Full wwPDB EM Validation Report ⓘ

Aug 18, 2025 – 02:59 PM JST

PDB ID	:	8YDG / pdb_00008ydg
EMDB ID	:	EMD-39170
Title	:	E.coli transcription translation coupling complex in TTC-B state 3 (subclass2) containing mRNA with 39-mer spacer, NusG, NusA, fMet-tRNA(iMet), Phe-tRNA(Phe), and viomycin
Authors	:	Zhang, J.; Lu, G.; Wang, C.; Lin, J.
Deposited on	:	2024-02-20
Resolution	:	5.10 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:

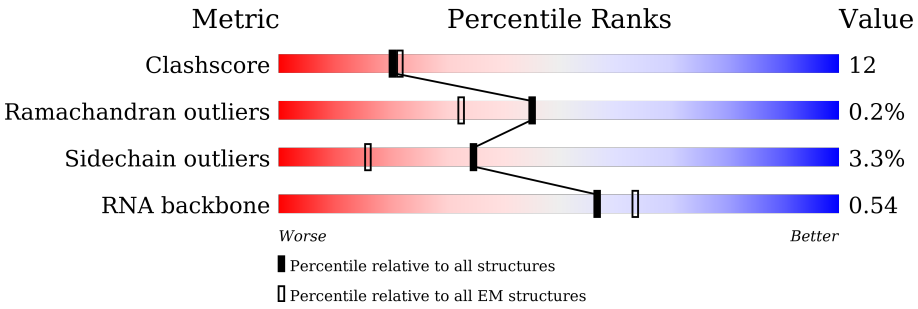
EMDB validation analysis	:	0.0.1.dev126
Mogul	:	1.8.5 (274361), CSD as541be (2020)
MolProbity	:	4-5-2 with Phenix2.0rc1
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.45.1

1 Overall quality at a glance

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

The reported resolution of this entry is 5.10 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	A	70	50% 16% 34%
2	B	57	67% 30%
3	C	55	53% 38% 9%
4	D	46	59% 37%
5	E	65	65% 31%
6	F	38	61% 39%
7	G	241	63% 27% 10%

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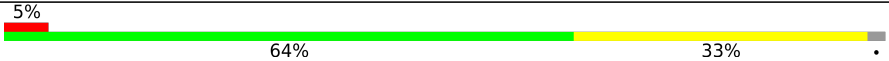
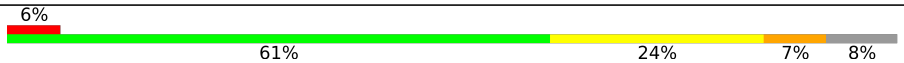
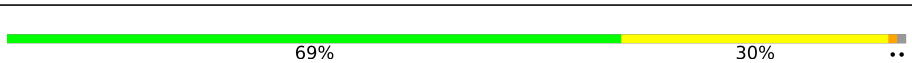
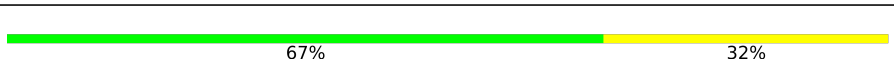
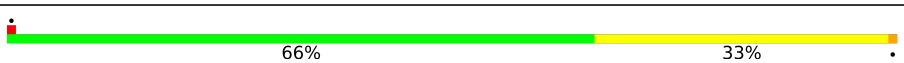
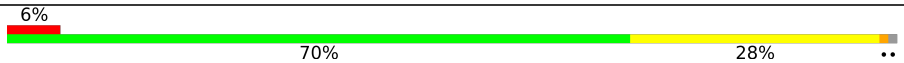
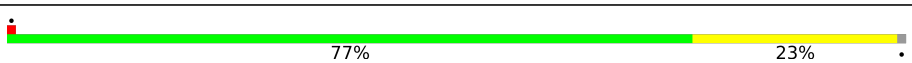
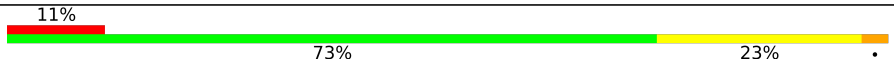
Mol	Chain	Length	Quality of chain
8	H	233	
9	I	206	
10	J	167	
11	K	135	
12	L	179	
13	M	130	
14	N	130	
15	O	103	
16	P	129	
17	Q	124	
18	R	118	
19	S	101	
20	T	89	
21	U	82	
22	V	84	
23	W	75	
24	X	92	
25	Y	87	
26	Z	71	
27	b	273	
28	c	209	
29	d	201	
30	e	179	
31	f	177	
32	g	149	

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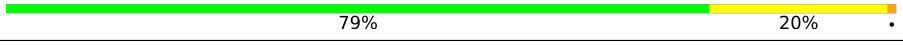
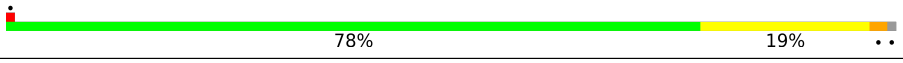
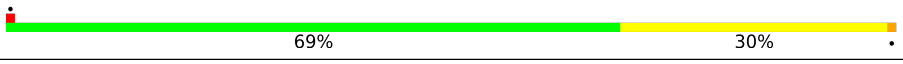
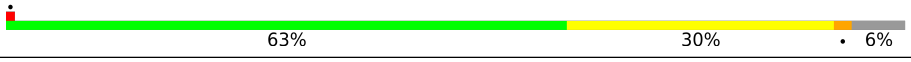
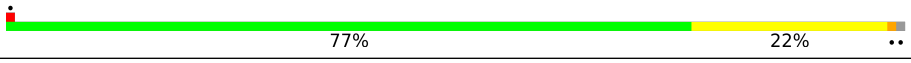
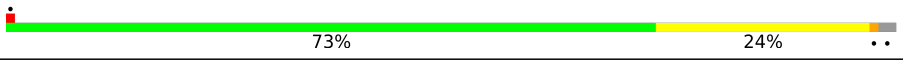
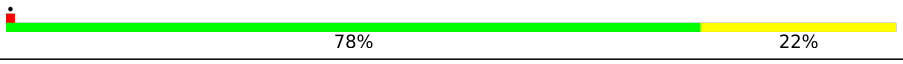
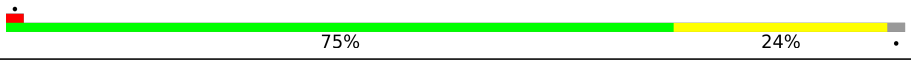
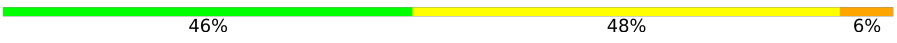
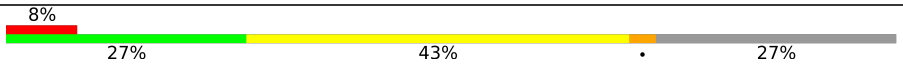
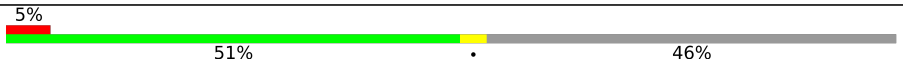
Mol	Chain	Length	Quality of chain
33	i	142	
34	j	142	
35	k	123	
36	l	144	
37	m	136	
38	n	127	
39	o	117	
40	p	115	
41	q	118	
42	r	103	
43	s	110	
44	t	100	
45	u	104	
46	v	94	
47	w	85	
48	x	78	
49	y	63	
50	z	59	
51	1	2904	
52	2	120	
53	3	1542	
54	4	56	
55	8	37	
56	9	37	
57	A1	329	

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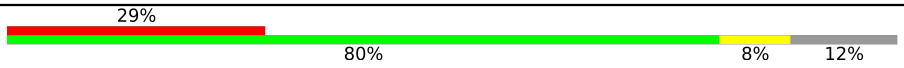
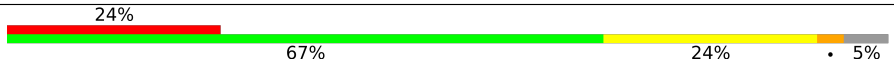
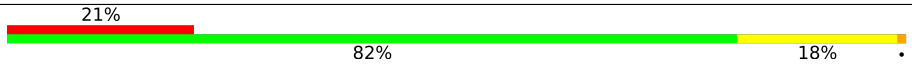
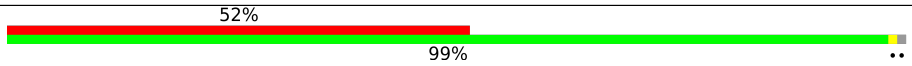
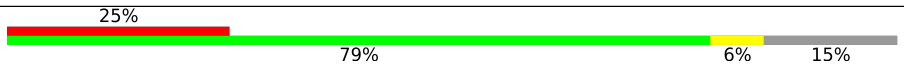
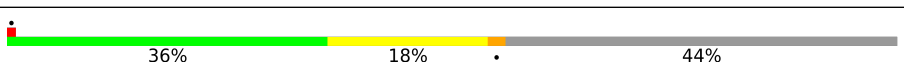
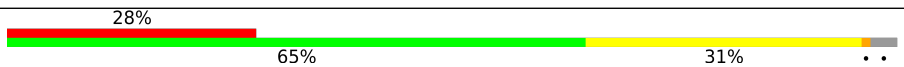
Mol	Chain	Length	Quality of chain
57	A2	329	
58	B1	1407	
59	B2	1342	
60	W0	91	
61	NA	495	
62	NG	181	
63	5	76	
64	6	77	
65	a	234	
66	0	716	
67	h	6	

2 Entry composition

There are 70 unique types of molecules in this entry. The entry contains 183439 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called 50S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	46	355	221	62	66	6	0	0

- Molecule 2 is a protein called 50S ribosomal protein L32.

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

- Molecule 3 is a protein called 50S ribosomal protein L33.

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

- Molecule 4 is a protein called 50S ribosomal protein L34.

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

- Molecule 5 is a protein called 50S ribosomal protein L35.

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

- Molecule 6 is a protein called 50S ribosomal protein L36.

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

- Molecule 7 is a protein called 30S ribosomal protein S2.

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

- Molecule 8 is a protein called 30S ribosomal protein S3.

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

- Molecule 9 is a protein called 30S ribosomal protein S4.

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

- Molecule 10 is a protein called 30S ribosomal protein S5.

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

- Molecule 11 is a protein called 30S ribosomal protein S6, fully modified isoform.

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

- Molecule 12 is a protein called 30S ribosomal protein S7.

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

- Molecule 13 is a protein called 30S ribosomal protein S8.

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

- Molecule 14 is a protein called 30S ribosomal protein S9.

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

- Molecule 15 is a protein called 30S ribosomal protein S10.

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

- Molecule 16 is a protein called 30S ribosomal protein S11.

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

- Molecule 17 is a protein called 30S ribosomal protein S12.

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

- Molecule 18 is a protein called 30S ribosomal protein S13.

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

- Molecule 19 is a protein called 30S ribosomal protein S14.

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

- Molecule 20 is a protein called 30S ribosomal protein S15.

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

- Molecule 21 is a protein called 30S ribosomal protein S16.

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

- Molecule 22 is a protein called 30S ribosomal protein S17.

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

- Molecule 23 is a protein called 30S ribosomal protein S18.

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

- Molecule 24 is a protein called 30S ribosomal protein S19.

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

- Molecule 25 is a protein called 30S ribosomal protein S20.

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

- Molecule 26 is a protein called 30S ribosomal protein S21.

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

- Molecule 27 is a protein called 50S ribosomal protein L2.

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

- Molecule 28 is a protein called 50S ribosomal protein L3.

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

- Molecule 29 is a protein called 50S ribosomal protein L4.

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

- Molecule 30 is a protein called 50S ribosomal protein L5.

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

- Molecule 31 is a protein called 50S ribosomal protein L6.

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

- Molecule 32 is a protein called 50S ribosomal protein L9.

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

- Molecule 33 is a protein called 50S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	i	141	Total	C	N	O	S	0	0
			1032	651	179	196	6		

- Molecule 34 is a protein called 50S ribosomal protein L13.

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

- Molecule 35 is a protein called 50S ribosomal protein L14.

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

- Molecule 36 is a protein called 50S ribosomal protein L15.

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

- Molecule 37 is a protein called 50S ribosomal protein L16.

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

- Molecule 38 is a protein called 50S ribosomal protein L17.

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

- Molecule 39 is a protein called 50S ribosomal protein L18.

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

- Molecule 40 is a protein called 50S ribosomal protein L19.

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

- Molecule 41 is a protein called 50S ribosomal protein L20.

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

- Molecule 42 is a protein called 50S ribosomal protein L21.

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

- Molecule 43 is a protein called 50S ribosomal protein L22.

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

- Molecule 44 is a protein called 50S ribosomal protein L23.

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

- Molecule 45 is a protein called 50S ribosomal protein L24.

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

- Molecule 46 is a protein called 50S ribosomal protein L25.

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

- Molecule 47 is a protein called 50S ribosomal protein L27.

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

- Molecule 48 is a protein called 50S ribosomal protein L28.

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

- Molecule 49 is a protein called 50S ribosomal protein L29.

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

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

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

- Molecule 51 is a RNA chain called 23S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	1	2903	Total	C	N	O	P	0	0
			62317	27801	11468	20146	2902		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
1	747	C	U	conflict	GB 1929590828

- Molecule 52 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	2	120	Total	C	N	O	P	0	0
			2568	1145	471	833	119		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
2	120	A	U	conflict	GB NR_103249

- Molecule 53 is a RNA chain called 16S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	3	1539	Total	C	N	O	P	0	0
			33012	14725	6052	10697	1538		

- Molecule 54 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	4	33	Total	C	N	O	P	0	0
			689	308	101	247	33		

- Molecule 55 is a DNA chain called templete DNA strand.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	8	27	Total	C	N	O	P	0	0
			539	257	88	167	27		

- Molecule 56 is a DNA chain called non-templete DNA strand.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	9	20	Total	C	N	O	P	0	0
			417	195	84	118	20		

- Molecule 57 is a protein called DNA-directed RNA polymerase subunit alpha.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	A1	301	Total	C	N	O	S	0	0
			2088	1293	380	409	6		
57	A2	288	Total	C	N	O	S	0	0
			2029	1257	366	400	6		

- Molecule 58 is a protein called DNA-directed RNA polymerase subunit beta'.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	B1	1335	Total	C	N	O	S	0	0
			10353	6509	1842	1955	47		

- Molecule 59 is a protein called DNA-directed RNA polymerase subunit beta.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	B2	1340	Total	C	N	O	S	0	0
			10546	6616	1839	2048	43		

- Molecule 60 is a protein called DNA-directed RNA polymerase subunit omega.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	W0	82	Total	C	N	O	S	0	0
			650	396	122	131	1		

- Molecule 61 is a protein called Transcription termination/antitermination protein NusA.

Mol	Chain	Residues	Atoms				AltConf	Trace
61	NA	492	Total	C	N	O	0	0
			2432	1448	492	492		

- Molecule 62 is a protein called Transcription termination/antitermination protein NusG.

Mol	Chain	Residues	Atoms				AltConf	Trace
62	NG	154	Total	C	N	O	0	0
			758	450	154	154		

- Molecule 63 is a RNA chain called tRNA(Phe).

Mol	Chain	Residues	Atoms					AltConf	Trace
63	5	76	Total	C	N	O	P	0	0
			1622	723	290	533	76		

- Molecule 64 is a RNA chain called tRNA(fMet).

Mol	Chain	Residues	Atoms					AltConf	Trace
64	6	77	Total	C	N	O	P	0	0
			1640	732	297	535	76		

- Molecule 65 is a protein called Large ribosomal subunit protein uL1.

Mol	Chain	Residues	Atoms					AltConf	Trace
65	a	132	Total	C	N	O	S	0	0
			1013	638	183	190	2		

- Molecule 66 is a protein called Elongation factor G.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	0	697	Total	C	N	O	S	0	0
			5399	3403	929	1042	25		

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
0	705	GLY	-	expression tag	UNP P0A6M8
0	706	SER	-	expression tag	UNP P0A6M8
0	707	SER	-	expression tag	UNP P0A6M8
0	708	GLY	-	expression tag	UNP P0A6M8
0	709	HIS	-	expression tag	UNP P0A6M8
0	710	HIS	-	expression tag	UNP P0A6M8
0	711	HIS	-	expression tag	UNP P0A6M8
0	712	HIS	-	expression tag	UNP P0A6M8
0	713	HIS	-	expression tag	UNP P0A6M8
0	714	HIS	-	expression tag	UNP P0A6M8

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Chain	Residue	Modelled	Actual	Comment	Reference
0	715	HIS	-	expression tag	UNP P0A6M8
0	716	HIS	-	expression tag	UNP P0A6M8

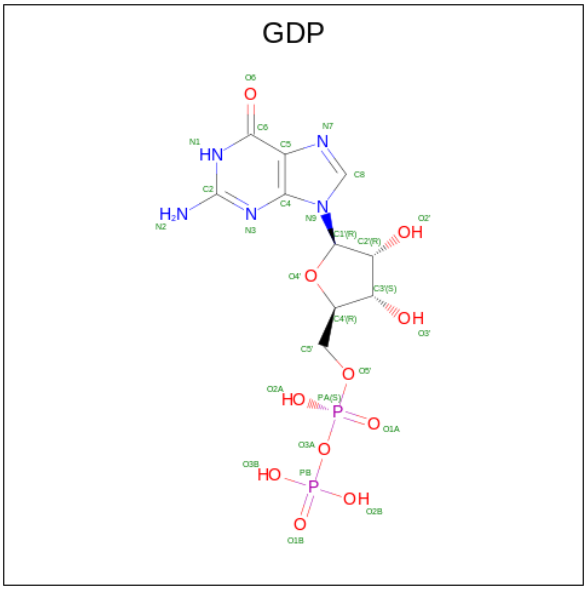
- Molecule 67 is a protein (with D amino acids) called Viomycin.

Mol	Chain	Residues	Atoms				AltConf	Trace
67	h	6	Total	C	N	O	0	0
			48	25	13	10		

- Molecule 68 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

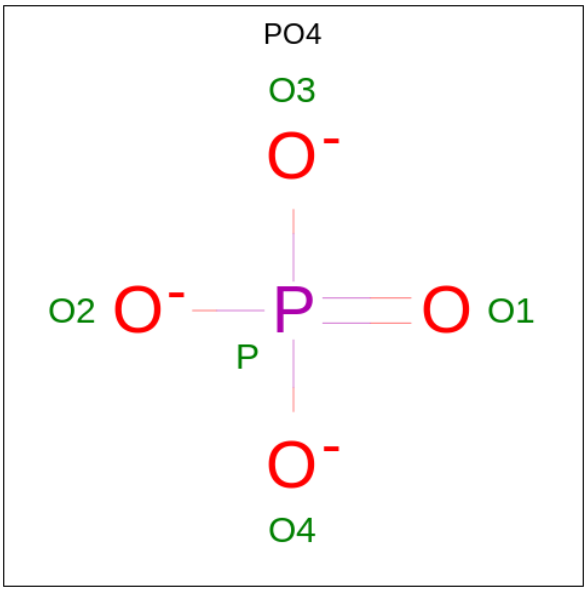
Mol	Chain	Residues	Atoms		AltConf
68	B1	1	Total	Mg	0
			1	1	

- Molecule 69 is GUANOSINE-5'-DIPHOSPHATE (CCD ID: GDP) (formula: $C_{10}H_{15}N_5O_{11}P_2$).



Mol	Chain	Residues	Atoms					AltConf
69	0	1	Total	C	N	O	P	0
			28	10	5	11	2	

- Molecule 70 is PHOSPHATE ION (CCD ID: PO4) (formula: O_4P).



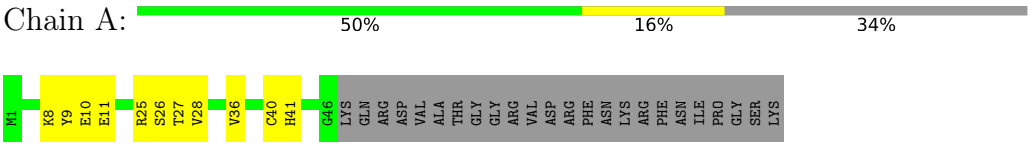
Mol	Chain	Residues	Atoms			AltConf
			Total	O	P	
70	0	1	5	4	1	0

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.

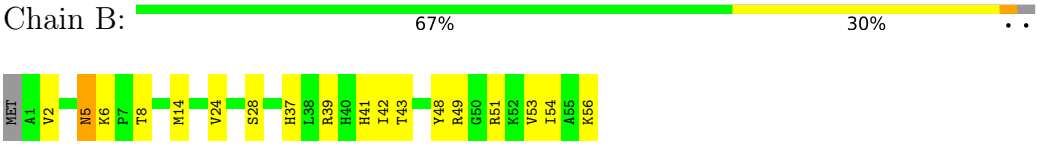
• Molecule 1: 50S ribosomal protein L31

Chain A:



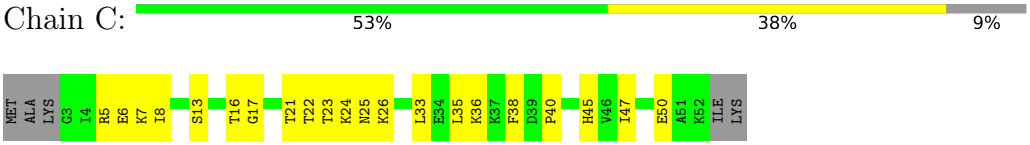
• Molecule 2: 50S ribosomal protein L32

Chain B:



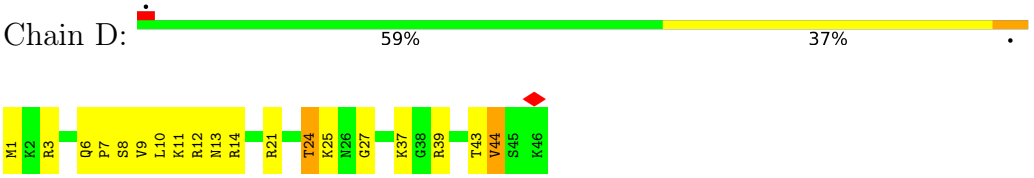
• Molecule 3: 50S ribosomal protein L33

Chain C:



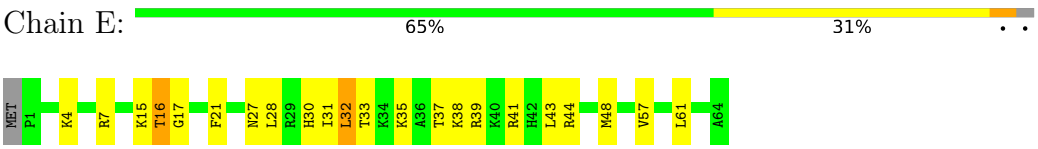
• Molecule 4: 50S ribosomal protein L34

Chain D:



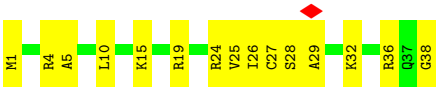
• Molecule 5: 50S ribosomal protein L35

Chain E:



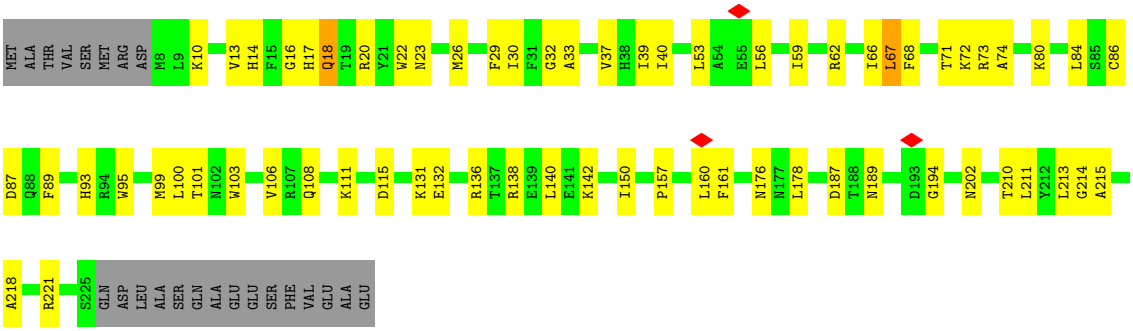
• Molecule 6: 50S ribosomal protein L36

Chain F:



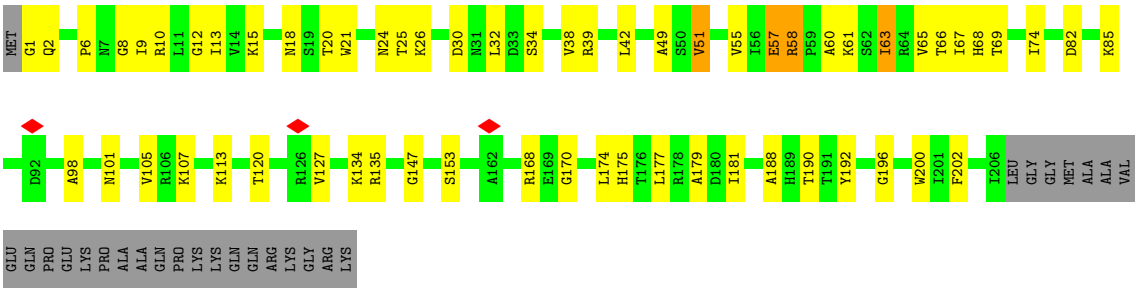
• Molecule 7: 30S ribosomal protein S2

Chain G:



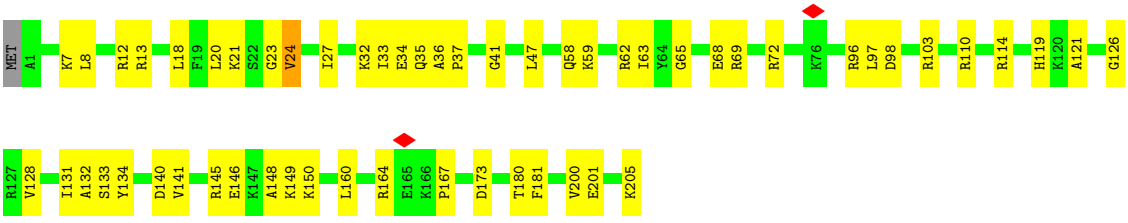
• Molecule 8: 30S ribosomal protein S3

Chain H:



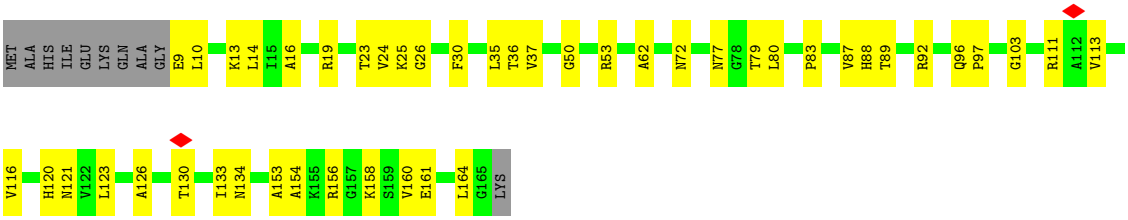
• Molecule 9: 30S ribosomal protein S4

Chain I:



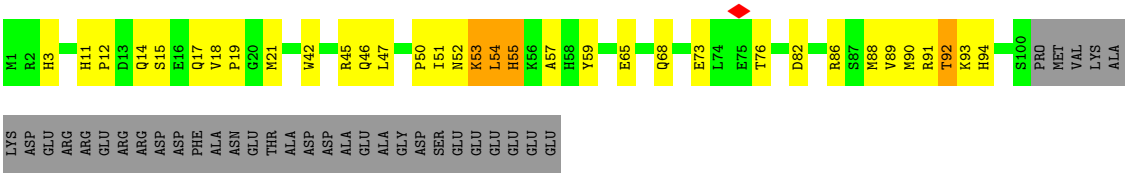
• Molecule 10: 30S ribosomal protein S5

Chain J:



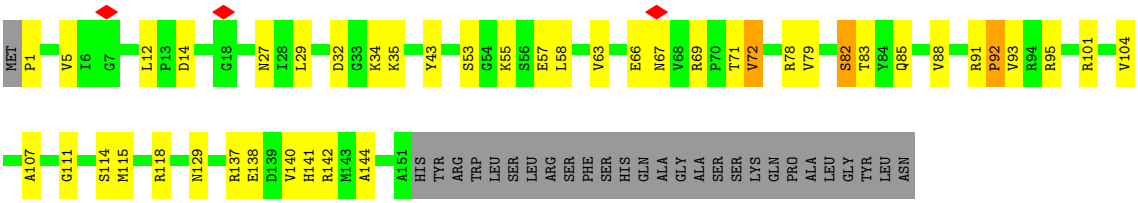
• Molecule 11: 30S ribosomal protein S6, fully modified isoform

Chain K:



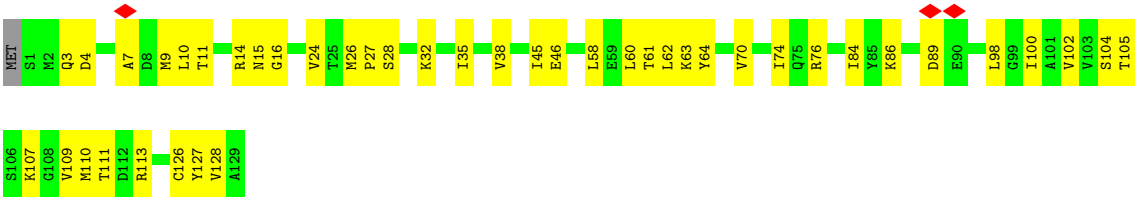
• Molecule 12: 30S ribosomal protein S7

Chain L:



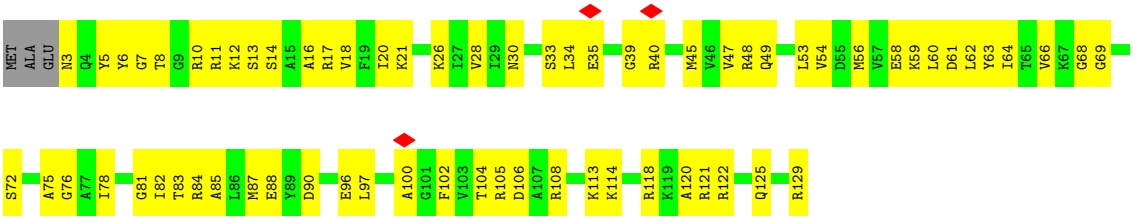
• Molecule 13: 30S ribosomal protein S8

Chain M:



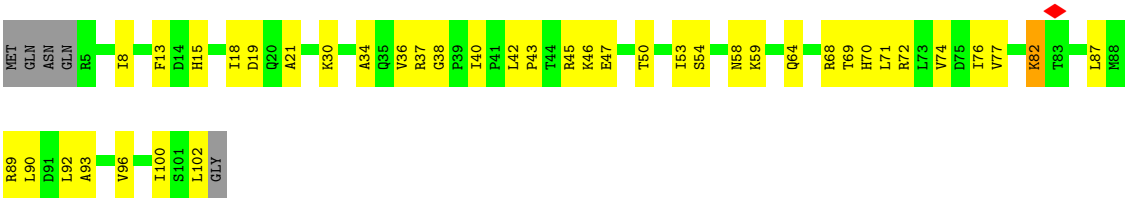
• Molecule 14: 30S ribosomal protein S9

Chain N:



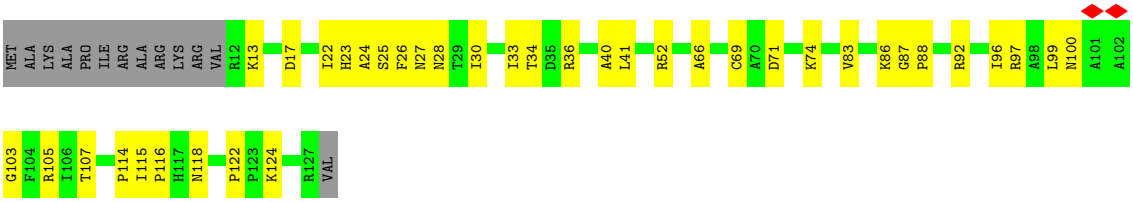
• Molecule 15: 30S ribosomal protein S10

Chain O:



• Molecule 16: 30S ribosomal protein S11

Chain P:



• Molecule 17: 30S ribosomal protein S12

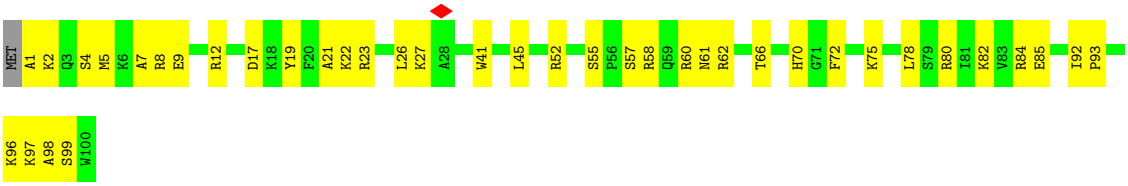
Chain Q:

• Molecule 18: 30S ribosomal protein S13

Chain R:

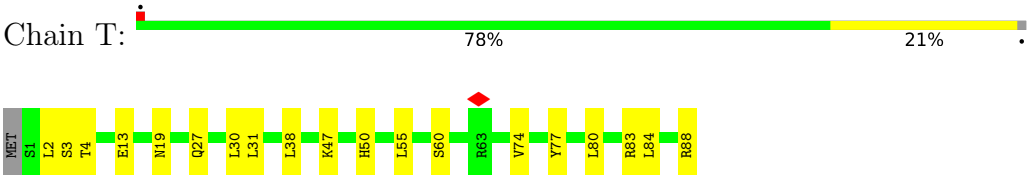
• Molecule 19: 30S ribosomal protein S14

Chain S:



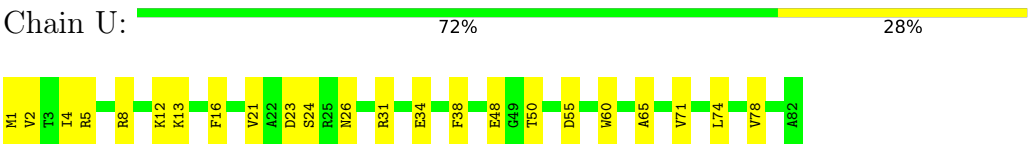
• Molecule 20: 30S ribosomal protein S15

Chain T:



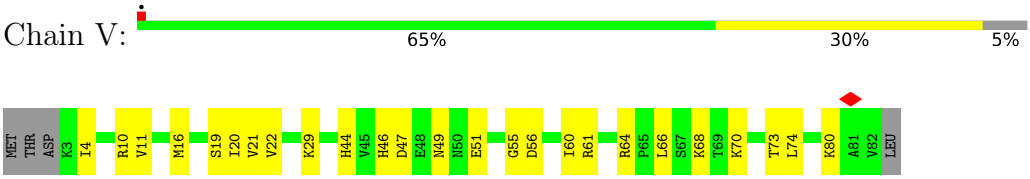
• Molecule 21: 30S ribosomal protein S16

Chain U:



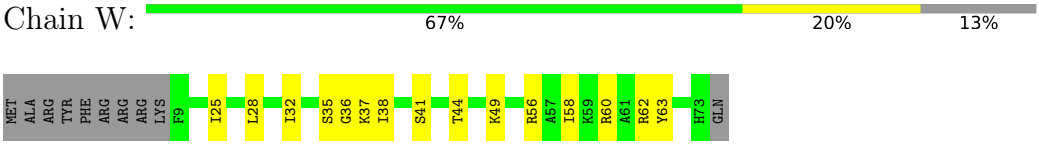
• Molecule 22: 30S ribosomal protein S17

Chain V:



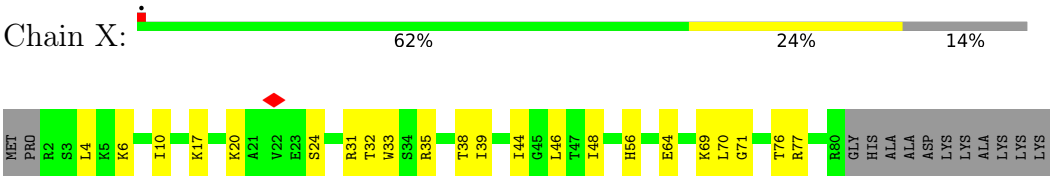
• Molecule 23: 30S ribosomal protein S18

Chain W:



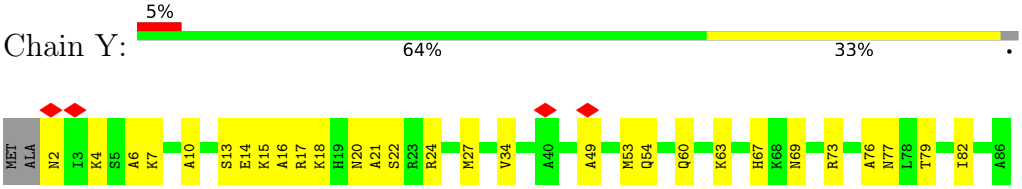
• Molecule 24: 30S ribosomal protein S19

Chain X:



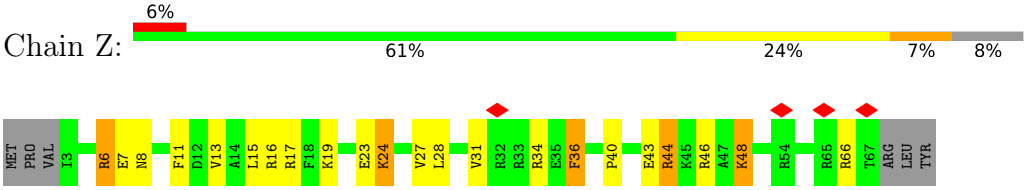
• Molecule 25: 30S ribosomal protein S20

Chain Y:



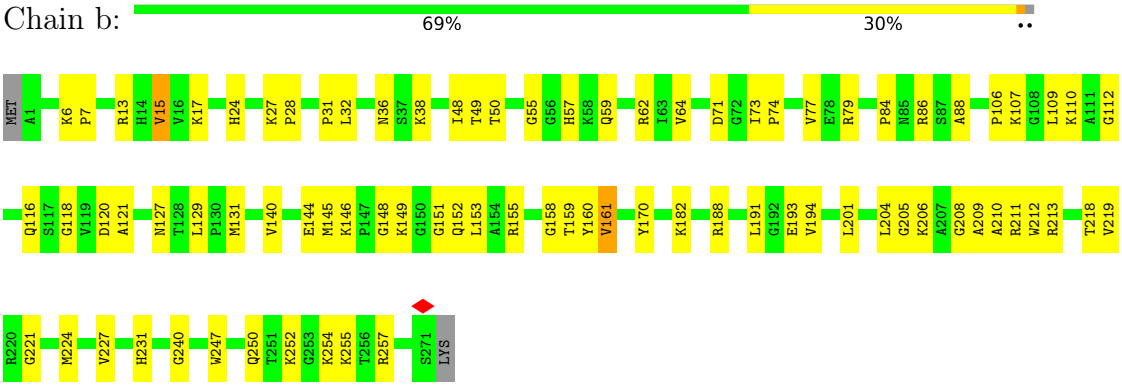
• Molecule 26: 30S ribosomal protein S21

Chain Z:



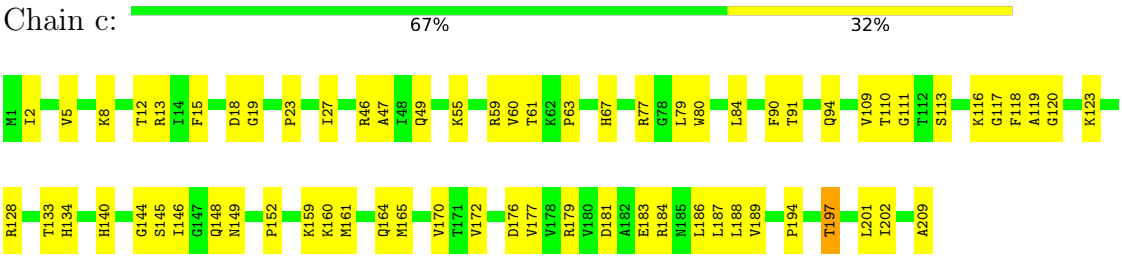
• Molecule 27: 50S ribosomal protein L2

Chain b:



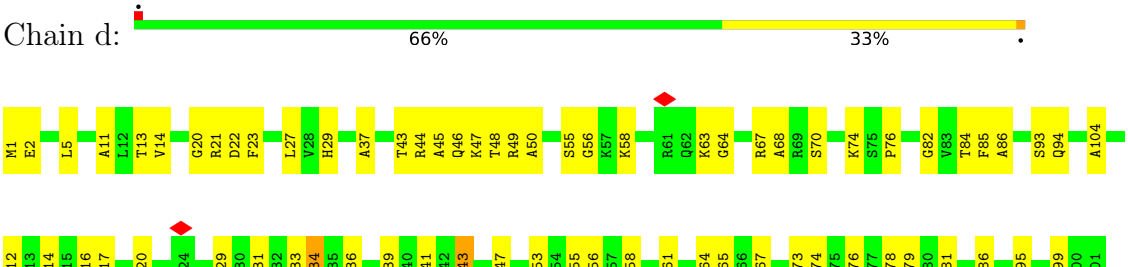
• Molecule 28: 50S ribosomal protein L3

Chain c:



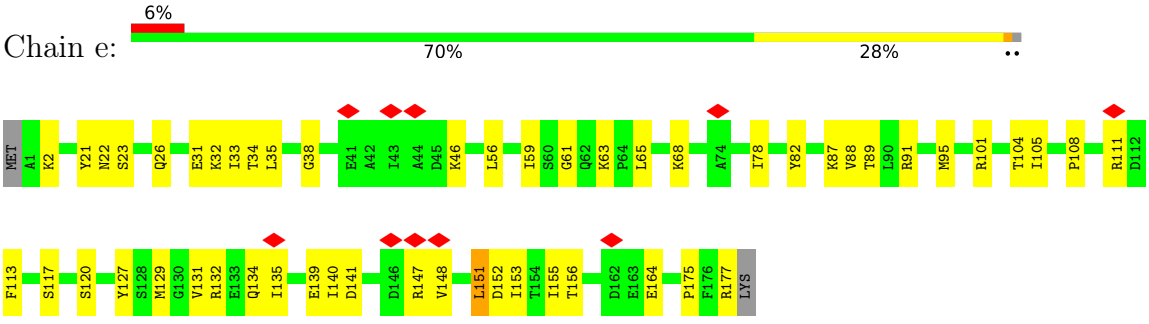
• Molecule 29: 50S ribosomal protein L4

Chain d:



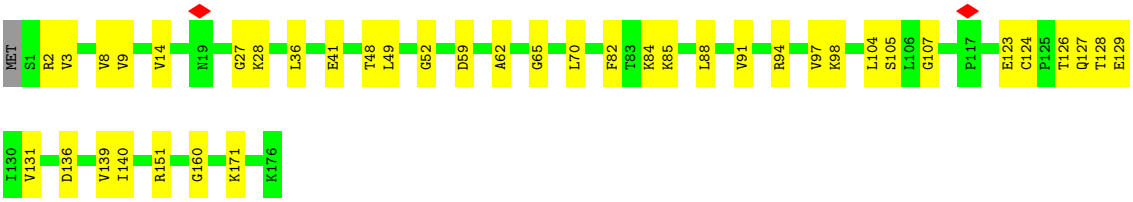
• Molecule 30: 50S ribosomal protein L5

Chain e:

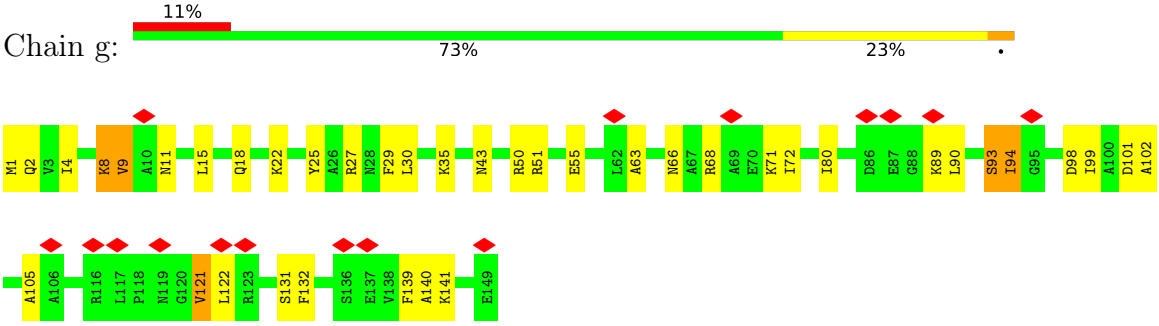


• Molecule 31: 50S ribosomal protein L6

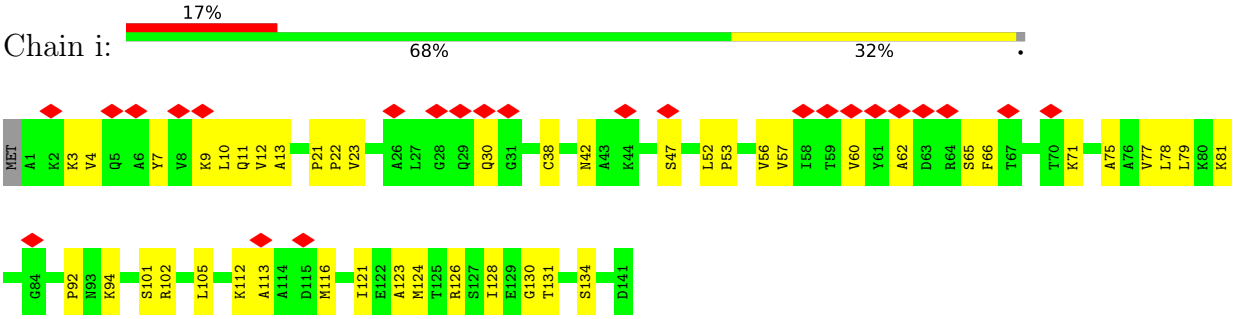
Chain f:



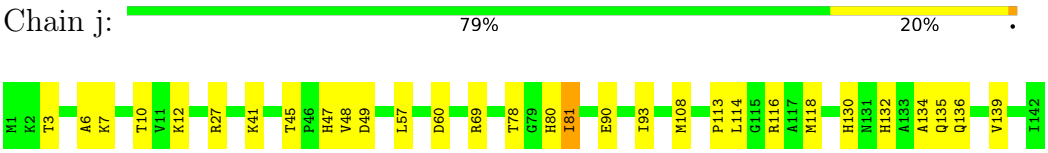
• Molecule 32: 50S ribosomal protein L9



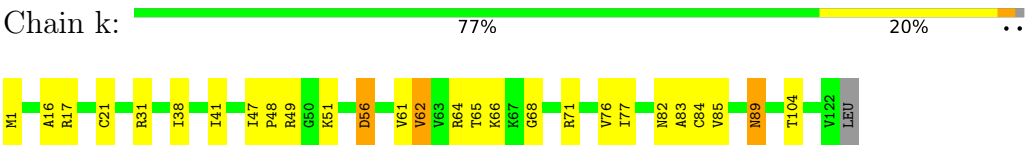
• Molecule 33: 50S ribosomal protein L11



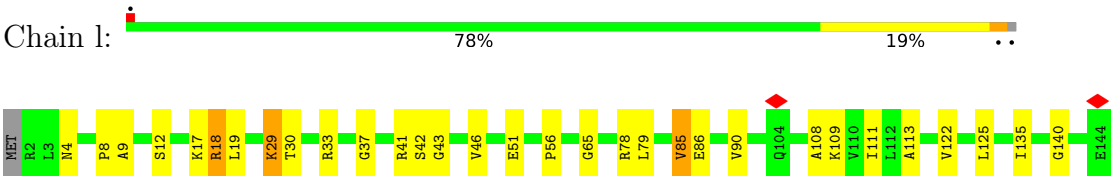
• Molecule 34: 50S ribosomal protein L13



• Molecule 35: 50S ribosomal protein L14

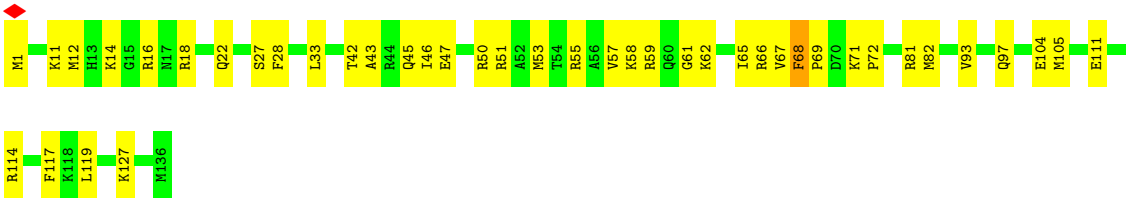


• Molecule 36: 50S ribosomal protein L15



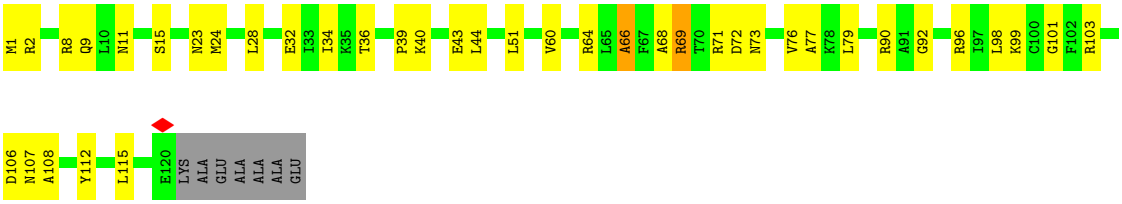
• Molecule 37: 50S ribosomal protein L16

Chain m:



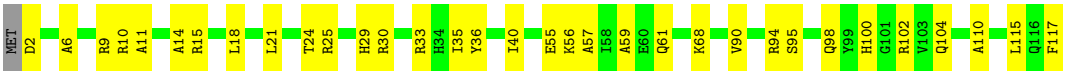
• Molecule 38: 50S ribosomal protein L17

Chain n:



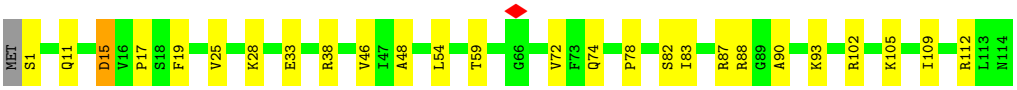
• Molecule 39: 50S ribosomal protein L18

Chain o:



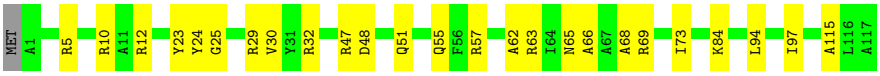
• Molecule 40: 50S ribosomal protein L19

Chain p:



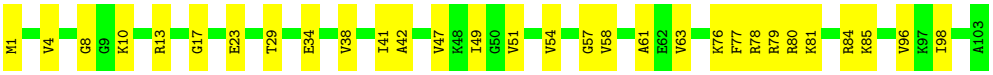
• Molecule 41: 50S ribosomal protein L20

Chain q:



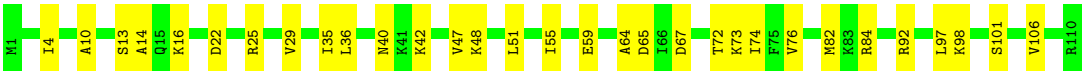
• Molecule 42: 50S ribosomal protein L21

Chain r:



• Molecule 43: 50S ribosomal protein L22

Chain s:

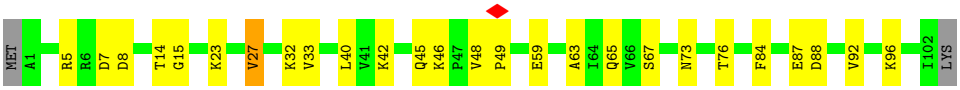


• Molecule 44: 50S ribosomal protein L23

Chain t:

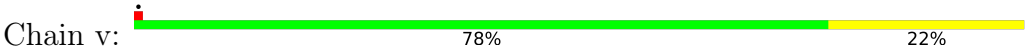
• Molecule 45: 50S ribosomal protein L24

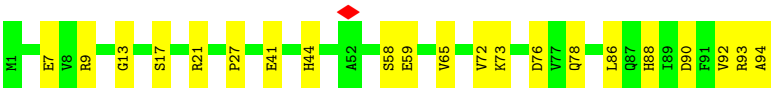
Chain u:



• Molecule 46: 50S ribosomal protein L25

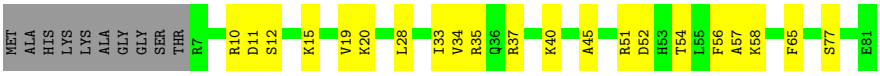
Chain v:





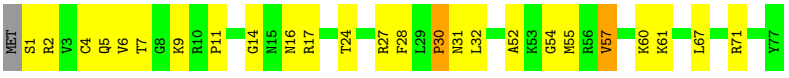
• Molecule 47: 50S ribosomal protein L27

Chain w:



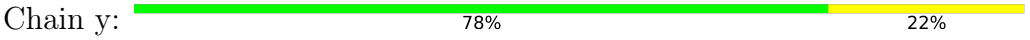
• Molecule 48: 50S ribosomal protein L28

Chain x:



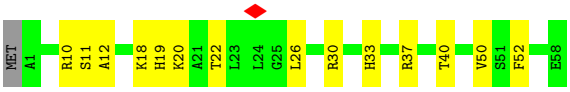
• Molecule 49: 50S ribosomal protein L29

Chain y:



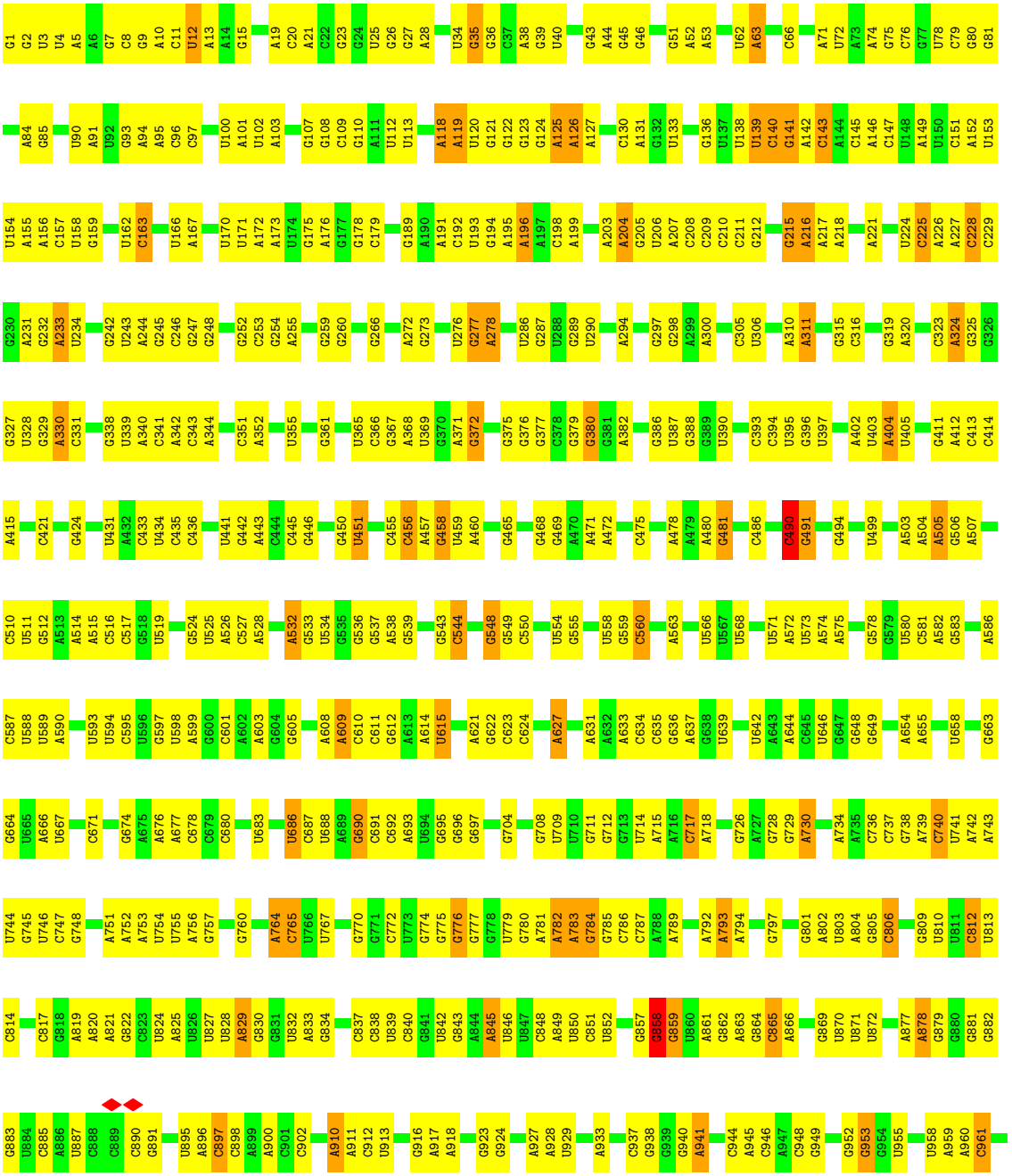
• Molecule 50: 50S ribosomal protein L30

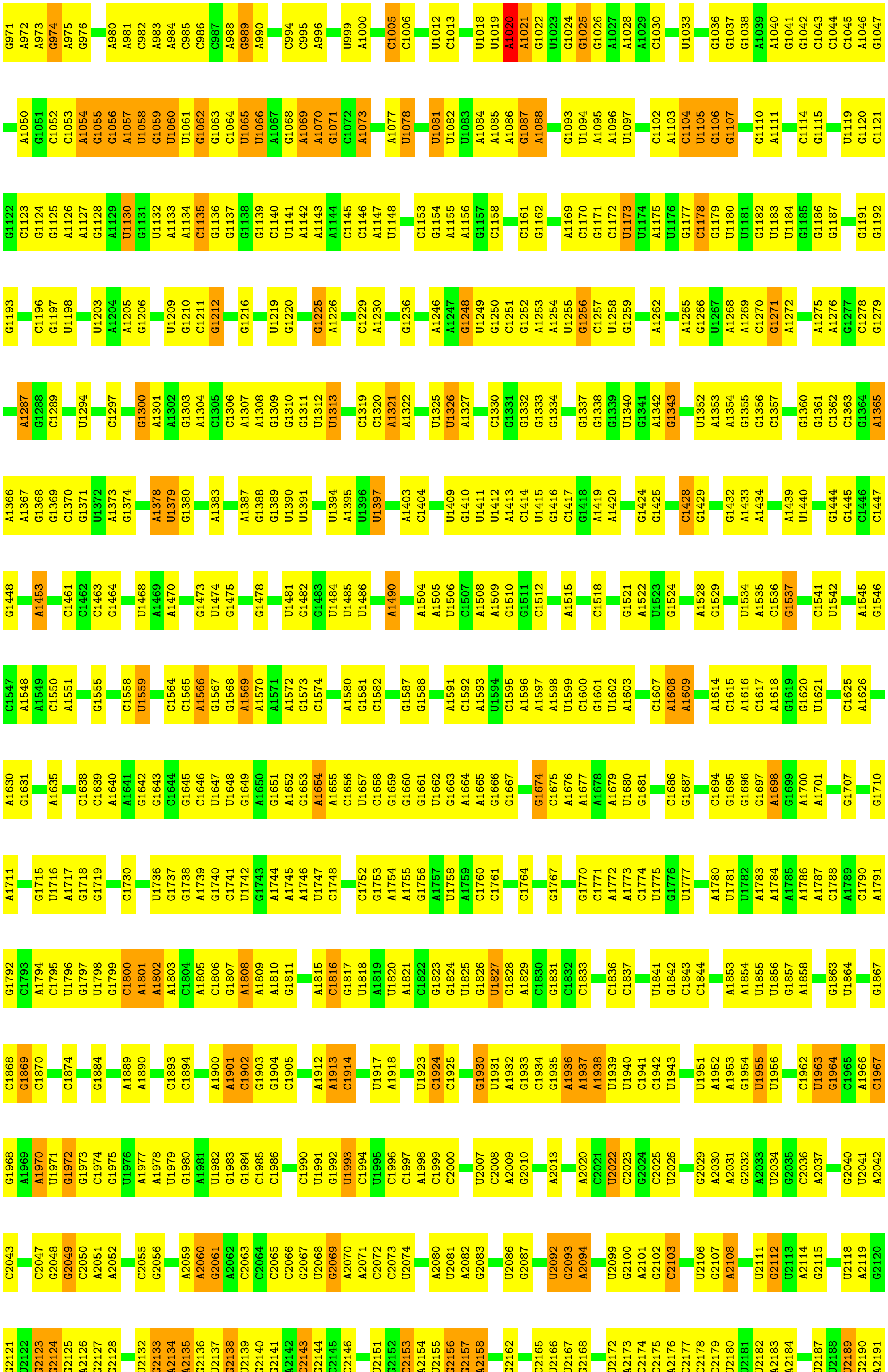
Chain z:

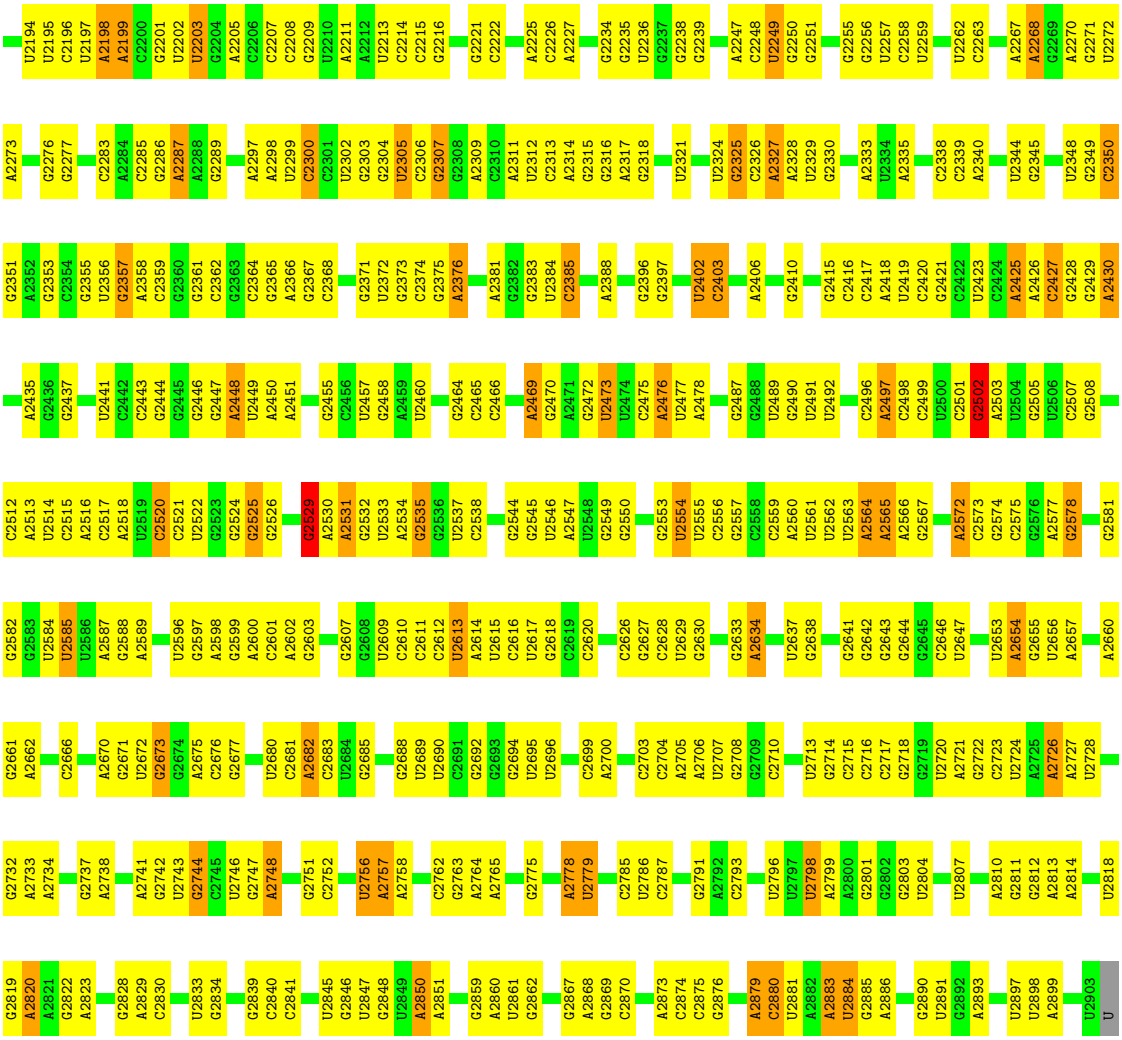


• Molecule 51: 23S rRNA

Chain 1:





