



Full wwPDB EM Validation Report ⓘ

Mar 20, 2026 – 02:57 AM UTC

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.dev132
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

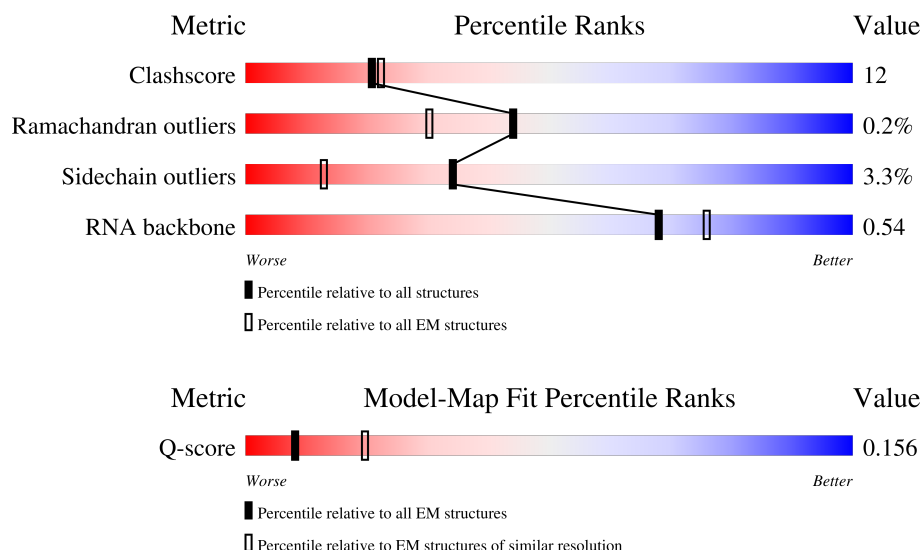
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 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.



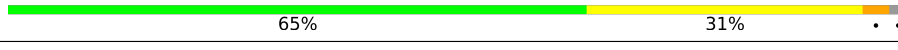
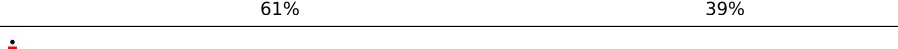
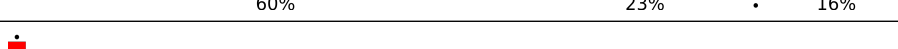
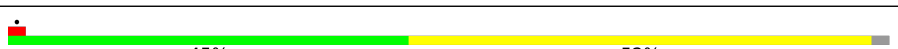
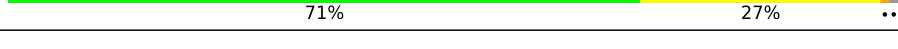
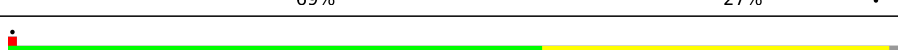
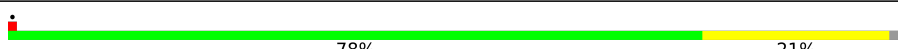
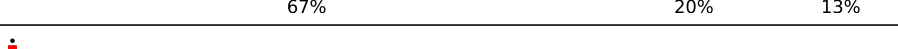
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	844 (4.60 - 5.60)

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

Mol	Chain	Length	Quality of chain
1	A	70	
2	B	57	
3	C	55	

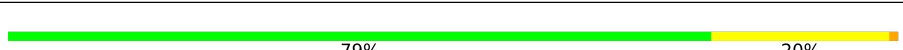
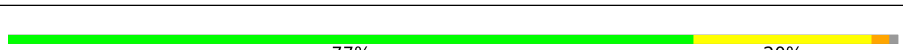
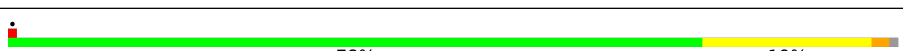
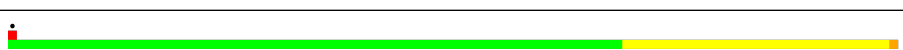
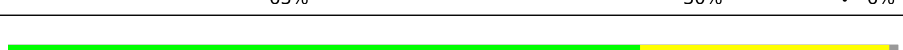
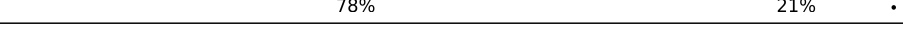
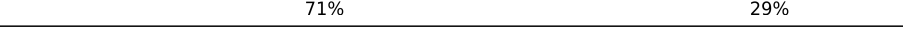
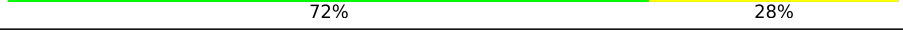
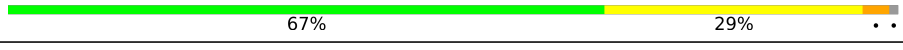
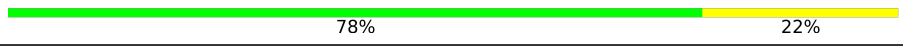
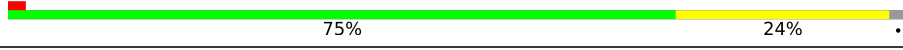
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Mol	Chain	Length	Quality of chain
4	D	46	
5	E	65	
6	F	38	
7	G	241	
8	H	233	
9	I	206	
10	J	167	
11	K	135	
12	L	179	
13	M	130	
14	N	130	
15	O	103	
16	P	129	
17	Q	124	
18	R	118	
19	S	101	
20	T	89	
21	U	82	
22	V	84	
23	W	75	
24	X	92	
25	Y	87	
26	Z	71	
27	b	273	
28	c	209	

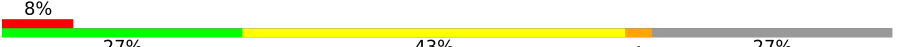
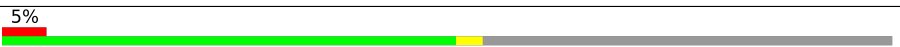
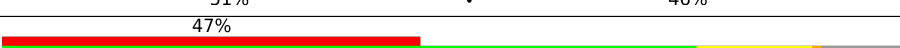
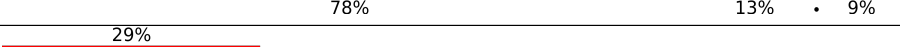
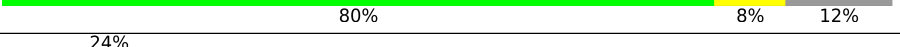
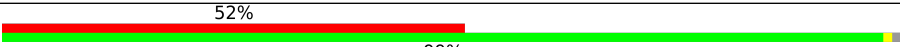
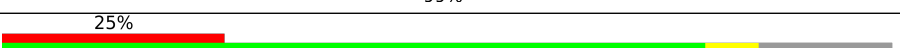
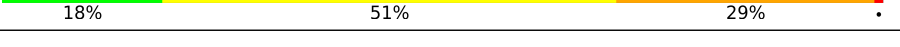
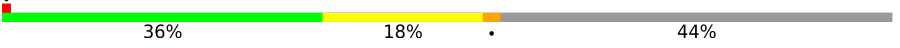
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Mol	Chain	Length	Quality of chain
29	d	201	
30	e	179	
31	f	177	
32	g	149	
33	i	142	
34	j	142	
35	k	123	
36	l	144	
37	m	136	
38	n	127	
39	o	117	
40	p	115	
41	q	118	
42	r	103	
43	s	110	
44	t	100	
45	u	104	
46	v	94	
47	w	85	
48	x	78	
49	y	63	
50	z	59	
51	1	2904	
52	2	120	
53	3	1542	

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Mol	Chain	Length	Quality of chain
54	4	56	
55	8	37	
56	9	37	
57	A1	329	
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
1	A	46	Total	C	N	O	S	0	0
			355	221	62	66	6		

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

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

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

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

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

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

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

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

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

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

- 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

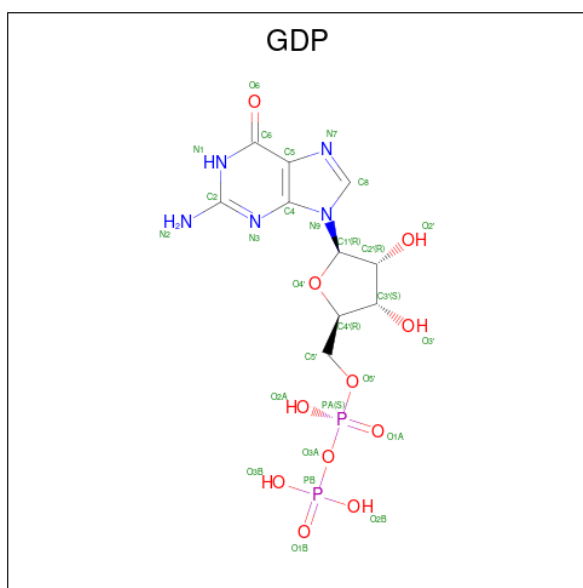
- Molecule 67 is a protein (with D amino acids) called Viomycin.

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).

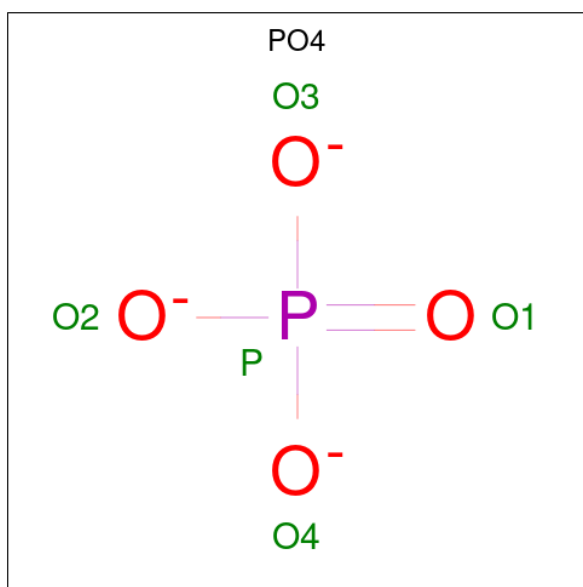
Mol	Chain	Residues	Atoms		AltConf
68	B1	1	Total	Mg	0
			1	1	

- Molecule 69 is GUANOSINE-5'-DIPHOSPHATE (CCD ID: GDP) (formula: C₁₀H₁₅N₅O₁₁P₂).



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

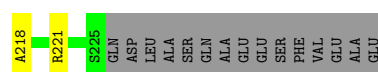
- Molecule 70 is PHOSPHATE ION (CCD ID: PO4) (formula: O₄P).



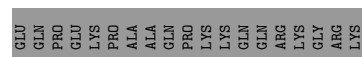
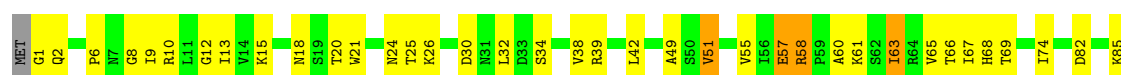
Mol	Chain	Residues	Atoms			AltConf
			Total	O	P	
70	0	1	5	4	1	0



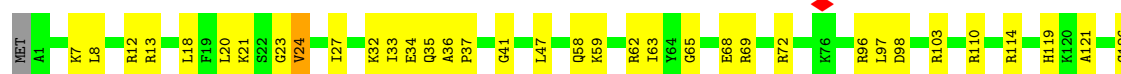
• Molecule 7: 30S ribosomal protein S2



• Molecule 8: 30S ribosomal protein S3

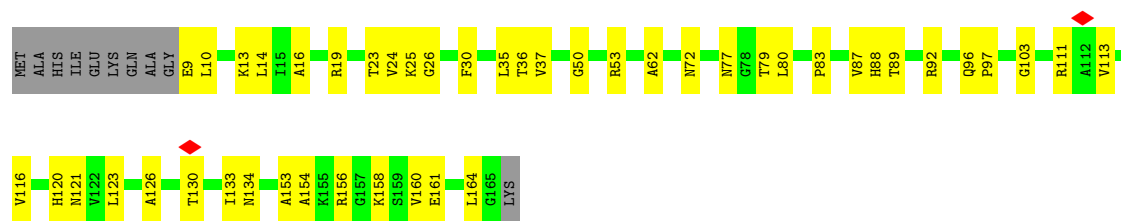


• Molecule 9: 30S ribosomal protein S4

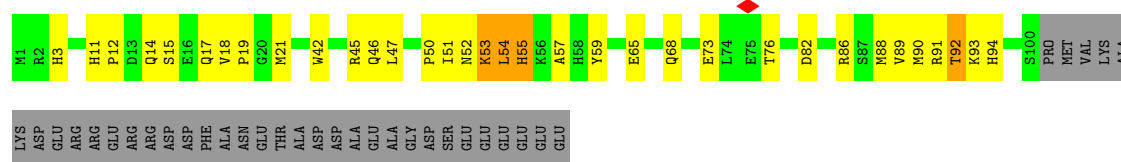


• Molecule 10: 30S ribosomal protein S5

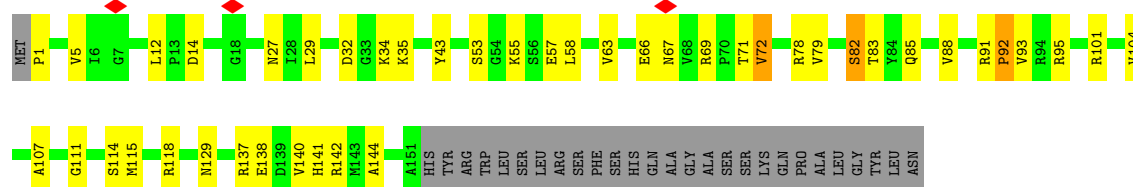




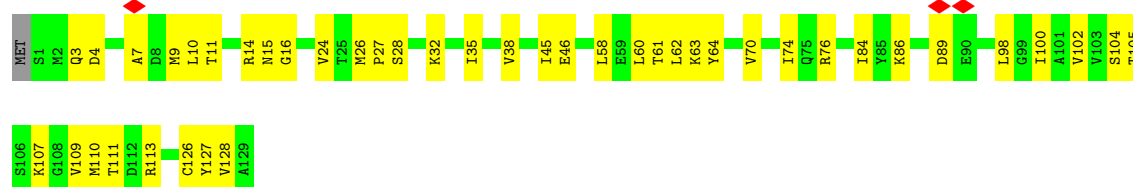
- Molecule 11: 30S ribosomal protein S6, fully modified isoform



