:ALA:O	4:D:117:VAL:HG23	2.16	0.45
13:M:49:GLU:O	13:M:53:ASP:HB3	2.17	0.45
1:A:1113:C:H2'	1:A:1114:C:H6	1.81	0.45
3:C:89:VAL:C	3:C:91:ALA:H	2.19	0.45
1:A:820:U:H4'	1:A:821:G:OP2	2.16	0.45
1:A:366:A:O2'	1:A:394:G:N2	2.49	0.45
2:B:56:LEU:O	2:B:59:ILE:HG13	2.16	0.45
13:M:75:SER:O	13:M:78:ARG:HB3	2.16	0.45
13:M:78:ARG:HE	13:M:79:LEU:HG	1.82	0.45
9:I:79:ARG:O	9:I:83:THR:HG22	2.17	0.45
15:O:80:LEU:HD23	15:O:80:LEU:C	2.36	0.45
1:A:1348:U:H2'	1:A:1349:A:C8	2.51	0.45
5:E:89:THR:HG21	5:E:134:ASN:HD21	1.81	0.45
1:A:1306:A:N6	1:A:1331:G:H1'	2.32	0.45
2:B:145:ASN:HD22	2:B:145:ASN:HA	1.55	0.45
14:N:50:LEU:CG	14:N:51:PRO:HD3	2.46	0.45
1:A:1231:G:H2'	1:A:1232:U:H6	1.80	0.45
3:C:14:VAL:HG23	3:C:15:LYS:HG2	1.98	0.45
13:M:3:ILE:HA	13:M:56:ARG:HG2	1.98	0.45
1:A:708:C:H2'	1:A:709:U:H6	1.80	0.45
1:A:325:A:H2'	1:A:326:G:O4'	2.16	0.45
14:N:25:GLU:O	14:N:29:ILE:HG13	2.16	0.45
20:T:23:ARG:HB2	20:T:65:LEU:HD11	1.98	0.45
1:A:563:A:H2'	1:A:567:G:C8	2.50	0.45
16:P:42:ILE:CG2	16:P:43:ALA:H	2.20	0.45
3:C:146:LYS:HG3	3:C:202:PHE:CD2	2.51	0.45
21:U:5:VAL:CG2	21:U:19:LYS:HZ1	2.30	0.45
1:A:1348:U:H4'	9:I:121:ARG:HH11	1.79	0.45
5:E:35:LEU:HD23	5:E:36:THR:N	2.30	0.45
20:T:54:GLN:N	20:T:55:PRO:CD	2.80	0.45
9:I:66:VAL:CG2	9:I:74:GLN:HG3	2.47	0.45
1:A:384:G:H2'	1:A:385:C:H6	1.80	0.45
3:C:131:ARG:HH22	3:C:135:ARG:CZ	2.29	0.45
1:A:551:U:O2'	1:A:552:U:H5'	2.16	0.45
10:J:33:GLY:HA3	10:J:83:THR:OG1	2.16	0.45
10:J:89:ARG:HA	10:J:89:ARG:CZ	2.47	0.45
1:A:1101:A:O2'	1:A:1102:A:OP2	2.34	0.45
1:A:662:U:O2'	1:A:836:G:H5''	2.15	0.45
21:U:5:VAL:HG22	21:U:19:LYS:NZ	2.31	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:T:70:LYS:HA	20:T:73:ARG:CZ	2.47	0.45
1:A:1126:U:O2'	1:A:1280:A:H2'	2.17	0.45
8:H:51:GLU:O	8:H:56:PRO:HA	2.16	0.45
1:A:734:G:O2'	18:R:59:LYS:HD3	2.17	0.45
1:A:620:C:C6	4:D:131:ILE:HD13	2.51	0.45
1:A:123:U:H5''	1:A:311:C:O2'	2.16	0.45
15:O:52:ARG:HG3	15:O:55:LEU:HD23	1.99	0.45
1:A:22:G:H2'	1:A:23:C:C6	2.52	0.45
1:A:687:A:C2	1:A:704:A:C5	3.05	0.45
7:G:102:TRP:CD1	7:G:102:TRP:N	2.83	0.45
1:A:832:G:C8	2:B:20:ARG:CD	3.00	0.45
13:M:10:ASP:HA	13:M:44:ILE:HD11	1.99	0.45
6:F:45:ARG:HG2	6:F:46:GLN:N	2.31	0.45
16:P:43:ALA:H	16:P:46:LYS:HD2	1.81	0.45
19:S:61:VAL:HA	19:S:65:MET:SD	2.56	0.45
4:D:29:THR:OG1	4:D:30:LYS:HD3	2.17	0.45
4:D:2:ARG:NH1	4:D:114:ARG:HD2	2.32	0.45
4:D:1:ALA:O	4:D:67:LEU:HD21	2.16	0.45
6:F:7:VAL:HG23	6:F:60:VAL:O	2.17	0.45
7:G:71:THR:O	7:G:72:VAL:HG13	2.16	0.45
4:D:99:ASN:ND2	4:D:110:ARG:NE	2.64	0.45
1:A:1056:U:O2'	1:A:1057:G:H5'	2.16	0.45
1:A:1252:A:H2'	1:A:1253:G:H5''	1.98	0.45
1:A:1237:C:H4'	1:A:1334:G:N2	2.31	0.45
4:D:201:GLU:OE2	5:E:104:ILE:HG22	2.17	0.45
6:F:51:ILE:HG23	6:F:51:ILE:O	2.17	0.45
1:A:1096:C:H2'	1:A:1097:C:H6	1.82	0.45
9:I:115:VAL:HG21	10:J:62:ARG:HB2	1.98	0.45
3:C:41:TYR:HA	3:C:44:LYS:HD3	1.98	0.45
1:A:244:U:O4	1:A:906:A:H1'	2.16	0.45
6:F:7:VAL:HG11	18:R:64:LEU:HD21	1.99	0.45
11:K:30:ILE:HG22	11:K:45:THR:CA	2.41	0.45
7:G:144:ALA:C	7:G:146:ALA:N	2.70	0.45
3:C:8:GLY:HA2	3:C:11:LEU:CG	2.41	0.45
1:A:1230:C:H2'	1:A:1231:G:H8	1.81	0.45
1:A:87:C:H2'	1:A:88:U:C4'	2.44	0.45
20:T:49:ALA:O	20:T:52:GLU:HB3	2.16	0.45
1:A:1010:U:H2'	1:A:1011:C:C6	2.51	0.45
1:A:766:A:H2	1:A:1525:G:N3	2.15	0.45
1:A:155:A:H2'	1:A:156:C:O4'	2.16	0.45
12:L:34:THR:HG21	12:L:53:ARG:CZ	2.47	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:778:G:O2'	1:A:779:C:H5'	2.16	0.45
1:A:652:U:H1'	1:A:653:U:C5	2.52	0.45
1:A:295:C:H2'	1:A:296:U:C6	2.52	0.45
1:A:828:U:N3	2:B:26:MET:SD	2.53	0.45
1:A:870:U:C2	2:B:27:LYS:CD	2.92	0.45
7:G:130:LYS:N	7:G:134:VAL:HG11	2.31	0.45
1:A:985:C:H2'	1:A:986:U:H6	1.82	0.45
10:J:73:LEU:CD1	10:J:75:ASP:HB3	2.47	0.45
5:E:82:HIS:CD2	8:H:95:MET:HG3	2.51	0.45
4:D:100:VAL:HA	4:D:103:ARG:HD2	1.99	0.45
1:A:232:G:H2'	1:A:233:C:O4'	2.17	0.45
1:A:734:G:N2	18:R:63:TYR:CE2	2.84	0.45
8:H:29:SER:HB3	8:H:32:LYS:CG	2.46	0.45
1:A:123:U:OP1	1:A:312:C:H5'	2.16	0.45
3:C:59:PRO:HD2	3:C:62:SER:O	2.17	0.45
5:E:16:ALA:O	5:E:34:ALA:HA	2.17	0.45
1:A:627:G:H2'	1:A:628:G:C8	2.51	0.45
16:P:12:LYS:O	16:P:14:ARG:HG3	2.17	0.45
1:A:1051:C:H2'	1:A:1052:U:H6	1.82	0.45
1:A:373:A:H1'	1:A:481:G:H1'	1.99	0.45
4:D:64:TYR:CD1	4:D:64:TYR:N	2.84	0.45
18:R:31:TYR:CG	18:R:54:LEU:HD21	2.52	0.45
3:C:72:PRO:HG2	3:C:73:GLY:H	1.81	0.45
1:A:1514:G:C5'	22:V:222:ARG:NH1	2.80	0.45
1:A:1518:A:N3	22:V:186:LYS:N	2.62	0.45
16:P:26:ASN:ND2	16:P:31:ARG:HB3	2.31	0.45
14:N:92:ILE:HG21	14:N:95:LEU:HD23	1.99	0.45
1:A:1244:G:H2'	1:A:1245:C:H6	1.81	0.45
3:C:131:ARG:HB3	3:C:131:ARG:NH1	2.31	0.45
1:A:463:U:H5'	1:A:464:U:OP2	2.17	0.45
1:A:647:C:O2'	1:A:648:A:H5'	2.16	0.45
18:R:20:ILE:HG23	18:R:53:GLN:NE2	2.32	0.45
1:A:454:G:O2'	1:A:455:G:H5'	2.17	0.45
14:N:63:CYS:HB2	14:N:79:SER:OG	2.17	0.45
1:A:448:A:H2'	1:A:449:G:C8	2.51	0.45
9:I:51:LEU:HD12	9:I:51:LEU:N	2.32	0.45
17:Q:26:ARG:HH21	17:Q:39:ARG:NH2	2.15	0.45
1:A:267:C:OP2	17:Q:68:LYS:HD2	2.17	0.45
2:B:119:GLN:O	2:B:125:PHE:HB3	2.17	0.45
1:A:429:U:H4'	1:A:430:A:O5'	2.16	0.45
16:P:7:ALA:O	16:P:17:TYR:HA	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:43:LYS:N	12:L:44:PRO:CD	2.80	0.45
1:A:628:G:H2'	1:A:629:A:C8	2.51	0.45
1:A:552:U:H5'	12:L:82:ARG:HH11	1.82	0.45
19:S:4:LEU:HD13	19:S:8:PRO:HA	1.99	0.44
3:C:176:THR:O	3:C:179:ALA:HB3	2.17	0.44
1:A:1325:C:O2'	1:A:1326:U:H5'	2.17	0.44
5:E:49:TYR:HE2	5:E:133:ILE:HG12	1.83	0.44
3:C:57:GLU:HB2	3:C:64:ARG:CB	2.45	0.44
1:A:473:U:C2	1:A:474:G:N7	2.85	0.44
10:J:42:LEU:HB2	10:J:71:LEU:HD13	1.98	0.44
1:A:71:A:N1	1:A:99:C:H1'	2.32	0.44
1:A:191:G:H2'	1:A:192:A:C8	2.52	0.44
1:A:382:A:H2'	1:A:383:A:C8	2.51	0.44
1:A:336:A:O2'	1:A:337:G:H5'	2.17	0.44
17:Q:80:LYS:HE3	17:Q:80:LYS:H	1.82	0.44
4:D:75:TYR:CE2	4:D:203:TYR:HB3	2.51	0.44
20:T:10:ALA:O	20:T:13:SER:HB3	2.17	0.44
1:A:834:U:H2'	1:A:835:U:C6	2.52	0.44
1:A:1023:U:H2'	1:A:1024:G:H8	1.82	0.44
19:S:48:ILE:HG22	19:S:49:ALA:N	2.33	0.44
19:S:39:ILE:CG2	19:S:65:MET:HB3	2.46	0.44
9:I:3:ASN:HB3	9:I:4:GLN:H	1.54	0.44
15:O:78:THR:HA	15:O:81:ILE:CG1	2.46	0.44
2:B:101:THR:HG23	2:B:102:ASN:N	2.32	0.44
6:F:38:ARG:HH21	6:F:96:VAL:HG11	1.81	0.44
12:L:71:HIS:CG	12:L:72:ASN:N	2.86	0.44
4:D:152:SER:O	4:D:155:LYS:HG3	2.17	0.44
3:C:19:SER:HB2	3:C:39:ARG:HH22	1.82	0.44
10:J:15:HIS:CD2	10:J:19:ASP:HB2	2.52	0.44
16:P:70:ARG:O	16:P:74:LEU:HG	2.18	0.44
1:A:1246:A:H2'	1:A:1247:U:O4'	2.17	0.44
1:A:238:A:C3'	1:A:239:U:H5''	2.47	0.44
10:J:6:ILE:HG12	10:J:102:LEU:CD1	2.45	0.44
8:H:40:LYS:HA	8:H:45:ILE:HG13	1.97	0.44
1:A:1342:C:H5'	9:I:127:SER:HA	1.98	0.44
1:A:191:G:H2'	1:A:192:A:H8	1.83	0.44
1:A:87:C:C2	1:A:88:U:H1'	2.51	0.44
1:A:175:C:H2'	1:A:176:C:H6	1.83	0.44
1:A:68:G:H5'	1:A:171:A:O2'	2.17	0.44
2:B:187:ASP:CG	2:B:188:THR:N	2.70	0.44
21:U:34:ARG:NH1	21:U:39:LYS:HE3	2.33	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:Q:20:ILE:CD1	17:Q:45:VAL:HB	2.47	0.44
3:C:5:HIS:O	3:C:9:ILE:HG22	2.16	0.44
1:A:811:C:O2'	1:A:901:A:N1	2.48	0.44
1:A:950:U:H2'	1:A:951:G:H8	1.81	0.44
1:A:1238:A:C8	1:A:1303:C:H1'	2.52	0.44
14:N:20:PHE:CG	14:N:24:ALA:HB2	2.51	0.44
3:C:100:ILE:HD13	3:C:100:ILE:C	2.38	0.44
1:A:138:G:O2'	1:A:139:A:H5'	2.17	0.44
1:A:859:G:C3'	2:B:191:ASP:OD1	2.66	0.44
2:B:31:PHE:CD2	2:B:41:ASN:HA	2.53	0.44
1:A:1081:A:P	5:E:22:LYS:N	2.66	0.44
14:N:84:ARG:HG3	14:N:84:ARG:HH11	1.83	0.44
10:J:87:LEU:H	10:J:88:MET:CE	2.30	0.44
19:S:18:VAL:HG13	19:S:19:GLU:N	2.32	0.44
13:M:14:ALA:HB1	13:M:33:LEU:HD11	2.00	0.44
9:I:25:GLY:HA3	9:I:57:VAL:O	2.16	0.44
12:L:119:LYS:O	12:L:119:LYS:HG3	2.16	0.44
4:D:191:SER:O	4:D:192:ALA:CB	2.65	0.44
11:K:28:ASN:HD21	11:K:30:ILE:HG23	1.83	0.44
2:B:175:ALA:C	2:B:177:ASN:H	2.20	0.44
12:L:52:CYS:SG	12:L:66:ILE:HD11	2.57	0.44
12:L:106:VAL:CG1	12:L:116:TYR:HB3	2.47	0.44
3:C:205:GLU:HB2	3:C:206:ILE:H	1.52	0.44
1:A:119:A:H4'	1:A:120:A:O4'	2.18	0.44
1:A:93:U:H2'	1:A:95:C:H5	1.83	0.44
1:A:586:C:C2'	1:A:587:G:H5'	2.46	0.44
12:L:41:PRO:HG3	12:L:46:SER:O	2.18	0.44
5:E:81:GLN:OE1	5:E:81:GLN:N	2.50	0.44
6:F:79:ARG:HH21	6:F:87:SER:HB2	1.81	0.44
1:A:1081:A:C4	5:E:22:LYS:HD2	2.07	0.44
2:B:67:LEU:HD23	2:B:160:LEU:CG	2.48	0.44
9:I:48:ARG:HA	9:I:51:LEU:HD13	1.99	0.44
11:K:88:PRO:HD3	21:U:28:LEU:CD2	2.47	0.44
4:D:104:MET:SD	4:D:179:GLY:HA3	2.57	0.44
12:L:80:LEU:HD13	12:L:101:LEU:HD11	1.99	0.44
1:A:471:U:H2'	1:A:472:U:C6	2.52	0.44
1:A:1239:A:H1'	1:A:1241:G:C5	2.52	0.44
8:H:45:ILE:C	8:H:63:LYS:HZ1	2.21	0.44
1:A:1300:G:O2'	1:A:1301:U:P	2.75	0.44
1:A:203:G:N2	1:A:205:A:H61	2.16	0.44
14:N:20:PHE:HA	14:N:24:ALA:CB	2.47	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:913:A:H1'	1:A:914:A:O4'	2.17	0.44
5:E:40:ASP:O	5:E:42:ASN:N	2.45	0.44
1:A:323:U:H2'	1:A:324:G:O4'	2.18	0.44
1:A:771:G:H2'	1:A:772:U:C6	2.53	0.44
1:A:832:G:C8	2:B:20:ARG:CG	2.98	0.44
13:M:106:ARG:NH1	13:M:106:ARG:HG2	2.33	0.44
4:D:24:VAL:O	4:D:25:ARG:C	2.55	0.44
17:Q:62:GLU:HG3	17:Q:72:TRP:CH2	2.53	0.44
3:C:112:ALA:HB1	3:C:199:VAL:CG2	2.47	0.44
6:F:7:VAL:HB	6:F:61:LEU:HD22	2.00	0.44
1:A:1515:G:O2'	1:A:1516:G:H5'	2.17	0.44
1:A:878:A:H2'	1:A:879:C:C6	2.53	0.44
1:A:657:U:H4'	15:O:27:GLN:HG3	1.99	0.44
4:D:137:SER:CB	4:D:138:PRO:HD2	2.47	0.44
6:F:88:MET:HE1	6:F:90:MET:HG3	2.00	0.44
1:A:113:G:O4'	1:A:354:G:H4'	2.18	0.44
11:K:62:ALA:O	11:K:65:ALA:HB3	2.18	0.44
1:A:284:C:H2'	1:A:285:C:H6	1.81	0.44
1:A:15:G:O2'	5:E:21:SER:HB2	2.18	0.44
2:B:67:LEU:HD23	2:B:160:LEU:HG	1.99	0.44
2:B:94:ARG:HG2	2:B:94:ARG:H	1.50	0.44
2:B:116:LEU:HD22	2:B:140:LEU:HG	1.99	0.44
1:A:1074:G:H5''	5:E:65:LYS:NZ	2.33	0.44
6:F:10:VAL:CG1	6:F:83:ALA:HB1	2.48	0.44
2:B:132:GLU:HG3	2:B:136:ARG:HD2	1.99	0.44
1:A:25:C:H2'	1:A:26:A:C8	2.53	0.44
1:A:554:A:H2'	1:A:555:U:C6	2.53	0.44
5:E:57:ALA:O	5:E:60:GLN:HB2	2.16	0.44
1:A:601:G:H2'	1:A:602:A:H8	1.83	0.44
1:A:1197:A:P	1:A:1197:A:H3'	2.57	0.44
1:A:442:G:H2'	1:A:443:C:C6	2.53	0.44
1:A:921:U:C2	1:A:1080:A:N1	2.86	0.44
2:B:59:ILE:CD1	2:B:66:ILE:HD11	2.48	0.44
19:S:31:ARG:NH2	19:S:55:GLN:HE22	2.16	0.44
13:M:63:VAL:HB	13:M:68:LEU:HG	2.00	0.44
4:D:109:THR:HG23	4:D:112:GLU:H	1.83	0.44
9:I:9:GLY:HA2	9:I:80:HIS:CD2	2.53	0.44
12:L:58:ASN:ND2	12:L:58:ASN:N	2.64	0.44
11:K:88:PRO:CD	21:U:28:LEU:HD22	2.48	0.44
