



Full wwPDB EM Validation Report ⓘ

Aug 4, 2025 – 09:54 PM JST

PDB ID : 8Y5P / pdb_00008y5p
EMDB ID : EMD-38945
Title : E.coli transcription translation coupling complex in TTC-B state 4 (subclass 1) containing mRNA with 24-mer spacer, NusG, NusA, fMet-tRNA(iMet), Phe-tRNA(Phe), and viomycin
Authors : Zhang, J.; Lu, G.; Wang, C.; Lin, J.
Deposited on : 2024-01-31
Resolution : 6.50 Å(reported)

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

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

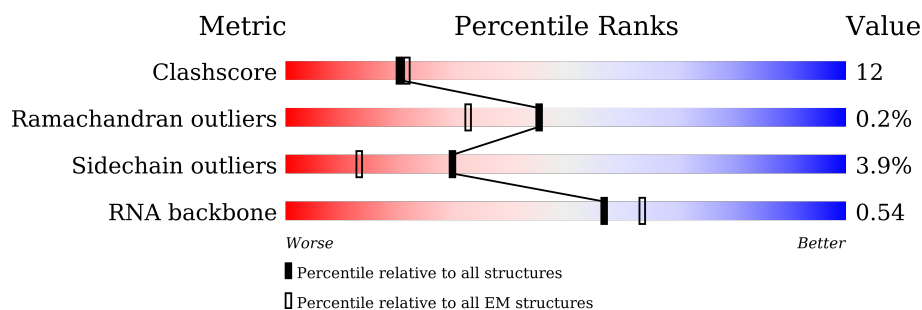
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 6.50 Å.

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



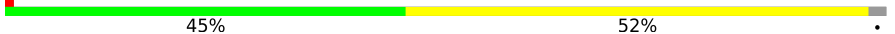
Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415
RNA backbone	6643	2191

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. 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	
4	D	46	
5	E	65	
6	F	38	
7	G	241	

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

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

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

2 Entry composition

There are 69 unique types of molecules in this entry. The entry contains 181755 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	30	Total	C	N	O	P	0	0
			627	280	92	225	30		

- 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(fMet).

Mol	Chain	Residues	Atoms					AltConf	Trace
63	6	77	Total	C	N	O	P	0	0
			1640	732	297	535	76		

- Molecule 64 is a protein called Large ribosomal subunit protein uL1.

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

- Molecule 65 is a protein called Elongation factor G.

Mol	Chain	Residues	Atoms					AltConf	Trace
65	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
0	715	HIS	-	expression tag	UNP P0A6M8
0	716	HIS	-	expression tag	UNP P0A6M8

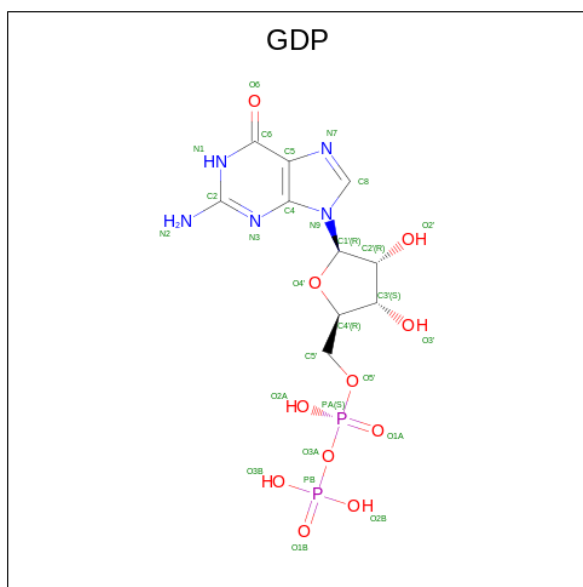
- Molecule 66 is a protein (with D amino acids) called Viomycin.

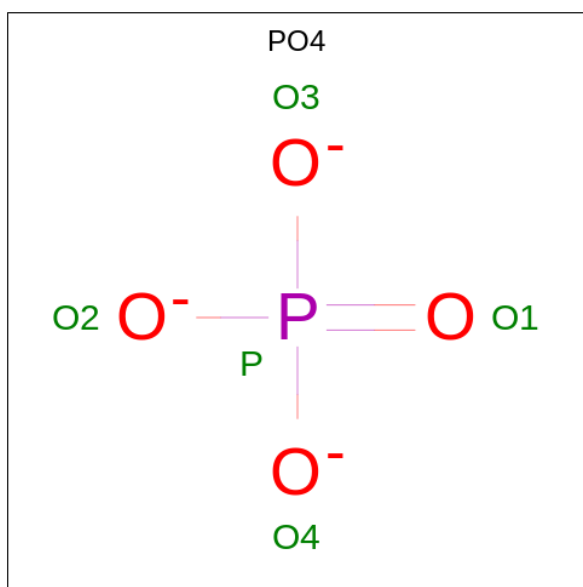
Mol	Chain	Residues	Atoms				AltConf	Trace
66	h	6	Total	C	N	O	0	0
			48	25	13	10		

- Molecule 67 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

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

- Molecule 68 is GUANOSINE-5'-DIPHOSPHATE (CCD ID: GDP) (formula: C₁₀H₁₅N₅O₁₁P₂).



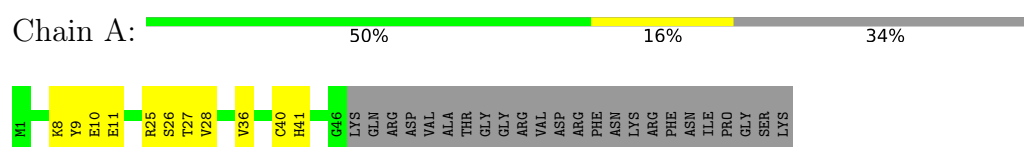


Mol	Chain	Residues	Atoms			AltConf
			Total	O	P	
69	0	1	5	4	1	0

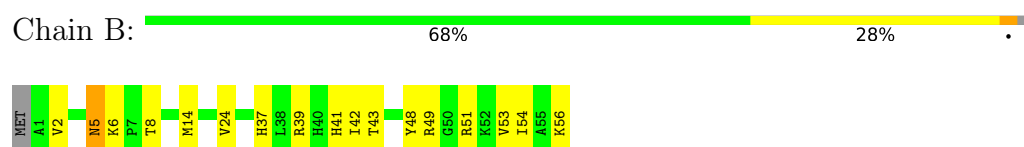
3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

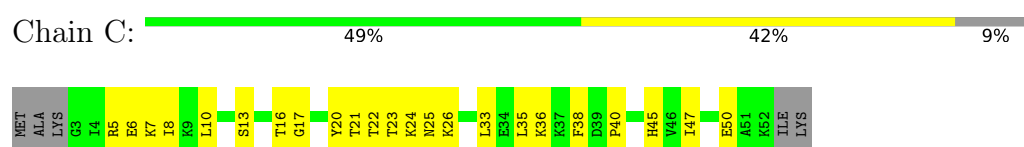
• Molecule 1: 50S ribosomal protein L31



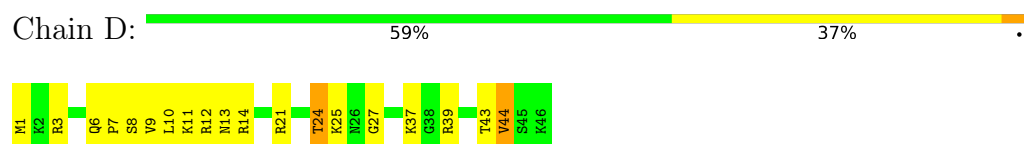
• Molecule 2: 50S ribosomal protein L32



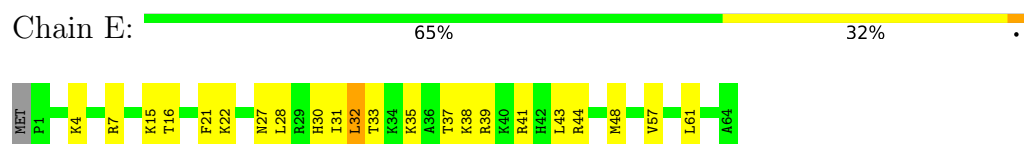
• Molecule 3: 50S ribosomal protein L33



• Molecule 4: 50S ribosomal protein L34

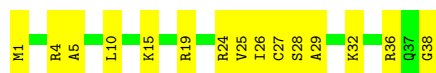


• Molecule 5: 50S ribosomal protein L35



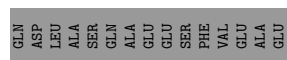
• Molecule 6: 50S ribosomal protein L36

Chain F:  61% 39%



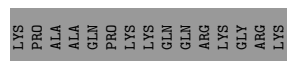
• Molecule 7: 30S ribosomal protein S2

Chain G:  64% 26% 10%



• Molecule 8: 30S ribosomal protein S3

Chain H:  61% 25% 12%



• Molecule 9: 30S ribosomal protein S4

Chain I:  71% 28%



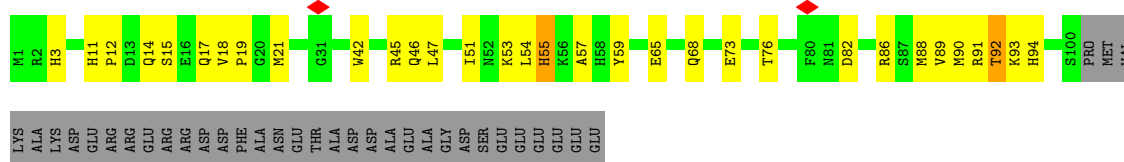
• Molecule 10: 30S ribosomal protein S5

Chain J:  66% 28% 6%

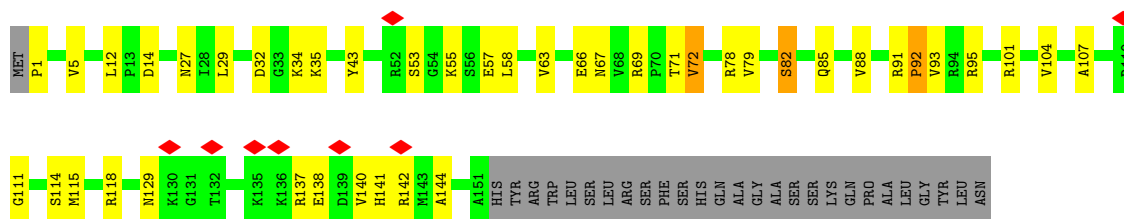




- Molecule 11: 30S ribosomal protein S6, fully modified isoform



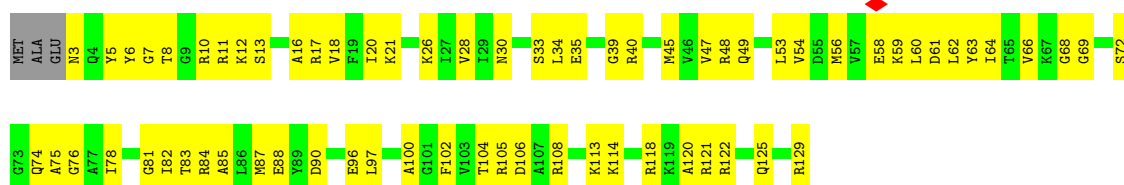
- Molecule 12: 30S ribosomal protein S7



- Molecule 13: 30S ribosomal protein S8

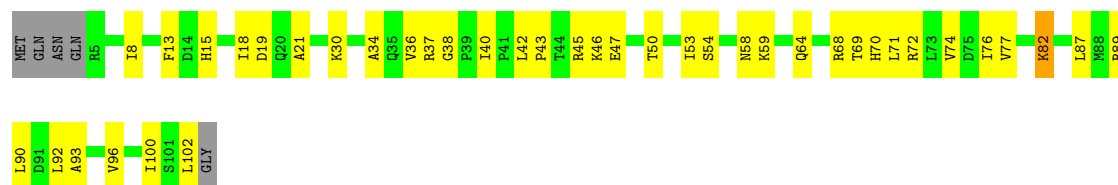


- Molecule 14: 30S ribosomal protein S9



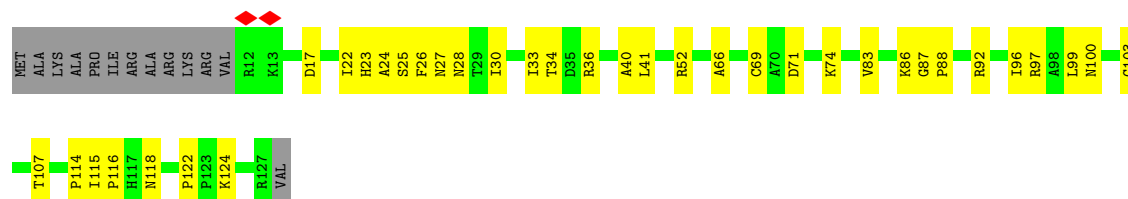
- Molecule 15: 30S ribosomal protein S10





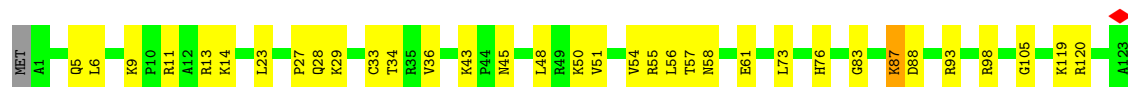
- Molecule 16: 30S ribosomal protein S11

Chain P: 62% 28% 10%



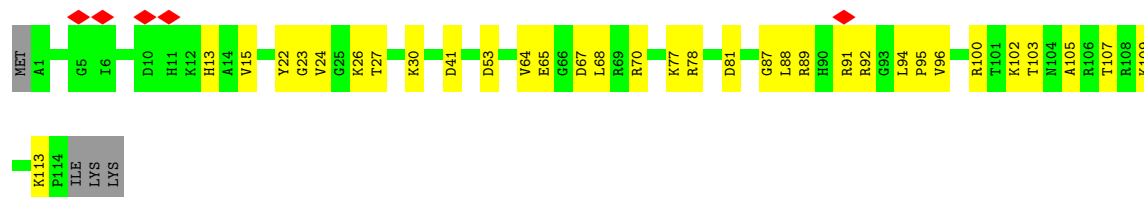
- Molecule 17: 30S ribosomal protein S12

Chain Q: 72% 27% ..



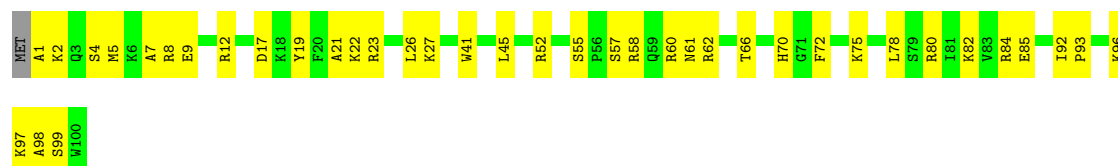
- Molecule 18: 30S ribosomal protein S13

Chain R: 69% 28% .



- Molecule 19: 30S ribosomal protein S14

Chain S: 60% 39% .



- Molecule 20: 30S ribosomal protein S15

Chain T: 78% 21% .



- Molecule 21: 30S ribosomal protein S16

Chain U: 72% 28%



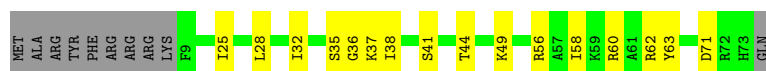
- Molecule 22: 30S ribosomal protein S17

Chain V: 65% 30% 5%



- Molecule 23: 30S ribosomal protein S18

Chain W: 65% 21% 13%



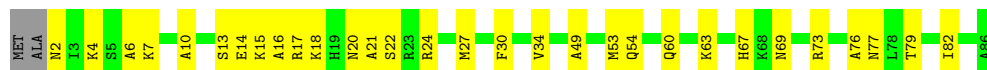
- Molecule 24: 30S ribosomal protein S19

Chain X: 64% 22% 14%



- Molecule 25: 30S ribosomal protein S20

Chain Y: 63% 34% 3%



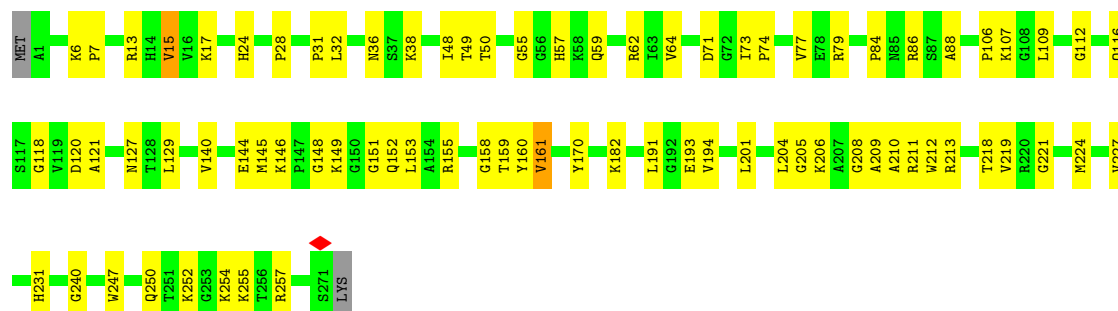
- Molecule 26: 30S ribosomal protein S21

Chain Z: 62% 24% 6% 8%



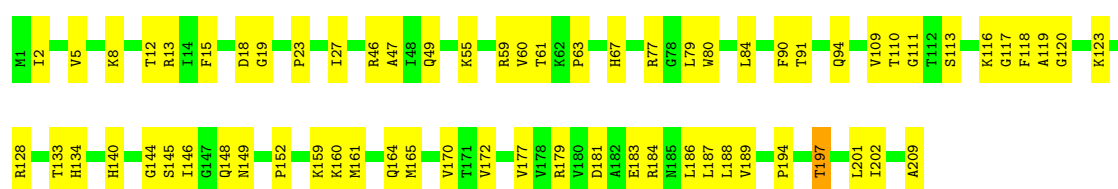
- Molecule 27: 50S ribosomal protein L2

Chain b: 70% 28% 2%



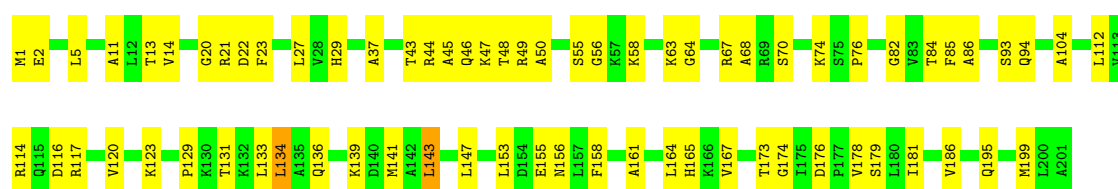
• Molecule 28: 50S ribosomal protein L3

Chain c: 68% 32%



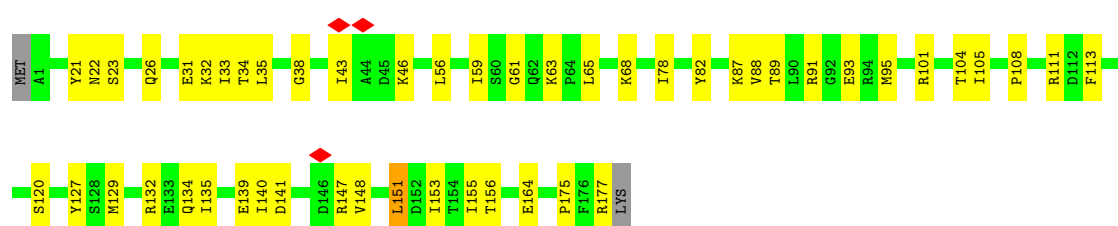
• Molecule 29: 50S ribosomal protein L4

Chain d: 65% 34%



• Molecule 30: 50S ribosomal protein L5

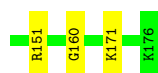
Chain e: 70% 28%



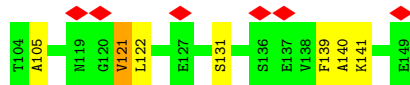
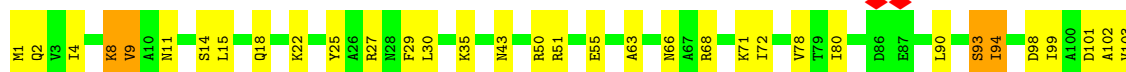
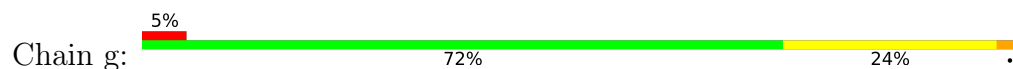
• Molecule 31: 50S ribosomal protein L6

Chain f: 78% 21%

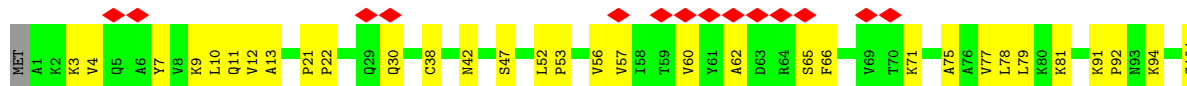




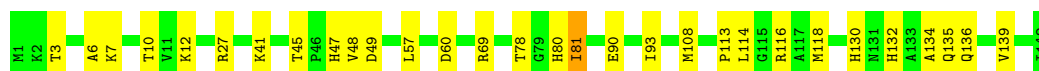
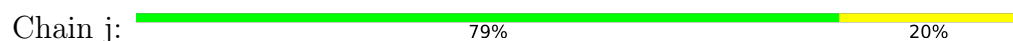
- Molecule 32: 50S ribosomal protein L9



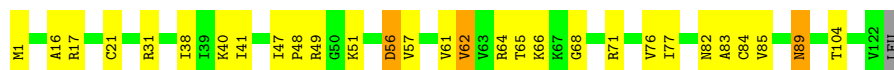
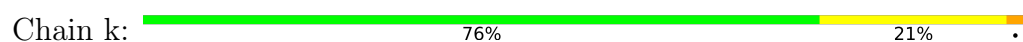
- Molecule 33: 50S ribosomal protein L11



- Molecule 34: 50S ribosomal protein L13



- Molecule 35: 50S ribosomal protein L14

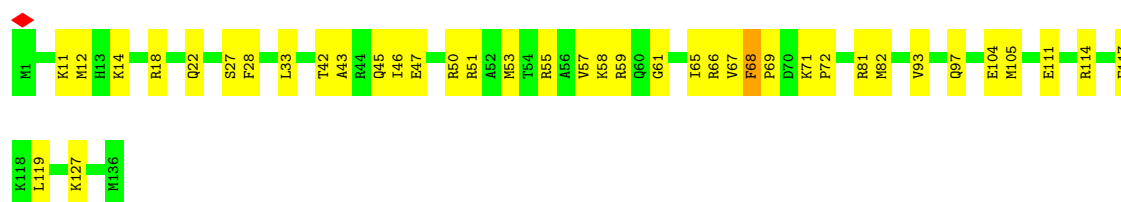


- Molecule 36: 50S ribosomal protein L15



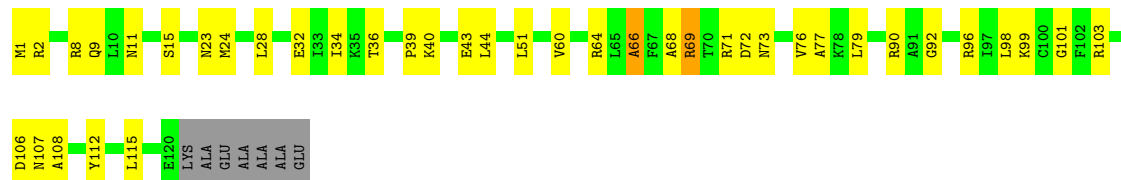
- Molecule 37: 50S ribosomal protein L16





- Molecule 38: 50S ribosomal protein L17

Chain n: 63% 30% 6%



- Molecule 39: 50S ribosomal protein L18

Chain o: 71% 28%



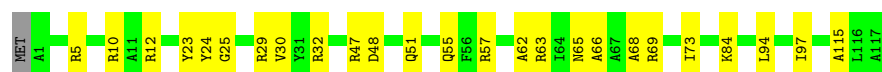
- Molecule 40: 50S ribosomal protein L19

Chain p: 76% 23%



- Molecule 41: 50S ribosomal protein L20

Chain q: 78% 21%



- Molecule 42: 50S ribosomal protein L21

Chain r: 71% 29%



- Molecule 43: 50S ribosomal protein L22

Chain s: 72% 28%



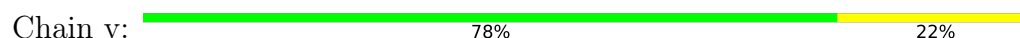
- Molecule 44: 50S ribosomal protein L23



- Molecule 45: 50S ribosomal protein L24



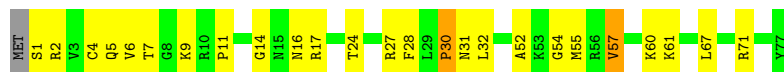
- Molecule 46: 50S ribosomal protein L25



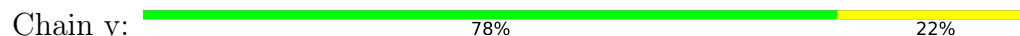
- Molecule 47: 50S ribosomal protein L27



- Molecule 48: 50S ribosomal protein L28

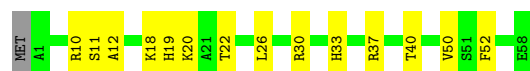


- Molecule 49: 50S ribosomal protein L29



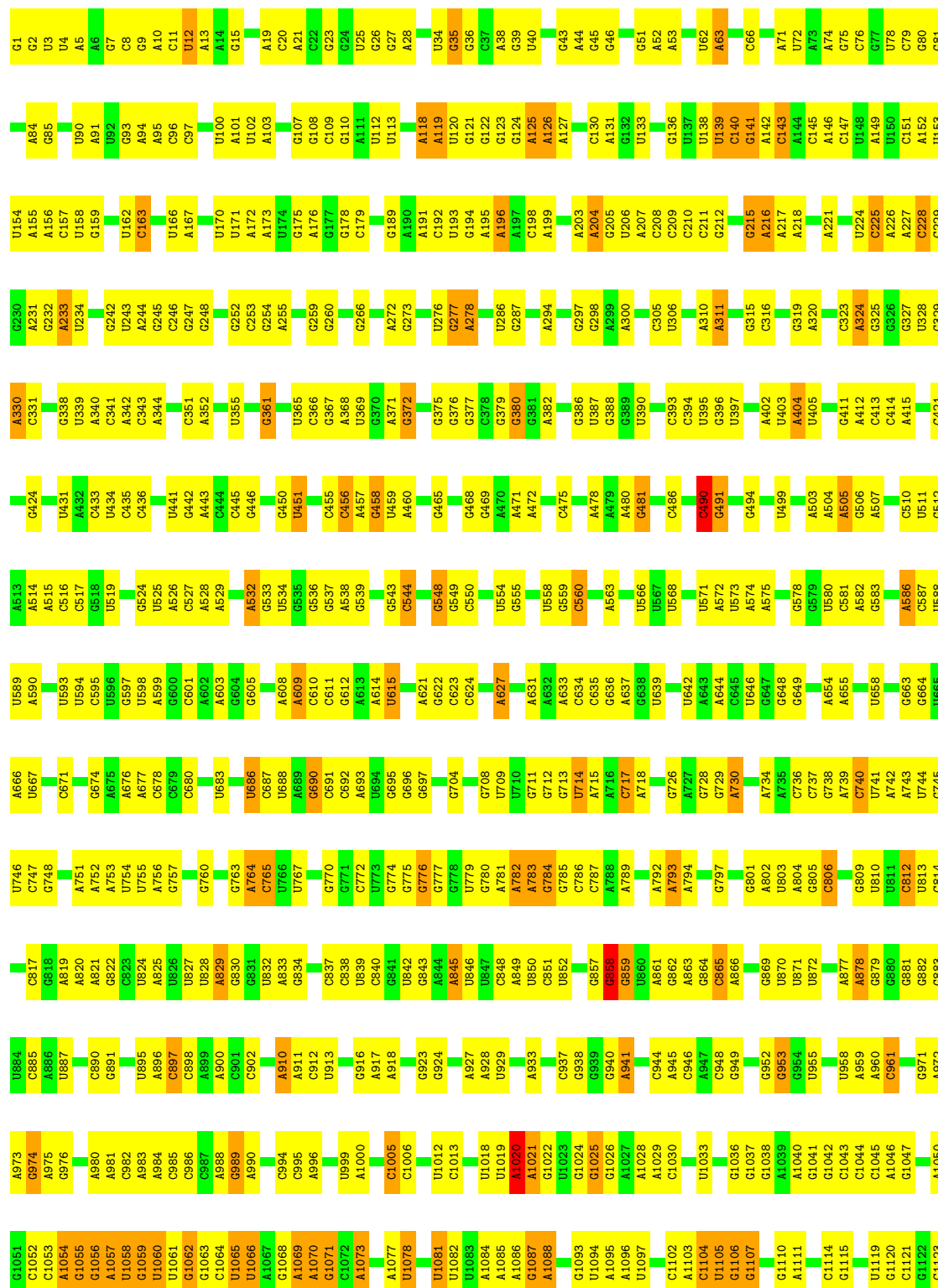
- Molecule 50: 50S ribosomal protein L30



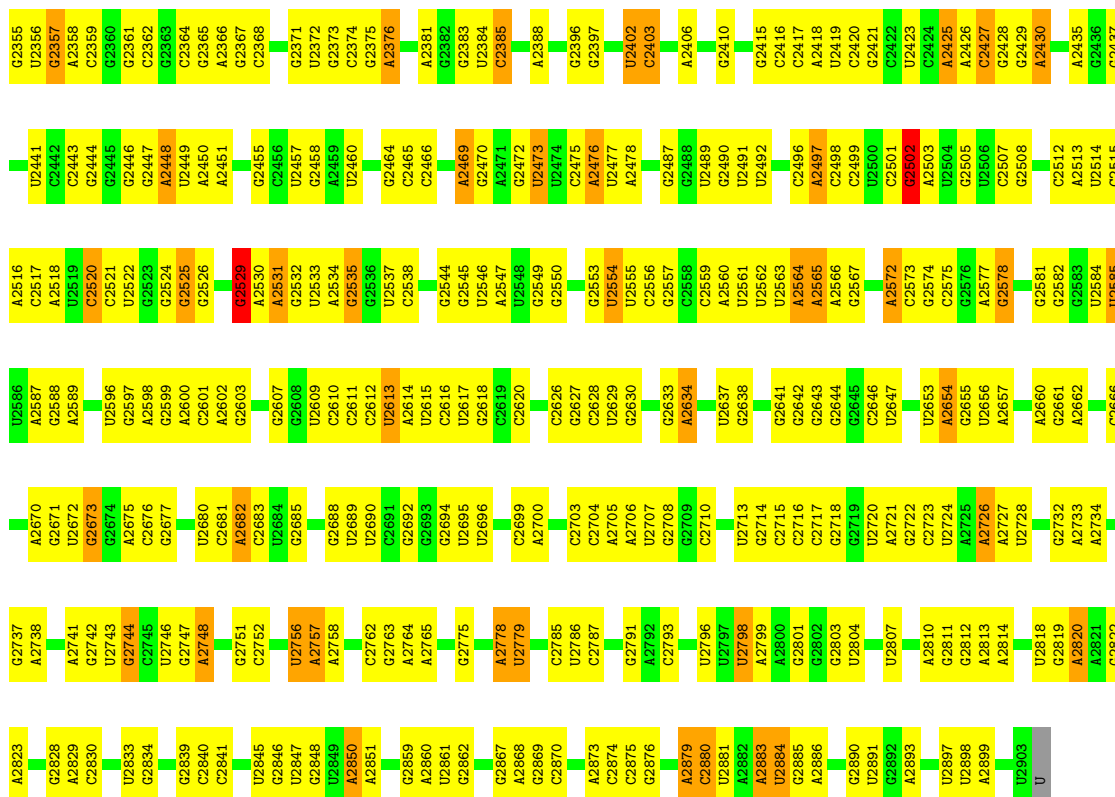


• Molecule 51: 23S rRNA

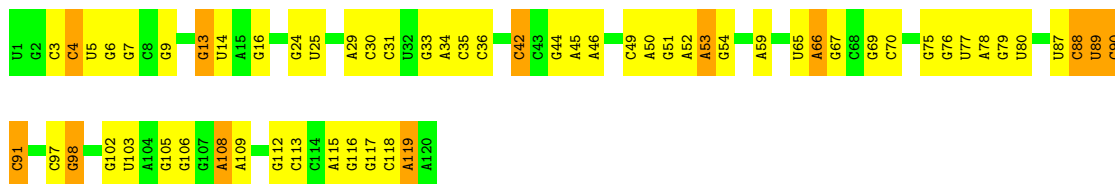
Chain 1: 44% 48% 8%



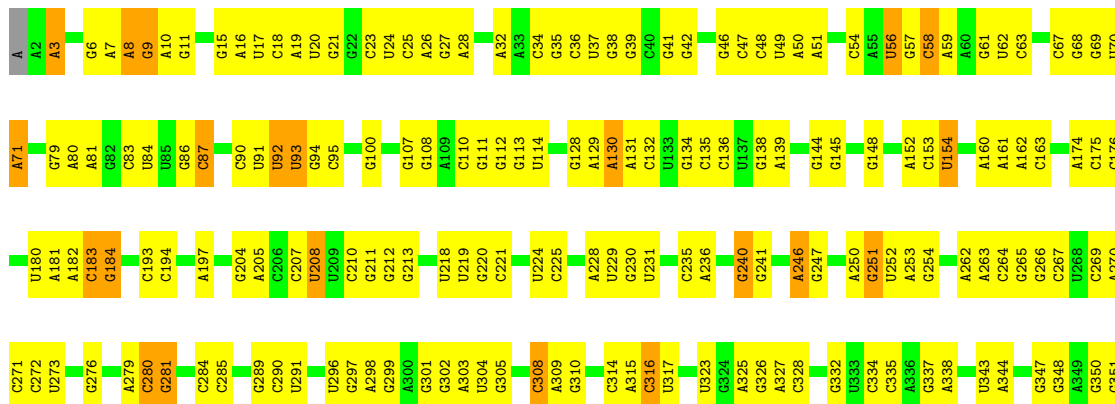
C2283	G1297	G2049	G1972	C1874	U1796	A1717	A1549	A1453	G1368	G1288	C1196	G1124
A2284	A2126	C2050	G1973	G1884	G1797	G1718	C1550	C1461	G1369	C1289	G1197	G1125
C2285	G2127	A2051	C1974	G1975	U1798	G1719	A1551	C1462	C1370	U1294	U1198	A1126
G2286	G2128	A2052	G1976	A1989	C1800	C1730	G1555	G1463	G1371	U1297	U1203	A1127
A2287	U2132	C2055	A1977	A1890	A1801	G1736	C1558	G1464	A1373	G1300	A1204	G1128
A2288	G2133	G2056	A1978	A1891	A1802	U1737	U1589	U1468	G1374	G1301	U1205	U1130
G2289	A2134	A2135	U1979	C1893	A1803	G1738	C1564	A1469	A1378	A1302	G1206	G1131
A2297	G2136	A2059	G1980	C1894	C1804	G1739	C1565	A1470	G1380	A1303	U1209	U1132
A2298	G2137	G2061	A1981	A1900	C1806	A1730	C1566	G1471	G1389	G1302	U1210	A1133
G2299	C2207	G2062	G1982	A1901	G1807	C1741	C1567	U1474	G1390	A1304	G1211	A1134
C2300	G2138	A2063	G1983	C1902	A1808	U1742	G1567	U1474	A1383	C1305	C1135	G1135
C2301	C2063	G2064	G1984	G1903	A1809	G1743	C1568	G1475	A1387	C1306	G1137	G1136
G2302	G2140	A2065	C1985	G1904	A1810	A1744	A1569	G1475	A1388	A1307	G1216	U1307
A2211	G2141	C2066	C1986	C1905	A1811	A1745	A1570	G1478	G1389	A1308	U1219	G1138
A2212	A2142	C2067	U1990	A1912	A1815	A1746	G1571	G1478	G1389	A1309	U1220	U1140
G2303	G2143	G2068	U1991	A1913	A1816	U1747	A1572	U1481	U1390	G1310	U1141	U1141
C2304	C2144	U2068	G1992	A1913	C1816	C1748	G1573	G1482	U1391	U1311	A1142	A1142
U2305	G2145	G2069	U1993	C1914	G1817	C1752	C1574	G1483	U1394	U1312	G1225	A1143
G2215	C2146	A2070	C1994	C1914	U1818	G1753	C1580	U1484	A1395	U1313	A1226	A1144
G2216	C2146	A2071	C1994	C1914	U1818	G1753	C1580	U1484	A1395	U1313	A1226	A1144
G2221	U2151	C2072	U1995	U1917	A1819	G1753	C1580	U1484	A1395	U1313	A1226	A1144
G2222	G2152	C2073	U1996	A1918	U1820	A1754	C1581	U1485	U1396	C1319	C1229	C1145
A2225	C2153	U2074	C1997	U1918	A1821	G1755	C1582	U1486	U1397	C1320	A1230	A1146
C2226	A2154	A2080	C1998	C1924	G1823	A1757	C1587	A1490	A1403	A1321	G1236	U1148
A2227	U2155	U2081	C2000	C1925	U1824	G1758	C1588	A1504	C1404	A1322	G1236	C1153
G2234	G2156	A2082	U1999	U1930	U1825	A1759	C1588	A1505	U1409	U1325	A1246	G1154
G2235	C2157	G2083	C2007	G1931	G1826	C1760	C1592	U1506	U1410	U1326	A1247	A1155
A2317	A2158	G2086	C2008	U1931	U1827	C1761	C1593	G1507	U1411	A1327	G1248	A1156
G2318	G2162	G2087	A2009	A1932	G1828	C1764	C1594	U1508	U1412	U1327	U1249	G1157
U2321	C2165	U2092	G2010	C1933	A1829	C1764	U1594	A1509	U1412	C1330	G1250	C1158
G2238	U2166	G2093	A2013	C1934	C1830	G1767	C1595	G1510	A1413	G1331	C1251	C1161
G2239	U2167	A2094	A2020	G1935	C1831	C1771	C1596	G1511	G1332	U1332	G1252	C1162
A2247	G2168	A2094	A2020	A1937	C1832	C1771	C1597	G1512	U1333	G1334	U1255	A1169
C2248	U2172	U2099	C2021	A1938	C1833	C1771	C1598	A1515	C1417	U1337	G1256	C1170
U2249	A2173	G2100	U2022	U1939	C1836	A1772	C1600	G1518	A1419	G1338	C1257	G1171
A2328	C2174	A2101	C2023	U1940	C1837	A1773	G1601	U1518	A1420	U1339	U1258	C1172
G2251	C2175	G2102	G2024	C1941	U1841	C1774	U1602	G1521	G1424	G1340	G1259	U1173
G2330	A2176	C2103	C2025	U1942	G1842	U1775	A1603	G1522	G1425	A1342	A1262	U1174
G2255	C2177	U2106	G2026	U1943	C1843	U1777	C1607	U1523	G1428	G1343	U1175	A1175
G2256	G2178	G2107	A2029	U1951	C1844	U1777	C1608	G1524	C1428	U1352	A1265	U1176
U2257	C2179	A2108	A2030	A1952	A1853	U1780	A1609	G1528	G1429	A1353	G1266	G1177
C2258	U2180	U2111	A2031	G1953	A1854	U1781	A1614	G1529	G1432	U1354	G1267	C1178
U2259	U2181	G2112	G2032	G1954	U1855	U1782	C1615	U1534	A1433	G1355	A1268	U1179
G2262	A2182	G2113	A2033	U1955	U1856	A1783	A1616	U1534	A1434	G1356	A1269	U1180
C2263	U2183	U2114	G2034	U1956	G1857	A1784	C1617	A1535	A1434	G1357	C1270	U1181
G2267	A2184	G2115	G2035	C1962	A1858	G1785	A1618	C1536	A1439	C1357	G1271	U1182
A2268	U2187	G2116	C2036	U1963	U1859	U1786	G1619	G1537	U1439	A1272	A1271	U1183
G2269	U2188	U2118	A2037	G1964	C1863	U1787	U1620	U1541	U1440	G1360	G1185	U1184
A2270	U2189	G2119	G2040	C1965	U1864	A1788	U1621	U1542	U1440	G1361	A1275	G1186
G2349	A2190	U2120	U2041	A1966	U1865	C1789	G1707	U1542	G1444	C1362	A1276	G1187
U2272	A2191	G2121	A2042	C1967	G1867	A1791	G1710	A1545	G1445	C1363	G1277	G1188
A2273	G2121	G2121	C2043	G1968	C1868	G1792	A1711	A1545	G1446	G1364	C1278	G1191
G2276	U2122	U2122	C2047	A1969	G1869	C1793	G1715	G1547	C1447	A1365	G1279	U1192
G2353	U2123	G2123	C2047	A1970	G1870	C1795	G1715	G1547	G1448	A1366	G1279	G1193
C2354	G2124	G2124	G2048	U1971	C1795	C1795	U1716	A1548	G1448	A1367	A1287	G1194



Chain 2: 50% 40% 10%

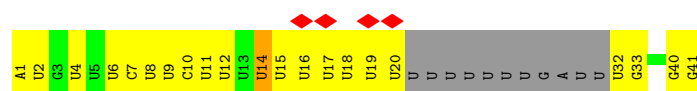
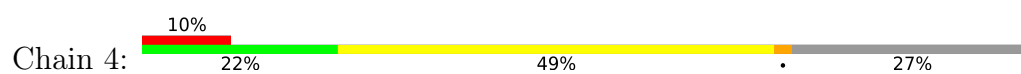


Chain 3: 45% 48% 6%



U1490	A1398	C1320	C1245	A1170	G1094	G1015	C940	C857	U678	A596	U512	G424	C352
G1491	C1399	C1325	A1250	A1171	U1095	A1016	G945	C858	C679	G597	C513	G425	A353
A1492	C1400	C1326	A1251	C1172	C1096	U1017	G946	C859	U684	U598	C514	U426	G354
A1493	C1401	C1327	A1252	U1173	C1097	U1018	A946	A860	G685	C599	G515	U427	C355
C1496	C1402	C1328	G1253	G1174	G1098	A1019	G947	C861	G686	A600	U516	G428	A356
G1497	C1403	C1329	A1254	A1179	C1100	A1022	U950	U863	G690	A602	C517	U429	G357
G1498	C1404	U1330	G1255	A1180	A1101	U1023	U951	A864	G691	A431	C518	U430	U358
A1502	G1405	U1331	A1256	G1181	A1102	G1024	U952	A865	U701	A432	A520	A432	G359
A1503	C1406	A1332	A1257	U1182	C1103	U1025	G953	C866	U702	A433	C528	G362	G362
G1504	C1407	A1333	G1258	U1183	G1104	G1026	G954	C867	A703	U434	G529	U437	A366
G1505	C1412	A1339	G1260	G1184	A1105	C1027	U955	A872	G703	C613	U531	U438	A367
U1506	A1413	A1261	A1261	G1187	C1107	U1029	U957	A873	A706	C620	U532	U439	U867
A1507	U1414	C1282	C1282	A1188	G1108	U1030	A958	G874	U707	A622	A533	U440	G369
A1508	G1415	U1284	U1284	C1192	C1109	G1031	A959	U875	G710	C623	U534	G445	C372
U1512	U1420	U1345	C1267	G1193	A1110	G1032	U960	C876	G713	U625	G530	A448	G376
A1513	G1421	A1346	G1268	U1194	A1111	G1033	U961	G877	A715	G626	U531	A452	G377
G1514	G1422	U1348	G1268	U1194	A1111	G1034	C962	A878	A718	G627	A532	G453	G378
G1515	G1423	A1349	A1271	C1195	A1117	A1035	G963	G881	C719	U632	C545	G454	G380
G1516	U1424	A1350	A1274	G1198	U1118	A1042	A964	C882	C720	U633	A546	G455	G384
U1517	U1425	U1351	A1275	G1199	C1119	G1043	G965	C883	G721	C634	U552	U458	C385
A1518	G1432	U1354	A1278	C1200	U1122	G1047	A966	C884	A728	U639	U553	U459	C386
C1521	G1435	G1355	G1278	A1201	U1123	G1048	A969	C885	G722	U640	A554	U460	U387
U1522	U1436	G1356	G1279	C1210	G1124	U1050	C970	C886	U723	U641	A555	U461	G388
G1525	A1437	A1357	U1279	U1211	U1125	G1051	G971	A889	U724	A642	U556	U462	U389
G1526	G1441	C1361	C1281	U1212	C1126	G1052	C972	G894	G725	U643	U557	U467	G391
U1527	A1441	A1362	C1282	U1213	C1127	G1053	G973	G895	G733	U644	U558	U468	C392
U1528	U1442	A1363	U1283	C1214	C1128	C1054	C974	G896	G734	U645	U559	U478	A393
G1529	G1443	A1364	C1284	G1215	C1129	G1057	A975	A900	C735	U646	U561	U479	A397
G1530	U1444	G1365	A1285	G1216	U1134	U1058	G976	A901	C736	G650	U562	U480	C400
C1536	C1448	C1366	U1286	A1216	C1135	G1059	A977	A902	G737	C651	C564	C483	C401
U1537	C1452	C1367	A1288	C1217	C1136	U1060	C978	G903	C738	U652	U565	G484	G402
C1537	G1458	C1368	A1289	G1218	C1137	G1061	C980	U904	C739	U653	G566	U486	U405
U1540	U1464	G1370	G1290	G1220	G1138	U1062	U981	U905	G742	U657	C569	G492	G406
U	A1465	U1371	U1291	G1221	G1139	C1063	U986	A906	A743	C658	G570	A493	U409
A	C1466	G1372	G1292	G1222	C1140	U1064	G987	A907	G744	U659	A572	G494	G410
	C1469	A1375	C1293	A1225	C1147	U1065	G987	A908	C745	G661	A573	G497	G413
	U1470	U1376	U1300	C1226	U1148	C1069	C990	A909	G746	U665	A574	A498	A414
	U1471	A1377	C1302	A1229	C1149	U1070	U991	A913	A747	U666	C571	C501	A415
	U1474	C1378	C1303	G1230	A1150	G1071	U992	G917	G748	G667	A572	A502	G416
	G1475	C1382	G1304	G1231	A1151	G1072	G993	G925	C750	G668	A573	G505	C418
	A1476	C1383	G1305	G1232	A1152	U1073	A994	G927	U751	G669	C578	G506	C419
	U1477	C1388	A1306	U1233	G1153	G1074	A1000	G934	G755	G673	C579	A509	U420
	U1478	G1386	U1307	C1234	A1154	G1075	C1001	C924	C756	G674	C580	A510	C422
	C1479	G1387	U1308	U1235	A1155	U1076	A1004	G926	U757	A675	G581	G509	G423
	A1480	C1388	G1309	A1236	A1157	G1077	A1005	G927	C758	A676	U593	A510	
	U1485	U1390	G1312	C1237	U1159	U1078	A1006	G927	U759	A677	U594	C422	
	G1486	U1391	C1313	A1238	U1160	G1084	G1006	G927	G755		U595		
	G1487	U1391	C1314	U1239	G1161	G1088	U1007	G927	U756				
	G1488	C1395	C1315	G1241	C1162	U1091	U1008	C936	U757				
	G1489	G1396	C1316	C1242	C1168	A1092	A1012	A937	U762				
		C1397	C1317	G1244	A1169	A1093	A1014	G939	G763				