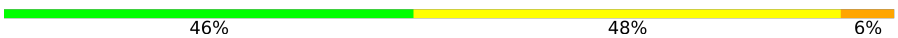


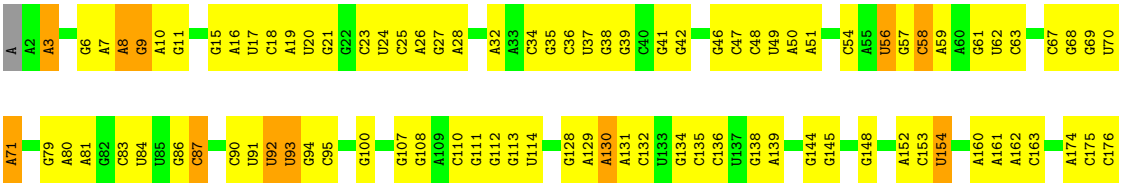
• Molecule 52: 5S rRNA

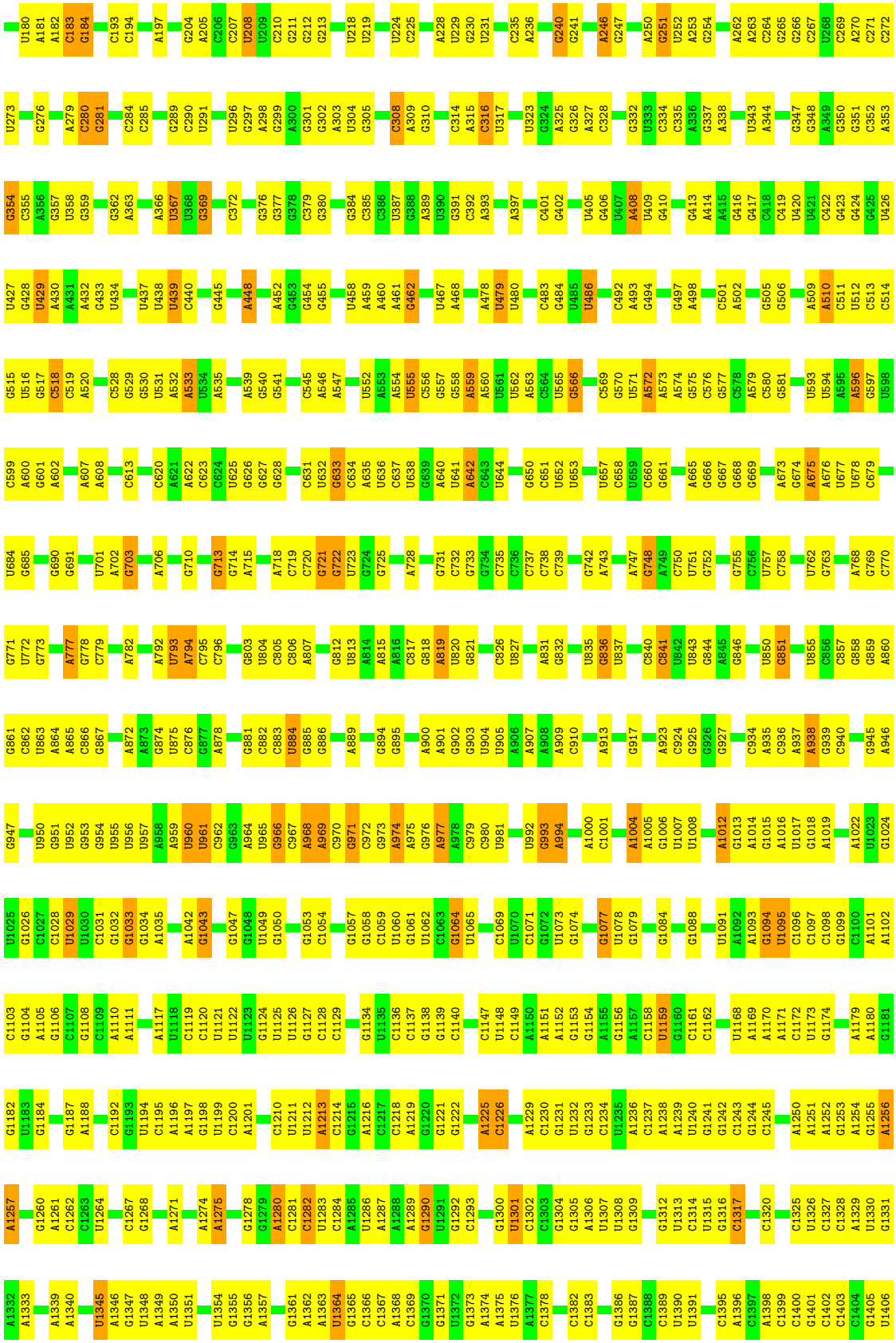
Chain 2:

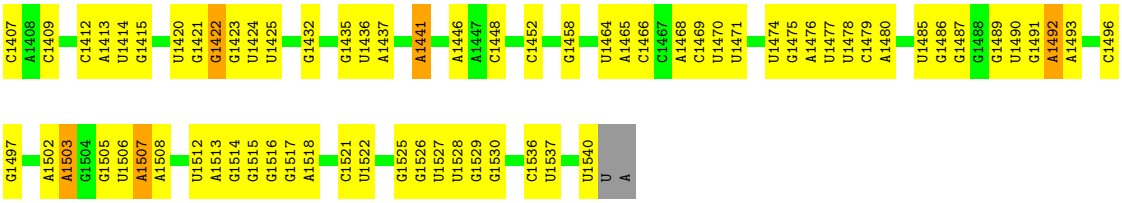
• Molecule 53: 16S rRNA

Chain 3:



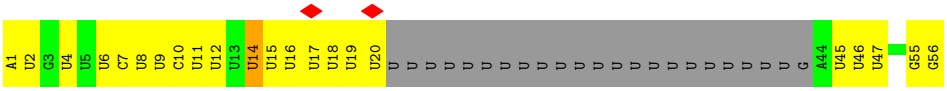






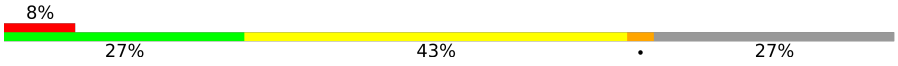
• Molecule 54: mRNA

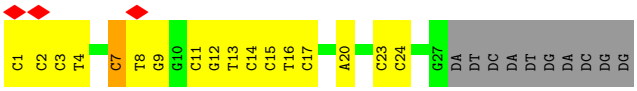
Chain 4:



• Molecule 55: templete DNA strand

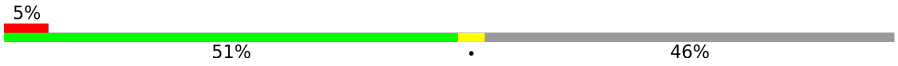
Chain 8:

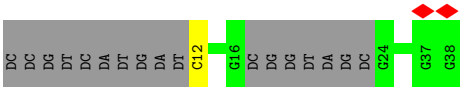




• Molecule 56: non-templete DNA strand

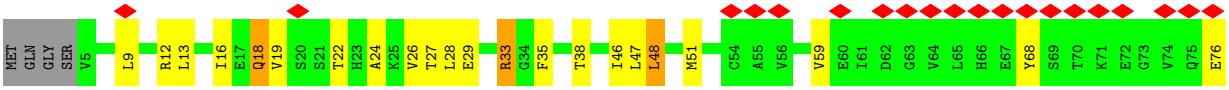
Chain 9:

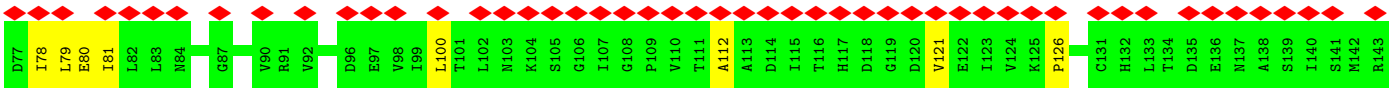


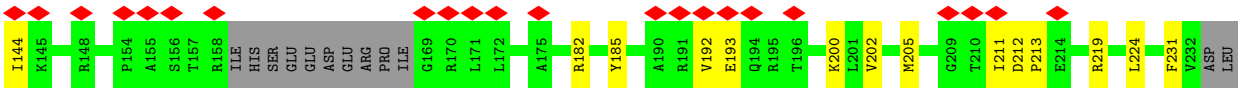


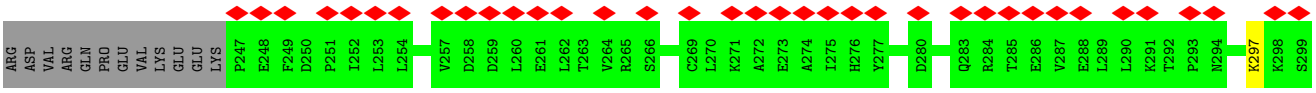
• Molecule 57: DNA-directed RNA polymerase subunit alpha

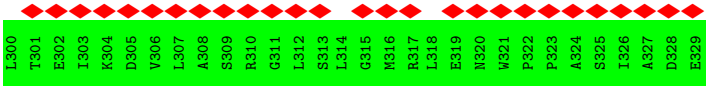
Chain A1:





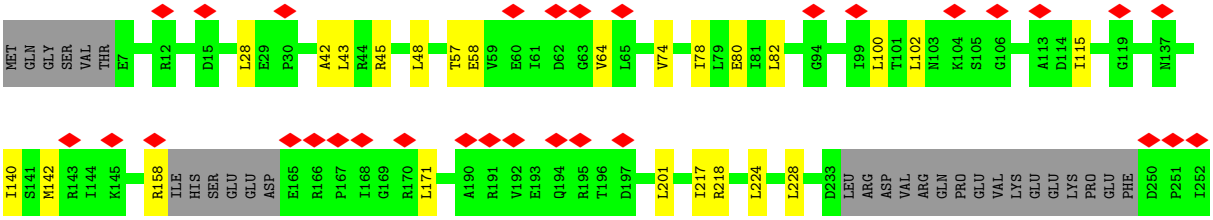


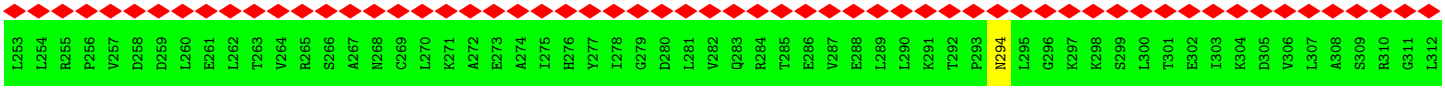


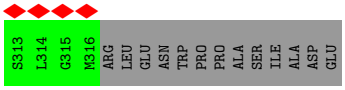


• Molecule 57: DNA-directed RNA polymerase subunit alpha

Chain A2:

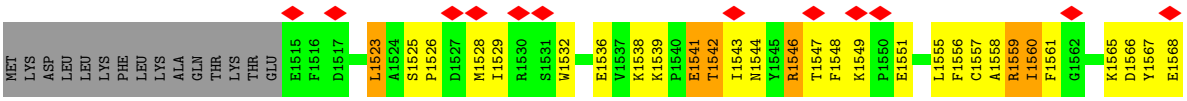


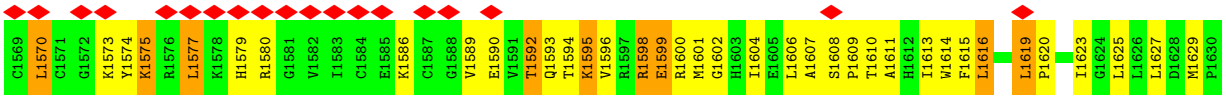


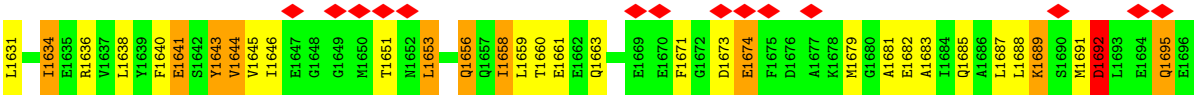


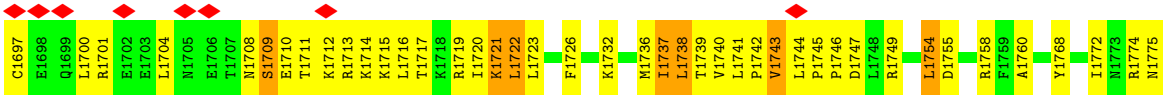
• Molecule 58: DNA-directed RNA polymerase subunit beta'

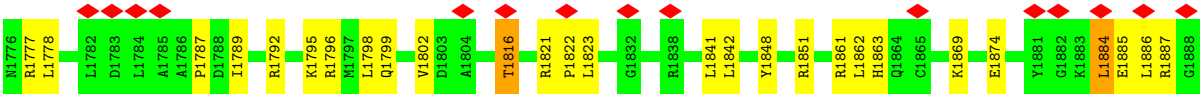
Chain B1:

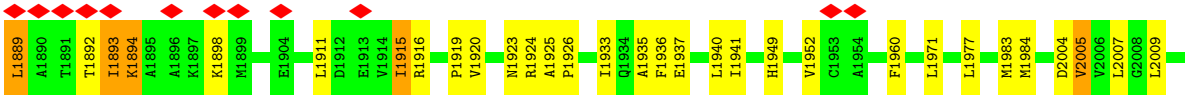


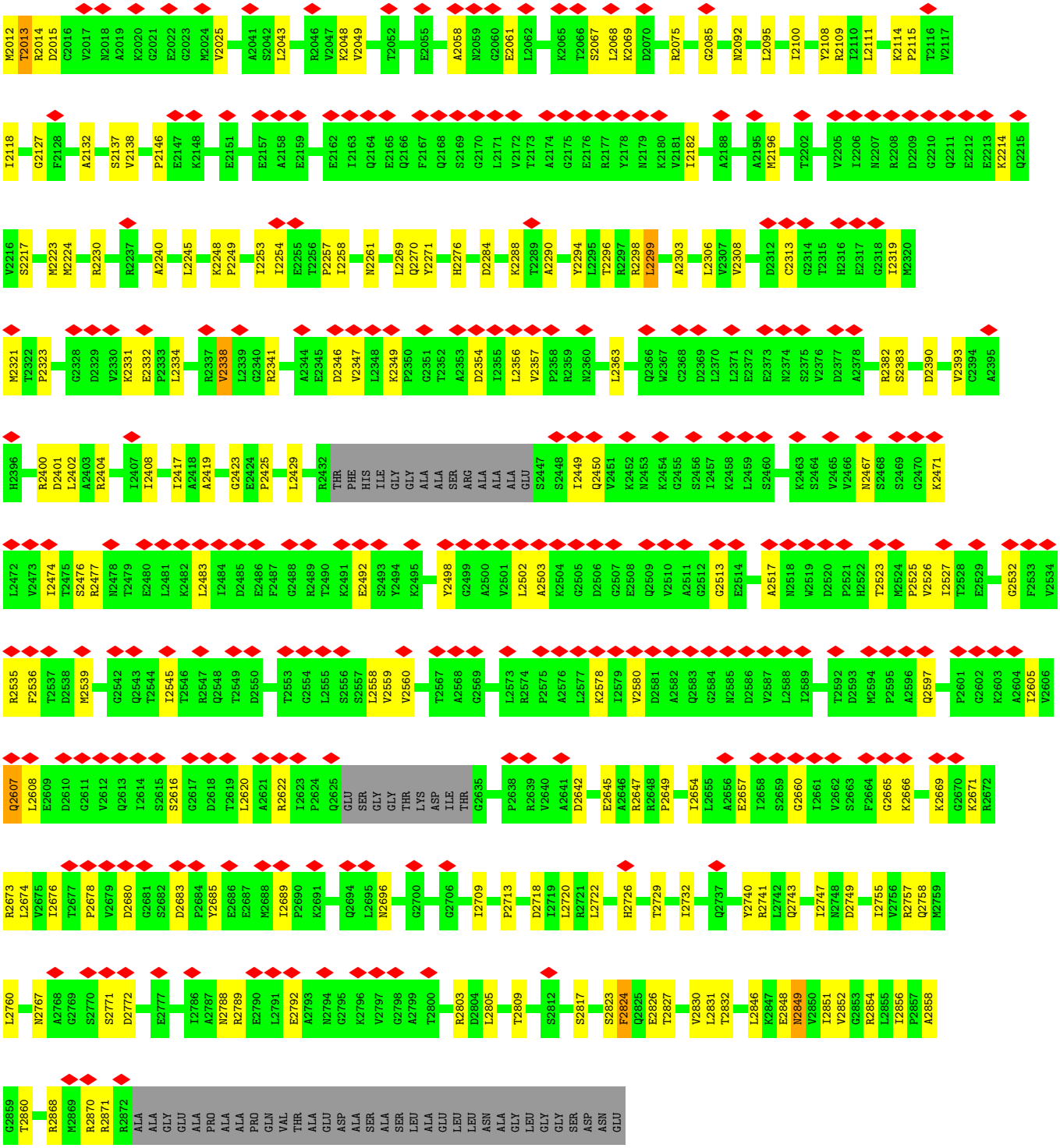






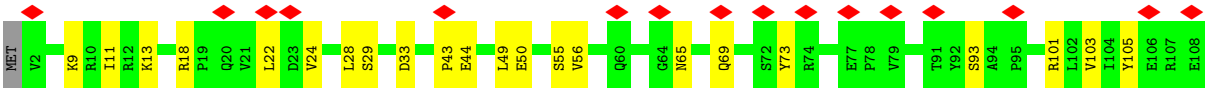


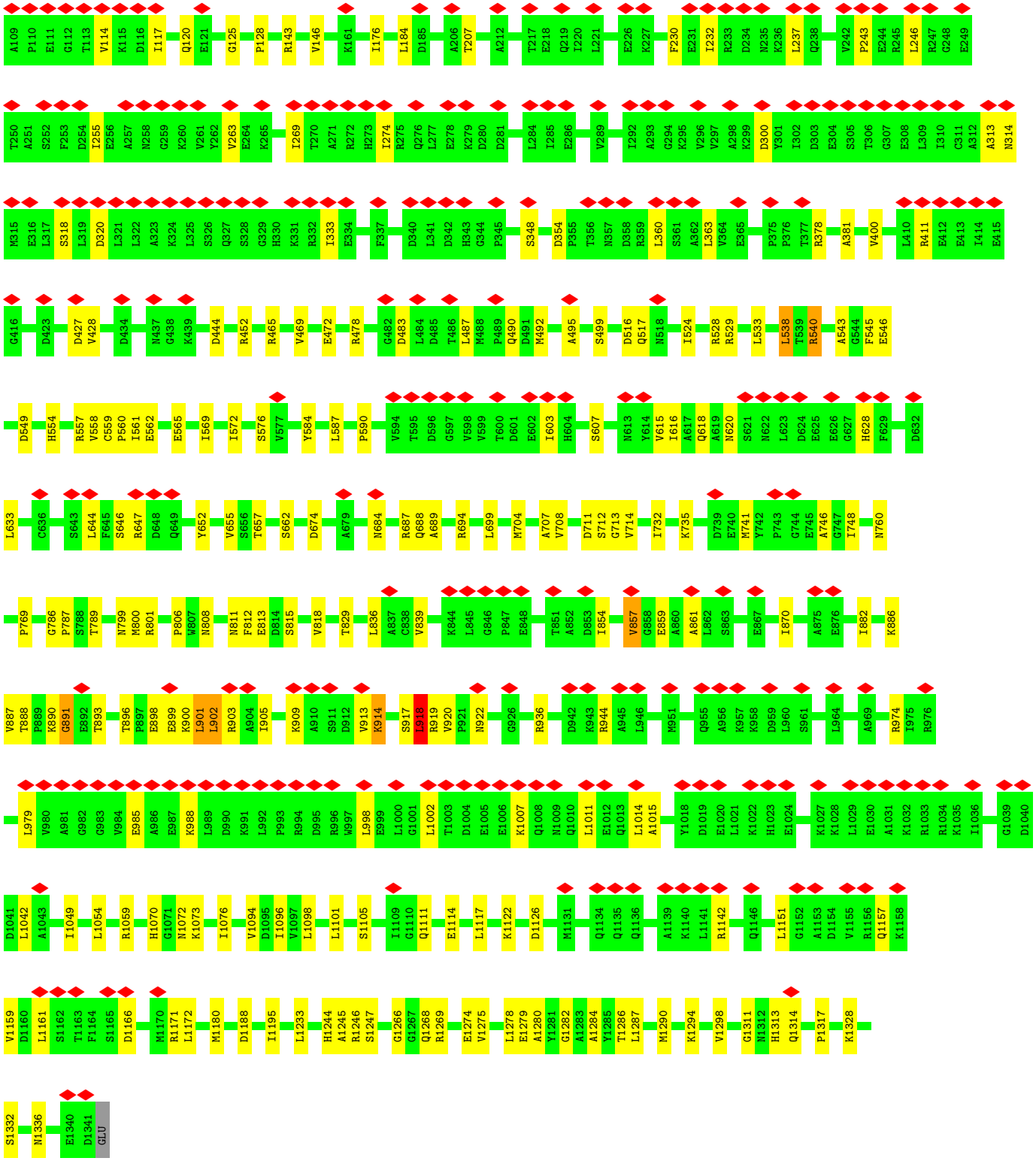




• Molecule 59: DNA-directed RNA polymerase subunit beta

Chain B2:

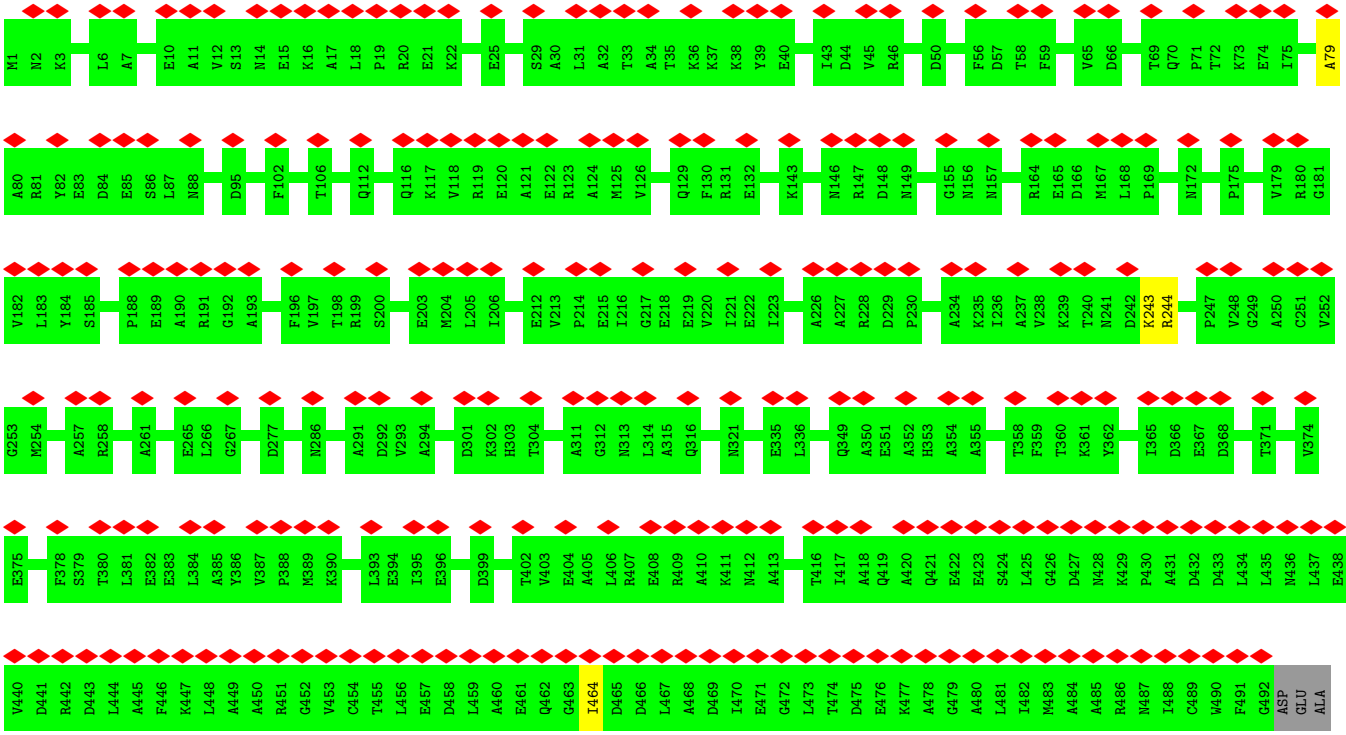




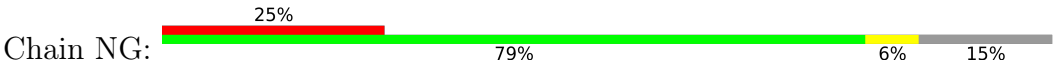
• Molecule 60: DNA-directed RNA polymerase subunit omega

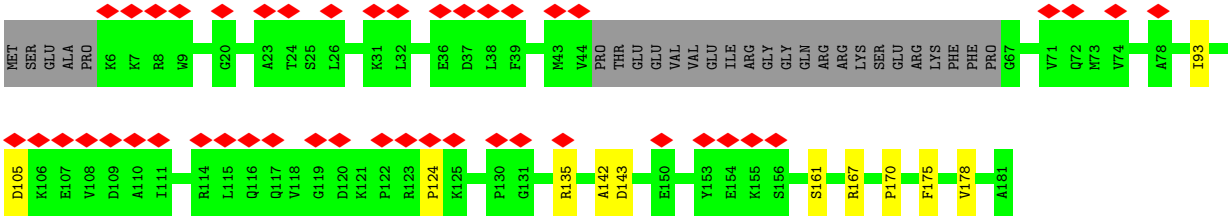
Chain W0:

• Molecule 61: Transcription termination/antitermination protein NusA

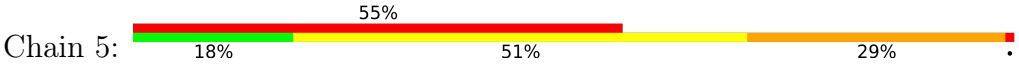


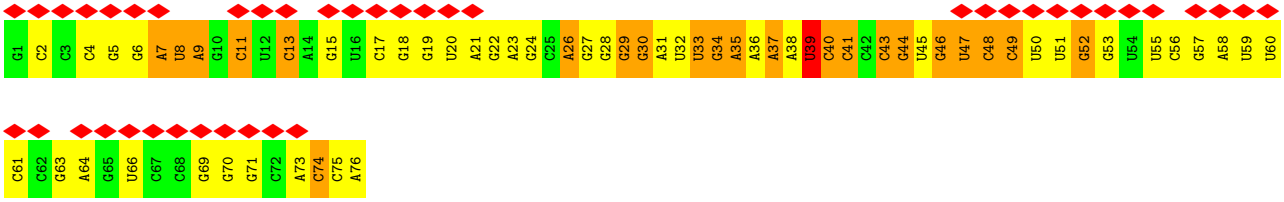
• Molecule 62: Transcription termination/antitermination protein NusG





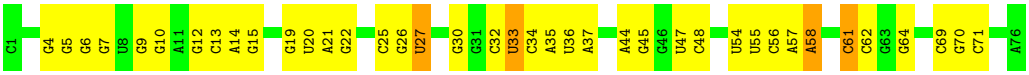
• Molecule 63: tRNA(Phe)





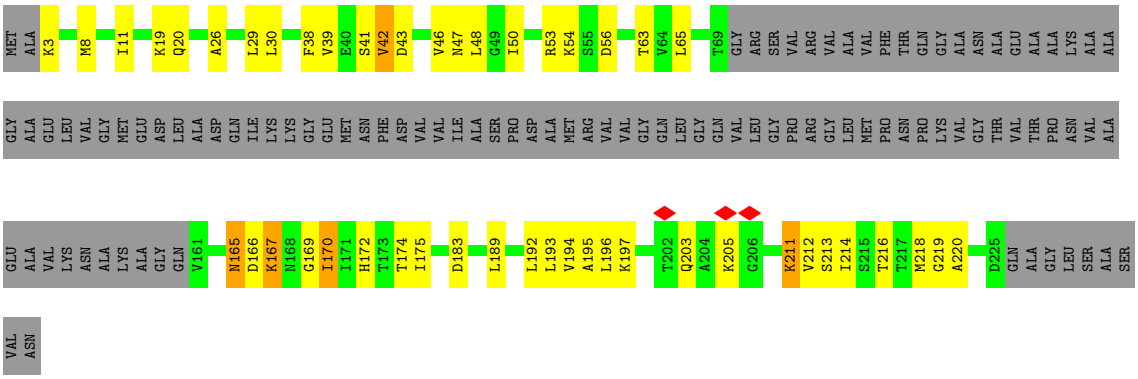
• Molecule 64: tRNA(fMet)

Chain 6:



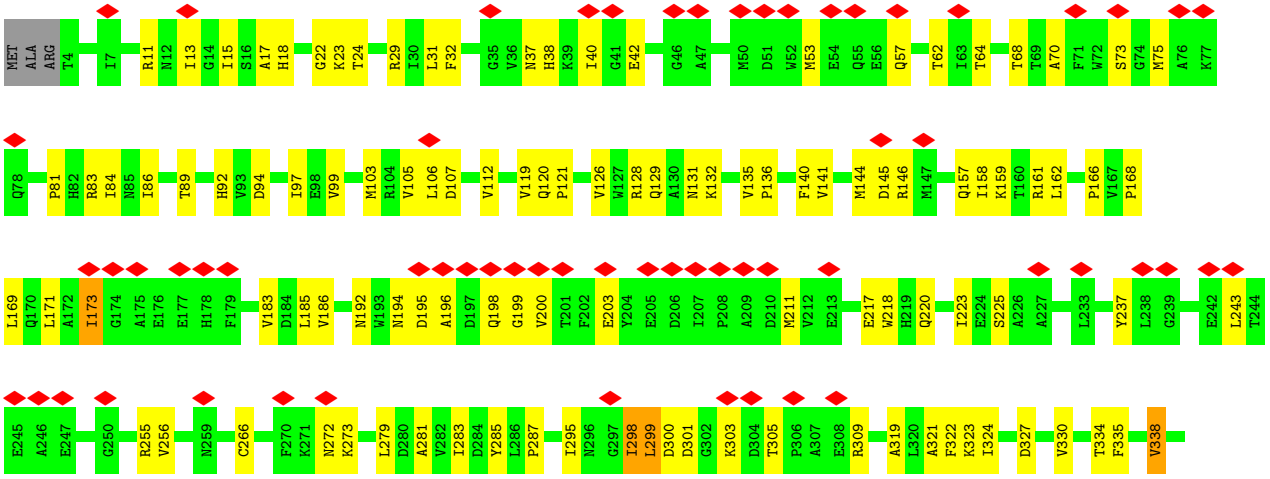
• Molecule 65: Large ribosomal subunit protein uL1

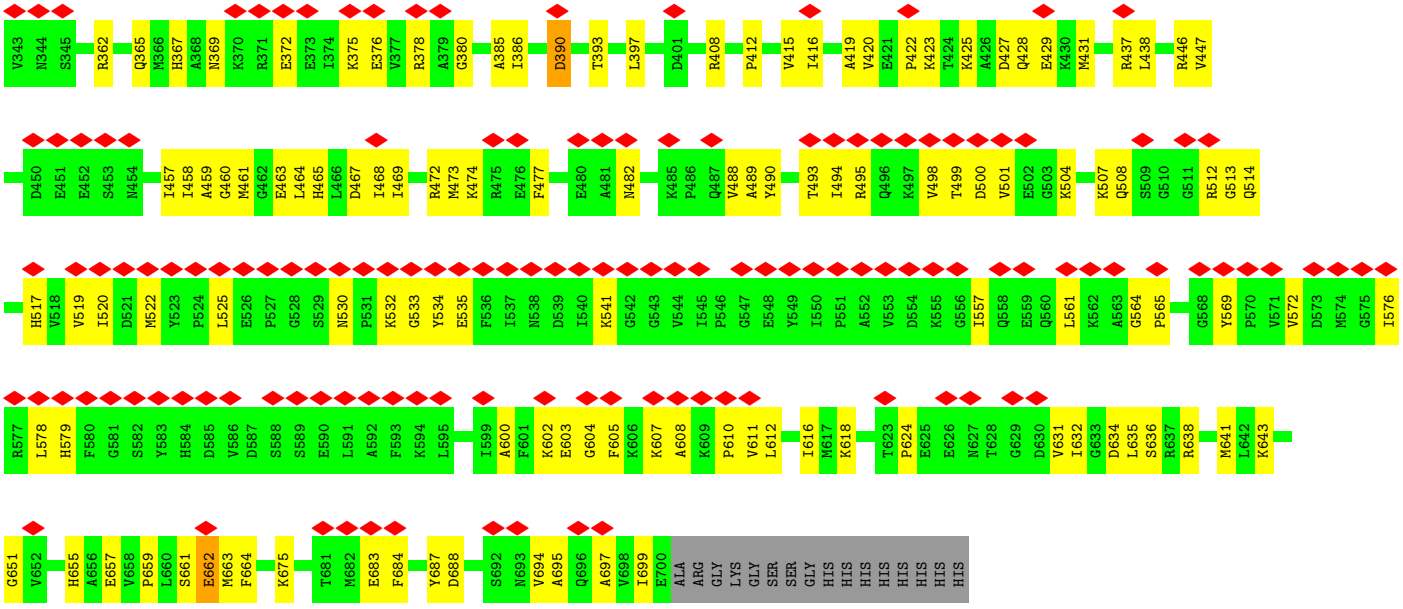
Chain a:



• Molecule 66: Elongation factor G

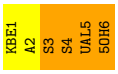
Chain 0:





• Molecule 67: Viomycin

Chain h:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	569815	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TALOS ARCTICA	Depositor
Voltage (kV)	200	Depositor
Electron dose ($e^-/Å^2$)	47	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	1500	Depositor
Magnification	Not provided	
Image detector	FEI FALCON III (4k x 4k)	Depositor
Maximum map value	0.168	Depositor
Minimum map value	-0.079	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.005	Depositor
Recommended contour level	0.011	Depositor
Map size (Å)	753.60004, 753.60004, 753.60004	wwPDB
Map dimensions	480, 480, 480	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.57, 1.57, 1.57	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: 5OH, MG, UAL, KBE, DPP, PO4, GDP

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|>5$	RMSZ	#$\|Z\|>5$
1	A	0.25	0/362	0.73	0/485
2	B	0.37	0/450	0.80	2/599 (0.3%)
3	C	0.32	0/416	0.61	0/554
4	D	0.47	0/380	0.95	0/498
5	E	0.47	0/513	0.80	0/676
6	F	0.41	0/303	0.79	0/397
7	G	0.39	0/1735	0.82	0/2338
8	H	0.42	0/1651	0.80	0/2225
9	I	0.28	0/1665	0.76	1/2227 (0.0%)
10	J	0.46	0/1169	0.80	0/1573
11	K	0.41	0/835	0.90	3/1128 (0.3%)
12	L	0.42	0/1195	0.82	2/1602 (0.1%)
13	M	0.31	0/989	0.75	0/1326
14	N	0.29	0/1034	0.74	0/1375
15	O	0.56	0/796	0.81	0/1077
16	P	0.42	0/885	0.76	0/1195
17	Q	0.43	0/969	0.81	0/1300
18	R	0.28	0/892	0.70	0/1193
19	S	0.28	0/817	0.68	1/1088 (0.1%)
20	T	0.37	0/722	0.74	0/964
21	U	0.30	0/659	0.63	0/884
22	V	0.33	0/657	0.72	0/881
23	W	0.28	0/544	0.69	0/731
24	X	0.28	0/652	0.64	0/877
25	Y	0.26	0/671	0.64	2/888 (0.2%)
26	Z	0.56	0/550	1.09	1/728 (0.1%)
27	b	0.49	0/2121	0.82	0/2852
28	c	0.45	0/1586	0.77	0/2134
29	d	0.40	0/1571	0.80	3/2113 (0.1%)
30	e	0.30	0/1434	0.66	0/1926
31	f	0.29	0/1343	0.61	0/1816
32	g	0.34	0/1122	0.77	3/1515 (0.2%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
33	i	0.39	0/1046	0.80	1/1410 (0.1%)
34	j	0.46	0/1152	0.72	0/1551
35	k	0.42	0/947	0.91	1/1268 (0.1%)
36	l	0.41	1/1054 (0.1%)	0.80	2/1403 (0.1%)
37	m	0.40	0/1093	0.81	2/1460 (0.1%)
38	n	0.54	1/973 (0.1%)	0.88	0/1301
39	o	0.32	0/902	0.68	0/1209
40	p	0.39	0/929	0.72	2/1242 (0.2%)
41	q	0.43	0/960	0.72	0/1278
42	r	0.38	0/829	0.78	1/1107 (0.1%)
43	s	0.52	0/864	0.83	0/1156
44	t	0.48	0/744	0.81	1/994 (0.1%)
45	u	0.33	0/787	0.74	2/1051 (0.2%)
46	v	0.35	0/766	0.66	0/1025
47	w	0.40	0/582	0.80	2/769 (0.3%)
48	x	0.62	0/635	1.16	5/848 (0.6%)
49	y	0.28	0/510	0.71	0/677
50	z	0.36	0/453	0.76	1/605 (0.2%)
51	1	0.59	0/69796	0.60	16/108888 (0.0%)
52	2	0.60	0/2872	0.55	1/4479 (0.0%)
53	3	0.60	0/36963	0.57	5/57662 (0.0%)
54	4	0.58	0/764	0.77	0/1183
55	8	0.56	0/599	0.70	1/919 (0.1%)
56	9	0.50	0/468	0.55	0/719
57	A1	0.55	0/2106	0.82	0/2868
57	A2	0.49	0/2048	0.75	0/2786
58	B1	0.56	5/10510 (0.0%)	0.74	8/14196 (0.1%)
59	B2	0.45	0/10714	0.66	0/14459
60	W0	0.30	0/652	0.61	0/879
61	NA	0.76	0/2431	1.22	0/3385
62	NG	1.15	0/756	1.04	0/1048
63	5	0.59	0/1812	0.90	3/2823 (0.1%)
64	6	0.60	0/1832	0.59	0/2855
65	a	0.47	0/1020	0.83	0/1370
66	0	0.39	0/5501	0.72	3/7446 (0.0%)
67	h	3.20	2/11 (18.2%)	0.74	0/13
All	All	0.54	9/196769 (0.0%)	0.67	75/289497 (0.0%)

All (9) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
67	h	3	SER	CA-C	-6.72	1.38	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
67	h	4	SER	CA-C	-6.31	1.39	1.52
38	n	66	ALA	CA-C	-6.09	1.43	1.52
58	B1	2849	ASN	CG-ND2	-5.31	1.22	1.33
58	B1	2607	GLN	CD-OE1	5.19	1.33	1.23
58	B1	1923	ASN	CG-ND2	-5.16	1.22	1.33
58	B1	2276	HIS	ND1-CE1	5.05	1.37	1.32
58	B1	2767	ASN	CG-OD1	5.05	1.33	1.23
36	l	18	ARG	CA-CB	-5.01	1.44	1.52

All (75) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
12	L	92	PRO	N-CA-C	-10.49	98.46	113.47
51	1	1020	A	C2'-C3'-O3'	7.34	120.51	109.50
48	x	11	PRO	N-CA-C	-7.32	99.55	111.77
51	1	2425	A	O3'-P-O5'	-6.89	93.66	104.00
12	L	82	SER	N-CA-C	6.89	116.41	108.49
58	B1	1949	HIS	CB-CG-CD2	-6.57	122.66	131.20
48	x	30	PRO	N-CA-C	6.53	125.92	112.47
36	l	29	LYS	CA-C-N	6.48	133.92	121.54
36	l	29	LYS	C-N-CA	6.48	133.92	121.54
58	B1	1560	ILE	CA-C-N	-6.42	113.94	121.64
58	B1	1560	ILE	C-N-CA	-6.42	113.94	121.64
51	1	2428	G	O3'-P-O5'	-6.42	94.38	104.00
51	1	490	C	N1-C1'-C2'	6.38	121.58	112.00
9	I	24	VAL	N-CA-C	-6.36	107.67	113.71
45	u	45	GLN	CA-C-N	6.32	129.46	120.49
45	u	45	GLN	C-N-CA	6.32	129.46	120.49
32	g	8	LYS	CA-C-N	6.31	133.33	121.97
32	g	8	LYS	C-N-CA	6.31	133.33	121.97
11	K	52	ASN	CB-CA-C	6.31	121.48	111.51
53	3	1301	U	N1-C1'-C2'	6.30	121.45	112.00
58	B1	2276	HIS	CB-CG-CD2	-6.30	123.02	131.20
48	x	71	ARG	N-CA-C	-6.18	105.73	113.28
19	S	21	ALA	N-CA-C	-6.10	107.67	114.62
66	0	367	HIS	CA-C-N	6.09	133.17	121.54
66	0	367	HIS	C-N-CA	6.09	133.17	121.54
48	x	67	LEU	N-CA-C	-6.08	104.58	111.14
63	5	39	U	C3'-C2'-O2'	5.85	119.48	110.70
32	g	121	VAL	N-CA-C	-5.82	106.73	111.91
11	K	52	ASN	N-CA-C	-5.80	104.82	112.24
51	1	1816	C	N1-C1'-C2'	5.76	120.64	112.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
26	Z	17	ARG	N-CA-C	-5.71	104.87	113.89
48	x	54	GLY	N-CA-C	5.70	120.71	113.24
58	B1	1949	HIS	CB-CG-ND1	5.69	131.23	122.70
2	B	5	ASN	CA-C-N	5.69	128.96	120.83
2	B	5	ASN	C-N-CA	5.69	128.96	120.83
51	1	1343	G	N9-C1'-C2'	5.58	120.37	112.00
11	K	52	ASN	CA-CB-CG	5.54	118.14	112.60
33	i	62	ALA	N-CA-C	5.52	116.99	110.97
51	1	2502	G	O3'-P-O5'	5.47	112.20	104.00
37	m	57	VAL	CA-C-N	5.46	131.96	121.54
37	m	57	VAL	C-N-CA	5.46	131.96	121.54
29	d	74	LYS	CA-C-N	5.45	128.62	120.83
29	d	74	LYS	C-N-CA	5.45	128.62	120.83
53	3	130	A	N9-C1'-C2'	5.44	120.16	112.00
42	r	51	VAL	N-CA-C	-5.42	97.18	108.88
55	8	7	DC	C2'-C3'-O3'	-5.41	103.38	111.50
58	B1	2276	HIS	CB-CG-ND1	5.40	130.80	122.70
51	1	1106	G	C2'-C3'-O3'	5.38	121.77	113.70
53	3	813	U	N1-C1'-C2'	5.38	120.07	112.00
29	d	20	GLY	N-CA-C	-5.31	107.47	114.95
58	B1	1526	PRO	N-CA-C	-5.25	106.19	113.81
25	Y	53	MET	CA-C-N	5.25	127.51	120.58
25	Y	53	MET	C-N-CA	5.25	127.51	120.58
35	k	89	ASN	N-CA-C	5.25	117.42	111.02
51	1	1924	C	N1-C1'-C2'	5.24	119.85	112.00
51	1	2529	G	N9-C1'-C2'	5.23	119.84	112.00
44	t	65	GLY	N-CA-C	5.22	117.47	111.36
63	5	39	U	C4'-C3'-O3'	5.22	120.83	113.00
66	0	664	PHE	CA-CB-CG	5.21	119.01	113.80
52	2	66	A	N9-C1'-C2'	5.20	119.80	112.00
51	1	858	G	C4'-C3'-O3'	5.18	120.77	113.00
51	1	1211	C	N1-C1'-C2'	5.18	119.77	112.00
47	w	15	LYS	CA-C-N	5.14	129.71	122.46
47	w	15	LYS	C-N-CA	5.14	129.71	122.46
51	1	278	A	N9-C1'-C2'	5.12	119.68	112.00
53	3	1043	G	N9-C1'-C2'	5.11	119.67	112.00
53	3	722	G	N9-C1'-C2'	5.10	119.66	112.00
63	5	74	C	C4'-C3'-O3'	-5.10	105.34	113.00
58	B1	1560	ILE	CA-C-O	-5.08	115.67	120.95
50	z	40	THR	N-CA-C	-5.07	101.31	109.58
51	1	1087	G	N9-C1'-C2'	5.06	119.59	112.00
40	p	15	ASP	CA-C-N	5.05	131.47	122.13

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
40	p	15	ASP	C-N-CA	5.05	131.47	122.13
51	1	1508	A	N9-C1'-C2'	5.04	119.57	112.00
51	1	933	A	N9-C1'-C2'	5.00	119.50	112.00

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	A	355	0	353	10	0
2	B	444	0	461	15	0
3	C	409	0	440	17	0
4	D	377	0	418	17	0
5	E	504	0	574	16	0
6	F	302	0	341	14	0
7	G	1704	0	1732	46	0
8	H	1624	0	1699	45	0
9	I	1643	0	1710	41	0
10	J	1156	0	1199	38	0
11	K	817	0	808	26	0
12	L	1181	0	1240	46	0
13	M	979	0	1034	30	0
14	N	1022	0	1070	55	0
15	O	786	0	828	32	0
16	P	869	0	878	29	0
17	Q	955	0	1019	34	0
18	R	883	0	944	23	0
19	S	805	0	847	36	0
20	T	714	0	737	16	0
21	U	649	0	666	21	0
22	V	648	0	691	18	0
23	W	535	0	552	15	0
24	X	637	0	665	18	0
25	Y	665	0	714	21	0
26	Z	544	0	579	16	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
27	b	2082	0	2157	73	0
28	c	1565	0	1616	57	0
29	d	1552	0	1619	50	0
30	e	1410	0	1447	43	0
31	f	1323	0	1374	32	0
32	g	1111	0	1148	31	0
33	i	1032	0	1088	36	0
34	j	1129	0	1162	31	0
35	k	938	0	1012	20	0
36	l	1045	0	1117	29	0
37	m	1074	0	1157	31	0
38	n	960	0	1000	34	0
39	o	892	0	923	20	0
40	p	917	0	965	23	0
41	q	947	0	1022	22	0
42	r	816	0	839	22	0
43	s	857	0	922	19	0
44	t	738	0	807	15	0
45	u	779	0	834	22	0
46	v	753	0	780	14	0
47	w	575	0	592	21	0
48	x	625	0	655	22	0
49	y	509	0	543	9	0
50	z	449	0	491	10	0
51	1	62317	0	31346	1368	0
52	2	2568	0	1303	58	0
53	3	33012	0	16618	720	0
54	4	689	0	344	6	0
55	8	539	0	305	28	0
56	9	417	0	224	1	0
57	A1	2088	0	1895	25	0
57	A2	2029	0	1864	17	0
58	B1	10353	0	10548	322	0
59	B2	10546	0	10550	160	0
60	W0	650	0	658	11	0
61	NA	2432	0	1171	5	0
62	NG	758	0	334	10	0
63	5	1622	0	821	31	0
64	6	1640	0	837	27	0
65	a	1013	0	1081	41	0
66	0	5399	0	5363	152	0
67	h	48	0	40	5	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
68	B1	1	0	0	0	0
69	0	28	0	12	1	0
70	0	5	0	0	0	0
All	All	183439	0	132783	3774	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 12.

All (3774) 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)
12:L:92:PRO:HA	12:L:95:ARG:HE	1.12	1.13
53:3:112:G:H21	53:3:354:G:H5'	1.16	1.11
51:1:1060:U:H4'	51:1:1061:U:H5'	1.32	1.09
51:1:2061:G:H2'	51:1:2501:C:O2'	1.52	1.09
50:z:37:ARG:HH12	51:1:929:U:H5'	1.12	1.08
9:I:131:ILE:HG21	53:3:620:C:H1'	1.40	1.04
51:1:45:G:H5"	51:1:46:G:H5'	1.35	1.03
51:1:1607:C:H4'	51:1:1608:A:H5'	1.40	1.02
51:1:1796:U:H2'	51:1:1797:G:H8	1.18	1.02
51:1:1104:C:H2'	51:1:1105:U:H4'	1.38	1.01
58:B1:1610:THR:HG23	58:B1:1799:GLN:CD	1.86	1.01
58:B1:2249:PRO:HB3	59:B2:549:ASP:OD2	1.60	1.00
51:1:2324:U:H3'	51:1:2325:G:H5"	1.46	0.98
51:1:572:A:H61	51:1:2029:G:H21	1.04	0.98
51:1:1645:G:H5"	51:1:1646:C:H5'	1.45	0.98
58:B1:1851:ARG:HD2	59:B2:1268:GLN:NE2	1.79	0.98
51:1:2672:U:H2'	51:1:2673:G:H5"	1.43	0.97
10:J:120:HIS:ND1	10:J:121:ASN:ND2	2.14	0.96
52:2:90:C:H2'	52:2:91:C:H5"	1.44	0.96
51:1:1597:A:H5"	51:1:1598:A:H5'	1.45	0.96
51:1:413:C:H42	51:1:2410:G:H1	1.14	0.95
7:G:16:GLY:HA2	7:G:39:ILE:HA	1.49	0.95
52:2:118:C:H2'	52:2:119:A:H4'	1.46	0.94
58:B1:1567:TYR:O	58:B1:1574:TYR:CE2	2.20	0.94
38:n:39:PRO:HG3	51:1:1651:G:H5'	1.49	0.94
43:s:59:GLU:HA	43:s:64:ALA:HA	1.50	0.94
42:r:79:ARG:HH22	51:1:572:A:H5'	1.33	0.93
53:3:1156:G:H1'	53:3:1179:A:H61	1.31	0.93
51:1:828:U:H2'	51:1:829:A:C8	2.02	0.93
23:W:38:ILE:HD11	53:3:720:C:H1'	1.52	0.92

