Full wwPDB X-ray Structure Validation Report ⓘ

Oct 26, 2023 – 01:23 PM EDT

PDB ID	:	2ZM6
Title	:	Crystal structure of the Thermus thermophilus 30S ribosomal subunit
Authors	:	Kaminishi, T.; Wang, H.; Kawazoe, M.; Ishii, R.; Schluenzen, F.; Hanawa-Suetsugu, K.; Wilson, D.N.; Nomura, M.; Takemoto, C.; Shirouzu, M.; Fucini, P.; Yokoyama, S.; RIKEN Structural Genomics/Proteomics Initiative (RSGI)
Deposited on	:	2008-04-11
Resolution	:	3.30 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/XrayValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

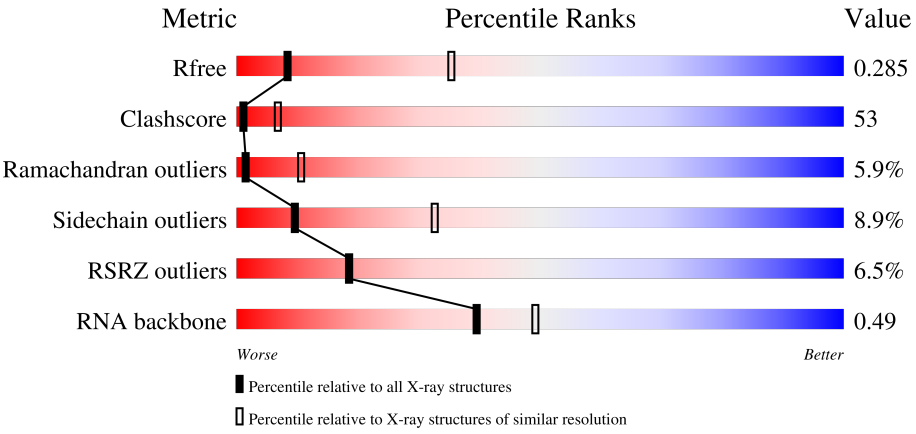
MolProbity	:	4.02b-467
Xtriage (Phenix)	:	1.13
EDS	:	2.36
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 3.30 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1149 (3.34-3.26)
Clashscore	141614	1205 (3.34-3.26)
Ramachandran outliers	138981	1183 (3.34-3.26)
Sidechain outliers	138945	1182 (3.34-3.26)
RSRZ outliers	127900	1115 (3.34-3.26)
RNA backbone	3102	1117 (3.70-2.90)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	1509	9% 59% 21% 10%
2	B	255	39% 39% 9% 13%
3	C	238	6% 33% 42% 11% 13%
4	D	208	4% 43% 47% 9%

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Mol	Chain	Length	Quality of chain
5	E	161	6% 35% 48% 9% 7%
6	F	101	53% 42% 5%
7	G	155	5% 50% 46%
8	H	138	% 40% 46% 13%
9	I	128	30% 41% 52% 5%
10	J	104	38% 39% 45% 8% 6%
11	K	128	7% 41% 45% 5% 10%
12	L	131	11% 46% 44% 5% 5%
13	M	125	18% 31% 50% 11%
14	N	60	22% 37% 53% 10%
15	O	88	2% 45% 43% 11%
16	P	88	9% 40% 45% 9% 6%
17	Q	104	38% 52% 7%
18	R	87	34% 36% 8% 22%
19	S	92	18% 36% 47% 13%
20	T	105	15% 41% 43% 6% 10%
21	V	26	62% 35% 54% 8%

2 Entry composition (i)

There are 22 unique types of molecules in this entry. The entry contains 51308 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a RNA chain called 16S ribosomal RNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
1	A	1506	32372	14408	5996	10462	1506	0	0	0

- Molecule 2 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	B	222	1810	1154	328	323	5	0	0	0

- Molecule 3 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
3	C	206	1612	1016	314	281	1	0	0	0

- Molecule 4 is a protein called 30S ribosomal protein S4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
4	D	208	1703	1066	339	291	7	0	0	0

- Molecule 5 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
5	E	150	1146	724	217	201	4	0	0	0

- Molecule 6 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
6	F	101	843	531	155	154	3	0	0	0

- Molecule 7 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
7	G	153	Total	C	N	O	S	0	0	0
			1231	764	246	215	6			

- Molecule 8 is a protein called 30S ribosomal protein S8.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
8	H	138	Total	C	N	O	S	0	0	0
			1116	705	215	193	3			

- Molecule 9 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
9	I	125	Total	C	N	O	0	0	0
			993	629	195	169			

- Molecule 10 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
10	J	98	Total	C	N	O	S	0	0	0
			794	499	156	138	1			

- Molecule 11 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
11	K	115	Total	C	N	O	S	0	0	0
			853	531	160	159	3			

- Molecule 12 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
12	L	124	Total	C	N	O	S	0	0	0
			970	611	195	163	1			

- Molecule 13 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
13	M	120	Total	C	N	O	S	0	0	0
			955	591	197	165	2			

- Molecule 14 is a protein called 30S ribosomal protein S14 type Z.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
14	N	60	Total	C	N	O	S	0	0	0
			492	312	104	72	4			

- Molecule 15 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
15	O	88	Total	C	N	O	S	0	0	0
			734	459	147	126	2			

- Molecule 16 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
16	P	83	Total	C	N	O	S	0	0	0
			700	443	139	117	1			

- Molecule 17 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
17	Q	100	Total	C	N	O	S	0	0	0
			834	534	156	142	2			

- Molecule 18 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
18	R	68	Total	C	N	O	0	0	0
			559	357	109	93			

- Molecule 19 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
19	S	80	Total	C	N	O	S	0	0	0
			647	414	119	112	2			

- Molecule 20 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
20	T	94	Total	C	N	O	S	0	0	0
			734	453	157	122	2			

- Molecule 21 is a protein called 30S ribosomal protein Thx.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
21	V	24	Total	C	N	O	0	0	0
			208	128	50	30			

- Molecule 22 is ZINC ION (three-letter code: ZN) (formula: Zn).

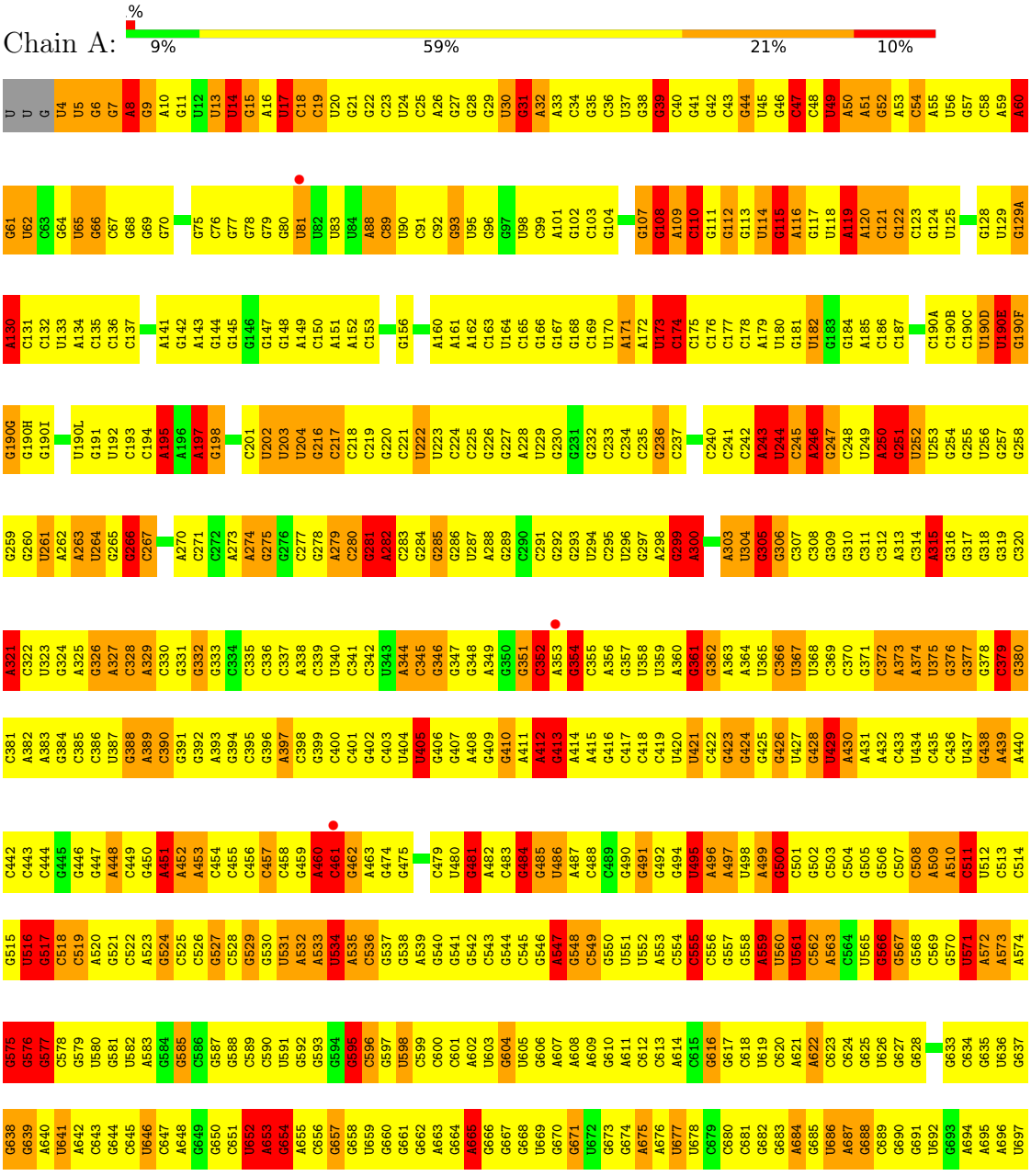
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
22	D	1	Total	Zn	0	0
			1	1		
22	N	1	Total	Zn	0	0
			1	1		

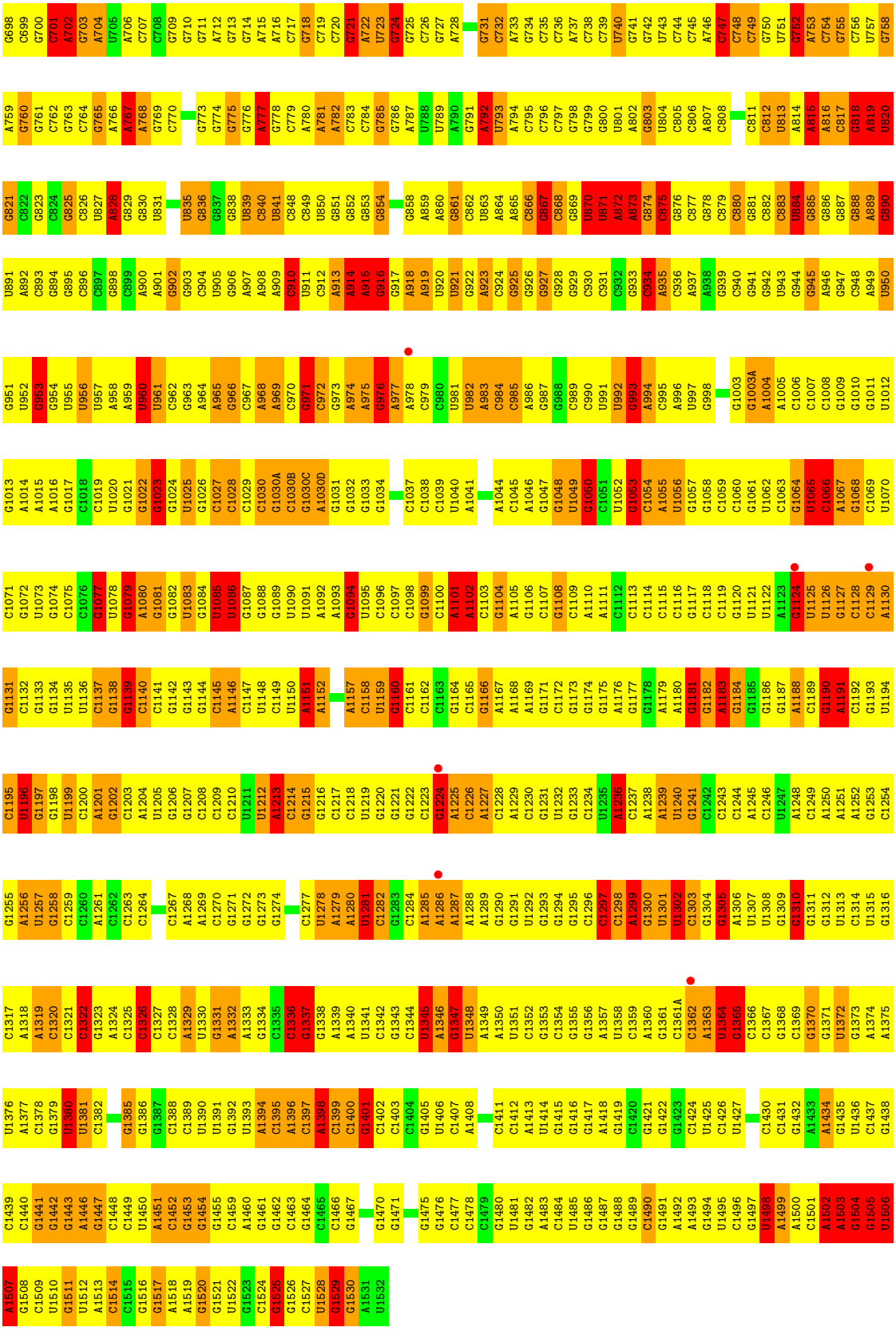
3 Residue-property plots (i)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. 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. A red dot above a residue indicates a poor fit to the electron density (RSRZ > 2). 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

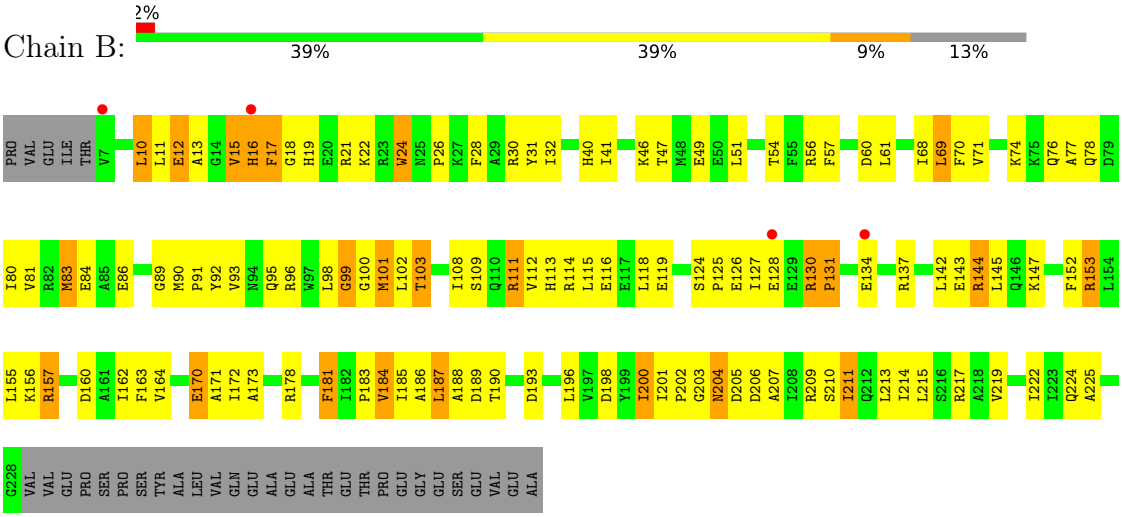
Chain A:





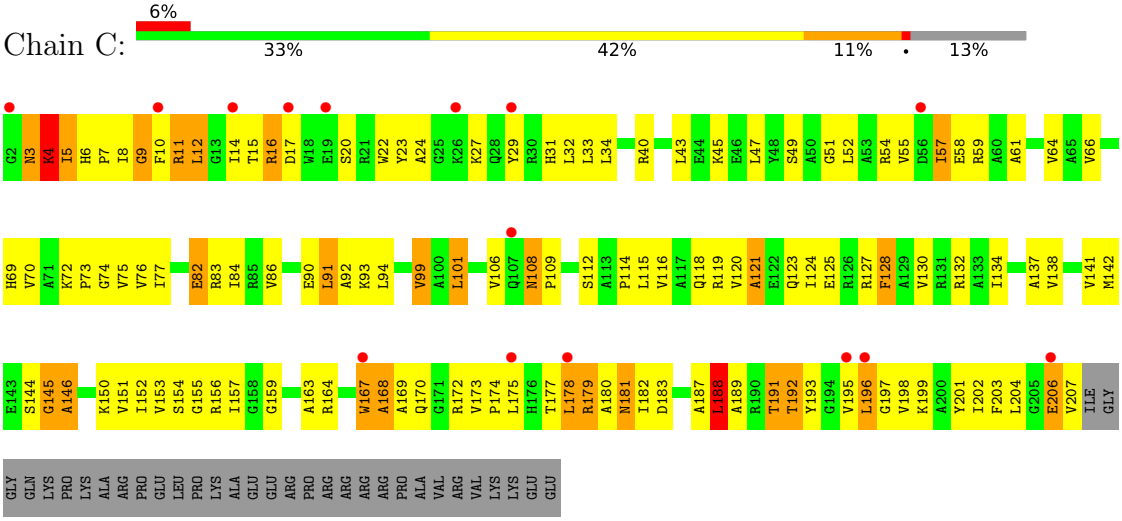
• Molecule 2: 30S ribosomal protein S2

Chain B:



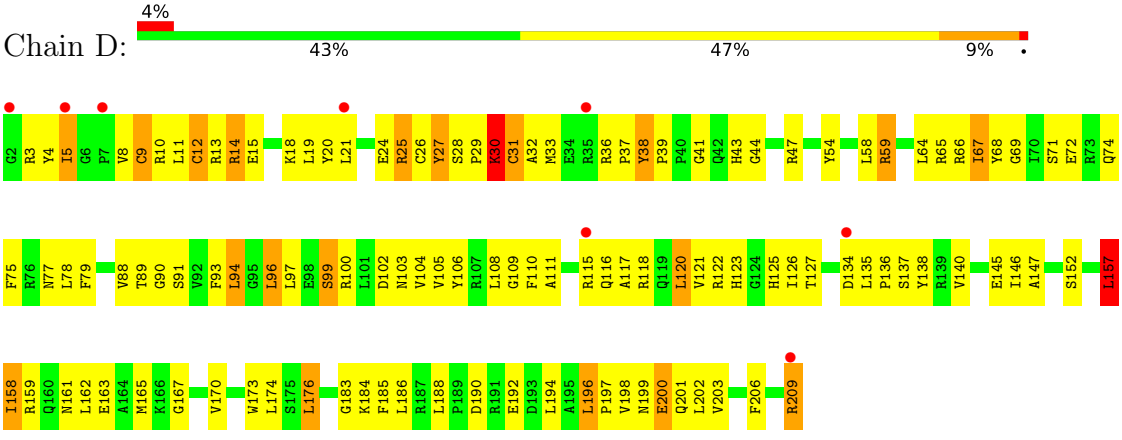
• Molecule 3: 30S ribosomal protein S3

Chain C:



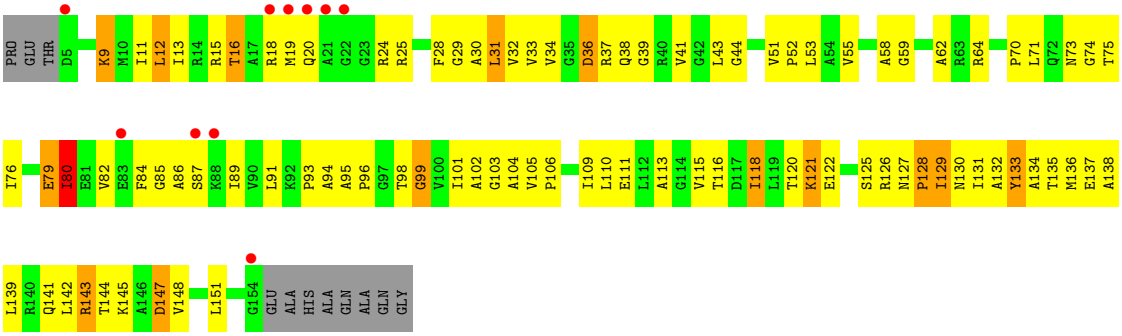
• Molecule 4: 30S ribosomal protein S4

Chain D:



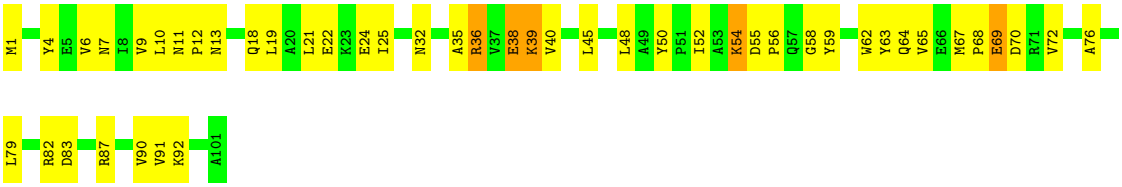
• Molecule 5: 30S ribosomal protein S5

Chain E:



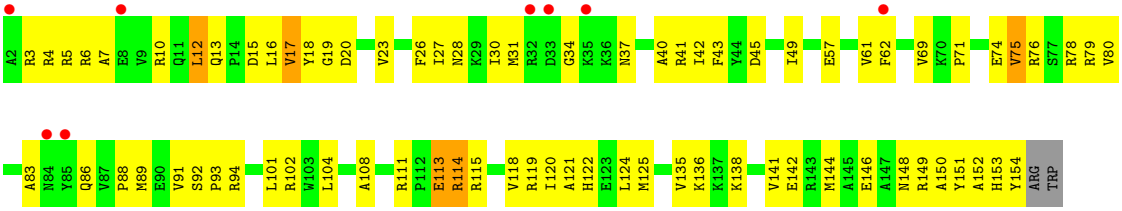
• Molecule 6: 30S ribosomal protein S6

Chain F:



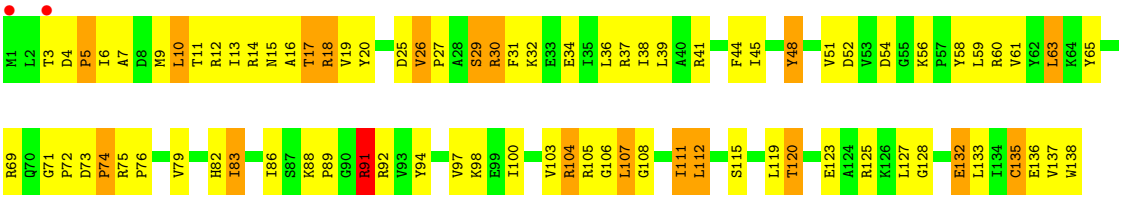
• Molecule 7: 30S ribosomal protein S7

Chain G:



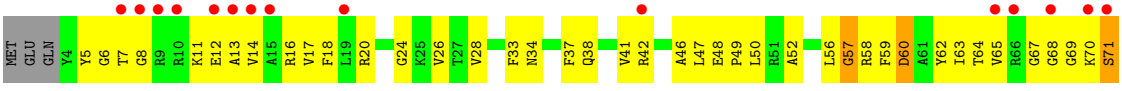
• Molecule 8: 30S ribosomal protein S8

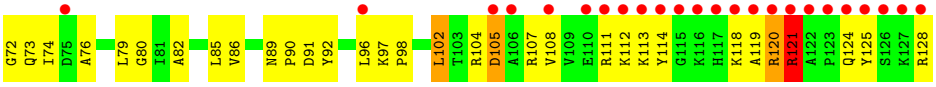
Chain H:



• Molecule 9: 30S ribosomal protein S9

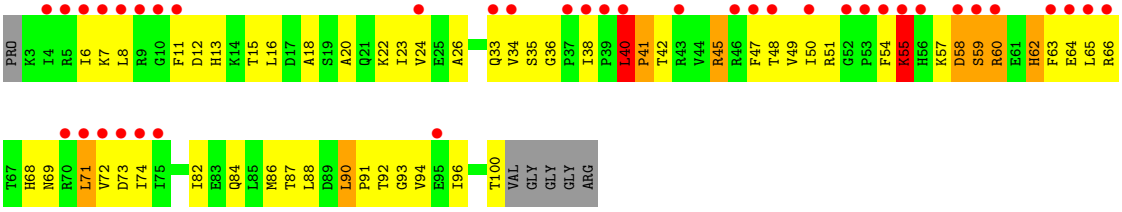
Chain I:





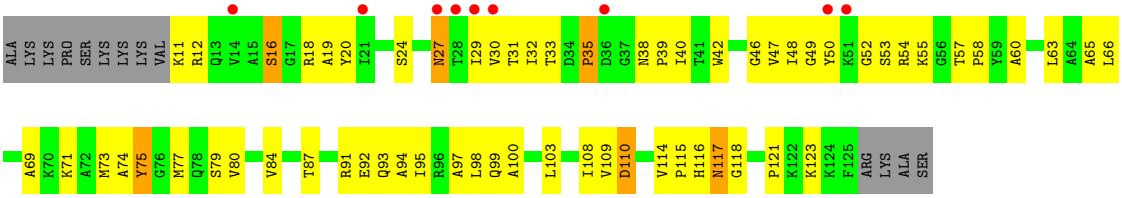
• Molecule 10: 30S ribosomal protein S10

Chain J:



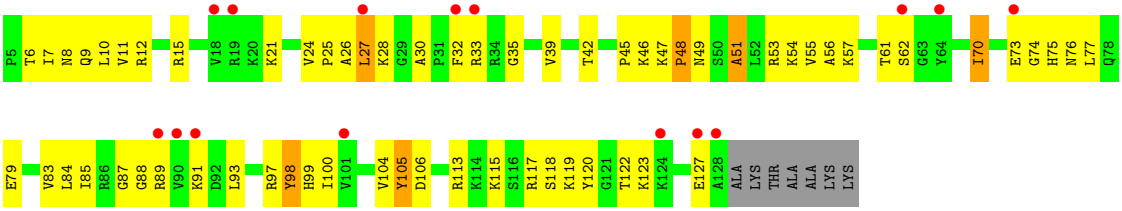
• Molecule 11: 30S ribosomal protein S11

Chain K:



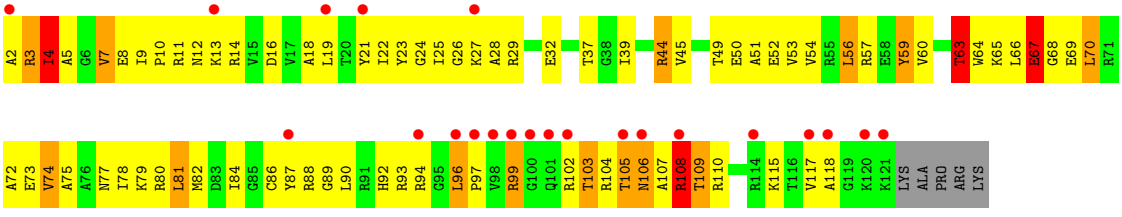
• Molecule 12: 30S ribosomal protein S12

Chain L:



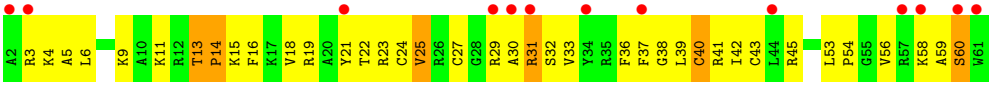
• Molecule 13: 30S ribosomal protein S13

Chain M:

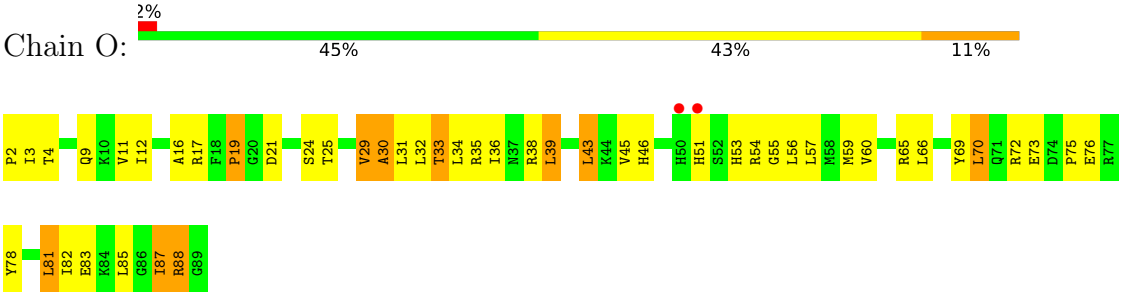


• Molecule 14: 30S ribosomal protein S14 type Z

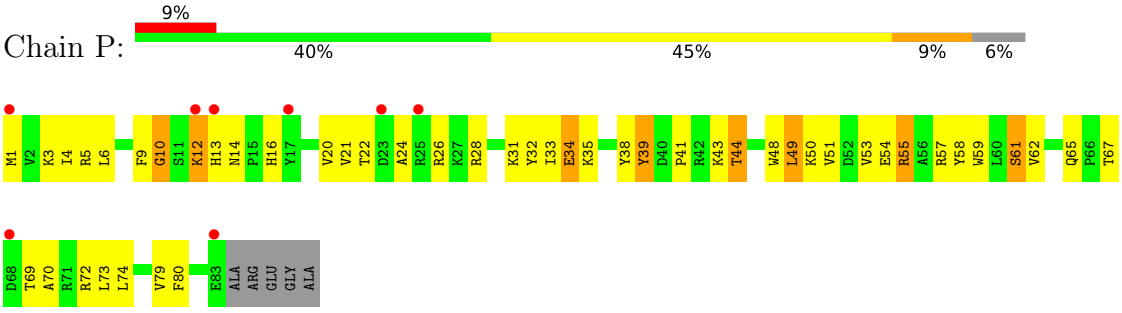
Chain N:



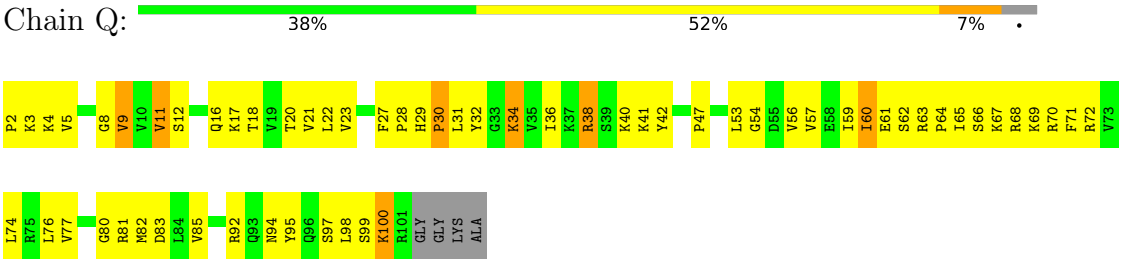
• Molecule 15: 30S ribosomal protein S15



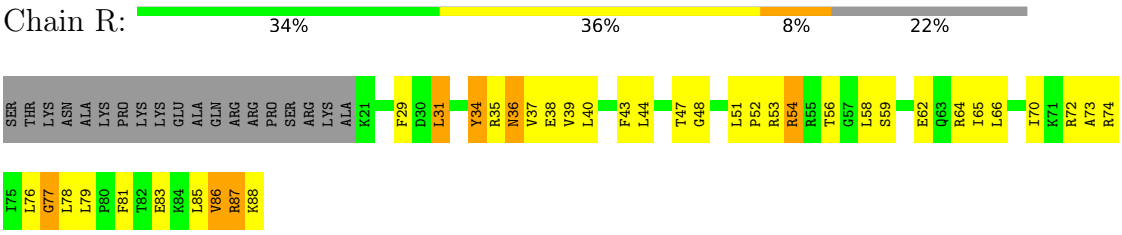
• Molecule 16: 30S ribosomal protein S16



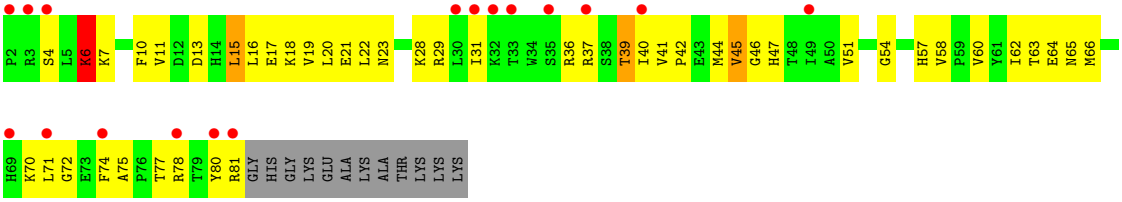
• Molecule 17: 30S ribosomal protein S17



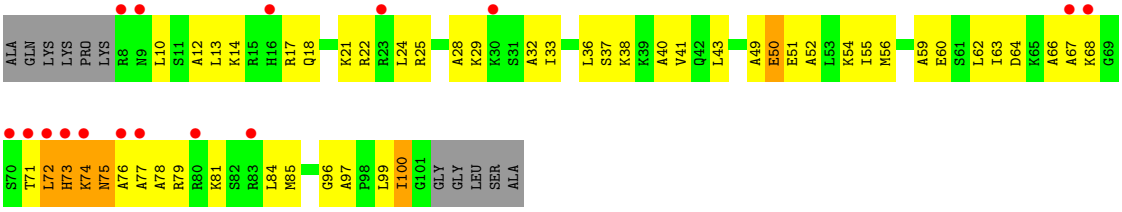
• Molecule 18: 30S ribosomal protein S18



• Molecule 19: 30S ribosomal protein S19



• Molecule 20: 30S ribosomal protein S20



• Molecule 21: 30S ribosomal protein Thx

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 41 21 2	Depositor
Cell constants a, b, c, α, β, γ	411.50Å 411.50Å 172.58Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	184.03 – 3.30 184.03 – 3.30	Depositor EDS
% Data completeness (in resolution range)	97.7 (184.03-3.30) 97.7 (184.03-3.30)	Depositor EDS
R_{merge}	0.15	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.86 (at 3.33Å)	Xtriage
Refinement program	CNS 1.1	Depositor
R, R_{free}	0.292 , 0.323 0.252 , 0.285	Depositor DCC
R_{free} test set	10942 reflections (5.08%)	wwPDB-VP
Wilson B-factor (Å^2)	95.8	Xtriage
Anisotropy	0.188	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.12 , 20.1	EDS
L-test for twinning[2]	$< \|L\| > = 0.35$, $< L^2 > = 0.18$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.87	EDS
Total number of atoms	51308	wwPDB-VP
Average B, all atoms (Å^2)	109.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.66% of the height of the origin peak. No significant pseudotranslation is detected.*

[1] Intensities estimated from amplitudes.

[2] Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

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	#$\|Z\|$ >5	RMSZ	#$\|Z\|$ >5
1	A	0.97	29/36237 (0.1%)	0.99	122/56558 (0.2%)
2	B	0.68	0/1842	0.91	1/2479 (0.0%)
3	C	0.62	0/1636	0.88	3/2205 (0.1%)
4	D	0.72	2/1733 (0.1%)	1.01	7/2318 (0.3%)
5	E	0.81	0/1162	1.02	0/1564
6	F	0.57	0/856	0.83	0/1154
7	G	0.48	0/1248	0.71	0/1672
8	H	0.76	0/1136	1.02	3/1527 (0.2%)
9	I	0.56	0/1011	0.80	1/1354 (0.1%)
10	J	0.53	0/807	0.87	2/1085 (0.2%)
11	K	0.53	0/868	0.82	0/1173
12	L	0.59	0/986	0.89	1/1320 (0.1%)
13	M	0.54	0/965	0.88	3/1292 (0.2%)
14	N	0.58	0/501	0.98	1/664 (0.2%)
15	O	0.66	0/745	0.90	1/992 (0.1%)
16	P	0.66	0/716	0.88	0/963
17	Q	0.69	0/847	0.92	0/1131
18	R	0.56	0/564	0.89	0/748
19	S	0.53	0/661	0.92	1/890 (0.1%)
20	T	0.50	0/736	0.83	1/970 (0.1%)
21	V	0.60	0/212	0.77	0/277
All	All	0.87	31/55469 (0.1%)	0.96	147/82336 (0.2%)

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	160
4	D	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
5	E	0	1
8	H	0	1
17	Q	0	1
All	All	0	164

All (31) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1077	G	C5-C6	-12.45	1.29	1.42
1	A	1511	G	N3-C4	-8.17	1.29	1.35
1	A	1108	G	C5-C6	7.17	1.49	1.42
1	A	378	G	C5-C6	-6.89	1.35	1.42
1	A	1081	G	N3-C4	-6.69	1.30	1.35
1	A	576	G	C5-C6	-6.62	1.35	1.42
1	A	1081	G	N9-C4	-6.51	1.32	1.38
1	A	577	G	C5-C6	-6.42	1.35	1.42
1	A	918	A	C5-C6	-6.32	1.35	1.41
1	A	1080	A	C5-C6	-6.06	1.35	1.41
1	A	1102	A	C5-C6	-6.03	1.35	1.41
1	A	1079	G	C5-C6	-6.02	1.36	1.42
1	A	585	G	C5-C6	-6.01	1.36	1.42
1	A	299	G	C6-O6	6.00	1.29	1.24
1	A	300	A	C5-C6	-6.00	1.35	1.41
1	A	921	U	N1-C2	-5.92	1.33	1.38
4	D	12	CYS	CA-CB	5.87	1.66	1.53
1	A	17	U	C4-O4	-5.85	1.19	1.23
1	A	379	C	C4-N4	-5.75	1.28	1.33
1	A	555	C	N1-C2	-5.56	1.34	1.40
1	A	825	G	C5-C6	-5.35	1.37	1.42
1	A	361	G	C5-C6	-5.29	1.37	1.42
1	A	758	G	C2-N3	-5.28	1.28	1.32
1	A	17	U	C4-C5	-5.20	1.38	1.43
1	A	299	G	N3-C4	-5.14	1.31	1.35
1	A	758	G	N9-C4	-5.12	1.33	1.38
1	A	916	G	C5-C6	-5.08	1.37	1.42
4	D	12	CYS	CB-SG	5.07	1.90	1.82
1	A	362	G	C5-C6	-5.06	1.37	1.42
1	A	326	G	C5-C6	-5.04	1.37	1.42
1	A	665	A	C5-C6	-5.02	1.36	1.41

All (147) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	246	A	N9-C1'-C2'	10.65	127.85	114.00
1	A	934	C	N1-C1'-C2'	9.98	126.98	114.00
14	N	40	CYS	CA-CB-SG	9.68	131.43	114.00
1	A	1336	C	N1-C1'-C2'	9.27	126.05	114.00
4	D	12	CYS	CA-CB-SG	9.23	130.62	114.00
1	A	652	U	N1-C1'-C2'	8.97	125.66	114.00
1	A	653	A	N9-C1'-C2'	8.89	125.56	114.00
1	A	1181	G	N9-C1'-C2'	8.77	125.40	114.00
1	A	566	G	N9-C1'-C2'	8.66	125.25	114.00
4	D	94	LEU	CA-CB-CG	-8.61	95.49	115.30
1	A	1151	A	N9-C1'-C2'	8.57	125.15	114.00
10	J	40	LEU	C-N-CD	-8.25	102.44	120.60
1	A	960	U	N1-C1'-C2'	8.20	124.66	114.00
1	A	1502	A	N9-C1'-C2'	8.10	124.53	114.00
1	A	517	G	N9-C1'-C2'	8.09	124.52	114.00
1	A	1322	C	N1-C1'-C2'	7.95	124.33	114.00
1	A	884	U	N1-C1'-C2'	7.91	124.28	114.00
1	A	752	G	N9-C1'-C2'	7.84	124.19	114.00
8	H	10	LEU	CA-CB-CG	-7.58	97.86	115.30
1	A	1302	U	C2'-C3'-O3'	7.56	126.12	109.50
1	A	429	U	O4'-C1'-N1	7.49	114.19	108.20
1	A	575	G	N9-C1'-C2'	7.37	123.58	114.00
1	A	1299	A	N9-C1'-C2'	7.37	123.58	114.00
1	A	266	G	O4'-C1'-N9	-7.37	102.31	108.20
13	M	5	ALA	N-CA-C	-7.26	91.39	111.00
1	A	1525	G	N9-C1'-C2'	-7.21	104.07	112.00
1	A	595	G	C5'-C4'-O4'	-7.20	100.46	109.10
1	A	388	G	N9-C1'-C2'	7.17	123.32	114.00
1	A	315	A	N9-C1'-C2'	7.08	123.21	114.00
1	A	976	G	N9-C1'-C2'	7.04	123.16	114.00
1	A	867	G	O4'-C1'-N9	-7.03	102.57	108.20
1	A	8	A	O4'-C1'-N9	6.97	113.78	108.20
1	A	547	A	N9-C1'-C2'	6.93	123.00	114.00
1	A	1305	G	N9-C1'-C2'	6.83	122.88	114.00
1	A	1504	G	OP2-P-O3'	6.80	120.16	105.20
3	C	4	LYS	N-CA-C	6.76	129.26	111.00
1	A	1380	U	C2'-C3'-O3'	6.73	124.47	113.70
1	A	511	C	N1-C1'-C2'	6.72	122.74	114.00
1	A	305	G	N9-C1'-C2'	6.67	122.68	114.00
1	A	1502	A	O4'-C1'-N9	6.60	113.48	108.20
1	A	47	C	N1-C1'-C2'	6.57	122.54	114.00
1	A	819	A	N9-C1'-C2'	6.56	122.53	114.00
4	D	120	LEU	CA-CB-CG	-6.47	100.43	115.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	1498	U	N1-C1'-C2'	6.46	122.40	114.00
1	A	130	A	N9-C1'-C2'	6.44	122.37	114.00
1	A	516	U	N1-C1'-C2'	6.30	122.20	114.00
1	A	1224	G	N9-C1'-C2'	6.29	122.18	114.00
13	M	3	ARG	N-CA-C	6.29	127.97	111.00
1	A	985	C	N1-C1'-C2'	-6.28	105.09	112.00
1	A	484	G	N9-C1'-C2'	6.25	122.13	114.00
1	A	702	A	N9-C1'-C2'	6.22	122.08	114.00
1	A	1506	U	N1-C1'-C2'	6.22	122.08	114.00
1	A	1454	G	N9-C1'-C2'	-6.21	105.17	112.00
1	A	1124	G	N9-C1'-C2'	6.16	122.01	114.00
1	A	1502	A	C1'-O4'-C4'	-6.12	105.01	109.90
8	H	107	LEU	CA-CB-CG	-6.11	101.24	115.30
1	A	49	U	N1-C1'-C2'	6.09	121.92	114.00
1	A	190(E)	U	N1-C1'-C2'	6.06	121.88	114.00
1	A	1529	G	O4'-C1'-N9	6.04	113.03	108.20
1	A	875	C	C5'-C4'-C3'	-6.03	106.35	116.00
1	A	1108	G	C4'-C3'-C2'	-6.01	96.59	102.60
1	A	1108	G	C5'-C4'-C3'	5.99	125.59	116.00
1	A	60	A	N9-C1'-C2'	5.95	121.74	114.00
4	D	30	LYS	N-CA-C	5.92	126.98	111.00
1	A	1132	C	N1-C1'-C2'	-5.87	105.54	112.00
1	A	108	G	C4'-C3'-C2'	-5.83	96.77	102.60
1	A	934	C	C1'-O4'-C4'	-5.83	105.24	109.90
1	A	281	G	OP2-P-O3'	5.82	118.01	105.20
1	A	352	C	O5'-P-OP1	-5.82	100.47	105.70
1	A	1364	U	OP1-P-O3'	5.81	117.98	105.20
1	A	460	A	N9-C1'-C2'	5.81	121.55	114.00
1	A	818	G	N9-C1'-C2'	5.80	121.55	114.00
1	A	511	C	C1'-O4'-C4'	-5.80	105.26	109.90
1	A	451	A	N9-C1'-C2'	5.78	121.52	114.00
4	D	31	CYS	N-CA-C	-5.73	95.54	111.00
19	S	6	LYS	N-CA-C	5.73	126.46	111.00
1	A	1281	U	N1-C1'-C2'	5.71	121.43	114.00
1	A	1101	A	OP2-P-O3'	5.71	117.76	105.20
1	A	461	C	N1-C1'-C2'	5.69	121.40	114.00
1	A	1401	G	C5'-C4'-O4'	5.68	115.92	109.10
1	A	767	A	OP2-P-O3'	5.67	117.66	105.20
1	A	31	G	C2'-C3'-O3'	5.66	122.76	113.70
1	A	281	G	C2'-C3'-O3'	5.66	122.75	113.70
1	A	890	G	N9-C1'-C2'	5.65	121.35	114.00
1	A	1065	U	C5'-C4'-C3'	5.65	125.03	116.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
8	H	135	CYS	CA-CB-SG	-5.64	103.85	114.00
1	A	1280	A	C1'-O4'-C4'	-5.64	105.39	109.90
15	O	43	LEU	CA-CB-CG	-5.63	102.36	115.30
1	A	1139	G	N9-C1'-C2'	5.61	121.29	114.00
4	D	12	CYS	N-CA-C	-5.58	95.92	111.00
1	A	747	C	C2'-C3'-O3'	5.56	122.59	113.70
3	C	178	LEU	CA-CB-CG	5.55	128.06	115.30
1	A	282	A	O5'-P-OP1	-5.53	100.72	105.70
1	A	429	U	C1'-O4'-C4'	-5.53	105.48	109.90
1	A	721	G	N9-C1'-C2'	5.50	121.15	114.00
1	A	1077	G	O4'-C4'-C3'	-5.50	98.50	104.00
1	A	976	G	C1'-O4'-C4'	-5.48	105.51	109.90
1	A	934	C	O4'-C1'-N1	5.48	112.58	108.20
1	A	173	U	N1-C1'-C2'	5.47	121.11	114.00
1	A	563	A	N9-C1'-C2'	5.44	121.07	114.00
1	A	792	A	N9-C1'-C2'	5.44	121.07	114.00
1	A	1050	G	C5'-C4'-C3'	5.43	124.69	116.00
1	A	571	U	OP2-P-O3'	5.42	117.13	105.20
1	A	890	G	OP2-P-O3'	5.42	117.12	105.20
1	A	1395	C	C2'-C3'-O3'	5.42	122.37	113.70
1	A	405	U	N1-C1'-C2'	5.42	121.04	114.00
1	A	1310	G	C5'-C4'-C3'	5.42	124.66	116.00
1	A	452	A	O4'-C1'-N9	5.41	112.53	108.20
1	A	17	U	O5'-P-OP1	5.41	117.19	110.70
10	J	40	LEU	C-N-CA	5.40	144.68	122.00
1	A	244	U	N1-C1'-C2'	5.40	121.02	114.00
1	A	1099	G	O4'-C1'-N9	5.38	112.51	108.20
1	A	566	G	C4'-C3'-O3'	-5.38	98.10	109.40
1	A	1094	G	C5'-C4'-O4'	5.38	115.55	109.10
1	A	971	G	N9-C1'-C2'	5.37	120.98	114.00
1	A	299	G	N9-C1'-C2'	5.37	120.98	114.00
1	A	815	A	N9-C1'-C2'	5.32	120.91	114.00
1	A	1505	G	C2'-C3'-O3'	5.31	122.20	113.70
9	I	102	LEU	CA-CB-CG	-5.30	103.10	115.30
1	A	119	A	C2'-C3'-O3'	5.29	122.17	113.70
1	A	871	U	C2'-C3'-O3'	-5.28	97.88	109.50
4	D	26	CYS	CA-CB-SG	5.28	123.51	114.00
1	A	1053	G	O3'-P-O5'	-5.28	93.98	104.00
1	A	1079	G	O4'-C4'-C3'	-5.27	98.73	104.00
1	A	595	G	C2'-C3'-O3'	-5.26	97.93	109.50
1	A	1302	U	N1-C1'-C2'	5.26	120.84	114.00
1	A	511	C	O4'-C1'-N1	5.25	112.40	108.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	873	A	C5'-C4'-C3'	-5.24	107.61	116.00
1	A	1081	G	N9-C1'-C2'	-5.24	106.24	112.00
1	A	971	G	C1'-O4'-C4'	-5.22	105.72	109.90
20	T	12	ALA	N-CA-C	-5.19	96.99	111.00
1	A	1297	C	C2'-C3'-O3'	5.16	121.96	113.70
1	A	18	C	O4'-C4'-C3'	-5.16	98.84	104.00
13	M	4	ILE	N-CA-C	5.15	124.89	111.00
3	C	51	GLY	N-CA-C	-5.14	100.25	113.10
1	A	1345	U	O4'-C1'-N1	5.12	112.30	108.20
1	A	1236	A	C5'-C4'-C3'	5.10	124.17	116.00
1	A	305	G	O4'-C1'-N9	5.10	112.28	108.20
1	A	1086	U	N1-C1'-C2'	5.09	120.62	114.00
1	A	559	A	OP2-P-O3'	5.09	116.39	105.20
1	A	677	U	N1-C1'-C2'	5.08	120.61	114.00
2	B	200	ILE	CB-CA-C	-5.08	101.44	111.60
1	A	872	A	N9-C1'-C2'	5.05	120.56	114.00
1	A	115	G	N9-C1'-C2'	5.03	120.55	114.00
1	A	675	A	N9-C1'-C2'	-5.01	106.48	112.00
12	L	26	ALA	N-CA-C	-5.01	97.47	111.00
1	A	1213	A	N9-C1'-C2'	5.01	120.51	114.00

There are no chirality outliers.

All (164) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	1023	G	Sidechain
1	A	1048	G	Sidechain
1	A	1056	U	Sidechain
1	A	1066	C	Sidechain
1	A	107	G	Sidechain
1	A	1077	G	Sidechain
1	A	1078	U	Sidechain
1	A	1079	G	Sidechain
1	A	108	G	Sidechain
1	A	1083	U	Sidechain
1	A	1085	U	Sidechain
1	A	110	C	Sidechain
1	A	112	G	Sidechain
1	A	1124	G	Sidechain
1	A	1133	G	Sidechain
1	A	1139	G	Sidechain
1	A	114	U	Sidechain

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Mol	Chain	Res	Type	Group
1	A	1160	G	Sidechain
1	A	1166	G	Sidechain
1	A	1181	G	Sidechain
1	A	1183	A	Sidechain
1	A	1188	A	Sidechain
1	A	1190	G	Sidechain
1	A	1191	A	Sidechain
1	A	1195	C	Sidechain
1	A	1196	U	Sidechain
1	A	1199	U	Sidechain
1	A	1213	A	Sidechain
1	A	1236	A	Sidechain
1	A	1281	U	Sidechain
1	A	1322	C	Sidechain
1	A	1326	C	Sidechain
1	A	1329	A	Sidechain
1	A	1336	C	Sidechain
1	A	1337	G	Sidechain
1	A	1347	G	Sidechain
1	A	1365	G	Sidechain
1	A	1370	G	Sidechain
1	A	1372	U	Sidechain
1	A	1385	G	Sidechain
1	A	1398	A	Sidechain
1	A	14	U	Sidechain
1	A	1434	A	Sidechain
1	A	1441	G	Sidechain
1	A	1498	U	Sidechain
1	A	15	G	Sidechain
1	A	1503	A	Sidechain
1	A	1505	G	Sidechain
1	A	1507	A	Sidechain
1	A	1514	C	Sidechain
1	A	1525	G	Sidechain
1	A	17	U	Sidechain
1	A	171	A	Sidechain
1	A	174	C	Sidechain
1	A	19	C	Sidechain
1	A	190(E)	U	Sidechain
1	A	195	A	Sidechain
1	A	197	A	Sidechain
1	A	222	U	Sidechain

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Mol	Chain	Res	Type	Group
1	A	236	G	Sidechain
1	A	243	A	Sidechain
1	A	250	A	Sidechain
1	A	251	G	Sidechain
1	A	261	U	Sidechain
1	A	263	A	Sidechain
1	A	264	U	Sidechain
1	A	285	G	Sidechain
1	A	299	G	Sidechain
1	A	30	U	Sidechain
1	A	303	A	Sidechain
1	A	317	G	Sidechain
1	A	321	A	Sidechain
1	A	354	G	Sidechain
1	A	361	G	Sidechain
1	A	374	A	Sidechain
1	A	375	U	Sidechain
1	A	376	G	Sidechain
1	A	377	G	Sidechain
1	A	379	C	Sidechain
1	A	380	G	Sidechain
1	A	39	G	Sidechain
1	A	405	U	Sidechain
1	A	410	G	Sidechain
1	A	412	A	Sidechain
1	A	413	G	Sidechain
1	A	426	G	Sidechain
1	A	448	A	Sidechain
1	A	457	C	Sidechain
1	A	47	C	Sidechain
1	A	481	G	Sidechain
1	A	484	G	Sidechain
1	A	491	G	Sidechain
1	A	495	U	Sidechain
1	A	500	G	Sidechain
1	A	516	U	Sidechain
1	A	517	G	Sidechain
1	A	524	G	Sidechain
1	A	529	G	Sidechain
1	A	534	U	Sidechain
1	A	54	C	Sidechain
1	A	547	A	Sidechain

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Mol	Chain	Res	Type	Group
1	A	549	C	Sidechain
1	A	561	U	Sidechain
1	A	566	G	Sidechain
1	A	571	U	Sidechain
1	A	575	G	Sidechain
1	A	577	G	Sidechain
1	A	60	A	Sidechain
1	A	604	G	Sidechain
1	A	622	A	Sidechain
1	A	638	G	Sidechain
1	A	639	G	Sidechain
1	A	646	U	Sidechain
1	A	652	U	Sidechain
1	A	654	G	Sidechain
1	A	657	G	Sidechain
1	A	684	A	Sidechain
1	A	686	U	Sidechain
1	A	701	C	Sidechain
1	A	724	G	Sidechain
1	A	727	G	Sidechain
1	A	732	C	Sidechain
1	A	740	U	Sidechain
1	A	752	G	Sidechain
1	A	760	G	Sidechain
1	A	765	G	Sidechain
1	A	767	A	Sidechain
1	A	768	A	Sidechain
1	A	773	G	Sidechain
1	A	775	G	Sidechain
1	A	777	A	Sidechain
1	A	785	G	Sidechain
1	A	803	G	Sidechain
1	A	819	A	Sidechain
1	A	820	U	Sidechain
1	A	828	A	Sidechain
1	A	835	U	Sidechain
1	A	836	G	Sidechain
1	A	854	G	Sidechain
1	A	861	G	Sidechain
1	A	866	C	Sidechain
1	A	868	C	Sidechain
1	A	870	U	Sidechain

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Mol	Chain	Res	Type	Group
1	A	871	U	Sidechain
1	A	872	A	Sidechain
1	A	873	A	Sidechain
1	A	875	C	Sidechain
1	A	880	C	Sidechain
1	A	884	U	Sidechain
1	A	888	G	Sidechain
1	A	910	C	Sidechain
1	A	914	A	Sidechain
1	A	915	A	Sidechain
1	A	917	G	Sidechain
1	A	93	G	Sidechain
1	A	953	G	Sidechain
1	A	956	U	Sidechain
1	A	963	G	Sidechain
1	A	991	U	Sidechain
1	A	993	G	Sidechain
4	D	27	TYR	Sidechain
5	E	133	TYR	Sidechain
8	H	48	TYR	Sidechain
17	Q	32	TYR	Sidechain

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	32372	0	16335	3399	0
2	B	1810	0	1861	119	0
3	C	1612	0	1677	169	0
4	D	1703	0	1763	134	0
5	E	1146	0	1207	112	0
6	F	843	0	857	42	0
7	G	1231	0	1273	81	0
8	H	1116	0	1177	113	0
9	I	993	0	1029	103	0
10	J	794	0	840	65	0
11	K	853	0	868	52	0
12	L	970	0	1057	77	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
13	M	955	0	1021	98	0
14	N	492	0	529	62	0
15	O	734	0	771	41	0
16	P	700	0	720	65	0
17	Q	834	0	906	70	0
18	R	559	0	624	49	0
19	S	647	0	673	57	0
20	T	734	0	832	55	0
21	V	208	0	221	15	0
22	D	1	0	0	0	0
22	N	1	0	0	0	0
All	All	51308	0	36241	4584	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 53.

