



Full wwPDB EM Validation Report ⓘ

Mar 6, 2026 – 12:27 PM UTC

PDB ID : 7JSW / pdb_00007jsw
EMDB ID : EMD-22461
Title : ArfB Rescue of a 70S Ribosome stalled on truncated mRNA with a partial A-site codon (+2-III)
Authors : Carbone, C.E.; Korostelev, A.A.
Deposited on : 2020-08-16
Resolution : 3.80 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:

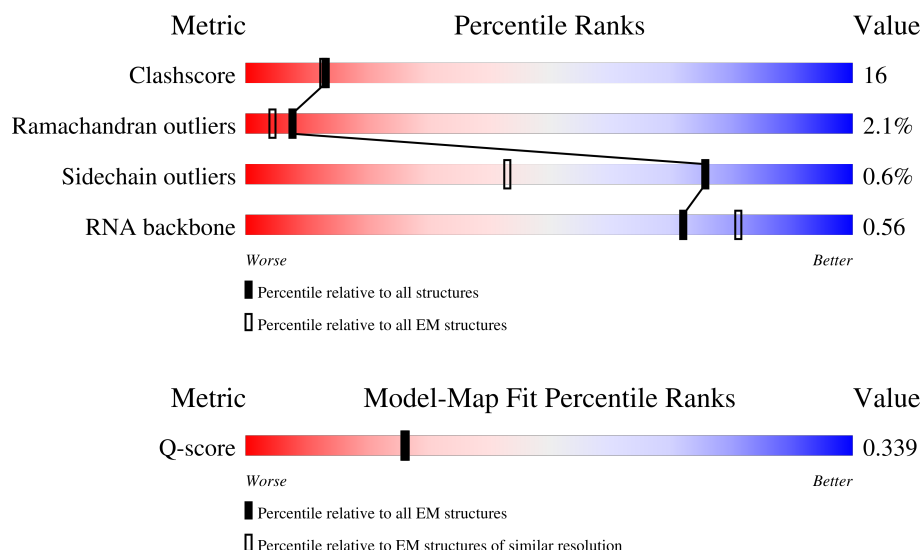
EMDB validation analysis : 0.0.1.dev132
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh &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

1 Overall quality at a glance

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

The reported resolution of this entry is 3.80 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.



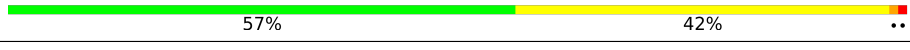
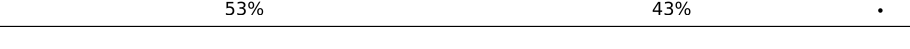
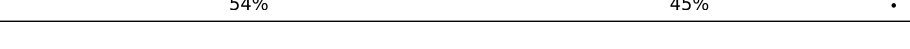
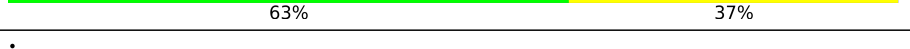
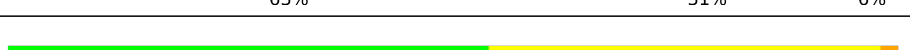
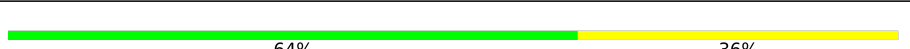
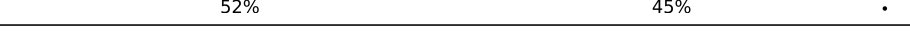
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	10198 (3.30 - 4.30)

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	
2	c	209	
3	d	201	

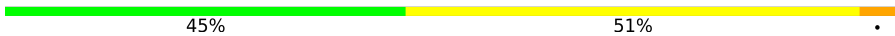
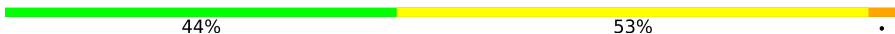
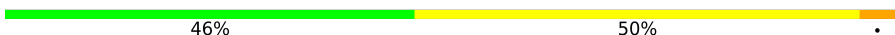
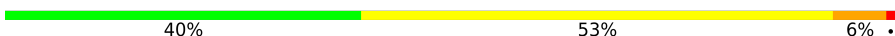
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Mol	Chain	Length	Quality of chain
4	e	177	
5	f	176	
6	g	149	
7	j	142	
8	k	122	
9	l	143	
10	m	136	
11	n	120	
12	o	116	
13	p	114	
14	q	117	
15	r	103	
16	s	110	
17	t	93	
18	u	102	
19	v	94	
20	w	75	
21	x	77	
22	y	63	
23	z	58	
24	B	56	
25	C	50	
26	D	46	
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	13% 32% 47% 11% 9%

2 Entry composition

There are 54 unique types of molecules in this entry. The entry contains 144808 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		

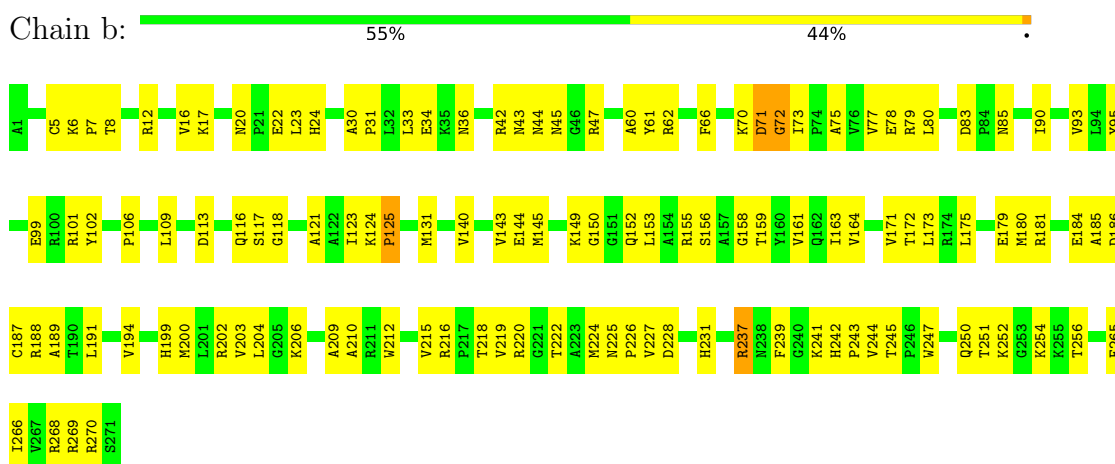
- Molecule 54 is a protein called Peptidyl-tRNA hydrolase ArfB.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	8	120	Total	C	N	O	S	0	0
			949	591	186	170	2		

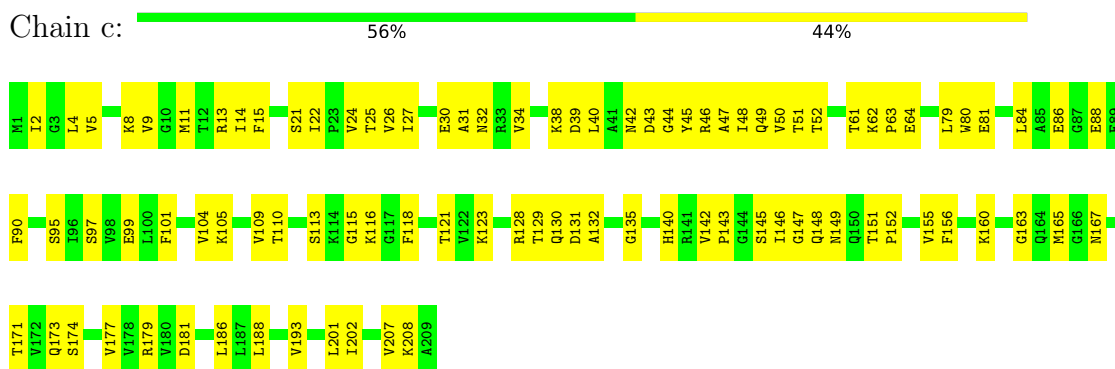
3 Residue-property plots

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.

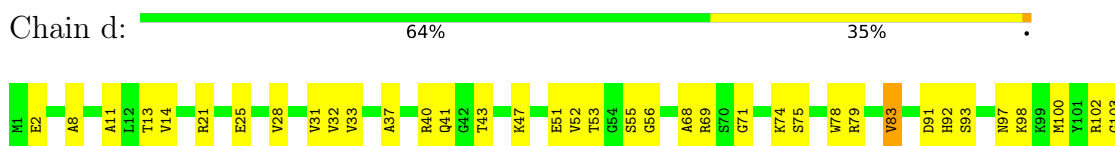
• Molecule 1: 50S ribosomal protein L2



• Molecule 2: 50S ribosomal protein L3



• Molecule 3: 50S ribosomal protein L4

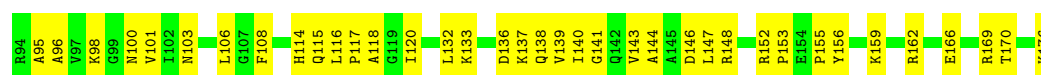
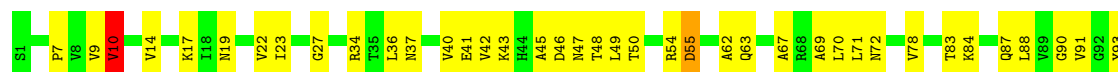




• Molecule 4: 50S ribosomal protein L5



• Molecule 5: 50S ribosomal protein L6



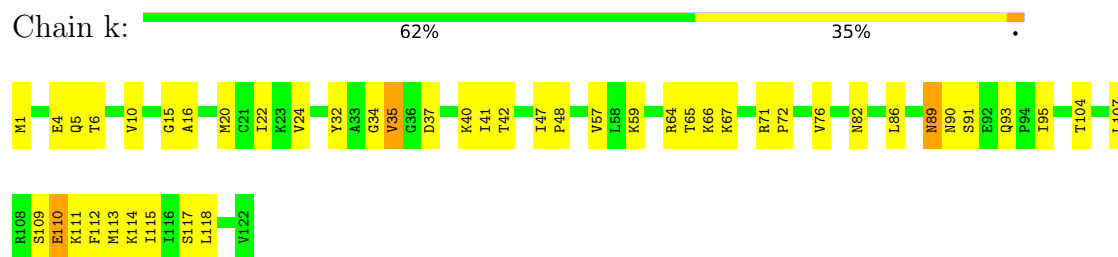
• Molecule 6: 50S ribosomal protein L9



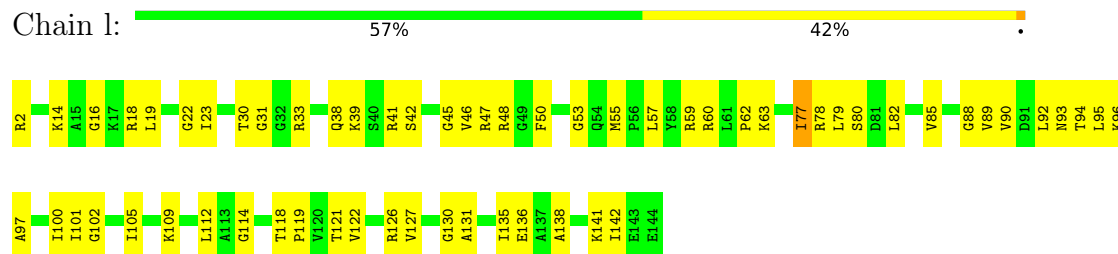
• Molecule 7: 50S ribosomal protein L13



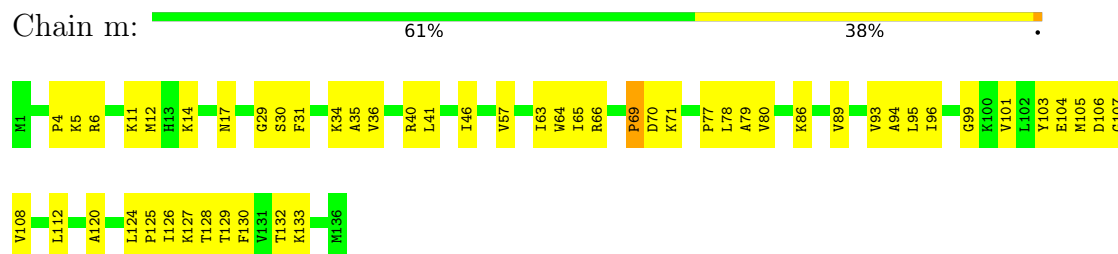
• Molecule 8: 50S ribosomal protein L14



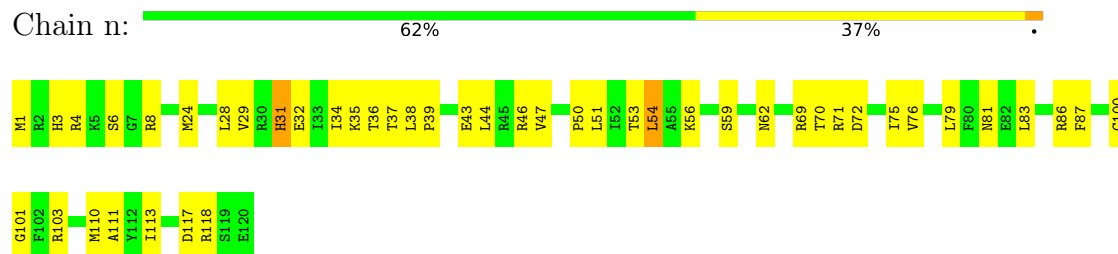
- Molecule 9: 50S ribosomal protein L15



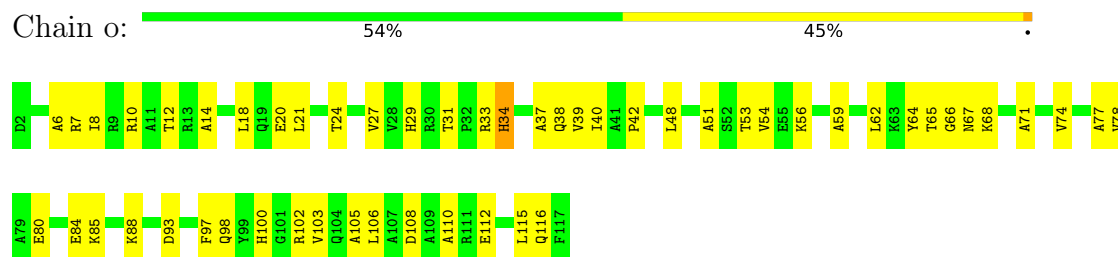
- Molecule 10: 50S ribosomal protein L16



- Molecule 11: 50S ribosomal protein L17

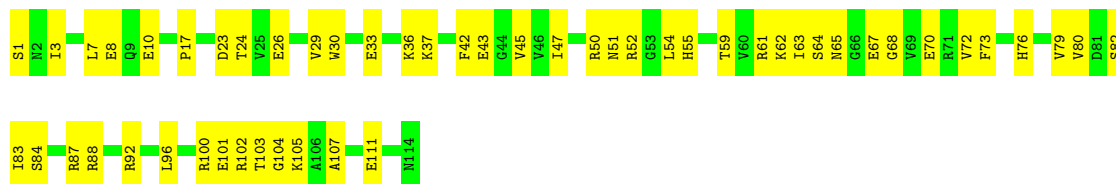


- Molecule 12: 50S ribosomal protein L18



- Molecule 13: 50S ribosomal protein L19

Chain p:  54% 46%



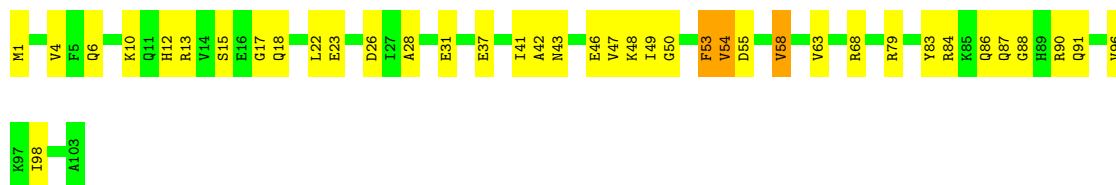
- Molecule 14: 50S ribosomal protein L20

Chain q:  71% 29%



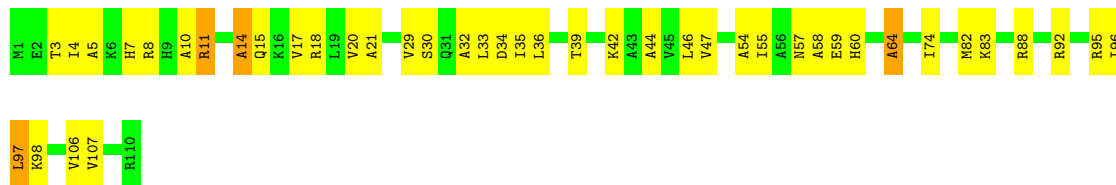
- Molecule 15: 50S ribosomal protein L21

Chain r:  62% 35% .



- Molecule 16: 50S ribosomal protein L22

Chain s:  61% 35% .



- Molecule 17: 50S ribosomal protein L23

Chain t:  63% 37%



- Molecule 18: 50S ribosomal protein L24

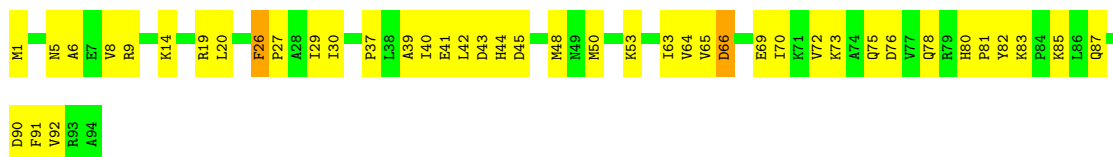
Chain u:  63% 31% 6%





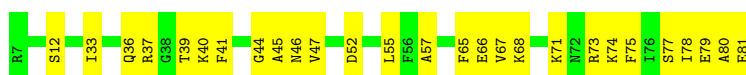
- Molecule 19: 50S ribosomal protein L25

Chain v: 54% 44%



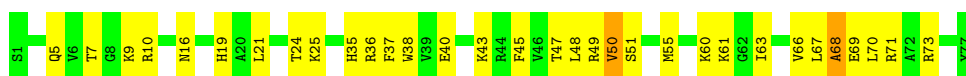
- Molecule 20: 50S ribosomal protein L27

Chain w: 64% 36%



- Molecule 21: 50S ribosomal protein L28

Chain x: 58% 39%



- Molecule 22: 50S ribosomal protein L29

Chain y: 65% 33%



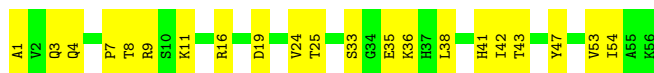
- Molecule 23: 50S ribosomal protein L30

Chain z: 52% 45%



- Molecule 24: 50S ribosomal protein L32

Chain B: 62% 38%



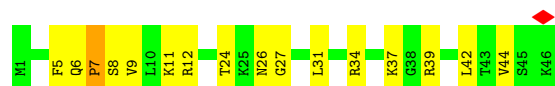
- Molecule 25: 50S ribosomal protein L33

Chain C:  60% 38%



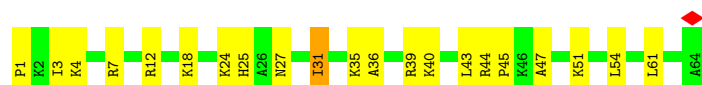
• Molecule 26: 50S ribosomal protein L34

Chain D:  65% 33%



• Molecule 27: 50S ribosomal protein L35

Chain E:  67% 31%



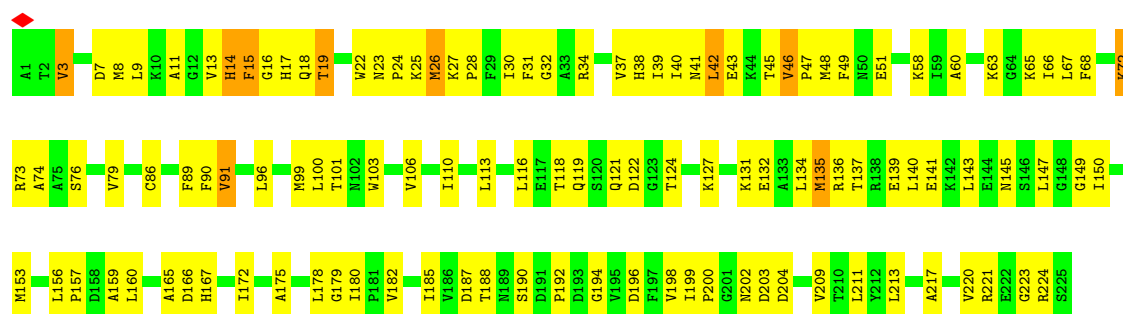
• Molecule 28: 50S ribosomal protein L36

Chain F:  55% 42%



• Molecule 29: 30S ribosomal protein S2

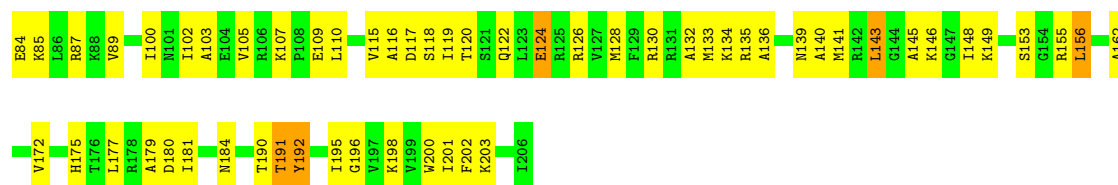
Chain G:  48% 47%



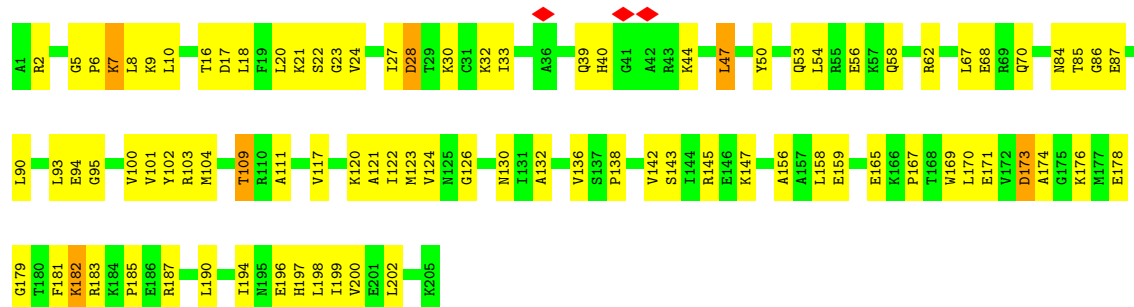
• Molecule 30: 30S ribosomal protein S3

Chain H:  54% 43%

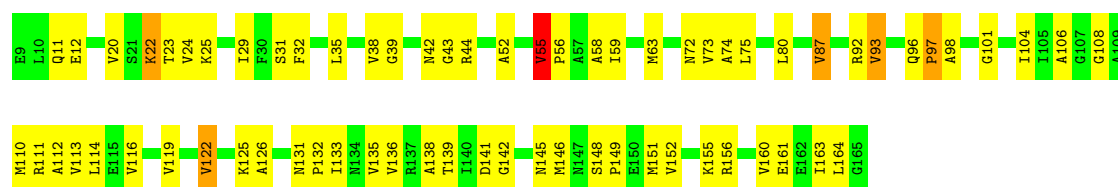




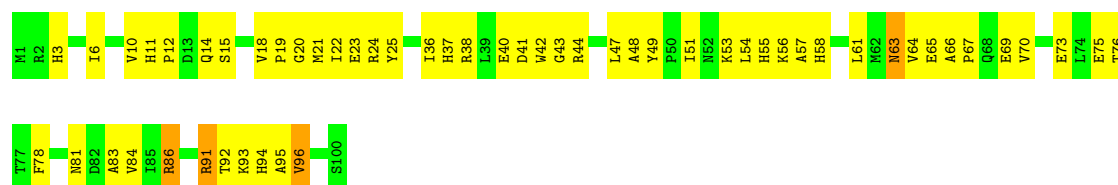
- Molecule 31: 30S ribosomal protein S4



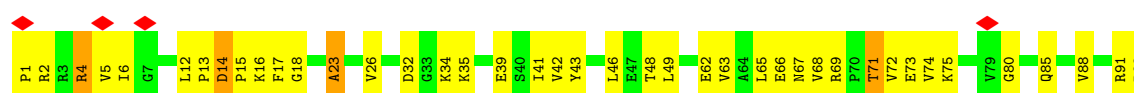
- Molecule 32: 30S ribosomal protein S5



- Molecule 33: 30S ribosomal protein S6

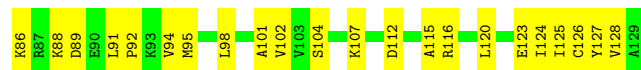


- Molecule 34: 30S ribosomal protein S7

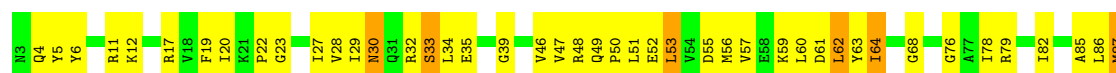




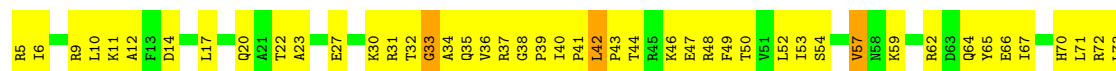
• Molecule 35: 30S ribosomal protein S8



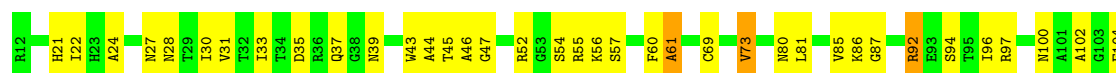
• Molecule 36: 30S ribosomal protein S9



• Molecule 37: 30S ribosomal protein S10



• Molecule 38: 30S ribosomal protein S11

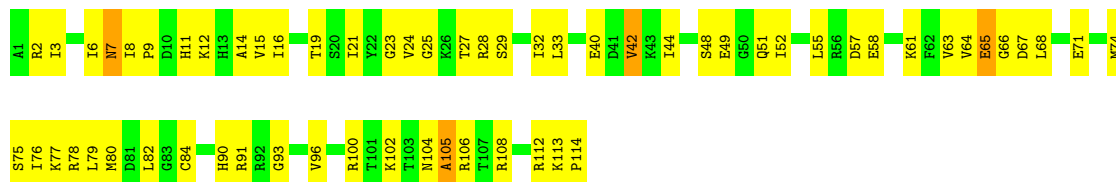


• Molecule 39: 30S ribosomal protein S12

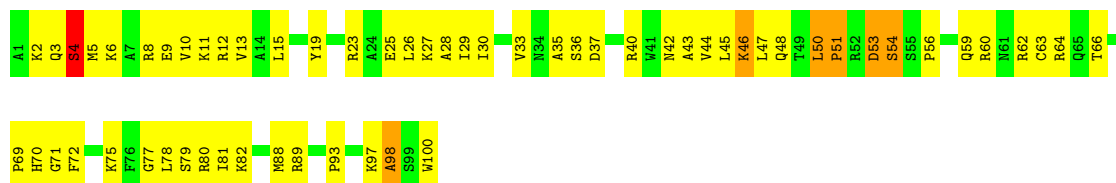




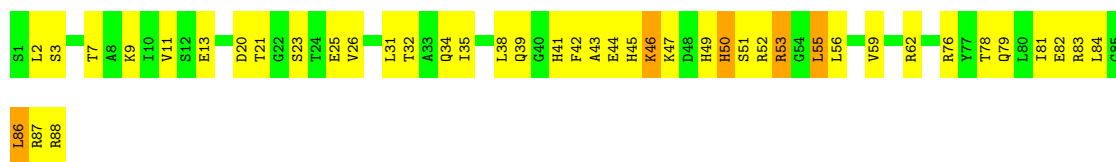
- Molecule 40: 30S ribosomal protein S13



- Molecule 41: 30S ribosomal protein S14



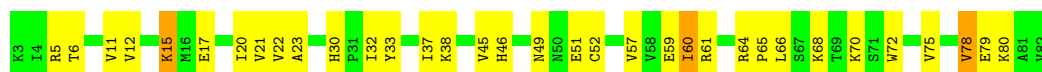
- Molecule 42: 30S ribosomal protein S15



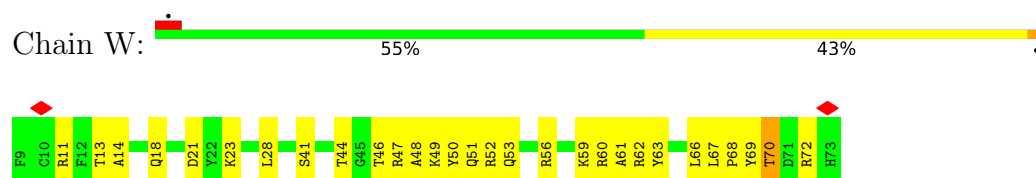
- Molecule 43: 30S ribosomal protein S16



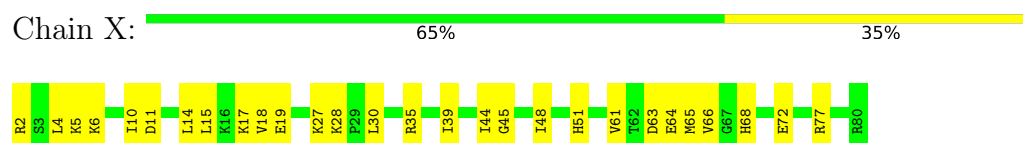
- Molecule 44: 30S ribosomal protein S17



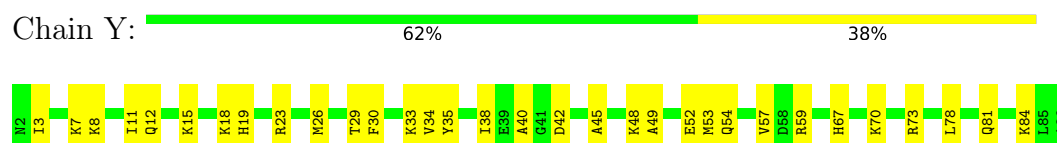
- Molecule 45: 30S ribosomal protein S18



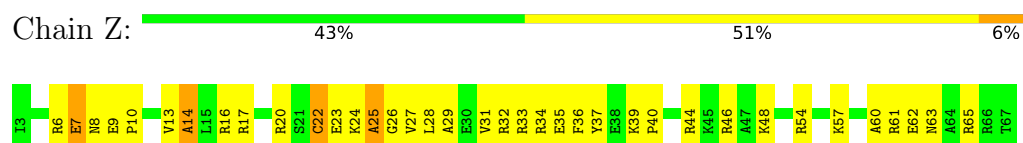
- Molecule 46: 30S ribosomal protein S19



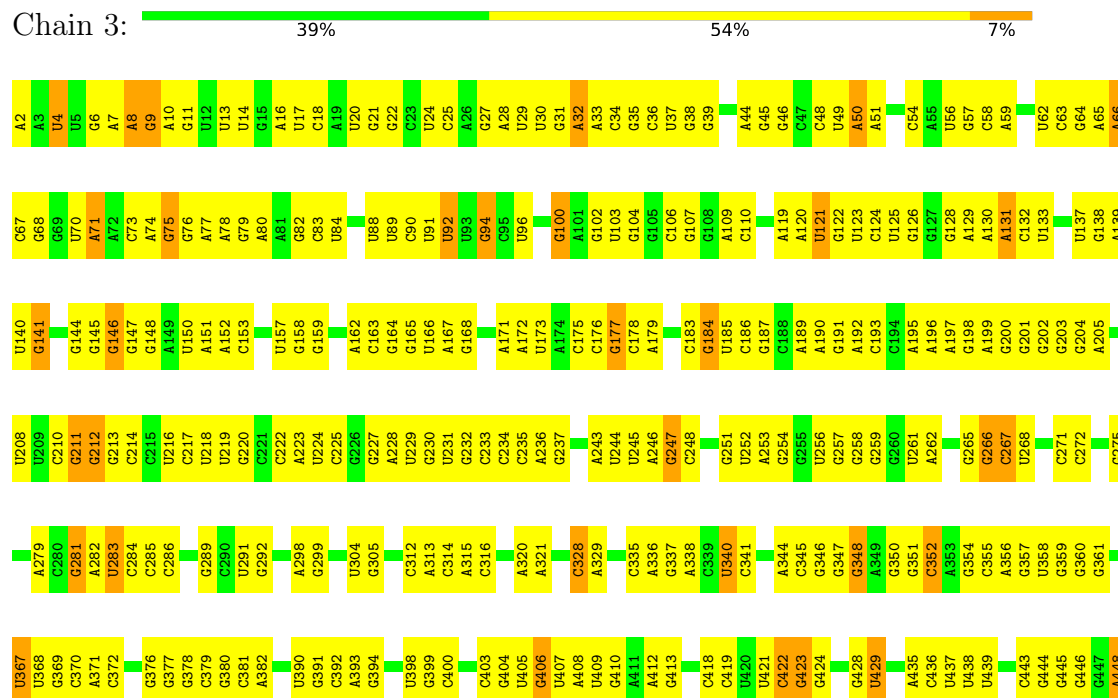
- Molecule 47: 30S ribosomal protein S20

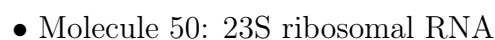


- Molecule 48: 30S ribosomal protein S21



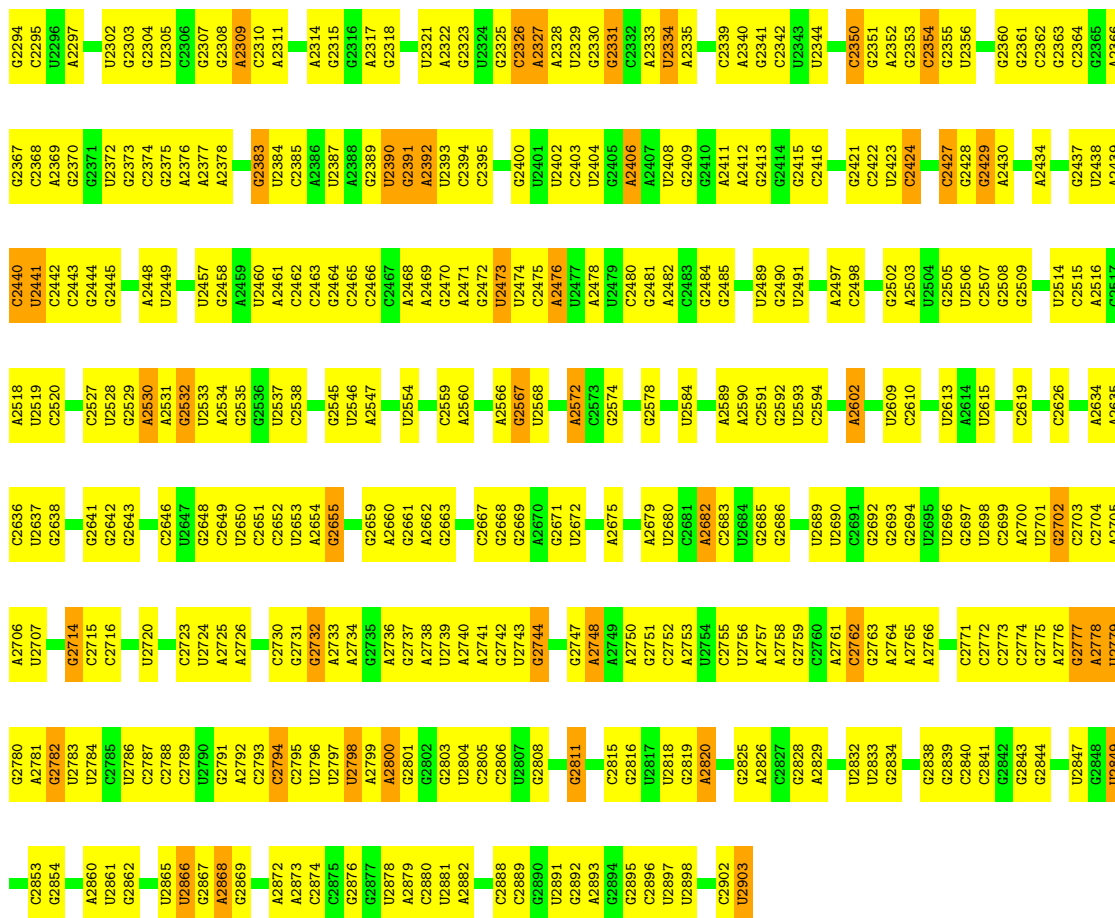
- Molecule 49: 16S ribosomal RNA



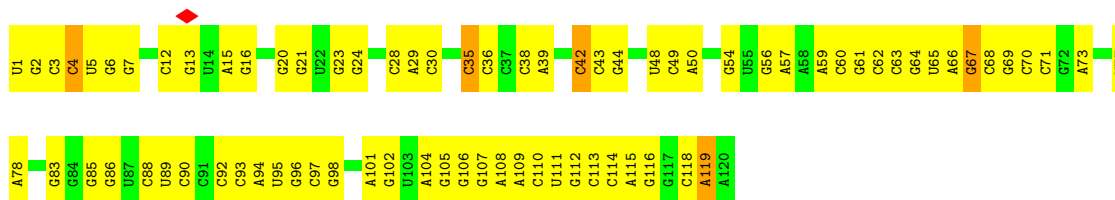




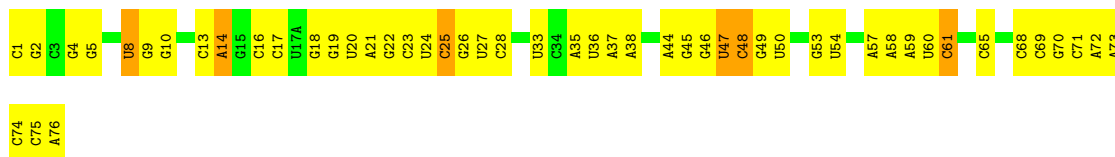




• Molecule 51: 5S ribosomal RNA

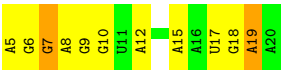


• Molecule 52: tRNA^{fMet}

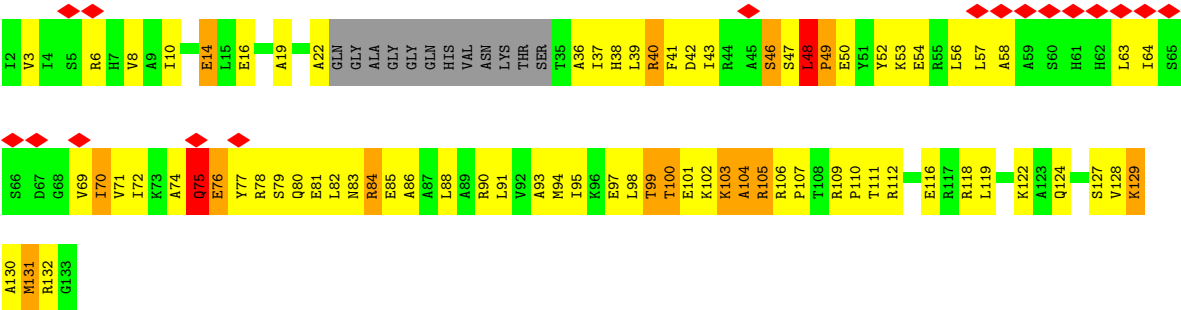


• Molecule 53: mRNA





● 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	7464	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	12.365	Depositor
Minimum map value	-5.856	Depositor
Average map value	0.096	Depositor
Map value standard deviation	0.614	Depositor
Recommended contour level	0.592	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	0.29	0/2122	0.85	2/2852 (0.1%)
2	c	0.30	0/1586	0.80	0/2134
3	d	0.30	0/1571	0.81	5/2113 (0.2%)
4	e	0.33	0/1435	0.91	4/1926 (0.2%)
5	f	0.33	0/1343	0.85	3/1816 (0.2%)
6	g	0.32	0/1122	0.92	3/1515 (0.2%)
7	j	0.29	0/1152	0.83	3/1551 (0.2%)
8	k	0.30	0/948	0.95	3/1268 (0.2%)
9	l	0.30	0/1054	0.94	4/1403 (0.3%)
10	m	0.30	0/1093	0.83	1/1460 (0.1%)
11	n	0.29	0/974	0.82	1/1301 (0.1%)
12	o	0.29	0/902	0.89	3/1209 (0.2%)
13	p	0.30	0/929	0.82	0/1242
14	q	0.29	0/960	0.88	3/1278 (0.2%)
15	r	0.30	0/829	0.84	1/1107 (0.1%)
16	s	0.28	0/864	0.90	1/1156 (0.1%)
17	t	0.28	0/745	0.80	1/994 (0.1%)
18	u	0.29	0/788	0.87	4/1051 (0.4%)
19	v	0.32	0/766	0.85	2/1025 (0.2%)
20	w	0.27	0/582	0.86	1/769 (0.1%)
21	x	0.28	0/635	0.89	2/848 (0.2%)
22	y	0.28	0/510	0.90	0/677
23	z	0.29	0/453	0.88	3/605 (0.5%)
24	B	0.29	0/450	0.84	1/599 (0.2%)
25	C	0.30	0/417	0.81	1/554 (0.2%)
26	D	0.31	0/380	0.97	3/498 (0.6%)
27	E	0.33	0/513	0.80	0/676
28	F	0.31	0/303	0.81	0/397
29	G	0.33	0/1788	0.94	10/2408 (0.4%)
30	H	0.31	0/1652	0.88	4/2225 (0.2%)
31	I	0.31	0/1665	0.91	4/2227 (0.2%)
32	J	0.34	0/1170	0.95	5/1573 (0.3%)
33	K	0.35	0/836	0.93	1/1128 (0.1%)
34	L	0.31	0/1196	0.93	6/1602 (0.4%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
35	M	0.30	0/989	0.84	0/1326
36	N	0.32	0/1034	0.94	5/1375 (0.4%)
37	O	0.33	0/797	0.87	0/1077
38	P	0.34	0/886	0.95	4/1195 (0.3%)
39	Q	0.31	0/969	0.92	3/1300 (0.2%)
40	R	0.34	0/893	1.01	3/1193 (0.3%)
41	S	0.31	0/817	1.06	5/1088 (0.5%)
42	T	0.29	0/722	0.99	4/964 (0.4%)
43	U	0.33	0/659	0.88	1/884 (0.1%)
44	V	0.30	0/658	0.89	1/881 (0.1%)
45	W	0.35	0/545	0.92	1/731 (0.1%)
46	X	0.37	0/653	0.84	0/877
47	Y	0.29	0/671	0.98	3/888 (0.3%)
48	Z	0.36	0/551	1.03	4/728 (0.5%)
49	3	0.39	0/36963	0.48	1/57662 (0.0%)
50	1	0.38	0/69796	0.49	1/108888 (0.0%)
51	2	0.40	0/2872	0.48	0/4479
52	5	0.41	0/1832	0.48	0/2855
53	4	0.44	0/398	0.51	0/620
54	8	0.37	0/959	1.11	12/1285 (0.9%)
All	All	0.37	0/157397	0.62	133/235483 (0.1%)

There are no bond length outliers.

All (133) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
54	8	129	LYS	N-CA-C	-10.14	100.86	113.02
54	8	99	THR	N-CA-C	-8.15	102.34	111.14
24	B	53	VAL	N-CA-C	7.75	118.55	110.72
32	J	22	LYS	N-CA-C	-7.67	105.88	114.62
42	T	43	ALA	N-CA-C	-7.59	103.28	112.54
38	P	73	VAL	N-CA-C	-7.34	106.15	113.20
14	q	85	ALA	N-CA-C	-7.21	104.35	113.72
54	8	84	ARG	N-CA-C	-7.20	101.96	111.24
18	u	48	VAL	N-CA-C	7.12	114.04	107.56
18	u	66	VAL	N-CA-C	7.04	117.80	110.62
12	o	84	GLU	N-CA-C	-7.01	104.70	113.18
54	8	48	LEU	CA-C-N	6.82	128.37	119.84
54	8	48	LEU	C-N-CA	6.82	128.37	119.84
9	l	96	LYS	N-CA-C	-6.66	104.63	112.89
20	w	52	ASP	N-CA-C	-6.63	105.06	113.02
41	S	4	SER	N-CA-C	-6.63	104.14	111.36

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
41	S	46	LYS	N-CA-C	-6.62	105.16	113.18
42	T	50	HIS	N-CA-C	-6.55	103.97	112.23
6	g	72	ILE	N-CA-C	-6.54	102.88	112.04
26	D	6	GLN	CA-C-N	6.53	126.56	119.90
26	D	6	GLN	C-N-CA	6.53	126.56	119.90
8	k	32	TYR	N-CA-C	6.50	119.98	110.17
12	o	85	LYS	N-CA-C	-6.46	105.43	113.38
54	8	76	GLU	N-CA-C	6.43	119.30	110.24
54	8	105	ARG	N-CA-C	6.36	119.08	108.20
29	G	72	LYS	N-CA-C	-6.23	105.36	114.39
21	x	68	ALA	N-CA-C	-6.17	104.67	111.82
41	S	9	GLU	N-CA-C	-6.15	104.13	111.69
5	f	118	ALA	N-CA-C	6.14	117.97	111.28
5	f	10	VAL	N-CA-C	6.12	113.94	107.76
23	z	39	ASP	N-CA-C	6.09	118.37	108.63
32	J	55	VAL	N-CA-C	6.06	119.62	112.35
5	f	62	ALA	N-CA-C	-6.03	104.82	111.82
33	K	91	ARG	N-CA-C	6.02	117.86	109.31
9	l	92	LEU	N-CA-C	-6.01	104.73	111.28
32	J	145	ASN	N-CA-C	-5.99	105.89	112.72
34	L	142	ARG	N-CA-C	-5.97	105.48	112.89
54	8	40	ARG	N-CA-C	5.97	118.92	109.96
21	x	50	VAL	N-CA-C	5.96	117.69	109.46
14	q	50	ARG	N-CA-C	-5.96	106.55	113.88
54	8	48	LEU	N-CA-C	-5.94	96.68	109.81
39	Q	114	SER	N-CA-C	-5.94	105.30	112.54
40	R	42	VAL	N-CA-C	5.93	116.72	108.89
38	P	100	ASN	N-CA-C	-5.87	104.83	112.23
18	u	17	ASP	N-CA-C	5.85	117.46	110.44
36	N	87	MET	N-CA-C	-5.81	105.08	111.82
47	Y	40	ALA	N-CA-C	-5.80	106.25	113.38
32	J	101	GLY	N-CA-C	-5.78	108.31	114.67
29	G	19	THR	N-CA-C	5.75	118.33	111.71
40	R	7	ASN	N-CA-C	5.74	118.52	109.96
30	H	192	TYR	N-CA-C	-5.74	106.41	113.41
25	C	41	VAL	N-CA-C	5.72	115.91	110.53
29	G	43	GLU	N-CA-C	5.72	117.19	111.07
4	e	107	VAL	N-CA-C	5.71	121.22	108.88
47	Y	18	LYS	N-CA-C	-5.70	105.14	111.36
29	G	194	GLY	N-CA-C	-5.70	99.67	113.18
45	W	69	TYR	N-CA-C	-5.67	105.09	111.28
42	T	53	ARG	N-CA-C	-5.66	105.19	111.36

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
48	Z	13	VAL	N-CA-C	-5.65	101.27	109.29
6	g	110	VAL	N-CA-C	5.65	118.04	109.12
34	L	14	ASP	CA-C-N	5.64	126.89	119.84
34	L	14	ASP	C-N-CA	5.64	126.89	119.84
34	L	4	ARG	N-CA-C	5.64	118.63	110.28
41	S	50	LEU	CA-C-N	5.62	126.86	119.84
41	S	50	LEU	C-N-CA	5.62	126.86	119.84
34	L	23	ALA	N-CA-C	-5.60	105.25	111.36
14	q	24	TYR	N-CA-C	5.58	118.32	110.23
36	N	52	GLU	N-CA-C	-5.57	106.53	113.38
12	o	6	ALA	N-CA-C	-5.56	105.30	111.36
11	n	54	LEU	N-CA-C	-5.54	106.52	113.28
31	I	130	ASN	N-CA-C	-5.52	107.19	114.31
3	d	31	VAL	N-CA-C	5.52	116.29	110.72
9	l	77	ILE	N-CA-C	5.51	116.19	109.30
48	Z	60	ALA	N-CA-C	-5.51	103.95	111.56
9	l	136	GLU	N-CA-C	-5.50	105.37	111.36
54	8	103	LYS	N-CA-C	5.49	122.48	110.80
3	d	176	ASP	CA-C-N	5.46	124.92	119.24
3	d	176	ASP	C-N-CA	5.46	124.92	119.24
38	P	61	ALA	N-CA-C	-5.42	105.38	111.28
54	8	131	MET	N-CA-C	5.42	122.34	110.80
39	Q	43	LYS	N-CA-C	5.41	121.77	109.81
4	e	56	LEU	N-CA-C	5.40	117.86	111.33
40	R	96	VAL	N-CA-C	5.39	116.65	112.12
31	I	5	GLY	CA-C-N	5.38	126.56	119.84
31	I	5	GLY	C-N-CA	5.38	126.56	119.84
29	G	167	HIS	N-CA-C	-5.37	106.73	113.28
47	Y	84	LYS	N-CA-C	-5.34	105.50	112.23
48	Z	61	ARG	N-CA-C	5.33	119.30	112.26
42	T	51	SER	N-CA-C	-5.33	105.52	112.23
3	d	79	ARG	N-CA-C	-5.32	102.88	110.59
29	G	42	LEU	N-CA-C	5.30	117.47	111.11
36	N	64	ILE	N-CA-C	5.30	116.22	108.53
50	1	1020	A	C2'-C3'-O3'	5.28	117.42	109.50
7	j	44	TYR	N-CA-C	5.28	117.97	110.10
26	D	7	PRO	N-CA-C	5.28	119.49	111.15
36	N	53	LEU	N-CA-C	-5.28	106.34	112.89
39	Q	115	LYS	N-CA-C	-5.24	102.71	110.46
29	G	14	HIS	N-CA-C	5.24	117.96	109.79
8	k	91	SER	N-CA-C	-5.22	107.29	113.97
48	Z	63	ASN	N-CA-C	5.20	118.26	108.65

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
34	L	71	THR	N-CA-C	-5.18	108.71	114.62
3	d	8	ALA	N-CA-C	-5.17	108.00	114.56
7	j	7	LYS	CA-C-N	5.17	125.21	119.32
7	j	7	LYS	C-N-CA	5.17	125.21	119.32
4	e	3	LEU	N-CA-C	-5.17	105.72	112.23
29	G	46	VAL	CB-CA-C	-5.17	108.87	114.35
23	z	40	THR	N-CA-C	-5.16	102.65	110.50
30	H	85	LYS	N-CA-C	-5.16	105.83	111.82
19	v	26	PHE	CA-C-N	5.15	125.05	119.85
19	v	26	PHE	C-N-CA	5.15	125.05	119.85
31	I	7	LYS	N-CA-C	5.15	117.63	111.71
1	b	237	ARG	N-CA-C	5.14	116.93	110.91
10	m	57	VAL	N-CA-C	-5.13	108.28	113.47
1	b	71	ASP	N-CA-C	5.12	117.98	110.30
8	k	93	GLN	N-CA-C	5.11	117.36	110.31
16	s	14	ALA	N-CA-C	-5.11	107.18	113.41
29	G	26	MET	N-CA-C	-5.11	107.56	112.97
43	U	62	GLY	N-CA-C	-5.10	107.98	114.16
17	t	18	GLU	N-CA-C	-5.09	105.82	111.36
29	G	135	MET	N-CA-C	-5.09	105.92	111.82
49	3	1094	G	N9-C1'-C2'	5.08	119.62	112.00
30	H	89	VAL	N-CA-C	5.08	115.69	110.36
38	P	102	ALA	N-CA-C	-5.06	107.06	113.18
36	N	62	LEU	N-CA-C	5.05	116.91	108.99
6	g	113	SER	N-CA-C	5.04	117.55	111.40
54	8	14	GLU	N-CA-C	-5.04	107.08	113.18
4	e	10	GLU	N-CA-C	5.04	116.58	111.14
23	z	18	LYS	N-CA-C	-5.04	105.68	111.07
32	J	55	VAL	CB-CA-C	-5.04	107.40	114.00
44	V	78	VAL	N-CA-C	5.03	115.18	110.30
18	u	75	ALA	N-CA-C	-5.03	108.18	114.56
15	r	46	GLU	N-CA-C	5.02	117.09	108.90
30	H	124	GLU	N-CA-C	-5.01	106.68	112.89

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen

atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	b	2083	0	2157	104	0
2	c	1565	0	1616	74	0
3	d	1552	0	1619	55	0
4	e	1411	0	1447	63	0
5	f	1323	0	1374	59	0
6	g	1111	0	1148	53	0
7	j	1129	0	1162	49	0
8	k	939	0	1012	34	0
9	l	1045	0	1117	62	0
10	m	1074	0	1157	43	0
11	n	961	0	1000	47	0
12	o	892	0	923	36	0
13	p	917	0	965	48	0
14	q	947	0	1022	28	0
15	r	816	0	839	37	0
16	s	857	0	922	37	0
17	t	739	0	807	27	0
18	u	780	0	834	27	0
19	v	753	0	780	37	0
20	w	575	0	592	18	0
21	x	625	0	655	29	0
22	y	509	0	543	16	0
23	z	449	0	491	28	0
24	B	444	0	461	20	0
25	C	410	0	440	17	0
26	D	377	0	418	17	0
27	E	504	0	574	19	0
28	F	302	0	343	15	0
29	G	1757	0	1787	93	0
30	H	1625	0	1699	74	0
31	I	1643	0	1710	82	0
32	J	1157	0	1199	54	0
33	K	818	0	808	60	0
34	L	1182	0	1240	58	0
35	M	979	0	1034	52	0
36	N	1022	0	1070	62	0
37	O	787	0	828	48	0
38	P	870	0	878	48	0
39	Q	955	0	1019	58	0
40	R	884	0	944	57	0
41	S	805	0	847	58	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
42	T	714	0	737	35	0
43	U	649	0	666	31	0
44	V	649	0	691	32	0
45	W	536	0	552	19	0
46	X	638	0	665	31	0
47	Y	665	0	714	25	0
48	Z	545	0	579	39	0
49	3	33012	0	16619	771	0
50	1	62317	0	31346	1228	0
51	2	2568	0	1303	75	0
52	5	1640	0	837	38	0
53	4	353	0	175	8	0
54	8	949	0	1009	83	0
All	All	144808	0	97374	3906	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 16.

