Full wwPDB EM Validation Report

Jul 3, 2025 – 11:02 AM EDT

PDB ID	:	8UZ3 / pdb_00008uz3
EMDB ID	:	EMD-42832
Title	:	E. coli 70S ribosome with unmodified e*/E-tRNAPro(GGG) bound to slippery P-site CCC-C codon
Authors	:	Kimbrough, E.M.; Dunham, C.M.; Nguyen, H.A.
Deposited on	:	2023-11-14
Resolution	:	3.20 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:

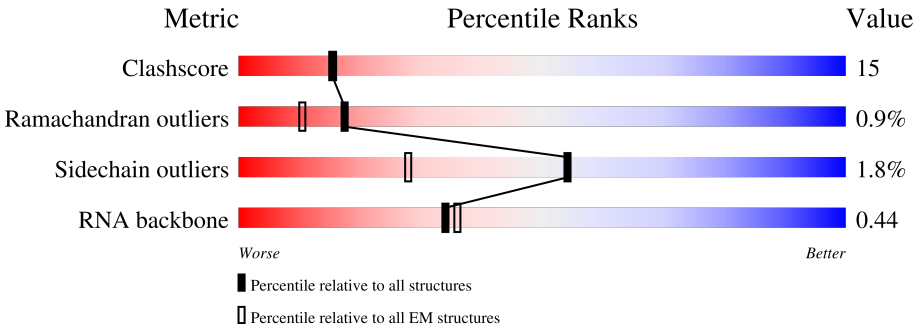
EMDB validation analysis	:	0.0.1.dev118
MolProbity	:	4-5-2 with Phenix2.0rc1
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.44

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.20 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415
RNA backbone	6643	2191

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 <=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	1	2904	38% 52% 10%
2	2	1540	32% 56% 12%
3	3	120	48% 47% 5%
4	4	18	17% 6% 78%
5	5	77	42% 30% 27%
6	A	229	38% 20% 41%
7	B	273	74% 24%

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Mol	Chain	Length	Quality of chain
8	C	209	76% 23%
9	D	201	73% 26%
10	E	179	61% 38%
11	F	177	70% 27%
12	G	149	5% 80% 18%
13	J	142	69% 29%
14	K	123	61% 34%
15	L	144	71% 28%
16	M	136	72% 28%
17	N	127	64% 31% 6%
18	O	117	74% 25%
19	P	115	75% 22%
20	Q	118	75% 22%
21	R	103	75% 23%
22	S	110	79% 20%
23	T	100	67% 26% 7%
24	U	104	78% 20%
25	V	94	70% 29%
26	W	84	73% 17% 11%
27	X	78	63% 36%
28	Y	63	83% 16%
29	Z	59	68% 31%
30	b	57	74% 23%
31	c	55	60% 31% 9%
32	d	46	74% 26%

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Mol	Chain	Length	Quality of chain
33	e	65	
34	f	38	
35	h	206	
36	i	206	
37	j	167	
38	k	135	
39	l	179	
40	m	130	
41	n	130	
42	o	103	
43	p	129	
44	q	124	
45	r	118	
46	s	101	
47	t	89	
48	u	82	
49	v	84	
50	w	75	
51	x	92	
52	y	87	
53	z	71	

2 Entry composition

There are 55 unique types of molecules in this entry. The entry contains 144496 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called 23S ribosomal RNA.

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

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
1	747	C	U	conflict	GB 1109114233

- Molecule 2 is a RNA chain called 16S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	2	1539	33012	14725	6052	10697	1538	0	0

- Molecule 3 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	3	120	2568	1145	471	833	119	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
3	120	A	U	conflict	GB 1370526515

- Molecule 4 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
4	4	4	80	36	12	28	4	0	0

- Molecule 5 is a RNA chain called tRNA ProL(GGG).

Mol	Chain	Residues	Atoms					AltConf	Trace
5	5	76	Total	C	N	O	P	0	0
			1628	724	294	534	76		

- Molecule 6 is a protein called 50S ribosomal protein L1.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	A	134	Total	C	N	O	S	0	0
			1026	645	186	193	2		

- Molecule 7 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	B	271	Total	C	N	O	S	0	0
			2082	1288	423	364	7		

- Molecule 8 is a protein called 50S ribosomal protein L3.

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

- Molecule 9 is a protein called 50S ribosomal protein L4.

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

- Molecule 10 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	E	177	Total	C	N	O	S	0	0
			1410	899	249	256	6		

- Molecule 11 is a protein called 50S ribosomal protein L6.

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

- Molecule 12 is a protein called 50S ribosomal protein L9.

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

- Molecule 13 is a protein called 50S ribosomal protein L13.

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

- Molecule 14 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	K	122	Total	C	N	O	S	0	0
			938	587	180	165	6		

- Molecule 15 is a protein called 50S ribosomal protein L15.

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

- Molecule 16 is a protein called 50S ribosomal protein L16.

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

- Molecule 17 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	N	120	Total	C	N	O	S	0	0
			960	593	196	166	5		

- Molecule 18 is a protein called 50S ribosomal protein L18.

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

- Molecule 19 is a protein called 50S ribosomal protein L19.

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

- Molecule 20 is a protein called 50S ribosomal protein L20.

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

- Molecule 21 is a protein called 50S ribosomal protein L21.

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

- Molecule 22 is a protein called 50S ribosomal protein L22.

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

- Molecule 23 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	T	93	Total	C	N	O	S	0	0
			738	466	139	131	2		

- Molecule 24 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms				AltConf	Trace
24	U	102	Total	C	N	O	0	0
			779	492	146	141		

- Molecule 25 is a protein called 50S ribosomal protein L25.

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

- Molecule 26 is a protein called 50S ribosomal protein L27.

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

- Molecule 27 is a protein called 50S ribosomal protein L28.

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

- Molecule 28 is a protein called 50S ribosomal protein L29.

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

- Molecule 29 is a protein called 50S ribosomal protein L30.

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

- Molecule 30 is a protein called 50S ribosomal protein L32.

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

- Molecule 31 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms				AltConf	Trace
31	c	50	Total	C	N	O	0	0
			409	263	75	71		

- Molecule 32 is a protein called 50S ribosomal protein L34.

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

- Molecule 33 is a protein called 50S ribosomal protein L35.

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

- Molecule 34 is a protein called 50S ribosomal protein L36.

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

- Molecule 35 is a protein called 30S ribosomal protein S3.

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

- Molecule 36 is a protein called 30S ribosomal protein S4.

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

- Molecule 37 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	j	157	Total	C	N	O	S	0	0
			1156	719	218	213	6		

- Molecule 38 is a protein called 30S ribosomal protein S6.

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

- Molecule 39 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	l	151	Total	C	N	O	S	0	0
			1181	735	227	215	4		

- Molecule 40 is a protein called 30S ribosomal protein S8.

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

- Molecule 41 is a protein called 30S ribosomal protein S9.

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

- Molecule 42 is a protein called 30S ribosomal protein S10.

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

- Molecule 43 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	p	116	Total	C	N	O	S	0	0
			869	535	173	158	3		

- Molecule 44 is a protein called 30S ribosomal protein S12.

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

- Molecule 45 is a protein called 30S ribosomal protein S13.

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

- Molecule 46 is a protein called 30S ribosomal protein S14.

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

- Molecule 47 is a protein called 30S ribosomal protein S15.

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

- Molecule 48 is a protein called 30S ribosomal protein S16.

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

- Molecule 49 is a protein called 30S ribosomal protein S17.

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

- Molecule 50 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	w	65	Total	C	N	O	S	0	0
			535	339	100	95	1		

- Molecule 51 is a protein called 30S ribosomal protein S19.

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

- Molecule 52 is a protein called 30S ribosomal protein S20.

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

- Molecule 53 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	z	65	Total	C	N	O	S	0	0
			544	335	117	91	1		

- Molecule 54 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms	AltConf
54	1	306	Total Mg 306 306	0
54	2	78	Total Mg 78 78	0
54	3	7	Total Mg 7 7	0
54	4	1	Total Mg 1 1	0
54	5	1	Total Mg 1 1	0
54	B	2	Total Mg 2 2	0
54	D	1	Total Mg 1 1	0
54	E	1	Total Mg 1 1	0
54	J	1	Total Mg 1 1	0
54	K	1	Total Mg 1 1	0
54	L	1	Total Mg 1 1	0
54	M	1	Total Mg 1 1	0
54	N	1	Total Mg 1 1	0
54	Q	1	Total Mg 1 1	0
54	R	1	Total Mg 1 1	0
54	S	3	Total Mg 3 3	0
54	W	1	Total Mg 1 1	0
54	Z	1	Total Mg 1 1	0
54	b	1	Total Mg 1 1	0
54	m	1	Total Mg 1 1	0
54	p	1	Total Mg 1 1	0
54	q	1	Total Mg 1 1	0

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Mol	Chain	Residues	Atoms	AltConf
54	r	1	Total Mg 1 1	0
54	w	1	Total Mg 1 1	0

- Molecule 55 is water.

Mol	Chain	Residues	Atoms	AltConf
55	1	812	Total O 812 812	0
55	2	288	Total O 288 288	0
55	3	13	Total O 13 13	0
55	4	1	Total O 1 1	0
55	5	5	Total O 5 5	0
55	A	5	Total O 5 5	0
55	B	1	Total O 1 1	0
55	C	2	Total O 2 2	0
55	E	2	Total O 2 2	0
55	F	4	Total O 4 4	0
55	G	8	Total O 8 8	0
55	J	11	Total O 11 11	0
55	K	3	Total O 3 3	0
55	M	6	Total O 6 6	0
55	N	1	Total O 1 1	0
55	O	3	Total O 3 3	0
55	P	2	Total O 2 2	0

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Mol	Chain	Residues	Atoms	AltConf
55	Q	1	Total O 1 1	0
55	R	1	Total O 1 1	0
55	T	5	Total O 5 5	0
55	U	4	Total O 4 4	0
55	V	3	Total O 3 3	0
55	W	3	Total O 3 3	0
55	X	3	Total O 3 3	0
55	Y	1	Total O 1 1	0
55	Z	5	Total O 5 5	0
55	c	6	Total O 6 6	0
55	d	1	Total O 1 1	0
55	h	9	Total O 9 9	0
55	i	1	Total O 1 1	0
55	j	4	Total O 4 4	0
55	k	4	Total O 4 4	0
55	l	4	Total O 4 4	0
55	m	1	Total O 1 1	0
55	o	1	Total O 1 1	0
55	p	11	Total O 11 11	0
55	r	1	Total O 1 1	0
55	t	7	Total O 7 7	0

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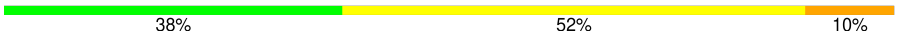
Mol	Chain	Residues	Atoms	AltConf
55	w	4	Total O 4 4	0
55	z	8	Total O 8 8	0

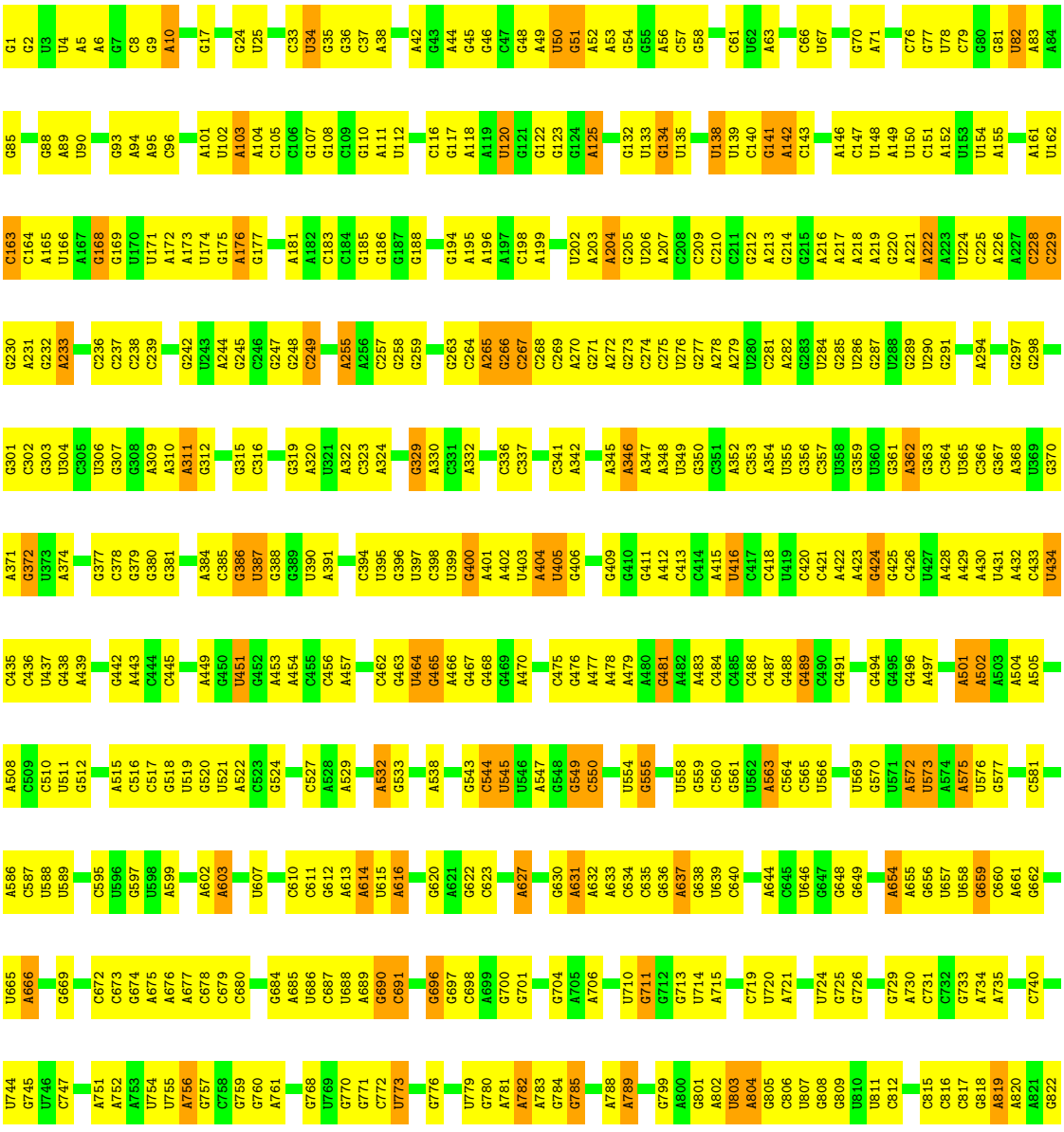
3 Residue-property plots (i)

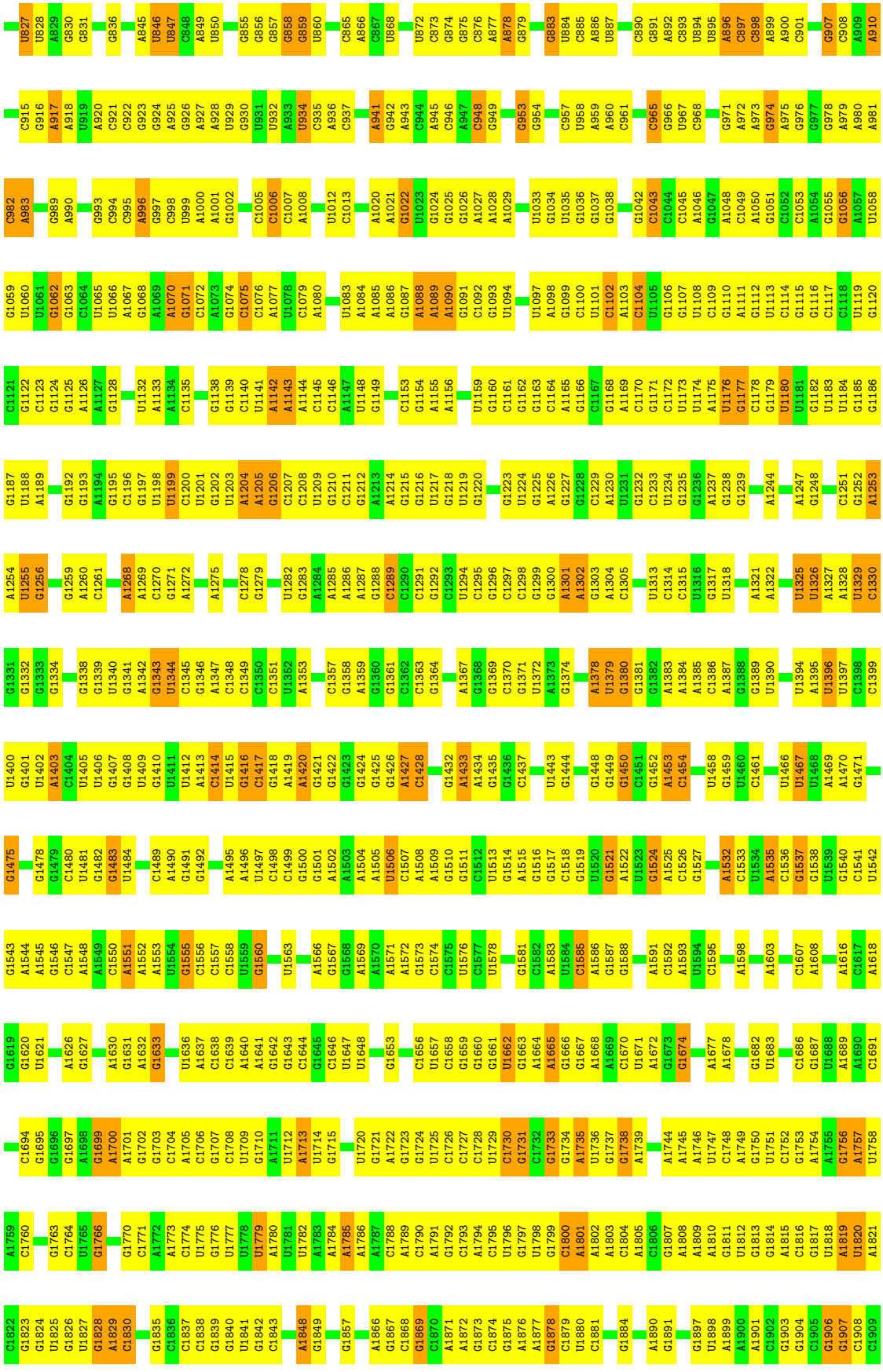
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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.

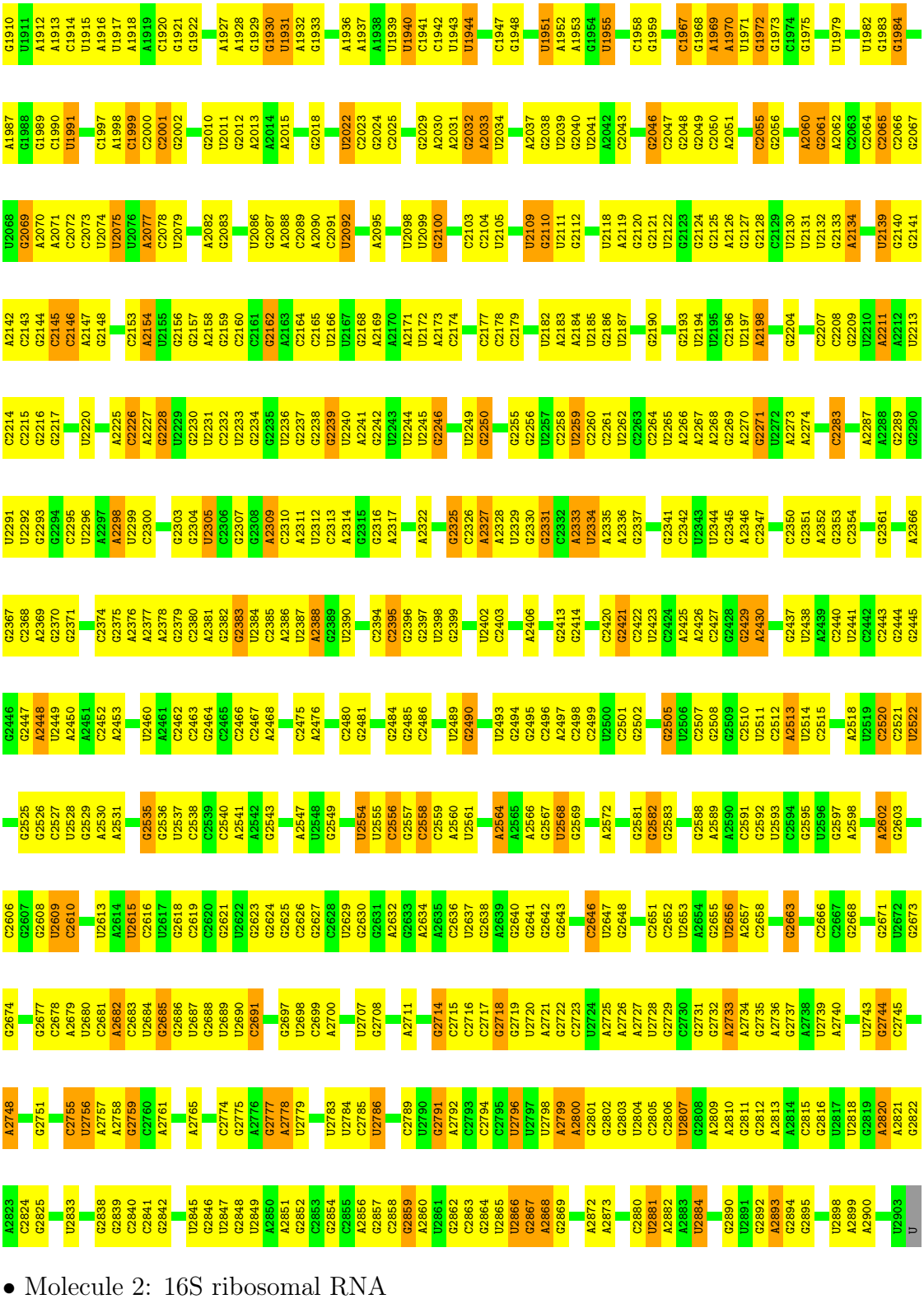
- Molecule 1: 23S ribosomal RNA

Chain 1:



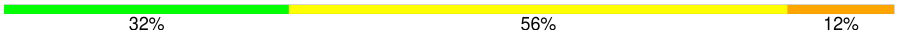


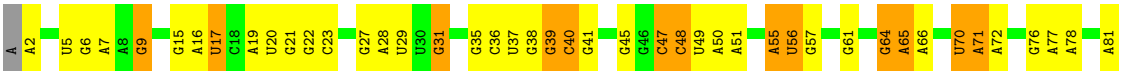


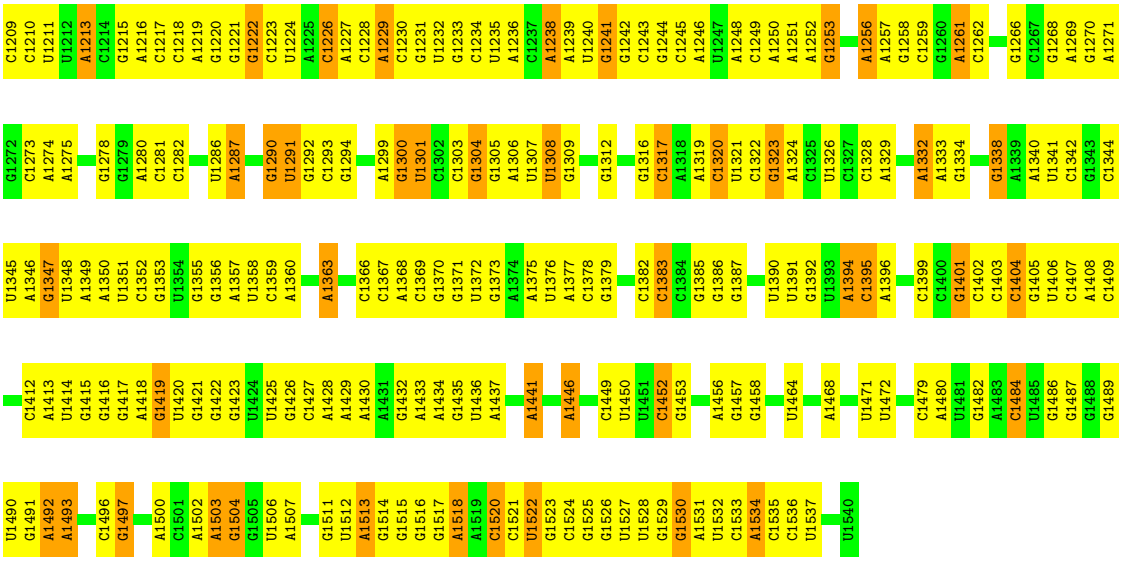


• Molecule 2: 16S ribosomal RNA

Chain 2:







• Molecule 3: 5S ribosomal RNA

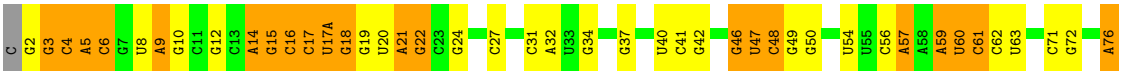
Chain 3:

• Molecule 4: mRNA

Chain 4:

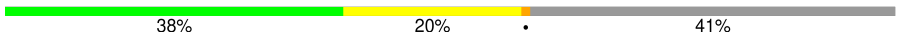
• Molecule 5: tRNA ProL(GGG)

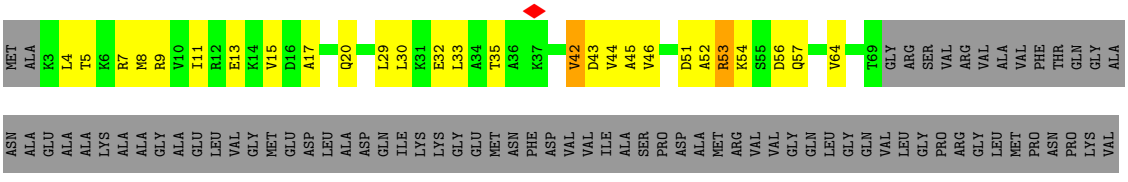
Chain 5:



• Molecule 6: 50S ribosomal protein L1

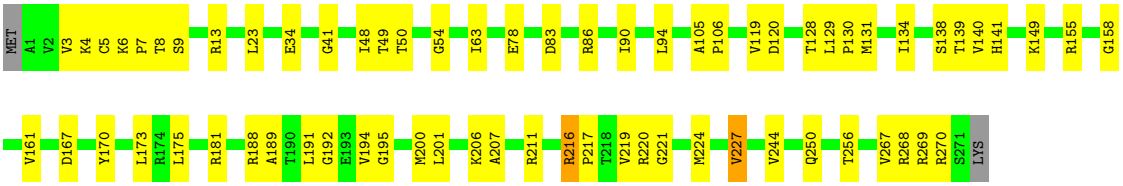
Chain A:





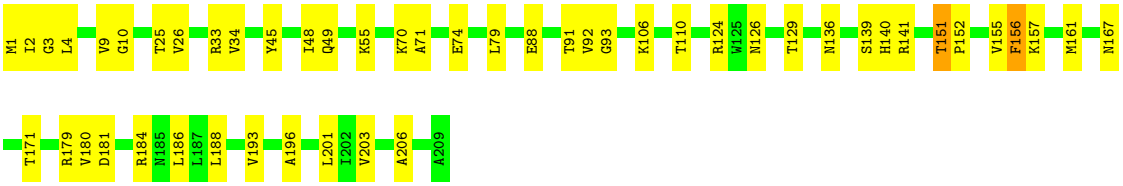
• Molecule 7: 50S ribosomal protein L2

Chain B:



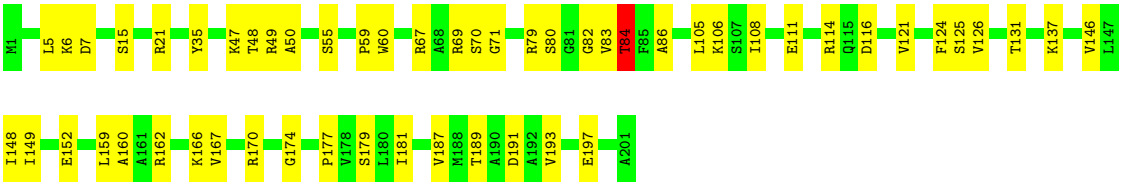
• Molecule 8: 50S ribosomal protein L3

Chain C:



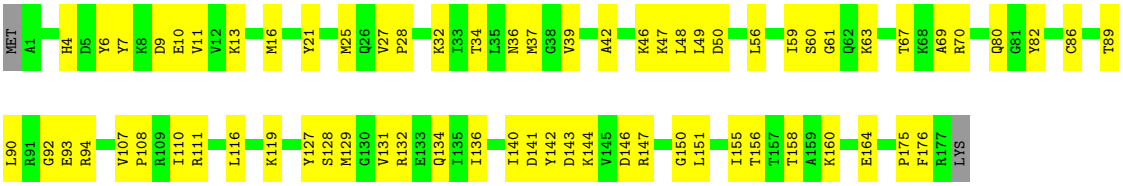
• Molecule 9: 50S ribosomal protein L4

Chain D:



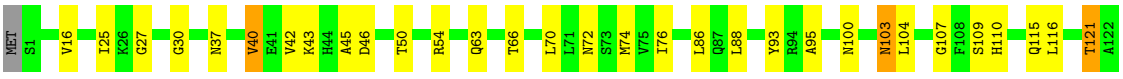
• Molecule 10: 50S ribosomal protein L5

Chain E:



• Molecule 11: 50S ribosomal protein L6

Chain F:

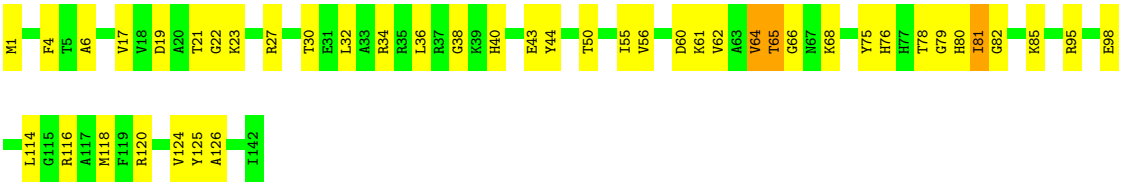


• Molecule 12: 50S ribosomal protein L9

Chain G:

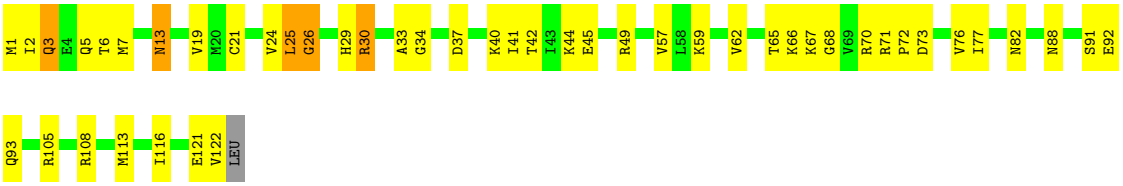
• Molecule 13: 50S ribosomal protein L13

Chain J:



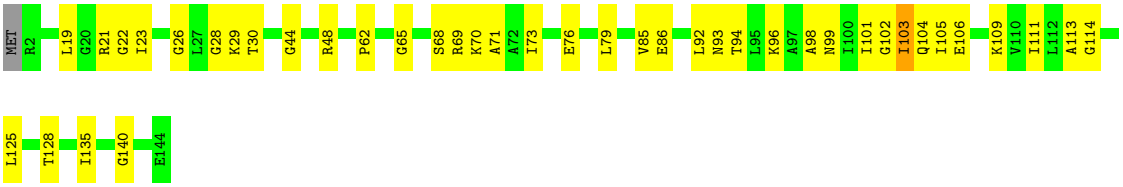
• Molecule 14: 50S ribosomal protein L14

Chain K:



• Molecule 15: 50S ribosomal protein L15

Chain L:

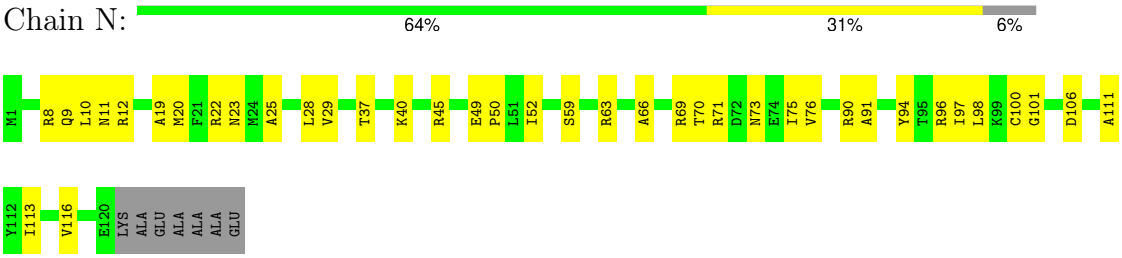


• Molecule 16: 50S ribosomal protein L16

Chain M:

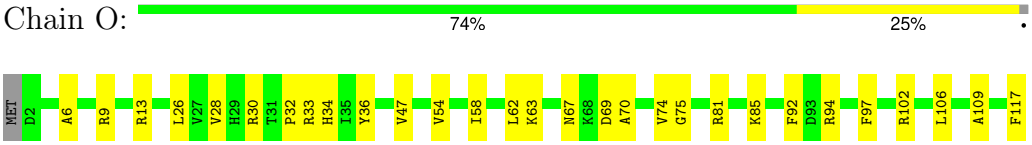
• Molecule 17: 50S ribosomal protein L17

Chain N:



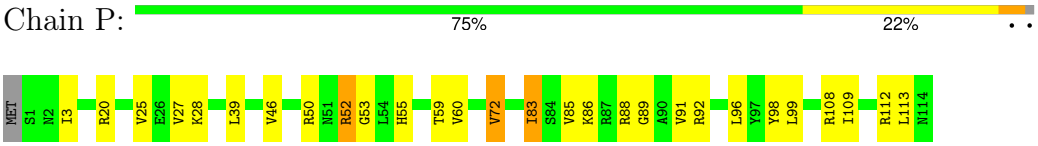
• Molecule 18: 50S ribosomal protein L18

Chain O:



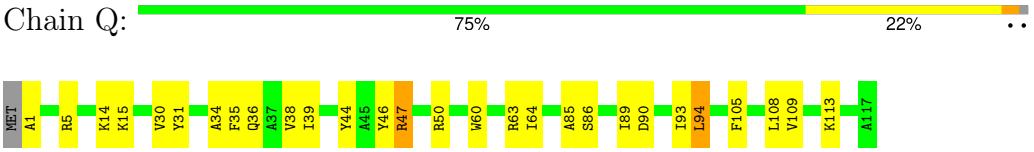
• Molecule 19: 50S ribosomal protein L19

Chain P:



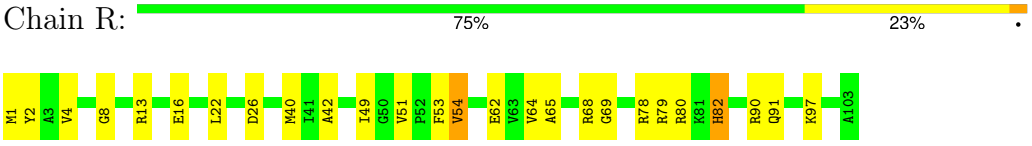
• Molecule 20: 50S ribosomal protein L20

Chain Q:



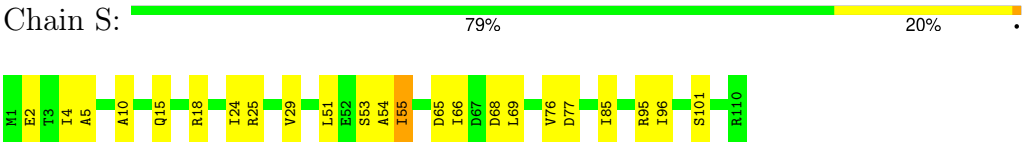
• Molecule 21: 50S ribosomal protein L21

Chain R:



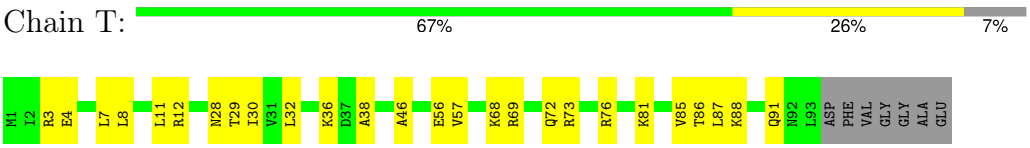
• Molecule 22: 50S ribosomal protein L22

Chain S:



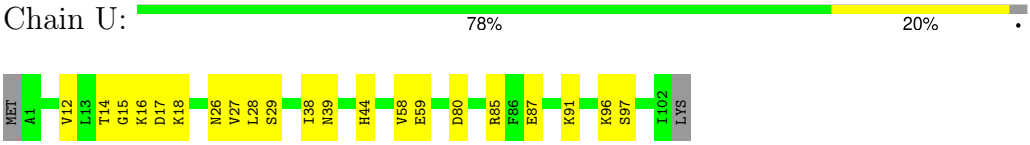
• Molecule 23: 50S ribosomal protein L23

Chain T:



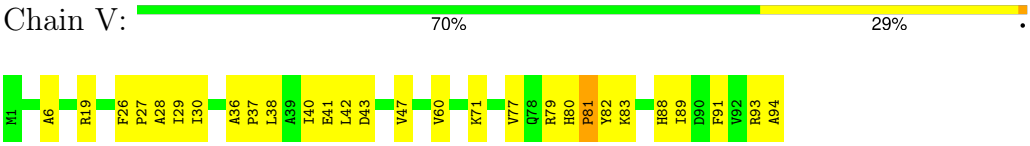
• Molecule 24: 50S ribosomal protein L24

Chain U:



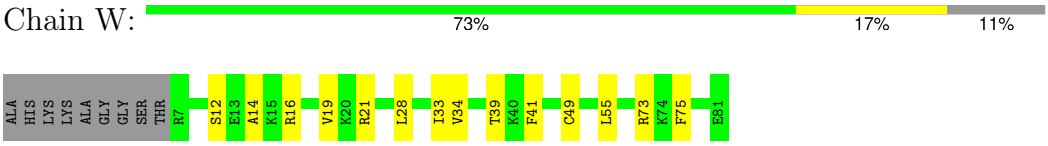
• Molecule 25: 50S ribosomal protein L25

Chain V:



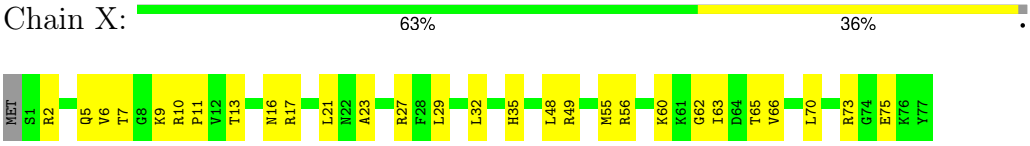
• Molecule 26: 50S ribosomal protein L27

Chain W:



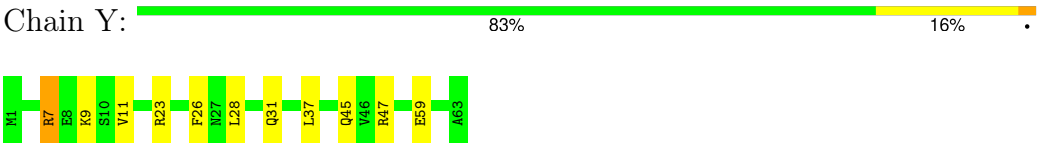
• Molecule 27: 50S ribosomal protein L28

Chain X:



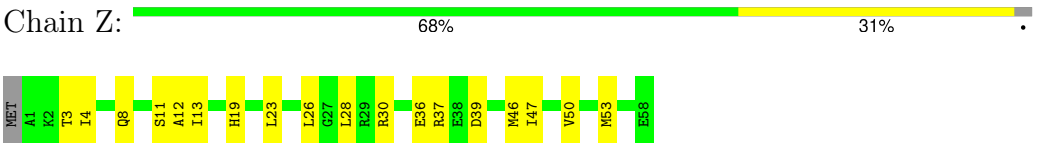
• Molecule 28: 50S ribosomal protein L29

Chain Y:



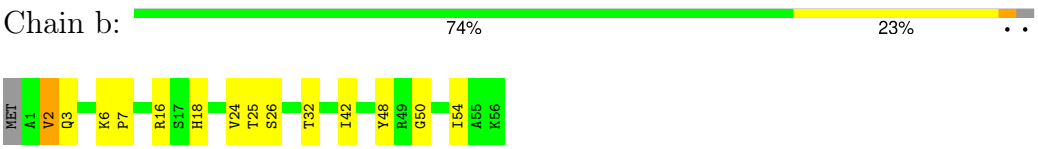
• Molecule 29: 50S ribosomal protein L30

Chain Z:



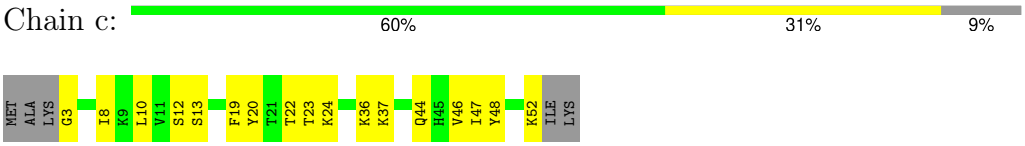
• Molecule 30: 50S ribosomal protein L32

Chain b:



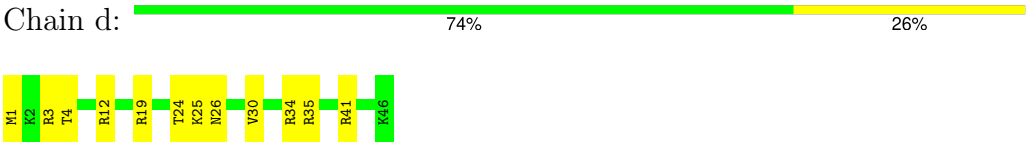
• Molecule 31: 50S ribosomal protein L33

Chain c:



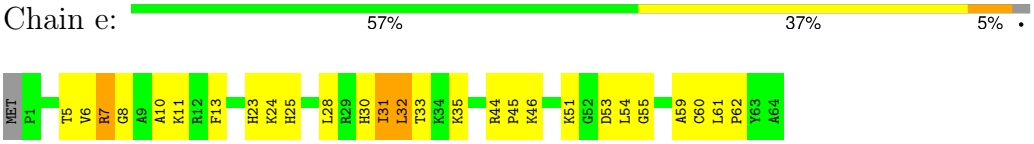
• Molecule 32: 50S ribosomal protein L34

Chain d:



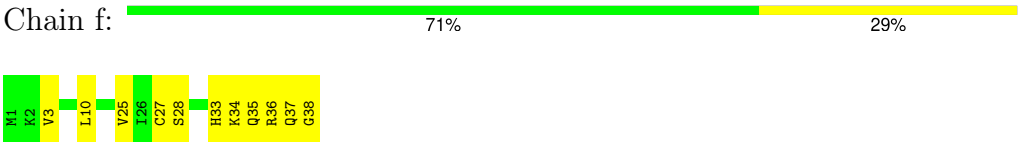
• Molecule 33: 50S ribosomal protein L35

Chain e:



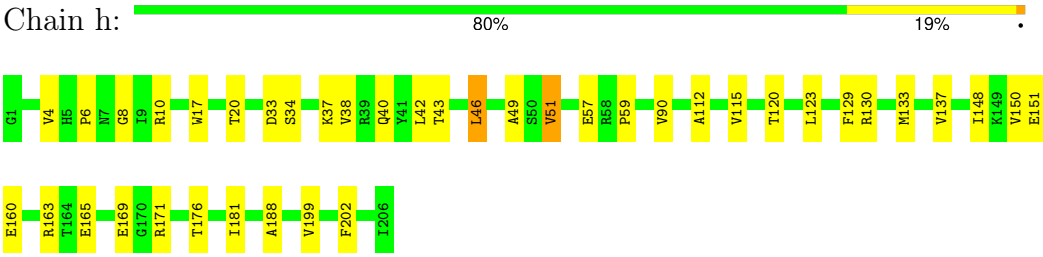
• Molecule 34: 50S ribosomal protein L36

Chain f:



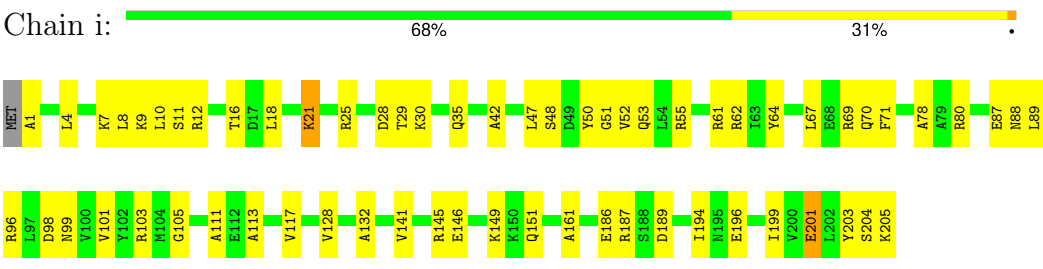
• Molecule 35: 30S ribosomal protein S3

Chain h:



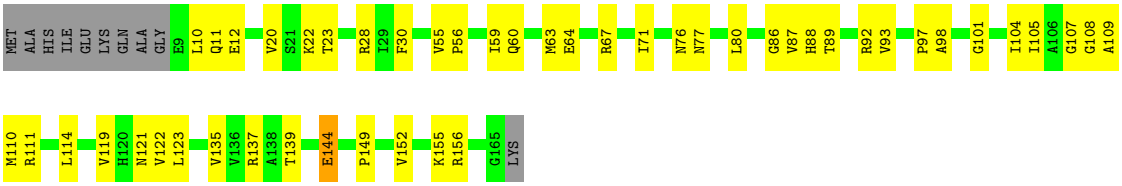
• Molecule 36: 30S ribosomal protein S4

Chain i:



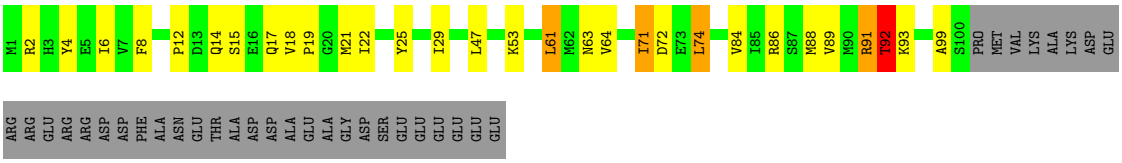
• Molecule 37: 30S ribosomal protein S5

Chain j:



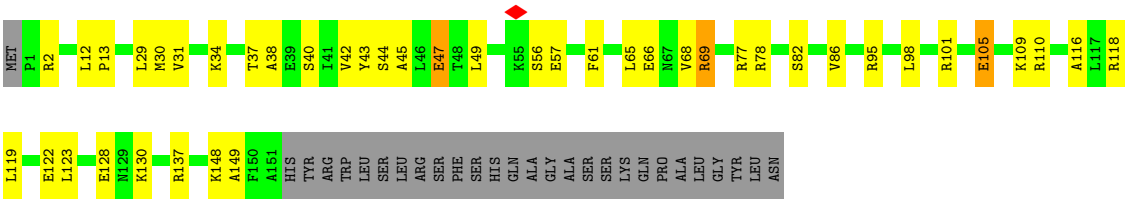
• Molecule 38: 30S ribosomal protein S6

Chain k:



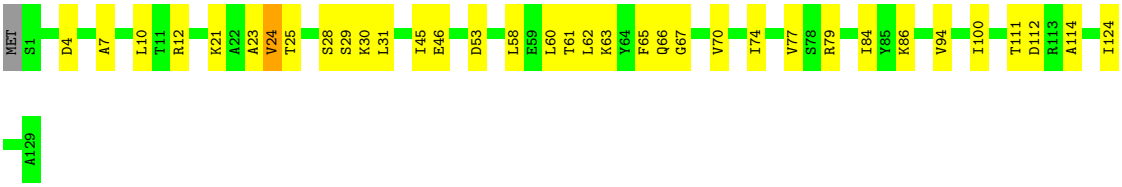
• Molecule 39: 30S ribosomal protein S7

Chain l:



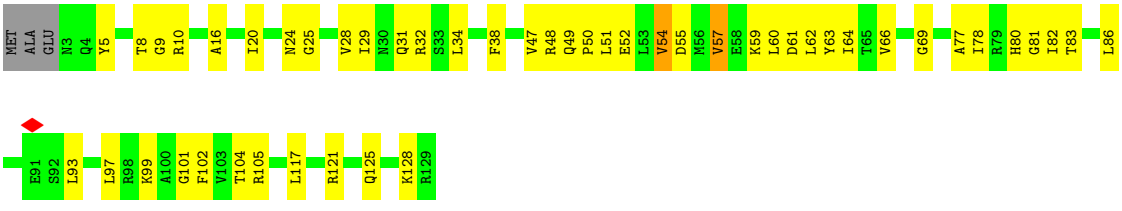
• Molecule 40: 30S ribosomal protein S8

Chain m:



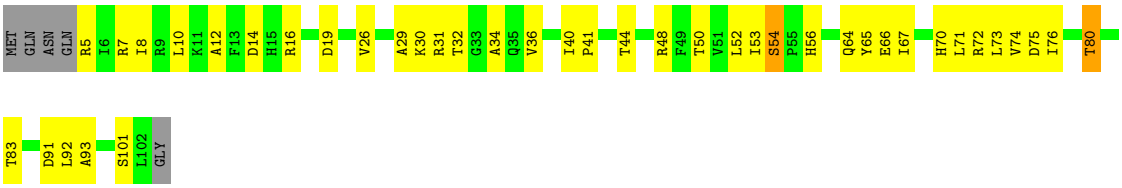
• Molecule 41: 30S ribosomal protein S9

Chain n:



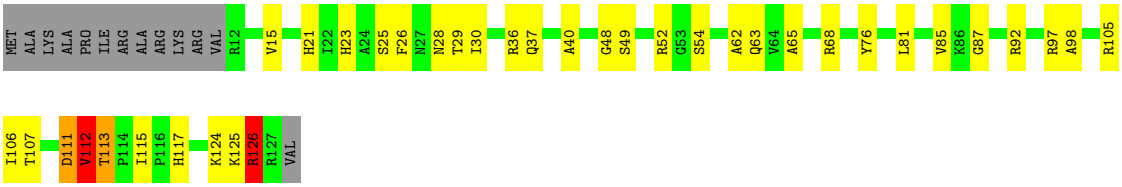
• Molecule 42: 30S ribosomal protein S10

Chain o:



• Molecule 43: 30S ribosomal protein S11

Chain p:

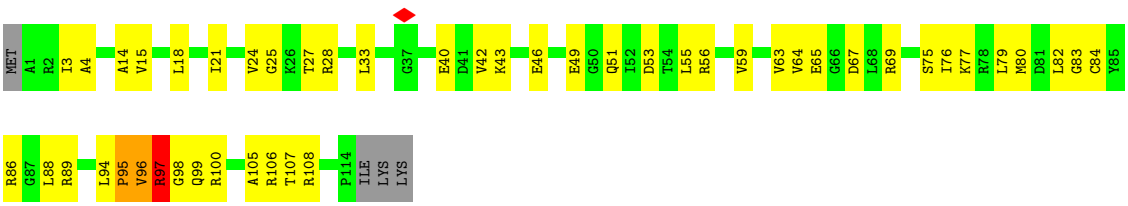


• Molecule 44: 30S ribosomal protein S12

Chain q:

