



# Full wwPDB/EMDatabank EM Map/Model Validation Report ⓘ

Aug 20, 2017 – 09:50 PM EDT

PDB ID : 5MY1  
EMDB ID: : EMD-3580  
Title : E. coli expressome  
Authors : Kohler, R.; Mooney, R.A.; Mills, D.J.; Kostrewa, D.; Landick, R.; Cramer, P.  
Deposited on : unknown  
Resolution : 7.60 Å(reported)

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

We welcome your comments at [validation@mail.wwpdb.org](mailto:validation@mail.wwpdb.org)

A user guide is available at

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

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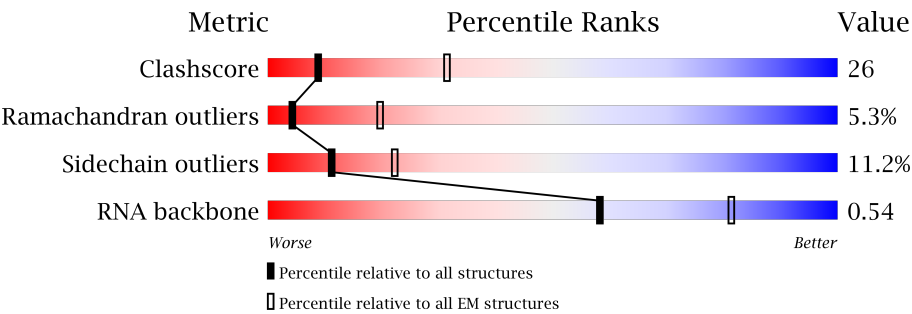
MolProbity : 4.02b-467  
Percentile statistics : 20161228.v01 (using entries in the PDB archive December 28th 2016)  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et. al. (1996)  
Validation Pipeline (wwPDB-VP) : rb-20029824

# 1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:  
*ELECTRON MICROSCOPY*

The reported resolution of this entry is 7.60 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.



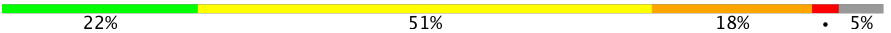
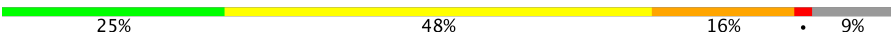
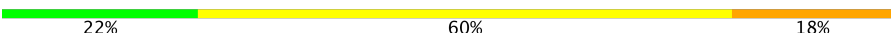
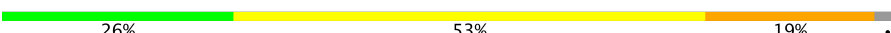
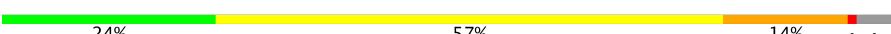
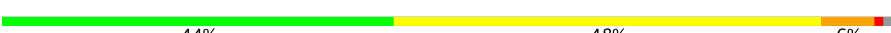
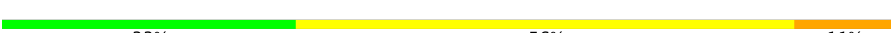







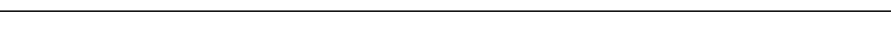
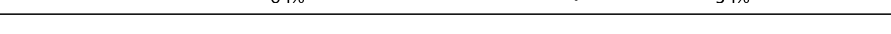
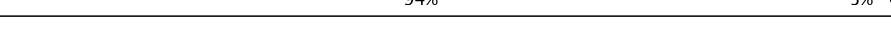
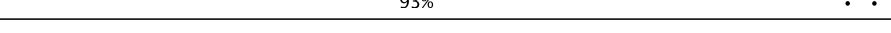
Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	125131	1336
Ramachandran outliers	121729	1120
Sidechain outliers	121581	1026
RNA backbone	3398	335

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	<div><div>26%</div><div>59%</div><div>14%</div><div>.</div></div>
2	C	232	<div><div>25%</div><div>50%</div><div>14%</div><div>11%</div></div>
3	D	205	<div><div>27%</div><div>54%</div><div>19%</div><div>.</div></div>
4	E	166	<div><div>29%</div><div>51%</div><div>10%</div><div>.</div><div>10%</div></div>
5	F	135	<div><div>24%</div><div>37%</div><div>11%</div><div>.</div><div>26%</div></div>
6	G	178	<div><div>25%</div><div>47%</div><div>12%</div><div>.</div><div>16%</div></div>
7	H	129	<div><div>44%</div><div>46%</div><div>10%</div></div>
8	I	129	<div><div>25%</div><div>51%</div><div>22%</div><div>..</div></div>

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Mol	Chain	Length	Quality of chain
9	J	103	
10	K	128	
11	L	123	
12	M	117	
13	N	100	
14	O	89	
15	P	82	
16	Q	83	
17	R	74	
18	S	91	
19	T	86	
20	B	240	
21	U	71	
22	V	329	
22	W	329	
23	X	1342	
24	Y	1407	
25	Z	91	

## 2 Entry composition

There are 26 unique types of molecules in this entry. The entry contains 71071 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	1530	Total	C	N	O	P	0	0
			32831	14642	6024	10635	1530		

- Molecule 2 is a protein called 30S ribosomal protein S3.

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

- Molecule 3 is a protein called 30S ribosomal protein S4.

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

- Molecule 4 is a protein called 30S ribosomal protein S5.

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

- Molecule 5 is a protein called 30S ribosomal protein S6.

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

- Molecule 6 is a protein called 30S ribosomal protein S7.

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

- Molecule 7 is a protein called 30S ribosomal protein S8.

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

- Molecule 8 is a protein called 30S ribosomal protein S9.

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

- Molecule 9 is a protein called 30S ribosomal protein S10.

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

- Molecule 10 is a protein called 30S ribosomal protein S11.

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

- Molecule 11 is a protein called 30S ribosomal protein S12.

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

- Molecule 12 is a protein called 30S ribosomal protein S13.

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

- Molecule 13 is a protein called 30S ribosomal protein S14.

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

- Molecule 14 is a protein called 30S ribosomal protein S15.

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

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
O	79	ARG	GLN	conflict	UNP P0ADZ4

- Molecule 15 is a protein called 30S ribosomal protein S16.

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

- Molecule 16 is a protein called 30S ribosomal protein S17.

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

- Molecule 17 is a protein called 30S ribosomal protein S18.

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

- Molecule 18 is a protein called 30S ribosomal protein S19.

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

- Molecule 19 is a protein called 30S ribosomal protein S20.

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

- Molecule 20 is a protein called 30S ribosomal protein S2.

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

- 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 DNA-directed RNA polymerase subunit alpha.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	V	225	Total	C	N	O	S	0	0
			1422	884	254	280	4		
22	W	216	Total	C	N	O	S	0	0
			1485	917	271	292	5		

- Molecule 23 is a protein called DNA-directed RNA polymerase subunit beta.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	X	1319	Total	C	N	O	S	1	0
			8347	5174	1507	1642	24		

- Molecule 24 is a protein called DNA-directed RNA polymerase subunit beta'.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	Y	1372	Total	C	N	O	S	0	0
			7824	4771	1488	1552	13		

- Molecule 25 is a protein called DNA-directed RNA polymerase subunit omega.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	Z	79	Total	C	N	O	S	0	0
			623	379	116	127	1		

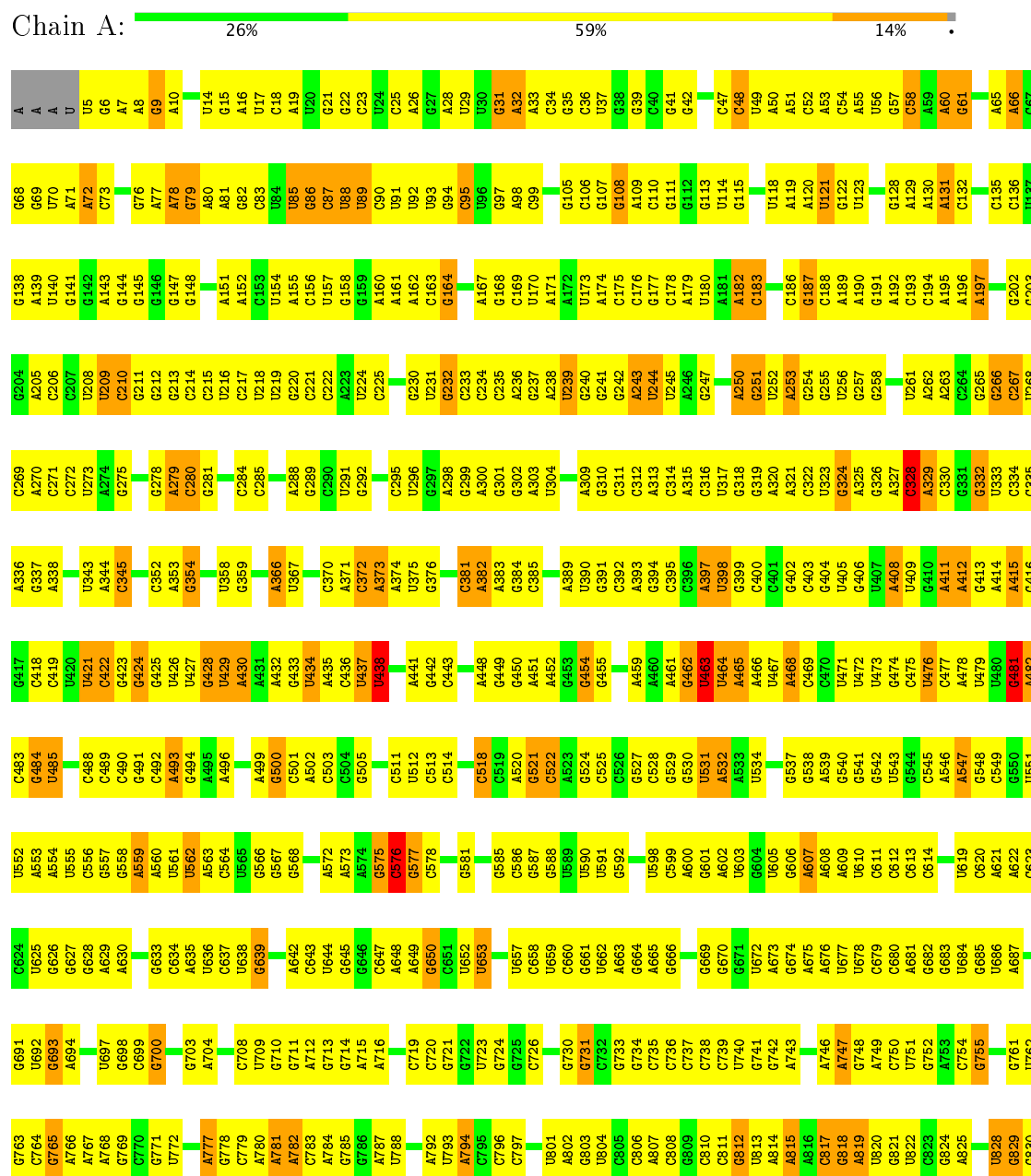
- Molecule 26 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
26	Y	1	Total	Zn	0
			1	1	

### 3 Residue-property plots

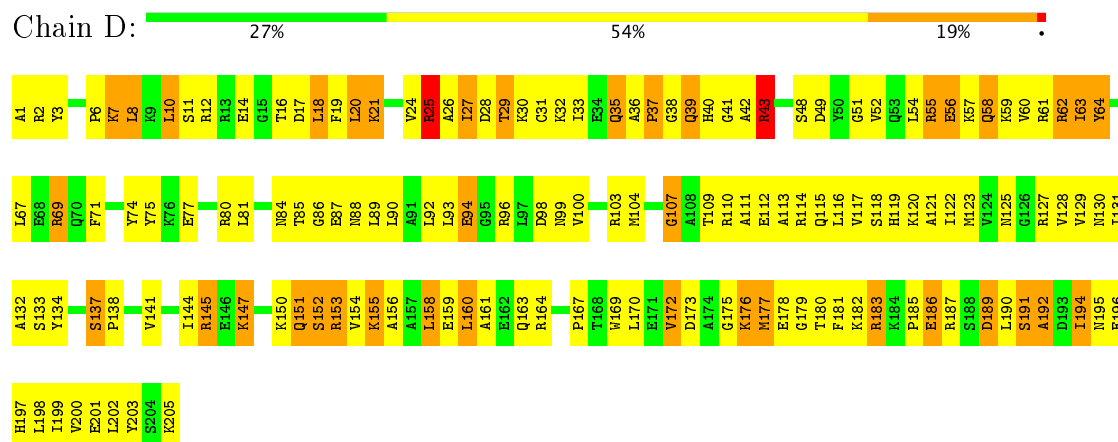
These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. Residues are color-coded according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

#### • Molecule 1: 16S ribosomal RNA

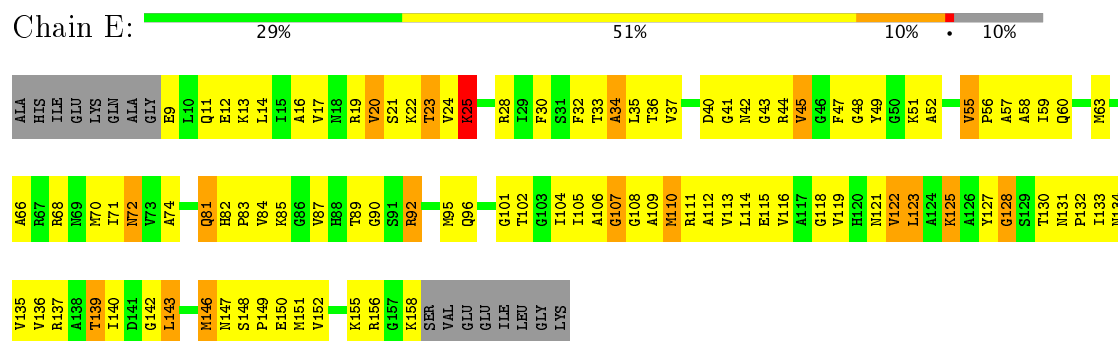




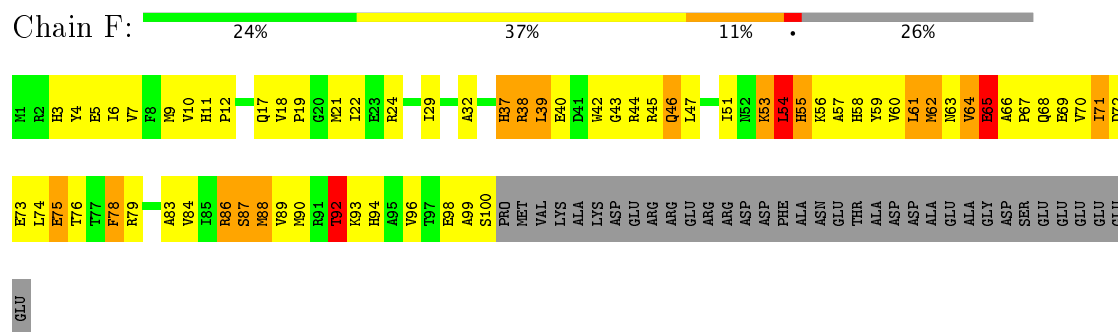
- Molecule 3: 30S ribosomal protein S4



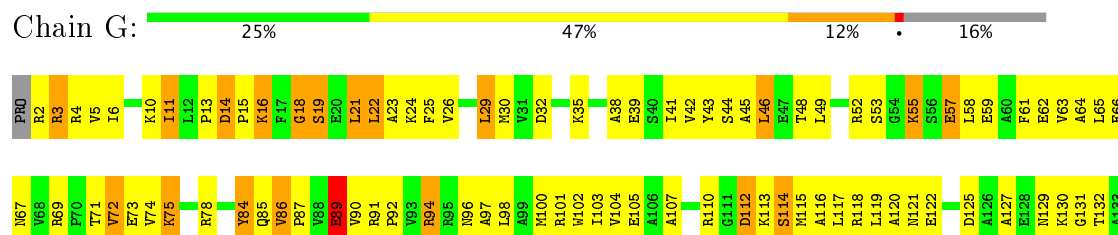
- Molecule 4: 30S ribosomal protein S5

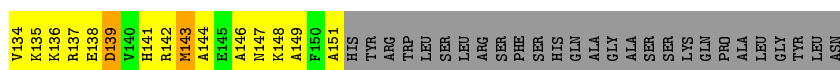


- Molecule 5: 30S ribosomal protein S6



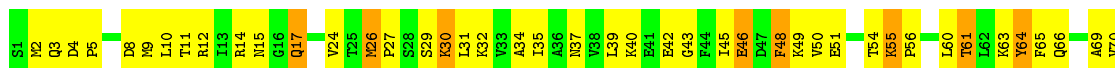
- Molecule 6: 30S ribosomal protein S7





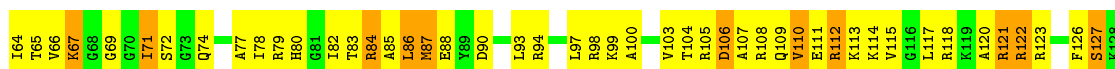
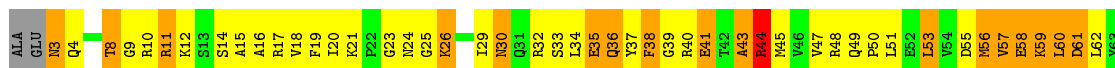
• Molecule 7: 30S ribosomal protein S8

Chain H: 44% 46% 10%



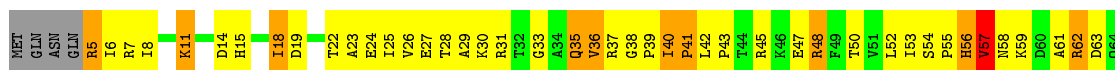
• Molecule 8: 30S ribosomal protein S9

Chain I: 25% 51% 22% ..



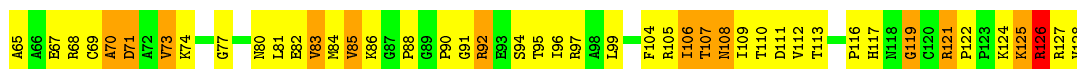
• Molecule 9: 30S ribosomal protein S10

Chain J: 22% 51% 18% • 5%



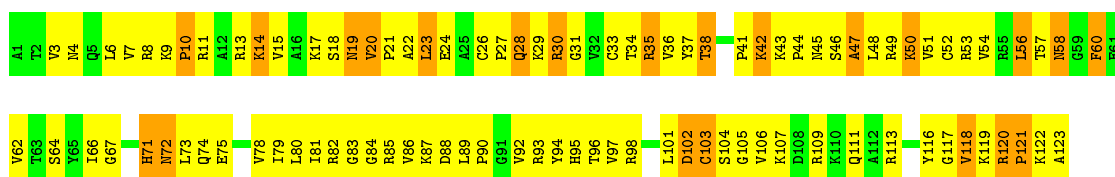
• Molecule 10: 30S ribosomal protein S11

Chain K: 25% 48% 16% • 9%

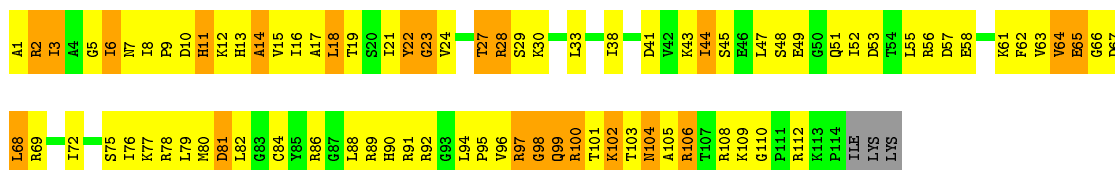


• Molecule 11: 30S ribosomal protein S12

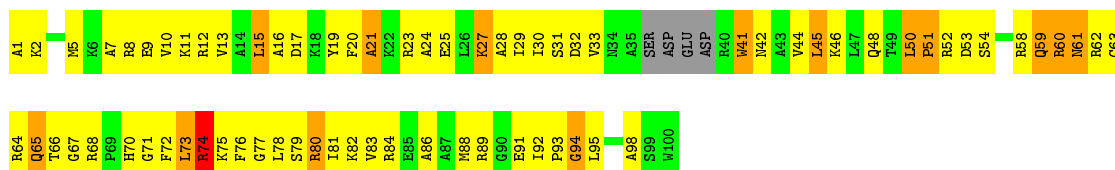
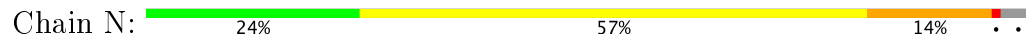
Chain L: 22% 60% 18%



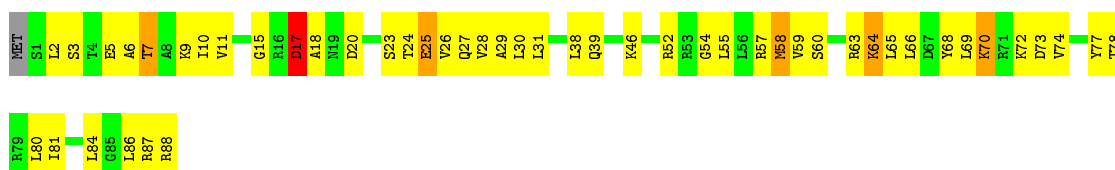
• Molecule 12: 30S ribosomal protein S13



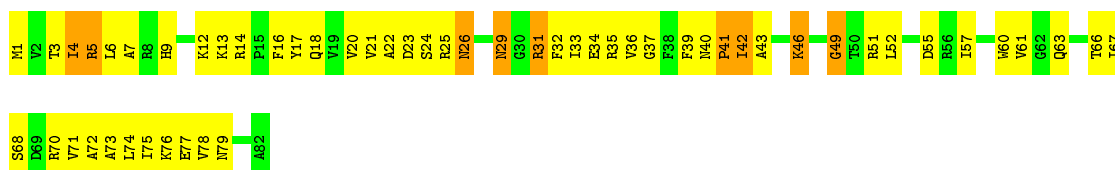
• Molecule 13: 30S ribosomal protein S14



• Molecule 14: 30S ribosomal protein S15

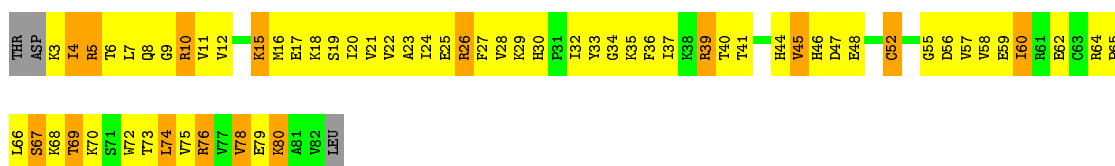


• Molecule 15: 30S ribosomal protein S16



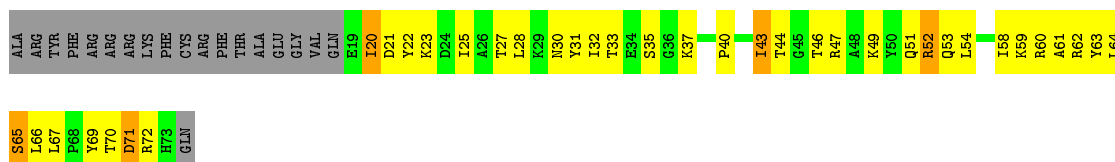
• Molecule 16: 30S ribosomal protein S17





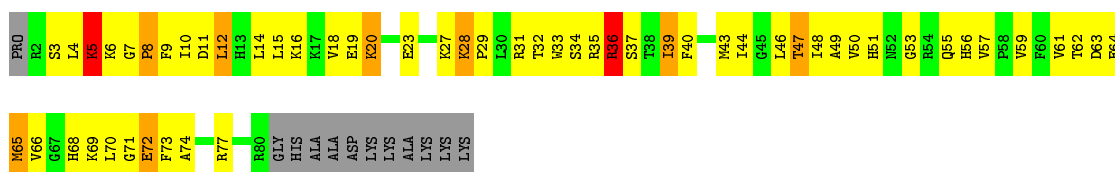
- Molecule 17: 30S ribosomal protein S18

Chain R: 24% 43% 7% 26%



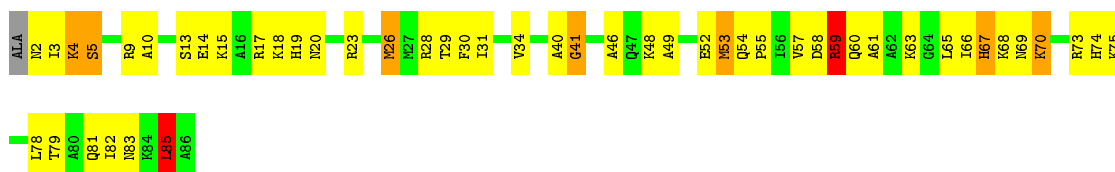
- Molecule 18: 30S ribosomal protein S19

Chain S: 25% 51% 9% 13%



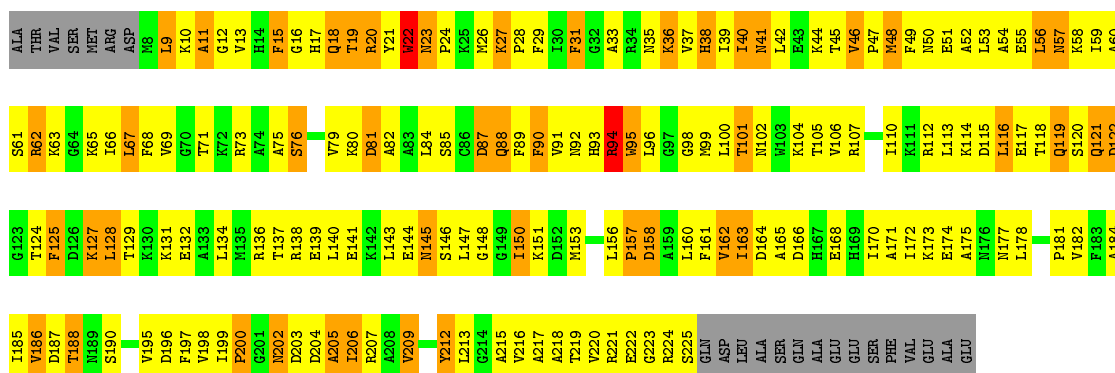
- Molecule 19: 30S ribosomal protein S20

Chain T: 41% 48% 8% ..



- Molecule 20: 30S ribosomal protein S2

Chain B: 20% 51% 20% 9%



- Molecule 21: 30S ribosomal protein S21

Chain U: 

MET PRO VAL I3 K4 V5 R6 E7 N8 E9 P10 F11 D12 V13 A14 L15 R16 R17 F18 K19 R20 S21 C22 E23 K24 A25 G26 V27 L28 A29 E30 V31 R32 R33 R34 E35 F36 Y37 E38 K39 T41 T42 E43 R44 K48 V52 K53 ARG HIS ALA LYS LYS LEU ALA ARG ASN

ALA ARG THR ARG LEU TYR

- Molecule 22: DNA-directed RNA polymerase subunit alpha

Chain V: 

MET GLN GLY SER VAL ASP THR LEU PHE K10 V14 K95 L102 T111 A112 A113 D114 I115 T116 H117 D118 G119 D120 K125 P126 Q127 H128 E163 D164 S178 E193 L234 ARG ASP VAL ARG GLN PRO GLU VAL LYS GLU ASP LYS VAL ARG GLU PHE ASP PRO ILE LEU

LEU ARG PRO VAL ASP LEU GLU THR VAL ARG SER ASN CYS LEU LYS ALA GLU ILE HIS TYR ILE GLY ASP LEU VAL GLN ARG THR VAL GLU LYS THR ASN GLY LYS LYS SER THR ILE LYS ASP VAL LEU SER ARG GLY ILE SER

LEU GLY MET ARG LEU ASN TRP PRO ALA ILE ASP ALA ASP GLU

- Molecule 22: DNA-directed RNA polymerase subunit alpha

Chain W: 

MET GLN GLY S4 L13 L133 A138 H160 SER GLU ASP GLU ARG ARG PRO ILE GLY ARG LEU VAL D174 E193 V232 ASP LEU ARG VAL ARG GLN PRO GLU VAL LYS GLU GLU LYS PRO VAL ASP PHE ASP PRO ILE LEU LEU LEU ARG VAL ASP ASP LEU LEU

THR VAL ARG SER ALA ASN CYS LEU LYS ALA ILE HIS TYR ILE ASP GLU LEU VAL GLN ARG THR GLU LEU VAL LEU LEU LYS THR PRO ASN GLY LYS SER LEU THR ILE LYS ASP VAL LEU ALA GLU PHE ARG GLY LEU SER LEU LEU MET ARG LEU LEU ASP ASP LEU TRP ASN PRO

PRO ALA ILE ALA ASP GLU

- Molecule 23: DNA-directed RNA polymerase subunit beta

Chain X: 

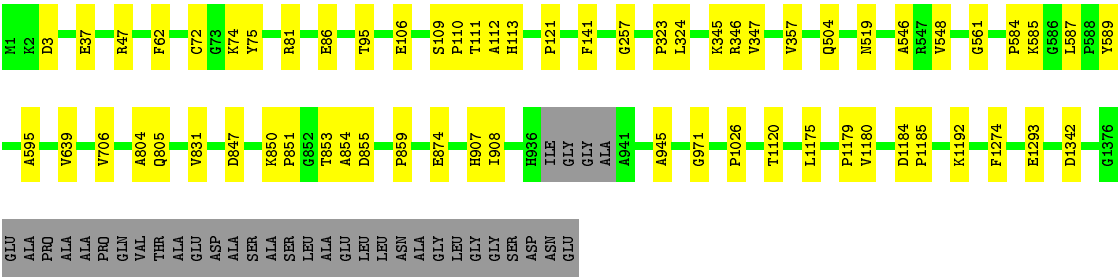
MET VAL T3 D42 P43 F57 P58 V98 E111 I117 E121 V228 A257 I285 C311 G329 T338 M488 P489 Q490 Y555 D596 V655 V733 A746 G747 I748 D749 I750 V618 R841 D842 T851 A852 D853 I854 G858 E859

A860 A861 L862 S863 K864 L865 D866 E867 I873 K886 V887 T893 Q894 L895 T896 P897 E898 E899 K900 L901 L902 R903 A904 I905 K943 R944 E947 G983 VAL GLU ALA GLU LYS LEU ASP LYS LEU ASP LEU PRO ARG ASP ARG TRP LEU LEU LEU GLY LEU THR D1004 L1042 A1043 P1044

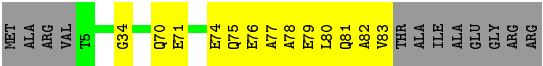
V1138 V1159 T1255 T1292 S1295 P1317 E1321 D1341 GLU

- Molecule 24: DNA-directed RNA polymerase subunit beta'

Chain Y: 



- Molecule 25: DNA-directed RNA polymerase subunit omega



## 4 Experimental information

Property	Value	Source
Reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	15085	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI POLARA 300	Depositor
Voltage (kV)	300	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	16	Depositor
Minimum defocus (nm)	Not provided	Depositor
Maximum defocus (nm)	Not provided	Depositor
Magnification	Not provided	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor

## 5 Model quality ⓘ

### 5.1 Standard geometry ⓘ

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

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	1/36762 (0.0%)	0.75	7/57350 (0.0%)
10	K	0.24	0/893	0.46	0/1205
11	L	0.22	0/969	0.47	0/1300
12	M	0.21	0/892	0.48	0/1193
13	N	0.25	0/785	0.46	0/1043
14	O	0.23	0/724	0.45	0/966
15	P	0.26	0/659	0.44	0/884
16	Q	0.24	0/657	0.46	0/881
17	R	0.23	0/462	0.46	0/621
18	S	0.26	0/652	0.46	0/877
19	T	0.24	0/671	0.41	0/888
2	C	0.23	0/1651	0.45	0/2225
20	B	0.25	0/1735	0.47	0/2338
21	U	1.01	4/430 (0.9%)	0.74	2/570 (0.4%)
22	V	0.36	0/1438	0.57	0/1982
22	W	0.37	0/1502	0.57	0/2052
23	X	0.35	0/8473	0.54	2/11640 (0.0%)
24	Y	0.34	0/7889	0.52	0/10883
25	Z	0.36	0/625	0.52	0/842
3	D	0.23	0/1665	0.46	0/2227
4	E	0.23	0/1118	0.45	0/1504
5	F	0.25	0/835	0.47	0/1128
6	G	0.23	0/1187	0.45	0/1591
7	H	0.24	0/989	0.45	0/1326
8	I	0.24	0/1034	0.45	0/1375
9	J	0.23	0/796	0.49	0/1077
All	All	0.29	5/75493 (0.0%)	0.64	11/109968 (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	16
21	U	0	1
23	X	0	1
All	All	0	18

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
21	U	15	LEU	C-N	-15.10	0.99	1.34
21	U	25	ALA	C-N	-9.37	1.16	1.33
1	A	463	U	O3'-P	-6.66	1.53	1.61
21	U	29	ALA	C-N	6.60	1.49	1.34
21	U	11	PHE	C-N	-5.38	1.21	1.34

All (11) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	765	G	N9-C1'-C2'	-8.19	102.99	112.00
1	A	438	U	N1-C1'-C2'	-6.31	105.06	112.00
1	A	232	G	C5'-C4'-C3'	-6.22	106.04	116.00
1	A	66	A	N9-C1'-C2'	-5.95	105.45	112.00
21	U	15	LEU	C-N-CA	5.74	136.05	121.70
23	X	841	ARG	C-N-CA	5.66	135.84	121.70
23	X	58	PRO	N-CA-C	-5.49	97.81	112.10
1	A	328	C	C2'-C3'-O3'	5.46	122.44	113.70
21	U	11	PHE	CA-C-N	-5.45	105.21	117.20
1	A	1118	U	C5'-C4'-C3'	-5.23	107.63	116.00
1	A	576	C	C5'-C4'-O4'	5.00	115.10	109.10

There are no chirality outliers.

All (18) 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	1441	A	Sidechain
1	A	187	G	Sidechain
1	A	281	G	Sidechain

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Mol	Chain	Res	Type	Group
1	A	437	U	Sidechain
1	A	438	U	Sidechain
1	A	454	G	Sidechain
1	A	481	G	Sidechain
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
23	X	57	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	32831	0	16521	1126	0
2	C	1624	0	1697	268	0
3	D	1643	0	1707	213	0
4	E	1105	0	1148	112	0
5	F	817	0	808	75	0
6	G	1174	0	1230	104	0
7	H	979	0	1034	79	0
8	I	1022	0	1070	143	0
9	J	786	0	828	129	0
10	K	877	0	887	109	0
11	L	955	0	1019	101	0
12	M	883	0	944	85	0
13	N	774	0	827	94	0
14	O	716	0	742	49	0
15	P	649	0	666	78	0
16	Q	648	0	691	77	0
17	R	455	0	478	40	0
18	S	637	0	665	76	0
19	T	665	0	714	52	0
20	B	1704	0	1725	314	0
21	U	425	0	447	102	0
22	V	1422	0	1178	38	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
22	W	1485	0	1322	0	0
23	X	8347	0	6484	136	0
24	Y	7824	0	5280	17	0
25	Z	623	0	617	126	0
26	Y	1	0	0	0	0
All	All	71071	0	50729	3201	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 26.

