



Full wwPDB EM Validation Report ⓘ

Mar 20, 2026 – 01:13 AM UTC

PDB ID : 7JSS / pdb_00007jss
EMDB ID : EMD-22459
Title : ArfB Rescue of a 70S Ribosome stalled on truncated mRNA with a partial A-site codon (+2-II)
Authors : Carbone, C.E.; Korostelev, A.A.
Deposited on : 2020-08-15
Resolution : 3.70 Å(reported)

This is a Full wwPDB EM 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/EMValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

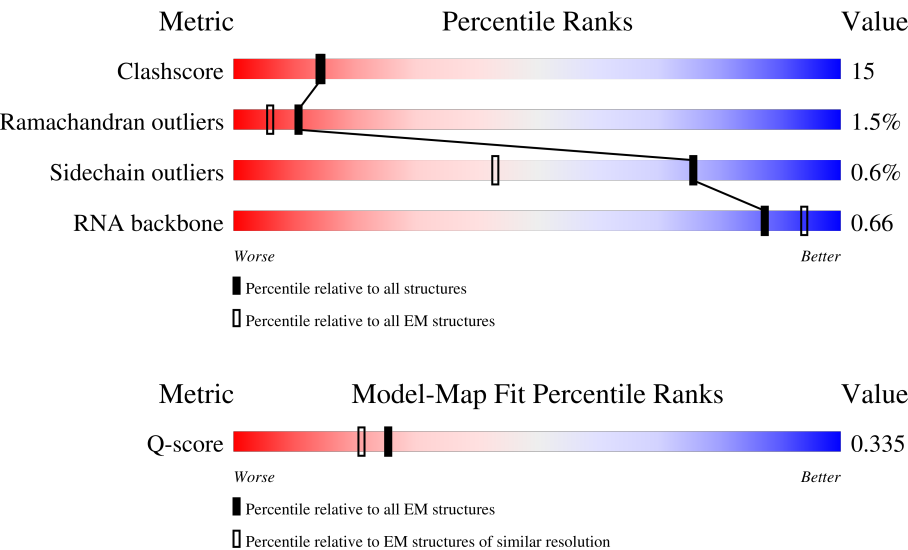
EMDB validation analysis : 0.0.1.dev132
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

1 Overall quality at a glance i

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

The reported resolution of this entry is 3.70 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	11569 (3.20 - 4.20)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	b	271	59% 40%
2	c	209	64% 36%
3	d	201	66% 33%

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Mol	Chain	Length	Quality of chain
4	e	177	
5	f	176	
6	g	149	
7	j	142	
8	k	122	
9	l	143	
10	m	136	
11	n	120	
12	o	116	
13	p	114	
14	q	117	
15	r	103	
16	s	110	
17	t	93	
18	u	102	
19	v	94	
20	w	75	
21	x	77	
22	y	63	
23	z	58	
24	B	56	
25	C	50	
26	D	46	
27	E	64	
28	F	38	

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Mol	Chain	Length	Quality of chain
29	G	225	
30	H	206	
31	I	205	
32	J	157	
33	K	100	
34	L	151	
35	M	129	
36	N	127	
37	O	98	
38	P	116	
39	Q	123	
40	R	114	
41	S	100	
42	T	88	
43	U	82	
44	V	80	
45	W	65	
46	X	79	
47	Y	85	
48	Z	65	
49	3	1539	
50	1	2903	
51	2	120	
52	5	77	
53	4	16	

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Mol	Chain	Length	Quality of chain
54	8	132	 23% 39% 55%

2 Entry composition

There are 54 unique types of molecules in this entry. The entry contains 144890 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	b	271	Total	C	N	O	S	0	0
			2083	1288	423	365	7		

- Molecule 2 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	c	209	Total	C	N	O	S	0	0
			1565	979	288	294	4		

- Molecule 3 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	d	201	Total	C	N	O	S	0	0
			1552	974	283	290	5		

- Molecule 4 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	e	177	Total	C	N	O	S	0	0
			1411	899	249	257	6		

- Molecule 5 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	f	176	Total	C	N	O	S	0	0
			1323	832	243	246	2		

- Molecule 6 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	g	149	Total	C	N	O	S	0	0
			1111	699	197	214	1		

- Molecule 7 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	j	142	Total	C	N	O	S	0	0
			1129	714	212	199	4		

- Molecule 8 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	k	122	Total	C	N	O	S	0	0
			939	587	180	166	6		

- Molecule 9 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	l	143	Total	C	N	O	S	0	0
			1045	649	206	189	1		

- Molecule 10 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	m	136	Total	C	N	O	S	0	0
			1074	686	205	177	6		

- Molecule 11 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	n	120	Total	C	N	O	S	0	0
			961	593	196	167	5		

- Molecule 12 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms				AltConf	Trace
12	o	116	Total	C	N	O	0	0
			892	552	178	162		

- Molecule 13 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	p	114	Total	C	N	O	S	0	0
			917	574	179	163	1		

- Molecule 14 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms				AltConf	Trace
14	q	117	Total	C	N	O	0	0
			947	604	192	151		

- Molecule 15 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	r	103	Total	C	N	O	S	0	0
			816	516	153	145	2		

- Molecule 16 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	s	110	Total	C	N	O	S	0	0
			857	532	166	156	3		

- Molecule 17 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	t	93	Total	C	N	O	S	0	0
			739	466	139	132	2		

- Molecule 18 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms				AltConf	Trace
18	u	102	Total	C	N	O	0	0
			780	492	146	142		

- Molecule 19 is a protein called 50S ribosomal protein L25.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	v	94	Total	C	N	O	S	0	0
			753	479	137	134	3		

- Molecule 20 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	w	75	Total	C	N	O	S	0	0
			575	356	116	102	1		

- Molecule 21 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	x	77	Total	C	N	O	S	0	0
			625	388	129	106	2		

- Molecule 22 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	y	63	Total	C	N	O	S	0	0
			509	313	99	95	2		

- Molecule 23 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	z	58	Total	C	N	O	S	0	0
			449	281	87	79	2		

- Molecule 24 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	B	56	Total	C	N	O	S	0	0
			444	269	94	80	1		

- Molecule 25 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms				AltConf	Trace
25	C	50	Total	C	N	O	0	0
			410	263	75	72		

- Molecule 26 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	D	46	Total	C	N	O	S	0	0
			377	228	90	57	2		

- Molecule 27 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	E	64	Total	C	N	O	S	0	0
			504	323	105	74	2		

- Molecule 28 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	F	38	Total	C	N	O	S	0	0
			302	185	65	48	4		

- Molecule 29 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	G	225	Total	C	N	O	S	0	0
			1757	1111	315	323	8		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
30	H	206	Total	C	N	O	S	0	0
			1625	1028	305	289	3		

- Molecule 31 is a protein called 30S ribosomal protein S4.

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

- Molecule 32 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	J	157	Total	C	N	O	S	0	0
			1157	719	218	214	6		

- Molecule 33 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	K	100	Total	C	N	O	S	0	0
			818	515	148	149	6		

- Molecule 34 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	L	151	Total	C	N	O	S	0	0
			1182	735	227	216	4		

- Molecule 35 is a protein called 30S ribosomal protein S8.

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

- Molecule 36 is a protein called 30S ribosomal protein S9.

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

- Molecule 37 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	O	98	Total	C	N	O	S	0	0
			787	493	150	143	1		

- Molecule 38 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	P	116	Total	C	N	O	S	0	0
			870	535	173	159	3		

- Molecule 39 is a protein called 30S ribosomal protein S12.

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

- Molecule 40 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	R	114	Total	C	N	O	S	0	0
			884	546	178	157	3		

- Molecule 41 is a protein called 30S ribosomal protein S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	S	100	Total	C	N	O	S	0	0
			805	499	164	139	3		

- Molecule 42 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	T	88	Total	C	N	O	S	0	0
			714	439	144	130	1		

- Molecule 43 is a protein called 30S ribosomal protein S16.

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

- Molecule 44 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	V	80	Total	C	N	O	S	0	0
			649	411	121	114	3		

- Molecule 45 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	W	65	Total	C	N	O	S	0	0
			536	339	100	96	1		

- Molecule 46 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	X	79	Total	C	N	O	S	0	0
			638	408	120	108	2		

- Molecule 47 is a protein called 30S ribosomal protein S20.

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

- Molecule 48 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	Z	65	Total	C	N	O	S	0	0
			545	335	117	92	1		

- Molecule 49 is a RNA chain called 16S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	3	1539	Total	C	N	O	P	0	0
			33012	14725	6053	10696	1538		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
3	1490	C	U	conflict	GB 1789840096

- Molecule 50 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	1	2903	Total	C	N	O	P	0	0
			62317	27801	11468	20146	2902		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
1	747	C	U	conflict	GB 802133627

- Molecule 51 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	2	120	Total	C	N	O	P	0	0
			2568	1145	471	833	119		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
2	120	A	-	insertion	GB 1266961702

- Molecule 52 is a RNA chain called tRNA^{fMet}.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	5	77	Total	C	N	O	P	0	0
			1640	732	297	535	76		

- Molecule 53 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	4	16	Total	C	N	O	P	0	0
			353	158	74	105	16		

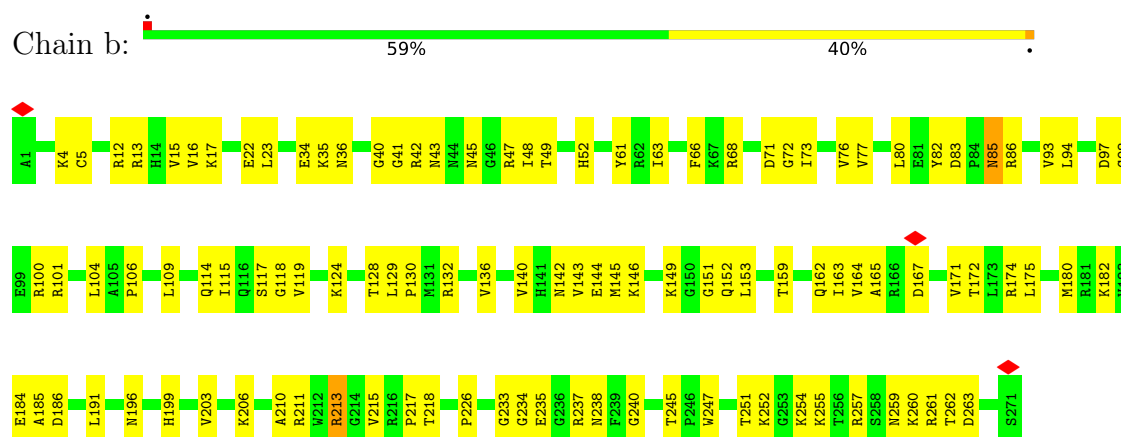
- Molecule 54 is a protein called Peptidyl-tRNA hydrolase ArfB.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	8	132	Total	C	N	O	S	0	0
			1031	638	204	187	2		

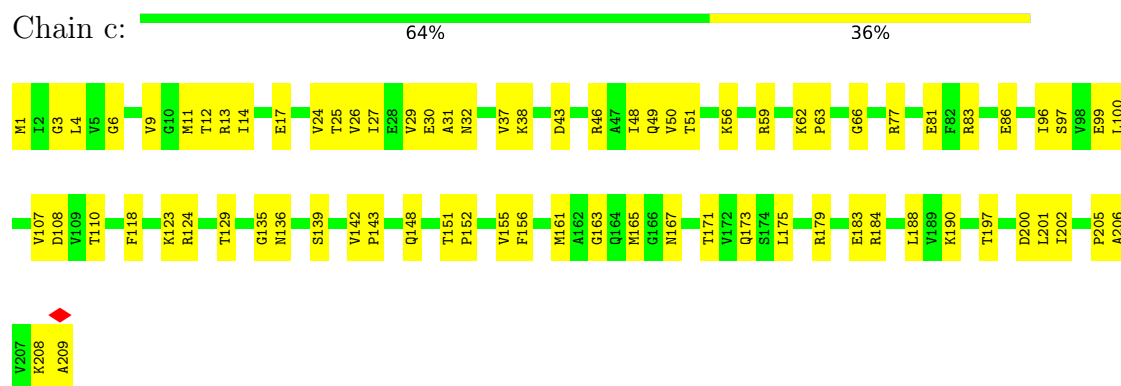
3 Residue-property plots

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 atom inclusion in map 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 diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). 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.

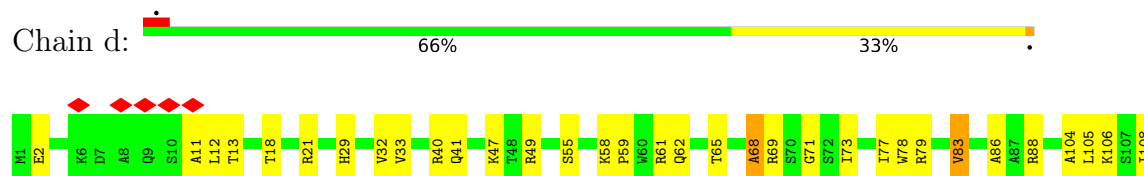
• Molecule 1: 50S ribosomal protein L2

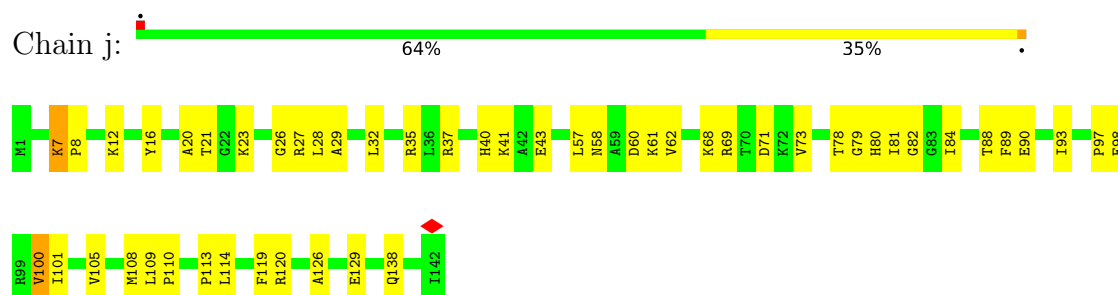


• Molecule 2: 50S ribosomal protein L3

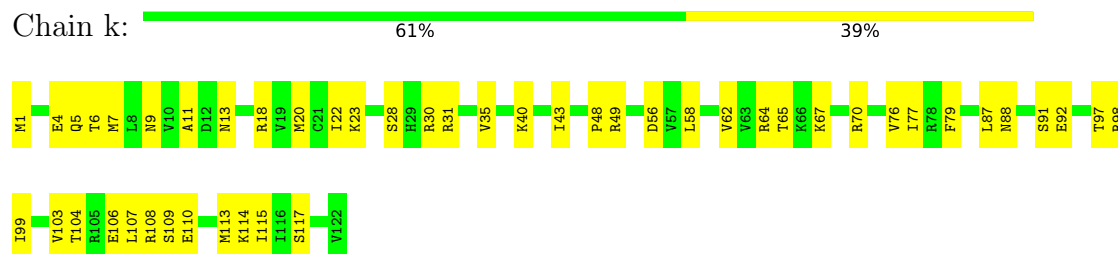


• Molecule 3: 50S ribosomal protein L4

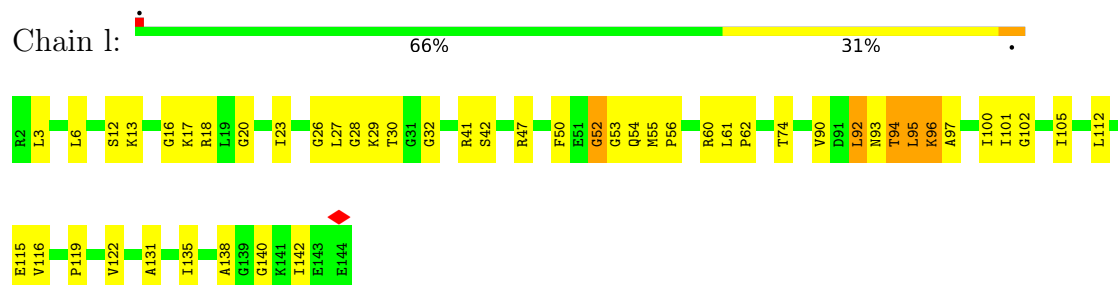




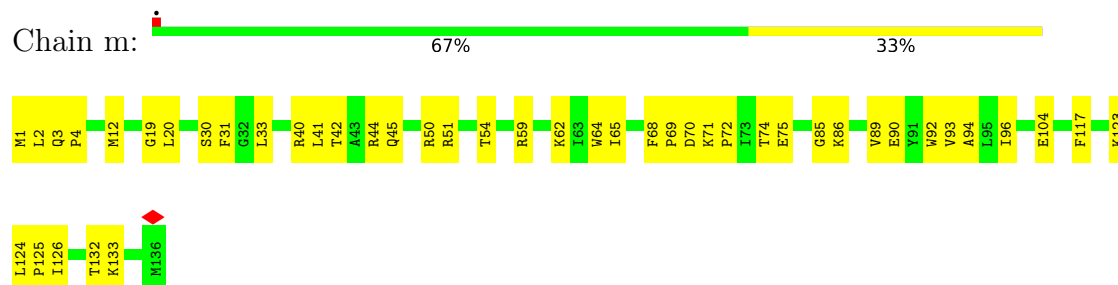
- Molecule 8: 50S ribosomal protein L14



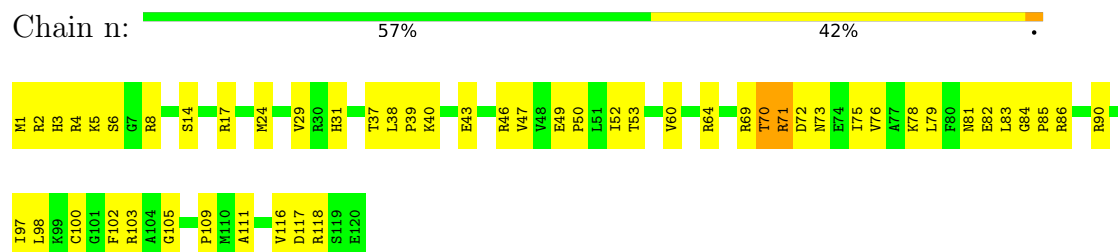
- Molecule 9: 50S ribosomal protein L15



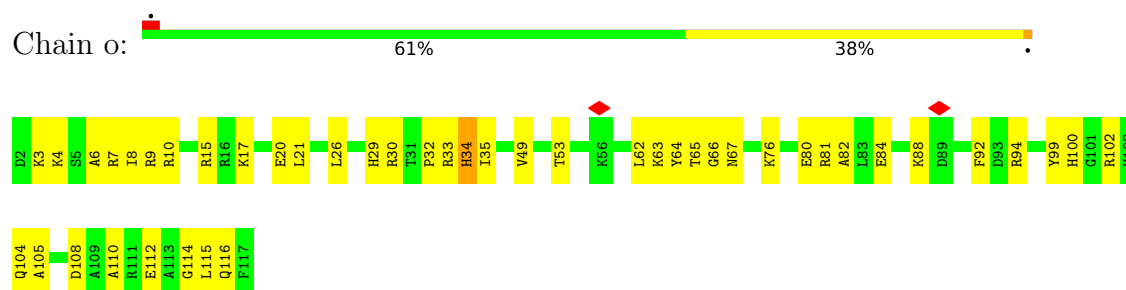
- Molecule 10: 50S ribosomal protein L16



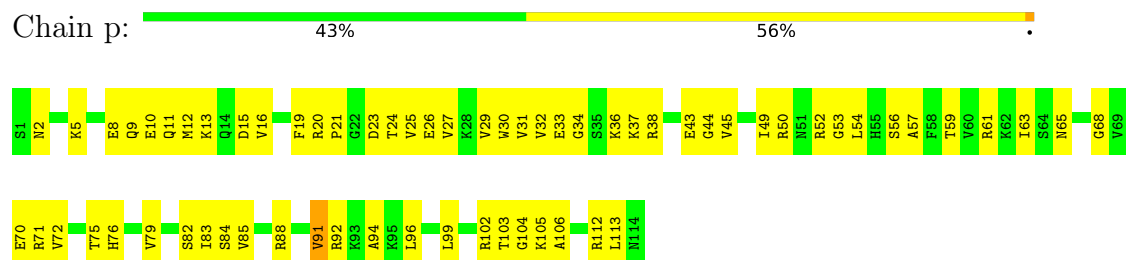
- Molecule 11: 50S ribosomal protein L17



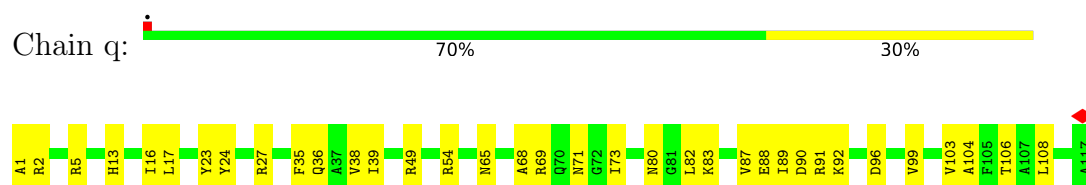
- Molecule 12: 50S ribosomal protein L18



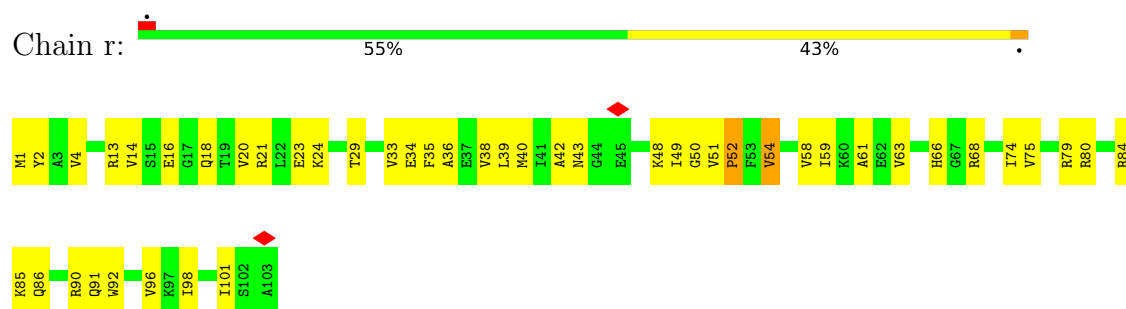
- Molecule 13: 50S ribosomal protein L19



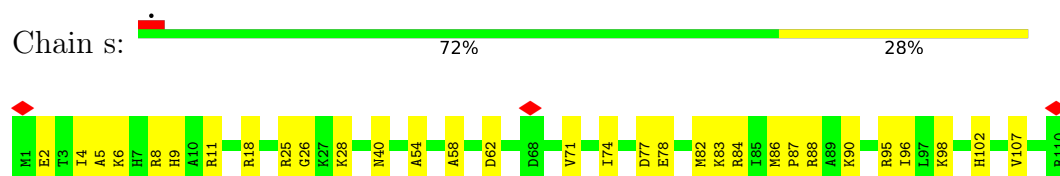
- Molecule 14: 50S ribosomal protein L20



- Molecule 15: 50S ribosomal protein L21

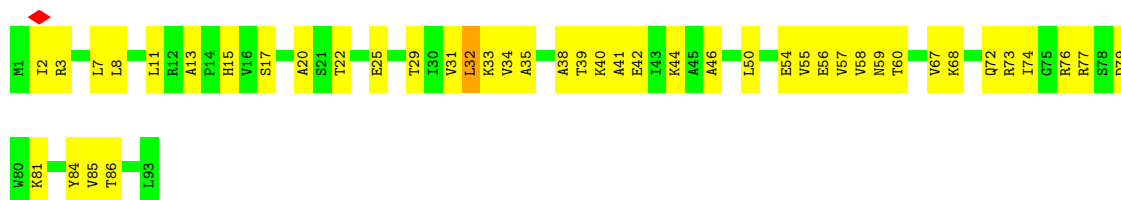


- Molecule 16: 50S ribosomal protein L22



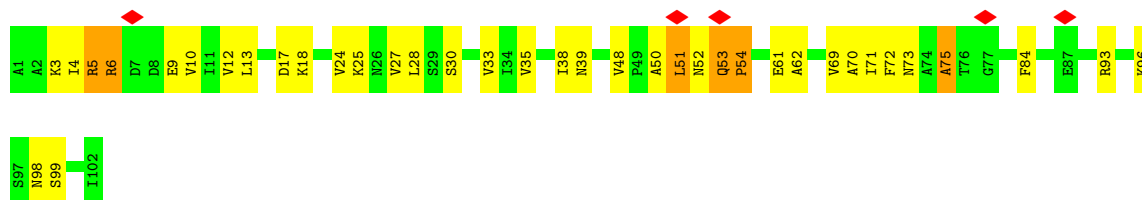
- Molecule 17: 50S ribosomal protein L23

Chain t: 



- Molecule 18: 50S ribosomal protein L24

Chain u: 



- Molecule 19: 50S ribosomal protein L25

Chain v: 



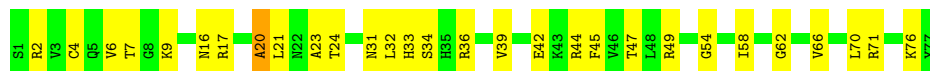
- Molecule 20: 50S ribosomal protein L27

Chain w: 



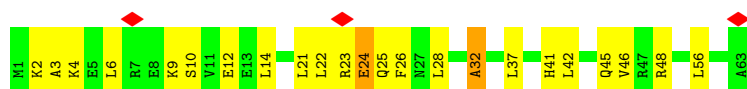
- Molecule 21: 50S ribosomal protein L28

Chain x: 

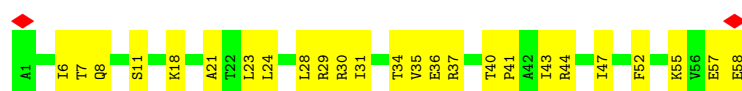


- Molecule 22: 50S ribosomal protein L29

Chain y: 



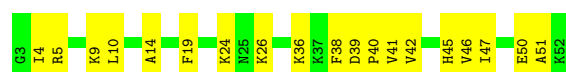
- Molecule 23: 50S ribosomal protein L30



- Molecule 24: 50S ribosomal protein L32



- Molecule 25: 50S ribosomal protein L33



- Molecule 26: 50S ribosomal protein L34



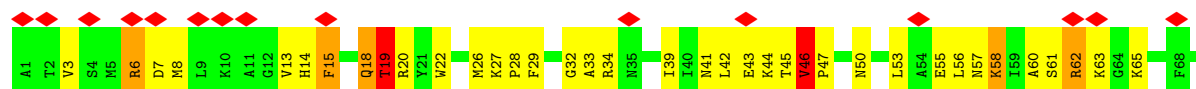
- Molecule 27: 50S ribosomal protein L35

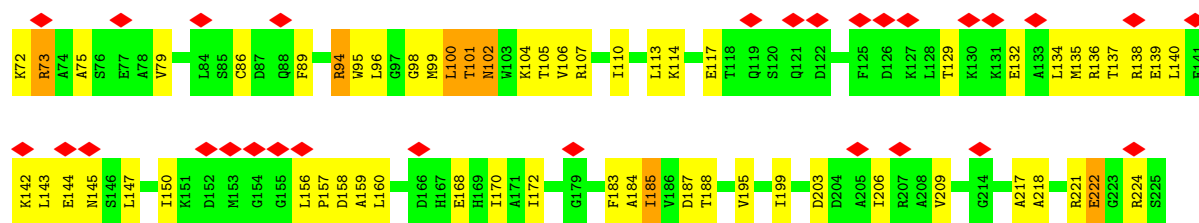


- Molecule 28: 50S ribosomal protein L36

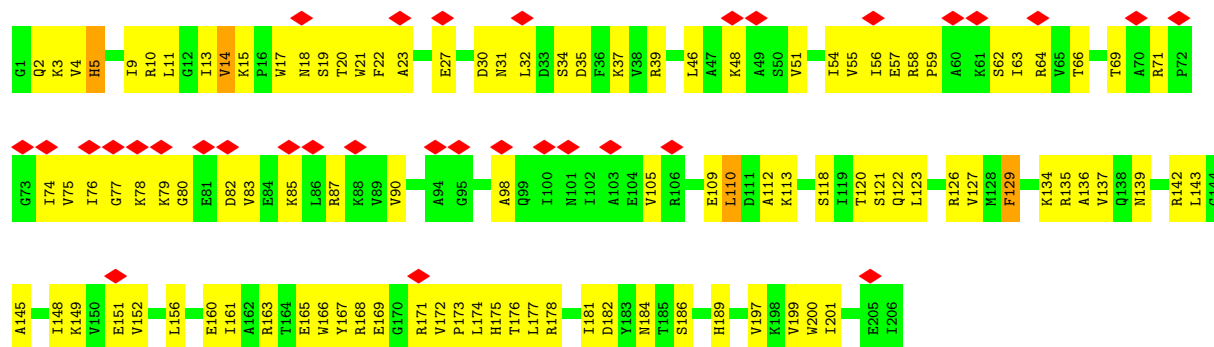


- Molecule 29: 30S ribosomal protein S2

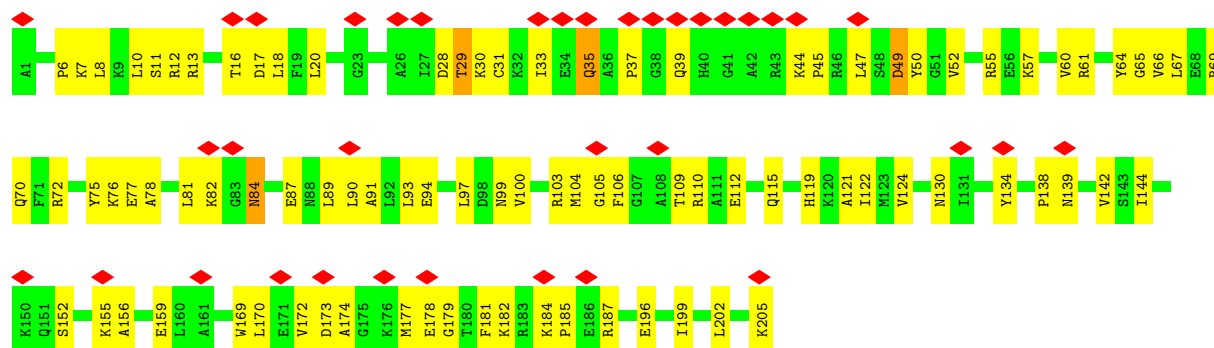




• Molecule 30: 30S ribosomal protein S3



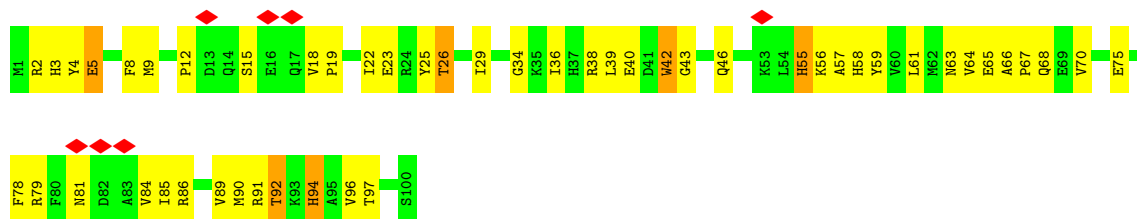
• Molecule 31: 30S ribosomal protein S4



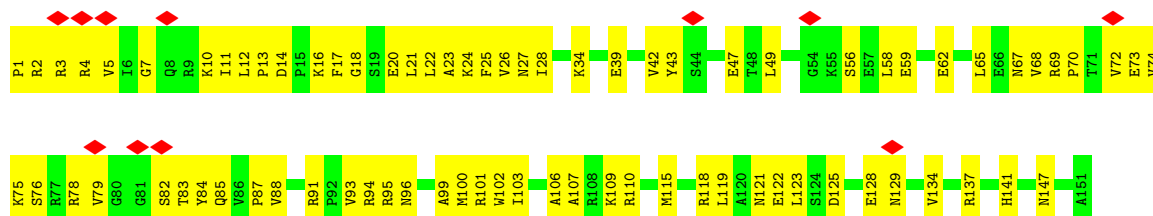
• Molecule 32: 30S ribosomal protein S5



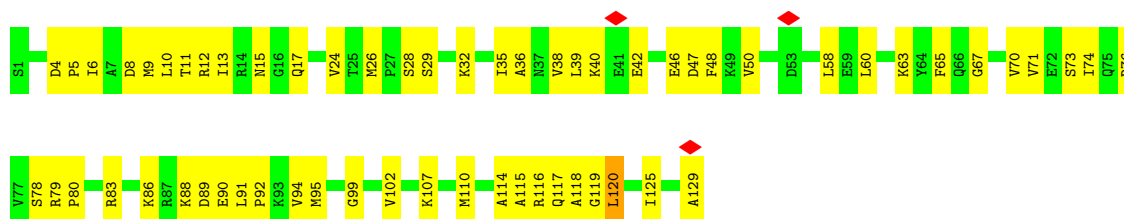
• Molecule 33: 30S ribosomal protein S6



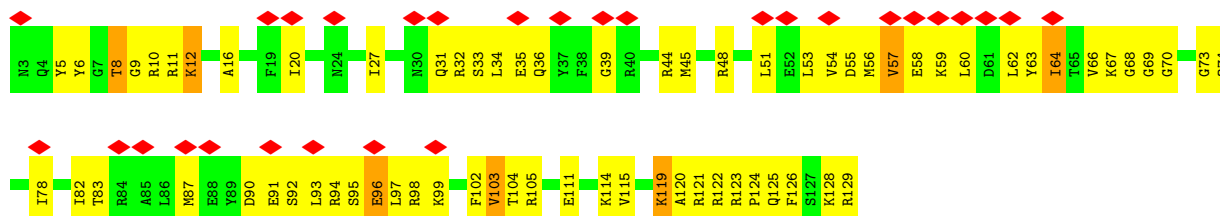
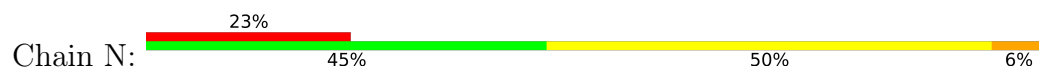
• Molecule 34: 30S ribosomal protein S7



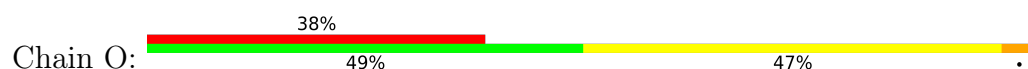
• Molecule 35: 30S ribosomal protein S8

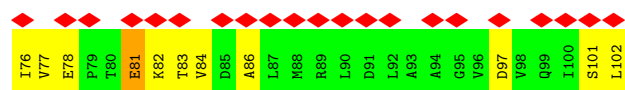


• Molecule 36: 30S ribosomal protein S9



• Molecule 37: 30S ribosomal protein S10

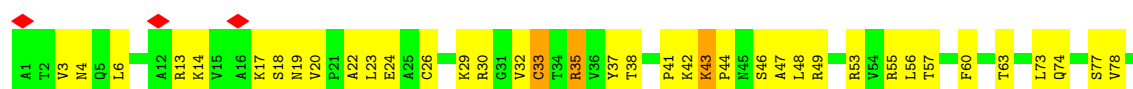




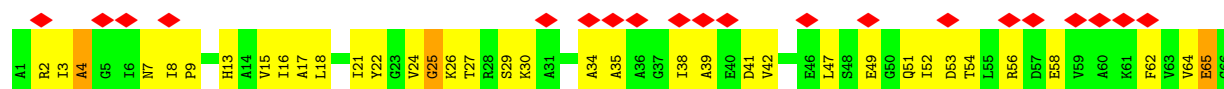
- Molecule 38: 30S ribosomal protein S11



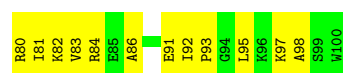
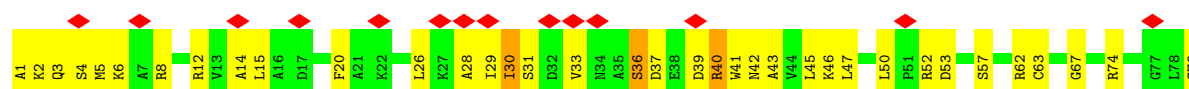
- Molecule 39: 30S ribosomal protein S12



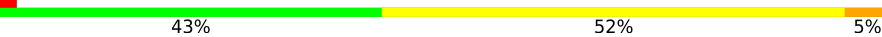
- Molecule 40: 30S ribosomal protein S13

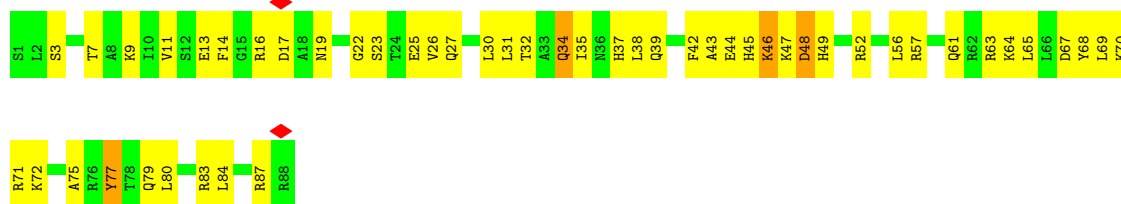


- Molecule 41: 30S ribosomal protein S14



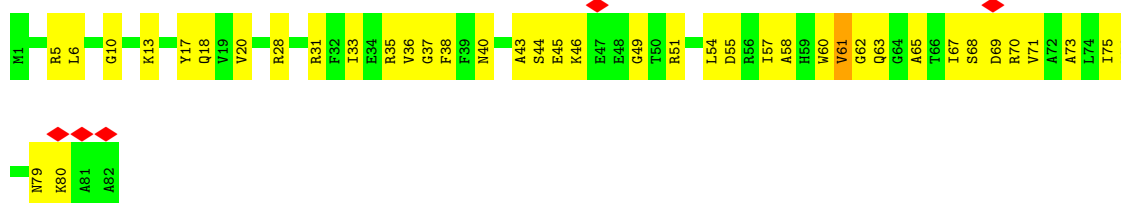
- Molecule 42: 30S ribosomal protein S15

Chain T:  43% 52% 5%

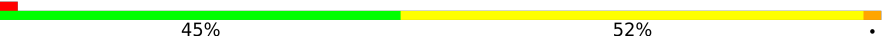


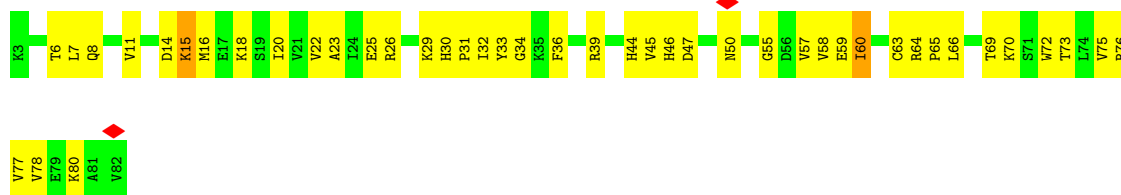
- Molecule 43: 30S ribosomal protein S16

Chain U:  6% 51% 48%



- Molecule 44: 30S ribosomal protein S17

Chain V:  45% 52%



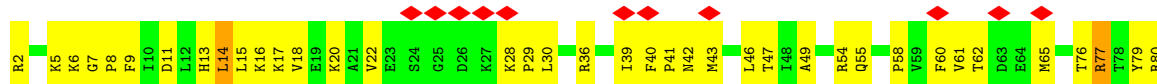
- Molecule 45: 30S ribosomal protein S18

Chain W:  12% 49% 49%



- Molecule 46: 30S ribosomal protein S19

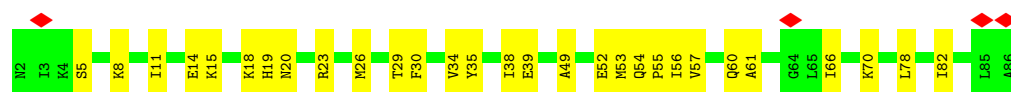
Chain X:  14% 52% 46%



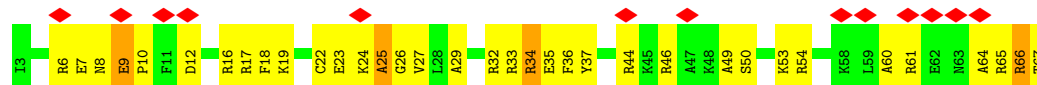
- Molecule 47: 30S ribosomal protein S20