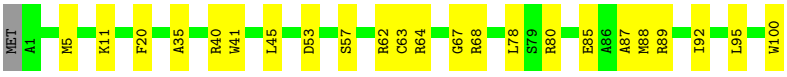
• Molecule 45: 30S ribosomal protein S13

Chain r:



• Molecule 46: 30S ribosomal protein S14

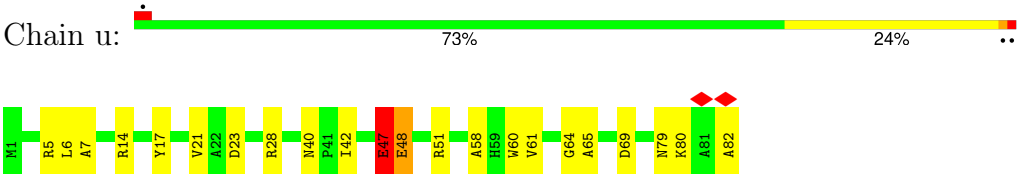
Chain s:



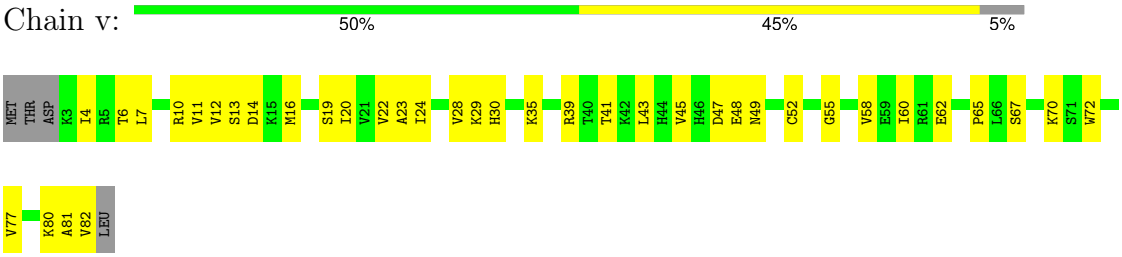
• Molecule 47: 30S ribosomal protein S15

Chain t:

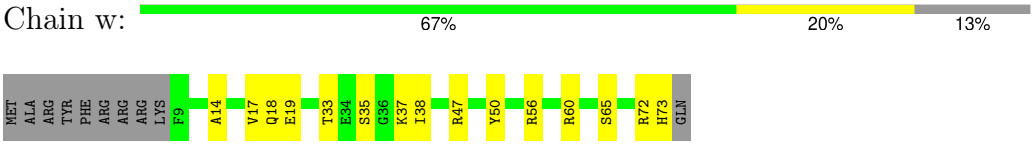
• Molecule 48: 30S ribosomal protein S16



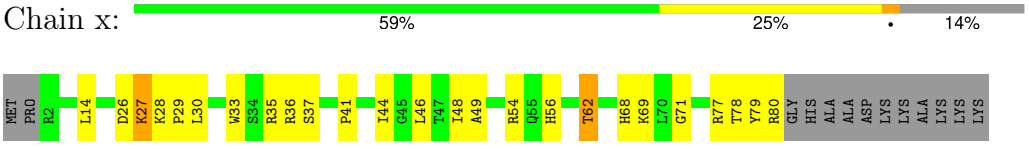
• Molecule 49: 30S ribosomal protein S17



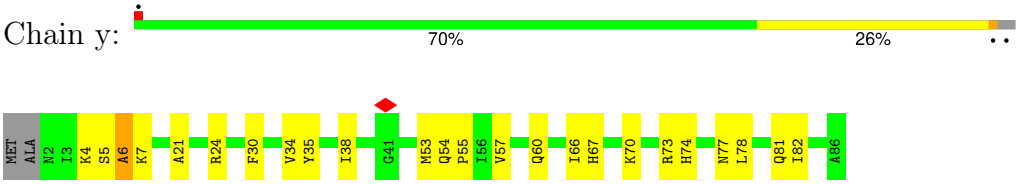
• Molecule 50: 30S ribosomal protein S18



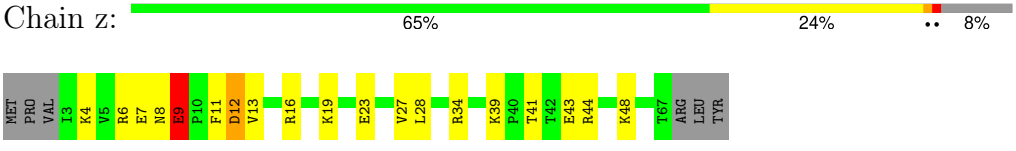
• Molecule 51: 30S ribosomal protein S19



• Molecule 52: 30S ribosomal protein S20



• Molecule 53: 30S ribosomal protein S21



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	65321	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TALOS ARCTICA	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	61.23	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	2700	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.090	Depositor
Minimum map value	-0.012	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.007	Depositor
Recommended contour level	0.0126	Depositor
Map size (Å)	427.64, 427.64, 427.64	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.0691, 1.0691, 1.0691	Depositor

5 Model quality (i)

5.1 Standard geometry (i)

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

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	1	0.23	0/69796	0.36	0/108888
2	2	0.20	0/36963	0.37	1/57662 (0.0%)
3	3	0.21	0/2872	0.33	0/4479
4	4	0.49	0/87	0.50	0/132
5	5	0.21	0/1819	0.39	0/2836
6	A	0.20	0/1033	0.44	0/1387
7	B	0.32	0/2121	0.53	1/2852 (0.0%)
8	C	0.30	0/1586	0.50	0/2134
9	D	0.29	0/1571	0.56	2/2113 (0.1%)
10	E	0.23	0/1434	0.47	0/1926
11	F	0.31	0/1343	0.53	1/1816 (0.1%)
12	G	0.22	0/1122	0.43	1/1515 (0.1%)
13	J	0.30	0/1152	0.48	0/1551
14	K	0.39	0/947	0.63	0/1268
15	L	0.34	0/1054	0.73	2/1403 (0.1%)
16	M	0.31	0/1093	0.50	1/1460 (0.1%)
17	N	0.35	0/973	0.51	0/1301
18	O	0.24	0/902	0.45	1/1209 (0.1%)
19	P	0.39	0/929	0.59	0/1242
20	Q	0.38	0/960	0.54	0/1278
21	R	0.40	0/829	0.53	0/1107
22	S	0.35	0/864	0.71	3/1156 (0.3%)
23	T	0.35	0/744	0.48	0/994
24	U	0.29	0/787	0.50	0/1051
25	V	0.27	0/766	0.44	0/1025
26	W	0.33	0/582	0.54	0/769
27	X	0.27	0/635	0.45	0/848
28	Y	0.49	0/510	0.71	0/677
29	Z	0.29	0/453	0.54	0/605
30	b	0.32	0/450	0.51	0/599
31	c	0.38	0/416	0.48	0/554
32	d	0.30	0/380	0.50	0/498

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
33	e	0.52	0/513	0.82	1/676 (0.1%)
34	f	0.28	0/303	0.56	0/397
35	h	0.24	0/1652	0.46	1/2225 (0.0%)
36	i	0.25	0/1665	0.53	1/2227 (0.0%)
37	j	0.28	0/1169	0.52	0/1573
38	k	0.36	0/835	0.66	3/1128 (0.3%)
39	l	0.31	0/1195	0.53	1/1602 (0.1%)
40	m	0.30	0/989	0.55	1/1326 (0.1%)
41	n	0.24	0/1034	0.59	1/1375 (0.1%)
42	o	0.23	0/796	0.59	2/1077 (0.2%)
43	p	0.38	0/885	0.65	2/1195 (0.2%)
44	q	0.25	0/969	0.56	1/1300 (0.1%)
45	r	0.30	0/892	0.59	1/1193 (0.1%)
46	s	0.21	0/817	0.44	0/1088
47	t	0.24	0/722	0.43	0/964
48	u	0.30	0/659	0.59	0/884
49	v	0.21	0/657	0.52	0/881
50	w	0.23	0/544	0.42	0/731
51	x	0.17	0/652	0.43	0/877
52	y	0.27	0/671	0.55	1/888 (0.1%)
53	z	0.35	0/550	0.74	1/728 (0.1%)
All	All	0.25	0/155342	0.42	30/232670 (0.0%)

There are no bond length outliers.

All (30) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
22	S	24	ILE	N-CA-C	14.17	125.61	112.29
15	L	22	GLY	N-CA-C	13.45	128.75	112.48
41	n	57	VAL	N-CA-C	11.51	122.36	110.62
45	r	96	VAL	N-CA-C	8.99	128.05	109.34
42	o	53	ILE	N-CA-C	-8.88	101.88	112.98
38	k	92	THR	N-CA-C	7.28	126.31	110.80
52	y	6	ALA	N-CA-C	7.07	125.86	110.80
9	D	82	GLY	N-CA-C	6.96	129.68	113.18
40	m	62	LEU	N-CA-C	6.81	120.36	110.28
9	D	152	GLU	N-CA-C	6.69	120.42	109.85
43	p	112	VAL	N-CA-C	6.55	116.71	110.42
7	B	256	THR	N-CA-C	6.53	118.40	111.28
53	z	12	ASP	N-CA-C	6.52	124.69	110.80
15	L	26	GLY	N-CA-C	-6.50	106.11	115.27
22	S	25	ARG	N-CA-C	-6.02	101.14	110.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
33	e	30	HIS	N-CA-C	5.93	117.26	108.60
38	k	91	ARG	N-CA-C	5.91	118.39	109.23
42	o	54	SER	N-CA-C	5.89	117.95	109.48
35	h	51	VAL	CB-CA-C	-5.75	103.94	111.25
12	G	8	LYS	N-CA-C	-5.57	100.22	109.46
36	i	199	ILE	N-CA-C	-5.52	104.99	110.62
38	k	72	ASP	N-CA-C	-5.49	105.29	111.28
39	l	69	ARG	N-CA-C	5.48	121.91	109.81
18	O	54	VAL	N-CA-C	-5.47	108.51	113.71
22	S	24	ILE	CB-CA-C	-5.35	104.56	111.88
44	q	34	THR	N-CA-C	-5.20	100.84	108.79
2	2	833	G	C2'-C3'-O3'	-5.18	105.93	113.70
11	F	169	ARG	N-CA-C	-5.16	100.11	108.41
16	M	81	ARG	N-CA-C	5.06	117.06	110.53
43	p	111	ASP	CB-CA-C	-5.00	103.07	110.62

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	1	62317	0	31343	1438	0
2	2	33012	0	16618	874	0
3	3	2568	0	1303	53	0
4	4	80	0	45	1	0
5	5	1628	0	823	40	0
6	A	1026	0	1092	38	0
7	B	2082	0	2157	49	0
8	C	1565	0	1616	38	0
9	D	1552	0	1619	36	0
10	E	1410	0	1447	54	0
11	F	1323	0	1374	34	0
12	G	1111	0	1148	24	0
13	J	1129	0	1161	49	0
14	K	938	0	1012	37	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
15	L	1045	0	1117	33	0
16	M	1074	0	1157	26	0
17	N	960	0	1000	29	0
18	O	892	0	923	24	0
19	P	917	0	965	21	0
20	Q	947	0	1022	23	0
21	R	816	0	839	25	0
22	S	857	0	922	12	0
23	T	738	0	807	21	0
24	U	779	0	834	19	0
25	V	753	0	780	25	0
26	W	575	0	592	11	0
27	X	625	0	655	30	0
28	Y	509	0	543	9	0
29	Z	449	0	491	12	0
30	b	444	0	461	11	0
31	c	409	0	440	14	0
32	d	377	0	418	9	0
33	e	504	0	574	23	0
34	f	302	0	343	6	0
35	h	1625	0	1699	34	0
36	i	1643	0	1710	47	0
37	j	1156	0	1199	42	0
38	k	817	0	808	25	0
39	l	1181	0	1240	34	0
40	m	979	0	1034	24	0
41	n	1022	0	1070	39	0
42	o	786	0	828	31	0
43	p	869	0	878	43	0
44	q	955	0	1019	31	0
45	r	883	0	944	46	0
46	s	805	0	847	18	0
47	t	714	0	737	24	0
48	u	649	0	666	16	0
49	v	648	0	691	31	0
50	w	535	0	552	16	0
51	x	637	0	665	22	0
52	y	665	0	714	15	0
53	z	544	0	579	23	0
54	1	306	0	0	0	0
54	2	78	0	0	0	0
54	3	7	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
54	4	1	0	0	0	0
54	5	1	0	0	0	0
54	B	2	0	0	0	0
54	D	1	0	0	0	0
54	E	1	0	0	0	0
54	J	1	0	0	0	0
54	K	1	0	0	0	0
54	L	1	0	0	0	0
54	M	1	0	0	0	0
54	N	1	0	0	0	0
54	Q	1	0	0	0	0
54	R	1	0	0	0	0
54	S	3	0	0	0	0
54	W	1	0	0	0	0
54	Z	1	0	0	0	0
54	b	1	0	0	0	0
54	m	1	0	0	0	0
54	p	1	0	0	0	0
54	q	1	0	0	0	0
54	r	1	0	0	0	0
54	w	1	0	0	0	0
55	1	812	0	0	85	0
55	2	288	0	0	33	0
55	3	13	0	0	5	0
55	4	1	0	0	0	0
55	5	5	0	0	1	0
55	A	5	0	0	5	0
55	B	1	0	0	0	0
55	C	2	0	0	2	0
55	E	2	0	0	0	0
55	F	4	0	0	1	0
55	G	8	0	0	7	0
55	J	11	0	0	14	0
55	K	3	0	0	0	0
55	M	6	0	0	2	0
55	N	1	0	0	0	0
55	O	3	0	0	2	0
55	P	2	0	0	2	0
55	Q	1	0	0	0	0
55	R	1	0	0	3	0
55	T	5	0	0	4	0
55	U	4	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
55	V	3	0	0	0	0
55	W	3	0	0	4	0
55	X	3	0	0	5	0
55	Y	1	0	0	1	0
55	Z	5	0	0	0	0
55	c	6	0	0	2	0
55	d	1	0	0	0	0
55	h	9	0	0	4	0
55	i	1	0	0	0	0
55	j	4	0	0	4	0
55	k	4	0	0	3	0
55	l	4	0	0	3	0
55	m	1	0	0	2	0
55	o	1	0	0	0	0
55	p	11	0	0	12	0
55	r	1	0	0	1	0
55	t	7	0	0	6	0
55	w	4	0	0	4	0
55	z	8	0	0	7	0
All	All	144496	0	95521	3421	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 15.

All (3421) 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)
47:t:34:GLN:HG3	55:t:106:HOH:O	1.26	1.25
26:W:73:ARG:HG3	55:W:202:HOH:O	1.37	1.19
43:p:54:SER:HB2	55:p:310:HOH:O	1.40	1.18
2:2:209:U:H3'	55:2:1725:HOH:O	1.45	1.16
5:5:27:C:H5"	55:5:202:HOH:O	1.44	1.13
47:t:52:ARG:HG2	55:t:105:HOH:O	1.59	1.03
55:1:3535:HOH:O	16:M:40:ARG:HD2	1.58	1.02
43:p:112:VAL:HA	55:w:203:HOH:O	1.60	1.01
1:1:706:A:H62	1:1:725:G:H21	1.13	0.96
2:2:1503:A:O2'	2:2:1504:G:OP1	1.83	0.95
1:1:1170:C:H1'	55:1:3625:HOH:O	1.64	0.95
1:1:352:A:H5"	55:1:3488:HOH:O	1.68	0.94
6:A:207:VAL:HG12	55:A:304:HOH:O	1.67	0.93
2:2:2:A:H5"	55:2:1773:HOH:O	1.67	0.93