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:674:G:H2'	53:3:675:A:C8	2.05	0.92
58:B1:1701:ARG:HG2	58:B1:1701:ARG:HH11	1.35	0.91
54:4:56:G:H21	58:B1:1926:PRO:HD3	1.35	0.91
51:1:2068:U:H3	51:1:2430:A:H62	1.15	0.91
53:3:91:U:H2'	53:3:92:U:H5"	1.53	0.91
51:1:1558:C:H4'	51:1:1559:U:H5"	1.51	0.90
53:3:674:G:H2'	53:3:675:A:H8	1.34	0.90
53:3:409:U:H3	53:3:433:G:H1	1.12	0.90
53:3:1218:C:H2'	53:3:1219:A:C8	2.06	0.90
51:1:2653:U:H3'	51:1:2654:A:H5"	1.52	0.89
12:L:92:PRO:HA	12:L:95:ARG:NE	1.88	0.89
58:B1:1567:TYR:C	58:B1:1574:TYR:HE2	1.80	0.89
58:B1:1816:THR:HA	58:B1:1822:PRO:HA	1.55	0.88
52:2:78:A:H62	52:2:98:G:H21	1.17	0.88
29:d:68:ALA:HA	51:1:1255:U:C5	2.08	0.88
53:3:1422:G:H22	53:3:1478:U:H3	1.22	0.88
50:z:37:ARG:NH1	51:1:929:U:H5'	1.89	0.88
59:B2:854:ILE:HG21	59:B2:917:SER:HB3	1.54	0.88
51:1:1473:G:H1	51:1:1518:C:H42	1.21	0.88
12:L:91:ARG:HB3	12:L:93:VAL:HG12	1.54	0.88
51:1:1796:U:H2'	51:1:1797:G:C8	2.08	0.88
51:1:435:C:H2'	51:1:436:C:H5'	1.56	0.87
52:2:3:C:H2'	52:2:4:C:H5"	1.55	0.87
63:5:9:A:H2'	63:5:11:C:H41	1.38	0.87
53:3:1395:C:HO2'	53:3:1396:A:H8	0.89	0.86
7:G:131:LYS:HD2	53:3:1158:C:H4'	1.57	0.86
51:1:2128:G:OP1	65:a:38:PHE:CE1	2.29	0.86
14:N:68:GLY:HA2	53:3:1250:A:H5'	1.55	0.86
42:r:79:ARG:NH2	51:1:572:A:H5'	1.91	0.85
53:3:1218:C:H2'	53:3:1219:A:H8	1.41	0.85
51:1:2443:C:H2'	51:1:2444:G:H8	1.42	0.85
51:1:2822:G:H2'	51:1:2823:A:H5"	1.58	0.85
19:S:70:HIS:HB2	53:3:974:A:H5'	1.59	0.84
51:1:1783:A:C6	51:1:2587:A:C2	2.66	0.84
58:B1:1567:TYR:HB3	58:B1:1574:TYR:OH	1.76	0.84
37:m:12:MET:HA	51:1:910:A:H62	1.41	0.84
34:j:116:ARG:NH2	51:1:528:A:H5"	1.92	0.84
12:L:27:ASN:HD22	53:3:1374:A:H4'	1.42	0.84
51:1:1783:A:N1	51:1:2587:A:C4	2.46	0.84
53:3:3:A:H5'	53:3:613:C:H4'	1.58	0.84
53:3:835:U:H2'	53:3:836:G:H5"	1.60	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2262:U:H2'	51:1:2263:C:C6	2.13	0.83
58:B1:2132:ALA:HB2	59:B2:808:ASN:H	1.41	0.83
53:3:1424:U:H3	53:3:1476:A:H61	1.26	0.83
58:B1:2269:LEU:HD13	59:B2:618:GLN:HG3	1.61	0.83
66:0:40:ILE:HG23	66:0:198:GLN:OE1	1.79	0.83
23:W:37:LYS:HB3	53:3:719:C:H1'	1.60	0.82
51:1:554:U:H2'	51:1:555:G:O4'	1.79	0.82
51:1:1937:A:O2'	51:1:1938:A:H5'	1.78	0.82
53:3:1512:U:H2'	53:3:1513:A:C8	2.14	0.82
14:N:13:SER:OG	53:3:1251:A:H5'	1.80	0.82
51:1:2050:C:H2'	51:1:2051:A:H5'	1.62	0.82
51:1:695:G:H1	51:1:767:U:H3	1.26	0.81
53:3:572:A:H5"	53:3:917:G:H4'	1.59	0.81
51:1:1433:A:H2'	51:1:1434:A:O4'	1.79	0.81
58:B1:1610:THR:HG23	58:B1:1799:GLN:OE1	1.81	0.81
27:b:55:GLY:HA2	51:1:692:C:OP1	1.81	0.81
53:3:555:U:H2'	53:3:556:C:C6	2.15	0.81
26:Z:7:GLU:HB2	26:Z:11:PHE:HB3	1.63	0.81
51:1:1680:U:H2'	51:1:1681:G:H5'	1.60	0.81
58:B1:1643:TYR:HE1	58:B1:1661:GLU:OE2	1.64	0.81
51:1:1064:C:H3'	51:1:1065:U:H5"	1.63	0.80
58:B1:1640:PHE:HE2	58:B1:1795:LYS:HB2	1.44	0.80
58:B1:1640:PHE:CE2	58:B1:1795:LYS:HB2	2.15	0.80
51:1:2128:G:OP1	65:a:38:PHE:CD1	2.34	0.80
58:B1:1536:GLU:O	58:B1:1560:ILE:HD11	1.81	0.80
58:B1:1567:TYR:O	58:B1:1574:TYR:HE2	1.58	0.80
55:8:1:DC:H5"	58:B1:1709:SER:OG	1.80	0.80
51:1:2402:U:C2'	51:1:2403:C:H5"	2.11	0.79
29:d:76:PRO:HA	29:d:82:GLY:HA3	1.62	0.79
53:3:952:U:H4'	53:3:964:A:H61	1.47	0.79
66:0:498:VAL:HG11	66:0:522:MET:HE3	1.65	0.79
51:1:1791:A:C2'	51:1:1792:G:H5'	2.13	0.78
58:B1:1685:GLN:HG3	58:B1:1737:ILE:HG13	1.65	0.78
53:3:769:G:H4'	53:3:1513:A:H4'	1.63	0.78
7:G:178:LEU:O	61:NA:243:LYS:CB	2.32	0.78
51:1:2402:U:H2'	51:1:2403:C:H5"	1.64	0.78
53:3:1073:U:H3	53:3:1102:A:H61	1.29	0.78
51:1:1052:C:H42	51:1:1107:G:H1	1.30	0.78
51:1:784:G:H5'	51:1:785:G:OP1	1.84	0.78
51:1:2036:C:H2'	51:1:2037:A:C8	2.18	0.78
51:1:1783:A:C6	51:1:2587:A:N3	2.51	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:2:65:U:H3'	52:2:108:A:H61	1.49	0.78
51:1:2524:G:H2'	51:1:2525:G:H5"	1.65	0.78
51:1:1661:G:H2'	51:1:1662:U:H6	1.50	0.77
51:1:2124:G:O2'	65:a:41:SER:HB3	1.83	0.77
53:3:153:C:H3'	53:3:154:U:H5"	1.66	0.77
51:1:208:C:H2'	51:1:209:C:H6	1.49	0.77
53:3:1422:G:N2	53:3:1478:U:H3	1.80	0.77
8:H:175:HIS:ND1	53:3:1108:G:H5'	2.00	0.77
51:1:2259:U:C4	51:1:2427:C:N4	2.52	0.77
55:8:13:DT:H72	58:B1:2290:ALA:HB2	1.67	0.77
51:1:52:A:H2'	51:1:53:A:C8	2.20	0.77
51:1:1853:A:H2'	51:1:1854:A:C8	2.19	0.77
51:1:20:C:H2'	51:1:21:A:C8	2.19	0.77
51:1:1287:A:C2	51:1:1649:G:H4'	2.20	0.76
22:V:68:LYS:HB3	53:3:267:C:OP1	1.85	0.76
51:1:2443:C:H2'	51:1:2444:G:C8	2.20	0.76
28:c:148:GLN:O	51:1:2052:A:H4'	1.86	0.76
51:1:2672:U:C2'	51:1:2673:G:H5"	2.16	0.76
51:1:1126:A:H4'	51:1:1127:A:H5"	1.67	0.76
51:1:324:A:H62	51:1:338:G:H21	1.32	0.76
51:1:1020:A:H1'	51:1:1021:A:OP2	1.86	0.76
51:1:687:C:H2'	51:1:688:U:H5'	1.66	0.76
66:0:40:ILE:CG2	66:0:198:GLN:OE1	2.33	0.76
51:1:1935:G:H1'	51:1:1964:G:N2	2.00	0.75
53:3:57:G:H2'	53:3:58:C:C6	2.21	0.75
53:3:1356:G:H2'	53:3:1357:A:H8	1.51	0.75
58:B1:1701:ARG:HG2	58:B1:1701:ARG:NH1	1.99	0.75
59:B2:896:THR:HG21	59:B2:902:LEU:HD13	1.66	0.75
51:1:2124:G:O2'	65:a:41:SER:CB	2.34	0.75
53:3:193:C:H2'	53:3:194:C:C6	2.21	0.75
53:3:768:A:OP1	53:3:804:U:H4'	1.86	0.75
55:8:3:DC:H2'	55:8:4:DT:H72	1.69	0.75
55:8:15:DC:H1'	58:B1:1925:ALA:HB1	1.67	0.75
51:1:1783:A:C2	51:1:2587:A:C5	2.75	0.75
51:1:2375:G:H2'	51:1:2376:A:H5"	1.69	0.75
51:1:1718:G:H2'	51:1:1719:G:H8	1.52	0.75
8:H:127:VAL:HG23	54:4:14:U:H4'	1.67	0.75
51:1:633:A:H2'	51:1:634:C:O4'	1.87	0.75
53:3:850:U:H2'	53:3:851:G:H5"	1.69	0.75
53:3:1330:U:H2'	53:3:1331:G:O4'	1.87	0.75
66:0:490:TYR:HA	66:0:612:LEU:HD13	1.69	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:3:A:C5'	53:3:613:C:H4'	2.17	0.74
51:1:581:C:H2'	51:1:582:A:C8	2.22	0.74
53:3:212:G:H2'	53:3:213:G:H8	1.53	0.74
33:i:10:LEU:HD11	51:1:1070:A:H2	1.51	0.74
53:3:354:G:H2'	53:3:355:C:C6	2.23	0.74
53:3:1236:A:H4'	53:3:1304:G:H4'	1.68	0.74
53:3:1412:C:H2'	53:3:1413:A:C8	2.22	0.74
51:1:1019:U:H3	51:1:1142:A:H62	1.36	0.74
30:e:34:THR:HG21	51:1:2314:A:H5'	1.69	0.74
51:1:208:C:H2'	51:1:209:C:C6	2.23	0.74
51:1:917:A:H5"	51:1:2268:A:H61	1.53	0.74
51:1:2221:G:H2'	51:1:2222:C:C6	2.23	0.74
10:J:25:LYS:NZ	53:3:923:A:H5"	2.03	0.74
12:L:71:THR:HG23	12:L:72:VAL:HG12	1.68	0.74
58:B1:2642:ASP:OD1	58:B1:2647:ARG:NH1	2.21	0.74
53:3:153:C:C3'	53:3:154:U:H5"	2.18	0.73
51:1:2859:G:H2'	51:1:2860:A:C8	2.22	0.73
65:a:167:LYS:O	65:a:170:ILE:HG23	1.88	0.73
51:1:2743:U:H2'	51:1:2744:G:O4'	1.87	0.73
58:B1:1606:LEU:HD11	58:B1:1741:LEU:HB2	1.70	0.73
53:3:884:U:H4'	53:3:885:G:H5"	1.70	0.73
15:O:45:ARG:HB3	15:O:69:THR:HB	1.71	0.73
47:w:28:LEU:HD22	51:1:2353:G:H4'	1.68	0.73
51:1:1161:C:H2'	51:1:1162:G:C8	2.23	0.73
51:1:1528:A:H2'	51:1:1529:G:H5'	1.69	0.73
58:B1:1604:ILE:HD12	58:B1:1741:LEU:HD22	1.71	0.73
58:B1:1609:PRO:HG2	58:B1:1682:GLU:HG3	1.68	0.73
55:8:3:DC:C2'	55:8:4:DT:H72	2.19	0.73
53:3:175:C:H2'	53:3:176:C:C6	2.24	0.73
51:1:1940:U:H1'	51:1:1942:C:N4	2.04	0.73
53:3:279:A:H5"	53:3:281:G:H5'	1.69	0.73
51:1:1310:G:H2'	51:1:1311:G:H5'	1.71	0.73
51:1:2030:A:N3	51:1:2499:C:H5"	2.04	0.73
51:1:1265:A:H61	51:1:2013:A:H5"	1.53	0.73
66:0:499:THR:HG23	66:0:500:ASP:H	1.53	0.73
52:2:87:U:H5"	52:2:88:C:C5	2.23	0.72
53:3:1306:A:H61	53:3:1331:G:H1'	1.54	0.72
58:B1:1710:GLU:HG2	58:B1:1714:LYS:HE3	1.70	0.72
53:3:1073:U:H2'	53:3:1074:G:C8	2.24	0.72
9:I:23:GLY:HA3	53:3:408:A:H4'	1.71	0.72
51:1:1868:C:H2'	51:1:1869:G:H5'	1.70	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:B1:1719:ARG:HG2	58:B1:1719:ARG:HH11	1.54	0.72
30:e:65:LEU:HD22	52:2:42:C:C4	2.24	0.72
53:3:1028:C:H3'	53:3:1029:U:H5"	1.71	0.72
58:B1:1709:SER:HB3	58:B1:1712:LYS:HB2	1.71	0.72
46:v:9:ARG:HB3	46:v:41:GLU:HB2	1.71	0.72
51:1:96:C:H2'	51:1:97:C:H6	1.54	0.72
53:3:840:C:H2'	53:3:841:C:H5"	1.70	0.72
58:B1:1641:GLU:HG3	58:B1:1641:GLU:O	1.89	0.72
53:3:1424:U:H2'	53:3:1425:U:C6	2.24	0.72
21:U:5:ARG:HB2	53:3:376:G:H5"	1.72	0.72
53:3:1507:A:H2'	53:3:1508:A:O4'	1.89	0.72
36:l:79:LEU:HD12	36:l:113:ALA:H	1.52	0.72
51:1:777:G:N7	51:1:793:A:H2	1.87	0.72
51:1:952:G:H2'	51:1:953:G:H5"	1.71	0.72
51:1:2629:U:O2'	51:1:2630:G:H5"	1.90	0.72
12:L:27:ASN:ND2	53:3:1374:A:H4'	2.05	0.72
12:L:92:PRO:HA	12:L:95:ARG:HG3	1.71	0.71
51:1:2061:G:H2'	51:1:2501:C:HO2'	1.53	0.71
48:x:2:ARG:HG2	48:x:32:LEU:HD12	1.73	0.71
51:1:2036:C:H2'	51:1:2037:A:H8	1.55	0.71
51:1:2818:U:H2'	51:1:2819:G:H8	1.56	0.71
53:3:1395:C:O2'	53:3:1396:A:H8	1.70	0.71
51:1:1170:C:H2'	51:1:1171:G:H8	1.54	0.71
51:1:2562:U:H3	51:1:2566:A:H62	1.35	0.71
51:1:2733:A:H2'	51:1:2734:A:C8	2.25	0.71
6:F:4:ARG:HB2	51:1:2466:C:OP1	1.89	0.71
51:1:435:C:C2'	51:1:436:C:H5'	2.21	0.71
51:1:1064:C:H3'	51:1:1065:U:C5'	2.21	0.71
51:1:2125:G:H5'	65:a:39:VAL:O	1.89	0.71
53:3:1374:A:H2'	53:3:1375:A:H8	1.56	0.71
53:3:1435:G:H2'	53:3:1436:U:C6	2.26	0.71
58:B1:1656:GLN:OE1	58:B1:1656:GLN:HA	1.89	0.71
51:1:2086:U:H2'	51:1:2087:G:C8	2.25	0.71
52:2:90:C:C2'	52:2:91:C:H5"	2.20	0.71
53:3:419:C:H2'	53:3:420:U:O4'	1.90	0.71
53:3:1243:C:H2'	53:3:1244:G:C8	2.26	0.71
53:3:1395:C:H4'	53:3:1402:C:H4'	1.72	0.71
51:1:2491:U:H2'	51:1:2492:U:H5'	1.71	0.71
53:3:946:A:H2'	53:3:947:G:H8	1.56	0.71
51:1:1161:C:H2'	51:1:1162:G:H8	1.55	0.71
53:3:979:C:H2'	53:3:980:C:H5'	1.73	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:B1:1567:TYR:C	58:B1:1574:TYR:CE2	2.65	0.71
58:B1:1592:THR:HB	58:B1:1596:VAL:HG21	1.73	0.70
12:L:92:PRO:CA	12:L:95:ARG:HE	1.97	0.70
51:1:52:A:H2'	51:1:53:A:H8	1.56	0.70
51:1:1447:C:H2'	51:1:1448:G:H8	1.56	0.70
51:1:1791:A:H2'	51:1:1792:G:H5'	1.70	0.70
53:3:501:C:H2'	53:3:502:A:H8	1.57	0.70
58:B1:1627:LEU:HD11	58:B1:1688:LEU:HG	1.73	0.70
48:x:60:LYS:HD3	51:1:372:G:H5"	1.73	0.70
53:3:86:G:H4'	53:3:87:C:C4	2.26	0.70
53:3:1412:C:H2'	53:3:1413:A:H8	1.55	0.70
12:L:91:ARG:O	12:L:95:ARG:HG2	1.91	0.70
34:j:116:ARG:HH22	51:1:528:A:H5"	1.53	0.70
53:3:939:G:H2'	53:3:940:C:C6	2.26	0.70
51:1:100:U:H4'	51:1:101:A:O4'	1.91	0.70
11:K:50:PRO:HB2	11:K:53:LYS:HA	1.72	0.70
36:l:17:LYS:HB2	51:1:663:G:H5"	1.74	0.70
38:n:1:MET:HE3	51:1:2723:C:H4'	1.74	0.70
51:1:2514:U:H2'	51:1:2515:C:C6	2.27	0.70
53:3:673:A:H2'	53:3:674:G:C8	2.26	0.70
51:1:677:A:H2'	51:1:678:C:H6	1.57	0.70
51:1:1270:C:H5"	51:1:1271:G:C5'	2.21	0.70
51:1:1739:A:H2'	51:1:1740:G:O4'	1.92	0.70
51:1:2030:A:C2	51:1:2499:C:H5"	2.27	0.70
51:1:2446:G:H2'	51:1:2501:C:H5	1.57	0.70
64:6:26:G:H2'	64:6:27:U:H5"	1.73	0.70
64:6:69:C:H2'	64:6:70:G:H8	1.55	0.69
66:0:695:ALA:HA	66:0:699:ILE:HB	1.74	0.69
58:B1:1894:LYS:HZ2	58:B1:1898:LYS:CD	2.05	0.69
29:d:165:HIS:HB2	51:1:1205:A:C6	2.27	0.69
51:1:2859:G:H2'	51:1:2860:A:H8	1.54	0.69
38:n:66:ALA:HA	38:n:69:ARG:HD2	1.72	0.69
53:3:960:U:H4'	53:3:961:U:H5"	1.74	0.69
51:1:1607:C:H4'	51:1:1608:A:C5'	2.19	0.69
53:3:1421:G:H2'	53:3:1422:G:H4'	1.73	0.69
57:A2:294:ASN:HA	61:NA:464:ILE:H	1.57	0.69
24:X:77:ARG:NH1	53:3:1225:A:H4'	2.07	0.69
27:b:6:LYS:NZ	51:1:1695:G:H5'	2.08	0.69
51:1:2818:U:H2'	51:1:2819:G:C8	2.27	0.69
63:5:47:U:H4'	63:5:48:C:H5'	1.75	0.69
12:L:92:PRO:O	12:L:95:ARG:HG3	1.93	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:N:17:ARG:CZ	53:3:1129:C:H4’	2.22	0.69
51:1:958:U:H2’	52:2:89:U:H1’	1.75	0.69
51:1:1935:G:H1’	51:1:1964:G:C2	2.28	0.69
51:1:2502:G:H5”	51:1:2503:A:H5”	1.74	0.69
58:B1:1660:THR:HG22	58:B1:1663:GLN:HB2	1.75	0.69
64:6:56:C:H2’	64:6:57:A:H8	1.58	0.69
66:0:29:ARG:HH21	66:0:272:ASN:HD21	1.40	0.69
67:h:6:5OH:N	67:h:6:5OH:HS	2.07	0.69
51:1:740:C:H6	51:1:740:C:H5’	1.58	0.69
58:B1:1742:PRO:HG2	59:B2:1332:SER:O	1.93	0.69
17:Q:23:LEU:HD12	17:Q:29:LYS:HG2	1.75	0.69
57:A1:297:LYS:CB	61:NA:79:ALA:HB1	2.22	0.69
31:f:91:VAL:HG21	51:1:2657:A:O3’	1.93	0.68
51:1:1697:G:H3’	51:1:1698:A:H5”	1.75	0.68
51:1:2553:G:H3’	51:1:2554:U:H5”	1.75	0.68
51:1:2628:C:H3’	51:1:2629:U:H5’	1.75	0.68
53:3:520:A:H62	53:3:529:G:H21	1.38	0.68
58:B1:2331:LYS:C	58:B1:2741:ARG:HH12	2.01	0.68
8:H:34:SER:HB3	8:H:58:ARG:HH12	1.57	0.68
51:1:2450:A:O2’	51:1:2451:A:H5’	1.94	0.68
53:3:70:U:H5”	53:3:71:A:OP1	1.92	0.68
14:N:121:ARG:HG3	53:3:1348:U:H4’	1.75	0.68
51:1:1077:A:H2’	51:1:1078:U:H5’	1.74	0.68
51:1:1481:U:H3	51:1:1510:G:H1	1.41	0.68
53:3:900:A:H2’	53:3:901:A:C8	2.29	0.68
59:B2:65:ASN:HB3	59:B2:105:TYR:HB2	1.74	0.68
14:N:10:ARG:HH22	53:3:1148:U:H5”	1.59	0.68
51:1:1979:U:H2’	51:1:1980:G:H5’	1.74	0.68
26:Z:48:LYS:HB3	53:3:723:U:H5	1.58	0.68
51:1:781:A:H2’	51:1:1777:U:O2’	1.93	0.68
51:1:1024:G:H3’	51:1:1025:G:H5”	1.75	0.68
51:1:2464:G:H2’	51:1:2465:C:C6	2.29	0.68
58:B1:1538:LYS:O	58:B1:1772:ILE:CG2	2.41	0.68
53:3:478:A:H2’	53:3:479:U:H4’	1.76	0.68
51:1:1219:U:H2’	51:1:1220:G:C8	2.29	0.68
51:1:2656:U:H5”	66:0:146:ARG:CZ	2.24	0.68
58:B1:1851:ARG:HD2	59:B2:1268:GLN:HE22	1.55	0.68
67:h:4:SER:O	67:h:5:UAL:N1	2.26	0.68
17:Q:13:ARG:HH21	53:3:303:A:H5’	1.59	0.68
28:c:181:ASP:HB2	28:c:186:LEU:H	1.59	0.68
51:1:1801:A:H5”	51:1:2203:U:H2’	1.75	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:501:C:H2'	53:3:502:A:C8	2.29	0.68
12:L:35:LYS:HB2	53:3:1373:G:H4'	1.76	0.67
27:b:73:ILE:HG12	51:1:1490:A:C2	2.29	0.67
51:1:869:G:H2'	51:1:870:U:O4'	1.93	0.67
53:3:1346:A:H61	53:3:1374:A:H3'	1.57	0.67
51:1:687:C:C2'	51:1:688:U:H5'	2.23	0.67
55:8:3:DC:C6	55:8:4:DT:H72	2.29	0.67
36:l:111:ILE:HD12	51:1:627:A:N7	2.09	0.67
51:1:1697:G:H5"	51:1:1698:A:H5"	1.77	0.67
58:B1:1607:ALA:CB	58:B1:1778:LEU:HD22	2.25	0.67
58:B1:1616:LEU:HD12	58:B1:1616:LEU:O	1.94	0.67
51:1:84:A:H4'	51:1:85:G:O5'	1.94	0.67
66:0:501:VAL:HG12	66:0:607:LYS:HZ1	1.60	0.67
58:B1:1640:PHE:CD2	58:B1:1792:ARG:O	2.47	0.67
51:1:1783:A:C2	51:1:2587:A:C4	2.83	0.67
53:3:747:A:H3'	53:3:748:G:H5"	1.75	0.67
64:6:69:C:H2'	64:6:70:G:C8	2.29	0.67
38:n:71:ARG:HH21	51:1:2708:G:H1'	1.59	0.67
18:R:102:LYS:HG2	53:3:1226:C:C5	2.29	0.67
51:1:848:C:H2'	51:1:849:A:H8	1.59	0.67
66:0:103:MET:HG3	66:0:129:GLN:HB3	1.77	0.67
51:1:1799:G:H4'	51:1:1800:C:O5'	1.95	0.66
51:1:2633:G:H2'	51:1:2634:A:H5"	1.77	0.66
53:3:924:C:H2'	53:3:925:G:H8	1.60	0.66
53:3:1007:U:H3	53:3:1022:A:H61	1.44	0.66
55:8:23:DC:H2"	55:8:24:DC:C5	2.30	0.66
29:d:27:LEU:HD22	29:d:104:ALA:HB2	1.75	0.66
51:1:1139:G:O2'	51:1:1140:C:H5'	1.96	0.66
51:1:2177:C:O2	65:a:172:HIS:HE1	1.78	0.66
53:3:1026:G:H1	53:3:1035:A:H61	1.43	0.66
38:n:96:ARG:HA	51:1:2881:U:O2'	1.95	0.66
51:1:849:A:H2'	51:1:850:U:C6	2.30	0.66
51:1:1661:G:H2'	51:1:1662:U:C6	2.29	0.66
53:3:113:G:H2'	53:3:114:U:C6	2.31	0.66
53:3:955:U:H3	53:3:1225:A:H61	1.42	0.66
58:B1:2536:PHE:HB3	58:B1:2539:MET:HB2	1.78	0.66
39:o:68:LYS:HG2	52:2:50:A:OP1	1.94	0.66
51:1:395:U:H2'	51:1:396:G:C8	2.31	0.66
51:1:621:A:H2'	51:1:622:G:O4'	1.95	0.66
53:3:1356:G:H2'	53:3:1357:A:C8	2.30	0.66
4:D:8:SER:HA	51:1:1309:G:H5"	1.78	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:n:2:ARG:HD2	51:1:2822:G:O6	1.95	0.66
51:1:1755:A:H2'	51:1:1756:G:H5'	1.76	0.66
51:1:1824:G:O2'	51:1:1825:U:H5'	1.96	0.66
51:1:2415:G:H2'	51:1:2416:C:C6	2.30	0.66
64:6:12:G:H2'	64:6:13:C:O4'	1.95	0.66
51:1:1680:U:C2'	51:1:1681:G:H5'	2.26	0.66
53:3:1172:C:H2'	53:3:1173:U:O4'	1.95	0.66
58:B1:2483:LEU:HB3	58:B1:2492:GLU:HB2	1.76	0.66
10:J:25:LYS:HE2	53:3:923:A:OP1	1.96	0.66
29:d:176:ASP:HB2	29:d:179:SER:HB3	1.78	0.66
58:B1:1692:ASP:HB3	58:B1:1695:GLN:HB2	1.78	0.66
58:B1:2854:ARG:NH1	58:B1:2868:ARG:HH12	1.92	0.66
48:x:27:ARG:NH2	51:1:1365:A:OP1	2.29	0.66
52:2:3:C:C2'	52:2:4:C:H5"	2.25	0.66
11:K:42:TRP:HB2	11:K:59:TYR:HB2	1.77	0.66
51:1:1528:A:C2'	51:1:1529:G:H5'	2.26	0.66
51:1:2086:U:H2'	51:1:2087:G:H8	1.59	0.66
58:B1:1640:PHE:HD2	58:B1:1792:ARG:O	1.79	0.66
51:1:1509:A:H2'	51:1:1510:G:C8	2.31	0.65
51:1:1718:G:H2'	51:1:1719:G:C8	2.30	0.65
53:3:1125:U:H2'	53:3:1126:U:H2'	1.78	0.65
10:J:53:ARG:NH1	53:3:1071:C:H5'	2.12	0.65
35:k:76:VAL:H	40:p:72:VAL:HG12	1.61	0.65
53:3:153:C:H2'	53:3:154:U:O4'	1.96	0.65
53:3:211:G:H2'	53:3:212:G:O4'	1.96	0.65
55:8:13:DT:OP2	58:B1:2290:ALA:HB1	1.95	0.65
17:Q:33:CYS:H	17:Q:54:VAL:HG13	1.60	0.65
51:1:1268:A:H2'	51:1:1269:A:C8	2.31	0.65
53:3:835:U:C2'	53:3:836:G:H5"	2.26	0.65
22:V:60:ILE:HG22	22:V:74:LEU:HA	1.78	0.65
58:B1:1960:PHE:HD2	59:B2:813:GLU:HB2	1.61	0.65
58:B1:1607:ALA:HB3	58:B1:1778:LEU:HD22	1.77	0.65
58:B1:2474:ILE:HG22	58:B1:2476:SER:H	1.62	0.65
4:D:7:PRO:HA	51:1:686:U:O2	1.96	0.65
51:1:203:A:H3'	51:1:204:A:H5"	1.79	0.65
51:1:2048:G:H2'	51:1:2049:G:H5"	1.79	0.65
53:3:738:C:H2'	53:3:739:C:H6	1.62	0.65
55:8:3:DC:C2'	55:8:4:DT:C7	2.75	0.65
51:1:2008:C:H2'	51:1:2009:A:H8	1.61	0.65
58:B1:1567:TYR:HB3	58:B1:1574:TYR:CE2	2.32	0.65
59:B2:314:ASN:HD21	59:B2:348:SER:HA	1.62	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
66:0:17:ALA:HB2	66:0:112:VAL:HG23	1.79	0.65
3:C:5:ARG:NH1	51:1:2285:C:C5	2.65	0.65
22:V:47:ASP:HB3	22:V:74:LEU:HB3	1.78	0.65
51:1:2029:G:O6	51:1:2032:G:H5"	1.97	0.65
53:3:660:C:H2'	53:3:661:G:O4'	1.96	0.65
53:3:1173:U:H2'	53:3:1174:G:H8	1.62	0.65
17:Q:98:ARG:HB3	17:Q:105:GLY:HA2	1.79	0.65
47:w:40:LYS:NZ	51:1:2330:G:O2'	2.30	0.65
51:1:195:A:H3'	51:1:196:A:H4'	1.78	0.65
51:1:1170:C:H2'	51:1:1171:G:C8	2.32	0.65
13:M:111:THR:HG22	13:M:113:ARG:H	1.62	0.65
51:1:2329:U:H2'	51:1:2330:G:C8	2.32	0.65
30:e:104:THR:HG23	30:e:105:ILE:HG13	1.79	0.64
31:f:82:PHE:HB2	31:f:140:ILE:HG12	1.79	0.64
51:1:748:G:O6	51:1:751:A:H4'	1.97	0.64
52:2:13:G:H2'	52:2:14:U:H5"	1.78	0.64
53:3:246:A:H62	53:3:281:G:N2	1.95	0.64
53:3:1366:C:H2'	53:3:1367:C:C6	2.32	0.64
51:1:581:C:H2'	51:1:582:A:H8	1.60	0.64
51:1:2704:C:H2'	51:1:2705:A:O4'	1.97	0.64
51:1:2047:C:H2'	51:1:2048:G:C8	2.32	0.64
53:3:1436:U:H2'	53:3:1437:A:H8	1.62	0.64
23:W:41:SER:HA	23:W:44:THR:HG22	1.80	0.64
31:f:94:ARG:H	31:f:105:SER:HB3	1.62	0.64
32:g:94:ILE:HG12	32:g:122:LEU:HB2	1.78	0.64
10:J:25:LYS:HZ1	53:3:923:A:H5"	1.61	0.64
51:1:1278:C:H2'	51:1:1279:G:H8	1.62	0.64
51:1:1474:U:H2'	51:1:1475:G:H5'	1.79	0.64
53:3:1156:G:H21	53:3:1179:A:H2	1.44	0.64
58:B1:2477:ARG:HG2	58:B1:2696:ASN:HD21	1.60	0.64
51:1:20:C:H2'	51:1:21:A:H8	1.60	0.64
51:1:246:C:H2'	51:1:247:G:H5'	1.79	0.64
66:0:501:VAL:HG11	66:0:604:GLY:HA2	1.78	0.64
27:b:155:ARG:NH1	51:1:1818:U:H5	1.96	0.64
51:1:1447:C:H2'	51:1:1448:G:C8	2.31	0.64
53:3:56:U:O2	66:0:362:ARG:NH1	2.30	0.64
58:B1:1661:GLU:OE1	58:B1:1661:GLU:HA	1.97	0.64
17:Q:27:PRO:HB3	53:3:552:U:O2	1.98	0.64
51:1:1127:A:H2'	51:1:1128:G:H5"	1.80	0.64
51:1:2215:C:H2'	51:1:2216:G:C8	2.31	0.64
51:1:2267:A:H3'	51:1:2267:A:N3	2.13	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:g:4:ILE:HA	32:g:18:GLN:HE22	1.63	0.64
51:1:1297:C:OP1	51:1:2710:C:H4'	1.97	0.64
53:3:1474:U:H2'	53:3:1475:G:O4'	1.98	0.64
58:B1:1610:THR:CG2	58:B1:1799:GLN:CD	2.67	0.64
58:B1:2417:ILE:HG22	59:B2:1280:ALA:HB1	1.79	0.64
66:0:624:PRO:HA	66:0:651:GLY:HA2	1.80	0.64
4:D:14:ARG:HG2	51:1:125:A:H5'	1.80	0.64
53:3:952:U:H2'	53:3:953:G:C8	2.32	0.64
53:3:1148:U:H2'	53:3:1149:C:O4'	1.98	0.64
53:3:1306:A:N6	53:3:1331:G:H1'	2.12	0.64
64:6:26:G:H3'	64:6:27:U:H5"	1.80	0.64
2:B:8:THR:HB	51:1:2020:A:H5'	1.80	0.63
44:t:37:ASP:OD1	44:t:37:ASP:N	2.29	0.63
51:1:746:U:H1'	51:1:748:G:H21	1.61	0.63
59:B2:528:ARG:NH2	59:B2:576:SER:O	2.30	0.63
59:B2:1282:GLY:HA3	60:W0:17:PHE:HE1	1.63	0.63
64:6:61:C:O2'	65:a:53:ARG:HD2	1.97	0.63
48:x:1:SER:HB2	51:1:1366:A:OP2	1.99	0.63
51:1:2464:G:H2'	51:1:2465:C:H6	1.63	0.63
53:3:1345:U:H4'	53:3:1346:A:H5'	1.80	0.63
58:B1:1700:LEU:HB2	58:B1:1720:ILE:HD13	1.80	0.63
4:D:21:ARG:NH1	51:1:465:G:O3'	2.32	0.63
15:O:46:LYS:HE3	53:3:1253:G:OP1	1.98	0.63
25:Y:54:GLN:HE22	53:3:193:C:C1'	2.11	0.63
53:3:1243:C:H2'	53:3:1244:G:H8	1.63	0.63
58:B1:2856:ILE:HD11	59:B2:1287:LEU:HD13	1.81	0.63
51:1:96:C:H2'	51:1:97:C:C6	2.33	0.63
51:1:158:U:H2'	51:1:159:G:O4'	1.97	0.63
51:1:340:A:H2'	51:1:341:C:H5'	1.81	0.63
53:3:600:A:H61	53:3:638:U:H3	1.47	0.63
53:3:966:G:C2	64:6:34:C:H5'	2.33	0.63
58:B1:1627:LEU:HA	58:B1:1691:MET:HE1	1.81	0.63
64:6:54:U:H3	64:6:58:A:H8	1.47	0.63
15:O:59:LYS:HE3	53:3:972:C:H5'	1.81	0.63
21:U:34:GLU:OE1	21:U:60:TRP:NE1	2.30	0.63
27:b:49:THR:OG1	27:b:50:THR:N	2.31	0.63
33:i:112:LYS:NZ	33:i:124:MET:SD	2.69	0.63
8:H:10:ARG:HH12	8:H:181:ILE:H	1.45	0.63
14:N:17:ARG:NH2	53:3:1129:C:H4'	2.13	0.63
42:r:41:ILE:HB	42:r:47:VAL:HB	1.80	0.63
48:x:60:LYS:CD	51:1:372:G:H5"	2.28	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2123:G:H8	51:1:2125:G:H21	1.44	0.63
52:2:13:G:N7	52:2:70:C:H4'	2.14	0.63
53:3:492:C:H2'	53:3:493:A:C8	2.34	0.63
53:3:1007:U:H2'	53:3:1008:U:C6	2.34	0.63
59:B2:120:GLN:NE2	59:B2:490:GLN:OE1	2.32	0.63
14:N:105:ARG:HD2	53:3:1117:A:O2'	1.99	0.63
32:g:4:ILE:HD11	32:g:43:ASN:HB3	1.80	0.63
51:1:2066:C:O2'	51:1:2067:G:H5'	1.99	0.63
53:3:67:C:H2'	53:3:68:G:H8	1.64	0.63
6:F:1:MET:HG3	51:1:2742:G:H5'	1.79	0.63
14:N:68:GLY:HA2	53:3:1250:A:C5'	2.27	0.63
51:1:764:A:O2'	51:1:765:C:H5'	1.99	0.63
51:1:1063:G:H3'	51:1:1064:C:H6	1.63	0.63
64:6:26:G:C3'	64:6:27:U:H5"	2.29	0.63
34:j:78:THR:HB	51:1:2641:G:H5"	1.81	0.62
51:1:1736:U:H2'	51:1:1737:G:O4'	1.99	0.62
51:1:2339:C:H2'	51:1:2340:A:H8	1.64	0.62
51:1:2898:U:H2'	51:1:2899:A:C8	2.33	0.62
53:3:91:U:C2'	53:3:92:U:H5"	2.27	0.62
66:0:94:ASP:HB2	66:0:465:HIS:HB2	1.81	0.62
66:0:490:TYR:HA	66:0:612:LEU:CD1	2.29	0.62
12:L:92:PRO:CA	12:L:95:ARG:HG3	2.28	0.62
47:w:19:VAL:HG13	47:w:34:VAL:HG22	1.81	0.62
51:1:1597:A:H5"	51:1:1598:A:C5'	2.24	0.62
51:1:2656:U:H5"	66:0:146:ARG:NH1	2.14	0.62
53:3:946:A:H2'	53:3:947:G:C8	2.34	0.62
19:S:75:LYS:NZ	53:3:1357:A:H5"	2.14	0.62
51:1:315:G:H2'	51:1:316:C:C6	2.33	0.62
51:1:481:G:H1'	51:1:506:G:N2	2.14	0.62
51:1:948:C:H2'	51:1:949:G:C8	2.34	0.62
51:1:1783:A:C5	51:1:2587:A:C2	2.87	0.62
22:V:19:SER:OG	22:V:20:ILE:N	2.33	0.62
23:W:38:ILE:CD1	53:3:720:C:H1'	2.27	0.62
30:e:35:LEU:HB3	30:e:151:LEU:HD11	1.82	0.62
51:1:948:C:H2'	51:1:949:G:H8	1.64	0.62
51:1:1173:U:H2'	51:1:1177:G:H1	1.64	0.62
51:1:1395:A:H4'	51:1:1397:U:C5	2.34	0.62
51:1:2810:A:H62	51:1:2890:G:H21	1.46	0.62
53:3:34:C:H2'	53:3:35:G:C8	2.33	0.62
6:F:27:CYS:SG	6:F:28:SER:N	2.71	0.62
9:I:8:LEU:HD23	9:I:21:LYS:HE2	1.82	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1901:A:H2'	51:1:1902:C:C6	2.35	0.62
53:3:668:G:H1	53:3:738:C:H42	1.47	0.62
58:B1:1610:THR:CG2	58:B1:1799:GLN:NE2	2.63	0.62
7:G:32:GLY:HA2	7:G:39:ILE:H	1.64	0.62
7:G:67:LEU:HD12	7:G:160:LEU:HD12	1.82	0.62
14:N:12:LYS:H	14:N:105:ARG:HH22	1.46	0.62
16:P:17:ASP:HB2	16:P:36:ARG:HH22	1.65	0.62
41:q:12:ARG:NH1	51:1:1251:C:H5"	2.15	0.62
51:1:66:C:H1'	51:1:456:C:O2	2.00	0.62
51:1:1270:C:H5"	51:1:1271:G:H5"	1.79	0.62
51:1:1675:C:H2'	51:1:1676:A:O4'	2.00	0.62
57:A1:211:ILE:HG12	57:A1:219:ARG:HH12	1.65	0.62
7:G:89:PHE:HB3	7:G:150:ILE:HD12	1.81	0.62
12:L:1:PRO:HD2	12:L:5:VAL:HA	1.82	0.62
34:j:113:PRO:HG3	51:1:528:A:H5'	1.81	0.62
51:1:1867:G:H1	51:1:1874:C:H42	1.48	0.62
53:3:1347:G:N2	53:3:1373:G:H2'	2.15	0.62
58:B1:1744:LEU:HG	58:B1:1745:PRO:HD2	1.80	0.62
43:s:25:ARG:HH22	51:1:519:U:H5"	1.64	0.62
45:u:87:GLU:HG2	45:u:92:VAL:HG11	1.81	0.62
58:B1:1894:LYS:HZ2	58:B1:1898:LYS:HD3	1.62	0.62
51:1:2384:U:O2'	51:1:2385:C:H5'	1.98	0.62
53:3:1084:G:H5'	53:3:1102:A:OP2	2.00	0.62
8:H:21:TRP:CD1	8:H:58:ARG:H	2.18	0.62
51:1:812:C:H5"	51:1:1250:G:O2'	2.00	0.62
58:B1:1599:GLU:HA	59:B2:1328:LYS:HE2	1.82	0.62
27:b:6:LYS:HZ1	51:1:1695:G:H5'	1.65	0.61
51:1:848:C:H2'	51:1:849:A:C8	2.35	0.61
51:1:2121:G:H1'	65:a:167:LYS:HB2	1.82	0.61
51:1:2286:G:H4'	51:1:2287:A:O4'	2.00	0.61
51:1:2512:C:H2'	51:1:2513:A:O4'	2.00	0.61
55:8:1:DC:H2"	55:8:2:DC:C5	2.35	0.61
51:1:677:A:H2'	51:1:678:C:C6	2.34	0.61
51:1:2082:A:C2	51:1:2083:G:H1'	2.35	0.61
53:3:367:U:H3	53:3:393:A:H2	1.47	0.61
30:e:38:GLY:HA3	51:1:2312:U:O2	2.00	0.61
53:3:737:C:H2'	53:3:738:C:C6	2.34	0.61
55:8:3:DC:H2'	55:8:4:DT:C7	2.30	0.61
9:I:119:HIS:CD2	53:3:438:U:H4'	2.35	0.61
46:v:72:VAL:HG13	46:v:93:ARG:HA	1.82	0.61
51:1:368:A:O2'	51:1:369:U:H5'	2.00	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:572:A:N6	51:1:2029:G:H21	1.88	0.61
51:1:1078:U:H4'	51:1:1088:A:H2	1.65	0.61
51:1:2885:G:H2'	51:1:2886:A:O4'	2.00	0.61
53:3:1110:A:H2'	53:3:1111:A:C8	2.35	0.61
17:Q:55:ARG:HA	17:Q:61:GLU:HA	1.83	0.61
42:r:63:VAL:HG12	42:r:96:VAL:HG12	1.83	0.61
51:1:1361:G:H2'	51:1:1362:C:C6	2.35	0.61
51:1:1740:G:H2'	51:1:1741:C:H6	1.66	0.61
51:1:1746:A:H2'	51:1:1747:U:C6	2.33	0.61
53:3:452:A:H61	53:3:480:U:H3	1.49	0.61
53:3:939:G:H2'	53:3:940:C:H6	1.63	0.61
58:B1:1894:LYS:NZ	58:B1:1898:LYS:HD3	2.15	0.61
58:B1:2660:GLY:HA3	58:B1:2678:PRO:HA	1.83	0.61
30:e:132:ARG:O	30:e:132:ARG:NH2	2.34	0.61
51:1:1063:G:H5"	51:1:1064:C:H5	1.64	0.61
53:3:657:U:H2'	53:3:658:C:C6	2.36	0.61
58:B1:1643:TYR:CE1	58:B1:1661:GLU:OE2	2.51	0.61
59:B2:55:SER:OG	59:B2:465:ARG:NH1	2.33	0.61
53:3:358:U:H2'	53:3:359:G:H8	1.64	0.61
57:A1:38:THR:HB	57:A2:45:ARG:HD3	1.83	0.61
57:A1:112:ALA:HB3	57:A1:126:PRO:HA	1.83	0.61
58:B1:1841:LEU:HD23	58:B1:2851:ILE:HG23	1.83	0.61
58:B1:2854:ARG:NH1	58:B1:2868:ARG:NH1	2.47	0.61
19:S:23:ARG:HH11	19:S:26:LEU:HB3	1.65	0.61
51:1:1053:C:H2'	51:1:1054:A:H5'	1.83	0.61
53:3:924:C:H2'	53:3:925:G:C8	2.34	0.61
18:R:81:ASP:OD1	30:e:111:ARG:NH2	2.34	0.61
46:v:17:SER:HB3	46:v:27:PRO:HG3	1.83	0.61
51:1:729:G:H2'	51:1:1775:U:O2	2.01	0.61
53:3:715:A:H5"	53:3:805:C:O2'	2.00	0.61
58:B1:1722:LEU:O	58:B1:1722:LEU:HG	2.00	0.61
63:5:39:U:H2'	63:5:40:C:C6	2.36	0.61
42:r:81:LYS:HD3	51:1:973:A:H5"	1.83	0.61
51:1:11:C:H2'	51:1:12:U:H5"	1.83	0.61
52:2:30:C:H2'	52:2:31:C:O4'	2.01	0.61
13:M:28:SER:HB2	13:M:58:LEU:HB2	1.82	0.60
51:1:139:U:H2'	51:1:140:C:H5	1.65	0.60
51:1:2699:C:H2'	51:1:2700:A:H8	1.66	0.60
55:8:13:DT:C7	58:B1:2290:ALA:HB2	2.29	0.60
66:0:321:ALA:HB2	66:0:397:LEU:HD21	1.82	0.60
29:d:155:GLU:HA	29:d:158:PHE:HB3	1.82	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:m:58:LYS:O	37:m:59:ARG:NH2	2.32	0.60
40:p:90:ALA:HB2	40:p:112:ARG:HA	1.81	0.60
48:x:4:CYS:HB3	48:x:9:LYS:H	1.65	0.60
51:1:971:G:H2'	51:1:972:A:O4'	2.01	0.60
51:1:2327:A:H2'	51:1:2328:A:C8	2.35	0.60
58:B1:1567:TYR:HB3	58:B1:1574:TYR:CZ	2.35	0.60
59:B2:1072:ASN:ND2	59:B2:1111:GLN:OE1	2.34	0.60
22:V:10:ARG:NH1	22:V:11:VAL:O	2.33	0.60
34:j:113:PRO:HD2	51:1:558:U:OP1	2.00	0.60
51:1:2653:U:C3'	51:1:2654:A:H5"	2.30	0.60
58:B1:1653:LEU:HD21	58:B1:1659:LEU:HD21	1.83	0.60
37:m:14:LYS:NZ	51:1:955:U:OP2	2.35	0.60
51:1:1308:A:H61	51:1:1608:A:H61	1.48	0.60
51:1:2208:C:H2'	51:1:2209:G:C8	2.36	0.60
53:3:454:G:H2'	53:3:455:G:C8	2.37	0.60
53:3:979:C:C2'	53:3:980:C:H5'	2.32	0.60
27:b:201:LEU:HD22	53:3:773:G:H5"	1.82	0.60
29:d:64:GLY:O	51:1:2059:A:H4'	2.01	0.60
51:1:468:G:H2'	51:1:469:G:H5'	1.83	0.60
51:1:1818:U:H4'	51:1:1821:A:H1'	1.83	0.60
52:2:90:C:H2'	52:2:91:C:C5'	2.24	0.60
65:a:216:THR:H	65:a:220:ALA:HB3	1.67	0.60
51:1:729:G:H5"	51:1:730:A:H5"	1.83	0.60
51:1:1064:C:H2'	51:1:1065:U:C6	2.37	0.60
53:3:314:C:H2'	53:3:315:A:C8	2.37	0.60
58:B1:2132:ALA:HA	59:B2:806:PRO:O	2.01	0.60
64:6:26:G:C2'	64:6:27:U:H5"	2.31	0.60
21:U:2:VAL:HB	53:3:229:U:H4'	1.83	0.60
36:l:79:LEU:HB2	36:l:113:ALA:HB3	1.83	0.60
51:1:589:U:H2'	51:1:590:A:C8	2.36	0.60
51:1:611:C:H2'	51:1:612:G:O4'	2.01	0.60
51:1:445:C:C2'	51:1:446:G:H5'	2.32	0.60
51:1:1278:C:H2'	51:1:1279:G:C8	2.37	0.60
51:1:1484:U:H2'	51:1:1485:U:C6	2.36	0.60
51:1:2303:G:O2'	51:1:2304:G:H5'	2.02	0.60
51:1:2356:U:H2'	51:1:2357:G:O4'	2.01	0.60
53:3:1374:A:H2'	53:3:1375:A:C8	2.36	0.60
58:B1:1911:LEU:HD22	58:B1:1940:LEU:HD21	1.84	0.60
36:l:108:ALA:HB3	36:l:125:LEU:HD11	1.83	0.60
43:s:42:LYS:HE3	51:1:2010:G:H4'	1.84	0.60
48:x:31:ASN:ND2	48:x:52:ALA:CB	2.65	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:192:C:H2'	51:1:193:U:H5'	1.84	0.60
51:1:1369:G:H21	51:1:1810:A:H2	1.48	0.60
51:1:1674:G:H21	51:1:1677:A:H61	1.49	0.60
51:1:2537:U:H2'	51:1:2538:C:C6	2.37	0.60
51:1:2743:U:H3'	51:1:2744:G:H5"	1.83	0.60
51:1:2898:U:H2'	51:1:2899:A:H8	1.67	0.60
53:3:747:A:C3'	53:3:748:G:H5"	2.32	0.60
53:3:1512:U:H2'	53:3:1513:A:H8	1.66	0.60
32:g:51:ARG:HA	32:g:55:GLU:HB2	1.84	0.60
51:1:2048:G:C3'	51:1:2049:G:H5"	2.31	0.60
10:J:96:GLN:HG2	53:3:7:A:C6	2.36	0.59
51:1:1081:U:H3'	51:1:1081:U:O2	2.02	0.59
51:1:2443:C:O2'	51:1:2444:G:H5'	2.02	0.59
53:3:419:C:H5"	53:3:513:C:H1'	1.83	0.59
58:B1:2013:THR:HG21	58:B1:2095:LEU:HD12	1.84	0.59
15:O:50:THR:HG22	15:O:64:GLN:HG3	1.83	0.59
17:Q:48:LEU:HB2	53:3:520:A:OP1	2.02	0.59
51:1:635:C:O2'	51:1:639:U:H5"	2.02	0.59
51:1:729:G:H5"	51:1:730:A:C5'	2.33	0.59
51:1:2189:U:H2'	51:1:2190:G:C8	2.37	0.59
51:1:2521:C:O2'	51:1:2522:U:H5'	2.02	0.59
58:B1:2224:MET:SD	59:B2:1101:LEU:HD23	2.42	0.59
9:I:121:ALA:HA	9:I:145:ARG:HB2	1.83	0.59
19:S:12:ARG:NH1	19:S:58:ARG:O	2.35	0.59
51:1:35:G:H1	51:1:445:C:H42	1.50	0.59
51:1:1889:A:H2'	51:1:1890:A:C8	2.37	0.59
58:B1:2450:GLN:NE2	58:B1:2513:GLY:O	2.35	0.59
7:G:73:ARG:HH22	7:G:93:HIS:HA	1.67	0.59
18:R:26:LYS:O	18:R:30:LYS:NZ	2.36	0.59
29:d:21:ARG:NH2	29:d:22:ASP:OD1	2.35	0.59
53:3:128:G:H2'	53:3:129:A:C8	2.37	0.59
55:8:11:DC:H2'	55:8:12:DG:C8	2.37	0.59
22:V:61:ARG:NH1	22:V:73:THR:OG1	2.36	0.59
27:b:48:ILE:HG22	51:1:779:U:P	2.43	0.59
47:w:56:PHE:CE2	51:1:2365:G:H4'	2.37	0.59
51:1:572:A:H61	51:1:2029:G:N2	1.88	0.59
51:1:911:A:H5'	51:1:912:C:H5"	1.85	0.59
51:1:1802:A:H2'	51:1:1803:A:C8	2.38	0.59
51:1:1982:U:H2'	51:1:1983:G:H8	1.68	0.59
53:3:579:A:H5'	53:3:728:A:H1'	1.85	0.59
18:R:95:PRO:HG2	18:R:105:ALA:HB1	1.83	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:881:G:N2	51:1:897:C:N3	2.50	0.59
53:3:34:C:H2'	53:3:35:G:H8	1.68	0.59
53:3:253:A:H2'	53:3:254:G:O4'	2.03	0.59
53:3:836:G:H2'	53:3:837:U:O4'	2.02	0.59
53:3:1521:C:H2'	53:3:1522:U:C6	2.37	0.59
59:B2:69:GLN:HE21	59:B2:101:ARG:HD2	1.67	0.59
10:J:25:LYS:HB2	53:3:923:A:OP1	2.02	0.59
45:u:40:LEU:HD12	45:u:59:GLU:HB3	1.84	0.59
51:1:1638:C:H4'	51:1:2710:C:O2	2.02	0.59
51:1:2032:G:OP2	51:1:2455:G:H5'	2.03	0.59
51:1:2324:U:C3'	51:1:2325:G:H5"	2.26	0.59
58:B1:1700:LEU:HD11	58:B1:1719:ARG:HH11	1.67	0.59
58:B1:1774:ARG:NH1	58:B1:1777:ARG:NH1	2.51	0.59
59:B2:918:LEU:O	59:B2:918:LEU:HD23	2.02	0.59
7:G:142:LYS:HE2	53:3:1098:C:OP1	2.03	0.59
17:Q:13:ARG:NH1	17:Q:14:LYS:O	2.35	0.59
29:d:55:SER:OG	29:d:56:GLY:N	2.35	0.59
41:q:12:ARG:HH12	51:1:1251:C:H5"	1.68	0.59
51:1:704:G:H1'	51:1:726:G:H22	1.67	0.59
53:3:207:C:H3'	53:3:208:U:H5"	1.84	0.59
53:3:1280:A:O2'	53:3:1281:C:H5'	2.02	0.59
64:6:55:U:H2'	64:6:56:C:H6	1.68	0.59
21:U:5:ARG:HD3	53:3:376:G:H4'	1.85	0.59
51:1:12:U:O2	51:1:12:U:H2'	2.02	0.59
51:1:1062:G:H5'	51:1:1071:G:H5'	1.85	0.59
53:3:738:C:H2'	53:3:739:C:C6	2.38	0.59
63:5:29:G:H5'	66:0:513:GLY:HA3	1.85	0.59
7:G:99:MET:HA	7:G:106:VAL:HG21	1.84	0.59
28:c:194:PRO:HA	51:1:2680:U:H5'	1.85	0.59
40:p:1:SER:OG	51:1:2875:C:H4'	2.03	0.59
51:1:1444:G:H2'	51:1:1445:G:C8	2.37	0.59
51:1:1993:U:H2'	51:1:1994:C:H6	1.67	0.59
51:1:2446:G:H2'	51:1:2501:C:C5	2.38	0.59
53:3:59:A:H5"	53:3:387:U:H5"	1.84	0.59
53:3:337:G:H2'	53:3:338:A:C8	2.38	0.59
53:3:570:G:O2'	53:3:819:A:H2'	2.03	0.59
55:8:9:DG:H4'	58:B1:1619:LEU:HG	1.84	0.59
28:c:46:ARG:HG2	28:c:84:LEU:HD12	1.85	0.58
51:1:952:G:C2'	51:1:953:G:H5"	2.32	0.58
51:1:1836:C:O2'	51:1:1837:C:H5'	2.03	0.58
51:1:1924:C:H3'	51:1:1925:C:C6	2.38	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:B1:1596:VAL:HG11	58:B1:1600:ARG:NH2	2.18	0.58
7:G:103:TRP:HA	7:G:106:VAL:HB	1.85	0.58
9:I:68:GLU:HB3	53:3:546:A:OP2	2.03	0.58
29:d:164:LEU:HB2	29:d:167:VAL:HG22	1.84	0.58
43:s:25:ARG:NH2	51:1:519:U:H5"	2.18	0.58
50:z:12:ALA:O	50:z:20:LYS:NZ	2.36	0.58
51:1:166:U:H2'	51:1:167:A:C8	2.38	0.58
51:1:1063:G:H3'	51:1:1064:C:C6	2.37	0.58
51:1:1065:U:O4	51:1:1069:A:H5"	2.03	0.58
51:1:2306:C:H2'	51:1:2307:G:C8	2.38	0.58
53:3:41:G:H2'	53:3:42:G:H8	1.68	0.58
58:B1:1869:LYS:HG2	58:B1:1940:LEU:HD23	1.84	0.58
51:1:1319:C:O2'	51:1:1320:C:H5'	2.02	0.58
53:3:235:C:H2'	53:3:236:A:C8	2.38	0.58
53:3:448:A:H62	53:3:486:U:H3	1.48	0.58
53:3:518:C:N4	63:5:34:G:O6	2.36	0.58
53:3:677:U:H3	53:3:713:G:H1	1.51	0.58
53:3:885:G:H2'	53:3:886:G:C8	2.39	0.58
53:3:1421:G:H3'	53:3:1422:G:C5'	2.33	0.58
58:B1:1598:ARG:NH1	58:B1:1598:ARG:HG3	2.17	0.58
58:B1:1660:THR:HG23	58:B1:1663:GLN:H	1.68	0.58
58:B1:1740:VAL:O	58:B1:1740:VAL:HG12	2.04	0.58
58:B1:2425:PRO:HG2	58:B1:2747:ILE:HD11	1.84	0.58
59:B2:707:ALA:O	59:B2:711:ASP:HB2	2.03	0.58
64:6:6:G:O2'	64:6:7:G:H5'	2.03	0.58
51:1:1000:A:H62	51:1:1154:G:H2'	1.68	0.58
51:1:1806:C:H2'	51:1:1807:G:O4'	2.04	0.58
53:3:742:G:H2'	53:3:743:A:C8	2.38	0.58
58:B1:2114:LYS:HG2	60:W0:5:THR:HG21	1.85	0.58
3:C:7:LYS:HA	3:C:23:THR:HA	1.84	0.58
5:E:4:LYS:HD3	51:1:242:G:C8	2.38	0.58
9:I:8:LEU:HD21	53:3:429:U:O5'	2.03	0.58
15:O:40:ILE:CD1	53:3:1124:G:H4'	2.34	0.58
19:S:17:ASP:O	19:S:22:LYS:NZ	2.35	0.58
28:c:118:PHE:HD2	51:1:1654:A:H2	1.52	0.58
35:k:16:ALA:O	35:k:17:ARG:NH1	2.36	0.58
51:1:952:G:C3'	51:1:953:G:H5"	2.33	0.58
55:8:7:DC:H2"	55:8:8:DT:H71	1.84	0.58
58:B1:1937:GLU:HG3	58:B1:1984:MET:HE1	1.85	0.58
58:B1:2269:LEU:HD13	59:B2:618:GLN:CG	2.30	0.58
64:6:14:A:H2'	64:6:15:G:H5'	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:b:116:GLN:O	27:b:127:ASN:ND2	2.35	0.58
40:p:11:GLN:HB2	40:p:54:LEU:HD11	1.84	0.58
51:1:1197:G:H2'	51:1:1198:U:H6	1.67	0.58
51:1:2333:A:H5'	51:1:2335:A:H1'	1.85	0.58
53:3:1005:A:H2'	53:3:1006:G:H5'	1.85	0.58
53:3:1195:C:H2'	53:3:1197:A:O4'	2.04	0.58
5:E:21:PHE:HE2	5:E:61:LEU:HD23	1.68	0.58
7:G:176:ASN:ND2	7:G:194:GLY:O	2.33	0.58
9:I:12:ARG:HH21	9:I:35:GLN:H	1.50	0.58
13:M:38:VAL:HG11	13:M:110:MET:HA	1.83	0.58
25:Y:73:ARG:O	25:Y:77:ASN:ND2	2.36	0.58
51:1:36:G:H4'	51:1:451:U:C2	2.38	0.58
53:3:721:G:H4'	53:3:722:G:O4'	2.03	0.58
53:3:850:U:C2'	53:3:851:G:H5"	2.33	0.58
65:a:26:ALA:HA	65:a:29:LEU:HB3	1.84	0.58
6:F:19:ARG:NE	51:1:2756:U:OP2	2.36	0.58
51:1:414:C:H2'	51:1:415:A:C8	2.39	0.58
51:1:1770:G:H4'	51:1:1938:A:OP1	2.03	0.58
53:3:16:A:O2'	53:3:17:U:H5'	2.03	0.58
53:3:41:G:H2'	53:3:42:G:C8	2.38	0.58
12:L:137:ARG:NH1	12:L:138:GLU:OE2	2.37	0.58
51:1:1197:G:H2'	51:1:1198:U:C6	2.39	0.58
51:1:1270:C:H5"	51:1:1271:G:H5'	1.84	0.58
51:1:1368:G:H2'	51:1:1369:G:H8	1.68	0.58
52:2:24:G:H4'	52:2:25:U:C5	2.38	0.58
53:3:180:U:H2'	53:3:181:A:O4'	2.03	0.58
53:3:626:G:H2'	53:3:627:G:C8	2.39	0.58
23:W:56:ARG:NH1	53:3:735:C:OP1	2.37	0.58
40:p:33:GLU:OE1	40:p:38:ARG:NH1	2.37	0.58
45:u:42:LYS:HG3	51:1:499:U:H4'	1.85	0.58
51:1:1565:C:H2'	51:1:1567:G:N7	2.18	0.58
51:1:1941:C:H2'	51:1:1942:C:O4'	2.04	0.58
51:1:2123:G:O6	51:1:2174:C:N4	2.37	0.58
53:3:308:C:H2'	53:3:309:A:H8	1.69	0.58
53:3:1069:C:O2'	53:3:1192:C:H1'	2.03	0.58
58:B1:1598:ARG:CG	58:B1:1598:ARG:HH11	2.17	0.58
58:B1:2249:PRO:CB	59:B2:549:ASP:OD2	2.45	0.58
64:6:4:G:H2'	64:6:5:G:O4'	2.03	0.58
8:H:18:ASN:HD21	8:H:39:ARG:HH12	1.51	0.57
9:I:58:GLN:HB3	9:I:62:ARG:HH21	1.68	0.57
51:1:1787:A:C2	51:1:1788:C:C6	2.91	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:B1:2009:LEU:HD22	58:B1:2100:ILE:HD12	1.86	0.57
59:B2:1142:ARG:NH1	59:B2:1161:LEU:O	2.36	0.57
10:J:87:VAL:HG13	10:J:92:ARG:HG3	1.86	0.57
20:T:13:GLU:OE1	20:T:83:ARG:NH2	2.37	0.57
28:c:18:ASP:OD1	28:c:18:ASP:N	2.37	0.57
42:r:79:ARG:NH1	51:1:572:A:OP2	2.37	0.57
51:1:1843:C:H2'	51:1:1844:C:C6	2.38	0.57
66:0:223:ILE:HB	66:0:243:LEU:HD22	1.85	0.57
15:O:13:PHE:O	15:O:70:HIS:ND1	2.36	0.57
28:c:128:ARG:NH2	51:1:2512:C:OP2	2.37	0.57
51:1:1332:G:N7	51:1:1609:A:H2'	2.18	0.57
51:1:2196:C:H2'	51:1:2197:U:C6	2.39	0.57
57:A2:82:LEU:HD11	57:A2:171:LEU:HD23	1.86	0.57
58:B1:1541:GLU:HB3	58:B1:1551:GLU:HG3	1.86	0.57
58:B1:1659:LEU:HD22	58:B1:1663:GLN:HB3	1.86	0.57
14:N:69:GLY:N	53:3:1250:A:H4'	2.20	0.57
16:P:33:ILE:HG22	16:P:41:LEU:HD12	1.86	0.57
58:B1:1697:CYS:HA	58:B1:1720:ILE:HD11	1.86	0.57
8:H:105:VAL:HG22	8:H:107:LYS:H	1.69	0.57
32:g:139:PHE:O	32:g:141:LYS:NZ	2.37	0.57
47:w:51:ARG:NH2	51:1:2384:U:OP2	2.37	0.57
51:1:1697:G:C5'	51:1:1698:A:H5"	2.35	0.57
51:1:2675:A:H2'	51:1:2676:C:C6	2.39	0.57
53:3:19:A:H1'	53:3:864:A:N3	2.19	0.57
58:B1:1746:PRO:HA	58:B1:1749:ARG:HG3	1.87	0.57
58:B1:2240:ALA:O	58:B1:2261:ASN:ND2	2.38	0.57
2:B:49:ARG:O	2:B:51:ARG:NH2	2.37	0.57
11:K:82:ASP:OD1	11:K:82:ASP:N	2.38	0.57
29:d:76:PRO:CA	29:d:82:GLY:HA3	2.35	0.57
32:g:15:LEU:HG	32:g:51:ARG:HH22	1.69	0.57
34:j:45:THR:OG1	41:q:63:ARG:NH2	2.37	0.57
37:m:66:ARG:NH1	37:m:104:GLU:OE2	2.37	0.57
51:1:1177:G:H2'	51:1:1178:C:H5"	1.86	0.57
66:0:168:PRO:HG2	66:0:218:TRP:HE1	1.70	0.57
14:N:5:TYR:HB2	14:N:20:ILE:HD11	1.85	0.57
44:t:38:ALA:O	44:t:81:LYS:NZ	2.37	0.57
51:1:62:U:O2'	51:1:63:A:H5'	2.04	0.57
53:3:539:A:H2'	53:3:540:G:C8	2.40	0.57
53:3:651:C:H2'	53:3:652:U:O4'	2.04	0.57
53:3:1004:A:H5'	53:3:1024:G:H1	1.70	0.57
2:B:5:ASN:ND2	51:1:2020:A:N7	2.52	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:60:ALA:HB3	62:NG:167:ARG:HA	1.87	0.57
11:K:90:MET:SD	23:W:60:ARG:NH1	2.78	0.57
20:T:60:SER:HB2	53:3:581:G:H5'	1.86	0.57
27:b:221:GLY:HA2	27:b:224:MET:HE3	1.85	0.57
38:n:92:GLY:HA3	51:1:2839:G:H21	1.69	0.57
51:1:78:U:H2'	51:1:79:C:C6	2.40	0.57
51:1:211:C:H2'	51:1:212:G:C8	2.40	0.57
51:1:1069:A:H2'	51:1:1073:A:N7	2.20	0.57
51:1:1791:A:H2'	51:1:1792:G:C5'	2.34	0.57
51:1:2420:C:O2'	51:1:2421:G:H5'	2.05	0.57
51:1:2475:C:N4	51:1:2529:G:H22	2.03	0.57
53:3:279:A:H5"	53:3:281:G:C5'	2.34	0.57
53:3:885:G:H2'	53:3:886:G:H8	1.69	0.57
59:B2:1122:LYS:NZ	59:B2:1126:ASP:OD1	2.38	0.57
17:Q:119:LYS:HD3	53:3:36:C:H5"	1.86	0.57
46:v:21:ARG:HH22	52:2:77:U:H5'	1.70	0.57
47:w:20:LYS:HD2	51:1:2355:G:H4'	1.85	0.57
51:1:324:A:H62	51:1:338:G:N2	2.00	0.57
51:1:601:C:O2	51:1:605:G:H4'	2.05	0.57
53:3:408:A:H61	53:3:434:U:H3	1.52	0.57
58:B1:1629:MET:HE2	58:B1:1634:ILE:HG12	1.87	0.57
59:B2:839:VAL:HG12	59:B2:1049:ILE:HG12	1.87	0.57
59:B2:1142:ARG:NH2	59:B2:1166:ASP:OD1	2.38	0.57
3:C:5:ARG:HG3	3:C:25:ASN:HA	1.86	0.57
4:D:37:LYS:NZ	51:1:468:G:OP2	2.34	0.57
13:M:15:ASN:HB3	53:3:827:U:H4'	1.86	0.57
30:e:31:GLU:OE1	30:e:32:LYS:NZ	2.37	0.57
51:1:2050:C:C2'	51:1:2051:A:H5'	2.33	0.57
51:1:2208:C:H2'	51:1:2209:G:H8	1.70	0.57
51:1:2524:G:C2'	51:1:2525:G:H5"	2.34	0.57
51:1:2554:U:H2'	51:1:2555:U:C6	2.40	0.57
53:3:1271:A:H5'	53:3:1314:C:C5'	2.35	0.57
53:3:1399:C:N3	53:3:1502:A:N1	2.53	0.57
58:B1:1536:GLU:O	58:B1:1560:ILE:CD1	2.52	0.57
66:0:446:ARG:O	66:0:459:ALA:N	2.38	0.57
12:L:91:ARG:CB	12:L:93:VAL:HG12	2.32	0.56
16:P:71:ASP:HA	16:P:74:LYS:HG3	1.87	0.56
16:P:116:PRO:HA	53:3:675:A:H2	1.70	0.56
20:T:19:ASN:HB2	53:3:750:C:O4'	2.04	0.56
51:1:1310:G:C2'	51:1:1311:G:H5'	2.34	0.56
51:1:2396:G:O2'	51:1:2397:G:H5'	2.05	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2743:U:C3'	51:1:2744:G:H5"	2.35	0.56
53:3:302:G:H2'	53:3:303:A:C8	2.41	0.56
53:3:1016:A:H4'	53:3:1218:C:H4'	1.86	0.56
66:0:31:LEU:HD21	66:0:68:THR:HG21	1.87	0.56
5:E:27:ASN:O	5:E:35:LYS:NZ	2.38	0.56
18:R:87:GLY:O	18:R:91:ARG:NH2	2.39	0.56
31:f:59:ASP:OD1	31:f:59:ASP:N	2.37	0.56
51:1:28:A:O2'	51:1:583:G:H5'	2.05	0.56
53:3:1513:A:H2'	53:3:1514:G:C8	2.40	0.56
58:B1:2665:GLY:HA3	58:B1:2673:ARG:HB2	1.88	0.56
66:0:438:LEU:HD22	66:0:469:ILE:HD11	1.88	0.56
4:D:12:ARG:HD2	4:D:44:VAL:HG11	1.88	0.56
7:G:138:ARG:HH21	7:G:142:LYS:HG2	1.69	0.56
10:J:120:HIS:CE1	10:J:121:ASN:ND2	2.74	0.56
19:S:5:MET:O	19:S:62:ARG:NH1	2.38	0.56
27:b:140:VAL:O	27:b:161:VAL:N	2.35	0.56
29:d:2:GLU:HB2	29:d:11:ALA:HB1	1.87	0.56
33:i:123:ALA:HB1	51:1:1081:U:H4'	1.87	0.56
45:u:32:LYS:HE3	51:1:478:A:H4'	1.86	0.56
51:1:27:G:N2	51:1:512:G:H1'	2.20	0.56
51:1:1120:G:H2'	51:1:1121:C:O4'	2.05	0.56
51:1:2529:G:H5'	51:1:2530:A:H5"	1.87	0.56
51:1:2637:U:H2'	51:1:2638:G:O4'	2.04	0.56
51:1:2692:G:H1'	51:1:2847:U:H1'	1.86	0.56
52:2:4:C:H2'	52:2:5:U:C6	2.41	0.56
53:3:24:U:H2'	53:3:25:C:C6	2.40	0.56
53:3:416:G:H2'	53:3:417:G:H8	1.70	0.56
59:B2:13:LYS:HB2	59:B2:1180:MET:HE2	1.87	0.56
63:5:38:A:C8	63:5:39:U:H1'	2.40	0.56
66:0:616:ILE:HG13	66:0:688:ASP:HB2	1.87	0.56
3:C:8:ILE:HB	3:C:24:LYS:HB2	1.88	0.56
25:Y:2:ASN:O	25:Y:7:LYS:NZ	2.38	0.56
27:b:17:LYS:HD3	51:1:1565:C:OP1	2.05	0.56
40:p:88:ARG:HD3	40:p:112:ARG:HD3	1.86	0.56
51:1:259:G:O2'	51:1:260:G:H5'	2.05	0.56
51:1:1114:C:H2'	51:1:1115:G:C8	2.41	0.56
51:1:1370:C:H2'	51:1:1371:G:O4'	2.04	0.56
51:1:1774:C:H4'	51:1:1979:U:O2	2.05	0.56
53:3:428:G:H4'	53:3:429:U:H4'	1.86	0.56
53:3:936:C:H2'	53:3:937:A:O4'	2.04	0.56
58:B1:2860:THR:HB	59:B2:1284:ALA:HB3	1.85	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
66:0:322:PHE:HB3	66:0:323:LYS:HD2	1.87	0.56
18:R:113:LYS:NZ	64:6:44:A:H4'	2.20	0.56
25:Y:13:SER:O	25:Y:17:ARG:N	2.38	0.56
27:b:158:GLY:HA3	51:1:1820:U:C4	2.40	0.56
47:w:33:ILE:HG22	47:w:34:VAL:HG23	1.88	0.56
47:w:52:ASP:OD2	51:1:2364:C:H5'	2.04	0.56
51:1:379:G:H2'	51:1:380:G:O4'	2.05	0.56
51:1:1740:G:H2'	51:1:1741:C:C6	2.41	0.56
51:1:1801:A:H5"	51:1:2203:U:C2'	2.35	0.56
51:1:1923:U:H2'	51:1:1924:C:H6	1.70	0.56
58:B1:2007:LEU:HD22	59:B2:1101:LEU:HD21	1.88	0.56
9:I:65:GLY:O	9:I:96:ARG:NH1	2.39	0.56
13:M:27:PRO:O	13:M:32:LYS:NZ	2.38	0.56
14:N:47:VAL:HG23	14:N:48:ARG:HG3	1.88	0.56
51:1:959:A:H1'	51:1:2457:U:O2'	2.06	0.56
51:1:2317:A:H2'	51:1:2318:G:O4'	2.06	0.56
51:1:2430:A:N3	51:1:2430:A:H2'	2.20	0.56
66:0:493:THR:O	66:0:610:PRO:HA	2.06	0.56
7:G:30:ILE:HG22	7:G:40:ILE:HA	1.88	0.56
30:e:113:PHE:HZ	30:e:175:PRO:HB3	1.71	0.56
53:3:882:C:O2'	53:3:883:C:H5'	2.05	0.56
53:3:1257:A:H3'	53:3:1257:A:N3	2.21	0.56
53:3:1513:A:H2'	53:3:1514:G:H8	1.70	0.56
8:H:32:LEU:HD13	19:S:92:ILE:HD11	1.88	0.56
14:N:83:THR:HG21	14:N:102:PHE:HB3	1.88	0.56
28:c:109:VAL:HG23	28:c:172:VAL:HG13	1.88	0.56
34:j:60:ASP:HA	34:j:93:ILE:HD11	1.88	0.56
40:p:87:ARG:NH2	40:p:109:ILE:O	2.37	0.56
45:u:32:LYS:HB3	45:u:63:ALA:HB1	1.87	0.56
46:v:72:VAL:HA	46:v:94:ALA:H	1.71	0.56
51:1:36:G:H4'	51:1:451:U:N3	2.21	0.56
51:1:687:C:H2'	51:1:688:U:C5'	2.36	0.56
51:1:1827:U:C2'	51:1:1828:G:H5'	2.35	0.56
51:1:2041:U:H2'	51:1:2042:A:C8	2.40	0.56
51:1:2584:U:H2'	51:1:2585:U:H2'	1.87	0.56
52:2:105:G:H2'	52:2:106:G:H8	1.71	0.56
53:3:416:G:H2'	53:3:417:G:C8	2.41	0.56
53:3:1093:A:C2'	53:3:1094:G:H5'	2.36	0.56
65:a:26:ALA:HB1	65:a:30:LEU:HB2	1.87	0.56
7:G:178:LEU:HD23	61:NA:244:ARG:CB	2.36	0.56
13:M:24:VAL:HG13	13:M:62:LEU:HD11	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:c:63:PRO:O	28:c:67:HIS:N	2.39	0.56
33:i:3:LYS:HD3	51:1:1055:G:O5'	2.06	0.56
51:1:1933:G:O2'	51:1:1974:C:H4'	2.04	0.56
51:1:2796:U:H3	51:1:2799:A:H61	1.53	0.56
53:3:301:G:H2'	53:3:302:G:C8	2.41	0.56
3:C:36:LYS:NZ	3:C:45:HIS:O	2.38	0.56
8:H:20:THR:HA	19:S:93:PRO:HB3	1.88	0.56
14:N:11:ARG:NH1	14:N:106:ASP:O	2.39	0.56
28:c:119:ALA:O	51:1:1655:A:H4'	2.06	0.56
29:d:112:LEU:HD22	29:d:117:ARG:HB3	1.88	0.56
51:1:683:U:H3	51:1:794:A:H61	1.53	0.56
51:1:923:G:O2'	51:1:924:G:H5'	2.06	0.56
51:1:1141:U:H4'	51:1:1142:A:O4'	2.05	0.56
51:1:1868:C:H2'	51:1:1869:G:C5'	2.35	0.56
53:3:1525:G:O2'	53:3:1526:G:H5'	2.06	0.56
58:B1:2545:ILE:HD12	58:B1:2558:LEU:HB3	1.86	0.56
58:B1:2674:LEU:HD22	58:B1:2689:ILE:HD11	1.88	0.56
7:G:101:THR:HG22	53:3:1074:G:H4'	1.88	0.55
10:J:25:LYS:HG3	53:3:923:A:H5'	1.87	0.55
13:M:74:ILE:HG22	13:M:128:VAL:HA	1.87	0.55
17:Q:50:LYS:NZ	17:Q:51:VAL:O	2.39	0.55
26:Z:48:LYS:HB3	53:3:723:U:C5	2.41	0.55
33:i:53:PRO:HD2	33:i:77:VAL:HG21	1.87	0.55
47:w:35:ARG:HH21	51:1:2355:G:H1'	1.69	0.55
50:z:10:ARG:NH2	50:z:52:PHE:O	2.39	0.55
51:1:1255:U:OP1	51:1:1256:G:H5"	2.06	0.55
51:1:2563:U:H2'	51:1:2564:A:H5"	1.88	0.55
53:3:212:G:H2'	53:3:213:G:C8	2.38	0.55
53:3:684:U:H2'	53:3:685:G:O4'	2.06	0.55
53:3:971:G:OP1	53:3:971:G:H3'	2.07	0.55
53:3:1401:G:H2'	53:3:1402:C:O4'	2.06	0.55
58:B1:1601:MET:HG2	58:B1:1745:PRO:HG3	1.87	0.55
58:B1:2303:ALA:HA	58:B1:2758:GLN:HG3	1.88	0.55
66:0:11:ARG:NH2	66:0:283:ILE:O	2.39	0.55
66:0:564:GLY:HA3	66:0:569:TYR:H	1.71	0.55
1:A:28:VAL:HG23	30:e:139:GLU:HA	1.88	0.55
4:D:8:SER:OG	4:D:9:VAL:N	2.38	0.55
8:H:49:ALA:HA	8:H:74:ILE:HD11	1.88	0.55
8:H:82:ASP:HA	8:H:85:LYS:HD2	1.86	0.55
35:k:65:THR:HA	35:k:82:ASN:HA	1.89	0.55
41:q:68:ALA:HB1	41:q:73:ILE:HG13	1.87	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:849:A:H2'	51:1:850:U:H6	1.68	0.55
51:1:2299:U:H2'	51:1:2300:C:C6	2.42	0.55
51:1:2508:G:C6	51:1:2582:G:O6	2.59	0.55
52:2:4:C:H6	52:2:4:C:H5'	1.71	0.55
66:0:323:LYS:HB2	66:0:335:PHE:HB2	1.89	0.55
5:E:43:LEU:HD11	51:1:2362:C:P	2.46	0.55
8:H:120:THR:HG23	8:H:188:ALA:HB2	1.87	0.55
10:J:120:HIS:CE1	10:J:121:ASN:HD21	2.23	0.55
11:K:89:VAL:HG23	53:3:737:C:H5'	1.89	0.55
15:O:42:LEU:HD22	15:O:71:LEU:HB2	1.88	0.55
21:U:1:MET:HB2	53:3:135:C:N3	2.21	0.55
30:e:32:LYS:HB3	30:e:91:ARG:HE	1.71	0.55
51:1:881:G:H2'	51:1:882:G:H8	1.71	0.55
51:1:1186:G:N2	51:1:1187:G:H1'	2.20	0.55
51:1:2207:C:O2'	51:1:2208:C:H5'	2.07	0.55
53:3:560:A:H5'	53:3:566:G:N2	2.21	0.55
53:3:1244:G:H2'	53:3:1245:C:C6	2.40	0.55
10:J:19:ARG:HG2	10:J:30:PHE:HB3	1.89	0.55
12:L:91:ARG:O	12:L:95:ARG:CG	2.55	0.55
40:p:15:ASP:N	40:p:15:ASP:OD1	2.39	0.55
51:1:146:A:H2'	51:1:147:C:C6	2.42	0.55
51:1:310:A:C2'	51:1:311:A:H5"	2.37	0.55
51:1:1191:G:H2'	51:1:1192:G:H8	1.71	0.55
51:1:1783:A:N1	51:1:2587:A:H2'	2.21	0.55
53:3:593:U:H2'	53:3:594:U:C6	2.41	0.55
59:B2:818:VAL:HG22	59:B2:1096:ILE:HG12	1.87	0.55
13:M:14:ARG:NH1	13:M:74:ILE:O	2.39	0.55
13:M:84:ILE:HD11	13:M:86:LYS:HG2	1.89	0.55
21:U:5:ARG:NH2	21:U:23:ASP:O	2.40	0.55
30:e:46:LYS:NZ	30:e:82:TYR:OH	2.40	0.55
30:e:56:LEU:HG	30:e:59:ILE:HD12	1.89	0.55
51:1:782:A:H4'	51:1:783:A:H5'	1.87	0.55
51:1:1827:U:H2'	51:1:1828:G:H5'	1.88	0.55
51:1:2726:A:O2'	51:1:2727:A:H5'	2.06	0.55
53:3:357:G:OP1	53:3:367:U:H5"	2.06	0.55
12:L:32:ASP:HA	53:3:1350:A:O2'	2.06	0.55
22:V:64:ARG:HB2	53:3:130:A:H8	1.71	0.55
38:n:64:ARG:O	38:n:68:ALA:N	2.40	0.55
51:1:155:A:H2'	51:1:156:A:H8	1.71	0.55
53:3:46:G:H2'	53:3:366:A:H62	1.72	0.55
53:3:539:A:H2'	53:3:540:G:H8	1.72	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1127:G:H2'	53:3:1128:C:C6	2.41	0.55
58:B1:2298:ARG:HG2	58:B1:2824:PHE:HZ	1.72	0.55
66:0:565:PRO:HD3	66:0:602:LYS:HZ2	1.71	0.55
26:Z:13:VAL:HG13	26:Z:15:LEU:HG	1.89	0.55
51:1:1257:C:O5'	51:1:1257:C:H6	1.90	0.55
53:3:459:A:H2'	53:3:460:A:C8	2.42	0.55
53:3:596:A:H2'	53:3:597:G:O4'	2.07	0.55
3:C:21:THR:HG21	51:1:2419:U:H5"	1.89	0.55
7:G:59:ILE:HG12	7:G:62:ARG:HH21	1.71	0.55
10:J:16:ALA:HB3	10:J:35:LEU:H	1.71	0.55
27:b:257:ARG:HD3	51:1:1799:G:OP1	2.07	0.55
28:c:118:PHE:HD2	51:1:1654:A:C2	2.24	0.55
51:1:286:U:H2'	51:1:287:G:H8	1.72	0.55
51:1:2048:G:C2'	51:1:2049:G:H5"	2.37	0.55
66:0:225:SER:O	66:0:255:ARG:NH1	2.39	0.55
12:L:111:GLY:HA2	12:L:118:ARG:HG2	1.88	0.55
26:Z:66:ARG:NH1	53:3:1098:C:O2'	2.38	0.55
29:d:44:ARG:HH12	51:1:1248:G:P	2.30	0.55
41:q:24:TYR:OH	51:1:2020:A:O3'	2.25	0.55
51:1:305:C:H2'	51:1:306:U:C6	2.42	0.55
51:1:1343:G:H1'	51:1:1597:A:C4	2.42	0.55
51:1:1403:A:H2'	51:1:1404:C:C6	2.42	0.55
51:1:2008:C:H2'	51:1:2009:A:C8	2.42	0.55
51:1:2682:A:H61	51:1:2728:U:H1'	1.72	0.55
58:B1:1538:LYS:O	58:B1:1772:ILE:HG21	2.06	0.55
65:a:189:LEU:HA	65:a:192:LEU:HG	1.88	0.55
66:0:192:ASN:HB3	66:0:203:GLU:HB2	1.87	0.55
66:0:694:VAL:HA	66:0:697:ALA:HB3	1.87	0.55
8:H:21:TRP:HD1	8:H:57:GLU:HA	1.71	0.55
29:d:147:LEU:HB3	29:d:186:VAL:HG12	1.88	0.55
31:f:3:VAL:HG11	31:f:65:GLY:HA2	1.89	0.55
33:i:11:GLN:HB2	33:i:56:VAL:HG22	1.88	0.55
34:j:6:ALA:HB3	34:j:48:VAL:HG11	1.89	0.55
36:l:29:LYS:HG2	51:1:566:U:OP1	2.07	0.55
38:n:11:ASN:N	51:1:1653:G:O6	2.37	0.55
39:o:33:ARG:HD3	52:2:52:A:N7	2.22	0.55
41:q:5:ARG:NH2	51:1:1251:C:OP2	2.40	0.55
51:1:2128:G:H5'	65:a:218:MET:HE1	1.89	0.55
53:3:1213:A:O2'	53:3:1214:C:H2'	2.06	0.55
53:3:1348:U:H2'	53:3:1349:A:H5'	1.87	0.55
57:A2:100:LEU:HD23	57:A2:115:ILE:HG21	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:B2:103:VAL:HB	59:B2:114:VAL:HG11	1.89	0.55
66:0:103:MET:HB3	66:0:135:VAL:HG21	1.89	0.55
66:0:427:ASP:O	66:0:431:MET:N	2.39	0.55
6:F:5:ALA:HB3	51:1:2466:C:H5'	1.88	0.54
15:O:43:PRO:HA	53:3:1151:A:H5'	1.89	0.54
27:b:204:LEU:HD21	27:b:213:ARG:HH21	1.72	0.54
33:i:38:CYS:O	33:i:42:ASN:ND2	2.40	0.54
44:t:14:PRO:HA	44:t:32:LEU:HA	1.89	0.54
48:x:2:ARG:HG2	48:x:32:LEU:CD1	2.37	0.54
51:1:486:C:H42	51:1:494:G:H1	1.56	0.54
51:1:490:C:H5'	51:1:491:G:OP2	2.06	0.54
51:1:2496:C:C2'	51:1:2497:A:H5'	2.37	0.54
58:B1:2258:ILE:HG23	58:B1:2270:GLN:HB3	1.89	0.54
65:a:19:LYS:NZ	65:a:20:GLN:O	2.38	0.54
3:C:40:PRO:HG3	51:1:2348:U:H4'	1.89	0.54
6:F:10:LEU:HD21	51:1:2477:U:C5	2.42	0.54
27:b:140:VAL:HG12	27:b:191:LEU:HA	1.89	0.54
51:1:171:U:H2'	51:1:172:A:C8	2.42	0.54
51:1:471:A:H2'	51:1:472:A:O4'	2.08	0.54
51:1:605:G:H21	51:1:658:U:H5'	1.72	0.54
51:1:614:A:H5'	51:1:615:U:OP1	2.06	0.54
51:1:1697:G:C3'	51:1:1698:A:H5"	2.36	0.54
51:1:2813:A:H2'	51:1:2814:A:C8	2.42	0.54
53:3:350:G:O2'	53:3:351:G:H5'	2.08	0.54
53:3:866:C:C4	53:3:867:G:H1'	2.41	0.54
53:3:874:G:H2'	53:3:875:U:C6	2.42	0.54
53:3:1042:A:H2'	53:3:1043:G:C4'	2.38	0.54
53:3:1091:U:H2'	53:3:1093:A:OP2	2.07	0.54
53:3:1096:C:H2'	53:3:1097:C:C6	2.41	0.54
53:3:1105:A:H2'	53:3:1106:G:C8	2.43	0.54
53:3:1414:U:H2'	53:3:1415:G:C8	2.43	0.54
58:B1:1643:TYR:HE1	58:B1:1661:GLU:CD	2.14	0.54
58:B1:2137:SER:OG	58:B1:2138:VAL:N	2.36	0.54
58:B1:2332:GLU:HB2	58:B1:2741:ARG:NH1	2.22	0.54
59:B2:360:LEU:HD13	59:B2:378:ARG:HH11	1.72	0.54
59:B2:985:GLU:HB3	59:B2:988:LYS:HB2	1.89	0.54
63:5:40:C:H2'	63:5:41:C:C6	2.42	0.54
66:0:488:VAL:HG11	66:0:661:SER:HA	1.87	0.54
9:I:96:ARG:NH2	9:I:98:ASP:OD2	2.40	0.54
9:I:141:VAL:HA	9:I:180:THR:HA	1.88	0.54
13:M:9:MET:HB2	13:M:32:LYS:HE2	1.88	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:b:206:LYS:HE3	27:b:209:ALA:HB2	1.89	0.54
30:e:127:TYR:HB3	30:e:155:ILE:HG13	1.89	0.54
38:n:2:ARG:NH1	51:1:2820:A:OP2	2.40	0.54
39:o:2:ASP:N	52:2:59:A:HO2'	2.04	0.54
51:1:207:A:H2'	51:1:208:C:O4'	2.07	0.54
51:1:310:A:H2'	51:1:311:A:H5"	1.90	0.54
51:1:1024:G:H3'	51:1:1025:G:C5'	2.37	0.54
51:1:1063:G:OP2	51:1:1070:A:H4'	2.07	0.54
53:3:1347:G:H22	53:3:1373:G:H2'	1.72	0.54
59:B2:811:ASN:HA	59:B2:815:SER:HB2	1.90	0.54
42:r:76:LYS:NZ	42:r:85:LYS:O	2.40	0.54
51:1:130:C:H2'	51:1:131:A:O4'	2.07	0.54
51:1:1040:A:H2'	51:1:1041:G:H8	1.72	0.54
53:3:1042:A:H2'	53:3:1043:G:O4'	2.08	0.54
63:5:33:U:H4'	63:5:35:A:N7	2.23	0.54
66:0:92:HIS:HD2	66:0:464:LEU:HD21	1.72	0.54
21:U:16:PHE:CE2	53:3:625:U:H5"	2.42	0.54
51:1:1614:A:H2'	51:1:1615:C:H5'	1.89	0.54
58:B1:2654:ILE:HG13	58:B1:2709:ILE:HB	1.89	0.54
66:0:171:LEU:HB2	66:0:183:VAL:HB	1.88	0.54
66:0:501:VAL:CG1	66:0:607:LYS:HZ1	2.20	0.54
8:H:26:LYS:HE3	53:3:1256:A:H3'	1.89	0.54
16:P:122:PRO:HG2	26:Z:34:ARG:HA	1.89	0.54
17:Q:23:LEU:HB2	17:Q:29:LYS:HD3	1.90	0.54
25:Y:14:GLU:O	25:Y:18:LYS:NZ	2.41	0.54
29:d:70:SER:C	51:1:674:G:H5"	2.33	0.54
37:m:1:MET:HE1	63:5:63:G:H21	1.72	0.54
38:n:98:LEU:HB2	38:n:112:TYR:HB2	1.88	0.54
51:1:121:G:H4'	51:1:149:A:H5'	1.90	0.54
51:1:1192:G:O2'	51:1:1193:G:H5'	2.08	0.54
51:1:1791:A:O2'	51:1:1792:G:H5'	2.07	0.54
51:1:1809:A:H2'	51:1:1810:A:C8	2.42	0.54
53:3:1390:U:H2'	53:3:1391:U:C6	2.42	0.54
59:B2:243:PRO:HB2	59:B2:274:ILE:HG23	1.90	0.54
59:B2:684:ASN:OD1	59:B2:687:ARG:NH2	2.41	0.54
10:J:153:ALA:HB1	10:J:160:VAL:HA	1.90	0.54
19:S:9:GLU:HA	19:S:12:ARG:HB2	1.89	0.54
30:e:120:SER:HA	51:1:2303:G:H4'	1.89	0.54
53:3:1325:C:H2'	53:3:1326:U:C6	2.42	0.54
58:B1:2299:LEU:HB3	58:B1:2419:ALA:HB1	1.89	0.54
11:K:46:GLN:NE2	11:K:47:LEU:O	2.39	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:b:106:PRO:HG2	27:b:109:LEU:HB2	1.90	0.54
28:c:146:ILE:O	28:c:159:LYS:NZ	2.40	0.54
39:o:15:ARG:NH2	39:o:95:SER:OG	2.39	0.54
45:u:65:GLN:OE1	51:1:328:U:H4'	2.07	0.54
51:1:1126:A:H4'	51:1:1127:A:C5'	2.38	0.54
51:1:1652:A:H2'	51:1:1653:G:O4'	2.07	0.54
51:1:1936:A:H2	51:1:1943:U:H3	1.51	0.54
51:1:2375:G:C2'	51:1:2376:A:H5"	2.38	0.54
53:3:1399:C:H4'	53:3:1400:C:H3'	1.88	0.54
58:B1:1598:ARG:HG3	58:B1:1598:ARG:HH11	1.73	0.54
66:0:416:ILE:N	66:0:460:GLY:O	2.40	0.54
11:K:11:HIS:ND1	11:K:14:GLN:OE1	2.41	0.54
16:P:99:LEU:O	16:P:103:GLY:N	2.38	0.54
23:W:49:LYS:HB2	53:3:835:U:OP1	2.08	0.54
27:b:208:GLY:HA2	27:b:211:ARG:HB3	1.89	0.54
29:d:141:MET:HB2	29:d:143:LEU:HD11	1.90	0.54
51:1:142:A:H2'	51:1:143:C:C6	2.42	0.54
51:1:1319:C:H2'	51:1:1320:C:H6	1.73	0.54
51:1:1659:G:H2'	51:1:1660:G:O4'	2.08	0.54
51:1:1836:C:C2'	51:1:1837:C:H5'	2.37	0.54
51:1:1889:A:H2'	51:1:1890:A:H8	1.73	0.54
58:B1:1557:CYS:SG	58:B1:1558:ALA:N	2.80	0.54
59:B2:29:SER:O	59:B2:33:ASP:HB2	2.07	0.54
66:0:393:THR:OG1	66:0:408:ARG:NH1	2.40	0.54
8:H:58:ARG:HA	8:H:63:ILE:HA	1.90	0.54
14:N:104:THR:HG22	53:3:1180:A:OP1	2.08	0.54
32:g:29:PHE:HB2	51:1:2198:A:C2	2.43	0.54
33:i:9:LYS:HD2	51:1:1059:G:OP2	2.07	0.54
51:1:2373:G:H2'	51:1:2374:C:C6	2.43	0.54
53:3:112:G:N2	53:3:354:G:H5'	2.02	0.54
53:3:1013:G:N2	53:3:1015:G:H3'	2.23	0.54
53:3:1271:A:C5'	53:3:1314:C:H5"	2.38	0.54
59:B2:1117:LEU:HD12	59:B2:1195:ILE:HG12	1.90	0.54
7:G:20:ARG:HD2	53:3:831:A:C5'	2.39	0.53
9:I:205:LYS:HE2	53:3:8:A:C6	2.42	0.53
12:L:91:ARG:NE	12:L:91:ARG:HA	2.22	0.53
16:P:124:LYS:HA	26:Z:34:ARG:HE	1.73	0.53
24:X:4:LEU:HG	24:X:6:LYS:H	1.72	0.53
28:c:110:THR:OG1	28:c:111:GLY:N	2.38	0.53
38:n:60:VAL:HG12	38:n:64:ARG:HH22	1.73	0.53
51:1:1905:C:H2'	51:1:1930:G:C8	2.42	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:20:U:H2'	53:3:21:G:O4'	2.08	0.53
53:3:1093:A:C6	53:3:1095:U:H1'	2.43	0.53
53:3:1234:C:H1'	53:3:1364:U:O2	2.08	0.53
53:3:1507:A:H61	53:3:1528:U:H3	1.56	0.53
58:B1:2245:LEU:HG	58:B1:2257:PRO:HG3	1.90	0.53
59:B2:633:LEU:HD13	59:B2:644:LEU:HD23	1.89	0.53
66:0:632:ILE:HA	66:0:635:LEU:HB3	1.89	0.53
51:1:851:C:H2'	51:1:852:U:C6	2.43	0.53
51:1:1550:C:H2'	51:1:1551:A:H8	1.73	0.53
51:1:1783:A:C6	51:1:2587:A:C4	2.96	0.53
52:2:78:A:H62	52:2:98:G:N2	1.97	0.53
53:3:36:C:H2'	53:3:37:U:H6	1.73	0.53
53:3:401:C:H2'	53:3:402:G:H8	1.73	0.53
53:3:951:G:H2'	53:3:952:U:C6	2.43	0.53
53:3:1084:G:HO2'	53:3:1103:C:H5	1.57	0.53
53:3:1420:U:H3	53:3:1480:A:H2	1.54	0.53
57:A1:100:LEU:HD21	57:A1:121:VAL:HG11	1.90	0.53
57:A2:43:LEU:HD13	57:A2:217:ILE:HD11	1.90	0.53
58:B1:1708:ASN:HA	58:B1:1713:ARG:HH21	1.74	0.53
58:B1:2313:CYS:SG	58:B1:2382:ARG:NH2	2.81	0.53
59:B2:917:SER:O	59:B2:919:ARG:HG3	2.07	0.53
66:0:641:MET:HB3	66:0:657:GLU:HB2	1.90	0.53
4:D:11:LYS:HE2	51:1:770:G:OP2	2.09	0.53
7:G:68:PHE:HA	7:G:161:PHE:HB3	1.90	0.53
8:H:179:ALA:HB1	8:H:202:PHE:HE1	1.73	0.53
13:M:105:THR:HG22	13:M:107:LYS:H	1.73	0.53
22:V:49:ASN:ND2	22:V:51:GLU:OE2	2.41	0.53
25:Y:14:GLU:OE2	25:Y:18:LYS:NZ	2.41	0.53
51:1:534:U:H3	51:1:559:G:H1	1.55	0.53
51:1:1127:A:C2'	51:1:1128:G:H5"	2.37	0.53
51:1:2092:U:C5	51:1:2199:A:H2	2.26	0.53
51:1:2155:U:OP1	51:1:2157:G:N2	2.41	0.53
51:1:2516:A:O2'	51:1:2517:C:H5'	2.08	0.53
53:3:1073:U:H2'	53:3:1074:G:H8	1.70	0.53
65:a:194:VAL:HA	65:a:197:LYS:HB2	1.89	0.53
66:0:334:THR:OG1	66:0:385:ALA:N	2.40	0.53
12:L:53:SER:HB2	12:L:55:LYS:HE3	1.90	0.53
51:1:937:C:H2'	51:1:938:G:C8	2.43	0.53
51:1:1760:C:H2'	51:1:1761:C:H5'	1.91	0.53
53:3:690:G:H2'	53:3:691:G:O4'	2.08	0.53
53:3:952:U:H2'	53:3:953:G:H8	1.74	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1421:G:H3'	53:3:1422:G:H5"	1.90	0.53
57:A1:205:MET:HE3	57:A1:213:PRO:HB3	1.91	0.53
58:B1:1610:THR:HG22	58:B1:1799:GLN:NE2	2.23	0.53
65:a:11:ILE:HG13	65:a:219:GLY:HA3	1.91	0.53
6:F:24:ARG:HE	6:F:36:ARG:HG3	1.73	0.53
17:Q:120:ARG:HG2	53:3:37:U:H5'	1.89	0.53
34:j:49:ASP:N	34:j:49:ASP:OD1	2.39	0.53
37:m:127:LYS:HE2	51:1:1030:C:OP2	2.08	0.53
38:n:39:PRO:CG	51:1:1651:G:H5'	2.33	0.53
51:1:2125:G:H5'	65:a:39:VAL:C	2.33	0.53
51:1:2638:G:H1	51:1:2775:G:H2'	1.74	0.53
53:3:1402:C:H2'	53:3:1403:C:O4'	2.08	0.53
58:B1:1567:TYR:CA	58:B1:1574:TYR:HE2	2.22	0.53
66:0:327:ASP:O	66:0:437:ARG:NH2	2.42	0.53
66:0:446:ARG:HH11	66:0:447:VAL:H	1.54	0.53
7:G:10:LYS:HG2	7:G:211:LEU:HD21	1.89	0.53
8:H:190:THR:HG23	8:H:192:TYR:H	1.73	0.53
14:N:97:LEU:O	14:N:102:PHE:N	2.39	0.53
46:v:73:LYS:O	46:v:92:VAL:N	2.41	0.53
51:1:231:A:H2'	51:1:232:G:O4'	2.08	0.53
51:1:351:C:H2'	51:1:352:A:C8	2.44	0.53
51:1:737:C:H2'	51:1:738:G:H8	1.72	0.53
51:1:772:C:H5"	51:1:1356:G:H5'	1.90	0.53
51:1:1433:A:H2'	51:1:1434:A:C1'	2.38	0.53
51:1:2276:G:O2'	51:1:2277:G:H5'	2.09	0.53
57:A1:47:LEU:HD23	57:A1:51:MET:HG3	1.89	0.53
58:B1:1644:VAL:HG23	58:B1:1658:ILE:HG22	1.89	0.53
4:D:13:ASN:HB3	51:1:125:A:C4'	2.39	0.53
5:E:48:MET:SD	5:E:48:MET:N	2.79	0.53
10:J:53:ARG:CZ	53:3:1071:C:H5'	2.39	0.53
13:M:9:MET:HE1	13:M:35:ILE:HD13	1.91	0.53
14:N:45:MET:HE3	14:N:49:GLN:HA	1.90	0.53
31:f:2:ARG:HG2	51:1:2751:G:C4	2.44	0.53
41:q:48:ASP:HA	41:q:51:GLN:HB3	1.89	0.53
49:y:21:LEU:HA	49:y:25:GLN:HB3	1.90	0.53
51:1:838:C:H2'	51:1:839:U:C6	2.44	0.53
53:3:162:A:H2'	53:3:163:C:H5'	1.89	0.53
53:3:563:A:H4'	53:3:566:G:O2'	2.09	0.53
53:3:601:G:H2'	53:3:602:A:C8	2.44	0.53
58:B1:1529:ILE:HG21	58:B1:1740:VAL:O	2.08	0.53