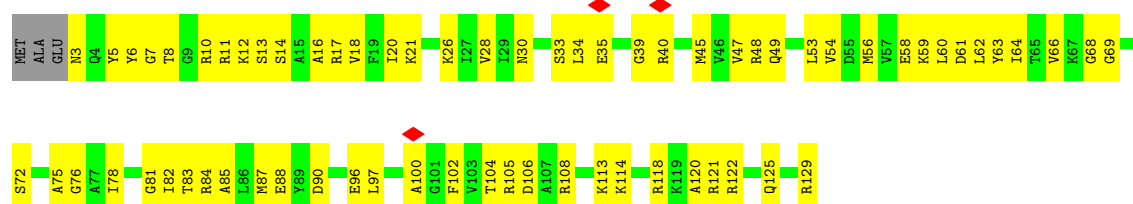
- Molecule 12: 30S ribosomal protein S7



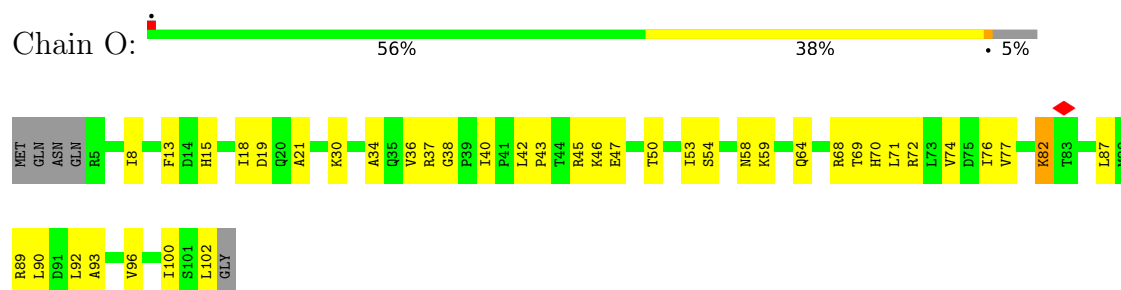
- Molecule 13: 30S ribosomal protein S8



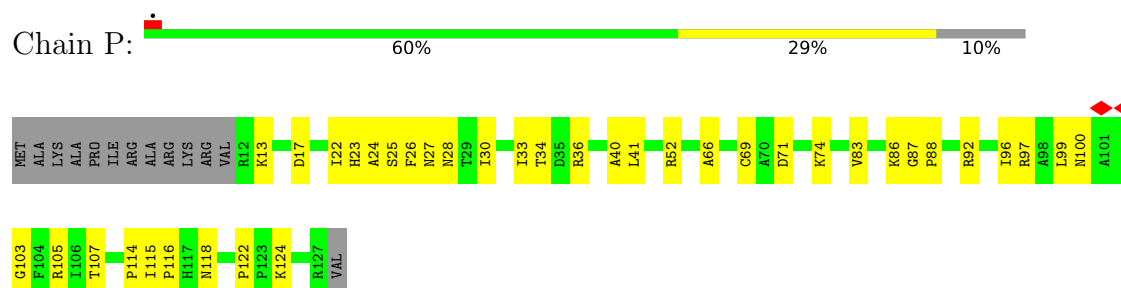
- Molecule 14: 30S ribosomal protein S9



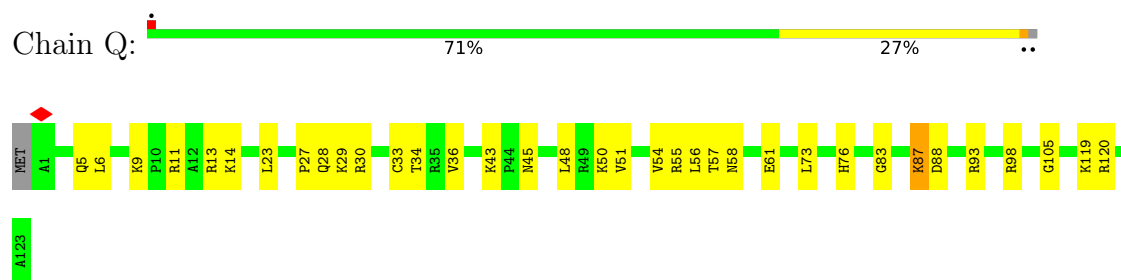
- Molecule 15: 30S ribosomal protein S10



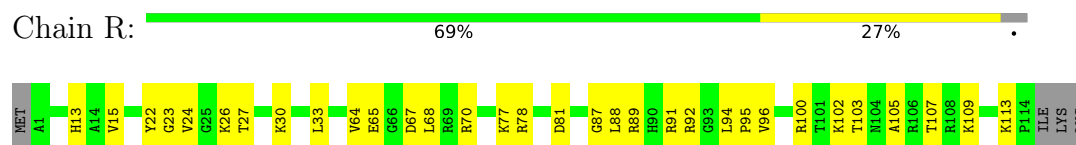
- Molecule 16: 30S ribosomal protein S11



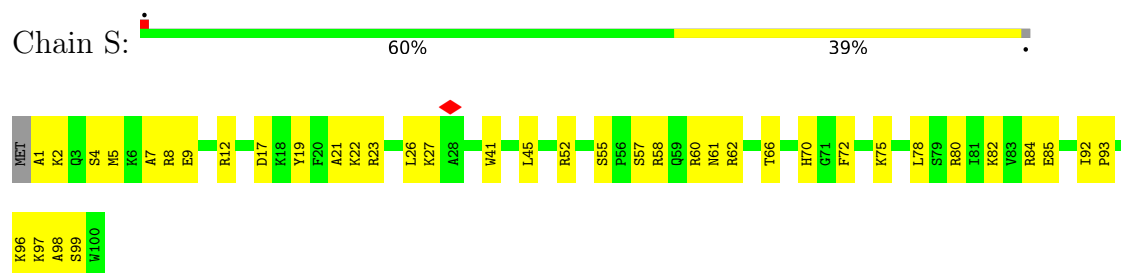
- Molecule 17: 30S ribosomal protein S12



- Molecule 18: 30S ribosomal protein S13



- Molecule 19: 30S ribosomal protein S14



- Molecule 20: 30S ribosomal protein S15

Chain T:  78% 21%



- Molecule 21: 30S ribosomal protein S16

Chain U:  72% 28%



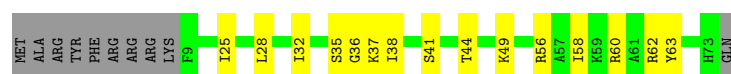
- Molecule 22: 30S ribosomal protein S17

Chain V:  65% 30% 5%



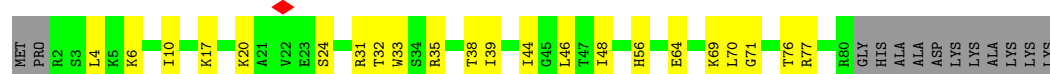
- Molecule 23: 30S ribosomal protein S18

Chain W:  67% 20% 13%



- Molecule 24: 30S ribosomal protein S19

Chain X:  62% 24% 14%



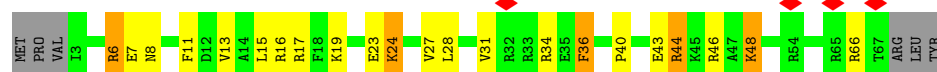
- Molecule 25: 30S ribosomal protein S20

Chain Y:  5% 64% 33%

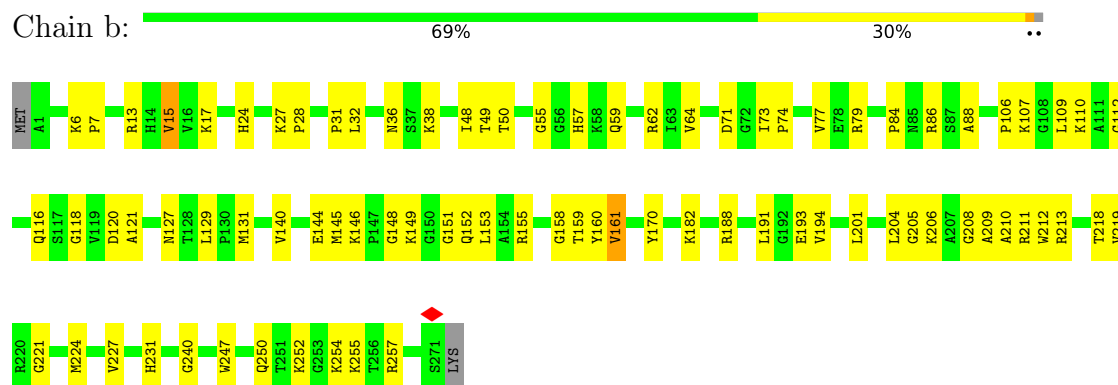


- Molecule 26: 30S ribosomal protein S21

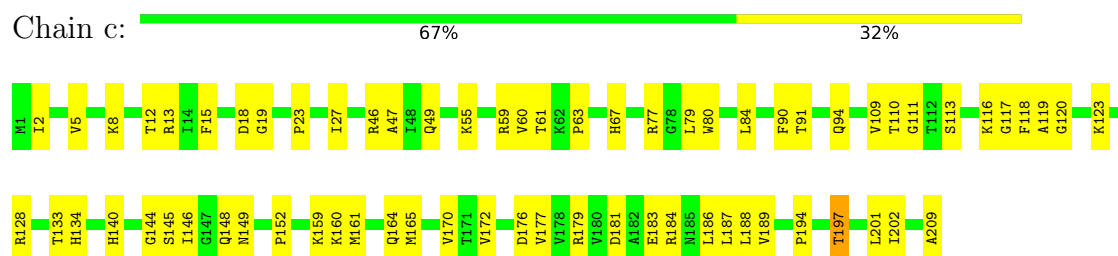
Chain Z:  6% 61% 24% 7% 8%



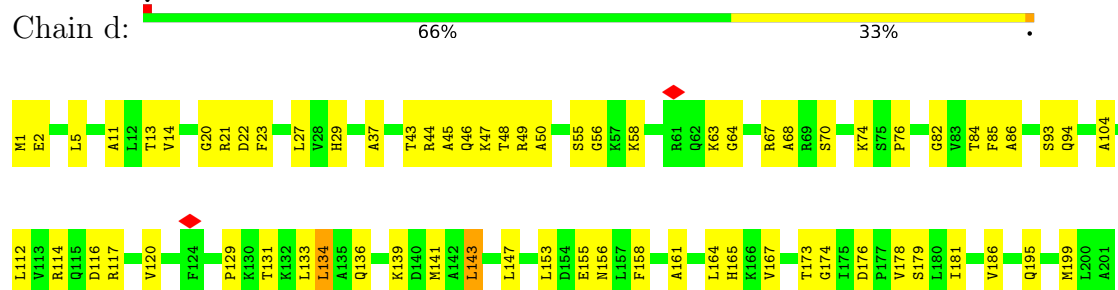
- Molecule 27: 50S ribosomal protein L2



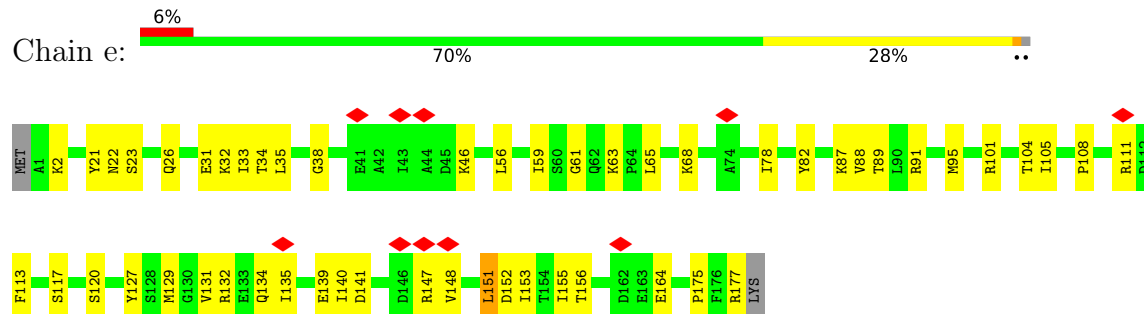
- Molecule 28: 50S ribosomal protein L3



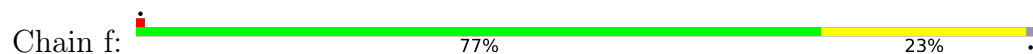
- Molecule 29: 50S ribosomal protein L4

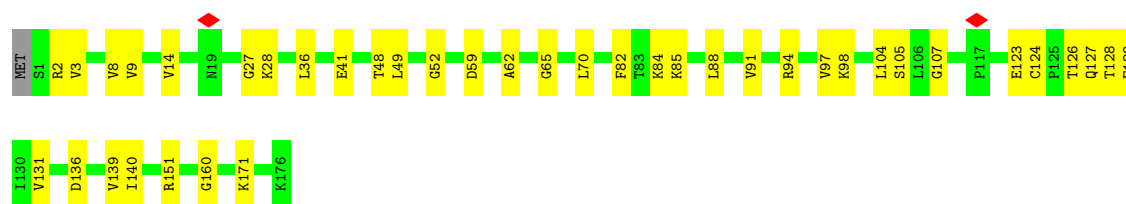


- Molecule 30: 50S ribosomal protein L5

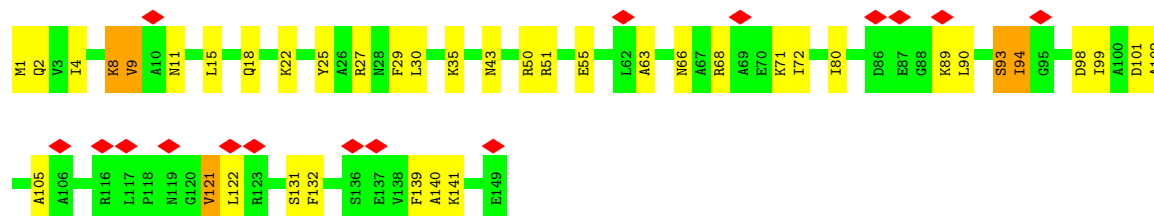
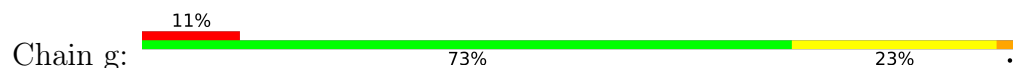


- Molecule 31: 50S ribosomal protein L6

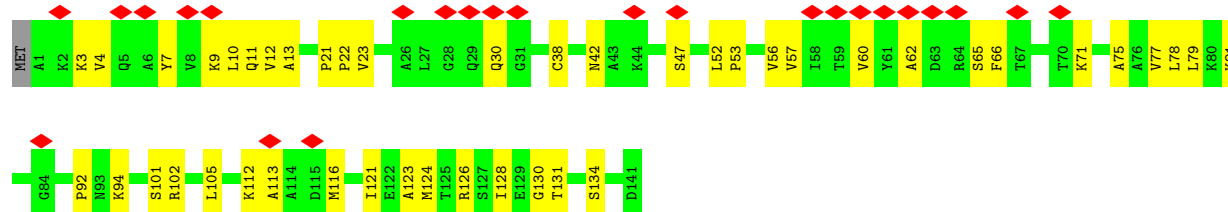




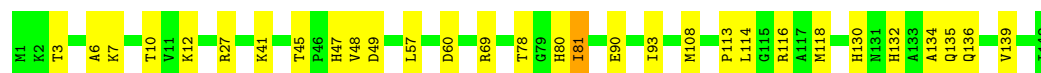
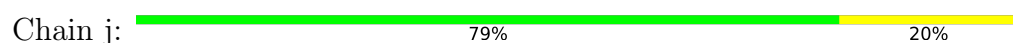
- Molecule 32: 50S ribosomal protein L9



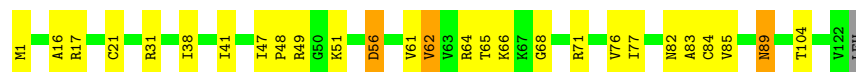
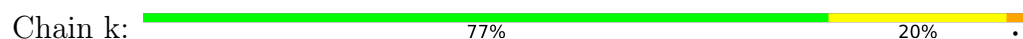
- Molecule 33: 50S ribosomal protein L11



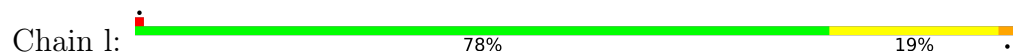
- Molecule 34: 50S ribosomal protein L13



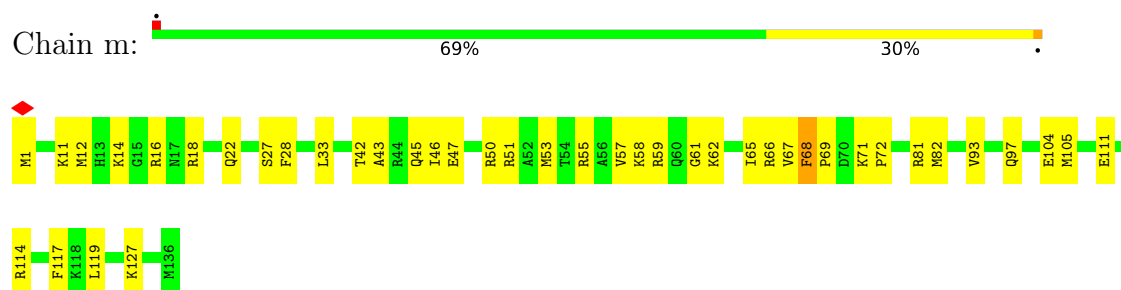
- Molecule 35: 50S ribosomal protein L14



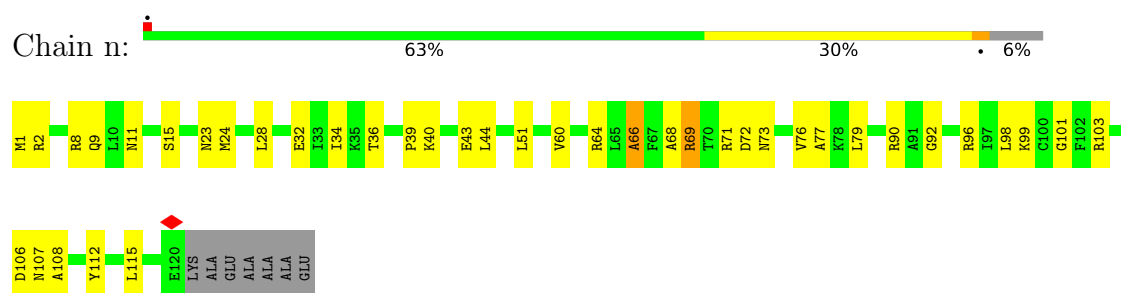
- Molecule 36: 50S ribosomal protein L15