All (3201) 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)
9:J:89:ARG:HG3	22:V:116:THR:CB	1.15	1.56
2:C:126:ARG:HB2	23:X:904:ALA:CB	1.15	1.55
20:B:63:LYS:NZ	25:Z:34:GLY:CA	1.70	1.50
2:C:126:ARG:CB	23:X:904:ALA:CB	1.89	1.49
9:J:89:ARG:CG	22:V:116:THR:CB	1.85	1.49
2:C:72:PRO:HD2	23:X:863:SER:CA	1.26	1.48
2:C:72:PRO:CD	23:X:863:SER:CA	1.76	1.47
2:C:79:LYS:NZ	23:X:944:ARG:NE	1.63	1.45
3:D:35:GLN:O	23:X:894:GLN:CB	1.65	1.43
20:B:56:LEU:O	25:Z:78:ALA:CB	1.66	1.41
3:D:43:ARG:NH2	23:X:900:LYS:CB	1.82	1.40
20:B:223:GLY:O	25:Z:74:GLU:CB	1.69	1.40
20:B:63:LYS:CE	25:Z:34:GLY:CA	1.98	1.38
2:C:126:ARG:CB	23:X:904:ALA:HB1	1.43	1.37
20:B:53:LEU:CB	25:Z:81:GLN:HB3	1.51	1.36
21:U:14:ALA:HA	21:U:16:ARG:NH1	1.37	1.36
2:C:108:PRO:CB	23:X:859:GLU:CB	1.77	1.35
21:U:14:ALA:O	21:U:16:ARG:NE	1.57	1.35
20:B:63:LYS:NZ	25:Z:34:GLY:HA3	1.05	1.34
2:C:108:PRO:HB3	23:X:859:GLU:CB	0.99	1.33
3:D:41:GLY:O	23:X:896:THR:HG22	1.21	1.33
2:C:126:ARG:O	23:X:904:ALA:HB3	1.18	1.32
2:C:126:ARG:CA	23:X:904:ALA:HB1	1.46	1.32
20:B:63:LYS:HE3	25:Z:34:GLY:C	1.47	1.32
21:U:14:ALA:CA	21:U:16:ARG:NH1	1.92	1.30
9:J:90:LEU:HD21	22:V:118:ASP:CB	1.61	1.30
2:C:79:LYS:NZ	23:X:944:ARG:CD	1.97	1.26
20:B:54:ALA:HA	25:Z:77:ALA:O	1.34	1.25

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:B:58:LYS:HB3	25:Z:79:GLU:N	1.51	1.25
20:B:63:LYS:CE	25:Z:34:GLY:C	2.06	1.24
2:C:73:GLY:CA	23:X:866:ASP:HA	1.67	1.23
20:B:58:LYS:CB	25:Z:79:GLU:H	1.49	1.23
9:J:31:ARG:NH2	22:V:119:GLY:O	1.72	1.23
2:C:72:PRO:CD	23:X:863:SER:HA	1.01	1.21
2:C:126:ARG:C	23:X:904:ALA:HB3	1.60	1.21
20:B:57:ASN:O	25:Z:74:GLU:O	1.60	1.19
21:U:14:ALA:N	21:U:16:ARG:NH1	1.88	1.19
20:B:54:ALA:O	25:Z:77:ALA:C	1.79	1.18
20:B:54:ALA:CA	25:Z:77:ALA:O	1.94	1.16
2:C:79:LYS:HG2	23:X:947:GLU:OE2	1.40	1.16
20:B:62:ARG:NH2	25:Z:79:GLU:OE2	1.78	1.16
4:E:9:GLU:N	24:Y:3:ASP:N	1.95	1.14
3:D:43:ARG:CZ	23:X:900:LYS:CB	2.24	1.14
2:C:71:ARG:HD2	23:X:862:LEU:O	1.45	1.14
21:U:14:ALA:CA	21:U:16:ARG:CZ	2.24	1.14
20:B:62:ARG:CD	25:Z:75:GLN:OE1	1.95	1.14
20:B:54:ALA:O	25:Z:78:ALA:C	1.86	1.14
2:C:71:ARG:HD3	23:X:862:LEU:CB	1.77	1.12
20:B:63:LYS:HE2	25:Z:34:GLY:HA2	1.31	1.12
20:B:225:SER:OG	25:Z:70:GLN:C	1.86	1.12
20:B:63:LYS:CE	25:Z:34:GLY:HA2	1.74	1.11
20:B:58:LYS:O	25:Z:75:GLN:CA	1.98	1.11
20:B:223:GLY:C	25:Z:74:GLU:HB3	1.68	1.11
20:B:61:SER:HB3	25:Z:75:GLN:N	1.64	1.11
20:B:225:SER:OG	25:Z:71:GLU:N	1.83	1.10
20:B:58:LYS:HB3	25:Z:79:GLU:H	0.94	1.10
20:B:225:SER:CA	25:Z:74:GLU:HG3	1.80	1.09
3:D:41:GLY:O	23:X:896:THR:CG2	2.01	1.09
9:J:35:GLN:HB3	9:J:77:VAL:HG23	1.34	1.09
2:C:79:LYS:CE	23:X:944:ARG:HD2	1.81	1.08
2:C:71:ARG:CD	23:X:862:LEU:CB	2.29	1.08
20:B:58:LYS:NZ	25:Z:79:GLU:HB2	1.48	1.08
2:C:122:GLN:CA	23:X:905:ILE:O	2.02	1.08
2:C:71:ARG:HG2	23:X:862:LEU:CB	1.83	1.08
9:J:89:ARG:CD	22:V:116:THR:CB	2.31	1.08
20:B:223:GLY:O	25:Z:74:GLU:HB3	0.91	1.08
2:C:126:ARG:CA	23:X:904:ALA:CB	2.19	1.07
2:C:72:PRO:HD3	23:X:863:SER:HA	1.09	1.07
2:C:126:ARG:C	23:X:904:ALA:CB	2.21	1.07

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:B:63:LYS:HE3	25:Z:34:GLY:O	1.53	1.07
20:B:62:ARG:HD3	25:Z:75:GLN:OE1	1.50	1.07
2:C:78:LYS:HG2	2:C:81:GLU:HB2	1.36	1.06
20:B:54:ALA:O	25:Z:77:ALA:O	1.73	1.06
20:B:216:VAL:HA	25:Z:83:VAL:O	1.54	1.06
20:B:225:SER:N	25:Z:74:GLU:HG3	1.68	1.06
20:B:163:ILE:HG23	20:B:164:ASP:H	1.17	1.05
2:C:122:GLN:HA	23:X:905:ILE:O	1.54	1.05
20:B:59:ILE:N	25:Z:78:ALA:HB3	1.69	1.05
20:B:53:LEU:CB	25:Z:81:GLN:CB	2.33	1.05
2:C:122:GLN:CB	23:X:905:ILE:O	2.05	1.05
20:B:58:LYS:HZ2	25:Z:79:GLU:CB	1.71	1.04
20:B:53:LEU:HB2	25:Z:81:GLN:HB3	1.07	1.04
2:C:71:ARG:NH2	23:X:866:ASP:O	1.89	1.04
3:D:42:ALA:HB1	23:X:893:THR:O	1.56	1.04
20:B:62:ARG:HD3	25:Z:75:GLN:CD	1.79	1.03
2:C:108:PRO:HD3	23:X:860:ALA:N	1.73	1.03
3:D:19:PHE:CZ	24:Y:86:GLU:CB	2.41	1.02
6:G:125:ASP:HB3	6:G:130:LYS:HB3	1.39	1.02
2:C:73:GLY:HA3	23:X:866:ASP:CA	1.89	1.01
2:C:108:PRO:CD	23:X:860:ALA:H	1.74	1.01
21:U:14:ALA:N	21:U:16:ARG:CZ	2.23	1.01
20:B:54:ALA:O	25:Z:79:GLU:N	1.93	1.01
9:J:90:LEU:CD2	22:V:118:ASP:CB	2.37	1.01
20:B:62:ARG:N	25:Z:75:GLN:HG2	1.70	1.01
2:C:122:GLN:O	23:X:905:ILE:HA	1.59	1.00
20:B:225:SER:HA	25:Z:74:GLU:HG3	1.38	1.00
21:U:29:ALA:HB1	21:U:32:ARG:HH21	1.26	1.00
2:C:73:GLY:HA3	23:X:866:ASP:HA	1.03	1.00
9:J:89:ARG:HG2	22:V:116:THR:C	1.81	0.99
3:D:19:PHE:HZ	24:Y:86:GLU:CB	1.74	0.99
2:C:71:ARG:CG	23:X:862:LEU:CB	2.40	0.99
20:B:225:SER:H	25:Z:74:GLU:HG3	1.27	0.99
20:B:58:LYS:O	25:Z:75:GLN:CB	2.10	0.98
2:C:126:ARG:O	23:X:904:ALA:CB	2.11	0.98
2:C:122:GLN:HB3	23:X:905:ILE:O	1.62	0.98
9:J:27:GLU:OE1	22:V:95:LYS:HD2	1.64	0.98
20:B:54:ALA:C	25:Z:77:ALA:O	2.01	0.98
20:B:54:ALA:C	25:Z:80:LEU:N	2.02	0.98
9:J:28:THR:HA	22:V:119:GLY:O	1.60	0.98
1:A:376:G:H5"	15:P:5:ARG:HB2	1.45	0.98

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:M:106:ARG:HE	12:M:112:ARG:HG2	1.29	0.98
21:U:14:ALA:HA	21:U:16:ARG:CZ	1.90	0.98
9:J:89:ARG:CG	22:V:116:THR:CA	2.41	0.98
20:B:56:LEU:O	25:Z:78:ALA:HB1	1.00	0.97
20:B:46:VAL:HG13	20:B:47:PRO:HD3	1.45	0.97
3:D:43:ARG:HH21	23:X:900:LYS:CB	1.73	0.97
18:S:49:ALA:HB1	18:S:56:HIS:HB3	1.47	0.97
20:B:61:SER:CB	25:Z:75:GLN:N	2.25	0.97
13:N:63:CYS:HB3	13:N:67:GLY:H	1.30	0.97
10:K:124:LYS:HA	21:U:34:ARG:HB3	1.47	0.97
20:B:54:ALA:O	25:Z:78:ALA:N	1.98	0.96
3:D:41:GLY:C	23:X:896:THR:HG22	1.84	0.96
20:B:58:LYS:HZ2	25:Z:79:GLU:HB2	0.79	0.96
1:A:1086:U:H3	1:A:1099:G:H22	1.13	0.95
7:H:103:VAL:HG12	7:H:124:ILE:HA	1.46	0.95
5:F:53:LYS:HD3	5:F:54:LEU:H	1.30	0.95
2:C:72:PRO:HD3	23:X:863:SER:CA	1.68	0.95
2:C:74:ILE:HG13	23:X:867:GLU:CB	1.98	0.94
20:B:67:LEU:HD11	20:B:157:PRO:HB3	1.47	0.94
2:C:70:ALA:O	23:X:863:SER:N	2.00	0.94
2:C:79:LYS:CG	23:X:947:GLU:OE2	2.11	0.94
1:A:1313:U:H5"	18:S:5:LYS:HG2	1.47	0.94
4:E:9:GLU:N	24:Y:3:ASP:H	1.56	0.94
20:B:58:LYS:O	25:Z:75:GLN:HA	1.64	0.94
2:C:72:PRO:HD3	23:X:863:SER:CB	1.98	0.94
12:M:11:HIS:H	12:M:44:ILE:HD11	1.31	0.93
9:J:88:MET:HB2	9:J:89:ARG:HH12	1.32	0.93
2:C:58:ARG:HG2	2:C:63:ILE:HG22	1.48	0.93
20:B:63:LYS:CE	25:Z:34:GLY:O	2.12	0.93
9:J:89:ARG:HG2	22:V:117:HIS:N	1.84	0.92
16:Q:18:LYS:HG2	16:Q:48:GLU:HA	1.52	0.91
3:D:43:ARG:HH11	23:X:895:LEU:CA	1.83	0.91
2:C:74:ILE:HA	23:X:867:GLU:CB	2.00	0.91
10:K:22:ILE:HG21	10:K:95:THR:HG21	1.53	0.91
18:S:18:VAL:HG21	18:S:43:MET:HG2	1.53	0.91
20:B:63:LYS:HE2	25:Z:34:GLY:CA	1.92	0.90
19:T:68:LYS:HG3	19:T:69:ASN:H	1.36	0.90
12:M:78:ARG:HH21	12:M:79:LEU:HG	1.37	0.89
13:N:60:ARG:HD3	13:N:60:ARG:H	1.37	0.89
20:B:53:LEU:HB3	25:Z:81:GLN:HB3	1.53	0.89
9:J:31:ARG:CZ	22:V:119:GLY:O	2.19	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:79:LYS:HZ2	23:X:944:ARG:HG3	1.37	0.89
3:D:25:ARG:NH1	24:Y:47:ARG:HH12	1.71	0.89
20:B:131:LYS:HA	20:B:134:LEU:HD12	1.56	0.88
2:C:108:PRO:HB2	23:X:859:GLU:CB	2.04	0.88
20:B:225:SER:OG	25:Z:71:GLU:CA	2.21	0.88
20:B:62:ARG:HD2	25:Z:75:GLN:OE1	1.73	0.88
5:F:53:LYS:HA	5:F:53:LYS:HZ3	1.36	0.88
13:N:60:ARG:HH21	13:N:62:ARG:HE	1.21	0.88
20:B:63:LYS:NZ	25:Z:34:GLY:HA2	1.75	0.88
2:C:70:ALA:O	23:X:863:SER:CA	2.22	0.88
20:B:54:ALA:O	25:Z:78:ALA:CA	2.21	0.87
20:B:56:LEU:O	25:Z:78:ALA:HB2	1.71	0.87
20:B:58:LYS:C	25:Z:78:ALA:HB3	1.86	0.87
18:S:4:LEU:HD13	18:S:9:PHE:H	1.37	0.87
1:A:699:C:H2'	1:A:700:G:H5''	1.57	0.87
17:R:52:ARG:HH11	17:R:52:ARG:HB3	1.40	0.87
15:P:46:LYS:HD3	15:P:46:LYS:H	1.39	0.87
11:L:8:ARG:HG3	11:L:9:LYS:H	1.40	0.87
21:U:13:VAL:HG13	21:U:14:ALA:H	1.38	0.87
8:I:34:LEU:HD11	8:I:47:VAL:HG21	1.55	0.87
9:J:27:GLU:OE1	22:V:95:LYS:CD	2.22	0.86
2:C:125:ARG:HG3	23:X:904:ALA:HA	1.57	0.86
20:B:57:ASN:HB3	25:Z:77:ALA:O	1.69	0.86
3:D:42:ALA:CB	23:X:894:GLN:O	2.23	0.86
12:M:48:SER:H	12:M:51:GLN:HB2	1.38	0.86
3:D:160:LEU:HD13	3:D:160:LEU:H	1.41	0.86
3:D:60:VAL:HA	3:D:63:ILE:HD12	1.57	0.86
9:J:89:ARG:HD3	22:V:116:THR:HA	1.58	0.86
1:A:1101:A:H4'	1:A:1102:A:O5'	1.76	0.85
9:J:8:ILE:HD12	9:J:100:ILE:HG22	1.58	0.85
2:C:79:LYS:NZ	23:X:944:ARG:HE	1.68	0.85
8:I:29:ILE:HG22	8:I:64:ILE:HB	1.57	0.85
15:P:20:VAL:HG23	15:P:35:ARG:HA	1.57	0.85
20:B:225:SER:OG	25:Z:71:GLU:HA	1.77	0.85
20:B:163:ILE:HG23	20:B:164:ASP:N	1.92	0.85
7:H:54:THR:HG23	7:H:55:LYS:HG2	1.59	0.85
14:O:6:ALA:HA	14:O:9:LYS:HE3	1.58	0.85
20:B:58:LYS:HB2	25:Z:76:GLU:C	1.97	0.85
20:B:54:ALA:C	25:Z:78:ALA:C	2.31	0.85
6:G:112:ASP:HB2	6:G:118:ARG:HG2	1.55	0.84
20:B:62:ARG:HA	25:Z:75:GLN:NE2	1.93	0.84