58:B1:1704:LEU:HG	58:B1:1716:LEU:HB3	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:154:ALA:O	10:J:158:LYS:NZ	2.41	0.53
12:L:63:VAL:HA	12:L:66:GLU:HG2	1.91	0.53
13:M:32:LYS:HA	13:M:35:ILE:HD12	1.90	0.53
29:d:63:LYS:HE3	51:1:2060:A:H3'	1.91	0.53
38:n:8:ARG:NH2	38:n:43:GLU:OE1	2.42	0.53
39:o:30:ARG:HG3	39:o:102:ARG:HD2	1.89	0.53
51:1:859:G:N2	51:1:916:G:H2'	2.23	0.53
51:1:1065:U:H3'	51:1:1066:U:H5"	1.91	0.53
51:1:2699:C:H2'	51:1:2700:A:C8	2.44	0.53
66:0:136:PRO:HG2	66:0:287:PRO:HG3	1.90	0.53
9:I:13:ARG:NH2	9:I:37:PRO:O	2.42	0.53
28:c:23:PRO:HB3	51:1:2682:A:C2	2.43	0.53
29:d:68:ALA:HA	51:1:1255:U:C6	2.42	0.53
32:g:2:GLN:NE2	32:g:18:GLN:O	2.40	0.53
32:g:25:TYR:HB2	51:1:2093:G:O3'	2.08	0.53
36:l:29:LYS:HA	51:1:810:U:C5	2.44	0.53
36:l:29:LYS:HE3	51:1:566:U:H5"	1.90	0.53
37:m:27:SER:OG	37:m:66:ARG:NH1	2.42	0.53
51:1:351:C:H2'	51:1:352:A:H8	1.73	0.53
51:1:1592:C:H2'	51:1:1593:A:C8	2.44	0.53
51:1:2048:G:H3'	51:1:2049:G:H5"	1.91	0.53
52:2:102:G:H2'	52:2:103:U:O4'	2.08	0.53
53:3:337:G:H2'	53:3:338:A:H8	1.74	0.53
53:3:1077:G:N2	53:3:1079:G:H3'	2.23	0.53
57:A2:140:ILE:HD12	57:A2:142:MET:HE3	1.91	0.53
58:B1:1611:ALA:HA	58:B1:1737:ILE:HA	1.91	0.53
58:B1:2284:ASP:O	58:B1:2288:LYS:HB2	2.08	0.53
66:0:415:VAL:H	66:0:461:MET:HA	1.73	0.53
10:J:36:THR:OG1	10:J:37:VAL:N	2.38	0.53
17:Q:6:LEU:HD21	17:Q:11:ARG:HH21	1.73	0.53
22:V:46:HIS:HB2	22:V:70:LYS:HD3	1.91	0.53
28:c:144:GLY:HA2	51:1:2578:G:H1'	1.91	0.53
29:d:45:ALA:HB3	51:1:38:A:H4'	1.91	0.53
33:i:101:SER:OG	33:i:102:ARG:N	2.42	0.53
43:s:4:ILE:HG23	43:s:106:VAL:HG22	1.91	0.53
51:1:1303:G:H2'	51:1:1304:A:H8	1.74	0.53
51:1:1656:C:H2'	51:1:1657:U:C6	2.44	0.53
53:3:36:C:H2'	53:3:37:U:C6	2.44	0.53
53:3:737:C:H2'	53:3:738:C:H6	1.74	0.53
58:B1:2331:LYS:HB3	58:B1:2741:ARG:NH1	2.24	0.53
20:T:2:LEU:HD11	20:T:30:LEU:HD11	1.90	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:e:33:ILE:HD12	30:e:155:ILE:HG22	1.90	0.52
40:p:19:PHE:HE2	40:p:46:VAL:HG21	1.74	0.52
49:y:44:LYS:HE2	49:y:48:ARG:HG3	1.90	0.52
51:1:2124:G:N1	51:1:2175:C:O2	2.42	0.52
51:1:2694:G:H2'	51:1:2695:U:O4'	2.09	0.52
53:3:722:G:H1	53:3:733:G:H1	1.56	0.52
58:B1:2349:LYS:HB2	58:B1:2356:LEU:HB2	1.92	0.52
59:B2:246:LEU:HB3	59:B2:269:ILE:HD13	1.91	0.52
7:G:210:THR:HA	7:G:213:LEU:HB2	1.90	0.52
14:N:11:ARG:HH11	14:N:105:ARG:HH12	1.57	0.52
19:S:8:ARG:HB2	19:S:62:ARG:HH12	1.74	0.52
32:g:2:GLN:HB3	32:g:18:GLN:HB3	1.91	0.52
33:i:92:PRO:HB3	33:i:134:SER:HA	1.89	0.52
38:n:103:ARG:HB3	38:n:108:ALA:H	1.74	0.52
51:1:133:U:H3	51:1:146:A:H61	1.57	0.52
51:1:1229:C:H2'	51:1:1230:A:H8	1.74	0.52
52:2:33:G:H2'	52:2:34:A:O4'	2.09	0.52
53:3:224:U:H2'	53:3:225:C:C6	2.44	0.52
53:3:1064:G:O3'	53:3:1065:U:H4'	2.09	0.52
58:B1:1577:LEU:O	58:B1:1577:LEU:HD13	2.08	0.52
58:B1:2474:ILE:HD11	58:B1:2502:LEU:HD11	1.91	0.52
63:5:38:A:H2'	63:5:39:U:H4'	1.91	0.52
66:0:530:ASN:ND2	66:0:535:GLU:OE1	2.43	0.52
7:G:67:LEU:HD11	7:G:157:PRO:HG3	1.91	0.52
8:H:18:ASN:HA	8:H:55:VAL:HG22	1.91	0.52
12:L:92:PRO:HA	12:L:95:ARG:CG	2.37	0.52
14:N:64:ILE:HG21	14:N:78:ILE:HG13	1.91	0.52
22:V:11:VAL:HG23	22:V:55:GLY:H	1.74	0.52
38:n:32:GLU:HG2	38:n:115:LEU:HD13	1.92	0.52
42:r:77:PHE:HD1	42:r:84:ARG:HB3	1.73	0.52
51:1:533:G:H1	51:1:560:C:H42	1.56	0.52
51:1:1352:U:O2'	51:1:1353:A:H5'	2.08	0.52
51:1:1357:C:H42	51:1:1374:G:H1	1.57	0.52
53:3:1479:C:H2'	53:3:1480:A:O4'	2.09	0.52
65:a:63:THR:HG21	65:a:195:ALA:HB1	1.90	0.52
12:L:12:LEU:HD13	53:3:1374:A:OP1	2.08	0.52
18:R:89:ARG:NH2	18:R:95:PRO:O	2.34	0.52
19:S:82:LYS:HA	19:S:85:GLU:HB2	1.92	0.52
21:U:1:MET:SD	21:U:24:SER:OG	2.64	0.52
25:Y:67:HIS:HD2	25:Y:69:ASN:HB2	1.73	0.52
28:c:15:PHE:HB3	40:p:78:PRO:HD3	1.89	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:d:133:LEU:O	29:d:136:GLN:NE2	2.40	0.52
35:k:64:ARG:O	35:k:83:ALA:N	2.43	0.52
36:l:85:VAL:HG22	36:l:86:GLU:HG2	1.92	0.52
51:1:803:U:O2'	51:1:804:A:H5'	2.09	0.52
51:1:1361:G:H2'	51:1:1362:C:H6	1.74	0.52
51:1:1635:A:H2	51:1:1761:C:O2'	1.92	0.52
51:1:1674:G:N2	51:1:1677:A:H61	2.07	0.52
58:B1:1714:LYS:HA	58:B1:1717:THR:HG22	1.92	0.52
59:B2:628:HIS:HB3	59:B2:647:ARG:HH21	1.74	0.52
66:0:223:ILE:HG13	66:0:237:TYR:HE1	1.74	0.52
66:0:541:LYS:NZ	66:0:579:HIS:O	2.41	0.52
11:K:47:LEU:HD21	11:K:55:HIS:HA	1.92	0.52
15:O:15:HIS:CD2	53:3:1152:A:H5'	2.44	0.52
51:1:1655:A:H2'	51:1:1656:C:H5'	1.91	0.52
51:1:2402:U:O2'	51:1:2403:C:H5"	2.09	0.52
52:2:30:C:C2'	52:2:31:C:H5'	2.40	0.52
53:3:67:C:H2'	53:3:68:G:C8	2.44	0.52
53:3:369:G:H22	53:3:393:A:H1'	1.75	0.52
53:3:1274:A:C2'	53:3:1275:A:H5"	2.39	0.52
53:3:1406:U:H2'	53:3:1407:C:O4'	2.10	0.52
58:B1:1538:LYS:O	58:B1:1772:ILE:HG23	2.08	0.52
60:W0:3:ARG:NH1	60:W0:55:GLU:OE2	2.40	0.52
65:a:167:LYS:O	65:a:170:ILE:CG2	2.58	0.52
8:H:181:ILE:HD11	8:H:200:TRP:HB3	1.92	0.52
16:P:87:GLY:O	16:P:92:ARG:NH1	2.43	0.52
27:b:7:PRO:HB3	27:b:13:ARG:HA	1.92	0.52
28:c:59:ARG:O	28:c:59:ARG:NH2	2.37	0.52
30:e:23:SER:HB3	30:e:26:GLN:HB2	1.91	0.52
34:j:135:GLN:HE22	51:1:7:G:H1'	1.75	0.52
35:k:21:CYS:HA	35:k:41:ILE:HA	1.92	0.52
39:o:29:HIS:HB3	39:o:36:TYR:HD2	1.74	0.52
42:r:29:THR:HA	42:r:63:VAL:HG23	1.92	0.52
51:1:25:U:H2'	51:1:26:G:O4'	2.10	0.52
51:1:1864:U:H5"	51:1:2410:G:O2'	2.10	0.52
51:1:2061:G:H8	51:1:2501:C:H4'	1.73	0.52
51:1:2345:G:N3	51:1:2381:A:H2'	2.24	0.52
51:1:2507:C:H6	51:1:2507:C:O5'	1.93	0.52
53:3:358:U:H2'	53:3:359:G:C8	2.44	0.52
53:3:1169:A:H2'	53:3:1170:A:O4'	2.09	0.52
53:3:1366:C:H2'	53:3:1367:C:H6	1.72	0.52
58:B1:1789:ILE:HG21	62:NG:93:ILE:O	2.09	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
66:0:217:GLU:O	66:0:220:GLN:NE2	2.41	0.52
10:J:133:ILE:HD11	53:3:1079:G:H5'	1.92	0.52
41:q:57:ARG:NH2	51:1:1154:G:OP2	2.43	0.52
43:s:40:ASN:OD1	43:s:40:ASN:N	2.40	0.52
51:1:155:A:H2'	51:1:156:A:C8	2.44	0.52
51:1:203:A:H3'	51:1:204:A:C5'	2.39	0.52
51:1:532:A:H2'	51:1:532:A:N3	2.24	0.52
51:1:958:U:H2'	52:2:89:U:C1'	2.39	0.52
51:1:1536:C:H4'	51:1:1537:G:C2	2.44	0.52
51:1:2577:A:H2'	51:1:2614:A:H61	1.75	0.52
53:3:153:C:H2'	53:3:154:U:C4'	2.39	0.52
53:3:299:G:N2	53:3:565:U:H3	2.06	0.52
53:3:977:A:H2'	53:3:977:A:N3	2.25	0.52
66:0:520:ILE:HB	66:0:576:ILE:HD11	1.90	0.52
14:N:114:LYS:HE3	53:3:1188:A:P	2.49	0.52
27:b:36:ASN:HB3	27:b:38:LYS:HG2	1.91	0.52
36:l:9:ALA:HB3	36:l:12:SER:HB3	1.91	0.52
51:1:1082:U:H3	51:1:1086:A:H2	1.56	0.52
51:1:1841:U:H2'	51:1:1842:G:H8	1.73	0.52
51:1:1903:G:C2	51:1:1904:G:C8	2.98	0.52
51:1:1954:G:H1	51:1:1986:C:H5"	1.75	0.52
53:3:90:C:H2'	53:3:91:U:C6	2.45	0.52
53:3:148:G:H1	53:3:174:A:H61	1.58	0.52
66:0:53:MET:O	66:0:57:GLN:NE2	2.42	0.52
14:N:122:ARG:NH1	53:3:1350:A:OP1	2.43	0.52
17:Q:28:GLN:HB2	53:3:363:A:H1'	1.92	0.52
32:g:94:ILE:HD12	32:g:99:ILE:HD13	1.91	0.52
53:3:19:A:H1'	53:3:864:A:C2	2.45	0.52
53:3:437:U:H2'	53:3:438:U:H5'	1.91	0.52
53:3:884:U:OP2	53:3:884:U:H6	1.92	0.52
65:a:183:ASP:OD1	65:a:183:ASP:N	2.43	0.52
5:E:38:LYS:HG3	5:E:41:ARG:HH22	1.74	0.52
17:Q:45:ASN:OD1	17:Q:45:ASN:N	2.43	0.52
19:S:7:ALA:HB1	53:3:994:A:O2'	2.09	0.52
28:c:161:MET:HE1	51:1:2050:C:H1'	1.91	0.52
39:o:110:ALA:HB1	39:o:115:LEU:HD12	1.92	0.52
51:1:413:C:N4	51:1:2410:G:H1	1.96	0.52
51:1:1332:G:N3	51:1:1332:G:H5'	2.25	0.52
51:1:1767:G:O5'	51:1:1767:G:H8	1.93	0.52
51:1:2660:A:OP1	66:0:675:LYS:HD2	2.10	0.52
58:B1:1700:LEU:HD12	58:B1:1723:LEU:HD12	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:B1:1787:PRO:HB3	62:NG:105:ASP:HA	1.91	0.52
58:B1:1874:GLU:HG2	59:B2:1245:ALA:O	2.10	0.52
62:NG:161:SER:HA	62:NG:170:PRO:HA	1.92	0.52
66:0:107:ASP:OD1	66:0:107:ASP:N	2.40	0.52
66:0:473:MET:HA	66:0:477:PHE:HB2	1.91	0.52
51:1:1409:U:H2'	51:1:1410:G:C8	2.46	0.51
51:1:1889:A:H2'	51:1:1890:A:O4'	2.10	0.51
51:1:2022:U:O2'	51:1:2617:U:H5'	2.10	0.51
51:1:2272:U:H5"	51:1:2273:A:OP1	2.10	0.51
52:2:24:G:H4'	52:2:25:U:H5	1.73	0.51
53:3:174:A:C2'	53:3:175:C:H5'	2.41	0.51
53:3:731:G:O2'	53:3:732:C:H5'	2.10	0.51
53:3:1225:A:H2'	53:3:1225:A:N3	2.25	0.51
53:3:1485:U:O2'	53:3:1486:G:H5'	2.10	0.51
53:3:1496:C:H2'	53:3:1497:G:O4'	2.10	0.51
58:B1:1598:ARG:HA	58:B1:1747:ASP:HB2	1.92	0.51
66:0:192:ASN:ND2	66:0:203:GLU:OE1	2.43	0.51
21:U:55:ASP:OD1	21:U:55:ASP:N	2.41	0.51
51:1:277:G:H4'	51:1:278:A:C8	2.44	0.51
51:1:1187:G:O5'	51:1:1187:G:H8	1.93	0.51
53:3:218:U:H2'	53:3:219:U:O4'	2.09	0.51
53:3:265:G:H2'	53:3:267:C:H5	1.75	0.51
53:3:1239:A:H5"	53:3:1240:U:C5	2.44	0.51
58:B1:1889:LEU:N	58:B1:1889:LEU:CD1	2.73	0.51
58:B1:2182:ILE:HD12	58:B1:2253:ILE:HG21	1.93	0.51
14:N:35:GLU:HA	14:N:39:GLY:HA3	1.92	0.51
27:b:231:HIS:ND1	51:1:1826:G:OP1	2.38	0.51
29:d:1:MET:N	29:d:14:VAL:O	2.35	0.51
30:e:32:LYS:O	30:e:156:THR:OG1	2.27	0.51
30:e:117:SER:HB3	30:e:177:ARG:HH21	1.76	0.51
51:1:12:U:H2'	51:1:13:A:H5'	1.91	0.51
51:1:44:A:H2'	51:1:45:G:H5'	1.93	0.51
51:1:526:A:N6	51:1:2626:C:H4'	2.25	0.51
51:1:1268:A:H2'	51:1:1269:A:H8	1.74	0.51
53:3:410:G:H21	53:3:432:A:H62	1.57	0.51
59:B2:714:VAL:HB	59:B2:787:PRO:HD2	1.92	0.51
2:B:54:ILE:HG13	2:B:56:LYS:H	1.76	0.51
8:H:9:ILE:HG13	8:H:177:LEU:HD21	1.91	0.51
9:I:160:LEU:HD21	9:I:164:ARG:HH21	1.75	0.51
13:M:16:GLY:O	13:M:64:TYR:OH	2.28	0.51
16:P:17:ASP:N	16:P:17:ASP:OD1	2.42	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:n:64:ARG:HD3	51:1:2706:A:O2'	2.10	0.51
42:r:61:ALA:HB1	42:r:96:VAL:HB	1.92	0.51
51:1:755:U:H2'	51:1:756:A:H8	1.75	0.51
51:1:1710:G:H2'	51:1:1711:A:H8	1.74	0.51
51:1:1951:U:C2	51:1:1953:A:OP2	2.63	0.51
53:3:574:A:N3	53:3:883:C:H1'	2.25	0.51
58:B1:1643:TYR:CE1	58:B1:1661:GLU:CD	2.88	0.51
24:X:35:ARG:HB2	53:3:1320:C:N4	2.25	0.51
32:g:22:LYS:HB2	51:1:2094:A:OP1	2.11	0.51
34:j:69:ARG:NH1	34:j:90:GLU:OE2	2.38	0.51
51:1:243:U:O2'	51:1:244:A:H5'	2.11	0.51
51:1:745:G:H2'	51:1:746:U:O4'	2.09	0.51
51:1:1333:G:H2'	51:1:1334:G:H8	1.75	0.51
51:1:1470:A:H61	51:1:1521:G:H1'	1.75	0.51
51:1:1505:A:H2'	51:1:1506:U:O4'	2.10	0.51
51:1:2082:A:H2'	51:1:2083:G:O4'	2.10	0.51
53:3:49:U:O2'	53:3:50:A:H2'	2.10	0.51
53:3:515:G:O2'	53:3:516:U:H5'	2.10	0.51
53:3:894:G:H2'	53:3:895:G:H8	1.75	0.51
57:A1:16:ILE:HG23	57:A1:26:VAL:HG22	1.91	0.51
58:B1:2401:ASP:HB3	58:B1:2404:ARG:HB2	1.93	0.51
66:0:295:ILE:HG13	66:0:309:ARG:HB2	1.91	0.51
9:I:18:LEU:HB3	9:I:20:LEU:HD22	1.91	0.51
13:M:11:THR:OG1	53:3:876:C:H1'	2.10	0.51
29:d:67:ARG:O	51:1:1255:U:H5	1.94	0.51
31:f:151:ARG:HG3	31:f:160:GLY:HA2	1.92	0.51
51:1:178:G:O2'	51:1:179:C:H5'	2.10	0.51
51:1:376:G:H2'	51:1:377:G:H8	1.74	0.51
51:1:622:G:O2'	51:1:623:C:H5'	2.10	0.51
51:1:1210:G:P	51:1:1212:G:H5'	2.51	0.51
51:1:1394:U:H4'	51:1:1603:A:H4'	1.93	0.51
51:1:1599:U:H2'	51:1:1600:C:H6	1.74	0.51
51:1:2248:C:H3'	51:1:2249:U:C6	2.46	0.51
51:1:2415:G:H2'	51:1:2416:C:H6	1.75	0.51
51:1:2656:U:H2'	51:1:2657:A:H8	1.75	0.51
53:3:1271:A:H5'	53:3:1314:C:H5"	1.91	0.51
58:B1:1851:ARG:HD2	59:B2:1268:GLN:HE21	1.68	0.51
1:A:26:SER:OG	30:e:139:GLU:OE2	2.28	0.51
8:H:38:VAL:O	8:H:42:LEU:N	2.43	0.51
8:H:67:ILE:N	8:H:101:ASN:O	2.42	0.51
9:I:24:VAL:HG12	53:3:409:U:H5"	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:10:ALA:O	25:Y:13:SER:OG	2.28	0.51
31:f:126:THR:OG1	31:f:127:GLN:N	2.44	0.51
32:g:131:SER:OG	32:g:140:ALA:O	2.28	0.51
40:p:93:LYS:HE2	51:1:1754:A:OP1	2.11	0.51
41:q:23:TYR:HD1	51:1:533:G:H5'	1.75	0.51
51:1:45:G:C5'	51:1:46:G:H5'	2.25	0.51
51:1:548:G:H2'	51:1:549:G:O4'	2.10	0.51
51:1:2489:U:H2'	51:1:2490:G:O4'	2.11	0.51
53:3:135:C:H2'	53:3:136:C:H5'	1.92	0.51
53:3:955:U:H2'	53:3:956:U:H6	1.74	0.51
53:3:1105:A:H2'	53:3:1106:G:H8	1.75	0.51
53:3:1251:A:H2'	53:3:1252:A:C8	2.46	0.51
55:8:13:DT:OP2	58:B1:2290:ALA:CB	2.59	0.51
58:B1:1936:PHE:HZ	58:B1:1952:VAL:HG11	1.76	0.51
58:B1:2004:ASP:OD2	59:B2:812:PHE:HA	2.11	0.51
59:B2:974:ARG:HD2	59:B2:1014:LEU:HD21	1.92	0.51
9:I:146:GLU:HA	9:I:149:LYS:HE2	1.91	0.51
15:O:59:LYS:HE3	53:3:972:C:C5'	2.41	0.51
16:P:22:ILE:HD13	16:P:83:VAL:HG13	1.92	0.51
27:b:31:PRO:HG2	27:b:32:LEU:HD12	1.92	0.51
40:p:102:ARG:HH22	51:1:1755:A:P	2.34	0.51
51:1:3:U:H2'	51:1:4:U:C6	2.45	0.51
51:1:216:A:O2'	51:1:217:A:H5'	2.11	0.51
51:1:216:A:H2'	51:1:217:A:O4'	2.11	0.51
51:1:543:G:H3'	51:1:544:C:H5"	1.92	0.51
51:1:1410:G:O2'	51:1:1411:U:H5'	2.10	0.51
51:1:2372:U:H2'	51:1:2373:G:C8	2.46	0.51
51:1:2545:G:H2'	51:1:2546:U:O4'	2.11	0.51
53:3:207:C:C3'	53:3:208:U:H5"	2.40	0.51
7:G:72:LYS:HZ2	7:G:74:ALA:HB3	1.76	0.51
12:L:14:ASP:OD1	12:L:43:TYR:OH	2.24	0.51
19:S:78:LEU:HD13	19:S:82:LYS:HB3	1.92	0.51
39:o:100:HIS:O	39:o:104:GLN:NE2	2.43	0.51
51:1:286:U:H2'	51:1:287:G:C8	2.46	0.51
51:1:838:C:H2'	51:1:839:U:H6	1.75	0.51
51:1:1473:G:H1	51:1:1518:C:N4	2.00	0.51
51:1:2177:C:O2	65:a:172:HIS:CE1	2.61	0.51
53:3:302:G:H2'	53:3:303:A:H8	1.74	0.51
53:3:1230:C:H5'	64:6:30:G:H5"	1.93	0.51
59:B2:400:VAL:HG21	59:B2:452:ARG:HE	1.76	0.51
66:0:499:THR:HG23	66:0:500:ASP:N	2.23	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:K:92:THR:OG1	11:K:94:HIS:O	2.29	0.51
28:c:177:VAL:HA	28:c:189:VAL:HA	1.93	0.51
29:d:58:LYS:HE2	51:1:676:A:OP1	2.11	0.51
32:g:8:LYS:NZ	32:g:11:ASN:O	2.44	0.51
51:1:1963:U:C2'	51:1:1964:G:H5"	2.41	0.51
51:1:2616:C:H2'	51:1:2617:U:H6	1.76	0.51
51:1:2850:A:H2'	51:1:2851:A:O4'	2.11	0.51
53:3:379:C:H2'	53:3:380:G:O4'	2.10	0.51
53:3:554:A:H2'	53:3:555:U:H5'	1.93	0.51
66:0:194:ASN:OD1	66:0:200:VAL:N	2.44	0.51
7:G:53:LEU:HD11	7:G:215:ALA:HB1	1.93	0.50
14:N:33:SER:OG	14:N:34:LEU:N	2.43	0.50
18:R:89:ARG:HB3	18:R:96:VAL:HG22	1.93	0.50
33:i:4:VAL:HB	51:1:1055:G:OP2	2.10	0.50
36:l:51:GLU:HG3	36:l:56:PRO:HB3	1.93	0.50
51:1:402:A:H2'	51:1:403:U:O4'	2.12	0.50
51:1:403:U:O3'	51:1:404:A:H4'	2.11	0.50
51:1:1550:C:H2'	51:1:1551:A:C8	2.46	0.50
51:1:1597:A:H4'	51:1:1598:A:H8	1.76	0.50
51:1:1917:U:O2'	51:1:1918:A:H5'	2.11	0.50
51:1:1977:A:H2'	51:1:1978:A:O4'	2.12	0.50
51:1:2372:U:H2'	51:1:2373:G:H8	1.77	0.50
58:B1:1774:ARG:HH12	58:B1:1777:ARG:NH1	2.09	0.50
58:B1:2248:LYS:HB3	58:B1:2254:ILE:HD11	1.93	0.50
59:B2:125:GLY:HA2	59:B2:499:SER:HB2	1.92	0.50
65:a:165:ASN:HD22	65:a:169:GLY:HA2	1.75	0.50
11:K:68:GLN:NE2	53:3:738:C:O3'	2.44	0.50
15:O:8:ILE:HB	15:O:74:VAL:HB	1.92	0.50
28:c:27:ILE:HD11	28:c:187:LEU:HD23	1.93	0.50
28:c:133:THR:OG1	28:c:134:HIS:N	2.38	0.50
33:i:113:ALA:HB2	33:i:121:ILE:HD11	1.94	0.50
51:1:558:U:H2'	51:1:559:G:C8	2.46	0.50
51:1:866:A:H61	51:1:913:U:H1'	1.76	0.50
51:1:1439:A:H2'	51:1:1440:U:H5'	1.94	0.50
51:1:1937:A:C2'	51:1:1938:A:H5'	2.41	0.50
51:1:2549:G:H2'	51:1:2550:G:H8	1.76	0.50
52:2:29:A:H2'	52:2:30:C:O4'	2.11	0.50
53:3:678:U:H2'	53:3:679:C:O4'	2.11	0.50
53:3:1271:A:H4'	53:3:1314:C:OP1	2.11	0.50
14:N:118:ARG:NH2	53:3:1366:C:OP1	2.44	0.50
15:O:37:ARG:HG2	15:O:77:VAL:HB	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:t:61:LEU:HD21	44:t:82:LYS:HD2	1.92	0.50
48:x:14:GLY:HA3	48:x:28:PHE:HE1	1.76	0.50
51:1:233:A:H2'	51:1:234:U:H5'	1.92	0.50
51:1:990:A:N6	51:1:1186:G:H1'	2.27	0.50
51:1:1783:A:N6	51:1:2587:A:N3	2.59	0.50
51:1:1794:A:H1'	51:1:1900:A:C2	2.46	0.50
51:1:2417:C:H2'	51:1:2418:A:H8	1.76	0.50
51:1:2656:U:H5"	66:0:146:ARG:NH2	2.25	0.50
53:3:162:A:C2'	53:3:163:C:H5'	2.42	0.50
53:3:903:G:H2'	53:3:904:U:O4'	2.11	0.50
53:3:945:G:H2'	53:3:945:G:N3	2.27	0.50
53:3:993:G:N3	53:3:993:G:H2'	2.25	0.50
53:3:1400:C:N4	64:6:34:C:H1'	2.26	0.50
53:3:1421:G:C2'	53:3:1422:G:H4'	2.40	0.50
59:B2:255:ILE:HB	59:B2:263:VAL:HB	1.92	0.50
7:G:187:ASP:OD1	7:G:187:ASP:N	2.42	0.50
12:L:92:PRO:C	12:L:95:ARG:HG3	2.36	0.50
26:Z:16:ARG:HG3	26:Z:19:LYS:HB2	1.93	0.50
29:d:195:GLN:HE22	29:d:199:MET:HE2	1.76	0.50
51:1:1810:A:H2'	51:1:1811:G:O4'	2.12	0.50
51:1:2358:A:H2'	51:1:2359:C:O4'	2.11	0.50
53:3:284:C:O2'	53:3:285:C:H5'	2.11	0.50
53:3:599:C:H2'	53:3:600:A:H8	1.77	0.50
53:3:650:G:H2'	53:3:651:C:C6	2.47	0.50
53:3:793:U:O2	53:3:1516:G:H4'	2.12	0.50
53:3:1351:U:H3	53:3:1371:G:H1	1.59	0.50
53:3:1516:G:H2'	53:3:1518:A:OP2	2.10	0.50
59:B2:524:ILE:HG21	59:B2:708:VAL:HG13	1.92	0.50
66:0:70:ALA:HB3	66:0:84:ILE:HB	1.94	0.50
66:0:490:TYR:HB2	66:0:569:TYR:CD1	2.47	0.50
24:X:76:THR:HG21	53:3:1221:G:H4'	1.94	0.50
26:Z:27:VAL:HG22	26:Z:31:VAL:HB	1.93	0.50
35:k:71:ARG:HG3	35:k:77:ILE:HD11	1.92	0.50
51:1:871:U:H2'	51:1:872:U:C6	2.47	0.50
51:1:1040:A:H2'	51:1:1041:G:C8	2.47	0.50
51:1:1390:U:O2'	51:1:1391:U:H5'	2.11	0.50
51:1:1934:C:H2'	51:1:1935:G:O4'	2.12	0.50
53:3:559:A:H4'	53:3:560:A:H3'	1.94	0.50
59:B2:93:SER:HA	59:B2:128:PRO:HA	1.92	0.50
2:B:28:SER:HG	2:B:39:ARG:HH21	1.57	0.50
25:Y:4:LYS:HB3	25:Y:6:ALA:H	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:c:160:LYS:HD2	51:1:2513:A:OP1	2.12	0.50
30:e:129:MET:HG3	30:e:153:ILE:HB	1.94	0.50
31:f:171:LYS:NZ	51:1:2529:G:OP2	2.40	0.50
32:g:50:ARG:O	32:g:55:GLU:N	2.38	0.50
34:j:60:ASP:OD1	34:j:60:ASP:N	2.42	0.50
34:j:108:MET:HB3	51:1:1006:C:O2'	2.11	0.50
38:n:107:ASN:HD22	51:1:2009:A:H4'	1.74	0.50
42:r:76:LYS:HZ1	42:r:85:LYS:HE2	1.76	0.50
51:1:198:C:O2'	51:1:199:A:H5'	2.12	0.50
51:1:375:G:C2'	51:1:376:G:H5'	2.42	0.50
51:1:704:G:H1'	51:1:726:G:N2	2.27	0.50
52:2:88:C:H4'	52:2:90:C:N3	2.27	0.50
53:3:953:G:H2'	53:3:954:G:O4'	2.12	0.50
58:B1:2870:ARG:HE	58:B1:2871:ARG:NH1	2.10	0.50
59:B2:9:LYS:HG2	59:B2:1171:ARG:HH12	1.77	0.50
66:0:603:GLU:O	66:0:607:LYS:NZ	2.41	0.50
4:D:13:ASN:HB3	51:1:125:A:H4'	1.93	0.50
14:N:26:LYS:HG2	14:N:61:ASP:HB2	1.93	0.50
15:O:47:GLU:HG3	53:3:1254:A:OP1	2.12	0.50
17:Q:33:CYS:HA	17:Q:54:VAL:HG22	1.94	0.50
28:c:12:THR:OG1	28:c:13:ARG:N	2.45	0.50
33:i:9:LYS:HZ3	51:1:1059:G:H5'	1.77	0.50
33:i:30:GLN:HG3	33:i:60:VAL:HG11	1.93	0.50
42:r:80:ARG:HD3	51:1:566:U:C5	2.47	0.50
51:1:598:U:H2'	51:1:599:A:H8	1.76	0.50
51:1:801:G:H3'	51:1:802:A:H5'	1.92	0.50
51:1:839:U:H2'	51:1:840:C:C6	2.47	0.50
51:1:1042:G:H2'	51:1:1043:C:C6	2.46	0.50
51:1:1867:G:H1	51:1:1874:C:N4	2.08	0.50
53:3:812:G:OP1	53:3:903:G:H1'	2.12	0.50
58:B1:1623:ILE:HG23	58:B1:1627:LEU:HD12	1.94	0.50
59:B2:232:ILE:HG12	59:B2:237:LEU:HG	1.94	0.50
59:B2:411:ARG:NH2	59:B2:427:ASP:OD2	2.44	0.50
66:0:419:ALA:HA	66:0:457:ILE:HA	1.93	0.50
1:A:8:LYS:O	1:A:27:THR:OG1	2.28	0.50
9:I:96:ARG:NE	9:I:132:ALA:O	2.44	0.50
9:I:173:ASP:OD1	9:I:173:ASP:N	2.44	0.50
11:K:17:GLN:O	11:K:21:MET:N	2.44	0.50
27:b:24:HIS:CD2	27:b:79:ARG:HH21	2.29	0.50
45:u:73:ASN:HD22	45:u:76:THR:H	1.60	0.50
48:x:57:VAL:O	48:x:61:LYS:NZ	2.44	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1686:C:H2'	51:1:1687:G:O4'	2.12	0.50
51:1:2416:C:H2'	51:1:2417:C:C6	2.47	0.50
53:3:128:G:H2'	53:3:129:A:H8	1.76	0.50
53:3:138:G:H2'	53:3:139:A:C8	2.46	0.50
53:3:439:U:H2'	53:3:440:C:O4'	2.12	0.50
53:3:1017:U:H2'	53:3:1018:G:O4'	2.11	0.50
53:3:1515:G:H2'	53:3:1516:G:C8	2.46	0.50
66:0:141:VAL:HB	66:0:266:CYS:HA	1.93	0.50
67:h:6:5OH:N	67:h:6:5OH:CS	2.75	0.50
5:E:35:LYS:HE2	5:E:39:ARG:HE	1.76	0.50
10:J:37:VAL:HG11	10:J:113:VAL:HA	1.93	0.50
12:L:107:ALA:HB1	12:L:115:MET:HE1	1.94	0.50
14:N:62:LEU:HD12	14:N:64:ILE:HD11	1.92	0.50
19:S:75:LYS:HZ1	53:3:1357:A:H5"	1.75	0.50
40:p:102:ARG:NH2	51:1:1755:A:H5'	2.26	0.50
41:q:10:ARG:NH1	51:1:1216:G:H5"	2.25	0.50
43:s:16:LYS:HE3	51:1:1266:G:N7	2.27	0.50
43:s:42:LYS:HB2	51:1:2010:G:H5"	1.94	0.50
51:1:594:U:H2'	51:1:595:C:H6	1.77	0.50
51:1:737:C:H2'	51:1:738:G:C8	2.47	0.50
51:1:1700:A:H2'	51:1:1701:A:H5'	1.93	0.50
51:1:2259:U:C5	51:1:2427:C:N4	2.80	0.50
52:2:53:A:C2	52:2:54:G:H1'	2.47	0.50
53:3:62:U:H2'	53:3:63:C:C6	2.46	0.50
53:3:570:G:H2'	53:3:571:U:O4'	2.11	0.50
53:3:1012:A:H5'	53:3:1012:A:H8	1.76	0.50
55:8:3:DC:H2"	55:8:4:DT:C7	2.42	0.50
59:B2:400:VAL:HG11	59:B2:452:ARG:HD2	1.93	0.50
66:0:365:GLN:N	66:0:372:GLU:O	2.38	0.50
8:H:6:PRO:O	8:H:10:ARG:NE	2.41	0.49
9:I:131:ILE:HD12	53:3:620:C:C2	2.47	0.49
15:O:19:ASP:OD1	15:O:19:ASP:N	2.45	0.49
21:U:5:ARG:NH1	21:U:26:ASN:O	2.43	0.49
22:V:4:ILE:HD11	22:V:61:ARG:HD3	1.94	0.49
35:k:1:MET:HE1	51:1:1664:A:H2	1.77	0.49
40:p:28:LYS:HD3	40:p:82:SER:HB3	1.93	0.49
41:q:62:ALA:O	41:q:66:ALA:N	2.43	0.49
51:1:123:G:H2'	51:1:124:G:H8	1.77	0.49
51:1:1424:G:H2'	51:1:1425:G:O4'	2.12	0.49
51:1:1937:A:C3'	51:1:1938:A:H5'	2.41	0.49
51:1:1984:G:H2'	51:1:1985:C:C6	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2040:G:H2'	51:1:2041:U:O4'	2.12	0.49
53:3:184:G:H4'	53:3:224:U:O3'	2.12	0.49
53:3:1327:C:O2'	53:3:1328:C:H5'	2.12	0.49
53:3:1339:A:H2'	53:3:1340:A:O4'	2.12	0.49
58:B1:1920:VAL:O	58:B1:1935:ALA:HA	2.11	0.49
59:B2:533:LEU:HD13	59:B2:540:ARG:HH21	1.77	0.49
59:B2:1070:HIS:NE2	59:B2:1114:GLU:OE1	2.36	0.49
66:0:105:VAL:HG23	66:0:106:LEU:HD12	1.93	0.49
66:0:169:LEU:HD11	66:0:186:VAL:HG13	1.94	0.49
66:0:390:ASP:OD1	66:0:390:ASP:N	2.44	0.49
7:G:71:THR:OG1	7:G:72:LYS:N	2.45	0.49
19:S:9:GLU:HA	19:S:12:ARG:HE	1.76	0.49
20:T:27:GLN:HE21	20:T:31:LEU:HG	1.77	0.49
30:e:65:LEU:HD22	52:2:42:C:C5	2.47	0.49
31:f:2:ARG:HD3	51:1:2751:G:OP2	2.12	0.49
33:i:9:LYS:HD3	51:1:1060:U:OP2	2.13	0.49
41:q:65:ASN:HD21	41:q:69:ARG:HH11	1.60	0.49
42:r:10:LYS:HE2	51:1:994:C:O2'	2.12	0.49
43:s:10:ALA:N	43:s:101:SER:O	2.43	0.49
48:x:2:ARG:CG	48:x:32:LEU:HD12	2.41	0.49
51:1:108:G:O2'	51:1:109:C:H5'	2.11	0.49
51:1:306:U:H3	51:1:310:A:H62	1.61	0.49
51:1:376:G:H2'	51:1:377:G:C8	2.47	0.49
51:1:1581:G:H2'	51:1:1582:C:O4'	2.12	0.49
51:1:2297:A:N1	51:1:2321:U:H5	2.09	0.49
51:1:2549:G:H2'	51:1:2550:G:C8	2.47	0.49
53:3:454:G:H2'	53:3:455:G:H8	1.77	0.49
53:3:579:A:H2'	53:3:580:C:C6	2.48	0.49
53:3:860:A:H2'	53:3:861:G:O4'	2.12	0.49
53:3:1267:C:H2'	53:3:1268:G:O4'	2.11	0.49
59:B2:857:VAL:HG13	59:B2:919:ARG:HH21	1.78	0.49
65:a:46:VAL:HG11	65:a:196:LEU:HD13	1.94	0.49
66:0:659:PRO:HB2	66:0:662:GLU:HB2	1.93	0.49
7:G:210:THR:O	7:G:214:GLY:N	2.40	0.49
37:m:12:MET:H	37:m:72:PRO:HG2	1.77	0.49
42:r:8:GLY:HA3	42:r:23:GLU:HG3	1.94	0.49
47:w:52:ASP:HB2	47:w:54:THR:HG23	1.94	0.49
51:1:227:A:O2'	51:1:228:C:H4'	2.12	0.49
51:1:475:C:H4'	51:1:510:C:H5'	1.93	0.49
51:1:1289:C:O2'	51:1:1330:C:H4'	2.12	0.49
51:1:1326:U:H2'	51:1:1327:A:H8	1.78	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:7:A:O2'	53:3:8:A:H5'	2.12	0.49
53:3:636:U:H2'	53:3:637:C:C6	2.47	0.49
53:3:803:G:H2'	53:3:804:U:C6	2.47	0.49
53:3:1049:U:H4'	53:3:1050:G:H5"	1.94	0.49
53:3:1231:G:H2'	53:3:1232:U:C6	2.47	0.49
58:B1:1894:LYS:NZ	58:B1:1898:LYS:CD	2.74	0.49
58:B1:1911:LEU:HD23	58:B1:1915:ILE:HG13	1.92	0.49
58:B1:2471:LYS:HD2	58:B1:2503:ALA:HA	1.93	0.49
59:B2:554:HIS:HD2	59:B2:558:VAL:HB	1.77	0.49
9:I:7:LYS:HB3	9:I:20:LEU:HG	1.94	0.49
14:N:72:SER:O	14:N:76:GLY:N	2.45	0.49
15:O:54:SER:O	19:S:80:ARG:NH2	2.44	0.49
18:R:24:VAL:HA	53:3:1329:A:H5"	1.94	0.49
37:m:18:ARG:O	37:m:97:GLN:NE2	2.46	0.49
41:q:10:ARG:HH11	51:1:1216:G:H5"	1.78	0.49
44:t:58:VAL:HG22	44:t:85:VAL:HG22	1.94	0.49
47:w:10:ARG:HD2	51:1:2258:C:OP1	2.12	0.49
51:1:1620:G:O2'	51:1:1621:U:H5'	2.13	0.49
52:2:87:U:H5"	52:2:88:C:H5	1.74	0.49
53:3:25:C:H2'	53:3:26:A:H8	1.77	0.49
53:3:505:G:H2'	53:3:506:G:C8	2.47	0.49
53:3:1382:C:H3'	53:3:1382:C:O2	2.13	0.49
57:A1:18:GLN:HA	57:A1:24:ALA:HA	1.94	0.49
58:B1:1610:THR:HG23	58:B1:1799:GLN:NE2	2.24	0.49
66:0:631:VAL:O	66:0:635:LEU:N	2.42	0.49
12:L:34:LYS:HE2	53:3:1290:G:H4'	1.94	0.49
14:N:3:ASN:N	14:N:88:GLU:OE1	2.45	0.49
23:W:49:LYS:NZ	53:3:836:G:OP1	2.45	0.49
31:f:8:VAL:O	31:f:49:LEU:N	2.44	0.49
41:q:24:TYR:N	51:1:533:G:OP1	2.38	0.49
44:t:55:VAL:O	44:t:88:LYS:NZ	2.37	0.49
51:1:458:G:N2	51:1:469:G:H2'	2.27	0.49
51:1:864:G:O5'	51:1:864:G:H8	1.95	0.49
51:1:1952:A:H2'	51:1:1953:A:O4'	2.13	0.49
51:1:2262:U:H2'	51:1:2263:C:H6	1.71	0.49
52:2:49:C:H2'	52:2:50:A:C8	2.48	0.49
53:3:162:A:C2	53:3:348:G:H4'	2.47	0.49
53:3:269:C:H2'	53:3:270:A:H8	1.77	0.49
53:3:967:C:H2'	53:3:968:A:N7	2.26	0.49
54:4:1:A:H2'	54:4:2:U:H6	1.78	0.49
58:B1:1644:VAL:HG12	58:B1:1683:ALA:HB1	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:B1:2860:THR:OG1	59:B2:1282:GLY:O	2.28	0.49
64:6:61:C:HO2'	65:a:53:ARG:HD2	1.76	0.49
66:0:128:ARG:HA	66:0:131:ASN:HD22	1.77	0.49
4:D:3:ARG:O	4:D:6:GLN:NE2	2.40	0.49
9:I:32:LYS:HB3	53:3:429:U:OP2	2.12	0.49
10:J:79:THR:OG1	10:J:80:LEU:N	2.44	0.49
11:K:73:GLU:O	11:K:76:THR:OG1	2.31	0.49
19:S:1:ALA:N	19:S:66:THR:O	2.45	0.49
33:i:10:LEU:HD11	51:1:1070:A:C2	2.41	0.49
36:l:46:VAL:HG21	51:1:832:U:H4'	1.94	0.49
48:x:7:THR:HG23	48:x:9:LYS:HG3	1.95	0.49
51:1:90:U:H1'	51:1:456:C:H42	1.77	0.49
51:1:739:A:H8	51:1:739:A:O5'	1.95	0.49
51:1:1366:A:H2'	51:1:1367:A:O4'	2.12	0.49
53:3:666:G:H5'	53:3:725:G:N2	2.27	0.49
63:5:51:U:H2'	63:5:52:G:C8	2.48	0.49
66:0:92:HIS:CD2	66:0:464:LEU:HD21	2.47	0.49
66:0:530:ASN:ND2	66:0:532:LYS:O	2.45	0.49
6:F:1:MET:CG	51:1:2742:G:H5'	2.43	0.49
14:N:108:ARG:HB3	53:3:1347:G:C8	2.47	0.49
25:Y:54:GLN:HE22	53:3:193:C:H1'	1.76	0.49
32:g:80:ILE:HG13	32:g:102:ALA:HB1	1.94	0.49
35:k:65:THR:HG23	35:k:68:GLY:H	1.78	0.49
35:k:89:ASN:N	35:k:89:ASN:OD1	2.45	0.49
51:1:341:C:H2'	51:1:342:A:C8	2.46	0.49
51:1:1130:U:H5	51:1:2026:U:P	2.35	0.49
51:1:1528:A:H2'	51:1:1529:G:C5'	2.40	0.49
51:1:1963:U:H2'	51:1:1964:G:H5"	1.93	0.49
51:1:2194:U:H2'	51:1:2195:U:H6	1.77	0.49
51:1:2235:G:H2'	51:1:2236:U:O4'	2.12	0.49
51:1:2339:C:H2'	51:1:2340:A:C8	2.45	0.49
53:3:153:C:C2'	53:3:154:U:H5"	2.43	0.49
53:3:174:A:H2'	53:3:175:C:H5'	1.95	0.49
57:A1:100:LEU:HB2	57:A1:144:ILE:HG23	1.95	0.49
59:B2:732:ILE:HD11	59:B2:769:PRO:HB3	1.95	0.49
59:B2:836:LEU:HD13	59:B2:1054:LEU:HD13	1.95	0.49
9:I:59:LYS:O	9:I:63:ILE:N	2.44	0.49
14:N:87:MET:HA	14:N:90:ASP:HB3	1.94	0.49
51:1:210:C:H2'	51:1:211:C:C6	2.48	0.49
51:1:664:G:O2'	51:1:940:G:H5"	2.12	0.49
51:1:2638:G:H1'	51:1:2778:A:H61	1.78	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2807:U:H3	51:1:2891:U:H3	1.61	0.49
53:3:17:U:H2'	53:3:18:C:C6	2.48	0.49
53:3:23:C:H2'	53:3:24:U:C6	2.48	0.49
53:3:513:C:H2'	53:3:514:C:O4'	2.13	0.49
53:3:955:U:H2'	53:3:956:U:C6	2.48	0.49
58:B1:1700:LEU:HD11	58:B1:1719:ARG:HG2	1.95	0.49
58:B1:2678:PRO:HD2	58:B1:2683:ASP:HA	1.93	0.49
3:C:16:THR:OG1	3:C:17:GLY:N	2.44	0.49
9:I:12:ARG:HG3	9:I:37:PRO:HG3	1.94	0.49
14:N:8:THR:H	14:N:84:ARG:HB2	1.78	0.49
27:b:155:ARG:CZ	51:1:1818:U:H5	2.26	0.49
36:l:65:GLY:HA2	51:1:631:A:O2'	2.12	0.49
38:n:68:ALA:HA	51:1:2707:U:O2'	2.13	0.49
47:w:65:PHE:CD2	51:1:857:G:H5'	2.48	0.49
51:1:1219:U:H2'	51:1:1220:G:H8	1.78	0.49
51:1:1378:A:H1'	51:1:1379:U:C5	2.48	0.49
51:1:1893:C:H2'	51:1:1894:C:O4'	2.13	0.49
51:1:1999:C:O2'	51:1:2000:C:H5'	2.12	0.49
51:1:2716:C:O2'	51:1:2717:C:H5'	2.13	0.49
53:3:423:G:C2	53:3:424:G:H1'	2.48	0.49
53:3:1253:G:H2'	53:3:1254:A:H8	1.78	0.49
1:A:36:VAL:HG13	1:A:40:CYS:HB3	1.94	0.49
3:C:35:LEU:CD2	51:1:2286:G:H22	2.26	0.49
24:X:32:THR:O	24:X:56:HIS:NE2	2.45	0.49
43:s:72:THR:OG1	43:s:73:LYS:N	2.45	0.49
44:t:34:VAL:HG11	44:t:43:ILE:HD13	1.93	0.49
51:1:1036:G:H1	51:1:1119:U:H3	1.60	0.49
51:1:1595:C:H2'	51:1:1596:A:C8	2.48	0.49
51:1:1807:G:H2'	51:1:1808:A:H5'	1.95	0.49
53:3:770:C:O2'	53:3:771:G:H5'	2.12	0.49
53:3:1354:U:H2'	53:3:1355:G:H8	1.78	0.49
64:6:26:G:H3'	64:6:27:U:C5'	2.42	0.49
19:S:19:TYR:HB3	19:S:23:ARG:HH21	1.77	0.48
20:T:88:ARG:HH22	51:1:715:A:H5"	1.76	0.48
27:b:48:ILE:HG22	51:1:779:U:OP2	2.13	0.48
29:d:2:GLU:HA	29:d:13:THR:HA	1.95	0.48
37:m:61:GLY:HA3	37:m:105:MET:HE1	1.95	0.48
51:1:157:C:H2'	51:1:158:U:O4'	2.13	0.48
51:1:1005:C:H2'	51:1:1006:C:H6	1.78	0.48
51:1:1657:U:H2'	51:1:1658:C:C6	2.48	0.48
51:1:2247:A:H2'	51:1:2248:C:O4'	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2786:U:H2'	51:1:2787:C:C6	2.48	0.48
59:B2:529:ARG:HH11	59:B2:572:ILE:HG22	1.77	0.48
31:f:91:VAL:CG2	51:1:2657:A:H4'	2.43	0.48
33:i:75:ALA:HA	33:i:78:LEU:HB2	1.96	0.48
34:j:47:HIS:CG	51:1:536:G:H21	2.31	0.48
42:r:4:VAL:HG22	42:r:13:ARG:HA	1.95	0.48
45:u:5:ARG:HH11	51:1:84:A:H5"	1.77	0.48
50:z:30:ARG:HG2	50:z:33:HIS:HB2	1.94	0.48
51:1:445:C:H2'	51:1:446:G:H5'	1.94	0.48
51:1:445:C:O2	51:1:450:G:H1'	2.13	0.48
51:1:1658:C:O5'	51:1:1658:C:H6	1.95	0.48
51:1:1755:A:C2'	51:1:1756:G:H5'	2.40	0.48
51:1:2314:A:H2'	51:1:2315:G:C8	2.48	0.48
51:1:2364:C:H2'	51:1:2365:G:O4'	2.13	0.48
51:1:2803:G:H2'	51:1:2804:U:C6	2.48	0.48
52:2:3:C:C3'	52:2:4:C:H5"	2.42	0.48
9:I:12:ARG:NH1	9:I:36:ALA:O	2.46	0.48
13:M:89:ASP:OD1	13:M:89:ASP:N	2.37	0.48
17:Q:76:HIS:O	66:0:425:LYS:NZ	2.45	0.48
27:b:59:GLN:NE2	51:1:1567:G:OP1	2.46	0.48
29:d:93:SER:O	29:d:93:SER:OG	2.32	0.48
30:e:132:ARG:NH1	30:e:148:VAL:O	2.46	0.48
37:m:28:PHE:N	37:m:104:GLU:OE1	2.44	0.48
41:q:84:LYS:HB3	41:q:115:ALA:HB1	1.94	0.48
51:1:937:C:H2'	51:1:938:G:H8	1.78	0.48
51:1:1178:C:H2'	51:1:1179:G:C8	2.48	0.48
51:1:2810:A:H62	51:1:2890:G:N2	2.11	0.48
58:B1:2269:LEU:CD1	59:B2:618:GLN:HG3	2.36	0.48
7:G:100:LEU:HD11	7:G:160:LEU:HD13	1.95	0.48
11:K:91:ARG:O	11:K:93:LYS:NZ	2.39	0.48
12:L:78:ARG:NH1	12:L:82:SER:O	2.46	0.48
17:Q:36:VAL:HG13	17:Q:73:LEU:HD11	1.96	0.48
30:e:21:TYR:OH	30:e:164:GLU:OE1	2.31	0.48
43:s:47:VAL:O	43:s:51:LEU:N	2.39	0.48
51:1:153:U:O2'	51:1:154:U:H5'	2.13	0.48
51:1:175:G:H2'	51:1:176:A:C8	2.49	0.48
51:1:2556:C:H2'	51:1:2557:G:H5'	1.96	0.48
51:1:2600:A:H2'	51:1:2601:C:C6	2.48	0.48
53:3:83:C:O2'	53:3:84:U:H3'	2.13	0.48
53:3:865:A:H8	53:3:865:A:O5'	1.96	0.48
53:3:1349:A:H2'	53:3:1350:A:O4'	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:B1:2308:VAL:HG21	58:B1:2408:ILE:HG12	1.95	0.48
58:B1:2526:VAL:HB	58:B1:2620:LEU:HB2	1.95	0.48
65:a:43:ASP:OD1	65:a:174:THR:OG1	2.32	0.48
66:0:501:VAL:HG11	66:0:604:GLY:CA	2.43	0.48
24:X:76:THR:HG21	53:3:1221:G:O2'	2.13	0.48
29:d:23:PHE:H	29:d:114:ARG:HH22	1.60	0.48
51:1:319:G:H2'	51:1:320:A:O4'	2.13	0.48
51:1:387:U:H4'	51:1:388:G:O4'	2.14	0.48
51:1:459:U:H2'	51:1:460:A:O4'	2.13	0.48
51:1:532:A:N1	51:1:2020:A:H1'	2.28	0.48
51:1:821:A:H5"	51:1:822:G:C8	2.49	0.48
51:1:999:U:H5"	51:1:1154:G:O6	2.13	0.48
51:1:1680:U:H2'	51:1:1681:G:C5'	2.40	0.48
51:1:1914:C:N4	53:3:1409:C:O3'	2.46	0.48
51:1:2834:G:H2'	51:1:2879:A:N6	2.29	0.48
53:3:714:G:H2'	53:3:715:A:C8	2.48	0.48
58:B1:1754:LEU:HD23	58:B1:1760:ALA:HB2	1.95	0.48
59:B2:1314:GLN:HB2	60:W0:28:ARG:HH12	1.79	0.48
64:6:36:U:H2'	64:6:37:A:C8	2.48	0.48
15:O:15:HIS:HA	15:O:18:ILE:HG22	1.96	0.48
23:W:32:ILE:HD12	23:W:36:GLY:HA2	1.95	0.48
51:1:1182:G:H2'	51:1:1183:U:C6	2.48	0.48
51:1:1225:G:O2'	51:1:1226:A:H5'	2.14	0.48
51:1:1810:A:H2'	51:1:1811:G:H5'	1.95	0.48
53:3:483:C:H3'	53:3:484:G:H5'	1.94	0.48
53:3:483:C:C3'	53:3:484:G:H5'	2.44	0.48
53:3:701:U:O4'	53:3:703:G:H1'	2.14	0.48
58:B1:2760:LEU:HD12	58:B1:2803:ARG:HH21	1.78	0.48
59:B2:18:ARG:HE	59:B2:620:ASN:HA	1.77	0.48
59:B2:565:GLU:HA	59:B2:569:ILE:HG12	1.95	0.48
66:0:157:GLN:HE22	66:0:161:ARG:HE	1.61	0.48
1:A:26:SER:OG	1:A:27:THR:N	2.47	0.48
37:m:53:MET:HE3	37:m:119:LEU:HB3	1.94	0.48
51:1:93:G:O2'	51:1:94:A:H5'	2.12	0.48
51:1:189:G:N2	51:1:206:U:C5	2.82	0.48
51:1:404:A:H2	51:1:421:C:N3	2.11	0.48
51:1:511:U:H2'	51:1:512:G:H5'	1.95	0.48
51:1:1258:U:H2'	51:1:1259:G:C8	2.48	0.48
51:1:2531:A:H2'	51:1:2532:G:H5'	1.95	0.48
53:3:1414:U:H2'	53:3:1415:G:H8	1.79	0.48
58:B1:2132:ALA:HB2	59:B2:808:ASN:N	2.19	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:B2:786:GLY:N	59:B2:789:THR:OG1	2.41	0.48
66:0:99:VAL:HG11	66:0:126:VAL:HG12	1.95	0.48
9:I:37:PRO:HD2	9:I:41:GLY:HA3	1.96	0.48
21:U:8:ARG:NH1	53:3:391:G:H5"	2.29	0.48
22:V:11:VAL:HA	22:V:22:VAL:HA	1.95	0.48
22:V:56:ASP:HB3	22:V:80:LYS:HA	1.94	0.48
28:c:8:LYS:HB2	28:c:201:LEU:HD11	1.96	0.48
29:d:67:ARG:NH2	51:1:1257:C:H5"	2.29	0.48
35:k:48:PRO:HB3	53:3:1422:G:OP1	2.13	0.48
35:k:65:THR:OG1	35:k:66:LYS:N	2.44	0.48
51:1:166:U:H2'	51:1:167:A:H8	1.78	0.48
51:1:1343:G:N3	51:1:1343:G:H2'	2.28	0.48
53:3:129:A:O2'	53:3:130:A:H5"	2.13	0.48
53:3:193:C:H2'	53:3:194:C:C5	2.48	0.48
53:3:792:A:H4'	53:3:793:U:H5"	1.95	0.48
53:3:1424:U:H3	53:3:1476:A:N6	2.05	0.48
55:8:14:DC:H2'	55:8:15:DC:H6	1.79	0.48
58:B1:1598:ARG:NH1	58:B1:1598:ARG:CG	2.76	0.48
58:B1:1607:ALA:HB1	58:B1:1778:LEU:HD22	1.96	0.48
66:0:530:ASN:HD22	66:0:532:LYS:HB2	1.79	0.48
4:D:24:THR:HG23	4:D:27:GLY:H	1.78	0.48
16:P:83:VAL:HG11	16:P:96:ILE:HG12	1.95	0.48
20:T:19:ASN:HB2	53:3:750:C:C4'	2.43	0.48
25:Y:34:VAL:HG22	25:Y:49:ALA:HB1	1.95	0.48
34:j:7:LYS:HE2	51:1:539:G:H5'	1.95	0.48
36:l:41:ARG:HG2	51:1:806:C:H41	1.78	0.48
37:m:22:GLN:HE21	51:1:864:G:P	2.36	0.48
37:m:111:GLU:HA	37:m:114:ARG:HB3	1.96	0.48
44:t:36:LYS:NZ	44:t:79:ASP:OD1	2.38	0.48
48:x:4:CYS:SG	48:x:5:GLN:N	2.86	0.48
51:1:80:G:H2'	51:1:81:G:C8	2.49	0.48
51:1:441:U:H2'	51:1:442:G:C8	2.49	0.48
51:1:443:A:H2	51:1:1246:A:H1'	1.78	0.48
51:1:2276:G:C2'	51:1:2277:G:H5'	2.44	0.48
51:1:2884:U:O2	51:1:2884:U:H3'	2.14	0.48
53:3:27:G:H2'	53:3:28:A:C8	2.49	0.48
53:3:316:C:H2'	53:3:317:U:H6	1.79	0.48
58:B1:1719:ARG:HG2	58:B1:1719:ARG:NH1	2.25	0.48
58:B1:2467:ASN:HA	58:B1:2616:SER:HB2	1.96	0.48
59:B2:207:THR:OG1	59:B2:354:ASP:OD2	2.32	0.48
62:NG:161:SER:CA	62:NG:170:PRO:HA	2.43	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:87:VAL:HA	10:J:92:ARG:HA	1.96	0.48
27:b:15:VAL:HB	27:b:205:GLY:HA3	1.95	0.48
28:c:134:HIS:CD2	51:1:1675:C:H42	2.32	0.48
37:m:65:ILE:HG22	37:m:67:VAL:H	1.79	0.48
38:n:34:ILE:HA	51:1:1279:G:OP1	2.13	0.48
46:v:13:GLY:N	52:2:76:G:OP1	2.39	0.48
51:1:858:G:H5'	51:1:859:G:OP2	2.14	0.48
51:1:881:G:H1	51:1:895:U:H3	1.61	0.48
51:1:1414:C:H42	51:1:1588:G:H1	1.62	0.48
51:1:1710:G:H2'	51:1:1711:A:C8	2.49	0.48
51:1:1810:A:C2'	51:1:1811:G:H5'	2.44	0.48
51:1:1993:U:H2'	51:1:1994:C:O4'	2.14	0.48
51:1:2143:C:H3'	51:1:2144:G:C8	2.49	0.48
51:1:2298:A:H2'	51:1:2299:U:O4'	2.13	0.48
51:1:2367:G:O2'	51:1:2368:C:H5'	2.14	0.48
53:3:554:A:C2'	53:3:555:U:H5'	2.43	0.48
53:3:1251:A:H2'	53:3:1252:A:H8	1.79	0.48
53:3:1308:U:H2'	53:3:1309:G:C8	2.49	0.48
55:8:14:DC:H2'	55:8:15:DC:C6	2.48	0.48
3:C:5:ARG:NH2	3:C:23:THR:O	2.47	0.47
27:b:146:LYS:HB2	27:b:149:LYS:HB2	1.94	0.47
37:m:22:GLN:NE2	51:1:864:G:OP1	2.47	0.47
49:y:43:LEU:HD21	49:y:47:ARG:HH11	1.79	0.47
51:1:1018:U:H2'	51:1:1019:U:O4'	2.13	0.47
51:1:1103:A:H2'	51:1:1103:A:N3	2.29	0.47
51:1:1265:A:N6	51:1:2013:A:H5"	2.27	0.47
51:1:1333:G:H2'	51:1:1334:G:C8	2.49	0.47
51:1:2654:A:H8	51:1:2654:A:OP1	1.97	0.47
52:2:45:A:H2'	52:2:46:A:O4'	2.13	0.47
53:3:153:C:H2'	53:3:154:U:H5"	1.95	0.47
53:3:563:A:H5'	53:3:566:G:C2	2.48	0.47
53:3:1465:A:H2'	53:3:1466:C:C6	2.48	0.47
58:B1:1601:MET:HG2	58:B1:1745:PRO:HD3	1.94	0.47
58:B1:1614:TRP:O	58:B1:2832:THR:HG21	2.13	0.47
58:B1:2049:VAL:O	58:B1:2068:LEU:HA	2.13	0.47
66:0:330:VAL:HG11	66:0:386:ILE:HD11	1.96	0.47
66:0:474:LYS:HD3	66:0:474:LYS:HA	1.72	0.47
7:G:18:GLN:NE2	7:G:189:ASN:HB3	2.30	0.47
10:J:24:VAL:HG13	10:J:26:GLY:H	1.79	0.47
50:z:18:LYS:O	50:z:22:THR:OG1	2.31	0.47
51:1:118:A:H5'	51:1:119:A:H8	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1463:C:H2'	51:1:1464:G:C8	2.48	0.47
51:1:2257:U:O2'	51:1:2258:C:H5'	2.14	0.47
53:3:92:U:H2'	53:3:93:U:H5'	1.96	0.47
53:3:230:G:O2'	53:3:231:U:H5'	2.14	0.47
53:3:530:G:C8	63:5:34:G:C6	3.02	0.47
53:3:840:C:C2'	53:3:841:C:H5"	2.41	0.47
58:B1:2645:GLU:OE2	58:B1:2809:THR:HG22	2.14	0.47
59:B2:1286:THR:O	59:B2:1290:MET:HB2	2.14	0.47
66:0:22:GLY:N	69:0:801:GDP:O1B	2.47	0.47
5:E:32:LEU:HD12	5:E:32:LEU:HA	1.73	0.47
7:G:33:ALA:N	7:G:37:VAL:O	2.46	0.47
10:J:83:PRO:HD3	10:J:97:PRO:HG3	1.96	0.47
19:S:12:ARG:HH22	19:S:60:ARG:H	1.61	0.47
19:S:96:LYS:HZ3	19:S:97:LYS:H	1.62	0.47
20:T:74:VAL:HA	20:T:77:TYR:HB3	1.96	0.47
33:i:65:SER:OG	33:i:66:PHE:N	2.46	0.47
51:1:145:C:H2'	51:1:146:A:C8	2.49	0.47
51:1:367:G:H2'	51:1:368:A:O4'	2.14	0.47
51:1:1095:A:C8	66:0:632:ILE:HD11	2.50	0.47
51:1:2828:G:O2'	51:1:2829:A:H5'	2.13	0.47
53:3:631:C:H5"	53:3:632:U:O4'	2.15	0.47
53:3:1274:A:H2'	53:3:1275:A:H5"	1.96	0.47
57:A2:102:LEU:HD12	57:A2:115:ILE:HG12	1.96	0.47
57:A2:294:ASN:HA	61:NA:464:ILE:N	2.28	0.47
59:B2:1311:GLY:O	60:W0:31:GLN:NE2	2.47	0.47
66:0:319:ALA:HB3	66:0:397:LEU:HB2	1.96	0.47
66:0:422:PRO:HG3	66:0:428:GLN:HB2	1.97	0.47
1:A:8:LYS:NZ	1:A:10:GLU:OE1	2.45	0.47
11:K:86:ARG:NH2	53:3:673:A:O3'	2.48	0.47
27:b:240:GLY:HA2	51:1:2597:G:H5"	1.97	0.47
29:d:178:VAL:HA	29:d:181:ILE:HG22	1.95	0.47
51:1:2475:C:H2'	51:1:2476:A:H5'	1.97	0.47
51:1:2521:C:H42	51:1:2544:G:H1	1.61	0.47
51:1:2588:G:C6	51:1:2607:G:C2	3.03	0.47
51:1:2721:A:H2'	51:1:2722:G:O4'	2.14	0.47
53:3:253:A:H4'	53:3:276:G:O2'	2.15	0.47
53:3:751:U:C2'	53:3:752:G:H5'	2.44	0.47
58:B1:1602:GLY:H	58:B1:1743:VAL:HG22	1.79	0.47
58:B1:1894:LYS:NZ	58:B1:1898:LYS:CE	2.78	0.47
2:B:2:VAL:O	51:1:2615:U:C4	2.67	0.47
7:G:53:LEU:HA	7:G:56:LEU:HB2	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:30:ASP:OD1	8:H:30:ASP:N	2.46	0.47
13:M:4:ASP:OD2	13:M:76:ARG:NH2	2.47	0.47
24:X:39:ILE:HD11	24:X:70:LEU:HD23	1.96	0.47
34:j:116:ARG:HH22	51:1:528:A:H8	1.60	0.47
45:u:8:ASP:O	45:u:23:LYS:NZ	2.45	0.47
51:1:593:U:H2'	51:1:594:U:C6	2.49	0.47
51:1:739:A:H1'	51:1:740:C:H5	1.79	0.47
51:1:1414:C:H2'	51:1:1415:U:H5'	1.95	0.47
51:1:1900:A:H5'	51:1:1970:A:H5'	1.96	0.47
51:1:1924:C:H3'	51:1:1925:C:C5	2.49	0.47
51:1:2515:C:O2'	51:1:2516:A:H5'	2.15	0.47
51:1:2813:A:H2'	51:1:2814:A:H8	1.78	0.47
53:3:1015:G:H2'	53:3:1016:A:O4'	2.14	0.47
53:3:1268:G:H21	53:3:1327:C:H1'	1.79	0.47
53:3:1465:A:H2'	53:3:1466:C:H6	1.80	0.47
53:3:1478:U:H2'	53:3:1479:C:C6	2.49	0.47
53:3:1493:A:N7	67:h:6:5OH:NQ	2.61	0.47
66:0:498:VAL:HG22	66:0:499:THR:H	1.79	0.47
2:B:37:HIS:HB3	2:B:43:THR:HG22	1.97	0.47
10:J:23:THR:HG21	53:3:15:G:N3	2.29	0.47
18:R:27:THR:HG22	53:3:1328:C:H5"	1.97	0.47
19:S:41:TRP:HZ2	24:X:10:ILE:HG22	1.79	0.47
30:e:31:GLU:HG2	30:e:32:LYS:H	1.80	0.47
47:w:45:ALA:N	47:w:77:SER:OG	2.42	0.47
47:w:56:PHE:HE2	51:1:2365:G:H5'	1.80	0.47
51:1:215:G:O3'	51:1:216:A:H4'	2.15	0.47
51:1:524:G:O2'	51:1:525:U:H5'	2.14	0.47
51:1:744:U:H5"	51:1:1658:C:H5"	1.96	0.47
51:1:833:A:H2'	51:1:834:G:H8	1.78	0.47
51:1:1580:A:H2'	51:1:1581:G:O4'	2.14	0.47
53:3:1435:G:H1	53:3:1466:C:H42	1.62	0.47
53:3:1441:A:N3	53:3:1441:A:H2'	2.30	0.47
66:0:463:GLU:O	66:0:467:ASP:N	2.42	0.47
3:C:8:ILE:HD11	3:C:50:GLU:HB2	1.96	0.47
8:H:8:GLY:O	19:S:96:LYS:NZ	2.42	0.47
8:H:32:LEU:HD21	19:S:78:LEU:HD11	1.97	0.47
13:M:63:LYS:HG2	13:M:70:VAL:HG21	1.95	0.47
14:N:113:LYS:NZ	53:3:1368:A:OP2	2.39	0.47
18:R:23:GLY:HA2	18:R:68:LEU:HD13	1.97	0.47
19:S:55:SER:OG	19:S:57:SER:OG	2.30	0.47
27:b:158:GLY:HA3	51:1:1820:U:C5	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:d:112:LEU:O	29:d:117:ARG:N	2.43	0.47
30:e:22:ASN:ND2	30:e:26:GLN:OE1	2.48	0.47
31:f:107:GLY:O	51:1:2666:C:N4	2.47	0.47
32:g:93:SER:HB3	32:g:121:VAL:HG12	1.97	0.47
34:j:47:HIS:CD2	51:1:536:G:H21	2.32	0.47
36:l:37:GLY:O	36:l:41:ARG:NH2	2.44	0.47
36:l:43:GLY:N	51:1:671:C:OP1	2.47	0.47
36:l:109:LYS:HB3	51:1:636:G:O6	2.15	0.47
37:m:43:ALA:HB2	37:m:69:PRO:HG3	1.96	0.47
44:t:67:VAL:HG12	44:t:76:ARG:HA	1.96	0.47
44:t:89:GLU:OE1	44:t:91:GLN:NE2	2.48	0.47
46:v:21:ARG:HH12	52:2:77:U:H5"	1.80	0.47
51:1:680:C:H42	51:1:797:G:H1	1.63	0.47
51:1:696:G:O2'	51:1:697:G:H5'	2.15	0.47
51:1:1153:C:H2'	51:1:1154:G:O4'	2.15	0.47
51:1:1856:U:H2'	51:1:1857:G:O4'	2.15	0.47
51:1:1943:U:OP1	51:1:1943:U:H6	1.98	0.47
51:1:2316:G:O2'	51:1:2317:A:H5'	2.14	0.47
52:2:30:C:H2'	52:2:31:C:H5'	1.95	0.47
53:3:343:U:O2'	53:3:344:A:H2'	2.14	0.47
53:3:344:A:OP1	66:0:38:HIS:NE2	2.48	0.47
53:3:1000:A:H2'	53:3:1001:C:O4'	2.15	0.47
53:3:1161:C:H2'	53:3:1162:C:C6	2.50	0.47
53:3:1161:C:H2'	53:3:1162:C:H6	1.78	0.47
53:3:1170:A:H2'	53:3:1171:A:H5'	1.97	0.47
53:3:1382:C:H2'	53:3:1383:C:C6	2.50	0.47
53:3:1486:G:H2'	53:3:1487:G:O4'	2.15	0.47
58:B1:1528:MET:HG2	59:B2:1336:ASN:ND2	2.29	0.47
58:B1:1627:LEU:HD21	58:B1:1687:LEU:HB3	1.97	0.47
58:B1:1851:ARG:HB2	59:B2:1268:GLN:NE2	2.30	0.47
58:B1:2025:VAL:HG12	58:B1:2048:LYS:HB2	1.96	0.47
58:B1:2390:ASP:OD2	58:B1:2789:ARG:NH2	2.47	0.47
58:B1:2666:LYS:NZ	58:B1:2669:LYS:HB2	2.30	0.47
59:B2:318:SER:OG	59:B2:320:ASP:OD1	2.31	0.47
59:B2:400:VAL:HG22	59:B2:584:TYR:HB3	1.96	0.47
62:NG:142:ALA:O	62:NG:143:ASP:CB	2.63	0.47
63:5:50:U:H2'	63:5:51:U:C6	2.49	0.47
64:6:62:C:H5'	65:a:53:ARG:CZ	2.45	0.47
3:C:6:GLU:HG2	3:C:26:LYS:HD3	1.97	0.47
7:G:66:ILE:HD11	7:G:161:PHE:HB2	1.96	0.47
12:L:91:ARG:HG2	12:L:91:ARG:HH11	1.78	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:O:21:ALA:HB2	15:O:93:ALA:HB2	1.97	0.47
51:1:139:U:H2'	51:1:140:C:C5	2.49	0.47
51:1:1085:A:H2'	51:1:1086:A:N7	2.30	0.47
51:1:1306:C:O2'	51:1:1307:A:H5'	2.13	0.47
51:1:2682:A:O2'	51:1:2683:C:H5'	2.15	0.47
53:3:1093:A:H2'	53:3:1094:G:H5'	1.95	0.47
58:B1:1874:GLU:HB3	59:B2:1245:ALA:HB3	1.97	0.47
58:B1:2341:ARG:HH22	58:B1:2749:ASP:HB2	1.80	0.47
58:B1:2649:PRO:HG3	58:B1:2713:PRO:HB2	1.96	0.47
66:0:17:ALA:H	66:0:23:LYS:HZ3	1.61	0.47
66:0:420:VAL:HB	66:0:458:ILE:HD11	1.97	0.47
5:E:57:VAL:O	5:E:61:LEU:N	2.41	0.47
8:H:147:GLY:HA2	8:H:170:GLY:HA3	1.97	0.47
36:l:42:SER:O	36:l:42:SER:OG	2.32	0.47
42:r:80:ARG:HD3	51:1:566:U:H5	1.80	0.47
51:1:341:C:H2'	51:1:342:A:H8	1.79	0.47
51:1:1209:U:H2'	51:1:1210:G:H21	1.80	0.47
51:1:1868:C:C2'	51:1:1869:G:H5'	2.42	0.47
53:3:211:G:H3'	53:3:211:G:N3	2.29	0.47
53:3:325:A:H2'	53:3:326:G:O4'	2.14	0.47
53:3:1059:C:H2'	53:3:1060:U:C6	2.49	0.47
58:B1:2332:GLU:N	58:B1:2741:ARG:HH12	2.12	0.47
66:0:24:THR:HG21	66:0:62:THR:HG21	1.97	0.47
66:0:494:ILE:HG21	66:0:605:PHE:CD1	2.50	0.47
7:G:17:HIS:CE1	7:G:187:ASP:HB2	2.50	0.47
15:O:64:GLN:HB3	19:S:98:ALA:HB3	1.96	0.47
31:f:85:LYS:HE2	31:f:129:GLU:HB3	1.97	0.47
33:i:79:LEU:HD22	33:i:131:THR:HG23	1.97	0.47
36:l:30:THR:O	36:l:33:ARG:N	2.47	0.47
51:1:514:A:N3	51:1:581:C:O2'	2.45	0.47
51:1:786:C:O2'	51:1:787:C:H5'	2.15	0.47
51:1:1444:G:H2'	51:1:1445:G:H8	1.76	0.47
51:1:1587:G:H2'	51:1:1588:G:C8	2.50	0.47
51:1:1595:C:H2'	51:1:1596:A:H8	1.80	0.47
51:1:1663:G:O2'	51:1:1664:A:H8	1.98	0.47
51:1:1826:G:H2'	51:1:1827:U:C6	2.50	0.47
51:1:2450:A:OP1	51:1:2497:A:O2'	2.31	0.47
53:3:835:U:C3'	53:3:836:G:H5"	2.45	0.47
53:3:859:G:O2'	53:3:860:A:H5'	2.15	0.47
58:B1:2720:LEU:HD22	58:B1:2805:LEU:HB2	1.96	0.47
63:5:29:G:H3'	63:5:30:G:C8	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:51:VAL:HA	8:H:69:THR:HA	1.97	0.46
9:I:140:ASP:O	9:I:181:PHE:N	2.46	0.46
13:M:102:VAL:HB	13:M:126:CYS:HB3	1.96	0.46
16:P:23:HIS:HB3	16:P:30:ILE:HG23	1.96	0.46
25:Y:16:ALA:O	25:Y:20:ASN:N	2.45	0.46
25:Y:22:SER:HB2	53:3:1458:G:H4'	1.98	0.46
25:Y:79:THR:HA	25:Y:82:ILE:HB	1.97	0.46
28:c:55:LYS:HG3	28:c:77:ARG:HB3	1.97	0.46
28:c:119:ALA:C	51:1:1655:A:H4'	2.40	0.46
33:i:7:TYR:CE1	51:1:1058:U:H5'	2.50	0.46
51:1:820:A:O2'	51:1:821:A:H5'	2.15	0.46
51:1:1388:G:H2'	51:1:1389:G:C8	2.51	0.46
51:1:1572:A:O2'	51:1:1573:G:H5'	2.15	0.46
51:1:1933:G:H2'	51:1:1934:C:H6	1.80	0.46
51:1:2080:A:C6	51:1:2081:U:C4	3.03	0.46
51:1:2248:C:C2'	51:1:2249:U:H5'	2.45	0.46
52:2:51:G:N3	52:2:52:A:H1'	2.30	0.46
57:A1:182:ARG:O	57:A1:205:MET:HA	2.14	0.46
66:0:369:ASN:OD1	66:0:369:ASN:N	2.48	0.46
5:E:7:ARG:NH2	51:1:245:G:N7	2.63	0.46
51:1:233:A:H5'	51:1:233:A:C8	2.51	0.46
51:1:940:G:H2'	51:1:941:A:H5"	1.97	0.46
51:1:1136:G:H2'	51:1:1137:G:H8	1.80	0.46
51:1:1639:C:H2'	51:1:1640:A:H5'	1.98	0.46
53:3:138:G:H2'	53:3:139:A:H8	1.79	0.46
54:4:1:A:H2'	54:4:2:U:C6	2.50	0.46
58:B1:2718:ASP:O	58:B1:2722:LEU:HB2	2.15	0.46
58:B1:2846:LEU:HG	58:B1:2856:ILE:HG23	1.96	0.46
59:B2:735:LYS:HA	59:B2:748:ILE:HG22	1.98	0.46
63:5:26:A:H61	63:5:44:G:H22	1.64	0.46
66:0:136:PRO:HB3	66:0:256:VAL:HG12	1.97	0.46
66:0:376:GLU:OE1	66:0:378:ARG:NE	2.48	0.46
8:H:2:GLN:NE2	53:3:1062:U:O4	2.48	0.46
8:H:39:ARG:HA	8:H:42:LEU:HB3	1.97	0.46
12:L:66:GLU:HA	12:L:69:ARG:HG3	1.96	0.46
17:Q:58:ASN:OD1	17:Q:58:ASN:N	2.46	0.46
29:d:173:THR:OG1	29:d:174:GLY:N	2.48	0.46
33:i:47:SER:O	33:i:47:SER:OG	2.31	0.46
35:k:31:ARG:HH12	51:1:2676:C:P	2.39	0.46
51:1:1321:A:C2	51:1:1322:A:H1'	2.50	0.46
51:1:1470:A:N6	51:1:1521:G:H1'	2.30	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2845:U:H2'	51:1:2846:G:C8	2.50	0.46
53:3:1448:C:O2	53:3:1448:C:H2'	2.15	0.46
58:B1:2271:TYR:HE2	59:B2:561:ILE:HG21	1.80	0.46
59:B2:689:ALA:HB2	59:B2:1233:LEU:HD23	1.97	0.46
7:G:132:GLU:OE2	7:G:136:ARG:NE	2.47	0.46
8:H:49:ALA:O	8:H:69:THR:OG1	2.34	0.46
31:f:88:LEU:O	31:f:128:THR:OG1	2.33	0.46
32:g:68:ARG:O	32:g:72:ILE:N	2.48	0.46
48:x:16:ASN:HB2	48:x:24:THR:HB	1.97	0.46
51:1:1196:C:O2'	51:1:1197:G:H5'	2.16	0.46
51:1:1842:G:O2'	51:1:1843:C:H5'	2.15	0.46
51:1:2135:A:H8	51:1:2156:G:H21	1.64	0.46
51:1:2153:C:H3'	51:1:2154:A:H8	1.79	0.46
51:1:2861:U:O2'	51:1:2862:G:H5'	2.15	0.46
53:3:545:C:O2'	53:3:546:A:H5'	2.14	0.46
53:3:1084:G:O2'	53:3:1103:C:H5	1.98	0.46
58:B1:1570:LEU:HD23	58:B1:1570:LEU:HA	1.75	0.46
58:B1:1604:ILE:HD12	58:B1:1741:LEU:CD2	2.44	0.46
58:B1:1608:SER:HB2	58:B1:1795:LYS:HG2	1.98	0.46
58:B1:1708:ASN:HA	58:B1:1713:ARG:NH2	2.30	0.46
58:B1:2559:VAL:HG13	58:B1:2605:ILE:HG12	1.96	0.46
59:B2:230:PHE:HB2	59:B2:333:ILE:HB	1.97	0.46
65:a:193:LEU:O	65:a:197:LYS:N	2.42	0.46
9:I:103:ARG:HD2	9:I:167:PRO:HG3	1.97	0.46
14:N:40:ARG:NE	53:3:1292:G:H5"	2.31	0.46
17:Q:83:GLY:H	53:3:552:U:H4'	1.80	0.46
27:b:86:ARG:HB3	27:b:88:ALA:H	1.80	0.46
33:i:9:LYS:HZ2	51:1:1059:G:P	2.38	0.46
43:s:82:MET:HE1	51:1:1322:A:H4'	1.98	0.46
46:v:7:GLU:HG3	46:v:41:GLU:HB3	1.97	0.46
51:1:365:U:H2'	51:1:366:C:O4'	2.16	0.46
51:1:441:U:H2'	51:1:442:G:H8	1.81	0.46
51:1:742:A:O2'	51:1:743:A:H5'	2.15	0.46
51:1:1569:A:H2'	51:1:1570:A:C8	2.51	0.46
51:1:1858:A:N6	51:1:1884:G:O2'	2.48	0.46
51:1:2134:A:C5	51:1:2157:G:H4'	2.51	0.46
51:1:2259:U:C6	51:1:2427:C:C5	3.04	0.46
51:1:2491:U:C2'	51:1:2492:U:H5'	2.41	0.46
51:1:2531:A:C2'	51:1:2532:G:H5'	2.45	0.46
52:2:116:G:O2'	52:2:117:G:H5'	2.15	0.46
57:A1:35:PHE:HA	57:A1:38:THR:HG22	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:B1:1697:CYS:HA	58:B1:1720:ILE:CD1	2.45	0.46
59:B2:363:LEU:HB3	59:B2:381:ALA:HB1	1.96	0.46
59:B2:517:GLN:HB3	59:B2:760:ASN:H	1.79	0.46
63:5:8:U:H2'	63:5:13:C:N4	2.30	0.46
2:B:14:MET:HG2	51:1:15:G:O2'	2.16	0.46
12:L:101:ARG:HH22	53:3:940:C:P	2.37	0.46
17:Q:11:ARG:NH1	53:3:563:A:H2	2.14	0.46
27:b:210:ALA:HA	27:b:213:ARG:HG3	1.96	0.46
31:f:136:ASP:HB3	31:f:139:VAL:HG12	1.97	0.46
36:l:18:ARG:NE	51:1:1249:U:C5	2.79	0.46
43:s:82:MET:HB2	43:s:98:LYS:HB2	1.97	0.46
51:1:141:G:C8	51:1:142:A:H1'	2.51	0.46
51:1:433:C:O2'	51:1:434:U:H5'	2.15	0.46
51:1:824:U:H2'	51:1:825:A:O4'	2.15	0.46
51:1:1485:U:H2'	51:1:1486:U:C6	2.50	0.46
51:1:1790:C:H2'	51:1:1791:A:C5	2.51	0.46
53:3:556:C:O2'	53:3:557:G:H5'	2.16	0.46
53:3:857:C:H2'	53:3:858:G:O4'	2.14	0.46
56:9:12:DC:H3'	58:B1:1546:ARG:HH12	1.80	0.46
58:B1:1701:ARG:NH1	58:B1:1701:ARG:CG	2.73	0.46
59:B2:103:VAL:HG12	59:B2:117:ILE:HG22	1.97	0.46
12:L:91:ARG:HG2	12:L:91:ARG:NH1	2.30	0.46
14:N:72:SER:HA	14:N:75:ALA:HB3	1.98	0.46
20:T:50:HIS:ND1	53:3:667:G:H4'	2.31	0.46
31:f:98:LYS:HD2	31:f:98:LYS:HA	1.78	0.46
51:1:175:G:H2'	51:1:176:A:H8	1.81	0.46
51:1:690:G:H2'	51:1:691:C:H5'	1.98	0.46
51:1:704:G:N3	51:1:726:G:C2	2.84	0.46
51:1:1313:U:O2	51:1:1313:U:C2'	2.64	0.46
51:1:1661:G:O2'	51:1:1662:U:H5'	2.16	0.46
51:1:2537:U:H2'	51:1:2538:C:H6	1.78	0.46
51:1:2741:A:H61	51:1:2763:G:H1'	1.80	0.46
53:3:250:A:O4'	53:3:252:U:H1'	2.15	0.46
53:3:556:C:H2'	53:3:557:G:O4'	2.15	0.46
53:3:980:C:H2'	53:3:981:U:O4'	2.15	0.46
53:3:1018:G:O2'	53:3:1019:A:H5'	2.16	0.46
57:A2:64:VAL:HG11	57:A2:78:ILE:HG21	1.97	0.46
58:B1:1689:LYS:HB2	58:B1:1689:LYS:HE3	1.41	0.46
59:B2:1314:GLN:HA	60:W0:28:ARG:HH22	1.80	0.46
66:0:498:VAL:CG1	66:0:522:MET:HE3	2.43	0.46
3:C:35:LEU:HD21	51:1:2286:G:H22	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:15:LYS:N	6:F:26:ILE:O	2.40	0.46
11:K:18:VAL:HG13	11:K:19:PRO:HD3	1.97	0.46
12:L:79:VAL:O	12:L:79:VAL:HG12	2.16	0.46
25:Y:60:GLN:HA	25:Y:63:LYS:HD2	1.98	0.46
27:b:250:GLN:HB3	27:b:254:LYS:HD2	1.97	0.46
29:d:49:ARG:NH1	51:1:674:G:OP2	2.48	0.46
34:j:7:LYS:HG2	34:j:10:THR:HG23	1.97	0.46
39:o:6:ALA:HA	39:o:9:ARG:HE	1.81	0.46
51:1:340:A:C2'	51:1:341:C:H5'	2.43	0.46
51:1:2695:U:H2'	51:1:2696:U:C6	2.51	0.46
53:3:528:C:H4'	53:3:535:A:C6	2.51	0.46
53:3:994:A:H3'	53:3:994:A:OP2	2.15	0.46
53:3:1436:U:H2'	53:3:1437:A:C8	2.45	0.46
59:B2:28:LEU:HD21	59:B2:524:ILE:HG13	1.98	0.46
63:5:70:G:H2'	63:5:71:G:C8	2.51	0.46
65:a:50:ILE:HG12	65:a:169:GLY:HA2	1.98	0.46
4:D:1:MET:HE3	4:D:3:ARG:HH21	1.80	0.46
14:N:56:MET:HB2	14:N:60:LEU:HB2	1.97	0.46
14:N:96:GLU:O	14:N:100:ALA:N	2.41	0.46
15:O:36:VAL:HG22	15:O:38:GLY:H	1.80	0.46
15:O:36:VAL:HA	15:O:76:ILE:HA	1.97	0.46
16:P:97:ARG:HA	16:P:100:ASN:HD22	1.81	0.46
27:b:71:ASP:HB3	27:b:118:GLY:HA2	1.98	0.46
27:b:107:LYS:N	27:b:193:GLU:O	2.49	0.46
29:d:22:ASP:OD1	29:d:22:ASP:N	2.48	0.46
32:g:30:LEU:HA	32:g:35:LYS:HE3	1.97	0.46
49:y:10:SER:HA	49:y:13:GLU:HB3	1.98	0.46
51:1:717:C:H2'	51:1:718:A:H5'	1.98	0.46
51:1:845:A:N3	51:1:845:A:H3'	2.31	0.46
51:1:912:C:O2'	51:1:913:U:H5'	2.15	0.46
51:1:2041:U:H2'	51:1:2042:A:H8	1.81	0.46
51:1:2646:C:H2'	51:1:2647:U:O4'	2.16	0.46
51:1:2751:G:O2'	51:1:2752:C:H5'	2.16	0.46
53:3:10:A:H2'	53:3:11:G:C8	2.51	0.46
53:3:520:A:H62	53:3:529:G:N2	2.11	0.46
53:3:1069:C:H4'	53:3:1192:C:O2	2.16	0.46
53:3:1260:G:H4'	53:3:1284:C:H5'	1.98	0.46
1:A:9:TYR:HE1	30:e:61:GLY:H	1.63	0.46
16:P:115:ILE:HD12	16:P:116:PRO:HD2	1.98	0.46
27:b:155:ARG:CZ	51:1:1818:U:C5	2.99	0.46
28:c:49:GLN:HE21	28:c:79:LEU:HB3	1.79	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:g:71:LYS:HD3	32:g:71:LYS:HA	1.66	0.46
45:u:88:ASP:OD1	45:u:88:ASP:N	2.48	0.46
51:1:1177:G:C2'	51:1:1178:C:H5"	2.46	0.46
51:1:1614:A:C2'	51:1:1615:C:H5'	2.46	0.46
51:1:1642:G:O2'	51:1:1643:G:H5'	2.15	0.46
51:1:1695:G:H2'	51:1:1696:G:O4'	2.15	0.46
51:1:2643:G:O2'	51:1:2644:G:H5'	2.16	0.46
52:2:118:C:C2'	52:2:119:A:H4'	2.33	0.46
53:3:131:A:H2'	53:3:132:C:C6	2.51	0.46
53:3:460:A:H2'	53:3:461:A:C8	2.51	0.46
53:3:684:U:H3	53:3:706:A:H61	1.63	0.46
55:8:20:DA:H4'	59:B2:143:ARG:NH1	2.31	0.46
58:B1:1874:GLU:O	59:B2:1247:SER:HB3	2.16	0.46
58:B1:1919:PRO:HA	58:B1:1936:PHE:O	2.15	0.46
58:B1:2346:ASP:OD1	58:B1:2346:ASP:N	2.49	0.46
59:B2:176:ILE:HD11	59:B2:428:VAL:HG21	1.98	0.46
8:H:10:ARG:HA	8:H:13:ILE:HD11	1.97	0.45
10:J:156:ARG:NH1	13:M:98:LEU:O	2.49	0.45
10:J:161:GLU:HA	10:J:164:LEU:HD12	1.98	0.45
14:N:30:ASN:N	14:N:64:ILE:O	2.48	0.45
15:O:47:GLU:OE2	15:O:69:THR:OG1	2.29	0.45
21:U:4:ILE:HD13	21:U:21:VAL:HA	1.99	0.45
27:b:6:LYS:HD2	27:b:7:PRO:HD2	1.98	0.45
31:f:94:ARG:HA	31:f:127:GLN:HB2	1.98	0.45
51:1:107:G:H2'	51:1:108:G:C8	2.51	0.45
51:1:233:A:H5'	51:1:233:A:H8	1.81	0.45
51:1:393:C:H2'	51:1:394:C:H6	1.81	0.45
52:2:30:C:H2'	52:2:31:C:C5'	2.47	0.45
53:3:271:C:H2'	53:3:272:C:C6	2.51	0.45
53:3:323:U:H3	53:3:327:A:H62	1.64	0.45
53:3:962:C:H1'	53:3:1201:A:C6	2.51	0.45
53:3:1121:U:H2'	53:3:1122:U:C6	2.51	0.45
58:B1:1894:LYS:HE3	58:B1:1894:LYS:HB3	1.45	0.45
58:B1:1983:MET:CE	59:B2:1278:LEU:HD21	2.46	0.45
58:B1:2014:ARG:NH2	58:B1:2217:SER:O	2.48	0.45
63:5:6:G:H2'	63:5:7:A:C8	2.51	0.45
66:0:15:ILE:O	66:0:89:THR:OG1	2.35	0.45
10:J:158:LYS:HD3	10:J:158:LYS:HA	1.73	0.45
16:P:105:ARG:HD2	16:P:105:ARG:HA	1.84	0.45
17:Q:34:THR:HG22	17:Q:76:HIS:CD2	2.51	0.45
22:V:21:VAL:HG22	22:V:44:HIS:HA	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:c:61:THR:HB	28:c:63:PRO:HD2	1.96	0.45
29:d:47:LYS:HG2	51:1:451:U:OP2	2.15	0.45
32:g:94:ILE:HD12	32:g:99:ILE:HG21	1.98	0.45
51:1:2099:U:H2'	51:1:2100:G:C8	2.51	0.45
53:3:37:U:H2'	53:3:38:G:H5'	1.98	0.45
53:3:1104:G:H2'	53:3:1105:A:O4'	2.16	0.45
53:3:1289:A:H2'	53:3:1290:G:H5'	1.98	0.45
58:B1:1700:LEU:CD1	58:B1:1723:LEU:HD12	2.46	0.45
58:B1:2856:ILE:HD13	59:B2:1279:GLU:HG2	1.97	0.45
63:5:31:A:H5'	63:5:33:U:O4	2.16	0.45
11:K:51:ILE:HD12	11:K:86:ARG:HH21	1.82	0.45
15:O:15:HIS:CG	53:3:1152:A:H5'	2.51	0.45
33:i:52:LEU:HD13	33:i:77:VAL:HG13	1.97	0.45
34:j:57:LEU:HD11	34:j:130:HIS:HD2	1.82	0.45
45:u:5:ARG:NH1	51:1:84:A:H5"	2.31	0.45
51:1:388:G:H2'	51:1:390:U:H5	1.80	0.45
51:1:817:C:O2'	51:1:839:U:H5"	2.16	0.45
51:1:1086:A:H1'	51:1:1103:A:H2	1.81	0.45
51:1:1841:U:H2'	51:1:1842:G:C8	2.51	0.45
51:1:2101:A:H2'	51:1:2102:G:C8	2.51	0.45
51:1:2190:G:H2'	51:1:2191:A:O4'	2.16	0.45
51:1:2785:C:H2'	51:1:2786:U:C6	2.51	0.45
53:3:280:C:H5"	53:3:281:G:OP2	2.16	0.45
53:3:973:G:H2'	53:3:974:A:C8	2.52	0.45
53:3:1361:G:H2'	53:3:1362:A:O4'	2.16	0.45
57:A1:185:TYR:HA	57:A1:202:VAL:O	2.16	0.45
58:B1:1614:TRP:HB3	58:B1:2832:THR:CG2	2.46	0.45
66:0:171:LEU:HD11	66:0:218:TRP:HD1	1.82	0.45
66:0:520:ILE:HD12	66:0:576:ILE:HD11	1.99	0.45
66:0:533:GLY:HA3	66:0:572:VAL:HG22	1.97	0.45
20:T:38:LEU:HD23	20:T:55:LEU:HD12	1.98	0.45
25:Y:76:ALA:O	25:Y:79:THR:OG1	2.27	0.45
31:f:88:LEU:HB3	31:f:128:THR:HA	1.97	0.45
42:r:49:ILE:HG22	42:r:54:VAL:HG22	1.98	0.45
51:1:191:A:H2'	51:1:192:C:H6	1.81	0.45
51:1:1069:A:H2'	51:1:1073:A:C5	2.51	0.45
51:1:1337:G:O2'	51:1:1338:G:H5'	2.17	0.45
51:1:2680:U:O2'	51:1:2681:C:H5'	2.17	0.45
53:3:113:G:O2'	53:3:353:A:H4'	2.16	0.45
53:3:607:A:H2'	53:3:608:A:O4'	2.17	0.45
53:3:951:G:H2'	53:3:952:U:H6	1.79	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1316:G:H2'	53:3:1317:C:H5"	1.99	0.45
55:8:13:DT:C6	58:B1:2290:ALA:HA	2.51	0.45
57:A1:59:VAL:HG22	57:A1:144:ILE:HA	1.97	0.45
60:W0:25:ARG:NH1	60:W0:61:ASN:OD1	2.49	0.45
62:NG:135:ARG:O	62:NG:178:VAL:HA	2.16	0.45
63:5:8:U:H2'	63:5:13:C:H41	1.81	0.45
7:G:115:ASP:OD1	7:G:115:ASP:N	2.42	0.45
12:L:140:VAL:O	12:L:144:ALA:N	2.46	0.45
28:c:194:PRO:HA	51:1:2680:U:C5'	2.46	0.45
31:f:84:LYS:HA	31:f:84:LYS:HD2	1.78	0.45
31:f:91:VAL:HG21	51:1:2657:A:H4'	1.98	0.45
38:n:99:LYS:HE3	38:n:99:LYS:HB3	1.72	0.45
43:s:25:ARG:NE	43:s:74:ILE:O	2.46	0.45
51:1:642:U:H2'	51:1:644:A:OP2	2.16	0.45
51:1:864:G:H2'	51:1:865:C:O4'	2.17	0.45
51:1:1573:G:H2'	51:1:1574:C:O4'	2.17	0.45
51:1:1792:G:H1	51:1:1827:U:H3	1.65	0.45
51:1:2123:G:N3	51:1:2176:A:N6	2.65	0.45
51:1:2869:G:H2'	51:1:2870:C:O4'	2.16	0.45
53:3:478:A:H2'	53:3:479:U:C4'	2.46	0.45
58:B1:1542:THR:HG22	58:B1:1556:PHE:HE1	1.80	0.45
58:B1:1566:ASP:OD1	58:B1:1566:ASP:O	2.35	0.45
58:B1:2657:GLU:HA	58:B1:2722:LEU:HD21	1.99	0.45
2:B:49:ARG:NH2	51:1:2884:U:H1'	2.32	0.45
18:R:107:THR:HG21	53:3:1307:U:H4'	1.99	0.45
24:X:46:LEU:HD12	24:X:48:ILE:HD11	1.99	0.45
29:d:43:THR:O	51:1:38:A:H1'	2.17	0.45
29:d:131:THR:HA	29:d:134:LEU:HB3	1.97	0.45
34:j:118:MET:HE3	34:j:118:MET:HB2	1.76	0.45
40:p:48:ALA:N	40:p:59:THR:OG1	2.50	0.45
51:1:91:A:H8	51:1:91:A:OP1	1.99	0.45
51:1:468:G:C2'	51:1:469:G:H5'	2.46	0.45
51:1:753:A:H2'	51:1:754:U:C6	2.52	0.45
51:1:866:A:H61	51:1:913:U:C1'	2.28	0.45
51:1:1094:U:H2'	51:1:1096:A:OP2	2.17	0.45
51:1:1954:G:H21	51:1:1956:U:H3	1.65	0.45
51:1:2226:C:H2'	51:1:2227:A:O4'	2.17	0.45
51:1:2457:U:O2'	51:1:2458:G:H5'	2.15	0.45
53:3:144:G:H2'	53:3:145:G:O4'	2.16	0.45
53:3:437:U:C2'	53:3:438:U:H5'	2.46	0.45
53:3:792:A:H4'	53:3:793:U:C5'	2.46	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1173:U:H2'	53:3:1174:G:C8	2.48	0.45
55:8:1:DC:H2"	55:8:2:DC:C6	2.51	0.45
57:A2:80:GLU:HG3	59:B2:694:ARG:HH22	1.81	0.45
58:B1:1712:LYS:HA	58:B1:1712:LYS:HE3	1.99	0.45
58:B1:1851:ARG:CD	59:B2:1268:GLN:NE2	2.67	0.45
58:B1:1894:LYS:NZ	58:B1:1898:LYS:HE2	2.32	0.45
58:B1:2535:ARG:HE	58:B1:2580:VAL:HG11	1.79	0.45
63:5:27:G:H1	63:5:43:C:H42	1.64	0.45
66:0:618:LYS:N	66:0:683:GLU:O	2.49	0.45
6:F:28:SER:OG	6:F:29:ALA:N	2.50	0.45
8:H:63:ILE:HG23	8:H:98:ALA:HA	1.98	0.45
13:M:104:SER:OG	53:3:642:A:N3	2.48	0.45
14:N:28:VAL:HG13	14:N:63:TYR:HA	1.99	0.45
15:O:59:LYS:HD3	53:3:972:C:O3'	2.17	0.45
16:P:71:ASP:OD1	16:P:71:ASP:N	2.43	0.45
16:P:114:PRO:O	26:Z:28:LEU:HD21	2.17	0.45
19:S:23:ARG:HH12	19:S:27:LYS:HB3	1.82	0.45
27:b:155:ARG:NH1	51:1:1818:U:C5	2.81	0.45
30:e:35:LEU:HD22	30:e:151:LEU:HD21	1.99	0.45
37:m:27:SER:H	37:m:104:GLU:CD	2.24	0.45
39:o:94:ARG:NH2	39:o:98:GLN:OE1	2.50	0.45
40:p:74:GLN:NE2	51:1:2683:C:O2'	2.49	0.45
50:z:19:HIS:CD2	50:z:50:VAL:HG12	2.52	0.45
51:1:252:G:H2'	51:1:253:C:H6	1.81	0.45
53:3:334:C:H2'	53:3:335:C:O4'	2.16	0.45
53:3:384:G:H2'	53:3:385:C:C6	2.52	0.45
53:3:1147:C:H2'	53:3:1148:U:C6	2.51	0.45
58:B1:1842:LEU:HD11	58:B1:2823:SER:HB3	1.97	0.45
58:B1:2269:LEU:HD13	59:B2:618:GLN:CD	2.42	0.45
58:B1:2666:LYS:HZ2	58:B1:2669:LYS:HB2	1.81	0.45
59:B2:712:SER:OG	59:B2:713:GLY:N	2.49	0.45
66:0:144:MET:HG2	66:0:266:CYS:HB2	1.99	0.45
66:0:600:ALA:HA	66:0:603:GLU:HB2	1.98	0.45
1:A:41:HIS:HD2	30:e:108:PRO:HA	1.81	0.45
5:E:7:ARG:NH1	51:1:243:U:OP2	2.50	0.45
10:J:88:HIS:HB3	10:J:134:ASN:HD21	1.81	0.45
14:N:16:ALA:HA	14:N:66:VAL:HA	1.98	0.45
27:b:84:PRO:HG3	51:1:1568:G:OP1	2.16	0.45
29:d:153:LEU:HD11	29:d:158:PHE:HB2	1.98	0.45
33:i:126:ARG:O	33:i:130:GLY:N	2.50	0.45
51:1:44:A:C2'	51:1:45:G:H5'	2.45	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:708:G:O2'	51:1:709:U:H5'	2.17	0.45
51:1:776:G:C8	51:1:793:A:C2	3.05	0.45
51:1:918:A:H4'	52:2:97:C:O2	2.16	0.45