All (3906) 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)
54:8:106:ARG:H	54:8:107:PRO:HA	1.07	1.18
50:1:2170:A:H2'	50:1:2171:A:H4'	1.40	1.00
38:P:28:ASN:HD21	38:P:56:LYS:HE2	1.26	1.00
5:f:96:ALA:HB3	5:f:103:ASN:HD21	1.27	0.99
39:Q:113:ARG:HB2	39:Q:118:VAL:HB	1.43	0.99
15:r:68:ARG:HH11	15:r:90:ARG:HD3	1.25	0.98
48:Z:25:ALA:HB3	53:4:9:G:H5''	1.41	0.98
50:1:435:C:H2'	50:1:436:C:H5'	1.45	0.98
50:1:1906:G:H2'	50:1:1907:G:H5''	1.47	0.96
39:Q:49:ARG:HH22	49:3:522:C:H41	1.04	0.96
50:1:2139:U:H2'	50:1:2140:G:H5'	1.46	0.96
38:P:43:TRP:HE1	49:3:686:U:H4'	1.31	0.95
54:8:106:ARG:N	54:8:107:PRO:HA	1.79	0.95
10:m:12:MET:HA	50:1:910:A:H62	1.29	0.93
50:1:783:A:H2'	50:1:784:G:H4'	1.51	0.92
17:t:56:GLU:HG3	17:t:88:LYS:HG2	1.50	0.91
18:u:17:ASP:HB3	18:u:20:LYS:HD3	1.52	0.91
44:V:15:LYS:HE2	49:3:275:G:H5'	1.50	0.90
54:8:47:SER:O	54:8:48:LEU:HB2	1.69	0.89
30:H:156:LEU:H	30:H:156:LEU:HD12	1.37	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:106:PRO:HD2	1:b:109:LEU:HD22	1.54	0.88
54:8:48:LEU:H	54:8:49:PRO:HD3	1.38	0.87
50:1:1914:C:H42	54:8:101:GLU:HB2	1.37	0.87
2:c:121:THR:HG21	2:c:143:PRO:HB3	1.57	0.87
34:L:75:LYS:HD2	34:L:88:VAL:HG11	1.56	0.87
40:R:15:VAL:HG23	40:R:16:ILE:HD12	1.57	0.87
10:m:40:ARG:HB3	10:m:93:VAL:HG21	1.57	0.86
41:S:29:ILE:HG13	41:S:30:ILE:HD12	1.56	0.86
50:1:1175:A:H3'	50:1:1176:U:H5'	1.58	0.85
50:1:655:A:H4'	50:1:656:G:H5'	1.57	0.85
39:Q:23:LEU:HD12	39:Q:29:LYS:HE3	1.57	0.85
50:1:1722:A:H2'	50:1:1723:G:C8	2.11	0.84
54:8:79:SER:HB3	54:8:82:LEU:HG	1.58	0.84
2:c:9:VAL:HG21	13:p:3:ILE:HD11	1.60	0.84
44:V:12:VAL:HB	44:V:21:VAL:HG13	1.59	0.84
29:G:3:VAL:HG22	29:G:8:MET:HG2	1.60	0.83
50:1:1127:A:H2'	50:1:1128:G:H5''	1.59	0.83
11:n:53:THR:HG21	50:1:2840:C:H5''	1.58	0.83
38:P:54:SER:OG	49:3:694:A:H5'	1.78	0.83
48:Z:36:PHE:HB2	48:Z:40:PRO:HD3	1.60	0.83
2:c:115:GLY:HA2	2:c:167:ASN:HB2	1.60	0.83
9:l:101:ILE:HG13	9:l:102:GLY:H	1.44	0.82
50:1:1807:G:H2'	50:1:1808:A:H5'	1.60	0.82
49:3:451:A:N6	49:3:480:U:H2'	1.94	0.82
50:1:2155:U:H2'	50:1:2156:G:H5'	1.61	0.82
44:V:68:LYS:HB2	49:3:266:G:H3'	1.62	0.82
49:3:67:C:H2'	49:3:68:G:C8	2.15	0.82
11:n:34:ILE:HG13	11:n:113:ILE:HG23	1.60	0.82
48:Z:54:ARG:HA	48:Z:57:LYS:HE2	1.60	0.82
49:3:1212:U:H4'	49:3:1213:A:C8	2.15	0.82
6:g:5:LEU:HD22	6:g:13:GLY:HA2	1.61	0.82
54:8:38:HIS:HB2	54:8:74:ALA:HB3	1.61	0.81
29:G:15:PHE:HA	29:G:39:ILE:HA	1.63	0.81
48:Z:33:ARG:HE	48:Z:34:ARG:H	1.27	0.81
49:3:212:G:H2'	49:3:213:G:H8	1.45	0.81
50:1:2101:A:H2'	50:1:2102:G:C8	2.14	0.81
7:j:78:THR:HG23	7:j:80:HIS:H	1.44	0.81
37:O:37:ARG:HH21	49:3:1124:G:H4'	1.46	0.81
29:G:221:ARG:HH12	29:G:224:ARG:HH11	1.28	0.81
50:1:2102:G:H2'	50:1:2103:C:H5'	1.63	0.80
30:H:76:ILE:HB	30:H:80:GLY:HA2	1.61	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:F:36:ARG:HG2	28:F:37:GLN:H	1.44	0.80
50:1:1172:C:H2'	50:1:1173:U:H5''	1.60	0.80
18:u:47:PRO:HA	18:u:53:GLN:HE22	1.45	0.80
43:U:6:LEU:HD11	43:U:17:TYR:HB3	1.61	0.80
36:N:35:GLU:HA	36:N:39:GLY:HA3	1.62	0.80
49:3:730:G:H2'	49:3:731:G:H5'	1.64	0.80
50:1:1419:A:H61	50:1:1494:A:H61	1.28	0.80
39:Q:49:ARG:HH22	49:3:522:C:N4	1.78	0.79
38:P:28:ASN:ND2	38:P:56:LYS:HE2	1.98	0.79
49:3:74:A:H2	49:3:96:U:H3	1.29	0.79
49:3:664:G:H22	49:3:741:G:H1	1.31	0.78
32:J:35:LEU:HD22	32:J:133:ILE:HD13	1.65	0.78
49:3:184:G:H5''	49:3:224:U:H4'	1.65	0.78
50:1:1300:G:H4'	50:1:1301:A:H5''	1.66	0.78
51:2:118:C:H2'	51:2:119:A:C8	2.18	0.78
15:r:15:SER:H	15:r:18:GLN:HE21	1.28	0.77
31:I:100:VAL:HG12	31:I:104:MET:HE2	1.65	0.77
50:1:2638:G:H1'	50:1:2778:A:H61	1.48	0.77
49:3:1212:U:H4'	49:3:1213:A:N7	1.99	0.77
13:p:54:LEU:HA	13:p:76:HIS:HD2	1.49	0.77
50:1:2105:U:H3	50:1:2184:A:H61	1.32	0.77
50:1:2139:U:H2'	50:1:2140:G:C5'	2.14	0.77
50:1:1077:A:H2'	50:1:1078:U:H5'	1.65	0.77
6:g:110:VAL:HG13	6:g:114:GLU:HG3	1.66	0.77
1:b:62:ARG:H	1:b:85:ASN:HD21	1.33	0.76
11:n:103:ARG:HD2	50:1:1287:A:H5'	1.67	0.76
50:1:1597:A:H5''	50:1:1598:A:H5'	1.66	0.76
49:3:1486:G:H2'	49:3:1487:G:C8	2.19	0.76
49:3:993:G:H5'	49:3:995:C:H41	1.51	0.76
1:b:180:MET:HB2	1:b:268:ARG:HB3	1.65	0.76
31:I:199:ILE:H	31:I:199:ILE:HD12	1.49	0.76
4:e:120:SER:OG	50:1:2304:G:H5'	1.84	0.76
7:j:81:ILE:HG23	7:j:82:GLY:H	1.49	0.76
13:p:52:ARG:HB2	13:p:55:HIS:HB2	1.66	0.76
54:8:106:ARG:H	54:8:107:PRO:CA	1.95	0.75
37:O:37:ARG:NH1	49:3:1125:U:H5'	2.00	0.75
49:3:677:U:H3	49:3:713:G:H1	1.34	0.75
50:1:145:C:H2'	50:1:146:A:C8	2.21	0.75
50:1:1168:G:H1	50:1:1181:U:H3	1.34	0.75
51:2:3:C:H2'	51:2:4:C:H5''	1.68	0.75
5:f:84:LYS:HB2	5:f:132:LEU:HD21	1.68	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:2653:U:H3	50:1:2667:C:H42	1.35	0.75
35:M:28:SER:HB3	35:M:58:LEU:HB2	1.68	0.75
29:G:185:ILE:HD13	29:G:199:ILE:HB	1.68	0.75
40:R:106:ARG:HG2	49:3:947:G:OP1	1.86	0.75
39:Q:11:ARG:HB3	49:3:562:U:O2'	1.85	0.75
42:T:21:THR:HG21	49:3:658:C:H1'	1.68	0.75
36:N:114:LYS:HE2	49:3:1187:G:OP1	1.87	0.74
49:3:955:U:H3	49:3:1225:A:H61	1.35	0.74
50:1:2469:A:H2'	50:1:2470:G:O4'	1.87	0.74
6:g:66:ASN:HD22	6:g:134:VAL:HG23	1.52	0.74
33:K:36:ILE:HA	33:K:64:VAL:HG23	1.68	0.74
50:1:1906:G:C2'	50:1:1907:G:H5''	2.17	0.74
21:x:10:ARG:NH1	21:x:10:ARG:HB2	2.02	0.74
30:H:83:VAL:HG22	30:H:100:ILE:HD12	1.68	0.74
2:c:151:THR:OG1	2:c:152:PRO:HD3	1.88	0.74
49:3:1300:G:N2	49:3:1334:G:H2'	2.03	0.74
34:L:138:GLU:HA	34:L:141:HIS:HB2	1.70	0.74
5:f:101:VAL:HG22	5:f:115:GLN:HG2	1.70	0.73
31:I:16:THR:HG22	31:I:17:ASP:H	1.54	0.73
13:p:63:ILE:HA	13:p:68:GLY:HA2	1.70	0.73
49:3:448:A:H62	49:3:486:U:H3	1.32	0.73
1:b:239:PHE:HE2	1:b:243:PRO:HG3	1.53	0.73
30:H:56:ILE:HG23	30:H:63:ILE:HD11	1.69	0.73
51:2:12:C:H1'	51:2:15:A:C4	2.23	0.73
25:C:17:GLY:HA3	50:1:2400:G:H4'	1.70	0.73
34:L:80:GLY:HA3	53:4:12:A:H4'	1.67	0.73
50:1:2747:G:O6	50:1:2755:C:H5''	1.88	0.73
54:8:106:ARG:N	54:8:107:PRO:CA	2.52	0.73
34:L:73:GLU:HG3	34:L:74:VAL:H	1.53	0.73
3:d:117:ARG:HH12	9:l:2:ARG:HG2	1.54	0.73
27:E:36:ALA:HB3	27:E:39:ARG:HG2	1.71	0.73
3:d:164:LEU:HD23	3:d:166:LYS:H	1.52	0.72
8:k:65:THR:HG22	8:k:67:LYS:H	1.52	0.72
13:p:92:ARG:HH21	50:1:1753:G:H5'	1.53	0.72
38:P:35:ASP:HB2	38:P:37:GLN:HE22	1.53	0.72
49:3:1496:C:H2'	49:3:1497:G:O4'	1.89	0.72
42:T:32:THR:HG22	42:T:62:ARG:HH11	1.53	0.72
50:1:894:U:H2'	50:1:895:U:H5'	1.70	0.72
35:M:6:ILE:HB	35:M:76:ARG:HH12	1.55	0.72
39:Q:98:ARG:HB2	39:Q:116:TYR:HA	1.70	0.72
43:U:41:PRO:HB2	49:3:450:G:H4'	1.70	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:560:A:H5'	49:3:566:G:N2	2.03	0.72
50:1:121:G:H4'	50:1:149:A:H5'	1.71	0.72
50:1:1936:A:H2	50:1:1943:U:H3	1.37	0.72
39:Q:49:ARG:NH2	49:3:522:C:H41	1.84	0.72
54:8:105:ARG:HG2	54:8:107:PRO:HB3	1.71	0.72
50:1:2285:C:O2'	50:1:2287:A:H1'	1.88	0.72
54:8:42:ASP:HB3	54:8:70:ILE:HB	1.71	0.72
15:r:54:VAL:HG23	15:r:55:ASP:H	1.54	0.72
50:1:898:C:H2'	50:1:899:A:H5'	1.70	0.72
50:1:1063:G:H1	50:1:1075:C:H42	1.38	0.72
50:1:2150:C:H2'	50:1:2151:U:H5'	1.71	0.72
50:1:1909:C:H2'	50:1:1910:G:H8	1.54	0.72
31:I:53:GLN:HA	31:I:198:LEU:HD21	1.71	0.71
49:3:436:C:H2'	49:3:437:U:C6	2.25	0.71
50:1:1732:C:O2'	50:1:1733:G:H5'	1.90	0.71
34:L:34:LYS:HZ1	49:3:1290:G:H5'	1.55	0.71
50:1:2267:A:H5''	50:1:2268:A:H5'	1.72	0.71
6:g:124:THR:HG23	6:g:128:HIS:HE1	1.55	0.71
33:K:47:LEU:HD21	33:K:57:ALA:HB3	1.72	0.71
49:3:1001:C:H2'	49:3:1002:G:C8	2.25	0.71
7:j:38:GLY:HA3	7:j:50:THR:HG23	1.72	0.71
19:v:14:LYS:HB2	51:2:98:G:H1	1.55	0.71
50:1:1434:A:H2'	50:1:1435:G:C8	2.26	0.71
2:c:181:ASP:HB3	2:c:186:LEU:H	1.55	0.71
3:d:163:ASN:HB2	50:1:322:A:OP2	1.91	0.71
29:G:217:ALA:O	29:G:221:ARG:HG2	1.90	0.71
36:N:29:ILE:HG22	36:N:64:ILE:HB	1.71	0.71
50:1:155:A:H2'	50:1:156:A:C8	2.25	0.71
50:1:1847:A:HO2'	50:1:1848:A:H8	1.35	0.71
50:1:893:C:H2'	50:1:894:U:C6	2.26	0.71
10:m:17:ASN:HD22	10:m:95:LEU:HB3	1.56	0.71
50:1:873:C:H41	50:1:900:A:H5''	1.55	0.71
50:1:1796:U:H2'	50:1:1797:G:H8	1.55	0.71
50:1:1311:G:H21	50:1:1603:A:H62	1.37	0.71
8:k:1:MET:HE1	50:1:2726:A:H1'	1.73	0.70
33:K:11:HIS:ND1	33:K:12:PRO:HD2	2.05	0.70
33:K:44:ARG:HA	33:K:58:HIS:HA	1.73	0.70
15:r:91:GLN:HE21	50:1:993:G:H1'	1.55	0.70
49:3:1163:A:H2'	49:3:1164:G:C8	2.26	0.70
50:1:2286:G:H5''	50:1:2287:A:OP1	1.91	0.70
2:c:135:GLY:HA2	50:1:743:A:OP1	1.91	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:1437:C:H2'	50:1:1438:U:C6	2.26	0.70
27:E:7:ARG:HG2	50:1:246:C:N4	2.05	0.70
49:3:701:U:H4'	49:3:703:G:H1'	1.73	0.70
6:g:72:ILE:HB	6:g:108:VAL:HG22	1.72	0.70
29:G:22:TRP:HZ2	49:3:829:G:H4'	1.55	0.70
31:I:124:VAL:HG23	31:I:142:VAL:HG22	1.73	0.70
50:1:2776:A:H4'	50:1:2778:A:OP1	1.92	0.70
1:b:145:MET:HE3	1:b:181:ARG:HH12	1.57	0.70
43:U:70:ARG:HE	49:3:451:A:H5''	1.57	0.70
49:3:304:U:O2'	49:3:305:G:H5'	1.90	0.70
4:e:33:ILE:HG23	4:e:90:LEU:HB2	1.71	0.70
34:L:49:LEU:HD22	34:L:123:LEU:HD13	1.74	0.70
40:R:64:VAL:HG12	40:R:65:GLU:H	1.57	0.70
50:1:807:U:H2'	50:1:808:G:C8	2.27	0.70
50:1:2106:U:H2'	50:1:2107:G:C8	2.27	0.70
15:r:1:MET:HA	15:r:43:ASN:HA	1.74	0.69
50:1:2101:A:H2'	50:1:2102:G:H8	1.57	0.69
1:b:36:ASN:HB2	1:b:61:TYR:HB2	1.71	0.69
23:z:6:ILE:HG22	23:z:28:LEU:HD21	1.74	0.69
27:E:1:PRO:H2	50:1:591:U:H1'	1.56	0.69
48:Z:65:ARG:HG2	49:3:1099:G:H1'	1.74	0.69
50:1:366:C:H2'	50:1:367:G:H5''	1.74	0.69
52:5:71:C:H2'	52:5:72:A:H8	1.56	0.69
17:t:65:GLY:HA3	17:t:77:ARG:O	1.92	0.69
36:N:22:PRO:HA	36:N:60:LEU:HG	1.75	0.69
49:3:212:G:H2'	49:3:213:G:C8	2.28	0.69
31:I:100:VAL:HG21	31:I:136:VAL:HG11	1.75	0.69
31:I:87:GLU:HG3	31:I:187:ARG:HG2	1.74	0.69
49:3:1414:U:H3	49:3:1486:G:H1	1.40	0.69
50:1:2406:A:H4'	50:1:2408:U:OP2	1.92	0.69
34:L:35:LYS:HG3	49:3:1373:G:H5''	1.75	0.69
8:k:59:LYS:HD2	8:k:89:ASN:HA	1.75	0.69
31:I:85:THR:HG23	31:I:200:VAL:HG11	1.74	0.69
37:O:36:VAL:HG23	37:O:76:ILE:HA	1.74	0.69
43:U:75:ILE:O	43:U:78:VAL:HG12	1.93	0.69
50:1:290:U:H2'	50:1:291:G:C8	2.27	0.69
50:1:1020:A:H1'	50:1:1021:A:OP2	1.93	0.69
50:1:2799:A:H2'	50:1:2800:A:H5'	1.75	0.69
1:b:106:PRO:HG2	1:b:109:LEU:HB2	1.75	0.69
16:s:4:ILE:HD13	16:s:106:VAL:HG22	1.75	0.69
1:b:171:VAL:HG23	1:b:185:ALA:HB2	1.75	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:N:27:ILE:HB	36:N:34:LEU:HD22	1.75	0.69
17:t:6:ARG:HH22	50:1:144:A:H5''	1.58	0.68
18:u:65:GLN:OE1	50:1:328:U:H4'	1.92	0.68
35:M:12:ARG:NH2	49:3:826:C:H5'	2.08	0.68
49:3:744:C:H2'	49:3:745:G:H8	1.57	0.68
19:v:20:LEU:HD11	19:v:27:PRO:HD3	1.76	0.68
49:3:1213:A:O2'	49:3:1214:C:H2'	1.92	0.68
31:I:90:LEU:HD13	31:I:93:LEU:HD12	1.76	0.68
49:3:477:C:H2'	49:3:478:A:H8	1.59	0.68
40:R:24:VAL:HG23	40:R:28:ARG:HB2	1.76	0.68
49:3:477:C:H2'	49:3:478:A:C8	2.28	0.68
38:P:124:LYS:HZ2	48:Z:34:ARG:HB2	1.58	0.68
49:3:186:C:H2'	49:3:187:G:C8	2.27	0.68
50:1:2281:A:O2'	50:1:2282:G:H5'	1.93	0.68
54:8:64:ILE:HG12	54:8:70:ILE:HG12	1.75	0.68
40:R:82:LEU:HD23	40:R:84:CYS:SG	2.34	0.68
48:Z:9:GLU:HB2	48:Z:10:PRO:HD3	1.74	0.68
50:1:1573:G:H2'	50:1:1574:C:H5'	1.76	0.68
50:1:2902:C:H3'	50:1:2903:U:H5''	1.76	0.68
4:e:35:LEU:HB3	4:e:88:VAL:HB	1.75	0.68
4:e:105:ILE:HG13	4:e:109:ARG:HH21	1.58	0.68
54:8:3:VAL:HB	54:8:10:ILE:O	1.94	0.68
16:s:3:THR:HG21	16:s:58:ALA:HB2	1.75	0.68
33:K:15:SER:O	33:K:18:VAL:HG12	1.93	0.68
44:V:11:VAL:HG21	44:V:52:CYS:SG	2.34	0.68
37:O:37:ARG:HH12	49:3:1125:U:H5'	1.58	0.68
6:g:101:ASP:O	6:g:104:THR:HG22	1.93	0.67
11:n:101:GLY:HA2	24:B:41:HIS:HD2	1.59	0.67
49:3:1141:C:H2'	49:3:1142:G:H5''	1.76	0.67
49:3:1242:G:O2'	49:3:1303:C:H5''	1.93	0.67
50:1:225:C:H2'	50:1:226:A:O4'	1.93	0.67
54:8:37:ILE:HD11	54:8:76:GLU:HA	1.77	0.67
34:L:102:TRP:HA	34:L:105:GLU:OE1	1.94	0.67
50:1:807:U:H2'	50:1:808:G:H8	1.60	0.67
50:1:906:U:H2'	50:1:907:G:H5''	1.76	0.67
50:1:917:A:H5''	50:1:2268:A:H61	1.58	0.67
4:e:70:ARG:HA	4:e:80:GLN:HE22	1.59	0.67
22:y:2:LYS:HG3	22:y:3:ALA:H	1.59	0.67
49:3:621:A:H2'	49:3:622:A:C8	2.29	0.67
49:3:1376:U:H2'	49:3:1377:A:C8	2.30	0.67
54:8:37:ILE:HG23	54:8:74:ALA:O	1.95	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:P:33:ILE:HD11	38:P:69:CYS:HB2	1.76	0.67
49:3:607:A:H2'	49:3:608:A:H8	1.59	0.67
49:3:992:U:H4'	49:3:993:G:H5''	1.77	0.67
2:c:11:MET:HG2	2:c:25:THR:HA	1.77	0.67
49:3:1218:C:H2'	49:3:1219:A:C8	2.30	0.67
50:1:1026:G:H2'	50:1:1027:A:H8	1.59	0.67
50:1:1077:A:C2'	50:1:1078:U:H5'	2.24	0.67
50:1:1437:C:H2'	50:1:1438:U:H6	1.60	0.67
5:f:136:ASP:HB3	5:f:139:VAL:HG12	1.76	0.67
7:j:45:THR:HG23	7:j:48:VAL:HG12	1.76	0.67
29:G:40:ILE:H	29:G:40:ILE:HD12	1.59	0.67
31:I:67:LEU:HB2	31:I:70:GLN:HB2	1.77	0.67
49:3:54:C:H2'	49:3:352:C:H41	1.59	0.67
49:3:1454:G:H2'	49:3:1455:G:C8	2.29	0.67
50:1:2873:A:O2'	50:1:2874:C:H5'	1.94	0.67
7:j:30:THR:HG21	50:1:1005:C:O2'	1.95	0.67
50:1:690:G:O2'	50:1:691:C:H5'	1.95	0.67
50:1:1909:C:H2'	50:1:1910:G:C8	2.30	0.67
17:t:39:THR:HG22	17:t:42:GLU:HG3	1.77	0.67
31:I:7:LYS:HA	31:I:10:LEU:HD13	1.76	0.67
36:N:91:GLU:HA	36:N:94:ARG:HB2	1.76	0.67
45:W:49:LYS:HA	45:W:52:ARG:HH21	1.59	0.67
15:r:48:LYS:HG2	15:r:49:ILE:H	1.60	0.66
32:J:55:VAL:HG23	32:J:56:PRO:HD3	1.77	0.66
50:1:1051:G:H4'	50:1:2752:C:H1'	1.77	0.66
6:g:83:LYS:HD3	6:g:84:ALA:N	2.11	0.66
35:M:10:LEU:HD12	35:M:74:ILE:HG12	1.76	0.66
39:Q:79:ILE:HG22	39:Q:80:LEU:H	1.60	0.66
50:1:717:C:H2'	50:1:718:A:H5'	1.77	0.66
50:1:2039:U:H2'	50:1:2040:G:H8	1.60	0.66
50:1:2475:C:H42	50:1:2529:G:H1	1.43	0.66
2:c:110:THR:HG23	2:c:171:THR:HG22	1.77	0.66
50:1:2443:C:H2'	50:1:2444:G:C8	2.30	0.66
31:I:50:TYR:HH	49:3:509:A:H2	1.42	0.66
32:J:52:ALA:HB3	32:J:58:ALA:HB2	1.77	0.66
50:1:1065:U:H3'	50:1:1066:U:H5''	1.76	0.66
2:c:5:VAL:H	2:c:32:ASN:HD21	1.42	0.66
19:v:45:ASP:O	19:v:48:MET:HG2	1.95	0.66
40:R:79:LEU:HA	40:R:82:LEU:HB2	1.77	0.66
44:V:78:VAL:HG12	44:V:79:GLU:HG3	1.78	0.66
50:1:859:G:H1'	50:1:860:U:H5	1.61	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:x:50:VAL:HG22	21:x:51:SER:N	2.11	0.66
50:1:329:G:O4'	50:1:477:A:H1'	1.95	0.66
51:2:118:C:H2'	51:2:119:A:H8	1.61	0.66
12:o:39:VAL:HG23	12:o:48:LEU:HB2	1.77	0.66
50:1:176:A:O2'	50:1:177:G:H5'	1.96	0.66
5:f:87:GLN:HB2	5:f:162:ARG:HB2	1.77	0.66
6:g:128:HIS:HB2	6:g:144:VAL:HG13	1.78	0.66
32:J:22:LYS:HD3	49:3:1081:A:H5'	1.78	0.66
49:3:223:A:H2'	49:3:224:U:C6	2.30	0.66
49:3:865:A:H5'	49:3:1078:U:O4	1.95	0.66
9:l:16:GLY:H	50:1:662:G:H4'	1.60	0.66
49:3:211:G:N2	49:3:212:G:H1'	2.10	0.66
50:1:774:G:O2'	50:1:775:G:H5''	1.96	0.66
50:1:1103:A:H3'	50:1:1104:C:H5''	1.78	0.66
34:L:65:LEU:O	34:L:69:ARG:HG3	1.96	0.65
49:3:501:C:H2'	49:3:502:A:C8	2.31	0.65
49:3:1144:G:H2'	49:3:1145:A:C8	2.31	0.65
37:O:33:GLY:HA3	37:O:83:THR:HB	1.78	0.65
51:2:28:C:H2'	51:2:29:A:C8	2.30	0.65
12:o:29:HIS:ND1	51:2:7:G:H5'	2.11	0.65
40:R:7:ASN:CG	40:R:9:PRO:HD3	2.20	0.65
50:1:1251:C:O2'	50:1:1252:G:H3'	1.96	0.65
49:3:448:A:N6	49:3:486:U:H3	1.95	0.65
49:3:1175:G:H2'	49:3:1176:A:C8	2.31	0.65
50:1:1607:C:H3'	50:1:1608:A:H5'	1.78	0.65
50:1:2039:U:H2'	50:1:2040:G:C8	2.32	0.65
50:1:2743:U:H2'	50:1:2744:G:O4'	1.95	0.65
29:G:22:TRP:HE1	49:3:830:G:H5'	1.62	0.65
30:H:14:VAL:HG23	30:H:15:LYS:H	1.61	0.65
34:L:74:VAL:HG23	34:L:85:GLN:HB3	1.78	0.65
35:M:54:THR:HG23	35:M:55:LYS:HG3	1.78	0.65
49:3:203:G:H1	49:3:214:C:H42	1.45	0.65
49:3:1391:U:H2'	49:3:1392:G:C8	2.31	0.65
50:1:783:A:H2'	50:1:784:G:C4'	2.25	0.65
8:k:40:LYS:HE2	8:k:57:VAL:HG22	1.78	0.65
29:G:23:ASN:HD22	29:G:26:MET:HG2	1.62	0.65
3:d:155:GLU:HG2	3:d:156:ASN:N	2.10	0.65
7:j:27:ARG:HH22	50:1:1142:A:H4'	1.61	0.65
41:S:47:LEU:HD11	49:3:1317:C:H4'	1.78	0.65
42:T:81:ILE:HA	42:T:84:LEU:HB2	1.78	0.65
49:3:1251:A:H2'	49:3:1252:A:C8	2.31	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:1937:A:O2'	50:1:1938:A:H3'	1.97	0.65
52:5:25:C:H42	52:5:45:G:H22	1.43	0.65
54:8:102:LYS:HD3	54:8:105:ARG:HE	1.62	0.65
10:m:65:ILE:HG22	10:m:103:TYR:CE1	2.32	0.65
16:s:3:THR:HG23	16:s:107:VAL:HG13	1.76	0.65
26:D:24:THR:HG23	26:D:27:GLY:H	1.62	0.65
49:3:997:U:H2'	49:3:998:C:C6	2.32	0.65
50:1:1944:U:H2'	54:8:75:GLN:HE22	1.62	0.65
50:1:2849:U:H4'	50:1:2868:A:C2	2.31	0.65
21:x:10:ARG:HB2	21:x:10:ARG:HH11	1.61	0.65
50:1:832:U:H2'	50:1:833:A:C8	2.32	0.65
50:1:1179:G:H2'	50:1:1180:U:H4'	1.77	0.65
50:1:1180:U:H2'	50:1:1181:U:H5'	1.79	0.65
28:F:10:LEU:HD13	28:F:33:HIS:NE2	2.12	0.64
35:M:25:THR:HG22	35:M:59:GLU:HA	1.78	0.64
44:V:30:HIS:HD2	44:V:33:TYR:H	1.45	0.64
43:U:54:LEU:HD13	43:U:57:ILE:HD12	1.79	0.64
49:3:1166:G:C6	49:3:1168:U:H5''	2.32	0.64
50:1:2322:A:H2'	50:1:2323:G:O4'	1.97	0.64
20:w:67:VAL:HG22	20:w:74:LYS:HG2	1.78	0.64
33:K:23:GLU:OE2	33:K:24:ARG:HG3	1.97	0.64
49:3:563:A:H61	49:3:884:U:H3	1.43	0.64
50:1:833:A:H2'	50:1:834:G:H8	1.60	0.64
9:l:53:GLY:HA3	50:1:826:U:O2'	1.97	0.64
50:1:706:A:H2'	50:1:707:G:O4'	1.97	0.64
50:1:1506:U:H2'	50:1:1507:C:C6	2.32	0.64
2:c:116:LYS:HG3	2:c:165:MET:SD	2.37	0.64
18:u:73:ASN:ND2	18:u:75:ALA:HB3	2.12	0.64
31:I:117:VAL:HG11	31:I:132:ALA:HA	1.80	0.64
35:M:88:LYS:O	35:M:91:LEU:HG	1.97	0.64
49:3:1007:U:H2'	49:3:1008:U:C6	2.32	0.64
49:3:1300:G:H22	49:3:1334:G:H2'	1.63	0.64
50:1:1942:C:H3'	50:1:1943:U:H5''	1.79	0.64
4:e:45:ASP:HB3	4:e:48:LEU:HB2	1.79	0.64
17:t:53:VAL:HG23	17:t:92:ASN:HD22	1.62	0.64
24:B:16:ARG:HA	24:B:19:ASP:OD2	1.97	0.64
29:G:72:LYS:O	29:G:73:ARG:HG2	1.98	0.64
49:3:405:U:H3'	49:3:406:G:H5'	1.79	0.64
1:b:78:GLU:OE1	1:b:79:ARG:HG2	1.98	0.64
3:d:2:GLU:HA	3:d:13:THR:HA	1.80	0.64
8:k:109:SER:O	8:k:110:GLU:HG3	1.97	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:I:167:PRO:HB2	31:I:170:LEU:HG	1.80	0.64
31:I:170:LEU:HA	31:I:182:LYS:H	1.63	0.64
38:P:81:LEU:HD21	38:P:104:PHE:HB3	1.79	0.64
48:Z:65:ARG:HH21	49:3:1100:C:H1'	1.63	0.64
49:3:1171:A:H2'	49:3:1172:C:C6	2.31	0.64
50:1:621:A:H2'	50:1:622:G:H5'	1.79	0.64
50:1:2194:U:H2'	50:1:2195:U:C6	2.32	0.64
50:1:215:G:H4'	50:1:216:A:H4'	1.80	0.64
50:1:1478:G:H2'	50:1:1479:G:H8	1.62	0.64
5:f:23:ILE:HD13	5:f:36:LEU:HD13	1.80	0.64
8:k:48:PRO:HB3	49:3:1422:G:H5'	1.80	0.64
14:q:64:ILE:HD11	14:q:94:LEU:HB3	1.79	0.64
22:y:6:LEU:HD23	22:y:7:ARG:HH11	1.63	0.64
30:H:87:ARG:HB3	30:H:100:ILE:HD13	1.80	0.64
39:Q:114:SER:HB2	49:3:35:G:H21	1.61	0.64
50:1:314:C:H2'	50:1:315:G:C8	2.33	0.64
50:1:639:U:H2'	50:1:640:C:C6	2.32	0.64
2:c:8:LYS:HB2	2:c:201:LEU:HD11	1.80	0.64
9:l:135:ILE:HD11	9:l:142:ILE:HG13	1.79	0.64
50:1:833:A:H2'	50:1:834:G:C8	2.33	0.64
3:d:121:VAL:HG12	3:d:123:LYS:H	1.62	0.63
47:Y:70:LYS:HG3	47:Y:73:ARG:HH22	1.63	0.63
50:1:2761:A:H3'	50:1:2762:C:H5''	1.80	0.63
52:5:1:C:H2'	52:5:2:G:H8	1.62	0.63
10:m:132:THR:HG22	10:m:133:LYS:H	1.63	0.63
50:1:435:C:C2'	50:1:436:C:H5'	2.25	0.63
50:1:1746:A:H2'	50:1:1747:U:C6	2.32	0.63
18:u:23:LYS:O	18:u:36:GLU:HG2	1.98	0.63
29:G:23:ASN:HD21	29:G:25:LYS:HB3	1.61	0.63
33:K:48:ALA:HB1	45:W:68:PRO:HB3	1.80	0.63
48:Z:25:ALA:HB1	48:Z:29:ALA:HB2	1.80	0.63
49:3:1383:C:H2'	49:3:1384:C:H5'	1.80	0.63
50:1:1433:A:O2'	50:1:1434:A:H5'	1.98	0.63
50:1:1592:C:H2'	50:1:1593:A:H8	1.64	0.63
49:3:607:A:H2'	49:3:608:A:C8	2.34	0.63
50:1:2150:C:C2'	50:1:2151:U:H5'	2.29	0.63
1:b:164:VAL:HG23	1:b:172:THR:HG23	1.79	0.63
5:f:34:ARG:HH11	5:f:70:LEU:HD13	1.64	0.63
40:R:3:ILE:HD11	40:R:7:ASN:HD22	1.64	0.63
50:1:1871:A:H2'	50:1:1872:A:H5'	1.79	0.63
15:r:6:GLN:HB3	15:r:37:GLU:OE1	1.99	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:r:84:ARG:HG2	15:r:86:GLN:HE22	1.63	0.63
16:s:29:VAL:HG11	16:s:55:ILE:HD11	1.81	0.63
38:P:30:ILE:HG12	38:P:45:THR:HG23	1.81	0.63
39:Q:79:ILE:HG23	39:Q:103:CYS:HB2	1.80	0.63
50:1:437:U:H2'	50:1:438:G:C8	2.34	0.63
50:1:2788:C:H2'	50:1:2789:C:C6	2.34	0.63
21:x:16:ASN:HB3	21:x:24:THR:HG23	1.81	0.63
24:B:8:THR:HG23	24:B:11:LYS:H	1.63	0.63
50:1:2537:U:H2'	50:1:2538:C:C6	2.34	0.63
17:t:2:ILE:HD11	50:1:144:A:H4'	1.79	0.63
29:G:165:ALA:HB1	29:G:172:ILE:HD13	1.79	0.63
29:G:166:ASP:HB3	29:G:190:SER:HA	1.79	0.63
43:U:61:VAL:HA	43:U:65:ALA:H	1.64	0.63
44:V:46:HIS:HB2	44:V:70:LYS:HE3	1.80	0.63
49:3:29:U:O2'	49:3:30:U:H5'	1.99	0.63
50:1:1065:U:H3'	50:1:1066:U:C5'	2.27	0.63
7:j:15:TRP:HB3	7:j:137:PRO:HB3	1.81	0.63
14:q:2:ARG:HD2	50:1:1248:G:C2	2.33	0.63
49:3:49:U:O2'	49:3:50:A:H2'	1.99	0.63
49:3:314:C:O2'	49:3:315:A:H5'	1.98	0.63
49:3:911:U:H2'	49:3:912:C:C6	2.34	0.63
9:l:38:GLN:HE21	9:l:45:GLY:H	1.46	0.62
35:M:17:GLN:OE1	35:M:69:ALA:HB1	1.98	0.62
50:1:796:C:H2'	50:1:797:G:H8	1.64	0.62
50:1:2761:A:C3'	50:1:2762:C:H5''	2.29	0.62
51:2:12:C:H1'	51:2:15:A:N3	2.14	0.62
1:b:244:VAL:HG12	1:b:250:GLN:HA	1.81	0.62
8:k:65:THR:HA	8:k:82:ASN:HD22	1.64	0.62
10:m:11:LYS:HD2	10:m:86:LYS:HD3	1.80	0.62
9:l:16:GLY:HA2	50:1:662:G:O3'	1.98	0.62
29:G:17:HIS:HB2	29:G:188:THR:OG1	1.99	0.62
41:S:97:LYS:NZ	49:3:1189:U:H5'	2.15	0.62
50:1:2102:G:C2'	50:1:2103:C:H5'	2.29	0.62
2:c:149:ASN:HB3	50:1:2572:A:OP2	1.98	0.62
4:e:99:PHE:HA	4:e:102:LEU:HD12	1.80	0.62
30:H:53:ARG:HH22	30:H:184:ASN:HD22	1.45	0.62
40:R:6:ILE:HD11	40:R:65:GLU:CD	2.25	0.62
49:3:1248:A:H2'	49:3:1249:C:C6	2.34	0.62
50:1:878:A:H2'	50:1:879:G:C8	2.34	0.62
15:r:48:LYS:HG2	15:r:49:ILE:N	2.14	0.62
38:P:121:ARG:HE	38:P:124:LYS:HD3	1.64	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:S:40:ARG:NH2	46:X:6:LYS:HG3	2.13	0.62
50:1:2514:U:H2'	50:1:2515:C:C6	2.35	0.62
11:n:47:VAL:C	11:n:50:PRO:HD2	2.25	0.62
14:q:36:GLN:HE21	50:1:1252:G:H1	1.48	0.62
29:G:103:TRP:HA	29:G:106:VAL:HG12	1.81	0.62
50:1:272:A:H2'	50:1:273:G:C8	2.34	0.62
50:1:389:G:H2'	50:1:390:U:H5'	1.81	0.62
50:1:881:G:H2'	50:1:882:G:C8	2.34	0.62
50:1:2155:U:C2'	50:1:2156:G:H5'	2.29	0.62
2:c:81:GLU:OE2	50:1:2636:C:H4'	2.00	0.62
25:C:4:ILE:HB	50:1:2284:A:OP1	2.00	0.62
35:M:26:MET:HE1	35:M:60:LEU:HD12	1.80	0.62
35:M:29:SER:HB2	49:3:589:U:H5''	1.82	0.62
35:M:125:ILE:H	35:M:125:ILE:HD12	1.63	0.62
44:V:57:VAL:HG13	44:V:78:VAL:HB	1.81	0.62
49:3:482:A:H2'	49:3:483:C:H5'	1.82	0.62
50:1:538:A:H2'	50:1:539:G:O4'	2.00	0.62
50:1:1539:U:H2'	50:1:1540:G:C8	2.34	0.62
52:5:14:A:H61	52:5:21:A:H1'	1.63	0.62
52:5:49:G:H1	52:5:65:C:H42	1.48	0.62
3:d:164:LEU:HD22	3:d:167:VAL:HG22	1.81	0.62
44:V:46:HIS:N	44:V:70:LYS:HD2	2.15	0.62
50:1:362:A:H5''	50:1:363:G:C8	2.35	0.62
52:5:1:C:H2'	52:5:2:G:C8	2.35	0.62
7:j:1:MET:HE1	15:r:18:GLN:OE1	1.98	0.62
49:3:494:G:H2'	49:3:496:A:H1'	1.81	0.62
50:1:1498:C:H2'	50:1:1499:C:C6	2.35	0.62
50:1:1979:U:O2'	50:1:1980:G:H5'	1.99	0.62
50:1:2391:G:H2'	50:1:2424:C:N4	2.15	0.62
50:1:2638:G:H1'	50:1:2778:A:N6	2.15	0.62
3:d:117:ARG:HG2	3:d:185:LYS:HZ3	1.65	0.62
16:s:83:LYS:HD2	16:s:95:ARG:HE	1.65	0.62
35:M:37:ASN:O	35:M:41:GLU:HG3	2.00	0.62
49:3:7:A:H4'	49:3:298:A:OP1	2.00	0.62
49:3:357:G:OP1	49:3:367:U:H5''	2.00	0.62
49:3:1019:A:H2'	49:3:1020:G:O4'	1.99	0.62
49:3:1346:A:O2'	49:3:1347:G:H4'	1.99	0.62
50:1:1826:G:H2'	50:1:1827:U:C6	2.35	0.62
47:Y:8:LYS:HE2	47:Y:12:GLN:OE1	2.00	0.61
50:1:2047:C:H2'	50:1:2048:G:H8	1.65	0.61
50:1:2071:A:H61	50:1:2438:U:H3	1.48	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:2739:U:O2'	50:1:2740:A:H5'	2.01	0.61
51:2:65:U:H3'	51:2:108:A:H61	1.66	0.61
53:4:9:G:H2'	53:4:10:G:O4'	2.01	0.61
8:k:6:THR:HG23	50:1:1666:G:O3'	2.01	0.61
12:o:56:LYS:HA	12:o:59:ALA:HB3	1.81	0.61
49:3:224:U:O2'	49:3:225:C:H5'	2.00	0.61
49:3:984:C:H2'	49:3:985:C:C6	2.35	0.61
49:3:1209:C:H2'	49:3:1210:C:C6	2.35	0.61
50:1:1181:U:H2'	50:1:1182:G:O4'	2.00	0.61
50:1:2861:U:H2'	50:1:2862:G:H8	1.65	0.61
6:g:2:GLN:NE2	6:g:20:ASN:HD22	1.98	0.61
8:k:71:ARG:HG3	8:k:72:PRO:HD2	1.83	0.61
11:n:38:LEU:HB3	11:n:39:PRO:HD3	1.82	0.61
43:U:33:ILE:H	43:U:33:ILE:HD12	1.65	0.61
49:3:176:C:H2'	49:3:177:G:N3	2.15	0.61
50:1:1111:A:H2'	50:1:1112:G:H4'	1.82	0.61
50:1:1873:G:O2'	50:1:1874:C:H5'	2.00	0.61
35:M:102:VAL:HG23	35:M:126:CYS:H	1.64	0.61
49:3:17:U:H2'	49:3:18:C:C6	2.35	0.61
49:3:1372:U:H2'	49:3:1373:G:O4'	2.00	0.61
50:1:2139:U:C2'	50:1:2140:G:H5'	2.26	0.61
1:b:204:LEU:HD12	50:1:1791:A:H5''	1.82	0.61
6:g:2:GLN:NE2	6:g:20:ASN:HB2	2.15	0.61
7:j:49:ASP:HB2	7:j:121:LYS:HE3	1.82	0.61
50:1:2287:A:O2'	50:1:2288:A:H2'	2.00	0.61
51:2:3:C:C2'	51:2:4:C:H5''	2.30	0.61
52:5:27:U:H2'	52:5:28:C:C6	2.35	0.61
9:l:95:LEU:HD22	9:l:100:ILE:HD11	1.83	0.61
49:3:137:U:H2'	49:3:138:G:H8	1.66	0.61
50:1:1550:C:H2'	50:1:1551:A:H8	1.64	0.61
8:k:110:GLU:O	8:k:113:MET:HE3	2.01	0.61
31:I:145:ARG:HD3	31:I:147:LYS:HE2	1.82	0.61
49:3:1218:C:H2'	49:3:1219:A:H8	1.65	0.61
9:l:80:SER:HB3	9:l:114:GLY:HA3	1.82	0.61
15:r:17:GLY:H	15:r:98:ILE:HG23	1.65	0.61
50:1:784:G:O2'	50:1:785:G:H8	1.83	0.61
50:1:1040:A:H2	50:1:1115:G:H22	1.49	0.61
50:1:1453:A:H2'	50:1:1454:C:C6	2.36	0.61
50:1:1566:A:O2'	50:1:1567:G:H5'	2.00	0.61
7:j:23:LYS:HB2	7:j:28:LEU:HD11	1.81	0.61
12:o:51:ALA:HB3	12:o:78:VAL:HG12	1.81	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:u:12:VAL:HA	18:u:69:VAL:HG12	1.82	0.61
35:M:94:VAL:CG2	35:M:101:ALA:HB2	2.31	0.61
50:1:894:U:C2'	50:1:895:U:H5'	2.31	0.61
50:1:1127:A:C2'	50:1:1128:G:H5''	2.30	0.61
3:d:126:VAL:HG23	3:d:133:LEU:HD22	1.82	0.60
4:e:48:LEU:HA	4:e:51:ASN:HD22	1.66	0.60
33:K:18:VAL:CG1	33:K:19:PRO:HD3	2.31	0.60
34:L:43:TYR:O	34:L:46:LEU:HG	2.01	0.60
49:3:979:C:H41	49:3:1360:A:N6	1.98	0.60
50:1:882:G:H1	50:1:894:U:H3	1.48	0.60
50:1:1722:A:H2'	50:1:1723:G:H8	1.64	0.60
50:1:1906:G:H2'	50:1:1907:G:C5'	2.27	0.60
50:1:2443:C:H2'	50:1:2444:G:H8	1.66	0.60
11:n:79:LEU:HD23	11:n:83:LEU:HD12	1.84	0.60
27:E:27:ASN:OD1	27:E:35:LYS:HE2	2.01	0.60
29:G:116:LEU:HD22	29:G:139:GLU:HG3	1.82	0.60
30:H:53:ARG:NH2	30:H:184:ASN:HD22	1.99	0.60
32:J:111:ARG:HD2	32:J:112:ALA:N	2.16	0.60
37:O:37:ARG:NH2	49:3:1124:G:H4'	2.13	0.60
42:T:78:THR:O	42:T:81:ILE:HG12	2.01	0.60
46:X:27:LYS:HG3	46:X:28:LYS:HG2	1.83	0.60
50:1:2798:U:OP1	50:1:2798:U:H6	1.84	0.60
54:8:102:LYS:HB2	54:8:105:ARG:HB3	1.83	0.60
4:e:42:ALA:HA	4:e:48:LEU:HD23	1.82	0.60
19:v:37:PRO:HG2	51:2:73:A:H2	1.65	0.60
49:3:1397:C:N4	54:8:122:LYS:HG3	2.17	0.60
52:5:8:U:H2'	52:5:13:C:H41	1.66	0.60
4:e:140:ILE:HG22	4:e:142:TYR:H	1.66	0.60
49:3:231:U:H2'	49:3:232:G:H8	1.66	0.60
50:1:723:C:H2'	50:1:724:U:C6	2.36	0.60
50:1:2221:G:O2'	50:1:2222:C:H5'	2.01	0.60
50:1:2360:G:H2'	50:1:2361:G:H5'	1.83	0.60
54:8:105:ARG:HD2	54:8:105:ARG:C	2.26	0.60
11:n:24:MET:HE1	50:1:1278:C:H5'	1.84	0.60
37:O:80:THR:HB	37:O:83:THR:HG22	1.83	0.60
49:3:56:U:H2'	49:3:57:G:C8	2.37	0.60
49:3:204:G:N2	49:3:205:A:H62	2.00	0.60
49:3:265:G:N2	49:3:267:C:H5'	2.16	0.60
50:1:1478:G:H2'	50:1:1479:G:C8	2.35	0.60
29:G:132:GLU:HA	29:G:135:MET:HE3	1.82	0.60
32:J:133:ILE:O	32:J:136:VAL:HG22	2.01	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:898:C:C2'	50:1:899:A:H5'	2.31	0.60
50:1:1455:G:H3'	50:1:1456:G:H8	1.67	0.60
50:1:2758:A:H2'	50:1:2759:G:O4'	2.01	0.60
52:5:35:A:H2'	52:5:36:U:C6	2.37	0.60
1:b:219:VAL:HG23	1:b:224:MET:HE2	1.83	0.60
23:z:52:PHE:CD2	51:2:83:G:H4'	2.36	0.60
31:I:56:GLU:OE1	31:I:194:ILE:HG23	2.01	0.60
50:1:1278:C:H2'	50:1:1279:G:H8	1.67	0.60
2:c:129:THR:OG1	2:c:140:HIS:O	2.17	0.60
11:n:72:ASP:OD2	11:n:75:ILE:HG12	2.02	0.60
29:G:187:ASP:H	29:G:190:SER:HB3	1.66	0.60
35:M:76:ARG:HE	35:M:79:ARG:HA	1.67	0.60
39:Q:64:SER:OG	39:Q:96:THR:HG23	2.02	0.60
49:3:195:A:H2'	49:3:196:A:C8	2.37	0.60
49:3:845:A:OP2	49:3:846:G:H1'	2.00	0.60
49:3:1145:A:H2	49:3:1147:C:H41	1.49	0.60
15:r:15:SER:H	15:r:18:GLN:NE2	1.98	0.60
27:E:61:LEU:HD12	27:E:61:LEU:O	2.02	0.60
40:R:49:GLU:HA	40:R:52:ILE:HG22	1.84	0.60
41:S:81:ILE:H	41:S:81:ILE:HD12	1.66	0.60
46:X:11:ASP:O	46:X:15:LEU:HB3	2.02	0.60
49:3:1413:A:H2	49:3:1487:G:H22	1.48	0.60
50:1:2078:C:H4'	50:1:2434:A:H5'	1.83	0.60
8:k:66:LYS:H	8:k:82:ASN:HD21	1.48	0.60
9:l:42:SER:OG	50:1:672:C:H5	1.84	0.60
10:m:34:LYS:HD3	10:m:99:GLY:HA2	1.83	0.60
45:W:41:SER:HB2	45:W:51:GLN:HG2	1.84	0.60
49:3:191:G:H2'	49:3:192:A:H8	1.66	0.60
49:3:1335:U:HO2'	49:3:1336:C:H5	1.50	0.60
50:1:27:G:N2	50:1:512:G:H1'	2.16	0.60
50:1:594:U:H2'	50:1:595:C:C6	2.37	0.60
52:5:16:C:H5'	52:5:59:A:N1	2.17	0.60
52:5:25:C:H2'	52:5:26:G:H8	1.65	0.60
6:g:96:THR:HG23	6:g:115:VAL:HG21	1.82	0.59
38:P:45:THR:HG22	38:P:47:GLY:H	1.67	0.59
44:V:37:ILE:N	44:V:37:ILE:HD12	2.17	0.59
47:Y:70:LYS:HG3	47:Y:73:ARG:NH2	2.16	0.59
49:3:45:G:H2'	49:3:46:G:C8	2.37	0.59
50:1:2440:C:H2'	50:1:2441:U:H4'	1.82	0.59
9:l:77:ILE:HD12	9:l:77:ILE:H	1.66	0.59
13:p:101:GLU:OE2	13:p:102:ARG:HG3	2.01	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:q:111:LYS:HG2	15:r:48:LYS:HE2	1.83	0.59
23:z:3:THR:OG1	23:z:36:GLU:HG3	2.01	0.59
27:E:35:LYS:HB2	27:E:40:LYS:HD3	1.84	0.59
44:V:59:GLU:HB2	44:V:75:VAL:HB	1.84	0.59
50:1:2651:C:H2'	50:1:2652:C:H6	1.67	0.59
50:1:2781:A:H5''	50:1:2782:G:H5'	1.84	0.59
9:l:79:LEU:HB2	9:l:114:GLY:O	2.02	0.59
30:H:177:LEU:HG	49:3:1112:C:C2	2.38	0.59
37:O:47:GLU:HB2	37:O:67:ILE:HB	1.84	0.59
50:1:1914:C:H2'	50:1:1915:U:H5'	1.85	0.59
13:p:52:ARG:NH2	50:1:2720:U:H5''	2.17	0.59
50:1:133:U:H2'	50:1:134:G:C8	2.36	0.59
50:1:548:G:H2'	50:1:549:G:H4'	1.84	0.59
50:1:581:C:H2'	50:1:582:A:C8	2.36	0.59
50:1:2805:C:H2'	50:1:2806:C:H6	1.68	0.59
1:b:269:ARG:HD2	1:b:270:ARG:H	1.68	0.59
10:m:30:SER:HA	10:m:133:LYS:HB3	1.85	0.59
29:G:11:ALA:HB2	29:G:211:LEU:HD22	1.84	0.59
30:H:13:ILE:HD13	49:3:1113:C:H4'	1.84	0.59
31:I:6:PRO:HB2	31:I:9:LYS:HZ2	1.67	0.59
42:T:78:THR:O	42:T:82:GLU:HG3	2.03	0.59
50:1:322:A:H5'	50:1:340:A:H1'	1.84	0.59
50:1:2457:U:O2'	50:1:2458:G:H5'	2.03	0.59
52:5:48:C:O2'	52:5:59:A:H4'	2.02	0.59
12:o:34:HIS:CE1	12:o:54:VAL:HG22	2.38	0.59
49:3:459:A:H2'	49:3:460:A:C8	2.38	0.59
49:3:949:A:H61	49:3:1232:U:H3	1.51	0.59
50:1:1444:G:H2'	50:1:1445:G:C8	2.36	0.59
50:1:2286:G:H4'	50:1:2287:A:O5'	2.02	0.59
6:g:66:ASN:O	6:g:138:VAL:HG21	2.02	0.59
29:G:150:ILE:HA	29:G:153:MET:HB3	1.85	0.59
30:H:149:LYS:HB3	30:H:200:TRP:HB2	1.83	0.59
42:T:86:LEU:HD23	42:T:86:LEU:H	1.67	0.59
48:Z:28:LEU:HB3	48:Z:32:ARG:HH21	1.68	0.59
49:3:1176:A:H2'	49:3:1177:G:C8	2.36	0.59
49:3:1181:G:H1'	49:3:1182:G:C8	2.38	0.59
50:1:886:A:H5'	50:1:890:C:H41	1.66	0.59
50:1:2761:A:H2'	50:1:2762:C:O4'	2.03	0.59
4:e:161:SER:HB3	4:e:164:GLU:CD	2.27	0.59
10:m:69:PRO:HA	10:m:94:ALA:HB2	1.83	0.59
29:G:30:ILE:HD11	29:G:38:HIS:HB3	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:U:16:PHE:CE2	49:3:625:U:H4'	2.38	0.59
50:1:286:U:H2'	50:1:287:G:C8	2.38	0.59
50:1:621:A:C2'	50:1:622:G:H5'	2.32	0.59
50:1:968:C:H2'	50:1:969:G:H8	1.67	0.59
51:2:3:C:C3'	51:2:4:C:H5''	2.33	0.59
38:P:55:ARG:HH21	38:P:60:PHE:HD2	1.50	0.59
50:1:1564:C:H2'	50:1:1565:C:O4'	2.03	0.59
1:b:70:LYS:HG3	1:b:95:TYR:CZ	2.37	0.59
1:b:156:SER:HB3	1:b:159:THR:HG21	1.85	0.59
12:o:98:GLN:HG3	12:o:100:HIS:HB2	1.85	0.59
32:J:80:LEU:HB3	32:J:97:PRO:HA	1.84	0.59
50:1:2167:U:H1'	50:1:2170:A:H62	1.67	0.59
11:n:36:THR:HG22	11:n:37:THR:N	2.17	0.58
26:D:31:LEU:HD11	26:D:42:LEU:HD21	1.85	0.58
49:3:631:C:H3'	49:3:632:U:H5'	1.84	0.58
49:3:1432:G:H2'	49:3:1467:C:H42	1.66	0.58
50:1:8:C:H2'	50:1:9:G:O4'	2.02	0.58
50:1:1422:G:H2'	50:1:1423:G:H8	1.66	0.58
50:1:2637:U:H2'	50:1:2638:G:O4'	2.03	0.58
50:1:2698:U:H2'	50:1:2699:C:C6	2.38	0.58
52:5:68:C:H2'	52:5:69:C:C6	2.38	0.58
54:8:83:ASN:HA	54:8:86:ALA:HB3	1.85	0.58
1:b:143:VAL:HG22	1:b:153:LEU:HB2	1.85	0.58
5:f:88:LEU:CD2	5:f:95:ALA:HB2	2.33	0.58
18:u:5:ARG:HG2	18:u:93:ARG:HH22	1.68	0.58
23:z:15:ARG:HE	23:z:52:PHE:HE2	1.51	0.58
31:I:181:PHE:HZ	31:I:185:PRO:HD3	1.68	0.58
38:P:31:VAL:HG13	38:P:44:ALA:HB3	1.85	0.58
49:3:1471:U:H2'	49:3:1472:U:C6	2.39	0.58
50:1:1512:C:H2'	50:1:1513:U:O4'	2.03	0.58
34:L:12:LEU:HD11	36:N:46:VAL:HB	1.85	0.58
35:M:94:VAL:HG23	35:M:101:ALA:HB2	1.84	0.58
36:N:23:GLY:H	36:N:60:LEU:HA	1.68	0.58
41:S:72:PHE:CZ	41:S:77:GLY:HA2	2.38	0.58
46:X:30:LEU:H	46:X:48:ILE:HA	1.68	0.58
50:1:542:C:H2'	50:1:543:G:C8	2.39	0.58
50:1:1796:U:H2'	50:1:1797:G:C8	2.37	0.58
50:1:1870:C:O2'	50:1:1871:A:H5'	2.02	0.58
50:1:1947:C:H2'	50:1:1948:G:H8	1.69	0.58
11:n:24:MET:HE2	11:n:34:ILE:HD12	1.85	0.58
16:s:10:ALA:HB1	16:s:46:LEU:HD21	1.86	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:K:10:VAL:HB	33:K:58:HIS:HB3	1.85	0.58
36:N:59:LYS:C	36:N:60:LEU:HD12	2.29	0.58
43:U:58:ALA:HA	43:U:61:VAL:HG22	1.85	0.58
50:1:1041:G:H2'	50:1:1042:G:H8	1.68	0.58
50:1:2528:U:H3	50:1:2535:G:H1	1.51	0.58
10:m:12:MET:HA	50:1:910:A:N6	2.11	0.58
31:I:158:LEU:HD11	31:I:174:ALA:HB1	1.85	0.58
35:M:14:ARG:HD2	49:3:875:U:O2'	2.03	0.58
40:R:93:GLY:HA2	40:R:108:ARG:HH12	1.68	0.58
46:X:10:ILE:HG12	46:X:15:LEU:HD22	1.85	0.58
46:X:77:ARG:HH11	49:3:1222:G:H5''	1.67	0.58
50:1:598:U:H2'	50:1:599:A:C8	2.38	0.58
50:1:1311:G:H21	50:1:1603:A:N6	2.01	0.58
50:1:2530:A:H1'	50:1:2534:A:H61	1.68	0.58
1:b:200:MET:HG3	50:1:1820:U:C2	2.39	0.58
4:e:147:ARG:O	4:e:148:VAL:HG23	2.02	0.58
9:l:77:ILE:HD12	9:l:77:ILE:N	2.19	0.58
27:E:31:ILE:HG23	27:E:31:ILE:O	2.03	0.58
29:G:49:PHE:HE2	29:G:200:PRO:HD2	1.68	0.58
31:I:6:PRO:HB2	31:I:9:LYS:NZ	2.19	0.58
50:1:511:U:H2'	50:1:512:G:H5'	1.85	0.58
50:1:2374:C:H2'	50:1:2375:G:C8	2.39	0.58
1:b:144:GLU:HB2	1:b:187:CYS:HB2	1.84	0.58
9:l:112:LEU:HD12	9:l:112:LEU:N	2.19	0.58
18:u:73:ASN:HD21	18:u:75:ALA:HB3	1.69	0.58
28:F:1:MET:HG3	28:F:34:LYS:HE3	1.86	0.58
41:S:2:LYS:HD2	49:3:1048:G:H5''	1.86	0.58
49:3:452:A:H61	49:3:480:U:H3	1.51	0.58
13:p:87:ARG:HB3	13:p:111:GLU:OE1	2.04	0.58
13:p:100:ARG:HB2	13:p:100:ARG:NH2	2.19	0.58
16:s:97:LEU:HD12	16:s:97:LEU:N	2.19	0.58
50:1:704:G:H2'	50:1:726:G:H22	1.68	0.58
50:1:1147:A:O2'	50:1:1148:U:H5'	2.03	0.58
50:1:1592:C:H2'	50:1:1593:A:C8	2.39	0.58
51:2:66:A:H4'	51:2:67:G:C8	2.38	0.58
2:c:9:VAL:HG12	2:c:26:VAL:O	2.04	0.58
5:f:152:ARG:HH22	50:1:2743:U:H4'	1.69	0.58
17:t:22:THR:O	17:t:26:LYS:HB3	2.04	0.58
23:z:17:PRO:HA	23:z:20:LYS:HB2	1.85	0.58
49:3:100:G:N3	49:3:100:G:H2'	2.18	0.58
49:3:422:C:H4'	49:3:423:G:C2	2.39	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:1440:U:H4'	49:3:1441:A:C4	2.38	0.58
50:1:2233:U:H2'	50:1:2234:G:H8	1.68	0.58
11:n:24:MET:HE1	50:1:1278:C:C5'	2.33	0.58
31:I:104:MET:SD	31:I:179:GLY:HA3	2.44	0.58
32:J:114:LEU:HD12	32:J:119:VAL:HG21	1.86	0.58
35:M:53:ASP:OD1	35:M:54:THR:HG22	2.04	0.58
45:W:59:LYS:HA	45:W:62:ARG:HB2	1.86	0.58
49:3:350:G:H2'	49:3:351:G:C8	2.39	0.58
49:3:1047:G:H21	49:3:1215:G:H5'	1.68	0.58
49:3:1140:C:H2'	49:3:1141:C:C6	2.39	0.58
50:1:2208:C:H2'	50:1:2209:G:C8	2.39	0.58
8:k:76:VAL:H	13:p:72:VAL:HG12	1.69	0.57
46:X:77:ARG:NE	49:3:1225:A:O2'	2.34	0.57
49:3:191:G:H2'	49:3:192:A:C8	2.39	0.57
49:3:572:A:H5''	49:3:917:G:H4'	1.86	0.57
49:3:1316:G:H2'	49:3:1317:C:H5''	1.86	0.57
49:3:1412:C:H2'	49:3:1413:A:H8	1.67	0.57
50:1:118:A:H5'	50:1:119:A:H8	1.69	0.57
50:1:1474:U:H2'	50:1:1475:G:O4'	2.04	0.57
50:1:2155:U:H2'	50:1:2156:G:C5'	2.34	0.57
52:5:37:A:H2'	52:5:38:A:C8	2.39	0.57
54:8:111:THR:HG23	54:8:112:ARG:HD2	1.86	0.57
10:m:29:GLY:HA2	10:m:106:ASP:HB2	1.85	0.57
26:D:26:ASN:CG	50:1:682:G:H5'	2.29	0.57
30:H:156:LEU:H	30:H:156:LEU:CD1	2.15	0.57
49:3:744:C:H2'	49:3:745:G:C8	2.38	0.57
49:3:1162:C:H2'	49:3:1163:A:C8	2.40	0.57
50:1:277:G:H2'	50:1:359:G:OP2	2.04	0.57
1:b:16:VAL:HB	1:b:203:VAL:HG22	1.84	0.57
18:u:87:GLU:HG3	18:u:88:ASP:OD1	2.03	0.57
21:x:60:LYS:HD2	50:1:372:G:C8	2.39	0.57
31:I:68:GLU:OE2	49:3:545:C:H5''	2.04	0.57
34:L:68:VAL:HB	34:L:137:ARG:CZ	2.34	0.57
49:3:505:G:H2'	49:3:506:G:H8	1.70	0.57
50:1:1173:U:H1'	50:1:1177:G:O6	2.04	0.57
50:1:1367:A:H2'	50:1:1368:G:H5'	1.86	0.57
50:1:2591:C:H2'	50:1:2592:G:C8	2.39	0.57
9:l:63:LYS:HA	27:E:12:ARG:HG2	1.86	0.57
11:n:31:HIS:ND1	50:1:1279:G:H4'	2.19	0.57
17:t:8:LEU:HD13	22:y:21:LEU:HB3	1.86	0.57
29:G:132:GLU:O	29:G:136:ARG:HG2	2.04	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:H:18:ASN:ND2	41:S:89:ARG:O	2.37	0.57
49:3:32:A:H2'	49:3:33:A:H8	1.69	0.57
49:3:715:A:H2'	49:3:716:A:C8	2.39	0.57
50:1:1440:U:H2'	50:1:1441:G:C8	2.39	0.57
2:c:48:ILE:HG23	2:c:84:LEU:HD21	1.86	0.57
6:g:68:ARG:HD2	6:g:69:ALA:N	2.18	0.57
7:j:87:ALA:HB1	7:j:91:GLU:OE1	2.03	0.57
19:v:5:ASN:HA	19:v:64:VAL:HG13	1.85	0.57
37:O:14:ASP:HB2	37:O:17:LEU:HB3	1.85	0.57
49:3:452:A:H3'	49:3:452:A:N3	2.19	0.57
50:1:475:C:H3'	50:1:475:C:OP1	2.04	0.57
51:2:1:U:H3	51:2:119:A:H61	1.52	0.57
4:e:40:GLY:HA2	4:e:84:ILE:HB	1.86	0.57
5:f:83:THR:HG22	5:f:133:LYS:HG2	1.87	0.57
5:f:120:ILE:N	5:f:120:ILE:HD12	2.20	0.57
29:G:124:THR:HG22	29:G:127:LYS:HD3	1.86	0.57
40:R:48:SER:H	40:R:51:GLN:HE21	1.52	0.57
48:Z:6:ARG:O	48:Z:7:GLU:HG2	2.04	0.57
49:3:545:C:H2'	49:3:546:A:O4'	2.05	0.57
49:3:1233:G:H2'	49:3:1234:C:C6	2.40	0.57
49:3:1456:A:C5	49:3:1457:G:H1'	2.39	0.57
50:1:2096:C:H2'	50:1:2097:A:H8	1.69	0.57
1:b:145:MET:HE1	50:1:1800:C:H5'	1.86	0.57
13:p:17:PRO:HG3	13:p:83:ILE:HB	1.85	0.57
18:u:6:ARG:HB2	50:1:85:G:OP2	2.03	0.57
24:B:35:GLU:OE2	24:B:43:THR:HB	2.05	0.57
33:K:66:ALA:HB1	33:K:67:PRO:HD2	1.86	0.57
41:S:26:LEU:HD11	41:S:43:ALA:O	2.05	0.57
50:1:1051:G:H4'	50:1:2752:C:C1'	2.34	0.57
50:1:1077:A:H2'	50:1:1078:U:C5'	2.35	0.57
50:1:1775:U:H2'	50:1:1776:G:H5'	1.86	0.57
54:8:79:SER:HB3	54:8:82:LEU:CG	2.33	0.57
2:c:113:SER:O	2:c:167:ASN:HA	2.05	0.57
40:R:24:VAL:HA	49:3:1329:A:H5''	1.85	0.57
49:3:224:U:H2'	49:3:225:C:C6	2.39	0.57
49:3:501:C:H2'	49:3:502:A:H8	1.69	0.57
49:3:539:A:H2'	49:3:540:G:C8	2.39	0.57
50:1:1139:G:O2'	50:1:1140:C:H5'	2.05	0.57
50:1:1258:U:H2'	50:1:1259:G:H8	1.69	0.57
50:1:2266:A:H4'	50:1:2267:A:N3	2.19	0.57
53:4:5:A:H2'	53:4:6:G:C8	2.40	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:e:129:MET:HG3	4:e:153:ILE:HG12	1.87	0.57
16:s:18:ARG:HH12	50:1:518:G:H4'	1.70	0.57
30:H:105:VAL:HG22	30:H:107:LYS:H	1.68	0.57
31:I:173:ASP:N	31:I:173:ASP:OD1	2.37	0.57
33:K:86:ARG:HD3	45:W:63:TYR:O	2.05	0.57
47:Y:42:ASP:HB3	47:Y:45:ALA:HB3	1.86	0.57
50:1:1872:A:H2'	50:1:1873:G:O4'	2.05	0.57
52:5:58:A:H2	52:5:60:U:O2'	1.88	0.57
4:e:34:THR:HB	4:e:154:THR:HB	1.87	0.57
26:D:31:LEU:HD12	26:D:42:LEU:HD11	1.87	0.57
41:S:5:MET:HA	41:S:8:ARG:HD3	1.85	0.57
49:3:505:G:H2'	49:3:506:G:C8	2.39	0.57
50:1:390:U:H4'	50:1:391:A:H5'	1.87	0.57
50:1:437:U:H2'	50:1:438:G:H8	1.68	0.57
50:1:1130:U:O2'	50:1:1131:G:OP1	2.23	0.57
50:1:2257:U:O2'	50:1:2258:C:H5'	2.05	0.57
12:o:38:GLN:HE21	12:o:40:ILE:HD11	1.70	0.56
19:v:9:ARG:HB3	19:v:9:ARG:NH1	2.20	0.56
39:Q:100:ALA:HB3	39:Q:103:CYS:HB3	1.87	0.56
46:X:15:LEU:HG	46:X:19:GLU:HG2	1.85	0.56
54:8:103:LYS:O	54:8:104:ALA:HB2	2.05	0.56
30:H:126:ARG:HH11	30:H:126:ARG:H	1.52	0.56
41:S:50:LEU:HD23	41:S:54:SER:HB3	1.87	0.56
41:S:79:SER:OG	41:S:82:LYS:HG2	2.05	0.56
44:V:65:PRO:HG2	49:3:234:C:H4'	1.86	0.56
49:3:102:G:H2'	49:3:103:U:C6	2.41	0.56
50:1:270:A:H5''	50:1:271:G:H5''	1.86	0.56
50:1:675:A:H2'	50:1:676:A:C8	2.39	0.56
50:1:1594:U:H2'	50:1:1595:C:C6	2.40	0.56
50:1:1889:A:O2'	50:1:2087:G:H5'	2.05	0.56
50:1:2291:U:H2'	50:1:2292:U:C6	2.41	0.56
50:1:2741:A:H2'	50:1:2742:G:H5'	1.86	0.56
12:o:20:GLU:OE2	12:o:21:LEU:HG	2.05	0.56
12:o:71:ALA:HB1	12:o:106:LEU:HG	1.87	0.56
20:w:55:LEU:HD12	20:w:55:LEU:N	2.20	0.56
24:B:3:GLN:OE1	24:B:7:PRO:HD3	2.05	0.56
32:J:161:GLU:HA	32:J:164:LEU:HB2	1.86	0.56
50:1:674:G:H2'	50:1:804:A:H61	1.69	0.56
50:1:1524:G:H2'	50:1:1525:A:H8	1.71	0.56
50:1:2096:C:H2'	50:1:2097:A:C8	2.40	0.56
50:1:2243:U:H2'	50:1:2244:U:H6	1.71	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:5:44:A:H2'	52:5:45:G:O4'	2.04	0.56
1:b:17:LYS:HA	1:b:202:ARG:NH1	2.20	0.56
2:c:31:ALA:HB1	2:c:95:SER:HB2	1.88	0.56
6:g:31:VAL:N	6:g:32:PRO:HD2	2.19	0.56
38:P:117:HIS:ND1	49:3:675:A:H1'	2.20	0.56
49:3:32:A:H2'	49:3:33:A:C8	2.40	0.56
49:3:461:A:H3'	49:3:462:G:H5''	1.87	0.56
49:3:469:C:H2'	49:3:470:C:H5'	1.87	0.56
50:1:745:G:O2'	50:1:748:G:H1'	2.05	0.56
50:1:1411:U:H2'	50:1:1412:U:C6	2.40	0.56
50:1:2783:U:H2'	50:1:2784:U:C6	2.40	0.56
3:d:75:SER:HB2	3:d:78:TRP:HD1	1.69	0.56
28:F:4:ARG:HB2	50:1:2466:C:OP1	2.05	0.56
42:T:38:LEU:CD2	42:T:55:LEU:HG	2.35	0.56
49:3:34:C:H2'	49:3:35:G:C8	2.39	0.56
49:3:555:U:H2'	49:3:556:C:C6	2.41	0.56
50:1:20:C:H2'	50:1:21:A:H8	1.70	0.56
50:1:947:A:H2'	50:1:948:C:C6	2.41	0.56
50:1:1422:G:H2'	50:1:1423:G:C8	2.41	0.56
50:1:2096:C:O5'	50:1:2096:C:H6	1.89	0.56
50:1:2714:G:O2'	50:1:2715:C:H5'	2.05	0.56
4:e:61:GLY:HA3	4:e:94:ARG:CZ	2.36	0.56
18:u:42:LYS:HG2	18:u:59:GLU:OE2	2.05	0.56
19:v:29:ILE:HD12	19:v:39:ALA:HA	1.87	0.56
31:I:121:ALA:C	31:I:122:ILE:HD12	2.31	0.56
37:O:5:ARG:N	37:O:76:ILE:O	2.39	0.56
38:P:37:GLN:HG2	38:P:39:ASN:H	1.70	0.56
38:P:122:PRO:HD2	48:Z:35:GLU:OE1	2.06	0.56
41:S:12:ARG:HB3	41:S:59:GLN:HE22	1.71	0.56
50:1:1827:U:C2'	50:1:1828:G:H5'	2.35	0.56
50:1:2803:G:H2'	50:1:2804:U:C6	2.40	0.56
54:8:128:VAL:O	54:8:128:VAL:HG12	2.05	0.56
13:p:29:VAL:HG12	13:p:80:VAL:HA	1.88	0.56
17:t:74:ILE:H	17:t:74:ILE:HD12	1.71	0.56
27:E:7:ARG:HG2	50:1:246:C:H41	1.67	0.56
32:J:106:ALA:C	49:3:8:A:H1'	2.31	0.56
33:K:81:ASN:HD22	33:K:84:VAL:HG12	1.71	0.56
36:N:50:PRO:HB3	36:N:102:PHE:CD2	2.40	0.56
40:R:104:ASN:HD22	49:3:948:C:H3'	1.69	0.56
45:W:28:LEU:HB3	45:W:67:LEU:HD11	1.88	0.56
49:3:403:C:H2'	49:3:404:G:H8	1.69	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:842:U:H2'	49:3:843:U:H4'	1.87	0.56
49:3:975:A:N3	49:3:975:A:H5'	2.21	0.56
54:8:112:ARG:O	54:8:116:GLU:HG3	2.05	0.56
1:b:17:LYS:HA	1:b:202:ARG:HH11	1.69	0.56
6:g:133:GLN:HE21	6:g:139:PHE:HA	1.70	0.56
13:p:59:THR:HA	13:p:72:VAL:HA	1.87	0.56
15:r:41:ILE:HB	15:r:47:VAL:HB	1.88	0.56
35:M:104:SER:HB2	35:M:125:ILE:HD11	1.87	0.56
49:3:279:A:H5'	49:3:281:G:H5'	1.88	0.56
49:3:347:G:H2'	49:3:348:G:H5''	1.88	0.56
49:3:736:C:H2'	49:3:737:C:C6	2.40	0.56
50:1:314:C:H2'	50:1:315:G:H8	1.71	0.56
50:1:1848:A:H2'	50:1:1849:G:C8	2.40	0.56
50:1:2284:A:H1'	50:1:2325:G:C2	2.41	0.56
50:1:2360:G:C2'	50:1:2361:G:H5'	2.35	0.56
50:1:2839:G:H1	50:1:2878:U:H3	1.54	0.56
54:8:124:GLN:O	54:8:128:VAL:HG23	2.06	0.56
2:c:173:GLN:NE2	2:c:174:SER:HB2	2.21	0.56
16:s:32:ALA:O	16:s:35:ILE:HG22	2.06	0.56
49:3:360:G:H2'	49:3:361:G:C8	2.41	0.56
49:3:994:A:C2	49:3:1216:A:H5''	2.41	0.56
51:2:28:C:H2'	51:2:29:A:H8	1.71	0.56
5:f:88:LEU:HD22	5:f:95:ALA:HB2	1.86	0.56
49:3:204:G:H21	49:3:205:A:N6	2.04	0.56
49:3:258:G:H2'	49:3:259:G:C8	2.41	0.56
49:3:1005:A:H2'	49:3:1006:G:H5'	1.86	0.56
50:1:2282:G:H21	50:1:2390:U:H3	1.53	0.56
50:1:2853:C:H2'	50:1:2854:G:H8	1.71	0.56
1:b:75:ALA:HB2	1:b:95:TYR:CD1	2.40	0.55
4:e:41:GLU:HB2	4:e:147:ARG:HH22	1.71	0.55
4:e:133:GLU:HB3	4:e:135:ILE:HG13	1.87	0.55
7:j:27:ARG:HE	50:1:1012:U:H3	1.54	0.55
26:D:5:PHE:HD2	26:D:7:PRO:HD3	1.71	0.55
26:D:39:ARG:NH2	50:1:468:G:N7	2.54	0.55
29:G:118:THR:O	29:G:121:GLN:NE2	2.37	0.55
31:I:84:ASN:HB2	31:I:87:GLU:HB2	1.87	0.55
39:Q:73:LEU:HD21	39:Q:103:CYS:SG	2.46	0.55
49:3:200:G:H2'	49:3:201:G:H8	1.70	0.55
49:3:271:C:H2'	49:3:272:C:C6	2.41	0.55
49:3:714:G:H2'	49:3:715:A:C8	2.41	0.55
50:1:1386:C:H2'	50:1:1387:A:C8	2.41	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:1965:C:H5''	50:1:1966:A:H2'	1.88	0.55
51:2:3:C:H3'	51:2:4:C:H5''	1.88	0.55
54:8:36:ALA:O	54:8:80:GLN:NE2	2.39	0.55
8:k:4:GLU:OE2	8:k:24:VAL:HG23	2.05	0.55
32:J:108:GLY:C	32:J:110:MET:H	2.14	0.55
37:O:49:PHE:HB2	37:O:65:TYR:H	1.70	0.55
44:V:22:VAL:HG22	44:V:23:ALA:H	1.71	0.55
49:3:152:A:H2'	49:3:153:C:H5'	1.89	0.55
49:3:216:U:H2'	49:3:217:C:C6	2.41	0.55
50:1:1405:U:H2'	50:1:1406:U:C6	2.41	0.55
50:1:1443:U:H2'	50:1:1444:G:C8	2.42	0.55
50:1:1453:A:H2'	50:1:1454:C:H6	1.69	0.55
12:o:59:ALA:HA	12:o:62:LEU:HG	1.87	0.55
31:I:196:GLU:HG2	31:I:197:HIS:N	2.22	0.55
33:K:18:VAL:O	33:K:22:ILE:HG13	2.06	0.55
46:X:15:LEU:HD12	46:X:18:VAL:HB	1.88	0.55
49:3:202:G:H2'	49:3:203:G:O4'	2.06	0.55
49:3:602:A:O2'	49:3:603:U:H5'	2.06	0.55
50:1:12:U:O2	50:1:2626:C:H4'	2.07	0.55
50:1:1444:G:H2'	50:1:1445:G:H8	1.71	0.55
50:1:2350:C:H2'	50:1:2351:G:O4'	2.06	0.55
54:8:6:ARG:NH1	54:8:99:THR:OG1	2.39	0.55
54:8:48:LEU:H	54:8:49:PRO:CD	2.14	0.55
5:f:54:ARG:O	5:f:55:ASP:HB3	2.05	0.55
12:o:88:LYS:HD2	12:o:116:GLN:HE22	1.71	0.55
42:T:50:HIS:CE1	49:3:667:G:H4'	2.41	0.55
49:3:184:G:H5''	49:3:224:U:C4'	2.36	0.55
49:3:596:A:H61	49:3:644:U:H3	1.53	0.55
49:3:1309:G:H2'	49:3:1310:G:H8	1.71	0.55
50:1:441:U:O2'	50:1:442:G:H5'	2.05	0.55
50:1:2475:C:C2'	50:1:2476:A:H5'	2.37	0.55
2:c:47:ALA:HA	2:c:84:LEU:HG	1.87	0.55
4:e:163:GLU:HA	4:e:166:ARG:NH1	2.20	0.55
6:g:47:PHE:HA	6:g:51:ARG:HB2	1.89	0.55
13:p:61:ARG:HG3	13:p:70:GLU:OE1	2.07	0.55
17:t:30:ILE:HD12	17:t:30:ILE:N	2.22	0.55
17:t:63:VAL:HG12	17:t:80:TRP:O	2.05	0.55
22:y:8:GLU:O	22:y:60:LYS:NZ	2.40	0.55
48:Z:36:PHE:HB3	48:Z:39:LYS:HB2	1.89	0.55
49:3:1015:G:H1'	49:3:1218:C:O2'	2.06	0.55
49:3:1412:C:H2'	49:3:1413:A:C8	2.40	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:1687:G:H21	50:1:1701:A:H62	1.54	0.55
3:d:103:GLY:HA2	3:d:106:LYS:HD2	1.89	0.55
7:j:91:GLU:OE2	7:j:95:ARG:HD3	2.07	0.55
15:r:4:VAL:HG22	15:r:13:ARG:HA	1.88	0.55
17:t:39:THR:HG22	17:t:42:GLU:CG	2.36	0.55
42:T:38:LEU:HD12	42:T:41:HIS:HB3	1.89	0.55
49:3:700:G:C2'	49:3:701:U:H5''	2.36	0.55
49:3:868:C:H2'	49:3:869:G:O4'	2.06	0.55
49:3:880:C:H2'	49:3:881:G:H8	1.71	0.55
50:1:1447:C:H2'	50:1:1448:G:C8	2.42	0.55
50:1:2197:U:O2'	50:1:2198:A:H5''	2.06	0.55
21:x:40:GLU:HA	21:x:43:LYS:HD3	1.88	0.55
29:G:49:PHE:CE2	29:G:200:PRO:HD2	2.42	0.55
49:3:236:A:H2'	49:3:237:G:C8	2.42	0.55
50:1:581:C:H2'	50:1:582:A:H8	1.72	0.55
50:1:2888:C:H2'	50:1:2889:C:C6	2.42	0.55
3:d:173:THR:HA	3:d:199:MET:HE1	1.89	0.55
5:f:10:VAL:HG23	5:f:14:VAL:HG11	1.88	0.55
30:H:68:HIS:HA	30:H:103:ALA:HB3	1.89	0.55
34:L:34:LYS:HZ3	49:3:1289:A:H2'	1.72	0.55
47:Y:19:HIS:O	47:Y:23:ARG:HG2	2.06	0.55
49:3:367:U:O2'	49:3:368:U:H4'	2.06	0.55
49:3:455:G:H2'	49:3:456:A:H8	1.72	0.55
49:3:524:G:H2'	49:3:525:C:C6	2.41	0.55
49:3:700:G:H2'	49:3:701:U:H5''	1.89	0.55
49:3:1071:C:H2'	49:3:1072:G:H8	1.72	0.55
50:1:971:G:H2'	50:1:972:A:O4'	2.07	0.55
50:1:1138:G:H2'	50:1:1139:G:O4'	2.06	0.55
50:1:2145:C:H5''	50:1:2146:C:OP1	2.07	0.55
50:1:2310:C:H2'	50:1:2311:A:H4'	1.88	0.55
50:1:2314:A:H2'	50:1:2315:G:C8	2.42	0.55
2:c:179:ARG:HB3	2:c:188:LEU:HD12	1.89	0.55
13:p:50:ARG:HD2	13:p:52:ARG:HG2	1.89	0.55
18:u:39:ASN:HB3	18:u:62:ALA:HB3	1.89	0.55
19:v:50:MET:HA	19:v:53:LYS:HZ2	1.72	0.55
27:E:1:PRO:N	50:1:591:U:H1'	2.21	0.55
29:G:46:VAL:N	29:G:47:PRO:HD2	2.22	0.55
37:O:27:GLU:O	37:O:30:LYS:HG3	2.06	0.55
39:Q:78:VAL:O	39:Q:102:ASP:HB2	2.06	0.55
40:R:63:VAL:HG13	40:R:67:ASP:HB3	1.89	0.55
49:3:592:G:H2'	49:3:593:U:C6	2.42	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:1071:C:H2'	49:3:1072:G:C8	2.42	0.55
49:3:1391:U:H2'	49:3:1392:G:H8	1.71	0.55
49:3:1524:C:H2'	49:3:1525:G:C8	2.42	0.55
50:1:871:U:H2'	50:1:872:U:C6	2.42	0.55
50:1:1713:A:H2	50:1:1715:G:H21	1.55	0.55
50:1:2131:U:OP1	50:1:2133:G:H4'	2.07	0.55
3:d:25:GLU:HA	3:d:28:VAL:HG12	1.89	0.55
5:f:96:ALA:HB3	5:f:103:ASN:ND2	2.11	0.55
6:g:50:ARG:HH22	6:g:51:ARG:HH21	1.55	0.55
14:q:23:TYR:O	14:q:28:SER:HB3	2.06	0.55
15:r:28:ALA:HB3	15:r:31:GLU:CD	2.31	0.55
18:u:33:VAL:HG13	18:u:66:VAL:HG22	1.89	0.55
19:v:29:ILE:HG22	19:v:90:ASP:HA	1.89	0.55
39:Q:26:CYS:HB3	39:Q:29:LYS:HE2	1.89	0.55
39:Q:32:VAL:HB	39:Q:55:ARG:HB3	1.89	0.55
47:Y:59:ARG:NH2	49:3:178:C:OP2	2.40	0.55
49:3:224:U:H2'	49:3:225:C:H6	1.73	0.55
50:1:873:C:H2'	50:1:874:G:O4'	2.06	0.55
50:1:1447:C:H2'	50:1:1448:G:H8	1.72	0.55
51:2:30:C:H1'	51:2:57:A:H61	1.70	0.55
51:2:92:C:H2'	51:2:93:C:C6	2.41	0.55
6:g:23:ALA:HB1	6:g:27:ARG:HH12	1.71	0.54
6:g:66:ASN:HD22	6:g:134:VAL:CG2	2.19	0.54
32:J:92:ARG:O	32:J:93:VAL:O	2.26	0.54
40:R:78:ARG:HH12	46:X:64:GLU:HB2	1.72	0.54
49:3:1477:U:H2'	49:3:1478:U:C6	2.42	0.54
50:1:1607:C:H3'	50:1:1608:A:C5'	2.38	0.54
50:1:2853:C:H2'	50:1:2854:G:C8	2.42	0.54
29:G:113:LEU:HD13	29:G:143:LEU:HB2	1.88	0.54
31:I:123:MET:HE3	31:I:126:GLY:HA2	1.88	0.54
33:K:92:THR:O	33:K:93:LYS:HB2	2.06	0.54
40:R:9:PRO:HB2	40:R:44:ILE:HD13	1.89	0.54
44:V:17:GLU:HG3	49:3:254:G:H21	1.71	0.54
49:3:20:U:H2'	49:3:21:G:O4'	2.07	0.54
49:3:109:A:H5'	49:3:110:C:H5	1.72	0.54
49:3:358:U:H2'	49:3:359:G:H8	1.72	0.54
49:3:418:C:H2'	49:3:419:C:C6	2.41	0.54
49:3:455:G:H2'	49:3:456:A:C8	2.42	0.54
49:3:707:U:H2'	49:3:708:C:C6	2.42	0.54
49:3:1254:A:H2'	49:3:1255:G:C8	2.42	0.54
50:1:1166:G:H2'	50:1:1167:C:C6	2.42	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:1671:U:H2'	50:1:1673:G:OP2	2.07	0.54
50:1:1948:G:O2'	50:1:1949:G:H5'	2.08	0.54
50:1:2200:C:H42	50:1:2223:G:H1	1.54	0.54
50:1:2786:U:H2'	50:1:2787:C:H6	1.72	0.54
50:1:2861:U:H2'	50:1:2862:G:C8	2.42	0.54
50:1:2868:A:H3'	50:1:2869:G:H8	1.71	0.54
3:d:68:ALA:HA	50:1:1255:U:C5	2.43	0.54
4:e:105:ILE:HG13	4:e:109:ARG:NH2	2.23	0.54
4:e:107:VAL:O	4:e:110:ILE:HG13	2.07	0.54
5:f:19:ASN:O	5:f:22:VAL:HG12	2.07	0.54
10:m:78:LEU:HD23	10:m:79:ALA:HB2	1.90	0.54
13:p:26:GLU:HB3	13:p:84:SER:OG	2.08	0.54
20:w:45:ALA:H	20:w:77:SER:HA	1.72	0.54
33:K:21:MET:HG2	33:K:25:TYR:CE2	2.42	0.54
49:3:502:A:H2'	49:3:503:C:C6	2.41	0.54
49:3:1521:C:H2'	49:3:1522:U:C6	2.43	0.54
50:1:2705:A:H2'	50:1:2706:A:O4'	2.07	0.54
1:b:250:GLN:NE2	1:b:251:THR:O	2.40	0.54
28:F:30:GLU:O	28:F:33:HIS:HB2	2.07	0.54
31:I:194:ILE:HD12	31:I:194:ILE:N	2.22	0.54
49:3:58:C:H2'	49:3:59:A:H8	1.73	0.54
50:1:189:G:H2'	50:1:205:G:H22	1.71	0.54
50:1:995:C:H6	50:1:995:C:H5'	1.72	0.54
2:c:88:GLU:H	2:c:88:GLU:CD	2.16	0.54
9:l:101:ILE:HB	9:l:105:ILE:HG13	1.89	0.54
15:r:49:ILE:O	15:r:49:ILE:HG13	2.06	0.54
19:v:26:PHE:HE1	19:v:44:HIS:HA	1.72	0.54
37:O:52:LEU:HD12	37:O:52:LEU:H	1.73	0.54
38:P:33:ILE:N	38:P:33:ILE:HD12	2.22	0.54
40:R:113:LYS:HG3	40:R:114:PRO:HD3	1.90	0.54
49:3:258:G:H2'	49:3:259:G:H8	1.72	0.54
49:3:617:G:H1	49:3:623:C:H42	1.54	0.54
49:3:637:C:H2'	49:3:638:U:C6	2.42	0.54
50:1:239:C:H2'	50:1:240:C:O4'	2.07	0.54
50:1:406:G:O2'	50:1:407:G:H5'	2.08	0.54
50:1:598:U:H2'	50:1:599:A:H8	1.72	0.54
54:8:57:LEU:HD12	54:8:58:ALA:N	2.22	0.54
1:b:24:HIS:CG	1:b:79:ARG:HD2	2.43	0.54
3:d:71:GLY:N	50:1:674:G:H5''	2.23	0.54
20:w:39:THR:H	50:1:2331:G:H4'	1.73	0.54
40:R:29:SER:O	40:R:32:ILE:HG22	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:Z:35:GLU:C	48:Z:37:TYR:H	2.16	0.54
49:3:285:C:H2'	49:3:286:C:C6	2.43	0.54
50:1:414:C:H2'	50:1:415:A:H8	1.73	0.54
50:1:1172:C:C2'	50:1:1173:U:H5''	2.33	0.54
50:1:1847:A:O2'	50:1:1848:A:H8	1.89	0.54
50:1:2233:U:H2'	50:1:2234:G:C8	2.42	0.54
50:1:2651:C:H2'	50:1:2652:C:C6	2.43	0.54
39:Q:25:ALA:O	39:Q:27:PRO:HD3	2.08	0.54
50:1:768:G:N2	50:1:1379:U:H1'	2.23	0.54
50:1:832:U:H2'	50:1:833:A:H8	1.72	0.54
10:m:40:ARG:HB3	10:m:93:VAL:CG2	2.34	0.54
23:z:45:GLY:HA3	50:1:852:U:H5'	1.89	0.54
32:J:113:VAL:HG13	32:J:114:LEU:HD22	1.90	0.54
36:N:46:VAL:HG23	36:N:49:GLN:HE21	1.73	0.54
49:3:769:G:H4'	49:3:1513:A:H4'	1.90	0.54
50:1:2489:U:C2'	50:1:2490:G:H5'	2.38	0.54
54:8:75:GLN:O	54:8:83:ASN:ND2	2.40	0.54
54:8:101:GLU:O	54:8:102:LYS:HB2	2.07	0.54
1:b:254:LYS:O	50:1:1797:G:H4'	2.08	0.54
2:c:34:VAL:HG22	2:c:50:VAL:HG12	1.89	0.54
40:R:91:ARG:HD2	40:R:91:ARG:C	2.33	0.54
41:S:42:ASN:HA	41:S:45:LEU:HG	1.88	0.54
49:3:129:A:O2'	49:3:130:A:H5''	2.07	0.54
50:1:171:U:H2'	50:1:172:A:H8	1.72	0.54
50:1:2087:G:H2'	50:1:2088:A:H8	1.73	0.54
11:n:36:THR:HG22	11:n:37:THR:H	1.73	0.54
11:n:69:ARG:C	11:n:71:ARG:H	2.16	0.54
33:K:64:VAL:HG22	33:K:65:GLU:N	2.21	0.54
49:3:1241:G:H2'	49:3:1242:G:H8	1.73	0.54
50:1:1357:C:H2'	50:1:1358:G:O4'	2.07	0.54
52:5:16:C:H5'	52:5:59:A:C2	2.42	0.54
23:z:15:ARG:HG3	23:z:53:MET:HE1	1.91	0.53
32:J:43:GLY:O	32:J:73:VAL:HG12	2.08	0.53
46:X:4:LEU:HD22	49:3:1318:A:H5''	1.89	0.53
49:3:493:A:H2'	49:3:494:G:C8	2.43	0.53
49:3:625:U:H2'	49:3:626:G:H8	1.73	0.53
49:3:736:C:H2'	49:3:737:C:H6	1.72	0.53
49:3:946:A:H2'	49:3:947:G:C8	2.43	0.53
49:3:1105:A:H2'	49:3:1106:G:C8	2.43	0.53
50:1:404:A:H1'	50:1:406:G:C4	2.44	0.53
50:1:2470:G:H2'	50:1:2471:A:C8	2.43	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:2515:C:H2'	50:1:2516:A:H8	1.73	0.53
50:1:2609:U:H5'	50:1:2610:C:OP2	2.07	0.53
54:8:53:LYS:HG3	54:8:54:GLU:OE2	2.08	0.53
54:8:102:LYS:HD3	54:8:105:ARG:NE	2.23	0.53
11:n:47:VAL:O	11:n:51:LEU:HD23	2.07	0.53
25:C:18:HIS:NE2	25:C:40:PRO:HG2	2.22	0.53
37:O:100:ILE:H	37:O:100:ILE:HD12	1.73	0.53
39:Q:17:LYS:HE2	49:3:909:A:OP1	2.08	0.53
46:X:44:ILE:HD13	46:X:63:ASP:HA	1.89	0.53
49:3:1359:C:H4'	49:3:1362:A:N6	2.23	0.53
50:1:99:U:H5''	50:1:100:U:H5'	1.90	0.53
50:1:1326:U:H2'	50:1:1327:A:H8	1.74	0.53
50:1:1527:G:H2'	50:1:1528:A:C8	2.43	0.53
50:1:2464:G:H2'	50:1:2465:C:C6	2.43	0.53
2:c:38:LYS:HD2	2:c:43:ASP:OD2	2.07	0.53
39:Q:86:VAL:HG13	39:Q:88:ASP:H	1.74	0.53
49:3:236:A:H2'	49:3:237:G:H8	1.73	0.53
50:1:575:A:O2'	50:1:576:U:H5'	2.07	0.53
50:1:2266:A:H4'	50:1:2267:A:C2	2.44	0.53
7:j:43:GLU:HA	14:q:63:ARG:HH12	1.73	0.53
32:J:148:SER:OG	32:J:151:MET:HG2	2.09	0.53
40:R:9:PRO:HB2	40:R:44:ILE:CD1	2.39	0.53
42:T:2:LEU:HD21	42:T:34:GLN:HA	1.91	0.53
49:3:91:U:H3'	49:3:92:U:H5''	1.90	0.53
50:1:214:G:H2'	50:1:215:G:C8	2.44	0.53
50:1:784:G:HO2'	50:1:785:G:H8	1.53	0.53
50:1:1180:U:C2'	50:1:1181:U:H5'	2.37	0.53
50:1:1675:C:H2'	50:1:1676:A:O4'	2.09	0.53
50:1:1775:U:C2'	50:1:1776:G:H5'	2.39	0.53
50:1:2799:A:C2'	50:1:2800:A:H5'	2.38	0.53
17:t:14:PRO:HD2	22:y:33:ALA:HB3	1.90	0.53
18:u:65:GLN:HB2	18:u:68:ASN:ND2	2.23	0.53
37:O:10:LEU:HB2	37:O:72:ARG:HB2	1.90	0.53
43:U:33:ILE:HD12	43:U:33:ILE:N	2.23	0.53
49:3:166:U:H2'	49:3:167:A:C8	2.44	0.53
49:3:222:C:H2'	49:3:223:A:C8	2.42	0.53
49:3:629:A:O2'	49:3:630:A:H5'	2.08	0.53
49:3:1203:C:H2'	49:3:1204:A:H8	1.73	0.53
49:3:1314:C:H2'	49:3:1315:U:C6	2.44	0.53
49:3:1471:U:H2'	49:3:1472:U:H6	1.72	0.53
50:1:669:G:H2'	50:1:669:G:N3	2.22	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:968:C:H2'	50:1:969:G:C8	2.43	0.53
50:1:1773:A:C2'	50:1:1774:C:H5'	2.38	0.53
50:1:1890:A:H2'	50:1:1891:G:O4'	2.09	0.53
52:5:4:G:H2'	52:5:5:G:C8	2.44	0.53
4:e:92:GLY:O	4:e:95:MET:HB3	2.09	0.53
6:g:96:THR:HG23	6:g:115:VAL:CG2	2.37	0.53
6:g:110:VAL:HG13	6:g:114:GLU:CG	2.37	0.53
31:I:22:SER:OG	31:I:109:THR:HG22	2.09	0.53
33:K:81:ASN:HD21	33:K:83:ALA:HB3	1.72	0.53
34:L:75:LYS:HE3	34:L:88:VAL:HG21	1.90	0.53
43:U:67:ILE:HD13	43:U:75:ILE:HD12	1.91	0.53
49:3:819:A:H5'	49:3:820:U:C5	2.44	0.53
50:1:1045:C:OP1	50:1:1047:G:H5'	2.09	0.53
50:1:1175:A:H3'	50:1:1176:U:C5'	2.36	0.53
50:1:1229:C:H2'	50:1:1230:A:C8	2.44	0.53
50:1:1278:C:H2'	50:1:1279:G:C8	2.44	0.53
4:e:111:ARG:HH12	4:e:133:GLU:HG3	1.74	0.53
13:p:7:LEU:HA	13:p:10:GLU:OE1	2.08	0.53
26:D:12:ARG:CZ	26:D:44:VAL:HG21	2.39	0.53
28:F:36:ARG:CG	28:F:37:GLN:H	2.17	0.53
30:H:119:ILE:HD11	30:H:136:ALA:HB2	1.90	0.53
30:H:130:ARG:O	30:H:134:LYS:HG2	2.08	0.53
42:T:3:SER:O	42:T:7:THR:HG23	2.09	0.53
45:W:62:ARG:HD2	45:W:67:LEU:O	2.09	0.53
49:3:219:U:H2'	49:3:220:G:H8	1.74	0.53
49:3:475:C:H2'	49:3:476:U:C6	2.43	0.53
49:3:647:C:H2'	49:3:648:A:H8	1.74	0.53
50:1:851:C:H2'	50:1:852:U:C6	2.43	0.53
50:1:2206:C:H2'	50:1:2207:C:C6	2.44	0.53
54:8:42:ASP:OD1	54:8:70:ILE:HD12	2.09	0.53
18:u:10:VAL:HG12	18:u:71:ILE:HA	1.90	0.53
32:J:12:GLU:HA	32:J:38:VAL:HG12	1.89	0.53
38:P:35:ASP:HB2	38:P:37:GLN:NE2	2.22	0.53
49:3:514:C:H2'	49:3:515:G:H8	1.73	0.53
50:1:1344:U:O2	50:1:1385:A:H5'	2.09	0.53
50:1:1455:G:H3'	50:1:1456:G:C8	2.43	0.53
50:1:1994:C:O2'	50:1:1995:U:H5'	2.09	0.53
54:8:42:ASP:OD1	54:8:91:LEU:HD11	2.09	0.53
3:d:98:LYS:HB3	3:d:102:ARG:HH11	1.74	0.53
4:e:33:ILE:HG23	4:e:33:ILE:O	2.08	0.53
13:p:24:THR:HG22	13:p:45:VAL:HG22	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:R:104:ASN:O	40:R:105:ALA:HB3	2.09	0.53
44:V:6:THR:OG1	44:V:59:GLU:HB3	2.08	0.53
44:V:60:ILE:HG22	44:V:72:TRP:HB3	1.91	0.53
49:3:243:A:H4'	49:3:244:U:H3'	1.91	0.53
49:3:392:C:H2'	49:3:393:A:H8	1.73	0.53
49:3:1067:A:N7	49:3:1109:C:H5'	2.24	0.53
49:3:1499:A:O2'	49:3:1500:A:H5'	2.08	0.53
50:1:151:C:H2'	50:1:152:A:H8	1.73	0.53
50:1:796:C:H2'	50:1:797:G:C8	2.43	0.53
50:1:873:C:N4	50:1:900:A:H5''	2.23	0.53
50:1:1186:G:H3'	50:1:1187:G:H8	1.73	0.53
50:1:1285:A:H2'	50:1:1286:A:H5'	1.91	0.53
6:g:4:ILE:HG23	6:g:37:VAL:HG23	1.91	0.53
9:l:142:ILE:HD12	9:l:142:ILE:N	2.23	0.53
26:D:26:ASN:ND2	50:1:682:G:H5'	2.24	0.53
43:U:5:ARG:NH1	49:3:377:G:H5'	2.24	0.53
49:3:483:C:H3'	49:3:484:G:H2'	1.90	0.53
49:3:730:G:C2'	49:3:731:G:H5'	2.38	0.53
50:1:5:A:H2'	50:1:6:A:C8	2.44	0.53
50:1:171:U:H2'	50:1:172:A:C8	2.44	0.53
50:1:272:A:H2'	50:1:273:G:H8	1.74	0.53
50:1:2439:A:H4'	50:1:2441:U:O5'	2.09	0.53
54:8:22:ALA:HB2	54:8:37:ILE:HG12	1.91	0.53
3:d:41:GLN:HG3	3:d:43:THR:HG23	1.90	0.52
5:f:100:ASN:O	5:f:116:LEU:HD23	2.09	0.52
11:n:44:LEU:O	11:n:47:VAL:HG12	2.09	0.52
31:I:16:THR:HG22	31:I:17:ASP:N	2.24	0.52
34:L:93:VAL:HG22	34:L:94:ARG:NH2	2.24	0.52
49:3:379:C:H2'	49:3:380:G:H8	1.72	0.52
49:3:393:A:H2'	49:3:394:G:H8	1.74	0.52
49:3:1444:U:H2'	49:3:1445:U:H5'	1.90	0.52
50:1:704:G:H1'	50:1:727:A:N6	2.24	0.52
50:1:1555:G:H5'	50:1:1555:G:H8	1.74	0.52
50:1:2105:U:H2'	50:1:2106:U:H5'	1.91	0.52
50:1:2339:C:H2'	50:1:2340:A:C8	2.44	0.52
54:8:50:GLU:O	54:8:54:GLU:HG2	2.09	0.52
3:d:188:MET:HG2	3:d:193:VAL:HG13	1.91	0.52
9:l:135:ILE:HD11	9:l:142:ILE:CG1	2.39	0.52
27:E:39:ARG:O	27:E:43:LEU:HG	2.09	0.52
30:H:126:ARG:H	30:H:126:ARG:NH1	2.06	0.52
33:K:3:HIS:HA	33:K:65:GLU:HA	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:N:28:VAL:HG13	36:N:63:TYR:HD1	1.74	0.52
40:R:7:ASN:HB2	40:R:21:ILE:HD11	1.90	0.52
49:3:74:A:H2'	49:3:75:G:C8	2.44	0.52
49:3:227:G:H2'	49:3:228:A:H8	1.74	0.52
50:1:467:G:O2'	50:1:468:G:H5'	2.10	0.52
50:1:1683:U:H2'	50:1:1684:G:H8	1.73	0.52
50:1:2076:U:O2	50:1:2076:U:C2'	2.57	0.52
50:1:2339:C:H2'	50:1:2340:A:H8	1.74	0.52
51:2:95:U:H2'	51:2:96:G:H8	1.74	0.52
3:d:105:LEU:O	3:d:108:ILE:HG22	2.08	0.52
6:g:143:ILE:HD12	6:g:143:ILE:N	2.23	0.52
21:x:50:VAL:HG22	21:x:51:SER:H	1.74	0.52
29:G:22:TRP:CZ2	49:3:829:G:H4'	2.41	0.52
32:J:75:LEU:O	32:J:75:LEU:HD12	2.09	0.52