8:H:46:GLU:HB2	8:H:61:THR:OG1	2.18	0.44
15:O:11:VAL:HA	15:O:26:VAL:HG13	1.98	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1256:A:O2'	1:A:1257:A:H5''	2.18	0.44
3:C:90:VAL:HA	3:C:93:ILE:CG2	2.48	0.44
1:A:736:C:H2'	1:A:737:C:H6	1.82	0.44
1:A:41:G:H2'	1:A:42:G:H8	1.83	0.44
1:A:1291:U:O2'	1:A:1292:G:H5'	2.18	0.44
1:A:408:A:OP1	4:D:109:THR:HG21	2.18	0.44
4:D:18:LEU:HD22	4:D:63:ILE:HG12	2.00	0.44
20:T:66:ILE:HG23	20:T:70:LYS:CD	2.48	0.44
4:D:190:LEU:O	4:D:192:ALA:N	2.51	0.44
7:G:148:LYS:HA	7:G:151:ALA:HB3	2.00	0.44
5:E:89:THR:HG22	5:E:90:GLY:N	2.33	0.44
16:P:7:ALA:HB1	16:P:29:ASN:CB	2.45	0.44
1:A:474:G:H2'	1:A:475:C:H6	1.83	0.44
5:E:114:LEU:C	5:E:116:VAL:H	2.20	0.44
8:H:11:THR:HG23	8:H:14:ARG:NH1	2.33	0.44
2:B:121:GLN:HB3	2:B:121:GLN:HE21	1.64	0.44
8:H:98:LEU:HD12	8:H:98:LEU:H	1.82	0.44
1:A:1008:U:H2'	1:A:1009:U:C4'	2.47	0.44
1:A:803:G:H2'	1:A:804:U:H6	1.82	0.44
1:A:392:C:H2'	1:A:393:A:H8	1.82	0.44
2:B:113:LEU:CG	2:B:143:LEU:HB3	2.47	0.44
1:A:1314:C:H2'	1:A:1315:U:H6	1.81	0.44
1:A:1350:A:H2'	1:A:1351:U:C6	2.53	0.44
2:B:67:LEU:HD12	2:B:153:MET:CE	2.39	0.43
18:R:49:LYS:HA	18:R:52:ARG:HD2	2.00	0.43
16:P:21:VAL:HG21	16:P:60:TRP:CD1	2.53	0.43
7:G:13:PRO:HA	7:G:23:ALA:HB2	2.00	0.43
1:A:1348:U:OP1	9:I:111:GLU:HB2	2.18	0.43
3:C:39:ARG:HH21	3:C:56:ILE:HD12	1.83	0.43
12:L:83:GLY:HA2	12:L:94:TYR:CD1	2.52	0.43
2:B:165:ALA:CB	2:B:186:VAL:HG12	2.48	0.43
5:E:109:ALA:O	5:E:113:VAL:HG13	2.18	0.43
5:E:33:THR:O	5:E:58:ALA:HB1	2.17	0.43
10:J:80:THR:H	10:J:84:VAL:CG1	2.29	0.43
10:J:81:GLU:O	10:J:85:ASP:HB2	2.17	0.43
1:A:397:A:H5'	1:A:398:U:OP1	2.18	0.43
1:A:1007:U:H2'	1:A:1008:U:C6	2.52	0.43
2:B:110:ILE:O	2:B:113:LEU:HB3	2.18	0.43
1:A:22:G:H2'	1:A:23:C:H6	1.83	0.43
1:A:394:G:H2'	1:A:395:C:C6	2.53	0.43
1:A:394:G:H2'	1:A:395:C:H6	1.82	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:432:A:H2'	1:A:433:G:H5'	1.99	0.43
22:V:145:VAL:HG21	22:V:190:ALA:HB3	2.00	0.43
1:A:830:G:C4	2:B:22:TRP:CA	2.99	0.43
1:A:829:G:N3	2:B:188:THR:O	2.51	0.43
1:A:924:C:H2'	1:A:925:G:H8	1.83	0.43
21:U:13:VAL:CG1	21:U:14:ALA:H	2.21	0.43
2:B:134:LEU:HA	2:B:137:THR:OG1	2.17	0.43
1:A:661:G:O2'	1:A:662:U:H5'	2.18	0.43
9:I:38:PHE:C	9:I:44:ARG:HG2	2.39	0.43
1:A:1124:G:C5'	10:J:38:GLY:HA3	2.49	0.43
10:J:7:ARG:O	10:J:8:ILE:HD13	2.18	0.43
1:A:1073:U:O3'	2:B:104:LYS:NZ	2.51	0.43
1:A:501:C:O2'	1:A:502:A:H5'	2.17	0.43
1:A:619:U:C2	4:D:131:ILE:HD12	2.53	0.43
1:A:969:A:H2'	1:A:970:C:O2	2.18	0.43
8:H:9:MET:HE3	8:H:32:LYS:HB3	1.99	0.43
1:A:627:G:H2'	1:A:628:G:H8	1.83	0.43
1:A:1376:U:P	7:G:24:LYS:HD3	2.58	0.43
1:A:692:U:H5	11:K:27:ASN:HD22	1.64	0.43
1:A:893:C:H2'	1:A:894:G:H8	1.83	0.43
1:A:1148:U:H5''	9:I:8:THR:HG23	1.99	0.43
1:A:831:A:H5'	2:B:19:THR:HA	1.15	0.43
1:A:17:U:O5'	1:A:1079:G:O4'	2.35	0.43
1:A:1082:A:O2'	1:A:1083:U:H5'	2.18	0.43
1:A:1517:G:C5'	22:V:144:VAL:CG2	2.96	0.43
11:K:124:LYS:O	21:U:33:ARG:NH2	2.51	0.43
19:S:68:HIS:NE2	19:S:72:GLU:HG3	2.33	0.43
9:I:12:LYS:N	9:I:109:GLN:HE22	2.07	0.43
17:Q:30:HIS:H	17:Q:35:LYS:H	1.65	0.43
1:A:19:A:OP1	5:E:134:ASN:ND2	2.51	0.43
15:O:58:MET:H	15:O:58:MET:HG2	1.59	0.43
1:A:818:G:O2'	1:A:819:A:H5''	2.19	0.43
1:A:1254:A:H61	1:A:1283:U:H3	1.66	0.43
7:G:55:LYS:HE2	7:G:57:GLU:OE1	2.18	0.43
1:A:611:C:H2'	1:A:612:C:H6	1.83	0.43
1:A:682:G:O2'	1:A:683:G:H5'	2.17	0.43
2:B:164:ASP:OD2	2:B:203:ASP:HB2	2.18	0.43
1:A:15:G:H1'	1:A:1080:A:H1'	2.00	0.43
2:B:147:LEU:O	2:B:151:LYS:HG3	2.17	0.43
13:M:79:LEU:HD22	13:M:86:ARG:NH2	2.34	0.43
1:A:740:U:O3'	15:O:38:LEU:HD21	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:23:GLY:N	9:I:60:LEU:HA	2.24	0.43
9:I:64:ILE:HD13	9:I:78:ILE:CG2	2.49	0.43
3:C:71:ARG:HB3	3:C:74:ILE:CG2	2.47	0.43
21:U:5:VAL:HG13	21:U:15:LEU:HD23	2.00	0.43
1:A:261:U:H2'	1:A:263:A:OP2	2.18	0.43
4:D:169:TRP:CE2	4:D:185:PRO:HB3	2.54	0.43
4:D:154:VAL:HG13	4:D:155:LYS:N	2.33	0.43
4:D:14:GLU:OE2	4:D:58:GLN:HG3	2.18	0.43
11:K:69:CYS:O	11:K:71:ASP:N	2.51	0.43
7:G:29:LEU:HD12	7:G:104:VAL:CG1	2.48	0.43
1:A:1057:G:H2'	1:A:1058:G:O4'	2.19	0.43
1:A:1110:A:H2'	1:A:1111:A:H5'	1.99	0.43
1:A:82:G:C6	1:A:88:U:O2	2.71	0.43
12:L:38:THR:HA	12:L:49:ARG:O	2.19	0.43
20:T:20:ASN:O	20:T:65:LEU:HD21	2.18	0.43
1:A:669:G:O2'	1:A:670:G:H5'	2.18	0.43
1:A:224:U:H2'	1:A:225:C:H6	1.82	0.43
1:A:1014:A:H2	1:A:1219:A:H1'	1.83	0.43
1:A:973:G:O2'	10:J:56:HIS:HA	2.18	0.43
16:P:67:ILE:CD1	16:P:72:ALA:HA	2.49	0.43
4:D:58:GLN:CD	4:D:62:ARG:HG3	2.39	0.43
12:L:98:ARG:HA	12:L:98:ARG:NE	2.29	0.43
11:K:15:VAL:O	11:K:16:SER:HB2	2.17	0.43
7:G:29:LEU:HD21	7:G:41:ILE:CG2	2.48	0.43
4:D:89:LEU:O	4:D:92:LEU:HB2	2.18	0.43
4:D:147:LYS:HE3	4:D:147:LYS:N	2.34	0.43
1:A:1114:C:H2'	1:A:1115:U:O4'	2.19	0.43
1:A:383:A:H2'	1:A:384:G:O4'	2.18	0.43
4:D:54:LEU:HA	4:D:202:LEU:HD22	2.01	0.43
1:A:210:C:H4'	1:A:211:G:H5''	2.01	0.43
8:H:24:VAL:HG13	8:H:60:LEU:HB2	2.00	0.43
22:V:247:MET:HE3	22:V:252:ILE:HD13	2.00	0.43
1:A:709:U:H2'	1:A:710:G:H8	1.83	0.43
1:A:489:C:H2'	1:A:490:C:H6	1.84	0.43
3:C:40:GLN:O	3:C:44:LYS:HG3	2.18	0.43
1:A:140:U:H2'	1:A:141:G:H8	1.82	0.43
1:A:989:U:H2'	1:A:990:C:H6	1.84	0.43
1:A:847:G:H2'	1:A:848:C:C6	2.54	0.43
2:B:163:ILE:CG2	2:B:164:ASP:N	2.64	0.43
21:U:40:PRO:HG2	21:U:41:THR:N	2.27	0.43
1:A:1099:G:H2'	1:A:1100:C:O4'	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:S:44:ILE:HA	19:S:61:VAL:CG1	2.48	0.43
1:A:740:U:O2'	1:A:741:G:H5'	2.19	0.43
10:J:40:ILE:CG1	10:J:73:LEU:HB3	2.46	0.43
9:I:56:MET:HA	9:I:59:LYS:NZ	2.31	0.43
9:I:51:LEU:HD21	9:I:62:LEU:HG	2.01	0.43
2:B:101:THR:HG22	2:B:174:GLU:OE1	2.18	0.43
4:D:100:VAL:HA	4:D:103:ARG:CD	2.48	0.43
5:E:36:THR:O	5:E:48:GLY:N	2.51	0.43
1:A:237:G:H2'	1:A:238:A:H8	1.84	0.43
1:A:473:U:N3	1:A:474:G:N7	2.67	0.43
10:J:65:TYR:C	14:N:98:ALA:HB2	2.39	0.43
5:E:106:ALA:HB1	5:E:110:MET:HB2	2.00	0.43
4:D:77:GLU:OE1	4:D:80:ARG:NH2	2.48	0.43
1:A:538:G:OP2	12:L:111:GLN:HB2	2.18	0.43
10:J:30:LYS:HG3	10:J:36:VAL:HB	2.01	0.43
11:K:81:LEU:O	11:K:106:ILE:HA	2.19	0.43
11:K:70:ALA:HA	11:K:74:LYS:HD3	1.99	0.43
1:A:251:G:H4'	1:A:252:U:C5'	2.48	0.43
1:A:179:A:H2'	1:A:180:U:H6	1.83	0.43
4:D:125:ASN:HA	4:D:141:VAL:HG23	2.00	0.43
1:A:859:G:H3'	2:B:191:ASP:OD1	2.18	0.43
1:A:1080:A:OP1	5:E:21:SER:N	2.48	0.43
4:D:28:ASP:O	4:D:29:THR:OG1	2.35	0.43
16:P:20:VAL:HG22	16:P:21:VAL:H	1.83	0.43
4:D:163:GLN:OE1	4:D:163:GLN:N	2.51	0.43
16:P:75:ILE:O	16:P:78:VAL:HG12	2.19	0.43
1:A:473:U:C2	1:A:474:G:C8	3.07	0.43
9:I:32:ARG:HH11	9:I:32:ARG:HG2	1.83	0.43
1:A:539:A:H2'	1:A:540:G:H8	1.78	0.43
5:E:17:VAL:HB	5:E:34:ALA:HB2	2.00	0.43
1:A:26:A:N6	1:A:558:G:H1'	2.33	0.43
1:A:1050:G:C2'	1:A:1051:C:H5'	2.49	0.43
1:A:143:A:H2	1:A:220:G:H22	1.65	0.43
1:A:599:C:O2'	1:A:600:A:H5'	2.19	0.43
1:A:224:U:H2'	1:A:225:C:C6	2.53	0.43
19:S:16:LYS:HA	19:S:16:LYS:HD3	1.83	0.43
13:M:84:CYS:SG	13:M:86:ARG:HB3	2.59	0.43
16:P:18:GLN:NE2	16:P:35:ARG:HH11	2.16	0.43
12:L:22:ALA:HB1	12:L:29:LYS:HG3	2.00	0.43
1:A:1324:A:H2'	1:A:1325:C:O4'	2.19	0.43
17:Q:45:VAL:HG13	17:Q:60:ILE:CG2	2.48	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:116:LEU:CD1	2:B:139:GLU:HB3	2.44	0.43
2:B:98:GLY:C	2:B:100:LEU:H	2.22	0.43
1:A:813:U:O2'	1:A:814:A:H5'	2.18	0.43
1:A:397:A:N3	1:A:397:A:H3'	2.33	0.43
1:A:644:U:O2'	1:A:645:G:H5'	2.19	0.43
1:A:777:A:H2'	1:A:778:G:C8	2.53	0.43
1:A:697:U:H2'	1:A:698:G:H5'	2.00	0.43
1:A:144:G:H2'	1:A:145:G:O4'	2.19	0.43
21:U:32:ARG:HB3	21:U:33:ARG:H	1.69	0.43
1:A:242:G:H2'	1:A:243:A:H5''	2.01	0.43
4:D:159:GLU:HG3	4:D:160:LEU:HD13	2.01	0.43
17:Q:29:LYS:HA	17:Q:35:LYS:C	2.39	0.43
1:A:238:A:H3'	1:A:239:U:H5''	2.00	0.43
12:L:101:LEU:HB3	12:L:102:ASP:H	1.61	0.43
8:H:9:MET:HE1	8:H:32:LYS:O	2.18	0.43
1:A:478:A:H2'	1:A:479:U:O4'	2.19	0.43
1:A:382:A:O2'	1:A:383:A:H5'	2.19	0.43
12:L:41:PRO:HD3	12:L:47:ALA:O	2.19	0.43
1:A:598:U:H2'	1:A:599:C:C6	2.53	0.43
19:S:12:LEU:CD2	19:S:15:LEU:HD23	2.49	0.43
8:H:35:ILE:O	8:H:39:LEU:HD12	2.19	0.43
1:A:488:C:H2'	1:A:489:C:H6	1.84	0.43
12:L:14:LYS:NZ	12:L:17:LYS:HE2	2.34	0.43
20:T:40:ALA:O	20:T:41:GLY:C	2.56	0.43
3:C:21:TRP:CH2	14:N:93:PRO:HG3	2.54	0.43
19:S:31:ARG:HG3	19:S:56:HIS:HE2	1.81	0.43
19:S:16:LYS:HA	19:S:19:GLU:OE1	2.19	0.43
9:I:56:MET:CA	9:I:59:LYS:HZ2	2.28	0.43
5:E:105:ILE:HD12	5:E:123:LEU:HB3	2.00	0.43
4:D:12:ARG:HG3	4:D:33:ILE:HA	2.00	0.43
1:A:970:C:C5	1:A:1231:G:H1'	2.54	0.43
8:H:69:ALA:HB3	8:H:72:GLU:OE2	2.19	0.43
1:A:177:G:N3	1:A:177:G:O4'	2.51	0.43
5:E:114:LEU:HD13	5:E:122:VAL:HG21	2.01	0.43
1:A:415:A:O4'	1:A:415:A:N3	2.52	0.43
1:A:31:G:H2'	1:A:48:C:C5	2.53	0.43
1:A:284:C:H2'	1:A:285:C:C6	2.53	0.43
5:E:30:PHE:N	5:E:30:PHE:CD1	2.87	0.43
1:A:828:U:P	2:B:44:LYS:HE3	2.59	0.42
21:U:31:VAL:O	21:U:32:ARG:C	2.57	0.42
2:B:224:ARG:H	2:B:224:ARG:HG2	1.61	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:71:THR:HG22	2:B:94:ARG:HH21	1.84	0.42
14:N:15:LEU:C	14:N:17:ASP:H	2.21	0.42
9:I:21:LYS:O	9:I:60:LEU:HB2	2.19	0.42
17:Q:56:ASP:C	17:Q:79:GLU:HB3	2.40	0.42
1:A:1072:G:H2'	1:A:1073:U:H6	1.84	0.42
4:D:84:ASN:OD1	5:E:101:GLY:HA2	2.19	0.42
1:A:237:G:H2'	1:A:238:A:C8	2.54	0.42
1:A:1238:A:N7	1:A:1303:C:H1'	2.34	0.42
1:A:1226:C:H4'	1:A:1227:A:OP1	2.19	0.42
5:E:95:MET:CE	5:E:114:LEU:HD21	2.48	0.42
19:S:28:LYS:HD3	19:S:28:LYS:H	1.84	0.42
1:A:1052:U:H5'	1:A:1053:G:OP2	2.19	0.42
1:A:564:C:H1'	17:Q:32:ILE:O	2.19	0.42
1:A:1033:G:H3'	1:A:1034:G:H5''	2.01	0.42
10:J:5:ARG:HG3	10:J:79:PRO:HD3	2.01	0.42
1:A:1157:A:H4'	1:A:1158:C:O5'	2.19	0.42
1:A:1181:G:O4'	1:A:1181:G:P	2.77	0.42
21:U:11:PHE:HD1	21:U:11:PHE:O	2.02	0.42
4:D:176:LYS:O	4:D:177:MET:C	2.57	0.42
1:A:861:G:H2'	1:A:862:C:H6	1.84	0.42
1:A:1081:A:C3'	5:E:24:VAL:HG13	2.50	0.42
2:B:53:LEU:HD12	2:B:219:THR:CG2	2.49	0.42
19:S:57:VAL:HG21	19:S:74:ALA:HB2	2.01	0.42
16:P:40:ASN:HA	16:P:41:PRO:HD3	1.73	0.42
12:L:8:ARG:CZ	12:L:9:LYS:HE3	2.50	0.42
12:L:56:LEU:HB2	12:L:60:PHE:O	2.19	0.42
5:E:85:LYS:HE2	5:E:92:ARG:HH11	1.82	0.42
3:C:112:ALA:O	3:C:113:LYS:C	2.57	0.42
3:C:39:ARG:NH2	3:C:56:ILE:HD12	2.35	0.42
19:S:20:LYS:O	19:S:20:LYS:HD2	2.19	0.42
1:A:914:A:O2'	1:A:915:A:H5'	2.19	0.42
4:D:49:ASP:O	4:D:52:VAL:HG22	2.19	0.42
17:Q:12:VAL:HG13	17:Q:21:VAL:HB	2.01	0.42
2:B:22:TRP:CG	2:B:23:ASN:N	2.81	0.42