51:1:927:A:H2'	51:1:928:A:O4'	2.17	0.45
51:1:952:G:H3'	51:1:953:G:H5"	1.98	0.45
51:1:1020:A:C1'	51:1:1021:A:OP2	2.61	0.45
51:1:1786:A:O2'	51:1:1787:A:H5'	2.17	0.45
51:1:1954:G:N2	51:1:1956:U:H3	2.15	0.45
51:1:1979:U:O5'	51:1:1979:U:H6	1.99	0.45
53:3:433:G:H2'	53:3:434:U:C6	2.51	0.45
53:3:569:C:H4'	53:3:574:A:N7	2.31	0.45
53:3:771:G:H2'	53:3:772:U:C6	2.51	0.45
53:3:962:C:H1'	53:3:1201:A:N1	2.32	0.45
53:3:962:C:H42	53:3:973:G:H1	1.65	0.45
53:3:1096:C:H2'	53:3:1097:C:H6	1.80	0.45
58:B1:2726:HIS:HA	58:B1:2729:THR:HG22	1.99	0.45
59:B2:562:GLU:OE1	59:B2:662:SER:OG	2.28	0.45
11:K:11:HIS:HB3	11:K:14:GLN:HB2	1.99	0.45
12:L:57:GLU:HG3	12:L:58:LEU:HD12	1.99	0.45
17:Q:120:ARG:HG2	53:3:37:U:C5'	2.46	0.45
19:S:92:ILE:HD13	19:S:92:ILE:HA	1.84	0.45
24:X:71:GLY:HA3	53:3:1320:C:C2	2.51	0.45
26:Z:24:LYS:HD3	26:Z:24:LYS:HA	1.80	0.45
27:b:73:ILE:HG12	51:1:1490:A:H2	1.79	0.45
29:d:37:ALA:HB1	29:d:94:GLN:H	1.82	0.45
31:f:41:GLU:N	31:f:52:GLY:O	2.49	0.45
32:g:98:ASP:O	32:g:102:ALA:N	2.49	0.45
35:k:56:ASP:N	35:k:56:ASP:OD1	2.49	0.45
42:r:38:VAL:HG21	42:r:57:GLY:HA3	1.97	0.45
49:y:38:GLN:O	51:1:95:A:H4'	2.16	0.45
50:z:37:ARG:NH1	51:1:928:A:O2'	2.50	0.45
51:1:162:U:H6	51:1:163:C:H5	1.64	0.45
51:1:224:U:H2'	51:1:225:C:O4'	2.17	0.45
51:1:1028:A:N6	51:1:1125:G:H2'	2.31	0.45
51:1:1276:A:H61	51:1:1294:U:H3	1.64	0.45
51:1:2127:G:H2'	51:1:2128:G:C8	2.52	0.45
53:3:768:A:C2	53:3:1512:U:H4'	2.52	0.45
53:3:782:A:O3'	53:3:1515:G:H4'	2.16	0.45
53:3:1198:G:H2'	53:3:1199:U:C6	2.51	0.45
57:A1:231:PHE:O	57:A2:218:ARG:NH1	2.50	0.45
58:B1:1561:PHE:N	58:B1:1561:PHE:CD1	2.85	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:B1:1567:TYR:O	58:B1:1574:TYR:CD2	2.70	0.45
58:B1:1887:ARG:NH1	58:B1:1887:ARG:HG2	2.32	0.45
59:B2:1246:ARG:HH11	59:B2:1266:GLY:HA2	1.82	0.45
63:5:49:C:H2'	63:5:50:U:C6	2.52	0.45
63:5:69:G:H2'	63:5:70:G:C8	2.52	0.45
66:0:643:LYS:HE3	66:0:655:HIS:HB3	1.99	0.45
8:H:58:ARG:HB3	8:H:63:ILE:HB	1.98	0.45
8:H:153:SER:O	8:H:196:GLY:N	2.50	0.45
10:J:72:ASN:OD1	10:J:72:ASN:N	2.50	0.45
19:S:61:ASN:HB3	19:S:72:PHE:CE2	2.52	0.45
20:T:19:ASN:O	53:3:750:C:H1'	2.16	0.45
27:b:212:TRP:NE1	51:1:1566:A:O4'	2.50	0.45
30:e:91:ARG:HA	30:e:95:MET:HG2	1.99	0.45
33:i:9:LYS:HA	33:i:57:VAL:HA	1.99	0.45
33:i:52:LEU:HD11	33:i:81:LYS:HD3	1.99	0.45
51:1:623:C:H2'	51:1:624:C:C6	2.52	0.45
51:1:1300:G:N7	51:1:1626:A:H2'	2.32	0.45
51:1:2183:A:H2'	51:1:2184:A:C8	2.52	0.45
51:1:2560:A:O2'	51:1:2561:U:H5'	2.17	0.45
52:2:6:G:O2'	52:2:7:G:H5'	2.17	0.45
53:3:347:G:H2'	53:3:348:G:O4'	2.17	0.45
53:3:925:G:H1'	53:3:1502:A:C4	2.52	0.45
53:3:1255:G:H1	53:3:1282:C:H42	1.64	0.45
57:A1:68:TYR:HE1	57:A1:79:LEU:HD13	1.82	0.45
58:B1:1532:TRP:HZ2	59:B2:1336:ASN:OD1	2.00	0.45
58:B1:1574:TYR:CD2	58:B1:1574:TYR:O	2.70	0.45
58:B1:1575:LYS:NZ	58:B1:1575:LYS:HB3	2.32	0.45
58:B1:1660:THR:H	58:B1:1663:GLN:HB2	1.82	0.45
58:B1:1700:LEU:HD11	58:B1:1719:ARG:NH1	2.31	0.45
58:B1:1719:ARG:HH11	58:B1:1719:ARG:CG	2.25	0.45
58:B1:2817:SER:OG	58:B1:2848:GLU:OE2	2.32	0.45
59:B2:998:LEU:HG	59:B2:1011:LEU:HB3	1.99	0.45
59:B2:1002:LEU:HD21	59:B2:1007:LYS:HB2	1.98	0.45
66:0:11:ARG:HG3	66:0:283:ILE:HA	1.99	0.45
66:0:618:LYS:H	66:0:684:PHE:HA	1.82	0.45
38:n:73:ASN:O	38:n:77:ALA:N	2.50	0.44
39:o:18:LEU:HD23	39:o:21:LEU:HD12	1.99	0.44
51:1:598:U:H2'	51:1:599:A:C8	2.52	0.44
51:1:1024:G:O5'	51:1:1025:G:H5"	2.16	0.44
51:1:1429:G:C2	51:1:1568:G:C2	3.05	0.44
51:1:1432:G:H2'	51:1:1433:A:C8	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2061:G:C2’	51:1:2501:C:HO2’	2.25	0.44
51:1:2737:G:H2’	51:1:2738:A:C8	2.52	0.44
52:2:16:G:N2	52:2:69:G:H1’	2.31	0.44
53:3:20:U:O2’	53:3:21:G:H5’	2.17	0.44
53:3:757:U:H2’	53:3:758:C:H5’	1.99	0.44
53:3:806:C:H2’	53:3:807:A:C8	2.52	0.44
53:3:946:A:H4’	53:3:1333:A:O2’	2.17	0.44
53:3:1098:C:H2’	53:3:1099:G:O4’	2.17	0.44
58:B1:1627:LEU:CD2	58:B1:1687:LEU:HB3	2.47	0.44
58:B1:2477:ARG:HD3	58:B1:2498:TYR:H	1.83	0.44
59:B2:896:THR:CG2	59:B2:902:LEU:HD13	2.41	0.44
66:0:97:ILE:HD13	66:0:412:PRO:HG3	1.99	0.44
5:E:15:LYS:HA	5:E:21:PHE:HA	2.00	0.44
9:I:47:LEU:HD22	53:3:510:A:OP1	2.17	0.44
17:Q:57:THR:HG21	53:3:362:G:H5”	1.99	0.44
20:T:80:LEU:O	20:T:84:LEU:N	2.42	0.44
25:Y:4:LYS:NZ	53:3:332:G:P	2.91	0.44
28:c:2:ILE:HG12	28:c:90:PHE:HZ	1.82	0.44
35:k:61:VAL:O	35:k:85:VAL:N	2.47	0.44
40:p:28:LYS:HB2	40:p:82:SER:H	1.81	0.44
45:u:65:GLN:CD	51:1:328:U:H4’	2.42	0.44
48:x:31:ASN:ND2	48:x:52:ALA:HB3	2.32	0.44
51:1:878:A:H3’	51:1:879:G:H8	1.82	0.44
51:1:1087:G:H1	51:1:1102:C:H42	1.64	0.44
51:1:1541:C:H2’	51:1:1542:U:O4’	2.17	0.44
51:1:1656:C:H2’	51:1:1657:U:H6	1.82	0.44
51:1:2073:C:O5’	51:1:2073:C:H6	1.99	0.44
51:1:2599:G:H2’	51:1:2600:A:H8	1.80	0.44
51:1:2757:A:H2’	51:1:2757:A:N3	2.32	0.44
53:3:152:A:H2’	53:3:153:C:H5’	1.99	0.44
57:A1:48:LEU:HD12	57:A1:48:LEU:HA	1.79	0.44
58:B1:1884:LEU:HD23	58:B1:1889:LEU:HB2	1.98	0.44
62:NG:161:SER:CB	62:NG:170:PRO:HA	2.48	0.44
3:C:45:HIS:ND1	51:1:2372:U:H4’	2.33	0.44
9:I:96:ARG:HG2	9:I:133:SER:HA	1.99	0.44
9:I:145:ARG:HB3	9:I:148:ALA:HB3	1.99	0.44
17:Q:87:LYS:HB3	17:Q:87:LYS:HE3	1.69	0.44
22:V:64:ARG:CB	53:3:130:A:H8	2.31	0.44
30:e:35:LEU:HB2	30:e:88:VAL:HG12	1.98	0.44
33:i:94:LYS:HD3	33:i:94:LYS:HA	1.73	0.44
36:l:135:ILE:HG23	36:l:140:GLY:HA3	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:p:105:LYS:HG2	53:3:1464:U:OP1	2.17	0.44
51:1:1044:C:O5'	51:1:1044:C:H6	2.00	0.44
51:1:1565:C:O2'	51:1:1566:A:H2'	2.16	0.44
51:1:2194:U:H2'	51:1:2195:U:C6	2.52	0.44
57:A1:29:GLU:HB3	57:A1:200:LYS:HG3	1.98	0.44
58:B1:1977:LEU:HD21	60:W0:47:THR:HG23	1.99	0.44
63:5:22:G:H2'	63:5:23:A:C8	2.51	0.44
64:6:70:G:H2'	64:6:71:C:C6	2.52	0.44
7:G:20:ARG:HD2	53:3:831:A:H5"	1.98	0.44
14:N:6:TYR:OH	53:3:1148:U:H5'	2.16	0.44
18:R:94:LEU:HD12	18:R:95:PRO:HD2	2.00	0.44
35:k:62:VAL:HA	35:k:84:CYS:HA	2.00	0.44
51:1:146:A:H2'	51:1:147:C:H6	1.81	0.44
51:1:885:C:H2'	51:1:891:G:H22	1.83	0.44
51:1:974:G:O2'	51:1:989:G:N2	2.51	0.44
51:1:1368:G:H2'	51:1:1369:G:C8	2.51	0.44
51:1:2125:G:C5'	65:a:39:VAL:HG22	2.47	0.44
53:3:563:A:H2'	53:3:563:A:N3	2.32	0.44
53:3:675:A:C2	53:3:676:A:H1'	2.52	0.44
57:A1:212:ASP:OD1	57:A1:212:ASP:N	2.48	0.44
58:B1:2349:LYS:HB3	58:B1:2354:ASP:HB2	2.00	0.44
58:B1:2545:ILE:HG22	58:B1:2560:VAL:HA	2.00	0.44
59:B2:829:THR:HG23	59:B2:1059:ARG:HG2	2.00	0.44
66:0:13:ILE:HG22	66:0:86:ILE:HA	1.98	0.44
8:H:68:HIS:HE2	8:H:105:VAL:HB	1.81	0.44
16:P:25:SER:HG	16:P:28:ASN:H	1.64	0.44
17:Q:11:ARG:HH11	53:3:563:A:H2	1.64	0.44
19:S:2:LYS:HG2	19:S:4:SER:H	1.81	0.44
19:S:75:LYS:HZ3	53:3:1357:A:H5"	1.82	0.44
27:b:17:LYS:HE3	27:b:17:LYS:HB3	1.80	0.44
27:b:57:HIS:CE1	51:1:1567:G:H4'	2.52	0.44
31:f:28:LYS:HE3	31:f:28:LYS:HB2	1.86	0.44
34:j:134:ALA:HB1	51:1:2898:U:O2	2.18	0.44
41:q:51:GLN:O	41:q:55:GLN:N	2.48	0.44
46:v:58:SER:OG	46:v:59:GLU:OE1	2.31	0.44
51:1:138:U:H3'	51:1:139:U:H5'	1.99	0.44
51:1:233:A:C2'	51:1:234:U:H5'	2.48	0.44
51:1:960:A:H5"	51:1:961:C:OP1	2.17	0.44
51:1:1028:A:C2	51:1:2487:G:H1'	2.52	0.44
51:1:1093:G:H22	51:1:1097:U:H3'	1.82	0.44
51:1:1130:U:C5	51:1:2025:C:H5"	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2007:U:O5'	51:1:2007:U:H6	2.01	0.44
51:1:2073:C:O2'	51:1:2074:U:H5'	2.17	0.44
53:3:272:C:H2'	53:3:273:U:H6	1.83	0.44
53:3:563:A:H5'	53:3:566:G:N2	2.33	0.44
53:3:994:A:H61	53:3:1047:G:C4'	2.30	0.44
58:B1:1933:ILE:HD11	59:B2:1274:GLU:HG3	2.00	0.44
58:B1:1971:LEU:CD1	59:B2:1294:LYS:HG2	2.47	0.44
58:B1:2856:ILE:HG22	58:B1:2858:ALA:H	1.82	0.44
59:B2:674:ASP:OD2	59:B2:1070:HIS:ND1	2.50	0.44
66:0:75:MET:HG3	66:0:279:LEU:HD11	1.99	0.44
66:0:211:MET:HB3	66:0:211:MET:HE2	1.63	0.44
12:L:67:ASN:HB3	12:L:129:ASN:HD21	1.83	0.44
27:b:106:PRO:HD2	27:b:109:LEU:HD22	1.99	0.44
29:d:5:LEU:HG	29:d:120:VAL:HG13	2.00	0.44
37:m:81:ARG:NH1	51:1:2251:G:OP1	2.51	0.44
41:q:25:GLY:O	41:q:29:ARG:NH1	2.50	0.44
44:t:17:SER:OG	44:t:20:ALA:N	2.49	0.44
45:u:7:ASP:OD1	45:u:7:ASP:N	2.46	0.44
47:w:56:PHE:HE1	47:w:58:LYS:HE2	1.83	0.44
51:1:368:A:C2'	51:1:369:U:H5'	2.47	0.44
51:1:514:A:O2'	51:1:515:A:H5'	2.17	0.44
51:1:740:C:H5'	51:1:740:C:C6	2.46	0.44
51:1:754:U:O5'	51:1:754:U:H6	2.01	0.44
51:1:2066:C:H2'	51:1:2067:G:H8	1.81	0.44
51:1:2069:G:H2'	51:1:2070:A:H8	1.82	0.44
51:1:2270:A:H2'	51:1:2271:G:O4'	2.18	0.44
51:1:2524:G:C3'	51:1:2525:G:H5"	2.48	0.44
53:3:253:A:O4'	53:3:276:G:H1'	2.18	0.44
53:3:505:G:C6	53:3:535:A:C2	3.05	0.44
53:3:622:A:H2'	53:3:623:C:H5'	1.99	0.44
55:8:16:DT:H2'	55:8:17:DC:C6	2.52	0.44
58:B1:1610:THR:HG21	58:B1:1802:VAL:HB	1.99	0.44
58:B1:1700:LEU:CB	58:B1:1720:ILE:HD13	2.47	0.44
58:B1:1894:LYS:HZ2	58:B1:1898:LYS:CE	2.31	0.44
58:B1:2607:GLN:HG3	58:B1:2608:LEU:HD12	1.99	0.44
59:B2:11:ILE:HG22	59:B2:1172:LEU:HD11	1.99	0.44
59:B2:557:ARG:NH2	59:B2:607:SER:O	2.49	0.44
65:a:50:ILE:HG12	65:a:169:GLY:CA	2.47	0.44
66:0:119:VAL:HG21	66:0:162:LEU:HD11	2.00	0.44
7:G:33:ALA:HB3	7:G:37:VAL:HB	1.99	0.44
14:N:45:MET:HA	14:N:48:ARG:HH21	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:d:134:LEU:HD11	29:d:161:ALA:HB2	1.99	0.44
30:e:135:ILE:HA	30:e:140:ILE:HD11	1.99	0.44
31:f:62:ALA:HA	51:1:2748:A:O2'	2.18	0.44
34:j:41:LYS:HB2	34:j:41:LYS:HE3	1.86	0.44
38:n:40:LYS:O	38:n:44:LEU:N	2.47	0.44
40:p:25:VAL:HG21	40:p:83:ILE:HG22	1.99	0.44
45:u:27:VAL:HA	45:u:33:VAL:HG13	1.99	0.44
47:w:58:LYS:HD3	51:1:2366:A:H4'	1.99	0.44
51:1:1147:A:O2'	51:1:1148:U:H5'	2.17	0.44
53:3:240:G:H2'	53:3:241:G:C8	2.53	0.44
53:3:369:G:N2	53:3:393:A:H1'	2.33	0.44
53:3:894:G:H2'	53:3:895:G:C8	2.53	0.44
53:3:969:A:H2'	53:3:970:C:O4'	2.18	0.44
53:3:971:G:H4'	53:3:972:C:H5"	1.99	0.44
58:B1:1610:THR:CG2	58:B1:1799:GLN:HA	2.48	0.44
58:B1:1674:GLU:H	58:B1:1674:GLU:HG3	1.66	0.44
58:B1:2303:ALA:HB2	58:B1:2755:ILE:CD1	2.48	0.44
58:B1:2578:LYS:HD3	58:B1:2597:GLN:HB3	1.99	0.44
66:0:305:THR:O	66:0:305:THR:OG1	2.33	0.44
66:0:338:VAL:HG13	66:0:380:GLY:H	1.83	0.44
7:G:136:ARG:O	7:G:140:LEU:N	2.47	0.44
11:K:3:HIS:ND1	11:K:65:GLU:HB2	2.32	0.44
11:K:47:LEU:HD21	11:K:54:LEU:O	2.17	0.44
14:N:125:GLN:HG3	53:3:1232:U:H5"	1.99	0.44
21:U:26:ASN:HD21	21:U:31:ARG:N	2.15	0.44
23:W:58:ILE:O	23:W:62:ARG:N	2.49	0.44
26:Z:44:ARG:HD3	26:Z:44:ARG:HA	1.77	0.44
27:b:227:VAL:HG11	51:1:784:G:C2	2.52	0.44
34:j:81:ILE:HG21	51:1:2514:U:H4'	1.99	0.44
39:o:90:VAL:HG23	39:o:117:PHE:HB3	2.00	0.44
51:1:118:A:H5'	51:1:119:A:C8	2.53	0.44
51:1:861:A:H2'	51:1:862:G:O4'	2.18	0.44
51:1:1308:A:N6	51:1:1608:A:H61	2.16	0.44
51:1:1545:A:H2'	51:1:1546:G:O4'	2.17	0.44
51:1:2102:G:H2'	51:1:2103:C:O4'	2.18	0.44
51:1:2703:C:H2'	51:1:2704:C:H6	1.82	0.44
51:1:2723:C:H2'	51:1:2724:U:O4'	2.17	0.44
53:3:290:C:H2'	53:3:291:U:O4'	2.18	0.44
53:3:570:G:H5'	53:3:820:U:O4'	2.17	0.44
53:3:723:U:O2	53:3:855:U:H4'	2.17	0.44
53:3:1134:G:H1	53:3:1140:C:H42	1.66	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1475:G:C2	53:3:1476:A:H1'	2.52	0.44
58:B1:1640:PHE:CE2	58:B1:1795:LYS:CB	2.94	0.44
58:B1:1712:LYS:HE3	58:B1:1712:LYS:CA	2.47	0.44
58:B1:2393:VAL:HG22	58:B1:2757:ARG:HH11	1.83	0.44
66:0:145:ASP:OD1	66:0:273:LYS:NZ	2.45	0.44
11:K:45:ARG:N	11:K:57:ALA:O	2.45	0.44
12:L:91:ARG:O	12:L:92:PRO:C	2.59	0.44
13:M:45:ILE:HG12	13:M:60:LEU:HD23	2.00	0.44
14:N:47:VAL:HG12	14:N:78:ILE:HG21	2.00	0.44
28:c:197:THR:HG23	51:1:2820:A:C6	2.52	0.44
29:d:136:GLN:HA	29:d:139:LYS:HB2	1.99	0.44
41:q:32:ARG:HB2	51:1:581:C:OP1	2.18	0.44
43:s:13:SER:OG	43:s:14:ALA:N	2.50	0.44
48:x:57:VAL:HG12	48:x:61:LYS:HZ1	1.82	0.44
51:1:152:A:H2'	51:1:153:U:C6	2.53	0.44
51:1:298:G:C2	51:1:339:U:H5	2.36	0.44
51:1:397:U:O5'	51:1:397:U:H6	2.00	0.44
51:1:537:G:H22	51:1:555:G:H2'	1.83	0.44
51:1:1086:A:H3'	51:1:1086:A:N3	2.33	0.44
51:1:1744:A:H3'	51:1:1745:A:H8	1.83	0.44
51:1:2102:G:H1	51:1:2187:U:H3	1.65	0.44
51:1:2259:U:C2	51:1:2427:C:C4	3.06	0.44
51:1:2599:G:H2'	51:1:2600:A:C8	2.53	0.44
51:1:2762:C:H2'	51:1:2763:G:H5'	2.00	0.44
53:3:68:G:H2'	53:3:69:G:O4'	2.17	0.44
53:3:182:A:N1	53:3:224:U:H5'	2.33	0.44
53:3:599:C:H2'	53:3:600:A:C8	2.53	0.44
53:3:865:A:H2'	53:3:866:C:C6	2.53	0.44
53:3:964:A:H2'	53:3:965:U:H5'	2.00	0.44
59:B2:24:VAL:HG11	59:B2:704:MET:HE1	1.98	0.44
59:B2:891:GLY:H	59:B2:914:LYS:H	1.66	0.44
59:B2:1157:GLN:HG3	59:B2:1159:VAL:HG13	2.00	0.44
63:5:63:G:H2'	63:5:64:A:C8	2.53	0.44
65:a:203:GLN:HG2	65:a:205:LYS:H	1.83	0.44
3:C:33:LEU:HD21	51:1:2286:G:C5	2.52	0.43
6:F:1:MET:N	51:1:2526:G:H1'	2.32	0.43
12:L:34:LYS:NZ	53:3:1289:A:C2	2.86	0.43
14:N:129:ARG:NH1	64:6:32:C:OP2	2.50	0.43
15:O:70:HIS:HD2	15:O:72:ARG:HH22	1.64	0.43
16:P:25:SER:HG	16:P:28:ASN:N	2.16	0.43
21:U:13:LYS:CD	53:3:392:C:H5'	2.48	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:c:5:VAL:HG22	28:c:202:ILE:HG12	2.00	0.43
51:1:648:G:H2'	51:1:649:G:H8	1.83	0.43
51:1:728:G:O2'	51:1:730:A:H8	2.01	0.43
51:1:1177:G:H2'	51:1:1178:C:C5'	2.48	0.43
51:1:2065:C:H2'	51:1:2066:C:C6	2.53	0.43
52:2:115:A:H2'	52:2:116:G:C8	2.53	0.43
53:3:1312:G:H2'	53:3:1313:U:C6	2.52	0.43
57:A1:78:ILE:HA	57:A1:81:ILE:HG22	2.00	0.43
58:B1:1544:ASN:HD22	58:B1:1547:THR:H	1.65	0.43
58:B1:2005:VAL:HG23	58:B1:2127:GLY:HA3	1.99	0.43
59:B2:557:ARG:HB3	59:B2:587:LEU:HD13	2.00	0.43
63:5:13:C:H42	63:5:46:G:N2	2.16	0.43
10:J:50:GLY:HA3	10:J:62:ALA:HB2	2.00	0.43
11:K:12:PRO:O	11:K:15:SER:OG	2.32	0.43
17:Q:50:LYS:HA	17:Q:50:LYS:HD2	1.86	0.43
23:W:35:SER:OG	23:W:37:LYS:NZ	2.37	0.43
26:Z:6:ARG:HA	26:Z:6:ARG:HD2	1.61	0.43
28:c:120:GLY:H	28:c:123:LYS:HB2	1.82	0.43
32:g:27:ARG:NH2	48:x:55:MET:HB3	2.32	0.43
33:i:128:ILE:HA	33:i:131:THR:HG22	2.00	0.43
37:m:68:PHE:CE2	51:1:871:U:H5"	2.53	0.43
37:m:71:LYS:HD3	37:m:72:PRO:HD2	2.00	0.43
40:p:59:THR:HG22	40:p:72:VAL:HG23	2.00	0.43
45:u:14:THR:OG1	45:u:15:GLY:N	2.51	0.43
48:x:9:LYS:HB3	48:x:30:PRO:CB	2.48	0.43
51:1:330:A:H8	51:1:1210:G:C5	2.36	0.43
51:1:974:G:C6	51:1:1186:G:C6	3.06	0.43
51:1:1056:G:H1'	51:1:1103:A:N6	2.33	0.43
51:1:1630:A:H2'	51:1:1631:G:H5'	2.00	0.43
51:1:1697:G:H3'	51:1:1698:A:C5'	2.45	0.43
53:3:1057:G:H2'	53:3:1058:G:O4'	2.18	0.43
53:3:1242:G:H4'	53:3:1304:G:OP1	2.18	0.43
59:B2:800:MET:HB2	59:B2:800:MET:HE3	1.69	0.43
66:0:498:VAL:HG22	66:0:499:THR:N	2.33	0.43
9:I:33:ILE:HG23	9:I:34:GLU:HG2	1.99	0.43
36:l:29:LYS:HA	51:1:810:U:H5	1.81	0.43
39:o:55:GLU:OE2	52:2:116:G:H5"	2.17	0.43
42:r:17:GLY:H	42:r:98:ILE:HB	1.83	0.43
51:1:1747:U:H2'	51:1:1748:C:C6	2.52	0.43
51:1:2267:A:H5"	51:1:2268:A:H5'	2.00	0.43
51:1:2845:U:H2'	51:1:2846:G:H8	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:160:A:H2'	53:3:161:A:O4'	2.19	0.43
53:3:296:U:H2'	53:3:297:G:O4'	2.19	0.43
53:3:777:A:C2	53:3:778:G:H1'	2.52	0.43
53:3:1508:A:H61	53:3:1527:U:H3	1.66	0.43
58:B1:2230:ARG:HB3	59:B2:1105:SER:HB2	2.00	0.43
59:B2:646:SER:OG	59:B2:647:ARG:N	2.51	0.43
66:0:73:SER:HB2	66:0:81:PRO:HG3	2.00	0.43
66:0:73:SER:O	66:0:73:SER:OG	2.29	0.43
66:0:423:LYS:HA	66:0:482:ASN:HD21	1.83	0.43
17:Q:48:LEU:HD12	17:Q:48:LEU:HA	1.85	0.43
26:Z:66:ARG:O	53:3:1088:G:O2'	2.36	0.43
29:d:129:PRO:HG3	29:d:156:ASN:HA	2.00	0.43
34:j:130:HIS:HB2	34:j:132:HIS:HD2	1.83	0.43
35:k:49:ARG:HH22	53:3:1423:G:H5'	1.84	0.43
39:o:10:ARG:HE	39:o:10:ARG:HB2	1.61	0.43
39:o:56:LYS:HA	39:o:59:ALA:HB3	2.01	0.43
43:s:36:LEU:HD23	43:s:48:LYS:HB2	2.01	0.43
43:s:84:ARG:NH1	51:1:1322:A:O2'	2.51	0.43
51:1:608:A:H2'	51:1:609:A:O4'	2.18	0.43
53:3:1042:A:H2'	53:3:1043:G:H4'	2.00	0.43
53:3:1252:A:H2'	53:3:1253:G:O4'	2.18	0.43
53:3:1382:C:H2'	53:3:1383:C:C5	2.54	0.43
63:5:37:A:H2'	63:5:38:A:C8	2.53	0.43
15:O:68:ARG:HD3	15:O:68:ARG:HA	1.68	0.43
20:T:60:SER:HB2	53:3:581:G:C5'	2.48	0.43
31:f:9:VAL:HA	31:f:48:THR:HA	2.01	0.43
37:m:46:ILE:O	37:m:50:ARG:N	2.45	0.43
38:n:36:THR:HG22	51:1:1278:C:OP1	2.18	0.43
38:n:72:ASP:O	38:n:76:VAL:HG23	2.19	0.43
39:o:57:ALA:O	39:o:61:GLN:NE2	2.52	0.43
51:1:170:U:H2'	51:1:171:U:C6	2.53	0.43
51:1:252:G:H2'	51:1:253:C:C6	2.53	0.43
51:1:812:C:H1'	51:1:1250:G:C2	2.53	0.43
51:1:984:A:P	51:1:985:C:H5	2.41	0.43
51:1:1057:A:H5"	51:1:1058:U:O2	2.18	0.43
51:1:1064:C:H5"	51:1:1065:U:C5	2.54	0.43
51:1:1123:C:O2'	51:1:1124:G:H5'	2.18	0.43
51:1:1428:C:C5	51:1:1569:A:H5"	2.53	0.43
51:1:1913:A:H61	53:3:1493:A:H2'	1.83	0.43
51:1:2556:C:H2'	51:1:2557:G:C5'	2.48	0.43
51:1:2638:G:H22	51:1:2775:G:H2'	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2672:U:C3'	51:1:2673:G:H5"	2.48	0.43
52:2:4:C:H6	52:2:4:C:C5'	2.31	0.43
53:3:1014:A:C2	53:3:1219:A:H1'	2.54	0.43
53:3:1095:U:OP1	53:3:1108:G:N2	2.52	0.43
53:3:1515:G:H2'	53:3:1516:G:H8	1.82	0.43
57:A1:192:VAL:HG12	57:A1:193:GLU:H	1.83	0.43
58:B1:1557:CYS:SG	58:B1:1559:ARG:HG2	2.59	0.43
58:B1:2525:PRO:HB2	58:B1:2527:ILE:HG23	2.00	0.43
59:B2:811:ASN:ND2	59:B2:1098:LEU:O	2.51	0.43
59:B2:1244:HIS:NE2	59:B2:1266:GLY:O	2.44	0.43
66:0:112:VAL:HG12	66:0:140:PHE:HB3	2.00	0.43
66:0:173:ILE:HD13	66:0:173:ILE:HA	1.90	0.43
8:H:66:THR:HA	8:H:101:ASN:HB2	1.99	0.43
10:J:25:LYS:HG3	53:3:923:A:C5'	2.49	0.43
10:J:123:LEU:HD22	53:3:7:A:H2'	1.99	0.43
16:P:118:ASN:OD1	53:3:718:A:H5'	2.18	0.43
17:Q:43:LYS:HG3	53:3:1492:A:H4'	2.00	0.43
27:b:209:ALA:HA	27:b:212:TRP:CE2	2.54	0.43
29:d:131:THR:HG21	51:1:320:A:H2'	1.99	0.43
34:j:93:ILE:HD12	34:j:93:ILE:HA	1.72	0.43
34:j:116:ARG:HH21	51:1:528:A:H5"	1.81	0.43
42:r:34:GLU:HB2	42:r:58:VAL:HB	1.99	0.43
47:w:56:PHE:HB2	47:w:57:ALA:H	1.73	0.43
50:z:11:SER:OG	51:1:988:A:H5"	2.18	0.43
51:1:74:A:H2'	51:1:74:A:N3	2.33	0.43
51:1:578:G:H21	51:1:1252:G:N2	2.16	0.43
51:1:728:G:H3'	51:1:729:G:H5'	2.00	0.43
51:1:755:U:H2'	51:1:756:A:C8	2.52	0.43
51:1:862:G:H2'	51:1:863:A:O4'	2.18	0.43
51:1:1313:U:O2	51:1:1313:U:H2'	2.18	0.43
51:1:1716:U:C2'	51:1:1717:A:H5'	2.49	0.43
51:1:1771:C:H2'	51:1:1772:A:O4'	2.19	0.43
51:1:1794:A:O2'	51:1:1795:C:H5'	2.18	0.43
51:1:1823:G:C6	51:1:1824:G:C6	3.06	0.43
51:1:1943:U:OP1	51:1:1943:U:C6	2.71	0.43
51:1:2061:G:C8	51:1:2501:C:H4'	2.53	0.43
53:3:596:A:H61	53:3:644:U:H3	1.66	0.43
58:B1:1744:LEU:CG	58:B1:1745:PRO:HD2	2.48	0.43
58:B1:1893:ILE:O	58:B1:1893:ILE:HG13	2.19	0.43
58:B1:2323:PRO:HD3	58:B1:2334:LEU:HD12	2.00	0.43
9:I:69:ARG:HH11	9:I:72:ARG:HH22	1.67	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:200:VAL:HG11	10:J:103:GLY:HA2	2.00	0.43
11:K:89:VAL:HG23	53:3:737:C:C4'	2.49	0.43
12:L:29:LEU:HD23	12:L:104:VAL:HG23	2.01	0.43
17:Q:5:GLN:NE2	53:3:881:G:N7	2.67	0.43
30:e:134:GLN:NE2	30:e:147:ARG:O	2.41	0.43
38:n:107:ASN:HD22	51:1:2009:A:C4'	2.31	0.43
51:1:793:A:OP2	51:1:793:A:H8	2.01	0.43
51:1:824:U:H1'	51:1:2358:A:N7	2.34	0.43
51:1:1037:G:O2'	51:1:1038:G:H5'	2.18	0.43
51:1:2248:C:H3'	51:1:2249:U:H6	1.82	0.43
51:1:2338:C:H6	51:1:2338:C:O5'	2.01	0.43
51:1:2489:U:O2'	51:1:2490:G:H5'	2.18	0.43
51:1:2564:A:C2	51:1:2647:U:H4'	2.54	0.43
53:3:37:U:C2'	53:3:38:G:H5'	2.48	0.43
53:3:439:U:O2'	53:3:440:C:H5'	2.19	0.43
53:3:635:A:H2'	53:3:636:U:C6	2.53	0.43
53:3:640:A:H2'	53:3:641:U:H5'	2.01	0.43
53:3:1195:C:O5'	53:3:1195:C:H6	2.01	0.43
53:3:1236:A:H2'	53:3:1237:C:O4'	2.19	0.43
55:8:12:DG:OP1	58:B1:2294:TYR:CE1	2.71	0.43
58:B1:1861:ARG:HB2	58:B1:1863:HIS:HD2	1.83	0.43
58:B1:1874:GLU:HB3	59:B2:1245:ALA:CB	2.48	0.43
58:B1:2532:GLY:HA3	58:B1:2580:VAL:O	2.18	0.43
65:a:193:LEU:HG	65:a:197:LYS:HG3	2.00	0.43
66:0:634:ASP:O	66:0:638:ARG:NH1	2.52	0.43
7:G:22:TRP:HA	7:G:189:ASN:HA	2.01	0.43
24:X:38:THR:HG23	24:X:69:LYS:HD3	1.99	0.43
34:j:80:HIS:CD2	51:1:2642:G:H5'	2.53	0.43
38:n:9:GLN:HB2	51:1:1653:G:C6	2.54	0.43
51:1:481:G:H2'	51:1:507:A:N1	2.34	0.43
51:1:571:U:C4	51:1:575:A:C5	3.07	0.43
51:1:786:C:H2'	51:1:787:C:H6	1.83	0.43
51:1:878:A:H3'	51:1:879:G:C8	2.54	0.43
51:1:1412:U:H2'	51:1:1413:A:O4'	2.18	0.43
51:1:1803:A:C2	51:1:1823:G:H1'	2.53	0.43
51:1:1998:A:H4'	51:1:2724:U:O2'	2.19	0.43
51:1:2101:A:H2'	51:1:2102:G:H8	1.84	0.43
53:3:1158:C:H2'	53:3:1159:U:H4'	2.01	0.43
58:B1:1933:ILE:HD11	59:B2:1274:GLU:CG	2.49	0.43
59:B2:559:CYS:HA	59:B2:560:PRO:HD3	1.90	0.43
66:0:159:LYS:HG3	66:0:166:PRO:HD2	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:1:GLY:HA2	53:3:1060:U:C5	2.54	0.43
11:K:53:LYS:HA	11:K:53:LYS:HD2	1.78	0.43
14:N:7:GLY:HA3	14:N:85:ALA:HB2	2.00	0.43
14:N:13:SER:HG	53:3:1251:A:H5'	1.81	0.43
14:N:18:VAL:HG21	14:N:81:GLY:HA3	2.01	0.43
27:b:120:ASP:OD1	27:b:120:ASP:N	2.49	0.43
33:i:105:LEU:HD13	33:i:128:ILE:HG23	2.01	0.43
51:1:597:G:H2'	51:1:598:U:O4'	2.18	0.43
51:1:666:A:H2'	51:1:667:U:C6	2.54	0.43
51:1:742:A:H2'	51:1:743:A:O4'	2.19	0.43
51:1:784:G:N7	51:1:792:A:C5	2.87	0.43
51:1:832:U:C5	51:1:944:C:N4	2.87	0.43
51:1:960:A:O3'	51:1:961:C:H3'	2.18	0.43
51:1:1675:C:O2'	51:1:1676:A:H5'	2.19	0.43
51:1:1815:A:O4'	51:1:1817:G:H1'	2.18	0.43
51:1:1962:C:H1'	51:1:1963:U:C5	2.53	0.43
51:1:1984:G:H2'	51:1:1985:C:H6	1.82	0.43
51:1:2234:G:O2'	51:1:2235:G:H5'	2.19	0.43
51:1:2598:A:N7	51:1:2599:G:H1'	2.34	0.43
53:3:304:U:O2'	53:3:305:G:H5'	2.19	0.43
53:3:1364:U:O2'	53:3:1365:G:H5'	2.19	0.43
58:B1:2058:ALA:HB3	58:B1:2061:GLU:HB3	2.01	0.43
58:B1:2425:PRO:HB2	58:B1:2740:TYR:HE1	1.82	0.43
65:a:48:LEU:HB3	65:a:50:ILE:HG23	2.01	0.43
6:F:38:GLY:OXT	51:1:1124:G:H1'	2.19	0.43
9:I:110:ARG:O	9:I:114:ARG:N	2.52	0.43
14:N:53:LEU:HD12	14:N:54:VAL:HG13	2.00	0.43
18:R:13:HIS:HB3	18:R:15:VAL:HG12	2.00	0.43
18:R:77:LYS:HB2	18:R:77:LYS:HE3	1.88	0.43
18:R:78:ARG:HD3	24:X:64:GLU:HG2	2.01	0.43
24:X:44:ILE:HD12	24:X:44:ILE:HA	1.92	0.43
32:g:63:ALA:HA	32:g:66:ASN:HD22	1.84	0.43
36:l:37:GLY:H	36:l:41:ARG:HH22	1.67	0.43
38:n:73:ASN:HB3	51:1:1453:A:C8	2.54	0.43
44:t:1:MET:HG3	51:1:136:G:H21	1.84	0.43
51:1:690:G:C2'	51:1:691:C:H5'	2.49	0.43
51:1:1135:C:O2	51:1:1135:C:H2'	2.18	0.43
51:1:1191:G:H2'	51:1:1192:G:C8	2.51	0.43
51:1:1404:C:O5'	51:1:1404:C:H6	2.01	0.43
51:1:1797:G:C4	51:1:1798:U:C6	3.07	0.43
51:1:2311:A:H3'	51:1:2312:U:C6	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2617:U:H2'	51:1:2618:G:H5'	2.01	0.43
51:1:2626:C:O2'	51:1:2627:G:H5'	2.19	0.43
53:3:633:G:H2'	53:3:634:C:C6	2.54	0.43
53:3:973:G:H2'	53:3:974:A:H8	1.84	0.43
53:3:1061:G:H2'	53:3:1062:U:O4'	2.19	0.43
53:3:1233:G:O2'	53:3:1365:G:H5"	2.18	0.43
53:3:1423:G:H1	53:3:1477:U:H3	1.65	0.43
58:B1:1595:LYS:NZ	59:B2:1298:VAL:HG11	2.34	0.43
58:B1:2067:SER:HB3	58:B1:2069:LYS:NZ	2.34	0.43
59:B2:300:ASP:OD1	59:B2:313:ALA:N	2.51	0.43
59:B2:1275:VAL:HG13	59:B2:1287:LEU:HD11	2.00	0.43
66:0:607:LYS:HE2	66:0:607:LYS:HB2	1.84	0.43
2:B:41:HIS:HD2	38:n:101:GLY:HA2	1.84	0.42
4:D:10:LEU:HD13	51:1:125:A:C2	2.54	0.42
5:E:28:LEU:HD12	5:E:32:LEU:HD11	2.01	0.42
9:I:119:HIS:HA	53:3:439:U:H5"	2.01	0.42
12:L:138:GLU:HA	12:L:141:HIS:HB2	2.00	0.42
14:N:58:GLU:HG2	14:N:59:LYS:HG3	2.00	0.42
16:P:25:SER:OG	16:P:28:ASN:N	2.48	0.42
18:R:22:TYR:HD2	18:R:65:GLU:HA	1.84	0.42
30:e:88:VAL:HA	52:2:42:C:O2	2.19	0.42
31:f:85:LYS:HE3	31:f:131:VAL:HG22	2.00	0.42
33:i:12:VAL:HG12	33:i:13:ALA:H	1.83	0.42
34:j:136:GLN:NE2	51:1:2899:A:H5'	2.34	0.42
36:l:18:ARG:NE	51:1:1249:U:C4	2.87	0.42
38:n:90:ARG:NH2	51:1:2880:C:O2'	2.48	0.42
42:r:1:MET:N	42:r:42:ALA:O	2.42	0.42
46:v:88:HIS:CE1	52:2:75:G:H21	2.37	0.42
51:1:343:C:C2'	51:1:344:A:H5'	2.49	0.42
51:1:974:G:C8	51:1:989:G:C2	3.07	0.42
51:1:1931:U:H2'	51:1:1932:A:C8	2.54	0.42
51:1:2553:G:C3'	51:1:2554:U:H5"	2.47	0.42
51:1:2577:A:H2'	51:1:2614:A:N6	2.33	0.42
51:1:2581:G:N1	51:1:2610:C:O2'	2.52	0.42
53:3:778:G:H2'	53:3:779:C:O4'	2.19	0.42
53:3:865:A:H5'	53:3:1078:U:O4	2.19	0.42
53:3:1210:C:H2'	53:3:1211:U:H5'	2.00	0.42
53:3:1489:G:H2'	53:3:1490:U:C6	2.53	0.42
58:B1:1743:VAL:HA	58:B1:1768:TYR:OH	2.19	0.42
58:B1:1745:PRO:HA	58:B1:1746:PRO:HD3	1.96	0.42
58:B1:2085:GLY:HA3	58:B1:2111:LEU:HD11	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:W0:58:LEU:HD12	60:W0:59:ILE:HG12	2.00	0.42
66:0:129:GLN:HG3	66:0:132:LYS:HE2	2.00	0.42
8:H:174:LEU:HB3	53:3:1108:G:OP1	2.19	0.42
12:L:114:SER:O	12:L:118:ARG:N	2.38	0.42
13:M:10:LEU:HD13	13:M:74:ILE:HG13	2.00	0.42
13:M:15:ASN:HB3	53:3:827:U:C4'	2.48	0.42
14:N:113:LYS:HA	14:N:120:ALA:HB2	2.01	0.42
23:W:25:ILE:HA	23:W:28:LEU:HD12	2.01	0.42
23:W:37:LYS:HE2	23:W:37:LYS:HB2	1.73	0.42
27:b:204:LEU:O	27:b:206:LYS:N	2.48	0.42
35:k:51:LYS:HD3	35:k:51:LYS:HA	1.75	0.42
36:l:90:VAL:HG22	36:l:122:VAL:HA	2.02	0.42
37:m:42:THR:N	37:m:45:GLN:OE1	2.40	0.42
40:p:1:SER:N	51:1:2876:G:OP1	2.44	0.42
44:t:29:THR:HG22	44:t:86:THR:HA	2.01	0.42
51:1:1060:U:OP2	51:1:1060:U:H3'	2.19	0.42
51:1:1177:G:C3'	51:1:1178:C:H5"	2.49	0.42
51:1:1321:A:H3'	51:1:1322:A:H8	1.84	0.42
51:1:1794:A:H1'	51:1:1900:A:N3	2.34	0.42
51:1:2656:U:H2'	51:1:2657:A:C8	2.54	0.42
53:3:405:U:O2	53:3:498:A:H2'	2.20	0.42
58:B1:1523:LEU:HD21	58:B1:1615:PHE:CE2	2.54	0.42
58:B1:2296:THR:HG22	58:B1:2423:GLY:HA3	2.01	0.42
58:B1:2523:THR:HG23	58:B1:2622:ARG:HA	2.00	0.42
59:B2:590:PRO:HB2	59:B2:655:VAL:HG21	2.01	0.42
66:0:493:THR:OG1	66:0:525:LEU:CD1	2.68	0.42
66:0:499:THR:CG2	66:0:500:ASP:H	2.22	0.42
5:E:44:ARG:NH2	51:1:2349:G:OP1	2.48	0.42
9:I:12:ARG:NH2	9:I:36:ALA:H	2.17	0.42
28:c:118:PHE:O	51:1:1655:A:H5'	2.19	0.42
28:c:183:GLU:OE2	28:c:184:ARG:NE	2.53	0.42
33:i:3:LYS:HB3	51:1:1055:G:O5'	2.19	0.42
37:m:33:LEU:HD12	37:m:117:PHE:HB3	2.00	0.42
43:s:29:VAL:HG21	43:s:55:ILE:HG21	2.01	0.42
51:1:272:A:H2'	51:1:273:G:C8	2.54	0.42
51:1:441:U:O2'	51:1:442:G:H5'	2.19	0.42
51:1:809:G:O4'	51:1:1254:A:H1'	2.19	0.42
51:1:1801:A:C8	51:1:1801:A:H5'	2.54	0.42
53:3:1194:U:H2'	53:3:1195:C:C6	2.54	0.42
55:8:3:DC:N1	55:8:4:DT:H72	2.34	0.42
57:A1:76:GLU:HB3	57:A1:80:GLU:HB3	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:B1:1558:ALA:HB1	58:B1:1589:VAL:HG23	2.01	0.42
58:B1:1742:PRO:HG2	59:B2:1332:SER:C	2.44	0.42
58:B1:1884:LEU:CD2	58:B1:1889:LEU:HB2	2.50	0.42
58:B1:2014:ARG:HH12	58:B1:2223:MET:HG2	1.84	0.42
59:B2:469:VAL:HA	59:B2:472:GLU:HG2	2.02	0.42
63:5:9:A:H1'	63:5:45:U:H2'	2.01	0.42
25:Y:4:LYS:HE2	53:3:332:G:OP1	2.20	0.42
28:c:118:PHE:CD2	51:1:1654:A:H2	2.35	0.42
37:m:55:ARG:HA	37:m:58:LYS:HA	2.02	0.42
38:n:51:LEU:HD23	38:n:79:LEU:HD11	2.02	0.42
41:q:47:ARG:NH2	51:1:560:C:O2'	2.52	0.42
49:y:1:MET:HA	49:y:4:LYS:HE2	2.01	0.42
51:1:194:G:H2'	51:1:195:A:O4'	2.19	0.42
51:1:1050:A:O2'	51:1:2752:C:H1'	2.19	0.42
51:1:1145:C:H2'	51:1:1146:C:C6	2.54	0.42
51:1:1363:C:O2'	51:1:1809:A:H1'	2.20	0.42
51:1:1983:G:C2	51:1:1984:G:C8	3.07	0.42
51:1:2521:C:C2'	51:1:2522:U:H5'	2.50	0.42
51:1:2556:C:H2'	51:1:2557:G:O4'	2.19	0.42
53:3:7:A:H5'	53:3:298:A:O4'	2.19	0.42
53:3:250:A:H4'	53:3:251:G:O5'	2.19	0.42
53:3:301:G:H2'	53:3:302:G:H8	1.83	0.42
53:3:1119:C:O2'	53:3:1120:C:H5'	2.20	0.42
53:3:1229:A:H2'	53:3:1230:C:C6	2.54	0.42
57:A2:48:LEU:HD23	57:A2:48:LEU:HA	1.86	0.42
58:B1:1606:LEU:HA	58:B1:1775:ASN:ND2	2.33	0.42
58:B1:2005:VAL:H	58:B1:2005:VAL:HG12	1.59	0.42
11:K:47:LEU:CD2	11:K:55:HIS:HA	2.49	0.42
25:Y:15:LYS:HE2	25:Y:15:LYS:HB3	1.92	0.42
27:b:73:ILE:HA	27:b:74:PRO:HD3	1.90	0.42
27:b:218:THR:HG22	51:1:1790:C:OP1	2.19	0.42
28:c:161:MET:CE	51:1:2050:C:H1'	2.49	0.42
34:j:12:LYS:HD2	34:j:12:LYS:HA	1.78	0.42
50:z:18:LYS:HE2	50:z:18:LYS:HB3	1.89	0.42
51:1:516:C:H2'	51:1:517:C:H5'	2.02	0.42
51:1:533:G:H5"	51:1:533:G:H8	1.83	0.42
51:1:751:A:H62	51:1:789:A:H62	1.67	0.42
51:1:820:A:H5'	51:1:837:C:O2'	2.19	0.42
51:1:981:A:H1'	51:1:2037:A:H1'	2.00	0.42
51:1:1592:C:H2'	51:1:1593:A:H8	1.83	0.42
51:1:1797:G:N2	51:1:1798:U:H1'	2.34	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2060:A:O2'	51:1:2061:G:OP2	2.35	0.42
51:1:2556:C:C2'	51:1:2557:G:H5'	2.48	0.42
51:1:2897:U:H2'	51:1:2898:U:C6	2.54	0.42
53:3:58:C:H2'	53:3:59:A:H5'	2.01	0.42
53:3:316:C:H2'	53:3:317:U:C6	2.55	0.42
53:3:540:G:H2'	53:3:541:G:O4'	2.20	0.42
53:3:1199:U:H2'	53:3:1200:C:H5'	2.01	0.42
58:B1:1643:TYR:CE1	58:B1:1661:GLU:OE1	2.73	0.42
58:B1:1721:LYS:HA	58:B1:1721:LYS:HD2	1.33	0.42
59:B2:538:LEU:HD13	59:B2:543:ALA:HB2	2.01	0.42
65:a:41:SER:OG	65:a:43:ASP:OD2	2.32	0.42
67:h:2:DPP:NG	67:h:3:SER:N	2.66	0.42
7:G:26:MET:HG3	7:G:29:PHE:HB2	2.00	0.42
8:H:12:GLY:N	8:H:15:LYS:O	2.35	0.42
8:H:168:ARG:NH1	53:3:1106:G:O2'	2.53	0.42
10:J:126:ALA:H	53:3:9:G:P	2.43	0.42
20:T:27:GLN:O	20:T:27:GLN:NE2	2.52	0.42
21:U:38:PHE:HZ	21:U:48:GLU:HG3	1.84	0.42
27:b:148:GLY:O	51:1:2205:A:H5'	2.20	0.42
27:b:219:VAL:HG21	51:1:782:A:N7	2.35	0.42
28:c:94:GLN:H	28:c:94:GLN:HG3	1.59	0.42
28:c:140:HIS:NE2	51:1:1658:C:OP1	2.52	0.42
28:c:152:PRO:HA	51:1:1130:U:O2	2.20	0.42
38:n:106:ASP:OD2	51:1:1287:A:C5	2.72	0.42
49:y:9:LYS:HD3	49:y:10:SER:H	1.84	0.42
51:1:1373:A:H2'	51:1:1374:G:O4'	2.20	0.42
51:1:2133:G:H8	51:1:2158:A:C2	2.38	0.42
51:1:2350:C:H2'	51:1:2351:G:O4'	2.19	0.42
51:1:2475:C:H42	51:1:2529:G:H22	1.66	0.42
51:1:2633:G:C2'	51:1:2634:A:H5"	2.47	0.42
52:2:79:G:H2'	52:2:80:U:O4'	2.19	0.42
53:3:182:A:H2'	53:3:183:C:H5"	2.01	0.42
53:3:264:C:H2'	53:3:265:G:O4'	2.19	0.42
53:3:927:G:H4'	53:3:1503:A:N7	2.33	0.42
53:3:1271:A:H5'	53:3:1314:C:H5'	2.01	0.42
58:B1:2788:ASN:O	58:B1:2792:GLU:HB2	2.20	0.42
59:B2:1313:HIS:CD2	60:W0:31:GLN:HE22	2.37	0.42
20:T:3:SER:OG	20:T:4:THR:N	2.53	0.42
24:X:32:THR:OG1	24:X:33:TRP:N	2.53	0.42
27:b:144:GLU:HA	27:b:151:GLY:HA2	2.01	0.42
28:c:59:ARG:HA	28:c:59:ARG:HD2	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:d:46:GLN:HE21	29:d:86:ALA:HA	1.84	0.42
51:1:8:C:H2'	51:1:9:G:O4'	2.20	0.42
51:1:39:G:H2'	51:1:40:U:C6	2.54	0.42
51:1:76:C:H42	51:1:110:G:H1	1.68	0.42
51:1:435:C:H2'	51:1:436:C:C5'	2.37	0.42
51:1:458:G:H21	51:1:469:G:H2'	1.84	0.42
51:1:481:G:H1'	51:1:506:G:H22	1.82	0.42
51:1:503:A:H4'	51:1:505:A:H5"	2.02	0.42
51:1:736:C:H42	51:1:760:G:H1	1.66	0.42
51:1:842:U:H2'	51:1:843:G:O4'	2.19	0.42
51:1:2469:A:H2'	51:1:2470:G:O4'	2.20	0.42
51:1:2472:G:H5"	51:1:2473:U:OP2	2.20	0.42
51:1:2575:C:O5'	51:1:2575:C:H6	2.03	0.42
51:1:2654:A:H1'	51:1:2656:U:C6	2.55	0.42
51:1:2670:A:H2'	51:1:2671:G:C8	2.55	0.42
53:3:1005:A:C2'	53:3:1006:G:H5'	2.49	0.42
53:3:1405:G:H21	53:3:1518:A:H8	1.66	0.42
53:3:1469:C:C2'	53:3:1470:U:H5'	2.50	0.42
54:4:55:G:H5'	59:B2:688:GLN:HE22	1.84	0.42
58:B1:2338:VAL:HG12	58:B1:2363:LEU:HD12	2.02	0.42
62:NG:135:ARG:O	62:NG:178:VAL:CA	2.68	0.42
4:D:13:ASN:HB3	51:1:125:A:O4'	2.20	0.42
7:G:53:LEU:HD23	7:G:56:LEU:HD12	2.01	0.42
16:P:24:ALA:N	16:P:86:LYS:O	2.39	0.42
18:R:105:ALA:HB3	18:R:109:LYS:HE3	2.02	0.42
21:U:5:ARG:NH2	53:3:377:G:H5"	2.35	0.42
25:Y:27:MET:H	25:Y:27:MET:HG3	1.74	0.42
29:d:85:PHE:CE2	51:1:587:C:H5'	2.54	0.42
29:d:85:PHE:CG	51:1:588:U:H1'	2.54	0.42
39:o:11:ALA:HB1	39:o:14:ALA:HB3	2.01	0.42
46:v:76:ASP:H	46:v:90:ASP:HB3	1.85	0.42
51:1:382:A:C2	51:1:393:C:N3	2.88	0.42
51:1:395:U:H2'	51:1:396:G:H8	1.80	0.42
51:1:780:G:H21	51:1:783:A:H62	1.67	0.42
51:1:813:U:H2'	51:1:814:C:C6	2.54	0.42
51:1:877:A:O2'	51:1:900:A:N6	2.53	0.42
51:1:1564:C:C4	51:1:1565:C:C4	3.08	0.42
51:1:1741:C:C2'	51:1:1742:U:H5'	2.50	0.42
51:1:1854:A:H2'	51:1:1855:U:H5'	2.02	0.42
53:3:269:C:H2'	53:3:270:A:C8	2.55	0.42
58:B1:1555:LEU:HD12	58:B1:1555:LEU:HA	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:B1:1636:ARG:HA	58:B1:1641:GLU:HG2	2.02	0.42
58:B1:1889:LEU:N	58:B1:1889:LEU:HD13	2.35	0.42
58:B1:2146:PRO:HG3	58:B1:2196:MET:HB3	2.01	0.42
58:B1:2429:LEU:HA	58:B1:2743:GLN:HG3	2.02	0.42
59:B2:524:ILE:HD12	59:B2:712:SER:HB2	2.02	0.42
59:B2:616:ILE:HG13	59:B2:652:TYR:HB2	2.01	0.42
66:0:281:ALA:O	66:0:285:TYR:N	2.53	0.42
66:0:493:THR:OG1	66:0:525:LEU:HD11	2.20	0.42
66:0:520:ILE:HG22	66:0:578:LEU:HA	2.02	0.42
7:G:56:LEU:HD23	7:G:56:LEU:HA	1.93	0.42
14:N:11:ARG:O	14:N:14:SER:OG	2.32	0.42
18:R:64:VAL:H	18:R:67:ASP:HB3	1.85	0.42
19:S:52:ARG:HD3	53:3:1317:C:N3	2.35	0.42
35:k:38:ILE:HG22	35:k:61:VAL:HG22	2.01	0.42
48:x:17:ARG:HA	48:x:17:ARG:HD3	1.72	0.42
51:1:172:A:H2'	51:1:173:A:C8	2.54	0.42
51:1:445:C:O2'	51:1:446:G:H5'	2.20	0.42
51:1:1183:U:O2'	51:1:1184:U:H5'	2.20	0.42
51:1:1387:A:H2'	51:1:1388:G:C8	2.55	0.42
51:1:1741:C:H2'	51:1:1742:U:H5'	2.01	0.42
51:1:2114:A:N6	51:1:2119:A:H61	2.18	0.42
51:1:2544:G:H2'	51:1:2545:G:C8	2.55	0.42
51:1:2873:A:O2'	51:1:2874:C:H5'	2.20	0.42
53:3:228:A:H2'	53:3:229:U:O4'	2.20	0.42
53:3:627:G:H2'	53:3:628:G:C8	2.54	0.42
53:3:668:G:H2'	53:3:669:G:C8	2.55	0.42
53:3:971:G:N7	53:3:1233:G:H1'	2.34	0.42
53:3:1292:G:H2'	53:3:1293:C:C6	2.55	0.42
59:B2:861:ALA:HB1	59:B2:882:ILE:HD13	2.02	0.42
65:a:42:VAL:HG13	65:a:175:ILE:HG13	2.02	0.42
3:C:38:PHE:HD1	3:C:45:HIS:HD2	1.68	0.42
18:R:100:ARG:HG2	53:3:950:U:C5	2.55	0.42
21:U:31:ARG:HB2	53:3:310:G:H5"	2.01	0.42
21:U:50:THR:HB	21:U:78:VAL:HB	2.02	0.42
21:U:71:VAL:HA	21:U:74:LEU:HB2	2.02	0.42
31:f:104:LEU:HD23	31:f:104:LEU:HA	1.94	0.42
36:l:29:LYS:HA	36:l:29:LYS:HD2	1.71	0.42
46:v:44:HIS:CE1	46:v:86:LEU:H	2.37	0.42
51:1:1:G:H2'	51:1:2:G:C8	2.55	0.42
51:1:43:G:O2'	51:1:44:A:H5'	2.20	0.42
51:1:538:A:H2'	51:1:539:G:O4'	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:976:G:H5'	51:1:1156:A:N6	2.35	0.42
51:1:1229:C:H2'	51:1:1230:A:C8	2.53	0.42
51:1:1512:C:O5'	51:1:1512:C:H6	2.03	0.42
51:1:2114:A:C5	51:1:2115:G:H1'	2.55	0.42
51:1:2259:U:H1'	51:1:2427:C:H2'	2.02	0.42
51:1:2402:U:H2'	51:1:2403:C:C5'	2.42	0.42
51:1:2596:U:H2'	51:1:2597:G:O4'	2.19	0.42
53:3:866:C:N3	53:3:867:G:H1'	2.35	0.42
53:3:1368:A:O2'	53:3:1369:C:H5'	2.19	0.42
54:4:56:G:OP1	59:B2:1073:LYS:NZ	2.34	0.42
58:B1:1640:PHE:CD2	58:B1:1796:ARG:HB2	2.54	0.42
58:B1:1887:ARG:HG2	58:B1:1887:ARG:HH11	1.84	0.42
58:B1:2319:ILE:HD11	58:B1:2321:MET:HE2	2.02	0.42
66:0:324:ILE:HA	66:0:334:THR:HA	2.01	0.42
14:N:21:LYS:HZ1	14:N:63:TYR:H	1.67	0.41
15:O:30:LYS:HA	15:O:34:ALA:HA	2.01	0.41
15:O:40:ILE:HD11	53:3:1124:G:H4'	2.02	0.41
16:P:34:THR:HA	16:P:40:ALA:HA	2.02	0.41
18:R:33:LEU:HD12	18:R:33:LEU:HA	1.91	0.41
29:d:29:HIS:CE1	36:l:8:PRO:HB3	2.55	0.41
29:d:50:ALA:HB2	51:1:801:G:C8	2.55	0.41
31:f:14:VAL:HG12	31:f:27:GLY:HA2	2.01	0.41
32:g:101:ASP:O	32:g:105:ALA:N	2.46	0.41
45:u:96:LYS:HE2	51:1:300:A:P	2.60	0.41
51:1:19:A:H2'	51:1:20:C:C6	2.55	0.41
51:1:52:A:C5	51:1:118:A:C2	3.08	0.41
51:1:1086:A:C1'	51:1:1103:A:H2	2.33	0.41
51:1:1388:G:H2'	51:1:1389:G:H8	1.84	0.41
51:1:2733:A:H2'	51:1:2734:A:H8	1.81	0.41
53:3:224:U:H2'	53:3:225:C:C5	2.55	0.41
53:3:1032:G:H21	53:3:1033:G:H4'	1.85	0.41
53:3:1153:G:H2'	53:3:1154:G:O4'	2.20	0.41
53:3:1386:G:O2'	53:3:1387:G:H5'	2.20	0.41
55:8:15:DC:H5'	59:B2:1269:ARG:HD3	2.00	0.41
58:B1:1741:LEU:HD23	58:B1:1741:LEU:C	2.44	0.41
58:B1:2115:PRO:HA	58:B1:2118:ILE:HG22	2.02	0.41
58:B1:2722:LEU:HD23	58:B1:2722:LEU:HA	1.89	0.41
59:B2:22:LEU:HD22	59:B2:603:ILE:HG21	2.02	0.41
59:B2:125:GLY:H	59:B2:495:ALA:HB1	1.84	0.41
59:B2:699:LEU:HG	59:B2:799:ASN:HD22	1.85	0.41
66:0:632:ILE:O	66:0:636:SER:OG	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:26:SER:HB2	30:e:101:ARG:HH11	1.84	0.41
2:B:24:VAL:H	43:s:35:ILE:HD11	1.84	0.41
7:G:218:ALA:HA	7:G:221:ARG:HE	1.85	0.41
8:H:24:ASN:OD1	8:H:25:THR:N	2.53	0.41
9:I:149:LYS:HG2	9:I:150:LYS:HG2	2.02	0.41
13:M:7:ALA:HA	13:M:10:LEU:HB2	2.02	0.41
27:b:170:TYR:HB3	27:b:182:LYS:HB3	2.02	0.41
28:c:117:GLY:H	28:c:164:GLN:HE22	1.68	0.41
45:u:42:LYS:HE2	45:u:42:LYS:HB3	1.90	0.41
45:u:48:VAL:HA	45:u:49:PRO:HD3	1.93	0.41
51:1:711:G:H2'	51:1:712:G:O4'	2.21	0.41
51:1:1379:U:H2'	51:1:1380:G:H5'	2.02	0.41
51:1:1639:C:C2'	51:1:1640:A:H5'	2.51	0.41
51:1:1716:U:O2'	51:1:1717:A:H5'	2.20	0.41
51:1:1972:G:H2'	51:1:1973:G:H8	1.85	0.41
51:1:1974:C:H2'	51:1:1975:G:C8	2.55	0.41
51:1:2448:A:H3'	51:1:2449:U:H2'	2.02	0.41
51:1:2520:C:H1'	51:1:2565:A:O2'	2.19	0.41
51:1:2553:G:H2'	51:1:2554:U:C4'	2.49	0.41
51:1:2840:C:H2'	51:1:2841:C:C6	2.56	0.41
52:2:53:A:H2'	52:2:54:G:O4'	2.20	0.41
53:3:111:G:O2'	53:3:389:A:H1'	2.20	0.41
53:3:762:U:H2'	53:3:763:G:C8	2.55	0.41
53:3:850:U:O5'	53:3:850:U:H6	2.03	0.41
53:3:909:A:H2'	53:3:910:C:O4'	2.20	0.41
53:3:957:U:H2'	53:3:959:A:OP2	2.21	0.41
53:3:1422:G:N2	53:3:1479:C:N4	2.68	0.41
58:B1:2676:ILE:HD12	58:B1:2685:TYR:HE2	1.85	0.41
58:B1:2771:SER:OG	58:B1:2772:ASP:N	2.53	0.41
58:B1:2849:ASN:HA	58:B1:2852:VAL:HG12	2.02	0.41
59:B2:741:MET:SD	59:B2:974:ARG:NH2	2.93	0.41
59:B2:746:ALA:O	59:B2:974:ARG:NH2	2.45	0.41
1:A:11:GLU:HG2	1:A:25:ARG:HG2	2.02	0.41
2:B:53:VAL:HG23	2:B:54:ILE:HG23	2.02	0.41
12:L:35:LYS:HD3	53:3:1373:G:H5"	2.01	0.41
21:U:12:LYS:HB3	53:3:392:C:OP2	2.20	0.41
23:W:62:ARG:NH1	53:3:718:A:N6	2.69	0.41
32:g:1:MET:HE3	32:g:1:MET:HB3	1.91	0.41
32:g:89:LYS:HD2	32:g:89:LYS:HA	1.83	0.41
47:w:56:PHE:HE2	51:1:2365:G:C5'	2.33	0.41
51:1:191:A:N3	51:1:192:C:C6	2.88	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1024:G:P	51:1:1025:G:H3'	2.60	0.41
51:1:1054:A:H2'	51:1:1055:G:C8	2.55	0.41
51:1:1310:G:C3'	51:1:1311:G:H5'	2.50	0.41
51:1:2013:A:H61	51:1:2613:U:H3	1.68	0.41
51:1:2139:U:H2'	51:1:2140:G:C8	2.54	0.41
51:1:2305:U:H2'	51:1:2306:C:H5'	2.01	0.41
51:1:2676:C:O5'	51:1:2676:C:H6	2.04	0.41
53:3:426:U:H2'	53:3:427:U:C6	2.54	0.41
58:B1:2319:ILE:HG12	58:B1:2383:SER:HB2	2.01	0.41
65:a:65:LEU:HD23	65:a:65:LEU:HA	1.92	0.41
66:0:495:ARG:HG3	66:0:495:ARG:NH1	2.36	0.41
3:C:13:SER:OG	3:C:47:ILE:O	2.27	0.41
7:G:23:ASN:H	7:G:189:ASN:HA	1.86	0.41
9:I:201:GLU:OE1	10:J:111:ARG:NH1	2.53	0.41
17:Q:9:LYS:HE2	17:Q:9:LYS:HB2	1.85	0.41
27:b:252:LYS:HD3	27:b:252:LYS:HA	1.80	0.41
28:c:47:ALA:HA	28:c:84:LEU:HG	2.01	0.41
28:c:80:TRP:CD1	28:c:202:ILE:HD11	2.55	0.41
28:c:116:LYS:HB2	28:c:165:MET:HB3	2.02	0.41
31:f:97:VAL:HG12	31:f:124:CYS:HB2	2.02	0.41
34:j:114:LEU:O	34:j:118:MET:N	2.54	0.41
36:l:78:ARG:HE	36:l:111:ILE:HD11	1.86	0.41
37:m:16:ARG:HD3	37:m:16:ARG:HA	1.90	0.41
44:t:49:LYS:HD2	44:t:49:LYS:HA	1.75	0.41
51:1:324:A:H2'	51:1:325:G:H5'	2.01	0.41
51:1:734:A:O2'	51:1:1635:A:H4'	2.21	0.41
51:1:1158:C:O5'	51:1:1158:C:H6	2.02	0.41
51:1:1591:A:H2'	51:1:1592:C:C6	2.55	0.41
51:1:1625:C:H2'	51:1:1626:A:O4'	2.20	0.41
51:1:2139:U:H2'	51:1:2140:G:H8	1.84	0.41
51:1:2302:U:H2'	51:1:2303:G:C8	2.55	0.41
51:1:2498:C:O2'	51:1:2499:C:H5'	2.20	0.41
53:3:458:U:H2'	53:3:459:A:C8	2.55	0.41
53:3:678:U:H2'	53:3:679:C:C6	2.55	0.41
53:3:938:A:H1'	53:3:1376:U:O2'	2.20	0.41
53:3:1007:U:H2'	53:3:1008:U:C5	2.54	0.41
53:3:1264:U:H3	53:3:1271:A:H61	1.67	0.41
53:3:1327:C:H2'	53:3:1328:C:H6	1.85	0.41
53:3:1490:U:H2'	53:3:1491:G:O4'	2.20	0.41
58:B1:2012:MET:HG3	58:B1:2043:LEU:HD11	2.01	0.41
58:B1:2014:ARG:HG2	58:B1:2015:ASP:H	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:B2:22:LEU:HB3	59:B2:655:VAL:HG11	2.01	0.41
59:B2:870:ILE:HB	59:B2:944:ARG:HD3	2.02	0.41
59:B2:998:LEU:HD21	59:B2:1015:ALA:HB2	2.02	0.41
63:5:4:C:H2'	63:5:5:G:C8	2.55	0.41
66:0:446:ARG:HB3	66:0:459:ALA:HB3	2.01	0.41
5:E:7:ARG:NH1	51:1:254:G:H22	2.18	0.41
6:F:10:LEU:HD21	51:1:2477:U:H5	1.82	0.41
10:J:13:LYS:NZ	10:J:14:LEU:O	2.53	0.41
28:c:145:SER:HB3	51:1:2578:G:N7	2.35	0.41
28:c:170:VAL:HG13	28:c:194:PRO:HG3	2.01	0.41
30:e:63:LYS:O	52:2:42:C:H1'	2.21	0.41
33:i:123:ALA:CB	51:1:1081:U:H4'	2.50	0.41
35:k:47:ILE:HD13	35:k:47:ILE:HA	1.85	0.41
47:w:37:ARG:HA	47:w:37:ARG:HD3	1.69	0.41
51:1:140:C:C6	51:1:141:G:H4'	2.55	0.41
51:1:828:U:H2'	51:1:829:A:N7	2.30	0.41
51:1:917:A:H5"	51:1:2268:A:N6	2.30	0.41
51:1:1609:A:H5'	51:1:1609:A:C8	2.55	0.41
51:1:2049:G:N2	51:1:2620:C:C2	2.89	0.41
51:1:2559:C:H2'	51:1:2560:A:H8	1.85	0.41
51:1:2638:G:H1'	51:1:2778:A:N6	2.34	0.41
53:3:862:C:O2'	53:3:863:U:H5'	2.20	0.41
53:3:1315:U:H2'	53:3:1316:G:O4'	2.21	0.41
55:8:14:DC:C2	55:8:15:DC:C5	3.09	0.41
57:A1:33:ARG:HE	57:A1:33:ARG:HB3	1.56	0.41
66:0:64:THR:HG23	66:0:472:ARG:HH22	1.86	0.41
66:0:169:LEU:HD12	66:0:185:LEU:HB3	2.01	0.41
66:0:494:ILE:HB	66:0:608:ALA:HB1	2.03	0.41
2:B:6:LYS:NZ	51:1:1262:A:C2	2.89	0.41
6:F:32:LYS:HD2	51:1:2478:A:OP1	2.20	0.41
7:G:95:TRP:HZ3	7:G:99:MET:HE2	1.85	0.41
15:O:58:ASN:HD21	53:3:1061:G:H4'	1.85	0.41
16:P:86:LYS:HG3	16:P:114:PRO:HD3	2.02	0.41
18:R:88:LEU:HD21	18:R:92:ARG:HE	1.86	0.41
22:V:29:LYS:HE2	22:V:29:LYS:HB3	1.83	0.41
28:c:19:GLY:HA2	40:p:78:PRO:HD2	2.02	0.41
28:c:209:ALA:OXT	51:1:2733:A:C2	2.73	0.41
37:m:42:THR:HA	37:m:93:VAL:HA	2.02	0.41
38:n:24:MET:O	38:n:28:LEU:N	2.54	0.41
39:o:24:THR:HB	39:o:90:VAL:HG12	2.02	0.41
44:t:7:LEU:HD23	44:t:7:LEU:HA	1.90	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:72:U:C4	51:1:112:U:H4'	2.55	0.41
51:1:151:C:H5"	51:1:1360:G:OP1	2.21	0.41
51:1:272:A:H2'	51:1:273:G:H8	1.86	0.41
51:1:527:C:OP2	51:1:2779:U:N3	2.51	0.41
51:1:692:C:H2'	51:1:693:A:H8	1.86	0.41
51:1:1900:A:H5'	51:1:1970:A:C5'	2.50	0.41
51:1:2611:C:H2'	51:1:2612:C:H6	1.85	0.41
53:3:68:G:C2	53:3:69:G:H1'	2.55	0.41
53:3:79:G:H2'	53:3:80:A:H5'	2.03	0.41
53:3:107:G:H2'	53:3:108:G:O4'	2.20	0.41
58:B1:1570:LEU:HB2	58:B1:1589:VAL:HG11	2.03	0.41
58:B1:1638:LEU:HD23	58:B1:1638:LEU:HA	1.89	0.41
58:B1:1643:TYR:N	58:B1:1643:TYR:CD1	2.88	0.41
58:B1:1643:TYR:OH	58:B1:1661:GLU:OE1	2.34	0.41
58:B1:1778:LEU:HD13	58:B1:1798:LEU:HD13	2.02	0.41
59:B2:50:GLU:HG2	59:B2:73:TYR:HE1	1.85	0.41
59:B2:901:LEU:HD12	59:B2:901:LEU:HA	1.77	0.41
65:a:54:LYS:NZ	65:a:56:ASP:OD1	2.53	0.41
66:0:375:LYS:HE2	66:0:375:LYS:HB2	1.90	0.41
13:M:4:ASP:HB3	13:M:7:ALA:HB3	2.02	0.41
15:O:45:ARG:NH1	15:O:47:GLU:OE1	2.53	0.41
15:O:46:LYS:HB3	53:3:1253:G:OP1	2.21	0.41
17:Q:56:LEU:HD13	17:Q:56:LEU:HA	1.91	0.41
27:b:131:MET:HE3	27:b:131:MET:HB2	1.84	0.41
28:c:91:THR:H	28:c:94:GLN:HE21	1.66	0.41
30:e:32:LYS:H	30:e:32:LYS:HG2	1.69	0.41
30:e:131:VAL:N	30:e:152:ASP:OD1	2.49	0.41
31:f:123:GLU:HB2	31:f:131:VAL:HB	2.03	0.41
36:l:4:ASN:OD1	51:1:1203:U:O2	2.39	0.41
39:o:35:ILE:HD13	39:o:35:ILE:HA	1.94	0.41
51:1:4:U:H2'	51:1:5:A:O4'	2.20	0.41
51:1:413:C:H2'	51:1:414:C:C6	2.56	0.41
51:1:958:U:C2'	52:2:89:U:H1'	2.47	0.41
51:1:2073:C:O2	51:1:2437:G:C2	2.74	0.41
51:1:2081:U:H2'	51:1:2082:A:H8	1.86	0.41
51:1:2140:G:H1	51:1:2151:U:H3	1.69	0.41
53:3:26:A:H61	53:3:558:G:H1'	1.86	0.41
53:3:262:A:H2'	53:3:263:A:C8	2.55	0.41
53:3:461:A:H2'	53:3:462:G:C8	2.56	0.41
58:B1:1610:THR:HG23	58:B1:1799:GLN:HA	2.03	0.41
58:B1:1701:ARG:HH11	58:B1:1701:ARG:CG	2.14	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:B1:1738:LEU:N	58:B1:1738:LEU:HD23	2.36	0.41
58:B1:2214:LYS:HE2	58:B1:2214:LYS:HB3	1.93	0.41
58:B1:2347:VAL:HB	58:B1:2357:VAL:HG22	2.02	0.41
66:0:18:HIS:ND1	66:0:120:GLN:HB3	2.36	0.41
66:0:520:ILE:HD13	66:0:557:ILE:HD11	2.01	0.41
13:M:3:GLN:HE21	53:3:878:A:H1'	1.86	0.41
15:O:53:ILE:HD12	19:S:84:ARG:HD2	2.03	0.41
19:S:99:SER:HG	53:3:1187:G:H21	1.69	0.41
24:X:20:LYS:O	24:X:24:SER:OG	2.39	0.41
24:X:77:ARG:HH11	53:3:1225:A:H4'	1.83	0.41
26:Z:27:VAL:O	26:Z:31:VAL:N	2.54	0.41
27:b:145:MET:SD	51:1:1800:C:H5"	2.61	0.41
28:c:55:LYS:HE3	28:c:60:VAL:HG22	2.03	0.41
28:c:113:SER:HB3	28:c:194:PRO:HB3	2.03	0.41
29:d:45:ALA:CB	51:1:38:A:H4'	2.50	0.41
30:e:65:LEU:N	30:e:87:LYS:O	2.53	0.41
34:j:27:ARG:NH2	51:1:1142:A:H4'	2.36	0.41
35:k:1:MET:HE3	51:1:1665:A:H1'	2.02	0.41
41:q:30:VAL:HG11	51:1:580:U:H4'	2.02	0.41
45:u:67:SER:HB2	51:1:327:G:H21	1.85	0.41
49:y:31:GLN:HB3	49:y:37:LEU:HD12	2.02	0.41
51:1:549:G:H2'	51:1:550:C:C6	2.56	0.41
51:1:940:G:C3'	51:1:941:A:H5"	2.51	0.41
51:1:1063:G:OP2	51:1:1070:A:C4'	2.69	0.41
51:1:1354:A:H2'	51:1:1355:G:O4'	2.20	0.41
51:1:1698:A:N7	51:1:1700:A:C8	2.89	0.41
51:1:1752:C:O2'	51:1:1753:G:H5'	2.21	0.41
51:1:1853:A:H2'	51:1:1854:A:H8	1.82	0.41
51:1:1863:G:H2'	51:1:1864:U:C6	2.56	0.41
51:1:2588:G:C2'	51:1:2589:A:H5'	2.50	0.41
53:3:520:A:H61	53:3:533:A:H61	1.67	0.41
53:3:562:U:H4'	53:3:563:A:O5'	2.20	0.41
53:3:1093:A:O2'	53:3:1094:G:H5'	2.20	0.41
58:B1:1608:SER:CB	58:B1:1795:LYS:HG2	2.51	0.41
58:B1:1710:GLU:CG	58:B1:1714:LYS:HE3	2.44	0.41
58:B1:1941:ILE:HD13	58:B1:1941:ILE:HA	1.88	0.41
58:B1:2108:TYR:HD2	58:B1:2109:ARG:NH1	2.17	0.41
62:NG:175:PHE:O	62:NG:178:VAL:O	2.38	0.41
2:B:39:ARG:CZ	51:1:2884:U:H3	2.34	0.41
4:D:24:THR:OG1	4:D:25:LYS:N	2.53	0.41
4:D:39:ARG:CZ	51:1:469:G:O6	2.69	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:K:89:VAL:HG23	53:3:737:C:C5'	2.48	0.41
21:U:60:TRP:HB3	21:U:65:ALA:HB2	2.03	0.41
22:V:16:MET:HE2	22:V:16:MET:HB3	1.84	0.41
24:X:17:LYS:NZ	24:X:31:ARG:O	2.48	0.41
27:b:7:PRO:HB3	27:b:13:ARG:HG3	2.03	0.41
27:b:145:MET:HE3	27:b:153:LEU:HD11	2.02	0.41
27:b:153:LEU:HA	51:1:1799:G:N2	2.35	0.41
27:b:240:GLY:CA	51:1:2597:G:H5"	2.51	0.41
32:g:22:LYS:HD3	32:g:22:LYS:HA	1.86	0.41
45:u:84:PHE:HB2	51:1:297:G:O3'	2.21	0.41
48:x:57:VAL:HG13	51:1:372:G:H5'	2.03	0.41
51:1:838:C:C2	51:1:941:A:C6	3.09	0.41
51:1:986:C:O5'	51:1:986:C:H6	2.04	0.41
51:1:1054:A:H2	51:1:1105:U:H3	1.68	0.41
51:1:1444:G:H2'	51:1:1445:G:O4'	2.21	0.41
51:1:1801:A:H5'	51:1:1801:A:H8	1.86	0.41
51:1:1810:A:H2'	51:1:1811:G:C5'	2.51	0.41
51:1:1823:G:C6	51:1:1824:G:C5	3.09	0.41
51:1:1932:A:H62	51:1:1968:G:H21	1.68	0.41
51:1:2063:C:O2	51:1:2450:A:N1	2.54	0.41
51:1:2138:G:N1	51:1:2154:A:O2'	2.47	0.41
51:1:2201:G:H2'	51:1:2202:U:O4'	2.21	0.41
51:1:2356:U:H3'	51:1:2357:G:H5"	2.03	0.41
51:1:2534:A:C2	51:1:2535:G:H1'	2.56	0.41
52:2:78:A:H2'	52:2:79:G:O4'	2.20	0.41
53:3:153:C:H2'	53:3:154:U:C5'	2.51	0.41
53:3:204:G:H2'	53:3:205:A:C8	2.55	0.41
53:3:492:C:H2'	53:3:493:A:H8	1.83	0.41
53:3:795:C:C5	53:3:796:C:C5	3.09	0.41
53:3:1346:A:N1	53:3:1374:A:H5"	2.35	0.41
53:3:1389:C:H2'	53:3:1390:U:O4'	2.21	0.41
55:8:2:DC:C6	55:8:2:DC:H5'	2.56	0.41
59:B2:478:ARG:HD2	59:B2:492:MET:HA	2.02	0.41
59:B2:657:THR:HG21	59:B2:1188:ASP:HB2	2.03	0.41
59:B2:1278:LEU:HD23	59:B2:1278:LEU:HA	1.86	0.41
60:W0:26:ARG:HA	60:W0:26:ARG:HD2	1.93	0.41
63:5:34:G:H5'	63:5:35:A:C8	2.56	0.41
66:0:334:THR:HG1	66:0:385:ALA:H	1.69	0.41
7:G:17:HIS:HB2	7:G:202:ASN:HD22	1.86	0.41
11:K:88:MET:HB2	23:W:63:TYR:HE2	1.86	0.41
15:O:82:LYS:HD2	15:O:82:LYS:HA	1.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:P:13:LYS:HE2	16:P:13:LYS:HB2	1.95	0.41
22:V:46:HIS:CG	22:V:66:LEU:HD22	2.56	0.41
30:e:68:LYS:HD3	30:e:68:LYS:HA	1.86	0.41
45:u:73:ASN:ND2	45:u:76:THR:H	2.19	0.41
48:x:31:ASN:ND2	48:x:52:ALA:HB2	2.34	0.41
51:1:121:G:H2'	51:1:122:G:H8	1.86	0.41
51:1:1146:C:O2'	51:1:1147:A:H5'	2.21	0.41
51:1:1303:G:H2'	51:1:1304:A:C8	2.54	0.41
51:1:2136:G:N1	51:1:2137:U:O2	2.54	0.41
51:1:2643:G:H2'	51:1:2644:G:O4'	2.20	0.41
53:3:130:A:N3	53:3:130:A:H2'	2.36	0.41
57:A2:57:THR:HG23	57:A2:158:ARG:HH21	1.86	0.41
58:B1:1607:ALA:HB2	58:B1:1775:ASN:OD1	2.21	0.41
58:B1:2449:ILE:HB	58:B1:2517:ALA:HB3	2.01	0.41
59:B2:176:ILE:HD12	59:B2:184:LEU:HD23	2.03	0.41
64:6:33:U:H2'	64:6:35:A:OP2	2.21	0.41
66:0:534:TYR:HB2	66:0:561:LEU:HD11	2.03	0.41
5:E:16:THR:OG1	5:E:17:GLY:N	2.52	0.40
12:L:34:LYS:CE	53:3:1290:G:H4'	2.51	0.40
12:L:82:SER:HB3	12:L:83:THR:H	1.60	0.40
13:M:46:GLU:O	13:M:61:THR:OG1	2.28	0.40
16:P:66:ALA:HA	16:P:69:CYS:HB3	2.04	0.40
18:R:70:ARG:NE	30:e:141:ASP:O	2.53	0.40
19:S:1:ALA:HB1	53:3:1049:U:C4	2.56	0.40
25:Y:21:ALA:HA	25:Y:24:ARG:HD3	2.02	0.40
27:b:71:ASP:OD2	27:b:188:ARG:NH2	2.46	0.40
27:b:121:ALA:HA	27:b:129:LEU:HD13	2.02	0.40
27:b:152:GLN:HG2	51:1:1818:U:C4	2.55	0.40
28:c:179:ARG:HB3	28:c:188:LEU:HB2	2.03	0.40
32:g:9:VAL:HG12	32:g:11:ASN:H	1.85	0.40
32:g:132:PHE:HB2	32:g:140:ALA:HB3	2.03	0.40
37:m:11:LYS:O	51:1:910:A:N6	2.54	0.40
37:m:82:MET:HE2	37:m:82:MET:HB2	1.80	0.40
41:q:94:LEU:HA	41:q:97:ILE:HG22	2.03	0.40
45:u:46:LYS:HE2	45:u:46:LYS:HB2	1.91	0.40
48:x:1:SER:OG	51:1:1365:A:H5'	2.20	0.40
51:1:289:G:H2'	51:1:290:U:O4'	2.20	0.40
51:1:740:C:O2'	51:1:741:U:H5'	2.21	0.40
51:1:772:C:H5"	51:1:1356:G:C5'	2.50	0.40
51:1:1340:U:H4'	51:1:1394:U:O2'	2.21	0.40
51:1:1700:A:C2'	51:1:1701:A:H5'	2.50	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1787:A:H2'	51:1:1787:A:N3	2.36	0.40
51:1:2830:C:O2	51:1:2883:A:H2	2.03	0.40
53:3:270:A:H2'	53:3:271:C:O4'	2.20	0.40
53:3:794:A:O2'	53:3:795:C:H5'	2.20	0.40
53:3:866:C:C2	53:3:867:G:H1'	2.56	0.40
53:3:883:C:H2'	53:3:884:U:C6	2.56	0.40
53:3:1305:G:H22	53:3:1331:G:H2'	1.86	0.40
57:A1:224:LEU:HD23	57:A2:228:LEU:HD21	2.03	0.40
57:A2:28:LEU:HB2	57:A2:201:LEU:HB3	2.02	0.40
58:B1:1601:MET:HG2	58:B1:1745:PRO:CG	2.49	0.40
65:a:211:LYS:HE2	65:a:211:LYS:HB2	1.57	0.40
66:0:83:ARG:HE	66:0:83:ARG:HB2	1.75	0.40
2:B:42:ILE:HG22	2:B:48:TYR:HB2	2.03	0.40
8:H:113:LYS:HA	8:H:113:LYS:HD2	1.88	0.40
10:J:83:PRO:HB3	10:J:97:PRO:HD3	2.02	0.40
14:N:21:LYS:HE2	14:N:21:LYS:HB2	1.85	0.40
14:N:82:ILE:HA	14:N:85:ALA:HB3	2.03	0.40
19:S:4:SER:OG	53:3:1216:A:H5"	2.21	0.40
19:S:96:LYS:HA	19:S:96:LYS:HD2	1.79	0.40
24:X:46:LEU:HB3	24:X:48:ILE:HG12	2.03	0.40
27:b:77:VAL:HB	27:b:112:GLY:H	1.86	0.40
31:f:70:LEU:HD12	31:f:70:LEU:HA	1.95	0.40
33:i:71:LYS:HD3	33:i:116:MET:HE2	2.03	0.40
42:r:78:ARG:HH22	51:1:975:A:H4'	1.86	0.40
51:1:1169:A:H2'	51:1:1170:C:O4'	2.22	0.40
51:1:1831:G:C2	51:1:1975:G:C2	3.10	0.40
51:1:1955:U:H6	51:1:1955:U:H5'	1.86	0.40
51:1:2140:G:H2'	51:1:2141:G:C8	2.56	0.40
51:1:2255:G:H2'	51:1:2256:G:C8	2.56	0.40
51:1:2313:C:H2'	51:1:2314:A:C8	2.56	0.40
51:1:2656:U:OP1	66:0:146:ARG:NH2	2.52	0.40
51:1:2798:U:H4'	51:1:2799:A:C6	2.56	0.40
52:2:102:G:H2'	52:2:103:U:C1'	2.51	0.40
53:3:240:G:H2'	53:3:241:G:H8	1.87	0.40
53:3:1536:C:H2'	53:3:1537:U:C6	2.56	0.40
58:B1:1971:LEU:HD11	59:B2:1294:LYS:HG2	2.03	0.40
7:G:108:GLN:HA	7:G:111:LYS:HZ2	1.87	0.40
9:I:97:LEU:HG	9:I:134:TYR:HB3	2.04	0.40
10:J:37:VAL:HG21	10:J:113:VAL:HG13	2.02	0.40
13:M:26:MET:HB3	13:M:58:LEU:HB3	2.03	0.40
13:M:126:CYS:SG	13:M:127:TYR:N	2.93	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:P:26:PHE:O	16:P:27:ASN:ND2	2.54	0.40
16:P:52:ARG:HA	16:P:52:ARG:HD3	1.85	0.40
17:Q:23:LEU:HA	17:Q:23:LEU:HD23	1.83	0.40
26:Z:36:PHE:CE1	26:Z:40:PRO:HD3	2.57	0.40
27:b:27:LYS:NZ	51:1:1428:C:OP2	2.44	0.40
27:b:116:GLN:NE2	27:b:120:ASP:OD2	2.54	0.40
27:b:247:TRP:CE2	51:1:1805:A:H5"	2.57	0.40
28:c:149:ASN:ND2	51:1:2572:A:C8	2.89	0.40
30:e:2:LYS:O	30:e:2:LYS:NZ	2.49	0.40
37:m:62:LYS:HD2	37:m:62:LYS:HA	1.91	0.40
39:o:25:ARG:HG3	39:o:40:ILE:HB	2.03	0.40
49:y:31:GLN:HG2	49:y:37:LEU:HB2	2.04	0.40
51:1:191:A:H2'	51:1:192:C:C6	2.56	0.40
51:1:1679:A:H4'	51:1:1990:C:H4'	2.03	0.40
51:1:2746:U:H2'	51:1:2747:G:O4'	2.21	0.40
51:1:2811:G:O2'	51:1:2812:G:H5'	2.21	0.40
53:3:408:A:N6	53:3:434:U:H3	2.18	0.40
53:3:1283:U:O2'	53:3:1284:C:H5'	2.22	0.40
57:A2:42:ALA:HB1	57:A2:224:LEU:HD11	2.03	0.40
58:B1:1719:ARG:NH1	58:B1:1719:ARG:CG	2.82	0.40
59:B2:886:LYS:HE2	59:B2:918:LEU:HD13	2.03	0.40
8:H:68:HIS:NE2	8:H:105:VAL:HB	2.37	0.40
12:L:115:MET:HA	12:L:118:ARG:HB2	2.04	0.40
14:N:6:TYR:CZ	53:3:1147:C:H4'	2.56	0.40
16:P:25:SER:HA	16:P:88:PRO:HD2	2.02	0.40
17:Q:30:ARG:NH1	66:0:429:GLU:OE2	2.54	0.40
27:b:110:LYS:HD2	27:b:110:LYS:HA	1.89	0.40
28:c:209:ALA:OXT	51:1:2733:A:N3	2.54	0.40
30:e:78:ILE:HD11	30:e:82:TYR:HB3	2.03	0.40
33:i:21:PRO:HB2	33:i:22:PRO:HD3	2.03	0.40
33:i:52:LEU:HD21	33:i:81:LYS:HB2	2.03	0.40
40:p:17:PRO:HD2	40:p:83:ILE:HB	2.04	0.40
41:q:23:TYR:HD1	51:1:533:G:C5'	2.35	0.40
46:v:78:GLN:HB3	46:v:88:HIS:HB3	2.03	0.40
51:1:43:G:H2'	51:1:44:A:O4'	2.22	0.40
51:1:126:A:C6	51:1:127:A:C2	3.10	0.40
51:1:226:A:H2'	51:1:227:A:O4'	2.21	0.40
51:1:324:A:C2'	51:1:325:G:H5'	2.51	0.40
51:1:375:G:O2'	51:1:376:G:H5'	2.21	0.40
51:1:375:G:H2'	51:1:376:G:H5'	2.03	0.40
51:1:571:U:C5	51:1:575:A:C6	3.10	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:677:A:C6	51:1:802:A:C6	3.09	0.40
51:1:1047:G:N2	51:1:1110:G:H2'	2.36	0.40
51:1:1177:G:H3'	51:1:1178:C:H5"	2.02	0.40
51:1:1468:U:H2'	51:1:1522:A:H61	1.86	0.40
51:1:1666:G:N7	51:1:1667:G:C6	2.89	0.40
51:1:1967:C:H2'	51:1:1968:G:O4'	2.22	0.40
51:1:2070:A:C2	51:1:2071:A:C4	3.08	0.40
51:1:2112:G:O6	51:1:2167:U:O2'	2.37	0.40
51:1:2356:U:C3'	51:1:2357:G:H5"	2.52	0.40
51:1:2688:G:N1	51:1:2720:U:OP2	2.40	0.40
51:1:2741:A:N6	51:1:2763:G:H1'	2.37	0.40
52:2:112:G:H2'	52:2:113:C:C6	2.55	0.40
53:3:517:G:H4'	53:3:519:C:C2	2.56	0.40
57:A1:211:ILE:HD12	57:A1:211:ILE:HA	1.92	0.40
58:B1:1525:SER:HB3	58:B1:1528:MET:H	1.87	0.40
58:B1:1848:TYR:HA	59:B2:1246:ARG:O	2.21	0.40
59:B2:741:MET:HE3	59:B2:974:ARG:HH12	1.85	0.40
59:B2:936:ARG:HB2	59:B2:1042:LEU:HD12	2.03	0.40
59:B2:979:LEU:HD11	59:B2:1011:LEU:HD11	2.03	0.40
63:5:23:A:H2'	63:5:24:G:C8	2.56	0.40
64:6:25:C:H2'	64:6:26:G:H8	1.85	0.40
66:0:32:PHE:HA	66:0:37:ASN:HB2	2.03	0.40
66:0:158:ILE:HG23	66:0:162:LEU:HB2	2.03	0.40
66:0:489:ALA:HB3	66:0:687:TYR:HE1	1.85	0.40
12:L:138:GLU:O	12:L:142:ARG:N	2.52	0.40
20:T:47:LYS:HA	20:T:47:LYS:HD3	1.94	0.40
27:b:28:PRO:HB2	27:b:62:ARG:HH12	1.87	0.40
27:b:159:THR:OG1	27:b:160:TYR:N	2.54	0.40
27:b:255:LYS:HD3	51:1:1844:C:H5"	2.02	0.40
28:c:176:ASP:OD1	28:c:176:ASP:N	2.37	0.40
31:f:97:VAL:HG11	31:f:123:GLU:HA	2.03	0.40
32:g:90:LEU:HD11	32:g:93:SER:HA	2.02	0.40
33:i:10:LEU:HG	33:i:23:VAL:HG13	2.03	0.40
37:m:47:GLU:O	37:m:51:ARG:N	2.48	0.40
38:n:23:ASN:HD21	51:1:1294:U:H1'	1.87	0.40
47:w:11:ASP:OD1	47:w:12:SER:N	2.54	0.40
47:w:58:LYS:HB2	47:w:58:LYS:HE3	1.76	0.40
51:1:1601:G:O2'	51:1:1602:U:H5'	2.22	0.40
51:1:1917:U:O5'	51:1:1917:U:O2	2.39	0.40
51:1:2108:A:OP1	65:a:3:LYS:HB3	2.22	0.40
51:1:2153:C:H3'	51:1:2154:A:C8	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2533:U:H2'	51:1:2534:A:O4'	2.21	0.40
53:3:904:U:H2'	53:3:905:U:C6	2.56	0.40
53:3:1034:G:H2'	53:3:1035:A:H8	1.86	0.40
53:3:1221:G:O2'	53:3:1222:G:H5'	2.21	0.40
53:3:1468:A:H2'	53:3:1469:C:O4'	2.21	0.40
57:A2:57:THR:HG22	57:A2:58:GLU:HG3	2.04	0.40
58:B1:1681:ALA:HB1	58:B1:1737:ILE:CG2	2.52	0.40
58:B1:2075:ARG:HD3	58:B1:2092:ASN:HA	2.03	0.40
59:B2:444:ASP:OD1	59:B2:444:ASP:N	2.51	0.40
59:B2:801:ARG:HG2	59:B2:1094:VAL:HG23	2.04	0.40
64:6:62:C:H5'	65:a:53:ARG:NE	2.36	0.40
66:0:161:ARG:HD2	66:0:162:LEU:HD23	2.02	0.40
66:0:468:ILE:O	66:0:472:ARG:N	2.51	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	A	44/70 (63%)	38 (86%)	6 (14%)	0	100 100
2	B	54/57 (95%)	48 (89%)	6 (11%)	0	100 100
3	C	48/55 (87%)	37 (77%)	11 (23%)	0	100 100
4	D	44/46 (96%)	35 (80%)	9 (20%)	0	100 100
5	E	62/65 (95%)	48 (77%)	13 (21%)	1 (2%)	8 37
6	F	36/38 (95%)	29 (81%)	7 (19%)	0	100 100
7	G	216/241 (90%)	182 (84%)	34 (16%)	0	100 100
8	H	204/233 (88%)	187 (92%)	17 (8%)	0	100 100
9	I	203/206 (98%)	170 (84%)	32 (16%)	1 (0%)	25 63
10	J	155/167 (93%)	129 (83%)	26 (17%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
11	K	98/135 (73%)	81 (83%)	17 (17%)	0	100	100
12	L	149/179 (83%)	130 (87%)	19 (13%)	0	100	100
13	M	127/130 (98%)	111 (87%)	16 (13%)	0	100	100
14	N	125/130 (96%)	110 (88%)	15 (12%)	0	100	100
15	O	96/103 (93%)	82 (85%)	14 (15%)	0	100	100
16	P	114/129 (88%)	104 (91%)	10 (9%)	0	100	100
17	Q	121/124 (98%)	97 (80%)	23 (19%)	1 (1%)	16	53
18	R	112/118 (95%)	99 (88%)	13 (12%)	0	100	100
19	S	98/101 (97%)	86 (88%)	12 (12%)	0	100	100
20	T	86/89 (97%)	80 (93%)	6 (7%)	0	100	100
21	U	80/82 (98%)	69 (86%)	11 (14%)	0	100	100
22	V	78/84 (93%)	69 (88%)	9 (12%)	0	100	100
23	W	63/75 (84%)	59 (94%)	4 (6%)	0	100	100
24	X	77/92 (84%)	70 (91%)	7 (9%)	0	100	100
25	Y	83/87 (95%)	77 (93%)	6 (7%)	0	100	100
26	Z	63/71 (89%)	47 (75%)	16 (25%)	0	100	100
27	b	269/273 (98%)	227 (84%)	42 (16%)	0	100	100
28	c	207/209 (99%)	177 (86%)	30 (14%)	0	100	100
29	d	199/201 (99%)	182 (92%)	17 (8%)	0	100	100
30	e	175/179 (98%)	165 (94%)	10 (6%)	0	100	100
31	f	174/177 (98%)	157 (90%)	17 (10%)	0	100	100
32	g	147/149 (99%)	124 (84%)	23 (16%)	0	100	100
33	i	139/142 (98%)	124 (89%)	15 (11%)	0	100	100
34	j	140/142 (99%)	120 (86%)	20 (14%)	0	100	100
35	k	120/123 (98%)	98 (82%)	22 (18%)	0	100	100
36	l	141/144 (98%)	117 (83%)	24 (17%)	0	100	100
37	m	134/136 (98%)	116 (87%)	18 (13%)	0	100	100
38	n	118/127 (93%)	104 (88%)	14 (12%)	0	100	100
39	o	114/117 (97%)	103 (90%)	11 (10%)	0	100	100
40	p	112/115 (97%)	105 (94%)	7 (6%)	0	100	100
41	q	115/118 (98%)	108 (94%)	7 (6%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
42	r	101/103 (98%)	88 (87%)	13 (13%)	0	100	100
43	s	108/110 (98%)	92 (85%)	16 (15%)	0	100	100
44	t	91/100 (91%)	77 (85%)	14 (15%)	0	100	100
45	u	100/104 (96%)	83 (83%)	17 (17%)	0	100	100
46	v	92/94 (98%)	79 (86%)	13 (14%)	0	100	100
47	w	73/85 (86%)	63 (86%)	10 (14%)	0	100	100
48	x	75/78 (96%)	66 (88%)	9 (12%)	0	100	100
49	y	61/63 (97%)	61 (100%)	0	0	100	100
50	z	56/59 (95%)	50 (89%)	6 (11%)	0	100	100
57	A1	295/329 (90%)	275 (93%)	20 (7%)	0	100	100
57	A2	282/329 (86%)	271 (96%)	11 (4%)	0	100	100
58	B1	1329/1407 (94%)	1207 (91%)	118 (9%)	4 (0%)	37	72
59	B2	1338/1342 (100%)	1208 (90%)	124 (9%)	6 (0%)	30	68
60	W0	80/91 (88%)	77 (96%)	3 (4%)	0	100	100
61	NA	490/495 (99%)	476 (97%)	14 (3%)	0	100	100
62	NG	150/181 (83%)	134 (89%)	15 (10%)	1 (1%)	19	56
65	a	128/234 (55%)	105 (82%)	23 (18%)	0	100	100
66	0	695/716 (97%)	618 (89%)	72 (10%)	5 (1%)	19	56
67	h	2/6 (33%)	1 (50%)	1 (50%)	0	100	100
All	All	10486/11185 (94%)	9332 (89%)	1135 (11%)	19 (0%)	45	78