All (4584) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1027:C:C2'	1:A:1028:C:H5"	1.52	1.36
1:A:1250:A:H2'	1:A:1251:A:C8	1.72	1.25
14:N:24:CYS:SG	14:N:39:LEU:HA	1.79	1.21
1:A:1027:C:H2'	1:A:1028:C:C5'	1.72	1.19
1:A:109:A:H2'	1:A:326:G:N2	1.58	1.18
1:A:981:U:H2'	1:A:982:U:C5	1.80	1.16
1:A:22:G:H2'	1:A:23:C:H6	1.03	1.15
1:A:243:A:H4'	1:A:244:U:C5'	1.76	1.15
1:A:243:A:H4'	1:A:244:U:H5'	1.22	1.14
1:A:981:U:H5'	14:N:21:TYR:CE1	1.82	1.13
2:B:71:VAL:HG22	2:B:93:VAL:HB	1.30	1.13
1:A:389:A:H2'	1:A:390:C:H5'	1.23	1.12
1:A:547:A:H4'	1:A:548:G:O5'	1.46	1.11
1:A:869:G:H4'	1:A:872:A:C8	1.85	1.11
1:A:447:G:H2'	1:A:485:G:N2	1.65	1.10
1:A:1029:C:H2'	1:A:1030:C:H5"	1.20	1.10
1:A:1489:G:C3'	1:A:1490:C:H5"	1.82	1.10
1:A:438:G:H4'	1:A:439:A:OP1	1.47	1.09
1:A:22:G:H2'	1:A:23:C:C6	1.85	1.09
1:A:1435:G:H2'	1:A:1436:U:C6	1.87	1.09
1:A:1218:C:H2'	1:A:1219:U:C6	1.88	1.08
1:A:1443:G:H5"	1:A:1446:A:H5'	1.29	1.08

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1489:G:C2'	1:A:1490:C:H5"	1.83	1.08
4:D:104:VAL:HG11	4:D:146:ILE:HD12	1.33	1.08
1:A:551:U:H2'	1:A:552:U:H6	1.16	1.07
1:A:981:U:H2'	1:A:982:U:H5	1.05	1.07
1:A:15:G:H4'	5:E:24:ARG:HH12	1.12	1.07
1:A:277:C:H5"	17:Q:68:ARG:HH22	0.94	1.07
5:E:143:ARG:HH21	8:H:104:ARG:NH1	1.51	1.07
1:A:1196:U:H5"	1:A:1197:G:H5'	1.30	1.06
1:A:1126:U:H2'	1:A:1127:G:H8	1.19	1.05
3:C:91:LEU:HD21	3:C:99:VAL:HG13	1.33	1.05
1:A:266:G:H5"	1:A:266:G:H8	1.22	1.04
1:A:872:A:H4'	1:A:873:A:OP1	1.52	1.04
1:A:677:U:H2'	1:A:678:U:C6	1.93	1.03
1:A:42:G:H2'	1:A:43:C:H6	1.22	1.03
1:A:1196:U:H5"	1:A:1197:G:C5'	1.88	1.03
1:A:1356:G:H2'	1:A:1357:A:H8	1.22	1.03
5:E:75:THR:HG22	5:E:76:ILE:H	1.23	1.03
1:A:794:A:H2'	1:A:795:C:H6	1.24	1.02
1:A:872:A:C2	1:A:874:G:C5	2.46	1.02
1:A:1029:C:C2'	1:A:1030:C:H5"	1.88	1.02
1:A:1005:A:H2'	1:A:1006:C:H5'	1.40	1.01
1:A:39:G:O2'	1:A:40:C:H5'	1.58	1.01
1:A:1189:C:H5"	3:C:5:ILE:HD13	1.39	1.01
1:A:1356:G:H2'	1:A:1357:A:C8	1.95	1.01
1:A:625:G:H2'	1:A:626:U:H6	1.22	1.00
1:A:15:G:C4'	5:E:24:ARG:HH12	1.72	1.00
1:A:1054:C:O2'	1:A:1055:A:H5"	1.59	1.00
1:A:386:C:H2'	1:A:387:U:H5'	1.42	1.00
1:A:1347:G:N2	1:A:1373:G:H2'	1.75	1.00
1:A:1129:C:O5'	1:A:1130:A:H5'	1.60	1.00
1:A:1505:G:H8	1:A:1505:G:H3'	1.24	1.00
1:A:190(F):G:H4'	1:A:190(G):G:OP2	1.61	0.99
4:D:25:ARG:HH21	4:D:30:LYS:HD3	1.23	0.99
1:A:1347:G:C8	9:I:107:ARG:HB3	1.98	0.99
9:I:26:VAL:HB	9:I:33:PHE:HB2	1.45	0.99
15:O:9:GLN:HA	15:O:12:ILE:HD12	1.42	0.99
1:A:807:A:H2'	1:A:808:C:H6	1.28	0.98
1:A:1489:G:H2'	1:A:1490:C:H5"	1.44	0.98
1:A:112:G:H21	1:A:354:G:H5'	1.24	0.98
1:A:1413:A:H2	1:A:1487:G:H22	1.01	0.98
1:A:551:U:H2'	1:A:552:U:C6	1.99	0.98

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:839:U:H5'	1:A:840:C:C5	1.99	0.98
1:A:1086:U:H2'	1:A:1087:G:H8	1.27	0.98
1:A:1020:U:O2'	1:A:1021:G:H5'	1.64	0.98
1:A:277:C:H5"	17:Q:68:ARG:NH2	1.78	0.98
1:A:579:G:C5	1:A:580:U:C5	2.51	0.97
1:A:277:C:C5'	17:Q:68:ARG:HH22	1.76	0.97
1:A:1323:G:H2'	1:A:1324:A:C8	1.99	0.97
1:A:429:U:H4'	1:A:430:A:O5'	1.63	0.97
1:A:802:A:H2'	1:A:803:G:H5'	1.45	0.97
1:A:1047:G:C2'	1:A:1048:G:H5'	1.95	0.97
1:A:624:C:O2'	1:A:625:G:H5'	1.64	0.96
1:A:1191:A:C4	1:A:1192:C:H5	1.82	0.96
20:T:50:GLU:HB2	20:T:99:LEU:HD12	1.46	0.96
5:E:120:THR:HG22	5:E:121:LYS:H	1.26	0.96
1:A:1086:U:H2'	1:A:1087:G:C8	2.01	0.96
1:A:386:C:C2'	1:A:387:U:H5'	1.94	0.96
1:A:1319:A:H4'	1:A:1320:C:OP1	1.66	0.96
1:A:1346:A:H2'	7:G:10:ARG:HH22	1.31	0.96
1:A:1505:G:H3'	1:A:1505:G:C8	2.01	0.96
1:A:663:A:H2'	1:A:664:G:H8	1.27	0.95
1:A:447:G:H2'	1:A:485:G:H22	1.29	0.95
1:A:946:A:H2'	1:A:947:G:C8	2.00	0.95
4:D:9:CYS:SG	4:D:31:CYS:O	2.24	0.95
1:A:946:A:H2'	1:A:947:G:H8	1.32	0.95
1:A:1306:A:C2	1:A:1307:U:N1	2.36	0.94
1:A:1239:A:H4'	1:A:1240:U:O5'	1.66	0.94
16:P:21:VAL:HG21	16:P:59:TRP:CD1	2.02	0.94
1:A:948:C:O2'	1:A:949:A:H5'	1.67	0.94
1:A:351:G:H4'	1:A:352:C:OP1	1.66	0.94
1:A:1126:U:H2'	1:A:1127:G:C8	2.03	0.94
1:A:579:G:H5'	1:A:728:A:H1'	1.48	0.93
1:A:914:A:O2'	1:A:915:A:H5'	1.66	0.93
1:A:1343:G:H2'	1:A:1344:C:C6	2.03	0.93
1:A:390:C:H4'	16:P:28:ARG:NH2	1.84	0.93
1:A:794:A:H2'	1:A:795:C:C6	2.03	0.93
1:A:1451:A:H5"	1:A:1452:C:H5	1.34	0.93
2:B:219:VAL:HA	2:B:222:ILE:HD12	1.51	0.93
1:A:854:G:H3'	1:A:871:U:O4	1.69	0.93
1:A:1007:C:H2'	1:A:1008:C:H6	1.34	0.93
12:L:6:THR:OG1	12:L:9:GLN:HG3	1.69	0.93
1:A:370:C:O2'	1:A:371:G:H5'	1.69	0.92

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:451:A:H1'	1:A:452:A:C8	2.04	0.92
1:A:1521:G:H2'	1:A:1522:U:H6	1.30	0.92
1:A:42:G:C4	1:A:43:C:C5	2.58	0.92
1:A:109:A:H2'	1:A:326:G:H21	1.28	0.92
11:K:57:THR:HG23	11:K:60:ALA:H	1.33	0.92
1:A:57:G:H2'	1:A:58:C:H6	1.33	0.92
1:A:371:G:O2'	1:A:372:C:H5'	1.70	0.92
1:A:1201:A:H4'	1:A:1202:G:O5'	1.68	0.92
12:L:75:HIS:HD2	12:L:77:LEU:H	1.17	0.92
1:A:345:C:H4'	1:A:346:G:O5'	1.67	0.92
1:A:882:C:O2'	1:A:883:C:H5'	1.68	0.92
1:A:839:U:H5'	1:A:840:C:H5	1.34	0.91
6:F:9:VAL:HB	6:F:87:ARG:HB2	1.52	0.91
1:A:405:U:H3'	1:A:406:G:H5'	1.52	0.91
1:A:1014:A:H2'	1:A:1015:A:C8	2.06	0.91
1:A:1029:C:H2'	1:A:1030:C:C5'	2.01	0.91
1:A:148:G:H2'	1:A:149:A:H8	1.36	0.91
1:A:992:U:H4'	1:A:993:G:O5'	1.71	0.91
1:A:1251:A:H2'	1:A:1252:A:C8	2.06	0.91
1:A:1490:C:H6	1:A:1490:C:H5'	1.36	0.91
1:A:450:G:H5"	1:A:451:A:H3'	1.52	0.91
1:A:642:A:C4	1:A:643:C:C5	2.60	0.91
1:A:736:C:H2'	1:A:737:A:C8	2.05	0.91
6:F:48:LEU:HD13	6:F:52:ILE:HG13	1.53	0.91
1:A:753:A:H4'	1:A:754:C:O5'	1.71	0.90
1:A:807:A:H2'	1:A:808:C:C6	2.06	0.90
1:A:677:U:H2'	1:A:678:U:H6	1.31	0.90
1:A:840:C:H5"	1:A:841:U:OP1	1.71	0.90
1:A:1090:U:O2'	1:A:1091:U:H5'	1.72	0.90
1:A:1400:C:H4'	1:A:1401:G:OP2	1.70	0.90
1:A:625:G:H2'	1:A:626:U:C6	2.05	0.90
1:A:1250:A:H2'	1:A:1251:A:H8	1.24	0.90
1:A:344:A:H5"	1:A:345:C:C5	2.07	0.90
1:A:820:U:H4'	1:A:821:G:OP2	1.69	0.90
1:A:1490:C:H5'	1:A:1490:C:C6	2.07	0.89
1:A:582:U:H2'	1:A:583:A:H8	1.33	0.89
1:A:1218:C:H2'	1:A:1219:U:C5	2.07	0.89
1:A:1435:G:H2'	1:A:1436:U:H6	1.28	0.89
2:B:19:HIS:CE1	2:B:206:ASP:HB3	2.06	0.89
1:A:358:U:H2'	1:A:359:U:C6	2.08	0.89
1:A:517:G:O2'	1:A:530:G:H4'	1.71	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:802:A:C8	1:A:803:G:C8	2.60	0.89
1:A:1047:G:O2'	1:A:1048:G:H5'	1.72	0.89
1:A:562:C:C4	1:A:884:U:C6	2.61	0.89
5:E:144:THR:O	5:E:148:VAL:HG23	1.71	0.89
1:A:414:A:C2	1:A:415:A:N9	2.41	0.89
1:A:394:G:H2'	1:A:395:C:H6	1.37	0.89
1:A:975:A:H4'	1:A:976:G:OP2	1.72	0.89
1:A:1367:C:C2	1:A:1368:G:C8	2.61	0.89
1:A:429:U:H2'	4:D:25:ARG:HH12	1.36	0.88
1:A:1191:A:C4	1:A:1192:C:C5	2.60	0.88
1:A:1300:G:HO2'	1:A:1301:U:H6	1.22	0.88
1:A:1347:G:H22	1:A:1373:G:H2'	1.38	0.88
1:A:902:G:O2'	1:A:903:G:H5'	1.71	0.88
3:C:22:TRP:CZ2	3:C:32:LEU:HD22	2.08	0.88
10:J:90:LEU:H	10:J:91:PRO:HD2	1.37	0.88
1:A:889:A:H4'	1:A:890:G:OP1	1.70	0.88
1:A:607:A:O2'	1:A:608:A:H5'	1.72	0.88
1:A:1128:C:O2'	1:A:1130:A:H8	1.56	0.88
1:A:1256:A:H2	1:A:1258:G:N1	1.71	0.88
1:A:328:C:O2	1:A:328:C:H2'	1.73	0.88
4:D:104:VAL:HG21	4:D:140:VAL:HG21	1.56	0.88
1:A:1319:A:H2'	1:A:1323:G:N7	1.89	0.88
1:A:1057:G:H5"	3:C:154:SER:HB2	1.55	0.87
1:A:943:U:C2'	1:A:944:G:H5'	2.03	0.87
7:G:122:HIS:HA	7:G:125:MET:HE3	1.54	0.87
1:A:625:G:C4	1:A:626:U:C5	2.61	0.87
1:A:952:U:O2'	1:A:953:G:H5'	1.74	0.87
1:A:1126:U:P	1:A:1126:U:H6	1.97	0.87
1:A:1027:C:H2'	1:A:1028:C:H5"	0.87	0.87
1:A:1328:C:O2'	1:A:1329:A:H5'	1.73	0.87
1:A:940:C:O2'	1:A:941:G:H5'	1.75	0.87
4:D:30:LYS:C	4:D:32:ALA:H	1.71	0.87
15:O:30:ALA:O	15:O:33:THR:HB	1.75	0.87
1:A:965:A:C2	1:A:969:A:C2	2.63	0.87
1:A:1490:C:H6	1:A:1490:C:C5'	1.87	0.87
1:A:1518:A:H2'	1:A:1519:A:C8	2.10	0.87
6:F:1:MET:HG2	6:F:68:PRO:HA	1.57	0.87
8:H:10:LEU:HD23	8:H:13:ILE:HD12	1.54	0.87
9:I:121:ARG:HG2	9:I:121:ARG:HH11	1.40	0.87
1:A:1372:U:H5"	9:I:71:SER:HB2	1.57	0.86
1:A:36:C:H5"	12:L:122:THR:O	1.75	0.86

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:914:A:C2'	1:A:915:A:H5'	2.06	0.86
1:A:1487:G:O2'	1:A:1488:G:H5'	1.76	0.86
1:A:1124:G:O2'	1:A:1125:U:H5'	1.75	0.86
1:A:770:C:H1'	1:A:900:A:C2	2.11	0.86
1:A:1371:G:C5	1:A:1372:U:C5	2.63	0.86
1:A:1305:G:H5"	21:V:4:GLY:HA3	1.55	0.86
1:A:382:A:H2'	1:A:383:A:C8	2.11	0.85
1:A:486:U:H2'	1:A:486:U:O2	1.76	0.85
1:A:562:C:N4	1:A:884:U:C6	2.44	0.85
1:A:1005:A:C2'	1:A:1006:C:H5'	2.04	0.85
1:A:1128:C:HO2'	1:A:1130:A:H8	1.19	0.85
1:A:1399:C:O2	1:A:1401:G:C5	2.29	0.85
12:L:75:HIS:CD2	12:L:77:LEU:H	1.93	0.85
1:A:1007:C:H2'	1:A:1008:C:C6	2.11	0.85
1:A:178:C:H2'	1:A:179:A:H8	1.42	0.85
1:A:429:U:H1'	1:A:430:A:H5"	1.57	0.85
1:A:1101:A:H4'	1:A:1102:A:O5'	1.77	0.85
1:A:1426:C:H2'	1:A:1427:U:H6	1.41	0.85
1:A:1491:G:H2'	1:A:1492:A:C8	2.12	0.85
19:S:28:LYS:HG2	19:S:29:ARG:H	1.39	0.85
1:A:80:G:H3'	1:A:81:U:H5"	1.59	0.85
1:A:423:G:N2	1:A:424:G:C8	2.44	0.85
1:A:664:G:OP1	18:R:64:ARG:HD2	1.75	0.85
1:A:1010:G:O2'	1:A:1011:G:H5'	1.77	0.85
1:A:1352:C:H2'	1:A:1353:G:C8	2.11	0.85
1:A:338:A:C5	1:A:339:C:C5	2.65	0.84
1:A:598:U:H2'	1:A:599:C:C6	2.11	0.84
1:A:872:A:C2	1:A:874:G:C6	2.64	0.84
1:A:39:G:C6	1:A:40:C:C5	2.66	0.84
1:A:531:U:H5"	1:A:532:A:OP1	1.77	0.84
1:A:948:C:OP2	13:M:108:ARG:HD2	1.77	0.84
2:B:111:ARG:HG2	2:B:111:ARG:HH11	1.41	0.84
1:A:57:G:C4	1:A:58:C:C5	2.66	0.84
1:A:1060:C:O2'	1:A:1061:G:H5'	1.78	0.84
5:E:80:ILE:HD11	5:E:91:LEU:HD12	1.59	0.84
1:A:277:C:O2'	1:A:278:G:H5'	1.78	0.84
1:A:736:C:H2'	1:A:737:A:H8	1.41	0.84
1:A:1064:G:H4'	1:A:1065:U:C5'	2.07	0.84
1:A:1234:C:H1'	1:A:1364:U:O2	1.77	0.84
3:C:3:ASN:ND2	3:C:3:ASN:H	1.76	0.84
1:A:579:G:C4	1:A:580:U:C5	2.66	0.84