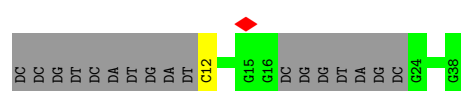
• Molecule 54: mRNA



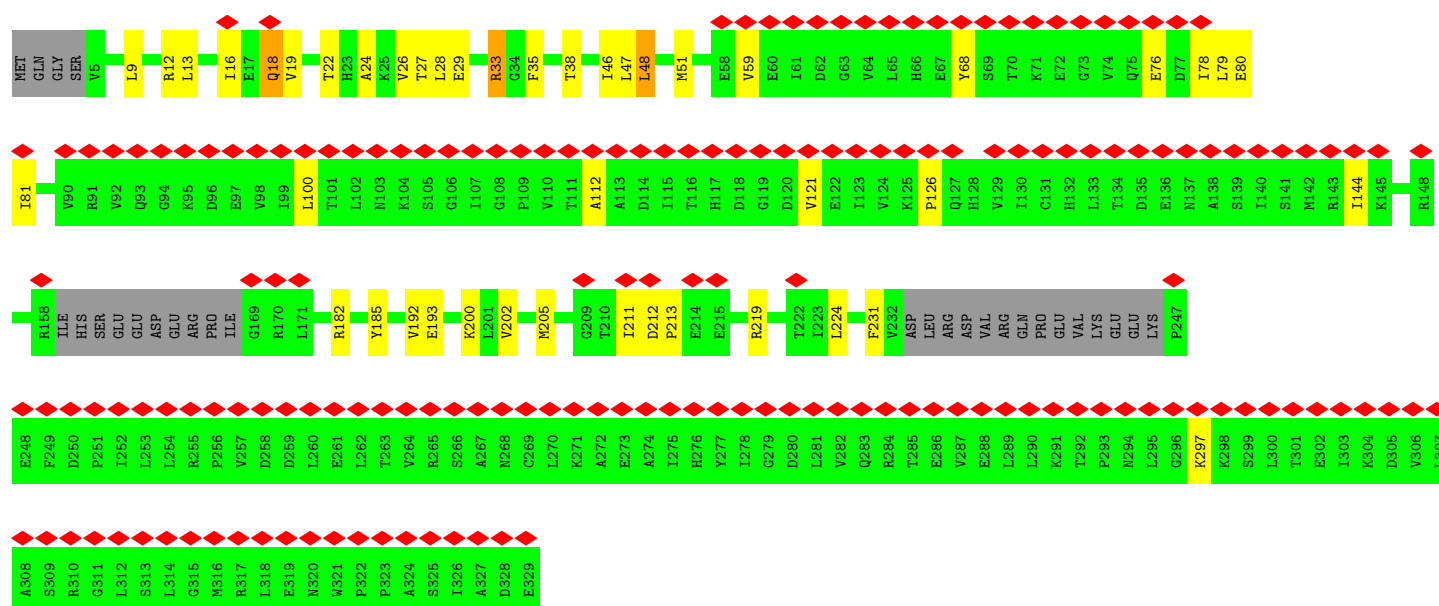
- Molecule 55: template DNA strand



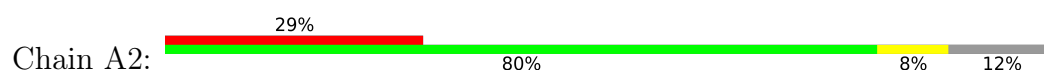
- Molecule 56: non-template DNA strand

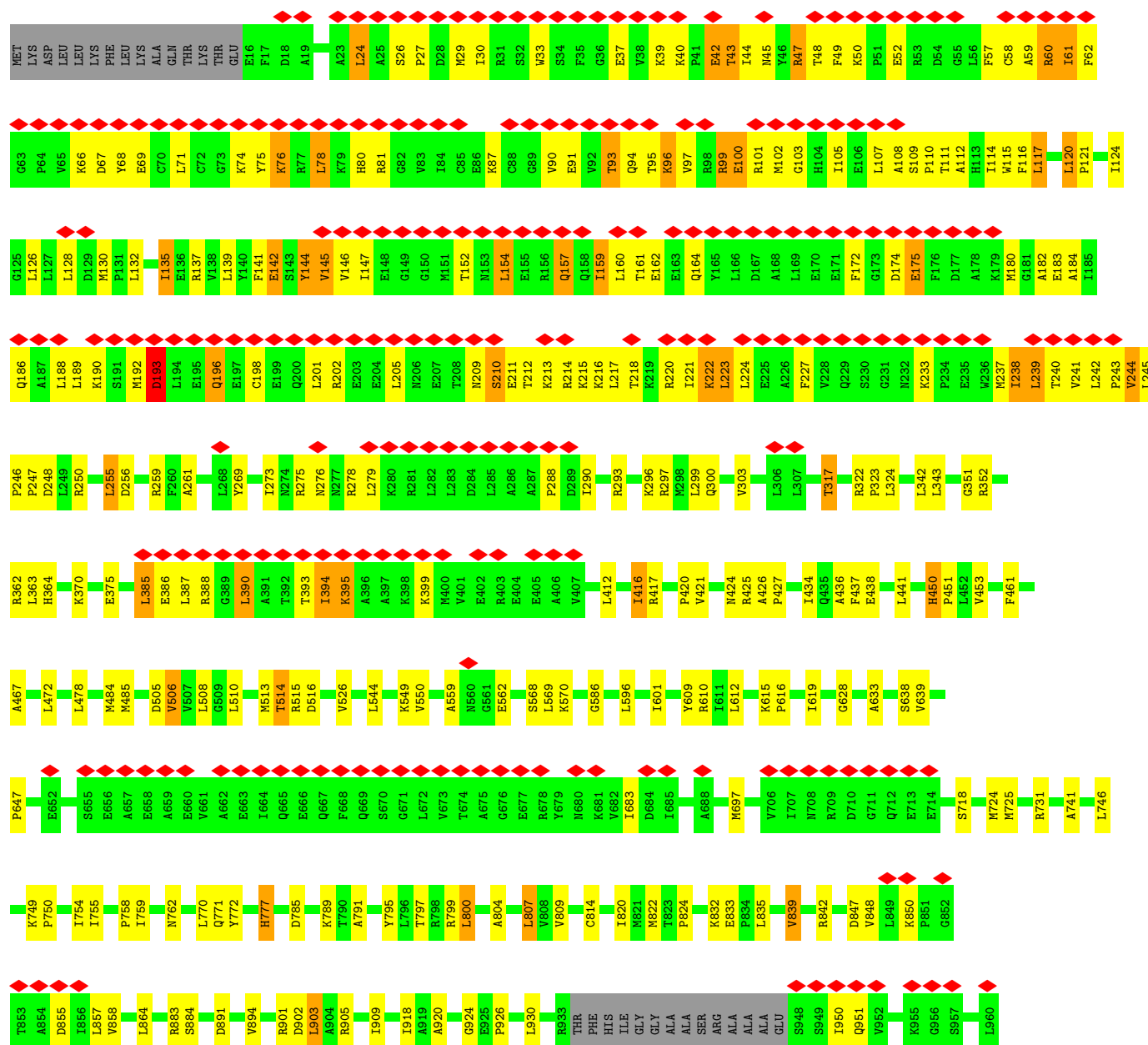


- Molecule 57: DNA-directed RNA polymerase subunit alpha

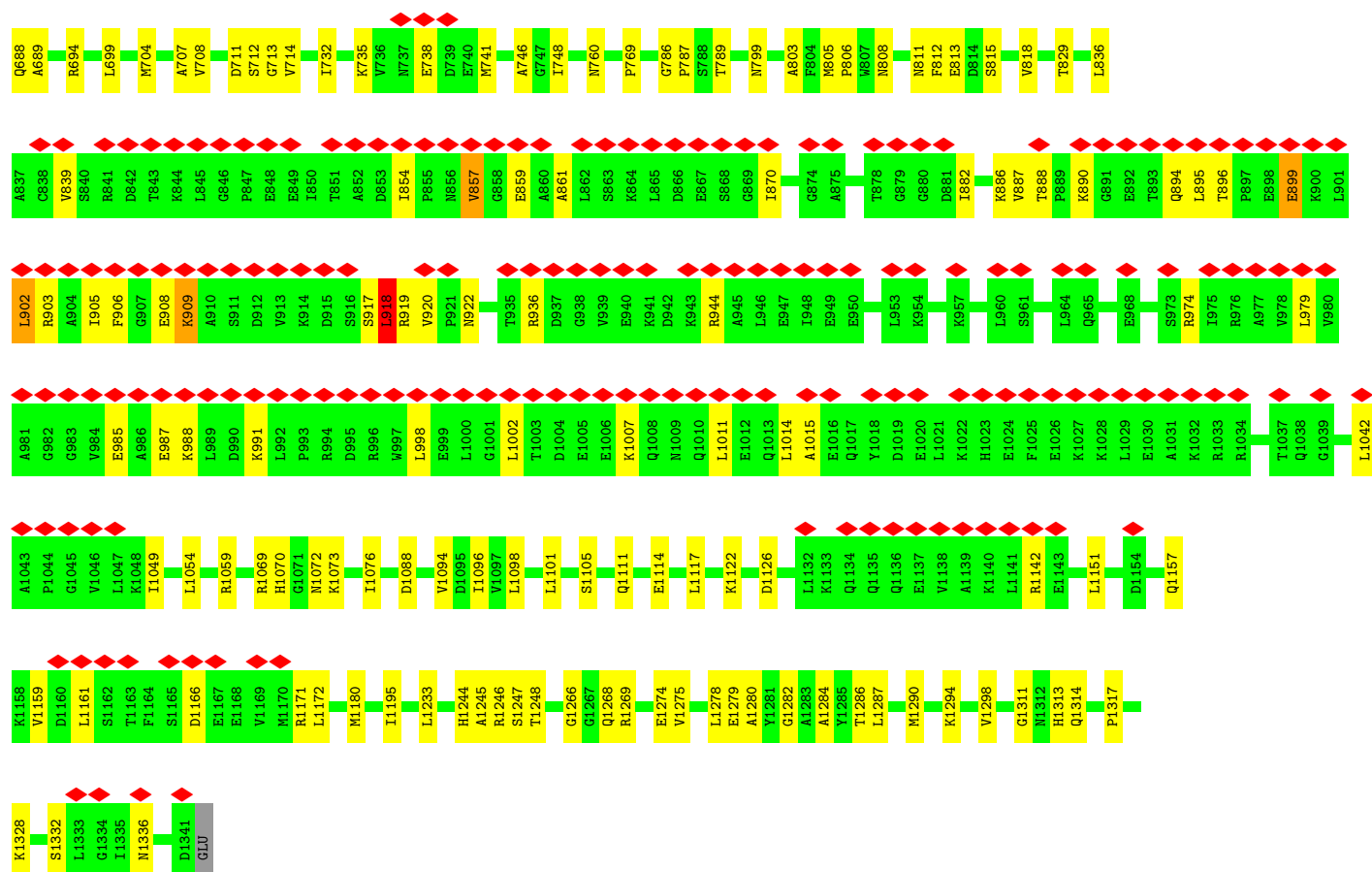


- Molecule 57: DNA-directed RNA polymerase subunit alpha

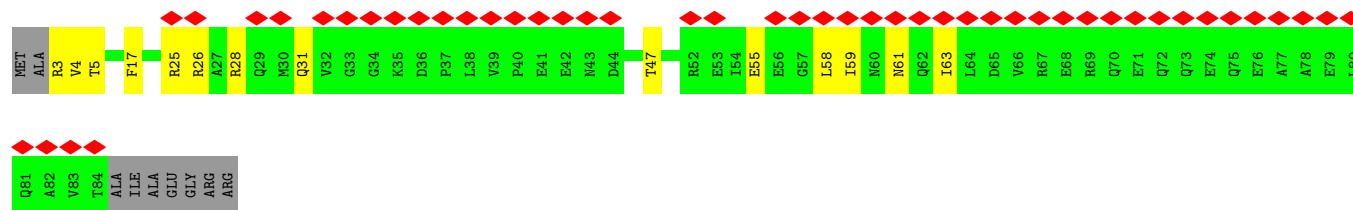
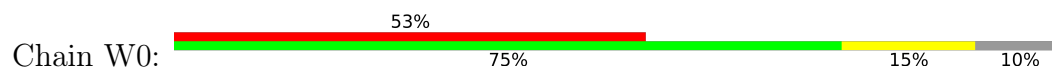




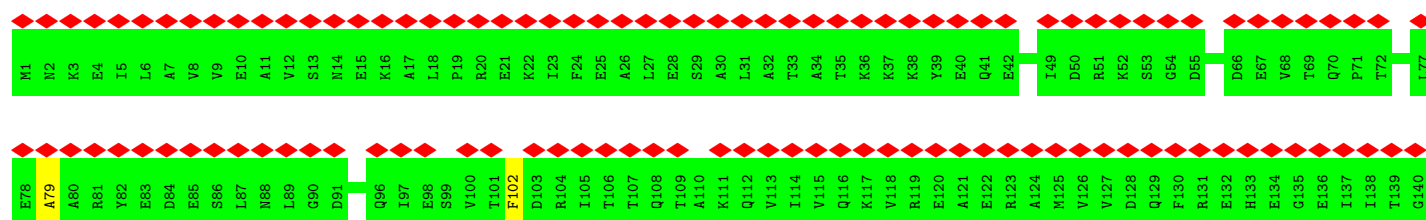
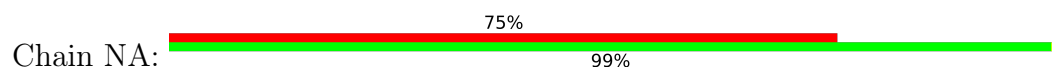


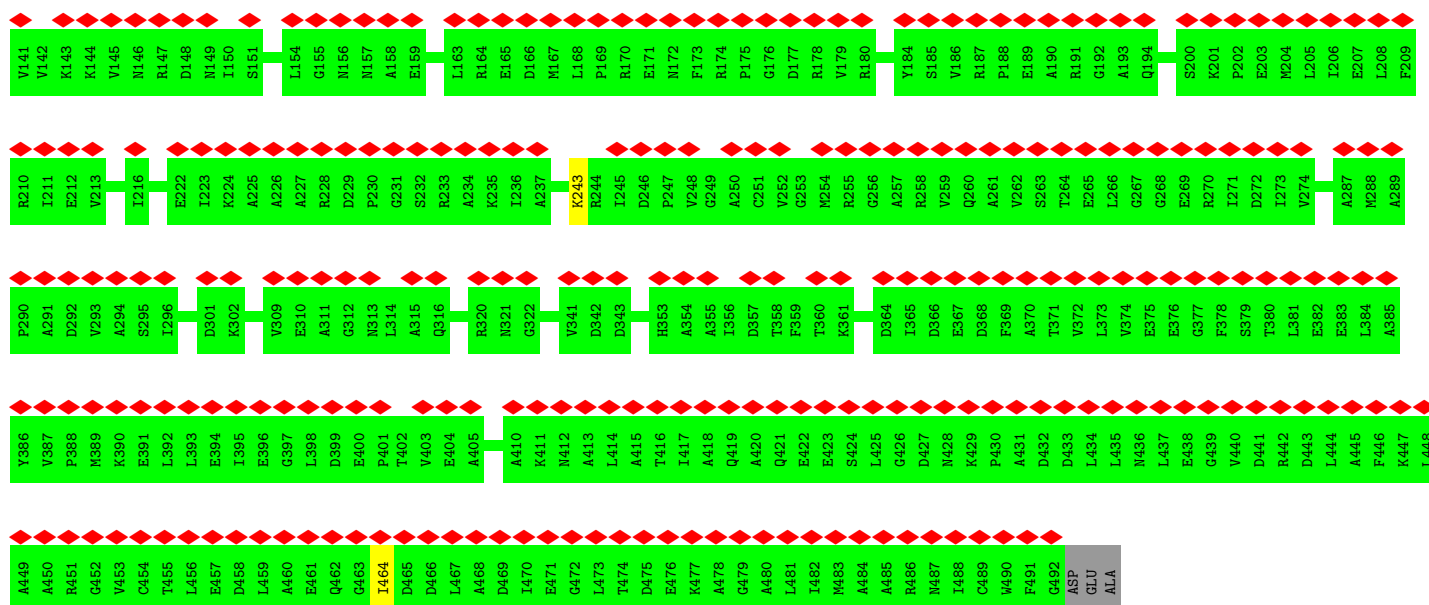


• Molecule 60: DNA-directed RNA polymerase subunit omega

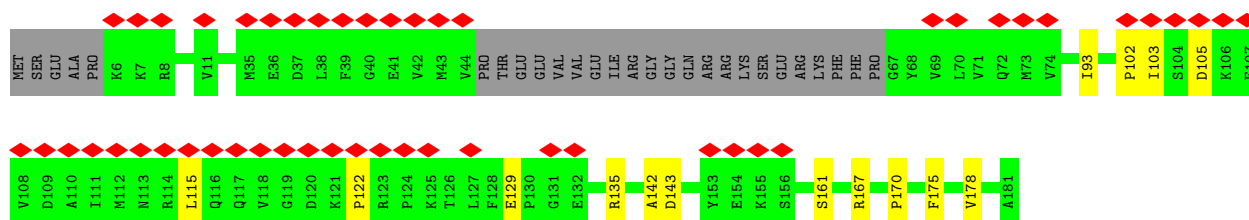
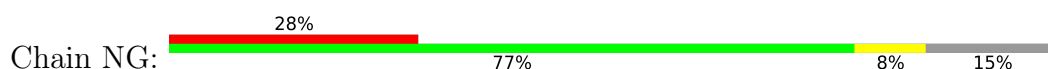


• Molecule 61: Transcription termination/antitermination protein NusA

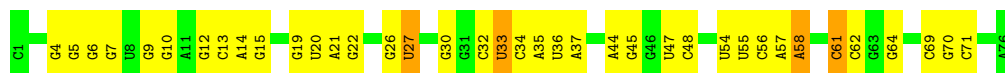




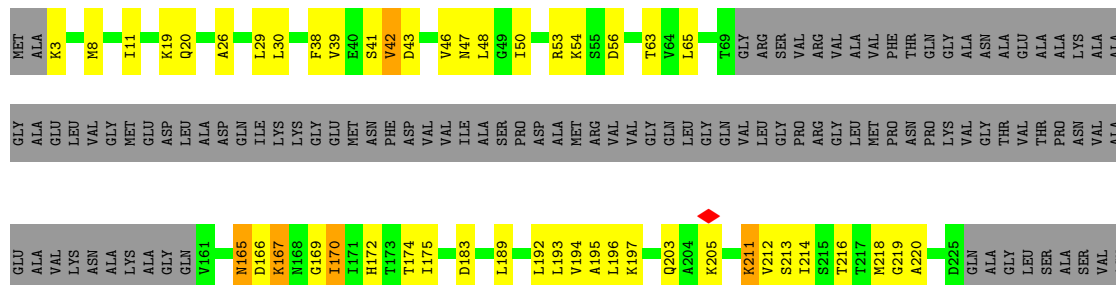
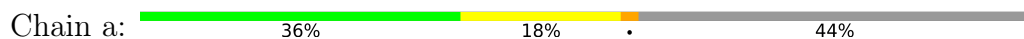
• Molecule 62: Transcription termination/antitermination protein NusG



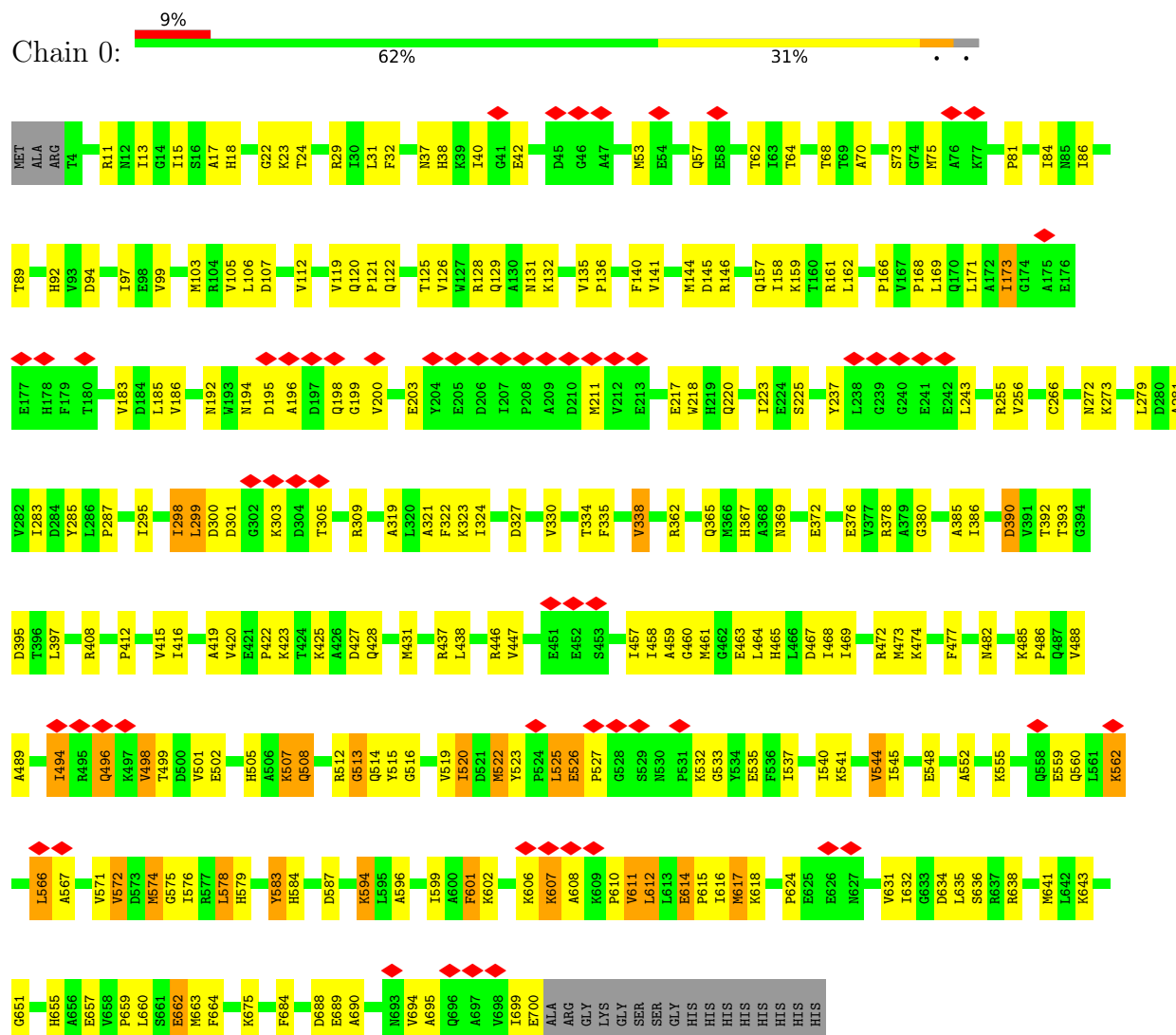
• Molecule 63: tRNA(fMet)



• Molecule 64: Large ribosomal subunit protein uL1



Chain 0:



Chain h:



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	23500	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	0.085	Depositor
Minimum map value	-0.027	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.004	Depositor
Recommended contour level	0.006	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: 5OH, DPP, GDP, UAL, MG, KBE, 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	0.72	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	0.48	0/380	0.95	0/498
5	E	0.46	0/513	0.80	0/676
6	F	0.40	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	0.47	0/1169	0.81	0/1573
11	K	0.44	0/835	0.86	0/1128
12	L	0.41	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	0.80	0/1300
18	R	0.29	0/892	0.68	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	0.29	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	0.65	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%)	0.81	4/1403 (0.3%)
37	m	0.40	0/1093	0.81	2/1460 (0.1%)
38	n	0.54	1/973 (0.1%)	0.87	0/1301
39	o	0.32	0/902	0.68	0/1209
40	p	0.39	0/929	0.72	0/1242
41	q	0.43	0/960	0.71	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	0.36	0/766	0.66	0/1025
47	w	0.40	0/582	0.78	0/769
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	0.64	0/695	0.79	0/1076
55	8	0.56	0/599	0.70	1/919 (0.1%)
56	9	0.49	0/468	0.53	0/719
57	A1	0.56	0/2106	0.82	0/2868
57	A2	0.49	0/2048	0.76	0/2786
58	B1	0.56	4/10510 (0.0%)	0.74	8/14196 (0.1%)
59	B2	0.46	1/10714 (0.0%)	0.67	0/14459
60	W0	0.30	0/652	0.61	0/879
61	NA	0.76	0/2431	1.22	0/3385
62	NG	1.16	0/756	1.04	0/1048
63	6	0.60	0/1832	0.59	0/2855
64	a	0.49	0/1020	0.80	0/1370
65	0	0.55	0/5501	0.82	3/7446 (0.0%)
66	h	3.22	2/11 (18.2%)	0.75	0/13
All	All	0.55	9/194888 (0.0%)	0.67	67/286567 (0.0%)

All (9) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
66	h	3	SER	CA-C	-6.75	1.38	1.52
66	h	4	SER	CA-C	-6.34	1.39	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
38	n	66	ALA	CA-C	-5.96	1.44	1.52
58	B1	1350	ASN	CG-ND2	-5.24	1.22	1.33
58	B1	1108	GLN	CD-OE1	5.15	1.33	1.23
58	B1	424	ASN	CG-ND2	-5.09	1.22	1.33
59	B2	896	THR	N-CA	5.04	1.49	1.46
58	B1	1268	ASN	CG-OD1	5.01	1.33	1.23
36	l	18	ARG	CA-CB	-5.00	1.44	1.52

All (67) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
12	L	92	PRO	N-CA-C	-10.51	98.44	113.47
51	1	1020	A	C2'-C3'-O3'	7.36	120.55	109.50
48	x	11	PRO	N-CA-C	-7.36	99.48	111.77
51	1	2425	A	O3'-P-O5'	-6.95	93.57	104.00
12	L	82	SER	N-CA-C	6.90	116.43	108.49
58	B1	450	HIS	CB-CG-CD2	-6.58	122.64	131.20
48	x	30	PRO	N-CA-C	6.53	125.92	112.47
36	l	29	LYS	CA-C-N	6.50	133.96	121.54
36	l	29	LYS	C-N-CA	6.50	133.96	121.54
51	1	2428	G	O3'-P-O5'	-6.40	94.40	104.00
58	B1	61	ILE	CA-C-N	-6.39	113.97	121.64
58	B1	61	ILE	C-N-CA	-6.39	113.97	121.64
58	B1	777	HIS	CB-CG-CD2	-6.37	122.92	131.20
51	1	490	C	N1-C1'-C2'	6.35	121.53	112.00
32	g	8	LYS	CA-C-N	6.33	133.36	121.97
32	g	8	LYS	C-N-CA	6.33	133.36	121.97
9	I	24	VAL	N-CA-C	-6.32	107.71	113.71
45	u	45	GLN	CA-C-N	6.30	129.44	120.49
45	u	45	GLN	C-N-CA	6.30	129.44	120.49
48	x	71	ARG	N-CA-C	-6.24	105.66	113.28
53	3	1301	U	N1-C1'-C2'	6.24	121.35	112.00
48	x	67	LEU	N-CA-C	-6.06	104.59	111.14
65	0	367	HIS	CA-C-N	6.04	133.07	121.54
65	0	367	HIS	C-N-CA	6.04	133.07	121.54
32	g	121	VAL	N-CA-C	-5.84	106.72	111.91
51	1	1816	C	N1-C1'-C2'	5.80	120.70	112.00
48	x	54	GLY	N-CA-C	5.76	120.79	113.24
26	Z	17	ARG	N-CA-C	-5.72	104.85	113.89
58	B1	450	HIS	CB-CG-ND1	5.69	131.23	122.70
2	B	5	ASN	CA-C-N	5.68	128.95	120.83
2	B	5	ASN	C-N-CA	5.68	128.95	120.83