1:A:1519:A:H3'	1:A:1520:C:C5'	2.49	0.42
1:A:1121:U:O2'	1:A:1122:U:H5'	2.20	0.42
21:U:3:ILE:CG1	21:U:19:LYS:HG2	2.46	0.42
20:T:60:GLN:HE21	20:T:61:ALA:N	2.10	0.42
4:D:151:GLN:HB3	4:D:154:VAL:CG1	2.49	0.42
1:A:236:A:H2'	1:A:237:G:H8	1.85	0.42
12:L:21:PRO:HD2	12:L:94:TYR:OH	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:N:86:ALA:HB3	14:N:92:ILE:HD11	2.02	0.42
1:A:8:A:H1'	5:E:107:GLY:HA2	2.00	0.42
2:B:50:ASN:O	2:B:51:GLU:C	2.58	0.42
9:I:98:ARG:HA	9:I:103:VAL:HG22	2.02	0.42
6:F:68:GLN:O	6:F:71:ILE:HG13	2.19	0.42
1:A:113:G:H21	1:A:353:A:H8	1.67	0.42
1:A:1356:G:H2'	1:A:1357:A:C8	2.54	0.42
1:A:829:G:P	2:B:30:ILE:C	2.68	0.42
19:S:62:THR:HG22	19:S:63:ASP:N	2.33	0.42
9:I:26:LYS:H	9:I:26:LYS:HG2	1.56	0.42
9:I:83:THR:HG23	9:I:84:ARG:N	2.35	0.42
3:C:156:LEU:H	3:C:156:LEU:CD1	2.31	0.42
20:T:57:VAL:C	20:T:60:GLN:HE22	2.22	0.42
3:C:185:THR:O	3:C:186:SER:HB2	2.19	0.42
1:A:1252:A:H2'	1:A:1253:G:C5'	2.49	0.42
1:A:538:G:H2'	1:A:539:A:C8	2.54	0.42
1:A:711:G:H2'	1:A:712:A:H8	1.85	0.42
9:I:10:ARG:HA	9:I:77:ALA:CB	2.50	0.42
9:I:11:ARG:NH1	9:I:106:ASP:OD2	2.53	0.42
1:A:462:G:H2'	1:A:463:U:C6	2.55	0.42
1:A:114:U:O2'	1:A:115:G:H5'	2.19	0.42
20:T:19:HIS:O	20:T:23:ARG:HG2	2.18	0.42
4:D:48:SER:OG	4:D:49:ASP:N	2.52	0.42
1:A:972:C:H4'	10:J:59:LYS:HB3	2.02	0.42
1:A:1079:G:O3'	5:E:21:SER:N	2.51	0.42
2:B:61:SER:HA	2:B:224:ARG:CA	2.42	0.42
1:A:1220:G:H21	19:S:53:GLY:HA2	1.84	0.42
9:I:4:GLN:HE21	9:I:21:LYS:HE3	1.84	0.42
9:I:20:ILE:HA	9:I:61:ASP:O	2.19	0.42
20:T:57:VAL:O	20:T:61:ALA:HB2	2.19	0.42
4:D:169:TRP:O	4:D:182:LYS:HB3	2.19	0.42
4:D:169:TRP:CB	4:D:183:ARG:HH21	2.32	0.42
1:A:839:C:O2'	1:A:840:C:H5'	2.19	0.42
5:E:101:GLY:N	5:E:121:ASN:HD21	2.14	0.42
18:R:60:ARG:HA	18:R:63:TYR:CD1	2.54	0.42
1:A:1029:U:H5''	1:A:1030:U:C5	2.47	0.42
1:A:796:C:O2'	1:A:797:C:H5'	2.19	0.42
1:A:421:U:H5'	1:A:422:C:C5	2.55	0.42
22:V:66:GLU:O	22:V:89:GLN:HA	2.19	0.42
19:S:35:ARG:HB3	19:S:71:GLY:HA2	2.02	0.42
6:F:11:HIS:CG	6:F:12:PRO:HD2	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:9:GLY:O	9:I:16:ALA:HB3	2.20	0.42
17:Q:28:VAL:O	17:Q:28:VAL:HG13	2.19	0.42
17:Q:67:SER:HB2	17:Q:70:LYS:HB3	2.01	0.42
3:C:55:VAL:HG12	3:C:56:ILE:H	1.84	0.42
4:D:84:ASN:ND2	4:D:86:GLY:N	2.67	0.42
1:A:202:G:H1'	1:A:468:A:H8	1.85	0.42
9:I:66:VAL:HG22	9:I:67:LYS:N	2.34	0.42
1:A:93:U:H2'	1:A:95:C:C5	2.54	0.42
1:A:1113:C:H2'	1:A:1114:C:C6	2.55	0.42
1:A:622:A:H2'	1:A:623:C:H5'	2.02	0.42
1:A:321:A:H2'	1:A:322:C:H6	1.85	0.42
1:A:41:G:H2'	1:A:42:G:C8	2.54	0.42
2:B:81:ASP:O	2:B:85:SER:HB2	2.19	0.42
9:I:85:ALA:O	9:I:88:GLU:HB2	2.20	0.42
1:A:857:C:H1'	2:B:21:TYR:HB3	2.02	0.42
1:A:918:A:N1	1:A:1078:U:C4	2.87	0.42
1:A:15:G:C6	1:A:1079:G:N2	2.88	0.42
11:K:22:ILE:HD13	11:K:95:THR:HG21	2.01	0.42
19:S:64:GLU:O	19:S:66:VAL:HG23	2.20	0.42
9:I:56:MET:O	9:I:58:GLU:N	2.52	0.42
2:B:9:LEU:CD1	2:B:11:ALA:HB3	2.50	0.42
16:P:68:SER:HB3	16:P:71:VAL:CG1	2.49	0.42
12:L:113:ARG:HD3	12:L:121:PRO:HD3	2.02	0.42
1:A:818:G:C3'	1:A:819:A:H5''	2.50	0.42
1:A:1286:U:C2	1:A:1286:U:OP1	2.72	0.42
4:D:145:ARG:C	4:D:147:LYS:H	2.22	0.42
1:A:557:G:H2'	1:A:558:G:O4'	2.20	0.42
1:A:373:A:C1'	1:A:481:G:H1'	2.50	0.42
1:A:1271:A:H2'	1:A:1272:G:C8	2.55	0.42
1:A:432:A:C2'	1:A:433:G:H5'	2.49	0.42
18:R:27:THR:O	18:R:28:LEU:HD12	2.20	0.42
21:U:22:CYS:O	21:U:23:GLU:HG2	2.20	0.42
21:U:52:VAL:HG13	21:U:53:LYS:N	2.34	0.42
1:A:832:G:H8	2:B:20:ARG:HG3	1.79	0.42
2:B:45:THR:HA	2:B:48:MET:CG	2.50	0.42
9:I:17:ARG:HE	9:I:65:THR:HB	1.85	0.42
9:I:82:ILE:HG22	9:I:86:LEU:HD21	2.01	0.42
1:A:255:G:H2'	1:A:256:U:H6	1.84	0.42
5:E:105:ILE:HB	5:E:123:LEU:CA	2.42	0.42
3:C:172:VAL:HG11	3:C:200:TRP:HB3	2.02	0.42
10:J:15:HIS:HD2	10:J:18:ILE:CG2	2.31	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:P:39:PHE:HE2	16:P:70:ARG:NH2	2.18	0.42
1:A:411:A:C4	1:A:413:G:H1'	2.55	0.42
1:A:999:C:O2'	1:A:1000:A:H5'	2.20	0.42
2:B:121:GLN:NE2	2:B:122:ASP:HB2	2.35	0.42
3:C:160:GLU:O	3:C:160:GLU:HG2	2.19	0.42
1:A:512:U:O2'	1:A:513:C:H5'	2.20	0.42
1:A:402:G:H2'	1:A:403:C:H6	1.84	0.42
1:A:1273:C:H2'	1:A:1274:A:O4'	2.20	0.42
13:M:58:GLU:HA	13:M:61:LYS:CE	2.50	0.42
1:A:552:U:H4'	12:L:82:ARG:HG2	2.01	0.42
1:A:1151:A:HO2'	1:A:1152:A:H8	1.65	0.42
20:T:17:ARG:C	20:T:17:ARG:HD2	2.40	0.42
16:P:25:ARG:HD3	16:P:25:ARG:N	2.34	0.42
1:A:920:U:O2'	1:A:921:U:H5'	2.19	0.42
9:I:62:LEU:N	9:I:62:LEU:HD22	2.35	0.42
6:F:7:VAL:HA	6:F:60:VAL:O	2.20	0.42
2:B:120:SER:HA	2:B:125:PHE:CB	2.44	0.42
5:E:101:GLY:H	5:E:121:ASN:ND2	2.14	0.42
2:B:79:VAL:HG11	2:B:92:ASN:HB3	2.01	0.42
3:C:111:ASP:OD2	3:C:114:LEU:HG	2.19	0.42
1:A:957:U:O2	1:A:959:A:H8	2.03	0.42
10:J:48:ARG:HB3	10:J:66:GLU:HB3	2.01	0.42
1:A:709:U:H2'	1:A:710:G:C8	2.54	0.42
1:A:1528:U:H6	1:A:1528:U:O5'	2.03	0.42
3:C:41:TYR:HA	3:C:44:LYS:CD	2.49	0.42
1:A:1262:C:H2'	1:A:1263:C:O4'	2.19	0.42
1:A:358:U:H2'	1:A:359:G:C8	2.55	0.42
1:A:828:U:O2	2:B:29:PHE:HD2	1.83	0.42
1:A:920:U:C4	1:A:1079:G:O6	2.70	0.42
2:B:61:SER:HB3	2:B:223:GLY:O	2.20	0.42
1:A:405:U:OP2	4:D:114:ARG:NH2	2.53	0.42
12:L:4:ASN:O	12:L:8:ARG:HG2	2.19	0.42
1:A:1269:A:H1'	1:A:1326:U:O4'	2.20	0.42
10:J:57:VAL:HG13	10:J:58:ASN:CG	2.40	0.42
11:K:33:ILE:HG13	11:K:73:VAL:HG21	2.01	0.42
3:C:13:ILE:HG22	3:C:14:VAL:HG13	2.01	0.42
14:N:20:PHE:HA	14:N:24:ALA:H	1.85	0.42
1:A:399:G:H2'	1:A:400:C:H6	1.85	0.42
1:A:844:G:H2'	1:A:845:A:H5''	2.00	0.42
1:A:5:U:H1'	1:A:6:G:N1	2.35	0.42
5:E:56:PRO:O	5:E:59:ILE:HG22	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:605:U:H2'	1:A:606:G:C8	2.55	0.42
1:A:896:C:O2'	1:A:897:C:H5'	2.20	0.42
1:A:666:G:H5'	1:A:726:C:H1'	2.02	0.42
1:A:861:G:H2'	1:A:862:C:C6	2.55	0.41
1:A:829:G:C2'	2:B:30:ILE:CG1	2.93	0.41
9:I:49:GLN:HB3	9:I:49:GLN:HE21	1.70	0.41
3:C:155:ARG:NH1	3:C:192:TYR:HB2	2.35	0.41
6:F:64:VAL:CG1	6:F:65:GLU:N	2.82	0.41
11:K:85:VAL:O	11:K:111:ASP:HA	2.20	0.41
3:C:181:ILE:HG22	3:C:182:ASP:N	2.35	0.41
1:A:812:G:OP1	1:A:812:G:C4'	2.68	0.41
12:L:117:GLY:O	12:L:118:VAL:HG13	2.19	0.41
5:E:35:LEU:HD12	5:E:133:ILE:HA	2.01	0.41
1:A:1300:G:O2'	1:A:1301:U:O5'	2.37	0.41
5:E:143:LEU:O	5:E:146:MET:HB2	2.20	0.41
1:A:1037:C:H2'	1:A:1038:C:C6	2.55	0.41
9:I:66:VAL:HG21	9:I:74:GLN:HG3	2.02	0.41
1:A:337:G:O2'	1:A:338:A:H5'	2.20	0.41
1:A:730:G:O2'	1:A:766:A:H5'	2.20	0.41
4:D:54:LEU:HA	4:D:57:LYS:HB3	2.01	0.41
15:O:17:ASP:HB2	15:O:18:ALA:H	1.59	0.41
11:K:57:SER:O	11:K:90:PRO:HG2	2.19	0.41
7:G:115:MET:CE	7:G:119:LEU:HB2	2.50	0.41
14:N:73:LEU:O	14:N:75:LYS:N	2.52	0.41
1:A:923:A:H2'	1:A:924:C:C6	2.55	0.41
9:I:25:GLY:HA2	9:I:60:LEU:O	2.19	0.41
9:I:86:LEU:N	9:I:86:LEU:HD13	2.34	0.41
21:U:3:ILE:HG23	21:U:19:LYS:HE3	2.01	0.41
7:G:87:PRO:HB2	7:G:144:ALA:CB	2.50	0.41
16:P:6:LEU:HD21	16:P:74:LEU:HD11	2.02	0.41
12:L:120:ARG:HA	12:L:121:PRO:HD2	1.87	0.41
1:A:542:G:O2'	1:A:543:U:H5'	2.20	0.41
2:B:138:ARG:HA	2:B:141:GLU:CD	2.40	0.41
1:A:1238:A:H2	1:A:1241:G:H1'	1.82	0.41
5:E:37:VAL:HA	5:E:47:PHE:HA	2.01	0.41
1:A:493:A:N3	1:A:493:A:O4'	2.52	0.41
1:A:9:G:OP2	5:E:125:LYS:HD3	2.20	0.41
1:A:585:G:O2'	1:A:586:C:H5'	2.20	0.41
7:G:94:ARG:NH1	7:G:98:LEU:HD21	2.34	0.41
1:A:113:G:H2'	1:A:114:U:C6	2.55	0.41
1:A:1261:A:H2'	1:A:1262:C:O4'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:N:68:ARG:HH11	14:N:70:HIS:HB2	1.85	0.41
7:G:84:TYR:HD1	7:G:84:TYR:HA	1.74	0.41
2:B:42:LEU:O	2:B:46:VAL:HG12	2.20	0.41
1:A:408:A:OP1	4:D:111:ALA:HB3	2.20	0.41
12:L:9:LYS:HG3	12:L:9:LYS:O	2.20	0.41
16:P:22:ALA:HB2	16:P:32:PHE:HB3	2.01	0.41
21:U:5:VAL:O	21:U:6:ARG:HB2	2.19	0.41
3:C:54:ILE:O	3:C:54:ILE:HG12	2.19	0.41
4:D:99:ASN:HB3	4:D:103:ARG:HH21	1.86	0.41
4:D:19:PHE:CB	4:D:110:ARG:HH12	2.30	0.41
1:A:70:U:H1'	1:A:71:A:N7	2.36	0.41
19:S:29:PRO:HB3	19:S:47:THR:HB	2.01	0.41
11:K:81:LEU:CD2	11:K:104:PHE:HB3	2.50	0.41
1:A:581:G:OP1	15:O:64:LYS:HE3	2.20	0.41
3:C:40:GLN:OE1	3:C:44:LYS:HD2	2.19	0.41
1:A:1065:U:H1'	1:A:1066:C:OP2	2.19	0.41
1:A:152:A:N6	1:A:170:U:C2	2.88	0.41
14:N:19:TYR:HD1	14:N:23:ARG:HD3	1.85	0.41
1:A:829:G:H3'	2:B:30:ILE:HD13	2.00	0.41
1:A:857:C:H1'	2:B:21:TYR:CB	2.50	0.41
2:B:205:ALA:O	2:B:209:VAL:HG22	2.20	0.41
1:A:830:G:H3'	2:B:38:HIS:HD1	1.27	0.41
1:A:17:U:C4'	1:A:1079:G:C4'	2.68	0.41
11:K:121:ARG:HA	11:K:122:PRO:HD2	1.93	0.41
19:S:31:ARG:HH11	19:S:31:ARG:HG2	1.86	0.41
7:G:112:ASP:H	7:G:118:ARG:HD3	1.86	0.41
2:B:104:LYS:H	2:B:104:LYS:HG3	1.62	0.41
18:R:64:LEU:HB3	18:R:66:LEU:HG	2.01	0.41
1:A:1248:A:H2	9:I:71:ILE:HD11	1.85	0.41
9:I:71:ILE:O	9:I:72:SER:C	2.59	0.41
1:A:1304:G:H2'	1:A:1305:G:C1'	2.51	0.41
1:A:60:A:H1'	1:A:61:G:O4'	2.20	0.41
15:O:52:ARG:HA	15:O:55:LEU:HB3	2.02	0.41
10:J:30:LYS:O	10:J:30:LYS:HD2	2.20	0.41
9:I:118:ARG:O	9:I:118:ARG:HG2	2.21	0.41
1:A:634:C:O2'	1:A:635:A:H5'	2.20	0.41
1:A:691:G:H2'	1:A:692:U:C6	2.55	0.41
1:A:328:C:H4'	1:A:329:A:H5''	2.02	0.41
1:A:343:U:H2'	1:A:345:C:C5	2.55	0.41
1:A:1358:U:OP1	14:N:73:LEU:HA	2.20	0.41
1:A:680:C:H2'	1:A:681:A:H8	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:25:LYS:HE2	5:E:25:LYS:C	2.41	0.41
1:A:861:G:O2'	1:A:862:C:H5'	2.20	0.41
1:A:870:U:C6	2:B:27:LYS:HD2	2.37	0.41
1:A:17:U:C1'	1:A:1079:G:C8	3.04	0.41
1:A:16:A:H4'	5:E:21:SER:N	2.35	0.41
15:O:5:GLU:O	15:O:9:LYS:HB2	2.20	0.41
1:A:1129:C:H5''	9:I:17:ARG:NH2	2.34	0.41
20:T:53:MET:SD	20:T:57:VAL:HG21	2.60	0.41
4:D:187:ARG:HH11	4:D:187:ARG:HG3	1.86	0.41
3:C:148:ILE:HA	3:C:200:TRP:O	2.20	0.41
1:A:1074:G:O2'	1:A:1075:U:H5'	2.21	0.41
4:D:84:ASN:ND2	4:D:87:GLU:N	2.64	0.41
1:A:233:C:O2'	1:A:234:C:H5'	2.20	0.41
5:E:155:LYS:HG3	8:H:65:PHE:HB2	2.01	0.41
2:B:80:LYS:HB3	2:B:90:PHE:CE2	2.54	0.41
14:N:45:LEU:HD23	14:N:46:LYS:N	2.35	0.41
12:L:30:ARG:HB3	12:L:57:THR:CG2	2.50	0.41
1:A:415:A:N1	1:A:428:G:O6	2.53	0.41
1:A:959:A:H2'	1:A:960:U:O4'	2.21	0.41
7:G:46:LEU:HD13	7:G:46:LEU:O	2.20	0.41
12:L:34:THR:HB	12:L:53:ARG:HB2	2.02	0.41
1:A:29:U:H5'	1:A:296:U:OP1	2.19	0.41
1:A:787:A:O2'	1:A:788:U:H5'	2.20	0.41
2:B:187:ASP:H	2:B:190:SER:HB2	1.85	0.41
1:A:921:U:O3'	1:A:1081:A:O2'	2.38	0.41
1:A:1098:C:H2'	1:A:1099:G:O4'	2.20	0.41
1:A:980:C:H2'	1:A:981:U:H5'	2.03	0.41
9:I:24:ASN:CA	9:I:26:LYS:HZ2	2.33	0.41
15:O:2:LEU:HD13	15:O:7:THR:HG23	2.02	0.41
2:B:9:LEU:CD1	2:B:9:LEU:H	2.33	0.41