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:613:C:C2	1:A:628:G:N2	2.46	0.84
1:A:15:G:H4'	5:E:24:ARG:NH1	1.92	0.83
1:A:457:C:O2'	1:A:458:C:H5'	1.76	0.83
1:A:1323:G:H2'	1:A:1324:A:H8	1.39	0.83
1:A:1513:A:H2'	1:A:1514:C:C6	2.13	0.83
1:A:627:G:O2'	1:A:628:G:H5'	1.78	0.83
1:A:839:U:O2	1:A:839:U:H2'	1.79	0.83
19:S:15:LEU:HA	19:S:18:LYS:HB3	1.61	0.83
1:A:663:A:H2'	1:A:664:G:C8	2.13	0.83
1:A:1451:A:H5"	1:A:1452:C:C5	2.14	0.83
1:A:1176:A:H2'	1:A:1177:G:C8	2.13	0.83
1:A:1181:G:O2'	1:A:1182:G:C8	2.32	0.83
1:A:1416:G:N2	1:A:1485:U:H1'	1.93	0.83
13:M:96:LEU:HB3	13:M:97:PRO:HD2	1.59	0.83
1:A:181:G:O2'	1:A:182:U:H5'	1.77	0.83
1:A:279:A:C8	17:Q:95:TYR:HE2	1.97	0.83
1:A:789:U:H2'	1:A:791:G:OP2	1.78	0.83
1:A:429:U:H2'	4:D:25:ARG:NH1	1.93	0.83
1:A:1225:A:H3'	1:A:1226:C:C6	2.14	0.83
1:A:1049:U:H1'	1:A:1201:A:N7	1.93	0.83
1:A:1342:C:O2'	1:A:1343:G:H5'	1.79	0.83
1:A:581:G:N7	1:A:758:G:N7	2.26	0.83
1:A:389:A:H2'	1:A:390:C:C5'	2.08	0.82
1:A:404:U:H2'	1:A:405:U:C6	2.14	0.82
1:A:1089:G:C6	1:A:1090:U:C5	2.66	0.82
1:A:1488:G:H2'	1:A:1489:G:C8	2.14	0.82
4:D:13:ARG:HD2	4:D:38:TYR:O	1.80	0.82
1:A:1288:A:C2	1:A:1289:A:C4	2.67	0.82
1:A:1303:C:H2'	1:A:1304:G:H5'	1.60	0.82
1:A:1378:C:C5	1:A:1379:G:C8	2.67	0.82
5:E:143:ARG:HH21	8:H:104:ARG:HH11	1.26	0.82
7:G:37:ASN:ND2	9:I:41:VAL:HG23	1.95	0.82
15:O:36:ILE:HG12	15:O:59:MET:HE3	1.61	0.82
1:A:39:G:C2'	1:A:40:C:H5'	2.08	0.82
1:A:1030:C:H2'	1:A:1030(A):G:C8	2.14	0.82
1:A:1130:A:H62	1:A:1144:G:H21	1.28	0.82
1:A:1349:A:H2'	1:A:1350:A:H8	1.45	0.82
5:E:143:ARG:NH2	8:H:104:ARG:NH1	2.28	0.82
12:L:7:ILE:O	12:L:11:VAL:HG23	1.79	0.82
1:A:1226:C:H4'	1:A:1227:A:OP1	1.76	0.82
1:A:328:C:H4'	1:A:329:A:O5'	1.80	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:746:A:O2'	1:A:747:C:H5'	1.80	0.82
14:N:24:CYS:SG	14:N:39:LEU:CA	2.67	0.82
20:T:40:ALA:HB2	20:T:55:ILE:HG22	1.62	0.82
1:A:266:G:H5"	1:A:266:G:C8	2.11	0.82
1:A:1443:G:C5'	1:A:1446:A:H5'	2.09	0.82
1:A:99:C:H2'	1:A:101:A:C8	2.14	0.82
9:I:104:ARG:HG2	9:I:104:ARG:HH11	1.44	0.81
1:A:57:G:H2'	1:A:58:C:C6	2.14	0.81
1:A:1443:G:H5"	1:A:1446:A:C5'	2.08	0.81
1:A:404:U:H2'	1:A:405:U:H6	1.42	0.81
1:A:642:A:C5	1:A:643:C:C5	2.68	0.81
7:G:31:MET:SD	7:G:34:GLY:HA2	2.21	0.81
1:A:41:G:H2'	1:A:42:G:H8	1.43	0.81
1:A:414:A:H2	1:A:415:A:H1'	1.46	0.81
1:A:254:G:H21	17:Q:16:GLN:NE2	1.78	0.81
1:A:321:A:O2'	1:A:322:C:H5'	1.79	0.81
1:A:402:G:C5	1:A:403:C:C5	2.69	0.81
1:A:163:C:O2'	1:A:164:U:H5'	1.80	0.81
1:A:524:G:H2'	1:A:525:C:C6	2.15	0.81
1:A:1225:A:H2'	1:A:1225:A:N3	1.94	0.81
1:A:961:U:C2'	1:A:962:C:H5'	2.11	0.81
1:A:1015:A:H2'	1:A:1016:A:C8	2.16	0.81
1:A:293:G:H2'	1:A:294:U:H6	1.46	0.81
1:A:1027:C:C2'	1:A:1028:C:C5'	2.46	0.81
1:A:1094:G:H5"	1:A:1095:U:H5	1.44	0.81
1:A:259:G:H2'	1:A:260:G:H8	1.46	0.80
1:A:559:A:H4'	1:A:560:U:O5'	1.78	0.80
1:A:383:A:H2'	1:A:384:G:H5'	1.62	0.80
1:A:499:A:O2'	1:A:500:G:C8	2.34	0.80
9:I:96:LEU:HD23	9:I:102:LEU:HD11	1.62	0.80
1:A:724:G:C2	1:A:725:G:C8	2.70	0.80
1:A:869:G:C4'	1:A:872:A:C8	2.65	0.80
3:C:58:GLU:HB3	10:J:92:THR:HG21	1.62	0.80
3:C:179:ARG:O	3:C:179:ARG:HG2	1.80	0.80
7:G:76:ARG:HD2	7:G:89:MET:SD	2.21	0.80
1:A:279:A:C8	17:Q:95:TYR:CE2	2.69	0.80
1:A:1202:G:O2'	1:A:1203:C:H5'	1.81	0.80
16:P:4:ILE:HG12	16:P:21:VAL:HG22	1.64	0.80
8:H:112:LEU:N	8:H:112:LEU:HD23	1.96	0.80
17:Q:64:PRO:HA	17:Q:70:ARG:HG3	1.64	0.80
1:A:858:G:O6	1:A:869:G:C8	2.34	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1368:G:C2	1:A:1369:C:C6	2.69	0.80
10:J:55:LYS:HG3	10:J:55:LYS:O	1.82	0.80
20:T:75:ASN:ND2	20:T:75:ASN:H	1.79	0.80
1:A:981:U:C5'	14:N:21:TYR:CE1	2.63	0.80
1:A:1126:U:C2'	1:A:1127:G:H8	1.92	0.80
1:A:1305:G:C5'	21:V:4:GLY:HA3	2.11	0.80
1:A:1055:A:H1'	3:C:156:ARG:HH12	1.46	0.80
3:C:3:ASN:H	3:C:3:ASN:HD22	1.28	0.80
1:A:101:A:C2	1:A:102:G:C8	2.69	0.79
1:A:439:A:C4	1:A:497:A:C2	2.70	0.79
1:A:562:C:C4	1:A:884:U:C5	2.69	0.79
1:A:947:G:H2'	1:A:948:C:H6	1.46	0.79
1:A:1047:G:H2'	1:A:1048:G:H5'	1.63	0.79
1:A:1256:A:H4'	1:A:1257:U:H5'	1.64	0.79
1:A:1310:G:H5"	13:M:77:ASN:HD21	1.47	0.79
1:A:1316:G:N2	1:A:1318:A:H3'	1.97	0.79
1:A:544:G:C5	1:A:545:C:C5	2.70	0.79
1:A:1350:A:C2	1:A:1351:U:C2	2.69	0.79
11:K:108:ILE:HD12	18:R:88:LYS:HG3	1.62	0.79
12:L:83:VAL:HG22	12:L:84:LEU:H	1.47	0.79
15:O:25:THR:HG21	15:O:70:LEU:HD21	1.65	0.79
16:P:20:VAL:HG22	16:P:21:VAL:H	1.43	0.79
1:A:414:A:C2	1:A:415:A:C1'	2.65	0.79
1:A:463:A:N7	1:A:474:G:N7	2.31	0.79
1:A:1089:G:C5	1:A:1090:U:C5	2.70	0.79
9:I:17:VAL:HG21	9:I:80:GLY:HA3	1.64	0.79
1:A:607:A:C2	1:A:608:A:C8	2.71	0.79
1:A:767:A:H2'	1:A:768:A:O4'	1.82	0.79
1:A:1098:C:H2'	1:A:1099:G:O4'	1.82	0.79
1:A:42:G:H2'	1:A:43:C:C6	2.14	0.79
1:A:562:C:N3	1:A:884:U:C5	2.51	0.79
3:C:70:VAL:O	3:C:106:VAL:HG23	1.82	0.79
4:D:38:TYR:H	4:D:38:TYR:HD2	1.29	0.79
5:E:11:ILE:HB	5:E:31:LEU:HB3	1.62	0.79
20:T:60:GLU:HA	20:T:63:ILE:HD12	1.65	0.79
1:A:1325:C:O2'	1:A:1326:C:H5'	1.83	0.79
1:A:556:C:O2'	1:A:557:G:H5'	1.82	0.79
1:A:598:U:H2'	1:A:599:C:H6	1.45	0.79
16:P:22:THR:HA	16:P:33:ILE:CD1	2.12	0.79
1:A:293:G:C5	1:A:294:U:C5	2.71	0.79
1:A:642:A:H2'	1:A:643:C:H6	1.47	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:723:U:O2	1:A:723:U:H2'	1.82	0.78
1:A:1502:A:H5"	1:A:1503:A:OP2	1.83	0.78
7:G:12:LEU:H	7:G:12:LEU:HD12	1.47	0.78
1:A:39:G:HO2'	1:A:40:C:H5'	1.46	0.78
1:A:452:A:C2	1:A:453:A:C4	2.72	0.78
1:A:1196:U:C5'	1:A:1197:G:H5'	2.13	0.78
1:A:1306:A:C2	1:A:1307:U:C1'	2.67	0.78
1:A:218:C:H4'	1:A:461:C:N4	1.99	0.78
1:A:390:C:H4'	16:P:28:ARG:HH22	1.48	0.78
13:M:25:ILE:HG23	13:M:29:ARG:HB2	1.65	0.78
1:A:1030(C):G:H5'	1:A:1030(C):G:H8	1.46	0.78
15:O:25:THR:HG21	15:O:70:LEU:CD2	2.13	0.78
1:A:337:C:H2'	1:A:338:A:C8	2.19	0.78
1:A:1016:A:H2'	1:A:1017:G:O4'	1.84	0.78
1:A:802:A:C2'	1:A:803:G:H5'	2.14	0.78
2:B:32:ILE:HD13	2:B:40:HIS:HB3	1.66	0.78
1:A:582:U:H2'	1:A:583:A:C8	2.19	0.78
1:A:968:A:H4'	1:A:969:A:OP2	1.84	0.78
1:A:337:C:H2'	1:A:338:A:H8	1.46	0.78
1:A:754:C:O2	1:A:754:C:H2'	1.83	0.78
1:A:924:C:O2'	1:A:925:G:H5'	1.83	0.78
1:A:982:U:H4'	1:A:983:A:O5'	1.84	0.78
11:K:18:ARG:HB2	11:K:33:THR:HG23	1.66	0.78
1:A:890:G:HO2'	1:A:906:G:H1	1.29	0.78
1:A:1521:G:C4	1:A:1522:U:C5	2.72	0.78
2:B:47:THR:HG23	2:B:202:PRO:HG2	1.65	0.78
1:A:76:C:O2'	1:A:77:G:H5'	1.83	0.77
1:A:579:G:H2'	1:A:580:U:H6	1.50	0.77
1:A:972:C:O2	1:A:972:C:H2'	1.84	0.77
1:A:1508:G:O2'	1:A:1509:C:H5'	1.84	0.77
5:E:11:ILE:HG21	5:E:31:LEU:HD13	1.65	0.77
5:E:120:THR:HG22	5:E:121:LYS:N	1.97	0.77
1:A:914:A:H2'	1:A:915:A:C5'	2.14	0.77
7:G:115:ARG:HB2	7:G:118:VAL:HG23	1.66	0.77
19:S:36:ARG:HH21	19:S:75:ALA:HB3	1.46	0.77
1:A:203:U:H5"	1:A:204:U:OP1	1.85	0.77
1:A:293:G:C4	1:A:294:U:C5	2.73	0.77
1:A:1137:C:H4'	1:A:1138:G:C2	2.18	0.77
1:A:1501:C:N4	1:A:1504:G:C2	2.53	0.77
1:A:556:C:C2'	1:A:557:G:H5'	2.15	0.77
1:A:1010:G:H2'	1:A:1011:G:H8	1.50	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1126:U:P	1:A:1126:U:C6	2.77	0.77
1:A:1206:G:C6	1:A:1207:G:C5	2.72	0.77
1:A:250:A:H4'	1:A:251:G:O5'	1.84	0.77
1:A:344:A:H5"	1:A:345:C:H5	1.45	0.77
1:A:943:U:H2'	1:A:944:G:H5'	1.66	0.77
20:T:73:HIS:O	20:T:74:LYS:HB2	1.85	0.77
1:A:266:G:O3'	17:Q:67:LYS:HB2	1.83	0.77
1:A:577:G:H1'	1:A:816:A:C4	2.19	0.77
1:A:836:G:C6	1:A:851:G:C6	2.72	0.77
1:A:836:G:C5	1:A:851:G:C6	2.73	0.77
2:B:77:ALA:HA	2:B:80:ILE:HD12	1.66	0.77
16:P:10:GLY:HA3	16:P:14:ASN:O	1.84	0.77
17:Q:12:SER:HB3	17:Q:20:THR:OG1	1.83	0.77
1:A:394:G:H2'	1:A:395:C:C6	2.19	0.77
1:A:1030:C:H6	1:A:1030:C:H5'	1.50	0.77
1:A:1149:C:H2'	1:A:1150:U:C6	2.20	0.77
14:N:24:CYS:SG	14:N:40:CYS:N	2.58	0.77
1:A:76:C:H2'	1:A:77:G:H8	1.49	0.77
1:A:827:U:H2'	1:A:870:U:O4	1.84	0.77
1:A:1505:G:C8	1:A:1505:G:C3'	2.66	0.77
2:B:101:MET:C	2:B:102:LEU:HD12	2.06	0.77
1:A:981:U:C2'	1:A:982:U:C5	2.66	0.77
1:A:1124:G:H5'	10:J:35:SER:O	1.85	0.77
1:A:1225:A:H5'	13:M:103:THR:OG1	1.85	0.77
1:A:112:G:N2	1:A:354:G:H5'	2.00	0.76
1:A:292:G:N2	1:A:309:G:C4	2.53	0.76
10:J:12:ASP:O	10:J:15:THR:HG22	1.85	0.76
1:A:1202:G:C4	14:N:42:ILE:HD13	2.20	0.76
20:T:75:ASN:H	20:T:75:ASN:HD22	1.29	0.76
1:A:34:C:H2'	1:A:35:G:H8	1.51	0.76
1:A:335:C:H2'	1:A:336:C:C6	2.20	0.76
1:A:947:G:H2'	1:A:948:C:C6	2.21	0.76
1:A:1105:A:O2'	1:A:1106:G:H5'	1.85	0.76
1:A:1269:A:C2	1:A:1313:U:O4'	2.37	0.76
1:A:1187:G:H5'	9:I:113:LYS:HE3	1.67	0.76
1:A:1240:U:H4'	1:A:1241:G:OP2	1.84	0.76
1:A:428:G:H4'	1:A:429:U:O5'	1.86	0.76
1:A:1191:A:H5"	3:C:4:LYS:NZ	2.00	0.76
1:A:1281:U:H4'	1:A:1282:C:OP2	1.84	0.76
1:A:1497:G:H2'	1:A:1498:U:H6	1.50	0.76
5:E:12:LEU:O	5:E:12:LEU:HD13	1.86	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:143:ARG:NH2	8:H:104:ARG:HH11	1.82	0.76
7:G:101:LEU:HA	7:G:104:LEU:HD12	1.68	0.76
18:R:74:ARG:HB3	18:R:81:PHE:CE1	2.21	0.76
1:A:577:G:H1'	1:A:816:A:N3	2.00	0.76
1:A:1206:G:C5	1:A:1207:G:N7	2.53	0.76
1:A:1343:G:H2'	1:A:1344:C:H6	1.46	0.76
1:A:1126:U:C6	1:A:1126:U:OP1	2.39	0.76
3:C:91:LEU:HD21	3:C:99:VAL:CG1	2.15	0.76
1:A:414:A:C2	1:A:415:A:C4	2.75	0.75
1:A:1233:G:H2'	1:A:1234:C:C6	2.21	0.75
1:A:243:A:C2	1:A:245:C:N3	2.54	0.75
1:A:338:A:C4	1:A:339:C:C5	2.74	0.75
1:A:1343:G:O2'	1:A:1344:C:H5'	1.85	0.75
1:A:1352:C:H2'	1:A:1353:G:H8	1.50	0.75
1:A:223:U:H5'	20:T:68:LYS:NZ	2.01	0.75
1:A:397:A:N6	1:A:548:G:C5	2.54	0.75
2:B:69:LEU:HD22	2:B:71:VAL:HG23	1.68	0.75
1:A:192:U:H2'	1:A:193:C:H6	1.51	0.75
1:A:861:G:O2'	1:A:862:C:H5'	1.85	0.75
1:A:99:C:H2'	1:A:101:A:H8	1.51	0.75
1:A:657:G:O2'	1:A:658:G:H5'	1.87	0.75
1:A:1058:G:H2'	1:A:1059:C:C6	2.22	0.75
1:A:1195:C:H3'	1:A:1196:U:H5'	1.69	0.75
4:D:9:CYS:SG	4:D:31:CYS:C	2.62	0.75
6:F:35:ALA:HB2	6:F:67:MET:HB3	1.66	0.75
14:N:6:LEU:HA	14:N:9:LYS:HB3	1.69	0.75
1:A:1126:U:C2	1:A:1127:G:C8	2.75	0.75
1:A:1306:A:C2	1:A:1307:U:C6	2.74	0.75
4:D:170:VAL:HG21	4:D:176:LEU:HD22	1.67	0.75
7:G:16:LEU:H	7:G:16:LEU:HD22	1.50	0.75
1:A:977:A:H2'	1:A:978:A:H5"	1.69	0.75
1:A:1091:U:H2'	1:A:1093:A:OP2	1.87	0.75
1:A:1130:A:N6	1:A:1144:G:H21	1.83	0.75
1:A:1300:G:O2'	1:A:1301:U:H6	1.69	0.75
1:A:1333:A:H2'	1:A:1334:G:O4'	1.86	0.75
1:A:1027:C:O2'	1:A:1028:C:H5"	1.85	0.75
1:A:696:A:H2'	1:A:697:U:C6	2.22	0.75
1:A:1305:G:H5"	21:V:4:GLY:CA	2.17	0.75
1:A:1489:G:H3'	1:A:1490:C:H5"	1.68	0.75
1:A:247:G:OP2	17:Q:99:SER:HB2	1.87	0.74
1:A:382:A:C2	1:A:383:A:C4	2.75	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:676:A:O2'	1:A:677:U:H5'	1.87	0.74
1:A:696:A:C4	1:A:697:U:C5	2.74	0.74
1:A:642:A:C6	1:A:643:C:C4	2.75	0.74
1:A:908:A:O2'	1:A:909:A:H5'	1.87	0.74
1:A:943:U:O2'	1:A:944:G:H5'	1.87	0.74
16:P:39:TYR:CD2	16:P:73:LEU:HD11	2.21	0.74
1:A:1367:C:N3	1:A:1368:G:N7	2.34	0.74
12:L:28:LYS:HD2	12:L:33:ARG:HH22	1.50	0.74
18:R:29:PHE:HE1	18:R:31:LEU:HD23	1.51	0.74
19:S:41:VAL:H	19:S:44:MET:HE3	1.51	0.74
1:A:1236:A:H4'	1:A:1304:G:H4'	1.70	0.74
1:A:1349:A:C4	1:A:1350:A:C8	2.75	0.74
1:A:1402:C:C2	1:A:1403:C:C6	2.74	0.74
1:A:579:G:C4	1:A:580:U:C6	2.75	0.74
1:A:994:A:C2	1:A:995:C:C6	2.74	0.74
1:A:1230:C:O2'	1:A:1231:G:H5'	1.87	0.74
1:A:528:C:H41	12:L:49:ASN:CG	1.91	0.74
1:A:818:G:O2'	1:A:820:U:C5	2.40	0.74
13:M:96:LEU:O	13:M:110:ARG:HG2	1.87	0.74
1:A:1278:U:H5"	1:A:1279:A:O4'	1.88	0.74
1:A:1347:G:O2'	1:A:1348:U:P	2.46	0.74
1:A:60:A:H4'	1:A:61:G:O5'	1.85	0.74
1:A:455:C:O2'	1:A:456:C:H5'	1.87	0.74
1:A:1401:G:C5	1:A:1402:C:C5	2.76	0.74
1:A:754:C:O2	1:A:754:C:C2'	2.35	0.74
1:A:1309:G:P	13:M:88:ARG:HH21	2.11	0.74
8:H:44:PHE:CE1	8:H:137:VAL:HG12	2.22	0.74
16:P:43:LYS:HG2	16:P:48:TRP:CD2	2.23	0.74
18:R:34:TYR:H	18:R:34:TYR:HD2	1.35	0.74
1:A:414:A:C2	1:A:415:A:H1'	2.23	0.74
1:A:696:A:H2'	1:A:697:U:H6	1.51	0.74
1:A:915:A:H2'	1:A:916:G:C5'	2.18	0.74
1:A:1094:G:H5"	1:A:1095:U:C5	2.22	0.74
1:A:893:C:H2'	1:A:894:G:H8	1.52	0.73
1:A:943:U:H2'	1:A:944:G:C5'	2.16	0.73
14:N:27:CYS:SG	14:N:29:ARG:HB2	2.28	0.73
1:A:370:C:C2	1:A:371:G:C8	2.77	0.73
1:A:1369:C:H2'	1:A:1370:G:C8	2.24	0.73
1:A:458:C:C2	1:A:459:G:C8	2.76	0.73
1:A:1497:G:C5	1:A:1498:U:C5	2.76	0.73
1:A:1521:G:H2'	1:A:1522:U:C6	2.19	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:694:A:H5'	11:K:53:SER:HB2	1.68	0.73
1:A:914:A:H2'	1:A:915:A:H5'	1.71	0.73
20:T:33:ILE:HD11	20:T:63:ILE:HA	1.70	0.73
1:A:781:A:H2'	1:A:782:A:H5'	1.70	0.73
1:A:1278:U:C5'	1:A:1279:A:O4'	2.36	0.73
19:S:20:LEU:HA	19:S:23:ASN:ND2	2.03	0.73
1:A:411:A:C4	1:A:413:G:H1'	2.23	0.73
1:A:804:U:H5"	1:A:805:C:OP2	1.88	0.73
14:N:23:ARG:HD3	14:N:30:ALA:HB2	1.71	0.73
1:A:56:U:H2'	1:A:57:G:H8	1.54	0.73
1:A:1442:G:N2	1:A:1446:A:H3'	2.04	0.73
3:C:154:SER:CB	3:C:197:GLY:H	2.01	0.73
18:R:29:PHE:CE1	18:R:31:LEU:HD23	2.24	0.73
1:A:251:G:H4'	1:A:252:U:O5'	1.88	0.72
1:A:1113:C:H4'	3:C:14:ILE:HD11	1.70	0.72
1:A:1528:U:O2'	1:A:1529:G:H3'	1.89	0.72
1:A:56:U:H2'	1:A:57:G:C8	2.24	0.72
1:A:607:A:C2	1:A:608:A:N9	2.57	0.72
1:A:1440:C:H2'	1:A:1441:G:O4'	1.90	0.72
1:A:656:C:H3'	1:A:656:C:C6	2.24	0.72
1:A:880:C:H5"	12:L:12:ARG:HH21	1.54	0.72
1:A:961:U:H2'	1:A:962:C:H5'	1.70	0.72
1:A:981:U:H5'	14:N:21:TYR:HE1	1.54	0.72
1:A:1083:U:C5	1:A:1084:G:C6	2.77	0.72
1:A:1256:A:C2	1:A:1258:G:C6	2.76	0.72
1:A:1290:G:C5	1:A:1291:G:N7	2.57	0.72
1:A:1413:A:H2'	1:A:1414:U:H6	1.53	0.72
2:B:178:ARG:HH21	8:H:74:PRO:HG3	1.54	0.72
6:F:18:GLN:O	6:F:21:LEU:HB3	1.90	0.72
1:A:180:U:C2'	1:A:181:G:H5'	2.19	0.72
1:A:357:G:C2	1:A:358:U:C5	2.77	0.72
1:A:1015:A:H2'	1:A:1016:A:H8	1.51	0.72
1:A:1413:A:H2	1:A:1487:G:N2	1.82	0.72
1:A:53:A:N1	1:A:54:C:C2	2.58	0.72
1:A:400:C:H2'	1:A:401:C:H6	1.52	0.72
1:A:607:A:C4	1:A:608:A:C8	2.77	0.72
2:B:160:ASP:O	2:B:183:PRO:HD2	1.89	0.72
1:A:265:G:H2'	1:A:267:C:H5	1.55	0.72
1:A:322:C:O2'	1:A:323:U:H5'	1.90	0.72
4:D:88:VAL:HB	4:D:91:SER:OG	1.89	0.72
4:D:194:LEU:HD12	4:D:196:LEU:HG	1.70	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:16:A:O2'	5:E:16:THR:HG22	1.89	0.72
1:A:49:U:H1'	12:L:28:LYS:NZ	2.04	0.72
1:A:321:A:H2'	1:A:322:C:H6	1.53	0.72
1:A:1057:G:C5'	3:C:154:SER:HB2	2.19	0.72
1:A:1306:A:C2	1:A:1307:U:C2	2.77	0.72
3:C:54:ARG:HB3	3:C:69:HIS:HD2	1.54	0.72
12:L:47:LYS:HB2	12:L:48:PRO:HD3	1.69	0.72
1:A:642:A:C5	1:A:643:C:C4	2.78	0.72
1:A:914:A:C2'	1:A:915:A:C5'	2.68	0.72
1:A:1005:A:H2'	1:A:1006:C:C5'	2.17	0.72
10:J:49:VAL:O	10:J:60:ARG:HA	1.88	0.72
1:A:393:A:C2	1:A:394:G:C8	2.77	0.72
1:A:452:A:C2	1:A:453:A:N9	2.58	0.72
1:A:1191:A:H5"	3:C:4:LYS:HZ3	1.52	0.72
6:F:62:TRP:CH2	6:F:64:GLN:HB2	2.25	0.72
11:K:50:TYR:CD2	11:K:54:ARG:HD3	2.25	0.72
1:A:170:U:O2'	1:A:171:A:H5'	1.90	0.72
1:A:622:A:C8	1:A:623:C:C6	2.78	0.72
1:A:642:A:H2'	1:A:643:C:C6	2.25	0.72
1:A:1126:U:H6	1:A:1126:U:OP1	1.71	0.72
1:A:1190:G:O2'	1:A:1191:A:P	2.47	0.72
1:A:1489:G:H2'	1:A:1490:C:C5'	2.18	0.72
3:C:9:GLY:HA2	3:C:12:LEU:HD21	1.72	0.72
18:R:73:ALA:HB3	18:R:79:LEU:HD12	1.71	0.72
1:A:926:G:H2'	1:A:1505:G:H21	1.55	0.71
1:A:1193:G:O2'	1:A:1194:U:H5'	1.90	0.71
1:A:1244:C:OP2	21:V:9:ARG:HB2	1.90	0.71
1:A:336:C:O2'	1:A:337:C:H5'	1.90	0.71
1:A:608:A:C4	1:A:609:A:C8	2.78	0.71
1:A:1030(B):C:H2'	1:A:1030(C):G:H5"	1.72	0.71
3:C:64:VAL:HB	3:C:99:VAL:HB	1.72	0.71
4:D:140:VAL:HG11	4:D:146:ILE:HD11	1.70	0.71
1:A:389:A:C2'	1:A:390:C:H5'	2.14	0.71
1:A:484:G:H4'	1:A:485:G:O5'	1.90	0.71
1:A:1144:G:H22	1:A:1146:A:H62	1.38	0.71
1:A:1157:A:H1'	1:A:1181:G:N2	2.05	0.71
1:A:1299:A:C5	1:A:1301:U:O2	2.42	0.71
3:C:173:VAL:O	3:C:173:VAL:HG12	1.90	0.71
1:A:402:G:C6	1:A:403:C:C5	2.79	0.71
1:A:807:A:C4	1:A:808:C:C5	2.79	0.71
1:A:1267:C:C5	1:A:1268:A:N7	2.59	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1303:C:N4	1:A:1304:G:C6	2.58	0.71
3:C:187:ALA:HB3	3:C:198:VAL:HB	1.73	0.71
19:S:62:ILE:HD12	19:S:66:MET:HE2	1.72	0.71
1:A:118:U:C5	1:A:288:A:C6	2.79	0.71
1:A:293:G:C6	1:A:305:G:C2	2.79	0.71
1:A:536:C:H2'	1:A:537:G:H8	1.53	0.71
1:A:1381:U:O2'	1:A:1382:C:H5'	1.90	0.71
3:C:10:PHE:CZ	3:C:178:LEU:HD13	2.26	0.71
13:M:81:LEU:H	13:M:81:LEU:CD2	2.03	0.71
1:A:620:C:N1	4:D:135:LEU:HD13	2.05	0.71
1:A:935:A:C6	7:G:3:ARG:NH2	2.57	0.71
1:A:1064:G:H4'	1:A:1065:U:H5'	1.71	0.71
1:A:1138:G:N2	1:A:1140:C:C5	2.59	0.71
1:A:1486:G:H2'	1:A:1487:G:O4'	1.90	0.71
3:C:5:ILE:O	3:C:5:ILE:HG13	1.91	0.71
1:A:22:G:C4	1:A:23:C:C5	2.79	0.71
1:A:192:U:H2'	1:A:193:C:C6	2.25	0.71
1:A:571:U:H3'	1:A:572:A:C5'	2.21	0.71
1:A:976:G:OP2	1:A:1358:U:H1'	1.89	0.71
5:E:129:ILE:HG23	5:E:133:TYR:CE1	2.26	0.71
1:A:65:U:C5	1:A:381:C:N4	2.58	0.71
1:A:454:C:H2'	1:A:455:C:H5'	1.73	0.71
1:A:490:G:C4	1:A:491:G:C8	2.79	0.71
1:A:718:G:H5'	1:A:719:C:OP2	1.91	0.71
1:A:1511:G:H2'	1:A:1512:U:O4'	1.90	0.71
4:D:30:LYS:C	4:D:32:ALA:N	2.41	0.71
1:A:176:C:C2	1:A:177:C:C5	2.79	0.71
1:A:607:A:N3	1:A:608:A:C8	2.59	0.71
1:A:900:A:O2'	1:A:901:A:H5'	1.91	0.71
1:A:1197:G:C2'	1:A:1198:G:H5'	2.21	0.71
1:A:9:G:C6	1:A:26:A:N6	2.58	0.71
1:A:371:G:C2'	1:A:372:C:H5'	2.21	0.71
1:A:650:G:H2'	1:A:651:C:H5'	1.71	0.71
1:A:1147:C:H4'	9:I:5:TYR:CE1	2.26	0.71
1:A:1306:A:N1	1:A:1307:U:C2	2.59	0.71
5:E:75:THR:HG22	5:E:76:ILE:N	2.02	0.71
12:L:25:PRO:HD2	12:L:98:TYR:OH	1.91	0.71
13:M:4:ILE:HA	13:M:8:GLU:O	1.91	0.71
1:A:259:G:H2'	1:A:260:G:C8	2.26	0.70
1:A:377:G:OP1	16:P:3:LYS:HD2	1.91	0.70
1:A:803:G:C5	1:A:804:U:C5	2.79	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1187:G:H5'	9:I:113:LYS:CE	2.20	0.70
1:A:650:G:C2'	1:A:651:C:H5'	2.20	0.70
1:A:1256:A:H2	1:A:1258:G:C6	2.09	0.70
5:E:103:GLY:O	5:E:106:PRO:HD2	1.92	0.70
12:L:83:VAL:HG22	12:L:84:LEU:N	2.05	0.70
19:S:41:VAL:HG23	19:S:44:MET:HB2	1.72	0.70
1:A:16:A:N1	1:A:919:A:C2	2.60	0.70
1:A:394:G:C4	1:A:395:C:C5	2.78	0.70
1:A:1202:G:C2'	1:A:1203:C:H5'	2.20	0.70
5:E:120:THR:CG2	5:E:121:LYS:H	2.04	0.70
8:H:69:ARG:HB2	8:H:74:PRO:HA	1.72	0.70
15:O:56:LEU:O	15:O:60:VAL:HG23	1.89	0.70
1:A:407:G:O2'	1:A:408:A:H5'	1.91	0.70
1:A:451:A:C1'	1:A:452:A:C8	2.74	0.70
1:A:554:C:H2'	1:A:555:C:H5'	1.74	0.70
1:A:872:A:C4'	1:A:873:A:OP1	2.36	0.70
1:A:885:G:C2	1:A:886:G:C8	2.80	0.70
1:A:1129:C:O5'	1:A:1130:A:C5'	2.39	0.70
1:A:1148:U:H4'	9:I:14:VAL:HG11	1.72	0.70
7:G:40:ALA:HB3	9:I:41:VAL:HG21	1.73	0.70
1:A:1426:C:H2'	1:A:1427:U:C6	2.27	0.70
5:E:13:ILE:HG22	5:E:30:ALA:HA	1.73	0.70
1:A:166:G:H2'	1:A:167:G:H8	1.56	0.70
1:A:179:A:O2'	1:A:180:U:H5'	1.92	0.70
1:A:449:C:C6	1:A:450:G:C8	2.79	0.70
1:A:1197:G:H2'	1:A:1198:G:H5'	1.73	0.70
3:C:32:LEU:HD21	3:C:59:ARG:NE	2.06	0.70
1:A:1435:G:H2'	1:A:1436:U:C5	2.26	0.70
3:C:150:LYS:HB3	3:C:201:TYR:HB2	1.74	0.70
5:E:75:THR:CG2	5:E:76:ILE:H	2.03	0.70
1:A:55:A:C2	1:A:56:U:C1'	2.75	0.70
1:A:281:G:O2'	1:A:282:A:OP2	2.09	0.70
1:A:382:A:C2	1:A:383:A:C5	2.79	0.70
1:A:670:G:H2'	1:A:671:G:O4'	1.92	0.70
1:A:1490:C:C6	1:A:1490:C:C5'	2.72	0.70
18:R:47:THR:HA	18:R:83:GLU:HB2	1.73	0.70
1:A:426:G:O2'	1:A:427:U:H5'	1.91	0.70
1:A:676:A:H2'	1:A:677:U:C6	2.26	0.70
1:A:1187:G:H5'	9:I:113:LYS:NZ	2.06	0.70
2:B:101:MET:O	2:B:102:LEU:HD12	1.92	0.70
1:A:362:G:H5"	12:L:61:THR:HG21	1.74	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1128:C:H5'	9:I:16:ARG:CZ	2.21	0.69
1:A:1217:C:C4	1:A:1218:C:C5	2.79	0.69
1:A:1263:C:H2'	1:A:1264:C:H6	1.58	0.69
1:A:1286:A:C8	1:A:1287:A:H4'	2.27	0.69
1:A:1333:A:C8	1:A:1334:G:C8	2.79	0.69
2:B:100:GLY:C	2:B:102:LEU:H	1.94	0.69
1:A:149:A:C2	1:A:150:C:C4	2.80	0.69
1:A:443:C:H2'	1:A:444:C:H6	1.58	0.69
1:A:687:A:H4'	1:A:688:G:O5'	1.91	0.69
1:A:1028:C:H6	1:A:1028:C:H5'	1.57	0.69
1:A:1470:G:O2'	1:A:1471:G:H5'	1.92	0.69
5:E:113:ALA:HB3	5:E:115:VAL:HG23	1.74	0.69
1:A:531:U:H4'	1:A:532:A:H5"	1.72	0.69
1:A:1452:C:H4'	1:A:1453:G:O5'	1.90	0.69
1:A:266:G:H8	1:A:266:G:C5'	2.00	0.69
1:A:1061:G:N2	1:A:1197:G:H1'	2.07	0.69
1:A:1138:G:N2	1:A:1140:C:C4	2.60	0.69
1:A:1187:G:H5'	9:I:113:LYS:HZ1	1.57	0.69
1:A:448:A:OP2	1:A:485:G:N2	2.24	0.69
1:A:171:A:O2'	1:A:172:A:H5'	1.93	0.69
2:B:130:ARG:HH22	3:C:207:VAL:HG11	1.55	0.69
6:F:50:TYR:CE1	18:R:77:GLY:HA2	2.28	0.69
1:A:338:A:C4	1:A:339:C:C6	2.80	0.69
1:A:915:A:H2'	1:A:916:G:H5'	1.73	0.69
1:A:1151:A:HO2'	1:A:1152:A:H8	1.39	0.69
1:A:1371:G:C6	1:A:1372:U:C5	2.80	0.69
6:F:7:ASN:ND2	18:R:34:TYR:HE1	1.91	0.69
7:G:115:ARG:HB2	7:G:118:VAL:CG2	2.22	0.69
12:L:70:ILE:HD13	12:L:77:LEU:HD12	1.75	0.69
1:A:39:G:C2	1:A:40:C:C6	2.81	0.69
1:A:218:C:C4'	1:A:461:C:N4	2.55	0.69
1:A:338:A:H2'	1:A:339:C:H6	1.57	0.69
1:A:405:U:H5"	1:A:406:G:O4'	1.93	0.69
1:A:429:U:H4'	1:A:430:A:C5'	2.22	0.69
1:A:650:G:C6	1:A:651:C:C5	2.81	0.69
1:A:698:G:H2'	1:A:699:C:H6	1.58	0.69
1:A:959:A:H3'	1:A:960:U:H5"	1.75	0.69
1:A:1151:A:O2'	1:A:1152:A:C8	2.46	0.69
1:A:1179:A:O2'	1:A:1180:A:H5'	1.92	0.69
1:A:1292:U:P	7:G:41:ARG:HH22	2.16	0.69
1:A:1306:A:H2	1:A:1307:U:H1'	1.57	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1326:C:H2'	1:A:1327:C:H6	1.58	0.69
5:E:82:VAL:HG21	5:E:138:ALA:HA	1.74	0.69
8:H:86:ILE:HD12	8:H:133:LEU:HD21	1.74	0.69
1:A:77:G:O2'	1:A:78:G:H5'	1.92	0.69
1:A:185:A:H2'	1:A:186:C:C6	2.28	0.69
1:A:332:G:O2'	1:A:333:G:H5'	1.93	0.69
1:A:487:A:O2'	1:A:488:C:H5'	1.92	0.69
1:A:571:U:OP1	1:A:819:A:H2'	1.93	0.69
1:A:656:C:H3'	1:A:656:C:H6	1.56	0.69
1:A:767:A:C5	1:A:768:A:N7	2.60	0.69
1:A:1030(B):C:H3'	1:A:1030(C):G:C5'	2.23	0.69
1:A:1226:C:OP2	13:M:103:THR:HG21	1.93	0.69
1:A:425:G:O2'	1:A:426:G:H5'	1.93	0.69
1:A:463:A:C8	1:A:474:G:C8	2.81	0.69
1:A:509:A:C8	1:A:509:A:H3'	2.27	0.69
1:A:740:U:OP2	15:O:2:PRO:HG3	1.93	0.69
1:A:1004:A:H2'	1:A:1005:A:C8	2.28	0.69
1:A:1287:A:H2'	1:A:1288:A:C8	2.28	0.69
1:A:1424:C:O2'	1:A:1425:U:H5'	1.93	0.69
5:E:76:ILE:O	5:E:93:PRO:HB3	1.91	0.69
12:L:46:LYS:HG2	12:L:47:LYS:H	1.57	0.69
1:A:624:C:H2'	1:A:625:G:H8	1.58	0.68
1:A:766:A:C8	1:A:814:A:N6	2.61	0.68
1:A:1219:U:H2'	1:A:1220:G:C8	2.27	0.68
1:A:1250:A:H5"	9:I:67:GLY:C	2.13	0.68
10:J:40:LEU:HB3	10:J:41:PRO:HB2	1.75	0.68
1:A:15:G:C4	1:A:16:A:C8	2.80	0.68
1:A:261:U:O2	1:A:263:A:C8	2.45	0.68
1:A:802:A:H2'	1:A:803:G:C5'	2.22	0.68
1:A:1063:C:H2'	1:A:1064:G:C8	2.28	0.68
1:A:1210:C:H5'	1:A:1214:C:N4	2.08	0.68
10:J:54:PHE:CE2	10:J:55:LYS:HG2	2.28	0.68
1:A:121:C:H5'	1:A:122:G:OP1	1.93	0.68
1:A:947:G:C4	1:A:948:C:C5	2.80	0.68
1:A:1347:G:C2'	1:A:1348:U:OP2	2.41	0.68
1:A:8:A:N6	4:D:209:ARG:HB2	2.09	0.68
1:A:32:A:C2	1:A:33:A:C4	2.81	0.68
1:A:75:G:O2'	1:A:76:C:H5'	1.94	0.68
1:A:607:A:C2'	1:A:608:A:H5'	2.23	0.68
1:A:676:A:C4	1:A:677:U:C5	2.81	0.68
1:A:797:C:O2'	1:A:798:G:H5'	1.94	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1391:U:H2'	1:A:1392:G:C8	2.28	0.68
1:A:1520:G:H2'	1:A:1521:G:H8	1.59	0.68
13:M:49:THR:HB	13:M:52:GLU:HG3	1.75	0.68
1:A:551:U:C2	1:A:552:U:C5	2.81	0.68
1:A:676:A:H2'	1:A:677:U:H6	1.58	0.68
1:A:1219:U:H2'	1:A:1220:G:H8	1.58	0.68
1:A:1309:G:C2'	1:A:1310:G:H5'	2.23	0.68
2:B:113:HIS:HA	2:B:116:GLU:HG3	1.73	0.68
1:A:182:U:O4	1:A:223:U:H1'	1.93	0.68
1:A:487:A:H2'	1:A:488:C:O4'	1.93	0.68
1:A:767:A:H2'	1:A:768:A:H8	1.58	0.68
1:A:1128:C:O2'	1:A:1130:A:C8	2.39	0.68
1:A:1225:A:H5'	1:A:1226:C:OP2	1.93	0.68
1:A:1375:A:C2	1:A:1376:U:C2	2.82	0.68
1:A:562:C:N4	1:A:884:U:H6	1.89	0.68
1:A:1326:C:OP1	21:V:12:LYS:NZ	2.27	0.68
8:H:108:GLY:HA3	8:H:138:TRP:HB3	1.76	0.68
1:A:245:C:O2'	1:A:246:A:H5'	1.93	0.68
1:A:448:A:C8	1:A:487:A:C6	2.82	0.68
12:L:32:PHE:HA	12:L:85:ILE:O	1.93	0.68
13:M:2:ALA:O	13:M:9:ILE:HG23	1.93	0.68
1:A:936:C:O2'	1:A:937:A:H5'	1.94	0.68
1:A:1004:A:H5'	1:A:1025:U:O2	1.93	0.68
1:A:1030(B):C:C3'	1:A:1030(C):G:H5"	2.24	0.68
1:A:191:G:H2'	1:A:192:U:H6	1.59	0.68
1:A:540:G:O2'	1:A:541:G:H5'	1.94	0.68
1:A:692:U:H1'	1:A:695:A:N7	2.09	0.68
1:A:770:C:C1'	1:A:900:A:H2	2.06	0.68
1:A:1311:G:C6	1:A:1312:G:N7	2.61	0.68
1:A:1233:G:H2'	1:A:1234:C:H6	1.56	0.67
3:C:6:HIS:NE2	3:C:8:ILE:HB	2.07	0.67
7:G:74:GLU:HG2	7:G:91:VAL:HG22	1.76	0.67
7:G:92:SER:HB2	7:G:93:PRO:HD2	1.76	0.67
1:A:280:C:O2	17:Q:38:ARG:HG3	1.93	0.67
9:I:104:ARG:HG2	9:I:104:ARG:NH1	2.09	0.67
15:O:9:GLN:HA	15:O:12:ILE:CD1	2.20	0.67
1:A:35:G:C4	1:A:550:G:N2	2.62	0.67
1:A:517:G:HO2'	1:A:530:G:H4'	1.58	0.67
1:A:1144:G:H22	1:A:1146:A:N6	1.93	0.67
1:A:1306:A:N3	1:A:1307:U:C6	2.62	0.67
3:C:33:LEU:HD11	14:N:53:LEU:HD22	1.76	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:8:VAL:O	4:D:10:ARG:N	2.24	0.67
5:E:84:PHE:O	5:E:86:ALA:N	2.28	0.67
1:A:191:G:H2'	1:A:192:U:C6	2.29	0.67
1:A:243:A:C2	1:A:245:C:C4	2.82	0.67
1:A:409:G:OP1	4:D:24:GLU:O	2.11	0.67
1:A:449:C:H3'	1:A:450:G:H8	1.59	0.67
1:A:591:U:H2'	1:A:592:G:H8	1.59	0.67
1:A:656:C:C6	1:A:656:C:C3'	2.77	0.67
1:A:960:U:O2'	1:A:1223:C:H4'	1.93	0.67
1:A:1158:C:N3	1:A:1160:G:N7	2.42	0.67
1:A:1364:U:O2'	1:A:1365:G:OP1	2.11	0.67
5:E:151:LEU:HD21	8:H:79:VAL:HA	1.76	0.67
7:G:37:ASN:ND2	9:I:41:VAL:H	1.92	0.67
20:T:43:LEU:HD11	20:T:55:ILE:HD12	1.75	0.67
1:A:254:G:H21	17:Q:16:GLN:HE21	1.42	0.67
1:A:463:A:C8	1:A:474:G:N7	2.63	0.67
1:A:911:U:O2'	1:A:912:C:H5'	1.94	0.67
1:A:1039:C:O2'	1:A:1040:U:H5'	1.95	0.67
1:A:1488:G:H2'	1:A:1489:G:H8	1.60	0.67
1:A:41:G:H2'	1:A:42:G:C8	2.27	0.67
1:A:149:A:N3	1:A:150:C:C6	2.63	0.67
1:A:266:G:C8	1:A:266:G:C5'	2.78	0.67
1:A:280:C:H4'	1:A:281:G:OP2	1.94	0.67
1:A:434:U:H2'	1:A:435:C:H6	1.59	0.67
1:A:523:A:C2	1:A:527:G:O6	2.47	0.67
1:A:533:A:N6	1:A:536:C:C2	2.63	0.67
1:A:923:A:H1'	1:A:1398:A:C2	2.29	0.67
1:A:953:G:N7	13:M:104:ARG:NH2	2.43	0.67
1:A:1157:A:C2	1:A:1181:G:C4	2.83	0.67
1:A:1504:G:C5'	1:A:1505:G:H5'	2.24	0.67
3:C:137:ALA:O	3:C:141:VAL:HG23	1.94	0.67
5:E:32:VAL:HG12	5:E:33:VAL:N	2.09	0.67
11:K:18:ARG:HB2	11:K:33:THR:CG2	2.24	0.67
1:A:42:G:N3	1:A:43:C:C6	2.63	0.67
1:A:181:G:N2	1:A:195:A:C4	2.63	0.67
1:A:554:C:C2'	1:A:555:C:H5'	2.24	0.67
1:A:560:U:H5'	1:A:566:G:N2	2.10	0.67
2:B:111:ARG:HG2	2:B:111:ARG:NH1	2.10	0.67
1:A:55:A:C2	1:A:56:U:N1	2.62	0.67
1:A:80:G:C3'	1:A:81:U:H5"	2.23	0.67
1:A:499:A:H4'	1:A:500:G:OP1	1.94	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:614:A:C2	1:A:627:G:C2	2.82	0.67
1:A:635:G:H2'	1:A:636:U:H6	1.60	0.67
1:A:1058:G:H2'	1:A:1059:C:H6	1.59	0.67
19:S:62:ILE:HD12	19:S:66:MET:CE	2.23	0.67
1:A:411:A:N9	1:A:413:G:H1'	2.10	0.67
1:A:885:G:C2	1:A:886:G:N7	2.62	0.67
1:A:1055:A:H1'	3:C:156:ARG:NH1	2.09	0.67
1:A:1248:A:H2'	1:A:1249:C:H6	1.60	0.67
3:C:3:ASN:ND2	3:C:3:ASN:N	2.42	0.67
1:A:434:U:C2	1:A:435:C:C5	2.83	0.67
1:A:452:A:C4	1:A:453:A:C8	2.82	0.67
1:A:558:G:H2'	1:A:559:A:H2	1.60	0.67
1:A:803:G:H2'	1:A:804:U:H6	1.60	0.67
1:A:1372:U:H5"	9:I:71:SER:CB	2.23	0.67
8:H:83:ILE:HD12	8:H:137:VAL:HG13	1.77	0.67
1:A:33:A:H2'	1:A:34:C:C6	2.30	0.66
1:A:490:G:C5	1:A:491:G:N7	2.63	0.66
1:A:815:A:H5"	1:A:817:C:N4	2.09	0.66
1:A:1128:C:H5'	9:I:16:ARG:NH1	2.11	0.66
1:A:1316:G:H22	1:A:1318:A:H3'	1.60	0.66
1:A:620:C:C6	4:D:135:LEU:HD13	2.29	0.66
1:A:696:A:C6	1:A:697:U:O4	2.48	0.66
1:A:872:A:N3	1:A:874:G:N7	2.42	0.66
1:A:1039:C:H2'	1:A:1040:U:H6	1.61	0.66
1:A:1480:G:H2'	1:A:1481:U:H6	1.59	0.66
2:B:152:PHE:CE1	2:B:155:LEU:HD12	2.30	0.66
1:A:501:C:O2'	1:A:502:G:H5'	1.95	0.66
1:A:1157:A:N3	1:A:1181:G:C2	2.63	0.66
1:A:1243:C:H2'	1:A:1244:C:C6	2.30	0.66
3:C:10:PHE:CE1	3:C:178:LEU:HD13	2.30	0.66
10:J:16:LEU:HD23	10:J:94:VAL:HG22	1.76	0.66
16:P:20:VAL:HG23	16:P:35:LYS:HA	1.77	0.66
1:A:355:C:C4	1:A:356:A:N7	2.63	0.66
1:A:746:A:C2'	1:A:747:C:H5'	2.25	0.66
1:A:1030(B):C:H3'	1:A:1030(C):G:H5"	1.77	0.66
1:A:1138:G:C2	1:A:1140:C:C6	2.83	0.66
1:A:95:U:H2'	1:A:96:G:H8	1.60	0.66
1:A:438:G:C4'	1:A:439:A:OP1	2.36	0.66
1:A:685:G:H5'	11:K:39:PRO:O	1.95	0.66
1:A:746:A:C4	1:A:747:C:C5	2.84	0.66
1:A:1149:C:H2'	1:A:1150:U:H6	1.58	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:484:G:C4	1:A:486:U:C5	2.83	0.66
1:A:668:G:O2'	1:A:669:U:H5'	1.95	0.66
1:A:756:C:H2'	1:A:757:U:O4'	1.95	0.66
1:A:1442:G:H21	1:A:1446:A:H3'	1.60	0.66
1:A:123:C:H5"	1:A:311:C:O2'	1.96	0.66
1:A:538:G:OP2	12:L:115:LYS:HG3	1.96	0.66
1:A:1198:G:H2'	1:A:1199:U:O4'	1.95	0.66
1:A:1315:U:H2'	1:A:1316:G:O4'	1.96	0.66
8:H:9:MET:HG2	8:H:13:ILE:HD11	1.77	0.66
9:I:28:VAL:HA	9:I:63:ILE:O	1.96	0.66
1:A:21:G:H2'	1:A:22:G:C8	2.31	0.66
1:A:622:A:C8	1:A:623:C:C5	2.84	0.66
1:A:767:A:N6	1:A:768:A:N6	2.44	0.66
7:G:40:ALA:HB1	9:I:41:VAL:HG11	1.78	0.66
1:A:147:G:O2'	1:A:148:G:H5'	1.96	0.66
1:A:748:C:H4'	1:A:749:C:O5'	1.95	0.66
1:A:781:A:H2'	1:A:782:A:C5'	2.26	0.66
1:A:1358:U:H3'	1:A:1359:C:C6	2.30	0.66
1:A:279:A:H5"	1:A:280:C:H3'	1.77	0.66
1:A:575:G:C2	1:A:881:G:C4	2.84	0.66
1:A:639:G:O2'	1:A:640:A:H5'	1.96	0.66
1:A:802:A:N7	1:A:803:G:C8	2.64	0.66
1:A:293:G:C4	1:A:294:U:C6	2.84	0.65
1:A:556:C:H2'	1:A:557:G:H5'	1.76	0.65
1:A:1281:U:H5'	1:A:1282:C:H5	1.61	0.65
1:A:20:U:O4	1:A:21:G:C6	2.49	0.65
1:A:99:C:C2	1:A:101:A:C8	2.84	0.65
1:A:829:G:N2	1:A:830:G:C4	2.64	0.65
1:A:1318:A:H4'	19:S:10:PHE:CE2	2.30	0.65
16:P:49:LEU:HD12	16:P:50:LYS:N	2.09	0.65
1:A:32:A:C2	1:A:33:A:C5	2.84	0.65
1:A:162:A:O5'	1:A:162:A:H8	1.78	0.65
1:A:452:A:N3	1:A:453:A:C8	2.64	0.65
1:A:1056:U:O2'	1:A:1057:G:H5'	1.96	0.65
1:A:1057:G:C4'	3:C:154:SER:HB2	2.25	0.65
1:A:1225:A:H3'	1:A:1226:C:C5	2.31	0.65
3:C:151:VAL:HG12	3:C:152:ILE:N	2.10	0.65
1:A:195:A:H2	1:A:222:U:O2	1.79	0.65
1:A:818:G:H3'	1:A:819:A:H5'	1.79	0.65
1:A:1291:G:H4'	9:I:38:GLN:O	1.96	0.65
8:H:88:LYS:HB3	8:H:89:PRO:HD2	1.77	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:90:LEU:H	10:J:91:PRO:CD	2.09	0.65
1:A:35:G:C6	1:A:36:C:N4	2.65	0.65
1:A:370:C:C2'	1:A:371:G:H5'	2.26	0.65
1:A:428:G:C2	1:A:430:A:N6	2.64	0.65
1:A:536:C:H2'	1:A:537:G:C8	2.31	0.65
1:A:625:G:N3	1:A:626:U:C6	2.65	0.65
1:A:698:G:H2'	1:A:699:C:C6	2.31	0.65
10:J:87:THR:O	10:J:88:LEU:HD23	1.96	0.65
13:M:26:GLY:O	13:M:28:ALA:N	2.28	0.65
1:A:415:A:N6	1:A:416:G:C6	2.64	0.65
1:A:505:G:H5'	1:A:534:U:H2'	1.79	0.65
1:A:674:G:H5'	6:F:50:TYR:CE2	2.31	0.65
1:A:895:G:H2'	1:A:896:C:H6	1.61	0.65
1:A:1347:G:H8	9:I:107:ARG:O	1.79	0.65
1:A:1369:C:H2'	1:A:1370:G:O4'	1.96	0.65
1:A:151:A:O2'	1:A:152:A:H5'	1.97	0.65
1:A:818:G:C2'	1:A:819:A:H5"	2.27	0.65
1:A:1287:A:H2'	1:A:1288:A:H8	1.60	0.65
2:B:13:ALA:C	2:B:15:VAL:H	2.00	0.65
5:E:106:PRO:O	5:E:110:LEU:HG	1.96	0.65
7:G:12:LEU:HD12	7:G:12:LEU:N	2.12	0.65
1:A:381:C:C2	1:A:382:A:C8	2.85	0.65
1:A:485:G:C2'	1:A:486:U:OP2	2.44	0.65
1:A:509:A:C8	1:A:509:A:C3'	2.79	0.65
1:A:663:A:O2'	1:A:664:G:H5'	1.97	0.65
1:A:765:G:H1	1:A:812:C:H2'	1.62	0.65
1:A:55:A:C2	1:A:56:U:C2	2.85	0.65
1:A:580:U:O2	1:A:580:U:H2'	1.97	0.65
1:A:1030(A):G:N2	1:A:1030(C):G:O6	2.29	0.65
1:A:1118:C:P	9:I:104:ARG:HH12	2.19	0.65
1:A:1151:A:C2	1:A:1152:A:C5	2.85	0.65
6:F:69:GLU:O	6:F:72:VAL:HG23	1.96	0.65
1:A:243:A:C4'	1:A:244:U:H5'	2.14	0.65
1:A:725:G:N3	1:A:726:C:C6	2.65	0.65
1:A:985:C:C2	1:A:1221:G:N2	2.65	0.65
1:A:1221:G:O3'	19:S:77:THR:HG21	1.97	0.65
4:D:140:VAL:CG1	4:D:146:ILE:HD11	2.25	0.65
1:A:36:C:C5'	12:L:122:THR:O	2.45	0.64
1:A:50:A:O2'	1:A:52:G:C8	2.50	0.64
1:A:129(A):G:N3	1:A:190(E):U:H5'	2.12	0.64
1:A:1216:G:H5"	14:N:5:ALA:CB	2.27	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1291:G:C4	1:A:1292:U:C5	2.86	0.64
18:R:37:VAL:HG21	18:R:78:LEU:HB3	1.79	0.64
18:R:87:ARG:O	18:R:88:LYS:HG2	1.97	0.64
1:A:616:G:N2	1:A:625:G:C4	2.65	0.64
15:O:55:GLY:O	15:O:59:MET:HG3	1.96	0.64
1:A:20:U:C2'	1:A:21:G:H5'	2.28	0.64
1:A:285:G:H2'	1:A:286:G:H8	1.62	0.64
1:A:415:A:C6	1:A:416:G:C5	2.86	0.64
1:A:642:A:C4	1:A:643:C:C6	2.85	0.64
1:A:1196:U:C5'	1:A:1197:G:C5'	2.71	0.64
1:A:1329:A:O2'	1:A:1330:U:H5'	1.96	0.64
1:A:1330:U:H5"	13:M:23:TYR:O	1.97	0.64
3:C:70:VAL:HG21	3:C:76:VAL:HG21	1.80	0.64
20:T:40:ALA:HB2	20:T:55:ILE:CG2	2.27	0.64
1:A:346:G:H2'	1:A:347:G:H5'	1.80	0.64
1:A:1026:G:H2'	1:A:1026:G:N3	2.11	0.64
1:A:1196:U:H5"	1:A:1197:G:H5"	1.77	0.64
17:Q:27:PHE:O	17:Q:36:ILE:HG12	1.97	0.64
1:A:7:G:C2	1:A:298:A:N1	2.65	0.64
1:A:168:G:O2'	1:A:169:C:H5'	1.97	0.64
1:A:262:A:C6	1:A:263:A:C6	2.86	0.64
1:A:617:G:H4'	16:P:44:THR:HB	1.79	0.64
1:A:731:G:O2'	1:A:732:C:H5'	1.98	0.64
1:A:757:U:O2'	1:A:879:C:H1'	1.98	0.64
1:A:852:G:C2	1:A:853:G:C8	2.86	0.64
16:P:58:TYR:O	16:P:61:SER:HB3	1.97	0.64
1:A:1326:C:H2'	1:A:1327:C:C6	2.33	0.64
1:A:1408:A:C6	1:A:1494:G:C6	2.86	0.64
8:H:10:LEU:HA	8:H:13:ILE:HD12	1.79	0.64
13:M:3:ARG:HB3	13:M:4:ILE:HG13	1.79	0.64
15:O:3:ILE:HD12	15:O:3:ILE:H	1.63	0.64
1:A:226:G:C6	1:A:227:G:N7	2.66	0.64
1:A:723:U:O2	1:A:723:U:C2'	2.46	0.64
1:A:725:G:C2	1:A:726:C:C6	2.86	0.64
1:A:836:G:C6	1:A:851:G:C5	2.86	0.64
5:E:121:LYS:HD2	5:E:122:GLU:N	2.13	0.64
1:A:411:A:H1'	1:A:413:G:H1'	1.80	0.64
1:A:1250:A:H5"	9:I:67:GLY:CA	2.28	0.64
20:T:75:ASN:O	20:T:78:ALA:HB3	1.97	0.64
1:A:7:G:C2	1:A:298:A:C6	2.85	0.64
1:A:386:C:H2'	1:A:387:U:C5'	2.25	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:643:C:H2'	1:A:644:G:H8	1.63	0.64
1:A:961:U:O2'	1:A:962:C:H5'	1.98	0.64
1:A:1158:C:C2	1:A:1160:G:C8	2.86	0.64
1:A:1402:C:C4	1:A:1403:C:C5	2.86	0.64
11:K:84:VAL:HG22	11:K:109:VAL:O	1.98	0.64
13:M:13:LYS:O	13:M:45:VAL:HG23	1.98	0.64
1:A:57:G:C5	1:A:58:C:C5	2.86	0.64
1:A:872:A:C4	1:A:874:G:C8	2.86	0.64
1:A:981:U:C2	1:A:982:U:C4	2.86	0.64
1:A:1019:C:O2'	1:A:1020:U:H5'	1.97	0.64
1:A:1306:A:C2	1:A:1307:U:H1'	2.31	0.64
1:A:1459:C:O2'	1:A:1460:A:H5'	1.98	0.64
1:A:436:C:H2'	1:A:437:U:H6	1.62	0.63
1:A:596:C:O2'	1:A:597:G:H5'	1.99	0.63
1:A:1250:A:C6	1:A:1251:A:C6	2.87	0.63
1:A:1475:G:H2'	1:A:1476:G:H8	1.63	0.63
1:A:9:G:H5'	5:E:122:GLU:OE2	1.98	0.63
1:A:42:G:C5	1:A:43:C:C5	2.86	0.63
1:A:55:A:N1	1:A:56:U:C2	2.66	0.63
1:A:527:G:N2	1:A:528:C:C2	2.66	0.63
1:A:556:C:H2'	1:A:557:G:C5'	2.28	0.63
1:A:867:G:H5"	1:A:867:G:H8	1.63	0.63
1:A:1057:G:H4'	3:C:154:SER:CB	2.28	0.63
1:A:1210:C:H5'	1:A:1214:C:H42	1.63	0.63
1:A:1346:A:C2'	7:G:10:ARG:HH22	2.10	0.63
1:A:1447:G:C4	1:A:1448:C:C5	2.87	0.63
1:A:1491:G:N1	1:A:1492:A:N6	2.46	0.63
7:G:15:ASP:OD2	7:G:17:VAL:HB	1.98	0.63
17:Q:60:ILE:HD13	17:Q:61:GLU:N	2.12	0.63
20:T:56:MET:HE2	20:T:85:MET:HA	1.79	0.63
1:A:202:U:H4'	1:A:203:U:OP2	1.96	0.63
1:A:262:A:C2	1:A:263:A:C4	2.86	0.63
1:A:282:A:C5	1:A:283:C:C5	2.86	0.63
1:A:448:A:C2	1:A:449:C:C4	2.87	0.63
1:A:767:A:H2'	1:A:768:A:C8	2.33	0.63
1:A:1310:G:C5'	13:M:77:ASN:HD21	2.11	0.63
1:A:1371:G:C4	1:A:1372:U:C6	2.86	0.63
9:I:121:ARG:HG2	9:I:121:ARG:NH1	2.11	0.63
12:L:104:VAL:O	12:L:105:TYR:HB2	1.97	0.63
18:R:43:PHE:CG	18:R:66:LEU:HD21	2.34	0.63
1:A:34:C:H2'	1:A:35:G:C8	2.32	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:202:U:O5'	1:A:202:U:H6	1.81	0.63
1:A:382:A:H2'	1:A:383:A:H8	1.61	0.63
1:A:449:C:H2'	1:A:450:G:O4'	1.97	0.63
1:A:1125:U:O3'	1:A:1126:U:H5	1.81	0.63
1:A:1129:C:P	1:A:1130:A:H5'	2.39	0.63
1:A:1206:G:C4	1:A:1207:G:C8	2.87	0.63
1:A:1415:G:H2'	1:A:1416:G:O4'	1.98	0.63
1:A:1526:G:O2'	1:A:1527:C:H5'	1.98	0.63
8:H:38:ILE:HG22	8:H:39:LEU:N	2.13	0.63
13:M:22:ILE:HD12	13:M:25:ILE:HD12	1.78	0.63
13:M:59:TYR:O	13:M:63:THR:HG22	1.98	0.63
18:R:43:PHE:HA	18:R:51:LEU:HD12	1.79	0.63
1:A:113:G:C4	1:A:114:U:C5	2.87	0.63
1:A:507:C:C2	1:A:508:C:C5	2.87	0.63
1:A:561:U:O2'	1:A:562:C:P	2.56	0.63
1:A:602:A:H2'	1:A:603:U:H6	1.62	0.63
1:A:715:A:H2'	1:A:716:A:O4'	1.98	0.63
1:A:757:U:H2'	1:A:758:G:O4'	1.98	0.63
1:A:886:G:O2'	1:A:887:G:H5'	1.99	0.63
1:A:1067:A:HO2'	1:A:1068:G:H8	1.44	0.63
1:A:1401:G:C5	1:A:1402:C:C6	2.87	0.63
2:B:19:HIS:HE1	2:B:206:ASP:HB3	1.63	0.63
5:E:89:ILE:HD11	5:E:131:ILE:HG23	1.81	0.63
1:A:949:A:O2'	1:A:950:U:H5'	1.97	0.63
1:A:969:A:C2'	1:A:970:C:H5'	2.29	0.63
1:A:1290:G:C6	1:A:1291:G:N7	2.66	0.63
1:A:1486:G:H2'	1:A:1487:G:C8	2.33	0.63
4:D:104:VAL:HG12	4:D:108:LEU:CD1	2.28	0.63
6:F:7:ASN:HD21	18:R:34:TYR:HE1	1.45	0.63
1:A:190(L):U:O2'	1:A:191:G:H5'	1.99	0.63
1:A:479:C:C2'	1:A:480:U:H5'	2.28	0.63
1:A:1256:A:C2	1:A:1258:G:N1	2.61	0.63
1:A:1288:A:C2	1:A:1289:A:C5	2.87	0.63
1:A:1415:G:O2'	1:A:1416:G:H5'	1.99	0.63
1:A:113:G:C2	1:A:114:U:C2	2.87	0.63
1:A:406:G:H5"	4:D:5:ILE:HG21	1.81	0.63
1:A:491:G:C2	1:A:492:G:C8	2.86	0.63
1:A:688:G:C5	1:A:700:G:C2	2.87	0.63
1:A:949:A:C5	1:A:950:U:C4	2.86	0.63
1:A:1157:A:H4'	1:A:1158:C:O5'	1.99	0.63
6:F:12:PRO:HG3	6:F:55:ASP:OD1	1.99	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:83:ILE:HG23	8:H:83:ILE:O	1.99	0.63
10:J:54:PHE:O	10:J:55:LYS:HB3	1.98	0.63
11:K:73:MET:SD	11:K:103:LEU:HD21	2.38	0.63
16:P:20:VAL:HG21	16:P:32:TYR:CG	2.34	0.63
1:A:161:A:H2'	1:A:162:A:C8	2.34	0.63
1:A:608:A:H2'	1:A:609:A:H8	1.63	0.63
1:A:838:G:H2'	1:A:839:U:H5"	1.80	0.63
1:A:1314:C:OP2	19:S:6:LYS:HB3	1.99	0.63
1:A:1440:C:C2'	1:A:1441:G:H5'	2.28	0.63
1:A:1504:G:O2'	1:A:1505:G:OP2	2.17	0.63
5:E:11:ILE:HG22	5:E:12:LEU:HD12	1.80	0.63
1:A:185:A:H2'	1:A:186:C:H6	1.63	0.62
1:A:186:C:C2	1:A:187:C:C5	2.87	0.62
1:A:293:G:H2'	1:A:294:U:C6	2.31	0.62
1:A:450:G:N2	1:A:482:A:H61	1.97	0.62
1:A:975:A:C4'	1:A:976:G:OP2	2.45	0.62
1:A:1052:U:O4	1:A:1200:C:C2	2.52	0.62
1:A:1055:A:C5	1:A:1206:G:C2	2.87	0.62
3:C:134:ILE:O	3:C:138:VAL:HG23	1.99	0.62
9:I:86:VAL:HG13	9:I:90:PRO:HA	1.80	0.62
17:Q:67:LYS:O	17:Q:68:ARG:HB3	1.99	0.62
1:A:405:U:C3'	1:A:406:G:H5'	2.27	0.62
1:A:448:A:H2'	1:A:449:C:C6	2.34	0.62
1:A:892:A:C6	1:A:893:C:C4	2.86	0.62
1:A:1038:C:C2	1:A:1039:C:C5	2.87	0.62
1:A:1053:G:C8	1:A:1199:U:C6	2.87	0.62
1:A:1303:C:N4	1:A:1304:G:C5	2.66	0.62
1:A:1376:U:H2'	1:A:1377:A:C8	2.33	0.62
1:A:1406:U:H2'	1:A:1407:C:C6	2.35	0.62
1:A:129(A):G:H4'	1:A:130:A:O5'	1.98	0.62
1:A:622:A:N7	1:A:623:C:C6	2.66	0.62
1:A:662:G:H2'	1:A:663:A:H8	1.64	0.62
1:A:972:C:P	10:J:57:LYS:HD3	2.39	0.62
1:A:1054:C:OP1	1:A:1198:G:OP2	2.16	0.62
1:A:1255:G:H2'	1:A:1279:A:H62	1.64	0.62
2:B:16:HIS:CE1	2:B:214:ILE:HD11	2.34	0.62
15:O:75:PRO:HG2	15:O:76:GLU:H	1.64	0.62
1:A:32:A:N6	1:A:553:A:C6	2.67	0.62
1:A:149:A:H2'	1:A:150:C:C6	2.35	0.62
1:A:645:C:H2'	1:A:646:U:C6	2.34	0.62
1:A:1306:A:N3	1:A:1306:A:H2'	2.13	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:95:U:H2'	1:A:96:G:C8	2.34	0.62
1:A:176:C:N3	1:A:177:C:C5	2.67	0.62
1:A:252:U:H2'	1:A:253:U:C6	2.34	0.62
1:A:393:A:C4	1:A:394:G:C8	2.87	0.62
1:A:563:A:C8	1:A:567:G:O4'	2.52	0.62
1:A:1077:G:N1	1:A:1080:A:OP2	2.31	0.62
1:A:1333:A:C2'	1:A:1334:G:H5'	2.29	0.62
1:A:1405:G:O2'	1:A:1406:U:H5'	1.99	0.62
4:D:28:SER:O	4:D:30:LYS:N	2.33	0.62
1:A:203:U:C5'	1:A:204:U:OP1	2.48	0.62
1:A:256:U:C2	1:A:257:G:C8	2.88	0.62
1:A:443:C:H2'	1:A:444:C:C6	2.35	0.62
1:A:613:C:C2	1:A:628:G:C2	2.88	0.62
1:A:663:A:C4	1:A:664:G:C8	2.88	0.62
1:A:881:G:P	12:L:12:ARG:HH22	2.23	0.62
1:A:885:G:O2'	1:A:914:A:N1	2.30	0.62
1:A:953:G:H2'	1:A:954:G:O4'	2.00	0.62
1:A:1057:G:C4	1:A:1058:G:C8	2.87	0.62
1:A:1130:A:C4	1:A:1146:A:C2	2.87	0.62
1:A:1318:A:H4'	19:S:10:PHE:CD2	2.35	0.62
1:A:1321:C:C6	1:A:1322:C:C6	2.88	0.62
1:A:1394:A:N6	1:A:1501:C:H5'	2.15	0.62
1:A:981:U:C2'	1:A:982:U:H5	1.98	0.62
1:A:1291:G:H2'	1:A:1292:U:C6	2.34	0.62
1:A:1401:G:C6	1:A:1402:C:C5	2.88	0.62
3:C:32:LEU:HD21	3:C:59:ARG:HE	1.62	0.62
8:H:89:PRO:HB3	8:H:92:ARG:HH21	1.64	0.62
12:L:98:TYR:N	12:L:98:TYR:CD1	2.67	0.62
1:A:149:A:H2'	1:A:150:C:H6	1.65	0.62
1:A:375:U:OP1	16:P:69:THR:HG21	2.00	0.62
1:A:703:G:H3'	1:A:703:G:OP2	1.99	0.62
1:A:1225:A:H5'	13:M:103:THR:CG2	2.29	0.62
1:A:1498:U:O2'	1:A:1499:A:P	2.57	0.62
4:D:8:VAL:HG22	4:D:115:ARG:NH2	2.14	0.62
12:L:83:VAL:HG21	12:L:100:ILE:HD13	1.82	0.62
1:A:545:C:O2'	1:A:546:G:H5'	1.99	0.62
1:A:922:G:C6	1:A:923:A:C6	2.87	0.62
1:A:1225:A:N3	1:A:1225:A:C2'	2.62	0.62
1:A:1333:A:H2'	1:A:1334:G:H5'	1.81	0.62
10:J:8:LEU:CD2	10:J:96:ILE:HG12	2.29	0.62
1:A:92:C:H2'	1:A:93:G:H8	1.63	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:152:A:N6	1:A:170:U:C2	2.68	0.62
1:A:262:A:N1	1:A:263:A:C6	2.68	0.62
1:A:448:A:C4	1:A:487:A:C2	2.88	0.62
1:A:650:G:C2	1:A:651:C:C6	2.88	0.62
1:A:840:C:H4'	1:A:841:U:O5'	1.98	0.62
14:N:37:PHE:HB3	14:N:39:LEU:HD12	1.81	0.62
1:A:690:G:H8	1:A:690:G:O5'	1.83	0.61
1:A:818:G:H3'	1:A:819:A:C5'	2.30	0.61
1:A:967:C:H4'	9:I:128:ARG:HG3	1.81	0.61
1:A:1029:C:H42	1:A:1032:G:H1	1.47	0.61
1:A:1030(B):C:C2'	1:A:1030(C):G:H5"	2.30	0.61
1:A:1508:G:H2'	1:A:1509:C:C6	2.35	0.61
1:A:7:G:H4'	1:A:8:A:OP1	2.00	0.61
1:A:325:A:N6	1:A:326:G:C6	2.67	0.61
1:A:481:G:O2'	1:A:482:A:C8	2.46	0.61
1:A:507:C:H2'	1:A:508:C:C5	2.34	0.61
1:A:815:A:O2'	1:A:816:A:P	2.57	0.61
1:A:1251:A:H2'	1:A:1252:A:H8	1.60	0.61
1:A:1286:A:H8	1:A:1287:A:H4'	1.65	0.61
1:A:1487:G:H2'	1:A:1488:G:H8	1.65	0.61
4:D:25:ARG:C	4:D:27:TYR:H	2.02	0.61
1:A:66:G:H4'	1:A:173:U:C5	2.36	0.61
1:A:243:A:C4'	1:A:244:U:C5'	2.68	0.61
1:A:273:A:O2'	1:A:274:A:H5'	2.00	0.61
1:A:434:U:H2'	1:A:435:C:C6	2.35	0.61
1:A:434:U:N3	1:A:435:C:C5	2.68	0.61
1:A:880:C:H5"	12:L:12:ARG:NH2	2.16	0.61
1:A:953:G:C4	1:A:1229:A:C2	2.88	0.61
1:A:969:A:H2'	1:A:970:C:H5'	1.80	0.61
1:A:1057:G:H2'	1:A:1058:G:O4'	2.00	0.61
1:A:1301:U:C5	1:A:1303:C:C6	2.87	0.61
2:B:210:SER:O	2:B:214:ILE:HG12	2.00	0.61
1:A:891:U:C6	1:A:906:G:N2	2.69	0.61
1:A:1055:A:C8	1:A:1206:G:N2	2.68	0.61
1:A:1500:A:C2	1:A:1501:C:C6	2.88	0.61
3:C:154:SER:HB3	3:C:197:GLY:H	1.63	0.61
17:Q:29:HIS:O	17:Q:31:LEU:N	2.33	0.61
18:R:36:ASN:O	18:R:39:VAL:HG12	2.01	0.61
1:A:496:A:C2	1:A:497:A:C6	2.87	0.61
1:A:806:C:H2'	1:A:807:A:H8	1.66	0.61
1:A:955:U:H1'	1:A:1227:A:N6	2.15	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:36:ASP:HB3	5:E:38:GLN:H	1.65	0.61
8:H:26:VAL:HG23	8:H:27:PRO:HD2	1.82	0.61
11:K:57:THR:HG22	11:K:60:ALA:HB2	1.82	0.61
13:M:78:ILE:O	13:M:81:LEU:HD23	2.00	0.61
1:A:180:U:H2'	1:A:181:G:H5'	1.81	0.61
1:A:277:C:C5'	17:Q:68:ARG:NH2	2.50	0.61
1:A:535:A:H5"	1:A:536:C:OP2	2.00	0.61
1:A:803:G:C6	1:A:804:U:C4	2.88	0.61
1:A:905:U:H2'	1:A:906:G:H5'	1.82	0.61
1:A:1128:C:H5'	9:I:16:ARG:NH2	2.15	0.61
1:A:1151:A:O2'	1:A:1152:A:H8	1.82	0.61
1:A:1270:C:O2'	1:A:1271:G:H5'	2.00	0.61
1:A:1358:U:H3'	1:A:1359:C:C5	2.36	0.61
1:A:1413:A:O2'	1:A:1414:U:H5'	2.00	0.61
6:F:6:VAL:HB	6:F:63:TYR:HB2	1.82	0.61
11:K:54:ARG:O	11:K:57:THR:HG22	2.00	0.61
13:M:96:LEU:HB3	13:M:97:PRO:CD	2.30	0.61
14:N:6:LEU:HD23	14:N:9:LYS:HD3	1.82	0.61
18:R:76:LEU:HB2	18:R:78:LEU:HD12	1.82	0.61
1:A:22:G:C5	1:A:23:C:C5	2.88	0.61
1:A:228:A:H4'	16:P:62:VAL:HG11	1.82	0.61
1:A:364:A:H2'	1:A:365:U:O2	2.00	0.61
1:A:675:A:N6	1:A:676:A:C6	2.68	0.61
1:A:859:A:O2'	1:A:860:A:H5'	2.00	0.61
1:A:1206:G:C5	1:A:1207:G:C8	2.89	0.61
1:A:1300:G:H2'	1:A:1301:U:OP2	2.01	0.61
3:C:3:ASN:O	3:C:4:LYS:HB2	2.01	0.61
3:C:15:THR:O	3:C:16:ARG:HB2	1.99	0.61
4:D:105:VAL:HG13	4:D:110:PHE:HB2	1.82	0.61
7:G:37:ASN:HD21	9:I:41:VAL:H	1.47	0.61
9:I:107:ARG:HG3	9:I:107:ARG:NH1	2.16	0.61
1:A:252:U:C2	1:A:253:U:C5	2.88	0.61
1:A:376:G:OP2	16:P:67:THR:HG21	2.01	0.61
1:A:625:G:O2'	1:A:626:U:H5'	2.00	0.61
1:A:647:C:O2'	1:A:648:A:H5'	1.99	0.61
1:A:968:A:C4'	1:A:969:A:OP2	2.49	0.61
1:A:1128:C:H1'	1:A:1146:A:H61	1.66	0.61
1:A:1218:C:H2'	1:A:1219:U:H6	1.63	0.61
1:A:1231:G:O2'	1:A:1232:U:H5'	2.01	0.61
11:K:30:VAL:HG12	11:K:31:THR:N	2.14	0.61
20:T:29:LYS:O	20:T:32:ALA:HB3	2.00	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:573:A:O2'	1:A:574:A:H5'	2.01	0.61
1:A:645:C:H2'	1:A:646:U:H6	1.66	0.61
1:A:840:C:H5'	1:A:848:C:O2	2.00	0.61
1:A:1125:U:O3'	1:A:1126:U:C5	2.54	0.61
14:N:54:PRO:O	14:N:56:VAL:HG23	2.01	0.61
16:P:20:VAL:HG22	16:P:21:VAL:N	2.13	0.61
19:S:46:GLY:H	19:S:62:ILE:HG23	1.65	0.61
1:A:101:A:O2'	1:A:102:G:H5'	2.00	0.61
1:A:218:C:C4'	1:A:461:C:H41	2.12	0.61
1:A:397:A:N7	1:A:547:A:O2'	2.34	0.61
1:A:474:G:H2'	1:A:475:G:H8	1.66	0.61
1:A:492:G:N2	1:A:494:G:H1'	2.15	0.61
1:A:1094:G:OP2	1:A:1095:U:C5	2.54	0.61
2:B:170:GLU:O	2:B:172:ILE:N	2.34	0.61
1:A:243:A:C2	1:A:245:C:C2	2.89	0.60
1:A:293:G:C5	1:A:305:G:C2	2.89	0.60
1:A:325:A:N6	1:A:326:G:N1	2.48	0.60
1:A:425:G:C2'	1:A:426:G:H5'	2.31	0.60
1:A:943:U:C2'	1:A:944:G:C5'	2.75	0.60
1:A:1194:U:O2'	1:A:1195:C:H5'	2.01	0.60
1:A:1438:G:H2'	1:A:1439:C:H6	1.66	0.60
16:P:22:THR:HA	16:P:33:ILE:HD12	1.83	0.60
1:A:487:A:H2'	1:A:488:C:C5'	2.31	0.60
1:A:964:A:OP1	1:A:1199:U:OP1	2.19	0.60
1:A:1248:A:C4	1:A:1249:C:C5	2.88	0.60
1:A:1263:C:H2'	1:A:1264:C:C6	2.35	0.60
1:A:1426:C:C2	1:A:1427:U:C5	2.89	0.60
1:A:1435:G:C4	1:A:1436:U:C5	2.89	0.60
5:E:129:ILE:HG23	5:E:133:TYR:HE1	1.66	0.60
6:F:35:ALA:CB	6:F:67:MET:HB3	2.30	0.60
19:S:63:THR:HG22	19:S:65:ASN:H	1.64	0.60
1:A:7:G:C6	1:A:298:A:C2	2.89	0.60
1:A:192:U:C2	1:A:193:C:C5	2.89	0.60
1:A:411:A:C1'	1:A:413:G:H1'	2.31	0.60
1:A:753:A:H5'	1:A:754:C:C6	2.36	0.60
1:A:1231:G:C2'	1:A:1232:U:H5'	2.31	0.60
2:B:17:PHE:HD1	2:B:18:GLY:H	1.49	0.60
6:F:6:VAL:HG22	6:F:90:VAL:HG22	1.83	0.60
1:A:130:A:N1	1:A:233:C:H1'	2.16	0.60
1:A:151:A:H2'	1:A:152:A:O4'	2.01	0.60
1:A:173:U:C2	1:A:197:A:C2	2.90	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:390:C:C4'	16:P:28:ARG:HH22	2.14	0.60
1:A:544:G:C6	1:A:545:C:C5	2.89	0.60
1:A:1268:A:H2'	1:A:1269:A:C8	2.36	0.60
5:E:43:LEU:HD23	5:E:43:LEU:C	2.21	0.60
10:J:11:PHE:CZ	10:J:65:LEU:HD21	2.37	0.60
12:L:55:VAL:HG12	12:L:56:ALA:H	1.66	0.60
13:M:11:ARG:HG2	13:M:12:ASN:N	2.15	0.60
1:A:706:A:C1'	11:K:29:ILE:HD11	2.32	0.60
1:A:101:A:N3	1:A:102:G:C8	2.70	0.60
1:A:595:G:C5	1:A:641:U:C4	2.89	0.60
1:A:792:A:H4'	1:A:793:U:H5"	1.82	0.60
1:A:1180:A:O2'	1:A:1181:G:H5'	2.02	0.60
13:M:14:ARG:HB3	13:M:16:ASP:OD1	2.01	0.60
16:P:3:LYS:HA	16:P:65:GLN:O	2.01	0.60
1:A:8:A:H1'	5:E:102:ALA:O	2.01	0.60
1:A:32:A:N6	1:A:553:A:N1	2.48	0.60
1:A:533:A:C5	1:A:536:C:C4	2.90	0.60
1:A:770:C:C1'	1:A:900:A:C2	2.80	0.60
1:A:778:G:O2'	1:A:779:C:H5'	2.02	0.60
1:A:854:G:C3'	1:A:871:U:O4	2.48	0.60
1:A:1204:A:H2'	1:A:1205:U:H6	1.65	0.60
1:A:1231:G:H2'	1:A:1232:U:H6	1.66	0.60
1:A:1480:G:H2'	1:A:1481:U:C6	2.36	0.60
10:J:26:ALA:HB1	10:J:84:GLN:HB3	1.83	0.60
1:A:134:A:C4	1:A:325:A:C2	2.90	0.60
1:A:434:U:C2	1:A:435:C:C6	2.90	0.60
1:A:636:U:H5'	17:Q:2:PRO:HG2	1.82	0.60
1:A:642:A:N7	8:H:115:SER:HA	2.16	0.60
1:A:976:G:C8	1:A:1358:U:O2	2.55	0.60
1:A:1126:U:C2'	1:A:1127:G:C8	2.77	0.60
1:A:1190:G:OP1	3:C:5:ILE:HG12	2.02	0.60
1:A:1249:C:O2'	9:I:73:GLN:NE2	2.35	0.60
1:A:1250:A:H5"	9:I:67:GLY:HA2	1.84	0.60
1:A:1309:G:N7	13:M:99:ARG:NH2	2.50	0.60
5:E:11:ILE:HG12	5:E:33:VAL:HG23	1.83	0.60
7:G:75:VAL:CG1	7:G:86:GLN:HB3	2.31	0.60
1:A:274:A:HO2'	1:A:275:G:H8	1.48	0.60
1:A:658:G:C6	1:A:749:C:N4	2.70	0.60
1:A:986:A:H2'	1:A:987:G:C8	2.36	0.60
1:A:1110:A:H8	1:A:1110:A:O5'	1.84	0.60
1:A:1168:A:H2'	1:A:1169:A:C8	2.36	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1223:C:OP2	19:S:78:ARG:NH2	2.30	0.60
1:A:1258:G:O2'	1:A:1259:C:H5'	2.02	0.60
2:B:89:GLY:O	2:B:90:MET:SD	2.60	0.60
2:B:178:ARG:HH21	8:H:74:PRO:CG	2.14	0.60
9:I:56:LEU:HD22	9:I:57:GLY:H	1.67	0.60
18:R:31:LEU:HD13	18:R:65:ILE:HG22	1.84	0.60
1:A:35:G:C4	1:A:36:C:C5	2.89	0.60
1:A:38:G:C2	1:A:397:A:C2	2.89	0.60
1:A:252:U:H2'	1:A:253:U:C5	2.37	0.60
1:A:327:A:H4'	1:A:328:C:OP1	2.00	0.60
1:A:460:A:C5	1:A:462:G:C5	2.90	0.60
1:A:559:A:P	5:E:126:ARG:HH22	2.25	0.60
1:A:621:A:C6	1:A:622:A:C6	2.90	0.60
1:A:767:A:C4	1:A:768:A:C8	2.90	0.60
1:A:496:A:C2	1:A:497:A:C5	2.90	0.59
1:A:849:C:C2	1:A:850:U:C6	2.90	0.59
1:A:1347:G:O2'	1:A:1348:U:OP2	2.19	0.59
5:E:51:VAL:O	5:E:55:VAL:HG23	2.02	0.59
1:A:345:C:C4'	1:A:346:G:O5'	2.47	0.59
1:A:794:A:C5	1:A:795:C:C4	2.89	0.59
1:A:1148:U:H2'	1:A:1149:C:O4'	2.02	0.59
1:A:1195:C:H3'	1:A:1196:U:C5'	2.31	0.59
1:A:1291:G:H2'	1:A:1292:U:H6	1.67	0.59
1:A:1329:A:C2'	1:A:1330:U:H5'	2.32	0.59
1:A:1346:A:C4	7:G:10:ARG:NH2	2.71	0.59
3:C:34:LEU:HG	14:N:25:VAL:HG21	1.85	0.59
1:A:617:G:O2'	16:P:44:THR:HG21	2.02	0.59
1:A:1020:U:C2'	1:A:1021:G:H5'	2.31	0.59
1:A:1039:C:C2	1:A:1040:U:C6	2.91	0.59
1:A:1126:U:H6	1:A:1126:U:O5'	1.83	0.59
1:A:243:A:N6	1:A:281:G:H1'	2.16	0.59
1:A:429:U:C1'	1:A:430:A:H5"	2.29	0.59
1:A:486:U:O2	1:A:486:U:C2'	2.47	0.59
1:A:571:U:H3'	1:A:572:A:H5"	1.84	0.59
1:A:664:G:N2	1:A:666:G:C8	2.71	0.59
1:A:838:G:H3'	1:A:840:C:H41	1.67	0.59
1:A:1057:G:H4'	3:C:154:SER:HB2	1.85	0.59
1:A:1101:A:C2	2:B:99:GLY:O	2.56	0.59
1:A:1136:U:H6	1:A:1136:U:O5'	1.85	0.59
1:A:1189:C:P	10:J:51:ARG:HH22	2.25	0.59
1:A:1324:A:C4	1:A:1325:C:C5	2.91	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:83:ILE:HG13	8:H:137:VAL:HG22	1.82	0.59
17:Q:5:VAL:HA	17:Q:59:ILE:O	2.03	0.59
17:Q:62:SER:CB	17:Q:72:ARG:HG3	2.31	0.59
1:A:391:G:C6	1:A:392:G:N7	2.71	0.59
1:A:509:A:O5'	1:A:509:A:H8	1.85	0.59
1:A:662:G:C2	1:A:663:A:C5	2.90	0.59
1:A:895:G:C4	1:A:896:C:C5	2.90	0.59
1:A:1290:G:C4	1:A:1291:G:C8	2.90	0.59
1:A:1326:C:O2'	1:A:1327:C:H5'	2.02	0.59
3:C:12:LEU:HD23	3:C:12:LEU:H	1.67	0.59
9:I:56:LEU:HD22	9:I:57:GLY:N	2.17	0.59
15:O:25:THR:O	15:O:29:VAL:HG23	2.02	0.59
1:A:16:A:N1	1:A:919:A:H2	1.99	0.59
1:A:691:G:O2'	1:A:797:C:H4'	2.02	0.59
1:A:783:C:O2'	1:A:784:C:H5'	2.03	0.59
1:A:812:C:O2'	1:A:813:U:P	2.60	0.59
1:A:925:G:C6	1:A:927:G:N7	2.70	0.59
1:A:948:C:HO2'	1:A:949:A:H5'	1.66	0.59
1:A:973:G:H3'	1:A:974:A:H5"	1.84	0.59
1:A:1181:G:O2'	1:A:1182:G:O5'	2.19	0.59
4:D:102:ASP:HB3	4:D:136:PRO:HB3	1.84	0.59
19:S:15:LEU:O	19:S:19:VAL:N	2.33	0.59
1:A:39:G:H2'	1:A:40:C:H5'	1.85	0.59
1:A:318:G:O2'	1:A:319:G:H5'	2.03	0.59
1:A:540:G:C2'	1:A:541:G:H5'	2.32	0.59
1:A:547:A:C4'	1:A:548:G:O5'	2.34	0.59
1:A:866:C:C2'	1:A:867:G:O5'	2.51	0.59
1:A:1309:G:C2	1:A:1329:A:N3	2.70	0.59
1:A:1324:A:C6	1:A:1325:C:C4	2.90	0.59
2:B:68:ILE:HB	2:B:90:MET:HE3	1.84	0.59
2:B:100:GLY:O	2:B:102:LEU:N	2.35	0.59
17:Q:68:ARG:HG2	17:Q:68:ARG:O	2.02	0.59
1:A:362:G:H5"	12:L:61:THR:CG2	2.32	0.59
1:A:485:G:O2'	1:A:486:U:P	2.59	0.59
1:A:961:U:H2'	1:A:962:C:C5'	2.31	0.59
1:A:1191:A:N3	1:A:1192:C:C5	2.70	0.59
1:A:1324:A:C5	1:A:1325:C:C5	2.91	0.59
1:A:1507:A:H2'	1:A:1508:G:C8	2.38	0.59
2:B:124:SER:O	2:B:127:ILE:HG13	2.02	0.59
7:G:142:GLU:C	7:G:144:MET:H	2.06	0.59
10:J:42:THR:HG23	10:J:68:HIS:HA	1.85	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:29:G:N2	1:A:555:C:C2	2.71	0.59
1:A:149:A:C2	1:A:150:C:C5	2.91	0.59
1:A:544:G:H2'	1:A:545:C:H6	1.68	0.59
1:A:724:G:O2'	1:A:725:G:H5'	2.03	0.59
1:A:877:C:OP1	8:H:88:LYS:HE3	2.03	0.59
1:A:1223:C:P	19:S:78:ARG:HH22	2.25	0.59
1:A:1333:A:H2'	1:A:1334:G:C5'	2.33	0.59
1:A:321:A:H2'	1:A:322:C:C6	2.35	0.59
1:A:579:G:N2	1:A:763:G:C4	2.71	0.59
1:A:926:G:C2'	1:A:1505:G:H21	2.15	0.59
1:A:958:A:C6	1:A:959:A:N1	2.71	0.59
1:A:1168:A:C2	1:A:1169:A:C2	2.91	0.59
1:A:1401:G:N2	1:A:1402:C:H1'	2.17	0.59
3:C:132:ARG:HH22	4:D:47:ARG:NH2	2.00	0.59
1:A:482:A:C2	1:A:483:C:H1'	2.38	0.58
1:A:781:A:C2'	1:A:782:A:H5'	2.33	0.58
1:A:1012:U:O2'	1:A:1013:G:H5'	2.02	0.58
1:A:1103:C:H2'	1:A:1104:G:O4'	2.03	0.58
2:B:130:ARG:HH22	3:C:207:VAL:CG1	2.16	0.58
3:C:91:LEU:CD2	3:C:99:VAL:HG13	2.22	0.58
4:D:36:ARG:HA	4:D:38:TYR:HE2	1.68	0.58
9:I:48:GLU:N	9:I:49:PRO:HD2	2.17	0.58
20:T:14:LYS:HA	20:T:17:ARG:HD2	1.84	0.58
1:A:177:C:O2'	1:A:178:C:H5'	2.03	0.58
1:A:746:A:C5	1:A:747:C:C5	2.91	0.58
1:A:978:A:C4	1:A:1319:A:C2	2.91	0.58
1:A:1081:G:N2	1:A:1082:G:H1'	2.18	0.58
1:A:1182:G:H4'	1:A:1183:A:O5'	2.03	0.58
1:A:1440:C:O2'	1:A:1441:G:H5'	2.03	0.58
1:A:1501:C:N4	1:A:1504:G:N3	2.50	0.58
2:B:84:GLU:HG3	2:B:215:LEU:HB3	1.85	0.58
4:D:18:LYS:HB3	4:D:20:TYR:HE2	1.68	0.58
13:M:81:LEU:HD23	13:M:81:LEU:N	2.18	0.58
13:M:89:GLY:O	13:M:92:HIS:HB2	2.03	0.58
1:A:247:G:OP2	17:Q:100:LYS:HD2	2.03	0.58
1:A:325:A:N7	1:A:326:G:C5	2.71	0.58
1:A:335:C:H2'	1:A:336:C:H6	1.68	0.58
1:A:482:A:N1	1:A:483:C:C2	2.71	0.58
1:A:891:U:C5	1:A:906:G:N2	2.71	0.58
3:C:76:VAL:O	3:C:83:ARG:HD3	2.03	0.58
4:D:104:VAL:HG12	4:D:108:LEU:HD11	1.84	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:107:ARG:HG3	9:I:107:ARG:HH11	1.68	0.58
1:A:113:G:C6	1:A:114:U:C4	2.92	0.58
1:A:116:A:H2'	1:A:117:G:O4'	2.03	0.58
1:A:292:G:C2	1:A:309:G:C2	2.91	0.58
1:A:949:A:H2'	1:A:950:U:C6	2.38	0.58
1:A:1080:A:O3'	5:E:16:THR:HG21	2.03	0.58
1:A:1117:G:O3'	9:I:104:ARG:NH1	2.37	0.58
1:A:1263:C:O2'	1:A:1264:C:H5'	2.03	0.58
1:A:1349:A:C5	1:A:1350:A:N7	2.71	0.58
1:A:1434:A:H2'	1:A:1435:G:O4'	2.03	0.58
1:A:925:G:C2	1:A:927:G:C8	2.91	0.58
1:A:1028:C:C2	1:A:1034:G:C2	2.92	0.58
1:A:1135:U:H4'	1:A:1136:U:H5	1.68	0.58
1:A:1205:U:H1'	3:C:195:VAL:CG2	2.34	0.58
1:A:1504:G:H4'	1:A:1505:G:C5'	2.34	0.58
2:B:74:LYS:HZ2	2:B:76:GLN:HG2	1.68	0.58
1:A:101:A:C2	1:A:102:G:N9	2.72	0.58
1:A:323:U:H2'	1:A:324:G:O4'	2.03	0.58
1:A:561:U:O2'	1:A:562:C:OP2	2.18	0.58
1:A:1193:G:C2	1:A:1194:U:C5	2.91	0.58
1:A:1320:C:O2'	1:A:1321:C:H5'	2.04	0.58
1:A:1435:G:C6	1:A:1436:U:O4	2.56	0.58
16:P:39:TYR:OH	16:P:41:PRO:HA	2.02	0.58
1:A:46:G:O2'	1:A:365:U:H1'	2.04	0.58
1:A:99:C:C2	1:A:101:A:N7	2.72	0.58
1:A:259:G:C4	1:A:260:G:C8	2.92	0.58
1:A:423:G:N2	1:A:424:G:N7	2.51	0.58
1:A:432:A:C8	1:A:433:C:C5	2.92	0.58
1:A:889:A:C2	1:A:891:U:O4	2.56	0.58
1:A:933:G:O6	7:G:3:ARG:NH2	2.36	0.58
1:A:958:A:N1	19:S:54:GLY:HA3	2.18	0.58
5:E:105:VAL:HB	5:E:106:PRO:HD3	1.84	0.58
9:I:8:GLY:HA2	9:I:79:LEU:HD12	1.86	0.58
10:J:34:VAL:HG12	10:J:36:GLY:H	1.68	0.58
12:L:97:ARG:HB2	12:L:98:TYR:CE1	2.39	0.58
15:O:30:ALA:HA	15:O:85:LEU:HD11	1.86	0.58
1:A:57:G:C6	1:A:58:C:N4	2.72	0.58
1:A:248:C:C2'	1:A:249:U:H5'	2.34	0.58
1:A:459:G:N2	1:A:462:G:N7	2.51	0.58
1:A:482:A:C2	1:A:483:C:C1'	2.87	0.58
1:A:1372:U:C5'	9:I:71:SER:HB2	2.31	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:M:73:GLU:O	13:M:77:ASN:HB2	2.02	0.58
1:A:457:C:H2'	1:A:458:C:H6	1.68	0.58
1:A:1023:G:H2'	1:A:1023:G:N3	2.18	0.58
1:A:1328:C:O2'	1:A:1329:A:C5'	2.50	0.58
11:K:87:THR:HG23	11:K:91:ARG:HH21	1.69	0.58
19:S:46:GLY:N	19:S:62:ILE:HG23	2.18	0.58
1:A:41:G:C4	1:A:42:G:N7	2.72	0.58
1:A:102:G:H2'	1:A:103:C:H6	1.67	0.58
1:A:282:A:C4	1:A:283:C:C6	2.92	0.58
1:A:293:G:C6	1:A:294:U:C4	2.91	0.58
1:A:451:A:H1'	1:A:452:A:H8	1.63	0.58
1:A:568:G:N2	1:A:883:C:C6	2.72	0.58
1:A:597:G:C6	1:A:644:G:C6	2.92	0.58
1:A:713:G:H21	1:A:777:A:C4'	2.17	0.58
1:A:1038:C:N3	1:A:1039:C:C5	2.72	0.58
1:A:1067:A:H4'	1:A:1068:G:O5'	2.04	0.58
1:A:1284:C:H3'	1:A:1285:A:H8	1.68	0.58
1:A:1513:A:H2'	1:A:1514:C:H6	1.65	0.58
2:B:178:ARG:O	8:H:71:GLY:HA2	2.03	0.58
12:L:8:ASN:O	12:L:11:VAL:HB	2.04	0.58
1:A:357:G:N3	1:A:358:U:C6	2.72	0.57
1:A:439:A:C8	1:A:497:A:C6	2.92	0.57
1:A:765:G:N1	1:A:812:C:H2'	2.19	0.57
1:A:1067:A:O2'	1:A:1068:G:H8	1.87	0.57
1:A:1114:C:O2'	1:A:1115:C:H5'	2.04	0.57
1:A:1511:G:O2'	1:A:1512:U:H5'	2.04	0.57
1:A:1521:G:C4	1:A:1522:U:C6	2.91	0.57
1:A:27:G:C5	1:A:28:G:N7	2.72	0.57
1:A:36:C:C2	1:A:37:U:C6	2.92	0.57
1:A:294:U:H2'	1:A:295:C:H6	1.69	0.57
1:A:588:G:N2	1:A:589:C:C2	2.72	0.57
1:A:640:A:H2'	1:A:641:U:O4'	2.03	0.57
1:A:839:U:C5'	1:A:840:C:H5	2.11	0.57
1:A:926:G:H2'	1:A:1505:G:N2	2.19	0.57
1:A:1085:U:O4'	1:A:1094:G:C2	2.58	0.57
1:A:1157:A:C2	1:A:1181:G:C5	2.92	0.57
1:A:1401:G:C6	1:A:1402:C:C4	2.91	0.57
1:A:1485:U:O2	1:A:1485:U:H2'	2.04	0.57
4:D:18:LYS:O	4:D:19:LEU:HD23	2.04	0.57
13:M:32:GLU:HG2	13:M:32:GLU:O	2.04	0.57
1:A:166:G:C4	1:A:167:G:C8	2.93	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:539:A:H2'	1:A:540:G:C8	2.39	0.57
1:A:597:G:C8	1:A:598:U:C5	2.92	0.57
1:A:914:A:H2'	1:A:915:A:O5'	2.04	0.57
1:A:926:G:C4	1:A:1505:G:C2	2.92	0.57
1:A:1019:C:C2'	1:A:1020:U:H5'	2.35	0.57
1:A:1371:G:O3'	9:I:69:GLY:HA3	2.04	0.57
11:K:94:ALA:O	11:K:97:ALA:HB3	2.03	0.57
1:A:39:G:C2'	1:A:40:C:C5'	2.82	0.57
1:A:149:A:C2	1:A:150:C:C2	2.93	0.57
1:A:181:G:N2	1:A:195:A:C5	2.72	0.57
1:A:560:U:H5'	1:A:566:G:H22	1.70	0.57
1:A:698:G:C4	1:A:699:C:C5	2.93	0.57
1:A:859:A:H2'	1:A:860:A:H8	1.69	0.57
1:A:866:C:H2'	1:A:867:G:O5'	2.04	0.57
1:A:1053:G:N7	1:A:1199:U:H2'	2.19	0.57
1:A:1367:C:O2	1:A:1368:G:C8	2.57	0.57
2:B:204:ASN:HD22	2:B:205:ASP:N	2.02	0.57
3:C:52:LEU:HG	3:C:52:LEU:O	2.04	0.57
4:D:136:PRO:O	4:D:138:TYR:N	2.37	0.57
5:E:31:LEU:HD23	5:E:44:GLY:O	2.03	0.57
12:L:28:LYS:C	12:L:30:ALA:H	2.07	0.57
18:R:39:VAL:CG1	18:R:40:LEU:N	2.67	0.57
1:A:65:U:C5	1:A:381:C:C4	2.93	0.57
1:A:89:C:C2'	1:A:90:U:O5'	2.52	0.57
1:A:113:G:C6	1:A:315:A:C6	2.92	0.57
1:A:700:G:O3'	1:A:703:G:H5'	2.05	0.57
1:A:706:A:O4'	11:K:29:ILE:HD11	2.04	0.57
1:A:922:G:N2	1:A:1396:A:C4	2.72	0.57
1:A:1089:G:C5	1:A:1090:U:C6	2.92	0.57
1:A:1138:G:C2	1:A:1140:C:C5	2.93	0.57
1:A:1371:G:OP2	9:I:11:LYS:HE2	2.03	0.57
15:O:53:HIS:O	15:O:56:LEU:HB3	2.04	0.57
1:A:598:U:C2	1:A:599:C:C5	2.93	0.57
1:A:722:A:H5'	1:A:723:U:OP2	2.05	0.57
1:A:1210:C:C5'	1:A:1214:C:N4	2.67	0.57
1:A:1414:U:H2'	1:A:1415:G:C8	2.39	0.57
1:A:119:A:C2	1:A:240:C:C6	2.93	0.57
1:A:325:A:N7	1:A:326:G:N7	2.52	0.57
1:A:463:A:C5	1:A:474:G:C8	2.93	0.57
1:A:511:C:H1'	4:D:43:HIS:HE2	1.70	0.57
1:A:573:A:C2	1:A:574:A:C2	2.93	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:690:G:C6	1:A:691:G:N1	2.72	0.57
1:A:1319:A:C2'	1:A:1323:G:N7	2.67	0.57
7:G:16:LEU:HD22	7:G:16:LEU:N	2.18	0.57
1:A:25:C:C5	1:A:558:G:N2	2.73	0.57
1:A:492:G:C2	1:A:494:G:H1'	2.40	0.57
1:A:650:G:O2'	1:A:651:C:H5'	2.05	0.57
1:A:862:C:O2'	1:A:863:U:H5'	2.05	0.57
1:A:866:C:C5	1:A:867:G:H1'	2.40	0.57
1:A:1489:G:C3'	1:A:1490:C:C5'	2.71	0.57
1:A:1497:G:C8	1:A:1498:U:H5	2.23	0.57
2:B:100:GLY:C	2:B:102:LEU:N	2.58	0.57
3:C:187:ALA:O	3:C:188:LEU:HB2	2.05	0.57
15:O:45:VAL:HG12	15:O:46:HIS:N	2.20	0.57
1:A:27:G:C4	1:A:28:G:C8	2.93	0.57
1:A:75:G:C2'	1:A:76:C:O5'	2.52	0.57
1:A:286:G:C2	1:A:287:U:C2	2.93	0.57
1:A:391:G:H2'	1:A:392:G:O5'	2.04	0.57
1:A:458:C:H2'	1:A:459:G:H8	1.68	0.57
1:A:626:U:H4'	16:P:38:TYR:CZ	2.40	0.57
1:A:663:A:C2	1:A:664:G:C4	2.92	0.57
1:A:807:A:C6	1:A:808:C:N4	2.73	0.57
1:A:1205:U:H1'	3:C:195:VAL:HG21	1.87	0.57
1:A:1305:G:H22	1:A:1331:G:C2'	2.17	0.57
3:C:130:VAL:CB	3:C:157:ILE:HG23	2.35	0.57
3:C:130:VAL:HG21	3:C:157:ILE:HG23	1.85	0.57
5:E:70:PRO:O	5:E:71:LEU:HD23	2.05	0.57
11:K:57:THR:HG23	11:K:60:ALA:N	2.13	0.57
13:M:26:GLY:C	13:M:28:ALA:H	2.08	0.57
1:A:42:G:C4	1:A:43:C:C6	2.93	0.57
1:A:75:G:H2'	1:A:76:C:O5'	2.05	0.57
1:A:563:A:N7	1:A:567:G:H1'	2.20	0.57
1:A:688:G:C5	1:A:700:G:N2	2.73	0.57
1:A:725:G:C2	1:A:726:C:C5	2.93	0.57
1:A:770:C:O4'	1:A:900:A:H2	1.88	0.57
1:A:913:A:H4'	1:A:914:A:O5'	2.03	0.57
1:A:1060:C:OP1	14:N:45:ARG:NH2	2.38	0.57
2:B:178:ARG:HG3	8:H:72:PRO:HA	1.87	0.57
1:A:90:U:H2'	1:A:91:C:C6	2.40	0.56
1:A:148:G:H2'	1:A:149:A:C8	2.28	0.56
1:A:709:G:H2'	1:A:710:G:H8	1.70	0.56
1:A:958:A:C6	1:A:959:A:C6	2.93	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1030(C):G:H5'	1:A:1030(C):G:C8	2.35	0.56
1:A:1305:G:N2	1:A:1331:G:O2'	2.38	0.56
1:A:1311:G:C6	1:A:1312:G:C5	2.93	0.56
2:B:11:LEU:O	2:B:13:ALA:N	2.38	0.56
1:A:248:C:H2'	1:A:249:U:H5'	1.87	0.56
1:A:490:G:H2'	1:A:491:G:H8	1.68	0.56
1:A:579:G:C5	1:A:580:U:H5	2.20	0.56
1:A:803:G:H2'	1:A:804:U:O4'	2.04	0.56
1:A:914:A:O2'	1:A:915:A:C5'	2.48	0.56
1:A:1306:A:C6	1:A:1307:U:C4	2.92	0.56
1:A:1437:C:H2'	1:A:1438:G:C8	2.40	0.56
8:H:103:VAL:O	8:H:106:GLY:N	2.38	0.56
20:T:14:LYS:O	20:T:17:ARG:HB2	2.05	0.56
1:A:22:G:H4'	1:A:885:G:C8	2.40	0.56
1:A:116:A:H61	1:A:313:A:H1'	1.70	0.56
1:A:119:A:C2	1:A:240:C:C5	2.93	0.56
1:A:328:C:HO2'	1:A:329:A:P	2.28	0.56
1:A:393:A:N3	1:A:394:G:C8	2.73	0.56
1:A:399:G:O2'	1:A:400:C:H5'	2.05	0.56
1:A:446:G:O2'	1:A:447:G:H5'	2.05	0.56
1:A:622:A:N7	1:A:623:C:C5	2.73	0.56
1:A:714:G:N3	1:A:777:A:H1'	2.20	0.56
1:A:794:A:C5	1:A:795:C:C5	2.94	0.56
1:A:872:A:H2	1:A:874:G:C6	2.23	0.56
1:A:914:A:C2'	1:A:915:A:O5'	2.54	0.56
1:A:930:C:O2'	1:A:931:C:H5'	2.05	0.56
1:A:937:A:N6	1:A:1345:U:O4	2.38	0.56
1:A:1158:C:O2	1:A:1158:C:C2'	2.52	0.56
1:A:1193:G:C2	1:A:1194:U:C6	2.94	0.56
1:A:1202:G:H2'	1:A:1203:C:C5'	2.35	0.56
1:A:1306:A:C4	1:A:1307:U:C6	2.93	0.56
1:A:1436:U:H2'	1:A:1437:C:C6	2.41	0.56
1:A:1442:G:H22	1:A:1446:A:H8	1.53	0.56
4:D:96:LEU:H	4:D:96:LEU:HD22	1.70	0.56
5:E:79:GLU:O	5:E:80:ILE:HG23	2.04	0.56
14:N:27:CYS:SG	14:N:29:ARG:CB	2.94	0.56
17:Q:56:VAL:O	17:Q:77:VAL:HG23	2.05	0.56
1:A:374:A:C4	1:A:375:U:C5	2.93	0.56
1:A:389:A:C6	1:A:390:C:H1'	2.40	0.56
1:A:597:G:N7	1:A:598:U:C5	2.74	0.56
1:A:657:G:C2	1:A:750:G:C4	2.92	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:778:G:C4	1:A:779:C:C6	2.94	0.56
1:A:936:C:C2'	1:A:937:A:H5'	2.35	0.56
3:C:116:VAL:O	3:C:119:ARG:HB3	2.05	0.56
4:D:94:LEU:HA	4:D:97:LEU:HB2	1.87	0.56
4:D:96:LEU:HD13	4:D:96:LEU:N	2.20	0.56
5:E:31:LEU:HD21	5:E:43:LEU:HD21	1.87	0.56
6:F:50:TYR:HE1	18:R:77:GLY:HA2	1.65	0.56
18:R:34:TYR:CD2	18:R:34:TYR:N	2.68	0.56
1:A:338:A:C6	1:A:339:C:C4	2.92	0.56
1:A:398:C:O2'	1:A:399:G:H5'	2.06	0.56
1:A:581:G:O6	1:A:758:G:C8	2.59	0.56
1:A:645:C:O2'	1:A:646:U:H5'	2.06	0.56
1:A:663:A:C4	1:A:664:G:N7	2.74	0.56
1:A:839:U:O2	1:A:839:U:C2'	2.50	0.56
1:A:858:G:C6	1:A:869:G:C8	2.94	0.56
1:A:866:C:H2'	1:A:867:G:O4'	2.04	0.56
1:A:996:A:H2'	1:A:997:U:C6	2.41	0.56