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
36	l	116	VAL	CA-C-N	5.66	129.31	120.82
36	l	116	VAL	C-N-CA	5.66	129.31	120.82
33	i	62	ALA	N-CA-C	5.57	117.04	110.97
51	1	1343	G	N9-C1'-C2'	5.57	120.35	112.00
19	S	21	ALA	N-CA-C	-5.55	107.75	114.75
37	m	57	VAL	CA-C-N	5.50	132.05	121.54
37	m	57	VAL	C-N-CA	5.50	132.05	121.54
53	3	130	A	N9-C1'-C2'	5.45	120.17	112.00
29	d	74	LYS	CA-C-N	5.44	128.61	120.83
29	d	74	LYS	C-N-CA	5.44	128.61	120.83
51	1	1106	G	C2'-C3'-O3'	5.44	121.86	113.70
51	1	2502	G	O3'-P-O5'	5.44	112.16	104.00
42	r	51	VAL	N-CA-C	-5.43	97.15	108.88
53	3	813	U	N1-C1'-C2'	5.43	120.14	112.00
58	B1	777	HIS	CB-CG-ND1	5.42	130.83	122.70
55	8	7	DC	C2'-C3'-O3'	-5.39	103.41	111.50
35	k	89	ASN	N-CA-C	5.31	117.50	111.02
29	d	20	GLY	N-CA-C	-5.28	107.50	114.95
25	Y	53	MET	CA-C-N	5.26	127.52	120.58
25	Y	53	MET	C-N-CA	5.26	127.52	120.58
51	1	2529	G	N9-C1'-C2'	5.25	119.87	112.00
58	B1	27	PRO	N-CA-C	-5.23	106.23	113.81
52	2	66	A	N9-C1'-C2'	5.21	119.81	112.00
51	1	858	G	C4'-C3'-O3'	5.20	120.79	113.00
51	1	1211	C	N1-C1'-C2'	5.18	119.77	112.00
51	1	1924	C	N1-C1'-C2'	5.18	119.77	112.00
58	B1	61	ILE	CA-C-O	-5.15	115.59	120.95
65	0	664	PHE	CA-CB-CG	5.15	118.95	113.80
50	z	40	THR	N-CA-C	-5.13	101.21	109.58
53	3	1043	G	N9-C1'-C2'	5.13	119.69	112.00
44	t	65	GLY	N-CA-C	5.12	117.35	111.36
51	1	278	A	N9-C1'-C2'	5.10	119.65	112.00
51	1	1087	G	N9-C1'-C2'	5.08	119.62	112.00
51	1	933	A	N9-C1'-C2'	5.07	119.61	112.00
51	1	1508	A	N9-C1'-C2'	5.06	119.59	112.00
53	3	722	G	N9-C1'-C2'	5.05	119.57	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	14	0
3	C	409	0	440	20	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	44	0
8	H	1624	0	1699	45	0
9	I	1643	0	1710	44	0
10	J	1156	0	1199	39	0
11	K	817	0	808	23	0
12	L	1181	0	1240	44	0
13	M	979	0	1034	31	0
14	N	1022	0	1070	55	0
15	O	786	0	828	32	0
16	P	869	0	878	27	0
17	Q	955	0	1019	32	0
18	R	883	0	944	25	0
19	S	805	0	847	35	0
20	T	714	0	737	17	0
21	U	649	0	666	21	0
22	V	648	0	691	18	0
23	W	535	0	552	16	0
24	X	637	0	665	17	0
25	Y	665	0	714	22	0
26	Z	544	0	579	15	0
27	b	2082	0	2157	70	0
28	c	1565	0	1616	57	0
29	d	1552	0	1619	51	0
30	e	1410	0	1447	43	0
31	f	1323	0	1374	31	0
32	g	1111	0	1148	31	0
33	i	1032	0	1088	35	0
34	j	1129	0	1162	31	0
35	k	938	0	1012	22	0
36	l	1045	0	1117	30	0
37	m	1074	0	1157	28	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
38	n	960	0	1000	34	0
39	o	892	0	923	20	0
40	p	917	0	965	24	0
41	q	947	0	1022	22	0
42	r	816	0	839	22	0
43	s	857	0	922	18	0
44	t	738	0	807	15	0
45	u	779	0	834	21	0
46	v	753	0	780	14	0
47	w	575	0	592	20	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	1373	0
52	2	2568	0	1303	58	0
53	3	33012	0	16618	724	0
54	4	627	0	313	8	0
55	8	539	0	305	27	0
56	9	417	0	224	1	0
57	A1	2088	0	1895	24	0
57	A2	2029	0	1864	18	0
58	B1	10353	0	10548	323	0
59	B2	10546	0	10550	171	0
60	W0	650	0	658	11	0
61	NA	2432	0	1171	5	0
62	NG	758	0	334	10	0
63	6	1640	0	837	27	0
64	a	1013	0	1081	41	0
65	0	5399	0	5363	140	0
66	h	48	0	40	6	0
67	B1	1	0	0	0	0
68	0	28	0	12	1	0
69	0	5	0	0	0	0
All	All	181755	0	131931	3749	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 (3749) 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	1.10
51:1:1060:U:H4'	51:1:1061:U:H5'	1.32	1.10
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	1.06
9:I:131:ILE:HG21	53:3:620:C:H1'	1.40	1.04
51:1:1104:C:H2'	51:1:1105:U:H4'	1.38	1.03
51:1:45:G:H5''	51:1:46:G:H5'	1.34	1.02
51:1:1607:C:H4'	51:1:1608:A:H5'	1.40	1.01
51:1:1796:U:H2'	51:1:1797:G:H8	1.19	1.01
58:B1:111:THR:HG23	58:B1:300:GLN:CD	1.86	1.01
51:1:572:A:H61	51:1:2029:G:H21	1.04	0.98
51:1:2324:U:H3'	51:1:2325:G:H5''	1.45	0.98
58:B1:750:PRO:HB3	59:B2:549:ASP:OD2	1.60	0.98
51:1:1645:G:H5''	51:1:1646:C:H5'	1.45	0.97
58:B1:352:ARG:HD2	59:B2:1268:GLN:NE2	1.79	0.96
51:1:1597:A:H5''	51:1:1598:A:H5'	1.45	0.96
10:J:120:HIS:ND1	10:J:121:ASN:ND2	2.14	0.96
51:1:413:C:H42	51:1:2410:G:H1	1.15	0.95
51:1:2672:U:H2'	51:1:2673:G:H5''	1.43	0.95
58:B1:68:TYR:O	58:B1:75:TYR:CE2	2.20	0.95
7:G:16:GLY:HA2	7:G:39:ILE:HA	1.49	0.94
52:2:90:C:H2'	52:2:91:C:H5''	1.44	0.94
53:3:1156:G:H1'	53:3:1179:A:H61	1.31	0.94
38:n:39:PRO:HG3	51:1:1651:G:H5'	1.49	0.94
52:2:118:C:H2'	52:2:119:A:H4'	1.46	0.94
42:r:79:ARG:HH22	51:1:572:A:H5'	1.33	0.93
43:s:59:GLU:HA	43:s:64:ALA:HA	1.50	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
51:1:2068:U:H3	51:1:2430:A:H62	1.15	0.91
53:3:674:G:H2'	53:3:675:A:C8	2.06	0.91
58:B1:202:ARG:HG2	58:B1:202:ARG:HH11	1.35	0.91
53:3:91:U:H2'	53:3:92:U:H5''	1.53	0.90
51:1:1558:C:H4'	51:1:1559:U:H5''	1.51	0.90
53:3:1218:C:H2'	53:3:1219:A:C8	2.06	0.90
58:B1:68:TYR:C	58:B1:75:TYR:HE2	1.80	0.90
51:1:2653:U:H3'	51:1:2654:A:H5''	1.52	0.90
59:B2:854:ILE:HG21	59:B2:917:SER:HB3	1.54	0.90
53:3:674:G:H2'	53:3:675:A:H8	1.34	0.90
54:4:41:G:H21	58:B1:427:PRO:HD3	1.34	0.89
12:L:92:PRO:HA	12:L:95:ARG:NE	1.88	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:409:U:H3	53:3:433:G:H1	1.12	0.88
53:3:1422:G:H22	53:3:1478:U:H3	1.22	0.88
29:d:68:ALA:HA	51:1:1255:U:C5	2.08	0.88
50:z:37:ARG:NH1	51:1:929:U:H5'	1.89	0.88
52:2:78:A:H62	52:2:98:G:H21	1.17	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
51:1:1473:G:H1	51:1:1518:C:H42	1.21	0.88
52:2:3:C:H2'	52:2:4:C:H5''	1.55	0.88
58:B1:317:THR:HA	58:B1:323:PRO:HA	1.55	0.88
65:0:508:GLN:HA	65:0:513:GLY:HA2	1.57	0.87
51:1:435:C:H2'	51:1:436:C:H5'	1.56	0.87
53:3:1395:C:HO2'	53:3:1396:A:H8	0.89	0.86
14:N:68:GLY:HA2	53:3:1250:A:H5'	1.55	0.86
7:G:131:LYS:HD2	53:3:1158:C:H4'	1.58	0.86
51:1:2128:G:OP1	64:a:38:PHE:CE1	2.29	0.86
53:3:1218:C:H2'	53:3:1219:A:H8	1.41	0.85
51:1:2822:G:H2'	51:1:2823:A:H5''	1.58	0.85
42:r:79:ARG:NH2	51:1:572:A:H5'	1.91	0.85
58:B1:68:TYR:HB3	58:B1:75:TYR:OH	1.76	0.85
58:B1:633:ALA:HB2	59:B2:808:ASN:H	1.41	0.85
51:1:2443:C:H2'	51:1:2444:G:H8	1.42	0.85
37:m:12:MET:HA	51:1:910:A:H62	1.41	0.85
51:1:1783:A:C6	51:1:2587:A:C2	2.66	0.84
19:S:70:HIS:HB2	53:3:974:A:H5'	1.59	0.84
51:1:1783:A:N1	51:1:2587:A:C4	2.46	0.84
53:3:835:U:H2'	53:3:836:G:H5''	1.60	0.84
53:3:3:A:H5'	53:3:613:C:H4'	1.58	0.84
51:1:2262:U:H2'	51:1:2263:C:C6	2.13	0.84
34:j:116:ARG:NH2	51:1:528:A:H5''	1.92	0.83
12:L:27:ASN:HD22	53:3:1374:A:H4'	1.42	0.83
53:3:1424:U:H3	53:3:1476:A:H61	1.26	0.83
65:0:40:ILE:HG23	65:0:198:GLN:OE1	1.79	0.83
53:3:1512:U:H2'	53:3:1513:A:C8	2.14	0.82
51:1:554:U:H2'	51:1:555:G:O4'	1.79	0.82
58:B1:68:TYR:O	58:B1:75:TYR:HE2	1.58	0.82
51:1:1937:A:O2'	51:1:1938:A:H5'	1.78	0.82
23:W:37:LYS:HB3	53:3:719:C:H1'	1.60	0.82
51:1:2050:C:H2'	51:1:2051:A:H5'	1.62	0.82
53:3:572:A:H5''	53:3:917:G:H4'	1.59	0.81
14:N:13:SER:OG	53:3:1251:A:H5'	1.80	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:B1:141:PHE:CE2	58:B1:296:LYS:HB2	2.15	0.81
51:1:695:G:H1	51:1:767:U:H3	1.26	0.81
55:8:1:DC:H5''	58:B1:210:SER:OG	1.80	0.81
51:1:1433:A:H2'	51:1:1434:A:O4'	1.79	0.81
51:1:1680:U:H2'	51:1:1681:G:H5'	1.60	0.81
53:3:555:U:H2'	53:3:556:C:C6	2.15	0.81
58:B1:770:LEU:HD13	59:B2:618:GLN:HG3	1.61	0.81
26:Z:7:GLU:HB2	26:Z:11:PHE:HB3	1.63	0.81
27:b:55:GLY:HA2	51:1:692:C:OP1	1.81	0.80
51:1:1064:C:H3'	51:1:1065:U:H5''	1.63	0.80
51:1:2128:G:OP1	64:a:38:PHE:CD1	2.35	0.80
58:B1:141:PHE:HE2	58:B1:296:LYS:HB2	1.44	0.80
58:B1:144:TYR:HE1	58:B1:162:GLU:OE2	1.64	0.80
29:d:76:PRO:HA	29:d:82:GLY:HA3	1.62	0.79
51:1:2402:U:C2'	51:1:2403:C:H5''	2.11	0.79
53:3:769:G:H4'	53:3:1513:A:H4'	1.63	0.79
58:B1:111:THR:HG23	58:B1:300:GLN:OE1	1.81	0.79
53:3:952:U:H4'	53:3:964:A:H61	1.47	0.79
51:1:1791:A:C2'	51:1:1792:G:H5'	2.13	0.78
51:1:2402:U:H2'	51:1:2403:C:H5''	1.64	0.78
58:B1:37:GLU:O	58:B1:61:ILE:HD11	1.81	0.78
51:1:2036:C:H2'	51:1:2037:A:C8	2.18	0.78
58:B1:186:GLN:HG3	58:B1:238:ILE:HG13	1.65	0.78
51:1:784:G:H5'	51:1:785:G:OP1	1.84	0.78
51:1:1052:C:H42	51:1:1107:G:H1	1.31	0.78
53:3:1073:U:H3	53:3:1102:A:H61	1.29	0.78
51:1:208:C:H2'	51:1:209:C:H6	1.49	0.78
51:1:1783:A:C6	51:1:2587:A:N3	2.51	0.78
52:2:65:U:H3'	52:2:108:A:H61	1.49	0.78
8:H:175:HIS:ND1	53:3:1108:G:H5'	2.00	0.77
51:1:1661:G:H2'	51:1:1662:U:H6	1.50	0.77
51:1:2259:U:C4	51:1:2427:C:N4	2.52	0.77
53:3:1422:G:N2	53:3:1478:U:H3	1.80	0.77
51:1:2524:G:H2'	51:1:2525:G:H5''	1.65	0.77
53:3:153:C:H3'	53:3:154:U:H5''	1.66	0.77
51:1:52:A:H2'	51:1:53:A:C8	2.20	0.77
51:1:2124:G:O2'	64:a:41:SER:HB3	1.83	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	2.20	0.76
51:1:1287:A:C2	51:1:1649:G:H4'	2.20	0.76
28:c:148:GLN:O	51:1:2052:A:H4'	1.86	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:687:C:H2'	51:1:688:U:H5'	1.66	0.76
22:V:68:LYS:HB3	53:3:267:C:OP1	1.85	0.76
55:8:13:DT:H72	58:B1:791:ALA:HB2	1.66	0.76
51:1:2443:C:H2'	51:1:2444:G:C8	2.20	0.76
51:1:324:A:H62	51:1:338:G:H21	1.32	0.76
53:3:57:G:H2'	53:3:58:C:C6	2.21	0.76
51:1:2124:G:O2'	64:a:41:SER:CB	2.34	0.76
51:1:2672:U:C2'	51:1:2673:G:H5''	2.16	0.76
53:3:1356:G:H2'	53:3:1357:A:H8	1.51	0.76
51:1:1126:A:H4'	51:1:1127:A:H5''	1.67	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
65:0:40:ILE:CG2	65:0:198:GLN:OE1	2.33	0.75
58:B1:202:ARG:HG2	58:B1:202:ARG:NH1	1.99	0.75
51:1:1020:A:H1'	51:1:1021:A:OP2	1.86	0.75
51:1:1935:G:H1'	51:1:1964:G:N2	2.00	0.75
8:H:127:VAL:HG23	54:4:14:U:H4'	1.67	0.75
51:1:1783:A:C2	51:1:2587:A:C5	2.75	0.75
51:1:1718:G:H2'	51:1:1719:G:H8	1.52	0.75
53:3:850:U:H2'	53:3:851:G:H5''	1.69	0.75
55:8:15:DC:H1'	58:B1:426:ALA:HB1	1.67	0.75
51:1:2375:G:H2'	51:1:2376:A:H5''	1.69	0.74
53:3:3:A:C5'	53:3:613:C:H4'	2.17	0.74
51:1:633:A:H2'	51:1:634:C:O4'	1.88	0.74
53:3:212:G:H2'	53:3:213:G:H8	1.53	0.74
30:e:34:THR:HG21	51:1:2314:A:H5'	1.69	0.74
33:i:10:LEU:HD11	51:1:1070:A:H2	1.51	0.74
12:L:71:THR:HG23	12:L:72:VAL:HG12	1.68	0.74
51:1:917:A:H5''	51:1:2268:A:H61	1.53	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'	1.69	0.74
53:3:1330:U:H2'	53:3:1331:G:O4'	1.86	0.74
55:8:3:DC:H2'	55:8:4:DT:H72	1.69	0.74
51:1:208:C:H2'	51:1:209:C:C6	2.23	0.74
51:1:1019:U:H3	51:1:1142:A:H62	1.36	0.74
51:1:581:C:H2'	51:1:582:A:C8	2.23	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
51:1:2743:U:H2'	51:1:2744:G:O4'	1.87	0.74
53:3:1412:C:H2'	53:3:1413:A:C8	2.22	0.74
51:1:1528:A:H2'	51:1:1529:G:H5'	1.69	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1161:C:H2'	51:1:1162:G:C8	2.23	0.73
51:1:1265:A:H61	51:1:2013:A:H5''	1.53	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
53:3:175:C:H2'	53:3:176:C:C6	2.24	0.73
58:B1:210:SER:HB3	58:B1:213:LYS:HB2	1.71	0.73
51:1:2859:G:H2'	51:1:2860:A:C8	2.22	0.73
58:B1:1143:ASP:OD1	58:B1:1148:ARG:NH1	2.21	0.73
15:O:45:ARG:HB3	15:O:69:THR:HB	1.71	0.73
53:3:884:U:H4'	53:3:885:G:H5''	1.70	0.73
53:3:1028:C:H3'	53:3:1029:U:H5''	1.71	0.73
53:3:840:C:H2'	53:3:841:C:H5''	1.70	0.73
53:3:1073:U:H2'	53:3:1074:G:C8	2.24	0.73
58:B1:110:PRO:HG2	58:B1:183:GLU:HG3	1.68	0.73
9:I:23:GLY:HA3	53:3:408:A:H4'	1.71	0.73
47:w:28:LEU:HD22	51:1:2353:G:H4'	1.68	0.73
51:1:2030:A:N3	51:1:2499:C:H5''	2.04	0.73
55:8:3:DC:C2'	55:8:4:DT:H72	2.19	0.73
30:e:65:LEU:HD22	52:2:42:C:C4	2.24	0.72
51:1:1940:U:H1'	51:1:1942:C:N4	2.04	0.72
53:3:153:C:C3'	53:3:154:U:H5''	2.18	0.72
59:B2:906:PHE:HB2	61:NA:102:PHE:H	1.53	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
53:3:1507:A:H2'	53:3:1508:A:O4'	1.89	0.72
58:B1:68:TYR:C	58:B1:75:TYR:CE2	2.65	0.72
58:B1:105:ILE:HD12	58:B1:242:LEU:HD22	1.71	0.72
53:3:1306:A:H61	53:3:1331:G:H1'	1.54	0.72
58:B1:157:GLN:OE1	58:B1:157:GLN:HA	1.89	0.72
51:1:777:G:N7	51:1:793:A:H2	1.87	0.72
52:2:87:U:H5''	52:2:88:C:C5	2.23	0.72
21:U:5:ARG:HB2	53:3:376:G:H5''	1.72	0.72
51:1:952:G:H2'	51:1:953:G:H5''	1.71	0.72
51:1:1170:C:H2'	51:1:1171:G:H8	1.54	0.72
53:3:1424:U:H2'	53:3:1425:U:C6	2.24	0.72
12:L:27:ASN:ND2	53:3:1374:A:H4'	2.05	0.72
36:l:79:LEU:HD12	36:l:113:ALA:H	1.52	0.72
51:1:2125:G:H5'	64:a:39:VAL:O	1.89	0.72
51:1:2733:A:H2'	51:1:2734:A:C8	2.25	0.72
58:B1:142:GLU:HG3	58:B1:142:GLU:O	1.89	0.72
48:x:2:ARG:HG2	48:x:32:LEU:HD12	1.72	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1868:C:H2'	51:1:1869:G:H5'	1.70	0.71
51:1:2061:G:H2'	51:1:2501:C:HO2'	1.54	0.71
51:1:2818:U:H2'	51:1:2819:G:H8	1.55	0.71
12:L:92:PRO:HA	12:L:95:ARG:HG3	1.71	0.71
58:B1:211:GLU:HG2	58:B1:215:LYS:HE3	1.71	0.71
53:3:1435:G:H2'	53:3:1436:U:C6	2.26	0.71
58:B1:107:LEU:HD11	58:B1:242:LEU:HB2	1.70	0.71
58:B1:220:ARG:HG2	58:B1:220:ARG:HH11	1.55	0.71
34:j:116:ARG:HH22	51:1:528:A:H5''	1.53	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
51:1:2629:U:O2'	51:1:2630:G:H5''	1.90	0.71
53:3:1395:C:O2'	53:3:1396:A:H8	1.71	0.71
51:1:2491:U:H2'	51:1:2492:U:H5'	1.71	0.71
51:1:2562:U:H3	51:1:2566:A:H62	1.35	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
6:F:4:ARG:HB2	51:1:2466:C:OP1	1.89	0.71
51:1:52:A:H2'	51:1:53:A:H8	1.56	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
53:3:1395:C:H4'	53:3:1402:C:H4'	1.73	0.71
51:1:2036:C:H2'	51:1:2037:A:H8	1.55	0.71
53:3:946:A:H2'	53:3:947:G:H8	1.56	0.71
53:3:1374:A:H2'	53:3:1375:A:H8	1.56	0.71
51:1:1791:A:H2'	51:1:1792:G:H5'	1.70	0.70
63:6:69:C:H2'	63:6:70:G:H8	1.55	0.70
58:B1:93:THR:HB	58:B1:97:VAL:HG21	1.73	0.70
53:3:86:G:H4'	53:3:87:C:C4	2.26	0.70
53:3:939:G:H2'	53:3:940:C:C6	2.26	0.70
53:3:979:C:H2'	53:3:980:C:H5'	1.73	0.70
57:A2:294:ASN:HA	61:NA:464:ILE:H	1.56	0.70
59:B2:65:ASN:HB3	59:B2:105:TYR:HB2	1.73	0.70
51:1:100:U:H4'	51:1:101:A:O4'	1.91	0.70
51:1:1161:C:H2'	51:1:1162:G:H8	1.55	0.70
12:L:92:PRO:CA	12:L:95:ARG:HE	1.97	0.70
48:x:60:LYS:HD3	51:1:372:G:H5''	1.73	0.70
51:1:2514:U:H2'	51:1:2515:C:C6	2.27	0.70
53:3:501:C:H2'	53:3:502:A:H8	1.57	0.70
38:n:1:MET:HE3	51:1:2723:C:H4'	1.74	0.70
51:1:1270:C:H5''	51:1:1271:G:C5'	2.21	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1447:C:H2'	51:1:1448:G:H8	1.56	0.70
51:1:2859:G:H2'	51:1:2860:A:H8	1.54	0.70
36:l:17:LYS:HB2	51:1:663:G:H5''	1.74	0.70
51:1:2030:A:C2	51:1:2499:C:H5''	2.27	0.70
53:3:673:A:H2'	53:3:674:G:C8	2.26	0.70
12:L:91:ARG:O	12:L:95:ARG:HG2	1.92	0.70
29:d:165:HIS:HB2	51:1:1205:A:C6	2.27	0.69
24:X:77:ARG:NH1	53:3:1225:A:H4'	2.07	0.69
51:1:677:A:H2'	51:1:678:C:H6	1.57	0.69
51:1:1739:A:H2'	51:1:1740:G:O4'	1.92	0.69
53:3:1412:C:H2'	53:3:1413:A:H8	1.55	0.69
51:1:2446:G:H2'	51:1:2501:C:H5	1.57	0.69
57:A1:297:LYS:CB	61:NA:79:ALA:HB1	2.22	0.69
51:1:958:U:H2'	52:2:89:U:H1'	1.75	0.69
51:1:2502:G:H5''	51:1:2503:A:H5''	1.74	0.69
51:1:2818:U:H2'	51:1:2819:G:C8	2.27	0.69
58:B1:128:LEU:HD11	58:B1:189:LEU:HG	1.73	0.69
63:6:26:G:H2'	63:6:27:U:H5''	1.73	0.69
65:0:29:ARG:HH21	65:0:272:ASN:HD21	1.40	0.69
53:3:960:U:H4'	53:3:961:U:H5''	1.74	0.69
53:3:520:A:H62	53:3:529:G:H21	1.38	0.69
66:h:6:5OH:N	66:h:6:5OH:HS	2.07	0.69
17:Q:23:LEU:HD12	17:Q:29:LYS:HG2	1.75	0.69
27:b:6:LYS:NZ	51:1:1695:G:H5'	2.08	0.69
51:1:1607:C:H4'	51:1:1608:A:C5'	2.19	0.69
51:1:2628:C:H3'	51:1:2629:U:H5'	1.75	0.69
58:B1:39:LYS:O	58:B1:273:ILE:CG2	2.41	0.69
58:B1:243:PRO:HG2	59:B2:1332:SER:O	1.93	0.69
63:6:56:C:H2'	63:6:57:A:H8	1.58	0.69
65:0:610:PRO:HD2	65:0:695:ALA:HB2	1.74	0.69
14:N:17:ARG:CZ	53:3:1129:C:H4'	2.22	0.69
38:n:66:ALA:HA	38:n:69:ARG:HD2	1.72	0.69
8:H:34:SER:HB3	8:H:58:ARG:HH12	1.57	0.69
26:Z:48:LYS:HB3	53:3:723:U:H5	1.58	0.69
31:f:91:VAL:HG21	51:1:2657:A:O3'	1.93	0.69
51:1:1935:G:H1'	51:1:1964:G:C2	2.28	0.69
53:3:1421:G:H2'	53:3:1422:G:H4'	1.74	0.69
51:1:1077:A:H2'	51:1:1078:U:H5'	1.74	0.68
51:1:1481:U:H3	51:1:1510:G:H1	1.42	0.68
51:1:2450:A:O2'	51:1:2451:A:H5'	1.93	0.68
53:3:1346:A:H61	53:3:1374:A:H3'	1.57	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:B1:832:LYS:C	58:B1:1242:ARG:HH12	2.01	0.68
12:L:92:PRO:O	12:L:95:ARG:HG3	1.93	0.68
51:1:740:C:H6	51:1:740:C:H5'	1.58	0.68
53:3:900:A:H2'	53:3:901:A:C8	2.29	0.68
53:3:70:U:H5''	53:3:71:A:OP1	1.92	0.68
51:1:2553:G:H3'	51:1:2554:U:H5''	1.76	0.68
14:N:121:ARG:HG3	53:3:1348:U:H4'	1.75	0.68
51:1:1697:G:H3'	51:1:1698:A:H5''	1.76	0.68
58:B1:141:PHE:CD2	58:B1:293:ARG:O	2.47	0.68
28:c:181:ASP:HB2	28:c:186:LEU:H	1.59	0.68
51:1:2464:G:H2'	51:1:2465:C:C6	2.29	0.68
51:1:2656:U:H5''	65:0:146:ARG:CZ	2.24	0.68
58:B1:117:LEU:HD12	58:B1:117:LEU:O	1.94	0.68
58:B1:352:ARG:HD2	59:B2:1268:GLN:HE22	1.55	0.68
12:L:35:LYS:HB2	53:3:1373:G:H4'	1.76	0.68
14:N:10:ARG:HH22	53:3:1148:U:H5''	1.59	0.68
51:1:1024:G:H3'	51:1:1025:G:H5''	1.75	0.68
51:1:1979:U:H2'	51:1:1980:G:H5'	1.74	0.68
53:3:478:A:H2'	53:3:479:U:H4'	1.76	0.68
51:1:687:C:C2'	51:1:688:U:H5'	2.23	0.68
66:h:4:SER:O	66:h:5:UAL:N1	2.26	0.68
51:1:781:A:H2'	51:1:1777:U:O2'	1.93	0.67
17:Q:13:ARG:HH21	53:3:303:A:H5'	1.59	0.67
51:1:869:G:H2'	51:1:870:U:O4'	1.93	0.67
7:G:178:LEU:O	61:NA:243:LYS:CB	2.42	0.67
51:1:1219:U:H2'	51:1:1220:G:C8	2.29	0.67
53:3:501:C:H2'	53:3:502:A:C8	2.29	0.67
55:8:3:DC:C6	55:8:4:DT:H72	2.29	0.67
51:1:1697:G:H5''	51:1:1698:A:H5''	1.77	0.67
58:B1:984:LEU:HB3	58:B1:993:GLU:HB2	1.77	0.67
36:l:111:ILE:HD12	51:1:627:A:N7	2.09	0.67
27:b:73:ILE:HG12	51:1:1490:A:C2	2.29	0.67
29:d:27:LEU:HD22	29:d:104:ALA:HB2	1.75	0.67
51:1:84:A:H4'	51:1:85:G:O5'	1.94	0.67
51:1:1799:G:H4'	51:1:1800:C:O5'	1.95	0.67
58:B1:108:ALA:CB	58:B1:279:LEU:HD22	2.25	0.67
65:0:103:MET:HG3	65:0:129:GLN:HB3	1.77	0.67
51:1:1783:A:C2	51:1:2587:A:C4	2.83	0.67
51:1:1801:A:H5''	51:1:2203:U:H2'	1.75	0.67
58:B1:1355:ARG:NH1	58:B1:1369:ARG:HH12	1.92	0.67
51:1:2086:U:H2'	51:1:2087:G:H8	1.59	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2633:G:H2'	51:1:2634:A:H5''	1.77	0.67
53:3:747:A:H3'	53:3:748:G:H5''	1.75	0.67
53:3:1007:U:H3	53:3:1022:A:H61	1.43	0.67
58:B1:161:THR:HG22	58:B1:164:GLN:HB2	1.75	0.67
51:1:1139:G:O2'	51:1:1140:C:H5'	1.95	0.66
58:B1:111:THR:CG2	58:B1:300:GLN:CD	2.67	0.66
63:6:69:C:H2'	63:6:70:G:C8	2.29	0.66
18:R:102:LYS:HG2	53:3:1226:C:C5	2.29	0.66
38:n:96:ARG:HA	51:1:2881:U:O2'	1.95	0.66
39:o:68:LYS:HG2	52:2:50:A:OP1	1.94	0.66
51:1:621:A:H2'	51:1:622:G:O4'	1.95	0.66
51:1:849:A:H2'	51:1:850:U:C6	2.30	0.66
51:1:1755:A:H2'	51:1:1756:G:H5'	1.76	0.66
55:8:23:DC:H2''	55:8:24:DC:C5	2.30	0.66
58:B1:108:ALA:HB3	58:B1:279:LEU:HD22	1.77	0.66
63:6:12:G:H2'	63:6:13:C:O4'	1.95	0.66
51:1:395:U:H2'	51:1:396:G:C8	2.31	0.66
51:1:848:C:H2'	51:1:849:A:H8	1.59	0.66
51:1:2415:G:H2'	51:1:2416:C:C6	2.30	0.66
53:3:113:G:H2'	53:3:114:U:C6	2.31	0.66
53:3:1026:G:H1	53:3:1035:A:H61	1.43	0.66
51:1:1824:G:O2'	51:1:1825:U:H5'	1.96	0.66
51:1:2177:C:O2	64:a:172:HIS:HE1	1.78	0.66
53:3:924:C:H2'	53:3:925:G:H8	1.60	0.66
53:3:1356:G:H2'	53:3:1357:A:C8	2.30	0.66
55:8:13:DT:OP2	58:B1:791:ALA:HB1	1.95	0.66
10:J:25:LYS:HE2	53:3:923:A:OP1	1.96	0.66
38:n:2:ARG:HD2	51:1:2822:G:O6	1.95	0.66
38:n:71:ARG:HH21	51:1:2708:G:H1'	1.59	0.66
48:x:27:ARG:NH2	51:1:1365:A:OP1	2.29	0.66
51:1:1661:G:H2'	51:1:1662:U:C6	2.30	0.66
51:1:1680:U:C2'	51:1:1681:G:H5'	2.26	0.66
51:1:1718:G:H2'	51:1:1719:G:C8	2.30	0.66
53:3:955:U:H3	53:3:1225:A:H61	1.42	0.66
51:1:1528:A:C2'	51:1:1529:G:H5'	2.26	0.66
29:d:176:ASP:HB2	29:d:179:SER:HB3	1.77	0.66
58:B1:1037:PHE:HB3	58:B1:1040:MET:HB2	1.78	0.66
11:K:42:TRP:HB2	11:K:59:TYR:HB2	1.77	0.65
17:Q:33:CYS:H	17:Q:54:VAL:HG13	1.60	0.65
51:1:1509:A:H2'	51:1:1510:G:C8	2.31	0.65
52:2:3:C:C2'	52:2:4:C:H5''	2.25	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:153:C:H2'	53:3:154:U:O4'	1.96	0.65
4:D:8:SER:HA	51:1:1309:G:H5''	1.78	0.65
10:J:53:ARG:NH1	53:3:1071:C:H5'	2.12	0.65
53:3:660:C:H2'	53:3:661:G:O4'	1.96	0.65
53:3:738:C:H2'	53:3:739:C:H6	1.62	0.65
53:3:1125:U:H2'	53:3:1126:U:H2'	1.78	0.65
53:3:211:G:H2'	53:3:212:G:O4'	1.96	0.65
53:3:835:U:C2'	53:3:836:G:H5''	2.26	0.65
53:3:1172:C:H2'	53:3:1173:U:O4'	1.95	0.65
4:D:7:PRO:HA	51:1:686:U:O2	1.96	0.65
58:B1:141:PHE:HD2	58:B1:293:ARG:O	1.79	0.65
35:k:76:VAL:H	40:p:72:VAL:HG12	1.61	0.65
51:1:2048:G:H2'	51:1:2049:G:H5''	1.79	0.65
22:V:60:ILE:HG22	22:V:74:LEU:HA	1.78	0.65
58:B1:978:ARG:HG2	58:B1:1197:ASN:HD21	1.60	0.65
52:2:13:G:H2'	52:2:14:U:H5''	1.78	0.65
53:3:1366:C:H2'	53:3:1367:C:C6	2.32	0.65
3:C:5:ARG:NH1	51:1:2285:C:C5	2.65	0.65
17:Q:98:ARG:HB3	17:Q:105:GLY:HA2	1.79	0.65
51:1:203:A:H3'	51:1:204:A:H5''	1.79	0.65
51:1:748:G:O6	51:1:751:A:H4'	1.97	0.65
51:1:1268:A:H2'	51:1:1269:A:C8	2.31	0.65
51:1:2029:G:O6	51:1:2032:G:H5''	1.97	0.65
58:B1:395:LYS:HZ2	58:B1:399:LYS:CD	2.10	0.65
59:B2:314:ASN:HD21	59:B2:348:SER:HA	1.62	0.65
53:3:1156:G:H21	53:3:1179:A:H2	1.44	0.65
53:3:1173:U:H2'	53:3:1174:G:H8	1.61	0.65
55:8:3:DC:C2'	55:8:4:DT:C7	2.75	0.65
58:B1:975:ILE:HG22	58:B1:977:SER:H	1.62	0.65
65:0:17:ALA:HB2	65:0:112:VAL:HG23	1.79	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	0.64
30:e:104:THR:HG23	30:e:105:ILE:HG13	1.80	0.64
51:1:2329:U:H2'	51:1:2330:G:C8	2.32	0.64
58:B1:193:ASP:HB3	58:B1:196:GLN:HB2	1.78	0.64
22:V:47:ASP:HB3	22:V:74:LEU:HB3	1.78	0.64
47:w:40:LYS:NZ	51:1:2330:G:O2'	2.30	0.64
51:1:581:C:H2'	51:1:582:A:H8	1.60	0.64
51:1:1278:C:H2'	51:1:1279:G:H8	1.62	0.64
51:1:2008:C:H2'	51:1:2009:A:H8	1.61	0.64
58:B1:68:TYR:HB3	58:B1:75:TYR:CE2	2.32	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:g:94:ILE:HG12	32:g:122:LEU:HB2	1.78	0.64
51:1:1474:U:H2'	51:1:1475:G:H5'	1.79	0.64
51:1:2215:C:H2'	51:1:2216:G:C8	2.31	0.64
31:f:82:PHE:HB2	31:f:140:ILE:HG12	1.79	0.64
51:1:246:C:H2'	51:1:247:G:H5'	1.79	0.64
51:1:2047:C:H2'	51:1:2048:G:C8	2.32	0.64
53:3:1306:A:N6	53:3:1331:G:H1'	2.12	0.64
53:3:1436:U:H2'	53:3:1437:A:H8	1.62	0.64
58:B1:162:GLU:HA	58:B1:162:GLU:OE1	1.97	0.64
58:B1:461:PHE:HD2	59:B2:813:GLU:HB2	1.62	0.64
59:B2:1282:GLY:HA3	60:W0:17:PHE:HE1	1.63	0.64
51:1:195:A:H3'	51:1:196:A:H4'	1.78	0.64
51:1:1127:A:H2'	51:1:1128:G:H5''	1.80	0.64
23:W:41:SER:HA	23:W:44:THR:HG22	1.80	0.64
51:1:746:U:H1'	51:1:748:G:H21	1.61	0.64
51:1:1447:C:H2'	51:1:1448:G:C8	2.31	0.64
58:B1:918:ILE:HG22	59:B2:1280:ALA:HB1	1.79	0.64
2:B:8:THR:HB	51:1:2020:A:H5'	1.80	0.64
27:b:155:ARG:NH1	51:1:1818:U:H5	1.96	0.64
51:1:2704:C:H2'	51:1:2705:A:O4'	1.97	0.64
53:3:1474:U:H2'	53:3:1475:G:O4'	1.98	0.64
58:B1:245:LEU:HG	58:B1:246:PRO:HD2	1.80	0.64
63:6:26:G:H3'	63:6:27:U:H5''	1.80	0.64
15:O:46:LYS:HE3	53:3:1253:G:OP1	1.98	0.64
53:3:56:U:O2	65:0:362:ARG:NH1	2.30	0.64
53:3:1243:C:H2'	53:3:1244:G:H8	1.63	0.64
6:F:1:MET:HG3	51:1:2742:G:H5'	1.79	0.64
17:Q:27:PRO:HB3	53:3:552:U:O2	1.98	0.64
51:1:1297:C:OP1	51:1:2710:C:H4'	1.98	0.64
51:1:2267:A:H3'	51:1:2267:A:N3	2.13	0.64
53:3:246:A:H62	53:3:281:G:N2	1.95	0.64
53:3:1148:U:H2'	53:3:1149:C:O4'	1.98	0.64
53:3:1345:U:H4'	53:3:1346:A:H5'	1.80	0.64
65:0:624:PRO:HA	65:0:651:GLY:HA2	1.80	0.64
21:U:34:GLU:OE1	21:U:60:TRP:NE1	2.30	0.64
27:b:49:THR:OG1	27:b:50:THR:N	2.31	0.64
4:D:14:ARG:HG2	51:1:125:A:H5'	1.80	0.63
4:D:21:ARG:NH1	51:1:465:G:O3'	2.32	0.63
10:J:25:LYS:HZ1	53:3:923:A:H5''	1.63	0.63
25:Y:54:GLN:HE22	53:3:193:C:C1'	2.11	0.63
33:i:112:LYS:NZ	33:i:124:MET:SD	2.69	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:f:94:ARG:H	31:f:105:SER:HB3	1.61	0.63
32:g:4:ILE:HA	32:g:18:GLN:HE22	1.63	0.63
42:r:41:ILE:HB	42:r:47:VAL:HB	1.80	0.63
44:t:37:ASP:OD1	44:t:37:ASP:N	2.29	0.63
48:x:1:SER:HB2	51:1:1366:A:OP2	1.99	0.63
51:1:20:C:H2'	51:1:21:A:H8	1.60	0.63
53:3:952:U:H2'	53:3:953:G:C8	2.32	0.63
63:6:61:C:O2'	64:a:53:ARG:HD2	1.97	0.63
51:1:764:A:O2'	51:1:765:C:H5'	1.98	0.63
58:B1:201:LEU:HB2	58:B1:221:ILE:HD13	1.80	0.63
58:B1:1357:ILE:HD11	59:B2:1287:LEU:HD13	1.80	0.63
51:1:158:U:H2'	51:1:159:G:O4'	1.97	0.63
53:3:67:C:H2'	53:3:68:G:H8	1.63	0.63
59:B2:528:ARG:NH2	59:B2:576:SER:O	2.30	0.63
63:6:54:U:H3	63:6:58:A:H8	1.47	0.63
14:N:105:ARG:HD2	53:3:1117:A:O2'	1.99	0.63
15:O:59:LYS:HE3	53:3:972:C:H5'	1.81	0.63
51:1:2123:G:H8	51:1:2125:G:H21	1.44	0.63
51:1:2656:U:H5''	65:0:146:ARG:NH1	2.14	0.63
53:3:1007:U:H2'	53:3:1008:U:C6	2.34	0.63
63:6:26:G:C3'	63:6:27:U:H5''	2.29	0.63
65:0:94:ASP:HB2	65:0:465:HIS:HB2	1.81	0.63
48:x:60:LYS:CD	51:1:372:G:H5''	2.28	0.63
51:1:96:C:H2'	51:1:97:C:C6	2.33	0.63
51:1:948:C:H2'	51:1:949:G:C8	2.34	0.63
51:1:1597:A:H5''	51:1:1598:A:C5'	2.24	0.63
51:1:2339:C:H2'	51:1:2340:A:H8	1.64	0.63
8:H:10:ARG:HH12	8:H:181:ILE:H	1.45	0.63
51:1:340:A:H2'	51:1:341:C:H5'	1.81	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
53:3:600:A:H61	53:3:638:U:H3	1.47	0.63
53:3:966:G:C2	63:6:34:C:H5'	2.33	0.63
12:L:92:PRO:CA	12:L:95:ARG:HG3	2.28	0.62
14:N:68:GLY:HA2	53:3:1250:A:C5'	2.27	0.62
32:g:4:ILE:HD11	32:g:43:ASN:HB3	1.80	0.62
51:1:2464:G:H2'	51:1:2465:C:H6	1.63	0.62
14:N:12:LYS:H	14:N:105:ARG:HH22	1.45	0.62
14:N:17:ARG:NH2	53:3:1129:C:H4'	2.13	0.62
30:e:35:LEU:HB3	30:e:151:LEU:HD11	1.81	0.62
47:w:19:VAL:HG13	47:w:34:VAL:HG22	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1736:U:H2'	51:1:1737:G:O4'	1.99	0.62
51:1:1913:A:H61	53:3:1493:A:H2'	1.64	0.62
51:1:2066:C:O2'	51:1:2067:G:H5'	1.99	0.62
51:1:2810:A:H62	51:1:2890:G:H21	1.46	0.62
7:G:89:PHE:HB3	7:G:150:ILE:HD12	1.81	0.62
34:j:78:THR:HB	51:1:2641:G:H5''	1.81	0.62
51:1:315:G:H2'	51:1:316:C:C6	2.33	0.62
51:1:1063:G:H3'	51:1:1064:C:H6	1.63	0.62
51:1:1270:C:H5''	51:1:1271:G:H5''	1.79	0.62
51:1:1395:A:H4'	51:1:1397:U:C5	2.35	0.62
51:1:1783:A:C5	51:1:2587:A:C2	2.87	0.62
53:3:668:G:H1	53:3:738:C:H42	1.47	0.62
7:G:32:GLY:HA2	7:G:39:ILE:H	1.64	0.62
23:W:38:ILE:CD1	53:3:720:C:H1'	2.27	0.62
45:u:87:GLU:HG2	45:u:92:VAL:HG11	1.81	0.62
51:1:1675:C:H2'	51:1:1676:A:O4'	2.00	0.62
53:3:91:U:C2'	53:3:92:U:H5''	2.27	0.62
58:B1:144:TYR:CE1	58:B1:162:GLU:OE2	2.51	0.62
22:V:19:SER:OG	22:V:20:ILE:N	2.33	0.62