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2346:A:H2	55:c:104:HOH:O	1.53	0.91
1:1:1179:G:C4	55:1:3474:HOH:O	2.22	0.91
13:J:34:ARG:HG3	55:J:302:HOH:O	1.70	0.91
1:1:2421:G:H5"	55:1:4162:HOH:O	1.71	0.87
43:p:25:SER:CB	55:p:303:HOH:O	2.23	0.86
12:G:120:GLY:CA	55:G:201:HOH:O	2.24	0.85
27:X:6:VAL:HG13	27:X:7:THR:HG23	1.59	0.85
1:1:1172:C:H4'	55:1:3556:HOH:O	1.77	0.83
2:2:978:A:H61	2:2:1316:G:H21	1.26	0.83
53:z:44:ARG:HB3	55:z:106:HOH:O	1.78	0.83
2:2:1160:G:H1	2:2:1176:A:H61	1.26	0.83
17:N:12:ARG:NH2	17:N:20:MET:SD	2.51	0.83
1:1:779:U:OP1	7:B:48:ILE:HG22	1.79	0.82
1:1:1942:C:OP2	1:1:1943:U:O2'	1.97	0.82
2:2:350:G:C8	55:2:1701:HOH:O	2.31	0.82
1:1:2220:U:H5"	55:1:4127:HOH:O	1.78	0.82
3:3:41:G:C5	55:3:303:HOH:O	2.31	0.82
7:B:4:LYS:NZ	7:B:5:CYS:O	2.13	0.82
45:r:83:GLY:HA3	55:r:301:HOH:O	1.79	0.81
7:B:211:ARG:NH1	7:B:211:ARG:O	2.14	0.80
15:L:29:LYS:O	15:L:30:THR:OG1	1.97	0.80
41:n:16:ALA:HA	41:n:66:VAL:HG12	1.62	0.80
13:J:61:LYS:HE3	55:J:307:HOH:O	1.80	0.80
1:1:138:U:H1'	55:1:3642:HOH:O	1.81	0.80
1:1:1322:A:H2	55:1:4056:HOH:O	1.64	0.80
1:1:2634:A:C8	55:1:3565:HOH:O	2.34	0.80
1:1:2865:U:OP2	1:1:2866:U:O2'	2.01	0.79
2:2:1173:U:C5	55:2:1744:HOH:O	2.35	0.79
1:1:1343:G:O2'	1:1:1344:U:OP1	1.99	0.79
2:2:1081:A:H2	55:2:1745:HOH:O	1.64	0.79
13:J:34:ARG:CD	55:J:302:HOH:O	2.30	0.78
2:2:55:A:H3'	55:2:1727:HOH:O	1.83	0.77
49:v:58:VAL:HG12	49:v:77:VAL:HA	1.64	0.77
2:2:720:C:OP2	2:2:721:G:O2'	2.02	0.77
43:p:52:ARG:HG3	55:p:302:HOH:O	1.85	0.77
1:1:489:G:H2'	55:1:4122:HOH:O	1.85	0.77
12:G:112:LYS:HB2	55:G:203:HOH:O	1.83	0.77
1:1:2124:G:H21	6:A:217:THR:HG22	1.50	0.77
14:K:121:GLU:HG3	14:K:122:VAL:HG23	1.67	0.77
37:j:80:LEU:HD11	37:j:97:PRO:HG3	1.67	0.76
1:1:706:A:H62	1:1:725:G:N2	1.82	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:r:76:ILE:HG22	45:r:80:MET:HE2	1.67	0.76
5:5:3:G:O2'	5:5:4:C:OP2	2.04	0.76
1:1:1176:U:C4	55:1:3420:HOH:O	2.39	0.76
35:h:46:LEU:HD23	35:h:49:ALA:HB3	1.66	0.76
16:M:33:LEU:HD11	16:M:128:THR:HB	1.69	0.75
50:w:72:ARG:HD2	55:w:203:HOH:O	1.84	0.75
1:1:1535:A:C6	55:1:3432:HOH:O	2.38	0.75
2:2:404:G:N7	36:i:1:ALA:N	2.34	0.75
13:J:34:ARG:CG	55:J:302:HOH:O	2.32	0.75
10:E:21:TYR:OH	10:E:27:VAL:N	2.20	0.75
34:f:10:LEU:HD23	34:f:33:HIS:CE1	2.22	0.74
2:2:1534:A:H5'	55:2:1861:HOH:O	1.86	0.74
1:1:464:U:O2'	1:1:465:G:O5'	2.05	0.74
41:n:86:LEU:HB3	41:n:93:LEU:HD13	1.69	0.74
2:2:1307:U:C5	45:r:97:ARG:HB2	2.23	0.74
3:3:41:G:C4	55:3:303:HOH:O	2.39	0.74
41:n:10:ARG:O	41:n:105:ARG:NH2	2.20	0.74
9:D:125:SER:O	9:D:137:LYS:NZ	2.20	0.74
1:1:2371:G:O3'	31:c:44:GLN:NE2	2.21	0.73
27:X:35:HIS:HB2	27:X:55:MET:HE1	1.69	0.73
27:X:49:ARG:HG2	55:X:102:HOH:O	1.86	0.73
35:h:155:ARG:NH1	35:h:160:GLU:OE2	2.21	0.73
1:1:1653:G:O6	17:N:11:ASN:N	2.22	0.73
1:1:1723:G:N2	1:1:1724:G:H1'	2.04	0.73
2:2:1422:G:O3'	14:K:49:ARG:NH1	2.22	0.73
1:1:53:A:N1	32:d:35:ARG:NH1	2.36	0.73
1:1:654:A:H1'	55:1:3604:HOH:O	1.86	0.73
37:j:93:VAL:HG21	37:j:110:MET:HE1	1.69	0.73
2:2:350:G:N7	55:2:1701:HOH:O	2.21	0.73
8:C:91:THR:HG22	8:C:92:VAL:H	1.53	0.73
1:1:1363:C:OP1	27:X:49:ARG:NH2	2.22	0.73
1:1:2743:U:OP2	1:1:2755:C:N4	2.20	0.73
2:2:1119:C:H42	2:2:1154:G:H1	1.37	0.73
10:E:90:LEU:HD11	10:E:94:ARG:HB2	1.70	0.73
41:n:29:ILE:N	41:n:32:ARG:O	2.20	0.73
14:K:105:ARG:O	14:K:108:ARG:NH2	2.22	0.72
43:p:15:VAL:N	43:p:76:TYR:O	2.22	0.72
39:l:110:ARG:NH1	39:l:122:GLU:OE1	2.22	0.72
48:u:6:LEU:HD12	48:u:17:TYR:HB3	1.69	0.72
1:1:1006:C:OP1	13:J:34:ARG:NH2	2.22	0.72
1:1:264:C:N4	55:1:3402:HOH:O	2.21	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:3:94:A:OP1	25:V:19:ARG:NH1	2.23	0.72
2:2:696:A:OP2	43:p:52:ARG:NH2	2.21	0.72
13:J:23:LYS:HG3	55:J:311:HOH:O	1.88	0.72
1:1:1658:C:OP1	8:C:140:HIS:NE2	2.22	0.72
13:J:23:LYS:CG	55:J:311:HOH:O	2.37	0.72
13:J:38:GLY:HA3	13:J:50:THR:HG23	1.70	0.72
1:1:1217:U:OP1	20:Q:14:LYS:NZ	2.23	0.72
2:2:834:U:OP1	50:w:47:ARG:NH1	2.23	0.72
26:W:49:CYS:SG	55:W:203:HOH:O	2.47	0.71
29:Z:26:LEU:HD22	29:Z:46:MET:HE2	1.72	0.71
1:1:142:A:H8	55:1:3522:HOH:O	1.73	0.71
1:1:1656:C:OP2	8:C:141:ARG:NH2	2.22	0.71
7:B:83:ASP:OD2	7:B:86:ARG:NH1	2.22	0.71
1:1:636:G:OP2	15:L:109:LYS:NZ	2.22	0.71
6:A:54:LYS:HB2	55:A:305:HOH:O	1.89	0.71
13:J:98:GLU:OE2	13:J:126:ALA:N	2.22	0.71
1:1:277:G:N2	1:1:277:G:OP2	2.23	0.71
2:2:350:G:C5	55:2:1701:HOH:O	2.44	0.71
19:P:92:ARG:NH2	55:P:201:HOH:O	2.23	0.71
1:1:1028:A:OP2	1:1:1126:A:N6	2.23	0.71
27:X:10:ARG:NH2	55:X:101:HOH:O	2.24	0.71
1:1:2331:G:N7	55:1:3404:HOH:O	2.23	0.70
2:2:952:U:H3	2:2:1229:A:H61	1.40	0.70
27:X:49:ARG:CD	55:X:102:HOH:O	2.40	0.70
31:c:52:LYS:HE3	55:c:105:HOH:O	1.91	0.70
38:k:4:TYR:HE2	38:k:71:ILE:HG21	1.55	0.70
1:1:1097:U:H5”	55:1:3516:HOH:O	1.90	0.70
1:1:706:A:N6	1:1:725:G:H21	1.89	0.70
2:2:565:U:OP2	2:2:566:G:O2’	2.07	0.70
55:1:3762:HOH:O	28:Y:59:GLU:HG2	1.91	0.70
2:2:1075:U:H3	2:2:1082:A:H61	1.40	0.70
7:B:54:GLY:HA3	7:B:216:ARG:HD3	1.73	0.70
43:p:105:ARG:NH1	43:p:106:ILE:O	2.25	0.70
2:2:1307:U:H5	45:r:97:ARG:HB2	1.56	0.70
6:A:57:GLN:HG3	55:A:305:HOH:O	1.92	0.70
23:T:72:GLN:OE1	23:T:73:ARG:NH2	2.25	0.70
39:l:38:ALA:O	39:l:42:VAL:HG22	1.92	0.70
43:p:52:ARG:CD	55:p:302:HOH:O	2.39	0.70
1:1:1800:C:O2’	1:1:1801:A:OP2	2.09	0.69
1:1:2160:C:C1’	55:1:3477:HOH:O	2.39	0.69
1:1:1595:C:H4’	55:1:3684:HOH:O	1.91	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:C:9:VAL:HB	8:C:26:VAL:HG23	1.74	0.69
15:L:29:LYS:HD2	15:L:30:THR:HG23	1.75	0.69
3:3:41:G:C8	55:3:303:HOH:O	2.45	0.69
12:G:120:GLY:HA3	55:G:201:HOH:O	1.91	0.69
32:d:34:ARG:NH1	32:d:41:ARG:O	2.26	0.69
12:G:121:VAL:N	55:G:201:HOH:O	2.25	0.69
23:T:12:ARG:NE	55:T:201:HOH:O	2.26	0.68
16:M:11:LYS:HE3	55:M:305:HOH:O	1.93	0.68
39:l:95:ARG:HA	39:l:98:LEU:HD12	1.72	0.68
43:p:92:ARG:HG2	55:p:301:HOH:O	1.91	0.68
1:1:1583:A:O2'	1:1:1585:C:N4	2.26	0.68
2:2:55:A:O2'	2:2:56:U:OP1	2.10	0.68
2:2:977:A:O2'	2:2:1223:C:N4	2.26	0.68
2:2:1173:U:O2'	2:2:1174:G:OP1	2.11	0.68
35:h:38:VAL:HG21	35:h:90:VAL:HG23	1.76	0.68
5:5:48:C:C5	5:5:59:A:N7	2.62	0.68
41:n:20:ILE:HD12	41:n:61:ASP:O	1.94	0.68
1:1:362:A:C5	1:1:363:G:C8	2.82	0.68
1:1:634:C:OP1	15:L:70:LYS:NZ	2.27	0.68
1:1:1141:U:OP1	13:J:27:ARG:NH1	2.27	0.68
2:2:714:G:O2'	2:2:777:A:N7	2.27	0.68
41:n:16:ALA:HB2	41:n:77:ALA:HB1	1.76	0.68
45:r:15:VAL:HG13	45:r:33:LEU:HD22	1.76	0.68
1:1:309:A:N3	1:1:329:G:O2'	2.27	0.68
45:r:95:PRO:HG2	45:r:105:ALA:HB1	1.76	0.68
1:1:1508:A:O2'	1:1:1509:A:O4'	2.13	0.67
1:1:442:G:C8	55:1:3464:HOH:O	2.46	0.67
2:2:400:C:OP1	36:i:69:ARG:NH2	2.27	0.67
53:z:8:ASN:O	53:z:9:GLU:HB3	1.94	0.67
2:2:204:G:C2	2:2:205:A:C8	2.82	0.67
1:1:307:G:N2	1:1:310:A:OP2	2.28	0.67
2:2:1516:G:N2	2:2:1520:C:O2	2.27	0.67
2:2:1308:U:OP2	45:r:86:ARG:NH2	2.28	0.67
2:2:1321:U:O2	51:x:35:ARG:NH2	2.26	0.67
6:A:44:VAL:HG21	6:A:175:ILE:HG23	1.77	0.67
11:F:149:ALA:HB2	55:F:203:HOH:O	1.94	0.67
1:1:563:A:O2'	20:Q:36:GLN:NE2	2.28	0.67
1:1:2120:G:O2'	1:1:2121:G:O5'	2.12	0.67
1:1:2581:G:N2	1:1:2581:G:OP2	2.28	0.67
1:1:1453:A:N6	55:1:3416:HOH:O	2.28	0.66
1:1:2505:G:N1	1:1:2610:C:O2	2.24	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:O:74:VAL:HG23	18:O:106:LEU:HD13	1.76	0.66
1:1:1709:U:C2	1:1:1710:G:C8	2.84	0.66
10:E:4:HIS:ND1	10:E:93:GLU:OE1	2.29	0.66
23:T:28:ASN:ND2	23:T:88:LYS:O	2.29	0.66
30:b:42:ILE:HG22	30:b:48:TYR:HB2	1.77	0.66
36:i:117:VAL:HG11	36:i:132:ALA:HA	1.77	0.66
1:1:2640:G:OP1	13:J:95:ARG:NH2	2.29	0.66
1:1:636:G:N1	15:L:76:GLU:OE1	2.28	0.66
1:1:1205:A:C2	55:1:4006:HOH:O	2.48	0.66
20:Q:89:ILE:HG13	20:Q:93:ILE:HD11	1.75	0.66
1:1:974:G:O2'	1:1:989:G:N2	2.28	0.66
1:1:1818:U:OP2	7:B:155:ARG:NE	2.23	0.66
2:2:335:C:H2'	2:2:336:A:C8	2.31	0.66
2:2:1419:G:H5"	55:2:1823:HOH:O	1.95	0.66
2:2:1493:A:H5"	55:2:1916:HOH:O	1.95	0.66
47:t:52:ARG:CG	55:t:105:HOH:O	2.26	0.66
1:1:518:G:C2	1:1:519:U:C4	2.84	0.65
2:2:996:A:N6	2:2:1046:A:O2'	2.28	0.65
19:P:25:VAL:HG12	19:P:85:VAL:HA	1.78	0.65
53:z:4:LYS:NZ	55:z:101:HOH:O	2.28	0.65
2:2:705:G:C5	2:2:706:A:C8	2.84	0.65
2:2:1308:U:P	45:r:98:GLY:H	2.20	0.65
1:1:818:G:N1	1:1:1188:U:OP2	2.28	0.65
2:2:936:C:H42	2:2:1379:G:H1	1.44	0.65
8:C:110:THR:HG22	8:C:171:THR:HG23	1.76	0.65
1:1:141:G:C5'	55:1:3522:HOH:O	2.44	0.65
1:1:405:U:P	55:1:3413:HOH:O	2.55	0.65
20:Q:93:ILE:HD13	21:R:4:VAL:HG21	1.79	0.65
47:t:41:HIS:ND1	55:t:101:HOH:O	2.29	0.65
1:1:715:A:OP2	47:t:88:ARG:NH2	2.27	0.65
10:E:128:SER:O	10:E:129:MET:HE2	1.96	0.65
20:Q:46:TYR:O	20:Q:50:ARG:NH1	2.30	0.65
1:1:61:C:OP2	28:Y:47:ARG:NH1	2.30	0.65
1:1:2514:U:H2'	1:1:2515:C:C6	2.31	0.65
2:2:673:A:H2'	2:2:674:G:C8	2.32	0.65
36:i:53:GLN:HE22	36:i:201:GLU:HB2	1.60	0.65
1:1:476:G:N1	1:1:479:A:OP2	2.28	0.65
1:1:1475:G:C6	55:1:3434:HOH:O	2.50	0.65
37:j:28:ARG:HD3	55:j:201:HOH:O	1.95	0.65
1:1:857:G:N2	1:1:921:C:O2	2.30	0.65
1:1:2485:G:OP1	16:M:45:GLN:NE2	2.30	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:F:150:TYR:O	11:F:151:ARG:NH1	2.30	0.65
40:m:4:ASP:OD2	40:m:7:ALA:N	2.28	0.65
1:1:1416:G:O2'	1:1:1417:C:O5'	2.15	0.64
2:2:835:U:OP2	50:w:47:ARG:NH2	2.30	0.64
1:1:489:G:H3'	55:1:4122:HOH:O	1.98	0.64
1:1:2395:C:H42	1:1:2421:G:H1	1.44	0.64
6:A:33:LEU:HB3	6:A:216:THR:HG21	1.80	0.64
19:P:46:VAL:HA	19:P:60:VAL:HG12	1.79	0.64
50:w:73:HIS:NE2	55:w:202:HOH:O	2.29	0.64
52:y:73:ARG:O	52:y:77:ASN:ND2	2.29	0.64
1:1:445:C:OP1	20:Q:1:ALA:N	2.30	0.64
1:1:1489:C:N4	55:1:3425:HOH:O	2.29	0.64
2:2:708:C:P	55:2:1711:HOH:O	2.56	0.64
35:h:17:TRP:HB3	35:h:20:THR:HG22	1.79	0.64
1:1:464:U:O2'	1:1:465:G:O4'	2.13	0.64
2:2:880:C:C2	2:2:881:G:C8	2.85	0.64
1:1:1753:G:H1'	55:1:3928:HOH:O	1.97	0.64
41:n:97:LEU:HD11	41:n:102:PHE:HB2	1.80	0.64
1:1:242:G:N2	1:1:255:A:OP2	2.24	0.64
1:1:1533:C:O2	1:1:1538:G:N2	2.29	0.64
6:A:45:ALA:HB1	6:A:170:ILE:HD11	1.79	0.64
7:B:131:MET:HE1	7:B:173:LEU:HD21	1.78	0.64
9:D:148:ILE:HD13	9:D:187:VAL:HG11	1.80	0.64
15:L:102:GLY:O	15:L:105:ILE:N	2.28	0.64
1:1:1721:G:O2'	1:1:1739:A:N6	2.31	0.64
2:2:684:U:O2	43:p:40:ALA:HB3	1.97	0.64
24:U:96:LYS:O	24:U:97:SER:OG	2.11	0.64
42:o:14:ASP:OD2	42:o:16:ARG:N	2.28	0.64
44:q:99:GLY:N	44:q:103:CYS:O	2.27	0.64
51:x:46:LEU:HB3	51:x:48:ILE:HG23	1.80	0.64
1:1:2104:C:H2'	1:1:2105:U:C6	2.33	0.64
37:j:110:MET:HE2	37:j:139:THR:CG2	2.28	0.64
1:1:465:G:OP1	32:d:12:ARG:NH1	2.31	0.63
44:q:39:THR:HG22	44:q:49:ARG:HB2	1.80	0.63
1:1:698:C:O2'	1:1:734:A:N6	2.31	0.63
1:1:2065:C:C2	1:1:2066:C:C5	2.85	0.63
2:2:1351:U:O2'	39:l:34:LYS:NZ	2.30	0.63
1:1:1159:U:C2	1:1:1160:G:C8	2.86	0.63
2:2:407:U:H5"	36:i:111:ALA:HB1	1.80	0.63
1:1:409:G:H1	1:1:418:C:H42	1.46	0.63
12:G:147:VAL:HG12	12:G:148:ALA:H	1.63	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:T:36:LYS:HA	23:T:81:LYS:HD3	1.80	0.63
37:j:10:LEU:HD23	37:j:10:LEU:H	1.63	0.63
48:u:48:GLU:OE1	48:u:51:ARG:NH2	2.29	0.63
29:Z:8:GLN:HG2	29:Z:28:LEU:HD21	1.81	0.63
41:n:9:GLY:HA3	41:n:16:ALA:HB3	1.81	0.63
43:p:112:VAL:O	50:w:72:ARG:NH1	2.32	0.63
2:2:674:G:H21	43:p:117:HIS:HB2	1.64	0.63
13:J:44:TYR:O	20:Q:63:ARG:NE	2.23	0.63
1:1:1475:G:N1	55:1:3434:HOH:O	2.32	0.63
1:1:1857:G:H2'	1:1:1884:G:N2	2.14	0.63
1:1:517:C:C2	1:1:518:G:C8	2.86	0.62
2:2:126:G:OP1	2:2:633:G:N2	2.32	0.62
37:j:135:VAL:O	37:j:139:THR:HG23	1.99	0.62
2:2:1002:G:H1	2:2:1038:C:H42	1.47	0.62
25:V:77:VAL:HG12	25:V:89:ILE:HG12	1.82	0.62
43:p:48:GLY:O	43:p:68:ARG:NH2	2.32	0.62
1:1:1535:A:N6	55:1:3432:HOH:O	2.31	0.62
1:1:2688:G:N1	1:1:2720:U:OP2	2.32	0.62
2:2:599:C:H2'	2:2:600:A:O4'	1.99	0.62
6:A:56:ASP:O	6:A:203:GLN:NE2	2.32	0.62
1:1:306:U:H3	1:1:310:A:H62	1.47	0.62
1:1:564:C:OP2	21:R:79:ARG:NH2	2.29	0.62
2:2:791:G:O6	2:2:792:A:N6	2.32	0.62
2:2:977:A:HO2'	2:2:1223:C:N4	1.98	0.62
2:2:1430:A:H5"	55:2:1879:HOH:O	1.99	0.62
1:1:1827:U:H2'	1:1:1828:G:O4'	1.99	0.62
6:A:181:ASP:O	6:A:184:LYS:N	2.33	0.62
7:B:158:GLY:H	7:B:194:VAL:HG23	1.65	0.62
1:1:660:C:C2	1:1:661:A:C8	2.87	0.62
1:1:2634:A:H5'	55:1:4114:HOH:O	1.98	0.62
2:2:17:U:H1'	2:2:1080:A:H8	1.65	0.62
2:2:704:A:C4	2:2:705:G:C8	2.87	0.62
3:3:31:C:C2	3:3:32:U:C5	2.87	0.62
25:V:6:ALA:HB1	25:V:40:ILE:HG21	1.82	0.62
38:k:2:ARG:HD3	38:k:92:THR:H	1.64	0.62
7:B:128:THR:HG22	7:B:188:ARG:HG2	1.80	0.62
53:z:44:ARG:NH2	55:z:102:HOH:O	2.33	0.62
6:A:44:VAL:HB	6:A:173:THR:HG23	1.82	0.62
40:m:63:LYS:HB3	40:m:70:VAL:HG21	1.82	0.62
1:1:674:G:N3	9:D:69:ARG:NH2	2.48	0.62
1:1:2109:U:N3	1:1:2110:G:O6	2.32	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1416:G:H1	2:2:1484:C:H42	1.46	0.62
1:1:2104:C:H42	1:1:2185:U:H3	1.46	0.61
1:1:2848:G:O2'	1:1:2867:G:N2	2.31	0.61
2:2:1391:U:H2'	2:2:1392:G:C8	2.35	0.61
11:F:144:ALA:HA	11:F:147:LEU:HD12	1.82	0.61
1:1:1798:U:O2'	1:1:1802:A:N3	2.30	0.61
6:A:5:THR:HG23	6:A:7:ARG:H	1.66	0.61
20:Q:85:ALA:O	20:Q:86:SER:OG	2.17	0.61
1:1:752:A:OP1	32:d:3:ARG:NH1	2.29	0.61
1:1:980:A:N6	1:1:981:A:N1	2.48	0.61
2:2:64:G:H2'	2:2:99:C:H41	1.65	0.61
6:A:166:ASP:OD2	6:A:167:LYS:N	2.33	0.61
10:E:70:ARG:O	10:E:80:GLN:NE2	2.34	0.61
1:1:1535:A:N1	55:1:3432:HOH:O	2.34	0.61
2:2:660:C:H42	2:2:745:G:H1	1.49	0.61
55:p:305:HOH:O	53:z:19:LYS:HD3	2.01	0.61
48:u:79:ASN:HB3	48:u:82:ALA:HB3	1.81	0.61
1:1:1024:G:OP2	1:1:1025:G:O2'	2.18	0.61
1:1:1537:G:H5'	55:1:3467:HOH:O	2.00	0.61
2:2:90:C:H2'	2:2:91:U:C5	2.35	0.61
2:2:765:G:H1	2:2:812:G:HO2'	1.47	0.61
34:f:27:CYS:SG	34:f:28:SER:N	2.73	0.61
1:1:2073:C:C2	1:1:2437:G:N2	2.69	0.61
2:2:744:C:H2'	2:2:745:G:H8	1.65	0.61
1:1:860:U:OP2	1:1:916:G:N1	2.27	0.61
1:1:2744:G:O6	1:1:2761:A:N6	2.34	0.61
19:P:85:VAL:O	19:P:86:LYS:HD3	2.00	0.61
1:1:2673:G:C2	1:1:2674:G:C8	2.89	0.61
2:2:705:G:C6	2:2:706:A:C8	2.89	0.61
2:2:1357:A:H2'	2:2:1358:U:C6	2.36	0.61
19:P:53:GLY:C	19:P:55:HIS:H	2.08	0.61
1:1:2759:G:N2	11:F:138:GLN:OE1	2.34	0.61
1:1:2812:G:H2'	1:1:2813:A:H8	1.66	0.61
55:1:4115:HOH:O	23:T:68:LYS:HG2	2.01	0.61
2:2:714:G:H2'	2:2:715:A:C8	2.35	0.61
43:p:52:ARG:NE	55:p:302:HOH:O	2.33	0.61
1:1:603:A:H5'	55:1:3910:HOH:O	2.00	0.60
2:2:1307:U:O4	45:r:108:ARG:NH1	2.34	0.60
22:S:77:ASP:N	22:S:77:ASP:OD1	2.33	0.60
2:2:335:C:H2'	2:2:336:A:H8	1.65	0.60
37:j:28:ARG:CD	55:j:201:HOH:O	2.49	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:q:32:VAL:HA	44:q:78:VAL:HA	1.83	0.60
1:1:910:A:H62	16:M:12:MET:HA	1.66	0.60
1:1:1918:A:O2'	1:1:1920:C:N4	2.34	0.60
1:1:1932:A:C4	1:1:1969:A:N6	2.69	0.60
2:2:1139:G:C2	2:2:1141:C:N4	2.70	0.60
2:2:1320:C:OP1	51:x:69:LYS:NZ	2.34	0.60
1:1:1159:U:N3	1:1:1160:G:N7	2.50	0.60
1:1:2283:C:OP1	31:c:3:GLY:N	2.34	0.60
2:2:452:A:H61	2:2:480:U:H3	1.48	0.60
2:2:873:A:O2'	2:2:874:G:OP1	2.17	0.60
2:2:1307:U:OP2	45:r:97:ARG:HB3	2.02	0.60
6:A:54:LYS:CB	55:A:305:HOH:O	2.47	0.60
19:P:108:ARG:NH1	55:P:202:HOH:O	2.34	0.60
35:h:130:ARG:NH2	55:h:302:HOH:O	2.34	0.60
1:1:1661:G:H2'	1:1:1662:U:O4'	2.01	0.60
2:2:190:A:H5"	2:2:191:G:C8	2.36	0.60
1:1:1196:C:C2	1:1:1197:G:C8	2.90	0.60
18:O:81:ARG:O	18:O:85:LYS:NZ	2.35	0.60
1:1:1226:A:OP1	20:Q:15:LYS:NZ	2.27	0.60
1:1:1801:A:OP1	7:B:149:LYS:NZ	2.35	0.60
13:J:34:ARG:NE	55:J:302:HOH:O	2.34	0.60
1:1:2744:G:C6	1:1:2761:A:C6	2.90	0.60
2:2:453:G:C4	2:2:454:G:C8	2.90	0.60
1:1:2495:G:C6	1:1:2496:C:N4	2.70	0.59
2:2:1404:C:H2'	2:2:1405:G:C8	2.36	0.59
1:1:1799:G:C6	7:B:175:LEU:HD12	2.37	0.59
55:1:3779:HOH:O	31:c:20:TYR:HD1	1.85	0.59
53:z:23:GLU:O	53:z:27:VAL:HG22	2.02	0.59
1:1:1114:C:H2'	1:1:1115:G:H8	1.67	0.59
1:1:1545:A:H2'	1:1:1546:G:O4'	2.02	0.59
2:2:7:A:H2'	37:j:123:LEU:HD13	1.84	0.59
5:5:9:A:O2'	5:5:10:G:N7	2.33	0.59
55:p:305:HOH:O	53:z:19:LYS:CD	2.51	0.59
1:1:2244:U:N3	1:1:2245:U:O2	2.34	0.59
7:B:158:GLY:N	7:B:194:VAL:HG23	2.16	0.59
15:L:85:VAL:HG23	15:L:86:GLU:H	1.66	0.59
23:T:57:VAL:HG12	23:T:86:THR:OG1	2.01	0.59
1:1:1930:G:O2'	1:1:1931:U:O5'	2.21	0.59
2:2:7:A:H3'	37:j:105:ILE:HD12	1.83	0.59
18:O:13:ARG:HB3	55:O:202:HOH:O	2.01	0.59
36:i:149:LYS:O	36:i:151:GLN:NE2	2.35	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:254:G:H2'	2:2:255:G:H8	1.67	0.59
13:J:80:HIS:O	13:J:82:GLY:N	2.35	0.59
16:M:33:LEU:HD12	16:M:129:THR:O	2.03	0.59
1:1:1251:C:OP2	20:Q:5:ARG:NH1	2.32	0.59
1:1:1952:A:N6	1:1:1953:A:N1	2.51	0.59
2:2:1502:A:H2	55:2:1729:HOH:O	1.84	0.59
3:3:42:C:OP2	10:E:63:LYS:NZ	2.35	0.59
2:2:1209:C:H2'	2:2:1210:C:C6	2.38	0.59
43:p:107:THR:O	53:z:6:ARG:NH1	2.36	0.59
2:2:187:G:H21	2:2:190:A:H8	1.50	0.59
3:3:49:C:OP2	18:O:102:ARG:NH2	2.30	0.59
11:F:37:ASN:HB3	11:F:40:VAL:HG12	1.85	0.59
22:S:68:ASP:C	22:S:69:LEU:HD12	2.28	0.59
1:1:489:G:C2'	55:1:4122:HOH:O	2.48	0.58
1:1:2496:C:O2'	1:1:2497:A:O5'	2.20	0.58
2:2:181:A:H62	2:2:194:C:H2'	1.68	0.58
14:K:42:THR:HG23	14:K:44:LYS:NZ	2.18	0.58
35:h:46:LEU:HD22	35:h:51:VAL:HG22	1.85	0.58
1:1:966:G:H1'	1:1:2267:A:H62	1.68	0.58
1:1:2089:C:N3	1:1:2090:A:N7	2.51	0.58
1:1:2090:A:N6	1:1:2230:G:O6	2.36	0.58
2:2:600:A:H61	2:2:638:U:H3	1.51	0.58
13:J:56:VAL:HB	13:J:124:VAL:HG23	1.85	0.58
21:R:91:GLN:HG2	55:R:301:HOH:O	2.03	0.58
26:W:14:ALA:O	26:W:16:ARG:NH1	2.36	0.58
39:l:86:VAL:HG21	55:l:204:HOH:O	2.03	0.58
41:n:83:THR:HG21	41:n:102:PHE:O	2.04	0.58
42:o:36:VAL:HG12	42:o:76:ILE:HG23	1.86	0.58
10:E:107:VAL:HG21	10:E:175:PRO:HG2	1.85	0.58
44:q:120:ARG:O	44:q:122:LYS:N	2.35	0.58
1:1:2012:G:H4'	22:S:96:ILE:HD11	1.85	0.58
33:e:7:ARG:O	33:e:11:LYS:NZ	2.37	0.58
38:k:4:TYR:CE2	38:k:71:ILE:HG21	2.38	0.58
1:1:627:A:N7	15:L:111:ILE:HD12	2.18	0.58
1:1:1699:G:O2'	1:1:1763:G:N2	2.36	0.58
1:1:2109:U:C4	1:1:2110:G:O6	2.56	0.58
2:2:406:G:H5'	36:i:4:LEU:HD21	1.85	0.58
2:2:713:G:H2'	2:2:714:G:C8	2.38	0.58
11:F:40:VAL:O	11:F:54:ARG:NH2	2.33	0.58
51:x:14:LEU:HD22	51:x:37:SER:HB2	1.85	0.58
1:1:151:C:C2	1:1:152:A:C8	2.92	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:239:C:N4	55:1:3422:HOH:O	2.29	0.58
1:1:489:G:C3'	55:1:4122:HOH:O	2.49	0.58
1:1:2328:A:H2'	1:1:2329:U:C6	2.38	0.58
2:2:9:G:N7	2:2:558:G:O2'	2.26	0.58
2:2:815:A:O2'	2:2:816:A:OP1	2.18	0.58
1:1:953:G:C6	1:1:965:C:N4	2.71	0.58
1:1:1176:U:H2'	1:1:1177:G:N9	2.18	0.58
1:1:1749:A:C4	1:1:1750:G:C8	2.92	0.58
1:1:2121:G:H2'	1:1:2122:U:O4'	2.04	0.58
1:1:2354:C:O3'	26:W:21:ARG:NH2	2.35	0.58
2:2:191:G:O2'	2:2:192:A:O5'	2.21	0.58
2:2:501:C:OP1	44:q:113:ARG:NH2	2.35	0.58
2:2:1177:G:OP1	41:n:99:LYS:NZ	2.22	0.58
19:P:53:GLY:C	19:P:55:HIS:N	2.58	0.58
2:2:20:U:H1'	2:2:572:A:C2	2.39	0.58
1:1:1433:A:H61	1:1:1560:G:H1	1.50	0.58
2:2:229:U:O2'	48:u:23:ASP:OD1	2.21	0.58
7:B:34:GLU:HG3	7:B:63:ILE:HD11	1.84	0.58
45:r:77:LYS:HA	45:r:80:MET:HE3	1.85	0.58
1:1:1179:G:C5	55:1:3474:HOH:O	2.51	0.58
2:2:393:A:C2	2:2:394:G:C8	2.92	0.58
48:u:14:ARG:NH1	48:u:42:ILE:O	2.36	0.58
1:1:315:G:H2'	1:1:316:C:O4'	2.04	0.57
1:1:1038:G:H1	1:1:1117:C:H42	1.51	0.57
35:h:130:ARG:NH1	55:h:301:HOH:O	2.26	0.57
1:1:2641:G:H5"	13:J:78:THR:HG22	1.86	0.57
27:X:70:LEU:HD11	27:X:75:GLU:HB3	1.86	0.57
29:Z:23:LEU:HD11	29:Z:53:MET:HE3	1.86	0.57
1:1:24:G:N2	1:1:517:C:C2	2.72	0.57
1:1:2183:A:H2'	1:1:2184:A:C8	2.39	0.57
2:2:868:C:H2'	2:2:869:G:O4'	2.04	0.57
7:B:141:HIS:ND1	7:B:192:GLY:O	2.36	0.57
1:1:1682:G:C2	1:1:1757:A:O4'	2.57	0.57
17:N:19:ALA:O	17:N:23:ASN:HB2	2.04	0.57
1:1:1077:A:C2	55:1:3438:HOH:O	2.57	0.57
2:2:259:G:C4	2:2:260:G:C8	2.92	0.57
31:c:8:ILE:HD13	31:c:24:LYS:HD2	1.86	0.57
41:n:20:ILE:HD11	41:n:60:LEU:HB3	1.86	0.57
49:v:12:VAL:O	49:v:55:GLY:N	2.35	0.57
1:1:1942:C:P	1:1:1943:U:HO2'	2.28	0.57
2:2:23:C:OP2	2:2:561:U:N3	2.38	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:947:G:O5’	45:r:107:THR:OG1	2.21	0.57
1:1:1358:G:N1	1:1:1372:U:OP2	2.29	0.57
1:1:2258:C:O2’	1:1:2426:A:H4’	2.04	0.57
1:1:2898:U:O2’	1:1:2899:A:H5’	2.05	0.57
2:2:17:U:H1’	2:2:1080:A:C8	2.39	0.57
2:2:1173:U:HO2’	2:2:1174:G:P	2.28	0.57
38:k:14:GLN:OE1	38:k:17:GLN:NE2	2.38	0.57
47:t:28:VAL:HG11	47:t:66:LEU:HD21	1.87	0.57
1:1:2809:A:OP2	1:1:2890:G:N1	2.35	0.57
23:T:28:ASN:OD1	23:T:91:GLN:NE2	2.36	0.57
1:1:654:A:C8	55:1:3604:HOH:O	2.52	0.57
1:1:2270:A:C2	1:1:2271:G:H1’	2.40	0.57
7:B:269:ARG:NH1	7:B:270:ARG:O	2.38	0.57
21:R:1:MET:N	21:R:42:ALA:O	2.29	0.57
1:1:141:G:H5”	55:1:3522:HOH:O	2.04	0.57
1:1:150:U:H2’	1:1:151:C:C6	2.40	0.57
1:1:263:G:H2’	1:1:264:C:O4’	2.05	0.57
1:1:858:G:N2	1:1:920:A:N1	2.53	0.57
1:1:2791:G:O2’	1:1:2792:A:O5’	2.17	0.57
2:2:15:G:H21	37:j:22:LYS:HA	1.70	0.57
2:2:159:G:N2	2:2:162:A:OP2	2.35	0.57
43:p:87:GLY:O	43:p:92:ARG:NE	2.38	0.57
45:r:18:LEU:O	45:r:21:ILE:HG22	2.05	0.57
1:1:1282:U:H2’	1:1:1283:G:O4’	2.05	0.56
1:1:2591:C:H42	1:1:2603:G:H1	1.53	0.56
2:2:451:A:H1’	2:2:452:A:C2	2.40	0.56
2:2:928:G:O2’	2:2:1533:C:OP1	2.22	0.56
20:Q:105:PHE:O	20:Q:109:VAL:HG23	2.05	0.56
39:l:77:ARG:NH1	39:l:78:ARG:O	2.38	0.56
1:1:1056:G:N1	1:1:1102:C:OP2	2.38	0.56
14:K:71:ARG:C	14:K:73:ASP:H	2.13	0.56
33:e:31:ILE:O	33:e:35:LYS:NZ	2.38	0.56
37:j:28:ARG:NE	55:j:201:HOH:O	2.37	0.56
1:1:1723:G:C4	1:1:1724:G:C8	2.93	0.56
1:1:2269:G:N2	1:1:2270:A:H1’	2.19	0.56
1:1:2758:A:N6	1:1:2759:G:C2	2.73	0.56
2:2:1173:U:H5	55:2:1744:HOH:O	1.80	0.56
2:2:1379:G:H3’	55:2:1704:HOH:O	2.04	0.56
10:E:107:VAL:O	10:E:110:ILE:HG22	2.05	0.56
12:G:132:PHE:HA	55:G:202:HOH:O	2.04	0.56
29:Z:47:ILE:O	29:Z:47:ILE:HG22	2.05	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:j:110:MET:HG2	37:j:114:LEU:HD23	1.88	0.56
1:1:633:A:OP1	15:L:71:ALA:HB2	2.05	0.56
1:1:1817:G:O5'	7:B:155:ARG:NH2	2.38	0.56
10:E:56:LEU:HA	10:E:59:ILE:HG22	1.87	0.56
22:S:85:ILE:HG22	22:S:95:ARG:HG2	1.87	0.56
40:m:53:ASP:OD1	40:m:53:ASP:N	2.36	0.56
1:1:142:A:H2'	1:1:143:C:C6	2.41	0.56
1:1:1807:G:N2	1:1:1810:A:OP2	2.36	0.56
1:1:2313:C:O2'	10:E:34:THR:HG21	2.06	0.56
1:1:2748:A:C2	1:1:2757:A:C6	2.94	0.56
2:2:779:C:H2'	2:2:780:A:O4'	2.06	0.56
15:L:93:ASN:O	15:L:94:THR:OG1	2.16	0.56
41:n:8:THR:HG22	41:n:9:GLY:N	2.21	0.56
43:p:125:LYS:O	43:p:126:ARG:HB2	2.04	0.56
1:1:1007:C:OP2	1:1:1008:A:O2'	2.22	0.56
1:1:2250:G:O2'	1:1:2496:C:OP1	2.22	0.56
3:3:51:G:OP1	18:O:63:LYS:NZ	2.34	0.56
10:E:127:TYR:HB3	10:E:155:ILE:HD11	1.88	0.56
53:z:43:GLU:CB	55:z:103:HOH:O	2.53	0.56
1:1:2666:C:N4	11:F:107:GLY:O	2.37	0.56
10:E:67:THR:HG23	10:E:86:CYS:N	2.20	0.56
21:R:49:ILE:HG22	21:R:54:VAL:HG22	1.88	0.56
1:1:1341:G:OP1	1:1:1397:U:N3	2.37	0.56
1:1:1682:G:P	1:1:1699:G:H22	2.28	0.56
1:1:1839:G:C5	1:1:1840:G:C8	2.93	0.56
1:1:2262:U:OP2	26:W:12:SER:HB2	2.06	0.56
2:2:643:C:C5'	40:m:31:LEU:HD11	2.36	0.56
13:J:23:LYS:HD2	55:J:311:HOH:O	2.06	0.56
22:S:15:GLN:OE1	30:b:16:ARG:NH1	2.39	0.56
53:z:11:PHE:O	53:z:13:VAL:HG23	2.06	0.56
1:1:994:C:O2'	1:1:996:A:OP1	2.21	0.56
1:1:2683:C:OP1	19:P:50:ARG:NH1	2.37	0.56
2:2:78:A:H61	2:2:91:U:H3	1.54	0.56
19:P:89:GLY:HA2	19:P:109:ILE:HD12	1.87	0.56
1:1:1668:A:O2'	1:1:1674:G:N7	2.28	0.56
1:1:2134:A:H62	1:1:2156:G:H2'	1.70	0.56
1:1:2700:A:C2	1:1:2708:G:C2	2.94	0.56
2:2:113:G:N2	2:2:353:A:O2'	2.39	0.56
11:F:43:LYS:O	11:F:50:THR:HG22	2.06	0.56
16:M:25:ASP:OD1	16:M:25:ASP:N	2.38	0.56
42:o:80:THR:O	42:o:83:THR:OG1	2.20	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:s:87:ALA:HB2	46:s:92:ILE:HD12	1.88	0.56
1:1:1510:G:N2	1:1:1511:G:H1'	2.21	0.55
1:1:1632:A:H2'	1:1:1633:G:C1'	2.37	0.55
1:1:2812:G:H2'	1:1:2813:A:C8	2.41	0.55
2:2:645:G:C2	2:2:646:G:C8	2.94	0.55
2:2:857:C:H2'	2:2:858:G:O4'	2.06	0.55
2:2:1251:A:H2'	2:2:1252:A:C8	2.41	0.55
1:1:1830:C:H42	1:1:1975:G:H1	1.53	0.55
2:2:299:G:H2'	2:2:300:A:C8	2.41	0.55
35:h:6:PRO:HB2	35:h:181:ILE:HD11	1.87	0.55
35:h:46:LEU:CD2	35:h:49:ALA:HB3	2.34	0.55
36:i:186:GLU:N	36:i:189:ASP:OD2	2.38	0.55
1:1:1586:A:C2	1:1:1587:G:H1'	2.40	0.55
15:L:96:LYS:HG2	15:L:101:ILE:HD11	1.88	0.55
52:y:54:GLN:HA	52:y:57:VAL:HG22	1.89	0.55
2:2:81:A:H61	2:2:85:U:H4'	1.71	0.55
2:2:606:G:H3'	2:2:607:A:H5'	1.89	0.55
2:2:704:A:C2	2:2:705:G:H1'	2.40	0.55
2:2:927:G:H1	2:2:1390:U:H3	1.54	0.55
38:k:53:LYS:HE3	55:k:202:HOH:O	2.06	0.55
43:p:126:ARG:HB2	53:z:34:ARG:HH12	1.71	0.55
1:1:538:A:N6	1:1:555:G:O2'	2.37	0.55
1:1:2196:C:O2'	1:1:2197:U:H5'	2.06	0.55
8:C:34:VAL:HG12	8:C:48:ILE:HG21	1.87	0.55
39:l:61:PHE:HD1	39:l:123:LEU:HD13	1.72	0.55
1:1:1202:G:O6	1:1:1244:A:N6	2.39	0.55
1:1:2270:A:C4	1:1:2271:G:C8	2.95	0.55
1:1:2839:G:N2	17:N:91:ALA:O	2.40	0.55
2:2:312:C:H2'	2:2:313:A:H8	1.71	0.55
2:2:936:C:H1'	2:2:1383:C:H41	1.71	0.55
2:2:974:A:OP2	46:s:80:ARG:NH2	2.39	0.55
7:B:201:LEU:H	7:B:201:LEU:HD23	1.71	0.55
1:1:212:G:H2'	1:1:213:A:C8	2.42	0.55
1:1:696:G:C2	1:1:697:G:C8	2.95	0.55
2:2:1496:C:H3'	2:2:1497:G:O4'	2.05	0.55
5:5:5:A:O2'	5:5:6:C:O5'	2.22	0.55
12:G:47:PHE:HA	12:G:51:ARG:HB3	1.89	0.55
12:G:101:ASP:OD1	12:G:102:ALA:N	2.40	0.55
39:l:148:LYS:HE2	53:z:13:VAL:HG13	1.89	0.55
52:y:53:MET:SD	52:y:54:GLN:N	2.79	0.55
1:1:2369:A:O2'	1:1:2370:G:H5'	2.07	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2728:U:HO2'	1:1:2729:G:H8	1.53	0.55
2:2:175:C:H2'	2:2:176:C:C6	2.41	0.55
2:2:1090:U:H4'	55:2:1786:HOH:O	2.07	0.55
2:2:1156:G:H3'	2:2:1157:A:H5'	1.89	0.55
13:J:22:GLY:CA	55:J:308:HOH:O	2.55	0.55
49:v:14:ASP:O	49:v:16:MET:HG2	2.06	0.55
1:1:1326:U:O2'	1:1:2010:G:O2'	2.22	0.55
55:1:3634:HOH:O	16:M:79:ALA:HB2	2.06	0.55
2:2:1406:U:C4	2:2:1407:C:C5	2.95	0.55
3:3:54:G:H21	10:E:25:MET:HE3	1.72	0.55
17:N:96:ARG:HH11	17:N:116:VAL:HG13	1.72	0.55
48:u:47:GLU:O	48:u:48:GLU:C	2.49	0.55
1:1:2627:G:C2	1:1:2777:G:C2	2.95	0.55
1:1:2646:C:OP2	1:1:2732:G:O2'	2.20	0.55
1:1:2674:G:H4'	14:K:30:ARG:HD3	1.89	0.55
2:2:1122:U:C5	2:2:1123:U:C4	2.95	0.55
2:2:1403:C:H5	55:2:1889:HOH:O	1.89	0.55
35:h:33:ASP:OD2	35:h:37:LYS:NZ	2.26	0.55
35:h:34:SER:O	35:h:38:VAL:HG12	2.06	0.55
39:l:109:LYS:O	39:l:118:ARG:NH1	2.40	0.55
44:q:78:VAL:O	44:q:79:ILE:HD13	2.07	0.55
45:r:99:GLN:NE2	45:r:99:GLN:O	2.40	0.55
1:1:194:G:H2'	1:1:195:A:O4'	2.07	0.54
1:1:1453:A:O2'	1:1:1454:C:P	2.65	0.54
1:1:2352:A:C2	1:1:2366:A:C4	2.95	0.54
2:2:492:C:O2'	2:2:493:A:O4'	2.16	0.54
2:2:661:G:H5"	55:2:1805:HOH:O	2.06	0.54
2:2:1248:A:C2	2:2:1290:G:C4	2.96	0.54
11:F:27:GLY:N	11:F:30:GLY:O	2.40	0.54
37:j:60:GLN:O	37:j:64:GLU:HG3	2.07	0.54
1:1:1343:G:HO2'	1:1:1344:U:P	2.26	0.54
2:2:1151:A:C8	42:o:41:PRO:HB3	2.41	0.54
49:v:10:ARG:HB3	49:v:23:ALA:HB3	1.89	0.54
1:1:1838:C:N4	1:1:1899:A:O4'	2.41	0.54
2:2:760:G:N1	55:2:1718:HOH:O	2.32	0.54
41:n:25:GLY:HA3	41:n:57:VAL:O	2.07	0.54
1:1:1036:G:C4	1:1:1037:G:C8	2.95	0.54
1:1:2064:C:C2	1:1:2065:C:C6	2.95	0.54
1:1:2207:C:H42	1:1:2217:G:H1	1.54	0.54
1:1:2303:G:H4'	10:E:119:LYS:HZ2	1.71	0.54
1:1:2467:C:H2'	1:1:2468:A:O4'	2.08	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:203:G:HO2'	2:2:204:G:H8	1.54	0.54
2:2:1403:C:H1'	2:2:1500:A:N1	2.23	0.54
43:p:29:THR:HG21	43:p:62:ALA:HB1	1.88	0.54
1:1:1179:G:C5	1:1:1180:U:H1'	2.42	0.54
1:1:1343:G:O2'	1:1:1344:U:P	2.66	0.54
1:1:2065:C:O2'	1:1:2449:U:N3	2.40	0.54
1:1:2531:A:N7	11:F:176:LYS:HD2	2.22	0.54
2:2:1386:G:H2'	2:2:1387:G:H8	1.73	0.54
11:F:100:ASN:ND2	11:F:115:GLN:OE1	2.40	0.54
19:P:28:LYS:HE2	19:P:39:LEU:HD23	1.90	0.54
1:1:289:G:N2	1:1:352:A:C4	2.75	0.54
1:1:1786:A:N6	1:1:2606:C:O4'	2.41	0.54
1:1:2657:A:H2'	1:1:2658:C:H5'	1.90	0.54
2:2:155:A:C6	2:2:156:C:C4	2.96	0.54
2:2:386:C:H2'	2:2:387:U:O4'	2.08	0.54
2:2:1421:G:C2	2:2:1422:G:C8	2.96	0.54
1:1:896:A:O2'	1:1:897:C:P	2.66	0.54
1:1:1208:C:H2'	1:1:1209:U:O4'	2.08	0.54
1:1:2140:G:C4	1:1:2141:G:C8	2.96	0.54
1:1:2249:U:H3'	1:1:2250:G:H5'	1.89	0.54
1:1:2642:G:P	13:J:78:THR:HG21	2.47	0.54
2:2:679:C:C2	2:2:680:C:C5	2.96	0.54
13:J:36:LEU:C	13:J:118:MET:HE1	2.32	0.54
1:1:399:U:OP2	27:X:56:ARG:NH2	2.40	0.54
1:1:859:G:H4'	1:1:859:G:OP1	2.08	0.54
1:1:1699:G:C6	55:1:3503:HOH:O	2.54	0.54
1:1:1799:G:O3'	7:B:181:ARG:NH2	2.41	0.54
1:1:2305:U:C4	10:E:151:LEU:HA	2.43	0.54
1:1:2421:G:N2	5:5:76:A:O4'	2.41	0.54
2:2:258:G:C4	2:2:259:G:C8	2.96	0.54
1:1:1695:G:OP1	7:B:6:LYS:NZ	2.41	0.54
1:1:2069:G:C2	1:1:2070:A:C8	2.96	0.54
2:2:453:G:N2	2:2:454:G:H1'	2.23	0.54
2:2:527:G:N2	2:2:528:C:C2	2.76	0.54
2:2:1250:A:N7	2:2:1287:A:C8	2.76	0.54
5:5:4:C:O2'	5:5:5:A:OP2	2.22	0.54
11:F:123:GLU:OE1	11:F:133:LYS:NZ	2.39	0.54
23:T:29:THR:HG23	23:T:85:VAL:O	2.07	0.54
41:n:8:THR:O	41:n:81:GLY:HA2	2.08	0.54
1:1:379:G:C6	1:1:396:G:O6	2.61	0.54
1:1:1140:C:P	13:J:68:LYS:HZ1	2.31	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2143:C:H2'	1:1:2144:G:O4'	2.08	0.54
1:1:2379:G:N2	1:1:2380:C:C2	2.76	0.54
2:2:506:G:C6	2:2:507:C:C4	2.96	0.54
2:2:643:C:N4	2:2:644:U:O4	2.41	0.54
3:3:65:U:H3'	3:3:108:A:H61	1.72	0.54
5:5:48:C:C4	5:5:59:A:N7	2.76	0.54
36:i:90:LEU:HD11	36:i:196:GLU:CD	2.33	0.54
41:n:5:TYR:O	41:n:20:ILE:HG22	2.08	0.54
45:r:95:PRO:HB3	45:r:108:ARG:HB2	1.90	0.54
8:C:179:ARG:HB2	8:C:188:LEU:HD21	1.89	0.53
1:1:941:A:H2'	1:1:942:G:O4'	2.07	0.53
1:1:1087:G:N2	1:1:1090:A:N7	2.56	0.53
1:1:1704:C:H2'	1:1:1705:A:C8	2.43	0.53
2:2:458:U:C2	2:2:459:A:C8	2.96	0.53
2:2:859:G:N2	55:2:1726:HOH:O	2.40	0.53
2:2:1202:U:C4	2:2:1203:C:C5	2.96	0.53
34:f:3:VAL:HG22	34:f:36:ARG:HD3	1.88	0.53
39:l:69:ARG:HH21	39:l:95:ARG:HB3	1.72	0.53
43:p:85:VAL:HG12	43:p:92:ARG:HH22	1.71	0.53
1:1:1055:G:H1	1:1:1104:C:H42	1.55	0.53
1:1:1790:C:OP2	1:1:1828:G:N1	2.39	0.53
1:1:1983:G:C2	1:1:1984:G:C8	2.97	0.53
1:1:2089:C:C2	1:1:2090:A:C8	2.96	0.53
1:1:2824:C:H3'	1:1:2825:G:H21	1.73	0.53
2:2:35:G:H21	44:q:114:SER:HB3	1.73	0.53
2:2:477:C:H2'	2:2:478:A:C8	2.43	0.53
2:2:523:A:H2	2:2:527:G:O6	1.91	0.53
2:2:579:A:O2'	47:t:53:ARG:NH2	2.41	0.53
2:2:1407:C:C2	2:2:1408:A:C8	2.96	0.53
35:h:40:GLN:HA	35:h:43:THR:HG22	1.90	0.53
43:p:124:LYS:HA	53:z:34:ARG:HB3	1.90	0.53
1:1:207:A:O2'	1:1:799:G:H4'	2.08	0.53
2:2:31:G:HO2'	2:2:48:C:H5	1.56	0.53
2:2:738:C:OP1	38:k:2:ARG:NH1	2.42	0.53
2:2:1076:U:H2'	2:2:1077:G:C8	2.43	0.53
2:2:1434:A:C4	2:2:1435:G:C8	2.96	0.53
9:D:59:PRO:HB2	9:D:60:TRP:CE3	2.43	0.53
25:V:6:ALA:HB1	25:V:40:ILE:CG2	2.38	0.53
25:V:36:ALA:O	25:V:93:ARG:NH2	2.38	0.53
49:v:16:MET:HE3	49:v:20:ILE:HA	1.90	0.53
1:1:139:U:H3'	1:1:141:G:H1'	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:176:A:H3'	1:1:177:G:N2	2.23	0.53
1:1:366:C:N4	55:1:3460:HOH:O	2.40	0.53
1:1:1483:G:H2'	1:1:1484:U:O4'	2.08	0.53
1:1:1526:C:H2'	1:1:1527:G:O4'	2.08	0.53
1:1:2249:U:H3'	1:1:2250:G:C5'	2.38	0.53
2:2:581:G:H3'	2:2:758:C:H42	1.74	0.53
2:2:1016:A:O2'	2:2:1217:C:O2'	2.26	0.53
2:2:1127:G:H1	2:2:1145:A:H2	1.56	0.53
2:2:1399:C:C2	2:2:1401:G:C6	2.97	0.53
7:B:138:SER:OG	7:B:139:THR:N	2.42	0.53
45:r:15:VAL:HG12	45:r:33:LEU:HD13	1.90	0.53
1:1:442:G:N7	55:1:3464:HOH:O	2.42	0.53
1:1:627:A:C8	15:L:111:ILE:HD12	2.43	0.53
1:1:1145:C:O2'	1:1:1146:C:H5'	2.09	0.53
1:1:1200:C:C2	1:1:1201:U:C5	2.97	0.53
1:1:2638:G:H22	1:1:2775:G:H2'	1.74	0.53
2:2:1496:C:C3'	2:2:1497:G:O4'	2.57	0.53
21:R:49:ILE:HD12	21:R:51:VAL:O	2.08	0.53
43:p:23:HIS:HB3	43:p:30:ILE:HG23	1.91	0.53
45:r:24:VAL:HG11	45:r:28:ARG:HG2	1.91	0.53
1:1:822:G:C6	1:1:836:G:C6	2.97	0.53
1:1:971:G:O2'	1:1:972:A:H5'	2.08	0.53
1:1:1353:A:C8	1:1:1378:A:N6	2.77	0.53
1:1:1409:U:H2'	1:1:1410:G:C8	2.44	0.53
1:1:2353:G:H4'	26:W:28:LEU:HD23	1.89	0.53
1:1:2841:C:H2'	1:1:2842:G:O4'	2.08	0.53
2:2:689:C:H2'	2:2:690:G:C8	2.44	0.53
2:2:890:G:O2'	2:2:906:A:N6	2.41	0.53
2:2:1017:U:C2	2:2:1018:G:C8	2.97	0.53
49:v:43:LEU:HD21	49:v:72:TRP:CE2	2.44	0.53
1:1:142:A:O2'	1:1:143:C:O5'	2.26	0.53
1:1:258:G:C2	1:1:259:G:C8	2.96	0.53
1:1:433:C:O2'	1:1:434:U:H5'	2.09	0.53
2:2:280:C:H1'	49:v:39:ARG:HH21	1.73	0.53
2:2:1396:A:H2	37:j:23:THR:HG21	1.73	0.53
9:D:177:PRO:O	9:D:181:ILE:HG22	2.09	0.53
1:1:910:A:H2	1:1:2264:C:O2	1.92	0.53
1:1:2120:G:HO2'	1:1:2121:G:C5'	2.22	0.53
2:2:297:G:N2	2:2:300:A:OP2	2.36	0.53
2:2:872:A:C8	2:2:874:G:C8	2.97	0.53
2:2:879:C:OP1	44:q:4:ASN:ND2	2.41	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:K:71:ARG:HB3	14:K:73:ASP:OD1	2.09	0.53
42:o:7:ARG:NE	42:o:75:ASP:OD1	2.42	0.53
1:1:679:C:O2'	1:1:680:C:H5'	2.08	0.53
1:1:948:C:H2'	1:1:949:G:C8	2.44	0.53
1:1:1270:C:O2'	1:1:1325:U:H2'	2.09	0.53
1:1:1666:G:O2'	14:K:6:THR:HG22	2.09	0.53
2:2:28:A:H2'	2:2:29:U:C6	2.44	0.53
2:2:156:C:H2'	2:2:157:U:O4'	2.09	0.53
2:2:271:C:H2'	2:2:272:C:O4'	2.09	0.53
2:2:501:C:H1'	2:2:549:C:H1'	1.90	0.53
2:2:784:A:C6	2:2:799:G:N1	2.77	0.53
2:2:1067:A:H4'	2:2:1387:G:O2'	2.09	0.53
2:2:1152:A:O2'	42:o:16:ARG:NH2	2.42	0.53
2:2:1402:C:H2'	2:2:1403:C:O4'	2.09	0.53
33:e:31:ILE:C	33:e:35:LYS:HZ3	2.17	0.53
35:h:38:VAL:O	35:h:42:LEU:HG	2.09	0.53
43:p:115:ILE:HG13	53:z:28:LEU:HD12	1.90	0.53
1:1:362:A:C2	1:1:363:G:H1'	2.44	0.52
55:1:3639:HOH:O	27:X:13:THR:HG21	2.09	0.52
2:2:70:U:H4'	2:2:71:A:O5'	2.07	0.52
2:2:594:U:H2'	2:2:595:A:O4'	2.09	0.52
2:2:745:G:N3	2:2:746:A:C8	2.77	0.52
2:2:1407:C:N3	2:2:1408:A:N7	2.57	0.52
8:C:188:LEU:HD23	8:C:188:LEU:H	1.74	0.52
37:j:119:VAL:HG11	37:j:122:VAL:HG22	1.90	0.52
41:n:48:ARG:O	41:n:52:GLU:N	2.36	0.52
1:1:285:G:H2'	1:1:286:U:O4'	2.09	0.52
1:1:907:G:C2	1:1:908:C:C6	2.97	0.52
1:1:1789:A:H2'	1:1:1790:C:O4'	2.08	0.52
2:2:236:A:H2'	2:2:237:G:C8	2.44	0.52
9:D:21:ARG:NH2	9:D:106:LYS:O	2.42	0.52
16:M:41:LEU:O	16:M:94:ALA:N	2.32	0.52
16:M:73:ILE:HG21	16:M:91:TYR:CZ	2.44	0.52
35:h:10:ARG:NH1	35:h:176:THR:O	2.43	0.52
1:1:566:U:O2'	1:1:809:G:OP2	2.24	0.52
1:1:1867:G:H2'	1:1:1868:C:O4'	2.09	0.52
1:1:1874:C:H2'	1:1:1875:G:O4'	2.09	0.52
1:1:1932:A:C2	1:1:1933:G:H1'	2.44	0.52
1:1:2184:A:H2'	1:1:2185:U:C6	2.44	0.52
2:2:719:C:O2	50:w:38:ILE:HG22	2.09	0.52
2:2:1251:A:H2'	2:2:1252:A:H8	1.74	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:D:148:ILE:HA	9:D:187:VAL:HG13	1.91	0.52
12:G:147:VAL:HG12	12:G:148:ALA:N	2.24	0.52
30:b:2:VAL:HG12	30:b:3:GLN:H	1.73	0.52
53:z:43:GLU:CG	55:z:103:HOH:O	2.57	0.52
1:1:1204:A:H1'	1:1:1206:G:N7	2.24	0.52
1:1:1314:C:N3	1:1:1339:G:N2	2.57	0.52
2:2:150:U:H3	2:2:171:A:H62	1.56	0.52
2:2:350:G:H2'	2:2:351:G:C8	2.45	0.52
2:2:720:C:H1'	50:w:38:ILE:HD13	1.90	0.52
25:V:30:ILE:HG12	25:V:40:ILE:HD11	1.92	0.52
34:f:33:HIS:O	34:f:35:GLN:N	2.42	0.52
39:l:82:SER:HA	55:l:203:HOH:O	2.07	0.52
47:t:86:LEU:HD12	47:t:87:ARG:HB2	1.90	0.52
1:1:1020:A:N1	1:1:1141:U:O2'	2.40	0.52
1:1:1049:C:C2	1:1:1050:A:C8	2.97	0.52
2:2:710:G:OP1	38:k:53:LYS:NZ	2.37	0.52
9:D:83:VAL:HG13	9:D:86:ALA:HB2	1.90	0.52
17:N:49:GLU:N	17:N:50:PRO:HD2	2.24	0.52
25:V:43:ASP:O	25:V:47:VAL:HG12	2.09	0.52
39:l:86:VAL:CG2	55:l:204:HOH:O	2.55	0.52
1:1:37:C:O2'	1:1:38:A:H5'	2.09	0.52
1:1:989:G:C6	29:Z:13:ILE:HD11	2.44	0.52
1:1:1204:A:H1'	1:1:1206:G:C5	2.45	0.52
1:1:1414:C:H2'	1:1:1415:U:O4'	2.09	0.52
1:1:1839:G:C4	1:1:1840:G:C8	2.98	0.52
1:1:2350:C:H2'	1:1:2351:G:O4'	2.10	0.52
1:1:2658:C:H42	1:1:2663:G:H1	1.58	0.52
2:2:643:C:H5"	40:m:31:LEU:HD11	1.91	0.52
3:3:51:G:P	18:O:67:ASN:HD21	2.32	0.52
10:E:6:TYR:CD2	10:E:11:VAL:HG23	2.44	0.52
13:J:22:GLY:HA3	55:J:308:HOH:O	2.10	0.52
14:K:71:ARG:NH1	14:K:77:ILE:HD11	2.25	0.52
19:P:98:TYR:CZ	19:P:99:LEU:HD21	2.44	0.52
43:p:25:SER:HB2	55:p:303:HOH:O	2.01	0.52
1:1:892:A:O2'	1:1:893:C:H5'	2.10	0.52
1:1:892:A:H2'	1:1:893:C:C6	2.45	0.52
1:1:1142:A:O2'	1:1:1143:A:OP2	2.20	0.52
1:1:2090:A:O2'	1:1:2091:C:H5'	2.09	0.52
1:1:2269:G:C2	1:1:2270:A:C8	2.97	0.52
1:1:2677:G:C6	1:1:2731:G:C6	2.98	0.52
1:1:2757:A:H2'	1:1:2758:A:H5'	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:491:G:H2'	2:2:492:C:C5	2.45	0.52
3:3:81:G:N7	3:3:96:G:N1	2.57	0.52
5:5:21:A:C1'	5:5:48:C:H42	2.22	0.52
5:5:47:U:O2'	5:5:48:C:OP2	2.27	0.52
36:i:10:LEU:HD13	36:i:62:ARG:HB3	1.92	0.52
49:v:45:VAL:HG11	49:v:60:ILE:HD12	1.90	0.52
1:1:661:A:C4	1:1:662:G:C8	2.97	0.52
1:1:1357:C:H42	1:1:1374:G:H1	1.58	0.52
1:1:2099:U:H2'	1:1:2100:G:C8	2.45	0.52
2:2:1503:A:HO2'	2:2:1504:G:P	2.23	0.52
8:C:129:THR:OG1	8:C:140:HIS:O	2.27	0.52
10:E:39:VAL:HG21	10:E:48:LEU:HD21	1.92	0.52
11:F:136:ASP:HB3	11:F:139:VAL:HG12	1.91	0.52
14:K:113:MET:HA	14:K:116:ILE:HG12	1.92	0.52
39:l:12:LEU:HD12	39:l:13:PRO:HD2	1.91	0.52
40:m:111:THR:HG23	40:m:114:ALA:H	1.73	0.52
1:1:36:G:C6	1:1:445:C:N4	2.78	0.52
1:1:2756:U:H1'	1:1:2757:A:C8	2.45	0.52
2:2:358:U:C2	2:2:359:G:C8	2.98	0.52
2:2:917:G:H2'	2:2:918:A:C8	2.45	0.52
2:2:971:G:OP2	2:2:1231:G:N2	2.41	0.52
2:2:1099:G:H2'	2:2:1100:C:C6	2.44	0.52
2:2:1329:A:OP1	45:r:25:GLY:N	2.40	0.52
2:2:1412:C:H2'	2:2:1413:A:C8	2.45	0.52
6:A:32:GLU:N	6:A:32:GLU:OE2	2.42	0.52
14:K:29:HIS:O	14:K:30:ARG:C	2.53	0.52
26:W:41:PHE:O	26:W:55:LEU:HD11	2.10	0.52
37:j:152:VAL:HG22	37:j:156:ARG:HB3	1.91	0.52
1:1:2162:G:OP2	1:1:2164:C:N4	2.41	0.52
2:2:616:G:C2	2:2:625:U:O2	2.62	0.52
2:2:969:A:O2'	2:2:970:C:O4'	2.23	0.52
10:E:143:ASP:OD2	10:E:144:LYS:N	2.41	0.52
11:F:43:LYS:HG2	11:F:45:ALA:HB2	1.92	0.52
16:M:40:ARG:NH1	16:M:91:TYR:OH	2.42	0.52
43:p:113:THR:HG22	53:z:28:LEU:HD13	1.91	0.52
44:q:32:VAL:HG22	44:q:78:VAL:HG22	1.92	0.52
53:z:43:GLU:HB2	55:z:103:HOH:O	2.10	0.52
1:1:404:A:C5'	55:1:3411:HOH:O	2.58	0.51
1:1:926:G:H2'	1:1:927:A:H8	1.75	0.51
1:1:1670:C:H2'	1:1:1671:U:O4'	2.10	0.51
2:2:419:C:N3	2:2:425:G:N1	2.57	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1323:G:H2'	2:2:1324:A:C8	2.44	0.51
16:M:44:ARG:NH1	55:M:301:HOH:O	2.42	0.51
46:s:87:ALA:CB	46:s:92:ILE:HD12	2.41	0.51
1:1:993:G:OP2	20:Q:50:ARG:NH2	2.43	0.51
10:E:131:VAL:HG21	10:E:136:ILE:HD13	1.91	0.51
11:F:63:GLN:O	11:F:66:THR:OG1	2.27	0.51
35:h:37:LYS:O	35:h:40:GLN:NE2	2.43	0.51
39:l:123:LEU:HD12	39:l:123:LEU:O	2.10	0.51
51:x:35:ARG:NH2	51:x:71:GLY:O	2.41	0.51
1:1:35:G:H1'	1:1:454:A:C4	2.45	0.51
1:1:760:G:H2'	1:1:761:A:O4'	2.10	0.51
1:1:858:G:H1'	55:1:3403:HOH:O	2.10	0.51
1:1:1115:G:C4	1:1:1116:G:C8	2.98	0.51
1:1:2333:A:H5"	55:1:3695:HOH:O	2.11	0.51
2:2:71:A:C2	2:2:72:A:H1'	2.45	0.51
2:2:373:A:C2	2:2:374:A:C8	2.98	0.51
2:2:415:A:H3'	2:2:416:G:H8	1.74	0.51
2:2:1304:G:O2'	2:2:1305:G:O4'	2.24	0.51
46:s:62:ARG:NH1	46:s:67:GLY:O	2.43	0.51
1:1:496:G:C4	1:1:497:A:C8	2.98	0.51
2:2:1067:A:N1	2:2:1191:A:N7	2.58	0.51
2:2:1306:A:C2	2:2:1332:A:C4	2.99	0.51
5:5:47:U:O2'	5:5:48:C:P	2.68	0.51
13:J:23:LYS:CD	55:J:311:HOH:O	2.57	0.51
44:q:34:THR:HA	44:q:75:GLU:HG3	1.93	0.51
1:1:415:A:H2'	1:1:416:U:C6	2.46	0.51
1:1:559:G:O2'	1:1:560:C:H5'	2.10	0.51
1:1:1313:U:O2'	1:1:1332:G:O4'	2.27	0.51
1:1:1419:A:HO2'	1:1:1421:G:H8	1.57	0.51
1:1:1668:A:N3	1:1:1670:C:N4	2.58	0.51
1:1:1709:U:N3	1:1:1710:G:N7	2.58	0.51
1:1:2525:G:H1	1:1:2538:C:H42	1.58	0.51
2:2:19:A:H2'	2:2:20:U:C6	2.45	0.51
2:2:260:G:H2'	2:2:261:U:C6	2.46	0.51
2:2:552:U:O4	2:2:553:A:N6	2.43	0.51
2:2:554:A:C2	2:2:555:U:C4	2.98	0.51
2:2:1157:A:H8	2:2:1157:A:H5"	1.76	0.51
2:2:1433:A:C4	2:2:1434:A:C8	2.98	0.51
21:R:91:GLN:CD	55:R:301:HOH:O	2.53	0.51
31:c:12:SER:HA	31:c:48:TYR:CD1	2.46	0.51
1:1:183:C:O2'	1:1:432:A:N3	2.39	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:817:C:H2'	1:1:818:G:O4'	2.11	0.51
1:1:2540:C:H2'	1:1:2541:A:O4'	2.10	0.51
2:2:964:A:C3'	2:2:965:U:H5'	2.40	0.51
2:2:1208:C:H2'	2:2:1209:C:C6	2.46	0.51
2:2:1301:U:O2	2:2:1301:U:H2'	2.09	0.51
2:2:1360:A:N7	46:s:57:SER:OG	2.43	0.51
8:C:151:THR:OG1	8:C:152:PRO:HD3	2.10	0.51
27:X:5:GLN:O	27:X:73:ARG:NH2	2.43	0.51
39:l:29:LEU:O	39:l:31:VAL:HG13	2.10	0.51
42:o:92:LEU:HD23	42:o:93:ALA:HB2	1.91	0.51
1:1:679:C:C2	1:1:680:C:C5	2.99	0.51
1:1:1114:C:C2	1:1:1115:G:N7	2.79	0.51
2:2:753:A:OP1	47:t:72:LYS:NZ	2.44	0.51
2:2:1229:A:OP2	45:r:106:ARG:NH2	2.44	0.51
21:R:49:ILE:HB	21:R:54:VAL:HG13	1.91	0.51
45:r:14:ALA:HB1	45:r:33:LEU:HD21	1.93	0.51
1:1:217:A:H2'	1:1:218:A:O4'	2.11	0.51
1:1:627:A:C2	1:1:637:A:C4	2.99	0.51
1:1:859:G:H22	1:1:917:A:P	2.33	0.51
1:1:1233:C:N3	1:1:1234:U:C5	2.79	0.51
1:1:1294:U:O2'	1:1:1295:C:H5'	2.11	0.51
1:1:1535:A:N6	1:1:1538:G:O2'	2.44	0.51
1:1:2185:U:H2'	1:1:2186:G:C8	2.46	0.51
1:1:2528:U:O2'	1:1:2530:A:OP1	2.25	0.51
1:1:2536:G:C5	1:1:2537:U:C5	2.99	0.51
1:1:2717:C:H2'	1:1:2718:G:O4'	2.11	0.51
2:2:690:G:H2'	2:2:691:G:C8	2.46	0.51
2:2:885:G:N1	2:2:913:A:N1	2.58	0.51
2:2:1166:G:N2	2:2:1171:A:C6	2.79	0.51
6:A:4:LEU:HD13	6:A:8:MET:HB3	1.93	0.51
9:D:79:ARG:O	9:D:80:SER:C	2.54	0.51
9:D:187:VAL:HG13	9:D:187:VAL:O	2.11	0.51
27:X:32:LEU:HD21	27:X:49:ARG:HD2	1.92	0.51
50:w:72:ARG:CD	55:w:203:HOH:O	2.49	0.51
1:1:1042:G:N2	1:1:1114:C:H1'	2.26	0.51
1:1:2341:G:O2'	1:1:2342:C:H5'	2.11	0.51
2:2:264:C:H2'	2:2:265:G:O4'	2.10	0.51
2:2:973:G:H5"	2:2:974:A:H2'	1.93	0.51
2:2:1013:G:N2	2:2:1017:U:O4	2.44	0.51
2:2:1513:A:H61	2:2:1522:U:H3	1.59	0.51
3:3:34:A:C2	3:3:44:G:C6	2.99	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:21:A:N1	5:5:46:G:H2'	2.26	0.51
17:N:52:ILE:HG21	17:N:94:TYR:CD1	2.46	0.51
23:T:76:ARG:HD3	55:T:203:HOH:O	2.10	0.51
33:e:23:HIS:ND1	33:e:24:LYS:O	2.41	0.51
40:m:65:PHE:C	40:m:67:GLY:H	2.18	0.51
51:x:79:TYR:O	51:x:80:ARG:HB2	2.11	0.51
1:1:1005:C:O2'	13:J:30:THR:HG21	2.11	0.51
2:2:199:A:C2	2:2:219:U:O2	2.64	0.51
8:C:157:LYS:HG3	13:J:79:GLY:O	2.11	0.51
40:m:60:LEU:H	40:m:60:LEU:HD23	1.75	0.51
45:r:46:GLU:N	45:r:46:GLU:OE2	2.44	0.51
1:1:1077:A:N3	55:1:3438:HOH:O	2.33	0.50
1:1:1114:C:H2'	1:1:1115:G:C8	2.45	0.50
1:1:1385:A:HO2'	1:1:1386:C:H6	1.56	0.50
1:1:1932:A:H2'	1:1:1933:G:O4'	2.11	0.50
1:1:2854:G:C6	1:1:2864:G:O6	2.64	0.50
2:2:1068:G:C2	2:2:1069:C:C6	2.99	0.50
2:2:1307:U:C2'	45:r:95:PRO:HB2	2.40	0.50
5:5:62:C:H4'	6:A:53:ARG:HE	1.76	0.50
13:J:76:HIS:CE1	13:J:85:LYS:HB2	2.47	0.50
14:K:5:GLN:N	14:K:21:CYS:O	2.42	0.50
48:u:58:ALA:HA	48:u:61:VAL:HG12	1.93	0.50
1:1:486:C:H42	1:1:494:G:H1	1.59	0.50
1:1:1100:C:H2'	1:1:1101:U:O4'	2.12	0.50
1:1:1283:G:N2	1:1:1286:A:OP2	2.44	0.50
1:1:2743:U:H2'	1:1:2744:G:O4'	2.10	0.50
12:G:10:ALA:HA	55:G:204:HOH:O	2.11	0.50
15:L:79:LEU:HD12	15:L:113:ALA:H	1.77	0.50
37:j:110:MET:HE2	37:j:139:THR:HG21	1.93	0.50
1:1:1712:U:OP2	1:1:1713:A:O2'	2.18	0.50
1:1:2177:C:O2	6:A:170:ILE:HG21	2.11	0.50
1:1:2707:U:O2	17:N:71:ARG:NH2	2.44	0.50
2:2:114:U:O2'	2:2:115:G:O5'	2.28	0.50
2:2:439:U:H2'	2:2:440:C:O4'	2.12	0.50
6:A:173:THR:OG1	6:A:174:THR:N	2.45	0.50
17:N:106:ASP:N	17:N:106:ASP:OD1	2.45	0.50
35:h:123:LEU:HD21	35:h:129:PHE:HA	1.94	0.50
37:j:59:ILE:HG22	37:j:63:MET:HE2	1.93	0.50
41:n:78:ILE:O	41:n:82:ILE:HG12	2.11	0.50
43:p:63:GLN:HG3	43:p:98:ALA:HB2	1.93	0.50
1:1:1791:A:N1	1:1:1829:A:H4'	2.27	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2226:C:H2'	1:1:2227:A:O4'	2.12	0.50
1:1:2420:C:OP1	33:e:33:THR:HB	2.11	0.50
1:1:2733:A:C2	1:1:2734:A:H1'	2.46	0.50
2:2:76:G:H2'	2:2:77:A:O4'	2.11	0.50
2:2:427:U:OP1	36:i:12:ARG:NH2	2.44	0.50
2:2:1308:U:O5'	45:r:97:ARG:N	2.43	0.50
13:J:81:ILE:O	13:J:81:ILE:HG22	2.12	0.50
30:b:24:VAL:HG13	30:b:25:THR:H	1.76	0.50
42:o:40:ILE:N	42:o:40:ILE:HD12	2.27	0.50
52:y:21:ALA:HA	52:y:24:ARG:HB2	1.93	0.50
1:1:1141:U:H4'	1:1:1142:A:O4'	2.11	0.50
1:1:1173:U:H4'	1:1:1177:G:H22	1.77	0.50
1:1:2073:C:H5"	7:B:227:VAL:HG12	1.93	0.50
2:2:164:G:C2	2:2:165:G:C8	2.99	0.50
2:2:452:A:H2'	2:2:453:G:O4'	2.12	0.50
2:2:753:A:OP1	47:t:68:TYR:OH	2.30	0.50
2:2:1000:A:C6	2:2:1041:G:O6	2.65	0.50
3:3:92:C:O2'	3:3:93:C:H5'	2.12	0.50
15:L:73:ILE:HG23	15:L:106:GLU:H	1.76	0.50
1:1:1059:G:C2	1:1:1080:A:C2	3.00	0.50
1:1:1063:G:O6	1:1:1075:C:N3	2.45	0.50
1:1:1254:A:O2'	1:1:1256:G:O4'	2.27	0.50
1:1:1291:C:C2	1:1:1292:G:C8	3.00	0.50
1:1:1656:C:C2	1:1:1657:U:C5	2.99	0.50
1:1:1800:C:C6	1:1:1802:A:H1'	2.47	0.50
1:1:2073:C:C2	1:1:2437:G:C2	2.98	0.50
1:1:2420:C:H2'	1:1:2421:G:C8	2.46	0.50
2:2:303:A:H1'	2:2:555:U:O2'	2.12	0.50
2:2:568:G:N1	2:2:883:C:N4	2.59	0.50
2:2:587:G:N2	2:2:754:C:OP2	2.45	0.50
38:k:12:PRO:O	38:k:15:SER:OG	2.29	0.50
47:t:31:LEU:O	47:t:35:ILE:HG12	2.12	0.50
1:1:638:G:C6	1:1:639:U:C4	3.00	0.50
1:1:677:A:C2	1:1:678:C:C6	3.00	0.50
1:1:1097:U:C6	55:1:3516:HOH:O	2.54	0.50
1:1:1341:G:H2'	1:1:1397:U:O2	2.11	0.50
1:1:2684:U:H2'	1:1:2685:G:O4'	2.11	0.50
1:1:2758:A:N6	1:1:2759:G:N3	2.59	0.50
2:2:922:G:H1'	37:j:23:THR:HG23	1.94	0.50
2:2:933:G:O6	39:l:2:ARG:NH2	2.45	0.50
2:2:1081:A:C2	55:2:1745:HOH:O	2.50	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:C:106:LYS:O	8:C:206:ALA:HB2	2.11	0.50
41:n:55:ASP:HB2	41:n:59:LYS:HD2	1.93	0.50
52:y:70:LYS:O	52:y:74:HIS:ND1	2.45	0.50
1:1:353:C:H2'	1:1:354:A:C8	2.47	0.50
1:1:483:A:O4'	24:U:44:HIS:HB3	2.12	0.50
2:2:161:A:H2'	2:2:162:A:O4'	2.12	0.50
2:2:231:U:C2	2:2:232:G:C8	3.00	0.50
2:2:428:G:O4'	2:2:430:A:C8	2.65	0.50
9:D:5:LEU:HD23	9:D:7:ASP:N	2.27	0.50
17:N:98:LEU:HD11	30:b:54:ILE:HD11	1.94	0.50
38:k:8:PHE:HD2	38:k:84:VAL:HG13	1.77	0.50
43:p:81:LEU:HD23	43:p:81:LEU:H	1.77	0.50
43:p:111:ASP:HB2	53:z:19:LYS:HE2	1.94	0.50
52:y:5:SER:O	52:y:7:LYS:N	2.45	0.50
1:1:2536:G:C6	1:1:2537:U:C4	2.99	0.50
1:1:2636:C:O2'	8:C:45:TYR:OH	2.26	0.50
2:2:419:C:OP1	2:2:513:C:O2'	2.23	0.50
2:2:437:U:O2'	2:2:438:U:H5'	2.12	0.50
2:2:459:A:H2'	2:2:460:A:C8	2.47	0.50
2:2:684:U:C4	2:2:685:G:C5	3.00	0.50
2:2:1241:G:H2'	2:2:1242:G:H8	1.77	0.50
7:B:161:VAL:HG11	7:B:173:LEU:HD23	1.93	0.50
18:O:33:ARG:O	18:O:34:HIS:CG	2.65	0.50
22:S:5:ALA:HB3	22:S:54:ALA:HB2	1.94	0.50
40:m:46:GLU:O	40:m:61:THR:OG1	2.30	0.50
1:1:788:A:H1'	32:d:4:THR:HG21	1.93	0.49
1:1:1110:G:OP2	1:1:1110:G:C8	2.65	0.49
1:1:1268:A:H1'	1:1:2013:A:N6	2.27	0.49
1:1:1730:C:H1'	1:1:1731:G:OP2	2.11	0.49
1:1:2233:U:H2'	1:1:2234:G:C8	2.47	0.49
1:1:2269:G:H21	1:1:2270:A:H1'	1.77	0.49
1:1:2655:G:H5"	1:1:2656:U:H5'	1.94	0.49
2:2:376:G:H22	2:2:387:U:H3	1.60	0.49
2:2:377:G:H2'	2:2:378:G:C8	2.47	0.49
2:2:1340:A:H2'	2:2:1341:U:O4'	2.11	0.49
12:G:41:LYS:HD3	12:G:44:ILE:HD12	1.94	0.49
18:O:75:GLY:HA3	18:O:109:ALA:HB3	1.93	0.49
22:S:66:ILE:O	22:S:69:LEU:HD13	2.12	0.49
29:Z:11:SER:OG	29:Z:12:ALA:N	2.45	0.49
36:i:64:TYR:O	36:i:96:ARG:NH1	2.45	0.49
1:1:36:G:C6	1:1:37:C:C4	3.00	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:959:A:H2'	1:1:960:A:C8	2.47	0.49
1:1:1869:G:N1	1:1:1873:G:O6	2.46	0.49
1:1:2082:A:C2	1:1:2083:G:H1'	2.46	0.49
1:1:2334:U:C5	55:1:3695:HOH:O	2.54	0.49
2:2:663:A:H2	55:2:1867:HOH:O	1.93	0.49
2:2:997:U:H2'	2:2:998:C:C6	2.47	0.49
2:2:1213:A:N1	2:2:1215:G:H1'	2.27	0.49
21:R:64:VAL:HG23	21:R:65:ALA:N	2.27	0.49
36:i:28:ASP:O	36:i:29:THR:OG1	2.20	0.49
42:o:7:ARG:HD2	42:o:73:LEU:HD11	1.93	0.49
1:1:83:A:O2'	1:1:103:A:N6	2.45	0.49
1:1:132:G:H2'	1:1:133:U:C6	2.47	0.49
1:1:347:A:H2'	1:1:348:A:C8	2.48	0.49
1:1:1074:G:C2	1:1:1075:C:C4	2.99	0.49
1:1:1088:A:C4	55:1:3438:HOH:O	2.63	0.49
1:1:1380:G:OP2	1:1:1380:G:H8	1.95	0.49
1:1:1506:U:H2'	1:1:1507:C:C6	2.47	0.49
1:1:1915:U:H3'	1:1:1916:A:H8	1.76	0.49
1:1:2177:C:N4	1:1:2178:C:N4	2.60	0.49
2:2:49:U:O2'	2:2:50:A:H2'	2.12	0.49
2:2:490:C:O2'	2:2:491:G:H5'	2.12	0.49
2:2:1316:G:N1	2:2:1319:A:OP2	2.45	0.49
12:G:5:LEU:HG	12:G:9:VAL:HB	1.95	0.49
15:L:48:ARG:NH2	33:e:59:ALA:O	2.45	0.49
37:j:20:VAL:O	37:j:30:PHE:HB2	2.13	0.49
42:o:52:LEU:C	42:o:54:SER:H	2.20	0.49
44:q:34:THR:O	44:q:35:ARG:C	2.55	0.49
1:1:1299:G:N1	1:1:1640:A:OP2	2.40	0.49
1:1:2173:A:H2'	1:1:2174:C:C6	2.48	0.49
1:1:2246:G:H1'	1:1:2426:A:C2	2.47	0.49
1:1:2514:U:H2'	1:1:2515:C:H6	1.76	0.49
1:1:2557:G:H2'	1:1:2558:C:C6	2.47	0.49
1:1:2791:G:C2	1:1:2806:C:C2	3.01	0.49
1:1:2800:A:H3'	1:1:2801:G:H5'	1.95	0.49
1:1:2821:A:O3'	8:C:167:ASN:ND2	2.45	0.49
2:2:47:C:H1'	2:2:365:U:C4	2.47	0.49
2:2:553:A:C4	2:2:554:A:C8	3.00	0.49
2:2:939:G:O2'	2:2:1375:A:O2'	2.30	0.49
2:2:1139:G:C2	2:2:1143:G:O6	2.66	0.49
2:2:1173:U:O2'	2:2:1174:G:P	2.70	0.49
2:2:1229:A:H2'	2:2:1230:C:O4'	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1332:A:H2	45:r:107:THR:HG21	1.77	0.49
2:2:1358:U:O5'	2:2:1359:C:OP2	2.30	0.49
6:A:52:ALA:C	6:A:54:LYS:H	2.20	0.49
13:J:27:ARG:CB	55:J:303:HOH:O	2.59	0.49
35:h:112:ALA:HB1	35:h:199:VAL:HG23	1.93	0.49
36:i:53:GLN:NE2	36:i:201:GLU:HB2	2.27	0.49
44:q:89:LEU:O	44:q:91:GLY:N	2.45	0.49
1:1:219:A:H2'	1:1:220:G:O4'	2.13	0.49
1:1:477:A:N1	24:U:16:LYS:NZ	2.58	0.49
1:1:560:C:H2'	1:1:561:G:O4'	2.11	0.49
1:1:1295:C:C2	1:1:1296:G:C8	3.00	0.49
1:1:2619:C:H5"	8:C:157:LYS:HD3	1.95	0.49
2:2:477:C:H2'	2:2:478:A:C4	2.47	0.49
2:2:757:U:H2'	2:2:758:C:O4'	2.12	0.49
29:Z:36:GLU:O	29:Z:37:ARG:NH1	2.40	0.49
31:c:37:LYS:HB2	31:c:48:TYR:CE2	2.48	0.49
35:h:150:VAL:HG22	35:h:199:VAL:HG12	1.95	0.49
40:m:24:VAL:HG23	40:m:60:LEU:HD21	1.94	0.49
46:s:63:CYS:SG	46:s:64:ARG:N	2.85	0.49
1:1:676:A:C2	1:1:2070:A:O4'	2.65	0.49
1:1:859:G:N2	1:1:917:A:OP2	2.30	0.49
1:1:966:G:C6	1:1:967:U:C4	3.01	0.49
1:1:1790:C:O2'	7:B:207:ALA:HB2	2.13	0.49
1:1:2015:A:C6	30:b:2:VAL:HG13	2.47	0.49
2:2:558:G:OP2	2:2:559:A:O2'	2.27	0.49
2:2:1268:G:O2'	2:2:1269:A:H5'	2.13	0.49
9:D:47:LYS:O	9:D:83:VAL:HG12	2.13	0.49
10:E:69:ALA:HB3	10:E:82:TYR:H	1.77	0.49
21:R:62:GLU:O	21:R:97:LYS:N	2.41	0.49
30:b:32:THR:OG1	30:b:50:GLY:HA2	2.13	0.49
45:r:51:GLN:O	45:r:55:LEU:HG	2.13	0.49
51:x:41:PRO:HA	51:x:44:ILE:HD13	1.95	0.49