1:A:1371:G:OP1	9:I:12:LYS:HG2	2.20	0.41
1:A:65:A:N7	1:A:381:C:C4	2.89	0.41
6:F:7:VAL:O	6:F:7:VAL:HG13	2.21	0.41
16:P:52:LEU:HD22	16:P:52:LEU:N	2.36	0.41
5:E:131:ASN:ND2	5:E:134:ASN:N	2.69	0.41
5:E:35:LEU:CD1	5:E:133:ILE:HA	2.50	0.41
20:T:27:MET:O	20:T:31:ILE:HG13	2.21	0.41
10:J:36:VAL:CG2	10:J:76:ILE:HG22	2.50	0.41
17:Q:65:PRO:HA	17:Q:71:SER:OG	2.21	0.41
10:J:48:ARG:HG2	10:J:48:ARG:H	1.73	0.41
1:A:367:U:OP1	1:A:395:C:H1'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:75:GLN:O	8:H:126:CYS:HB2	2.21	0.41
22:V:68:ASP:OD1	22:V:70:ASP:HB2	2.21	0.41
1:A:484:G:H4'	1:A:485:U:H5'	2.02	0.41
1:A:761:G:H2'	1:A:762:U:C6	2.55	0.41
21:U:33:ARG:CZ	21:U:34:ARG:HG3	2.51	0.41
1:A:1219:A:OP1	14:N:52:ARG:HG2	2.21	0.41
19:S:35:ARG:H	19:S:35:ARG:HG3	1.72	0.41
10:J:73:LEU:O	10:J:74:VAL:HB	2.21	0.41
9:I:52:GLU:N	9:I:56:MET:HG2	2.35	0.41
6:F:3:HIS:HB2	6:F:92:THR:OG1	2.21	0.41
18:R:64:LEU:C	18:R:66:LEU:H	2.23	0.41
7:G:138:GLU:HA	7:G:141:HIS:HB2	2.02	0.41
7:G:141:HIS:O	7:G:144:ALA:O	2.39	0.41
1:A:441:A:N6	1:A:493:A:H62	2.15	0.41
1:A:711:G:H2'	1:A:712:A:C8	2.56	0.41
3:C:60:ALA:O	3:C:61:LYS:HB2	2.21	0.41
14:N:1:ALA:O	14:N:2:LYS:HB2	2.20	0.41
17:Q:7:LEU:C	17:Q:9:GLY:H	2.24	0.41
1:A:162:A:H2'	1:A:163:C:O4'	2.20	0.41
1:A:1521:C:H2'	1:A:1522:U:C6	2.56	0.41
1:A:319:G:O2'	1:A:320:A:H5'	2.20	0.41
1:A:612:C:H2'	1:A:613:C:C6	2.55	0.41
1:A:1351:U:H4'	7:G:32:ASP:OD2	2.21	0.41
1:A:1340:A:H2'	1:A:1341:U:H6	1.86	0.41
1:A:993:G:C2'	1:A:995:C:H41	2.34	0.41
6:F:44:ARG:HA	6:F:57:ALA:O	2.21	0.41
12:L:6:LEU:O	12:L:10:PRO:HG3	2.19	0.41
1:A:1529:G:H3'	1:A:1529:G:OP2	2.20	0.41
1:A:1217:C:H2'	1:A:1218:C:C6	2.56	0.41
4:D:26:ALA:O	4:D:27:ILE:O	2.38	0.41
2:B:131:LYS:O	2:B:134:LEU:HB2	2.21	0.41
1:A:1123:U:C2'	1:A:1124:G:H5'	2.51	0.41
9:I:20:ILE:N	9:I:20:ILE:HD12	2.35	0.41
9:I:83:THR:HA	9:I:86:LEU:CD2	2.51	0.41
17:Q:26:ARG:NH2	17:Q:28:VAL:HG11	2.36	0.41
12:L:35:ARG:HE	12:L:35:ARG:CA	2.29	0.41
3:C:17:TRP:C	3:C:19:SER:H	2.24	0.41
1:A:56:U:O5'	1:A:56:U:H6	2.04	0.41
1:A:1311:A:H2'	1:A:1312:G:O4'	2.21	0.41
1:A:648:A:H2'	1:A:649:A:C8	2.56	0.41
1:A:154:U:H2'	1:A:155:A:C8	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:777:A:H2'	1:A:778:G:H8	1.86	0.41
1:A:860:A:C3'	2:B:193:ASP:HA	2.38	0.41
2:B:202:ASN:HD21	2:B:204:ASP:HB3	1.86	0.41
5:E:51:LYS:O	5:E:52:ALA:HB2	2.21	0.41
1:A:1081:A:O3'	5:E:24:VAL:HG13	2.04	0.41
1:A:1517:G:C8	22:V:141:GLN:CD	2.83	0.41
21:U:40:PRO:CG	21:U:41:THR:H	2.29	0.41
2:B:42:LEU:HA	2:B:45:THR:OG1	2.21	0.41
1:A:132:C:H5''	20:T:68:LYS:CE	2.47	0.41
4:D:36:ALA:C	4:D:38:GLY:H	2.24	0.41
4:D:160:LEU:HA	4:D:163:GLN:OE1	2.21	0.41
1:A:36:C:O2'	1:A:37:U:H5'	2.20	0.41
17:Q:68:LYS:O	17:Q:69:THR:HB	2.21	0.41
17:Q:76:ARG:HE	17:Q:78:VAL:HG22	1.85	0.41
21:U:20:ARG:O	21:U:20:ARG:HG2	2.20	0.41
21:U:24:LYS:O	21:U:26:GLY:N	2.54	0.41
11:K:26:PHE:HE1	11:K:88:PRO:HG2	1.85	0.41
2:B:116:LEU:HD13	2:B:140:LEU:HD23	2.02	0.41
17:Q:57:VAL:N	17:Q:79:GLU:HB3	2.35	0.41
4:D:104:MET:CE	4:D:170:LEU:HD13	2.50	0.41
15:O:70:LYS:NZ	15:O:74:VAL:HA	2.36	0.41
1:A:842:U:H3'	1:A:842:U:OP1	2.21	0.41
1:A:1126:U:O2'	1:A:1127:G:H5'	2.21	0.41
1:A:502:A:O2'	1:A:503:C:H5'	2.20	0.41
1:A:1057:G:O2'	1:A:1058:G:H5'	2.20	0.41
1:A:236:A:H2'	1:A:237:G:C8	2.56	0.41
12:L:80:LEU:HD13	12:L:101:LEU:CD1	2.51	0.41
1:A:619:U:O2	4:D:129:VAL:HG13	2.20	0.41
1:A:1231:G:H2'	1:A:1232:U:C6	2.55	0.41
1:A:591:U:H2'	1:A:592:G:C8	2.55	0.41
1:A:676:A:O2'	1:A:677:U:H5'	2.21	0.41
14:N:65:GLN:HA	14:N:65:GLN:HE21	1.86	0.41
4:D:120:LYS:CB	4:D:145:ARG:HH21	2.32	0.41
8:H:76:ARG:HG3	8:H:76:ARG:NH1	2.36	0.41
1:A:425:G:O2'	1:A:426:U:H5'	2.21	0.41
1:A:893:C:H2'	1:A:894:G:C8	2.55	0.41
1:A:821:G:H2'	1:A:822:U:C6	2.56	0.41
1:A:28:A:H2'	1:A:29:U:O4'	2.21	0.41
2:B:58:LYS:HD3	2:B:62:ARG:NH2	2.35	0.41
17:Q:3:LYS:HD2	17:Q:3:LYS:O	2.20	0.41
14:N:89:ARG:HB2	14:N:91:GLU:HG3	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:374:A:H2'	1:A:375:U:C6	2.55	0.41
1:A:790:A:H2	22:V:17:GLN:CB	2.32	0.41
1:A:17:U:C6	1:A:1079:G:C4	3.09	0.41
21:U:34:ARG:C	21:U:34:ARG:HD2	2.41	0.41
10:J:88:MET:SD	10:J:88:MET:N	2.85	0.41
15:O:25:GLU:HA	15:O:80:LEU:CD1	2.51	0.41
1:A:1073:U:O2	2:B:102:ASN:ND2	2.53	0.41
6:F:62:MET:O	6:F:63:ASN:HB2	2.21	0.41
4:D:99:ASN:CB	4:D:103:ARG:HH21	2.34	0.41
12:L:42:LYS:HB3	12:L:44:PRO:HD2	2.03	0.41
13:M:103:THR:HG22	13:M:104:ASN:N	2.33	0.41
1:A:1281:C:H3'	1:A:1282:C:H6	1.86	0.41
1:A:219:U:H2'	1:A:220:G:H8	1.85	0.41
1:A:635:A:H2'	1:A:636:U:C6	2.56	0.41
1:A:635:A:O2'	1:A:636:U:H5'	2.21	0.41
1:A:529:G:H22	12:L:47:ALA:HB2	1.85	0.41
1:A:547:A:H4'	1:A:548:G:O5'	2.21	0.41
14:N:74:ARG:C	14:N:74:ARG:HD3	2.41	0.41
3:C:122:GLN:O	3:C:127:VAL:HG22	2.20	0.41
5:E:43:GLY:HA2	5:E:75:LEU:HD12	2.03	0.41
1:A:714:G:H2'	1:A:715:A:C8	2.56	0.41
1:A:291:U:O2'	1:A:292:G:H5'	2.21	0.41
1:A:847:G:H2'	1:A:848:C:H6	1.86	0.40
2:B:209:VAL:O	2:B:213:LEU:HB2	2.21	0.40
14:N:11:LYS:NZ	14:N:11:LYS:HA	2.36	0.40
9:I:52:GLU:C	9:I:54:VAL:N	2.75	0.40
9:I:64:ILE:HG22	9:I:65:THR:H	1.85	0.40
1:A:35:G:H2'	1:A:36:C:H6	1.86	0.40
18:R:64:LEU:C	18:R:66:LEU:N	2.74	0.40
4:D:116:LEU:O	4:D:121:ALA:HB3	2.21	0.40
1:A:657:U:O2'	1:A:658:C:H5'	2.21	0.40
1:A:177:G:C5'	20:T:59:ARG:HH21	2.33	0.40
1:A:1337:G:H5''	1:A:1338:G:OP1	2.21	0.40
1:A:167:A:H2'	1:A:168:G:H8	1.86	0.40
17:Q:4:ILE:H	17:Q:4:ILE:CD1	2.32	0.40
1:A:499:A:H4'	1:A:500:G:H5'	2.03	0.40
4:D:54:LEU:C	4:D:54:LEU:HD13	2.41	0.40
1:A:611:C:H2'	1:A:612:C:C6	2.56	0.40
1:A:426:U:O2'	1:A:427:U:H5'	2.21	0.40
9:I:126:PHE:O	9:I:128:LYS:N	2.54	0.40
16:P:73:ALA:HB1	16:P:77:GLU:OE2	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:74:LEU:HG	6:F:78:PHE:CD2	2.55	0.40
15:O:46:LYS:HE3	15:O:46:LYS:HB2	1.89	0.40
10:J:37:ARG:N	10:J:77:VAL:HG22	2.36	0.40
20:T:68:LYS:HA	20:T:68:LYS:HD3	1.96	0.40
9:I:18:VAL:HG22	9:I:64:ILE:CG2	2.50	0.40
12:L:56:LEU:HB3	12:L:58:ASN:HD21	1.84	0.40
1:A:254:G:OP1	17:Q:68:LYS:O	2.39	0.40
17:Q:10:ARG:CZ	17:Q:56:ASP:N	2.84	0.40
2:B:119:GLN:HE21	2:B:119:GLN:HB3	1.59	0.40
12:L:71:HIS:CE1	12:L:73:LEU:H	2.39	0.40
10:J:6:ILE:HA	10:J:102:LEU:CD2	2.51	0.40
1:A:1225:A:H4'	19:S:77:ARG:CZ	2.51	0.40
13:M:16:ILE:CG2	13:M:17:ALA:N	2.84	0.40
7:G:57:GLU:HA	7:G:57:GLU:OE1	2.22	0.40
1:A:1338:G:H2'	1:A:1339:A:H8	1.83	0.40
1:A:768:A:H4'	1:A:1523:G:N2	2.35	0.40
1:A:738:C:H2'	1:A:739:C:C6	2.56	0.40
7:G:101:ARG:HB3	7:G:105:GLU:OE2	2.20	0.40
1:A:1195:C:H2'	1:A:1197:A:O4'	2.21	0.40
1:A:178:C:O2'	1:A:179:A:H5'	2.20	0.40
3:C:40:GLN:HB3	3:C:40:GLN:HE21	1.63	0.40
14:N:75:LYS:HG3	14:N:76:PHE:CE1	2.57	0.40
8:H:77:VAL:HG12	8:H:84:ILE:HD13	2.03	0.40
1:A:1347:G:N2	1:A:1373:G:H2'	2.35	0.40
13:M:44:ILE:CA	13:M:47:LEU:HD13	2.46	0.40
19:S:57:VAL:HG21	19:S:74:ALA:CB	2.51	0.40
7:G:112:ASP:HB3	7:G:113:LYS:H	1.66	0.40
9:I:107:ALA:O	9:I:109:GLN:HG2	2.21	0.40
15:O:70:LYS:HG2	15:O:77:TYR:CG	2.56	0.40
8:H:110:MET:HB3	8:H:114:ALA:HB3	2.03	0.40
3:C:4:VAL:HG21	3:C:9:ILE:HD13	2.02	0.40
1:A:1150:A:H1'	1:A:1280:A:N6	2.36	0.40
10:J:71:LEU:N	10:J:71:LEU:HD12	2.27	0.40
2:B:186:VAL:HG22	2:B:198:VAL:HG23	2.03	0.40
5:E:71:ILE:HG12	5:E:72:ASN:H	1.86	0.40
6:F:18:VAL:HG11	6:F:58:HIS:CE1	2.57	0.40
1:A:1047:G:O2'	1:A:1048:G:H5'	2.21	0.40
1:A:841:C:H3'	1:A:843:U:P	2.60	0.40
1:A:880:C:H2'	1:A:881:G:H8	1.86	0.40
3:C:70:ALA:CB	3:C:108:PRO:HB3	2.52	0.40
1:A:1067:A:H1'	1:A:1068:G:C8	2.55	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:158:LEU:HD23	4:D:158:LEU:N	2.36	0.40
1:A:830:G:H2'	2:B:19:THR:O	1.79	0.40
1:A:1084:G:H2'	1:A:1085:U:C5	2.56	0.40
4:D:25:ARG:NH1	4:D:30:LYS:HE3	2.36	0.40
9:I:49:GLN:HB3	9:I:50:PRO:CD	2.51	0.40
1:A:438:U:H2'	1:A:494:G:O6	2.21	0.40
1:A:812:G:O2'	1:A:813:U:H6	2.04	0.40
17:Q:30:HIS:N	17:Q:35:LYS:H	2.19	0.40
7:G:29:LEU:HD12	7:G:104:VAL:HG13	2.04	0.40
1:A:192:A:O2'	1:A:193:C:H5'	2.20	0.40
9:I:118:ARG:HH12	9:I:122:ARG:HE	1.67	0.40
1:A:797:C:O2'	1:A:798:U:H5'	2.21	0.40
1:A:1521:C:H2'	1:A:1522:U:H6	1.87	0.40
1:A:1368:A:O2'	1:A:1369:C:H5'	2.21	0.40
6:F:29:ILE:HG23	6:F:66:ALA:HB2	2.03	0.40
7:G:94:ARG:O	7:G:98:LEU:HD12	2.22	0.40
7:G:94:ARG:CZ	7:G:98:LEU:HD21	2.51	0.40
4:D:158:LEU:HD23	4:D:158:LEU:H	1.87	0.40
1:A:108:G:O4'	1:A:108:G:N3	2.54	0.40
1:A:829:G:O2'	1:A:830:G:H5'	2.22	0.40
1:A:1082:A:H2'	1:A:1083:U:C6	2.56	0.40
1:A:921:U:O3'	1:A:1082:A:H4'	2.22	0.40
1:A:1319:A:H5''	19:S:3:SER:OG	2.21	0.40
11:K:22:ILE:HA	11:K:31:VAL:HG22	2.02	0.40
7:G:114:SER:O	7:G:118:ARG:HG3	2.21	0.40
4:D:196:GLU:HA	4:D:199:ILE:CD1	2.51	0.40
9:I:41:GLU:H	9:I:44:ARG:CZ	2.34	0.40
16:P:4:ILE:HD12	16:P:66:THR:O	2.22	0.40
11:K:113:THR:O	11:K:115:ILE:HG13	2.22	0.40
1:A:1288:A:N1	1:A:1371:G:H1'	2.36	0.40
3:C:6:PRO:HG2	3:C:183:TYR:CD2	2.57	0.40
7:G:73:GLU:OE2	7:G:90:VAL:HG12	2.21	0.40
3:C:54:ILE:O	3:C:54:ILE:HG23	2.22	0.40
1:A:951:G:H1'	1:A:970:C:O2'	2.22	0.40
1:A:1236:A:H2'	1:A:1237:C:O4'	2.22	0.40
1:A:1225:A:N3	1:A:1225:A:H2'	2.37	0.40
1:A:492:C:C2'	1:A:493:A:H5''	2.51	0.40
1:A:314:C:O2'	1:A:315:A:H5'	2.21	0.40
15:O:87:ARG:C	15:O:88:ARG:HG2	2.41	0.40
1:A:945:G:N1	1:A:1337:G:C2	2.89	0.40
1:A:1202:U:H2'	1:A:1203:C:H5'	2.02	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:P:12:LYS:C	16:P:14:ARG:N	2.75	0.40
1:A:1036:A:H2'	1:A:1036:A:N3	2.36	0.40
1:A:264:C:O2'	17:Q:65:PRO:O	2.39	0.40
1:A:633:G:H2'	1:A:634:C:H6	1.86	0.40
1:A:737:C:H2'	1:A:738:C:H6	1.86	0.40
1:A:68:G:C4'	1:A:171:A:H1'	2.52	0.40
1:A:140:U:H2'	1:A:141:G:C8	2.56	0.40
4:D:106:PHE:CD1	4:D:106:PHE:N	2.88	0.40
1:A:754:C:H3'	1:A:754:C:O2	2.21	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	
2	B	216/240 (90%)	145 (67%)	53 (24%)	18 (8%)	1	18
3	C	204/232 (88%)	135 (66%)	49 (24%)	20 (10%)	1	14
4	D	203/205 (99%)	130 (64%)	55 (27%)	18 (9%)	1	17
5	E	148/166 (89%)	108 (73%)	33 (22%)	7 (5%)	3	32
6	F	98/135 (73%)	69 (70%)	23 (24%)	6 (6%)	2	26
7	G	148/178 (83%)	103 (70%)	37 (25%)	8 (5%)	2	29
8	H	127/129 (98%)	105 (83%)	19 (15%)	3 (2%)	7	47
9	I	125/129 (97%)	86 (69%)	28 (22%)	11 (9%)	1	17
10	J	96/103 (93%)	63 (66%)	21 (22%)	12 (12%)	0	8
11	K	115/128 (90%)	75 (65%)	27 (24%)	13 (11%)	0	10
12	L	121/123 (98%)	74 (61%)	30 (25%)	17 (14%)	0	6
13	M	112/117 (96%)	87 (78%)	14 (12%)	11 (10%)	1	14
14	N	92/100 (92%)	59 (64%)	24 (26%)	9 (10%)	1	14