36:N:53:LEU:O	36:N:53:LEU:HD23	2.09	0.52
40:R:65:GLU:HG2	40:R:66:GLY:N	2.23	0.52
47:Y:26:MET:SD	49:3:1458:G:H5'	2.50	0.52
49:3:145:G:H2'	49:3:146:G:O4'	2.08	0.52
50:1:39:G:H2'	50:1:40:U:C6	2.44	0.52
50:1:366:C:H2'	50:1:367:G:C5'	2.39	0.52
50:1:438:G:H2'	50:1:439:A:C8	2.44	0.52
50:1:1152:C:H2'	50:1:1153:C:C6	2.44	0.52
50:1:1229:C:H2'	50:1:1230:A:H8	1.75	0.52
50:1:1501:G:H2'	50:1:1502:A:H8	1.75	0.52
50:1:1936:A:H3'	50:1:1937:A:H5'	1.90	0.52
51:2:66:A:HO2'	51:2:68:C:H5	1.57	0.52
4:e:43:ILE:HG21	4:e:78:ILE:HD12	1.91	0.52
7:j:26:GLY:HA3	50:1:1140:C:C5'	2.39	0.52
12:o:67:ASN:HA	51:2:50:A:OP2	2.10	0.52
13:p:92:ARG:HH21	50:1:1753:G:C5'	2.20	0.52
39:Q:76:HIS:O	39:Q:77:SER:C	2.52	0.52
43:U:6:LEU:CD1	43:U:17:TYR:HB3	2.37	0.52
49:3:233:C:H2'	49:3:234:C:C6	2.44	0.52
49:3:501:C:H1'	49:3:549:C:H1'	1.91	0.52
49:3:678:U:H2'	49:3:679:C:C6	2.45	0.52
49:3:1513:A:H2'	49:3:1514:G:C8	2.45	0.52
50:1:1522:A:H8	50:1:1522:A:OP1	1.93	0.52
50:1:1524:G:H2'	50:1:1525:A:C8	2.44	0.52
50:1:1700:A:H3'	50:1:1701:A:H8	1.75	0.52
50:1:1725:U:H2'	50:1:1726:C:C6	2.45	0.52
51:2:70:C:H2'	51:2:71:C:H6	1.73	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:m:77:PRO:O	10:m:80:VAL:HG22	2.08	0.52
33:K:65:GLU:HG3	33:K:65:GLU:O	2.08	0.52
36:N:6:TYR:CZ	49:3:1147:C:H4'	2.44	0.52
36:N:55:ASP:OD2	36:N:56:MET:N	2.42	0.52
39:Q:52:CYS:HB3	39:Q:66:ILE:HD11	1.91	0.52
40:R:3:ILE:CD1	40:R:7:ASN:HD22	2.22	0.52
40:R:3:ILE:HG13	40:R:7:ASN:HB3	1.91	0.52
41:S:69:PRO:HG2	41:S:70:HIS:HD2	1.74	0.52
44:V:32:ILE:HD12	44:V:32:ILE:N	2.25	0.52
49:3:109:A:H5'	49:3:110:C:C5	2.45	0.52
49:3:1029:U:H5'	49:3:1030:U:OP1	2.09	0.52
49:3:1309:G:H2'	49:3:1310:G:C8	2.44	0.52
50:1:288:U:H2'	50:1:289:G:H8	1.75	0.52
50:1:381:G:O2'	50:1:382:A:H5'	2.09	0.52
50:1:680:C:H2'	50:1:681:G:H8	1.75	0.52
50:1:705:A:C2	50:1:727:A:H1'	2.45	0.52
50:1:1159:U:H2'	50:1:1160:G:H8	1.75	0.52
50:1:1186:G:H3'	50:1:1187:G:C8	2.45	0.52
50:1:1496:A:H2'	50:1:1498:C:C4	2.43	0.52
50:1:1685:C:H2'	50:1:1686:C:C6	2.44	0.52
50:1:2329:U:H2'	50:1:2330:G:H8	1.75	0.52
50:1:2638:G:H22	50:1:2775:G:H2'	1.75	0.52
50:1:2773:C:H2'	50:1:2774:C:H6	1.75	0.52
23:z:52:PHE:CG	51:2:83:G:H4'	2.45	0.52
33:K:11:HIS:CG	33:K:12:PRO:HD2	2.44	0.52
37:O:64:GLN:HB3	41:S:98:ALA:HB3	1.91	0.52
40:R:76:ILE:O	40:R:80:MET:HG2	2.10	0.52
50:1:1020:A:O5'	50:1:1020:A:H8	1.92	0.52
52:5:70:G:H2'	52:5:71:C:C6	2.44	0.52
21:x:61:LYS:HE2	50:1:372:G:OP2	2.09	0.52
32:J:104:ILE:HG13	32:J:104:ILE:O	2.09	0.52
33:K:78:PHE:HD1	33:K:84:VAL:HG11	1.74	0.52
40:R:64:VAL:HG12	40:R:65:GLU:N	2.25	0.52
43:U:5:ARG:HH12	49:3:377:G:H5'	1.73	0.52
46:X:39:ILE:HB	46:X:66:VAL:HA	1.90	0.52
47:Y:3:ILE:HG23	47:Y:7:LYS:HG2	1.90	0.52
50:1:78:U:H3	50:1:108:G:H1	1.57	0.52
50:1:162:U:O2'	50:1:163:C:H5'	2.10	0.52
50:1:184:C:H2'	50:1:185:G:C8	2.44	0.52
50:1:1316:U:H2'	50:1:1317:G:H8	1.75	0.52
50:1:2024:G:OP2	50:1:2034:U:H4'	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:2469:A:H61	50:1:2481:G:C2'	2.23	0.52
6:g:75:LEU:HD23	6:g:75:LEU:H	1.75	0.52
11:n:103:ARG:HD2	50:1:1287:A:C5'	2.38	0.52
17:t:6:ARG:HA	17:t:9:LYS:NZ	2.25	0.52
24:B:3:GLN:HA	50:1:2615:U:C2	2.44	0.52
33:K:75:GLU:HA	33:K:78:PHE:HD2	1.74	0.52
34:L:32:ASP:HB3	49:3:1351:U:H1'	1.91	0.52
35:M:31:LEU:O	35:M:35:ILE:HG12	2.08	0.52
41:S:26:LEU:HD13	41:S:46:LYS:HD3	1.91	0.52
43:U:70:ARG:NE	49:3:451:A:H5''	2.21	0.52
48:Z:27:VAL:O	48:Z:31:VAL:HG23	2.10	0.52
48:Z:39:LYS:N	48:Z:40:PRO:CD	2.73	0.52
49:3:1015:G:O2'	49:3:1218:C:H4'	2.10	0.52
49:3:1481:U:H2'	49:3:1482:G:C8	2.44	0.52
50:1:813:U:H2'	50:1:814:C:C6	2.44	0.52
50:1:1111:A:H2'	50:1:1112:G:C4'	2.39	0.52
50:1:1783:A:O2'	50:1:1784:A:H5'	2.09	0.52
6:g:55:GLU:HA	6:g:58:LEU:HB3	1.92	0.52
18:u:27:VAL:HG12	18:u:33:VAL:HG12	1.92	0.52
29:G:72:LYS:HG3	29:G:74:ALA:H	1.75	0.52
29:G:76:SER:O	29:G:79:VAL:HG12	2.10	0.52
30:H:120:THR:O	30:H:124:GLU:HG3	2.09	0.52
34:L:71:THR:HG23	34:L:72:VAL:HG13	1.90	0.52
49:3:590:U:H2'	49:3:591:U:C6	2.45	0.52
49:3:824:G:H2'	49:3:825:A:H8	1.75	0.52
50:1:741:U:H2'	50:1:742:A:H8	1.73	0.52
50:1:861:A:H2'	50:1:862:G:H5'	1.92	0.52
50:1:1409:U:H2'	50:1:1410:G:C8	2.45	0.52
50:1:2662:A:C5	50:1:2663:G:H1'	2.45	0.52
1:b:77:VAL:HG12	1:b:113:ASP:O	2.10	0.52
3:d:98:LYS:HB3	3:d:102:ARG:NH1	2.25	0.52
8:k:66:LYS:H	8:k:82:ASN:ND2	2.08	0.52
29:G:172:ILE:HA	29:G:175:ALA:HB3	1.92	0.52
32:J:156:ARG:HG3	35:M:42:GLU:O	2.10	0.52
49:3:211:G:H5''	49:3:212:G:C1'	2.40	0.52
49:3:487:A:H2'	49:3:488:C:O4'	2.10	0.52
49:3:636:U:H2'	49:3:637:C:C6	2.44	0.52
49:3:760:G:H2'	49:3:761:G:H5'	1.90	0.52
49:3:1084:G:H2'	49:3:1085:U:C5	2.45	0.52
50:1:795:C:H2'	50:1:796:C:C6	2.45	0.52
50:1:1815:A:O4'	50:1:1817:G:H1'	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:2825:G:H3'	50:1:2826:A:H8	1.74	0.52
4:e:55:ASP:O	4:e:59:ILE:HG13	2.11	0.51
5:f:23:ILE:HD12	5:f:23:ILE:N	2.25	0.51
9:l:109:LYS:HA	9:l:126:ARG:O	2.10	0.51
13:p:55:HIS:CE1	50:1:2682:A:H4'	2.45	0.51
29:G:30:ILE:N	29:G:41:ASN:HB2	2.25	0.51
29:G:34:ARG:O	29:G:37:VAL:HG12	2.10	0.51
30:H:139:ASN:O	30:H:143:LEU:HB2	2.10	0.51
32:J:160:VAL:HG13	32:J:161:GLU:H	1.75	0.51
35:M:86:LYS:HG3	35:M:92:PRO:HD3	1.91	0.51
35:M:88:LYS:HD3	49:3:600:A:H5''	1.92	0.51
42:T:84:LEU:HB3	42:T:86:LEU:HD23	1.91	0.51
49:3:140:U:H2'	49:3:141:G:O4'	2.10	0.51
49:3:742:G:O2'	49:3:743:A:H5'	2.10	0.51
49:3:1011:C:H2'	49:3:1012:A:C8	2.45	0.51
49:3:1011:C:H2'	49:3:1012:A:H8	1.75	0.51
49:3:1512:U:H2'	49:3:1513:A:H8	1.75	0.51
50:1:44:A:H2'	50:1:45:G:O4'	2.10	0.51
50:1:285:G:H2'	50:1:286:U:C6	2.45	0.51
50:1:1042:G:H2'	50:1:1043:C:H5'	1.92	0.51
50:1:1510:G:H2'	50:1:1511:G:O4'	2.10	0.51
50:1:1578:U:H2'	50:1:1579:A:H8	1.75	0.51
50:1:1906:G:C3'	50:1:1907:G:H5''	2.40	0.51
4:e:37:MET:HB2	4:e:151:LEU:HD13	1.92	0.51
16:s:88:ARG:HB2	16:s:92:ARG:O	2.10	0.51
29:G:131:LYS:O	29:G:134:LEU:HG	2.10	0.51
30:H:180:ASP:C	30:H:181:ILE:HD12	2.34	0.51
36:N:5:TYR:HB2	36:N:20:ILE:HG23	1.91	0.51
38:P:80:ASN:HA	38:P:105:ARG:HB3	1.92	0.51
42:T:35:ILE:O	42:T:39:GLN:N	2.39	0.51
48:Z:9:GLU:HB2	48:Z:10:PRO:CD	2.40	0.51
49:3:232:G:C2'	49:3:233:C:H5'	2.40	0.51
49:3:337:G:H2'	49:3:338:A:C8	2.45	0.51
49:3:1219:A:H2'	49:3:1220:G:H8	1.74	0.51
50:1:189:G:H2'	50:1:205:G:N2	2.26	0.51
50:1:550:C:H2'	50:1:551:G:C8	2.46	0.51
50:1:1591:A:H2'	50:1:1592:C:C6	2.44	0.51
13:p:51:ASN:O	13:p:52:ARG:HD3	2.10	0.51
14:q:73:ILE:HD13	14:q:78:PHE:HD1	1.75	0.51
23:z:46:MET:HA	50:1:851:C:H4'	1.92	0.51
32:J:22:LYS:CD	49:3:1081:A:H5'	2.40	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:K:75:GLU:HA	33:K:78:PHE:CD2	2.46	0.51
35:M:45:ILE:HG21	35:M:60:LEU:HD22	1.91	0.51
36:N:49:GLN:N	36:N:50:PRO:HD2	2.25	0.51
38:P:46:ALA:HB1	38:P:61:ALA:HB1	1.93	0.51
50:1:817:C:O2'	50:1:839:U:H5''	2.11	0.51
50:1:1409:U:H2'	50:1:1410:G:H8	1.75	0.51
50:1:1448:G:H2'	50:1:1449:G:C8	2.45	0.51
50:1:1765:U:H2'	50:1:1766:G:H8	1.75	0.51
50:1:1947:C:H2'	50:1:1948:G:C8	2.46	0.51
8:k:35:VAL:HG11	8:k:104:THR:HG21	1.91	0.51
16:s:82:MET:HB2	16:s:98:LYS:HB2	1.93	0.51
49:3:229:U:H2'	49:3:230:G:O4'	2.11	0.51
49:3:1404:C:H2'	49:3:1405:G:C8	2.46	0.51
50:1:445:C:O2'	50:1:446:G:H5'	2.10	0.51
50:1:599:A:H2'	50:1:600:G:H8	1.76	0.51
50:1:1786:A:H1'	50:1:1938:A:N6	2.26	0.51
50:1:2476:A:O2'	50:1:2480:C:N4	2.43	0.51
50:1:2699:C:H2'	50:1:2700:A:C8	2.46	0.51
51:2:95:U:H2'	51:2:96:G:C8	2.44	0.51
6:g:23:ALA:HB1	6:g:27:ARG:NH1	2.25	0.51
12:o:8:ILE:O	12:o:12:THR:HG23	2.11	0.51
21:x:35:HIS:HE2	50:1:2199:A:HO2'	1.58	0.51
30:H:33:ASP:HB2	41:S:64:ARG:HH21	1.75	0.51
35:M:112:ASP:O	35:M:116:ARG:HG3	2.10	0.51
43:U:12:LYS:HG2	49:3:44:A:OP2	2.11	0.51
49:3:27:G:H2'	49:3:28:A:H8	1.75	0.51
49:3:673:A:H2'	49:3:674:G:C8	2.46	0.51
49:3:1163:A:H2'	49:3:1164:G:H8	1.74	0.51
50:1:720:U:H2'	50:1:721:A:H8	1.75	0.51
50:1:1645:G:H5''	50:1:1646:C:O5'	2.11	0.51
50:1:1830:C:H2'	50:1:1831:G:H8	1.74	0.51
10:m:41:LEU:HB3	10:m:46:ILE:HD11	1.92	0.51
12:o:68:LYS:HA	12:o:102:ARG:HG2	1.93	0.51
29:G:27:LYS:N	29:G:28:PRO:CD	2.73	0.51
44:V:22:VAL:HG22	44:V:23:ALA:N	2.26	0.51
49:3:335:C:H2'	49:3:336:A:H8	1.76	0.51
50:1:596:U:H2'	50:1:597:G:H8	1.75	0.51
50:1:1539:U:H2'	50:1:1540:G:H8	1.76	0.51
50:1:2287:A:C2'	50:1:2288:A:H2'	2.40	0.51
50:1:2475:C:H2'	50:1:2476:A:H5'	1.93	0.51
52:5:27:U:H2'	52:5:28:C:H6	1.75	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:s:11:ARG:HH21	16:s:98:LYS:HD2	1.75	0.51
23:z:4:ILE:HG13	23:z:4:ILE:O	2.10	0.51
23:z:7:THR:HB	23:z:55:LYS:HB3	1.93	0.51
36:N:105:ARG:O	36:N:105:ARG:HD3	2.10	0.51
39:Q:49:ARG:HG2	39:Q:49:ARG:HH11	1.76	0.51
44:V:79:GLU:C	44:V:80:LYS:HD2	2.36	0.51
49:3:825:A:H2'	49:3:826:C:C6	2.46	0.51
50:1:268:C:H2'	50:1:269:C:C6	2.46	0.51
50:1:1412:U:H2'	50:1:1413:A:C8	2.46	0.51
50:1:2355:G:O2'	50:1:2356:U:H5'	2.11	0.51
50:1:2786:U:H2'	50:1:2787:C:C6	2.46	0.51
51:2:5:U:H2'	51:2:6:G:H8	1.75	0.51
1:b:118:GLY:HA2	1:b:188:ARG:NH2	2.25	0.51
4:e:65:LEU:HD22	51:2:42:C:C4	2.46	0.51
6:g:110:VAL:CG1	6:g:114:GLU:HG3	2.40	0.51
15:r:37:GLU:HB2	15:r:53:PHE:CE1	2.46	0.51
19:v:75:GLN:HB2	19:v:92:VAL:HG13	1.93	0.51
31:I:18:LEU:HB3	31:I:20:LEU:HD22	1.92	0.51
33:K:12:PRO:O	33:K:15:SER:HB2	2.11	0.51
39:Q:88:ASP:O	39:Q:90:PRO:HD3	2.11	0.51
42:T:49:HIS:HA	42:T:52:ARG:HB3	1.93	0.51
46:X:65:MET:HE2	46:X:65:MET:HA	1.93	0.51
46:X:77:ARG:NH1	49:3:1222:G:OP1	2.44	0.51
49:3:354:G:O2'	49:3:355:C:H5'	2.11	0.51
49:3:870:U:H4'	49:3:872:A:OP2	2.10	0.51
49:3:952:U:H2'	49:3:953:G:C8	2.45	0.51
49:3:1296:C:H4'	49:3:1302:C:N3	2.25	0.51
49:3:1346:A:H2'	49:3:1346:A:N3	2.24	0.51
50:1:1611:C:H6	50:1:1611:C:H5'	1.76	0.51
50:1:1806:C:H2'	50:1:1807:G:O4'	2.11	0.51
50:1:2372:U:H2'	50:1:2373:G:H8	1.76	0.51
1:b:206:LYS:HB2	50:1:729:G:C5	2.46	0.51
9:l:82:LEU:O	9:l:85:VAL:HG12	2.10	0.51
10:m:14:LYS:NZ	50:1:956:G:O6	2.44	0.51
11:n:6:SER:OG	11:n:46:ARG:NH2	2.44	0.51
11:n:34:ILE:HG13	11:n:113:ILE:CG2	2.35	0.51
13:p:67:GLU:OE1	13:p:67:GLU:N	2.44	0.51
32:J:110:MET:HE1	32:J:139:THR:HG22	1.91	0.51
37:O:54:SER:HB3	37:O:57:VAL:O	2.11	0.51
49:3:1119:C:H2'	49:3:1120:C:C6	2.45	0.51
49:3:1450:U:H4'	49:3:1451:U:H5	1.76	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:150:U:H2'	50:1:151:C:C6	2.46	0.51
50:1:210:C:H2'	50:1:211:C:C6	2.46	0.51
51:2:92:C:H2'	51:2:93:C:H6	1.76	0.51
1:b:227:VAL:HG11	50:1:784:G:C6	2.46	0.51
7:j:23:LYS:CB	7:j:28:LEU:HD11	2.41	0.51
9:l:93:ASN:O	9:l:94:THR:OG1	2.24	0.51
16:s:96:ILE:HG22	50:1:2013:A:H4'	1.92	0.51
20:w:46:ASN:HB2	20:w:78:ILE:HB	1.93	0.51
21:x:36:ARG:HD2	21:x:45:PHE:HB3	1.92	0.51
25:C:9:LYS:HG3	25:C:19:PHE:CD2	2.46	0.51
34:L:1:PRO:O	34:L:2:ARG:HB3	2.10	0.51
34:L:48:THR:HG23	34:L:120:ALA:HB2	1.93	0.51
37:O:100:ILE:HD12	37:O:100:ILE:N	2.26	0.51
40:R:23:GLY:HA2	40:R:68:LEU:HD22	1.92	0.51
42:T:9:LYS:O	42:T:13:GLU:HG3	2.11	0.51
48:Z:22:CYS:O	48:Z:26:GLY:HA3	2.11	0.51
49:3:572:A:C4'	49:3:917:G:H4'	2.41	0.51
49:3:591:U:H2'	49:3:592:G:C8	2.45	0.51
49:3:883:C:O2'	49:3:884:U:H5'	2.10	0.51
49:3:889:A:H5'	49:3:891:U:H1'	1.93	0.51
49:3:1256:A:O2'	49:3:1257:A:H5''	2.11	0.51
49:3:1530:G:H2'	49:3:1531:A:C8	2.46	0.51
50:1:43:G:H2'	50:1:44:A:C8	2.45	0.51
50:1:109:C:H2'	50:1:110:G:H5''	1.92	0.51
50:1:268:C:H2'	50:1:269:C:H6	1.75	0.51
50:1:1045:C:H5'	50:1:1046:A:H8	1.76	0.51
50:1:1367:A:C2'	50:1:1368:G:H5'	2.41	0.51
50:1:1368:G:H2'	50:1:1369:G:H8	1.75	0.51
51:2:85:G:H2'	51:2:86:G:H8	1.75	0.51
52:5:18:G:N2	52:5:57:A:H2'	2.26	0.51
54:8:3:VAL:HA	54:8:88:LEU:HD11	1.93	0.51
14:q:48:ASP:HA	14:q:51:GLN:HB2	1.93	0.50
31:I:170:LEU:HD12	31:I:170:LEU:O	2.11	0.50
37:O:41:PRO:HG3	49:3:1150:A:N3	2.27	0.50
41:S:62:ARG:HH21	41:S:69:PRO:HD3	1.75	0.50
48:Z:65:ARG:CZ	49:3:1099:G:H21	2.24	0.50
49:3:151:A:H2'	49:3:152:A:O4'	2.10	0.50
49:3:722:G:H2'	49:3:724:G:C8	2.46	0.50
49:3:860:A:H2'	49:3:861:G:O4'	2.12	0.50
49:3:1086:U:H2'	49:3:1087:G:C8	2.47	0.50
49:3:1173:U:H2'	49:3:1174:G:C8	2.46	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:1038:G:H2'	50:1:1039:A:C8	2.46	0.50
50:1:1168:G:H22	50:1:1181:U:H3	1.58	0.50
50:1:1807:G:C2'	50:1:1808:A:H5'	2.36	0.50
50:1:2314:A:H2'	50:1:2315:G:H8	1.76	0.50
9:l:112:LEU:HD11	9:l:131:ALA:N	2.26	0.50
25:C:34:GLU:OE1	25:C:49:LYS:HG2	2.11	0.50
29:G:221:ARG:HH12	29:G:224:ARG:NH1	2.04	0.50
33:K:12:PRO:HG3	33:K:56:LYS:O	2.11	0.50
34:L:73:GLU:HA	34:L:140:VAL:HG21	1.94	0.50
41:S:29:ILE:HG13	41:S:30:ILE:CD1	2.34	0.50
49:3:35:G:H2'	49:3:36:C:C6	2.47	0.50
49:3:381:C:H2'	49:3:382:A:O4'	2.11	0.50
49:3:700:G:H4'	49:3:704:A:H1'	1.91	0.50
49:3:1141:C:C2'	49:3:1142:G:H5''	2.41	0.50
50:1:90:U:H3'	50:1:91:A:H2'	1.93	0.50
50:1:1453:A:H61	50:1:2703:C:H41	1.59	0.50
50:1:2567:G:H2'	50:1:2568:U:C6	2.45	0.50
1:b:66:PHE:HB3	1:b:150:GLY:O	2.11	0.50
5:f:169:ARG:NH2	28:F:31:PRO:HG2	2.27	0.50
10:m:71:LYS:HB3	10:m:93:VAL:O	2.12	0.50
11:n:35:LYS:NZ	11:n:100:CYS:SG	2.84	0.50
15:r:68:ARG:O	15:r:90:ARG:NH2	2.44	0.50
17:t:73:ARG:HD2	50:1:456:C:N3	2.26	0.50
30:H:45:GLU:C	30:H:46:LEU:HD12	2.36	0.50
36:N:129:ARG:HG3	52:5:33:U:C5	2.45	0.50
49:3:1059:C:H2'	49:3:1060:U:C6	2.46	0.50
50:1:704:G:H2'	50:1:726:G:N2	2.27	0.50
50:1:1149:G:H2'	50:1:1150:C:C6	2.47	0.50
50:1:1344:U:O5'	50:1:1344:U:H6	1.94	0.50
50:1:2743:U:H2'	50:1:2744:G:H5''	1.92	0.50
54:8:56:LEU:HD22	54:8:94:MET:HE1	1.93	0.50
1:b:43:ASN:HD21	1:b:45:ASN:HB2	1.75	0.50
3:d:188:MET:HG3	3:d:192:ALA:HB3	1.93	0.50
19:v:14:LYS:HB2	51:2:98:G:N1	2.25	0.50
31:I:181:PHE:CZ	31:I:185:PRO:HD3	2.45	0.50
38:P:123:PRO:O	48:Z:34:ARG:HB3	2.11	0.50
39:Q:79:ILE:HG22	39:Q:80:LEU:N	2.25	0.50
49:3:935:A:H2'	49:3:936:C:C6	2.47	0.50
50:1:1827:U:H2'	50:1:1828:G:H5'	1.92	0.50
50:1:1874:C:H2'	50:1:1875:G:O4'	2.11	0.50
1:b:163:ILE:HG12	1:b:173:LEU:CD2	2.41	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:k:47:ILE:HG13	8:k:48:PRO:HD2	1.92	0.50
9:l:33:ARG:NH2	9:l:39:LYS:O	2.44	0.50
11:n:101:GLY:HA2	24:B:41:HIS:CD2	2.43	0.50
29:G:3:VAL:HG23	29:G:7:ASP:OD1	2.11	0.50
49:3:230:G:O2'	49:3:231:U:H5'	2.11	0.50
49:3:403:C:H2'	49:3:404:G:C8	2.46	0.50
49:3:1354:U:H2'	49:3:1355:G:H8	1.75	0.50
50:1:703:U:H2'	50:1:704:G:O4'	2.12	0.50
50:1:708:G:H2'	50:1:709:U:C6	2.47	0.50
50:1:2329:U:H2'	50:1:2330:G:C8	2.45	0.50
54:8:39:LEU:HD22	54:8:41:PHE:CE1	2.46	0.50
54:8:84:ARG:O	54:8:88:LEU:HD23	2.12	0.50
3:d:195:GLN:O	3:d:198:GLU:HG2	2.12	0.50
14:q:80:ASN:HD21	14:q:84:LYS:HE3	1.76	0.50
49:3:204:G:H21	49:3:205:A:H62	1.56	0.50
49:3:298:A:H2'	49:3:299:G:O4'	2.11	0.50
50:1:1028:A:H2'	50:1:1029:A:C8	2.46	0.50
50:1:2366:A:H2'	50:1:2367:G:O4'	2.11	0.50
3:d:97:ASN:HB2	3:d:100:MET:HB2	1.94	0.50
4:e:31:GLU:HB2	4:e:156:THR:HG23	1.94	0.50
5:f:156:TYR:CZ	50:1:2531:A:H5''	2.46	0.50
6:g:121:VAL:HG23	6:g:123:ARG:HG3	1.92	0.50
9:l:55:MET:SD	9:l:59:ARG:HD3	2.51	0.50
22:y:6:LEU:HD23	22:y:6:LEU:O	2.10	0.50
28:F:3:VAL:HG22	28:F:36:ARG:HD3	1.94	0.50
31:I:44:LYS:HD2	31:I:47:LEU:HD12	1.93	0.50
37:O:36:VAL:HG22	37:O:37:ARG:N	2.27	0.50
42:T:44:GLU:O	42:T:45:HIS:HB2	2.12	0.50
46:X:45:GLY:H	46:X:61:VAL:HG13	1.76	0.50
50:1:247:G:H4'	50:1:386:G:C6	2.47	0.50
50:1:1686:C:H2'	50:1:1687:G:O4'	2.11	0.50
50:1:1704:C:H2'	50:1:1705:A:C8	2.46	0.50
50:1:2307:G:N2	50:1:2311:A:H2'	2.26	0.50
50:1:2839:G:H2'	50:1:2840:C:C6	2.46	0.50
2:c:62:LYS:HB2	2:c:63:PRO:HD3	1.93	0.50
12:o:37:ALA:HB3	12:o:78:VAL:HG11	1.94	0.50
16:s:29:VAL:HA	16:s:32:ALA:HB3	1.93	0.50
29:G:42:LEU:O	29:G:45:THR:HG22	2.11	0.50
30:H:201:ILE:HD12	30:H:201:ILE:N	2.26	0.50
40:R:102:LYS:HG3	49:3:1226:C:C4	2.47	0.50
49:3:159:G:H1'	49:3:162:A:N6	2.27	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:227:G:H2'	49:3:228:A:C8	2.47	0.50
49:3:995:C:H2'	49:3:996:A:H8	1.77	0.50
49:3:1512:U:H2'	49:3:1513:A:C8	2.46	0.50
50:1:89:A:O2'	50:1:90:U:H5'	2.11	0.50
50:1:593:U:H2'	50:1:594:U:C6	2.47	0.50
50:1:1440:U:H2'	50:1:1441:G:H8	1.76	0.50
50:1:2208:C:H2'	50:1:2209:G:H8	1.74	0.50
50:1:2533:U:H2'	50:1:2534:A:O4'	2.12	0.50
51:2:110:C:O2'	51:2:111:U:H5'	2.12	0.50
54:8:99:THR:O	54:8:100:THR:C	2.55	0.50
2:c:4:LEU:HD13	2:c:101:PHE:CE2	2.47	0.50
4:e:15:LEU:HA	4:e:18:GLU:HB3	1.94	0.50
9:l:100:ILE:HG13	9:l:101:ILE:HG23	1.93	0.50
18:u:47:PRO:O	18:u:49:PRO:HD3	2.11	0.50
33:K:38:ARG:HB2	33:K:63:ASN:HB3	1.94	0.50
37:O:38:GLY:HA3	49:3:1123:U:H4'	1.94	0.50
40:R:12:LYS:H	40:R:44:ILE:HG12	1.76	0.50
49:3:320:A:H2'	49:3:321:A:O4'	2.12	0.50
49:3:591:U:H2'	49:3:592:G:H8	1.77	0.50
49:3:1005:A:C2'	49:3:1006:G:H5'	2.41	0.50
50:1:28:A:H1'	50:1:513:A:C2	2.47	0.50
50:1:1167:C:H2'	50:1:1168:G:C8	2.47	0.50
50:1:1443:U:H2'	50:1:1444:G:H8	1.77	0.50
50:1:1550:C:H2'	50:1:1551:A:C8	2.46	0.50
50:1:2047:C:H2'	50:1:2048:G:C8	2.47	0.50
50:1:2072:C:H42	50:1:2437:G:H1	1.57	0.50
50:1:2084:C:H2'	50:1:2085:U:C6	2.47	0.50
54:8:19:ALA:HB1	54:8:36:ALA:HB1	1.94	0.50
4:e:14:LYS:O	4:e:18:GLU:HB2	2.11	0.49
25:C:5:ARG:HH12	50:1:2285:C:H3'	1.77	0.49
33:K:18:VAL:HG13	33:K:19:PRO:HD3	1.94	0.49
37:O:43:PRO:HD3	49:3:1150:A:H4'	1.94	0.49
38:P:85:VAL:HG13	38:P:111:ASP:OD1	2.12	0.49
49:3:79:G:N2	49:3:90:C:H41	2.10	0.49
49:3:1275:A:H3'	49:3:1276:G:H8	1.77	0.49
50:1:1265:A:H5'	50:1:1267:U:H1'	1.94	0.49
50:1:1464:G:H2'	50:1:1465:G:C8	2.47	0.49
50:1:2377:A:H2'	50:1:2378:A:H8	1.76	0.49
54:8:105:ARG:C	54:8:105:ARG:CD	2.85	0.49
1:b:242:HIS:O	1:b:244:VAL:HG13	2.12	0.49
6:g:4:ILE:HA	6:g:18:GLN:HA	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:j:43:GLU:N	7:j:43:GLU:OE1	2.45	0.49
10:m:41:LEU:C	10:m:93:VAL:HG23	2.37	0.49
11:n:72:ASP:O	11:n:76:VAL:HG23	2.12	0.49
11:n:79:LEU:CD2	11:n:83:LEU:HD12	2.41	0.49
25:C:5:ARG:HD2	50:1:2285:C:OP2	2.12	0.49
30:H:33:ASP:O	30:H:37:LYS:HG2	2.13	0.49
30:H:162:ALA:HB2	49:3:1056:U:H5'	1.94	0.49
31:I:53:GLN:HA	31:I:198:LEU:HD11	1.94	0.49
33:K:14:GLN:O	33:K:18:VAL:N	2.45	0.49
33:K:55:HIS:HB2	33:K:56:LYS:HD3	1.94	0.49
44:V:61:ARG:HB2	44:V:75:VAL:HG22	1.93	0.49
49:3:379:C:H2'	49:3:380:G:C8	2.47	0.49
49:3:532:A:C2	49:3:1206:G:N2	2.73	0.49
49:3:674:G:H2'	49:3:675:A:H8	1.77	0.49
50:1:856:G:H2'	50:1:857:G:C8	2.47	0.49
50:1:1664:A:H61	50:1:1996:C:H42	1.59	0.49
50:1:1718:G:H2'	50:1:1719:G:H8	1.77	0.49
51:2:5:U:H2'	51:2:6:G:C8	2.46	0.49
54:8:90:ARG:HH22	54:8:94:MET:HG3	1.76	0.49
6:g:110:VAL:HG12	6:g:111:ALA:O	2.12	0.49
19:v:78:GLN:HB3	19:v:87:GLN:HB2	1.94	0.49
33:K:93:LYS:O	33:K:94:HIS:HB2	2.12	0.49
35:M:6:ILE:HB	35:M:76:ARG:NH1	2.26	0.49
49:3:1148:U:H2'	49:3:1149:C:O4'	2.11	0.49
49:3:1170:A:H2'	49:3:1171:A:O4'	2.12	0.49
49:3:1444:U:H2'	49:3:1445:U:C5'	2.42	0.49
50:1:233:A:O2'	50:1:234:U:H5'	2.12	0.49
50:1:391:A:H3'	50:1:391:A:OP2	2.12	0.49
50:1:414:C:H2'	50:1:415:A:C8	2.47	0.49
50:1:554:U:H2'	50:1:555:G:O4'	2.12	0.49
50:1:2773:C:H2'	50:1:2774:C:C6	2.46	0.49
51:2:118:C:C2	51:2:119:A:N7	2.80	0.49
2:c:14:ILE:HG12	2:c:24:VAL:HG21	1.93	0.49
5:f:37:ASN:O	5:f:40:VAL:HG12	2.12	0.49
5:f:84:LYS:HD2	5:f:144:ALA:CB	2.43	0.49
16:s:17:VAL:O	16:s:20:VAL:HG12	2.12	0.49
32:J:55:VAL:HG23	32:J:56:PRO:CD	2.43	0.49
35:M:50:VAL:HG12	35:M:56:PRO:HB2	1.94	0.49
36:N:20:ILE:HD12	36:N:61:ASP:O	2.11	0.49
45:W:11:ARG:HE	45:W:47:ARG:NE	2.10	0.49
47:Y:67:HIS:CD2	49:3:262:A:H5'	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:Z:17:ARG:HG2	48:Z:20:ARG:HH21	1.76	0.49
49:3:45:G:H2'	49:3:46:G:H8	1.76	0.49
49:3:1383:C:C2'	49:3:1384:C:H5'	2.43	0.49
49:3:1435:G:H2'	49:3:1436:U:C6	2.47	0.49
50:1:107:G:H1'	50:1:294:A:H1'	1.94	0.49
50:1:270:A:C2	50:1:369:U:H4'	2.48	0.49
50:1:408:G:H1	50:1:419:U:H3	1.60	0.49
50:1:1498:C:H2'	50:1:1499:C:H6	1.77	0.49
50:1:2206:C:H2'	50:1:2207:C:H6	1.77	0.49
50:1:2282:G:H4'	50:1:2389:G:O2'	2.12	0.49
50:1:2302:U:H2'	50:1:2303:G:C8	2.48	0.49
51:2:63:C:H2'	51:2:64:G:C8	2.48	0.49
4:e:99:PHE:O	4:e:102:LEU:HB2	2.12	0.49
8:k:109:SER:O	8:k:111:LYS:N	2.42	0.49
9:l:80:SER:N	9:l:114:GLY:HA3	2.27	0.49
25:C:34:GLU:HB3	25:C:47:ILE:HD11	1.94	0.49
29:G:15:PHE:CG	29:G:16:GLY:N	2.81	0.49
34:L:75:LYS:CD	34:L:88:VAL:HG11	2.37	0.49
38:P:117:HIS:CG	49:3:675:A:H1'	2.47	0.49
40:R:113:LYS:CG	40:R:114:PRO:HD3	2.41	0.49
42:T:84:LEU:HB3	42:T:86:LEU:CD2	2.42	0.49
49:3:232:G:O2'	49:3:233:C:H5'	2.12	0.49
49:3:692:U:H1'	49:3:695:A:H62	1.77	0.49
49:3:932:C:H2'	49:3:933:G:H8	1.76	0.49
49:3:1472:U:H2'	49:3:1473:G:C8	2.47	0.49
50:1:1536:C:H5''	50:1:1537:G:H21	1.76	0.49
50:1:2327:A:H2'	50:1:2328:A:C8	2.48	0.49
6:g:80:ILE:HB	6:g:146:VAL:HG23	1.94	0.49
33:K:10:VAL:CG1	33:K:14:GLN:HG2	2.42	0.49
34:L:41:ILE:HG22	34:L:119:LEU:HD11	1.93	0.49
35:M:10:LEU:HD13	35:M:13:ILE:HD12	1.93	0.49
35:M:74:ILE:HD12	35:M:128:VAL:HA	1.94	0.49
43:U:12:LYS:C	43:U:14:ARG:H	2.20	0.49
46:X:2:ARG:HG2	49:3:1312:G:C8	2.46	0.49
49:3:629:A:H2'	49:3:630:A:O4'	2.12	0.49
50:1:170:U:H2'	50:1:171:U:C6	2.47	0.49
50:1:844:A:H61	50:1:934:U:H3	1.60	0.49
50:1:1464:G:H2'	50:1:1465:G:H8	1.76	0.49
50:1:2156:G:H2'	50:1:2157:G:H5'	1.95	0.49
54:8:43:ILE:CD1	54:8:46:SER:HB3	2.42	0.49
1:b:5:CYS:SG	1:b:12:ARG:HG2	2.53	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:209:ALA:HA	1:b:212:TRP:NE1	2.27	0.49
2:c:142:VAL:CG2	2:c:143:PRO:HD2	2.42	0.49
5:f:9:VAL:HG13	5:f:9:VAL:O	2.13	0.49
33:K:47:LEU:H	33:K:55:HIS:HB3	1.77	0.49
34:L:49:LEU:HD22	34:L:123:LEU:CD1	2.41	0.49
43:U:16:PHE:CZ	49:3:625:U:H4'	2.46	0.49
49:3:67:C:H2'	49:3:68:G:H8	1.74	0.49
49:3:376:G:O2'	49:3:377:G:H5'	2.13	0.49
49:3:407:U:H3	49:3:435:A:H2	1.54	0.49
49:3:856:C:H2'	49:3:857:C:C6	2.48	0.49
49:3:962:C:H2'	49:3:963:G:H8	1.78	0.49
49:3:1009:U:O2'	49:3:1010:U:H5'	2.13	0.49
50:1:349:U:H2'	50:1:350:G:C8	2.48	0.49
50:1:655:A:H4'	50:1:656:G:C5'	2.35	0.49
50:1:1131:G:N7	50:1:2025:C:H4'	2.27	0.49
50:1:2471:A:H3'	50:1:2472:G:C8	2.47	0.49
50:1:2472:G:H2'	50:1:2475:C:H41	1.77	0.49
50:1:2659:G:N2	50:1:2661:G:H3'	2.28	0.49
52:5:23:C:H2'	52:5:24:U:C6	2.47	0.49
2:c:148:GLN:HE22	2:c:156:PHE:HE2	1.61	0.49
5:f:10:VAL:CG1	5:f:48:THR:HA	2.43	0.49
7:j:111:LYS:HD2	7:j:111:LYS:N	2.28	0.49
14:q:44:TYR:HD1	14:q:47:ARG:HH11	1.60	0.49
31:I:39:GLN:HE22	49:3:540:G:H21	1.60	0.49
32:J:125:LYS:HG3	49:3:9:G:OP2	2.12	0.49
36:N:11:ARG:HD2	36:N:76:GLY:C	2.37	0.49
49:3:514:C:H2'	49:3:515:G:C8	2.48	0.49
49:3:1008:U:H2'	49:3:1009:U:C6	2.47	0.49
50:1:413:C:H2'	50:1:414:C:C6	2.47	0.49
50:1:1475:G:H1'	50:1:1732:C:H5	1.75	0.49
50:1:2105:U:C2'	50:1:2106:U:H5'	2.43	0.49
50:1:2185:U:H2'	50:1:2186:G:C8	2.48	0.49
54:8:43:ILE:HD12	54:8:46:SER:HB3	1.94	0.49
54:8:128:VAL:C	54:8:130:ALA:H	2.20	0.49
6:g:62:LEU:O	6:g:65:ALA:HB3	2.12	0.49
6:g:85:GLY:HA3	6:g:89:LYS:HG3	1.94	0.49
12:o:38:GLN:HG3	12:o:40:ILE:HD11	1.95	0.49
32:J:24:VAL:HG22	32:J:25:LYS:N	2.28	0.49
32:J:74:ALA:O	32:J:146:MET:HE1	2.12	0.49
34:L:118:ARG:HA	34:L:121:ASN:HD22	1.78	0.49
37:O:47:GLU:N	37:O:66:GLU:OE2	2.44	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:R:91:ARG:HH11	50:1:888:C:N4	2.11	0.49
48:Z:16:ARG:H	48:Z:20:ARG:HH22	1.60	0.49
49:3:211:G:H3'	49:3:212:G:O4'	2.13	0.49
49:3:497:G:H2'	49:3:498:A:C8	2.48	0.49
49:3:1096:C:H2'	49:3:1097:C:C6	2.48	0.49
49:3:1113:C:H2'	49:3:1114:C:C6	2.47	0.49
49:3:1121:U:H2'	49:3:1122:U:C6	2.48	0.49
50:1:20:C:H2'	50:1:21:A:C8	2.47	0.49
50:1:431:U:O2'	50:1:432:A:H5'	2.13	0.49
50:1:1363:C:H2'	50:1:1364:G:H8	1.78	0.49
50:1:2080:A:H2'	50:1:2081:U:C6	2.47	0.49
50:1:2591:C:H2'	50:1:2592:G:H8	1.77	0.49
2:c:129:THR:OG1	2:c:130:GLN:N	2.44	0.49
4:e:25:MET:HE1	51:2:54:G:H21	1.78	0.49
5:f:148:ARG:HD2	5:f:148:ARG:C	2.38	0.49
9:l:48:ARG:NH1	27:E:4:LYS:O	2.46	0.49
9:l:95:LEU:HD22	9:l:100:ILE:CD1	2.43	0.49
16:s:36:LEU:HD13	16:s:47:VAL:HG13	1.94	0.49
16:s:39:THR:HG23	16:s:44:ALA:HB2	1.94	0.49
19:v:9:ARG:HG2	19:v:41:GLU:HB2	1.93	0.49
38:P:126:ARG:HB3	48:Z:33:ARG:HH12	1.77	0.49
40:R:78:ARG:NH1	46:X:64:GLU:HB2	2.28	0.49
49:3:695:A:H2'	49:3:696:A:C8	2.48	0.49
50:1:938:G:H2'	50:1:939:G:H8	1.78	0.49
50:1:1041:G:H2'	50:1:1042:G:C8	2.48	0.49
50:1:1866:A:H3'	50:1:1867:G:H8	1.78	0.49
50:1:2086:U:H2'	50:1:2087:G:C8	2.48	0.49
50:1:2654:A:O3'	50:1:2655:G:H4'	2.12	0.49
1:b:75:ALA:HB1	1:b:93:VAL:HG22	1.94	0.48
5:f:27:GLY:HA3	5:f:78:VAL:HB	1.94	0.48
10:m:66:ARG:HD2	10:m:104:GLU:OE2	2.13	0.48
16:s:42:LYS:HB2	50:1:2010:G:H5''	1.93	0.48
16:s:44:ALA:HA	16:s:47:VAL:HG12	1.94	0.48
29:G:116:LEU:CD2	29:G:139:GLU:HG3	2.42	0.48
29:G:202:ASN:ND2	29:G:203:ASP:H	2.11	0.48
30:H:175:HIS:ND1	49:3:1108:G:H5'	2.27	0.48
32:J:22:LYS:HB3	32:J:29:ILE:HG22	1.94	0.48
36:N:112:ARG:NH1	36:N:114:LYS:HG2	2.28	0.48
49:3:184:G:H2'	49:3:185:U:C6	2.48	0.48
49:3:983:A:H3'	49:3:983:A:N3	2.28	0.48
50:1:273:G:H2'	50:1:274:C:C6	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:906:U:H2'	50:1:907:G:O4'	2.13	0.48
50:1:1458:U:H4'	50:1:1459:G:O4'	2.13	0.48
50:1:2860:A:H2'	50:1:2861:U:H5'	1.95	0.48
52:5:21:A:H2'	52:5:22:G:C8	2.48	0.48
54:8:14:GLU:O	54:8:43:ILE:HD13	2.13	0.48
1:b:256:THR:OG1	50:1:1798:U:H5'	2.13	0.48
2:c:13:ARG:NH1	50:1:2683:C:H5'	2.26	0.48
3:d:47:LYS:O	3:d:83:VAL:HG23	2.13	0.48
4:e:131:VAL:HG11	4:e:136:ILE:HD13	1.95	0.48
5:f:136:ASP:HB3	5:f:139:VAL:CG1	2.43	0.48
11:n:4:ARG:HA	50:1:2820:A:OP1	2.12	0.48
11:n:35:LYS:HG2	11:n:110:MET:HE3	1.95	0.48
13:p:26:GLU:HG3	13:p:43:GLU:HG2	1.94	0.48
18:u:5:ARG:HG2	18:u:93:ARG:NH2	2.28	0.48
36:N:82:ILE:O	36:N:86:LEU:HG	2.13	0.48
42:T:56:LEU:HA	42:T:59:VAL:HG12	1.94	0.48
43:U:68:SER:HB3	43:U:71:VAL:HG23	1.96	0.48
49:3:16:A:O2'	49:3:17:U:H5'	2.12	0.48
49:3:543:U:H2'	49:3:544:G:C8	2.48	0.48
49:3:1097:C:H2'	49:3:1098:C:C6	2.47	0.48
49:3:1527:U:O2'	49:3:1528:U:H5'	2.13	0.48
50:1:121:G:H2'	50:1:122:G:H8	1.77	0.48
50:1:672:C:O2'	50:1:673:C:H5'	2.13	0.48
50:1:1423:G:H2'	50:1:1424:G:H8	1.78	0.48
50:1:1604:C:O2'	50:1:1605:C:H5'	2.13	0.48
50:1:1609:A:H1'	50:1:1616:A:O4'	2.13	0.48
50:1:1765:U:H2'	50:1:1766:G:C8	2.48	0.48
50:1:2062:A:H4'	50:1:2442:C:OP2	2.14	0.48
50:1:2693:G:H2'	50:1:2694:G:H8	1.77	0.48
51:2:104:A:H2'	51:2:105:G:O4'	2.13	0.48
54:8:93:ALA:O	54:8:97:GLU:HG2	2.13	0.48
3:d:14:VAL:HG13	3:d:197:GLU:OE1	2.12	0.48
4:e:68:LYS:HD2	4:e:81:GLY:O	2.14	0.48
7:j:7:LYS:NZ	50:1:538:A:H5''	2.28	0.48
29:G:68:PHE:O	29:G:91:VAL:HG12	2.13	0.48
31:I:27:ILE:HG13	31:I:28:ASP:H	1.77	0.48
32:J:141:ASP:OD2	32:J:142:GLY:N	2.47	0.48
33:K:43:GLY:HA2	33:K:58:HIS:CE1	2.48	0.48
33:K:54:LEU:HG	33:K:55:HIS:H	1.77	0.48
34:L:132:THR:HG23	34:L:135:LYS:HE3	1.95	0.48
37:O:12:ALA:HB2	37:O:96:VAL:HG22	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:U:18:GLN:HG2	43:U:38:PHE:HB3	1.95	0.48
44:V:64:ARG:HB3	49:3:130:A:C8	2.48	0.48
49:3:27:G:H2'	49:3:28:A:C8	2.48	0.48
49:3:235:C:H2'	49:3:236:A:H8	1.79	0.48
49:3:393:A:H2'	49:3:394:G:C8	2.49	0.48
49:3:754:C:H3'	49:3:754:C:O2	2.14	0.48
49:3:1450:U:H4'	49:3:1451:U:C5	2.49	0.48
50:1:613:A:H5'	50:1:614:A:C8	2.47	0.48
50:1:875:G:H2'	50:1:876:C:O4'	2.12	0.48
50:1:1268:A:H2'	50:1:1269:A:O4'	2.13	0.48
50:1:1822:C:H2'	50:1:1823:G:H8	1.77	0.48
50:1:2383:G:O2'	50:1:2384:U:H5'	2.13	0.48
50:1:2834:G:O6	50:1:2879:A:H2'	2.13	0.48
50:1:2881:U:H2'	50:1:2882:A:C8	2.48	0.48
6:g:84:ALA:HA	6:g:91:PHE:HB2	1.95	0.48
7:j:21:THR:HG22	7:j:61:LYS:HE2	1.95	0.48
13:p:29:VAL:HB	13:p:79:VAL:HG22	1.95	0.48
16:s:60:HIS:CD2	50:1:486:C:H4'	2.48	0.48
17:t:15:HIS:HE1	17:t:17:SER:HB3	1.79	0.48
19:v:76:ASP:HB3	19:v:90:ASP:OD2	2.13	0.48
25:C:10:LEU:HD23	25:C:50:GLU:HG2	1.95	0.48
31:I:187:ARG:HA	31:I:190:LEU:HD12	1.95	0.48
36:N:114:LYS:NZ	36:N:120:ALA:O	2.46	0.48
38:P:37:GLN:CD	38:P:37:GLN:H	2.22	0.48
42:T:7:THR:O	42:T:11:VAL:HG23	2.13	0.48
50:1:1429:G:H2'	50:1:1430:G:H8	1.78	0.48
50:1:1833:C:H2'	50:1:1834:U:O4'	2.12	0.48
6:g:46:PHE:O	6:g:51:ARG:HG3	2.13	0.48
16:s:15:GLN:O	16:s:18:ARG:HG2	2.13	0.48
31:I:30:LYS:HE3	49:3:412:A:H5'	1.96	0.48
31:I:90:LEU:O	31:I:94:GLU:HG2	2.13	0.48
37:O:44:THR:HG22	37:O:70:HIS:HA	1.95	0.48
41:S:60:ARG:NE	49:3:981:U:O2'	2.47	0.48
44:V:37:ILE:HG22	44:V:38:LYS:N	2.29	0.48
49:3:187:G:N2	49:3:189:A:H3'	2.28	0.48
49:3:291:U:O2'	49:3:292:G:H5'	2.13	0.48
49:3:450:G:H2'	49:3:481:G:H22	1.77	0.48
49:3:635:A:H2'	49:3:636:U:C6	2.48	0.48
49:3:1494:G:H5''	50:1:1913:A:H8	1.79	0.48
50:1:137:U:H3	50:1:142:A:H61	1.59	0.48
50:1:168:G:O2'	50:1:169:G:H5'	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:545:U:H3'	50:1:546:U:H5''	1.95	0.48
50:1:1914:C:H42	54:8:101:GLU:CB	2.19	0.48
52:5:8:U:H2'	52:5:13:C:N4	2.29	0.48
54:8:63:LEU:O	54:8:70:ILE:HA	2.13	0.48
16:s:4:ILE:HG13	16:s:5:ALA:N	2.29	0.48
18:u:6:ARG:N	50:1:85:G:OP1	2.39	0.48
18:u:40:LEU:HD23	18:u:40:LEU:H	1.78	0.48
19:v:76:ASP:H	19:v:90:ASP:HB2	1.78	0.48
22:y:22:LEU:HG	22:y:23:ARG:HD2	1.95	0.48
29:G:60:ALA:HB1	29:G:223:GLY:HA3	1.95	0.48
30:H:140:ALA:HB3	30:H:148:ILE:HD11	1.95	0.48
32:J:24:VAL:HG22	32:J:25:LYS:H	1.78	0.48
34:L:16:LYS:HB3	34:L:17:PHE:CD1	2.49	0.48
37:O:50:THR:HG23	37:O:50:THR:O	2.14	0.48
47:Y:34:VAL:HG21	47:Y:78:LEU:HD13	1.96	0.48
49:3:80:A:H1'	49:3:90:C:H42	1.78	0.48
49:3:843:U:O5'	49:3:844:G:H5''	2.14	0.48
50:1:966:G:H1'	50:1:2267:A:N7	2.28	0.48
50:1:1161:C:H2'	50:1:1162:G:C8	2.48	0.48
50:1:1435:G:H2'	50:1:1436:G:H8	1.78	0.48
50:1:2041:U:H2'	50:1:2042:A:C8	2.49	0.48
50:1:2412:A:H2'	50:1:2413:G:O4'	2.14	0.48
50:1:2751:G:H21	50:1:2751:G:P	2.36	0.48
52:5:47:U:H3'	52:5:48:C:H5''	1.95	0.48
54:8:69:VAL:O	54:8:70:ILE:C	2.57	0.48
2:c:2:ILE:HG21	2:c:90:PHE:HE2	1.78	0.48
5:f:176:LYS:HE2	50:1:2660:A:H62	1.77	0.48
7:j:15:TRP:CD2	7:j:135:GLN:HG3	2.49	0.48
20:w:36:GLN:HE22	20:w:41:PHE:H	1.61	0.48
29:G:63:LYS:HZ3	29:G:224:ARG:HA	1.79	0.48
31:I:103:ARG:HG3	31:I:167:PRO:HG2	1.96	0.48
32:J:92:ARG:O	32:J:93:VAL:C	2.57	0.48
34:L:91:ARG:O	34:L:95:ARG:N	2.42	0.48
35:M:78:SER:HB3	35:M:123:GLU:OE2	2.14	0.48
36:N:50:PRO:HB3	36:N:102:PHE:CE2	2.48	0.48
49:3:2:A:O4'	49:3:613:C:H4'	2.14	0.48
49:3:358:U:H2'	49:3:359:G:C8	2.49	0.48
49:3:410:G:H2'	49:3:429:U:C5	2.49	0.48
49:3:678:U:H2'	49:3:679:C:H6	1.77	0.48
49:3:955:U:H3	49:3:1225:A:N6	2.05	0.48
50:1:706:A:C2'	50:1:707:G:H5'	2.44	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:1386:C:H2'	50:1:1387:A:H8	1.77	0.48
50:1:1856:U:H2'	50:1:1857:G:O4'	2.13	0.48
50:1:1924:C:H2'	50:1:1925:C:C6	2.49	0.48
50:1:2213:U:H5''	50:1:2214:C:OP2	2.14	0.48
1:b:99:GLU:OE2	50:1:1491:G:H4'	2.14	0.48
1:b:152:GLN:HB3	50:1:1818:U:C4	2.48	0.48
2:c:101:PHE:HA	2:c:104:VAL:HG22	1.95	0.48
2:c:145:SER:OG	50:1:2578:G:N7	2.46	0.48
2:c:201:LEU:C	2:c:202:ILE:HD12	2.39	0.48
3:d:163:ASN:ND2	50:1:320:A:N3	2.62	0.48
3:d:187:VAL:HG23	3:d:187:VAL:O	2.14	0.48
9:l:30:THR:HG23	50:1:810:U:N3	2.28	0.48
10:m:34:LYS:HA	10:m:101:VAL:HA	1.94	0.48
12:o:40:ILE:N	12:o:40:ILE:HD12	2.28	0.48
23:z:6:ILE:HD12	23:z:6:ILE:N	2.29	0.48
38:P:37:GLN:HE21	38:P:39:ASN:N	2.11	0.48
39:Q:30:ARG:HH21	39:Q:57:THR:HG21	1.78	0.48
39:Q:81:ILE:HG23	39:Q:94:TYR:HB3	1.96	0.48
41:S:63:CYS:SG	41:S:66:THR:HG22	2.54	0.48
45:W:11:ARG:HB3	45:W:14:ALA:HB3	1.95	0.48
49:3:1054:C:H5'	49:3:1196:A:H2'	1.95	0.48
49:3:1490:C:H2'	49:3:1491:G:H8	1.78	0.48
50:1:481:G:H1'	50:1:506:G:H21	1.79	0.48
50:1:721:A:H2'	50:1:722:A:H8	1.79	0.48
50:1:741:U:H2'	50:1:742:A:C8	2.49	0.48
50:1:1048:A:H2'	50:1:1049:C:O4'	2.14	0.48
50:1:2741:A:C2'	50:1:2742:G:H5'	2.44	0.48
50:1:2761:A:H2'	50:1:2762:C:C4'	2.43	0.48
10:m:31:PHE:HB3	10:m:130:PHE:HE1	1.79	0.48
12:o:53:THR:HG22	12:o:74:VAL:HG11	1.94	0.48
16:s:30:SER:O	16:s:33:LEU:HG	2.14	0.48
17:t:74:ILE:HD12	17:t:74:ILE:N	2.29	0.48
23:z:16:LEU:HD21	50:1:968:C:H4'	1.96	0.48
31:I:124:VAL:CG2	31:I:142:VAL:HG22	2.41	0.48
32:J:149:PRO:HA	32:J:152:VAL:HG22	1.95	0.48
33:K:53:LYS:HD2	33:K:54:LEU:O	2.12	0.48
36:N:34:LEU:HG	36:N:35:GLU:N	2.28	0.48
47:Y:78:LEU:HD23	47:Y:81:GLN:HG3	1.95	0.48
49:3:999:C:H2'	49:3:1000:A:H8	1.78	0.48
49:3:1206:G:H2'	49:3:1207:G:O4'	2.14	0.48
49:3:1305:G:H2'	49:3:1331:G:N2	2.28	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:1506:U:O2'	49:3:1507:A:H5'	2.13	0.48
50:1:521:U:H2'	50:1:522:A:H8	1.79	0.48
50:1:720:U:H2'	50:1:721:A:C8	2.49	0.48
50:1:1113:U:H2'	50:1:1114:C:C6	2.48	0.48
50:1:1376:C:H2'	50:1:1377:G:O4'	2.14	0.48
50:1:2105:U:H2'	50:1:2106:U:O4'	2.13	0.48
51:2:3:C:H3'	51:2:4:C:C5'	2.44	0.48
51:2:85:G:H2'	51:2:86:G:C8	2.48	0.48
3:d:43:THR:O	50:1:38:A:H1'	2.14	0.48
3:d:193:VAL:HA	3:d:196:VAL:HG22	1.95	0.48
8:k:65:THR:HA	8:k:82:ASN:ND2	2.29	0.48
12:o:7:ARG:HD2	12:o:97:PHE:CZ	2.49	0.48
21:x:36:ARG:HA	21:x:47:THR:HA	1.94	0.48
26:D:31:LEU:CD1	26:D:42:LEU:HD21	2.43	0.48
29:G:209:VAL:O	29:G:213:LEU:HG	2.13	0.48
31:I:165:GLU:OE1	31:I:165:GLU:N	2.47	0.48
39:Q:116:TYR:HB2	39:Q:118:VAL:HG23	1.96	0.48
40:R:75:SER:O	40:R:79:LEU:HG	2.14	0.48
44:V:5:ARG:NH2	49:3:636:U:H4'	2.29	0.48
49:3:4:U:H6	49:3:4:U:O5'	1.96	0.48
50:1:6:A:H2'	50:1:7:G:C8	2.49	0.48
50:1:1391:U:N3	50:1:1394:U:H5	2.12	0.48
50:1:1458:U:H1'	50:1:1459:G:C6	2.48	0.48
50:1:1837:C:H2'	50:1:1899:A:H61	1.79	0.48
50:1:2150:C:H2'	50:1:2151:U:C5'	2.42	0.48
50:1:2270:A:H2'	50:1:2271:G:O4'	2.14	0.48
50:1:2724:U:H2'	50:1:2725:A:C8	2.49	0.48
4:e:134:GLN:CD	4:e:149:ARG:HB2	2.39	0.47
17:t:29:THR:HG22	17:t:86:THR:HG22	1.96	0.47
23:z:4:ILE:HG13	23:z:37:ARG:HB2	1.96	0.47
29:G:66:ILE:HG13	29:G:67:LEU:N	2.29	0.47
49:3:805:C:O2'	49:3:806:C:H5'	2.13	0.47
49:3:1230:C:O2'	49:3:1231:G:H5'	2.13	0.47
50:1:753:A:H2'	50:1:754:U:C6	2.49	0.47
50:1:1170:C:H2'	50:1:1171:G:C8	2.49	0.47
50:1:1395:A:H2'	50:1:1397:U:OP2	2.14	0.47
50:1:1412:U:H2'	50:1:1413:A:H8	1.79	0.47
50:1:2818:U:H2'	50:1:2819:G:H8	1.78	0.47
51:2:106:G:N2	51:2:107:G:H1'	2.29	0.47
8:k:5:GLN:NE2	8:k:20:MET:SD	2.87	0.47
19:v:63:ILE:HG12	19:v:72:VAL:HG21	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:H:19:SER:O	41:S:93:PRO:HG3	2.14	0.47
30:H:179:ALA:HB1	30:H:202:PHE:HE1	1.79	0.47
31:I:50:TYR:OH	49:3:509:A:H2	1.97	0.47
31:I:124:VAL:HA	31:I:142:VAL:HA	1.96	0.47
41:S:23:ARG:NE	41:S:23:ARG:HA	2.30	0.47
47:Y:54:GLN:HE22	49:3:193:C:H1'	1.79	0.47
49:3:832:G:H2'	49:3:833:G:C8	2.49	0.47
49:3:1123:U:H2'	49:3:1124:G:C8	2.49	0.47
50:1:1717:A:H2'	50:1:1718:G:O4'	2.14	0.47
50:1:2162:G:H1'	50:1:2173:A:N1	2.30	0.47
51:2:1:U:H2'	51:2:2:G:C8	2.49	0.47
52:5:22:G:H2'	52:5:23:C:C6	2.49	0.47
1:b:30:ALA:HB3	1:b:31:PRO:HD3	1.96	0.47
3:d:2:GLU:HB2	3:d:11:ALA:HB1	1.97	0.47
3:d:25:GLU:O	3:d:28:VAL:HG12	2.14	0.47
3:d:105:LEU:HD21	3:d:177:PRO:HG3	1.96	0.47
4:e:163:GLU:HA	4:e:166:ARG:HH11	1.79	0.47
16:s:74:ILE:HG23	16:s:74:ILE:O	2.14	0.47
17:t:50:LEU:HD13	22:y:26:PHE:CE1	2.49	0.47
19:v:73:LYS:HB3	19:v:92:VAL:HG23	1.96	0.47
19:v:85:LYS:NZ	50:1:1118:C:H4'	2.29	0.47
21:x:63:ILE:O	21:x:67:LEU:HD13	2.14	0.47
31:I:54:LEU:C	31:I:54:LEU:HD23	2.39	0.47
31:I:68:GLU:HB2	49:3:546:A:OP2	2.14	0.47
31:I:199:ILE:HD12	31:I:199:ILE:N	2.23	0.47
33:K:18:VAL:HG12	33:K:19:PRO:HD3	1.96	0.47
41:S:15:LEU:O	41:S:15:LEU:HD23	2.14	0.47
42:T:88:ARG:HD3	42:T:88:ARG:N	2.29	0.47
45:W:44:THR:OG1	45:W:46:THR:HG23	2.14	0.47
49:3:21:G:H21	49:3:914:A:H62	1.61	0.47
49:3:1390:U:H2'	49:3:1391:U:C6	2.49	0.47
49:3:1513:A:H2'	49:3:1514:G:H8	1.79	0.47
50:1:78:U:H2'	50:1:79:C:C6	2.49	0.47
50:1:184:C:H2'	50:1:185:G:H8	1.77	0.47
50:1:366:C:C2'	50:1:367:G:H5''	2.43	0.47
50:1:1585:C:H2'	50:1:1586:A:O4'	2.14	0.47
50:1:2328:A:H2'	50:1:2329:U:C6	2.49	0.47
52:5:25:C:H42	52:5:45:G:N2	2.08	0.47
2:c:22:ILE:N	2:c:22:ILE:HD12	2.29	0.47
7:j:93:ILE:O	7:j:97:PRO:HG3	2.14	0.47
9:l:48:ARG:HH22	27:E:3:ILE:HG23	1.78	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:l:78:ARG:NH2	50:1:626:A:N3	2.60	0.47
11:n:3:HIS:CG	50:1:2820:A:H4'	2.49	0.47
11:n:53:THR:O	11:n:56:LYS:HG2	2.14	0.47
21:x:50:VAL:CG2	21:x:51:SER:N	2.77	0.47
21:x:68:ALA:HA	21:x:71:ARG:HH12	1.79	0.47
33:K:37:HIS:NE2	33:K:65:GLU:OE2	2.47	0.47
33:K:40:GLU:O	33:K:42:TRP:N	2.47	0.47
33:K:94:HIS:O	33:K:95:ALA:HB2	2.15	0.47
34:L:34:LYS:NZ	49:3:1289:A:H2'	2.28	0.47
36:N:64:ILE:HD12	36:N:78:ILE:HD12	1.96	0.47
39:Q:98:ARG:HB3	39:Q:105:GLY:HA2	1.97	0.47
41:S:47:LEU:HD23	41:S:47:LEU:O	2.15	0.47
49:3:150:U:H2'	49:3:151:A:C8	2.49	0.47
49:3:175:C:O2'	49:3:176:C:H5'	2.15	0.47
49:3:674:G:H2'	49:3:675:A:C8	2.49	0.47
50:1:1418:G:O6	50:1:1578:U:H5''	2.13	0.47
50:1:2743:U:H2'	50:1:2744:G:C4'	2.44	0.47
50:1:2748:A:H5'	50:1:2752:C:OP2	2.14	0.47
51:2:113:C:H2'	51:2:114:C:C6	2.50	0.47
1:b:210:ALA:O	1:b:215:VAL:HG22	2.15	0.47
4:e:34:THR:HG21	4:e:87:LYS:NZ	2.30	0.47
10:m:63:ILE:HG12	10:m:105:MET:SD	2.55	0.47
14:q:51:GLN:OE1	14:q:54:ARG:HD2	2.13	0.47
16:s:5:ALA:HB3	16:s:54:ALA:HB2	1.96	0.47
19:v:45:ASP:HA	19:v:48:MET:SD	2.54	0.47
19:v:50:MET:HA	19:v:53:LYS:NZ	2.28	0.47
20:w:12:SER:HB3	50:1:2262:U:H5	1.79	0.47
26:D:8:SER:OG	26:D:11:LYS:HB2	2.14	0.47
29:G:60:ALA:CB	29:G:223:GLY:HA3	2.44	0.47
29:G:72:LYS:C	29:G:74:ALA:H	2.21	0.47
30:H:105:VAL:HG22	30:H:107:LYS:N	2.29	0.47
33:K:42:TRP:HB2	33:K:61:LEU:HD23	1.96	0.47
36:N:123:ARG:NH2	49:3:1344:C:OP1	2.47	0.47
49:3:128:G:H2'	49:3:129:A:C8	2.48	0.47
49:3:233:C:H2'	49:3:234:C:H6	1.79	0.47
49:3:282:A:H3'	49:3:283:U:H6	1.78	0.47
49:3:335:C:H2'	49:3:336:A:C8	2.49	0.47
49:3:407:U:N3	49:3:435:A:C2	2.72	0.47
49:3:722:G:H1	49:3:733:G:H1	1.62	0.47
50:1:412:A:N7	50:1:2411:A:H2	2.12	0.47
50:1:1858:A:N6	50:1:1884:G:O2'	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:e:166:ARG:O	4:e:169:LEU:HG	2.15	0.47
15:r:79:ARG:NH2	50:1:572:A:H5'	2.30	0.47
29:G:32:GLY:HA3	29:G:38:HIS:HA	1.96	0.47
36:N:20:ILE:HD13	36:N:62:LEU:HD23	1.96	0.47
37:O:17:LEU:O	37:O:20:GLN:NE2	2.45	0.47
41:S:3:GLN:HE21	49:3:1047:G:H4'	1.78	0.47
49:3:102:G:H2'	49:3:103:U:H6	1.79	0.47
49:3:762:U:H2'	49:3:763:G:H8	1.78	0.47
49:3:1265:C:H2'	49:3:1266:G:C8	2.50	0.47
50:1:1050:A:H2'	50:1:1051:G:O4'	2.14	0.47
50:1:1355:G:O2'	50:1:1356:G:H5'	2.14	0.47
50:1:2109:U:H1'	50:1:2180:U:O2	2.15	0.47
50:1:2297:A:N1	50:1:2321:U:H5	2.12	0.47
50:1:2372:U:H2'	50:1:2373:G:C8	2.48	0.47
50:1:2692:G:H1'	50:1:2847:U:H1'	1.96	0.47
50:1:2794:C:H2'	50:1:2795:C:C6	2.49	0.47
50:1:2881:U:H2'	50:1:2882:A:H8	1.80	0.47
1:b:158:GLY:HA2	1:b:194:VAL:O	2.13	0.47
2:c:51:THR:HB	2:c:79:LEU:HD23	1.97	0.47
3:d:147:LEU:O	3:d:149:ILE:HD12	2.15	0.47
4:e:91:ARG:NH2	51:2:43:C:O2	2.48	0.47
5:f:37:ASN:HB3	5:f:40:VAL:HG12	1.96	0.47
7:j:132:HIS:HB3	7:j:135:GLN:NE2	2.30	0.47
11:n:86:ARG:HH21	11:n:117:ASP:HB2	1.80	0.47
13:p:61:ARG:HH21	13:p:70:GLU:CD	2.21	0.47
20:w:37:ARG:NH1	50:1:2387:U:H4'	2.30	0.47
22:y:58:ASN:ND2	50:1:111:A:O2'	2.48	0.47
23:z:5:LYS:N	23:z:57:GLU:O	2.46	0.47
24:B:4:GLN:O	50:1:2017:U:H4'	2.15	0.47
26:D:44:VAL:HG13	26:D:44:VAL:O	2.15	0.47
34:L:5:VAL:O	34:L:5:VAL:HG13	2.15	0.47
34:L:93:VAL:HG13	34:L:94:ARG:HG2	1.97	0.47
35:M:102:VAL:HG23	35:M:125:ILE:HB	1.96	0.47
37:O:40:ILE:N	37:O:73:LEU:O	2.48	0.47
41:S:25:GLU:HA	41:S:28:ALA:HB3	1.95	0.47
41:S:27:LYS:HE2	49:3:1317:C:OP2	2.15	0.47
43:U:54:LEU:HA	43:U:57:ILE:HD12	1.96	0.47
45:W:48:ALA:O	45:W:51:GLN:HB3	2.15	0.47
45:W:61:ALA:HB1	45:W:66:LEU:HB2	1.97	0.47
47:Y:54:GLN:O	47:Y:57:VAL:HG12	2.15	0.47
48:Z:14:ALA:O	48:Z:16:ARG:HG3	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:408:A:H2'	49:3:409:U:C6	2.49	0.47
49:3:746:A:H2'	49:3:747:A:C8	2.49	0.47
49:3:762:U:H2'	49:3:763:G:C8	2.49	0.47
49:3:932:C:H2'	49:3:933:G:C8	2.50	0.47
49:3:1236:A:H2'	49:3:1237:C:C6	2.50	0.47
49:3:1346:A:H1'	49:3:1348:U:N1	2.30	0.47
49:3:1502:A:C8	49:3:1505:G:N2	2.81	0.47
50:1:325:G:H2'	50:1:326:G:C8	2.50	0.47
50:1:371:A:N1	50:1:401:A:H5''	2.29	0.47
50:1:377:G:H1	50:1:397:U:H3	1.63	0.47
50:1:528:A:H2	50:1:2043:C:H5'	1.79	0.47
50:1:729:G:H4'	50:1:763:G:H5'	1.97	0.47
50:1:777:G:N7	50:1:793:A:H2	2.12	0.47
50:1:881:G:H22	50:1:895:U:H1'	1.79	0.47
50:1:927:A:H2'	50:1:928:A:C8	2.50	0.47
50:1:1104:C:H2'	50:1:1105:U:C6	2.49	0.47
50:1:1521:G:H3'	50:1:1522:A:C8	2.48	0.47
50:1:2055:C:H5'	50:1:2056:G:O5'	2.15	0.47
50:1:2193:G:H2'	50:1:2194:U:C6	2.49	0.47
50:1:2394:C:H2'	50:1:2395:C:H6	1.80	0.47
50:1:2675:A:H61	50:1:2732:G:H1	1.63	0.47
51:2:61:G:H2'	51:2:62:C:C6	2.50	0.47
51:2:70:C:H2'	51:2:71:C:C6	2.49	0.47
53:4:18:G:H3'	53:4:19:A:H5'	1.97	0.47
54:8:48:LEU:N	54:8:49:PRO:CD	2.73	0.47
1:b:131:MET:HE1	1:b:189:ALA:HB2	1.97	0.47
18:u:48:VAL:HG12	18:u:50:ALA:H	1.79	0.47
21:x:50:VAL:HG11	21:x:55:MET:HG3	1.96	0.47
32:J:132:PRO:O	32:J:135:VAL:HG22	2.15	0.47
38:P:22:ILE:HB	38:P:85:VAL:HA	1.95	0.47
39:Q:81:ILE:CG2	39:Q:94:TYR:HB3	2.44	0.47
49:3:357:G:O2'	49:3:358:U:H5'	2.15	0.47
49:3:483:C:H2'	49:3:484:G:C8	2.50	0.47
49:3:1252:A:H2'	49:3:1253:G:O4'	2.15	0.47
49:3:1340:A:H2'	49:3:1341:U:H6	1.80	0.47
49:3:1340:A:H2'	49:3:1341:U:C6	2.49	0.47
50:1:108:G:H2'	50:1:109:C:C6	2.49	0.47
50:1:151:C:H2'	50:1:152:A:C8	2.49	0.47
50:1:158:U:O2	50:1:158:U:H2'	2.14	0.47
50:1:172:A:H2'	50:1:173:A:H8	1.80	0.47
50:1:687:C:H42	50:1:787:C:H4'	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:2221:G:H2'	50:1:2222:C:O4'	2.14	0.47
50:1:2286:G:H4'	50:1:2287:A:O4'	2.15	0.47
50:1:2394:C:H2'	50:1:2395:C:C6	2.49	0.47
51:2:114:C:H2'	51:2:115:A:H8	1.80	0.47
1:b:90:ILE:HD12	1:b:102:TYR:CD1	2.50	0.47
2:c:5:VAL:HG11	2:c:80:TRP:CE3	2.50	0.47
3:d:37:ALA:O	3:d:40:ARG:HG2	2.15	0.47
5:f:114:HIS:CD2	5:f:147:LEU:HD21	2.49	0.47
8:k:1:MET:SD	50:1:1664:A:H2	2.38	0.47
9:l:16:GLY:N	50:1:662:G:H4'	2.29	0.47
22:y:31:GLN:O	22:y:37:LEU:HG	2.15	0.47
25:C:5:ARG:HG3	50:1:2284:A:P	2.55	0.47
29:G:18:GLN:HA	29:G:37:VAL:HG23	1.96	0.47
30:H:146:LYS:HB2	30:H:202:PHE:O	2.15	0.47
39:Q:34:THR:O	39:Q:53:ARG:HB3	2.14	0.47
44:V:11:VAL:HG13	44:V:20:ILE:HD11	1.97	0.47
50:1:565:C:O2'	50:1:566:U:H5'	2.15	0.47
50:1:2190:G:O2'	50:1:2191:A:H5'	2.15	0.47
50:1:2240:U:O2'	50:1:2241:A:H5'	2.14	0.47
50:1:2545:G:C2'	50:1:2546:U:H5'	2.45	0.47
54:8:49:PRO:O	54:8:53:LYS:HG2	2.15	0.47
1:b:199:HIS:HB3	50:1:1820:U:O2	2.15	0.47
2:c:40:LEU:HA	2:c:44:GLY:C	2.40	0.47
5:f:176:LYS:CE	50:1:2660:A:H62	2.28	0.47
9:l:80:SER:H	9:l:114:GLY:HA3	1.80	0.47
14:q:35:PHE:O	14:q:38:VAL:HG12	2.15	0.47
31:I:8:LEU:HD22	49:3:429:U:H5'	1.97	0.47
35:M:49:LYS:H	35:M:59:GLU:HG2	1.80	0.47
42:T:45:HIS:O	42:T:47:LYS:N	2.47	0.47
42:T:81:ILE:HG21	42:T:87:ARG:NH1	2.29	0.47
49:3:244:U:O4	49:3:906:A:H1'	2.15	0.47
50:1:95:A:H2'	50:1:96:C:O4'	2.14	0.47
50:1:1848:A:H2'	50:1:1849:G:H8	1.80	0.47
50:1:2489:U:O2'	50:1:2490:G:H5'	2.15	0.47
50:1:2818:U:H2'	50:1:2819:G:C8	2.49	0.47
1:b:93:VAL:HG12	1:b:101:ARG:O	2.15	0.46
3:d:53:THR:HG1	50:1:452:G:H8	1.61	0.46
6:g:40:THR:OG1	6:g:43:ASN:ND2	2.49	0.46
10:m:29:GLY:CA	10:m:106:ASP:HB2	2.44	0.46
14:q:64:ILE:CD1	14:q:94:LEU:HB3	2.43	0.46
16:s:7:HIS:NE2	16:s:46:LEU:HD11	2.29	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:H:5:HIS:HB3	41:S:88:MET:SD	2.55	0.46
32:J:98:ALA:HB3	32:J:122:VAL:HA	1.96	0.46
37:O:17:LEU:O	37:O:17:LEU:HD23	2.15	0.46
48:Z:6:ARG:C	48:Z:7:GLU:HG2	2.39	0.46
49:3:125:U:H2'	49:3:126:G:C8	2.50	0.46
49:3:164:G:H2'	49:3:165:G:C8	2.49	0.46
49:3:189:A:H2'	49:3:190:A:O4'	2.14	0.46
49:3:328:C:H4'	49:3:329:A:H5'	1.96	0.46
49:3:1353:G:H2'	49:3:1354:U:C6	2.50	0.46
50:1:161:A:N7	50:1:162:U:H5	2.13	0.46
50:1:614:A:H4'	50:1:616:A:N7	2.30	0.46
50:1:656:G:O2'	50:1:657:U:H5'	2.15	0.46
50:1:1026:G:H2'	50:1:1027:A:C8	2.45	0.46
50:1:1792:G:O2'	50:1:1793:C:H5'	2.15	0.46
50:1:1794:A:H4'	50:1:1900:A:C6	2.51	0.46
50:1:1858:A:H1'	50:1:1885:A:C2	2.50	0.46
50:1:1958:C:H2'	50:1:1959:G:H8	1.80	0.46
50:1:1964:G:H4'	50:1:1965:C:OP2	2.15	0.46
50:1:2105:U:H2'	50:1:2106:U:C5'	2.44	0.46
1:b:42:ARG:HH12	50:1:691:C:H4'	1.79	0.46
2:c:13:ARG:HD2	2:c:15:PHE:CZ	2.50	0.46
12:o:31:THR:HG21	51:2:28:C:OP1	2.16	0.46
14:q:17:LEU:HA	14:q:20:ALA:HB3	1.97	0.46
19:v:70:ILE:N	19:v:70:ILE:HD12	2.30	0.46
23:z:46:MET:HG2	50:1:851:C:O4'	2.16	0.46
25:C:37:LYS:HB2	25:C:48:TYR:CE2	2.51	0.46
29:G:150:ILE:O	29:G:150:ILE:HG22	2.15	0.46
31:I:95:GLY:O	31:I:136:VAL:HG12	2.15	0.46
33:K:64:VAL:HG22	33:K:65:GLU:H	1.79	0.46
33:K:91:ARG:HG3	33:K:93:LYS:HD3	1.96	0.46
36:N:112:ARG:HE	41:S:100:TRP:HE1	1.63	0.46
37:O:48:ARG:HH11	37:O:48:ARG:HG3	1.79	0.46
44:V:11:VAL:CG1	44:V:20:ILE:HD11	2.45	0.46
48:Z:62:GLU:HG3	48:Z:62:GLU:O	2.15	0.46
49:3:10:A:H2'	49:3:11:G:H8	1.80	0.46
49:3:764:C:H2'	49:3:765:G:O4'	2.15	0.46
49:3:818:G:H2'	49:3:818:G:N3	2.30	0.46
49:3:1032:G:H21	49:3:1033:G:H4'	1.80	0.46
49:3:1062:U:H2'	49:3:1063:C:C6	2.50	0.46
49:3:1445:U:H1'	49:3:1458:G:O6	2.14	0.46
50:1:288:U:H2'	50:1:289:G:C8	2.49	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:1764:C:H2'	50:1:1765:U:C6	2.50	0.46
50:1:2815:C:H2'	50:1:2816:G:H8	1.80	0.46
51:2:62:C:H2'	51:2:63:C:C6	2.50	0.46
6:g:8:LYS:HG3	6:g:8:LYS:O	2.15	0.46
7:j:113:PRO:HD2	50:1:558:U:P	2.56	0.46
23:z:40:THR:OG1	23:z:43:ILE:HG12	2.16	0.46
28:F:25:VAL:O	28:F:34:LYS:HA	2.15	0.46
30:H:54:ILE:HA	30:H:66:THR:O	2.16	0.46
32:J:96:GLN:O	32:J:122:VAL:HG23	2.16	0.46
36:N:56:MET:HA	36:N:59:LYS:NZ	2.30	0.46
45:W:70:THR:HG22	45:W:72:ARG:NH2	2.29	0.46
49:3:73:C:H42	49:3:94:G:H1	1.63	0.46
49:3:1015:G:H2'	49:3:1016:A:C8	2.50	0.46
49:3:1237:C:H4'	49:3:1334:G:N2	2.31	0.46
50:1:433:C:O2'	50:1:434:U:H5'	2.14	0.46
50:1:596:U:H2'	50:1:597:G:C8	2.50	0.46
50:1:1718:G:H2'	50:1:1719:G:C8	2.50	0.46
50:1:1745:A:H2'	50:1:1746:A:O4'	2.15	0.46
50:1:1872:A:C2'	50:1:1873:G:H5'	2.45	0.46
50:1:2076:U:O2	50:1:2076:U:H2'	2.15	0.46
50:1:2468:A:H1'	50:1:2482:A:H61	1.79	0.46
50:1:2484:G:O2'	50:1:2485:G:H5'	2.16	0.46
53:4:7:G:H2'	53:4:8:A:N7	2.31	0.46
2:c:155:VAL:O	50:1:2619:C:H5'	2.16	0.46
5:f:162:ARG:NH1	5:f:166:GLU:O	2.49	0.46
7:j:52:ASP:O	7:j:54:ILE:HG13	2.16	0.46
7:j:113:PRO:HD2	50:1:558:U:OP1	2.15	0.46
12:o:27:VAL:HA	12:o:93:ASP:HB3	1.98	0.46
13:p:30:TRP:HE3	13:p:37:LYS:HG2	1.79	0.46
14:q:93:ILE:HD11	15:r:12:HIS:HA	1.98	0.46
20:w:33:ILE:HD12	20:w:33:ILE:N	2.31	0.46
25:C:41:VAL:HG13	25:C:42:VAL:N	2.30	0.46
30:H:109:GLU:HB3	30:H:140:ALA:HB2	1.97	0.46
33:K:67:PRO:HB2	33:K:69:GLU:OE2	2.15	0.46
39:Q:45:ASN:ND2	49:3:528:C:H41	2.14	0.46
49:3:604:G:H2'	49:3:605:U:O4'	2.16	0.46
50:1:179:C:O2'	50:1:180:G:H5'	2.15	0.46
50:1:2070:A:O2'	50:1:2071:A:H5'	2.15	0.46
50:1:2732:G:H8	50:1:2732:G:OP2	1.98	0.46
1:b:237:ARG:NH2	50:1:1827:U:OP1	2.47	0.46
9:l:41:ARG:NH1	50:1:807:U:OP2	2.49	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:w:37:ARG:HH12	50:1:2387:U:H4'	1.81	0.46
21:x:19:HIS:C	21:x:21:LEU:H	2.22	0.46
36:N:85:ALA:HA	36:N:87:MET:HE1	1.97	0.46
39:Q:8:ARG:NH2	49:3:880:C:OP1	2.49	0.46
49:3:106:C:H2'	49:3:107:G:H8	1.80	0.46
49:3:203:G:H1	49:3:214:C:N4	2.11	0.46
49:3:861:G:H21	49:3:874:G:H5'	1.79	0.46
49:3:978:A:H62	49:3:1360:A:H2	1.63	0.46
50:1:652:U:H2'	50:1:653:U:C2	2.50	0.46
50:1:1862:G:H1	50:1:1880:U:H3	1.64	0.46
50:1:2126:A:H1'	50:1:2173:A:N6	2.31	0.46
51:2:71:C:H42	51:2:105:G:H1	1.64	0.46
54:8:91:LEU:O	54:8:95:ILE:HG13	2.16	0.46
1:b:180:MET:CB	1:b:268:ARG:HB3	2.40	0.46
15:r:79:ARG:NH1	50:1:572:A:OP2	2.48	0.46
16:s:8:ARG:HG2	16:s:8:ARG:HH11	1.81	0.46
21:x:25:LYS:HD3	50:1:189:G:OP1	2.15	0.46
26:D:5:PHE:CD2	26:D:7:PRO:HD3	2.49	0.46
29:G:63:LYS:NZ	29:G:224:ARG:HA	2.30	0.46
33:K:3:HIS:HB2	33:K:92:THR:HA	1.97	0.46
33:K:49:TYR:O	33:K:51:ILE:HD12	2.15	0.46
38:P:24:ALA:HB3	38:P:87:GLY:O	2.16	0.46
40:R:32:ILE:HG13	40:R:58:GLU:HG3	1.98	0.46
44:V:64:ARG:HD2	49:3:130:A:O4'	2.16	0.46
45:W:13:THR:HG23	45:W:18:GLN:H	1.80	0.46
46:X:35:ARG:NH1	49:3:1221:G:OP1	2.45	0.46
49:3:312:C:H2'	49:3:313:A:H8	1.80	0.46
49:3:1074:G:H2'	49:3:1075:U:C6	2.50	0.46
49:3:1436:U:H2'	49:3:1437:A:H8	1.81	0.46
50:1:121:G:H2'	50:1:122:G:C8	2.51	0.46
50:1:129:C:H2'	50:1:130:C:C6	2.51	0.46
50:1:296:U:H2'	50:1:297:G:H8	1.80	0.46
50:1:758:C:O2	50:1:758:C:H2'	2.16	0.46
50:1:784:G:O2'	50:1:785:G:C8	2.66	0.46
50:1:1289:C:O2'	50:1:1330:C:H4'	2.15	0.46
50:1:1368:G:H2'	50:1:1369:G:C8	2.50	0.46
50:1:1981:A:H5''	50:1:1982:U:OP2	2.15	0.46
50:1:2266:A:H4'	50:1:2267:A:C4	2.51	0.46
54:8:8:VAL:HG13	54:8:10:ILE:HG12	1.98	0.46
54:8:81:GLU:O	54:8:84:ARG:HB3	2.15	0.46
1:b:70:LYS:HE2	1:b:95:TYR:CD2	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:d:69:ARG:HD2	50:1:674:G:H1'	1.98	0.46
15:r:87:GLN:HG3	50:1:1224:U:O2'	2.15	0.46
17:t:10:VAL:HG11	17:t:43:ILE:HG12	1.98	0.46
28:F:37:GLN:OE1	50:1:1125:G:H5'	2.16	0.46
29:G:27:LYS:N	29:G:28:PRO:HD3	2.30	0.46
35:M:31:LEU:HD21	49:3:643:C:H5''	1.98	0.46
37:O:6:ILE:HG12	37:O:102:LEU:HG	1.98	0.46
41:S:5:MET:HE1	49:3:982:U:H5''	1.98	0.46
42:T:88:ARG:HD3	42:T:88:ARG:H	1.81	0.46
49:3:10:A:H2'	49:3:11:G:C8	2.51	0.46
49:3:662:U:H2'	49:3:663:A:C8	2.50	0.46
49:3:1386:G:H2'	49:3:1387:G:H8	1.79	0.46
49:3:1397:C:H42	54:8:122:LYS:HG3	1.80	0.46
50:1:7:G:H2'	50:1:8:C:C6	2.50	0.46
50:1:551:G:O2'	50:1:552:U:H5'	2.16	0.46
50:1:861:A:C2'	50:1:862:G:H5'	2.46	0.46
50:1:922:C:H2'	50:1:923:G:H8	1.80	0.46
50:1:1882:U:H2'	50:1:1883:U:C6	2.50	0.46
50:1:2353:G:H2'	50:1:2354:C:O4'	2.16	0.46
50:1:2740:A:H2'	50:1:2741:A:C8	2.50	0.46
50:1:2761:A:H2'	50:1:2762:C:H5''	1.98	0.46
51:2:38:C:O2'	51:2:39:A:H5'	2.15	0.46
51:2:114:C:H2'	51:2:115:A:C8	2.50	0.46
1:b:124:LYS:C	1:b:124:LYS:HD3	2.41	0.46
7:j:110:PRO:O	7:j:115:GLY:HA3	2.15	0.46
9:l:23:ILE:HD11	15:r:84:ARG:CB	2.46	0.46
13:p:8:GLU:HG2	13:p:54:LEU:HB2	1.97	0.46
20:w:73:ARG:HD3	20:w:75:PHE:CZ	2.51	0.46
30:H:3:LYS:HD2	30:H:3:LYS:N	2.31	0.46
31:I:171:GLU:HG2	31:I:182:LYS:HB2	1.97	0.46
38:P:126:ARG:HB3	48:Z:33:ARG:NH1	2.31	0.46
41:S:71:GLY:O	41:S:79:SER:HA	2.15	0.46
49:3:490:C:H2'	49:3:491:G:H8	1.81	0.46
49:3:1005:A:H2'	49:3:1006:G:C5'	2.45	0.46
49:3:1064:G:H8	49:3:1064:G:OP1	1.99	0.46
49:3:1230:C:H2'	49:3:1231:G:H8	1.81	0.46
49:3:1490:C:H2'	49:3:1491:G:C8	2.51	0.46
49:3:1517:G:C2	50:1:1920:C:H5'	2.51	0.46
50:1:475:C:H4'	50:1:510:C:H5'	1.97	0.46
50:1:539:G:O2'	50:1:540:C:H5'	2.16	0.46
50:1:825:A:H4'	50:1:2428:G:N7	2.30	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:1435:G:H2'	50:1:1436:G:C8	2.51	0.46
50:1:1876:A:H3'	50:1:1877:A:H8	1.81	0.46
50:1:2667:C:H2'	50:1:2668:G:C8	2.50	0.46
5:f:69:ALA:HA	5:f:72:ASN:HD22	1.80	0.46
6:g:72:ILE:HD12	6:g:108:VAL:HG13	1.96	0.46
7:j:16:TYR:CD1	7:j:140:LEU:HB2	2.50	0.46
30:H:14:VAL:HG23	30:H:15:LYS:N	2.29	0.46
31:I:169:TRP:HA	31:I:182:LYS:HE2	1.98	0.46
34:L:63:VAL:HB	34:L:67:ASN:ND2	2.30	0.46
38:P:28:ASN:HD21	38:P:56:LYS:CE	2.12	0.46
38:P:94:SER:HA	38:P:97:ARG:HH12	1.81	0.46
40:R:7:ASN:ND2	40:R:9:PRO:HD3	2.31	0.46
49:3:24:U:H2'	49:3:25:C:C6	2.51	0.46
49:3:936:C:H2'	49:3:937:A:C8	2.50	0.46
49:3:1335:U:O2'	49:3:1336:C:H5	1.98	0.46
50:1:562:U:H2'	50:1:572:A:O4'	2.16	0.46
50:1:863:A:H2'	50:1:864:G:C8	2.51	0.46
50:1:2287:A:H2'	50:1:2288:A:H2'	1.98	0.46
50:1:2369:A:H2'	50:1:2370:G:H8	1.81	0.46
50:1:2730:C:H2'	50:1:2731:G:H8	1.79	0.46
4:e:120:SER:HB3	4:e:127:TYR:CE1	2.51	0.46
10:m:78:LEU:HD23	10:m:78:LEU:C	2.40	0.46
24:B:33:SER:HB2	24:B:47:TYR:CE2	2.51	0.46
29:G:24:PRO:HB3	49:3:828:U:H2'	1.97	0.46
30:H:70:ALA:HA	30:H:105:VAL:HB	1.98	0.46
33:K:92:THR:OG1	33:K:93:LYS:N	2.48	0.46
39:Q:69:GLU:HG2	49:3:521:G:O5'	2.16	0.46
40:R:2:ARG:HG3	40:R:2:ARG:O	2.16	0.46
46:X:51:HIS:HD2	49:3:1220:G:H1'	1.81	0.46
49:3:784:A:H2'	49:3:785:G:H8	1.81	0.46
50:1:327:G:H2'	50:1:328:U:O4'	2.15	0.46
50:1:628:G:O2'	50:1:629:G:H5'	2.15	0.46
50:1:766:U:H2'	50:1:767:U:C6	2.51	0.46
50:1:852:U:H2'	50:1:853:C:C6	2.50	0.46
50:1:948:C:H2'	50:1:949:G:H8	1.81	0.46
50:1:1429:G:H2'	50:1:1430:G:C8	2.50	0.46
50:1:1527:G:H21	50:1:1545:A:H62	1.64	0.46
50:1:1692:U:H2'	50:1:1694:C:C5	2.50	0.46
50:1:1987:A:H2'	50:1:1988:G:H8	1.81	0.46
4:e:33:ILE:CG2	4:e:90:LEU:HB2	2.43	0.45
9:l:119:PRO:HG3	9:l:138:ALA:O	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:r:53:PHE:CD1	15:r:53:PHE:N	2.84	0.45
18:u:52:ASN:C	18:u:54:PRO:HD3	2.41	0.45
19:v:42:LEU:H	19:v:42:LEU:HD23	1.81	0.45
21:x:68:ALA:HA	21:x:71:ARG:NH1	2.31	0.45
36:N:51:LEU:HD13	36:N:56:MET:HG3	1.98	0.45
36:N:98:ARG:C	36:N:100:ALA:H	2.24	0.45
39:Q:23:LEU:HD12	39:Q:29:LYS:CE	2.39	0.45
49:3:265:G:H2'	49:3:267:C:H5	1.80	0.45
49:3:405:U:H1'	49:3:498:A:H2'	1.98	0.45
50:1:662:G:O2'	50:1:663:G:H5'	2.16	0.45
50:1:1020:A:C1'	50:1:1021:A:OP2	2.63	0.45
50:1:1486:U:H2'	50:1:1487:U:C6	2.51	0.45
50:1:2076:U:O2	50:1:2076:U:H3'	2.16	0.45
50:1:2403:C:H2'	50:1:2404:U:C6	2.51	0.45
54:8:112:ARG:HA	54:8:112:ARG:NE	2.31	0.45
2:c:27:ILE:N	2:c:27:ILE:HD12	2.32	0.45
13:p:42:PHE:CE1	13:p:62:LYS:HD3	2.51	0.45
22:y:22:LEU:C	22:y:23:ARG:HD2	2.40	0.45
24:B:24:VAL:HG23	24:B:25:THR:N	2.31	0.45
30:H:2:GLN:HG2	30:H:3:LYS:HZ2	1.82	0.45
30:H:196:GLY:H	49:3:1057:G:H4'	1.81	0.45
32:J:160:VAL:HG13	32:J:161:GLU:N	2.31	0.45
35:M:75:GLN:O	35:M:126:CYS:HB3	2.15	0.45
36:N:78:ILE:O	36:N:82:ILE:HG13	2.16	0.45
36:N:112:ARG:HE	41:S:100:TRP:NE1	2.14	0.45
41:S:10:VAL:O	41:S:13:VAL:HG12	2.16	0.45
43:U:2:VAL:HG13	43:U:21:VAL:HG13	1.97	0.45
46:X:11:ASP:O	46:X:15:LEU:CB	2.63	0.45
49:3:247:G:H2'	49:3:248:C:C6	2.51	0.45
49:3:1085:U:H6	49:3:1085:U:OP1	1.99	0.45
49:3:1141:C:C3'	49:3:1142:G:H5''	2.47	0.45
49:3:1436:U:H2'	49:3:1437:A:C8	2.51	0.45
50:1:565:C:H2'	50:1:566:U:O4'	2.16	0.45
50:1:654:A:H2'	50:1:654:A:N3	2.32	0.45
50:1:1111:A:N3	50:1:1111:A:H3'	2.31	0.45
50:1:1999:C:O2'	50:1:2000:C:H5'	2.16	0.45
50:1:2317:A:H2'	50:1:2318:G:O4'	2.16	0.45
2:c:4:LEU:HD13	2:c:101:PHE:CZ	2.51	0.45
7:j:93:ILE:HD13	7:j:100:VAL:HG21	1.98	0.45
10:m:5:LYS:HG2	10:m:6:ARG:HG3	1.99	0.45
16:s:29:VAL:HG11	16:s:55:ILE:CD1	2.45	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:s:83:LYS:HD3	16:s:95:ARG:HH11	1.81	0.45
27:E:44:ARG:N	27:E:45:PRO:HD2	2.30	0.45
29:G:40:ILE:HD12	29:G:40:ILE:N	2.29	0.45
29:G:48:MET:O	29:G:51:GLU:HG3	2.16	0.45
30:H:172:VAL:HG11	30:H:200:TRP:HB3	1.98	0.45
30:H:200:TRP:C	30:H:201:ILE:HD12	2.41	0.45
36:N:49:GLN:HG3	36:N:102:PHE:CZ	2.52	0.45
40:R:106:ARG:NH2	40:R:112:ARG:HD3	2.31	0.45
44:V:46:HIS:HB2	44:V:70:LYS:CE	2.47	0.45
46:X:11:ASP:HB3	46:X:14:LEU:HB3	1.99	0.45
49:3:152:A:C2'	49:3:153:C:H5'	2.46	0.45
49:3:1275:A:H3'	49:3:1276:G:C8	2.52	0.45
49:3:1456:A:C6	49:3:1457:G:H1'	2.51	0.45
50:1:36:G:O2'	50:1:37:C:H5'	2.16	0.45
50:1:304:U:H2'	50:1:305:C:C6	2.51	0.45
50:1:882:G:H22	50:1:894:U:H3	1.63	0.45
50:1:1287:A:H2'	50:1:1288:G:H5'	1.98	0.45
50:1:1609:A:H1'	50:1:1616:A:C1'	2.45	0.45
50:1:1685:C:H2'	50:1:1686:C:H6	1.81	0.45
50:1:1747:U:H2'	50:1:1748:C:C6	2.52	0.45
50:1:1838:C:H4'	50:1:1839:G:H8	1.82	0.45
50:1:2471:A:H2'	50:1:2472:G:O4'	2.17	0.45
50:1:2733:A:O2'	50:1:2734:A:H5'	2.15	0.45
51:2:38:C:H2'	51:2:39:A:H8	1.81	0.45
52:5:16:C:H4'	52:5:60:U:O2	2.16	0.45
5:f:34:ARG:NH1	5:f:70:LEU:HD13	2.29	0.45
14:q:20:ALA:O	14:q:23:TYR:HD1	1.99	0.45
21:x:70:LEU:CD2	21:x:73:ARG:HH21	2.29	0.45
22:y:17:GLU:HB2	22:y:53:VAL:HG11	1.97	0.45
31:l:143:SER:HB3	31:l:178:GLU:OE2	2.17	0.45
32:J:111:ARG:HD2	32:J:111:ARG:C	2.41	0.45
34:L:35:LYS:HG3	49:3:1373:G:C5'	2.44	0.45
35:M:79:ARG:HB3	35:M:80:PRO:HD2	1.98	0.45
36:N:46:VAL:HA	36:N:49:GLN:NE2	2.31	0.45
36:N:47:VAL:HG12	36:N:79:ARG:HH11	1.82	0.45
40:R:15:VAL:HG23	40:R:16:ILE:CD1	2.37	0.45
41:S:8:ARG:HA	41:S:11:LYS:HB3	1.99	0.45
49:3:271:C:H2'	49:3:272:C:H6	1.80	0.45
49:3:470:C:H2'	49:3:471:U:C6	2.51	0.45
49:3:1461:G:H2'	49:3:1462:C:C6	2.51	0.45
50:1:697:G:H2'	50:1:698:C:C6	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:704:G:H1'	50:1:727:A:H61	1.79	0.45
50:1:709:U:H2'	50:1:710:U:C6	2.52	0.45
50:1:718:A:H2'	50:1:719:C:H5'	1.98	0.45
50:1:1291:C:H2'	50:1:1292:G:C8	2.51	0.45
50:1:2352:A:H2'	50:1:2353:G:H5'	1.99	0.45
50:1:2508:G:H2'	50:1:2509:G:H8	1.82	0.45
2:c:146:ILE:HG13	2:c:147:GLY:H	1.82	0.45
3:d:105:LEU:HA	3:d:108:ILE:HG22	1.99	0.45
4:e:169:LEU:HD12	4:e:170:ALA:N	2.31	0.45
8:k:76:VAL:HG22	13:p:72:VAL:HG12	1.99	0.45
10:m:36:VAL:HB	10:m:127:LYS:O	2.17	0.45
10:m:64:TRP:HE1	50:1:873:C:H4'	1.81	0.45
11:n:100:CYS:H	11:n:111:ALA:HA	1.82	0.45
12:o:98:GLN:O	12:o:103:VAL:HG21	2.16	0.45
14:q:65:ASN:HD21	14:q:69:ARG:HH12	1.64	0.45
16:s:34:ASP:OD1	24:B:36:LYS:NZ	2.46	0.45
30:H:28:PHE:HB3	41:S:75:LYS:O	2.16	0.45
32:J:138:ALA:O	32:J:141:ASP:OD2	2.34	0.45
34:L:12:LEU:HD23	34:L:13:PRO:O	2.16	0.45
35:M:48:PHE:HB3	35:M:60:LEU:HD23	1.98	0.45
47:Y:29:THR:O	47:Y:33:LYS:HG3	2.16	0.45
49:3:235:C:H2'	49:3:236:A:C8	2.52	0.45
49:3:596:A:N6	49:3:644:U:H3	2.14	0.45
50:1:168:G:C2'	50:1:169:G:H5'	2.47	0.45
50:1:827:U:H5'	50:1:828:U:O5'	2.16	0.45
50:1:1131:G:H1	50:1:2024:G:H21	1.63	0.45
50:1:1152:C:H2'	50:1:1153:C:H6	1.81	0.45
50:1:2138:G:H2'	50:1:2139:U:H5'	1.97	0.45
50:1:2376:A:H2'	50:1:2377:A:O4'	2.17	0.45
50:1:2897:U:H2'	50:1:2898:U:C6	2.52	0.45
54:8:78:ARG:NH2	54:8:78:ARG:HG2	2.32	0.45
1:b:62:ARG:H	1:b:85:ASN:ND2	2.08	0.45
6:g:40:THR:O	6:g:44:ILE:HG13	2.16	0.45
35:M:88:LYS:HG3	35:M:89:ASP:N	2.31	0.45
37:O:53:ILE:HD12	49:3:1060:U:H5''	1.98	0.45
39:Q:26:CYS:CB	39:Q:29:LYS:HE2	2.46	0.45
39:Q:86:VAL:C	39:Q:88:ASP:H	2.24	0.45
40:R:33:LEU:HD23	40:R:40:GLU:OE2	2.16	0.45
43:U:79:ASN:O	43:U:81:ALA:N	2.49	0.45
46:X:77:ARG:HD3	49:3:1222:G:H5''	1.98	0.45
49:3:24:U:H2'	49:3:25:C:H6	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:461:A:H2'	49:3:462:G:O4'	2.17	0.45
49:3:939:G:O2'	49:3:940:C:H5'	2.16	0.45
50:1:1039:A:H2'	50:1:1040:A:H8	1.81	0.45
50:1:1363:C:H2'	50:1:1364:G:C8	2.51	0.45
50:1:1595:C:H2'	50:1:1596:A:C8	2.52	0.45
50:1:1769:U:H2'	50:1:1770:G:H8	1.81	0.45
50:1:1772:A:H2'	50:1:1773:A:H4'	1.97	0.45
50:1:1930:G:O2'	50:1:1931:U:C5	2.70	0.45
50:1:2468:A:H1'	50:1:2482:A:N6	2.31	0.45
50:1:2515:C:H2'	50:1:2516:A:C8	2.52	0.45
50:1:2777:G:O4'	50:1:2779:U:H5	1.99	0.45
4:e:91:ARG:HH21	4:e:91:ARG:HG2	1.81	0.45
4:e:98:PHE:O	4:e:102:LEU:HG	2.17	0.45
4:e:124:ARG:C	4:e:159:ALA:HB3	2.42	0.45
8:k:10:VAL:HG21	8:k:16:ALA:O	2.17	0.45
11:n:24:MET:HA	11:n:24:MET:HE3	1.98	0.45
16:s:3:THR:CG2	16:s:107:VAL:HG13	2.44	0.45
29:G:100:LEU:HD11	29:G:178:LEU:HD12	1.98	0.45
34:L:2:ARG:NH2	49:3:935:A:N1	2.64	0.45