1:1:174:U:C2	1:1:175:G:C8	3.00	0.49
1:1:286:U:H2'	1:1:287:G:C8	2.47	0.49
1:1:428:A:C6	1:1:429:A:C6	3.01	0.49
1:1:1936:A:H1'	1:1:1940:U:C2	2.48	0.49
2:2:1060:U:H2'	2:2:1061:G:H8	1.77	0.49
2:2:1089:G:O6	2:2:1097:C:N4	2.46	0.49
3:3:29:A:H2'	3:3:30:C:O4'	2.13	0.49
11:F:162:ARG:HG2	11:F:166:GLU:HB3	1.95	0.49
39:l:49:LEU:HD13	39:l:123:LEU:HD23	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:v:24:ILE:O	49:v:41:THR:N	2.43	0.49
1:1:274:C:H2'	1:1:275:C:O4'	2.12	0.49
1:1:857:G:H2'	1:1:858:G:C1'	2.43	0.49
1:1:1550:C:H2'	1:1:1551:A:O4'	2.13	0.49
1:1:1702:G:N3	1:1:1703:G:C8	2.80	0.49
2:2:56:U:H2'	2:2:57:G:H8	1.77	0.49
2:2:283:U:C4	2:2:284:C:C4	3.01	0.49
2:2:1139:G:N2	2:2:1143:G:O6	2.45	0.49
2:2:1531:A:H2'	2:2:1532:U:O4'	2.12	0.49
7:B:131:MET:O	7:B:134:ILE:HG22	2.13	0.49
17:N:96:ARG:NH1	17:N:116:VAL:HG13	2.27	0.49
32:d:1:MET:SD	32:d:3:ARG:NH1	2.86	0.49
1:1:428:A:N6	1:1:429:A:C6	2.80	0.49
1:1:1022:G:C6	1:1:1141:U:C5	3.00	0.49
1:1:1517:G:C6	1:1:1518:C:C4	3.01	0.49
1:1:1876:A:C2	1:1:1877:A:C8	3.00	0.49
1:1:2484:G:H1'	16:M:123:LYS:HD2	1.94	0.49
1:1:2494:G:C2	1:1:2495:G:C8	3.01	0.49
2:2:106:C:H2'	2:2:107:G:O4'	2.12	0.49
2:2:1005:A:C2	2:2:1006:G:H1'	2.48	0.49
2:2:1515:G:H2'	2:2:1516:G:C8	2.48	0.49
3:3:46:A:C5	3:3:47:C:C5	3.01	0.49
10:E:111:ARG:NE	51:x:62:THR:OG1	2.46	0.49
17:N:100:CYS:SG	17:N:101:GLY:N	2.82	0.49
22:S:10:ALA:O	22:S:101:SER:N	2.44	0.49
24:U:12:VAL:HG21	24:U:17:ASP:O	2.13	0.49
30:b:24:VAL:HG22	30:b:26:SER:H	1.78	0.49
42:o:50:THR:OG1	42:o:64:GLN:OE1	2.31	0.49
49:v:43:LEU:HD21	49:v:72:TRP:CD2	2.47	0.49
1:1:689:A:H2'	1:1:690:G:O4'	2.12	0.49
1:1:1112:G:H2'	1:1:1113:U:H6	1.78	0.49
1:1:1527:G:N1	1:1:1544:A:OP2	2.37	0.49
1:1:1792:G:O2'	1:1:1830:C:OP1	2.24	0.49
2:2:21:G:H2'	2:2:22:G:H8	1.78	0.49
2:2:426:U:H2'	2:2:427:U:C6	2.48	0.49
13:J:43:GLU:OE2	13:J:43:GLU:N	2.46	0.49
39:l:30:MET:HE1	39:l:34:LYS:C	2.38	0.49
47:t:57:ARG:CZ	55:t:102:HOH:O	2.61	0.49
1:1:301:G:C2	1:1:302:C:C4	3.01	0.48
1:1:611:C:H2'	1:1:612:G:O4'	2.12	0.48
1:1:1086:A:H4'	1:1:1103:A:N1	2.27	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1114:C:O2	1:1:1115:G:C8	2.66	0.48
1:1:1827:U:OP2	7:B:220:ARG:HD2	2.14	0.48
1:1:2048:G:C4	1:1:2049:G:C8	3.01	0.48
1:1:2070:A:C4	1:1:2071:A:C8	3.00	0.48
2:2:491:G:H2'	2:2:492:C:C6	2.48	0.48
2:2:590:U:N3	2:2:650:G:C2	2.81	0.48
2:2:1181:G:H1'	2:2:1182:G:C8	2.48	0.48
2:2:1206:G:C3'	2:2:1207:G:H5'	2.43	0.48
3:3:66:A:OP2	3:3:108:A:N6	2.45	0.48
3:3:114:C:H1'	18:O:47:VAL:HG11	1.95	0.48
10:E:69:ALA:HB3	10:E:82:TYR:N	2.28	0.48
10:E:90:LEU:HD21	10:E:94:ARG:C	2.38	0.48
22:S:65:ASP:O	22:S:69:LEU:HD11	2.13	0.48
42:o:5:ARG:N	42:o:76:ILE:O	2.46	0.48
42:o:70:HIS:C	42:o:71:LEU:HD22	2.38	0.48
52:y:35:TYR:HA	52:y:38:ILE:HD12	1.94	0.48
1:1:134:G:C6	1:1:146:A:N6	2.81	0.48
1:1:428:A:C6	1:1:429:A:C5	3.01	0.48
1:1:1453:A:O2'	1:1:1454:C:OP2	2.27	0.48
1:1:1510:G:C4	1:1:1511:G:C8	3.00	0.48
1:1:1702:G:C2	1:1:1703:G:C8	3.01	0.48
1:1:1828:G:O2'	1:1:1829:A:O5'	2.24	0.48
1:1:1948:G:H21	2:2:1418:A:H2	1.60	0.48
55:1:3762:HOH:O	28:Y:59:GLU:CG	2.55	0.48
2:2:104:G:C2	2:2:105:G:N7	2.81	0.48
2:2:671:G:H2'	2:2:672:U:O4'	2.14	0.48
2:2:736:C:H2'	2:2:737:C:C6	2.47	0.48
2:2:966:G:C2	5:5:34:G:O4'	2.67	0.48
2:2:1202:U:O2'	46:s:68:ARG:HD3	2.13	0.48
16:M:40:ARG:HG2	16:M:93:VAL:HG21	1.93	0.48
29:Z:19:HIS:CD2	29:Z:50:VAL:HG12	2.48	0.48
38:k:61:LEU:HD21	38:k:63:ASN:HB2	1.94	0.48
44:q:101:LEU:HG	44:q:102:ASP:N	2.29	0.48
1:1:271:G:C6	1:1:367:G:C6	3.01	0.48
1:1:284:U:O2'	1:1:285:G:H8	1.97	0.48
1:1:356:G:C2	1:1:357:C:C2	3.01	0.48
1:1:819:A:N6	1:1:1189:A:H1'	2.28	0.48
1:1:895:U:O5'	1:1:895:U:H6	1.97	0.48
1:1:2082:A:N6	1:1:2237:G:O2'	2.46	0.48
1:1:2856:A:H2'	1:1:2857:G:O4'	2.13	0.48
2:2:120:A:C4	2:2:122:G:C5	3.01	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:246:A:C2	2:2:282:A:C5	3.01	0.48
2:2:300:A:C8	2:2:301:G:C8	3.02	0.48
2:2:416:G:H2'	2:2:417:G:H8	1.79	0.48
2:2:1230:C:O2'	2:2:1231:G:H5'	2.14	0.48
2:2:1291:U:C2	2:2:1292:G:C8	3.02	0.48
6:A:175:ILE:HG22	6:A:192:LEU:HD11	1.96	0.48
9:D:60:TRP:CZ2	9:D:67:ARG:HB3	2.48	0.48
9:D:148:ILE:HA	9:D:187:VAL:CG1	2.43	0.48
14:K:34:GLY:N	14:K:37:ASP:OD2	2.46	0.48
19:P:88:ARG:HE	19:P:113:LEU:HD21	1.78	0.48
33:e:24:LYS:HG2	33:e:25:HIS:H	1.78	0.48
34:f:37:GLN:O	34:f:38:GLY:C	2.55	0.48
1:1:9:G:O2'	1:1:2800:A:N6	2.46	0.48
1:1:52:A:C2	1:1:53:A:C5	3.00	0.48
1:1:587:C:C2	15:L:19:LEU:HD23	2.48	0.48
1:1:953:G:C2	1:1:954:G:C8	3.02	0.48
1:1:1091:G:C2	1:1:1092:C:C5	3.02	0.48
1:1:1109:C:H2'	1:1:1110:G:N9	2.29	0.48
1:1:1378:A:C4	1:1:1380:G:C8	3.01	0.48
1:1:2186:G:H2'	1:1:2187:U:O4'	2.14	0.48
1:1:2367:G:C2	1:1:2368:C:C5	3.01	0.48
1:1:2657:A:C2'	1:1:2658:C:H5'	2.43	0.48
1:1:2791:G:C2'	1:1:2792:A:O5'	2.61	0.48
2:2:27:G:C6	2:2:557:G:N1	2.82	0.48
2:2:336:A:H2'	2:2:337:G:O4'	2.13	0.48
2:2:1261:A:C5	2:2:1262:C:C6	3.01	0.48
3:3:32:U:C2	3:3:33:G:C8	3.01	0.48
14:K:25:LEU:O	14:K:26:GLY:C	2.57	0.48
1:1:2309:A:H2'	1:1:2310:C:O4'	2.14	0.48
1:1:2734:A:C2	1:1:2735:G:H1'	2.48	0.48
1:1:2804:U:H2'	1:1:2805:C:C6	2.49	0.48
2:2:204:G:N7	2:2:465:A:C2	2.82	0.48
2:2:278:G:N2	55:2:1730:HOH:O	2.42	0.48
2:2:620:C:H2'	2:2:621:A:O4'	2.13	0.48
2:2:873:A:HO2'	2:2:874:G:P	2.34	0.48
2:2:1456:A:H2'	2:2:1457:G:O4'	2.13	0.48
3:3:75:G:C1'	25:V:29:ILE:HD13	2.43	0.48
23:T:12:ARG:HG3	55:T:201:HOH:O	2.13	0.48
26:W:75:PHE:HE1	55:W:201:HOH:O	1.96	0.48
1:1:599:A:C6	1:1:659:G:C6	3.01	0.48
1:1:1501:G:C2	1:1:1502:A:C8	3.02	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2124:G:H2'	1:1:2125:G:O4'	2.13	0.48
1:1:2184:A:H2'	1:1:2185:U:H6	1.78	0.48
1:1:2259:U:N3	1:1:2260:C:C5	2.81	0.48
1:1:2377:A:O2'	18:O:117:PHE:O	2.30	0.48
1:1:2711:A:N6	1:1:2714:G:C5	2.82	0.48
1:1:2743:U:N3	1:1:2744:G:C8	2.81	0.48
2:2:624:C:H2'	2:2:625:U:O4'	2.14	0.48
2:2:674:G:H8	2:2:674:G:O5'	1.97	0.48
2:2:930:C:H2'	2:2:931:C:O4'	2.13	0.48
16:M:57:VAL:HG23	16:M:58:LYS:N	2.29	0.48
25:V:41:GLU:C	25:V:42:LEU:HD22	2.39	0.48
36:i:35:GLN:O	36:i:42:ALA:HB2	2.14	0.48
46:s:63:CYS:SG	46:s:78:LEU:HD23	2.54	0.48
1:1:381:G:OP1	27:X:17:ARG:NE	2.47	0.48
1:1:729:G:C4	7:B:206:LYS:HD2	2.49	0.48
1:1:926:G:H2'	1:1:927:A:C8	2.49	0.48
1:1:1153:C:H2'	1:1:1154:G:O4'	2.14	0.48
1:1:1329:U:H5"	1:1:1330:C:OP2	2.13	0.48
1:1:2632:A:H5"	55:1:4001:HOH:O	2.13	0.48
1:1:2744:G:C6	1:1:2761:A:N6	2.81	0.48
2:2:35:G:H21	44:q:114:SER:CB	2.26	0.48
2:2:311:C:H2'	2:2:312:C:H6	1.78	0.48
55:2:1893:HOH:O	49:v:28:VAL:HG11	2.12	0.48
7:B:129:LEU:N	7:B:129:LEU:HD23	2.29	0.48
18:O:30:ARG:HD2	18:O:102:ARG:HH21	1.77	0.48
18:O:69:ASP:OD1	18:O:70:ALA:N	2.46	0.48
49:v:11:VAL:HG11	49:v:52:CYS:HB3	1.95	0.48
1:1:35:G:C5	1:1:36:G:C8	3.01	0.48
1:1:221:A:C8	1:1:266:G:O6	2.67	0.48
1:1:532:A:H2'	1:1:532:A:N3	2.28	0.48
1:1:615:U:H5"	1:1:616:A:OP2	2.13	0.48
1:1:676:A:H62	1:1:802:A:H61	1.60	0.48
1:1:679:C:C2	1:1:799:G:N2	2.82	0.48
1:1:781:A:O2'	1:1:1788:C:O2	2.31	0.48
1:1:876:C:H2'	1:1:877:A:O4'	2.13	0.48
1:1:926:G:N2	1:1:927:A:C5	2.82	0.48
2:2:100:G:C5	2:2:101:A:C8	3.01	0.48
2:2:302:G:C4	2:2:303:A:C8	3.01	0.48
2:2:544:G:OP1	36:i:55:ARG:NH2	2.47	0.48
2:2:783:C:N4	2:2:800:G:N2	2.61	0.48
2:2:895:G:C6	2:2:896:C:C4	3.01	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:950:U:H2'	2:2:951:G:H8	1.79	0.48
3:3:30:C:C4	3:3:31:C:C6	3.02	0.48
5:5:12:G:C6	5:5:24:G:C6	3.01	0.48
10:E:36:ASN:OD1	10:E:37:MET:N	2.47	0.48
40:m:23:ALA:HB2	40:m:61:THR:HA	1.94	0.48
43:p:25:SER:OG	43:p:26:PHE:N	2.46	0.48
1:1:79:C:O2'	1:1:346:A:H1'	2.14	0.48
1:1:306:U:H2'	1:1:307:G:O4'	2.14	0.48
1:1:577:G:O2'	1:1:1254:A:OP1	2.31	0.48
1:1:704:G:O2'	1:1:726:G:N2	2.34	0.48
1:1:1093:G:N1	1:1:1099:G:O6	2.47	0.48
1:1:2535:G:C2	1:1:2536:G:C8	3.01	0.48
1:1:2680:U:H2'	1:1:2681:C:C6	2.49	0.48
1:1:2697:G:C6	1:1:2711:A:N1	2.81	0.48
2:2:45:G:H5"	2:2:307:C:H1'	1.96	0.48
2:2:568:G:C2	2:2:569:C:C5	3.02	0.48
2:2:749:A:O2'	2:2:750:C:H5'	2.14	0.48
2:2:901:A:O5'	2:2:901:A:H8	1.97	0.48
2:2:1031:C:H4'	2:2:1033:G:H21	1.77	0.48
2:2:1118:U:HO2'	2:2:1119:C:H5	1.60	0.48
2:2:1356:G:C2	2:2:1367:C:O2	2.67	0.48
2:2:1522:U:N3	2:2:1523:G:N7	2.62	0.48
3:3:37:C:H2'	3:3:38:C:O4'	2.12	0.48
37:j:149:PRO:HA	37:j:152:VAL:HG12	1.96	0.48
45:r:15:VAL:HG22	45:r:40:GLU:HB2	1.96	0.48
47:t:30:LEU:O	47:t:34:GLN:NE2	2.47	0.48
1:1:401:A:H2'	1:1:402:A:C8	2.49	0.48
1:1:432:A:C6	1:1:433:C:C4	3.02	0.48
1:1:1500:G:C4	1:1:1501:G:C8	3.01	0.48
1:1:1553:A:N7	1:1:1555:G:C5	2.82	0.48
1:1:1707:G:C8	1:1:1756:G:C5	3.01	0.48
1:1:1907:G:C6	1:1:1908:C:C4	3.02	0.48
2:2:453:G:C2	2:2:454:G:H1'	2.48	0.48
2:2:586:C:OP1	49:v:35:LYS:NZ	2.43	0.48
2:2:985:C:C2	2:2:986:U:C5	3.01	0.48
2:2:1009:U:C2	2:2:1021:A:C2	3.02	0.48
2:2:1332:A:C2	45:r:107:THR:HG21	2.48	0.48
2:2:1372:U:H2'	2:2:1373:G:O4'	2.14	0.48
2:2:1425:U:H2'	2:2:1426:G:H8	1.79	0.48
5:5:71:C:H2'	5:5:72:G:O4'	2.14	0.48
17:N:25:ALA:O	17:N:28:LEU:HB3	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:e:53:ASP:OD1	33:e:53:ASP:N	2.41	0.48
42:o:12:ALA:O	42:o:70:HIS:N	2.42	0.48
43:p:92:ARG:CG	55:p:301:HOH:O	2.57	0.48
1:1:565:C:OP2	21:R:80:ARG:N	2.46	0.47
1:1:636:G:H3'	15:L:128:THR:HG21	1.95	0.47
1:1:1176:U:H2'	1:1:1177:G:C4	2.49	0.47
1:1:1342:A:C6	1:1:1397:U:C5	3.02	0.47
1:1:1415:U:O2'	1:1:1416:G:H4'	2.14	0.47
1:1:1480:C:H2'	1:1:1481:U:O4'	2.13	0.47
1:1:2636:C:HO2'	8:C:45:TYR:HH	1.61	0.47
1:1:2881:U:H2'	1:1:2882:A:H5'	1.96	0.47
2:2:292:G:N2	2:2:609:A:C2	2.82	0.47
2:2:331:G:OP1	2:2:332:G:H8	1.97	0.47
2:2:412:A:N3	2:2:414:A:H1'	2.29	0.47
2:2:655:A:H2'	2:2:656:G:O4'	2.14	0.47
2:2:904:U:C2	2:2:905:U:C5	3.02	0.47
2:2:1399:C:O4'	2:2:1401:G:C8	2.67	0.47
14:K:71:ARG:HH12	14:K:77:ILE:HD11	1.79	0.47
35:h:156:LEU:HD21	35:h:163:ARG:HB3	1.96	0.47
37:j:101:GLY:N	37:j:121:ASN:OD1	2.47	0.47
41:n:62:LEU:HD21	41:n:82:ILE:HD11	1.95	0.47
43:p:21:HIS:HE1	55:p:309:HOH:O	1.96	0.47
1:1:329:G:O6	24:U:16:LYS:N	2.47	0.47
1:1:847:U:O2	1:1:847:U:H2'	2.14	0.47
1:1:924:G:H2'	1:1:925:A:H8	1.79	0.47
1:1:1112:G:H2'	1:1:1113:U:C6	2.49	0.47
1:1:1890:A:C5	1:1:1891:G:C8	3.02	0.47
1:1:2656:U:H2'	1:1:2656:U:O2	2.13	0.47
2:2:608:A:C6	2:2:609:A:C6	3.02	0.47
2:2:1060:U:H3	2:2:1197:A:H61	1.60	0.47
2:2:1511:G:H2'	2:2:1512:U:O4'	2.14	0.47
20:Q:105:PHE:CE2	20:Q:109:VAL:HG21	2.50	0.47
23:T:32:LEU:HD23	23:T:32:LEU:H	1.79	0.47
28:Y:45:GLN:OE1	55:Y:101:HOH:O	2.20	0.47
33:e:6:VAL:O	33:e:8:GLY:N	2.47	0.47
43:p:85:VAL:HB	43:p:111:ASP:CG	2.39	0.47
1:1:263:G:C2'	1:1:264:C:O5'	2.62	0.47
1:1:269:C:C2	1:1:270:A:C8	3.02	0.47
1:1:665:U:C2'	1:1:666:A:H5'	2.45	0.47
1:1:1035:U:H2'	1:1:1036:G:H8	1.79	0.47
1:1:1751:U:H2'	1:1:1752:C:C6	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1803:A:H2	1:1:1823:G:H1'	1.80	0.47
1:1:2086:U:H2'	1:1:2087:G:C8	2.49	0.47
1:1:2493:U:C4	1:1:2494:G:C8	3.02	0.47
2:2:181:A:N6	2:2:194:C:H2'	2.29	0.47
2:2:782:A:C6	2:2:801:U:C2	3.03	0.47
2:2:894:G:C2	2:2:895:G:C8	3.02	0.47
3:3:31:C:O2	3:3:32:U:C5	2.67	0.47
7:B:267:VAL:O	7:B:268:ARG:NE	2.46	0.47
8:C:34:VAL:HG23	8:C:93:GLY:H	1.79	0.47
13:J:116:ARG:O	13:J:120:ARG:HG3	2.14	0.47
30:b:24:VAL:HG13	30:b:25:THR:N	2.29	0.47
1:1:132:G:C2	1:1:148:U:C2	3.02	0.47
1:1:336:C:O2'	1:1:337:C:H5'	2.13	0.47
1:1:1287:A:H3'	1:1:1288:G:N2	2.29	0.47
1:1:1659:G:C6	1:1:1660:G:C5	3.02	0.47
1:1:1805:A:C6	1:1:1813:G:C6	3.03	0.47
1:1:2626:C:O2'	1:1:2627:G:H5'	2.14	0.47
2:2:587:G:C2	2:2:755:G:O6	2.67	0.47
2:2:1320:C:N4	51:x:36:ARG:HA	2.29	0.47
2:2:1350:A:H2'	2:2:1351:U:O4'	2.14	0.47
9:D:148:ILE:HD13	9:D:187:VAL:CG1	2.44	0.47
10:E:60:SER:OG	10:E:61:GLY:N	2.47	0.47
11:F:70:LEU:O	11:F:74:MET:HG2	2.13	0.47
17:N:90:ARG:HH22	17:N:116:VAL:HG11	1.79	0.47
34:f:25:VAL:HB	34:f:35:GLN:HB2	1.95	0.47
35:h:130:ARG:NH2	55:h:303:HOH:O	2.47	0.47
50:w:17:VAL:HG22	50:w:18:GLN:H	1.80	0.47
52:y:53:MET:HE2	52:y:57:VAL:HG11	1.96	0.47
52:y:78:LEU:O	52:y:82:ILE:HG12	2.15	0.47
1:1:116:C:H2'	1:1:117:G:O4'	2.15	0.47
1:1:362:A:C4	1:1:363:G:C8	3.02	0.47
1:1:575:A:C2	1:1:576:U:C6	3.03	0.47
1:1:677:A:C6	1:1:678:C:C5	3.03	0.47
1:1:830:G:O4'	1:1:2448:A:C2	2.68	0.47
1:1:1183:U:H2'	1:1:1184:U:C6	2.50	0.47
1:1:1508:A:C2'	1:1:1509:A:O4'	2.63	0.47
1:1:1516:G:N2	1:1:1517:G:H1'	2.29	0.47
1:1:1722:A:C4	1:1:1723:G:C8	3.02	0.47
1:1:2582:G:O2'	1:1:2583:G:H5'	2.14	0.47
2:2:71:A:C2	2:2:72:A:N9	2.82	0.47
2:2:204:G:N3	2:2:205:A:C8	2.82	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:235:C:O2'	2:2:236:A:H5'	2.15	0.47
2:2:423:G:N2	2:2:424:G:C8	2.82	0.47
2:2:1117:A:OP1	41:n:10:ARG:CZ	2.63	0.47
2:2:1121:U:C2	2:2:1122:U:C5	3.02	0.47
2:2:1180:A:OP1	41:n:104:THR:HG22	2.15	0.47
2:2:1185:G:H2'	2:2:1186:G:C8	2.49	0.47
13:J:80:HIS:C	13:J:82:GLY:H	2.21	0.47
21:R:91:GLN:CG	55:R:301:HOH:O	2.60	0.47
35:h:156:LEU:HD23	35:h:156:LEU:H	1.78	0.47
47:t:53:ARG:HA	47:t:56:LEU:HD12	1.96	0.47
51:x:26:ASP:O	51:x:28:LYS:N	2.47	0.47
1:1:576:U:H2'	1:1:577:G:C8	2.50	0.47
1:1:1419:A:H2'	1:1:1421:G:N7	2.29	0.47
1:1:1876:A:C4	1:1:1877:A:C8	3.03	0.47
1:1:2090:A:C6	1:1:2230:G:O6	2.68	0.47
1:1:2298:A:H2'	1:1:2299:U:O4'	2.14	0.47
2:2:102:G:H2'	2:2:103:U:C6	2.49	0.47
2:2:150:U:O4	2:2:171:A:N7	2.47	0.47
2:2:417:G:H2'	2:2:418:C:O4'	2.14	0.47
2:2:719:C:C2	50:w:38:ILE:HG22	2.49	0.47
2:2:1017:U:H2'	2:2:1018:G:H8	1.79	0.47
2:2:1109:C:N4	2:2:1110:A:C2	2.82	0.47
9:D:131:THR:HG22	9:D:160:ALA:O	2.15	0.47
12:G:1:MET:SD	12:G:1:MET:N	2.70	0.47
19:P:59:THR:HG22	19:P:72:VAL:HG12	1.96	0.47
36:i:48:SER:O	36:i:52:VAL:HG23	2.15	0.47
37:j:87:VAL:HG12	37:j:92:ARG:HA	1.96	0.47
38:k:61:LEU:C	38:k:61:LEU:HD23	2.40	0.47
1:1:48:G:H22	1:1:177:G:N2	2.12	0.47
1:1:278:A:N6	1:1:362:A:C8	2.82	0.47
1:1:374:A:H1'	1:1:401:A:N6	2.30	0.47
1:1:630:G:N2	1:1:633:A:OP2	2.37	0.47
1:1:687:C:H2'	1:1:688:U:O4'	2.14	0.47
1:1:1106:G:N3	1:1:1107:G:C8	2.83	0.47
1:1:1298:C:H2'	1:1:1299:G:O4'	2.14	0.47
1:1:1399:C:O2'	1:1:1400:U:H5'	2.14	0.47
1:1:1705:A:O2'	1:1:1706:C:O5'	2.30	0.47
1:1:1748:C:C2	1:1:1749:A:C8	3.03	0.47
1:1:2060:A:O2'	1:1:2061:G:OP2	2.32	0.47
1:1:2396:G:H2'	1:1:2397:G:H8	1.79	0.47
1:1:2462:C:O2'	1:1:2463:C:H5'	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2838:G:C5	1:1:2839:G:C8	3.03	0.47
2:2:154:U:H5'	2:2:155:A:OP2	2.15	0.47
2:2:448:A:H62	2:2:486:U:H3	1.62	0.47
2:2:567:G:N2	2:2:568:G:H1'	2.29	0.47
2:2:580:C:H2'	2:2:581:G:O4'	2.15	0.47
2:2:767:A:H2'	2:2:768:A:C1'	2.45	0.47
2:2:955:U:H2'	2:2:956:U:C6	2.50	0.47
2:2:1202:U:C2	2:2:1203:C:C6	3.03	0.47
2:2:1242:G:C4	2:2:1243:C:C5	3.03	0.47
2:2:1420:U:H2'	2:2:1421:G:C8	2.50	0.47
3:3:31:C:O2	3:3:31:C:H2'	2.15	0.47
3:3:41:G:N7	55:3:303:HOH:O	2.41	0.47
10:E:107:VAL:N	10:E:108:PRO:CD	2.78	0.47
10:E:146:ASP:O	10:E:147:ARG:NH1	2.47	0.47
12:G:31:VAL:N	12:G:32:PRO:CD	2.77	0.47
18:O:13:ARG:CB	55:O:202:HOH:O	2.60	0.47
28:Y:7:ARG:O	28:Y:7:ARG:HG2	2.15	0.47
36:i:88:ASN:O	36:i:92:LEU:HG	2.13	0.47
45:r:82:LEU:HD21	51:x:68:HIS:CE1	2.50	0.47
48:u:40:ASN:ND2	48:u:42:ILE:O	2.48	0.47
51:x:26:ASP:O	51:x:27:LYS:HG2	2.15	0.47
1:1:487:C:O2	22:S:53:SER:OG	2.32	0.47
1:1:816:C:N4	1:1:1192:G:C6	2.83	0.47
1:1:1428:C:H2'	1:1:1569:A:OP2	2.15	0.47
1:1:1537:G:C5'	55:1:3467:HOH:O	2.60	0.47
1:1:1790:C:O3'	1:1:1791:A:H8	1.98	0.47
1:1:2260:C:O2'	1:1:2261:C:H5'	2.15	0.47
2:2:191:G:H2'	2:2:192:A:C8	2.50	0.47
2:2:507:C:OP2	2:2:508:U:O2'	2.24	0.47
2:2:1031:C:OP2	2:2:1032:G:N2	2.48	0.47
8:C:70:LYS:O	8:C:71:ALA:HB3	2.15	0.47
10:E:107:VAL:HG12	10:E:108:PRO:HD3	1.97	0.47
27:X:11:PRO:HB3	27:X:29:LEU:HD12	1.97	0.47
37:j:92:ARG:HG3	55:j:202:HOH:O	2.15	0.47
1:1:631:A:OP1	33:e:46:LYS:NZ	2.42	0.47
1:1:1103:A:H2'	1:1:1103:A:N3	2.30	0.47
1:1:1664:A:H2	14:K:1:MET:SD	2.38	0.47
1:1:1752:C:O2'	1:1:1753:G:H5'	2.15	0.47
1:1:1990:C:H2'	1:1:1991:U:O4'	2.15	0.47
1:1:2295:C:O2'	1:1:2296:U:H5'	2.15	0.47
1:1:2711:A:C8	1:1:2714:G:O4'	2.68	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:359:G:C4	2:2:360:G:C8	3.03	0.47
2:2:503:C:H2'	2:2:504:C:C6	2.49	0.47
2:2:946:A:H2'	2:2:947:G:H8	1.79	0.47
2:2:1220:G:H2'	2:2:1221:G:O4'	2.15	0.47
7:B:41:GLY:O	7:B:49:THR:N	2.46	0.47
10:E:16:MET:O	10:E:21:TYR:HB3	2.15	0.47
1:1:236:C:H2'	1:1:237:C:H6	1.80	0.47
1:1:744:U:H2'	1:1:745:G:O4'	2.15	0.47
1:1:1113:U:C2	1:1:1114:C:C6	3.02	0.47
1:1:1122:G:C2	1:1:1123:C:C6	3.03	0.47
1:1:1346:G:N2	1:1:1347:A:H1'	2.30	0.47
1:1:1547:C:H2'	1:1:1548:A:C8	2.50	0.47
1:1:2071:A:H61	1:1:2438:U:H3	1.63	0.47
1:1:2398:U:O2'	1:1:2399:G:H5'	2.15	0.47
1:1:2463:C:C2	1:1:2464:G:C8	3.03	0.47
2:2:363:A:H2'	2:2:364:A:N9	2.30	0.47
2:2:436:C:H2'	2:2:437:U:O4'	2.14	0.47
2:2:745:G:C2	2:2:746:A:C8	3.03	0.47
2:2:1249:C:O2'	41:n:69:GLY:O	2.25	0.47
5:5:17(A):U:O2'	5:5:18:G:OP1	2.31	0.47
8:C:33:ARG:NH1	8:C:74:GLU:O	2.42	0.47
41:n:62:LEU:HD23	41:n:64:ILE:HD11	1.96	0.47
51:x:77:ARG:O	51:x:78:THR:C	2.58	0.47
1:1:49:A:OP1	1:1:50:U:C6	2.68	0.46
1:1:751:A:N6	1:1:789:A:N7	2.62	0.46
1:1:1024:G:C6	1:1:1025:G:C6	3.03	0.46
1:1:1794:A:C6	1:1:1826:G:C6	3.03	0.46
1:1:2066:C:C2	1:1:2067:G:C8	3.03	0.46
1:1:2368:C:H2'	1:1:2369:A:H8	1.80	0.46
2:2:883:C:O2'	2:2:884:U:H5'	2.15	0.46
2:2:1355:G:C2	2:2:1368:A:N3	2.83	0.46
5:5:14:A:C4	5:5:22:G:N2	2.83	0.46
9:D:159:LEU:HA	9:D:162:ARG:HE	1.80	0.46
14:K:88:ASN:HB3	14:K:91:SER:O	2.15	0.46
23:T:38:ALA:O	23:T:81:LYS:NZ	2.48	0.46
33:e:13:PHE:HB2	33:e:61:LEU:HD11	1.97	0.46
37:j:110:MET:CG	37:j:114:LEU:HD23	2.45	0.46
44:q:23:LEU:O	44:q:24:GLU:C	2.58	0.46
45:r:15:VAL:HG13	45:r:40:GLU:HB3	1.98	0.46
47:t:74:VAL:HG21	49:v:82:VAL:HG23	1.97	0.46
1:1:85:G:C5'	24:U:27:VAL:HG23	2.45	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:364:C:H2'	1:1:365:U:O4'	2.15	0.46
1:1:934:U:C2	1:1:935:C:C6	3.03	0.46
1:1:1592:C:H2'	1:1:1593:A:C8	2.50	0.46
1:1:1664:A:H3'	1:1:1665:A:C8	2.49	0.46
1:1:1791:A:C2	1:1:1829:A:H4'	2.50	0.46
1:1:1941:C:H2'	1:1:1942:C:O4'	2.15	0.46
1:1:2011:U:H2'	1:1:2012:G:O4'	2.16	0.46
1:1:2227:A:H5'	1:1:2228:G:OP2	2.15	0.46
2:2:113:G:H1'	2:2:354:G:H5'	1.98	0.46
2:2:331:G:H4'	55:2:1851:HOH:O	2.16	0.46
2:2:1213:A:C4	2:2:1215:G:C8	3.03	0.46
2:2:1419:G:C5	2:2:1482:G:C2	3.03	0.46
9:D:48:THR:C	9:D:50:ALA:H	2.24	0.46
9:D:83:VAL:O	9:D:84:THR:C	2.59	0.46
17:N:8:ARG:O	17:N:10:LEU:N	2.48	0.46
23:T:7:LEU:HD22	23:T:46:ALA:HB2	1.97	0.46
36:i:187:ARG:NH2	36:i:194:ILE:O	2.47	0.46
42:o:10:LEU:HD23	42:o:10:LEU:H	1.80	0.46
45:r:49:GLU:OE2	45:r:53:ASP:N	2.48	0.46
46:s:35:ALA:O	46:s:40:ARG:NH1	2.48	0.46
1:1:202:U:O2'	1:1:203:A:H5'	2.15	0.46
1:1:402:A:H2'	1:1:403:U:O4'	2.15	0.46
1:1:827:U:O2	1:1:2246:G:O2'	2.29	0.46
1:1:1200:C:N3	1:1:1201:U:C5	2.83	0.46
1:1:1210:G:C2	1:1:1237:A:C6	3.03	0.46
1:1:1283:G:H22	1:1:1286:A:P	2.38	0.46
1:1:1879:C:H2'	1:1:1880:U:O4'	2.15	0.46
1:1:1932:A:C4	1:1:1933:G:C8	3.03	0.46
1:1:2160:C:H1'	55:1:3477:HOH:O	2.08	0.46
1:1:2312:U:H2'	10:E:36:ASN:HD21	1.80	0.46
1:1:2744:G:C2	1:1:2745:C:C5	3.03	0.46
1:1:2859:G:H2'	1:1:2860:A:C8	2.50	0.46
55:1:3639:HOH:O	27:X:13:THR:CG2	2.64	0.46
2:2:22:G:N2	2:2:23:C:C2	2.83	0.46
2:2:236:A:H2'	2:2:237:G:H8	1.80	0.46
2:2:253:A:N6	2:2:274:A:N1	2.63	0.46
2:2:613:C:OP1	36:i:80:ARG:HB2	2.15	0.46
2:2:621:A:N6	2:2:622:A:N6	2.63	0.46
2:2:646:G:C2	2:2:647:C:C6	3.03	0.46
2:2:751:U:H2'	2:2:752:G:O4'	2.15	0.46
2:2:1047:G:H2'	2:2:1048:G:C8	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1204:A:H2'	2:2:1205:U:C6	2.50	0.46
6:A:64:VAL:HG13	6:A:64:VAL:O	2.15	0.46
7:B:120:ASP:N	7:B:120:ASP:OD1	2.47	0.46
9:D:15:SER:N	9:D:197:GLU:OE1	2.36	0.46
11:F:88:LEU:HD13	11:F:93:TYR:HB3	1.96	0.46
16:M:17:ASN:HB2	16:M:95:LEU:HD22	1.98	0.46
42:o:10:LEU:HD21	42:o:72:ARG:HB2	1.97	0.46
1:1:303:G:C2	1:1:315:G:C2	3.03	0.46
1:1:772:C:O2'	1:1:773:U:H5'	2.15	0.46
1:1:785:G:O2'	1:1:1779:U:H5"	2.15	0.46
1:1:815:C:O2'	1:1:816:C:H5'	2.15	0.46
1:1:983:A:H2'	1:1:983:A:N3	2.29	0.46
1:1:1254:A:HO2'	1:1:1256:G:C1'	2.29	0.46
55:1:3779:HOH:O	31:c:20:TYR:CD1	2.56	0.46
2:2:300:A:N7	2:2:301:G:C8	2.84	0.46
2:2:918:A:H2'	2:2:919:A:O4'	2.15	0.46
2:2:1391:U:H2'	2:2:1392:G:H8	1.81	0.46
2:2:1516:G:C2	2:2:1518:A:H5"	2.50	0.46
5:5:3:G:O2'	5:5:4:C:P	2.74	0.46
6:A:30:LEU:HD11	6:A:182:ALA:HB2	1.97	0.46
11:F:121:THR:HG23	11:F:133:LYS:HB2	1.96	0.46
24:U:38:ILE:HG13	24:U:39:ASN:H	1.81	0.46
27:X:21:LEU:HD22	27:X:21:LEU:N	2.30	0.46
40:m:28:SER:OG	40:m:58:LEU:N	2.49	0.46
51:x:27:LYS:O	51:x:28:LYS:HG2	2.15	0.46
1:1:34:U:C5'	55:1:4153:HOH:O	2.63	0.46
1:1:948:C:H2'	1:1:949:G:H8	1.81	0.46
1:1:1297:C:C2	1:1:1298:C:C5	3.04	0.46
1:1:1817:G:P	7:B:155:ARG:HH22	2.39	0.46
1:1:2327:A:O2'	1:1:2328:A:H5'	2.16	0.46
1:1:2335:A:N7	1:1:2337:G:C5	2.84	0.46
1:1:2595:G:N2	1:1:2598:A:OP2	2.37	0.46
2:2:1041:G:H2'	2:2:1042:A:C8	2.50	0.46
2:2:1170:A:H2'	2:2:1171:A:O4'	2.16	0.46
2:2:1244:G:H2'	2:2:1245:C:C6	2.51	0.46
2:2:1366:C:H2'	2:2:1367:C:O4'	2.16	0.46
3:3:85:G:H2'	3:3:86:G:O4'	2.16	0.46
36:i:47:LEU:HD11	36:i:51:GLY:HA3	1.97	0.46
45:r:3:ILE:O	45:r:4:ALA:HB3	2.14	0.46
1:1:77:G:C4	1:1:110:G:N2	2.83	0.46
1:1:175:G:C2	1:1:176:A:C5	3.04	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1062:G:N7	1:1:1088:A:H2'	2.31	0.46
1:1:1289:C:O2	1:1:1289:C:H2'	2.15	0.46
1:1:1387:A:H5'	1:1:1469:A:H1'	1.97	0.46
1:1:1417:C:OP2	55:1:3401:HOH:O	2.21	0.46
1:1:1722:A:C2	1:1:1723:G:C8	3.03	0.46
1:1:2783:U:C2	1:1:2784:U:C5	3.03	0.46
1:1:2838:G:O2'	17:N:45:ARG:NE	2.49	0.46
2:2:348:G:N3	2:2:349:A:C8	2.84	0.46
2:2:476:U:O2'	2:2:477:C:H5'	2.16	0.46
2:2:873:A:O2'	2:2:874:G:P	2.74	0.46
2:2:981:U:OP2	2:2:982:U:O2'	2.29	0.46
2:2:1073:U:H5"	55:2:1887:HOH:O	2.16	0.46
2:2:1344:C:O2'	2:2:1345:U:H5'	2.15	0.46
10:E:134:GLN:O	10:E:140:ILE:HD13	2.16	0.46
14:K:19:VAL:HG21	14:K:41:ILE:HD12	1.98	0.46
16:M:13:HIS:O	16:M:14:LYS:HB3	2.16	0.46
20:Q:89:ILE:HG12	20:Q:94:LEU:HD13	1.97	0.46
40:m:86:LYS:HG2	40:m:124:ILE:HD13	1.97	0.46
40:m:94:VAL:HG21	40:m:100:ILE:O	2.16	0.46
47:t:16:ARG:NH1	47:t:20:ASP:OD2	2.49	0.46
47:t:84:LEU:HD23	47:t:86:LEU:HD21	1.97	0.46
48:u:5:ARG:HH12	48:u:28:ARG:HA	1.80	0.46
49:v:28:VAL:HG22	49:v:29:LYS:H	1.80	0.46
53:z:41:THR:HG21	55:z:105:HOH:O	2.14	0.46
1:1:76:C:H2'	1:1:77:G:H8	1.81	0.46
1:1:134:G:C6	1:1:135:U:C4	3.04	0.46
1:1:572:A:H3'	1:1:573:U:O4'	2.16	0.46
1:1:934:U:C4	1:1:935:C:C5	3.04	0.46
1:1:1387:A:C6	1:1:1401:G:N1	2.84	0.46
1:1:1735:A:H2'	1:1:1736:U:C6	2.51	0.46
1:1:1840:G:C6	1:1:1841:U:C4	3.04	0.46
1:1:2244:U:N3	1:1:2245:U:C2	2.84	0.46
1:1:2255:G:C2	1:1:2256:G:H1'	2.51	0.46
1:1:2366:A:C2	1:1:2367:G:H1'	2.50	0.46
1:1:2736:A:H2'	1:1:2737:G:C8	2.51	0.46
2:2:246:A:C2	2:2:282:A:C4	3.04	0.46
2:2:272:C:O2'	2:2:273:U:H5'	2.16	0.46
2:2:451:A:N7	2:2:481:G:C2	2.84	0.46
2:2:514:C:C2	2:2:515:G:C8	3.03	0.46
2:2:545:C:O2'	2:2:549:C:H5"	2.16	0.46
2:2:995:C:H2'	2:2:996:A:H8	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1113:C:N4	2:2:1188:A:H61	2.14	0.46
14:K:24:VAL:O	14:K:25:LEU:C	2.58	0.46
17:N:97:ILE:CG1	17:N:113:ILE:HG22	2.45	0.46
23:T:30:ILE:HD11	23:T:87:LEU:HD11	1.97	0.46
27:X:6:VAL:HG13	27:X:7:THR:CG2	2.40	0.46
38:k:53:LYS:CE	55:k:202:HOH:O	2.62	0.46
40:m:29:SER:OG	40:m:30:LYS:N	2.48	0.46
48:u:79:ASN:O	48:u:80:LYS:C	2.58	0.46
1:1:198:C:C2'	1:1:199:A:H5'	2.46	0.46
1:1:635:C:H2'	1:1:636:G:O4'	2.16	0.46
1:1:1000:A:OP2	1:1:1154:G:N1	2.34	0.46
1:1:1359:A:OP2	1:1:1371:G:N1	2.43	0.46
1:1:1504:A:N1	1:1:1505:A:C5	2.84	0.46
1:1:1720:U:H2'	1:1:1721:G:O4'	2.16	0.46
1:1:1944:U:O4'	1:1:1955:U:O4'	2.34	0.46
1:1:1951:U:C2	1:1:1953:A:OP2	2.69	0.46
1:1:2520:C:O2'	1:1:2521:C:H5'	2.16	0.46
2:2:39:G:H2'	2:2:40:C:O4'	2.15	0.46
2:2:65:A:C5	2:2:381:C:C5	3.04	0.46
2:2:683:G:C2	2:2:684:U:C6	3.03	0.46
2:2:712:A:H3'	2:2:713:G:C8	2.51	0.46
2:2:1190:G:OP1	35:h:4:VAL:HG12	2.16	0.46
9:D:105:LEU:HD23	9:D:108:ILE:HD11	1.97	0.46
28:Y:31:GLN:HB3	28:Y:37:LEU:HB2	1.97	0.46
31:c:36:LYS:HG3	31:c:47:ILE:HG22	1.98	0.46
33:e:6:VAL:HG23	33:e:60:CYS:O	2.16	0.46
41:n:80:HIS:CE1	41:n:105:ARG:HA	2.51	0.46
49:v:10:ARG:O	49:v:23:ALA:N	2.49	0.46
49:v:80:LYS:HG3	49:v:81:ALA:H	1.81	0.46
1:1:229:C:C5	1:1:230:G:C8	3.04	0.46
1:1:386:G:O2'	1:1:387:U:OP1	2.24	0.46
1:1:639:U:H2'	1:1:640:C:C6	2.51	0.46
1:1:1195:G:C2	1:1:1196:C:C5	3.04	0.46
1:1:1202:G:O2'	1:1:1203:U:H5'	2.16	0.46
1:1:1507:C:H2'	1:1:1508:A:O4'	2.15	0.46
1:1:1917:U:C4	1:1:1918:A:C6	3.04	0.46
1:1:2050:C:H2'	1:1:2051:A:O4'	2.15	0.46
1:1:2493:U:C4	1:1:2494:G:N7	2.83	0.46
1:1:2514:U:H2'	1:1:2515:C:C5	2.51	0.46
1:1:2734:A:C5	1:1:2735:G:C8	3.04	0.46
2:2:347:G:C2	2:2:348:G:C5	3.04	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:672:U:H2'	2:2:673:A:H8	1.80	0.46
2:2:949:A:OP1	45:r:100:ARG:HB3	2.16	0.46
2:2:986:U:H2'	2:2:987:G:O4'	2.16	0.46
3:3:42:C:N3	10:E:89:THR:HB	2.31	0.46
6:A:64:VAL:HG12	55:A:301:HOH:O	2.16	0.46
7:B:119:VAL:HG22	7:B:130:PRO:HG2	1.97	0.46
26:W:19:VAL:HG12	26:W:34:VAL:HG22	1.98	0.46
36:i:35:GLN:O	36:i:35:GLN:HG2	2.16	0.46
37:j:104:ILE:HA	37:j:122:VAL:O	2.15	0.46
39:l:66:GLU:O	39:l:137:ARG:NH1	2.49	0.46
1:1:355:U:H2'	1:1:356:G:H8	1.81	0.46
1:1:443:A:H1'	1:1:1201:U:O4'	2.16	0.46
1:1:781:A:C8	7:B:217:PRO:HG2	2.51	0.46
1:1:820:A:OP2	1:1:973:A:N6	2.36	0.46
1:1:1426:G:C8	1:1:1427:A:C8	3.04	0.46
1:1:1823:G:C4	1:1:1824:G:C8	3.04	0.46
1:1:2140:G:C2	1:1:2141:G:C8	3.03	0.46
1:1:2460:U:O2	1:1:2493:U:C2	2.69	0.46
1:1:2638:G:H1'	1:1:2778:A:H61	1.80	0.46
2:2:142:G:H2'	2:2:143:A:O4'	2.16	0.46
2:2:413:G:O2'	2:2:428:G:N2	2.49	0.46
2:2:663:A:H2'	2:2:664:G:O4'	2.16	0.46
2:2:1013:G:N2	2:2:1017:U:C4	2.84	0.46
2:2:1113:C:H42	2:2:1187:G:H1	1.64	0.46
2:2:1210:C:H2'	2:2:1211:U:O4'	2.15	0.46
2:2:1306:A:C2	2:2:1332:A:C5	3.04	0.46
2:2:1492:A:H5'	2:2:1493:A:OP2	2.16	0.46
2:2:1530:G:H2'	2:2:1531:A:C8	2.51	0.46
3:3:48:U:P	18:O:30:ARG:HH22	2.39	0.46
16:M:66:ARG:NH1	16:M:104:GLU:OE2	2.46	0.46
18:O:26:LEU:HD11	18:O:92:PHE:CD1	2.51	0.46
21:R:69:GLY:O	21:R:90:ARG:NH1	2.49	0.46
42:o:26:VAL:O	42:o:30:LYS:HG2	2.16	0.46
1:1:1:G:C2	1:1:2:G:N7	2.84	0.45
1:1:132:G:N2	1:1:148:U:C2	2.84	0.45
1:1:219:A:H2'	1:1:220:G:C8	2.51	0.45
1:1:924:G:C2	1:1:925:A:N7	2.85	0.45
1:1:1029:A:H2	1:1:2466:C:O4'	1.98	0.45
1:1:1205:A:H2	55:1:4006:HOH:O	1.94	0.45
1:1:1664:A:C2	14:K:1:MET:SD	3.09	0.45
1:1:1737:G:H2'	1:1:1738:G:H1'	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2182:U:H2'	1:1:2183:A:C8	2.51	0.45
1:1:2791:G:N1	1:1:2806:C:N3	2.64	0.45
2:2:416:G:C2	2:2:417:G:N7	2.84	0.45
2:2:556:C:O2'	2:2:557:G:H5'	2.16	0.45
2:2:821:G:N2	2:2:880:C:C2	2.83	0.45
2:2:1348:U:C2	2:2:1349:A:C8	3.04	0.45
27:X:63:ILE:HA	27:X:66:VAL:HG22	1.98	0.45
35:h:181:ILE:HG22	35:h:202:PHE:HB2	1.98	0.45
36:i:87:GLU:HA	36:i:90:LEU:HD12	1.98	0.45
38:k:61:LEU:HD21	38:k:63:ASN:CG	2.41	0.45
1:1:209:C:O2'	1:1:210:C:H5'	2.16	0.45
1:1:213:A:H2'	1:1:214:G:C8	2.52	0.45
1:1:257:C:H2'	1:1:258:G:O4'	2.16	0.45
1:1:451:U:C2	1:1:453:A:N7	2.84	0.45
1:1:924:G:C2	1:1:925:A:C5	3.04	0.45
1:1:1219:U:O2'	1:1:1220:G:H5'	2.17	0.45
1:1:1424:G:H2'	1:1:1425:G:C8	2.52	0.45
1:1:1641:A:C8	1:1:1642:G:C8	3.03	0.45
1:1:1897:G:O2'	1:1:1898:U:H5'	2.16	0.45
2:2:444:G:C2	2:2:445:G:C4	3.04	0.45
2:2:683:G:C2	2:2:684:U:C5	3.05	0.45
2:2:705:G:H21	43:p:30:ILE:CD1	2.29	0.45
2:2:759:A:H3'	2:2:760:G:H5"	1.98	0.45
2:2:940:C:OP1	39:l:101:ARG:NH1	2.40	0.45
2:2:1328:C:OP1	45:r:27:THR:OG1	2.31	0.45
3:3:48:U:OP1	18:O:30:ARG:NH2	2.49	0.45
6:A:51:ASP:O	6:A:57:GLN:NE2	2.49	0.45
10:E:9:ASP:O	10:E:11:VAL:N	2.50	0.45
36:i:11:SER:OG	36:i:16:THR:O	2.31	0.45
49:v:6:THR:C	49:v:7:LEU:HD22	2.40	0.45
49:v:47:ASP:OD1	49:v:48:GLU:N	2.49	0.45
1:1:76:C:N3	1:1:111:A:C2	2.84	0.45
1:1:85:G:H5'	24:U:27:VAL:HG23	1.97	0.45
1:1:622:G:C2	1:1:623:C:C6	3.04	0.45
1:1:827:U:C4	1:1:2430:A:C6	3.05	0.45
1:1:1161:C:H1'	21:R:8:GLY:O	2.16	0.45
1:1:1298:C:H42	1:1:1642:G:H1	1.65	0.45
1:1:1364:G:N2	1:1:1367:A:OP2	2.40	0.45
1:1:2232:C:H2'	1:1:2233:U:O4'	2.16	0.45
1:1:2698:U:H2'	1:1:2699:C:C6	2.51	0.45
2:2:302:G:H2'	2:2:303:A:H8	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:309:A:C2	2:2:310:G:C8	3.04	0.45
2:2:552:U:H4'	44:q:82:ARG:HD2	1.99	0.45
2:2:745:G:H2'	2:2:746:A:H8	1.81	0.45
2:2:973:G:O3'	46:s:80:ARG:NH2	2.46	0.45
2:2:1202:U:N3	2:2:1203:C:C6	2.84	0.45
2:2:1496:C:H5'	2:2:1497:G:OP2	2.17	0.45
7:B:244:VAL:HA	7:B:250:GLN:HA	1.99	0.45
9:D:121:VAL:HG21	9:D:124:PHE:HB2	1.98	0.45
11:F:95:ALA:HA	11:F:104:LEU:HD23	1.98	0.45
16:M:43:ALA:HA	16:M:46:ILE:HG22	1.97	0.45
18:O:58:ILE:O	18:O:62:LEU:HG	2.16	0.45
23:T:3:ARG:O	23:T:7:LEU:HG	2.16	0.45
23:T:11:LEU:HD22	28:Y:26:PHE:CE1	2.51	0.45
40:m:112:ASP:OD1	40:m:112:ASP:N	2.50	0.45
43:p:49:SER:OG	43:p:65:ALA:HB2	2.16	0.45
44:q:93:ARG:O	44:q:93:ARG:HG2	2.17	0.45
1:1:49:A:C8	1:1:51:G:C2	3.04	0.45
1:1:245:G:O2'	1:1:384:A:N1	2.41	0.45
1:1:286:U:H2'	1:1:287:G:H8	1.81	0.45
1:1:370:G:O2'	1:1:424:G:OP1	2.33	0.45
1:1:819:A:O2'	1:1:820:A:H5'	2.16	0.45
1:1:1234:U:C4	1:1:1235:G:C6	3.05	0.45
1:1:1774:C:H4'	1:1:1979:U:O2	2.17	0.45
1:1:2592:G:H2'	1:1:2593:U:O4'	2.16	0.45
1:1:2608:G:H5'	55:1:3590:HOH:O	2.17	0.45
1:1:2802:G:C2	1:1:2803:G:C5	3.04	0.45
2:2:40:C:H2'	2:2:41:G:C8	2.52	0.45
2:2:609:A:H2'	2:2:610:U:O4'	2.17	0.45
2:2:1060:U:H2'	2:2:1061:G:C8	2.51	0.45
2:2:1073:U:C2	2:2:1074:G:C8	3.05	0.45
2:2:1456:A:C2	2:2:1457:G:H1'	2.52	0.45
2:2:1527:U:H2'	2:2:1528:U:C6	2.51	0.45
10:E:32:LYS:N	10:E:156:THR:OG1	2.46	0.45
15:L:102:GLY:O	15:L:104:GLN:N	2.49	0.45
42:o:92:LEU:HD23	42:o:93:ALA:N	2.31	0.45
45:r:64:VAL:HG22	45:r:65:GLU:H	1.81	0.45
1:1:88:G:C2	1:1:89:A:C8	3.04	0.45
1:1:249:C:H5'	1:1:2394:C:O2'	2.16	0.45
1:1:674:G:H5"	9:D:71:GLY:HA2	1.98	0.45
1:1:941:A:H2'	1:1:942:G:C8	2.51	0.45
1:1:1798:U:C4	1:1:1819:A:C2	3.05	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:256:U:H2'	2:2:257:G:C8	2.52	0.45
2:2:626:G:H2'	2:2:627:G:O4'	2.17	0.45
2:2:690:G:C6	2:2:691:G:C6	3.04	0.45
2:2:1441:A:H2'	2:2:1441:A:N3	2.32	0.45
3:3:61:G:C6	3:3:62:C:C4	3.04	0.45
5:5:6:C:H5	5:5:17:C:H41	1.65	0.45
8:C:124:ARG:NH1	8:C:161:MET:O	2.48	0.45
9:D:166:LYS:HG3	9:D:167:VAL:HG23	1.98	0.45
10:E:69:ALA:N	10:E:82:TYR:O	2.47	0.45
27:X:17:ARG:HD3	27:X:23:ALA:HB2	1.99	0.45
33:e:31:ILE:HG13	33:e:35:LYS:HZ3	1.81	0.45
49:v:48:GLU:O	49:v:49:ASN:CG	2.59	0.45
50:w:33:THR:HG23	50:w:35:SER:H	1.81	0.45
1:1:44:A:H2'	1:1:45:G:O4'	2.15	0.45
1:1:164:C:OP2	1:1:165:A:N6	2.50	0.45
1:1:483:A:C5	1:1:484:C:C6	3.05	0.45
1:1:549:G:H2'	1:1:550:C:C6	2.52	0.45
1:1:631:A:O2'	1:1:632:A:H5'	2.16	0.45
1:1:945:A:C4	1:1:2448:A:C2	3.05	0.45
1:1:1036:G:C6	1:1:1120:G:C6	3.04	0.45
1:1:1161:C:H2'	1:1:1162:G:H8	1.81	0.45
1:1:1749:A:H2'	1:1:1750:G:H8	1.81	0.45
1:1:1877:A:C4	1:1:1878:G:C8	3.05	0.45
1:1:2259:U:C2	1:1:2260:C:C5	3.05	0.45
1:1:2625:G:H2'	1:1:2626:C:C6	2.52	0.45
1:1:2655:G:H4'	1:1:2656:U:O5'	2.17	0.45
1:1:2688:G:N2	1:1:2720:U:OP2	2.50	0.45
2:2:55:A:C3'	55:2:1727:HOH:O	2.54	0.45
2:2:98:A:H2'	2:2:99:C:O4'	2.16	0.45
2:2:258:G:H2'	2:2:259:G:O4'	2.16	0.45
2:2:415:A:C8	2:2:416:G:N7	2.85	0.45
2:2:582:C:H2'	2:2:583:A:O4'	2.17	0.45
6:A:9:ARG:NH1	6:A:13:GLU:OE2	2.50	0.45
7:B:8:THR:OG1	7:B:9:SER:N	2.50	0.45
37:j:98:ALA:HB3	37:j:121:ASN:O	2.16	0.45
44:q:56:LEU:HD12	44:q:60:PHE:HB2	1.97	0.45
45:r:42:VAL:HG22	45:r:43:LYS:N	2.32	0.45
1:1:188:G:N2	55:1:3498:HOH:O	2.49	0.45
1:1:554:U:H2'	1:1:555:G:O4'	2.17	0.45
1:1:1170:C:H2'	1:1:1171:G:C8	2.52	0.45
1:1:1223:G:H5'	21:R:68:ARG:HH22	1.80	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1327:A:H2'	1:1:1327:A:N3	2.32	0.45
1:1:1495:A:C6	1:1:1496:A:C6	3.04	0.45
1:1:1632:A:H2'	1:1:1633:G:C4	2.51	0.45
1:1:1726:C:H2'	1:1:1727:C:C6	2.51	0.45
1:1:1983:G:N2	1:1:1984:G:C4	2.85	0.45
1:1:2255:G:C5	1:1:2256:G:C8	3.04	0.45
1:1:2591:C:C2	1:1:2592:G:C8	3.05	0.45
1:1:2637:U:H2'	1:1:2638:G:O4'	2.16	0.45
1:1:2820:A:H2'	8:C:196:ALA:HB1	1.98	0.45
2:2:224:U:H2'	2:2:225:C:C6	2.52	0.45
2:2:719:C:O2'	50:w:37:LYS:HE3	2.17	0.45
2:2:993:G:H2'	2:2:993:G:N3	2.31	0.45
2:2:996:A:O2'	2:2:997:U:H5'	2.16	0.45
2:2:1015:G:H21	2:2:1218:C:H1'	1.82	0.45
2:2:1057:G:O6	2:2:1204:A:C6	2.69	0.45
5:5:16:C:O2'	5:5:17:C:O5'	2.35	0.45
12:G:9:VAL:HG13	12:G:11:ASN:N	2.32	0.45
19:P:53:GLY:O	19:P:55:HIS:N	2.49	0.45
21:R:1:MET:HE1	21:R:16:GLU:H	1.81	0.45
24:U:80:ASP:OD1	24:U:97:SER:OG	2.35	0.45
36:i:53:GLN:HE22	36:i:201:GLU:CB	2.29	0.45
46:s:41:TRP:O	46:s:45:LEU:HG	2.16	0.45
1:1:48:G:N2	1:1:177:G:N2	2.65	0.45
1:1:597:G:H1	1:1:660:C:H42	1.64	0.45
1:1:975:A:O4'	21:R:78:ARG:NH1	2.49	0.45
1:1:1088:A:C6	55:1:3438:HOH:O	2.68	0.45
1:1:1107:G:C6	1:1:1108:U:C4	3.05	0.45
1:1:1214:A:C4	1:1:1215:G:C8	3.04	0.45
1:1:1322:A:C2	55:1:4056:HOH:O	2.52	0.45
1:1:1394:U:O4	1:1:1395:A:C6	2.70	0.45
1:1:1921:G:C4	1:1:1922:G:C8	3.05	0.45
1:1:2153:C:H2'	1:1:2154:A:O4'	2.16	0.45
1:1:2366:A:C5	1:1:2367:G:C8	3.05	0.45
1:1:2380:C:H2'	1:1:2381:A:C8	2.52	0.45
1:1:2789:C:C4	1:1:2893:A:C5	3.05	0.45
1:1:2809:A:C2	1:1:2810:A:C5	3.04	0.45
1:1:2811:G:C4	1:1:2812:G:C8	3.05	0.45
2:2:376:G:C2	2:2:377:G:C8	3.04	0.45
2:2:382:A:H2'	2:2:383:A:O4'	2.17	0.45
2:2:495:A:C2	2:2:496:A:N6	2.85	0.45
2:2:966:G:N3	5:5:34:G:H4'	2.31	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1158:C:O2'	2:2:1160:G:H5"	2.16	0.45
2:2:1163:A:N6	2:2:1164:G:O6	2.50	0.45
2:2:1290:G:C5	2:2:1291:U:C5	3.05	0.45
2:2:1369:C:H2'	2:2:1370:G:C8	2.52	0.45
3:3:75:G:N2	3:3:76:G:H1'	2.32	0.45
8:C:126:ASN:ND2	55:C:301:HOH:O	2.50	0.45
9:D:111:GLU:HA	9:D:114:ARG:HB2	1.99	0.45
10:E:140:ILE:HG22	10:E:142:TYR:H	1.82	0.45
14:K:42:THR:HG23	14:K:44:LYS:HZ3	1.82	0.45
20:Q:34:ALA:O	20:Q:38:VAL:HG23	2.17	0.45
36:i:145:ARG:HE	36:i:146:GLU:H	1.64	0.45
46:s:85:GLU:O	46:s:89:ARG:HB2	2.17	0.45
1:1:57:C:H2'	1:1:58:G:O4'	2.17	0.45
1:1:543:G:O3'	1:1:544:C:O4'	2.35	0.45
1:1:690:G:C5'	1:1:691:C:OP2	2.65	0.45
1:1:1168:G:C6	1:1:1182:G:N1	2.85	0.45
1:1:1396:U:O2	1:1:1396:U:O4'	2.34	0.45
1:1:1434:A:H2'	1:1:1435:G:H8	1.81	0.45
1:1:1857:G:H2'	1:1:1884:G:H22	1.79	0.45
1:1:1871:A:H2'	1:1:1872:A:O4'	2.17	0.45
1:1:2230:G:C4	1:1:2231:U:C5	3.05	0.45
1:1:2292:U:O2'	1:1:2293:G:H5'	2.17	0.45
1:1:2592:G:C2	1:1:2593:U:H1'	2.52	0.45
2:2:149:A:C6	2:2:150:U:C4	3.05	0.45
2:2:554:A:H2'	2:2:555:U:C6	2.52	0.45
2:2:976:G:N2	2:2:1363:A:C4	2.85	0.45
2:2:1095:U:P	2:2:1108:G:H1	2.40	0.45
2:2:1151:A:N9	42:o:41:PRO:HB3	2.32	0.45
2:2:1157:A:N6	2:2:1178:G:O2'	2.49	0.45
2:2:1184:G:H5"	55:2:1714:HOH:O	2.15	0.45
3:3:9:G:H1	3:3:111:U:H3	1.63	0.45
3:3:65:U:H3'	3:3:108:A:N6	2.31	0.45
9:D:5:LEU:HD23	9:D:7:ASP:H	1.80	0.45
10:E:10:GLU:HA	10:E:13:LYS:HB2	1.99	0.45
15:L:68:SER:O	15:L:71:ALA:N	2.50	0.45
17:N:69:ARG:C	17:N:70:THR:HG23	2.42	0.45
37:j:88:HIS:CG	37:j:89:THR:H	2.35	0.45
41:n:49:GLN:N	41:n:50:PRO:HD2	2.31	0.45
42:o:8:ILE:HB	42:o:74:VAL:HB	1.98	0.45
1:1:24:G:N1	1:1:517:C:N3	2.65	0.45
1:1:207:A:N3	1:1:207:A:H2'	2.33	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:303:G:C2	1:1:304:U:C2	3.04	0.45
1:1:691:C:H42	1:1:771:G:H1	1.64	0.45
1:1:803:U:H2'	1:1:804:A:H5'	1.98	0.45
1:1:879:G:C6	1:1:899:A:C2	3.05	0.45
1:1:1042:G:H2'	1:1:1043:C:O4'	2.17	0.45
1:1:1296:G:C2	1:1:1297:C:C5	3.05	0.45
1:1:1299:G:N2	1:1:1640:A:C8	2.85	0.45
1:1:1513:U:H2'	1:1:1514:G:O4'	2.17	0.45
1:1:1540:G:C2	1:1:1541:C:C4	3.04	0.45
1:1:1770:G:C6	1:1:1983:G:C5	3.04	0.45
1:1:1876:A:N3	1:1:1877:A:C8	2.86	0.45
1:1:2269:G:C2	1:1:2270:A:N9	2.85	0.45
1:1:2489:U:H2'	1:1:2490:G:O4'	2.17	0.45
1:1:2591:C:H2'	1:1:2592:G:C8	2.52	0.45
1:1:2796:U:C5	1:1:2796:U:OP2	2.70	0.45
1:1:2799:A:C2	1:1:2801:G:C5	3.05	0.45
2:2:333:U:H2'	2:2:334:C:C6	2.52	0.45
2:2:864:A:N7	2:2:865:A:C6	2.85	0.45
2:2:907:A:H2'	2:2:908:A:O4'	2.16	0.45
2:2:984:C:C2	2:2:985:C:C5	3.04	0.45
2:2:1307:U:C6	45:r:97:ARG:HB2	2.51	0.45
7:B:221:GLY:HA2	7:B:224:MET:HE3	1.98	0.45
14:K:92:GLU:O	14:K:93:GLN:C	2.60	0.45
45:r:56:ARG:HA	45:r:59:VAL:HG22	1.98	0.45
48:u:69:ASP:OD1	48:u:69:ASP:N	2.50	0.45
1:1:1260:A:O2'	1:1:1261:C:H5'	2.17	0.44
1:1:1315:C:N3	1:1:1338:G:N2	2.65	0.44
1:1:1736:U:H2'	1:1:1737:G:C8	2.52	0.44
1:1:2558:C:H2'	1:1:2559:C:O4'	2.17	0.44
1:1:2862:G:C6	1:1:2863:C:C4	3.05	0.44
2:2:9:G:H5'	37:j:107:GLY:HA3	1.99	0.44
2:2:301:G:C2	2:2:302:G:C8	3.06	0.44
2:2:578:C:H42	2:2:763:G:H1	1.64	0.44
2:2:681:A:H2'	2:2:682:G:H8	1.82	0.44
2:2:1252:A:C4	2:2:1253:G:C8	3.06	0.44
2:2:1347:G:O2'	2:2:1373:G:O6	2.35	0.44
6:A:214:ILE:HG23	6:A:214:ILE:O	2.18	0.44
7:B:105:ALA:O	7:B:195:GLY:N	2.39	0.44
8:C:156:PHE:CZ	13:J:81:ILE:C	2.96	0.44
8:C:186:LEU:HD11	19:P:3:ILE:HD12	1.97	0.44
14:K:42:THR:HG23	14:K:44:LYS:HZ1	1.81	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:M:26:VAL:HG21	16:M:133:LYS:HA	1.98	0.44
25:V:30:ILE:CG1	25:V:38:LEU:HB2	2.46	0.44
42:o:31:ARG:HD2	42:o:32:THR:HG23	1.99	0.44
43:p:21:HIS:CE1	55:p:309:HOH:O	2.69	0.44
45:r:84:CYS:O	45:r:88:LEU:HG	2.17	0.44
48:u:61:VAL:HA	48:u:65:ALA:HB3	2.00	0.44
1:1:230:G:C2	1:1:231:A:C8	3.05	0.44
1:1:755:U:H2'	1:1:756:A:O4'	2.17	0.44
1:1:827:U:OP1	1:1:2429:G:OP2	2.34	0.44
1:1:936:A:H2'	1:1:937:C:C6	2.52	0.44
1:1:1048:A:OP2	1:1:1110:G:N2	2.51	0.44
1:1:2197:U:O2'	1:1:2198:A:H2'	2.16	0.44
2:2:334:C:H2'	2:2:335:C:C6	2.53	0.44
2:2:412:A:C2	2:2:414:A:H1'	2.52	0.44
2:2:443:C:H2'	2:2:444:G:H8	1.83	0.44
2:2:560:A:N7	2:2:566:G:C4	2.85	0.44
2:2:794:A:H2'	2:2:795:C:C6	2.52	0.44
2:2:855:U:OP2	2:2:871:U:C4	2.71	0.44
2:2:1095:U:C4	2:2:1096:C:C5	3.05	0.44
2:2:1174:G:N1	2:2:1175:G:O6	2.50	0.44
2:2:1300:G:H1'	2:2:1303:C:N4	2.32	0.44
2:2:1355:G:C2	2:2:1368:A:C2	3.06	0.44
2:2:1413:A:H2	2:2:1487:G:H22	1.65	0.44
14:K:91:SER:O	14:K:92:GLU:C	2.61	0.44
23:T:91:GLN:OE1	23:T:91:GLN:N	2.34	0.44
1:1:385:C:O2'	1:1:388:G:N2	2.48	0.44
1:1:872:U:O2'	1:1:873:C:H5'	2.16	0.44
1:1:1198:U:H2'	1:1:1199:U:H5"	1.99	0.44
1:1:1766:G:N1	1:1:1987:A:C6	2.85	0.44
1:1:1819:A:H1'	1:1:1821:A:C6	2.53	0.44
1:1:2048:G:C5	1:1:2049:G:N7	2.86	0.44
1:1:2098:U:H2'	1:1:2099:U:O4'	2.17	0.44
1:1:2452:C:H2'	1:1:2453:A:C8	2.52	0.44
1:1:2480:C:H2'	1:1:2481:G:O4'	2.18	0.44
1:1:2678:C:H2'	1:1:2679:A:O4'	2.17	0.44
2:2:447:G:O2'	2:2:487:A:N6	2.51	0.44
2:2:985:C:O2	2:2:986:U:C5	2.70	0.44
2:2:1058:G:C6	2:2:1059:C:C4	3.05	0.44
2:2:1074:G:C6	2:2:1075:U:C4	3.06	0.44
2:2:1163:A:N6	2:2:1164:G:C6	2.85	0.44
2:2:1191:A:C2	2:2:1192:C:C5	3.06	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:14:A:H3'	5:5:15:G:C8	2.52	0.44
13:J:19:ASP:O	13:J:23:LYS:NZ	2.44	0.44
13:J:114:LEU:HD21	13:J:118:MET:HG3	2.00	0.44
39:l:43:TYR:O	39:l:47:GLU:CD	2.60	0.44
44:q:34:THR:N	44:q:53:ARG:O	2.51	0.44
1:1:345:A:N3	1:1:347:A:N6	2.65	0.44
1:1:381:G:N2	1:1:394:C:C2	2.85	0.44
1:1:1099:G:H2'	1:1:1100:C:C6	2.53	0.44
1:1:1103:A:H2'	1:1:1104:C:OP1	2.18	0.44
1:1:1677:A:H2'	1:1:1678:A:O4'	2.18	0.44
1:1:1682:G:H2'	1:1:1683:U:C6	2.52	0.44
1:1:2685:G:C2	1:1:2686:G:C8	3.04	0.44
1:1:2685:G:C2	1:1:2725:A:C2	3.05	0.44
1:1:2868:A:C4	1:1:2869:G:C8	3.05	0.44
2:2:2:A:C5'	55:2:1773:HOH:O	2.45	0.44
2:2:66:A:C6	2:2:104:G:C2	3.06	0.44
2:2:748:G:C2	2:2:749:A:C5	3.05	0.44
2:2:966:G:H2'	2:2:967:C:C6	2.53	0.44
2:2:993:G:O2'	2:2:994:A:N7	2.43	0.44
2:2:1422:G:C2	2:2:1423:G:C8	3.05	0.44
9:D:170:ARG:NH2	9:D:174:GLY:O	2.50	0.44
36:i:8:LEU:HD12	36:i:21:LYS:HB3	1.99	0.44
1:1:10:A:C6	1:1:2800:A:C2	3.06	0.44
1:1:733:G:O6	1:1:761:A:C8	2.70	0.44
1:1:997:G:O2'	1:1:998:C:H5'	2.17	0.44
1:1:1509:A:N7	1:1:1510:G:N7	2.64	0.44
1:1:1542:U:H2'	1:1:1543:G:O4'	2.17	0.44
1:1:1725:U:H2'	1:1:1726:C:C6	2.52	0.44
1:1:2751:G:OP1	1:1:2751:G:N2	2.49	0.44
1:1:2899:A:O2'	1:1:2900:A:H5'	2.17	0.44
2:2:336:A:C4	2:2:337:G:C8	3.06	0.44
2:2:441:A:C8	2:2:442:G:C8	3.06	0.44
2:2:452:A:C5	2:2:453:G:C8	3.06	0.44
2:2:872:A:C4	2:2:874:G:N7	2.86	0.44
2:2:885:G:H2'	2:2:886:G:H8	1.83	0.44
2:2:938:A:OP2	2:2:938:A:C8	2.70	0.44
2:2:1512:U:H2'	2:2:1513:A:C8	2.53	0.44
2:2:1524:C:H2'	2:2:1525:G:C8	2.52	0.44
3:3:45:A:C4	3:3:46:A:C8	3.05	0.44
10:E:7:TYR:HA	10:E:11:VAL:HB	1.99	0.44
13:J:1:MET:HE3	21:R:13:ARG:HH21	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:N:37:THR:HG23	17:N:40:LYS:HB3	1.99	0.44
25:V:71:LYS:HG3	25:V:94:ALA:HB3	1.98	0.44
27:X:49:ARG:CG	55:X:102:HOH:O	2.46	0.44
35:h:57:GLU:HG3	35:h:59:PRO:HD3	2.00	0.44
39:l:101:ARG:HG3	39:l:105:GLU:OE2	2.17	0.44
44:q:89:LEU:HB2	44:q:90:PRO:CD	2.47	0.44
46:s:11:LYS:HD2	46:s:53:ASP:OD2	2.17	0.44
52:y:54:GLN:N	52:y:55:PRO:HD2	2.33	0.44
1:1:272:A:C6	1:1:273:G:C5	3.06	0.44
1:1:363:G:C2	1:1:364:C:C5	3.06	0.44
1:1:468:G:H5"	9:D:55:SER:HB3	1.99	0.44
1:1:675:A:N3	1:1:2443:C:O2'	2.47	0.44
1:1:679:C:H2'	1:1:680:C:C6	2.53	0.44
1:1:710:U:H2'	1:1:711:G:O4'	2.18	0.44
1:1:855:G:C6	1:1:923:G:C6	3.06	0.44
1:1:1207:C:C2	1:1:1208:C:C5	3.05	0.44
1:1:1728:C:O2'	1:1:1731:G:N2	2.48	0.44
1:1:1866:A:C6	1:1:1876:A:N7	2.86	0.44
1:1:2130:U:H1'	1:1:2159:G:O6	2.17	0.44
1:1:2602:A:H4'	1:1:2603:G:C5'	2.48	0.44
1:1:2824:C:OP2	1:1:2825:G:N2	2.50	0.44
2:2:191:G:C2	2:2:192:A:C5	3.05	0.44
2:2:416:G:C2	2:2:417:G:C5	3.06	0.44
2:2:504:C:O2	2:2:511:C:C5	2.70	0.44
2:2:552:U:H2'	2:2:553:A:H8	1.83	0.44
2:2:598:U:C2	2:2:599:C:C5	3.05	0.44
2:2:1006:G:C2	2:2:1007:U:C6	3.06	0.44
2:2:1078:U:O3'	37:j:137:ARG:NH1	2.51	0.44
2:2:1273:C:H2'	2:2:1274:A:O4'	2.17	0.44
27:X:5:GLN:HG2	27:X:48:LEU:HD22	1.99	0.44
36:i:61:ARG:HH21	36:i:67:LEU:HA	1.82	0.44
42:o:91:ASP:N	42:o:91:ASP:OD1	2.50	0.44
1:1:303:G:C6	1:1:315:G:N1	2.86	0.44
1:1:377:G:C6	1:1:378:C:C4	3.05	0.44
1:1:422:A:H2'	1:1:423:A:O4'	2.18	0.44
1:1:669:G:C2'	1:1:669:G:N3	2.80	0.44
1:1:849:A:H2'	1:1:850:U:C6	2.53	0.44
1:1:1106:G:C2	1:1:1107:G:C8	3.06	0.44
1:1:1203:U:H3'	1:1:1204:A:H5"	2.00	0.44
1:1:1910:G:N2	1:1:1921:G:C4	2.85	0.44
1:1:2103:C:H2'	1:1:2104:C:C5	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2556:C:C4	1:1:2557:G:C5	3.05	0.44
1:1:2838:G:C2	1:1:2839:G:H1'	2.53	0.44
2:2:312:C:H2'	2:2:313:A:C8	2.53	0.44
2:2:363:A:C2	44:q:27:PRO:HD2	2.53	0.44
2:2:437:U:H5'	36:i:151:GLN:HB3	2.00	0.44
2:2:712:A:O3'	2:2:713:G:O4'	2.36	0.44
2:2:745:G:C4	2:2:746:A:N7	2.86	0.44
2:2:1203:C:C2	2:2:1204:A:C8	3.06	0.44
2:2:1429:A:N3	2:2:1430:A:C8	2.86	0.44
16:M:41:LEU:HD23	16:M:96:ILE:HG13	2.00	0.44
16:M:57:VAL:HB	16:M:112:LEU:HD21	1.99	0.44
28:Y:9:LYS:HG3	28:Y:11:VAL:HG12	2.00	0.44
37:j:104:ILE:HB	37:j:111:ARG:HH22	1.81	0.44
41:n:48:ARG:O	41:n:51:LEU:N	2.51	0.44
48:u:60:TRP:HB3	48:u:65:ALA:HB2	1.98	0.44
1:1:270:A:C2	1:1:370:G:C4	3.05	0.44
1:1:291:G:C5	1:1:350:G:O6	2.71	0.44
1:1:367:G:H2'	1:1:368:A:O4'	2.18	0.44
1:1:437:U:H2'	1:1:438:G:H8	1.82	0.44
1:1:673:C:OP1	9:D:49:ARG:NH2	2.46	0.44
1:1:1124:G:H2'	1:1:1125:G:O4'	2.17	0.44
1:1:1198:U:C2'	1:1:1199:U:H5"	2.48	0.44
1:1:1340:U:O2	1:1:1340:U:O4'	2.35	0.44
1:1:1425:G:H22	1:1:1574:C:N4	2.16	0.44
1:1:1510:G:C5	1:1:1511:G:C8	3.06	0.44
1:1:1948:G:C6	1:1:1959:G:C6	3.06	0.44
1:1:2024:G:O2'	1:1:2025:C:H5'	2.17	0.44
1:1:2048:G:C6	1:1:2049:G:N7	2.86	0.44
1:1:2443:C:O2'	1:1:2444:G:H5'	2.18	0.44
2:2:291:U:O2'	2:2:292:G:H5'	2.18	0.44
2:2:348:G:C2	2:2:349:A:C5	3.06	0.44
2:2:446:G:C6	2:2:447:G:C5	3.05	0.44
2:2:492:C:H2'	2:2:493:A:C8	2.52	0.44
2:2:705:G:N2	43:p:30:ILE:HD11	2.33	0.44
2:2:745:G:C4	2:2:746:A:C8	3.06	0.44
2:2:821:G:N1	2:2:880:C:C4	2.86	0.44
2:2:1124:G:N1	2:2:1150:A:C2	2.86	0.44
2:2:1319:A:C4	2:2:1323:G:C8	3.05	0.44
2:2:1367:C:C4	2:2:1368:A:N7	2.86	0.44
3:3:9:G:C6	3:3:112:G:C6	3.06	0.44
10:E:160:LYS:N	10:E:164:GLU:OE1	2.50	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:O:94:ARG:NH2	18:O:97:PHE:O	2.44	0.44
32:d:24:THR:OG1	32:d:25:LYS:N	2.50	0.44
35:h:151:GLU:OE2	35:h:165:GLU:N	2.51	0.44
38:k:22:ILE:HA	38:k:25:TYR:CD2	2.52	0.44
1:1:198:C:O2'	1:1:199:A:H5'	2.18	0.44
1:1:282:A:C6	1:1:359:G:N1	2.85	0.44
1:1:501:A:H2'	1:1:502:A:C8	2.53	0.44
1:1:779:U:H2'	1:1:780:G:O4'	2.18	0.44
1:1:925:A:N3	1:1:926:G:C8	2.86	0.44
1:1:1025:G:H3'	1:1:1026:G:C5'	2.48	0.44
1:1:1303:G:C2	1:1:1304:A:C8	3.05	0.44
1:1:1495:A:H2	1:1:1578:U:H1'	1.82	0.44
1:1:1824:G:C6	1:1:1825:U:C4	3.06	0.44
1:1:1921:G:N3	1:1:1922:G:C8	2.86	0.44
1:1:2800:A:C2	1:1:2895:G:H1'	2.53	0.44
1:1:2849:U:O4	19:P:20:ARG:NH2	2.51	0.44
2:2:112:G:C2	2:2:113:G:C8	3.06	0.44
2:2:934:C:C5	2:2:1345:U:C6	3.06	0.44
2:2:1044:A:H8	2:2:1044:A:OP2	2.01	0.44
2:2:1167:A:H2'	2:2:1169:A:C5	2.52	0.44
2:2:1333:A:H3'	2:2:1334:G:C8	2.53	0.44
2:2:1507:A:C8	2:2:1530:G:N2	2.86	0.44
8:C:181:ASP:OD1	8:C:184:ARG:N	2.48	0.44
17:N:69:ARG:C	17:N:71:ARG:H	2.26	0.44
19:P:91:VAL:HG11	19:P:96:LEU:HD21	2.00	0.44
20:Q:90:ASP:OD1	20:Q:93:ILE:HG12	2.17	0.44
22:S:18:ARG:NH1	22:S:76:VAL:O	2.50	0.44
24:U:38:ILE:HG23	24:U:39:ASN:N	2.33	0.44
25:V:26:PHE:CZ	25:V:47:VAL:HG11	2.52	0.44
25:V:37:PRO:C	25:V:38:LEU:HD12	2.42	0.44
27:X:49:ARG:NE	55:X:102:HOH:O	2.49	0.44
33:e:32:LEU:HD23	33:e:32:LEU:H	1.83	0.44
37:j:104:ILE:O	37:j:105:ILE:C	2.60	0.44
38:k:53:LYS:CD	55:k:202:HOH:O	2.66	0.44
43:p:25:SER:N	43:p:28:ASN:O	2.51	0.44
52:y:54:GLN:HA	52:y:57:VAL:CG2	2.48	0.44
1:1:24:G:C2	1:1:517:C:C2	3.06	0.43
1:1:138:U:OP2	1:1:139:U:OP2	2.35	0.43
1:1:397:U:C2	1:1:398:C:C5	3.06	0.43
1:1:397:U:O2'	1:1:398:C:H5'	2.18	0.43
1:1:486:C:O2'	1:1:487:C:H5'	2.17	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:974:G:N3	1:1:974:G:H2'	2.33	0.43
1:1:1165:A:C2	1:1:1185:G:C2	3.06	0.43
1:1:1556:C:O2'	1:1:1557:C:H5'	2.17	0.43
1:1:1702:G:C4	1:1:1703:G:C8	3.06	0.43
1:1:1809:A:O2'	1:1:1810:A:O4'	2.24	0.43
1:1:1947:C:C2	1:1:1948:G:C8	3.06	0.43
1:1:2721:A:C2	1:1:2722:G:H1'	2.53	0.43
2:2:70:U:H5"	2:2:71:A:OP1	2.18	0.43
2:2:646:G:N1	2:2:647:C:C4	2.86	0.43
2:2:708:C:O2'	2:2:709:U:H5'	2.17	0.43
2:2:737:C:H2'	2:2:738:C:H6	1.82	0.43
2:2:917:G:H2'	2:2:918:A:H8	1.83	0.43
2:2:1160:G:H1	2:2:1176:A:N6	2.06	0.43
2:2:1222:G:H2'	2:2:1223:C:O5'	2.18	0.43
2:2:1464:U:H6	2:2:1464:U:O5'	2.00	0.43
3:3:28:C:H2'	3:3:29:A:C8	2.53	0.43
9:D:79:ARG:HG2	9:D:80:SER:H	1.82	0.43
41:n:31:GLN:CD	41:n:63:TYR:HH	2.21	0.43
42:o:29:ALA:HA	42:o:32:THR:O	2.18	0.43
1:1:4:U:C2	1:1:2900:A:C2	3.06	0.43
1:1:81:G:C5	1:1:82:U:N3	2.86	0.43
1:1:171:U:H2'	1:1:172:A:H8	1.83	0.43
1:1:226:A:C2	1:1:230:G:O6	2.71	0.43
1:1:572:A:C2	1:1:2033:A:C2	3.06	0.43
1:1:607:U:O4	1:1:620:G:O4'	2.35	0.43
1:1:713:G:N2	1:1:719:C:N4	2.66	0.43
1:1:720:U:H2'	1:1:721:A:C8	2.53	0.43
1:1:740:C:H42	1:1:757:G:H1	1.65	0.43
1:1:1321:A:N3	1:1:1321:A:H2'	2.32	0.43
1:1:1347:A:C2	1:1:1348:C:H1'	2.53	0.43
1:1:1837:C:C2	1:1:1904:G:N2	2.87	0.43
1:1:2241:A:H2'	1:1:2242:G:H8	1.83	0.43
1:1:2510:C:C4	1:1:2511:U:C4	3.06	0.43
1:1:2864:G:H2'	1:1:2865:U:C6	2.54	0.43
2:2:268:U:N3	2:2:269:C:C5	2.86	0.43
2:2:273:U:O4	2:2:274:A:N6	2.51	0.43
2:2:1108:G:H5'	2:2:1109:C:OP2	2.19	0.43
2:2:1370:G:C2	2:2:1371:G:N7	2.86	0.43
2:2:1416:G:C4	2:2:1417:G:C8	3.06	0.43
5:5:5:A:O2'	5:5:6:C:P	2.75	0.43
9:D:69:ARG:O	9:D:70:SER:C	2.61	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:T:56:GLU:CD	23:T:88:LYS:HD3	2.43	0.43
39:l:40:SER:O	39:l:44:SER:OG	2.28	0.43
52:y:77:ASN:O	52:y:81:GLN:HG2	2.19	0.43
1:1:519:U:O2'	1:1:520:G:H5'	2.19	0.43
1:1:1090:A:C4	1:1:1091:G:C8	3.07	0.43
1:1:1184:U:OP1	29:Z:30:ARG:CZ	2.66	0.43
1:1:1287:A:O2'	1:1:1288:G:H5'	2.18	0.43
1:1:1369:G:O2'	1:1:1370:C:H5'	2.18	0.43
1:1:1817:G:N1	1:1:1818:U:O2	2.50	0.43
1:1:1841:U:C4	1:1:1842:G:N7	2.87	0.43
1:1:2651:C:O2'	1:1:2652:C:H5'	2.19	0.43
2:2:282:A:C2	2:2:283:U:H1'	2.53	0.43
2:2:527:G:O2'	2:2:535:A:N1	2.37	0.43
2:2:599:C:C2	2:2:600:A:C8	3.05	0.43
2:2:1106:G:C2	2:2:1107:C:C5	3.05	0.43
2:2:1176:A:H2'	2:2:1177:G:O4'	2.18	0.43
10:E:28:PRO:HB3	10:E:164:GLU:HG2	1.99	0.43
11:F:72:ASN:O	11:F:76:ILE:HG12	2.18	0.43
13:J:65:THR:HG22	13:J:66:GLY:H	1.82	0.43
25:V:81:PRO:O	25:V:83:LYS:N	2.51	0.43
35:h:112:ALA:HA	35:h:115:VAL:HG12	2.00	0.43
36:i:105:GLY:HA3	36:i:161:ALA:HB1	2.00	0.43
42:o:67:ILE:HG13	42:o:67:ILE:O	2.18	0.43
44:q:37:TYR:HB2	44:q:51:VAL:HG23	2.00	0.43
48:u:7:ALA:O	48:u:17:TYR:HA	2.18	0.43
1:1:53:A:H2'	1:1:54:G:H5'	2.01	0.43
1:1:94:A:H2'	1:1:95:A:O4'	2.17	0.43
1:1:463:G:O2'	1:1:465:G:N7	2.38	0.43
1:1:1587:G:N3	1:1:1588:G:C8	2.87	0.43
1:1:1672:A:H5"	1:1:2554:U:OP1	2.18	0.43
1:1:1708:C:H2'	1:1:1709:U:H6	1.84	0.43
1:1:1722:A:N3	1:1:1723:G:C8	2.87	0.43
1:1:2141:G:C2	1:1:2142:A:C8	3.06	0.43
1:1:2640:G:H1	1:1:2774:C:H42	1.65	0.43
1:1:2846:G:H5'	19:P:52:ARG:HH22	1.82	0.43
2:2:572:A:C2	2:2:864:A:C2	3.05	0.43
2:2:672:U:H2'	2:2:673:A:C8	2.53	0.43
2:2:1057:G:C4	2:2:1058:G:C8	3.07	0.43
3:3:15:A:H1'	3:3:109:A:N7	2.33	0.43
5:5:17(A):U:O5'	5:5:60:U:H4'	2.18	0.43
8:C:55:LYS:HB3	55:C:302:HOH:O	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:R:2:TYR:CE1	21:R:42:ALA:HB3	2.53	0.43
35:h:37:LYS:O	35:h:40:GLN:HG3	2.18	0.43
49:v:67:SER:HB2	49:v:70:LYS:HG2	1.99	0.43
1:1:175:G:N2	1:1:176:A:C4	2.87	0.43
1:1:370:G:C6	1:1:424:G:N7	2.86	0.43
1:1:386:G:H3'	1:1:387:U:H5"	1.99	0.43