1:A:1088:G:C2	1:A:1089:G:C8	2.93	0.56
1:A:1250:A:N6	1:A:1251:A:N6	2.54	0.56
1:A:1357:A:C5	1:A:1358:U:C4	2.94	0.56
2:B:124:SER:HB2	2:B:125:PRO:HD2	1.86	0.56
3:C:52:LEU:HD23	3:C:52:LEU:H	1.70	0.56
1:A:270:A:H2'	1:A:271:C:C6	2.39	0.56
1:A:329:A:C2	1:A:332:G:C4	2.93	0.56
1:A:439:A:C8	1:A:497:A:N1	2.73	0.56
1:A:621:A:N6	1:A:622:A:C6	2.74	0.56
1:A:741:G:O2'	1:A:742:G:H5'	2.05	0.56
1:A:803:G:C4	1:A:804:U:C6	2.94	0.56
1:A:880:C:H2'	1:A:881:G:H8	1.69	0.56
1:A:1063:C:H2'	1:A:1064:G:H8	1.68	0.56
1:A:1087:G:H2'	1:A:1088:G:C8	2.40	0.56
1:A:1100:C:O2'	1:A:1101:A:H5'	2.06	0.56
1:A:1202:G:H2'	1:A:1203:C:H5'	1.87	0.56
1:A:1253:G:N2	1:A:1254:C:C2	2.74	0.56
3:C:20:SER:HB3	3:C:40:ARG:HH22	1.69	0.56
7:G:78:ARG:NH1	7:G:154:TYR:HB3	2.19	0.56
8:H:36:LEU:HD22	8:H:61:VAL:CG2	2.36	0.56
1:A:920:U:O2'	1:A:921:U:H5'	2.06	0.56
1:A:973:G:H2'	1:A:974:A:H8	1.71	0.56
1:A:1061:G:C2'	1:A:1062:U:H5'	2.35	0.56
1:A:1129:C:OP2	9:I:62:TYR:HE2	1.89	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1186:G:N2	1:A:1187:G:H1'	2.21	0.56
1:A:1374:A:C4	1:A:1375:A:C8	2.94	0.56
1:A:1438:G:H2'	1:A:1439:C:C6	2.40	0.56
3:C:125:GLU:CG	3:C:189:ALA:HB1	2.36	0.56
16:P:58:TYR:HE1	16:P:59:TRP:CZ3	2.24	0.56
1:A:35:G:H2'	1:A:36:C:H6	1.71	0.56
1:A:88:A:H2'	1:A:89:C:O5'	2.06	0.56
1:A:197:A:O2'	1:A:198:G:C8	2.59	0.56
1:A:293:G:C5	1:A:305:G:N2	2.74	0.56
1:A:449:C:C5	1:A:450:G:C5	2.94	0.56
1:A:1158:C:O2	1:A:1158:C:H2'	2.04	0.56
1:A:1285:A:O2'	1:A:1286:A:OP2	2.22	0.56
1:A:1302:U:O2'	1:A:1303:C:OP1	2.20	0.56
1:A:1503:A:O2'	1:A:1504:G:OP1	2.19	0.56
1:A:1529:G:H5"	1:A:1530:G:OP2	2.06	0.56
20:T:36:LEU:HD12	20:T:62:LEU:HD12	1.88	0.56
20:T:75:ASN:ND2	20:T:75:ASN:N	2.53	0.56
1:A:190(E):U:C5	17:Q:72:ARG:NH2	2.74	0.56
1:A:354:G:C2	1:A:355:C:C6	2.94	0.56
1:A:512:U:H2'	1:A:513:C:H6	1.71	0.56
1:A:600:C:H4'	8:H:128:GLY:O	2.06	0.56
1:A:737:A:H2'	1:A:738:C:C6	2.41	0.56
1:A:761:G:C6	1:A:762:C:C4	2.94	0.56
1:A:910:C:H2'	1:A:911:U:C6	2.41	0.56
1:A:1190:G:O2'	1:A:1191:A:OP2	2.24	0.56
1:A:42:G:N3	1:A:43:C:C5	2.74	0.56
1:A:152:A:N6	1:A:170:U:O2	2.39	0.56
1:A:357:G:C2	1:A:358:U:C6	2.93	0.56
1:A:519:C:O2'	1:A:520:A:H5'	2.06	0.56
1:A:600:C:O2'	1:A:601:C:H5'	2.05	0.56
1:A:627:G:HO2'	1:A:628:G:H5'	1.71	0.56
1:A:895:G:C5	1:A:896:C:C5	2.94	0.56
1:A:920:U:H2'	1:A:921:U:O5'	2.06	0.56
1:A:978:A:C5	1:A:1319:A:C2	2.94	0.56
1:A:1190:G:C2'	1:A:1191:A:OP2	2.53	0.56
1:A:1216:G:H5"	14:N:5:ALA:HB2	1.88	0.56
1:A:1249:C:H1'	9:I:70:LYS:HG3	1.88	0.56
1:A:1368:G:N2	1:A:1369:C:N1	2.54	0.56
1:A:1455:G:C2	1:A:1459:C:C6	2.94	0.56
15:O:45:VAL:HG12	15:O:46:HIS:H	1.71	0.56
16:P:74:LEU:HD22	16:P:79:VAL:HG21	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:T:73:HIS:HB2	20:T:76:ALA:HB2	1.88	0.56
1:A:543:C:C2	1:A:544:G:C8	2.94	0.55
1:A:724:G:N1	1:A:725:G:C5	2.75	0.55
1:A:768:A:C4	1:A:769:G:C8	2.93	0.55
1:A:817:C:H4'	1:A:818:G:OP1	2.03	0.55
1:A:1065:U:O2'	1:A:1066:C:OP2	2.25	0.55
1:A:1192:C:O2	1:A:1193:G:H1'	2.05	0.55
1:A:1234:C:H5'	1:A:1365:G:OP1	2.07	0.55
1:A:1314:C:O2'	1:A:1315:U:H5'	2.06	0.55
1:A:1507:A:H2'	1:A:1508:G:H8	1.70	0.55
2:B:181:PHE:N	2:B:181:PHE:CD1	2.73	0.55
3:C:8:ILE:O	3:C:10:PHE:N	2.39	0.55
3:C:202:ILE:HG22	3:C:204:LEU:HG	1.87	0.55
1:A:174:C:N3	1:A:175:C:C5	2.75	0.55
1:A:201:C:H2'	1:A:202:U:H3'	1.86	0.55
1:A:243:A:N3	1:A:245:C:C4	2.74	0.55
1:A:256:U:H2'	1:A:257:G:H8	1.70	0.55
1:A:393:A:C6	1:A:394:G:N7	2.74	0.55
1:A:397:A:N3	1:A:397:A:H5"	2.21	0.55
1:A:402:G:C4	1:A:403:C:C6	2.94	0.55
1:A:485:G:H2'	1:A:486:U:OP2	2.05	0.55
1:A:724:G:N3	1:A:725:G:C8	2.73	0.55
1:A:1053:G:C4	1:A:1199:U:C5	2.94	0.55
1:A:1126:U:C6	1:A:1126:U:O5'	2.59	0.55
1:A:1309:G:H2'	1:A:1310:G:H5'	1.88	0.55
2:B:214:ILE:HG23	2:B:217:ARG:NH2	2.21	0.55
8:H:36:LEU:HD22	8:H:61:VAL:HG22	1.87	0.55
12:L:8:ASN:O	12:L:11:VAL:N	2.39	0.55
1:A:233:C:O2'	1:A:234:C:H5'	2.05	0.55
1:A:435:C:C2	1:A:436:C:C5	2.95	0.55
1:A:534:U:H5"	1:A:535:A:OP2	2.06	0.55
1:A:609:A:C2'	1:A:610:G:H5'	2.37	0.55
1:A:686:U:O4	1:A:703:G:O2'	2.22	0.55
1:A:818:G:C3'	1:A:819:A:C5'	2.83	0.55
1:A:1459:C:H2'	1:A:1460:A:O5'	2.05	0.55
4:D:59:ARG:HG2	4:D:59:ARG:NH1	2.20	0.55
4:D:173:TRP:CD1	4:D:174:LEU:HG	2.40	0.55
16:P:43:LYS:HG2	16:P:48:TRP:CG	2.42	0.55
1:A:202:U:O2'	1:A:203:U:OP1	2.24	0.55
1:A:355:C:N3	1:A:356:A:N7	2.54	0.55
1:A:391:G:P	16:P:28:ARG:HH12	2.29	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:573:A:C6	1:A:574:A:N1	2.75	0.55
1:A:595:G:C4	1:A:641:U:C4	2.94	0.55
1:A:769:G:C2	1:A:770:C:C6	2.95	0.55
1:A:777:A:C6	1:A:778:G:C5	2.95	0.55
1:A:780:A:O2'	1:A:781:A:H5"	2.06	0.55
1:A:783:C:C2'	1:A:784:C:H5'	2.36	0.55
1:A:921:U:H2'	1:A:922:G:O4'	2.05	0.55
1:A:1015:A:H8	1:A:1015:A:O5'	1.90	0.55
1:A:1346:A:C4	7:G:10:ARG:CZ	2.89	0.55
1:A:1499:A:C2'	1:A:1500:A:H5'	2.37	0.55
1:A:1504:G:C4'	1:A:1505:G:H5'	2.37	0.55
2:B:80:ILE:O	2:B:84:GLU:HG2	2.05	0.55
5:E:127:ASN:OD1	5:E:129:ILE:HB	2.07	0.55
11:K:71:LYS:O	11:K:74:ALA:HB3	2.06	0.55
1:A:175:C:O2'	1:A:176:C:H5'	2.06	0.55
1:A:407:G:H2'	1:A:408:A:H8	1.71	0.55
1:A:448:A:C5	1:A:487:A:C4	2.94	0.55
1:A:781:A:C5	1:A:802:A:C2	2.94	0.55
1:A:996:A:C6	1:A:997:U:O4	2.59	0.55
1:A:1061:G:O2'	1:A:1062:U:H5'	2.06	0.55
1:A:1218:C:C2'	1:A:1219:U:C6	2.78	0.55
1:A:1245:A:H2'	1:A:1246:C:C6	2.41	0.55
1:A:1489:G:H2'	1:A:1490:C:O4'	2.06	0.55
1:A:1492:A:H2'	1:A:1493:A:O4'	2.07	0.55
1:A:1504:G:H4'	1:A:1505:G:H5'	1.89	0.55
3:C:57:ILE:HG22	3:C:57:ILE:O	2.06	0.55
7:G:146:GLU:HA	7:G:149:ARG:HB2	1.89	0.55
18:R:39:VAL:HG13	18:R:40:LEU:N	2.21	0.55
1:A:67:C:O2'	1:A:68:G:H5'	2.06	0.55
1:A:175:C:C2	1:A:176:C:C5	2.94	0.55
1:A:261:U:C6	20:T:79:ARG:NH1	2.75	0.55
1:A:373:A:C4	1:A:482:A:N7	2.75	0.55
1:A:429:U:C4'	1:A:430:A:O5'	2.48	0.55
1:A:592:G:N2	1:A:593:G:C4	2.74	0.55
1:A:854:G:H3'	1:A:871:U:C4	2.40	0.55
1:A:1065:U:H4'	1:A:1066:C:O5'	2.05	0.55
1:A:1089:G:C6	1:A:1090:U:C6	2.94	0.55
1:A:1095:U:H2'	1:A:1096:C:C6	2.40	0.55
1:A:1220:G:H2'	1:A:1221:G:H8	1.71	0.55
13:M:81:LEU:H	13:M:81:LEU:HD23	1.72	0.55
1:A:204:U:H4'	1:A:216:G:O5'	2.05	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:565:U:C6	1:A:566:G:C8	2.95	0.55
1:A:657:G:N2	1:A:750:G:N9	2.54	0.55
1:A:981:U:C5'	14:N:21:TYR:CZ	2.89	0.55
1:A:1052:U:H2'	1:A:1055:A:OP1	2.06	0.55
1:A:1057:G:H2'	1:A:1058:G:H8	1.71	0.55
1:A:1061:G:C6	1:A:1062:U:N3	2.75	0.55
1:A:1158:C:N3	1:A:1160:G:C8	2.75	0.55
1:A:1492:A:N6	1:A:1493:A:C2	2.75	0.55
4:D:67:ILE:HG22	4:D:68:TYR:N	2.20	0.55
1:A:321:A:H2	1:A:332:G:H22	1.54	0.55
1:A:421:U:C6	3:C:127:ARG:NH2	2.75	0.55
1:A:663:A:N3	1:A:664:G:C8	2.75	0.55
1:A:767:A:C6	1:A:768:A:C5	2.94	0.55
1:A:1049:U:H1'	1:A:1201:A:C8	2.41	0.55
1:A:1399:C:C2	1:A:1401:G:C4	2.95	0.55
1:A:1442:G:N2	1:A:1446:A:H8	2.05	0.55
1:A:1480:G:C4	1:A:1481:U:C5	2.94	0.55
6:F:48:LEU:HD13	6:F:52:ILE:CG1	2.30	0.55
13:M:37:THR:HG22	13:M:37:THR:O	2.06	0.55
15:O:32:LEU:O	15:O:35:ARG:N	2.39	0.55
15:O:69:TYR:O	15:O:72:ARG:HB3	2.06	0.55
1:A:8:A:H62	4:D:209:ARG:HB2	1.72	0.55
1:A:130:A:C8	17:Q:63:ARG:HG3	2.42	0.55
1:A:300:A:H1'	1:A:565:U:O2	2.07	0.55
1:A:544:G:C4	1:A:545:C:C5	2.94	0.55
1:A:582:U:C2	1:A:583:A:C8	2.95	0.55
1:A:651:C:C4	1:A:652:U:O4	2.60	0.55
1:A:825:G:C5	1:A:826:C:C5	2.95	0.55
1:A:869:G:H4'	1:A:872:A:H8	1.61	0.55
1:A:1192:C:O2	1:A:1193:G:C1'	2.54	0.55
1:A:1309:G:O2'	1:A:1310:G:H5'	2.07	0.55
1:A:1360:A:H2'	1:A:1361:G:O4'	2.07	0.55
2:B:189:ASP:HB3	2:B:203:GLY:O	2.07	0.55
3:C:27:LYS:O	3:C:31:HIS:HD2	1.90	0.55
3:C:70:VAL:HG12	3:C:72:LYS:H	1.70	0.55
16:P:49:LEU:HD22	16:P:73:LEU:HD22	1.89	0.55
1:A:10:A:C2	1:A:11:G:C5	2.95	0.55
1:A:21:G:H2'	1:A:22:G:H8	1.72	0.55
1:A:37:U:O2'	1:A:38:G:H5'	2.07	0.55
1:A:113:G:C6	1:A:315:A:N6	2.74	0.55
1:A:265:G:O2'	1:A:266:G:H5'	2.06	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:596:C:N4	1:A:645:C:N3	2.53	0.55
1:A:1225:A:C5'	13:M:103:THR:OG1	2.55	0.55
1:A:1392:G:N2	1:A:1502:A:H8	2.04	0.55
3:C:167:TRP:O	3:C:168:ALA:HB2	2.07	0.55
11:K:95:ILE:O	11:K:99:GLN:HG3	2.07	0.55
1:A:27:G:C6	1:A:28:G:N7	2.75	0.54
1:A:65:U:C4	1:A:381:C:C4	2.96	0.54
1:A:522:C:H41	12:L:53:ARG:HH22	1.56	0.54
1:A:657:G:N2	1:A:750:G:C4	2.75	0.54
1:A:948:C:O2'	1:A:949:A:C5'	2.48	0.54
1:A:1077:G:N2	1:A:1080:A:OP2	2.40	0.54
1:A:1508:G:H2'	1:A:1509:C:H6	1.71	0.54
4:D:104:VAL:CG1	4:D:146:ILE:HD12	2.23	0.54
5:E:12:LEU:HD22	5:E:13:ILE:N	2.22	0.54
6:F:38:GLU:O	6:F:39:LYS:HB3	2.07	0.54
17:Q:9:VAL:N	17:Q:21:VAL:HG13	2.22	0.54
1:A:38:G:H22	1:A:397:A:C5'	2.20	0.54
1:A:319:G:O2'	1:A:320:C:H5'	2.06	0.54
1:A:448:A:C5	1:A:487:A:C2	2.96	0.54
1:A:676:A:C6	1:A:677:U:C4	2.95	0.54
1:A:835:U:OP1	18:R:64:ARG:NH2	2.41	0.54
1:A:955:U:H1'	1:A:1227:A:H61	1.69	0.54
1:A:1307:U:H2'	1:A:1308:U:C6	2.43	0.54
1:A:1368:G:O2'	1:A:1369:C:H5'	2.06	0.54
3:C:22:TRP:HZ3	3:C:24:ALA:HB2	1.72	0.54
4:D:78:LEU:HB3	4:D:93:PHE:HE2	1.73	0.54
11:K:114:VAL:O	11:K:114:VAL:HG13	2.07	0.54
1:A:5:U:O2	1:A:5:U:C2'	2.56	0.54
1:A:80:G:H3'	1:A:81:U:C5'	2.33	0.54
1:A:720:C:O5'	1:A:720:C:H6	1.90	0.54
1:A:924:C:C2'	1:A:925:G:H5'	2.37	0.54
1:A:1346:A:N9	7:G:10:ARG:NH2	2.56	0.54
1:A:1381:U:O2	1:A:1381:U:H2'	2.06	0.54
1:A:1461:G:O2'	1:A:1462:G:H5'	2.07	0.54
3:C:120:VAL:HG12	3:C:124:ILE:HD11	1.89	0.54
5:E:129:ILE:HG22	5:E:130:ASN:N	2.21	0.54
6:F:4:TYR:O	6:F:64:GLN:HA	2.07	0.54
7:G:23:VAL:HG13	7:G:43:PHE:CE2	2.42	0.54
1:A:35:G:H2'	1:A:36:C:C6	2.42	0.54
1:A:119:A:C5	1:A:240:C:C4	2.95	0.54
1:A:370:C:O2	1:A:371:G:C8	2.60	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:518:C:H5”	1:A:519:C:H6	1.73	0.54
1:A:910:C:H2’	1:A:911:U:H6	1.71	0.54
1:A:1039:C:C2	1:A:1040:U:C5	2.95	0.54
1:A:1226:C:C4’	1:A:1227:A:OP1	2.54	0.54
1:A:1317:C:H2’	1:A:1318:A:O4’	2.08	0.54
9:I:6:GLY:O	9:I:7:THR:HB	2.07	0.54
16:P:59:TRP:HA	16:P:59:TRP:CE3	2.42	0.54
1:A:501:C:H2’	1:A:502:G:H8	1.72	0.54
1:A:507:C:C2	1:A:508:C:H5	2.25	0.54
1:A:614:A:N1	1:A:627:G:C6	2.76	0.54
1:A:872:A:C2	1:A:874:G:N7	2.76	0.54
1:A:1085:U:H1’	1:A:1094:G:C6	2.42	0.54
1:A:1227:A:H5’	1:A:1227:A:H8	1.72	0.54
1:A:1442:G:N2	1:A:1446:A:C8	2.75	0.54
4:D:36:ARG:HA	4:D:38:TYR:CE2	2.42	0.54
8:H:89:PRO:HA	8:H:92:ARG:HE	1.72	0.54
18:R:37:VAL:CG2	18:R:78:LEU:HB3	2.38	0.54
1:A:6:G:O6	5:E:95:ALA:N	2.38	0.54
1:A:318:G:C2	1:A:319:G:C8	2.96	0.54
1:A:318:G:C6	1:A:319:G:N7	2.76	0.54
1:A:506:G:C6	1:A:507:C:C4	2.95	0.54
1:A:696:A:C6	1:A:697:U:C4	2.96	0.54
1:A:965:A:C2	1:A:969:A:N1	2.75	0.54
1:A:1053:G:N7	1:A:1199:U:C6	2.75	0.54
1:A:1083:U:C4	1:A:1084:G:C2	2.96	0.54
1:A:1172:C:H2’	1:A:1173:G:H8	1.71	0.54
1:A:1425:U:H2’	1:A:1426:C:C6	2.42	0.54
3:C:33:LEU:HD11	14:N:53:LEU:CD2	2.37	0.54
8:H:13:ILE:O	8:H:17:THR:HG23	2.07	0.54
20:T:51:GLU:O	20:T:54:LYS:HB2	2.07	0.54
1:A:22:G:O2’	1:A:23:C:H5’	2.08	0.54
1:A:655:A:O2’	1:A:656:C:H5’	2.08	0.54
1:A:673:G:H2’	1:A:674:G:C8	2.43	0.54
1:A:1040:U:H2’	1:A:1041:A:H8	1.72	0.54
1:A:1290:G:C6	1:A:1291:G:C5	2.96	0.54
1:A:1305:G:H5’	21:V:4:GLY:HA3	1.90	0.54
1:A:1371:G:C6	1:A:1372:U:C4	2.96	0.54
2:B:162:ILE:HG22	2:B:164:VAL:HG23	1.89	0.54
8:H:111:ILE:C	8:H:112:LEU:HD23	2.28	0.54
9:I:112:LYS:HE2	9:I:118:LYS:HA	1.90	0.54
10:J:8:LEU:HD21	10:J:96:ILE:HG12	1.90	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:S:15:LEU:O	19:S:19:VAL:HG12	2.07	0.54
1:A:9:G:C2	1:A:10:A:C8	2.96	0.54
1:A:142:G:O6	1:A:143:A:N6	2.41	0.54
1:A:448:A:N6	1:A:487:A:C1'	2.70	0.54
1:A:462:G:C2	1:A:463:A:C4	2.95	0.54
1:A:690:G:N1	1:A:691:G:C2	2.75	0.54
1:A:1107:C:C4	1:A:1108:G:C8	2.96	0.54
1:A:1108:G:C5	1:A:1109:C:C5	2.95	0.54
1:A:1144:G:N2	1:A:1146:A:H62	2.06	0.54
1:A:1516:G:C2	1:A:1520:G:C2	2.96	0.54
3:C:4:LYS:O	3:C:5:ILE:HG12	2.07	0.54
3:C:8:ILE:O	3:C:11:ARG:N	2.36	0.54
7:G:148:ASN:C	7:G:150:ALA:H	2.10	0.54
9:I:65:VAL:HG21	9:I:73:GLN:OE1	2.07	0.54
9:I:70:LYS:O	9:I:74:ILE:HG13	2.08	0.54
1:A:45:U:H2'	1:A:46:G:C8	2.43	0.54
1:A:76:C:H2'	1:A:77:G:O5'	2.08	0.54
1:A:166:G:N3	1:A:167:G:C8	2.76	0.54
1:A:294:U:C2	1:A:295:C:C5	2.96	0.54
1:A:502:G:C4	1:A:503:C:C6	2.96	0.54
1:A:616:G:N2	1:A:625:G:C5	2.76	0.54
1:A:972:C:O2	1:A:972:C:C2'	2.49	0.54
1:A:1105:A:C2'	1:A:1106:G:H5'	2.38	0.54
1:A:1168:A:H8	1:A:1168:A:O5'	1.89	0.54
1:A:1216:G:H5"	14:N:5:ALA:HB1	1.89	0.54
1:A:1366:C:H2'	1:A:1367:C:C6	2.43	0.54
5:E:110:LEU:HD13	5:E:118:ILE:HD13	1.88	0.54
8:H:83:ILE:HD12	8:H:137:VAL:CG1	2.38	0.54
1:A:33:A:H2'	1:A:34:C:H6	1.69	0.54
1:A:633:G:C6	1:A:634:C:C4	2.96	0.54
1:A:803:G:H2'	1:A:804:U:C6	2.43	0.54
1:A:849:C:N3	1:A:850:U:C5	2.76	0.54
1:A:981:U:H2'	1:A:982:U:C6	2.37	0.54
1:A:1064:G:H4'	1:A:1065:U:H5"	1.90	0.54
1:A:1080:A:H4'	5:E:16:THR:HG21	1.90	0.54
1:A:1087:G:H2'	1:A:1088:G:H8	1.72	0.54
1:A:1114:C:H2'	1:A:1115:C:H6	1.73	0.54
1:A:1206:G:H8	1:A:1206:G:O5'	1.91	0.54
1:A:1237:C:H3'	1:A:1238:A:H5'	1.90	0.54
1:A:1281:U:H5'	1:A:1282:C:C5	2.41	0.54
1:A:1303:C:C2'	1:A:1304:G:H5'	2.34	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:117:ARG:O	12:L:119:LYS:O	2.26	0.54
17:Q:63:ARG:O	17:Q:65:ILE:HG13	2.08	0.54
1:A:53:A:N6	1:A:54:C:C4	2.75	0.53
1:A:81:U:C6	1:A:83:U:OP2	2.62	0.53
1:A:190(A):C:O2'	1:A:190(B):C:H5'	2.08	0.53
1:A:293:G:C4	1:A:305:G:N2	2.76	0.53
1:A:449:C:C6	1:A:450:G:N7	2.76	0.53
1:A:484:G:O4'	1:A:486:U:C6	2.61	0.53
1:A:521:G:O6	1:A:529:G:C2	2.61	0.53
1:A:818:G:O2'	1:A:820:U:C6	2.61	0.53
1:A:1278:U:H5'	1:A:1279:A:O4'	2.07	0.53
1:A:1284:C:H3'	1:A:1285:A:C8	2.42	0.53
1:A:1381:U:O2	1:A:1382:C:C6	2.61	0.53
1:A:1392:G:C6	1:A:1393:U:C4	2.96	0.53
1:A:1407:C:H6	1:A:1407:C:O5'	1.90	0.53
1:A:1499:A:O2'	1:A:1500:A:H5'	2.07	0.53
1:A:1521:G:N3	1:A:1522:U:C6	2.76	0.53
3:C:195:VAL:C	3:C:196:LEU:HD23	2.28	0.53
17:Q:92:ARG:O	17:Q:95:TYR:HB2	2.08	0.53
1:A:20:U:H2'	1:A:21:G:H5'	1.90	0.53
1:A:118:U:H5	1:A:288:A:C6	2.25	0.53
1:A:452:A:H4'	16:P:72:ARG:NH2	2.24	0.53
1:A:499:A:C6	1:A:547:A:C8	2.96	0.53
1:A:568:G:C6	1:A:569:C:N4	2.77	0.53
1:A:635:G:H2'	1:A:636:U:C6	2.41	0.53
1:A:953:G:N3	1:A:1229:A:C2	2.76	0.53
1:A:1206:G:C6	1:A:1207:G:N7	2.76	0.53
1:A:1221:G:H5"	19:S:36:ARG:NH1	2.23	0.53
1:A:1300:G:C6	1:A:1334:G:C5	2.96	0.53
1:A:1338:G:H2'	1:A:1339:A:C8	2.43	0.53
1:A:1348:U:C2	1:A:1349:A:C8	2.97	0.53
2:B:130:ARG:NH2	3:C:207:VAL:HG11	2.23	0.53
19:S:42:PRO:O	19:S:45:VAL:HG23	2.07	0.53
1:A:52:G:O2'	1:A:53:A:H5'	2.08	0.53
1:A:577:G:O2'	1:A:816:A:H2'	2.09	0.53
1:A:688:G:C8	1:A:700:G:N2	2.77	0.53
1:A:783:C:H2'	1:A:784:C:H5'	1.91	0.53
1:A:1308:U:O2'	1:A:1309:G:H5'	2.08	0.53
1:A:1369:C:C2'	1:A:1370:G:O4'	2.56	0.53
1:A:1401:G:C6	1:A:1402:C:C6	2.96	0.53
1:A:1454:G:O2'	1:A:1455:G:H5'	2.08	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:47:PHE:CZ	14:N:37:PHE:HE1	2.26	0.53
12:L:87:GLY:HA2	12:L:98:TYR:HA	1.90	0.53
1:A:50:A:N6	1:A:361:G:H4'	2.23	0.53
1:A:369:C:N3	1:A:370:C:C5	2.76	0.53
1:A:502:G:C2	1:A:503:C:C2	2.96	0.53
1:A:538:G:C2	1:A:539:A:C4	2.96	0.53
1:A:595:G:H2'	1:A:641:U:O4	2.07	0.53
1:A:657:G:C2	1:A:750:G:C5	2.97	0.53
1:A:698:G:C5	1:A:699:C:C5	2.97	0.53
1:A:949:A:N6	1:A:1233:G:C6	2.76	0.53
1:A:960:U:C2	1:A:1225:A:C5	2.96	0.53
1:A:1152:A:OP1	10:J:68:HIS:ND1	2.41	0.53
1:A:1227:A:H5'	1:A:1227:A:C8	2.44	0.53
1:A:1363:A:H1'	1:A:1365:G:N7	2.23	0.53
1:A:1498:U:H1'	1:A:1499:A:N7	2.23	0.53
3:C:154:SER:OG	3:C:196:LEU:HA	2.07	0.53
3:C:157:ILE:HB	3:C:164:ARG:HH21	1.73	0.53
13:M:86:CYS:SG	13:M:88:ARG:HB3	2.48	0.53
16:P:20:VAL:HG21	16:P:32:TYR:HB2	1.90	0.53
1:A:13:U:C5	1:A:916:G:O6	2.61	0.53
1:A:370:C:H2'	1:A:371:G:H8	1.72	0.53
1:A:399:G:H2'	1:A:400:C:C6	2.44	0.53
1:A:490:G:C6	1:A:491:G:N7	2.76	0.53
1:A:698:G:C6	1:A:699:C:C4	2.97	0.53
1:A:698:G:C6	1:A:699:C:N4	2.76	0.53
1:A:893:C:H2'	1:A:894:G:C8	2.39	0.53
1:A:1021:G:H2'	1:A:1022:G:O4'	2.09	0.53
1:A:1030:C:C2'	1:A:1030(A):G:C8	2.91	0.53
2:B:188:ALA:O	2:B:203:GLY:N	2.41	0.53
3:C:91:LEU:HD23	3:C:92:ALA:N	2.22	0.53
15:O:29:VAL:O	15:O:31:LEU:N	2.42	0.53
1:A:7:G:N2	1:A:298:A:N6	2.57	0.53
1:A:503:C:H2'	1:A:504:C:H6	1.72	0.53
1:A:568:G:H2'	1:A:569:C:C6	2.43	0.53
1:A:640:A:O2'	1:A:641:U:H5'	2.08	0.53
1:A:778:G:H2'	1:A:779:C:H6	1.72	0.53
1:A:892:A:C5	1:A:893:C:C5	2.96	0.53
1:A:951:G:C6	1:A:1231:G:C6	2.96	0.53
1:A:1500:A:C2	1:A:1501:C:N1	2.77	0.53
5:E:121:LYS:HD2	5:E:122:GLU:H	1.73	0.53
1:A:160:A:H2'	1:A:161:A:O4'	2.07	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:354:G:O2'	1:A:355:C:H5'	2.08	0.53
1:A:397:A:N3	1:A:397:A:H3'	2.23	0.53
1:A:864:A:C6	1:A:865:A:C6	2.96	0.53
1:A:869:G:C4'	1:A:872:A:H8	2.18	0.53
1:A:974:A:N3	14:N:31:ARG:NH2	2.56	0.53
1:A:1052:U:O4	1:A:1200:C:H2'	2.09	0.53
1:A:1253:G:C2	1:A:1254:C:C2	2.96	0.53
1:A:1402:C:C4	1:A:1403:C:C4	2.97	0.53
1:A:1402:C:O2	1:A:1500:A:N1	2.41	0.53
2:B:13:ALA:O	2:B:15:VAL:N	2.39	0.53
3:C:73:PRO:O	3:C:77:ILE:HG12	2.09	0.53
5:E:15:ARG:HB3	5:E:28:PHE:CE2	2.44	0.53
9:I:89:ASN:OD1	9:I:91:ASP:HB2	2.09	0.53
18:R:76:LEU:O	18:R:78:LEU:N	2.42	0.53
19:S:47:HIS:O	19:S:62:ILE:HG22	2.09	0.53
1:A:55:A:O2'	1:A:56:U:H5'	2.09	0.53
1:A:69:G:H2'	1:A:70:G:H8	1.73	0.53
1:A:229:U:O2'	1:A:230:G:H5'	2.08	0.53
1:A:357:G:C2	1:A:358:U:C4	2.96	0.53
1:A:608:A:N3	1:A:609:A:C8	2.77	0.53
1:A:919:A:N3	1:A:1080:A:H2	2.07	0.53
1:A:1039:C:O2'	1:A:1040:U:C5'	2.56	0.53
1:A:1347:G:H2'	1:A:1348:U:OP2	2.09	0.53
3:C:151:VAL:CG1	3:C:152:ILE:N	2.72	0.53
13:M:67:GLU:O	13:M:69:GLU:N	2.42	0.53
1:A:27:G:C5	1:A:557:G:C2	2.97	0.53
1:A:264:U:C5	1:A:265:G:C8	2.97	0.53
1:A:533:A:C6	1:A:536:C:N3	2.77	0.53
1:A:571:U:C3'	1:A:572:A:H5"	2.39	0.53
1:A:613:C:O2	1:A:628:G:N2	2.42	0.53
1:A:953:G:C2	1:A:1229:A:C2	2.97	0.53
1:A:1030:C:H2'	1:A:1030(A):G:H8	1.68	0.53
1:A:1032:G:H2'	1:A:1033:G:C8	2.44	0.53
1:A:1093:A:C2	1:A:1095:U:H5'	2.44	0.53
1:A:1120:G:O2'	1:A:1121:U:H5'	2.09	0.53
4:D:157:LEU:HD23	4:D:161:ASN:ND2	2.24	0.53
17:Q:65:ILE:HB	17:Q:69:LYS:O	2.09	0.53
1:A:39:G:H2'	1:A:40:C:C5'	2.39	0.53
1:A:112:G:C2	1:A:113:G:C8	2.97	0.53
1:A:233:C:C2'	1:A:234:C:H5'	2.39	0.53
1:A:310:G:C4	1:A:311:C:C5	2.97	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:310:G:C5	1:A:311:C:C5	2.97	0.53
1:A:391:G:C2'	1:A:392:G:O5'	2.57	0.53
1:A:506:G:C6	1:A:507:C:N4	2.76	0.53
1:A:542:G:OP1	4:D:10:ARG:NH2	2.42	0.53
1:A:719:C:N3	18:R:74:ARG:NH1	2.51	0.53
1:A:743:U:H2'	1:A:744:C:C6	2.43	0.53
1:A:1128:C:C1'	1:A:1146:A:H61	2.22	0.53
1:A:1147:C:H4'	9:I:5:TYR:HE1	1.72	0.53
1:A:1250:A:C6	1:A:1251:A:N6	2.77	0.53
4:D:117:ALA:O	4:D:121:VAL:HG23	2.09	0.53
15:O:25:THR:HG21	15:O:70:LEU:HD23	1.90	0.53
1:A:173:U:H5'	1:A:197:A:O4'	2.08	0.52
1:A:204:U:H5'	1:A:216:G:OP1	2.10	0.52
1:A:744:C:H2'	1:A:745:C:H6	1.74	0.52
1:A:1030:C:H42	1:A:1031:G:H1	1.56	0.52
1:A:1145:C:O2'	1:A:1146:A:O5'	2.21	0.52
3:C:174:PRO:HB2	3:C:177:THR:OG1	2.09	0.52
6:F:10:LEU:HD12	6:F:59:TYR:HB3	1.90	0.52
9:I:50:LEU:C	9:I:52:ALA:H	2.12	0.52
18:R:38:GLU:H	18:R:38:GLU:CD	2.13	0.52
1:A:416:G:C5	1:A:417:C:C4	2.97	0.52
1:A:579:G:C6	1:A:580:U:C4	2.97	0.52
1:A:600:C:H2'	1:A:601:C:H6	1.74	0.52
1:A:670:G:N1	1:A:737:A:C6	2.77	0.52
1:A:714:G:H2'	1:A:715:A:C8	2.44	0.52
1:A:825:G:C4	1:A:826:C:C5	2.97	0.52
1:A:1267:C:C5	1:A:1268:A:C5	2.96	0.52
1:A:1402:C:H2'	1:A:1403:C:H6	1.74	0.52
1:A:1520:G:C4	1:A:1521:G:N7	2.77	0.52
5:E:36:ASP:C	5:E:38:GLN:H	2.11	0.52
9:I:20:ARG:O	9:I:60:ASP:N	2.37	0.52
1:A:51:A:H4'	1:A:52:G:C5'	2.39	0.52
1:A:112:G:C6	1:A:113:G:N7	2.76	0.52
1:A:175:C:O2	1:A:176:C:C6	2.62	0.52
1:A:355:C:N3	1:A:356:A:C8	2.77	0.52
1:A:515:G:C2'	1:A:516:U:H5'	2.40	0.52
1:A:515:G:H2'	1:A:516:U:O4'	2.09	0.52
1:A:1237:C:H4'	1:A:1334:G:N2	2.24	0.52
1:A:1442:G:N3	1:A:1442:G:H2'	2.25	0.52
7:G:15:ASP:HB3	7:G:19:GLY:H	1.73	0.52
1:A:9:G:N3	1:A:10:A:C8	2.78	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:228:A:H2'	1:A:229:U:C6	2.44	0.52
1:A:579:G:C6	1:A:580:U:C5	2.97	0.52
1:A:936:C:H2'	1:A:937:A:C5'	2.39	0.52
1:A:1136:U:H5"	1:A:1137:C:OP2	2.09	0.52
1:A:1151:A:C2'	1:A:1152:A:H8	2.23	0.52
1:A:1167:A:C6	1:A:1168:A:C6	2.97	0.52
1:A:1504:G:H4'	1:A:1505:G:O5'	2.10	0.52
1:A:1528:U:O2'	1:A:1529:G:P	2.68	0.52
12:L:9:GLN:O	12:L:11:VAL:N	2.42	0.52
1:A:113:G:C5	1:A:114:U:C4	2.98	0.52
1:A:391:G:C6	1:A:392:G:C5	2.97	0.52
1:A:408:A:H2'	1:A:409:G:O5'	2.10	0.52
1:A:604:G:C6	1:A:605:U:C4	2.98	0.52
1:A:889:A:C4'	1:A:890:G:OP1	2.51	0.52
1:A:1164:G:N1	1:A:1173:G:C6	2.78	0.52
1:A:1298:C:C6	7:G:114:ARG:NH1	2.77	0.52
1:A:1380:U:O2'	1:A:1381:U:OP2	2.18	0.52
1:A:1388:C:O2'	1:A:1389:C:H5'	2.09	0.52
3:C:29:TYR:OH	14:N:54:PRO:HG2	2.09	0.52
6:F:21:LEU:O	6:F:24:GLU:HB3	2.10	0.52
1:A:5:U:H4'	1:A:6:G:C2	2.45	0.52
1:A:344:A:O2'	1:A:345:C:P	2.67	0.52
1:A:377:G:C6	1:A:387:U:O2	2.63	0.52
1:A:402:G:C4	1:A:403:C:C5	2.97	0.52
1:A:887:G:H2'	1:A:888:G:H8	1.75	0.52
1:A:939:G:H5"	7:G:102:ARG:NH2	2.25	0.52
1:A:1128:C:O2'	1:A:1129:C:OP1	2.26	0.52
1:A:1168:A:N1	1:A:1169:A:C2	2.78	0.52
1:A:1331:G:HO2'	1:A:1332:A:P	2.32	0.52
2:B:130:ARG:HH12	3:C:207:VAL:HG11	1.75	0.52
16:P:39:TYR:HB2	16:P:49:LEU:HD13	1.92	0.52
1:A:61:G:C5	1:A:107:G:N2	2.77	0.52
1:A:402:G:C6	1:A:403:C:C4	2.97	0.52
1:A:436:C:H2'	1:A:437:U:C6	2.43	0.52
1:A:529:G:C4'	1:A:533:A:C2	2.92	0.52
1:A:792:A:C2	1:A:794:A:C4	2.97	0.52
1:A:798:G:C2'	1:A:799:G:O5'	2.58	0.52
1:A:915:A:H2'	1:A:916:G:O5'	2.09	0.52
1:A:1058:G:OP1	3:C:199:LYS:HE3	2.10	0.52
3:C:182:ILE:HA	3:C:202:ILE:O	2.09	0.52
1:A:102:G:H2'	1:A:103:C:C6	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:174:C:C4	1:A:175:C:C5	2.98	0.52
1:A:182:U:O2	1:A:182:U:H2'	2.10	0.52
1:A:254:G:OP1	17:Q:67:LYS:O	2.27	0.52
1:A:310:G:H2'	1:A:311:C:H6	1.73	0.52
1:A:379:C:O2'	1:A:380:G:H5'	2.08	0.52
1:A:417:C:O5'	1:A:417:C:H6	1.93	0.52
1:A:533:A:O2'	1:A:535:A:OP2	2.27	0.52
1:A:625:G:N3	1:A:626:U:C5	2.78	0.52
1:A:657:G:N2	1:A:750:G:C8	2.77	0.52
1:A:658:G:H2'	1:A:659:U:C6	2.45	0.52
1:A:746:A:H2'	1:A:747:C:H5'	1.92	0.52
1:A:827:U:C2'	1:A:870:U:O4	2.54	0.52
1:A:1152:A:H5"	10:J:13:HIS:CD2	2.45	0.52
10:J:16:LEU:CD2	10:J:94:VAL:HG22	2.39	0.52
17:Q:61:GLU:HA	17:Q:71:PHE:CD1	2.44	0.52
1:A:5:U:O2	1:A:5:U:H2'	2.09	0.52
1:A:58:C:H2'	1:A:58:C:O2	2.08	0.52
1:A:101:A:C2	1:A:102:G:C4	2.98	0.52
1:A:579:G:C2	1:A:763:G:C2	2.98	0.52
1:A:665:A:C2	1:A:732:C:C2	2.98	0.52
1:A:724:G:N2	1:A:725:G:C4	2.78	0.52
1:A:782:A:H62	1:A:800:G:H21	1.56	0.52
1:A:909:A:H2'	1:A:910:C:O4'	2.10	0.52
1:A:1144:G:N2	1:A:1146:A:N6	2.58	0.52
1:A:1187:G:C5'	9:I:113:LYS:HE3	2.35	0.52
1:A:1231:G:C4	1:A:1232:U:C5	2.97	0.52
1:A:1250:A:H4'	9:I:68:GLY:N	2.24	0.52
1:A:1501:C:C4	1:A:1504:G:C2	2.98	0.52
2:B:70:PHE:O	2:B:92:TYR:HA	2.09	0.52
2:B:214:ILE:HD12	2:B:217:ARG:NH2	2.25	0.52
3:C:151:VAL:C	3:C:152:ILE:HG13	2.28	0.52
4:D:12:CYS:HA	4:D:19:LEU:HB2	1.91	0.52
4:D:96:LEU:O	4:D:99:SER:N	2.38	0.52
9:I:17:VAL:HG13	9:I:63:ILE:HD11	1.91	0.52
1:A:55:A:C2	1:A:56:U:H1'	2.44	0.52
1:A:76:C:C2'	1:A:77:G:O5'	2.58	0.52
1:A:92:C:H2'	1:A:93:G:C8	2.44	0.52
1:A:129:U:OP1	17:Q:3:LYS:NZ	2.43	0.52
1:A:357:G:O2'	1:A:358:U:H5'	2.10	0.52
1:A:592:G:C2	1:A:593:G:C8	2.98	0.52
1:A:687:A:HO2'	1:A:688:G:P	2.32	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:724:G:N2	1:A:725:G:N9	2.58	0.52
1:A:731:G:OP1	1:A:766:A:H1'	2.08	0.52
1:A:767:A:O2'	1:A:768:A:H5'	2.10	0.52
1:A:838:G:C2'	1:A:839:U:H5"	2.39	0.52
1:A:879:C:H2'	1:A:880:C:H6	1.74	0.52
1:A:885:G:H2'	1:A:886:G:H8	1.75	0.52
1:A:888:G:N1	1:A:889:A:N6	2.58	0.52
1:A:954:G:C5	1:A:955:U:C5	2.97	0.52
1:A:1054:C:HO2'	1:A:1055:A:H5"	1.69	0.52
1:A:1089:G:C4	1:A:1090:U:C6	2.98	0.52
1:A:1151:A:C4	1:A:1152:A:N7	2.78	0.52
1:A:1301:U:O4	1:A:1303:C:H1'	2.10	0.52
1:A:1355:G:O2'	1:A:1356:G:H5'	2.09	0.52
1:A:1367:C:N3	1:A:1368:G:C8	2.78	0.52
1:A:1494:G:O2'	1:A:1495:U:H5'	2.10	0.52
2:B:46:LYS:O	2:B:49:GLU:N	2.43	0.52
4:D:198:VAL:HG12	4:D:199:ASN:H	1.75	0.52
8:H:133:LEU:O	8:H:133:LEU:HD23	2.09	0.52
1:A:62:U:H5"	1:A:385:C:O2	2.10	0.51
1:A:76:C:O2'	1:A:77:G:C5'	2.55	0.51
1:A:397:A:H5'	1:A:398:C:OP1	2.09	0.51
1:A:449:C:C5	1:A:450:G:N7	2.78	0.51
1:A:637:G:O2'	1:A:638:G:H5'	2.10	0.51
1:A:658:G:H2'	1:A:659:U:H6	1.75	0.51
1:A:691:G:H2'	1:A:692:U:H6	1.75	0.51
1:A:701:C:O2'	1:A:702:A:OP2	2.23	0.51
1:A:830:G:H2'	1:A:831:U:O4'	2.10	0.51
1:A:1321:C:C6	1:A:1322:C:C5	2.98	0.51
1:A:1349:A:H2'	1:A:1350:A:C8	2.36	0.51
1:A:1449:C:H2'	1:A:1450:U:H5'	1.92	0.51
2:B:155:LEU:HD22	2:B:157:ARG:O	2.09	0.51
5:E:115:VAL:HG11	5:E:118:ILE:HD12	1.90	0.51
17:Q:100:LYS:HD2	17:Q:100:LYS:N	2.24	0.51
1:A:149:A:N3	1:A:150:C:C5	2.79	0.51
1:A:246:A:O3'	1:A:247:G:H4'	2.10	0.51
1:A:293:G:C5	1:A:294:U:C4	2.98	0.51
1:A:605:U:O4	1:A:606:G:C6	2.63	0.51
1:A:786:G:C2	1:A:787:A:C4	2.97	0.51
1:A:794:A:C4	1:A:795:C:C5	2.99	0.51
1:A:993:G:O2'	1:A:994:A:OP1	2.27	0.51
1:A:1047:G:H5"	14:N:4:LYS:HD2	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1121:U:H2'	1:A:1122:U:C6	2.45	0.51
1:A:1326:C:OP2	21:V:6:ARG:NH1	2.43	0.51
2:B:13:ALA:C	2:B:15:VAL:N	2.64	0.51
3:C:203:PHE:CD1	3:C:204:LEU:N	2.79	0.51
6:F:45:LEU:HA	6:F:58:GLY:O	2.10	0.51
10:J:49:VAL:HG13	14:N:41:ARG:HB2	1.92	0.51
1:A:291:C:O2'	1:A:292:G:H5'	2.11	0.51
1:A:359:U:O2'	1:A:360:A:H5'	2.09	0.51
1:A:437:U:O2'	4:D:123:HIS:HD2	1.93	0.51
1:A:448:A:N7	1:A:487:A:C5	2.79	0.51
1:A:527:G:C2	1:A:528:C:C6	2.98	0.51
1:A:742:G:O2'	1:A:743:U:H5'	2.10	0.51
1:A:983:A:H3'	1:A:984:C:H5'	1.93	0.51
1:A:1095:U:P	1:A:1108:G:H1	2.33	0.51
1:A:1297:C:O2'	1:A:1298:C:OP2	2.25	0.51
1:A:1350:A:H2'	1:A:1351:U:C6	2.45	0.51
1:A:1366:C:H2'	1:A:1367:C:H6	1.75	0.51
6:F:67:MET:HB2	6:F:68:PRO:CD	2.39	0.51
10:J:8:LEU:HD23	10:J:96:ILE:HG12	1.93	0.51
10:J:40:LEU:HB3	10:J:41:PRO:CB	2.41	0.51
10:J:84:GLN:O	10:J:88:LEU:HD12	2.10	0.51
12:L:28:LYS:HD2	12:L:33:ARG:NH2	2.21	0.51
13:M:69:GLU:O	13:M:72:ALA:HB3	2.09	0.51
1:A:41:G:O2'	1:A:42:G:H5'	2.11	0.51
1:A:176:C:H2'	1:A:177:C:H6	1.75	0.51
1:A:415:A:C6	1:A:416:G:C6	2.98	0.51
1:A:829:G:C2	1:A:830:G:C8	2.99	0.51
1:A:926:G:C5	1:A:1505:G:C2	2.98	0.51
1:A:974:A:OP1	14:N:29:ARG:NH2	2.44	0.51
1:A:1028:C:C5'	1:A:1028:C:H6	2.22	0.51
1:A:1150:U:O2'	10:J:40:LEU:O	2.26	0.51
1:A:1248:A:H2'	1:A:1249:C:C6	2.43	0.51
1:A:1300:G:C2'	1:A:1301:U:OP2	2.59	0.51
1:A:1527:C:O2'	1:A:1528:U:H5'	2.11	0.51
6:F:82:ARG:HA	6:F:82:ARG:HE	1.74	0.51
9:I:89:ASN:HB3	9:I:92:TYR:CD1	2.45	0.51
14:N:36:PHE:O	14:N:36:PHE:CD1	2.63	0.51
16:P:62:VAL:O	16:P:62:VAL:HG12	2.11	0.51
17:Q:11:VAL:HG11	17:Q:22:LEU:HB2	1.92	0.51
19:S:17:GLU:HA	19:S:20:LEU:HG	1.93	0.51
1:A:321:A:N3	1:A:322:C:C6	2.78	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:414:A:C2	1:A:415:A:C8	2.99	0.51
1:A:428:G:C5	1:A:430:A:C6	2.99	0.51
1:A:583:A:H1'	1:A:759:A:N6	2.25	0.51
1:A:602:A:H2'	1:A:603:U:C6	2.45	0.51
1:A:995:C:O2	1:A:995:C:H2'	2.11	0.51
1:A:1161:C:H2'	1:A:1162:C:C6	2.46	0.51
1:A:1222:G:C6	1:A:1223:C:C4	2.99	0.51
1:A:1249:C:O2	1:A:1249:C:H2'	2.09	0.51
1:A:1374:A:H2'	1:A:1375:A:H8	1.74	0.51
1:A:1463:C:O2'	1:A:1464:G:H5'	2.11	0.51
4:D:33:MET:SD	4:D:37:PRO:HA	2.49	0.51
6:F:76:ALA:O	6:F:79:LEU:N	2.43	0.51
8:H:100:ILE:HG22	8:H:125:ARG:NH2	2.25	0.51
11:K:69:ALA:O	11:K:73:MET:HG2	2.11	0.51
13:M:66:LEU:O	13:M:70:LEU:N	2.33	0.51
1:A:176:C:O2	1:A:177:C:C6	2.63	0.51
1:A:383:A:C2'	1:A:384:G:H5'	2.35	0.51
1:A:428:G:O4'	1:A:430:A:C8	2.63	0.51
1:A:447:G:C2'	1:A:485:G:H22	2.13	0.51
1:A:458:C:C4	1:A:459:G:N7	2.79	0.51
1:A:656:C:H2'	1:A:657:G:O5'	2.10	0.51
1:A:858:G:O2'	1:A:859:A:H5'	2.10	0.51
1:A:947:G:C5	1:A:948:C:C5	2.99	0.51
1:A:1057:G:H5"	3:C:154:SER:CB	2.36	0.51
1:A:1128:C:O2'	1:A:1129:C:P	2.69	0.51
1:A:1251:A:C2'	1:A:1252:A:H8	2.24	0.51
1:A:1301:U:C4	1:A:1303:C:N1	2.79	0.51
1:A:1350:A:C6	1:A:1351:U:C4	2.99	0.51
1:A:1486:G:C2'	1:A:1487:G:O4'	2.58	0.51
15:O:39:LEU:CD1	15:O:56:LEU:HB2	2.40	0.51
1:A:32:A:H2'	1:A:33:A:C8	2.45	0.51
1:A:75:G:O2'	1:A:76:C:C5'	2.57	0.51
1:A:132:C:O2'	1:A:133:U:H5'	2.11	0.51
1:A:529:G:H4'	1:A:533:A:C2	2.46	0.51
1:A:703:G:OP2	1:A:703:G:C3'	2.58	0.51
1:A:1111:A:N1	3:C:177:THR:HG23	2.25	0.51
1:A:1475:G:C4	1:A:1476:G:C8	2.99	0.51
4:D:59:ARG:HG2	4:D:59:ARG:HH11	1.76	0.51
6:F:65:VAL:HG23	6:F:67:MET:HG2	1.93	0.51
7:G:135:VAL:O	7:G:138:LYS:HB3	2.11	0.51
8:H:48:TYR:HA	8:H:60:ARG:O	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:M:81:LEU:CD2	13:M:81:LEU:N	2.68	0.51
1:A:286:G:C6	1:A:287:U:C4	2.99	0.51
1:A:926:G:C8	1:A:1505:G:N2	2.79	0.51
1:A:1088:G:C6	1:A:1089:G:N7	2.79	0.51
1:A:1169:A:H8	1:A:1169:A:O5'	1.93	0.51
1:A:1287:A:N6	1:A:1288:A:N6	2.59	0.51
1:A:1310:G:C5'	13:M:77:ASN:ND2	2.74	0.51
1:A:1346:A:N1	1:A:1374:A:H5"	2.26	0.51
1:A:1360:A:H2'	1:A:1361:G:C8	2.46	0.51
3:C:55:VAL:O	3:C:55:VAL:HG12	2.11	0.51
7:G:45:ASP:O	7:G:49:ILE:HG13	2.11	0.51
11:K:16:SER:HA	11:K:79:SER:O	2.11	0.51
13:M:37:THR:HG21	13:M:39:ILE:HD11	1.92	0.51
13:M:106:ASN:HA	13:M:108:ARG:NE	2.26	0.51
14:N:54:PRO:C	14:N:56:VAL:H	2.14	0.51
20:T:66:ALA:HB1	20:T:71:THR:HB	1.92	0.51
20:T:72:LEU:O	20:T:74:LYS:N	2.44	0.51
1:A:14:U:N3	1:A:17:U:OP2	2.44	0.51
1:A:23:C:C2	1:A:24:U:C6	2.99	0.51
1:A:88:A:C2'	1:A:89:C:O5'	2.58	0.51
1:A:153:C:N3	1:A:169:C:N4	2.59	0.51
1:A:357:G:N1	1:A:358:U:C4	2.79	0.51
1:A:408:A:O2'	1:A:409:G:H5'	2.11	0.51
1:A:715:A:OP1	1:A:805:C:H1'	2.11	0.51
1:A:746:A:H2'	1:A:747:C:H6	1.76	0.51
1:A:754:C:OP1	15:O:72:ARG:NH2	2.44	0.51
1:A:947:G:C6	1:A:948:C:C4	2.99	0.51
1:A:1060:C:C2	1:A:1198:G:N2	2.79	0.51
1:A:1061:G:H2'	1:A:1062:U:H5'	1.93	0.51
1:A:1061:G:H22	1:A:1197:G:H1'	1.73	0.51
1:A:1291:G:N3	1:A:1292:U:C5	2.78	0.51
1:A:1325:C:H2'	1:A:1326:C:H6	1.76	0.51
1:A:1375:A:H2'	1:A:1376:U:O4'	2.11	0.51
1:A:1501:C:N3	1:A:1504:G:C6	2.79	0.51
1:A:1508:G:HO2'	1:A:1509:C:H5'	1.75	0.51
4:D:200:GLU:O	4:D:203:VAL:HB	2.11	0.51
12:L:119:LYS:O	12:L:120:TYR:HB2	2.11	0.51
16:P:20:VAL:HG21	16:P:32:TYR:CD2	2.45	0.51
1:A:296:U:H2'	1:A:297:G:C8	2.46	0.51
1:A:397:A:N6	1:A:548:G:N7	2.59	0.51
1:A:531:U:H4'	1:A:532:A:C5'	2.41	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:544:G:C5	1:A:545:C:H5	2.27	0.51
1:A:544:G:C4	1:A:545:C:C6	2.98	0.51
1:A:547:A:OP1	4:D:3:ARG:NH2	2.44	0.51
1:A:607:A:H2'	1:A:608:A:H5'	1.92	0.51
1:A:704:A:N6	11:K:42:TRP:CZ2	2.79	0.51
1:A:806:C:O2'	1:A:807:A:H5'	2.11	0.51
1:A:1049:U:H4'	1:A:1050:G:OP2	2.11	0.51
1:A:1157:A:H1'	1:A:1181:G:H22	1.76	0.51
1:A:1257:U:O2'	1:A:1258:G:OP2	2.27	0.51
1:A:1347:G:N7	9:I:107:ARG:HB3	2.23	0.51
1:A:1385:G:H2'	1:A:1386:G:O4'	2.10	0.51
7:G:75:VAL:HG11	7:G:86:GLN:HB3	1.91	0.51
15:O:29:VAL:O	15:O:30:ALA:C	2.48	0.51
15:O:87:ILE:HG22	15:O:88:ARG:N	2.26	0.51
16:P:20:VAL:HG21	16:P:32:TYR:CB	2.41	0.51
1:A:20:U:O2'	1:A:21:G:H5'	2.11	0.50
1:A:792:A:O2'	1:A:793:U:P	2.69	0.50
1:A:859:A:C2'	1:A:860:A:H5'	2.40	0.50
1:A:948:C:C4	13:M:106:ASN:ND2	2.79	0.50
1:A:1047:G:H2'	1:A:1048:G:C5'	2.36	0.50
1:A:1054:C:C3'	1:A:1054:C:C6	2.93	0.50
1:A:1054:C:C6	1:A:1054:C:H3'	2.46	0.50
1:A:1257:U:O2'	1:A:1258:G:P	2.69	0.50
3:C:121:ALA:HB2	3:C:187:ALA:HB1	1.92	0.50
5:E:136:MET:C	5:E:138:ALA:N	2.62	0.50
9:I:16:ARG:HB2	9:I:64:THR:HB	1.93	0.50
20:T:33:ILE:CD1	20:T:63:ILE:HA	2.38	0.50
1:A:98:U:O2'	1:A:99:C:H5'	2.11	0.50
1:A:164:U:O2'	1:A:165:C:H5'	2.10	0.50
1:A:346:G:C2'	1:A:347:G:H5'	2.40	0.50
1:A:517:G:N1	1:A:533:A:OP2	2.43	0.50
1:A:537:G:OP1	12:L:113:ARG:NH2	2.45	0.50
1:A:665:A:H2'	1:A:732:C:O2	2.10	0.50
1:A:683:G:C6	1:A:684:A:C6	2.98	0.50
1:A:781:A:C8	1:A:802:A:C2	2.99	0.50
1:A:973:G:H8	1:A:973:G:O5'	1.93	0.50
1:A:1003:G:C4	1:A:1003(A):G:C8	2.99	0.50
1:A:1064:G:C2	1:A:1066:C:N4	2.79	0.50
1:A:1397:C:H4'	1:A:1398:A:OP2	2.11	0.50
2:B:125:PRO:O	2:B:127:ILE:N	2.44	0.50
3:C:22:TRP:CZ3	3:C:24:ALA:HB2	2.46	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:52:ASP:HA	8:H:56:LYS:O	2.11	0.50
9:I:46:ALA:O	9:I:49:PRO:HD2	2.10	0.50
13:M:4:ILE:HG23	13:M:7:VAL:HA	1.94	0.50
1:A:147:G:C2	1:A:148:G:C8	3.00	0.50
1:A:236:G:C6	1:A:237:C:C4	2.98	0.50
1:A:450:G:C5'	1:A:451:A:H3'	2.32	0.50
1:A:507:C:H2'	1:A:508:C:C6	2.47	0.50
1:A:533:A:C5	1:A:536:C:N4	2.80	0.50
1:A:892:A:C2	1:A:907:A:C4	3.00	0.50
1:A:975:A:O2'	14:N:32:SER:HB2	2.11	0.50
1:A:1179:A:C2'	1:A:1180:A:H5'	2.41	0.50
1:A:1237:C:C6	1:A:1336:C:N4	2.80	0.50
1:A:1394:A:C5	1:A:1501:C:H4'	2.46	0.50
2:B:51:LEU:HD21	2:B:217:ARG:NH2	2.26	0.50
5:E:99:GLY:O	5:E:101:ILE:HG13	2.11	0.50
5:E:133:TYR:O	5:E:136:MET:HB2	2.10	0.50
10:J:7:LYS:HA	10:J:71:LEU:HD22	1.94	0.50
12:L:55:VAL:HG12	12:L:56:ALA:N	2.26	0.50
15:O:81:LEU:O	15:O:81:LEU:HD22	2.11	0.50
17:Q:82:MET:O	17:Q:85:VAL:N	2.45	0.50
1:A:92:C:O2'	1:A:93:G:H5'	2.11	0.50
1:A:114:U:H2'	1:A:115:G:C8	2.46	0.50
1:A:235:C:H2'	1:A:236:G:H8	1.77	0.50
1:A:453:A:C2	1:A:454:C:C2	2.99	0.50
1:A:506:G:H2'	1:A:507:C:C6	2.46	0.50
1:A:543:C:O2'	1:A:544:G:H5'	2.11	0.50
1:A:622:A:H3'	1:A:623:C:H6	1.76	0.50
1:A:625:G:C5	1:A:626:U:C5	2.99	0.50
1:A:746:A:H2'	1:A:747:C:C5'	2.42	0.50
1:A:876:G:C6	1:A:877:C:N4	2.78	0.50
1:A:905:U:C2'	1:A:906:G:H5'	2.42	0.50
1:A:1305:G:OP1	21:V:2:GLY:N	2.44	0.50
1:A:1320:C:C2	19:S:72:GLY:HA3	2.47	0.50
1:A:1331:G:C2'	1:A:1332:A:OP2	2.59	0.50
5:E:127:ASN:O	5:E:128:PRO:C	2.49	0.50
13:M:56:LEU:O	13:M:60:VAL:HG23	2.11	0.50
1:A:24:U:O2	1:A:24:U:H2'	2.12	0.50
1:A:149:A:C2	1:A:150:C:C6	2.99	0.50
1:A:184:G:O2'	1:A:185:A:H5'	2.11	0.50
1:A:223:U:C5'	20:T:68:LYS:HZ2	2.24	0.50
1:A:257:G:C6	1:A:270:A:N1	2.79	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:391:G:C5	1:A:392:G:C8	3.00	0.50
1:A:452:A:C2	1:A:453:A:C8	3.00	0.50
1:A:577:G:C4	1:A:816:A:C2	3.00	0.50
1:A:608:A:C2	1:A:609:A:N9	2.79	0.50
1:A:654:G:C6	1:A:655:A:C5	3.00	0.50
1:A:746:A:C2'	1:A:747:C:C5'	2.88	0.50
1:A:1004:A:C6	1:A:1026:G:H1'	2.45	0.50
1:A:1007:C:C2	1:A:1008:C:C5	3.00	0.50
1:A:1090:U:C2'	1:A:1091:U:H5'	2.41	0.50
1:A:1329:A:P	13:M:28:ALA:HB3	2.52	0.50
1:A:1518:A:H2'	1:A:1519:A:N9	2.25	0.50
2:B:17:PHE:HD1	2:B:18:GLY:N	2.09	0.50
3:C:73:PRO:C	3:C:75:VAL:H	2.15	0.50
13:M:84:ILE:HD13	19:S:66:MET:HB2	1.94	0.50
1:A:57:G:C6	1:A:58:C:C4	2.99	0.50
1:A:384:G:H2'	1:A:385:C:H6	1.76	0.50
1:A:509:A:H5'	4:D:54:TYR:CD2	2.46	0.50
1:A:533:A:C8	1:A:536:C:N4	2.80	0.50
1:A:542:G:O2'	1:A:543:C:H5'	2.12	0.50
1:A:819:A:H5"	1:A:820:U:OP2	2.11	0.50
1:A:948:C:OP1	13:M:109:THR:HB	2.11	0.50
1:A:1206:G:O6	1:A:1207:G:C6	2.64	0.50
1:A:1317:C:C6	14:N:16:PHE:CD2	2.99	0.50
1:A:1371:G:C4	1:A:1372:U:C5	3.00	0.50
3:C:156:ARG:H	3:C:163:ALA:HA	1.77	0.50
4:D:4:TYR:CD2	4:D:5:ILE:N	2.80	0.50
10:J:57:LYS:HG3	10:J:58:ASP:N	2.27	0.50
12:L:6:THR:HG23	12:L:9:GLN:OE1	2.11	0.50
1:A:67:C:O2'	1:A:171:A:H1'	2.12	0.50
1:A:115:G:C2	1:A:313:A:N3	2.80	0.50
1:A:178:C:H2'	1:A:179:A:C8	2.34	0.50
1:A:264:U:O4	1:A:265:G:C5	2.65	0.50
1:A:384:G:H2'	1:A:385:C:C6	2.47	0.50
1:A:448:A:C6	1:A:487:A:C4	2.99	0.50
1:A:452:A:N3	1:A:453:A:N9	2.60	0.50
1:A:568:G:N2	1:A:883:C:C5	2.80	0.50
1:A:662:G:N2	1:A:663:A:C4	2.80	0.50
1:A:720:C:C2	1:A:721:G:N7	2.80	0.50
1:A:796:C:O5'	1:A:796:C:H6	1.94	0.50
1:A:950:U:H3'	13:M:102:ARG:HH22	1.77	0.50
1:A:1306:A:H62	1:A:1331:G:H1'	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1325:C:C2	1:A:1326:C:C5	3.00	0.50
4:D:104:VAL:HG11	4:D:146:ILE:CD1	2.23	0.50
9:I:89:ASN:O	9:I:92:TYR:HB2	2.11	0.50
1:A:53:A:C6	1:A:54:C:C2	3.00	0.50
1:A:227:G:H2'	1:A:228:A:C8	2.47	0.50
1:A:263:A:OP2	20:T:79:ARG:NH1	2.45	0.50
1:A:404:U:C2	1:A:405:U:C5	2.99	0.50
1:A:439:A:C5	1:A:497:A:C2	3.00	0.50
1:A:487:A:C2'	1:A:488:C:H5'	2.42	0.50
1:A:724:G:C2	1:A:725:G:N7	2.80	0.50
1:A:909:A:OP1	12:L:21:LYS:HD3	2.12	0.50
1:A:949:A:H2'	1:A:950:U:H6	1.75	0.50
1:A:949:A:C2	1:A:1233:G:N3	2.80	0.50
1:A:1261:A:H62	1:A:1274:G:H21	1.60	0.50
1:A:1303:C:C4	1:A:1304:G:C5	2.99	0.50
1:A:1400:C:C4'	1:A:1401:G:OP2	2.52	0.50
1:A:1417:G:N2	1:A:1484:C:N4	2.60	0.50
17:Q:40:LYS:HD3	17:Q:42:TYR:OH	2.12	0.50
17:Q:60:ILE:O	17:Q:71:PHE:HD1	1.94	0.50
1:A:142:G:N2	1:A:222:U:C2	2.79	0.50
1:A:219:C:C4	1:A:220:G:N7	2.80	0.50
1:A:282:A:C8	1:A:283:C:C5	3.00	0.50
1:A:485:G:O2'	1:A:486:U:OP2	2.30	0.50
1:A:981:U:N1	1:A:982:U:C5	2.79	0.50
1:A:1030(B):C:C3'	1:A:1030(C):G:C5'	2.87	0.50
1:A:1135:U:H6	1:A:1135:U:O5'	1.95	0.50
1:A:1288:A:N1	1:A:1289:A:C6	2.80	0.50
1:A:1374:A:C5	1:A:1375:A:N7	2.80	0.50
1:A:1451:A:O2'	1:A:1452:C:P	2.70	0.50
10:J:47:PHE:CZ	14:N:37:PHE:CE1	3.00	0.50
10:J:82:ILE:O	10:J:86:MET:HB2	2.11	0.50
17:Q:53:LEU:HD12	17:Q:54:GLY:H	1.77	0.50
20:T:13:LEU:HD12	20:T:13:LEU:O	2.12	0.50
1:A:329:A:C2	1:A:332:G:C8	3.00	0.49
1:A:355:C:C2	1:A:356:A:C8	3.00	0.49
1:A:482:A:N1	1:A:483:C:O2	2.45	0.49
1:A:592:G:C6	1:A:648:A:C6	3.00	0.49
1:A:664:G:P	18:R:64:ARG:HH11	2.35	0.49
1:A:673:G:O3'	6:F:87:ARG:NH2	2.45	0.49
1:A:859:A:N7	1:A:860:A:N7	2.60	0.49
1:A:877:C:O2	8:H:3:THR:HG21	2.11	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:949:A:H2'	1:A:950:U:O5'	2.12	0.49
1:A:958:A:N6	1:A:959:A:N1	2.60	0.49
1:A:1225:A:H5'	13:M:103:THR:HG23	1.93	0.49
1:A:1325:C:C2'	1:A:1326:C:H5'	2.42	0.49
1:A:1402:C:C2	1:A:1403:C:C5	3.00	0.49
1:A:1501:C:C4	1:A:1504:G:C4	3.00	0.49
10:J:71:LEU:HD13	10:J:72:VAL:N	2.27	0.49
16:P:49:LEU:HD12	16:P:50:LYS:H	1.77	0.49
1:A:75:G:C6	1:A:96:G:C6	3.00	0.49
1:A:386:C:O2'	1:A:387:U:H5'	2.10	0.49
1:A:568:G:N2	1:A:883:C:C2	2.80	0.49
1:A:760:G:N2	17:Q:94:ASN:OD1	2.45	0.49
1:A:786:G:C6	1:A:787:A:C6	2.99	0.49
1:A:1011:G:C6	1:A:1012:U:C4	3.00	0.49
1:A:1028:C:C2	1:A:1034:G:N2	2.80	0.49
1:A:1054:C:H3'	1:A:1054:C:H6	1.76	0.49
1:A:1121:U:O2'	1:A:1122:U:H5'	2.11	0.49
1:A:1238:A:N7	1:A:1303:C:H1'	2.27	0.49
1:A:1354:C:O2'	1:A:1355:G:H5'	2.12	0.49
3:C:6:HIS:CD2	3:C:8:ILE:HB	2.46	0.49
7:G:79:ARG:HA	7:G:83:ALA:O	2.12	0.49
13:M:66:LEU:O	13:M:70:LEU:HB2	2.12	0.49
19:S:51:VAL:O	19:S:58:VAL:N	2.45	0.49
1:A:518:C:H5"	1:A:519:C:C6	2.47	0.49
1:A:602:A:C4	1:A:603:U:C6	3.00	0.49
1:A:797:C:O2'	1:A:798:G:C5'	2.60	0.49
1:A:826:C:H5'	8:H:12:ARG:NH2	2.27	0.49
1:A:919:A:C2'	1:A:920:U:H5'	2.42	0.49
1:A:1055:A:O2'	3:C:156:ARG:NH1	2.46	0.49
1:A:1330:U:C5'	13:M:23:TYR:O	2.59	0.49
1:A:1351:U:O2'	1:A:1352:C:H5'	2.12	0.49
3:C:173:VAL:N	3:C:174:PRO:CD	2.75	0.49
7:G:16:LEU:H	7:G:16:LEU:CD2	2.22	0.49
1:A:479:C:O2'	1:A:480:U:H5'	2.12	0.49
1:A:565:U:C5	1:A:566:G:C4	3.00	0.49
1:A:1054:C:C2'	1:A:1055:A:H5"	2.40	0.49
1:A:1060:C:C2	1:A:1198:G:C2	3.00	0.49
1:A:1071:C:H2'	1:A:1072:G:C8	2.47	0.49
1:A:1221:G:O2'	19:S:77:THR:HG21	2.12	0.49
1:A:1402:C:N3	1:A:1403:C:C5	2.81	0.49
6:F:11:ASN:OD1	6:F:13:ASN:N	2.46	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:115:ARG:O	7:G:118:VAL:HB	2.13	0.49
13:M:10:PRO:HB2	13:M:18:ALA:HB1	1.94	0.49
19:S:22:LEU:CD2	19:S:28:LYS:HD2	2.42	0.49
1:A:41:G:C2	1:A:42:G:C5	3.01	0.49
1:A:49:U:H5	1:A:365:U:O4	1.95	0.49
1:A:128:G:O3'	17:Q:3:LYS:NZ	2.44	0.49
1:A:226:G:C5	1:A:227:G:C8	3.00	0.49
1:A:452:A:O2'	1:A:453:A:O4'	2.29	0.49
1:A:502:G:H2'	1:A:503:C:O4'	2.11	0.49
1:A:964:A:O2'	10:J:55:LYS:HE3	2.13	0.49
1:A:1093:A:N3	1:A:1095:U:H5'	2.28	0.49
1:A:1240:U:H5"	1:A:1241:G:C8	2.48	0.49
1:A:1309:G:C6	1:A:1329:A:C2	3.01	0.49
3:C:154:SER:HB3	3:C:197:GLY:N	2.26	0.49
12:L:45:PRO:HB2	12:L:49:ASN:O	2.12	0.49
1:A:311:C:O2'	1:A:312:C:H5'	2.11	0.49
1:A:435:C:N3	1:A:436:C:C5	2.81	0.49
1:A:540:G:H2'	1:A:541:G:C5'	2.43	0.49
1:A:616:G:C2	1:A:625:G:C6	3.01	0.49
1:A:633:G:O6	1:A:634:C:N4	2.46	0.49
1:A:819:A:H4'	1:A:820:U:OP2	2.10	0.49
1:A:892:A:C5	1:A:893:C:C4	3.00	0.49
1:A:926:G:H2'	1:A:1505:G:N3	2.28	0.49
1:A:1083:U:C4	1:A:1084:G:N1	2.81	0.49
1:A:1126:U:HO2'	1:A:1127:G:P	2.35	0.49
1:A:1437:C:H2'	1:A:1438:G:H8	1.78	0.49
1:A:1521:G:C5	1:A:1522:U:C5	3.01	0.49
2:B:30:ARG:HG3	2:B:31:TYR:CD2	2.47	0.49
8:H:11:THR:O	8:H:15:ASN:HB2	2.12	0.49
12:L:84:LEU:O	12:L:100:ILE:HA	2.13	0.49
12:L:85:ILE:HA	12:L:99:HIS:O	2.12	0.49
17:Q:27:PHE:HB2	17:Q:28:PRO:HD2	1.94	0.49
1:A:261:U:C5	20:T:79:ARG:NH1	2.81	0.49
1:A:344:A:H8	1:A:344:A:O5'	1.96	0.49
1:A:403:C:O2'	4:D:122:ARG:NH2	2.45	0.49
1:A:448:A:C5	1:A:487:A:N3	2.81	0.49
1:A:607:A:C2	1:A:608:A:C1'	2.95	0.49
1:A:651:C:N3	1:A:652:U:C4	2.80	0.49
1:A:933:G:OP1	7:G:4:ARG:NE	2.46	0.49
1:A:960:U:N3	1:A:1225:A:C5	2.81	0.49
1:A:969:A:H2'	1:A:970:C:C5'	2.42	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:989:C:O2'	1:A:990:C:H5'	2.12	0.49
1:A:1347:G:H8	9:I:107:ARG:HB3	1.70	0.49
4:D:125:HIS:C	4:D:126:ILE:HD13	2.33	0.49
4:D:134:ASP:O	4:D:136:PRO:HD3	2.13	0.49
8:H:4:ASP:O	8:H:7:ALA:HB3	2.13	0.49
8:H:75:ARG:HA	8:H:76:PRO:HD3	1.52	0.49
19:S:13:ASP:O	19:S:17:GLU:HG2	2.12	0.49
20:T:54:LYS:HG3	20:T:100:ILE:HD11	1.95	0.49
20:T:67:ALA:HB2	20:T:77:ALA:HB2	1.94	0.49
1:A:57:G:C4	1:A:58:C:C6	3.00	0.49
1:A:176:C:O2'	1:A:177:C:H5'	2.13	0.49
1:A:236:G:C5	1:A:237:C:C5	3.00	0.49
1:A:556:C:C2'	1:A:557:G:C5'	2.86	0.49
1:A:655:A:C2	1:A:656:C:C2	3.00	0.49
1:A:722:A:C4	1:A:724:G:C8	3.00	0.49
1:A:766:A:C8	1:A:814:A:C6	3.01	0.49
1:A:919:A:H2'	1:A:920:U:H5'	1.95	0.49
1:A:949:A:N1	1:A:1233:G:C4	2.81	0.49
1:A:949:A:C8	1:A:950:U:C5	3.00	0.49
1:A:1305:G:C8	1:A:1305:G:OP2	2.66	0.49
1:A:1305:G:O2'	1:A:1306:A:C8	2.64	0.49
8:H:6:ILE:HD11	8:H:31:PHE:CE2	2.47	0.49
8:H:97:VAL:HG13	8:H:98:LYS:N	2.28	0.49
9:I:79:LEU:O	9:I:82:ALA:HB3	2.12	0.49
15:O:75:PRO:HG2	15:O:76:GLU:N	2.27	0.49
1:A:54:C:O2	1:A:358:U:N3	2.46	0.49
1:A:110:C:H2'	1:A:111:G:O4'	2.13	0.49
1:A:131:C:H2'	1:A:132:C:C6	2.48	0.49
1:A:176:C:C2	1:A:177:C:C6	3.01	0.49
1:A:246:A:C5	1:A:279:A:C6	3.00	0.49
1:A:293:G:N3	1:A:294:U:C6	2.81	0.49
1:A:344:A:O5'	1:A:344:A:C8	2.65	0.49
1:A:520:A:H2'	1:A:521:G:O4'	2.13	0.49
1:A:521:G:O2'	1:A:522:C:H5'	2.13	0.49
1:A:642:A:C6	1:A:643:C:N4	2.79	0.49
1:A:692:U:O2	1:A:694:A:H5"	2.13	0.49
1:A:827:U:H5"	1:A:828:A:OP2	2.13	0.49
1:A:895:G:H2'	1:A:896:C:C6	2.45	0.49
1:A:1526:G:H8	1:A:1526:G:O5'	1.96	0.49
2:B:31:TYR:CD2	2:B:31:TYR:N	2.79	0.49
2:B:144:ARG:O	2:B:147:LYS:HB2	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:67:ILE:HG22	4:D:68:TYR:CD1	2.47	0.49
4:D:170:VAL:CG2	4:D:176:LEU:HD22	2.40	0.49
1:A:134:A:C5	1:A:135:C:C4	3.00	0.49
1:A:274:A:O2'	1:A:275:G:H8	1.95	0.49
1:A:277:C:H5'	17:Q:68:ARG:HH12	1.78	0.49
1:A:400:C:O2'	1:A:401:C:H5'	2.13	0.49
1:A:410:G:H2'	1:A:429:U:C5	2.47	0.49
1:A:440:A:H5'	1:A:442:C:OP2	2.13	0.49
1:A:484:G:O4'	1:A:486:U:H6	1.96	0.49
1:A:509:A:C8	1:A:509:A:C4'	2.96	0.49
1:A:571:U:C3'	1:A:572:A:C5'	2.90	0.49
1:A:650:G:N1	1:A:651:C:C5	2.80	0.49
1:A:656:C:H6	1:A:656:C:C3'	2.19	0.49
1:A:662:G:H2'	1:A:663:A:C8	2.46	0.49
1:A:724:G:C2	1:A:725:G:C5	3.01	0.49
1:A:741:G:C2'	1:A:742:G:H5'	2.43	0.49
1:A:947:G:C6	1:A:948:C:N4	2.81	0.49
2:B:74:LYS:NZ	2:B:76:GLN:HG2	2.27	0.49
11:K:75:TYR:N	11:K:75:TYR:CD1	2.81	0.49
17:Q:60:ILE:HD13	17:Q:60:ILE:C	2.33	0.49
20:T:18:GLN:O	20:T:21:LYS:HB2	2.13	0.49
1:A:17:U:H2'	1:A:18:C:O4'	2.13	0.48
1:A:195:A:C2	1:A:222:U:O2	2.63	0.48
1:A:259:G:C2'	1:A:260:G:H8	2.22	0.48
1:A:370:C:C2'	1:A:371:G:C5'	2.91	0.48
1:A:487:A:C2'	1:A:488:C:C5'	2.91	0.48
1:A:582:U:C2	1:A:760:G:C6	3.01	0.48
1:A:738:C:H2'	1:A:739:C:H6	1.78	0.48
1:A:914:A:C6	1:A:915:A:C5	3.01	0.48
1:A:1159:U:H5	1:A:1182:G:H2'	1.78	0.48
1:A:1202:G:C2'	1:A:1203:C:C5'	2.89	0.48
1:A:1212:U:O4'	1:A:1212:U:OP2	2.30	0.48
1:A:1316:G:N2	1:A:1318:A:C8	2.81	0.48
1:A:1488:G:C2	1:A:1489:G:C5	3.01	0.48
1:A:1497:G:C4	1:A:1498:U:C5	3.01	0.48
2:B:145:LEU:C	2:B:147:LYS:H	2.16	0.48
10:J:47:PHE:HB2	10:J:63:PHE:HB2	1.95	0.48
1:A:282:A:N7	1:A:283:C:C5	2.80	0.48
1:A:387:U:H3'	1:A:387:U:H6	1.78	0.48
1:A:394:G:N3	1:A:395:C:C6	2.81	0.48
1:A:533:A:O2'	1:A:534:U:P	2.71	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:664:G:H2'	1:A:666:G:OP1	2.13	0.48
1:A:745:C:H2'	1:A:745:C:O2	2.12	0.48
1:A:927:G:H4'	1:A:1503:A:N7	2.28	0.48
1:A:965:A:O2'	1:A:966:G:OP2	2.26	0.48
1:A:1118:C:H2'	1:A:1119:C:O4'	2.13	0.48
1:A:1353:G:N2	1:A:1354:C:C2	2.81	0.48
1:A:1401:G:O6	1:A:1402:C:C4	2.66	0.48
1:A:1454:G:H2'	1:A:1455:G:H8	1.78	0.48
1:A:1500:A:OP2	1:A:1505:G:OP2	2.31	0.48
3:C:70:VAL:C	3:C:106:VAL:HG23	2.32	0.48
4:D:74:GLN:O	4:D:77:ASN:N	2.47	0.48
8:H:17:THR:O	8:H:20:TYR:N	2.42	0.48
12:L:42:THR:HA	12:L:53:ARG:O	2.13	0.48
13:M:70:LEU:O	13:M:74:VAL:HG23	2.12	0.48
16:P:67:THR:HB	16:P:70:ALA:HB2	1.94	0.48
1:A:7:G:N1	1:A:298:A:N1	2.61	0.48
1:A:132:C:H2'	1:A:133:U:O4'	2.13	0.48
1:A:180:U:O2'	1:A:181:G:H5'	2.13	0.48
1:A:233:C:H2'	1:A:234:C:C5'	2.44	0.48
1:A:501:C:O3'	12:L:118:SER:HB2	2.13	0.48
1:A:625:G:C4	1:A:626:U:C6	3.00	0.48
1:A:637:G:H2'	1:A:638:G:H8	1.79	0.48
1:A:721:G:OP2	18:R:53:ARG:HG3	2.12	0.48
1:A:786:G:N1	1:A:787:A:C4	2.81	0.48
1:A:875:C:H1'	8:H:15:ASN:HD21	1.77	0.48
1:A:954:G:C6	1:A:955:U:C4	3.01	0.48
1:A:1030(C):G:H2'	1:A:1030(D):A:C8	2.48	0.48
1:A:1213:A:C2	1:A:1215:G:H1'	2.47	0.48
1:A:1447:G:C5	1:A:1448:C:C5	3.00	0.48
1:A:1495:U:H2'	1:A:1496:C:C6	2.48	0.48
1:A:1496:C:H2'	1:A:1497:G:O4'	2.13	0.48
2:B:30:ARG:C	2:B:31:TYR:HD2	2.17	0.48
2:B:184:VAL:HG23	2:B:198:ASP:OD2	2.13	0.48
3:C:66:VAL:O	3:C:101:LEU:HA	2.13	0.48
5:E:12:LEU:HD13	5:E:12:LEU:C	2.33	0.48
7:G:30:ILE:HG21	7:G:42:ILE:HD12	1.95	0.48
11:K:55:LYS:O	11:K:60:ALA:HB3	2.12	0.48
15:O:2:PRO:HA	15:O:38:ARG:HH12	1.78	0.48
20:T:56:MET:CE	20:T:85:MET:HA	2.43	0.48
1:A:109:A:C6	1:A:326:G:C6	3.01	0.48
1:A:175:C:C2	1:A:176:C:C6	3.01	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:488:C:O5'	1:A:488:C:H6	1.96	0.48
1:A:558:G:H2'	1:A:559:A:C2	2.45	0.48
1:A:663:A:C2	1:A:664:G:C5	3.00	0.48
1:A:683:G:C6	1:A:684:A:C5	3.01	0.48
1:A:1040:U:H2'	1:A:1041:A:C8	2.48	0.48
1:A:1073:U:O2'	1:A:1074:G:H5'	2.14	0.48
1:A:1089:G:C6	1:A:1090:U:C4	3.01	0.48
1:A:1326:C:C2	1:A:1327:C:C5	3.01	0.48
1:A:1367:C:H4'	10:J:48:THR:HG21	1.93	0.48
2:B:28:PHE:CD2	2:B:190:THR:HA	2.48	0.48
3:C:40:ARG:HE	3:C:55:VAL:HB	1.78	0.48
8:H:20:TYR:HA	8:H:65:TYR:OH	2.13	0.48
8:H:51:VAL:CG1	8:H:52:ASP:N	2.75	0.48
16:P:6:LEU:HD12	16:P:6:LEU:N	2.28	0.48
18:R:35:ARG:O	18:R:37:VAL:HG23	2.14	0.48
1:A:300:A:C8	1:A:300:A:H3'	2.49	0.48
1:A:392:G:C6	1:A:393:A:C5	3.01	0.48
1:A:460:A:N7	1:A:462:G:C6	2.81	0.48
1:A:900:A:N6	1:A:901:A:C6	2.82	0.48
1:A:900:A:N6	1:A:901:A:N1	2.61	0.48
1:A:1108:G:N7	1:A:1109:C:C5	2.81	0.48
1:A:1179:A:H5"	9:I:102:LEU:O	2.13	0.48
8:H:111:ILE:HA	8:H:119:LEU:O	2.12	0.48
19:S:40:ILE:HD11	19:S:74:PHE:HE1	1.78	0.48
1:A:92:C:C2	1:A:93:G:C8	3.01	0.48
1:A:374:A:N1	1:A:391:G:O4'	2.46	0.48
1:A:428:G:C4	1:A:430:A:C5	3.01	0.48
1:A:642:A:N3	1:A:643:C:C6	2.81	0.48
1:A:667:G:C2	1:A:740:U:O2	2.66	0.48
1:A:712:A:H2'	1:A:713:G:O4'	2.14	0.48
1:A:811:C:H4'	1:A:900:A:N6	2.29	0.48
1:A:872:A:C4	1:A:874:G:N7	2.81	0.48
1:A:992:U:O2'	1:A:993:G:OP2	2.31	0.48
1:A:1151:A:C2'	1:A:1152:A:C8	2.97	0.48
1:A:1164:G:C6	1:A:1173:G:C6	3.02	0.48
1:A:1217:C:C5	1:A:1218:C:C5	3.02	0.48
1:A:1240:U:OP1	7:G:119:ARG:NH2	2.47	0.48
1:A:1475:G:O2'	1:A:1476:G:H5'	2.12	0.48
2:B:115:LEU:HD23	2:B:153:ARG:HE	1.77	0.48
6:F:35:ALA:HB1	6:F:65:VAL:HB	1.96	0.48
7:G:113:GLU:HB2	7:G:119:ARG:HG2	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:S:6:LYS:HD2	19:S:7:LYS:H	1.76	0.48
1:A:8:A:H4'	5:E:102:ALA:HA	1.96	0.48
1:A:253:U:C2	1:A:254:G:C8	3.02	0.48
1:A:309:G:H2'	1:A:310:G:H8	1.79	0.48
1:A:579:G:N3	1:A:763:G:C2	2.81	0.48
1:A:925:G:N1	1:A:927:G:C5	2.82	0.48
1:A:986:A:C6	1:A:1220:G:C6	3.01	0.48
1:A:1061:G:H2'	1:A:1062:U:C5'	2.44	0.48
1:A:1162:C:N3	1:A:1175:G:C2	2.81	0.48
1:A:1258:G:N2	1:A:1259:C:C2	2.82	0.48
1:A:1475:G:H2'	1:A:1476:G:C8	2.45	0.48
7:G:40:ALA:CB	9:I:41:VAL:HG21	2.42	0.48
12:L:35:GLY:O	12:L:83:VAL:HG12	2.12	0.48
1:A:362:G:OP1	12:L:61:THR:HG23	2.13	0.48
1:A:380:G:C2	1:A:384:G:C6	3.02	0.48
1:A:571:U:H3'	1:A:572:A:H5'	1.95	0.48
1:A:760:G:H2'	1:A:761:G:H5'	1.95	0.48
1:A:818:G:H2'	1:A:819:A:H5"	1.95	0.48
1:A:910:C:O2'	1:A:911:U:H5'	2.14	0.48
1:A:993:G:H4'	1:A:994:A:OP2	2.14	0.48
1:A:1105:A:HO2'	1:A:1106:G:H5'	1.79	0.48
1:A:1151:A:H5"	10:J:42:THR:OG1	2.14	0.48
1:A:1191:A:H2'	1:A:1192:C:H6	1.78	0.48
1:A:1290:G:C5	1:A:1291:G:C8	3.01	0.48
1:A:1388:C:H2'	1:A:1389:C:H6	1.79	0.48
1:A:1460:A:C2	1:A:1461:G:H1'	2.48	0.48
1:A:1480:G:C6	1:A:1481:U:C4	3.02	0.48
1:A:1482:G:HO2'	1:A:1483:A:H8	1.58	0.48
3:C:23:TYR:CD2	3:C:24:ALA:N	2.82	0.48
8:H:104:ARG:O	8:H:105:ARG:C	2.52	0.48
13:M:74:VAL:O	13:M:77:ASN:N	2.47	0.48
13:M:117:VAL:HG12	13:M:118:ALA:H	1.78	0.48
1:A:4:U:H4'	1:A:5:U:OP2	2.13	0.48
1:A:35:G:C6	1:A:550:G:N1	2.82	0.48
1:A:262:A:OP2	20:T:73:HIS:CG	2.67	0.48
1:A:390:C:H2'	1:A:391:G:C8	2.49	0.48
1:A:513:C:H2'	1:A:514:C:C6	2.48	0.48
1:A:551:U:C2	1:A:552:U:C6	3.02	0.48
1:A:577:G:C2	1:A:578:C:C6	3.02	0.48
1:A:652:U:O2'	1:A:653:A:H5"	2.13	0.48
1:A:676:A:C5	1:A:677:U:C4	3.02	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:864:A:C2	1:A:865:A:C2	3.01	0.48
1:A:1084:G:C5	1:A:1085:U:C4	3.02	0.48
1:A:1212:U:O2'	1:A:1213:A:O5'	2.32	0.48
1:A:1418:A:H2'	1:A:1419:G:O4'	2.14	0.48
1:A:1449:C:C2'	1:A:1450:U:H5'	2.44	0.48
2:B:69:LEU:HD23	2:B:91:PRO:O	2.14	0.48
4:D:39:PRO:HG2	4:D:44:GLY:HA2	1.96	0.48
4:D:59:ARG:HH11	4:D:59:ARG:CG	2.26	0.48
4:D:90:GLY:O	4:D:94:LEU:HD12	2.13	0.48
4:D:173:TRP:O	4:D:186:LEU:HB2	2.13	0.48
17:Q:40:LYS:HD3	17:Q:42:TYR:CZ	2.49	0.48
18:R:39:VAL:CG1	18:R:40:LEU:H	2.27	0.48
1:A:9:G:C6	1:A:26:A:C6	3.02	0.48
1:A:98:U:C2	1:A:99:C:C5	3.02	0.48
1:A:184:G:C4'	1:A:224:C:H4'	2.44	0.48
1:A:376:G:C4	1:A:389:A:C2	3.02	0.48
1:A:406:G:C5	1:A:496:A:N7	2.82	0.48
1:A:551:U:N3	1:A:552:U:C5	2.81	0.48
1:A:607:A:H2'	1:A:608:A:C5'	2.43	0.48
1:A:664:G:H22	1:A:741:G:H1	1.60	0.48
1:A:781:A:N7	1:A:802:A:C2	2.82	0.48
1:A:1278:U:OP2	1:A:1278:U:C4	2.67	0.48
1:A:1299:A:C4	1:A:1301:U:C2	3.02	0.48
3:C:130:VAL:HG11	3:C:157:ILE:HG23	1.96	0.48
4:D:176:LEU:HA	4:D:183:GLY:HA2	1.96	0.48
19:S:15:LEU:HD12	19:S:16:LEU:N	2.28	0.48
1:A:92:C:O2'	1:A:93:G:C5'	2.62	0.47
1:A:148:G:N3	1:A:149:A:C8	2.82	0.47
1:A:190(B):C:H2'	1:A:190(C):C:O4'	2.13	0.47
1:A:397:A:C6	1:A:548:G:N7	2.82	0.47
1:A:423:G:N2	1:A:424:G:C5	2.81	0.47
1:A:433:C:H2'	1:A:434:U:H6	1.78	0.47
1:A:448:A:C6	1:A:487:A:N3	2.82	0.47
1:A:503:C:O2	1:A:510:A:H2	1.95	0.47
1:A:652:U:C5	1:A:752:G:C4	3.01	0.47
1:A:767:A:C2'	1:A:768:A:H8	2.26	0.47
1:A:825:G:C4	1:A:826:C:C6	3.01	0.47
1:A:864:A:H3'	1:A:865:A:C8	2.49	0.47
1:A:898:G:C6	1:A:902:G:O6	2.67	0.47
1:A:971:G:H5"	1:A:972:C:H5"	1.95	0.47
1:A:1067:A:H1'	1:A:1068:G:O4'	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1070:U:O5'	5:E:25:ARG:NH1	2.48	0.47
1:A:1225:A:C5'	1:A:1226:C:OP2	2.62	0.47
1:A:1245:A:C6	1:A:1293:G:C6	3.02	0.47
1:A:1309:G:H2'	1:A:1310:G:O4'	2.15	0.47
1:A:1324:A:N3	1:A:1325:C:C6	2.82	0.47
1:A:1401:G:C2	1:A:1402:C:H1'	2.48	0.47
5:E:32:VAL:HG12	5:E:33:VAL:H	1.76	0.47
16:P:39:TYR:CZ	16:P:41:PRO:HA	2.49	0.47
20:T:22:ARG:HA	20:T:25:ARG:HB3	1.96	0.47
1:A:287:U:H2'	1:A:288:A:C8	2.48	0.47
1:A:303:A:N6	1:A:304:U:C4	2.83	0.47
1:A:371:G:C2	1:A:372:C:C5	3.03	0.47
1:A:390:C:O3'	16:P:28:ARG:NH1	2.44	0.47
1:A:443:C:C2	1:A:444:C:C5	3.02	0.47
1:A:512:U:H2'	1:A:513:C:C6	2.49	0.47
1:A:542:G:H2'	1:A:543:C:H6	1.78	0.47
1:A:1183:A:C2'	1:A:1184:G:OP1	2.63	0.47
1:A:1189:C:C5'	3:C:5:ILE:HD13	2.28	0.47
1:A:1206:G:C6	1:A:1207:G:C6	3.02	0.47
1:A:1217:C:C5	1:A:1218:C:H5	2.32	0.47
1:A:1251:A:O2'	1:A:1369:C:O2'	2.25	0.47
1:A:1358:U:H3'	1:A:1359:C:H6	1.76	0.47
1:A:1401:G:H5"	1:A:1402:C:OP2	2.14	0.47
2:B:19:HIS:NE2	2:B:206:ASP:HB3	2.26	0.47
5:E:102:ALA:HB2	5:E:120:THR:OG1	2.14	0.47
13:M:50:GLU:O	13:M:53:VAL:HB	2.14	0.47
17:Q:53:LEU:HD12	17:Q:54:GLY:N	2.29	0.47
1:A:15:G:N3	1:A:16:A:C8	2.82	0.47
1:A:42:G:O2'	1:A:43:C:H5'	2.15	0.47
1:A:121:C:C5'	1:A:122:G:OP1	2.61	0.47
1:A:130:A:C2	1:A:232:G:N2	2.82	0.47
1:A:136:C:C2	1:A:137:C:C5	3.03	0.47
1:A:175:C:H2'	1:A:176:C:H6	1.79	0.47
1:A:392:G:N1	1:A:393:A:C5	2.83	0.47
1:A:414:A:OP2	1:A:428:G:N2	2.48	0.47
1:A:961:U:C2	1:A:983:A:C2	3.02	0.47
1:A:994:A:C2	1:A:995:C:N1	2.82	0.47
1:A:1007:C:O2'	1:A:1008:C:H5'	2.14	0.47
1:A:1231:G:C5	1:A:1232:U:C5	3.01	0.47
1:A:1306:A:C8	1:A:1332:A:C5	3.02	0.47
1:A:1477:C:H2'	1:A:1478:C:H6	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:77:ALA:O	2:B:81:VAL:HG23	2.14	0.47
3:C:59:ARG:HD3	3:C:64:VAL:HG22	1.96	0.47
3:C:141:VAL:O	3:C:146:ALA:HB3	2.14	0.47
7:G:30:ILE:H	7:G:30:ILE:HD12	1.80	0.47
11:K:115:PRO:C	11:K:117:ASN:H	2.18	0.47
16:P:4:ILE:HG12	16:P:21:VAL:CG2	2.41	0.47
18:R:29:PHE:HE1	18:R:31:LEU:CD2	2.24	0.47
1:A:245:C:O2	1:A:283:C:N3	2.47	0.47
1:A:408:A:H2'	1:A:409:G:C5'	2.45	0.47
1:A:450:G:OP1	1:A:452:A:OP2	2.32	0.47
1:A:558:G:C8	1:A:559:A:C2	3.03	0.47
1:A:614:A:C6	1:A:627:G:C6	3.02	0.47
1:A:718:G:C8	11:K:116:HIS:HB3	2.48	0.47
1:A:874:G:C6	1:A:875:C:C4	3.02	0.47
1:A:940:C:HO2'	1:A:941:G:H5'	1.73	0.47
1:A:1161:C:H2'	1:A:1162:C:H6	1.79	0.47
1:A:1221:G:O2'	19:S:77:THR:CG2	2.62	0.47
1:A:1500:A:C2	1:A:1501:C:C2	3.03	0.47
1:A:1521:G:O2'	1:A:1522:U:H5'	2.14	0.47
2:B:10:LEU:HB2	2:B:12:GLU:HG3	1.97	0.47
2:B:10:LEU:HD12	2:B:10:LEU:H	1.79	0.47
2:B:170:GLU:O	2:B:173:ALA:N	2.48	0.47
3:C:130:VAL:CG2	3:C:157:ILE:HG23	2.44	0.47
7:G:13:GLN:HB2	9:I:42:ARG:NH2	2.30	0.47
8:H:13:ILE:O	8:H:17:THR:CG2	2.62	0.47
13:M:84:ILE:C	13:M:86:CYS:H	2.18	0.47
13:M:107:ALA:O	13:M:109:THR:N	2.47	0.47
15:O:11:VAL:HG21	15:O:34:LEU:HD12	1.96	0.47
1:A:226:G:C4	1:A:227:G:C8	3.03	0.47
1:A:282:A:H3'	1:A:283:C:C6	2.49	0.47
1:A:402:G:C5	1:A:403:C:H5	2.27	0.47
1:A:406:G:C6	1:A:496:A:C8	3.03	0.47
1:A:424:G:O2'	1:A:425:G:H5'	2.14	0.47
1:A:460:A:C4	1:A:462:G:N7	2.82	0.47
1:A:499:A:H4'	1:A:500:G:H5'	1.95	0.47
1:A:527:G:N2	1:A:528:C:N1	2.62	0.47
1:A:557:G:C6	1:A:558:G:N1	2.82	0.47
1:A:849:C:C2	1:A:850:U:C5	3.03	0.47
1:A:872:A:N1	1:A:874:G:C4	2.82	0.47
1:A:953:G:C2	1:A:1229:A:C4	3.02	0.47
1:A:985:C:H3'	1:A:985:C:C6	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1284:C:C4	1:A:1285:A:C6	3.02	0.47
4:D:200:GLU:HG2	4:D:201:GLN:N	2.30	0.47
12:L:10:LEU:HD22	12:L:15:ARG:HD3	1.95	0.47
12:L:83:VAL:CG2	12:L:84:LEU:H	2.23	0.47
21:V:24:ARG:O	21:V:25:LYS:HB2	2.14	0.47
1:A:38:G:H22	1:A:397:A:H5"	1.79	0.47
1:A:39:G:C5	1:A:40:C:C5	3.03	0.47
1:A:130:A:H5"	1:A:190(F):G:H2'	1.95	0.47
1:A:336:C:H2'	1:A:337:C:H6	1.80	0.47
1:A:366:C:O2'	1:A:394:G:N2	2.46	0.47
1:A:390:C:H2'	1:A:391:G:H8	1.78	0.47
1:A:408:A:C2	1:A:409:G:C4	3.03	0.47
1:A:570:G:C6	1:A:571:U:O4	2.68	0.47
1:A:579:G:C8	1:A:580:U:H5	2.32	0.47
1:A:892:A:N6	1:A:893:C:N4	2.63	0.47
1:A:918:A:H2'	1:A:919:A:H8	1.79	0.47
1:A:959:A:C3'	1:A:960:U:H5"	2.42	0.47
1:A:1004:A:C5'	1:A:1025:U:O2	2.61	0.47
1:A:1085:U:O2'	1:A:1086:U:OP1	2.26	0.47
1:A:1173:G:OP1	7:G:5:ARG:NH2	2.47	0.47
1:A:1220:G:H2'	1:A:1221:G:C8	2.48	0.47
1:A:1402:C:H2'	1:A:1403:C:O4'	2.15	0.47
3:C:22:TRP:HA	10:J:93:GLY:HA2	1.97	0.47
9:I:114:TYR:CE1	10:J:59:SER:O	2.67	0.47
12:L:75:HIS:HD2	12:L:77:LEU:N	1.99	0.47
1:A:37:U:C2'	1:A:38:G:H5'	2.44	0.47
1:A:101:A:N1	1:A:102:G:C5	2.83	0.47
1:A:181:G:C2	1:A:195:A:C8	3.03	0.47
1:A:197:A:H4'	1:A:198:G:O5'	2.14	0.47
1:A:339:C:H2'	1:A:340:U:C6	2.50	0.47
1:A:394:G:C5	1:A:395:C:C5	3.02	0.47
1:A:400:C:H2'	1:A:401:C:C6	2.41	0.47
1:A:448:A:N7	1:A:487:A:C6	2.83	0.47
1:A:515:G:O2'	1:A:516:U:H5'	2.15	0.47
1:A:621:A:C6	1:A:622:A:C5	3.03	0.47
1:A:688:G:C4	1:A:700:G:N2	2.83	0.47
1:A:752:G:O2'	1:A:753:A:P	2.72	0.47
1:A:767:A:N6	1:A:768:A:C6	2.83	0.47
1:A:778:G:C5	1:A:779:C:C5	3.02	0.47
1:A:793:U:O4	1:A:1517:G:H8	1.98	0.47
1:A:794:A:C6	1:A:795:C:C4	3.02	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:885:G:N3	1:A:886:G:C8	2.82	0.47
1:A:890:G:O2'	1:A:891:U:OP2	2.32	0.47
1:A:1107:C:N4	1:A:1108:G:C8	2.83	0.47
1:A:1255:G:H2'	1:A:1279:A:N6	2.28	0.47
1:A:1301:U:C5	1:A:1303:C:C5	3.02	0.47
1:A:1309:G:P	13:M:88:ARG:NH2	2.84	0.47
1:A:1319:A:C8	1:A:1323:G:C5	3.02	0.47
1:A:1390:U:H2'	1:A:1391:U:C6	2.50	0.47
1:A:1401:G:C4	1:A:1402:C:C6	3.01	0.47
2:B:22:LYS:HD2	2:B:40:HIS:CE1	2.49	0.47
3:C:120:VAL:O	3:C:123:GLN:N	2.47	0.47
4:D:65:ARG:HH21	4:D:71:SER:HA	1.79	0.47
5:E:32:VAL:CG1	5:E:33:VAL:N	2.76	0.47
5:E:87:SER:HB3	5:E:125:SER:O	2.15	0.47
5:E:128:PRO:O	5:E:129:ILE:C	2.53	0.47
8:H:26:VAL:HG13	8:H:26:VAL:O	2.14	0.47
9:I:13:ALA:HB2	9:I:68:GLY:HA3	1.97	0.47
9:I:24:GLY:HA2	9:I:59:PHE:O	2.15	0.47
10:J:40:LEU:HG	10:J:69:ASN:HB3	1.97	0.47
13:M:81:LEU:H	13:M:81:LEU:HD22	1.80	0.47
14:N:13:THR:HG22	14:N:14:PRO:HD2	1.96	0.47
16:P:53:VAL:HG23	16:P:54:GLU:N	2.29	0.47
17:Q:9:VAL:O	17:Q:21:VAL:HA	2.15	0.47
1:A:13:U:O2	1:A:914:A:H3'	2.14	0.47
1:A:604:G:C5	1:A:605:U:C5	3.03	0.47
1:A:725:G:C4	1:A:726:C:C5	3.03	0.47
1:A:748:C:H1'	1:A:749:C:H5	1.80	0.47
1:A:973:G:C2'	1:A:974:A:OP1	2.63	0.47
1:A:993:G:O2'	1:A:994:A:P	2.73	0.47
1:A:1210:C:C4'	1:A:1214:C:C4	2.98	0.47
1:A:1319:A:C8	1:A:1323:G:C6	3.03	0.47
3:C:29:TYR:CZ	14:N:54:PRO:HG2	2.50	0.47
5:E:51:VAL:HB	5:E:52:PRO:HD3	1.95	0.47
10:J:18:ALA:HB1	10:J:22:LYS:NZ	2.30	0.47
13:M:59:TYR:CE1	13:M:63:THR:HG21	2.49	0.47
16:P:5:ARG:HH11	16:P:5:ARG:HG3	1.80	0.47
1:A:41:G:N3	1:A:42:G:C8	2.83	0.47
1:A:42:G:C6	1:A:43:C:N4	2.83	0.47
1:A:175:C:N3	1:A:176:C:C5	2.83	0.47
1:A:414:A:N3	1:A:415:A:C8	2.82	0.47
1:A:460:A:C5	1:A:462:G:C6	3.03	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:545:C:HO2'	1:A:546:G:H5'	1.79	0.47
1:A:560:U:O4'	1:A:566:G:N2	2.48	0.47
1:A:903:G:H2'	1:A:904:C:C6	2.50	0.47
1:A:946:A:O2'	1:A:1333:A:H1'	2.15	0.47
1:A:1003:G:C6	1:A:1003(A):G:C5	3.02	0.47
1:A:1064:G:O2'	1:A:1190:G:N2	2.48	0.47
1:A:1116:C:O2'	9:I:108:VAL:HG21	2.14	0.47
1:A:1225:A:C4'	1:A:1226:C:OP2	2.62	0.47
1:A:1291:G:C2	1:A:1292:U:C5	3.02	0.47
1:A:1361(A):C:HO2'	1:A:1362:C:H6	1.62	0.47
1:A:1441:G:H5"	1:A:1442:G:C8	2.50	0.47
8:H:44:PHE:HE1	8:H:137:VAL:HG12	1.77	0.47
13:M:49:THR:HB	13:M:52:GLU:CG	2.42	0.47
1:A:329:A:C2	1:A:332:G:N9	2.83	0.47
1:A:490:G:N3	1:A:491:G:C8	2.83	0.47
1:A:525:C:H2'	1:A:526:C:C6	2.50	0.47
1:A:531:U:C5'	1:A:532:A:OP1	2.58	0.47
1:A:575:G:O2'	1:A:576:G:P	2.73	0.47
1:A:662:G:C2	1:A:663:A:N7	2.83	0.47
1:A:1053:G:H2'	1:A:1199:U:H5	1.80	0.47
1:A:1191:A:H2'	1:A:1192:C:C6	2.49	0.47
1:A:149:A:C2	1:A:150:C:N3	2.84	0.46
1:A:166:G:C5	1:A:167:G:N7	2.83	0.46
1:A:437:U:O2'	4:D:123:HIS:CD2	2.67	0.46
1:A:506:G:C5	1:A:507:C:C4	3.02	0.46
1:A:646:U:H2'	1:A:647:C:C6	2.50	0.46
1:A:735:C:O2'	1:A:736:C:H5'	2.15	0.46
1:A:815:A:H5"	1:A:817:C:H41	1.78	0.46
1:A:949:A:C2'	1:A:950:U:O5'	2.62	0.46
1:A:1053:G:N7	1:A:1199:U:C2'	2.79	0.46
1:A:1210:C:H4'	1:A:1214:C:C4	2.49	0.46
1:A:1314:C:H2'	1:A:1315:U:C6	2.49	0.46
1:A:1526:G:C5	1:A:1527:C:C5	3.04	0.46
3:C:34:LEU:HD23	3:C:34:LEU:O	2.15	0.46
4:D:88:VAL:O	4:D:90:GLY:N	2.48	0.46
4:D:103:ASN:O	4:D:106:TYR:N	2.48	0.46
8:H:6:ILE:O	8:H:9:MET:HB3	2.15	0.46
20:T:28:ALA:O	20:T:32:ALA:HB2	2.15	0.46
1:A:44:G:OP2	16:P:12:LYS:HB2	2.16	0.46
1:A:77:G:C2'	1:A:78:G:H5'	2.45	0.46
1:A:129(A):G:C2	1:A:190(E):U:H5'	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:166:G:O2'	1:A:167:G:H5'	2.15	0.46
1:A:299:G:H2'	1:A:300:A:C8	2.50	0.46
1:A:318:G:C4	1:A:319:G:C8	3.03	0.46
1:A:581:G:H3'	1:A:758:G:O6	2.15	0.46
1:A:592:G:O2'	1:A:593:G:H5'	2.14	0.46
1:A:866:C:H2'	1:A:867:G:C4'	2.45	0.46
1:A:1087:G:C6	1:A:1099:G:C6	3.03	0.46
1:A:1258:G:C2	1:A:1259:C:C2	3.04	0.46
1:A:1378:C:N3	1:A:1379:G:H1'	2.29	0.46
1:A:1421:G:C6	1:A:1422:G:C5	3.03	0.46
1:A:1454:G:H2'	1:A:1455:G:O5'	2.16	0.46
8:H:9:MET:HG2	8:H:13:ILE:CD1	2.45	0.46
8:H:16:ALA:O	8:H:19:VAL:HG22	2.15	0.46
8:H:17:THR:HA	8:H:65:TYR:OH	2.14	0.46
17:Q:61:GLU:HA	17:Q:71:PHE:CE1	2.50	0.46
20:T:72:LEU:HD23	20:T:72:LEU:HA	1.52	0.46
1:A:382:A:O2'	1:A:383:A:H5'	2.16	0.46
1:A:463:A:N7	1:A:474:G:C8	2.82	0.46
1:A:490:G:C4	1:A:491:G:N7	2.82	0.46
1:A:533:A:N7	1:A:536:C:N4	2.63	0.46
1:A:545:C:O2	1:A:545:C:H2'	2.14	0.46
1:A:614:A:C6	1:A:627:G:N1	2.83	0.46
1:A:945:G:C2	1:A:946:A:C8	3.03	0.46
1:A:950:U:H3'	13:M:102:ARG:NH2	2.30	0.46
1:A:1130:A:H62	1:A:1144:G:N2	2.06	0.46
1:A:1350:A:N1	1:A:1351:U:N3	2.63	0.46
1:A:1401:G:C2	1:A:1402:C:C1'	2.98	0.46
2:B:69:LEU:HD23	2:B:70:PHE:N	2.29	0.46
2:B:112:VAL:O	2:B:115:LEU:N	2.48	0.46
8:H:19:VAL:O	8:H:20:TYR:HB2	2.16	0.46
8:H:104:ARG:O	8:H:106:GLY:N	2.49	0.46
9:I:73:GLN:O	9:I:76:ALA:HB3	2.15	0.46
10:J:90:LEU:N	10:J:91:PRO:HD2	2.16	0.46
14:N:53:LEU:HB3	14:N:56:VAL:HG21	1.97	0.46
1:A:9:G:C4	1:A:26:A:N1	2.83	0.46
1:A:46:G:N1	1:A:396:G:C6	2.84	0.46
1:A:181:G:N2	1:A:195:A:C8	2.83	0.46
1:A:190(D):U:O2	1:A:190(D):U:C2'	2.64	0.46
1:A:532:A:N6	3:C:159:GLY:O	2.49	0.46
1:A:557:G:C6	1:A:558:G:C6	3.03	0.46
1:A:918:A:H2'	1:A:919:A:O4'	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:926:G:C6	1:A:1505:G:C6	3.04	0.46
1:A:985:C:C6	1:A:985:C:C3'	2.99	0.46
1:A:1190:G:OP1	3:C:4:LYS:O	2.33	0.46
1:A:1256:A:C2	1:A:1258:G:C2	3.03	0.46
1:A:1310:G:C2	1:A:1328:C:N3	2.84	0.46
1:A:1319:A:C4'	1:A:1320:C:OP1	2.49	0.46