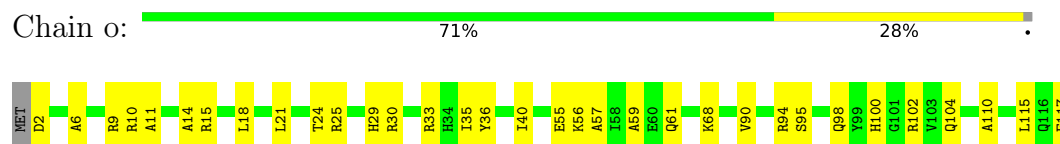
- Molecule 37: 50S ribosomal protein L16



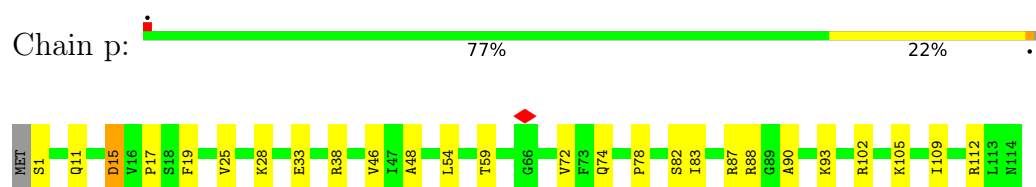
- Molecule 38: 50S ribosomal protein L17



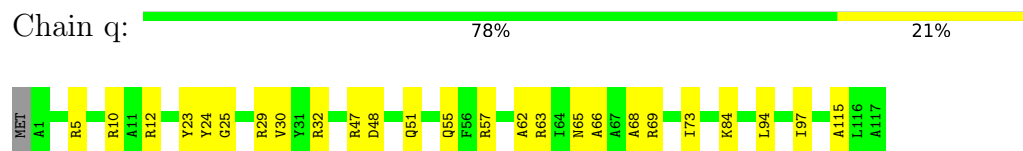
- Molecule 39: 50S ribosomal protein L18



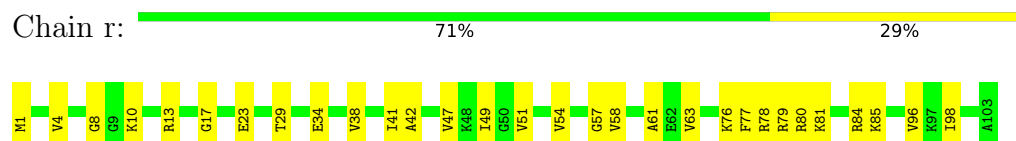
- Molecule 40: 50S ribosomal protein L19



- Molecule 41: 50S ribosomal protein L20



- Molecule 42: 50S ribosomal protein L21



- Molecule 43: 50S ribosomal protein L22

Chain s:  72% 28%



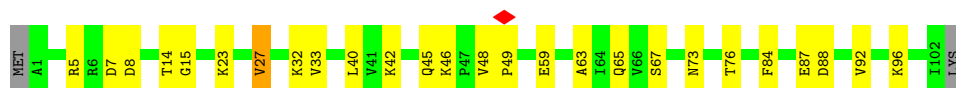
- Molecule 44: 50S ribosomal protein L23

Chain t:  64% 28% 7%



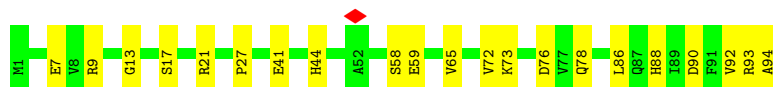
- Molecule 45: 50S ribosomal protein L24

Chain u:  73% 24% ..



- Molecule 46: 50S ribosomal protein L25

Chain v:  78% 22%



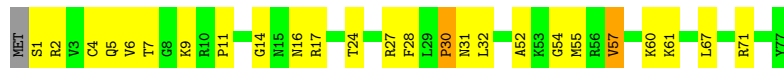
- Molecule 47: 50S ribosomal protein L27

Chain w:  64% 25% 12%



- Molecule 48: 50S ribosomal protein L28

Chain x:  67% 29% ..



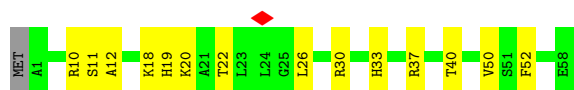
- Molecule 49: 50S ribosomal protein L29

Chain y:  78% 22%



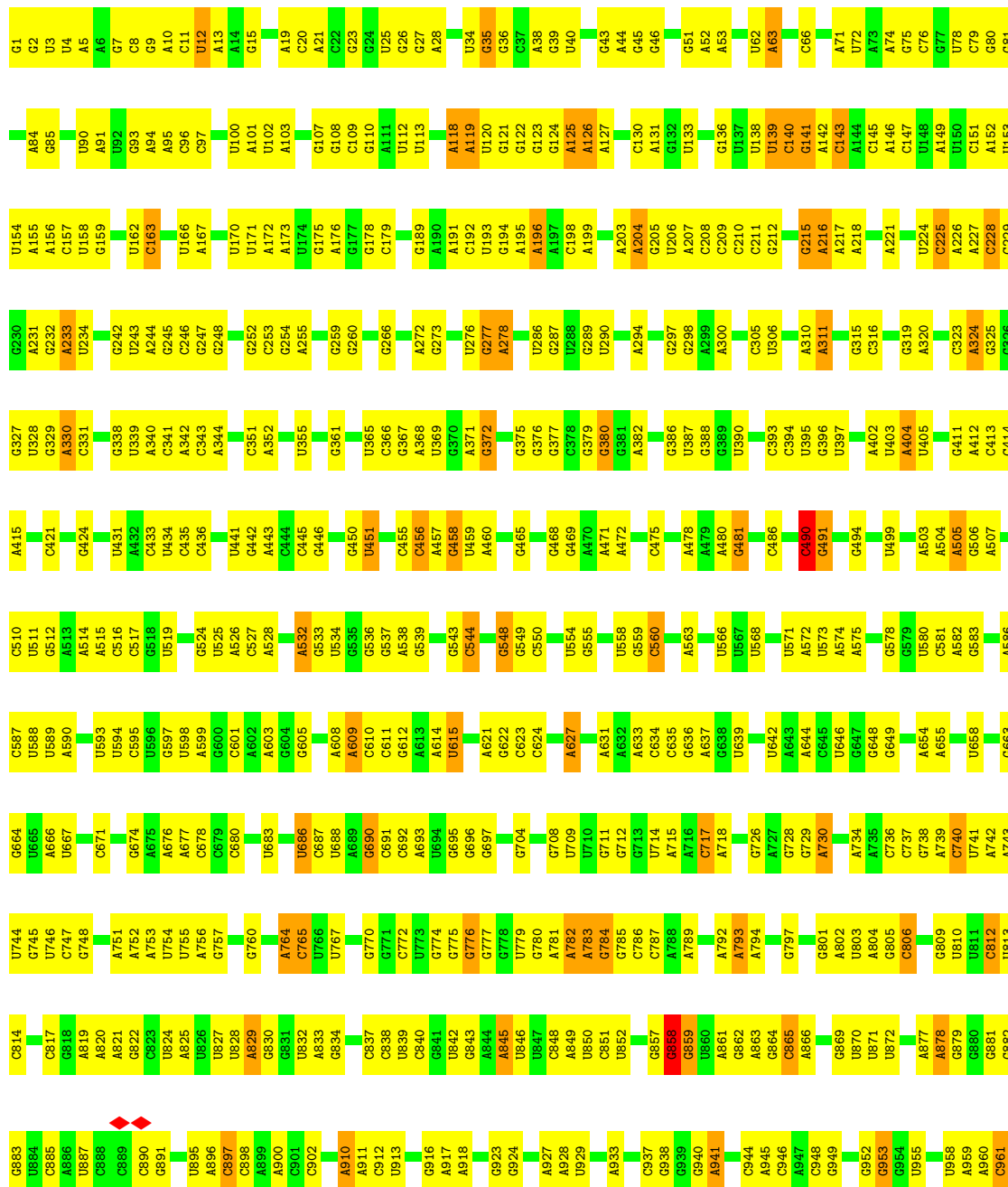
- Molecule 50: 50S ribosomal protein L30

Chain z: 

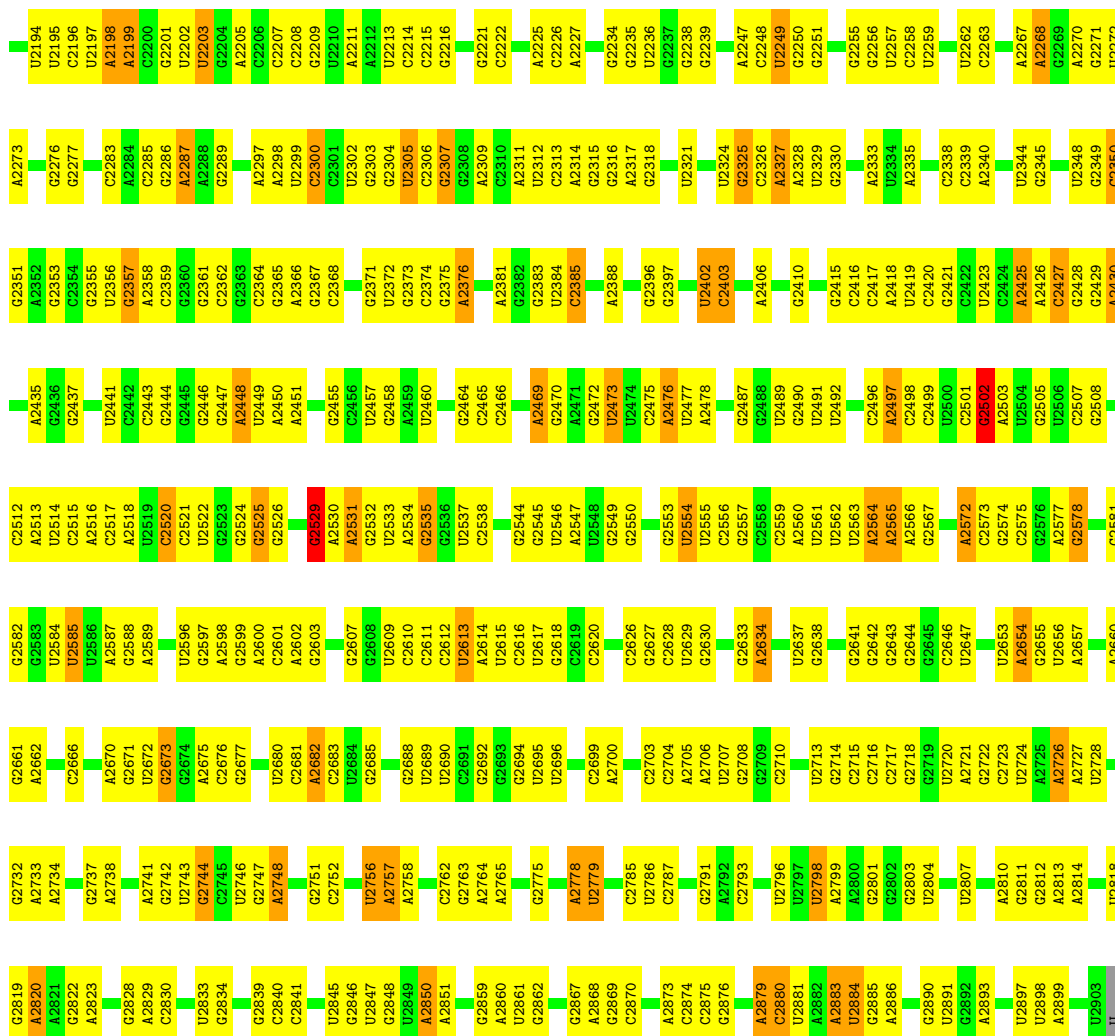


- Molecule 51: 23S rRNA

Chain 1: 



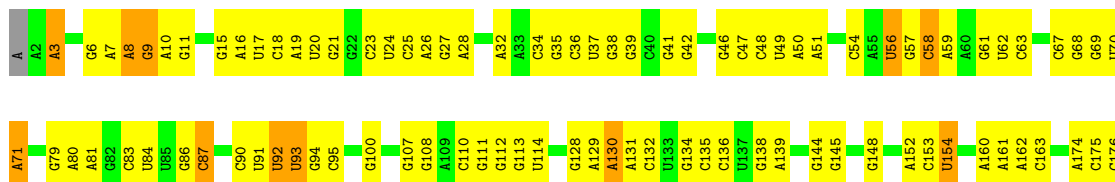
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U2122	C2047	A1969	G1869	C1793	G1715	G1631	A1548	A1453	A1367	A1287	C1196	C1123	A972
G2123	G2048	A1970	C1870	A1794	U1716	A1635	A1549	A1454	G1368	G1288	C1196	C1124	A973
G2124	G2049	U1971	C1795	U1716	U1716	A1635	A1550	C1461	G1369	G1289	G1197	G1125	G974
A2126	C2050	G1972	U1796	A1717	G1717	C1638	A1551	C1462	C1370	C1289	U1198	A1126	A975
G2127	A2051	G1973	G1797	G1718	G1718	C1639	G1555	C1463	G1371	U1294	U1198	A1127	G976
G2128	A2052	G1974	U1798	G1719	G1719	A1640	G1556	G1464	U1372	G1297	U1203	U1128	
		G1975	G1799			A1641	C1558	G1464	A1373	C1297	A1204	A1129	A980
U2132	C2055	U1976	A1889	C1730		A1642	C1559	U1468	A1374	G1300	G1206	U1130	A981
G2133	G2056	A1977	A1890	U1736	U1736	G1643	U1559	A1469	A1378	G1301	G1206	G1131	A982
A2134	A2057	A1978	A1891	G1737	G1737	C1644	C1564	A1470	A1379	A1302	U1209	A1132	A983
A2135	A2058	G1979	C1893	G1738	G1738	G1645	C1565	U1470	G1380	G1303	G1210	A1133	A984
G2136	A2059	G1980	C1894	A1739	A1739	C1646	A1566	G1473	G1380	A1304	C1211	A1134	C985
U2137	A2060	A1981	A1805	A1739	A1739	C1647	G1567	U1474	A1383	C1305	G1212	C1135	C986
G2138	A2061	U1982	C1806	G1740	G1740	U1647	G1568	G1475	A1387	A1307	G1216	G1136	C987
C2139	A2062	G1983	G1807	G1741	G1741	U1648	G1569	G1475	G1388	A1308	G1216	G1138	A988
G2140	C2063	G1984	A1808	U1742	U1742	G1649	A1570	G1478	G1389	G1309	U1219	C1140	A989
U2141	G2064	C1985	A1809	G1743	G1743	A1651	A1571	G1478	G1388	A1307	G1216	G1138	
G2142	C2065	U1986	A1810	A1744	A1744	G1652	A1572	G1478	G1389	G1309	U1219	C1140	C994
A2143	C2066	C1987	G1811	U1745	U1745	A1653	A1573	U1481	U1390	G1310	G1220	U1141	C995
G2144	G2067	U1988	A1815	A1746	A1746	G1654	G1574	G1482	U1391	U1312	G1226	A1142	A996
C2145	U2068	A1912	C1816	U1747	U1747	A1655	A1580	U1485	U1394	U1313	A1226	C1144	
U2146	A2070	C1914	G1817	C1748	C1748	C1656	A1581	U1486	A1395	C1319	C1229	C1146	U999
	A2071	U1993	U1818	G1752	G1752	C1657	C1582	U1486	U1397	C1320	A1230	A1147	A1000
C2147	A2072	C1984	A1819	G1753	G1753	C1658	G1587	A1490	A1403	A1321	G1236	U1148	A1007
G2148	C2072	U1985	U1820	G1754	G1754	G1659	G1588	A1504	C1404	A1322	G1236	C1153	C1006
C2149	C2073	C1986	A1821	A1754	A1754	G1660	G1588	A1505	A1246	U1325	A1246	G1154	U1012
A2150	U2074	C1987	C1822	G1756	G1756	U1662	G1588	A1506	A1247	U1326	G1248	A1155	C1013
U2151	A2080	A1988	G1823	A1757	A1757	G1663	A1591	C1597	U1409	U1327	G1248	A1156	
G2152	G2081	C1989	C1824	U1758	U1758	G1664	A1592	C1597	U1410	A1327	U1249	G1157	U1018
C2153	A2082	C2000	U1825	A1759	A1759	A1665	C1593	A1508	U1411	C1330	G1251	C1158	A1084
G2154	G2083	C2001	G1826	U1760	U1760	G1666	U1594	A1509	U1412	G1331	G1251	C1158	A1019
C2155	U2084	U2007	U1827	C1761	C1761	G1667	U1595	G1510	A1413	G1332	G1252	C1158	A1086
G2156	A2085	C2008	G1828	C1764	C1764	C1674	A1596	G1511	C1414	G1333	A1253	C1161	A1020
C2157	G2086	C2009	A1829	U1765	U1765	C1675	A1597	C1512	U1415	G1334	G1254	G1162	A1087
A2158	C2087	G2010	C1830	G1767	G1767	C1676	U1598	A1515	C1417	U1255	U1255	U1174	G1022
		A2013	G1831	G1767	G1767	C1677	U1599	A1515	G1419	G1337	G1256	A1169	U1023
C2162	U2092	C2020	C1832	G1770	G1770	A1676	C1600	C1518	U1419	G1338	G1257	C1170	G1024
U2166	A2094	A2020	C1833	C1771	C1771	A1677	G1601	C1518	A1419	G1339	G1258	C1171	G1025
U2167	G2093	C2021	G1834	A1772	A1772	A1678	U1602	C1518	A1420	G1339	U1258	C1172	G1026
G2168	A2094	U2022	C1835	A1773	A1773	U1680	A1603	G1521	A1420	U1340	G1259	U1173	A1027
		C2023	C1836	C1774	C1774	G1681	A1607	A1522	G1424	G1341	G1259	U1174	A1028
U2172	U2099	G2024	U1841	U1775	U1775	C1686	C1607	U1523	G1425	A1342	A1262	A1175	A1029
A2173	G2100	U2025	G1842	G1776	G1776	C1687	A1608	U1523	G1426	A1343	A1262	A1175	C1030
C2174	A2101	C2026	C1843	U1777	U1777	G1687	A1609	G1524	C1428	G1343	A1265	U1176	C1033
G2175	G2102	U2027	C1844	U1777	U1777	C1688	A1609	G1524	G1429	U1352	A1266	G1177	U1033
C2176	C2103	U2028	C1845	A1780	A1780	C1694	A1614	A1529	G1432	A1353	G1267	C1178	G1036
U2177	U2106	G2029	C1846	U1781	U1781	G1695	C1615	G1529	A1433	A1354	U1268	U1179	G1037
C2178	G2107	A2030	A1853	U1782	U1782	G1696	A1616	U1534	A1434	G1355	A1269	U1180	G1038
U2180	A2108	A2031	A1854	U1783	U1783	G1697	C1617	A1535	A1434	G1356	C1270	U1181	A1039
U2181	G2032	G2032	A1855	A1784	A1784	A1698	A1618	C1536	A1439	C1357	G1271	U1182	G1110
U2182	U2111	U2033	G1856	A1785	A1785	A1699	G1619	G1537	U1439	C1357	A1272	U1183	A1111
A2183	G2112	G2034	A1857	A1786	A1786	A1700	G1620	C1537	U1440	G1360	A1275	G1185	G1114
A2184	U2113	U2035	G1857	A1787	A1787	A1701	U1621	C1541	U1440	G1361	A1276	G1186	C1043
	A2114	C2036	A1858	A1788	A1788	G1707	U1622	U1542	G1444	C1362	G1277	G1187	C1044
G2187	G2115	A2037	G1863	C1788	C1788	A1707	C1625	U1545	G1445	C1363	G1278	G1187	C1045
U2188	U2118	G2040	A1864	A1789	A1789	G1707	C1626	A1546	C1446	G1364	G1279	G1192	A1046
C2189	A2119	U2041	U1866	A1790	A1790	A1626	A1626	G1546	C1447	A1365	G1279	G1192	A1047
A2191	G2120	A2042	G1867	A1791	A1791	G1710							