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:126:ARG:HB2	23:X:904:ALA:HB2	0.87	0.84
21:U:14:ALA:O	21:U:16:ARG:CZ	2.25	0.84
20:B:61:SER:HB2	25:Z:71:GLU:O	1.76	0.84
20:B:33:ALA:HA	20:B:38:HIS:HA	1.59	0.84
11:L:48:LEU:HD23	11:L:48:LEU:H	1.42	0.84
21:U:14:ALA:C	21:U:16:ARG:NE	2.30	0.84
9:J:31:ARG:HH12	22:V:120:ASP:HA	1.42	0.84
3:D:43:ARG:NH1	23:X:895:LEU:CB	2.41	0.84
14:O:25:GLU:HG3	14:O:80:LEU:HD12	1.58	0.83
20:B:58:LYS:O	25:Z:75:GLN:HB3	1.76	0.83
20:B:202:ASN:HD22	20:B:204:ASP:H	1.26	0.83
2:C:108:PRO:CD	23:X:860:ALA:N	2.37	0.83
16:Q:27:PHE:HB3	16:Q:36:PHE:HB3	1.59	0.83
21:U:13:VAL:C	21:U:16:ARG:HH12	1.81	0.83
21:U:14:ALA:HA	21:U:16:ARG:HH11	1.03	0.83
10:K:126:ARG:HB2	21:U:33:ARG:HD2	1.61	0.83
20:B:62:ARG:N	25:Z:75:GLN:CG	2.33	0.83
11:L:56:LEU:HD11	11:L:81:ILE:HD12	1.61	0.83
21:U:14:ALA:O	21:U:16:ARG:CD	2.25	0.83
1:A:243:A:H4'	1:A:244:U:H5'	1.59	0.83
3:D:43:ARG:HG3	23:X:898:GLU:N	1.94	0.83
2:C:73:GLY:C	23:X:866:ASP:HA	1.98	0.82
3:D:43:ARG:HH11	23:X:895:LEU:C	1.81	0.82
1:A:664:G:H22	1:A:741:G:H1	1.25	0.82
2:C:70:ALA:O	23:X:859:GLU:O	1.97	0.82
2:C:79:LYS:HE2	23:X:944:ARG:HD2	1.61	0.82
3:D:27:ILE:HG21	24:Y:72:CYS:HB2	1.60	0.82
2:C:146:LYS:HE3	2:C:202:PHE:HE2	1.42	0.82
9:J:89:ARG:HG2	22:V:116:THR:CA	2.08	0.82
3:D:159:GLU:HG3	3:D:160:LEU:N	1.94	0.82
1:A:1323:G:H2'	1:A:1324:A:C8	2.15	0.82
4:E:105:ILE:HB	4:E:123:LEU:HA	1.61	0.81
2:C:79:LYS:CE	23:X:944:ARG:CD	2.49	0.81
14:O:7:THR:HG22	14:O:30:LEU:HD11	1.62	0.81
20:B:150:ILE:HG13	20:B:153:MET:HE3	1.61	0.81
2:C:49:ALA:HB1	2:C:75:VAL:HG22	1.63	0.81
5:F:64:VAL:HG12	5:F:65:GLU:H	1.45	0.81
2:C:155:ARG:H	2:C:162:ALA:HA	1.45	0.81
16:Q:10:ARG:NH1	16:Q:56:ASP:H	1.79	0.81
12:M:33:LEU:HD22	12:M:38:ILE:HB	1.61	0.81
20:B:58:LYS:HB3	25:Z:79:GLU:CB	2.08	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:T:30:PHE:HB3	19:T:53:MET:HB3	1.63	0.80
1:A:33:A:H1'	11:L:27:PRO:HG3	1.61	0.80
20:B:61:SER:HA	20:B:224:ARG:HA	1.62	0.80
2:C:79:LYS:NZ	23:X:944:ARG:CZ	2.45	0.80
3:D:36:ALA:HA	3:D:41:GLY:HA3	1.61	0.80
9:J:35:GLN:HB2	9:J:78:GLU:HB2	1.64	0.80
20:B:67:LEU:HD12	20:B:153:MET:HE2	1.64	0.80
1:A:1005:A:H2'	1:A:1006:G:O4'	1.82	0.80
16:Q:10:ARG:CZ	16:Q:11:VAL:H	1.95	0.80
1:A:1211:U:H4'	1:A:1213:A:H1'	1.64	0.80
2:C:79:LYS:NZ	23:X:944:ARG:CG	2.44	0.80
4:E:87:VAL:HG12	4:E:92:ARG:HA	1.64	0.79
8:I:12:LYS:H	8:I:109:GLN:HE22	1.30	0.79
20:B:225:SER:H	25:Z:74:GLU:CG	1.94	0.79
1:A:1409:C:N4	1:A:1491:G:H1	1.79	0.79
6:G:21:LEU:HD23	6:G:21:LEU:H	1.45	0.79
9:J:56:HIS:H	13:N:80:ARG:HH22	1.30	0.79
21:U:14:ALA:N	21:U:16:ARG:HH12	1.81	0.79
20:B:112:ARG:O	20:B:116:LEU:HB2	1.82	0.79
5:F:38:ARG:HB3	5:F:63:ASN:HB2	1.64	0.79
14:O:2:LEU:HD22	14:O:7:THR:HG23	1.65	0.79
21:U:36:PHE:HB3	21:U:40:PRO:HD3	1.63	0.79
21:U:3:ILE:HA	21:U:19:LYS:HG2	1.64	0.79
20:B:58:LYS:HB3	25:Z:79:GLU:CA	2.12	0.79
1:A:65:A:H2'	1:A:65:A:N3	1.98	0.78
20:B:9:LEU:HD22	20:B:11:ALA:H	1.48	0.78
8:I:23:GLY:H	8:I:60:LEU:HA	1.48	0.78
21:U:13:VAL:C	21:U:16:ARG:NH1	2.35	0.78
16:Q:16:MET:HB2	16:Q:19:SER:HB2	1.64	0.78
12:M:19:THR:HA	12:M:24:VAL:HG23	1.64	0.78
20:B:225:SER:HG	25:Z:70:GLN:C	1.87	0.78
3:D:42:ALA:CB	23:X:893:THR:O	2.31	0.78
8:I:110:VAL:HG12	8:I:111:GLU:H	1.47	0.78
13:N:30:ILE:HG21	13:N:41:TRP:HB2	1.65	0.78
2:C:109:GLU:OE1	23:X:858:GLY:HA3	1.83	0.78
13:N:12:ARG:HA	13:N:15:LEU:HD11	1.66	0.78
12:M:21:ILE:HG22	12:M:64:VAL:HG11	1.67	0.77
4:E:83:PRO:HB3	4:E:96:GLN:HG3	1.65	0.77
12:M:23:GLY:HA3	12:M:64:VAL:HG13	1.67	0.77
20:B:162:VAL:HG13	20:B:184:ALA:HB2	1.67	0.77
6:G:87:PRO:HG2	6:G:151:ALA:HB2	1.66	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:B:62:ARG:NH2	25:Z:79:GLU:CD	2.37	0.77
12:M:11:HIS:N	12:M:44:ILE:HD11	1.99	0.77
16:Q:11:VAL:HA	16:Q:22:VAL:HG22	1.66	0.77
7:H:113:ARG:HH21	7:H:114:ALA:HA	1.49	0.77
12:M:18:LEU:HB3	12:M:29:SER:HB2	1.67	0.77
1:A:840:C:H2'	1:A:842:U:H5''	1.68	0.76
1:A:1103:C:H5''	20:B:96:LEU:HD12	1.68	0.76
20:B:53:LEU:HB2	25:Z:81:GLN:CB	1.99	0.76
20:B:58:LYS:HG3	25:Z:76:GLU:HA	1.67	0.76
2:C:8:GLY:HA2	2:C:11:LEU:HG	1.67	0.76
18:S:35:ARG:HG2	18:S:50:VAL:HG13	1.66	0.76
3:D:187:ARG:HA	3:D:190:LEU:HD22	1.65	0.76
3:D:43:ARG:NH1	23:X:895:LEU:CA	2.47	0.76
1:A:437:U:H2'	1:A:438:U:O4'	1.85	0.76
14:O:70:LYS:HZ1	14:O:74:VAL:HG13	1.49	0.76
15:P:42:ILE:HB	15:P:46:LYS:HD2	1.67	0.76
11:L:35:ARG:NH2	11:L:75:GLU:HB3	2.00	0.76
10:K:86:LYS:HB2	10:K:112:VAL:HG23	1.68	0.76
1:A:1308:U:H2'	1:A:1309:G:H8	1.50	0.75
21:U:14:ALA:HA	21:U:16:ARG:CD	2.15	0.75
2:C:184:ASN:HD22	2:C:185:THR:H	1.32	0.75
1:A:78:A:H2'	1:A:79:G:C8	2.20	0.75
20:B:41:ASN:HD22	20:B:44:LYS:HE2	1.50	0.75
20:B:67:LEU:HD22	20:B:67:LEU:H	1.52	0.75
20:B:50:ASN:HB2	25:Z:81:GLN:HG2	1.68	0.75
10:K:30:ILE:HG22	10:K:45:THR:HA	1.67	0.75
10:K:110:THR:HG21	21:U:4:LYS:HD2	1.69	0.75
14:O:81:ILE:HA	14:O:86:LEU:HD12	1.67	0.75
20:B:120:SER:HA	20:B:125:PHE:HB3	1.67	0.75
1:A:1219:A:H2'	1:A:1220:G:C8	2.21	0.74
1:A:764:C:H3'	1:A:765:G:H21	1.51	0.74
9:J:19:ASP:O	9:J:22:THR:HG22	1.87	0.74
12:M:15:VAL:HG23	12:M:33:LEU:HD12	1.70	0.74
20:B:163:ILE:HD11	20:B:209:VAL:HG12	1.70	0.74
15:P:71:VAL:HA	15:P:74:LEU:HG	1.69	0.74
20:B:223:GLY:O	25:Z:74:GLU:HB2	1.85	0.74
1:A:1461:G:H2'	1:A:1462:C:C6	2.23	0.74
20:B:58:LYS:NZ	25:Z:79:GLU:CB	2.39	0.74
9:J:39:PRO:HA	9:J:74:VAL:HG22	1.70	0.74
2:C:70:ALA:O	23:X:863:SER:CB	2.35	0.74
21:U:14:ALA:C	21:U:16:ARG:CZ	2.56	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:927:G:H4'	1:A:1503:A:N7	2.03	0.73
15:P:52:LEU:HG	15:P:75:ILE:HG12	1.69	0.73
1:A:781:A:H2'	1:A:782:A:H5'	1.69	0.73
20:B:225:SER:HA	25:Z:74:GLU:CG	2.16	0.73
11:L:66:ILE:HD13	11:L:73:LEU:HD12	1.69	0.73
21:U:20:ARG:HA	21:U:24:LYS:HG3	1.71	0.73
21:U:40:PRO:HG2	21:U:41:THR:H	1.54	0.73
2:C:127:VAL:HA	23:X:901:LEU:O	1.88	0.73
12:M:44:ILE:HD12	12:M:45:SER:H	1.52	0.73
2:C:126:ARG:CB	23:X:904:ALA:HB2	1.83	0.73
1:A:430:A:OP1	3:D:8:LEU:HB2	1.89	0.73
1:A:946:A:H2'	1:A:947:G:C8	2.24	0.73
1:A:135:C:O2	15:P:1:MET:HB2	1.88	0.73
21:U:14:ALA:C	21:U:16:ARG:HD2	2.09	0.73
1:A:429:U:H3'	3:D:8:LEU:HD23	1.70	0.72
1:A:812:G:H2'	1:A:812:G:N3	2.02	0.72
3:D:10:LEU:HD21	3:D:62:ARG:HD3	1.70	0.72
3:D:27:ILE:CG2	24:Y:72:CYS:HB2	2.18	0.72
1:A:1125:U:H2'	1:A:1126:U:H5''	1.70	0.72
2:C:179:ALA:HB1	2:C:202:PHE:HE1	1.52	0.72
13:N:63:CYS:HB3	13:N:67:GLY:N	2.04	0.72
15:P:67:ILE:HG13	15:P:71:VAL:HG13	1.71	0.72
8:I:71:ILE:HD12	8:I:71:ILE:H	1.55	0.72
10:K:42:GLY:HA3	10:K:73:VAL:HG22	1.71	0.72
11:L:20:VAL:HG13	11:L:94:TYR:HH	1.54	0.72
1:A:1218:C:H2'	1:A:1219:A:H8	1.55	0.72
6:G:67:ASN:HD22	6:G:127:ALA:HA	1.51	0.72
1:A:1308:U:H2'	1:A:1309:G:C8	2.24	0.72
3:D:94:GLU:HG3	3:D:103:ARG:HH12	1.55	0.72
3:D:42:ALA:O	23:X:894:GLN:O	2.08	0.72
3:D:84:ASN:ND2	3:D:87:GLU:H	1.87	0.72
10:K:92:ARG:HH11	10:K:92:ARG:HB3	1.55	0.72
2:C:5:HIS:HD2	2:C:8:GLY:H	1.35	0.72
1:A:1471:U:O2'	1:A:1472:U:H5'	1.90	0.72
1:A:239:U:OP1	1:A:239:U:H4'	1.90	0.72
6:G:100:MET:HA	6:G:103:ILE:HD12	1.71	0.72
19:T:60:GLN:HE21	19:T:61:ALA:H	1.36	0.72
21:U:29:ALA:CB	21:U:32:ARG:HH21	2.02	0.72
1:A:1250:A:H4'	8:I:69:GLY:H	1.54	0.72
1:A:501:C:H2'	1:A:502:A:H8	1.53	0.72
3:D:25:ARG:NH1	24:Y:47:ARG:NH1	2.37	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:B:116:LEU:HD11	20:B:139:GLU:HB3	1.71	0.71
19:T:81:GLN:O	19:T:85:LEU:HB3	1.90	0.71
20:B:46:VAL:HA	20:B:49:PHE:HD2	1.55	0.71
20:B:57:ASN:C	25:Z:74:GLU:O	2.28	0.71
1:A:1057:G:H5''	2:C:153:SER:HB3	1.72	0.71
3:D:156:ALA:O	3:D:159:GLU:HG2	1.90	0.71
9:J:89:ARG:HD3	22:V:116:THR:CB	2.18	0.71
5:F:86:ARG:HH11	17:R:63:TYR:HB3	1.56	0.71
6:G:13:PRO:HB2	6:G:18:GLY:HA2	1.72	0.71
1:A:1179:A:H4'	8:I:104:THR:HA	1.73	0.71
8:I:40:ARG:H	8:I:44:ARG:HE	1.39	0.71
10:K:113:THR:HG21	21:U:28:LEU:HD11	1.72	0.71
12:M:38:ILE:HG13	12:M:55:LEU:HD21	1.72	0.71
1:A:412:A:H1'	1:A:413:G:H8	1.55	0.71
9:J:92:LEU:H	9:J:92:LEU:HD22	1.55	0.71
15:P:42:ILE:HG22	15:P:43:ALA:H	1.55	0.71
21:U:14:ALA:C	21:U:16:ARG:CD	2.58	0.71
1:A:1218:C:H2'	1:A:1219:A:C8	2.25	0.71
2:C:71:ARG:HD2	23:X:862:LEU:C	2.10	0.71
2:C:72:PRO:O	2:C:76:ILE:HG12	1.90	0.71
4:E:131:ASN:HD21	4:E:133:ILE:HB	1.54	0.71
12:M:77:LYS:HA	12:M:80:MET:HB3	1.71	0.71
1:A:278:G:H21	1:A:279:A:H62	1.36	0.71
9:J:89:ARG:HD3	22:V:116:THR:CA	2.21	0.71
13:N:30:ILE:HD12	13:N:30:ILE:H	1.56	0.71
1:A:814:A:H5'	1:A:1511:G:H4'	1.73	0.71
11:L:98:ARG:HA	11:L:98:ARG:HE	1.55	0.71
1:A:1409:C:H42	1:A:1491:G:H1	1.39	0.71
11:L:28:GLN:HG3	11:L:80:LEU:HD21	1.73	0.71
20:B:204:ASP:CG	20:B:205:ALA:H	1.95	0.70
1:A:1458:G:H5'	19:T:26:MET:HB2	1.73	0.70
2:C:153:SER:HB2	2:C:196:GLY:H	1.54	0.70
16:Q:29:LYS:HD3	16:Q:35:LYS:N	2.05	0.70
1:A:780:A:O2'	1:A:781:A:H5''	1.91	0.70
10:K:56:LYS:O	10:K:58:THR:HG22	1.90	0.70
1:A:1330:U:H2'	1:A:1331:G:H5'	1.72	0.70
20:B:212:TYR:O	20:B:216:VAL:HG23	1.92	0.70
12:M:44:ILE:HA	12:M:47:LEU:HD13	1.71	0.70
1:A:1182:G:H4'	1:A:1183:U:C5'	2.22	0.70
21:U:14:ALA:CA	21:U:16:ARG:HD2	2.22	0.70
20:B:62:ARG:HD3	25:Z:75:GLN:CG	2.21	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:B:96:LEU:HB2	20:B:99:MET:HE3	1.72	0.70
7:H:49:LYS:HG3	7:H:50:VAL:H	1.56	0.70
9:J:56:HIS:O	9:J:57:VAL:HG12	1.92	0.70
10:K:88:PRO:HD3	21:U:28:LEU:HD13	1.73	0.70
3:D:194:ILE:HD13	3:D:195:ASN:N	2.06	0.70
11:L:79:ILE:HD13	11:L:96:THR:HG22	1.74	0.70
13:N:50:LEU:HD23	13:N:51:PRO:HD3	1.73	0.70
6:G:38:ALA:O	6:G:41:ILE:HG22	1.92	0.70
20:B:59:ILE:H	25:Z:78:ALA:HB3	1.53	0.70
1:A:71:A:H61	1:A:99:C:H1'	1.56	0.70
2:C:78:LYS:N	23:X:943:LYS:HE2	2.06	0.70
1:A:878:A:H5''	7:H:80:PRO:HG2	1.73	0.70
7:H:93:LYS:HZ2	7:H:93:LYS:H	1.39	0.70
8:I:112:ARG:HB2	8:I:112:ARG:NH1	2.07	0.70
9:J:52:LEU:HB2	13:N:80:ARG:HD2	1.74	0.70
1:A:1320:C:H41	18:S:36:ARG:HG2	1.57	0.69
11:L:35:ARG:HG3	11:L:36:VAL:H	1.55	0.69
1:A:922:G:H2'	1:A:923:A:C8	2.26	0.69
16:Q:20:ILE:HG13	16:Q:45:VAL:HB	1.73	0.69
1:A:390:U:H2'	1:A:391:G:C8	2.27	0.69
20:B:59:ILE:N	25:Z:78:ALA:CB	2.51	0.69
1:A:541:G:O2'	3:D:39:GLN:HB2	1.92	0.69
20:B:54:ALA:C	25:Z:80:LEU:H	1.92	0.69
15:P:7:ALA:HB1	15:P:29:ASN:HB3	1.74	0.69
18:S:48:ILE:HB	18:S:59:VAL:HB	1.73	0.69
2:C:57:GLU:HB2	2:C:64:ARG:HB2	1.73	0.69
10:K:19:VAL:HG12	10:K:82:GLU:HB2	1.74	0.69
1:A:1326:U:H2'	1:A:1327:C:C6	2.27	0.69
1:A:518:C:H2'	1:A:530:G:C8	2.28	0.69
12:M:78:ARG:NH2	12:M:79:LEU:HG	2.05	0.69
1:A:473:U:H2'	1:A:474:G:H8	1.58	0.69
1:A:673:A:H2'	1:A:674:G:C8	2.27	0.69
1:A:1021:A:H2'	1:A:1022:A:O4'	1.93	0.69
1:A:1208:C:H2'	1:A:1209:C:O4'	1.93	0.69
1:A:279:A:H5''	1:A:280:C:H3'	1.74	0.69
1:A:967:C:H3'	1:A:968:A:H5'	1.75	0.69
3:D:25:ARG:HH11	24:Y:47:ARG:HH12	1.40	0.69
9:J:40:ILE:HG13	9:J:73:LEU:HB3	1.75	0.68
15:P:26:ASN:CG	15:P:31:ARG:HB3	2.13	0.68
1:A:1060:U:H5''	9:J:53:ILE:HG22	1.75	0.68
2:C:33:ASP:HB2	13:N:64:ARG:HD3	1.75	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:186:C:H4'	19:T:75:LYS:HB2	1.74	0.68
21:U:7:GLU:OE2	21:U:15:LEU:HD22	1.93	0.68
20:B:224:ARG:O	25:Z:71:GLU:HG2	1.93	0.68
3:D:12:ARG:HD2	3:D:37:PRO:HA	1.75	0.68
1:A:619:U:N3	3:D:131:ILE:HD12	2.09	0.68
2:C:154:GLY:HA3	2:C:162:ALA:HB1	1.76	0.68
17:R:46:THR:HG23	17:R:51:GLN:HB2	1.75	0.68
9:J:27:GLU:OE1	22:V:95:LYS:HG3	1.93	0.68
1:A:1412:C:H2'	1:A:1413:A:C8	2.29	0.68
14:O:68:TYR:CZ	14:O:72:LYS:HG3	2.29	0.68
1:A:1000:A:H2'	1:A:1001:C:C6	2.29	0.68
12:M:64:VAL:HA	12:M:68:LEU:HD12	1.76	0.68
2:C:72:PRO:HD2	23:X:863:SER:HA	0.68	0.68
12:M:9:PRO:O	12:M:44:ILE:HG12	1.94	0.68
18:S:49:ALA:HA	18:S:57:VAL:O	1.93	0.68
20:B:198:VAL:HG22	20:B:200:PRO:HD3	1.76	0.68
11:L:80:LEU:HD23	11:L:97:VAL:HG21	1.74	0.68
1:A:1251:A:H2'	1:A:1252:A:C8	2.28	0.68
7:H:102:VAL:HG12	7:H:125:ILE:HD12	1.76	0.68
9:J:6:ILE:HG12	9:J:102:LEU:HD11	1.74	0.68
9:J:28:THR:HA	22:V:119:GLY:C	2.15	0.68
12:M:109:LYS:HG3	12:M:110:GLY:H	1.59	0.68
1:A:901:A:H5'	1:A:902:G:OP2	1.94	0.67
20:B:63:LYS:HE2	25:Z:34:GLY:O	1.93	0.67
1:A:1060:U:H2'	1:A:1061:G:H8	1.58	0.67
1:A:501:C:H2'	1:A:502:A:C8	2.30	0.67
7:H:92:PRO:HA	7:H:93:LYS:NZ	2.09	0.67
9:J:71:LEU:H	9:J:71:LEU:HD12	1.58	0.67
11:L:24:GLU:HB3	11:L:26:CYS:SG	2.34	0.67
1:A:268:U:H2'	1:A:269:C:C6	2.28	0.67
20:B:102:ASN:O	20:B:106:VAL:HG23	1.93	0.67
20:B:119:GLN:HE22	20:B:127:LYS:HD3	1.60	0.67
4:E:109:ALA:HB3	4:E:135:VAL:HG23	1.76	0.67
20:B:67:LEU:HD21	20:B:157:PRO:HG3	1.76	0.67
2:C:176:THR:HB	2:C:179:ALA:HB2	1.77	0.67
8:I:33:SER:HB3	8:I:36:GLN:HB2	1.76	0.67
6:G:149:ALA:HB1	10:K:58:THR:HG21	1.75	0.67
5:F:86:ARG:NH1	17:R:63:TYR:HB3	2.09	0.67
21:U:14:ALA:HA	21:U:16:ARG:HD2	1.76	0.67
1:A:1029:U:H5''	1:A:1030:U:H5	1.59	0.67
1:A:278:G:N2	1:A:279:A:H62	1.93	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1071:C:H2'	1:A:1072:G:H8	1.60	0.67
1:A:1236:A:H4'	1:A:1304:G:H4'	1.76	0.67
2:C:77:GLY:HA3	2:C:82:ASP:H	1.59	0.67
2:C:9:ILE:HG23	2:C:10:ARG:HG3	1.76	0.67
5:F:37:HIS:CE1	5:F:65:GLU:HB2	2.29	0.67
1:A:559:A:H4'	1:A:560:A:H3'	1.77	0.66
20:B:141:GLU:O	20:B:145:ASN:HB2	1.93	0.66
20:B:62:ARG:H	25:Z:75:GLN:HG2	1.58	0.66
5:F:3:HIS:HA	5:F:65:GLU:HA	1.77	0.66
9:J:65:TYR:HB3	13:N:95:LEU:HD11	1.77	0.66
12:M:106:ARG:NE	12:M:112:ARG:HG2	2.08	0.66
17:R:58:ILE:O	17:R:62:ARG:HG3	1.94	0.66
20:B:58:LYS:CB	25:Z:79:GLU:CB	2.72	0.66
2:C:74:ILE:HA	23:X:867:GLU:CA	2.24	0.66
16:Q:10:ARG:HH11	16:Q:55:GLY:H	1.43	0.66
9:J:27:GLU:HG2	22:V:120:ASP:CB	2.24	0.66
2:C:46:LEU:HD11	2:C:86:LEU:HD21	1.76	0.66
3:D:123:MET:HA	3:D:128:VAL:HA	1.78	0.66
4:E:101:GLY:H	4:E:121:ASN:HD21	1.41	0.66
7:H:111:THR:HG23	7:H:114:ALA:HB2	1.76	0.66
7:H:5:PRO:HB2	7:H:32:LYS:NZ	2.11	0.66
7:H:64:TYR:HB3	7:H:69:ALA:HA	1.77	0.66
13:N:66:THR:HG23	13:N:67:GLY:H	1.59	0.66
1:A:1326:U:H2'	1:A:1327:C:H6	1.61	0.66
20:B:52:ALA:O	20:B:56:LEU:HD22	1.96	0.66
20:B:62:ARG:N	25:Z:75:GLN:CD	2.34	0.66
2:C:141:MET:HE1	2:C:147:GLY:H	1.60	0.66
19:T:48:LYS:O	19:T:52:GLU:HB2	1.96	0.66
15:P:51:ARG:HB3	15:P:51:ARG:NH1	2.10	0.66
19:T:28:ARG:HA	19:T:31:ILE:HD12	1.77	0.66
1:A:17:U:H2'	1:A:18:C:C6	2.30	0.66
1:A:441:A:H61	1:A:493:A:H62	1.44	0.66
9:J:89:ARG:CD	22:V:116:THR:CA	2.74	0.66
2:C:79:LYS:HZ2	23:X:944:ARG:CG	2.03	0.66
9:J:37:ARG:NE	9:J:77:VAL:HG11	2.11	0.66
1:A:1225:A:H3'	1:A:1226:C:H6	1.61	0.66
2:C:13:ILE:O	2:C:14:VAL:HG22	1.96	0.66
3:D:19:PHE:HB2	3:D:110:ARG:HH12	1.61	0.66
21:U:3:ILE:HG12	21:U:19:LYS:HG2	1.77	0.66
1:A:1026:G:H2'	1:A:1027:C:C6	2.31	0.65
1:A:131:A:H2'	1:A:132:C:C6	2.32	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:238:A:H2'	1:A:239:U:H5''	1.77	0.65
20:B:202:ASN:ND2	20:B:204:ASP:H	1.92	0.65
1:A:562:U:H1'	11:L:11:ARG:HB3	1.78	0.65
3:D:43:ARG:HH11	23:X:895:LEU:HA	1.59	0.65
1:A:1123:U:O2'	1:A:1124:G:H5'	1.96	0.65
1:A:1300:G:H1'	1:A:1301:U:H5	1.61	0.65
3:D:159:GLU:HG3	3:D:160:LEU:H	1.59	0.65
5:F:10:VAL:HA	5:F:84:VAL:HA	1.77	0.65
9:J:53:ILE:HG12	9:J:63:ASP:HB2	1.78	0.65
12:M:106:ARG:HA	12:M:106:ARG:HH11	1.61	0.65
1:A:1302:C:O4'	12:M:16:ILE:HD11	1.96	0.65
13:N:60:ARG:NH2	13:N:62:ARG:HE	1.92	0.65
13:N:60:ARG:HE	13:N:62:ARG:NE	1.93	0.65
21:U:14:ALA:CA	21:U:16:ARG:NE	2.59	0.65
21:U:36:PHE:HB3	21:U:40:PRO:CD	2.25	0.65
1:A:205:A:H2'	1:A:206:C:H6	1.61	0.65
7:H:111:THR:H	7:H:114:ALA:HB3	1.60	0.65
10:K:105:ARG:NH2	21:U:10:PRO:HG3	2.12	0.65
1:A:922:G:H4'	4:E:24:VAL:HA	1.77	0.65
3:D:41:GLY:C	23:X:896:THR:CG2	2.54	0.65
13:N:30:ILE:HB	13:N:44:VAL:HG11	1.77	0.65
16:Q:10:ARG:HE	16:Q:10:ARG:HA	1.62	0.65
1:A:1062:U:H2'	1:A:1063:C:C6	2.32	0.65
1:A:269:C:H2'	1:A:270:A:C8	2.32	0.65
3:D:84:ASN:HD22	3:D:87:GLU:H	1.43	0.65
4:E:104:ILE:HD13	4:E:115:GLU:HG3	1.78	0.65
2:C:71:ARG:HD3	23:X:862:LEU:CA	2.26	0.65
1:A:1342:C:H2'	1:A:1343:G:H8	1.61	0.65
9:J:27:GLU:OE1	22:V:95:LYS:CG	2.43	0.65
1:A:1182:G:H4'	1:A:1183:U:H5'	1.79	0.65
3:D:43:ARG:HH12	23:X:895:LEU:CB	2.10	0.65
2:C:79:LYS:NZ	23:X:944:ARG:HG3	2.05	0.65
7:H:30:LYS:NZ	7:H:30:LYS:HA	2.12	0.65
1:A:1513:A:H2'	1:A:1514:G:C8	2.32	0.64
1:A:270:A:H2'	1:A:271:C:C6	2.32	0.64
1:A:620:C:H1'	3:D:131:ILE:HG21	1.79	0.64
8:I:20:ILE:HG23	8:I:60:LEU:HD13	1.79	0.64
14:O:31:LEU:HD12	14:O:58:MET:HB2	1.78	0.64
1:A:87:C:H2'	1:A:88:U:H4'	1.79	0.64
2:C:178:ARG:O	2:C:178:ARG:HG2	1.96	0.64
1:A:1221:G:H5''	18:S:35:ARG:HH11	1.62	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:188:C:H2'	1:A:189:A:O4'	1.97	0.64
2:C:125:ARG:HG3	23:X:904:ALA:CA	2.21	0.64
3:D:2:ARG:HG3	3:D:114:ARG:CZ	2.28	0.64
3:D:88:ASN:O	3:D:92:LEU:HD23	1.97	0.64
5:F:40:GLU:HG3	5:F:42:TRP:HE1	1.61	0.64
6:G:148:LYS:HG3	6:G:151:ALA:HB3	1.79	0.64
9:J:11:LYS:HG2	9:J:97:ASP:HB3	1.78	0.64
15:P:68:SER:HB3	15:P:71:VAL:HG12	1.80	0.64
1:A:1241:G:H2'	1:A:1242:G:H8	1.59	0.64
1:A:859:G:H2'	1:A:860:A:C8	2.32	0.64
1:A:36:C:H5''	11:L:119:LYS:HB3	1.79	0.64
19:T:59:ARG:HB2	19:T:59:ARG:HH11	1.62	0.64
1:A:1468:A:H2'	1:A:1469:C:O4'	1.98	0.64
20:B:225:SER:OG	25:Z:70:GLN:O	2.15	0.64
4:E:114:LEU:HD22	4:E:119:VAL:HG21	1.80	0.64
12:M:103:THR:HG22	12:M:104:ASN:H	1.62	0.64
14:O:29:ALA:HA	14:O:84:LEU:HD21	1.80	0.64
1:A:522:C:H41	11:L:49:ARG:HH22	1.45	0.64
13:N:12:ARG:HH11	13:N:60:ARG:NH1	1.95	0.64
10:K:105:ARG:HH21	21:U:10:PRO:HG3	1.63	0.64
1:A:1017:U:H2'	1:A:1018:G:C8	2.31	0.64
1:A:1342:C:H2'	1:A:1343:G:C8	2.32	0.64
1:A:269:C:H2'	1:A:270:A:H8	1.63	0.64
20:B:58:LYS:HB2	25:Z:76:GLU:O	1.97	0.64
2:C:113:LYS:HE2	2:C:117:ASP:OD2	1.97	0.64
2:C:185:THR:HG22	2:C:186:SER:H	1.62	0.64
12:M:52:ILE:HD12	12:M:55:LEU:HD12	1.78	0.64
18:S:31:ARG:HG3	18:S:56:HIS:NE2	2.13	0.64
2:C:71:ARG:CZ	23:X:866:ASP:O	2.45	0.64
1:A:539:A:H2'	1:A:540:G:C8	2.32	0.64
20:B:75:ALA:O	20:B:79:VAL:HB	1.98	0.64
9:J:15:HIS:HA	9:J:18:ILE:HG22	1.79	0.64
12:M:3:ILE:HG23	12:M:56:ARG:HG2	1.78	0.64
19:T:4:LYS:HD2	19:T:5:SER:N	2.13	0.64
20:B:65:LYS:HD2	20:B:157:PRO:HA	1.80	0.64
21:U:40:PRO:O	21:U:44:ARG:HB2	1.98	0.64
2:C:61:LYS:O	2:C:96:VAL:HB	1.98	0.63
4:E:23:THR:HG23	4:E:28:ARG:HD3	1.78	0.63
1:A:875:U:O2'	7:H:14:ARG:HD2	1.97	0.63
1:A:312:C:H2'	1:A:313:A:C8	2.33	0.63
1:A:531:U:H6	1:A:531:U:H5'	1.63	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:E:140:ILE:HA	4:E:143:LEU:HD12	1.80	0.63
9:J:89:ARG:CG	22:V:116:THR:C	2.60	0.63
1:A:1101:A:H61	20:B:173:LYS:HD2	1.63	0.63
20:B:41:ASN:ND2	20:B:44:LYS:HB2	2.13	0.63
4:E:104:ILE:HD11	4:E:114:LEU:HB2	1.79	0.63
8:I:113:LYS:HA	8:I:120:ALA:HB2	1.81	0.63
9:J:87:LEU:HD22	9:J:90:LEU:HD12	1.79	0.63
11:L:20:VAL:HG13	11:L:94:TYR:OH	1.99	0.63
16:Q:26:ARG:HE	16:Q:39:ARG:NH1	1.97	0.63
19:T:15:LYS:HD3	19:T:18:LYS:HE3	1.79	0.63
1:A:105:G:H2'	1:A:106:C:C6	2.33	0.63
1:A:203:G:H1'	1:A:465:A:N6	2.13	0.63
3:D:43:ARG:NH1	23:X:895:LEU:C	2.50	0.63
3:D:56:GLU:HG2	3:D:195:ASN:HD22	1.62	0.63
12:M:1:ALA:O	12:M:8:ILE:HG22	1.98	0.63
1:A:1505:G:H4'	1:A:1506:U:H5''	1.81	0.63
2:C:146:LYS:HD3	2:C:204:GLY:HA2	1.79	0.63
10:K:88:PRO:HA	10:K:92:ARG:HE	1.63	0.63
13:N:60:ARG:N	13:N:60:ARG:HD3	2.11	0.63
20:B:202:ASN:HD22	20:B:204:ASP:N	1.95	0.63
15:P:9:HIS:HE1	15:P:29:ASN:HB2	1.63	0.63
16:Q:59:GLU:H	16:Q:74:LEU:HD23	1.62	0.63
18:S:39:ILE:HG21	18:S:65:MET:HB3	1.80	0.63
1:A:1118:U:H1'	1:A:1179:A:C4	2.34	0.63
1:A:1447:A:H5'	1:A:1448:C:H5	1.63	0.63
2:C:5:HIS:CD2	2:C:8:GLY:H	2.16	0.63
8:I:30:ASN:ND2	8:I:65:THR:HA	2.14	0.63
10:K:69:CYS:C	10:K:71:ASP:H	2.02	0.63
2:C:74:ILE:HA	23:X:867:GLU:N	2.13	0.63
13:N:51:PRO:HB2	13:N:54:SER:HB3	1.79	0.63
15:P:42:ILE:HG22	15:P:43:ALA:N	2.14	0.63
1:A:10:A:OP2	4:E:130:THR:HB	1.99	0.62
1:A:1391:U:H2'	1:A:1392:G:C8	2.34	0.62
1:A:79:G:H2'	1:A:80:A:C8	2.34	0.62
1:A:9:G:H5'	4:E:107:GLY:HA3	1.81	0.62
7:H:63:LYS:HG2	7:H:70:VAL:HG21	1.80	0.62
9:J:88:MET:HB2	9:J:89:ARG:NH1	2.11	0.62
9:J:67:ILE:HD11	13:N:95:LEU:HD22	1.81	0.62
20:B:58:LYS:HB2	25:Z:76:GLU:CA	2.29	0.62
1:A:78:A:H2'	1:A:79:G:H8	1.62	0.62
4:E:35:LEU:HD11	4:E:136:VAL:HG11	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:I:40:ARG:N	8:I:44:ARG:HE	1.96	0.62
1:A:981:U:H4'	13:N:60:ARG:HG3	1.81	0.62
13:N:71:GLY:O	13:N:79:SER:HA	1.98	0.62
15:P:67:ILE:HD11	15:P:72:ALA:HA	1.81	0.62
3:D:43:ARG:NE	23:X:900:LYS:CB	2.62	0.62
1:A:662:U:H2'	1:A:663:A:C8	2.34	0.62
1:A:678:U:H2'	1:A:679:C:C6	2.34	0.62
1:A:817:C:H1'	1:A:819:A:H5'	1.80	0.62
1:A:882:C:O2'	1:A:883:C:H5'	1.99	0.62
7:H:11:THR:HA	7:H:14:ARG:NH1	2.14	0.62
8:I:51:LEU:HB3	8:I:56:MET:HG2	1.81	0.62
12:M:68:LEU:O	12:M:72:ILE:HD13	1.99	0.62
21:U:39:LYS:N	21:U:40:PRO:HD2	2.13	0.62
20:B:63:LYS:HZ2	25:Z:34:GLY:HA3	0.80	0.62
1:A:1011:C:H2'	1:A:1012:A:H8	1.64	0.62
1:A:1171:A:H2'	1:A:1172:C:H6	1.64	0.62
20:B:118:THR:O	20:B:121:GLN:HB3	1.98	0.62
4:E:45:VAL:O	4:E:71:ILE:HG22	1.98	0.62
1:A:524:G:H2'	1:A:525:C:C6	2.33	0.62
2:C:71:ARG:CD	23:X:862:LEU:CA	2.77	0.62
3:D:42:ALA:HB1	23:X:894:GLN:O	1.99	0.62
3:D:99:ASN:ND2	3:D:110:ARG:HE	1.97	0.62
6:G:44:SER:O	6:G:48:THR:HG23	1.99	0.62
13:N:15:LEU:HD12	13:N:16:ALA:N	2.14	0.62
1:A:1038:C:H2'	1:A:1039:G:H8	1.64	0.62
1:A:1513:A:H2'	1:A:1514:G:H8	1.65	0.62
1:A:918:A:H2'	1:A:919:A:C8	2.35	0.62
1:A:983:A:H5'	1:A:984:C:OP2	1.99	0.62
20:B:63:LYS:HZ2	25:Z:34:GLY:CA	1.68	0.62
5:F:53:LYS:HA	5:F:53:LYS:NZ	2.12	0.62
5:F:92:THR:HG23	5:F:93:LYS:H	1.63	0.62
12:M:88:LEU:O	12:M:92:ARG:HG3	2.00	0.62
1:A:376:G:H5''	15:P:5:ARG:CB	2.28	0.62
9:J:56:HIS:N	13:N:80:ARG:HH22	1.98	0.62
14:O:87:ARG:NH1	14:O:87:ARG:HA	2.15	0.62
1:A:121:U:H3'	1:A:121:U:OP1	2.00	0.62
1:A:69:G:H2'	1:A:70:U:C6	2.34	0.62
18:S:5:LYS:HE3	18:S:5:LYS:N	2.15	0.62
21:U:36:PHE:HB3	21:U:40:PRO:CG	2.29	0.62
1:A:476:U:H2'	1:A:477:C:C6	2.35	0.62
20:B:163:ILE:O	20:B:185:ILE:HG13	1.99	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:184:ASN:HD22	2:C:185:THR:N	1.98	0.62
1:A:37:U:P	11:L:119:LYS:HB2	2.40	0.62
11:L:43:LYS:N	11:L:44:PRO:HD2	2.14	0.62
16:Q:10:ARG:HH11	16:Q:55:GLY:N	1.97	0.62
20:B:148:GLY:O	20:B:151:LYS:HE2	1.99	0.62
2:C:146:LYS:HE3	2:C:202:PHE:CE2	2.30	0.62
16:Q:26:ARG:HH21	16:Q:39:ARG:CZ	2.13	0.62
18:S:4:LEU:HD13	18:S:9:PHE:N	2.13	0.62
1:A:60:A:H4'	1:A:61:G:O5'	1.99	0.61
2:C:151:GLU:O	2:C:197:VAL:HA	1.99	0.61
11:L:85:ARG:HA	11:L:93:ARG:HA	1.80	0.61
20:B:27:LYS:HB3	20:B:28:PRO:HD3	1.82	0.61
3:D:163:GLN:HB2	3:D:164:ARG:NH1	2.14	0.61
9:J:15:HIS:HD2	9:J:18:ILE:HG22	1.65	0.61
13:N:78:LEU:HB2	13:N:83:VAL:HG22	1.82	0.61
20:B:53:LEU:HB3	25:Z:81:GLN:CB	2.21	0.61
1:A:1219:A:H2'	1:A:1220:G:H8	1.65	0.61
2:C:69:THR:HG21	2:C:75:VAL:HG21	1.81	0.61
5:F:9:MET:HA	5:F:58:HIS:O	1.99	0.61
10:K:95:THR:HG23	10:K:96:ILE:H	1.65	0.61
11:L:78:VAL:HG12	11:L:101:LEU:HD23	1.82	0.61
20:B:96:LEU:HD21	20:B:146:SER:HB2	1.82	0.61
8:I:10:ARG:HB2	8:I:14:SER:O	2.00	0.61
9:J:80:THR:H	9:J:84:VAL:HG11	1.66	0.61
14:O:11:VAL:HG23	14:O:26:VAL:HG11	1.82	0.61
1:A:398:U:H2'	1:A:399:G:H8	1.66	0.61
3:D:191:SER:O	3:D:192:ALA:HB2	2.01	0.61
3:D:20:LEU:H	3:D:20:LEU:HD12	1.65	0.61
19:T:54:GLN:N	19:T:55:PRO:HD2	2.16	0.61
1:A:1295:U:H2'	1:A:1296:C:C6	2.35	0.61
1:A:1323:G:H2'	1:A:1324:A:H8	1.65	0.61
1:A:590:U:H2'	1:A:591:U:H6	1.66	0.61
3:D:58:GLN:HA	3:D:61:ARG:HB2	1.83	0.61
6:G:117:LEU:HD22	6:G:120:ALA:HB3	1.83	0.61
6:G:3:ARG:HB3	6:G:3:ARG:NH1	2.16	0.61
1:A:1060:U:H2'	1:A:1061:G:C8	2.35	0.61
1:A:1074:G:H5'	20:B:104:LYS:NZ	2.15	0.61
1:A:1109:C:H42	1:A:1110:A:N6	1.98	0.61
1:A:1438:G:O2'	1:A:1439:G:H5'	2.00	0.61
1:A:505:G:H5'	1:A:534:U:H2'	1.81	0.61
6:G:144:ALA:C	6:G:146:ALA:H	2.04	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:I:18:VAL:HG11	8:I:82:ILE:HG12	1.83	0.61
1:A:212:G:H2'	1:A:213:G:H8	1.65	0.61
2:C:59:PRO:HG2	2:C:60:ALA:H	1.65	0.61
4:E:33:THR:O	4:E:34:ALA:HB3	2.00	0.61
6:G:22:LEU:O	6:G:25:PHE:HB3	2.01	0.61
10:K:86:LYS:HG3	10:K:113:THR:HA	1.82	0.61
1:A:501:C:H1'	1:A:549:C:H1'	1.81	0.61
1:A:8:A:H2'	3:D:205:LYS:O	2.00	0.61
1:A:1074:G:H2'	1:A:1075:U:C6	2.36	0.61
1:A:1193:G:O2'	1:A:1194:U:H5'	2.01	0.61
1:A:1307:U:H2'	1:A:1308:U:C6	2.36	0.61
1:A:1518:A:H2'	1:A:1519:A:C8	2.35	0.61
1:A:858:G:O6	1:A:869:G:H3'	2.01	0.61
8:I:56:MET:HA	8:I:59:LYS:HZ1	1.66	0.61
12:M:5:GLY:O	12:M:6:ILE:HG12	2.00	0.61
13:N:20:PHE:HA	13:N:24:ALA:HB2	1.83	0.61
1:A:1225:A:H4'	18:S:77:ARG:NH2	2.16	0.61
2:C:108:PRO:CG	23:X:860:ALA:H	2.14	0.61
20:B:69:VAL:O	20:B:163:ILE:HG22	2.00	0.60
4:E:96:GLN:HB3	4:E:123:LEU:CD1	2.31	0.60
14:O:55:LEU:O	14:O:59:VAL:HG23	2.01	0.60
2:C:71:ARG:HA	23:X:862:LEU:O	2.00	0.60
1:A:1278:G:H4'	1:A:1279:G:O5'	2.01	0.60
1:A:1281:C:H5'	1:A:1282:C:H5	1.66	0.60
1:A:1285:A:H4'	1:A:1286:U:C5	2.35	0.60
1:A:1300:G:H1'	1:A:1301:U:C5	2.36	0.60
1:A:80:A:H2'	1:A:81:A:O4'	2.01	0.60
3:D:94:GLU:HG3	3:D:103:ARG:NH1	2.16	0.60
8:I:117:LEU:HD22	8:I:123:ARG:HG2	1.83	0.60
1:A:1254:A:OP1	9:J:47:GLU:HG3	2.01	0.60
1:A:1225:A:H3'	1:A:1226:C:C6	2.35	0.60
1:A:590:U:H2'	1:A:591:U:C6	2.35	0.60
20:B:166:ASP:OD1	20:B:190:SER:HA	2.02	0.60
6:G:59:GLU:O	6:G:63:VAL:HG23	2.02	0.60
10:K:69:CYS:O	10:K:73:VAL:HG23	2.00	0.60
1:A:194:C:O2'	1:A:195:A:H5'	2.01	0.60
1:A:699:C:C2'	1:A:700:G:H5''	2.30	0.60
20:B:37:VAL:HG22	20:B:38:HIS:N	2.17	0.60
13:N:11:LYS:O	13:N:15:LEU:HG	1.99	0.60
1:A:1257:A:N3	1:A:1257:A:H2'	2.16	0.60
1:A:132:C:H5''	19:T:68:LYS:HE3	1.82	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:B:17:HIS:HB2	20:B:202:ASN:OD1	2.00	0.60
20:B:76:SER:O	20:B:79:VAL:HG12	2.01	0.60
3:D:7:LYS:HE2	3:D:20:LEU:HD22	1.83	0.60
6:G:49:LEU:HB2	6:G:57:GLU:HG3	1.82	0.60
19:T:60:GLN:NE2	19:T:61:ALA:H	1.99	0.60
21:U:14:ALA:CA	21:U:16:ARG:CD	2.77	0.60
3:D:16:THR:HG21	24:Y:74:LYS:O	2.00	0.60
1:A:429:U:H1'	1:A:430:A:H5''	1.84	0.60
1:A:763:G:H2'	1:A:764:C:C6	2.36	0.60
7:H:42:GLU:HG3	7:H:100:ILE:HD13	1.84	0.60
4:E:152:VAL:HG21	7:H:98:LEU:HD23	1.83	0.60
11:L:64:SER:OG	11:L:96:THR:HG23	2.00	0.60
12:M:98:GLY:H	12:M:99:GLN:HE21	1.49	0.60
1:A:801:U:H2'	1:A:802:A:H8	1.66	0.60
3:D:120:LYS:HB2	3:D:145:ARG:HH21	1.66	0.60
4:E:85:LYS:HE2	4:E:92:ARG:NH1	2.16	0.60
18:S:50:VAL:O	18:S:56:HIS:HA	2.00	0.60
2:C:125:ARG:CG	23:X:903:ARG:O	2.50	0.60
1:A:1011:C:H2'	1:A:1012:A:C8	2.37	0.60
1:A:763:G:H2'	1:A:764:C:H6	1.64	0.60
20:B:128:LEU:HG	20:B:132:GLU:HG2	1.83	0.60
3:D:154:VAL:HG13	3:D:155:LYS:H	1.66	0.60
4:E:155:LYS:HA	7:H:65:PHE:CD1	2.36	0.60
1:A:720:C:H5''	17:R:40:PRO:HA	1.84	0.60
1:A:1090:U:H2'	1:A:1091:U:C6	2.37	0.60
3:D:20:LEU:O	3:D:21:LYS:HE3	2.02	0.60
13:N:63:CYS:SG	13:N:66:THR:HG22	2.41	0.60
15:P:46:LYS:CD	15:P:46:LYS:H	2.10	0.60
1:A:1243:C:H2'	1:A:1244:G:H8	1.67	0.60
2:C:104:GLU:CG	23:X:863:SER:CB	2.80	0.60
5:F:40:GLU:HG3	5:F:42:TRP:NE1	2.16	0.60
6:G:64:ALA:HA	6:G:127:ALA:HB2	1.82	0.60
9:J:27:GLU:OE2	22:V:95:LYS:N	2.34	0.60
20:B:31:PHE:HB3	20:B:39:ILE:HB	1.84	0.59
4:E:156:ARG:HD2	7:H:42:GLU:O	2.02	0.59
8:I:15:ALA:O	8:I:66:VAL:HG23	2.01	0.59
10:K:126:ARG:HB2	21:U:33:ARG:CD	2.32	0.59
16:Q:59:GLU:H	16:Q:74:LEU:CD2	2.14	0.59
1:A:832:G:O2'	1:A:833:G:H5'	2.02	0.59
2:C:30:ASP:O	2:C:33:ASP:HB3	2.01	0.59
3:D:90:LEU:HA	3:D:93:LEU:HD12	1.83	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:I:35:GLU:HA	8:I:39:GLY:HA3	1.82	0.59
19:T:67:HIS:O	19:T:70:LYS:HG2	2.02	0.59
21:U:26:GLY:C	21:U:28:LEU:H	2.05	0.59
2:C:183:TYR:HA	2:C:199:VAL:O	2.03	0.59
4:E:110:MET:HB3	4:E:139:THR:HG21	1.82	0.59
5:F:99:ALA:O	5:F:100:SER:HB2	2.00	0.59
7:H:29:SER:CB	7:H:32:LYS:HZ2	2.14	0.59
1:A:1074:G:H2'	1:A:1075:U:H6	1.67	0.59
1:A:370:C:H2'	1:A:371:A:H8	1.67	0.59
1:A:783:C:O2'	1:A:784:A:H5'	2.02	0.59
20:B:67:LEU:N	20:B:67:LEU:HD13	2.18	0.59
6:G:11:ILE:HG12	6:G:24:LYS:HE2	1.85	0.59
9:J:25:ILE:HG23	9:J:29:ALA:HB3	1.83	0.59
9:J:38:GLY:O	9:J:74:VAL:HA	2.02	0.59
21:U:13:VAL:HG13	21:U:14:ALA:N	2.16	0.59
20:B:62:ARG:CA	25:Z:75:GLN:NE2	2.53	0.59
3:D:11:SER:OG	3:D:17:ASP:HA	2.02	0.59
3:D:59:LYS:O	3:D:63:ILE:HG13	2.02	0.59
11:L:19:ASN:HB2	11:L:93:ARG:NH1	2.18	0.59
16:Q:7:LEU:HD13	16:Q:24:ILE:HG12	1.84	0.59
20:B:58:LYS:CG	25:Z:76:GLU:HA	2.31	0.59
1:A:105:G:H2'	1:A:106:C:H6	1.66	0.59
1:A:57:G:H2'	1:A:58:C:H6	1.68	0.59
8:I:56:MET:HE2	8:I:57:VAL:H	1.66	0.59
21:U:14:ALA:HA	21:U:16:ARG:NE	2.18	0.59
1:A:1284:C:H3'	1:A:1285:A:H5''	1.84	0.59
2:C:112:ALA:HB1	2:C:199:VAL:HG23	1.84	0.59
3:D:138:PRO:HA	3:D:181:PHE:HD2	1.67	0.59
5:F:64:VAL:HG12	5:F:65:GLU:N	2.17	0.59
7:H:79:ARG:HB2	7:H:80:PRO:HD2	1.84	0.59
10:K:83:VAL:HG23	10:K:109:ILE:HA	1.84	0.59
14:O:78:THR:HA	14:O:81:ILE:HG12	1.85	0.59
1:A:107:G:O6	19:T:9:ARG:HD3	2.03	0.59
1:A:1444:U:H2'	1:A:1445:U:C6	2.38	0.59
1:A:626:G:H2'	1:A:627:G:C8	2.38	0.59
1:A:93:U:H3'	1:A:94:G:H5''	1.83	0.59
4:E:156:ARG:HB2	7:H:43:GLY:HA3	1.85	0.59
8:I:17:ARG:O	8:I:64:ILE:HA	2.02	0.59
15:P:1:MET:N	15:P:24:SER:HB3	2.18	0.59
20:B:61:SER:CB	25:Z:75:GLN:H	2.09	0.59
1:A:1361:G:H2'	1:A:1362:A:H5''	1.85	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:118:U:O4	1:A:288:A:H2'	2.02	0.59
1:A:436:C:O2'	1:A:437:U:H5'	2.03	0.59
1:A:57:G:H2'	1:A:58:C:C6	2.37	0.59
20:B:18:GLN:O	20:B:37:VAL:HG23	2.03	0.59
10:K:58:THR:HG23	10:K:61:ALA:HB2	1.85	0.59
11:L:19:ASN:O	11:L:20:VAL:HG23	2.03	0.59
11:L:22:ALA:HB2	11:L:56:LEU:HD21	1.85	0.59
12:M:48:SER:O	12:M:52:ILE:HG22	2.03	0.59
2:C:5:HIS:CD2	13:N:88:MET:HB3	2.37	0.59
18:S:7:GLY:H	18:S:8:PRO:HD3	1.67	0.59
1:A:1260:G:H4'	1:A:1284:C:H5'	1.84	0.59
1:A:95:C:O2	1:A:95:C:H2'	2.02	0.59
1:A:978:A:HO2'	1:A:1322:C:H5	1.51	0.59
6:G:53:SER:HB2	6:G:55:LYS:NZ	2.18	0.59
9:J:26:VAL:O	9:J:30:LYS:HB3	2.02	0.59
12:M:98:GLY:H	12:M:99:GLN:NE2	1.99	0.59
1:A:1217:C:OP1	13:N:8:ARG:HD3	2.03	0.59
18:S:50:VAL:HB	18:S:57:VAL:HG22	1.84	0.59
19:T:60:GLN:CD	19:T:60:GLN:H	2.07	0.59
1:A:920:U:H2'	1:A:921:U:C6	2.38	0.58
1:A:1100:C:OP2	20:B:94:ARG:HD3	2.04	0.58
3:D:137:SER:HB2	3:D:138:PRO:HD2	1.85	0.58
5:F:42:TRP:HB2	5:F:59:TYR:HB2	1.85	0.58
9:J:87:LEU:H	9:J:88:MET:HE1	1.67	0.58
12:M:21:ILE:CG2	12:M:64:VAL:HG11	2.32	0.58
1:A:926:G:N2	1:A:1505:G:H2'	2.18	0.58
10:K:18:GLY:O	10:K:81:LEU:HB2	2.03	0.58
11:L:42:LYS:HE3	11:L:90:PRO:HD3	1.84	0.58
14:O:60:SER:HA	14:O:63:ARG:NH1	2.17	0.58
1:A:1116:U:O2'	1:A:1117:A:H5'	2.03	0.58
1:A:677:U:H3	1:A:713:G:H22	1.51	0.58
20:B:59:ILE:HG13	25:Z:78:ALA:HB1	1.84	0.58
20:B:59:ILE:H	25:Z:78:ALA:CB	2.14	0.58
9:J:30:LYS:HB2	9:J:36:VAL:HG21	1.85	0.58
18:S:28:LYS:HB2	18:S:29:PRO:HD2	1.84	0.58
1:A:272:C:H2'	1:A:273:U:H6	1.68	0.58
3:D:196:GLU:HA	3:D:199:ILE:HD12	1.85	0.58
8:I:18:VAL:HG22	8:I:64:ILE:HG12	1.85	0.58
1:A:1238:A:C2	1:A:1241:G:H1'	2.38	0.58
1:A:1338:G:H2'	1:A:1339:A:C8	2.39	0.58
1:A:160:A:H2'	1:A:161:A:O4'	2.04	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:241:G:O2'	1:A:242:G:H5'	2.03	0.58
3:D:118:SER:HA	3:D:130:ASN:HB2	1.85	0.58
13:N:61:ASN:O	13:N:62:ARG:HB2	2.03	0.58
16:Q:46:HIS:HB2	16:Q:70:LYS:HE3	1.85	0.58
1:A:672:U:H2'	1:A:673:A:C8	2.39	0.58
2:C:71:ARG:NH1	23:X:866:ASP:O	2.36	0.58
11:L:35:ARG:HE	11:L:35:ARG:HA	1.68	0.58
12:M:89:ARG:HB2	12:M:96:VAL:HG12	1.84	0.58
9:J:31:ARG:NH1	22:V:119:GLY:O	2.36	0.58
1:A:1446:A:H2'	1:A:1447:A:H5''	1.86	0.58
1:A:168:G:O2'	1:A:169:C:H5'	2.04	0.58
1:A:676:A:H1'	10:K:116:PRO:HB3	1.86	0.58
13:N:11:LYS:HZ2	13:N:11:LYS:HA	1.67	0.58
1:A:1163:A:H2'	1:A:1164:G:C8	2.39	0.58
1:A:1163:A:H2'	1:A:1164:G:H8	1.68	0.58
1:A:203:G:H1'	1:A:465:A:H62	1.69	0.58
1:A:555:U:H2'	1:A:556:C:C6	2.39	0.58
1:A:967:C:H3'	1:A:968:A:C5'	2.33	0.58
20:B:147:LEU:O	20:B:150:ILE:HG22	2.03	0.58
2:C:141:MET:HA	2:C:141:MET:HE2	1.85	0.58
2:C:72:PRO:HD2	23:X:863:SER:N	2.10	0.58
3:D:169:TRP:NE1	3:D:170:LEU:HD23	2.18	0.58
3:D:24:VAL:HG23	3:D:25:ARG:HD2	1.86	0.58
6:G:97:ALA:HA	6:G:100:MET:HE3	1.85	0.58
16:Q:10:ARG:NE	16:Q:10:ARG:HA	2.18	0.58
3:D:25:ARG:NH1	3:D:30:LYS:HG2	2.18	0.58
3:D:94:GLU:HA	3:D:103:ARG:HH22	1.67	0.58
8:I:56:MET:CE	8:I:57:VAL:H	2.17	0.58
1:A:922:G:N3	1:A:1398:A:H2	2.02	0.58
2:C:71:ARG:HH22	23:X:866:ASP:C	2.02	0.58
3:D:99:ASN:CG	3:D:103:ARG:HH21	2.06	0.58
10:K:52:ARG:HD2	10:K:53:GLY:N	2.19	0.58
1:A:1329:A:OP1	12:M:28:ARG:HB2	2.04	0.58
1:A:1048:G:H4'	13:N:2:LYS:NZ	2.18	0.57
1:A:1380:U:O4	6:G:2:ARG:HA	2.04	0.57
1:A:450:G:H4'	15:P:41:PRO:HB2	1.86	0.57
2:C:90:VAL:CG2	2:C:98:ALA:HB3	2.34	0.57
3:D:170:LEU:HB2	3:D:180:THR:O	2.04	0.57
6:G:74:VAL:HG12	6:G:75:LYS:H	1.68	0.57
7:H:64:TYR:HA	7:H:70:VAL:HG23	1.85	0.57
1:A:625:U:H4'	15:P:16:PHE:CE2	2.39	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1201:A:H1'	1:A:1202:U:OP2	2.04	0.57
1:A:560:A:H4'	1:A:561:U:H5''	1.86	0.57
1:A:940:C:H2'	1:A:941:G:H8	1.69	0.57
2:C:125:ARG:HG2	23:X:903:ARG:O	2.03	0.57
7:H:93:LYS:HZ2	7:H:93:LYS:N	2.01	0.57
8:I:18:VAL:HG22	8:I:64:ILE:HG23	1.85	0.57
1:A:1055:A:H4'	2:C:160:GLU:CG	2.35	0.57
1:A:1077:G:N2	1:A:1079:G:H3'	2.20	0.57
1:A:1172:C:H2'	1:A:1173:U:C6	2.39	0.57
2:C:71:ARG:HA	23:X:862:LEU:C	2.24	0.57
2:C:73:GLY:HA3	23:X:865:LEU:O	2.04	0.57
7:H:46:GLU:HA	7:H:63:LYS:HZ3	1.69	0.57
10:K:25:SER:HB3	10:K:28:ASN:O	2.03	0.57
15:P:51:ARG:O	15:P:52:LEU:HD13	2.03	0.57
10:K:88:PRO:HD3	21:U:28:LEU:CD1	2.34	0.57
1:A:1142:G:H2'	1:A:1143:G:O4'	2.03	0.57
1:A:239:U:C5'	1:A:239:U:H6	2.18	0.57
1:A:586:C:O2'	1:A:587:G:H5'	2.04	0.57
1:A:91:U:H2'	1:A:92:U:C6	2.39	0.57
4:E:13:LYS:HD2	4:E:112:ALA:HB1	1.85	0.57
4:E:90:GLY:O	4:E:128:GLY:HA3	2.04	0.57
6:G:53:SER:HB2	6:G:55:LYS:HZ2	1.69	0.57
8:I:80:HIS:O	8:I:84:ARG:HB2	2.04	0.57
8:I:82:ILE:O	8:I:86:LEU:HD22	2.03	0.57
13:N:24:ALA:HB1	13:N:27:LYS:HE3	1.86	0.57
21:U:36:PHE:CB	21:U:40:PRO:HD3	2.35	0.57
1:A:176:C:H2'	1:A:177:G:N3	2.20	0.57
1:A:967:C:OP1	1:A:969:A:H5'	2.04	0.57
10:K:95:THR:HG23	10:K:96:ILE:N	2.20	0.57
1:A:865:A:H5'	1:A:1078:U:O4	2.04	0.57
1:A:1294:G:H2'	1:A:1295:U:C6	2.40	0.57
1:A:372:C:H4'	1:A:373:A:H5'	1.87	0.57
1:A:384:G:H2'	1:A:385:C:C6	2.39	0.57
1:A:85:U:H4'	1:A:86:G:H4'	1.86	0.57
2:C:78:LYS:H	23:X:943:LYS:HE2	1.68	0.57
8:I:51:LEU:HD11	8:I:82:ILE:HG21	1.87	0.57
9:J:31:ARG:HH22	22:V:119:GLY:C	2.07	0.57
14:O:60:SER:HA	14:O:63:ARG:HH12	1.69	0.57
10:K:124:LYS:CA	21:U:34:ARG:HB3	2.29	0.57
1:A:1091:U:H2'	1:A:1093:A:OP2	2.04	0.57
1:A:1241:G:H2'	1:A:1242:G:C8	2.38	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:451:A:H4'	1:A:452:A:O4'	2.03	0.57
1:A:940:C:H2'	1:A:941:G:C8	2.40	0.57
3:D:173:ASP:HB3	3:D:178:GLU:HB3	1.85	0.57
7:H:26:MET:HB2	7:H:27:PRO:HD2	1.86	0.57
8:I:118:ARG:NH1	8:I:122:ARG:HE	2.03	0.57
8:I:118:ARG:HH22	8:I:122:ARG:HH21	1.52	0.57
1:A:1053:G:H4'	1:A:1054:C:H5'	1.87	0.57
1:A:1463:U:H2'	1:A:1464:U:C6	2.39	0.57
20:B:41:ASN:ND2	20:B:44:LYS:HE2	2.17	0.57
2:C:45:GLU:C	2:C:46:LEU:HD12	2.25	0.57
3:D:25:ARG:HH11	3:D:30:LYS:HE3	1.70	0.57
5:F:4:TYR:O	5:F:63:ASN:HA	2.04	0.57
7:H:8:ASP:O	7:H:12:ARG:HG3	2.03	0.57
1:A:1170:A:O5'	1:A:1170:A:H8	1.88	0.57
1:A:784:A:H2'	1:A:785:G:H8	1.69	0.57
1:A:86:G:OP1	1:A:86:G:H4'	2.05	0.57
3:D:69:ARG:HE	3:D:69:ARG:HA	1.68	0.57
4:E:104:ILE:CD1	4:E:114:LEU:HB2	2.34	0.57
5:F:17:GLN:HG2	5:F:21:MET:HG3	1.86	0.57
8:I:18:VAL:HG13	8:I:64:ILE:HG12	1.85	0.57
9:J:67:ILE:HG13	13:N:95:LEU:HD13	1.87	0.57
1:A:528:C:H41	11:L:45:ASN:CG	2.07	0.57
11:L:83:GLY:HA2	11:L:94:TYR:HD1	1.70	0.57
9:J:28:THR:N	22:V:119:GLY:HA2	2.20	0.57
1:A:1422:G:O2'	1:A:1423:G:H5'	2.05	0.57
1:A:312:C:H2'	1:A:313:A:H8	1.68	0.57
1:A:924:C:O2'	1:A:925:G:H5'	2.05	0.57
20:B:119:GLN:O	20:B:124:THR:HG23	2.04	0.57
20:B:125:PHE:HD2	20:B:125:PHE:H	1.53	0.57
2:C:46:LEU:HD23	2:C:75:VAL:HG13	1.86	0.57
5:F:53:LYS:CD	5:F:54:LEU:H	2.11	0.57
6:G:96:ASN:O	6:G:100:MET:HG3	2.04	0.57
6:G:4:ARG:CZ	6:G:5:VAL:H	2.18	0.57
3:D:25:ARG:HH12	3:D:30:LYS:HG2	1.69	0.56
5:F:54:LEU:CD1	5:F:55:HIS:H	2.18	0.56
6:G:132:THR:HG22	6:G:136:LYS:HG3	1.87	0.56
13:N:65:GLN:HB2	13:N:78:LEU:HD22	1.87	0.56
15:P:12:LYS:HD2	15:P:13:LYS:HE3	1.87	0.56
1:A:1330:U:C2'	1:A:1331:G:H5'	2.35	0.56
1:A:313:A:H2'	1:A:314:C:C6	2.41	0.56
1:A:390:U:H2'	1:A:391:G:H8	1.66	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:978:A:H5'	1:A:1362:A:N6	2.19	0.56
3:D:111:ALA:O	3:D:114:ARG:HB3	2.04	0.56
5:F:18:VAL:N	5:F:19:PRO:HD2	2.19	0.56
8:I:61:ASP:O	8:I:62:LEU:HD13	2.06	0.56
12:M:95:PRO:HD3	12:M:108:ARG:HG2	1.87	0.56
15:P:18:GLN:NE2	15:P:35:ARG:HD2	2.20	0.56
1:A:1508:A:H2'	1:A:1509:C:C6	2.39	0.56
3:D:60:VAL:HB	3:D:194:ILE:HG13	1.86	0.56
6:G:13:PRO:HB2	6:G:18:GLY:CA	2.35	0.56
13:N:9:GLU:HB2	13:N:60:ARG:NH2	2.20	0.56
4:E:9:GLU:N	24:Y:3:ASP:CA	2.67	0.56
1:A:1027:C:H2'	1:A:1028:C:H6	1.70	0.56
1:A:1244:G:H2'	1:A:1245:C:C6	2.40	0.56
1:A:1492:A:H2'	1:A:1493:A:O4'	2.06	0.56
1:A:177:G:H5''	19:T:59:ARG:HH21	1.70	0.56
1:A:674:G:H2'	1:A:675:A:H8	1.70	0.56
1:A:678:U:H2'	1:A:679:C:H6	1.70	0.56
1:A:883:C:O2'	1:A:884:U:H5'	2.05	0.56
1:A:987:G:H2'	1:A:988:G:H8	1.68	0.56
20:B:38:HIS:O	20:B:39:ILE:HD13	2.06	0.56
3:D:99:ASN:HD21	3:D:110:ARG:HE	1.52	0.56
13:N:66:THR:HG23	13:N:67:GLY:N	2.20	0.56
15:P:23:ASP:O	15:P:26:ASN:HB2	2.05	0.56
16:Q:74:LEU:HD22	16:Q:75:VAL:N	2.21	0.56
1:A:1035:A:H2'	1:A:1036:A:H8	1.69	0.56
1:A:129:A:H1'	1:A:130:A:C8	2.40	0.56
1:A:1490:U:H5'	1:A:1491:G:OP2	2.05	0.56
1:A:16:A:O2'	1:A:17:U:H5'	2.05	0.56
1:A:335:C:H2'	1:A:336:A:C8	2.41	0.56
1:A:372:C:H1'	1:A:373:A:OP2	2.06	0.56
1:A:796:C:H5'	10:K:128:VAL:HG13	1.86	0.56
1:A:985:C:H2'	1:A:986:U:C6	2.40	0.56
16:Q:75:VAL:HG23	16:Q:76:ARG:H	1.70	0.56
1:A:389:A:H3'	1:A:390:U:H6	1.71	0.56
1:A:408:A:H5'	3:D:21:LYS:HE2	1.88	0.56
1:A:72:A:H2'	1:A:73:C:H6	1.70	0.56
6:G:4:ARG:NE	6:G:5:VAL:H	2.03	0.56
1:A:1129:C:H5''	8:I:17:ARG:HH22	1.70	0.56
13:N:42:ASN:O	13:N:46:LYS:HG3	2.05	0.56
13:N:50:LEU:CD2	13:N:51:PRO:HD3	2.36	0.56
15:P:20:VAL:HG22	15:P:21:VAL:N	2.21	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1026:G:H2'	1:A:1027:C:H6	1.67	0.56
1:A:921:U:H2'	1:A:922:G:O4'	2.06	0.56
1:A:987:G:H2'	1:A:988:G:C8	2.40	0.56
3:D:117:VAL:O	3:D:130:ASN:HA	2.05	0.56
3:D:32:LYS:O	3:D:35:GLN:HB2	2.05	0.56
6:G:67:ASN:ND2	6:G:127:ALA:HA	2.21	0.56
7:H:49:LYS:HG3	7:H:50:VAL:N	2.21	0.56
10:K:32:THR:HA	10:K:43:TRP:HA	1.87	0.56
11:L:105:GLY:HA3	11:L:117:GLY:HA3	1.88	0.56
12:M:106:ARG:NH1	12:M:109:LYS:HD2	2.21	0.56
16:Q:45:VAL:HG12	16:Q:46:HIS:H	1.70	0.56
18:S:44:ILE:HA	18:S:61:VAL:HB	1.86	0.56
1:A:1102:A:H2'	1:A:1103:C:C6	2.40	0.56
1:A:1246:A:H2'	1:A:1247:U:C6	2.41	0.56
1:A:1280:A:O4'	9:J:43:PRO:HG3	2.06	0.56
1:A:202:G:H2'	1:A:203:G:C8	2.39	0.56
1:A:555:U:H2'	1:A:556:C:H6	1.71	0.56
1:A:1225:A:O5'	12:M:102:LYS:HB3	2.06	0.56
17:R:52:ARG:NH1	17:R:52:ARG:HB3	2.14	0.56
2:C:78:LYS:CG	23:X:947:GLU:HG2	2.24	0.56
1:A:1027:C:H2'	1:A:1028:C:C6	2.41	0.56
20:B:144:GLU:O	20:B:148:GLY:HA3	2.06	0.56
2:C:151:GLU:HB2	2:C:200:TRP:HZ3	1.71	0.56
4:E:82:HIS:HB2	4:E:83:PRO:HD2	1.88	0.56
5:F:3:HIS:HB2	5:F:92:THR:CB	2.35	0.56
8:I:30:ASN:N	8:I:30:ASN:HD22	2.04	0.56
9:J:11:LYS:HZ3	9:J:99:GLN:H	1.53	0.56
12:M:64:VAL:HG12	12:M:65:GLU:H	1.71	0.56
2:C:71:ARG:HB3	2:C:74:ILE:HG22	1.87	0.56
4:E:95:MET:HE2	4:E:114:LEU:HD11	1.87	0.56
5:F:100:SER:HA	17:R:23:LYS:NZ	2.21	0.56
10:K:15:VAL:HG21	10:K:41:LEU:HD11	1.88	0.56
19:T:34:VAL:HG22	19:T:49:ALA:HB1	1.87	0.56
1:A:1320:C:N4	18:S:36:ARG:HG2	2.21	0.56
1:A:1522:U:O2'	1:A:1523:G:H5'	2.06	0.56
1:A:163:C:H2'	1:A:164:G:O4'	2.06	0.56
1:A:190:A:H8	1:A:190:A:O5'	1.87	0.56
1:A:844:G:N2	1:A:845:A:H62	2.03	0.56
20:B:138:ARG:HA	20:B:141:GLU:OE2	2.06	0.56
4:E:132:PRO:HA	4:E:135:VAL:HG22	1.88	0.56
1:A:878:A:H1'	7:H:3:GLN:HE22	1.71	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:I:23:GLY:O	8:I:24:ASN:HB2	2.06	0.56
11:L:30:ARG:CB	11:L:30:ARG:HH11	2.19	0.56
12:M:22:TYR:HB3	12:M:69:ARG:NH2	2.20	0.56
16:Q:32:ILE:HG13	16:Q:33:TYR:N	2.21	0.56
18:S:49:ALA:HB1	18:S:56:HIS:CB	2.30	0.56
21:U:14:ALA:H	21:U:16:ARG:CZ	2.15	0.56
9:J:28:THR:CA	22:V:119:GLY:CA	2.64	0.56
1:A:449:G:H2'	1:A:450:G:C8	2.40	0.55
13:N:12:ARG:HH21	13:N:58:ARG:HH12	1.53	0.55
18:S:11:ASP:CG	18:S:34:SER:HB2	2.26	0.55
1:A:1346:A:N1	1:A:1374:A:H5''	2.22	0.55
1:A:32:A:H2'	1:A:33:A:C8	2.41	0.55
1:A:393:A:H5'	1:A:483:C:O2'	2.06	0.55
2:C:154:GLY:HA2	2:C:163:ARG:O	2.06	0.55
6:G:72:VAL:HA	6:G:89:GLU:HA	1.86	0.55
1:A:973:G:H1'	9:J:56:HIS:ND1	2.20	0.55
16:Q:10:ARG:CZ	16:Q:56:ASP:H	2.19	0.55
16:Q:16:MET:CB	16:Q:19:SER:HB2	2.35	0.55
10:K:113:THR:CG2	21:U:28:LEU:HD21	2.36	0.55
1:A:1111:A:O2'	1:A:1112:C:H6	1.90	0.55
1:A:629:A:H2'	1:A:630:A:O4'	2.06	0.55
1:A:764:C:C2'	1:A:765:G:H5'	2.37	0.55
1:A:803:G:H2'	1:A:804:U:C6	2.40	0.55
9:J:55:PRO:HA	13:N:80:ARG:NH2	2.21	0.55
10:K:97:ARG:NH1	10:K:97:ARG:HB3	2.21	0.55
11:L:3:VAL:O	11:L:7:VAL:HG23	2.06	0.55
1:A:521:G:OP2	11:L:50:LYS:HE3	2.06	0.55
3:D:19:PHE:CE2	24:Y:86:GLU:CB	2.88	0.55
1:A:1171:A:H2'	1:A:1172:C:C6	2.40	0.55
1:A:1243:C:H2'	1:A:1244:G:C8	2.41	0.55
1:A:1392:G:H2'	1:A:1393:U:C6	2.41	0.55
2:C:39:ARG:HG3	2:C:54:ILE:HG21	1.87	0.55
3:D:25:ARG:HG2	24:Y:47:ARG:HH12	1.71	0.55
8:I:49:GLN:NE2	8:I:79:ARG:HD2	2.22	0.55
12:M:2:ARG:HB3	12:M:6:ILE:O	2.06	0.55
13:N:30:ILE:HG21	13:N:44:VAL:HG21	1.88	0.55
21:U:13:VAL:O	21:U:14:ALA:HB2	2.04	0.55
21:U:14:ALA:N	21:U:16:ARG:NH2	2.55	0.55
1:A:173:U:H5'	1:A:197:A:O4'	2.07	0.55
1:A:270:A:H2'	1:A:271:C:H6	1.68	0.55
1:A:278:G:H21	1:A:279:A:N6	2.04	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:810:C:O2'	1:A:811:C:H5'	2.06	0.55
20:B:216:VAL:O	20:B:220:VAL:HG23	2.06	0.55
5:F:46:GLN:HA	5:F:56:LYS:HG3	1.89	0.55
9:J:24:GLU:OE1	9:J:90:LEU:HD22	2.06	0.55
10:K:58:THR:HG23	10:K:61:ALA:CB	2.36	0.55
10:K:61:ALA:O	10:K:64:VAL:HG12	2.06	0.55
18:S:18:VAL:CG2	18:S:43:MET:HG2	2.32	0.55
18:S:59:VAL:HG11	18:S:70:LEU:HD11	1.88	0.55
1:A:332:G:OP2	19:T:2:ASN:HB3	2.06	0.55
10:K:113:THR:HG21	21:U:28:LEU:HD21	1.88	0.55
1:A:764:C:H2'	1:A:765:G:H5'	1.87	0.55
1:A:859:G:H2'	1:A:860:A:H8	1.71	0.55
6:G:45:ALA:HB1	6:G:120:ALA:HB2	1.88	0.55
14:O:54:GLY:O	14:O:58:MET:HG2	2.07	0.55
15:P:41:PRO:O	15:P:42:ILE:HD13	2.06	0.55
18:S:32:THR:HB	18:S:49:ALA:O	2.06	0.55
21:U:39:LYS:N	21:U:40:PRO:CD	2.69	0.55
1:A:1008:U:H2'	1:A:1009:U:H4'	1.88	0.55
1:A:1363:A:N3	1:A:1363:A:H2'	2.22	0.55
1:A:218:U:H2'	1:A:219:U:C6	2.41	0.55
1:A:769:G:H4'	1:A:1513:A:H4'	1.87	0.55
3:D:117:VAL:HG12	3:D:130:ASN:HA	1.88	0.55
12:M:13:HIS:HB2	12:M:16:ILE:CG2	2.37	0.55
19:T:82:ILE:HG13	19:T:83:ASN:N	2.22	0.55
1:A:1112:C:O2	2:C:178:ARG:N	2.40	0.55
1:A:1448:C:H2'	1:A:1449:C:C6	2.42	0.55
2:C:42:LEU:O	2:C:46:LEU:HB2	2.07	0.55
2:C:71:ARG:NH2	23:X:867:GLU:HA	2.21	0.55
8:I:113:LYS:HG2	8:I:114:LYS:N	2.22	0.55
1:A:1250:A:H4'	8:I:69:GLY:N	2.22	0.55
10:K:92:ARG:NH1	10:K:92:ARG:HB3	2.19	0.55
1:A:37:U:OP1	11:L:119:LYS:HE3	2.07	0.55
16:Q:44:HIS:O	16:Q:72:TRP:HB2	2.07	0.55
1:A:1101:A:N6	20:B:173:LYS:HD2	2.22	0.55
1:A:477:C:H2'	1:A:478:A:C8	2.42	0.55
20:B:46:VAL:O	20:B:49:PHE:HB2	2.07	0.55
6:G:112:ASP:CB	6:G:118:ARG:HG2	2.33	0.55
8:I:51:LEU:HD11	8:I:82:ILE:HD13	1.87	0.55
16:Q:28:VAL:C	16:Q:36:PHE:HA	2.28	0.55
16:Q:64:ARG:HG3	16:Q:65:PRO:HD2	1.89	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:1332:A:H2'	1:A:1333:A:C8	2.42	0.55
1:A:1491:G:H5''	1:A:1492:A:OP2	2.07	0.55
1:A:602:A:O2'	1:A:603:U:H5'	2.07	0.55
20:B:62:ARG:HH21	25:Z:79:GLU:CD	2.10	0.55
2:C:126:ARG:HH22	2:C:190:THR:HG22	1.72	0.55
2:C:166:TRP:CE3	2:C:166:TRP:HA	2.42	0.55
9:J:53:ILE:HG23	13:N:84:ARG:CZ	2.37	0.55
1:A:1160:G:H2'	1:A:1161:C:H6	1.72	0.54
1:A:1324:A:H2'	1:A:1325:C:H6	1.72	0.54
2:C:53:ARG:HG2	2:C:54:ILE:H	1.72	0.54
5:F:6:ILE:HD13	5:F:89:VAL:HB	1.90	0.54
11:L:37:TYR:HB2	11:L:51:VAL:HG23	1.88	0.54
13:N:30:ILE:CG2	13:N:41:TRP:HB2	2.34	0.54
13:N:42:ASN:HB3	13:N:46:LYS:HE2	1.89	0.54