1:A:1391:U:H2'	1:A:1392:G:H8	1.76	0.46
1:A:1529:G:H4'	1:A:1530:G:OP2	2.14	0.46
3:C:33:LEU:HD23	3:C:33:LEU:C	2.35	0.46
8:H:86:ILE:HG21	8:H:133:LEU:HD22	1.97	0.46
11:K:58:PRO:HB2	11:K:93:GLN:HG3	1.96	0.46
13:M:49:THR:HG22	13:M:51:ALA:H	1.80	0.46
13:M:87:TYR:O	13:M:90:LEU:N	2.49	0.46
17:Q:8:GLY:HA3	17:Q:23:VAL:HG22	1.96	0.46
17:Q:8:GLY:O	17:Q:56:VAL:HG13	2.16	0.46
1:A:54:C:O2	1:A:358:U:C2	2.69	0.46
1:A:149:A:O2'	1:A:150:C:H5'	2.15	0.46
1:A:173:U:C2	1:A:197:A:N1	2.83	0.46
1:A:277:C:H5'	17:Q:68:ARG:NH1	2.30	0.46
1:A:663:A:C6	1:A:664:G:C6	3.04	0.46
1:A:761:G:C5	1:A:762:C:C4	3.03	0.46
1:A:1187:G:H3'	1:A:1188:A:H8	1.80	0.46
1:A:1256:A:N3	1:A:1258:G:C5	2.83	0.46
1:A:1340:A:O2'	1:A:1341:U:H5'	2.16	0.46
1:A:1396:A:H4'	1:A:1397:C:H5"	1.98	0.46
1:A:1421:G:C6	1:A:1422:G:N7	2.84	0.46
2:B:187:LEU:HD23	2:B:214:ILE:HG21	1.97	0.46
8:H:29:SER:O	8:H:30:ARG:C	2.53	0.46
11:K:33:THR:HA	11:K:40:ILE:HG13	1.96	0.46
13:M:11:ARG:HG2	13:M:12:ASN:H	1.79	0.46
14:N:18:VAL:HG23	14:N:19:ARG:N	2.31	0.46
15:O:51:HIS:ND1	15:O:51:HIS:N	2.64	0.46
19:S:17:GLU:HA	19:S:20:LEU:CD2	2.45	0.46
1:A:36:C:OP1	12:L:123:LYS:HE2	2.16	0.46
1:A:59:A:C4	1:A:331:G:N2	2.84	0.46
1:A:292:G:N2	1:A:309:G:N3	2.63	0.46
1:A:446:G:C2'	1:A:447:G:H5'	2.46	0.46
1:A:448:A:C8	1:A:487:A:N1	2.84	0.46
1:A:511:C:H1'	4:D:43:HIS:NE2	2.30	0.46
1:A:879:C:H2'	1:A:880:C:C6	2.50	0.46
1:A:961:U:C2	1:A:983:A:C4	3.04	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1085:U:O4'	1:A:1094:G:N1	2.49	0.46
1:A:1288:A:N1	1:A:1289:A:C5	2.83	0.46
1:A:1399:C:O2	1:A:1401:G:C4	2.69	0.46
3:C:120:VAL:O	3:C:121:ALA:C	2.54	0.46
4:D:202:LEU:HD23	4:D:202:LEU:HA	1.77	0.46
8:H:4:ASP:OD2	8:H:89:PRO:HD3	2.15	0.46
8:H:31:PHE:O	8:H:34:GLU:N	2.49	0.46
1:A:42:G:C4	1:A:43:C:H5	2.30	0.46
1:A:168:G:C2	1:A:169:C:C5	3.03	0.46
1:A:190(E):U:H2'	17:Q:63:ARG:NH2	2.31	0.46
1:A:501:C:O2	1:A:549:C:O2'	2.25	0.46
1:A:607:A:C2'	1:A:608:A:C5'	2.94	0.46
1:A:689:C:OP2	11:K:46:GLY:HA3	2.16	0.46
1:A:812:C:C2'	1:A:813:U:OP2	2.63	0.46
1:A:954:G:N2	1:A:1228:C:C4	2.84	0.46
1:A:1104:G:P	2:B:111:ARG:HD2	2.56	0.46
1:A:1222:G:C6	1:A:1223:C:N4	2.84	0.46
1:A:1251:A:HO2'	1:A:1369:C:HO2'	1.60	0.46
1:A:1350:A:O2'	1:A:1351:U:H5'	2.16	0.46
2:B:17:PHE:CD1	2:B:18:GLY:N	2.84	0.46
2:B:163:PHE:CD1	2:B:185:ILE:HD12	2.51	0.46
2:B:164:VAL:O	2:B:186:ALA:HA	2.16	0.46
4:D:4:TYR:CG	4:D:5:ILE:N	2.84	0.46
4:D:121:VAL:O	4:D:134:ASP:HA	2.15	0.46
5:E:75:THR:HG21	5:E:94:ALA:H	1.81	0.46
7:G:26:PHE:HB2	7:G:62:PHE:HZ	1.81	0.46
16:P:12:LYS:O	16:P:13:HIS:HB2	2.14	0.46
17:Q:57:VAL:HA	17:Q:77:VAL:HG23	1.97	0.46
17:Q:66:SER:OG	17:Q:69:LYS:CB	2.64	0.46
18:R:44:LEU:HD22	18:R:48:GLY:O	2.15	0.46
1:A:151:A:C2'	1:A:152:A:H5'	2.46	0.46
1:A:446:G:H2'	1:A:447:G:C5'	2.46	0.46
1:A:542:G:H5'	4:D:41:GLY:CA	2.46	0.46
1:A:544:G:OP1	4:D:59:ARG:NH2	2.48	0.46
1:A:670:G:C2	1:A:737:A:C2	3.03	0.46
1:A:691:G:C5	1:A:692:U:H5	2.33	0.46
1:A:777:A:C6	1:A:778:G:C4	3.04	0.46
1:A:777:A:N6	1:A:778:G:C6	2.84	0.46
1:A:807:A:C5	1:A:808:C:C5	3.04	0.46
1:A:829:G:C2	1:A:830:G:C4	3.04	0.46
1:A:1225:A:H4'	1:A:1226:C:OP2	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1378:C:C4	1:A:1379:G:H1'	2.50	0.46
1:A:1525:G:O2'	1:A:1526:G:H5'	2.16	0.46
7:G:20:ASP:HB3	7:G:23:VAL:HG23	1.97	0.46
13:M:11:ARG:CG	13:M:12:ASN:N	2.79	0.46
14:N:37:PHE:CD2	14:N:53:LEU:HD13	2.51	0.46
20:T:49:ALA:HB3	20:T:99:LEU:HG	1.98	0.46
20:T:56:MET:O	20:T:59:ALA:HB3	2.16	0.46
1:A:15:G:H2'	1:A:16:A:O4'	2.16	0.46
1:A:27:G:C6	1:A:28:G:C5	3.04	0.46
1:A:42:G:C2	1:A:43:C:C5	3.04	0.46
1:A:243:A:H62	1:A:281:G:H1'	1.80	0.46
1:A:273:A:H2'	1:A:274:A:O5'	2.16	0.46
1:A:459:G:H3'	1:A:460:A:C5'	2.46	0.46
1:A:503:C:C2	1:A:504:C:C5	3.04	0.46
1:A:507:C:H2'	1:A:508:C:H5	1.77	0.46
1:A:751:U:C5	1:A:752:G:C6	3.04	0.46
1:A:877:C:O2'	8:H:3:THR:HG23	2.16	0.46
1:A:998:G:C6	1:A:1044:A:C6	3.03	0.46
1:A:1009:G:C2	1:A:1010:G:C8	3.04	0.46
1:A:1010:G:O2'	1:A:1011:G:C5'	2.57	0.46
1:A:1355:G:N2	1:A:1356:G:C4	2.84	0.46
1:A:1495:U:C4	1:A:1496:C:N4	2.84	0.46
1:A:1501:C:H5"	1:A:1502:A:OP2	2.16	0.46
4:D:36:ARG:N	4:D:37:PRO:HD3	2.31	0.46
7:G:15:ASP:O	7:G:19:GLY:HA2	2.16	0.46
8:H:26:VAL:HG12	8:H:59:LEU:O	2.15	0.46
8:H:86:ILE:HD11	8:H:136:GLU:HG3	1.98	0.46
9:I:50:LEU:O	9:I:52:ALA:N	2.49	0.46
11:K:65:ALA:HB1	11:K:98:LEU:HD21	1.96	0.46
15:O:66:LEU:O	15:O:69:TYR:HB3	2.15	0.46
1:A:9:G:H2'	1:A:10:A:H8	1.81	0.46
1:A:55:A:C2'	1:A:56:U:H5'	2.46	0.46
1:A:156:G:N2	1:A:166:G:C4	2.84	0.46
1:A:262:A:N1	1:A:263:A:N1	2.63	0.46
1:A:303:A:C6	1:A:304:U:C4	3.03	0.46
1:A:376:G:O2'	1:A:377:G:H5'	2.16	0.46
1:A:406:G:H5"	4:D:5:ILE:CG2	2.46	0.46
1:A:463:A:N7	1:A:474:G:C5	2.83	0.46
1:A:474:G:H2'	1:A:475:G:C8	2.48	0.46
1:A:591:U:H2'	1:A:592:G:C8	2.46	0.46
1:A:714:G:C2	1:A:777:A:H1'	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:865:A:C6	1:A:866:C:N4	2.84	0.46
1:A:947:G:C5	1:A:948:C:C4	3.03	0.46
1:A:953:G:N2	1:A:1229:A:C4	2.84	0.46
1:A:972:C:OP2	10:J:57:LYS:HD3	2.16	0.46
1:A:1030(A):G:H2'	1:A:1030(A):G:N3	2.30	0.46
1:A:1160:G:C2'	1:A:1161:C:O5'	2.64	0.46
1:A:1312:G:C6	1:A:1326:C:N4	2.84	0.46
1:A:1313:U:H5	19:S:4:SER:HG	1.63	0.46
1:A:1316:G:C2	1:A:1318:A:H3'	2.51	0.46
1:A:1346:A:H61	1:A:1374:A:H3'	1.81	0.46
2:B:47:THR:CG2	2:B:202:PRO:HG2	2.42	0.46
3:C:125:GLU:HG3	3:C:189:ALA:HB1	1.98	0.46
5:E:36:ASP:C	5:E:38:GLN:N	2.69	0.46
8:H:120:THR:OG1	8:H:123:GLU:HB2	2.16	0.46
1:A:186:C:N3	1:A:187:C:C5	2.84	0.45
1:A:321:A:N3	1:A:322:C:C5	2.84	0.45
1:A:328:C:O2	1:A:328:C:C2'	2.44	0.45
1:A:523:A:H61	12:L:53:ARG:HH12	1.63	0.45
1:A:675:A:C6	1:A:676:A:C5	3.04	0.45
1:A:722:A:C2	1:A:724:G:N7	2.84	0.45
1:A:976:G:C8	1:A:1358:U:C2	3.05	0.45
1:A:984:C:O2'	1:A:985:C:H5'	2.16	0.45
1:A:1054:C:P	1:A:1197:G:OP1	2.74	0.45
1:A:1068:G:C2	1:A:1069:C:C6	3.04	0.45
1:A:1399:C:O2	1:A:1401:G:N7	2.49	0.45
5:E:43:LEU:HD23	5:E:44:GLY:N	2.32	0.45
5:E:129:ILE:O	5:E:132:ALA:HB3	2.17	0.45
8:H:17:THR:OG1	8:H:18:ARG:N	2.48	0.45
15:O:32:LEU:O	15:O:33:THR:C	2.55	0.45
20:T:37:SER:O	20:T:41:VAL:HG23	2.16	0.45
1:A:99:C:N3	1:A:101:A:N7	2.63	0.45
1:A:246:A:C4	1:A:279:A:N6	2.84	0.45
1:A:542:G:H5'	4:D:41:GLY:HA2	1.99	0.45
1:A:853:G:H2'	1:A:854:G:H8	1.81	0.45
1:A:880:C:H2'	1:A:881:G:C8	2.51	0.45
1:A:944:G:H3'	1:A:945:G:C5'	2.46	0.45
1:A:1010:G:H2'	1:A:1011:G:C8	2.40	0.45
1:A:1064:G:O6	1:A:1193:G:C6	2.69	0.45
1:A:1173:G:C4	1:A:1174:G:C8	3.05	0.45
1:A:1352:C:N3	1:A:1371:G:C6	2.84	0.45
8:H:10:LEU:HD23	8:H:10:LEU:HA	1.36	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:105:ARG:HD3	8:H:105:ARG:HA	1.71	0.45
9:I:50:LEU:C	9:I:52:ALA:N	2.70	0.45
11:K:19:ALA:HB2	11:K:80:VAL:HG11	1.97	0.45
14:N:6:LEU:HB3	14:N:23:ARG:HH21	1.81	0.45
20:T:24:LEU:HD12	20:T:24:LEU:HA	1.83	0.45
1:A:22:G:C4	1:A:23:C:C6	3.04	0.45
1:A:34:C:O2'	1:A:35:G:H5'	2.16	0.45
1:A:59:A:H3'	1:A:331:G:H22	1.81	0.45
1:A:89:C:H2'	1:A:90:U:O4'	2.16	0.45
1:A:262:A:C2	1:A:263:A:C5	3.04	0.45
1:A:287:U:O2'	1:A:288:A:H5'	2.16	0.45
1:A:292:G:N3	1:A:309:G:C2	2.84	0.45
1:A:357:G:N3	1:A:358:U:C5	2.84	0.45
1:A:389:A:H8	1:A:389:A:H5'	1.81	0.45
1:A:419:C:H2'	1:A:420:U:C6	2.51	0.45
1:A:686:U:O2'	1:A:687:A:O5'	2.34	0.45
1:A:696:A:N3	1:A:697:U:C5	2.84	0.45
1:A:940:C:H2'	1:A:941:G:O4'	2.16	0.45
1:A:1028:C:H5'	1:A:1028:C:C6	2.45	0.45
1:A:1498:U:O2'	1:A:1499:A:OP2	2.34	0.45
1:A:1524:C:H2'	1:A:1525:G:O4'	2.15	0.45
7:G:121:ALA:O	7:G:125:MET:HG3	2.16	0.45
11:K:32:ILE:HG22	11:K:40:ILE:HD12	1.97	0.45
13:M:79:LYS:HA	13:M:82:MET:HB3	1.97	0.45
13:M:90:LEU:O	13:M:93:ARG:N	2.50	0.45
1:A:32:A:C6	1:A:553:A:N1	2.84	0.45
1:A:265:G:H2'	1:A:267:C:C5	2.41	0.45
1:A:414:A:N3	1:A:415:A:C1'	2.79	0.45
1:A:660:G:C2'	1:A:661:G:O5'	2.64	0.45
1:A:755:G:C2	1:A:756:C:C6	3.04	0.45
1:A:811:C:O2'	1:A:901:A:N1	2.43	0.45
1:A:1191:A:H5"	3:C:4:LYS:HZ1	1.79	0.45
1:A:1213:A:C5	1:A:1215:G:C4	3.05	0.45
1:A:1237:C:C5	1:A:1336:C:C4	3.05	0.45
1:A:1301:U:HO2'	1:A:1302:U:P	2.39	0.45
1:A:1325:C:H5"	21:V:17:THR:HG21	1.99	0.45
1:A:1352:C:O2	1:A:1371:G:C2	2.70	0.45
1:A:1454:G:C2'	1:A:1455:G:O5'	2.65	0.45
4:D:21:LEU:HD23	4:D:21:LEU:HA	1.68	0.45
5:E:34:VAL:O	5:E:41:VAL:HA	2.16	0.45
6:F:1:MET:HB3	6:F:67:MET:O	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:113:ARG:HB2	12:L:122:THR:HG21	1.98	0.45
16:P:22:THR:HA	16:P:33:ILE:HD11	1.94	0.45
21:V:5:ASP:C	21:V:7:ARG:H	2.20	0.45
1:A:26:A:N6	1:A:558:G:O2'	2.45	0.45
1:A:173:U:N1	1:A:197:A:C2	2.84	0.45
1:A:204:U:O2	1:A:204:U:H2'	2.15	0.45
1:A:370:C:N3	1:A:371:G:N7	2.63	0.45
1:A:456:C:O2'	1:A:457:C:H5'	2.16	0.45
1:A:500:G:H8	1:A:500:G:O5'	1.98	0.45
1:A:562:C:H4'	1:A:563:A:O5'	2.16	0.45
1:A:867:G:H5"	1:A:867:G:C8	2.49	0.45
1:A:1033:G:H8	1:A:1033:G:O5'	2.00	0.45
1:A:1251:A:C2'	1:A:1252:A:C8	2.88	0.45
1:A:1480:G:O2'	1:A:1481:U:H5'	2.16	0.45
1:A:1491:G:C2	1:A:1492:A:N6	2.84	0.45
1:A:1529:G:C4'	1:A:1530:G:OP2	2.64	0.45
4:D:157:LEU:O	4:D:159:ARG:N	2.50	0.45
4:D:157:LEU:O	4:D:158:ILE:C	2.55	0.45
8:H:29:SER:OG	8:H:32:LYS:HG3	2.16	0.45
8:H:82:HIS:HD2	8:H:138:TRP:NE1	2.13	0.45
8:H:108:GLY:CA	8:H:138:TRP:HB3	2.43	0.45
9:I:97:LYS:HG3	9:I:102:LEU:HD12	1.99	0.45
11:K:30:VAL:CG1	11:K:31:THR:N	2.80	0.45
16:P:58:TYR:CE1	16:P:59:TRP:CZ3	3.03	0.45
20:T:60:GLU:HG3	20:T:81:LYS:HE3	1.98	0.45
1:A:61:G:H2'	1:A:62:U:O4'	2.17	0.45
1:A:303:A:C5	1:A:304:U:C5	3.04	0.45
1:A:380:G:C2	1:A:384:G:C5	3.05	0.45
1:A:390:C:C3'	16:P:28:ARG:HH22	2.29	0.45
1:A:518:C:O2'	1:A:519:C:OP2	2.29	0.45
1:A:902:G:HO2'	1:A:903:G:H5'	1.77	0.45
1:A:1003:G:C6	1:A:1003(A):G:N7	2.85	0.45
1:A:1030(B):C:OP1	1:A:1030(B):C:O4'	2.33	0.45
1:A:1057:G:C5	1:A:1058:G:N7	2.85	0.45
1:A:1064:G:N3	1:A:1066:C:N4	2.64	0.45
1:A:1066:C:O2'	1:A:1067:A:H5'	2.16	0.45
1:A:1223:C:H3'	1:A:1224:G:H5"	1.98	0.45
1:A:1460:A:H2'	1:A:1461:G:O4'	2.16	0.45
2:B:144:ARG:HG3	2:B:145:LEU:N	2.31	0.45
4:D:109:GLY:C	4:D:111:ALA:H	2.20	0.45
5:E:33:VAL:HG11	5:E:109:ILE:HA	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:98:THR:O	5:E:98:THR:HG22	2.17	0.45
9:I:26:VAL:HB	9:I:33:PHE:CB	2.32	0.45
9:I:33:PHE:O	9:I:37:PHE:HD1	2.00	0.45
10:J:34:VAL:HG22	10:J:74:ILE:HG12	1.99	0.45
12:L:47:LYS:HB2	12:L:48:PRO:CD	2.42	0.45
17:Q:81:ARG:HG3	17:Q:81:ARG:O	2.16	0.45
1:A:166:G:C2	1:A:167:G:C8	3.05	0.45
1:A:279:A:H4'	1:A:280:C:OP2	2.15	0.45
1:A:406:G:C4	1:A:496:A:C5	3.05	0.45
1:A:482:A:C2	1:A:483:C:C2	3.05	0.45
1:A:613:C:O2	1:A:628:G:C2	2.70	0.45
1:A:819:A:N6	1:A:1529:G:C5	2.85	0.45
1:A:910:C:P	12:L:97:ARG:HH22	2.39	0.45
1:A:935:A:C5	7:G:3:ARG:NH2	2.85	0.45
1:A:997:U:H2'	1:A:998:G:O4'	2.17	0.45
1:A:1109:C:O2'	1:A:1110:A:H5'	2.15	0.45
1:A:1198:G:O2'	10:J:54:PHE:CE2	2.69	0.45
1:A:1306:A:C5	1:A:1307:U:C5	3.04	0.45
1:A:1311:G:C5	1:A:1312:G:C8	3.04	0.45
1:A:1324:A:C2	1:A:1325:C:C6	3.05	0.45
1:A:1349:A:C5	1:A:1350:A:C8	3.05	0.45
1:A:1430:C:O2'	1:A:1431:C:H5'	2.16	0.45
1:A:1442:G:C2	1:A:1446:A:C8	3.05	0.45
1:A:1487:G:O2'	1:A:1488:G:C5'	2.57	0.45
2:B:57:PHE:O	2:B:60:ASP:HB3	2.17	0.45
7:G:40:ALA:CB	9:I:41:VAL:HG11	2.46	0.45
8:H:34:GLU:O	8:H:37:ARG:HB3	2.17	0.45
12:L:83:VAL:HG21	12:L:100:ILE:CD1	2.46	0.45
13:M:105:THR:HB	13:M:106:ASN:H	1.43	0.45
1:A:93:G:C6	1:A:95:U:N3	2.85	0.45
1:A:228:A:C4'	16:P:62:VAL:HG11	2.46	0.45
1:A:264:U:C5	1:A:265:G:N7	2.85	0.45
1:A:369:C:C2	1:A:370:C:C5	3.05	0.45
1:A:448:A:C2	1:A:449:C:N3	2.85	0.45
1:A:557:G:N1	1:A:558:G:C2	2.84	0.45
1:A:640:A:C2'	1:A:641:U:H5'	2.46	0.45
1:A:786:G:C6	1:A:787:A:C5	3.04	0.45
1:A:918:A:C4	1:A:919:A:C8	3.05	0.45
1:A:994:A:H2'	1:A:994:A:N3	2.31	0.45
1:A:1038:C:O2	1:A:1039:C:C6	2.70	0.45
1:A:1057:G:H2'	1:A:1058:G:C8	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1205:U:C1'	3:C:195:VAL:HG21	2.46	0.45
1:A:1252:A:C2	1:A:1253:G:C4	3.05	0.45
1:A:1452:C:C4'	1:A:1453:G:O5'	2.61	0.45
3:C:43:LEU:HA	3:C:47:LEU:HD13	1.99	0.45
3:C:47:LEU:N	3:C:47:LEU:HD12	2.31	0.45
7:G:17:VAL:HG12	7:G:18:TYR:N	2.31	0.45
9:I:5:TYR:HD2	9:I:17:VAL:O	2.00	0.45
19:S:39:THR:HA	19:S:70:LYS:HG2	1.99	0.45
1:A:373:A:C5	1:A:482:A:C8	3.04	0.45
1:A:428:G:H8	1:A:428:G:OP1	2.00	0.45
1:A:479:C:H2'	1:A:480:U:O4'	2.17	0.45
1:A:609:A:O2'	1:A:610:G:H5'	2.17	0.45
1:A:644:G:C5	1:A:645:C:C5	3.05	0.45
1:A:722:A:C6	1:A:724:G:C4	3.05	0.45
1:A:782:A:H62	1:A:800:G:N2	2.14	0.45
1:A:900:A:HO2'	1:A:901:A:H5'	1.79	0.45
1:A:936:C:C2'	1:A:937:A:C5'	2.95	0.45
1:A:973:G:C4	1:A:974:A:N7	2.85	0.45
1:A:1167:A:H8	1:A:1167:A:O5'	2.00	0.45
1:A:1347:G:H22	1:A:1373:G:C2'	2.21	0.45
1:A:1348:U:H4'	9:I:120:ARG:HG3	1.98	0.45
1:A:1368:G:N2	1:A:1369:C:C1'	2.79	0.45
1:A:1411:C:H2'	1:A:1412:C:C6	2.52	0.45
2:B:31:TYR:N	2:B:31:TYR:HD2	2.14	0.45
3:C:169:ALA:O	3:C:170:GLN:HG3	2.17	0.45
4:D:25:ARG:NH2	4:D:30:LYS:HD3	2.08	0.45
5:E:74:GLY:HA3	5:E:116:THR:HG22	1.99	0.45
5:E:91:LEU:HA	5:E:91:LEU:HD23	1.54	0.45
5:E:129:ILE:CG2	5:E:133:TYR:HE1	2.30	0.45
7:G:74:GLU:O	7:G:88:PRO:HA	2.17	0.45
7:G:120:ILE:O	7:G:124:LEU:HG	2.16	0.45
12:L:115:LYS:O	12:L:117:ARG:N	2.49	0.45
13:M:63:THR:HG23	13:M:64:TRP:H	1.82	0.45
16:P:1:MET:O	16:P:24:ALA:HB2	2.16	0.45
19:S:71:LEU:HD23	19:S:71:LEU:HA	1.77	0.45
1:A:166:G:C4	1:A:167:G:N7	2.85	0.45
1:A:226:G:C6	1:A:227:G:C8	3.05	0.45
1:A:319:G:HO2'	1:A:1434:A:H2	1.65	0.45
1:A:370:C:C2	1:A:371:G:N7	2.85	0.45
1:A:392:G:C4	1:A:393:A:C8	3.05	0.45
1:A:404:U:H5'	4:D:122:ARG:NH2	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:581:G:C5	1:A:758:G:N7	2.85	0.45
1:A:634:C:O2'	1:A:635:G:H5'	2.17	0.45
1:A:742:G:H2'	1:A:743:U:C5'	2.47	0.45
1:A:769:G:N2	1:A:770:C:C2	2.85	0.45
1:A:817:C:H1'	1:A:819:A:H5'	1.99	0.45
1:A:979:C:O2	14:N:19:ARG:NE	2.47	0.45
1:A:1295:G:H4'	13:M:14:ARG:NH2	2.31	0.45
1:A:1368:G:N3	1:A:1369:C:C6	2.84	0.45
1:A:1507:A:C6	1:A:1530:G:C5	3.05	0.45
2:B:134:GLU:HA	2:B:137:ARG:HB2	1.99	0.45
2:B:181:PHE:N	2:B:181:PHE:HD1	2.15	0.45
2:B:213:LEU:HD23	2:B:213:LEU:C	2.38	0.45
11:K:75:TYR:N	11:K:75:TYR:HD1	2.14	0.45
16:P:9:PHE:HB2	16:P:16:HIS:O	2.16	0.45
1:A:20:U:H2'	1:A:21:G:O4'	2.16	0.44
1:A:55:A:H2	1:A:56:U:H1'	1.81	0.44
1:A:113:G:N3	1:A:114:U:C6	2.84	0.44
1:A:223:U:C5'	20:T:68:LYS:NZ	2.72	0.44
1:A:363:A:OP1	12:L:33:ARG:HG3	2.17	0.44
1:A:401:C:O2'	1:A:402:G:H5'	2.17	0.44
1:A:492:G:H2'	1:A:494:G:O4'	2.18	0.44
1:A:533:A:N6	1:A:536:C:N3	2.65	0.44
1:A:534:U:C5'	1:A:535:A:OP2	2.65	0.44
1:A:706:A:H1'	11:K:29:ILE:HD11	1.99	0.44
1:A:785:G:C6	1:A:786:G:N7	2.85	0.44
1:A:886:G:C2'	1:A:887:G:H5'	2.46	0.44
1:A:920:U:C2'	1:A:921:U:O5'	2.65	0.44
1:A:934:C:N3	1:A:1345:U:C5	2.85	0.44
1:A:1085:U:C1'	1:A:1094:G:C6	3.00	0.44
1:A:1145:C:O2'	1:A:1146:A:P	2.74	0.44
1:A:1301:U:C4	1:A:1303:C:C6	3.05	0.44
1:A:1394:A:N6	1:A:1500:A:O2'	2.48	0.44
1:A:1459:C:C2'	1:A:1460:A:O5'	2.64	0.44
2:B:109:SER:HA	2:B:112:VAL:HG23	1.99	0.44
5:E:41:VAL:HG23	5:E:41:VAL:O	2.17	0.44
8:H:38:ILE:CG2	8:H:39:LEU:N	2.80	0.44
11:K:11:LYS:O	11:K:12:ARG:HG3	2.17	0.44
13:M:16:ASP:OD1	13:M:16:ASP:N	2.50	0.44
18:R:44:LEU:HD23	18:R:44:LEU:HA	1.67	0.44
19:S:6:LYS:CD	19:S:7:LYS:H	2.30	0.44
1:A:20:U:H2'	1:A:21:G:C5'	2.47	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:113:G:O6	1:A:315:A:N6	2.50	0.44
1:A:119:A:C4	1:A:240:C:C5	3.05	0.44
1:A:408:A:C4	1:A:409:G:C8	3.05	0.44
1:A:457:C:HO2'	1:A:458:C:H5'	1.80	0.44
1:A:459:G:C6	1:A:461:C:OP2	2.70	0.44
1:A:565:U:C5	1:A:566:G:C5	3.05	0.44
1:A:613:C:N3	1:A:628:G:C2	2.85	0.44
1:A:621:A:H8	1:A:621:A:O5'	2.00	0.44
1:A:683:G:H2'	1:A:684:A:O4'	2.17	0.44
1:A:760:G:C2'	1:A:761:G:H5'	2.48	0.44
1:A:1015:A:C6	1:A:1016:A:C6	3.05	0.44
1:A:1160:G:H2'	1:A:1161:C:O5'	2.16	0.44
1:A:1179:A:H2'	1:A:1180:A:C8	2.53	0.44
1:A:1202:G:C4	14:N:42:ILE:CD1	2.97	0.44
1:A:1239:A:C4'	1:A:1240:U:O5'	2.53	0.44
1:A:1346:A:C8	7:G:10:ARG:NH2	2.85	0.44
1:A:1368:G:OP2	9:I:112:LYS:O	2.35	0.44
1:A:1490:C:C6	1:A:1490:C:C4'	2.99	0.44
2:B:204:ASN:ND2	2:B:205:ASP:N	2.64	0.44
3:C:22:TRP:HB2	3:C:23:TYR:H	1.63	0.44
10:J:45:ARG:HB2	10:J:65:LEU:HB3	1.99	0.44
11:K:33:THR:OG1	11:K:38:ASN:N	2.51	0.44
12:L:39:VAL:H	12:L:57:LYS:HB2	1.82	0.44
13:M:2:ALA:N	13:M:11:ARG:HD2	2.32	0.44
19:S:22:LEU:HD22	19:S:28:LYS:HD2	1.99	0.44
19:S:40:ILE:HA	19:S:44:MET:HE3	1.99	0.44
1:A:8:A:N7	4:D:209:ARG:HA	2.32	0.44
1:A:120:A:C6	1:A:122:G:C2	3.06	0.44
1:A:124:G:C6	1:A:125:U:C4	3.05	0.44
1:A:190(F):G:C4'	1:A:190(G):G:OP2	2.49	0.44
1:A:190(L):U:C2'	1:A:191:G:H5'	2.46	0.44
1:A:255:G:C2	1:A:256:U:C4	3.05	0.44
1:A:279:A:H8	17:Q:95:TYR:CE2	2.28	0.44
1:A:282:A:C5	1:A:283:C:C6	3.05	0.44
1:A:285:G:O2'	1:A:286:G:H5'	2.17	0.44
1:A:348:G:O2'	1:A:349:A:H5'	2.18	0.44
1:A:454:C:C2'	1:A:455:C:H5'	2.45	0.44
1:A:575:G:N2	1:A:881:G:C4	2.85	0.44
1:A:600:C:OP1	8:H:97:VAL:HG12	2.18	0.44
1:A:662:G:N2	1:A:663:A:C5	2.85	0.44
1:A:687:A:O2'	1:A:688:G:OP2	2.30	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:792:A:C2	1:A:794:A:C5	3.05	0.44
1:A:958:A:H2	1:A:985:C:O2	2.00	0.44
1:A:960:U:O2	1:A:960:U:H2'	2.17	0.44
1:A:1152:A:H5'	10:J:13:HIS:HB2	2.00	0.44
1:A:1443:G:C4'	1:A:1446:A:H5'	2.48	0.44
3:C:108:ASN:HA	3:C:109:PRO:HD2	1.74	0.44
3:C:155:GLY:O	3:C:156:ARG:HB2	2.17	0.44
6:F:19:LEU:HD11	6:F:59:TYR:CZ	2.52	0.44
6:F:91:VAL:HG12	6:F:92:LYS:O	2.17	0.44
14:N:36:PHE:CD1	14:N:36:PHE:C	2.90	0.44
18:R:47:THR:CA	18:R:83:GLU:HB2	2.45	0.44
1:A:33:A:O5'	1:A:33:A:H8	2.01	0.44
1:A:68:G:H5'	1:A:171:A:H1'	2.00	0.44
1:A:197:A:N6	1:A:221:C:C5'	2.81	0.44
1:A:225:C:H6	1:A:225:C:O5'	2.01	0.44
1:A:262:A:C2	1:A:263:A:C2	3.06	0.44
1:A:455:C:C2'	1:A:456:C:H5'	2.48	0.44
1:A:725:G:C4	1:A:726:C:C6	3.06	0.44
1:A:766:A:C2'	1:A:767:A:H5'	2.47	0.44
1:A:900:A:O2'	1:A:901:A:C5'	2.63	0.44
1:A:949:A:C6	1:A:1233:G:C2	3.06	0.44
1:A:972:C:O2	10:J:55:LYS:HD2	2.17	0.44
1:A:973:G:H2'	1:A:974:A:C8	2.52	0.44
1:A:1075:C:OP1	2:B:103:THR:HG21	2.18	0.44
1:A:1110:A:O5'	1:A:1110:A:C8	2.69	0.44
1:A:1142:G:H2'	1:A:1143:G:O4'	2.16	0.44
1:A:1145:C:H1'	1:A:1146:A:C8	2.51	0.44
1:A:1237:C:C4'	1:A:1334:G:N2	2.81	0.44
1:A:1240:U:HO2'	1:A:1241:G:P	2.40	0.44
1:A:1358:U:H2'	1:A:1359:C:C6	2.52	0.44
1:A:1368:G:OP1	10:J:62:HIS:HE1	2.00	0.44
2:B:74:LYS:HE3	2:B:206:ASP:HA	1.99	0.44
3:C:123:GLN:O	3:C:128:PHE:HB2	2.17	0.44
3:C:191:THR:HG22	3:C:192:THR:H	1.82	0.44
4:D:64:LEU:HD12	4:D:75:PHE:HE1	1.83	0.44
5:E:13:ILE:HA	5:E:29:GLY:O	2.17	0.44
5:E:130:ASN:O	5:E:131:ILE:C	2.56	0.44
7:G:69:VAL:O	7:G:71:PRO:HD3	2.18	0.44
9:I:17:VAL:HG21	9:I:80:GLY:CA	2.43	0.44
9:I:18:PHE:HB2	9:I:62:TYR:O	2.17	0.44
16:P:39:TYR:CG	16:P:73:LEU:HD11	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:S:28:LYS:HD3	19:S:31:ILE:CD1	2.48	0.44
20:T:43:LEU:CD1	20:T:52:ALA:HA	2.48	0.44
20:T:56:MET:HG3	20:T:84:LEU:CD2	2.47	0.44
1:A:19:C:O2'	1:A:20:U:H5'	2.17	0.44
1:A:202:U:O5'	1:A:202:U:C6	2.67	0.44
1:A:341:C:O2'	1:A:342:C:H5'	2.18	0.44
1:A:342:C:C2	1:A:348:G:N2	2.85	0.44
1:A:373:A:O2'	1:A:374:A:H5'	2.18	0.44
1:A:416:G:C6	1:A:417:C:N3	2.86	0.44
1:A:439:A:N9	1:A:497:A:C2	2.84	0.44
1:A:502:G:C5	1:A:503:C:C5	3.06	0.44
1:A:663:A:C5	1:A:664:G:N7	2.85	0.44
1:A:683:G:C5	1:A:684:A:C5	3.05	0.44
1:A:765:G:C6	1:A:812:C:C2	3.06	0.44
1:A:812:C:O2'	1:A:813:U:OP2	2.30	0.44
1:A:952:U:C2'	1:A:953:G:H5'	2.48	0.44
1:A:1013:G:H2'	1:A:1015:A:OP2	2.17	0.44
1:A:1182:G:H4'	1:A:1183:A:C5'	2.47	0.44
1:A:1296:C:H4'	1:A:1302:U:O4	2.16	0.44
1:A:1311:G:C6	1:A:1312:G:C8	3.04	0.44
1:A:1342:C:HO2'	1:A:1343:G:H5'	1.78	0.44
1:A:1412:C:H2'	1:A:1413:A:C8	2.52	0.44
2:B:178:ARG:CG	8:H:72:PRO:HA	2.48	0.44
5:E:43:LEU:C	5:E:43:LEU:CD2	2.86	0.44
8:H:6:ILE:HD11	8:H:31:PHE:CD2	2.53	0.44
9:I:18:PHE:HD1	9:I:62:TYR:HD2	1.66	0.44
13:M:54:VAL:O	13:M:57:ARG:HB3	2.18	0.44
19:S:80:TYR:CG	19:S:81:ARG:N	2.85	0.44
20:T:62:LEU:HA	20:T:62:LEU:HD23	1.72	0.44
1:A:15:G:O2'	5:E:24:ARG:NH1	2.51	0.44
1:A:89:C:O2'	1:A:90:U:O5'	2.33	0.44
1:A:141:A:O2'	1:A:182:U:H1'	2.17	0.44
1:A:177:C:H2'	1:A:178:C:H6	1.83	0.44
1:A:282:A:H3'	1:A:283:C:H6	1.83	0.44
1:A:292:G:C2'	1:A:293:G:O5'	2.66	0.44
1:A:427:U:C4	1:A:428:G:C6	3.05	0.44
1:A:604:G:O6	1:A:605:U:C4	2.71	0.44
1:A:624:C:O2'	1:A:625:G:C5'	2.51	0.44
1:A:686:U:H2'	1:A:687:A:C8	2.53	0.44
1:A:766:A:H2'	1:A:767:A:H5'	1.99	0.44
1:A:890:G:O2'	1:A:891:U:P	2.75	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:954:G:N2	1:A:1228:C:N4	2.66	0.44
1:A:1055:A:C1'	3:C:156:ARG:NH1	2.79	0.44
1:A:1158:C:C4	1:A:1160:G:C8	3.06	0.44
1:A:1239:A:H2'	1:A:1298:C:H42	1.81	0.44
1:A:1392:G:H21	1:A:1502:A:H8	1.64	0.44
1:A:1435:G:C2'	1:A:1436:U:H6	2.13	0.44
3:C:118:GLN:O	3:C:119:ARG:C	2.56	0.44
3:C:125:GLU:HG2	3:C:189:ALA:HB1	1.99	0.44
5:E:134:ALA:O	5:E:138:ALA:HB2	2.17	0.44
7:G:122:HIS:HA	7:G:125:MET:CE	2.38	0.44
8:H:26:VAL:HG13	8:H:59:LEU:HB2	1.99	0.44
8:H:36:LEU:CD2	8:H:61:VAL:HG21	2.47	0.44
8:H:83:ILE:O	8:H:83:ILE:CG2	2.65	0.44
8:H:91:ARG:HG3	12:L:7:ILE:HD12	2.00	0.44
9:I:85:LEU:HD12	9:I:85:LEU:HA	1.75	0.44
11:K:110:ASP:HB3	18:R:85:LEU:HB3	1.99	0.44
13:M:3:ARG:HB3	13:M:4:ILE:CG1	2.45	0.44
13:M:44:ARG:HA	13:M:44:ARG:HD2	1.75	0.44
19:S:41:VAL:CG2	19:S:44:MET:HB2	2.44	0.44
1:A:93:G:N1	1:A:95:U:C2	2.86	0.44
1:A:113:G:H2'	1:A:114:U:C6	2.52	0.44
1:A:319:G:C2	1:A:320:C:C6	3.06	0.44
1:A:370:C:H2'	1:A:371:G:C5'	2.48	0.44
1:A:414:A:N7	1:A:431:A:C2	2.86	0.44
1:A:440:A:C5'	1:A:442:C:OP2	2.65	0.44
1:A:455:C:O5'	1:A:455:C:H6	2.00	0.44
1:A:718:G:C5	1:A:719:C:C4	3.06	0.44
1:A:864:A:H2'	1:A:865:A:C8	2.52	0.44
1:A:887:G:H2'	1:A:888:G:C8	2.52	0.44
1:A:1014:A:C2	1:A:1219:U:H1'	2.53	0.44
1:A:1085:U:H3'	1:A:1086:U:C5	2.53	0.44
1:A:1229:A:H2'	1:A:1230:C:C6	2.53	0.44
1:A:1273:G:H2'	1:A:1274:G:O4'	2.18	0.44
1:A:1378:C:C6	1:A:1379:G:C8	3.05	0.44
1:A:1450:U:O2'	1:A:1451:A:H8	1.99	0.44
3:C:6:HIS:CD2	3:C:6:HIS:C	2.91	0.44
4:D:79:PHE:C	4:D:79:PHE:CD2	2.91	0.44
8:H:63:LEU:HD23	8:H:65:TYR:OH	2.17	0.44
11:K:98:LEU:C	11:K:100:ALA:H	2.20	0.44
12:L:85:ILE:CG2	12:L:98:TYR:HB3	2.48	0.44
13:M:26:GLY:C	13:M:28:ALA:N	2.71	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:N:53:LEU:O	14:N:56:VAL:HB	2.17	0.44
17:Q:66:SER:OG	17:Q:69:LYS:HB3	2.18	0.44
1:A:197:A:H1'	1:A:198:G:O4'	2.18	0.44
1:A:264:U:O2'	17:Q:63:ARG:HG2	2.17	0.44
1:A:436:C:C2'	1:A:437:U:O5'	2.66	0.44
1:A:502:G:C6	1:A:503:C:C4	3.06	0.44
1:A:539:A:H2'	1:A:540:G:H8	1.81	0.44
1:A:544:G:C6	1:A:545:C:C4	3.06	0.44
1:A:579:G:N3	1:A:580:U:C6	2.86	0.44
1:A:633:G:C5	1:A:634:C:C5	3.05	0.44
1:A:650:G:H2'	1:A:651:C:C5'	2.43	0.44
1:A:763:G:C2	1:A:764:C:C6	3.06	0.44
1:A:849:C:C4	1:A:850:U:C5	3.06	0.44
1:A:1126:U:O2'	1:A:1127:G:OP1	2.31	0.44
1:A:1250:A:H5'	9:I:68:GLY:O	2.17	0.44
1:A:1500:A:N3	1:A:1501:C:C6	2.85	0.44
2:B:142:LEU:O	2:B:143:GLU:C	2.56	0.44
9:I:97:LYS:N	9:I:98:PRO:CD	2.80	0.44
1:A:23:C:N3	1:A:24:U:C5	2.86	0.44
1:A:89:C:H2'	1:A:90:U:O5'	2.18	0.44
1:A:178:C:C2	1:A:179:A:C8	3.06	0.44
1:A:246:A:H3'	17:Q:100:LYS:HD3	2.00	0.44
1:A:278:G:OP2	17:Q:41:LYS:NZ	2.49	0.44
1:A:414:A:H2'	1:A:415:A:O4'	2.18	0.44
1:A:481:G:OP2	1:A:481:G:O4'	2.35	0.44
1:A:552:U:O2'	1:A:553:A:H5'	2.18	0.44
1:A:568:G:N2	1:A:883:C:C4	2.86	0.44
1:A:572:A:N1	1:A:864:A:C5	2.85	0.44
1:A:745:C:O2'	1:A:746:A:H5'	2.18	0.44
1:A:767:A:C6	1:A:768:A:C6	3.06	0.44
1:A:792:A:O2'	1:A:794:A:C8	2.69	0.44
1:A:949:A:C6	1:A:1233:G:N1	2.86	0.44
1:A:956:U:O2'	1:A:957:U:H5'	2.18	0.44
1:A:986:A:C2	1:A:987:G:C4	3.06	0.44
1:A:993:G:HO2'	1:A:994:A:P	2.40	0.44
1:A:1083:U:C5	1:A:1084:G:C5	3.06	0.44
1:A:1504:G:O2'	1:A:1505:G:P	2.75	0.44
4:D:8:VAL:C	4:D:10:ARG:N	2.71	0.44
6:F:22:GLU:HA	6:F:25:ILE:CD1	2.48	0.44
8:H:94:TYR:CE2	8:H:132:GLU:HG3	2.53	0.44
13:M:2:ALA:HB1	13:M:45:VAL:HG12	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:M:84:ILE:HG21	19:S:66:MET:SD	2.58	0.44
17:Q:76:LEU:C	17:Q:76:LEU:HD23	2.39	0.44
1:A:162:A:O5'	1:A:162:A:C8	2.66	0.43
1:A:181:G:N2	1:A:195:A:N9	2.65	0.43
1:A:292:G:H2'	1:A:293:G:O5'	2.18	0.43
1:A:338:A:N3	1:A:339:C:C6	2.86	0.43
1:A:542:G:H2'	1:A:543:C:C6	2.53	0.43
1:A:580:U:O2	1:A:580:U:C2'	2.59	0.43
1:A:604:G:C2	1:A:635:G:C5	3.05	0.43
1:A:683:G:O6	1:A:684:A:C6	2.71	0.43
1:A:775:G:O6	1:A:776:G:C6	2.71	0.43
1:A:1010:G:N3	1:A:1011:G:C8	2.86	0.43
1:A:1145:C:HO2'	1:A:1146:A:P	2.38	0.43
1:A:1221:G:OP1	1:A:1321:C:N3	2.51	0.43
1:A:1447:G:N3	1:A:1448:C:C6	2.86	0.43
2:B:155:LEU:HA	2:B:155:LEU:HD23	1.70	0.43
3:C:73:PRO:O	3:C:75:VAL:N	2.51	0.43
4:D:125:HIS:ND1	4:D:152:SER:OG	2.50	0.43
8:H:48:TYR:CD2	8:H:48:TYR:N	2.86	0.43
9:I:104:ARG:NH1	9:I:104:ARG:CG	2.77	0.43
19:S:28:LYS:HG2	19:S:29:ARG:N	2.19	0.43
1:A:322:C:HO2'	1:A:323:U:H5'	1.83	0.43
1:A:517:G:N2	1:A:533:A:OP2	2.50	0.43
1:A:553:A:H2'	1:A:554:C:C6	2.53	0.43
1:A:575:G:C2	1:A:881:G:N3	2.86	0.43
1:A:766:A:C8	1:A:813:U:O4	2.71	0.43
1:A:812:C:HO2'	1:A:813:U:P	2.39	0.43
1:A:1055:A:C2'	3:C:156:ARG:NH1	2.82	0.43
1:A:1079:G:C6	1:A:1080:A:N6	2.86	0.43
1:A:1097:C:O2'	1:A:1168:A:H1'	2.17	0.43
1:A:1182:G:O2'	1:A:1183:A:OP2	2.34	0.43
1:A:1240:U:O4	7:G:30:ILE:HG23	2.18	0.43
1:A:1295:G:H4'	13:M:14:ARG:HH22	1.84	0.43
1:A:1305:G:H22	1:A:1331:G:H2'	1.81	0.43
1:A:1382:C:O5'	1:A:1382:C:H6	2.01	0.43
1:A:1425:U:H2'	1:A:1426:C:H6	1.82	0.43
1:A:1440:C:H2'	1:A:1441:G:H5'	1.98	0.43
3:C:9:GLY:CA	3:C:12:LEU:HD21	2.44	0.43
4:D:64:LEU:O	4:D:67:ILE:HB	2.18	0.43
6:F:21:LEU:O	6:F:25:ILE:HG13	2.17	0.43
7:G:57:GLU:O	7:G:61:VAL:HG23	2.17	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:K:30:VAL:HG21	11:K:65:ALA:HA	1.99	0.43
16:P:67:THR:HB	16:P:70:ALA:CB	2.48	0.43
17:Q:16:GLN:O	17:Q:18:THR:N	2.51	0.43
18:R:59:SER:H	18:R:62:GLU:HB2	1.83	0.43
21:V:12:LYS:O	21:V:16:GLY:N	2.51	0.43
1:A:35:G:H5'	12:L:104:VAL:CG2	2.48	0.43
1:A:306:G:N3	1:A:306:G:H2'	2.33	0.43
1:A:373:A:C2'	1:A:374:A:O5'	2.67	0.43
1:A:540:G:H2'	1:A:541:G:O4'	2.18	0.43
1:A:577:G:C1'	1:A:816:A:C4	2.98	0.43
1:A:719:C:H3'	1:A:720:C:C5	2.54	0.43
1:A:850:U:O2	1:A:851:G:C8	2.70	0.43
1:A:862:C:O2'	1:A:863:U:C5'	2.66	0.43
1:A:890:G:O2'	1:A:906:G:N1	2.31	0.43
1:A:1006:C:O2'	1:A:1007:C:H5'	2.18	0.43
1:A:1135:U:O3'	1:A:1136:U:C5	2.71	0.43
1:A:1168:A:C6	1:A:1169:A:C6	3.05	0.43
1:A:1223:C:OP1	1:A:1224:G:H3'	2.18	0.43
1:A:1460:A:C6	1:A:1461:G:C4	3.06	0.43
3:C:45:LYS:HD3	3:C:45:LYS:HA	1.55	0.43
5:E:115:VAL:HG11	5:E:118:ILE:CD1	2.48	0.43
15:O:54:ARG:C	15:O:56:LEU:N	2.70	0.43
19:S:62:ILE:HD12	19:S:66:MET:HE3	1.99	0.43
1:A:47:C:H6	1:A:365:U:H2'	1.84	0.43
1:A:119:A:O2'	1:A:120:A:OP2	2.27	0.43
1:A:149:A:N1	1:A:150:C:C4	2.87	0.43
1:A:354:G:N3	1:A:355:C:C6	2.87	0.43
1:A:428:G:HO2'	1:A:429:U:P	2.41	0.43
1:A:577:G:N9	1:A:816:A:C2	2.86	0.43
1:A:867:G:C6	1:A:868:C:C5	3.06	0.43
1:A:1130:A:P	9:I:20:ARG:HH22	2.42	0.43
1:A:1202:G:H8	1:A:1202:G:OP1	2.01	0.43
1:A:1210:C:H4'	1:A:1214:C:N4	2.33	0.43
1:A:1367:C:C2	1:A:1368:G:H8	2.31	0.43
1:A:1370:G:H5"	9:I:12:GLU:OE1	2.18	0.43
1:A:1415:G:C2'	1:A:1416:G:H5'	2.48	0.43
1:A:1431:C:O2'	1:A:1432:G:H5'	2.17	0.43
2:B:118:LEU:HA	2:B:118:LEU:HD23	1.72	0.43
2:B:156:LYS:HD2	2:B:157:ARG:HD2	2.00	0.43
2:B:224:GLN:O	2:B:224:GLN:HG2	2.18	0.43
8:H:111:ILE:HG13	8:H:135:CYS:SG	2.58	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:54:LYS:NZ	12:L:74:GLY:HA2	2.34	0.43
17:Q:4:LYS:O	17:Q:60:ILE:HA	2.19	0.43
19:S:20:LEU:HD12	19:S:21:GLU:N	2.34	0.43
1:A:294:U:H2'	1:A:295:C:C6	2.50	0.43
1:A:357:G:C4	1:A:358:U:C5	3.06	0.43
1:A:373:A:H1'	1:A:481:G:N3	2.33	0.43
1:A:391:G:C6	1:A:392:G:C8	3.06	0.43
1:A:590:C:H2'	1:A:591:U:H6	1.83	0.43
1:A:815:A:H4'	1:A:817:C:C4	2.53	0.43
1:A:929:G:O2'	1:A:930:C:H5'	2.19	0.43
1:A:1029:C:N4	1:A:1032:G:H1	2.14	0.43
1:A:1187:G:H2'	1:A:1188:A:C8	2.54	0.43
1:A:1408:A:N6	1:A:1494:G:O6	2.52	0.43
1:A:1418:A:C6	1:A:1483:A:C5	3.06	0.43
1:A:118:U:C5	1:A:288:A:C5	3.06	0.43
1:A:257:G:C2	1:A:258:G:C4	3.06	0.43
1:A:406:G:C6	1:A:496:A:N7	2.86	0.43
1:A:425:G:H2'	1:A:426:G:C5'	2.49	0.43
1:A:670:G:C6	1:A:737:A:N1	2.87	0.43
1:A:706:A:H1'	11:K:29:ILE:CD1	2.48	0.43
1:A:949:A:N7	1:A:950:U:C4	2.86	0.43
1:A:1138:G:N3	1:A:1140:C:C6	2.87	0.43
1:A:1189:C:OP2	10:J:51:ARG:NH2	2.52	0.43
1:A:1255:G:H3'	1:A:1279:A:H61	1.84	0.43
1:A:1372:U:H2'	1:A:1373:G:O4'	2.19	0.43
1:A:1411:C:H2'	1:A:1412:C:H6	1.84	0.43
1:A:1504:G:O5'	1:A:1505:G:H5'	2.19	0.43
5:E:9:LYS:O	5:E:32:VAL:HG13	2.18	0.43
8:H:51:VAL:HG12	8:H:52:ASP:N	2.32	0.43
9:I:33:PHE:HD2	9:I:34:ASN:OD1	2.01	0.43
11:K:48:ILE:HD13	11:K:63:LEU:HB2	1.99	0.43
18:R:74:ARG:HB3	18:R:81:PHE:CZ	2.53	0.43
1:A:39:G:N1	1:A:40:C:C5	2.86	0.43
1:A:61:G:C5	1:A:107:G:C2	3.07	0.43
1:A:104:G:H4'	1:A:174:C:O4'	2.19	0.43
1:A:118:U:H5	1:A:288:A:C5	2.36	0.43
1:A:121:C:C4'	1:A:122:G:OP1	2.67	0.43
1:A:241:C:N4	1:A:242:C:N4	2.66	0.43
1:A:341:C:C2	1:A:349:A:C2	3.06	0.43
1:A:381:C:H2'	1:A:382:A:H8	1.83	0.43
1:A:429:U:H4'	1:A:430:A:H5"	1.98	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:817:C:C2	1:A:819:A:O4'	2.71	0.43
1:A:925:G:N1	1:A:927:G:N7	2.67	0.43
1:A:927:G:H2'	1:A:928:G:O5'	2.19	0.43
1:A:1061:G:C5	1:A:1062:U:N3	2.86	0.43
1:A:1243:C:H2'	1:A:1244:C:H6	1.78	0.43
1:A:1278:U:H5"	1:A:1279:A:C4'	2.48	0.43
1:A:1426:C:O2'	1:A:1427:U:H5'	2.19	0.43
1:A:1480:G:C5	1:A:1481:U:C5	3.06	0.43
3:C:82:GLU:O	3:C:86:VAL:HG23	2.19	0.43
3:C:180:ALA:CB	3:C:182:ILE:HG13	2.49	0.43
8:H:136:GLU:C	8:H:137:VAL:HG23	2.38	0.43
14:N:37:PHE:CE2	14:N:53:LEU:HD13	2.52	0.43
14:N:40:CYS:O	14:N:43:CYS:HB2	2.19	0.43
15:O:75:PRO:O	15:O:78:TYR:N	2.52	0.43
15:O:75:PRO:O	15:O:76:GLU:C	2.57	0.43
20:T:51:GLU:HA	20:T:54:LYS:HB2	2.00	0.43
1:A:123:C:OP1	1:A:312:C:H5'	2.19	0.43
1:A:197:A:O2'	1:A:198:G:P	2.77	0.43
1:A:374:A:H2'	1:A:375:U:H6	1.83	0.43
1:A:436:C:O2'	1:A:437:U:H5'	2.18	0.43
1:A:575:G:N2	1:A:881:G:N9	2.66	0.43
1:A:818:G:O2'	1:A:820:U:H5	1.95	0.43
1:A:1052:U:C4	1:A:1200:C:C2	3.06	0.43
1:A:1091:U:C2'	1:A:1092:A:O5'	2.67	0.43
1:A:1164:G:O2'	1:A:1165:C:H5'	2.19	0.43
1:A:1375:A:C2	1:A:1376:U:N1	2.85	0.43
1:A:1381:U:H2'	1:A:1382:C:C6	2.54	0.43
1:A:1488:G:C2	1:A:1489:G:C4	3.07	0.43
1:A:1489:G:C2'	1:A:1490:C:C5'	2.74	0.43
3:C:132:ARG:HH22	4:D:47:ARG:HH22	1.66	0.43
3:C:145:GLY:O	3:C:146:ALA:O	2.37	0.43
4:D:196:LEU:HA	4:D:197:PRO:HD2	1.88	0.43
9:I:118:LYS:HB3	9:I:119:ALA:H	1.62	0.43
10:J:49:VAL:HG12	10:J:50:ILE:N	2.34	0.43
12:L:8:ASN:O	12:L:9:GLN:C	2.57	0.43
14:N:31:ARG:HA	14:N:31:ARG:HD2	1.80	0.43
1:A:7:G:O2'	1:A:8:A:P	2.77	0.43
1:A:75:G:C6	1:A:76:C:C4	3.06	0.43
1:A:425:G:H2'	1:A:426:G:H5'	1.99	0.43
1:A:427:U:OP1	4:D:13:ARG:NH2	2.52	0.43
1:A:605:U:H2'	1:A:606:G:C8	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:662:G:N3	1:A:663:A:C8	2.87	0.43
1:A:663:A:C6	1:A:664:G:C5	3.06	0.43
1:A:713:G:H21	1:A:777:A:H4'	1.81	0.43
1:A:718:G:C6	1:A:719:C:C4	3.06	0.43
1:A:926:G:C2	1:A:1505:G:C4	3.06	0.43
1:A:1104:G:H4'	2:B:111:ARG:NH1	2.33	0.43
1:A:1107:C:N4	1:A:1108:G:N7	2.67	0.43
1:A:1181:G:C2'	1:A:1182:G:C8	3.01	0.43
1:A:1245:A:C2	1:A:1293:G:C2	3.07	0.43
1:A:1361(A):C:O2'	1:A:1362:C:H6	2.02	0.43
1:A:1371:G:C2	1:A:1372:U:C6	3.06	0.43
1:A:1401:G:N1	1:A:1402:C:C2	2.87	0.43
1:A:1448:C:H2'	1:A:1448:C:O2	2.18	0.43
3:C:3:ASN:O	3:C:4:LYS:CB	2.65	0.43
3:C:120:VAL:O	3:C:123:GLN:HB2	2.18	0.43
4:D:25:ARG:C	4:D:27:TYR:N	2.71	0.43
4:D:165:MET:O	4:D:167:GLY:N	2.52	0.43
4:D:174:LEU:CD2	4:D:185:PHE:HA	2.49	0.43
4:D:199:ASN:O	4:D:200:GLU:C	2.58	0.43
7:G:108:ALA:O	7:G:111:ARG:HG3	2.19	0.43
7:G:111:ARG:NH1	7:G:122:HIS:HB3	2.34	0.43
8:H:103:VAL:O	8:H:104:ARG:C	2.57	0.43
9:I:105:ASP:HB3	9:I:107:ARG:HG2	2.01	0.43
13:M:74:VAL:O	13:M:75:ALA:C	2.58	0.43
16:P:53:VAL:O	16:P:57:ARG:HG3	2.18	0.43
17:Q:82:MET:O	17:Q:83:ASP:C	2.57	0.43
1:A:41:G:N1	1:A:402:G:C6	2.87	0.43
1:A:113:G:C5	1:A:315:A:N1	2.87	0.43
1:A:162:A:H2'	1:A:163:C:O4'	2.18	0.43
1:A:362:G:N2	1:A:365:U:OP2	2.51	0.43
1:A:406:G:C5	1:A:496:A:C8	3.07	0.43
1:A:415:A:C5	1:A:416:G:C5	3.07	0.43
1:A:437:U:H2'	1:A:438:G:O4'	2.18	0.43
1:A:517:G:O2'	1:A:530:G:C4'	2.56	0.43
1:A:581:G:C8	1:A:758:G:O6	2.72	0.43
1:A:718:G:C6	1:A:719:C:N3	2.87	0.43
1:A:742:G:C2'	1:A:743:U:H5'	2.49	0.43
1:A:774:G:C2	1:A:775:G:H1'	2.54	0.43
1:A:797:C:C2'	1:A:798:G:O5'	2.66	0.43
1:A:935:A:N1	7:G:3:ARG:NH2	2.66	0.43
1:A:1044:A:C2'	1:A:1045:C:H5'	2.49	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1293:G:H2'	1:A:1294:G:O4'	2.19	0.43
2:B:211:ILE:H	2:B:211:ILE:HG13	1.36	0.43
4:D:19:LEU:HD23	4:D:19:LEU:HA	1.62	0.43
4:D:104:VAL:HG21	4:D:140:VAL:CG2	2.36	0.43
5:E:89:ILE:HD12	5:E:135:THR:OG1	2.18	0.43
10:J:87:THR:O	10:J:87:THR:HG22	2.19	0.43
15:O:54:ARG:O	15:O:57:LEU:N	2.52	0.43
18:R:51:LEU:HA	18:R:52:PRO:HD3	1.77	0.43
20:T:13:LEU:HD12	20:T:13:LEU:C	2.39	0.43
1:A:43:C:O2	1:A:43:C:H2'	2.19	0.42
1:A:115:G:H1'	1:A:116:A:N7	2.34	0.42
1:A:142:G:H2'	1:A:143:A:C8	2.54	0.42
1:A:177:C:O2'	1:A:178:C:C5'	2.67	0.42
1:A:392:G:C6	1:A:393:A:N7	2.87	0.42
1:A:414:A:N3	1:A:414:A:H2'	2.34	0.42
1:A:522:C:C2'	1:A:523:A:H5'	2.49	0.42
1:A:533:A:C6	1:A:536:C:C2	3.07	0.42
1:A:579:G:N7	1:A:580:U:H5	2.17	0.42
1:A:696:A:C5	1:A:697:U:C5	3.06	0.42
1:A:819:A:C4'	1:A:820:U:OP2	2.66	0.42
1:A:976:G:N7	1:A:1358:U:C2	2.86	0.42
1:A:1205:U:C1'	3:C:195:VAL:CG2	2.97	0.42
1:A:1237:C:C2'	1:A:1238:A:OP1	2.67	0.42
1:A:1415:G:C4	1:A:1416:G:C8	3.07	0.42
1:A:1497:G:N7	1:A:1498:U:C5	2.87	0.42
4:D:10:ARG:O	4:D:13:ARG:HB2	2.19	0.42
4:D:11:LEU:HD13	4:D:66:ARG:HD3	1.99	0.42
4:D:71:SER:O	4:D:74:GLN:N	2.48	0.42
6:F:1:MET:CG	6:F:68:PRO:HA	2.40	0.42
8:H:26:VAL:CG1	8:H:59:LEU:O	2.67	0.42
16:P:20:VAL:CG2	16:P:21:VAL:H	2.23	0.42
19:S:10:PHE:O	19:S:11:VAL:HG23	2.19	0.42
21:V:5:ASP:O	21:V:7:ARG:N	2.52	0.42
1:A:17:U:O2'	1:A:1079:G:N3	2.46	0.42
1:A:411:A:H2'	1:A:413:G:C8	2.54	0.42
1:A:411:A:C8	1:A:413:G:C4	3.07	0.42
1:A:458:C:N3	1:A:459:G:C8	2.87	0.42
1:A:605:U:O4	1:A:606:G:O6	2.37	0.42
1:A:655:A:C2'	1:A:656:C:H5'	2.49	0.42
1:A:883:C:O2'	1:A:884:U:H5'	2.19	0.42
1:A:973:G:C3'	1:A:974:A:H5"	2.49	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1208:C:O2'	1:A:1209:C:H5'	2.19	0.42
1:A:1214:C:H4'	1:A:1215:G:OP1	2.18	0.42
1:A:1306:A:C4	1:A:1307:U:C5	3.06	0.42
3:C:8:ILE:C	3:C:10:PHE:N	2.72	0.42
3:C:114:PRO:HD3	3:C:183:ASP:OD1	2.18	0.42
4:D:38:TYR:CD2	4:D:38:TYR:N	2.69	0.42
8:H:10:LEU:HD22	8:H:83:ILE:HG12	2.01	0.42
10:J:20:ALA:O	10:J:24:VAL:HG23	2.20	0.42
13:M:21:TYR:N	13:M:21:TYR:CD1	2.85	0.42
16:P:50:LYS:C	16:P:51:VAL:HG23	2.40	0.42
20:T:33:ILE:HD11	20:T:63:ILE:CA	2.45	0.42
1:A:44:G:C6	1:A:45:U:C2	3.08	0.42
1:A:319:G:C2'	1:A:320:C:H5'	2.49	0.42
1:A:366:C:H4'	1:A:367:U:OP1	2.19	0.42
1:A:412:A:O2'	1:A:413:G:OP2	2.29	0.42
1:A:463:A:C4	1:A:474:G:C8	3.07	0.42
1:A:501:C:H2'	1:A:502:G:C8	2.53	0.42
1:A:509:A:H8	1:A:509:A:C5'	2.33	0.42
1:A:518:C:H4'	1:A:519:C:O5'	2.17	0.42
1:A:663:A:N1	1:A:664:G:C5	2.88	0.42
1:A:724:G:C2	1:A:725:G:N9	2.87	0.42
1:A:819:A:C5'	1:A:820:U:OP2	2.67	0.42
1:A:939:G:H5"	7:G:102:ARG:HH22	1.82	0.42
1:A:1057:G:C2'	1:A:1058:G:H8	2.30	0.42
1:A:1181:G:H2'	1:A:1182:G:N7	2.34	0.42
1:A:1202:G:H1'	14:N:42:ILE:CD1	2.49	0.42
1:A:1321:C:H2'	1:A:1322:C:C5	2.54	0.42
1:A:1388:C:H2'	1:A:1389:C:C6	2.54	0.42
2:B:15:VAL:HG13	2:B:209:ARG:HB3	2.00	0.42
2:B:54:THR:HG21	2:B:201:ILE:HD11	2.01	0.42
4:D:100:ARG:O	4:D:104:VAL:HG23	2.19	0.42
5:E:11:ILE:HA	5:E:11:ILE:HD13	1.74	0.42
7:G:148:ASN:C	7:G:150:ALA:N	2.72	0.42
8:H:44:PHE:N	8:H:44:PHE:CD2	2.88	0.42
9:I:124:GLN:HG3	9:I:124:GLN:O	2.19	0.42
10:J:71:LEU:HD13	10:J:72:VAL:H	1.84	0.42
14:N:58:LYS:HB3	14:N:58:LYS:HE3	1.43	0.42
15:O:82:ILE:O	15:O:83:GLU:C	2.57	0.42
18:R:52:PRO:HB2	18:R:54:ARG:HG3	2.01	0.42
1:A:20:U:C4	1:A:21:G:C5	3.07	0.42
1:A:265:G:C4	1:A:267:C:C5	3.06	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:273:A:N6	1:A:274:A:C6	2.87	0.42
1:A:338:A:C6	1:A:339:C:C5	3.07	0.42
1:A:508:C:H4'	1:A:509:A:O5'	2.18	0.42
1:A:695:A:C2	1:A:696:A:C4	3.07	0.42
1:A:981:U:C6	1:A:982:U:C6	3.08	0.42
1:A:1150:U:H4'	10:J:41:PRO:HD3	2.00	0.42
1:A:1442:G:N1	1:A:1446:A:C8	2.87	0.42
1:A:1450:U:N3	1:A:1452:C:N3	2.67	0.42
1:A:1506:U:O4	1:A:1521:G:H5"	2.20	0.42
1:A:1528:U:HO2'	1:A:1529:G:P	2.40	0.42
8:H:26:VAL:C	8:H:58:TYR:HD2	2.22	0.42
11:K:77:MET:HE2	11:K:77:MET:HB3	1.88	0.42
12:L:119:LYS:O	12:L:120:TYR:CB	2.68	0.42
18:R:88:LYS:HD3	18:R:88:LYS:HA	1.80	0.42
1:A:43:C:O2	1:A:43:C:C2'	2.66	0.42
1:A:101:A:O2'	1:A:102:G:C5'	2.67	0.42
1:A:256:U:H2'	1:A:257:G:C8	2.53	0.42
1:A:506:G:C5	1:A:507:C:C5	3.07	0.42
1:A:635:G:C4	1:A:636:U:C5	3.07	0.42
1:A:669:U:H2'	1:A:670:G:C8	2.55	0.42
1:A:707:C:H5"	11:K:20:TYR:CD2	2.54	0.42
1:A:866:C:C6	1:A:867:G:C1'	3.02	0.42
1:A:898:G:C6	1:A:902:G:C6	3.07	0.42
1:A:1210:C:C4'	1:A:1214:C:N4	2.82	0.42
1:A:1349:A:C2'	1:A:1350:A:H8	2.25	0.42
1:A:1491:G:OP1	12:L:47:LYS:HE2	2.20	0.42
3:C:172:ARG:O	3:C:173:VAL:HG23	2.19	0.42
5:E:129:ILE:CG2	5:E:133:TYR:CE1	2.98	0.42
6:F:36:ARG:HE	6:F:36:ARG:HB2	1.32	0.42
7:G:141:VAL:O	7:G:144:MET:HB2	2.19	0.42
9:I:49:PRO:O	9:I:52:ALA:HB3	2.20	0.42
9:I:65:VAL:HG11	9:I:73:GLN:OE1	2.19	0.42
11:K:66:LEU:HD23	11:K:66:LEU:HA	1.94	0.42
19:S:20:LEU:O	19:S:23:ASN:HB2	2.19	0.42
20:T:14:LYS:O	20:T:18:GLN:HG3	2.20	0.42
1:A:57:G:C5	1:A:58:C:C4	3.08	0.42
1:A:113:G:C4	1:A:114:U:C6	3.07	0.42
1:A:195:A:N3	1:A:222:U:O2'	2.44	0.42
1:A:393:A:C2	1:A:394:G:N9	2.88	0.42
1:A:418:C:N3	1:A:426:G:C2	2.88	0.42
1:A:600:C:H2'	1:A:601:C:C6	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:608:A:C2	1:A:609:A:C8	3.08	0.42
1:A:616:G:C2	1:A:625:G:C5	3.08	0.42
1:A:910:C:H5"	12:L:97:ARG:NH2	2.35	0.42
1:A:941:G:C2'	1:A:942:G:O5'	2.68	0.42
1:A:1003:G:C5	1:A:1003(A):G:C8	3.08	0.42
1:A:1044:A:H2'	1:A:1045:C:H5'	2.00	0.42
1:A:1094:G:OP2	1:A:1095:U:H5	2.02	0.42
1:A:1183:A:O2'	1:A:1184:G:P	2.77	0.42
1:A:1237:C:C6	1:A:1336:C:C4	3.08	0.42
1:A:1378:C:OP1	7:G:6:ARG:O	2.37	0.42
2:B:156:LYS:CD	2:B:157:ARG:HD2	2.49	0.42
3:C:12:LEU:HA	3:C:16:ARG:O	2.18	0.42
4:D:36:ARG:HG2	4:D:38:TYR:OH	2.20	0.42
5:E:101:ILE:HG22	5:E:101:ILE:O	2.19	0.42
1:A:174:C:C2	1:A:175:C:C6	3.06	0.42
1:A:262:A:OP1	20:T:73:HIS:ND1	2.53	0.42
1:A:291:C:C2'	1:A:292:G:H5'	2.50	0.42
1:A:486:U:C2'	1:A:487:A:H5'	2.49	0.42
1:A:495:U:O5'	1:A:495:U:H6	2.02	0.42
1:A:674:G:C5'	6:F:50:TYR:CE2	3.00	0.42
1:A:886:G:C2	1:A:887:G:C4	3.08	0.42
1:A:927:G:C6	1:A:1391:U:C2	3.08	0.42
1:A:1088:G:C4	1:A:1089:G:C8	3.07	0.42
1:A:1440:C:H2'	1:A:1441:G:C5'	2.50	0.42
1:A:1520:G:C2	1:A:1521:G:C5	3.08	0.42
3:C:8:ILE:HG23	3:C:16:ARG:HG2	2.02	0.42
4:D:136:PRO:C	4:D:138:TYR:H	2.23	0.42
5:E:118:ILE:HD13	5:E:118:ILE:HG21	1.77	0.42
5:E:139:LEU:O	5:E:142:LEU:HG	2.19	0.42
5:E:144:THR:HB	5:E:147:ASP:H	1.85	0.42
7:G:93:PRO:HG2	7:G:94:ARG:H	1.85	0.42
13:M:37:THR:O	13:M:37:THR:CG2	2.67	0.42
1:A:248:C:H2'	1:A:249:U:C5'	2.49	0.42
1:A:281:G:O2'	1:A:282:A:P	2.77	0.42
1:A:408:A:C2	1:A:409:G:N9	2.88	0.42
1:A:418:C:H2'	1:A:419:C:C6	2.54	0.42
1:A:500:G:C8	1:A:500:G:H3'	2.55	0.42
1:A:829:G:C2	1:A:830:G:C5	3.07	0.42
1:A:944:G:H3'	1:A:945:G:H5'	2.02	0.42
1:A:968:A:C5'	1:A:969:A:OP2	2.68	0.42
1:A:1135:U:O3'	1:A:1136:U:H5	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1165:C:C4	1:A:1166:G:N7	2.88	0.42
1:A:1191:A:C5	1:A:1192:C:C5	3.07	0.42
1:A:1378:C:C5	1:A:1379:G:N9	2.88	0.42
1:A:1447:G:H2'	1:A:1448:C:H6	1.84	0.42
1:A:1508:G:C6	1:A:1509:C:C4	3.08	0.42
2:B:83:MET:O	2:B:86:GLU:HB2	2.20	0.42
4:D:79:PHE:CD2	4:D:79:PHE:O	2.73	0.42
5:E:32:VAL:O	5:E:43:LEU:HA	2.20	0.42
6:F:35:ALA:CA	6:F:67:MET:HB3	2.50	0.42
13:M:2:ALA:CB	13:M:45:VAL:HG12	2.50	0.42
14:N:6:LEU:HB3	14:N:23:ARG:NH2	2.33	0.42
1:A:9:G:C2	1:A:10:A:C5	3.07	0.42
1:A:39:G:N1	1:A:40:C:C6	2.88	0.42
1:A:75:G:C6	1:A:76:C:N4	2.87	0.42
1:A:129(A):G:N3	1:A:190(E):U:C5'	2.83	0.42
1:A:142:G:C2	1:A:222:U:C2	3.08	0.42
1:A:266:G:C8	1:A:266:G:C4'	3.02	0.42
1:A:339:C:H2'	1:A:340:U:H6	1.84	0.42
1:A:540:G:H2'	1:A:541:G:H5'	2.00	0.42
1:A:627:G:H2'	1:A:628:G:O5'	2.20	0.42
1:A:801:U:O2'	1:A:802:A:H5'	2.20	0.42
1:A:865:A:C2	1:A:918:A:H4'	2.54	0.42
1:A:885:G:O2'	1:A:914:A:C2	2.70	0.42
1:A:940:C:C2	1:A:941:G:C8	3.08	0.42
1:A:940:C:C2'	1:A:941:G:H5'	2.50	0.42
1:A:978:A:C5	1:A:1319:A:N1	2.88	0.42
1:A:1278:U:H5"	1:A:1279:A:C5'	2.50	0.42
1:A:1381:U:O2	1:A:1381:U:C2'	2.68	0.42
3:C:152:ILE:HG22	3:C:153:VAL:N	2.35	0.42
3:C:173:VAL:O	3:C:173:VAL:CG1	2.61	0.42
8:H:86:ILE:HD12	8:H:133:LEU:CD2	2.46	0.42
10:J:40:LEU:HG	10:J:69:ASN:CB	2.50	0.42
15:O:12:ILE:H	15:O:12:ILE:HG13	1.66	0.42
1:A:7:G:C5	1:A:298:A:C2	3.08	0.42
1:A:31:G:O2'	1:A:32:A:P	2.77	0.42
1:A:190(D):U:O2'	1:A:190(E):U:H5'	2.20	0.42
1:A:293:G:C6	1:A:305:G:N1	2.88	0.42
1:A:491:G:N1	1:A:492:G:C5	2.88	0.42
1:A:533:A:H2'	1:A:535:A:OP2	2.19	0.42
1:A:676:A:C5	1:A:677:U:C5	3.08	0.42
1:A:769:G:N2	1:A:770:C:N1	2.68	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:981:U:C2	1:A:982:U:C5	3.07	0.42
1:A:1069:C:H2'	1:A:1070:U:O5'	2.18	0.42
1:A:1072:G:C5	1:A:1073:U:C4	3.08	0.42
1:A:1091:U:N1	1:A:1093:A:OP2	2.53	0.42
1:A:1439:C:P	20:T:38:LYS:HZ2	2.43	0.42
1:A:1451:A:HO2'	1:A:1452:C:P	2.42	0.42
3:C:155:GLY:O	3:C:196:LEU:HD22	2.20	0.42
3:C:180:ALA:O	3:C:181:ASN:CB	2.68	0.42
3:C:180:ALA:HB1	3:C:182:ILE:HG13	2.02	0.42
3:C:191:THR:HG22	3:C:192:THR:N	2.35	0.42
4:D:162:LEU:O	4:D:163:GLU:C	2.59	0.42
5:E:144:THR:HG22	5:E:145:LYS:N	2.35	0.42
9:I:28:VAL:HG22	9:I:63:ILE:HB	2.02	0.42
13:M:96:LEU:O	13:M:110:ARG:NH1	2.53	0.42
15:O:53:HIS:O	15:O:57:LEU:HD13	2.20	0.42
16:P:59:TRP:HA	16:P:59:TRP:HE3	1.82	0.42
1:A:22:G:C5	1:A:23:C:C4	3.07	0.41
1:A:28:G:O2'	1:A:296:U:OP1	2.29	0.41
1:A:185:A:C6	1:A:186:C:N4	2.88	0.41
1:A:223:U:H2'	1:A:224:C:O4'	2.19	0.41
1:A:284:G:C4	1:A:285:G:C8	3.08	0.41
1:A:300:A:C8	1:A:300:A:C3'	3.02	0.41
1:A:448:A:N6	1:A:487:A:N9	2.68	0.41
1:A:452:A:C2	1:A:453:A:H1'	2.55	0.41
1:A:508:C:OP1	4:D:209:ARG:NH2	2.53	0.41
1:A:533:A:HO2'	1:A:534:U:P	2.43	0.41
1:A:559:A:OP1	5:E:126:ARG:NH1	2.51	0.41
1:A:633:G:C6	1:A:634:C:N4	2.88	0.41
1:A:662:G:O2'	1:A:663:A:H5'	2.20	0.41
1:A:817:C:C4'	1:A:818:G:OP1	2.67	0.41
1:A:866:C:C5	1:A:867:G:C1'	3.03	0.41
1:A:889:A:C4	1:A:891:U:C4	3.08	0.41
1:A:1019:C:H2'	1:A:1020:U:C5'	2.50	0.41
1:A:1054:C:O2'	1:A:1055:A:C5'	2.48	0.41
1:A:1055:A:N6	1:A:1206:G:C6	2.87	0.41
1:A:1398:A:H8	1:A:1398:A:H5"	1.85	0.41
1:A:1450:U:HO2'	1:A:1451:A:H8	1.68	0.41
2:B:22:LYS:HD2	2:B:40:HIS:HE1	1.85	0.41
4:D:117:ALA:O	4:D:120:LEU:HB2	2.20	0.41
4:D:188:LEU:HA	4:D:188:LEU:HD23	1.83	0.41
5:E:58:ALA:O	5:E:59:GLY:C	2.58	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:141:GLN:O	5:E:142:LEU:C	2.57	0.41
7:G:113:GLU:OE1	7:G:118:VAL:HG12	2.20	0.41
8:H:9:MET:CG	8:H:13:ILE:HD11	2.49	0.41
8:H:112:LEU:N	8:H:112:LEU:CD2	2.65	0.41
11:K:29:ILE:HG21	11:K:29:ILE:HD13	1.81	0.41
14:N:25:VAL:HG12	14:N:38:GLY:O	2.20	0.41
18:R:85:LEU:HD12	18:R:85:LEU:HA	1.89	0.41
18:R:85:LEU:HD12	18:R:86:VAL:H	1.85	0.41
1:A:142:G:C6	1:A:143:A:C6	3.08	0.41
1:A:190(A):C:C2'	1:A:190(B):C:H5'	2.50	0.41
1:A:190(H):G:H2'	1:A:190(I):G:H8	1.85	0.41
1:A:243:A:C4	1:A:245:C:C4	3.07	0.41
1:A:279:A:H3'	17:Q:95:TYR:OH	2.20	0.41
1:A:307:C:H5"	1:A:308:C:OP2	2.19	0.41
1:A:371:G:C2'	1:A:372:C:C5'	2.96	0.41
1:A:411:A:H1'	1:A:413:G:C1'	2.50	0.41
1:A:463:A:C5	1:A:474:G:C5	3.08	0.41
1:A:538:G:H2'	1:A:539:A:C8	2.56	0.41
1:A:587:G:C6	1:A:755:G:C6	3.08	0.41
1:A:922:G:C6	1:A:923:A:N1	2.88	0.41
1:A:939:G:C5'	7:G:102:ARG:HH22	2.32	0.41
1:A:1135:U:H4'	1:A:1136:U:C5	2.53	0.41
1:A:1233:G:C4	1:A:1234:C:C5	3.08	0.41
1:A:1237:C:H2'	1:A:1336:C:C5	2.55	0.41
1:A:1328:C:O3'	13:M:28:ALA:HB3	2.20	0.41
1:A:1466:C:H2'	1:A:1467:G:O4'	2.20	0.41
1:A:1480:G:C4	1:A:1481:U:C6	3.08	0.41
1:A:1505:G:O2'	1:A:1506:U:OP2	2.28	0.41
2:B:205:ASP:O	2:B:211:ILE:HG12	2.20	0.41
4:D:24:GLU:O	4:D:25:ARG:HB3	2.20	0.41
10:J:40:LEU:HD23	10:J:40:LEU:HA	1.72	0.41
17:Q:62:SER:OG	17:Q:72:ARG:HG3	2.20	0.41
18:R:56:THR:HB	18:R:58:LEU:HG	2.02	0.41
18:R:74:ARG:O	18:R:77:GLY:N	2.52	0.41
19:S:15:LEU:CA	19:S:18:LYS:HB3	2.42	0.41
20:T:56:MET:HG3	20:T:84:LEU:HD21	2.02	0.41
1:A:58:C:O2	1:A:58:C:C2'	2.69	0.41
1:A:79:G:C2	1:A:91:C:C2	3.08	0.41
1:A:170:U:O2'	1:A:171:A:C5'	2.65	0.41
1:A:311:C:O2	1:A:311:C:H2'	2.19	0.41
1:A:332:G:C2'	1:A:333:G:H5'	2.50	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:495:U:H5”	1:A:496:A:OP2	2.20	0.41
1:A:555:C:C6	1:A:555:C:C3’	3.03	0.41
1:A:563:A:N7	1:A:567:G:C1’	2.83	0.41
1:A:618:C:H3’	1:A:619:U:H5”	2.02	0.41
1:A:687:A:C2	1:A:704:A:C5	3.08	0.41
1:A:918:A:H2’	1:A:919:A:C8	2.54	0.41
1:A:923:A:N6	1:A:1392:G:O6	2.53	0.41
1:A:945:G:C6	1:A:1337:G:C6	3.09	0.41
1:A:955:U:C2’	1:A:956:U:H5’	2.51	0.41
1:A:1031:G:H2’	1:A:1032:G:H8	1.85	0.41
1:A:1039:C:N3	1:A:1040:U:C5	2.89	0.41
1:A:1045:C:C2’	1:A:1046:A:O5’	2.69	0.41
1:A:1114:C:H1’	14:N:60:SER:HB3	2.02	0.41
1:A:1256:A:O2’	1:A:1257:U:OP2	2.38	0.41
1:A:1272:G:H2’	1:A:1273:G:O4’	2.20	0.41
1:A:1286:A:H2’	1:A:1287:A:H4’	2.01	0.41
1:A:1291:G:N3	1:A:1292:U:C6	2.88	0.41
1:A:1324:A:C6	1:A:1325:C:N4	2.88	0.41
1:A:1345:U:C2	1:A:1377:A:N1	2.89	0.41
1:A:1398:A:H5”	1:A:1398:A:C8	2.55	0.41
1:A:1477:C:H2’	1:A:1478:C:C6	2.55	0.41
3:C:112:SER:O	3:C:116:VAL:HG23	2.20	0.41
4:D:118:ARG:O	4:D:121:VAL:N	2.47	0.41
4:D:157:LEU:HB3	4:D:158:ILE:H	1.66	0.41
5:E:11:ILE:O	5:E:12:LEU:HB3	2.19	0.41
5:E:102:ALA:HB2	5:E:120:THR:CB	2.49	0.41
7:G:142:GLU:C	7:G:144:MET:N	2.73	0.41
8:H:127:LEU:HA	8:H:127:LEU:HD13	1.76	0.41
13:M:65:LYS:O	13:M:66:LEU:HD23	2.20	0.41
19:S:63:THR:HG22	19:S:64:GLU:N	2.35	0.41
21:V:10:ARG:HA	21:V:13:ILE:HD12	2.01	0.41
1:A:109:A:C2’	1:A:326:G:N2	2.53	0.41
1:A:168:G:N1	1:A:169:C:C5	2.88	0.41
1:A:175:C:H4’	20:T:25:ARG:NH1	2.36	0.41
1:A:201:C:C4	1:A:203:U:C6	3.09	0.41
1:A:376:G:O3’	16:P:5:ARG:HD2	2.19	0.41
1:A:401:C:H2’	1:A:402:G:C8	2.55	0.41
1:A:520:A:H2	1:A:536:C:O2	2.03	0.41
1:A:562:C:N3	1:A:884:U:H5	2.15	0.41
1:A:656:C:C2’	1:A:657:G:O5’	2.68	0.41
1:A:718:G:O4’	11:K:117:ASN:ND2	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1004:A:H2'	1:A:1005:A:H8	1.83	0.41
1:A:1086:U:C2'	1:A:1087:G:H8	2.15	0.41
1:A:1232:U:C2'	1:A:1233:G:O5'	2.68	0.41
1:A:1321:C:H2'	1:A:1322:C:C6	2.54	0.41
1:A:1450:U:O2'	1:A:1451:A:C8	2.73	0.41
1:A:1486:G:C2	1:A:1487:G:C4	3.08	0.41
2:B:84:GLU:HG3	2:B:215:LEU:CB	2.49	0.41
2:B:115:LEU:HD23	2:B:153:ARG:NE	2.35	0.41
2:B:222:ILE:O	2:B:225:ALA:HB3	2.21	0.41
3:C:206:GLU:HB3	3:C:207:VAL:H	1.67	0.41
4:D:127:THR:HB	4:D:147:ALA:HB3	2.02	0.41
5:E:136:MET:O	5:E:137:GLU:C	2.58	0.41
8:H:5:PRO:O	8:H:6:ILE:C	2.58	0.41
12:L:45:PRO:HG2	12:L:51:ALA:N	2.35	0.41
13:M:67:GLU:C	13:M:69:GLU:H	2.24	0.41
19:S:45:VAL:HG11	19:S:64:GLU:HA	2.03	0.41
20:T:50:GLU:CB	20:T:99:LEU:HD12	2.32	0.41
1:A:9:G:C2	1:A:10:A:N7	2.89	0.41
1:A:101:A:C2	1:A:102:G:C5	3.08	0.41
1:A:284:G:H2'	1:A:285:G:H8	1.84	0.41
1:A:513:C:H2'	1:A:514:C:H6	1.86	0.41
1:A:592:G:C2	1:A:593:G:N7	2.88	0.41
1:A:688:G:C6	1:A:700:G:C2	3.08	0.41
1:A:798:G:H2'	1:A:799:G:O5'	2.20	0.41
1:A:872:A:N3	1:A:872:A:H2'	2.36	0.41
1:A:915:A:C2'	1:A:916:G:O5'	2.68	0.41
1:A:924:C:C2'	1:A:925:G:C5'	2.98	0.41
1:A:1049:U:O2'	1:A:1050:G:OP2	2.32	0.41
1:A:1075:C:O5'	1:A:1075:C:H6	2.03	0.41
1:A:1325:C:H2'	1:A:1326:C:C6	2.55	0.41
1:A:1371:G:OP1	9:I:11:LYS:HD3	2.20	0.41
1:A:1396:A:H4'	1:A:1397:C:C5'	2.50	0.41
4:D:71:SER:O	4:D:72:GLU:C	2.58	0.41
7:G:27:ILE:O	7:G:28:ASN:C	2.58	0.41
8:H:123:GLU:O	8:H:127:LEU:N	2.50	0.41
8:H:136:GLU:O	8:H:137:VAL:HG23	2.20	0.41
12:L:24:VAL:HG13	12:L:98:TYR:CE2	2.55	0.41
12:L:75:HIS:CD2	12:L:76:ASN:N	2.88	0.41
12:L:105:TYR:HB3	12:L:106:ASP:H	1.61	0.41
16:P:62:VAL:O	16:P:62:VAL:CG1	2.68	0.41
1:A:144:G:C6	1:A:145:G:N7	2.89	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:296:U:H2'	1:A:297:G:H8	1.84	0.41
1:A:404:U:H5'	4:D:122:ARG:NE	2.35	0.41
1:A:433:C:O2'	1:A:434:U:H5'	2.20	0.41
1:A:436:C:C2	1:A:437:U:C5	3.08	0.41
1:A:577:G:C6	1:A:578:C:C5	3.08	0.41
1:A:581:G:N7	1:A:758:G:C5	2.87	0.41
1:A:680:C:O2	1:A:711:G:C2	2.73	0.41
1:A:710:G:OP1	6:F:54:LYS:HE3	2.20	0.41
1:A:753:A:H5'	1:A:754:C:C5	2.56	0.41
1:A:791:G:C2'	1:A:792:A:H5'	2.51	0.41
1:A:807:A:C6	1:A:808:C:C4	3.09	0.41
1:A:823:G:C6	1:A:878:G:C6	3.08	0.41
1:A:865:A:H2	1:A:918:A:H4'	1.86	0.41
1:A:914:A:HO2'	1:A:915:A:H5'	1.74	0.41
1:A:949:A:C6	1:A:950:U:N3	2.89	0.41
1:A:1130:A:O5'	1:A:1131:G:OP2	2.38	0.41
1:A:1179:A:H2'	1:A:1180:A:H8	1.85	0.41
1:A:1231:G:H2'	1:A:1232:U:C6	2.53	0.41
1:A:1267:C:C6	1:A:1268:A:C8	3.09	0.41
1:A:1299:A:C5	1:A:1301:U:C2	3.09	0.41
1:A:1305:G:N2	1:A:1331:G:C2'	2.83	0.41
1:A:1348:U:H2'	1:A:1349:A:H8	1.85	0.41
1:A:1414:U:H2'	1:A:1415:G:H8	1.86	0.41
3:C:6:HIS:CD2	3:C:9:GLY:H	2.37	0.41
3:C:54:ARG:H	3:C:69:HIS:HB2	1.86	0.41
3:C:73:PRO:C	3:C:75:VAL:N	2.73	0.41
3:C:154:SER:OG	3:C:197:GLY:N	2.48	0.41
4:D:145:GLU:HG2	4:D:184:LYS:HE2	2.02	0.41
6:F:79:LEU:HD23	6:F:79:LEU:HA	1.89	0.41
7:G:151:TYR:O	7:G:153:HIS:N	2.48	0.41
10:J:57:LYS:HB2	10:J:60:ARG:NH2	2.34	0.41
13:M:84:ILE:CG2	19:S:66:MET:SD	3.07	0.41
13:M:94:ARG:HH22	19:S:81:ARG:HD2	1.85	0.41
1:A:10:A:C2	1:A:11:G:C4	3.08	0.41
1:A:59:A:N1	1:A:354:G:C8	2.88	0.41
1:A:59:A:C6	1:A:354:G:C5	3.09	0.41
1:A:217:C:O2'	1:A:218:C:H5'	2.20	0.41
1:A:374:A:H2'	1:A:375:U:C6	2.56	0.41
1:A:412:A:O2'	1:A:413:G:P	2.79	0.41
1:A:418:C:H2'	1:A:419:C:H6	1.84	0.41
1:A:540:G:C2'	1:A:541:G:C5'	2.97	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:562:C:O2'	12:L:15:ARG:HB3	2.20	0.41
1:A:592:G:C2	1:A:593:G:C5	3.09	0.41
1:A:593:G:C2	1:A:647:C:O2	2.74	0.41
1:A:654:G:O6	1:A:655:A:C6	2.73	0.41
1:A:660:G:H2'	1:A:661:G:O5'	2.20	0.41
1:A:718:G:C4'	11:K:117:ASN:HD21	2.33	0.41
1:A:794:A:C8	1:A:795:C:C5	3.09	0.41
1:A:939:G:H5"	7:G:102:ARG:CZ	2.50	0.41
1:A:970:C:H5"	1:A:972:C:C6	2.54	0.41
1:A:1073:U:C2'	1:A:1074:G:H5'	2.51	0.41
1:A:1083:U:H5	1:A:1084:G:C6	2.33	0.41
1:A:1126:U:P	1:A:1126:U:C5	3.14	0.41
1:A:1248:A:C5	1:A:1249:C:C5	3.08	0.41
1:A:1504:G:HO2'	1:A:1505:G:P	2.44	0.41
2:B:16:HIS:HE2	2:B:213:LEU:HD13	1.84	0.41
3:C:130:VAL:HB	3:C:157:ILE:HG23	2.02	0.41
4:D:78:LEU:HA	4:D:78:LEU:HD23	1.53	0.41
7:G:27:ILE:HA	7:G:30:ILE:HD13	2.03	0.41
8:H:26:VAL:HA	8:H:27:PRO:HD3	1.92	0.41
8:H:63:LEU:HD12	8:H:63:LEU:HA	1.76	0.41
9:I:47:LEU:C	9:I:49:PRO:HD2	2.40	0.41
10:J:64:GLU:OE2	14:N:59:ALA:HA	2.20	0.41
14:N:3:ARG:O	14:N:6:LEU:N	2.44	0.41
16:P:74:LEU:HB3	16:P:79:VAL:HG21	2.01	0.41
18:R:59:SER:OG	18:R:62:GLU:HG3	2.21	0.41
1:A:110:C:N4	1:A:111:G:C6	2.88	0.41
1:A:279:A:O2'	1:A:280:C:P	2.78	0.41
1:A:318:G:N3	1:A:319:G:C8	2.88	0.41
1:A:325:A:C8	1:A:326:G:N7	2.89	0.41
1:A:451:A:C2	1:A:480:U:C4	3.08	0.41
1:A:550:G:C5	1:A:551:U:C5	3.08	0.41
1:A:563:A:C8	1:A:567:G:C1'	3.04	0.41
1:A:575:G:HO2'	1:A:576:G:P	2.43	0.41
1:A:716:A:N3	11:K:117:ASN:O	2.53	0.41
1:A:872:A:N1	1:A:874:G:C5	2.86	0.41
1:A:945:G:O6	1:A:1337:G:C6	2.73	0.41
1:A:1037:C:H6	1:A:1037:C:O5'	2.04	0.41
1:A:1141:C:O2'	1:A:1142:G:H5'	2.21	0.41
1:A:1143:G:H2'	1:A:1144:G:O4'	2.20	0.41
1:A:1228:C:H4'	13:M:115:LYS:O	2.21	0.41
1:A:1370:G:C5'	9:I:12:GLU:OE1	2.69	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1508:G:C2'	1:A:1509:C:H5'	2.51	0.41
3:C:6:HIS:HA	3:C:7:PRO:HD2	1.65	0.41
3:C:22:TRP:HZ3	3:C:24:ALA:CB	2.33	0.41
5:E:62:ALA:O	5:E:64:ARG:N	2.54	0.41
6:F:55:ASP:HA	6:F:56:PRO:HD2	1.68	0.41
8:H:73:ASP:N	8:H:74:PRO:CD	2.84	0.41
8:H:107:LEU:HD23	8:H:107:LEU:HA	1.86	0.41
1:A:22:G:O2'	1:A:23:C:C5'	2.69	0.41
1:A:23:C:C2	1:A:24:U:C5	3.09	0.41
1:A:142:G:C2	1:A:222:U:N3	2.88	0.41
1:A:319:G:C4	1:A:320:C:C6	3.08	0.41
1:A:328:C:O2'	1:A:329:A:OP2	2.28	0.41
1:A:416:G:H2'	1:A:417:C:C6	2.55	0.41
1:A:428:G:C4	1:A:430:A:C6	3.08	0.41
1:A:428:G:N1	1:A:430:A:N6	2.68	0.41
1:A:521:G:OP1	12:L:73:GLU:O	2.39	0.41
1:A:522:C:O2'	1:A:523:A:H5'	2.21	0.41
1:A:550:G:C6	1:A:551:U:C4	3.08	0.41
1:A:595:G:O2'	1:A:596:C:C5	2.65	0.41
1:A:605:U:O2'	1:A:606:G:H5'	2.21	0.41
1:A:621:A:N6	1:A:622:A:N6	2.69	0.41
1:A:622:A:H3'	1:A:623:C:C6	2.54	0.41
1:A:680:C:C2	1:A:711:G:C2	3.09	0.41
1:A:746:A:H2'	1:A:747:C:O5'	2.21	0.41
1:A:751:U:C4	1:A:752:G:C6	3.08	0.41
1:A:783:C:H2'	1:A:784:C:C5'	2.50	0.41
1:A:941:G:C6	1:A:1343:G:C6	3.09	0.41
1:A:949:A:C6	1:A:1233:G:C6	3.08	0.41
1:A:986:A:H2'	1:A:987:G:H8	1.86	0.41
1:A:986:A:C6	1:A:987:G:C6	3.09	0.41
1:A:1010:G:HO2'	1:A:1011:G:H5'	1.79	0.41
1:A:1020:U:HO2'	1:A:1021:G:H5'	1.75	0.41
1:A:1054:C:OP2	1:A:1197:G:OP1	2.38	0.41
1:A:1172:C:H2'	1:A:1173:G:C8	2.54	0.41
1:A:1202:G:H1'	14:N:42:ILE:HD12	2.02	0.41
1:A:1217:C:H2'	1:A:1218:C:O4'	2.21	0.41
1:A:1240:U:C4	7:G:30:ILE:HG23	2.56	0.41
1:A:1241:G:N3	1:A:1241:G:H2'	2.35	0.41
1:A:1345:U:O2'	1:A:1377:A:N1	2.47	0.41
1:A:1350:A:N1	1:A:1351:U:C2	2.89	0.41
1:A:1366:C:O2'	1:A:1367:C:H5'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1368:G:N2	1:A:1369:C:C6	2.88	0.41
1:A:1480:G:C2	1:A:1481:U:C2	3.08	0.41
2:B:12:GLU:OE1	2:B:213:LEU:HD11	2.21	0.41
2:B:17:PHE:O	2:B:41:ILE:HG23	2.21	0.41
2:B:80:ILE:O	2:B:80:ILE:HG22	2.21	0.41
2:B:170:GLU:C	2:B:172:ILE:N	2.74	0.41
2:B:214:ILE:HG23	2:B:217:ARG:HH21	1.85	0.41
3:C:23:TYR:CG	3:C:24:ALA:N	2.89	0.41
3:C:90:GLU:O	3:C:93:LYS:HB2	2.21	0.41
4:D:64:LEU:HD12	4:D:75:PHE:CE1	2.55	0.41
5:E:110:LEU:O	5:E:111:GLU:C	2.58	0.41
9:I:89:ASN:HA	9:I:90:PRO:HD2	1.92	0.41
10:J:6:ILE:O	10:J:71:LEU:HD22	2.21	0.41
10:J:45:ARG:NH2	14:N:36:PHE:HD2	2.19	0.41
11:K:24:SER:HB3	11:K:27:ASN:O	2.21	0.41
12:L:45:PRO:HD3	12:L:51:ALA:O	2.20	0.41
15:O:39:LEU:HD13	15:O:56:LEU:HB2	2.03	0.41
18:R:70:ILE:C	18:R:72:ARG:N	2.74	0.41
21:V:5:ASP:O	21:V:11:GLY:HA3	2.20	0.41
1:A:103:C:OP2	20:T:14:LYS:HE3	2.21	0.41
1:A:115:G:C2	1:A:313:A:C2	3.09	0.41
1:A:149:A:H2	1:A:150:C:C2	2.37	0.41
1:A:194:C:H2'	1:A:195:A:H5"	2.03	0.41
1:A:474:G:N3	1:A:475:G:C8	2.89	0.41
1:A:692:U:O2	1:A:692:U:H2'	2.21	0.41
1:A:859:A:C8	1:A:860:A:N7	2.89	0.41
1:A:926:G:H2'	1:A:1505:G:C2	2.56	0.41
1:A:1053:G:C5	1:A:1199:U:C6	3.09	0.41
1:A:1089:G:O6	1:A:1090:U:C4	2.74	0.41
1:A:1226:C:OP2	13:M:103:THR:CG2	2.65	0.41
1:A:1231:G:H2'	1:A:1232:U:H5'	2.01	0.41
1:A:1324:A:C6	1:A:1325:C:C5	3.08	0.41
1:A:1431:C:C2'	1:A:1432:G:H5'	2.51	0.41
1:A:1459:C:H2'	1:A:1460:A:C5'	2.50	0.41
1:A:1483:A:H2'	1:A:1484:C:C6	2.56	0.41
1:A:1497:G:N7	1:A:1498:U:H5	2.19	0.41
4:D:14:ARG:HD3	4:D:14:ARG:HA	1.84	0.41
5:E:12:LEU:HD22	5:E:12:LEU:C	2.41	0.41
5:E:110:LEU:HD13	5:E:118:ILE:CD1	2.51	0.41
5:E:151:LEU:CD2	8:H:79:VAL:HA	2.47	0.41
14:N:9:LYS:C	14:N:11:LYS:H	2.24	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:N:25:VAL:HG13	14:N:39:LEU:HD23	2.03	0.41
16:P:34:GLU:OE2	16:P:55:ARG:NH1	2.53	0.41
17:Q:29:HIS:HA	17:Q:30:PRO:HD2	1.78	0.41
1:A:190(E):U:H2'	17:Q:63:ARG:HH22	1.86	0.40
1:A:202:U:HO2'	1:A:203:U:P	2.42	0.40
1:A:560:U:H5"	1:A:561:U:H3'	2.02	0.40
1:A:587:G:C2	1:A:755:G:C5	3.09	0.40
1:A:609:A:H2'	1:A:610:G:H5'	2.02	0.40
1:A:663:A:O2'	1:A:664:G:C5'	2.68	0.40
1:A:761:G:C6	1:A:762:C:N3	2.90	0.40
1:A:792:A:O2'	1:A:793:U:OP2	2.39	0.40
1:A:859:A:H2'	1:A:860:A:C8	2.54	0.40
1:A:922:G:C2	1:A:1396:A:C2	3.09	0.40
1:A:976:G:OP2	1:A:1358:U:O2'	2.36	0.40
1:A:1030(C):G:H2'	1:A:1030(D):A:O4'	2.22	0.40
1:A:1186:G:C6	1:A:1187:G:N7	2.89	0.40
1:A:1221:G:O2'	1:A:1222:G:H5'	2.21	0.40
1:A:1324:A:C4	1:A:1325:C:C6	3.09	0.40
1:A:1329:A:H4'	13:M:24:GLY:O	2.21	0.40
1:A:1499:A:C2	1:A:1500:A:C8	3.09	0.40
1:A:1509:C:O2'	1:A:1510:U:H5'	2.21	0.40
2:B:98:LEU:HD12	2:B:101:MET:CE	2.51	0.40
2:B:108:ILE:O	2:B:109:SER:C	2.59	0.40
3:C:33:LEU:CD1	14:N:53:LEU:HD22	2.48	0.40
3:C:154:SER:HG	3:C:197:GLY:H	1.64	0.40
4:D:19:LEU:O	4:D:21:LEU:N	2.54	0.40
4:D:206:PHE:CD2	4:D:206:PHE:C	2.94	0.40
7:G:78:ARG:HG2	7:G:80:VAL:HG23	2.02	0.40
8:H:14:ARG:NH1	8:H:83:ILE:O	2.54	0.40
12:L:93:LEU:HD23	12:L:93:LEU:HA	1.77	0.40
15:O:43:LEU:HA	15:O:43:LEU:HD23	1.63	0.40
16:P:20:VAL:CG2	16:P:32:TYR:HB2	2.51	0.40
19:S:28:LYS:HD3	19:S:31:ILE:HD11	2.04	0.40
1:A:250:A:O4'	1:A:252:U:C6	2.75	0.40
1:A:254:G:N2	17:Q:16:GLN:NE2	2.59	0.40
1:A:528:C:N4	12:L:49:ASN:OD1	2.48	0.40
1:A:560:U:H4'	1:A:561:U:H5"	2.04	0.40
1:A:585:G:O3'	17:Q:34:LYS:NZ	2.54	0.40
1:A:611:A:C5	1:A:612:C:C5	3.09	0.40
1:A:840:C:C5'	1:A:841:U:OP1	2.56	0.40
1:A:974:A:C4	14:N:31:ARG:NH2	2.89	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1029:C:C3’	1:A:1030:C:H5”	2.50	0.40
1:A:1129:C:OP2	9:I:62:TYR:CE2	2.72	0.40
1:A:1167:A:O5’	1:A:1167:A:C8	2.74	0.40
1:A:1215:G:H2’	1:A:1215:G:N3	2.36	0.40
1:A:1318:A:O2’	19:S:37:ARG:HD2	2.21	0.40
1:A:1381:U:HO2’	1:A:1382:C:H5’	1.84	0.40
1:A:1497:G:H2’	1:A:1498:U:C6	2.41	0.40
2:B:68:ILE:O	2:B:91:PRO:HD2	2.21	0.40
2:B:127:ILE:HB	2:B:128:GLU:H	1.68	0.40
3:C:203:PHE:O	3:C:204:LEU:HG	2.21	0.40
4:D:97:LEU:HA	4:D:97:LEU:HD23	1.74	0.40
4:D:104:VAL:O	4:D:105:VAL:C	2.59	0.40
5:E:143:ARG:NH2	8:H:138:TRP:CE3	2.89	0.40
8:H:45:ILE:HD13	8:H:61:VAL:HG13	2.03	0.40
12:L:117:ARG:O	12:L:118:SER:C	2.59	0.40
1:A:38:G:N2	1:A:397:A:H5”	2.36	0.40
1:A:115:G:C6	1:A:313:A:C2	3.09	0.40
1:A:149:A:C4	1:A:150:C:C5	3.09	0.40
1:A:969:A:O2’	1:A:970:C:H5’	2.21	0.40
1:A:1003:G:C5	1:A:1003(A):G:N7	2.90	0.40
1:A:1053:G:C5	1:A:1199:U:C5	3.09	0.40
1:A:1331:G:O2’	1:A:1332:A:P	2.78	0.40
1:A:1342:C:O3’	9:I:125:TYR:CE2	2.74	0.40
1:A:1501:C:C2	1:A:1504:G:C6	3.09	0.40
1:A:1528:U:O2’	1:A:1529:G:O5’	2.40	0.40
2:B:80:ILE:H	2:B:80:ILE:HG13	1.74	0.40
2:B:207:ALA:O	2:B:211:ILE:HG13	2.20	0.40
3:C:20:SER:HB2	3:C:57:ILE:HB	2.03	0.40
3:C:84:ILE:O	3:C:84:ILE:HG12	2.21	0.40
3:C:112:SER:O	3:C:115:LEU:N	2.54	0.40
4:D:20:TYR:N	4:D:20:TYR:CD2	2.89	0.40
5:E:80:ILE:HG22	8:H:104:ARG:HH22	1.87	0.40
18:R:43:PHE:CA	18:R:51:LEU:HD12	2.51	0.40
1:A:24:U:O2	1:A:24:U:C2’	2.69	0.40
1:A:255:G:O2’	1:A:256:U:H5’	2.20	0.40
1:A:344:A:HO2’	1:A:345:C:P	2.43	0.40
1:A:372:C:N3	1:A:387:U:C5	2.89	0.40
1:A:434:U:N3	1:A:435:C:C4	2.90	0.40
1:A:523:A:C2	1:A:527:G:C6	3.09	0.40
1:A:754:C:OP1	15:O:72:ARG:CZ	2.69	0.40
1:A:786:G:O6	1:A:787:A:C6	2.74	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:820:U:C4'	1:A:821:G:OP2	2.55	0.40
1:A:859:A:C4	1:A:860:A:C8	3.09	0.40
1:A:975:A:N1	10:J:48:THR:HB	2.36	0.40
1:A:1126:U:C3'	1:A:1127:G:H8	2.34	0.40
1:A:1277:C:O2'	1:A:1279:A:C8	2.71	0.40
1:A:1357:A:C5	1:A:1358:U:O4	2.75	0.40
2:B:70:PHE:HE1	2:B:90:MET:HG3	1.86	0.40
3:C:4:LYS:O	3:C:5:ILE:CG1	2.70	0.40
5:E:19:MET:O	5:E:20:GLN:HG2	2.22	0.40
7:G:115:ARG:HB2	7:G:118:VAL:HG21	2.03	0.40
8:H:136:GLU:O	8:H:137:VAL:CG2	2.69	0.40
10:J:45:ARG:NH2	14:N:36:PHE:CD2	2.90	0.40
11:K:52:GLY:C	11:K:54:ARG:N	2.74	0.40
13:M:11:ARG:CG	13:M:12:ASN:H	2.34	0.40
13:M:70:LEU:C	13:M:72:ALA:N	2.75	0.40
14:N:4:LYS:C	14:N:6:LEU:H	2.24	0.40
16:P:48:TRP:O	16:P:49:LEU:HB2	2.21	0.40
18:R:35:ARG:O	18:R:37:VAL:N	2.54	0.40
20:T:43:LEU:HD12	20:T:52:ALA:HA	2.04	0.40
1:A:4:U:C4'	1:A:5:U:OP2	2.69	0.40
1:A:142:G:H2'	1:A:143:A:H8	1.85	0.40
1:A:226:G:C6	1:A:227:G:C5	3.10	0.40
1:A:243:A:N3	1:A:245:C:C5	2.90	0.40
1:A:292:G:C2	1:A:309:G:N3	2.89	0.40
1:A:452:A:O2'	1:A:453:A:O5'	2.35	0.40
1:A:515:G:N1	1:A:537:G:C6	2.89	0.40
1:A:533:A:C6	1:A:536:C:C4	3.10	0.40
1:A:547:A:OP1	4:D:3:ARG:CZ	2.69	0.40
1:A:579:G:C5'	1:A:728:A:H1'	2.33	0.40
1:A:642:A:C5	1:A:643:C:N4	2.89	0.40
1:A:643:C:H2'	1:A:644:G:C8	2.50	0.40
1:A:673:G:H5"	6:F:87:ARG:CZ	2.51	0.40
1:A:681:C:H2'	1:A:682:G:H8	1.87	0.40
1:A:690:G:C6	1:A:691:G:C2	3.09	0.40
1:A:797:C:H2'	1:A:798:G:H8	1.87	0.40
1:A:919:A:N3	1:A:1080:A:C2	2.89	0.40
1:A:960:U:N3	1:A:1225:A:C4	2.90	0.40
1:A:965:A:O2'	1:A:966:G:P	2.80	0.40
1:A:1152:A:H5"	10:J:13:HIS:CG	2.56	0.40
1:A:1191:A:OP1	3:C:4:LYS:HE2	2.21	0.40
1:A:1212:U:O2'	1:A:1213:A:C8	2.75	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1226:C:H6	13:M:103:THR:OG1	2.04	0.40
1:A:1286:A:C8	1:A:1286:A:C3'	3.05	0.40
1:A:1355:G:C2	1:A:1356:G:C4	3.09	0.40
1:A:1369:C:H2'	1:A:1370:G:H8	1.79	0.40
1:A:1460:A:O2'	1:A:1461:G:H5'	2.21	0.40
4:D:115:ARG:O	4:D:116:GLN:C	2.58	0.40
5:E:80:ILE:HG22	8:H:104:ARG:NH2	2.36	0.40
5:E:110:LEU:O	5:E:113:ALA:N	2.51	0.40
8:H:25:ASP:C	8:H:26:VAL:HG12	2.42	0.40
14:N:37:PHE:HB3	14:N:39:LEU:CD1	2.48	0.40
17:Q:22:LEU:HA	17:Q:22:LEU:HD12	1.82	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
2	B	220/255 (86%)	165 (75%)	41 (19%)	14 (6%)	1 9
3	C	204/238 (86%)	140 (69%)	47 (23%)	17 (8%)	1 5
4	D	206/208 (99%)	153 (74%)	42 (20%)	11 (5%)	2 12
5	E	148/161 (92%)	113 (76%)	24 (16%)	11 (7%)	1 7
6	F	99/101 (98%)	86 (87%)	9 (9%)	4 (4%)	3 18
7	G	151/155 (97%)	126 (83%)	21 (14%)	4 (3%)	5 27
8	H	136/138 (99%)	117 (86%)	13 (10%)	6 (4%)	2 16
9	I	123/128 (96%)	98 (80%)	21 (17%)	4 (3%)	4 22
10	J	96/104 (92%)	74 (77%)	14 (15%)	8 (8%)	1 5
11	K	113/128 (88%)	88 (78%)	17 (15%)	8 (7%)	1 7
12	L	122/131 (93%)	87 (71%)	26 (21%)	9 (7%)	1 7