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
15	O	86/89 (97%)	66 (77%)	18 (21%)	2 (2%)	8	48
16	P	80/82 (98%)	59 (74%)	17 (21%)	4 (5%)	3	31
17	Q	78/83 (94%)	48 (62%)	26 (33%)	4 (5%)	2	30
18	R	53/74 (72%)	27 (51%)	19 (36%)	7 (13%)	0	7
19	S	77/91 (85%)	57 (74%)	14 (18%)	6 (8%)	1	20
20	T	83/86 (96%)	69 (83%)	8 (10%)	6 (7%)	1	22
21	U	49/71 (69%)	22 (45%)	12 (24%)	15 (31%)	0	0
22	V	250/252 (99%)	247 (99%)	2 (1%)	1 (0%)	39	80
All	All	2561/2813 (91%)	1834 (72%)	529 (21%)	198 (8%)	2	20

All (198) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	19	THR
2	B	22	TRP
2	B	163	ILE
2	B	186	VAL
3	C	2	GLN
3	C	91	ALA
3	C	153	SER
4	D	18	LEU
4	D	31	CYS
4	D	191	SER
6	F	92	THR
9	I	8	THR
9	I	43	ALA
10	J	57	VAL
11	K	56	LYS
11	K	126	ARG
12	L	10	PRO
12	L	23	LEU
13	M	6	ILE
13	M	14	ALA
14	N	52	ARG
21	U	14	ALA
21	U	22	CYS
2	B	18	GLN
3	C	19	SER
3	C	25	THR