41:q:12:ARG:NH1	51:1:1251:C:H5''	2.15	0.62
51:1:481:G:H1'	51:1:506:G:N2	2.14	0.62
51:1:1901:A:H2'	51:1:1902:C:C6	2.35	0.62
51:1:2898:U:H2'	51:1:2899:A:C8	2.33	0.62
53:3:946:A:H2'	53:3:947:G:C8	2.34	0.62
6:F:27:CYS:SG	6:F:28:SER:N	2.71	0.62
16:P:17:ASP:HB2	16:P:36:ARG:HH22	1.64	0.62
51:1:948:C:H2'	51:1:949:G:H8	1.64	0.62
51:1:1867:G:H1	51:1:1874:C:H42	1.48	0.62
58:B1:128:LEU:HA	58:B1:192:MET:HE1	1.81	0.62
51:1:1173:U:H2'	51:1:1177:G:H1	1.64	0.62
51:1:1746:A:H2'	51:1:1747:U:C6	2.34	0.62
53:3:34:C:H2'	53:3:35:G:C8	2.33	0.62
58:B1:111:THR:CG2	58:B1:300:GLN:NE2	2.63	0.62
7:G:67:LEU:HD12	7:G:160:LEU:HD12	1.82	0.62
8:H:21:TRP:CD1	8:H:58:ARG:H	2.18	0.62
9:I:8:LEU:HD23	9:I:21:LYS:HE2	1.82	0.62
12:L:1:PRO:HD2	12:L:5:VAL:HA	1.82	0.62
19:S:75:LYS:NZ	53:3:1357:A:H5''	2.14	0.62
51:1:1078:U:H4'	51:1:1088:A:H2	1.65	0.62
53:3:737:C:H2'	53:3:738:C:C6	2.34	0.62
53:3:1084:G:H5'	53:3:1102:A:OP2	2.00	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1347:G:N2	53:3:1373:G:H2'	2.15	0.62
55:8:1:DC:H2''	55:8:2:DC:C5	2.35	0.62
55:8:3:DC:H2'	55:8:4:DT:C7	2.30	0.62
58:B1:1355:ARG:NH1	58:B1:1369:ARG:NH1	2.47	0.62
51:1:66:C:H1'	51:1:456:C:O2	2.00	0.62
51:1:572:A:N6	51:1:2029:G:H21	1.88	0.62
51:1:848:C:H2'	51:1:849:A:C8	2.35	0.62
51:1:2082:A:C2	51:1:2083:G:H1'	2.35	0.62
53:3:367:U:H3	53:3:393:A:H2	1.47	0.62
30:e:38:GLY:HA3	51:1:2312:U:O2	2.00	0.62
34:j:113:PRO:HG3	51:1:528:A:H5'	1.81	0.62
51:1:2286:G:H4'	51:1:2287:A:O4'	2.00	0.62
9:I:119:HIS:CD2	53:3:438:U:H4'	2.35	0.61
51:1:368:A:O2'	51:1:369:U:H5'	2.00	0.61
59:B2:120:GLN:NE2	59:B2:490:GLN:OE1	2.32	0.61
51:1:677:A:H2'	51:1:678:C:C6	2.34	0.61
51:1:812:C:H5''	51:1:1250:G:O2'	2.00	0.61
51:1:2384:U:O2'	51:1:2385:C:H5'	1.98	0.61
51:1:2512:C:H2'	51:1:2513:A:O4'	2.00	0.61
58:B1:223:LEU:HG	58:B1:223:LEU:O	2.00	0.61
43:s:25:ARG:HH22	51:1:519:U:H5''	1.64	0.61
51:1:729:G:H2'	51:1:1775:U:O2	2.00	0.61
51:1:2885:G:H2'	51:1:2886:A:O4'	2.00	0.61
53:3:715:A:H5''	53:3:805:C:O2'	2.00	0.61
55:8:13:DT:C7	58:B1:791:ALA:HB2	2.29	0.61
58:B1:100:GLU:HA	59:B2:1328:LYS:HE2	1.82	0.61
13:M:28:SER:HB2	13:M:58:LEU:HB2	1.82	0.61
42:r:63:VAL:HG12	42:r:96:VAL:HG12	1.83	0.61
53:3:939:G:H2'	53:3:940:C:H6	1.63	0.61
58:B1:633:ALA:HA	59:B2:806:PRO:O	2.01	0.61
17:Q:55:ARG:HA	17:Q:61:GLU:HA	1.83	0.61
40:p:90:ALA:HB2	40:p:112:ARG:HA	1.81	0.61
53:3:358:U:H2'	53:3:359:G:H8	1.64	0.61
53:3:1110:A:H2'	53:3:1111:A:C8	2.35	0.61
57:A1:38:THR:HB	57:A2:45:ARG:HD3	1.82	0.61
59:B2:55:SER:OG	59:B2:465:ARG:NH1	2.33	0.61
22:V:10:ARG:NH1	22:V:11:VAL:O	2.33	0.61
30:e:132:ARG:O	30:e:132:ARG:NH2	2.34	0.61
46:v:17:SER:HB3	46:v:27:PRO:HG3	1.83	0.61
53:3:452:A:H61	53:3:480:U:H3	1.49	0.61
53:3:924:C:H2'	53:3:925:G:C8	2.34	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1053:C:H2'	51:1:1054:A:H5'	1.83	0.61
51:1:2653:U:C3'	51:1:2654:A:H5''	2.29	0.61
19:S:23:ARG:HH11	19:S:26:LEU:HB3	1.65	0.61
51:1:1063:G:H5''	51:1:1064:C:H5	1.64	0.61
51:1:1740:G:H2'	51:1:1741:C:H6	1.66	0.61
51:1:2699:C:H2'	51:1:2700:A:H8	1.66	0.61
53:3:657:U:H2'	53:3:658:C:C6	2.36	0.61
57:A1:211:ILE:HG12	57:A1:219:ARG:HH12	1.65	0.61
58:B1:68:TYR:HB3	58:B1:75:TYR:CZ	2.35	0.61
42:r:81:LYS:HD3	51:1:973:A:H5''	1.83	0.61
46:v:72:VAL:HG13	46:v:93:ARG:HA	1.82	0.61
51:1:11:C:H2'	51:1:12:U:H5''	1.83	0.61
51:1:1361:G:H2'	51:1:1362:C:C6	2.35	0.61
58:B1:395:LYS:NZ	58:B1:399:LYS:HD3	2.15	0.61
34:j:113:PRO:HD2	51:1:558:U:OP1	2.00	0.60
48:x:4:CYS:HB3	48:x:9:LYS:H	1.65	0.60
51:1:1484:U:H2'	51:1:1485:U:C6	2.36	0.60
51:1:2327:A:H2'	51:1:2328:A:C8	2.35	0.60
29:d:155:GLU:HA	29:d:158:PHE:HB3	1.82	0.60
36:l:79:LEU:HB2	36:l:113:ALA:HB3	1.83	0.60
37:m:58:LYS:O	37:m:59:ARG:NH2	2.32	0.60
51:1:468:G:H2'	51:1:469:G:H5'	1.83	0.60
51:1:971:G:H2'	51:1:972:A:O4'	2.01	0.60
51:1:1369:G:H21	51:1:1810:A:H2	1.48	0.60
52:2:30:C:H2'	52:2:31:C:O4'	2.01	0.60
51:1:139:U:H2'	51:1:140:C:H5	1.65	0.60
51:1:2356:U:H2'	51:1:2357:G:O4'	2.01	0.60
58:B1:770:LEU:HD13	59:B2:618:GLN:CG	2.30	0.60
65:0:321:ALA:HB2	65:0:397:LEU:HD21	1.82	0.60
51:1:2743:U:H3'	51:1:2744:G:H5''	1.83	0.60
53:3:314:C:H2'	53:3:315:A:C8	2.37	0.60
53:3:979:C:C2'	53:3:980:C:H5'	2.32	0.60
36:l:108:ALA:HB3	36:l:125:LEU:HD11	1.83	0.60
51:1:589:U:H2'	51:1:590:A:C8	2.36	0.60
51:1:729:G:H5''	51:1:730:A:H5''	1.83	0.60
51:1:1818:U:H4'	51:1:1821:A:H1'	1.83	0.60
10:J:96:GLN:HG2	53:3:7:A:C6	2.36	0.60
37:m:14:LYS:NZ	51:1:955:U:OP2	2.35	0.60
51:1:1278:C:H2'	51:1:1279:G:C8	2.37	0.60
51:1:2208:C:H2'	51:1:2209:G:C8	2.37	0.60
53:3:419:C:H5''	53:3:513:C:H1'	1.83	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:454:G:H2'	53:3:455:G:C8	2.37	0.60
64:a:216:THR:H	64:a:220:ALA:HB3	1.66	0.60
17:Q:48:LEU:HB2	53:3:520:A:OP1	2.02	0.60
18:R:81:ASP:OD1	30:e:111:ARG:NH2	2.34	0.60
19:S:12:ARG:NH1	19:S:58:ARG:O	2.35	0.60
21:U:2:VAL:HB	53:3:229:U:H4'	1.83	0.60
48:x:31:ASN:ND2	48:x:52:ALA:CB	2.65	0.60
51:1:445:C:C2'	51:1:446:G:H5'	2.32	0.60
51:1:611:C:H2'	51:1:612:G:O4'	2.01	0.60
51:1:1064:C:H2'	51:1:1065:U:C6	2.37	0.60
53:3:747:A:C3'	53:3:748:G:H5''	2.32	0.60
58:B1:342:LEU:HD23	58:B1:1352:ILE:HG23	1.83	0.60
58:B1:370:LYS:HG2	58:B1:441:LEU:HD23	1.84	0.60
58:B1:926:PRO:HG2	58:B1:1248:ILE:HD11	1.84	0.60
58:B1:1161:GLY:HA3	58:B1:1179:PRO:HA	1.82	0.60
51:1:192:C:H2'	51:1:193:U:H5'	1.84	0.60
51:1:572:A:H61	51:1:2029:G:N2	1.88	0.60
51:1:2898:U:H2'	51:1:2899:A:H8	1.67	0.60
58:B1:951:GLN:NE2	58:B1:1014:GLY:O	2.35	0.60
27:b:201:LEU:HD22	53:3:773:G:H5''	1.82	0.60
47:w:56:PHE:CE2	51:1:2365:G:H4'	2.37	0.60
51:1:635:C:O2'	51:1:639:U:H5''	2.02	0.60
51:1:1308:A:H61	51:1:1608:A:H61	1.49	0.60
51:1:2443:C:O2'	51:1:2444:G:H5'	2.02	0.60
63:6:26:G:C2'	63:6:27:U:H5''	2.31	0.60
32:g:51:ARG:HA	32:g:55:GLU:HB2	1.84	0.59
43:s:42:LYS:HE3	51:1:2010:G:H4'	1.84	0.59
51:1:911:A:H5'	51:1:912:C:H5''	1.84	0.59
51:1:1674:G:H21	51:1:1677:A:H61	1.49	0.59
51:1:2303:G:O2'	51:1:2304:G:H5'	2.02	0.59
53:3:1512:U:H2'	53:3:1513:A:H8	1.67	0.59
58:B1:395:LYS:HZ2	58:B1:399:LYS:HD3	1.65	0.59
9:I:121:ALA:HA	9:I:145:ARG:HB2	1.83	0.59
15:O:50:THR:HG22	15:O:64:GLN:HG3	1.83	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
51:1:2537:U:H2'	51:1:2538:C:C6	2.37	0.59
53:3:128:G:H2'	53:3:129:A:C8	2.37	0.59
29:d:64:GLY:O	51:1:2059:A:H4'	2.01	0.59
51:1:881:G:N2	51:1:897:C:N3	2.50	0.59
51:1:2324:U:C3'	51:1:2325:G:H5''	2.26	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:207:C:H3'	53:3:208:U:H5''	1.83	0.59
53:3:1374:A:H2'	53:3:1375:A:C8	2.37	0.59
58:B1:161:THR:HG23	58:B1:164:GLN:H	1.68	0.59
59:B2:1072:ASN:ND2	59:B2:1111:GLN:OE1	2.35	0.59
18:R:95:PRO:HG2	18:R:105:ALA:HB1	1.83	0.59
21:U:5:ARG:HD3	53:3:376:G:H4'	1.85	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
29:d:21:ARG:NH2	29:d:22:ASP:OD1	2.35	0.59
51:1:12:U:O2	51:1:12:U:H2'	2.02	0.59
51:1:1889:A:H2'	51:1:1890:A:C8	2.37	0.59
51:1:1982:U:H2'	51:1:1983:G:H8	1.68	0.59
55:8:9:DG:H4'	58:B1:120:LEU:HG	1.84	0.59
58:B1:438:GLU:HG3	58:B1:485:MET:HE1	1.85	0.59
29:d:55:SER:OG	29:d:56:GLY:N	2.36	0.59
51:1:35:G:H1	51:1:445:C:H42	1.50	0.59
51:1:729:G:H5''	51:1:730:A:C5'	2.33	0.59
51:1:1081:U:H3'	51:1:1081:U:O2	2.02	0.59
51:1:1638:C:H4'	51:1:2710:C:O2	2.02	0.59
52:2:90:C:H2'	52:2:91:C:C5'	2.24	0.59
53:3:34:C:H2'	53:3:35:G:H8	1.68	0.59
53:3:579:A:H5'	53:3:728:A:H1'	1.85	0.59
57:A1:112:ALA:HB3	57:A1:126:PRO:HA	1.83	0.59
59:B2:69:GLN:HE21	59:B2:101:ARG:HD2	1.67	0.59
7:G:73:ARG:HH22	7:G:93:HIS:HA	1.67	0.59
7:G:142:LYS:HE2	53:3:1098:C:OP1	2.03	0.59
51:1:1802:A:H2'	51:1:1803:A:C8	2.38	0.59
51:1:2048:G:C3'	51:1:2049:G:H5''	2.31	0.59
53:3:337:G:H2'	53:3:338:A:C8	2.38	0.59
53:3:836:G:H2'	53:3:837:U:O4'	2.02	0.59
55:8:11:DC:H2'	55:8:12:DG:C8	2.37	0.59
58:B1:412:LEU:HD22	58:B1:441:LEU:HD21	1.84	0.59
41:q:12:ARG:HH12	51:1:1251:C:H5''	1.68	0.59
45:u:40:LEU:HD12	45:u:59:GLU:HB3	1.84	0.59
51:1:1063:G:H3'	51:1:1064:C:C6	2.37	0.59
51:1:1924:C:H3'	51:1:1925:C:C6	2.38	0.59
51:1:2032:G:OP2	51:1:2455:G:H5'	2.03	0.59
53:3:1521:C:H2'	53:3:1522:U:C6	2.37	0.59
58:B1:201:LEU:HD11	58:B1:220:ARG:HH11	1.67	0.59
18:R:26:LYS:O	18:R:30:LYS:NZ	2.36	0.59
51:1:704:G:H1'	51:1:726:G:H22	1.68	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1444:G:H2'	51:1:1445:G:C8	2.37	0.59
53:3:448:A:H62	53:3:486:U:H3	1.48	0.59
53:3:738:C:H2'	53:3:739:C:C6	2.38	0.59
58:B1:97:VAL:HG11	58:B1:101:ARG:NH2	2.18	0.59
58:B1:154:LEU:HD21	58:B1:160:LEU:HD21	1.83	0.59
63:6:55:U:H2'	63:6:56:C:H6	1.68	0.59
65:0:508:GLN:CA	65:0:513:GLY:HA2	2.32	0.59
10:J:25:LYS:HB2	53:3:923:A:OP1	2.02	0.59
40:p:1:SER:OG	51:1:2875:C:H4'	2.02	0.59
7:G:99:MET:HA	7:G:106:VAL:HG21	1.84	0.59
9:I:68:GLU:HB3	53:3:546:A:OP2	2.03	0.59
13:M:38:VAL:HG11	13:M:110:MET:HA	1.83	0.59
51:1:1062:G:H5'	51:1:1071:G:H5'	1.85	0.59
53:3:677:U:H3	53:3:713:G:H1	1.51	0.59
55:8:7:DC:H2''	55:8:8:DT:H71	1.84	0.59
58:B1:99:ARG:NH1	58:B1:99:ARG:HG3	2.17	0.59
58:B1:725:MET:SD	59:B2:1101:LEU:HD23	2.42	0.59
3:C:7:LYS:HA	3:C:23:THR:HA	1.85	0.58
7:G:176:ASN:ND2	7:G:194:GLY:O	2.33	0.58
40:p:11:GLN:HB2	40:p:54:LEU:HD11	1.84	0.58
51:1:2121:G:H1'	64:a:167:LYS:HB2	1.85	0.58
53:3:59:A:H5''	53:3:387:U:H5''	1.84	0.58
53:3:253:A:H2'	53:3:254:G:O4'	2.03	0.58
17:Q:13:ARG:NH1	17:Q:14:LYS:O	2.35	0.58
28:c:194:PRO:HA	51:1:2680:U:H5'	1.85	0.58
51:1:2446:G:H2'	51:1:2501:C:C5	2.38	0.58
53:3:885:G:H2'	53:3:886:G:C8	2.39	0.58
53:3:1280:A:O2'	53:3:1281:C:H5'	2.02	0.58
53:3:1421:G:H3'	53:3:1422:G:C5'	2.33	0.58
58:B1:275:ARG:NH1	58:B1:278:ARG:NH1	2.51	0.58
5:E:4:LYS:HD3	51:1:242:G:C8	2.38	0.58
9:I:12:ARG:HH21	9:I:35:GLN:H	1.50	0.58
27:b:116:GLN:O	27:b:127:ASN:ND2	2.35	0.58
28:c:46:ARG:HG2	28:c:84:LEU:HD12	1.85	0.58
35:k:16:ALA:O	35:k:17:ARG:NH1	2.36	0.58
43:s:25:ARG:NH2	51:1:519:U:H5''	2.19	0.58
50:z:12:ALA:O	50:z:20:LYS:NZ	2.36	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
53:3:41:G:H2'	53:3:42:G:C8	2.38	0.58
53:3:721:G:H4'	53:3:722:G:O4'	2.03	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1195:C:H2'	53:3:1197:A:O4'	2.04	0.58
59:B2:918:LEU:O	59:B2:918:LEU:HD23	2.02	0.58
63:6:6:G:O2'	63:6:7:G:H5'	2.04	0.58
7:G:103:TRP:HA	7:G:106:VAL:HB	1.85	0.58
51:1:1319:C:O2'	51:1:1320:C:H5'	2.02	0.58
51:1:2306:C:H2'	51:1:2307:G:C8	2.38	0.58
51:1:2333:A:H5'	51:1:2335:A:H1'	1.85	0.58
53:3:41:G:H2'	53:3:42:G:H8	1.68	0.58
53:3:180:U:H2'	53:3:181:A:O4'	2.03	0.58
53:3:742:G:H2'	53:3:743:A:C8	2.38	0.58
59:B2:1142:ARG:NH1	59:B2:1161:LEU:O	2.36	0.58
63:6:4:G:H2'	63:6:5:G:O4'	2.03	0.58
51:1:1806:C:H2'	51:1:1807:G:O4'	2.04	0.58
53:3:16:A:O2'	53:3:17:U:H5'	2.03	0.58
53:3:850:U:C2'	53:3:851:G:H5''	2.33	0.58
63:6:14:A:H2'	63:6:15:G:H5'	1.85	0.58
64:a:26:ALA:HA	64:a:29:LEU:HB3	1.85	0.58
65:0:515:TYR:H	65:0:587:ASP:HB3	1.68	0.58
6:F:19:ARG:NE	51:1:2756:U:OP2	2.36	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
51:1:166:U:H2'	51:1:167:A:C8	2.38	0.58
51:1:952:G:C3'	51:1:953:G:H5''	2.33	0.58
51:1:1000:A:H62	51:1:1154:G:H2'	1.68	0.58
53:3:570:G:O2'	53:3:819:A:H2'	2.03	0.58
53:3:626:G:H2'	53:3:627:G:C8	2.39	0.58
5:E:21:PHE:HE2	5:E:61:LEU:HD23	1.68	0.58
40:p:33:GLU:OE1	40:p:38:ARG:NH1	2.37	0.58
51:1:1065:U:O4	51:1:1069:A:H5''	2.03	0.58
51:1:1197:G:H2'	51:1:1198:U:C6	2.39	0.58
51:1:1368:G:H2'	51:1:1369:G:H8	1.68	0.58
51:1:1941:C:H2'	51:1:1942:C:O4'	2.04	0.58
51:1:1993:U:H2'	51:1:1994:C:H6	1.67	0.58
53:3:235:C:H2'	53:3:236:A:C8	2.38	0.58
29:d:164:LEU:HB2	29:d:167:VAL:HG22	1.84	0.58
51:1:1332:G:N7	51:1:1609:A:H2'	2.18	0.58
51:1:2123:G:O6	51:1:2174:C:N4	2.37	0.58
58:B1:37:GLU:O	58:B1:61:ILE:CD1	2.52	0.58
8:H:105:VAL:HG22	8:H:107:LYS:H	1.69	0.58
9:I:8:LEU:HD21	53:3:429:U:O5'	2.03	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:36:G:H4'	51:1:451:U:C2	2.38	0.58
51:1:414:C:H2'	51:1:415:A:C8	2.39	0.58
51:1:1843:C:H2'	51:1:1844:C:C6	2.38	0.58
53:3:1005:A:H2'	53:3:1006:G:H5'	1.85	0.58
53:3:1069:C:O2'	53:3:1192:C:H1'	2.03	0.58
58:B1:750:PRO:CB	59:B2:549:ASP:OD2	2.45	0.58
59:B2:707:ALA:O	59:B2:711:ASP:HB2	2.03	0.58
4:D:37:LYS:NZ	51:1:468:G:OP2	2.34	0.58
8:H:18:ASN:HD21	8:H:39:ARG:HH12	1.51	0.58
12:L:137:ARG:NH1	12:L:138:GLU:OE2	2.37	0.58
23:W:56:ARG:NH1	53:3:735:C:OP1	2.37	0.58
51:1:1197:G:H2'	51:1:1198:U:H6	1.67	0.58
51:1:1787:A:C2	51:1:1788:C:C6	2.91	0.58
59:B2:13:LYS:HB2	59:B2:1180:MET:HE2	1.86	0.58
9:I:58:GLN:HB3	9:I:62:ARG:HH21	1.68	0.57
25:Y:73:ARG:O	25:Y:77:ASN:ND2	2.36	0.57
51:1:2675:A:H2'	51:1:2676:C:C6	2.39	0.57
10:J:87:VAL:HG13	10:J:92:ARG:HG3	1.86	0.57
53:3:19:A:H1'	53:3:864:A:N3	2.19	0.57
14:N:5:TYR:HB2	14:N:20:ILE:HD11	1.85	0.57
14:N:69:GLY:N	53:3:1250:A:H4'	2.20	0.57
15:O:13:PHE:O	15:O:70:HIS:ND1	2.37	0.57
16:P:33:ILE:HG22	16:P:41:LEU:HD12	1.86	0.57
20:T:13:GLU:OE1	20:T:83:ARG:NH2	2.37	0.57
28:c:110:THR:OG1	28:c:111:GLY:N	2.38	0.57
37:m:66:ARG:NH1	37:m:104:GLU:OE2	2.37	0.57
42:r:79:ARG:NH1	51:1:572:A:OP2	2.37	0.57
44:t:38:ALA:O	44:t:81:LYS:NZ	2.37	0.57
51:1:1177:G:H2'	51:1:1178:C:H5''	1.86	0.57
51:1:1270:C:H5''	51:1:1271:G:H5'	1.84	0.57
53:3:308:C:H2'	53:3:309:A:H8	1.69	0.57
57:A2:28:LEU:HB2	57:A2:201:LEU:HB3	1.86	0.57
2:B:49:ARG:O	2:B:51:ARG:NH2	2.37	0.57
12:L:91:ARG:CB	12:L:93:VAL:HG12	2.32	0.57
28:c:18:ASP:OD1	28:c:18:ASP:N	2.37	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
28:c:128:ARG:NH2	51:1:2512:C:OP2	2.37	0.57
51:1:1697:G:C5'	51:1:1698:A:H5''	2.35	0.57
51:1:1770:G:H4'	51:1:1938:A:OP1	2.04	0.57
58:B1:510:LEU:HD22	58:B1:601:ILE:HD12	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:B1:615:LYS:HG2	60:W0:5:THR:HG21	1.85	0.57
27:b:221:GLY:HA2	27:b:224:MET:HE3	1.85	0.57
51:1:2196:C:H2'	51:1:2197:U:C6	2.39	0.57
52:2:24:G:H4'	52:2:25:U:C5	2.38	0.57
17:Q:119:LYS:HD3	53:3:36:C:H5''	1.86	0.57
45:u:42:LYS:HG3	51:1:499:U:H4'	1.85	0.57
51:1:1370:C:H2'	51:1:1371:G:O4'	2.04	0.57
51:1:1565:C:H2'	51:1:1567:G:N7	2.19	0.57
51:1:1791:A:H2'	51:1:1792:G:C5'	2.34	0.57
51:1:2524:G:C2'	51:1:2525:G:H5''	2.34	0.57
53:3:885:G:H2'	53:3:886:G:H8	1.69	0.57
53:3:1271:A:H5'	53:3:1314:C:C5'	2.35	0.57
58:B1:514:THR:HG21	58:B1:596:LEU:HD12	1.84	0.57
65:0:168:PRO:HG2	65:0:218:TRP:HE1	1.70	0.57
65:0:223:ILE:HB	65:0:243:LEU:HD22	1.85	0.57
11:K:82:ASP:OD1	11:K:82:ASP:N	2.38	0.57
11:K:90:MET:SD	23:W:60:ARG:NH1	2.78	0.57
38:n:92:GLY:HA3	51:1:2839:G:H21	1.69	0.57
47:w:20:LYS:HD2	51:1:2355:G:H4'	1.85	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
53:3:539:A:H2'	53:3:540:G:C8	2.40	0.57
53:3:1004:A:H5'	53:3:1024:G:H1	1.70	0.57
58:B1:160:LEU:HD22	58:B1:164:GLN:HB3	1.86	0.57
59:B2:818:VAL:HG22	59:B2:1096:ILE:HG12	1.87	0.57
59:B2:1122:LYS:NZ	59:B2:1126:ASP:OD1	2.38	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
8:H:60:ALA:HB3	62:NG:167:ARG:HA	1.86	0.57
20:T:19:ASN:HB2	53:3:750:C:O4'	2.04	0.57
32:g:139:PHE:O	32:g:141:LYS:NZ	2.37	0.57
51:1:62:U:O2'	51:1:63:A:H5'	2.04	0.57
51:1:78:U:H2'	51:1:79:C:C6	2.40	0.57
51:1:1069:A:H2'	51:1:1073:A:N7	2.20	0.57
51:1:2554:U:H2'	51:1:2555:U:C6	2.40	0.57
51:1:2743:U:C3'	51:1:2744:G:H5''	2.35	0.57
53:3:279:A:H5''	53:3:281:G:C5'	2.34	0.57
53:3:1399:C:N3	53:3:1502:A:N1	2.53	0.57
53:3:1513:A:H2'	53:3:1514:G:C8	2.40	0.57
58:B1:198:CYS:HA	58:B1:221:ILE:HD11	1.86	0.57
19:S:5:MET:O	19:S:62:ARG:NH1	2.38	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:v:21:ARG:HH22	52:2:77:U:H5'	1.70	0.57
47:w:51:ARG:NH2	51:1:2384:U:OP2	2.37	0.57
51:1:28:A:O2'	51:1:583:G:H5'	2.05	0.57
51:1:211:C:H2'	51:1:212:G:C8	2.40	0.57
51:1:324:A:H62	51:1:338:G:N2	2.00	0.57
51:1:1310:G:C2'	51:1:1311:G:H5'	2.34	0.57
51:1:2420:C:O2'	51:1:2421:G:H5'	2.05	0.57
53:3:936:C:H2'	53:3:937:A:O4'	2.04	0.57
58:B1:1361:THR:HB	59:B2:1284:ALA:HB3	1.85	0.57
2:B:5:ASN:ND2	51:1:2020:A:N7	2.52	0.56
16:P:71:ASP:HA	16:P:74:LYS:HG3	1.87	0.56
20:T:60:SER:HB2	53:3:581:G:H5'	1.86	0.56
27:b:17:LYS:HD3	51:1:1565:C:OP1	2.05	0.56
33:i:123:ALA:HB1	51:1:1081:U:H4'	1.87	0.56
40:p:87:ARG:NH2	40:p:109:ILE:O	2.36	0.56
45:u:32:LYS:HE3	51:1:478:A:H4'	1.87	0.56
51:1:2475:C:N4	51:1:2529:G:H22	2.03	0.56
53:3:302:G:H2'	53:3:303:A:C8	2.40	0.56
53:3:651:C:H2'	53:3:652:U:O4'	2.04	0.56
58:B1:42:GLU:HB3	58:B1:52:GLU:HG3	1.86	0.56
58:B1:99:ARG:CG	58:B1:99:ARG:HH11	2.18	0.56
64:a:19:LYS:NZ	64:a:20:GLN:O	2.38	0.56
13:M:15:ASN:HB3	53:3:827:U:H4'	1.86	0.56
18:R:87:GLY:O	18:R:91:ARG:NH2	2.39	0.56
29:d:2:GLU:HB2	29:d:11:ALA:HB1	1.87	0.56
51:1:27:G:N2	51:1:512:G:H1'	2.20	0.56
51:1:259:G:O2'	51:1:260:G:H5'	2.05	0.56
53:3:1016:A:H4'	53:3:1218:C:H4'	1.86	0.56
65:0:31:LEU:HD21	65:0:68:THR:HG21	1.87	0.56
4:D:12:ARG:HD2	4:D:44:VAL:HG11	1.88	0.56
10:J:120:HIS:CE1	10:J:121:ASN:ND2	2.73	0.56
13:M:27:PRO:O	13:M:32:LYS:NZ	2.38	0.56
18:R:113:LYS:NZ	63:6:44:A:H4'	2.20	0.56
25:Y:2:ASN:O	25:Y:7:LYS:NZ	2.39	0.56
25:Y:13:SER:O	25:Y:17:ARG:N	2.38	0.56
30:e:31:GLU:OE1	30:e:32:LYS:NZ	2.37	0.56
51:1:1801:A:H5''	51:1:2203:U:C2'	2.35	0.56
51:1:1933:G:O2'	51:1:1974:C:H4'	2.04	0.56
51:1:2050:C:C2'	51:1:2051:A:H5'	2.33	0.56
51:1:2396:G:O2'	51:1:2397:G:H5'	2.05	0.56
51:1:2430:A:N3	51:1:2430:A:H2'	2.20	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
53:3:1257:A:H3'	53:3:1257:A:N3	2.21	0.56
58:B1:102:MET:HG2	58:B1:246:PRO:HG3	1.87	0.56
58:B1:130:MET:HE2	58:B1:135:ILE:HG12	1.87	0.56
65:0:322:PHE:HB3	65:0:323:LYS:HD2	1.87	0.56
65:0:438:LEU:HD22	65:0:469:ILE:HD11	1.88	0.56
65:0:446:ARG:O	65:0:459:ALA:N	2.38	0.56
14:N:47:VAL:HG23	14:N:48:ARG:HG3	1.88	0.56
27:b:140:VAL:O	27:b:161:VAL:N	2.35	0.56
30:e:113:PHE:HZ	30:e:175:PRO:HB3	1.71	0.56
34:j:60:ASP:HA	34:j:93:ILE:HD11	1.88	0.56
47:w:52:ASP:OD2	51:1:2364:C:H5'	2.05	0.56
51:1:379:G:H2'	51:1:380:G:O4'	2.05	0.56
51:1:1141:U:H4'	51:1:1142:A:O4'	2.05	0.56
51:1:1923:U:H2'	51:1:1924:C:H6	1.71	0.56
51:1:2208:C:H2'	51:1:2209:G:H8	1.70	0.56
51:1:2529:G:H5'	51:1:2530:A:H5''	1.87	0.56
53:3:416:G:H2'	53:3:417:G:H8	1.70	0.56
57:A2:82:LEU:HD11	57:A2:171:LEU:HD23	1.86	0.56
58:B1:1166:GLY:HA3	58:B1:1174:ARG:HB2	1.87	0.56
3:C:8:ILE:HB	3:C:24:LYS:HB2	1.88	0.56
7:G:138:ARG:HH21	7:G:142:LYS:HG2	1.69	0.56
16:P:116:PRO:HA	53:3:675:A:H2	1.70	0.56
28:c:109:VAL:HG23	28:c:172:VAL:HG13	1.88	0.56
51:1:36:G:H4'	51:1:451:U:N3	2.21	0.56
51:1:1120:G:H2'	51:1:1121:C:O4'	2.05	0.56
51:1:1774:C:H4'	51:1:1979:U:O2	2.05	0.56
51:1:2637:U:H2'	51:1:2638:G:O4'	2.04	0.56
53:3:212:G:H2'	53:3:213:G:C8	2.38	0.56
53:3:428:G:H4'	53:3:429:U:H4'	1.86	0.56
58:B1:247:PRO:HA	58:B1:250:ARG:HG3	1.87	0.56
58:B1:1167:LYS:HZ2	58:B1:1170:LYS:HB2	1.71	0.56
3:C:36:LYS:NZ	3:C:45:HIS:O	2.38	0.56
5:E:27:ASN:O	5:E:35:LYS:NZ	2.38	0.56
8:H:82:ASP:HA	8:H:85:LYS:HD2	1.86	0.56
13:M:24:VAL:HG13	13:M:62:LEU:HD11	1.87	0.56
51:1:1114:C:H2'	51:1:1115:G:C8	2.41	0.56
53:3:416:G:H2'	53:3:417:G:C8	2.41	0.56
9:I:65:GLY:O	9:I:96:ARG:NH1	2.39	0.56
27:b:158:GLY:HA3	51:1:1820:U:C4	2.40	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:i:3:LYS:HD3	51:1:1055:G:O5'	2.06	0.56
51:1:959:A:H1'	51:1:2457:U:O2'	2.06	0.56
51:1:1186:G:N2	51:1:1187:G:H1'	2.20	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
53:3:24:U:H2'	53:3:25:C:C6	2.40	0.56
53:3:882:C:O2'	53:3:883:C:H5'	2.05	0.56
57:A1:29:GLU:HB3	57:A1:200:LYS:HG3	1.88	0.56
58:B1:39:LYS:O	58:B1:273:ILE:HG21	2.06	0.56
58:B1:1046:ILE:HD12	58:B1:1059:LEU:HB3	1.86	0.56
7:G:30:ILE:HG22	7:G:40:ILE:HA	1.88	0.56
8:H:49:ALA:HA	8:H:74:ILE:HD11	1.88	0.56
10:J:25:LYS:HG3	53:3:923:A:H5'	1.87	0.56
17:Q:50:LYS:NZ	17:Q:51:VAL:O	2.39	0.56
28:c:63:PRO:O	28:c:67:HIS:N	2.39	0.56
31:f:59:ASP:OD1	31:f:59:ASP:N	2.37	0.56
40:p:88:ARG:HD3	40:p:112:ARG:HD3	1.86	0.56
51:1:687:C:H2'	51:1:688:U:C5'	2.36	0.56
51:1:1740:G:H2'	51:1:1741:C:C6	2.41	0.56
52:2:4:C:H6	52:2:4:C:H5'	1.71	0.56
53:3:1513:A:H2'	53:3:1514:G:H8	1.71	0.56
58:B1:638:SER:OG	58:B1:639:VAL:N	2.36	0.56
58:B1:804:ALA:HA	58:B1:1259:GLN:HG3	1.88	0.56
8:H:32:LEU:HD13	19:S:92:ILE:HD11	1.88	0.56
26:Z:48:LYS:HB3	53:3:723:U:C5	2.41	0.56
47:w:35:ARG:HH21	51:1:2355:G:H1'	1.70	0.56
51:1:683:U:H3	51:1:794:A:H61	1.53	0.56
51:1:1827:U:C2'	51:1:1828:G:H5'	2.35	0.56
51:1:2317:A:H2'	51:1:2318:G:O4'	2.06	0.56
53:3:301:G:H2'	53:3:302:G:C8	2.41	0.56
53:3:1401:G:H2'	53:3:1402:C:O4'	2.06	0.56
58:B1:741:ALA:O	58:B1:762:ASN:ND2	2.38	0.56
10:J:120:HIS:CE1	10:J:121:ASN:HD21	2.23	0.56
14:N:83:THR:HG21	14:N:102:PHE:HB3	1.88	0.56
29:d:112:LEU:HD22	29:d:117:ARG:HB3	1.88	0.56
46:v:72:VAL:HA	46:v:94:ALA:H	1.71	0.56
51:1:881:G:H2'	51:1:882:G:H8	1.71	0.56
51:1:2796:U:H3	51:1:2799:A:H61	1.53	0.56
52:2:105:G:H2'	52:2:106:G:H8	1.71	0.56
53:3:560:A:H5'	53:3:566:G:N2	2.21	0.56
53:3:1093:A:C2'	53:3:1094:G:H5'	2.36	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:K:89:VAL:HG23	53:3:737:C:H5'	1.89	0.55
30:e:32:LYS:HB3	30:e:91:ARG:HE	1.71	0.55
45:u:32:LYS:HB3	45:u:63:ALA:HB1	1.87	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
51:1:2508:G:C6	51:1:2582:G:O6	2.59	0.55
53:3:684:U:H2'	53:3:685:G:O4'	2.06	0.55
53:3:1525:G:O2'	53:3:1526:G:H5'	2.06	0.55
58:B1:241:VAL:O	58:B1:241:VAL:HG12	2.04	0.55
65:0:11:ARG:NH2	65:0:283:ILE:O	2.39	0.55
4:D:8:SER:OG	4:D:9:VAL:N	2.38	0.55
8:H:20:THR:HA	19:S:93:PRO:HB3	1.88	0.55
10:J:19:ARG:HG2	10:J:30:PHE:HB3	1.89	0.55
13:M:14:ARG:NH1	13:M:74:ILE:O	2.39	0.55
28:c:118:PHE:HD2	51:1:1654:A:C2	2.24	0.55
35:k:65:THR:HA	35:k:82:ASN:HA	1.88	0.55
47:w:33:ILE:HG22	47:w:34:VAL:HG23	1.88	0.55
51:1:1191:G:H2'	51:1:1192:G:H8	1.71	0.55
51:1:1255:U:OP1	51:1:1256:G:H5''	2.06	0.55
53:3:971:G:OP1	53:3:971:G:H3'	2.06	0.55
58:B1:1155:ILE:HG13	58:B1:1210:ILE:HB	1.89	0.55
5:E:43:LEU:HD11	51:1:2362:C:P	2.46	0.55
7:G:101:THR:HG22	53:3:1074:G:H4'	1.88	0.55
10:J:36:THR:OG1	10:J:37:VAL:N	2.38	0.55
13:M:74:ILE:HG22	13:M:128:VAL:HA	1.87	0.55
30:e:46:LYS:NZ	30:e:82:TYR:OH	2.40	0.55
51:1:146:A:H2'	51:1:147:C:C6	2.42	0.55
51:1:923:G:O2'	51:1:924:G:H5'	2.06	0.55
51:1:2207:C:O2'	51:1:2208:C:H5'	2.07	0.55
53:3:593:U:H2'	53:3:594:U:C6	2.41	0.55
53:3:1244:G:H2'	53:3:1245:C:C6	2.40	0.55
65:0:323:LYS:HB2	65:0:335:PHE:HB2	1.89	0.55
7:G:59:ILE:HG12	7:G:62:ARG:HH21	1.71	0.55
8:H:120:THR:HG23	8:H:188:ALA:HB2	1.87	0.55
12:L:32:ASP:HA	53:3:1350:A:O2'	2.06	0.55
14:N:11:ARG:NH1	14:N:106:ASP:O	2.39	0.55
28:c:119:ALA:O	51:1:1655:A:H4'	2.06	0.55
50:z:10:ARG:NH2	50:z:52:PHE:O	2.39	0.55
51:1:1403:A:H2'	51:1:1404:C:C6	2.42	0.55
51:1:1783:A:N1	51:1:2587:A:H2'	2.21	0.55
51:1:2299:U:H2'	51:1:2300:C:C6	2.42	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:B1:144:TYR:HE1	58:B1:162:GLU:CD	2.14	0.55
58:B1:833:GLU:HB2	58:B1:1242:ARG:NH1	2.22	0.55
65:0:225:SER:O	65:0:255:ARG:NH1	2.39	0.55
1:A:28:VAL:HG23	30:e:139:GLU:HA	1.88	0.55
12:L:91:ARG:O	12:L:95:ARG:CG	2.55	0.55
15:O:42:LEU:HD22	15:O:71:LEU:HB2	1.88	0.55
41:q:68:ALA:HB1	41:q:73:ILE:HG13	1.87	0.55
51:1:155:A:H2'	51:1:156:A:H8	1.72	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
59:B2:917:SER:O	59:B2:919:ARG:HG3	2.07	0.55
64:a:26:ALA:HB1	64:a:30:LEU:HB2	1.87	0.55
65:0:192:ASN:HB3	65:0:203:GLU:HB2	1.87	0.55
65:0:427:ASP:O	65:0:431:MET:N	2.39	0.55
3:C:21:THR:HG21	51:1:2419:U:H5''	1.89	0.55
30:e:56:LEU:HG	30:e:59:ILE:HD12	1.89	0.55
51:1:310:A:C2'	51:1:311:A:H5''	2.36	0.55
51:1:614:A:H5'	51:1:615:U:OP1	2.06	0.55
51:1:1257:C:O5'	51:1:1257:C:H6	1.90	0.55
51:1:2563:U:H2'	51:1:2564:A:H5''	1.88	0.55
53:3:46:G:H2'	53:3:366:A:H62	1.72	0.55
58:B1:799:ARG:HG2	58:B1:1325:PHE:HZ	1.72	0.55
59:B2:103:VAL:HB	59:B2:114:VAL:HG11	1.89	0.55
10:J:16:ALA:HB3	10:J:35:LEU:H	1.71	0.55
13:M:84:ILE:HD11	13:M:86:LYS:HG2	1.89	0.55
21:U:1:MET:HB2	53:3:135:C:N3	2.21	0.55
22:V:64:ARG:HB2	53:3:130:A:H8	1.70	0.55
33:i:53:PRO:HD2	33:i:77:VAL:HG21	1.87	0.55
51:1:1868:C:H2'	51:1:1869:G:C5'	2.35	0.55
53:3:596:A:H2'	53:3:597:G:O4'	2.07	0.55
53:3:1127:G:H2'	53:3:1128:C:C6	2.41	0.55
53:3:1348:U:H2'	53:3:1349:A:H5'	1.87	0.55
65:0:92:HIS:HD2	65:0:464:LEU:HD21	1.71	0.55
6:F:10:LEU:HD21	51:1:2477:U:C5	2.42	0.55
13:M:9:MET:HB2	13:M:32:LYS:HE2	1.87	0.55
27:b:6:LYS:HZ1	51:1:1695:G:H5'	1.71	0.55
27:b:204:LEU:HD21	27:b:213:ARG:HH21	1.72	0.55
29:d:44:ARG:HH12	51:1:1248:G:P	2.30	0.55
31:f:3:VAL:HG11	31:f:65:GLY:HA2	1.89	0.55
51:1:1343:G:H1'	51:1:1597:A:C4	2.42	0.55
51:1:2128:G:H5'	64:a:218:MET:HE1	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:539:A:H2'	53:3:540:G:H8	1.72	0.55
53:3:1096:C:H2'	53:3:1097:C:C6	2.41	0.55
53:3:1213:A:O2'	53:3:1214:C:H2'	2.06	0.55
59:B2:839:VAL:HG12	59:B2:1049:ILE:HG12	1.87	0.55
65:0:535:GLU:HB2	65:0:575:GLY:HA2	1.88	0.55
41:q:5:ARG:NH2	51:1:1251:C:OP2	2.40	0.55
42:r:76:LYS:NZ	42:r:85:LYS:O	2.40	0.55
51:1:305:C:H2'	51:1:306:U:C6	2.42	0.55
64:a:189:LEU:HA	64:a:192:LEU:HG	1.88	0.55
12:L:111:GLY:HA2	12:L:118:ARG:HG2	1.88	0.55
21:U:5:ARG:NH2	21:U:23:ASP:O	2.40	0.55
27:b:257:ARG:HD3	51:1:1799:G:OP1	2.07	0.55
36:l:29:LYS:HG2	51:1:566:U:OP1	2.07	0.55
40:p:15:ASP:N	40:p:15:ASP:OD1	2.39	0.55
51:1:286:U:H2'	51:1:287:G:H8	1.72	0.55
51:1:310:A:H2'	51:1:311:A:H5''	1.89	0.55
51:1:605:G:H21	51:1:658:U:H5'	1.72	0.55
51:1:849:A:H2'	51:1:850:U:H6	1.68	0.55
51:1:2048:G:C2'	51:1:2049:G:H5''	2.37	0.55
9:I:96:ARG:NH2	9:I:98:ASP:OD2	2.39	0.54
27:b:140:VAL:HG12	27:b:191:LEU:HA	1.89	0.54
33:i:38:CYS:O	33:i:42:ASN:ND2	2.40	0.54
34:j:6:ALA:HB3	34:j:48:VAL:HG11	1.89	0.54
39:o:33:ARG:HD3	52:2:52:A:N7	2.22	0.54
51:1:142:A:H2'	51:1:143:C:C6	2.42	0.54
51:1:171:U:H2'	51:1:172:A:C8	2.42	0.54
51:1:1063:G:OP2	51:1:1070:A:H4'	2.07	0.54
51:1:1936:A:H2	51:1:1943:U:H3	1.51	0.54
52:2:78:A:H62	52:2:98:G:N2	1.97	0.54
53:3:357:G:OP1	53:3:367:U:H5''	2.06	0.54
53:3:1347:G:H22	53:3:1373:G:H2'	1.72	0.54