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
13	M	118/125 (94%)	75 (64%)	31 (26%)	12 (10%)	0 3
14	N	58/60 (97%)	46 (79%)	12 (21%)	0	100 100
15	O	86/88 (98%)	62 (72%)	17 (20%)	7 (8%)	1 6
16	P	81/88 (92%)	58 (72%)	19 (24%)	4 (5%)	2 14
17	Q	98/104 (94%)	77 (79%)	16 (16%)	5 (5%)	2 13
18	R	66/87 (76%)	45 (68%)	17 (26%)	4 (6%)	1 10
19	S	78/92 (85%)	62 (80%)	15 (19%)	1 (1%)	12 40
20	T	92/105 (88%)	70 (76%)	16 (17%)	6 (6%)	1 9
21	V	22/26 (85%)	17 (77%)	3 (14%)	2 (9%)	1 4
All	All	2317/2522 (92%)	1759 (76%)	421 (18%)	137 (6%)	1 10

All (137) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	10	LEU
2	B	12	GLU
2	B	21	ARG
2	B	24	TRP
2	B	95	GLN
2	B	130	ARG
2	B	131	PRO
2	B	171	ALA
3	C	4	LYS
3	C	16	ARG
3	C	61	ALA
3	C	128	PHE
3	C	146	ALA
3	C	179	ARG
3	C	181	ASN
3	C	188	LEU
4	D	9	CYS
4	D	30	LYS
5	E	73	ASN
8	H	91	ARG
10	J	33	GLN
10	J	40	LEU
10	J	41	PRO
10	J	55	LYS
10	J	90	LEU