38:P:86:LYS:HD3	49:3:707:U:OP1	2.16	0.45
49:3:1013:G:H2'	49:3:1015:G:OP2	2.16	0.45
49:3:1109:C:H2'	49:3:1110:A:C8	2.52	0.45
50:1:255:A:H2'	50:1:256:A:O4'	2.17	0.45
50:1:389:G:C2'	50:1:390:U:H5'	2.44	0.45
50:1:552:U:H2'	50:1:553:G:C8	2.51	0.45
50:1:577:G:H2'	50:1:578:G:C8	2.52	0.45
50:1:654:A:C2	50:1:655:A:H3'	2.52	0.45
50:1:842:U:H2'	50:1:843:G:H8	1.80	0.45
50:1:2685:G:O2'	50:1:2686:G:H5'	2.17	0.45
50:1:2805:C:H2'	50:1:2806:C:C6	2.47	0.45
2:c:49:GLN:NE2	2:c:79:LEU:HD13	2.32	0.45
3:d:51:GLU:N	3:d:51:GLU:OE2	2.49	0.45
3:d:75:SER:HB2	3:d:78:TRP:CD1	2.49	0.45
5:f:83:THR:CG2	5:f:133:LYS:HG2	2.46	0.45
13:p:30:TRP:CE3	13:p:37:LYS:HG2	2.52	0.45
15:r:26:ASP:N	15:r:26:ASP:OD1	2.50	0.45
22:y:48:ARG:O	22:y:52:ARG:HG3	2.17	0.45
29:G:22:TRP:NE1	49:3:830:G:H5'	2.30	0.45
29:G:96:LEU:HB3	29:G:99:MET:SD	2.56	0.45
31:I:40:HIS:HB2	49:3:511:C:H4'	1.99	0.45
34:L:65:LEU:HB3	34:L:69:ARG:HE	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:S:35:ALA:O	41:S:37:ASP:N	2.50	0.45
47:Y:30:PHE:HA	47:Y:33:LYS:HD2	1.98	0.45
49:3:162:A:H2'	49:3:163:C:H5'	1.99	0.45
49:3:945:G:C2	49:3:946:A:C8	3.05	0.45
49:3:1298:U:H5'	49:3:1299:A:N3	2.30	0.45
50:1:118:A:H5'	50:1:119:A:C8	2.50	0.45
50:1:1113:U:H2'	50:1:1114:C:H6	1.81	0.45
50:1:1131:G:H21	50:1:1132:U:H5	1.63	0.45
50:1:1258:U:H2'	50:1:1259:G:C8	2.51	0.45
50:1:1417:C:H2'	50:1:1418:G:H8	1.82	0.45
50:1:1872:A:H2'	50:1:1873:G:C5'	2.46	0.45
50:1:1987:A:H2'	50:1:1988:G:C8	2.52	0.45
50:1:2333:A:H5''	50:1:2334:U:OP1	2.17	0.45
51:2:97:C:H2'	51:2:98:G:O4'	2.16	0.45
52:5:69:C:H2'	52:5:70:G:C8	2.52	0.45
14:q:81:GLY:HA3	14:q:112:ALA:HB1	1.98	0.45
29:G:65:LYS:HG2	29:G:153:MET:SD	2.57	0.45
29:G:160:LEU:HD21	29:G:182:VAL:HG12	1.99	0.45
29:G:198:VAL:O	29:G:199:ILE:HD13	2.17	0.45
31:I:117:VAL:HA	31:I:122:ILE:HD13	1.99	0.45
41:S:2:LYS:HD3	49:3:1049:U:H2'	1.98	0.45
49:3:218:U:H2'	49:3:219:U:C6	2.51	0.45
49:3:378:G:H2'	49:3:379:C:C6	2.52	0.45
49:3:563:A:N6	49:3:884:U:H3	2.14	0.45
49:3:840:C:H42	49:3:846:G:H1	1.64	0.45
49:3:985:C:H2'	49:3:986:U:C6	2.52	0.45
49:3:1408:A:O2'	49:3:1409:C:H5'	2.17	0.45
50:1:325:G:H2'	50:1:326:G:H8	1.82	0.45
50:1:1080:A:H2'	50:1:1081:U:C6	2.52	0.45
50:1:1709:U:H2'	50:1:1710:G:C8	2.52	0.45
50:1:1775:U:H2'	50:1:1776:G:C5'	2.46	0.45
50:1:2310:C:H3'	50:1:2311:A:H5''	1.99	0.45
1:b:179:GLU:OE1	1:b:266:ILE:HG23	2.17	0.45
1:b:252:LYS:HD3	50:1:1901:A:H4'	1.99	0.45
7:j:35:ARG:HG2	7:j:35:ARG:HH11	1.81	0.45
8:k:22:ILE:HD13	8:k:42:THR:OG1	2.17	0.45
8:k:41:ILE:HD11	8:k:86:LEU:HD22	1.99	0.45
12:o:77:ALA:O	12:o:80:GLU:HG3	2.16	0.45
19:v:8:VAL:HA	19:v:40:ILE:HD12	1.99	0.45
30:H:122:GLN:OE1	30:H:135:ARG:NH2	2.47	0.45
30:H:132:ALA:O	30:H:135:ARG:HG2	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:I:122:ILE:HD12	31:I:122:ILE:N	2.32	0.45
49:3:162:A:H2'	49:3:163:C:O4'	2.17	0.45
49:3:1176:A:H2'	49:3:1177:G:H8	1.82	0.45
49:3:1192:C:H2'	49:3:1193:G:O4'	2.17	0.45
49:3:1233:G:H2'	49:3:1234:C:H6	1.80	0.45
49:3:1333:A:H3'	49:3:1334:G:H8	1.81	0.45
50:1:679:C:H2'	50:1:680:C:C6	2.52	0.45
50:1:967:U:H2'	50:1:968:C:C6	2.52	0.45
50:1:996:A:H2'	50:1:997:G:H8	1.82	0.45
50:1:1849:G:O2'	50:1:1850:G:H5'	2.17	0.45
2:c:5:VAL:HG11	2:c:80:TRP:CZ3	2.52	0.44
2:c:128:ARG:NE	50:1:1995:U:OP1	2.48	0.44
7:j:7:LYS:HZ2	50:1:538:A:H5''	1.81	0.44
11:n:103:ARG:HB2	11:n:110:MET:CG	2.47	0.44
23:z:4:ILE:HG21	23:z:39:ASP:HB2	1.98	0.44
25:C:14:ALA:HB2	25:C:46:VAL:HG21	1.99	0.44
25:C:26:LYS:HD2	25:C:26:LYS:C	2.42	0.44
29:G:90:PHE:H	29:G:149:GLY:HA3	1.81	0.44
32:J:42:ASN:HA	32:J:75:LEU:HD21	1.99	0.44
33:K:56:LYS:HD3	33:K:56:LYS:N	2.33	0.44
34:L:23:ALA:O	34:L:26:VAL:HG12	2.18	0.44
37:O:46:LYS:N	37:O:46:LYS:HD2	2.31	0.44
39:Q:101:LEU:N	39:Q:101:LEU:HD23	2.32	0.44
49:3:1385:G:H2'	49:3:1386:G:H8	1.81	0.44
49:3:1517:G:N3	50:1:1920:C:H5'	2.31	0.44
50:1:1326:U:H2'	50:1:1327:A:C8	2.52	0.44
50:1:2532:G:O5'	50:1:2532:G:H8	1.99	0.44
50:1:2648:G:O2'	50:1:2649:C:H5'	2.17	0.44
54:8:84:ARG:O	54:8:88:LEU:HB2	2.17	0.44
2:c:109:VAL:HG21	2:c:193:VAL:HG13	1.99	0.44
4:e:145:VAL:O	4:e:145:VAL:HG13	2.16	0.44
6:g:1:MET:HE3	6:g:2:GLN:H	1.83	0.44
6:g:8:LYS:HD3	6:g:14:SER:HA	1.99	0.44
12:o:71:ALA:HA	12:o:74:VAL:HG22	1.99	0.44
13:p:83:ILE:HD12	13:p:83:ILE:N	2.32	0.44
15:r:58:VAL:HG23	15:r:58:VAL:O	2.17	0.44
29:G:91:VAL:O	29:G:91:VAL:HG13	2.17	0.44
31:I:138:PRO:HB3	31:I:183:ARG:HA	1.99	0.44
33:K:11:HIS:CE1	33:K:12:PRO:HD2	2.52	0.44
35:M:124:ILE:HD12	35:M:124:ILE:N	2.32	0.44
40:R:52:ILE:O	40:R:55:LEU:HB2	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:S:40:ARG:HH21	46:X:6:LYS:HG3	1.79	0.44
41:S:44:VAL:O	41:S:48:GLN:NE2	2.51	0.44
49:3:509:A:O2'	49:3:510:A:H5'	2.17	0.44
49:3:1286:U:H2'	49:3:1287:A:H5'	2.00	0.44
49:3:1344:C:O2'	49:3:1345:U:H5'	2.18	0.44
49:3:1350:A:H2'	49:3:1351:U:C6	2.53	0.44
50:1:194:G:H2'	50:1:195:A:O4'	2.17	0.44
50:1:528:A:C2	50:1:2042:A:H2'	2.51	0.44
50:1:648:G:H2'	50:1:649:G:H8	1.81	0.44
50:1:723:C:H2'	50:1:724:U:H6	1.79	0.44
50:1:898:C:H2'	50:1:899:A:C5'	2.42	0.44
50:1:1179:G:C2'	50:1:1180:U:H4'	2.46	0.44
50:1:2216:G:H2'	50:1:2217:G:H8	1.82	0.44
50:1:2229:U:H2'	50:1:2230:G:H8	1.82	0.44
50:1:2480:C:H3'	50:1:2481:G:H8	1.81	0.44
5:f:152:ARG:HH12	50:1:2743:U:H4'	1.83	0.44
6:g:24:GLY:HA2	6:g:28:ASN:HD22	1.83	0.44
13:p:79:VAL:HG13	13:p:80:VAL:N	2.32	0.44
15:r:91:GLN:NE2	50:1:993:G:H1'	2.26	0.44
24:B:1:ALA:N	50:1:2056:G:N2	2.65	0.44
30:H:190:THR:O	30:H:192:TYR:N	2.51	0.44
31:I:58:GLN:O	31:I:62:ARG:HG2	2.17	0.44
32:J:23:THR:HG21	49:3:1396:A:H2	1.82	0.44
32:J:156:ARG:HH22	32:J:163:ILE:HB	1.82	0.44
35:M:107:LYS:HG2	35:M:120:LEU:HD11	1.99	0.44
36:N:112:ARG:HH21	41:S:100:TRP:HZ2	1.65	0.44
37:O:9:ARG:HA	37:O:73:LEU:HD23	2.00	0.44
38:P:52:ARG:HA	38:P:56:LYS:HB2	1.98	0.44
45:W:56:ARG:O	45:W:60:ARG:HG3	2.17	0.44
49:3:54:C:H2'	49:3:352:C:N4	2.30	0.44
49:3:128:G:O2'	49:3:129:A:H5'	2.17	0.44
49:3:443:C:H2'	49:3:444:G:H8	1.82	0.44
49:3:681:A:H2'	49:3:682:G:H8	1.82	0.44
49:3:734:G:O2'	49:3:735:C:H5'	2.17	0.44
49:3:1067:A:H2	49:3:1191:A:C5	2.35	0.44
49:3:1424:U:H2'	49:3:1425:U:C6	2.53	0.44
49:3:1457:G:H2'	49:3:1458:G:H8	1.83	0.44
49:3:1471:U:O2'	49:3:1472:U:H5'	2.16	0.44
49:3:1478:U:H2'	49:3:1479:C:C6	2.52	0.44
50:1:839:U:H2'	50:1:840:C:C6	2.53	0.44
50:1:1832:C:H2'	50:1:1833:C:O4'	2.16	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:2216:G:H2'	50:1:2217:G:C8	2.52	0.44
50:1:2377:A:O2'	50:1:2378:A:H5'	2.17	0.44
50:1:2700:A:H2'	50:1:2701:U:C6	2.52	0.44
54:8:77:TYR:HD2	54:8:83:ASN:ND2	2.16	0.44
1:b:140:VAL:HG12	1:b:191:LEU:HA	2.00	0.44
1:b:159:THR:HG21	50:1:1819:A:H5''	1.98	0.44
2:c:61:THR:OG1	2:c:64:GLU:HG2	2.18	0.44
4:e:79:ARG:NH1	4:e:80:GLN:HB3	2.32	0.44
7:j:80:HIS:O	7:j:81:ILE:C	2.60	0.44
8:k:34:GLY:H	8:k:37:ASP:CG	2.25	0.44
9:l:19:LEU:HD11	9:l:31:GLY:O	2.17	0.44
9:l:89:VAL:O	9:l:89:VAL:HG13	2.17	0.44
9:l:94:THR:O	9:l:97:ALA:HB3	2.17	0.44
36:N:98:ARG:HE	36:N:103:VAL:HG11	1.83	0.44
36:N:123:ARG:NH2	36:N:123:ARG:HB2	2.33	0.44
39:Q:88:ASP:HB2	49:3:523:A:H61	1.82	0.44
49:3:283:U:H2'	49:3:283:U:O2	2.16	0.44
49:3:1094:G:N3	49:3:1094:G:H2'	2.33	0.44
50:1:6:A:H2'	50:1:7:G:H8	1.82	0.44
50:1:220:G:H22	50:1:427:U:H2'	1.83	0.44
50:1:714:U:O5'	50:1:714:U:H6	2.00	0.44
51:2:93:C:H2'	51:2:94:A:H8	1.83	0.44
3:d:146:VAL:HG12	3:d:147:LEU:N	2.33	0.44
4:e:29:ARG:O	4:e:157:THR:HG23	2.17	0.44
4:e:73:VAL:HG11	4:e:76:PHE:HD2	1.81	0.44
7:j:26:GLY:HA3	50:1:1140:C:H5''	1.99	0.44
7:j:58:ASN:HD21	7:j:128:ASN:CG	2.26	0.44
7:j:84:ILE:HG23	7:j:84:ILE:O	2.17	0.44
9:l:57:LEU:HA	9:l:60:ARG:HG2	2.00	0.44
9:l:62:PRO:HA	50:1:2393:U:O3'	2.17	0.44
12:o:33:ARG:O	12:o:34:HIS:CB	2.65	0.44
15:r:79:ARG:HH22	50:1:572:A:H5'	1.82	0.44
20:w:66:GLU:OE2	20:w:68:LYS:HB3	2.18	0.44
30:H:110:LEU:O	30:H:203:LYS:HE2	2.18	0.44
31:I:28:ASP:HB3	31:I:33:ILE:HG22	2.00	0.44
34:L:68:VAL:O	34:L:137:ARG:NE	2.50	0.44
36:N:111:GLU:N	49:3:1348:U:OP1	2.46	0.44
38:P:122:PRO:HG2	48:Z:34:ARG:HA	1.99	0.44
39:Q:49:ARG:NH1	39:Q:88:ASP:OD1	2.51	0.44
48:Z:48:LYS:HE3	49:3:723:U:P	2.57	0.44
49:3:284:C:H2'	49:3:285:C:C6	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:912:C:H2'	49:3:913:A:C8	2.53	0.44
50:1:680:C:H2'	50:1:681:G:C8	2.51	0.44
50:1:1958:C:H2'	50:1:1959:G:C8	2.52	0.44
50:1:2341:G:H2'	50:1:2342:C:C6	2.53	0.44
50:1:2642:G:O2'	50:1:2643:G:H5'	2.18	0.44
50:1:2762:C:H2'	50:1:2763:G:O4'	2.18	0.44
50:1:2865:U:H2'	50:1:2866:U:C5	2.51	0.44
1:b:204:LEU:HD13	1:b:210:ALA:HB2	1.99	0.44
9:l:118:THR:HA	9:l:119:PRO:HD3	1.85	0.44
24:B:24:VAL:HG23	24:B:25:THR:H	1.82	0.44
28:F:12:ARG:O	28:F:15:LYS:NZ	2.49	0.44
31:I:111:ALA:HB3	49:3:408:A:OP1	2.17	0.44
34:L:62:GLU:HG3	34:L:66:GLU:HG3	1.99	0.44
34:L:73:GLU:CG	34:L:74:VAL:H	2.25	0.44
40:R:82:LEU:HD11	46:X:65:MET:HE3	1.99	0.44
43:U:8:ARG:NH2	43:U:15:PRO:HG3	2.33	0.44
47:Y:34:VAL:CG1	47:Y:53:MET:HE3	2.48	0.44
47:Y:73:ARG:NH2	49:3:261:U:OP2	2.50	0.44
48:Z:6:ARG:O	48:Z:8:ASN:N	2.43	0.44
49:3:78:A:H2'	49:3:79:G:O4'	2.17	0.44
49:3:456:A:H61	49:3:476:U:H3	1.66	0.44
49:3:662:U:H3	49:3:743:A:H61	1.66	0.44
49:3:979:C:H2'	49:3:980:C:O4'	2.16	0.44
49:3:1273:C:H2'	49:3:1274:A:O4'	2.18	0.44
50:1:149:A:O2'	50:1:150:U:H5'	2.18	0.44
50:1:1019:U:H2'	50:1:1020:A:C8	2.53	0.44
50:1:1485:U:H3	50:1:1504:A:H61	1.65	0.44
50:1:1737:G:H2'	50:1:1738:G:C4	2.53	0.44
50:1:1866:A:H3'	50:1:1867:G:C8	2.53	0.44
50:1:2377:A:H2'	50:1:2378:A:C8	2.53	0.44
2:c:39:ASP:OD1	2:c:39:ASP:N	2.50	0.44
2:c:208:LYS:HE2	50:1:2733:A:C2	2.53	0.44
7:j:27:ARG:HD2	50:1:1143:A:H62	1.82	0.44
8:k:114:LYS:O	8:k:117:SER:OG	2.31	0.44
21:x:66:VAL:O	21:x:69:GLU:HB3	2.17	0.44
29:G:137:THR:O	29:G:140:LEU:HB3	2.18	0.44
29:G:141:GLU:OE2	29:G:145:ASN:ND2	2.51	0.44
34:L:136:LYS:HA	34:L:136:LYS:HD3	1.89	0.44
38:P:85:VAL:HG11	38:P:92:ARG:HH21	1.83	0.44
49:3:830:G:O2'	49:3:831:A:H5'	2.16	0.44
50:1:1419:A:N6	50:1:1494:A:H61	2.04	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:1421:G:H1'	50:1:1494:A:N6	2.33	0.44
50:1:1569:A:H2'	50:1:1570:A:C8	2.53	0.44
50:1:2104:C:H2'	50:1:2105:U:C6	2.53	0.44
51:2:62:C:H2'	51:2:63:C:H6	1.82	0.44
1:b:20:ASN:HD22	1:b:23:LEU:HG	1.82	0.44
1:b:155:ARG:N	50:1:1819:A:OP1	2.51	0.44
3:d:131:THR:HG23	50:1:321:U:H5''	1.99	0.44
5:f:22:VAL:C	5:f:23:ILE:HD12	2.43	0.44
5:f:43:LYS:HB2	5:f:50:THR:HG23	2.00	0.44
6:g:8:LYS:NZ	6:g:14:SER:HA	2.33	0.44
9:l:18:ARG:NH2	50:1:1249:U:C4	2.86	0.44
9:l:101:ILE:HG13	9:l:102:GLY:N	2.22	0.44
9:l:121:THR:HG23	9:l:141:LYS:HB3	2.00	0.44
13:p:64:SER:OG	13:p:65:ASN:N	2.51	0.44
29:G:89:PHE:HD1	29:G:149:GLY:O	1.99	0.44
30:H:5:HIS:CG	41:S:88:MET:HB3	2.52	0.44
33:K:96:VAL:HG13	33:K:96:VAL:O	2.18	0.44
38:P:81:LEU:N	38:P:81:LEU:HD23	2.33	0.44
39:Q:87:LYS:HG2	39:Q:87:LYS:O	2.17	0.44
42:T:23:SER:OG	42:T:26:VAL:HG22	2.17	0.44
45:W:21:ASP:OD2	45:W:23:LYS:HB3	2.18	0.44
49:3:340:U:O2'	49:3:341:C:H5'	2.18	0.44
49:3:1123:U:O2	49:3:1150:A:H2	2.00	0.44
50:1:262:A:H2'	50:1:263:G:O4'	2.18	0.44
50:1:502:A:H2'	50:1:503:A:H5'	2.00	0.44
50:1:521:U:H2'	50:1:522:A:C8	2.52	0.44
50:1:527:C:H4'	50:1:528:A:O4'	2.17	0.44
50:1:2515:C:O2'	50:1:2516:A:H5'	2.18	0.44
50:1:2531:A:H8	50:1:2531:A:OP1	2.01	0.44
50:1:2699:C:H2'	50:1:2700:A:H8	1.82	0.44
52:5:4:G:H2'	52:5:5:G:H8	1.82	0.44
1:b:7:PRO:HG3	50:1:1694:C:OP1	2.18	0.44
2:c:208:LYS:HG2	50:1:2733:A:N6	2.33	0.44
6:g:1:MET:N	6:g:21:VAL:O	2.51	0.44
10:m:108:VAL:HB	10:m:112:LEU:HD23	1.99	0.44
19:v:30:ILE:HD13	19:v:91:PHE:HB2	2.00	0.44
24:B:1:ALA:H3	50:1:2056:G:N2	2.16	0.44
35:M:7:ALA:HB2	35:M:76:ARG:HD2	1.99	0.44
35:M:112:ASP:HA	35:M:115:ALA:HB3	2.00	0.44
44:V:46:HIS:HB3	44:V:66:LEU:HD22	1.98	0.44
44:V:49:ASN:OD1	44:V:51:GLU:HB3	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:572:A:C5'	49:3:917:G:H4'	2.47	0.44
50:1:440:C:H2'	50:1:441:U:H6	1.83	0.44
50:1:1555:G:H5'	50:1:1555:G:C8	2.53	0.44
50:1:1637:A:H5'	50:1:1760:C:O2'	2.17	0.44
3:d:21:ARG:HH12	3:d:106:LYS:HD3	1.83	0.43
4:e:157:THR:O	4:e:159:ALA:N	2.51	0.43
6:g:19:VAL:HG22	6:g:20:ASN:N	2.33	0.43
8:k:48:PRO:CB	49:3:1422:G:H5'	2.46	0.43
11:n:28:LEU:O	11:n:32:GLU:N	2.49	0.43
19:v:20:LEU:HD22	19:v:41:GLU:CD	2.43	0.43
20:w:40:LYS:HE2	50:1:2330:G:O3'	2.17	0.43
23:z:29:ARG:HB2	23:z:30:ARG:HE	1.82	0.43
30:H:191:THR:HG22	30:H:191:THR:O	2.18	0.43
33:K:10:VAL:HG13	33:K:14:GLN:HG2	1.99	0.43
33:K:76:THR:C	33:K:78:PHE:H	2.25	0.43
40:R:7:ASN:O	40:R:8:ILE:HD13	2.18	0.43
42:T:53:ARG:HG2	42:T:53:ARG:NH1	2.33	0.43
49:3:70:U:H4'	49:3:71:A:C8	2.53	0.43
49:3:467:U:H5''	49:3:468:A:N7	2.33	0.43
49:3:647:C:O2'	49:3:648:A:H5'	2.17	0.43
49:3:994:A:C2'	49:3:995:C:H5'	2.48	0.43
50:1:107:G:H4'	50:1:294:A:H4'	2.00	0.43
50:1:391:A:H1'	50:1:411:G:O4'	2.18	0.43
50:1:419:U:H2'	50:1:420:C:C6	2.53	0.43
50:1:558:U:H2'	50:1:559:G:H8	1.82	0.43
50:1:672:C:H2'	50:1:673:C:H6	1.83	0.43
50:1:1348:C:H2'	50:1:1349:C:O4'	2.18	0.43
50:1:1453:A:N6	50:1:2703:C:H41	2.15	0.43
50:1:2019:A:H2	50:1:2035:G:H22	1.65	0.43
1:b:34:GLU:O	1:b:61:TYR:HB3	2.18	0.43
5:f:137:LYS:HA	5:f:140:ILE:HG22	1.99	0.43
8:k:115:ILE:HD12	8:k:115:ILE:N	2.33	0.43
9:l:22:GLY:HA2	50:1:811:U:H3'	2.00	0.43
17:t:39:THR:CG2	17:t:42:GLU:HG3	2.47	0.43
21:x:7:THR:OG1	21:x:9:LYS:HG3	2.18	0.43
26:D:34:ARG:NE	26:D:42:LEU:O	2.51	0.43
34:L:139:ASP:O	34:L:142:ARG:HG2	2.17	0.43
36:N:28:VAL:HA	36:N:33:SER:HA	2.00	0.43
36:N:29:ILE:HG22	36:N:64:ILE:CB	2.44	0.43
40:R:74:MET:O	40:R:77:LYS:HG3	2.18	0.43
49:3:171:A:H2'	49:3:172:A:C8	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:999:C:H2'	49:3:1000:A:C8	2.53	0.43
50:1:1281:G:H2'	50:1:1282:U:C6	2.53	0.43
50:1:1356:G:H2'	50:1:1357:C:C6	2.53	0.43
50:1:1561:C:H2'	50:1:1562:U:C6	2.53	0.43
51:2:106:G:H2'	51:2:107:G:C8	2.52	0.43
1:b:225:ASN:O	1:b:227:VAL:N	2.51	0.43
2:c:97:SER:HB3	2:c:99:GLU:HG2	1.99	0.43
2:c:105:LYS:O	2:c:177:VAL:HG12	2.19	0.43
3:d:91:ASP:OD1	3:d:91:ASP:N	2.50	0.43
13:p:47:ILE:HB	13:p:96:LEU:HB2	1.99	0.43
20:w:44:GLY:H	20:w:47:VAL:HG21	1.83	0.43
29:G:156:LEU:HD23	29:G:157:PRO:O	2.18	0.43
39:Q:23:LEU:HD23	39:Q:23:LEU:HA	1.90	0.43
41:S:56:PRO:HA	41:S:59:GLN:HG2	2.00	0.43
49:3:77:A:H3'	49:3:78:A:H8	1.83	0.43
49:3:473:U:O5'	49:3:473:U:H6	2.01	0.43
49:3:801:U:H2'	49:3:802:A:H8	1.83	0.43
49:3:1354:U:H2'	49:3:1355:G:C8	2.53	0.43
50:1:721:A:H2'	50:1:722:A:C8	2.53	0.43
50:1:1193:G:O2'	50:1:1194:A:H5'	2.18	0.43
50:1:1287:A:C2'	50:1:1288:G:H5'	2.49	0.43
50:1:1311:G:N2	50:1:1603:A:H62	2.11	0.43
50:1:1480:C:H2'	50:1:1481:U:C6	2.53	0.43
50:1:1558:C:H6	50:1:1558:C:OP1	2.01	0.43
50:1:1754:A:N1	50:1:2716:C:O2'	2.49	0.43
50:1:2294:G:H2'	50:1:2295:C:C6	2.52	0.43
50:1:2704:C:H2'	50:1:2705:A:O4'	2.18	0.43
51:2:20:G:O2'	51:2:21:G:H5'	2.19	0.43
54:8:53:LYS:NZ	54:8:54:GLU:OE2	2.51	0.43
1:b:116:GLN:NE2	1:b:121:ALA:HA	2.32	0.43
1:b:245:THR:C	1:b:247:TRP:H	2.26	0.43
2:c:30:GLU:HB2	2:c:52:THR:OG1	2.18	0.43
2:c:148:GLN:N	2:c:148:GLN:OE1	2.52	0.43
4:e:56:LEU:HD13	4:e:59:ILE:HD12	2.00	0.43
10:m:34:LYS:HD3	19:v:82:TYR:HA	2.00	0.43
11:n:56:LYS:NZ	11:n:87:PHE:O	2.51	0.43
11:n:79:LEU:C	11:n:81:ASN:H	2.26	0.43
13:p:72:VAL:HG22	13:p:73:PHE:H	1.83	0.43
14:q:3:VAL:HG12	50:1:1199:U:H1'	2.00	0.43
14:q:21:LYS:HB2	14:q:21:LYS:HE3	1.83	0.43
16:s:18:ARG:HA	16:s:21:ALA:HB3	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:J:93:VAL:HA	32:J:126:ALA:HA	2.01	0.43
34:L:92:PRO:HA	34:L:95:ARG:HG2	2.01	0.43
34:L:112:ASP:HB3	34:L:118:ARG:HG2	2.01	0.43
37:O:52:LEU:HB2	41:S:80:ARG:CZ	2.49	0.43
40:R:3:ILE:HD13	40:R:52:ILE:HD11	2.00	0.43
49:3:88:U:H2'	49:3:89:U:C6	2.53	0.43
49:3:443:C:H2'	49:3:444:G:C8	2.54	0.43
49:3:625:U:H2'	49:3:626:G:C8	2.53	0.43
49:3:939:G:H2'	49:3:940:C:C6	2.53	0.43
49:3:1457:G:H2'	49:3:1458:G:C8	2.53	0.43
50:1:282:A:H2'	50:1:283:G:C8	2.53	0.43
50:1:633:A:H2'	50:1:634:C:H5'	1.99	0.43
50:1:1804:C:O2'	50:1:1805:A:H5'	2.18	0.43
50:1:2163:A:H2'	50:1:2164:C:H5'	2.00	0.43
51:2:105:G:H2'	51:2:106:G:C8	2.54	0.43
1:b:181:ARG:HE	1:b:265:PHE:HB2	1.83	0.43
2:c:116:LYS:HB2	2:c:165:MET:O	2.18	0.43
3:d:32:VAL:HG13	3:d:33:VAL:N	2.33	0.43
6:g:69:ALA:CB	6:g:134:VAL:HG11	2.48	0.43
9:l:90:VAL:HG22	9:l:122:VAL:HA	1.99	0.43
10:m:89:VAL:HG23	10:m:89:VAL:O	2.18	0.43
15:r:83:TYR:CZ	50:1:1187:G:H5''	2.54	0.43
30:H:84:GLU:O	30:H:87:ARG:HG2	2.19	0.43
32:J:135:VAL:O	32:J:139:THR:HG23	2.18	0.43
34:L:2:ARG:O	34:L:2:ARG:HG2	2.19	0.43
40:R:57:ASP:O	40:R:61:LYS:HE2	2.19	0.43
41:S:33:VAL:O	41:S:33:VAL:HG13	2.19	0.43
41:S:70:HIS:HB3	49:3:974:A:H5'	2.00	0.43
41:S:81:ILE:HD12	41:S:81:ILE:N	2.30	0.43
43:U:4:ILE:HG23	43:U:4:ILE:O	2.18	0.43
46:X:5:LYS:NZ	49:3:1314:C:OP2	2.45	0.43
48:Z:34:ARG:NH1	48:Z:36:PHE:HE2	2.16	0.43
49:3:369:G:H2'	49:3:370:C:C6	2.54	0.43
49:3:478:A:C5	49:3:479:U:H1'	2.54	0.43
49:3:1440:U:H4'	49:3:1441:A:C5	2.53	0.43
50:1:127:A:H5''	50:1:128:C:O4'	2.18	0.43
50:1:320:A:H4'	50:1:322:A:N7	2.34	0.43
50:1:438:G:H2'	50:1:439:A:H8	1.84	0.43
50:1:552:U:H2'	50:1:553:G:H8	1.82	0.43
50:1:946:C:H2'	50:1:947:A:H8	1.83	0.43
50:1:1076:C:H2'	50:1:1077:A:C8	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:1827:U:O2'	50:1:1828:G:H5'	2.18	0.43
1:b:143:VAL:HG12	1:b:189:ALA:HB1	2.01	0.43
8:k:64:ARG:NH1	13:p:67:GLU:OE2	2.51	0.43
13:p:1:SER:OG	50:1:2876:G:H5'	2.18	0.43
14:q:111:LYS:HZ2	15:r:50:GLY:HA2	1.84	0.43
29:G:100:LEU:HD21	29:G:178:LEU:HB2	2.00	0.43
32:J:110:MET:O	32:J:113:VAL:HG12	2.18	0.43
33:K:91:ARG:NH1	33:K:93:LYS:HG3	2.33	0.43
35:M:12:ARG:CZ	49:3:826:C:H5'	2.49	0.43
35:M:15:ASN:OD1	49:3:874:G:N2	2.51	0.43
39:Q:78:VAL:HG22	39:Q:102:ASP:OD1	2.18	0.43
44:V:45:VAL:C	44:V:70:LYS:HD2	2.43	0.43
49:3:37:U:H2'	49:3:38:G:H8	1.83	0.43
49:3:935:A:H1'	49:3:1384:C:O2	2.18	0.43
49:3:960:U:O2'	49:3:1223:C:H4'	2.18	0.43
49:3:1300:G:H1	49:3:1334:G:H3'	1.84	0.43
50:1:200:U:H2'	50:1:201:C:H5'	2.01	0.43
50:1:1030:C:O2'	50:1:1031:G:H5'	2.19	0.43
50:1:1183:U:H2'	50:1:1184:U:C6	2.54	0.43
50:1:1306:C:H41	50:1:1606:C:H2'	1.84	0.43
50:1:1486:U:H2'	50:1:1487:U:H6	1.83	0.43
50:1:2228:G:H2'	50:1:2229:U:C6	2.53	0.43
50:1:2281:A:C2'	50:1:2282:G:H5'	2.48	0.43
50:1:2559:C:H2'	50:1:2560:A:H8	1.83	0.43
1:b:143:VAL:CG2	1:b:153:LEU:HB2	2.49	0.43
1:b:149:LYS:HD3	50:1:2204:G:H4'	1.99	0.43
5:f:91:VAL:HG13	5:f:91:VAL:O	2.18	0.43
6:g:134:VAL:HG22	6:g:138:VAL:HB	1.99	0.43
9:l:23:ILE:HD11	15:r:84:ARG:HB3	2.01	0.43
13:p:72:VAL:HG22	13:p:73:PHE:N	2.33	0.43
19:v:20:LEU:CD1	19:v:27:PRO:HD3	2.47	0.43
24:B:38:LEU:HB2	24:B:41:HIS:HB2	2.00	0.43
34:L:92:PRO:HA	34:L:95:ARG:HE	1.83	0.43
35:M:80:PRO:HG2	49:3:878:A:H5''	2.00	0.43
36:N:29:ILE:O	36:N:32:ARG:N	2.43	0.43
41:S:10:VAL:HA	41:S:13:VAL:HG12	2.00	0.43
49:3:256:U:H2'	49:3:257:G:C8	2.53	0.43
49:3:399:G:H2'	49:3:400:C:C6	2.53	0.43
50:1:106:C:H2'	50:1:107:G:C8	2.53	0.43
50:1:215:G:C4'	50:1:216:A:H4'	2.47	0.43
50:1:942:G:H2'	50:1:943:A:H8	1.82	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:995:C:H5'	50:1:995:C:C6	2.53	0.43
50:1:1303:G:O2'	50:1:1304:A:H5'	2.19	0.43
50:1:1417:C:H2'	50:1:1418:G:C8	2.53	0.43
50:1:2194:U:H2'	50:1:2195:U:H6	1.79	0.43
50:1:2895:G:H2'	50:1:2896:C:C6	2.53	0.43
53:4:17:U:O2'	53:4:18:G:H5'	2.19	0.43
1:b:7:PRO:O	50:1:1695:G:H8	2.01	0.43
1:b:161:VAL:HG21	1:b:173:LEU:HD13	2.01	0.43
6:g:114:GLU:O	6:g:116:ARG:HD2	2.18	0.43
11:n:3:HIS:CD2	50:1:2820:A:H4'	2.54	0.43
11:n:100:CYS:HA	24:B:42:ILE:HG12	2.00	0.43
19:v:80:HIS:CG	19:v:81:PRO:HD2	2.53	0.43
21:x:37:PHE:HZ	21:x:55:MET:HE3	1.84	0.43
21:x:70:LEU:HD21	21:x:73:ARG:HH21	1.84	0.43
30:H:57:GLU:O	30:H:63:ILE:HD12	2.18	0.43
31:I:28:ASP:C	31:I:30:LYS:H	2.27	0.43
32:J:32:PHE:CD2	32:J:55:VAL:HG13	2.53	0.43
46:X:2:ARG:NH1	49:3:1312:G:N7	2.67	0.43
47:Y:59:ARG:NH1	49:3:195:A:OP1	2.51	0.43
49:3:204:G:N2	49:3:205:A:N6	2.64	0.43
50:1:146:A:H2'	50:1:147:C:C6	2.53	0.43
50:1:863:A:H2'	50:1:864:G:H8	1.83	0.43
50:1:1876:A:H2'	50:1:1877:A:O4'	2.19	0.43
50:1:2408:U:O2'	50:1:2409:G:H5'	2.18	0.43
50:1:2832:U:H1'	50:1:2834:G:C2	2.54	0.43
54:8:78:ARG:HG2	54:8:78:ARG:HH21	1.83	0.43
2:c:81:GLU:CD	50:1:2636:C:H4'	2.43	0.43
3:d:52:VAL:HG11	3:d:74:LYS:HB2	2.00	0.43
4:e:141:ASP:C	4:e:143:ASP:H	2.27	0.43
5:f:7:PRO:HB2	5:f:48:THR:HG22	2.00	0.43
5:f:41:GLU:HG3	5:f:54:ARG:HA	2.01	0.43
6:g:54:LEU:HD23	6:g:55:GLU:N	2.33	0.43
7:j:113:PRO:HG3	50:1:529:A:OP2	2.18	0.43
9:l:14:LYS:HD3	9:l:14:LYS:HA	1.87	0.43
10:m:41:LEU:CD1	10:m:96:ILE:HG13	2.49	0.43
11:n:29:VAL:HG21	11:n:75:ILE:HG23	2.01	0.43
12:o:105:ALA:O	12:o:108:ASP:OD1	2.36	0.43
13:p:105:LYS:N	49:3:1432:G:OP1	2.41	0.43
14:q:111:LYS:CG	15:r:48:LYS:HE2	2.49	0.43
16:s:14:ALA:HB1	16:s:18:ARG:HH21	1.83	0.43
21:x:38:TRP:NE1	21:x:40:GLU:OE2	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:H:153:SER:O	30:H:195:ILE:HG23	2.19	0.43
31:I:182:LYS:HG2	31:I:183:ARG:HG2	2.01	0.43
32:J:44:ARG:HA	32:J:72:ASN:HA	2.01	0.43
33:K:70:VAL:O	33:K:73:GLU:HG3	2.18	0.43
37:O:30:LYS:HD2	37:O:31:ARG:N	2.33	0.43
39:Q:6:LEU:HD21	39:Q:11:ARG:NE	2.33	0.43
40:R:90:HIS:CE1	49:3:1308:U:H4'	2.54	0.43
43:U:60:TRP:HA	43:U:60:TRP:CE3	2.54	0.43
49:3:189:A:O2'	49:3:190:A:H5'	2.18	0.43
49:3:722:G:H2'	49:3:724:G:H8	1.84	0.43
49:3:887:G:C2'	49:3:888:G:H5'	2.48	0.43
49:3:1514:G:O2'	49:3:1515:G:H5'	2.18	0.43
50:1:256:A:O2'	50:1:257:C:H5'	2.19	0.43
50:1:1923:U:H2'	50:1:1924:C:H6	1.84	0.43
50:1:2391:G:HO2'	50:1:2392:A:H8	1.64	0.43
2:c:9:VAL:CG1	2:c:26:VAL:HG13	2.48	0.43
3:d:125:SER:OG	3:d:126:VAL:N	2.52	0.43
3:d:147:LEU:HG	3:d:149:ILE:HD11	2.00	0.43
4:e:48:LEU:HG	4:e:149:ARG:HH22	1.84	0.43
5:f:117:PRO:HG2	5:f:120:ILE:HD13	2.01	0.43
5:f:155:PRO:O	5:f:170:THR:HA	2.19	0.43
8:k:15:GLY:O	8:k:47:ILE:N	2.51	0.43
9:l:135:ILE:HA	9:l:138:ALA:HB3	2.01	0.43
13:p:33:GLU:HB2	13:p:36:LYS:HB2	2.01	0.43
13:p:103:THR:HA	13:p:107:ALA:HB2	1.99	0.43
17:t:31:VAL:O	17:t:31:VAL:HG13	2.18	0.43
19:v:69:GLU:C	19:v:70:ILE:HD12	2.44	0.43
22:y:11:VAL:O	22:y:14:LEU:HB3	2.19	0.43
25:C:13:SER:HB2	25:C:47:ILE:HG23	2.00	0.43
27:E:25:HIS:NE2	27:E:47:ALA:HB2	2.33	0.43
30:H:46:LEU:HD23	30:H:51:VAL:HG21	2.01	0.43
32:J:151:MET:O	32:J:155:LYS:NZ	2.52	0.43
34:L:4:ARG:HG2	34:L:6:ILE:HG23	2.00	0.43
34:L:73:GLU:HG3	34:L:74:VAL:N	2.28	0.43
34:L:135:LYS:O	34:L:139:ASP:N	2.49	0.43
49:3:62:U:O2'	49:3:63:C:H5'	2.19	0.43
49:3:197:A:N3	49:3:198:G:H1'	2.33	0.43
49:3:651:C:H2'	49:3:652:U:C6	2.53	0.43
49:3:682:G:H2'	49:3:683:G:H8	1.83	0.43
50:1:813:U:O2'	50:1:1225:G:H1'	2.19	0.43
50:1:1658:C:H2'	50:1:1659:G:H8	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:1683:U:H2'	50:1:1684:G:C8	2.53	0.43
50:1:1692:U:H2'	50:1:1694:C:H5	1.84	0.43
50:1:2701:U:OP1	50:1:2702:G:H5''	2.19	0.43
54:8:71:VAL:HG22	54:8:72:ILE:N	2.33	0.43
1:b:184:GLU:OE1	1:b:186:ASP:HB2	2.19	0.42
6:g:9:VAL:HG12	6:g:13:GLY:CA	2.50	0.42
9:l:62:PRO:HG2	27:E:24:LYS:HB3	2.00	0.42
13:p:104:GLY:HA3	49:3:1432:G:OP1	2.19	0.42
19:v:65:VAL:HG13	19:v:66:ASP:OD1	2.18	0.42
23:z:4:ILE:HG22	23:z:58:GLU:HG2	1.99	0.42
23:z:29:ARG:HB2	23:z:30:ARG:HD3	2.00	0.42
32:J:110:MET:O	32:J:114:LEU:HD23	2.19	0.42
32:J:113:VAL:HG13	32:J:114:LEU:CD2	2.49	0.42
34:L:39:GLU:O	34:L:42:VAL:HG22	2.19	0.42
36:N:35:GLU:HA	36:N:39:GLY:CA	2.43	0.42
36:N:98:ARG:HB2	36:N:103:VAL:HG21	2.00	0.42
38:P:115:ILE:HG23	38:P:115:ILE:O	2.19	0.42
49:3:139:A:H2'	49:3:140:U:C6	2.53	0.42
49:3:735:C:H2'	49:3:736:C:C6	2.54	0.42
49:3:995:C:H2'	49:3:996:A:C8	2.54	0.42
49:3:1414:U:H2'	49:3:1415:G:H8	1.83	0.42
49:3:1460:C:H2'	49:3:1461:G:C8	2.54	0.42
50:1:364:C:O5'	50:1:364:C:H6	2.02	0.42
50:1:635:C:H2'	50:1:636:G:C8	2.54	0.42
50:1:760:G:H2'	50:1:761:A:O4'	2.19	0.42
50:1:1164:C:H2'	50:1:1165:A:H8	1.84	0.42
50:1:2527:C:H2'	50:1:2528:U:C6	2.53	0.42
50:1:2634:A:H2'	50:1:2635:A:C8	2.54	0.42
50:1:2650:U:H2'	50:1:2651:C:C6	2.53	0.42
50:1:2761:A:C2'	50:1:2762:C:H5''	2.49	0.42
54:8:109:ARG:NH1	54:8:110:PRO:HG2	2.34	0.42
2:c:26:VAL:C	2:c:27:ILE:HD12	2.44	0.42
10:m:93:VAL:HG22	10:m:94:ALA:N	2.35	0.42
19:v:80:HIS:HB3	19:v:83:LYS:O	2.20	0.42
21:x:5:GLN:HG3	21:x:49:ARG:H	1.84	0.42
31:I:85:THR:HG23	31:I:86:GLY:N	2.34	0.42
34:L:129:ASN:HA	34:L:134:VAL:HG21	1.99	0.42
35:M:3:GLN:HE22	49:3:755:G:H21	1.66	0.42
39:Q:49:ARG:N	39:Q:49:ARG:HD2	2.34	0.42
39:Q:72:ASN:ND2	39:Q:104:SER:H	2.16	0.42
49:3:817:C:H4'	49:3:818:G:H5''	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:1120:C:H2'	49:3:1121:U:C6	2.54	0.42
50:1:404:A:O2'	50:1:406:G:C8	2.70	0.42
50:1:455:C:O2	50:1:472:A:H2'	2.19	0.42
50:1:814:C:H2'	50:1:815:C:H6	1.84	0.42
50:1:940:G:H3'	50:1:941:A:H5''	2.00	0.42
50:1:1627:G:H2'	50:1:1628:G:H8	1.83	0.42
50:1:1972:G:H2'	50:1:1973:G:H8	1.84	0.42
50:1:2593:U:H2'	50:1:2594:C:C6	2.54	0.42
54:8:111:THR:HG23	54:8:112:ARG:HH11	1.83	0.42
3:d:176:ASP:HA	3:d:177:PRO:HD3	1.86	0.42
7:j:26:GLY:HA3	50:1:1140:C:H5'	2.01	0.42
23:z:52:PHE:CZ	23:z:53:MET:HE3	2.54	0.42
29:G:65:LYS:HG3	29:G:89:PHE:CE2	2.54	0.42
29:G:66:ILE:HA	29:G:159:ALA:HB3	2.01	0.42
30:H:75:VAL:HG23	30:H:76:ILE:HG23	2.00	0.42
34:L:14:ASP:HA	34:L:15:PRO:HD3	1.74	0.42
36:N:34:LEU:HG	36:N:35:GLU:H	1.85	0.42
37:O:37:ARG:HH21	37:O:40:ILE:HD11	1.84	0.42
37:O:80:THR:O	37:O:83:THR:HG22	2.19	0.42
41:S:50:LEU:HA	41:S:51:PRO:HD2	1.79	0.42
49:3:252:U:C2	49:3:253:A:N7	2.87	0.42
49:3:614:C:O5'	49:3:614:C:H6	2.02	0.42
50:1:340:A:H2'	50:1:341:C:O4'	2.19	0.42
50:1:373:U:H2'	50:1:374:A:H8	1.84	0.42
50:1:534:U:H2'	50:1:535:G:H8	1.84	0.42
50:1:1173:U:H6	50:1:1174:U:H4'	1.84	0.42
50:1:1867:G:H2'	50:1:1868:C:C6	2.53	0.42
50:1:2248:C:C2'	50:1:2249:U:H5'	2.49	0.42
51:2:69:G:H2'	51:2:70:C:H5'	2.02	0.42
52:5:53:G:H2'	52:5:54:U:C6	2.55	0.42
3:d:117:ARG:NH1	9:l:2:ARG:HG2	2.28	0.42
8:k:35:VAL:HG12	8:k:107:LEU:HD21	2.01	0.42
9:l:47:ARG:NH2	50:1:195:A:O3'	2.44	0.42
10:m:106:ASP:OD2	10:m:107:GLY:N	2.52	0.42
16:s:57:ASN:OD1	50:1:495:G:H1'	2.20	0.42
18:u:39:ASN:HD21	18:u:64:ILE:HB	1.84	0.42
21:x:16:ASN:N	21:x:24:THR:O	2.52	0.42
27:E:18:LYS:HE3	27:E:18:LYS:HB2	1.86	0.42
29:G:202:ASN:ND2	29:G:204:ASP:H	2.17	0.42
30:H:117:ASP:OD1	30:H:118:SER:N	2.53	0.42
31:I:20:LEU:HG	31:I:21:LYS:HG2	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:I:156:ALA:O	31:I:159:GLU:HB3	2.18	0.42
34:L:129:ASN:HB2	34:L:134:VAL:HG11	2.02	0.42
37:O:41:PRO:HB2	49:3:1150:A:O2'	2.19	0.42
39:Q:97:VAL:HG13	39:Q:97:VAL:O	2.19	0.42
39:Q:101:LEU:HD23	39:Q:101:LEU:H	1.84	0.42
42:T:20:ASP:HA	49:3:750:C:H4'	2.00	0.42
43:U:42:ILE:HG12	49:3:449:G:O2'	2.19	0.42
49:3:132:C:H2'	49:3:133:U:C6	2.55	0.42
49:3:775:G:H2'	49:3:776:G:O4'	2.19	0.42
49:3:1286:U:H2'	49:3:1287:A:C5'	2.50	0.42
50:1:1180:U:H2'	50:1:1181:U:H6	1.84	0.42
50:1:1547:C:H2'	50:1:1548:A:H8	1.85	0.42
50:1:2123:G:H2'	50:1:2124:G:C8	2.54	0.42
50:1:2162:G:H5''	50:1:2164:C:H41	1.84	0.42
50:1:2196:C:H2'	50:1:2197:U:C6	2.54	0.42
51:2:30:C:H1'	51:2:57:A:N6	2.34	0.42
52:5:17:C:H5'	52:5:61:C:OP1	2.18	0.42
54:8:3:VAL:HB	54:8:10:ILE:HG22	2.01	0.42
1:b:118:GLY:HA2	1:b:188:ARG:HH22	1.85	0.42
1:b:228:ASP:CG	50:1:780:G:H1	2.27	0.42
3:d:92:HIS:O	3:d:93:SER:C	2.63	0.42
4:e:129:MET:HE1	4:e:131:VAL:CG1	2.49	0.42
4:e:161:SER:HB3	4:e:164:GLU:OE1	2.19	0.42
5:f:42:VAL:C	5:f:43:LYS:HD3	2.43	0.42
5:f:136:ASP:OD1	5:f:138:GLN:HG3	2.20	0.42
10:m:35:ALA:HB1	10:m:126:ILE:HG21	2.00	0.42
12:o:98:GLN:HB3	51:2:48:U:H5'	2.01	0.42
15:r:88:GLY:O	50:1:1224:U:H4'	2.18	0.42
19:v:1:MET:SD	19:v:1:MET:N	2.89	0.42
21:x:37:PHE:HD2	21:x:48:LEU:HD13	1.85	0.42
29:G:32:GLY:HA2	29:G:39:ILE:CD1	2.50	0.42
29:G:178:LEU:O	29:G:180:ILE:N	2.48	0.42
29:G:187:ASP:H	29:G:190:SER:CB	2.32	0.42
31:I:2:ARG:NH2	49:3:406:G:H4'	2.34	0.42
31:I:30:LYS:HG2	49:3:412:A:OP2	2.19	0.42
31:I:53:GLN:HG2	31:I:202:LEU:HB2	2.00	0.42
31:I:101:VAL:HG13	31:I:102:TYR:N	2.34	0.42
31:I:198:LEU:HD23	31:I:198:LEU:C	2.45	0.42
35:M:75:GLN:HG3	35:M:127:TYR:HB2	2.02	0.42
38:P:121:ARG:HD2	38:P:122:PRO:HD2	2.01	0.42
40:R:14:ALA:HB3	40:R:42:VAL:CG1	2.49	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:X:17:LYS:HE2	49:3:1013:G:OP1	2.20	0.42
48:Z:46:ARG:NH2	49:3:1530:G:N7	2.62	0.42
49:3:66:A:H61	49:3:103:U:H3	1.67	0.42
49:3:682:G:O2'	49:3:683:G:H5'	2.20	0.42
49:3:1115:U:H2'	49:3:1116:U:C6	2.55	0.42
49:3:1227:A:H2'	49:3:1228:C:H5'	2.02	0.42
49:3:1395:C:C4'	49:3:1401:G:H21	2.33	0.42
50:1:156:A:H2'	50:1:157:C:C6	2.54	0.42
50:1:650:C:H2'	50:1:651:G:H5''	2.00	0.42
50:1:814:C:H2'	50:1:815:C:C6	2.54	0.42
50:1:894:U:O5'	50:1:894:U:H6	2.02	0.42
50:1:1391:U:H3	50:1:1394:U:H5	1.65	0.42
50:1:2266:A:N6	50:1:2273:A:OP2	2.52	0.42
54:8:40:ARG:HD3	54:8:41:PHE:N	2.35	0.42
1:b:60:ALA:O	1:b:62:ARG:NH1	2.52	0.42
3:d:108:ILE:HD11	3:d:180:LEU:HB2	2.02	0.42
12:o:64:TYR:CE2	12:o:66:GLY:HA3	2.54	0.42
20:w:79:GLU:O	20:w:81:GLU:N	2.52	0.42
25:C:10:LEU:O	25:C:19:PHE:HB2	2.20	0.42
26:D:9:VAL:HG23	50:1:1309:G:H5''	2.01	0.42
26:D:12:ARG:HG2	50:1:686:U:O4	2.20	0.42
30:H:115:VAL:HG23	30:H:116:ALA:N	2.35	0.42
30:H:128:MET:CE	30:H:130:ARG:HG3	2.50	0.42
30:H:135:ARG:HG3	30:H:136:ALA:N	2.34	0.42
32:J:131:ASN:HA	32:J:132:PRO:HD2	1.88	0.42
33:K:67:PRO:O	33:K:70:VAL:HG22	2.19	0.42
39:Q:98:ARG:HH21	39:Q:106:VAL:HA	1.85	0.42
49:3:232:G:H1'	49:3:262:A:H61	1.84	0.42
49:3:312:C:H2'	49:3:313:A:C8	2.54	0.42
49:3:528:C:H5'	49:3:535:A:C6	2.55	0.42
49:3:834:U:H2'	49:3:835:U:C6	2.55	0.42
50:1:594:U:H2'	50:1:595:C:H6	1.79	0.42
50:1:668:A:H2'	50:1:670:A:H62	1.85	0.42
50:1:711:G:C6	50:1:721:A:C6	3.07	0.42
50:1:1438:U:H2'	50:1:1439:A:C8	2.54	0.42
50:1:2507:C:H6	50:1:2507:C:O5'	2.02	0.42
50:1:2668:G:O2'	50:1:2669:G:H5'	2.19	0.42
50:1:2828:G:H2'	50:1:2829:A:H8	1.83	0.42
51:2:112:G:H2'	51:2:113:C:C6	2.54	0.42
54:8:56:LEU:HD13	54:8:94:MET:HE1	2.02	0.42
5:f:46:ASP:OD1	5:f:47:ASN:N	2.50	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:k:86:LEU:HB2	8:k:95:ILE:HG22	2.01	0.42
9:l:30:THR:HG23	50:l:810:U:C4	2.55	0.42
13:p:52:ARG:NH2	50:l:2720:U:OP1	2.52	0.42
18:u:9:GLU:HA	18:u:23:LYS:HA	2.00	0.42
29:G:9:LEU:HD12	29:G:14:HIS:HE1	1.85	0.42
30:H:198:LYS:HE3	30:H:198:LYS:HB2	1.89	0.42
34:L:125:ASP:HA	34:L:128:GLU:HG2	2.00	0.42
36:N:98:ARG:HG3	36:N:103:VAL:HB	2.01	0.42
36:N:108:ARG:HE	36:N:108:ARG:HB2	1.66	0.42
38:P:124:LYS:NZ	48:Z:34:ARG:HB2	2.31	0.42
47:Y:49:ALA:O	47:Y:52:GLU:HB2	2.19	0.42
49:3:202:G:N2	49:3:466:A:N6	2.68	0.42
49:3:686:U:O2	49:3:704:A:N7	2.53	0.42
49:3:1263:C:O5'	49:3:1263:C:H6	2.03	0.42
50:1:118:A:OP2	50:1:119:A:H5''	2.20	0.42
50:1:671:C:O2'	50:1:672:C:H5'	2.19	0.42
50:1:717:C:C2'	50:1:718:A:H5'	2.48	0.42
50:1:1039:A:H2'	50:1:1040:A:C8	2.54	0.42
50:1:1418:G:H1'	50:1:1581:G:N2	2.34	0.42
50:1:1515:A:H2'	50:1:1516:G:O4'	2.19	0.42
50:1:2276:G:O2'	50:1:2277:G:H5'	2.19	0.42
51:2:77:U:O2'	51:2:78:A:H5'	2.19	0.42
1:b:44:ASN:OD1	50:1:1812:U:H1'	2.20	0.42
1:b:47:ARG:NH2	50:1:774:G:H5''	2.35	0.42
2:c:208:LYS:C	2:c:208:LYS:HD3	2.44	0.42
4:e:126:ASN:OD1	4:e:154:THR:HG23	2.20	0.42
12:o:24:THR:N	12:o:42:PRO:HG3	2.35	0.42
12:o:110:ALA:HB1	12:o:115:LEU:HD23	2.02	0.42
18:u:3:LYS:O	18:u:93:ARG:NH2	2.53	0.42
20:w:71:LYS:HG3	20:w:73:ARG:HB3	2.01	0.42
24:B:9:ARG:NH1	50:1:516:C:OP1	2.52	0.42
29:G:31:PHE:O	29:G:39:ILE:HB	2.20	0.42
30:H:20:THR:OG1	30:H:57:GLU:HG3	2.20	0.42
31:I:16:THR:HG22	31:I:17:ASP:OD2	2.20	0.42
31:I:27:ILE:HG13	31:I:28:ASP:N	2.34	0.42
32:J:20:VAL:HG23	32:J:31:SER:HB2	2.02	0.42
33:K:47:LEU:H	33:K:56:LYS:H	1.68	0.42
35:M:94:VAL:HG21	35:M:101:ALA:HB2	2.02	0.42
37:O:22:THR:HG23	37:O:23:ALA:N	2.34	0.42
37:O:33:GLY:HA2	37:O:80:THR:HG21	2.02	0.42
37:O:42:LEU:HD22	37:O:73:LEU:CD1	2.50	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:T:53:ARG:HG2	42:T:53:ARG:HH11	1.84	0.42
43:U:4:ILE:HD12	43:U:20:VAL:C	2.45	0.42
49:3:179:A:H61	49:3:196:A:H62	1.67	0.42
49:3:253:A:H2'	49:3:254:G:H8	1.85	0.42
49:3:547:A:H4'	49:3:548:G:O5'	2.20	0.42
49:3:598:U:H2'	49:3:599:C:C6	2.54	0.42
49:3:677:U:H2'	49:3:678:U:C6	2.54	0.42
49:3:893:C:H2'	49:3:894:G:H8	1.84	0.42
49:3:952:U:H2'	49:3:953:G:H8	1.85	0.42
49:3:1245:C:H2'	49:3:1246:A:H8	1.84	0.42
50:1:148:U:H5''	50:1:149:A:OP2	2.19	0.42
50:1:154:U:H2'	50:1:155:A:C8	2.55	0.42
50:1:650:C:H2'	50:1:651:G:O4'	2.20	0.42
50:1:1182:G:H2'	50:1:1183:U:C6	2.55	0.42
50:1:2082:A:H2'	50:1:2083:G:O4'	2.20	0.42
50:1:2326:C:H5''	50:1:2327:A:OP2	2.19	0.42
50:1:2696:U:H2'	50:1:2697:G:C8	2.55	0.42
50:1:2743:U:H2'	50:1:2744:G:C5'	2.49	0.42
2:c:2:ILE:HD13	2:c:90:PHE:CE2	2.55	0.42
4:e:107:VAL:HG23	4:e:108:PRO:HD3	2.02	0.42
7:j:24:THR:O	7:j:28:LEU:HG	2.19	0.42
9:l:95:LEU:HD23	9:l:95:LEU:HA	1.80	0.42
14:q:54:ARG:NH2	50:1:1155:A:O3'	2.53	0.42
24:B:3:GLN:HA	50:1:2615:U:N3	2.35	0.42
29:G:26:MET:HE2	29:G:187:ASP:O	2.20	0.42
30:H:22:PHE:HZ	37:O:11:LYS:NZ	2.17	0.42
30:H:141:MET:HA	30:H:145:ALA:HB3	2.02	0.42
31:I:199:ILE:H	31:I:199:ILE:CD1	2.24	0.42
33:K:6:ILE:N	33:K:6:ILE:HD12	2.34	0.42
34:L:130:LYS:HD2	34:L:130:LYS:O	2.20	0.42
37:O:32:THR:HB	37:O:82:LYS:HE2	2.02	0.42
39:Q:33:CYS:HA	39:Q:53:ARG:O	2.20	0.42
39:Q:65:TYR:OH	49:3:522:C:OP2	2.38	0.42
46:X:77:ARG:HD2	49:3:960:U:H5	1.85	0.42
47:Y:35:TYR:HD1	47:Y:38:ILE:HD12	1.85	0.42
49:3:13:U:O2'	49:3:14:U:H5'	2.20	0.42
49:3:711:G:O2'	49:3:712:A:H5'	2.20	0.42
49:3:729:A:H2'	49:3:730:G:H8	1.85	0.42
49:3:1144:G:H21	49:3:1146:A:N6	2.18	0.42
50:1:76:C:O2'	50:1:77:G:H5'	2.19	0.42
50:1:766:U:H2'	50:1:767:U:H6	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:774:G:C2'	50:1:775:G:H5''	2.50	0.42
50:1:1710:G:H2'	50:1:1711:A:H8	1.85	0.42
50:1:1845:G:H2'	50:1:1846:G:C8	2.55	0.42
50:1:2741:A:H62	50:1:2763:G:H21	1.67	0.42
50:1:2795:C:H2'	50:1:2796:U:O4'	2.20	0.42
50:1:2843:G:H2'	50:1:2844:G:C8	2.55	0.42
2:c:118:PHE:CE1	2:c:163:GLY:HA2	2.55	0.42
5:f:98:LYS:HZ2	5:f:103:ASN:HB3	1.85	0.42
17:t:13:ALA:HB1	22:y:33:ALA:CB	2.49	0.42
20:w:65:PHE:CD2	50:1:857:G:H5'	2.55	0.42
23:z:19:HIS:O	23:z:22:THR:HB	2.20	0.42
31:I:185:PRO:HB2	31:I:190:LEU:HD11	2.01	0.42
31:I:187:ARG:HA	31:I:190:LEU:HB2	2.01	0.42
32:J:59:ILE:O	32:J:63:MET:HG2	2.20	0.42
36:N:4:GLN:CD	36:N:19:PHE:HB3	2.45	0.42
36:N:56:MET:SD	36:N:56:MET:C	3.03	0.42
37:O:39:PRO:HA	37:O:74:VAL:HA	2.02	0.42
39:Q:109:ARG:O	39:Q:118:VAL:HG11	2.20	0.42
42:T:31:LEU:O	42:T:35:ILE:HG13	2.19	0.42
42:T:42:PHE:CD2	42:T:55:LEU:HD12	2.55	0.42
49:3:56:U:H2'	49:3:57:G:H8	1.84	0.42
49:3:265:G:O2'	49:3:266:G:H5'	2.20	0.42
49:3:469:C:OP2	49:3:470:C:H5	2.02	0.42
49:3:1166:G:O6	49:3:1168:U:H5''	2.19	0.42
49:3:1193:G:O2'	49:3:1194:U:H5'	2.20	0.42
50:1:179:C:H2'	50:1:180:G:O4'	2.20	0.42
50:1:634:C:H2'	50:1:635:C:C6	2.55	0.42
50:1:1069:A:H62	50:1:1073:A:N6	2.17	0.42
50:1:1740:G:H2'	50:1:1741:C:C6	2.55	0.42
50:1:2363:G:O2'	50:1:2364:C:H5'	2.20	0.42
50:1:2473:U:H5	50:1:2529:G:N3	2.18	0.42
50:1:2589:A:O2'	50:1:2590:A:H5'	2.19	0.42
3:d:40:ARG:HB3	50:1:443:A:N7	2.34	0.41
7:j:81:ILE:HG23	7:j:82:GLY:N	2.25	0.41
11:n:69:ARG:O	11:n:70:THR:OG1	2.29	0.41
23:z:11:SER:HB3	50:1:989:G:OP2	2.19	0.41
29:G:16:GLY:HA2	29:G:202:ASN:HD22	1.84	0.41
29:G:119:GLN:HA	29:G:122:ASP:OD1	2.20	0.41
35:M:95:MET:O	35:M:98:LEU:HG	2.20	0.41
37:O:43:PRO:O	37:O:71:LEU:HD12	2.20	0.41
39:Q:97:VAL:HG13	39:Q:100:ALA:HB2	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:T:81:ILE:HG21	42:T:87:ARG:HH11	1.85	0.41
42:T:81:ILE:CG2	42:T:87:ARG:HG3	2.49	0.41
48:Z:23:GLU:O	48:Z:24:LYS:HB2	2.20	0.41
49:3:450:G:N2	49:3:482:A:H62	2.18	0.41
49:3:521:G:H21	49:3:536:C:C4'	2.33	0.41
49:3:543:U:H2'	49:3:544:G:H8	1.84	0.41
49:3:1512:U:H3	49:3:1523:G:H1	1.68	0.41
50:1:64:A:H2'	50:1:65:U:C6	2.55	0.41
50:1:181:A:H2'	50:1:182:A:C8	2.55	0.41
50:1:226:A:H2'	50:1:227:A:C8	2.55	0.41
50:1:742:A:H2'	50:1:743:A:C8	2.55	0.41
50:1:822:G:H2'	50:1:823:C:C6	2.55	0.41
50:1:880:G:H2'	50:1:881:G:C8	2.55	0.41
50:1:904:G:O2'	50:1:905:A:H5'	2.20	0.41
50:1:1526:C:O2'	50:1:1527:G:H5'	2.20	0.41
50:1:1928:A:H5''	50:1:1929:G:OP2	2.20	0.41
50:1:1930:G:H2'	50:1:1968:G:N1	2.35	0.41
50:1:2121:G:H5''	50:1:2168:G:H22	1.85	0.41
50:1:2470:G:H2'	50:1:2471:A:H8	1.84	0.41
50:1:2527:C:H2'	50:1:2528:U:H6	1.85	0.41
1:b:47:ARG:NH1	50:1:778:G:H5'	2.35	0.41
1:b:83:ASP:OD1	1:b:85:ASN:ND2	2.53	0.41
1:b:222:THR:N	50:1:1826:G:OP1	2.52	0.41
2:c:202:ILE:HD12	2:c:202:ILE:N	2.35	0.41
4:e:56:LEU:HD22	4:e:56:LEU:H	1.85	0.41
5:f:84:LYS:HE2	5:f:141:GLY:HA2	2.00	0.41
5:f:143:VAL:HA	5:f:146:ASP:OD2	2.19	0.41
7:j:132:HIS:HB3	7:j:135:GLN:CD	2.44	0.41
12:o:34:HIS:HD2	12:o:65:THR:HG21	1.84	0.41
19:v:75:GLN:HB2	19:v:92:VAL:HG22	2.02	0.41
23:z:7:THR:O	23:z:55:LYS:N	2.50	0.41
29:G:3:VAL:HG23	29:G:7:ASP:CG	2.45	0.41
29:G:86:CYS:HA	29:G:221:ARG:HD3	2.03	0.41
29:G:220:VAL:HG13	29:G:221:ARG:HD2	2.02	0.41
32:J:106:ALA:HB3	32:J:111:ARG:HA	2.02	0.41
36:N:47:VAL:HG23	36:N:48:ARG:HG3	2.01	0.41
38:P:27:ASN:HA	38:P:57:SER:OG	2.20	0.41
38:P:107:THR:O	48:Z:6:ARG:HD2	2.20	0.41
40:R:100:ARG:HB2	49:3:950:U:OP2	2.20	0.41
46:X:68:HIS:HD2	46:X:72:GLU:HG3	1.85	0.41
49:3:1479:C:H2'	49:3:1480:A:C8	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:621:A:H2'	50:1:622:G:C5'	2.49	0.41
50:1:891:G:H2'	50:1:892:A:C8	2.55	0.41
50:1:1872:A:H2'	50:1:1873:G:H5'	2.03	0.41
50:1:2462:C:H2'	50:1:2463:C:C6	2.55	0.41
50:1:2602:A:H2'	52:5:75:C:OP1	2.20	0.41
50:1:2840:C:H2'	50:1:2841:C:C6	2.56	0.41
52:5:47:U:H5''	52:5:48:C:H5'	2.02	0.41
1:b:124:LYS:HD3	1:b:125:PRO:N	2.36	0.41
5:f:43:LYS:O	5:f:49:LEU:HD13	2.21	0.41
6:g:16:GLY:HA2	6:g:47:PHE:CZ	2.55	0.41
10:m:78:LEU:HD23	10:m:79:ALA:CB	2.49	0.41
12:o:108:ASP:O	12:o:112:GLU:HG3	2.20	0.41
13:p:33:GLU:N	13:p:36:LYS:O	2.53	0.41
14:q:65:ASN:ND2	14:q:69:ARG:HH12	2.18	0.41
19:v:19:ARG:HH22	51:2:95:U:P	2.43	0.41
29:G:3:VAL:HG13	29:G:3:VAL:O	2.20	0.41
30:H:109:GLU:OE1	30:H:139:ASN:HB3	2.21	0.41
31:I:176:LYS:HG3	31:I:178:GLU:HB3	2.01	0.41
36:N:98:ARG:NE	36:N:103:VAL:HG11	2.35	0.41
38:P:21:HIS:ND1	49:3:707:U:H4'	2.35	0.41
39:Q:120:ARG:CZ	49:3:500:G:H5'	2.50	0.41
41:S:40:ARG:HG2	41:S:40:ARG:HH11	1.84	0.41
47:Y:11:ILE:O	47:Y:15:LYS:HG2	2.20	0.41
47:Y:30:PHE:HD1	47:Y:33:LYS:HD2	1.85	0.41
48:Z:44:ARG:NH1	49:3:722:G:OP2	2.52	0.41
49:3:737:C:H2'	49:3:738:C:C6	2.55	0.41
49:3:920:U:H2'	49:3:921:U:C6	2.56	0.41
49:3:1306:A:N6	49:3:1331:G:O2'	2.52	0.41
50:1:140:C:H3'	50:1:141:G:O4'	2.20	0.41
50:1:662:G:H2'	50:1:663:G:H8	1.84	0.41
50:1:962:G:O2'	50:1:963:U:H5'	2.20	0.41
50:1:1677:A:H2'	50:1:1678:A:C8	2.54	0.41
50:1:2230:G:H2'	50:1:2231:U:C6	2.55	0.41
50:1:2779:U:OP1	50:1:2780:G:H8	2.04	0.41
50:1:2868:A:H3'	50:1:2869:G:C8	2.54	0.41
1:b:206:LYS:HD2	50:1:729:G:C8	2.55	0.41
1:b:220:ARG:HH12	1:b:237:ARG:HH22	1.68	0.41
4:e:139:GLU:CD	4:e:139:GLU:H	2.28	0.41
4:e:140:ILE:N	4:e:140:ILE:HD12	2.35	0.41
11:n:8:ARG:HH21	11:n:43:GLU:HG3	1.86	0.41
13:p:64:SER:N	13:p:67:GLU:O	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:s:59:GLU:HA	16:s:64:ALA:HA	2.01	0.41
17:t:24:MET:O	17:t:24:MET:HE3	2.20	0.41
23:z:16:LEU:CD2	50:1:968:C:H4'	2.51	0.41
29:G:37:VAL:HG22	29:G:38:HIS:N	2.36	0.41
33:K:67:PRO:HB2	33:K:69:GLU:CD	2.45	0.41
36:N:29:ILE:O	36:N:30:ASN:C	2.63	0.41
38:P:96:ILE:HG13	38:P:97:ARG:N	2.36	0.41
41:S:63:CYS:SG	41:S:78:LEU:HA	2.60	0.41
42:T:83:ARG:HD2	42:T:83:ARG:C	2.46	0.41
45:W:62:ARG:HH22	49:3:718:A:N6	2.18	0.41
49:3:121:U:H2'	49:3:122:G:H5'	2.02	0.41
49:3:131:A:H2'	49:3:132:C:C6	2.56	0.41
49:3:200:G:H2'	49:3:201:G:C8	2.52	0.41
49:3:943:U:H2'	49:3:944:G:H8	1.85	0.41
50:1:167:A:H2'	50:1:168:G:O4'	2.21	0.41
50:1:851:C:H2'	50:1:852:U:H6	1.86	0.41
50:1:1123:C:H2'	50:1:1124:G:H8	1.86	0.41
50:1:1165:A:H2'	50:1:1166:G:H8	1.86	0.41
50:1:1658:C:H2'	50:1:1659:G:C8	2.55	0.41
50:1:1794:A:O2'	50:1:1795:C:H5'	2.20	0.41
50:1:2671:G:O2'	50:1:2672:U:H5'	2.21	0.41
50:1:2752:C:H2'	50:1:2753:A:C8	2.56	0.41
50:1:2771:C:H2'	50:1:2772:C:C6	2.56	0.41
50:1:2891:U:H2'	50:1:2892:G:C8	2.55	0.41
51:2:48:U:H2'	51:2:49:C:C6	2.56	0.41
1:b:227:VAL:HG11	50:1:784:G:C5	2.55	0.41
1:b:245:THR:C	1:b:247:TRP:N	2.78	0.41
1:b:252:LYS:HG2	1:b:252:LYS:O	2.20	0.41
2:c:173:GLN:HE22	2:c:174:SER:HB2	1.86	0.41
3:d:105:LEU:O	3:d:109:LEU:HG	2.19	0.41
5:f:17:LYS:HG3	5:f:19:ASN:HD21	1.84	0.41
5:f:106:LEU:HB2	5:f:108:PHE:CE2	2.55	0.41
6:g:114:GLU:C	6:g:116:ARG:HD2	2.45	0.41
7:j:81:ILE:HG13	7:j:82:GLY:N	2.35	0.41
7:j:140:LEU:C	7:j:140:LEU:HD23	2.46	0.41
9:l:77:ILE:H	9:l:77:ILE:CD1	2.33	0.41
9:l:112:LEU:HD11	9:l:130:GLY:C	2.45	0.41
10:m:31:PHE:HE2	10:m:108:VAL:O	2.03	0.41
11:n:59:SER:OG	11:n:62:ASN:ND2	2.54	0.41
12:o:34:HIS:ND1	12:o:54:VAL:HG22	2.35	0.41
12:o:54:VAL:HG11	51:2:116:G:O2'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:p:82:SER:C	13:p:83:ILE:HD12	2.45	0.41
30:H:67:ILE:HB	30:H:102:ILE:HA	2.03	0.41
36:N:17:ARG:HD2	36:N:19:PHE:CZ	2.56	0.41
36:N:20:ILE:HG23	36:N:20:ILE:O	2.21	0.41
39:Q:22:ALA:O	39:Q:23:LEU:HG	2.20	0.41
39:Q:30:ARG:HE	39:Q:57:THR:HG21	1.84	0.41
40:R:16:ILE:HG12	49:3:1302:C:C6	2.55	0.41
40:R:27:THR:OG1	40:R:28:ARG:N	2.53	0.41
40:R:58:GLU:O	40:R:61:LYS:HG2	2.20	0.41
48:Z:33:ARG:NE	48:Z:34:ARG:H	2.06	0.41
49:3:140:U:H2'	49:3:141:G:C1'	2.50	0.41
49:3:145:G:H2'	49:3:146:G:C1'	2.50	0.41
49:3:146:G:N2	49:3:177:G:N7	2.68	0.41
49:3:258:G:H1	49:3:268:U:H3	1.67	0.41
49:3:702:A:H5''	49:3:703:G:C8	2.56	0.41
49:3:785:G:H2'	49:3:786:G:H8	1.84	0.41
49:3:864:A:H2'	49:3:865:A:C8	2.56	0.41
49:3:1140:C:H2'	49:3:1141:C:H6	1.84	0.41
49:3:1310:G:H2'	49:3:1311:A:C8	2.55	0.41
50:1:107:G:H2'	50:1:108:G:H8	1.85	0.41
50:1:204:A:H8	50:1:204:A:OP1	2.02	0.41
50:1:531:C:O2'	50:1:563:A:H5''	2.21	0.41
50:1:841:G:H2'	50:1:842:U:C6	2.55	0.41
50:1:1030:C:H2'	50:1:1031:G:C8	2.54	0.41
50:1:1306:C:H5''	50:1:1606:C:N4	2.35	0.41
50:1:1581:G:H2'	50:1:1582:C:N1	2.35	0.41
50:1:2427:C:H5''	50:1:2429:G:H5'	2.01	0.41
51:2:1:U:H3	51:2:119:A:N6	2.17	0.41
51:2:56:G:H4'	51:2:57:A:O5'	2.20	0.41
1:b:175:LEU:HD23	1:b:175:LEU:HA	1.95	0.41
2:c:40:LEU:HD23	2:c:40:LEU:O	2.21	0.41
5:f:43:LYS:HD3	5:f:43:LYS:N	2.36	0.41
11:n:72:ASP:HB3	11:n:75:ILE:HB	2.03	0.41
14:q:49:ARG:HG2	50:1:994:C:OP2	2.21	0.41
14:q:64:ILE:HD11	14:q:94:LEU:C	2.46	0.41
29:G:19:THR:HA	29:G:38:HIS:CD2	2.55	0.41
29:G:58:LYS:HD2	29:G:58:LYS:HA	1.96	0.41
29:G:89:PHE:CD1	29:G:153:MET:HB2	2.55	0.41
30:H:72:PRO:HB2	30:H:102:ILE:HD12	2.02	0.41
30:H:155:ARG:NH1	49:3:1055:A:H1'	2.35	0.41
31:I:8:LEU:HD23	49:3:429:U:P	2.60	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:L:105:GLU:H	34:L:105:GLU:CD	2.28	0.41
44:V:57:VAL:O	44:V:78:VAL:HB	2.21	0.41
45:W:50:TYR:HA	45:W:53:GLN:HE21	1.86	0.41
47:Y:15:LYS:HA	47:Y:15:LYS:HD3	1.93	0.41
49:3:123:U:H2'	49:3:124:C:C6	2.56	0.41
49:3:265:G:H2'	49:3:267:C:C5	2.56	0.41
49:3:390:U:H2'	49:3:391:G:H8	1.84	0.41
49:3:513:C:H2'	49:3:514:C:C6	2.56	0.41
49:3:530:G:C8	54:8:118:ARG:HD2	2.56	0.41
49:3:854:U:H2'	49:3:855:U:C6	2.55	0.41
49:3:1143:G:H2'	49:3:1144:G:C8	2.56	0.41
50:1:582:A:H2'	50:1:583:G:C8	2.55	0.41
50:1:1176:U:H2'	50:1:1177:G:C8	2.56	0.41
50:1:1378:A:H1'	50:1:1379:U:C5	2.55	0.41
50:1:2210:U:H6	50:1:2210:U:OP1	2.03	0.41
50:1:2723:C:H2'	50:1:2724:U:O4'	2.21	0.41
50:1:2800:A:C4	50:1:2895:G:H1'	2.55	0.41
51:2:66:A:O2'	51:2:68:C:H5	2.02	0.41
52:5:49:G:H2'	52:5:50:U:H6	1.86	0.41
1:b:6:LYS:O	1:b:8:THR:N	2.53	0.41
1:b:33:LEU:HD12	1:b:61:TYR:O	2.21	0.41
2:c:39:ASP:OD1	2:c:42:ASN:HB2	2.20	0.41
2:c:131:ASP:OD2	2:c:132:ALA:N	2.53	0.41
2:c:142:VAL:HG22	2:c:143:PRO:HD2	2.02	0.41
5:f:67:ALA:O	5:f:71:LEU:HD23	2.21	0.41
5:f:153:PRO:HA	5:f:159:LYS:O	2.21	0.41
9:l:46:VAL:HG23	9:l:50:PHE:HD2	1.86	0.41
13:p:26:GLU:HB3	13:p:84:SER:HG	1.83	0.41
17:t:53:VAL:HG22	17:t:54:GLU:N	2.35	0.41
17:t:63:VAL:HG11	17:t:80:TRP:CE2	2.56	0.41
24:B:11:LYS:HA	24:B:11:LYS:HD2	1.89	0.41
27:E:39:ARG:NH1	50:1:2362:C:OP1	2.53	0.41
29:G:221:ARG:NH1	29:G:224:ARG:HE	2.18	0.41
31:I:2:ARG:NH1	49:3:405:U:OP2	2.52	0.41
35:M:85:TYR:HE1	35:M:123:GLU:HB2	1.86	0.41
38:P:73:VAL:O	38:P:73:VAL:HG12	2.20	0.41
39:Q:72:ASN:HD21	39:Q:104:SER:H	1.68	0.41
40:R:51:GLN:O	40:R:55:LEU:HD23	2.21	0.41
41:S:42:ASN:HA	41:S:45:LEU:CD2	2.50	0.41
49:3:1431:A:H2'	49:3:1432:G:O4'	2.19	0.41
49:3:1443:C:H2'	49:3:1444:U:C6	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:545:U:N3	50:1:546:U:H1'	2.35	0.41
50:1:1164:C:H2'	50:1:1165:A:C8	2.55	0.41
50:1:1735:A:H2'	50:1:1736:U:C6	2.56	0.41
50:1:1773:A:H2'	50:1:1774:C:O4'	2.20	0.41
50:1:2730:C:H2'	50:1:2731:G:C8	2.55	0.41
51:2:35:C:H2'	51:2:36:C:O4'	2.21	0.41
1:b:163:ILE:HG12	1:b:173:LEU:HD21	2.03	0.41
4:e:113:PHE:CZ	4:e:115:GLY:HA2	2.56	0.41
4:e:129:MET:HE1	4:e:131:VAL:HG13	2.02	0.41
5:f:37:ASN:ND2	5:f:63:GLN:NE2	2.68	0.41
9:l:112:LEU:N	9:l:112:LEU:CD1	2.83	0.41
10:m:78:LEU:O	10:m:79:ALA:HB3	2.20	0.41
10:m:124:LEU:HD13	10:m:125:PRO:HD2	2.01	0.41
10:m:128:THR:OG1	10:m:129:THR:N	2.54	0.41
14:q:2:ARG:HD2	50:1:1248:G:N3	2.36	0.41
23:z:4:ILE:CG2	23:z:39:ASP:HB2	2.51	0.41
30:H:40:GLN:O	30:H:43:THR:HG22	2.20	0.41
36:N:112:ARG:HH12	36:N:114:LYS:HG2	1.85	0.41
42:T:25:GLU:HG2	42:T:26:VAL:N	2.35	0.41
43:U:60:TRP:HA	43:U:60:TRP:HE3	1.85	0.41
49:3:88:U:H2'	49:3:89:U:N1	2.36	0.41
49:3:487:A:H2'	49:3:488:C:H5'	2.03	0.41
49:3:580:C:H2'	49:3:581:G:C8	2.55	0.41
49:3:664:G:N2	49:3:741:G:H1	2.08	0.41
49:3:672:U:O2'	49:3:673:A:H5'	2.21	0.41
49:3:893:C:H2'	49:3:894:G:C8	2.56	0.41
49:3:1410:A:H2'	49:3:1411:C:C6	2.56	0.41
50:1:291:G:O2'	50:1:292:U:H5'	2.21	0.41
50:1:1283:G:H1'	50:1:1329:U:O2	2.21	0.41
50:1:1752:C:H2'	50:1:1753:G:C8	2.56	0.41
50:1:2368:C:H2'	50:1:2369:A:C8	2.56	0.41
50:1:2737:G:H2'	50:1:2738:A:C8	2.56	0.41
51:2:23:G:H2'	51:2:24:G:N7	2.36	0.41
51:2:59:A:H2'	51:2:60:C:O4'	2.21	0.41
51:2:66:A:H5''	51:2:67:G:OP1	2.21	0.41
53:4:7:G:H2'	53:4:8:A:C5	2.56	0.41
54:8:77:TYR:CD2	54:8:83:ASN:ND2	2.89	0.41
1:b:77:VAL:HG13	1:b:77:VAL:O	2.20	0.41
1:b:216:ARG:HG2	1:b:216:ARG:HH11	1.85	0.41
1:b:231:HIS:HA	1:b:241:LYS:HD2	2.02	0.41
1:b:269:ARG:HG3	1:b:270:ARG:N	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:d:143:LEU:HB3	3:d:146:VAL:CG2	2.51	0.41
5:f:116:LEU:HD23	5:f:116:LEU:H	1.86	0.41
7:j:78:THR:OG1	50:1:2641:G:O3'	2.39	0.41
10:m:132:THR:HG22	10:m:133:LYS:N	2.34	0.41
11:n:28:LEU:HD13	11:n:34:ILE:HG12	2.02	0.41
11:n:103:ARG:CD	50:1:1287:A:H5'	2.46	0.41
12:o:10:ARG:HD2	50:1:2294:G:OP1	2.20	0.41
15:r:63:VAL:HA	15:r:96:VAL:HG12	2.03	0.41
17:t:33:LYS:HG2	17:t:80:TRP:CZ3	2.56	0.41
18:u:81:ARG:HH12	50:1:300:A:P	2.44	0.41
21:x:19:HIS:C	21:x:21:LEU:N	2.79	0.41
28:F:22:VAL:O	28:F:22:VAL:HG13	2.20	0.41
28:F:31:PRO:C	28:F:33:HIS:H	2.29	0.41
29:G:110:ILE:HA	29:G:147:LEU:HD13	2.03	0.41
30:H:2:GLN:HB3	49:3:1062:U:O4	2.21	0.41
30:H:34:SER:O	30:H:38:VAL:HG23	2.21	0.41
30:H:107:LYS:HG2	30:H:110:LEU:HD13	2.02	0.41
30:H:116:ALA:O	30:H:120:THR:HG23	2.20	0.41
31:I:24:VAL:HG11	49:3:410:G:OP2	2.21	0.41
32:J:39:GLY:HA3	32:J:116:VAL:HG22	2.02	0.41
33:K:67:PRO:HG2	33:K:70:VAL:HG22	2.03	0.41
36:N:48:ARG:C	36:N:50:PRO:HD2	2.46	0.41
36:N:62:LEU:HD12	36:N:62:LEU:O	2.20	0.41
38:P:109:ILE:HG21	48:Z:16:ARG:HD2	2.03	0.41
38:P:124:LYS:O	38:P:125:LYS:HG3	2.21	0.41
39:Q:49:ARG:HD2	39:Q:49:ARG:H	1.85	0.41
40:R:11:HIS:N	40:R:44:ILE:HD11	2.35	0.41
42:T:44:GLU:C	42:T:46:LYS:H	2.28	0.41
43:U:67:ILE:HD13	43:U:75:ILE:CD1	2.50	0.41
49:3:106:C:H2'	49:3:107:G:C8	2.55	0.41
49:3:340:U:H2'	49:3:341:C:H6	1.85	0.41
49:3:454:G:O6	49:3:478:A:N1	2.53	0.41
49:3:464:U:C2	49:3:466:A:H5''	2.56	0.41
49:3:478:A:H2'	49:3:479:U:H4'	2.02	0.41
49:3:628:G:H2'	49:3:629:A:C8	2.56	0.41
49:3:766:A:H2'	49:3:767:A:O4'	2.21	0.41
49:3:779:C:H2'	49:3:780:A:O4'	2.20	0.41
49:3:796:C:O2'	49:3:797:C:H5'	2.21	0.41
49:3:910:C:H2'	49:3:911:U:C6	2.56	0.41
49:3:956:U:H2'	49:3:957:U:C6	2.56	0.41
49:3:1425:U:O2'	49:3:1426:G:H5'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:1:296:U:H2'	50:1:297:G:C8	2.55	0.41
50:1:744:U:C2'	50:1:745:G:H5'	2.51	0.41
50:1:776:G:H2'	50:1:776:G:N3	2.36	0.41
50:1:818:G:H5'	50:1:839:U:OP1	2.21	0.41
50:1:935:C:H2'	50:1:936:A:H8	1.86	0.41
50:1:1042:G:C2'	50:1:1043:C:H5'	2.51	0.41
50:1:1165:A:H2'	50:1:1166:G:C8	2.56	0.41
50:1:1694:C:H5'	50:1:1695:G:C5	2.55	0.41
50:1:1701:A:H2'	50:1:1702:G:H5'	2.02	0.41
50:1:1753:G:H2'	50:1:1755:A:OP2	2.21	0.41
50:1:1842:G:H2'	50:1:1843:C:C6	2.56	0.41
50:1:1923:U:H2'	50:1:1924:C:C6	2.55	0.41
50:1:1999:C:H5''	50:1:2723:C:O2'	2.21	0.41
50:1:2004:G:H2'	50:1:2005:A:O4'	2.21	0.41
50:1:2297:A:H8	50:1:2297:A:OP2	2.04	0.41
50:1:2460:U:H2'	50:1:2461:A:O4'	2.20	0.41
50:1:2545:G:H2'	50:1:2546:U:H5'	2.03	0.41
50:1:2572:A:OP1	50:1:2574:G:H4'	2.20	0.41
50:1:2750:A:O2'	50:1:2752:C:N4	2.53	0.41
50:1:2843:G:H2'	50:1:2844:G:H8	1.86	0.41
54:8:63:LEU:HD13	54:8:72:ILE:HB	2.03	0.41
54:8:127:SER:C	54:8:129:LYS:H	2.28	0.41
1:b:71:ASP:O	1:b:73:ILE:HG13	2.21	0.41
1:b:72:GLY:N	1:b:117:SER:O	2.52	0.41
2:c:123:LYS:HE2	11:n:1:MET:HE1	2.03	0.41
9:l:30:THR:CG2	50:1:810:U:H3	2.34	0.41
9:l:47:ARG:HG2	9:l:50:PHE:HB2	2.02	0.41
10:m:66:ARG:HD3	10:m:101:VAL:HG13	2.03	0.41
12:o:14:ALA:O	12:o:18:LEU:HD23	2.21	0.41
15:r:1:MET:HA	15:r:42:ALA:O	2.21	0.41
16:s:39:THR:HG23	16:s:39:THR:O	2.21	0.41
16:s:98:LYS:HD3	50:1:2012:G:OP1	2.21	0.41
18:u:92:VAL:HG22	18:u:93:ARG:N	2.36	0.41
21:x:50:VAL:HG22	21:x:51:SER:O	2.21	0.41
23:z:4:ILE:O	23:z:6:ILE:HD12	2.21	0.41
28:F:11:CYS:SG	28:F:27:CYS:SG	3.16	0.41
30:H:181:ILE:HD12	30:H:181:ILE:N	2.36	0.41
34:L:13:PRO:HA	34:L:23:ALA:HB2	2.03	0.41
34:L:137:ARG:O	34:L:140:VAL:HG12	2.21	0.41
37:O:59:LYS:O	37:O:62:ARG:NE	2.48	0.41
38:P:94:SER:HA	38:P:97:ARG:NH1	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:V:61:ARG:HH12	44:V:75:VAL:HA	1.86	0.41
49:3:103:U:H2'	49:3:104:G:O4'	2.21	0.41
49:3:604:G:H2'	49:3:605:U:C6	2.56	0.41
49:3:663:A:H5'	49:3:836:G:OP1	2.21	0.41
49:3:731:G:O2'	49:3:732:C:H5'	2.21	0.41
49:3:940:C:H4'	49:3:1374:A:H2	1.86	0.41
49:3:1323:G:H2'	49:3:1324:A:H8	1.84	0.41
49:3:1386:G:H2'	49:3:1387:G:C8	2.56	0.41
50:1:375:G:O2'	50:1:376:G:H5'	2.21	0.41
50:1:849:A:H2'	50:1:850:U:C6	2.57	0.41
50:1:906:U:C2'	50:1:907:G:H5''	2.48	0.41
50:1:1439:A:H3'	50:1:1440:U:H6	1.86	0.41
50:1:1635:A:H2'	50:1:1636:U:O4'	2.21	0.41
50:1:2041:U:H2'	50:1:2042:A:H8	1.85	0.41
50:1:2415:G:H2'	50:1:2416:C:C6	2.56	0.41
50:1:2473:U:H2'	50:1:2474:U:H6	1.85	0.41
51:2:96:G:O2'	51:2:97:C:H5'	2.21	0.41
54:8:19:ALA:HB1	54:8:36:ALA:CA	2.50	0.41
54:8:52:TYR:O	54:8:56:LEU:HG	2.21	0.41
2:c:46:ARG:HB2	2:c:84:LEU:HD12	2.03	0.40
7:j:35:ARG:HG2	7:j:35:ARG:NH1	2.36	0.40
7:j:115:GLY:HA2	7:j:118:MET:HG2	2.02	0.40
8:k:109:SER:C	8:k:110:GLU:HG3	2.47	0.40
10:m:4:PRO:HG3	10:m:70:ASP:HA	2.02	0.40
19:v:6:ALA:HB1	19:v:40:ILE:HG12	2.03	0.40
26:D:34:ARG:NH1	50:1:467:G:OP2	2.55	0.40
29:G:182:VAL:HG23	29:G:196:ASP:H	1.86	0.40
35:M:45:ILE:HA	35:M:61:THR:O	2.21	0.40
39:Q:20:VAL:HG13	39:Q:94:TYR:HE1	1.86	0.40
41:S:62:ARG:NH2	41:S:69:PRO:HD3	2.35	0.40
47:Y:34:VAL:O	47:Y:38:ILE:HG13	2.22	0.40
49:3:33:A:H2'	49:3:34:C:C6	2.56	0.40
49:3:158:G:H2'	49:3:159:G:C8	2.56	0.40
49:3:869:G:H4'	49:3:872:A:C8	2.57	0.40
50:1:845:A:H3'	50:1:845:A:N3	2.36	0.40
50:1:1775:U:H2'	50:1:1776:G:O4'	2.20	0.40
50:1:1857:G:H1'	50:1:1885:A:N6	2.36	0.40
50:1:2308:G:H2'	50:1:2309:A:H5'	2.02	0.40
50:1:2838:G:H2'	50:1:2839:G:O4'	2.20	0.40
52:5:25:C:N4	52:5:45:G:H22	2.16	0.40
54:8:94:MET:SD	54:8:98:LEU:HD12	2.61	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:5:CYS:SG	1:b:6:LYS:N	2.95	0.40
2:c:21:SER:C	2:c:22:ILE:HD12	2.46	0.40
5:f:90:GLY:HA3	5:f:93:TYR:CD2	2.56	0.40
13:p:23:ASP:OD1	13:p:88:ARG:HA	2.21	0.40
15:r:10:LYS:HD3	15:r:12:HIS:CE1	2.57	0.40
25:C:46:VAL:HG22	25:C:47:ILE:N	2.36	0.40
28:F:19:ARG:HH21	50:1:2755:C:H3'	1.86	0.40
29:G:46:VAL:O	29:G:49:PHE:HB2	2.20	0.40
31:I:120:LYS:HE2	49:3:439:U:H4'	2.02	0.40
35:M:80:PRO:HG2	49:3:878:A:C5'	2.51	0.40
36:N:114:LYS:HD3	49:3:1187:G:H5''	2.03	0.40
40:R:19:THR:HG23	40:R:25:GLY:HA2	2.03	0.40
40:R:63:VAL:HG21	40:R:71:GLU:OE2	2.21	0.40
42:T:76:ARG:O	42:T:79:GLN:HB3	2.21	0.40
43:U:68:SER:HB3	43:U:71:VAL:CG2	2.51	0.40
49:3:995:C:O2'	49:3:996:A:H5'	2.20	0.40
49:3:1494:G:H5'	49:3:1494:G:H8	1.86	0.40
50:1:63:A:H2'	50:1:64:A:C8	2.56	0.40
50:1:131:A:H2'	50:1:132:G:C8	2.56	0.40
50:1:257:C:H2'	50:1:258:G:O4'	2.20	0.40
50:1:302:C:H2'	50:1:303:G:H8	1.87	0.40
50:1:852:U:H2'	50:1:853:C:H6	1.87	0.40
50:1:1082:U:O5'	50:1:1082:U:H6	2.04	0.40
50:1:1529:G:H1	50:1:1542:U:H3	1.70	0.40
50:1:1894:C:H2'	50:1:1895:C:O4'	2.21	0.40
50:1:2000:C:O2'	50:1:2001:C:H5'	2.21	0.40
50:1:2468:A:OP2	50:1:2476:A:N6	2.55	0.40
50:1:2743:U:C3'	50:1:2744:G:H5''	2.51	0.40
50:1:2798:U:H4'	50:1:2799:A:C2	2.56	0.40
51:2:101:A:H2'	51:2:102:G:O4'	2.21	0.40
1:b:206:LYS:HB2	50:1:729:G:C6	2.57	0.40
26:D:37:LYS:NZ	50:1:469:G:N7	2.68	0.40
35:M:125:ILE:HG22	35:M:126:CYS:SG	2.61	0.40
45:W:70:THR:HG22	45:W:72:ARG:CZ	2.51	0.40
46:X:35:ARG:HD3	49:3:1221:G:OP1	2.22	0.40
47:Y:48:LYS:HE3	47:Y:52:GLU:OE2	2.21	0.40
48:Z:23:GLU:HB3	48:Z:24:LYS:H	1.61	0.40
49:3:91:U:H3'	49:3:92:U:C5'	2.49	0.40
49:3:119:A:H4'	49:3:120:A:N9	2.36	0.40
49:3:157:U:H2'	49:3:158:G:H8	1.85	0.40
49:3:211:G:H21	49:3:212:G:H1'	1.84	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:3:490:C:H2'	49:3:491:G:C8	2.56	0.40
49:3:801:U:H2'	49:3:802:A:C8	2.57	0.40
49:3:984:C:H2'	49:3:985:C:H6	1.81	0.40
49:3:1473:G:H2'	49:3:1474:U:O4'	2.22	0.40
50:1:24:G:N2	50:1:516:C:O2	2.44	0.40
50:1:1131:G:C5	50:1:2025:C:H4'	2.57	0.40
50:1:1680:U:H2'	50:1:1681:G:O4'	2.21	0.40
50:1:1914:C:N4	54:8:101:GLU:O	2.55	0.40
50:1:1934:C:H2'	50:1:1935:G:H8	1.86	0.40
50:1:2779:U:OP1	50:1:2780:G:C8	2.75	0.40
1:b:22:GLU:N	1:b:22:GLU:OE2	2.54	0.40
1:b:171:VAL:CG2	1:b:185:ALA:HB2	2.49	0.40
2:c:45:TYR:HH	50:1:2636:C:HO2'	1.69	0.40
2:c:207:VAL:HG13	2:c:208:LYS:N	2.36	0.40
8:k:112:PHE:HB3	8:k:115:ILE:HD13	2.03	0.40
11:n:118:ARG:HH22	24:B:54:ILE:HA	1.86	0.40
19:v:26:PHE:CE1	19:v:44:HIS:HA	2.53	0.40
22:y:20:ASN:O	22:y:24:GLU:HB2	2.22	0.40
27:E:51:LYS:O	27:E:54:LEU:HG	2.21	0.40
30:H:78:LYS:O	30:H:79:LYS:HB2	2.21	0.40
33:K:12:PRO:HA	33:K:15:SER:OG	2.22	0.40
38:P:54:SER:N	49:3:694:A:H5''	2.36	0.40
41:S:4:SER:O	41:S:8:ARG:HG3	2.20	0.40
49:3:147:G:H2'	49:3:148:G:C8	2.57	0.40
49:3:1238:A:C2	49:3:1241:G:N3	2.90	0.40
49:3:1323:G:H2'	49:3:1324:A:C8	2.56	0.40
49:3:1385:G:H2'	49:3:1386:G:C8	2.57	0.40
50:1:18:U:H2'	50:1:19:A:C8	2.57	0.40
50:1:69:C:O2'	50:1:70:G:H5'	2.21	0.40
50:1:718:A:C2'	50:1:719:C:H5'	2.51	0.40
50:1:1461:C:H6	50:1:1461:C:O5'	2.04	0.40
50:1:1483:G:H4'	50:1:1510:G:C2	2.55	0.40
50:1:1579:A:H2'	50:1:1580:A:C8	2.56	0.40
50:1:2693:G:H2'	50:1:2694:G:C8	2.57	0.40
51:2:106:G:H2'	51:2:107:G:H8	1.87	0.40
1:b:140:VAL:O	1:b:161:VAL:HG12	2.22	0.40
1:b:218:THR:HG23	1:b:218:THR:O	2.21	0.40
1:b:231:HIS:CE1	1:b:239:PHE:HZ	2.40	0.40
3:d:52:VAL:CG1	3:d:74:LYS:HB2	2.51	0.40
6:g:124:THR:HG23	6:g:128:HIS:CE1	2.44	0.40
7:j:27:ARG:NE	50:1:1012:U:H3	2.17	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:j:35:ARG:HA	7:j:40:HIS:ND1	2.36	0.40
7:j:124:VAL:HG12	7:j:125:TYR:N	2.36	0.40
9:l:127:VAL:HB	9:l:131:ALA:HB3	2.02	0.40
10:m:120:ALA:O	10:m:124:LEU:HD23	2.20	0.40
11:n:36:THR:CG2	11:n:37:THR:N	2.84	0.40
14:q:58:GLN:HG3	50:1:1009:A:O4'	2.22	0.40
20:w:47:VAL:HG12	20:w:57:ALA:HA	2.04	0.40
31:I:22:SER:O	31:I:24:VAL:HG23	2.22	0.40
32:J:87:VAL:HA	32:J:92:ARG:HA	2.03	0.40
33:K:20:GLY:O	33:K:23:GLU:HG3	2.21	0.40
37:O:80:THR:HB	37:O:83:THR:CG2	2.50	0.40
41:S:6:LYS:O	41:S:10:VAL:HG23	2.21	0.40
41:S:33:VAL:O	41:S:33:VAL:HG22	2.21	0.40
41:S:53:ASP:CG	41:S:54:SER:H	2.28	0.40
49:3:211:G:H5''	49:3:212:G:N9	2.35	0.40
49:3:231:U:H2'	49:3:232:G:C8	2.52	0.40
49:3:370:C:H2'	49:3:371:A:H8	1.87	0.40
49:3:613:C:H2'	49:3:614:C:C6	2.57	0.40
49:3:764:C:H2'	49:3:765:G:C8	2.57	0.40
49:3:1018:G:H2'	49:3:1019:A:C8	2.56	0.40
49:3:1105:A:H2'	49:3:1106:G:H8	1.87	0.40
49:3:1385:G:O2'	49:3:1386:G:H5'	2.21	0.40
50:1:466:A:H2'	50:1:467:G:H5'	2.02	0.40
50:1:545:U:H2'	50:1:546:U:H4'	2.03	0.40
50:1:1147:A:C2'	50:1:1148:U:H5'	2.51	0.40
50:1:1936:A:H2	50:1:1943:U:N3	2.13	0.40
50:1:2679:A:O2'	50:1:2680:U:H5'	2.22	0.40
50:1:2736:A:H2'	50:1:2737:G:H8	1.87	0.40
50:1:2811:G:H1	50:1:2889:C:H42	1.68	0.40
52:5:47:U:C5'	52:5:48:C:H5'	2.52	0.40
54:8:57:LEU:HD12	54:8:57:LEU:C	2.47	0.40
54:8:82:LEU:O	54:8:85:GLU:HG2	2.22	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all 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%)	227 (84%)	38 (14%)	4 (2%)	8	36
2	c	207/209 (99%)	183 (88%)	22 (11%)	2 (1%)	12	43
3	d	199/201 (99%)	166 (83%)	30 (15%)	3 (2%)	8	36
4	e	175/177 (99%)	139 (79%)	31 (18%)	5 (3%)	3	25
5	f	174/176 (99%)	151 (87%)	21 (12%)	2 (1%)	11	41
6	g	147/149 (99%)	118 (80%)	21 (14%)	8 (5%)	1	16
7	j	140/142 (99%)	130 (93%)	9 (6%)	1 (1%)	18	51
8	k	120/122 (98%)	102 (85%)	15 (12%)	3 (2%)	4	28
9	l	141/143 (99%)	114 (81%)	26 (18%)	1 (1%)	18	51
10	m	134/136 (98%)	117 (87%)	16 (12%)	1 (1%)	18	51
11	n	118/120 (98%)	103 (87%)	15 (13%)	0	100	100
12	o	114/116 (98%)	105 (92%)	8 (7%)	1 (1%)	14	45
13	p	112/114 (98%)	91 (81%)	21 (19%)	0	100	100
14	q	115/117 (98%)	106 (92%)	8 (7%)	1 (1%)	14	45
15	r	101/103 (98%)	72 (71%)	26 (26%)	3 (3%)	3	25
16	s	108/110 (98%)	97 (90%)	9 (8%)	2 (2%)	6	32
17	t	91/93 (98%)	75 (82%)	15 (16%)	1 (1%)	11	41
18	u	100/102 (98%)	78 (78%)	19 (19%)	3 (3%)	3	25
19	v	92/94 (98%)	80 (87%)	10 (11%)	2 (2%)	5	30
20	w	73/75 (97%)	63 (86%)	9 (12%)	1 (1%)	9	37
21	x	75/77 (97%)	68 (91%)	7 (9%)	0	100	100
22	y	61/63 (97%)	56 (92%)	4 (7%)	1 (2%)	7	35
23	z	56/58 (97%)	47 (84%)	9 (16%)	0	100	100
24	B	54/56 (96%)	46 (85%)	8 (15%)	0	100	100
25	C	48/50 (96%)	37 (77%)	11 (23%)	0	100	100
26	D	44/46 (96%)	37 (84%)	7 (16%)	0	100	100
27	E	62/64 (97%)	53 (86%)	8 (13%)	1 (2%)	7	35
28	F	36/38 (95%)	29 (81%)	6 (17%)	1 (3%)	4	26
29	G	223/225 (99%)	186 (83%)	30 (14%)	7 (3%)	3	25