58:B1:145:VAL:HG23	58:B1:159:ILE:HG22	1.89	0.54
59:B2:29:SER:O	59:B2:33:ASP:HB2	2.08	0.54
6:F:5:ALA:HB3	51:1:2466:C:H5'	1.88	0.54
26:Z:13:VAL:HG13	26:Z:15:LEU:HG	1.90	0.54
39:o:2:ASP:N	52:2:59:A:HO2'	2.04	0.54
41:q:24:TYR:OH	51:1:2020:A:O3'	2.25	0.54
51:1:486:C:H42	51:1:494:G:H1	1.56	0.54
53:3:350:G:O2'	53:3:351:G:H5'	2.08	0.54
53:3:1414:U:H2'	53:3:1415:G:C8	2.43	0.54
59:B2:1117:LEU:HD12	59:B2:1195:ILE:HG12	1.90	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
65:0:103:MET:HB3	65:0:135:VAL:HG21	1.89	0.54
65:0:416:ILE:N	65:0:460:GLY:O	2.40	0.54
33:i:11:GLN:HB2	33:i:56:VAL:HG22	1.88	0.54
38:n:2:ARG:NH1	51:1:2820:A:OP2	2.40	0.54
38:n:98:LEU:HB2	38:n:112:TYR:HB2	1.88	0.54
44:t:14:PRO:HA	44:t:32:LEU:HA	1.90	0.54
51:1:471:A:H2'	51:1:472:A:O4'	2.08	0.54
51:1:1040:A:H2'	51:1:1041:G:H8	1.72	0.54
51:1:1652:A:H2'	51:1:1653:G:O4'	2.07	0.54
51:1:2726:A:O2'	51:1:2727:A:H5'	2.06	0.54
53:3:459:A:H2'	53:3:460:A:C8	2.42	0.54
53:3:866:C:C4	53:3:867:G:H1'	2.41	0.54
53:3:1042:A:H2'	53:3:1043:G:C4'	2.38	0.54
59:B2:811:ASN:HA	59:B2:815:SER:HB2	1.90	0.54
3:C:40:PRO:HG3	51:1:2348:U:H4'	1.88	0.54
8:H:26:LYS:HE3	53:3:1256:A:H3'	1.89	0.54
10:J:153:ALA:HB1	10:J:160:VAL:HA	1.90	0.54
11:K:46:GLN:NE2	11:K:47:LEU:O	2.39	0.54
15:O:43:PRO:HA	53:3:1151:A:H5'	1.89	0.54
28:c:59:ARG:O	28:c:59:ARG:NH2	2.37	0.54
29:d:147:LEU:HB3	29:d:186:VAL:HG12	1.88	0.54
51:1:490:C:H5'	51:1:491:G:OP2	2.06	0.54
51:1:1024:G:H3'	51:1:1025:G:C5'	2.37	0.54
51:1:1836:C:C2'	51:1:1837:C:H5'	2.37	0.54
51:1:2496:C:C2'	51:1:2497:A:H5'	2.36	0.54
53:3:874:G:H2'	53:3:875:U:C6	2.42	0.54
53:3:1091:U:H2'	53:3:1093:A:OP2	2.07	0.54
53:3:1390:U:H2'	53:3:1391:U:C6	2.42	0.54
58:B1:352:ARG:HD2	59:B2:1268:GLN:HE21	1.68	0.54
59:B2:633:LEU:HD13	59:B2:644:LEU:HD23	1.89	0.54
16:P:99:LEU:O	16:P:103:GLY:N	2.38	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
51:1:1809:A:H2'	51:1:1810:A:C8	2.42	0.54
53:3:1105:A:H2'	53:3:1106:G:C8	2.43	0.54
58:B1:508:LEU:HD22	59:B2:1101:LEU:HD21	1.88	0.54
8:H:21:TRP:HD1	8:H:57:GLU:HA	1.71	0.54
9:I:141:VAL:HA	9:I:180:THR:HA	1.88	0.54
19:S:9:GLU:HA	19:S:12:ARG:HB2	1.89	0.54
30:e:127:TYR:HB3	30:e:155:ILE:HG13	1.89	0.54
48:x:2:ARG:HG2	48:x:32:LEU:CD1	2.37	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:130:C:H2'	51:1:131:A:O4'	2.07	0.54
51:1:2813:A:H2'	51:1:2814:A:C8	2.42	0.54
53:3:1042:A:H2'	53:3:1043:G:O4'	2.08	0.54
53:3:1073:U:H2'	53:3:1074:G:H8	1.70	0.54
58:B1:58:CYS:SG	58:B1:59:ALA:N	2.80	0.54
12:L:91:ARG:NE	12:L:91:ARG:HA	2.22	0.54
26:Z:66:ARG:NH1	53:3:1098:C:O2'	2.38	0.54
51:1:851:C:H2'	51:1:852:U:C6	2.42	0.54
51:1:1889:A:H2'	51:1:1890:A:H8	1.73	0.54
58:B1:39:LYS:O	58:B1:273:ILE:HG23	2.08	0.54
59:B2:985:GLU:HB3	59:B2:988:LYS:HB2	1.88	0.54
65:0:171:LEU:HB2	65:0:183:VAL:HB	1.88	0.54
14:N:104:THR:HG22	53:3:1180:A:OP1	2.08	0.54
51:1:121:G:H4'	51:1:149:A:H5'	1.90	0.54
51:1:207:A:H2'	51:1:208:C:O4'	2.07	0.54
51:1:1697:G:C3'	51:1:1698:A:H5''	2.36	0.54
53:3:1013:G:N2	53:3:1015:G:H3'	2.23	0.54
53:3:1399:C:H4'	53:3:1400:C:H3'	1.88	0.54
58:B1:1175:LEU:HD22	58:B1:1190:ILE:HD11	1.88	0.54
65:0:617:MET:HG2	65:0:684:PHE:HD1	1.72	0.54
65:0:641:MET:HB3	65:0:657:GLU:HB2	1.90	0.54
25:Y:14:GLU:O	25:Y:18:LYS:NZ	2.41	0.54
27:b:106:PRO:HG2	27:b:109:LEU:HB2	1.90	0.54
27:b:206:LYS:HE3	27:b:209:ALA:HB2	1.89	0.54
28:c:146:ILE:O	28:c:159:LYS:NZ	2.41	0.54
29:d:70:SER:C	51:1:674:G:H5''	2.33	0.54
29:d:141:MET:HB2	29:d:143:LEU:HD11	1.90	0.54
33:i:9:LYS:HD2	51:1:1059:G:OP2	2.07	0.54
39:o:15:ARG:NH2	39:o:95:SER:OG	2.39	0.54
51:1:1192:G:O2'	51:1:1193:G:H5'	2.08	0.54
51:1:1659:G:H2'	51:1:1660:G:O4'	2.08	0.54
51:1:2373:G:H2'	51:1:2374:C:C6	2.43	0.54
58:B1:759:ILE:HG23	58:B1:771:GLN:HB3	1.89	0.54
59:B2:684:ASN:OD1	59:B2:687:ARG:NH2	2.41	0.54
60:W0:3:ARG:NH1	60:W0:55:GLU:OE2	2.40	0.54
65:0:393:THR:OG1	65:0:408:ARG:NH1	2.40	0.54
65:0:525:LEU:HA	65:0:574:MET:HA	1.89	0.54
21:U:16:PHE:CE2	53:3:625:U:H5''	2.42	0.54
23:W:49:LYS:HB2	53:3:835:U:OP1	2.08	0.54
30:e:120:SER:HA	51:1:2303:G:H4'	1.89	0.54
51:1:1127:A:C2'	51:1:1128:G:H5''	2.37	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1791:A:O2'	51:1:1792:G:H5'	2.07	0.54
51:1:1905:C:H2'	51:1:1930:G:C8	2.42	0.54
53:3:690:G:H2'	53:3:691:G:O4'	2.08	0.54
53:3:1325:C:H2'	53:3:1326:U:C6	2.42	0.54
58:B1:814:CYS:SG	58:B1:883:ARG:NH2	2.81	0.54
59:B2:243:PRO:HB2	59:B2:274:ILE:HG23	1.90	0.54
65:0:446:ARG:HH11	65:0:447:VAL:H	1.54	0.54
8:H:58:ARG:HA	8:H:63:ILE:HA	1.90	0.53
13:M:105:THR:HG22	13:M:107:LYS:H	1.73	0.53
32:g:29:PHE:HB2	51:1:2198:A:C2	2.43	0.53
37:m:127:LYS:HE2	51:1:1030:C:OP2	2.08	0.53
51:1:1614:A:H2'	51:1:1615:C:H5'	1.90	0.53
51:1:2155:U:OP1	51:1:2157:G:N2	2.41	0.53
53:3:162:A:H2'	53:3:163:C:H5'	1.88	0.53
53:3:1093:A:C6	53:3:1095:U:H1'	2.44	0.53
53:3:1271:A:C5'	53:3:1314:C:H5''	2.39	0.53
53:3:1420:U:H3	53:3:1480:A:H2	1.54	0.53
57:A2:29:GLU:HG3	57:A2:200:LYS:HG3	1.88	0.53
58:B1:78:LEU:O	58:B1:78:LEU:HD13	2.09	0.53
65:0:632:ILE:HA	65:0:635:LEU:HB3	1.89	0.53
9:I:205:LYS:HE2	53:3:8:A:C6	2.42	0.53
27:b:208:GLY:HA2	27:b:211:ARG:HB3	1.89	0.53
38:n:11:ASN:N	51:1:1653:G:O6	2.37	0.53
39:o:30:ARG:HG3	39:o:102:ARG:HD2	1.89	0.53
45:u:65:GLN:OE1	51:1:328:U:H4'	2.07	0.53
51:1:231:A:H2'	51:1:232:G:O4'	2.08	0.53
51:1:2375:G:C2'	51:1:2376:A:H5''	2.38	0.53
53:3:20:U:H2'	53:3:21:G:O4'	2.08	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	1.56	0.53
53:3:1234:C:H1'	53:3:1364:U:O2	2.08	0.53
58:B1:111:THR:HG22	58:B1:300:GLN:NE2	2.23	0.53
65:0:334:THR:OG1	65:0:385:ALA:N	2.40	0.53
7:G:20:ARG:HD2	53:3:831:A:C5'	2.39	0.53
11:K:11:HIS:ND1	11:K:14:GLN:OE1	2.41	0.53
12:L:53:SER:HB2	12:L:55:LYS:HE3	1.90	0.53
38:n:60:VAL:HG12	38:n:64:ARG:HH22	1.73	0.53
51:1:534:U:H3	51:1:559:G:H1	1.55	0.53
51:1:737:C:H2'	51:1:738:G:H8	1.72	0.53
51:1:1319:C:H2'	51:1:1320:C:H6	1.73	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1507:A:H61	53:3:1528:U:H3	1.56	0.53
58:B1:30:ILE:HG21	58:B1:241:VAL:O	2.08	0.53
58:B1:746:LEU:HG	58:B1:758:PRO:HG3	1.90	0.53
64:a:11:ILE:HG13	64:a:219:GLY:HA3	1.91	0.53
51:1:2092:U:C5	51:1:2199:A:H2	2.26	0.53
53:3:337:G:H2'	53:3:338:A:H8	1.74	0.53
58:B1:800:LEU:HB3	58:B1:920:ALA:HB1	1.89	0.53
59:B2:360:LEU:HD13	59:B2:378:ARG:HH11	1.72	0.53
64:a:194:VAL:HA	64:a:197:LYS:HB2	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
20:T:2:LEU:HD11	20:T:30:LEU:HD11	1.90	0.53
25:Y:14:GLU:OE2	25:Y:18:LYS:NZ	2.41	0.53
32:g:25:TYR:HB2	51:1:2093:G:O3'	2.08	0.53
33:i:92:PRO:HB3	33:i:134:SER:HA	1.89	0.53
51:1:1783:A:C6	51:1:2587:A:C4	2.96	0.53
51:1:2048:G:H3'	51:1:2049:G:H5''	1.91	0.53
53:3:952:U:H2'	53:3:953:G:H8	1.74	0.53
4:D:11:LYS:HE2	51:1:770:G:OP2	2.09	0.53
7:G:10:LYS:HG2	7:G:211:LEU:HD21	1.89	0.53
7:G:210:THR:HA	7:G:213:LEU:HB2	1.90	0.53
10:J:154:ALA:O	10:J:158:LYS:NZ	2.41	0.53
17:Q:120:ARG:HG2	53:3:37:U:H5'	1.89	0.53
22:V:49:ASN:ND2	22:V:51:GLU:OE2	2.41	0.53
24:X:4:LEU:HG	24:X:6:LYS:H	1.72	0.53
51:1:351:C:H2'	51:1:352:A:H8	1.73	0.53
51:1:533:G:H1	51:1:560:C:H42	1.56	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
51:1:2276:G:O2'	51:1:2277:G:H5'	2.09	0.53
51:1:2516:A:O2'	51:1:2517:C:H5'	2.08	0.53
57:A2:28:LEU:HD22	57:A2:201:LEU:HD23	1.90	0.53
57:A2:100:LEU:HD23	57:A2:115:ILE:HG21	1.89	0.53
58:B1:209:ASN:HA	58:B1:214:ARG:HH21	1.74	0.53
65:0:327:ASP:O	65:0:437:ARG:NH2	2.42	0.53
6:F:24:ARG:HE	6:F:36:ARG:HG3	1.73	0.53
8:H:179:ALA:HB1	8:H:202:PHE:HE1	1.73	0.53
10:J:53:ARG:CZ	53:3:1071:C:H5'	2.39	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
16:P:124:LYS:HA	26:Z:34:ARG:HE	1.73	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
40:p:19:PHE:HE2	40:p:46:VAL:HG21	1.74	0.53
46:v:73:LYS:O	46:v:92:VAL:N	2.41	0.53
51:1:1550:C:H2'	51:1:1551:A:H8	1.73	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
53:3:1421:G:H3'	53:3:1422:G:H5''	1.90	0.53
58:B1:99:ARG:HG3	58:B1:99:ARG:HH11	1.73	0.53
58:B1:832:LYS:HB3	58:B1:1242:ARG:NH1	2.24	0.53
25:Y:67:HIS:HD2	25:Y:69:ASN:HB2	1.73	0.53
29:d:45:ALA:HB3	51:1:38:A:H4'	1.91	0.53
29:d:63:LYS:HE3	51:1:2060:A:H3'	1.91	0.53
41:q:48:ASP:HA	41:q:51:GLN:HB3	1.89	0.53
51:1:859:G:N2	51:1:916:G:H2'	2.23	0.53
51:1:2638:G:H1	51:1:2775:G:H2'	1.74	0.53
53:3:36:C:H2'	53:3:37:U:H6	1.73	0.53
53:3:1402:C:H2'	53:3:1403:C:O4'	2.08	0.53
58:B1:68:TYR:CA	58:B1:75:TYR:HE2	2.22	0.53
8:H:18:ASN:HA	8:H:55:VAL:HG22	1.91	0.53
32:g:2:GLN:NE2	32:g:18:GLN:O	2.40	0.53
36:l:29:LYS:HA	51:1:810:U:C5	2.44	0.53
51:1:838:C:H2'	51:1:839:U:C6	2.44	0.53
51:1:1229:C:H2'	51:1:1230:A:H8	1.74	0.53
51:1:1303:G:H2'	51:1:1304:A:H8	1.74	0.53
51:1:1592:C:H2'	51:1:1593:A:C8	2.44	0.53
51:1:1656:C:H2'	51:1:1657:U:C6	2.44	0.53
53:3:299:G:N2	53:3:565:U:H3	2.06	0.53
57:A1:47:LEU:HD23	57:A1:51:MET:HG3	1.89	0.53
58:B1:111:THR:HG23	58:B1:300:GLN:NE2	2.24	0.53
58:B1:785:ASP:O	58:B1:789:LYS:HB2	2.08	0.53
65:0:223:ILE:HG13	65:0:237:TYR:HE1	1.73	0.53
7:G:68:PHE:HA	7:G:161:PHE:HB3	1.90	0.53
9:I:13:ARG:NH2	9:I:37:PRO:O	2.42	0.53
19:S:8:ARG:HB2	19:S:62:ARG:HH12	1.74	0.53
38:n:8:ARG:NH2	38:n:43:GLU:OE1	2.42	0.53
49:y:21:LEU:HA	49:y:25:GLN:HB3	1.90	0.53
51:1:351:C:H2'	51:1:352:A:C8	2.44	0.53
51:1:1361:G:H2'	51:1:1362:C:H6	1.74	0.53
51:1:2699:C:H2'	51:1:2700:A:C8	2.44	0.53
53:3:1077:G:N2	53:3:1079:G:H3'	2.24	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:M:9:MET:HE1	13:M:35:ILE:HD13	1.91	0.52
14:N:64:ILE:HG21	14:N:78:ILE:HG13	1.92	0.52
22:V:46:HIS:HB2	22:V:70:LYS:HD3	1.91	0.52
28:c:144:GLY:HA2	51:1:2578:G:H1'	1.91	0.52
51:1:133:U:H3	51:1:146:A:H61	1.57	0.52
51:1:772:C:H5''	51:1:1356:G:H5'	1.90	0.52
51:1:1433:A:H2'	51:1:1434:A:C1'	2.38	0.52
53:3:36:C:H2'	53:3:37:U:C6	2.44	0.52
53:3:1479:C:H2'	53:3:1480:A:O4'	2.09	0.52
58:B1:290:ILE:HG21	62:NG:93:ILE:O	2.09	0.52
58:B1:850:LYS:HB2	58:B1:857:LEU:HB2	1.91	0.52
5:E:48:MET:SD	5:E:48:MET:N	2.79	0.52
27:b:231:HIS:ND1	51:1:1826:G:OP1	2.38	0.52
31:f:2:ARG:HG2	51:1:2751:G:C4	2.43	0.52
51:1:1065:U:H3'	51:1:1066:U:H5''	1.91	0.52
51:1:1352:U:O2'	51:1:1353:A:H5'	2.08	0.52
51:1:1655:A:H2'	51:1:1656:C:H5'	1.91	0.52
51:1:2125:G:H5'	64:a:39:VAL:C	2.33	0.52
51:1:2345:G:N3	51:1:2381:A:H2'	2.24	0.52
52:2:33:G:H2'	52:2:34:A:O4'	2.09	0.52
53:3:358:U:H2'	53:3:359:G:C8	2.44	0.52
53:3:369:G:H22	53:3:393:A:H1'	1.75	0.52
53:3:1064:G:O3'	53:3:1065:U:H4'	2.09	0.52
4:D:13:ASN:HB3	51:1:125:A:C4'	2.39	0.52
15:O:15:HIS:CD2	53:3:1152:A:H5'	2.44	0.52
21:U:55:ASP:OD1	21:U:55:ASP:N	2.41	0.52
30:e:33:ILE:HD12	30:e:155:ILE:HG22	1.90	0.52
36:l:85:VAL:HG22	36:l:86:GLU:HG2	1.92	0.52
42:r:29:THR:HA	42:r:63:VAL:HG23	1.91	0.52
43:s:4:ILE:HG23	43:s:106:VAL:HG22	1.91	0.52
51:1:2124:G:N1	51:1:2175:C:O2	2.42	0.52
52:2:30:C:C2'	52:2:31:C:H5'	2.40	0.52
52:2:102:G:H2'	52:2:103:U:O4'	2.08	0.52
53:3:67:C:H2'	53:3:68:G:C8	2.44	0.52
53:3:224:U:H2'	53:3:225:C:C6	2.44	0.52
64:a:63:THR:HG21	64:a:195:ALA:HB1	1.90	0.52
65:0:415:VAL:H	65:0:461:MET:HA	1.73	0.52
7:G:67:LEU:HD11	7:G:157:PRO:HG3	1.91	0.52
12:L:12:LEU:HD13	53:3:1374:A:OP1	2.09	0.52
14:N:45:MET:HE3	14:N:49:GLN:HA	1.90	0.52
19:S:82:LYS:HA	19:S:85:GLU:HB2	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:m:27:SER:OG	37:m:66:ARG:NH1	2.42	0.52
38:n:39:PRO:CG	51:1:1651:G:H5'	2.33	0.52
38:n:103:ARG:HB3	38:n:108:ALA:H	1.74	0.52
51:1:958:U:H2'	52:2:89:U:C1'	2.39	0.52
51:1:2694:G:H2'	51:1:2695:U:O4'	2.09	0.52
53:3:1169:A:H2'	53:3:1170:A:O4'	2.09	0.52
53:3:1406:U:H2'	53:3:1407:C:O4'	2.10	0.52
58:B1:201:LEU:HD12	58:B1:224:LEU:HD12	1.92	0.52
58:B1:205:LEU:HG	58:B1:217:LEU:HB3	1.90	0.52
59:B2:628:HIS:HB3	59:B2:647:ARG:HH21	1.74	0.52
65:0:136:PRO:HG2	65:0:287:PRO:HG3	1.90	0.52
12:L:92:PRO:HA	12:L:95:ARG:CG	2.37	0.52
17:Q:6:LEU:HD21	17:Q:11:ARG:HH21	1.73	0.52
22:V:11:VAL:HG23	22:V:55:GLY:H	1.74	0.52
28:c:15:PHE:HB3	40:p:78:PRO:HD3	1.89	0.52
30:e:23:SER:HB3	30:e:26:GLN:HB2	1.91	0.52
32:g:2:GLN:HB3	32:g:18:GLN:HB3	1.91	0.52
33:i:101:SER:OG	33:i:102:ARG:N	2.42	0.52
35:k:21:CYS:HA	35:k:41:ILE:HA	1.92	0.52
36:l:29:LYS:HE3	51:1:566:U:H5''	1.90	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
49:y:44:LYS:HE2	49:y:48:ARG:HG3	1.91	0.52
51:1:203:A:H3'	51:1:204:A:C5'	2.39	0.52
51:1:803:U:O2'	51:1:804:A:H5'	2.09	0.52
51:1:2507:C:H6	51:1:2507:C:O5'	1.93	0.52
53:3:90:C:H2'	53:3:91:U:C6	2.45	0.52
53:3:737:C:H2'	53:3:738:C:H6	1.74	0.52
16:P:87:GLY:O	16:P:92:ARG:NH1	2.43	0.52
35:k:64:ARG:O	35:k:83:ALA:N	2.42	0.52
51:1:277:G:H4'	51:1:278:A:C8	2.44	0.52
51:1:1082:U:H3	51:1:1086:A:H2	1.56	0.52
51:1:1536:C:H4'	51:1:1537:G:C2	2.44	0.52
51:1:1635:A:H2	51:1:1761:C:O2'	1.92	0.52
51:1:1864:U:H5''	51:1:2410:G:O2'	2.10	0.52
51:1:2402:U:O2'	51:1:2403:C:H5''	2.09	0.52
53:3:112:G:N2	53:3:354:G:H5'	2.02	0.52
14:N:11:ARG:HH11	14:N:105:ARG:HH12	1.57	0.52
27:b:36:ASN:HB3	27:b:38:LYS:HG2	1.91	0.52
29:d:133:LEU:O	29:d:136:GLN:NE2	2.40	0.52
51:1:25:U:H2'	51:1:26:G:O4'	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1674:G:N2	51:1:1677:A:H61	2.06	0.52
51:1:1903:G:C2	51:1:1904:G:C8	2.98	0.52
53:3:722:G:H1	53:3:733:G:H1	1.56	0.52
53:3:1274:A:C2'	53:3:1275:A:H5''	2.39	0.52
57:A1:205:MET:HE3	57:A1:213:PRO:HB3	1.91	0.52
58:B1:144:TYR:CE1	58:B1:162:GLU:CD	2.88	0.52
65:0:217:GLU:O	65:0:220:GLN:NE2	2.41	0.52
65:0:614:GLU:CD	65:0:659:PRO:HB3	2.34	0.52
8:H:181:ILE:HD11	8:H:200:TRP:HB3	1.92	0.52
18:R:89:ARG:NH2	18:R:95:PRO:O	2.34	0.52
27:b:7:PRO:HB3	27:b:13:ARG:HA	1.92	0.52
51:1:2061:G:H8	51:1:2501:C:H4'	1.73	0.52
53:3:153:C:H2'	53:3:154:U:C4'	2.39	0.52
53:3:1366:C:H2'	53:3:1367:C:H6	1.71	0.52
57:A2:43:LEU:HD13	57:A2:217:ILE:HD11	1.90	0.52
58:B1:99:ARG:HA	58:B1:248:ASP:HB2	1.92	0.52
58:B1:112:ALA:HA	58:B1:238:ILE:HA	1.91	0.52
58:B1:215:LYS:HA	58:B1:218:THR:HG22	1.92	0.52
62:NG:161:SER:HA	62:NG:170:PRO:HA	1.92	0.52
65:0:53:MET:O	65:0:57:GLN:NE2	2.42	0.52
8:H:9:ILE:HG13	8:H:177:LEU:HD21	1.91	0.52
12:L:114:SER:O	12:L:118:ARG:N	2.38	0.52
14:N:114:LYS:HE3	53:3:1188:A:P	2.49	0.52
14:N:122:ARG:NH1	53:3:1350:A:OP1	2.43	0.52
32:g:94:ILE:HD12	32:g:99:ILE:HD13	1.91	0.52
34:j:135:GLN:HE22	51:1:7:G:H1'	1.75	0.52
51:1:155:A:H2'	51:1:156:A:C8	2.44	0.52
51:1:1767:G:O5'	51:1:1767:G:H8	1.93	0.52
51:1:2577:A:H2'	51:1:2614:A:H61	1.75	0.52
53:3:265:G:H2'	53:3:267:C:H5	1.75	0.52
53:3:731:G:O2'	53:3:732:C:H5'	2.10	0.52
53:3:1225:A:H2'	53:3:1225:A:N3	2.25	0.52
58:B1:633:ALA:HB2	59:B2:808:ASN:N	2.19	0.52
59:B2:125:GLY:HA2	59:B2:499:SER:HB2	1.92	0.52
59:B2:786:GLY:N	59:B2:789:THR:OG1	2.41	0.52
64:a:50:ILE:HG12	64:a:169:GLY:HA2	1.90	0.52
65:0:107:ASP:OD1	65:0:107:ASP:N	2.40	0.52
11:K:47:LEU:HD21	11:K:55:HIS:HA	1.92	0.52
14:N:35:GLU:HA	14:N:39:GLY:HA3	1.92	0.52
29:d:1:MET:N	29:d:14:VAL:O	2.35	0.52
30:e:32:LYS:O	30:e:156:THR:OG1	2.27	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:o:29:HIS:HB3	39:o:36:TYR:HD2	1.74	0.52
39:o:110:ALA:HB1	39:o:115:LEU:HD12	1.92	0.52
41:q:57:ARG:NH2	51:1:1154:G:OP2	2.43	0.52
51:1:1357:C:H42	51:1:1374:G:H1	1.57	0.52
51:1:1409:U:H2'	51:1:1410:G:C8	2.45	0.52
51:1:1841:U:H2'	51:1:1842:G:H8	1.73	0.52
51:1:1954:G:H1	51:1:1986:C:H5''	1.76	0.52
51:1:2272:U:H5''	51:1:2273:A:OP1	2.10	0.52
53:3:977:A:H2'	53:3:977:A:N3	2.25	0.52
53:3:1485:U:O2'	53:3:1486:G:H5'	2.10	0.52
58:B1:975:ILE:HD11	58:B1:1003:LEU:HD11	1.91	0.52
65:0:473:MET:HA	65:0:477:PHE:HB2	1.91	0.52
8:H:38:VAL:O	8:H:42:LEU:N	2.43	0.51
9:I:160:LEU:HD21	9:I:164:ARG:HH21	1.75	0.51
16:P:17:ASP:N	16:P:17:ASP:OD1	2.42	0.51
17:Q:28:GLN:HB2	53:3:363:A:H1'	1.93	0.51
36:l:9:ALA:HB3	36:l:12:SER:HB3	1.91	0.51
51:1:745:G:H2'	51:1:746:U:O4'	2.09	0.51
51:1:1187:G:O5'	51:1:1187:G:H8	1.93	0.51
51:1:1332:G:N3	51:1:1332:G:H5'	2.25	0.51
51:1:1710:G:H2'	51:1:1711:A:H8	1.74	0.51
51:1:2022:U:O2'	51:1:2617:U:H5'	2.10	0.51
51:1:2656:U:H2'	51:1:2657:A:H8	1.75	0.51
53:3:955:U:H2'	53:3:956:U:H6	1.74	0.51
57:A1:100:LEU:HD21	57:A1:121:VAL:HG11	1.90	0.51
59:B2:974:ARG:HD2	59:B2:1014:LEU:HD21	1.92	0.51
28:c:161:MET:HE1	51:1:2050:C:H1'	1.91	0.51
30:e:117:SER:HB3	30:e:177:ARG:HH21	1.76	0.51
51:1:526:A:N6	51:1:2626:C:H4'	2.25	0.51
51:1:532:A:H2'	51:1:532:A:N3	2.24	0.51
51:1:622:G:O2'	51:1:623:C:H5'	2.10	0.51
51:1:1470:A:H61	51:1:1521:G:H1'	1.75	0.51
53:3:19:A:H1'	53:3:864:A:C2	2.45	0.51
53:3:49:U:O2'	53:3:50:A:H2'	2.10	0.51
53:3:148:G:H1	53:3:174:A:H61	1.58	0.51
53:3:174:A:C2'	53:3:175:C:H5'	2.41	0.51
53:3:1496:C:H2'	53:3:1497:G:O4'	2.10	0.51
58:B1:375:GLU:HG2	59:B2:1245:ALA:O	2.10	0.51
59:B2:246:LEU:HB3	59:B2:269:ILE:HD13	1.91	0.51
59:B2:255:ILE:HB	59:B2:263:VAL:HB	1.92	0.51
1:A:26:SER:OG	30:e:139:GLU:OE2	2.28	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:24:VAL:HG12	53:3:409:U:H5''	1.92	0.51
10:J:133:ILE:HD11	53:3:1079:G:H5'	1.92	0.51
51:1:755:U:H2'	51:1:756:A:H8	1.75	0.51
51:1:1268:A:H2'	51:1:1269:A:H8	1.74	0.51
51:1:1505:A:H2'	51:1:1506:U:O4'	2.10	0.51
51:1:2177:C:O2	64:a:172:HIS:CE1	2.61	0.51
51:1:2660:A:OP1	65:0:675:LYS:HD2	2.10	0.51
53:3:135:C:H2'	53:3:136:C:H5'	1.92	0.51
53:3:207:C:C3'	53:3:208:U:H5''	2.40	0.51
53:3:218:U:H2'	53:3:219:U:O4'	2.09	0.51
53:3:884:U:OP2	53:3:884:U:H6	1.92	0.51
53:3:1239:A:H5''	53:3:1240:U:C5	2.44	0.51
57:A2:140:ILE:HD12	57:A2:142:MET:HE3	1.91	0.51
65:0:192:ASN:ND2	65:0:203:GLU:OE1	2.43	0.51
65:0:295:ILE:HG13	65:0:309:ARG:HB2	1.91	0.51
9:I:18:LEU:HB3	9:I:20:LEU:HD22	1.91	0.51
24:X:35:ARG:HB2	53:3:1320:C:N4	2.25	0.51
28:c:133:THR:OG1	28:c:134:HIS:N	2.38	0.51
38:n:64:ARG:HD3	51:1:2706:A:O2'	2.10	0.51
51:1:44:A:H2'	51:1:45:G:H5'	1.93	0.51
51:1:1394:U:H4'	51:1:1603:A:H4'	1.92	0.51
51:1:2248:C:H3'	51:1:2249:U:C6	2.46	0.51
58:B1:412:LEU:HD23	58:B1:416:ILE:HG13	1.92	0.51
2:B:6:LYS:HZ3	51:1:1262:A:H2	1.56	0.51
2:B:54:ILE:HG13	2:B:56:LYS:H	1.76	0.51
7:G:72:LYS:HZ2	7:G:74:ALA:HB3	1.76	0.51
14:N:33:SER:OG	14:N:34:LEU:N	2.43	0.51
19:S:7:ALA:HB1	53:3:994:A:O2'	2.09	0.51
29:d:67:ARG:O	51:1:1255:U:H5	1.94	0.51
51:1:413:C:N4	51:1:2410:G:H1	1.96	0.51
53:3:437:U:H2'	53:3:438:U:H5'	1.91	0.51
53:3:515:G:O2'	53:3:516:U:H5'	2.10	0.51
58:B1:390:LEU:N	58:B1:390:LEU:CD1	2.73	0.51
29:d:76:PRO:CA	29:d:82:GLY:HA3	2.35	0.51
42:r:61:ALA:HB1	42:r:96:VAL:HB	1.92	0.51
51:1:12:U:H2'	51:1:13:A:H5'	1.92	0.51
51:1:178:G:O2'	51:1:179:C:H5'	2.10	0.51
51:1:216:A:H2'	51:1:217:A:O4'	2.11	0.51
51:1:233:A:H2'	51:1:234:U:H5'	1.92	0.51
51:1:543:G:H3'	51:1:544:C:H5''	1.92	0.51
53:3:302:G:H2'	53:3:303:A:H8	1.74	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1251:A:H2'	53:3:1252:A:C8	2.46	0.51
5:E:38:LYS:HG3	5:E:41:ARG:HH22	1.75	0.51
15:O:8:ILE:HB	15:O:74:VAL:HB	1.91	0.51
19:S:78:LEU:HD13	19:S:82:LYS:HB3	1.92	0.51
21:U:1:MET:SD	21:U:24:SER:OG	2.64	0.51
27:b:31:PRO:HG2	27:b:32:LEU:HD12	1.92	0.51
40:p:93:LYS:HE2	51:1:1754:A:OP1	2.11	0.51
43:s:40:ASN:OD1	43:s:40:ASN:N	2.40	0.51
51:1:243:U:O2'	51:1:244:A:H5'	2.11	0.51
51:1:376:G:H2'	51:1:377:G:H8	1.74	0.51
51:1:1210:G:P	51:1:1212:G:H5'	2.51	0.51
51:1:1410:G:O2'	51:1:1411:U:H5'	2.10	0.51
51:1:1889:A:H2'	51:1:1890:A:O4'	2.10	0.51
51:1:2082:A:H2'	51:1:2083:G:O4'	2.10	0.51
51:1:2545:G:H2'	51:1:2546:U:O4'	2.11	0.51
53:3:379:C:H2'	53:3:380:G:O4'	2.10	0.51
53:3:410:G:H21	53:3:432:A:H62	1.57	0.51
58:B1:972:LYS:HD2	58:B1:1004:ALA:HA	1.93	0.51
58:B1:1179:PRO:HD2	58:B1:1184:ASP:HA	1.93	0.51
28:c:177:VAL:HA	28:c:189:VAL:HA	1.93	0.51
32:g:131:SER:OG	32:g:140:ALA:O	2.28	0.51
51:1:216:A:O2'	51:1:217:A:H5'	2.11	0.51
51:1:548:G:H2'	51:1:549:G:O4'	2.10	0.51
51:1:1333:G:H2'	51:1:1334:G:H8	1.75	0.51
51:1:1597:A:H4'	51:1:1598:A:H8	1.76	0.51
51:1:2489:U:H2'	51:1:2490:G:O4'	2.11	0.51
51:1:2616:C:H2'	51:1:2617:U:H6	1.76	0.51
53:3:574:A:N3	53:3:883:C:H1'	2.25	0.51
53:3:1271:A:H5'	53:3:1314:C:H5''	1.91	0.51
57:A1:16:ILE:HG23	57:A1:26:VAL:HG22	1.91	0.51
58:B1:275:ARG:HH12	58:B1:278:ARG:NH1	2.09	0.51
58:B1:395:LYS:NZ	58:B1:399:LYS:CD	2.74	0.51
58:B1:437:PHE:HZ	58:B1:453:VAL:HG11	1.76	0.51
59:B2:524:ILE:HG21	59:B2:708:VAL:HG13	1.92	0.51
7:G:187:ASP:OD1	7:G:187:ASP:N	2.42	0.51
13:M:11:THR:OG1	53:3:876:C:H1'	2.10	0.51
13:M:16:GLY:O	13:M:64:TYR:OH	2.28	0.51
15:O:54:SER:O	19:S:80:ARG:NH2	2.44	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	1.93	0.51
25:Y:10:ALA:O	25:Y:13:SER:OG	2.28	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:c:27:ILE:HD11	28:c:187:LEU:HD23	1.93	0.51
32:g:22:LYS:HB2	51:1:2094:A:OP1	2.11	0.51
40:p:102:ARG:HH22	51:1:1755:A:P	2.34	0.51
51:1:1917:U:O2'	51:1:1918:A:H5'	2.11	0.51
51:1:1963:U:C2'	51:1:1964:G:H5''	2.41	0.51
52:2:24:G:H4'	52:2:25:U:H5	1.73	0.51
52:2:29:A:H2'	52:2:30:C:O4'	2.11	0.51
65:0:194:ASN:OD1	65:0:200:VAL:N	2.44	0.51
8:H:67:ILE:N	8:H:101:ASN:O	2.42	0.51
9:I:146:GLU:HA	9:I:149:LYS:HE2	1.91	0.51
18:R:89:ARG:HB3	18:R:96:VAL:HG22	1.93	0.51
29:d:58:LYS:HE2	51:1:676:A:OP1	2.11	0.51
31:f:151:ARG:HG3	31:f:160:GLY:HA2	1.92	0.51
34:j:69:ARG:NH1	34:j:90:GLU:OE2	2.38	0.51
36:l:51:GLU:HG3	36:l:56:PRO:HB3	1.93	0.51
48:x:14:GLY:HA3	48:x:28:PHE:HE1	1.76	0.51
51:1:286:U:H2'	51:1:287:G:C8	2.46	0.51
51:1:866:A:H61	51:1:913:U:H1'	1.76	0.51
51:1:1951:U:C2	51:1:1953:A:OP2	2.63	0.51
51:1:2372:U:H2'	51:1:2373:G:C8	2.46	0.51
51:1:2656:U:H5''	65:0:146:ARG:NH2	2.25	0.51
53:3:284:C:O2'	53:3:285:C:H5'	2.11	0.51
53:3:554:A:H2'	53:3:555:U:H5'	1.93	0.51
53:3:1421:G:C2'	53:3:1422:G:H4'	2.40	0.51
55:8:13:DT:OP2	58:B1:791:ALA:CB	2.59	0.51
58:B1:288:PRO:HB3	62:NG:105:ASP:H	1.75	0.51
58:B1:505:ASP:OD2	59:B2:812:PHE:HA	2.11	0.51
59:B2:714:VAL:HB	59:B2:787:PRO:HD2	1.92	0.51
65:0:141:VAL:HB	65:0:266:CYS:HA	1.92	0.51
26:Z:16:ARG:HG3	26:Z:19:LYS:HB2	1.93	0.50
33:i:4:VAL:HB	51:1:1055:G:OP2	2.10	0.50
33:i:113:ALA:HB2	33:i:121:ILE:HD11	1.93	0.50
41:q:23:TYR:HD1	51:1:533:G:H5'	1.75	0.50
51:1:402:A:H2'	51:1:403:U:O4'	2.11	0.50
51:1:801:G:H3'	51:1:802:A:H5'	1.92	0.50
51:1:1550:C:H2'	51:1:1551:A:C8	2.46	0.50
51:1:1977:A:H2'	51:1:1978:A:O4'	2.12	0.50
51:1:2358:A:H2'	51:1:2359:C:O4'	2.11	0.50
51:1:2415:G:H2'	51:1:2416:C:H6	1.75	0.50
53:3:793:U:O2	53:3:1516:G:H4'	2.11	0.50
53:3:1230:C:H5'	63:6:30:G:H5''	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1400:C:N4	63:6:34:C:H1'	2.26	0.50
1:A:8:LYS:O	1:A:27:THR:OG1	2.28	0.50
25:Y:4:LYS:HB3	25:Y:6:ALA:H	1.76	0.50
39:o:100:HIS:O	39:o:104:GLN:NE2	2.43	0.50
44:t:61:LEU:HD21	44:t:82:LYS:HD2	1.92	0.50
51:1:3:U:H2'	51:1:4:U:C6	2.45	0.50
51:1:403:U:O3'	51:1:404:A:H4'	2.11	0.50
51:1:1810:A:H2'	51:1:1811:G:O4'	2.12	0.50
53:3:678:U:H2'	53:3:679:C:O4'	2.11	0.50
53:3:1105:A:H2'	53:3:1106:G:H8	1.75	0.50
53:3:1516:G:H2'	53:3:1518:A:OP2	2.10	0.50
58:B1:749:LYS:HB3	58:B1:755:ILE:HD11	1.93	0.50
59:B2:400:VAL:HG21	59:B2:452:ARG:HE	1.76	0.50
59:B2:411:ARG:NH2	59:B2:427:ASP:OD2	2.44	0.50
7:G:210:THR:O	7:G:214:GLY:N	2.40	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
14:N:118:ARG:NH2	53:3:1366:C:OP1	2.44	0.50
31:f:126:THR:OG1	31:f:127:GLN:N	2.44	0.50
42:r:76:LYS:HZ1	42:r:85:LYS:HE2	1.76	0.50
48:x:57:VAL:O	48:x:61:LYS:NZ	2.44	0.50
51:1:558:U:H2'	51:1:559:G:C8	2.46	0.50
51:1:1390:U:O2'	51:1:1391:U:H5'	2.11	0.50
51:1:1794:A:H1'	51:1:1900:A:C2	2.46	0.50
53:3:894:G:H2'	53:3:895:G:H8	1.75	0.50
58:B1:770:LEU:CD1	59:B2:618:GLN:HG3	2.37	0.50
59:B2:1070:HIS:NE2	59:B2:1114:GLU:OE1	2.36	0.50
11:K:68:GLN:NE2	53:3:738:C:O3'	2.44	0.50
12:L:14:ASP:OD1	12:L:43:TYR:OH	2.24	0.50
15:O:37:ARG:HG2	15:O:77:VAL:HB	1.93	0.50
38:n:107:ASN:HD22	51:1:2009:A:H4'	1.74	0.50
51:1:839:U:H2'	51:1:840:C:C6	2.47	0.50
51:1:1040:A:H2'	51:1:1041:G:C8	2.47	0.50
51:1:1439:A:H2'	51:1:1440:U:H5'	1.94	0.50
51:1:1599:U:H2'	51:1:1600:C:H6	1.75	0.50
51:1:2297:A:N1	51:1:2321:U:H5	2.09	0.50
51:1:2372:U:H2'	51:1:2373:G:H8	1.76	0.50
53:3:162:A:C2'	53:3:163:C:H5'	2.42	0.50
53:3:1351:U:H3	53:3:1371:G:H1	1.59	0.50
58:B1:202:ARG:HH11	58:B1:202:ARG:CG	2.14	0.50
58:B1:1361:THR:OG1	59:B2:1282:GLY:O	2.28	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:B2:400:VAL:HG11	59:B2:452:ARG:HD2	1.93	0.50
65:0:631:VAL:O	65:0:635:LEU:N	2.42	0.50
7:G:53:LEU:HD11	7:G:215:ALA:HB1	1.93	0.50
27:b:24:HIS:CD2	27:b:79:ARG:HH21	2.29	0.50
32:g:8:LYS:NZ	32:g:11:ASN:O	2.44	0.50
35:k:71:ARG:HG3	35:k:77:ILE:HD11	1.92	0.50
41:q:10:ARG:NH1	51:1:1216:G:H5''	2.25	0.50
51:1:375:G:C2'	51:1:376:G:H5'	2.42	0.50
51:1:838:C:H2'	51:1:839:U:H6	1.75	0.50
51:1:871:U:H2'	51:1:872:U:C6	2.47	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
51:1:2417:C:H2'	51:1:2418:A:H8	1.76	0.50
53:3:650:G:H2'	53:3:651:C:C6	2.47	0.50
53:3:945:G:H2'	53:3:945:G:N3	2.27	0.50
53:3:953:G:H2'	53:3:954:G:O4'	2.12	0.50
59:B2:9:LYS:HG2	59:B2:1171:ARG:HH12	1.77	0.50
12:L:92:PRO:C	12:L:95:ARG:HG3	2.36	0.50
14:N:62:LEU:HD12	14:N:64:ILE:HD11	1.92	0.50
24:X:76:THR:HG21	53:3:1221:G:H4'	1.94	0.50
28:c:160:LYS:HD2	51:1:2513:A:OP1	2.12	0.50
42:r:80:ARG:HD3	51:1:566:U:C5	2.47	0.50
43:s:16:LYS:HE3	51:1:1266:G:N7	2.27	0.50
51:1:598:U:H2'	51:1:599:A:H8	1.76	0.50
51:1:1937:A:C2'	51:1:1938:A:H5'	2.41	0.50
51:1:2259:U:C5	51:1:2427:C:N4	2.80	0.50
51:1:2549:G:H2'	51:1:2550:G:H8	1.76	0.50
51:1:2850:A:H2'	51:1:2851:A:O4'	2.10	0.50
52:2:88:C:H4'	52:2:90:C:N3	2.27	0.50
53:3:62:U:H2'	53:3:63:C:C6	2.46	0.50
53:3:559:A:H4'	53:3:560:A:H3'	1.94	0.50
53:3:599:C:H2'	53:3:600:A:H8	1.77	0.50
53:3:1267:C:H2'	53:3:1268:G:O4'	2.11	0.50
53:3:1271:A:H4'	53:3:1314:C:OP1	2.10	0.50
65:0:70:ALA:HB3	65:0:84:ILE:HB	1.94	0.50
65:0:419:ALA:HA	65:0:457:ILE:HA	1.93	0.50
5:E:35:LYS:HE2	5:E:39:ARG:HE	1.76	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
51:1:704:G:H1'	51:1:726:G:N2	2.27	0.50
51:1:1934:C:H2'	51:1:1935:G:O4'	2.12	0.50