Chain Y:  5% 66% 34%

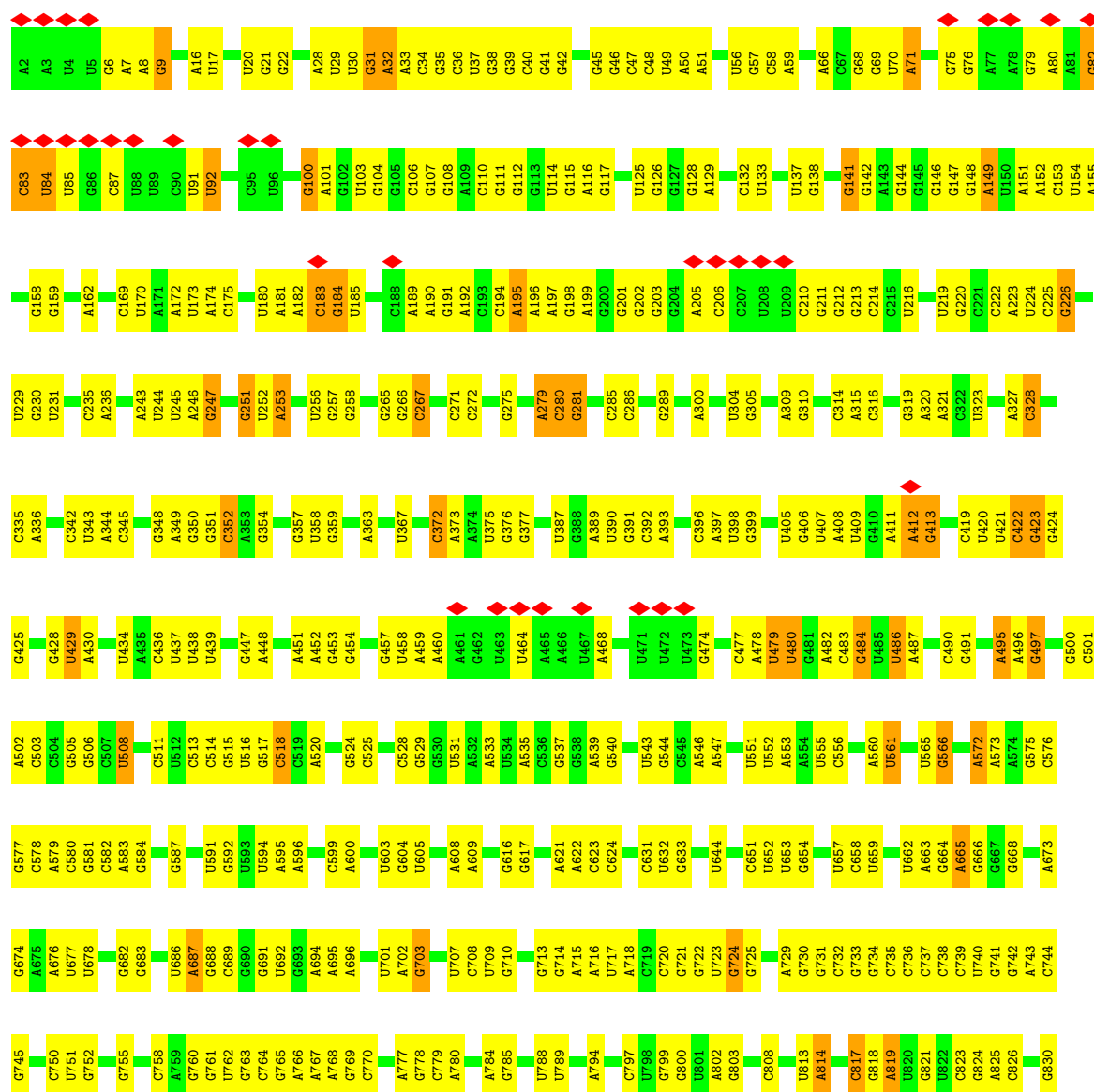


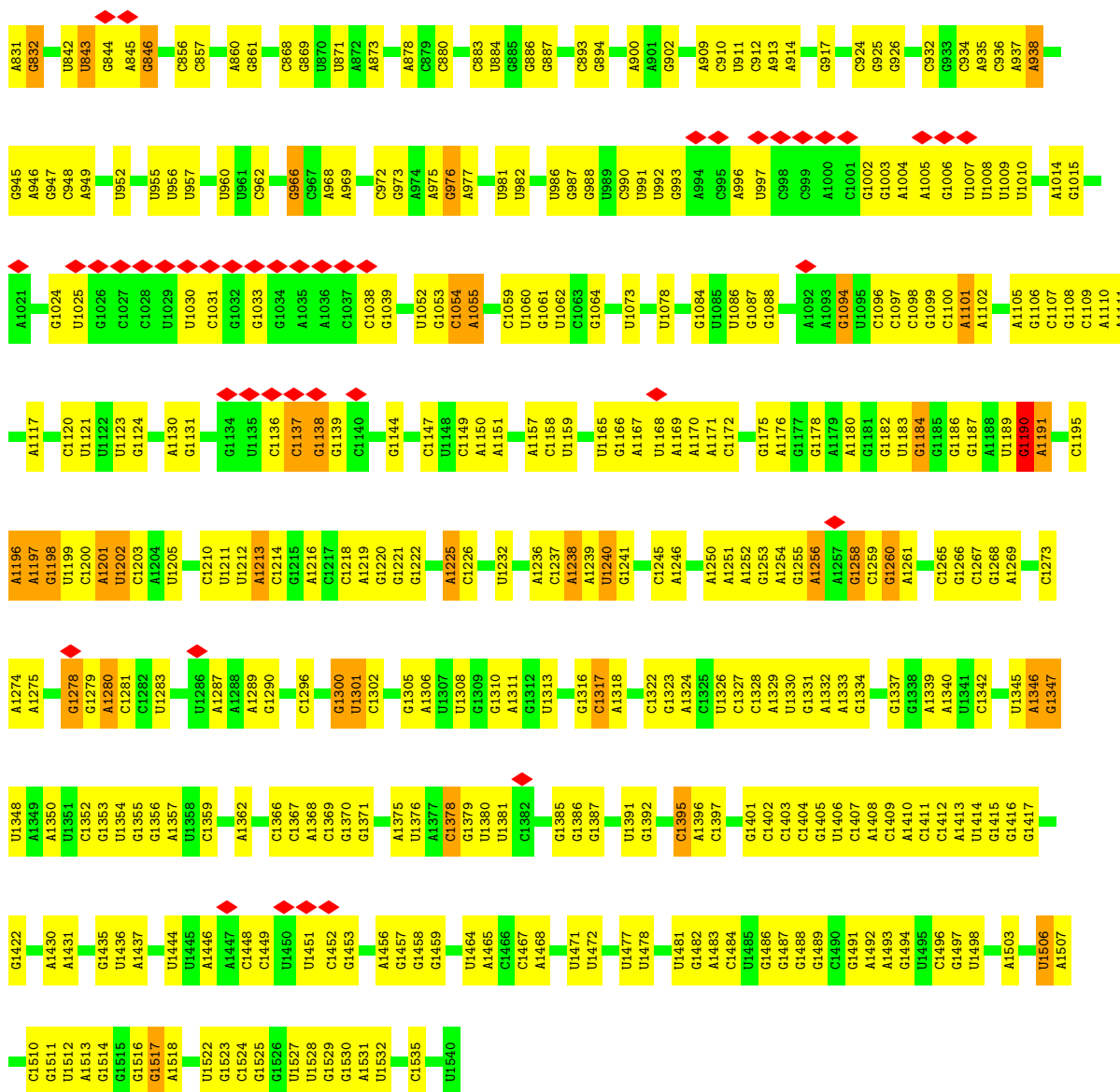


• Molecule 48: 30S ribosomal protein S21

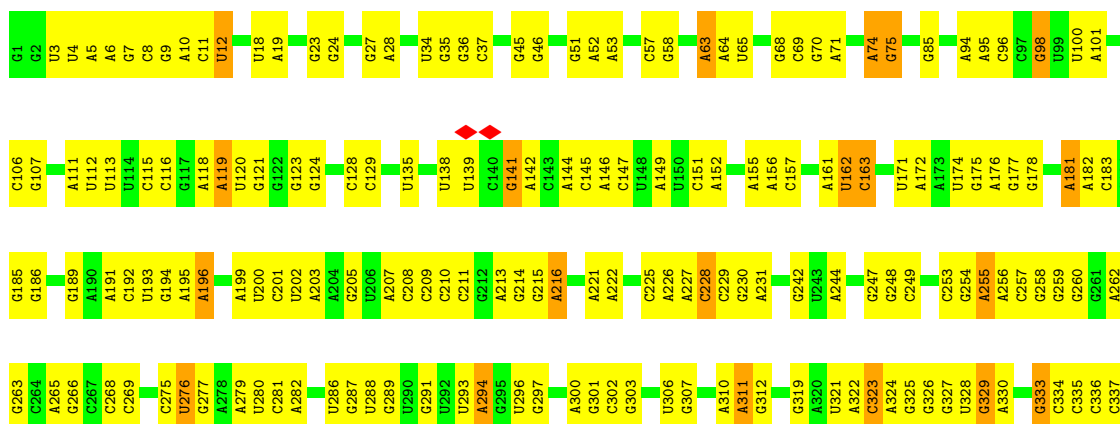


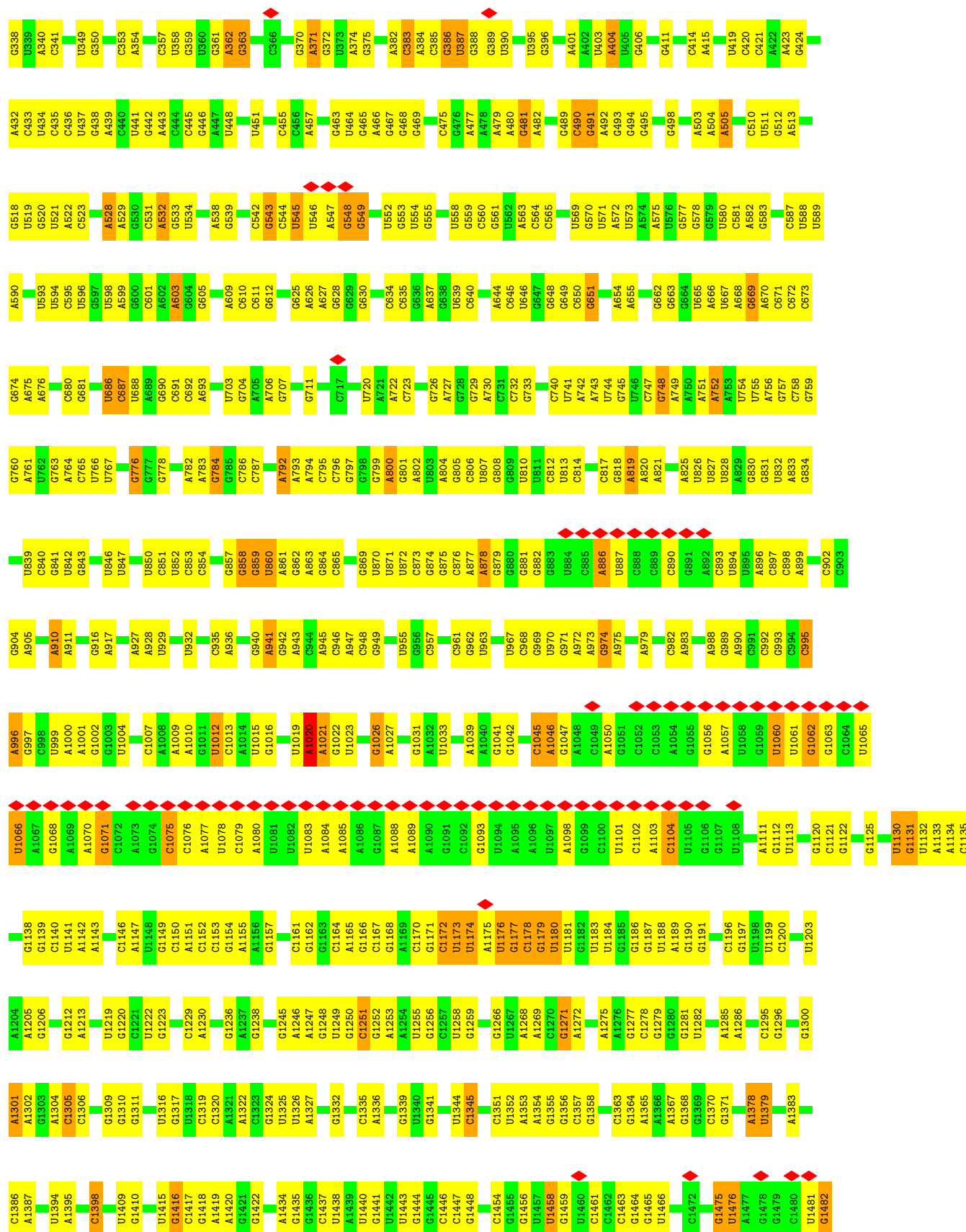
• Molecule 49: 16S ribosomal RNA

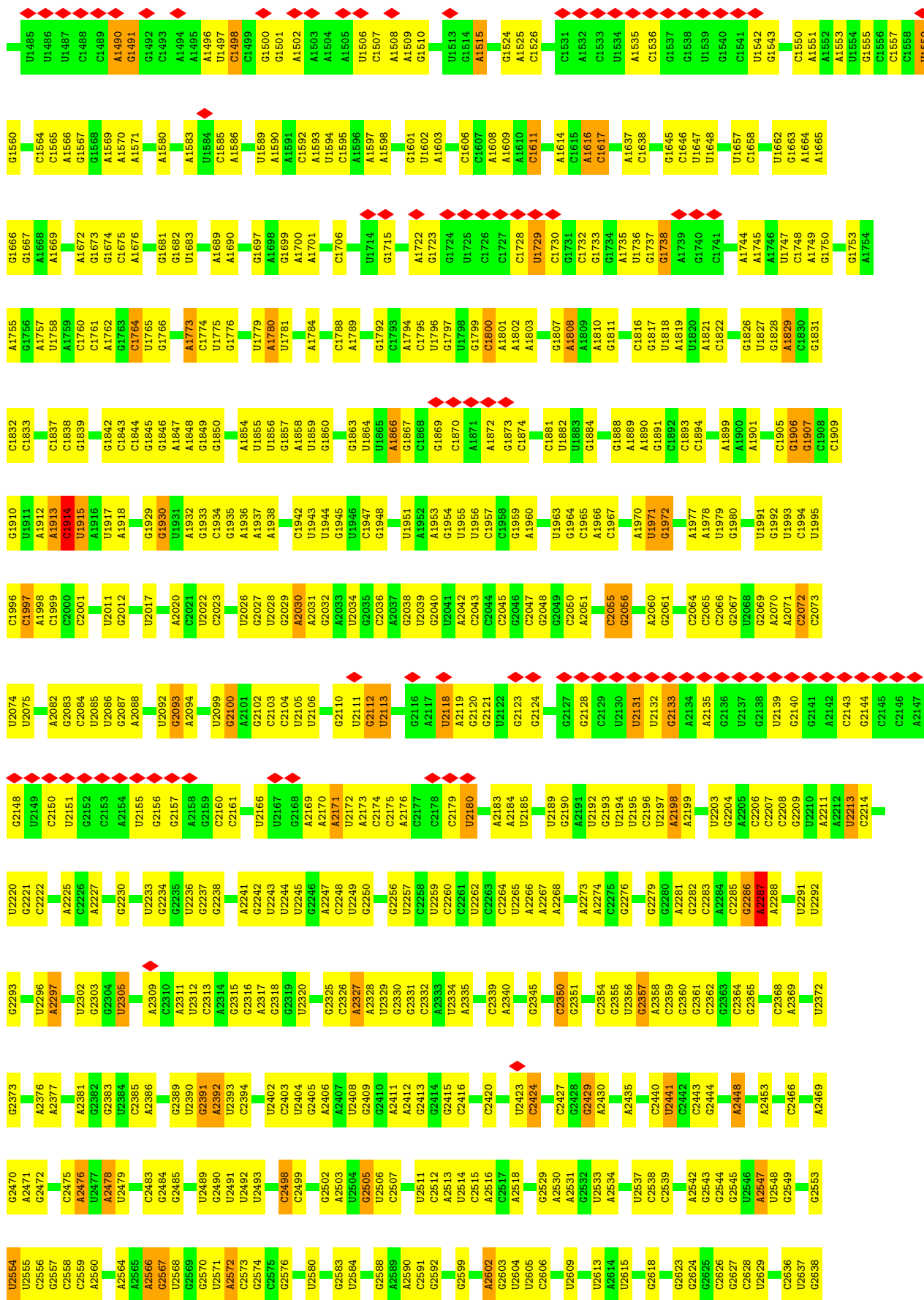


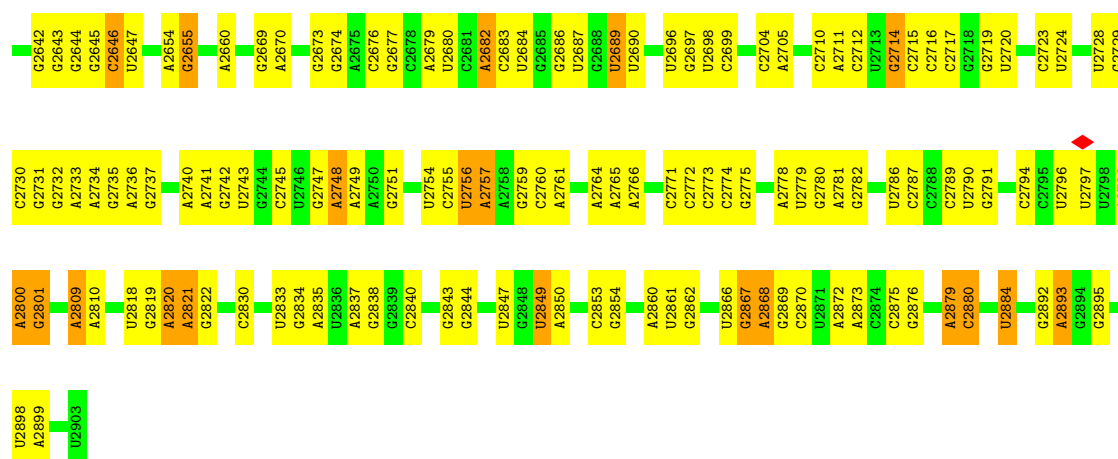


• Molecule 50: 23S ribosomal RNA

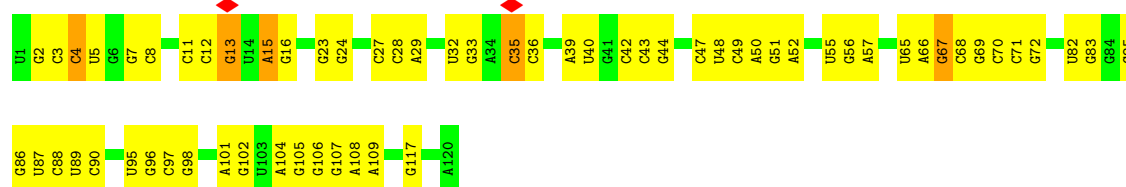




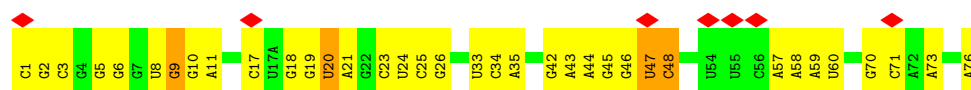




- Molecule 51: 5S ribosomal RNA



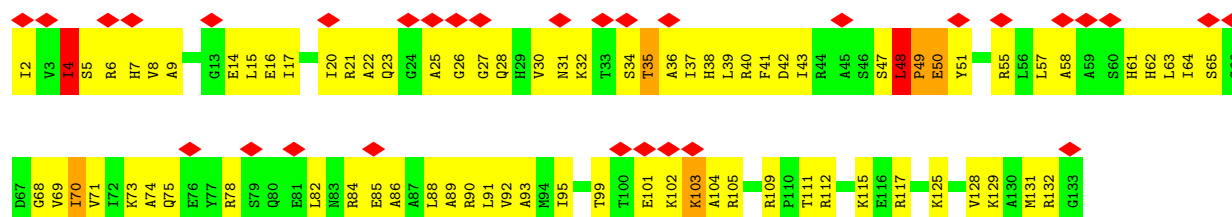
- Molecule 52: tRNAfMet



- Molecule 53: mRNA



- Molecule 54: Peptidyl-tRNA hydrolase ArfB



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	10953	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING ONLY	Depositor
Microscope	FEI TALOS ARCTICA	Depositor
Voltage (kV)	200	Depositor
Electron dose ($e^-/\text{\AA}^2$)	30.5	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	18.584	Depositor
Minimum map value	-7.929	Depositor
Average map value	0.013	Depositor
Map value standard deviation	1.099	Depositor
Recommended contour level	2.54	Depositor
Map size ($\text{\AA}$)	389.76, 389.76, 389.76	wwPDB
Map dimensions	448, 448, 448	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	0.87, 0.87, 0.87	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# $ Z > 5$	RMSZ	# $ Z > 5$
1	b	0.35	0/2122	0.84	5/2852 (0.2%)
2	c	0.37	0/1586	0.80	0/2134
3	d	0.34	0/1571	0.86	2/2113 (0.1%)
4	e	0.38	0/1435	0.90	4/1926 (0.2%)
5	f	0.38	0/1343	0.84	1/1816 (0.1%)
6	g	0.39	0/1122	0.94	5/1515 (0.3%)
7	j	0.35	0/1152	0.87	3/1551 (0.2%)
8	k	0.34	0/948	0.88	0/1268
9	l	0.35	0/1054	0.91	7/1403 (0.5%)
10	m	0.35	0/1093	0.80	0/1460
11	n	0.35	0/974	0.87	2/1301 (0.2%)
12	o	0.34	0/902	0.81	1/1209 (0.1%)
13	p	0.33	0/929	0.84	1/1242 (0.1%)
14	q	0.34	0/960	0.93	2/1278 (0.2%)
15	r	0.35	0/829	0.85	2/1107 (0.2%)
16	s	0.33	0/864	0.83	0/1156
17	t	0.32	0/745	0.84	1/994 (0.1%)
18	u	0.34	0/788	0.90	2/1051 (0.2%)
19	v	0.32	0/766	0.81	0/1025
20	w	0.32	0/582	0.83	1/769 (0.1%)
21	x	0.34	0/635	0.94	3/848 (0.4%)
22	y	0.30	0/510	0.92	2/677 (0.3%)
23	z	0.33	0/453	0.84	0/605
24	B	0.35	0/450	0.82	1/599 (0.2%)
25	C	0.36	0/417	0.80	1/554 (0.2%)
26	D	0.40	0/380	0.90	0/498
27	E	0.35	0/513	0.81	0/676
28	F	0.35	0/303	0.88	1/397 (0.3%)
29	G	0.40	1/1788 (0.1%)	0.98	10/2408 (0.4%)
30	H	0.37	0/1652	0.89	5/2225 (0.2%)
31	I	0.37	0/1665	0.89	4/2227 (0.2%)
32	J	0.35	0/1170	0.93	7/1573 (0.4%)
33	K	0.39	0/836	0.96	1/1128 (0.1%)
34	L	0.37	0/1196	0.95	1/1602 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
35	M	0.35	0/989	0.93	2/1326 (0.2%)
36	N	0.39	0/1034	0.97	5/1375 (0.4%)
37	O	0.41	0/797	0.93	4/1077 (0.4%)
38	P	0.39	0/886	0.97	4/1195 (0.3%)
39	Q	0.33	0/969	0.95	7/1300 (0.5%)
40	R	0.40	0/893	0.91	6/1193 (0.5%)
41	S	0.36	0/817	0.86	4/1088 (0.4%)
42	T	0.33	0/722	0.91	3/964 (0.3%)
43	U	0.36	0/659	0.96	3/884 (0.3%)
44	V	0.34	0/658	0.80	1/881 (0.1%)
45	W	0.40	0/545	0.88	0/731
46	X	0.43	0/653	0.90	5/877 (0.6%)
47	Y	0.32	0/671	0.85	1/888 (0.1%)
48	Z	0.41	0/551	0.94	2/728 (0.3%)
49	3	0.45	0/36963	0.48	1/57662 (0.0%)
50	1	0.45	0/69796	0.49	5/108888 (0.0%)
51	2	0.46	0/2872	0.47	0/4479
52	5	0.47	0/1832	0.47	0/2855
53	4	0.51	0/398	0.56	0/620
54	8	0.40	0/1043	1.02	6/1399 (0.4%)
All	All	0.43	1/157481 (0.0%)	0.62	134/235597 (0.1%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
29	G	46	VAL	CA-CB	5.62	1.57	1.54

All (134) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
32	J	122	VAL	N-CA-C	8.05	126.08	109.34
40	R	25	GLY	N-CA-C	7.94	122.32	112.79
38	P	68	ARG	N-CA-C	-7.76	103.80	113.20
35	M	67	GLY	N-CA-C	-7.74	104.54	115.30
29	G	18	GLN	N-CA-C	7.22	121.55	107.98
39	Q	19	ASN	N-CA-C	-7.20	105.68	114.75
29	G	62	ARG	N-CA-C	-7.11	104.57	113.18
4	e	137	PHE	CA-C-N	7.09	126.80	119.56
4	e	137	PHE	C-N-CA	7.09	126.80	119.56
15	r	23	GLU	N-CA-C	6.92	118.78	110.19
43	U	62	GLY	N-CA-C	-6.87	106.15	114.66
35	M	89	ASP	N-CA-C	6.85	118.74	111.28

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
30	H	14	VAL	N-CA-C	6.80	117.41	111.90
29	G	43	GLU	N-CA-C	6.63	120.24	111.75
12	o	82	ALA	N-CA-C	-6.59	103.92	112.23
15	r	50	GLY	N-CA-C	-6.53	97.72	113.18
50	1	1130	U	C2'-C3'-O3'	6.53	119.29	109.50
46	X	9	PHE	N-CA-C	6.49	119.65	110.50
46	X	16	LYS	N-CA-C	-6.48	104.31	111.82
48	Z	60	ALA	N-CA-C	-6.44	103.76	112.26
9	l	92	LEU	N-CA-C	-6.43	104.36	111.82
21	x	71	ARG	N-CA-C	-6.43	104.36	111.82
54	8	103	LYS	N-CA-C	6.42	120.91	111.34
7	j	100	VAL	N-CA-C	6.42	117.10	110.36
29	G	222	GLU	N-CA-C	-6.35	105.01	112.89
46	X	14	LEU	N-CA-C	-6.32	106.10	113.88
41	S	40	ARG	N-CA-C	-6.32	104.47	111.36
6	g	87	GLU	N-CA-C	6.29	118.89	111.02
36	N	103	VAL	N-CA-C	6.27	117.28	111.45
9	l	96	LYS	N-CA-C	-6.26	105.13	112.89
21	x	20	ALA	N-CA-C	-6.25	105.51	113.02
39	Q	74	GLN	N-CA-C	6.22	117.90	110.44
13	p	94	ALA	N-CA-C	-6.20	106.93	114.75
39	Q	57	THR	N-CA-C	-6.11	105.79	113.18
6	g	10	ALA	N-CA-C	6.07	120.10	110.70
32	J	117	ALA	N-CA-C	-6.05	105.73	113.23
6	g	67	ALA	N-CA-C	-6.05	104.61	112.23
32	J	160	VAL	N-CA-C	6.00	116.18	110.42
32	J	101	GLY	N-CA-C	-5.99	108.08	114.67
38	P	69	CYS	N-CA-C	-5.99	106.10	113.41
42	T	77	TYR	N-CA-C	-5.98	104.84	111.36
5	f	119	GLY	N-CA-C	5.97	121.03	114.40
43	U	76	LYS	N-CA-C	-5.96	104.86	111.36
9	l	55	MET	CA-C-N	5.94	127.27	119.84
9	l	55	MET	C-N-CA	5.94	127.27	119.84
54	8	38	HIS	N-CA-C	5.93	118.83	110.23
47	Y	60	GLN	N-CA-C	-5.85	106.48	113.97
9	l	95	LEU	N-CA-C	-5.84	105.99	113.23
29	G	19	THR	N-CA-C	5.83	123.21	110.80
32	J	123	LEU	N-CA-C	-5.79	97.80	107.99
4	e	6	TYR	N-CA-C	-5.76	105.00	111.28
50	1	1020	A	C2'-C3'-O3'	5.72	118.09	109.50
1	b	12	ARG	N-CA-C	-5.70	106.09	113.16
40	R	34	ALA	N-CA-C	-5.68	105.07	112.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
30	H	85	LYS	N-CA-C	-5.68	105.17	111.36
36	N	92	SER	N-CA-C	-5.68	105.23	111.82
39	Q	22	ALA	N-CA-C	-5.67	104.80	110.97
14	q	88	GLU	N-CA-C	5.65	118.96	112.97
39	Q	99	GLY	N-CA-C	-5.64	104.25	114.46
36	N	96	GLU	N-CA-C	-5.64	105.66	112.54
54	8	48	LEU	CA-C-N	5.61	126.85	119.84
54	8	48	LEU	C-N-CA	5.61	126.85	119.84
7	j	7	LYS	CA-C-N	5.60	125.71	119.32
7	j	7	LYS	C-N-CA	5.60	125.71	119.32
39	Q	114	SER	N-CA-C	-5.58	105.35	111.82
1	b	85	ASN	N-CA-C	5.58	118.29	111.82
32	J	133	ILE	N-CA-C	5.58	116.31	110.62
50	1	2287	A	N9-C1'-C2'	5.58	120.36	112.00
1	b	13	ARG	N-CA-C	5.57	117.16	111.14
9	l	97	ALA	N-CA-C	-5.56	105.37	111.82
29	G	63	LYS	N-CA-C	5.54	117.39	110.91
49	3	1190	G	C2'-C3'-O3'	5.53	117.80	109.50
40	R	96	VAL	N-CA-C	5.51	119.76	112.76
39	Q	43	LYS	N-CA-C	5.50	121.03	113.77
54	8	4	ILE	N-CA-C	5.50	120.78	109.34
44	V	50	ASN	N-CA-C	-5.50	107.14	112.97
48	Z	17	ARG	N-CA-C	-5.47	106.56	113.18
40	R	78	ARG	N-CA-C	-5.46	105.41	111.36
14	q	83	LYS	N-CA-C	-5.45	105.50	111.82
11	n	78	LYS	N-CA-C	-5.43	105.52	111.82
20	w	52	ASP	N-CA-C	-5.39	106.28	112.92
50	1	1914	C	N1-C1'-C2'	5.39	120.09	112.00
3	d	165	HIS	N-CA-C	5.38	117.15	111.28
22	y	14	LEU	N-CA-C	-5.38	105.50	111.36
34	L	10	LYS	N-CA-C	5.37	117.23	110.24
54	8	14	GLU	N-CA-C	-5.35	106.77	113.72
42	T	43	ALA	N-CA-C	-5.34	105.56	111.71
22	y	32	ALA	N-CA-C	-5.33	106.28	112.89
17	t	56	GLU	N-CA-C	-5.33	104.37	111.24
3	d	68	ALA	N-CA-C	-5.32	102.65	110.52
46	X	15	LEU	N-CA-C	-5.32	105.53	112.23
21	x	34	SER	N-CA-C	-5.31	101.99	109.96
29	G	6	ARG	N-CA-C	5.31	120.07	111.37
18	u	5	ARG	N-CA-C	5.30	116.71	109.18
25	C	41	VAL	N-CA-C	5.30	117.68	111.05
4	e	104	THR	N-CA-C	5.30	117.87	111.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
37	O	81	GLU	N-CA-C	5.29	117.05	111.28
41	S	14	ALA	N-CA-C	-5.29	105.59	111.36
37	O	27	GLU	N-CA-C	-5.29	105.19	111.69
28	F	31	PRO	N-CA-C	-5.26	107.28	113.86
31	I	105	GLY	N-CA-C	-5.26	107.96	115.64
40	R	4	ALA	N-CA-C	-5.26	106.25	113.56
11	n	71	ARG	N-CA-C	5.25	118.69	111.54
24	B	24	VAL	N-CA-C	-5.25	107.71	112.12
43	U	61	VAL	N-CA-C	-5.23	105.96	113.07
31	I	30	LYS	N-CA-C	-5.23	108.16	114.75
31	I	35	GLN	N-CA-C	-5.22	107.58	114.31
36	N	119	LYS	N-CA-C	5.21	118.39	111.30
29	G	102	ASN	N-CA-C	-5.21	105.64	112.41
41	S	43	ALA	N-CA-C	-5.20	105.61	111.28
29	G	61	SER	N-CA-C	-5.18	106.47	112.89
38	P	67	GLU	N-CA-C	-5.18	106.81	113.23
30	H	5	HIS	CA-C-N	5.17	125.47	119.47
30	H	5	HIS	C-N-CA	5.17	125.47	119.47
50	l	1178	C	N1-C1'-C2'	5.17	119.75	112.00
36	N	93	LEU	N-CA-C	-5.16	106.14	112.90
31	I	84	ASN	N-CA-C	-5.14	105.31	112.30
32	J	141	ASP	N-CA-C	-5.13	105.60	111.14
1	b	213	ARG	N-CA-C	-5.13	106.28	112.54
46	X	77	ARG	N-CA-C	5.11	116.99	107.99
42	T	34	GLN	N-CA-C	-5.11	105.79	111.36
41	S	30	ILE	N-CA-C	5.08	111.65	106.21
6	g	88	GLY	N-CA-C	5.07	120.72	114.69
9	l	115	GLU	N-CA-C	5.06	116.81	110.24
40	R	35	ALA	N-CA-C	-5.05	107.06	113.18
30	H	129	PHE	N-CA-C	5.05	116.48	111.07
37	O	42	LEU	CA-C-N	5.04	126.14	119.84
37	O	42	LEU	C-N-CA	5.04	126.14	119.84
1	b	15	VAL	N-CA-C	5.02	115.52	108.89
38	P	46	ALA	N-CA-C	-5.01	106.00	111.82
6	g	27	ARG	N-CA-C	5.01	116.55	111.14
29	G	58	LYS	N-CA-C	-5.01	105.90	111.36
33	K	26	THR	N-CA-C	-5.01	107.00	113.01
18	u	75	ALA	N-CA-C	-5.00	108.45	114.75

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	b	2083	0	2157	98	0
2	c	1565	0	1616	73	0
3	d	1552	0	1619	65	0
4	e	1411	0	1447	63	0
5	f	1323	0	1374	61	0
6	g	1111	0	1148	53	0
7	j	1129	0	1162	52	0
8	k	939	0	1012	42	0
9	l	1045	0	1117	42	0
10	m	1074	0	1157	41	0
11	n	961	0	1000	39	0
12	o	892	0	923	35	0
13	p	917	0	965	54	0
14	q	947	0	1022	36	0
15	r	816	0	839	35	0
16	s	857	0	922	30	0
17	t	739	0	807	36	0
18	u	780	0	834	30	0
19	v	753	0	780	28	0
20	w	575	0	592	28	0
21	x	625	0	655	19	0
22	y	509	0	543	20	0
23	z	449	0	491	23	0
24	B	444	0	461	16	0
25	C	410	0	440	14	0
26	D	377	0	418	14	0
27	E	504	0	574	38	0
28	F	302	0	343	21	0
29	G	1757	0	1787	69	0
30	H	1625	0	1699	80	0
31	I	1643	0	1710	81	0
32	J	1157	0	1199	75	0
33	K	818	0	808	55	0
34	L	1182	0	1240	65	0
35	M	979	0	1034	54	0
36	N	1022	0	1070	61	0
37	O	787	0	828	44	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
38	P	870	0	878	59	0
39	Q	955	0	1019	63	0
40	R	884	0	944	54	0
41	S	805	0	847	42	0
42	T	714	0	737	40	0
43	U	649	0	666	42	0
44	V	649	0	691	35	0
45	W	536	0	552	31	0
46	X	638	0	665	36	0
47	Y	665	0	714	27	0
48	Z	545	0	579	42	0
49	3	33012	0	16619	761	0
50	1	62317	0	31346	1213	0
51	2	2568	0	1303	62	0
52	5	1640	0	837	34	0
53	4	353	0	175	5	0
54	8	1031	0	1087	86	0
All	All	144890	0	97452	3739	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 15.

All (3739) 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)
50:1:45:G:H5''	50:1:46:G:H5'	1.20	1.17
50:1:783:A:H2'	50:1:784:G:H4'	1.25	1.12
51:2:3:C:H3'	51:2:4:C:H5''	1.27	1.12
50:1:1300:G:H4'	50:1:1301:A:H5''	1.19	1.10
50:1:1645:G:H5''	50:1:1646:C:H5'	1.36	1.06
50:1:1906:G:H2'	50:1:1907:G:H5''	1.32	1.06
50:1:2170:A:H2'	50:1:2171:A:H4'	1.35	1.05
49:3:1259:C:H3'	49:3:1260:G:H5''	1.40	1.03
32:J:107:GLY:HA3	49:3:9:G:H5'	1.41	1.03
4:e:84:ILE:HD11	50:1:2312:U:H5'	1.43	1.00
33:K:86:ARG:HH22	49:3:673:A:H4'	1.30	0.96
37:O:65:TYR:HB3	41:S:95:LEU:HD11	1.47	0.96
14:q:16:ILE:HD11	14:q:38:VAL:HG11	1.46	0.96
29:G:156:LEU:HD12	29:G:157:PRO:HD2	1.47	0.96
16:s:96:ILE:HD11	50:1:2012:G:H4'	1.48	0.95
49:3:1088:G:H21	49:3:1167:A:H61	1.13	0.95