15:P:51:ARG:HB3	15:P:51:ARG:HH11	1.71	0.54
1:A:1039:G:H2'	1:A:1040:U:C6	2.43	0.54
1:A:1221:G:H5''	18:S:35:ARG:NH1	2.23	0.54
1:A:1427:C:O2'	1:A:1428:A:H5'	2.07	0.54
1:A:1479:C:H2'	1:A:1480:A:H8	1.71	0.54
1:A:187:G:H4'	19:T:79:THR:HG21	1.89	0.54
1:A:189:A:H2'	1:A:190:A:C8	2.43	0.54
1:A:621:A:H2'	1:A:622:A:C8	2.43	0.54
2:C:156:LEU:H	2:C:156:LEU:HD12	1.72	0.54
3:D:17:ASP:OD2	3:D:27:ILE:HG12	2.08	0.54
4:E:45:VAL:CG1	4:E:116:VAL:HG23	2.37	0.54
4:E:134:ASN:O	4:E:137:ARG:HG2	2.07	0.54
6:G:100:MET:O	6:G:104:VAL:HG23	2.08	0.54
10:K:70:ALA:HB1	10:K:74:LYS:HE3	1.89	0.54
13:N:15:LEU:HD12	13:N:16:ALA:H	1.71	0.54
17:R:33:THR:HG23	17:R:35:SER:H	1.73	0.54
1:A:1310:G:H2'	1:A:1311:A:O4'	2.07	0.54
1:A:190:A:H2'	1:A:191:G:O4'	2.07	0.54
1:A:415:A:H3'	1:A:416:G:H8	1.72	0.54
2:C:55:VAL:HG12	2:C:56:ILE:N	2.23	0.54
2:C:21:TRP:CB	2:C:58:ARG:HB2	2.37	0.54
8:I:38:PHE:O	8:I:44:ARG:HG2	2.07	0.54
16:Q:45:VAL:HG11	16:Q:74:LEU:HB2	1.89	0.54
1:A:1040:U:H2'	1:A:1041:G:C8	2.43	0.54
1:A:1512:U:O2'	1:A:1513:A:H5'	2.07	0.54
1:A:398:U:H2'	1:A:399:G:C8	2.42	0.54
1:A:6:G:H4'	1:A:298:A:H4'	1.88	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:845:A:H3'	1:A:846:G:O4'	2.06	0.54
1:A:865:A:H2'	1:A:866:C:C6	2.43	0.54
1:A:97:G:H2'	1:A:98:A:O4'	2.07	0.54
20:B:67:LEU:HA	20:B:89:PHE:O	2.07	0.54
1:A:716:A:N3	10:K:119:GLY:HA2	2.22	0.54
11:L:58:ASN:ND2	11:L:58:ASN:H	2.05	0.54
13:N:17:ASP:HA	13:N:21:ALA:CB	2.37	0.54
14:O:84:LEU:HD22	14:O:86:LEU:HD11	1.89	0.54
1:A:1035:A:H2'	1:A:1036:A:C8	2.43	0.54
1:A:930:C:H2'	1:A:931:C:O4'	2.08	0.54
20:B:67:LEU:HD21	20:B:157:PRO:CG	2.37	0.54
8:I:50:PRO:HG2	8:I:51:LEU:HD12	1.88	0.54
10:K:33:ILE:O	10:K:41:LEU:HB2	2.07	0.54
18:S:69:LYS:O	18:S:72:GLU:HB2	2.07	0.54
10:K:110:THR:CG2	21:U:4:LYS:HA	2.37	0.54
1:A:1100:C:O2'	1:A:1101:A:H5'	2.07	0.54
1:A:1473:G:H2'	1:A:1474:U:O4'	2.07	0.54
1:A:973:G:H3'	1:A:974:A:H5''	1.90	0.54
1:A:532:A:H62	2:C:191:THR:HB	1.72	0.54
4:E:56:PRO:O	4:E:60:GLN:HG3	2.07	0.54
6:G:19:SER:OG	6:G:22:LEU:HB2	2.06	0.54
1:A:1117:A:H5''	8:I:105:ARG:HH12	1.73	0.54
18:S:20:LYS:O	18:S:23:GLU:HB3	2.07	0.54
1:A:1307:U:H2'	1:A:1308:U:H6	1.72	0.54
1:A:638:U:H2'	1:A:639:G:O4'	2.08	0.54
20:B:148:GLY:HA2	20:B:151:LYS:HD3	1.89	0.54
20:B:58:LYS:CB	25:Z:79:GLU:HB2	2.37	0.54
2:C:122:GLN:HB3	23:X:905:ILE:C	2.28	0.54
5:F:18:VAL:O	5:F:22:ILE:HG13	2.07	0.54
9:J:11:LYS:NZ	9:J:99:GLN:H	2.05	0.54
15:P:42:ILE:HB	15:P:46:LYS:CD	2.36	0.54
17:R:52:ARG:CB	17:R:52:ARG:HH11	2.15	0.54
18:S:29:PRO:HA	18:S:47:THR:HB	1.89	0.54
19:T:53:MET:O	19:T:57:VAL:HG23	2.08	0.54
2:C:108:PRO:CG	23:X:860:ALA:N	2.71	0.54
1:A:1135:U:H2'	1:A:1135:U:O2	2.07	0.54
1:A:120:A:H2'	1:A:121:U:H5''	1.90	0.54
1:A:1439:G:H2'	1:A:1440:U:O4'	2.08	0.54
1:A:742:G:O2'	1:A:743:A:H5'	2.08	0.54
1:A:766:A:H2'	1:A:767:A:O4'	2.08	0.54
20:B:112:ARG:HA	20:B:115:ASP:OD2	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:111:ASP:O	2:C:115:VAL:HG23	2.08	0.54
5:F:61:LEU:HD12	5:F:63:ASN:OD1	2.07	0.54
7:H:50:VAL:HG22	7:H:51:GLU:N	2.22	0.54
13:N:81:ILE:HD12	13:N:82:LYS:H	1.72	0.54
16:Q:18:LYS:HA	16:Q:47:ASP:O	2.08	0.54
1:A:370:C:H2'	1:A:371:A:C8	2.42	0.54
2:C:38:VAL:HG23	2:C:39:ARG:N	2.23	0.54
4:E:9:GLU:N	24:Y:3:ASP:CB	2.71	0.54
5:F:37:HIS:HE1	5:F:65:GLU:HB2	1.73	0.54
9:J:7:ARG:HA	9:J:75:ASP:HB2	1.90	0.54
10:K:51:PHE:CE1	10:K:61:ALA:HB1	2.43	0.54
11:L:20:VAL:O	11:L:23:LEU:HG	2.08	0.54
9:J:28:THR:CA	22:V:119:GLY:C	2.75	0.54
1:A:1435:G:H2'	1:A:1436:U:C6	2.43	0.54
1:A:532:A:H62	2:C:191:THR:CG2	2.22	0.54
1:A:77:A:H2'	1:A:78:A:C8	2.43	0.54
20:B:185:ILE:HA	20:B:199:ILE:HB	1.90	0.54
4:E:84:VAL:HG22	4:E:85:LYS:H	1.73	0.54
9:J:27:GLU:CG	22:V:120:ASP:CB	2.86	0.54
9:J:81:GLU:HA	9:J:84:VAL:HG22	1.89	0.54
10:K:54:SER:HA	10:K:56:LYS:HE3	1.89	0.54
10:K:88:PRO:HA	10:K:92:ARG:NE	2.23	0.54
21:U:3:ILE:HA	21:U:19:LYS:CG	2.38	0.54
1:A:801:U:H2'	1:A:802:A:C8	2.42	0.53
2:C:6:PRO:HG3	2:C:200:TRP:HE1	1.73	0.53
11:L:8:ARG:HG3	11:L:9:LYS:N	2.17	0.53
10:K:110:THR:HG22	21:U:4:LYS:HA	1.90	0.53
1:A:824:G:O2'	1:A:825:A:H5'	2.08	0.53
1:A:960:U:O2'	1:A:1223:C:H4'	2.08	0.53
20:B:113:LEU:HG	20:B:143:LEU:HB3	1.90	0.53
20:B:185:ILE:HG22	20:B:199:ILE:HB	1.91	0.53
20:B:163:ILE:CD1	20:B:209:VAL:HG12	2.38	0.53
2:C:156:LEU:HD11	2:C:163:ARG:O	2.08	0.53
3:D:25:ARG:HD3	3:D:26:ALA:H	1.74	0.53
11:L:86:VAL:HG11	11:L:89:LEU:HD23	1.90	0.53
12:M:44:ILE:HD12	12:M:45:SER:N	2.23	0.53
1:A:53:A:C2	1:A:54:C:H1'	2.44	0.53
3:D:27:ILE:HG21	24:Y:72:CYS:CB	2.35	0.53
6:G:16:LYS:HG3	6:G:43:TYR:OH	2.08	0.53
8:I:110:VAL:HG12	8:I:111:GLU:N	2.20	0.53
1:A:1111:A:HO2'	1:A:1112:C:H6	1.55	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1499:A:O2'	1:A:1500:A:H5'	2.09	0.53
1:A:17:U:H2'	1:A:18:C:H6	1.74	0.53
1:A:405:U:O4	3:D:1:ALA:HA	2.09	0.53
20:B:58:LYS:CB	25:Z:79:GLU:N	2.29	0.53
20:B:87:ASP:O	20:B:88:GLN:HG3	2.07	0.53
2:C:78:LYS:HB3	23:X:943:LYS:HG2	1.90	0.53
3:D:138:PRO:HA	3:D:181:PHE:CD2	2.43	0.53
3:D:144:ILE:CD1	3:D:154:VAL:HG21	2.38	0.53
16:Q:4:ILE:HD12	16:Q:5:ARG:H	1.73	0.53
19:T:74:HIS:O	19:T:78:LEU:HD12	2.08	0.53
1:A:403:C:O2'	1:A:404:G:H5'	2.08	0.53
2:C:77:GLY:HA3	2:C:81:GLU:HB3	1.90	0.53
15:P:42:ILE:CG2	15:P:43:ALA:H	2.20	0.53
15:P:57:ILE:O	15:P:61:VAL:HG22	2.09	0.53
1:A:1488:G:O2'	1:A:1489:G:H5'	2.09	0.53
1:A:472:U:H2'	1:A:473:U:C6	2.44	0.53
15:P:12:LYS:HD2	15:P:13:LYS:HG3	1.89	0.53
15:P:40:ASN:HB3	15:P:49:GLY:O	2.08	0.53
9:J:27:GLU:CD	22:V:95:LYS:HG3	2.29	0.53
1:A:1508:A:H2'	1:A:1509:C:H6	1.73	0.53
1:A:202:G:H2'	1:A:203:G:H8	1.74	0.53
1:A:889:A:H61	1:A:907:A:H3'	1.74	0.53
4:E:55:VAL:N	4:E:56:PRO:HD2	2.23	0.53
6:G:110:ARG:HH22	6:G:121:ASN:HB3	1.72	0.53
8:I:38:PHE:O	8:I:41:GLU:HB2	2.09	0.53
13:N:81:ILE:O	13:N:84:ARG:HB3	2.09	0.53
16:Q:17:GLU:C	16:Q:19:SER:H	2.11	0.53
1:A:1040:U:H2'	1:A:1041:G:H8	1.74	0.53
1:A:399:G:H2'	1:A:400:C:C6	2.44	0.53
1:A:860:A:H2'	1:A:861:G:O4'	2.09	0.53
2:C:186:SER:HB3	2:C:197:VAL:CG1	2.39	0.53
14:O:15:GLY:HA3	14:O:20:ASP:OD1	2.09	0.53
16:Q:4:ILE:H	16:Q:4:ILE:HD12	1.74	0.53
16:Q:80:LYS:HE3	16:Q:80:LYS:O	2.09	0.53
21:U:14:ALA:H	21:U:16:ARG:NH2	2.07	0.53
1:A:1170:A:H2'	1:A:1171:A:O4'	2.09	0.53
1:A:1507:A:H2'	1:A:1508:A:C8	2.44	0.53
1:A:263:A:P	19:T:73:ARG:HH22	2.32	0.53
1:A:408:A:H3'	1:A:409:U:H6	1.74	0.53
1:A:846:G:H2'	1:A:846:G:N3	2.24	0.53
20:B:95:TRP:CZ3	20:B:171:ALA:HA	2.44	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:E:109:ALA:CB	4:E:135:VAL:HG23	2.39	0.53
4:E:149:PRO:HA	7:H:98:LEU:HD21	1.91	0.53
5:F:55:HIS:O	5:F:56:LYS:HG3	2.09	0.53
6:G:45:ALA:HA	6:G:48:THR:OG1	2.08	0.53
7:H:5:PRO:O	7:H:32:LYS:HE3	2.09	0.53
8:I:30:ASN:N	8:I:30:ASN:ND2	2.56	0.53
8:I:24:ASN:O	8:I:61:ASP:HA	2.09	0.53
11:L:56:LEU:HB3	11:L:58:ASN:ND2	2.24	0.53
1:A:275:G:C5'	16:Q:15:LYS:HG2	2.39	0.53
5:F:100:SER:HA	17:R:23:LYS:HD2	1.91	0.53
1:A:1103:C:C5'	20:B:96:LEU:HD12	2.37	0.53
1:A:128:G:H2'	1:A:129:A:C8	2.44	0.53
1:A:1381:U:O2'	1:A:1382:C:H5'	2.09	0.53
1:A:1452:C:H4'	1:A:1453:G:C5'	2.39	0.53
1:A:411:A:O2'	1:A:412:A:H4'	2.09	0.53
1:A:513:C:H2'	1:A:514:C:H6	1.73	0.53
1:A:636:U:H2'	1:A:637:C:C6	2.43	0.53
1:A:997:U:O2'	1:A:998:C:H5'	2.09	0.53
20:B:225:SER:HB3	25:Z:70:GLN:CG	2.39	0.53
6:G:143:MET:O	6:G:147:ASN:HB2	2.09	0.53
8:I:11:ARG:HA	8:I:105:ARG:NE	2.23	0.53
11:L:30:ARG:HH11	11:L:30:ARG:HB3	1.74	0.53
14:O:66:LEU:HB3	14:O:77:TYR:HE1	1.74	0.53
20:B:62:ARG:CA	25:Z:75:GLN:CD	2.77	0.53
1:A:1283:U:H2'	1:A:1284:C:C6	2.43	0.52
1:A:476:U:H2'	1:A:477:C:H6	1.73	0.52
1:A:922:G:H2'	1:A:923:A:H8	1.75	0.52
4:E:74:ALA:HB1	4:E:148:SER:HB3	1.91	0.52
6:G:114:SER:C	6:G:118:ARG:HG3	2.30	0.52
7:H:76:ARG:HG3	7:H:76:ARG:HH11	1.74	0.52
8:I:24:ASN:CA	8:I:26:LYS:HZ2	2.22	0.52
8:I:44:ARG:HH11	8:I:44:ARG:N	2.06	0.52
17:R:25:ILE:HG13	17:R:67:LEU:HD11	1.91	0.52
18:S:29:PRO:CA	18:S:47:THR:HB	2.39	0.52
1:A:1042:A:H2'	1:A:1043:G:O4'	2.08	0.52
1:A:1299:A:H62	1:A:1302:C:H5	1.57	0.52
8:I:90:ASP:O	8:I:93:LEU:HG	2.09	0.52
11:L:20:VAL:HG12	11:L:20:VAL:O	2.08	0.52
18:S:62:THR:HB	18:S:64:GLU:OE1	2.10	0.52
1:A:1048:G:H4'	13:N:2:LYS:HZ2	1.73	0.52
1:A:1130:A:H5'	8:I:19:PHE:CE2	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1409:C:N4	1:A:1491:G:N1	2.54	0.52
1:A:600:A:H2'	1:A:601:G:H8	1.74	0.52
3:D:197:HIS:HA	3:D:200:VAL:HG22	1.91	0.52
4:E:71:ILE:HG12	4:E:72:ASN:N	2.24	0.52
5:F:40:GLU:CG	5:F:42:TRP:HE1	2.22	0.52
6:G:3:ARG:HB3	6:G:3:ARG:CZ	2.40	0.52
9:J:39:PRO:CA	9:J:74:VAL:HG22	2.38	0.52
12:M:106:ARG:HD3	12:M:110:GLY:O	2.10	0.52
1:A:1308:U:OP1	12:M:95:PRO:HA	2.09	0.52
16:Q:56:ASP:HB3	16:Q:79:GLU:O	2.09	0.52
1:A:1320:C:H41	18:S:36:ARG:HE	1.57	0.52
1:A:936:C:H1'	1:A:1382:C:H42	1.74	0.52
1:A:610:U:O2	1:A:610:U:O4'	2.28	0.52
1:A:712:A:O2'	1:A:713:G:H5'	2.10	0.52
20:B:76:SER:OG	20:B:92:ASN:HB2	2.10	0.52
20:B:95:TRP:HH2	20:B:100:LEU:HB2	1.75	0.52
2:C:146:LYS:HG3	2:C:202:PHE:HD2	1.74	0.52
3:D:96:ARG:O	3:D:100:VAL:HG23	2.09	0.52
1:A:1309:G:N7	12:M:97:ARG:NH2	2.58	0.52
13:N:27:LYS:HD2	13:N:27:LYS:C	2.30	0.52
14:O:2:LEU:HD23	14:O:3:SER:N	2.24	0.52
1:A:1289:A:H2'	1:A:1290:G:H5'	1.91	0.52
1:A:214:C:H2'	1:A:215:C:C6	2.44	0.52
3:D:183:ARG:HH22	3:D:186:GLU:H	1.58	0.52
4:E:14:LEU:HA	4:E:36:THR:HG22	1.92	0.52
8:I:113:LYS:HG2	8:I:114:LYS:H	1.74	0.52
9:J:55:PRO:O	9:J:56:HIS:HB3	2.10	0.52
10:K:109:ILE:H	21:U:5:VAL:HB	1.75	0.52
10:K:63:GLN:HB3	10:K:94:SER:OG	2.10	0.52
11:L:35:ARG:CZ	11:L:75:GLU:HB3	2.39	0.52
16:Q:35:LYS:O	16:Q:37:ILE:HG13	2.10	0.52
17:R:62:ARG:HD3	17:R:69:TYR:HA	1.90	0.52
1:A:1332:A:H2'	1:A:1333:A:H8	1.75	0.52
1:A:1390:U:H2'	1:A:1391:U:C6	2.45	0.52
1:A:252:U:H2'	1:A:253:A:H8	1.74	0.52
1:A:36:C:H2'	1:A:37:U:O4'	2.09	0.52
1:A:56:U:H2'	1:A:57:G:C8	2.44	0.52
1:A:979:C:H2'	1:A:980:C:O4'	2.10	0.52
20:B:162:VAL:HG13	20:B:184:ALA:CB	2.39	0.52
3:D:98:ASP:CG	3:D:132:ALA:HB1	2.30	0.52
1:A:16:A:O2'	4:E:20:VAL:HG13	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:G:110:ARG:HH22	6:G:121:ASN:CB	2.23	0.52
6:G:30:MET:SD	6:G:35:LYS:HB2	2.50	0.52
14:O:70:LYS:NZ	14:O:74:VAL:HG13	2.22	0.52
21:U:36:PHE:HB3	21:U:40:PRO:HG3	1.90	0.52
1:A:1132:C:H2'	1:A:1133:G:O4'	2.09	0.52
1:A:1376:U:H2'	1:A:1377:A:H8	1.75	0.52
1:A:1412:C:H2'	1:A:1413:A:H8	1.73	0.52
1:A:423:G:H2'	1:A:424:G:O4'	2.09	0.52
1:A:492:C:H2'	1:A:493:A:H5''	1.91	0.52
1:A:958:A:N1	18:S:53:GLY:HA3	2.25	0.52
20:B:101:THR:HG23	20:B:102:ASN:H	1.75	0.52
20:B:68:PHE:HA	20:B:161:PHE:O	2.10	0.52
20:B:49:PHE:O	20:B:53:LEU:HD23	2.10	0.52
2:C:104:GLU:HG2	23:X:863:SER:CB	2.40	0.52
2:C:141:MET:CE	2:C:147:GLY:H	2.23	0.52
2:C:78:LYS:CG	2:C:81:GLU:HB2	2.24	0.52
10:K:80:ASN:HD21	10:K:107:THR:CG2	2.23	0.52
1:A:196:A:O5'	19:T:63:LYS:HE2	2.09	0.52
1:A:266:G:O2'	1:A:267:C:H3'	2.10	0.52
1:A:474:G:H2'	1:A:475:C:C6	2.45	0.52
1:A:499:A:H4'	1:A:500:G:OP1	2.09	0.52
1:A:693:G:H2'	1:A:694:A:O4'	2.10	0.52
6:G:11:ILE:H	6:G:11:ILE:HD12	1.75	0.52
6:G:91:ARG:HB3	6:G:92:PRO:HD2	1.91	0.52
13:N:30:ILE:C	13:N:32:ASP:H	2.13	0.52
15:P:9:HIS:CE1	15:P:29:ASN:HB2	2.44	0.52
1:A:208:U:H2'	1:A:210:C:C5	2.45	0.52
1:A:337:G:H2'	1:A:338:A:C8	2.45	0.52
1:A:545:C:O2'	1:A:546:A:H5'	2.10	0.52
1:A:815:A:H4'	1:A:817:C:C4	2.45	0.52
1:A:956:U:O2'	1:A:957:U:H5'	2.09	0.52
20:B:55:GLU:HG3	20:B:197:PHE:CZ	2.45	0.52
2:C:83:VAL:HG12	2:C:87:ARG:HE	1.75	0.52
3:D:131:ILE:O	3:D:134:TYR:HB2	2.10	0.52
8:I:93:LEU:HD13	8:I:97:LEU:HD23	1.92	0.52
1:A:520:A:OP2	11:L:47:ALA:HB1	2.09	0.52
12:M:106:ARG:CZ	12:M:109:LYS:HD2	2.40	0.52
17:R:44:THR:HG22	17:R:46:THR:HB	1.91	0.52
10:K:111:ASP:HB3	21:U:3:ILE:HD13	1.92	0.52
1:A:920:U:H2'	1:A:921:U:H6	1.74	0.52
20:B:67:LEU:N	20:B:67:LEU:HD22	2.21	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:F:47:LEU:HD13	5:F:51:ILE:HG22	1.91	0.52
5:F:43:GLY:O	5:F:58:HIS:HA	2.09	0.52
8:I:32:ARG:NH2	8:I:36:GLN:HG2	2.25	0.52
8:I:51:LEU:HD23	8:I:56:MET:HE3	1.90	0.52
8:I:56:MET:SD	8:I:57:VAL:N	2.82	0.52
10:K:56:LYS:O	10:K:58:THR:N	2.43	0.52
14:O:70:LYS:HZ1	14:O:74:VAL:CG1	2.21	0.52
15:P:40:ASN:HD21	15:P:42:ILE:HG13	1.75	0.52
1:A:1033:G:H2'	1:A:1034:G:O4'	2.10	0.51
1:A:195:A:H1'	1:A:222:C:O2'	2.09	0.51
1:A:736:C:H2'	1:A:737:C:C6	2.45	0.51
3:D:107:GLY:HA2	3:D:112:GLU:OE1	2.10	0.51
7:H:60:LEU:HD12	7:H:60:LEU:N	2.26	0.51
9:J:87:LEU:HB3	9:J:88:MET:HE3	1.92	0.51
10:K:36:ARG:HG2	10:K:37:GLN:H	1.74	0.51
13:N:9:GLU:O	13:N:13:VAL:HG23	2.09	0.51
18:S:35:ARG:HG2	18:S:50:VAL:CG1	2.39	0.51
18:S:4:LEU:CD1	18:S:9:PHE:H	2.17	0.51
1:A:1197:A:O2'	1:A:1198:G:H5'	2.10	0.51
1:A:300:A:H2'	1:A:301:G:O4'	2.11	0.51
1:A:309:A:H2'	1:A:310:G:H8	1.76	0.51
1:A:746:A:H2'	1:A:747:A:C8	2.44	0.51
20:B:53:LEU:HD12	20:B:219:THR:HG21	1.92	0.51
2:C:39:ARG:HG3	2:C:54:ILE:HD13	1.91	0.51
3:D:122:ILE:O	3:D:128:VAL:HG23	2.10	0.51
3:D:54:LEU:HD22	3:D:54:LEU:O	2.09	0.51
6:G:19:SER:OG	6:G:21:LEU:HG	2.10	0.51
1:A:644:U:H4'	7:H:83:ARG:HH22	1.75	0.51
8:I:11:ARG:O	8:I:11:ARG:HG3	2.10	0.51
8:I:99:LYS:HD3	8:I:100:ALA:N	2.25	0.51
10:K:111:ASP:O	17:R:72:ARG:HD3	2.09	0.51
11:L:22:ALA:HB2	11:L:56:LEU:CD2	2.40	0.51
14:O:6:ALA:O	14:O:9:LYS:HB3	2.09	0.51
1:A:1366:C:H2'	1:A:1367:C:H6	1.76	0.51
1:A:320:A:H2'	1:A:321:A:C8	2.44	0.51
1:A:590:U:OP1	7:H:30:LYS:HE2	2.10	0.51
3:D:186:GLU:O	3:D:190:LEU:HD13	2.09	0.51
6:G:45:ALA:HB2	6:G:116:ALA:O	2.10	0.51
9:J:22:THR:HG23	9:J:23:ALA:N	2.24	0.51
16:Q:24:ILE:HB	16:Q:41:THR:HB	1.92	0.51
17:R:62:ARG:HD2	17:R:69:TYR:CD2	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:K:110:THR:CG2	21:U:4:LYS:HD2	2.40	0.51
20:B:58:LYS:CB	25:Z:76:GLU:CA	2.89	0.51
1:A:1071:C:H2'	1:A:1072:G:C8	2.42	0.51
1:A:1423:G:H2'	1:A:1424:U:O4'	2.10	0.51
20:B:10:LYS:C	20:B:12:GLY:H	2.14	0.51
1:A:16:A:H4'	4:E:21:SER:H	1.76	0.51
6:G:85:GLN:O	6:G:86:VAL:C	2.49	0.51
7:H:43:GLY:O	7:H:63:LYS:HE3	2.09	0.51
11:L:48:LEU:CD2	11:L:48:LEU:H	2.18	0.51
1:A:626:G:H2'	1:A:627:G:H8	1.74	0.51
1:A:731:G:OP1	1:A:766:A:H1'	2.10	0.51
3:D:58:GLN:OE1	3:D:62:ARG:HG3	2.09	0.51
5:F:67:PRO:HG2	5:F:70:VAL:HG22	1.92	0.51
5:F:98:GLU:HG2	5:F:99:ALA:H	1.76	0.51
7:H:104:SER:O	7:H:122:GLY:HA3	2.10	0.51
7:H:92:PRO:HA	7:H:93:LYS:HZ1	1.74	0.51
10:K:80:ASN:HD21	10:K:107:THR:HG23	1.76	0.51
10:K:81:LEU:HD22	10:K:104:PHE:HB3	1.92	0.51
17:R:60:ARG:HG3	17:R:61:ALA:N	2.25	0.51
1:A:1051:C:H2'	1:A:1052:U:C6	2.45	0.51
1:A:1122:U:H2'	1:A:1123:U:C6	2.45	0.51
1:A:1366:C:H2'	1:A:1367:C:C6	2.45	0.51
1:A:642:A:H2'	1:A:643:C:C6	2.45	0.51
1:A:939:G:H4'	6:G:101:ARG:NH2	2.25	0.51
1:A:975:A:H5''	1:A:976:G:O5'	2.10	0.51
20:B:53:LEU:HA	20:B:56:LEU:HD23	1.92	0.51
2:C:186:SER:O	2:C:197:VAL:HG12	2.11	0.51
3:D:11:SER:HB2	3:D:20:LEU:HD11	1.92	0.51
3:D:2:ARG:O	3:D:3:TYR:HB2	2.11	0.51
8:I:51:LEU:HD23	8:I:56:MET:CE	2.40	0.51
10:K:88:PRO:HA	10:K:92:ARG:HD2	1.93	0.51
10:K:88:PRO:HD3	21:U:28:LEU:HD22	1.91	0.51
1:A:177:G:P	19:T:59:ARG:HE	2.33	0.51
20:B:61:SER:CB	25:Z:71:GLU:O	2.56	0.51
1:A:1005:A:H3'	1:A:1006:G:H8	1.74	0.51
1:A:1247:U:O2'	1:A:1248:A:H5'	2.10	0.51
1:A:272:C:H2'	1:A:273:U:C6	2.45	0.51
1:A:275:G:O5'	16:Q:15:LYS:HG2	2.11	0.51
1:A:751:U:H2'	1:A:752:G:O4'	2.11	0.51
20:B:132:GLU:O	20:B:136:ARG:HG3	2.11	0.51
3:D:115:GLN:HE21	3:D:119:HIS:CE1	2.28	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:G:23:ALA:O	6:G:26:VAL:HG22	2.11	0.51
1:A:1060:U:H5''	9:J:53:ILE:CG2	2.40	0.51
1:A:685:G:O4'	10:K:40:ALA:HB3	2.11	0.51
10:K:83:VAL:HG21	10:K:109:ILE:HG12	1.92	0.51
11:L:3:VAL:HG23	11:L:4:ASN:OD1	2.11	0.51
16:Q:60:ILE:HD13	16:Q:60:ILE:N	2.25	0.51
1:A:1521:C:O2'	1:A:1522:U:H5'	2.10	0.51
1:A:255:G:H5'	16:Q:17:GLU:O	2.10	0.51
1:A:838:G:H2'	1:A:839:C:O4'	2.11	0.51
2:C:110:LEU:O	2:C:203:LYS:HE2	2.10	0.51
7:H:29:SER:HB3	7:H:32:LYS:HZ2	1.76	0.51
10:K:28:ASN:ND2	10:K:29:THR:N	2.58	0.51
11:L:106:VAL:CG2	11:L:116:TYR:HB3	2.40	0.51
11:L:20:VAL:HG22	11:L:94:TYR:CE1	2.46	0.51
17:R:23:LYS:C	17:R:25:ILE:H	2.14	0.51
21:U:43:GLU:HA	21:U:43:GLU:OE1	2.10	0.51
1:A:1190:G:O2'	2:C:2:GLN:HB2	2.10	0.51
1:A:1285:A:N6	1:A:1355:G:H4'	2.26	0.51
1:A:613:C:H2'	1:A:614:C:C6	2.46	0.51
1:A:824:G:H2'	1:A:825:A:H8	1.76	0.51
20:B:67:LEU:HD12	20:B:153:MET:CE	2.39	0.51
2:C:71:ARG:O	2:C:74:ILE:HG22	2.11	0.51
7:H:8:ASP:OD2	7:H:12:ARG:HD2	2.11	0.51
11:L:103:CYS:SG	11:L:104:SER:N	2.83	0.51
11:L:113:ARG:HA	11:L:118:VAL:HG23	1.93	0.51
12:M:18:LEU:O	12:M:21:ILE:HG13	2.10	0.51
15:P:51:ARG:C	15:P:52:LEU:HD22	2.31	0.51
1:A:237:G:O2'	1:A:238:A:H5'	2.11	0.51
1:A:413:G:O6	3:D:32:LYS:HE3	2.11	0.51
6:G:14:ASP:OD2	6:G:22:LEU:HD12	2.10	0.51
6:G:61:PHE:O	6:G:65:LEU:HD13	2.11	0.51
6:G:66:GLU:HA	6:G:69:ARG:HE	1.75	0.51
12:M:106:ARG:CA	12:M:106:ARG:HH11	2.24	0.51
18:S:50:VAL:H	18:S:57:VAL:H	1.57	0.51
1:A:1098:C:C2'	1:A:1099:G:H5'	2.41	0.50
1:A:1101:A:N7	20:B:170:ILE:HD12	2.26	0.50
1:A:1434:A:H2'	1:A:1435:G:C8	2.46	0.50
1:A:219:U:H2'	1:A:220:G:C8	2.46	0.50
1:A:840:C:C2'	1:A:842:U:H5''	2.38	0.50
1:A:90:C:H2'	1:A:91:U:C6	2.47	0.50
2:C:71:ARG:NH2	2:C:74:ILE:HB	2.26	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:77:GLY:CA	2:C:81:GLU:HB3	2.40	0.50
2:C:78:LYS:HE3	2:C:81:GLU:OE2	2.11	0.50
3:D:71:PHE:O	3:D:74:TYR:HB2	2.11	0.50
4:E:81:GLN:HG2	4:E:148:SER:HA	1.92	0.50
12:M:27:THR:O	12:M:30:LYS:HB3	2.11	0.50
21:U:29:ALA:HA	21:U:32:ARG:HB2	1.94	0.50
21:U:5:VAL:HG12	21:U:6:ARG:N	2.25	0.50
1:A:1477:U:H2'	1:A:1478:U:C6	2.46	0.50
1:A:1524:C:H2'	1:A:1525:G:C8	2.46	0.50
1:A:529:G:H22	11:L:47:ALA:CB	2.24	0.50
1:A:556:C:O2'	1:A:557:G:H5'	2.11	0.50
1:A:711:G:O2'	1:A:712:A:H5'	2.11	0.50
1:A:857:C:H2'	1:A:858:G:O4'	2.10	0.50
20:B:67:LEU:HD11	20:B:157:PRO:CB	2.30	0.50
3:D:10:LEU:HD21	3:D:62:ARG:CD	2.41	0.50
3:D:169:TRP:HB3	3:D:183:ARG:HH21	1.76	0.50
8:I:11:ARG:HA	8:I:105:ARG:HE	1.76	0.50
13:N:17:ASP:HA	13:N:21:ALA:HB2	1.92	0.50
1:A:275:G:H5'	16:Q:15:LYS:HG2	1.93	0.50
1:A:214:C:H2'	1:A:215:C:H6	1.76	0.50
1:A:22:G:H4'	1:A:885:G:C8	2.47	0.50
1:A:33:A:H2'	1:A:34:C:C6	2.46	0.50
1:A:90:C:H2'	1:A:91:U:H6	1.76	0.50
3:D:18:LEU:HB2	3:D:20:LEU:HD11	1.92	0.50
4:E:89:THR:HG21	4:E:134:ASN:ND2	2.27	0.50
5:F:6:ILE:HB	5:F:89:VAL:HB	1.93	0.50
6:G:72:VAL:HB	6:G:144:ALA:CB	2.41	0.50
8:I:49:GLN:HE21	8:I:79:ARG:HD2	1.75	0.50
12:M:13:HIS:O	12:M:16:ILE:HG22	2.11	0.50
12:M:78:ARG:HH12	18:S:64:GLU:HG2	1.75	0.50
15:P:71:VAL:HA	15:P:74:LEU:CG	2.39	0.50
21:U:38:GLU:C	21:U:40:PRO:HD2	2.31	0.50
1:A:1225:A:H4'	18:S:77:ARG:HH22	1.75	0.50
1:A:1490:U:H3'	1:A:1491:G:H8	1.76	0.50
20:B:114:LYS:HA	20:B:117:GLU:OE1	2.12	0.50
20:B:76:SER:HA	20:B:92:ASN:HB2	1.94	0.50
2:C:21:TRP:HB3	2:C:58:ARG:HB2	1.93	0.50
6:G:72:VAL:HB	6:G:144:ALA:HB3	1.92	0.50
7:H:30:LYS:HZ2	7:H:30:LYS:HA	1.75	0.50
10:K:125:LYS:O	10:K:126:ARG:O	2.29	0.50
1:A:1343:G:H2'	1:A:1344:C:C6	2.46	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:216:U:H2'	1:A:217:C:C6	2.46	0.50
1:A:663:A:O2'	1:A:664:G:H5'	2.11	0.50
20:B:9:LEU:HD11	20:B:11:ALA:HB3	1.93	0.50
2:C:100:ILE:HG23	2:C:100:ILE:O	2.11	0.50
3:D:116:LEU:HB3	3:D:122:ILE:HD11	1.93	0.50
4:E:92:ARG:HB3	4:E:127:TYR:HB2	1.94	0.50
5:F:32:ALA:HB1	5:F:70:VAL:HG11	1.93	0.50
9:J:67:ILE:HG12	13:N:94:GLY:O	2.11	0.50
10:K:125:LYS:O	21:U:33:ARG:NH2	2.45	0.50
1:A:1086:U:H4'	1:A:1389:C:H5''	1.94	0.50
1:A:220:G:O2'	1:A:221:C:H5'	2.12	0.50
1:A:279:A:H4'	1:A:280:C:OP2	2.10	0.50
20:B:107:ARG:HA	20:B:110:ILE:CD1	2.42	0.50
20:B:204:ASP:CG	20:B:205:ALA:N	2.63	0.50
20:B:37:VAL:HG22	20:B:38:HIS:H	1.76	0.50
2:C:149:LYS:HB3	2:C:200:TRP:HB2	1.94	0.50
4:E:110:MET:O	4:E:113:VAL:HG22	2.10	0.50
11:L:31:GLY:HA3	11:L:54:VAL:CG1	2.41	0.50
5:F:100:SER:HA	17:R:23:LYS:CE	2.42	0.50
21:U:29:ALA:HB1	21:U:32:ARG:NH2	2.10	0.50
21:U:8:ASN:O	21:U:9:GLU:HB2	2.12	0.50
1:A:110:C:H2'	1:A:111:G:O4'	2.12	0.50
1:A:1220:G:H2'	1:A:1221:G:H8	1.77	0.50
1:A:909:A:H2'	1:A:910:C:O4'	2.11	0.50
20:B:100:LEU:O	20:B:178:LEU:HG	2.11	0.50
2:C:154:GLY:HA2	2:C:163:ARG:H	1.77	0.50
9:J:57:VAL:HG13	9:J:58:ASN:N	2.27	0.50
12:M:38:ILE:HG13	12:M:55:LEU:CD2	2.41	0.50
12:M:89:ARG:HH11	12:M:94:LEU:HD13	1.76	0.50
13:N:27:LYS:HD2	13:N:28:ALA:N	2.26	0.50
14:O:78:THR:HA	14:O:81:ILE:CD1	2.42	0.50
1:A:685:G:O2'	1:A:686:U:H5'	2.12	0.50
1:A:840:C:C2	1:A:842:U:H4'	2.47	0.50
1:A:971:G:H3'	1:A:971:G:OP1	2.12	0.50
20:B:95:TRP:CE3	20:B:171:ALA:HA	2.47	0.50
5:F:39:LEU:HD13	5:F:40:GLU:H	1.77	0.50
9:J:41:PRO:O	9:J:42:LEU:HB2	2.12	0.50
11:L:95:HIS:HD1	11:L:96:THR:N	2.08	0.50
15:P:52:LEU:HG	15:P:75:ILE:CG1	2.40	0.50
10:K:122:PRO:HG2	21:U:35:GLU:HG2	1.93	0.50
1:A:1142:G:H3'	1:A:1143:G:H8	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1284:C:H3'	1:A:1285:A:C5'	2.42	0.50
1:A:1324:A:H2'	1:A:1325:C:C6	2.46	0.50
20:B:218:ALA:HA	20:B:221:ARG:HE	1.76	0.50
20:B:55:GLU:N	25:Z:80:LEU:C	2.63	0.50
4:E:41:GLY:HA2	4:E:118:GLY:HA2	1.94	0.50
10:K:56:LYS:H	10:K:56:LYS:HD3	1.75	0.50
11:L:54:VAL:HG12	11:L:56:LEU:HD12	1.93	0.50
12:M:10:ASP:HA	12:M:44:ILE:CD1	2.41	0.50
16:Q:10:ARG:NH2	16:Q:11:VAL:HG23	2.27	0.50
1:A:1372:U:OP1	8:I:72:SER:HB2	2.12	0.49
1:A:49:U:O2'	1:A:50:A:H2'	2.11	0.49
1:A:600:A:H2'	1:A:601:G:C8	2.48	0.49
1:A:72:A:H2'	1:A:73:C:C6	2.47	0.49
1:A:807:A:H2'	1:A:808:C:C6	2.47	0.49
3:D:69:ARG:HE	3:D:69:ARG:CA	2.25	0.49
3:D:77:GLU:O	3:D:81:LEU:HG	2.11	0.49
4:E:37:VAL:HG11	4:E:113:VAL:HG12	1.93	0.49
6:G:103:ILE:O	6:G:107:ALA:HB2	2.11	0.49
1:A:1096:C:O2'	1:A:1097:C:H5'	2.12	0.49
1:A:1108:G:H5'	2:C:175:HIS:CD2	2.47	0.49
1:A:1110:A:C2'	1:A:1111:A:H5'	2.42	0.49
1:A:182:A:H1'	1:A:183:C:C5	2.47	0.49
1:A:900:A:H2'	1:A:901:A:C8	2.48	0.49
2:C:150:VAL:HG12	2:C:151:GLU:N	2.27	0.49
3:D:112:GLU:OE2	3:D:153:ARG:HD3	2.12	0.49
3:D:17:ASP:HB2	3:D:27:ILE:HG23	1.94	0.49
3:D:51:GLY:O	3:D:55:ARG:HB2	2.12	0.49
10:K:49:SER:HA	10:K:68:ARG:HH21	1.77	0.49
1:A:1137:C:O2'	1:A:1138:G:H5'	2.12	0.49
1:A:1169:A:H2'	1:A:1170:A:C8	2.47	0.49
1:A:1481:U:H2'	1:A:1482:G:C8	2.47	0.49
1:A:251:G:H4'	1:A:252:U:H5'	1.93	0.49
1:A:317:U:H2'	1:A:318:G:H8	1.74	0.49
1:A:31:G:H2'	1:A:48:C:H5	1.77	0.49
1:A:841:C:H3'	1:A:843:U:OP2	2.11	0.49
1:A:71:A:N6	1:A:99:C:H1'	2.24	0.49
20:B:113:LEU:O	20:B:117:GLU:HG3	2.12	0.49
20:B:36:LYS:N	20:B:36:LYS:HE3	2.27	0.49
2:C:122:GLN:O	23:X:905:ILE:CA	2.48	0.49
16:Q:18:LYS:HE3	16:Q:48:GLU:HG2	1.93	0.49
17:R:40:PRO:HD2	17:R:43:ILE:HD11	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:U:37:TYR:C	21:U:40:PRO:HD2	2.33	0.49
2:C:107:LYS:H	23:X:860:ALA:HB2	1.77	0.49
1:A:546:A:H4'	1:A:548:G:O3'	2.12	0.49
1:A:837:U:H2'	1:A:838:G:H8	1.77	0.49
1:A:969:A:N3	1:A:970:C:O2	2.45	0.49
20:B:195:VAL:HG12	20:B:197:PHE:H	1.78	0.49
20:B:59:ILE:HD12	20:B:60:ALA:N	2.27	0.49
8:I:24:ASN:HA	8:I:26:LYS:HZ2	1.78	0.49
12:M:106:ARG:HE	12:M:112:ARG:CG	2.14	0.49
15:P:5:ARG:HD2	15:P:5:ARG:H	1.77	0.49
18:S:51:HIS:HA	18:S:55:GLN:O	2.13	0.49
19:T:68:LYS:HG3	19:T:69:ASN:ND2	2.28	0.49
2:C:104:GLU:HG3	23:X:863:SER:CB	2.43	0.49
1:A:1460:C:H2'	1:A:1461:G:O4'	2.11	0.49
1:A:537:G:H2'	1:A:538:G:C8	2.47	0.49
1:A:677:U:H2'	1:A:678:U:C6	2.48	0.49
1:A:98:A:H2'	1:A:99:C:C6	2.47	0.49
2:C:85:LYS:O	2:C:89:VAL:HG23	2.13	0.49
3:D:7:LYS:HG3	3:D:20:LEU:HB2	1.94	0.49
5:F:88:MET:CE	5:F:90:MET:HG3	2.43	0.49
4:E:155:LYS:HE3	7:H:70:VAL:HG13	1.94	0.49
8:I:56:MET:HA	8:I:59:LYS:HB2	1.94	0.49
12:M:21:ILE:HG22	12:M:64:VAL:CG1	2.41	0.49
15:P:67:ILE:HG13	15:P:71:VAL:CG1	2.42	0.49
19:T:61:ALA:HA	19:T:66:ILE:O	2.13	0.49
1:A:1206:G:H4'	2:C:192:TYR:HA	1.93	0.49
1:A:1234:C:H2'	1:A:1235:U:C6	2.48	0.49
1:A:218:U:H2'	1:A:219:U:H6	1.77	0.49
1:A:252:U:H2'	1:A:253:A:C8	2.48	0.49
1:A:335:C:H2'	1:A:336:A:H8	1.78	0.49
1:A:34:C:H2'	1:A:35:G:C8	2.47	0.49
1:A:708:C:H2'	1:A:709:U:C6	2.47	0.49
8:I:4:GLN:NE2	8:I:21:LYS:HE3	2.28	0.49
10:K:52:ARG:O	10:K:54:SER:N	2.46	0.49
11:L:35:ARG:O	11:L:52:CYS:HB2	2.13	0.49
12:M:58:GLU:HA	12:M:61:LYS:HE2	1.94	0.49
12:M:89:ARG:NH1	12:M:94:LEU:HD13	2.27	0.49
14:O:70:LYS:HZ1	14:O:74:VAL:HA	1.77	0.49
18:S:20:LYS:HB3	18:S:20:LYS:HZ2	1.78	0.49
1:A:1002:G:N3	1:A:1002:G:H2'	2.27	0.49
1:A:1285:A:H62	1:A:1355:G:H4'	1.76	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:238:A:C2'	1:A:239:U:H5''	2.43	0.49
1:A:806:C:H2'	1:A:807:A:C8	2.48	0.49
20:B:71:THR:HG23	20:B:93:HIS:C	2.33	0.49
2:C:77:GLY:O	2:C:79:LYS:N	2.46	0.49
4:E:110:MET:N	4:E:110:MET:SD	2.85	0.49
4:E:111:ARG:O	4:E:115:GLU:HG3	2.13	0.49
5:F:54:LEU:HD13	5:F:55:HIS:H	1.77	0.49
11:L:35:ARG:HG3	11:L:36:VAL:N	2.26	0.49
15:P:29:ASN:N	15:P:29:ASN:HD22	2.11	0.49
18:S:64:GLU:OE1	18:S:65:MET:HG3	2.12	0.49
2:C:79:LYS:HE3	23:X:944:ARG:HD2	1.83	0.49
1:A:174:A:O2'	1:A:175:C:H5'	2.13	0.49
1:A:56:U:H2'	1:A:57:G:H8	1.77	0.49
1:A:575:G:H4'	1:A:576:C:O5'	2.13	0.49
20:B:15:PHE:HD1	20:B:16:GLY:H	1.61	0.49
20:B:31:PHE:HA	20:B:41:ASN:HB2	1.94	0.49
20:B:46:VAL:CG1	20:B:47:PRO:HD3	2.31	0.49
2:C:150:VAL:HG12	2:C:151:GLU:H	1.77	0.49
2:C:78:LYS:H	2:C:81:GLU:CB	2.25	0.49
3:D:172:VAL:HA	3:D:178:GLU:O	2.11	0.49
4:E:150:GLU:C	4:E:152:VAL:H	2.16	0.49
6:G:131:GLY:O	6:G:134:VAL:HG12	2.13	0.49
6:G:94:ARG:HD3	6:G:98:LEU:HD11	1.93	0.49
7:H:29:SER:HB3	7:H:32:LYS:HG3	1.95	0.49
8:I:118:ARG:HH22	8:I:122:ARG:NH2	2.10	0.49
8:I:53:LEU:HD13	8:I:53:LEU:O	2.12	0.49
8:I:64:ILE:HG22	8:I:65:THR:N	2.28	0.49
16:Q:68:LYS:O	16:Q:69:THR:CB	2.61	0.49
1:A:1215:G:H8	1:A:1215:G:H5'	1.78	0.49
1:A:179:A:H2'	1:A:180:U:C6	2.48	0.49
1:A:79:G:H2'	1:A:80:A:O4'	2.13	0.49
20:B:113:LEU:C	20:B:113:LEU:HD23	2.33	0.49
20:B:22:TRP:CG	20:B:23:ASN:N	2.81	0.49
20:B:58:LYS:HG3	25:Z:76:GLU:CA	2.40	0.49
7:H:17:GLN:NE2	7:H:69:ALA:HB1	2.28	0.49
12:M:15:VAL:HG13	12:M:29:SER:OG	2.13	0.49
1:A:723:U:O4'	21:U:48:LYS:HD3	2.12	0.49
2:C:71:ARG:HH12	23:X:865:LEU:C	2.15	0.49
1:A:1007:U:H2'	1:A:1008:U:H6	1.77	0.49
1:A:1504:G:H4'	1:A:1505:G:C4	2.48	0.49
1:A:462:G:H3'	1:A:463:U:H5''	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:633:G:H2'	1:A:634:C:C6	2.47	0.49
1:A:65:A:C2'	1:A:65:A:N3	2.74	0.49
3:D:64:TYR:HD1	3:D:64:TYR:H	1.59	0.49
3:D:84:ASN:HD22	3:D:87:GLU:N	2.10	0.49
7:H:24:VAL:CG1	7:H:60:LEU:HB2	2.43	0.49
8:I:43:ALA:C	8:I:45:MET:H	2.16	0.49
8:I:23:GLY:N	8:I:60:LEU:HA	2.24	0.49
8:I:87:MET:SD	8:I:94:ARG:HG3	2.53	0.49
9:J:41:PRO:O	9:J:71:LEU:HD13	2.13	0.49
11:L:58:ASN:HD22	11:L:58:ASN:N	2.11	0.49
16:Q:10:ARG:NE	16:Q:10:ARG:CA	2.76	0.49
1:A:1343:G:H2'	1:A:1344:C:H6	1.78	0.48
1:A:1464:U:H2'	1:A:1465:A:C8	2.48	0.48
1:A:235:C:H2'	1:A:236:A:C8	2.47	0.48
1:A:33:A:H2'	1:A:34:C:H6	1.77	0.48
20:B:162:VAL:HG11	20:B:172:ILE:HG12	1.95	0.48
20:B:215:ALA:O	20:B:218:ALA:HB3	2.13	0.48
20:B:60:ALA:HB3	20:B:223:GLY:HA3	1.95	0.48
20:B:23:ASN:C	20:B:23:ASN:HD22	2.16	0.48
2:C:119:ILE:O	2:C:123:LEU:HG	2.12	0.48
10:K:69:CYS:C	10:K:71:ASP:N	2.66	0.48
10:K:92:ARG:HH11	10:K:92:ARG:CB	2.23	0.48
14:O:87:ARG:HH11	14:O:87:ARG:HA	1.79	0.48
15:P:20:VAL:HG21	15:P:32:PHE:CD2	2.48	0.48
2:C:77:GLY:HA2	23:X:943:LYS:NZ	2.28	0.48
1:A:1130:A:O2'	1:A:1131:G:H5'	2.13	0.48
1:A:1172:C:H2'	1:A:1173:U:H6	1.76	0.48
1:A:1271:A:H2'	1:A:1272:G:H8	1.78	0.48
1:A:1397:C:H4'	1:A:1398:A:OP2	2.13	0.48
1:A:1452:C:H5'	1:A:1453:G:C4	2.47	0.48
1:A:513:C:H2'	1:A:514:C:C6	2.49	0.48
1:A:522:C:H41	11:L:49:ARG:NH2	2.10	0.48
1:A:636:U:H2'	1:A:637:C:H6	1.78	0.48
20:B:162:VAL:HG21	20:B:168:GLU:HB2	1.95	0.48
2:C:113:LYS:HG3	2:C:117:ASP:OD2	2.13	0.48
2:C:122:GLN:HE22	2:C:136:ALA:HB1	1.78	0.48
13:N:74:ARG:O	13:N:74:ARG:HD3	2.13	0.48
15:P:1:MET:H2	15:P:24:SER:HB3	1.78	0.48
1:A:1281:C:H5'	1:A:1282:C:C5	2.48	0.48
1:A:1314:C:H2'	1:A:1315:U:C6	2.49	0.48
1:A:205:A:H2'	1:A:206:C:C6	2.44	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:321:A:O2'	1:A:322:C:H5'	2.14	0.48
1:A:642:A:H2'	1:A:643:C:H6	1.76	0.48
1:A:806:C:H2'	1:A:807:A:H8	1.77	0.48
1:A:915:A:H2'	1:A:916:U:H5'	1.94	0.48
20:B:9:LEU:H	20:B:9:LEU:HD12	1.78	0.48
6:G:14:ASP:OD1	6:G:15:PRO:HD2	2.14	0.48
6:G:16:LYS:C	6:G:16:LYS:HD3	2.33	0.48
8:I:18:VAL:HG21	8:I:82:ILE:HG13	1.95	0.48
20:B:225:SER:H	25:Z:74:GLU:CB	2.24	0.48
1:A:255:G:H2'	1:A:256:U:C6	2.48	0.48
1:A:412:A:H1'	1:A:413:G:C8	2.43	0.48
1:A:87:C:N3	1:A:88:U:H1'	2.28	0.48
1:A:16:A:N1	1:A:919:A:H2	2.10	0.48
2:C:5:HIS:CD2	2:C:7:ASN:HB2	2.49	0.48
4:E:45:VAL:HG23	4:E:71:ILE:CG2	2.43	0.48
7:H:87:ARG:O	7:H:91:LEU:HG	2.14	0.48
7:H:92:PRO:HA	7:H:93:LYS:HZ2	1.77	0.48
8:I:112:ARG:HH11	8:I:112:ARG:HB2	1.77	0.48
9:J:88:MET:C	9:J:90:LEU:H	2.17	0.48
1:A:1506:U:H4'	10:K:128:VAL:OXT	2.13	0.48
13:N:59:GLN:N	13:N:59:GLN:NE2	2.61	0.48
9:J:55:PRO:HA	13:N:80:ARG:HH22	1.77	0.48
15:P:12:LYS:C	15:P:14:ARG:H	2.17	0.48
16:Q:10:ARG:NH1	16:Q:11:VAL:HB	2.28	0.48
1:A:1072:G:H2'	1:A:1073:U:C6	2.48	0.48
1:A:1110:A:N7	1:A:1111:A:N6	2.58	0.48
1:A:239:U:H5''	1:A:239:U:H6	1.78	0.48
1:A:301:G:H2'	1:A:302:G:H8	1.79	0.48
1:A:333:U:H2'	1:A:334:C:C6	2.49	0.48
1:A:5:U:H1'	1:A:6:G:C2	2.48	0.48
20:B:206:ILE:O	20:B:209:VAL:HG23	2.13	0.48
20:B:71:THR:CG2	20:B:94:ARG:HH21	2.25	0.48
2:C:109:GLU:OE1	23:X:858:GLY:CA	2.58	0.48
2:C:135:ARG:C	2:C:137:VAL:H	2.16	0.48
2:C:115:VAL:CG1	2:C:137:VAL:HG13	2.43	0.48
4:E:17:VAL:HA	4:E:34:ALA:HA	1.93	0.48
5:F:12:PRO:HG3	5:F:54:LEU:HG	1.94	0.48
5:F:67:PRO:O	5:F:70:VAL:HG22	2.13	0.48
6:G:137:ARG:HG2	6:G:141:HIS:CE1	2.48	0.48
16:Q:60:ILE:HB	16:Q:72:TRP:HE3	1.78	0.48
1:A:1081:A:O2'	1:A:1082:A:H5'	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1456:A:H2'	1:A:1457:G:O4'	2.14	0.48
20:B:160:LEU:O	20:B:182:VAL:HA	2.14	0.48
4:E:104:ILE:HG23	4:E:104:ILE:O	2.14	0.48
5:F:66:ALA:HB1	5:F:67:PRO:HD2	1.96	0.48
8:I:51:LEU:CD1	8:I:82:ILE:HG21	2.42	0.48
9:J:88:MET:H	9:J:88:MET:CE	2.26	0.48
12:M:84:CYS:HA	18:S:72:GLU:O	2.13	0.48
15:P:46:LYS:N	15:P:46:LYS:HD3	2.19	0.48
16:Q:20:ILE:HG21	16:Q:52:CYS:SG	2.53	0.48
1:A:664:G:H5''	17:R:52:ARG:NH2	2.27	0.48
19:T:68:LYS:CG	19:T:69:ASN:H	2.12	0.48
1:A:1018:G:H2'	1:A:1019:A:C8	2.48	0.48
1:A:1060:U:C5'	9:J:53:ILE:HG22	2.42	0.48
1:A:1478:U:H2'	1:A:1479:C:C6	2.48	0.48
1:A:1526:G:O2'	1:A:1527:U:H5'	2.13	0.48
1:A:208:U:C2'	1:A:209:U:H5''	2.43	0.48
1:A:370:C:O2'	1:A:371:A:H5'	2.13	0.48
1:A:426:U:H2'	1:A:427:U:C6	2.49	0.48
1:A:659:U:H2'	1:A:660:C:C6	2.49	0.48
1:A:911:U:H2'	1:A:912:C:C6	2.49	0.48
20:B:172:ILE:O	20:B:175:ALA:HB3	2.13	0.48
20:B:35:ASN:O	20:B:36:LYS:HB2	2.13	0.48
2:C:178:ARG:O	2:C:206:ILE:HA	2.14	0.48
3:D:94:GLU:CA	3:D:103:ARG:HH22	2.27	0.48
7:H:111:THR:HG23	7:H:114:ALA:CB	2.44	0.48
1:A:588:G:H5'	7:H:2:MET:O	2.14	0.48
1:A:1060:U:H4'	9:J:54:SER:HB2	1.95	0.48
10:K:83:VAL:CG2	10:K:109:ILE:HG12	2.44	0.48
12:M:109:LYS:HG3	12:M:110:GLY:N	2.28	0.48
1:A:1137:C:H1'	1:A:1138:G:N2	2.29	0.48
1:A:1376:U:H2'	1:A:1377:A:C8	2.49	0.48
1:A:265:G:H2'	1:A:267:C:H5	1.78	0.48
1:A:421:U:H1'	2:C:125:ARG:HH12	1.79	0.48
1:A:577:G:O2'	1:A:578:C:H5'	2.14	0.48
1:A:720:C:C5'	17:R:40:PRO:HA	2.43	0.48
1:A:734:G:H2'	1:A:735:C:C6	2.49	0.48
1:A:782:A:H2'	1:A:783:C:O4'	2.13	0.48
20:B:61:SER:HB3	25:Z:74:GLU:C	2.27	0.48
3:D:93:LEU:O	3:D:96:ARG:HB3	2.14	0.48
4:E:40:ASP:C	4:E:42:ASN:H	2.17	0.48
4:E:63:MET:O	4:E:66:ALA:HB3	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:G:71:THR:HA	6:G:90:VAL:HG22	1.96	0.48
8:I:18:VAL:HG21	8:I:82:ILE:CG1	2.43	0.48
16:Q:23:ALA:HB1	16:Q:40:THR:HG23	1.94	0.48
19:T:49:ALA:HA	19:T:52:GLU:HB3	1.96	0.48
19:T:60:GLN:N	19:T:60:GLN:CD	2.67	0.48
1:A:147:G:H2'	1:A:148:G:C8	2.49	0.48
1:A:21:G:H2'	1:A:22:G:C8	2.49	0.48
1:A:34:C:H2'	1:A:35:G:H8	1.79	0.48
20:B:150:ILE:HG13	20:B:153:MET:CE	2.39	0.48
20:B:66:ILE:C	20:B:67:LEU:HD13	2.34	0.48
4:E:19:ARG:O	4:E:20:VAL:HB	2.14	0.48
9:J:22:THR:CG2	9:J:23:ALA:N	2.77	0.48
10:K:92:ARG:NH2	10:K:111:ASP:OD1	2.47	0.48
17:R:64:LEU:CB	17:R:66:LEU:HG	2.44	0.48
17:R:70:THR:OG1	17:R:71:ASP:N	2.46	0.48
9:J:27:GLU:OE2	22:V:95:LYS:HG3	2.14	0.48
1:A:303:A:H2'	1:A:304:U:O4'	2.14	0.48
1:A:437:U:H5''	3:D:151:GLN:NE2	2.29	0.48
1:A:946:A:H2'	1:A:947:G:H8	1.75	0.48
2:C:120:THR:HA	2:C:123:LEU:HD12	1.96	0.48
2:C:21:TRP:CD1	2:C:58:ARG:HD2	2.49	0.48
3:D:43:ARG:HB3	23:X:897:PRO:HD2	1.25	0.48
5:F:75:GLU:O	5:F:79:ARG:HG2	2.14	0.48
6:G:142:ARG:C	6:G:146:ALA:HB3	2.34	0.48
7:H:11:THR:HG22	7:H:15:ASN:ND2	2.29	0.48
8:I:12:LYS:N	8:I:109:GLN:HE22	2.07	0.48
8:I:32:ARG:HD3	8:I:37:TYR:HD1	1.78	0.48
9:J:5:ARG:N	9:J:5:ARG:HD3	2.29	0.48
10:K:121:ARG:NH1	10:K:121:ARG:HG3	2.29	0.48
10:K:30:ILE:HG22	10:K:45:THR:CA	2.41	0.48
11:L:35:ARG:HH21	11:L:75:GLU:HB3	1.78	0.48
11:L:90:PRO:C	11:L:92:VAL:H	2.17	0.48
12:M:78:ARG:HH22	12:M:82:LEU:HD11	1.78	0.48
16:Q:22:VAL:HG21	16:Q:58:VAL:HG21	1.96	0.48
1:A:1294:G:H2'	1:A:1295:U:H6	1.79	0.47
1:A:232:G:H1'	1:A:262:A:N1	2.29	0.47
1:A:560:A:H5'	1:A:566:G:N2	2.28	0.47
1:A:677:U:H2'	1:A:678:U:H6	1.77	0.47
1:A:864:A:H2'	1:A:865:A:C8	2.49	0.47
20:B:162:VAL:O	20:B:184:ALA:HA	2.14	0.47
20:B:45:THR:HA	20:B:48:MET:HG3	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:46:LEU:CD2	2:C:75:VAL:HG13	2.44	0.47
3:D:117:VAL:HG12	3:D:130:ASN:C	2.35	0.47
4:E:40:ASP:O	4:E:42:ASN:N	2.45	0.47
5:F:18:VAL:HG21	5:F:58:HIS:CG	2.49	0.47
13:N:79:SER:O	13:N:81:ILE:HD12	2.14	0.47
15:P:36:VAL:O	15:P:36:VAL:HG13	2.14	0.47
23:X:733:VAL:HG12	23:X:750:ILE:HG22	1.96	0.47
1:A:1220:G:H4'	18:S:33:TRP:O	2.14	0.47
1:A:1329:A:O2'	1:A:1330:U:H5'	2.13	0.47
1:A:327:A:H1'	1:A:329:A:O4'	2.13	0.47
1:A:607:A:H2'	1:A:608:A:C8	2.49	0.47
1:A:649:A:H2'	1:A:650:G:O4'	2.14	0.47
1:A:719:C:H1'	17:R:37:LYS:HE3	1.96	0.47
1:A:764:C:H3'	1:A:765:G:N2	2.25	0.47
1:A:844:G:H21	1:A:845:A:H62	1.61	0.47
1:A:878:A:C5'	7:H:80:PRO:HG2	2.43	0.47
1:A:901:A:H3'	1:A:902:G:O4'	2.15	0.47
1:A:953:G:H2'	1:A:954:G:O4'	2.14	0.47
1:A:975:A:H4'	1:A:976:G:OP2	2.14	0.47
20:B:156:LEU:HD12	20:B:156:LEU:H	1.80	0.47
20:B:80:LYS:O	20:B:84:LEU:N	2.47	0.47
3:D:194:ILE:HD11	3:D:199:ILE:HD11	1.95	0.47
6:G:58:LEU:HB3	6:G:59:GLU:OE2	2.14	0.47
7:H:10:LEU:HA	7:H:74:ILE:HD11	1.95	0.47
10:K:15:VAL:HG11	10:K:35:ASP:HB2	1.94	0.47
1:A:755:G:OP2	14:O:64:LYS:HG2	2.13	0.47
15:P:33:ILE:N	15:P:33:ILE:HD12	2.29	0.47
1:A:109:A:H4'	1:A:110:C:OP2	2.14	0.47
1:A:541:G:H2'	1:A:542:G:H8	1.79	0.47
1:A:664:G:N2	1:A:741:G:H1	2.02	0.47
1:A:957:U:H3	1:A:960:U:H5''	1.77	0.47
2:C:71:ARG:NH1	23:X:865:LEU:C	2.68	0.47
2:C:75:VAL:O	2:C:75:VAL:HG12	2.14	0.47
5:F:70:VAL:HA	5:F:73:GLU:HG3	1.97	0.47
9:J:48:ARG:HA	9:J:66:GLU:HA	1.95	0.47
10:K:121:ARG:HG3	10:K:121:ARG:HH11	1.79	0.47
1:A:684:U:O2'	10:K:39:ASN:HB3	2.14	0.47
10:K:52:ARG:HD2	10:K:53:GLY:H	1.79	0.47
10:K:63:GLN:O	10:K:67:GLU:HB3	2.14	0.47
12:M:11:HIS:O	12:M:12:LYS:HG2	2.14	0.47
12:M:33:LEU:HB3	12:M:38:ILE:O	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:M:77:LYS:O	12:M:81:ASP:N	2.44	0.47
13:N:72:PHE:CE2	13:N:77:GLY:HA2	2.49	0.47
15:P:26:ASN:OD1	15:P:31:ARG:HB3	2.14	0.47
15:P:39:PHE:HE2	15:P:70:ARG:HH21	1.63	0.47
18:S:12:LEU:O	18:S:15:LEU:HB3	2.13	0.47
21:U:35:GLU:HB2	21:U:37:TYR:CZ	2.50	0.47
1:A:1038:C:H2'	1:A:1039:G:C8	2.47	0.47
1:A:1014:A:C2	1:A:1219:A:H1'	2.49	0.47
1:A:1432:G:H8	1:A:1432:G:OP2	1.97	0.47
1:A:1452:C:H4'	1:A:1453:G:H5''	1.96	0.47
1:A:235:C:H2'	1:A:236:A:H8	1.78	0.47
1:A:254:G:O2'	1:A:255:G:H5'	2.13	0.47
3:D:163:GLN:HB2	3:D:164:ARG:HH12	1.80	0.47
8:I:30:ASN:HD21	8:I:65:THR:HA	1.80	0.47
9:J:80:THR:N	9:J:84:VAL:HG11	2.29	0.47
11:L:80:LEU:O	11:L:97:VAL:HG23	2.14	0.47
15:P:39:PHE:CE1	15:P:74:LEU:HD22	2.49	0.47
1:A:1071:C:O2'	1:A:1072:G:H5'	2.14	0.47
1:A:1096:C:H2'	1:A:1097:C:C6	2.50	0.47
1:A:1410:A:H2'	1:A:1411:C:C6	2.49	0.47
1:A:1414:U:H2'	1:A:1415:G:H8	1.79	0.47
1:A:193:C:H2'	1:A:194:C:C6	2.49	0.47
1:A:343:U:O2'	1:A:344:A:H2'	2.14	0.47
1:A:537:G:H2'	1:A:538:G:H8	1.78	0.47
1:A:894:G:O2'	1:A:895:G:H5'	2.15	0.47
2:C:71:ARG:O	2:C:75:VAL:HG23	2.15	0.47
10:K:82:GLU:HG3	10:K:107:THR:OG1	2.13	0.47
12:M:22:TYR:HB3	12:M:69:ARG:HH22	1.78	0.47
16:Q:8:GLN:HB3	16:Q:57:VAL:HG13	1.95	0.47
18:S:4:LEU:N	18:S:5:LYS:HE3	2.29	0.47
1:A:1352:C:H2'	1:A:1353:G:C8	2.50	0.47
1:A:1367:C:O2'	1:A:1368:A:H5'	2.14	0.47
1:A:157:U:O2'	1:A:158:G:H5'	2.13	0.47
1:A:418:C:H2'	1:A:419:C:H6	1.79	0.47
1:A:434:U:O2	1:A:434:U:H2'	2.14	0.47
1:A:608:A:H2'	1:A:609:A:O4'	2.14	0.47
1:A:672:U:H2'	1:A:673:A:H8	1.78	0.47
1:A:87:C:H2'	1:A:88:U:C4'	2.44	0.47
20:B:13:VAL:HG11	20:B:207:ARG:HB2	1.95	0.47
20:B:56:LEU:HD22	25:Z:82:ALA:HA	1.70	0.47
20:B:79:VAL:HG13	20:B:90:PHE:HD1	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:117:VAL:HG22	3:D:122:ILE:HG13	1.97	0.47
3:D:29:THR:O	3:D:30:LYS:HB2	2.13	0.47
3:D:81:LEU:CD1	3:D:92:LEU:HD21	2.45	0.47
3:D:94:GLU:OE2	3:D:94:GLU:HA	2.14	0.47
6:G:132:THR:HA	6:G:135:LYS:HB3	1.97	0.47
18:S:43:MET:O	18:S:46:LEU:HB2	2.14	0.47
1:A:1369:C:H2'	1:A:1370:G:C8	2.49	0.47
2:C:66:THR:HA	2:C:101:ASN:O	2.14	0.47
5:F:46:GLN:HB2	5:F:46:GLN:HE21	1.50	0.47
6:G:94:ARG:CD	6:G:98:LEU:HD11	2.45	0.47
21:U:40:PRO:HG2	21:U:41:THR:N	2.27	0.47
1:A:1131:G:O2'	1:A:1132:C:H5'	2.15	0.47
1:A:1178:G:H2'	1:A:1180:A:OP2	2.13	0.47
1:A:1258:G:C4	1:A:1278:G:N2	2.82	0.47
1:A:333:U:H2'	1:A:334:C:H6	1.79	0.47
1:A:591:U:H2'	1:A:592:G:H8	1.79	0.47
1:A:950:U:H2'	1:A:951:G:C8	2.50	0.47
2:C:155:ARG:N	2:C:162:ALA:HA	2.21	0.47
3:D:147:LYS:HE3	3:D:147:LYS:H	1.80	0.47
9:J:57:VAL:HG22	9:J:58:ASN:H	1.80	0.47
10:K:12:ARG:N	10:K:12:ARG:HD2	2.30	0.47
1:A:1109:C:N4	1:A:1110:A:N6	2.62	0.47
1:A:1272:G:H2'	1:A:1273:C:C6	2.50	0.47
1:A:1348:U:H4'	8:I:121:ARG:HH11	1.79	0.47
1:A:384:G:H2'	1:A:385:C:H6	1.80	0.47
2:C:78:LYS:HB2	23:X:947:GLU:HG3	0.71	0.47
3:D:81:LEU:HD11	3:D:92:LEU:HD21	1.97	0.47
4:E:81:GLN:HE21	4:E:147:ASN:C	2.17	0.47
7:H:34:ALA:HB1	7:H:109:VAL:HG21	1.97	0.47
8:I:34:LEU:HD11	8:I:47:VAL:CG2	2.35	0.47
18:S:3:SER:O	18:S:4:LEU:HG	2.14	0.47
1:A:1348:U:H2'	1:A:1349:A:H8	1.80	0.47
1:A:551:U:O2'	1:A:552:U:H5'	2.15	0.47
1:A:662:U:O2'	1:A:836:G:H5''	2.15	0.47
20:B:128:LEU:HD13	20:B:129:THR:H	1.80	0.47
20:B:82:ALA:O	20:B:217:ALA:HB2	2.15	0.47
1:A:1057:G:H4'	2:C:194:VAL:O	2.15	0.47
2:C:61:LYS:O	2:C:97:PRO:HD2	2.13	0.47
3:D:117:VAL:HG12	3:D:130:ASN:CA	2.45	0.47
6:G:110:ARG:HH12	6:G:122:GLU:N	2.13	0.47
11:L:49:ARG:HH12	11:L:88:ASP:CB	2.28	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:P:33:ILE:H	15:P:33:ILE:HD12	1.79	0.47
21:U:26:GLY:C	21:U:28:LEU:N	2.66	0.47
9:J:89:ARG:CD	22:V:116:THR:HA	2.32	0.47
1:A:182:A:H1'	1:A:183:C:H5	1.79	0.47
1:A:78:A:O2'	1:A:79:G:H5'	2.14	0.47
1:A:948:C:O2'	1:A:949:A:H5'	2.15	0.47
1:A:986:U:H1'	18:S:53:GLY:O	2.14	0.47
2:C:126:ARG:HH22	2:C:190:THR:CG2	2.28	0.47
4:E:33:THR:O	4:E:34:ALA:CB	2.61	0.47
5:F:43:GLY:HA2	5:F:58:HIS:CE1	2.49	0.47
7:H:31:LEU:O	7:H:35:ILE:HG13	2.15	0.47
10:K:15:VAL:HG21	10:K:41:LEU:CD1	2.44	0.47
2:C:125:ARG:HG3	23:X:903:ARG:O	2.15	0.47
20:B:225:SER:HB2	25:Z:71:GLU:CG	2.45	0.47
1:A:1121:U:H2'	1:A:1122:U:O4'	2.15	0.46
1:A:114:U:H2'	1:A:115:G:C8	2.50	0.46
2:C:79:LYS:HD2	23:X:873:ILE:CD1	2.44	0.46
3:D:170:LEU:HD12	3:D:170:LEU:O	2.15	0.46
5:F:5:GLU:HG3	5:F:63:ASN:OD1	2.15	0.46
1:A:1124:G:H5''	9:J:38:GLY:HA3	1.98	0.46
10:K:109:ILE:O	10:K:110:THR:HG23	2.16	0.46
11:L:121:PRO:C	11:L:123:ALA:H	2.18	0.46
11:L:50:LYS:HE2	11:L:50:LYS:N	2.30	0.46
11:L:98:ARG:HA	11:L:98:ARG:NE	2.29	0.46
15:P:4:ILE:HA	15:P:20:VAL:O	2.15	0.46
15:P:71:VAL:CA	15:P:74:LEU:HG	2.41	0.46
21:U:40:PRO:O	21:U:42:THR:N	2.48	0.46
20:B:225:SER:CB	25:Z:70:GLN:HG2	2.45	0.46
1:A:1018:G:H2'	1:A:1019:A:H8	1.80	0.46
1:A:1430:A:H2'	1:A:1431:A:O4'	2.16	0.46
1:A:1448:C:H2'	1:A:1449:C:H6	1.79	0.46
20:B:116:LEU:CD1	20:B:139:GLU:HB3	2.44	0.46
3:D:123:MET:HG3	3:D:127:ARG:C	2.36	0.46
5:F:64:VAL:CG1	5:F:65:GLU:H	2.15	0.46
7:H:40:LYS:HA	7:H:45:ILE:HG13	1.97	0.46
8:I:49:GLN:N	8:I:50:PRO:HD2	2.31	0.46
10:K:60:PHE:HA	10:K:63:GLN:OE1	2.15	0.46
15:P:29:ASN:N	15:P:29:ASN:ND2	2.60	0.46
15:P:42:ILE:CB	15:P:46:LYS:HD2	2.42	0.46
18:S:10:ILE:HD11	18:S:15:LEU:HD13	1.96	0.46
19:T:70:LYS:HB2	19:T:70:LYS:NZ	2.30	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1085:U:H3'	1:A:1086:U:H5	1.80	0.46
1:A:212:G:H2'	1:A:213:G:C8	2.47	0.46
1:A:230:G:O2'	1:A:231:U:H5'	2.15	0.46
1:A:301:G:H2'	1:A:302:G:C8	2.50	0.46
1:A:552:U:H2'	1:A:553:A:C8	2.50	0.46
1:A:947:G:H2'	1:A:948:C:C6	2.51	0.46
1:A:968:A:H5'	1:A:968:A:N3	2.31	0.46
1:A:982:U:H4'	1:A:983:A:O4'	2.16	0.46
2:C:139:ASN:O	2:C:143:LEU:HD22	2.14	0.46
2:C:171:ARG:NH1	2:C:173:PRO:HG3	2.31	0.46
6:G:22:LEU:O	6:G:26:VAL:HG13	2.14	0.46
1:A:1180:A:P	8:I:98:ARG:HH22	2.38	0.46
9:J:35:GLN:H	9:J:78:GLU:HB3	1.80	0.46
12:M:53:ASP:OD1	12:M:56:ARG:HD2	2.15	0.46
9:J:67:ILE:CG1	13:N:95:LEU:HD13	2.45	0.46
14:O:28:VAL:HG22	14:O:65:LEU:HB3	1.96	0.46
1:A:1198:G:H2'	1:A:1199:U:C6	2.50	0.46
1:A:155:A:H2'	1:A:156:C:O4'	2.16	0.46
1:A:317:U:H2'	1:A:318:G:C8	2.49	0.46
1:A:366:A:O2'	1:A:394:G:N2	2.49	0.46
1:A:491:G:H2'	1:A:492:C:C6	2.51	0.46
20:B:158:ASP:O	20:B:181:PRO:HD2	2.15	0.46
2:C:11:LEU:HD22	2:C:17:TRP:CD1	2.50	0.46
2:C:131:ARG:CZ	2:C:131:ARG:HB3	2.45	0.46
4:E:89:THR:HG21	4:E:134:ASN:HD21	1.81	0.46
5:F:38:ARG:HH21	5:F:96:VAL:CG1	2.28	0.46
5:F:5:GLU:HA	5:F:63:ASN:HA	1.97	0.46
5:F:42:TRP:CZ2	5:F:61:LEU:HD23	2.51	0.46
7:H:51:GLU:O	7:H:56:PRO:HA	2.16	0.46
13:N:10:VAL:HG12	13:N:11:LYS:NZ	2.31	0.46
1:A:1231:G:H2'	1:A:1232:U:H6	1.80	0.46
1:A:1494:G:H2'	1:A:1495:U:C6	2.50	0.46
1:A:389:A:N3	1:A:389:A:H2'	2.30	0.46
1:A:767:A:H2'	1:A:768:A:C8	2.51	0.46
5:F:71:ILE:HG13	5:F:72:ASP:N	2.29	0.46
7:H:64:TYR:CA	7:H:70:VAL:HG23	2.45	0.46
1:A:751:U:H4'	14:O:23:SER:HA	1.97	0.46
15:P:6:LEU:HD11	15:P:71:VAL:HB	1.96	0.46
1:A:1085:U:H3'	1:A:1086:U:C5	2.51	0.46
1:A:1016:A:H5'	1:A:1218:C:H4'	1.97	0.46
1:A:1391:U:H2'	1:A:1392:G:H8	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:563:A:H2'	1:A:567:G:C8	2.50	0.46
1:A:674:G:H2'	1:A:675:A:C8	2.49	0.46
1:A:812:G:OP1	1:A:812:G:H4'	2.16	0.46
20:B:95:TRP:CH2	20:B:100:LEU:HB2	2.50	0.46
20:B:119:GLN:HA	20:B:124:THR:HG23	1.98	0.46
2:C:89:VAL:C	2:C:91:ALA:H	2.19	0.46
4:E:108:GLY:N	4:E:110:MET:SD	2.89	0.46
6:G:130:LYS:N	6:G:134:VAL:HG11	2.31	0.46
8:I:44:ARG:O	8:I:47:VAL:HG22	2.15	0.46
15:P:7:ALA:HB1	15:P:29:ASN:CB	2.45	0.46
16:Q:24:ILE:O	16:Q:40:THR:HA	2.14	0.46
20:B:58:LYS:HB2	25:Z:79:GLU:H	1.64	0.46
1:A:1256:A:O4'	1:A:1278:G:N2	2.49	0.46
1:A:1315:U:H3'	1:A:1316:G:C8	2.51	0.46
1:A:26:A:H61	1:A:558:G:H1'	1.81	0.46
1:A:123:U:OP1	1:A:312:C:H5'	2.16	0.46
1:A:844:G:N7	1:A:846:G:N3	2.63	0.46
20:B:163:ILE:HG13	20:B:185:ILE:HD11	1.96	0.46
2:C:146:LYS:HG3	2:C:202:PHE:CD2	2.51	0.46
2:C:24:ASN:O	2:C:26:LYS:N	2.49	0.46
2:C:90:VAL:HA	2:C:93:ILE:HG21	1.97	0.46
2:C:90:VAL:HG21	2:C:98:ALA:HB3	1.97	0.46
7:H:29:SER:HB3	7:H:32:LYS:CG	2.46	0.46
8:I:115:VAL:HG21	9:J:62:ARG:HB2	1.98	0.46
13:N:60:ARG:HE	13:N:62:ARG:CZ	2.28	0.46
14:O:80:LEU:HD23	14:O:80:LEU:C	2.36	0.46
16:Q:10:ARG:NE	16:Q:11:VAL:H	2.12	0.46
19:T:49:ALA:O	19:T:52:GLU:HB3	2.16	0.46
21:U:40:PRO:C	21:U:42:THR:N	2.69	0.46
1:A:1171:A:O2'	1:A:1172:C:H5'	2.15	0.46
1:A:1118:U:H1'	1:A:1179:A:C5	2.49	0.46
1:A:1252:A:H2'	1:A:1253:G:H5''	1.98	0.46
1:A:131:A:H2'	1:A:132:C:H6	1.75	0.46
1:A:586:C:C2'	1:A:587:G:H5'	2.46	0.46
1:A:947:G:H2'	1:A:948:C:H6	1.81	0.46
20:B:102:ASN:OD1	20:B:105:THR:HG22	2.16	0.46
2:C:84:GLU:HA	2:C:87:ARG:NH2	2.30	0.46
3:D:64:TYR:CD1	3:D:64:TYR:N	2.84	0.46
4:E:108:GLY:H	4:E:110:MET:HE1	1.80	0.46