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
30	H	204/206 (99%)	175 (86%)	25 (12%)	4 (2%)	6	32
31	I	203/205 (99%)	169 (83%)	29 (14%)	5 (2%)	4	28
32	J	155/157 (99%)	124 (80%)	27 (17%)	4 (3%)	4	27
33	K	98/100 (98%)	68 (69%)	26 (26%)	4 (4%)	2	20
34	L	149/151 (99%)	130 (87%)	17 (11%)	2 (1%)	9	38
35	M	127/129 (98%)	112 (88%)	14 (11%)	1 (1%)	16	48
36	N	125/127 (98%)	94 (75%)	25 (20%)	6 (5%)	2	17
37	O	96/98 (98%)	77 (80%)	13 (14%)	6 (6%)	1	14
38	P	114/116 (98%)	94 (82%)	18 (16%)	2 (2%)	6	33
39	Q	121/123 (98%)	90 (74%)	28 (23%)	3 (2%)	4	28
40	R	112/114 (98%)	97 (87%)	13 (12%)	2 (2%)	6	33
41	S	98/100 (98%)	77 (79%)	15 (15%)	6 (6%)	1	14
42	T	86/88 (98%)	79 (92%)	6 (7%)	1 (1%)	10	40
43	U	80/82 (98%)	68 (85%)	10 (12%)	2 (2%)	4	28
44	V	78/80 (98%)	68 (87%)	9 (12%)	1 (1%)	9	38
45	W	63/65 (97%)	56 (89%)	6 (10%)	1 (2%)	7	35
46	X	77/79 (98%)	66 (86%)	11 (14%)	0	100	100
47	Y	83/85 (98%)	81 (98%)	2 (2%)	0	100	100
48	Z	63/65 (97%)	47 (75%)	12 (19%)	4 (6%)	1	14
54	8	116/132 (88%)	84 (72%)	23 (20%)	9 (8%)	1	11
All	All	5637/5749 (98%)	4732 (84%)	788 (14%)	117 (2%)	8	31