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:N:91:GLU:HA	36:N:94:ARG:HB2	1.48	0.95
34:L:107:ALA:HA	34:L:122:GLU:HG3	1.49	0.94
20:w:39:THR:HG22	20:w:73:ARG:HH22	1.30	0.93
2:c:83:ARG:NH1	50:1:2637:U:H5''	1.85	0.92
2:c:1:MET:SD	2:c:205:PRO:HB2	2.11	0.91
7:j:100:VAL:HG13	7:j:101:ILE:HD12	1.50	0.90
49:3:482:A:H2'	49:3:483:C:H5'	1.52	0.90
17:t:40:LYS:HE3	17:t:60:THR:HG22	1.51	0.90
13:p:52:ARG:HH22	50:1:2720:U:H5''	1.38	0.89
32:J:108:GLY:H	49:3:9:G:H4'	1.34	0.89
27:E:14:LYS:HD3	27:E:22:LYS:HE3	1.53	0.89
50:1:1060:U:H4'	50:1:1061:U:H5'	1.55	0.89
50:1:2112:G:H2'	50:1:2113:U:H5'	1.53	0.88
50:1:2475:C:H42	50:1:2529:G:H22	1.21	0.88
51:2:65:U:H3'	51:2:108:A:H61	1.37	0.88
41:S:84:ARG:HH12	49:3:1059:C:H4'	1.38	0.88
6:g:132:PHE:HB2	6:g:140:ALA:HB3	1.56	0.87
14:q:36:GLN:HE21	50:1:1252:G:H1	1.21	0.87
50:1:2800:A:H3'	50:1:2801:G:H5'	1.57	0.86
10:m:124:LEU:HD12	10:m:125:PRO:HD2	1.57	0.86
46:X:11:ASP:HB3	46:X:14:LEU:HB2	1.56	0.86
37:O:37:ARG:HG2	49:3:1124:G:H5''	1.54	0.86
8:k:103:VAL:HG12	8:k:104:THR:H	1.40	0.86
10:m:64:TRP:HB2	10:m:104:GLU:HB2	1.58	0.85
2:c:83:ARG:HH11	50:1:2637:U:H5''	1.42	0.85
35:M:95:MET:HB2	35:M:99:GLY:H	1.40	0.85
49:3:91:U:H2'	49:3:92:U:H4'	1.57	0.85
1:b:86:ARG:HD2	50:1:1817:G:H5''	1.59	0.85
49:3:1052:U:H2'	49:3:1200:C:H41	1.42	0.85
50:1:668:A:H2'	50:1:670:A:H62	1.42	0.85
18:u:6:ARG:HH22	50:1:98:G:H1	1.23	0.84
31:I:119:HIS:HB3	49:3:438:U:H4'	1.59	0.84
50:1:1906:G:C2'	50:1:1907:G:H5''	2.06	0.84
50:1:1304:A:H2'	50:1:1305:C:H5''	1.59	0.84
41:S:26:LEU:HD11	41:S:46:LYS:HD2	1.60	0.84
38:P:127:ARG:HH12	49:3:1522:U:H5''	1.43	0.84
36:N:57:VAL:HG23	36:N:58:GLU:H	1.42	0.84
41:S:97:LYS:NZ	49:3:1189:U:H5'	1.93	0.84
36:N:67:LYS:HD3	49:3:1250:A:OP1	1.78	0.83
50:1:1133:A:H4'	50:1:1134:A:H5''	1.58	0.83
4:e:140:ILE:HG13	4:e:142:TYR:H	1.43	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:G:46:VAL:HG13	29:G:47:PRO:HD3	1.59	0.83
50:1:1300:G:C4'	50:1:1301:A:H5''	2.04	0.83
33:K:36:ILE:HA	33:K:64:VAL:HG23	1.60	0.83
46:X:29:PRO:HG3	46:X:47:THR:HG23	1.61	0.83
31:I:57:LYS:HE2	31:I:199:ILE:HG23	1.59	0.82
50:1:1300:G:H4'	50:1:1301:A:C5'	2.08	0.82
2:c:151:THR:HB	2:c:152:PRO:HD3	1.61	0.82
46:X:62:THR:H	46:X:65:MET:HE3	1.43	0.82
50:1:2092:U:H4'	50:1:2093:G:H5''	1.62	0.82
51:2:3:C:C3'	51:2:4:C:H5''	2.08	0.82
10:m:12:MET:HA	50:1:910:A:H62	1.45	0.82
40:R:2:ARG:HE	40:R:8:ILE:HD11	1.45	0.82
50:1:886:A:H4'	50:1:890:C:H41	1.44	0.82
49:3:184:G:H4'	49:3:224:U:H4'	1.61	0.81
33:K:29:ILE:HG22	33:K:34:GLY:HA3	1.62	0.81
49:3:478:A:H2'	49:3:479:U:H4'	1.62	0.81
38:P:34:THR:HA	38:P:40:ALA:HA	1.62	0.81
50:1:1063:G:H22	50:1:1075:C:H42	1.29	0.81
8:k:30:ARG:HD2	50:1:2674:G:H4'	1.62	0.81
50:1:1507:C:H2'	50:1:1508:A:H4'	1.62	0.81
54:8:40:ARG:HH21	54:8:84:ARG:HH12	1.27	0.81
18:u:10:VAL:HG12	18:u:71:ILE:HA	1.61	0.81
27:E:16:THR:HG23	27:E:17:GLY:H	1.46	0.81
2:c:148:GLN:HB2	2:c:152:PRO:HG2	1.62	0.80
5:f:7:PRO:HB2	5:f:48:THR:HG22	1.61	0.80
14:q:36:GLN:NE2	50:1:1252:G:H1	1.78	0.80
50:1:121:G:H4'	50:1:149:A:H5'	1.61	0.80
1:b:251:THR:HG22	1:b:252:LYS:H	1.46	0.80
1:b:34:GLU:HG2	1:b:63:ILE:HD11	1.62	0.80
50:1:792:A:H3'	50:1:793:A:H5'	1.64	0.80
50:1:1141:U:H4'	50:1:1142:A:O4'	1.81	0.79
8:k:88:ASN:HD22	8:k:91:SER:HB3	1.48	0.79
31:I:115:GLN:HE22	49:3:406:G:H1'	1.46	0.79
50:1:1728:C:H2'	50:1:1729:U:H5''	1.63	0.79
8:k:76:VAL:H	13:p:72:VAL:HG22	1.47	0.79
31:I:184:LYS:HD3	31:I:185:PRO:HD2	1.65	0.79
32:J:149:PRO:HA	32:J:152:VAL:HG12	1.63	0.79
36:N:35:GLU:HA	36:N:39:GLY:HA3	1.64	0.79
5:f:148:ARG:HA	5:f:161:VAL:HG13	1.65	0.78
36:N:54:VAL:HG23	36:N:55:ASP:H	1.46	0.78
50:1:215:G:H4'	50:1:216:A:H4'	1.65	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:2475:C:H2'	50:1:2476:A:H5'	1.64	0.78
44:V:26:ARG:HB2	44:V:39:ARG:HB2	1.64	0.78
50:1:1807:G:H2'	50:1:1808:A:H5'	1.66	0.78
54:8:47:SER:O	54:8:48:LEU:HB2	1.83	0.78
50:1:1168:G:H1	50:1:1181:U:H3	1.32	0.78
50:1:2104:C:H42	50:1:2185:U:H3	1.29	0.78
31:I:144:ILE:HG22	31:I:177:MET:HG3	1.65	0.77
7:j:26:GLY:HA3	50:1:1140:C:H5'	1.65	0.77
50:1:859:G:H1'	50:1:860:U:H5	1.50	0.77
34:L:75:LYS:HE3	34:L:88:VAL:HG21	1.66	0.77
2:c:123:LYS:HG2	2:c:165:MET:HE1	1.67	0.77
2:c:135:GLY:HA2	50:1:743:A:OP1	1.85	0.77
31:I:28:ASP:O	31:I:29:THR:HG22	1.84	0.77
34:L:110:ARG:HG2	34:L:121:ASN:HD21	1.50	0.77
38:P:23:HIS:HB3	38:P:30:ILE:HB	1.66	0.77
33:K:91:ARG:HG3	33:K:92:THR:H	1.49	0.77
50:1:45:G:C5'	50:1:46:G:H5'	2.10	0.77
33:K:86:ARG:NH2	49:3:673:A:H4'	2.00	0.76
50:1:2440:C:H2'	50:1:2441:U:H4'	1.66	0.76
33:K:66:ALA:HB1	33:K:67:PRO:HD2	1.66	0.76
32:J:105:ILE:HD11	32:J:123:LEU:HD23	1.67	0.76
50:1:2834:G:H2'	50:1:2879:A:H61	1.50	0.76
49:3:955:U:H3	49:3:1225:A:H61	1.33	0.76
50:1:2286:G:H5''	50:1:2287:A:OP1	1.86	0.76
25:C:4:ILE:H	25:C:4:ILE:HD12	1.51	0.76
50:1:1020:A:H1'	50:1:1021:A:OP2	1.86	0.76
51:2:3:C:H3'	51:2:4:C:C5'	2.14	0.76
49:3:211:G:H2'	49:3:212:G:H5'	1.68	0.76
35:M:12:ARG:CZ	49:3:826:C:H5'	2.16	0.75
49:3:373:A:H61	49:3:391:G:H1'	1.51	0.75
2:c:30:GLU:HG2	2:c:31:ALA:H	1.50	0.75
4:e:66:ILE:H	4:e:66:ILE:HD12	1.51	0.75
30:H:59:PRO:HG2	30:H:62:SER:OG	1.87	0.75
45:W:47:ARG:HB2	45:W:50:TYR:HD2	1.50	0.75
2:c:179:ARG:HB3	2:c:188:LEU:HD12	1.68	0.75
4:e:45:ASP:HB3	4:e:48:LEU:HG	1.68	0.75
19:v:9:ARG:HG2	19:v:41:GLU:HB2	1.67	0.75
50:1:382:A:H2'	50:1:383:C:H5''	1.68	0.75
16:s:71:VAL:HA	16:s:107:VAL:HG12	1.69	0.75
49:3:1316:G:H2'	49:3:1317:C:H5''	1.70	0.74
50:1:1597:A:H5''	50:1:1598:A:H5'	1.68	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:f:53:PRO:HB3	5:f:60:GLY:HA3	1.68	0.74
8:k:99:ILE:HD13	8:k:115:ILE:HG23	1.70	0.74
27:E:15:LYS:NZ	27:E:19:GLY:HA2	2.03	0.74
50:1:189:G:H2'	50:1:205:G:H22	1.53	0.74
50:1:2553:G:H3'	50:1:2554:U:H5''	1.67	0.74
15:r:40:MET:HE1	15:r:48:LYS:HB2	1.68	0.74
13:p:63:ILE:HA	13:p:68:GLY:HA2	1.69	0.73
30:H:78:LYS:HG3	30:H:79:LYS:HE2	1.70	0.73
49:3:1306:A:N6	49:3:1331:G:H1'	2.03	0.73
2:c:110:THR:HG23	2:c:171:THR:HG22	1.69	0.73
49:3:225:C:C3'	49:3:226:G:H5''	2.17	0.73
49:3:1088:G:H21	49:3:1167:A:N6	1.86	0.73
50:1:2267:A:H5''	50:1:2268:A:H5'	1.68	0.73
10:m:45:GLN:HE21	50:1:2485:G:H5''	1.50	0.73
50:1:807:U:H2'	50:1:808:G:H8	1.54	0.73
37:O:14:ASP:HB3	37:O:17:LEU:HB3	1.71	0.72
54:8:2:ILE:HG22	54:8:4:ILE:H	1.54	0.72
4:e:90:LEU:HD11	4:e:94:ARG:HB2	1.70	0.72
8:k:65:THR:HG22	8:k:67:LYS:H	1.53	0.72
35:M:6:ILE:HD12	35:M:6:ILE:H	1.54	0.72
49:3:327:A:O2'	49:3:328:C:H4'	1.88	0.72
49:3:1306:A:H61	49:3:1331:G:H1'	1.54	0.72
1:b:145:MET:HE1	50:1:1800:C:H3'	1.71	0.72
35:M:91:LEU:HD12	35:M:92:PRO:HD2	1.71	0.72
43:U:40:ASN:HB3	43:U:43:ALA:HB2	1.72	0.72
36:N:126:PHE:HB3	49:3:1342:C:H4'	1.71	0.72
20:w:39:THR:H	50:1:2331:G:H4'	1.55	0.72
12:o:94:ARG:NH2	50:1:2293:G:H5''	2.04	0.72
34:L:79:VAL:HG23	49:3:1381:U:O2'	1.90	0.72
36:N:119:LYS:HE3	49:3:1350:A:OP2	1.89	0.72
40:R:64:VAL:HG22	40:R:65:GLU:H	1.53	0.72
50:1:1179:G:H2'	50:1:1180:U:H4'	1.71	0.72
22:y:41:HIS:CD2	50:1:96:C:H4'	2.25	0.71
32:J:104:ILE:H	32:J:104:ILE:HD12	1.55	0.71
36:N:121:ARG:HG3	49:3:1348:U:H4'	1.71	0.71
5:f:132:LEU:HD23	5:f:132:LEU:H	1.55	0.71
29:G:218:ALA:O	29:G:222:GLU:HG3	1.90	0.71
32:J:93:VAL:HA	32:J:126:ALA:HA	1.73	0.71
50:1:503:A:H4'	50:1:505:A:H5''	1.71	0.71
48:Z:25:ALA:HB3	53:4:9:G:H4'	1.73	0.71
4:e:130:GLY:HA3	50:1:2305:U:H5''	1.72	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:o:94:ARG:HH21	50:1:2293:G:H5''	1.56	0.71
35:M:102:VAL:HG13	35:M:125:ILE:HB	1.72	0.71
49:3:831:A:H3'	49:3:832:G:H5''	1.73	0.71
3:d:18:THR:HA	3:d:106:LYS:HG3	1.73	0.70
5:f:69:ALA:HA	5:f:72:ASN:HD22	1.56	0.70
10:m:4:PRO:HG3	10:m:68:PHE:HE2	1.55	0.70
27:E:31:ILE:HG23	27:E:34:LYS:HZ2	1.56	0.70
29:G:96:LEU:O	29:G:99:MET:HG3	1.91	0.70
50:1:704:G:H2'	50:1:726:G:N2	2.05	0.70
50:1:2139:U:H2'	50:1:2140:G:H5'	1.71	0.70
9:l:62:PRO:HG3	50:1:2393:U:H5''	1.72	0.70
34:L:25:PHE:O	34:L:28:ILE:HG12	1.91	0.70
38:P:33:ILE:HD12	38:P:73:VAL:HG11	1.73	0.70
50:1:2514:U:H2'	50:1:2515:C:C6	2.26	0.70
4:e:65:LEU:HD22	51:2:42:C:C5	2.26	0.70
49:3:701:U:H4'	49:3:703:G:H1'	1.72	0.70
50:1:2800:A:H3'	50:1:2801:G:C5'	2.20	0.70
37:O:37:ARG:CG	49:3:1124:G:H5''	2.21	0.70
38:P:111:ASP:HB2	48:Z:16:ARG:HH22	1.56	0.70
50:1:189:G:H2'	50:1:205:G:N2	2.07	0.70
52:5:20:U:H2'	52:5:21:A:H5''	1.73	0.70
15:r:61:ALA:HB2	15:r:98:ILE:HD13	1.73	0.70
36:N:51:LEU:HB3	36:N:56:MET:HB2	1.73	0.70
49:3:225:C:H3'	49:3:226:G:H5''	1.72	0.70
2:c:66:GLY:HA3	50:1:2787:C:H5'	1.73	0.70
6:g:73:ASN:O	6:g:76:GLU:HG3	1.91	0.70
50:1:898:C:H2'	50:1:899:A:H5'	1.73	0.70
13:p:52:ARG:NH2	50:1:2720:U:H5''	2.07	0.70
34:L:2:ARG:HG3	49:3:1380:U:C5	2.27	0.70
3:d:21:ARG:HD2	3:d:106:LYS:HG2	1.72	0.70
2:c:9:VAL:HG23	2:c:26:VAL:HG23	1.73	0.70
5:f:174:LYS:HD2	50:1:2529:G:H4'	1.74	0.70
29:G:26:MET:HE3	29:G:188:THR:HA	1.74	0.70
39:Q:56:LEU:HD12	39:Q:60:PHE:HB2	1.74	0.70
45:W:59:LYS:HA	45:W:62:ARG:HD3	1.72	0.69
41:S:82:LYS:HD3	49:3:1202:U:O2	1.90	0.69
4:e:102:LEU:HA	4:e:106:ALA:HB3	1.73	0.69
12:o:33:ARG:HB2	51:2:52:A:H62	1.58	0.69
54:8:103:LYS:HG3	54:8:104:ALA:H	1.57	0.69
27:E:61:LEU:HD12	27:E:61:LEU:O	1.92	0.69
35:M:28:SER:HB2	35:M:58:LEU:HB2	1.74	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:T:35:ILE:O	42:T:39:GLN:HG3	1.91	0.69
15:r:36:ALA:HB2	15:r:58:VAL:HG12	1.73	0.69
35:M:80:PRO:HG2	49:3:878:A:H5''	1.73	0.69
42:T:46:LYS:HA	42:T:52:ARG:HH22	1.58	0.69
5:f:173:ALA:HB1	50:1:2531:A:H5'	1.75	0.69
43:U:10:GLY:HA2	49:3:624:C:H4'	1.73	0.69
49:3:1412:C:H2'	49:3:1413:A:C8	2.27	0.69
33:K:3:HIS:CD2	33:K:94:HIS:HA	2.27	0.69
13:p:25:VAL:HG12	13:p:85:VAL:HA	1.74	0.69
38:P:54:SER:OG	49:3:694:A:H5''	1.92	0.69
13:p:24:THR:HG22	13:p:45:VAL:HG22	1.75	0.69
26:D:12:ARG:HD3	50:1:686:U:O4	1.93	0.69
27:E:39:ARG:NH1	50:1:2362:C:H5''	2.08	0.69
31:I:57:LYS:NZ	31:I:202:LEU:HB3	2.08	0.69
41:S:5:MET:HE1	41:S:62:ARG:NH2	2.08	0.68
50:1:1093:G:H21	50:1:1098:A:H62	1.39	0.68
50:1:704:G:H2'	50:1:726:G:H22	1.56	0.68
9:l:16:GLY:HA2	50:1:662:G:O3'	1.94	0.68
9:l:53:GLY:HA3	50:1:826:U:O2'	1.93	0.68
39:Q:42:LYS:HG3	39:Q:44:PRO:HD2	1.74	0.68
9:l:3:LEU:HD23	50:1:1203:U:H4'	1.74	0.68
16:s:9:HIS:HB3	16:s:11:ARG:NH1	2.09	0.68
20:w:33:ILE:HG22	20:w:34:VAL:HG13	1.75	0.68
35:M:5:PRO:HG2	35:M:6:ILE:HD12	1.73	0.68
44:V:8:GLN:HE21	44:V:57:VAL:HG13	1.59	0.68
12:o:35:ILE:HG22	12:o:53:THR:HG23	1.76	0.68
27:E:15:LYS:HZ1	27:E:19:GLY:HA2	1.58	0.68
38:P:127:ARG:HH12	49:3:1522:U:C5'	2.06	0.68
49:3:151:A:H2'	49:3:152:A:O4'	1.93	0.68
28:F:19:ARG:HH21	50:1:2755:C:H3'	1.58	0.68
41:S:63:CYS:HB3	41:S:67:GLY:H	1.59	0.68
49:3:1259:C:H3'	49:3:1260:G:C5'	2.20	0.68
50:1:548:G:N7	50:1:549:G:H1'	2.09	0.68
50:1:2584:U:H5'	54:8:25:ALA:CB	2.24	0.68
54:8:20:ILE:HG13	54:8:21:ARG:H	1.57	0.68
19:v:20:LEU:HD11	19:v:27:PRO:HD3	1.75	0.68
29:G:18:GLN:O	29:G:20:ARG:N	2.24	0.68
39:Q:86:VAL:HG23	39:Q:88:ASP:H	1.59	0.68
50:1:996:A:H2'	50:1:997:G:H8	1.59	0.68
50:1:2139:U:C2'	50:1:2140:G:H5'	2.24	0.68
38:P:43:TRP:CZ2	49:3:686:U:H4'	2.29	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:769:G:H4'	49:3:1513:A:H4'	1.76	0.67
49:3:1524:C:H2'	49:3:1525:G:C8	2.29	0.67
10:m:3:GLN:HE21	10:m:92:TRP:HE1	1.41	0.67
13:p:54:LEU:HA	13:p:76:HIS:HD2	1.59	0.67
17:t:59:ASN:HB2	17:t:84:TYR:HB2	1.76	0.67
30:H:55:VAL:HB	30:H:66:THR:HB	1.75	0.67
43:U:58:ALA:HA	43:U:61:VAL:HG22	1.76	0.67
36:N:83:THR:HG21	36:N:102:PHE:HB3	1.76	0.67
50:1:2183:A:H2'	50:1:2184:A:C8	2.30	0.67
12:o:108:ASP:O	12:o:112:GLU:HG3	1.94	0.67
30:H:76:ILE:HB	30:H:80:GLY:HA2	1.75	0.67
38:P:126:ARG:HB2	48:Z:33:ARG:HH21	1.60	0.67
43:U:13:LYS:HE3	49:3:392:C:H5'	1.76	0.67
49:3:70:U:H4'	49:3:71:A:C8	2.30	0.67
50:1:2602:A:H4'	50:1:2603:G:C5'	2.25	0.67
18:u:48:VAL:HG22	18:u:50:ALA:H	1.60	0.67
50:1:1609:A:H1'	50:1:1616:A:H1'	1.77	0.67
50:1:2818:U:H4'	50:1:2837:A:H4'	1.76	0.67
17:t:2:ILE:HD11	50:1:144:A:H4'	1.75	0.67
30:H:134:LYS:HD2	30:H:135:ARG:N	2.10	0.67
30:H:149:LYS:HB3	30:H:200:TRP:HB2	1.76	0.67
33:K:67:PRO:HG2	33:K:70:VAL:HG22	1.75	0.67
49:3:216:U:H5''	49:3:464:U:H4'	1.77	0.67
50:1:293:U:H2'	50:1:294:A:H5''	1.76	0.67
50:1:2391:G:H22	50:1:2424:C:H2'	1.59	0.67
13:p:2:ASN:HD21	50:1:2876:G:H4'	1.60	0.67
36:N:44:ARG:H	36:N:44:ARG:HD3	1.60	0.67
5:f:3:VAL:HG21	50:1:2748:A:H5'	1.77	0.67
16:s:58:ALA:O	16:s:62:ASP:HB2	1.95	0.67
34:L:20:GLU:HG2	34:L:21:LEU:HD12	1.77	0.66
40:R:53:ASP:HA	40:R:56:ARG:HD2	1.78	0.66
49:3:1130:A:H61	49:3:1144:G:H1'	1.60	0.66
50:1:1845:G:H2'	50:1:1846:G:C8	2.30	0.66
50:1:2155:U:H2'	50:1:2156:G:H5'	1.77	0.66
28:F:22:VAL:HG23	28:F:37:GLN:HB3	1.77	0.66
39:Q:98:ARG:HB3	39:Q:105:GLY:HA2	1.77	0.66
49:3:1052:U:H2'	49:3:1200:C:N4	2.09	0.66
35:M:88:LYS:HB2	49:3:600:A:H5''	1.78	0.66
40:R:67:ASP:O	40:R:71:GLU:HG3	1.94	0.66
50:1:858:G:H5'	50:1:859:G:OP2	1.95	0.66
11:n:69:ARG:O	11:n:70:THR:HG22	1.94	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:J:113:VAL:O	32:J:116:VAL:HG22	1.95	0.66
36:N:70:GLY:HA3	49:3:1371:G:O3'	1.96	0.66
39:Q:46:SER:HB3	54:8:117:ARG:HH12	1.59	0.66
50:1:1481:U:H2'	50:1:1482:G:H4'	1.77	0.66
50:1:2790:U:H4'	50:1:2892:G:O2'	1.95	0.66
2:c:38:LYS:HD2	2:c:43:ASP:OD2	1.94	0.66
48:Z:19:LYS:HA	48:Z:22:CYS:SG	2.35	0.66
50:1:650:C:H3'	50:1:651:G:H5''	1.76	0.66
16:s:90:LYS:HA	50:1:751:A:H5'	1.78	0.66
49:3:1005:A:H2'	49:3:1006:G:O4'	1.96	0.66
4:e:84:ILE:HD11	50:1:2312:U:C5'	2.24	0.66
10:m:3:GLN:HE21	10:m:92:TRP:NE1	1.94	0.66
10:m:124:LEU:HG	10:m:126:ILE:H	1.61	0.66
15:r:80:ARG:NH1	50:1:571:U:H2'	2.10	0.66
34:L:16:LYS:HG2	34:L:17:PHE:HD1	1.60	0.66
36:N:11:ARG:HG3	36:N:12:LYS:HG2	1.76	0.66
45:W:40:PRO:HG2	45:W:43:ILE:HG12	1.78	0.66
50:1:2646:C:H2'	50:1:2647:U:O4'	1.96	0.66
10:m:75:GLU:HB2	10:m:90:GLU:HG3	1.77	0.66
30:H:57:GLU:HG3	30:H:59:PRO:HD3	1.78	0.66
31:I:152:SER:O	31:I:155:LYS:HE3	1.95	0.66
38:P:60:PHE:HA	38:P:63:GLN:HG2	1.78	0.66
49:3:1088:G:N2	49:3:1167:A:H61	1.91	0.66
50:1:2296:U:H5''	50:1:2297:A:OP1	1.95	0.66
49:3:70:U:H4'	49:3:71:A:H8	1.59	0.66
49:3:451:A:N6	49:3:480:U:H2'	2.10	0.66
50:1:441:U:O2'	50:1:442:G:H5'	1.96	0.66
30:H:145:ALA:HB3	30:H:148:ILE:HD11	1.78	0.65
36:N:83:THR:HG22	36:N:97:LEU:HD11	1.78	0.65
50:1:176:A:O2'	50:1:177:G:H5'	1.96	0.65
5:f:27:GLY:HA3	5:f:78:VAL:HB	1.77	0.65
22:y:24:GLU:HG2	22:y:25:GLN:N	2.10	0.65
31:I:44:LYS:HD2	31:I:47:LEU:HD11	1.79	0.65
32:J:134:ASN:HD21	49:3:1078:U:H1'	1.60	0.65
37:O:6:ILE:HB	37:O:76:ILE:HB	1.78	0.65
50:1:704:G:H1'	50:1:727:A:H61	1.60	0.65
50:1:1837:C:H2'	50:1:1899:A:N6	2.11	0.65
50:1:2135:A:H1'	50:1:2160:C:H4'	1.77	0.65
50:1:1304:A:C2'	50:1:1305:C:H5''	2.27	0.65
1:b:144:GLU:HG2	1:b:151:GLY:N	2.11	0.65
50:1:577:G:H2'	50:1:578:G:C8	2.32	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:I:84:ASN:OD1	31:I:87:GLU:HB2	1.95	0.65
1:b:104:LEU:HD12	1:b:104:LEU:H	1.61	0.65
1:b:164:VAL:HG21	1:b:180:MET:HE3	1.78	0.65
7:j:27:ARG:NH2	50:1:1142:A:H4'	2.11	0.65
8:k:1:MET:HE1	50:1:1664:A:H2	1.62	0.65
14:q:49:ARG:HH12	15:r:74:ILE:HG12	1.61	0.65
29:G:138:ARG:HD2	49:3:1097:C:H5''	1.77	0.65
31:I:8:LEU:HD23	49:3:429:U:OP2	1.96	0.65
33:K:96:VAL:HG22	33:K:97:THR:H	1.62	0.65
34:L:34:LYS:HZ1	49:3:1289:A:H2'	1.60	0.65
48:Z:44:ARG:NH1	49:3:722:G:H5''	2.12	0.65
49:3:84:U:H3'	49:3:85:U:H5'	1.79	0.65
12:o:3:LYS:HE2	51:2:47:C:OP1	1.96	0.64
14:q:2:ARG:HD2	50:1:1248:G:C2	2.32	0.64
39:Q:30:ARG:HG2	49:3:363:A:OP2	1.97	0.64
49:3:29:U:O2'	49:3:30:U:H5'	1.96	0.64
50:1:1319:C:O2'	50:1:1320:C:H5'	1.97	0.64
2:c:142:VAL:CG2	2:c:143:PRO:HD2	2.27	0.64
23:z:29:ARG:HB2	23:z:30:ARG:HE	1.62	0.64
42:T:7:THR:HA	42:T:30:LEU:HD11	1.79	0.64
50:1:435:C:H2'	50:1:436:C:H5'	1.79	0.64
50:1:783:A:C2'	50:1:784:G:H4'	2.16	0.64
54:8:89:ALA:O	54:8:93:ALA:HB3	1.97	0.64
6:g:4:ILE:HG13	6:g:37:VAL:HG23	1.79	0.64
20:w:36:GLN:NE2	20:w:39:THR:HA	2.13	0.64
4:e:15:LEU:HA	4:e:18:GLU:HB3	1.78	0.64
39:Q:109:ARG:HH12	49:3:537:G:H5''	1.63	0.64
44:V:63:CYS:SG	44:V:73:THR:HG23	2.37	0.64
50:1:2156:G:H2'	50:1:2157:G:H5'	1.78	0.64
1:b:98:GLY:HA3	50:1:1500:G:H21	1.62	0.64
11:n:100:CYS:H	11:n:111:ALA:HA	1.63	0.64
35:M:28:SER:HA	35:M:32:LYS:HD2	1.80	0.64
40:R:80:MET:HA	40:R:91:ARG:HE	1.62	0.64
31:I:119:HIS:CG	49:3:438:U:H4'	2.32	0.64
32:J:104:ILE:HD11	32:J:120:HIS:HA	1.77	0.64
34:L:94:ARG:NH2	49:3:938:A:O2'	2.29	0.64
47:Y:49:ALA:O	47:Y:52:GLU:HG3	1.98	0.64
49:3:41:G:H2'	49:3:42:G:H8	1.63	0.64
50:1:1675:C:H2'	50:1:1676:A:O4'	1.97	0.64
11:n:47:VAL:C	11:n:50:PRO:HD2	2.23	0.64
50:1:382:A:C2'	50:1:383:C:H5''	2.27	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:1796:U:H2'	50:1:1797:G:H8	1.61	0.64
1:b:143:VAL:HB	1:b:153:LEU:HB2	1.78	0.64
7:j:27:ARG:HH22	50:1:1142:A:H4'	1.62	0.64
41:S:97:LYS:HZ2	49:3:1189:U:H5'	1.60	0.64
46:X:18:VAL:O	46:X:22:VAL:HG22	1.97	0.64
50:1:2602:A:H4'	50:1:2603:G:H5''	1.78	0.64
2:c:124:ARG:HA	2:c:165:MET:SD	2.38	0.64
31:I:8:LEU:HD11	31:I:33:ILE:HD11	1.80	0.64
5:f:83:THR:HG22	5:f:133:LYS:HG3	1.79	0.64
20:w:39:THR:HG22	20:w:73:ARG:NH2	2.10	0.64
37:O:43:PRO:HA	49:3:1151:A:H5'	1.79	0.64
50:1:215:G:C4'	50:1:216:A:H4'	2.27	0.64
50:1:2834:G:H2'	50:1:2879:A:N6	2.13	0.64
1:b:213:ARG:NH2	50:1:1566:A:H5'	2.13	0.63
3:d:148:ILE:H	3:d:148:ILE:HD12	1.63	0.63
30:H:182:ASP:HB3	30:H:201:ILE:HB	1.79	0.63
31:I:16:THR:HG22	31:I:17:ASP:H	1.63	0.63
33:K:15:SER:O	33:K:18:VAL:HG22	1.98	0.63
9:l:101:ILE:HG13	9:l:102:GLY:H	1.63	0.63
49:3:1094:G:N3	49:3:1094:G:H2'	2.14	0.63
50:1:382:A:C3'	50:1:383:C:H5''	2.27	0.63
50:1:2281:A:O2'	50:1:2282:G:H5'	1.97	0.63
39:Q:119:LYS:HA	49:3:36:C:H5''	1.79	0.63
49:3:407:U:H2'	49:3:408:A:C8	2.34	0.63
50:1:528:A:N1	50:1:2042:A:H2'	2.13	0.63
52:5:21:A:H61	52:5:46:G:H2'	1.61	0.63
40:R:22:TYR:CE1	49:3:1330:U:H4'	2.34	0.63
46:X:47:THR:HA	46:X:60:PHE:HA	1.81	0.63
50:1:2345:G:N3	50:1:2381:A:H2'	2.14	0.63
53:4:18:G:H3'	53:4:19:A:H5'	1.79	0.63
2:c:59:ARG:HH11	50:1:2830:C:H3'	1.63	0.63
3:d:58:LYS:HE2	50:1:675:A:OP1	1.98	0.63
6:g:22:LYS:HE3	50:1:2093:G:OP2	1.98	0.63
10:m:40:ARG:HB3	10:m:93:VAL:HG21	1.79	0.63
29:G:46:VAL:HG13	29:G:47:PRO:CD	2.28	0.63
31:I:112:GLU:HB2	49:3:408:A:H5'	1.81	0.63
38:P:112:VAL:HA	45:W:72:ARG:NH1	2.13	0.63
39:Q:35:ARG:HH12	39:Q:37:TYR:HB3	1.64	0.63
49:3:1258:G:H2'	49:3:1259:C:C6	2.34	0.63
50:1:389:G:H2'	50:1:390:U:H5'	1.80	0.63
15:r:35:PHE:HB2	15:r:59:ILE:HB	1.80	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:N:64:ILE:HD12	36:N:64:ILE:N	2.14	0.63
49:3:687:A:H62	49:3:703:G:H21	1.47	0.63
31:I:119:HIS:CB	49:3:438:U:H4'	2.27	0.63
46:X:5:LYS:HG3	46:X:6:LYS:HG3	1.80	0.63
5:f:41:GLU:HG2	5:f:54:ARG:HD3	1.81	0.63
37:O:7:ARG:O	37:O:101:SER:HB2	1.99	0.63
40:R:27:THR:HG21	49:3:1328:C:OP1	1.98	0.63
50:1:2475:C:N4	50:1:2529:G:H22	1.92	0.63
50:1:2756:U:H4'	50:1:2757:A:OP1	1.99	0.63
32:J:44:ARG:HH21	32:J:70:MET:HE3	1.64	0.62
42:T:69:LEU:HA	42:T:72:LYS:HE2	1.81	0.62
50:1:2123:G:H2'	50:1:2124:G:C8	2.34	0.62
1:b:140:VAL:HG12	1:b:191:LEU:HA	1.81	0.62
15:r:14:VAL:HG21	15:r:98:ILE:HG13	1.81	0.62
21:x:36:ARG:HA	21:x:47:THR:HA	1.81	0.62
44:V:16:MET:HE3	49:3:253:A:O2'	1.99	0.62
49:3:966:G:N2	52:5:34:C:H5'	2.14	0.62
50:1:1838:C:H4'	50:1:1839:G:H8	1.65	0.62
48:Z:61:ARG:HD2	48:Z:61:ARG:O	1.99	0.62
50:1:227:A:H2'	50:1:228:C:H4'	1.79	0.62
54:8:85:GLU:HA	54:8:88:LEU:HD23	1.80	0.62
34:L:24:LYS:NZ	49:3:1375:A:OP1	2.32	0.62
49:3:195:A:H2'	49:3:196:A:C8	2.34	0.62
49:3:516:U:H3	49:3:533:A:H62	1.48	0.62
49:3:817:C:H4'	49:3:818:G:H5''	1.81	0.62
50:1:300:A:H1'	50:1:319:G:H1'	1.81	0.62
50:1:1357:C:H2'	50:1:1358:G:O4'	2.00	0.62
49:3:1084:G:H5'	49:3:1102:A:OP2	1.99	0.62
50:1:807:U:H2'	50:1:808:G:C8	2.33	0.62
32:J:23:THR:HG21	49:3:1396:A:H2	1.63	0.62
34:L:3:ARG:CD	49:3:932:C:H5''	2.30	0.62
45:W:59:LYS:HD2	49:3:735:C:H5'	1.81	0.62
54:8:42:ASP:HB3	54:8:70:ILE:HB	1.80	0.62
29:G:20:ARG:CZ	49:3:831:A:H5''	2.30	0.62
49:3:335:C:H2'	49:3:336:A:H8	1.65	0.62
49:3:715:A:H2'	49:3:716:A:C8	2.35	0.62
50:1:783:A:H2'	50:1:784:G:C4'	2.17	0.62
54:8:15:LEU:HD13	54:8:42:ASP:HB2	1.81	0.62
3:d:148:ILE:HD12	3:d:148:ILE:N	2.15	0.62
10:m:1:MET:HE1	10:m:44:ARG:HA	1.82	0.62
17:t:44:LYS:HB2	17:t:55:VAL:HG11	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:z:44:ARG:HD3	23:z:47:ILE:HD12	1.81	0.62
28:F:8:LYS:HZ3	50:1:1031:G:H5''	1.64	0.62
38:P:118:ASN:HD22	49:3:718:A:H5'	1.63	0.62
49:3:560:A:H4'	49:3:561:U:H5'	1.82	0.62
50:1:310:A:C2'	50:1:311:A:H5''	2.30	0.62
3:d:69:ARG:HD3	50:1:674:G:H1'	1.82	0.62
33:K:5:GLU:HA	33:K:63:ASN:HA	1.81	0.62
46:X:80:ARG:HH21	49:3:956:U:H5'	1.64	0.62
50:1:833:A:H2'	50:1:834:G:C8	2.35	0.62
50:1:2360:G:H2'	50:1:2361:G:H5'	1.81	0.62
51:2:104:A:H2'	51:2:105:G:O4'	2.00	0.62
34:L:24:LYS:HA	34:L:27:ASN:HD21	1.65	0.62
49:3:141:G:H2'	49:3:142:G:H8	1.65	0.62
21:x:6:VAL:HG23	21:x:7:THR:HG23	1.80	0.61
29:G:100:LEU:O	29:G:102:ASN:N	2.32	0.61
50:1:349:U:H2'	50:1:350:G:H8	1.64	0.61
38:P:127:ARG:NH1	49:3:1522:U:OP1	2.34	0.61
50:1:644:A:H2'	50:1:645:C:C4'	2.31	0.61
50:1:1443:U:H2'	50:1:1444:G:H8	1.64	0.61
54:8:40:ARG:NH2	54:8:88:LEU:HD22	2.16	0.61
23:z:18:LYS:HD3	50:1:850:U:H5''	1.82	0.61
31:I:109:THR:HG21	49:3:408:A:H5''	1.81	0.61
36:N:44:ARG:HG2	36:N:45:MET:SD	2.40	0.61
29:G:14:HIS:O	29:G:15:PHE:O	2.17	0.61
35:M:60:LEU:HD23	35:M:60:LEU:H	1.65	0.61
38:P:127:ARG:NH1	49:3:1522:U:H5''	2.13	0.61
43:U:5:ARG:HD2	49:3:376:G:O3'	2.00	0.61
42:T:47:LYS:HB2	49:3:668:G:H4'	1.82	0.61
49:3:730:G:H2'	49:3:731:G:H5'	1.81	0.61
50:1:296:U:H2'	50:1:297:G:H8	1.64	0.61
50:1:2248:C:C2'	50:1:2249:U:H5'	2.30	0.61
50:1:2287:A:O2'	50:1:2288:A:H2'	2.00	0.61
3:d:41:GLN:OE1	50:1:442:G:H4'	1.99	0.61
18:u:35:VAL:HG13	18:u:38:ILE:HB	1.81	0.61
33:K:86:ARG:HH22	49:3:673:A:C4'	2.10	0.61
50:1:2248:C:H2'	50:1:2249:U:H5'	1.82	0.61
6:g:134:VAL:HG23	6:g:135:HIS:H	1.65	0.61
22:y:42:LEU:O	22:y:45:GLN:NE2	2.34	0.61
39:Q:43:LYS:HG2	49:3:1492:A:OP2	1.99	0.61
50:1:554:U:H2'	50:1:555:G:O4'	2.00	0.61
50:1:1149:G:H2'	50:1:1150:C:C6	2.36	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:2327:A:H2'	50:1:2328:A:C8	2.36	0.61
2:c:161:MET:HE1	50:1:2050:C:H1'	1.83	0.61
31:I:57:LYS:HZ2	31:I:202:LEU:HB3	1.64	0.61
39:Q:113:ARG:HH11	39:Q:120:ARG:HG3	1.66	0.61
40:R:92:ARG:NH2	49:3:1226:C:H5''	2.16	0.61
49:3:1516:G:H2'	49:3:1518:A:OP2	2.00	0.61
50:1:1060:U:O4'	50:1:1062:G:H5'	1.99	0.61
52:5:73:A:H2'	54:8:82:LEU:HD11	1.81	0.61
9:l:96:LYS:HG3	9:l:101:ILE:HD11	1.82	0.61
20:w:42:HIS:HB2	20:w:73:ARG:HH21	1.65	0.61
39:Q:32:VAL:HA	39:Q:78:VAL:HG12	1.82	0.61
39:Q:46:SER:HB3	54:8:117:ARG:NH1	2.16	0.61
50:1:582:A:H2'	50:1:583:G:C8	2.35	0.61
4:e:37:MET:HB2	4:e:86:CYS:HB2	1.83	0.61
20:w:42:HIS:HB2	20:w:73:ARG:NH2	2.15	0.61
30:H:10:ARG:HB2	30:H:15:LYS:NZ	2.16	0.61
49:3:513:C:H2'	49:3:514:C:C6	2.36	0.61
50:1:419:U:H2'	50:1:420:C:C6	2.36	0.61
50:1:1258:U:H2'	50:1:1259:G:C8	2.36	0.61
35:M:80:PRO:HG2	49:3:878:A:C5'	2.30	0.60
50:1:741:U:H2'	50:1:742:A:C8	2.36	0.60
50:1:2628:C:H3'	50:1:2629:U:H5'	1.83	0.60
36:N:55:ASP:HB3	36:N:59:LYS:HD2	1.82	0.60
46:X:28:LYS:HD2	46:X:29:PRO:HD2	1.83	0.60
49:3:411:A:H1'	49:3:413:G:H1'	1.82	0.60
49:3:1408:A:H61	49:3:1492:A:H61	1.49	0.60
50:1:1912:A:H62	50:1:1917:U:H3	1.48	0.60
50:1:2391:G:H2'	50:1:2424:C:N4	2.15	0.60
6:g:96:THR:HG22	6:g:117:LEU:HD13	1.83	0.60
35:M:12:ARG:NH2	49:3:826:C:H5'	2.16	0.60
50:1:968:C:H2'	50:1:969:G:H8	1.65	0.60
3:d:68:ALA:HA	50:1:1255:U:C6	2.37	0.60
32:J:108:GLY:N	49:3:9:G:H4'	2.10	0.60
49:3:1280:A:O2'	49:3:1281:C:H5'	2.00	0.60
50:1:760:G:H2'	50:1:761:A:O4'	2.02	0.60
47:Y:11:ILE:O	47:Y:14:GLU:HG2	2.01	0.60
50:1:1645:G:H5''	50:1:1646:C:C5'	2.24	0.60
50:1:2055:C:H5'	50:1:2056:G:O5'	2.02	0.60
50:1:2247:A:H2'	50:1:2248:C:C6	2.35	0.60
25:C:5:ARG:NH2	25:C:24:LYS:HA	2.16	0.60
36:N:34:LEU:H	36:N:34:LEU:HD12	1.66	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:650:C:C3'	50:1:651:G:H5''	2.30	0.60
50:1:1664:A:H61	50:1:1996:C:H42	1.47	0.60
50:1:1965:C:H5''	50:1:1966:A:H2'	1.83	0.60
14:q:96:ASP:O	14:q:99:VAL:HG12	2.02	0.60
45:W:39:VAL:HB	45:W:43:ILE:HD11	1.82	0.60
49:3:1300:G:H22	49:3:1334:G:H2'	1.67	0.60
50:1:833:A:H2'	50:1:834:G:H8	1.66	0.60
50:1:1837:C:H2'	50:1:1899:A:H61	1.66	0.60
50:1:1890:A:H2'	50:1:1891:G:O4'	2.01	0.60
50:1:2112:G:C2'	50:1:2113:U:H5'	2.29	0.60
8:k:6:THR:HG23	50:1:1666:G:H4'	1.84	0.60
41:S:29:ILE:HD12	41:S:29:ILE:N	2.17	0.60
46:X:36:ARG:HH11	49:3:1318:A:H1'	1.66	0.60
49:3:1345:U:H4'	49:3:1346:A:H8	1.65	0.60
50:1:741:U:H2'	50:1:742:A:H8	1.66	0.60
3:d:131:THR:HG22	3:d:160:ALA:HA	1.82	0.60
7:j:60:ASP:HA	7:j:93:ILE:HD11	1.84	0.60
30:H:189:HIS:CD2	49:3:1205:U:H4'	2.37	0.60
35:M:88:LYS:HG3	35:M:119:GLY:O	2.01	0.60
35:M:94:VAL:HG12	35:M:95:MET:HG2	1.84	0.60
49:3:664:G:H22	49:3:741:G:H1	1.48	0.60
50:1:1171:G:H2'	50:1:1172:C:H4'	1.84	0.60
50:1:2529:G:H5''	50:1:2530:A:H5''	1.82	0.60
7:j:69:ARG:HA	7:j:89:PHE:CD2	2.37	0.60
15:r:2:TYR:CE1	15:r:42:ALA:HB3	2.37	0.60
29:G:147:LEU:HA	29:G:150:ILE:HD11	1.83	0.60
33:K:12:PRO:HG3	33:K:57:ALA:HA	1.83	0.60
6:g:97:ARG:HE	6:g:112:LYS:HG2	1.67	0.59
17:t:74:ILE:H	17:t:74:ILE:HD12	1.66	0.59
19:v:21:ARG:HA	19:v:25:LYS:O	2.01	0.59
43:U:70:ARG:NH1	49:3:452:A:H1'	2.17	0.59
46:X:29:PRO:HG3	46:X:47:THR:CG2	2.32	0.59
50:1:947:A:H2'	50:1:948:C:C6	2.36	0.59
50:1:968:C:H2'	50:1:969:G:C8	2.37	0.59
50:1:995:C:H6	50:1:995:C:H5'	1.67	0.59
4:e:114:ARG:HD3	4:e:114:ARG:H	1.67	0.59
29:G:57:ASN:HA	29:G:60:ALA:HB3	1.82	0.59
49:3:758:C:H4'	49:3:880:C:H4'	1.84	0.59
49:3:831:A:C3'	49:3:832:G:H5''	2.33	0.59
50:1:703:U:H2'	50:1:704:G:O4'	2.00	0.59
51:2:95:U:H2'	51:2:96:G:C8	2.38	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:171:VAL:HG23	1:b:185:ALA:HB2	1.85	0.59
33:K:3:HIS:H	33:K:92:THR:HG23	1.66	0.59
45:W:47:ARG:HB2	45:W:50:TYR:CD2	2.36	0.59
49:3:225:C:H2'	49:3:226:G:H5''	1.85	0.59
50:1:118:A:OP2	50:1:119:A:H5''	2.02	0.59
50:1:742:A:H2'	50:1:743:A:C8	2.37	0.59
50:1:1367:A:H2'	50:1:1368:G:H5'	1.84	0.59
21:x:16:ASN:HB3	21:x:24:THR:CG2	2.32	0.59
40:R:64:VAL:HG22	40:R:65:GLU:N	2.17	0.59
49:3:396:C:H2'	49:3:397:A:H5''	1.85	0.59
50:1:1251:C:O2'	50:1:1252:G:H3'	2.03	0.59
10:m:45:GLN:NE2	50:1:2485:G:H5''	2.17	0.59
49:3:946:A:H2'	49:3:947:G:C8	2.38	0.59
50:1:1409:U:H2'	50:1:1410:G:C8	2.37	0.59
6:g:58:LEU:O	6:g:61:VAL:HG22	2.03	0.59
32:J:107:GLY:HA2	49:3:8:A:H1'	1.83	0.59
33:K:3:HIS:HA	33:K:65:GLU:HA	1.84	0.59
43:U:5:ARG:NH1	49:3:377:G:H5'	2.17	0.59
43:U:70:ARG:HH12	49:3:452:A:H1'	1.67	0.59
50:1:1915:U:OP1	54:8:105:ARG:HG3	2.03	0.59
50:1:2285:C:O2'	50:1:2287:A:H1'	2.03	0.59
18:u:28:LEU:HD23	18:u:30:SER:H	1.67	0.59
19:v:45:ASP:O	19:v:48:MET:HB3	2.03	0.59
30:H:171:ARG:NH2	49:3:1106:G:OP1	2.29	0.59
34:L:43:TYR:O	34:L:47:GLU:HG2	2.02	0.59
49:3:490:C:H2'	49:3:491:G:H8	1.67	0.59
49:3:1506:U:O2'	49:3:1507:A:H5'	2.03	0.59
15:r:14:VAL:HG23	15:r:18:GLN:HE21	1.68	0.59
18:u:50:ALA:O	18:u:51:LEU:HG	2.03	0.59
19:v:72:VAL:HG11	19:v:91:PHE:HB3	1.84	0.59
50:1:69:C:O2'	50:1:70:G:H5'	2.02	0.59
50:1:1394:U:H4'	50:1:1603:A:H4'	1.85	0.59
54:8:2:ILE:HD12	54:8:9:ALA:HB1	1.84	0.59
11:n:79:LEU:HD23	11:n:83:LEU:HD12	1.85	0.59
25:C:9:LYS:HE3	25:C:19:PHE:CD2	2.37	0.59
43:U:67:ILE:H	43:U:67:ILE:HD12	1.68	0.59
49:3:1002:G:H2'	49:3:1003:G:O4'	2.02	0.59
50:1:414:C:H2'	50:1:415:A:H8	1.66	0.59
50:1:1509:A:H2'	50:1:1510:G:C8	2.38	0.59
8:k:87:LEU:HD22	8:k:92:GLU:O	2.02	0.59
34:L:69:ARG:HB3	34:L:95:ARG:HD3	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:P:22:ILE:HB	38:P:85:VAL:HA	1.85	0.59
50:1:1179:G:C2'	50:1:1180:U:H4'	2.32	0.59
50:1:2329:U:H2'	50:1:2330:G:C8	2.38	0.59
50:1:2493:U:H5''	54:8:35:THR:OG1	2.03	0.59
1:b:23:LEU:HD23	1:b:80:LEU:HB3	1.85	0.58
2:c:81:GLU:OE2	50:1:2636:C:H4'	2.02	0.58
14:q:5:ARG:HD2	50:1:1250:G:H5''	1.84	0.58
25:C:14:ALA:HB2	25:C:46:VAL:HG11	1.85	0.58
32:J:24:VAL:HG22	32:J:25:LYS:H	1.68	0.58
32:J:93:VAL:HG23	32:J:110:MET:HE1	1.85	0.58
32:J:106:ALA:HB1	32:J:110:MET:HG2	1.84	0.58
39:Q:85:ARG:HH21	39:Q:87:LYS:HA	1.68	0.58
49:3:1486:G:H2'	49:3:1487:G:C8	2.37	0.58
50:1:582:A:H2'	50:1:583:G:H8	1.68	0.58
50:1:1509:A:H2'	50:1:1510:G:H8	1.68	0.58
50:1:2730:C:H2'	50:1:2731:G:C8	2.38	0.58
2:c:208:LYS:HE2	50:1:2733:A:N6	2.18	0.58
13:p:33:GLU:HB2	13:p:36:LYS:HB3	1.85	0.58
31:I:109:THR:CG2	49:3:408:A:H5''	2.33	0.58
40:R:15:VAL:HA	40:R:29:SER:OG	2.03	0.58
42:T:23:SER:O	42:T:27:GLN:HG3	2.03	0.58
50:1:947:A:H2'	50:1:948:C:H6	1.68	0.58
50:1:1845:G:H2'	50:1:1846:G:H8	1.68	0.58
50:1:1936:A:H2	50:1:1943:U:H3	1.51	0.58
51:2:56:G:H4'	51:2:57:A:C8	2.38	0.58
2:c:46:ARG:HD3	2:c:86:GLU:HA	1.85	0.58
7:j:108:MET:HE1	50:1:1138:G:H21	1.67	0.58
13:p:105:LYS:HE2	49:3:1464:U:OP2	2.03	0.58
36:N:121:ARG:CG	49:3:1348:U:H4'	2.34	0.58
39:Q:107:LYS:HG3	39:Q:108:ASP:OD1	2.04	0.58
41:S:8:ARG:NH2	49:3:981:U:OP1	2.36	0.58
50:1:799:G:H5''	50:1:800:A:H2'	1.85	0.58
50:1:1476:U:H3	50:1:1515:A:H62	1.51	0.58
5:f:176:LYS:HE2	50:1:2660:A:H62	1.67	0.58
14:q:2:ARG:HB2	50:1:1248:G:C5	2.39	0.58
28:F:10:LEU:HD23	28:F:33:HIS:CD2	2.39	0.58
33:K:29:ILE:HD13	33:K:64:VAL:HG11	1.85	0.58
36:N:6:TYR:CE2	49:3:1147:C:H4'	2.38	0.58
49:3:813:U:H2'	49:3:814:A:H5''	1.86	0.58
50:1:1077:A:H2'	50:1:1078:U:H5'	1.85	0.58
1:b:184:GLU:HG3	1:b:186:ASP:H	1.68	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:k:28:SER:OG	50:1:2566:A:N1	2.37	0.58
11:n:103:ARG:HG2	11:n:105:GLY:H	1.68	0.58
12:o:34:HIS:HE1	51:2:27:C:H5''	1.68	0.58
33:K:38:ARG:HG2	33:K:40:GLU:HG3	1.85	0.58
33:K:75:GLU:O	33:K:79:ARG:HG2	2.02	0.58
34:L:70:PRO:HD3	34:L:99:ALA:HB2	1.84	0.58
40:R:87:GLY:O	40:R:91:ARG:HG3	2.03	0.58
50:1:669:G:H2'	50:1:669:G:N3	2.18	0.58
50:1:1179:G:C3'	50:1:1180:U:H4'	2.33	0.58
6:g:72:ILE:HD12	6:g:108:VAL:HG13	1.86	0.58
8:k:88:ASN:ND2	8:k:91:SER:HB3	2.18	0.58
11:n:37:THR:OG1	11:n:40:LYS:HG2	2.04	0.58
12:o:80:GLU:O	12:o:84:GLU:HG3	2.03	0.58
29:G:100:LEU:C	29:G:102:ASN:H	2.12	0.58
31:I:124:VAL:HG22	31:I:142:VAL:HG23	1.84	0.58
51:2:56:G:H4'	51:2:57:A:H8	1.68	0.58
51:2:106:G:H2'	51:2:107:G:O4'	2.02	0.58
10:m:75:GLU:HG2	50:1:957:C:H5'	1.85	0.58
38:P:20:ALA:HB3	38:P:83:VAL:HG12	1.85	0.58
50:1:2243:U:H2'	50:1:2244:U:H6	1.69	0.58
50:1:2243:U:H2'	50:1:2244:U:C6	2.38	0.58
7:j:26:GLY:HA3	50:1:1140:C:C5'	2.34	0.58
17:t:39:THR:OG1	17:t:42:GLU:HG3	2.04	0.58
49:3:159:G:H1'	49:3:162:A:H61	1.69	0.58
49:3:572:A:H5''	49:3:917:G:H4'	1.86	0.58
49:3:750:C:H2'	49:3:751:U:C6	2.39	0.58
13:p:43:GLU:HG3	13:p:44:GLY:H	1.68	0.58
37:O:52:LEU:HD11	37:O:59:LYS:HZ3	1.69	0.58
46:X:61:VAL:HG23	46:X:65:MET:HB2	1.86	0.58
48:Z:23:GLU:HG3	48:Z:27:VAL:HG12	1.86	0.58
49:3:185:U:H3	49:3:192:A:H61	1.49	0.58
50:1:594:U:H2'	50:1:595:C:C6	2.38	0.58
50:1:832:U:H2'	50:1:833:A:C8	2.38	0.58
50:1:1353:A:H2'	50:1:1354:A:C8	2.39	0.58
54:8:27:GLY:O	54:8:30:VAL:HG22	2.03	0.58
49:3:405:U:H3'	49:3:406:G:H5'	1.86	0.58
49:3:517:G:H2'	49:3:531:U:C5	2.39	0.58
49:3:1211:U:H4'	49:3:1213:A:C4	2.39	0.58
50:1:1440:U:H2'	50:1:1441:G:C8	2.39	0.58
54:8:131:MET:HG3	54:8:132:ARG:H	1.69	0.58
2:c:30:GLU:HG2	2:c:31:ALA:N	2.17	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:p:91:VAL:HG12	13:p:92:ARG:H	1.69	0.57
46:X:14:LEU:O	46:X:18:VAL:HG23	2.03	0.57
49:3:335:C:H2'	49:3:336:A:C8	2.39	0.57
50:1:288:U:H2'	50:1:289:G:C8	2.38	0.57
50:1:1794:A:H2'	50:1:1795:C:C6	2.39	0.57
50:1:2730:C:H2'	50:1:2731:G:H8	1.69	0.57
16:s:88:ARG:H	50:1:1614:A:H61	1.51	0.57
22:y:6:LEU:HA	22:y:56:LEU:HD21	1.86	0.57
33:K:9:MET:HB3	33:K:85:ILE:HG13	1.85	0.57
46:X:17:LYS:HA	46:X:20:LYS:HE3	1.86	0.57
49:3:148:G:H2'	49:3:149:A:O4'	2.04	0.57
49:3:148:G:H1	49:3:174:A:H61	1.49	0.57
49:3:717:U:H2'	49:3:734:G:H5'	1.85	0.57
50:1:1019:U:H3	50:1:1142:A:H62	1.50	0.57
50:1:1914:C:H5''	50:1:1915:U:C5	2.38	0.57
2:c:26:VAL:C	2:c:27:ILE:HD12	2.29	0.57
11:n:5:LYS:HE2	50:1:2873:A:C2	2.39	0.57
18:u:6:ARG:NH2	50:1:98:G:H1	1.97	0.57
49:3:744:C:H2'	49:3:745:G:H8	1.70	0.57
12:o:88:LYS:HB3	12:o:116:GLN:HG2	1.86	0.57
29:G:185:ILE:HD12	29:G:199:ILE:O	2.03	0.57
34:L:23:ALA:O	34:L:26:VAL:HG22	2.04	0.57
49:3:182:A:H2'	49:3:183:C:H5''	1.87	0.57
50:1:2391:G:H4'	50:1:2392:A:OP1	2.03	0.57
1:b:159:THR:HG21	50:1:1819:A:H5''	1.85	0.57
5:f:93:TYR:CE2	5:f:106:LEU:HB3	2.40	0.57
10:m:31:PHE:HA	10:m:132:THR:HA	1.86	0.57
49:3:1024:G:O2'	49:3:1025:U:H5'	2.04	0.57
50:1:225:C:H2'	50:1:226:A:O4'	2.05	0.57
50:1:322:A:H5'	50:1:340:A:H1'	1.84	0.57
50:1:876:C:H2'	50:1:877:A:O4'	2.05	0.57
50:1:1437:C:H2'	50:1:1438:U:C6	2.39	0.57
1:b:172:THR:HG22	1:b:182:LYS:HG2	1.86	0.57
7:j:69:ARG:HA	7:j:89:PHE:HD2	1.69	0.57
37:O:70:HIS:HD2	37:O:72:ARG:HH22	1.52	0.57
40:R:38:ILE:HD11	40:R:51:GLN:HG3	1.86	0.57
43:U:31:ARG:HH21	49:3:230:G:H5''	1.69	0.57
49:3:422:C:H5''	49:3:423:G:C2	2.40	0.57
50:1:176:A:H3'	50:1:177:G:N2	2.19	0.57
50:1:2427:C:H5''	50:1:2429:G:H5'	1.86	0.57
3:d:71:GLY:HA3	50:1:674:G:OP1	2.05	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:t:15:HIS:H	17:t:32:LEU:HA	1.70	0.57
44:V:30:HIS:HB3	44:V:34:GLY:H	1.69	0.57
49:3:56:U:H2'	49:3:57:G:C8	2.39	0.57
49:3:1054:C:H5'	49:3:1196:A:H2'	1.87	0.57
49:3:1137:C:H4'	49:3:1138:G:N2	2.20	0.57
50:1:161:A:H3'	50:1:162:U:H5''	1.87	0.57
50:1:296:U:H2'	50:1:297:G:C8	2.39	0.57
50:1:1278:C:H2'	50:1:1279:G:H8	1.69	0.57
50:1:1316:U:H2'	50:1:1317:G:H8	1.68	0.57
10:m:123:LYS:HD2	50:1:2484:G:H1'	1.87	0.57
28:F:37:GLN:OE1	50:1:1125:G:H5'	2.04	0.57
35:M:73:SER:HB3	35:M:129:ALA:HB3	1.85	0.57
37:O:11:LYS:HB3	37:O:71:LEU:HD13	1.86	0.57
49:3:147:G:H2'	49:3:148:G:C8	2.39	0.57
7:j:40:HIS:CE1	7:j:41:LYS:HG3	2.40	0.57
7:j:57:LEU:HD23	7:j:57:LEU:H	1.69	0.57
7:j:93:ILE:HD12	7:j:97:PRO:HA	1.87	0.57
20:w:75:PHE:C	20:w:76:ILE:HD12	2.30	0.57
29:G:39:ILE:HD12	29:G:39:ILE:N	2.20	0.57
32:J:123:LEU:HD13	49:3:7:A:C8	2.40	0.57
36:N:31:GLN:NE2	36:N:63:TYR:OH	2.38	0.57
49:3:314:C:O2'	49:3:315:A:H5'	2.05	0.57
49:3:802:A:H2'	49:3:803:G:O4'	2.04	0.57
49:3:1296:C:H4'	49:3:1302:C:H42	1.70	0.57
50:1:1083:U:H2'	50:1:1085:A:OP2	2.05	0.57
1:b:117:SER:HB2	1:b:128:THR:OG1	2.03	0.57
4:e:19:PHE:HB3	4:e:21:TYR:CE2	2.40	0.57
5:f:104:LEU:HB2	5:f:112:VAL:HB	1.87	0.57
8:k:99:ILE:CD1	8:k:115:ILE:HG23	2.35	0.57
24:B:21:LEU:HD23	24:B:22:THR:O	2.05	0.57
28:F:19:ARG:HE	50:1:2755:C:H2'	1.70	0.57
43:U:6:LEU:HD22	43:U:17:TYR:HB3	1.87	0.57
47:Y:15:LYS:HA	47:Y:18:LYS:HZ3	1.70	0.57
49:3:1098:C:H2'	49:3:1099:G:O4'	2.05	0.57
3:d:33:VAL:HG21	50:1:1245:G:H4'	1.87	0.56
24:B:49:ARG:HG2	50:1:2884:U:C6	2.39	0.56
31:I:57:LYS:O	31:I:60:VAL:HG22	2.05	0.56
32:J:39:GLY:HA3	32:J:116:VAL:HB	1.87	0.56
36:N:16:ALA:HA	36:N:66:VAL:HG22	1.87	0.56
38:P:126:ARG:NH2	49:3:797:C:OP1	2.39	0.56
49:3:203:G:H1	49:3:214:C:H42	1.53	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:382:A:H2'	50:1:383:C:C5'	2.35	0.56
50:1:389:G:C2'	50:1:390:U:H5'	2.35	0.56
50:1:395:U:H2'	50:1:396:G:C8	2.40	0.56
50:1:687:C:H2'	50:1:688:U:O4'	2.04	0.56
50:1:874:G:H2'	50:1:875:G:C8	2.39	0.56
50:1:1306:C:H41	50:1:1606:C:H2'	1.70	0.56
50:1:1951:U:H2'	50:1:1953:A:OP2	2.05	0.56
50:1:2573:C:H5''	50:1:2574:G:H5''	1.86	0.56
50:1:2676:C:H2'	50:1:2677:G:C8	2.40	0.56
1:b:16:VAL:HB	1:b:203:VAL:HG12	1.86	0.56
7:j:20:ALA:HB1	7:j:62:VAL:HG12	1.87	0.56
37:O:38:GLY:HA3	49:3:1123:U:H4'	1.85	0.56
38:P:22:ILE:N	38:P:22:ILE:HD12	2.19	0.56
46:X:80:ARG:HE	49:3:956:U:H4'	1.70	0.56
47:Y:20:ASN:ND2	49:3:323:U:H5''	2.20	0.56
47:Y:66:ILE:HG23	47:Y:70:LYS:HD2	1.86	0.56
49:3:225:C:C2'	49:3:226:G:H5''	2.34	0.56
49:3:966:G:H21	52:5:34:C:H5'	1.70	0.56
50:1:580:U:H2'	50:1:581:C:C6	2.39	0.56
50:1:874:G:H2'	50:1:875:G:H8	1.71	0.56
3:d:29:HIS:O	3:d:32:VAL:HG12	2.06	0.56
3:d:47:LYS:HE3	50:1:451:U:H4'	1.87	0.56
4:e:107:VAL:N	4:e:108:PRO:HD2	2.20	0.56
10:m:96:ILE:HD12	10:m:96:ILE:N	2.20	0.56
22:y:48:ARG:NH2	50:1:75:G:H4'	2.20	0.56
23:z:8:GLN:HE21	23:z:31:ILE:HG22	1.70	0.56
23:z:37:ARG:NH2	50:1:929:U:H4'	2.19	0.56
32:J:80:LEU:HG	32:J:81:GLN:H	1.70	0.56
35:M:9:MET:O	35:M:13:ILE:HG13	2.05	0.56
38:P:12:ARG:HB3	38:P:76:TYR:HE1	1.69	0.56
39:Q:3:VAL:HA	39:Q:6:LEU:HD12	1.85	0.56
40:R:97:ARG:HD2	49:3:1308:U:OP2	2.06	0.56
40:R:102:LYS:HD2	49:3:1226:C:N4	2.20	0.56
49:3:68:G:C2	49:3:69:G:H1'	2.39	0.56
49:3:191:G:H2'	49:3:192:A:C8	2.40	0.56
49:3:343:U:O2'	49:3:344:A:H2'	2.05	0.56
49:3:350:G:H2'	49:3:351:G:C8	2.40	0.56
49:3:842:U:H2'	49:3:843:U:H4'	1.86	0.56
49:3:1252:A:H2'	49:3:1253:G:O4'	2.04	0.56
49:3:1404:C:H2'	49:3:1405:G:C8	2.40	0.56
50:1:291:G:H1	50:1:349:U:H3	1.53	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:362:A:H5''	50:1:363:G:N7	2.20	0.56
50:1:1669:A:O3'	50:1:2549:G:H5'	2.04	0.56
50:1:2286:G:H4'	50:1:2287:A:O4'	2.05	0.56
50:1:2389:G:H5''	50:1:2390:U:O4'	2.05	0.56
52:5:47:U:H3'	52:5:48:C:H5'	1.86	0.56
1:b:63:ILE:H	1:b:63:ILE:HD12	1.68	0.56
2:c:97:SER:HB2	2:c:99:GLU:OE2	2.06	0.56
2:c:110:THR:HB	2:c:202:ILE:HB	1.87	0.56
3:d:105:LEU:HD23	3:d:108:ILE:HD12	1.88	0.56
5:f:69:ALA:HA	5:f:72:ASN:ND2	2.20	0.56
19:v:64:VAL:HA	19:v:69:GLU:HA	1.88	0.56
32:J:104:ILE:HD12	32:J:104:ILE:N	2.19	0.56
39:Q:20:VAL:HG11	49:3:553:A:H5''	1.87	0.56
49:3:408:A:H2'	49:3:409:U:O4'	2.05	0.56
54:8:62:HIS:C	54:8:64:ILE:H	2.13	0.56
3:d:105:LEU:HD21	3:d:177:PRO:HG3	1.88	0.56
19:v:72:VAL:HG12	19:v:73:LYS:H	1.71	0.56
32:J:44:ARG:HG2	32:J:72:ASN:OD1	2.06	0.56
33:K:2:ARG:C	33:K:65:GLU:HG3	2.31	0.56
35:M:83:ARG:NH2	49:3:587:G:OP1	2.38	0.56
48:Z:44:ARG:NH2	49:3:723:U:OP2	2.38	0.56
50:1:310:A:O2'	50:1:311:A:H5''	2.06	0.56
50:1:1917:U:O2'	50:1:1918:A:H5'	2.05	0.56
50:1:1945:G:H4'	54:8:62:HIS:CE1	2.41	0.56
1:b:136:VAL:HG11	1:b:165:ALA:HA	1.87	0.56
1:b:152:GLN:HB3	50:1:1818:U:C4	2.40	0.56
6:g:5:LEU:HB3	6:g:17:ASP:OD1	2.06	0.56
27:E:31:ILE:HG13	27:E:34:LYS:NZ	2.21	0.56
38:P:124:LYS:O	48:Z:34:ARG:NH1	2.39	0.56
39:Q:23:LEU:HD23	39:Q:29:LYS:HE3	1.87	0.56
50:1:1434:A:H2'	50:1:1435:G:C8	2.41	0.56
50:1:2453:A:H5'	54:8:32:LYS:HE3	1.86	0.56
51:2:66:A:H2'	51:2:107:G:O6	2.06	0.56
1:b:76:VAL:HG22	1:b:114:GLN:HB2	1.88	0.56
13:p:5:LYS:O	13:p:8:GLU:HG3	2.05	0.56
34:L:100:MET:HA	34:L:103:ILE:HD12	1.86	0.56
49:3:32:A:H2'	49:3:33:A:C8	2.41	0.56
50:1:581:C:H2'	50:1:582:A:H8	1.70	0.56
52:5:47:U:H3'	52:5:48:C:C5'	2.36	0.56
4:e:34:THR:HB	4:e:154:THR:HB	1.87	0.56
22:y:2:LYS:HG3	22:y:3:ALA:H	1.71	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:G:29:PHE:HA	29:G:44:LYS:HZ3	1.71	0.56
42:T:57:ARG:HH12	49:3:743:A:P	2.28	0.56
48:Z:19:LYS:CB	48:Z:24:LYS:HG3	2.35	0.56
49:3:285:C:H2'	49:3:286:C:C6	2.41	0.56
49:3:482:A:C2'	49:3:483:C:H5'	2.30	0.56
49:3:560:A:H5'	49:3:566:G:N2	2.20	0.56
49:3:701:U:C4'	49:3:703:G:H1'	2.35	0.56
50:1:593:U:H2'	50:1:594:U:C6	2.40	0.56
50:1:1611:C:H6	50:1:1611:C:H5'	1.71	0.56
50:1:2099:U:H2'	50:1:2100:G:C8	2.41	0.56
50:1:2679:A:O2'	50:1:2680:U:H5'	2.05	0.56
5:f:43:LYS:HE2	5:f:50:THR:HG23	1.88	0.56
5:f:173:ALA:HB3	5:f:176:LYS:C	2.30	0.56
19:v:30:ILE:HD11	19:v:38:LEU:HB3	1.88	0.56
30:H:152:VAL:HG22	30:H:165:GLU:O	2.06	0.56
38:P:126:ARG:HB2	48:Z:33:ARG:NH2	2.21	0.56
42:T:37:HIS:NE2	49:3:740:U:OP1	2.36	0.56
49:3:147:G:H2'	49:3:148:G:H8	1.71	0.56
49:3:309:A:H2'	49:3:310:G:H8	1.71	0.56
49:3:825:A:H2'	49:3:826:C:C6	2.41	0.56
49:3:1202:U:H2'	49:3:1203:C:O4'	2.05	0.56
50:1:403:U:O3'	50:1:404:A:H4'	2.06	0.56
54:8:88:LEU:O	54:8:92:VAL:HG22	2.06	0.56
5:f:174:LYS:CD	50:1:2529:G:H4'	2.36	0.56
9:l:93:ASN:HA	9:l:96:LYS:HZ3	1.70	0.56
31:I:64:TYR:HB2	31:I:66:VAL:HG13	1.88	0.56
32:J:80:LEU:H	32:J:121:ASN:HD22	1.54	0.56
49:3:490:C:H2'	49:3:491:G:C8	2.40	0.56
49:3:1305:G:N2	49:3:1331:G:H2'	2.21	0.56
54:8:103:LYS:HG3	54:8:104:ALA:N	2.21	0.56
1:b:36:ASN:HB2	1:b:61:TYR:HB2	1.88	0.55
6:g:12:LEU:HD13	6:g:19:VAL:HG21	1.88	0.55
16:s:26:GLY:H	16:s:71:VAL:HG13	1.70	0.55
21:x:36:ARG:NH2	50:1:2199:A:OP1	2.39	0.55
29:G:53:LEU:HD23	29:G:56:LEU:HD21	1.87	0.55
31:I:205:LYS:HB3	49:3:8:A:C5	2.41	0.55
40:R:89:ARG:HD2	40:R:94:LEU:HD22	1.87	0.55
41:S:50:LEU:C	41:S:52:ARG:H	2.12	0.55
42:T:83:ARG:HG3	42:T:83:ARG:HH11	1.70	0.55
49:3:41:G:H2'	49:3:42:G:C8	2.41	0.55
49:3:189:A:O2'	49:3:190:A:H5'	2.05	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:543:G:H8	50:1:543:G:H5'	1.70	0.55
50:1:668:A:H2'	50:1:670:A:N6	2.16	0.55
2:c:142:VAL:HG22	2:c:143:PRO:HD2	1.88	0.55
24:B:46:GLY:HA3	24:B:54:ILE:HG21	1.87	0.55
49:3:211:G:C2'	49:3:212:G:H5'	2.36	0.55
49:3:528:C:OP1	54:8:125:LYS:HG2	2.06	0.55
6:g:29:PHE:HB2	50:1:2198:A:C2	2.41	0.55
9:l:17:LYS:HG3	50:1:663:G:H5''	1.88	0.55
10:m:30:SER:HA	10:m:133:LYS:HE3	1.89	0.55
10:m:42:THR:OG1	10:m:45:GLN:HG3	2.05	0.55
30:H:2:GLN:HB3	49:3:1062:U:O4	2.06	0.55
33:K:89:VAL:HG12	33:K:90:MET:H	1.71	0.55
34:L:3:ARG:HD3	49:3:932:C:H5''	1.88	0.55
40:R:7:ASN:ND2	40:R:17:ALA:O	2.38	0.55
47:Y:53:MET:HA	47:Y:56:ILE:HD12	1.87	0.55
49:3:358:U:H2'	49:3:359:G:C8	2.41	0.55
50:1:247:G:H4'	50:1:386:G:C6	2.42	0.55
50:1:544:C:H2'	50:1:545:U:C6	2.42	0.55
50:1:2131:U:O5'	50:1:2133:G:H4'	2.06	0.55
15:r:49:ILE:HG22	15:r:54:VAL:HG22	1.87	0.55
36:N:105:ARG:HD2	49:3:1117:A:H4'	1.86	0.55
49:3:1183:U:H3'	49:3:1184:G:H5''	1.89	0.55
50:1:711:G:H1	50:1:720:U:H3	1.54	0.55
50:1:851:C:H2'	50:1:852:U:C6	2.42	0.55
50:1:1268:A:H2'	50:1:1269:A:O4'	2.06	0.55
50:1:1583:A:H4'	50:1:1585:C:C4	2.42	0.55
50:1:1947:C:H2'	50:1:1948:G:H8	1.72	0.55
50:1:2584:U:H5'	54:8:25:ALA:HB2	1.89	0.55
50:1:2602:A:C6	54:8:30:VAL:HG12	2.40	0.55
51:2:66:A:H61	51:2:107:G:H3'	1.72	0.55
6:g:2:GLN:HB3	6:g:39:ALA:HB3	1.89	0.55
26:D:12:ARG:HE	26:D:44:VAL:HG11	1.72	0.55
29:G:170:ILE:HD12	49:3:1101:A:C8	2.41	0.55
31:I:170:LEU:HD12	31:I:170:LEU:O	2.06	0.55
36:N:54:VAL:HG23	36:N:55:ASP:N	2.17	0.55
40:R:104:ASN:O	40:R:105:ALA:HB3	2.06	0.55
45:W:34:GLU:HB2	48:Z:18:PHE:HZ	1.71	0.55
49:3:1273:C:H2'	49:3:1274:A:O4'	2.07	0.55
50:1:1700:A:H2'	50:1:1701:A:H5'	1.88	0.55
7:j:21:THR:HG22	7:j:61:LYS:HE2	1.89	0.55
9:l:18:ARG:HH22	50:1:1249:U:H2'	1.72	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:u:84:PHE:CE1	18:u:93:ARG:HG2	2.41	0.55
29:G:42:LEU:O	29:G:45:THR:HG22	2.06	0.55
37:O:83:THR:HA	37:O:86:ALA:HB3	1.89	0.55
49:3:1238:A:H62	49:3:1301:U:H3	1.54	0.55
1:b:146:LYS:HB2	1:b:149:LYS:HB2	1.88	0.55
1:b:259:ASN:O	1:b:260:LYS:HG2	2.06	0.55
27:E:4:LYS:HE2	50:1:254:G:N7	2.22	0.55
39:Q:47:ALA:C	39:Q:48:LEU:HD12	2.31	0.55
40:R:49:GLU:O	40:R:52:ILE:HG12	2.07	0.55
49:3:682:G:H2'	49:3:683:G:H8	1.71	0.55
49:3:1346:A:H2'	49:3:1346:A:N3	2.20	0.55
50:1:1443:U:H2'	50:1:1444:G:C8	2.41	0.55
50:1:1821:A:H2'	50:1:1822:C:C6	2.42	0.55
50:1:2682:A:H61	50:1:2728:U:H1'	1.72	0.55
50:1:2809:A:H2'	50:1:2810:A:C8	2.41	0.55
50:1:2853:C:H2'	50:1:2854:G:C8	2.42	0.55
5:f:173:ALA:C	5:f:175:LYS:H	2.15	0.55
12:o:110:ALA:HB1	12:o:115:LEU:HD22	1.88	0.55
37:O:37:ARG:HB3	37:O:75:ASP:HB2	1.89	0.55
50:1:1999:C:H5''	50:1:2723:C:O2'	2.07	0.55
50:1:2391:G:H1	50:1:2424:C:H3'	1.72	0.55
50:1:2818:U:H4'	50:1:2837:A:C4'	2.36	0.55
1:b:175:LEU:HD13	50:1:1799:G:C5	2.42	0.55
5:f:169:ARG:NH2	5:f:170:THR:O	2.39	0.55
15:r:24:LYS:HB2	15:r:92:TRP:HB3	1.89	0.55
29:G:27:LYS:HB3	29:G:28:PRO:HD3	1.88	0.55
31:I:50:TYR:CE2	49:3:508:U:H4'	2.42	0.55
47:Y:35:TYR:O	47:Y:39:GLU:HG2	2.07	0.55
49:3:513:C:H2'	49:3:514:C:H6	1.72	0.55
49:3:707:U:H2'	49:3:708:C:C6	2.42	0.55
50:1:176:A:H3'	50:1:177:G:H21	1.70	0.55
50:1:979:A:H2'	50:1:982:C:H42	1.72	0.55
50:1:2861:U:H2'	50:1:2862:G:H8	1.72	0.55
52:5:21:A:N6	52:5:46:G:H2'	2.22	0.55
2:c:155:VAL:HG21	50:1:2618:G:H21	1.72	0.55
5:f:66:THR:O	5:f:70:LEU:HG	2.07	0.55
11:n:2:ARG:HA	11:n:5:LYS:CG	2.36	0.55
29:G:156:LEU:HD12	29:G:157:PRO:CD	2.31	0.55
49:3:184:G:H4'	49:3:224:U:C4'	2.34	0.55
49:3:484:G:H1'	49:3:486:U:OP2	2.07	0.55
49:3:662:U:H2'	49:3:663:A:C8	2.42	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:1415:G:H2'	49:3:1416:G:H8	1.71	0.55
50:1:1609:A:H1'	50:1:1616:A:C1'	2.37	0.55
50:1:2505:G:N3	50:1:2506:U:H5	2.05	0.55
4:e:66:ILE:HD12	4:e:66:ILE:N	2.22	0.54
13:p:9:GLN:HA	13:p:12:MET:HE3	1.89	0.54
20:w:29:ALA:N	20:w:60:ASP:OD1	2.40	0.54
30:H:46:LEU:HD11	30:H:75:VAL:HG13	1.89	0.54
35:M:6:ILE:HD12	35:M:6:ILE:N	2.22	0.54
42:T:42:PHE:CE1	42:T:52:ARG:HG3	2.42	0.54
49:3:831:A:H2'	49:3:832:G:O4'	2.07	0.54
49:3:945:G:H2'	49:3:945:G:N3	2.22	0.54
50:1:910:A:H2'	50:1:911:A:C8	2.43	0.54
50:1:1662:U:H2'	50:1:1663:G:C8	2.43	0.54
50:1:1728:C:C2'	50:1:1729:U:H5''	2.37	0.54
50:1:1859:U:H2'	50:1:1860:G:C8	2.43	0.54
50:1:1909:C:H2'	50:1:1910:G:H8	1.72	0.54
2:c:14:ILE:HG12	2:c:24:VAL:HG11	1.89	0.54
6:g:31:VAL:N	6:g:32:PRO:HD2	2.23	0.54
13:p:32:VAL:HG22	13:p:34:GLY:H	1.72	0.54
14:q:24:TYR:HB3	50:1:533:G:OP1	2.08	0.54
27:E:56:LEU:HD12	27:E:56:LEU:H	1.72	0.54
29:G:34:ARG:H	29:G:34:ARG:HD2	1.72	0.54
42:T:64:LYS:O	42:T:67:ASP:OD1	2.25	0.54
49:3:149:A:H61	49:3:172:A:H62	1.55	0.54
49:3:1218:C:H2'	49:3:1219:A:C8	2.42	0.54
49:3:1330:U:H2'	49:3:1331:G:O4'	2.08	0.54
50:1:300:A:H2'	50:1:334:C:H1'	1.90	0.54
50:1:2350:C:H2'	50:1:2351:G:O4'	2.07	0.54
54:8:15:LEU:HD11	54:8:40:ARG:HB3	1.89	0.54
3:d:68:ALA:HB2	50:1:1255:U:H3'	1.89	0.54
9:l:95:LEU:HB2	9:l:101:ILE:HD13	1.87	0.54
29:G:140:LEU:O	29:G:144:GLU:HG3	2.07	0.54
30:H:22:PHE:CE2	37:O:11:LYS:HE3	2.42	0.54
31:I:97:LEU:HD11	31:I:134:TYR:HB3	1.89	0.54
39:Q:53:ARG:NE	39:Q:63:THR:HG22	2.23	0.54
48:Z:19:LYS:HB3	48:Z:24:LYS:HG3	1.90	0.54
49:3:219:U:H2'	49:3:220:G:H8	1.73	0.54
49:3:320:A:H2'	49:3:321:A:C8	2.43	0.54
49:3:528:C:H5'	49:3:535:A:N6	2.22	0.54
49:3:673:A:H2'	49:3:674:G:C8	2.42	0.54
49:3:1407:C:H2'	49:3:1408:A:H8	1.72	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:2156:G:C2'	50:1:2157:G:H5'	2.37	0.54
50:1:2834:G:O2'	50:1:2835:A:H5'	2.08	0.54
54:8:28:GLN:HA	54:8:31:ASN:HD21	1.72	0.54
54:8:91:LEU:O	54:8:95:ILE:HG13	2.07	0.54
11:n:72:ASP:OD2	11:n:75:ILE:HG12	2.07	0.54
12:o:33:ARG:HG2	12:o:65:THR:HG23	1.89	0.54
21:x:17:ARG:HE	21:x:23:ALA:HB2	1.72	0.54
29:G:55:GLU:O	29:G:58:LYS:HB3	2.08	0.54
39:Q:107:LYS:HD3	39:Q:108:ASP:H	1.72	0.54
43:U:68:SER:OG	43:U:71:VAL:HG22	2.08	0.54
50:1:192:C:H2'	50:1:193:U:H5'	1.89	0.54
50:1:371:A:H61	50:1:401:A:H3'	1.72	0.54
50:1:543:G:H2'	50:1:544:C:O4'	2.07	0.54
52:5:48:C:H2'	52:5:59:A:H4'	1.90	0.54
6:g:128:HIS:HB2	6:g:144:VAL:HG13	1.89	0.54
37:O:59:LYS:HE3	49:3:972:C:O3'	2.07	0.54
42:T:31:LEU:HD12	42:T:32:THR:N	2.23	0.54
49:3:211:G:C2	49:3:212:G:H1'	2.43	0.54
49:3:406:G:H2'	49:3:407:U:C6	2.43	0.54
50:1:1881:C:H2'	50:1:1882:U:O4'	2.08	0.54
50:1:1956:U:H2'	50:1:1957:C:H5'	1.89	0.54
50:1:2412:A:H2'	50:1:2413:G:O4'	2.07	0.54
31:I:142:VAL:HG12	31:I:179:GLY:O	2.07	0.54
49:3:631:C:H5''	49:3:632:U:O4'	2.08	0.54
49:3:1316:G:C2'	49:3:1317:C:H5''	2.37	0.54
50:1:141:G:H3'	50:1:142:A:O4'	2.07	0.54
50:1:804:A:H2'	50:1:806:C:C4	2.43	0.54
50:1:2673:G:H2'	50:1:2674:G:C8	2.42	0.54
54:8:112:ARG:HA	54:8:115:LYS:HD3	1.90	0.54
2:c:32:ASN:HB3	2:c:50:VAL:HG11	1.89	0.54
3:d:68:ALA:HA	50:1:1255:U:C5	2.43	0.54
27:E:24:LYS:HB2	27:E:46:LYS:HZ2	1.73	0.54
27:E:34:LYS:HE2	50:1:2391:G:OP2	2.08	0.54
31:I:72:ARG:HH12	49:3:28:A:H5''	1.72	0.54
47:Y:66:ILE:HD12	47:Y:70:LYS:HD2	1.89	0.54
50:1:27:G:N2	50:1:512:G:H1'	2.22	0.54
50:1:794:A:H2'	50:1:795:C:C6	2.43	0.54
50:1:1564:C:H2'	50:1:1565:C:O4'	2.08	0.54
50:1:2345:G:H21	50:1:2381:A:H3'	1.72	0.54
50:1:2602:A:N6	54:8:30:VAL:HG12	2.23	0.54
50:1:2821:A:H2'	50:1:2822:G:C8	2.42	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:61:TYR:HA	1:b:85:ASN:HD21	1.71	0.54
8:k:103:VAL:HG12	8:k:104:THR:N	2.15	0.54
13:p:26:GLU:HG2	13:p:84:SER:OG	2.08	0.54
39:Q:26:CYS:CB	39:Q:29:LYS:HE2	2.38	0.54
49:3:1201:A:H4'	49:3:1203:C:OP2	2.08	0.54
50:1:310:A:O2'	50:1:311:A:H2'	2.08	0.54
50:1:464:U:H2'	50:1:465:G:O4'	2.08	0.54
50:1:548:G:H2'	50:1:549:G:H4'	1.88	0.54
50:1:1258:U:H2'	50:1:1259:G:H8	1.73	0.54
50:1:1872:A:H2'	50:1:1873:G:O4'	2.08	0.54
7:j:90:GLU:O	7:j:93:ILE:HG22	2.08	0.54
14:q:89:ILE:HD11	15:r:40:MET:HE3	1.89	0.54
49:3:1391:U:H2'	49:3:1392:G:C8	2.43	0.54
50:1:1199:U:H2'	50:1:1200:C:C6	2.43	0.54
50:1:2196:C:O2'	50:1:2197:U:H5'	2.07	0.54
12:o:49:VAL:HB	12:o:81:ARG:HD3	1.90	0.54
14:q:5:ARG:NH2	50:1:1251:C:C5	2.76	0.54
16:s:4:ILE:O	50:1:495:G:H4'	2.08	0.54
17:t:41:ALA:O	17:t:44:LYS:HG2	2.08	0.54
24:B:27:LEU:HB3	24:B:36:LYS:HE3	1.90	0.54
30:H:137:VAL:HG21	30:H:167:TYR:HD2	1.73	0.54
50:1:437:U:H2'	50:1:438:G:C8	2.43	0.54
50:1:1475:G:HO2'	50:1:1476:U:H6	1.55	0.54
54:8:16:GLU:HB3	54:8:41:PHE:HB2	1.89	0.54
4:e:42:ALA:HA	4:e:48:LEU:HD12	1.91	0.53
27:E:31:ILE:HG23	27:E:31:ILE:O	2.08	0.53
50:1:414:C:H2'	50:1:415:A:C8	2.43	0.53
51:2:95:U:H2'	51:2:96:G:H8	1.73	0.53
2:c:110:THR:CG2	2:c:171:THR:HG22	2.37	0.53
15:r:49:ILE:CG2	15:r:54:VAL:HG22	2.38	0.53
39:Q:114:SER:HB2	49:3:35:G:H21	1.73	0.53
40:R:47:LEU:HD21	40:R:52:ILE:HG21	1.90	0.53
43:U:67:ILE:HD12	43:U:67:ILE:N	2.23	0.53
45:W:62:ARG:HH21	49:3:718:A:H61	1.56	0.53
49:3:868:C:H2'	49:3:869:G:O4'	2.08	0.53
50:1:382:A:H3'	50:1:383:C:H5''	1.89	0.53
50:1:871:U:H2'	50:1:872:U:C6	2.43	0.53
50:1:1295:C:H2'	50:1:1296:G:H8	1.74	0.53
50:1:1409:U:H2'	50:1:1410:G:H8	1.72	0.53
50:1:2543:G:H2'	50:1:2544:G:C8	2.43	0.53
4:e:7:TYR:O	4:e:12:VAL:HG23	2.07	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:j:80:HIS:CE1	50:1:2642:G:H4'	2.43	0.53
22:y:21:LEU:HD13	22:y:25:GLN:HG2	1.90	0.53
29:G:138:ARG:HH11	49:3:1097:C:C5'	2.22	0.53
34:L:115:MET:O	34:L:119:LEU:HG	2.08	0.53
35:M:107:LYS:HB2	35:M:110:MET:HE1	1.90	0.53
36:N:57:VAL:HG23	36:N:58:GLU:N	2.17	0.53
41:S:81:ILE:HD13	49:3:1202:U:C2	2.43	0.53
49:3:413:G:N3	49:3:413:G:H2'	2.22	0.53
50:1:1186:G:H2'	50:1:1187:G:O4'	2.08	0.53
50:1:1843:C:H2'	50:1:1844:C:C6	2.43	0.53
50:1:2584:U:H5'	54:8:25:ALA:HB1	1.89	0.53
50:1:2837:A:H2'	50:1:2838:G:H8	1.73	0.53
7:j:108:MET:HE1	50:1:1138:G:N3	2.23	0.53
15:r:24:LYS:HG3	15:r:66:HIS:HE1	1.74	0.53
30:H:39:ARG:NH1	30:H:54:ILE:HB	2.22	0.53
38:P:21:HIS:CD2	49:3:707:U:H5''	2.44	0.53
38:P:43:TRP:CE2	49:3:686:U:H4'	2.43	0.53
49:3:1413:A:O2'	49:3:1414:U:H5'	2.09	0.53
50:1:275:C:H3'	50:1:276:U:H4'	1.90	0.53
17:t:57:VAL:HG12	17:t:86:THR:OG1	2.08	0.53
40:R:18:LEU:HD22	40:R:29:SER:HB2	1.90	0.53
42:T:22:GLY:HA3	49:3:750:C:O2	2.09	0.53
49:3:191:G:H2'	49:3:192:A:H8	1.73	0.53
49:3:651:C:H2'	49:3:652:U:C6	2.43	0.53
1:b:63:ILE:HD12	1:b:63:ILE:N	2.24	0.53
16:s:18:ARG:HE	50:1:518:G:H4'	1.74	0.53
19:v:11:GLU:HG2	19:v:12:GLN:O	2.09	0.53
33:K:46:GLN:HG3	33:K:55:HIS:CD2	2.44	0.53
39:Q:46:SER:OG	49:3:518:C:H1'	2.08	0.53
47:Y:66:ILE:HG23	47:Y:70:LYS:CG	2.38	0.53
50:1:1857:G:N2	50:1:1884:G:H2'	2.24	0.53
50:1:2208:C:H2'	50:1:2209:G:C8	2.43	0.53
54:8:129:LYS:HA	54:8:131:MET:HE3	1.90	0.53
2:c:62:LYS:HB2	2:c:63:PRO:HD3	1.89	0.53
45:W:62:ARG:NH2	45:W:69:TYR:HA	2.24	0.53
50:1:1026:G:H2'	50:1:1027:A:C8	2.43	0.53
50:1:1285:A:H2'	50:1:1286:A:H5'	1.89	0.53
3:d:190:ALA:O	3:d:193:VAL:HG12	2.08	0.53
4:e:4:HIS:CD2	4:e:8:LYS:HE3	2.44	0.53
4:e:69:ALA:HB3	4:e:82:TYR:H	1.74	0.53
7:j:84:ILE:HG23	7:j:84:ILE:O	2.08	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:m:51:ARG:NH2	50:1:2483:C:O2'	2.41	0.53
28:F:13:ASN:HB2	28:F:27:CYS:SG	2.49	0.53
30:H:136:ALA:HA	30:H:139:ASN:HD22	1.74	0.53
32:J:63:MET:HB3	32:J:67:ARG:HH12	1.74	0.53
39:Q:13:ARG:NH1	39:Q:14:LYS:O	2.42	0.53
42:T:31:LEU:O	42:T:35:ILE:HG13	2.08	0.53
49:3:580:C:H2'	49:3:581:G:C8	2.43	0.53
49:3:1412:C:H2'	49:3:1413:A:H8	1.70	0.53
50:1:191:A:H2'	50:1:192:C:C6	2.43	0.53
50:1:433:C:O2'	50:1:434:U:H5'	2.09	0.53
50:1:2354:C:H2'	50:1:2355:G:C8	2.44	0.53
54:8:86:ALA:O	54:8:90:ARG:HG3	2.08	0.53
1:b:128:THR:O	1:b:129:LEU:HD22	2.08	0.53
1:b:245:THR:C	1:b:247:TRP:H	2.17	0.53
2:c:107:VAL:HG12	2:c:175:LEU:O	2.09	0.53
2:c:167:ASN:HD21	50:1:2821:A:H4'	1.74	0.53
34:L:106:ALA:HA	34:L:109:LYS:HZ3	1.73	0.53
40:R:25:GLY:N	49:3:1329:A:H5''	2.24	0.53
49:3:1497:G:O2'	49:3:1498:U:H5'	2.09	0.53
50:1:255:A:H2'	50:1:256:A:O4'	2.08	0.53
50:1:704:G:H1'	50:1:727:A:N6	2.23	0.53
50:1:1190:G:H2'	50:1:1191:G:H8	1.74	0.53
1:b:211:ARG:NH1	1:b:217:PRO:HD3	2.24	0.53
3:d:49:ARG:HD3	50:1:801:G:C4	2.43	0.53
3:d:129:PRO:O	50:1:321:U:H5'	2.09	0.53
12:o:7:ARG:HA	12:o:10:ARG:HE	1.74	0.53
31:I:12:ARG:HB3	31:I:37:PRO:HA	1.91	0.53
50:1:1542:U:H2'	50:1:1543:G:O4'	2.09	0.53
50:1:1706:C:C2	50:1:1757:A:H5'	2.43	0.53
50:1:1796:U:H2'	50:1:1797:G:C8	2.42	0.53
50:1:2789:C:H2'	50:1:2893:A:N7	2.24	0.53
54:8:101:GLU:OE1	54:8:101:GLU:N	2.42	0.53
4:e:91:ARG:NH2	51:2:43:C:O2	2.42	0.52
14:q:54:ARG:NH2	50:1:1155:A:H4'	2.24	0.52
35:M:38:VAL:O	35:M:42:GLU:HG2	2.09	0.52
49:3:591:U:H2'	49:3:592:G:H8	1.75	0.52
49:3:813:U:H2'	49:3:814:A:C5'	2.39	0.52
50:1:1222:U:H2'	50:1:1223:G:C8	2.45	0.52
50:1:2637:U:H2'	50:1:2638:G:O4'	2.08	0.52
54:8:5:SER:HB2	54:8:8:VAL:O	2.08	0.52
54:8:40:ARG:HH22	54:8:88:LEU:HD22	1.74	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:260:LYS:HE2	50:1:2227:A:H5''	1.91	0.52
4:e:87:LYS:HD2	50:1:2313:C:H4'	1.90	0.52
5:f:173:ALA:CB	50:1:2531:A:H5'	2.38	0.52
8:k:76:VAL:H	13:p:72:VAL:CG2	2.20	0.52
9:l:26:GLY:C	9:l:27:LEU:HD22	2.34	0.52
30:H:181:ILE:HD11	30:H:200:TRP:HB3	1.91	0.52
31:I:119:HIS:HE1	49:3:495:A:H61	1.56	0.52
40:R:73:SER:O	40:R:77:LYS:HG3	2.09	0.52
41:S:74:ARG:HE	49:3:1359:C:H5	1.57	0.52
49:3:744:C:H2'	49:3:745:G:C8	2.44	0.52
49:3:784:A:H2'	49:3:785:G:C8	2.45	0.52
50:1:257:C:H2'	50:1:258:G:O4'	2.09	0.52
50:1:2029:G:O6	50:1:2032:G:H5''	2.09	0.52
50:1:2498:C:O2'	50:1:2499:C:H5'	2.09	0.52
50:1:2875:C:H2'	50:1:2876:G:H8	1.73	0.52
4:e:110:ILE:HD13	4:e:136:ILE:HG21	1.91	0.52
8:k:35:VAL:O	8:k:62:VAL:HG23	2.08	0.52
10:m:41:LEU:C	10:m:93:VAL:HG23	2.34	0.52
29:G:29:PHE:HA	29:G:44:LYS:NZ	2.24	0.52
31:I:78:ALA:HA	31:I:81:LEU:HD12	1.91	0.52
34:L:99:ALA:O	34:L:103:ILE:HG13	2.10	0.52
39:Q:23:LEU:HD23	39:Q:29:LYS:CE	2.39	0.52
46:X:77:ARG:NH2	49:3:1322:C:OP1	2.43	0.52
50:1:763:G:O2'	50:1:765:C:H5'	2.10	0.52
51:2:12:C:O2'	51:2:13:G:H4'	2.09	0.52
1:b:211:ARG:HH11	1:b:217:PRO:HD3	1.73	0.52
2:c:77:ARG:HH21	2:c:77:ARG:HG3	1.74	0.52
5:f:1:SER:N	50:1:2749:A:OP1	2.42	0.52
5:f:34:ARG:NH1	5:f:35:THR:O	2.43	0.52
17:t:34:VAL:HG12	17:t:35:ALA:N	2.24	0.52
17:t:74:ILE:HD12	17:t:74:ILE:N	2.23	0.52
28:F:2:LYS:HE2	50:1:2479:U:P	2.50	0.52
29:G:8:MET:HE2	29:G:13:VAL:HG11	1.92	0.52
36:N:119:LYS:CE	49:3:1350:A:OP2	2.55	0.52
40:R:24:VAL:HG12	40:R:62:PHE:HD2	1.74	0.52
40:R:88:LEU:HD13	40:R:91:ARG:HD2	1.92	0.52
49:3:1267:C:H2'	49:3:1268:G:O4'	2.09	0.52
50:1:742:A:H2'	50:1:743:A:H8	1.75	0.52
50:1:1020:A:Cl'	50:1:1021:A:OP2	2.57	0.52
50:1:1475:G:O2'	50:1:1476:U:H6	1.92	0.52
50:1:2572:A:H5'	50:1:2574:G:H4'	1.90	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:W:54:LEU:O	45:W:58:ILE:HG12	2.09	0.52
48:Z:46:ARG:HH12	49:3:1531:A:H62	1.57	0.52
49:3:79:G:H2'	49:3:80:A:O4'	2.10	0.52
49:3:223:A:H2'	49:3:224:U:O4'	2.10	0.52
50:1:765:C:H2'	50:1:766:U:C6	2.44	0.52
50:1:1326:U:H2'	50:1:1327:A:H8	1.74	0.52
50:1:1370:C:H2'	50:1:1371:G:O4'	2.10	0.52
50:1:1947:C:H2'	50:1:1948:G:C8	2.45	0.52
50:1:2282:G:H4'	50:1:2389:G:O2'	2.10	0.52
50:1:2669:G:H2'	50:1:2670:A:C8	2.45	0.52
51:2:51:G:H2'	51:2:52:A:O4'	2.10	0.52
14:q:23:TYR:CE2	50:1:533:G:H4'	2.44	0.52