All (19) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
58	B1	1620	PRO
59	B2	43	PRO
59	B2	918	LEU
66	0	199	GLY
59	B2	888	THR
59	B2	891	GLY
59	B2	914	LYS
66	0	298	ILE
66	0	299	LEU
17	Q	87	LYS
58	B1	1542	THR

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Mol	Chain	Res	Type
58	B1	1692	ASP
62	NG	124	PRO
66	0	196	ALA
5	E	16	THR
58	B1	2824	PHE
9	I	126	GLY
59	B2	1317	PRO
66	0	121	PRO

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	42/62 (68%)	42 (100%)	0	100	100
2	B	47/48 (98%)	47 (100%)	0	100	100
3	C	45/49 (92%)	44 (98%)	1 (2%)	47	65
4	D	38/38 (100%)	35 (92%)	3 (8%)	10	29
5	E	51/52 (98%)	46 (90%)	5 (10%)	6	22
6	F	34/34 (100%)	33 (97%)	1 (3%)	37	57
7	G	180/199 (90%)	172 (96%)	8 (4%)	24	46
8	H	170/190 (90%)	162 (95%)	8 (5%)	22	44
9	I	172/173 (99%)	170 (99%)	2 (1%)	67	79
10	J	119/126 (94%)	113 (95%)	6 (5%)	20	42
11	K	87/116 (75%)	83 (95%)	4 (5%)	23	45
12	L	124/147 (84%)	121 (98%)	3 (2%)	44	62
13	M	104/105 (99%)	102 (98%)	2 (2%)	52	70
14	N	105/107 (98%)	105 (100%)	0	100	100
15	O	86/90 (96%)	78 (91%)	8 (9%)	7	23
16	P	89/99 (90%)	88 (99%)	1 (1%)	70	80
17	Q	103/104 (99%)	101 (98%)	2 (2%)	52	70