All (117) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	d	83	VAL
7	j	81	ILE
8	k	89	ASN
8	k	110	GLU
12	o	34	HIS
15	r	54	VAL
27	E	31	ILE
29	G	15	PHE
32	J	93	VAL
32	J	122	VAL

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Mol	Chain	Res	Type
35	M	65	PHE
36	N	90	ASP
40	R	65	GLU
41	S	51	PRO
42	T	46	LYS
44	V	15	LYS
54	8	48	LEU
54	8	49	PRO
54	8	70	ILE
54	8	104	ALA
2	c	86	GLU
4	e	148	VAL
5	f	55	ASP
6	g	10	ALA
15	r	23	GLU
16	s	64	ALA
18	u	6	ARG
28	F	37	GLN
29	G	91	VAL
30	H	191	THR
31	I	23	GLY
31	I	47	LEU
31	I	182	LYS
33	K	86	ARG
33	K	96	VAL
34	L	144	ALA
36	N	33	SER
36	N	57	VAL
36	N	68	GLY
37	O	35	GLN
39	Q	77	SER
43	U	79	ASN
43	U	80	LYS
48	Z	14	ALA
54	8	75	GLN
54	8	100	THR
54	8	131	MET
54	8	132	ARG
1	b	72	GLY
1	b	226	PRO
3	d	55	SER
3	d	56	GLY