17:t:68:LYS:HD3	17:t:77:ARG:HE	1.74	0.52
21:x:16:ASN:HB3	21:x:24:THR:HG23	1.91	0.52
27:E:27:ASN:HD21	50:1:2361:G:H5''	1.74	0.52
29:G:65:LYS:H	29:G:158:ASP:HB2	1.75	0.52
29:G:95:TRP:HH2	29:G:100:LEU:HD23	1.73	0.52
36:N:5:TYR:HB2	36:N:20:ILE:CG1	2.40	0.52
40:R:80:MET:HA	40:R:91:ARG:NE	2.24	0.52
42:T:17:ASP:OD2	42:T:19:ASN:HB3	2.09	0.52
49:3:528:C:P	54:8:125:LYS:HG2	2.49	0.52
49:3:751:U:H2'	49:3:752:G:H5'	1.90	0.52
49:3:1356:G:H2'	49:3:1357:A:C8	2.45	0.52
50:1:598:U:H2'	50:1:599:A:C8	2.45	0.52
50:1:1914:C:H2'	54:8:105:ARG:HB3	1.91	0.52
50:1:2760:C:O2'	50:1:2761:A:H5'	2.10	0.52
1:b:226:PRO:HG3	1:b:233:GLY:HA3	1.92	0.52
37:O:57:VAL:HG12	37:O:58:ASN:H	1.75	0.52
38:P:53:GLY:HA2	49:3:691:G:O6	2.10	0.52
49:3:1483:A:H2'	49:3:1484:C:H5'	1.91	0.52
50:1:482:A:H1'	50:1:498:G:N2	2.25	0.52
50:1:817:C:H2'	50:1:818:G:O4'	2.09	0.52
7:j:81:ILE:HG23	7:j:82:GLY:N	2.25	0.52
9:l:93:ASN:C	9:l:95:LEU:H	2.17	0.52
9:l:101:ILE:HG13	9:l:102:GLY:N	2.25	0.52
11:n:14:SER:HA	11:n:17:ARG:HE	1.75	0.52
49:3:1457:G:H2'	49:3:1458:G:C8	2.45	0.52
50:1:2050:C:H2'	50:1:2051:A:O4'	2.09	0.52
1:b:73:ILE:HG12	50:1:1490:A:C2	2.45	0.52
3:d:134:LEU:O	3:d:138:LEU:HG	2.10	0.52
6:g:15:LEU:HD23	6:g:16:GLY:N	2.25	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:g:85:GLY:HA3	6:g:89:LYS:HD2	1.91	0.52
32:J:96:GLN:HE22	49:3:7:A:N6	2.08	0.52
49:3:1477:U:H2'	49:3:1478:U:C6	2.45	0.52
50:1:832:U:H2'	50:1:833:A:H8	1.75	0.52
50:1:904:G:H2'	50:1:905:A:H8	1.74	0.52
50:1:1854:A:H61	50:1:1888:G:H1'	1.75	0.52
50:1:2139:U:H2'	50:1:2140:G:C5'	2.40	0.52
50:1:2475:C:C2'	50:1:2476:A:H5'	2.35	0.52
6:g:43:ASN:O	6:g:51:ARG:NH1	2.43	0.52
6:g:137:GLU:N	6:g:137:GLU:OE1	2.43	0.52
9:l:32:GLY:HA2	50:1:1190:G:OP1	2.10	0.52
31:I:172:VAL:HG22	31:I:174:ALA:H	1.75	0.52
32:J:123:LEU:HD22	49:3:7:A:H2'	1.91	0.52
33:K:15:SER:O	33:K:19:PRO:HD3	2.09	0.52
35:M:114:ALA:O	35:M:117:GLN:NE2	2.43	0.52
49:3:158:G:H2'	49:3:159:G:C8	2.44	0.52
50:1:1316:U:H2'	50:1:1317:G:C8	2.44	0.52
50:1:1697:G:H4'	50:1:1978:A:H5''	1.91	0.52
50:1:2853:C:H2'	50:1:2854:G:H8	1.75	0.52
52:5:57:A:H2'	52:5:58:A:H5'	1.92	0.52
9:l:93:ASN:HA	9:l:96:LYS:NZ	2.25	0.51
28:F:4:ARG:HB3	50:1:2466:C:OP1	2.09	0.51
29:G:114:LYS:O	29:G:117:GLU:HG2	2.10	0.51
29:G:135:MET:O	29:G:139:GLU:HG3	2.09	0.51
32:J:119:VAL:HB	32:J:121:ASN:OD1	2.09	0.51
41:S:5:MET:HE1	41:S:62:ARG:CZ	2.40	0.51
42:T:9:LYS:O	42:T:13:GLU:HG3	2.09	0.51
44:V:22:VAL:HG22	44:V:23:ALA:H	1.76	0.51
49:3:779:C:H2'	49:3:780:A:O4'	2.10	0.51
49:3:1175:G:H2'	49:3:1176:A:C8	2.46	0.51
49:3:1513:A:H2'	49:3:1514:G:H8	1.76	0.51
49:3:1524:C:H2'	49:3:1525:G:H8	1.73	0.51
50:1:886:A:H4'	50:1:890:C:N4	2.20	0.51
50:1:1167:C:H2'	50:1:1168:G:C8	2.46	0.51
50:1:1278:C:H2'	50:1:1279:G:C8	2.45	0.51
17:t:72:GLN:HE21	17:t:73:ARG:HH12	1.57	0.51
23:z:43:ILE:O	23:z:47:ILE:HG13	2.10	0.51
33:K:38:ARG:O	33:K:39:LEU:HD22	2.10	0.51
34:L:34:LYS:HZ1	49:3:1289:A:C2'	2.23	0.51
37:O:41:PRO:HG3	49:3:1150:A:N3	2.26	0.51
42:T:69:LEU:HA	42:T:72:LYS:HG2	1.91	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:799:G:H2'	49:3:800:G:O4'	2.09	0.51
49:3:1245:C:H2'	49:3:1246:A:C8	2.44	0.51
50:1:1180:U:H2'	50:1:1181:U:C6	2.46	0.51
50:1:2331:G:H2'	50:1:2332:C:C6	2.45	0.51
50:1:2553:G:O6	54:8:23:GLN:HG3	2.09	0.51
19:v:73:LYS:HB3	19:v:92:VAL:HG13	1.92	0.51
34:L:101:ARG:HH22	49:3:1376:U:H5'	1.75	0.51
36:N:53:LEU:HD21	36:N:96:GLU:HG3	1.91	0.51
49:3:1456:A:H2'	49:3:1457:G:O4'	2.10	0.51
50:1:202:U:H2'	50:1:203:A:O4'	2.10	0.51
50:1:479:A:H4'	50:1:480:A:H5'	1.93	0.51
51:2:2:G:H2'	51:2:3:C:C6	2.45	0.51
13:p:63:ILE:HD12	13:p:63:ILE:N	2.25	0.51
14:q:91:ARG:HD3	50:1:997:G:OP1	2.10	0.51
17:t:68:LYS:HD3	17:t:77:ARG:NE	2.25	0.51
18:u:3:LYS:HG2	18:u:84:PHE:HE2	1.76	0.51
27:E:27:ASN:ND2	50:1:2361:G:H5''	2.25	0.51
29:G:72:LYS:HD3	29:G:75:ALA:HB3	1.92	0.51
29:G:89:PHE:HB3	29:G:150:ILE:HG22	1.91	0.51
32:J:14:LEU:HA	32:J:36:THR:HA	1.91	0.51
40:R:13:HIS:HD2	40:R:41:ASP:HA	1.76	0.51
49:3:202:G:H2'	49:3:203:G:O4'	2.11	0.51
49:3:452:A:H61	49:3:480:U:H3	1.56	0.51
49:3:1245:C:H2'	49:3:1246:A:H8	1.75	0.51
50:1:548:G:H3'	50:1:549:G:H4'	1.92	0.51
50:1:690:G:H2'	50:1:691:C:C6	2.44	0.51
50:1:1170:C:H2'	50:1:1171:G:C8	2.45	0.51
50:1:1909:C:H2'	50:1:1910:G:C8	2.45	0.51
50:1:2470:G:H2'	50:1:2471:A:H8	1.75	0.51
50:1:2669:G:H2'	50:1:2670:A:H8	1.75	0.51
51:2:35:C:H2'	51:2:36:C:H5'	1.93	0.51
1:b:118:GLY:O	1:b:129:LEU:HD13	2.10	0.51
11:n:38:LEU:HB3	11:n:39:PRO:HD3	1.93	0.51
15:r:75:VAL:HG12	15:r:86:GLN:HG2	1.93	0.51
21:x:17:ARG:NE	21:x:23:ALA:HB2	2.26	0.51
27:E:54:LEU:O	27:E:57:VAL:HG12	2.11	0.51
29:G:105:THR:HG21	49:3:1073:U:H1'	1.93	0.51
35:M:115:ALA:HA	35:M:118:ALA:HB3	1.91	0.51
43:U:57:ILE:O	43:U:61:VAL:HG22	2.09	0.51
49:3:154:U:H2'	49:3:155:A:C8	2.45	0.51
49:3:1236:A:H2'	49:3:1237:C:O4'	2.09	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:11:C:H2'	50:1:12:U:H5''	1.93	0.51
50:1:52:A:H2'	50:1:53:A:C8	2.44	0.51
50:1:121:G:C4'	50:1:149:A:H5'	2.37	0.51
50:1:2602:A:C5	54:8:30:VAL:HG12	2.46	0.51
51:2:65:U:H3'	51:2:108:A:N6	2.18	0.51
4:e:102:LEU:HD13	4:e:106:ALA:HB3	1.92	0.51
6:g:12:LEU:HD22	6:g:19:VAL:HG11	1.92	0.51
8:k:108:ARG:HG3	8:k:113:MET:SD	2.51	0.51
13:p:20:ARG:NH2	50:1:2849:U:O4	2.42	0.51
20:w:15:LYS:HB2	20:w:17:LEU:HD21	1.92	0.51
33:K:81:ASN:HD22	33:K:84:VAL:HG12	1.76	0.51
36:N:95:SER:O	36:N:99:LYS:HG2	2.10	0.51
37:O:47:GLU:HG3	49:3:1254:A:OP1	2.11	0.51
39:Q:33:CYS:SG	39:Q:73:LEU:HD21	2.51	0.51
48:Z:67:THR:OXT	49:3:1167:A:C8	2.63	0.51
49:3:603:U:H2'	49:3:604:G:C8	2.46	0.51
49:3:622:A:H2'	49:3:623:C:H5'	1.92	0.51
50:1:100:U:H4'	50:1:101:A:O4'	2.10	0.51
50:1:288:U:H2'	50:1:289:G:H8	1.76	0.51
50:1:1111:A:H2'	50:1:1112:G:H4'	1.92	0.51
51:2:66:A:N1	51:2:107:G:H2'	2.26	0.51
51:2:87:U:H5''	51:2:88:C:OP2	2.11	0.51
3:d:12:LEU:HD21	3:d:193:VAL:HG11	1.92	0.51
5:f:174:LYS:CE	50:1:2529:G:H4'	2.41	0.51
7:j:110:PRO:HB3	50:1:1007:C:O3'	2.10	0.51
49:3:31:G:N2	49:3:47:C:H5''	2.25	0.51
49:3:477:C:H2'	49:3:478:A:C8	2.46	0.51
49:3:1197:A:H2'	49:3:1198:G:C5'	2.40	0.51
50:1:490:C:H4'	50:1:491:G:OP2	2.11	0.51
50:1:2529:G:H5''	50:1:2530:A:C5'	2.40	0.51
50:1:2533:U:H2'	50:1:2534:A:O4'	2.10	0.51
51:2:66:A:H1'	51:2:68:C:H5	1.75	0.51
13:p:61:ARG:NH2	13:p:99:LEU:O	2.43	0.51
41:S:41:TRP:HZ3	46:X:8:PRO:HD2	1.76	0.51
46:X:39:ILE:HD12	46:X:39:ILE:N	2.25	0.51
49:3:1138:G:H3'	49:3:1138:G:N3	2.26	0.51
49:3:1401:G:H2'	49:3:1402:C:O4'	2.11	0.51
49:3:1414:U:H3	49:3:1486:G:H1	1.57	0.51
50:1:254:G:C2'	50:1:255:A:H5''	2.41	0.51
50:1:755:U:H2'	50:1:756:A:C8	2.45	0.51
50:1:2489:U:O2'	50:1:2490:G:H5'	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:2716:C:O2'	50:1:2717:C:H5'	2.10	0.51
4:e:19:PHE:HB3	4:e:21:TYR:HE2	1.75	0.51
8:k:110:GLU:H	8:k:113:MET:HG2	1.76	0.51
10:m:125:PRO:HB3	50:1:2485:G:O3'	2.10	0.51
27:E:31:ILE:HG13	27:E:34:LYS:HZ2	1.76	0.51
30:H:19:SER:HA	30:H:56:ILE:HG22	1.92	0.51
30:H:78:LYS:N	30:H:82:ASP:OD2	2.43	0.51
38:P:15:VAL:HG22	38:P:16:SER:H	1.76	0.51
44:V:60:ILE:HD11	44:V:72:TRP:HB3	1.92	0.51
49:3:75:G:C2'	49:3:76:G:H5'	2.40	0.51
49:3:279:A:H5''	49:3:280:C:H3'	1.91	0.51
49:3:1491:G:H2'	49:3:1492:A:O4'	2.11	0.51
50:1:18:U:H2'	50:1:19:A:C8	2.46	0.51
50:1:820:A:H2'	50:1:821:A:C8	2.46	0.51
50:1:971:G:H2'	50:1:972:A:O4'	2.11	0.51
50:1:1386:C:H2'	50:1:1387:A:H8	1.76	0.51
50:1:1856:U:H2'	50:1:1857:G:O4'	2.11	0.51
50:1:2220:U:H2'	50:1:2221:G:H8	1.75	0.51
50:1:2315:G:H2'	50:1:2316:G:C8	2.46	0.51
50:1:2843:G:O2'	50:1:2844:G:H5'	2.11	0.51
2:c:6:GLY:HA3	2:c:29:VAL:HG22	1.93	0.51
25:C:36:LYS:HA	25:C:47:ILE:HA	1.93	0.51
36:N:105:ARG:O	36:N:105:ARG:HD3	2.11	0.51
50:1:75:G:H22	50:1:111:A:H2	1.57	0.51
50:1:279:A:H2'	50:1:280:U:O4'	2.11	0.51
50:1:310:A:H2'	50:1:311:A:H5''	1.92	0.51
50:1:839:U:H2'	50:1:840:C:C6	2.46	0.51
50:1:942:G:H2'	50:1:943:A:O4'	2.11	0.51
50:1:2317:A:H2'	50:1:2318:G:O4'	2.11	0.51
50:1:2507:C:O3'	54:8:21:ARG:NH1	2.44	0.51
51:2:82:U:H2'	51:2:83:G:C8	2.46	0.51
3:d:77:ILE:HG23	3:d:78:TRP:CD1	2.46	0.50
13:p:27:VAL:HG22	13:p:83:ILE:HG13	1.92	0.50
42:T:7:THR:O	42:T:11:VAL:HG23	2.11	0.50
49:3:159:G:H1'	49:3:162:A:N6	2.26	0.50
49:3:1130:A:N6	49:3:1144:G:H1'	2.26	0.50
50:1:214:G:H2'	50:1:215:G:C8	2.45	0.50
50:1:1000:A:H2'	50:1:1001:A:C8	2.46	0.50
50:1:1188:U:O2'	50:1:1189:A:H5'	2.10	0.50
50:1:1304:A:C3'	50:1:1305:C:H5''	2.41	0.50
50:1:2544:G:H2'	50:1:2545:G:C8	2.46	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:8:20:ILE:HG13	54:8:21:ARG:N	2.25	0.50
33:K:64:VAL:HG22	33:K:65:GLU:N	2.26	0.50
34:L:110:ARG:HG2	34:L:121:ASN:ND2	2.22	0.50
49:3:34:C:H2'	49:3:35:G:C8	2.46	0.50
49:3:66:A:H5''	49:3:199:A:O2'	2.10	0.50
49:3:817:C:H4'	49:3:818:G:C5'	2.41	0.50
50:1:227:A:C2'	50:1:228:C:H4'	2.42	0.50
50:1:917:A:H5''	50:1:2268:A:H61	1.75	0.50
50:1:1139:G:O2'	50:1:1140:C:H5'	2.12	0.50
50:1:1553:A:H2'	50:1:1553:A:N3	2.26	0.50
2:c:179:ARG:H	2:c:188:LEU:HB2	1.77	0.50
5:f:24:THR:HG22	5:f:33:THR:HG23	1.93	0.50
7:j:41:LYS:HB3	7:j:43:GLU:OE1	2.11	0.50
23:z:40:THR:OG1	23:z:41:PRO:HD2	2.11	0.50
34:L:78:ARG:HE	34:L:82:SER:H	1.59	0.50
35:M:88:LYS:HD2	49:3:600:A:H5''	1.92	0.50
47:Y:61:ALA:HA	47:Y:66:ILE:HB	1.93	0.50
49:3:722:G:H1	49:3:733:G:H1	1.60	0.50
49:3:1497:G:C2'	49:3:1498:U:H5'	2.41	0.50
50:1:176:A:C2'	50:1:177:G:H5'	2.41	0.50
50:1:329:G:H1'	50:1:477:A:H1'	1.93	0.50
50:1:1905:C:H2'	50:1:1930:G:O4'	2.11	0.50
50:1:2861:U:H2'	50:1:2862:G:C8	2.46	0.50
51:2:23:G:H2'	51:2:24:G:C8	2.47	0.50
1:b:114:GLN:O	1:b:124:LYS:NZ	2.45	0.50
17:t:58:VAL:HG12	17:t:85:VAL:HG12	1.93	0.50
30:H:71:ARG:O	30:H:74:ILE:HG12	2.11	0.50
30:H:149:LYS:HG3	30:H:168:ARG:HB2	1.93	0.50
32:J:75:LEU:HD23	32:J:75:LEU:H	1.76	0.50
32:J:123:LEU:HD13	49:3:7:A:N7	2.26	0.50
43:U:54:LEU:HD13	43:U:80:LYS:HD3	1.93	0.50
45:W:33:THR:HG23	45:W:35:SER:H	1.77	0.50
49:3:20:U:H2'	49:3:21:G:O4'	2.11	0.50
50:1:386:G:H2'	50:1:388:G:N2	2.27	0.50
50:1:435:C:C2'	50:1:436:C:H5'	2.40	0.50
50:1:2286:G:H5'	50:1:2287:A:C1'	2.40	0.50
50:1:2875:C:H2'	50:1:2876:G:C8	2.47	0.50
54:8:35:THR:O	54:8:36:ALA:HB3	2.11	0.50
2:c:83:ARG:HH11	50:1:2637:U:C5'	2.20	0.50
3:d:61:ARG:HH22	3:d:65:THR:N	2.08	0.50
10:m:19:GLY:C	10:m:20:LEU:HD22	2.37	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:I:155:LYS:HD2	31:I:156:ALA:N	2.26	0.50
32:J:134:ASN:ND2	49:3:1078:U:H1'	2.27	0.50
38:P:117:HIS:CD2	49:3:674:G:H21	2.29	0.50
47:Y:15:LYS:HA	47:Y:18:LYS:NZ	2.27	0.50
49:3:1405:G:O2'	49:3:1406:U:H5'	2.10	0.50
50:1:722:A:H2'	50:1:723:C:C6	2.46	0.50
50:1:859:G:H1'	50:1:860:U:C5	2.40	0.50
50:1:904:G:H2'	50:1:905:A:C8	2.47	0.50
50:1:2368:C:H2'	50:1:2369:A:C8	2.46	0.50
52:5:43:A:H2'	52:5:44:A:C8	2.45	0.50
1:b:106:PRO:HD2	1:b:109:LEU:HD22	1.93	0.50
13:p:50:ARG:N	13:p:57:ALA:O	2.35	0.50
13:p:103:THR:OG1	13:p:104:GLY:N	2.43	0.50
22:y:32:ALA:HB2	22:y:37:LEU:HD12	1.93	0.50
36:N:98:ARG:NH2	49:3:1178:G:N7	2.59	0.50
37:O:7:ARG:HG3	37:O:75:ASP:HA	1.92	0.50
39:Q:97:VAL:O	39:Q:100:ALA:HB2	2.11	0.50
41:S:52:ARG:HG2	49:3:1317:C:N3	2.27	0.50
41:S:62:ARG:NH2	41:S:67:GLY:O	2.44	0.50
49:3:37:U:H2'	49:3:38:G:O4'	2.12	0.50
49:3:1256:A:H4'	49:3:1258:G:N9	2.25	0.50
50:1:2105:U:H2'	50:1:2106:U:O4'	2.11	0.50
50:1:2547:A:H2'	50:1:2548:U:C6	2.46	0.50
50:1:2636:C:H2'	50:1:2637:U:C6	2.46	0.50
50:1:2676:C:H2'	50:1:2677:G:H8	1.74	0.50
27:E:25:HIS:HB3	27:E:43:LEU:HD12	1.92	0.50
34:L:65:LEU:O	34:L:68:VAL:HG12	2.12	0.50
35:M:6:ILE:HA	35:M:9:MET:HE2	1.94	0.50
36:N:123:ARG:HH22	36:N:126:PHE:HB2	1.77	0.50
38:P:31:VAL:O	38:P:44:ALA:N	2.44	0.50
39:Q:48:LEU:HD13	49:3:520:A:OP1	2.12	0.50
44:V:64:ARG:HG2	44:V:65:PRO:HD2	1.94	0.50
49:3:424:G:O2'	49:3:425:G:H5'	2.12	0.50
49:3:912:C:H2'	49:3:913:A:C8	2.47	0.50
49:3:1513:A:H2'	49:3:1514:G:C8	2.46	0.50
50:1:611:C:H2'	50:1:612:G:O4'	2.11	0.50
50:1:1810:A:H2'	50:1:1811:G:O4'	2.12	0.50
1:b:5:CYS:SG	1:b:17:LYS:NZ	2.84	0.50
1:b:71:ASP:OD2	1:b:72:GLY:N	2.45	0.50
4:e:120:SER:HB2	4:e:127:TYR:CD1	2.47	0.50
9:l:12:SER:O	9:l:13:LYS:HE2	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:m:54:THR:OG1	10:m:59:ARG:NH1	2.45	0.50
30:H:168:ARG:HD2	30:H:168:ARG:C	2.36	0.50
32:J:24:VAL:HG22	32:J:25:LYS:N	2.27	0.50
34:L:65:LEU:O	34:L:69:ARG:HG3	2.12	0.50
35:M:6:ILE:HA	35:M:9:MET:CE	2.41	0.50
48:Z:29:ALA:HA	48:Z:32:ARG:HD3	1.94	0.50
49:3:82:G:H3'	49:3:83:C:H5'	1.94	0.50
49:3:243:A:H4'	49:3:244:U:H3'	1.92	0.50
49:3:412:A:H3'	49:3:413:G:H4'	1.92	0.50
50:1:766:U:H2'	50:1:767:U:C6	2.47	0.50
50:1:974:G:N3	50:1:974:G:H2'	2.27	0.50
50:1:1367:A:C2'	50:1:1368:G:H5'	2.41	0.50
50:1:2086:U:H2'	50:1:2087:G:C8	2.47	0.50
50:1:2155:U:C2'	50:1:2156:G:H5'	2.41	0.50
50:1:2220:U:H2'	50:1:2221:G:C8	2.47	0.50
50:1:2221:G:O2'	50:1:2222:C:H5'	2.12	0.50
52:5:42:G:H2'	52:5:43:A:C8	2.46	0.50
54:8:62:HIS:O	54:8:63:LEU:HB2	2.11	0.50
1:b:132:ARG:HH22	6:g:90:LEU:HD23	1.77	0.50
2:c:4:LEU:HD11	2:c:96:ILE:HG22	1.94	0.50
2:c:99:GLU:HG2	2:c:100:LEU:HD12	1.92	0.50
28:F:10:LEU:HD23	28:F:33:HIS:NE2	2.27	0.50
39:Q:85:ARG:HD3	49:3:525:C:OP1	2.12	0.50
43:U:28:ARG:NH1	49:3:390:U:O3'	2.45	0.50
49:3:376:G:H2'	49:3:377:G:H8	1.75	0.50
49:3:539:A:H2'	49:3:540:G:C8	2.47	0.50
50:1:749:A:H4'	50:1:1271:G:N3	2.27	0.50
50:1:1807:G:C2'	50:1:1808:A:H5'	2.41	0.50
50:1:1827:U:O2'	50:1:1828:G:H5'	2.12	0.50
50:1:2354:C:H2'	50:1:2355:G:H8	1.77	0.50
1:b:132:ARG:HD2	6:g:123:ARG:NE	2.27	0.49
3:d:71:GLY:N	50:1:674:G:H5''	2.27	0.49
13:p:82:SER:C	13:p:83:ILE:HD12	2.37	0.49
15:r:2:TYR:HE1	15:r:42:ALA:HB3	1.76	0.49
17:t:3:ARG:HG2	50:1:138:U:O4	2.11	0.49
29:G:132:GLU:O	29:G:136:ARG:HG2	2.12	0.49
30:H:10:ARG:HB2	30:H:15:LYS:HZ3	1.76	0.49
32:J:155:LYS:HD3	35:M:70:VAL:HG13	1.94	0.49
49:3:352:C:H4'	49:3:354:G:OP1	2.12	0.49
49:3:398:U:H2'	49:3:399:G:H8	1.77	0.49
49:3:591:U:H2'	49:3:592:G:C8	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:581:C:H2'	50:1:582:A:C8	2.45	0.49
50:1:996:A:H2'	50:1:997:G:C8	2.45	0.49
50:1:2291:U:H2'	50:1:2292:U:C6	2.47	0.49
50:1:2742:G:O2'	50:1:2743:U:H5'	2.12	0.49
53:4:9:G:H2'	53:4:10:G:O4'	2.11	0.49
1:b:41:GLY:O	1:b:48:ILE:HD12	2.12	0.49
14:q:2:ARG:HB2	50:1:1248:G:C4	2.47	0.49
49:3:372:C:N4	49:3:387:U:H2'	2.27	0.49
49:3:437:U:C2'	49:3:438:U:H5'	2.42	0.49
49:3:1333:A:H3'	49:3:1334:G:H8	1.76	0.49
50:1:639:U:H2'	50:1:640:C:C6	2.47	0.49
50:1:1056:G:H5''	50:1:1057:A:O4'	2.12	0.49
50:1:1935:G:H1'	50:1:1964:G:N2	2.27	0.49
50:1:2714:G:O2'	50:1:2715:C:H5'	2.12	0.49
51:2:66:A:H4'	51:2:67:G:C8	2.48	0.49
1:b:164:VAL:HG22	1:b:174:ARG:HG3	1.94	0.49
2:c:123:LYS:HG2	2:c:165:MET:CE	2.41	0.49
10:m:72:PRO:HD3	10:m:92:TRP:CZ3	2.47	0.49
17:t:32:LEU:N	17:t:32:LEU:HD23	2.28	0.49
18:u:27:VAL:HG23	18:u:33:VAL:HG12	1.93	0.49
22:y:24:GLU:HB2	22:y:28:LEU:HD13	1.95	0.49
23:z:37:ARG:HH21	50:1:929:U:H4'	1.75	0.49
29:G:142:LYS:HA	29:G:145:ASN:HD21	1.76	0.49
31:I:75:TYR:HA	31:I:89:LEU:HD21	1.95	0.49
46:X:77:ARG:HE	49:3:1222:G:H5''	1.76	0.49
49:3:152:A:H2'	49:3:153:C:O4'	2.12	0.49
49:3:205:A:H2'	49:3:206:C:H5'	1.93	0.49
49:3:813:U:C2'	49:3:814:A:H5''	2.42	0.49
50:1:878:A:H2'	50:1:879:G:C8	2.48	0.49
50:1:1196:C:H2'	50:1:1197:G:C8	2.46	0.49
50:1:1378:A:H1'	50:1:1379:U:C5	2.47	0.49
50:1:1747:U:H2'	50:1:1748:C:C6	2.47	0.49
50:1:1826:G:H2'	50:1:1827:U:C6	2.47	0.49
50:1:1843:C:H2'	50:1:1844:C:H6	1.77	0.49
3:d:18:THR:HG22	3:d:200:LEU:HD22	1.95	0.49
4:e:141:ASP:O	4:e:142:TYR:HB3	2.12	0.49
9:l:3:LEU:HD23	50:1:1203:U:C4'	2.41	0.49
15:r:1:MET:HA	15:r:43:ASN:HA	1.94	0.49
17:t:13:ALA:O	17:t:33:LYS:N	2.43	0.49
18:u:73:ASN:OD1	18:u:75:ALA:HB3	2.12	0.49
19:v:78:GLN:HG2	19:v:87:GLN:HB2	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:H:176:THR:HG23	30:H:176:THR:O	2.12	0.49
31:I:152:SER:OG	49:3:436:C:H4'	2.12	0.49
33:K:81:ASN:HB3	33:K:84:VAL:HG12	1.94	0.49
33:K:96:VAL:HG22	33:K:97:THR:N	2.27	0.49
36:N:129:ARG:NH2	52:5:33:U:H3'	2.27	0.49
39:Q:89:LEU:O	39:Q:92:VAL:HG22	2.13	0.49
42:T:63:ARG:NH2	49:3:582:C:H5'	2.27	0.49
48:Z:29:ALA:HA	48:Z:32:ARG:CD	2.42	0.49
49:3:222:C:H2'	49:3:223:A:C8	2.47	0.49
49:3:1379:G:O2'	49:3:1380:U:H5'	2.13	0.49
50:1:349:U:H2'	50:1:350:G:C8	2.46	0.49
50:1:752:A:O2'	50:1:1781:U:H5'	2.12	0.49
50:1:758:C:O2	50:1:758:C:H2'	2.13	0.49
50:1:940:G:H2'	50:1:941:A:H5''	1.94	0.49
50:1:1045:C:H5'	50:1:1046:A:H5''	1.94	0.49
50:1:1773:A:H2'	50:1:1774:C:O4'	2.13	0.49
1:b:257:ARG:NH2	1:b:262:THR:OG1	2.46	0.49
2:c:118:PHE:HE1	2:c:163:GLY:HA2	1.78	0.49
4:e:37:MET:HE2	4:e:52:ALA:HB1	1.93	0.49
11:n:6:SER:OG	11:n:46:ARG:NH2	2.45	0.49
15:r:68:ARG:HD2	15:r:92:TRP:CE2	2.47	0.49
21:x:31:ASN:HD22	50:1:2230:G:H1'	1.77	0.49
33:K:23:GLU:HA	33:K:26:THR:HG22	1.94	0.49
36:N:115:VAL:HG11	37:O:62:ARG:HB2	1.94	0.49
49:3:137:U:H2'	49:3:138:G:H8	1.76	0.49
49:3:701:U:C5'	49:3:703:G:H1'	2.42	0.49
50:1:208:C:H2'	50:1:209:C:C6	2.47	0.49
50:1:644:A:H2'	50:1:645:C:H4'	1.94	0.49
50:1:672:C:O2'	50:1:673:C:H5'	2.13	0.49
50:1:796:C:H2'	50:1:797:G:H8	1.78	0.49
50:1:1417:C:H2'	50:1:1418:G:O4'	2.12	0.49
50:1:2169:A:H2'	50:1:2170:A:O4'	2.12	0.49
50:1:2329:U:H2'	50:1:2330:G:H8	1.77	0.49
2:c:167:ASN:ND2	50:1:2821:A:H4'	2.26	0.49
4:e:39:VAL:HG11	4:e:42:ALA:HB2	1.94	0.49
5:f:176:LYS:CE	50:1:2660:A:H62	2.25	0.49
11:n:69:ARG:C	11:n:71:ARG:H	2.21	0.49
23:z:7:THR:HG22	23:z:34:THR:HG22	1.95	0.49
27:E:7:ARG:NH2	50:1:244:A:OP2	2.46	0.49
34:L:72:VAL:HG22	34:L:73:GLU:N	2.28	0.49
45:W:33:THR:HG22	45:W:37:LYS:H	1.76	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:Z:65:ARG:HD3	49:3:1087:G:H1'	1.93	0.49
49:3:1305:G:H22	49:3:1331:G:H2'	1.77	0.49
50:1:893:C:H2'	50:1:894:U:O4'	2.12	0.49
52:5:34:C:H2'	52:5:35:A:C8	2.47	0.49
5:f:173:ALA:HB1	50:1:2531:A:C5'	2.42	0.49
34:L:115:MET:HG2	49:3:1240:U:OP1	2.13	0.49
43:U:37:GLY:HA3	43:U:51:ARG:O	2.12	0.49
49:3:75:G:H2'	49:3:76:G:O4'	2.13	0.49
49:3:1120:C:H2'	49:3:1121:U:C6	2.48	0.49
49:3:1239:A:H5''	49:3:1240:U:H5	1.76	0.49
49:3:1464:U:H2'	49:3:1465:A:C8	2.47	0.49
50:1:151:C:H2'	50:1:152:A:C8	2.48	0.49
50:1:226:A:H2'	50:1:227:A:O4'	2.12	0.49
50:1:277:G:H3'	50:1:277:G:N3	2.27	0.49
50:1:546:U:O2'	50:1:547:A:H4'	2.11	0.49
50:1:1463:C:H2'	50:1:1464:G:C8	2.48	0.49
50:1:2092:U:C4'	50:1:2093:G:H5''	2.38	0.49
50:1:2123:G:H2'	50:1:2124:G:H8	1.76	0.49
51:2:48:U:H2'	51:2:49:C:C6	2.47	0.49
52:5:5:G:H2'	52:5:6:G:C8	2.47	0.49
1:b:40:GLY:O	1:b:42:ARG:NH1	2.45	0.49
6:g:25:TYR:CG	50:1:2094:A:H5'	2.48	0.49
29:G:75:ALA:O	29:G:79:VAL:HG23	2.13	0.49
29:G:98:GLY:O	29:G:102:ASN:HB3	2.13	0.49
31:I:49:ASP:HA	31:I:52:VAL:HG22	1.95	0.49
33:K:46:GLN:HA	33:K:56:LYS:HA	1.94	0.49
41:S:80:ARG:O	41:S:83:VAL:HG22	2.13	0.49
42:T:11:VAL:HA	42:T:26:VAL:HG21	1.95	0.49
42:T:75:ALA:O	42:T:79:GLN:HG2	2.12	0.49
43:U:54:LEU:HD23	43:U:57:ILE:HD12	1.95	0.49
49:3:82:G:H3'	49:3:83:C:C5'	2.43	0.49
49:3:376:G:H2'	49:3:377:G:C8	2.47	0.49
49:3:860:A:H2'	49:3:861:G:O4'	2.13	0.49
49:3:893:C:H2'	49:3:894:G:C8	2.48	0.49
50:1:57:C:H2'	50:1:58:G:O4'	2.13	0.49
50:1:558:U:H2'	50:1:559:G:H8	1.76	0.49
50:1:634:C:H2'	50:1:635:C:C6	2.48	0.49
50:1:1179:G:H3'	50:1:1180:U:H4'	1.94	0.49
50:1:2011:U:H2'	50:1:2012:G:O4'	2.12	0.49
50:1:2266:A:H4'	50:1:2267:A:N3	2.27	0.49
50:1:2514:U:H2'	50:1:2515:C:H6	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:v:46:LYS:NZ	50:1:1039:A:H4'	2.27	0.49
20:w:7:ARG:N	20:w:7:ARG:HD3	2.28	0.49
27:E:39:ARG:O	27:E:43:LEU:HD23	2.12	0.49
32:J:153:ALA:HA	32:J:163:ILE:HD12	1.94	0.49
34:L:125:ASP:HA	34:L:128:GLU:OE2	2.11	0.49
39:Q:82:ARG:HH11	49:3:552:U:H5'	1.78	0.49
50:1:302:C:H2'	50:1:303:G:H8	1.78	0.49
50:1:387:U:H4'	50:1:388:G:C8	2.47	0.49
50:1:1458:U:H4'	50:1:1459:G:C4	2.48	0.49
50:1:1854:A:H2'	50:1:1855:U:H5'	1.95	0.49
50:1:2066:C:H2'	50:1:2067:G:C8	2.48	0.49
50:1:2443:C:H2'	50:1:2444:G:C8	2.48	0.49
50:1:2698:U:H2'	50:1:2699:C:C6	2.48	0.49
50:1:2837:A:H2'	50:1:2838:G:C8	2.48	0.49
4:e:78:ILE:HD11	50:1:2311:A:H2	1.78	0.49
4:e:130:GLY:HA2	4:e:152:ASP:HA	1.95	0.49
5:f:44:HIS:HD2	5:f:49:LEU:HG	1.78	0.49
12:o:66:GLY:HA2	12:o:102:ARG:NH2	2.28	0.49
18:u:3:LYS:C	18:u:4:ILE:HD12	2.37	0.49
21:x:31:ASN:HD21	21:x:33:HIS:HE1	1.61	0.49
27:E:31:ILE:CG2	27:E:34:LYS:HZ2	2.23	0.49
39:Q:17:LYS:NZ	39:Q:18:SER:O	2.46	0.49
49:3:398:U:H2'	49:3:399:G:C8	2.48	0.49
49:3:1086:U:H2'	49:3:1087:G:C8	2.48	0.49
49:3:1269:A:H4'	49:3:1326:U:H4'	1.94	0.49
49:3:1352:C:H2'	49:3:1353:G:C8	2.48	0.49
50:1:776:G:H2'	50:1:776:G:N3	2.27	0.49
50:1:1180:U:H2'	50:1:1181:U:C5	2.48	0.49
50:1:1351:C:H2'	50:1:1352:U:C6	2.48	0.49
50:1:1464:G:H2'	50:1:1465:G:C8	2.48	0.49
52:5:2:G:O2'	52:5:3:C:H5'	2.13	0.49
2:c:124:ARG:HD3	2:c:161:MET:O	2.14	0.48
3:d:145:ASP:HB3	3:d:184:ASP:OD1	2.12	0.48
4:e:37:MET:SD	4:e:151:LEU:HB3	2.53	0.48
7:j:105:VAL:O	7:j:109:LEU:HD23	2.13	0.48
11:n:118:ARG:HH12	24:B:55:ALA:HB3	1.78	0.48
14:q:91:ARG:NH2	50:1:1153:C:OP1	2.45	0.48
24:B:24:VAL:O	24:B:26:SER:N	2.45	0.48
25:C:39:ASP:HB3	25:C:42:VAL:HG22	1.94	0.48
28:F:36:ARG:HG2	28:F:37:GLN:H	1.78	0.48
30:H:76:ILE:HA	30:H:83:VAL:HG13	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:H:161:ILE:HG12	49:3:1196:A:C2	2.48	0.48
36:N:69:GLY:N	49:3:1250:A:H4'	2.28	0.48
38:P:28:ASN:ND2	49:3:689:C:OP1	2.44	0.48
38:P:124:LYS:O	38:P:124:LYS:HD2	2.13	0.48
39:Q:122:LYS:NZ	49:3:37:U:OP1	2.44	0.48
49:3:132:C:H2'	49:3:133:U:H6	1.77	0.48
49:3:392:C:H2'	49:3:393:A:H8	1.78	0.48
49:3:947:G:H2'	49:3:948:C:O4'	2.13	0.48
50:1:2179:C:H2'	50:1:2180:U:C5	2.48	0.48
1:b:4:LYS:HG2	1:b:16:VAL:HG22	1.95	0.48
6:g:17:ASP:OD1	6:g:17:ASP:N	2.45	0.48
15:r:39:LEU:O	15:r:40:MET:HE2	2.13	0.48
19:v:80:HIS:CE1	19:v:81:PRO:HG2	2.47	0.48
30:H:168:ARG:HD2	30:H:169:GLU:N	2.28	0.48
31:I:155:LYS:O	31:I:159:GLU:HG2	2.14	0.48
34:L:34:LYS:HD2	49:3:1290:G:H5''	1.95	0.48
35:M:17:GLN:NE2	35:M:71:VAL:HB	2.29	0.48
42:T:52:ARG:O	42:T:56:LEU:HD23	2.14	0.48
49:3:243:A:C2	49:3:245:U:H2'	2.48	0.48
49:3:257:G:H2'	49:3:258:G:H8	1.78	0.48
49:3:1197:A:H2'	49:3:1198:G:H5''	1.95	0.48
49:3:1436:U:H2'	49:3:1437:A:H8	1.77	0.48
49:3:1467:C:H2'	49:3:1468:A:C8	2.48	0.48
49:3:1522:U:H2'	49:3:1523:G:H8	1.77	0.48
50:1:69:C:H2'	50:1:70:G:C8	2.48	0.48
50:1:128:C:H2'	50:1:129:C:C6	2.48	0.48
50:1:665:U:H2'	50:1:666:A:C8	2.49	0.48
50:1:819:A:H3'	50:1:973:A:H61	1.79	0.48
50:1:1103:A:H3'	50:1:1104:C:H5''	1.94	0.48
50:1:2471:A:H2'	50:1:2472:G:O4'	2.13	0.48
50:1:2515:C:H2'	50:1:2516:A:H8	1.78	0.48
50:1:2723:C:H2'	50:1:2724:U:O4'	2.13	0.48
1:b:73:ILE:HG23	50:1:1490:A:N6	2.27	0.48
11:n:8:ARG:N	11:n:43:GLU:OE2	2.46	0.48
12:o:4:LYS:O	12:o:8:ILE:HG13	2.14	0.48
30:H:174:LEU:HB2	49:3:1108:G:OP1	2.13	0.48
33:K:19:PRO:HA	33:K:22:ILE:HD12	1.95	0.48
36:N:8:THR:OG1	36:N:9:GLY:N	2.45	0.48
38:P:117:HIS:HD2	49:3:674:G:H21	1.61	0.48
39:Q:120:ARG:CZ	49:3:500:G:H5'	2.42	0.48
44:V:15:LYS:HG3	49:3:275:G:H5'	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:56:U:H2'	49:3:57:G:H8	1.77	0.48
49:3:1219:A:H2'	49:3:1220:G:C8	2.49	0.48
50:1:185:G:H2'	50:1:186:G:H8	1.77	0.48
50:1:1060:U:H4'	50:1:1061:U:C5'	2.37	0.48
50:1:1662:U:H2'	50:1:1663:G:H8	1.77	0.48
50:1:2038:G:H2'	50:1:2039:U:O4'	2.13	0.48
50:1:2800:A:C3'	50:1:2801:G:H5'	2.37	0.48
51:2:35:C:C2'	51:2:36:C:H5'	2.43	0.48
52:5:9:G:H5'	52:5:11:A:OP2	2.13	0.48
54:8:62:HIS:CD2	54:8:63:LEU:HG	2.49	0.48
1:b:47:ARG:HD2	50:1:778:G:H5''	1.95	0.48
2:c:136:ASN:OD1	2:c:139:SER:HB3	2.13	0.48
3:d:120:VAL:HA	3:d:188:MET:HB3	1.96	0.48
9:l:54:GLN:HE22	50:1:2358:A:H61	1.61	0.48
17:t:11:LEU:HD23	22:y:26:PHE:CZ	2.48	0.48
30:H:4:VAL:HG22	30:H:5:HIS:N	2.28	0.48
32:J:64:GLU:CD	32:J:64:GLU:H	2.21	0.48
49:3:70:U:H5''	49:3:71:A:O5'	2.13	0.48
50:1:227:A:H2'	50:1:228:C:C4'	2.42	0.48
50:1:1111:A:H2'	50:1:1112:G:C4'	2.43	0.48
50:1:1932:A:H3'	50:1:1933:G:H8	1.78	0.48
50:1:2654:A:O3'	50:1:2655:G:H4'	2.14	0.48
51:2:12:C:H1'	51:2:15:A:C4	2.47	0.48
3:d:196:VAL:HA	3:d:199:MET:HB3	1.96	0.48
15:r:79:ARG:NH1	50:1:572:A:OP2	2.46	0.48
23:z:40:THR:HG22	23:z:43:ILE:HG12	1.95	0.48
28:F:22:VAL:HG13	28:F:24:ARG:HD2	1.95	0.48
29:G:6:ARG:HH11	29:G:6:ARG:HG3	1.78	0.48
33:K:46:GLN:HG3	33:K:55:HIS:HD2	1.77	0.48
37:O:40:ILE:HB	37:O:73:LEU:HB2	1.95	0.48
49:3:621:A:H2'	49:3:622:A:C8	2.48	0.48
50:1:69:C:H2'	50:1:70:G:H8	1.78	0.48
50:1:569:U:H2'	50:1:570:G:O4'	2.13	0.48
50:1:813:U:H2'	50:1:814:C:C6	2.48	0.48
50:1:825:A:H2'	50:1:826:U:C6	2.48	0.48
50:1:1112:G:H2'	50:1:1113:U:C6	2.49	0.48
50:1:1138:G:H2'	50:1:1139:G:O4'	2.13	0.48
50:1:1310:G:H3'	50:1:1311:G:C8	2.47	0.48
50:1:1735:A:H2'	50:1:1736:U:C6	2.49	0.48
50:1:2556:C:H2'	50:1:2557:G:O4'	2.13	0.48
1:b:43:ASN:HD21	1:b:45:ASN:ND2	2.11	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:e:147:ARG:HH21	4:e:149:ARG:NH1	2.11	0.48
4:e:155:ILE:HD12	4:e:155:ILE:N	2.28	0.48
5:f:68:ARG:HD3	5:f:72:ASN:HD21	1.77	0.48
14:q:80:ASN:CG	50:1:1151:A:H4'	2.38	0.48
18:u:13:LEU:O	18:u:18:LYS:HG3	2.14	0.48
29:G:134:LEU:O	29:G:137:THR:HG22	2.13	0.48
30:H:51:VAL:HA	30:H:69:THR:HA	1.96	0.48
35:M:120:LEU:HB2	49:3:599:C:O2'	2.14	0.48
49:3:100:G:H3'	49:3:101:A:H8	1.79	0.48
50:1:503:A:C4'	50:1:505:A:H5''	2.43	0.48
50:1:1173:U:H1'	50:1:1177:G:H1	1.79	0.48
50:1:1779:U:OP2	50:1:1784:A:N6	2.47	0.48
50:1:1863:G:H2'	50:1:1864:U:C6	2.49	0.48
50:1:2470:G:H2'	50:1:2471:A:C8	2.49	0.48
54:8:125:LYS:O	54:8:128:VAL:HG12	2.13	0.48
3:d:73:ILE:N	3:d:73:ILE:HD12	2.28	0.48
10:m:33:LEU:HD13	10:m:117:PHE:HB3	1.95	0.48
11:n:60:VAL:O	11:n:64:ARG:HG2	2.13	0.48
11:n:86:ARG:HH21	11:n:117:ASP:HB3	1.79	0.48
25:C:9:LYS:O	25:C:51:ALA:N	2.46	0.48
25:C:10:LEU:HD13	25:C:50:GLU:N	2.29	0.48
26:D:34:ARG:NH2	50:1:466:A:H5''	2.28	0.48
29:G:184:ALA:HB3	29:G:195:VAL:HG21	1.95	0.48
30:H:122:GLN:O	30:H:127:VAL:HG22	2.13	0.48
30:H:160:GLU:OE2	49:3:1055:A:H4'	2.14	0.48
36:N:98:ARG:NE	36:N:103:VAL:HG21	2.29	0.48
37:O:6:ILE:HG23	37:O:102:LEU:HG	1.95	0.48
43:U:18:GLN:HA	43:U:38:PHE:HA	1.95	0.48
46:X:7:GLY:H	46:X:8:PRO:HD3	1.79	0.48
49:3:235:C:H2'	49:3:236:A:H8	1.79	0.48
49:3:300:A:H1'	49:3:565:U:O2	2.14	0.48
49:3:423:G:H2'	49:3:424:G:H5'	1.95	0.48
49:3:692:U:H2'	49:3:694:A:OP2	2.14	0.48
49:3:1060:U:H2'	49:3:1061:G:H8	1.77	0.48
49:3:1238:A:C2'	49:3:1239:A:H5'	2.43	0.48
50:1:1077:A:C2'	50:1:1078:U:H5'	2.44	0.48
50:1:1507:C:C2'	50:1:1508:A:H4'	2.39	0.48
50:1:1849:G:H2'	50:1:1850:G:H8	1.79	0.48
50:1:2605:U:H2'	50:1:2606:C:C6	2.48	0.48
51:2:97:C:H2'	51:2:98:G:O4'	2.13	0.48
52:5:20:U:H2'	52:5:21:A:C5'	2.43	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:e:142:TYR:HB3	40:R:8:ILE:HD12	1.95	0.48
7:j:129:GLU:OE1	7:j:129:GLU:N	2.44	0.48
8:k:70:ARG:NH1	50:1:2684:U:O4'	2.47	0.48
16:s:8:ARG:HG3	50:1:494:G:OP1	2.14	0.48
16:s:9:HIS:HB3	16:s:11:ARG:HH11	1.76	0.48
16:s:82:MET:N	16:s:82:MET:SD	2.87	0.48
24:B:46:GLY:HA3	24:B:54:ILE:CG2	2.43	0.48
25:C:4:ILE:HD12	25:C:4:ILE:N	2.24	0.48
29:G:56:LEU:HB3	29:G:183:PHE:CZ	2.49	0.48
29:G:62:ARG:O	29:G:62:ARG:HD3	2.13	0.48
32:J:111:ARG:O	32:J:115:GLU:HG3	2.14	0.48
39:Q:53:ARG:CD	39:Q:63:THR:HG22	2.43	0.48
49:3:392:C:H2'	49:3:393:A:C8	2.49	0.48
49:3:736:C:H2'	49:3:737:C:C6	2.48	0.48
49:3:1170:A:H2'	49:3:1171:A:O4'	2.14	0.48
49:3:1198:G:H5'	49:3:1198:G:H8	1.79	0.48
49:3:1385:G:H2'	49:3:1386:G:H8	1.78	0.48
50:1:1164:C:H2'	50:1:1165:A:C8	2.49	0.48
50:1:2238:G:H2'	50:1:2238:G:N3	2.29	0.48
54:8:43:ILE:HA	54:8:68:GLY:O	2.14	0.48
6:g:21:VAL:HG22	6:g:22:LYS:H	1.79	0.48
7:j:16:TYR:HD1	7:j:138:GLN:HE21	1.61	0.48
11:n:97:ILE:C	11:n:98:LEU:HD22	2.39	0.48
16:s:25:ARG:HH12	50:1:519:U:H5''	1.79	0.48
18:u:35:VAL:HG13	18:u:38:ILE:CB	2.43	0.48
19:v:47:VAL:HA	19:v:50:MET:HG2	1.95	0.48
32:J:125:LYS:HD2	49:3:9:G:OP1	2.14	0.48
33:K:2:ARG:HD2	33:K:91:ARG:HH21	1.78	0.48
35:M:79:ARG:HB3	49:3:878:A:OP1	2.14	0.48
36:N:35:GLU:HA	36:N:39:GLY:CA	2.41	0.48
49:3:251:G:H4'	49:3:252:U:O5'	2.13	0.48
49:3:762:U:H2'	49:3:763:G:C8	2.49	0.48
49:3:1254:A:H2'	49:3:1255:G:C8	2.49	0.48
50:1:603:A:H62	50:1:655:A:H5'	1.78	0.48
50:1:1246:A:H2'	50:1:1247:A:O4'	2.14	0.48
50:1:1942:C:H2'	50:1:1943:U:C5	2.48	0.48
50:1:2039:U:H2'	50:1:2040:G:C8	2.49	0.48
50:1:2567:G:H2'	50:1:2568:U:C6	2.49	0.48
51:2:32:U:H2'	51:2:33:G:C8	2.48	0.48
54:8:65:SER:HB2	54:8:69:VAL:HG22	1.94	0.48
1:b:66:PHE:HD1	1:b:142:ASN:HD21	1.61	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:f:132:LEU:HD23	5:f:132:LEU:N	2.25	0.48
20:w:13:GLU:HB3	20:w:15:LYS:HZ2	1.79	0.48
22:y:22:LEU:HG	22:y:23:ARG:HH21	1.78	0.48
31:I:57:LYS:HE2	31:I:199:ILE:HA	1.94	0.48
33:K:43:GLY:HA2	33:K:58:HIS:CE1	2.48	0.48
36:N:45:MET:HG3	36:N:48:ARG:HG3	1.95	0.48
39:Q:32:VAL:HG22	39:Q:55:ARG:HB3	1.94	0.48
40:R:7:ASN:C	40:R:9:PRO:HD3	2.39	0.48
42:T:3:SER:O	42:T:7:THR:HG23	2.14	0.48
43:U:36:VAL:HG11	43:U:57:ILE:HG13	1.96	0.48
49:3:169:C:H2'	49:3:170:U:H6	1.79	0.48
49:3:1105:A:H2'	49:3:1106:G:C8	2.48	0.48
49:3:1512:U:H2'	49:3:1513:A:C8	2.49	0.48
50:1:2443:C:O2'	50:1:2444:G:H5'	2.14	0.48
50:1:2673:G:H2'	50:1:2674:G:H8	1.77	0.48
2:c:173:GLN:HE21	50:1:2772:C:H5'	1.79	0.47
6:g:5:LEU:HD12	6:g:36:ALA:HB2	1.96	0.47
6:g:50:ARG:HD3	6:g:54:LEU:HD21	1.95	0.47
8:k:58:LEU:N	8:k:58:LEU:HD23	2.29	0.47
15:r:24:LYS:HG3	15:r:66:HIS:CE1	2.49	0.47
16:s:9:HIS:H	16:s:102:HIS:CE1	2.32	0.47
16:s:84:ARG:NH1	50:1:1322:A:O3'	2.46	0.47
19:v:32:GLY:O	19:v:93:ARG:NH1	2.47	0.47
20:w:37:ARG:HD2	50:1:2386:A:N3	2.29	0.47
31:I:57:LYS:HE2	31:I:199:ILE:CG2	2.37	0.47
42:T:27:GLN:HE21	49:3:657:U:H1'	1.77	0.47
43:U:73:ALA:HB1	49:3:452:A:O2'	2.13	0.47
49:3:132:C:H2'	49:3:133:U:C6	2.49	0.47
50:1:1219:U:H2'	50:1:1220:G:C8	2.49	0.47
50:1:2259:U:H2'	50:1:2260:C:H6	1.79	0.47
50:1:2492:U:H2'	50:1:2493:U:C6	2.48	0.47
54:8:69:VAL:O	54:8:70:ILE:C	2.57	0.47
1:b:234:GLY:HA2	50:1:2599:G:OP2	2.13	0.47
5:f:140:ILE:HA	5:f:143:VAL:HG22	1.94	0.47
12:o:76:LYS:O	12:o:80:GLU:HG3	2.14	0.47
13:p:83:ILE:HD12	13:p:83:ILE:N	2.29	0.47
27:E:22:LYS:HE2	50:1:630:G:OP2	2.13	0.47
31:I:172:VAL:HG22	31:I:173:ASP:N	2.28	0.47
36:N:128:LYS:HE2	52:5:34:C:OP2	2.14	0.47
41:S:30:ILE:HG23	41:S:30:ILE:O	2.15	0.47
46:X:28:LYS:CD	46:X:29:PRO:HD2	2.44	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:174:A:H2'	49:3:175:C:H5'	1.96	0.47
49:3:224:U:H2'	49:3:225:C:C6	2.48	0.47
50:1:532:A:H2'	50:1:532:A:N3	2.29	0.47
50:1:1275:A:N6	50:1:1296:G:H4'	2.28	0.47
50:1:1854:A:N6	50:1:1888:G:H1'	2.29	0.47
50:1:2315:G:H2'	50:1:2316:G:H8	1.79	0.47
8:k:13:ASN:OD1	8:k:98:ARG:N	2.47	0.47
17:t:38:ALA:O	17:t:81:LYS:NZ	2.46	0.47
20:w:36:GLN:HE22	20:w:39:THR:HA	1.79	0.47
30:H:3:LYS:HA	49:3:1190:G:OP1	2.13	0.47
30:H:177:LEU:HD12	30:H:178:ARG:N	2.29	0.47
38:P:106:ILE:N	38:P:106:ILE:HD12	2.29	0.47
43:U:46:LYS:NZ	43:U:49:GLY:H	2.12	0.47
48:Z:64:ALA:O	48:Z:65:ARG:HB2	2.15	0.47
49:3:246:A:O3'	49:3:247:G:H4'	2.15	0.47
49:3:358:U:H2'	49:3:359:G:H8	1.78	0.47
49:3:459:A:H2'	49:3:460:A:C8	2.48	0.47
50:1:230:G:O2'	50:1:231:A:H5'	2.14	0.47
50:1:940:G:H2'	50:1:941:A:C4'	2.45	0.47
50:1:2443:C:H2'	50:1:2444:G:H8	1.79	0.47
50:1:2591:C:H2'	50:1:2592:G:C8	2.49	0.47
54:8:40:ARG:HH11	54:8:91:LEU:HD22	1.79	0.47
1:b:35:LYS:NZ	50:1:1353:A:O3'	2.48	0.47
1:b:94:LEU:HD13	1:b:100:ARG:HD2	1.95	0.47
9:l:142:ILE:HD12	9:l:142:ILE:N	2.29	0.47
21:x:20:ALA:C	21:x:21:LEU:HD12	2.40	0.47
23:z:36:GLU:O	23:z:37:ARG:NH1	2.42	0.47
23:z:52:PHE:CD2	51:2:83:G:H4'	2.49	0.47
30:H:9:ILE:HG23	30:H:10:ARG:HG3	1.96	0.47
30:H:129:PHE:CG	30:H:156:LEU:HD12	2.49	0.47
31:I:172:VAL:HA	31:I:178:GLU:O	2.13	0.47
34:L:11:ILE:HD12	34:L:11:ILE:N	2.29	0.47
34:L:70:PRO:O	34:L:95:ARG:HG3	2.15	0.47
37:O:66:GLU:HB2	41:S:98:ALA:HB2	1.97	0.47
42:T:80:LEU:HA	42:T:83:ARG:HB2	1.96	0.47
49:3:1395:C:O2'	49:3:1396:A:H5'	2.14	0.47
50:1:286:U:H2'	50:1:287:G:C8	2.49	0.47
50:1:548:G:C5	50:1:549:G:H1'	2.49	0.47
50:1:560:C:H2'	50:1:561:G:O4'	2.14	0.47
50:1:729:G:H4'	50:1:763:G:H5'	1.96	0.47
50:1:869:G:H2'	50:1:870:U:O4'	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:1164:C:H2'	50:1:1165:A:H8	1.79	0.47
50:1:2074:U:H2'	50:1:2075:U:C6	2.50	0.47
50:1:2469:A:H2'	50:1:2470:G:O4'	2.15	0.47
3:d:155:GLU:HA	3:d:158:PHE:HB3	1.96	0.47
30:H:151:GLU:OE1	30:H:166:TRP:HB3	2.13	0.47
35:M:8:ASP:OD1	49:3:825:A:H1'	2.15	0.47
41:S:33:VAL:O	41:S:33:VAL:HG13	2.15	0.47
46:X:5:LYS:HD2	49:3:1313:U:OP1	2.15	0.47
48:Z:44:ARG:HH12	49:3:722:G:H21	1.61	0.47
49:3:453:G:H2'	49:3:454:G:C8	2.49	0.47
50:1:28:A:H1'	50:1:513:A:C2	2.49	0.47
50:1:340:A:H2'	50:1:341:C:O4'	2.14	0.47
50:1:570:G:H2'	50:1:2030:A:N7	2.30	0.47
50:1:594:U:H2'	50:1:595:C:H6	1.79	0.47
50:1:595:C:H2'	50:1:596:U:C6	2.50	0.47
51:2:11:C:C2	51:2:15:A:H2	2.33	0.47
53:4:6:G:C2'	53:4:7:G:H5'	2.45	0.47
1:b:16:VAL:H	1:b:203:VAL:HG13	1.79	0.47
16:s:4:ILE:HG23	50:1:495:G:H5''	1.96	0.47
31:I:184:LYS:HD3	31:I:185:PRO:CD	2.42	0.47
34:L:106:ALA:HA	34:L:109:LYS:NZ	2.29	0.47
36:N:12:LYS:HE2	36:N:73:GLY:CA	2.45	0.47
40:R:13:HIS:HA	40:R:42:VAL:O	2.14	0.47
41:S:20:PHE:CZ	41:S:50:LEU:HD11	2.49	0.47
47:Y:35:TYR:HA	47:Y:38:ILE:HD12	1.95	0.47
49:3:407:U:H2'	49:3:408:A:H8	1.79	0.47
49:3:529:G:H4'	49:3:533:A:C2	2.49	0.47
50:1:1010:A:H1'	50:1:1153:C:H1'	1.97	0.47
50:1:2644:G:H3'	50:1:2645:G:N2	2.30	0.47
50:1:2736:A:H2'	50:1:2737:G:C8	2.50	0.47
51:2:28:C:H2'	51:2:29:A:C8	2.49	0.47
3:d:59:PRO:HG2	3:d:78:TRP:CH2	2.49	0.47
6:g:21:VAL:HG22	6:g:22:LYS:N	2.30	0.47
7:j:84:ILE:HB	50:1:1131:G:H5'	1.97	0.47
9:l:119:PRO:O	9:l:140:GLY:HA2	2.14	0.47
22:y:48:ARG:CZ	50:1:75:G:H4'	2.45	0.47
23:z:55:LYS:HE3	23:z:57:GLU:HG3	1.96	0.47
26:D:34:ARG:NH1	26:D:42:LEU:O	2.47	0.47
29:G:138:ARG:HH11	49:3:1097:C:H5'	1.80	0.47
30:H:63:ILE:HG23	30:H:98:ALA:HA	1.97	0.47
32:J:92:ARG:O	32:J:93:VAL:O	2.32	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:L:34:LYS:NZ	49:3:1290:G:H5'	2.30	0.47
36:N:32:ARG:HD2	36:N:36:GLN:HG2	1.97	0.47
36:N:111:GLU:OE1	49:3:1186:G:H4'	2.14	0.47
40:R:26:LYS:HG3	40:R:30:LYS:HE3	1.96	0.47
44:V:18:LYS:HE2	44:V:46:HIS:CE1	2.50	0.47
47:Y:5:SER:O	47:Y:8:LYS:HG2	2.15	0.47
49:3:437:U:O2'	49:3:438:U:H5'	2.14	0.47
49:3:1413:A:H2	49:3:1487:G:H22	1.60	0.47
49:3:1464:U:H2'	49:3:1465:A:H8	1.80	0.47
49:3:1494:G:H5'	50:1:1913:A:H2	1.80	0.47
50:1:335:C:H2'	50:1:336:C:C6	2.50	0.47
50:1:475:C:H4'	50:1:510:C:H5'	1.97	0.47
50:1:492:A:H2'	50:1:493:G:O4'	2.14	0.47
50:1:853:C:O2'	50:1:854:C:H5'	2.14	0.47
50:1:1165:A:H2'	50:1:1166:G:H8	1.79	0.47
50:1:1914:C:H5''	50:1:1915:U:H5	1.79	0.47
50:1:2408:U:H2'	50:1:2409:G:C8	2.50	0.47
50:1:2512:C:H2'	50:1:2513:A:O4'	2.14	0.47
50:1:2553:G:C3'	50:1:2554:U:H5''	2.42	0.47
50:1:2781:A:H5''	50:1:2782:G:H5'	1.97	0.47
5:f:25:ILE:HG13	5:f:25:ILE:O	2.15	0.47
20:w:33:ILE:HD12	20:w:33:ILE:N	2.30	0.47
24:B:5:ASN:HD21	50:1:2020:A:H62	1.63	0.47
30:H:21:TRP:HZ3	30:H:23:ALA:HB3	1.80	0.47
37:O:51:VAL:HB	41:S:80:ARG:HB2	1.97	0.47
44:V:46:HIS:N	44:V:72:TRP:O	2.47	0.47
49:3:658:C:O2'	49:3:659:U:H5'	2.14	0.47
49:3:911:U:H2'	49:3:912:C:C6	2.50	0.47
50:1:171:U:H2'	50:1:172:A:C8	2.50	0.47
50:1:1326:U:H2'	50:1:1327:A:C8	2.50	0.47
50:1:2256:G:H2'	50:1:2257:U:O4'	2.15	0.47
54:8:55:ARG:NH1	54:8:99:THR:O	2.47	0.47
3:d:143:LEU:HA	3:d:185:LYS:HZ2	1.80	0.47
3:d:184:ASP:OD1	3:d:184:ASP:N	2.46	0.47
6:g:72:ILE:HB	6:g:108:VAL:HG22	1.97	0.47
21:x:4:CYS:HB3	21:x:9:LYS:H	1.79	0.47
22:y:9:LYS:HB3	22:y:12:GLU:HB2	1.96	0.47
30:H:156:LEU:HD21	30:H:163:ARG:HB2	1.95	0.47
33:K:78:PHE:HD1	33:K:84:VAL:HG11	1.80	0.47
42:T:44:GLU:O	42:T:45:HIS:HB2	2.15	0.47
43:U:71:VAL:O	43:U:75:ILE:HG13	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:Y:66:ILE:HG23	47:Y:70:LYS:CD	2.45	0.47
50:1:1173:U:H1'	50:1:1177:G:C6	2.50	0.47
50:1:1744:A:H3'	50:1:1745:A:H8	1.79	0.47
50:1:1869:G:H2'	50:1:1870:C:H5''	1.97	0.47
1:b:86:ARG:CD	50:1:1817:G:H5''	2.38	0.47
1:b:164:VAL:CG2	1:b:174:ARG:HG3	2.45	0.47
21:x:2:ARG:NE	50:1:1364:G:H5''	2.30	0.47
29:G:113:LEU:HD12	29:G:143:LEU:HB3	1.97	0.47
33:K:38:ARG:C	33:K:39:LEU:HD22	2.40	0.47
34:L:3:ARG:NE	49:3:932:C:O3'	2.47	0.47
43:U:58:ALA:HA	43:U:61:VAL:CG2	2.45	0.47
44:V:59:GLU:OE1	44:V:78:VAL:HG23	2.15	0.47
46:X:55:GLN:OE1	49:3:986:U:O2'	2.33	0.47
49:3:664:G:N2	49:3:741:G:H1	2.11	0.47
49:3:1064:G:H1'	49:3:1190:G:N2	2.29	0.47
49:3:1171:A:H2'	49:3:1172:C:C6	2.50	0.47
49:3:1402:C:H2'	49:3:1403:C:O4'	2.14	0.47
49:3:1436:U:H2'	49:3:1437:A:C8	2.50	0.47
50:1:279:A:H62	50:1:361:G:H21	1.63	0.47
50:1:1306:C:N4	50:1:1606:C:H2'	2.30	0.47
50:1:1386:C:H2'	50:1:1387:A:C8	2.50	0.47
50:1:2544:G:H2'	50:1:2545:G:H8	1.80	0.47
52:5:23:C:H2'	52:5:24:U:C6	2.50	0.47
2:c:129:THR:HG22	50:1:1997:C:P	2.55	0.46
4:e:55:ASP:O	4:e:59:ILE:HG12	2.15	0.46
6:g:12:LEU:HD12	6:g:12:LEU:O	2.14	0.46
11:n:90:ARG:HH22	11:n:116:VAL:HG21	1.80	0.46
13:p:63:ILE:HD12	13:p:63:ILE:H	1.79	0.46
14:q:104:ALA:O	14:q:108:LEU:HD13	2.16	0.46
31:I:7:LYS:HD2	31:I:20:LEU:HB3	1.96	0.46
31:I:11:SER:HA	31:I:18:LEU:HD12	1.97	0.46
31:I:115:GLN:NE2	49:3:406:G:N3	2.62	0.46
40:R:102:LYS:HD2	49:3:1226:C:H42	1.78	0.46
41:S:8:ARG:O	41:S:12:ARG:HG3	2.14	0.46
41:S:28:ALA:HB3	41:S:29:ILE:HD12	1.96	0.46
45:W:60:ARG:NH2	49:3:736:C:H5''	2.30	0.46
48:Z:23:GLU:C	48:Z:25:ALA:H	2.23	0.46
49:3:717:U:C2'	49:3:734:G:H5'	2.44	0.46
49:3:1471:U:O2'	49:3:1472:U:H5'	2.15	0.46
50:1:662:G:O2'	50:1:663:G:H5'	2.15	0.46
50:1:1050:A:H1'	50:1:2751:G:N2	2.30	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:1550:C:H2'	50:1:1551:A:C8	2.49	0.46
50:1:2543:G:H2'	50:1:2544:G:H8	1.80	0.46
4:e:169:LEU:HA	4:e:172:PHE:HD2	1.80	0.46
7:j:120:ARG:NE	50:1:2780:G:OP2	2.48	0.46
14:q:35:PHE:O	14:q:38:VAL:HG12	2.14	0.46
14:q:91:ARG:H	14:q:91:ARG:HD2	1.79	0.46
17:t:67:VAL:HB	17:t:76:ARG:HE	1.81	0.46
25:C:39:ASP:OD2	25:C:42:VAL:HG22	2.14	0.46
34:L:14:ASP:OD1	34:L:43:TYR:OH	2.32	0.46
35:M:76:ARG:NH1	35:M:78:SER:O	2.48	0.46
37:O:77:VAL:HG23	37:O:78:GLU:OE2	2.14	0.46
44:V:64:ARG:O	44:V:66:LEU:HD12	2.16	0.46
46:X:5:LYS:HG3	46:X:6:LYS:HZ3	1.80	0.46
49:3:596:A:H61	49:3:644:U:H3	1.62	0.46
49:3:616:G:H2'	49:3:617:G:H8	1.80	0.46
49:3:1417:G:H2'	49:3:1482:G:N2	2.31	0.46
50:1:337:C:H2'	50:1:338:G:O4'	2.15	0.46
50:1:794:A:H2'	50:1:795:C:H6	1.80	0.46
50:1:1281:G:H2'	50:1:1282:U:C6	2.50	0.46
50:1:1765:U:H2'	50:1:1766:G:H8	1.80	0.46
50:1:1893:C:C2'	50:1:1894:C:H5'	2.45	0.46
54:8:50:GLU:HG2	54:8:51:TYR:N	2.28	0.46
1:b:175:LEU:HD13	50:1:1799:G:C4	2.49	0.46
2:c:37:VAL:HG22	2:c:48:ILE:HG22	1.98	0.46
8:k:49:ARG:NH1	49:3:1422:G:O3'	2.44	0.46
29:G:32:GLY:HA3	29:G:39:ILE:HB	1.98	0.46
31:I:144:ILE:CG2	31:I:177:MET:HG3	2.42	0.46
33:K:61:LEU:C	33:K:61:LEU:HD23	2.40	0.46
37:O:32:THR:HB	37:O:82:LYS:HG3	1.97	0.46
39:Q:106:VAL:HG22	39:Q:116:TYR:HB3	1.96	0.46
43:U:61:VAL:HA	43:U:65:ALA:HB3	1.95	0.46
49:3:422:C:H4'	49:3:423:G:N2	2.30	0.46
49:3:528:C:P	54:8:125:LYS:HE3	2.56	0.46
49:3:730:G:C2'	49:3:731:G:H5'	2.46	0.46
49:3:1131:G:H22	49:3:1144:G:H4'	1.79	0.46
49:3:1410:A:H2'	49:3:1411:C:C6	2.50	0.46
50:1:210:C:H2'	50:1:211:C:C6	2.50	0.46
50:1:268:C:H2'	50:1:269:C:H6	1.80	0.46
50:1:329:G:C1'	50:1:477:A:H1'	2.45	0.46
50:1:542:C:H2'	50:1:543:G:C8	2.50	0.46
50:1:861:A:H2'	50:1:862:G:O4'	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:1062:G:H2'	50:1:1063:G:C8	2.51	0.46
50:1:1178:C:O2	50:1:1178:C:H2'	2.16	0.46
50:1:1557:C:H5''	50:1:1559:U:O4	2.16	0.46
50:1:2194:U:H2'	50:1:2195:U:C6	2.50	0.46
50:1:2819:G:H2'	50:1:2821:A:N7	2.30	0.46
54:8:73:LYS:HG2	54:8:75:GLN:CD	2.41	0.46
6:g:85:GLY:HA3	6:g:89:LYS:HB3	1.95	0.46
11:n:1:MET:SD	11:n:1:MET:N	2.85	0.46
12:o:105:ALA:HA	12:o:108:ASP:OD2	2.15	0.46
13:p:92:ARG:HG3	50:1:2849:U:OP2	2.16	0.46
15:r:51:VAL:HG13	15:r:52:PRO:HD2	1.98	0.46
18:u:5:ARG:HB2	50:1:85:G:OP1	2.16	0.46
19:v:80:HIS:CE1	19:v:83:LYS:H	2.33	0.46
39:Q:20:VAL:HG23	39:Q:94:TYR:HE1	1.79	0.46
40:R:22:TYR:CD1	49:3:1330:U:H4'	2.50	0.46
44:V:22:VAL:HG22	44:V:23:ALA:N	2.31	0.46
49:3:543:U:H2'	49:3:544:G:C8	2.51	0.46
50:1:864:G:H2'	50:1:865:C:C6	2.51	0.46
50:1:1026:G:H2'	50:1:1027:A:H8	1.81	0.46
50:1:1071:G:H1'	50:1:1089:A:C5	2.51	0.46
50:1:1295:C:H2'	50:1:1296:G:C8	2.51	0.46
50:1:1447:C:H2'	50:1:1448:G:C8	2.51	0.46
50:1:2286:G:H5'	50:1:2287:A:H1'	1.97	0.46
2:c:200:ASP:C	2:c:201:LEU:HD12	2.41	0.46
3:d:18:THR:HG22	3:d:106:LYS:HD3	1.98	0.46
4:e:36:ASN:O	4:e:151:LEU:HB2	2.16	0.46
8:k:4:GLU:HB3	8:k:5:GLN:NE2	2.29	0.46
8:k:65:THR:H	8:k:79:PHE:HD2	1.63	0.46
13:p:23:ASP:OD2	13:p:88:ARG:HA	2.16	0.46
14:q:65:ASN:HD21	14:q:69:ARG:HE	1.64	0.46
18:u:61:GLU:OE1	18:u:61:GLU:N	2.48	0.46
24:B:14:MET:HB3	50:1:2045:C:O3'	2.16	0.46
30:H:14:VAL:HG23	30:H:15:LYS:HG3	1.97	0.46
31:I:10:LEU:O	31:I:10:LEU:HD23	2.15	0.46
32:J:10:LEU:HG	32:J:38:VAL:HG22	1.97	0.46
32:J:44:ARG:NH1	32:J:72:ASN:OD1	2.48	0.46
34:L:91:ARG:HB3	34:L:93:VAL:HG22	1.98	0.46
36:N:33:SER:H	36:N:36:GLN:HB3	1.80	0.46
37:O:6:ILE:HD12	37:O:6:ILE:N	2.31	0.46
38:P:85:VAL:HG21	38:P:92:ARG:HB2	1.98	0.46
47:Y:78:LEU:O	47:Y:82:ILE:HG12	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:1038:C:H2'	49:3:1039:G:C8	2.51	0.46
50:1:690:G:H2'	50:1:691:C:H6	1.81	0.46
50:1:1848:A:H2'	50:1:1849:G:O4'	2.15	0.46
50:1:1971:U:H5'	50:1:1972:G:H5''	1.97	0.46
50:1:2415:G:H2'	50:1:2416:C:C6	2.51	0.46
50:1:2773:C:H2'	50:1:2774:C:H6	1.81	0.46
7:j:108:MET:HE1	50:1:1138:G:N2	2.31	0.46
13:p:8:GLU:HB2	13:p:54:LEU:HB2	1.97	0.46
14:q:91:ARG:H	14:q:91:ARG:CD	2.28	0.46
17:t:29:THR:OG1	17:t:86:THR:HG22	2.15	0.46
18:u:4:ILE:HD12	18:u:4:ILE:N	2.31	0.46
19:v:46:LYS:HE3	50:1:1039:A:O3'	2.16	0.46
31:l:6:PRO:HG2	49:3:428:G:OP2	2.15	0.46
33:K:86:ARG:HH12	49:3:673:A:H4'	1.80	0.46
39:Q:26:CYS:HB3	39:Q:29:LYS:HE2	1.97	0.46
40:R:3:ILE:HD13	40:R:56:ARG:HG2	1.97	0.46
42:T:47:LYS:O	42:T:49:HIS:N	2.47	0.46
49:3:583:A:H2'	49:3:584:G:O4'	2.16	0.46
50:1:64:A:H2'	50:1:65:U:C6	2.50	0.46
50:1:135:U:H3	50:1:144:A:H61	1.64	0.46
50:1:141:G:H5''	50:1:142:A:C4	2.50	0.46
50:1:1173:U:H1'	50:1:1177:G:N1	2.30	0.46
50:1:1309:G:H21	50:1:1611:C:H5''	1.81	0.46
50:1:1344:U:H3'	50:1:1345:C:H5'	1.96	0.46
50:1:1732:C:O2'	50:1:1733:G:H5'	2.15	0.46
50:1:2118:U:C5	50:1:2148:G:H1'	2.51	0.46
50:1:2404:U:H2'	50:1:2405:G:O4'	2.15	0.46
50:1:2773:C:H2'	50:1:2774:C:C6	2.51	0.46
51:2:106:G:C2	51:2:107:G:H1'	2.51	0.46
3:d:104:ALA:O	3:d:108:ILE:HG13	2.16	0.46
5:f:3:VAL:HG23	50:1:2751:G:H5'	1.97	0.46
8:k:48:PRO:HB2	8:k:49:ARG:HH11	1.80	0.46
9:l:32:GLY:HA2	50:1:1190:G:P	2.56	0.46
9:l:90:VAL:CG2	9:l:122:VAL:HA	2.46	0.46
27:E:24:LYS:HB2	27:E:46:LYS:NZ	2.30	0.46
29:G:106:VAL:O	29:G:110:ILE:HG13	2.16	0.46
31:l:39:GLN:HE22	49:3:511:C:H1'	1.80	0.46
33:K:92:THR:HG22	33:K:94:HIS:H	1.81	0.46
38:P:31:VAL:HB	38:P:44:ALA:HB3	1.97	0.46
45:W:38:ILE:O	49:3:720:C:H5'	2.16	0.46
47:Y:29:THR:HG21	49:3:1457:G:O3'	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:665:A:O4'	49:3:733:G:H1'	2.15	0.46
49:3:1195:C:H2'	49:3:1197:A:O4'	2.16	0.46
50:1:74:A:H4'	50:1:75:G:O5'	2.15	0.46
50:1:383:C:H41	50:1:385:C:H2'	1.81	0.46
50:1:519:U:H2'	50:1:520:G:C8	2.51	0.46
50:1:744:U:H2'	50:1:745:G:O4'	2.16	0.46
50:1:1004:U:H3	50:1:1151:A:H61	1.62	0.46
50:1:1570:A:H2'	50:1:1571:A:C8	2.51	0.46
50:1:1794:A:H2'	50:1:1795:C:H6	1.81	0.46
50:1:2189:U:H2'	50:1:2190:G:C8	2.51	0.46
50:1:2302:U:H2'	50:1:2303:G:C8	2.50	0.46
50:1:2623:G:H2'	50:1:2624:G:H8	1.80	0.46
2:c:12:THR:OG1	2:c:13:ARG:N	2.47	0.46
2:c:151:THR:CB	2:c:152:PRO:HD3	2.41	0.46
3:d:146:VAL:HA	3:d:185:LYS:O	2.16	0.46
5:f:71:LEU:HD13	5:f:74:MET:HE3	1.98	0.46
12:o:6:ALA:O	12:o:9:ARG:HG2	2.15	0.46
13:p:102:ARG:HD3	13:p:106:ALA:O	2.15	0.46
16:s:90:LYS:HA	50:1:751:A:C5'	2.46	0.46
20:w:56:PHE:CZ	50:1:2365:G:H4'	2.51	0.46
34:L:83:THR:HG23	34:L:83:THR:O	2.15	0.46
36:N:74:GLN:O	36:N:78:ILE:HG12	2.15	0.46
38:P:20:ALA:HA	38:P:33:ILE:HA	1.97	0.46
38:P:80:ASN:HA	38:P:105:ARG:HB3	1.97	0.46
39:Q:113:ARG:NH1	39:Q:121:PRO:HD2	2.31	0.46
40:R:7:ASN:HD22	40:R:21:ILE:HD11	1.80	0.46
40:R:25:GLY:H	49:3:1329:A:H5''	1.81	0.46
44:V:11:VAL:HB	44:V:55:GLY:H	1.81	0.46
49:3:149:A:N3	49:3:149:A:H2'	2.30	0.46
49:3:721:G:H4'	49:3:722:G:O4'	2.15	0.46
49:3:1105:A:H2'	49:3:1106:G:H8	1.81	0.46
49:3:1218:C:H2'	49:3:1219:A:H8	1.80	0.46
49:3:1415:G:H2'	49:3:1416:G:C8	2.49	0.46
50:1:36:G:O2'	50:1:37:C:H5'	2.15	0.46
50:1:783:A:H4'	50:1:2588:G:H4'	1.97	0.46
50:1:992:C:H2'	50:1:993:G:C8	2.51	0.46
7:j:100:VAL:CG1	7:j:101:ILE:HD12	2.32	0.46
10:m:4:PRO:HG3	10:m:68:PHE:CE2	2.44	0.46
12:o:63:LYS:HD3	12:o:63:LYS:C	2.41	0.46
17:t:60:THR:O	50:1:1341:G:H4'	2.16	0.46
26:D:44:VAL:HG13	26:D:44:VAL:O	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:G:44:LYS:C	29:G:47:PRO:HD2	2.41	0.46
45:W:70:THR:OG1	45:W:71:ASP:N	2.49	0.46
49:3:79:G:O2'	49:3:80:A:H5'	2.15	0.46
49:3:724:G:H2'	49:3:725:G:C8	2.51	0.46
49:3:1385:G:H2'	49:3:1386:G:C8	2.51	0.46
49:3:1510:C:H2'	49:3:1511:G:C8	2.51	0.46
50:1:210:C:H2'	50:1:211:C:H6	1.81	0.46
50:1:281:C:H2'	50:1:282:A:C5	2.51	0.46
50:1:601:C:O2'	50:1:605:G:H5''	2.15	0.46
50:1:1177:G:C4	50:1:1178:C:H1'	2.51	0.46
50:1:2087:G:H2'	50:1:2088:A:H8	1.81	0.46
50:1:2710:C:H2'	50:1:2711:A:C8	2.50	0.46
1:b:73:ILE:HG12	50:1:1490:A:N1	2.30	0.46
1:b:164:VAL:HB	1:b:172:THR:OG1	2.15	0.46
1:b:203:VAL:HG23	50:1:1792:G:H5''	1.98	0.46
5:f:136:ASP:HB3	5:f:139:VAL:HG12	1.98	0.46
7:j:57:LEU:HD23	7:j:57:LEU:N	2.31	0.46
21:x:32:LEU:HD12	21:x:49:ARG:HG2	1.96	0.46
34:L:110:ARG:NH1	34:L:122:GLU:OE2	2.48	0.46
43:U:70:ARG:HD3	49:3:375:U:OP1	2.15	0.46
49:3:75:G:H2'	49:3:76:G:H5'	1.98	0.46
49:3:148:G:H2'	49:3:149:A:C1'	2.45	0.46
49:3:818:G:H3'	49:3:819:A:H5'	1.96	0.46
50:1:145:C:H2'	50:1:146:A:C8	2.51	0.46
50:1:207:A:H2'	50:1:208:C:O4'	2.16	0.46
50:1:282:A:N6	50:1:357:C:N4	2.64	0.46
50:1:548:G:C2'	50:1:549:G:H4'	2.46	0.46
50:1:801:G:H3'	50:1:802:A:H5'	1.98	0.46
50:1:1071:G:OP1	50:1:1071:G:H3'	2.16	0.46
50:1:1956:U:C2'	50:1:1957:C:H5'	2.46	0.46
51:2:3:C:H42	51:2:117:G:H1	1.64	0.46
51:2:106:G:N2	51:2:107:G:H1'	2.30	0.46
1:b:22:GLU:CD	1:b:22:GLU:H	2.24	0.45
6:g:109:GLU:H	6:g:109:GLU:CD	2.24	0.45
7:j:68:LYS:HA	7:j:71:ASP:OD1	2.16	0.45
15:r:29:THR:HA	15:r:63:VAL:HG13	1.98	0.45
26:D:7:PRO:HA	50:1:686:U:O2	2.16	0.45
27:E:31:ILE:HA	50:1:2420:C:OP2	2.16	0.45
29:G:22:TRP:HE1	49:3:830:G:H5'	1.81	0.45
30:H:109:GLU:HB2	30:H:143:LEU:HD22	1.98	0.45
32:J:86:GLY:O	32:J:138:ALA:HB1	2.15	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:O:21:ALA:O	37:O:25:ILE:HG12	2.16	0.45
37:O:29:ALA:O	37:O:33:GLY:N	2.49	0.45
42:T:14:PHE:O	42:T:16:ARG:NH2	2.48	0.45
44:V:6:THR:O	44:V:7:LEU:HD23	2.15	0.45
48:Z:46:ARG:HD3	49:3:1532:U:O4	2.15	0.45
49:3:212:G:H2'	49:3:213:G:H8	1.82	0.45
49:3:770:C:H1'	49:3:900:A:H2	1.81	0.45
49:3:976:G:N2	49:3:1362:A:H2'	2.31	0.45
49:3:990:C:H2'	49:3:991:U:O4'	2.16	0.45
49:3:1345:U:H4'	49:3:1346:A:C8	2.49	0.45
50:1:8:C:H2'	50:1:9:G:O4'	2.17	0.45
50:1:948:C:H2'	50:1:949:G:C8	2.51	0.45
50:1:1722:A:H2'	50:1:1723:G:O4'	2.17	0.45
50:1:1915:U:O2	54:8:102:LYS:HD2	2.17	0.45
52:5:5:G:H2'	52:5:6:G:H8	1.79	0.45
52:5:42:G:H2'	52:5:43:A:H8	1.81	0.45
52:5:44:A:H2'	52:5:45:G:O4'	2.16	0.45
3:d:73:ILE:HD12	3:d:73:ILE:H	1.81	0.45
3:d:79:ARG:HH21	50:1:448:U:H4'	1.81	0.45
13:p:30:TRP:CD2	13:p:37:LYS:HE3	2.51	0.45
17:t:15:HIS:HB3	17:t:31:VAL:HG13	1.97	0.45
27:E:50:SER:O	27:E:53:ASP:OD1	2.35	0.45
29:G:94:ARG:HH12	49:3:1100:C:H3'	1.80	0.45
34:L:1:PRO:HD2	34:L:4:ARG:O	2.16	0.45
38:P:121:ARG:HD2	49:3:778:G:H21	1.82	0.45
40:R:101:THR:HG21	49:3:1226:C:OP2	2.16	0.45
42:T:68:TYR:HD1	42:T:71:ARG:HH12	1.64	0.45
49:3:40:C:H2'	49:3:41:G:H8	1.81	0.45
49:3:555:U:H2'	49:3:556:C:C6	2.51	0.45
50:1:826:U:H5''	50:1:2429:G:P	2.56	0.45
50:1:1177:G:H2'	50:1:1178:C:H4'	1.97	0.45
50:1:1637:A:H2'	50:1:1638:C:C6	2.52	0.45
50:1:2360:G:C2'	50:1:2361:G:H5'	2.45	0.45
50:1:2584:U:H4'	54:8:25:ALA:HA	1.98	0.45
50:1:2799:A:H2'	50:1:2800:A:H5'	1.98	0.45
1:b:93:VAL:HG12	1:b:101:ARG:O	2.16	0.45
2:c:14:ILE:HD12	13:p:11:GLN:HE22	1.82	0.45
4:e:15:LEU:HD22	4:e:168:LEU:HD11	1.97	0.45
6:g:49:ALA:HA	6:g:53:GLU:HG3	1.98	0.45
9:l:74:THR:HA	9:l:105:ILE:HG23	1.98	0.45
12:o:4:LYS:NZ	12:o:7:ARG:HH21	2.13	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:r:68:ARG:HB3	15:r:90:ARG:HB3	1.98	0.45
17:t:73:ARG:HD3	50:1:65:U:H1'	1.97	0.45
30:H:19:SER:O	41:S:93:PRO:HG3	2.16	0.45
31:I:16:THR:HG22	31:I:17:ASP:N	2.31	0.45
35:M:35:ILE:HG13	35:M:36:ALA:N	2.31	0.45
44:V:77:VAL:HG11	44:V:80:LYS:HZ3	1.80	0.45
47:Y:20:ASN:HD22	49:3:323:U:H5''	1.80	0.45
47:Y:34:VAL:HG11	47:Y:78:LEU:HD13	1.98	0.45
48:Z:22:CYS:SG	48:Z:23:GLU:N	2.90	0.45
49:3:125:U:H2'	49:3:126:G:C8	2.51	0.45
49:3:229:U:H2'	49:3:230:G:C8	2.51	0.45
49:3:1269:A:C4'	49:3:1326:U:H4'	2.46	0.45
50:1:64:A:H2'	50:1:65:U:C5	2.51	0.45
50:1:1173:U:H2'	50:1:1176:U:H3	1.82	0.45
50:1:1440:U:H2'	50:1:1441:G:H8	1.81	0.45
50:1:1773:A:C5	50:1:1829:A:H1'	2.51	0.45
50:1:1873:G:O2'	50:1:1874:C:H5'	2.16	0.45
50:1:2166:U:H3	50:1:2171:A:H2	1.64	0.45
50:1:2591:C:H2'	50:1:2592:G:H8	1.81	0.45
1:b:145:MET:HE1	50:1:1800:C:C3'	2.45	0.45
2:c:107:VAL:HG22	2:c:108:ASP:N	2.32	0.45
2:c:173:GLN:NE2	50:1:2772:C:H5'	2.31	0.45
11:n:47:VAL:O	11:n:50:PRO:HD2	2.17	0.45
12:o:65:THR:HG23	12:o:65:THR:O	2.16	0.45
16:s:71:VAL:HG13	16:s:71:VAL:O	2.16	0.45
20:w:15:LYS:HB2	20:w:17:LEU:CD2	2.46	0.45
23:z:18:LYS:CD	50:1:850:U:H5''	2.46	0.45
31:I:94:GLU:HA	31:I:99:ASN:ND2	2.32	0.45
31:I:169:TRP:CD2	31:I:185:PRO:HG3	2.51	0.45
32:J:98:ALA:HB3	32:J:122:VAL:HA	1.99	0.45
33:K:19:PRO:O	33:K:22:ILE:HB	2.15	0.45
42:T:61:GLN:O	42:T:65:LEU:HG	2.17	0.45
43:U:60:TRP:HZ3	43:U:63:GLN:HE21	1.64	0.45
44:V:60:ILE:HD11	44:V:72:TRP:CB	2.45	0.45
45:W:35:SER:OG	45:W:37:LYS:HG2	2.16	0.45
46:X:76:THR:HG21	49:3:1221:G:H4'	1.98	0.45
47:Y:54:GLN:N	47:Y:55:PRO:HD2	2.32	0.45
49:3:1527:U:H2'	49:3:1528:U:C6	2.51	0.45
50:1:3:U:H2'	50:1:4:U:C6	2.52	0.45
50:1:194:G:H2'	50:1:195:A:O4'	2.17	0.45
50:1:796:C:H2'	50:1:797:G:C8	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:962:G:H2'	50:1:963:U:C6	2.51	0.45
50:1:1682:G:H2'	50:1:1683:U:C6	2.51	0.45
52:5:76:A:H5'	54:8:26:GLY:O	2.16	0.45
54:8:4:ILE:HD12	54:8:9:ALA:HA	1.97	0.45
5:f:8:VAL:HB	5:f:49:LEU:HB2	1.99	0.45
12:o:64:TYR:HB3	12:o:67:ASN:ND2	2.32	0.45
13:p:61:ARG:HG3	13:p:70:GLU:OE2	2.17	0.45
15:r:39:LEU:O	15:r:49:ILE:HG23	2.16	0.45
15:r:63:VAL:HA	15:r:96:VAL:HG12	1.97	0.45
18:u:39:ASN:O	18:u:62:ALA:N	2.46	0.45
21:x:39:VAL:HG22	21:x:42:GLU:H	1.80	0.45
31:I:90:LEU:HD13	31:I:187:ARG:HD3	1.99	0.45
31:I:122:ILE:N	31:I:122:ILE:HD12	2.32	0.45
32:J:148:SER:OG	32:J:149:PRO:HD2	2.17	0.45
35:M:40:LYS:NZ	35:M:47:ASP:HB2	2.31	0.45
37:O:9:ARG:HD2	37:O:71:LEU:HD12	1.98	0.45
37:O:15:HIS:HB3	37:O:70:HIS:NE2	2.32	0.45
41:S:8:ARG:HB3	41:S:12:ARG:HH12	1.81	0.45
44:V:15:LYS:CD	49:3:275:G:H5'	2.46	0.45
49:3:16:A:O2'	49:3:17:U:H5'	2.17	0.45
49:3:180:U:H2'	49:3:181:A:O4'	2.17	0.45
49:3:285:C:H2'	49:3:286:C:H6	1.82	0.45
49:3:846:G:H2'	49:3:846:G:N3	2.32	0.45
49:3:996:A:H2'	49:3:997:U:C6	2.52	0.45
49:3:1457:G:H2'	49:3:1458:G:H8	1.82	0.45
50:1:5:A:H2'	50:1:6:A:C8	2.51	0.45
50:1:353:C:H2'	50:1:354:A:C8	2.52	0.45
50:1:395:U:H2'	50:1:396:G:H8	1.79	0.45
50:1:603:A:N6	50:1:655:A:H5'	2.31	0.45
50:1:1304:A:H2'	50:1:1305:C:C5'	2.41	0.45
50:1:1773:A:C6	50:1:1829:A:H1'	2.52	0.45
50:1:1866:A:H3'	50:1:1867:G:H8	1.81	0.45
50:1:1998:A:H2'	50:1:1999:C:C6	2.52	0.45
1:b:48:ILE:HG23	1:b:48:ILE:O	2.16	0.45
4:e:3:LEU:HD12	4:e:100:GLU:HG3	1.98	0.45
4:e:77:LYS:HE3	52:5:57:A:H5'	1.99	0.45
6:g:124:THR:OG1	6:g:128:HIS:NE2	2.44	0.45
7:j:41:LYS:HB3	7:j:43:GLU:CD	2.40	0.45
14:q:23:TYR:HE2	50:1:533:G:H4'	1.82	0.45
19:v:48:MET:SD	19:v:51:GLN:NE2	2.90	0.45
30:H:13:ILE:N	30:H:13:ILE:HD12	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:I:57:LYS:HA	31:I:60:VAL:HG22	1.99	0.45
38:P:63:GLN:OE1	38:P:98:ALA:HB2	2.16	0.45
41:S:79:SER:O	41:S:83:VAL:HG13	2.16	0.45
45:W:60:ARG:HH21	49:3:736:C:H5''	1.81	0.45
47:Y:34:VAL:O	47:Y:38:ILE:HG13	2.16	0.45
47:Y:54:GLN:HB3	47:Y:55:PRO:CD	2.46	0.45
49:3:428:G:H5'	49:3:430:A:H1'	1.98	0.45
50:1:948:C:H2'	50:1:949:G:H8	1.82	0.45
50:1:967:U:H2'	50:1:968:C:C6	2.51	0.45
1:b:106:PRO:HD2	1:b:109:LEU:CD2	2.47	0.45
2:c:77:ARG:HG3	2:c:77:ARG:NH2	2.31	0.45
3:d:181:ILE:HD13	9:l:6:LEU:HD11	1.99	0.45
5:f:65:GLY:HA3	50:1:2748:A:O2'	2.16	0.45
10:m:69:PRO:HA	10:m:94:ALA:HB2	1.98	0.45
10:m:75:GLU:HG2	50:1:957:C:C5'	2.46	0.45
13:p:19:PHE:HE2	13:p:49:ILE:HG12	1.82	0.45
16:s:88:ARG:H	50:1:1614:A:N6	2.15	0.45
19:v:72:VAL:HG12	19:v:73:LYS:N	2.32	0.45
24:B:3:GLN:HA	50:1:2615:U:C2	2.52	0.45
30:H:110:LEU:HD13	30:H:143:LEU:HD23	1.99	0.45
30:H:120:THR:HA	30:H:123:LEU:HD12	1.98	0.45
35:M:4:ASP:HB2	35:M:80:PRO:HG3	1.99	0.45
38:P:17:ASP:OD1	38:P:17:ASP:N	2.49	0.45
45:W:62:ARG:NH2	49:3:718:A:H61	2.14	0.45
50:1:589:U:H2'	50:1:590:A:C8	2.52	0.45
50:1:1585:C:H2'	50:1:1586:A:O4'	2.16	0.45
50:1:2626:C:O2'	50:1:2627:G:H5'	2.16	0.45
50:1:2734:A:H2'	50:1:2735:G:H5'	1.99	0.45
54:8:22:ALA:N	54:8:37:ILE:HG13	2.32	0.45
1:b:106:PRO:HG2	1:b:109:LEU:HB2	1.98	0.45
7:j:35:ARG:HG2	7:j:35:ARG:HH11	1.80	0.45
7:j:109:LEU:HD13	7:j:110:PRO:HD2	1.98	0.45
8:k:107:LEU:O	8:k:109:SER:N	2.48	0.45
22:y:9:LYS:HB3	22:y:12:GLU:CB	2.47	0.45
25:C:5:ARG:CZ	25:C:24:LYS:HA	2.47	0.45
30:H:165:GLU:N	30:H:165:GLU:OE1	2.50	0.45
32:J:55:VAL:N	32:J:56:PRO:HD2	2.31	0.45
36:N:44:ARG:H	36:N:44:ARG:CD	2.29	0.45
39:Q:87:LYS:HG3	39:Q:87:LYS:O	2.17	0.45
41:S:57:SER:HB2	49:3:1316:G:H4'	1.99	0.45
42:T:63:ARG:HG2	42:T:87:ARG:HH22	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:Z:46:ARG:NH1	49:3:1531:A:H62	2.14	0.45
49:3:202:G:H2'	49:3:203:G:C8	2.52	0.45
50:1:463:G:N1	50:1:467:G:C6	2.85	0.45
50:1:1146:C:H2'	50:1:1147:A:H8	1.82	0.45
50:1:1780:A:O2'	50:1:1781:U:H2'	2.16	0.45
50:1:1842:G:H2'	50:1:1843:C:C6	2.52	0.45
50:1:2206:C:H2'	50:1:2207:C:C6	2.52	0.45
50:1:2286:G:C5'	50:1:2287:A:O4'	2.65	0.45
50:1:2741:A:H2'	50:1:2742:G:O4'	2.17	0.45
50:1:2849:U:H1'	50:1:2866:U:O2	2.17	0.45
5:f:114:HIS:CD2	5:f:147:LEU:HD21	2.52	0.45
35:M:6:ILE:H	35:M:6:ILE:CD1	2.26	0.45
41:S:15:LEU:HD13	41:S:53:ASP:CG	2.42	0.45
45:W:38:ILE:H	45:W:38:ILE:HD12	1.82	0.45
49:3:551:U:H2'	49:3:552:U:C6	2.52	0.45
49:3:604:G:H2'	49:3:605:U:O4'	2.17	0.45
49:3:760:G:H2'	49:3:761:G:H5'	1.99	0.45
49:3:1158:C:H3'	49:3:1158:C:O2	2.16	0.45
50:1:992:C:H2'	50:1:993:G:H8	1.81	0.45
50:1:1335:C:H2'	50:1:1336:A:C8	2.52	0.45
50:1:1589:U:H2'	50:1:1590:A:C8	2.52	0.45
50:1:1906:G:C3'	50:1:1907:G:H5''	2.47	0.45
50:1:1977:A:H2'	50:1:1978:A:O4'	2.16	0.45
50:1:2372:U:H2'	50:1:2373:G:C8	2.52	0.45
51:2:55:U:O2'	51:2:56:G:H5'	2.16	0.45
5:f:88:LEU:HD22	5:f:128:THR:HA	1.99	0.45
5:f:93:TYR:OH	5:f:151:ARG:NH1	2.49	0.45
13:p:91:VAL:HG11	13:p:96:LEU:HD11	1.98	0.45
19:v:80:HIS:CG	19:v:81:PRO:HD2	2.52	0.45
23:z:41:PRO:HA	23:z:44:ARG:HB2	1.98	0.45
28:F:8:LYS:NZ	50:1:1031:G:H5''	2.31	0.45
32:J:80:LEU:N	32:J:121:ASN:HD22	2.14	0.45
33:K:9:MET:HE1	33:K:59:TYR:CZ	2.52	0.45
35:M:8:ASP:O	35:M:11:THR:HG22	2.17	0.45
38:P:88:PRO:HG2	38:P:89:GLY:H	1.82	0.45
40:R:3:ILE:O	40:R:4:ALA:HB3	2.17	0.45
43:U:31:ARG:NH2	49:3:230:G:H5''	2.31	0.45