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Mol	Chain	Res	Type
3	C	54	ILE
3	C	81	GLU
3	C	100	ILE
3	C	180	ASP
4	D	25	ARG
4	D	107	GLY
4	D	152	SER
4	D	172	VAL
4	D	192	ALA
5	E	20	VAL
5	E	128	GLY
6	F	62	MET
6	F	64	VAL
6	F	65	GLU
7	G	84	TYR
7	G	129	ASN
9	I	57	VAL
9	I	71	ILE
9	I	108	ARG
10	J	75	ASP
10	J	92	LEU
11	K	50	GLY
11	K	53	GLY
11	K	125	LYS
12	L	19	ASN
12	L	72	ASN
12	L	84	GLY
13	M	3	ILE
13	M	66	GLY
13	M	104	ASN
14	N	51	PRO
14	N	61	ASN
15	O	73	ASP
16	P	79	ASN
17	Q	6	THR
17	Q	34	GLY
18	R	32	ILE
19	S	5	LYS
20	T	85	LEU
21	U	32	ARG
21	U	34	ARG
2	B	20	ARG

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Mol	Chain	Res	Type
2	B	76	SER
3	C	59	PRO
3	C	78	LYS
3	C	136	ALA
4	D	27	ILE
4	D	28	ASP
4	D	43	ARG
4	D	151	GLN
4	D	177	MET
5	E	43	GLY
6	F	94	HIS
7	G	89	GLU
9	I	44	ARG
9	I	55	ASP
9	I	127	SER
10	J	62	ARG
10	J	93	ALA
11	K	70	ALA
11	K	77	GLY
11	K	91	GLY
12	L	13	ARG
12	L	60	PHE
12	L	122	LYS
13	M	7	ASN
13	M	22	TYR
13	M	65	GLU
13	M	98	GLY
14	N	21	ALA
14	N	74	ARG
14	N	80	ARG
17	Q	5	ARG
18	R	21	ASP
18	R	71	ASP
20	T	59	ARG
21	U	6	ARG
21	U	24	LYS
21	U	25	ALA
21	U	40	PRO
2	B	11	ALA
2	B	41	ASN
2	B	88	GLN
2	B	200	PRO