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
18	R	92/96 (96%)	91 (99%)	1 (1%)	70 80
19	S	83/84 (99%)	82 (99%)	1 (1%)	67 79
20	T	76/77 (99%)	76 (100%)	0	100 100
21	U	65/65 (100%)	65 (100%)	0	100 100
22	V	74/78 (95%)	74 (100%)	0	100 100
23	W	56/65 (86%)	56 (100%)	0	100 100
24	X	70/79 (89%)	70 (100%)	0	100 100
25	Y	65/66 (98%)	65 (100%)	0	100 100
26	Z	55/61 (90%)	46 (84%)	9 (16%)	2 10
27	b	216/218 (99%)	212 (98%)	4 (2%)	52 70
28	c	164/164 (100%)	163 (99%)	1 (1%)	84 88
29	d	165/165 (100%)	160 (97%)	5 (3%)	36 56
30	e	148/150 (99%)	146 (99%)	2 (1%)	62 76
31	f	137/138 (99%)	136 (99%)	1 (1%)	81 87
32	g	114/114 (100%)	111 (97%)	3 (3%)	41 60
33	i	109/110 (99%)	109 (100%)	0	100 100
34	j	116/116 (100%)	113 (97%)	3 (3%)	41 60
35	k	103/104 (99%)	100 (97%)	3 (3%)	37 57
36	l	102/103 (99%)	100 (98%)	2 (2%)	50 68
37	m	109/109 (100%)	108 (99%)	1 (1%)	75 83
38	n	100/103 (97%)	98 (98%)	2 (2%)	50 68
39	o	86/87 (99%)	86 (100%)	0	100 100
40	p	99/100 (99%)	99 (100%)	0	100 100
41	q	89/90 (99%)	89 (100%)	0	100 100
42	r	84/84 (100%)	84 (100%)	0	100 100
43	s	93/93 (100%)	87 (94%)	6 (6%)	14 36
44	t	80/84 (95%)	77 (96%)	3 (4%)	28 49
45	u	83/85 (98%)	82 (99%)	1 (1%)	67 79
46	v	78/78 (100%)	77 (99%)	1 (1%)	65 77
47	w	57/63 (90%)	57 (100%)	0	100 100
48	x	67/68 (98%)	65 (97%)	2 (3%)	36 56

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
49	y	55/55 (100%)	55 (100%)	0	100 100
50	z	48/49 (98%)	47 (98%)	1 (2%)	48 67
57	A1	185/286 (65%)	174 (94%)	11 (6%)	16 38
57	A2	186/286 (65%)	185 (100%)	1 (0%)	86 90
58	B1	1110/1168 (95%)	1021 (92%)	89 (8%)	10 29
59	B2	1150/1157 (99%)	1119 (97%)	31 (3%)	40 59
60	W0	70/75 (93%)	69 (99%)	1 (1%)	62 76
65	a	109/181 (60%)	98 (90%)	11 (10%)	6 21
66	0	574/588 (98%)	554 (96%)	20 (4%)	31 51
67	h	2/2 (100%)	2 (100%)	0	100 100
All	All	8120/8683 (94%)	7850 (97%)	270 (3%)	35 53

All (270) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
3	C	22	THR
4	D	24	THR
4	D	43	THR
4	D	44	VAL
5	E	30	HIS
5	E	31	ILE
5	E	32	LEU
5	E	33	THR
5	E	37	THR
6	F	25	VAL
7	G	13	VAL
7	G	14	HIS
7	G	18	GLN
7	G	67	LEU
7	G	80	LYS
7	G	84	LEU
7	G	86	CYS
7	G	87	ASP
8	H	51	VAL
8	H	57	GLU
8	H	58	ARG
8	H	61	LYS
8	H	63	ILE

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Mol	Chain	Res	Type
8	H	65	VAL
8	H	134	LYS
8	H	135	ARG
9	I	27	ILE
9	I	128	VAL
10	J	9	GLU
10	J	10	LEU
10	J	77	ASN
10	J	89	THR
10	J	116	VAL
10	J	130	THR
11	K	53	LYS
11	K	54	LEU
11	K	55	HIS
11	K	92	THR
12	L	72	VAL
12	L	85	GLN
12	L	88	VAL
13	M	100	ILE
13	M	109	VAL
15	O	82	LYS
15	O	87	LEU
15	O	89	ARG
15	O	90	LEU
15	O	92	LEU
15	O	96	VAL
15	O	100	ILE
15	O	102	LEU
16	P	107	THR
17	Q	88	ASP
17	Q	93	ARG
18	R	103	THR
19	S	45	LEU
26	Z	6	ARG
26	Z	8	ASN
26	Z	23	GLU
26	Z	24	LYS
26	Z	36	PHE
26	Z	43	GLU
26	Z	44	ARG
26	Z	46	ARG
26	Z	48	LYS

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Mol	Chain	Res	Type
27	b	15	VAL
27	b	64	VAL
27	b	161	VAL
27	b	194	VAL
28	c	197	THR
29	d	48	THR
29	d	84	THR
29	d	116	ASP
29	d	134	LEU
29	d	143	LEU
30	e	89	THR
30	e	151	LEU
31	f	36	LEU
32	g	9	VAL
32	g	93	SER
32	g	94	ILE
34	j	3	THR
34	j	81	ILE
34	j	139	VAL
35	k	56	ASP
35	k	62	VAL
35	k	104	THR
36	l	19	LEU
36	l	85	VAL
37	m	68	PHE
38	n	15	SER
38	n	69	ARG
43	s	22	ASP
43	s	65	ASP
43	s	67	ASP
43	s	76	VAL
43	s	92	ARG
43	s	97	LEU
44	t	6	ARG
44	t	11	LEU
44	t	37	ASP
45	u	27	VAL
46	v	65	VAL
48	x	6	VAL
48	x	57	VAL
50	z	26	LEU
57	A1	9	LEU

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Mol	Chain	Res	Type
57	A1	12	ARG
57	A1	13	LEU
57	A1	18	GLN
57	A1	19	VAL
57	A1	22	THR
57	A1	27	THR
57	A1	28	LEU
57	A1	33	ARG
57	A1	46	ILE
57	A1	48	LEU
57	A2	74	VAL
58	B1	1523	LEU
58	B1	1539	LYS
58	B1	1541	GLU
58	B1	1543	ILE
58	B1	1546	ARG
58	B1	1548	PHE
58	B1	1549	LYS
58	B1	1559	ARG
58	B1	1565	LYS
58	B1	1568	GLU
58	B1	1570	LEU
58	B1	1573	LYS
58	B1	1575	LYS
58	B1	1577	LEU
58	B1	1579	HIS
58	B1	1580	ARG
58	B1	1586	LYS
58	B1	1590	GLU
58	B1	1592	THR
58	B1	1593	GLN
58	B1	1594	THR
58	B1	1595	LYS
58	B1	1598	ARG
58	B1	1599	GLU
58	B1	1613	ILE
58	B1	1616	LEU
58	B1	1619	LEU
58	B1	1625	LEU
58	B1	1631	LEU
58	B1	1634	ILE
58	B1	1641	GLU

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Mol	Chain	Res	Type
58	B1	1643	TYR
58	B1	1644	VAL
58	B1	1645	VAL
58	B1	1646	ILE
58	B1	1651	THR
58	B1	1653	LEU
58	B1	1656	GLN
58	B1	1658	ILE
58	B1	1671	PHE
58	B1	1673	ASP
58	B1	1674	GLU
58	B1	1679	MET
58	B1	1689	LYS
58	B1	1692	ASP
58	B1	1695	GLN
58	B1	1709	SER
58	B1	1711	THR
58	B1	1715	LYS
58	B1	1721	LYS
58	B1	1722	LEU
58	B1	1726	PHE
58	B1	1732	LYS
58	B1	1736	MET
58	B1	1737	ILE
58	B1	1738	LEU
58	B1	1739	THR
58	B1	1743	VAL
58	B1	1754	LEU
58	B1	1755	ASP
58	B1	1758	ARG
58	B1	1816	THR
58	B1	1821	ARG
58	B1	1823	LEU
58	B1	1862	LEU
58	B1	1884	LEU
58	B1	1885	GLU
58	B1	1886	LEU
58	B1	1889	LEU
58	B1	1892	THR
58	B1	1893	ILE
58	B1	1894	LYS
58	B1	1915	ILE

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Mol	Chain	Res	Type
58	B1	1916	ARG
58	B1	1924	ARG
58	B1	2005	VAL
58	B1	2013	THR
58	B1	2299	LEU
58	B1	2306	LEU
58	B1	2338	VAL
58	B1	2400	ARG
58	B1	2402	LEU
58	B1	2671	LYS
58	B1	2680	ASP
58	B1	2732	ILE
58	B1	2826	GLU
58	B1	2827	THR
58	B1	2830	VAL
58	B1	2831	LEU
59	B2	44	GLU
59	B2	49	LEU
59	B2	56	VAL
59	B2	146	VAL
59	B2	483	ASP
59	B2	487	LEU
59	B2	516	ASP
59	B2	538	LEU
59	B2	540	ARG
59	B2	545	PHE
59	B2	546	GLU
59	B2	615	VAL
59	B2	857	VAL
59	B2	859	GLU
59	B2	887	VAL
59	B2	890	LYS
59	B2	893	THR
59	B2	898	GLU
59	B2	899	GLU
59	B2	900	LYS
59	B2	901	LEU
59	B2	902	LEU
59	B2	903	ARG
59	B2	905	ILE
59	B2	909	LYS
59	B2	913	VAL

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Mol	Chain	Res	Type
59	B2	918	LEU
59	B2	920	VAL
59	B2	922	ASN
59	B2	1076	ILE
59	B2	1151	LEU
60	W0	63	ILE
65	a	8	MET
65	a	42	VAL
65	a	47	ASN
65	a	165	ASN
65	a	166	ASP
65	a	167	LYS
65	a	170	ILE
65	a	211	LYS
65	a	212	VAL
65	a	213	SER
65	a	214	ILE
66	0	42	GLU
66	0	173	ILE
66	0	195	ASP
66	0	298	ILE
66	0	299	LEU
66	0	300	ASP
66	0	301	ASP
66	0	303	LYS
66	0	338	VAL
66	0	390	ASP
66	0	504	LYS
66	0	507	LYS
66	0	508	GLN
66	0	512	ARG
66	0	514	GLN
66	0	517	HIS
66	0	519	VAL
66	0	611	VAL
66	0	662	GLU
66	0	663	MET

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (150) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	20	ASN

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Mol	Chain	Res	Type
5	E	30	HIS
7	G	18	GLN
7	G	57	ASN
7	G	93	HIS
7	G	102	ASN
7	G	119	GLN
7	G	169	HIS
7	G	202	ASN
8	H	7	ASN
8	H	18	ASN
8	H	139	ASN
8	H	184	ASN
9	I	35	GLN
9	I	53	GLN
9	I	58	GLN
9	I	73	ASN
9	I	125	ASN
9	I	130	ASN
9	I	135	GLN
9	I	195	ASN
9	I	197	HIS
10	J	69	ASN
10	J	121	ASN
10	J	147	ASN
11	K	55	HIS
11	K	94	HIS
12	L	8	GLN
12	L	27	ASN
12	L	96	ASN
12	L	129	ASN
13	M	3	GLN
13	M	15	ASN
13	M	20	ASN
14	N	3	ASN
16	P	27	ASN
16	P	80	ASN
17	Q	72	ASN
17	Q	76	HIS
17	Q	111	GLN
18	R	90	HIS
19	S	48	GLN
19	S	59	GLN

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Mol	Chain	Res	Type
20	T	45	HIS
21	U	26	ASN
21	U	29	ASN
21	U	40	ASN
21	U	79	ASN
22	V	46	HIS
23	W	53	GLN
25	Y	74	HIS
25	Y	81	GLN
25	Y	83	ASN
26	Z	55	HIS
27	b	24	HIS
27	b	85	ASN
27	b	142	ASN
27	b	250	GLN
28	c	32	ASN
28	c	49	GLN
28	c	67	HIS
28	c	136	ASN
28	c	148	GLN
28	c	164	GLN
28	c	185	ASN
29	d	62	GLN
29	d	195	GLN
30	e	22	ASN
31	f	63	GLN
32	g	18	GLN
32	g	66	ASN
32	g	135	HIS
33	i	18	ASN
33	i	42	ASN
34	j	80	HIS
34	j	128	ASN
34	j	130	HIS
34	j	135	GLN
35	k	9	ASN
36	l	93	ASN
37	m	22	GLN
38	n	9	GLN
38	n	23	ASN
38	n	107	ASN
39	o	38	GLN

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Mol	Chain	Res	Type
39	o	104	GLN
39	o	116	GLN
40	p	74	GLN
41	q	65	ASN
41	q	70	GLN
43	s	31	GLN
43	s	60	HIS
44	t	59	ASN
44	t	92	ASN
45	u	45	GLN
45	u	68	ASN
45	u	73	ASN
46	v	24	ASN
46	v	78	GLN
46	v	88	HIS
48	x	31	ASN
49	y	41	HIS
57	A1	37	HIS
57	A1	66	HIS
57	A1	84	ASN
57	A1	117	HIS
57	A1	128	HIS
57	A1	227	GLN
57	A2	23	HIS
57	A2	227	GLN
58	B1	1544	ASN
58	B1	1695	GLN
58	B1	1863	HIS
58	B1	1923	ASN
58	B1	1949	HIS
58	B1	1968	HIS
58	B1	2304	GLN
58	B1	2364	HIS
58	B1	2694	GLN
58	B1	2737	GLN
58	B1	2758	GLN
59	B2	69	GLN
59	B2	314	ASN
59	B2	330	HIS
59	B2	343	HIS
59	B2	518	ASN
59	B2	554	HIS

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Mol	Chain	Res	Type
59	B2	688	GLN
59	B2	808	ASN
59	B2	1237	HIS
59	B2	1268	GLN
59	B2	1313	HIS
60	W0	7	GLN
60	W0	31	GLN
60	W0	62	GLN
65	a	24	ASN
65	a	172	HIS
66	0	85	ASN
66	0	92	HIS
66	0	157	GLN
66	0	170	GLN
66	0	259	ASN
66	0	272	ASN
66	0	276	GLN
66	0	351	ASN
66	0	455	GLN
66	0	487	GLN
66	0	514	GLN
66	0	530	ASN
66	0	584	HIS

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
51	1	2902/2904 (99%)	439 (15%)	6 (0%)
52	2	119/120 (99%)	18 (15%)	0
53	3	1538/1542 (99%)	193 (12%)	1 (0%)
54	4	31/56 (55%)	18 (58%)	4 (12%)
63	5	75/76 (98%)	45 (60%)	10 (13%)
64	6	76/77 (98%)	14 (18%)	0
All	All	4741/4775 (99%)	727 (15%)	21 (0%)

All (727) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
51	1	10	A
51	1	12	U
51	1	23	G

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Mol	Chain	Res	Type
51	1	34	U
51	1	35	G
51	1	51	G
51	1	63	A
51	1	71	A
51	1	75	G
51	1	102	U
51	1	103	A
51	1	113	U
51	1	118	A
51	1	119	A
51	1	120	U
51	1	125	A
51	1	126	A
51	1	139	U
51	1	140	C
51	1	141	G
51	1	143	C
51	1	163	C
51	1	196	A
51	1	204	A
51	1	205	G
51	1	215	G
51	1	216	A
51	1	218	A
51	1	221	A
51	1	225	C
51	1	228	C
51	1	229	C
51	1	233	A
51	1	248	G
51	1	255	A
51	1	266	G
51	1	276	U
51	1	277	G
51	1	294	A
51	1	311	A
51	1	323	C
51	1	324	A
51	1	329	G
51	1	330	A
51	1	331	C