1:1:602:A:C2	1:1:656:G:C6	3.06	0.43
1:1:926:G:C2	1:1:927:A:N7	2.86	0.43
1:1:953:G:N1	1:1:965:C:C4	2.86	0.43
1:1:1328:A:HO2'	1:1:1329:U:H6	1.63	0.43
1:1:1814:G:C6	1:1:1815:A:C6	3.06	0.43
1:1:2037:A:H2'	1:1:2038:G:C8	2.53	0.43
1:1:2075:U:H2'	1:1:2077:A:OP2	2.19	0.43
1:1:2806:C:H2'	1:1:2807:U:O4'	2.17	0.43
2:2:524:G:C2	2:2:525:C:C5	3.07	0.43
2:2:670:G:H2'	2:2:671:G:O4'	2.19	0.43
2:2:682:G:C2	2:2:683:G:N7	2.86	0.43
2:2:1127:G:H2'	2:2:1128:C:C6	2.53	0.43
2:2:1188:A:C2'	2:2:1189:U:O5'	2.66	0.43
2:2:1394:A:H3'	2:2:1395:C:H5'	2.00	0.43
2:2:1427:C:O2'	2:2:1428:A:H5'	2.18	0.43
6:A:15:VAL:HG12	6:A:29:LEU:HD21	1.99	0.43
7:B:128:THR:HG23	7:B:189:ALA:C	2.42	0.43
17:N:66:ALA:O	17:N:69:ARG:O	2.36	0.43
24:U:96:LYS:C	24:U:97:SER:HG	2.18	0.43
29:Z:4:ILE:HB	29:Z:39:ASP:OD1	2.18	0.43
39:l:149:ALA:O	43:p:97:ARG:NH2	2.51	0.43
1:1:24:G:H2'	1:1:25:U:C6	2.53	0.43
1:1:420:C:O2'	1:1:421:C:O5'	2.35	0.43
1:1:1232:G:C6	1:1:1233:C:C4	3.07	0.43
1:1:1327:A:C4	1:1:1328:A:C8	3.07	0.43
1:1:1401:G:H2'	1:1:1402:U:C6	2.54	0.43
1:1:1420:A:H1'	1:1:2211:A:N7	2.33	0.43
1:1:1667:G:OP1	14:K:7:MET:N	2.46	0.43
1:1:2065:C:O2	1:1:2065:C:H2'	2.17	0.43
1:1:2144:G:N2	1:1:2148:G:C6	2.86	0.43
1:1:2344:U:OP1	31:c:36:LYS:NZ	2.42	0.43
1:1:2526:G:H1	1:1:2537:U:H3	1.67	0.43
1:1:2543:G:N2	1:1:2646:C:H4'	2.33	0.43
1:1:2668:G:H1'	11:F:109:SER:OG	2.18	0.43
2:2:219:U:C2	2:2:220:G:C8	3.07	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:408:A:C6	2:2:435:A:C6	3.06	0.43
2:2:450:G:OP1	2:2:451:A:H3'	2.17	0.43
2:2:553:A:N3	2:2:554:A:C8	2.87	0.43
2:2:1270:G:N2	2:2:1271:A:C5	2.87	0.43
2:2:1332:A:C4	2:2:1333:A:C8	3.06	0.43
2:2:1341:U:H2'	2:2:1342:C:H6	1.84	0.43
3:3:39:A:C2	3:3:44:G:C2	3.07	0.43
3:3:75:G:O4'	25:V:29:ILE:HD13	2.18	0.43
5:5:8:U:H1'	5:5:15:G:H22	1.83	0.43
16:M:59:ARG:H	16:M:59:ARG:HD3	1.83	0.43
16:M:82:MET:HE3	16:M:82:MET:HB3	1.75	0.43
36:i:141:VAL:O	36:i:141:VAL:HG23	2.19	0.43
38:k:21:MET:HB3	38:k:25:TYR:CZ	2.54	0.43
41:n:128:LYS:HD3	41:n:128:LYS:HA	1.82	0.43
44:q:20:VAL:HG22	44:q:93:ARG:HG3	2.01	0.43
49:v:43:LEU:HD21	49:v:72:TRP:CG	2.54	0.43
50:w:17:VAL:O	50:w:18:GLN:HG2	2.19	0.43
51:x:49:ALA:HB1	51:x:56:HIS:HB3	2.01	0.43
52:y:66:ILE:HG22	52:y:67:HIS:N	2.33	0.43
1:1:275:C:O5'	1:1:275:C:H6	2.01	0.43
1:1:394:C:O2'	1:1:395:U:H5'	2.19	0.43
1:1:559:G:C2'	1:1:560:C:H5'	2.49	0.43
1:1:599:A:C6	1:1:659:G:C5	3.06	0.43
1:1:613:A:OP2	1:1:614:A:N7	2.52	0.43
1:1:690:G:C6	1:1:691:C:N4	2.87	0.43
1:1:768:G:N2	1:1:1379:U:O2'	2.52	0.43
1:1:945:A:C5	1:1:2448:A:C2	3.06	0.43
1:1:1317:G:H2'	1:1:1318:U:O4'	2.18	0.43
1:1:1380:G:C2	1:1:1381:G:C8	3.06	0.43
1:1:1800:C:C2	1:1:1818:U:O2	2.71	0.43
1:1:1835:G:C5	1:1:1931:U:C4	3.07	0.43
1:1:2142:A:H2'	1:1:2143:C:C6	2.53	0.43
1:1:2177:C:H2'	1:1:2178:C:O4'	2.18	0.43
1:1:2527:C:H2'	1:1:2528:U:O4'	2.19	0.43
2:2:190:A:H3'	2:2:191:G:O4'	2.19	0.43
2:2:282:A:C6	2:2:283:U:C2	3.06	0.43
2:2:456:A:H2'	2:2:457:G:H8	1.83	0.43
2:2:541:G:C2	2:2:542:G:C4	3.06	0.43
2:2:674:G:H22	2:2:716:A:H2	1.66	0.43
2:2:810:C:H2'	2:2:811:C:O4'	2.19	0.43
2:2:893:C:C2	2:2:894:G:C8	3.07	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1014:A:C8	51:x:33:TRP:CZ3	3.07	0.43
2:2:1206:G:H3'	2:2:1207:G:H5'	1.99	0.43
2:2:1215:G:N2	2:2:1216:A:H1'	2.34	0.43
2:2:1309:G:H2'	2:2:1309:G:N3	2.33	0.43
2:2:1434:A:H2'	2:2:1435:G:O4'	2.18	0.43
2:2:1457:G:C4	2:2:1458:G:C8	3.07	0.43
8:C:34:VAL:HG23	8:C:93:GLY:N	2.33	0.43
9:D:5:LEU:HD23	9:D:6:LYS:N	2.33	0.43
10:E:175:PRO:O	10:E:176:PHE:C	2.62	0.43
11:F:153:PRO:HG3	11:F:161:VAL:O	2.19	0.43
14:K:40:LYS:HA	14:K:59:LYS:HA	2.01	0.43
15:L:68:SER:HB3	15:L:71:ALA:HB3	2.01	0.43
17:N:29:VAL:HG21	17:N:75:ILE:HG23	1.99	0.43
18:O:34:HIS:HB3	18:O:36:TYR:CE2	2.54	0.43
37:j:10:LEU:HG	37:j:11:GLN:N	2.34	0.43
1:1:222:A:C2	1:1:233:A:H4'	2.53	0.43
1:1:268:C:C2	1:1:269:C:C5	3.07	0.43
1:1:648:G:C2	1:1:649:G:C5	3.07	0.43
1:1:807:U:OP1	1:1:830:G:N2	2.51	0.43
1:1:856:G:H2'	1:1:857:G:C8	2.54	0.43
1:1:878:A:C8	1:1:879:G:C8	3.07	0.43
1:1:1059:G:N2	1:1:1080:A:N3	2.67	0.43
1:1:1171:G:H2'	1:1:1172:C:O4'	2.19	0.43
1:1:1207:C:O2'	1:1:1208:C:H5'	2.18	0.43
1:1:1227:G:N2	55:1:3509:HOH:O	2.51	0.43
1:1:1294:U:C2'	1:1:1295:C:H5'	2.48	0.43
1:1:1470:A:C2	1:1:1471:G:H1'	2.54	0.43
1:1:2070:A:H2'	1:1:2071:A:O4'	2.19	0.43
2:2:348:G:C4	2:2:349:A:C8	3.06	0.43
2:2:380:G:N2	2:2:383:A:OP2	2.49	0.43
2:2:1026:G:O6	2:2:1033:G:O6	2.37	0.43
2:2:1172:C:H2'	2:2:1173:U:H5'	2.00	0.43
2:2:1226:C:OP1	51:x:77:ARG:NH2	2.51	0.43
2:2:1429:A:C2	2:2:1430:A:C8	3.07	0.43
3:3:40:U:N3	3:3:44:G:OP2	2.52	0.43
3:3:109:A:C2	3:3:110:C:N1	2.87	0.43
5:5:62:C:H2'	5:5:63:U:H6	1.83	0.43
9:D:189:THR:O	9:D:193:VAL:HG23	2.18	0.43
10:E:6:TYR:CD1	10:E:9:ASP:HB2	2.54	0.43
35:h:120:THR:HG23	35:h:188:ALA:HB2	1.99	0.43
41:n:38:PHE:CZ	41:n:47:VAL:HG11	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:o:92:LEU:HD23	42:o:93:ALA:CB	2.48	0.43
44:q:23:LEU:O	44:q:23:LEU:HG	2.19	0.43
1:1:107:G:C2	1:1:108:G:N7	2.87	0.43
1:1:477:A:H2'	1:1:478:A:O4'	2.19	0.43
1:1:1042:G:H22	1:1:1114:C:H1'	1.82	0.43
1:1:1058:U:O2'	1:1:1059:G:H5'	2.19	0.43
1:1:1363:C:O2'	1:1:1809:A:H1'	2.19	0.43
1:1:1498:C:H2'	1:1:1499:C:O4'	2.19	0.43
1:1:1603:A:H2'	1:1:1603:A:N3	2.33	0.43
1:1:1857:G:N2	1:1:1884:G:H2'	2.34	0.43
1:1:2064:C:O4'	1:1:2450:A:C2	2.71	0.43
1:1:2652:C:H2'	1:1:2653:U:O4'	2.18	0.43
1:1:2699:C:H2'	1:1:2700:A:C8	2.53	0.43
1:1:2796:U:OP2	1:1:2796:U:C6	2.72	0.43
2:2:254:G:H2'	2:2:255:G:C8	2.51	0.43
2:2:477:C:H2'	2:2:478:A:N9	2.33	0.43
2:2:487:A:H3'	2:2:488:C:H6	1.84	0.43
2:2:575:G:H4'	2:2:576:C:H5"	2.01	0.43
2:2:656:G:N2	2:2:751:U:C4	2.87	0.43
2:2:978:A:N6	2:2:1316:G:H21	2.05	0.43
2:2:1104:G:H2'	2:2:1105:A:O4'	2.18	0.43
2:2:1192:C:O5'	2:2:1192:C:H6	2.02	0.43
2:2:1229:A:O2'	2:2:1230:C:H5'	2.19	0.43
2:2:1234:C:O2'	2:2:1235:U:H5'	2.19	0.43
2:2:1245:C:H2'	2:2:1246:A:O4'	2.19	0.43
3:3:56:G:H4'	3:3:57:A:H5'	2.01	0.43
6:A:46:VAL:HB	6:A:171:ILE:CG2	2.49	0.43
6:A:52:ALA:C	6:A:54:LYS:N	2.76	0.43
25:V:27:PRO:HA	25:V:40:ILE:O	2.18	0.43
38:k:88:MET:SD	38:k:89:VAL:N	2.92	0.43
40:m:10:LEU:HD22	40:m:74:ILE:HD13	2.01	0.43
49:v:6:THR:O	49:v:7:LEU:HD22	2.18	0.43
1:1:125:A:OP2	32:d:19:ARG:NE	2.45	0.43
1:1:319:G:H2'	1:1:320:A:O4'	2.18	0.43
1:1:372:G:H22	1:1:400:G:H3'	1.84	0.43
1:1:415:A:H2'	1:1:416:U:H6	1.83	0.43
1:1:425:G:N2	1:1:426:C:C2	2.87	0.43
1:1:1071:G:C2	1:1:1089:A:C2	3.07	0.43
1:1:1186:G:H2'	1:1:1187:G:O4'	2.19	0.43
1:1:1298:C:C4	1:1:1299:G:C5	3.07	0.43
1:1:1370:C:O2'	1:1:1371:G:H5'	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1466:U:H5'	1:1:1467:U:O5'	2.19	0.43
1:1:1631:G:C6	1:1:1633:G:H5"	2.52	0.43
1:1:2039:U:H2'	1:1:2040:G:C8	2.53	0.43
1:1:2558:C:O2'	1:1:2559:C:H5'	2.19	0.43
2:2:385:C:H2'	2:2:386:C:C6	2.53	0.43
2:2:462:G:H2'	2:2:463:U:C6	2.54	0.43
2:2:646:G:C2	2:2:647:C:C5	3.07	0.43
2:2:1111:A:H61	35:h:176:THR:HA	1.83	0.43
2:2:1530:G:C2	2:2:1531:A:C6	3.06	0.43
8:C:136:ASN:ND2	8:C:139:SER:O	2.42	0.43
14:K:76:VAL:HG12	19:P:72:VAL:HG22	2.00	0.43
19:P:27:VAL:HG22	19:P:83:ILE:HG23	2.00	0.43
25:V:81:PRO:O	25:V:82:TYR:C	2.61	0.43
45:r:63:VAL:HG13	45:r:67:ASP:HB3	2.00	0.43
45:r:75:SER:O	45:r:79:LEU:HG	2.18	0.43
1:1:9:G:H1'	1:1:2800:A:H61	1.84	0.42
1:1:56:A:C6	1:1:57:C:C4	3.07	0.42
1:1:161:A:OP2	1:1:163:C:OP2	2.36	0.42
1:1:173:A:H2'	1:1:174:U:C6	2.54	0.42
1:1:203:A:C8	1:1:204:A:C8	3.07	0.42
1:1:615:U:C4	9:D:35:TYR:CZ	3.07	0.42
1:1:700:G:O2'	1:1:701:G:H5'	2.19	0.42
1:1:1689:A:N6	1:1:1697:G:H2'	2.33	0.42
1:1:1691:C:N4	1:1:1697:G:N2	2.66	0.42
1:1:1841:U:C2	1:1:1842:G:C8	3.07	0.42
1:1:2186:G:H2'	1:1:2187:U:C6	2.53	0.42
1:1:2265:U:OP2	1:1:2266:A:O2'	2.24	0.42
1:1:2851:A:H2'	1:1:2852:G:O4'	2.19	0.42
55:1:3506:HOH:O	15:L:104:GLN:NE2	2.52	0.42
2:2:235:C:H2'	2:2:236:A:H8	1.84	0.42
2:2:298:A:H2'	2:2:299:G:C8	2.54	0.42
2:2:728:A:N6	2:2:729:A:C6	2.87	0.42
2:2:746:A:H2'	2:2:747:A:C8	2.54	0.42
2:2:1187:G:N1	2:2:1188:A:N6	2.67	0.42
2:2:1231:G:N2	2:2:1232:U:C2	2.87	0.42
2:2:1231:G:C2	2:2:1232:U:C5	3.07	0.42
2:2:1307:U:O3'	45:r:98:GLY:N	2.52	0.42
6:A:17:ALA:O	6:A:20:GLN:NE2	2.52	0.42
10:E:7:TYR:HA	10:E:11:VAL:CB	2.49	0.42
12:G:19:VAL:HG12	12:G:20:ASN:N	2.34	0.42
12:G:87:GLU:O	12:G:87:GLU:HG3	2.17	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:K:44:LYS:O	14:K:45:GLU:C	2.61	0.42
15:L:79:LEU:H	15:L:113:ALA:HB3	1.84	0.42
24:U:58:VAL:HG12	24:U:59:GLU:N	2.34	0.42
37:j:152:VAL:HA	37:j:155:LYS:CG	2.49	0.42
1:1:154:U:H2'	1:1:155:A:C8	2.54	0.42
1:1:1168:G:C2	1:1:1182:G:C2	3.08	0.42
1:1:1202:G:O6	1:1:1244:A:C6	2.72	0.42
1:1:1348:C:C5	1:1:1349:C:C5	3.07	0.42
1:1:1591:A:H2'	1:1:1592:C:O4'	2.19	0.42
1:1:1809:A:O2'	1:1:1810:A:H5'	2.19	0.42
1:1:1927:A:N1	1:1:1928:A:C2	2.87	0.42
1:1:1942:C:P	1:1:1943:U:O2'	2.77	0.42
1:1:2065:C:HO2'	1:1:2449:U:H3	1.64	0.42
1:1:2325:G:OP1	1:1:2326:C:OP2	2.37	0.42
1:1:2642:G:OP1	13:J:78:THR:HG21	2.19	0.42
1:1:2800:A:H3'	1:1:2801:G:C5'	2.49	0.42
1:1:2815:C:C2	1:1:2816:G:C8	3.06	0.42
2:2:152:A:H2'	2:2:153:C:H5'	2.02	0.42
2:2:176:C:H2'	2:2:177:G:N3	2.34	0.42
2:2:347:G:C2	2:2:348:G:C8	3.07	0.42
2:2:658:C:O2'	2:2:659:U:H5'	2.18	0.42
2:2:707:U:H4'	43:p:21:HIS:CD2	2.54	0.42
2:2:788:U:H2'	2:2:789:U:O4'	2.19	0.42
2:2:834:U:H2'	2:2:835:U:C6	2.54	0.42
2:2:891:U:C5	2:2:906:A:N1	2.87	0.42
2:2:1034:G:C5	2:2:1035:A:H1'	2.54	0.42
2:2:1065:U:H5"	2:2:1190:G:H22	1.85	0.42
2:2:1087:G:C6	2:2:1088:G:O6	2.73	0.42
2:2:1306:A:H2'	2:2:1307:U:C5	2.54	0.42
2:2:1355:G:H2'	2:2:1356:G:H8	1.84	0.42
2:2:1406:U:C5	2:2:1407:C:C5	3.07	0.42
10:E:141:ASP:O	10:E:142:TYR:CD1	2.72	0.42
15:L:135:ILE:O	15:L:140:GLY:N	2.52	0.42
20:Q:30:VAL:HG12	20:Q:31:TYR:H	1.84	0.42
20:Q:44:TYR:O	20:Q:47:ARG:HG3	2.19	0.42
33:e:5:THR:OG1	33:e:6:VAL:N	2.52	0.42
37:j:63:MET:O	37:j:67:ARG:NH1	2.52	0.42
43:p:92:ARG:O	53:z:16:ARG:NH1	2.49	0.42
49:v:12:VAL:O	49:v:13:SER:OG	2.32	0.42
49:v:16:MET:HG3	49:v:19:SER:O	2.19	0.42
49:v:43:LEU:HD21	49:v:72:TRP:CD1	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:230:G:N3	1:1:231:A:C8	2.87	0.42
1:1:372:G:OP2	27:X:60:LYS:NZ	2.50	0.42
1:1:700:G:O6	1:1:733:G:N2	2.53	0.42
1:1:856:G:N1	1:1:922:C:N4	2.66	0.42
1:1:900:A:C2	1:1:901:C:H1'	2.54	0.42
1:1:967:U:H2'	1:1:968:C:C6	2.55	0.42
1:1:1002:G:O6	1:1:1154:G:N2	2.52	0.42
1:1:1027:A:C6	1:1:1126:A:C4	3.07	0.42
1:1:1119:U:OP1	25:V:83:LYS:NZ	2.51	0.42
1:1:1744:A:C4	1:1:1745:A:C8	3.07	0.42
1:1:1829:A:H3'	1:1:1830:C:C6	2.55	0.42
1:1:1983:G:N1	1:1:1984:G:C5	2.87	0.42
1:1:2046:G:C4	1:1:2047:C:C5	3.07	0.42
1:1:2090:A:C6	1:1:2091:C:N4	2.87	0.42
1:1:2334:U:O2'	18:O:13:ARG:NH2	2.51	0.42
1:1:2806:C:H6	1:1:2806:C:O5'	2.02	0.42
1:1:2811:G:H2'	1:1:2812:G:O4'	2.19	0.42
2:2:38:G:H1'	2:2:397:A:N6	2.34	0.42
2:2:509:A:H5'	36:i:50:TYR:HB3	2.01	0.42
2:2:637:C:O2'	2:2:638:U:H5'	2.18	0.42
2:2:836:G:C6	2:2:851:G:C6	3.08	0.42
2:2:838:G:C6	2:2:849:G:C6	3.08	0.42
2:2:945:G:N3	2:2:945:G:H2'	2.35	0.42
2:2:1042:A:H2'	2:2:1043:G:O4'	2.19	0.42
2:2:1086:U:O5'	2:2:1086:U:H6	2.01	0.42
2:2:1220:G:OP1	51:x:36:ARG:NH2	2.44	0.42
2:2:1222:G:H2'	2:2:1223:C:O4'	2.20	0.42
2:2:1407:C:O2	2:2:1407:C:H2'	2.19	0.42
5:5:48:C:N3	5:5:59:A:N6	2.66	0.42
15:L:68:SER:O	15:L:69:ARG:C	2.61	0.42
33:e:6:VAL:O	33:e:7:ARG:C	2.62	0.42
36:i:99:ASN:O	36:i:103:ARG:HG2	2.18	0.42
40:m:45:ILE:HG12	40:m:60:LEU:HD12	2.01	0.42
40:m:84:ILE:HB	40:m:86:LYS:HE2	2.01	0.42
1:1:374:A:H1'	1:1:401:A:H61	1.82	0.42
1:1:511:U:O4	1:1:512:G:N1	2.53	0.42
1:1:715:A:H5"	47:t:88:ARG:HE	1.84	0.42
1:1:1109:C:H2'	1:1:1110:G:C1'	2.49	0.42
1:1:1116:G:C2	1:1:1117:C:C5	3.07	0.42
1:1:1540:G:C2	1:1:1541:C:C5	3.07	0.42
1:1:1770:G:C6	1:1:1771:C:C4	3.08	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1776:G:C2	1:1:1777:U:C6	3.08	0.42
1:1:1804:C:C2	1:1:1805:A:C8	3.07	0.42
1:1:1967:C:H2'	1:1:1968:G:O4'	2.19	0.42
1:1:2374:C:O2'	1:1:2375:G:H5'	2.19	0.42
1:1:2497:A:H8	1:1:2497:A:OP2	2.03	0.42
1:1:2682:A:C6	1:1:2683:C:C4	3.07	0.42
1:1:2824:C:O5'	1:1:2824:C:H6	2.03	0.42
2:2:593:U:H2'	2:2:594:U:C6	2.54	0.42
2:2:767:A:H2'	2:2:768:A:O4'	2.19	0.42
2:2:1062:U:O3'	2:2:1063:C:C6	2.73	0.42
2:2:1530:G:O6	53:z:39:LYS:NZ	2.46	0.42
5:5:15:G:N2	5:5:59:A:C2	2.87	0.42
11:F:103:ASN:O	11:F:104:LEU:HD23	2.20	0.42
13:J:19:ASP:OD2	13:J:21:THR:HB	2.19	0.42
14:K:66:LYS:C	14:K:68:GLY:N	2.75	0.42
15:L:102:GLY:O	15:L:103:ILE:C	2.62	0.42
16:M:5:LYS:HG2	16:M:6:ARG:HG2	2.01	0.42
1:1:34:U:H5"	55:1:4153:HOH:O	2.19	0.42
1:1:381:G:C2	1:1:394:C:N3	2.87	0.42
1:1:520:G:H2'	1:1:521:U:C6	2.54	0.42
1:1:1188:U:O2'	1:1:1189:A:H5'	2.20	0.42
1:1:1223:G:H5'	21:R:68:ARG:NH2	2.34	0.42
1:1:1283:G:H2'	1:1:1285:A:OP2	2.19	0.42
1:1:1733:G:N1	1:1:1734:G:C5	2.87	0.42
1:1:1990:C:H2'	1:1:1991:U:C1'	2.49	0.42
1:1:2387:U:C3'	1:1:2388:A:H5"	2.50	0.42
2:2:102:G:C2	2:2:103:U:C4	3.07	0.42
2:2:598:U:H2'	2:2:599:C:C6	2.55	0.42
2:2:983:A:H2	2:2:984:C:C5	2.38	0.42
2:2:1089:G:C6	2:2:1097:C:C4	3.08	0.42
2:2:1185:G:N2	46:s:100:TRP:O	2.52	0.42
2:2:1218:C:H2'	2:2:1219:A:C8	2.54	0.42
2:2:1299:A:H2'	2:2:1300:G:H4'	2.02	0.42
2:2:1434:A:C6	2:2:1435:G:C5	3.07	0.42
3:3:71:C:H42	3:3:105:G:H1	1.68	0.42
5:5:17(A):U:H4'	5:5:61:C:OP2	2.19	0.42
7:B:23:LEU:HD12	7:B:23:LEU:O	2.18	0.42
11:F:165:ASP:O	11:F:167:VAL:N	2.53	0.42
15:L:98:ALA:O	15:L:99:ASN:C	2.63	0.42
17:N:10:LEU:O	17:N:12:ARG:HD2	2.19	0.42
17:N:100:CYS:H	17:N:111:ALA:HA	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Q:35:PHE:O	20:Q:39:ILE:HG12	2.20	0.42
24:U:58:VAL:HG12	24:U:59:GLU:H	1.83	0.42
27:X:13:THR:HA	27:X:27:ARG:HA	2.01	0.42
41:n:5:TYR:HD2	41:n:20:ILE:HG23	1.85	0.42
44:q:6:LEU:N	44:q:6:LEU:HD12	2.35	0.42
47:t:42:PHE:O	47:t:46:LYS:NZ	2.41	0.42
1:1:168:G:C4	1:1:169:G:C8	3.08	0.42
1:1:396:G:C5	1:1:397:U:C5	3.08	0.42
1:1:820:A:C2	1:1:943:A:H4'	2.55	0.42
1:1:896:A:O2'	1:1:897:C:OP2	2.35	0.42
1:1:1224:U:C4	1:1:1225:G:O6	2.72	0.42
1:1:1408:G:H2'	1:1:1409:U:C6	2.55	0.42
1:1:1448:G:O2'	1:1:1449:G:H5'	2.18	0.42
1:1:1572:A:C4	1:1:1573:G:C8	3.08	0.42
1:1:1620:G:O2'	1:1:1621:U:H5'	2.19	0.42
1:1:1700:A:H3'	1:1:1701:A:H8	1.85	0.42
1:1:2064:C:C4	1:1:2065:C:C5	3.07	0.42
1:1:2078:C:O2'	1:1:2079:U:H5'	2.18	0.42
1:1:2627:G:N2	1:1:2777:G:C4	2.88	0.42
1:1:2648:G:C5	1:1:2673:G:C6	3.08	0.42
1:1:2720:U:C2	1:1:2721:A:C8	3.07	0.42
2:2:503:C:OP2	44:q:112:ALA:HB2	2.19	0.42
2:2:619:U:O2	36:i:128:VAL:O	2.37	0.42
2:2:673:A:O3'	38:k:86:ARG:NH1	2.48	0.42
2:2:687:A:H1'	2:2:688:G:O4'	2.19	0.42
2:2:1307:U:C2'	2:2:1308:U:OP1	2.68	0.42
2:2:1489:G:C2	2:2:1490:U:C2	3.08	0.42
2:2:1507:A:C4	2:2:1530:G:C2	3.08	0.42
4:4:13:C:C2	5:5:37:G:N2	2.88	0.42
6:A:11:ILE:HD11	6:A:35:THR:HG21	2.00	0.42
11:F:86:LEU:HG	11:F:162:ARG:O	2.20	0.42
13:J:124:VAL:HG22	13:J:125:TYR:N	2.35	0.42
36:i:61:ARG:HG2	36:i:71:PHE:CE1	2.55	0.42
38:k:29:ILE:HD13	38:k:64:VAL:HG11	2.02	0.42
43:p:112:VAL:O	43:p:113:THR:C	2.62	0.42
44:q:32:VAL:O	44:q:33:CYS:HB2	2.19	0.42
49:v:4:ILE:HG22	49:v:6:THR:H	1.84	0.42
50:w:14:ALA:HA	50:w:50:TYR:HD2	1.83	0.42
1:1:17:G:C6	1:1:524:G:C6	3.08	0.42
1:1:103:A:C2	1:1:104:A:H1'	2.55	0.42
1:1:122:G:H2'	1:1:123:G:O4'	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:151:C:H1'	55:1:3483:HOH:O	2.19	0.42
1:1:244:A:OP2	33:e:7:ARG:NH1	2.53	0.42
1:1:400:G:OP2	1:1:400:G:H8	2.02	0.42
1:1:569:U:C4	1:1:570:G:C6	3.07	0.42
1:1:587:C:OP2	15:L:21:ARG:NH2	2.48	0.42
1:1:724:U:H2'	1:1:725:G:C8	2.55	0.42
1:1:782:A:N7	7:B:219:VAL:HG21	2.35	0.42
1:1:892:A:C5	1:1:893:C:C4	3.07	0.42
1:1:907:G:C6	1:1:908:C:C4	3.07	0.42
1:1:1432:G:H2'	1:1:1433:A:C8	2.55	0.42
1:1:1586:A:C4	1:1:1587:G:C8	3.07	0.42
1:1:1636:U:O2'	1:1:1760:C:O2	2.31	0.42
1:1:1906:G:H2'	1:1:1907:G:O4'	2.20	0.42
1:1:2024:G:C4	1:1:2040:G:N2	2.88	0.42
1:1:2120:G:O2'	1:1:2121:G:C5'	2.66	0.42
1:1:2236:U:H2'	1:1:2237:G:C8	2.55	0.42
1:1:2512:C:H2'	1:1:2513:A:O4'	2.20	0.42
2:2:1023:U:H2'	2:2:1024:G:O4'	2.19	0.42
2:2:1074:G:C4	2:2:1075:U:C5	3.08	0.42
2:2:1175:G:H2'	2:2:1176:A:C8	2.54	0.42
2:2:1188:A:H2'	2:2:1189:U:O4'	2.19	0.42
2:2:1213:A:C6	2:2:1215:G:H1'	2.54	0.42
2:2:1338:G:N2	5:5:41:C:O2'	2.38	0.42
2:2:1422:G:C6	2:2:1479:C:N3	2.88	0.42
2:2:1426:G:C4	2:2:1427:C:C5	3.08	0.42
7:B:167:ASP:N	7:B:170:TYR:O	2.52	0.42
9:D:170:ARG:NH1	9:D:179:SER:OG	2.53	0.42
13:J:32:LEU:O	13:J:36:LEU:HD13	2.20	0.42
14:K:71:ARG:C	14:K:73:ASP:N	2.78	0.42
14:K:71:ARG:O	14:K:73:ASP:N	2.46	0.42
14:K:73:ASP:OD1	14:K:73:ASP:N	2.52	0.42
42:o:44:THR:HG21	42:o:70:HIS:HA	2.01	0.42
47:t:35:ILE:CD1	47:t:55:LEU:HD12	2.50	0.42
1:1:120:U:O4'	1:1:149:A:C8	2.73	0.42
1:1:435:C:H2'	1:1:436:C:H5'	2.02	0.42
1:1:521:U:H2'	1:1:522:A:H8	1.85	0.42
1:1:677:A:C5	1:1:678:C:C5	3.08	0.42
1:1:974:G:C6	1:1:1186:G:C6	3.07	0.42
1:1:989:G:C5	29:Z:13:ILE:HD11	2.55	0.42
1:1:1185:G:H5"	1:1:1186:G:OP1	2.19	0.42
1:1:1452:G:H2'	1:1:1453:A:OP2	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1573:G:C5	1:1:1574:C:C5	3.07	0.42
1:1:1733:G:C2	1:1:1734:G:C8	3.08	0.42
1:1:2091:C:H3'	1:1:2092:U:H2'	2.01	0.42
1:1:2508:G:N1	1:1:2582:G:O6	2.52	0.42
1:1:2528:U:C4	1:1:2530:A:C4	3.07	0.42
1:1:2568:U:H2'	1:1:2569:G:O4'	2.20	0.42
1:1:2652:C:N3	1:1:2653:U:N3	2.68	0.42
1:1:2858:C:N4	1:1:2859:G:C6	2.88	0.42
1:1:2881:U:C2'	1:1:2882:A:H5'	2.50	0.42
2:2:109:A:H62	2:2:324:G:H1'	1.85	0.42
2:2:275:G:C2	2:2:276:G:C8	3.07	0.42
2:2:417:G:C5	2:2:418:C:C5	3.07	0.42
2:2:568:G:C2	2:2:883:C:N3	2.88	0.42
2:2:714:G:O2'	2:2:777:A:C5	2.72	0.42
2:2:882:C:O2'	2:2:883:C:H5'	2.19	0.42
2:2:983:A:H5'	2:2:984:C:OP2	2.19	0.42
2:2:1057:G:C6	2:2:1204:A:C6	3.08	0.42
2:2:1062:U:P	55:2:1720:HOH:O	2.77	0.42
2:2:1088:G:N2	2:2:1098:C:H1'	2.35	0.42
5:5:15:G:N2	5:5:59:A:N1	2.67	0.42
6:A:164:ARG:C	6:A:171:ILE:HD12	2.44	0.42
11:F:100:ASN:O	11:F:116:LEU:HG	2.20	0.42
11:F:142:GLN:O	11:F:142:GLN:NE2	2.52	0.42
18:O:6:ALA:HA	18:O:9:ARG:HG2	2.01	0.42
31:c:12:SER:HA	31:c:48:TYR:HD1	1.84	0.42
36:i:25:ARG:NH1	36:i:28:ASP:O	2.53	0.42
38:k:74:LEU:HD23	38:k:74:LEU:HA	1.71	0.42
41:n:48:ARG:HA	41:n:51:LEU:HD13	2.02	0.42
48:u:61:VAL:HA	48:u:64:GLY:O	2.19	0.42
1:1:239:C:C6	55:1:3864:HOH:O	2.71	0.42
1:1:457:A:N1	1:1:470:A:H5"	2.35	0.42
1:1:659:G:C4	1:1:660:C:C5	3.08	0.42
1:1:754:U:O2'	1:1:755:U:H5'	2.20	0.42
1:1:935:C:H2'	1:1:936:A:H8	1.85	0.42
1:1:1070:A:H3'	1:1:1071:G:C5'	2.50	0.42
1:1:1180:U:H4'	1:1:1180:U:OP1	2.19	0.42
1:1:1232:G:C2	1:1:1233:C:C6	3.08	0.42
1:1:1630:A:N6	1:1:1637:A:N6	2.67	0.42
1:1:2848:G:HO2'	1:1:2867:G:H22	1.61	0.42
2:2:147:G:O2'	2:2:148:G:H5'	2.20	0.42
2:2:501:C:H2'	2:2:502:A:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:645:G:N3	2:2:645:G:H2'	2.34	0.42
2:2:1238:A:H2	2:2:1241:G:N3	2.18	0.42
2:2:1240:U:N3	39:l:31:VAL:HG11	2.35	0.42
2:2:1292:G:C6	2:2:1293:C:C4	3.08	0.42
2:2:1436:U:C2	2:2:1437:A:C8	3.07	0.42
3:3:76:G:O4'	25:V:88:HIS:CD2	2.73	0.42
3:3:118:C:H2'	3:3:119:A:O4'	2.20	0.42
20:Q:108:LEU:HD11	21:R:40:MET:HE1	2.02	0.42
27:X:16:ASN:O	27:X:17:ARG:C	2.62	0.42
33:e:7:ARG:NH2	33:e:10:ALA:HB3	2.35	0.42
36:i:96:ARG:NE	36:i:98:ASP:OD1	2.53	0.42
37:j:76:ASN:O	37:j:77:ASN:OD1	2.38	0.42
37:j:86:GLY:O	37:j:87:VAL:C	2.62	0.42
41:n:28:VAL:O	41:n:64:ILE:HD12	2.20	0.42
42:o:34:ALA:CB	42:o:80:THR:HG21	2.50	0.42
44:q:7:VAL:HG23	49:v:30:HIS:NE2	2.34	0.42
1:1:1:G:H2'	1:1:2:G:H8	1.84	0.42
1:1:281:C:H2'	1:1:282:A:H8	1.85	0.42
1:1:391:A:H2'	1:1:391:A:N3	2.35	0.42
1:1:397:U:H2'	1:1:398:C:C6	2.55	0.42
1:1:545:U:O2	1:1:545:U:H2'	2.20	0.42
1:1:572:A:C3'	1:1:573:U:O4'	2.67	0.42
1:1:678:C:C2	1:1:679:C:C5	3.08	0.42
1:1:846:U:C4	55:1:3754:HOH:O	2.56	0.42
1:1:893:C:H2'	1:1:894:U:O4'	2.19	0.42
1:1:907:G:N2	1:1:908:C:C1'	2.83	0.42
1:1:1006:C:C2	1:1:1138:G:N2	2.88	0.42
1:1:1254:A:H3'	1:1:1255:U:C5'	2.50	0.42
1:1:2528:U:H2'	1:1:2530:A:O5'	2.20	0.42
1:1:2727:A:O2'	1:1:2728:U:H5'	2.20	0.42
2:2:337:G:C2	2:2:338:A:C5	3.08	0.42
2:2:570:G:H5"	2:2:820:U:O4'	2.20	0.42
2:2:633:G:H2'	2:2:634:C:C6	2.54	0.42
2:2:681:A:C2	2:2:682:G:C5	3.08	0.42
2:2:807:A:C2'	2:2:808:C:H5'	2.50	0.42
2:2:820:U:H4'	2:2:821:G:OP2	2.20	0.42
2:2:894:G:N3	2:2:895:G:C8	2.88	0.42
2:2:918:A:C2	2:2:919:A:C4	3.08	0.42
2:2:981:U:H5"	46:s:5:MET:SD	2.60	0.42
2:2:1015:G:H2'	2:2:1016:A:O4'	2.19	0.42
2:2:1057:G:C2	2:2:1058:G:H1'	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1194:U:H2'	2:2:1195:C:C6	2.55	0.42
2:2:1292:G:C5	2:2:1293:C:C5	3.08	0.42
2:2:1308:U:OP2	45:r:98:GLY:O	2.37	0.42
2:2:1308:U:C2'	2:2:1309:G:O5'	2.68	0.42
12:G:31:VAL:N	12:G:32:PRO:HD2	2.35	0.42
12:G:99:ILE:HD12	12:G:102:ALA:HB3	2.00	0.42
13:J:81:ILE:O	13:J:81:ILE:CG2	2.67	0.42
21:R:53:PHE:N	21:R:53:PHE:CD1	2.86	0.42
35:h:163:ARG:NE	55:h:304:HOH:O	2.52	0.42
36:i:98:ASP:OD1	36:i:98:ASP:N	2.51	0.42
37:j:71:ILE:HD11	37:j:144:GLU:HG3	2.02	0.42
38:k:6:ILE:HG13	38:k:88:MET:O	2.20	0.42
39:l:45:ALA:HB1	39:l:119:LEU:HD21	2.02	0.42
40:m:12:ARG:NH1	40:m:25:THR:O	2.53	0.42
42:o:48:ARG:HA	42:o:66:GLU:HG3	2.02	0.42
45:r:89:ARG:NE	45:r:94:LEU:HD13	2.35	0.42
48:u:14:ARG:NH1	48:u:42:ILE:HB	2.35	0.42
1:1:102:U:H2'	55:1:3629:HOH:O	2.19	0.41
1:1:247:G:N7	1:1:249:C:C2	2.89	0.41
1:1:311:A:C8	1:1:332:A:C6	3.08	0.41
1:1:432:A:C2	1:1:433:C:C2	3.07	0.41
1:1:1139:G:O2'	1:1:1143:A:N1	2.52	0.41
1:1:1291:C:H2'	1:1:1292:G:H8	1.85	0.41
1:1:1449:G:H2'	1:1:1450:G:O4'	2.20	0.41
1:1:1682:G:OP1	1:1:1699:G:N2	2.44	0.41
1:1:1915:U:O2	1:1:1915:U:O4'	2.38	0.41
1:1:1989:G:O2'	1:1:1990:C:H5'	2.20	0.41
1:1:2001:C:C4	1:1:2002:G:N7	2.88	0.41
1:1:2048:G:C5	1:1:2049:G:C8	3.08	0.41
1:1:2140:G:N3	1:1:2141:G:C8	2.88	0.41
1:1:2178:C:H2'	1:1:2179:C:C6	2.55	0.41
1:1:2316:G:C4	1:1:2317:A:C8	3.08	0.41
1:1:2330:G:C2	1:1:2386:A:C6	3.08	0.41
1:1:2334:U:O3'	18:O:13:ARG:NH2	2.51	0.41
1:1:2591:C:H2'	1:1:2592:G:H8	1.85	0.41
1:1:2691:C:C4	1:1:2719:G:C2	3.08	0.41
1:1:2725:A:O2'	1:1:2726:A:C8	2.70	0.41
1:1:2839:G:C6	1:1:2840:C:C4	3.07	0.41
2:2:71:A:N6	2:2:99:C:O2'	2.52	0.41
2:2:191:G:N2	2:2:192:A:C5	2.88	0.41
2:2:338:A:H2'	2:2:339:C:O4'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:951:G:C6	2:2:1231:G:C6	3.08	0.41
2:2:1058:G:C2	2:2:1059:C:C6	3.08	0.41
2:2:1256:A:O4'	2:2:1258:G:C5	2.73	0.41
2:2:1513:A:C4	2:2:1514:G:C8	3.08	0.41
3:3:74:U:H1'	25:V:37:PRO:HG2	2.02	0.41
17:N:97:ILE:HG13	17:N:113:ILE:HG22	2.02	0.41
36:i:78:ALA:CB	36:i:89:LEU:HD23	2.50	0.41
38:k:19:PRO:HA	38:k:22:ILE:HD12	2.02	0.41
39:l:57:GLU:OE1	39:l:57:GLU:N	2.52	0.41
45:r:15:VAL:CG1	45:r:33:LEU:HD22	2.48	0.41
1:1:228:C:C4	55:1:4002:HOH:O	2.73	0.41
1:1:231:A:C5	1:1:232:G:C5	3.08	0.41
1:1:372:G:H5"	27:X:60:LYS:HD2	2.02	0.41
1:1:483:A:C4	1:1:484:C:C6	3.08	0.41
1:1:654:A:C1'	55:1:3604:HOH:O	2.55	0.41
1:1:875:G:H2'	1:1:876:C:C6	2.54	0.41
1:1:898:C:H2'	1:1:899:A:O4'	2.20	0.41
1:1:928:A:C6	1:1:929:U:C4	3.08	0.41
1:1:1034:G:C6	1:1:1122:G:C6	3.08	0.41
1:1:1184:U:OP2	29:Z:30:ARG:NH2	2.53	0.41
1:1:2064:C:N3	1:1:2065:C:C5	2.87	0.41
1:1:2215:C:C2	1:1:2216:G:C8	3.08	0.41
1:1:2313:C:O2'	1:1:2314:A:H5'	2.20	0.41
1:1:2684:U:C2	1:1:2685:G:C8	3.08	0.41
1:1:2728:U:C2	1:1:2729:G:N7	2.88	0.41
1:1:2872:A:C2'	1:1:2873:A:H5'	2.50	0.41
1:1:2884:U:O2	1:1:2884:U:O5'	2.38	0.41
2:2:22:G:N1	2:2:23:C:C4	2.89	0.41
2:2:149:A:H1'	2:2:1446:A:H2	1.85	0.41
2:2:440:C:H2'	2:2:441:A:H4'	2.02	0.41
2:2:457:G:C6	2:2:458:U:C4	3.08	0.41
2:2:539:A:H2'	2:2:540:G:O4'	2.20	0.41
2:2:737:C:C2	2:2:738:C:C5	3.09	0.41
2:2:952:U:C2	2:2:953:G:C8	3.09	0.41
2:2:1087:G:C6	2:2:1099:G:N1	2.88	0.41
2:2:1291:U:OP1	39:l:37:THR:HG22	2.20	0.41
2:2:1293:C:H2'	2:2:1294:G:C8	2.55	0.41
2:2:1524:C:C2	2:2:1525:G:C8	3.08	0.41
3:3:41:G:N9	55:3:303:HOH:O	2.48	0.41
7:B:78:GLU:HG3	7:B:94:LEU:HD23	2.03	0.41
8:C:10:GLY:O	8:C:25:THR:HG23	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:E:116:LEU:HB3	10:E:176:PHE:HA	2.02	0.41
13:J:27:ARG:HB2	55:J:303:HOH:O	2.20	0.41
15:L:23:ILE:HG13	21:R:82:HIS:HD1	1.85	0.41
16:M:7:THR:HG22	16:M:8:LYS:N	2.34	0.41
30:b:6:LYS:O	30:b:7:PRO:C	2.63	0.41
1:1:1036:G:C5	1:1:1037:G:N7	2.88	0.41
1:1:1163:G:C2	1:1:1164:C:C5	3.08	0.41
1:1:1508:A:H2'	1:1:1509:A:O4'	2.19	0.41
1:1:1517:G:C4	1:1:1518:C:C5	3.08	0.41
1:1:1723:G:C5	1:1:1724:G:C8	3.08	0.41
1:1:2303:G:H4'	10:E:119:LYS:NZ	2.35	0.41
1:1:2376:A:H2'	1:1:2377:A:O4'	2.20	0.41
1:1:2413:G:N2	1:1:2414:G:H1'	2.35	0.41
2:2:878:A:OP1	40:m:79:ARG:HG2	2.20	0.41
2:2:1044:A:C5	2:2:1045:C:H1'	2.55	0.41
2:2:1135:U:H4'	2:2:1136:C:H5	1.85	0.41
2:2:1231:G:C2	2:2:1232:U:C6	3.09	0.41
2:2:1239:A:H62	2:2:1299:A:H61	1.67	0.41
2:2:1366:C:O2'	2:2:1367:C:H5'	2.21	0.41
2:2:1386:G:C2	2:2:1387:G:N7	2.89	0.41
2:2:1407:C:C2	2:2:1408:A:N7	2.89	0.41
2:2:1415:G:C2	2:2:1416:G:C8	3.08	0.41
2:2:1452:C:H4'	2:2:1453:G:C2	2.56	0.41
3:3:30:C:C5	3:3:31:C:C6	3.08	0.41
8:C:49:GLN:NE2	8:C:79:LEU:HB3	2.35	0.41
9:D:60:TRP:CD1	9:D:70:SER:HB3	2.55	0.41
10:E:6:TYR:HD1	10:E:9:ASP:HB2	1.85	0.41
10:E:47:LYS:HA	10:E:50:ASP:OD1	2.21	0.41
10:E:158:THR:HB	10:E:164:GLU:OE2	2.20	0.41
36:i:18:LEU:HD23	36:i:18:LEU:HA	1.93	0.41
36:i:87:GLU:HA	36:i:90:LEU:CD1	2.50	0.41
41:n:5:TYR:HB2	41:n:20:ILE:CG2	2.50	0.41
45:r:65:GLU:O	45:r:69:ARG:NH1	2.53	0.41
47:t:42:PHE:O	47:t:52:ARG:NH2	2.44	0.41
1:1:83:A:N7	1:1:101:A:N6	2.69	0.41
1:1:168:G:N3	1:1:169:G:C8	2.89	0.41
1:1:515:A:H1'	1:1:581:C:H1'	2.02	0.41
1:1:570:G:OP1	1:1:972:A:O2'	2.32	0.41
1:1:660:C:N3	1:1:661:A:N7	2.68	0.41
1:1:1170:C:N4	55:1:3472:HOH:O	2.54	0.41
1:1:1179:G:N3	55:1:3474:HOH:O	2.44	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1478:G:H1	1:1:1513:U:H3	1.67	0.41
1:1:1744:A:H3'	1:1:1745:A:H8	1.85	0.41
1:1:1795:C:H2'	1:1:1796:U:O4'	2.21	0.41
1:1:1999:C:H5'	1:1:2723:C:O2'	2.21	0.41
1:1:2055:C:O2	1:1:2055:C:H3'	2.20	0.41
1:1:2124:G:H21	6:A:217:THR:CG2	2.26	0.41
1:1:2346:A:O4'	1:1:2383:G:H1'	2.20	0.41
1:1:2374:C:H2'	1:1:2375:G:C8	2.55	0.41
1:1:2531:A:H5'	11:F:156:TYR:CE1	2.55	0.41
1:1:2627:G:N3	1:1:2777:G:C2	2.88	0.41
1:1:2785:C:H2'	1:1:2786:U:O4'	2.20	0.41
2:2:157:U:H2'	2:2:158:G:C8	2.55	0.41
2:2:264:C:O2'	49:v:65:PRO:O	2.37	0.41
2:2:403:C:OP2	36:i:70:GLN:NE2	2.49	0.41
2:2:417:G:H2'	2:2:418:C:C6	2.55	0.41
2:2:630:A:H2'	2:2:631:C:O4'	2.20	0.41
2:2:682:G:H2'	2:2:683:G:H8	1.85	0.41
2:2:904:U:N3	2:2:905:U:C5	2.88	0.41
2:2:965:U:C5'	2:2:966:G:OP1	2.69	0.41
2:2:1118:U:C2	2:2:1179:A:C6	3.08	0.41
2:2:1118:U:O4'	2:2:1179:A:C4	2.74	0.41
2:2:1139:G:N2	2:2:1143:G:C6	2.88	0.41
2:2:1232:U:H5'	41:n:125:GLN:HB3	2.02	0.41
2:2:1290:G:H2'	2:2:1290:G:N3	2.35	0.41
2:2:1449:C:H2'	2:2:1450:U:O4'	2.20	0.41
2:2:1525:G:C4	2:2:1526:G:C8	3.08	0.41
2:2:1535:C:O2	2:2:1535:C:O4'	2.38	0.41
13:J:75:TYR:OH	55:J:301:HOH:O	2.20	0.41
14:K:2:ILE:O	14:K:33:ALA:N	2.52	0.41
17:N:73:ASN:HA	17:N:76:VAL:HG22	2.02	0.41
31:c:10:LEU:O	31:c:19:PHE:HB2	2.21	0.41
35:h:133:MET:O	35:h:137:VAL:HG22	2.20	0.41
49:v:22:VAL:HG12	49:v:43:LEU:HB3	2.01	0.41
1:1:49:A:H4'	1:1:50:U:H5"	2.01	0.41
1:1:164:C:C5	1:1:165:A:C4	3.08	0.41
1:1:185:G:C6	1:1:212:G:N1	2.89	0.41
1:1:734:A:C4	1:1:735:A:C8	3.09	0.41
1:1:740:C:N4	1:1:757:G:H1	2.19	0.41
1:1:752:A:H62	1:1:2609:U:H3	1.69	0.41
1:1:856:G:N1	1:1:922:C:C4	2.88	0.41
1:1:972:A:OP2	1:1:973:A:O2'	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1062:G:C4	1:1:1063:G:N2	2.89	0.41
1:1:1076:C:H2'	1:1:1077:A:O4'	2.20	0.41
1:1:1165:A:H2'	1:1:1166:G:H8	1.86	0.41
1:1:1195:G:C2	1:1:1196:C:C6	3.09	0.41
1:1:1412:U:O2'	1:1:1413:A:H5'	2.21	0.41
1:1:1505:A:C2'	1:1:1506:U:O5'	2.68	0.41
1:1:1687:G:C2	1:1:1702:G:C6	3.08	0.41
1:1:1790:C:C3'	1:1:1791:A:C8	3.03	0.41
1:1:1877:A:C2	1:1:1878:G:C4	3.09	0.41
1:1:1880:U:H2'	1:1:1881:C:C6	2.56	0.41
1:1:1970:A:H8	1:1:1970:A:OP2	2.03	0.41
1:1:2074:U:O2'	1:1:2597:G:H1'	2.20	0.41
1:1:2100:G:C6	1:1:2190:G:C2	3.09	0.41
1:1:2213:U:H5"	1:1:2214:C:OP2	2.20	0.41
1:1:2273:A:H2'	1:1:2274:A:C8	2.55	0.41
1:1:2289:G:N2	1:1:2344:U:O2	2.54	0.41
1:1:2378:A:OP2	1:1:2379:G:N7	2.54	0.41
1:1:2444:G:C6	1:1:2445:G:C5	3.08	0.41
1:1:2636:C:H2'	1:1:2637:U:C6	2.55	0.41
1:1:2739:U:O2'	1:1:2740:A:H5'	2.21	0.41
2:2:213:G:C2	2:2:214:C:C6	3.08	0.41
2:2:679:C:N3	2:2:680:C:C5	2.89	0.41
2:2:877:G:C2	2:2:878:A:N7	2.89	0.41
2:2:964:A:H3'	2:2:965:U:H5'	2.03	0.41
2:2:1261:A:OP2	2:2:1261:A:C2	2.73	0.41
2:2:1432:G:H1'	2:2:1468:A:H62	1.86	0.41
2:2:1514:G:N1	2:2:1515:G:C5	2.88	0.41
3:3:29:A:OP1	18:O:32:PRO:HD2	2.20	0.41
3:3:38:C:N4	3:3:39:A:N6	2.68	0.41
5:5:61:C:C2	5:5:62:C:C5	3.09	0.41
10:E:46:LYS:O	10:E:49:LEU:HG	2.21	0.41
15:L:23:ILE:HG13	21:R:82:HIS:ND1	2.35	0.41
24:U:38:ILE:HD12	24:U:38:ILE:HA	1.89	0.41
46:s:63:CYS:SG	46:s:78:LEU:HA	2.60	0.41
1:1:610:C:H2'	1:1:611:C:H6	1.85	0.41
1:1:883:G:C2	1:1:894:U:O2	2.74	0.41
1:1:896:A:O2'	1:1:897:C:O5'	2.39	0.41
1:1:953:G:O6	1:1:965:C:N4	2.53	0.41
1:1:1093:G:H21	1:1:1098:A:H62	1.69	0.41
1:1:1168:G:C6	1:1:1182:G:C6	3.09	0.41
1:1:1384:A:N3	1:1:1405:U:H1'	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1458:U:H4'	1:1:1459:G:O4'	2.20	0.41
1:1:1877:A:H2'	1:1:1878:G:O4'	2.20	0.41
1:1:2029:G:N1	1:1:2033:A:OP2	2.51	0.41
1:1:2521:C:O2'	1:1:2522:U:H5'	2.21	0.41
1:1:2535:G:N3	1:1:2536:G:C8	2.88	0.41
1:1:2615:U:O2'	1:1:2616:C:H5'	2.20	0.41
1:1:2677:G:H2'	1:1:2678:C:H6	1.86	0.41
2:2:210:C:H4'	55:2:1725:HOH:O	2.20	0.41
2:2:235:C:H2'	2:2:236:A:C8	2.55	0.41
2:2:310:G:C6	2:2:311:C:C4	3.08	0.41
2:2:428:G:OP2	36:i:9:LYS:NZ	2.51	0.41
2:2:552:U:N3	2:2:553:A:N7	2.68	0.41
2:2:807:A:C5	2:2:808:C:C5	3.09	0.41
2:2:900:A:H2'	2:2:901:A:O4'	2.21	0.41
2:2:984:C:H2'	2:2:985:C:H6	1.85	0.41
2:2:1012:A:H2'	2:2:1013:G:O4'	2.21	0.41
13:J:17:VAL:HA	13:J:55:ILE:O	2.20	0.41
13:J:36:LEU:HB3	13:J:118:MET:HE1	2.02	0.41
20:Q:34:ALA:O	20:Q:38:VAL:N	2.51	0.41
24:U:26:ASN:OD1	24:U:26:ASN:N	2.53	0.41
31:c:22:THR:OG1	31:c:23:THR:N	2.53	0.41
35:h:148:ILE:HG22	35:h:169:GLU:O	2.19	0.41
39:l:45:ALA:HB2	39:l:116:ALA:CB	2.51	0.41
40:m:77:VAL:O	40:m:84:ILE:HG12	2.20	0.41
41:n:34:LEU:HD21	41:n:48:ARG:NH2	2.36	0.41
43:p:36:ARG:O	43:p:37:GLN:HB2	2.21	0.41
51:x:27:LYS:HG3	51:x:28:LYS:HG2	2.03	0.41
53:z:11:PHE:O	53:z:13:VAL:N	2.54	0.41
1:1:104:A:C5	1:1:105:C:C5	3.09	0.41
1:1:258:G:N3	1:1:259:G:C8	2.89	0.41
1:1:346:A:C6	1:1:347:A:C5	3.08	0.41
1:1:388:G:N7	1:1:390:U:H2'	2.36	0.41
1:1:672:C:O2'	1:1:673:C:H5'	2.21	0.41
1:1:1208:C:H2'	1:1:1209:U:C6	2.56	0.41
1:1:1298:C:C2	1:1:1299:G:C8	3.09	0.41
1:1:1334:G:O3'	23:T:69:ARG:NH2	2.54	0.41
1:1:1389:G:H2'	1:1:1390:U:O4'	2.20	0.41
1:1:2193:G:H2'	1:1:2194:U:H6	1.85	0.41
1:1:2260:C:C2	1:1:2261:C:C5	3.08	0.41
1:1:2345:G:C2	1:1:2381:A:C5	3.09	0.41
1:1:2846:G:H2'	1:1:2847:U:C6	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2872:A:O2'	1:1:2873:A:H5'	2.21	0.41
2:2:159:G:H2'	2:2:161:A:OP2	2.20	0.41
2:2:284:C:H2'	2:2:285:C:H6	1.85	0.41
2:2:346:G:O2'	2:2:347:G:H4'	2.21	0.41
2:2:676:A:H2'	2:2:677:U:H6	1.84	0.41
2:2:756:C:H2'	2:2:757:U:C6	2.55	0.41
2:2:795:C:C5	2:2:796:C:C5	3.08	0.41
2:2:938:A:C6	2:2:939:G:C5	3.09	0.41
2:2:1118:U:O2	2:2:1179:A:N6	2.54	0.41
2:2:1166:G:N2	2:2:1171:A:N1	2.69	0.41
2:2:1266:G:O6	2:2:1270:G:O6	2.39	0.41
2:2:1457:G:C2	2:2:1458:G:C8	3.09	0.41
5:5:49:G:C2	5:5:50:G:C8	3.08	0.41
7:B:131:MET:HA	7:B:134:ILE:HB	2.03	0.41
8:C:151:THR:CB	8:C:152:PRO:HD3	2.51	0.41
14:K:70:ARG:HE	14:K:70:ARG:HB3	1.60	0.41
14:K:82:ASN:OD1	14:K:82:ASN:N	2.53	0.41
38:k:4:TYR:HD2	38:k:71:ILE:HG12	1.86	0.41
40:m:21:LYS:HE3	55:m:301:HOH:O	2.20	0.41
40:m:21:LYS:NZ	55:m:301:HOH:O	2.44	0.41
41:n:117:LEU:HD23	41:n:121:ARG:HA	2.02	0.41
47:t:6:ALA:O	47:t:10:ILE:HG13	2.21	0.41
1:1:265:A:N7	1:1:428:A:N7	2.68	0.41
1:1:297:G:H2'	1:1:298:G:O4'	2.21	0.41
1:1:532:A:H4'	1:1:533:G:C8	2.56	0.41
1:1:846:U:C5	55:1:3754:HOH:O	2.73	0.41
1:1:1351:C:H1'	1:1:1571:A:C2	2.55	0.41
1:1:1448:G:H2'	1:1:1449:G:O4'	2.21	0.41
1:1:1972:G:C2	1:1:1973:G:N7	2.88	0.41
1:1:2032:G:N2	8:C:151:THR:CG2	2.84	0.41
1:1:2259:U:C2	1:1:2260:C:C6	3.08	0.41
1:1:2366:A:C4	1:1:2367:G:C8	3.08	0.41
1:1:2557:G:C2'	1:1:2558:C:O5'	2.68	0.41
2:2:94:G:H4'	2:2:95:C:OP1	2.21	0.41
2:2:293:G:C2	2:2:294:U:C6	3.09	0.41
2:2:374:A:O2'	2:2:451:A:OP2	2.36	0.41
2:2:400:C:O2'	2:2:401:C:H5'	2.21	0.41
2:2:430:A:OP2	36:i:7:LYS:HG2	2.21	0.41
2:2:469:C:H2'	2:2:470:C:C6	2.56	0.41
2:2:562:U:O2'	44:q:11:ARG:HG3	2.20	0.41
2:2:617:G:N1	2:2:624:C:C2	2.89	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1181:G:H4'	2:2:1182:G:OP1	2.20	0.41
2:2:1471:U:O2'	2:2:1472:U:H5'	2.20	0.41
2:2:1536:C:N4	55:2:1709:HOH:O	2.25	0.41
6:A:46:VAL:HB	6:A:171:ILE:HG23	2.02	0.41
8:C:3:GLY:C	8:C:4:LEU:HD12	2.46	0.41
12:G:1:MET:HA	12:G:20:ASN:HA	2.03	0.41
12:G:40:THR:CG2	12:G:43:ASN:ND2	2.84	0.41
12:G:86:ASP:O	12:G:87:GLU:HB3	2.21	0.41
13:J:4:PHE:CZ	13:J:6:ALA:HA	2.56	0.41
14:K:3:GLN:O	14:K:24:VAL:CG2	2.68	0.41
15:L:62:PRO:HG2	33:e:24:LYS:HB3	2.02	0.41
15:L:92:LEU:HD22	15:L:125:LEU:HD11	2.03	0.41
26:W:73:ARG:CG	55:W:202:HOH:O	2.21	0.41
27:X:6:VAL:CG1	27:X:7:THR:HG23	2.39	0.41
27:X:7:THR:OG1	27:X:9:LYS:HG3	2.21	0.41
33:e:31:ILE:HG13	33:e:35:LYS:NZ	2.36	0.41
36:i:203:TYR:C	36:i:205:LYS:H	2.28	0.41
38:k:91:ARG:O	38:k:93:LYS:N	2.44	0.41
1:1:66:C:C4	1:1:67:U:C5	3.09	0.41
1:1:132:G:H2'	1:1:133:U:C5	2.56	0.41
1:1:146:A:H2'	1:1:147:C:C6	2.55	0.41
1:1:175:G:C2	1:1:176:A:C4	3.08	0.41
1:1:198:C:O2'	1:1:199:A:C5'	2.69	0.41
1:1:311:A:C8	1:1:332:A:C5	3.08	0.41
1:1:396:G:OP1	27:X:9:LYS:HE3	2.21	0.41
1:1:770:G:C2	1:1:771:G:C8	3.09	0.41
1:1:929:U:H2'	1:1:930:G:C8	2.55	0.41
1:1:975:A:H2	1:1:1156:A:N3	2.19	0.41
1:1:982:C:H5'	1:1:983:A:OP1	2.21	0.41
1:1:1062:G:N7	1:1:1088:A:C2'	2.83	0.41
1:1:1144:A:C6	1:1:1145:C:C4	3.09	0.41
1:1:1148:U:O2'	1:1:1149:G:H5'	2.21	0.41
1:1:1199:U:H6	1:1:1199:U:C5'	2.34	0.41
1:1:1402:U:H3'	1:1:1403:A:H5"	2.01	0.41
1:1:1406:U:H2'	1:1:1407:G:O4'	2.20	0.41
1:1:1408:G:H2'	1:1:1409:U:H6	1.86	0.41
1:1:1409:U:H2'	1:1:1410:G:O4'	2.21	0.41
1:1:1422:G:H1	1:1:1576:U:H3	1.69	0.41
1:1:1443:U:H2'	1:1:1444:G:O4'	2.20	0.41
1:1:1521:G:C8	1:1:1522:A:C8	3.09	0.41
1:1:1665:A:H2'	1:1:1666:G:O4'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1790:C:H2'	1:1:1791:A:C8	2.56	0.41
1:1:1802:A:H2'	1:1:1803:A:C8	2.56	0.41
1:1:1809:A:HO2'	1:1:1810:A:C4'	2.29	0.41
1:1:1820:U:C6	7:B:200:MET:HE2	2.56	0.41
1:1:2022:U:HO2'	1:1:2616:C:HO2'	1.69	0.41
1:1:2145:C:H3'	1:1:2146:C:C5'	2.51	0.41
1:1:2177:C:C4	1:1:2178:C:C4	3.08	0.41
1:1:2230:G:C6	1:1:2231:U:C4	3.09	0.41
1:1:2270:A:C5	1:1:2271:G:C8	3.09	0.41
1:1:2292:U:C2	1:1:2293:G:C8	3.08	0.41
1:1:2379:G:N1	1:1:2380:C:C4	2.89	0.41
1:1:2507:C:N3	1:1:2583:G:C6	2.88	0.41
1:1:2564:A:C2	1:1:2647:U:H4'	2.56	0.41
1:1:2588:G:C4	1:1:2589:A:C8	3.09	0.41
1:1:2800:A:H4'	1:1:2801:G:OP2	2.21	0.41
1:1:2803:G:H2'	1:1:2804:U:C6	2.56	0.41
2:2:39:G:C6	2:2:40:C:C5	3.09	0.41
2:2:124:C:O2'	2:2:125:U:H5'	2.20	0.41
2:2:191:G:O2'	2:2:192:A:C5'	2.69	0.41
2:2:213:G:N3	2:2:213:G:H2'	2.34	0.41
2:2:332:G:H2'	2:2:333:U:O4'	2.21	0.41
2:2:416:G:N3	2:2:417:G:C8	2.89	0.41
2:2:453:G:H3'	2:2:454:G:H8	1.86	0.41
2:2:537:G:C4	2:2:538:G:C8	3.09	0.41
2:2:552:U:C4	2:2:553:A:N7	2.89	0.41
2:2:771:G:C6	2:2:809:G:C6	3.09	0.41
2:2:928:G:O2'	2:2:1533:C:P	2.79	0.41
2:2:950:U:H2'	2:2:951:G:C8	2.55	0.41
2:2:1017:U:H2'	2:2:1018:G:C8	2.56	0.41
2:2:1121:U:H2'	2:2:1122:U:H6	1.86	0.41
2:2:1135:U:H4'	2:2:1136:C:C5	2.56	0.41
2:2:1208:C:H2'	2:2:1209:C:H6	1.86	0.41
2:2:1306:A:N1	2:2:1332:A:C4	2.89	0.41
2:2:1309:G:O6	2:2:1329:A:C5	2.73	0.41
2:2:1317:C:N3	51:x:36:ARG:NH1	2.69	0.41
2:2:1382:C:H5"	2:2:1383:C:OP1	2.20	0.41
2:2:1408:A:H2'	2:2:1409:C:C6	2.56	0.41
2:2:1486:G:C4	2:2:1487:G:C8	3.08	0.41
3:3:39:A:O2'	3:3:40:U:H5'	2.20	0.41
5:5:31:C:O2'	5:5:32:A:H5'	2.21	0.41
6:A:43:ASP:O	6:A:215:SER:O	2.39	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:B:7:PRO:HB3	7:B:13:ARG:HD3	2.03	0.41
10:E:32:LYS:HG2	10:E:156:THR:HG21	2.03	0.41
11:F:16:VAL:HG22	11:F:25:ILE:HG22	2.02	0.41
11:F:95:ALA:N	11:F:127:GLN:O	2.52	0.41
11:F:110:HIS:O	11:F:110:HIS:ND1	2.54	0.41
12:G:112:LYS:CB	55:G:203:HOH:O	2.54	0.41
17:N:90:ARG:NH2	17:N:116:VAL:HG11	2.35	0.41
21:R:26:ASP:OD2	21:R:26:ASP:N	2.53	0.41
22:S:51:LEU:O	22:S:55:ILE:HD12	2.20	0.41
23:T:76:ARG:CD	55:T:203:HOH:O	2.66	0.41
24:U:14:THR:OG1	24:U:15:GLY:N	2.54	0.41
24:U:28:LEU:HD23	24:U:29:SER:N	2.35	0.41
24:U:87:GLU:H	24:U:87:GLU:HG2	1.66	0.41
25:V:30:ILE:HA	25:V:91:PHE:O	2.21	0.41
26:W:33:ILE:HG22	26:W:34:VAL:HG23	2.02	0.41
27:X:62:GLY:O	27:X:65:THR:OG1	2.36	0.41
28:Y:28:LEU:HD12	28:Y:28:LEU:N	2.35	0.41
33:e:44:ARG:N	33:e:45:PRO:CD	2.83	0.41
36:i:101:VAL:CG2	36:i:113:ALA:HB1	2.51	0.41
37:j:10:LEU:HD23	37:j:10:LEU:N	2.33	0.41
37:j:108:GLY:O	37:j:109:ALA:HB3	2.20	0.41
39:l:56:SER:OG	39:l:57:GLU:N	2.53	0.41
39:l:65:LEU:HD11	39:l:69:ARG:HD2	2.03	0.41
42:o:7:ARG:N	42:o:101:SER:O	2.53	0.41
44:q:48:LEU:HD12	44:q:48:LEU:HA	1.95	0.41
50:w:65:SER:O	50:w:65:SER:OG	2.29	0.41
1:1:77:G:C6	1:1:78:U:C4	3.09	0.41
1:1:163:C:H2'	1:1:164:C:O4'	2.22	0.41
1:1:279:A:N1	1:1:362:A:H4'	2.35	0.41
1:1:475:C:C4	1:1:481:G:O6	2.73	0.41
1:1:827:U:H1'	1:1:2246:G:O2'	2.20	0.41
1:1:972:A:OP2	1:1:974:G:H5'	2.21	0.41
1:1:999:U:H3	1:1:1155:A:H62	1.68	0.41
1:1:1037:G:H2'	1:1:1038:G:H8	1.85	0.41
1:1:1204:A:H8	1:1:1204:A:OP1	2.04	0.41
1:1:1314:C:C2	1:1:1339:G:N2	2.89	0.41
1:1:1532:A:H2'	1:1:1533:C:O4'	2.21	0.41
1:1:1631:G:N1	1:1:1633:G:H5"	2.36	0.41
1:1:1638:C:C2'	1:1:1639:C:O5'	2.69	0.41
1:1:1727:C:H2'	1:1:1728:C:O4'	2.21	0.41
1:1:1869:G:N2	1:1:1871:A:H5"	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1940:U:O2'	1:1:1941:C:P	2.79	0.41
1:1:2048:G:C6	1:1:2049:G:C5	3.09	0.41
1:1:2073:C:O2'	1:1:2074:U:H5'	2.21	0.41
1:1:2142:A:C6	1:1:2143:C:N4	2.89	0.41
1:1:2264:C:O2'	1:1:2265:U:H5'	2.21	0.41
1:1:2303:G:H2'	1:1:2304:G:O4'	2.21	0.41
1:1:2634:A:H8	55:1:3565:HOH:O	1.91	0.41
2:2:36:C:H2'	2:2:37:U:O4'	2.21	0.41
2:2:375:U:C2	2:2:376:G:C8	3.09	0.41
2:2:682:G:N3	2:2:683:G:C8	2.89	0.41
2:2:902:G:C4	2:2:903:G:C8	3.08	0.41
2:2:958:A:C6	51:x:54:ARG:NH1	2.89	0.41
2:2:1105:A:C2	2:2:1106:G:N7	2.89	0.41
10:E:92:GLY:C	10:E:94:ARG:H	2.29	0.41
11:F:46:ASP:OD1	11:F:46:ASP:C	2.63	0.41
18:O:26:LEU:HD11	18:O:92:PHE:CE1	2.56	0.41
23:T:4:GLU:O	23:T:8:LEU:HD11	2.20	0.41
31:c:13:SER:OG	31:c:47:ILE:HG13	2.20	0.41
36:i:28:ASP:OD1	36:i:30:LYS:HG2	2.21	0.41
39:l:49:LEU:CD1	39:l:123:LEU:HD23	2.51	0.41
41:n:24:ASN:HB3	41:n:61:ASP:HB3	2.02	0.41
42:o:16:ARG:NH2	42:o:19:ASP:OD1	2.53	0.41
50:w:56:ARG:O	50:w:60:ARG:HG3	2.20	0.41
51:x:29:PRO:C	51:x:30:LEU:HD12	2.46	0.41
52:y:30:PHE:O	52:y:34:VAL:HG23	2.21	0.41
52:y:66:ILE:CG2	52:y:70:LYS:HB3	2.51	0.41
1:1:78:U:O2'	1:1:79:C:H5'	2.21	0.40
1:1:307:G:N1	1:1:310:A:OP2	2.54	0.40
1:1:516:C:N3	1:1:517:C:C5	2.89	0.40
1:1:644:A:C2	1:1:2369:A:H1'	2.56	0.40
1:1:801:G:H3'	1:1:802:A:H5'	2.02	0.40
1:1:820:A:N3	1:1:943:A:O2'	2.47	0.40
1:1:976:G:O2'	1:1:1155:A:O2'	2.35	0.40
1:1:978:G:O4'	1:1:1001:A:H2	2.04	0.40
1:1:1021:A:N3	1:1:1021:A:H2'	2.36	0.40
1:1:1214:A:C5	1:1:1215:G:C8	3.10	0.40
1:1:1259:G:H2'	1:1:1260:A:C8	2.56	0.40
1:1:1304:A:O2'	1:1:1305:C:H5'	2.21	0.40
1:1:1437:C:O2'	1:1:1516:G:H4'	2.20	0.40
1:1:1797:G:O2'	1:1:1798:U:H5'	2.21	0.40
1:1:2046:G:H1'	30:b:18:HIS:HD2	1.86	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2088:A:C4	1:1:2089:C:C5	3.09	0.40
1:1:2139:U:H2'	1:1:2140:G:H8	1.86	0.40
1:1:2347:C:C4	1:1:2371:G:N2	2.90	0.40
1:1:2642:G:C4	1:1:2643:G:C8	3.09	0.40
1:1:2863:C:H2'	1:1:2864:G:H8	1.86	0.40
2:2:431:A:C2	2:2:432:A:H1'	2.56	0.40
2:2:439:U:OP2	2:2:440:C:OP2	2.40	0.40
2:2:625:U:H2'	2:2:626:G:H8	1.86	0.40
2:2:724:G:OP1	53:z:48:LYS:HD2	2.21	0.40
2:2:903:G:C4	2:2:904:U:C6	3.09	0.40
2:2:932:C:H41	39:l:2:ARG:HH12	1.68	0.40
2:2:1195:C:C4	2:2:1197:A:C8	3.09	0.40
2:2:1376:U:H2'	2:2:1377:A:O4'	2.20	0.40
5:5:18:G:N2	5:5:57:A:N7	2.69	0.40
5:5:59:A:C4'	5:5:60:U:OP1	2.69	0.40
6:A:42:VAL:HG13	6:A:178:VAL:HG13	2.02	0.40
6:A:174:THR:HG22	6:A:176:GLY:H	1.86	0.40
7:B:106:PRO:HA	7:B:194:VAL:HA	2.02	0.40
10:E:42:ALA:O	10:E:46:LYS:HA	2.22	0.40
14:K:3:GLN:O	14:K:24:VAL:HG22	2.20	0.40
17:N:22:ARG:HD2	17:N:70:THR:H	1.86	0.40
32:d:26:ASN:O	32:d:30:VAL:HG23	2.20	0.40
1:1:33:C:H1'	55:1:3515:HOH:O	2.21	0.40
1:1:224:U:C2'	1:1:225:C:O5'	2.70	0.40
1:1:271:G:C5	1:1:367:G:N1	2.90	0.40
1:1:271:G:H1'	1:1:272:A:C8	2.56	0.40
1:1:282:A:C6	1:1:359:G:C6	3.10	0.40
1:1:438:G:C2	1:1:439:A:C4	3.08	0.40
1:1:462:C:H2'	1:1:463:G:O4'	2.20	0.40
1:1:487:C:H2'	1:1:488:G:O4'	2.22	0.40
1:1:659:G:C2	1:1:660:C:C5	3.10	0.40
1:1:807:U:C2	1:1:808:G:C8	3.09	0.40
1:1:978:G:O2'	1:1:979:A:H5'	2.21	0.40
1:1:1001:A:H2'	1:1:1002:G:O4'	2.21	0.40
1:1:1159:U:N3	1:1:1160:G:C8	2.89	0.40
1:1:1229:C:H2'	1:1:1230:A:C8	2.56	0.40
1:1:1252:G:O2'	1:1:1253:A:C8	2.75	0.40
1:1:1301:A:O2'	1:1:1302:A:H5"	2.22	0.40
1:1:1425:G:O2'	1:1:1426:G:H5'	2.22	0.40
1:1:1491:G:H2'	1:1:1492:G:C8	2.56	0.40
1:1:1524:G:H2'	1:1:1525:A:H8	1.86	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1746:A:H2'	1:1:1747:U:C6	2.55	0.40
1:1:1848:A:C4	1:1:1849:G:C8	3.09	0.40
1:1:1921:G:C2	1:1:1922:G:C8	3.09	0.40
1:1:1958:C:O2'	1:1:1959:G:H5'	2.21	0.40
1:1:2046:G:C2	1:1:2047:C:C6	3.09	0.40
1:1:2291:U:H2'	1:1:2292:U:C6	2.56	0.40
1:1:2383:G:C2	1:1:2384:U:C4	3.09	0.40
1:1:2560:A:O2'	1:1:2561:U:H5'	2.21	0.40
1:1:2686:G:C5	1:1:2687:U:C4	3.09	0.40
2:2:230:G:H2'	2:2:231:U:C6	2.56	0.40
2:2:691:G:H2'	2:2:692:U:C6	2.55	0.40
2:2:903:G:C5	2:2:904:U:C5	3.09	0.40
2:2:905:U:H2'	2:2:906:A:O4'	2.21	0.40
2:2:1106:G:H4'	35:h:171:ARG:HG2	2.03	0.40
2:2:1356:G:H2'	2:2:1357:A:H8	1.85	0.40
2:2:1414:U:H2'	2:2:1415:G:H8	1.87	0.40
3:3:53:A:H2'	3:3:53:A:N3	2.37	0.40
8:C:193:VAL:HG11	8:C:201:LEU:HD13	2.03	0.40
10:E:132:ARG:O	10:E:150:GLY:N	2.54	0.40
20:Q:60:TRP:O	20:Q:64:ILE:HG13	2.22	0.40
20:Q:109:VAL:HG12	20:Q:113:LYS:HE3	2.03	0.40
33:e:54:LEU:O	33:e:55:GLY:C	2.65	0.40
41:n:97:LEU:HG	41:n:101:GLY:O	2.21	0.40
44:q:6:LEU:HA	44:q:9:LYS:O	2.21	0.40
47:t:74:VAL:O	47:t:78:THR:HG23	2.21	0.40
1:1:5:A:C2	1:1:6:A:C4	3.10	0.40
1:1:110:G:O2'	1:1:111:A:H5'	2.21	0.40
1:1:303:G:H2'	1:1:304:U:O4'	2.21	0.40
1:1:341:C:O2'	1:1:342:A:H5'	2.21	0.40
1:1:430:A:H5"	1:1:431:U:OP2	2.22	0.40
1:1:483:A:H2'	1:1:484:C:H5'	2.02	0.40
1:1:696:G:H2'	1:1:696:G:N3	2.36	0.40
1:1:759:G:N2	1:1:760:G:C4	2.89	0.40
1:1:937:C:P	33:e:51:LYS:HE3	2.62	0.40
1:1:1000:A:H2'	1:1:1001:A:C8	2.57	0.40
1:1:1074:G:C2	1:1:1075:C:C5	3.08	0.40
1:1:1417:C:H2'	1:1:1418:G:O4'	2.21	0.40
1:1:1504:A:C2	1:1:1505:A:C5	3.09	0.40
1:1:1664:A:H3'	1:1:1665:A:H8	1.86	0.40
1:1:1744:A:C5	1:1:1745:A:C8	3.10	0.40
1:1:1785:A:H2	1:1:2588:G:H21	1.68	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1793:C:H2'	1:1:1794:A:O4'	2.21	0.40
1:1:2127:G:N2	1:1:2128:G:C2	2.89	0.40
1:1:2128:G:H4'	6:A:218:MET:HE3	2.03	0.40
1:1:2208:C:O2'	1:1:2209:G:H5'	2.21	0.40
1:1:2618:G:N3	8:C:155:VAL:HG21	2.36	0.40
1:1:2807:U:O2	1:1:2892:G:N1	2.55	0.40
1:1:2856:A:N6	1:1:2862:G:O6	2.55	0.40
2:2:432:A:C4	2:2:433:G:C8	3.09	0.40
2:2:1009:U:C4	2:2:1021:A:N1	2.90	0.40
2:2:1244:G:C6	2:2:1294:G:C6	3.09	0.40
2:2:1312:G:N2	2:2:1326:U:C2	2.89	0.40
2:2:1521:C:H2'	2:2:1522:U:C6	2.57	0.40
2:2:1523:G:C4	2:2:1524:C:C5	3.10	0.40
7:B:49:THR:OG1	7:B:50:THR:N	2.54	0.40
7:B:83:ASP:HB2	7:B:90:ILE:HG13	2.03	0.40
11:F:42:VAL:HG22	11:F:43:LYS:N	2.36	0.40
15:L:79:LEU:HB2	15:L:114:GLY:O	2.22	0.40
17:N:59:SER:O	17:N:63:ARG:HG2	2.21	0.40
25:V:60:VAL:CG2	25:V:71:LYS:HD2	2.51	0.40
25:V:79:ARG:HA	25:V:79:ARG:HH11	1.86	0.40
39:l:128:GLU:HB2	39:l:130:LYS:HE2	2.03	0.40
41:n:29:ILE:CD1	41:n:34:LEU:HA	2.51	0.40
43:p:87:GLY:H	43:p:113:THR:HG23	1.85	0.40
45:r:89:ARG:HE	45:r:94:LEU:HD13	1.85	0.40
47:t:57:ARG:NH1	55:t:102:HOH:O	2.54	0.40
49:v:62:GLU:HG3	49:v:72:TRP:CZ3	2.56	0.40
1:1:222:A:H61	1:1:232:G:H1'	1.85	0.40
1:1:266:G:C6	1:1:267:C:C6	3.09	0.40
1:1:401:A:C6	1:1:402:A:C6	3.10	0.40
1:1:429:A:H2'	1:1:430:A:C8	2.56	0.40
1:1:1028:A:H2	1:1:2486:C:O2	2.05	0.40
1:1:1106:G:C4	1:1:1107:G:C8	3.09	0.40
1:1:1107:G:C4	1:1:1108:U:C5	3.09	0.40
1:1:1215:G:C2	1:1:1216:G:C8	3.09	0.40
1:1:1417:C:P	55:1:3401:HOH:O	2.80	0.40
1:1:1425:G:N2	1:1:1574:C:N4	2.70	0.40
1:1:2682:A:C6	1:1:2683:C:C5	3.09	0.40
1:1:2845:U:C2	1:1:2846:G:C8	3.09	0.40
2:2:71:A:C2	2:2:72:A:C1'	3.04	0.40
2:2:125:U:C4	2:2:126:G:N7	2.89	0.40
2:2:185:U:C4	2:2:186:C:N4	2.89	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:302:G:N3	2:2:303:A:C8	2.90	0.40
2:2:460:A:H2'	2:2:461:A:O4'	2.21	0.40
2:2:858:G:O6	2:2:869:G:H3'	2.20	0.40
2:2:953:G:C6	2:2:954:G:C5	3.09	0.40
2:2:1068:G:O6	2:2:1108:G:C2	2.74	0.40
5:5:17(A):U:H4'	5:5:61:C:P	2.61	0.40
5:5:62:C:C2	5:5:63:U:C5	3.09	0.40
8:C:1:MET:HG3	8:C:2:ILE:H	1.87	0.40
8:C:3:GLY:HA3	8:C:203:VAL:O	2.22	0.40
12:G:9:VAL:HG11	12:G:13:GLY:N	2.37	0.40
13:J:64:VAL:HG23	13:J:65:THR:H	1.87	0.40
15:L:73:ILE:CG2	15:L:106:GLU:H	2.34	0.40
19:P:112:ARG:O	19:P:113:LEU:C	2.64	0.40
25:V:28:ALA:HB1	25:V:89:ILE:HB	2.02	0.40
25:V:80:HIS:CE1	25:V:83:LYS:HB2	2.57	0.40
27:X:2:ARG:HD2	27:X:29:LEU:HD11	2.02	0.40
37:j:55:VAL:HB	37:j:56:PRO:HD3	2.03	0.40
42:o:65:TYR:CG	46:s:95:LEU:HD21	2.57	0.40
1:1:149:A:C6	1:1:150:U:C4	3.10	0.40
1:1:657:U:H2'	1:1:658:U:C6	2.56	0.40
1:1:893:C:H2'	1:1:894:U:C6	2.57	0.40
1:1:1109:C:C2'	1:1:1110:G:O4'	2.69	0.40
1:1:1208:C:C2	1:1:1239:G:N2	2.89	0.40
1:1:1278:C:H2'	1:1:1279:G:H8	1.86	0.40
1:1:1775:U:N3	1:1:1776:G:H1'	2.37	0.40
1:1:2239:G:H2'	1:1:2240:U:O5'	2.21	0.40
1:1:2367:G:C2	1:1:2368:C:C6	3.09	0.40
1:1:2623:G:C2	1:1:2624:G:N7	2.90	0.40
2:2:191:G:N2	2:2:192:A:C6	2.90	0.40
2:2:312:C:C2	2:2:313:A:C8	3.10	0.40
2:2:1061:G:H2'	2:2:1062:U:C6	2.57	0.40
2:2:1211:U:O2'	2:2:1213:A:C6	2.75	0.40
2:2:1242:G:C6	2:2:1243:C:N4	2.90	0.40
2:2:1258:G:H2'	2:2:1259:C:C6	2.55	0.40
2:2:1309:G:O6	2:2:1329:A:C6	2.74	0.40
2:2:1350:A:N6	2:2:1373:G:N2	2.69	0.40
2:2:1383:C:O2	2:2:1383:C:P	2.80	0.40
3:3:106:G:H2'	3:3:107:G:O4'	2.22	0.40
7:B:140:VAL:HG12	7:B:191:LEU:HA	2.02	0.40
8:C:156:PHE:CE2	13:J:81:ILE:O	2.74	0.40
13:J:76:HIS:NE2	13:J:85:LYS:HB2	2.37	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:U:14:THR:HA	24:U:18:LYS:HD2	2.02	0.40
35:h:8:GLY:HA3	46:s:88:MET:HB2	2.03	0.40
37:j:10:LEU:HB2	37:j:12:GLU:OE1	2.22	0.40
38:k:18:VAL:N	38:k:19:PRO:CD	2.84	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
6	A	130/229 (57%)	118 (91%)	11 (8%)	1 (1%)	16 51
7	B	269/273 (98%)	235 (87%)	33 (12%)	1 (0%)	30 64
8	C	207/209 (99%)	178 (86%)	28 (14%)	1 (0%)	25 60
9	D	199/201 (99%)	175 (88%)	23 (12%)	1 (0%)	25 60
10	E	175/179 (98%)	153 (87%)	22 (13%)	0	100 100
11	F	174/177 (98%)	156 (90%)	17 (10%)	1 (1%)	22 57
12	G	147/149 (99%)	138 (94%)	8 (5%)	1 (1%)	19 54
13	J	140/142 (99%)	124 (89%)	14 (10%)	2 (1%)	9 40
14	K	120/123 (98%)	96 (80%)	19 (16%)	5 (4%)	2 17
15	L	141/144 (98%)	112 (79%)	25 (18%)	4 (3%)	4 25
16	M	134/136 (98%)	116 (87%)	17 (13%)	1 (1%)	19 54
17	N	118/127 (93%)	96 (81%)	21 (18%)	1 (1%)	16 51
18	O	114/117 (97%)	107 (94%)	7 (6%)	0	100 100
19	P	112/115 (97%)	99 (88%)	13 (12%)	0	100 100
20	Q	115/118 (98%)	110 (96%)	5 (4%)	0	100 100
21	R	101/103 (98%)	90 (89%)	11 (11%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
22	S	108/110 (98%)	102 (94%)	6 (6%)	0	100	100
23	T	91/100 (91%)	83 (91%)	8 (9%)	0	100	100
24	U	100/104 (96%)	92 (92%)	7 (7%)	1 (1%)	13	47
25	V	92/94 (98%)	83 (90%)	8 (9%)	1 (1%)	12	44
26	W	73/84 (87%)	64 (88%)	9 (12%)	0	100	100
27	X	75/78 (96%)	68 (91%)	7 (9%)	0	100	100
28	Y	61/63 (97%)	59 (97%)	1 (2%)	1 (2%)	8	37
29	Z	56/59 (95%)	53 (95%)	3 (5%)	0	100	100
30	b	54/57 (95%)	46 (85%)	8 (15%)	0	100	100
31	c	48/55 (87%)	46 (96%)	2 (4%)	0	100	100
32	d	44/46 (96%)	41 (93%)	3 (7%)	0	100	100
33	e	62/65 (95%)	54 (87%)	4 (6%)	4 (6%)	1	8
34	f	36/38 (95%)	30 (83%)	5 (14%)	1 (3%)	4	25
35	h	204/206 (99%)	191 (94%)	13 (6%)	0	100	100
36	i	203/206 (98%)	183 (90%)	19 (9%)	1 (0%)	25	60
37	j	155/167 (93%)	134 (86%)	21 (14%)	0	100	100
38	k	98/135 (73%)	89 (91%)	7 (7%)	2 (2%)	6	32
39	l	149/179 (83%)	141 (95%)	8 (5%)	0	100	100
40	m	127/130 (98%)	115 (91%)	11 (9%)	1 (1%)	16	51
41	n	125/130 (96%)	110 (88%)	14 (11%)	1 (1%)	16	51
42	o	96/103 (93%)	82 (85%)	13 (14%)	1 (1%)	13	47
43	p	114/129 (88%)	105 (92%)	8 (7%)	1 (1%)	14	49
44	q	121/124 (98%)	96 (79%)	23 (19%)	2 (2%)	7	36
45	r	112/118 (95%)	97 (87%)	13 (12%)	2 (2%)	7	35
46	s	98/101 (97%)	87 (89%)	10 (10%)	1 (1%)	13	47
47	t	86/89 (97%)	81 (94%)	5 (6%)	0	100	100
48	u	80/82 (98%)	69 (86%)	9 (11%)	2 (2%)	4	28
49	v	78/84 (93%)	61 (78%)	17 (22%)	0	100	100
50	w	63/75 (84%)	59 (94%)	3 (5%)	1 (2%)	8	37
51	x	77/92 (84%)	66 (86%)	10 (13%)	1 (1%)	10	41
52	y	83/87 (95%)	79 (95%)	3 (4%)	1 (1%)	11	43