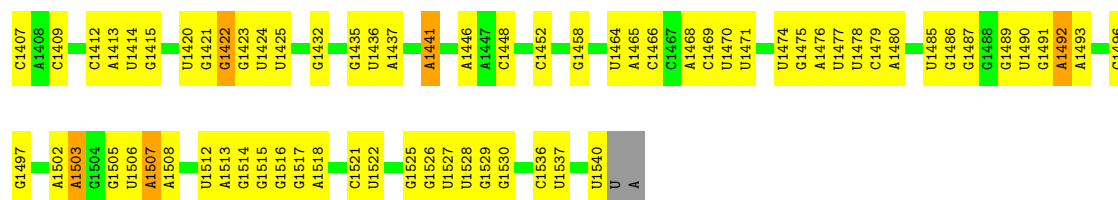
• Molecule 52: 5S rRNA



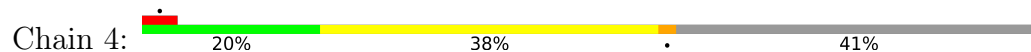
• Molecule 53: 16S rRNA



A1332	A1333	A1339	A1340	U1345	A1346	A1347	A1348	A1349	A1350	U1351	U1354	U1355	A1356	A1357	G1361	A1362	A1363	U1364	G1365	G1366	C1367	A1368	C1369	G1370	G1371	U1372	G1373	A1374	U1375	U1376	A1377	C1378	C1382	C1383	G1386	G1387	C1388	C1389	U1390	U1391	C1395	A1396	C1397	A1398	C1399	C1400	G1401	C1402	C1403	C1404	G1405	U1406						
A1257	G1182	U1183	G1184	A1261	C1262	C1263	U1264	C1267	G1268		A1271	A1274	A1275	G1278	G1279	A1280	C1281	C1282	U1283	C1284	G1285	A1286	A1287	A1288	A1289	G1290	U1291	G1292	C1293	G1300	U1301	C1302	C1303	G1304	G1305	A1306	U1307	U1308	G1309	G1312	U1313	C1314	U1315	G1316	C1317	C1320	C1325	U1326	C1327	C1328	U1329	U1330	G1331					
U1025	G1026	C1027	C1028	U1029	U1030	C1031	G1032	U1033	A1034	A1035	A1042	G1043	G1047	U1048	U1049	G1050	G1053	C1054	G1057	G1058	C1059	U1060	G1061	U1062	C1063	U1064	U1065	C1069	U1070	U1071	G1072	U1073	G1074		G1077	U1078	G1079	A1004	A1005	G1006	U1007	U1008		A1012	G1013	A1014	G1015	U1016	U1017	A1018	A1019	A1022	U1023	G1024				
G947	U950	G951	U952	G953	G954	U955	U956	U957	A958	A959	U960	U961	C962	G963	A964	U965	G966	C967	A968	A969	C970	A889	C971	C972	G973	A974	A975	G976	A977	A978	C979	C980	U981		U992	G993	A994	A1000	C1001	A1004	A1005	G1006	U1007	U1008		A1012	G1013	A1014	G1015	U1016	U1017	A1018	A1019	A1022	U1023	G1024		
G861	C862	U863	A864	A865	C866	G867	A872	A873	C874	U875	C876	G877	A878	G881	C882	C883	U884	A885	A886		A889	C971	C972	G973	A974	A975	G976	A977	A978	C979	C980	U981		U992	G993	A994	A1000	C1001	A1004	A1005	G1006	U1007	U1008		A1012	G1013	A1014	G1015	U1016	U1017	A1018	A1019	A1022	U1023	G1024			
U684	G685	G690	G691	A607	A608	C613	G620	A621	A622	C623	G624	A625	A639	U630	U531	A532	A533	U534	A535		A639	U648	G650	A651	U655	C556	U647	G557	G558	A559	A560	U561	U562	A563	C564	G565	U565	G566	C569	G570	U571	A572	A573	A574	G575	C576	G577	C578	A579	C580	G581		U593	U594	A595	A596	U597	U598
G771	U772	G773		A777	U701	A702	G703	A706	G710		G713	G714	A715	A718	C719	C720	G721	G722	C634	A635	U636	C637	U638	G639	U640	G557	G558	A642	C643	U644		G650	C651	U652	U653	U657	C658	U659	G660	G661	A665	G666	G667	G668	G669	A673	G674		U693	A675	A676	U677	A768	G769	C770			
G771	U772	G773		A777	U701	A702	G703	A706	G710		G713	G714	A715	A718	C719	C720	G721	G722	C634	A635	U636	C637	U638	G639	U640	G557	G558	A642	C643	U644		G650	C651	U652	U653	U657	C658	U659	G660	G661	A665	G666	G667	G668	G669	A673	G674		U693	A675	A676	U677	A768	G769	C770			
G681	C862	U863	A864	A865	C866	G867	A872	A873	C874	U875	C876	G877	A878	G881	C882	C883	U884	A885	A886		A889	C971	C972	G973	A974	A975	G976	A977	A978	C979	C980	U981		U992	G993	A994	A1000	C1001	A1004	A1005	G1006	U1007	U1008		A1012	G1013	A1014	G1015	U1016	U1017	A1018	A1019	A1022	U1023	G1024			
U1025	G1026	C1027	C1028	U1029	U1030	C1031	G1032	U1033	A1034	A1035	A1042	G1043	G1047	U1048	U1049	G1050	G1053	C1054	G1057	G1058	C1059	U1060	G1061	U1062	C1063	U1064	U1065	C1069	U1070	U1071	G1072	U1073	G1074		G1077	U1078	G1079	A1004	A1005	G1006	U1007	U1008		A1012	G1013	A1014	G1015	U1016	U1017	A1018	A1019	A1022	U1023	G1024				
C1103	G1104	A1105	G1106	C1107	U1108	C1109	A1110	A1111		A1117	U1118	C1119	C1120	U1121	U1122	U1123	G1124	U1125	U1126	U1127	C1128	C1129	G1134	U1135	C1136	C1137	G1138	G1139	C1140	C1147	U1148	C1149	A1150	A1151	A1152	G1153	G1154	A1155	G1156	A1157	C1158	U1159	G1160	C1161	C1162	U1168	A1169	A1170	A1171	C1172	U1173	G1174	A1179	A1180	G1181			
G1182	U1183	G1184	G1187	U1188	A1188	C1192	G1193	U1194	C1195	A1196	A1197	G1198	U1199	C1200	A1201	C1210	U1211	C1212	A1213	C1214	G1215	A1216	G1217	C1218	A1219	G1220	G1221	G1222	A1225	C1226	A1229	C1230	G1231	U1232	G1233	C1234	U1235	C1236	C1237	A1238	A1239	U1240	G1241	G1242	C1243	G1244	C1245	A1250	A1251	C1252	C1253	A1254	A1256					
A1257	G1260	A1261	C1262	C1263	U1264	C1267	G1268		A1271		A1274	A1275	G1278	G1279	A1280	C1281	C1282	U1283	C1284	G1285	A1286	A1287	A1288	A1289	G1290	U1291	G1292	C1293	G1300	U1301	C1302	C1303	G1304	G1305	A1306	U1307	U1308	G1309	G1312	U1313	C1314	U1315	G1316	C1317	C1320	C1325	U1326	C1327	C1328	U1329	U1330	G1331						



- Molecule 54: mRNA



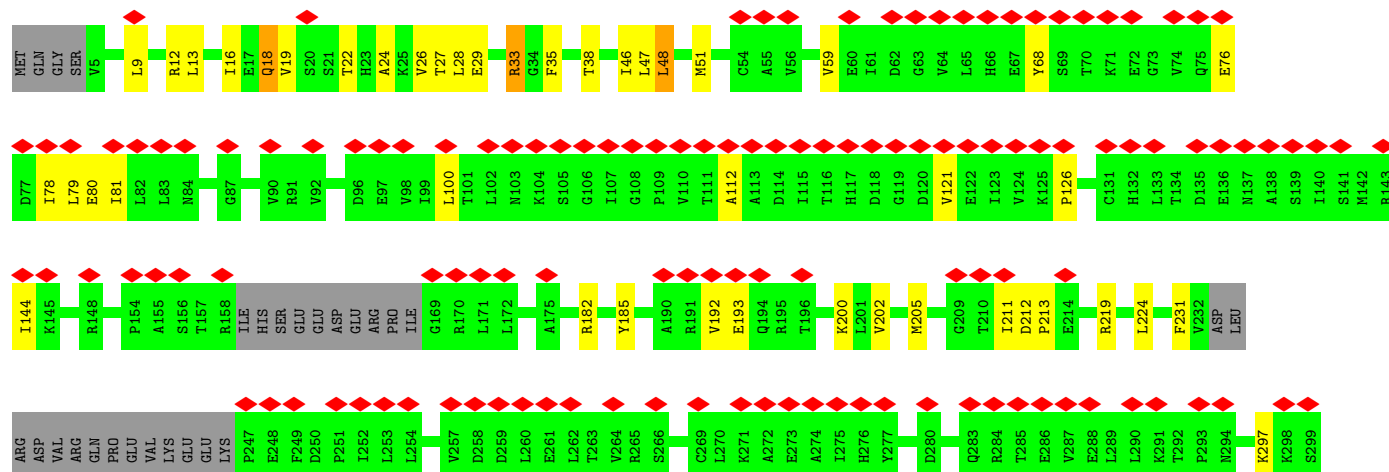
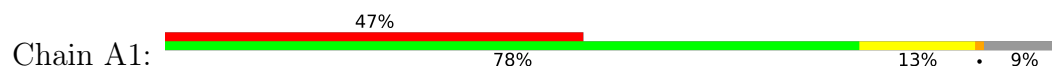
- Molecule 55: template DNA strand

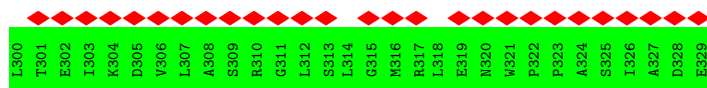


- Molecule 56: non-template DNA strand

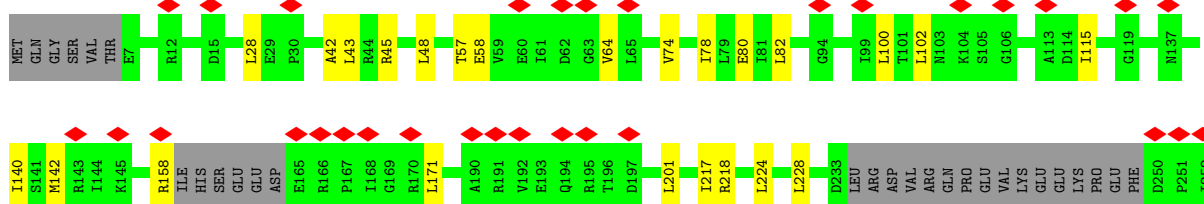
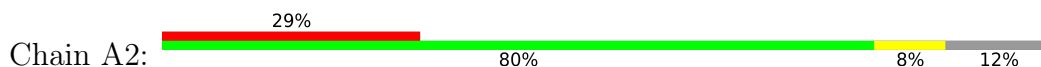


- Molecule 57: DNA-directed RNA polymerase subunit alpha

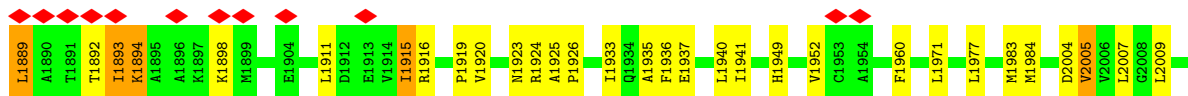
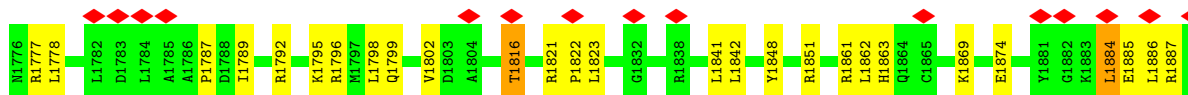
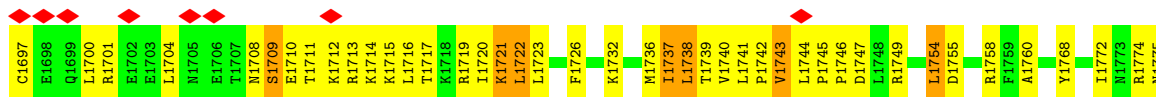
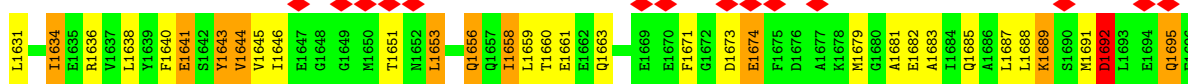
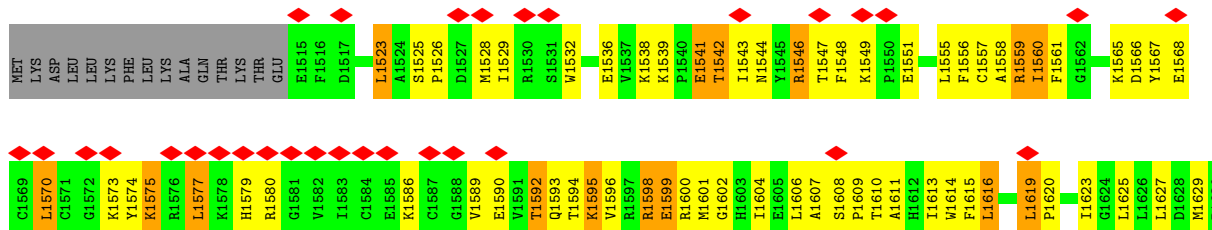