5:F:79:ARG:HH21	5:F:87:SER:HB2	1.81	0.46
8:I:64:ILE:HD13	8:I:78:ILE:HG21	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:L:106:VAL:HG22	11:L:117:GLY:H	1.79	0.46
13:N:20:PHE:CG	13:N:24:ALA:HB2	2.51	0.46
18:S:4:LEU:O	18:S:6:LYS:N	2.48	0.46
21:U:3:ILE:HA	21:U:19:LYS:HE3	1.97	0.46
1:A:1494:G:O2'	1:A:1495:U:H5'	2.15	0.46
1:A:1527:U:O2'	1:A:1528:U:H5'	2.16	0.46
1:A:325:A:H2'	1:A:326:G:O4'	2.16	0.46
1:A:382:A:H2'	1:A:383:A:C8	2.51	0.46
1:A:489:C:H2'	1:A:490:C:C6	2.51	0.46
1:A:628:G:H2'	1:A:629:A:C8	2.51	0.46
1:A:792:A:H1'	1:A:794:A:N7	2.31	0.46
1:A:88:U:O2'	1:A:89:U:C6	2.68	0.46
20:B:21:TYR:O	20:B:22:TRP:O	2.34	0.46
2:C:112:ALA:HB2	2:C:182:ASP:O	2.16	0.46
2:C:41:TYR:HA	2:C:44:LYS:HD3	1.98	0.46
4:E:35:LEU:HD23	4:E:36:THR:N	2.30	0.46
5:F:38:ARG:HH21	5:F:96:VAL:HG11	1.81	0.46
5:F:88:MET:HE1	5:F:90:MET:HG3	1.97	0.46
6:G:139:ASP:HA	6:G:142:ARG:HH12	1.80	0.46
13:N:25:GLU:O	13:N:29:ILE:HG13	2.16	0.46
14:O:24:THR:HB	14:O:69:LEU:HD21	1.97	0.46
3:D:25:ARG:HG2	24:Y:47:ARG:NH1	2.30	0.46
1:A:601:G:H2'	1:A:602:A:C8	2.51	0.46
1:A:87:C:C2	1:A:88:U:H1'	2.51	0.46
1:A:916:U:H2'	1:A:917:G:H8	1.80	0.46
2:C:78:LYS:H	2:C:81:GLU:HB3	1.79	0.46
3:D:113:ALA:O	3:D:117:VAL:HG23	2.17	0.46
4:E:57:ALA:O	4:E:60:GLN:HB2	2.16	0.46
6:G:42:VAL:O	6:G:46:LEU:HB2	2.15	0.46
8:I:40:ARG:HA	8:I:44:ARG:HH21	1.81	0.46
9:J:33:GLY:HA3	9:J:83:THR:OG1	2.16	0.46
11:L:35:ARG:HE	11:L:35:ARG:CA	2.30	0.46
13:N:50:LEU:CG	13:N:51:PRO:HD3	2.46	0.46
14:O:27:GLN:O	14:O:31:LEU:HD23	2.16	0.46
16:Q:20:ILE:CG1	16:Q:45:VAL:HB	2.43	0.46
1:A:1435:G:H2'	1:A:1436:U:H6	1.81	0.45
1:A:778:G:O2'	1:A:779:C:H5'	2.16	0.45
20:B:119:GLN:HE21	20:B:119:GLN:HB3	1.59	0.45
20:B:145:ASN:HD22	20:B:145:ASN:HA	1.55	0.45
20:B:187:ASP:CG	20:B:188:THR:N	2.70	0.45
2:C:33:ASP:O	2:C:37:LYS:HE2	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:160:LEU:HD22	3:D:161:ALA:N	2.31	0.45
4:E:108:GLY:H	4:E:110:MET:CE	2.28	0.45
4:E:45:VAL:HG12	4:E:116:VAL:HG23	1.98	0.45
6:G:35:LYS:O	6:G:39:GLU:HG2	2.16	0.45
7:H:9:MET:HE3	7:H:32:LYS:HB3	1.97	0.45
7:H:64:TYR:CB	7:H:69:ALA:HA	2.44	0.45
8:I:58:GLU:HG2	8:I:58:GLU:H	1.39	0.45
9:J:8:ILE:H	9:J:75:ASP:HB2	1.80	0.45
11:L:98:ARG:CB	11:L:116:TYR:HA	2.46	0.45
14:O:7:THR:CG2	14:O:30:LEU:HD11	2.38	0.45
19:T:4:LYS:HD2	19:T:5:SER:H	1.79	0.45
1:A:1056:U:O2'	1:A:1057:G:H5'	2.16	0.45
1:A:1101:A:O2'	1:A:1102:A:OP2	2.33	0.45
1:A:1211:U:H1'	1:A:1213:A:C2	2.52	0.45
1:A:1348:U:H2'	1:A:1349:A:C8	2.51	0.45
1:A:123:U:H5''	1:A:311:C:O2'	2.16	0.45
1:A:664:G:H5''	17:R:52:ARG:CZ	2.46	0.45
2:C:5:HIS:O	2:C:9:ILE:HG22	2.16	0.45
3:D:99:ASN:ND2	3:D:110:ARG:NE	2.64	0.45
3:D:32:LYS:HB3	3:D:35:GLN:HE21	1.81	0.45
6:G:14:ASP:CG	6:G:15:PRO:HD2	2.36	0.45
8:I:15:ALA:O	8:I:66:VAL:HA	2.16	0.45
12:M:13:HIS:HB2	12:M:16:ILE:HG22	1.97	0.45
12:M:3:ILE:HA	12:M:56:ARG:HG2	1.98	0.45
12:M:72:ILE:O	12:M:76:ILE:HG13	2.15	0.45
17:R:63:TYR:C	17:R:65:SER:H	2.19	0.45
19:T:10:ALA:O	19:T:13:SER:HB3	2.17	0.45
19:T:23:ARG:HB2	19:T:65:LEU:HD11	1.98	0.45
1:A:1010:U:H2'	1:A:1011:C:C6	2.51	0.45
1:A:1314:C:H2'	1:A:1315:U:H6	1.81	0.45
1:A:1320:C:H2'	1:A:1321:U:O4'	2.16	0.45
1:A:1320:C:P	18:S:69:LYS:HZ2	2.39	0.45
1:A:167:A:O2'	1:A:168:G:H5'	2.15	0.45
1:A:284:C:H2'	1:A:285:C:H6	1.81	0.45
1:A:391:G:HO2'	1:A:482:A:H2	1.60	0.45
1:A:736:C:H2'	1:A:737:C:H6	1.81	0.45
1:A:950:U:H2'	1:A:951:G:H8	1.81	0.45
2:C:76:ILE:C	2:C:82:ASP:HB2	2.36	0.45
3:D:167:PRO:HB2	3:D:170:LEU:HG	1.97	0.45
3:D:75:TYR:CE1	3:D:203:TYR:HB3	2.51	0.45
4:E:82:HIS:CD2	7:H:95:MET:HG3	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:J:42:LEU:HB2	9:J:71:LEU:HD13	1.99	0.45
9:J:73:LEU:CD1	9:J:75:ASP:HB3	2.47	0.45
9:J:80:THR:HG22	9:J:81:GLU:H	1.81	0.45
17:R:46:THR:CG2	17:R:51:GLN:HB2	2.43	0.45
18:S:37:SER:O	18:S:69:LYS:HG2	2.15	0.45
18:S:61:VAL:HA	18:S:65:MET:SD	2.56	0.45
19:T:74:HIS:O	19:T:78:LEU:HB2	2.16	0.45
20:B:224:ARG:C	25:Z:71:GLU:HG2	2.37	0.45
1:A:448:A:H2'	1:A:449:G:C8	2.52	0.45
1:A:463:U:H5'	1:A:464:U:OP2	2.17	0.45
1:A:473:U:C2	1:A:474:G:N7	2.85	0.45
1:A:687:A:C2	1:A:704:A:C5	3.05	0.45
1:A:820:U:H4'	1:A:821:G:OP2	2.16	0.45
1:A:927:G:O2'	1:A:928:G:H5'	2.16	0.45
20:B:174:GLU:O	20:B:178:LEU:HD23	2.16	0.45
5:F:51:ILE:HG23	5:F:51:ILE:O	2.17	0.45
10:K:21:HIS:CE1	10:K:34:THR:HG21	2.50	0.45
13:N:63:CYS:HB2	13:N:79:SER:OG	2.17	0.45
17:R:31:TYR:CG	17:R:54:LEU:HD21	2.52	0.45
21:U:5:VAL:HG22	21:U:19:LYS:NZ	2.31	0.45
20:B:56:LEU:O	20:B:59:ILE:HG13	2.17	0.45
2:C:14:VAL:HG23	2:C:15:LYS:HG2	1.98	0.45
2:C:49:ALA:HB1	2:C:75:VAL:CG2	2.40	0.45
3:D:25:ARG:HD3	3:D:26:ALA:N	2.31	0.45
12:M:75:SER:O	12:M:78:ARG:HB3	2.16	0.45
13:N:12:ARG:HH11	13:N:60:ARG:HH12	1.62	0.45
15:P:3:THR:HG22	15:P:66:THR:HB	1.98	0.45
15:P:43:ALA:H	15:P:46:LYS:HD2	1.81	0.45
16:Q:19:SER:O	16:Q:20:ILE:HG23	2.16	0.45
18:S:31:ARG:HG3	18:S:56:HIS:HE2	1.81	0.45
1:A:1113:C:H2'	1:A:1114:C:H6	1.81	0.45
1:A:138:G:O2'	1:A:139:A:H5'	2.17	0.45
1:A:22:G:O2'	1:A:23:C:H5'	2.16	0.45
1:A:299:G:H2'	1:A:300:A:C8	2.51	0.45
1:A:454:G:O2'	1:A:455:G:H5'	2.17	0.45
1:A:471:U:H2'	1:A:472:U:H6	1.80	0.45
1:A:708:C:H2'	1:A:709:U:H6	1.80	0.45
2:C:131:ARG:NH1	2:C:131:ARG:HB3	2.31	0.45
2:C:112:ALA:HB1	2:C:199:VAL:CG2	2.47	0.45
8:I:10:ARG:HA	8:I:77:ALA:HB1	1.98	0.45
10:K:88:PRO:HA	10:K:92:ARG:CD	2.47	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:K:22:ILE:HD13	10:K:95:THR:CG2	2.46	0.45
17:R:20:ILE:HG23	17:R:53:GLN:NE2	2.32	0.45
18:S:18:VAL:HG13	18:S:19:GLU:N	2.32	0.45
18:S:4:LEU:HD13	18:S:8:PRO:HA	1.99	0.45
1:A:1239:A:H1'	1:A:1241:G:C5	2.52	0.45
1:A:1306:A:N6	1:A:1331:G:H1'	2.32	0.45
1:A:1425:U:H2'	1:A:1426:G:H8	1.81	0.45
1:A:1462:C:H2'	1:A:1463:U:C6	2.52	0.45
1:A:295:C:H2'	1:A:296:U:C6	2.52	0.45
1:A:336:A:O2'	1:A:337:G:H5'	2.17	0.45
1:A:539:A:H2'	1:A:540:G:H8	1.78	0.45
1:A:627:G:H2'	1:A:628:G:C8	2.51	0.45
1:A:841:C:H6	1:A:843:U:OP1	1.99	0.45
1:A:890:G:O2'	1:A:906:A:N6	2.49	0.45
1:A:985:C:H2'	1:A:986:U:H6	1.82	0.45
20:B:101:THR:HG23	20:B:102:ASN:N	2.32	0.45
2:C:72:PRO:HG2	2:C:73:GLY:H	1.81	0.45
3:D:137:SER:CB	3:D:138:PRO:HD2	2.47	0.45
3:D:1:ALA:O	3:D:67:LEU:HD21	2.16	0.45
4:E:84:VAL:HG21	4:E:142:GLY:O	2.15	0.45
6:G:102:TRP:CD1	6:G:102:TRP:N	2.83	0.45
7:H:65:PHE:CD2	7:H:66:GLN:HG3	2.51	0.45
1:A:1348:U:H4'	8:I:121:ARG:NH1	2.31	0.45
9:J:18:ILE:HD12	9:J:72:ARG:HG3	1.97	0.45
9:J:89:ARG:NE	9:J:89:ARG:HA	2.31	0.45
12:M:78:ARG:HE	12:M:79:LEU:HG	1.82	0.45
14:O:11:VAL:HA	14:O:26:VAL:HG13	1.98	0.45
16:Q:66:LEU:HD11	16:Q:73:THR:HG22	1.98	0.45
1:A:1230:C:H2'	1:A:1231:G:H8	1.81	0.45
1:A:1438:G:C2'	1:A:1439:G:H5'	2.47	0.45
1:A:191:G:H2'	1:A:192:A:C8	2.52	0.45
1:A:232:G:H2'	1:A:233:C:O4'	2.17	0.45
1:A:692:U:H2'	1:A:694:A:OP2	2.16	0.45
1:A:734:G:O2'	17:R:59:LYS:HD3	2.17	0.45
3:D:29:THR:OG1	3:D:30:LYS:HD3	2.17	0.45
5:F:7:VAL:HG23	5:F:60:VAL:O	2.17	0.45
1:A:1342:C:H5'	8:I:127:SER:HA	1.98	0.45
1:A:1148:U:H5''	8:I:8:THR:HG23	1.99	0.45
12:M:49:GLU:O	12:M:53:ASP:HB3	2.17	0.45
14:O:6:ALA:O	14:O:10:ILE:HG22	2.16	0.45
1:A:746:A:H2'	1:A:747:A:H8	1.80	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:244:U:O4	1:A:906:A:H1'	2.16	0.45
2:C:131:ARG:HH22	2:C:135:ARG:CZ	2.30	0.45
3:D:152:SER:O	3:D:155:LYS:HG3	2.17	0.45
3:D:201:GLU:OE1	4:E:104:ILE:HG22	2.17	0.45
6:G:71:THR:O	6:G:72:VAL:HG13	2.17	0.45
9:J:89:ARG:CZ	9:J:89:ARG:HA	2.47	0.45
11:L:101:LEU:HB3	11:L:102:ASP:H	1.61	0.45
12:M:10:ASP:HA	12:M:44:ILE:HD11	1.98	0.45
19:T:54:GLN:N	19:T:55:PRO:CD	2.80	0.45
1:A:1008:U:H2'	1:A:1009:U:C4'	2.47	0.45
1:A:1238:A:C8	1:A:1303:C:H1'	2.52	0.45
1:A:1404:C:H2'	1:A:1405:G:C8	2.52	0.45
1:A:429:U:H4'	1:A:430:A:O5'	2.16	0.45
1:A:834:U:H2'	1:A:835:U:C6	2.52	0.45
20:B:119:GLN:O	20:B:125:PHE:HB3	2.17	0.45
2:C:131:ARG:HH22	2:C:135:ARG:NH1	2.14	0.45
2:C:176:THR:O	2:C:179:ALA:HB3	2.17	0.45
3:D:191:SER:O	3:D:192:ALA:CB	2.65	0.45
3:D:2:ARG:NH1	3:D:114:ARG:HD2	2.32	0.45
4:E:81:GLN:N	4:E:81:GLN:OE1	2.50	0.45
7:H:98:LEU:H	7:H:98:LEU:HD12	1.82	0.45
10:K:15:VAL:O	10:K:16:SER:HB2	2.17	0.45
11:L:106:VAL:CG1	11:L:116:TYR:HB3	2.47	0.45
11:L:119:LYS:O	11:L:119:LYS:HG3	2.16	0.45
1:A:1197:A:P	1:A:1197:A:H3'	2.57	0.44
1:A:119:A:H4'	1:A:120:A:O4'	2.17	0.44
1:A:373:A:H1'	1:A:481:G:H1'	1.99	0.44
1:A:512:U:H2'	1:A:513:C:C6	2.51	0.44
1:A:647:C:O2'	1:A:648:A:H5'	2.16	0.44
1:A:652:U:H1'	1:A:653:U:C5	2.52	0.44
20:B:55:GLU:H	25:Z:80:LEU:C	2.21	0.44
1:A:620:C:C6	3:D:131:ILE:HD13	2.51	0.44
7:H:5:PRO:HB2	7:H:32:LYS:HZ1	1.78	0.44
8:I:3:ASN:HB3	8:I:4:GLN:H	1.54	0.44
9:J:81:GLU:O	9:J:85:ASP:HB2	2.18	0.44
13:N:45:LEU:O	13:N:48:GLN:HB3	2.16	0.44
15:P:42:ILE:CG2	15:P:43:ALA:N	2.79	0.44
18:S:48:ILE:HG22	18:S:49:ALA:N	2.33	0.44
20:B:58:LYS:NZ	25:Z:76:GLU:O	2.51	0.44
1:A:1096:C:H2'	1:A:1097:C:H6	1.82	0.44
1:A:1237:C:H4'	1:A:1334:G:N2	2.32	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1410:A:H2'	1:A:1411:C:H6	1.81	0.44
1:A:323:U:H2'	1:A:324:G:O4'	2.18	0.44
1:A:68:G:H5'	1:A:171:A:O2'	2.17	0.44
1:A:734:G:N2	17:R:63:TYR:CE2	2.84	0.44
20:B:147:LEU:O	20:B:151:LYS:HG3	2.17	0.44
2:C:57:GLU:HB2	2:C:64:ARG:CB	2.45	0.44
4:E:85:LYS:HE2	4:E:92:ARG:HH11	1.82	0.44
8:I:25:GLY:HA3	8:I:57:VAL:O	2.16	0.44
8:I:48:ARG:HA	8:I:51:LEU:HD13	1.99	0.44
8:I:79:ARG:O	8:I:83:THR:HG22	2.17	0.44
14:O:52:ARG:HG3	14:O:55:LEU:HD23	1.99	0.44
15:P:12:LYS:O	15:P:14:ARG:HG3	2.17	0.44
1:A:234:C:H2'	1:A:235:C:C6	2.52	0.44
1:A:669:G:O2'	1:A:670:G:H5'	2.18	0.44
1:A:740:U:O3'	14:O:38:LEU:HD21	2.17	0.44
8:I:66:VAL:CG2	8:I:74:GLN:HG3	2.47	0.44
1:A:136:C:H1'	15:P:1:MET:HE1	1.99	0.44
16:Q:62:GLU:HG3	16:Q:72:TRP:CH2	2.53	0.44
10:K:88:PRO:HD3	21:U:28:LEU:CD2	2.47	0.44
1:A:1505:G:H5''	1:A:1506:U:O5'	2.17	0.44
1:A:238:A:H3'	1:A:239:U:H5''	2.00	0.44
1:A:71:A:N1	1:A:99:C:H1'	2.32	0.44
1:A:828:U:H2'	1:A:829:G:O5'	2.16	0.44
20:B:128:LEU:CG	20:B:132:GLU:HG2	2.46	0.44
20:B:67:LEU:HD23	20:B:160:LEU:CG	2.48	0.44
4:E:105:ILE:HD12	4:E:123:LEU:HB3	2.00	0.44
11:L:80:LEU:HD13	11:L:101:LEU:HD11	1.99	0.44
12:M:106:ARG:NH1	12:M:106:ARG:HG2	2.32	0.44
18:S:31:ARG:NH2	18:S:55:GLN:HE22	2.16	0.44
1:A:1023:U:H2'	1:A:1024:G:H8	1.82	0.44
1:A:1126:U:O2'	1:A:1280:A:H2'	2.17	0.44
1:A:132:C:H5''	19:T:68:LYS:CE	2.47	0.44
1:A:1348:U:OP1	8:I:111:GLU:HB2	2.18	0.44
1:A:1446:A:C2'	1:A:1447:A:H5''	2.46	0.44
1:A:203:G:N2	1:A:205:A:H61	2.16	0.44
1:A:22:G:H2'	1:A:23:C:C6	2.52	0.44
1:A:554:A:H2'	1:A:555:U:C6	2.53	0.44
1:A:661:G:O2'	1:A:662:U:H5'	2.18	0.44
1:A:813:U:O2'	1:A:814:A:H5'	2.18	0.44
1:A:913:A:H1'	1:A:914:A:O4'	2.17	0.44
20:B:61:SER:HA	20:B:224:ARG:CA	2.42	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:19:SER:HB2	2:C:39:ARG:HH22	1.82	0.44
2:C:59:PRO:HD2	2:C:62:SER:O	2.17	0.44
3:D:109:THR:HG23	3:D:112:GLU:H	1.82	0.44
4:E:106:ALA:HB1	4:E:110:MET:HB2	1.99	0.44
4:E:36:THR:O	4:E:48:GLY:N	2.51	0.44
5:F:7:VAL:HG11	17:R:64:LEU:HD21	1.99	0.44
6:G:112:ASP:HB3	6:G:113:LYS:H	1.66	0.44
9:J:80:THR:H	9:J:84:VAL:CG1	2.29	0.44
10:K:88:PRO:CD	21:U:28:LEU:HD22	2.48	0.44
11:L:52:CYS:SG	11:L:66:ILE:HD11	2.57	0.44
14:O:78:THR:HA	14:O:81:ILE:CG1	2.46	0.44
16:Q:20:ILE:CD1	16:Q:45:VAL:HB	2.48	0.44
18:S:16:LYS:HA	18:S:16:LYS:HD3	1.83	0.44
1:A:1246:A:H2'	1:A:1247:U:O4'	2.17	0.44
1:A:1300:G:O2'	1:A:1301:U:P	2.75	0.44
1:A:1325:C:O2'	1:A:1326:U:H5'	2.18	0.44
1:A:709:U:H2'	1:A:710:G:H8	1.83	0.44
2:C:71:ARG:HB3	2:C:74:ILE:CG2	2.47	0.44
5:F:45:ARG:HG2	5:F:46:GLN:N	2.31	0.44
5:F:10:VAL:CG1	5:F:83:ALA:HB1	2.48	0.44
6:G:29:LEU:HD12	6:G:104:VAL:CG1	2.48	0.44
7:H:11:THR:HG23	7:H:14:ARG:NH1	2.33	0.44
9:J:15:HIS:CD2	9:J:19:ASP:HB2	2.52	0.44
11:L:71:HIS:CG	11:L:72:ASN:N	2.86	0.44
15:P:70:ARG:O	15:P:74:LEU:HG	2.17	0.44
16:Q:30:HIS:H	16:Q:35:LYS:H	1.66	0.44
19:T:70:LYS:HA	19:T:73:ARG:CZ	2.47	0.44
1:A:1256:A:O2'	1:A:1257:A:H5''	2.18	0.44
1:A:175:C:H2'	1:A:176:C:H6	1.82	0.44
1:A:251:G:H4'	1:A:252:U:C5'	2.48	0.44
1:A:692:U:H5	10:K:27:ASN:HD22	1.64	0.44
20:B:113:LEU:CG	20:B:143:LEU:HB3	2.47	0.44
20:B:164:ASP:OD2	20:B:203:ASP:HB2	2.18	0.44
20:B:60:ALA:H	25:Z:78:ALA:CB	2.30	0.44
3:D:190:LEU:O	3:D:192:ALA:N	2.51	0.44
4:E:16:ALA:O	4:E:34:ALA:HA	2.17	0.44
1:A:1376:U:P	6:G:24:LYS:HD3	2.57	0.44
6:G:55:LYS:HE2	6:G:57:GLU:OE1	2.18	0.44
9:J:87:LEU:H	9:J:88:MET:CE	2.30	0.44
11:L:34:THR:HG21	11:L:53:ARG:CZ	2.47	0.44
11:L:43:LYS:N	11:L:44:PRO:CD	2.80	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:Q:45:VAL:HG13	16:Q:60:ILE:CG2	2.48	0.44
18:S:44:ILE:HA	18:S:61:VAL:CG1	2.48	0.44
1:A:1110:A:H2'	1:A:1111:A:H5'	1.99	0.44
1:A:191:G:H2'	1:A:192:A:H8	1.83	0.44
1:A:267:C:OP2	16:Q:68:LYS:HD2	2.17	0.44
1:A:394:G:H2'	1:A:395:C:C6	2.53	0.44
1:A:432:A:H2'	1:A:433:G:H5'	1.99	0.44
1:A:777:A:H2'	1:A:778:G:C8	2.53	0.44
1:A:803:G:H2'	1:A:804:U:H6	1.82	0.44
1:A:893:C:H2'	1:A:894:G:H8	1.83	0.44
1:A:93:U:H2'	1:A:95:C:H5	1.82	0.44
1:A:981:U:H4'	13:N:60:ARG:CG	2.45	0.44
20:B:116:LEU:HD22	20:B:140:LEU:HG	1.99	0.44
20:B:175:ALA:C	20:B:177:ASN:H	2.20	0.44
20:B:67:LEU:HD23	20:B:160:LEU:HG	1.99	0.44
2:C:90:VAL:HA	2:C:93:ILE:CG2	2.48	0.44
3:D:104:MET:SD	3:D:179:GLY:HA3	2.57	0.44
6:G:13:PRO:HA	6:G:23:ALA:HB2	2.00	0.44
15:P:26:ASN:ND2	15:P:31:ARG:HB3	2.31	0.44
18:S:68:HIS:NE2	18:S:72:GLU:HG3	2.33	0.44
1:A:1051:C:H2'	1:A:1052:U:H6	1.81	0.44
1:A:113:G:O4'	1:A:354:G:H4'	2.18	0.44
1:A:1350:A:H2'	1:A:1351:U:C6	2.53	0.44
1:A:1515:G:O2'	1:A:1516:G:H5'	2.17	0.44
1:A:22:G:H2'	1:A:23:C:H6	1.83	0.44
1:A:397:A:H5'	1:A:398:U:OP1	2.17	0.44
1:A:471:U:H2'	1:A:472:U:C6	2.52	0.44
1:A:501:C:O2'	1:A:502:A:H5'	2.17	0.44
1:A:878:A:H2'	1:A:879:C:C6	2.53	0.44
1:A:973:G:O2'	9:J:56:HIS:HA	2.18	0.44
2:C:100:ILE:HD13	2:C:100:ILE:C	2.38	0.44
1:A:408:A:OP1	3:D:109:THR:HG21	2.18	0.44
3:D:125:ASN:HA	3:D:141:VAL:HG23	2.00	0.44
3:D:24:VAL:O	3:D:25:ARG:C	2.55	0.44
4:E:49:TYR:HE2	4:E:133:ILE:HG12	1.83	0.44
1:A:19:A:OP1	4:E:134:ASN:ND2	2.51	0.44
4:E:89:THR:HG22	4:E:90:GLY:N	2.33	0.44
6:G:29:LEU:HD21	6:G:41:ILE:CG2	2.48	0.44
8:I:51:LEU:HD12	8:I:51:LEU:N	2.32	0.44
9:J:7:ARG:O	9:J:8:ILE:HD13	2.18	0.44
11:L:41:PRO:HG3	11:L:46:SER:O	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:N:20:PHE:HA	13:N:24:ALA:CB	2.47	0.44
13:N:92:ILE:HG21	13:N:95:LEU:HD23	1.99	0.44
16:Q:26:ARG:HH21	16:Q:39:ARG:NH2	2.15	0.44
21:U:5:VAL:HG13	21:U:15:LEU:HD23	1.99	0.44
21:U:3:ILE:CA	21:U:19:LYS:HG2	2.39	0.44
21:U:34:ARG:NH1	21:U:39:LYS:HE3	2.33	0.44
1:A:1029:U:H5''	1:A:1030:U:C5	2.46	0.43
1:A:1254:A:H61	1:A:1283:U:H3	1.66	0.43
1:A:1291:U:O2'	1:A:1292:G:H5'	2.18	0.43
1:A:224:U:H2'	1:A:225:C:H6	1.82	0.43
1:A:238:A:C3'	1:A:239:U:H5''	2.47	0.43
1:A:538:G:OP2	11:L:111:GLN:HB2	2.18	0.43
1:A:601:G:H2'	1:A:602:A:H8	1.83	0.43
1:A:657:U:H4'	14:O:27:GLN:HG3	1.99	0.43
1:A:8:A:H1'	4:E:107:GLY:HA2	2.00	0.43
20:B:110:ILE:O	20:B:113:LEU:HB3	2.18	0.43
20:B:132:GLU:HG3	20:B:136:ARG:HD2	1.99	0.43
20:B:59:ILE:CD1	20:B:66:ILE:HD11	2.48	0.43
3:D:100:VAL:HA	3:D:103:ARG:HD2	1.99	0.43
10:K:70:ALA:HA	10:K:74:LYS:HD3	1.99	0.43
12:M:14:ALA:HB1	12:M:33:LEU:HD11	1.99	0.43
15:P:7:ALA:O	15:P:17:TYR:HA	2.17	0.43
23:X:257:ALA:HB2	23:X:285:ILE:HG22	1.99	0.43
1:A:1082:A:O2'	1:A:1083:U:H5'	2.18	0.43
1:A:1386:G:H2'	1:A:1387:G:H8	1.83	0.43
1:A:1386:G:O2'	1:A:1387:G:H5'	2.17	0.43
1:A:1402:C:H2'	1:A:1403:C:O4'	2.19	0.43
1:A:140:U:H2'	1:A:141:G:H8	1.82	0.43
1:A:1486:G:H2'	1:A:1487:G:C8	2.53	0.43
1:A:766:A:H2	1:A:1525:G:N3	2.15	0.43
1:A:261:U:H2'	1:A:263:A:OP2	2.18	0.43
1:A:392:C:H2'	1:A:393:A:H8	1.82	0.43
1:A:697:U:H2'	1:A:698:G:H5'	2.00	0.43
1:A:771:G:H2'	1:A:772:U:C6	2.53	0.43
1:A:1074:G:H5'	20:B:104:LYS:HZ1	1.80	0.43
20:B:121:GLN:HB3	20:B:121:GLN:HE21	1.64	0.43
20:B:225:SER:HB2	25:Z:71:GLU:HG3	2.00	0.43
3:D:160:LEU:H	3:D:160:LEU:CD1	2.21	0.43
3:D:54:LEU:HA	3:D:202:LEU:HD22	2.00	0.43
7:H:46:GLU:HB2	7:H:61:THR:OG1	2.18	0.43
16:Q:80:LYS:H	16:Q:80:LYS:HE3	1.82	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:S:20:LYS:O	18:S:20:LYS:HD2	2.19	0.43
19:T:19:HIS:O	19:T:23:ARG:HG2	2.18	0.43
1:A:1007:U:H2'	1:A:1008:U:C6	2.52	0.43
1:A:31:G:H2'	1:A:48:C:C5	2.53	0.43
1:A:41:G:H2'	1:A:42:G:H8	1.83	0.43
1:A:619:U:C2	3:D:131:ILE:HD12	2.53	0.43
1:A:969:A:H2'	1:A:970:C:O2	2.18	0.43
20:B:134:LEU:HA	20:B:137:THR:OG1	2.17	0.43
20:B:165:ALA:CB	20:B:186:VAL:HG12	2.48	0.43
2:C:108:PRO:HG3	23:X:860:ALA:N	2.25	0.43
3:D:14:GLU:OE2	3:D:58:GLN:HG3	2.18	0.43
3:D:89:LEU:O	3:D:92:LEU:HB2	2.18	0.43
4:E:95:MET:CE	4:E:114:LEU:HD21	2.49	0.43
6:G:125:ASP:HB3	6:G:130:LYS:CB	2.27	0.43
8:I:9:GLY:HA2	8:I:80:HIS:CD2	2.53	0.43
10:K:62:ALA:O	10:K:65:ALA:HB3	2.18	0.43
13:N:51:PRO:CB	13:N:54:SER:HB3	2.48	0.43
19:T:40:ALA:O	19:T:41:GLY:C	2.56	0.43
1:A:682:G:O2'	1:A:683:G:H5'	2.17	0.43
1:A:924:C:H2'	1:A:925:G:H8	1.83	0.43
20:B:163:ILE:CG2	20:B:164:ASP:N	2.64	0.43
3:D:84:ASN:ND2	3:D:86:GLY:N	2.67	0.43
4:E:109:ALA:O	4:E:113:VAL:HG13	2.18	0.43
12:M:63:VAL:HB	12:M:68:LEU:HG	2.00	0.43
16:Q:29:LYS:HA	16:Q:35:LYS:C	2.39	0.43
19:T:66:ILE:HG23	19:T:70:LYS:CD	2.48	0.43
1:A:1157:A:H4'	1:A:1158:C:O5'	2.19	0.43
1:A:383:A:H2'	1:A:384:G:O4'	2.18	0.43
1:A:394:G:H2'	1:A:395:C:H6	1.82	0.43
1:A:402:G:H2'	1:A:403:C:H6	1.84	0.43
1:A:93:U:H2'	1:A:95:C:C5	2.54	0.43
20:B:31:PHE:CD1	20:B:41:ASN:HA	2.53	0.43
1:A:532:A:N6	2:C:191:THR:HB	2.33	0.43
2:C:73:GLY:C	23:X:866:ASP:CA	2.80	0.43
3:D:151:GLN:HB3	3:D:154:VAL:CG1	2.49	0.43
4:E:114:LEU:CD2	4:E:119:VAL:HG21	2.47	0.43
7:H:69:ALA:HB3	7:H:72:GLU:OE2	2.19	0.43
9:J:30:LYS:HG3	9:J:36:VAL:HB	2.01	0.43
10:K:28:ASN:HD21	10:K:30:ILE:HG23	1.83	0.43
19:T:20:ASN:O	19:T:65:LEU:HD21	2.18	0.43
1:A:1033:G:H3'	1:A:1034:G:H5''	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1099:G:H2'	1:A:1100:C:O4'	2.19	0.43
1:A:1114:C:H2'	1:A:1115:U:O4'	2.19	0.43
1:A:1226:C:H4'	1:A:1227:A:OP1	2.19	0.43
1:A:25:C:H2'	1:A:26:A:C8	2.53	0.43
1:A:397:A:H3'	1:A:397:A:N3	2.33	0.43
1:A:627:G:H2'	1:A:628:G:H8	1.83	0.43
1:A:839:C:O2'	1:A:840:C:H5'	2.19	0.43
1:A:844:G:H2'	1:A:845:A:H5''	2.00	0.43
2:C:205:GLU:HB2	2:C:206:ILE:H	1.51	0.43
3:D:100:VAL:HA	3:D:103:ARG:CD	2.48	0.43
3:D:176:LYS:O	3:D:177:MET:C	2.57	0.43
4:E:35:LEU:HD12	4:E:133:ILE:HA	2.01	0.43
1:A:15:G:O2'	4:E:21:SER:HB2	2.18	0.43
1:A:1081:A:OP1	4:E:22:LYS:HB2	2.19	0.43
4:E:56:PRO:O	4:E:59:ILE:HG22	2.19	0.43
4:E:33:THR:O	4:E:58:ALA:HB1	2.17	0.43
6:G:87:PRO:CG	6:G:151:ALA:HB2	2.41	0.43
8:I:82:ILE:HG22	8:I:86:LEU:HD21	2.01	0.43
1:A:1124:G:C5'	9:J:38:GLY:HA3	2.49	0.43
10:K:81:LEU:O	10:K:106:ILE:HA	2.19	0.43
9:J:65:TYR:C	13:N:98:ALA:HB2	2.39	0.43
18:S:39:ILE:CG2	18:S:65:MET:HB3	2.46	0.43
21:U:31:VAL:O	21:U:32:ARG:C	2.57	0.43
2:C:71:ARG:CD	23:X:862:LEU:C	2.84	0.43
1:A:1324:A:H2'	1:A:1325:C:O4'	2.19	0.43
1:A:1356:G:H2'	1:A:1357:A:C8	2.54	0.43
1:A:26:A:N6	1:A:558:G:H1'	2.33	0.43
1:A:442:G:H2'	1:A:443:C:C6	2.53	0.43
1:A:473:U:C2	1:A:474:G:C8	3.07	0.43
1:A:740:U:O2'	1:A:741:G:H5'	2.19	0.43
2:C:13:ILE:HG22	2:C:14:VAL:HG13	2.01	0.43
3:D:169:TRP:O	3:D:182:LYS:HB3	2.19	0.43
3:D:169:TRP:CE2	3:D:185:PRO:HB3	2.54	0.43
3:D:18:LEU:HD22	3:D:63:ILE:HG12	2.00	0.43
4:E:114:LEU:C	4:E:116:VAL:H	2.21	0.43
6:G:148:LYS:HA	6:G:151:ALA:HB3	2.00	0.43
9:J:40:ILE:CG1	9:J:73:LEU:HB3	2.46	0.43
10:K:69:CYS:O	10:K:71:ASP:N	2.51	0.43
11:L:38:THR:HA	11:L:49:ARG:O	2.19	0.43
13:N:84:ARG:HG3	13:N:84:ARG:HH11	1.83	0.43
18:S:62:THR:HG22	18:S:63:ASP:N	2.33	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1286:U:OP1	1:A:1286:U:C2	2.72	0.43
1:A:599:C:O2'	1:A:600:A:H5'	2.19	0.43
20:B:101:THR:HG22	20:B:174:GLU:OE1	2.18	0.43
20:B:80:LYS:HB3	20:B:90:PHE:CE1	2.54	0.43
2:C:40:GLN:O	2:C:44:LYS:HG3	2.18	0.43
3:D:159:GLU:HG3	3:D:160:LEU:HD13	2.01	0.43
6:G:94:ARG:NH1	6:G:98:LEU:HD21	2.34	0.43
8:I:64:ILE:HD13	8:I:78:ILE:CG2	2.49	0.43
11:L:56:LEU:HB2	11:L:60:PHE:O	2.19	0.43
13:N:15:LEU:C	13:N:17:ASP:H	2.21	0.43
15:P:75:ILE:O	15:P:78:VAL:HG12	2.19	0.43
21:U:13:VAL:CG1	21:U:14:ALA:H	2.20	0.43
10:K:124:LYS:O	21:U:33:ARG:NH2	2.51	0.43
1:A:1014:A:H2	1:A:1219:A:H1'	1.83	0.43
1:A:1057:G:H2'	1:A:1058:G:O4'	2.19	0.43
1:A:1065:U:H1'	1:A:1066:C:OP2	2.19	0.43
1:A:143:A:H2	1:A:220:G:H22	1.65	0.43
1:A:224:U:H2'	1:A:225:C:C6	2.53	0.43
1:A:41:G:H2'	1:A:42:G:C8	2.54	0.43
1:A:82:G:C6	1:A:88:U:O2	2.71	0.43
1:A:914:A:O2'	1:A:915:A:H5'	2.19	0.43
20:B:27:LYS:C	20:B:29:PHE:H	2.21	0.43
3:D:163:GLN:OE1	3:D:163:GLN:N	2.52	0.43
5:F:7:VAL:HB	5:F:61:LEU:HD22	1.99	0.43
5:F:68:GLN:O	5:F:71:ILE:HG13	2.19	0.43
8:I:66:VAL:HG22	8:I:67:LYS:N	2.34	0.43
10:K:57:SER:O	10:K:90:PRO:HG2	2.19	0.43
16:Q:28:VAL:O	16:Q:28:VAL:HG13	2.19	0.43
18:S:12:LEU:CD2	18:S:15:LEU:HD23	2.49	0.43
18:S:16:LYS:HA	18:S:19:GLU:OE1	2.19	0.43
18:S:29:PRO:HB3	18:S:47:THR:HB	2.01	0.43
1:A:1072:G:H2'	1:A:1073:U:H6	1.84	0.43
1:A:1073:U:O3'	20:B:104:LYS:NZ	2.51	0.43
1:A:1252:A:H2'	1:A:1253:G:C5'	2.49	0.43
1:A:1389:C:H2'	1:A:1390:U:C6	2.54	0.43
1:A:1452:C:H5'	1:A:1453:G:N9	2.34	0.43
1:A:1458:G:H2'	1:A:1459:G:H8	1.83	0.43
1:A:432:A:C2'	1:A:433:G:H5'	2.49	0.43
1:A:488:C:H2'	1:A:489:C:H6	1.84	0.43
20:B:98:GLY:C	20:B:100:LEU:H	2.22	0.43
3:D:147:LYS:HE3	3:D:147:LYS:N	2.34	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:169:TRP:CB	3:D:183:ARG:HH21	2.32	0.43
3:D:54:LEU:HA	3:D:57:LYS:HB3	2.01	0.43
5:F:11:HIS:CG	5:F:12:PRO:HD2	2.54	0.43
8:I:21:LYS:O	8:I:60:LEU:HB2	2.19	0.43
8:I:20:ILE:HA	8:I:61:ASP:O	2.19	0.43
8:I:87:MET:HE3	8:I:94:ARG:HE	1.83	0.43
11:L:120:ARG:HA	11:L:121:PRO:HD2	1.87	0.43
12:M:84:CYS:SG	12:M:86:ARG:HB3	2.59	0.43
17:R:64:LEU:HB3	17:R:66:LEU:HG	2.01	0.43
1:A:237:G:H2'	1:A:238:A:C8	2.54	0.42
1:A:284:C:H2'	1:A:285:C:C6	2.53	0.42
1:A:474:G:H2'	1:A:475:C:H6	1.83	0.42
1:A:598:U:H2'	1:A:599:C:C6	2.53	0.42
1:A:920:U:O2'	1:A:921:U:H5'	2.19	0.42
20:B:33:ALA:HA	20:B:38:HIS:CA	2.39	0.42
2:C:111:ASP:OD2	2:C:114:LEU:HG	2.19	0.42
2:C:55:VAL:HG12	2:C:56:ILE:H	1.84	0.42
3:D:12:ARG:HG3	3:D:33:ILE:HA	2.00	0.42
4:E:30:PHE:CD1	4:E:30:PHE:N	2.87	0.42
9:J:57:VAL:HG13	9:J:58:ASN:CG	2.40	0.42
12:M:79:LEU:HD22	12:M:86:ARG:NH2	2.33	0.42
15:P:18:GLN:NE2	15:P:35:ARG:HH11	2.16	0.42
17:R:49:LYS:HA	17:R:52:ARG:HD2	2.00	0.42
21:U:5:VAL:O	21:U:6:ARG:HB2	2.19	0.42
1:A:1454:G:H2'	1:A:1455:G:O4'	2.19	0.42
1:A:210:C:H4'	1:A:211:G:H5''	2.00	0.42
1:A:796:C:O2'	1:A:797:C:H5'	2.19	0.42
20:B:81:ASP:O	20:B:85:SER:HB2	2.19	0.42
2:C:71:ARG:NH1	23:X:865:LEU:HB2	2.34	0.42
7:H:45:ILE:C	7:H:63:LYS:HZ1	2.23	0.42
8:I:118:ARG:HH12	8:I:122:ARG:HE	1.67	0.42
8:I:56:MET:O	8:I:58:GLU:N	2.52	0.42
10:K:22:ILE:HD13	10:K:95:THR:HG21	2.01	0.42
11:L:34:THR:HB	11:L:53:ARG:HB2	2.01	0.42
11:L:83:GLY:HA2	11:L:94:TYR:CD1	2.52	0.42
13:N:73:LEU:O	13:N:75:LYS:N	2.52	0.42
15:P:20:VAL:HG22	15:P:21:VAL:H	1.83	0.42
15:P:21:VAL:HG21	15:P:60:TRP:CD1	2.53	0.42
2:C:74:ILE:CA	23:X:867:GLU:CB	2.87	0.42
1:A:1261:A:H2'	1:A:1262:C:O4'	2.20	0.42
1:A:144:G:H2'	1:A:145:G:O4'	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:896:C:O2'	1:A:897:C:H5'	2.20	0.42
20:B:53:LEU:HD12	20:B:219:THR:CG2	2.49	0.42
3:D:145:ARG:C	3:D:147:LYS:H	2.22	0.42
4:E:17:VAL:HB	4:E:34:ALA:HB2	2.01	0.42
7:H:24:VAL:HG13	7:H:60:LEU:HB2	2.00	0.42
8:I:32:ARG:HH11	8:I:32:ARG:HG2	1.84	0.42
8:I:56:MET:HA	8:I:59:LYS:NZ	2.31	0.42
11:L:22:ALA:HB1	11:L:29:LYS:HG3	2.00	0.42
11:L:56:LEU:HB3	11:L:58:ASN:HD21	1.83	0.42
1:A:1299:A:N6	1:A:1302:C:H5	2.18	0.42
1:A:1517:G:H2'	1:A:1518:A:C8	2.55	0.42
1:A:382:A:O2'	1:A:383:A:H5'	2.19	0.42
1:A:473:U:N3	1:A:474:G:N7	2.67	0.42
1:A:538:G:H2'	1:A:539:A:C8	2.54	0.42
1:A:709:U:H2'	1:A:710:G:C8	2.54	0.42
1:A:811:C:O2'	1:A:901:A:N1	2.48	0.42
1:A:972:C:H4'	9:J:59:LYS:HB3	2.02	0.42
1:A:989:U:H2'	1:A:990:C:H6	1.83	0.42
20:B:50:ASN:O	20:B:51:GLU:C	2.58	0.42
2:C:112:ALA:O	2:C:113:LYS:C	2.58	0.42
2:C:40:GLN:OE1	2:C:44:LYS:HD2	2.19	0.42
2:C:39:ARG:HH21	2:C:56:ILE:HD12	1.83	0.42
6:G:115:MET:CE	6:G:119:LEU:HB2	2.50	0.42
8:I:17:ARG:HE	8:I:65:THR:HB	1.85	0.42
8:I:83:THR:HG23	8:I:84:ARG:N	2.35	0.42
8:I:86:LEU:N	8:I:86:LEU:HD13	2.34	0.42
9:J:6:ILE:HG12	9:J:102:LEU:CD1	2.45	0.42
11:L:14:LYS:NZ	11:L:17:LYS:HE2	2.34	0.42
14:O:39:GLN:HB2	14:O:39:GLN:HE21	1.65	0.42
21:U:11:PHE:HD1	21:U:11:PHE:O	2.02	0.42
10:K:88:PRO:CD	21:U:28:LEU:HD13	2.47	0.42
2:C:74:ILE:CA	23:X:867:GLU:N	2.82	0.42
1:A:1050:G:C2'	1:A:1051:C:H5'	2.49	0.42
1:A:1052:U:H5'	1:A:1053:G:OP2	2.19	0.42
1:A:978:A:O2'	1:A:1322:C:H5	2.02	0.42
1:A:1470:U:O2'	1:A:1471:U:H5'	2.20	0.42
1:A:557:G:H2'	1:A:558:G:O4'	2.20	0.42
1:A:611:C:H2'	1:A:612:C:H6	1.83	0.42
1:A:644:U:O2'	1:A:645:G:H5'	2.19	0.42
2:C:166:TRP:HB3	2:C:167:TYR:H	1.49	0.42
4:E:37:VAL:HA	4:E:47:PHE:HA	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:H:49:LYS:CG	7:H:50:VAL:H	2.27	0.42
8:I:38:PHE:C	8:I:44:ARG:HG2	2.39	0.42
16:Q:12:VAL:HG13	16:Q:21:VAL:HB	2.01	0.42
18:S:64:GLU:O	18:S:66:VAL:HG23	2.20	0.42
18:S:57:VAL:HG21	18:S:74:ALA:HB2	2.01	0.42
21:U:3:ILE:HG23	21:U:19:LYS:HE3	2.01	0.42
1:A:1125:U:HO2'	1:A:1126:U:H6	1.65	0.42
1:A:114:U:O2'	1:A:115:G:H5'	2.19	0.42
1:A:1238:A:N7	1:A:1303:C:H1'	2.35	0.42
1:A:1519:A:H3'	1:A:1520:C:C5'	2.49	0.42
1:A:237:G:H2'	1:A:238:A:H8	1.84	0.42
1:A:29:U:H5'	1:A:296:U:OP1	2.20	0.42
1:A:415:A:N3	1:A:415:A:O4'	2.52	0.42
1:A:552:U:H5'	11:L:82:ARG:HH11	1.82	0.42
1:A:680:C:H2'	1:A:681:A:H8	1.85	0.42
1:A:847:G:H2'	1:A:848:C:C6	2.54	0.42
1:A:861:G:H2'	1:A:862:C:H6	1.84	0.42
20:B:9:LEU:CD1	20:B:11:ALA:HB3	2.50	0.42
2:C:185:THR:O	2:C:186:SER:HB2	2.20	0.42
3:D:77:GLU:OE1	3:D:80:ARG:NH2	2.48	0.42
1:A:9:G:OP2	4:E:125:LYS:HD3	2.20	0.42
6:G:101:ARG:O	6:G:105:GLU:N	2.42	0.42
11:L:117:GLY:O	11:L:118:VAL:HG13	2.19	0.42
11:L:41:PRO:HD3	11:L:47:ALA:O	2.19	0.42
17:R:60:ARG:HA	17:R:63:TYR:CD1	2.54	0.42
19:T:57:VAL:C	19:T:60:GLN:HE22	2.22	0.42
1:A:321:A:H2'	1:A:322:C:H6	1.85	0.42
1:A:343:U:H2'	1:A:345:C:C5	2.55	0.42
1:A:202:G:H1'	1:A:468:A:H8	1.85	0.42
1:A:489:C:H2'	1:A:490:C:H6	1.84	0.42
1:A:711:G:H2'	1:A:712:A:H8	1.85	0.42
1:A:818:G:O2'	1:A:819:A:H5''	2.19	0.42
1:A:818:G:C3'	1:A:819:A:H5''	2.50	0.42
20:B:61:SER:HB3	20:B:223:GLY:O	2.20	0.42
1:A:408:A:OP1	3:D:111:ALA:HB3	2.19	0.42
3:D:154:VAL:HG13	3:D:155:LYS:N	2.33	0.42
3:D:104:MET:CE	3:D:170:LEU:HD13	2.50	0.42
7:H:35:ILE:O	7:H:39:LEU:HD12	2.19	0.42
8:I:9:GLY:O	8:I:16:ALA:HB3	2.20	0.42
10:K:22:ILE:CG2	10:K:95:THR:HG21	2.35	0.42
11:L:21:PRO:HD2	11:L:94:TYR:OH	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:O:2:LEU:HD13	14:O:7:THR:HG23	2.02	0.42
16:Q:56:ASP:C	16:Q:79:GLU:HB3	2.40	0.42
1:A:1220:G:H21	18:S:53:GLY:HA2	1.84	0.42
23:X:1043:ALA:HB1	23:X:1044:PRO:HD2	2.02	0.42
1:A:1121:U:O2'	1:A:1122:U:H5'	2.20	0.42
1:A:462:G:H2'	1:A:463:U:C6	2.55	0.42
1:A:532:A:H62	2:C:191:THR:CB	2.31	0.42
1:A:999:C:O2'	1:A:1000:A:H5'	2.20	0.42
20:B:79:VAL:HG11	20:B:92:ASN:HB3	2.01	0.42
2:C:8:GLY:HA2	2:C:11:LEU:CG	2.41	0.42
3:D:58:GLN:CD	3:D:62:ARG:HG3	2.39	0.42
8:I:11:ARG:NH1	8:I:106:ASP:OD1	2.53	0.42
9:J:15:HIS:HD2	9:J:18:ILE:CG2	2.31	0.42
16:Q:57:VAL:N	16:Q:79:GLU:HB3	2.35	0.42
17:R:64:LEU:C	17:R:66:LEU:H	2.23	0.42
21:U:20:ARG:HG2	21:U:20:ARG:O	2.20	0.42
21:U:52:VAL:HG13	21:U:53:LYS:N	2.34	0.42
1:A:113:G:H2'	1:A:114:U:C6	2.55	0.42
1:A:1273:C:H2'	1:A:1274:A:O4'	2.20	0.42
1:A:219:U:H2'	1:A:220:G:H8	1.85	0.42
1:A:512:U:O2'	1:A:513:C:H5'	2.19	0.42
1:A:634:C:O2'	1:A:635:A:H5'	2.20	0.42
1:A:768:A:H4'	1:A:1523:G:N2	2.35	0.42
1:A:812:G:OP1	1:A:812:G:C4'	2.68	0.42
20:B:121:GLN:NE2	20:B:122:ASP:HB2	2.35	0.42
2:C:54:ILE:O	2:C:54:ILE:HG12	2.19	0.42
9:J:48:ARG:HB3	9:J:66:GLU:HB3	2.01	0.42
11:L:6:LEU:O	11:L:10:PRO:HG3	2.19	0.42
13:N:45:LEU:HD23	13:N:46:LYS:N	2.35	0.42
15:P:67:ILE:CD1	15:P:72:ALA:HA	2.49	0.42
18:S:35:ARG:HB3	18:S:71:GLY:HA2	2.02	0.42
19:T:53:MET:SD	19:T:57:VAL:HG21	2.60	0.42
1:A:177:G:C5'	19:T:59:ARG:HH21	2.33	0.42
19:T:57:VAL:O	19:T:61:ALA:HB2	2.19	0.42
20:B:55:GLU:O	25:Z:78:ALA:CB	2.68	0.42
1:A:1390:U:H2'	1:A:1391:U:H6	1.84	0.42
1:A:179:A:H2'	1:A:180:U:H6	1.83	0.42
1:A:358:U:H2'	1:A:359:G:C8	2.55	0.42
1:A:411:A:C4	1:A:413:G:H1'	2.55	0.42
1:A:421:U:H5'	1:A:422:C:C5	2.55	0.42
1:A:585:G:O2'	1:A:586:C:H5'	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:612:C:H2'	1:A:613:C:C6	2.55	0.42
1:A:666:G:H5'	1:A:726:C:H1'	2.02	0.42
1:A:761:G:H2'	1:A:762:U:C6	2.55	0.42
1:A:787:A:O2'	1:A:788:U:H5'	2.20	0.42
1:A:95:C:O2	1:A:95:C:C2'	2.67	0.42
20:B:205:ALA:O	20:B:209:VAL:HG22	2.20	0.42
2:C:70:ALA:O	23:X:863:SER:HA	2.15	0.42
2:C:71:ARG:NH1	23:X:865:LEU:O	2.53	0.42
1:A:405:U:OP2	3:D:114:ARG:NH2	2.53	0.42
8:I:25:GLY:HA2	8:I:60:LEU:O	2.19	0.42
8:I:26:LYS:H	8:I:26:LYS:HG2	1.56	0.42
9:J:36:VAL:CG2	9:J:76:ILE:HG22	2.50	0.42
10:K:85:VAL:O	10:K:111:ASP:HA	2.20	0.42
11:L:8:ARG:CZ	11:L:9:LYS:HE3	2.50	0.42
21:U:3:ILE:CG1	21:U:19:LYS:HG2	2.47	0.42
1:A:1231:G:H2'	1:A:1232:U:C6	2.55	0.41
1:A:162:A:H2'	1:A:163:C:O4'	2.20	0.41
1:A:177:G:O4'	1:A:177:G:N3	2.51	0.41
1:A:233:C:O2'	1:A:234:C:H5'	2.20	0.41
1:A:242:G:H2'	1:A:243:A:H5''	2.01	0.41
1:A:502:A:O2'	1:A:503:C:H5'	2.20	0.41
1:A:691:G:H2'	1:A:692:U:C6	2.55	0.41
1:A:970:C:C5	1:A:1231:G:H1'	2.54	0.41
20:B:71:THR:HG22	20:B:94:ARG:HH21	1.84	0.41
4:E:114:LEU:HD13	4:E:122:VAL:HG21	2.01	0.41
11:L:9:LYS:HG3	11:L:9:LYS:O	2.20	0.41
13:N:12:ARG:NH2	13:N:58:ARG:HH12	2.18	0.41
15:P:22:ALA:HB2	15:P:32:PHE:HB3	2.01	0.41
15:P:6:LEU:HD21	15:P:74:LEU:HD11	2.02	0.41
16:Q:67:SER:HB2	16:Q:70:LYS:HB3	2.02	0.41
21:U:34:ARG:C	21:U:34:ARG:HD2	2.41	0.41
1:A:1181:G:O4'	1:A:1181:G:P	2.78	0.41
1:A:1300:G:O2'	1:A:1301:U:O5'	2.37	0.41
1:A:1487:G:O2'	1:A:1488:G:H5'	2.21	0.41
1:A:1529:G:H3'	1:A:1529:G:OP2	2.21	0.41
1:A:236:A:H2'	1:A:237:G:H8	1.85	0.41
1:A:250:A:H1'	1:A:252:U:C5	2.55	0.41
1:A:373:A:C1'	1:A:481:G:H1'	2.50	0.41
1:A:542:G:O2'	1:A:543:U:H5'	2.20	0.41
2:C:155:ARG:NH1	2:C:192:TYR:HB2	2.35	0.41
2:C:160:GLU:O	2:C:160:GLU:HG2	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:F:62:MET:O	5:F:63:ASN:HB2	2.21	0.41
5:F:38:ARG:CB	5:F:63:ASN:HB2	2.43	0.41
9:J:30:LYS:O	9:J:30:LYS:HD2	2.21	0.41
10:K:26:PHE:HE1	10:K:88:PRO:HG2	1.85	0.41
13:N:68:ARG:HH11	13:N:70:HIS:HB2	1.85	0.41
14:O:52:ARG:O	14:O:55:LEU:HB3	2.21	0.41
15:P:39:PHE:HE2	15:P:70:ARG:NH2	2.18	0.41
18:S:28:LYS:H	18:S:28:LYS:HD3	1.84	0.41
21:U:22:CYS:O	21:U:23:GLU:HG2	2.20	0.41
3:D:43:ARG:NH1	23:X:895:LEU:HA	2.27	0.41
1:A:1057:G:O2'	1:A:1058:G:H5'	2.20	0.41
1:A:1269:A:H1'	1:A:1326:U:O4'	2.20	0.41
1:A:1271:A:H2'	1:A:1272:G:C8	2.55	0.41
1:A:28:A:H2'	1:A:29:U:O4'	2.21	0.41
1:A:328:C:H4'	1:A:329:A:H5''	2.02	0.41
1:A:478:A:H2'	1:A:479:U:O4'	2.19	0.41
1:A:60:A:H1'	1:A:61:G:O4'	2.20	0.41
1:A:841:C:H3'	1:A:843:U:P	2.61	0.41
1:A:861:G:O2'	1:A:862:C:H5'	2.20	0.41
1:A:980:C:H2'	1:A:981:U:H5'	2.03	0.41
20:B:202:ASN:HD21	20:B:204:ASP:HB3	1.85	0.41
20:B:42:LEU:O	20:B:46:VAL:HG12	2.20	0.41
20:B:58:LYS:HB2	25:Z:76:GLU:HA	2.02	0.41
3:D:158:LEU:N	3:D:158:LEU:HD23	2.36	0.41
8:I:118:ARG:O	8:I:118:ARG:HG2	2.21	0.41
8:I:51:LEU:HD21	8:I:62:LEU:HG	2.01	0.41
8:I:71:ILE:O	8:I:72:SER:C	2.59	0.41
11:L:30:ARG:HB3	11:L:57:THR:CG2	2.50	0.41
13:N:19:TYR:HD2	13:N:23:ARG:HD3	1.86	0.41
13:N:20:PHE:HA	13:N:24:ALA:H	1.85	0.41
16:Q:3:LYS:HD2	16:Q:3:LYS:O	2.21	0.41
16:Q:76:ARG:HE	16:Q:78:VAL:HG22	1.85	0.41
21:U:33:ARG:CZ	21:U:34:ARG:HG3	2.51	0.41
22:V:126:PRO:HD2	22:V:127:GLN:OE1	2.20	0.41
20:B:54:ALA:HB2	25:Z:81:GLN:HG3	2.03	0.41
1:A:1084:G:H2'	1:A:1085:U:C5	2.56	0.41
1:A:1262:C:H2'	1:A:1263:C:O4'	2.19	0.41
1:A:1322:C:O2	1:A:1322:C:O4'	2.39	0.41
1:A:314:C:O2'	1:A:315:A:H5'	2.21	0.41
1:A:484:G:H4'	1:A:485:U:H5'	2.02	0.41
1:A:957:U:H2'	1:A:959:A:OP2	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:21:TRP:CH2	13:N:93:PRO:HG3	2.54	0.41
2:C:79:LYS:HD2	23:X:873:ILE:HD12	2.01	0.41
3:D:48:SER:OG	3:D:49:ASP:N	2.52	0.41
3:D:49:ASP:O	3:D:52:VAL:HG22	2.19	0.41
3:D:84:ASN:OD1	4:E:101:GLY:HA2	2.19	0.41
4:E:155:LYS:HG3	7:H:65:PHE:HB2	2.01	0.41
8:I:10:ARG:HA	8:I:77:ALA:CB	2.50	0.41
1:A:1248:A:H2	8:I:71:ILE:HD11	1.85	0.41
13:N:81:ILE:HD12	13:N:82:LYS:N	2.36	0.41
1:A:581:G:OP1	14:O:64:LYS:HE3	2.20	0.41
15:P:25:ARG:HD3	15:P:25:ARG:N	2.34	0.41
15:P:73:ALA:HB1	15:P:77:GLU:OE2	2.21	0.41
19:T:60:GLN:HE21	19:T:61:ALA:N	2.10	0.41
20:B:225:SER:HB3	25:Z:70:GLN:HG2	2.02	0.41
1:A:108:G:O4'	1:A:108:G:N3	2.54	0.41
1:A:1098:C:H2'	1:A:1099:G:O4'	2.20	0.41
1:A:1129:C:H5''	8:I:17:ARG:NH2	2.34	0.41
1:A:1244:G:H2'	1:A:1245:C:H6	1.81	0.41
1:A:1347:G:N2	1:A:1373:G:H2'	2.36	0.41
1:A:1358:U:OP1	13:N:73:LEU:HA	2.20	0.41
1:A:1521:C:H2'	1:A:1522:U:C6	2.56	0.41
1:A:16:A:H4'	4:E:21:SER:N	2.35	0.41
1:A:152:A:N6	1:A:170:U:C2	2.88	0.41
1:A:374:A:H2'	1:A:375:U:C6	2.56	0.41
1:A:65:A:N7	1:A:381:C:C4	2.89	0.41
1:A:714:G:H2'	1:A:715:A:C8	2.56	0.41
1:A:730:G:O2'	1:A:766:A:H5'	2.20	0.41
1:A:923:A:H2'	1:A:924:C:C6	2.54	0.41
20:B:40:ILE:HG13	20:B:40:ILE:H	1.73	0.41
3:D:36:ALA:O	3:D:38:GLY:N	2.53	0.41
3:D:36:ALA:C	3:D:38:GLY:H	2.24	0.41
6:G:141:HIS:O	6:G:144:ALA:O	2.39	0.41
8:I:4:GLN:HE21	8:I:21:LYS:HE3	1.84	0.41
8:I:71:ILE:CD1	8:I:71:ILE:H	2.30	0.41
9:J:73:LEU:O	9:J:74:VAL:HB	2.21	0.41
10:K:81:LEU:CD2	10:K:104:PHE:HB3	2.50	0.41
11:L:113:ARG:HD3	11:L:121:PRO:HD3	2.02	0.41
11:L:4:ASN:O	11:L:8:ARG:HG2	2.19	0.41
15:P:76:LYS:HD2	15:P:76:LYS:HA	1.86	0.41
2:C:78:LYS:HG3	23:X:947:GLU:HG2	2.00	0.41
1:A:1035:A:C2'	1:A:1036:A:H8	2.34	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1126:U:O2'	1:A:1127:G:H5'	2.21	0.41
1:A:113:G:H21	1:A:353:A:H8	1.67	0.41
1:A:1319:A:H5''	18:S:3:SER:OG	2.21	0.41
1:A:186:C:H2'	1:A:187:G:O4'	2.21	0.41
1:A:648:A:H2'	1:A:649:A:C8	2.56	0.41
1:A:880:C:H2'	1:A:881:G:H8	1.86	0.41
2:C:122:GLN:O	2:C:127:VAL:HG22	2.20	0.41
2:C:39:ARG:NH2	2:C:56:ILE:HD12	2.35	0.41
3:D:99:ASN:CB	3:D:103:ARG:HH21	2.34	0.41
3:D:120:LYS:CB	3:D:145:ARG:HH21	2.32	0.41
3:D:187:ARG:HG3	3:D:187:ARG:HH11	1.86	0.41
1:A:541:G:HO2'	3:D:39:GLN:HB2	1.84	0.41
4:E:25:LYS:HE2	4:E:25:LYS:C	2.41	0.41
5:F:74:LEU:HG	5:F:78:PHE:CD1	2.55	0.41
6:G:101:ARG:HB3	6:G:105:GLU:OE2	2.20	0.41
6:G:112:ASP:H	6:G:118:ARG:HD3	1.86	0.41
6:G:144:ALA:C	6:G:146:ALA:N	2.70	0.41
6:G:62:GLU:O	6:G:66:GLU:HG3	2.21	0.41
10:K:33:ILE:HG13	10:K:73:VAL:HG21	2.01	0.41
1:A:1311:A:H2'	1:A:1312:G:O4'	2.21	0.41
1:A:1457:G:H2'	1:A:1458:G:H8	1.86	0.41
1:A:255:G:H2'	1:A:256:U:H6	1.84	0.41
1:A:337:G:O2'	1:A:338:A:H5'	2.21	0.41
1:A:399:G:H2'	1:A:400:C:H6	1.85	0.41
1:A:415:A:N1	1:A:428:G:O6	2.53	0.41
1:A:552:U:H4'	11:L:82:ARG:HG2	2.01	0.41
1:A:56:U:O5'	1:A:56:U:H6	2.04	0.41
1:A:605:U:H2'	1:A:606:G:C8	2.55	0.41
1:A:957:U:O2	1:A:959:A:H8	2.03	0.41
20:B:225:SER:N	25:Z:74:GLU:CG	2.55	0.41
2:C:181:ILE:HG22	2:C:182:ASP:N	2.35	0.41
2:C:4:VAL:HG21	2:C:9:ILE:HD13	2.02	0.41
3:D:99:ASN:HB3	3:D:103:ARG:HH21	1.85	0.41
4:E:101:GLY:N	4:E:121:ASN:HD21	2.14	0.41
4:E:131:ASN:ND2	4:E:134:ASN:N	2.69	0.41
4:E:70:MET:HB3	4:E:71:ILE:H	1.65	0.41
8:I:24:ASN:O	8:I:61:ASP:HB2	2.21	0.41
8:I:85:ALA:O	8:I:88:GLU:HB2	2.20	0.41
10:K:22:ILE:HA	10:K:31:VAL:HG22	2.03	0.41
12:M:103:THR:HG22	12:M:104:ASN:N	2.33	0.41
13:N:86:ALA:HB3	13:N:92:ILE:HD11	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:J:89:ARG:NE	22:V:116:THR:CB	2.82	0.41
1:A:1202:U:H2'	1:A:1203:C:H5'	2.02	0.41
1:A:1281:C:H3'	1:A:1282:C:H6	1.86	0.41
1:A:499:A:H4'	1:A:500:G:H5'	2.03	0.41
1:A:564:C:H1'	16:Q:32:ILE:O	2.19	0.41
1:A:622:A:H2'	1:A:623:C:H5'	2.02	0.41
1:A:70:U:H1'	1:A:71:A:N7	2.36	0.41
1:A:784:A:H2'	1:A:785:G:C8	2.54	0.41
1:A:812:G:O2'	1:A:813:U:C6	2.71	0.41
1:A:993:G:C2'	1:A:995:C:H41	2.34	0.41
20:B:187:ASP:H	20:B:190:SER:HB2	1.85	0.41
2:C:41:TYR:HA	2:C:44:LYS:CD	2.49	0.41
4:E:143:LEU:O	4:E:146:MET:HB2	2.20	0.41
1:A:1351:U:H4'	6:G:32:ASP:OD1	2.21	0.41
6:G:46:LEU:HD13	6:G:46:LEU:O	2.20	0.41
8:I:62:LEU:N	8:I:62:LEU:HD22	2.35	0.41
8:I:98:ARG:HA	8:I:103:VAL:HG22	2.01	0.41
9:J:5:ARG:HG3	9:J:79:PRO:HD3	2.01	0.41
13:N:89:ARG:HB2	13:N:91:GLU:HG3	2.02	0.41
14:O:5:GLU:O	14:O:9:LYS:HB2	2.20	0.41
19:T:17:ARG:C	19:T:17:ARG:HD2	2.40	0.41
1:A:1037:C:H2'	1:A:1038:C:C6	2.55	0.41
1:A:1392:G:H2'	1:A:1393:U:H6	1.85	0.41
1:A:1528:U:H6	1:A:1528:U:O5'	2.03	0.41
1:A:374:A:H5''	1:A:452:A:N1	2.36	0.41
1:A:5:U:H1'	1:A:6:G:N1	2.35	0.41
1:A:842:U:H3'	1:A:842:U:OP1	2.21	0.41
1:A:861:G:H2'	1:A:862:C:C6	2.55	0.41
20:B:15:PHE:HD1	20:B:16:GLY:N	2.19	0.41
20:B:9:LEU:CD1	20:B:9:LEU:H	2.33	0.41
2:C:106:ARG:HD2	22:V:164:ASP:OD2	2.21	0.41
3:D:160:LEU:HA	3:D:163:GLN:OE1	2.21	0.41
4:E:35:LEU:CD1	4:E:133:ILE:HA	2.50	0.41
5:F:7:VAL:HA	5:F:60:VAL:O	2.20	0.41
5:F:29:ILE:HD13	5:F:64:VAL:CG1	2.51	0.41
6:G:138:GLU:HA	6:G:141:HIS:HB2	2.02	0.41
7:H:9:MET:HE1	7:H:32:LYS:O	2.21	0.41
9:J:6:ILE:HA	9:J:102:LEU:CD2	2.51	0.41
10:K:57:SER:O	10:K:58:THR:C	2.60	0.41
12:M:58:GLU:HA	12:M:61:LYS:CE	2.50	0.41
13:N:5:MET:C	13:N:7:ALA:H	2.24	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:Q:10:ARG:CZ	16:Q:56:ASP:N	2.84	0.41
17:R:27:THR:O	17:R:28:LEU:HD12	2.20	0.41
1:A:1225:A:H4'	18:S:77:ARG:CZ	2.51	0.41
1:A:1437:A:H2'	1:A:1438:G:H8	1.86	0.41
1:A:1499:A:C1'	1:A:1520:C:H5'	2.51	0.41
1:A:68:G:C4'	1:A:171:A:H1'	2.51	0.41
1:A:291:U:O2'	1:A:292:G:H5'	2.21	0.41
1:A:319:G:O2'	1:A:320:A:H5'	2.21	0.41
1:A:493:A:O4'	1:A:493:A:N3	2.52	0.41
1:A:737:C:H2'	1:A:738:C:H6	1.86	0.41
1:A:777:A:H2'	1:A:778:G:H8	1.86	0.41
1:A:893:C:H2'	1:A:894:G:C8	2.55	0.41
20:B:138:ARG:HA	20:B:141:GLU:CD	2.40	0.41
20:B:45:THR:HA	20:B:48:MET:CG	2.50	0.41
2:C:40:GLN:CD	2:C:44:LYS:HD2	2.42	0.41
3:D:84:ASN:ND2	3:D:87:GLU:N	2.64	0.41
6:G:115:MET:HE1	6:G:119:LEU:HB2	2.03	0.41
6:G:87:PRO:HB2	6:G:144:ALA:CB	2.50	0.41
8:I:66:VAL:HG21	8:I:74:GLN:HG3	2.02	0.41
12:M:16:ILE:CG2	12:M:17:ALA:N	2.84	0.41
14:O:87:ARG:C	14:O:88:ARG:HG2	2.41	0.41
16:Q:26:ARG:HE	16:Q:39:ARG:HH12	1.67	0.41
21:U:24:LYS:O	21:U:26:GLY:N	2.54	0.41
1:A:1304:G:H2'	1:A:1305:G:C1'	2.51	0.41
1:A:1468:A:O2'	1:A:1469:C:H5'	2.20	0.41
1:A:36:C:O2'	1:A:37:U:H5'	2.20	0.41
1:A:425:G:O2'	1:A:426:U:H5'	2.21	0.41
1:A:438:U:H2'	1:A:494:G:O6	2.21	0.41
1:A:492:C:C2'	1:A:493:A:H5''	2.51	0.41
1:A:537:G:H5''	11:L:109:ARG:NH1	2.36	0.41
1:A:738:C:H2'	1:A:739:C:C6	2.56	0.41
20:B:62:ARG:HD3	25:Z:75:GLN:CB	2.50	0.41
2:C:17:TRP:C	2:C:19:SER:H	2.24	0.41
1:A:619:U:O2	3:D:129:VAL:HG13	2.21	0.41
3:D:26:ALA:O	3:D:27:ILE:O	2.39	0.41
6:G:19:SER:HG	6:G:22:LEU:HB2	1.86	0.41
7:H:40:LYS:HD2	7:H:48:PHE:CE1	2.56	0.41
8:I:107:ALA:O	8:I:109:GLN:HG2	2.21	0.41
8:I:20:ILE:HD12	8:I:20:ILE:N	2.35	0.41
8:I:41:GLU:H	8:I:44:ARG:CZ	2.34	0.41
11:L:80:LEU:HD13	11:L:101:LEU:CD1	2.51	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:M:100:ARG:HH11	12:M:103:THR:HB	1.86	0.41
20:B:58:LYS:CB	25:Z:76:GLU:HA	2.51	0.41
1:A:1067:A:H1'	1:A:1068:G:C8	2.55	0.40
1:A:17:U:H1'	1:A:1080:A:N3	2.36	0.40
1:A:1238:A:H2	1:A:1241:G:H1'	1.83	0.40
1:A:1340:A:H2'	1:A:1341:U:H6	1.86	0.40
1:A:547:A:H4'	1:A:548:G:O5'	2.21	0.40
1:A:635:A:O2'	1:A:636:U:H5'	2.21	0.40
1:A:754:C:O2	1:A:754:C:H3'	2.21	0.40
1:A:821:G:H2'	1:A:822:U:C6	2.55	0.40
1:A:847:G:H2'	1:A:848:C:H6	1.86	0.40
20:B:116:LEU:HD13	20:B:140:LEU:HD23	2.02	0.40
2:C:172:VAL:HG11	2:C:200:TRP:HB3	2.02	0.40
2:C:60:ALA:O	2:C:61:LYS:HB2	2.21	0.40
2:C:72:PRO:CD	23:X:863:SER:CB	2.64	0.40
3:D:19:PHE:CB	3:D:110:ARG:HH12	2.31	0.40
5:F:44:ARG:HA	5:F:57:ALA:O	2.20	0.40
5:F:7:VAL:O	5:F:7:VAL:HG13	2.21	0.40
7:H:110:MET:HB3	7:H:114:ALA:HB3	2.03	0.40
7:H:76:ARG:HG3	7:H:76:ARG:NH1	2.36	0.40
8:I:83:THR:HA	8:I:86:LEU:CD2	2.51	0.40
11:L:87:LYS:NZ	11:L:87:LYS:HA	2.37	0.40
13:N:1:ALA:O	13:N:2:LYS:HB2	2.19	0.40
13:N:30:ILE:H	13:N:30:ILE:CD1	2.31	0.40
16:Q:30:HIS:N	16:Q:35:LYS:H	2.19	0.40
17:R:52:ARG:HG3	17:R:52:ARG:H	1.71	0.40
18:S:57:VAL:HG21	18:S:74:ALA:CB	2.51	0.40
22:V:125:LYS:HD2	22:V:128:HIS:HB2	2.01	0.40
1:A:1432:G:H1'	1:A:1468:A:N6	2.36	0.40
1:A:154:U:H2'	1:A:155:A:C8	2.56	0.40
1:A:567:G:H2'	1:A:568:G:O4'	2.22	0.40
1:A:591:U:H2'	1:A:592:G:C8	2.55	0.40
1:A:601:G:O2'	1:A:602:A:H5'	2.22	0.40
1:A:657:U:O2'	1:A:658:C:H5'	2.21	0.40
1:A:945:G:N1	1:A:1337:G:C2	2.89	0.40
1:A:976:G:H5''	1:A:1358:U:O2'	2.21	0.40
20:B:131:LYS:O	20:B:134:LEU:HB2	2.21	0.40
3:D:116:LEU:O	3:D:121:ALA:HB3	2.21	0.40
3:D:189:ASP:OD1	3:D:189:ASP:N	2.55	0.40
5:F:53:LYS:HD3	5:F:54:LEU:N	2.14	0.40
10:K:60:PHE:HA	10:K:63:GLN:CD	2.42	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:Q:7:LEU:C	16:Q:9:GLY:H	2.24	0.40
1:A:1288:A:N1	1:A:1371:G:H1'	2.36	0.40
1:A:178:C:O2'	1:A:179:A:H5'	2.20	0.40
20:B:209:VAL:O	20:B:213:LEU:HB2	2.22	0.40
3:D:60:VAL:O	3:D:60:VAL:HG22	2.22	0.40
6:G:94:ARG:O	6:G:98:LEU:HD12	2.22	0.40
8:I:18:VAL:HG22	8:I:64:ILE:CG2	2.50	0.40
8:I:38:PHE:O	8:I:39:GLY:C	2.59	0.40
9:J:37:ARG:N	9:J:77:VAL:HG22	2.37	0.40
12:M:108:ARG:HD2	12:M:108:ARG:HA	1.93	0.40
14:O:70:LYS:HG2	14:O:77:TYR:CG	2.56	0.40
23:X:42:ASP:HA	23:X:43:PRO:HD3	1.99	0.40
1:A:1113:C:H2'	1:A:1114:C:C6	2.55	0.40
1:A:1123:U:C2'	1:A:1124:G:H5'	2.51	0.40
1:A:1195:C:H2'	1:A:1197:A:O4'	2.21	0.40
1:A:1499:A:H2'	1:A:1500:A:H8	1.87	0.40
1:A:538:G:H2'	1:A:539:A:H8	1.87	0.40
1:A:749:A:O2'	1:A:750:C:H5'	2.22	0.40
1:A:951:G:H1'	1:A:970:C:O2'	2.21	0.40
20:B:19:THR:OG1	20:B:20:ARG:N	2.53	0.40
20:B:56:LEU:HA	20:B:59:ILE:CG1	2.52	0.40
2:C:148:ILE:HA	2:C:200:TRP:O	2.20	0.40
4:E:35:LEU:HD21	4:E:47:PHE:HB2	2.03	0.40
4:E:51:LYS:O	4:E:52:ALA:HB2	2.21	0.40
6:G:114:SER:O	6:G:118:ARG:HG3	2.21	0.40
6:G:94:ARG:CZ	6:G:98:LEU:HD21	2.51	0.40
8:I:122:ARG:HG3	8:I:122:ARG:HH11	1.87	0.40
1:A:1371:G:OP1	8:I:12:LYS:HG2	2.20	0.40
8:I:56:MET:CA	8:I:59:LYS:HZ1	2.33	0.40
8:I:29:ILE:CG2	8:I:64:ILE:HB	2.40	0.40
9:J:93:ALA:HB1	9:J:96:VAL:HG23	2.03	0.40
14:O:46:LYS:HB2	14:O:46:LYS:HE3	1.88	0.40
18:S:48:ILE:HG21	18:S:70:LEU:HD21	2.04	0.40
19:T:58:ASP:HA	19:T:61:ALA:HB3	2.03	0.40
21:U:40:PRO:O	21:U:44:ARG:N	2.43	0.40
1:A:829:G:O2'	1:A:830:G:H5'	2.22	0.40
20:B:91:VAL:HG11	20:B:95:TRP:CD1	2.56	0.40
3:D:158:LEU:H	3:D:158:LEU:HD23	1.87	0.40
3:D:195:ASN:HB2	3:D:198:LEU:HG	2.04	0.40
3:D:196:GLU:HA	3:D:199:ILE:CD1	2.51	0.40
3:D:54:LEU:C	3:D:54:LEU:HD13	2.41	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:E:105:ILE:HB	4:E:123:LEU:CA	2.42	0.40
4:E:131:ASN:ND2	4:E:134:ASN:H	2.18	0.40
6:G:117:LEU:C	6:G:119:LEU:N	2.75	0.40
6:G:29:LEU:HD12	6:G:104:VAL:HG13	2.04	0.40
6:G:73:GLU:OE2	6:G:90:VAL:HG12	2.21	0.40
7:H:39:LEU:HD12	7:H:39:LEU:H	1.86	0.40
13:N:11:LYS:NZ	13:N:11:LYS:HA	2.36	0.40
13:N:81:ILE:HG13	13:N:81:ILE:H	1.68	0.40
14:O:17:ASP:HB2	14:O:18:ALA:H	1.59	0.40
14:O:58:MET:HG2	14:O:58:MET:H	1.59	0.40
15:P:12:LYS:C	15:P:14:ARG:N	2.74	0.40
15:P:52:LEU:HD22	15:P:52:LEU:N	2.36	0.40
16:Q:10:ARG:O	16:Q:22:VAL:HG13	2.22	0.40
17:R:64:LEU:C	17:R:66:LEU:N	2.74	0.40
21:U:26:GLY:O	21:U:30:GLU:N	2.53	0.40
24:Y:1026:PRO:HB3	24:Y:1120:THR:HG23	2.04	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	C	204/232 (88%)	135 (66%)	50 (24%)	19 (9%)	1	14
3	D	203/205 (99%)	131 (64%)	54 (27%)	18 (9%)	1	15
4	E	148/166 (89%)	107 (72%)	34 (23%)	7 (5%)	3	28
5	F	98/135 (73%)	69 (70%)	23 (24%)	6 (6%)	2	22
6	G	148/178 (83%)	103 (70%)	37 (25%)	8 (5%)	2	25
7	H	127/129 (98%)	105 (83%)	19 (15%)	3 (2%)	7	42
8	I	125/129 (97%)	86 (69%)	28 (22%)	11 (9%)	1	15