49:3:955:U:H3	49:3:1225:A:N6	2.09	0.45
50:1:155:A:H2'	50:1:156:A:C8	2.52	0.45
50:1:388:G:H5'	50:1:389:G:OP2	2.17	0.45
50:1:831:G:O2'	50:1:832:U:H5'	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:1173:U:H1'	50:1:1177:G:O6	2.17	0.45
50:1:1418:G:H21	50:1:1580:A:H62	1.64	0.45
50:1:1501:G:H2'	50:1:1502:A:C8	2.52	0.45
50:1:1657:U:O2'	50:1:1658:C:H5'	2.16	0.45
50:1:1857:G:H22	50:1:1884:G:H2'	1.81	0.45
50:1:1858:A:N6	50:1:1884:G:H1'	2.32	0.45
50:1:2740:A:H2'	50:1:2741:A:C8	2.52	0.45
51:2:13:G:N2	51:2:16:G:H1'	2.31	0.45
53:4:17:U:O2'	53:4:18:G:H5'	2.17	0.45
12:o:67:ASN:HA	51:2:50:A:OP2	2.18	0.44
22:y:9:LYS:NZ	22:y:10:SER:OG	2.50	0.44
26:D:30:VAL:HG13	26:D:33:ARG:HH11	1.82	0.44
27:E:39:ARG:HH11	50:1:2362:C:H5''	1.81	0.44
29:G:86:CYS:HA	29:G:221:ARG:HD3	1.99	0.44
30:H:87:ARG:O	30:H:87:ARG:HD3	2.17	0.44
33:K:79:ARG:NE	33:K:79:ARG:HA	2.32	0.44
34:L:56:SER:OG	34:L:59:GLU:HG2	2.17	0.44
35:M:24:VAL:O	35:M:60:LEU:HD23	2.17	0.44
43:U:5:ARG:HB2	49:3:376:G:OP1	2.17	0.44
49:3:309:A:H2'	49:3:310:G:C8	2.49	0.44
49:3:357:G:O2'	49:3:358:U:H5'	2.17	0.44
49:3:505:G:H2'	49:3:506:G:H8	1.82	0.44
49:3:952:U:H5'	49:3:972:C:N4	2.33	0.44
49:3:1096:C:H2'	49:3:1097:C:C6	2.53	0.44
49:3:1522:U:H2'	49:3:1523:G:C8	2.52	0.44
50:1:940:G:C3'	50:1:941:A:H5''	2.47	0.44
50:1:1760:C:H2'	50:1:1761:C:H5'	1.99	0.44
50:1:1764:C:H2'	50:1:1765:U:C6	2.52	0.44
50:1:2247:A:H2'	50:1:2248:C:H6	1.78	0.44
50:1:2538:C:H2'	50:1:2539:C:H6	1.83	0.44
50:1:2573:C:H41	54:8:32:LYS:HG2	1.82	0.44
50:1:2869:G:H2'	50:1:2870:C:O4'	2.17	0.44
14:q:1:ALA:N	50:1:1248:G:OP1	2.50	0.44
24:B:26:SER:C	24:B:27:LEU:HD22	2.41	0.44
29:G:94:ARG:HD3	49:3:1100:C:OP2	2.18	0.44
29:G:129:THR:HG23	29:G:132:GLU:H	1.82	0.44
30:H:126:ARG:NH2	49:3:421:U:O4'	2.50	0.44
30:H:172:VAL:O	30:H:172:VAL:HG13	2.17	0.44
31:I:205:LYS:HB3	49:3:8:A:C6	2.53	0.44
33:K:81:ASN:ND2	33:K:84:VAL:HG12	2.32	0.44
34:L:20:GLU:H	34:L:20:GLU:CD	2.25	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:V:45:VAL:CG2	44:V:60:ILE:HD12	2.47	0.44
44:V:58:VAL:HG12	44:V:77:VAL:HG13	1.99	0.44
48:Z:19:LYS:HB2	48:Z:24:LYS:HG3	1.99	0.44
49:3:40:C:H2'	49:3:41:G:C8	2.52	0.44
49:3:496:A:H2'	49:3:497:G:C8	2.52	0.44
49:3:1261:A:H1'	49:3:1283:U:H5''	1.99	0.44
50:1:370:G:P	50:1:423:A:H62	2.40	0.44
50:1:1196:C:H2'	50:1:1197:G:H8	1.82	0.44
50:1:1664:A:H2'	50:1:1664:A:N3	2.32	0.44
50:1:2796:U:H1'	50:1:2799:A:H61	1.82	0.44
4:e:66:ILE:H	4:e:66:ILE:CD1	2.27	0.44
5:f:120:ILE:HD11	5:f:139:VAL:HG13	1.99	0.44
7:j:93:ILE:O	7:j:97:PRO:HG3	2.17	0.44
14:q:82:LEU:HD21	14:q:87:VAL:HB	1.99	0.44
29:G:3:VAL:HG11	29:G:7:ASP:HB3	2.00	0.44
30:H:148:ILE:HD12	30:H:148:ILE:N	2.31	0.44
34:L:118:ARG:O	34:L:121:ASN:OD1	2.35	0.44
35:M:29:SER:OG	35:M:32:LYS:HG3	2.17	0.44
37:O:66:GLU:OE2	37:O:68:ARG:HG3	2.18	0.44
40:R:96:VAL:HG22	49:3:1308:U:H5''	1.99	0.44
41:S:1:ALA:HB2	49:3:1203:C:OP1	2.16	0.44
41:S:3:GLN:HA	41:S:6:LYS:HE2	1.98	0.44
46:X:43:MET:HE2	46:X:43:MET:HA	1.99	0.44
46:X:49:ALA:HA	46:X:58:PRO:HA	2.00	0.44
49:3:1106:G:O2'	49:3:1107:C:H5'	2.16	0.44
49:3:1300:G:N2	49:3:1334:G:H2'	2.30	0.44
50:1:306:U:H2'	50:1:307:G:O4'	2.17	0.44
50:1:648:G:H2'	50:1:649:G:H8	1.82	0.44
50:1:1689:A:H2'	50:1:1690:A:C8	2.53	0.44
50:1:1951:U:H1'	50:1:1954:G:N7	2.31	0.44
50:1:2143:C:H2'	50:1:2144:G:H5'	1.99	0.44
50:1:2208:C:H2'	50:1:2209:G:H8	1.80	0.44
50:1:2638:G:N2	50:1:2775:G:H2'	2.32	0.44
1:b:167:ASP:OD1	1:b:182:LYS:HE3	2.17	0.44
3:d:2:GLU:HB3	3:d:11:ALA:HB1	2.00	0.44
4:e:78:ILE:HD11	50:1:2311:A:C2	2.53	0.44
6:g:16:GLY:HA2	6:g:47:PHE:CE2	2.53	0.44
8:k:11:ALA:HB2	8:k:64:ARG:HH21	1.82	0.44
8:k:30:ARG:CD	50:1:2674:G:H4'	2.40	0.44
11:n:14:SER:HA	11:n:17:ARG:HB3	1.99	0.44
14:q:16:ILE:HG23	14:q:17:LEU:HD22	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:y:4:LYS:C	22:y:4:LYS:HD3	2.42	0.44
31:I:99:ASN:O	31:I:103:ARG:HG2	2.17	0.44
32:J:86:GLY:O	32:J:93:VAL:HG12	2.18	0.44
37:O:10:LEU:HD23	37:O:10:LEU:H	1.83	0.44
38:P:30:ILE:HD12	38:P:45:THR:HG22	1.99	0.44
49:3:76:G:H22	49:3:92:U:H3	1.66	0.44
49:3:110:C:H2'	49:3:111:G:O4'	2.18	0.44
49:3:1015:G:H1'	49:3:1218:C:O2'	2.18	0.44
49:3:1197:A:C2'	49:3:1198:G:H5''	2.47	0.44
49:3:1354:U:H2'	49:3:1355:G:C8	2.53	0.44
49:3:1369:C:H2'	49:3:1370:G:C8	2.52	0.44
50:1:437:U:H2'	50:1:438:G:H8	1.83	0.44
50:1:572:A:H61	50:1:2029:G:H21	1.65	0.44
50:1:745:G:O2'	50:1:748:G:H1'	2.16	0.44
50:1:1352:U:O2'	50:1:1353:A:H5'	2.17	0.44
50:1:1637:A:H5'	50:1:1760:C:O2'	2.18	0.44
50:1:2747:G:H1	50:1:2754:U:H2'	1.81	0.44
50:1:2759:G:O2'	50:1:2760:C:H5'	2.17	0.44
50:1:2800:A:C4	50:1:2895:G:H1'	2.53	0.44
51:2:101:A:H2'	51:2:102:G:O4'	2.17	0.44
1:b:43:ASN:HB3	1:b:49:THR:HG21	2.00	0.44
3:d:32:VAL:HG13	3:d:33:VAL:N	2.32	0.44
6:g:22:LYS:NZ	50:1:2093:G:OP1	2.43	0.44
11:n:24:MET:HE1	50:1:1277:G:O3'	2.16	0.44
13:p:29:VAL:HG23	13:p:79:VAL:HG22	1.99	0.44
16:s:5:ALA:HB3	16:s:54:ALA:HB2	2.00	0.44
26:D:26:ASN:O	26:D:30:VAL:HG23	2.17	0.44
29:G:104:LYS:HA	29:G:107:ARG:HE	1.83	0.44
30:H:118:SER:O	30:H:121:SER:OG	2.30	0.44
35:M:46:GLU:OE2	35:M:63:LYS:HG2	2.18	0.44
36:N:5:TYR:HB3	36:N:87:MET:HE3	1.99	0.44
36:N:27:ILE:N	36:N:27:ILE:HD12	2.32	0.44
44:V:60:ILE:HD11	44:V:72:TRP:CG	2.53	0.44
45:W:54:LEU:O	45:W:54:LEU:HD23	2.17	0.44
46:X:40:PHE:HD1	46:X:42:ASN:H	1.64	0.44
49:3:182:A:C2'	49:3:183:C:H5''	2.47	0.44
49:3:767:A:H2'	49:3:768:A:O4'	2.17	0.44
50:1:732:C:H2'	50:1:733:G:O4'	2.17	0.44
50:1:1153:C:H2'	50:1:1154:G:O4'	2.17	0.44
50:1:1335:C:H2'	50:1:1336:A:H8	1.83	0.44
50:1:1363:C:H2'	50:1:1364:G:C8	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:1638:C:H5'	50:1:2710:C:O2'	2.18	0.44
50:1:1681:G:N3	50:1:1762:A:H2'	2.33	0.44
50:1:1775:U:C2'	50:1:1776:G:H5'	2.48	0.44
50:1:2001:C:H4'	50:1:2689:U:O2'	2.17	0.44
50:1:2555:U:H2'	50:1:2556:C:H5'	2.00	0.44
54:8:39:LEU:HA	54:8:39:LEU:HD23	1.88	0.44
54:8:131:MET:HG3	54:8:132:ARG:N	2.31	0.44
4:e:84:ILE:CD1	50:1:2312:U:H5'	2.32	0.44
5:f:141:GLY:C	50:1:2745:C:H4'	2.43	0.44
9:l:131:ALA:O	9:l:135:ILE:HG13	2.18	0.44
10:m:133:LYS:O	10:m:133:LYS:HD2	2.17	0.44
28:F:14:CYS:SG	28:F:33:HIS:ND1	2.91	0.44
31:I:100:VAL:O	31:I:104:MET:HB2	2.17	0.44
32:J:76:ASN:HB3	32:J:79:THR:HG23	2.00	0.44
32:J:155:LYS:HB3	35:M:65:PHE:CG	2.53	0.44
33:K:68:GLN:H	33:K:68:GLN:CD	2.26	0.44
34:L:67:ASN:HB2	34:L:129:ASN:HB3	1.99	0.44
35:M:48:PHE:HA	35:M:60:LEU:HA	2.00	0.44
35:M:74:ILE:O	35:M:74:ILE:HG13	2.17	0.44
38:P:100:ASN:ND2	48:Z:12:ASP:OD1	2.47	0.44
49:3:543:U:H2'	49:3:544:G:H8	1.82	0.44
49:3:751:U:C2'	49:3:752:G:H5'	2.47	0.44
49:3:1456:A:H3'	49:3:1457:G:C8	2.53	0.44
50:1:754:U:H2'	50:1:755:U:C6	2.52	0.44
50:1:1979:U:O2'	50:1:1980:G:H5'	2.17	0.44
50:1:2039:U:H2'	50:1:2040:G:H8	1.82	0.44
50:1:2489:U:C2'	50:1:2490:G:H5'	2.48	0.44
54:8:17:ILE:CD1	54:8:40:ARG:HG2	2.48	0.44
54:8:30:VAL:HA	54:8:34:SER:OG	2.18	0.44
54:8:37:ILE:HG23	54:8:74:ALA:O	2.18	0.44
54:8:40:ARG:O	54:8:71:VAL:HA	2.17	0.44
2:c:11:MET:N	2:c:11:MET:SD	2.91	0.44
2:c:142:VAL:HG22	2:c:143:PRO:CD	2.47	0.44
3:d:148:ILE:HB	3:d:169:VAL:HA	2.00	0.44
5:f:122:ALA:HA	5:f:132:LEU:HA	1.99	0.44
20:w:21:ARG:HG3	20:w:27:VAL:HG11	2.00	0.44
24:B:5:ASN:ND2	50:1:2020:A:H62	2.16	0.44
27:E:24:LYS:HD3	27:E:46:LYS:HZ2	1.82	0.44
27:E:51:LYS:C	27:E:51:LYS:HD3	2.43	0.44
27:E:62:PRO:HG2	27:E:63:TYR:CD2	2.53	0.44
33:K:66:ALA:HB1	33:K:67:PRO:CD	2.41	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:O:81:GLU:O	37:O:84:VAL:HG22	2.17	0.44
39:Q:55:ARG:HD3	39:Q:60:PHE:O	2.18	0.44
41:S:52:ARG:HH11	49:3:1219:A:H5''	1.81	0.44
43:U:20:VAL:HA	43:U:35:ARG:HA	1.98	0.44
49:3:1007:U:H2'	49:3:1008:U:C6	2.53	0.44
50:1:650:C:H2'	50:1:651:G:C4'	2.47	0.44
50:1:1167:C:H2'	50:1:1168:G:H8	1.82	0.44
50:1:2356:U:H2'	50:1:2357:G:C8	2.52	0.44
50:1:2818:U:H2'	50:1:2819:G:C8	2.52	0.44
2:c:118:PHE:CE1	2:c:163:GLY:HA2	2.53	0.44
4:e:62:GLN:HE22	4:e:90:LEU:HD13	1.83	0.44
7:j:105:VAL:HG23	7:j:119:PHE:HE1	1.83	0.44
11:n:102:PHE:HE1	11:n:109:PRO:HG3	1.83	0.44
12:o:15:ARG:NH2	51:2:8:C:O3'	2.51	0.44
31:l:139:ASN:N	31:l:181:PHE:O	2.50	0.44
33:K:25:TYR:O	33:K:29:ILE:HG13	2.18	0.44
33:K:42:TRP:CD1	33:K:42:TRP:H	2.34	0.44
34:L:39:GLU:HA	34:L:42:VAL:HG22	1.99	0.44
34:L:76:SER:HA	34:L:85:GLN:HA	2.00	0.44
37:O:59:LYS:NZ	49:3:973:G:H5''	2.33	0.44
43:U:20:VAL:HG12	43:U:35:ARG:HB3	2.00	0.44
46:X:13:HIS:HE1	49:3:1014:A:H5''	1.82	0.44
49:3:197:A:H4'	49:3:198:G:O5'	2.18	0.44
49:3:1323:G:H2'	49:3:1324:A:C8	2.53	0.44
50:1:419:U:H2'	50:1:420:C:H6	1.81	0.44
50:1:740:C:H42	50:1:757:G:H1	1.66	0.44
50:1:1802:A:H2'	50:1:1803:A:C8	2.53	0.44
50:1:1893:C:H2'	50:1:1894:C:H5'	2.00	0.44
50:1:2073:C:O2'	50:1:2074:U:H5'	2.18	0.44
50:1:2849:U:H4'	50:1:2868:A:C2	2.52	0.44
51:2:39:A:H2'	51:2:40:U:C6	2.53	0.44
2:c:56:LYS:CE	50:1:2830:C:H5''	2.48	0.44
11:n:3:HIS:CG	50:1:2820:A:H4'	2.53	0.44
12:o:114:GLY:O	12:o:116:GLN:NE2	2.50	0.44
19:v:17:SER:HB2	19:v:21:ARG:HH22	1.83	0.44
28:F:20:ASP:OD1	50:1:2756:U:H3'	2.18	0.44
31:l:82:LYS:HD2	31:l:82:LYS:N	2.33	0.44
32:J:106:ALA:HB1	32:J:110:MET:CG	2.48	0.44
32:J:133:ILE:HG23	32:J:134:ASN:N	2.33	0.44
34:L:58:LEU:O	34:L:62:GLU:HG2	2.18	0.44
35:M:86:LYS:NZ	35:M:90:GLU:O	2.47	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:P:86:LYS:HA	38:P:112:VAL:O	2.18	0.44
44:V:44:HIS:HD2	44:V:69:THR:HB	1.83	0.44
49:3:883:C:H2'	49:3:884:U:C6	2.53	0.44
49:3:1211:U:H4'	49:3:1213:A:N3	2.33	0.44
50:1:445:C:O2'	50:1:446:G:H5'	2.18	0.44
50:1:468:G:H2'	50:1:469:G:O4'	2.18	0.44
50:1:1422:G:N2	50:1:1498:C:H1'	2.33	0.44
50:1:1821:A:H2'	50:1:1822:C:H6	1.83	0.44
2:c:142:VAL:HG23	2:c:143:PRO:HD2	1.99	0.43
3:d:49:ARG:NE	50:1:801:G:O4'	2.47	0.43
3:d:141:MET:HB3	3:d:143:LEU:HG	1.99	0.43
3:d:163:ASN:HD22	3:d:163:ASN:HA	1.65	0.43
8:k:4:GLU:HB3	8:k:5:GLN:CD	2.43	0.43
8:k:7:MET:SD	8:k:20:MET:HB2	2.58	0.43
10:m:85:GLY:N	50:1:2276:G:OP2	2.50	0.43
12:o:20:GLU:OE2	12:o:21:LEU:HG	2.17	0.43
13:p:9:GLN:HA	13:p:12:MET:HG2	2.00	0.43
14:q:92:LYS:HE3	50:1:995:C:O2	2.17	0.43
16:s:98:LYS:HD3	50:1:2012:G:OP1	2.18	0.43
17:t:59:ASN:HD22	17:t:59:ASN:HA	1.66	0.43
20:w:39:THR:N	50:1:2331:G:H4'	2.30	0.43
23:z:21:ALA:O	23:z:24:LEU:HG	2.18	0.43
25:C:4:ILE:H	25:C:4:ILE:CD1	2.27	0.43
31:I:90:LEU:HA	31:I:93:LEU:HD12	2.01	0.43
33:K:4:TYR:HE2	33:K:66:ALA:O	2.00	0.43
35:M:26:MET:HE3	35:M:60:LEU:HD21	1.99	0.43
38:P:114:PRO:HB2	49:3:676:A:H5''	2.00	0.43
39:Q:82:ARG:NH1	49:3:552:U:H5'	2.33	0.43
43:U:55:ASP:OD1	43:U:55:ASP:N	2.50	0.43
44:V:45:VAL:HG22	44:V:60:ILE:HD12	1.99	0.43
44:V:46:HIS:HB2	44:V:70:LYS:HD3	2.00	0.43
46:X:79:TYR:O	49:3:957:U:H5'	2.18	0.43
49:3:141:G:H2'	49:3:142:G:C8	2.50	0.43
50:1:680:C:H2'	50:1:681:G:H8	1.83	0.43
50:1:1019:U:H3	50:1:1142:A:N6	2.14	0.43
50:1:1465:G:H2'	50:1:1466:U:O4'	2.18	0.43
50:1:1506:U:H2'	50:1:1507:C:C6	2.53	0.43
50:1:1775:U:H2'	50:1:1776:G:H5'	1.99	0.43
50:1:2087:G:H2'	50:1:2088:A:C8	2.53	0.43
50:1:2236:U:H2'	50:1:2237:G:O4'	2.17	0.43
50:1:2511:U:H2'	50:1:2512:C:C6	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:174:ARG:HG2	1:b:180:MET:HG2	2.00	0.43
1:b:237:ARG:NH2	50:1:2590:A:H5''	2.33	0.43
2:c:27:ILE:HD12	2:c:27:ILE:N	2.32	0.43
4:e:107:VAL:N	4:e:108:PRO:CD	2.80	0.43
11:n:84:GLY:N	11:n:85:PRO:HD2	2.33	0.43
11:n:90:ARG:NH2	50:1:2880:C:O2'	2.45	0.43
12:o:17:LYS:O	12:o:20:GLU:OE2	2.36	0.43
17:t:15:HIS:HE1	50:1:1339:G:OP2	2.02	0.43
19:v:46:LYS:O	19:v:50:MET:HG2	2.18	0.43
21:x:62:GLY:O	21:x:66:VAL:HG23	2.18	0.43
25:C:38:PHE:HB2	25:C:45:HIS:CE1	2.53	0.43
32:J:13:LYS:NZ	32:J:115:GLU:OE2	2.51	0.43
32:J:142:GLY:O	32:J:145:ASN:OD1	2.36	0.43
39:Q:53:ARG:HD2	39:Q:63:THR:HG22	1.99	0.43
42:T:70:LYS:HE2	42:T:77:TYR:CZ	2.53	0.43
42:T:83:ARG:HG3	42:T:83:ARG:NH1	2.34	0.43
44:V:44:HIS:CD2	44:V:69:THR:HB	2.53	0.43
45:W:53:GLN:HG2	45:W:56:ARG:HH22	1.82	0.43
45:W:60:ARG:NH2	49:3:736:C:OP1	2.51	0.43
46:X:17:LYS:HD2	46:X:30:LEU:HD21	2.00	0.43
48:Z:44:ARG:HH22	49:3:722:G:H21	1.66	0.43
49:3:84:U:H3'	49:3:85:U:C5'	2.47	0.43
49:3:373:A:N6	49:3:391:G:H1'	2.26	0.43
49:3:451:A:C6	49:3:480:U:H2'	2.52	0.43
49:3:883:C:O2'	49:3:884:U:H5'	2.17	0.43
50:1:151:C:H2'	50:1:152:A:H8	1.83	0.43
50:1:256:A:O2'	50:1:257:C:H5'	2.18	0.43
50:1:259:G:H2'	50:1:260:G:H8	1.82	0.43
50:1:548:G:C3'	50:1:549:G:H4'	2.47	0.43
50:1:676:A:H1'	50:1:2443:C:H1'	1.99	0.43
50:1:859:G:N2	50:1:916:G:H2'	2.33	0.43
50:1:1324:G:H3'	50:1:1325:U:H4'	2.00	0.43
50:1:2192:U:H2'	50:1:2193:G:C8	2.53	0.43
50:1:2898:U:H2'	50:1:2899:A:C8	2.53	0.43
1:b:251:THR:HG22	1:b:252:LYS:N	2.23	0.43
4:e:102:LEU:O	4:e:107:VAL:HG22	2.18	0.43
6:g:117:LEU:HA	6:g:118:PRO:HD3	1.88	0.43
8:k:1:MET:HE3	50:1:1665:A:H1'	2.00	0.43
11:n:81:ASN:HB2	11:n:82:GLU:OE1	2.18	0.43
19:v:46:LYS:HA	19:v:49:ASN:HD22	1.83	0.43
24:B:8:THR:HG23	24:B:11:LYS:H	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:E:44:ARG:N	27:E:45:PRO:HD2	2.34	0.43
30:H:175:HIS:ND1	49:3:1109:C:OP2	2.51	0.43
35:M:91:LEU:HD23	35:M:116:ARG:HG3	1.99	0.43
36:N:122:ARG:CZ	36:N:124:PRO:HA	2.48	0.43
39:Q:29:LYS:HA	49:3:363:A:OP1	2.17	0.43
45:W:11:ARG:HH11	45:W:13:THR:H	1.65	0.43
48:Z:6:ARG:C	48:Z:8:ASN:H	2.26	0.43
48:Z:44:ARG:HH22	49:3:722:G:N2	2.16	0.43
49:3:279:A:H4'	49:3:281:G:C8	2.52	0.43
49:3:1097:C:H2'	49:3:1098:C:C6	2.54	0.43
49:3:1210:C:H2'	49:3:1211:U:H5'	2.00	0.43
49:3:1366:C:H2'	49:3:1367:C:C6	2.52	0.43
50:1:881:G:H2'	50:1:882:G:C8	2.53	0.43
50:1:1015:U:H2'	50:1:1016:G:C8	2.53	0.43
50:1:1496:A:H2'	50:1:1498:C:H41	1.83	0.43
50:1:1744:A:H3'	50:1:1745:A:C8	2.54	0.43
50:1:2273:A:H2'	50:1:2274:A:C8	2.53	0.43
50:1:2339:C:H2'	50:1:2340:A:C8	2.53	0.43
51:2:71:C:H2'	51:2:72:G:O4'	2.18	0.43
52:5:10:G:C2	52:5:26:G:H1'	2.53	0.43
2:c:156:PHE:CE1	7:j:81:ILE:HD13	2.54	0.43
3:d:138:LEU:HA	3:d:143:LEU:HD12	2.00	0.43
4:e:106:ALA:C	4:e:108:PRO:HD2	2.43	0.43
4:e:165:GLY:HA2	4:e:168:LEU:HD13	2.00	0.43
10:m:51:ARG:O	10:m:54:THR:HG22	2.19	0.43
21:x:54:GLY:O	21:x:58:ILE:HG12	2.19	0.43
22:y:23:ARG:O	22:y:25:GLN:N	2.51	0.43
26:D:34:ARG:HD2	26:D:39:ARG:HD2	2.00	0.43
29:G:159:ALA:O	29:G:160:LEU:HD23	2.19	0.43
30:H:113:LYS:HA	30:H:184:ASN:ND2	2.32	0.43
34:L:34:LYS:NZ	49:3:1289:A:H2'	2.32	0.43
34:L:137:ARG:HG2	34:L:141:HIS:NE2	2.33	0.43
38:P:84:MET:HG2	38:P:110:THR:OG1	2.18	0.43
38:P:116:PRO:HB3	49:3:676:A:H1'	1.99	0.43
46:X:2:ARG:NH2	49:3:1311:A:N7	2.67	0.43
48:Z:67:THR:C	49:3:1167:A:N7	2.77	0.43
49:3:256:U:H2'	49:3:257:G:C8	2.53	0.43
49:3:457:G:H2'	49:3:458:U:H5'	1.99	0.43
49:3:501:C:H2'	49:3:502:A:C8	2.54	0.43
49:3:677:U:H2'	49:3:678:U:C6	2.53	0.43
49:3:986:U:H2'	49:3:987:G:H8	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:1199:U:H2'	49:3:1200:C:H5'	2.00	0.43
50:1:1765:U:H2'	50:1:1766:G:C8	2.54	0.43
51:2:69:G:H2'	51:2:70:C:H5'	1.99	0.43
54:8:111:THR:HG23	54:8:112:ARG:N	2.33	0.43
1:b:115:ILE:HG22	1:b:124:LYS:HD2	2.01	0.43
1:b:152:GLN:NE2	50:1:1818:U:O4	2.50	0.43
6:g:117:LEU:HD23	6:g:122:LEU:HD13	2.01	0.43
8:k:77:ILE:HG22	13:p:71:ARG:HB2	2.00	0.43
10:m:3:GLN:HA	10:m:4:PRO:HD3	1.83	0.43
11:n:3:HIS:O	11:n:4:ARG:HB2	2.17	0.43
11:n:49:GLU:HA	11:n:52:ILE:HD12	2.01	0.43
14:q:13:HIS:O	14:q:17:LEU:HD23	2.18	0.43
17:t:79:ASP:OD1	17:t:79:ASP:N	2.51	0.43
22:y:2:LYS:HG3	22:y:3:ALA:N	2.32	0.43
36:N:78:ILE:O	36:N:82:ILE:HG13	2.19	0.43
38:P:68:ARG:HA	38:P:68:ARG:HD2	1.70	0.43
43:U:5:ARG:CG	49:3:376:G:H5''	2.48	0.43
47:Y:26:MET:O	47:Y:29:THR:OG1	2.33	0.43
49:3:695:A:H2'	49:3:696:A:C8	2.53	0.43
49:3:986:U:H2'	49:3:987:G:C8	2.53	0.43
49:3:988:G:H1'	49:3:1015:G:H22	1.83	0.43
49:3:1225:A:H5'	49:3:1226:C:OP2	2.17	0.43
49:3:1488:G:H2'	49:3:1489:G:H8	1.83	0.43
50:1:609:A:H2'	50:1:610:C:O4'	2.18	0.43
50:1:875:G:H1	50:1:902:C:H42	1.66	0.43
50:1:1737:G:H2'	50:1:1738:G:C4	2.53	0.43
50:1:2259:U:H2'	50:1:2260:C:C6	2.53	0.43
5:f:72:ASN:O	5:f:76:ILE:HG12	2.19	0.43
9:l:42:SER:OG	50:1:672:C:H5	2.01	0.43
9:l:95:LEU:HB2	9:l:101:ILE:CD1	2.49	0.43
13:p:15:ASP:OD1	13:p:15:ASP:N	2.52	0.43
13:p:112:ARG:O	13:p:113:LEU:HG	2.18	0.43
15:r:4:VAL:HG22	15:r:13:ARG:HA	2.00	0.43
15:r:38:VAL:O	15:r:54:VAL:HG23	2.18	0.43
17:t:54:GLU:H	17:t:54:GLU:CD	2.27	0.43
30:H:48:LYS:HD2	30:H:48:LYS:C	2.43	0.43
32:J:105:ILE:HD11	32:J:123:LEU:CD2	2.43	0.43
32:J:110:MET:HE3	32:J:124:ALA:HB1	1.99	0.43
32:J:121:ASN:OD1	32:J:121:ASN:N	2.51	0.43
39:Q:38:THR:HG23	39:Q:49:ARG:C	2.43	0.43
40:R:13:HIS:CD2	40:R:41:ASP:HA	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:112:G:H21	49:3:354:G:H5'	1.83	0.43
49:3:252:U:O2	49:3:252:U:H2'	2.18	0.43
49:3:709:U:H2'	49:3:710:G:C8	2.53	0.43
49:3:1213:A:O2'	49:3:1214:C:H2'	2.19	0.43
50:1:123:G:H2'	50:1:124:G:O4'	2.18	0.43
50:1:975:A:H1'	50:1:990:A:N1	2.34	0.43
50:1:1525:A:H2'	50:1:1526:C:O4'	2.19	0.43
50:1:1930:G:H4'	50:1:1930:G:OP1	2.18	0.43
50:1:1994:C:O2'	50:1:1995:U:H5'	2.18	0.43
50:1:2233:U:H2'	50:1:2234:G:C8	2.54	0.43
50:1:2285:C:H5'	50:1:2288:A:N6	2.34	0.43
50:1:2358:A:H2'	50:1:2359:C:O4'	2.17	0.43
50:1:2696:U:H2'	50:1:2697:G:C8	2.53	0.43
50:1:2771:C:H2'	50:1:2772:C:C6	2.54	0.43
54:8:85:GLU:O	54:8:88:LEU:HB2	2.19	0.43
1:b:136:VAL:HG13	1:b:163:ILE:HG22	2.01	0.43
1:b:175:LEU:HD13	50:1:1799:G:C8	2.54	0.43
3:d:83:VAL:O	3:d:83:VAL:HG23	2.19	0.43
4:e:79:ARG:NH2	4:e:80:GLN:O	2.51	0.43
5:f:137:LYS:HA	5:f:140:ILE:HG22	2.01	0.43
5:f:156:TYR:CZ	50:1:2531:A:H5''	2.53	0.43
6:g:16:GLY:HA2	6:g:47:PHE:CZ	2.54	0.43
6:g:42:LYS:O	6:g:45:GLU:HG3	2.19	0.43
6:g:49:ALA:O	6:g:53:GLU:HB2	2.19	0.43
7:j:23:LYS:HE3	7:j:28:LEU:HD21	2.00	0.43
16:s:83:LYS:HB3	16:s:95:ARG:HD2	2.01	0.43
17:t:32:LEU:N	17:t:32:LEU:CD2	2.82	0.43
20:w:55:LEU:HD22	20:w:55:LEU:N	2.34	0.43
34:L:74:VAL:HA	34:L:87:PRO:HA	2.00	0.43
38:P:114:PRO:CB	49:3:676:A:H5''	2.48	0.43
39:Q:30:ARG:NH1	49:3:363:A:OP2	2.50	0.43
39:Q:122:LYS:HE3	49:3:37:U:H5''	1.99	0.43
47:Y:54:GLN:HB3	47:Y:55:PRO:HD3	2.01	0.43
49:3:58:C:O2'	49:3:59:A:H5'	2.19	0.43
49:3:451:A:H4'	49:3:452:A:O4'	2.19	0.43
49:3:502:A:H2'	49:3:503:C:C6	2.54	0.43
49:3:1407:C:H2'	49:3:1408:A:C8	2.52	0.43
50:1:192:C:C2'	50:1:193:U:H5'	2.48	0.43
50:1:840:C:H2'	50:1:841:G:H8	1.83	0.43
50:1:935:C:H2'	50:1:936:A:H8	1.83	0.43
50:1:1065:U:H3'	50:1:1066:U:C5'	2.47	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:1146:C:H2'	50:1:1147:A:C8	2.53	0.43
50:1:1165:A:H2'	50:1:1166:G:C8	2.53	0.43
50:1:1959:G:H2'	50:1:1960:A:O4'	2.19	0.43
52:5:57:A:C2'	52:5:58:A:H5'	2.48	0.43
54:8:95:ILE:O	54:8:99:THR:HG23	2.18	0.43
1:b:196:ASN:ND2	1:b:199:HIS:HB2	2.34	0.43
1:b:259:ASN:C	1:b:261:ARG:H	2.27	0.43
3:d:130:LYS:HA	50:1:321:U:OP2	2.18	0.43
9:l:50:PHE:CZ	9:l:52:GLY:HA2	2.54	0.43
26:D:17:GLY:O	26:D:20:ALA:HB3	2.18	0.43
30:H:112:ALA:HB1	30:H:199:VAL:HG13	2.01	0.43
31:I:91:ALA:HB1	31:I:184:LYS:HD2	2.01	0.43
32:J:108:GLY:O	32:J:109:ALA:HB3	2.18	0.43
35:M:11:THR:O	35:M:15:ASN:ND2	2.52	0.43
38:P:45:THR:HB	49:3:689:C:OP1	2.19	0.43
47:Y:30:PHE:O	47:Y:34:VAL:HG23	2.19	0.43
49:3:424:G:H2'	49:3:425:G:H8	1.83	0.43
49:3:682:G:H2'	49:3:683:G:C8	2.53	0.43
49:3:1332:A:H2'	49:3:1333:A:O4'	2.18	0.43
50:1:162:U:C2'	50:1:163:C:H5'	2.49	0.43
50:1:522:A:H2'	50:1:523:C:C6	2.53	0.43
50:1:857:G:H2'	50:1:858:G:C1'	2.49	0.43
50:1:969:G:H2'	50:1:970:U:C6	2.54	0.43
50:1:1501:G:H2'	50:1:1502:A:H8	1.83	0.43
50:1:1700:A:C2'	50:1:1701:A:H5'	2.49	0.43
50:1:1826:G:H2'	50:1:1827:U:H6	1.83	0.43
50:1:1934:C:O2'	50:1:1935:G:H5'	2.19	0.43
50:1:2564:A:C2	50:1:2647:U:H4'	2.53	0.43
50:1:2576:G:H8	50:1:2580:U:O4	2.02	0.43
4:e:3:LEU:HA	4:e:6:TYR:HB3	1.99	0.43
6:g:68:ARG:HD2	6:g:68:ARG:C	2.44	0.43
7:j:37:ARG:NH2	50:1:1007:C:OP1	2.52	0.43
9:l:20:GLY:HA2	9:l:28:GLY:HA2	1.99	0.43
13:p:13:LYS:O	13:p:16:VAL:HG13	2.18	0.43
14:q:38:VAL:HG13	14:q:39:ILE:N	2.34	0.43
18:u:5:ARG:HE	18:u:93:ARG:NH2	2.17	0.43
30:H:151:GLU:CD	30:H:166:TRP:HB3	2.43	0.43
31:I:61:ARG:O	31:I:65:GLY:N	2.50	0.43
41:S:4:SER:OG	49:3:1216:A:H5''	2.18	0.43
41:S:84:ARG:NH2	49:3:1059:C:O3'	2.51	0.43
44:V:29:LYS:HB3	44:V:36:PHE:CE1	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:1165:U:H2'	49:3:1166:G:O4'	2.19	0.43
49:3:1265:C:H2'	49:3:1266:G:C8	2.54	0.43
49:3:1430:A:H2'	49:3:1431:A:C8	2.54	0.43
50:1:262:A:H2'	50:1:263:G:O4'	2.18	0.43
50:1:864:G:O2'	50:1:865:C:H5'	2.19	0.43
50:1:2731:G:H2'	50:1:2732:G:C8	2.54	0.43
1:b:97:ASP:HB2	50:1:1491:G:O4'	2.19	0.43
4:e:134:GLN:HG2	4:e:149:ARG:HB3	2.01	0.43
5:f:173:ALA:O	5:f:175:LYS:N	2.48	0.43
9:l:41:ARG:NH1	50:1:807:U:OP2	2.52	0.43
10:m:86:LYS:NZ	50:1:955:U:H5''	2.33	0.43
10:m:133:LYS:HE3	10:m:133:LYS:HB3	1.84	0.43
13:p:10:GLU:OE1	13:p:10:GLU:N	2.44	0.43
23:z:44:ARG:NH1	23:z:58:GLU:OE2	2.52	0.43
24:B:54:ILE:HG23	24:B:56:LYS:H	1.82	0.43
30:H:31:ASN:HA	30:H:34:SER:OG	2.19	0.43
31:I:12:ARG:HH22	49:3:428:G:H3'	1.84	0.43
34:L:78:ARG:HE	34:L:82:SER:N	2.17	0.43
36:N:5:TYR:HB2	36:N:20:ILE:HG13	2.00	0.43
36:N:125:GLN:HG3	49:3:1232:U:OP1	2.19	0.43
37:O:68:ARG:HB3	37:O:70:HIS:HE1	1.84	0.43
49:3:235:C:H2'	49:3:236:A:C8	2.54	0.43
49:3:423:G:C2'	49:3:424:G:H5'	2.49	0.43
49:3:731:G:O2'	49:3:732:C:H5'	2.18	0.43
49:3:766:A:H2'	49:3:767:A:O4'	2.19	0.43
49:3:1086:U:H2'	49:3:1087:G:H8	1.84	0.43
50:1:68:G:H2'	50:1:69:C:O4'	2.18	0.43
50:1:1889:A:H2'	50:1:1890:A:C8	2.54	0.43
50:1:2120:G:H2'	50:1:2121:G:C8	2.53	0.43
50:1:2368:C:H2'	50:1:2369:A:H8	1.84	0.43
50:1:2602:A:C2	54:8:78:ARG:HA	2.53	0.43
52:5:1:C:H2'	52:5:2:G:H8	1.84	0.43
52:5:73:A:H2'	54:8:82:LEU:CD1	2.47	0.43
1:b:162:GLN:HB3	1:b:174:ARG:HB2	2.01	0.42
2:c:30:GLU:CG	2:c:31:ALA:H	2.24	0.42
2:c:206:ALA:HB3	2:c:209:ALA:HB3	1.99	0.42
16:s:86:MET:HA	16:s:87:PRO:HD3	1.90	0.42
20:w:51:ARG:HD3	50:1:2364:C:OP1	2.19	0.42
28:F:19:ARG:HH12	28:F:26:ILE:HD11	1.83	0.42
29:G:72:LYS:O	29:G:73:ARG:C	2.62	0.42
29:G:96:LEU:HD23	29:G:99:MET:HE3	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:J:44:ARG:HH12	32:J:72:ASN:HD21	1.65	0.42
32:J:104:ILE:CD1	32:J:120:HIS:HA	2.48	0.42
34:L:12:LEU:HD23	34:L:13:PRO:O	2.19	0.42
37:O:13:PHE:HE1	37:O:69:THR:HG22	1.84	0.42
40:R:16:ILE:HD13	49:3:1302:C:C6	2.54	0.42
42:T:46:LYS:HE3	49:3:808:C:H5''	2.00	0.42
46:X:46:LEU:O	46:X:61:VAL:HG12	2.18	0.42
46:X:54:ARG:HA	49:3:986:U:H1'	2.01	0.42
49:3:245:U:O2'	49:3:246:A:H5'	2.18	0.42
49:3:724:G:H2'	49:3:725:G:H8	1.84	0.42
49:3:762:U:H2'	49:3:763:G:H8	1.84	0.42
50:1:63:A:H2'	50:1:64:A:O4'	2.19	0.42
50:1:494:G:O2'	50:1:495:G:H5'	2.19	0.42
50:1:511:U:H2'	50:1:512:G:H5'	2.00	0.42
50:1:1176:U:H2'	50:1:1177:G:C8	2.54	0.42
50:1:1566:A:O2'	50:1:1567:G:H5'	2.19	0.42
50:1:2071:A:H2'	50:1:2072:C:C6	2.54	0.42
50:1:2241:A:H2'	50:1:2242:G:C8	2.53	0.42
50:1:2403:C:H2'	50:1:2404:U:C6	2.54	0.42
50:1:2478:A:H2'	50:1:2479:U:O4'	2.18	0.42
50:1:2570:G:H2'	50:1:2571:U:O4'	2.19	0.42
50:1:2860:A:H2'	50:1:2861:U:H5'	2.00	0.42
54:8:4:ILE:O	54:8:4:ILE:HG23	2.19	0.42
2:c:11:MET:HA	2:c:25:THR:HA	2.02	0.42
8:k:106:GLU:OE2	8:k:107:LEU:HG	2.18	0.42
11:n:8:ARG:HB2	11:n:43:GLU:HG3	2.01	0.42
31:I:169:TRP:CG	31:I:185:PRO:HG3	2.54	0.42
31:I:196:GLU:H	31:I:196:GLU:CD	2.28	0.42
34:L:49:LEU:HD22	34:L:123:LEU:HB3	2.02	0.42
36:N:104:THR:HG23	49:3:1180:A:H5'	2.01	0.42
39:Q:29:LYS:HD3	49:3:363:A:OP1	2.20	0.42
48:Z:50:SER:O	48:Z:54:ARG:HG2	2.19	0.42
49:3:396:C:C2'	49:3:397:A:H5''	2.48	0.42
49:3:1481:U:H2'	49:3:1482:G:C8	2.53	0.42
50:1:162:U:O2'	50:1:163:C:H5'	2.18	0.42
50:1:182:A:O2'	50:1:183:C:H5'	2.19	0.42
50:1:552:U:H2'	50:1:553:G:C8	2.54	0.42
50:1:962:G:H21	50:1:2250:G:H1	1.67	0.42
50:1:2557:G:H2'	50:1:2558:C:C6	2.54	0.42
50:1:2719:G:H5'	50:1:2847:U:OP1	2.19	0.42
54:8:48:LEU:H	54:8:49:PRO:HD3	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:d:86:ALA:O	3:d:88:ARG:NH2	2.53	0.42
4:e:118:ALA:HB1	4:e:166:ARG:HD3	2.00	0.42
10:m:74:THR:HG22	10:m:89:VAL:HA	2.00	0.42
11:n:29:VAL:HB	11:n:75:ILE:HD12	2.02	0.42
11:n:90:ARG:NH2	11:n:116:VAL:HG21	2.34	0.42
14:q:27:ARG:NE	50:1:532:A:H3'	2.34	0.42
14:q:90:ASP:OD2	50:1:996:A:H4'	2.19	0.42
26:D:39:ARG:NH2	50:1:468:G:N7	2.66	0.42
29:G:224:ARG:HD3	29:G:224:ARG:HA	1.82	0.42
31:I:99:ASN:HA	31:I:110:ARG:HH12	1.84	0.42
37:O:37:ARG:CD	49:3:1124:G:H5''	2.49	0.42
45:W:25:ILE:HG22	45:W:29:LYS:HB2	2.00	0.42
46:X:28:LYS:NZ	46:X:29:PRO:HD2	2.34	0.42
49:3:304:U:O2'	49:3:305:G:H5'	2.18	0.42
49:3:599:C:H2'	49:3:600:A:C8	2.54	0.42
49:3:936:C:H2'	49:3:937:A:O4'	2.19	0.42
49:3:981:U:H2'	49:3:982:U:C5	2.54	0.42
49:3:1278:G:OP1	49:3:1279:G:H5'	2.18	0.42
49:3:1458:G:H2'	49:3:1459:G:H8	1.84	0.42
50:1:467:G:O2'	50:1:468:G:H5'	2.19	0.42
50:1:1001:A:H2'	50:1:1002:G:O4'	2.18	0.42
50:1:1079:C:H2'	50:1:1080:A:C8	2.55	0.42
50:1:2047:C:H2'	50:1:2048:G:C8	2.54	0.42
50:1:2102:G:H2'	50:1:2103:C:O4'	2.18	0.42
50:1:2102:G:C2'	50:1:2103:C:H5'	2.48	0.42
1:b:254:LYS:O	50:1:1797:G:H4'	2.20	0.42
3:d:129:PRO:HG3	3:d:156:ASN:OD1	2.20	0.42
3:d:162:ARG:NH1	50:1:340:A:O2'	2.52	0.42
3:d:196:VAL:HG23	3:d:197:GLU:OE1	2.19	0.42
4:e:163:GLU:HA	4:e:166:ARG:HB3	2.02	0.42
5:f:41:GLU:HA	5:f:54:ARG:HE	1.83	0.42
6:g:31:VAL:N	6:g:32:PRO:CD	2.82	0.42
8:k:22:ILE:O	8:k:23:LYS:HB2	2.18	0.42
8:k:22:ILE:HD11	8:k:40:LYS:HG3	2.01	0.42
9:l:95:LEU:HD22	9:l:100:ILE:HD11	2.02	0.42
18:u:9:GLU:H	18:u:9:GLU:CD	2.28	0.42
28:F:12:ARG:HA	28:F:12:ARG:HH21	1.83	0.42
31:I:13:ARG:NH2	49:3:543:U:H5'	2.34	0.42
31:I:72:ARG:O	31:I:76:LYS:HG2	2.19	0.42
31:I:99:ASN:HA	31:I:110:ARG:NH1	2.35	0.42
35:M:88:LYS:HE3	35:M:119:GLY:HA2	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:N:69:GLY:H	49:3:1250:A:H4'	1.82	0.42
40:R:22:TYR:N	40:R:65:GLU:OE2	2.53	0.42
40:R:27:THR:HA	40:R:30:LYS:HD2	2.01	0.42
43:U:69:ASP:OD1	43:U:70:ARG:N	2.52	0.42
44:V:30:HIS:HD2	44:V:33:TYR:H	1.67	0.42
45:W:48:ALA:O	45:W:51:GLN:HB3	2.19	0.42
49:3:1258:G:H2'	49:3:1259:C:H6	1.84	0.42
50:1:327:G:O2'	50:1:328:U:H5'	2.20	0.42
50:1:1152:C:H2'	50:1:1153:C:H6	1.84	0.42
50:1:1753:G:H2'	50:1:1755:A:OP2	2.20	0.42
50:1:2686:G:H2'	50:1:2687:U:C6	2.54	0.42
50:1:2766:A:N3	50:1:2766:A:H2'	2.34	0.42
51:2:13:G:O2'	51:2:15:A:H2'	2.19	0.42
2:c:190:LYS:HE2	50:1:2729:G:O3'	2.19	0.42
4:e:64:PRO:HA	4:e:88:VAL:HG22	2.02	0.42
4:e:109:ARG:HH22	4:e:138:PRO:HA	1.84	0.42
5:f:85:LYS:C	5:f:86:LEU:HD12	2.44	0.42
5:f:139:VAL:HG13	5:f:140:ILE:N	2.35	0.42
7:j:35:ARG:HG2	7:j:35:ARG:NH1	2.33	0.42
9:l:112:LEU:HD21	9:l:131:ALA:HA	2.02	0.42
16:s:90:LYS:HA	50:1:751:A:O4'	2.19	0.42
17:t:8:LEU:HD22	17:t:50:LEU:HD21	2.01	0.42
18:u:35:VAL:HG13	18:u:38:ILE:CG1	2.48	0.42
24:B:4:GLN:O	50:1:2017:U:H4'	2.19	0.42
30:H:87:ARG:O	30:H:90:VAL:HG12	2.19	0.42
37:O:21:ALA:O	37:O:24:GLU:HG2	2.19	0.42
40:R:75:SER:O	40:R:79:LEU:HD13	2.19	0.42
40:R:86:ARG:NH2	49:3:1310:G:OP2	2.52	0.42
43:U:5:ARG:HH12	49:3:377:G:H5'	1.84	0.42
43:U:5:ARG:HG3	49:3:376:G:H5''	2.02	0.42
45:W:45:GLY:O	45:W:47:ARG:NH1	2.53	0.42
48:Z:9:GLU:H	48:Z:10:PRO:HD2	1.84	0.42
49:3:279:A:H5'	49:3:281:G:C5'	2.49	0.42
49:3:1346:A:H2'	49:3:1347:G:H4'	2.01	0.42
49:3:1517:G:O2'	49:3:1518:A:H5'	2.19	0.42
50:1:112:U:H2'	50:1:113:U:H5'	1.99	0.42
50:1:388:G:H2'	50:1:390:U:H5	1.85	0.42
50:1:974:G:O2'	50:1:989:G:N2	2.48	0.42
50:1:1111:A:C2'	50:1:1112:G:H4'	2.50	0.42
50:1:1672:A:N6	50:1:1673:G:C6	2.88	0.42
50:1:2623:G:H2'	50:1:2624:G:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:52:HIS:CE1	1:b:218:THR:HG23	2.55	0.42
1:b:83:ASP:OD2	1:b:86:ARG:N	2.50	0.42
2:c:50:VAL:HG12	2:c:51:THR:N	2.34	0.42
3:d:142:ALA:O	3:d:185:LYS:NZ	2.49	0.42
5:f:86:LEU:HA	5:f:163:TYR:HA	2.01	0.42
7:j:12:LYS:C	7:j:12:LYS:HD2	2.45	0.42
7:j:78:THR:OG1	7:j:79:GLY:N	2.52	0.42
12:o:26:LEU:HB3	12:o:92:PHE:HA	2.02	0.42
12:o:62:LEU:C	12:o:62:LEU:HD12	2.44	0.42
13:p:30:TRP:CG	13:p:37:LYS:HE3	2.54	0.42
13:p:75:THR:OG1	13:p:76:HIS:N	2.52	0.42
16:s:25:ARG:NH2	16:s:74:ILE:O	2.53	0.42
24:B:8:THR:HG22	24:B:11:LYS:HG2	2.00	0.42
30:H:122:GLN:HB3	30:H:127:VAL:HG21	2.01	0.42
30:H:139:ASN:O	30:H:142:ARG:HG2	2.20	0.42
35:M:10:LEU:HA	35:M:13:ILE:HD12	2.02	0.42
37:O:68:ARG:HB3	37:O:70:HIS:CE1	2.55	0.42
38:P:116:PRO:HB3	49:3:676:A:C1'	2.50	0.42
39:Q:29:LYS:HA	39:Q:29:LYS:HD3	1.89	0.42
39:Q:115:LYS:O	39:Q:116:TYR:HB2	2.20	0.42
46:X:2:ARG:CZ	49:3:1311:A:H62	2.33	0.42
49:3:128:G:O2'	49:3:129:A:H5'	2.20	0.42
49:3:396:C:C3'	49:3:397:A:H5''	2.49	0.42
49:3:1339:A:H2'	49:3:1340:A:H5'	2.01	0.42
50:1:94:A:H2'	50:1:95:A:O4'	2.20	0.42
50:1:118:A:N3	50:1:178:G:H1'	2.34	0.42
50:1:335:C:H2'	50:1:336:C:H6	1.84	0.42
50:1:358:U:H2'	50:1:359:G:O4'	2.19	0.42
50:1:420:C:H2'	50:1:421:C:O4'	2.18	0.42
50:1:927:A:H2'	50:1:928:A:C8	2.54	0.42
50:1:2538:C:H2'	50:1:2539:C:C6	2.54	0.42
2:c:3:GLY:C	2:c:4:LEU:HD22	2.45	0.42
2:c:107:VAL:HG22	2:c:108:ASP:H	1.85	0.42
3:d:193:VAL:O	3:d:196:VAL:HG22	2.20	0.42
5:f:132:LEU:C	5:f:133:LYS:HD3	2.45	0.42
6:g:115:VAL:HG12	6:g:132:PHE:CE1	2.55	0.42
7:j:73:VAL:HA	7:j:88:THR:HA	2.02	0.42
7:j:98:GLU:OE1	7:j:98:GLU:N	2.49	0.42
8:k:43:ILE:HD12	8:k:56:ASP:HB2	2.01	0.42
18:u:53:GLN:N	18:u:54:PRO:CD	2.83	0.42
20:w:12:SER:OG	50:1:2262:U:H5	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:z:28:LEU:HD23	23:z:28:LEU:HA	1.90	0.42
27:E:18:LYS:HB3	50:1:651:G:OP1	2.18	0.42
28:F:20:ASP:HA	50:1:2757:A:OP2	2.19	0.42
28:F:25:VAL:O	28:F:34:LYS:HA	2.20	0.42
30:H:10:ARG:HB2	30:H:15:LYS:HZ1	1.83	0.42
35:M:35:ILE:O	35:M:39:LEU:HG	2.19	0.42
39:Q:24:GLU:C	39:Q:26:CYS:H	2.28	0.42
48:Z:16:ARG:NH2	48:Z:19:LYS:HE3	2.35	0.42
49:3:194:C:O2'	49:3:195:A:H5'	2.20	0.42
49:3:764:C:H2'	49:3:765:G:C8	2.55	0.42
49:3:1352:C:H2'	49:3:1353:G:H8	1.82	0.42
50:1:533:G:H2'	50:1:534:U:C6	2.55	0.42
50:1:558:U:H2'	50:1:559:G:C8	2.54	0.42
50:1:1229:C:H2'	50:1:1230:A:H8	1.84	0.42
50:1:1341:G:C2	50:1:1398:C:H4'	2.55	0.42
50:1:1550:C:H2'	50:1:1551:A:H8	1.84	0.42
51:2:70:C:O2'	51:2:71:C:H5'	2.19	0.42
1:b:94:LEU:HD13	1:b:100:ARG:CD	2.50	0.42
3:d:148:ILE:H	3:d:148:ILE:CD1	2.31	0.42
3:d:158:PHE:HA	3:d:169:VAL:HG11	2.00	0.42
3:d:170:ARG:NH2	3:d:176:ASP:OD1	2.42	0.42
9:l:23:ILE:HD13	15:r:84:ARG:HB3	2.00	0.42
9:l:47:ARG:NH2	50:1:195:A:H5''	2.35	0.42
9:l:92:LEU:O	9:l:96:LYS:NZ	2.53	0.42
11:n:49:GLU:N	11:n:50:PRO:CD	2.83	0.42
12:o:7:ARG:HA	12:o:10:ARG:HH11	1.85	0.42
15:r:4:VAL:HB	15:r:40:MET:HB2	2.01	0.42
16:s:28:LYS:HB3	16:s:28:LYS:HE2	1.79	0.42
18:u:24:VAL:HA	18:u:35:VAL:HA	2.01	0.42
29:G:217:ALA:O	29:G:221:ARG:HG2	2.20	0.42
30:H:37:LYS:HD3	30:H:37:LYS:HA	1.92	0.42
31:I:55:ARG:NH2	49:3:544:G:OP1	2.52	0.42
47:Y:19:HIS:O	47:Y:23:ARG:HG2	2.19	0.42
48:Z:23:GLU:OE2	48:Z:25:ALA:N	2.53	0.42
48:Z:34:ARG:HB3	48:Z:36:PHE:CD2	2.55	0.42
49:3:279:A:H5'	49:3:281:G:H5'	2.02	0.42
49:3:1409:C:H2'	49:3:1410:A:H8	1.84	0.42
50:1:333:G:H2'	50:1:333:G:N3	2.35	0.42
50:1:438:G:H2'	50:1:439:A:C8	2.54	0.42
50:1:587:C:C5	50:1:671:C:H1'	2.55	0.42
50:1:1173:U:H2'	50:1:1174:U:H4'	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:2682:A:O2'	50:1:2683:C:H5'	2.19	0.42
54:8:109:ARG:CZ	54:8:109:ARG:HA	2.49	0.42
2:c:17:GLU:OE1	2:c:17:GLU:N	2.46	0.42
7:j:114:LEU:HD23	7:j:114:LEU:C	2.45	0.42
13:p:31:VAL:HG23	13:p:38:ARG:HB3	2.02	0.42
16:s:77:ASP:O	16:s:102:HIS:N	2.52	0.42
17:t:22:THR:HA	17:t:25:GLU:HG2	2.02	0.42
27:E:15:LYS:HZ2	27:E:19:GLY:HA2	1.81	0.42
29:G:41:ASN:OD1	29:G:44:LYS:HG2	2.20	0.42
41:S:42:ASN:HA	41:S:45:LEU:HB2	2.00	0.42
42:T:17:ASP:OD1	42:T:17:ASP:N	2.53	0.42
42:T:25:GLU:H	42:T:25:GLU:CD	2.28	0.42
44:V:20:ILE:HG23	44:V:45:VAL:HB	2.02	0.42
45:W:42:ARG:HD2	45:W:42:ARG:C	2.45	0.42
49:3:116:A:H2'	49:3:117:G:O4'	2.19	0.42
49:3:408:A:H61	49:3:434:U:H3	1.67	0.42
49:3:909:A:H2'	49:3:910:C:O4'	2.20	0.42
49:3:1251:A:H2'	49:3:1252:A:C8	2.55	0.42
50:1:1173:U:H5	50:1:1174:U:H1'	1.85	0.42
50:1:2026:U:H2'	50:1:2027:G:C8	2.54	0.42
54:8:57:LEU:C	54:8:57:LEU:HD12	2.44	0.42
2:c:175:LEU:HD23	2:c:175:LEU:HA	1.83	0.42
6:g:66:ASN:HD22	6:g:135:HIS:HD2	1.68	0.42
6:g:134:VAL:HG23	6:g:135:HIS:N	2.32	0.42
8:k:97:THR:OG1	8:k:98:ARG:N	2.53	0.42
12:o:32:PRO:HD2	51:2:29:A:OP2	2.20	0.42
14:q:68:ALA:HB1	14:q:73:ILE:HG23	2.01	0.42
18:u:69:VAL:HG22	18:u:70:ALA:N	2.34	0.42
21:x:44:ARG:NH1	21:x:45:PHE:O	2.53	0.42
26:D:3:ARG:HD3	26:D:3:ARG:HA	1.75	0.42
28:F:5:ALA:HB3	50:1:2466:C:H5'	2.00	0.42
33:K:89:VAL:HG12	33:K:90:MET:N	2.33	0.42
36:N:54:VAL:CG2	36:N:55:ASP:H	2.25	0.42
38:P:25:SER:O	38:P:89:GLY:HA2	2.20	0.42
40:R:104:ASN:O	40:R:105:ALA:CB	2.67	0.42
41:S:92:ILE:N	41:S:92:ILE:HD12	2.35	0.42
44:V:75:VAL:HG12	44:V:76:ARG:HG2	2.01	0.42
48:Z:9:GLU:HB2	48:Z:10:PRO:HD3	2.02	0.42
48:Z:65:ARG:NH2	49:3:1099:G:O2'	2.53	0.42
49:3:21:G:H21	49:3:914:A:H62	1.67	0.42
49:3:428:G:O4'	49:3:430:A:C8	2.73	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:447:G:H1'	49:3:487:A:N6	2.35	0.42
49:3:578:C:H2'	49:3:579:A:C8	2.54	0.42
49:3:742:G:O2'	49:3:743:A:H5'	2.20	0.42
50:1:253:C:H2'	50:1:254:G:O4'	2.20	0.42
50:1:480:A:H3'	50:1:481:G:H5''	2.02	0.42
50:1:2082:A:H2'	50:1:2083:G:O4'	2.20	0.42
51:2:66:A:N6	51:2:107:G:H3'	2.33	0.42
51:2:85:G:H2'	51:2:86:G:C8	2.55	0.42
1:b:119:VAL:HG22	1:b:130:PRO:HG2	2.01	0.41
1:b:263:ASP:OD1	1:b:263:ASP:N	2.53	0.41
4:e:161:SER:HB3	4:e:164:GLU:CB	2.50	0.41
7:j:29:ALA:HA	7:j:32:LEU:HD12	2.02	0.41
13:p:21:PRO:HD2	50:1:2867:G:O6	2.20	0.41
13:p:105:LYS:HA	13:p:105:LYS:HD2	1.90	0.41
18:u:96:LYS:C	18:u:98:ASN:H	2.28	0.41
20:w:39:THR:CG2	20:w:73:ARG:HH22	2.17	0.41
29:G:206:ILE:HA	29:G:209:VAL:HG12	2.01	0.41
32:J:80:LEU:N	32:J:121:ASN:ND2	2.68	0.41
33:K:9:MET:HE1	33:K:59:TYR:CE2	2.55	0.41
36:N:10:ARG:HH12	49:3:1149:C:P	2.43	0.41
38:P:46:ALA:O	38:P:51:PHE:HD2	2.02	0.41
38:P:78:ILE:HD12	38:P:78:ILE:N	2.35	0.41
38:P:121:ARG:NH2	48:Z:35:GLU:OE1	2.53	0.41
49:3:103:U:H2'	49:3:104:G:O4'	2.19	0.41
49:3:1190:G:H1'	49:3:1191:A:OP2	2.19	0.41
50:1:23:G:H2'	50:1:24:G:C8	2.55	0.41
50:1:185:G:H2'	50:1:186:G:C8	2.53	0.41
50:1:200:U:H2'	50:1:201:C:O4'	2.20	0.41
50:1:353:C:H2'	50:1:354:A:H8	1.85	0.41
50:1:650:C:H2'	50:1:651:G:H5''	2.02	0.41
50:1:862:G:H2'	50:1:863:A:O4'	2.20	0.41
50:1:999:U:H5''	50:1:1154:G:O6	2.20	0.41
50:1:1076:C:H2'	50:1:1077:A:C8	2.54	0.41
50:1:2064:C:H2'	50:1:2065:C:C6	2.55	0.41
50:1:2376:A:H2'	50:1:2377:A:O4'	2.20	0.41
2:c:197:THR:HB	50:1:2820:A:N1	2.34	0.41
3:d:200:LEU:O	3:d:201:ALA:HB3	2.20	0.41
5:f:121:THR:HG23	5:f:121:THR:O	2.20	0.41
11:n:31:HIS:CD2	50:1:1279:G:H4'	2.55	0.41
12:o:99:TYR:CE1	12:o:104:GLN:HA	2.55	0.41
21:x:76:LYS:HE2	21:x:76:LYS:H	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:G:100:LEU:O	29:G:101:THR:HG22	2.21	0.41
30:H:186:SER:HB2	30:H:197:VAL:HG13	2.01	0.41
31:I:12:ARG:NH2	49:3:428:G:H3'	2.35	0.41
32:J:24:VAL:HG13	32:J:26:GLY:H	1.85	0.41
32:J:106:ALA:HB1	32:J:110:MET:HB3	2.01	0.41
33:K:86:ARG:NH1	49:3:673:A:H4'	2.35	0.41
34:L:134:VAL:HG13	34:L:137:ARG:HH21	1.85	0.41
35:M:50:VAL:O	35:M:50:VAL:HG13	2.19	0.41
39:Q:81:ILE:HD12	39:Q:95:HIS:O	2.20	0.41
39:Q:113:ARG:CZ	39:Q:121:PRO:HD2	2.49	0.41
49:3:603:U:H2'	49:3:604:G:H8	1.84	0.41
50:1:254:G:H2'	50:1:255:A:H5''	2.02	0.41
50:1:1271:G:C2	50:1:1617:C:H4'	2.55	0.41
50:1:1437:C:H2'	50:1:1438:U:H6	1.82	0.41
50:1:2642:G:O2'	50:1:2643:G:H5'	2.20	0.41
51:2:4:C:H2'	51:2:5:U:C6	2.55	0.41
51:2:13:G:H21	51:2:16:G:H1'	1.85	0.41
54:8:37:ILE:CG2	54:8:75:GLN:HG3	2.51	0.41
54:8:62:HIS:C	54:8:64:ILE:N	2.78	0.41
1:b:213:ARG:HH21	50:1:1566:A:H5'	1.84	0.41
1:b:245:THR:C	1:b:247:TRP:N	2.77	0.41
3:d:40:ARG:NH1	50:1:443:A:H2'	2.35	0.41
23:z:6:ILE:HG22	23:z:28:LEU:HD11	2.02	0.41
23:z:44:ARG:HA	23:z:47:ILE:HD12	2.01	0.41
29:G:107:ARG:HA	29:G:110:ILE:HD12	2.02	0.41
30:H:35:ASP:HB2	30:H:58:ARG:HH22	1.85	0.41
31:I:67:LEU:HB3	31:I:70:GLN:HB3	2.02	0.41
31:I:69:ARG:HG3	49:3:546:A:OP1	2.20	0.41
32:J:63:MET:HB3	32:J:67:ARG:NH1	2.34	0.41
33:K:8:PHE:CD2	33:K:84:VAL:HG23	2.54	0.41
39:Q:4:ASN:HB2	49:3:880:C:OP2	2.19	0.41
40:R:54:THR:O	40:R:58:GLU:HG3	2.19	0.41
43:U:33:ILE:N	43:U:33:ILE:HD12	2.35	0.41
43:U:46:LYS:HZ2	43:U:49:GLY:H	1.67	0.41
43:U:60:TRP:O	43:U:63:GLN:HB2	2.20	0.41
49:3:107:G:H2'	49:3:108:G:O4'	2.19	0.41
49:3:948:C:H2'	49:3:949:A:H8	1.86	0.41
49:3:952:U:H5'	49:3:972:C:H41	1.84	0.41
49:3:1060:U:H2'	49:3:1061:G:C8	2.54	0.41
49:3:1256:A:H4'	49:3:1258:G:C4	2.55	0.41
49:3:1386:G:H2'	49:3:1387:G:H8	1.84	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:1496:C:H2'	49:3:1497:G:C8	2.55	0.41
49:3:1510:C:H2'	49:3:1511:G:H8	1.86	0.41
50:1:7:G:H2'	50:1:8:C:C6	2.55	0.41
50:1:374:A:H2'	50:1:375:G:O4'	2.20	0.41
50:1:489:G:H22	50:1:1320:C:H3'	1.86	0.41
50:1:842:U:H2'	50:1:843:G:C8	2.54	0.41
50:1:1161:C:H2'	50:1:1162:G:H8	1.85	0.41
50:1:1446:C:H2'	50:1:1447:C:C6	2.54	0.41
50:1:2150:C:H2'	50:1:2151:U:O4'	2.20	0.41
50:1:2233:U:H2'	50:1:2234:G:H8	1.85	0.41
50:1:2372:U:H2'	50:1:2373:G:H8	1.84	0.41
50:1:2537:U:H2'	50:1:2538:C:C6	2.56	0.41
1:b:206:LYS:HB2	50:1:729:G:C6	2.56	0.41
8:k:76:VAL:HG12	13:p:72:VAL:CG2	2.50	0.41
13:p:105:LYS:HE2	49:3:1464:U:P	2.60	0.41
21:x:66:VAL:O	21:x:70:LEU:HD23	2.21	0.41
25:C:24:LYS:HZ2	25:C:26:LYS:HA	1.85	0.41
28:F:30:GLU:O	28:F:33:HIS:HB2	2.20	0.41
29:G:187:ASP:HB2	29:G:203:ASP:OD2	2.20	0.41
32:J:56:PRO:HA	32:J:59:ILE:HD11	2.02	0.41
32:J:65:LYS:HD3	32:J:68:ARG:HH12	1.85	0.41
34:L:22:LEU:O	34:L:26:VAL:HG13	2.21	0.41
34:L:87:PRO:HD3	34:L:147:ASN:HB3	2.01	0.41
35:M:80:PRO:HA	35:M:83:ARG:CZ	2.50	0.41
37:O:6:ILE:HG23	37:O:102:LEU:HA	2.02	0.41
38:P:85:VAL:O	38:P:112:VAL:N	2.52	0.41
40:R:89:ARG:HD3	40:R:89:ARG:HA	1.83	0.41
40:R:92:ARG:HH22	49:3:1226:C:H5''	1.82	0.41
40:R:113:LYS:HB2	40:R:114:PRO:HD3	2.02	0.41
49:3:100:G:N3	49:3:100:G:H2'	2.35	0.41
49:3:823:C:H2'	49:3:824:G:C8	2.56	0.41
49:3:856:C:O2'	49:3:857:C:H5'	2.20	0.41
49:3:886:G:H2'	49:3:887:G:O4'	2.20	0.41
50:1:538:A:H2'	50:1:539:G:O4'	2.20	0.41
50:1:1954:G:N2	50:1:1956:U:H3	2.18	0.41
51:2:48:U:H2'	51:2:49:C:H6	1.86	0.41
54:8:64:ILE:O	54:8:64:ILE:HG13	2.20	0.41
1:b:260:LYS:O	1:b:263:ASP:OD1	2.38	0.41
8:k:31:ARG:HE	50:1:1996:C:P	2.44	0.41
8:k:48:PRO:HG3	49:3:1422:G:H5'	2.01	0.41
9:l:47:ARG:HH12	50:1:196:A:H5''	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:n:73:ASN:HA	11:n:76:VAL:HG22	2.01	0.41
15:r:33:VAL:HG22	15:r:34:GLU:H	1.85	0.41
15:r:91:GLN:NE2	50:1:993:G:N3	2.69	0.41
19:v:42:LEU:N	19:v:42:LEU:HD23	2.35	0.41
20:w:73:ARG:O	20:w:73:ARG:HG3	2.20	0.41
20:w:74:LYS:HD3	20:w:74:LYS:N	2.36	0.41
27:E:16:THR:HG23	27:E:17:GLY:N	2.24	0.41
29:G:168:GLU:O	29:G:172:ILE:HG13	2.21	0.41
30:H:11:LEU:HD13	30:H:17:TRP:NE1	2.35	0.41
31:I:138:PRO:HB3	31:I:182:LYS:O	2.21	0.41
32:J:37:VAL:HG22	32:J:47:PHE:HB2	2.03	0.41
32:J:105:ILE:O	32:J:105:ILE:HG13	2.21	0.41
34:L:78:ARG:HD2	34:L:84:TYR:HB2	2.03	0.41
36:N:70:GLY:O	36:N:74:GLN:HG3	2.20	0.41
38:P:21:HIS:N	38:P:32:THR:O	2.46	0.41
38:P:58:THR:HG22	38:P:60:PHE:H	1.85	0.41
45:W:27:THR:HA	45:W:30:ASN:HD21	1.85	0.41
48:Z:6:ARG:O	48:Z:7:GLU:HB2	2.21	0.41
49:3:729:A:H2'	49:3:730:G:O4'	2.21	0.41
49:3:764:C:H2'	49:3:765:G:O4'	2.20	0.41
49:3:842:U:H3'	49:3:843:U:C5'	2.50	0.41
49:3:893:C:H2'	49:3:894:G:H8	1.83	0.41
49:3:962:C:H1'	49:3:1201:A:C6	2.55	0.41
49:3:1444:U:O5'	49:3:1444:U:H6	2.04	0.41
50:1:564:C:H2'	50:1:565:C:C6	2.56	0.41
50:1:680:C:H2'	50:1:681:G:C8	2.55	0.41
50:1:1849:G:H2'	50:1:1850:G:C8	2.56	0.41
50:1:1917:U:H2'	50:1:1918:A:O4'	2.21	0.41
50:1:1917:U:C2'	50:1:1918:A:H5'	2.50	0.41
51:2:105:G:H2'	51:2:106:G:O4'	2.20	0.41
52:5:17:C:OP1	52:5:60:U:H1'	2.20	0.41
52:5:34:C:H2'	52:5:35:A:H8	1.85	0.41
1:b:82:TYR:HE2	50:1:1567:G:H2'	1.84	0.41
3:d:79:ARG:HD3	50:1:1258:U:H4'	2.02	0.41
5:f:18:ILE:HG23	5:f:18:ILE:O	2.20	0.41
6:g:3:VAL:HG23	6:g:37:VAL:O	2.21	0.41
16:s:78:GLU:CD	16:s:78:GLU:H	2.27	0.41
18:u:9:GLU:N	18:u:9:GLU:OE2	2.54	0.41
19:v:9:ARG:NH2	19:v:12:GLN:HA	2.35	0.41
27:E:2:LYS:HG3	50:1:242:G:C8	2.56	0.41
31:I:119:HIS:HE1	49:3:495:A:N6	2.18	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:I:121:ALA:C	31:I:122:ILE:HD12	2.45	0.41
32:J:92:ARG:O	32:J:93:VAL:C	2.63	0.41
38:P:111:ASP:O	45:W:72:ARG:NH1	2.49	0.41
40:R:38:ILE:HG22	40:R:39:ALA:N	2.35	0.41
40:R:109:LYS:HD3	40:R:113:LYS:NZ	2.36	0.41
44:V:47:ASP:N	44:V:47:ASP:OD1	2.52	0.41
49:3:230:G:O2'	49:3:231:U:H5'	2.21	0.41
49:3:608:A:H2'	49:3:609:A:O4'	2.20	0.41
49:3:1157:A:N6	49:3:1178:G:H1'	2.36	0.41
49:3:1202:U:H2'	49:3:1203:C:H5'	2.02	0.41
49:3:1238:A:O2'	49:3:1239:A:H5'	2.21	0.41
49:3:1326:U:H2'	49:3:1327:C:C6	2.55	0.41
50:1:106:C:H2'	50:1:107:G:C8	2.56	0.41
50:1:420:C:O2'	50:1:421:C:H5'	2.20	0.41
50:1:666:A:H2'	50:1:667:U:C6	2.56	0.41
50:1:692:C:O2'	50:1:693:A:H5'	2.21	0.41
50:1:755:U:H2'	50:1:756:A:H8	1.85	0.41
50:1:1120:G:H2'	50:1:1121:C:O4'	2.20	0.41
50:1:2244:U:H2'	50:1:2245:U:O4'	2.21	0.41
50:1:2507:C:C2	50:1:2583:G:C2	3.09	0.41
50:1:2704:C:H2'	50:1:2705:A:O4'	2.21	0.41
51:2:28:C:H2'	51:2:29:A:H8	1.84	0.41
54:8:6:ARG:CZ	54:8:7:HIS:HB2	2.50	0.41
1:b:128:THR:C	1:b:129:LEU:HD22	2.45	0.41
1:b:210:ALA:O	1:b:215:VAL:HG12	2.21	0.41
1:b:235:GLU:O	1:b:238:ASN:ND2	2.53	0.41
4:e:109:ARG:NH1	4:e:135:ILE:O	2.50	0.41
6:g:2:GLN:HE22	6:g:20:ASN:HB2	1.86	0.41
6:g:78:VAL:HG21	6:g:103:VAL:HG12	2.03	0.41
7:j:27:ARG:NH1	50:1:1012:U:O2	2.54	0.41
8:k:9:ASN:OD1	8:k:18:ARG:NH1	2.52	0.41
10:m:50:ARG:HD3	10:m:65:ILE:HD11	2.02	0.41
10:m:71:LYS:HB3	10:m:93:VAL:O	2.21	0.41
16:s:6:LYS:HE3	16:s:8:ARG:HH21	1.85	0.41
18:u:12:VAL:HB	18:u:17:ASP:O	2.20	0.41
19:v:83:LYS:O	19:v:85:LYS:N	2.51	0.41
22:y:45:GLN:NE2	22:y:46:VAL:HG23	2.36	0.41
29:G:47:PRO:HA	29:G:50:ASN:HD22	1.86	0.41
30:H:21:TRP:HZ2	30:H:32:LEU:HD23	1.86	0.41
32:J:156:ARG:HH11	35:M:42:GLU:HB3	1.86	0.41
33:K:3:HIS:HB2	33:K:92:THR:HG23	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:L:5:VAL:HA	49:3:1378:C:OP2	2.21	0.41
39:Q:43:LYS:HZ1	49:3:1492:A:H5''	1.84	0.41
40:R:27:THR:OG1	49:3:1328:C:H5''	2.21	0.41
41:S:86:ALA:HB1	41:S:91:GLU:HB2	2.03	0.41
49:3:49:U:O2'	49:3:50:A:H2'	2.20	0.41
49:3:348:G:O2'	49:3:349:A:H5'	2.21	0.41
49:3:486:U:H2'	49:3:487:A:C8	2.55	0.41
49:3:715:A:H2'	49:3:716:A:H8	1.82	0.41
49:3:1094:G:N3	49:3:1094:G:C2'	2.82	0.41
49:3:1097:C:O2'	49:3:1169:A:H1'	2.20	0.41
50:1:115:C:O2'	50:1:116:C:H5'	2.21	0.41
50:1:371:A:N6	50:1:401:A:H3'	2.36	0.41
50:1:935:C:H2'	50:1:936:A:C8	2.55	0.41
50:1:1101:U:H2'	50:1:1102:C:H6	1.86	0.41
50:1:1213:A:N6	50:1:1236:G:H1'	2.36	0.41
50:1:1594:U:H2'	50:1:1595:C:C6	2.55	0.41
50:1:1749:A:H2'	50:1:1750:G:H8	1.86	0.41
50:1:1788:C:H2'	50:1:1789:A:O4'	2.21	0.41
50:1:2084:C:H2'	50:1:2085:U:C6	2.56	0.41
50:1:2264:C:H2'	50:1:2265:U:O4'	2.20	0.41
50:1:2286:G:H4'	50:1:2287:A:O5'	2.21	0.41
50:1:2712:C:OP1	50:1:2714:G:H4'	2.21	0.41
50:1:2898:U:H2'	50:1:2899:A:H8	1.86	0.41
3:d:145:ASP:OD2	3:d:183:PHE:HA	2.20	0.41
4:e:63:LYS:HA	4:e:64:PRO:HD3	1.94	0.41
4:e:140:ILE:HD11	4:e:144:LYS:HB2	2.01	0.41
4:e:151:LEU:N	4:e:151:LEU:HD23	2.35	0.41
6:g:128:HIS:O	6:g:143:ILE:HD12	2.20	0.41
7:j:100:VAL:HG13	7:j:101:ILE:N	2.36	0.41
8:k:114:LYS:O	8:k:117:SER:OG	2.36	0.41
12:o:26:LEU:HD23	12:o:92:PHE:HD1	1.84	0.41
18:u:51:LEU:HD12	18:u:52:ASN:ND2	2.36	0.41
27:E:24:LYS:CB	27:E:46:LYS:HZ2	2.34	0.41
30:H:69:THR:O	30:H:105:VAL:HG12	2.21	0.41
31:I:45:PRO:HG2	31:I:47:LEU:HD23	2.03	0.41
34:L:68:VAL:HG13	34:L:99:ALA:HB1	2.01	0.41
36:N:94:ARG:O	36:N:98:ARG:N	2.53	0.41
39:Q:6:LEU:HD23	39:Q:6:LEU:HA	1.96	0.41
49:3:201:G:H2'	49:3:202:G:C8	2.55	0.41
49:3:515:G:H2'	49:3:516:U:C6	2.56	0.41
49:3:676:A:H2	49:3:714:G:H22	1.69	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:788:U:H2'	49:3:789:U:O4'	2.20	0.41
50:1:214:G:O2'	50:1:215:G:H5'	2.21	0.41
50:1:644:A:H2'	50:1:645:C:C5'	2.51	0.41
50:1:945:A:C5	50:1:2448:A:C2	3.09	0.41
50:1:1592:C:H2'	50:1:1593:A:C8	2.56	0.41
50:1:2028:U:H2'	50:1:2029:G:O4'	2.21	0.41
50:1:2411:A:H2'	50:1:2412:A:C8	2.55	0.41
50:1:2542:A:H4'	50:1:2543:G:C8	2.56	0.41
50:1:2604:U:H2'	50:1:2605:U:C6	2.56	0.41
54:8:40:ARG:HH21	54:8:84:ARG:NH1	2.05	0.41
54:8:57:LEU:HD12	54:8:58:ALA:N	2.35	0.41
1:b:257:ARG:NH1	50:1:1799:G:OP1	2.53	0.41
2:c:81:GLU:CD	50:1:2636:C:H4'	2.45	0.41
3:d:13:THR:O	3:d:194:LYS:NZ	2.43	0.41
3:d:130:LYS:HD3	50:1:321:U:OP2	2.21	0.41
4:e:160:LYS:HA	4:e:160:LYS:HD3	1.91	0.41
5:f:43:LYS:HB2	5:f:50:THR:HG23	2.03	0.41
5:f:152:ARG:HD2	5:f:152:ARG:C	2.45	0.41
7:j:109:LEU:CD1	7:j:110:PRO:HD2	2.51	0.41
8:k:103:VAL:CG1	8:k:104:THR:H	2.22	0.41
9:l:116:VAL:HG13	9:l:138:ALA:HB2	2.02	0.41
10:m:2:LEU:HD12	10:m:2:LEU:HA	1.94	0.41
11:n:76:VAL:HA	11:n:79:LEU:HB2	2.02	0.41
12:o:30:ARG:NH1	51:2:49:C:OP2	2.54	0.41
14:q:71:ASN:HD21	14:q:106:THR:HG22	1.85	0.41
14:q:87:VAL:HG12	14:q:89:ILE:HG13	2.03	0.41
16:s:2:GLU:OE2	16:s:2:GLU:N	2.54	0.41
17:t:7:LEU:HD11	17:t:46:ALA:HB2	2.03	0.41
17:t:11:LEU:HD11	17:t:32:LEU:HD12	2.02	0.41
18:u:25:LYS:HB3	18:u:25:LYS:HE2	1.82	0.41
20:w:34:VAL:HG22	20:w:55:LEU:HB2	2.01	0.41
23:z:40:THR:HG23	23:z:43:ILE:H	1.85	0.41
29:G:143:LEU:O	29:G:147:LEU:HB2	2.20	0.41
30:H:27:GLU:HA	30:H:30:ASP:OD2	2.19	0.41
30:H:57:GLU:HB3	30:H:64:ARG:HB2	2.02	0.41
31:I:31:CYS:O	31:I:35:GLN:NE2	2.54	0.41
32:J:73:VAL:HG11	32:J:143:LEU:HB3	2.02	0.41
34:L:2:ARG:HB2	49:3:1380:U:O4	2.20	0.41
36:N:68:GLY:HA2	49:3:1250:A:O3'	2.21	0.41
40:R:64:VAL:CG2	40:R:65:GLU:H	2.29	0.41
41:S:36:SER:HA	41:S:40:ARG:HD3	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:U:44:SER:OG	43:U:45:GLU:N	2.53	0.41
49:3:114:U:O2'	49:3:115:G:H5'	2.21	0.41
49:3:484:G:H1'	49:3:486:U:P	2.61	0.41
49:3:924:C:H2'	49:3:925:G:C8	2.56	0.41
49:3:1254:A:H2'	49:3:1255:G:H8	1.86	0.41
50:1:146:A:H2'	50:1:147:C:C6	2.56	0.41
50:1:208:C:H2'	50:1:209:C:H6	1.85	0.41
50:1:323:C:H2'	50:1:1205:A:H61	1.86	0.41
50:1:706:A:H2'	50:1:707:G:O4'	2.21	0.41
50:1:759:G:H2'	50:1:760:G:C8	2.55	0.41
50:1:1139:G:H2'	50:1:1140:C:H6	1.86	0.41
50:1:2066:C:O2'	50:1:2067:G:H5'	2.20	0.41
50:1:2515:C:H2'	50:1:2516:A:C8	2.56	0.41
52:5:24:U:H2'	52:5:25:C:O4'	2.21	0.41
54:8:40:ARG:NH1	54:8:91:LEU:HD22	2.36	0.41
2:c:183:GLU:OE1	2:c:184:ARG:HG3	2.20	0.41
9:l:93:ASN:O	9:l:94:THR:OG1	2.36	0.41
10:m:62:LYS:HD2	10:m:64:TRP:CZ2	2.56	0.41
15:r:85:LYS:NZ	50:1:1187:G:OP1	2.53	0.41
18:u:10:VAL:HA	18:u:72:PHE:H	1.84	0.41
27:E:55:GLY:O	27:E:58:ILE:HG12	2.21	0.41
32:J:110:MET:O	32:J:113:VAL:HG12	2.20	0.41
34:L:70:PRO:HG3	34:L:102:TRP:CZ3	2.56	0.41
37:O:43:PRO:HD3	49:3:1150:A:H4'	2.03	0.41
39:Q:3:VAL:O	39:Q:6:LEU:HB2	2.21	0.41
39:Q:43:LYS:NZ	49:3:1492:A:H5''	2.36	0.41
42:T:34:GLN:O	42:T:38:LEU:HD13	2.21	0.41
44:V:14:ASP:HA	44:V:20:ILE:HD12	2.03	0.41
44:V:30:HIS:HA	44:V:31:PRO:HD3	1.95	0.41
45:W:62:ARG:NH1	45:W:68:PRO:O	2.54	0.41
48:Z:44:ARG:HD2	49:3:722:G:H5'	2.03	0.41
49:3:169:C:H2'	49:3:170:U:C6	2.56	0.41
49:3:257:G:H2'	49:3:258:G:C8	2.56	0.41
49:3:265:G:H2'	49:3:267:C:H5	1.86	0.41
49:3:342:C:H2'	49:3:343:U:O4'	2.20	0.41
49:3:1009:U:O2'	49:3:1010:U:H5'	2.21	0.41
50:1:174:U:H2'	50:1:175:G:C8	2.56	0.41
50:1:757:G:N2	50:1:758:C:H1'	2.35	0.41
51:2:32:U:H2'	51:2:33:G:H8	1.86	0.41
52:5:70:G:O2'	52:5:71:C:H5'	2.21	0.41
6:g:22:LYS:HA	6:g:22:LYS:HD2	1.92	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:j:7:LYS:HA	7:j:8:PRO:HD3	1.85	0.40
13:p:61:ARG:HB2	13:p:70:GLU:HG3	2.03	0.40
17:t:17:SER:H	17:t:20:ALA:HB3	1.86	0.40
19:v:61:LEU:HD23	19:v:62:THR:N	2.36	0.40
20:w:10:ARG:NH2	50:1:2279:G:N7	2.69	0.40
27:E:6:VAL:O	27:E:6:VAL:HG13	2.21	0.40
30:H:22:PHE:HE2	37:O:11:LYS:HE3	1.83	0.40
32:J:95:MET:N	32:J:95:MET:SD	2.95	0.40
33:K:68:GLN:H	33:K:68:GLN:NE2	2.19	0.40
34:L:91:ARG:O	34:L:95:ARG:N	2.53	0.40
34:L:119:LEU:O	34:L:123:LEU:HG	2.21	0.40
39:Q:29:LYS:CD	49:3:363:A:OP1	2.69	0.40
40:R:25:GLY:HA3	49:3:1329:A:H5''	2.02	0.40
48:Z:49:ALA:O	48:Z:53:LYS:HG2	2.21	0.40
48:Z:66:ARG:HG3	49:3:1098:C:O2'	2.21	0.40
49:3:389:A:H3'	49:3:390:U:C6	2.55	0.40
49:3:451:A:H61	49:3:480:U:H2'	1.81	0.40
49:3:505:G:H2'	49:3:506:G:C8	2.56	0.40
49:3:1197:A:H2'	49:3:1198:G:H5'	2.03	0.40
50:1:213:A:H2'	50:1:214:G:C8	2.57	0.40
50:1:362:A:H3'	50:1:363:G:C8	2.56	0.40
50:1:625:G:O2'	50:1:626:A:H5'	2.20	0.40
50:1:786:C:O2'	50:1:787:C:H5'	2.21	0.40
50:1:873:C:H2'	50:1:874:G:C8	2.56	0.40
50:1:1023:U:O2'	50:1:1122:G:H5'	2.21	0.40
50:1:2786:U:H2'	50:1:2787:C:C6	2.56	0.40
50:1:2843:G:H2'	50:1:2844:G:O4'	2.20	0.40
3:d:55:SER:OG	50:1:468:G:H5''	2.21	0.40
4:e:37:MET:HE2	4:e:52:ALA:CB	2.51	0.40
9:l:30:THR:HG22	50:1:810:U:O4	2.21	0.40
10:m:71:LYS:C	10:m:71:LYS:HD3	2.46	0.40
10:m:96:ILE:HD12	10:m:96:ILE:H	1.86	0.40
13:p:53:GLY:N	13:p:56:SER:OG	2.54	0.40
13:p:65:ASN:OD1	13:p:65:ASN:N	2.54	0.40
13:p:85:VAL:O	13:p:85:VAL:HG13	2.21	0.40
14:q:103:VAL:HG13	14:q:104:ALA:N	2.37	0.40
15:r:16:GLU:HB2	15:r:101:ILE:CG1	2.52	0.40
17:t:32:LEU:HD23	17:t:32:LEU:H	1.85	0.40
19:v:83:LYS:HA	19:v:84:PRO:HD3	1.94	0.40
20:w:67:VAL:O	20:w:67:VAL:HG13	2.21	0.40
23:z:11:SER:HB3	50:1:988:A:O5'	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:H:11:LEU:HD13	30:H:17:TRP:HE1	1.86	0.40
30:H:11:LEU:HD13	30:H:17:TRP:CD1	2.56	0.40
30:H:20:THR:HA	41:S:93:PRO:HG3	2.02	0.40
30:H:171:ARG:HG2	30:H:173:PRO:HD3	2.03	0.40
31:I:130:ASN:HD21	49:3:439:U:H4'	1.85	0.40
32:J:153:ALA:HB1	32:J:160:VAL:HA	2.03	0.40
36:N:114:LYS:HZ1	49:3:1187:G:P	2.44	0.40
39:Q:98:ARG:HA	39:Q:98:ARG:HD2	1.83	0.40
39:Q:113:ARG:HD3	39:Q:120:ARG:HB2	2.03	0.40
42:T:80:LEU:O	42:T:84:LEU:N	2.52	0.40
49:3:106:C:H2'	49:3:107:G:H8	1.85	0.40
50:1:106:C:H2'	50:1:107:G:H8	1.87	0.40
50:1:757:G:C2	50:1:758:C:H1'	2.56	0.40
50:1:1415:U:O3'	50:1:1416:G:H4'	2.21	0.40
51:2:70:C:H2'	51:2:71:C:H6	1.85	0.40
51:2:82:U:H2'	51:2:83:G:H8	1.86	0.40
1:b:68:ARG:HG2	1:b:128:THR:HG21	2.03	0.40
1:b:255:LYS:HD3	1:b:255:LYS:HA	1.98	0.40
5:f:82:PHE:N	5:f:134:GLY:O	2.52	0.40
5:f:174:LYS:HE2	50:1:2529:G:H4'	2.03	0.40
6:g:135:HIS:ND1	6:g:137:GLU:OE1	2.53	0.40
7:j:105:VAL:O	7:j:108:MET:HB2	2.22	0.40
9:l:17:LYS:HE2	50:1:663:G:O3'	2.20	0.40
9:l:60:ARG:HG2	9:l:61:LEU:HD22	2.02	0.40
13:p:59:THR:HA	13:p:72:VAL:HA	2.03	0.40
14:q:82:LEU:CD2	14:q:87:VAL:HB	2.51	0.40
26:D:37:LYS:HE2	26:D:37:LYS:HB3	1.98	0.40
30:H:18:ASN:OD1	30:H:19:SER:N	2.54	0.40
30:H:87:ARG:HD3	30:H:87:ARG:C	2.45	0.40
32:J:44:ARG:NH2	32:J:70:MET:HE3	2.32	0.40
32:J:107:GLY:HA3	49:3:9:G:C5'	2.30	0.40
36:N:20:ILE:HB	36:N:60:LEU:HD11	2.02	0.40
41:S:47:LEU:HD13	49:3:1317:C:O3'	2.22	0.40
44:V:25:GLU:HA	44:V:39:ARG:O	2.21	0.40
46:X:40:PHE:CD1	46:X:41:PRO:HD2	2.57	0.40
49:3:45:G:H2'	49:3:46:G:C8	2.56	0.40
49:3:154:U:H2'	49:3:155:A:H8	1.82	0.40
49:3:578:C:H2'	49:3:579:A:H8	1.86	0.40
49:3:594:U:H2'	49:3:595:A:O4'	2.22	0.40
49:3:1448:C:H2'	49:3:1449:C:C6	2.56	0.40
49:3:1486:G:H2'	49:3:1487:G:H8	1.83	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:156:A:H2'	50:1:157:C:C6	2.56	0.40
50:1:528:A:C2	50:1:2042:A:H2'	2.56	0.40
50:1:1041:G:H2'	50:1:1042:G:H8	1.86	0.40
50:1:1183:U:H2'	50:1:1184:U:C6	2.56	0.40
50:1:1601:G:O2'	50:1:1602:U:H5'	2.22	0.40
50:1:2070:A:O2'	50:1:2071:A:H5'	2.21	0.40
50:1:2393:U:H2'	50:1:2394:C:O4'	2.22	0.40
50:1:2734:A:C2'	50:1:2735:G:H5'	2.52	0.40
50:1:2756:U:H1'	50:1:2757:A:H5''	2.02	0.40
1:b:77:VAL:HA	1:b:93:VAL:HA	2.03	0.40
5:f:115:GLN:NE2	5:f:116:LEU:O	2.54	0.40
7:j:58:ASN:HA	7:j:126:ALA:O	2.21	0.40
9:l:90:VAL:HG22	9:l:122:VAL:HA	2.03	0.40
11:n:69:ARG:O	11:n:71:ARG:N	2.51	0.40
12:o:29:HIS:CD2	51:2:7:G:H5''	2.57	0.40
15:r:20:VAL:HG22	15:r:21:ARG:N	2.35	0.40
23:z:35:VAL:HG22	23:z:37:ARG:NH1	2.36	0.40
26:D:37:LYS:NZ	50:1:469:G:O6	2.49	0.40
32:J:156:ARG:NH1	35:M:42:GLU:OE1	2.54	0.40
32:J:160:VAL:HG23	32:J:161:GLU:N	2.37	0.40
33:K:86:ARG:CZ	49:3:673:A:H4'	2.50	0.40
37:O:52:LEU:HD21	37:O:59:LYS:NZ	2.35	0.40
38:P:61:ALA:O	38:P:64:VAL:HG12	2.22	0.40
38:P:66:ALA:O	38:P:69:CYS:HB3	2.21	0.40
42:T:46:LYS:CE	49:3:808:C:H5''	2.52	0.40
44:V:30:HIS:CD2	44:V:32:ILE:HB	2.56	0.40
47:Y:54:GLN:O	47:Y:57:VAL:HG22	2.22	0.40
49:3:271:C:H2'	49:3:272:C:C6	2.57	0.40
49:3:419:C:O2'	49:3:420:U:H5'	2.20	0.40
49:3:436:C:H2'	49:3:437:U:C6	2.57	0.40
49:3:599:C:H2'	49:3:600:A:H8	1.87	0.40
49:3:708:C:H2'	49:3:709:U:C6	2.57	0.40
49:3:968:A:C4	49:3:1062:U:H4'	2.56	0.40
49:3:1435:G:H2'	49:3:1436:U:C6	2.57	0.40
50:1:181:A:H2'	50:1:182:A:O4'	2.22	0.40
50:1:325:G:H2'	50:1:326:G:H8	1.87	0.40
50:1:327:G:H2'	50:1:328:U:O4'	2.21	0.40
50:1:940:G:H2'	50:1:941:A:C5'	2.51	0.40
50:1:1666:G:C2'	50:1:1667:G:H5'	2.52	0.40
50:1:1736:U:H2'	50:1:1737:G:H5'	2.04	0.40
50:1:2047:C:H2'	50:1:2048:G:H8	1.84	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:2213:U:H5''	50:1:2214:C:OP2	2.22	0.40
50:1:2559:C:H2'	50:1:2560:A:H8	1.87	0.40
52:5:18:G:N2	52:5:57:A:H2'	2.37	0.40
54:8:61:HIS:CD2	54:8:62:HIS:H	2.39	0.40
2:c:49:GLN:HB3	2:c:81:GLU:HG2	2.03	0.40
5:f:26:LYS:NZ	5:f:27:GLY:O	2.54	0.40
6:g:96:THR:O	6:g:99:ILE:HG22	2.21	0.40
7:j:113:PRO:HD2	50:1:558:U:OP1	2.21	0.40
11:n:53:THR:OG1	50:1:2840:C:H5''	2.21	0.40
22:y:42:LEU:O	22:y:46:VAL:HG23	2.22	0.40
27:E:6:VAL:HG22	27:E:8:GLY:H	1.87	0.40
31:I:106:PHE:CZ	31:I:172:VAL:HG21	2.56	0.40
41:S:37:ASP:OD2	41:S:39:ASP:HB3	2.22	0.40
42:T:67:ASP:OD1	42:T:68:TYR:N	2.55	0.40
43:U:28:ARG:NH2	49:3:390:U:O2'	2.55	0.40
43:U:44:SER:O	43:U:46:LYS:N	2.54	0.40
47:Y:23:ARG:HA	47:Y:23:ARG:HD2	1.96	0.40
49:3:91:U:H3'	49:3:92:U:H5''	2.02	0.40
49:3:106:C:H2'	49:3:107:G:C8	2.57	0.40
49:3:319:G:O2'	49:3:320:A:H5'	2.21	0.40
49:3:412:A:H3'	49:3:413:G:C4'	2.52	0.40
49:3:738:C:H2'	49:3:739:C:H6	1.87	0.40
49:3:1110:A:H2'	49:3:1111:A:O4'	2.22	0.40
49:3:1237:C:H4'	49:3:1334:G:N2	2.37	0.40
49:3:1368:A:O2'	49:3:1369:C:H5'	2.22	0.40
50:1:18:U:H2'	50:1:19:A:H8	1.85	0.40
50:1:384:A:H2'	50:1:384:A:N3	2.36	0.40
50:1:432:A:H2'	50:1:433:C:C6	2.57	0.40
50:1:521:U:H2'	50:1:522:A:C8	2.57	0.40
50:1:1266:G:N2	50:1:2012:G:H2'	2.35	0.40
50:1:1355:G:O2'	50:1:1356:G:H5'	2.21	0.40
50:1:1831:G:H2'	50:1:1832:C:C6	2.56	0.40
50:1:2506:U:O2'	50:1:2507:C:H5'	2.20	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	b	269/271 (99%)	229 (85%)	39 (14%)	1 (0%)	30	60
2	c	207/209 (99%)	186 (90%)	21 (10%)	0	100	100
3	d	199/201 (99%)	175 (88%)	22 (11%)	2 (1%)	12	43
4	e	175/177 (99%)	154 (88%)	21 (12%)	0	100	100
5	f	174/176 (99%)	146 (84%)	25 (14%)	3 (2%)	7	34
6	g	147/149 (99%)	118 (80%)	27 (18%)	2 (1%)	9	37
7	j	140/142 (99%)	126 (90%)	14 (10%)	0	100	100
8	k	120/122 (98%)	102 (85%)	18 (15%)	0	100	100
9	l	141/143 (99%)	118 (84%)	19 (14%)	4 (3%)	4	27
10	m	134/136 (98%)	119 (89%)	14 (10%)	1 (1%)	18	50
11	n	118/120 (98%)	98 (83%)	19 (16%)	1 (1%)	16	48
12	o	114/116 (98%)	101 (89%)	11 (10%)	2 (2%)	6	34
13	p	112/114 (98%)	98 (88%)	14 (12%)	0	100	100
14	q	115/117 (98%)	109 (95%)	6 (5%)	0	100	100
15	r	101/103 (98%)	81 (80%)	18 (18%)	2 (2%)	6	32
16	s	108/110 (98%)	93 (86%)	14 (13%)	1 (1%)	14	45
17	t	91/93 (98%)	81 (89%)	10 (11%)	0	100	100
18	u	100/102 (98%)	79 (79%)	16 (16%)	5 (5%)	1	17
19	v	92/94 (98%)	84 (91%)	8 (9%)	0	100	100
20	w	73/75 (97%)	64 (88%)	8 (11%)	1 (1%)	9	37
21	x	75/77 (97%)	70 (93%)	5 (7%)	0	100	100
22	y	61/63 (97%)	57 (93%)	3 (5%)	1 (2%)	7	35
23	z	56/58 (97%)	53 (95%)	3 (5%)	0	100	100
24	B	54/56 (96%)	48 (89%)	5 (9%)	1 (2%)	6	33
25	C	48/50 (96%)	42 (88%)	5 (10%)	1 (2%)	5	31