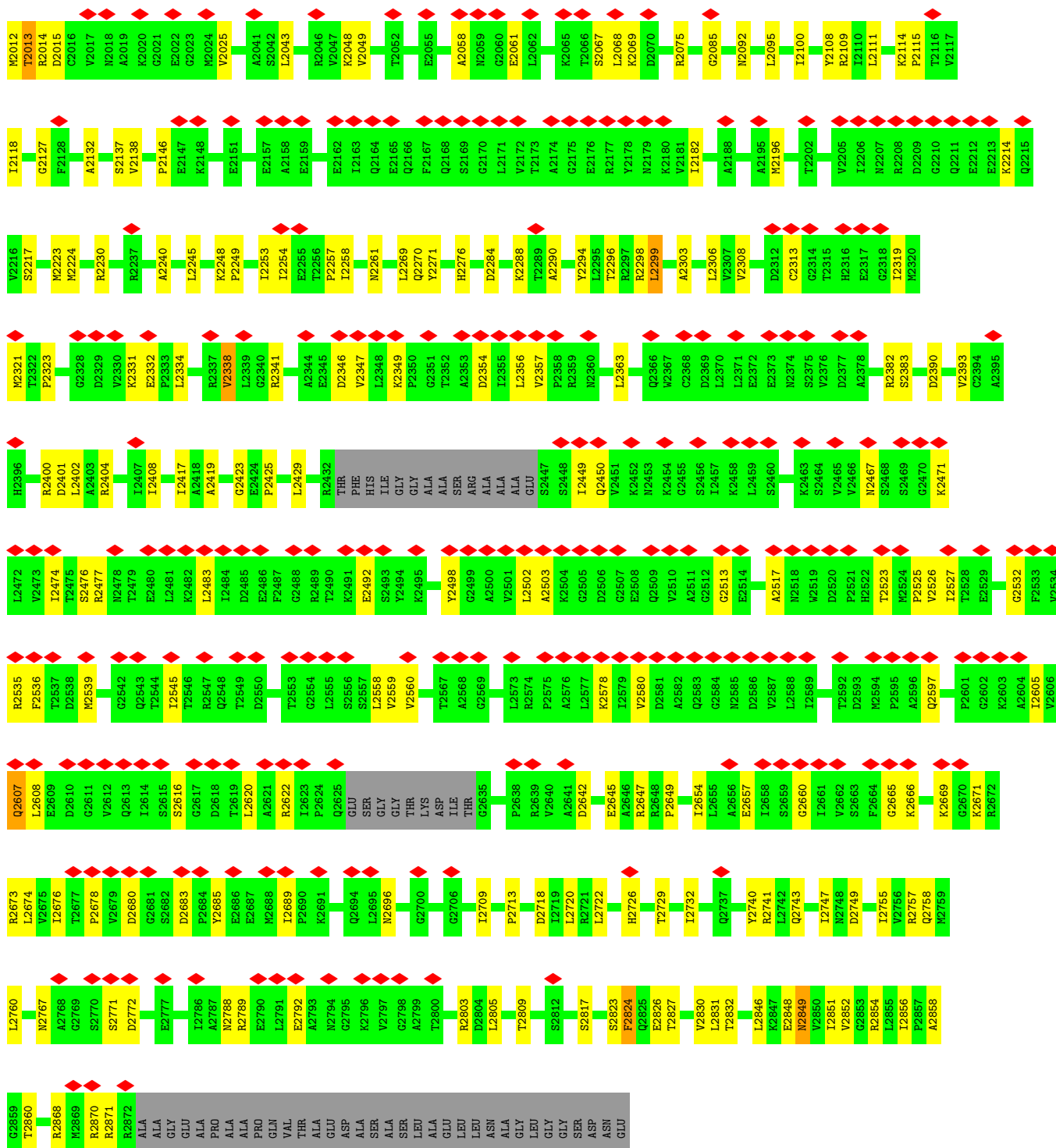


• Molecule 57: DNA-directed RNA polymerase subunit alpha

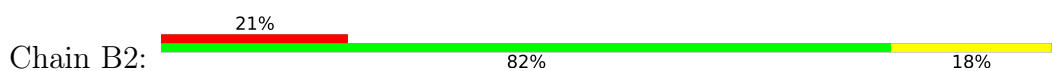


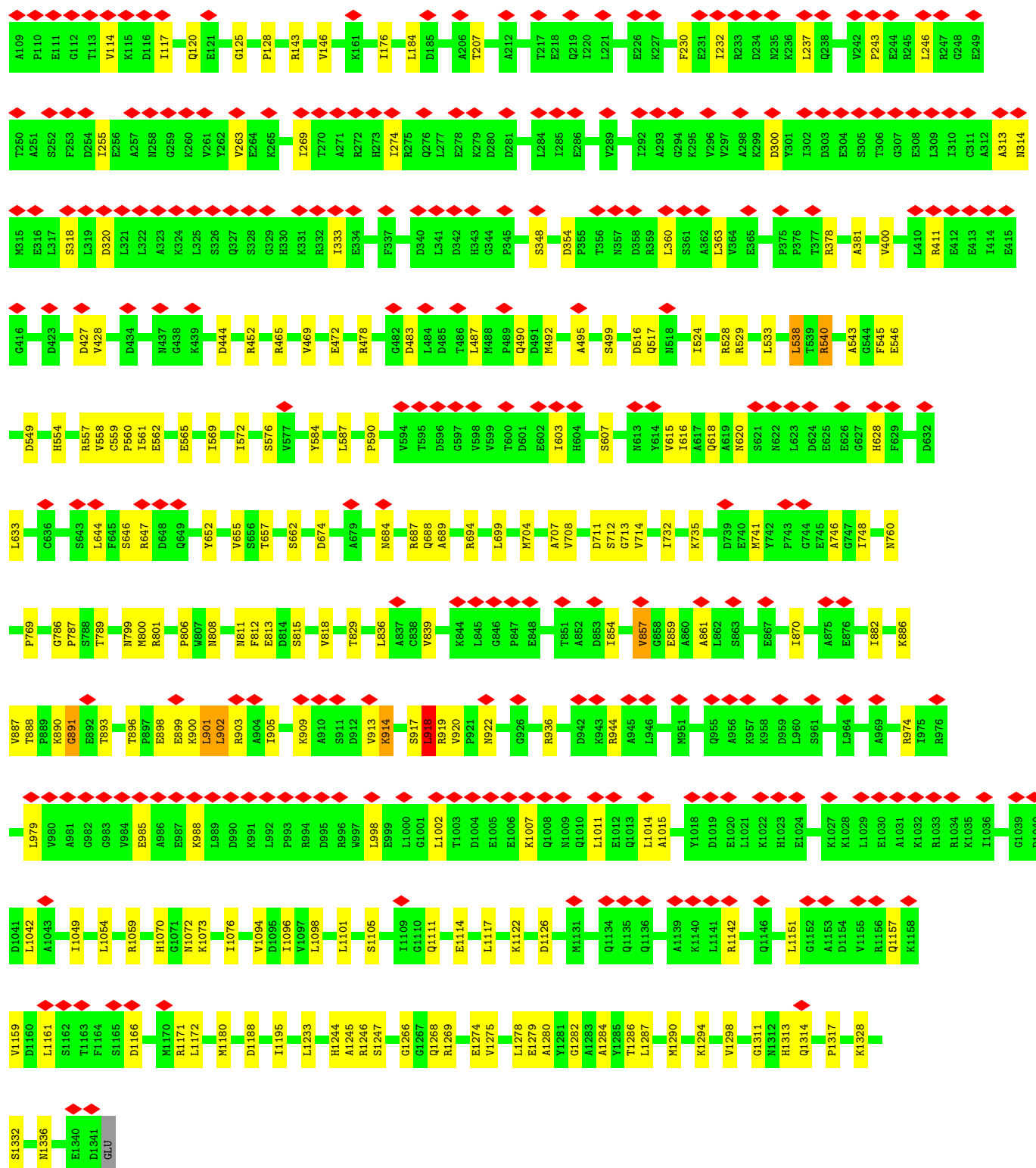
• Molecule 58: DNA-directed RNA polymerase subunit beta'



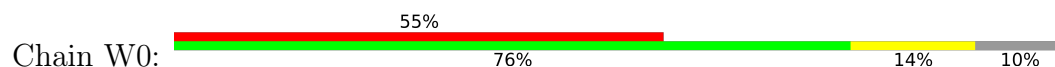


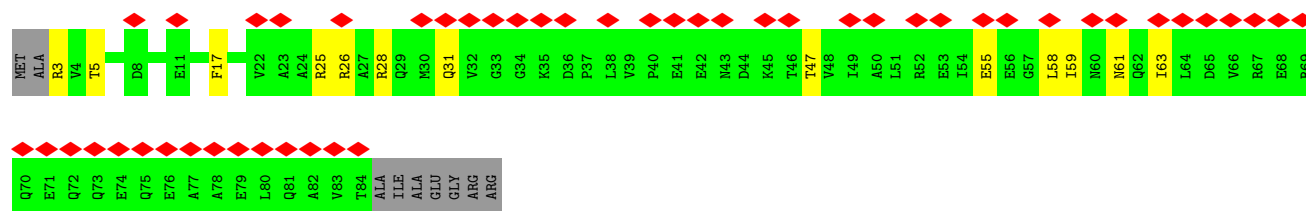
• Molecule 59: DNA-directed RNA polymerase subunit beta



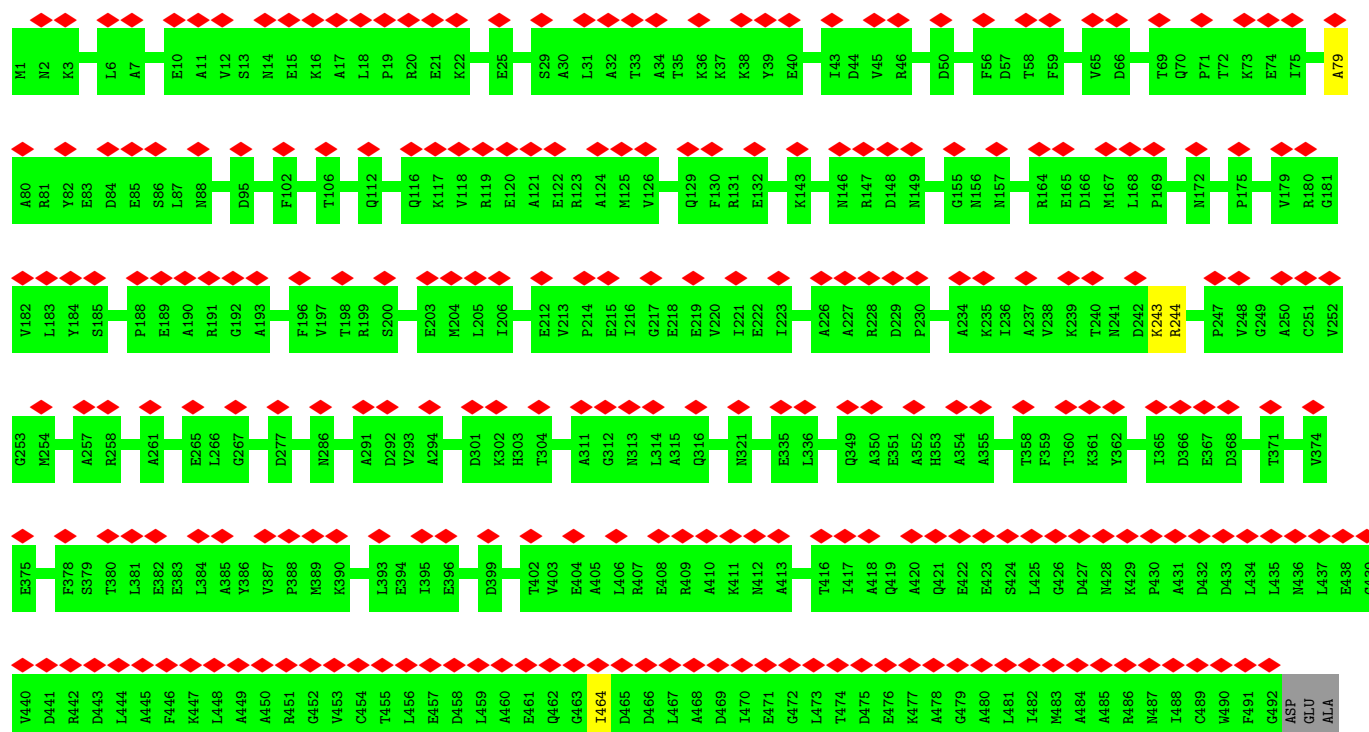


• Molecule 60: DNA-directed RNA polymerase subunit omega

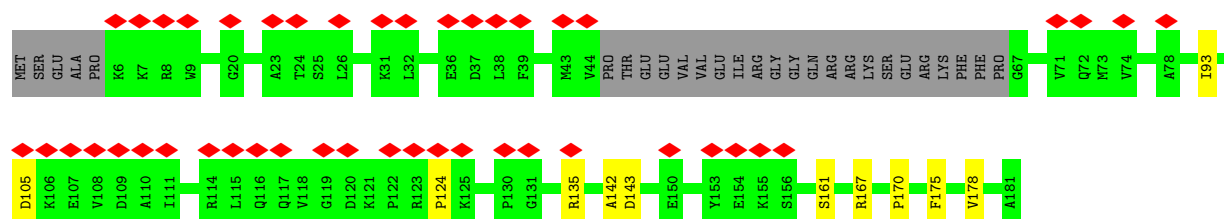
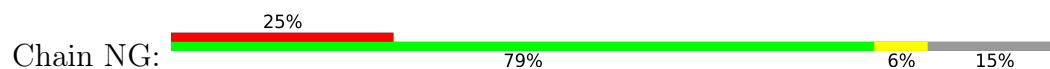




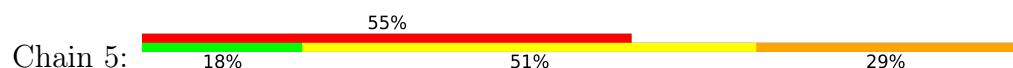
• Molecule 61: Transcription termination/antitermination protein NusA

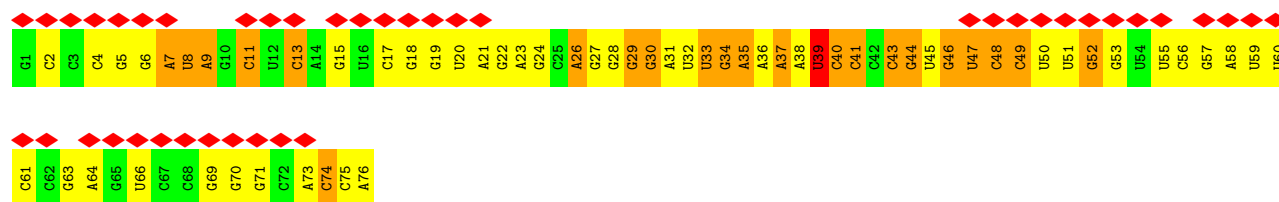


• Molecule 62: Transcription termination/antitermination protein NusG

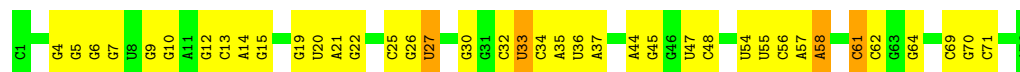


• Molecule 63: tRNA(Phe)