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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	0.50
51:1:2416:C:H2'	51:1:2417:C:C6	2.47	0.50
53:3:993:G:N3	53:3:993:G:H2'	2.25	0.50
58:B1:683:ILE:HD12	58:B1:754:ILE:HG21	1.93	0.50
59:B2:232:ILE:HG12	59:B2:237:LEU:HG	1.93	0.50
12:L:107:ALA:HB1	12:L:115:MET:HE1	1.94	0.50
26:Z:27:VAL:HG22	26:Z:31:VAL:HB	1.93	0.50
29:d:195:GLN:HE22	29:d:199:MET:HE2	1.77	0.50
45:u:73:ASN:HD22	45:u:76:THR:H	1.60	0.50
51:1:227:A:O2'	51:1:228:C:H4'	2.11	0.50
51:1:1042:G:H2'	51:1:1043:C:C6	2.46	0.50
51:1:1700:A:H2'	51:1:1701:A:H5'	1.93	0.50
52:2:53:A:C2	52:2:54:G:H1'	2.47	0.50
52:2:87:U:H5''	52:2:88:C:H5	1.74	0.50
53:3:184:G:H4'	53:3:224:U:O3'	2.12	0.50
53:3:636:U:H2'	53:3:637:C:C6	2.47	0.50
53:3:903:G:H2'	53:3:904:U:O4'	2.11	0.50
53:3:1327:C:O2'	53:3:1328:C:H5'	2.12	0.50
58:B1:421:VAL:O	58:B1:436:ALA:HA	2.12	0.50
59:B2:93:SER:HA	59:B2:128:PRO:HA	1.92	0.50
65:0:105:VAL:HG23	65:0:106:LEU:HD12	1.93	0.50
4:D:13:ASN:HB3	51:1:125:A:H4'	1.93	0.50
9:I:59:LYS:O	9:I:63:ILE:N	2.43	0.50
9:I:131:ILE:HD12	53:3:620:C:C2	2.47	0.50
21:U:5:ARG:NH1	21:U:26:ASN:O	2.43	0.50
30:e:129:MET:HG3	30:e:153:ILE:HB	1.94	0.50
40:p:102:ARG:NH2	51:1:1755:A:H5'	2.26	0.50
43:s:42:LYS:HB2	51:1:2010:G:H5''	1.94	0.50
44:t:55:VAL:O	44:t:88:LYS:NZ	2.37	0.50
51:1:341:C:H2'	51:1:342:A:C8	2.46	0.50
51:1:1984:G:H2'	51:1:1985:C:C6	2.47	0.50
51:1:2549:G:H2'	51:1:2550:G:C8	2.47	0.50
53:3:162:A:C2	53:3:348:G:H4'	2.47	0.50
53:3:439:U:H2'	53:3:440:C:O4'	2.12	0.50
53:3:1012:A:H5'	53:3:1012:A:H8	1.77	0.50
53:3:1049:U:H4'	53:3:1050:G:H5''	1.93	0.50
53:3:1339:A:H2'	53:3:1340:A:O4'	2.12	0.50
65:0:92:HIS:CD2	65:0:464:LEU:HD21	2.46	0.50
15:O:47:GLU:HG3	53:3:1254:A:OP1	2.11	0.49
35:k:1:MET:HE1	51:1:1664:A:H2	1.77	0.49
41:q:62:ALA:O	41:q:66:ALA:N	2.43	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:w:52:ASP:HB2	47:w:54:THR:HG23	1.94	0.49
51:1:475:C:H4'	51:1:510:C:H5'	1.93	0.49
51:1:594:U:H2'	51:1:595:C:H6	1.77	0.49
51:1:737:C:H2'	51:1:738:G:C8	2.47	0.49
51:1:1473:G:H1	51:1:1518:C:N4	2.00	0.49
51:1:1686:C:H2'	51:1:1687:G:O4'	2.12	0.49
53:3:138:G:H2'	53:3:139:A:C8	2.46	0.49
53:3:269:C:H2'	53:3:270:A:H8	1.77	0.49
59:B2:899:GLU:HA	59:B2:902:LEU:HB3	1.94	0.49
65:0:169:LEU:HD11	65:0:186:VAL:HG13	1.94	0.49
66:h:6:5OH:N	66:h:6:5OH:CS	2.75	0.49
10:J:37:VAL:HG11	10:J:113:VAL:HA	1.93	0.49
11:K:17:GLN:O	11:K:21:MET:N	2.44	0.49
14:N:26:LYS:HG2	14:N:61:ASP:HB2	1.93	0.49
15:O:19:ASP:OD1	15:O:19:ASP:N	2.45	0.49
18:R:24:VAL:HA	53:3:1329:A:H5''	1.94	0.49
20:T:27:GLN:HE21	20:T:31:LEU:HG	1.77	0.49
22:V:4:ILE:HD11	22:V:61:ARG:HD3	1.94	0.49
32:g:50:ARG:O	32:g:55:GLU:N	2.38	0.49
34:j:108:MET:HB3	51:1:1006:C:O2'	2.11	0.49
40:p:28:LYS:HD3	40:p:82:SER:HB3	1.93	0.49
41:q:10:ARG:HH11	51:1:1216:G:H5''	1.78	0.49
46:v:58:SER:OG	46:v:59:GLU:OE1	2.30	0.49
51:1:1126:A:H4'	51:1:1127:A:C5'	2.38	0.49
51:1:1424:G:H2'	51:1:1425:G:O4'	2.12	0.49
51:1:1620:G:O2'	51:1:1621:U:H5'	2.13	0.49
51:1:1937:A:C3'	51:1:1938:A:H5'	2.41	0.49
51:1:2235:G:H2'	51:1:2236:U:O4'	2.12	0.49
53:3:803:G:H2'	53:3:804:U:C6	2.47	0.49
53:3:812:G:OP1	53:3:903:G:H1'	2.12	0.49
53:3:967:C:H2'	53:3:968:A:N7	2.26	0.49
57:A1:18:GLN:HA	57:A1:24:ALA:HA	1.94	0.49
58:B1:145:VAL:HG12	58:B1:184:ALA:HB1	1.94	0.49
58:B1:1371:ARG:HE	58:B1:1372:ARG:NH1	2.10	0.49
65:0:128:ARG:HA	65:0:131:ASN:HD22	1.77	0.49
9:I:12:ARG:HG3	9:I:37:PRO:HG3	1.94	0.49
10:J:79:THR:OG1	10:J:80:LEU:N	2.44	0.49
12:L:34:LYS:HE2	53:3:1290:G:H4'	1.95	0.49
19:S:9:GLU:HA	19:S:12:ARG:HE	1.76	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:i:30:GLN:HG3	33:i:60:VAL:HG11	1.93	0.49
35:k:89:ASN:OD1	35:k:89:ASN:N	2.45	0.49
36:l:46:VAL:HG21	51:1:832:U:H4'	1.94	0.49
44:t:58:VAL:HG22	44:t:85:VAL:HG22	1.95	0.49
51:1:123:G:H2'	51:1:124:G:H8	1.77	0.49
51:1:198:C:O2'	51:1:199:A:H5'	2.12	0.49
51:1:1326:U:H2'	51:1:1327:A:H8	1.77	0.49
51:1:1867:G:H1	51:1:1874:C:N4	2.08	0.49
51:1:1952:A:H2'	51:1:1953:A:O4'	2.13	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'	2.13	0.49
53:3:1231:G:H2'	53:3:1232:U:C6	2.47	0.49
53:3:1515:G:H2'	53:3:1516:G:C8	2.46	0.49
59:B2:857:VAL:HG13	59:B2:919:ARG:HH21	1.78	0.49
64:a:46:VAL:HG11	64:a:196:LEU:HD13	1.94	0.49
14:N:3:ASN:N	14:N:88:GLU:OE1	2.45	0.49
14:N:96:GLU:O	14:N:100:ALA:N	2.41	0.49
30:e:65:LEU:HD22	52:2:42:C:C5	2.47	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	1.93	0.49
42:r:10:LYS:HE2	51:1:994:C:O2'	2.11	0.49
47:w:10:ARG:HD2	51:1:2258:C:OP1	2.12	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	1.78	0.49
51:1:376:G:H2'	51:1:377:G:C8	2.47	0.49
51:1:864:G:O5'	51:1:864:G:H8	1.95	0.49
51:1:1581:G:H2'	51:1:1582:C:O4'	2.12	0.49
53:3:25:C:H2'	53:3:26:A:H8	1.77	0.49
53:3:174:A:H2'	53:3:175:C:H5'	1.95	0.49
53:3:1017:U:H2'	53:3:1018:G:O4'	2.11	0.49
54:4:1:A:H2'	54:4:2:U:H6	1.78	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'	1.75	0.49
37:m:18:ARG:O	37:m:97:GLN:NE2	2.46	0.49
41:q:65:ASN:HD21	41:q:69:ARG:HH11	1.61	0.49
51:1:108:G:O2'	51:1:109:C:H5'	2.11	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
51:1:2124:G:HO2'	64:a:41:SER:CB	2.22	0.49
51:1:2194:U:H2'	51:1:2195:U:H6	1.77	0.49
52:2:49:C:H2'	52:2:50:A:C8	2.48	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
53:3:128:G:H2'	53:3:129:A:H8	1.76	0.49
53:3:1382:C:H3'	53:3:1382:C:O2	2.13	0.49
58:B1:902:ASP:HB3	58:B1:905:ARG:HB2	1.93	0.49
3:C:16:THR:OG1	3:C:17:GLY:N	2.44	0.49
7:G:71:THR:OG1	7:G:72:LYS:N	2.45	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
37:m:28:PHE:N	37:m:104:GLU:OE1	2.44	0.49
44:t:36:LYS:NZ	44:t:79:ASP:OD1	2.38	0.49
51:1:306:U:H3	51:1:310:A:H62	1.61	0.49
51:1:739:A:H8	51:1:739:A:O5'	1.95	0.49
51:1:1130:U:H5	51:1:2026:U:P	2.35	0.49
51:1:1366:A:H2'	51:1:1367:A:O4'	2.12	0.49
53:3:23:C:H2'	53:3:24:U:C6	2.48	0.49
65:0:659:PRO:HB2	65:0:662:GLU:HB2	1.93	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
14:N:8:THR:H	14:N:84:ARG:HB2	1.78	0.49
14:N:72:SER:O	14:N:76:GLY:N	2.45	0.49
19:S:96:LYS:HZ2	19:S:97:LYS:H	1.60	0.49
31:f:171:LYS:NZ	51:1:2529:G:OP2	2.40	0.49
34:j:60:ASP:OD1	34:j:60:ASP:N	2.42	0.49
35:k:65:THR:HG23	35:k:68:GLY:H	1.78	0.49
36:l:65:GLY:HA2	51:1:631:A:O2'	2.12	0.49
43:s:72:THR:OG1	43:s:73:LYS:N	2.45	0.49
51:1:1378:A:H1'	51:1:1379:U:C5	2.48	0.49
51:1:1658:C:O5'	51:1:1658:C:H6	1.95	0.49
53:3:153:C:C2'	53:3:154:U:H5''	2.43	0.49
53:3:505:G:H2'	53:3:506:G:C8	2.47	0.49
53:3:570:G:H2'	53:3:571:U:O4'	2.12	0.49
53:3:666:G:H5'	53:3:725:G:N2	2.27	0.49
64:a:165:ASN:HD22	64:a:169:GLY:HA2	1.78	0.49
6:F:1:MET:CG	51:1:2742:G:H5'	2.43	0.49
9:I:7:LYS:HB3	9:I:20:LEU:HG	1.94	0.49
23:W:49:LYS:NZ	53:3:836:G:OP1	2.45	0.49
32:g:80:ILE:HG13	32:g:102:ALA:HB1	1.94	0.49
44:t:34:VAL:HG11	44:t:43:ILE:HD13	1.93	0.49
48:x:2:ARG:CG	48:x:32:LEU:HD12	2.41	0.49
51:1:458:G:N2	51:1:469:G:H2'	2.27	0.49
51:1:1963:U:H2'	51:1:1964:G:H5''	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2638:G:H1'	51:1:2778:A:H61	1.78	0.49
53:3:17:U:H2'	53:3:18:C:C6	2.48	0.49
53:3:1354:U:H2'	53:3:1355:G:H8	1.78	0.49
13:M:89:ASP:OD1	13:M:89:ASP:N	2.37	0.49
27:b:155:ARG:CZ	51:1:1818:U:H5	2.26	0.49
30:e:132:ARG:NH1	30:e:148:VAL:O	2.45	0.49
31:f:8:VAL:O	31:f:49:LEU:N	2.44	0.49
31:f:91:VAL:CG2	51:1:2657:A:H4'	2.43	0.49
38:n:68:ALA:HA	51:1:2707:U:O2'	2.13	0.49
43:s:10:ALA:N	43:s:101:SER:O	2.43	0.49
47:w:65:PHE:CD2	51:1:857:G:H5'	2.48	0.49
51:1:1528:A:H2'	51:1:1529:G:C5'	2.40	0.49
51:1:1595:C:H2'	51:1:1596:A:C8	2.48	0.49
51:1:1999:C:O2'	51:1:2000:C:H5'	2.12	0.49
51:1:2786:U:H2'	51:1:2787:C:C6	2.48	0.49
51:1:2807:U:H3	51:1:2891:U:H3	1.61	0.49
53:3:423:G:C2	53:3:424:G:H1'	2.48	0.49
53:3:454:G:H2'	53:3:455:G:H8	1.77	0.49
53:3:1424:U:H3	53:3:1476:A:N6	2.05	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
50:z:30:ARG:HG2	50:z:33:HIS:HB2	1.94	0.49
51:1:532:A:N1	51:1:2020:A:H1'	2.27	0.49
51:1:1289:C:O2'	51:1:1330:C:H4'	2.12	0.49
51:1:1893:C:H2'	51:1:1894:C:O4'	2.13	0.49
51:1:2716:C:O2'	51:1:2717:C:H5'	2.13	0.49
51:1:2810:A:H62	51:1:2890:G:N2	2.11	0.49
53:3:1253:G:H2'	53:3:1254:A:H8	1.78	0.49
53:3:1349:A:H2'	53:3:1350:A:O4'	2.13	0.49
58:B1:102:MET:HG2	58:B1:246:PRO:HD3	1.94	0.49
58:B1:115:TRP:O	58:B1:1333:THR:HG21	2.13	0.49
59:B2:18:ARG:HE	59:B2:620:ASN:HA	1.77	0.49
59:B2:529:ARG:HH11	59:B2:572:ILE:HG22	1.77	0.49
63:6:26:G:H3'	63:6:27:U:C5'	2.42	0.49
65:0:505:HIS:HB2	65:0:596:ALA:HB2	1.94	0.49
12:L:78:ARG:NH1	12:L:82:SER:O	2.46	0.48
14:N:87:MET:HA	14:N:90:ASP:HB3	1.94	0.48
17:Q:76:HIS:O	65:0:425:LYS:NZ	2.45	0.48
27:b:48:ILE:HG22	51:1:779:U:OP2	2.13	0.48
34:j:47:HIS:CG	51:1:536:G:H21	2.31	0.48
37:m:61:GLY:HA3	37:m:105:MET:HE1	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:n:64:ARG:O	38:n:68:ALA:N	2.40	0.48
51:1:157:C:H2'	51:1:158:U:O4'	2.13	0.48
51:1:937:C:H2'	51:1:938:G:H8	1.78	0.48
51:1:2600:A:H2'	51:1:2601:C:C6	2.48	0.48
53:3:513:C:H2'	53:3:514:C:O4'	2.13	0.48
53:3:955:U:H2'	53:3:956:U:C6	2.48	0.48
55:8:3:DC:H2''	55:8:4:DT:C7	2.42	0.48
55:8:14:DC:H2'	55:8:15:DC:C6	2.48	0.48
58:B1:124:ILE:HG23	58:B1:128:LEU:HD12	1.94	0.48
58:B1:141:PHE:CE2	58:B1:296:LYS:CB	2.94	0.48
58:B1:1027:VAL:HB	58:B1:1121:LEU:HB2	1.95	0.48
59:B2:554:HIS:HD2	59:B2:558:VAL:HB	1.77	0.48
65:0:520:ILE:HG22	65:0:578:LEU:HA	1.95	0.48
20:T:88:ARG:HH22	51:1:715:A:H5''	1.76	0.48
27:b:59:GLN:NE2	51:1:1567:G:OP1	2.46	0.48
29:d:2:GLU:HA	29:d:13:THR:HA	1.96	0.48
33:i:10:LEU:HD11	51:1:1070:A:C2	2.41	0.48
51:1:511:U:H2'	51:1:512:G:H5'	1.95	0.48
51:1:1178:C:H2'	51:1:1179:G:C8	2.48	0.48
51:1:1807:G:H2'	51:1:1808:A:H5'	1.95	0.48
51:1:2247:A:H2'	51:1:2248:C:O4'	2.13	0.48
51:1:2262:U:H2'	51:1:2263:C:H6	1.71	0.48
57:A1:100:LEU:HB2	57:A1:144:ILE:HG23	1.95	0.48
59:B2:836:LEU:HD13	59:B2:1054:LEU:HD13	1.95	0.48
9:I:12:ARG:NH1	9:I:36:ALA:O	2.46	0.48
17:Q:36:VAL:HG13	17:Q:73:LEU:HD11	1.95	0.48
24:X:32:THR:O	24:X:56:HIS:NE2	2.45	0.48
37:m:53:MET:HE3	37:m:119:LEU:HB3	1.94	0.48
45:u:5:ARG:HH11	51:1:84:A:H5''	1.77	0.48
51:1:153:U:O2'	51:1:154:U:H5'	2.13	0.48
51:1:1258:U:H2'	51:1:1259:G:C8	2.48	0.48
51:1:2314:A:H2'	51:1:2315:G:C8	2.48	0.48
51:1:2339:C:H2'	51:1:2340:A:C8	2.45	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
51:1:2834:G:H2'	51:1:2879:A:N6	2.28	0.48
53:3:83:C:O2'	53:3:84:U:H3'	2.13	0.48
65:0:390:ASP:OD1	65:0:390:ASP:N	2.44	0.48
23:W:32:ILE:HD12	23:W:36:GLY:HA2	1.95	0.48
33:i:75:ALA:HA	33:i:78:LEU:HB2	1.96	0.48
51:1:93:G:O2'	51:1:94:A:H5'	2.12	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:387:U:H4'	51:1:388:G:O4'	2.13	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'	2.14	0.48
51:1:1005:C:H2'	51:1:1006:C:H6	1.77	0.48
51:1:1657:U:H2'	51:1:1658:C:C6	2.48	0.48
53:3:714:G:H2'	53:3:715:A:C8	2.48	0.48
59:B2:565:GLU:HA	59:B2:569:ILE:HG12	1.95	0.48
64:a:183:ASP:OD1	64:a:183:ASP:N	2.43	0.48
7:G:100:LEU:HD11	7:G:160:LEU:HD13	1.95	0.48
27:b:146:LYS:HB2	27:b:149:LYS:HB2	1.94	0.48
30:e:21:TYR:OH	30:e:164:GLU:OE1	2.31	0.48
51:1:821:A:H5''	51:1:822:G:C8	2.49	0.48
51:1:1219:U:H2'	51:1:1220:G:H8	1.78	0.48
53:3:1308:U:H2'	53:3:1309:G:C8	2.49	0.48
57:A1:182:ARG:O	57:A1:205:MET:HA	2.14	0.48
64:a:43:ASP:OD1	64:a:174:THR:OG1	2.32	0.48
11:K:92:THR:OG1	11:K:94:HIS:O	2.29	0.48
19:S:19:TYR:HB3	19:S:23:ARG:HH21	1.77	0.48
19:S:75:LYS:HZ1	53:3:1357:A:H5''	1.76	0.48
24:X:76:THR:HG21	53:3:1221:G:O2'	2.13	0.48
35:k:48:PRO:HB3	53:3:1422:G:OP1	2.13	0.48
42:r:4:VAL:HG22	42:r:13:ARG:HA	1.95	0.48
51:1:45:G:C5'	51:1:46:G:H5'	2.25	0.48
51:1:319:G:H2'	51:1:320:A:O4'	2.13	0.48
51:1:441:U:H2'	51:1:442:G:C8	2.49	0.48
51:1:1036:G:H1	51:1:1119:U:H3	1.60	0.48
51:1:1810:A:H2'	51:1:1811:G:H5'	1.95	0.48
51:1:2556:C:H2'	51:1:2557:G:H5'	1.96	0.48
53:3:701:U:O4'	53:3:703:G:H1'	2.14	0.48
53:3:770:C:O2'	53:3:771:G:H5'	2.12	0.48
53:3:1414:U:H2'	53:3:1415:G:H8	1.78	0.48
59:B2:318:SER:OG	59:B2:320:ASP:OD1	2.31	0.48
59:B2:533:LEU:HD13	59:B2:540:ARG:HH21	1.77	0.48
1:A:26:SER:OG	1:A:27:THR:N	2.47	0.48
13:M:4:ASP:OD2	13:M:76:ARG:NH2	2.47	0.48
15:O:15:HIS:HA	15:O:18:ILE:HG22	1.96	0.48
37:m:111:GLU:HA	37:m:114:ARG:HB3	1.96	0.48
51:1:404:A:H2	51:1:421:C:N3	2.11	0.48
51:1:1680:U:H2'	51:1:1681:G:C5'	2.40	0.48
51:1:2276:G:C2'	51:1:2277:G:H5'	2.44	0.48
51:1:2298:A:H2'	51:1:2299:U:O4'	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2654:A:H8	51:1:2654:A:OP1	1.97	0.48
53:3:483:C:H3'	53:3:484:G:H5'	1.94	0.48
53:3:554:A:C2'	53:3:555:U:H5'	2.43	0.48
53:3:865:A:H8	53:3:865:A:O5'	1.96	0.48
58:B1:103:GLY:H	58:B1:244:VAL:HG22	1.79	0.48
58:B1:201:LEU:HD11	58:B1:220:ARG:HG2	1.95	0.48
58:B1:550:VAL:O	58:B1:569:LEU:HA	2.13	0.48
58:B1:809:VAL:HG21	58:B1:909:ILE:HG12	1.95	0.48
59:B2:363:LEU:HB3	59:B2:381:ALA:HB1	1.96	0.48
63:6:36:U:H2'	63:6:37:A:C8	2.48	0.48
21:U:8:ARG:NH1	53:3:391:G:H5''	2.29	0.48
28:c:8:LYS:HB2	28:c:201:LEU:HD11	1.96	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	1.78	0.48
51:1:175:G:H2'	51:1:176:A:C8	2.49	0.48
51:1:189:G:N2	51:1:206:U:C5	2.82	0.48
51:1:459:U:H2'	51:1:460:A:O4'	2.13	0.48
51:1:881:G:H1	51:1:895:U:H3	1.61	0.48
51:1:999:U:H5''	51:1:1154:G:O6	2.13	0.48
51:1:1103:A:H2'	51:1:1103:A:N3	2.29	0.48
51:1:1225:G:O2'	51:1:1226:A:H5'	2.13	0.48
51:1:1755:A:C2'	51:1:1756:G:H5'	2.40	0.48
51:1:1993:U:H2'	51:1:1994:C:O4'	2.14	0.48
51:1:2531:A:H2'	51:1:2532:G:H5'	1.95	0.48
53:3:563:A:H5'	53:3:566:G:C2	2.49	0.48
53:3:792:A:H4'	53:3:793:U:H5''	1.95	0.48
58:B1:833:GLU:N	58:B1:1242:ARG:HH12	2.12	0.48
58:B1:1146:GLU:OE2	58:B1:1310:THR:HG22	2.14	0.48
58:B1:1347:LEU:HG	58:B1:1357:ILE:HG23	1.96	0.48
65:0:157:GLN:HE22	65:0:161:ARG:HE	1.61	0.48
14:N:113:LYS:NZ	53:3:1368:A:OP2	2.39	0.48
16:P:83:VAL:HG11	16:P:96:ILE:HG12	1.95	0.48
22:V:11:VAL:HA	22:V:22:VAL:HA	1.95	0.48
25:Y:34:VAL:HG22	25:Y:49:ALA:HB1	1.95	0.48
29:d:67:ARG:NH2	51:1:1257:C:H5''	2.29	0.48
40:p:1:SER:N	51:1:2876:G:OP1	2.44	0.48
51:1:80:G:H2'	51:1:81:G:C8	2.49	0.48
51:1:1182:G:H2'	51:1:1183:U:C6	2.48	0.48
51:1:2828:G:O2'	51:1:2829:A:H5'	2.13	0.48
53:3:27:G:H2'	53:3:28:A:C8	2.49	0.48
53:3:193:C:H2'	53:3:194:C:C5	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:483:C:C3'	53:3:484:G:H5'	2.44	0.48
53:3:1251:A:H2'	53:3:1252:A:H8	1.79	0.48
55:8:14:DC:H2'	55:8:15:DC:H6	1.79	0.48
58:B1:255:LEU:HD23	58:B1:261:ALA:HB2	1.95	0.48
58:B1:526:VAL:HG12	58:B1:549:LYS:HB2	1.96	0.48
65:0:99:VAL:HG11	65:0:126:VAL:HG12	1.95	0.48
4:D:24:THR:HG23	4:D:27:GLY:H	1.78	0.48
10:J:23:THR:HG21	53:3:15:G:N3	2.29	0.48
10:J:24:VAL:HG13	10:J:26:GLY:H	1.79	0.48
20:T:19:ASN:HB2	53:3:750:C:C4'	2.43	0.48
22:V:56:ASP:HB3	22:V:80:LYS:HA	1.94	0.48
29:d:23:PHE:H	29:d:114:ARG:HH22	1.60	0.48
29:d:178:VAL:HA	29:d:181:ILE:HG22	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
41:q:24:TYR:N	51:1:533:G:OP1	2.38	0.48
41:q:84:LYS:HB3	41:q:115:ALA:HB1	1.94	0.48
43:s:47:VAL:O	43:s:51:LEU:N	2.39	0.48
49:y:43:LEU:HD21	49:y:47:ARG:HH11	1.79	0.48
51:1:1018:U:H2'	51:1:1019:U:O4'	2.13	0.48
51:1:1810:A:C2'	51:1:1811:G:H5'	2.44	0.48
53:3:92:U:H2'	53:3:93:U:H5'	1.96	0.48
53:3:153:C:H2'	53:3:154:U:H5''	1.95	0.48
53:3:316:C:H2'	53:3:317:U:H6	1.79	0.48
59:B2:899:GLU:HG3	59:B2:902:LEU:HD22	1.96	0.48
59:B2:1314:GLN:HB2	60:W0:28:ARG:HH12	1.79	0.48
65:0:319:ALA:HB3	65:0:397:LEU:HB2	1.96	0.48
7:G:33:ALA:N	7:G:37:VAL:O	2.46	0.47
9:I:37:PRO:HD2	9:I:41:GLY:HA3	1.96	0.47
20:T:74:VAL:HA	20:T:77:TYR:HB3	1.96	0.47
33:i:9:LYS:HZ2	51:1:1059:G:P	2.36	0.47
33:i:65:SER:OG	33:i:66:PHE:N	2.46	0.47
50:z:18:LYS:O	50:z:22:THR:OG1	2.31	0.47
51:1:443:A:H2	51:1:1246:A:H1'	1.78	0.47
51:1:2588:G:C6	51:1:2607:G:C2	3.02	0.47
51:1:2813:A:H2'	51:1:2814:A:H8	1.78	0.47
58:B1:395:LYS:NZ	58:B1:399:LYS:CE	2.78	0.47
2:B:2:VAL:O	51:1:2615:U:C4	2.67	0.47
3:C:5:ARG:NH2	3:C:23:THR:O	2.48	0.47
7:G:18:GLN:NE2	7:G:189:ASN:HB3	2.30	0.47
31:f:107:GLY:O	51:1:2666:C:N4	2.47	0.47