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
26	D	44/46 (96%)	41 (93%)	3 (7%)	0	100	100
27	E	62/64 (97%)	52 (84%)	7 (11%)	3 (5%)	2	17
28	F	36/38 (95%)	30 (83%)	6 (17%)	0	100	100
29	G	223/225 (99%)	195 (87%)	22 (10%)	6 (3%)	4	27
30	H	204/206 (99%)	186 (91%)	17 (8%)	1 (0%)	24	56
31	I	203/205 (99%)	171 (84%)	32 (16%)	0	100	100
32	J	155/157 (99%)	124 (80%)	28 (18%)	3 (2%)	6	33
33	K	98/100 (98%)	81 (83%)	13 (13%)	4 (4%)	2	20
34	L	149/151 (99%)	132 (89%)	15 (10%)	2 (1%)	9	38
35	M	127/129 (98%)	115 (91%)	11 (9%)	1 (1%)	16	48
36	N	125/127 (98%)	94 (75%)	26 (21%)	5 (4%)	2	21
37	O	96/98 (98%)	80 (83%)	13 (14%)	3 (3%)	3	26
38	P	114/116 (98%)	93 (82%)	18 (16%)	3 (3%)	4	28
39	Q	121/123 (98%)	100 (83%)	17 (14%)	4 (3%)	3	25
40	R	112/114 (98%)	101 (90%)	9 (8%)	2 (2%)	6	34
41	S	98/100 (98%)	82 (84%)	13 (13%)	3 (3%)	3	26
42	T	86/88 (98%)	78 (91%)	6 (7%)	2 (2%)	5	30
43	U	80/82 (98%)	66 (82%)	13 (16%)	1 (1%)	9	38
44	V	78/80 (98%)	66 (85%)	11 (14%)	1 (1%)	9	38
45	W	63/65 (97%)	58 (92%)	4 (6%)	1 (2%)	7	35
46	X	77/79 (98%)	67 (87%)	10 (13%)	0	100	100
47	Y	83/85 (98%)	81 (98%)	2 (2%)	0	100	100
48	Z	63/65 (97%)	41 (65%)	16 (25%)	6 (10%)	0	7
54	8	130/132 (98%)	103 (79%)	22 (17%)	5 (4%)	2	22
All	All	5651/5749 (98%)	4868 (86%)	699 (12%)	84 (2%)	11	36