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
53	z	63/71 (89%)	49 (78%)	11 (18%)	3 (5%)	2 14
All	All	5428/5803 (94%)	4818 (89%)	563 (10%)	47 (1%)	17 49

All (47) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
13	J	81	ILE
38	k	92	THR
43	p	126	ARG
44	q	35	ARG
52	y	6	ALA
53	z	9	GLU
53	z	12	ASP
6	A	53	ARG
14	K	30	ARG
14	K	67	LYS
15	L	44	GLY
24	U	91	LYS
28	Y	7	ARG
33	e	28	LEU
38	k	99	ALA
40	m	66	GLN
42	o	56	HIS
45	r	97	ARG
48	u	47	GLU
48	u	48	GLU
8	C	156	PHE
9	D	84	THR
12	G	7	ASP
14	K	13	ASN
17	N	9	GLN
34	f	34	LYS
45	r	95	PRO
46	s	20	PHE
53	z	7	GLU
11	F	166	GLU
13	J	40	HIS
14	K	72	PRO
15	L	65	GLY
33	e	7	ARG
36	i	204	SER
50	w	19	GLU

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Mol	Chain	Res	Type
33	e	62	PRO
51	x	27	LYS
15	L	28	GLY
15	L	103	ILE
25	V	81	PRO
14	K	26	GLY
41	n	54	VAL
16	M	83	GLY
33	e	31	ILE
7	B	3	VAL
44	q	32	VAL