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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	0.47
51:1:118:A:H5'	51:1:119:A:H8	1.79	0.47
51:1:367:G:H2'	51:1:368:A:O4'	2.14	0.47
51:1:1710:G:H2'	51:1:1711:A:C8	2.49	0.47
51:1:2257:U:O2'	51:1:2258:C:H5'	2.14	0.47
51:1:2316:G:O2'	51:1:2317:A:H5'	2.13	0.47
51:1:2721:A:H2'	51:1:2722:G:O4'	2.14	0.47
51:1:2884:U:O2	51:1:2884:U:H3'	2.14	0.47
52:2:3:C:C3'	52:2:4:C:H5''	2.43	0.47
53:3:631:C:H5''	53:3:632:U:O4'	2.15	0.47
53:3:1161:C:H2'	53:3:1162:C:H6	1.78	0.47
58:B1:1060:VAL:HG13	58:B1:1106:ILE:HG12	1.96	0.47
59:B2:400:VAL:HG22	59:B2:584:TYR:HB3	1.96	0.47
62:NG:161:SER:CA	62:NG:170:PRO:HA	2.43	0.47
65:0:422:PRO:HG3	65:0:428:GLN:HB2	1.97	0.47
10:J:87:VAL:HA	10:J:92:ARG:HA	1.96	0.47
11:K:91:ARG:O	11:K:93:LYS:NZ	2.39	0.47
18:R:27:THR:HG22	53:3:1328:C:H5''	1.97	0.47
19:S:12:ARG:HH22	19:S:60:ARG:H	1.61	0.47
34:j:7:LYS:HE2	51:1:539:G:H5'	1.95	0.47
35:k:65:THR:OG1	35:k:66:LYS:N	2.44	0.47
38:n:34:ILE:HA	51:1:1279:G:OP1	2.13	0.47
48:x:4:CYS:SG	48:x:5:GLN:N	2.87	0.47
51:1:145:C:H2'	51:1:146:A:C8	2.49	0.47
51:1:739:A:H1'	51:1:740:C:H5	1.79	0.47
51:1:1343:G:N3	51:1:1343:G:H2'	2.28	0.47
51:1:2143:C:H3'	51:1:2144:G:C8	2.49	0.47
51:1:2367:G:O2'	51:1:2368:C:H5'	2.14	0.47
52:2:45:A:H2'	52:2:46:A:O4'	2.13	0.47
53:3:751:U:C2'	53:3:752:G:H5'	2.44	0.47
53:3:840:C:C2'	53:3:841:C:H5''	2.41	0.47
53:3:1274:A:H2'	53:3:1275:A:H5''	1.96	0.47
53:3:1465:A:H2'	53:3:1466:C:C6	2.48	0.47
53:3:1465:A:H2'	53:3:1466:C:H6	1.80	0.47
53:3:1493:A:N7	66:h:6:5OH:NQ	2.61	0.47
58:B1:1036:ARG:HE	58:B1:1081:VAL:HG11	1.79	0.47
65:0:22:GLY:N	68:0:801:GDP:O1B	2.47	0.47
65:0:330:VAL:HG11	65:0:386:ILE:HD11	1.96	0.47
24:X:39:ILE:HD11	24:X:70:LEU:HD23	1.96	0.47
27:b:15:VAL:HB	27:b:205:GLY:HA3	1.95	0.47
27:b:158:GLY:HA3	51:1:1820:U:C5	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:e:31:GLU:HG2	30:e:32:LYS:H	1.79	0.47
51:1:166:U:H2'	51:1:167:A:H8	1.78	0.47
51:1:1095:A:C8	65:0:632:ILE:HD11	2.50	0.47
51:1:2515:C:O2'	51:1:2516:A:H5'	2.15	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'	1.80	0.47
58:B1:891:ASP:OD2	58:B1:1290:ARG:NH2	2.47	0.47
59:B2:1311:GLY:O	60:W0:31:GLN:NE2	2.47	0.47
65:0:544:VAL:HG13	65:0:583:TYR:HB3	1.95	0.47
1:A:8:LYS:NZ	1:A:10:GLU:OE1	2.45	0.47
5:E:32:LEU:HD12	5:E:32:LEU:HA	1.73	0.47
10:J:83:PRO:HD3	10:J:97:PRO:HG3	1.96	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
37:m:22:GLN:NE2	51:1:864:G:OP1	2.47	0.47
46:v:21:ARG:HH12	52:2:77:U:H5''	1.80	0.47
51:1:215:G:O3'	51:1:216:A:H4'	2.15	0.47
51:1:833:A:H2'	51:1:834:G:H8	1.78	0.47
51:1:858:G:H5'	51:1:859:G:OP2	2.14	0.47
51:1:2475:C:H2'	51:1:2476:A:H5'	1.97	0.47
53:3:129:A:O2'	53:3:130:A:H5''	2.14	0.47
53:3:343:U:O2'	53:3:344:A:H2'	2.14	0.47
53:3:1478:U:H2'	53:3:1479:C:C6	2.49	0.47
58:B1:352:ARG:HB2	59:B2:1268:GLN:NE2	2.30	0.47
58:B1:1150:PRO:HG3	58:B1:1214:PRO:HB2	1.96	0.47
58:B1:1221:LEU:HD22	58:B1:1306:LEU:HB2	1.96	0.47
58:B1:1261:LEU:HD12	58:B1:1304:ARG:HH21	1.78	0.47
31:f:84:LYS:HA	31:f:84:LYS:HD2	1.78	0.47
34:j:47:HIS:CD2	51:1:536:G:H21	2.32	0.47
36:l:42:SER:O	36:l:42:SER:OG	2.32	0.47
36:l:43:GLY:N	51:1:671:C:OP1	2.47	0.47
51:1:593:U:H2'	51:1:594:U:C6	2.49	0.47
51:1:1085:A:H2'	51:1:1086:A:N7	2.30	0.47
51:1:1265:A:N6	51:1:2013:A:H5''	2.27	0.47
51:1:1414:C:H42	51:1:1588:G:H1	1.62	0.47
51:1:1414:C:H2'	51:1:1415:U:H5'	1.95	0.47
51:1:1444:G:H2'	51:1:1445:G:H8	1.76	0.47
51:1:1463:C:H2'	51:1:1464:G:C8	2.48	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
51:1:1943:U:OP1	51:1:1943:U:H6	1.98	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2521:C:H42	51:1:2544:G:H1	1.61	0.47
53:3:1000:A:H2'	53:3:1001:C:O4'	2.15	0.47
53:3:1059:C:H2'	53:3:1060:U:C6	2.49	0.47
53:3:1435:G:H1	53:3:1466:C:H42	1.62	0.47
58:B1:220:ARG:HG2	58:B1:220:ARG:NH1	2.25	0.47
59:B2:103:VAL:HG12	59:B2:117:ILE:HG22	1.97	0.47
62:NG:142:ALA:O	62:NG:143:ASP:CB	2.63	0.47
3:C:6:GLU:HG2	3:C:26:LYS:HD3	1.97	0.47
7:G:17:HIS:CE1	7:G:187:ASP:HB2	2.50	0.47
7:G:53:LEU:HA	7:G:56:LEU:HB2	1.97	0.47
7:G:66:ILE:HD11	7:G:161:PHE:HB2	1.96	0.47
8:H:30:ASP:OD1	8:H:30:ASP:N	2.47	0.47
8:H:32:LEU:HD21	19:S:78:LEU:HD11	1.97	0.47
15:O:21:ALA:HB2	15:O:93:ALA:HB2	1.97	0.47
18:R:23:GLY:HA2	18:R:68:LEU:HD13	1.97	0.47
30:e:22:ASN:ND2	30:e:26:GLN:OE1	2.48	0.47
34:j:49:ASP:N	34:j:49:ASP:OD1	2.38	0.47
36:l:30:THR:O	36:l:33:ARG:N	2.47	0.47
36:l:109:LYS:HB3	51:1:636:G:O6	2.15	0.47
37:m:42:THR:N	37:m:45:GLN:OE1	2.40	0.47
44:t:89:GLU:OE1	44:t:91:GLN:NE2	2.48	0.47
45:u:8:ASP:O	45:u:23:LYS:NZ	2.45	0.47
47:w:56:PHE:HE2	51:1:2365:G:H5'	1.80	0.47
51:1:1209:U:H2'	51:1:1210:G:H21	1.80	0.47
51:1:1333:G:H2'	51:1:1334:G:C8	2.49	0.47
51:1:1587:G:H2'	51:1:1588:G:C8	2.50	0.47
51:1:2153:C:H3'	51:1:2154:A:H8	1.79	0.47
51:1:2248:C:C2'	51:1:2249:U:H5'	2.44	0.47
52:2:30:C:H2'	52:2:31:C:H5'	1.95	0.47
53:3:230:G:O2'	53:3:231:U:H5'	2.14	0.47
53:3:253:A:H4'	53:3:276:G:O2'	2.15	0.47
53:3:325:A:H2'	53:3:326:G:O4'	2.14	0.47
53:3:344:A:OP1	65:0:38:HIS:NE2	2.48	0.47
53:3:1093:A:H2'	53:3:1094:G:H5'	1.95	0.47
53:3:1161:C:H2'	53:3:1162:C:C6	2.50	0.47
53:3:1382:C:H2'	53:3:1383:C:C6	2.50	0.47
53:3:1441:A:N3	53:3:1441:A:H2'	2.30	0.47
57:A1:59:VAL:HG22	57:A1:144:ILE:HA	1.97	0.47
58:B1:29:MET:HG2	59:B2:1336:ASN:ND2	2.29	0.47
59:B2:207:THR:OG1	59:B2:354:ASP:OD2	2.32	0.47
59:B2:1286:THR:O	59:B2:1290:MET:HB2	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
65:0:474:LYS:HD3	65:0:474:LYS:HA	1.72	0.47
2:B:37:HIS:HB3	2:B:43:THR:HG22	1.97	0.47
8:H:147:GLY:HA2	8:H:170:GLY:HA3	1.97	0.47
13:M:102:VAL:HB	13:M:126:CYS:HB3	1.96	0.47
15:O:64:GLN:HB3	19:S:98:ALA:HB3	1.96	0.47
27:b:210:ALA:HA	27:b:213:ARG:HG3	1.96	0.47
31:f:88:LEU:O	31:f:128:THR:OG1	2.32	0.47
34:j:116:ARG:HH22	51:1:528:A:H8	1.61	0.47
51:1:524:G:O2'	51:1:525:U:H5'	2.14	0.47
51:1:1153:C:H2'	51:1:1154:G:O4'	2.15	0.47
53:3:545:C:O2'	53:3:546:A:H5'	2.14	0.47
53:3:1170:A:H2'	53:3:1171:A:H5'	1.97	0.47
53:3:1486:G:H2'	53:3:1487:G:O4'	2.15	0.47
58:B1:108:ALA:HB1	58:B1:279:LEU:HD22	1.96	0.47
9:I:140:ASP:O	9:I:181:PHE:N	2.46	0.47
12:L:91:ARG:HG2	12:L:91:ARG:HH11	1.78	0.47
16:P:23:HIS:HB3	16:P:30:ILE:HG23	1.96	0.47
19:S:41:TRP:HZ2	24:X:10:ILE:HG22	1.79	0.47
25:Y:76:ALA:O	25:Y:79:THR:OG1	2.27	0.47
32:g:93:SER:HB3	32:g:121:VAL:HG12	1.97	0.47
42:r:80:ARG:HD3	51:1:566:U:H5	1.80	0.47
44:t:67:VAL:HG12	44:t:76:ARG:HA	1.96	0.47
51:1:139:U:H2'	51:1:140:C:C5	2.49	0.47
51:1:1306:C:O2'	51:1:1307:A:H5'	2.13	0.47
51:1:1580:A:H2'	51:1:1581:G:O4'	2.14	0.47
51:1:1595:C:H2'	51:1:1596:A:H8	1.80	0.47
51:1:1639:C:H2'	51:1:1640:A:H5'	1.97	0.47
51:1:1856:U:H2'	51:1:1857:G:O4'	2.15	0.47
51:1:2531:A:C2'	51:1:2532:G:H5'	2.45	0.47
51:1:2845:U:H2'	51:1:2846:G:C8	2.50	0.47
53:3:138:G:H2'	53:3:139:A:H8	1.80	0.47
58:B1:120:LEU:HD22	58:B1:120:LEU:HA	1.77	0.47
58:B1:209:ASN:HA	58:B1:214:ARG:NH2	2.30	0.47
59:B2:732:ILE:HD11	59:B2:769:PRO:HB3	1.95	0.47
63:6:62:C:H5'	64:a:53:ARG:CZ	2.45	0.47
65:0:488:VAL:HG13	65:0:660:LEU:HD22	1.96	0.47
3:C:8:ILE:HD11	3:C:50:GLU:HB2	1.96	0.47
6:F:15:LYS:N	6:F:26:ILE:O	2.40	0.47
17:Q:45:ASN:OD1	17:Q:45:ASN:N	2.44	0.47
25:Y:22:SER:HB2	53:3:1458:G:H4'	1.97	0.47
29:d:173:THR:OG1	29:d:174:GLY:N	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:l:18:ARG:NE	51:1:1249:U:C5	2.79	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
51:1:744:U:H5''	51:1:1658:C:H5''	1.96	0.47
51:1:940:G:H2'	51:1:941:A:H5''	1.97	0.47
51:1:2450:A:OP1	51:1:2497:A:O2'	2.31	0.47
51:1:2682:A:O2'	51:1:2683:C:H5'	2.15	0.47
51:1:2861:U:O2'	51:1:2862:G:H5'	2.15	0.47
52:2:51:G:N3	52:2:52:A:H1'	2.30	0.47
53:3:857:C:H2'	53:3:858:G:O4'	2.14	0.47
58:B1:842:ARG:HH22	58:B1:1250:ASP:HB2	1.80	0.47
58:B1:968:ASN:HA	58:B1:1117:SER:HB2	1.96	0.47
65:0:420:VAL:HB	65:0:458:ILE:HD11	1.97	0.47
8:H:39:ARG:HA	8:H:42:LEU:HB3	1.97	0.46
8:H:49:ALA:O	8:H:69:THR:OG1	2.33	0.46
12:L:101:ARG:HH22	53:3:940:C:P	2.37	0.46
18:R:53:ASP:OD1	18:R:53:ASP:N	2.48	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
31:f:85:LYS:HE2	31:f:129:GLU:HB3	1.97	0.46
33:i:9:LYS:HZ3	51:1:1059:G:H5'	1.80	0.46
37:m:43:ALA:HB2	37:m:69:PRO:HG3	1.96	0.46
47:w:45:ALA:N	47:w:77:SER:OG	2.42	0.46
51:1:341:C:H2'	51:1:342:A:H8	1.79	0.46
51:1:1663:G:O2'	51:1:1664:A:H8	1.99	0.46
53:3:1448:C:O2	53:3:1448:C:H2'	2.15	0.46
54:4:1:A:H2'	54:4:2:U:C6	2.50	0.46
58:B1:420:PRO:HA	58:B1:437:PHE:O	2.15	0.46
58:B1:1357:ILE:HD13	59:B2:1279:GLU:HG2	1.97	0.46
65:0:24:THR:HG21	65:0:62:THR:HG21	1.97	0.46
65:0:514:GLN:HA	65:0:587:ASP:HA	1.97	0.46
8:H:51:VAL:HA	8:H:69:THR:HA	1.97	0.46
13:M:63:LYS:HG2	13:M:70:VAL:HG21	1.95	0.46
17:Q:58:ASN:OD1	17:Q:58:ASN:N	2.46	0.46
17:Q:87:LYS:HB3	17:Q:87:LYS:HE3	1.69	0.46
27:b:250:GLN:HB3	27:b:254:LYS:HD2	1.96	0.46
32:g:68:ARG:O	32:g:72:ILE:N	2.47	0.46
33:i:79:LEU:HD22	33:i:131:THR:HG23	1.97	0.46
35:k:31:ARG:HH12	51:1:2676:C:P	2.38	0.46
51:1:233:A:H5'	51:1:233:A:C8	2.50	0.46
51:1:340:A:C2'	51:1:341:C:H5'	2.43	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:514:A:N3	51:1:581:C:O2'	2.45	0.46
51:1:1388:G:H2'	51:1:1389:G:C8	2.51	0.46
51:1:2080:A:C6	51:1:2081:U:C4	3.04	0.46
53:3:211:G:H3'	53:3:211:G:N3	2.29	0.46
53:3:835:U:C3'	53:3:836:G:H5''	2.46	0.46
57:A1:33:ARG:HE	57:A1:33:ARG:HB3	1.56	0.46
58:B1:43:THR:HG22	58:B1:57:PHE:HE1	1.80	0.46
58:B1:128:LEU:HD21	58:B1:188:LEU:HB3	1.97	0.46
58:B1:198:CYS:HA	58:B1:221:ILE:CD1	2.45	0.46
58:B1:385:LEU:HD23	58:B1:390:LEU:HB2	1.97	0.46
58:B1:1219:ASP:O	58:B1:1223:LEU:HB2	2.15	0.46
59:B2:28:LEU:HD21	59:B2:524:ILE:HG13	1.97	0.46
17:Q:11:ARG:NH1	53:3:563:A:H2	2.14	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:94:LYS:HD3	33:i:94:LYS:HA	1.72	0.46
51:1:433:C:O2'	51:1:434:U:H5'	2.15	0.46
51:1:1321:A:C2	51:1:1322:A:H1'	2.50	0.46
51:1:1485:U:H2'	51:1:1486:U:C6	2.50	0.46
51:1:1826:G:H2'	51:1:1827:U:C6	2.51	0.46
51:1:1868:C:C2'	51:1:1869:G:H5'	2.42	0.46
51:1:2135:A:H8	51:1:2156:G:H21	1.64	0.46
53:3:520:A:H62	53:3:529:G:N2	2.11	0.46
53:3:994:A:H3'	53:3:994:A:OP2	2.15	0.46
65:0:376:GLU:OE1	65:0:378:ARG:NE	2.48	0.46
5:E:57:VAL:O	5:E:61:LEU:N	2.41	0.46
12:L:66:GLU:HA	12:L:69:ARG:HG3	1.96	0.46
12:L:91:ARG:HG2	12:L:91:ARG:NH1	2.30	0.46
25:Y:79:THR:HA	25:Y:82:ILE:HB	1.98	0.46
29:d:112:LEU:O	29:d:117:ARG:N	2.43	0.46
51:1:786:C:O2'	51:1:787:C:H5'	2.16	0.46
51:1:1470:A:N6	51:1:1521:G:H1'	2.30	0.46
51:1:2134:A:C5	51:1:2157:G:H4'	2.51	0.46
51:1:2741:A:H61	51:1:2763:G:H1'	1.80	0.46
52:2:116:G:O2'	52:2:117:G:H5'	2.15	0.46
53:3:980:C:H2'	53:3:981:U:O4'	2.15	0.46
53:3:1084:G:O2'	53:3:1103:C:H5	1.98	0.46
58:B1:772:TYR:HE2	59:B2:561:ILE:HG21	1.80	0.46
59:B2:148:GLN:NE2	59:B2:535:PRO:O	2.40	0.46
59:B2:562:GLU:OE1	59:B2:662:SER:OG	2.28	0.46
65:0:369:ASN:OD1	65:0:369:ASN:N	2.48	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
65:0:463:GLU:O	65:0:467:ASP:N	2.42	0.46
65:0:607:LYS:HE2	65:0:607:LYS:HB2	1.72	0.46
9:I:103:ARG:HD2	9:I:167:PRO:HG3	1.97	0.46
32:g:30:LEU:HA	32:g:35:LYS:HE3	1.96	0.46
33:i:7:TYR:CE1	51:1:1058:U:H5'	2.49	0.46
43:s:82:MET:HE1	51:1:1322:A:H4'	1.97	0.46
46:v:13:GLY:N	52:2:76:G:OP1	2.40	0.46
51:1:141:G:C8	51:1:142:A:H1'	2.51	0.46
51:1:175:G:H2'	51:1:176:A:H8	1.81	0.46
51:1:742:A:O2'	51:1:743:A:H5'	2.15	0.46
51:1:912:C:O2'	51:1:913:U:H5'	2.15	0.46
51:1:1569:A:H2'	51:1:1570:A:C8	2.51	0.46
51:1:1695:G:H2'	51:1:1696:G:O4'	2.15	0.46
51:1:1858:A:N6	51:1:1884:G:O2'	2.48	0.46
51:1:2751:G:O2'	51:1:2752:C:H5'	2.16	0.46
65:0:594:LYS:HB3	65:0:594:LYS:HE3	1.66	0.46
5:E:7:ARG:NH2	51:1:245:G:N7	2.63	0.46
8:H:2:GLN:NE2	53:3:1062:U:O4	2.48	0.46
11:K:53:LYS:HD3	11:K:53:LYS:HA	1.69	0.46
14:N:72:SER:HA	14:N:75:ALA:HB3	1.98	0.46
15:O:36:VAL:HG22	15:O:38:GLY:H	1.80	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
51:1:704:G:N3	51:1:726:G:C2	2.84	0.46
51:1:1136:G:H2'	51:1:1137:G:H8	1.80	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
53:3:859:G:O2'	53:3:860:A:H5'	2.15	0.46
53:3:1260:G:H4'	53:3:1284:C:H5'	1.98	0.46
57:A2:102:LEU:HD12	57:A2:115:ILE:HG12	1.96	0.46
59:B2:1002:LEU:HD21	59:B2:1007:LYS:HB2	1.98	0.46
65:0:136:PRO:HB3	65:0:256:VAL:HG12	1.97	0.46
1:A:9:TYR:HE1	30:e:61:GLY:H	1.63	0.46
7:G:132:GLU:OE2	7:G:136:ARG:NE	2.47	0.46
14:N:40:ARG:NE	53:3:1292:G:H5''	2.31	0.46
25:Y:60:GLN:HA	25:Y:63:LYS:HD2	1.98	0.46
27:b:6:LYS:HD2	27:b:7:PRO:HD2	1.98	0.46
49:y:10:SER:HA	49:y:13:GLU:HB3	1.98	0.46
51:1:690:G:H2'	51:1:691:C:H5'	1.98	0.46
51:1:820:A:O2'	51:1:821:A:H5'	2.15	0.46
51:1:845:A:N3	51:1:845:A:H3'	2.31	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1196:C:O2'	51:1:1197:G:H5'	2.16	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
51:1:1790:C:H2'	51:1:1791:A:C5	2.51	0.46
53:3:250:A:O4'	53:3:252:U:H1'	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
2:B:14:MET:HG2	51:1:15:G:O2'	2.16	0.46
3:C:35:LEU:HD21	51:1:2286:G:H22	1.81	0.46
4:D:1:MET:HE3	4:D:3:ARG:HH21	1.80	0.46
10:J:156:ARG:NH1	13:M:98:LEU:O	2.49	0.46
11:K:18:VAL:HG13	11:K:19:PRO:HD3	1.97	0.46
14:N:56:MET:HB2	14:N:60:LEU:HB2	1.97	0.46
20:T:80:LEU:O	20:T:84:LEU:N	2.42	0.46
26:Z:44:ARG:HD3	26:Z:44:ARG:HA	1.77	0.46
28:c:49:GLN:HE21	28:c:79:LEU:HB3	1.79	0.46
31:f:91:VAL:HG21	51:1:2657:A:H4'	1.97	0.46
48:x:16:ASN:HB2	48:x:24:THR:HB	1.97	0.46
51:1:824:U:H2'	51:1:825:A:O4'	2.15	0.46
51:1:1177:G:C2'	51:1:1178:C:H5''	2.45	0.46
51:1:1842:G:O2'	51:1:1843:C:H5'	2.15	0.46
51:1:2695:U:H2'	51:1:2696:U:C6	2.51	0.46
53:3:10:A:H2'	53:3:11:G:C8	2.51	0.46
53:3:271:C:H2'	53:3:272:C:C6	2.51	0.46
53:3:528:C:H4'	53:3:535:A:C6	2.51	0.46
57:A1:35:PHE:HA	57:A1:38:THR:HG22	1.97	0.46
15:O:36:VAL:HA	15:O:76:ILE:HA	1.97	0.46
16:P:71:ASP:OD1	16:P:71:ASP:N	2.43	0.46
20:T:50:HIS:ND1	53:3:667:G:H4'	2.31	0.46
27:b:71:ASP:HB3	27:b:118:GLY:HA2	1.98	0.46
28:c:61:THR:HB	28:c:63:PRO:HD2	1.96	0.46
29:d:47:LYS:HG2	51:1:451:U:OP2	2.15	0.46
31:f:136:ASP:HB3	31:f:139:VAL:HG12	1.97	0.46
39:o:6:ALA:HA	39:o:9:ARG:HE	1.81	0.46
51:1:393:C:H2'	51:1:394:C:H6	1.81	0.46
51:1:1642:G:O2'	51:1:1643:G:H5'	2.15	0.46
51:1:2259:U:C6	51:1:2427:C:C5	3.04	0.46
51:1:2643:G:O2'	51:1:2644:G:H5'	2.16	0.46
53:3:131:A:H2'	53:3:132:C:C6	2.51	0.46
53:3:556:C:O2'	53:3:557:G:H5'	2.16	0.46
53:3:556:C:H2'	53:3:557:G:O4'	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:962:C:H1'	53:3:1201:A:C6	2.51	0.46
53:3:973:G:H2'	53:3:974:A:C8	2.51	0.46
53:3:1121:U:H2'	53:3:1122:U:C6	2.51	0.46
58:B1:115:TRP:HB3	58:B1:1333:THR:CG2	2.46	0.46
59:B2:230:PHE:HB2	59:B2:333:ILE:HB	1.97	0.46
59:B2:712:SER:OG	59:B2:713:GLY:N	2.49	0.46
64:a:193:LEU:O	64:a:197:LYS:N	2.42	0.46
12:L:140:VAL:O	12:L:144:ALA:N	2.46	0.46
14:N:30:ASN:N	14:N:64:ILE:O	2.48	0.46
19:S:55:SER:OG	19:S:57:SER:OG	2.30	0.46
27:b:107:LYS:N	27:b:193:GLU:O	2.49	0.46
27:b:155:ARG:CZ	51:1:1818:U:C5	2.99	0.46
34:j:7:LYS:HG2	34:j:10:THR:HG23	1.97	0.46
51:1:233:A:H5'	51:1:233:A:H8	1.80	0.46
51:1:441:U:H2'	51:1:442:G:H8	1.81	0.46
51:1:717:C:H2'	51:1:718:A:H5'	1.98	0.46
51:1:2099:U:H2'	51:1:2100:G:C8	2.51	0.46
51:1:2491:U:C2'	51:1:2492:U:H5'	2.41	0.46
53:3:1289:A:H2'	53:3:1290:G:H5'	1.98	0.46
55:8:13:DT:C6	58:B1:791:ALA:HA	2.51	0.46
58:B1:211:GLU:CG	58:B1:215:LYS:HE3	2.44	0.46
58:B1:1167:LYS:NZ	58:B1:1170:LYS:HB2	2.30	0.46
59:B2:689:ALA:HB2	59:B2:1233:LEU:HD23	1.97	0.46
65:0:419:ALA:HB2	65:0:486:PRO:HA	1.98	0.46
12:L:79:VAL:O	12:L:79:VAL:HG12	2.16	0.45
15:O:15:HIS:CG	53:3:1152:A:H5'	2.51	0.45
16:P:115:ILE:HD12	16:P:116:PRO:HD2	1.98	0.45
17:Q:120:ARG:HG2	53:3:37:U:C5'	2.46	0.45
21:U:4:ILE:HD13	21:U:21:VAL:HA	1.99	0.45
29:d:49:ARG:NH1	51:1:674:G:OP2	2.48	0.45
45:u:88:ASP:OD1	45:u:88:ASP:N	2.48	0.45
51:1:107:G:H2'	51:1:108:G:C8	2.51	0.45
51:1:388:G:H2'	51:1:390:U:H5	1.81	0.45
51:1:2537:U:H2'	51:1:2538:C:H6	1.78	0.45
52:2:118:C:C2'	52:2:119:A:H4'	2.33	0.45
53:3:113:G:O2'	53:3:353:A:H4'	2.16	0.45
53:3:144:G:H2'	53:3:145:G:O4'	2.16	0.45
53:3:460:A:H2'	53:3:461:A:C8	2.51	0.45
58:B1:343:LEU:HD11	58:B1:1324:SER:HB3	1.98	0.45
58:B1:1227:HIS:HA	58:B1:1230:THR:HG22	1.99	0.45
59:B2:735:LYS:HA	59:B2:748:ILE:HG22	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
65:0:15:ILE:O	65:0:89:THR:OG1	2.35	0.45
65:0:507:LYS:HE2	65:0:507:LYS:HB2	1.49	0.45
65:0:526:GLU:H	65:0:575:GLY:H	1.64	0.45
13:M:104:SER:OG	53:3:642:A:N3	2.48	0.45
16:P:97:ARG:HA	16:P:100:ASN:HD22	1.82	0.45
17:Q:34:THR:HG22	17:Q:76:HIS:CD2	2.51	0.45
34:j:57:LEU:HD11	34:j:130:HIS:HD2	1.82	0.45
43:s:82:MET:HB2	43:s:98:LYS:HB2	1.97	0.45
45:u:5:ARG:NH1	51:1:84:A:H5''	2.31	0.45
51:1:864:G:H2'	51:1:865:C:O4'	2.16	0.45
51:1:1614:A:C2'	51:1:1615:C:H5'	2.46	0.45
51:1:1841:U:H2'	51:1:1842:G:C8	2.51	0.45
51:1:2457:U:O2'	51:1:2458:G:H5'	2.15	0.45
51:1:2646:C:H2'	51:1:2647:U:O4'	2.16	0.45
53:3:280:C:H5''	53:3:281:G:OP2	2.17	0.45
53:3:1069:C:H4'	53:3:1192:C:O2	2.16	0.45
53:3:1096:C:H2'	53:3:1097:C:H6	1.80	0.45
53:3:1104:G:H2'	53:3:1105:A:O4'	2.16	0.45
53:3:1173:U:H2'	53:3:1174:G:C8	2.48	0.45
53:3:1361:G:H2'	53:3:1362:A:O4'	2.16	0.45
59:B2:24:VAL:HG11	59:B2:704:MET:HE1	1.99	0.45
59:B2:27:LEU:O	59:B2:528:ARG:NH1	2.43	0.45
65:0:17:ALA:H	65:0:23:LYS:HZ3	1.63	0.45
20:T:38:LEU:HD23	20:T:55:LEU:HD12	1.98	0.45
29:d:22:ASP:OD1	29:d:22:ASP:N	2.48	0.45
31:f:94:ARG:HA	31:f:127:GLN:HB2	1.99	0.45
33:i:52:LEU:HD13	33:i:77:VAL:HG13	1.97	0.45
42:r:49:ILE:HG22	42:r:54:VAL:HG22	1.97	0.45
51:1:91:A:H8	51:1:91:A:OP1	1.99	0.45
51:1:252:G:H2'	51:1:253:C:H6	1.81	0.45
51:1:1954:G:H21	51:1:1956:U:H3	1.65	0.45
51:1:2101:A:H2'	51:1:2102:G:C8	2.50	0.45
51:1:2869:G:H2'	51:1:2870:C:O4'	2.16	0.45
52:2:30:C:H2'	52:2:31:C:C5'	2.47	0.45
53:3:323:U:H3	53:3:327:A:H62	1.64	0.45
55:8:20:DA:H4'	59:B2:143:ARG:NH1	2.31	0.45
58:B1:213:LYS:HA	58:B1:213:LYS:HE3	1.99	0.45
65:0:560:GLN:HB2	65:0:601:PHE:HD2	1.81	0.45
2:B:49:ARG:NH2	51:1:2884:U:H1'	2.32	0.45
15:O:59:LYS:HD3	53:3:972:C:O3'	2.16	0.45
29:d:131:THR:HA	29:d:134:LEU:HB3	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:f:88:LEU:HB3	31:f:128:THR:HA	1.97	0.45
32:g:94:ILE:HD12	32:g:99:ILE:HG21	1.98	0.45
42:r:38:VAL:HG21	42:r:57:GLY:HA3	1.97	0.45
51:1:191:A:H2'	51:1:192:C:H6	1.81	0.45
51:1:468:G:C2'	51:1:469:G:H5'	2.46	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
51:1:2190:G:H2'	51:1:2191:A:O4'	2.16	0.45
53:3:37:U:H2'	53:3:38:G:H5'	1.98	0.45
53:3:478:A:H2'	53:3:479:U:C4'	2.46	0.45
53:3:1316:G:H2'	53:3:1317:C:H5''	1.99	0.45
57:A1:231:PHE:O	57:A2:218:ARG:NH1	2.50	0.45
57:A2:80:GLU:HG3	59:B2:694:ARG:HH22	1.81	0.45
58:B1:515:ARG:NH2	58:B1:718:SER:O	2.48	0.45
59:B2:546:GLU:H	59:B2:546:GLU:HG3	1.53	0.45
59:B2:557:ARG:NH2	59:B2:607:SER:O	2.49	0.45
65:0:144:MET:HG2	65:0:266:CYS:HB2	1.99	0.45
65:0:171:LEU:HD11	65:0:218:TRP:HD1	1.82	0.45
8:H:10:ARG:HA	8:H:13:ILE:HD11	1.97	0.45
16:P:25:SER:HG	16:P:28:ASN:H	1.62	0.45
16:P:114:PRO:O	26:Z:28:LEU:HD21	2.17	0.45
22:V:21:VAL:HG22	22:V:44:HIS:HA	1.98	0.45
29:d:43:THR:O	51:1:38:A:H1'	2.17	0.45
37:m:27:SER:H	37:m:104:GLU:CD	2.24	0.45
49:y:38:GLN:O	51:1:95:A:H4'	2.16	0.45
51:1:952:G:H3'	51:1:953:G:H5''	1.98	0.45
51:1:2123:G:N3	51:1:2176:A:N6	2.65	0.45
51:1:2680:U:O2'	51:1:2681:C:H5'	2.16	0.45
53:3:384:G:H2'	53:3:385:C:C6	2.52	0.45
53:3:771:G:H2'	53:3:772:U:C6	2.51	0.45
53:3:951:G:H2'	53:3:952:U:H6	1.79	0.45
58:B1:109:SER:HB2	58:B1:296:LYS:HG2	1.98	0.45
58:B1:375:GLU:HB3	59:B2:1245:ALA:HB3	1.97	0.45
59:B2:517:GLN:HB3	59:B2:760:ASN:H	1.79	0.45
64:a:167:LYS:HE2	64:a:167:LYS:HB3	1.55	0.45
7:G:115:ASP:OD1	7:G:115:ASP:N	2.42	0.45
10:J:161:GLU:HA	10:J:164:LEU:HD12	1.97	0.45
15:O:47:GLU:OE2	15:O:69:THR:OG1	2.30	0.45
20:T:19:ASN:O	53:3:750:C:H1'	2.16	0.45
29:d:123:LYS:HE2	29:d:123:LYS:HB3	1.80	0.45
30:e:35:LEU:HD22	30:e:151:LEU:HD21	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:k:56:ASP:N	35:k:56:ASP:OD1	2.49	0.45
39:o:94:ARG:NH2	39:o:98:GLN:OE1	2.50	0.45
51:1:642:U:H2'	51:1:644:A:OP2	2.16	0.45
51:1:817:C:O2'	51:1:839:U:H5''	2.16	0.45
51:1:1028:A:N6	51:1:1125:G:H2'	2.31	0.45
51:1:1086:A:H1'	51:1:1103:A:H2	1.81	0.45
51:1:1337:G:O2'	51:1:1338:G:H5'	2.17	0.45
51:1:2599:G:H2'	51:1:2600:A:H8	1.80	0.45
53:3:962:C:H42	53:3:973:G:H1	1.64	0.45
58:B1:75:TYR:CD2	58:B1:75:TYR:O	2.70	0.45
58:B1:213:LYS:HE3	58:B1:213:LYS:CA	2.47	0.45
58:B1:926:PRO:HB2	58:B1:1241:TYR:HE1	1.82	0.45
59:B2:674:ASP:OD2	59:B2:1070:HIS:ND1	2.50	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
6:F:28:SER:OG	6:F:29:ALA:N	2.50	0.45
10:J:88:HIS:HB3	10:J:134:ASN:HD21	1.81	0.45
11:K:11:HIS:HB3	11:K:14:GLN:HB2	1.99	0.45
16:P:25:SER:HG	16:P:28:ASN:N	2.15	0.45
24:X:71:GLY:HA3	53:3:1320:C:C2	2.51	0.45
28:c:194:PRO:HA	51:1:2680:U:C5'	2.46	0.45
30:e:35:LEU:HB2	30:e:88:VAL:HG12	1.98	0.45
33:i:126:ARG:O	33:i:130:GLY:N	2.50	0.45
45:u:65:GLN:CD	51:1:328:U:H4'	2.41	0.45
50:z:19:HIS:CD2	50:z:50:VAL:HG12	2.52	0.45
51:1:1069:A:H2'	51:1:1073:A:C5	2.51	0.45
51:1:1786:A:O2'	51:1:1787:A:H5'	2.17	0.45
51:1:2785:C:H2'	51:1:2786:U:C6	2.51	0.45
53:3:433:G:H2'	53:3:434:U:C6	2.51	0.45
53:3:437:U:C2'	53:3:438:U:H5'	2.46	0.45
53:3:569:C:H4'	53:3:574:A:N7	2.31	0.45
53:3:1198:G:H2'	53:3:1199:U:C6	2.51	0.45
57:A1:185:TYR:HA	57:A1:202:VAL:O	2.16	0.45
58:B1:67:ASP:OD1	58:B1:67:ASP:O	2.35	0.45
58:B1:201:LEU:CD1	58:B1:224:LEU:HD12	2.46	0.45
65:0:145:ASP:OD1	65:0:273:LYS:NZ	2.45	0.45
1:A:41:HIS:HD2	30:e:108:PRO:HA	1.82	0.45
7:G:136:ARG:O	7:G:140:LEU:N	2.47	0.45
8:H:63:ILE:HG23	8:H:98:ALA:HA	1.99	0.45
10:J:72:ASN:OD1	10:J:72:ASN:N	2.50	0.45
18:R:113:LYS:HZ3	63:6:44:A:H4'	1.80	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:S:23:ARG:HH12	19:S:27:LYS:HB3	1.82	0.45
19:S:75:LYS:HZ3	53:3:1357:A:H5''	1.81	0.45
24:X:46:LEU:HD12	24:X:48:ILE:HD11	1.99	0.45
32:g:98:ASP:O	32:g:102:ALA:N	2.49	0.45
51:1:708:G:O2'	51:1:709:U:H5'	2.17	0.45
51:1:740:C:H5'	51:1:740:C:C6	2.46	0.45
51:1:878:A:H3'	51:1:879:G:H8	1.82	0.45
51:1:1429:G:C2	51:1:1568:G:C2	3.05	0.45
51:1:2127:G:H2'	51:1:2128:G:C8	2.52	0.45
51:1:2226:C:H2'	51:1:2227:A:O4'	2.17	0.45
52:2:16:G:N2	52:2:69:G:H1'	2.31	0.45
53:3:20:U:O2'	53:3:21:G:H5'	2.17	0.45
53:3:684:U:H3	53:3:706:A:H61	1.63	0.45
53:3:1255:G:H1	53:3:1282:C:H42	1.64	0.45
65:0:392:THR:OG1	65:0:395:ASP:OD2	2.31	0.45
65:0:520:ILE:HA	65:0:579:HIS:H	1.80	0.45
5:E:7:ARG:NH1	51:1:243:U:OP2	2.49	0.45
7:G:20:ARG:HD2	53:3:831:A:H5''	1.98	0.45
14:N:16:ALA:HA	14:N:66:VAL:HA	1.98	0.45
17:Q:57:THR:HG21	53:3:362:G:H5''	1.99	0.45
18:R:107:THR:HG21	53:3:1307:U:H4'	1.99	0.45
27:b:252:LYS:HD3	27:b:252:LYS:HA	1.80	0.45
29:d:37:ALA:HB1	29:d:94:GLN:H	1.82	0.45
30:e:91:ARG:HA	30:e:95:MET:HG2	1.99	0.45
40:p:74:GLN:NE2	51:1:2683:C:O2'	2.49	0.45
50:z:37:ARG:NH1	51:1:928:A:O2'	2.50	0.45
51:1:146:A:H2'	51:1:147:C:H6	1.81	0.45
51:1:224:U:H2'	51:1:225:C:O4'	2.17	0.45
51:1:598:U:H2'	51:1:599:A:C8	2.52	0.45
51:1:866:A:H61	51:1:913:U:C1'	2.28	0.45
51:1:927:A:H2'	51:1:928:A:O4'	2.17	0.45
51:1:1300:G:N7	51:1:1626:A:H2'	2.32	0.45
51:1:2125:G:C5'	64:a:39:VAL:HG22	2.47	0.45
51:1:2183:A:H2'	51:1:2184:A:C8	2.52	0.45
53:3:607:A:H2'	53:3:608:A:O4'	2.17	0.45
53:3:1098:C:H2'	53:3:1099:G:O4'	2.17	0.45
53:3:1147:C:H2'	53:3:1148:U:C6	2.52	0.45
53:3:1436:U:H2'	53:3:1437:A:C8	2.45	0.45
55:8:1:DC:H2''	55:8:2:DC:C6	2.51	0.45
58:B1:33:TRP:HZ2	59:B2:1336:ASN:OD1	2.00	0.45
8:H:58:ARG:HB3	8:H:63:ILE:HB	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:96:ARG:HG2	9:I:133:SER:HA	1.99	0.45
19:S:61:ASN:HB3	19:S:72:PHE:CE2	2.52	0.45
28:c:2:ILE:HG12	28:c:90:PHE:HZ	1.82	0.45
34:j:134:ALA:HB1	51:1:2898:U:O2	2.17	0.45
35:k:61:VAL:O	35:k:85:VAL:N	2.47	0.45
38:n:73:ASN:O	38:n:77:ALA:N	2.50	0.45
39:o:18:LEU:HD23	39:o:21:LEU:HD12	1.99	0.45
40:p:48:ALA:N	40:p:59:THR:OG1	2.50	0.45
40:p:105:LYS:HG2	53:3:1464:U:OP1	2.17	0.45
48:x:31:ASN:ND2	48:x:52:ALA:HB3	2.32	0.45
51:1:44:A:C2'	51:1:45:G:H5'	2.45	0.45
51:1:776:G:C8	51:1:793:A:C2	3.05	0.45
51:1:1094:U:H2'	51:1:1096:A:OP2	2.17	0.45
51:1:1541:C:H2'	51:1:1542:U:O4'	2.17	0.45
51:1:2066:C:H2'	51:1:2067:G:H8	1.81	0.45
51:1:2073:C:O5'	51:1:2073:C:H6	1.99	0.45
53:3:757:U:H2'	53:3:758:C:H5'	1.99	0.45
53:3:792:A:H4'	53:3:793:U:C5'	2.47	0.45
53:3:946:A:H4'	53:3:1333:A:O2'	2.17	0.45
53:3:962:C:H1'	53:3:1201:A:N1	2.32	0.45
58:B1:68:TYR:O	58:B1:75:TYR:CD2	2.70	0.45
58:B1:395:LYS:NZ	58:B1:399:LYS:HE2	2.32	0.45
59:B2:805:MET:HE3	59:B2:805:MET:HB2	1.86	0.45
65:0:173:ILE:HD13	65:0:173:ILE:HA	1.90	0.45
65:0:643:LYS:HE3	65:0:655:HIS:HB3	1.99	0.45
14:N:28:VAL:HG13	14:N:63:TYR:HA	1.99	0.44
27:b:73:ILE:HG12	51:1:1490:A:H2	1.79	0.44
29:d:153:LEU:HD11	29:d:158:PHE:HB2	1.98	0.44
33:i:9:LYS:HA	33:i:57:VAL:HA	1.99	0.44
33:i:52:LEU:HD11	33:i:81:LYS:HD3	1.99	0.44
36:l:135:ILE:HG23	36:l:140:GLY:HA3	1.99	0.44
38:n:40:LYS:O	38:n:44:LEU:N	2.48	0.44
40:p:28:LYS:HB2	40:p:82:SER:H	1.81	0.44
51:1:753:A:H2'	51:1:754:U:C6	2.52	0.44
51:1:754:U:O5'	51:1:754:U:H6	2.00	0.44
51:1:918:A:H4'	52:2:97:C:O2	2.16	0.44
51:1:1979:U:O5'	51:1:1979:U:H6	1.99	0.44
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
53:3:347:G:H2'	53:3:348:G:O4'	2.17	0.44
56:9:12:DC:H3'	58:B1:47:ARG:HH12	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:B1:105:ILE:HD12	58:B1:242:LEU:CD2	2.44	0.44
58:B1:375:GLU:O	59:B2:1247:SER:HB3	2.16	0.44
58:B1:388:ARG:HG2	58:B1:388:ARG:NH1	2.32	0.44
58:B1:1108:GLN:HG3	58:B1:1109:LEU:HD12	1.99	0.44
59:B2:1314:GLN:HA	60:W0:28:ARG:HH22	1.80	0.44
63:6:70:G:H2'	63:6:71:C:C6	2.52	0.44
5:E:15:LYS:HA	5:E:21:PHE:HA	1.99	0.44
21:U:26:ASN:HD21	21:U:31:ARG:N	2.15	0.44
27:b:212:TRP:NE1	51:1:1566:A:O4'	2.50	0.44
51:1:162:U:H6	51:1:163:C:H5	1.65	0.44
51:1:1087:G:H1	51:1:1102:C:H42	1.64	0.44
51:1:1432:G:H2'	51:1:1433:A:C8	2.52	0.44
51:1:1565:C:O2'	51:1:1566:A:H2'	2.16	0.44
51:1:2007:U:O5'	51:1:2007:U:H6	2.01	0.44
53:3:68:G:H2'	53:3:69:G:O4'	2.17	0.44
53:3:334:C:H2'	53:3:335:C:O4'	2.16	0.44
53:3:563:A:H2'	53:3:563:A:N3	2.32	0.44
53:3:768:A:C2	53:3:1512:U:H4'	2.52	0.44
53:3:782:A:O3'	53:3:1515:G:H4'	2.16	0.44
58:B1:978:ARG:HD3	58:B1:999:TYR:H	1.82	0.44
65:0:11:ARG:HG3	65:0:283:ILE:HA	1.99	0.44
65:0:97:ILE:HD13	65:0:412:PRO:HG3	1.99	0.44
65:0:305:THR:O	65:0:305:THR:OG1	2.33	0.44
8:H:153:SER:O	8:H:196:GLY:N	2.50	0.44
14:N:6:TYR:OH	53:3:1148:U:H5'	2.16	0.44
17:Q:11:ARG:HH11	53:3:563:A:H2	1.64	0.44
19:S:92:ILE:HD13	19:S:92:ILE:HA	1.84	0.44
22:V:64:ARG:CB	53:3:130:A:H8	2.31	0.44
28:c:197:THR:HG23	51:1:2820:A:C6	2.52	0.44
41:q:25:GLY:O	41:q:29:ARG:NH1	2.50	0.44
48:x:57:VAL:HG12	48:x:61:LYS:HZ1	1.81	0.44
51:1:233:A:C2'	51:1:234:U:H5'	2.48	0.44
51:1:623:C:H2'	51:1:624:C:C6	2.52	0.44
51:1:1024:G:O5'	51:1:1025:G:H5''	2.16	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
51:1:1276:A:H61	51:1:1294:U:H3	1.64	0.44
51:1:1656:C:H2'	51:1:1657:U:H6	1.82	0.44
51:1:2102:G:H2'	51:1:2103:C:O4'	2.18	0.44
51:1:2270:A:H2'	51:1:2271:G:O4'	2.18	0.44
53:3:925:G:H1'	53:3:1502:A:C4	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:994:A:H61	53:3:1047:G:C4'	2.30	0.44
58:B1:76:LYS:NZ	58:B1:76:LYS:HB3	2.32	0.44
58:B1:1158:GLU:HA	58:B1:1223:LEU:HD21	1.99	0.44
59:B2:176:ILE:HD11	59:B2:428:VAL:HG21	1.98	0.44
62:NG:161:SER:CB	62:NG:170:PRO:HA	2.47	0.44
65:0:13:ILE:HG22	65:0:86:ILE:HA	1.98	0.44
12:L:57:GLU:HG3	12:L:58:LEU:HD12	1.99	0.44
19:S:2:LYS:HG2	19:S:4:SER:H	1.81	0.44
27:b:84:PRO:HG3	51:1:1568:G:OP1	2.16	0.44
29:d:5:LEU:HG	29:d:120:VAL:HG13	2.00	0.44
31:f:98:LYS:HD2	31:f:98:LYS:HA	1.78	0.44
35:k:62:VAL:HA	35:k:84:CYS:HA	2.00	0.44
45:u:27:VAL:HA	45:u:33:VAL:HG13	1.98	0.44
51:1:397:U:O5'	51:1:397:U:H6	2.00	0.44
51:1:974:G:O2'	51:1:989:G:N2	2.51	0.44
51:1:1147:A:O2'	51:1:1148:U:H5'	2.17	0.44
51:1:1368:G:H2'	51:1:1369:G:C8	2.51	0.44
51:1:1954:G:N2	51:1:1956:U:H3	2.15	0.44
53:3:152:A:H2'	53:3:153:C:H5'	1.99	0.44
53:3:272:C:H2'	53:3:273:U:H6	1.83	0.44
53:3:675:A:C2	53:3:676:A:H1'	2.52	0.44
53:3:806:C:H2'	53:3:807:A:C8	2.52	0.44
53:3:969:A:H2'	53:3:970:C:O4'	2.18	0.44
53:3:1475:G:C2	53:3:1476:A:H1'	2.52	0.44
58:B1:434:ILE:HD11	59:B2:1274:GLU:HG3	2.00	0.44
58:B1:484:MET:CE	59:B2:1278:LEU:HD21	2.46	0.44
58:B1:804:ALA:HB2	58:B1:1256:ILE:CD1	2.48	0.44
59:B2:998:LEU:HG	59:B2:1011:LEU:HB3	1.99	0.44
3:C:45:HIS:ND1	51:1:2372:U:H4'	2.32	0.44
7:G:33:ALA:HB3	7:G:37:VAL:HB	1.99	0.44
9:I:47:LEU:HD22	53:3:510:A:OP1	2.17	0.44
15:O:70:HIS:HD2	15:O:72:ARG:HH22	1.64	0.44
18:R:94:LEU:HD12	18:R:95:PRO:HD2	2.00	0.44
25:Y:4:LYS:NZ	53:3:332:G:P	2.91	0.44
27:b:155:ARG:NH1	51:1:1818:U:C5	2.81	0.44
40:p:25:VAL:HG21	40:p:83:ILE:HG22	1.99	0.44
43:s:13:SER:OG	43:s:14:ALA:N	2.50	0.44
44:t:17:SER:OG	44:t:20:ALA:N	2.48	0.44
47:w:56:PHE:HE1	47:w:58:LYS:HE2	1.83	0.44
50:z:18:LYS:HE2	50:z:18:LYS:HB3	1.89	0.44
51:1:138:U:H3'	51:1:139:U:H5'	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:885:C:H2'	51:1:891:G:H22	1.82	0.44
51:1:1177:G:H2'	51:1:1178:C:C5'	2.48	0.44
53:3:240:G:H2'	53:3:241:G:C8	2.53	0.44
53:3:505:G:C6	53:3:535:A:C2	3.05	0.44
53:3:563:A:H5'	53:3:566:G:N2	2.33	0.44
53:3:894:G:H2'	53:3:895:G:C8	2.53	0.44
53:3:1312:G:H2'	53:3:1313:U:C6	2.52	0.44
55:8:16:DT:H2'	55:8:17:DC:C6	2.52	0.44
58:B1:1357:ILE:HG22	58:B1:1359:ALA:H	1.82	0.44
59:B2:444:ASP:OD1	59:B2:444:ASP:N	2.51	0.44
6:F:1:MET:N	51:1:2526:G:H1'	2.32	0.44
23:W:37:LYS:HE2	23:W:37:LYS:HB2	1.73	0.44
27:b:57:HIS:CE1	51:1:1567:G:H4'	2.52	0.44
30:e:134:GLN:NE2	30:e:147:ARG:O	2.41	0.44
31:f:41:GLU:N	31:f:52:GLY:O	2.49	0.44
41:q:32:ARG:HB2	51:1:581:C:OP1	2.18	0.44
51:1:648:G:H2'	51:1:649:G:H8	1.82	0.44
51:1:960:A:H5''	51:1:961:C:OP1	2.17	0.44
51:1:2703:C:H2'	51:1:2704:C:H6	1.82	0.44
52:2:6:G:O2'	52:2:7:G:H5'	2.17	0.44
53:3:723:U:O2	53:3:855:U:H4'	2.18	0.44
54:4:41:G:OP1	59:B2:1073:LYS:NZ	2.35	0.44
58:B1:128:LEU:CD2	58:B1:188:LEU:HB3	2.47	0.44
58:B1:1024:THR:HG23	58:B1:1123:ARG:HA	2.00	0.44
59:B2:746:ALA:O	59:B2:974:ARG:NH2	2.45	0.44
65:0:75:MET:HG3	65:0:279:LEU:HD11	1.99	0.44
65:0:494:ILE:HA	65:0:610:PRO:HA	1.99	0.44
10:J:50:GLY:HA3	10:J:62:ALA:HB2	2.00	0.44
11:K:45:ARG:N	11:K:57:ALA:O	2.45	0.44
12:L:67:ASN:HB3	12:L:129:ASN:HD21	1.83	0.44
14:N:47:VAL:HG12	14:N:78:ILE:HG21	2.00	0.44
14:N:125:GLN:HG3	53:3:1232:U:H5''	1.99	0.44
39:o:90:VAL:HG23	39:o:117:PHE:HB3	2.00	0.44
51:1:861:A:H2'	51:1:862:G:O4'	2.18	0.44
51:1:1056:G:H1'	51:1:1103:A:N6	2.33	0.44
51:1:2073:C:O2'	51:1:2074:U:H5'	2.17	0.44
51:1:2102:G:H1	51:1:2187:U:H3	1.65	0.44
51:1:2560:A:O2'	51:1:2561:U:H5'	2.17	0.44
51:1:2757:A:H2'	51:1:2757:A:N3	2.31	0.44
52:2:115:A:H2'	52:2:116:G:C8	2.53	0.44
53:3:253:A:O4'	53:3:276:G:H1'	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:570:G:H5'	53:3:820:U:O4'	2.18	0.44
57:A1:68:TYR:HE1	57:A1:79:LEU:HD13	1.82	0.44
58:B1:111:THR:HG21	58:B1:303:VAL:HB	2.00	0.44
58:B1:770:LEU:HD13	59:B2:618:GLN:CD	2.42	0.44
59:B2:909:LYS:HD3	59:B2:909:LYS:HA	1.57	0.44
60:W0:58:LEU:HD12	60:W0:59:ILE:HG12	2.00	0.44
65:0:338:VAL:HG13	65:0:380:GLY:H	1.83	0.44
65:0:496:GLN:HB3	65:0:608:ALA:HA	1.98	0.44
65:0:498:VAL:HG12	65:0:522:MET:HB2	2.00	0.44
65:0:614:GLU:OE1	65:0:690:ALA:HB2	2.18	0.44
9:I:145:ARG:HB3	9:I:148:ALA:HB3	1.99	0.44
23:W:58:ILE:O	23:W:62:ARG:N	2.49	0.44
27:b:227:VAL:HG11	51:1:784:G:C2	2.52	0.44
28:c:94:GLN:H	28:c:94:GLN:HG3	1.59	0.44
29:d:136:GLN:HA	29:d:139:LYS:HB2	2.00	0.44
31:f:62:ALA:HA	51:1:2748:A:O2'	2.18	0.44
37:m:81:ARG:NH1	51:1:2251:G:OP1	2.51	0.44
51:1:1020:A:C1'	51:1:1021:A:OP2	2.61	0.44
51:1:1028:A:C2	51:1:2487:G:H1'	2.52	0.44
51:1:1630:A:H2'	51:1:1631:G:H5'	2.00	0.44
51:1:1744:A:H3'	51:1:1745:A:H8	1.83	0.44
51:1:2065:C:H2'	51:1:2066:C:C6	2.53	0.44
51:1:2069:G:H2'	51:1:2070:A:H8	1.82	0.44
51:1:2194:U:H2'	51:1:2195:U:C6	2.52	0.44
51:1:2259:U:C2	51:1:2427:C:C4	3.06	0.44
51:1:2723:C:H2'	51:1:2724:U:O4'	2.17	0.44
58:B1:62:PHE:N	58:B1:62:PHE:CD1	2.85	0.44
58:B1:107:LEU:HA	58:B1:276:ASN:ND2	2.33	0.44
65:0:119:VAL:HG21	65:0:162:LEU:HD11	2.00	0.44
8:H:66:THR:HA	8:H:101:ASN:HB2	1.99	0.44
11:K:3:HIS:ND1	11:K:65:GLU:HB2	2.33	0.44
13:M:45:ILE:HG12	13:M:60:LEU:HD23	2.00	0.44
25:Y:16:ALA:O	25:Y:20:ASN:N	2.45	0.44
28:c:5:VAL:HG22	28:c:202:ILE:HG12	2.00	0.44
34:j:81:ILE:HG21	51:1:2514:U:H4'	1.99	0.44
42:r:17:GLY:H	42:r:98:ILE:HB	1.83	0.44
45:u:14:THR:OG1	45:u:15:GLY:N	2.51	0.44
47:w:58:LYS:HD3	51:1:2366:A:H4'	1.99	0.44
51:1:514:A:O2'	51:1:515:A:H5'	2.17	0.44
51:1:537:G:H22	51:1:555:G:H2'	1.83	0.44
51:1:608:A:H2'	51:1:609:A:O4'	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2762:C:H2'	51:1:2763:G:H5'	2.00	0.44
53:3:182:A:N1	53:3:224:U:H5'	2.33	0.44
53:3:290:C:H2'	53:3:291:U:O4'	2.18	0.44
53:3:369:G:N2	53:3:393:A:H1'	2.33	0.44
53:3:599:C:H2'	53:3:600:A:C8	2.53	0.44
53:3:964:A:H2'	53:3:965:U:H5'	2.00	0.44
53:3:1057:G:H2'	53:3:1058:G:O4'	2.18	0.44
53:3:1508:A:H61	53:3:1527:U:H3	1.66	0.44
57:A1:192:VAL:HG12	57:A1:193:GLU:H	1.83	0.44
58:B1:375:GLU:HB3	59:B2:1245:ALA:CB	2.48	0.44
58:B1:472:LEU:CD1	59:B2:1294:LYS:HG2	2.47	0.44
59:B2:1246:ARG:HH11	59:B2:1266:GLY:HA2	1.82	0.44
14:N:129:ARG:NH1	63:6:32:C:OP2	2.49	0.43
23:W:71:ASP:OD1	23:W:71:ASP:N	2.50	0.43
26:Z:6:ARG:HA	26:Z:6:ARG:HD2	1.61	0.43
27:b:120:ASP:OD1	27:b:120:ASP:N	2.49	0.43
51:1:330:A:H8	51:1:1210:G:C5	2.36	0.43
51:1:368:A:C2'	51:1:369:U:H5'	2.47	0.43
51:1:728:G:O2'	51:1:730:A:H8	2.01	0.43
51:1:984:A:P	51:1:985:C:H5	2.41	0.43
51:1:1044:C:O5'	51:1:1044:C:H6	2.00	0.43
51:1:1545:A:H2'	51:1:1546:G:O4'	2.17	0.43
51:1:2338:C:H6	51:1:2338:C:O5'	2.01	0.43
51:1:2599:G:H2'	51:1:2600:A:C8	2.53	0.43
53:3:160:A:H2'	53:3:161:A:O4'	2.18	0.43
55:8:12:DG:OP1	58:B1:795:TYR:CE1	2.71	0.43
58:B1:45:ASN:HD22	58:B1:48:THR:H	1.65	0.43
58:B1:139:LEU:HD23	58:B1:139:LEU:HA	1.89	0.43
58:B1:731:ARG:HB3	59:B2:1105:SER:HB2	2.00	0.43
58:B1:850:LYS:HB3	58:B1:855:ASP:HB2	2.00	0.43
58:B1:894:VAL:HG22	58:B1:1258:ARG:HH11	1.83	0.43
59:B2:557:ARG:HB3	59:B2:587:LEU:HD13	2.00	0.43
65:0:365:GLN:N	65:0:372:GLU:O	2.38	0.43
65:0:566:LEU:HB3	65:0:567:ALA:H	1.70	0.43
12:L:34:LYS:NZ	53:3:1289:A:C2	2.86	0.43
21:U:13:LYS:CD	53:3:392:C:H5'	2.48	0.43
30:e:135:ILE:HA	30:e:140:ILE:HD11	1.99	0.43
37:m:68:PHE:CE2	51:1:871:U:H5''	2.53	0.43
40:p:59:THR:HG22	40:p:72:VAL:HG23	2.00	0.43
47:w:30:GLY:N	47:w:57:ALA:O	2.33	0.43
51:1:755:U:H2'	51:1:756:A:C8	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1086:A:H3'	51:1:1086:A:N3	2.33	0.43
51:1:1984:G:H2'	51:1:1985:C:H6	1.82	0.43
51:1:2845:U:H2'	51:1:2846:G:H8	1.83	0.43
53:3:622:A:H2'	53:3:623:C:H5'	1.99	0.43
53:3:1095:U:OP1	53:3:1108:G:N2	2.51	0.43
57:A1:212:ASP:OD1	57:A1:212:ASP:N	2.48	0.43
58:B1:111:THR:CG2	58:B1:300:GLN:HA	2.48	0.43
58:B1:161:THR:H	58:B1:164:GLN:HB2	1.82	0.43