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Mol	Chain	Res	Type
4	e	55	ASP
4	e	158	THR
5	f	45	ALA
6	g	9	VAL
6	g	96	THR
6	g	114	GLU
6	g	118	PRO
6	g	136	SER
14	q	5	ARG
20	w	80	ALA
29	G	101	THR
31	I	32	LYS
32	J	11	GLN
34	L	18	GLY
36	N	12	LYS
36	N	30	ASN
39	Q	17	LYS
41	S	53	ASP
41	S	98	ALA
45	W	70	THR
48	Z	7	GLU
48	Z	25	ALA
4	e	147	ARG
6	g	11	ASN
16	s	11	ARG
18	u	54	PRO
19	v	43	ASP
22	y	2	LYS
30	H	133	MET
31	I	28	ASP
33	K	41	ASP
37	O	33	GLY
40	R	105	ALA
41	S	19	TYR
41	S	36	SER
41	S	54	SER
2	c	160	LYS
4	e	173	ASP
6	g	140	ALA
17	t	68	LYS
19	v	66	ASP
29	G	179	GLY

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Mol	Chain	Res	Type
29	G	192	PRO
30	H	60	ALA
33	K	63	ASN
37	O	34	ALA
37	O	42	LEU
37	O	75	ASP
38	P	92	ARG
48	Z	22	CYS
32	J	87	VAL
54	8	46	SER
15	r	58	VAL
29	G	3	VAL
10	m	69	PRO
8	k	35	VAL
30	H	6	PRO
38	P	114	PRO
9	l	88	GLY
18	u	56	GLY
37	O	57	VAL
1	b	123	ILE
1	b	125	PRO
29	G	13	VAL
39	Q	41	PRO

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	b	216/216 (100%)	215 (100%)	1 (0%)	81	81
2	c	164/164 (100%)	164 (100%)	0	100	100
3	d	165/165 (100%)	165 (100%)	0	100	100
4	e	148/148 (100%)	148 (100%)	0	100	100
5	f	137/137 (100%)	136 (99%)	1 (1%)	76	77
6	g	114/114 (100%)	112 (98%)	2 (2%)	51	67

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
7	j	116/116 (100%)	116 (100%)	0	100	100
8	k	103/103 (100%)	101 (98%)	2 (2%)	50	66
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%)	98 (98%)	2 (2%)	48	65
12	o	86/86 (100%)	86 (100%)	0	100	100
13	p	99/99 (100%)	99 (100%)	0	100	100
14	q	89/89 (100%)	89 (100%)	0	100	100
15	r	84/84 (100%)	82 (98%)	2 (2%)	43	62
16	s	93/93 (100%)	92 (99%)	1 (1%)	65	73
17	t	80/80 (100%)	80 (100%)	0	100	100
18	u	83/83 (100%)	83 (100%)	0	100	100
19	v	78/78 (100%)	78 (100%)	0	100	100
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%)	48 (100%)	0	100	100
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%)	186 (100%)	0	100	100
30	H	170/170 (100%)	167 (98%)	3 (2%)	51	67
31	I	172/172 (100%)	170 (99%)	2 (1%)	63	72
32	J	119/119 (100%)	117 (98%)	2 (2%)	53	67
33	K	87/87 (100%)	87 (100%)	0	100	100
34	L	124/124 (100%)	124 (100%)	0	100	100
35	M	104/104 (100%)	103 (99%)	1 (1%)	68	74
36	N	105/105 (100%)	105 (100%)	0	100	100
37	O	86/86 (100%)	86 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
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%)	82 (99%)	1 (1%)	63	72
42	T	76/76 (100%)	74 (97%)	2 (3%)	40	60
43	U	65/65 (100%)	64 (98%)	1 (2%)	57	69
44	V	74/74 (100%)	73 (99%)	1 (1%)	59	70
45	W	56/56 (100%)	56 (100%)	0	100	100
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	100/108 (93%)	96 (96%)	4 (4%)	28	52
All	All	4689/4697 (100%)	4661 (99%)	28 (1%)	76	79

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

Mol	Chain	Res	Type
1	b	80	LEU
5	f	10	VAL
6	g	73	ASN
6	g	101	ASP
8	k	90	ASN
8	k	118	LEU
11	n	31	HIS
11	n	54	LEU
15	r	22	LEU
15	r	53	PHE
16	s	97	LEU
30	H	28	PHE
30	H	143	LEU
30	H	156	LEU
31	I	109	THR
31	I	173	ASP
32	J	55	VAL
32	J	97	PRO
35	M	50	VAL
41	S	4	SER
42	T	55	LEU

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Mol	Chain	Res	Type
42	T	86	LEU
43	U	63	GLN
44	V	60	ILE
54	8	16	GLU
54	8	48	LEU
54	8	75	GLN
54	8	119	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (135) such sidechains are listed below:

Mol	Chain	Res	Type
1	b	20	ASN
1	b	43	ASN
1	b	85	ASN
1	b	127	ASN
1	b	152	GLN
1	b	162	GLN
1	b	199	HIS
1	b	259	ASN
2	c	32	ASN
2	c	36	GLN
2	c	42	ASN
2	c	49	GLN
2	c	58	ASN
2	c	67	HIS
2	c	164	GLN
2	c	185	ASN
3	d	9	GLN
3	d	41	GLN
3	d	62	GLN
4	e	4	HIS
4	e	36	ASN
4	e	51	ASN
5	f	19	ASN
5	f	29	ASN
5	f	63	GLN
5	f	72	ASN
5	f	87	GLN
5	f	115	GLN
5	f	138	GLN
6	g	2	GLN
6	g	28	ASN

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Mol	Chain	Res	Type
6	g	43	ASN
6	g	66	ASN
6	g	128	HIS
6	g	133	GLN
7	j	58	ASN
7	j	80	HIS
8	k	3	GLN
8	k	5	GLN
8	k	82	ASN
8	k	93	GLN
9	l	35	HIS
9	l	38	GLN
10	m	13	HIS
12	o	34	HIS
12	o	38	GLN
12	o	43	ASN
13	p	6	GLN
13	p	11	GLN
13	p	76	HIS
14	q	36	GLN
14	q	71	ASN
14	q	80	ASN
15	r	12	HIS
15	r	18	GLN
15	r	86	GLN
15	r	91	GLN
16	s	7	HIS
16	s	9	HIS
17	t	15	HIS
17	t	72	GLN
17	t	92	ASN
18	u	39	ASN
18	u	52	ASN
18	u	73	ASN
19	v	5	ASN
19	v	12	GLN
19	v	49	ASN
20	w	8	ASN
22	y	31	GLN
22	y	58	ASN
23	z	8	GLN
24	B	5	ASN

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Mol	Chain	Res	Type
24	B	18	HIS
24	B	41	HIS
25	C	45	HIS
26	D	26	ASN
29	G	23	ASN
29	G	38	HIS
29	G	119	GLN
29	G	167	HIS
29	G	202	ASN
30	H	2	GLN
30	H	5	HIS
30	H	7	ASN
30	H	18	ASN
30	H	24	ASN
30	H	40	GLN
30	H	184	ASN
31	I	58	GLN
31	I	73	ASN
31	I	115	GLN
31	I	130	ASN
31	I	163	GLN
31	I	197	HIS
32	J	11	GLN
32	J	42	ASN
32	J	82	HIS
33	K	58	HIS
33	K	68	GLN
33	K	81	ASN
34	L	121	ASN
34	L	147	ASN
35	M	20	ASN
35	M	117	GLN
36	N	3	ASN
36	N	4	GLN
36	N	49	GLN
38	P	27	ASN
38	P	28	ASN
39	Q	5	GLN
39	Q	45	ASN
40	R	7	ASN
40	R	51	GLN
40	R	90	HIS

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Mol	Chain	Res	Type
40	R	104	ASN
41	S	3	GLN
41	S	59	GLN
42	T	41	HIS
42	T	79	GLN
43	U	9	HIS
43	U	18	GLN
43	U	29	ASN
43	U	79	ASN
44	V	30	HIS
45	W	51	GLN
45	W	53	GLN
47	Y	19	HIS
47	Y	20	ASN
47	Y	47	GLN
47	Y	51	ASN
47	Y	54	GLN
47	Y	67	HIS
47	Y	77	ASN
54	8	62	HIS

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
49	3	1538/1539 (99%)	222 (14%)	0
50	1	2902/2903 (99%)	454 (15%)	10 (0%)
51	2	119/120 (99%)	12 (10%)	0
52	5	76/77 (98%)	14 (18%)	0
53	4	15/16 (93%)	3 (20%)	0
All	All	4650/4655 (99%)	705 (15%)	10 (0%)

All (705) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
49	3	4	U
49	3	6	G
49	3	8	A
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	50	A
49	3	51	A
49	3	64	G
49	3	65	A
49	3	66	A
49	3	71	A
49	3	75	G
49	3	76	G
49	3	82	G
49	3	83	C
49	3	84	U
49	3	92	U
49	3	94	G
49	3	100	G
49	3	121	U
49	3	131	A
49	3	141	G
49	3	144	G
49	3	146	G
49	3	168	G
49	3	173	U
49	3	177	G
49	3	183	C
49	3	184	G
49	3	199	A
49	3	208	U
49	3	210	C
49	3	211	G
49	3	212	G
49	3	245	U
49	3	246	A
49	3	247	G
49	3	251	G
49	3	266	G
49	3	267	C
49	3	281	G
49	3	283	U
49	3	289	G
49	3	316	C
49	3	328	C

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Mol	Chain	Res	Type
49	3	340	U
49	3	344	A
49	3	345	C
49	3	346	G
49	3	348	G
49	3	352	C
49	3	356	A
49	3	367	U
49	3	372	C
49	3	398	U
49	3	406	G
49	3	413	G
49	3	421	U
49	3	422	C
49	3	423	G
49	3	424	G
49	3	428	G
49	3	429	U
49	3	438	U
49	3	445	G
49	3	446	G
49	3	448	A
49	3	451	A
49	3	452	A
49	3	462	G
49	3	467	U
49	3	468	A
49	3	479	U
49	3	480	U
49	3	481	G
49	3	484	G
49	3	486	U
49	3	496	A
49	3	497	G
49	3	518	C
49	3	524	G
49	3	527	G
49	3	546	A
49	3	547	A
49	3	561	U
49	3	562	U
49	3	572	A

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Mol	Chain	Res	Type
49	3	573	A
49	3	575	G
49	3	576	C
49	3	577	G
49	3	607	A
49	3	615	G
49	3	633	G
49	3	654	G
49	3	661	G
49	3	665	A
49	3	687	A
49	3	688	G
49	3	701	U
49	3	702	A
49	3	703	G
49	3	713	G
49	3	718	A
49	3	723	U
49	3	724	G
49	3	733	G
49	3	755	G
49	3	758	C
49	3	777	A
49	3	794	A
49	3	815	A
49	3	817	C
49	3	818	G
49	3	819	A
49	3	821	G
49	3	842	U
49	3	843	U
49	3	844	G
49	3	845	A
49	3	846	G
49	3	847	G
49	3	902	G
49	3	918	A
49	3	934	C
49	3	935	A
49	3	940	C
49	3	960	U
49	3	961	U