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
6	A	110/177 (62%)	108 (98%)	2 (2%)	54 77
7	B	216/218 (99%)	214 (99%)	2 (1%)	75 89
8	C	164/164 (100%)	161 (98%)	3 (2%)	54 77
9	D	165/165 (100%)	159 (96%)	6 (4%)	30 62
10	E	148/150 (99%)	148 (100%)	0	100 100
11	F	137/138 (99%)	133 (97%)	4 (3%)	37 67
12	G	114/114 (100%)	110 (96%)	4 (4%)	31 63
13	J	116/116 (100%)	112 (97%)	4 (3%)	32 63
14	K	103/104 (99%)	97 (94%)	6 (6%)	17 49
15	L	102/103 (99%)	102 (100%)	0	100 100
16	M	109/109 (100%)	109 (100%)	0	100 100
17	N	100/103 (97%)	100 (100%)	0	100 100
18	O	86/87 (99%)	85 (99%)	1 (1%)	67 85
19	P	99/100 (99%)	96 (97%)	3 (3%)	36 66
20	Q	89/90 (99%)	87 (98%)	2 (2%)	47 73

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
21	R	84/84 (100%)	81 (96%)	3 (4%)	30	62
22	S	93/93 (100%)	89 (96%)	4 (4%)	25	57
23	T	80/84 (95%)	80 (100%)	0	100	100
24	U	83/85 (98%)	82 (99%)	1 (1%)	67	85
25	V	78/78 (100%)	78 (100%)	0	100	100
26	W	57/62 (92%)	56 (98%)	1 (2%)	54	77
27	X	67/68 (98%)	67 (100%)	0	100	100
28	Y	55/55 (100%)	54 (98%)	1 (2%)	54	77
29	Z	48/49 (98%)	47 (98%)	1 (2%)	48	74
30	b	47/48 (98%)	46 (98%)	1 (2%)	48	74
31	c	45/49 (92%)	44 (98%)	1 (2%)	47	73
32	d	38/38 (100%)	38 (100%)	0	100	100
33	e	51/52 (98%)	50 (98%)	1 (2%)	50	75
34	f	34/34 (100%)	34 (100%)	0	100	100
35	h	170/170 (100%)	169 (99%)	1 (1%)	84	92
36	i	172/173 (99%)	170 (99%)	2 (1%)	67	85
37	j	119/126 (94%)	118 (99%)	1 (1%)	79	90
38	k	87/116 (75%)	82 (94%)	5 (6%)	17	50
39	l	124/147 (84%)	121 (98%)	3 (2%)	44	71
40	m	104/105 (99%)	103 (99%)	1 (1%)	73	87
41	n	105/107 (98%)	104 (99%)	1 (1%)	73	87
42	o	86/90 (96%)	85 (99%)	1 (1%)	67	85
43	p	89/99 (90%)	86 (97%)	3 (3%)	32	63
44	q	103/104 (99%)	102 (99%)	1 (1%)	73	87
45	r	92/96 (96%)	90 (98%)	2 (2%)	47	73
46	s	83/84 (99%)	83 (100%)	0	100	100
47	t	76/77 (99%)	75 (99%)	1 (1%)	65	83
48	u	65/65 (100%)	63 (97%)	2 (3%)	35	66
49	v	74/78 (95%)	74 (100%)	0	100	100
50	w	56/65 (86%)	56 (100%)	0	100	100
51	x	70/79 (89%)	69 (99%)	1 (1%)	62	82

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
52	y	65/66 (98%)	63 (97%)	2 (3%)	35 66
53	z	55/61 (90%)	54 (98%)	1 (2%)	54 77
All	All	4513/4725 (96%)	4434 (98%)	79 (2%)	54 77

All (79) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
6	A	42	VAL
6	A	173	THR
7	B	216	ARG
7	B	227	VAL
8	C	88	GLU
8	C	151	THR
8	C	180	VAL
9	D	84	THR
9	D	116	ASP
9	D	126	VAL
9	D	146	VAL
9	D	149	ILE
9	D	191	ASP
11	F	40	VAL
11	F	103	ASN
11	F	121	THR
11	F	167	VAL
12	G	5	LEU
12	G	6	LEU
12	G	7	ASP
12	G	8	LYS
13	J	60	ASP
13	J	62	VAL
13	J	64	VAL
13	J	65	THR
14	K	3	GLN
14	K	13	ASN
14	K	25	LEU
14	K	57	VAL
14	K	62	VAL
14	K	65	THR
18	O	28	VAL
19	P	52	ARG
19	P	72	VAL

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Mol	Chain	Res	Type
19	P	83	ILE
20	Q	47	ARG
20	Q	94	LEU
21	R	22	LEU
21	R	54	VAL
21	R	82	HIS
22	S	2	GLU
22	S	4	ILE
22	S	29	VAL
22	S	55	ILE
24	U	85	ARG
26	W	39	THR
28	Y	23	ARG
29	Z	3	THR
30	b	2	VAL
31	c	46	VAL
33	e	32	LEU
35	h	46	LEU
36	i	21	LYS
36	i	201	GLU
37	j	144	GLU
38	k	47	LEU
38	k	61	LEU
38	k	71	ILE
38	k	74	LEU
38	k	92	THR
39	l	47	GLU
39	l	68	VAL
39	l	105	GLU
40	m	24	VAL
41	n	54	VAL
42	o	80	THR
43	p	112	VAL
43	p	113	THR
43	p	126	ARG
44	q	103	CYS
45	r	96	VAL
45	r	97	ARG
47	t	34	GLN
48	u	21	VAL
48	u	47	GLU
51	x	62	THR

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Mol	Chain	Res	Type
52	y	4	LYS
52	y	60	GLN
53	z	9	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (51) such sidechains are listed below:

Mol	Chain	Res	Type
6	A	24	ASN
6	A	165	ASN
7	B	85	ASN
8	C	167	ASN
8	C	185	ASN
10	E	51	ASN
12	G	28	ASN
12	G	43	ASN
12	G	133	GLN
12	G	135	HIS
12	G	145	ASN
13	J	130	HIS
14	K	93	GLN
16	M	97	GLN
17	N	73	ASN
18	O	104	GLN
19	P	14	GLN
20	Q	13	HIS
20	Q	36	GLN
20	Q	43	GLN
22	S	60	HIS
22	S	61	ASN
23	T	15	HIS
26	W	8	ASN
26	W	42	HIS
27	X	5	GLN
28	Y	25	GLN
28	Y	36	GLN
29	Z	8	GLN
30	b	18	HIS
30	b	40	HIS
31	c	18	HIS
32	d	29	GLN
34	f	33	HIS
35	h	31	ASN

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Mol	Chain	Res	Type
36	i	35	GLN
36	i	53	GLN
36	i	73	ASN
36	i	115	GLN
36	i	125	ASN
37	j	120	HIS
38	k	17	GLN
38	k	68	GLN
39	l	141	HIS
42	o	56	HIS
43	p	63	GLN
45	r	51	GLN
45	r	99	GLN
49	v	50	ASN
50	w	30	ASN
52	y	2	ASN

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	1	2902/2904 (99%)	568 (19%)	9 (0%)
2	2	1538/1540 (99%)	334 (21%)	8 (0%)
3	3	119/120 (99%)	16 (13%)	0
4	4	3/18 (16%)	0	0
5	5	76/77 (98%)	25 (32%)	3 (3%)
All	All	4638/4659 (99%)	943 (20%)	20 (0%)

All (943) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	1	8	C
1	1	10	A
1	1	34	U
1	1	42	A
1	1	46	G
1	1	50	U
1	1	51	G
1	1	63	A
1	1	70	G
1	1	71	A
1	1	82	U

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Mol	Chain	Res	Type
1	1	90	U
1	1	93	G
1	1	96	C
1	1	103	A
1	1	112	U
1	1	118	A
1	1	120	U
1	1	125	A
1	1	134	G
1	1	138	U
1	1	140	C
1	1	141	G
1	1	142	A
1	1	162	U
1	1	163	C
1	1	166	U
1	1	168	G
1	1	176	A
1	1	181	A
1	1	186	G
1	1	196	A
1	1	204	A
1	1	205	G
1	1	206	U
1	1	216	A
1	1	222	A
1	1	228	C
1	1	229	C
1	1	233	A
1	1	238	C
1	1	248	G
1	1	249	C
1	1	255	A
1	1	265	A
1	1	266	G
1	1	267	C
1	1	276	U
1	1	290	U
1	1	294	A
1	1	311	A
1	1	312	G
1	1	322	A

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Mol	Chain	Res	Type
1	1	323	C
1	1	324	A
1	1	329	G
1	1	330	A
1	1	346	A
1	1	349	U
1	1	361	G
1	1	362	A
1	1	371	A
1	1	372	G
1	1	380	G
1	1	386	G
1	1	387	U
1	1	400	G
1	1	404	A
1	1	405	U
1	1	406	G
1	1	411	G
1	1	412	A
1	1	413	C
1	1	416	U
1	1	424	G
1	1	434	U
1	1	449	A
1	1	451	U
1	1	456	C
1	1	464	U
1	1	465	G
1	1	466	A
1	1	467	G
1	1	481	G
1	1	489	G
1	1	491	G
1	1	501	A
1	1	502	A
1	1	504	A
1	1	505	A
1	1	508	A
1	1	510	C
1	1	527	C
1	1	529	A
1	1	532	A

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Mol	Chain	Res	Type
1	1	544	C
1	1	545	U
1	1	547	A
1	1	549	G
1	1	550	C
1	1	555	G
1	1	558	U
1	1	563	A
1	1	572	A
1	1	573	U
1	1	575	A
1	1	586	A
1	1	588	U
1	1	589	U
1	1	595	C
1	1	603	A
1	1	614	A
1	1	616	A
1	1	627	A
1	1	631	A
1	1	637	A
1	1	646	U
1	1	654	A
1	1	655	A
1	1	659	G
1	1	666	A
1	1	684	G
1	1	685	A
1	1	686	U
1	1	690	G
1	1	691	C
1	1	696	G
1	1	711	G
1	1	714	U
1	1	730	A
1	1	731	C
1	1	747	C
1	1	756	A
1	1	773	U
1	1	776	G
1	1	782	A
1	1	783	A

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Mol	Chain	Res	Type
1	1	784	G
1	1	785	G
1	1	789	A
1	1	803	U
1	1	804	A
1	1	805	G
1	1	806	C
1	1	811	U
1	1	812	C
1	1	819	A
1	1	827	U
1	1	828	U
1	1	831	G
1	1	845	A
1	1	846	U
1	1	847	U
1	1	858	G
1	1	859	G
1	1	865	C
1	1	866	A
1	1	868	U
1	1	874	G
1	1	878	A
1	1	883	G
1	1	884	U
1	1	885	C
1	1	886	A
1	1	887	U
1	1	890	C
1	1	891	G
1	1	896	A
1	1	897	C
1	1	898	C
1	1	907	G
1	1	910	A
1	1	915	C
1	1	917	A
1	1	918	A
1	1	932	U
1	1	934	U
1	1	941	A
1	1	946	C

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Mol	Chain	Res	Type
1	1	948	C
1	1	953	G
1	1	957	C
1	1	958	U
1	1	961	C
1	1	965	C
1	1	974	G
1	1	982	C
1	1	983	A
1	1	990	A
1	1	995	C
1	1	996	A
1	1	1006	C
1	1	1012	U
1	1	1013	C
1	1	1022	G
1	1	1033	U
1	1	1043	C
1	1	1045	C
1	1	1046	A
1	1	1051	G
1	1	1053	C
1	1	1056	G
1	1	1060	U
1	1	1062	G
1	1	1065	U
1	1	1066	U
1	1	1067	A
1	1	1068	G
1	1	1070	A
1	1	1071	G
1	1	1072	C
1	1	1075	C
1	1	1079	C
1	1	1083	U
1	1	1084	A
1	1	1085	A
1	1	1088	A
1	1	1089	A
1	1	1090	A
1	1	1094	U
1	1	1102	C

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Mol	Chain	Res	Type
1	1	1104	C
1	1	1111	A
1	1	1128	G
1	1	1132	U
1	1	1133	A
1	1	1135	C
1	1	1142	A
1	1	1143	A
1	1	1169	A
1	1	1174	U
1	1	1175	A
1	1	1176	U
1	1	1177	G
1	1	1178	C
1	1	1180	U
1	1	1193	G
1	1	1199	U
1	1	1204	A
1	1	1205	A
1	1	1206	G
1	1	1211	C
1	1	1212	G
1	1	1218	G
1	1	1238	G
1	1	1247	A
1	1	1248	G
1	1	1253	A
1	1	1255	U
1	1	1256	G
1	1	1268	A
1	1	1269	A
1	1	1271	G
1	1	1272	A
1	1	1275	A
1	1	1289	C
1	1	1300	G
1	1	1301	A
1	1	1302	A
1	1	1325	U
1	1	1326	U
1	1	1329	U
1	1	1330	C

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Mol	Chain	Res	Type
1	1	1344	U
1	1	1345	C
1	1	1361	G
1	1	1378	A
1	1	1379	U
1	1	1380	G
1	1	1383	A
1	1	1396	U
1	1	1403	A
1	1	1414	C
1	1	1416	G
1	1	1417	C
1	1	1420	A
1	1	1427	A
1	1	1428	C
1	1	1433	A
1	1	1450	G
1	1	1453	A
1	1	1454	C
1	1	1461	C
1	1	1467	U
1	1	1475	G
1	1	1482	G
1	1	1483	G
1	1	1490	A
1	1	1497	U
1	1	1506	U
1	1	1515	A
1	1	1519	G
1	1	1521	G
1	1	1524	G
1	1	1532	A
1	1	1535	A
1	1	1536	C
1	1	1537	G
1	1	1551	A
1	1	1552	A
1	1	1555	G
1	1	1558	C
1	1	1560	G
1	1	1563	U
1	1	1566	A

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Mol	Chain	Res	Type
1	1	1567	G
1	1	1581	G
1	1	1585	C
1	1	1598	A
1	1	1607	C
1	1	1608	A
1	1	1616	A
1	1	1618	A
1	1	1627	G
1	1	1633	G
1	1	1643	G
1	1	1644	C
1	1	1646	C
1	1	1647	U
1	1	1648	U
1	1	1662	U
1	1	1663	G
1	1	1665	A
1	1	1674	G
1	1	1686	C
1	1	1694	C
1	1	1699	G
1	1	1700	A
1	1	1713	A
1	1	1714	U
1	1	1715	G
1	1	1729	U
1	1	1730	C
1	1	1731	G
1	1	1733	G
1	1	1735	A
1	1	1738	G
1	1	1754	A
1	1	1756	G
1	1	1757	A
1	1	1758	U
1	1	1764	C
1	1	1766	G
1	1	1773	A
1	1	1779	U
1	1	1780	A
1	1	1782	U

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Mol	Chain	Res	Type
1	1	1784	A
1	1	1785	A
1	1	1800	C
1	1	1801	A
1	1	1808	A
1	1	1811	G
1	1	1812	U
1	1	1816	C
1	1	1819	A
1	1	1820	U
1	1	1829	A
1	1	1830	C
1	1	1843	C
1	1	1848	A
1	1	1869	G
1	1	1878	G
1	1	1901	A
1	1	1903	G
1	1	1906	G
1	1	1907	G
1	1	1912	A
1	1	1913	A
1	1	1914	C
1	1	1929	G
1	1	1930	G
1	1	1931	U
1	1	1937	A
1	1	1939	U
1	1	1940	U
1	1	1944	U
1	1	1951	U
1	1	1955	U
1	1	1967	C
1	1	1969	A
1	1	1970	A
1	1	1971	U
1	1	1972	G
1	1	1982	U
1	1	1984	G
1	1	1991	U
1	1	1997	C
1	1	1998	A

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Mol	Chain	Res	Type
1	1	1999	C
1	1	2000	C
1	1	2001	C
1	1	2018	G
1	1	2022	U
1	1	2023	C
1	1	2030	A
1	1	2031	A
1	1	2032	G
1	1	2033	A
1	1	2034	U
1	1	2041	U
1	1	2043	C
1	1	2046	G
1	1	2055	C
1	1	2056	G
1	1	2060	A
1	1	2061	G
1	1	2062	A
1	1	2065	C
1	1	2069	G
1	1	2072	C
1	1	2075	U
1	1	2077	A
1	1	2092	U
1	1	2095	A
1	1	2100	G
1	1	2109	U
1	1	2110	G
1	1	2111	U
1	1	2112	G
1	1	2118	U
1	1	2119	A
1	1	2126	A
1	1	2131	U
1	1	2132	U
1	1	2133	G
1	1	2134	A
1	1	2139	U
1	1	2145	C
1	1	2146	C
1	1	2147	A

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Mol	Chain	Res	Type
1	1	2154	A
1	1	2157	G
1	1	2158	A
1	1	2162	G
1	1	2165	C
1	1	2166	U
1	1	2168	G
1	1	2169	A
1	1	2171	A
1	1	2172	U
1	1	2198	A
1	1	2204	G
1	1	2211	A
1	1	2225	A
1	1	2226	C
1	1	2228	G
1	1	2238	G
1	1	2239	G
1	1	2246	G
1	1	2250	G
1	1	2259	U
1	1	2268	A
1	1	2271	G
1	1	2283	C
1	1	2287	A
1	1	2298	A
1	1	2300	C
1	1	2305	U
1	1	2307	G
1	1	2309	A
1	1	2311	A
1	1	2322	A
1	1	2325	G
1	1	2327	A
1	1	2331	G
1	1	2333	A
1	1	2334	U
1	1	2336	A
1	1	2361	G
1	1	2382	G
1	1	2383	G
1	1	2385	C

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Mol	Chain	Res	Type
1	1	2388	A
1	1	2390	U
1	1	2395	C
1	1	2402	U
1	1	2403	C
1	1	2406	A
1	1	2421	G
1	1	2422	C
1	1	2423	U
1	1	2425	A
1	1	2427	C
1	1	2429	G
1	1	2430	A
1	1	2440	C
1	1	2441	U
1	1	2447	G
1	1	2448	A
1	1	2475	C
1	1	2476	A
1	1	2490	G
1	1	2498	C
1	1	2499	C
1	1	2501	C
1	1	2502	G
1	1	2505	G
1	1	2513	A
1	1	2518	A
1	1	2520	C
1	1	2522	U
1	1	2529	G
1	1	2535	G
1	1	2547	A
1	1	2549	G
1	1	2554	U
1	1	2555	U
1	1	2556	C
1	1	2558	C
1	1	2564	A
1	1	2566	A
1	1	2567	G
1	1	2568	U
1	1	2572	A

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Mol	Chain	Res	Type
1	1	2582	G
1	1	2602	A
1	1	2609	U
1	1	2610	C
1	1	2613	U
1	1	2615	U
1	1	2621	G
1	1	2629	U
1	1	2630	G
1	1	2646	C
1	1	2656	U
1	1	2663	G
1	1	2671	G
1	1	2682	A
1	1	2685	G
1	1	2689	U
1	1	2690	U
1	1	2691	C
1	1	2714	G
1	1	2715	C
1	1	2716	C
1	1	2718	G
1	1	2733	A
1	1	2744	G
1	1	2748	A
1	1	2755	C
1	1	2756	U
1	1	2759	G
1	1	2765	A
1	1	2777	G
1	1	2778	A
1	1	2779	U
1	1	2786	U
1	1	2791	G
1	1	2794	C
1	1	2796	U
1	1	2798	U
1	1	2799	A
1	1	2800	A
1	1	2807	U
1	1	2818	U
1	1	2820	A