All (84) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	d	83	VAL
12	o	34	HIS
15	r	54	VAL
22	y	24	GLU
24	B	25	THR

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Mol	Chain	Res	Type
27	E	16	THR
27	E	31	ILE
29	G	15	PHE
29	G	19	THR
29	G	101	THR
32	J	93	VAL
32	J	122	VAL
36	N	57	VAL
42	T	48	ASP
43	U	79	ASN
44	V	15	LYS
48	Z	37	TYR
54	8	4	ILE
54	8	70	ILE
1	b	240	GLY
5	f	174	LYS
6	g	15	LEU
6	g	136	SER
18	u	51	LEU
29	G	94	ARG
32	J	11	GLN
33	K	55	HIS
36	N	90	ASP
38	P	77	GLY
38	P	125	LYS
41	S	31	SER
42	T	46	LYS
48	Z	25	ALA
48	Z	26	GLY
48	Z	34	ARG
54	8	49	PRO
5	f	47	ASN
10	m	70	ASP
11	n	70	THR
18	u	6	ARG
20	w	15	LYS
27	E	17	GLY
30	H	77	GLY
33	K	42	TRP
33	K	92	THR
34	L	18	GLY
40	R	65	GLU

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Mol	Chain	Res	Type
40	R	105	ALA
41	S	2	LYS
54	8	50	GLU
3	d	62	GLN
9	l	29	LYS
12	o	100	HIS
15	r	52	PRO
16	s	40	ASN
18	u	99	SER
29	G	33	ALA
29	G	73	ARG
33	K	94	HIS
36	N	8	THR
36	N	12	LYS
37	O	43	PRO
37	O	56	HIS
39	Q	35	ARG
48	Z	66	ARG
5	f	117	PRO
9	l	94	THR
35	M	120	LEU
37	O	42	LEU
39	Q	33	CYS
39	Q	77	SER
41	S	36	SER
54	8	48	LEU
9	l	52	GLY
25	C	40	PRO
36	N	120	ALA
45	W	17	VAL
48	Z	9	GLU
34	L	7	GLY
39	Q	41	PRO
18	u	53	GLN
9	l	56	PRO
18	u	54	PRO
38	P	53	GLY

5.3.2 Protein sidechains

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

entries.