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
9	J	96/103 (93%)	63 (66%)	21 (22%)	12 (12%)	0	7
10	K	115/128 (90%)	75 (65%)	27 (24%)	13 (11%)	0	8
11	L	121/123 (98%)	74 (61%)	30 (25%)	17 (14%)	0	5
12	M	112/117 (96%)	87 (78%)	14 (12%)	11 (10%)	1	12
13	N	92/100 (92%)	59 (64%)	24 (26%)	9 (10%)	1	12
14	O	86/89 (97%)	66 (77%)	18 (21%)	2 (2%)	7	43
15	P	80/82 (98%)	59 (74%)	16 (20%)	5 (6%)	1	22
16	Q	78/83 (94%)	48 (62%)	26 (33%)	4 (5%)	2	26
17	R	53/74 (72%)	27 (51%)	19 (36%)	7 (13%)	0	6
18	S	77/91 (85%)	57 (74%)	14 (18%)	6 (8%)	1	17
19	T	83/86 (96%)	69 (83%)	8 (10%)	6 (7%)	1	19
20	B	216/240 (90%)	145 (67%)	53 (24%)	18 (8%)	1	16
21	U	49/71 (69%)	22 (45%)	12 (24%)	15 (31%)	0	0
22	V	223/329 (68%)	193 (86%)	23 (10%)	7 (3%)	5	36
22	W	212/329 (64%)	186 (88%)	23 (11%)	3 (1%)	13	54
23	X	1312/1342 (98%)	1106 (84%)	173 (13%)	33 (2%)	6	41
24	Y	1368/1407 (97%)	1155 (84%)	159 (12%)	54 (4%)	3	31
25	Z	77/91 (85%)	72 (94%)	5 (6%)	0	100	100
All	All	5503/6059 (91%)	4299 (78%)	910 (16%)	294 (5%)	4	26