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Mol	Chain	Res	Type
1	1	2822	G
1	1	2833	U
1	1	2859	G
1	1	2866	U
1	1	2867	G
1	1	2868	A
1	1	2880	C
1	1	2881	U
1	1	2884	U
1	1	2893	A
1	1	2894	G
2	2	5	U
2	2	6	G
2	2	9	G
2	2	16	A
2	2	17	U
2	2	31	G
2	2	39	G
2	2	40	C
2	2	47	C
2	2	48	C
2	2	51	A
2	2	56	U
2	2	61	G
2	2	64	G
2	2	65	A
2	2	71	A
2	2	82	G
2	2	83	C
2	2	84	U
2	2	87	C
2	2	88	U
2	2	110	C
2	2	121	U
2	2	128	G
2	2	130	A
2	2	131	A
2	2	155	A
2	2	165	G
2	2	183	C
2	2	184	G
2	2	189	A

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Mol	Chain	Res	Type
2	2	190	A
2	2	191	G
2	2	195	A
2	2	209	U
2	2	210	C
2	2	226	G
2	2	240	G
2	2	243	A
2	2	244	U
2	2	247	G
2	2	251	G
2	2	264	C
2	2	265	G
2	2	266	G
2	2	267	C
2	2	269	C
2	2	280	C
2	2	281	G
2	2	282	A
2	2	289	G
2	2	298	A
2	2	299	G
2	2	303	A
2	2	315	A
2	2	316	C
2	2	328	C
2	2	329	A
2	2	332	G
2	2	333	U
2	2	340	U
2	2	345	C
2	2	346	G
2	2	347	G
2	2	350	G
2	2	352	C
2	2	353	A
2	2	354	G
2	2	355	C
2	2	364	A
2	2	367	U
2	2	369	G
2	2	372	C

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Mol	Chain	Res	Type
2	2	387	U
2	2	388	G
2	2	389	A
2	2	397	A
2	2	398	U
2	2	406	G
2	2	409	U
2	2	411	A
2	2	412	A
2	2	413	G
2	2	421	U
2	2	422	C
2	2	424	G
2	2	429	U
2	2	430	A
2	2	439	U
2	2	441	A
2	2	442	G
2	2	445	G
2	2	446	G
2	2	461	A
2	2	462	G
2	2	467	U
2	2	484	G
2	2	486	U
2	2	497	G
2	2	506	G
2	2	508	U
2	2	509	A
2	2	512	U
2	2	513	C
2	2	516	U
2	2	518	C
2	2	519	C
2	2	521	G
2	2	524	G
2	2	531	U
2	2	532	A
2	2	533	A
2	2	534	U
2	2	547	A
2	2	548	G

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Mol	Chain	Res	Type
2	2	561	U
2	2	562	U
2	2	563	A
2	2	566	G
2	2	570	G
2	2	571	U
2	2	573	A
2	2	574	A
2	2	575	G
2	2	576	C
2	2	577	G
2	2	579	A
2	2	586	C
2	2	609	A
2	2	615	G
2	2	619	U
2	2	633	G
2	2	641	U
2	2	653	U
2	2	657	U
2	2	665	A
2	2	687	A
2	2	693	G
2	2	702	A
2	2	703	G
2	2	713	G
2	2	719	C
2	2	723	U
2	2	724	G
2	2	728	A
2	2	731	G
2	2	732	C
2	2	733	G
2	2	734	G
2	2	747	A
2	2	753	A
2	2	754	C
2	2	755	G
2	2	760	G
2	2	768	A
2	2	777	A
2	2	781	A

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Mol	Chain	Res	Type
2	2	792	A
2	2	793	U
2	2	794	A
2	2	813	U
2	2	814	A
2	2	815	A
2	2	817	C
2	2	818	G
2	2	819	A
2	2	828	U
2	2	836	G
2	2	842	U
2	2	843	U
2	2	844	G
2	2	845	A
2	2	846	G
2	2	850	U
2	2	871	U
2	2	872	A
2	2	873	A
2	2	874	G
2	2	902	G
2	2	913	A
2	2	914	A
2	2	915	A
2	2	927	G
2	2	934	C
2	2	935	A
2	2	938	A
2	2	946	A
2	2	955	U
2	2	960	U
2	2	961	U
2	2	962	C
2	2	965	U
2	2	966	G
2	2	968	A
2	2	969	A
2	2	971	G
2	2	975	A
2	2	976	G
2	2	977	A

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Mol	Chain	Res	Type
2	2	978	A
2	2	979	C
2	2	989	U
2	2	992	U
2	2	993	G
2	2	994	A
2	2	1004	A
2	2	1012	A
2	2	1015	G
2	2	1017	U
2	2	1028	C
2	2	1033	G
2	2	1035	A
2	2	1036	A
2	2	1037	C
2	2	1038	C
2	2	1044	A
2	2	1053	G
2	2	1054	C
2	2	1055	A
2	2	1063	C
2	2	1064	G
2	2	1065	U
2	2	1070	U
2	2	1074	G
2	2	1080	A
2	2	1085	U
2	2	1091	U
2	2	1092	A
2	2	1094	G
2	2	1095	U
2	2	1097	C
2	2	1101	A
2	2	1110	A
2	2	1111	A
2	2	1115	U
2	2	1119	C
2	2	1124	G
2	2	1126	U
2	2	1136	C
2	2	1137	C
2	2	1138	G

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Mol	Chain	Res	Type
2	2	1139	G
2	2	1146	A
2	2	1157	A
2	2	1158	C
2	2	1159	U
2	2	1160	G
2	2	1161	C
2	2	1165	U
2	2	1168	U
2	2	1169	A
2	2	1173	U
2	2	1174	G
2	2	1179	A
2	2	1181	G
2	2	1182	G
2	2	1183	U
2	2	1185	G
2	2	1190	G
2	2	1192	C
2	2	1193	G
2	2	1196	A
2	2	1197	A
2	2	1200	C
2	2	1201	A
2	2	1207	G
2	2	1213	A
2	2	1222	G
2	2	1224	U
2	2	1226	C
2	2	1227	A
2	2	1228	C
2	2	1229	A
2	2	1233	G
2	2	1236	A
2	2	1238	A
2	2	1241	G
2	2	1253	G
2	2	1256	A
2	2	1257	A
2	2	1261	A
2	2	1275	A
2	2	1278	G

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Mol	Chain	Res	Type
2	2	1280	A
2	2	1281	C
2	2	1282	C
2	2	1286	U
2	2	1287	A
2	2	1290	G
2	2	1291	U
2	2	1300	G
2	2	1301	U
2	2	1304	G
2	2	1308	U
2	2	1317	C
2	2	1320	C
2	2	1322	C
2	2	1323	G
2	2	1332	A
2	2	1338	G
2	2	1346	A
2	2	1347	G
2	2	1352	C
2	2	1353	G
2	2	1363	A
2	2	1378	C
2	2	1383	C
2	2	1385	G
2	2	1394	A
2	2	1395	C
2	2	1401	G
2	2	1404	C
2	2	1419	G
2	2	1441	A
2	2	1446	A
2	2	1452	C
2	2	1480	A
2	2	1484	C
2	2	1491	G
2	2	1492	A
2	2	1493	A
2	2	1497	G
2	2	1503	A
2	2	1504	G
2	2	1506	U

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Mol	Chain	Res	Type
2	2	1513	A
2	2	1517	G
2	2	1518	A
2	2	1520	C
2	2	1522	U
2	2	1529	G
2	2	1530	G
2	2	1534	A
2	2	1537	U
3	3	2	G
3	3	4	C
3	3	15	A
3	3	24	G
3	3	26	C
3	3	35	C
3	3	41	G
3	3	44	G
3	3	52	A
3	3	53	A
3	3	57	A
3	3	67	G
3	3	89	U
3	3	90	C
3	3	95	U
3	3	109	A
5	5	3	G
5	5	4	C
5	5	5	A
5	5	6	C
5	5	9	A
5	5	14	A
5	5	15	G
5	5	16	C
5	5	17	C
5	5	17(A)	U
5	5	18	G
5	5	19	G
5	5	20	U
5	5	21	A
5	5	22	G
5	5	40	U
5	5	42	G

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Mol	Chain	Res	Type
5	5	46	G
5	5	48	C
5	5	54	U
5	5	56	C
5	5	57	A
5	5	60	U
5	5	61	C
5	5	76	A

All (20) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	1	811	U
1	1	896	A
1	1	1343	G
1	1	1453	A
1	1	1626	A
1	1	1730	C
1	1	1828	G
1	1	1930	G
1	1	2030	A
2	2	55	A
2	2	70	U
2	2	281	G
2	2	429	U
2	2	960	U
2	2	1069	C
2	2	1157	A
2	2	1173	U
5	5	2	G
5	5	47	U
5	5	59	A

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

Of 415 ligands modelled in this entry, 415 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

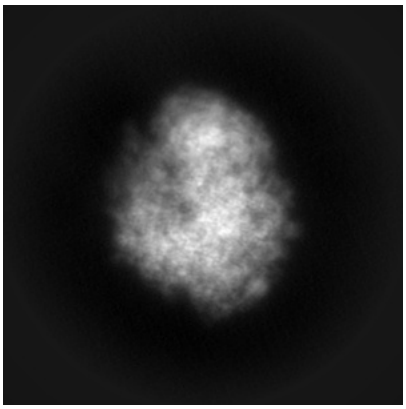
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-42832. These allow visual inspection of the internal detail of the map and identification of artifacts.

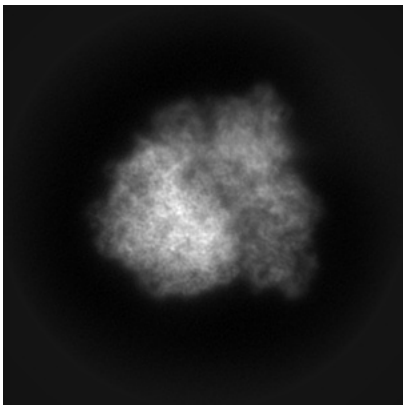
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

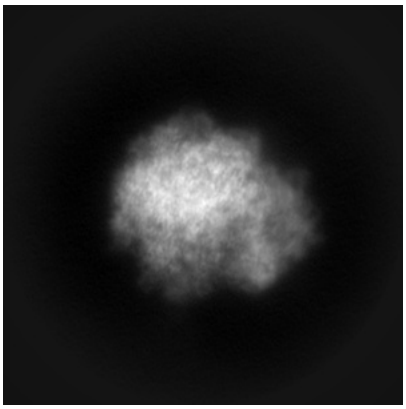
6.1.1 Primary map



X

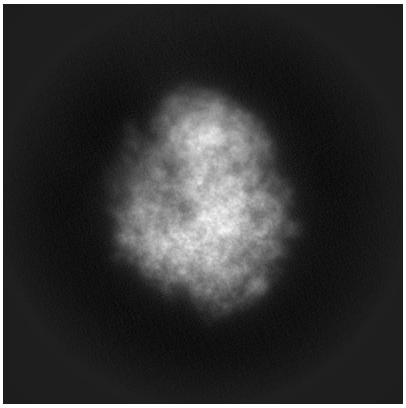


Y

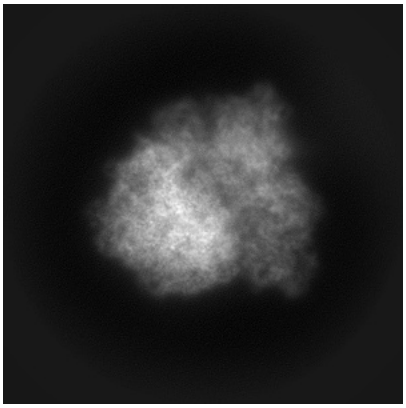


Z

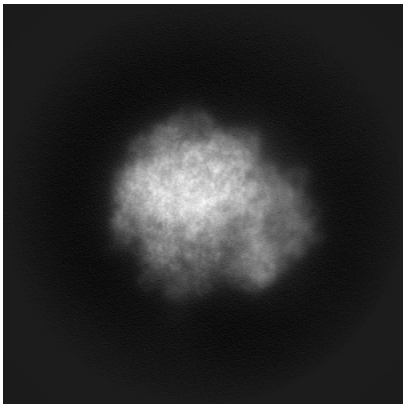
6.1.2 Raw map



X



Y

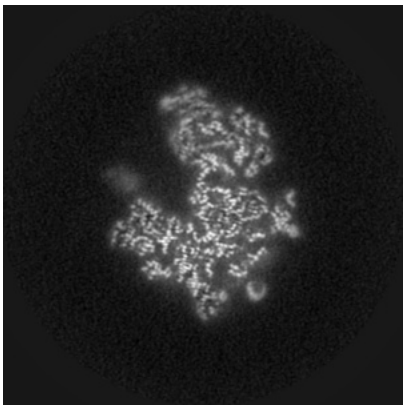


Z

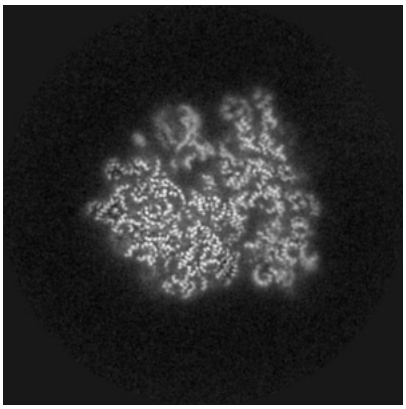
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

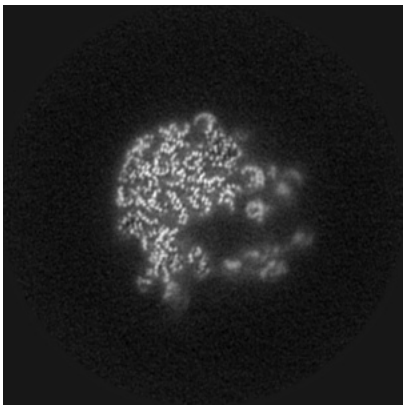
6.2.1 Primary map



X Index: 200

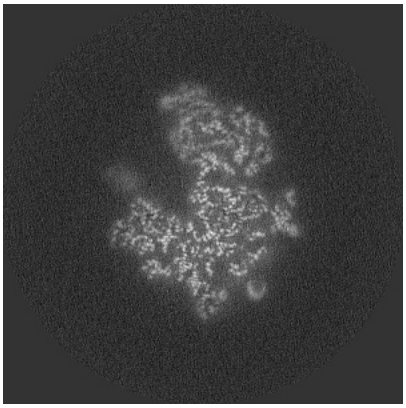


Y Index: 200

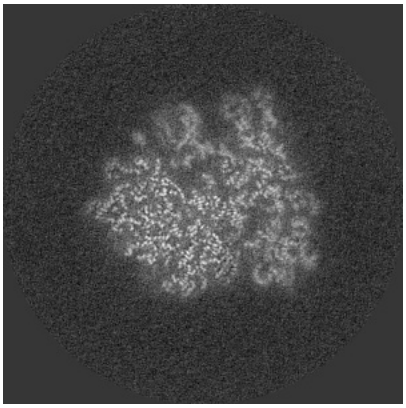


Z Index: 200

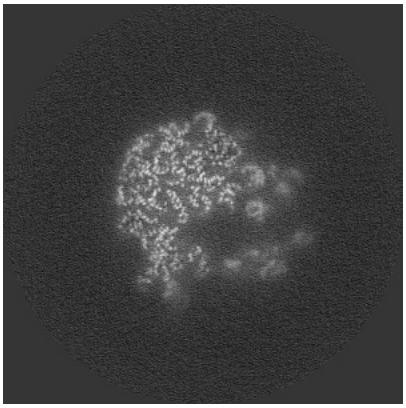
6.2.2 Raw map



X Index: 200



Y Index: 200

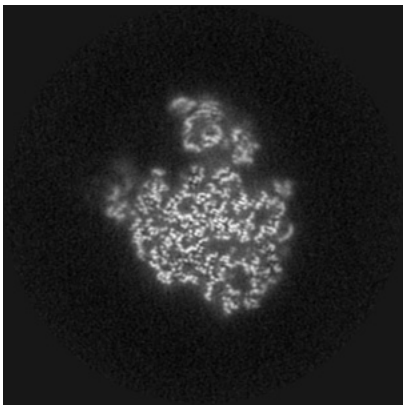


Z Index: 200

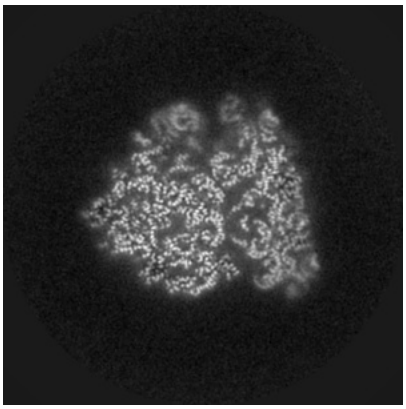
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

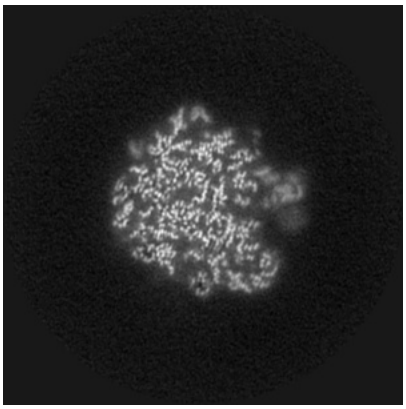
6.3.1 Primary map



X Index: 169

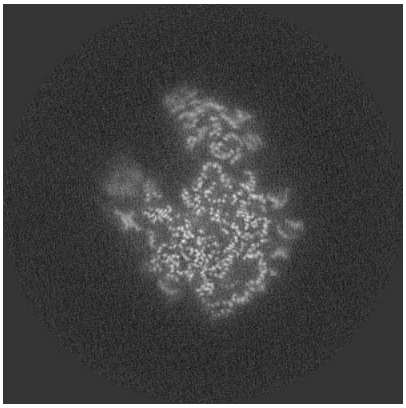


Y Index: 208

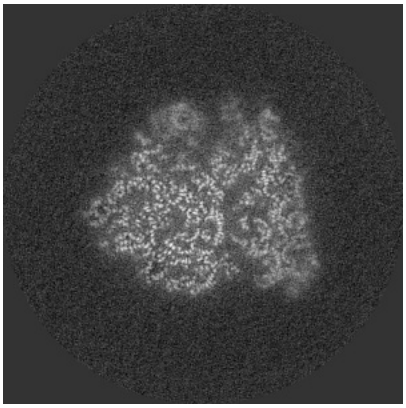


Z Index: 170

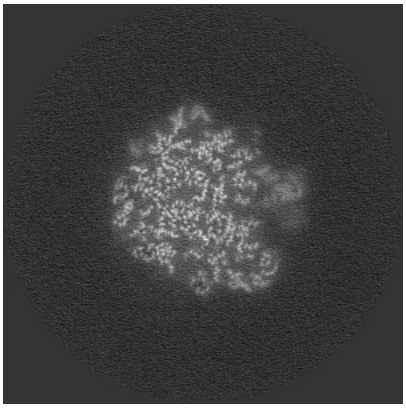
6.3.2 Raw map



X Index: 182



Y Index: 209

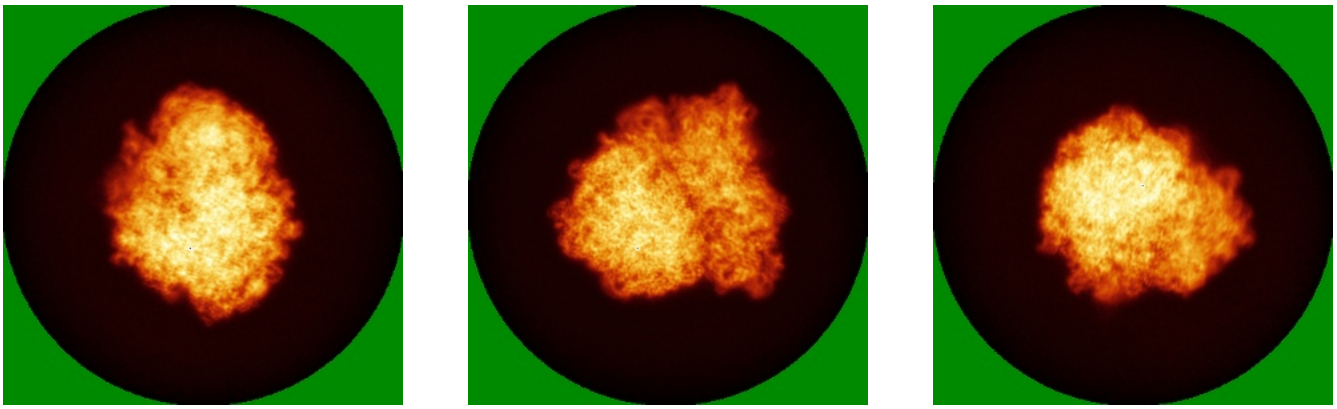


Z Index: 170

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

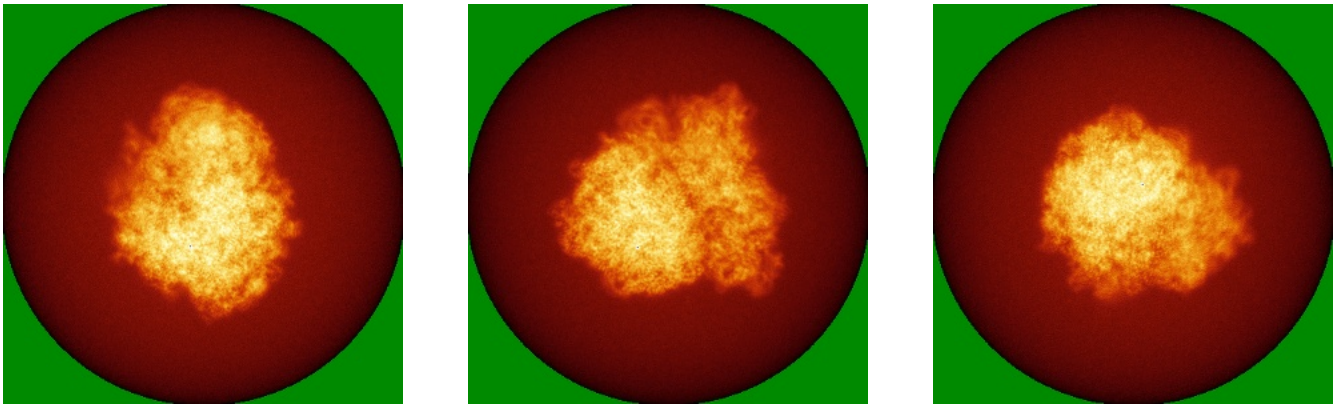
6.4 Orthogonal standard-deviation projections (False-color) (i)

6.4.1 Primary map



X Y Z

6.4.2 Raw map

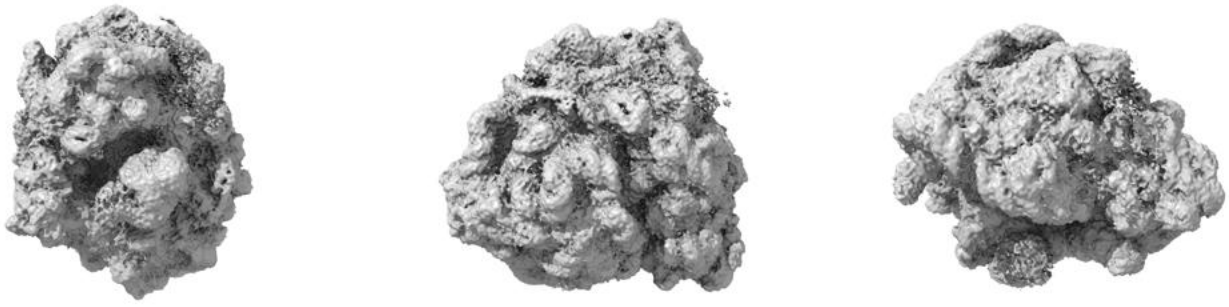


X Y Z

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

6.5 Orthogonal surface views (i)

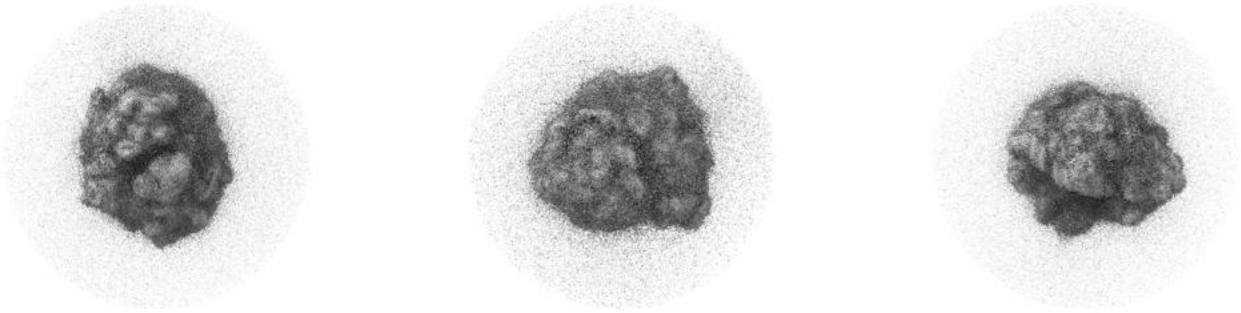
6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.0126. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X Y Z

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

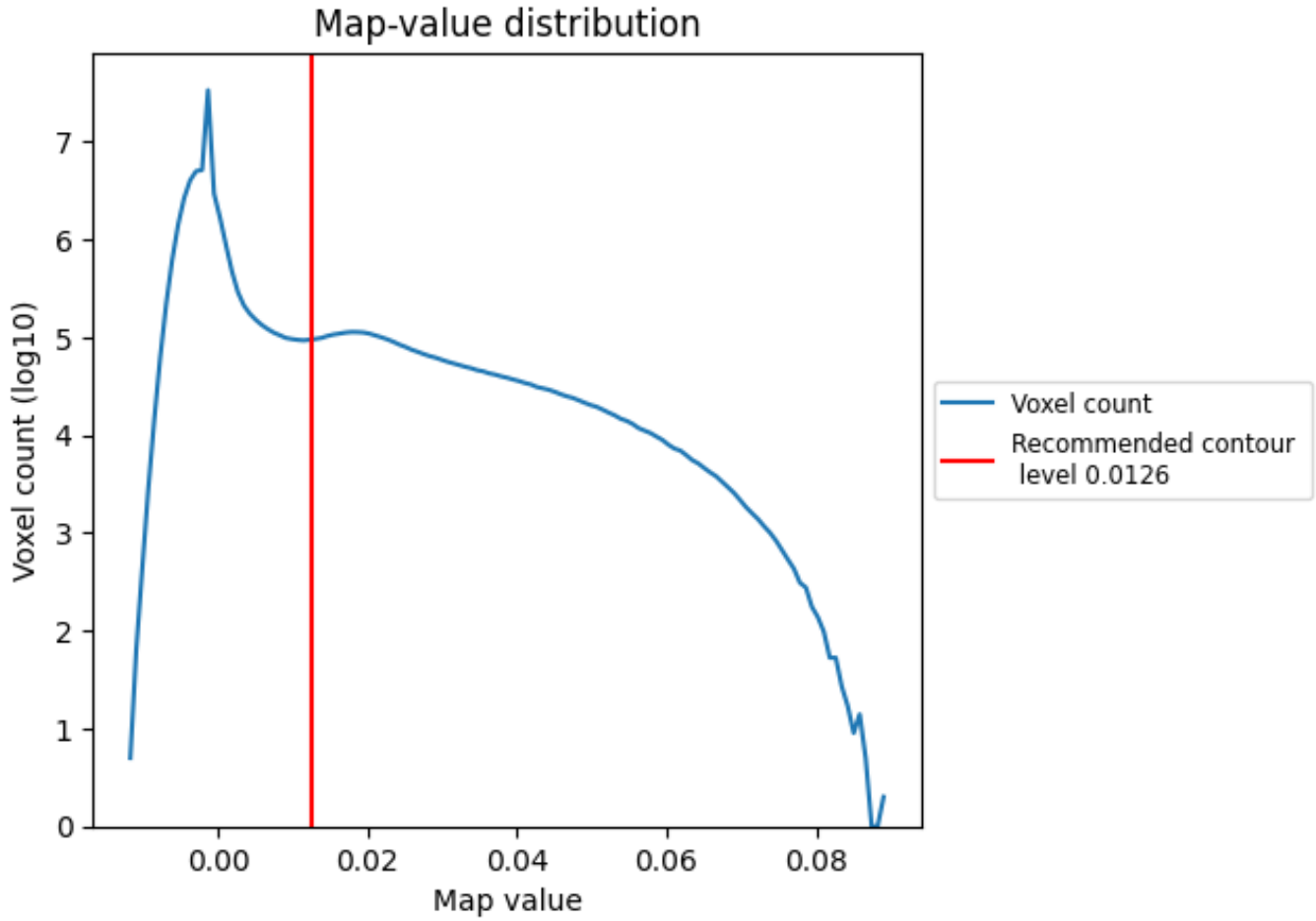
6.6 Mask visualisation (i)

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

7 Map analysis

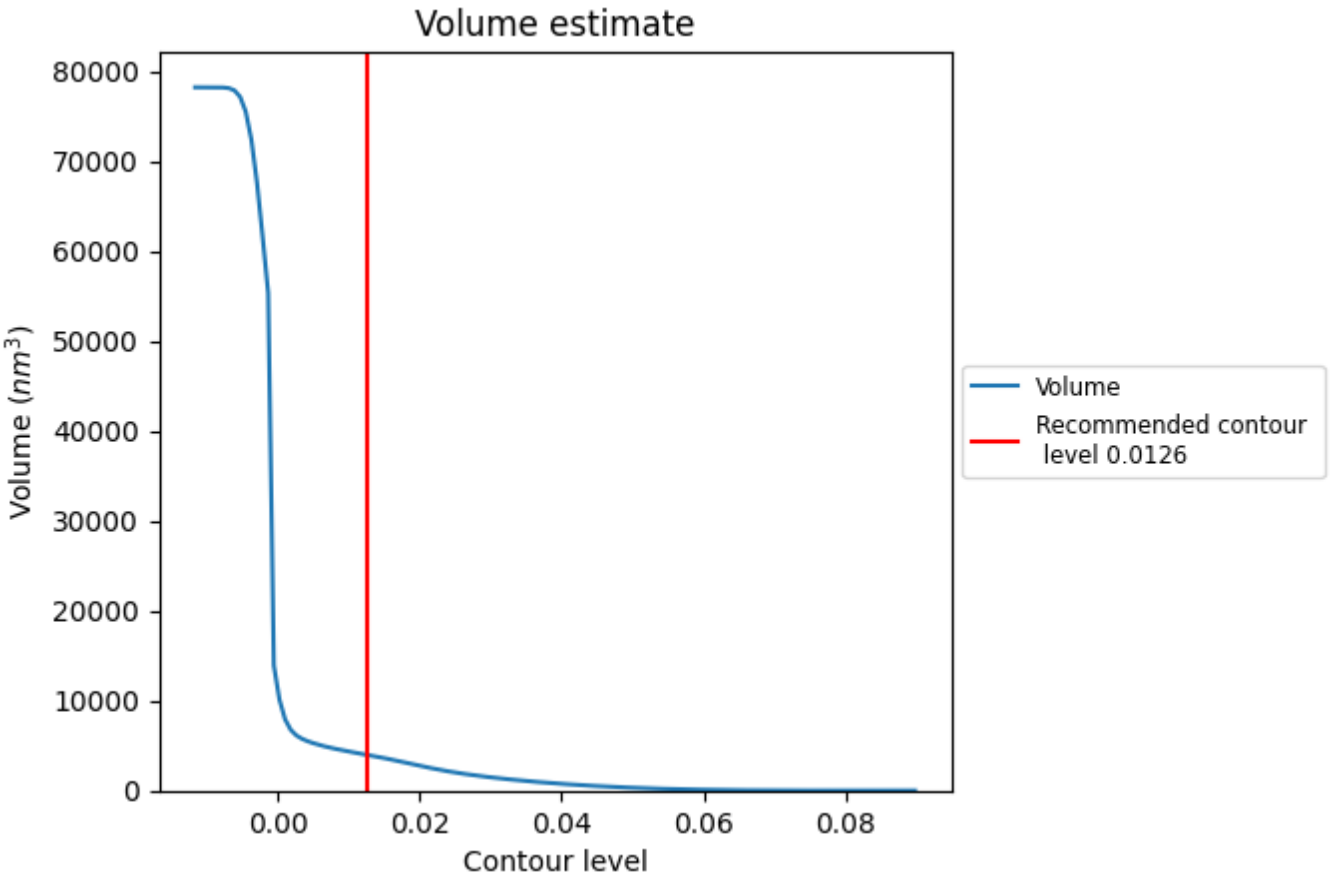
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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.

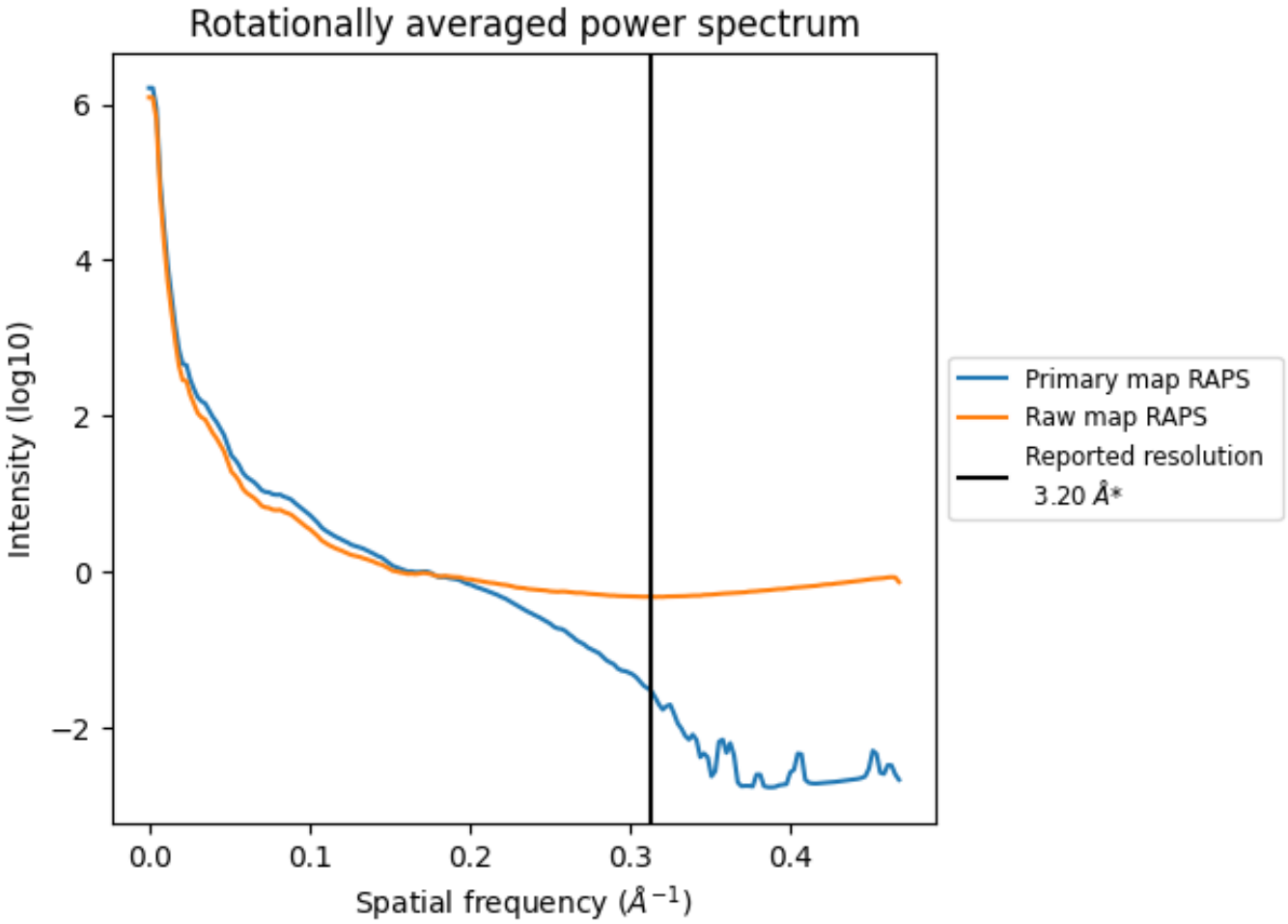
7.2 Volume estimate



The volume at the recommended contour level is 3966 nm^3; this corresponds to an approximate mass of 3583 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)

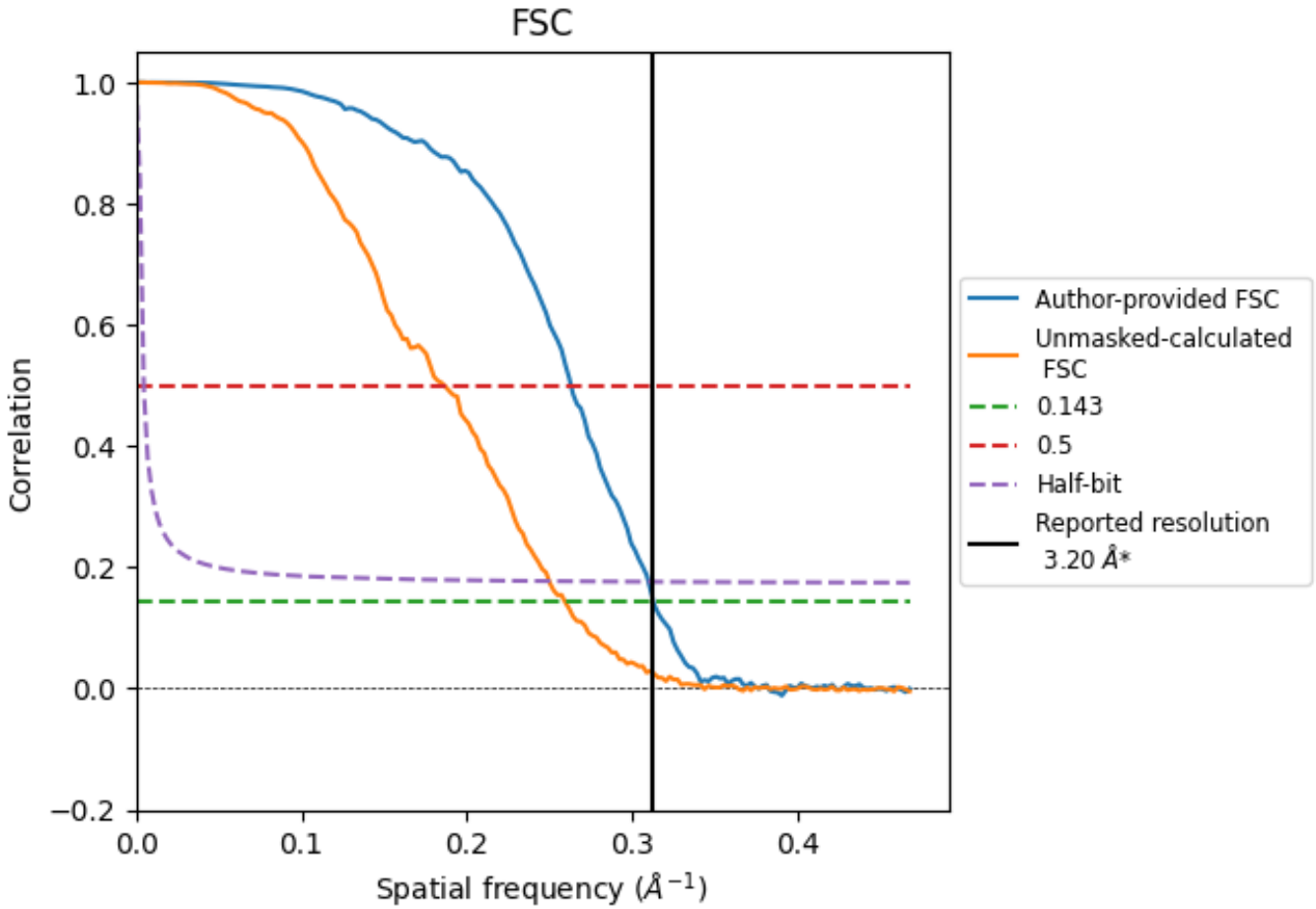


*Reported resolution corresponds to spatial frequency of 0.312 $Å^{-1}$

8 Fourier-Shell correlation

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



*Reported resolution corresponds to spatial frequency of 0.312 Å^{-1}

8.2 Resolution estimates (i)

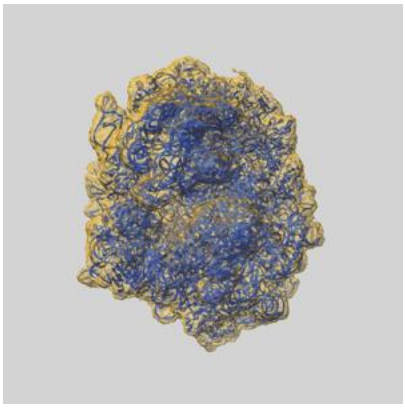
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.20	-	-
Author-provided FSC curve	3.20	3.80	3.23
Unmasked-calculated*	3.86	5.37	4.00

*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 3.86 differs from the reported value 3.2 by more than 10 %

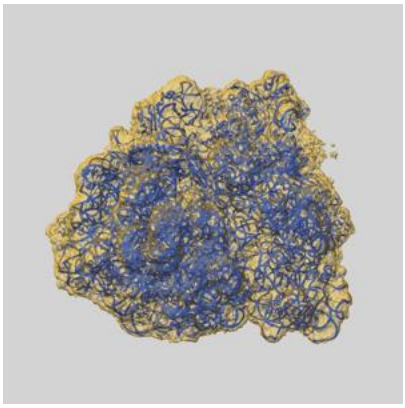
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-42832 and PDB model 8UZ3. Per-residue inclusion information can be found in section 3 on page 17.

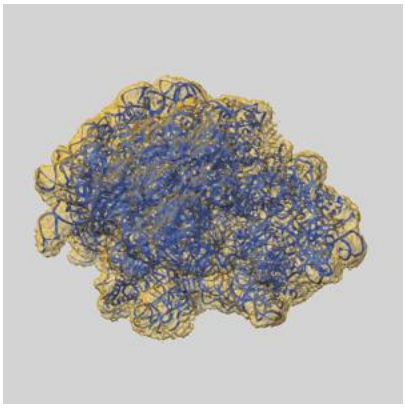
9.1 Map-model overlay



X



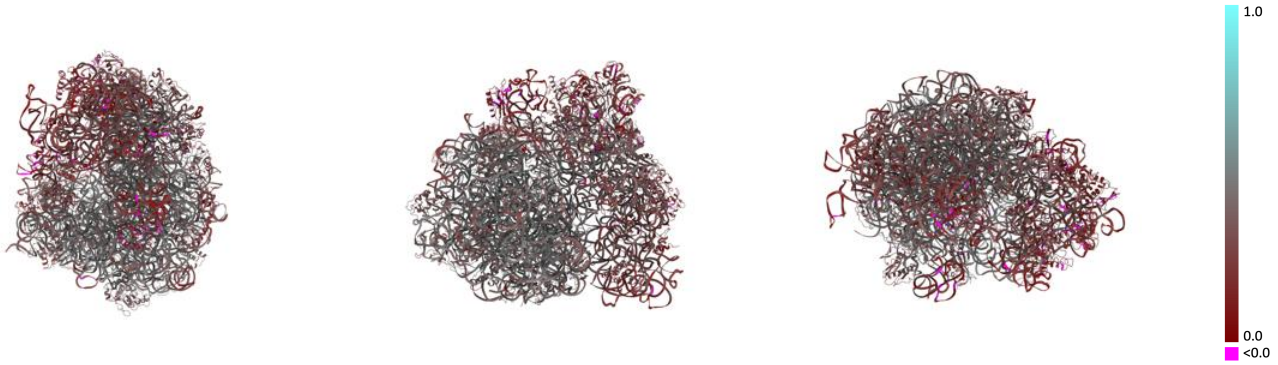
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.0126 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.

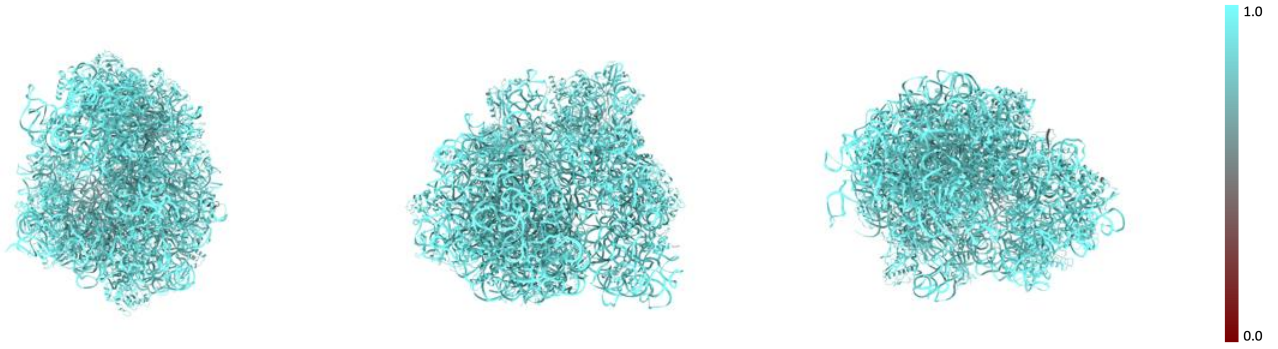
9.2 Q-score mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according 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.

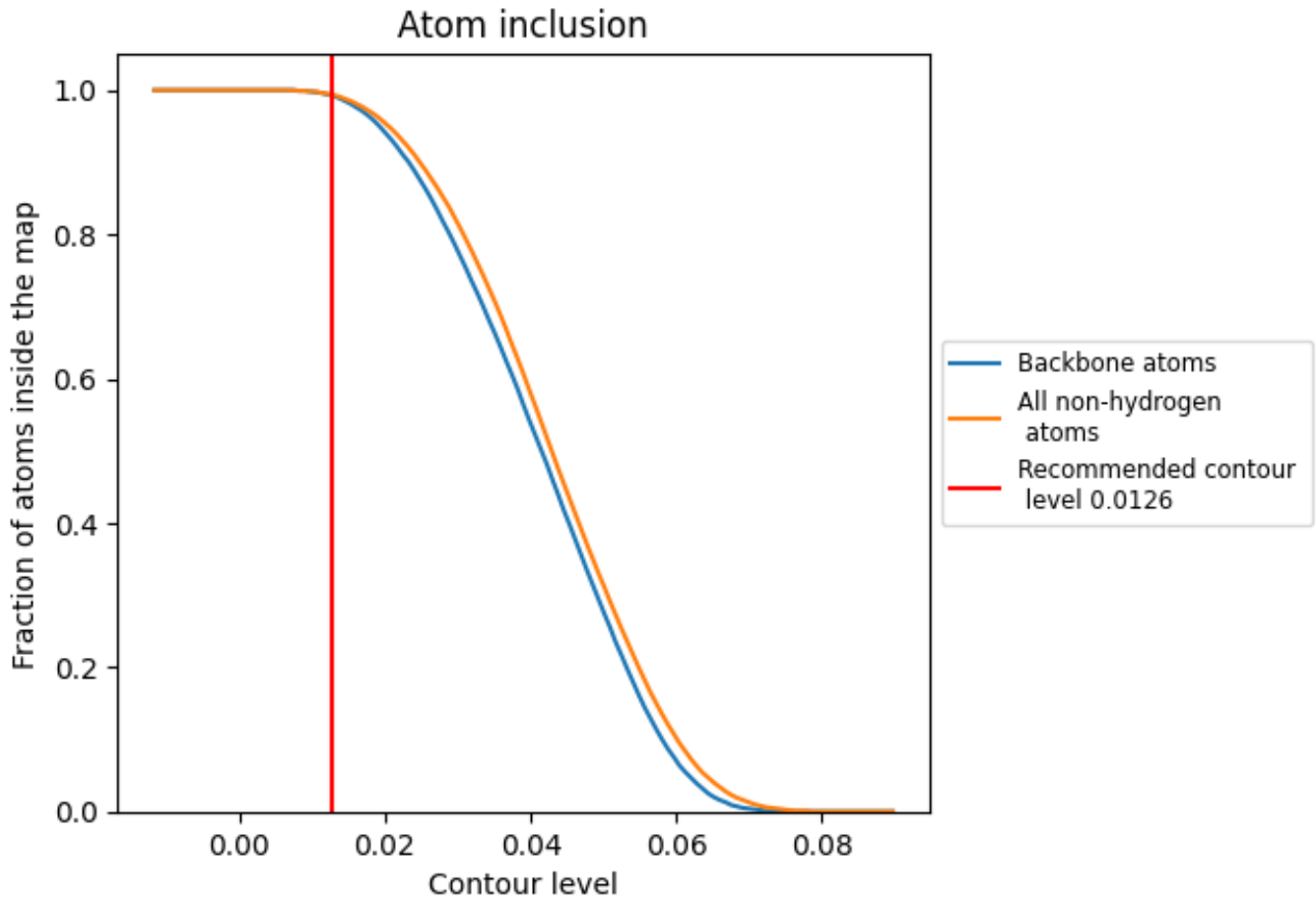
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

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 (0.0126).

9.4 Atom inclusion (i)



At the recommended contour level, 99% of all backbone atoms, 99% 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 (0.0126) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9940	0.3710
1	0.9980	0.4300
2	0.9960	0.3240
3	1.0000	0.4080
4	1.0000	0.3990
5	1.0000	0.3860
A	0.9560	0.1150
B	0.9990	0.4340
C	0.9950	0.4030
D	0.9880	0.3860
E	0.9910	0.2560
F	0.9880	0.3210
G	0.8490	0.2430
J	1.0000	0.4110
K	1.0000	0.3950
L	0.9890	0.4160
M	1.0000	0.3860
N	0.9970	0.4240
O	0.9900	0.3590
P	0.9980	0.3860
Q	0.9960	0.4320
R	0.9950	0.4210
S	0.9990	0.4110
T	0.9960	0.3780
U	0.9870	0.3730
V	0.9910	0.3880
W	1.0000	0.4240
X	1.0000	0.3890
Y	0.9820	0.3200
Z	0.9910	0.4040
b	0.9950	0.4130
c	0.9950	0.3650
d	1.0000	0.4410
e	1.0000	0.4330
f	1.0000	0.3720

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Chain	Atom inclusion	Q-score
h	0.9920	0.2520
i	0.9810	0.1940
j	0.9940	0.2950
k	0.9820	0.3090
l	0.9690	0.1680
m	0.9910	0.3140
n	0.9730	0.1960
o	0.9750	0.2010
p	1.0000	0.3230
q	0.9950	0.2060
r	0.9680	0.1840
s	0.9990	0.2040
t	0.9860	0.2980
u	0.9750	0.2630
v	0.9840	0.2620
w	0.9920	0.2990
x	0.9890	0.1970
y	0.9660	0.2160
z	0.9830	0.2120