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Mol	Chain	Res	Type
3	C	65	VAL
3	C	186	SER
4	D	29	THR
5	E	25	LYS
5	E	34	ALA
6	F	54	LEU
7	G	18	GLY
7	G	57	GLU
7	G	75	LYS
7	G	86	VAL
8	H	46	GLU
9	I	67	LYS
10	J	56	HIS
10	J	61	ALA
10	J	74	VAL
11	K	57	SER
11	K	108	ASN
12	L	14	LYS
12	L	15	VAL
12	L	47	ALA
12	L	56	LEU
12	L	67	GLY
12	L	120	ARG
14	N	31	SER
14	N	94	GLY
16	P	42	ILE
17	Q	69	THR
18	R	22	TYR
18	R	47	ARG
19	S	27	LYS
19	S	36	ARG
19	S	65	MET
21	U	26	GLY
21	U	33	ARG
21	U	36	PHE
21	U	37	TYR
21	U	41	THR
22	V	130	THR
2	B	24	PRO
2	B	27	LYS
2	B	87	ASP
2	B	94	ARG

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Mol	Chain	Res	Type
3	C	14	VAL
3	C	145	ALA
3	C	167	TYR
5	E	146	MET
9	I	122	ARG
10	J	36	VAL
11	K	127	ARG
12	L	42	LYS
12	L	121	PRO
13	M	105	ALA
15	O	17	ASP
18	R	20	ILE
19	S	8	PRO
20	T	5	SER
20	T	46	ALA
2	B	205	ALA
3	C	26	LYS
3	C	112	ALA
4	D	6	PRO
5	E	107	GLY
7	G	6	ILE
10	J	95	GLY
11	K	106	ILE
14	N	33	VAL
19	S	39	ILE
21	U	13	VAL
2	B	157	PRO
3	C	90	VAL
4	D	63	ILE
4	D	175	GLY
11	K	119	GLY
16	P	41	PRO
16	P	49	GLY
20	T	3	ILE
4	D	37	PRO
8	H	71	VAL
10	J	41	PRO
10	J	96	VAL
12	L	62	VAL
13	M	23	GLY
20	T	41	GLY
21	U	52	VAL

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Mol	Chain	Res	Type
2	B	150	ILE
8	H	77	VAL
9	I	110	VAL
18	R	43	ILE

### 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	
2	B	180/198 (91%)	142 (79%)	38 (21%)	1	9
3	C	170/189 (90%)	142 (84%)	28 (16%)	3	19
4	D	172/172 (100%)	140 (81%)	32 (19%)	2	14
5	E	113/125 (90%)	92 (81%)	21 (19%)	2	14
6	F	87/116 (75%)	68 (78%)	19 (22%)	1	9
7	G	123/146 (84%)	102 (83%)	21 (17%)	2	17
8	H	104/104 (100%)	87 (84%)	17 (16%)	3	20
9	I	105/106 (99%)	83 (79%)	22 (21%)	1	9
10	J	86/90 (96%)	66 (77%)	20 (23%)	1	7
11	K	90/98 (92%)	70 (78%)	20 (22%)	1	9
12	L	103/103 (100%)	88 (85%)	15 (15%)	4	24
13	M	92/95 (97%)	70 (76%)	22 (24%)	1	7
14	N	79/83 (95%)	67 (85%)	12 (15%)	3	22
15	O	76/77 (99%)	69 (91%)	7 (9%)	11	43
16	P	65/65 (100%)	56 (86%)	9 (14%)	4	27
17	Q	74/77 (96%)	60 (81%)	14 (19%)	2	13
18	R	48/64 (75%)	45 (94%)	3 (6%)	22	59
19	S	70/78 (90%)	60 (86%)	10 (14%)	4	25
20	T	65/65 (100%)	56 (86%)	9 (14%)	4	27
21	U	44/61 (72%)	36 (82%)	8 (18%)	2	15

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
22	V	213/216 (99%)	206 (97%)	7 (3%)	45 76
All	All	2159/2328 (93%)	1805 (84%)	354 (16%)	6 19

All (354) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	B	9	LEU
2	B	15	PHE
2	B	22	TRP
2	B	23	ASN
2	B	26	MET
2	B	31	PHE
2	B	36	LYS
2	B	38	HIS
2	B	40	ILE
2	B	46	VAL
2	B	48	MET
2	B	56	LEU
2	B	57	ASN
2	B	62	ARG
2	B	67	LEU
2	B	73	ARG
2	B	81	ASP
2	B	90	PHE
2	B	94	ARG
2	B	95	TRP
2	B	101	THR
2	B	116	LEU
2	B	119	GLN
2	B	121	GLN
2	B	122	ASP
2	B	125	PHE
2	B	127	LYS
2	B	128	LEU
2	B	145	ASN
2	B	158	ASP
2	B	162	VAL
2	B	188	THR
2	B	196	ASP
2	B	202	ASN
2	B	206	ILE
2	B	209	VAL

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Mol	Chain	Res	Type
2	B	212	TYR
2	B	222	GLU
3	C	17	TRP
3	C	20	THR
3	C	26	LYS
3	C	31	ASN
3	C	40	GLN
3	C	42	LEU
3	C	69	THR
3	C	82	ASP
3	C	88	LYS
3	C	100	ILE
3	C	102	ILE
3	C	106	ARG
3	C	113	LYS
3	C	141	MET
3	C	146	LYS
3	C	156	LEU
3	C	164	THR
3	C	165	GLU
3	C	166	TRP
3	C	168	ARG
3	C	174	LEU
3	C	176	THR
3	C	180	ASP
3	C	184	ASN
3	C	185	THR
3	C	189	HIS
3	C	190	THR
3	C	192	TYR
4	D	7	LYS
4	D	8	LEU
4	D	10	LEU
4	D	20	LEU
4	D	21	LYS
4	D	25	ARG
4	D	35	GLN
4	D	39	GLN
4	D	40	HIS
4	D	43	ARG
4	D	55	ARG
4	D	56	GLU

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Mol	Chain	Res	Type
4	D	58	GLN
4	D	62	ARG
4	D	64	TYR
4	D	69	ARG
4	D	85	THR
4	D	94	GLU
4	D	133	SER
4	D	137	SER
4	D	145	ARG
4	D	147	LYS
4	D	150	LYS
4	D	153	ARG
4	D	155	LYS
4	D	158	LEU
4	D	160	LEU
4	D	176	LYS
4	D	183	ARG
4	D	186	GLU
4	D	189	ASP
4	D	194	ILE
5	E	11	GLN
5	E	12	GLU
5	E	23	THR
5	E	25	LYS
5	E	32	PHE
5	E	44	ARG
5	E	45	VAL
5	E	55	VAL
5	E	68	ARG
5	E	72	ASN
5	E	81	GLN
5	E	92	ARG
5	E	102	THR
5	E	110	MET
5	E	122	VAL
5	E	123	LEU
5	E	125	LYS
5	E	139	THR
5	E	143	LEU
5	E	151	MET
5	E	158	LYS
6	F	24	ARG

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Mol	Chain	Res	Type
6	F	37	HIS
6	F	38	ARG
6	F	39	LEU
6	F	46	GLN
6	F	53	LYS
6	F	54	LEU
6	F	55	HIS
6	F	61	LEU
6	F	65	GLU
6	F	69	GLU
6	F	71	ILE
6	F	75	GLU
6	F	76	THR
6	F	78	PHE
6	F	86	ARG
6	F	87	SER
6	F	88	MET
6	F	92	THR
7	G	3	ARG
7	G	10	LYS
7	G	11	ILE
7	G	14	ASP
7	G	16	LYS
7	G	19	SER
7	G	21	LEU
7	G	22	LEU
7	G	29	LEU
7	G	46	LEU
7	G	52	ARG
7	G	55	LYS
7	G	72	VAL
7	G	78	ARG
7	G	84	TYR
7	G	89	GLU
7	G	94	ARG
7	G	112	ASP
7	G	114	SER
7	G	139	ASP
7	G	143	MET
8	H	4	ASP
8	H	17	GLN
8	H	26	MET