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	b	216/216 (100%)	216 (100%)	0	100	100
2	c	164/164 (100%)	164 (100%)	0	100	100
3	d	165/165 (100%)	164 (99%)	1 (1%)	78	79
4	e	148/148 (100%)	148 (100%)	0	100	100
5	f	137/137 (100%)	134 (98%)	3 (2%)	45	63
6	g	114/114 (100%)	114 (100%)	0	100	100
7	j	116/116 (100%)	116 (100%)	0	100	100
8	k	103/103 (100%)	103 (100%)	0	100	100
9	l	102/102 (100%)	102 (100%)	0	100	100
10	m	109/109 (100%)	109 (100%)	0	100	100
11	n	100/100 (100%)	100 (100%)	0	100	100
12	o	86/86 (100%)	86 (100%)	0	100	100
13	p	99/99 (100%)	98 (99%)	1 (1%)	68	74
14	q	89/89 (100%)	89 (100%)	0	100	100
15	r	84/84 (100%)	84 (100%)	0	100	100
16	s	93/93 (100%)	93 (100%)	0	100	100
17	t	80/80 (100%)	79 (99%)	1 (1%)	61	71
18	u	83/83 (100%)	83 (100%)	0	100	100
19	v	78/78 (100%)	77 (99%)	1 (1%)	61	71
20	w	57/57 (100%)	57 (100%)	0	100	100
21	x	67/67 (100%)	67 (100%)	0	100	100
22	y	55/55 (100%)	55 (100%)	0	100	100
23	z	48/48 (100%)	47 (98%)	1 (2%)	47	64
24	B	47/47 (100%)	47 (100%)	0	100	100
25	C	45/45 (100%)	45 (100%)	0	100	100
26	D	38/38 (100%)	38 (100%)	0	100	100
27	E	51/51 (100%)	51 (100%)	0	100	100
28	F	34/34 (100%)	34 (100%)	0	100	100
29	G	186/186 (100%)	182 (98%)	4 (2%)	45	63

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
30	H	170/170 (100%)	169 (99%)	1 (1%)	78	79
31	I	172/172 (100%)	169 (98%)	3 (2%)	53	67
32	J	119/119 (100%)	118 (99%)	1 (1%)	73	76
33	K	87/87 (100%)	86 (99%)	1 (1%)	65	73
34	L	124/124 (100%)	123 (99%)	1 (1%)	73	76
35	M	104/104 (100%)	104 (100%)	0	100	100
36	N	105/105 (100%)	103 (98%)	2 (2%)	50	65
37	O	86/86 (100%)	84 (98%)	2 (2%)	44	62
38	P	89/89 (100%)	89 (100%)	0	100	100
39	Q	103/103 (100%)	103 (100%)	0	100	100
40	R	92/92 (100%)	92 (100%)	0	100	100
41	S	83/83 (100%)	83 (100%)	0	100	100
42	T	76/76 (100%)	75 (99%)	1 (1%)	61	71
43	U	65/65 (100%)	65 (100%)	0	100	100
44	V	74/74 (100%)	73 (99%)	1 (1%)	59	70
45	W	56/56 (100%)	55 (98%)	1 (2%)	51	67
46	X	70/70 (100%)	70 (100%)	0	100	100
47	Y	65/65 (100%)	65 (100%)	0	100	100
48	Z	55/55 (100%)	55 (100%)	0	100	100
54	8	108/108 (100%)	106 (98%)	2 (2%)	50	65
All	All	4697/4697 (100%)	4669 (99%)	28 (1%)	76	79

All (28) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
3	d	163	ASN
5	f	47	ASN
5	f	48	THR
5	f	132	LEU
13	p	91	VAL
17	t	32	LEU
19	v	72	VAL
23	z	23	LEU
29	G	19	THR
29	G	46	VAL

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Mol	Chain	Res	Type
29	G	100	LEU
29	G	185	ILE
30	H	110	LEU
31	I	29	THR
31	I	49	ASP
31	I	77	GLU
32	J	104	ILE
33	K	5	GLU
34	L	96	ASN
36	N	62	LEU
36	N	64	ILE
37	O	57	VAL
37	O	97	ASP
42	T	48	ASP
44	V	60	ILE
45	W	30	ASN
54	8	35	THR
54	8	48	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (126) such sidechains are listed below:

Mol	Chain	Res	Type
1	b	45	ASN
1	b	59	GLN
1	b	85	ASN
1	b	116	GLN
1	b	127	ASN
1	b	133	ASN
1	b	142	ASN
1	b	152	GLN
1	b	162	GLN
1	b	196	ASN
1	b	199	HIS
1	b	238	ASN
1	b	250	GLN
2	c	32	ASN
2	c	49	GLN
2	c	167	ASN
2	c	173	GLN
3	d	9	GLN
3	d	90	GLN
3	d	97	ASN

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Mol	Chain	Res	Type
3	d	195	GLN
4	e	22	ASN
4	e	36	ASN
4	e	80	GLN
5	f	21	GLN
5	f	72	ASN
5	f	115	GLN
6	g	2	GLN
6	g	66	ASN
7	j	40	HIS
7	j	135	GLN
7	j	138	GLN
8	k	88	ASN
9	l	54	GLN
9	l	93	ASN
9	l	99	ASN
10	m	3	GLN
10	m	13	HIS
11	n	9	GLN
11	n	31	HIS
11	n	73	ASN
11	n	81	ASN
12	o	29	HIS
12	o	34	HIS
13	p	2	ASN
13	p	11	GLN
13	p	55	HIS
14	q	19	GLN
14	q	36	GLN
14	q	71	ASN
15	r	18	GLN
16	s	15	GLN
16	s	57	ASN
17	t	15	HIS
17	t	72	GLN
18	u	52	ASN
18	u	65	GLN
19	v	49	ASN
20	w	53	HIS
21	x	31	ASN
22	y	15	ASN
22	y	31	GLN

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Mol	Chain	Res	Type
23	z	8	GLN
23	z	48	ASN
24	B	5	ASN
24	B	41	HIS
25	C	44	GLN
26	D	13	ASN
27	E	27	ASN
27	E	42	HIS
28	F	13	ASN
29	G	14	HIS
29	G	17	HIS
29	G	50	ASN
29	G	108	GLN
30	H	31	ASN
31	I	35	GLN
31	I	39	GLN
31	I	40	HIS
31	I	70	GLN
31	I	73	ASN
31	I	88	ASN
31	I	115	GLN
31	I	119	HIS
31	I	130	ASN
31	I	151	GLN
31	I	163	GLN
32	J	18	ASN
32	J	60	GLN
32	J	81	GLN
32	J	134	ASN
33	K	55	HIS
33	K	81	ASN
34	L	8	GLN
34	L	27	ASN
34	L	129	ASN
34	L	147	ASN
35	M	66	GLN
36	N	4	GLN
36	N	31	GLN
36	N	74	GLN
37	O	99	GLN
38	P	117	HIS
38	P	118	ASN

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Mol	Chain	Res	Type
39	Q	4	ASN
39	Q	76	HIS
40	R	7	ASN
40	R	13	HIS
40	R	104	ASN
41	S	65	GLN
43	U	18	GLN
43	U	63	GLN
43	U	79	ASN
44	V	8	GLN
44	V	30	HIS
44	V	46	HIS
45	W	30	ASN
46	X	56	HIS
47	Y	20	ASN
47	Y	47	GLN
47	Y	51	ASN
47	Y	54	GLN
47	Y	69	ASN
47	Y	83	ASN
48	Z	63	ASN
54	8	31	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
49	3	1538/1539 (99%)	159 (10%)	1 (0%)
50	1	2902/2903 (99%)	339 (11%)	9 (0%)
51	2	119/120 (99%)	9 (7%)	0
52	5	76/77 (98%)	6 (7%)	0
53	4	15/16 (93%)	3 (20%)	0
All	All	4650/4655 (99%)	516 (11%)	10 (0%)

All (516) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
49	3	6	G
49	3	9	G
49	3	22	G
49	3	31	G
49	3	32	A

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Mol	Chain	Res	Type
49	3	39	G
49	3	48	C
49	3	51	A
49	3	71	A
49	3	82	G
49	3	83	C
49	3	84	U
49	3	87	C
49	3	92	U
49	3	100	G
49	3	141	G
49	3	144	G
49	3	146	G
49	3	149	A
49	3	173	U
49	3	183	C
49	3	184	G
49	3	195	A
49	3	210	C
49	3	226	G
49	3	247	G
49	3	251	G
49	3	253	A
49	3	266	G
49	3	267	C
49	3	279	A
49	3	280	C
49	3	281	G
49	3	289	G
49	3	316	C
49	3	328	C
49	3	345	C
49	3	352	C
49	3	367	U
49	3	372	C
49	3	412	A
49	3	413	G
49	3	422	C
49	3	423	G
49	3	429	U
49	3	448	A
49	3	468	A

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Mol	Chain	Res	Type
49	3	474	G
49	3	479	U
49	3	480	U
49	3	484	G
49	3	486	U
49	3	495	A
49	3	497	G
49	3	508	U
49	3	518	C
49	3	524	G
49	3	547	A
49	3	561	U
49	3	566	G
49	3	572	A
49	3	573	A
49	3	575	G
49	3	576	C
49	3	577	G
49	3	633	G
49	3	653	U
49	3	654	G
49	3	665	A
49	3	666	G
49	3	687	A
49	3	688	G
49	3	702	A
49	3	703	G
49	3	713	G
49	3	724	G
49	3	755	G
49	3	777	A
49	3	794	A
49	3	814	A
49	3	817	C
49	3	819	A
49	3	821	G
49	3	832	G
49	3	843	U
49	3	844	G
49	3	845	A
49	3	846	G
49	3	871	U

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Mol	Chain	Res	Type
49	3	873	A
49	3	902	G
49	3	926	G
49	3	934	C
49	3	935	A
49	3	938	A
49	3	960	U
49	3	966	G
49	3	969	A
49	3	975	A
49	3	976	G
49	3	977	A
49	3	992	U
49	3	993	G
49	3	1004	A
49	3	1030	U
49	3	1031	C
49	3	1033	G
49	3	1053	G
49	3	1054	C
49	3	1055	A
49	3	1094	G
49	3	1101	A
49	3	1136	C
49	3	1137	C
49	3	1138	G
49	3	1139	G
49	3	1159	U
49	3	1168	U
49	3	1182	G
49	3	1184	G
49	3	1191	A
49	3	1196	A
49	3	1197	A
49	3	1198	G
49	3	1201	A
49	3	1202	U
49	3	1212	U
49	3	1213	A
49	3	1225	A
49	3	1238	A
49	3	1240	U

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Mol	Chain	Res	Type
49	3	1241	G
49	3	1256	A
49	3	1258	G
49	3	1260	G
49	3	1275	A
49	3	1278	G
49	3	1280	A
49	3	1287	A
49	3	1300	G
49	3	1301	U
49	3	1317	C
49	3	1337	G
49	3	1346	A
49	3	1347	G
49	3	1378	C
49	3	1395	C
49	3	1397	C
49	3	1446	A
49	3	1451	U
49	3	1452	C
49	3	1453	G
49	3	1493	A
49	3	1503	A
49	3	1506	U
49	3	1517	G
49	3	1529	G
49	3	1530	G
49	3	1535	C
50	1	10	A
50	1	12	U
50	1	34	U
50	1	35	G
50	1	51	G
50	1	63	A
50	1	71	A
50	1	74	A
50	1	75	G
50	1	98	G
50	1	119	A
50	1	120	U
50	1	139	U
50	1	141	G

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Mol	Chain	Res	Type
50	1	162	U
50	1	163	C
50	1	181	A
50	1	196	A
50	1	199	A
50	1	216	A
50	1	221	A
50	1	222	A
50	1	228	C
50	1	229	C
50	1	248	G
50	1	249	C
50	1	255	A
50	1	265	A
50	1	266	G
50	1	276	U
50	1	294	A
50	1	301	G
50	1	311	A
50	1	312	G
50	1	323	C
50	1	324	A
50	1	329	G
50	1	330	A
50	1	333	G
50	1	362	A
50	1	363	G
50	1	371	A
50	1	372	G
50	1	383	C
50	1	386	G
50	1	387	U
50	1	404	A
50	1	406	G
50	1	411	G
50	1	424	G
50	1	455	C
50	1	457	A
50	1	481	G
50	1	491	G
50	1	504	A
50	1	505	A

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Mol	Chain	Res	Type
50	1	528	A
50	1	529	A
50	1	531	C
50	1	532	A
50	1	543	G
50	1	545	U
50	1	548	G
50	1	549	G
50	1	563	A
50	1	573	U
50	1	575	A
50	1	588	U
50	1	603	A
50	1	627	A
50	1	628	G
50	1	637	A
50	1	646	U
50	1	651	G
50	1	654	A
50	1	669	G
50	1	686	U
50	1	687	C
50	1	730	A
50	1	747	C
50	1	748	G
50	1	752	A
50	1	764	A
50	1	776	G
50	1	782	A
50	1	784	G
50	1	792	A
50	1	800	A
50	1	805	G
50	1	812	C
50	1	819	A
50	1	827	U
50	1	828	U
50	1	830	G
50	1	846	U
50	1	847	U
50	1	858	G
50	1	860	U

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Mol	Chain	Res	Type
50	1	878	A
50	1	886	A
50	1	887	U
50	1	896	A
50	1	897	C
50	1	910	A
50	1	932	U
50	1	941	A
50	1	946	C
50	1	961	C
50	1	974	G
50	1	983	A
50	1	995	C
50	1	996	A
50	1	1009	A
50	1	1012	U
50	1	1013	C
50	1	1021	A
50	1	1022	G
50	1	1026	G
50	1	1033	U
50	1	1045	C
50	1	1046	A
50	1	1047	G
50	1	1060	U
50	1	1062	G
50	1	1066	U
50	1	1068	G
50	1	1070	A
50	1	1071	G
50	1	1075	C
50	1	1084	A
50	1	1088	A
50	1	1104	C
50	1	1131	G
50	1	1132	U
50	1	1135	C
50	1	1143	A
50	1	1157	G
50	1	1172	C
50	1	1173	U
50	1	1174	U

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Mol	Chain	Res	Type
50	1	1175	A
50	1	1176	U
50	1	1177	G
50	1	1179	G
50	1	1180	U
50	1	1206	G
50	1	1212	G
50	1	1238	G
50	1	1251	C
50	1	1253	A
50	1	1256	G
50	1	1271	G
50	1	1272	A
50	1	1301	A
50	1	1302	A
50	1	1305	C
50	1	1332	G
50	1	1345	C
50	1	1365	A
50	1	1378	A
50	1	1379	U
50	1	1383	A
50	1	1395	A
50	1	1398	C
50	1	1416	G
50	1	1419	A
50	1	1420	A
50	1	1454	C
50	1	1456	G
50	1	1458	U
50	1	1461	C
50	1	1476	U
50	1	1482	G
50	1	1490	A
50	1	1491	G
50	1	1497	U
50	1	1498	C
50	1	1515	A
50	1	1524	G
50	1	1535	A
50	1	1536	C
50	1	1555	G

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Mol	Chain	Res	Type
50	1	1559	U
50	1	1560	G
50	1	1569	A
50	1	1608	A
50	1	1611	C
50	1	1616	A
50	1	1617	C
50	1	1647	U
50	1	1648	U
50	1	1674	G
50	1	1699	G
50	1	1715	G
50	1	1729	U
50	1	1730	C
50	1	1738	G
50	1	1758	U
50	1	1764	C
50	1	1773	A
50	1	1780	A
50	1	1800	C
50	1	1801	A
50	1	1808	A
50	1	1816	C
50	1	1829	A
50	1	1833	C
50	1	1847	A
50	1	1866	A
50	1	1901	A
50	1	1906	G
50	1	1907	G
50	1	1913	A
50	1	1914	C
50	1	1915	U
50	1	1929	G
50	1	1930	G
50	1	1937	A
50	1	1938	A
50	1	1944	U
50	1	1955	U
50	1	1963	U
50	1	1967	C
50	1	1970	A

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Mol	Chain	Res	Type
50	1	1971	U
50	1	1972	G
50	1	1991	U
50	1	1992	G
50	1	1993	U
50	1	1997	C
50	1	2022	U
50	1	2023	C
50	1	2030	A
50	1	2031	A
50	1	2034	U
50	1	2036	C
50	1	2043	C
50	1	2055	C
50	1	2056	G
50	1	2060	A
50	1	2061	G
50	1	2069	G
50	1	2072	C
50	1	2093	G
50	1	2100	G
50	1	2110	G
50	1	2111	U
50	1	2112	G
50	1	2113	U
50	1	2118	U
50	1	2119	A
50	1	2128	G
50	1	2131	U
50	1	2132	U
50	1	2133	G
50	1	2161	C
50	1	2171	A
50	1	2172	U
50	1	2173	A
50	1	2174	C
50	1	2175	C
50	1	2176	A
50	1	2180	U
50	1	2198	A
50	1	2203	U
50	1	2204	G

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Mol	Chain	Res	Type
50	1	2211	A
50	1	2213	U
50	1	2225	A
50	1	2283	C
50	1	2287	A
50	1	2297	A
50	1	2305	U
50	1	2309	A
50	1	2320	U
50	1	2325	G
50	1	2327	A
50	1	2334	U
50	1	2335	A
50	1	2350	C
50	1	2357	G
50	1	2383	G
50	1	2385	C
50	1	2392	A
50	1	2402	U
50	1	2406	A
50	1	2423	U
50	1	2424	C
50	1	2429	G
50	1	2430	A
50	1	2435	A
50	1	2441	U
50	1	2448	A
50	1	2476	A
50	1	2478	A
50	1	2491	U
50	1	2498	C
50	1	2502	G
50	1	2503	A
50	1	2505	G
50	1	2518	A
50	1	2547	A
50	1	2554	U
50	1	2566	A
50	1	2567	G
50	1	2572	A
50	1	2602	A
50	1	2609	U

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Mol	Chain	Res	Type
50	1	2613	U
50	1	2646	C
50	1	2655	G
50	1	2682	A
50	1	2689	U
50	1	2690	U
50	1	2714	G
50	1	2748	A
50	1	2757	A
50	1	2764	A
50	1	2765	A
50	1	2778	A
50	1	2779	U
50	1	2791	G
50	1	2794	C
50	1	2797	U
50	1	2800	A
50	1	2801	G
50	1	2809	A
50	1	2820	A
50	1	2821	A
50	1	2833	U
50	1	2849	U
50	1	2850	A
50	1	2867	G
50	1	2868	A
50	1	2872	A
50	1	2879	A
50	1	2880	C
50	1	2884	U
50	1	2893	A
51	2	4	C
51	2	13	G
51	2	15	A
51	2	35	C
51	2	44	G
51	2	67	G
51	2	89	U
51	2	90	C
51	2	109	A
52	5	8	U
52	5	9	G

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Mol	Chain	Res	Type
52	5	19	G
52	5	20	U
52	5	47	U
52	5	48	C
53	4	13	A
53	4	14	A
53	4	19	A

All (10) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
49	3	1190	G
50	1	490	C
50	1	859	G
50	1	1020	A
50	1	1130	U
50	1	1475	G
50	1	2286	G
50	1	2326	C
50	1	2391	G
50	1	2756	U

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

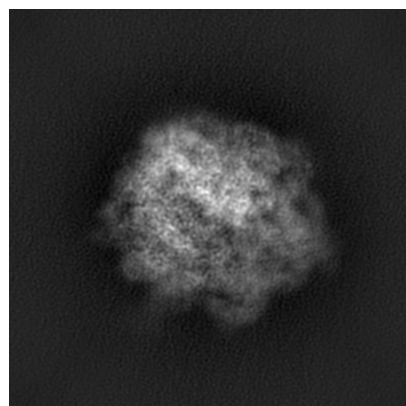
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-22459. These allow visual inspection of the internal detail of the map and identification of artifacts.

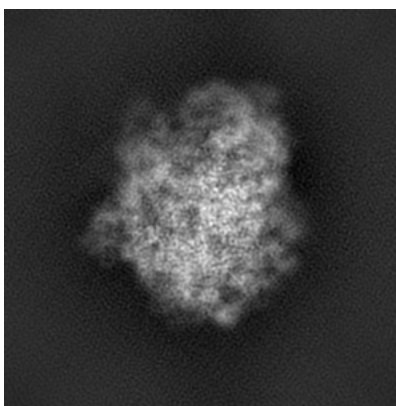
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

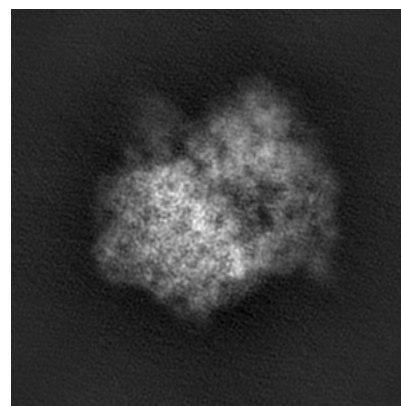
6.1.1 Primary map



X

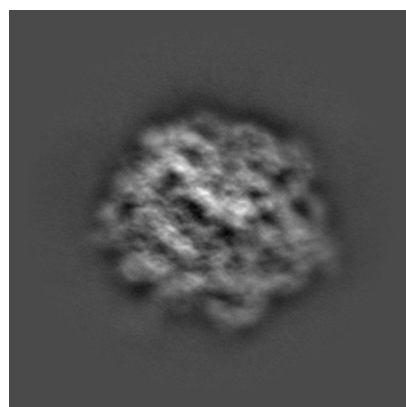


Y

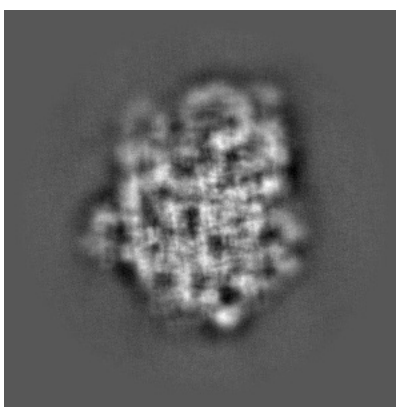


Z

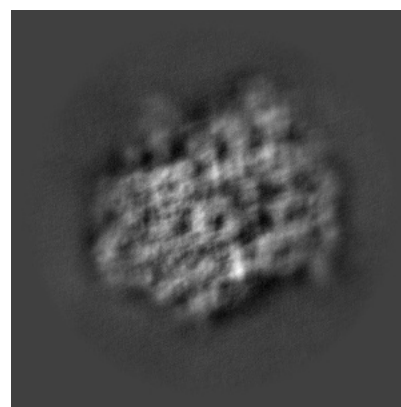
6.1.2 Raw map



X



Y

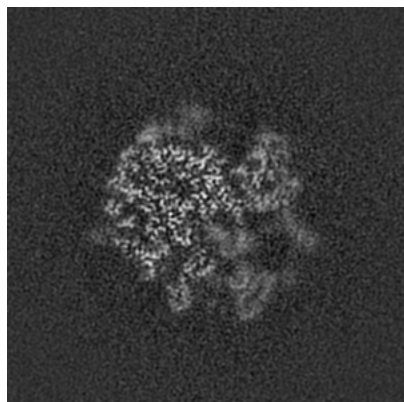


Z

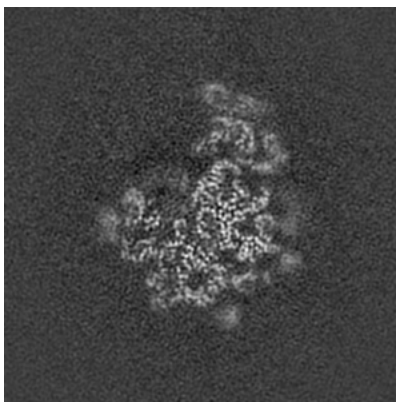
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

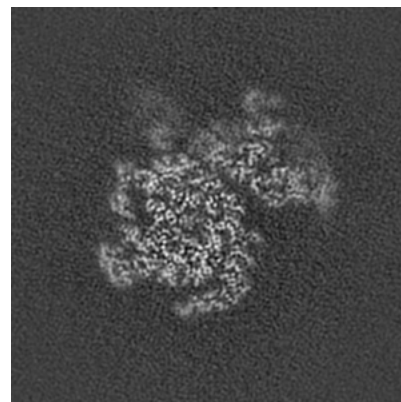
6.2.1 Primary map



X Index: 224

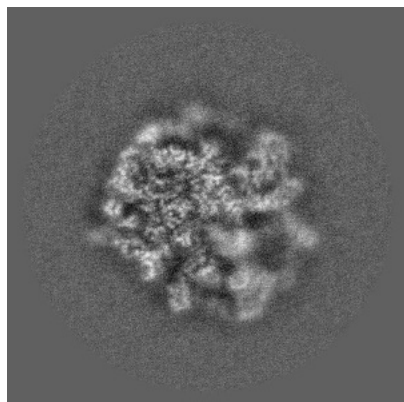


Y Index: 224

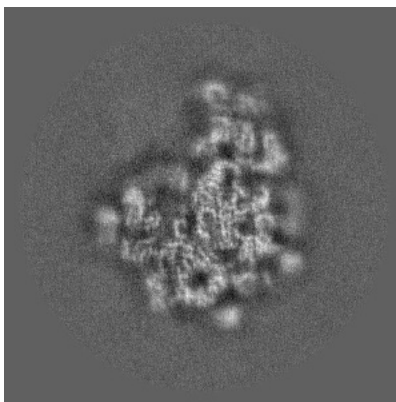


Z Index: 224

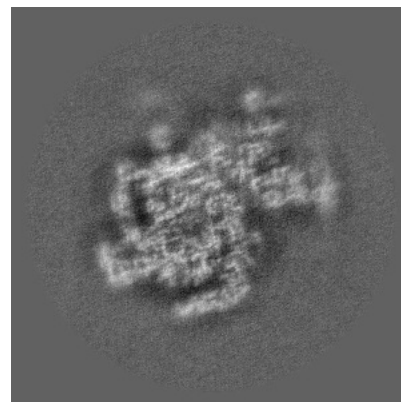
6.2.2 Raw map



X Index: 224



Y Index: 224

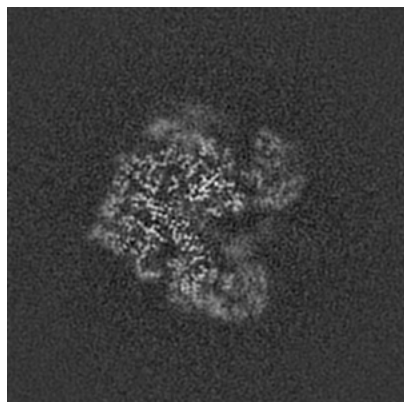


Z Index: 224

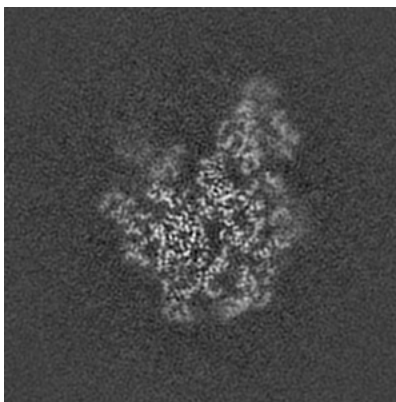
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

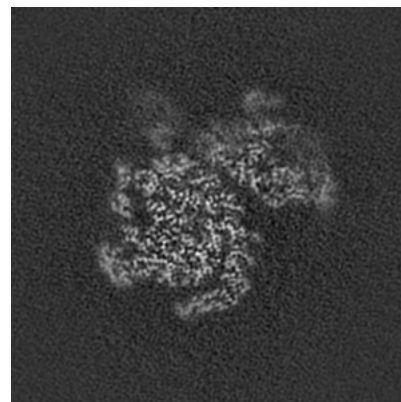
6.3.1 Primary map



X Index: 214

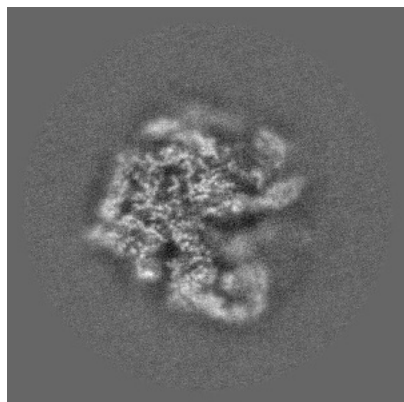


Y Index: 191

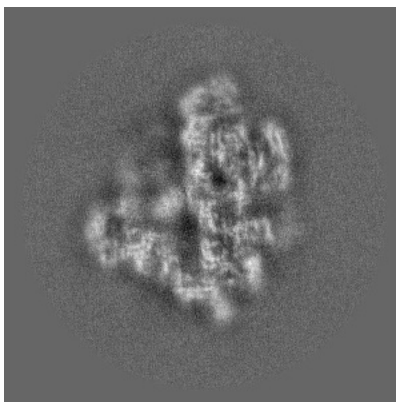


Z Index: 223

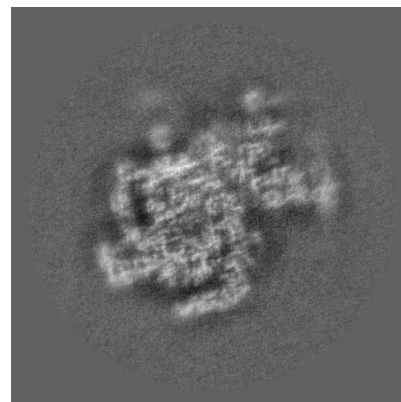
6.3.2 Raw map



X Index: 213



Y Index: 257

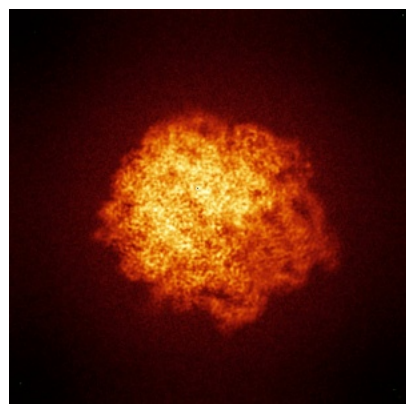


Z Index: 224

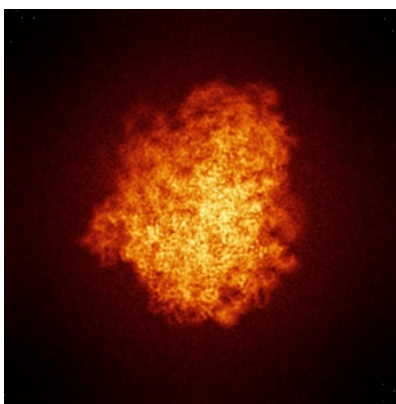
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) [i](#)

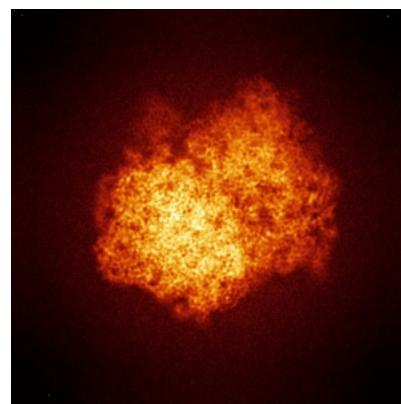
6.4.1 Primary map



X

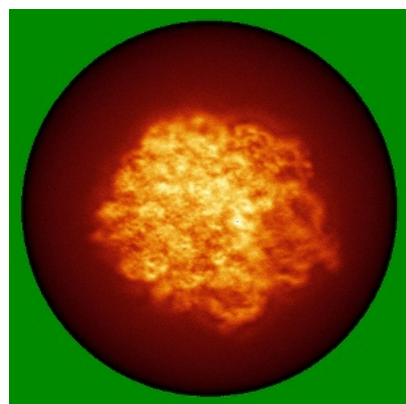


Y

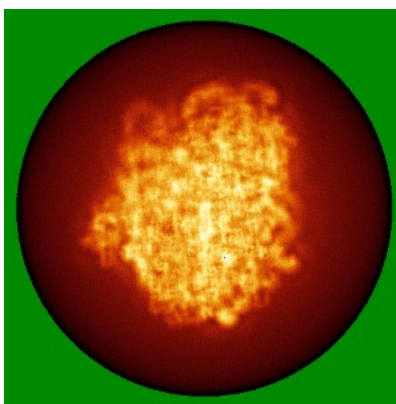


Z

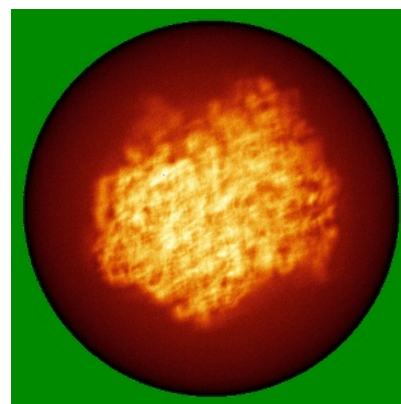
6.4.2 Raw map



X



Y



Z

The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 2.54. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

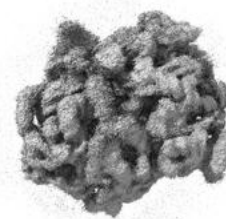
6.5.2 Raw map



X



Y



Z

These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

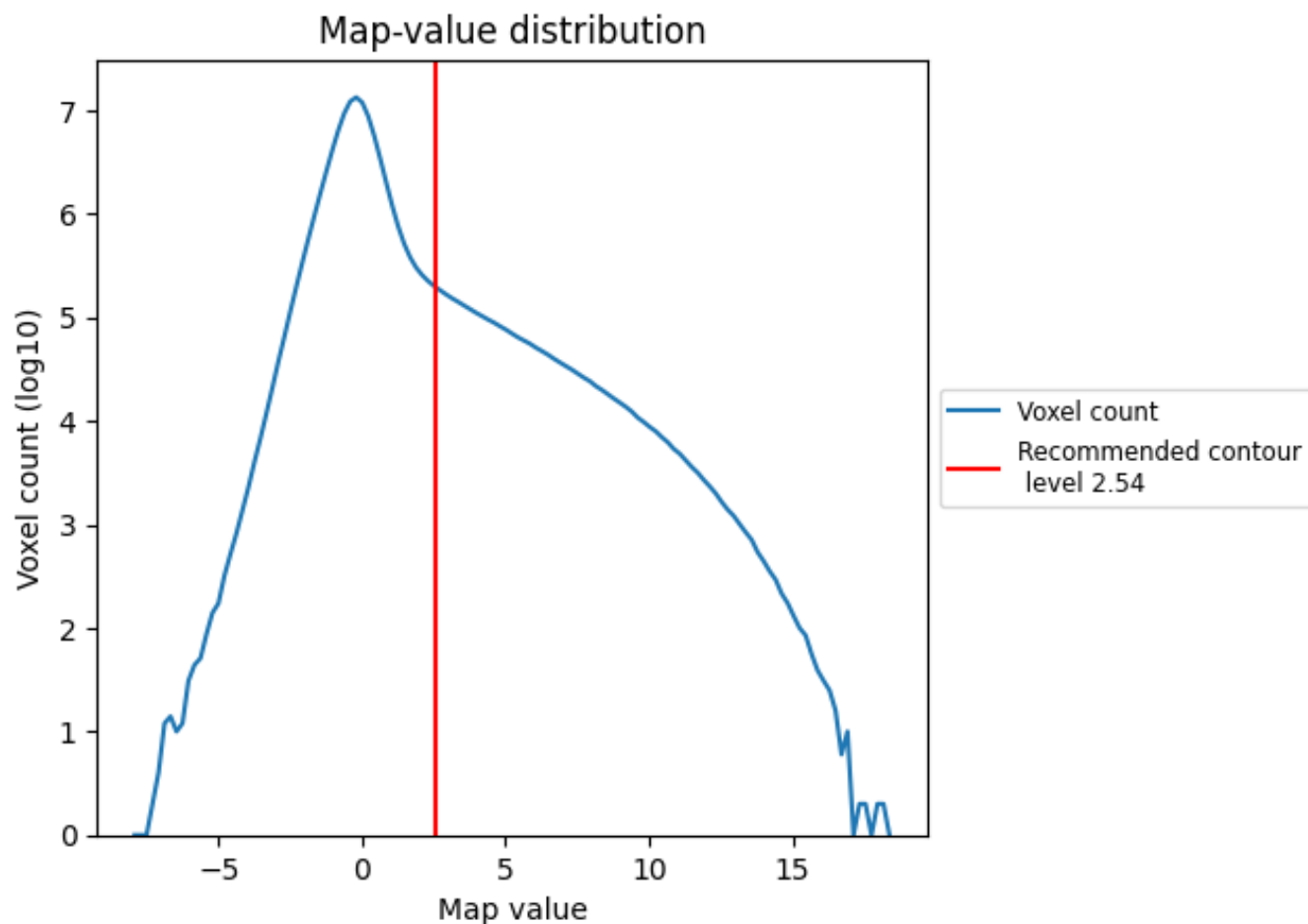
6.6 Mask visualisation [i](#)

This section was not generated. No masks/segmentation were deposited.

7 Map analysis [i](#)

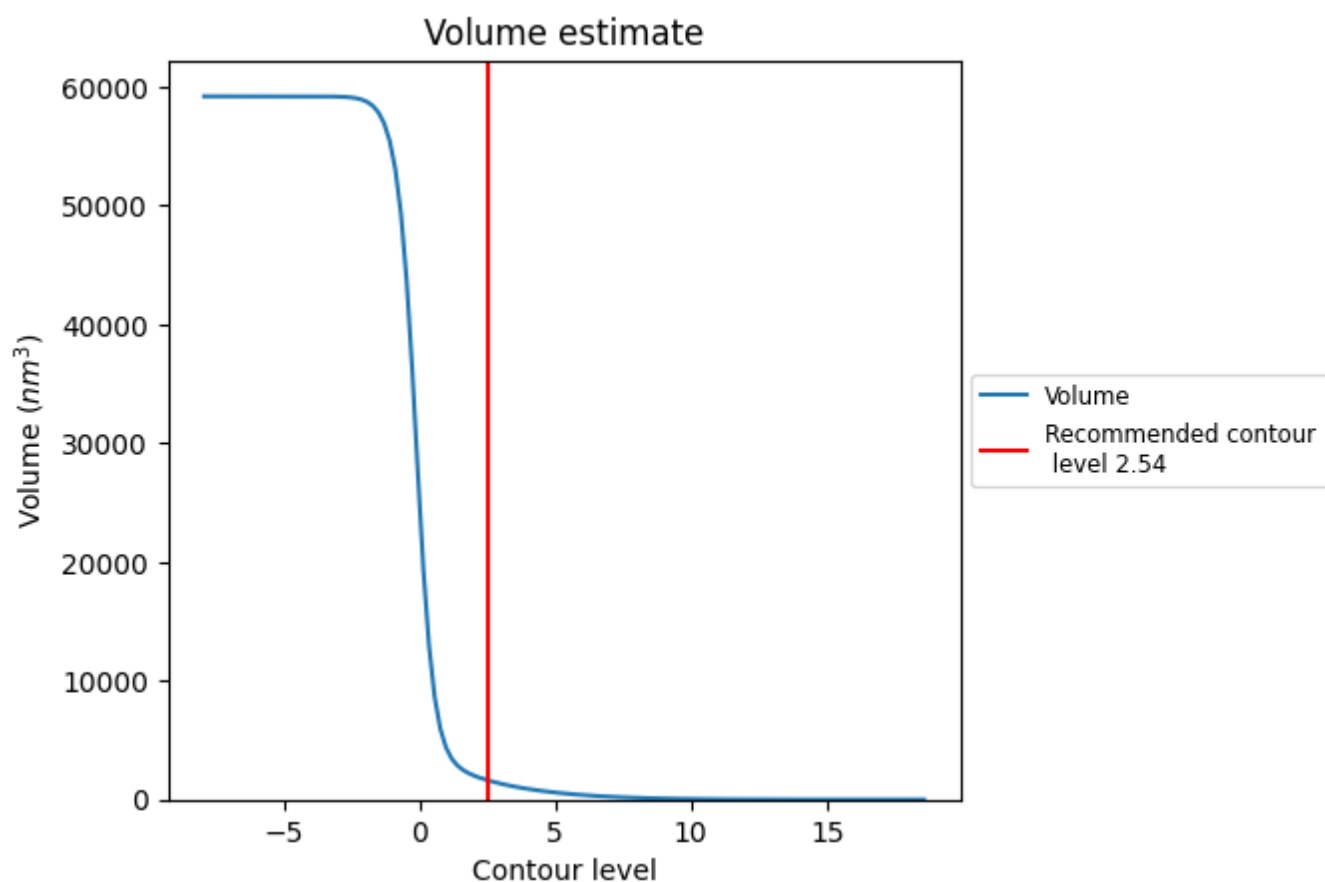
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

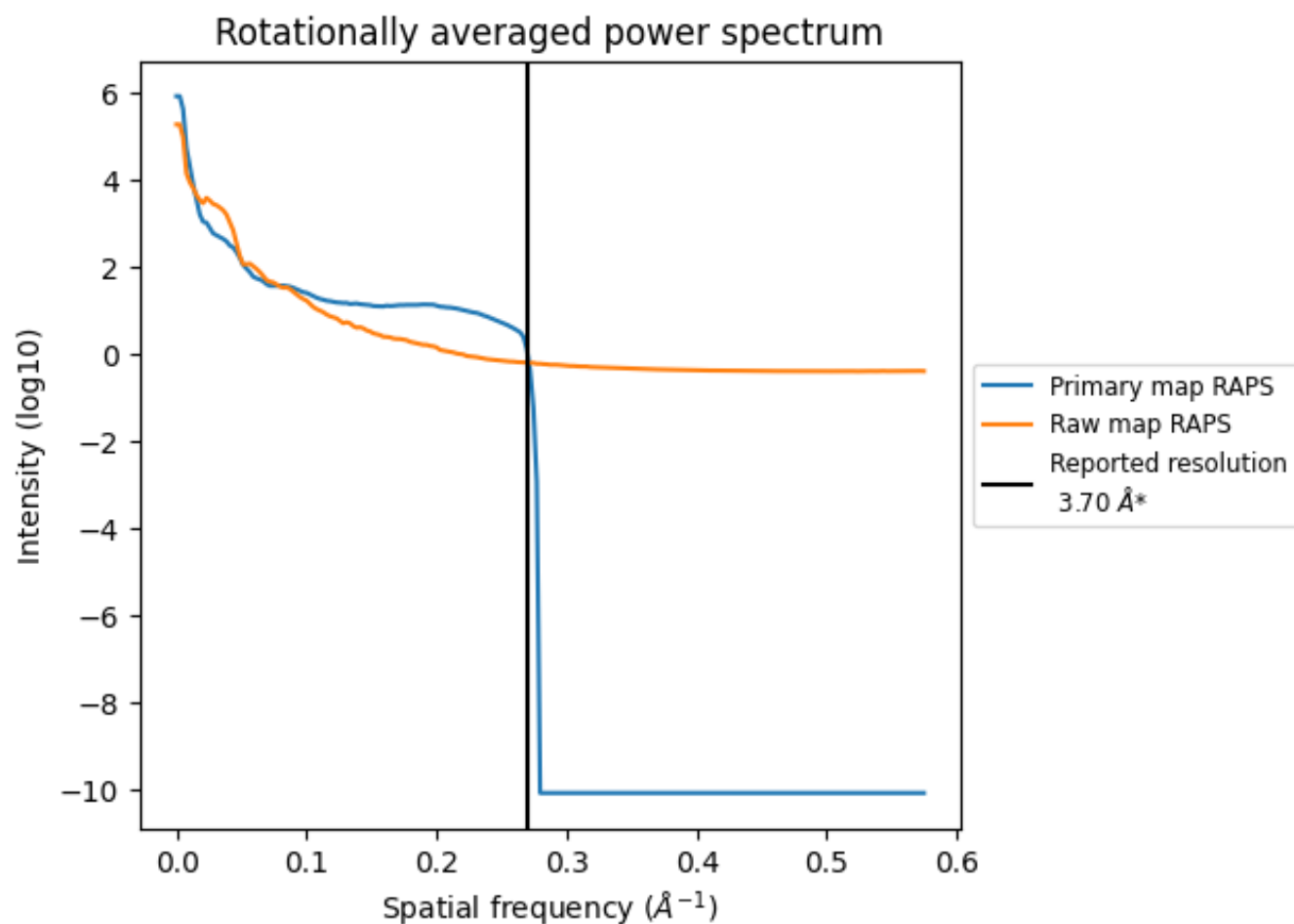
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1608 nm³; this corresponds to an approximate mass of 1453 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum ⓘ

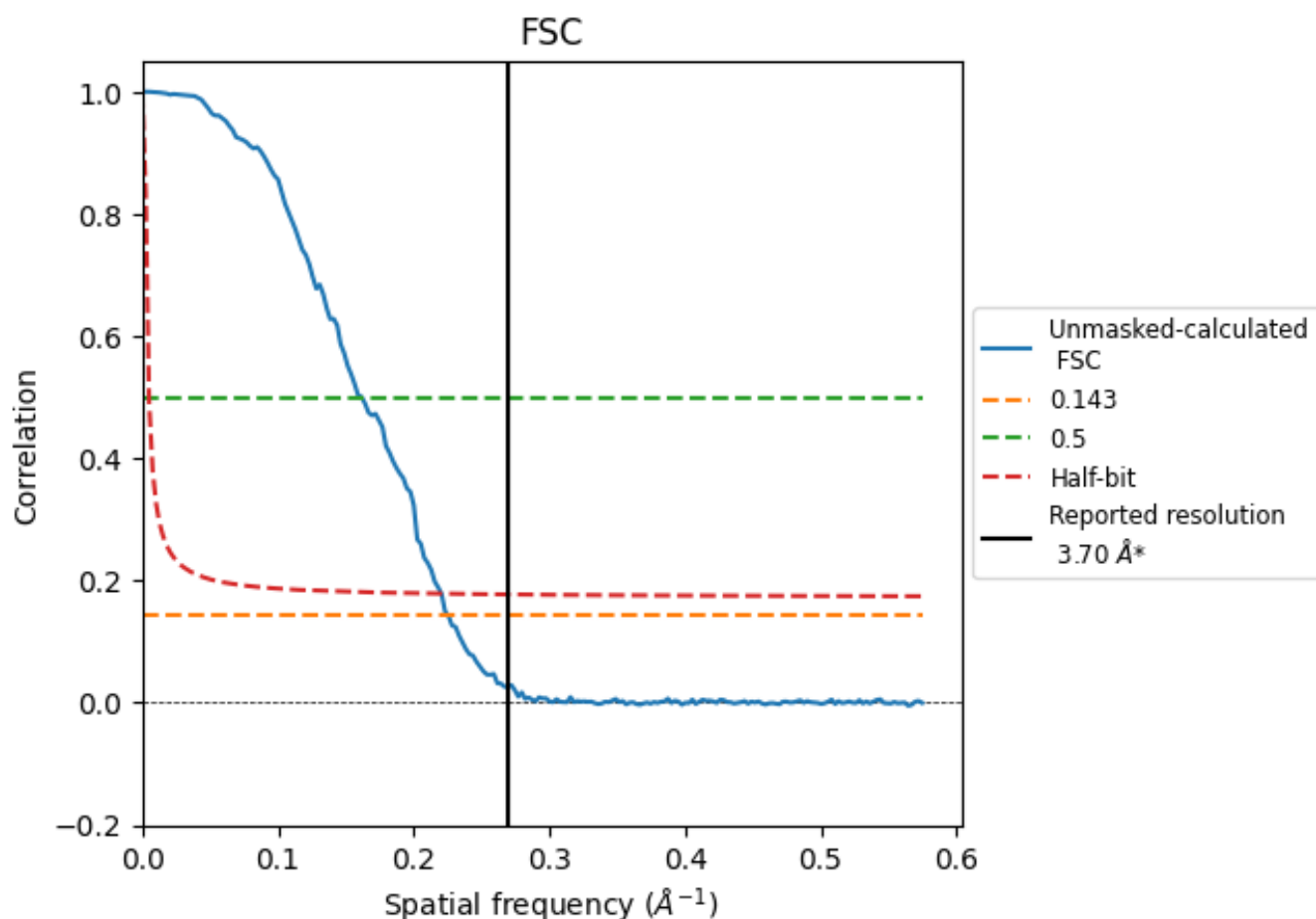


*Reported resolution corresponds to spatial frequency of 0.270 Å⁻¹

8 Fourier-Shell correlation [i](#)

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.270 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.70	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	4.44	6.18	4.54

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.44 differs from the reported value 3.7 by more than 10 %

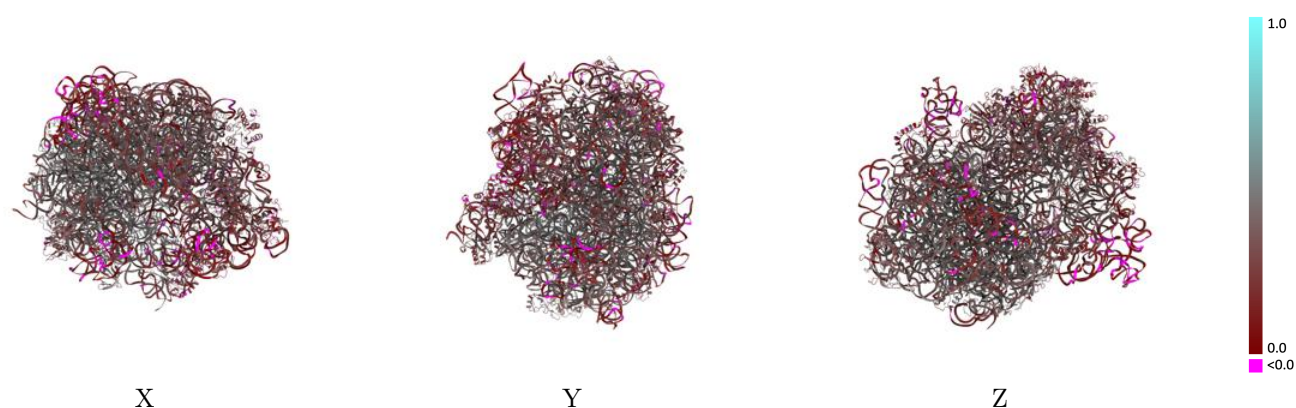
9 Map-model fit [i](#)

This section contains information regarding the fit between EMD map EMD-22459 and PDB model 7JSS. Per-residue inclusion information can be found in section 3 on page 15.

9.1 Map-model overlay [i](#)

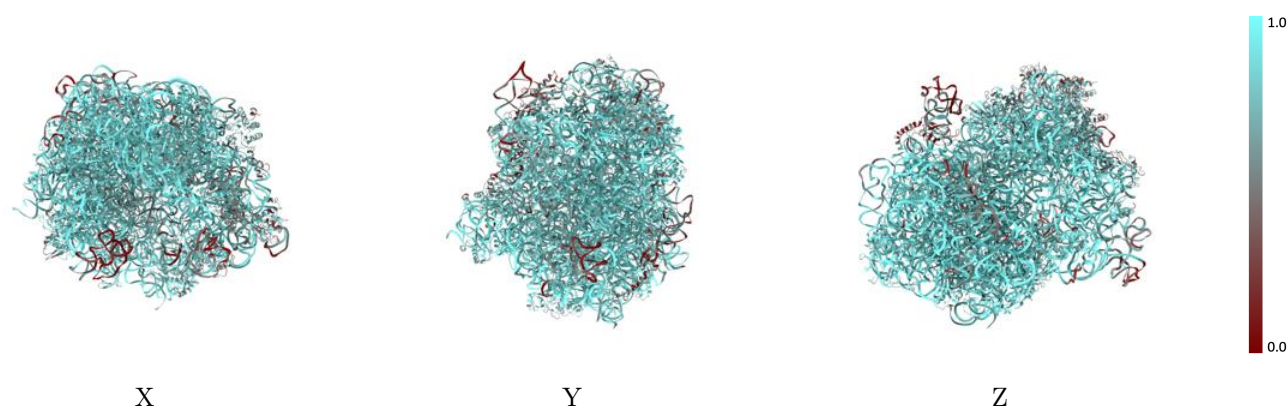
This section was not generated.

9.2 Q-score mapped to coordinate model [i](#)



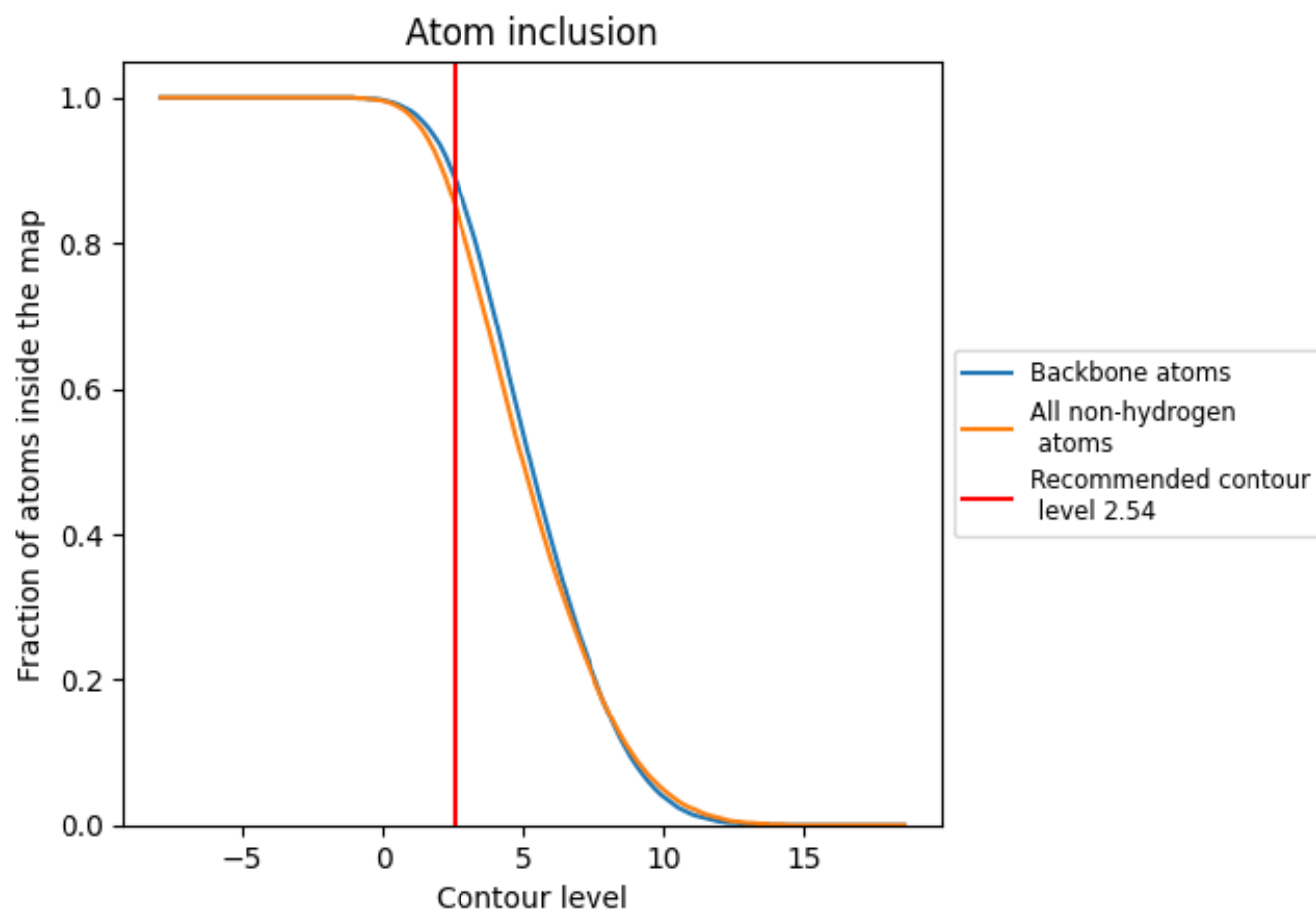
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

9.3 Atom inclusion mapped to coordinate model [i](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (2.54).

9.4 Atom inclusion [i](#)



At the recommended contour level, 89% of all backbone atoms, 85% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (2.54) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8540	 0.3350
1	 0.8990	 0.3560
2	 0.9180	 0.2780
3	 0.8790	 0.2960
4	 0.8360	 0.2080
5	 0.7610	 0.2060
8	 0.6060	 0.2830
B	 0.8810	 0.4140
C	 0.8210	 0.3850
D	 0.9300	 0.4440
E	 0.8880	 0.4330
F	 0.8940	 0.3700
G	 0.6240	 0.2730
H	 0.6420	 0.3170
I	 0.6640	 0.2710
J	 0.7890	 0.3560
K	 0.7550	 0.2900
L	 0.7070	 0.2460
M	 0.7950	 0.3300
N	 0.6310	 0.2400
O	 0.5140	 0.2670
P	 0.8190	 0.3220
Q	 0.8480	 0.3950
R	 0.6410	 0.1960
S	 0.6490	 0.2910
T	 0.7990	 0.3090
U	 0.7960	 0.3380
V	 0.8670	 0.3450
W	 0.7200	 0.2860
X	 0.7250	 0.2170
Y	 0.7950	 0.2980
Z	 0.6450	 0.2360
b	 0.8900	 0.4300
c	 0.8450	 0.4170
d	 0.8190	 0.3890



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Chain	Atom inclusion	Q-score
e	 0.6690	 0.1970
f	 0.7260	 0.2950
g	 0.4070	 0.2420
j	 0.8680	 0.4220
k	 0.8670	 0.4270
l	 0.8650	 0.4150
m	 0.8560	 0.4220
n	 0.8990	 0.4240
o	 0.8040	 0.3300
p	 0.8630	 0.4110
q	 0.8870	 0.4190
r	 0.8520	 0.4070
s	 0.8480	 0.4270
t	 0.8530	 0.3990
u	 0.8010	 0.3700
v	 0.8350	 0.3840
w	 0.8940	 0.4460
x	 0.8930	 0.4000
y	 0.8010	 0.3310
z	 0.8760	 0.4140