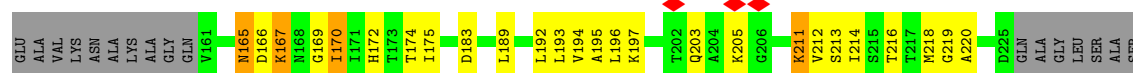
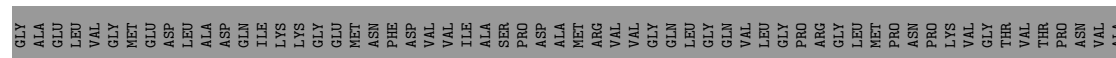
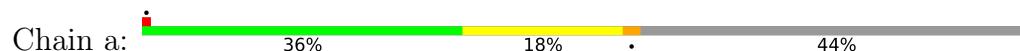




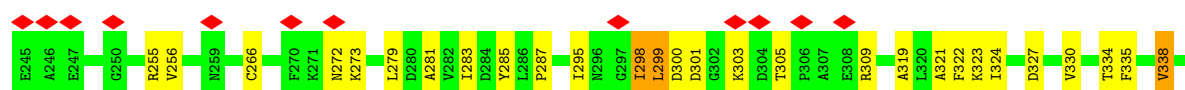
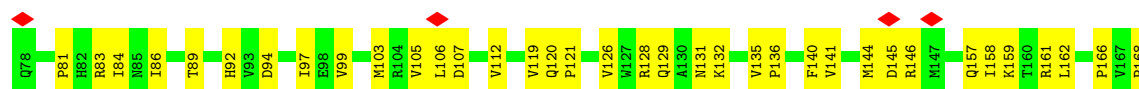
• Molecule 64: tRNA(fMet)

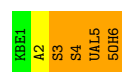


• Molecule 65: Large ribosomal subunit protein uL1



• Molecule 66: Elongation factor G





4 Experimental information

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 ($e^-/\text{\AA}^2$)	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 ($\text{\AA}$)	753.60004, 753.60004, 753.60004	wwPDB
Map dimensions	480, 480, 480	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	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: GDP, KBE, 5OH, MG, DPP, UAL, PO4

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(°)	Ideal(°)
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(°)	Ideal(°)
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(°)	Ideal(°)
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

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:O:18:HIS:ND1	66:O:120:GLN:HB3	2.36	0.41
66:O:520:ILE:HD13	66:O: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%)	7	36
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%)	24	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%)	36	72
59	B2	1338/1342 (100%)	1208 (90%)	124 (9%)	6 (0%)	30	67
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%)	18	55
65	a	128/234 (55%)	105 (82%)	23 (18%)	0	100	100
66	0	695/716 (97%)	618 (89%)	72 (10%)	5 (1%)	18	55
67	h	2/6 (33%)	1 (50%)	1 (50%)	0	100	100
All	All	10486/11185 (94%)	9332 (89%)	1135 (11%)	19 (0%)	44	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 ⓘ

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%)	45	64
4	D	38/38 (100%)	35 (92%)	3 (8%)	11	32
5	E	51/52 (98%)	46 (90%)	5 (10%)	7	24
6	F	34/34 (100%)	33 (97%)	1 (3%)	37	58
7	G	180/199 (90%)	172 (96%)	8 (4%)	25	46
8	H	170/190 (90%)	162 (95%)	8 (5%)	23	45
9	I	172/173 (99%)	170 (99%)	2 (1%)	63	74
10	J	119/126 (94%)	113 (95%)	6 (5%)	22	43
11	K	87/116 (75%)	83 (95%)	4 (5%)	24	45
12	L	124/147 (84%)	121 (98%)	3 (2%)	43	63
13	M	104/105 (99%)	102 (98%)	2 (2%)	50	66
14	N	105/107 (98%)	105 (100%)	0	100	100
15	O	86/90 (96%)	78 (91%)	8 (9%)	8	26
16	P	89/99 (90%)	88 (99%)	1 (1%)	65	74
17	Q	103/104 (99%)	101 (98%)	2 (2%)	50	66

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
18	R	92/96 (96%)	91 (99%)	1 (1%)	65	74
19	S	83/84 (99%)	82 (99%)	1 (1%)	63	74
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	11
27	b	216/218 (99%)	212 (98%)	4 (2%)	50	66
28	c	164/164 (100%)	163 (99%)	1 (1%)	78	82
29	d	165/165 (100%)	160 (97%)	5 (3%)	36	57
30	e	148/150 (99%)	146 (99%)	2 (1%)	59	72
31	f	137/138 (99%)	136 (99%)	1 (1%)	76	80
32	g	114/114 (100%)	111 (97%)	3 (3%)	40	61
33	i	109/110 (99%)	109 (100%)	0	100	100
34	j	116/116 (100%)	113 (97%)	3 (3%)	40	61
35	k	103/104 (99%)	100 (97%)	3 (3%)	37	58
36	l	102/103 (99%)	100 (98%)	2 (2%)	48	66
37	m	109/109 (100%)	108 (99%)	1 (1%)	70	77
38	n	100/103 (97%)	98 (98%)	2 (2%)	48	66
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%)	15	37
44	t	80/84 (95%)	77 (96%)	3 (4%)	29	50
45	u	83/85 (98%)	82 (99%)	1 (1%)	63	74
46	v	78/78 (100%)	77 (99%)	1 (1%)	61	73
47	w	57/63 (90%)	57 (100%)	0	100	100
48	x	67/68 (98%)	65 (97%)	2 (3%)	36	57

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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%)	47	65
57	A1	185/286 (65%)	174 (94%)	11 (6%)	18	39
57	A2	186/286 (65%)	185 (100%)	1 (0%)	81	82
58	B1	1110/1168 (95%)	1021 (92%)	89 (8%)	11	31
59	B2	1150/1157 (99%)	1119 (97%)	31 (3%)	39	60
60	W0	70/75 (93%)	69 (99%)	1 (1%)	59	72
65	a	109/181 (60%)	98 (90%)	11 (10%)	7	23
66	o	574/588 (98%)	554 (96%)	20 (4%)	32	53
67	h	2/2 (100%)	2 (100%)	0	100	100
All	All	8120/8683 (94%)	7850 (97%)	270 (3%)	34	55

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	UAL	h	5	67	6,8,9	2.35	2 (33%)	4,9,11	1.88	1 (25%)
67	5OH	h	6	67	7,12,13	0.76	0	4,16,18	1.33	1 (25%)
67	KBE	h	1	67	8,8,9	0.59	0	6,8,10	1.19	0
67	DPP	h	2	67	4,5,6	0.50	0	1,5,7	0.05	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
67	UAL	h	5	67	-	0/3/7/9	-
67	5OH	h	6	67	-	0/2/18/20	0/1/1/1
67	KBE	h	1	67	-	0/7/7/8	-
67	DPP	h	2	67	-	0/2/4/6	-

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
67	h	5	UAL	C1-N1	-4.90	1.32	1.40
67	h	5	UAL	C-CA	-2.84	1.40	1.45

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
67	h	5	UAL	O-C-CA	-3.31	121.25	125.39
67	h	6	5OH	CR-CB-CA	-2.38	110.09	112.61

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	5	UAL	1	0
67	h	6	5OH	3	0
67	h	2	DPP	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	$\# Z > 2$
70	PO4	0	802	-	4,4,4	1.00	0	6,6,6	0.50	0
69	GDP	0	801	-	29,30,30	1.16	2 (6%)	45,47,47	1.88	8 (17%)

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	-	-	2/16/32/32	0/3/3/3

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
69	0	801	GDP	C5-C4	2.79	1.46	1.38
69	0	801	GDP	C6-N1	-2.53	1.34	1.38

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
69	0	801	GDP	C5-C4-N3	-5.99	118.85	128.39
69	0	801	GDP	C2-N3-C4	5.05	121.00	112.30
69	0	801	GDP	N9-C4-N3	4.47	134.88	125.95
69	0	801	GDP	C6-C5-N7	3.59	136.83	130.29
69	0	801	GDP	C4-C5-N7	-2.78	106.27	110.67
69	0	801	GDP	C2'-C1'-N9	-2.11	107.38	113.25
69	0	801	GDP	O6-C6-C5	-2.08	121.05	126.53
69	0	801	GDP	C5-C6-N1	2.01	118.37	113.25

There are no chirality outliers.

All (2) torsion outliers are listed below:

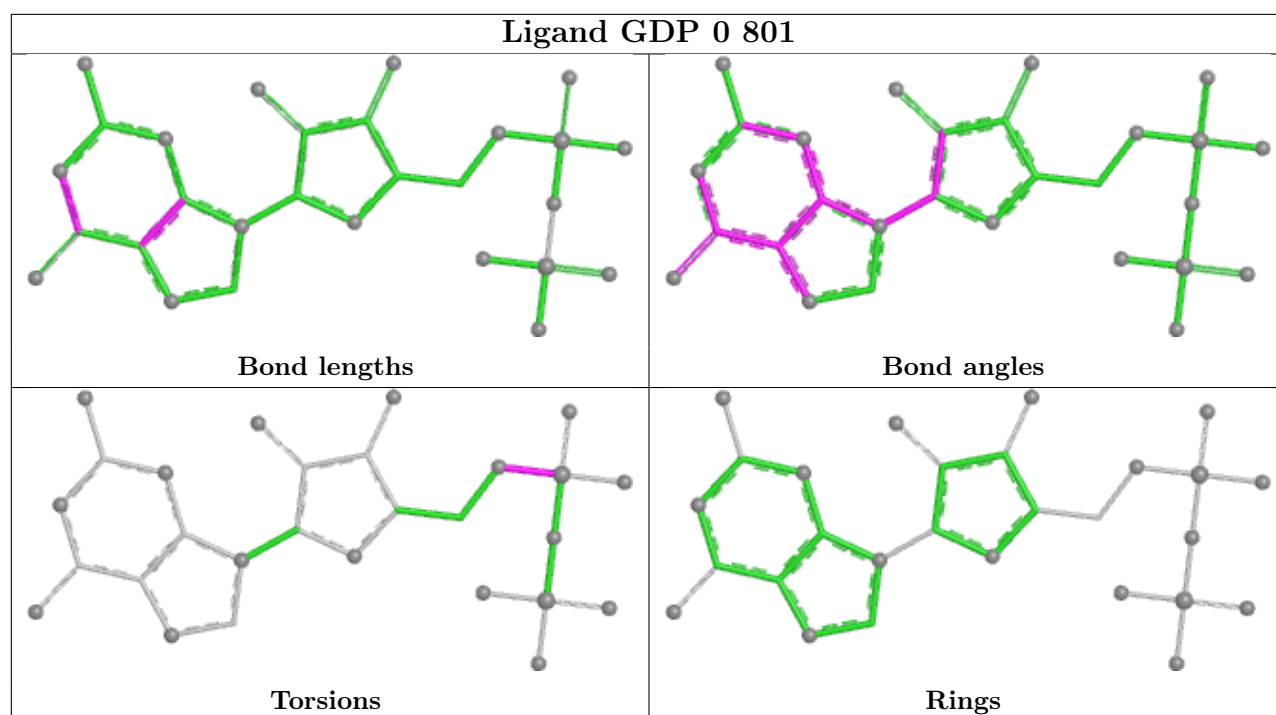
Mol	Chain	Res	Type	Atoms
69	0	801	GDP	C5'-O5'-PA-O3A
69	0	801	GDP	C5'-O5'-PA-O1A

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 than 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.



5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

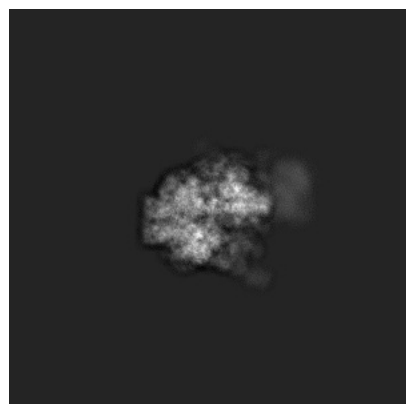
6 Map visualisation [i](#)

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

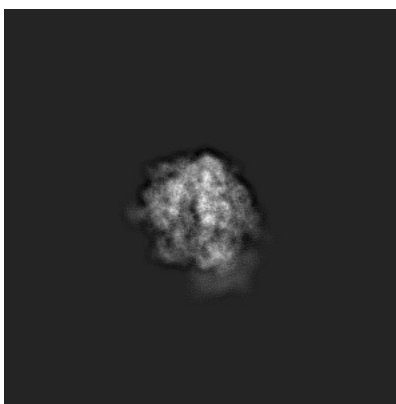
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

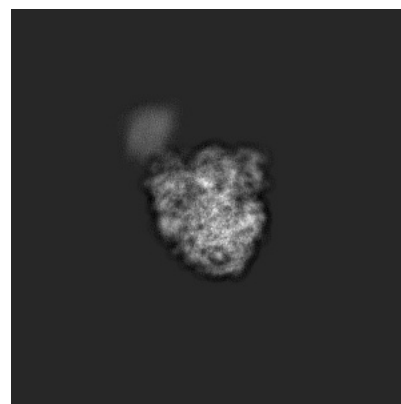
6.1.1 Primary map



X

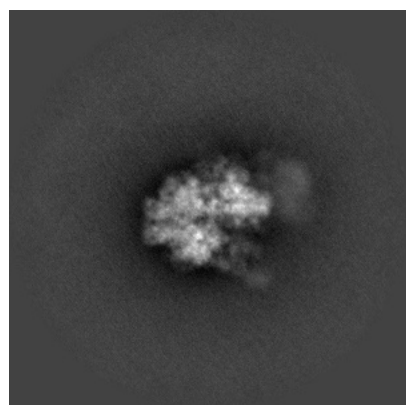


Y

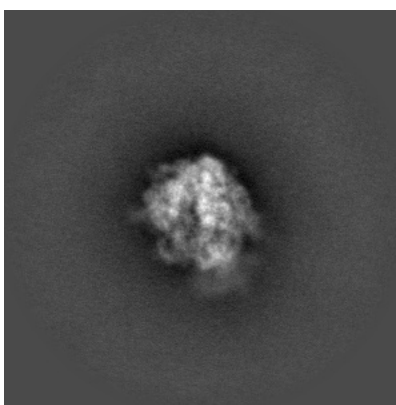


Z

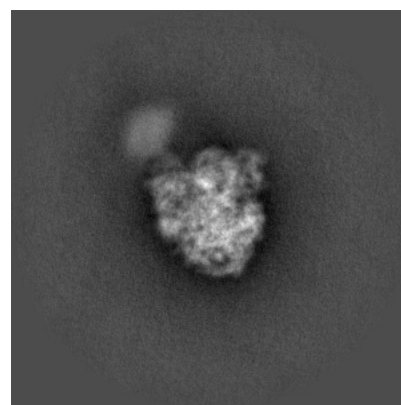
6.1.2 Raw map



X



Y

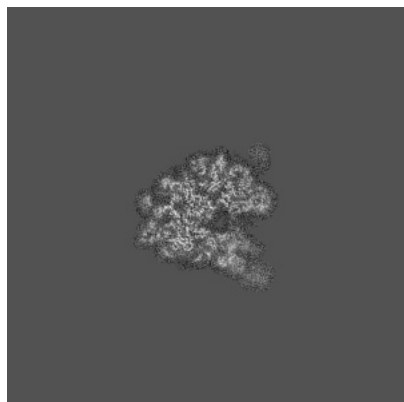


Z

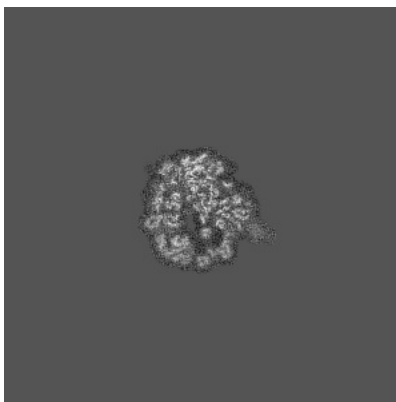
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