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Mol	Chain	Res	Type
8	H	30	LYS
8	H	37	ASN
8	H	48	PHE
8	H	55	LYS
8	H	61	THR
8	H	64	TYR
8	H	76	ARG
8	H	82	LEU
8	H	83	ARG
8	H	93	LYS
8	H	107	LYS
8	H	111	THR
8	H	113	ARG
8	H	120	LEU
9	I	3	ASN
9	I	11	ARG
9	I	26	LYS
9	I	30	ASN
9	I	35	GLU
9	I	36	GLN
9	I	38	PHE
9	I	41	GLU
9	I	44	ARG
9	I	53	LEU
9	I	56	MET
9	I	58	GLU
9	I	59	LYS
9	I	60	LEU
9	I	61	ASP
9	I	84	ARG
9	I	86	LEU
9	I	87	MET
9	I	106	ASP
9	I	112	ARG
9	I	121	ARG
9	I	126	PHE
10	J	5	ARG
10	J	11	LYS
10	J	14	ASP
10	J	18	ILE
10	J	35	GLN
10	J	40	ILE

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Mol	Chain	Res	Type
10	J	45	ARG
10	J	48	ARG
10	J	50	THR
10	J	57	VAL
10	J	68	ARG
10	J	71	LEU
10	J	73	LEU
10	J	75	ASP
10	J	81	GLU
10	J	88	MET
10	J	89	ARG
10	J	92	LEU
10	J	98	VAL
10	J	102	LEU
11	K	12	ARG
11	K	33	ILE
11	K	35	ASP
11	K	36	ARG
11	K	37	GLN
11	K	52	ARG
11	K	56	LYS
11	K	58	THR
11	K	71	ASP
11	K	73	VAL
11	K	83	VAL
11	K	84	MET
11	K	85	VAL
11	K	92	ARG
11	K	99	LEU
11	K	107	THR
11	K	108	ASN
11	K	117	HIS
11	K	121	ARG
11	K	126	ARG
12	L	18	SER
12	L	20	VAL
12	L	28	GLN
12	L	30	ARG
12	L	33	CYS
12	L	35	ARG
12	L	38	THR
12	L	50	LYS

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Mol	Chain	Res	Type
12	L	58	ASN
12	L	71	HIS
12	L	74	GLN
12	L	102	ASP
12	L	103	CYS
12	L	107	LYS
12	L	118	VAL
13	M	2	ARG
13	M	11	HIS
13	M	18	LEU
13	M	27	THR
13	M	28	ARG
13	M	41	ASP
13	M	43	LYS
13	M	44	ILE
13	M	57	ASP
13	M	62	PHE
13	M	64	VAL
13	M	67	ASP
13	M	68	LEU
13	M	81	ASP
13	M	90	HIS
13	M	91	ARG
13	M	97	ARG
13	M	99	GLN
13	M	100	ARG
13	M	101	THR
13	M	102	LYS
13	M	106	ARG
14	N	15	LEU
14	N	27	LYS
14	N	41	TRP
14	N	45	LEU
14	N	50	LEU
14	N	53	ASP
14	N	59	GLN
14	N	60	ARG
14	N	65	GLN
14	N	73	LEU
14	N	74	ARG
14	N	76	PHE
15	O	7	THR

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Mol	Chain	Res	Type
15	O	17	ASP
15	O	25	GLU
15	O	57	ARG
15	O	58	MET
15	O	64	LYS
15	O	70	LYS
16	P	4	ILE
16	P	5	ARG
16	P	26	ASN
16	P	29	ASN
16	P	31	ARG
16	P	34	GLU
16	P	46	LYS
16	P	55	ASP
16	P	63	GLN
17	Q	4	ILE
17	Q	10	ARG
17	Q	15	LYS
17	Q	25	GLU
17	Q	26	ARG
17	Q	39	ARG
17	Q	45	VAL
17	Q	52	CYS
17	Q	60	ILE
17	Q	67	SER
17	Q	74	LEU
17	Q	76	ARG
17	Q	78	VAL
17	Q	80	LYS
18	R	30	ASN
18	R	52	ARG
18	R	65	SER
19	S	5	LYS
19	S	12	LEU
19	S	14	LEU
19	S	20	LYS
19	S	28	LYS
19	S	36	ARG
19	S	40	PHE
19	S	47	THR
19	S	72	GLU
19	S	73	PHE

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Mol	Chain	Res	Type
20	T	4	LYS
20	T	14	GLU
20	T	26	MET
20	T	29	THR
20	T	53	MET
20	T	59	ARG
20	T	67	HIS
20	T	70	LYS
20	T	85	LEU
21	U	11	PHE
21	U	12	ASP
21	U	16	ARG
21	U	17	ARG
21	U	33	ARG
21	U	44	ARG
21	U	48	LYS
21	U	53	LYS
22	V	21	ASN
22	V	37	LYS
22	V	81	LEU
22	V	91	ASP
22	V	155	LYS
22	V	221	ARG
22	V	231	ASN

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (69) such sidechains are listed below:

Mol	Chain	Res	Type
2	B	108	GLN
2	B	119	GLN
2	B	121	GLN
2	B	145	ASN
2	B	167	HIS
2	B	202	ASN
3	C	2	GLN
3	C	5	HIS
3	C	40	GLN
3	C	68	HIS
3	C	122	GLN
3	C	139	ASN
3	C	184	ASN
4	D	35	GLN

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Mol	Chain	Res	Type
4	D	84	ASN
4	D	99	ASN
4	D	135	GLN
4	D	195	ASN
5	E	69	ASN
5	E	72	ASN
5	E	82	HIS
5	E	96	GLN
5	E	121	ASN
5	E	131	ASN
5	E	134	ASN
6	F	14	GLN
6	F	17	GLN
6	F	46	GLN
6	F	58	HIS
7	G	67	ASN
7	G	85	GLN
7	G	121	ASN
7	G	147	ASN
8	H	3	GLN
8	H	17	GLN
8	H	20	ASN
9	I	4	GLN
9	I	24	ASN
9	I	30	ASN
9	I	31	GLN
9	I	36	GLN
9	I	49	GLN
9	I	109	GLN
10	J	15	HIS
10	J	20	GLN
10	J	70	HIS
10	J	99	GLN
11	K	28	ASN
11	K	37	GLN
11	K	100	ASN
12	L	58	ASN
12	L	72	ASN
13	M	99	GLN
14	N	59	GLN
14	N	61	ASN
14	N	65	GLN

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Mol	Chain	Res	Type
15	O	34	GLN
15	O	39	GLN
16	P	9	HIS
16	P	18	GLN
16	P	29	ASN
16	P	63	GLN
18	R	53	GLN
19	S	51	HIS
19	S	55	GLN
20	T	12	GLN
20	T	20	ASN
20	T	54	GLN
20	T	60	GLN

### 5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	1407/1542 (91%)	261 (18%)	24 (1%)

All (261) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	7	A
1	A	9	G
1	A	14	U
1	A	31	G
1	A	32	A
1	A	39	G
1	A	47	C
1	A	48	C
1	A	51	A
1	A	52	C
1	A	55	A
1	A	61	G
1	A	66	A
1	A	72	A
1	A	76	G
1	A	78	A
1	A	79	G
1	A	83	C
1	A	85	U

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Mol	Chain	Res	Type
1	A	86	G
1	A	87	C
1	A	88	U
1	A	89	U
1	A	95	C
1	A	108	G
1	A	121	U
1	A	122	G
1	A	131	A
1	A	151	A
1	A	164	G
1	A	182	A
1	A	183	C
1	A	197	A
1	A	209	U
1	A	210	C
1	A	239	U
1	A	240	G
1	A	243	A
1	A	244	U
1	A	245	U
1	A	247	G
1	A	250	A
1	A	251	G
1	A	253	A
1	A	257	G
1	A	258	G
1	A	266	G
1	A	267	C
1	A	280	C
1	A	289	G
1	A	316	C
1	A	324	G
1	A	328	C
1	A	329	A
1	A	330	C
1	A	332	G
1	A	345	C
1	A	352	C
1	A	354	G
1	A	367	U
1	A	372	C

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Mol	Chain	Res	Type
1	A	373	A
1	A	381	C
1	A	382	A
1	A	397	A
1	A	398	U
1	A	406	G
1	A	408	A
1	A	411	A
1	A	412	A
1	A	414	A
1	A	415	A
1	A	421	U
1	A	422	C
1	A	424	G
1	A	429	U
1	A	430	A
1	A	434	U
1	A	435	A
1	A	438	U
1	A	459	A
1	A	461	A
1	A	462	G
1	A	463	U
1	A	464	U
1	A	465	A
1	A	466	A
1	A	467	U
1	A	468	A
1	A	469	C
1	A	476	U
1	A	481	G
1	A	482	A
1	A	484	G
1	A	485	U
1	A	493	A
1	A	500	G
1	A	511	C
1	A	518	C
1	A	522	C
1	A	527	G
1	A	531	U
1	A	532	A

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Mol	Chain	Res	Type
1	A	547	A
1	A	559	A
1	A	562	U
1	A	572	A
1	A	573	A
1	A	576	C
1	A	577	G
1	A	607	A
1	A	639	G
1	A	650	G
1	A	653	U
1	A	665	A
1	A	693	G
1	A	700	G
1	A	721	G
1	A	724	G
1	A	731	G
1	A	733	G
1	A	747	A
1	A	748	G
1	A	755	G
1	A	777	A
1	A	781	A
1	A	782	A
1	A	793	U
1	A	794	A
1	A	812	G
1	A	815	A
1	A	817	C
1	A	818	G
1	A	819	A
1	A	828	U
1	A	829	G
1	A	841	C
1	A	842	U
1	A	843	U
1	A	844	G
1	A	845	A
1	A	902	G
1	A	914	A
1	A	926	G
1	A	927	G

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Mol	Chain	Res	Type
1	A	931	C
1	A	934	C
1	A	935	A
1	A	960	U
1	A	961	U
1	A	966	G
1	A	968	A
1	A	969	A
1	A	971	G
1	A	974	A
1	A	976	G
1	A	977	A
1	A	983	A
1	A	991	U
1	A	992	U
1	A	993	G
1	A	1002	G
1	A	1004	A
1	A	1009	U
1	A	1022	A
1	A	1026	G
1	A	1030	U
1	A	1031	C
1	A	1034	G
1	A	1035	A
1	A	1043	G
1	A	1044	A
1	A	1045	C
1	A	1049	U
1	A	1050	G
1	A	1051	C
1	A	1053	G
1	A	1054	C
1	A	1055	A
1	A	1065	U
1	A	1066	C
1	A	1070	U
1	A	1094	G
1	A	1095	U
1	A	1101	A
1	A	1102	A
1	A	1108	G

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Mol	Chain	Res	Type
1	A	1111	A
1	A	1112	C
1	A	1126	U
1	A	1130	A
1	A	1136	C
1	A	1137	C
1	A	1138	G
1	A	1139	G
1	A	1140	C
1	A	1158	C
1	A	1159	U
1	A	1168	U
1	A	1169	A
1	A	1174	G
1	A	1179	A
1	A	1181	G
1	A	1183	U
1	A	1196	A
1	A	1197	A
1	A	1201	A
1	A	1202	U
1	A	1209	C
1	A	1212	U
1	A	1213	A
1	A	1214	C
1	A	1215	G
1	A	1225	A
1	A	1226	C
1	A	1227	A
1	A	1228	C
1	A	1238	A
1	A	1240	U
1	A	1241	G
1	A	1253	G
1	A	1256	A
1	A	1258	G
1	A	1261	A
1	A	1270	G
1	A	1278	G
1	A	1279	G
1	A	1280	A
1	A	1281	C

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Mol	Chain	Res	Type
1	A	1285	A
1	A	1286	U
1	A	1287	A
1	A	1298	U
1	A	1300	G
1	A	1301	U
1	A	1305	G
1	A	1316	G
1	A	1317	C
1	A	1320	C
1	A	1322	C
1	A	1323	G
1	A	1336	C
1	A	1338	G
1	A	1346	A
1	A	1347	G
1	A	1353	G
1	A	1362	A
1	A	1363	A
1	A	1364	U
1	A	1378	C
1	A	1379	G
1	A	1380	U
1	A	1381	U
1	A	1507	A
1	A	1517	G
1	A	1519	A
1	A	1520	C
1	A	1529	G
1	A	1530	G
1	A	1533	C
1	A	1534	A

All (24) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	A	51	A
1	A	60	A
1	A	243	A
1	A	279	A
1	A	328	C
1	A	366	A

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Mol	Chain	Res	Type
1	A	372	C
1	A	428	G
1	A	429	U
1	A	484	G
1	A	576	C
1	A	913	A
1	A	960	U
1	A	975	A
1	A	1025	U
1	A	1049	U
1	A	1065	U
1	A	1101	A
1	A	1181	G
1	A	1201	A
1	A	1226	C
1	A	1300	G
1	A	1302	C
1	A	1528	U

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

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

## 5.5 Carbohydrates [i](#)

There are no carbohydrates in this entry.

## 5.6 Ligand geometry [i](#)

There are no ligands in this entry.

## 5.7 Other polymers [i](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.