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Mol	Chain	Res	Type
11	K	123	LYS
13	M	4	ILE
13	M	27	LYS
15	O	19	PRO
15	O	73	GLU
20	T	73	HIS
20	T	74	LYS
2	B	99	GLY
4	D	25	ARG
4	D	89	THR
4	D	137	SER
4	D	158	ILE
5	E	85	GLY
5	E	99	GLY
5	E	104	ALA
5	E	121	LYS
7	G	7	ALA
8	H	29	SER
8	H	83	ILE
9	I	58	ARG
10	J	60	ARG
11	K	16	SER
11	K	121	PRO
12	L	27	LEU
12	L	105	TYR
12	L	127	GLU
13	M	67	GLU
13	M	68	GLY
13	M	80	ARG
13	M	106	ASN
13	M	108	ARG
15	O	29	VAL
17	Q	17	LYS
18	R	36	ASN
18	R	77	GLY
19	S	6	LYS
20	T	100	ILE
21	V	6	ARG
2	B	126	GLU
3	C	9	GLY
3	C	168	ALA
5	E	80	ILE

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Mol	Chain	Res	Type
8	H	5	PRO
9	I	72	GLY
9	I	121	ARG
11	K	27	ASN
11	K	49	GLY
11	K	118	GLY
12	L	51	ALA
12	L	89	ARG
13	M	19	LEU
13	M	59	TYR
15	O	30	ALA
17	Q	80	GLY
17	Q	97	SER
18	R	87	ARG
20	T	50	GLU
2	B	78	GLN
2	B	83	MET
2	B	101	MET
3	C	206	GLU
4	D	200	GLU
5	E	79	GLU
6	F	39	LYS
6	F	54	LYS
6	F	69	GLU
7	G	114	ARG
8	H	30	ARG
12	L	79	GLU
13	M	99	ARG
15	O	16	ALA
16	P	49	LEU
17	Q	30	PRO
20	T	96	GLY
3	C	5	ILE
3	C	108	ASN
3	C	121	ALA
3	C	175	LEU
4	D	5	ILE
4	D	157	LEU
4	D	196	LEU
5	E	39	GLY
5	E	147	ASP
6	F	70	ASP