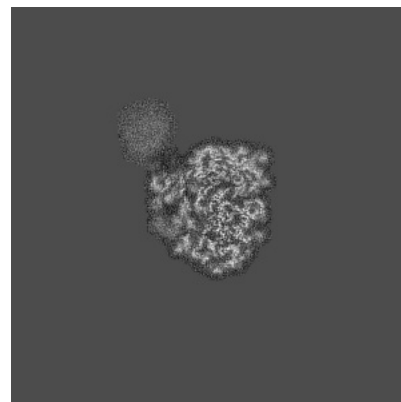
6.2.1 Primary map



X Index: 240

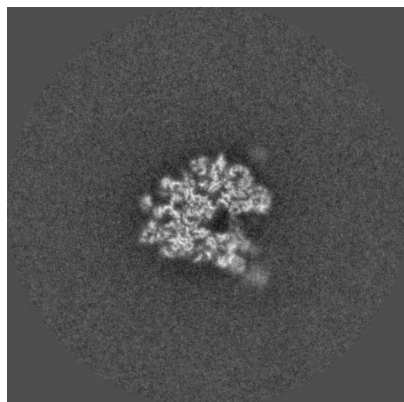


Y Index: 240

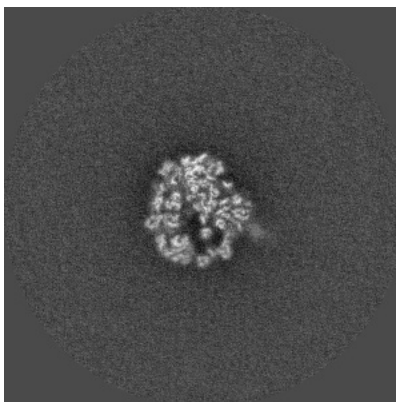


Z Index: 240

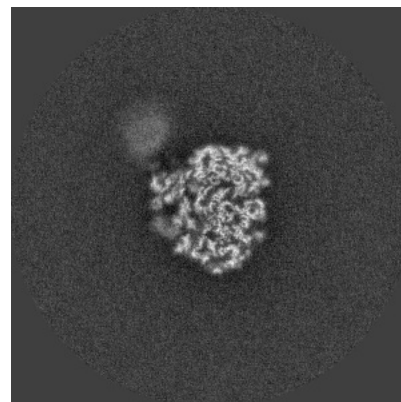
6.2.2 Raw map



X Index: 240



Y Index: 240

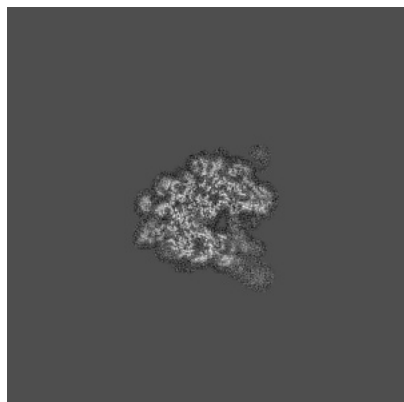


Z Index: 240

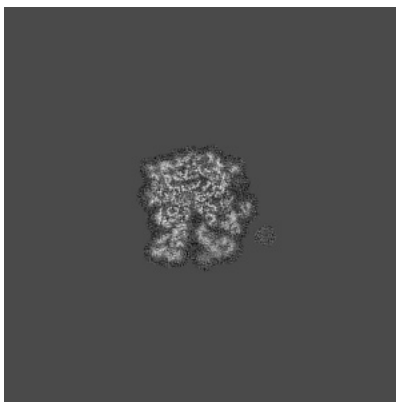
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

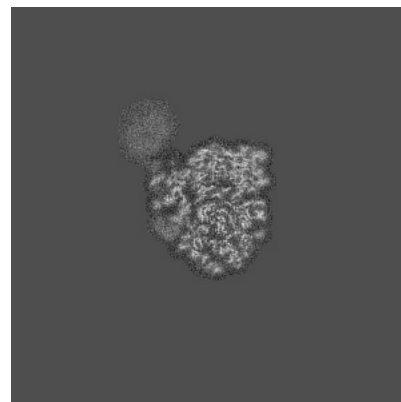
6.3.1 Primary map



X Index: 243

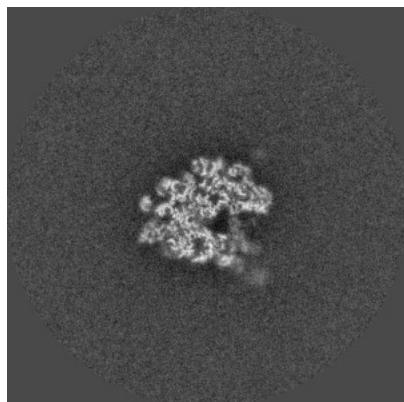


Y Index: 224

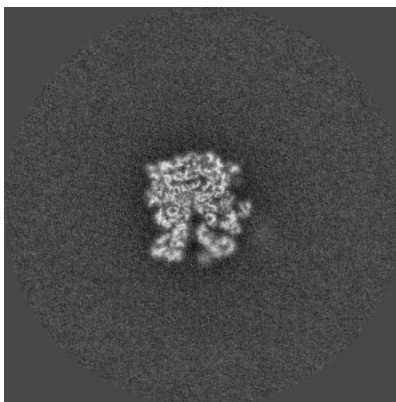


Z Index: 243

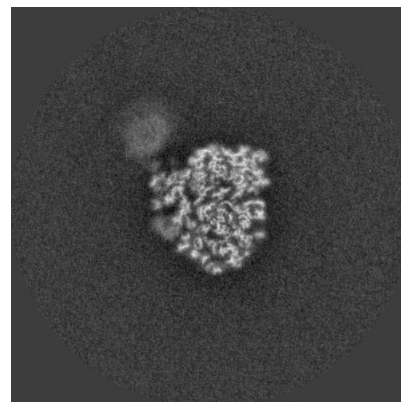
6.3.2 Raw map



X Index: 243



Y Index: 224

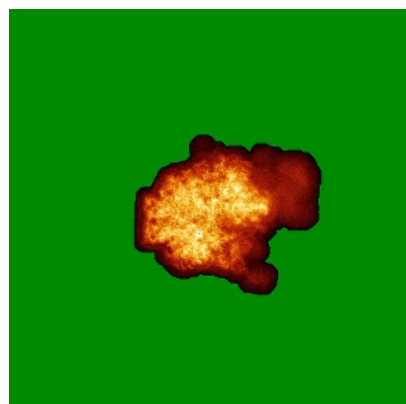


Z Index: 242

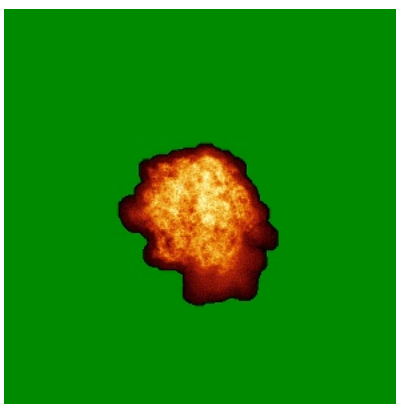
The images above show the largest variance slices of the map in three orthogonal directions.

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

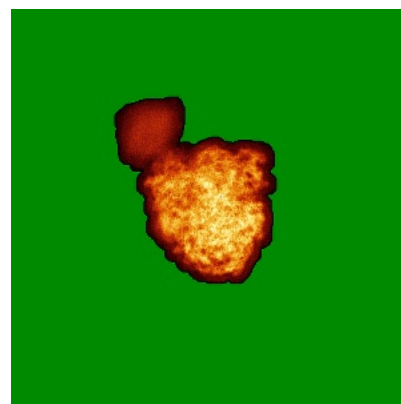
6.4.1 Primary map



X

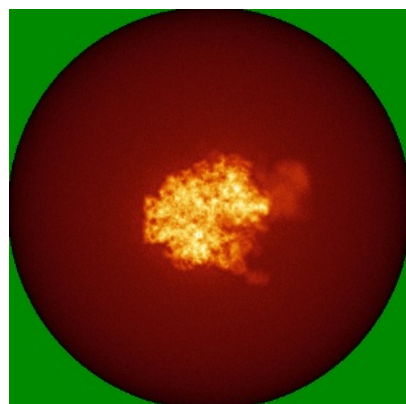


Y

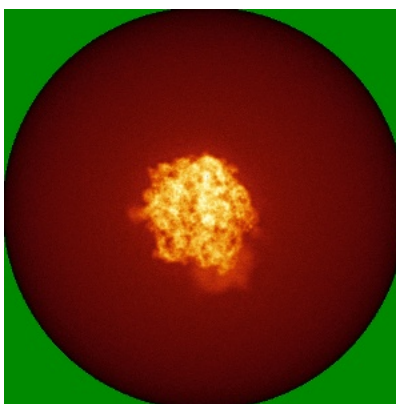


Z

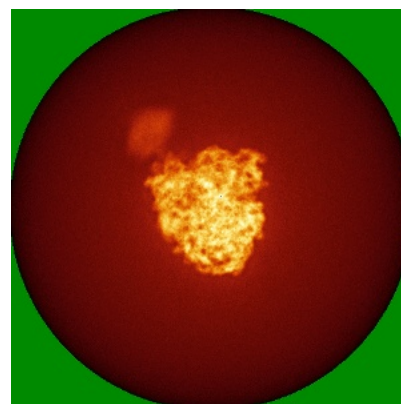
6.4.2 Raw map



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](#)

This section was not generated.

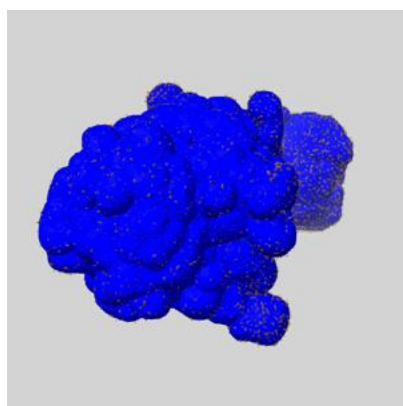
6.6 Mask visualisation [i](#)

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

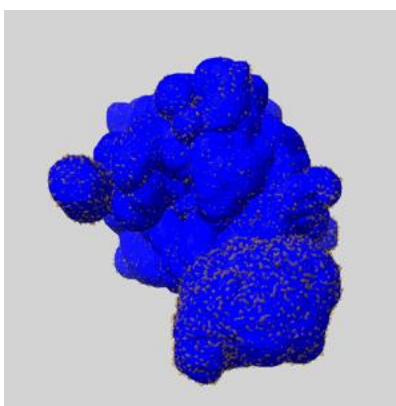
A mask typically either:

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

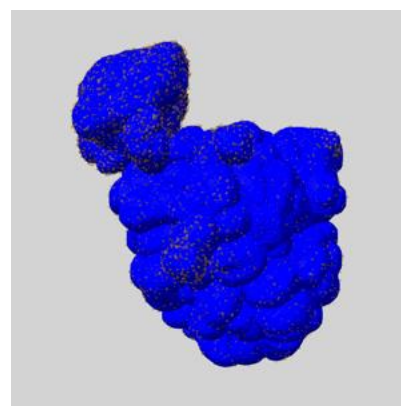
6.6.1 emd_39170_msk_1.map [i](#)



X



Y

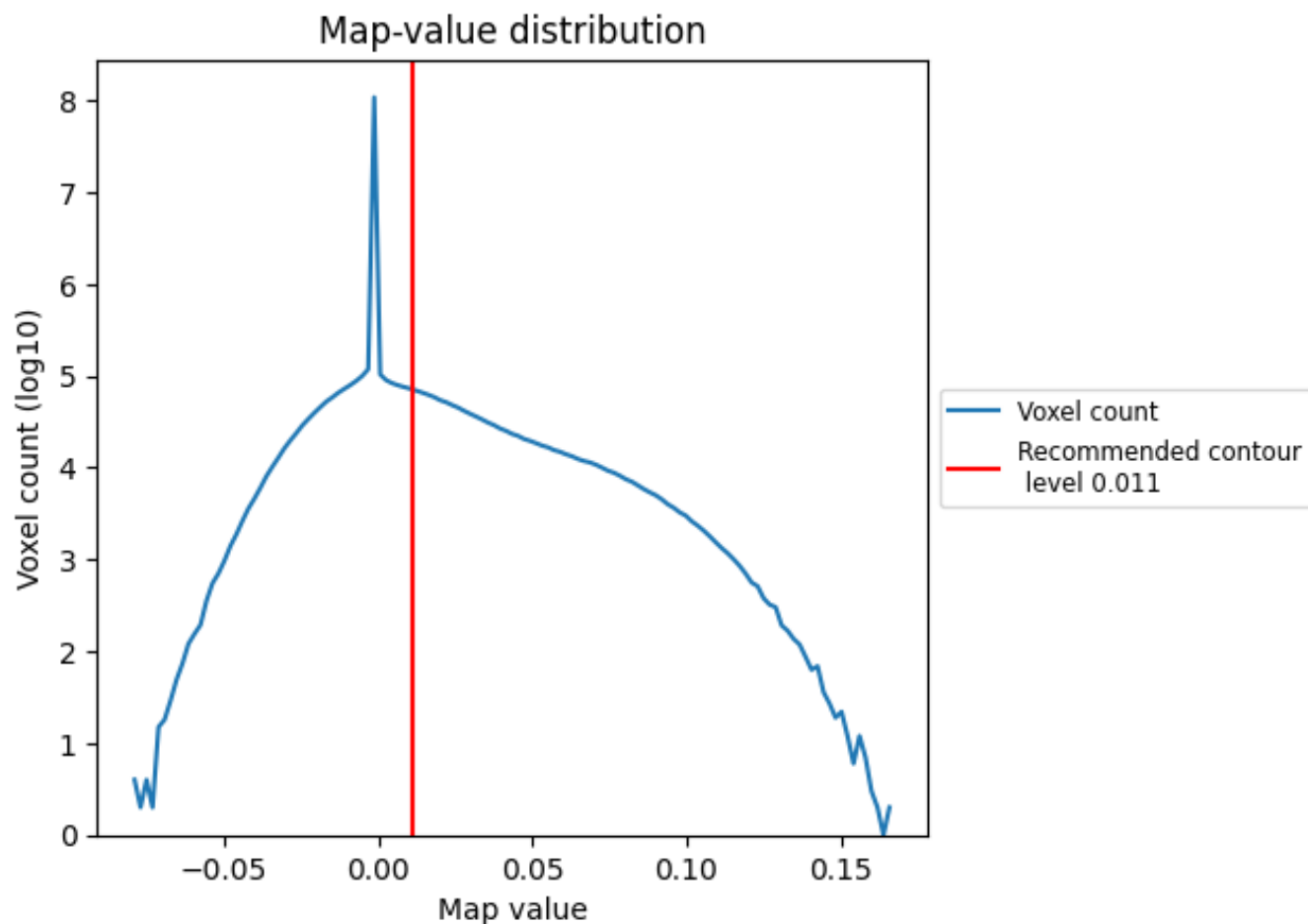


Z

7 Map analysis [i](#)

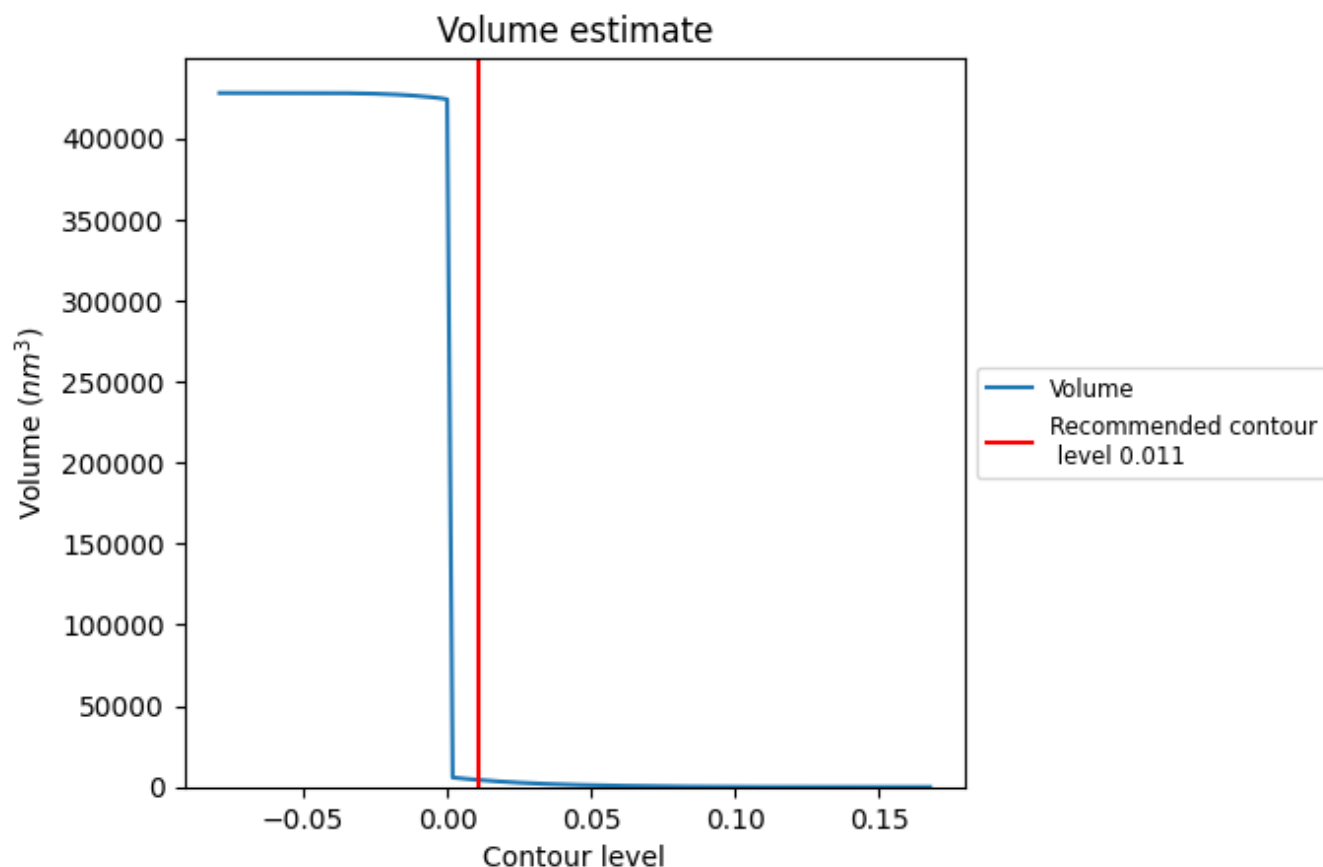
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