All (294) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	C	2	GLN
2	C	91	ALA
2	C	153	SER
3	D	18	LEU
3	D	31	CYS
3	D	191	SER
5	F	92	THR
8	I	8	THR
8	I	43	ALA
9	J	57	VAL
10	K	56	LYS
10	K	126	ARG
11	L	10	PRO

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Mol	Chain	Res	Type
11	L	23	LEU
12	M	6	ILE
12	M	14	ALA
13	N	52	ARG
20	B	19	THR
20	B	22	TRP
20	B	163	ILE
20	B	186	VAL
21	U	14	ALA
21	U	22	CYS
23	X	57	PHE
23	X	121	GLU
23	X	555	TYR
23	X	842	ASP
23	X	887	VAL
24	Y	81	ARG
24	Y	110	PRO
24	Y	323	PRO
24	Y	831	VAL
24	Y	859	PRO
24	Y	1179	PRO
2	C	19	SER
2	C	25	THR
2	C	54	ILE
2	C	81	GLU
2	C	100	ILE
2	C	180	ASP
3	D	25	ARG
3	D	107	GLY
3	D	152	SER
3	D	172	VAL
3	D	192	ALA
4	E	20	VAL
4	E	128	GLY
5	F	62	MET
5	F	64	VAL
5	F	65	GLU
6	G	84	TYR
6	G	129	ASN
8	I	57	VAL
8	I	71	ILE
8	I	108	ARG