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Mol	Chain	Res	Type
8	H	74	PRO
10	J	58	ASP
10	J	59	SER
11	K	117	ASN
12	L	91	LYS
13	M	63	THR
15	O	33	THR
16	P	10	GLY
16	P	31	LYS
21	V	23	PRO
5	E	129	ILE
7	G	152	ALA
16	P	12	LYS
15	O	87	ILE
7	G	17	VAL
2	B	15	VAL
3	C	145	GLY
17	Q	47	PRO
20	T	97	ALA
4	D	69	GLY
5	E	128	PRO
11	K	35	PRO
12	L	88	GLY
13	M	96	LEU
18	R	86	VAL
3	C	74	GLY
9	I	57	GLY
12	L	48	PRO

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 X-ray entries followed by that with respect to entries of similar resolution.

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
2	B	191/219 (87%)	166 (87%)	25 (13%)	4 17
3	C	160/187 (86%)	141 (88%)	19 (12%)	5 21
4	D	180/180 (100%)	166 (92%)	14 (8%)	12 38

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
5	E	115/122 (94%)	103 (90%)	12 (10%)	7 25
6	F	90/90 (100%)	85 (94%)	5 (6%)	21 52
7	G	124/126 (98%)	120 (97%)	4 (3%)	39 67
8	H	119/119 (100%)	107 (90%)	12 (10%)	7 27
9	I	96/99 (97%)	90 (94%)	6 (6%)	18 47
10	J	88/91 (97%)	78 (89%)	10 (11%)	5 22
11	K	87/98 (89%)	82 (94%)	5 (6%)	20 51
12	L	104/108 (96%)	100 (96%)	4 (4%)	33 62
13	M	96/100 (96%)	83 (86%)	13 (14%)	4 16
14	N	49/49 (100%)	41 (84%)	8 (16%)	2 10
15	O	79/79 (100%)	69 (87%)	10 (13%)	4 19
16	P	72/74 (97%)	65 (90%)	7 (10%)	8 29
17	Q	95/96 (99%)	87 (92%)	8 (8%)	11 35
18	R	60/76 (79%)	57 (95%)	3 (5%)	24 55
19	S	71/79 (90%)	65 (92%)	6 (8%)	10 35
20	T	74/81 (91%)	70 (95%)	4 (5%)	22 53
21	V	19/21 (90%)	19 (100%)	0	100 100
All	All	1969/2094 (94%)	1794 (91%)	175 (9%)	9 32

All (175) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	B	16	HIS
2	B	17	PHE
2	B	24	TRP
2	B	26	PRO
2	B	56	ARG
2	B	61	LEU
2	B	69	LEU
2	B	96	ARG
2	B	103	THR
2	B	111	ARG
2	B	114	ARG
2	B	119	GLU
2	B	131	PRO
2	B	144	ARG

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Mol	Chain	Res	Type
2	B	153	ARG
2	B	157	ARG
2	B	170	GLU
2	B	181	PHE
2	B	184	VAL
2	B	187	LEU
2	B	193	ASP
2	B	196	LEU
2	B	200	ILE
2	B	204	ASN
2	B	211	ILE
3	C	3	ASN
3	C	11	ARG
3	C	12	LEU
3	C	17	ASP
3	C	49	SER
3	C	57	ILE
3	C	82	GLU
3	C	91	LEU
3	C	94	LEU
3	C	99	VAL
3	C	101	LEU
3	C	142	MET
3	C	144	SER
3	C	167	TRP
3	C	188	LEU
3	C	191	THR
3	C	192	THR
3	C	193	TYR
3	C	196	LEU
4	D	14	ARG
4	D	15	GLU
4	D	29	PRO
4	D	38	TYR
4	D	58	LEU
4	D	59	ARG
4	D	67	ILE
4	D	96	LEU
4	D	99	SER
4	D	157	LEU
4	D	176	LEU
4	D	190	ASP

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Mol	Chain	Res	Type
4	D	192	GLU
4	D	209	ARG
5	E	9	LYS
5	E	12	LEU
5	E	16	THR
5	E	18	ARG
5	E	31	LEU
5	E	36	ASP
5	E	37	ARG
5	E	53	LEU
5	E	80	ILE
5	E	96	PRO
5	E	118	ILE
5	E	143	ARG
6	F	32	ASN
6	F	36	ARG
6	F	38	GLU
6	F	40	VAL
6	F	83	ASP
7	G	12	LEU
7	G	75	VAL
7	G	113	GLU
7	G	136	LYS
8	H	17	THR
8	H	18	ARG
8	H	26	VAL
8	H	41	ARG
8	H	54	ASP
8	H	63	LEU
8	H	91	ARG
8	H	104	ARG
8	H	111	ILE
8	H	112	LEU
8	H	120	THR
8	H	132	GLU
9	I	60	ASP
9	I	71	SER
9	I	105	ASP
9	I	111	ARG
9	I	120	ARG
9	I	121	ARG
10	J	23	ILE

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Mol	Chain	Res	Type
10	J	38	ILE
10	J	40	LEU
10	J	45	ARG
10	J	55	LYS
10	J	62	HIS
10	J	66	ARG
10	J	71	LEU
10	J	73	ASP
10	J	100	THR
11	K	35	PRO
11	K	47	VAL
11	K	75	TYR
11	K	92	GLU
11	K	110	ASP
12	L	27	LEU
12	L	62	SER
12	L	70	ILE
12	L	98	TYR
13	M	4	ILE
13	M	7	VAL
13	M	44	ARG
13	M	56	LEU
13	M	63	THR
13	M	67	GLU
13	M	70	LEU
13	M	74	VAL
13	M	81	LEU
13	M	103	THR
13	M	105	THR
13	M	108	ARG
13	M	109	THR
14	N	13	THR
14	N	14	PRO
14	N	15	LYS
14	N	22	THR
14	N	25	VAL
14	N	31	ARG
14	N	33	VAL
14	N	60	SER
15	O	4	THR
15	O	17	ARG
15	O	19	PRO

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Mol	Chain	Res	Type
15	O	21	ASP
15	O	24	SER
15	O	39	LEU
15	O	65	ARG
15	O	70	LEU
15	O	81	LEU
15	O	88	ARG
16	P	26	ARG
16	P	34	GLU
16	P	39	TYR
16	P	44	THR
16	P	55	ARG
16	P	61	SER
16	P	80	PHE
17	Q	9	VAL
17	Q	11	VAL
17	Q	34	LYS
17	Q	38	ARG
17	Q	60	ILE
17	Q	74	LEU
17	Q	98	LEU
17	Q	100	LYS
18	R	31	LEU
18	R	34	TYR
18	R	54	ARG
19	S	6	LYS
19	S	15	LEU
19	S	39	THR
19	S	45	VAL
19	S	57	HIS
19	S	60	VAL
20	T	10	LEU
20	T	64	ASP
20	T	72	LEU
20	T	75	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (33) such sidechains are listed below:

Mol	Chain	Res	Type
2	B	25	ASN
2	B	204	ASN
3	C	3	ASN

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Mol	Chain	Res	Type
3	C	6	HIS
3	C	31	HIS
3	C	37	GLN
3	C	69	HIS
3	C	139	GLN
4	D	123	HIS
4	D	161	ASN
4	D	199	ASN
6	F	27	GLN
6	F	100	ASN
7	G	37	ASN
7	G	106	GLN
7	G	122	HIS
8	H	82	HIS
9	I	117	HIS
10	J	56	HIS
10	J	62	HIS
11	K	38	ASN
11	K	93	GLN
11	K	117	ASN
12	L	75	HIS
13	M	12	ASN
13	M	77	ASN
14	N	49	HIS
15	O	37	ASN
15	O	46	HIS
17	Q	16	GLN
19	S	14	HIS
19	S	23	ASN
20	T	75	ASN

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	1506/1509 (99%)	332 (22%)	181 (12%)

All (332) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	5	U
1	A	6	G

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Mol	Chain	Res	Type
1	A	7	G
1	A	8	A
1	A	9	G
1	A	13	U
1	A	14	U
1	A	31	G
1	A	32	A
1	A	39	G
1	A	44	G
1	A	47	C
1	A	48	C
1	A	49	U
1	A	50	A
1	A	51	A
1	A	52	G
1	A	61	G
1	A	62	U
1	A	64	G
1	A	65	U
1	A	66	G
1	A	81	U
1	A	89	C
1	A	108	G
1	A	109	A
1	A	110	C
1	A	116	A
1	A	120	A
1	A	121	C
1	A	122	G
1	A	129(A)	G
1	A	130	A
1	A	173	U
1	A	174	C
1	A	182	U
1	A	190(D)	U
1	A	190(E)	U
1	A	190(F)	G
1	A	190(G)	G
1	A	195	A
1	A	197	A
1	A	198	G
1	A	202	U

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Mol	Chain	Res	Type
1	A	203	U
1	A	204	U
1	A	216	G
1	A	217	C
1	A	244	U
1	A	245	C
1	A	247	G
1	A	251	G
1	A	252	U
1	A	266	G
1	A	267	C
1	A	275	G
1	A	280	C
1	A	281	G
1	A	282	A
1	A	289	G
1	A	300	A
1	A	304	U
1	A	305	G
1	A	306	G
1	A	314	C
1	A	316	G
1	A	321	A
1	A	328	C
1	A	329	A
1	A	330	C
1	A	332	G
1	A	345	C
1	A	346	G
1	A	352	C
1	A	353	A
1	A	354	G
1	A	367	U
1	A	368	U
1	A	373	A
1	A	389	A
1	A	390	C
1	A	397	A
1	A	412	A
1	A	413	G
1	A	421	U
1	A	422	C

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Mol	Chain	Res	Type
1	A	423	G
1	A	424	G
1	A	428	G
1	A	429	U
1	A	430	A
1	A	439	A
1	A	453	A
1	A	460	A
1	A	461	C
1	A	462	G
1	A	481	G
1	A	484	G
1	A	485	G
1	A	486	U
1	A	495	U
1	A	496	A
1	A	497	A
1	A	498	U
1	A	500	G
1	A	508	C
1	A	509	A
1	A	510	A
1	A	511	C
1	A	518	C
1	A	519	C
1	A	527	G
1	A	532	A
1	A	533	A
1	A	534	U
1	A	535	A
1	A	536	C
1	A	548	G
1	A	555	C
1	A	559	A
1	A	560	U
1	A	561	U
1	A	562	C
1	A	566	G
1	A	567	G
1	A	572	A
1	A	573	A
1	A	575	G

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Mol	Chain	Res	Type
1	A	576	G
1	A	577	G
1	A	595	G
1	A	596	C
1	A	598	U
1	A	616	G
1	A	641	U
1	A	652	U
1	A	653	A
1	A	654	G
1	A	665	A
1	A	671	G
1	A	688	G
1	A	701	C
1	A	702	A
1	A	703	G
1	A	704	A
1	A	717	C
1	A	718	G
1	A	721	G
1	A	722	A
1	A	723	U
1	A	724	G
1	A	731	G
1	A	734	G
1	A	748	C
1	A	749	C
1	A	754	C
1	A	755	G
1	A	777	A
1	A	781	A
1	A	782	A
1	A	792	A
1	A	793	U
1	A	813	U
1	A	815	A
1	A	816	A
1	A	817	C
1	A	818	G
1	A	819	A
1	A	820	U
1	A	821	G

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Mol	Chain	Res	Type
1	A	828	A
1	A	839	U
1	A	840	C
1	A	841	U
1	A	867	G
1	A	871	U
1	A	872	A
1	A	873	A
1	A	874	G
1	A	884	U
1	A	885	G
1	A	889	A
1	A	890	G
1	A	902	G
1	A	910	C
1	A	914	A
1	A	915	A
1	A	916	G
1	A	919	A
1	A	923	A
1	A	925	G
1	A	927	G
1	A	934	C
1	A	935	A
1	A	945	G
1	A	950	U
1	A	953	G
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	972	C
1	A	974	A
1	A	975	A
1	A	976	G
1	A	977	A
1	A	982	U
1	A	983	A
1	A	984	C
1	A	992	U

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Mol	Chain	Res	Type
1	A	993	G
1	A	994	A
1	A	1003(A)	G
1	A	1004	A
1	A	1022	G
1	A	1023	G
1	A	1024	G
1	A	1025	U
1	A	1027	C
1	A	1028	C
1	A	1030	C
1	A	1030(A)	G
1	A	1030(B)	C
1	A	1030(C)	G
1	A	1030(D)	A
1	A	1050	G
1	A	1053	G
1	A	1054	C
1	A	1055	A
1	A	1064	G
1	A	1065	U
1	A	1066	C
1	A	1068	G
1	A	1085	U
1	A	1086	U
1	A	1101	A
1	A	1102	A
1	A	1104	G
1	A	1124	G
1	A	1125	U
1	A	1126	U
1	A	1127	G
1	A	1129	C
1	A	1130	A
1	A	1131	G
1	A	1134	G
1	A	1137	C
1	A	1138	G
1	A	1139	G
1	A	1140	C
1	A	1145	C
1	A	1146	A

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Mol	Chain	Res	Type
1	A	1152	A
1	A	1158	C
1	A	1159	U
1	A	1160	G
1	A	1171	G
1	A	1183	A
1	A	1184	G
1	A	1191	A
1	A	1196	U
1	A	1197	G
1	A	1201	A
1	A	1202	G
1	A	1212	U
1	A	1213	A
1	A	1215	G
1	A	1224	G
1	A	1225	A
1	A	1226	C
1	A	1227	A
1	A	1239	A
1	A	1240	U
1	A	1241	G
1	A	1257	U
1	A	1258	G
1	A	1278	U
1	A	1279	A
1	A	1282	C
1	A	1285	A
1	A	1286	A
1	A	1287	A
1	A	1298	C
1	A	1299	A
1	A	1300	G
1	A	1301	U
1	A	1302	U
1	A	1303	C
1	A	1305	G
1	A	1310	G
1	A	1320	C
1	A	1322	C
1	A	1326	C
1	A	1332	A

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Mol	Chain	Res	Type
1	A	1337	G
1	A	1345	U
1	A	1346	A
1	A	1347	G
1	A	1348	U
1	A	1362	C
1	A	1363	A
1	A	1364	U
1	A	1365	G
1	A	1381	U
1	A	1394	A
1	A	1395	C
1	A	1396	A
1	A	1397	C
1	A	1398	A
1	A	1399	C
1	A	1400	C
1	A	1401	G
1	A	1442	G
1	A	1443	G
1	A	1446	A
1	A	1447	G
1	A	1452	C
1	A	1453	G
1	A	1490	C
1	A	1499	A
1	A	1502	A
1	A	1503	A
1	A	1504	G
1	A	1505	G
1	A	1506	U
1	A	1507	A
1	A	1517	G
1	A	1520	G
1	A	1529	G
1	A	1530	G

All (181) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	A	4	U
1	A	5	U

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Mol	Chain	Res	Type
1	A	7	G
1	A	8	A
1	A	13	U
1	A	30	U
1	A	31	G
1	A	47	C
1	A	48	C
1	A	49	U
1	A	50	A
1	A	51	A
1	A	60	A
1	A	64	G
1	A	88	A
1	A	109	A
1	A	115	G
1	A	119	A
1	A	121	C
1	A	129(A)	G
1	A	130	A
1	A	173	U
1	A	190(D)	U
1	A	190(F)	G
1	A	197	A
1	A	202	U
1	A	204	U
1	A	243	A
1	A	244	U
1	A	246	A
1	A	250	A
1	A	251	G
1	A	266	G
1	A	274	A
1	A	279	A
1	A	280	C
1	A	281	G
1	A	305	G
1	A	315	A
1	A	327	A
1	A	328	C
1	A	329	A
1	A	344	A
1	A	345	C

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Mol	Chain	Res	Type
1	A	351	G
1	A	366	C
1	A	367	U
1	A	372	C
1	A	388	G
1	A	421	U
1	A	428	G
1	A	429	U
1	A	438	G
1	A	451	A
1	A	484	G
1	A	485	G
1	A	496	A
1	A	497	A
1	A	499	A
1	A	508	C
1	A	509	A
1	A	511	C
1	A	517	G
1	A	518	C
1	A	531	U
1	A	533	A
1	A	535	A
1	A	547	A
1	A	559	A
1	A	560	U
1	A	561	U
1	A	562	C
1	A	566	G
1	A	575	G
1	A	576	G
1	A	595	G
1	A	641	U
1	A	652	U
1	A	653	A
1	A	687	A
1	A	701	C
1	A	703	G
1	A	717	C
1	A	721	G
1	A	733	A
1	A	747	C

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Mol	Chain	Res	Type
1	A	748	C
1	A	752	G
1	A	753	A
1	A	792	A
1	A	812	C
1	A	815	A
1	A	817	C
1	A	818	G
1	A	819	A
1	A	820	U
1	A	840	C
1	A	870	U
1	A	871	U
1	A	872	A
1	A	873	A
1	A	883	C
1	A	884	U
1	A	889	A
1	A	913	A
1	A	934	C
1	A	960	U
1	A	965	A
1	A	968	A
1	A	971	G
1	A	974	A
1	A	975	A
1	A	976	G
1	A	982	U
1	A	992	U
1	A	993	G
1	A	1030(C)	G
1	A	1049	U
1	A	1064	G
1	A	1065	U
1	A	1067	A
1	A	1085	U
1	A	1094	G
1	A	1101	A
1	A	1126	U
1	A	1128	C
1	A	1129	C
1	A	1139	G

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Mol	Chain	Res	Type
1	A	1145	C
1	A	1151	A
1	A	1157	A
1	A	1159	U
1	A	1181	G
1	A	1182	G
1	A	1183	A
1	A	1190	G
1	A	1196	U
1	A	1201	A
1	A	1214	C
1	A	1224	G
1	A	1225	A
1	A	1226	C
1	A	1239	A
1	A	1240	U
1	A	1256	A
1	A	1257	U
1	A	1278	U
1	A	1280	A
1	A	1281	U
1	A	1285	A
1	A	1297	C
1	A	1298	C
1	A	1299	A
1	A	1300	G
1	A	1302	U
1	A	1319	A
1	A	1322	C
1	A	1331	G
1	A	1336	C
1	A	1345	U
1	A	1346	A
1	A	1347	G
1	A	1363	A
1	A	1364	U
1	A	1380	U
1	A	1394	A
1	A	1395	C
1	A	1396	A
1	A	1397	C
1	A	1399	C

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Mol	Chain	Res	Type
1	A	1400	C
1	A	1451	A
1	A	1452	C
1	A	1498	U
1	A	1502	A
1	A	1503	A
1	A	1504	G
1	A	1505	G
1	A	1506	U
1	A	1528	U
1	A	1529	G

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

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

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 2 ligands modelled in this entry, 2 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95^{th} percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q< 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å^2)	Q<0.9
1	A	1506/1509 (99%)	-0.33	9 (0%) 89 90	29, 94, 180, 218	0
2	B	222/255 (87%)	0.09	4 (1%) 68 67	43, 111, 195, 218	0
3	C	206/238 (86%)	0.24	15 (7%) 15 15	49, 123, 192, 215	0
4	D	208/208 (100%)	0.26	8 (3%) 40 37	25, 101, 171, 218	0
5	E	150/161 (93%)	0.30	10 (6%) 17 17	42, 85, 151, 185	0
6	F	101/101 (100%)	-0.05	0 100 100	53, 122, 186, 211	0
7	G	153/155 (98%)	0.12	8 (5%) 27 25	74, 136, 196, 218	0
8	H	138/138 (100%)	0.02	2 (1%) 75 75	30, 83, 156, 193	0
9	I	125/128 (97%)	1.36	39 (31%) 0 0	69, 144, 201, 218	0
10	J	98/104 (94%)	1.56	39 (39%) 0 0	61, 150, 210, 218	0
11	K	115/128 (89%)	0.19	9 (7%) 13 12	60, 118, 181, 209	0
12	L	124/131 (94%)	0.57	15 (12%) 4 3	41, 108, 169, 204	0
13	M	120/125 (96%)	0.69	22 (18%) 1 1	66, 133, 198, 218	0
14	N	60/60 (100%)	1.18	13 (21%) 0 1	56, 110, 174, 203	0
15	O	88/88 (100%)	0.16	2 (2%) 60 59	50, 103, 167, 203	0
16	P	83/88 (94%)	0.44	8 (9%) 8 8	36, 91, 152, 216	0
17	Q	100/104 (96%)	0.11	0 100 100	43, 95, 166, 211	0
18	R	68/87 (78%)	-0.03	0 100 100	49, 102, 184, 196	0
19	S	80/92 (86%)	0.78	17 (21%) 0 1	66, 143, 208, 218	0
20	T	94/105 (89%)	0.80	16 (17%) 1 1	64, 126, 190, 218	0
21	V	24/26 (92%)	3.16	16 (66%) 0 0	93, 129, 158, 188	0
All	All	3863/4031 (95%)	0.14	252 (6%) 18 18	25, 104, 188, 218	0

All (252) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
10	J	33	GLN	9.9
9	I	128	ARG	9.7
19	S	2	PRO	9.3
13	M	121	LYS	8.0
21	V	6	ARG	7.6
9	I	9	ARG	7.5
19	S	3	ARG	7.3
2	B	7	VAL	6.7
14	N	2	ALA	6.2
10	J	54	PHE	6.1
20	T	73	HIS	5.8
14	N	61	TRP	5.7
9	I	106	ALA	5.7
21	V	24	ARG	5.6
14	N	31	ARG	5.5
9	I	105	ASP	5.3
21	V	21	TYR	5.3
21	V	18	TYR	5.2
9	I	70	LYS	5.2
9	I	126	SER	5.1
9	I	117	HIS	5.0
10	J	73	ASP	5.0
9	I	66	ARG	5.0
21	V	2	GLY	5.0
13	M	120	LYS	5.0
10	J	64	GLU	4.9
10	J	66	ARG	4.8
9	I	127	LYS	4.8
21	V	7	ARG	4.8
13	M	106	ASN	4.7
13	M	102	ARG	4.7
7	G	2	ALA	4.7
21	V	3	LYS	4.6
10	J	39	PRO	4.5
14	N	30	ALA	4.5
9	I	121	ARG	4.5
7	G	8	GLU	4.4
4	D	209	ARG	4.4
21	V	22	ARG	4.4
19	S	35	SER	4.4
9	I	71	SER	4.4
9	I	124	GLN	4.4
10	J	53	PRO	4.4

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Mol	Chain	Res	Type	RSRZ
13	M	27	LYS	4.3
10	J	71	LEU	4.3
9	I	42	ARG	4.3
7	G	33	ASP	4.2
20	T	80	ARG	4.2
10	J	6	ILE	4.2
14	N	37	PHE	4.2
10	J	75	ILE	4.1
5	E	22	GLY	4.1
13	M	117	VAL	4.1
9	I	116	LYS	4.0
3	C	14	ILE	4.0
12	L	89	ARG	4.0
9	I	115	GLY	4.0
10	J	58	ASP	4.0
9	I	123	PRO	3.9
21	V	17	THR	3.9
9	I	119	ALA	3.9
10	J	8	LEU	3.8
20	T	72	LEU	3.8
10	J	34	VAL	3.8
4	D	134	ASP	3.8
9	I	14	VAL	3.7
21	V	5	ASP	3.7
2	B	128	GLU	3.7
13	M	105	THR	3.7
10	J	5	ARG	3.6
8	H	1	MET	3.6
9	I	12	GLU	3.6
1	A	1129	C	3.5
10	J	47	PHE	3.5
10	J	7	LYS	3.5
9	I	122	ALA	3.5
13	M	114	ARG	3.5
12	L	19	ARG	3.5
3	C	195	VAL	3.4
11	K	51	LYS	3.4
20	T	68	LYS	3.4
10	J	72	VAL	3.4
19	S	69	HIS	3.4
13	M	99	ARG	3.4
19	S	4	SER	3.4

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Mol	Chain	Res	Type	RSRZ
10	J	74	ILE	3.3
19	S	78	ARG	3.3
19	S	37	ARG	3.3
15	O	51	HIS	3.3
10	J	70	ARG	3.3
9	I	65	VAL	3.3
3	C	167	TRP	3.3
10	J	63	PHE	3.2
10	J	55	LYS	3.2
13	M	97	PRO	3.2
5	E	18	ARG	3.2
5	E	20	GLN	3.2
13	M	118	ALA	3.2
10	J	48	THR	3.2
3	C	107	GLN	3.2
13	M	101	GLN	3.2
7	G	84	ASN	3.2
19	S	81	ARG	3.2
9	I	111	ARG	3.2
9	I	125	TYR	3.2
9	I	7	THR	3.1
10	J	40	LEU	3.1
16	P	1	MET	3.1
1	A	81	U	3.1
10	J	56	HIS	3.1
13	M	98	VAL	3.1
13	M	2	ALA	3.1
10	J	38	ILE	3.1
10	J	50	ILE	3.1
20	T	76	ALA	3.0
12	L	27	LEU	3.0
9	I	118	LYS	3.0
7	G	62	PHE	3.0
3	C	175	LEU	3.0
13	M	108	ARG	3.0
4	D	35	ARG	3.0
14	N	57	ARG	3.0
14	N	21	TYR	3.0
3	C	19	GLU	2.9
4	D	21	LEU	2.9
21	V	14	TRP	2.9
14	N	34	TYR	2.8

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Mol	Chain	Res	Type	RSRZ
16	P	12	LYS	2.8
20	T	8	ARG	2.8
3	C	2	GLY	2.8
15	O	50	HIS	2.8
16	P	13	HIS	2.8
20	T	9	ASN	2.8
13	M	100	GLY	2.8
12	L	90	VAL	2.8
19	S	32	LYS	2.8
7	G	32	ARG	2.8
9	I	112	LYS	2.8
1	A	353	A	2.8
13	M	94	ARG	2.8
10	J	9	ARG	2.8
9	I	10	ARG	2.8
21	V	10	ARG	2.8
10	J	52	GLY	2.8
1	A	461	C	2.8
19	S	71	LEU	2.8
20	T	23	ARG	2.8
1	A	1224	G	2.7
19	S	31	ILE	2.7
19	S	80	TYR	2.7
11	K	28	THR	2.7
9	I	110	GLU	2.7
11	K	36	ASP	2.7
7	G	85	TYR	2.7
10	J	59	SER	2.7
9	I	75	ASP	2.7
11	K	29	ILE	2.7
11	K	14	VAL	2.7
12	L	128	ALA	2.7
19	S	49	ILE	2.6
1	A	1124	G	2.6
9	I	19	LEU	2.6
2	B	16	HIS	2.6
7	G	35	LYS	2.6
20	T	83	ARG	2.6
1	A	1286	A	2.6
20	T	67	ALA	2.6
21	V	9	ARG	2.6
3	C	56	ASP	2.6

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Mol	Chain	Res	Type	RSRZ
5	E	87	SER	2.6
10	J	46	ARG	2.5
10	J	24	VAL	2.5
9	I	96	LEU	2.5
16	P	17	TYR	2.5
20	T	74	LYS	2.5
11	K	50	TYR	2.5
11	K	27	ASN	2.5
16	P	25	ARG	2.5
21	V	25	LYS	2.5
3	C	206	GLU	2.5
1	A	978	A	2.5
3	C	29	TYR	2.5
3	C	178	LEU	2.5
12	L	33	ARG	2.4
21	V	23	PRO	2.4
9	I	8	GLY	2.4
16	P	83	GLU	2.4
5	E	154	GLY	2.4
16	P	23	ASP	2.4
5	E	21	ALA	2.4
13	M	87	TYR	2.4
10	J	10	GLY	2.4
21	V	15	ARG	2.4
9	I	68	GLY	2.4
9	I	108	VAL	2.4
20	T	77	ALA	2.4
10	J	37	PRO	2.4
12	L	91	LYS	2.4
12	L	62	SER	2.4
10	J	95	GLU	2.4
12	L	73	GLU	2.4
14	N	29	ARG	2.3
9	I	15	ALA	2.3
1	A	1362	C	2.3
10	J	65	LEU	2.3
14	N	60	SER	2.3
2	B	134	GLU	2.3
10	J	43	ARG	2.3
20	T	16	HIS	2.3
3	C	26	LYS	2.3
11	K	21	ILE	2.3

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Mol	Chain	Res	Type	RSRZ
11	K	30	VAL	2.3
20	T	71	THR	2.3
20	T	30	LYS	2.3
5	E	83	GLU	2.3
12	L	127	GLU	2.3
10	J	11	PHE	2.3
14	N	44	LEU	2.2
4	D	7	PRO	2.2
19	S	40	ILE	2.2
13	M	19	LEU	2.2
20	T	70	SER	2.2
3	C	10	PHE	2.2
8	H	3	THR	2.2
19	S	74	PHE	2.2
13	M	13	LYS	2.2
3	C	196	LEU	2.2
19	S	33	THR	2.2
12	L	18	VAL	2.2
10	J	60	ARG	2.2
14	N	3	ARG	2.2
12	L	32	PHE	2.2
14	N	58	LYS	2.2
9	I	114	TYR	2.1
10	J	4	ILE	2.1
16	P	68	ASP	2.1
19	S	30	LEU	2.1
5	E	5	ASP	2.1
4	D	5	ILE	2.1
5	E	88	LYS	2.1
12	L	64	TYR	2.1
12	L	101	VAL	2.1
5	E	19	MET	2.1
13	M	21	TYR	2.1
4	D	115	ARG	2.1
3	C	17	ASP	2.0
9	I	120	ARG	2.0
9	I	13	ALA	2.0
12	L	124	LYS	2.0
4	D	2	GLY	2.0
9	I	113	LYS	2.0
13	M	96	LEU	2.0

6.2 Non-standard residues in protein, DNA, RNA chains (i)

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

6.3 Carbohydrates (i)

There are no monosaccharides in this entry.

6.4 Ligands (i)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
22	ZN	D	210	1/1	0.99	0.33	90,90,90,90	0
22	ZN	N	62	1/1	0.99	0.11	101,101,101,101	0

6.5 Other polymers (i)

There are no such residues in this entry.