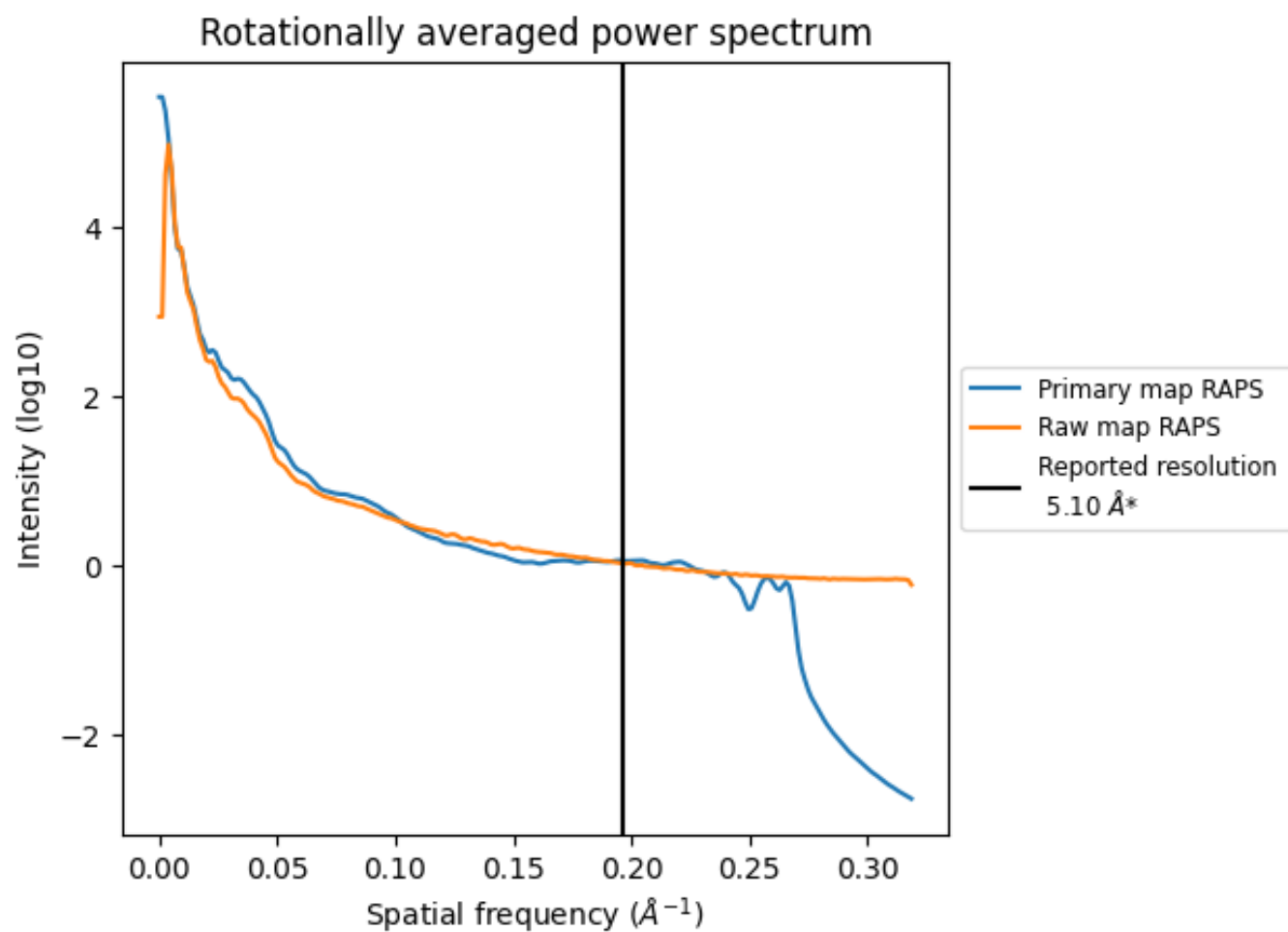
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 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 ⓘ

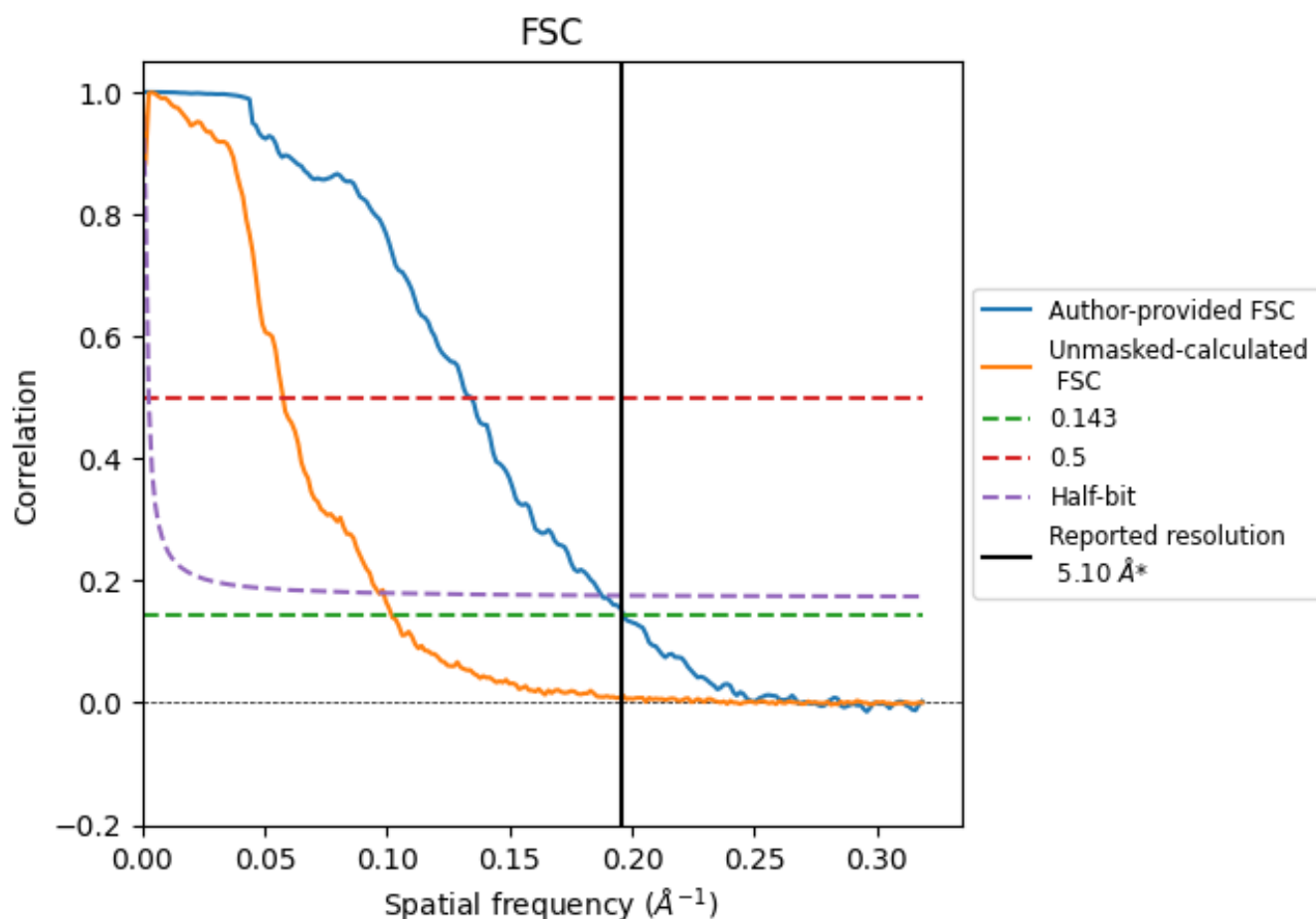


*Reported resolution corresponds to spatial frequency of 0.196 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.196 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	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 %

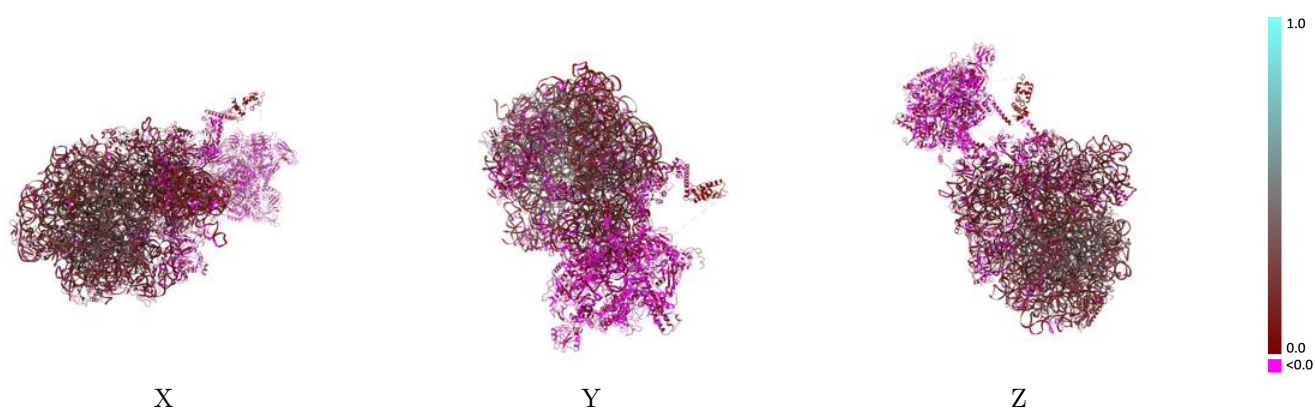
9 Map-model fit [i](#)

This section contains information regarding the fit between EMD 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 [i](#)

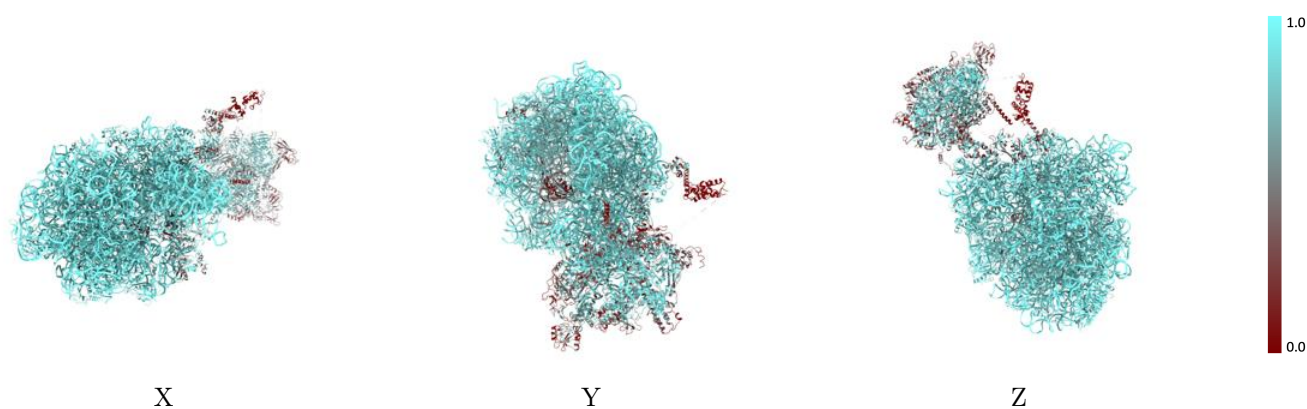
This section was not generated.

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



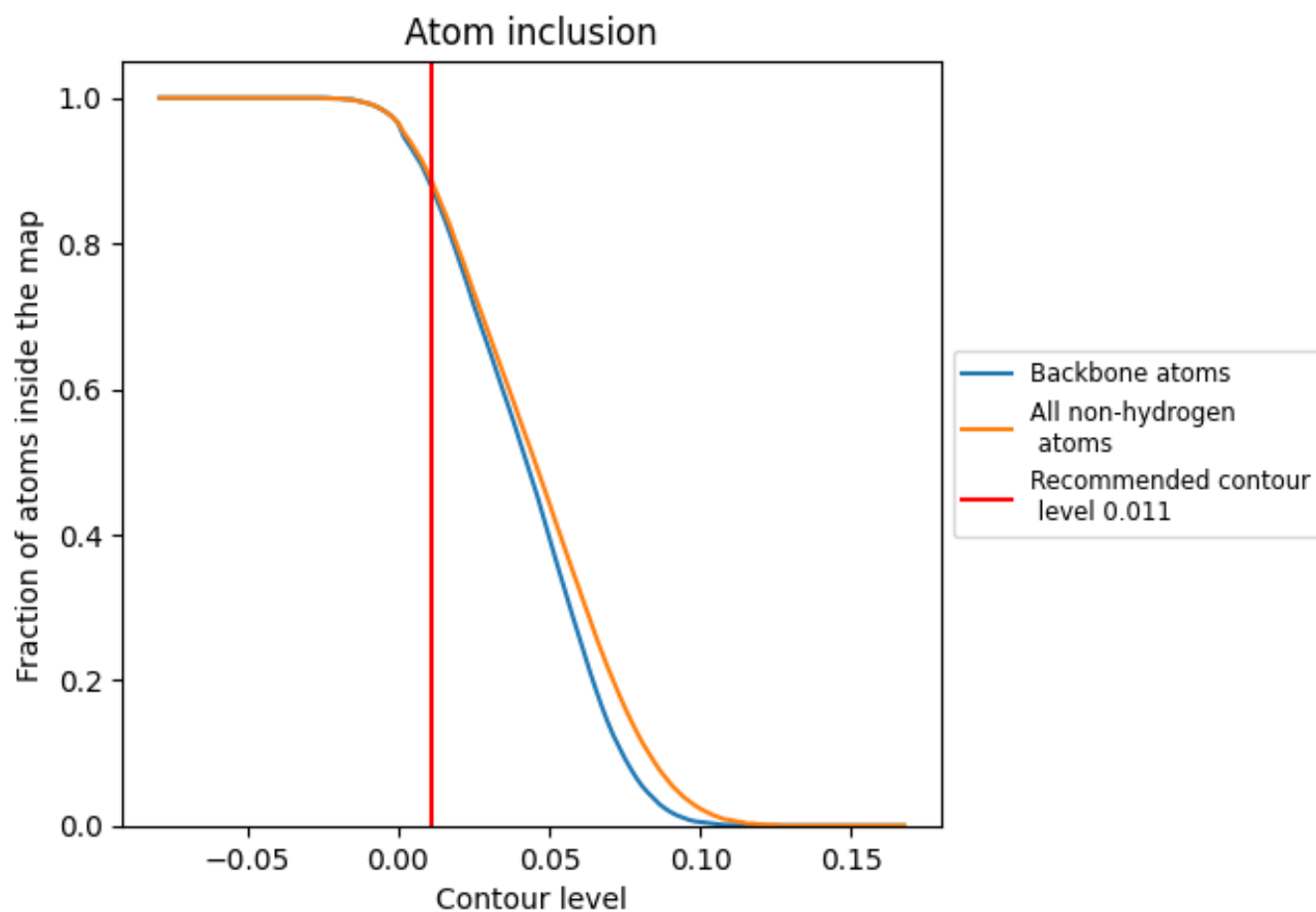
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



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