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Mol	Chain	Res	Type
9	J	75	ASP
9	J	92	LEU
10	K	50	GLY
10	K	53	GLY
10	K	125	LYS
11	L	19	ASN
11	L	72	ASN
11	L	84	GLY
12	M	3	ILE
12	M	66	GLY
12	M	104	ASN
13	N	51	PRO
13	N	61	ASN
14	O	73	ASP
15	P	79	ASN
16	Q	6	THR
16	Q	34	GLY
17	R	32	ILE
18	S	5	LYS
19	T	85	LEU
20	B	18	GLN
21	U	32	ARG
21	U	34	ARG
22	V	112	ALA
22	V	113	ALA
23	X	58	PRO
23	X	338	THR
23	X	488	MET
23	X	490	GLN
24	Y	37	GLU
24	Y	75	TYR
24	Y	357	VAL
24	Y	587	LEU
24	Y	805	GLN
24	Y	850	LYS
24	Y	971	GLY
2	C	59	PRO
2	C	78	LYS
2	C	136	ALA
3	D	27	ILE
3	D	28	ASP
3	D	43	ARG

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Mol	Chain	Res	Type
3	D	151	GLN
3	D	177	MET
4	E	43	GLY
5	F	94	HIS
6	G	89	GLU
8	I	44	ARG
8	I	55	ASP
8	I	127	SER
9	J	62	ARG
9	J	93	ALA
10	K	70	ALA
10	K	77	GLY
10	K	91	GLY
11	L	13	ARG
11	L	60	PHE
11	L	122	LYS
12	M	7	ASN
12	M	22	TYR
12	M	65	GLU
12	M	98	GLY
13	N	21	ALA
13	N	74	ARG
13	N	80	ARG
16	Q	5	ARG
17	R	21	ASP
17	R	71	ASP
19	T	59	ARG
20	B	20	ARG
20	B	76	SER
21	U	6	ARG
21	U	24	LYS
21	U	25	ALA
21	U	40	PRO
22	V	111	THR
22	V	193	GLU
23	X	748	ILE
23	X	818	VAL
23	X	1042	LEU
23	X	1292	THR
24	Y	111	THR
24	Y	347	VAL
24	Y	548	VAL

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Mol	Chain	Res	Type
24	Y	585	LYS
24	Y	639	VAL
24	Y	847	ASP
24	Y	854	ALA
24	Y	855	ASP
24	Y	908	ILE
24	Y	1185	PRO
24	Y	1274	PHE
2	C	65	VAL
2	C	186	SER
3	D	29	THR
4	E	25	LYS
4	E	34	ALA
5	F	54	LEU
6	G	18	GLY
6	G	57	GLU
6	G	75	LYS
6	G	86	VAL
7	H	46	GLU
8	I	67	LYS
9	J	56	HIS
9	J	61	ALA
9	J	74	VAL
10	K	57	SER
10	K	108	ASN
11	L	14	LYS
11	L	15	VAL
11	L	47	ALA
11	L	56	LEU
11	L	67	GLY
11	L	120	ARG
13	N	31	SER
13	N	94	GLY
15	P	42	ILE
16	Q	69	THR
17	R	22	TYR
17	R	47	ARG
18	S	27	LYS
18	S	36	ARG
18	S	65	MET
20	B	11	ALA
20	B	41	ASN

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Mol	Chain	Res	Type
20	B	88	GLN
20	B	200	PRO
21	U	26	GLY
21	U	33	ARG
21	U	36	PHE
21	U	37	TYR
21	U	41	THR
22	V	114	ASP
22	V	163	GLU
22	W	138	ALA
22	W	193	GLU
23	X	98	VAL
23	X	851	THR
23	X	853	ASP
23	X	854	ILE
23	X	886	LYS
23	X	1138	VAL
23	X	1295	SER
24	Y	112	ALA
24	Y	113	HIS
24	Y	257	GLY
24	Y	324	LEU
24	Y	346	ARG
24	Y	519	ASN
24	Y	595	ALA
24	Y	804	ALA
24	Y	851	PRO
24	Y	853	THR
24	Y	1192	LYS
24	Y	1293	GLU
24	Y	1342	ASP
2	C	14	VAL
2	C	145	ALA
2	C	167	TYR
4	E	146	MET
8	I	122	ARG
9	J	36	VAL
10	K	127	ARG
11	L	42	LYS
11	L	121	PRO
12	M	105	ALA
14	O	17	ASP

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Mol	Chain	Res	Type
17	R	20	ILE
18	S	8	PRO
19	T	5	SER
19	T	46	ALA
20	B	24	PRO
20	B	27	LYS
20	B	87	ASP
22	V	14	VAL
23	X	117	ILE
23	X	311	CYS
23	X	1159	VAL
23	X	1255	THR
23	X	1321	GLU
24	Y	62	PHE
24	Y	95	THR
24	Y	141	PHE
24	Y	345	LYS
24	Y	504	GLN
24	Y	589	TYR
24	Y	874	GLU
24	Y	945	ALA
24	Y	1175	LEU
2	C	112	ALA
3	D	6	PRO
4	E	107	GLY
6	G	6	ILE
9	J	95	GLY
10	K	106	ILE
13	N	33	VAL
18	S	39	ILE
20	B	94	ARG
20	B	205	ALA
21	U	13	VAL
22	W	13	LEU
23	X	111	GLU
23	X	329	GLY
23	X	596	ASP
23	X	655	VAL
23	X	746	ALA
23	X	894	GLN
24	Y	106	GLU
24	Y	546	ALA

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Mol	Chain	Res	Type
24	Y	706	VAL
24	Y	1180	VAL
2	C	90	VAL
3	D	63	ILE
3	D	175	GLY
10	K	119	GLY
15	P	41	PRO
20	B	157	PRO
23	X	228	VAL
15	P	49	GLY
19	T	3	ILE
24	Y	584	PRO
24	Y	1184	ASP
3	D	37	PRO
7	H	71	VAL
9	J	41	PRO
9	J	96	VAL
11	L	62	VAL
12	M	23	GLY
19	T	41	GLY
21	U	52	VAL
23	X	1317	PRO
24	Y	121	PRO
24	Y	561	GLY
7	H	77	VAL
8	I	110	VAL
17	R	43	ILE
20	B	150	ILE
15	P	37	GLY

### 5.3.2 Protein sidechains [i](#)

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	C	170/189 (90%)	142 (84%)	28 (16%)	2	16
3	D	172/172 (100%)	140 (81%)	32 (19%)	2	11

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
4	E	113/125 (90%)	92 (81%)	21 (19%)	2	11
5	F	87/116 (75%)	68 (78%)	19 (22%)	1	7
6	G	123/146 (84%)	102 (83%)	21 (17%)	2	15
7	H	104/104 (100%)	87 (84%)	17 (16%)	3	17
8	I	105/106 (99%)	83 (79%)	22 (21%)	1	8
9	J	86/90 (96%)	66 (77%)	20 (23%)	1	6
10	K	90/98 (92%)	70 (78%)	20 (22%)	1	7
11	L	103/103 (100%)	88 (85%)	15 (15%)	3	21
12	M	92/95 (97%)	70 (76%)	22 (24%)	1	5
13	N	79/83 (95%)	67 (85%)	12 (15%)	3	19
14	O	76/77 (99%)	69 (91%)	7 (9%)	11	37
15	P	65/65 (100%)	56 (86%)	9 (14%)	4	23
16	Q	74/77 (96%)	60 (81%)	14 (19%)	2	11
17	R	48/64 (75%)	45 (94%)	3 (6%)	21	53
18	S	70/78 (90%)	60 (86%)	10 (14%)	4	22
19	T	65/65 (100%)	56 (86%)	9 (14%)	4	23
20	B	180/198 (91%)	142 (79%)	38 (21%)	1	8
21	U	44/61 (72%)	36 (82%)	8 (18%)	2	12
22	V	106/286 (37%)	104 (98%)	2 (2%)	62	82
22	W	130/286 (46%)	129 (99%)	1 (1%)	85	92
23	X	567/1157 (49%)	567 (100%)	0	100	100
24	Y	332/1168 (28%)	330 (99%)	2 (1%)	89	94
25	Z	66/75 (88%)	66 (100%)	0	100	100
All	All	3147/5084 (62%)	2795 (89%)	352 (11%)	11	29

All (352) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	C	17	TRP
2	C	20	THR
2	C	26	LYS
2	C	31	ASN
2	C	40	GLN
2	C	42	LEU

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Mol	Chain	Res	Type
2	C	69	THR
2	C	82	ASP
2	C	88	LYS
2	C	100	ILE
2	C	102	ILE
2	C	106	ARG
2	C	113	LYS
2	C	141	MET
2	C	146	LYS
2	C	156	LEU
2	C	164	THR
2	C	165	GLU
2	C	166	TRP
2	C	168	ARG
2	C	174	LEU
2	C	176	THR
2	C	180	ASP
2	C	184	ASN
2	C	185	THR
2	C	189	HIS
2	C	190	THR
2	C	192	TYR
3	D	7	LYS
3	D	8	LEU
3	D	10	LEU
3	D	20	LEU
3	D	21	LYS
3	D	25	ARG
3	D	35	GLN
3	D	39	GLN
3	D	40	HIS
3	D	43	ARG
3	D	55	ARG
3	D	56	GLU
3	D	58	GLN
3	D	62	ARG
3	D	64	TYR
3	D	69	ARG
3	D	85	THR
3	D	94	GLU
3	D	133	SER
3	D	137	SER

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Mol	Chain	Res	Type
3	D	145	ARG
3	D	147	LYS
3	D	150	LYS
3	D	153	ARG
3	D	155	LYS
3	D	158	LEU
3	D	160	LEU
3	D	176	LYS
3	D	183	ARG
3	D	186	GLU
3	D	189	ASP
3	D	194	ILE
4	E	11	GLN
4	E	12	GLU
4	E	23	THR
4	E	25	LYS
4	E	32	PHE
4	E	44	ARG
4	E	45	VAL
4	E	55	VAL
4	E	68	ARG
4	E	72	ASN
4	E	81	GLN
4	E	92	ARG
4	E	102	THR
4	E	110	MET
4	E	122	VAL
4	E	123	LEU
4	E	125	LYS
4	E	139	THR
4	E	143	LEU
4	E	151	MET
4	E	158	LYS
5	F	24	ARG
5	F	37	HIS
5	F	38	ARG
5	F	39	LEU
5	F	46	GLN
5	F	53	LYS
5	F	54	LEU
5	F	55	HIS
5	F	61	LEU

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Mol	Chain	Res	Type
5	F	65	GLU
5	F	69	GLU
5	F	71	ILE
5	F	75	GLU
5	F	76	THR
5	F	78	PHE
5	F	86	ARG
5	F	87	SER
5	F	88	MET
5	F	92	THR
6	G	3	ARG
6	G	10	LYS
6	G	11	ILE
6	G	14	ASP
6	G	16	LYS
6	G	19	SER
6	G	21	LEU
6	G	22	LEU
6	G	29	LEU
6	G	46	LEU
6	G	52	ARG
6	G	55	LYS
6	G	72	VAL
6	G	78	ARG
6	G	84	TYR
6	G	89	GLU
6	G	94	ARG
6	G	112	ASP
6	G	114	SER
6	G	139	ASP
6	G	143	MET
7	H	4	ASP
7	H	17	GLN
7	H	26	MET
7	H	30	LYS
7	H	37	ASN
7	H	48	PHE
7	H	55	LYS
7	H	61	THR
7	H	64	TYR
7	H	76	ARG
7	H	82	LEU

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Mol	Chain	Res	Type
7	H	83	ARG
7	H	93	LYS
7	H	107	LYS
7	H	111	THR
7	H	113	ARG
7	H	120	LEU
8	I	3	ASN
8	I	11	ARG
8	I	26	LYS
8	I	30	ASN
8	I	35	GLU
8	I	36	GLN
8	I	38	PHE
8	I	41	GLU
8	I	44	ARG
8	I	53	LEU
8	I	56	MET
8	I	58	GLU
8	I	59	LYS
8	I	60	LEU
8	I	61	ASP
8	I	84	ARG
8	I	86	LEU
8	I	87	MET
8	I	106	ASP
8	I	112	ARG
8	I	121	ARG
8	I	126	PHE
9	J	5	ARG
9	J	11	LYS
9	J	14	ASP
9	J	18	ILE
9	J	35	GLN
9	J	40	ILE
9	J	45	ARG
9	J	48	ARG
9	J	50	THR
9	J	57	VAL
9	J	68	ARG
9	J	71	LEU
9	J	73	LEU
9	J	75	ASP

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Mol	Chain	Res	Type
9	J	81	GLU
9	J	88	MET
9	J	89	ARG
9	J	92	LEU
9	J	98	VAL
9	J	102	LEU
10	K	12	ARG
10	K	33	ILE
10	K	35	ASP
10	K	36	ARG
10	K	37	GLN
10	K	52	ARG
10	K	56	LYS
10	K	58	THR
10	K	71	ASP
10	K	73	VAL
10	K	83	VAL
10	K	84	MET
10	K	85	VAL
10	K	92	ARG
10	K	99	LEU
10	K	107	THR
10	K	108	ASN
10	K	117	HIS
10	K	121	ARG
10	K	126	ARG
11	L	18	SER
11	L	20	VAL
11	L	28	GLN
11	L	30	ARG
11	L	33	CYS
11	L	35	ARG
11	L	38	THR
11	L	50	LYS
11	L	58	ASN
11	L	71	HIS
11	L	74	GLN
11	L	102	ASP
11	L	103	CYS
11	L	107	LYS
11	L	118	VAL
12	M	2	ARG

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Mol	Chain	Res	Type
12	M	11	HIS
12	M	18	LEU
12	M	27	THR
12	M	28	ARG
12	M	41	ASP
12	M	43	LYS
12	M	44	ILE
12	M	57	ASP
12	M	62	PHE
12	M	64	VAL
12	M	67	ASP
12	M	68	LEU
12	M	81	ASP
12	M	90	HIS
12	M	91	ARG
12	M	97	ARG
12	M	99	GLN
12	M	100	ARG
12	M	101	THR
12	M	102	LYS
12	M	106	ARG
13	N	15	LEU
13	N	27	LYS
13	N	41	TRP
13	N	45	LEU
13	N	50	LEU
13	N	53	ASP
13	N	59	GLN
13	N	60	ARG
13	N	65	GLN
13	N	73	LEU
13	N	74	ARG
13	N	76	PHE
14	O	7	THR
14	O	17	ASP
14	O	25	GLU
14	O	57	ARG
14	O	58	MET
14	O	64	LYS
14	O	70	LYS
15	P	4	ILE
15	P	5	ARG

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Mol	Chain	Res	Type
15	P	26	ASN
15	P	29	ASN
15	P	31	ARG
15	P	34	GLU
15	P	46	LYS
15	P	55	ASP
15	P	63	GLN
16	Q	4	ILE
16	Q	10	ARG
16	Q	15	LYS
16	Q	25	GLU
16	Q	26	ARG
16	Q	39	ARG
16	Q	45	VAL
16	Q	52	CYS
16	Q	60	ILE
16	Q	67	SER
16	Q	74	LEU
16	Q	76	ARG
16	Q	78	VAL
16	Q	80	LYS
17	R	30	ASN
17	R	52	ARG
17	R	65	SER
18	S	5	LYS
18	S	12	LEU
18	S	14	LEU
18	S	20	LYS
18	S	28	LYS
18	S	36	ARG
18	S	40	PHE
18	S	47	THR
18	S	72	GLU
18	S	73	PHE
19	T	4	LYS
19	T	14	GLU
19	T	26	MET
19	T	29	THR
19	T	53	MET
19	T	59	ARG
19	T	67	HIS
19	T	70	LYS

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Mol	Chain	Res	Type
19	T	85	LEU
20	B	9	LEU
20	B	15	PHE
20	B	22	TRP
20	B	23	ASN
20	B	26	MET
20	B	31	PHE
20	B	36	LYS
20	B	38	HIS
20	B	40	ILE
20	B	46	VAL
20	B	48	MET
20	B	56	LEU
20	B	57	ASN
20	B	62	ARG
20	B	67	LEU
20	B	73	ARG
20	B	81	ASP
20	B	90	PHE
20	B	94	ARG
20	B	95	TRP
20	B	101	THR
20	B	116	LEU
20	B	119	GLN
20	B	121	GLN
20	B	122	ASP
20	B	125	PHE
20	B	127	LYS
20	B	128	LEU
20	B	145	ASN
20	B	158	ASP
20	B	162	VAL
20	B	188	THR
20	B	196	ASP
20	B	202	ASN
20	B	206	ILE
20	B	209	VAL
20	B	212	TYR
20	B	222	GLU
21	U	11	PHE
21	U	12	ASP
21	U	16	ARG

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Mol	Chain	Res	Type
21	U	17	ARG
21	U	33	ARG
21	U	44	ARG
21	U	48	LYS
21	U	53	LYS
22	V	102	LEU
22	V	178	SER
22	W	133	LEU
24	Y	109	SER
24	Y	907	HIS

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (71) such sidechains are listed below:

Mol	Chain	Res	Type
2	C	2	GLN
2	C	5	HIS
2	C	40	GLN
2	C	68	HIS
2	C	122	GLN
2	C	139	ASN
2	C	184	ASN
3	D	35	GLN
3	D	84	ASN
3	D	99	ASN
3	D	135	GLN
3	D	195	ASN
4	E	69	ASN
4	E	72	ASN
4	E	82	HIS
4	E	96	GLN
4	E	121	ASN
4	E	131	ASN
4	E	134	ASN
5	F	14	GLN
5	F	17	GLN
5	F	46	GLN
5	F	58	HIS
6	G	67	ASN
6	G	85	GLN
6	G	121	ASN
7	H	3	GLN
7	H	17	GLN

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Mol	Chain	Res	Type
8	I	4	GLN
8	I	24	ASN
8	I	30	ASN
8	I	31	GLN
8	I	36	GLN
8	I	49	GLN
8	I	109	GLN
9	J	15	HIS
9	J	20	GLN
9	J	70	HIS
9	J	99	GLN
10	K	28	ASN
10	K	37	GLN
10	K	100	ASN
11	L	58	ASN
11	L	72	ASN
12	M	99	GLN
13	N	59	GLN
13	N	65	GLN
14	O	34	GLN
14	O	39	GLN
15	P	9	HIS
15	P	18	GLN
15	P	29	ASN
15	P	63	GLN
17	R	53	GLN
18	S	51	HIS
18	S	55	GLN
19	T	12	GLN
19	T	20	ASN
19	T	54	GLN
19	T	60	GLN
20	B	17	HIS
20	B	23	ASN
20	B	35	ASN
20	B	108	GLN
20	B	119	GLN
20	B	121	GLN
20	B	145	ASN
20	B	167	HIS
20	B	202	ASN
22	V	227	GLN

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Mol	Chain	Res	Type
23	X	1244	HIS

### 5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	1529/1542 (99%)	277 (18%)	25 (1%)

All (277) 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
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

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Mol	Chain	Res	Type
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
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

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Mol	Chain	Res	Type
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
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

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Mol	Chain	Res	Type
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
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

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Mol	Chain	Res	Type
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
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

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Mol	Chain	Res	Type
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
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

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Mol	Chain	Res	Type
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	1398	A
1	A	1403	C
1	A	1404	C
1	A	1409	C
1	A	1419	G
1	A	1432	G
1	A	1446	A
1	A	1447	A
1	A	1451	U
1	A	1452	C
1	A	1490	U
1	A	1493	A
1	A	1497	G
1	A	1499	A
1	A	1503	A
1	A	1506	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 (25) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	A	51	A
1	A	60	A

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Mol	Chain	Res	Type
1	A	243	A
1	A	279	A
1	A	328	C
1	A	366	A
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	1397	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](#)

Of 1 ligands modelled in this entry, 1 is monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

## 5.7 Other polymers

There are no such residues in this entry.

## 5.8 Polymer linkage issues

The following chains have linkage breaks:

Mol	Chain	Number of breaks
23	X	2
21	U	2

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	X	967:LEU	C	968:GLU	N	4.69
1	X	941:LYS	C	942:ASP	N	3.24
1	U	25:ALA	C	26:GLY	N	1.16
1	U	15:LEU	C	16:ARG	N	0.99