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Mol	Chain	Res	Type
51	1	355	U
51	1	361	G
51	1	371	A
51	1	372	G
51	1	380	G
51	1	386	G
51	1	404	A
51	1	405	U
51	1	411	G
51	1	412	A
51	1	424	G
51	1	431	U
51	1	451	U
51	1	455	C
51	1	456	C
51	1	457	A
51	1	458	G
51	1	480	A
51	1	481	G
51	1	490	C
51	1	491	G
51	1	504	A
51	1	505	A
51	1	532	A
51	1	544	C
51	1	548	G
51	1	560	C
51	1	563	A
51	1	568	U
51	1	573	U
51	1	574	A
51	1	586	A
51	1	603	A
51	1	609	A
51	1	610	C
51	1	615	U
51	1	627	A
51	1	637	A
51	1	646	U
51	1	654	A
51	1	655	A
51	1	686	U

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Mol	Chain	Res	Type
51	1	690	G
51	1	714	U
51	1	717	C
51	1	730	A
51	1	740	C
51	1	747	C
51	1	752	A
51	1	757	G
51	1	764	A
51	1	765	C
51	1	774	G
51	1	775	G
51	1	776	G
51	1	782	A
51	1	783	A
51	1	784	G
51	1	793	A
51	1	805	G
51	1	806	C
51	1	812	C
51	1	819	A
51	1	827	U
51	1	829	A
51	1	830	G
51	1	845	A
51	1	846	U
51	1	858	G
51	1	859	G
51	1	865	C
51	1	878	A
51	1	883	G
51	1	887	U
51	1	890	C
51	1	896	A
51	1	897	C
51	1	898	C
51	1	902	C
51	1	910	A
51	1	941	A
51	1	945	A
51	1	946	C
51	1	953	G

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Mol	Chain	Res	Type
51	1	961	C
51	1	974	G
51	1	980	A
51	1	982	C
51	1	983	A
51	1	989	G
51	1	995	C
51	1	996	A
51	1	1005	C
51	1	1012	U
51	1	1013	C
51	1	1021	A
51	1	1022	G
51	1	1025	G
51	1	1026	G
51	1	1033	U
51	1	1045	C
51	1	1046	A
51	1	1054	A
51	1	1055	G
51	1	1056	G
51	1	1057	A
51	1	1058	U
51	1	1059	G
51	1	1060	U
51	1	1062	G
51	1	1065	U
51	1	1066	U
51	1	1068	G
51	1	1069	A
51	1	1070	A
51	1	1071	G
51	1	1073	A
51	1	1078	U
51	1	1081	U
51	1	1084	A
51	1	1088	A
51	1	1104	C
51	1	1105	U
51	1	1106	G
51	1	1107	G
51	1	1111	A

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Mol	Chain	Res	Type
51	1	1130	U
51	1	1132	U
51	1	1133	A
51	1	1134	A
51	1	1135	C
51	1	1143	A
51	1	1155	A
51	1	1172	C
51	1	1173	U
51	1	1175	A
51	1	1178	C
51	1	1180	U
51	1	1206	G
51	1	1212	G
51	1	1225	G
51	1	1236	G
51	1	1248	G
51	1	1253	A
51	1	1256	G
51	1	1271	G
51	1	1272	A
51	1	1275	A
51	1	1287	A
51	1	1300	G
51	1	1301	A
51	1	1312	U
51	1	1313	U
51	1	1321	A
51	1	1325	U
51	1	1326	U
51	1	1342	A
51	1	1365	A
51	1	1378	A
51	1	1379	U
51	1	1383	A
51	1	1397	U
51	1	1416	G
51	1	1417	C
51	1	1419	A
51	1	1420	A
51	1	1428	C
51	1	1453	A

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Mol	Chain	Res	Type
51	1	1461	C
51	1	1478	G
51	1	1482	G
51	1	1490	A
51	1	1504	A
51	1	1515	A
51	1	1524	G
51	1	1534	U
51	1	1535	A
51	1	1537	G
51	1	1548	A
51	1	1555	G
51	1	1559	U
51	1	1566	A
51	1	1569	A
51	1	1608	A
51	1	1609	A
51	1	1616	A
51	1	1617	C
51	1	1618	A
51	1	1647	U
51	1	1648	U
51	1	1654	A
51	1	1674	G
51	1	1694	C
51	1	1698	A
51	1	1707	G
51	1	1715	G
51	1	1730	C
51	1	1738	G
51	1	1758	U
51	1	1764	C
51	1	1773	A
51	1	1780	A
51	1	1781	U
51	1	1784	A
51	1	1800	C
51	1	1801	A
51	1	1802	A
51	1	1808	A
51	1	1816	C
51	1	1827	U

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Mol	Chain	Res	Type
51	1	1829	A
51	1	1833	C
51	1	1869	G
51	1	1870	C
51	1	1901	A
51	1	1902	C
51	1	1912	A
51	1	1913	A
51	1	1914	C
51	1	1930	G
51	1	1936	A
51	1	1937	A
51	1	1938	A
51	1	1939	U
51	1	1955	U
51	1	1963	U
51	1	1964	G
51	1	1966	A
51	1	1967	C
51	1	1970	A
51	1	1971	U
51	1	1972	G
51	1	1991	U
51	1	1992	G
51	1	1993	U
51	1	1996	C
51	1	1997	C
51	1	2022	U
51	1	2023	C
51	1	2031	A
51	1	2034	U
51	1	2043	C
51	1	2049	G
51	1	2055	C
51	1	2056	G
51	1	2060	A
51	1	2061	G
51	1	2069	G
51	1	2072	C
51	1	2092	U
51	1	2093	G
51	1	2094	A

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Mol	Chain	Res	Type
51	1	2103	C
51	1	2106	U
51	1	2107	G
51	1	2108	A
51	1	2111	U
51	1	2112	G
51	1	2118	U
51	1	2123	G
51	1	2124	G
51	1	2126	A
51	1	2132	U
51	1	2133	G
51	1	2134	A
51	1	2135	A
51	1	2138	G
51	1	2143	C
51	1	2146	C
51	1	2153	C
51	1	2156	G
51	1	2157	G
51	1	2158	A
51	1	2162	G
51	1	2165	C
51	1	2166	U
51	1	2168	G
51	1	2172	U
51	1	2173	A
51	1	2178	C
51	1	2179	C
51	1	2180	U
51	1	2182	U
51	1	2189	U
51	1	2198	A
51	1	2199	A
51	1	2203	U
51	1	2211	A
51	1	2213	U
51	1	2214	C
51	1	2225	A
51	1	2238	G
51	1	2239	G
51	1	2249	U

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Mol	Chain	Res	Type
51	1	2250	G
51	1	2268	A
51	1	2283	C
51	1	2287	A
51	1	2289	G
51	1	2300	C
51	1	2305	U
51	1	2307	G
51	1	2309	A
51	1	2325	G
51	1	2327	A
51	1	2344	U
51	1	2350	C
51	1	2357	G
51	1	2361	G
51	1	2371	G
51	1	2376	A
51	1	2383	G
51	1	2385	C
51	1	2388	A
51	1	2402	U
51	1	2403	C
51	1	2406	A
51	1	2423	U
51	1	2425	A
51	1	2426	A
51	1	2427	C
51	1	2429	G
51	1	2430	A
51	1	2435	A
51	1	2441	U
51	1	2447	G
51	1	2448	A
51	1	2460	U
51	1	2469	A
51	1	2473	U
51	1	2476	A
51	1	2497	A
51	1	2502	G
51	1	2505	G
51	1	2518	A
51	1	2520	C

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Mol	Chain	Res	Type
51	1	2525	G
51	1	2529	G
51	1	2531	A
51	1	2535	G
51	1	2547	A
51	1	2554	U
51	1	2564	A
51	1	2565	A
51	1	2567	G
51	1	2572	A
51	1	2573	C
51	1	2574	G
51	1	2578	G
51	1	2585	U
51	1	2602	A
51	1	2603	G
51	1	2609	U
51	1	2613	U
51	1	2634	A
51	1	2654	A
51	1	2655	G
51	1	2661	G
51	1	2662	A
51	1	2673	G
51	1	2677	G
51	1	2682	A
51	1	2685	G
51	1	2689	U
51	1	2690	U
51	1	2713	U
51	1	2714	G
51	1	2715	C
51	1	2718	G
51	1	2726	A
51	1	2732	G
51	1	2744	G
51	1	2748	A
51	1	2757	A
51	1	2758	A
51	1	2764	A
51	1	2765	A
51	1	2778	A

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Mol	Chain	Res	Type
51	1	2779	U
51	1	2791	G
51	1	2793	C
51	1	2798	U
51	1	2801	G
51	1	2820	A
51	1	2833	U
51	1	2848	G
51	1	2850	A
51	1	2867	G
51	1	2868	A
51	1	2879	A
51	1	2880	C
51	1	2883	A
51	1	2884	U
51	1	2893	A
52	2	4	C
52	2	9	G
52	2	13	G
52	2	35	C
52	2	36	C
52	2	42	C
52	2	44	G
52	2	53	A
52	2	66	A
52	2	67	G
52	2	88	C
52	2	89	U
52	2	90	C
52	2	91	C
52	2	98	G
52	2	108	A
52	2	109	A
52	2	119	A
53	3	3	A
53	3	6	G
53	3	8	A
53	3	9	G
53	3	32	A
53	3	39	G
53	3	47	C
53	3	48	C

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Mol	Chain	Res	Type
53	3	51	A
53	3	54	C
53	3	56	U
53	3	58	C
53	3	61	G
53	3	71	A
53	3	81	A
53	3	87	C
53	3	92	U
53	3	93	U
53	3	94	G
53	3	95	C
53	3	100	G
53	3	110	C
53	3	134	G
53	3	154	U
53	3	183	C
53	3	184	G
53	3	197	A
53	3	208	U
53	3	210	C
53	3	240	G
53	3	246	A
53	3	247	G
53	3	251	G
53	3	266	G
53	3	280	C
53	3	281	G
53	3	289	G
53	3	308	C
53	3	316	C
53	3	328	C
53	3	352	C
53	3	354	G
53	3	367	U
53	3	369	G
53	3	372	C
53	3	397	A
53	3	406	G
53	3	408	A
53	3	413	G
53	3	414	A

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Mol	Chain	Res	Type
53	3	422	C
53	3	429	U
53	3	430	A
53	3	439	U
53	3	445	G
53	3	448	A
53	3	462	G
53	3	467	U
53	3	468	A
53	3	479	U
53	3	486	U
53	3	494	G
53	3	497	G
53	3	509	A
53	3	510	A
53	3	511	C
53	3	512	U
53	3	518	C
53	3	531	U
53	3	532	A
53	3	533	A
53	3	547	A
53	3	555	U
53	3	559	A
53	3	566	G
53	3	572	A
53	3	573	A
53	3	575	G
53	3	576	C
53	3	577	G
53	3	596	A
53	3	633	G
53	3	642	A
53	3	653	U
53	3	665	A
53	3	675	A
53	3	702	A
53	3	703	G
53	3	710	G
53	3	713	G
53	3	721	G
53	3	748	G

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Mol	Chain	Res	Type
53	3	755	G
53	3	777	A
53	3	793	U
53	3	794	A
53	3	815	A
53	3	817	C
53	3	818	G
53	3	819	A
53	3	821	G
53	3	826	C
53	3	832	G
53	3	836	G
53	3	841	C
53	3	843	U
53	3	844	G
53	3	846	G
53	3	851	G
53	3	872	A
53	3	884	U
53	3	889	A
53	3	902	G
53	3	907	A
53	3	913	A
53	3	934	C
53	3	935	A
53	3	938	A
53	3	960	U
53	3	961	U
53	3	966	G
53	3	968	A
53	3	969	A
53	3	971	G
53	3	974	A
53	3	975	A
53	3	976	G
53	3	977	A
53	3	992	U
53	3	993	G
53	3	994	A
53	3	1004	A
53	3	1012	A
53	3	1029	U

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Mol	Chain	Res	Type
53	3	1031	C
53	3	1033	G
53	3	1053	G
53	3	1054	C
53	3	1064	G
53	3	1077	G
53	3	1094	G
53	3	1095	U
53	3	1101	A
53	3	1136	C
53	3	1137	C
53	3	1138	G
53	3	1139	G
53	3	1159	U
53	3	1168	U
53	3	1182	G
53	3	1184	G
53	3	1196	A
53	3	1212	U
53	3	1213	A
53	3	1225	A
53	3	1226	C
53	3	1238	A
53	3	1241	G
53	3	1256	A
53	3	1257	A
53	3	1261	A
53	3	1262	C
53	3	1275	A
53	3	1278	G
53	3	1280	A
53	3	1282	C
53	3	1286	U
53	3	1287	A
53	3	1290	G
53	3	1300	G
53	3	1301	U
53	3	1302	C
53	3	1317	C
53	3	1345	U
53	3	1363	A
53	3	1364	U

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Mol	Chain	Res	Type
53	3	1378	C
53	3	1398	A
53	3	1422	G
53	3	1432	G
53	3	1441	A
53	3	1446	A
53	3	1452	C
53	3	1471	U
53	3	1492	A
53	3	1503	A
53	3	1505	G
53	3	1506	U
53	3	1507	A
53	3	1517	G
53	3	1529	G
53	3	1530	G
53	3	1540	U
54	4	4	U
54	4	6	U
54	4	7	C
54	4	8	U
54	4	9	U
54	4	10	C
54	4	11	U
54	4	12	U
54	4	14	U
54	4	15	U
54	4	16	U
54	4	17	U
54	4	18	U
54	4	19	U
54	4	20	U
54	4	45	U
54	4	46	U
54	4	47	U
63	5	2	C
63	5	7	A
63	5	8	U
63	5	9	A
63	5	11	C
63	5	13	C
63	5	15	G

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Mol	Chain	Res	Type
63	5	17	C
63	5	18	G
63	5	19	G
63	5	20	U
63	5	21	A
63	5	26	A
63	5	28	G
63	5	29	G
63	5	30	G
63	5	32	U
63	5	33	U
63	5	34	G
63	5	35	A
63	5	36	A
63	5	37	A
63	5	39	U
63	5	40	C
63	5	41	C
63	5	43	C
63	5	44	G
63	5	46	G
63	5	47	U
63	5	48	C
63	5	49	C
63	5	52	G
63	5	53	G
63	5	55	U
63	5	56	C
63	5	57	G
63	5	58	A
63	5	59	U
63	5	60	U
63	5	61	C
63	5	66	U
63	5	73	A
63	5	74	C
63	5	75	C
63	5	76	A
64	6	9	G
64	6	10	G
64	6	19	G
64	6	20	U

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Mol	Chain	Res	Type
64	6	21	A
64	6	22	G
64	6	27	U
64	6	33	U
64	6	45	G
64	6	47	U
64	6	48	C
64	6	58	A
64	6	61	C
64	6	64	G

All (21) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
51	1	858	G
51	1	1020	A
51	1	1106	G
51	1	1801	A
51	1	2326	C
51	1	2756	U
53	3	413	G
54	4	10	C
54	4	11	U
54	4	18	U
54	4	19	U
63	5	7	A
63	5	29	G
63	5	32	U
63	5	35	A
63	5	39	U
63	5	48	C
63	5	57	G
63	5	60	U
63	5	73	A
63	5	75	C

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

4 non-standard protein/DNA/RNA residues are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and

the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. 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 $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
67	KBE	h	1	67	8,8,9	0.62	0	7,8,10	1.21	1 (14%)
67	DPP	h	2	67	3,5,6	0.56	0	1,5,7	0.06	0
67	5OH	h	6	67	8,12,13	0.82	0	3,16,18	1.50	1 (33%)
67	UAL	h	5	67	7,8,9	2.28	3 (42%)	5,9,11	2.92	2 (40%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
67	KBE	h	1	67	-	0/7/7/8	-
67	DPP	h	2	67	-	0/2/4/6	-
67	5OH	h	6	67	-	0/2/18/20	0/1/1/1
67	UAL	h	5	67	-	0/3/7/9	-

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
67	h	5	UAL	C1-N1	-4.79	1.32	1.40
67	h	5	UAL	C-CA	-2.91	1.40	1.45
67	h	5	UAL	CA-N	2.05	1.40	1.35

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
67	h	5	UAL	CA-CB-N1	-5.31	115.58	125.60
67	h	5	UAL	O-C-CA	-3.26	121.25	125.39
67	h	6	5OH	CR-CB-CA	-2.34	110.09	112.61
67	h	1	KBE	CB-CA-C	-2.09	109.17	112.25

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

3 monomers are involved in 5 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
67	h	2	DPP	1	0
67	h	6	5OH	3	0
67	h	5	UAL	1	0

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 3 ligands modelled in this entry, 1 is monoatomic - leaving 2 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. 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 $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
69	GDP	0	801	-	24,30,30	0.94	1 (4%)	30,47,47	1.33	4 (13%)
70	PO4	0	802	-	4,4,4	0.96	0	6,6,6	0.47	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
69	GDP	0	801	-	-	2/12/32/32	0/3/3/3

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
69	0	801	GDP	C6-N1	-2.52	1.34	1.37

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
69	0	801	GDP	PA-O3A-PB	-3.53	120.71	132.83
69	0	801	GDP	C8-N7-C5	2.52	107.79	102.99
69	0	801	GDP	C5-C6-N1	2.50	118.37	113.95
69	0	801	GDP	C3'-C2'-C1'	2.50	104.74	100.98

There are no chirality outliers.

All (2) torsion outliers are listed below:

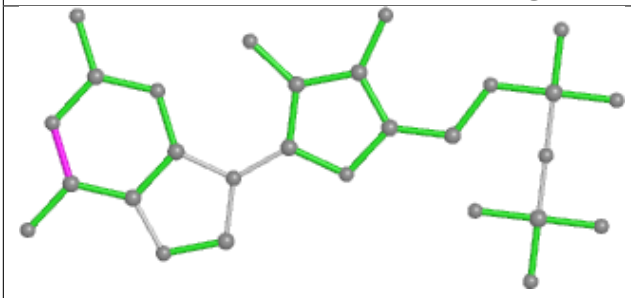
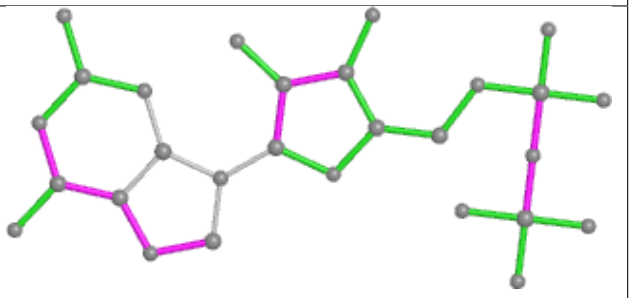
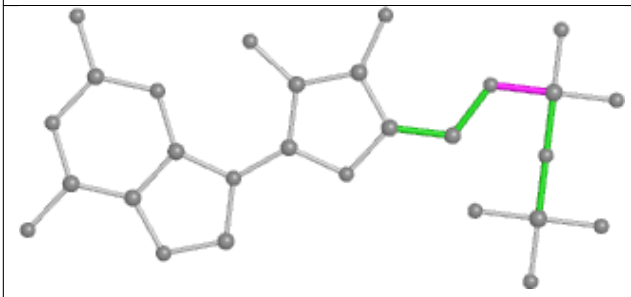
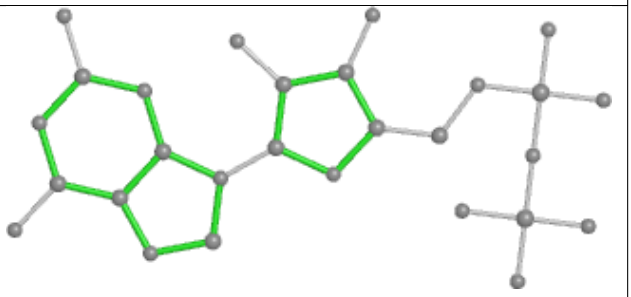
Mol	Chain	Res	Type	Atoms
69	0	801	GDP	C5'-O5'-PA-O3A
69	0	801	GDP	C5'-O5'-PA-O1A

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
69	0	801	GDP	1	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

Ligand GDP 0 801	
	
Bond lengths	Bond angles
	
Torsions	Rings

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.

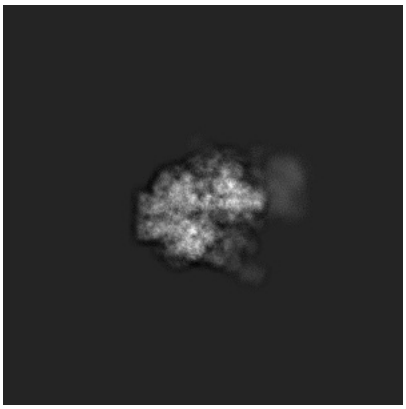
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-39170. These allow visual inspection of the internal detail of the map and identification of artifacts.

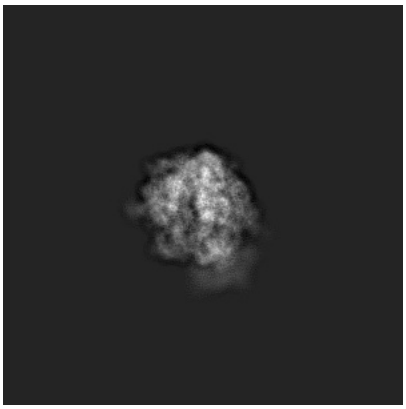
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

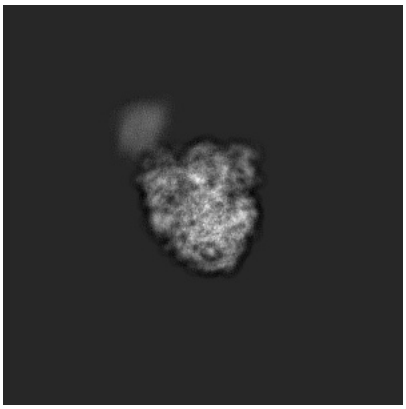
6.1.1 Primary map



X

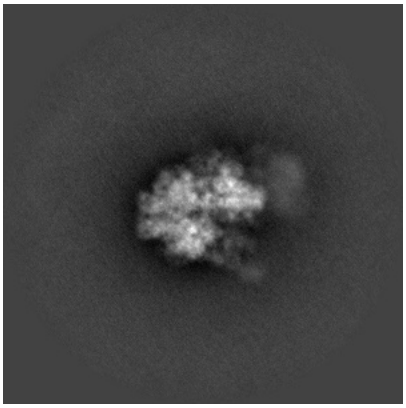


Y

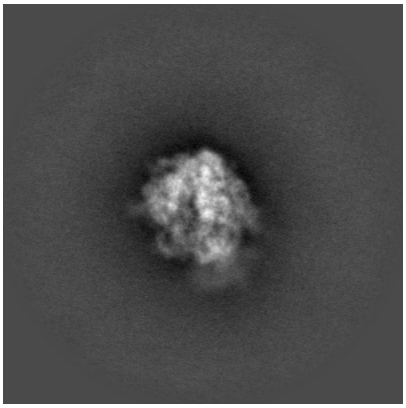


Z

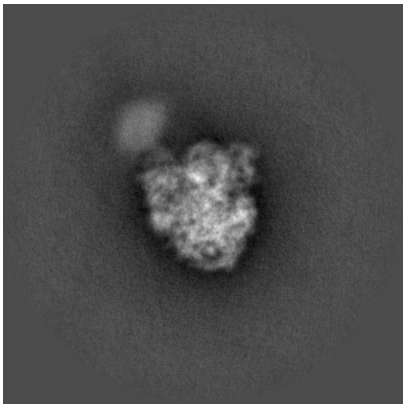
6.1.2 Raw map



X



Y

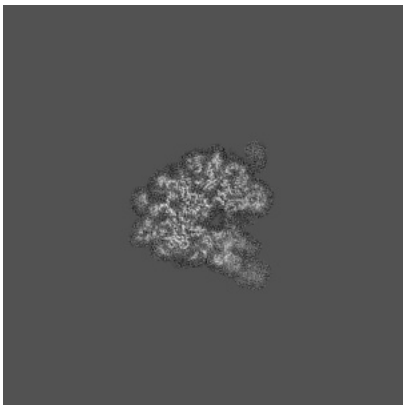


Z

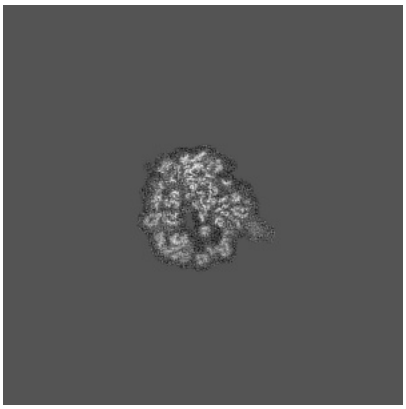
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

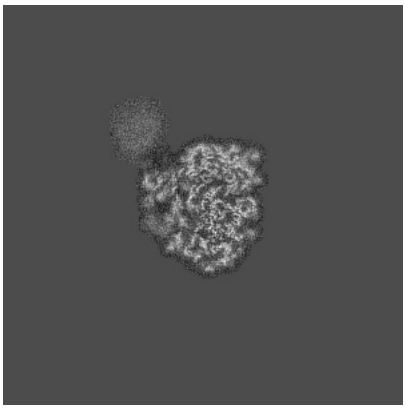
6.2.1 Primary map



X Index: 240

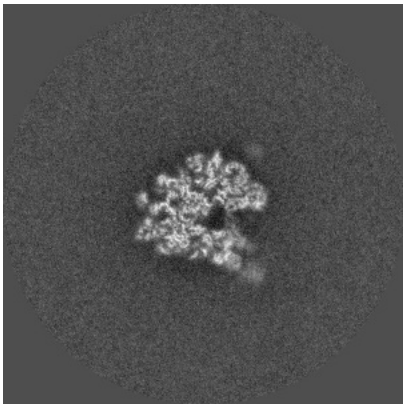


Y Index: 240

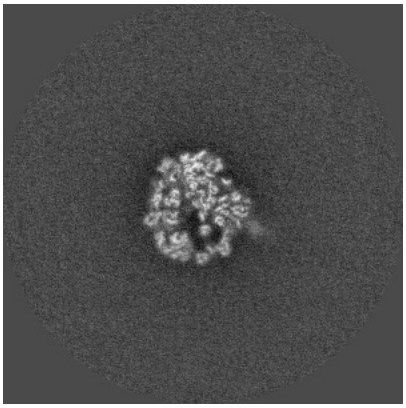


Z Index: 240

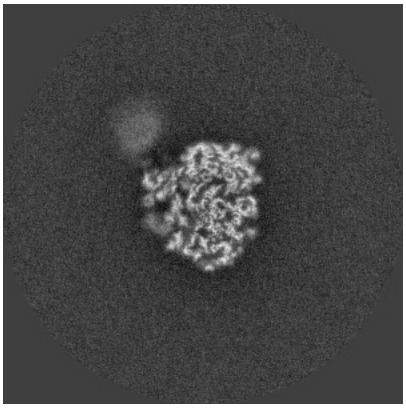
6.2.2 Raw map



X Index: 240



Y Index: 240

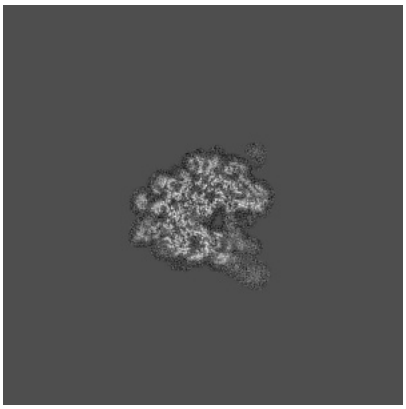


Z Index: 240

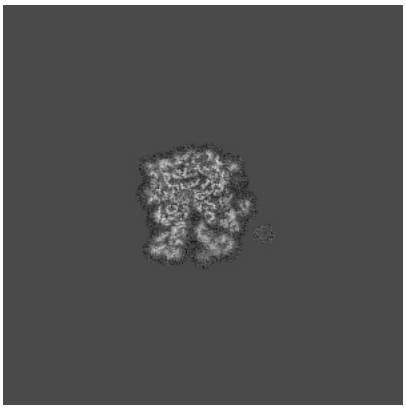
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

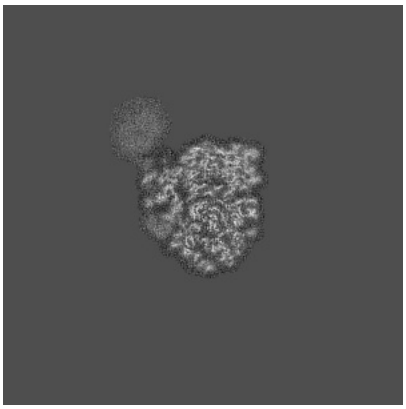
6.3.1 Primary map



X Index: 243

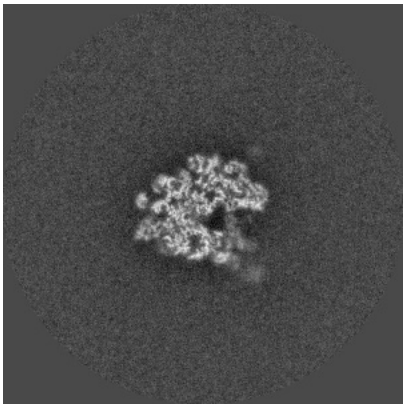


Y Index: 224

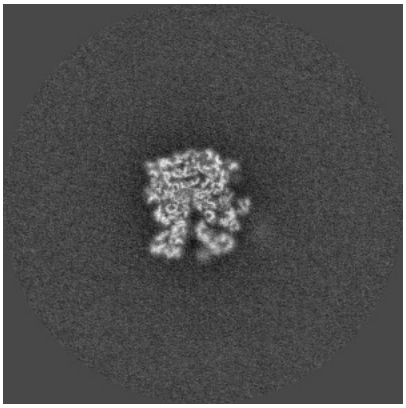


Z Index: 243

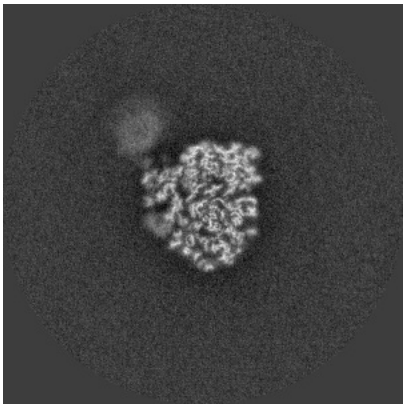
6.3.2 Raw map



X Index: 243



Y Index: 224

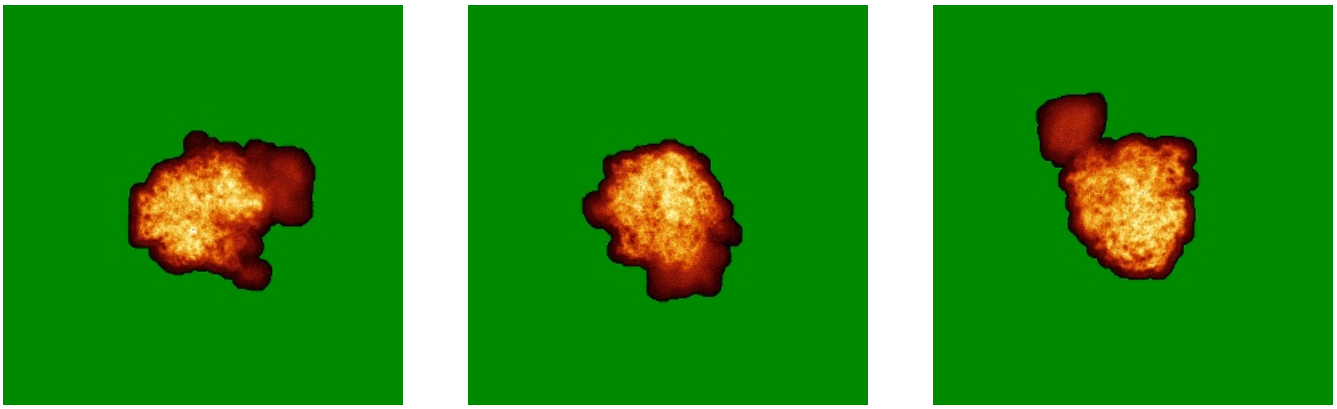


Z Index: 242

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

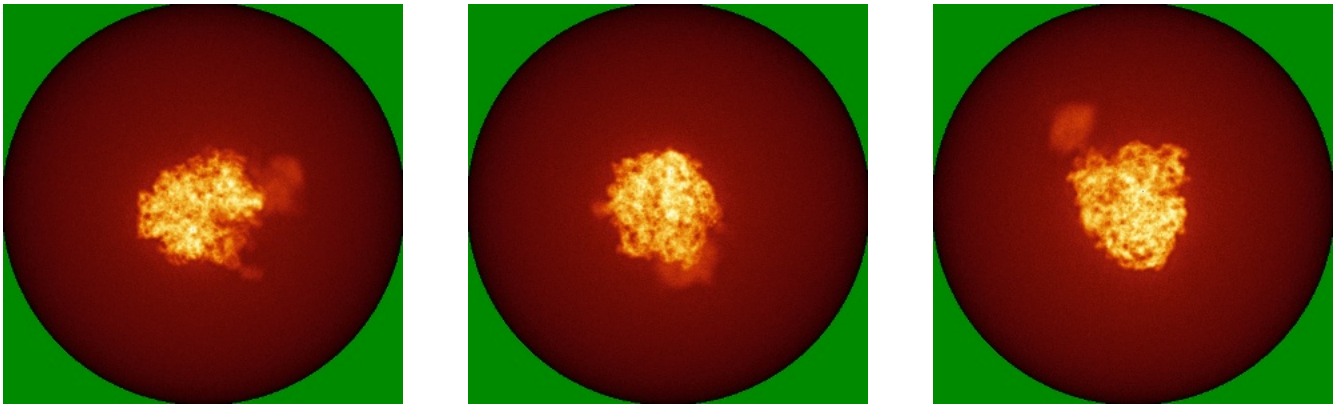
6.4 Orthogonal standard-deviation projections (False-color) (i)

6.4.1 Primary map



X Y Z

6.4.2 Raw map

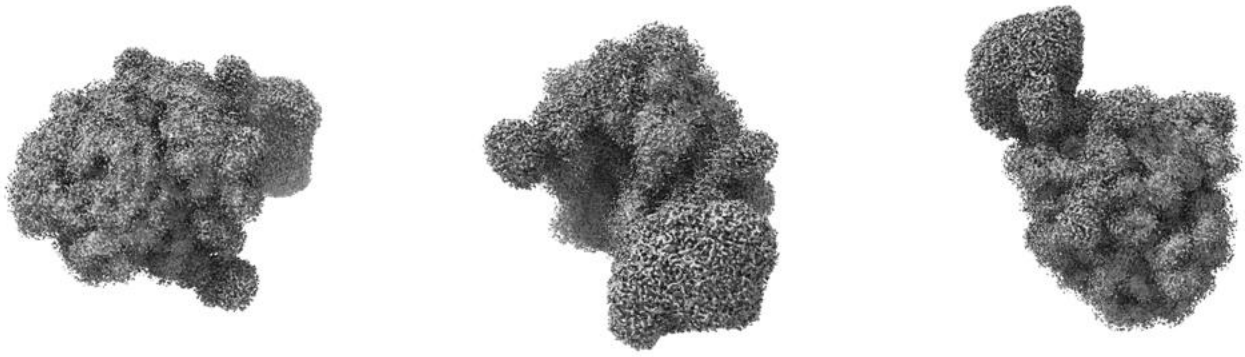


X Y Z

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 0.011. 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.

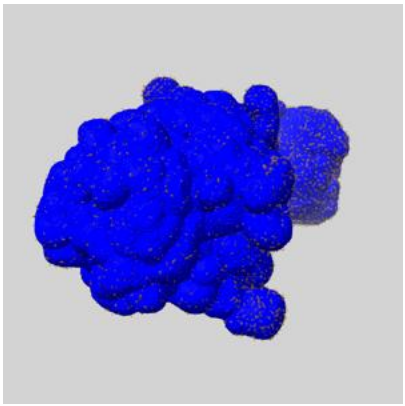
6.6 Mask visualisation (i)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

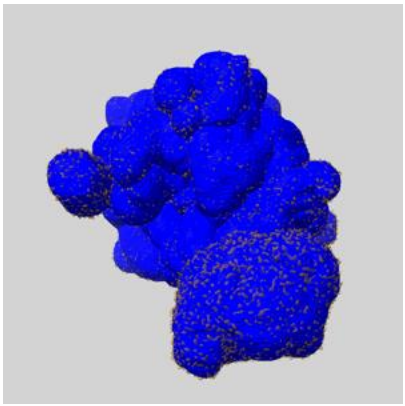
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

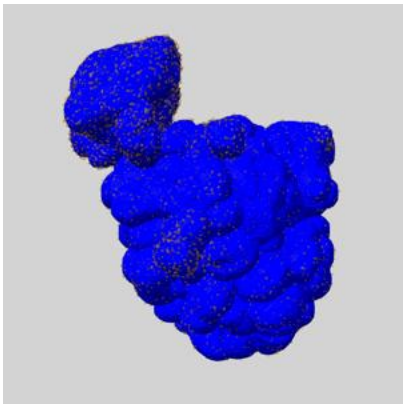
6.6.1 emd_39170_msk_1.map (i)



X



Y

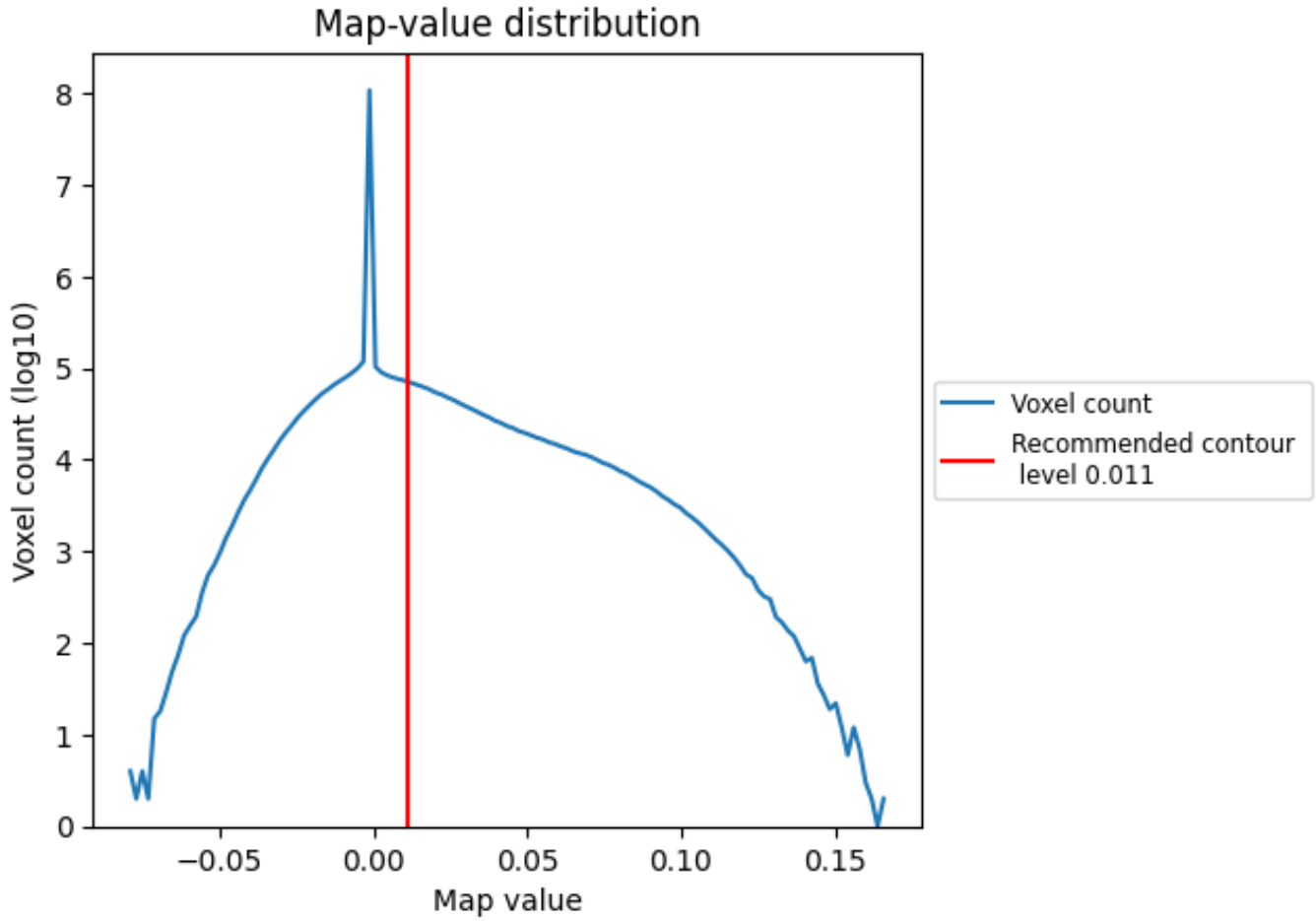


Z

7 Map analysis

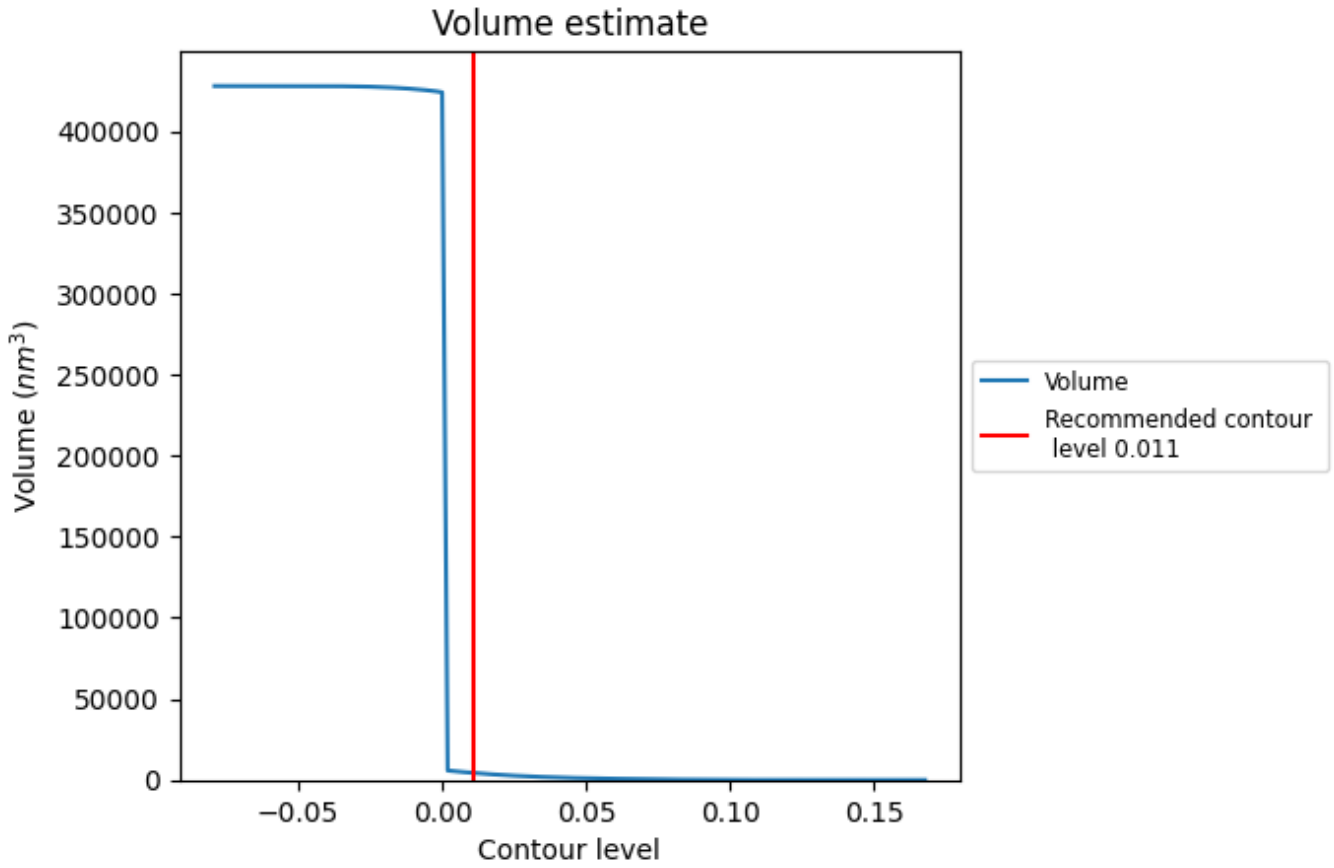
This section contains the results of statistical analysis of the map.

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.

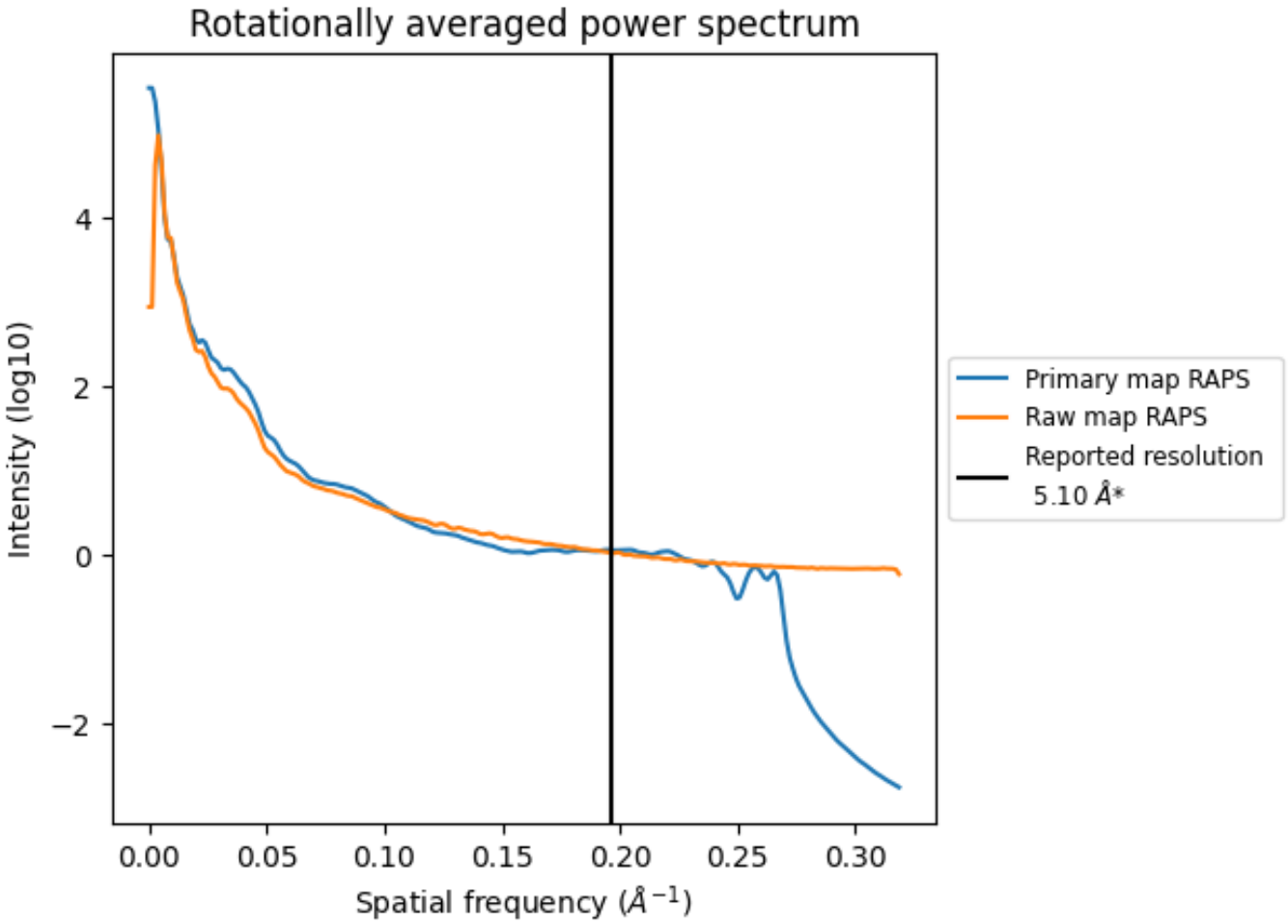
7.2 Volume estimate



The volume at the recommended contour level is 4325 nm^3; this corresponds to an approximate mass of 3906 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)

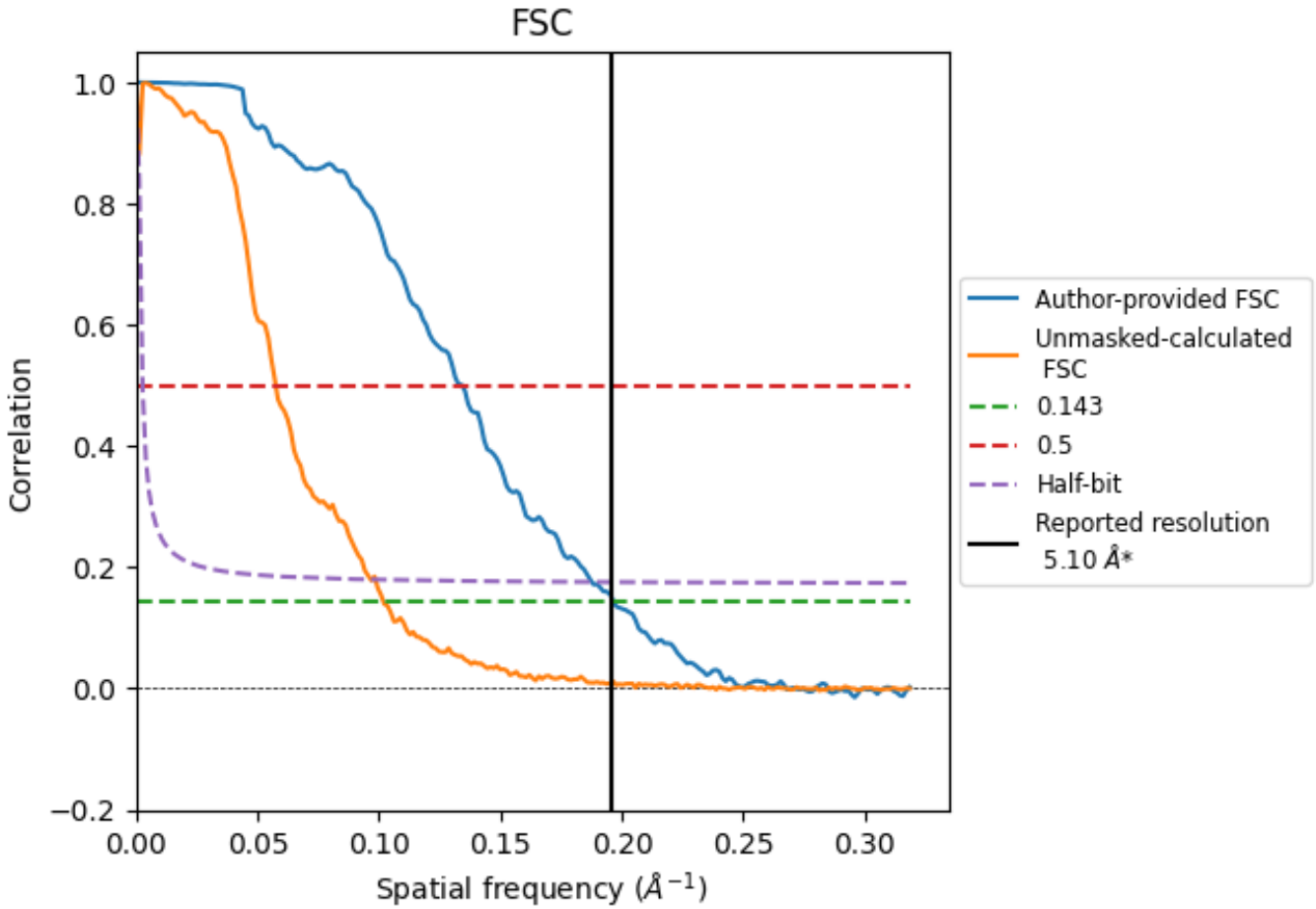


*Reported resolution corresponds to spatial frequency of 0.196 Å^{-1}

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 0.196 Å^{-1}

8.2 Resolution estimates (i)

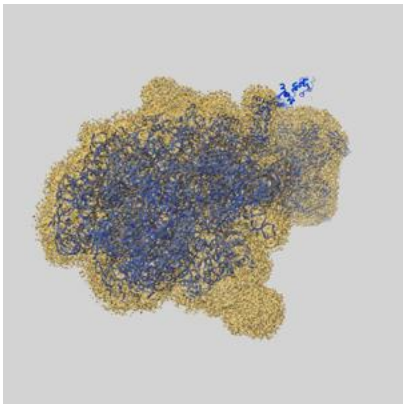
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	5.10	-	-
Author-provided FSC curve	5.08	7.45	5.33
Unmasked-calculated*	9.81	17.39	10.35

*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 9.81 differs from the reported value 5.1 by more than 10 %

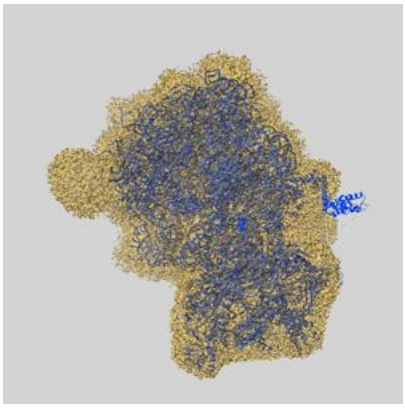
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-39170 and PDB model 8YDG. Per-residue inclusion information can be found in section 3 on page 18.

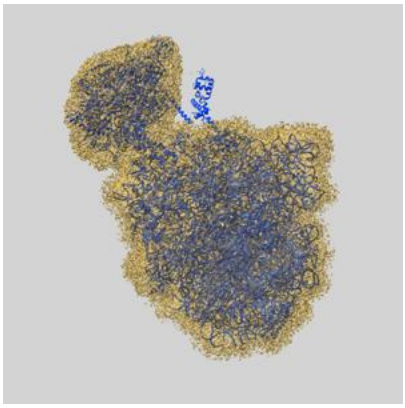
9.1 Map-model overlay



X



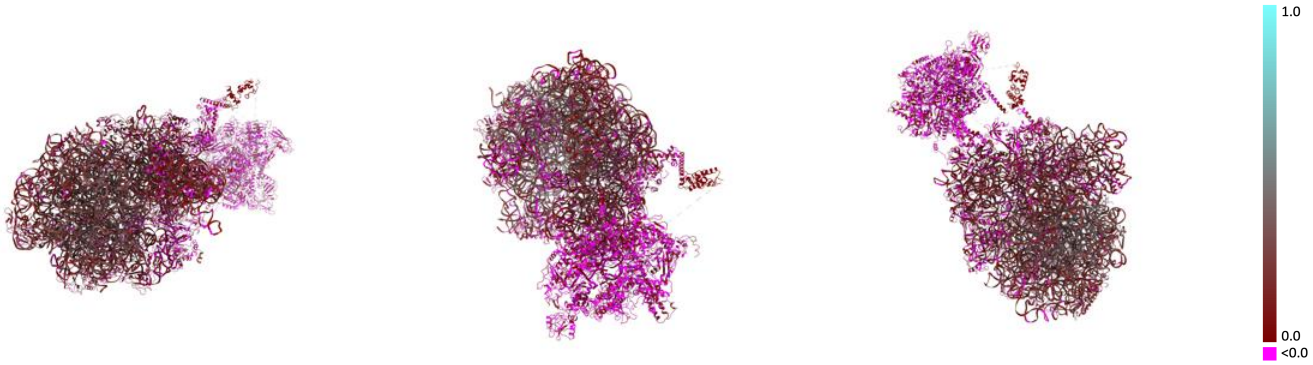
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.011 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.

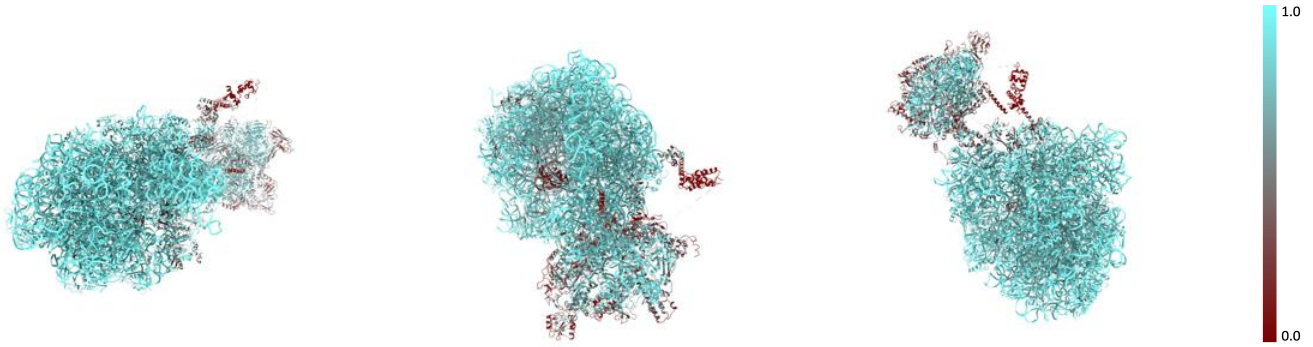
9.2 Q-score mapped to coordinate model (i)



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.

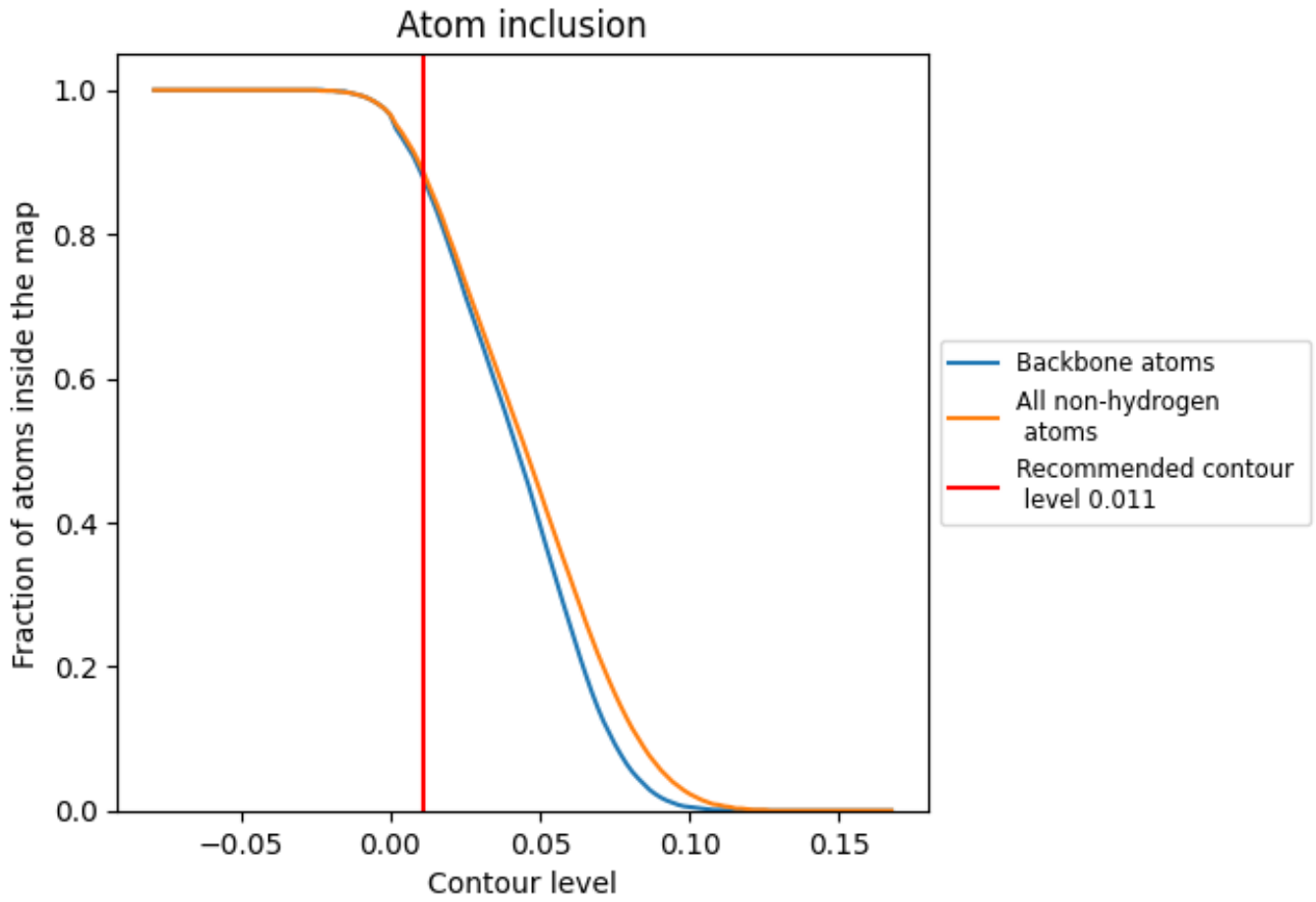
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.011).

9.4 Atom inclusion (i)



At the recommended contour level, 88% of all backbone atoms, 89% 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 (0.011) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8870	0.1560
0	0.6070	0.0450
1	0.9840	0.2390
2	0.9710	0.1000
3	0.9780	0.1870
4	0.7850	0.0670
5	0.4280	0.0330
6	0.9550	0.1580
8	0.6810	-0.0140
9	0.7360	-0.0020
A	0.9060	0.0170
A1	0.4730	-0.0040
A2	0.6020	0.0020
B	0.9560	0.2760
B1	0.6400	0.0040
B2	0.6710	-0.0030
C	0.8750	0.1090
D	0.8840	0.2500
E	0.9020	0.1820
F	0.9420	0.1670
G	0.8950	0.0980
H	0.8830	0.1170
I	0.9110	0.1280
J	0.8820	0.1200
K	0.9420	0.1390
L	0.8820	0.0870
M	0.8820	0.1210
N	0.9000	0.1030
NA	0.4740	0.0230
NG	0.6540	-0.0020
O	0.9130	0.0990
P	0.9080	0.1690
Q	0.8750	0.1790
R	0.9050	0.1250
S	0.9110	0.0900

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Continued from previous page...

Chain	Atom inclusion	Q-score
T	0.9300	0.1750
U	0.9090	0.0880
V	0.8970	0.0760
W	0.9480	0.1620
W0	0.3420	-0.0220
X	0.9030	0.0820
Y	0.9010	0.0770
Z	0.8080	0.1150
a	0.9140	0.0330
b	0.9100	0.2580
c	0.9420	0.2500
d	0.9120	0.1440
e	0.8640	0.0450
f	0.9070	0.1010
g	0.7650	0.0760
h	0.9580	0.1870
i	0.7690	0.0220
j	0.9230	0.2090
k	0.8890	0.2590
l	0.9030	0.1370
m	0.8780	0.1670
n	0.9440	0.2600
o	0.9590	0.0520
p	0.9220	0.2160
q	0.9440	0.2380
r	0.9540	0.1830
s	0.9090	0.2450
t	0.9180	0.1720
u	0.9530	0.1550
v	0.9320	0.1060
w	0.9250	0.1310
x	0.9300	0.2100
y	0.9480	0.1440
z	0.9060	0.1510