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Mol	Chain	Res	Type
49	3	966	G
49	3	968	A
49	3	969	A
49	3	971	G
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	1029	U
49	3	1030	U
49	3	1031	C
49	3	1033	G
49	3	1037	C
49	3	1053	G
49	3	1054	C
49	3	1055	A
49	3	1066	C
49	3	1089	G
49	3	1094	G
49	3	1095	U
49	3	1101	A
49	3	1109	C
49	3	1126	U
49	3	1130	A
49	3	1133	G
49	3	1136	C
49	3	1137	C
49	3	1138	G
49	3	1139	G
49	3	1142	G
49	3	1159	U
49	3	1168	U
49	3	1169	A
49	3	1182	G
49	3	1184	G
49	3	1196	A
49	3	1198	G
49	3	1201	A
49	3	1202	U
49	3	1212	U

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Mol	Chain	Res	Type
49	3	1213	A
49	3	1225	A
49	3	1226	C
49	3	1238	A
49	3	1241	G
49	3	1253	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	1282	C
49	3	1287	A
49	3	1290	G
49	3	1300	G
49	3	1301	U
49	3	1312	G
49	3	1317	C
49	3	1323	G
49	3	1347	G
49	3	1363	A
49	3	1378	C
49	3	1379	G
49	3	1381	U
49	3	1395	C
49	3	1398	A
49	3	1429	A
49	3	1442	G
49	3	1446	A
49	3	1448	C
49	3	1450	U
49	3	1451	U
49	3	1452	C
49	3	1453	G
49	3	1454	G
49	3	1475	G
49	3	1492	A
49	3	1494	G
49	3	1503	A
49	3	1506	U
49	3	1517	G

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Mol	Chain	Res	Type
49	3	1519	A
49	3	1529	G
49	3	1530	G
49	3	1534	A
49	3	1535	C
50	1	10	A
50	1	12	U
50	1	34	U
50	1	35	G
50	1	46	G
50	1	50	U
50	1	51	G
50	1	63	A
50	1	71	A
50	1	74	A
50	1	75	G
50	1	80	G
50	1	91	A
50	1	96	C
50	1	100	U
50	1	101	A
50	1	110	G
50	1	118	A
50	1	119	A
50	1	120	U
50	1	135	U
50	1	137	U
50	1	139	U
50	1	141	G
50	1	142	A
50	1	158	U
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	219	A
50	1	220	G
50	1	221	A
50	1	222	A
50	1	228	C

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Mol	Chain	Res	Type
50	1	233	A
50	1	241	A
50	1	248	G
50	1	249	C
50	1	250	G
50	1	255	A
50	1	266	G
50	1	276	U
50	1	278	A
50	1	279	A
50	1	281	C
50	1	282	A
50	1	285	G
50	1	287	G
50	1	294	A
50	1	302	C
50	1	310	A
50	1	311	A
50	1	312	G
50	1	317	G
50	1	319	G
50	1	323	C
50	1	324	A
50	1	329	G
50	1	330	A
50	1	362	A
50	1	367	G
50	1	371	A
50	1	372	G
50	1	387	U
50	1	388	G
50	1	389	G
50	1	391	A
50	1	404	A
50	1	406	G
50	1	411	G
50	1	412	A
50	1	422	A
50	1	424	G
50	1	437	U
50	1	455	C
50	1	480	A

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Mol	Chain	Res	Type
50	1	481	G
50	1	490	C
50	1	491	G
50	1	504	A
50	1	505	A
50	1	508	A
50	1	529	A
50	1	532	A
50	1	533	G
50	1	544	C
50	1	545	U
50	1	546	U
50	1	548	G
50	1	549	G
50	1	550	C
50	1	563	A
50	1	573	U
50	1	575	A
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	675	A
50	1	686	U
50	1	687	C
50	1	695	G
50	1	705	A
50	1	711	G
50	1	730	A
50	1	747	C
50	1	749	A
50	1	752	A
50	1	764	A
50	1	765	C
50	1	774	G
50	1	776	G
50	1	777	G
50	1	782	A

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Mol	Chain	Res	Type
50	1	784	G
50	1	785	G
50	1	800	A
50	1	805	G
50	1	812	C
50	1	819	A
50	1	825	A
50	1	827	U
50	1	828	U
50	1	830	G
50	1	844	A
50	1	846	U
50	1	847	U
50	1	856	G
50	1	859	G
50	1	860	U
50	1	866	A
50	1	878	A
50	1	887	U
50	1	896	A
50	1	897	C
50	1	900	A
50	1	907	G
50	1	910	A
50	1	915	C
50	1	932	U
50	1	933	A
50	1	941	A
50	1	946	C
50	1	961	C
50	1	973	A
50	1	974	G
50	1	983	A
50	1	995	C
50	1	996	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	1046	A

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Mol	Chain	Res	Type
50	1	1061	U
50	1	1065	U
50	1	1066	U
50	1	1067	A
50	1	1068	G
50	1	1070	A
50	1	1071	G
50	1	1075	C
50	1	1076	C
50	1	1082	U
50	1	1084	A
50	1	1088	A
50	1	1089	A
50	1	1099	G
50	1	1104	C
50	1	1111	A
50	1	1131	G
50	1	1132	U
50	1	1134	A
50	1	1135	C
50	1	1136	G
50	1	1141	U
50	1	1143	A
50	1	1172	C
50	1	1173	U
50	1	1174	U
50	1	1175	A
50	1	1176	U
50	1	1177	G
50	1	1178	C
50	1	1179	G
50	1	1180	U
50	1	1181	U
50	1	1186	G
50	1	1212	G
50	1	1251	C
50	1	1253	A
50	1	1256	G
50	1	1271	G
50	1	1272	A
50	1	1273	U
50	1	1294	U

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Mol	Chain	Res	Type
50	1	1300	G
50	1	1301	A
50	1	1311	G
50	1	1314	C
50	1	1329	U
50	1	1345	C
50	1	1365	A
50	1	1379	U
50	1	1383	A
50	1	1395	A
50	1	1416	G
50	1	1417	C
50	1	1419	A
50	1	1420	A
50	1	1421	G
50	1	1437	C
50	1	1453	A
50	1	1456	G
50	1	1458	U
50	1	1461	C
50	1	1470	A
50	1	1482	G
50	1	1490	A
50	1	1491	G
50	1	1493	C
50	1	1498	C
50	1	1515	A
50	1	1524	G
50	1	1535	A
50	1	1538	G
50	1	1554	U
50	1	1555	G
50	1	1559	U
50	1	1560	G
50	1	1565	C
50	1	1569	A
50	1	1583	A
50	1	1584	U
50	1	1607	C
50	1	1608	A
50	1	1611	C
50	1	1616	A

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Mol	Chain	Res	Type
50	1	1647	U
50	1	1648	U
50	1	1654	A
50	1	1674	G
50	1	1695	G
50	1	1703	G
50	1	1707	G
50	1	1714	U
50	1	1715	G
50	1	1729	U
50	1	1730	C
50	1	1731	G
50	1	1738	G
50	1	1758	U
50	1	1764	C
50	1	1773	A
50	1	1780	A
50	1	1781	U
50	1	1784	A
50	1	1791	A
50	1	1800	C
50	1	1801	A
50	1	1802	A
50	1	1808	A
50	1	1815	A
50	1	1816	C
50	1	1847	A
50	1	1858	A
50	1	1866	A
50	1	1871	A
50	1	1872	A
50	1	1884	G
50	1	1890	A
50	1	1896	G
50	1	1901	A
50	1	1906	G
50	1	1907	G
50	1	1913	A
50	1	1914	C
50	1	1929	G
50	1	1930	G
50	1	1936	A

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Mol	Chain	Res	Type
50	1	1937	A
50	1	1938	A
50	1	1943	U
50	1	1955	U
50	1	1960	A
50	1	1963	U
50	1	1966	A
50	1	1967	C
50	1	1970	A
50	1	1971	U
50	1	1972	G
50	1	1982	U
50	1	1989	G
50	1	1991	U
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	2043	C
50	1	2055	C
50	1	2056	G
50	1	2060	A
50	1	2061	G
50	1	2062	A
50	1	2066	C
50	1	2069	G
50	1	2072	C
50	1	2093	G
50	1	2095	A
50	1	2096	C
50	1	2110	G
50	1	2111	U
50	1	2112	G
50	1	2113	U
50	1	2114	A
50	1	2118	U
50	1	2119	A
50	1	2127	G
50	1	2128	G
50	1	2131	U

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Mol	Chain	Res	Type
50	1	2132	U
50	1	2133	G
50	1	2136	G
50	1	2137	U
50	1	2140	G
50	1	2144	G
50	1	2146	C
50	1	2148	G
50	1	2161	C
50	1	2166	U
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	2178	C
50	1	2180	U
50	1	2182	U
50	1	2183	A
50	1	2197	U
50	1	2198	A
50	1	2199	A
50	1	2204	G
50	1	2213	U
50	1	2225	A
50	1	2238	G
50	1	2239	G
50	1	2266	A
50	1	2283	C
50	1	2287	A
50	1	2305	U
50	1	2309	A
50	1	2326	C
50	1	2327	A
50	1	2331	G
50	1	2334	U
50	1	2335	A
50	1	2344	U
50	1	2350	C
50	1	2354	C
50	1	2383	G

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Mol	Chain	Res	Type
50	1	2385	C
50	1	2390	U
50	1	2391	G
50	1	2392	A
50	1	2402	U
50	1	2406	A
50	1	2421	G
50	1	2422	C
50	1	2423	U
50	1	2424	C
50	1	2427	C
50	1	2429	G
50	1	2430	A
50	1	2440	C
50	1	2441	U
50	1	2445	G
50	1	2448	A
50	1	2449	U
50	1	2473	U
50	1	2476	A
50	1	2478	A
50	1	2491	U
50	1	2497	A
50	1	2498	C
50	1	2502	G
50	1	2503	A
50	1	2505	G
50	1	2506	U
50	1	2518	A
50	1	2519	U
50	1	2520	C
50	1	2530	A
50	1	2532	G
50	1	2547	A
50	1	2554	U
50	1	2566	A
50	1	2567	G
50	1	2572	A
50	1	2584	U
50	1	2602	A
50	1	2613	U
50	1	2646	C

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Mol	Chain	Res	Type
50	1	2655	G
50	1	2682	A
50	1	2689	U
50	1	2690	U
50	1	2702	G
50	1	2707	U
50	1	2714	G
50	1	2732	G
50	1	2744	G
50	1	2748	A
50	1	2757	A
50	1	2762	C
50	1	2764	A
50	1	2765	A
50	1	2766	A
50	1	2777	G
50	1	2778	A
50	1	2779	U
50	1	2782	G
50	1	2791	G
50	1	2792	A
50	1	2793	C
50	1	2794	C
50	1	2797	U
50	1	2798	U
50	1	2800	A
50	1	2801	G
50	1	2808	G
50	1	2811	G
50	1	2820	A
50	1	2833	U
50	1	2849	U
50	1	2866	U
50	1	2867	G
50	1	2868	A
50	1	2872	A
50	1	2880	C
50	1	2893	A
50	1	2903	U
51	2	4	C
51	2	13	G
51	2	16	G

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Mol	Chain	Res	Type
51	2	35	C
51	2	42	C
51	2	44	G
51	2	67	G
51	2	88	C
51	2	89	U
51	2	90	C
51	2	109	A
51	2	119	A
52	5	8	U
52	5	9	G
52	5	10	G
52	5	14	A
52	5	19	G
52	5	20	U
52	5	25	C
52	5	46	G
52	5	47	U
52	5	48	C
52	5	61	C
52	5	73	A
52	5	74	C
52	5	76	A
53	4	7	G
53	4	15	A
53	4	19	A

All (10) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
50	1	421	C
50	1	704	G
50	1	859	G
50	1	1020	A
50	1	1130	U
50	1	1857	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 [i](#)

There are no chain breaks in this entry.

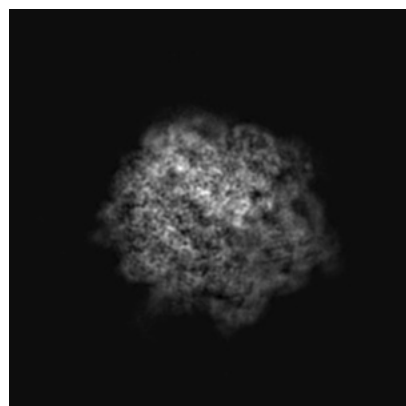
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-22461. These allow visual inspection of the internal detail of the map and identification of artifacts.

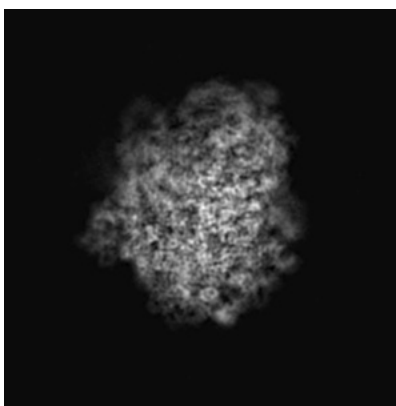
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

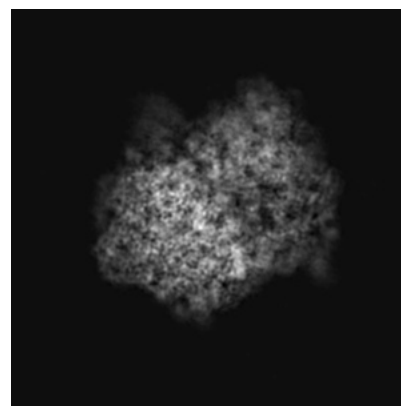
6.1.1 Primary map



X

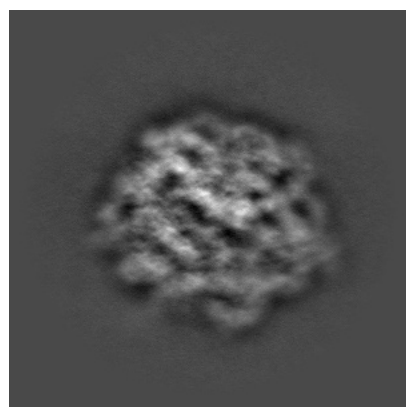


Y

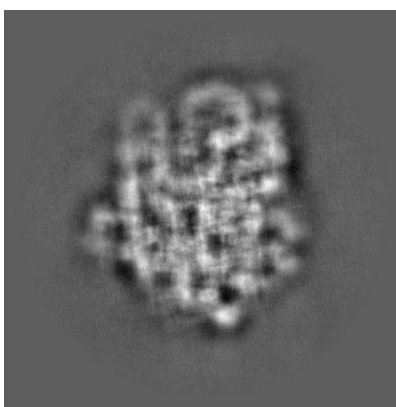


Z

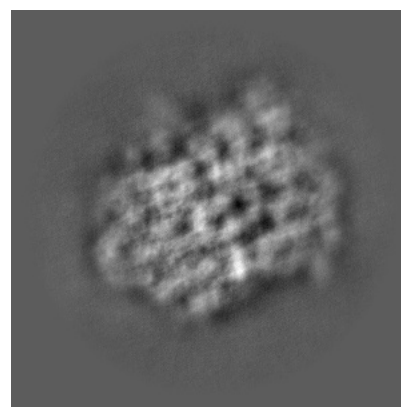
6.1.2 Raw map



X



Y

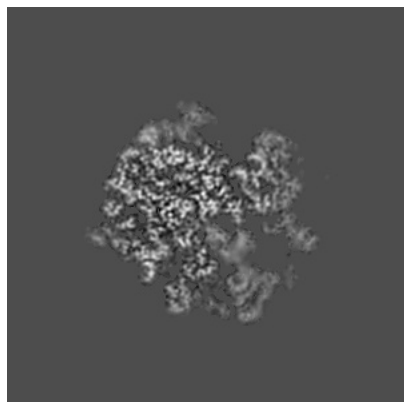


Z

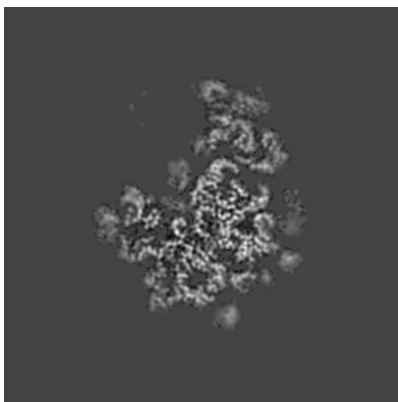
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

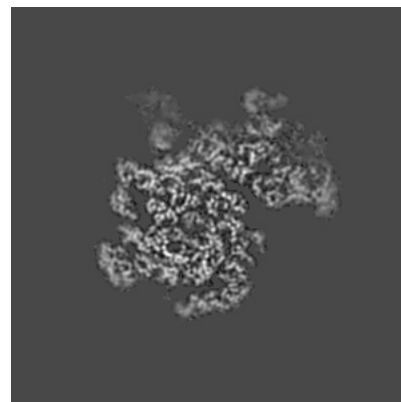
6.2.1 Primary map



X Index: 224

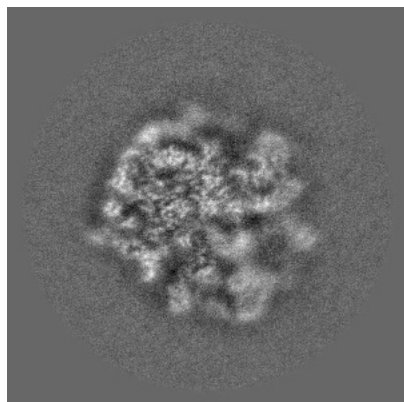


Y Index: 224

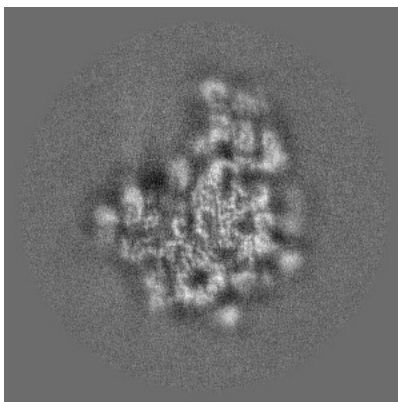


Z Index: 224

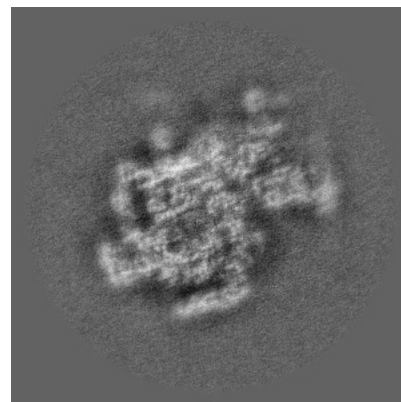
6.2.2 Raw map



X Index: 224



Y Index: 224

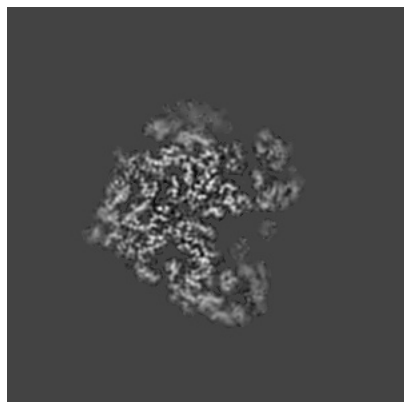


Z Index: 224

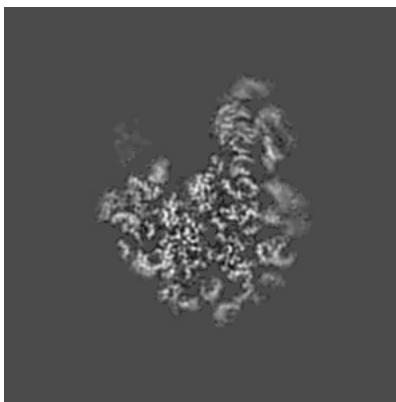
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

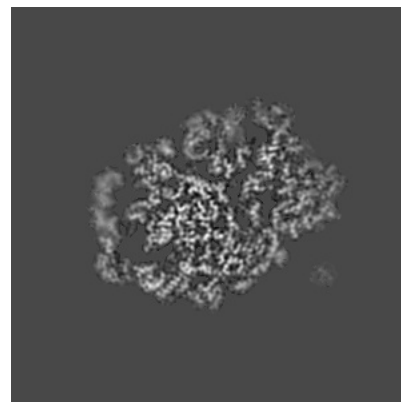
6.3.1 Primary map



X Index: 211

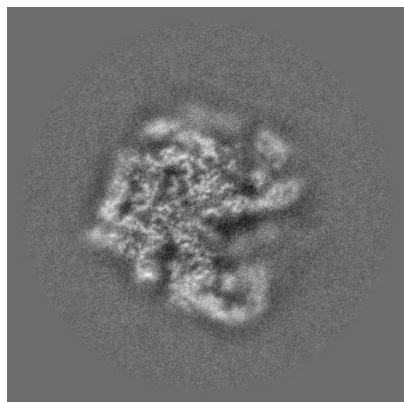


Y Index: 201

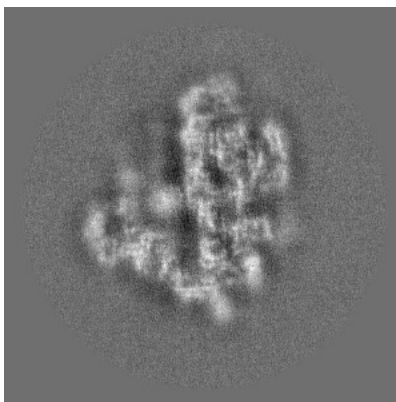


Z Index: 246

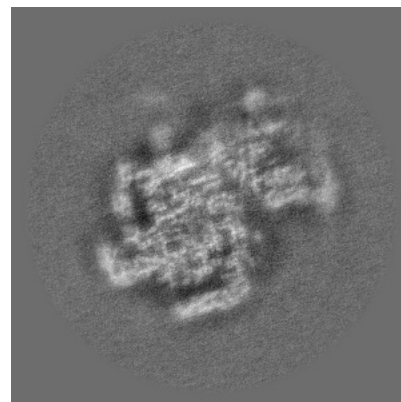
6.3.2 Raw map



X Index: 213



Y Index: 257

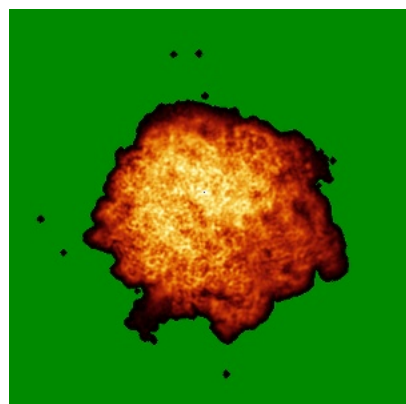


Z Index: 222

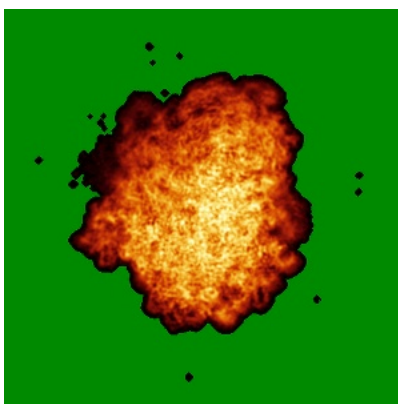
The images above show the largest variance slices of the map in three orthogonal directions.

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

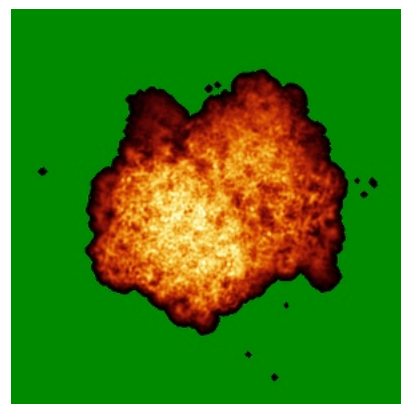
6.4.1 Primary map



X

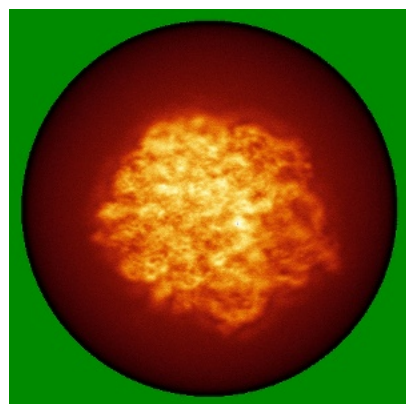


Y

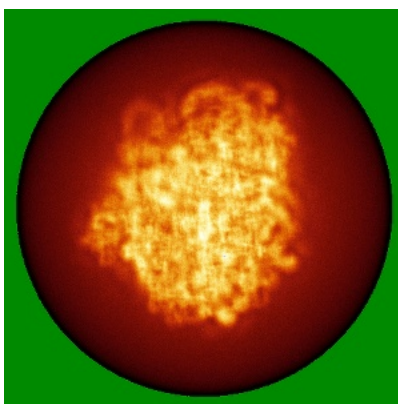


Z

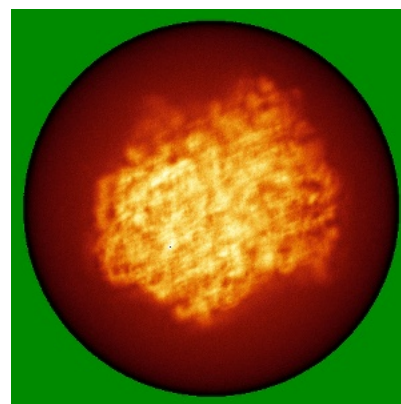
6.4.2 Raw map



X



Y

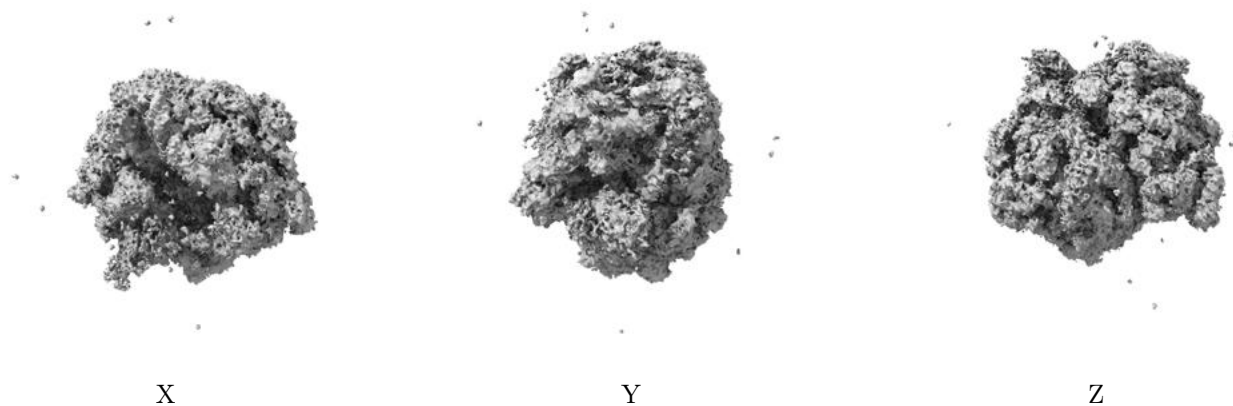


Z

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.

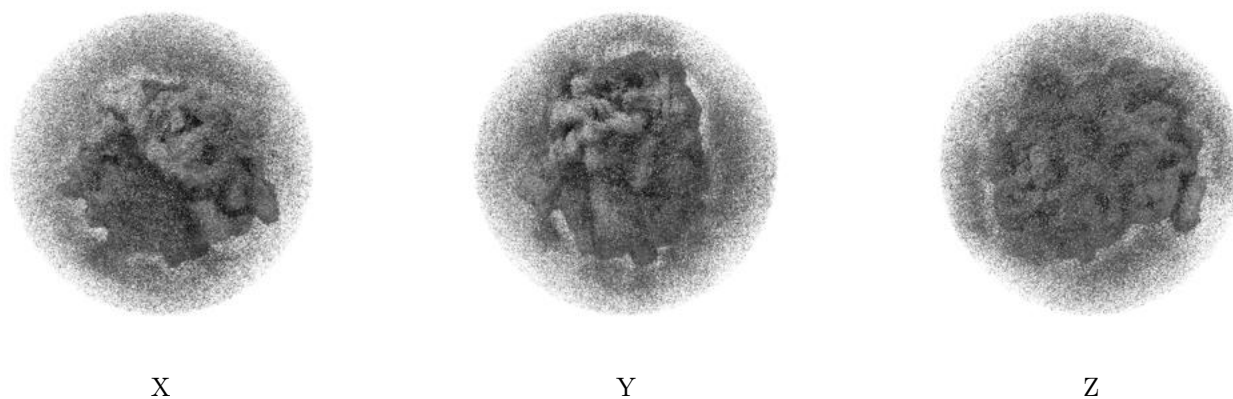
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.592. 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



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.

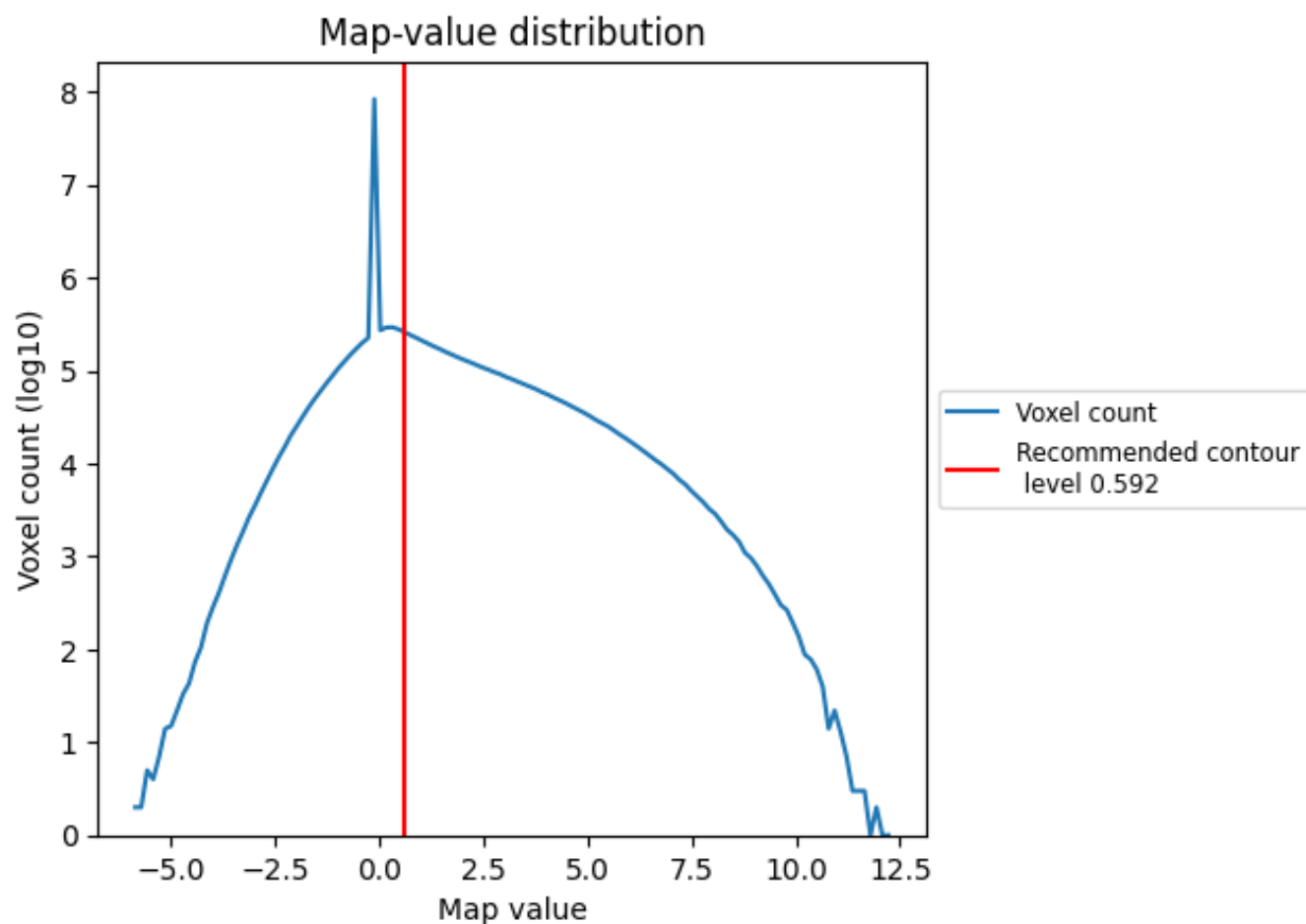
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

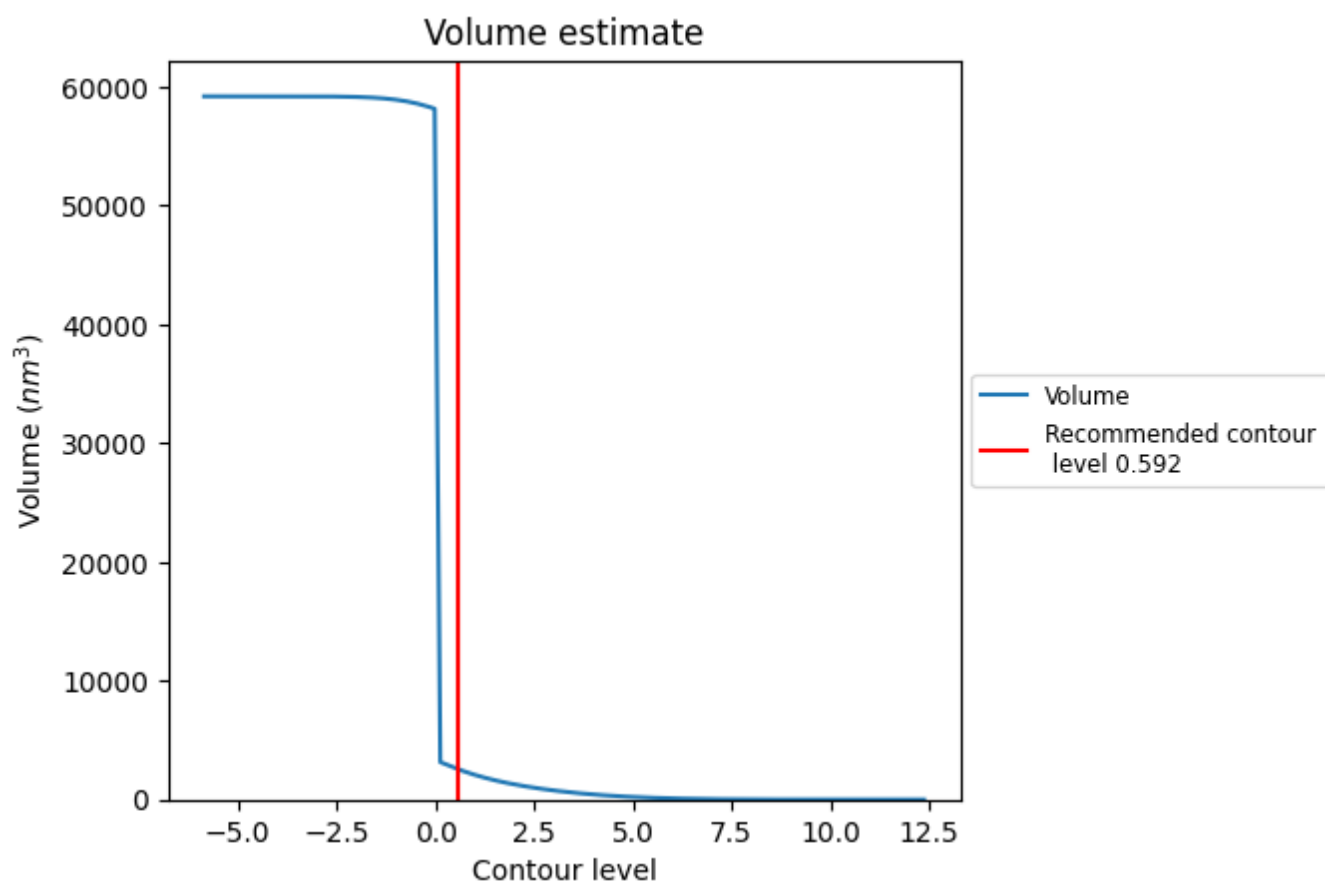
This section contains the results of statistical analysis of the map.

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.

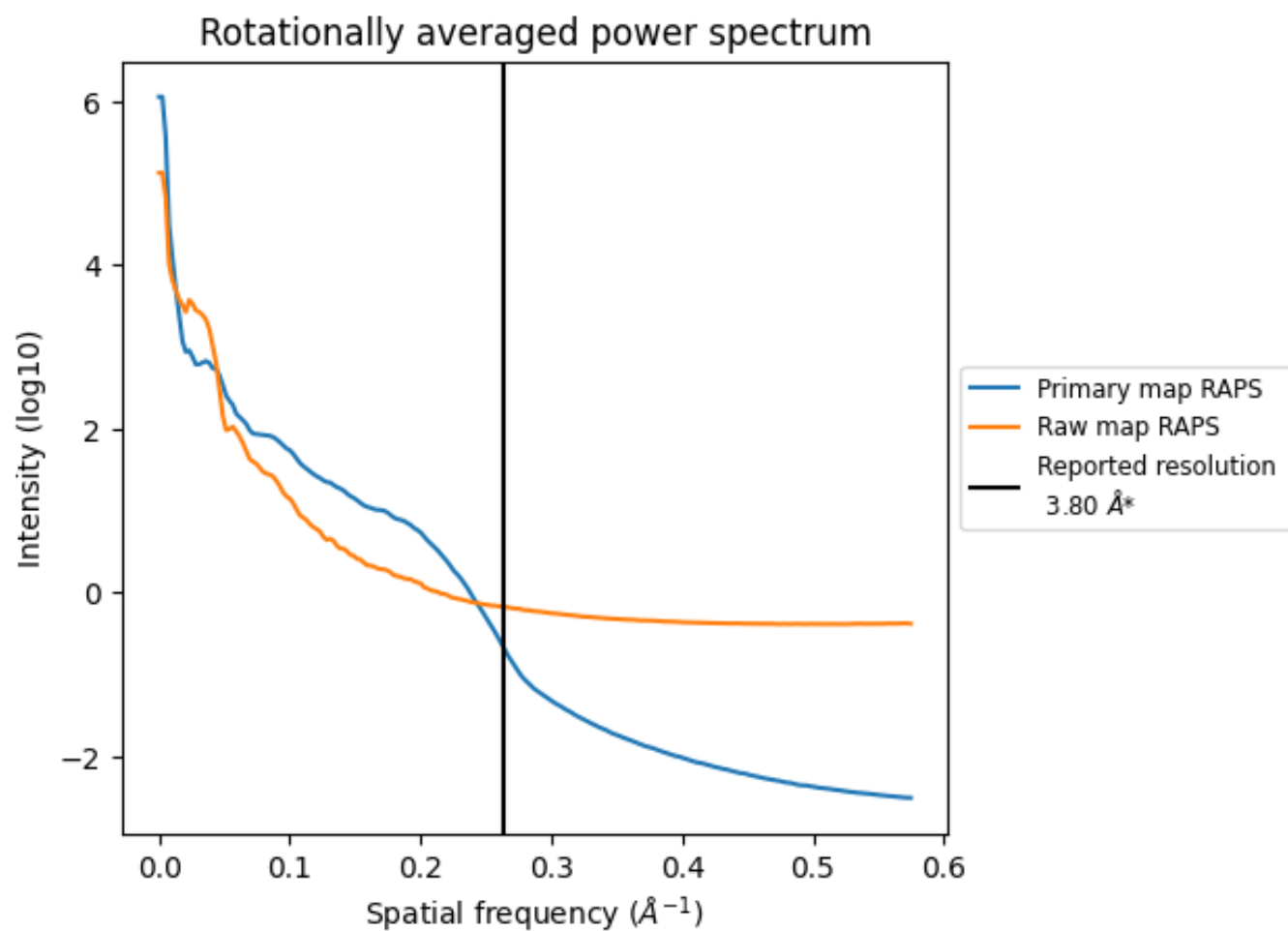
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 2536 nm³; this corresponds to an approximate mass of 2291 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 [i](#)

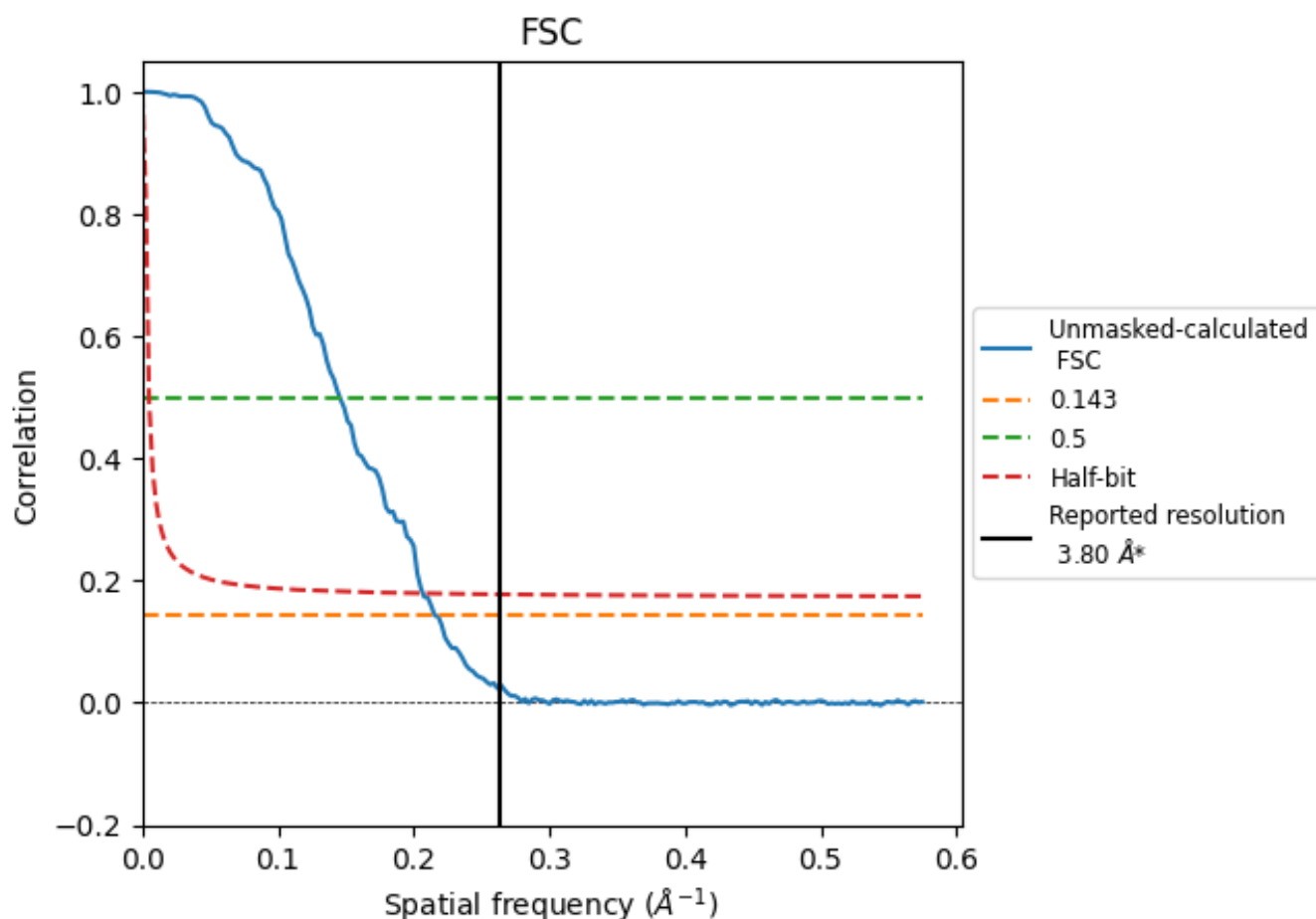


*Reported resolution corresponds to spatial frequency of $0.263 \text{ \AA}^{-1}$

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 0.263 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

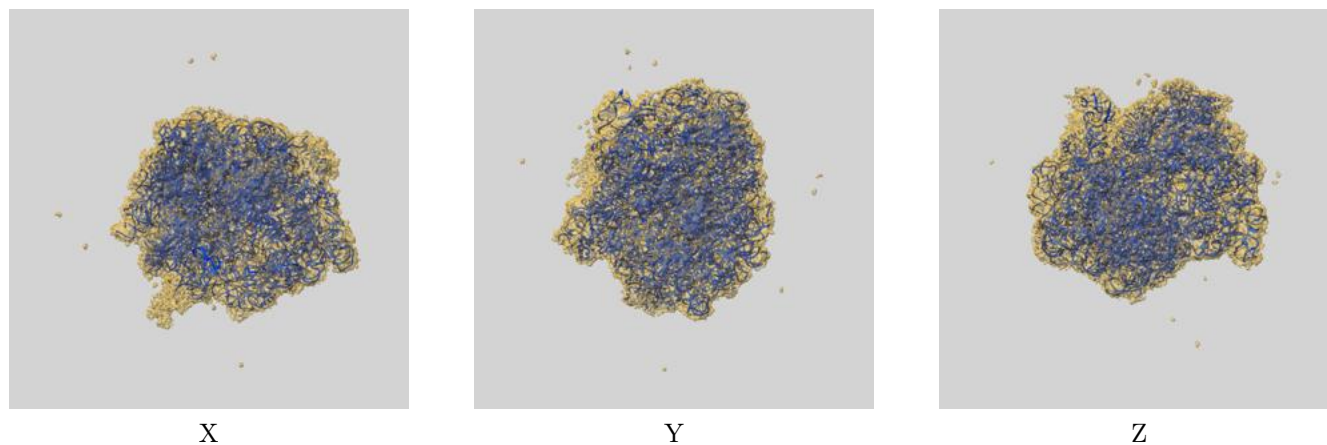
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.80	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	4.64	6.87	4.84

*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 4.64 differs from the reported value 3.8 by more than 10 %

9 Map-model fit [i](#)

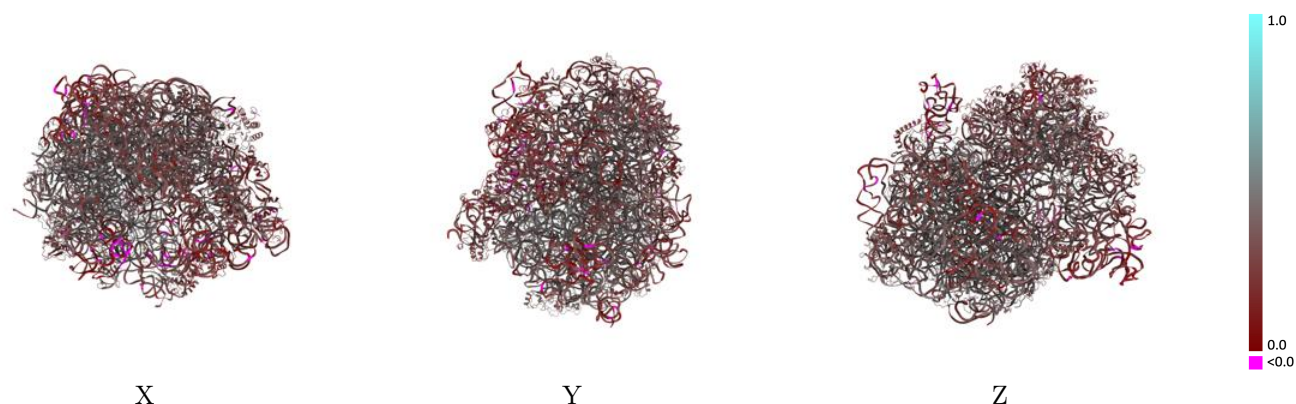
This section contains information regarding the fit between EMDB map EMD-22461 and PDB model 7JSW. Per-residue inclusion information can be found in section 3 on page 15.

9.1 Map-model overlay [i](#)



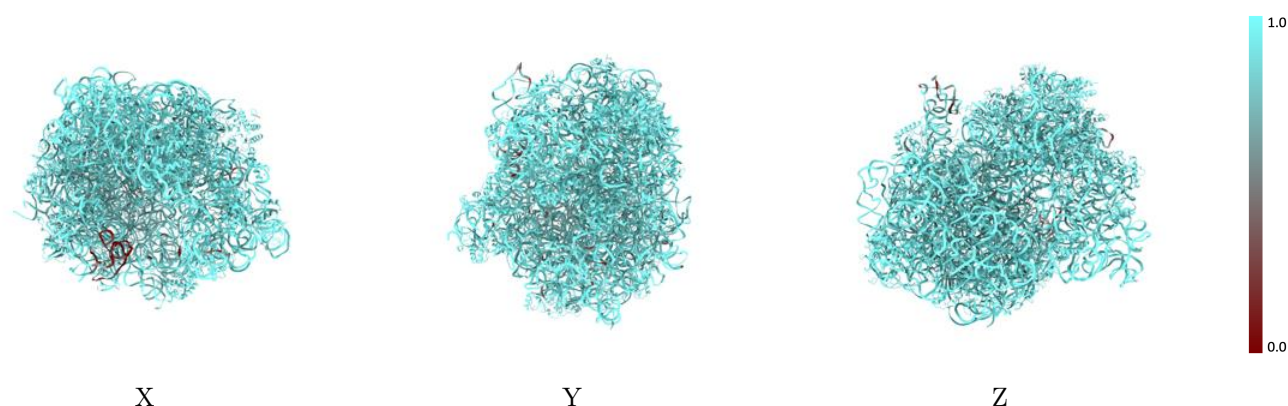
The images above show the 3D surface view of the map at the recommended contour level 0.592 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



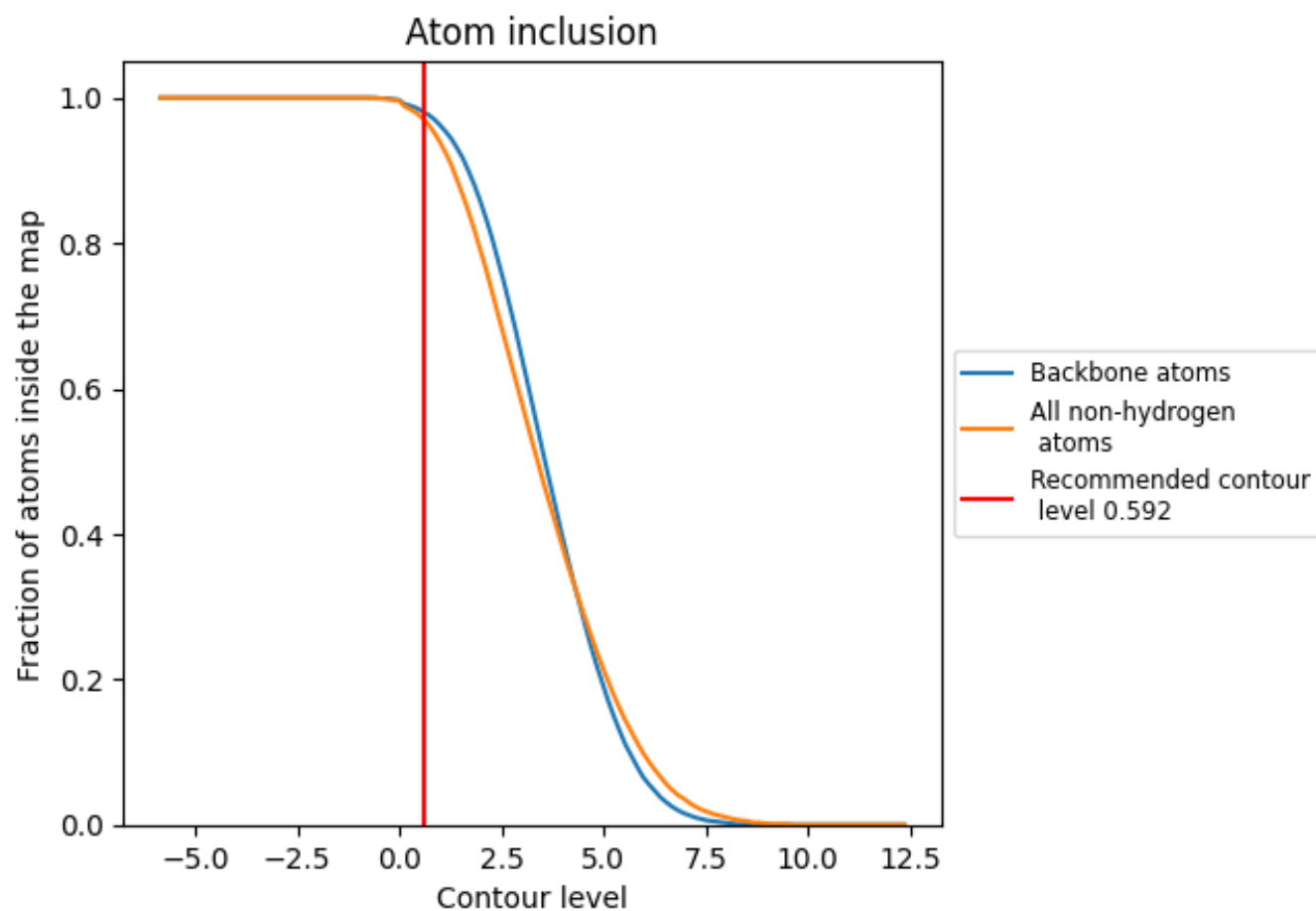
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.592).

9.4 Atom inclusion [i](#)



At the recommended contour level, 98% of all backbone atoms, 97% 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 (0.592) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9700	 0.3390
1	 0.9710	 0.3530
2	 0.9900	 0.2920
3	 0.9860	 0.3110
4	 0.9800	 0.2840
5	 0.9400	 0.2280
8	 0.7990	 0.2150
B	 0.9600	 0.4140
C	 0.9750	 0.3980
D	 0.9520	 0.4270
E	 0.9250	 0.4070
F	 0.9620	 0.3810
G	 0.9650	 0.3040
H	 0.9510	 0.3320
I	 0.9450	 0.2990
J	 0.9710	 0.3650
K	 0.9760	 0.3140
L	 0.9430	 0.2640
M	 0.9650	 0.3440
N	 0.9440	 0.2610
O	 0.9230	 0.2810
P	 0.9680	 0.3250
Q	 0.9700	 0.3950
R	 0.9770	 0.2660
S	 0.9680	 0.2920
T	 0.9680	 0.3180
U	 0.9540	 0.3300
V	 0.9750	 0.3510
W	 0.9130	 0.3130
X	 0.9940	 0.2500
Y	 0.9710	 0.3090
Z	 0.9030	 0.2660
b	 0.9550	 0.4150
c	 0.9610	 0.4160
d	 0.9690	 0.3780



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Chain	Atom inclusion	Q-score
e	 0.9690	 0.2420
f	 0.9750	 0.3050
g	 0.9080	 0.2760
j	 0.9580	 0.3970
k	 0.9660	 0.4170
l	 0.9670	 0.4100
m	 0.9660	 0.4040
n	 0.9770	 0.4130
o	 0.9840	 0.3270
p	 0.9810	 0.3980
q	 0.9580	 0.4000
r	 0.9750	 0.4040
s	 0.9550	 0.4130
t	 0.9680	 0.3930
u	 0.9670	 0.3670
v	 0.9800	 0.3630
w	 0.9480	 0.4080
x	 0.9800	 0.3980
y	 0.9780	 0.3320
z	 0.9700	 0.4070