58:B1:201:LEU:HD11	58:B1:220:ARG:NH1	2.32	0.43
58:B1:506:VAL:HG23	58:B1:628:GLY:HA3	1.99	0.43
65:0:73:SER:HB2	65:0:81:PRO:HG3	2.00	0.43
65:0:122:GLN:O	65:0:125:THR:OG1	2.36	0.43
17:Q:48:LEU:HD12	17:Q:48:LEU:HA	1.85	0.43
29:d:129:PRO:HG3	29:d:156:ASN:HA	2.00	0.43
29:d:131:THR:HG21	51:1:320:A:H2'	1.99	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	2.01	0.43
37:m:71:LYS:HD3	37:m:72:PRO:HD2	2.00	0.43
39:o:10:ARG:HE	39:o:10:ARG:HB2	1.61	0.43
39:o:55:GLU:OE2	52:2:116:G:H5''	2.17	0.43
39:o:56:LYS:HA	39:o:59:ALA:HB3	2.01	0.43
41:q:51:GLN:O	41:q:55:GLN:N	2.48	0.43
42:r:34:GLU:HB2	42:r:58:VAL:HB	1.99	0.43
48:x:9:LYS:HB3	48:x:30:PRO:CB	2.48	0.43
50:z:11:SER:OG	51:1:988:A:H5''	2.18	0.43
51:1:118:A:H5'	51:1:119:A:C8	2.53	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
51:1:1308:A:N6	51:1:1608:A:H61	2.16	0.43
51:1:1697:G:H3'	51:1:1698:A:C5'	2.45	0.43
51:1:1747:U:H2'	51:1:1748:C:C6	2.52	0.43
51:1:1794:A:O2'	51:1:1795:C:H5'	2.18	0.43
51:1:2248:C:H3'	51:1:2249:U:H6	1.81	0.43
51:1:2524:G:C3'	51:1:2525:G:H5''	2.48	0.43
51:1:2638:G:H22	51:1:2775:G:H2'	1.83	0.43
52:2:4:C:H6	52:2:4:C:C5'	2.31	0.43
53:3:296:U:H2'	53:3:297:G:O4'	2.19	0.43
53:3:1134:G:H1	53:3:1140:C:H42	1.66	0.43
53:3:1195:C:O5'	53:3:1195:C:H6	2.01	0.43
58:B1:141:PHE:HE2	58:B1:296:LYS:CB	2.23	0.43
58:B1:903:LEU:HD12	58:B1:903:LEU:HA	1.81	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:B2:1244:HIS:NE2	59:B2:1266:GLY:O	2.44	0.43
65:0:423:LYS:HA	65:0:482:ASN:HD21	1.83	0.43
3:C:33:LEU:HD21	51:1:2286:G:C5	2.53	0.43
8:H:68:HIS:HE2	8:H:105:VAL:HB	1.81	0.43
17:Q:5:GLN:NE2	53:3:881:G:N7	2.67	0.43
17:Q:50:LYS:HA	17:Q:50:LYS:HD2	1.86	0.43
29:d:134:LEU:HD11	29:d:161:ALA:HB2	1.99	0.43
34:j:80:HIS:CD2	51:1:2642:G:H5'	2.53	0.43
43:s:36:LEU:HD23	43:s:48:LYS:HB2	2.01	0.43
51:1:74:A:H2'	51:1:74:A:N3	2.33	0.43
51:1:152:A:H2'	51:1:153:U:C6	2.53	0.43
51:1:298:G:C2	51:1:339:U:H5	2.36	0.43
51:1:862:G:H2'	51:1:863:A:O4'	2.18	0.43
51:1:960:A:O3'	51:1:961:C:H3'	2.18	0.43
51:1:1823:G:C6	51:1:1824:G:C6	3.06	0.43
51:1:2556:C:H2'	51:1:2557:G:C5'	2.48	0.43
53:3:777:A:C2	53:3:778:G:H1'	2.53	0.43
53:3:865:A:H2'	53:3:866:C:C6	2.53	0.43
53:3:1158:C:H2'	53:3:1159:U:H4'	2.01	0.43
53:3:1515:G:H2'	53:3:1516:G:H8	1.82	0.43
58:B1:222:LYS:HD2	58:B1:222:LYS:HA	1.33	0.43
58:B1:388:ARG:HG2	58:B1:388:ARG:HH11	1.84	0.43
58:B1:478:LEU:HD21	60:W0:47:THR:HG23	1.99	0.43
58:B1:1033:GLY:HA3	58:B1:1081:VAL:O	2.18	0.43
59:B2:11:ILE:HG22	59:B2:1172:LEU:HD11	1.99	0.43
65:0:211:MET:HB3	65:0:211:MET:HE2	1.63	0.43
9:I:33:ILE:HG23	9:I:34:GLU:HG2	1.99	0.43
13:M:10:LEU:HD13	13:M:74:ILE:HG13	2.00	0.43
17:Q:43:LYS:HG3	53:3:1492:A:H4'	2.00	0.43
26:Z:66:ARG:O	53:3:1088:G:O2'	2.36	0.43
28:c:120:GLY:H	28:c:123:LYS:HB2	1.82	0.43
31:f:9:VAL:HA	31:f:48:THR:HA	2.00	0.43
34:j:116:ARG:HH21	51:1:528:A:H5''	1.81	0.43
34:j:118:MET:HE3	34:j:118:MET:HB2	1.76	0.43
38:n:72:ASP:O	38:n:76:VAL:HG23	2.19	0.43
51:1:812:C:H1'	51:1:1250:G:C2	2.53	0.43
51:1:974:G:C6	51:1:1186:G:C6	3.06	0.43
51:1:1123:C:O2'	51:1:1124:G:H5'	2.18	0.43
51:1:1815:A:O4'	51:1:1817:G:H1'	2.18	0.43
51:1:2061:G:C8	51:1:2501:C:H4'	2.53	0.43
51:1:2267:A:H5''	51:1:2268:A:H5'	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:971:G:H4'	53:3:972:C:H5''	2.00	0.43
53:3:1242:G:H4'	53:3:1304:G:OP1	2.18	0.43
53:3:1252:A:H2'	53:3:1253:G:O4'	2.18	0.43
53:3:1489:G:H2'	53:3:1490:U:C6	2.53	0.43
58:B1:58:CYS:SG	58:B1:60:ARG:HG2	2.58	0.43
58:B1:394:ILE:O	58:B1:394:ILE:HG13	2.19	0.43
59:B2:678:ARG:HD3	59:B2:678:ARG:HA	1.84	0.43
59:B2:811:ASN:ND2	59:B2:1098:LEU:O	2.51	0.43
64:a:203:GLN:HG2	64:a:205:LYS:H	1.82	0.43
65:0:129:GLN:HG3	65:0:132:LYS:HE2	2.00	0.43
5:E:44:ARG:NH2	51:1:2349:G:OP1	2.48	0.43
11:K:12:PRO:O	11:K:15:SER:OG	2.32	0.43
12:L:91:ARG:O	12:L:92:PRO:C	2.59	0.43
14:N:45:MET:HA	14:N:48:ARG:HH21	1.83	0.43
15:O:68:ARG:HD3	15:O:68:ARG:HA	1.68	0.43
16:P:24:ALA:N	16:P:86:LYS:O	2.39	0.43
27:b:106:PRO:HD2	27:b:109:LEU:HD22	1.99	0.43
35:k:47:ILE:HD13	35:k:47:ILE:HA	1.85	0.43
37:m:33:LEU:HD12	37:m:117:PHE:HB3	2.00	0.43
38:n:36:THR:HG22	51:1:1278:C:OP1	2.18	0.43
39:o:57:ALA:O	39:o:61:GLN:NE2	2.52	0.43
48:x:17:ARG:HA	48:x:17:ARG:HD3	1.72	0.43
51:1:170:U:H2'	51:1:171:U:C6	2.53	0.43
51:1:666:A:H2'	51:1:667:U:C6	2.54	0.43
51:1:786:C:H2'	51:1:787:C:H6	1.83	0.43
51:1:974:G:C8	51:1:989:G:C2	3.07	0.43
51:1:1037:G:O2'	51:1:1038:G:H5'	2.18	0.43
51:1:1057:A:H5''	51:1:1058:U:O2	2.17	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
51:1:2101:A:H2'	51:1:2102:G:H8	1.84	0.43
53:3:635:A:H2'	53:3:636:U:C6	2.53	0.43
53:3:1014:A:C2	53:3:1219:A:H1'	2.54	0.43
53:3:1364:U:O2'	53:3:1365:G:H5'	2.19	0.43
55:8:3:DC:N1	55:8:4:DT:H72	2.34	0.43
58:B1:59:ALA:HB1	58:B1:90:VAL:HG23	2.01	0.43
58:B1:568:SER:HB3	58:B1:570:LYS:NZ	2.34	0.43
58:B1:824:PRO:HD3	58:B1:835:LEU:HD12	2.00	0.43
58:B1:847:ASP:OD1	58:B1:847:ASP:N	2.49	0.43
59:B2:538:LEU:HD13	59:B2:543:ALA:HB2	2.01	0.43
59:B2:1157:GLN:HG3	59:B2:1159:VAL:HG13	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
65:0:334:THR:HG1	65:0:385:ALA:H	1.65	0.43
9:I:69:ARG:HH11	9:I:72:ARG:HH22	1.67	0.43
10:J:25:LYS:HG3	53:3:923:A:C5'	2.49	0.43
11:K:89:VAL:HG23	53:3:737:C:C5'	2.48	0.43
12:L:29:LEU:HD23	12:L:104:VAL:HG23	2.01	0.43
14:N:7:GLY:HA3	14:N:85:ALA:HB2	2.00	0.43
16:P:118:ASN:OD1	53:3:718:A:H5'	2.18	0.43
18:R:13:HIS:HB3	18:R:15:VAL:HG12	2.00	0.43
27:b:73:ILE:HA	27:b:74:PRO:HD3	1.90	0.43
36:l:29:LYS:HA	51:1:810:U:H5	1.81	0.43
36:l:37:GLY:H	36:l:41:ARG:HH22	1.66	0.43
37:m:46:ILE:O	37:m:50:ARG:N	2.45	0.43
38:n:107:ASN:HD22	51:1:2009:A:C4'	2.31	0.43
51:1:481:G:H2'	51:1:507:A:N1	2.34	0.43
51:1:793:A:OP2	51:1:793:A:H8	2.01	0.43
51:1:1060:U:OP2	51:1:1060:U:H3'	2.19	0.43
51:1:1943:U:OP1	51:1:1943:U:C6	2.71	0.43
51:1:2672:U:C3'	51:1:2673:G:H5''	2.48	0.43
53:3:640:A:H2'	53:3:641:U:H5'	2.01	0.43
53:3:1210:C:H2'	53:3:1211:U:H5'	2.00	0.43
53:3:1233:G:O2'	53:3:1365:G:H5''	2.18	0.43
58:B1:1079:LYS:HD3	58:B1:1098:GLN:HB3	1.99	0.43
9:I:200:VAL:HG11	10:J:103:GLY:HA2	2.00	0.43
14:N:18:VAL:HG21	14:N:81:GLY:HA3	2.01	0.43
18:R:78:ARG:HD3	24:X:64:GLU:HG2	2.01	0.43
23:W:25:ILE:HA	23:W:28:LEU:HD12	2.01	0.43
23:W:35:SER:OG	23:W:37:LYS:NZ	2.37	0.43
27:b:209:ALA:HA	27:b:212:TRP:CE2	2.54	0.43
34:j:93:ILE:HD12	34:j:93:ILE:HA	1.72	0.43
35:k:49:ARG:HH22	53:3:1423:G:H5'	1.84	0.43
38:n:73:ASN:HB3	51:1:1453:A:C8	2.54	0.43
42:r:1:MET:N	42:r:42:ALA:O	2.42	0.43
43:s:84:ARG:NH1	51:1:1322:A:O2'	2.51	0.43
47:w:56:PHE:HB2	47:w:57:ALA:H	1.73	0.43
51:1:784:G:N7	51:1:792:A:C5	2.87	0.43
51:1:878:A:H3'	51:1:879:G:C8	2.54	0.43
51:1:1064:C:H5''	51:1:1065:U:C5	2.54	0.43
51:1:1404:C:O5'	51:1:1404:C:H6	2.01	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
51:1:1962:C:H1'	51:1:1963:U:C5	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1998:A:H4'	51:1:2724:U:O2'	2.19	0.43
51:1:2311:A:H3'	51:1:2312:U:C6	2.54	0.43
53:3:37:U:C2'	53:3:38:G:H5'	2.48	0.43
53:3:1382:C:H2'	53:3:1383:C:C5	2.54	0.43
58:B1:201:LEU:CB	58:B1:221:ILE:HD13	2.47	0.43
58:B1:1026:PRO:HB2	58:B1:1028:ILE:HG23	2.00	0.43
59:B2:646:SER:OG	59:B2:647:ARG:N	2.51	0.43
59:B2:829:THR:HG23	59:B2:1059:ARG:HG2	2.00	0.43
59:B2:1275:VAL:HG13	59:B2:1287:LEU:HD11	2.01	0.43
65:0:112:VAL:HG12	65:0:140:PHE:HB3	2.00	0.43
65:0:566:LEU:HD23	65:0:566:LEU:HA	1.80	0.43
7:G:22:TRP:HA	7:G:189:ASN:HA	2.01	0.43
18:R:41:ASP:OD1	18:R:41:ASP:N	2.44	0.43
20:T:60:SER:HB2	53:3:581:G:C5'	2.48	0.43
24:X:38:THR:HG23	24:X:69:LYS:HD3	2.00	0.43
32:g:63:ALA:HA	32:g:66:ASN:HD22	1.84	0.43
34:j:41:LYS:HB2	34:j:41:LYS:HE3	1.86	0.43
34:j:130:HIS:HB2	34:j:132:HIS:HD2	1.84	0.43
38:n:99:LYS:HE3	38:n:99:LYS:HB3	1.72	0.43
51:1:252:G:H2'	51:1:253:C:C6	2.53	0.43
51:1:1428:C:C5	51:1:1569:A:H5''	2.53	0.43
51:1:1794:A:H1'	51:1:1900:A:N3	2.33	0.43
51:1:1931:U:H2'	51:1:1932:A:C8	2.54	0.43
51:1:2234:G:O2'	51:1:2235:G:H5'	2.19	0.43
51:1:2564:A:C2	51:1:2647:U:H4'	2.54	0.43
51:1:2626:C:O2'	51:1:2627:G:H5'	2.19	0.43
53:3:439:U:O2'	53:3:440:C:H5'	2.19	0.43
53:3:1423:G:H1	53:3:1477:U:H3	1.65	0.43
65:0:73:SER:O	65:0:73:SER:OG	2.29	0.43
4:D:10:LEU:HD13	51:1:125:A:C2	2.54	0.43
8:H:1:GLY:HA2	53:3:1060:U:C5	2.54	0.43
11:K:89:VAL:HG23	53:3:737:C:C4'	2.49	0.43
12:L:138:GLU:HA	12:L:141:HIS:HB2	2.00	0.43
14:N:58:GLU:HG2	14:N:59:LYS:HG3	2.01	0.43
30:e:88:VAL:HA	52:2:42:C:O2	2.19	0.43
31:f:85:LYS:HE3	31:f:131:VAL:HG22	2.01	0.43
38:n:9:GLN:HB2	51:1:1653:G:C6	2.54	0.43
51:1:571:U:C4	51:1:575:A:C5	3.07	0.43
51:1:597:G:H2'	51:1:598:U:O4'	2.18	0.43
51:1:742:A:H2'	51:1:743:A:O4'	2.19	0.43
51:1:824:U:H1'	51:1:2358:A:N7	2.34	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:832:U:C5	51:1:944:C:N4	2.87	0.43
51:1:1135:C:O2	51:1:1135:C:H2'	2.18	0.43
51:1:1321:A:H3'	51:1:1322:A:H8	1.84	0.43
51:1:2577:A:H2'	51:1:2614:A:N6	2.33	0.43
51:1:2617:U:H2'	51:1:2618:G:H5'	2.01	0.43
53:3:304:U:O2'	53:3:305:G:H5'	2.19	0.43
53:3:633:G:H2'	53:3:634:C:C6	2.54	0.43
53:3:778:G:H2'	53:3:779:C:O4'	2.19	0.43
53:3:927:G:H4'	53:3:1503:A:N7	2.33	0.43
59:B2:1313:HIS:CD2	60:W0:31:GLN:HE22	2.37	0.43
64:a:193:LEU:HG	64:a:197:LYS:HG3	2.00	0.43
65:0:159:LYS:HG3	65:0:166:PRO:HD2	2.00	0.43
65:0:634:ASP:O	65:0:638:ARG:NH1	2.52	0.43
8:H:6:PRO:O	8:H:10:ARG:NE	2.41	0.42
9:I:119:HIS:HA	53:3:439:U:H5''	2.01	0.42
10:J:123:LEU:HD22	53:3:7:A:H2'	1.99	0.42
16:P:25:SER:OG	16:P:28:ASN:N	2.48	0.42
22:V:29:LYS:HE2	22:V:29:LYS:HB3	1.83	0.42
28:c:118:PHE:O	51:1:1655:A:H5'	2.18	0.42
33:i:105:LEU:HD13	33:i:128:ILE:HG23	2.01	0.42
44:t:1:MET:HG3	51:1:136:G:H21	1.84	0.42
46:v:88:HIS:CE1	52:2:75:G:H21	2.36	0.42
48:x:31:ASN:ND2	48:x:52:ALA:HB2	2.34	0.42
51:1:1313:U:O2	51:1:1313:U:H2'	2.18	0.42
51:1:1675:C:O2'	51:1:1676:A:H5'	2.19	0.42
51:1:1983:G:C2	51:1:1984:G:C8	3.07	0.42
51:1:2489:U:O2'	51:1:2490:G:H5'	2.18	0.42
53:3:250:A:H4'	53:3:251:G:O5'	2.19	0.42
53:3:405:U:O2	53:3:498:A:H2'	2.19	0.42
53:3:596:A:H61	53:3:644:U:H3	1.66	0.42
53:3:865:A:H5'	53:3:1078:U:O4	2.19	0.42
53:3:973:G:H2'	53:3:974:A:H8	1.83	0.42
53:3:1196:A:N7	54:4:8:U:N3	2.67	0.42
53:3:1199:U:H2'	53:3:1200:C:H5'	2.01	0.42
53:3:1236:A:H2'	53:3:1237:C:O4'	2.19	0.42
55:8:15:DC:H5'	59:B2:1269:ARG:HD3	2.00	0.42
57:A1:76:GLU:HB3	57:A1:80:GLU:HB3	2.01	0.42
58:B1:1046:ILE:HG22	58:B1:1061:VAL:HA	2.00	0.42
64:a:65:LEU:HD23	64:a:65:LEU:HA	1.92	0.42
7:G:56:LEU:HD23	7:G:56:LEU:HA	1.93	0.42
9:I:12:ARG:NH2	9:I:36:ALA:H	2.17	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:b:17:LYS:HE3	27:b:17:LYS:HB3	1.80	0.42
34:j:12:LYS:HA	34:j:12:LYS:HD2	1.78	0.42
35:k:40:LYS:HZ2	35:k:57:VAL:HG12	1.84	0.42
35:k:51:LYS:HD3	35:k:51:LYS:HA	1.75	0.42
36:l:18:ARG:NE	51:1:1249:U:C4	2.87	0.42
43:s:29:VAL:HG21	43:s:55:ILE:HG21	2.01	0.42
51:1:194:G:H2'	51:1:195:A:O4'	2.19	0.42
51:1:272:A:H2'	51:1:273:G:C8	2.54	0.42
51:1:690:G:C2'	51:1:691:C:H5'	2.49	0.42
51:1:981:A:H1'	51:1:2037:A:H1'	2.00	0.42
51:1:1363:C:O2'	51:1:1809:A:H1'	2.19	0.42
51:1:1797:G:C4	51:1:1798:U:C6	3.07	0.42
51:1:1797:G:N2	51:1:1798:U:H1'	2.34	0.42
51:1:1801:A:C8	51:1:1801:A:H5'	2.54	0.42
51:1:2133:G:H8	51:1:2158:A:C2	2.38	0.42
51:1:2556:C:H2'	51:1:2557:G:O4'	2.19	0.42
51:1:2656:U:H2'	51:1:2657:A:C8	2.55	0.42
53:3:1042:A:H2'	53:3:1043:G:H4'	2.00	0.42
58:B1:96:LYS:NZ	59:B2:1298:VAL:HG11	2.34	0.42
58:B1:141:PHE:CD2	58:B1:297:ARG:HB2	2.54	0.42
59:B2:300:ASP:OD1	59:B2:313:ALA:N	2.51	0.42
64:a:48:LEU:HB3	64:a:50:ILE:HG23	2.01	0.42
3:C:35:LEU:HD12	3:C:35:LEU:HA	1.91	0.42
14:N:53:LEU:HD12	14:N:54:VAL:HG13	2.00	0.42
14:N:113:LYS:HA	14:N:120:ALA:HB2	2.01	0.42
28:c:183:GLU:OE2	28:c:184:ARG:NE	2.53	0.42
37:m:82:MET:HE2	37:m:82:MET:HB2	1.80	0.42
51:1:343:C:C2'	51:1:344:A:H5'	2.49	0.42
51:1:533:G:H5''	51:1:533:G:H8	1.83	0.42
51:1:828:U:H2'	51:1:829:A:N7	2.30	0.42
51:1:2733:A:H2'	51:1:2734:A:H8	1.81	0.42
53:3:58:C:H2'	53:3:59:A:H5'	2.01	0.42
53:3:1229:A:H2'	53:3:1230:C:C6	2.54	0.42
57:A1:78:ILE:HA	57:A1:81:ILE:HG22	2.00	0.42
58:B1:68:TYR:HB3	58:B1:75:TYR:HE2	1.81	0.42
58:B1:144:TYR:CE1	58:B1:162:GLU:OE1	2.73	0.42
58:B1:242:LEU:C	58:B1:242:LEU:HD23	2.44	0.42
58:B1:362:ARG:HB2	58:B1:364:HIS:HD2	1.83	0.42
59:B2:125:GLY:H	59:B2:495:ALA:HB1	1.84	0.42
65:0:68:THR:N	65:0:86:ILE:O	2.46	0.42
5:E:28:LEU:HD12	5:E:32:LEU:HD11	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:38:GLY:OXT	51:1:1124:G:H1'	2.19	0.42
9:I:110:ARG:O	9:I:114:ARG:N	2.52	0.42
13:M:46:GLU:O	13:M:61:THR:OG1	2.28	0.42
20:T:27:GLN:O	20:T:27:GLN:NE2	2.52	0.42
26:Z:24:LYS:HD3	26:Z:24:LYS:HA	1.81	0.42
27:b:218:THR:HG22	51:1:1790:C:OP1	2.19	0.42
28:c:140:HIS:NE2	51:1:1658:C:OP1	2.52	0.42
31:f:28:LYS:HE3	31:f:28:LYS:HB2	1.86	0.42
44:t:29:THR:HG22	44:t:86:THR:HA	2.01	0.42
45:u:25:LYS:NZ	45:u:61:GLU:OE1	2.36	0.42
49:y:1:MET:HA	49:y:4:LYS:HE2	2.02	0.42
51:1:39:G:H2'	51:1:40:U:C6	2.54	0.42
51:1:503:A:H4'	51:1:505:A:H5''	2.01	0.42
51:1:586:A:N1	51:1:809:G:O2'	2.45	0.42
51:1:842:U:H2'	51:1:843:G:O4'	2.19	0.42
51:1:1177:G:C3'	51:1:1178:C:H5''	2.49	0.42
51:1:1191:G:H2'	51:1:1192:G:C8	2.51	0.42
51:1:1373:A:H2'	51:1:1374:G:O4'	2.20	0.42
51:1:1854:A:H2'	51:1:1855:U:H5'	2.02	0.42
51:1:2350:C:H2'	51:1:2351:G:O4'	2.19	0.42
51:1:2598:A:N7	51:1:2599:G:H1'	2.34	0.42
53:3:264:C:H2'	53:3:265:G:O4'	2.19	0.42
57:A2:294:ASN:HA	61:NA:464:ILE:N	2.28	0.42
59:B2:22:LEU:HB3	59:B2:655:VAL:HG11	2.01	0.42
59:B2:741:MET:SD	59:B2:974:ARG:NH2	2.93	0.42
65:0:614:GLU:OE1	65:0:659:PRO:HB3	2.19	0.42
2:B:41:HIS:HD2	38:n:101:GLY:HA2	1.84	0.42
8:H:168:ARG:NH1	53:3:1106:G:O2'	2.53	0.42
8:H:174:LEU:HB3	53:3:1108:G:OP1	2.19	0.42
10:J:126:ALA:H	53:3:9:G:P	2.43	0.42
14:N:13:SER:HG	53:3:1251:A:H5'	1.81	0.42
18:R:22:TYR:HD2	18:R:65:GLU:HA	1.85	0.42
19:S:52:ARG:HD3	53:3:1317:C:N3	2.34	0.42
21:U:31:ARG:HB2	53:3:310:G:H5''	2.00	0.42
24:X:32:THR:OG1	24:X:33:TRP:N	2.53	0.42
24:X:44:ILE:HD12	24:X:44:ILE:HA	1.92	0.42
33:i:12:VAL:HG12	33:i:13:ALA:H	1.83	0.42
38:n:90:ARG:NH2	51:1:2880:C:O2'	2.48	0.42
41:q:47:ARG:NH2	51:1:560:C:O2'	2.52	0.42
51:1:76:C:H42	51:1:110:G:H1	1.68	0.42
51:1:441:U:O2'	51:1:442:G:H5'	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:516:C:H2'	51:1:517:C:H5'	2.02	0.42
51:1:820:A:H5'	51:1:837:C:O2'	2.19	0.42
51:1:1229:C:H2'	51:1:1230:A:C8	2.53	0.42
51:1:2556:C:C2'	51:1:2557:G:H5'	2.48	0.42
51:1:2575:C:O5'	51:1:2575:C:H6	2.03	0.42
51:1:2581:G:N1	51:1:2610:C:O2'	2.52	0.42
51:1:2688:G:N1	51:1:2720:U:OP2	2.40	0.42
52:2:79:G:H2'	52:2:80:U:O4'	2.19	0.42
53:3:301:G:H2'	53:3:302:G:H8	1.83	0.42
53:3:316:C:H2'	53:3:317:U:C6	2.55	0.42
53:3:1469:C:C2'	53:3:1470:U:H5'	2.50	0.42
58:B1:24:LEU:HD21	58:B1:116:PHE:CE2	2.54	0.42
58:B1:102:MET:HG2	58:B1:246:PRO:CG	2.49	0.42
58:B1:175:GLU:H	58:B1:175:GLU:HG3	1.66	0.42
58:B1:244:VAL:HA	58:B1:269:TYR:OH	2.19	0.42
58:B1:385:LEU:CD2	58:B1:390:LEU:HB2	2.50	0.42
58:B1:434:ILE:HD11	59:B2:1274:GLU:CG	2.49	0.42
58:B1:839:VAL:HG12	58:B1:864:LEU:HD12	2.02	0.42
58:B1:1002:VAL:N	58:B1:1019:ASN:O	2.45	0.42
11:K:47:LEU:CD2	11:K:55:HIS:HA	2.49	0.42
15:O:40:ILE:HD11	53:3:1124:G:H4'	2.02	0.42
27:b:148:GLY:O	51:1:2205:A:H5'	2.20	0.42
27:b:204:LEU:O	27:b:206:LYS:N	2.48	0.42
27:b:219:VAL:HG21	51:1:782:A:N7	2.35	0.42
30:e:32:LYS:H	30:e:32:LYS:HG2	1.68	0.42
34:j:136:GLN:NE2	51:1:2899:A:H5'	2.34	0.42
36:l:90:VAL:HG22	36:l:122:VAL:HA	2.02	0.42
38:n:51:LEU:HD23	38:n:79:LEU:HD11	2.02	0.42
51:1:751:A:H62	51:1:789:A:H62	1.67	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
51:1:1050:A:O2'	51:1:2752:C:H1'	2.19	0.42
51:1:2521:C:C2'	51:1:2522:U:H5'	2.50	0.42
51:1:2553:G:C3'	51:1:2554:U:H5''	2.47	0.42
51:1:2596:U:H2'	51:1:2597:G:O4'	2.19	0.42
53:3:540:G:H2'	53:3:541:G:O4'	2.20	0.42
53:3:1061:G:H2'	53:3:1062:U:O4'	2.19	0.42
58:B1:245:LEU:CG	58:B1:246:PRO:HD2	2.48	0.42
58:B1:616:PRO:HA	58:B1:619:ILE:HG22	2.02	0.42
66:h:2:DPP:NG	66:h:3:SER:N	2.65	0.42
2:B:24:VAL:H	43:s:35:ILE:HD11	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:26:MET:HG3	7:G:29:PHE:HB2	2.00	0.42
8:H:3:LYS:HA	8:H:3:LYS:HD3	1.95	0.42
13:M:15:ASN:HB3	53:3:827:U:C4'	2.48	0.42
21:U:71:VAL:HA	21:U:74:LEU:HB2	2.02	0.42
25:Y:15:LYS:HE2	25:Y:15:LYS:HB3	1.92	0.42
37:m:55:ARG:HA	37:m:58:LYS:HA	2.02	0.42
39:o:35:ILE:HD13	39:o:35:ILE:HA	1.95	0.42
51:1:445:C:O2'	51:1:446:G:H5'	2.20	0.42
51:1:809:G:O4'	51:1:1254:A:H1'	2.19	0.42
51:1:1145:C:H2'	51:1:1146:C:C6	2.54	0.42
53:3:1119:C:O2'	53:3:1120:C:H5'	2.20	0.42
53:3:1194:U:H2'	53:3:1195:C:C6	2.54	0.42
53:3:1405:G:H21	53:3:1518:A:H8	1.67	0.42
58:B1:137:ARG:HA	58:B1:142:GLU:HG2	2.02	0.42
58:B1:450:HIS:HA	58:B1:451:PRO:HD3	1.91	0.42
58:B1:848:VAL:HB	58:B1:858:VAL:HG22	2.02	0.42
58:B1:930:LEU:HA	58:B1:1244:GLN:HG3	2.02	0.42
59:B2:478:ARG:HD2	59:B2:492:MET:HA	2.02	0.42
59:B2:590:PRO:HB2	59:B2:655:VAL:HG21	2.01	0.42
59:B2:699:LEU:HG	59:B2:799:ASN:HD22	1.85	0.42
7:G:53:LEU:HD23	7:G:56:LEU:HD12	2.00	0.42
20:T:3:SER:OG	20:T:4:THR:N	2.53	0.42
21:U:5:ARG:NH2	53:3:377:G:H5''	2.35	0.42
21:U:50:THR:HB	21:U:78:VAL:HB	2.02	0.42
25:Y:4:LYS:HE2	53:3:332:G:OP1	2.20	0.42
27:b:204:LEU:HD23	27:b:204:LEU:HA	1.91	0.42
28:c:152:PRO:HA	51:1:1130:U:O2	2.20	0.42
28:c:159:LYS:HA	28:c:159:LYS:HD2	1.90	0.42
28:c:161:MET:CE	51:1:2050:C:H1'	2.49	0.42
33:i:3:LYS:HB3	51:1:1055:G:O5'	2.19	0.42
49:y:9:LYS:HD3	49:y:10:SER:H	1.84	0.42
51:1:8:C:H2'	51:1:9:G:O4'	2.20	0.42
51:1:172:A:H2'	51:1:173:A:C8	2.54	0.42
51:1:877:A:O2'	51:1:900:A:N6	2.53	0.42
51:1:1387:A:H2'	51:1:1388:G:C8	2.55	0.42
51:1:1564:C:C4	51:1:1565:C:C4	3.08	0.42
51:1:1592:C:H2'	51:1:1593:A:H8	1.83	0.42
51:1:2138:G:N1	51:1:2154:A:O2'	2.47	0.42
51:1:2402:U:H2'	51:1:2403:C:C5'	2.42	0.42
51:1:2873:A:O2'	51:1:2874:C:H5'	2.20	0.42
53:3:269:C:H2'	53:3:270:A:C8	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:426:U:H2'	53:3:427:U:C6	2.54	0.42
53:3:627:G:H2'	53:3:628:G:C8	2.54	0.42
53:3:1005:A:C2'	53:3:1006:G:H5'	2.49	0.42
58:B1:513:MET:HG3	58:B1:544:LEU:HD11	2.01	0.42
58:B1:1272:SER:OG	58:B1:1273:ASP:N	2.53	0.42
58:B1:1350:ASN:HA	58:B1:1353:VAL:HG12	2.02	0.42
59:B2:616:ILE:HG13	59:B2:652:TYR:HB2	2.01	0.42
65:0:324:ILE:HA	65:0:334:THR:HA	2.01	0.42
4:D:13:ASN:HB3	51:1:125:A:O4'	2.20	0.42
5:E:22:LYS:HZ1	51:1:631:A:H5''	1.84	0.42
8:H:24:ASN:OD1	8:H:25:THR:N	2.53	0.42
13:M:7:ALA:HA	13:M:10:LEU:HB2	2.02	0.42
14:N:21:LYS:HE2	14:N:21:LYS:HB2	1.85	0.42
18:R:105:ALA:HB3	18:R:109:LYS:HE3	2.02	0.42
21:U:38:PHE:HZ	21:U:48:GLU:HG3	1.84	0.42
35:k:38:ILE:HG22	35:k:61:VAL:HG22	2.01	0.42
46:v:44:HIS:CE1	46:v:86:LEU:H	2.37	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
51:1:527:C:OP2	51:1:2779:U:N3	2.51	0.42
51:1:976:G:H5'	51:1:1156:A:N6	2.35	0.42
51:1:1716:U:O2'	51:1:1717:A:H5'	2.20	0.42
51:1:1741:C:H2'	51:1:1742:U:H5'	2.01	0.42
51:1:2060:A:O2'	51:1:2061:G:OP2	2.35	0.42
51:1:2114:A:N6	51:1:2119:A:H61	2.18	0.42
51:1:2305:U:H2'	51:1:2306:C:H5'	2.02	0.42
51:1:2498:C:O2'	51:1:2499:C:H5'	2.20	0.42
51:1:2544:G:H2'	51:1:2545:G:C8	2.55	0.42
51:1:2654:A:H1'	51:1:2656:U:C6	2.54	0.42
51:1:2670:A:H2'	51:1:2671:G:C8	2.55	0.42
51:1:2897:U:H2'	51:1:2898:U:C6	2.54	0.42
53:3:182:A:H2'	53:3:183:C:H5''	2.01	0.42
53:3:1271:A:H5'	53:3:1314:C:H5'	2.01	0.42
54:4:40:G:H5'	59:B2:688:GLN:HE22	1.85	0.42
59:B2:998:LEU:HD21	59:B2:1015:ALA:HB2	2.02	0.42
62:NG:135:ARG:O	62:NG:178:VAL:CA	2.68	0.42
3:C:38:PHE:HD1	3:C:45:HIS:HD2	1.68	0.42
10:J:13:LYS:NZ	10:J:14:LEU:O	2.53	0.42
16:P:34:THR:HA	16:P:40:ALA:HA	2.02	0.42
17:Q:56:LEU:HD13	17:Q:56:LEU:HA	1.91	0.42
18:R:64:VAL:H	18:R:67:ASP:HB3	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:R:77:LYS:HB2	18:R:77:LYS:HE3	1.88	0.42
29:d:29:HIS:CE1	36:l:8:PRO:HB3	2.55	0.42
29:d:45:ALA:CB	51:1:38:A:H4'	2.50	0.42
33:i:47:SER:O	33:i:47:SER:OG	2.31	0.42
45:u:96:LYS:HE2	51:1:300:A:P	2.60	0.42
51:1:1388:G:H2'	51:1:1389:G:H8	1.84	0.42
51:1:1512:C:O5'	51:1:1512:C:H6	2.03	0.42
51:1:1625:C:H2'	51:1:1626:A:O4'	2.20	0.42
51:1:1913:A:N6	53:3:1493:A:H2'	2.33	0.42
51:1:1972:G:H2'	51:1:1973:G:H8	1.85	0.42
51:1:2472:G:H5''	51:1:2473:U:OP2	2.20	0.42
53:3:7:A:H5'	53:3:298:A:O4'	2.19	0.42
53:3:228:A:H2'	53:3:229:U:O4'	2.20	0.42
53:3:909:A:H2'	53:3:910:C:O4'	2.20	0.42
53:3:1007:U:H2'	53:3:1008:U:C5	2.54	0.42
53:3:1490:U:H2'	53:3:1491:G:O4'	2.20	0.42
58:B1:586:GLY:HA3	58:B1:612:LEU:HD11	2.01	0.42
59:B2:1069:ARG:NH2	59:B2:1114:GLU:OE2	2.44	0.42
59:B2:1088:ASP:OD1	59:B2:1088:ASP:N	2.51	0.42
65:0:281:ALA:O	65:0:285:TYR:N	2.53	0.42
7:G:218:ALA:HA	7:G:221:ARG:HE	1.85	0.41
9:I:149:LYS:HG2	9:I:150:LYS:HG2	2.02	0.41
9:I:201:GLU:OE1	10:J:111:ARG:NH1	2.53	0.41
14:N:68:GLY:O	14:N:74:GLN:NE2	2.37	0.41
17:Q:9:LYS:HE2	17:Q:9:LYS:HB2	1.85	0.41
27:b:144:GLU:HA	27:b:151:GLY:HA2	2.01	0.41
28:c:47:ALA:HA	28:c:84:LEU:HG	2.01	0.41
28:c:91:THR:H	28:c:94:GLN:HE21	1.66	0.41
28:c:116:LYS:HB2	28:c:165:MET:HB3	2.02	0.41
28:c:170:VAL:HG13	28:c:194:PRO:HG3	2.01	0.41
29:d:46:GLN:HE21	29:d:86:ALA:HA	1.84	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
38:n:106:ASP:OD2	51:1:1287:A:C5	2.72	0.41
39:o:11:ALA:HB1	39:o:14:ALA:HB3	2.01	0.41
51:1:736:C:H42	51:1:760:G:H1	1.66	0.41
51:1:917:A:H5''	51:1:2268:A:N6	2.30	0.41
51:1:958:U:C2'	52:2:89:U:H1'	2.47	0.41
51:1:1158:C:O5'	51:1:1158:C:H6	2.02	0.41
51:1:1741:C:C2'	51:1:1742:U:H5'	2.50	0.41
51:1:2259:U:H1'	51:1:2427:C:H2'	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2469:A:H2'	51:1:2470:G:O4'	2.20	0.41
51:1:2638:G:H1'	51:1:2778:A:N6	2.34	0.41
53:3:224:U:H2'	53:3:225:C:C5	2.55	0.41
53:3:866:C:N3	53:3:867:G:H1'	2.35	0.41
53:3:1153:G:H2'	53:3:1154:G:O4'	2.20	0.41
53:3:1292:G:H2'	53:3:1293:C:C6	2.55	0.41
53:3:1327:C:H2'	53:3:1328:C:H6	1.85	0.41
58:B1:820:ILE:HG12	58:B1:884:SER:HB2	2.01	0.41
59:B2:741:MET:HE3	59:B2:974:ARG:HH12	1.85	0.41
59:B2:861:ALA:HB1	59:B2:882:ILE:HD13	2.02	0.41
64:a:42:VAL:HG13	64:a:175:ILE:HG13	2.02	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
10:J:158:LYS:HA	10:J:158:LYS:HD3	1.74	0.41
12:L:35:LYS:HD3	53:3:1373:G:H5''	2.01	0.41
18:R:100:ARG:HG2	53:3:950:U:C5	2.55	0.41
25:Y:27:MET:H	25:Y:27:MET:HG3	1.74	0.41
28:c:80:TRP:CD1	28:c:202:ILE:HD11	2.55	0.41
29:d:85:PHE:CG	51:1:588:U:H1'	2.55	0.41
30:e:65:LEU:N	30:e:87:LYS:O	2.53	0.41
30:e:68:LYS:HA	30:e:68:LYS:HD3	1.86	0.41
39:o:24:THR:HB	39:o:90:VAL:HG12	2.02	0.41
51:1:43:G:O2'	51:1:44:A:H5'	2.20	0.41
51:1:395:U:H2'	51:1:396:G:H8	1.80	0.41
51:1:777:G:N7	51:1:793:A:C2	2.78	0.41
51:1:1183:U:O2'	51:1:1184:U:H5'	2.20	0.41
51:1:1974:C:H2'	51:1:1975:G:C8	2.55	0.41
51:1:2013:A:H61	51:1:2613:U:H3	1.68	0.41
51:1:2114:A:C5	51:1:2115:G:H1'	2.55	0.41
51:1:2139:U:H2'	51:1:2140:G:C8	2.54	0.41
51:1:2139:U:H2'	51:1:2140:G:H8	1.84	0.41
51:1:2475:C:H42	51:1:2529:G:H22	1.66	0.41
51:1:2633:G:C2'	51:1:2634:A:H5''	2.47	0.41
51:1:2676:C:O5'	51:1:2676:C:H6	2.04	0.41
53:3:262:A:H2'	53:3:263:A:C8	2.55	0.41
53:3:668:G:H2'	53:3:669:G:C8	2.55	0.41
53:3:964:A:H2	53:3:969:A:HO2'	1.63	0.41
53:3:1422:G:N2	53:3:1479:C:N4	2.69	0.41
55:8:14:DC:C2	55:8:15:DC:C5	3.09	0.41
58:B1:224:LEU:HD23	58:B1:224:LEU:HA	1.89	0.41
58:B1:246:PRO:HA	58:B1:247:PRO:HD3	1.96	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:B1:279:LEU:HD13	58:B1:299:LEU:HD13	2.02	0.41
14:N:21:LYS:HZ1	14:N:63:TYR:H	1.67	0.41
23:W:62:ARG:NH1	53:3:718:A:N6	2.69	0.41
28:c:117:GLY:H	28:c:164:GLN:HE22	1.68	0.41
29:d:50:ALA:HB2	51:1:801:G:C8	2.55	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
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
51:1:538:A:H2'	51:1:539:G:O4'	2.20	0.41
51:1:1609:A:H5'	51:1:1609:A:C8	2.55	0.41
51:1:2302:U:H2'	51:1:2303:G:C8	2.56	0.41
51:1:2840:C:H2'	51:1:2841:C:C6	2.56	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
53:3:957:U:H2'	53:3:959:A:OP2	2.21	0.41
53:3:971:G:N7	53:3:1233:G:H1'	2.34	0.41
53:3:1032:G:H21	53:3:1033:G:H4'	1.85	0.41
53:3:1264:U:H3	53:3:1271:A:H61	1.67	0.41
53:3:1315:U:H2'	53:3:1316:G:O4'	2.21	0.41
53:3:1386:G:O2'	53:3:1387:G:H5'	2.20	0.41
58:B1:220:ARG:NH1	58:B1:220:ARG:CG	2.82	0.41
58:B1:472:LEU:HD11	59:B2:1294:LYS:HG2	2.02	0.41
58:B1:515:ARG:HH12	58:B1:724:MET:HG2	1.84	0.41
58:B1:950:ILE:HB	58:B1:1018:ALA:HB3	2.01	0.41
62:NG:175:PHE:O	62:NG:178:VAL:O	2.38	0.41
7:G:23:ASN:H	7:G:189:ASN:HA	1.86	0.41
13:M:110:MET:HE2	13:M:110:MET:HB3	1.84	0.41
16:P:52:ARG:HA	16:P:52:ARG:HD3	1.85	0.41
27:b:170:TYR:HB3	27:b:182:LYS:HB3	2.02	0.41
28:c:209:ALA:OXT	51:1:2733:A:C2	2.74	0.41
29:d:93:SER:O	29:d:93:SER:OG	2.32	0.41
31:f:97:VAL:HG12	31:f:124:CYS:HB2	2.02	0.41
51:1:151:C:H5''	51:1:1360:G:OP1	2.21	0.41
51:1:191:A:N3	51:1:192:C:C6	2.88	0.41
51:1:481:G:H1'	51:1:506:G:H22	1.83	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
51:1:1591:A:H2'	51:1:1592:C:C6	2.55	0.41
51:1:2520:C:H1'	51:1:2565:A:O2'	2.19	0.41
53:3:79:G:H2'	53:3:80:A:H5'	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:107:G:H2'	53:3:108:G:O4'	2.20	0.41
53:3:461:A:H2'	53:3:462:G:C8	2.56	0.41
53:3:1368:A:O2'	53:3:1369:C:H5'	2.19	0.41
58:B1:390:LEU:N	58:B1:390:LEU:HD13	2.35	0.41
58:B1:395:LYS:HE3	58:B1:395:LYS:HB3	1.45	0.41
58:B1:609:TYR:HD2	58:B1:610:ARG:NH1	2.17	0.41
58:B1:797:THR:HG22	58:B1:924:GLY:HA3	2.01	0.41
8:H:12:GLY:N	8:H:15:LYS:O	2.35	0.41
8:H:113:LYS:HA	8:H:113:LYS:HD2	1.88	0.41
15:O:82:LYS:HD2	15:O:82:LYS:HA	1.53	0.41
19:S:96:LYS:HA	19:S:96:LYS:HD2	1.79	0.41
19:S:99:SER:HG	53:3:1187:G:H21	1.69	0.41
29:d:85:PHE:CE2	51:1:587:C:H5'	2.54	0.41
32:g:1:MET:HE3	32:g:1:MET:HB3	1.90	0.41
36:l:4:ASN:OD1	51:1:1203:U:O2	2.39	0.41
36:l:78:ARG:HE	36:l:111:ILE:HD11	1.86	0.41
45:u:67:SER:HB2	51:1:327:G:H21	1.85	0.41
47:w:56:PHE:HE2	51:1:2365:G:C5'	2.34	0.41
48:x:57:VAL:HG13	51:1:372:G:H5'	2.03	0.41
51:1:1:G:H2'	51:1:2:G:C8	2.55	0.41
51:1:4:U:H2'	51:1:5:A:O4'	2.20	0.41
51:1:458:G:H21	51:1:469:G:H2'	1.84	0.41
51:1:1086:A:C1'	51:1:1103:A:H2	2.33	0.41
51:1:1639:C:C2'	51:1:1640:A:H5'	2.50	0.41
51:1:2448:A:H3'	51:1:2449:U:H2'	2.01	0.41
53:3:458:U:H2'	53:3:459:A:C8	2.55	0.41
58:B1:506:VAL:H	58:B1:506:VAL:HG12	1.59	0.41
58:B1:820:ILE:HD11	58:B1:822:MET:HE2	2.02	0.41
58:B1:1289:ASN:O	58:B1:1293:GLU:HB2	2.20	0.41
59:B2:542:ARG:H	59:B2:542:ARG:HG2	1.70	0.41
65:0:64:THR:HG23	65:0:472:ARG:HH22	1.86	0.41
1:A:11:GLU:HG2	1:A:25:ARG:HG2	2.02	0.41
9:I:57:LYS:NZ	9:I:68:GLU:OE1	2.43	0.41
13:M:3:GLN:HE21	53:3:878:A:H1'	1.86	0.41
15:O:30:LYS:HA	15:O:34:ALA:HA	2.02	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
21:U:12:LYS:HB3	53:3:392:C:OP2	2.20	0.41
27:b:153:LEU:HA	51:1:1799:G:N2	2.35	0.41
28:c:145:SER:HB3	51:1:2578:G:N7	2.35	0.41
30:e:63:LYS:O	52:2:42:C:H1'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:j:114:LEU:O	34:j:118:MET:N	2.54	0.41
35:k:1:MET:HE3	51:1:1665:A:H1'	2.02	0.41
51:1:272:A:H2'	51:1:273:G:H8	1.86	0.41
51:1:324:A:H2'	51:1:325:G:H5'	2.01	0.41
51:1:435:C:H2'	51:1:436:C:C5'	2.37	0.41
51:1:692:C:H2'	51:1:693:A:H8	1.86	0.41
51:1:734:A:O2'	51:1:1635:A:H4'	2.21	0.41
51:1:1054:A:H2'	51:1:1055:G:C8	2.55	0.41
51:1:1303:G:H2'	51:1:1304:A:C8	2.54	0.41
51:1:1310:G:C3'	51:1:1311:G:H5'	2.50	0.41
51:1:1354:A:H2'	51:1:1355:G:O4'	2.20	0.41
51:1:2588:G:C2'	51:1:2589:A:H5'	2.50	0.41
52:2:53:A:H2'	52:2:54:G:O4'	2.20	0.41
53:3:68:G:C2	53:3:69:G:H1'	2.55	0.41
53:3:111:G:O2'	53:3:389:A:H1'	2.20	0.41
58:B1:647:PRO:HG3	58:B1:697:MET:HB3	2.01	0.41
58:B1:800:LEU:HD12	58:B1:800:LEU:HA	1.79	0.41
59:B2:469:VAL:HA	59:B2:472:GLU:HG2	2.01	0.41
59:B2:870:ILE:HB	59:B2:944:ARG:HD3	2.02	0.41
59:B2:886:LYS:HE2	59:B2:918:LEU:HD13	2.03	0.41
64:a:54:LYS:NZ	64:a:56:ASP:OD1	2.53	0.41
65:0:615:PRO:HB2	65:0:684:PHE:CE1	2.56	0.41
2:B:53:VAL:HG23	2:B:54:ILE:HG23	2.03	0.41
13:M:4:ASP:HB3	13:M:7:ALA:HB3	2.02	0.41
18:R:88:LEU:HD21	18:R:92:ARG:HE	1.86	0.41
26:Z:27:VAL:O	26:Z:31:VAL:N	2.54	0.41
41:q:30:VAL:HG11	51:1:580:U:H4'	2.02	0.41
51:1:72:U:C4	51:1:112:U:H4'	2.55	0.41
51:1:1752:C:O2'	51:1:1753:G:H5'	2.21	0.41
51:1:1900:A:H5'	51:1:1970:A:C5'	2.50	0.41
51:1:2553:G:H2'	51:1:2554:U:C4'	2.49	0.41
51:1:2611:C:H2'	51:1:2612:C:H6	1.85	0.41
51:1:2830:C:O2	51:1:2883:A:H2	2.03	0.41
53:3:678:U:H2'	53:3:679:C:C6	2.55	0.41
53:3:1389:C:H2'	53:3:1390:U:O4'	2.21	0.41
58:B1:111:THR:HG23	58:B1:300:GLN:HA	2.03	0.41
58:B1:559:ALA:HB3	58:B1:562:GLU:HB3	2.01	0.41
65:0:169:LEU:HD12	65:0:185:LEU:HB3	2.01	0.41
65:0:562:LYS:HA	65:0:562:LYS:HD2	1.74	0.41
5:E:7:ARG:NH1	51:1:254:G:H22	2.18	0.41
14:N:6:TYR:CZ	53:3:1147:C:H4'	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:O:45:ARG:NH1	15:O:47:GLU:OE1	2.53	0.41
27:b:145:MET:SD	51:1:1800:C:H5''	2.61	0.41
27:b:145:MET:HE3	27:b:153:LEU:HD11	2.02	0.41
28:c:59:ARG:HA	28:c:59:ARG:HD2	1.85	0.41
33:i:123:ALA:CB	51:1:1081:U:H4'	2.50	0.41
51:1:838:C:C2	51:1:941:A:C6	3.09	0.41
51:1:986:C:H6	51:1:986:C:O5'	2.04	0.41
51:1:1024:G:P	51:1:1025:G:H3'	2.60	0.41
51:1:1054:A:H2	51:1:1105:U:H3	1.68	0.41
51:1:1063:G:OP2	51:1:1070:A:C4'	2.69	0.41
51:1:1444:G:H2'	51:1:1445:G:O4'	2.21	0.41
51:1:1787:A:H2'	51:1:1787:A:N3	2.36	0.41
51:1:2049:G:N2	51:1:2620:C:C2	2.89	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	1.85	0.41
51:1:2140:G:H1	51:1:2151:U:H3	1.69	0.41
51:1:2534:A:C2	51:1:2535:G:H1'	2.56	0.41
53:3:204:G:H2'	53:3:205:A:C8	2.56	0.41
53:3:240:G:H2'	53:3:241:G:H8	1.86	0.41
53:3:270:A:H2'	53:3:271:C:O4'	2.20	0.41
53:3:794:A:O2'	53:3:795:C:H5'	2.20	0.41
53:3:938:A:H1'	53:3:1376:U:O2'	2.21	0.41
58:B1:144:TYR:N	58:B1:144:TYR:CD1	2.88	0.41
58:B1:243:PRO:HG2	59:B2:1332:SER:C	2.44	0.41
59:B2:22:LEU:HD22	59:B2:603:ILE:HG21	2.02	0.41
65:0:18:HIS:ND1	65:0:120:GLN:HB3	2.36	0.41
65:0:632:ILE:O	65:0:636:SER:OG	2.36	0.41
1:A:26:SER:HB2	30:e:101:ARG:HH11	1.84	0.41
3:C:5:ARG:NH2	3:C:23:THR:OG1	2.51	0.41
4:D:39:ARG:CZ	51:1:469:G:O6	2.69	0.41
9:I:155:LYS:HA	9:I:155:LYS:HD2	1.86	0.41
10:J:37:VAL:HG21	10:J:113:VAL:HG13	2.02	0.41
11:K:88:MET:HB2	23:W:63:TYR:HE2	1.86	0.41
12:L:138:GLU:O	12:L:142:ARG:N	2.52	0.41
20:T:3:SER:OG	20:T:5:GLU:OE1	2.33	0.41
24:X:20:LYS:O	24:X:24:SER:OG	2.38	0.41
25:Y:30:PHE:O	25:Y:34:VAL:N	2.52	0.41
27:b:7:PRO:HB3	27:b:13:ARG:HG3	2.03	0.41
27:b:121:ALA:HA	27:b:129:LEU:HD13	2.02	0.41
27:b:240:GLY:CA	51:1:2597:G:H5''	2.51	0.41
28:c:55:LYS:HE3	28:c:60:VAL:HG22	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:c:113:SER:HB3	28:c:194:PRO:HB3	2.03	0.41
31:f:123:GLU:HB2	31:f:131:VAL:HB	2.03	0.41
34:j:27:ARG:NH2	51:1:1142:A:H4'	2.36	0.41
37:m:11:LYS:O	51:1:910:A:N6	2.54	0.41
39:o:25:ARG:HG3	39:o:40:ILE:HB	2.03	0.41
45:u:48:VAL:HA	45:u:49:PRO:HD3	1.92	0.41
45:u:73:ASN:ND2	45:u:76:THR:H	2.19	0.41
51:1:140:C:C6	51:1:141:G:H4'	2.55	0.41
51:1:375:G:H2'	51:1:376:G:H5'	2.03	0.41
51:1:413:C:H2'	51:1:414:C:C6	2.56	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
51:1:2063:C:O2	51:1:2450:A:N1	2.54	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
51:1:2559:C:H2'	51:1:2560:A:H8	1.86	0.41
53:3:26:A:H61	53:3:558:G:H1'	1.86	0.41
53:3:862:C:O2'	53:3:863:U:H5'	2.20	0.41
57:A2:57:THR:HG23	57:A2:158:ARG:HH21	1.86	0.41
58:B1:242:LEU:HA	58:B1:243:PRO:HD3	1.95	0.41
58:B1:777:HIS:CD2	59:B2:550:VAL:HG13	2.56	0.41
58:B1:1177:ILE:HD12	58:B1:1186:TYR:HE2	1.85	0.41
59:B2:213:LEU:HD13	59:B2:422:LYS:HG2	2.03	0.41
63:6:33:U:H2'	63:6:35:A:OP2	2.21	0.41
64:a:41:SER:OG	64:a:43:ASP:OD2	2.32	0.41
65:0:446:ARG:HB3	65:0:459:ALA:HB3	2.02	0.41
65:0:533:GLY:HA3	65:0:572:VAL:HG22	2.03	0.41
65:0:612:LEU:HD12	65:0:612:LEU:HA	1.84	0.41
65:0:695:ALA:HA	65:0:699:ILE:HB	2.01	0.41
4:D:24:THR:OG1	4:D:25:LYS:N	2.53	0.41
6:F:10:LEU:HD21	51:1:2477:U:H5	1.82	0.41
10:J:83:PRO:HB3	10:J:97:PRO:HD3	2.02	0.41
16:P:25:SER:HA	16:P:88:PRO:HD2	2.02	0.41
21:U:60:TRP:HB3	21:U:65:ALA:HB2	2.04	0.41
22:V:46:HIS:CG	22:V:66:LEU:HD22	2.56	0.41
24:X:77:ARG:HH11	53:3:1225:A:H4'	1.83	0.41
28:c:19:GLY:HA2	40:p:78:PRO:HD2	2.02	0.41
28:c:179:ARG:HB3	28:c:188:LEU:HB2	2.03	0.41
28:c:209:ALA:OXT	51:1:2733:A:N3	2.54	0.41
32:g:22:LYS:HD3	32:g:22:LYS:HA	1.86	0.41
33:i:21:PRO:HB2	33:i:22:PRO:HD3	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:q:94:LEU:HA	41:q:97:ILE:HG22	2.03	0.41
46:v:78:GLN:HB3	46:v:88:HIS:HB3	2.03	0.41
51:1:740:C:O2'	51:1:741:U:H5'	2.21	0.41
51:1:1146:C:O2'	51:1:1147:A:H5'	2.21	0.41
51:1:1801:A:H5'	51:1:1801:A:H8	1.86	0.41
51:1:1843:C:H2'	51:1:1844:C:H6	1.82	0.41
51:1:1853:A:H2'	51:1:1854:A:H8	1.81	0.41
51:1:2112:G:O6	51:1:2167:U:O2'	2.37	0.41
51:1:2136:G:N1	51:1:2137:U:O2	2.54	0.41
51:1:2255:G:H2'	51:1:2256:G:C8	2.56	0.41
51:1:2746:U:H2'	51:1:2747:G:O4'	2.21	0.41
52:2:102:G:H2'	52:2:103:U:C1'	2.51	0.41
53:3:153:C:H2'	53:3:154:U:C5'	2.51	0.41
53:3:492:C:H2'	53:3:493:A:H8	1.83	0.41
53:3:520:A:H61	53:3:533:A:H61	1.67	0.41
53:3:795:C:C5	53:3:796:C:C5	3.09	0.41
53:3:1283:U:O2'	53:3:1284:C:H5'	2.21	0.41
53:3:1346:A:N1	53:3:1374:A:H5''	2.35	0.41
58:B1:515:ARG:HG2	58:B1:516:ASP:H	1.85	0.41
2:B:39:ARG:CZ	51:1:2884:U:H3	2.34	0.40
10:J:35:LEU:HD23	10:J:35:LEU:HA	1.93	0.40
20:T:84:LEU:HD12	20:T:84:LEU:HA	1.94	0.40
25:Y:21:ALA:HA	25:Y:24:ARG:HD3	2.02	0.40
30:e:43:ILE:HD12	30:e:43:ILE:HA	1.90	0.40
32:g:9:VAL:HG12	32:g:11:ASN:H	1.85	0.40
40:p:17:PRO:HD2	40:p:83:ILE:HB	2.03	0.40
42:r:78:ARG:HH22	51:1:975:A:H4'	1.86	0.40
47:w:37:ARG:HA	47:w:37:ARG:HD3	1.68	0.40
48:x:1:SER:OG	51:1:1365:A:H5'	2.20	0.40
49:y:31:GLN:HB3	49:y:37:LEU:HD12	2.02	0.40
51:1:121:G:H2'	51:1:122:G:H8	1.86	0.40
51:1:549:G:H2'	51:1:550:C:C6	2.56	0.40
51:1:772:C:H5''	51:1:1356:G:C5'	2.50	0.40
51:1:940:G:C3'	51:1:941:A:H5''	2.51	0.40
51:1:1698:A:N7	51:1:1700:A:C8	2.89	0.40
51:1:1863:G:H2'	51:1:1864:U:C6	2.56	0.40
51:1:1932:A:H62	51:1:1968:G:H21	1.68	0.40
51:1:2356:U:C3'	51:1:2357:G:H5''	2.52	0.40
52:2:112:G:H2'	52:2:113:C:C6	2.56	0.40
53:3:220:G:O2'	53:3:221:C:H5'	2.21	0.40
53:3:562:U:H4'	53:3:563:A:O5'	2.20	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:B1:26:SER:HB3	58:B1:29:MET:H	1.87	0.40
58:B1:108:ALA:HB2	58:B1:276:ASN:OD1	2.21	0.40
58:B1:239:LEU:HD23	58:B1:239:LEU:N	2.36	0.40
59:B2:979:LEU:HD11	59:B2:1011:LEU:HD11	2.03	0.40
59:B2:987:GLU:HG2	59:B2:991:LYS:HE3	2.03	0.40
7:G:17:HIS:HB2	7:G:202:ASN:HD22	1.86	0.40
14:N:82:ILE:HA	14:N:85:ALA:HB3	2.03	0.40
15:O:46:LYS:HB3	53:3:1253:G:OP1	2.21	0.40
16:P:66:ALA:HA	16:P:69:CYS:HB3	2.04	0.40
19:S:1:ALA:HB1	53:3:1049:U:C4	2.56	0.40
22:V:16:MET:HE2	22:V:16:MET:HB3	1.84	0.40
28:c:149:ASN:ND2	51:1:2572:A:C8	2.90	0.40
32:g:14:SER:O	32:g:14:SER:OG	2.38	0.40
41:q:23:TYR:HD1	51:1:533:G:C5'	2.35	0.40
44:t:7:LEU:HD23	44:t:7:LEU:HA	1.90	0.40
49:y:31:GLN:HG2	49:y:37:LEU:HB2	2.03	0.40
51:1:226:A:H2'	51:1:227:A:O4'	2.21	0.40
51:1:1028:A:H2'	51:1:1029:A:C8	2.56	0.40
51:1:1047:G:N2	51:1:1110:G:H2'	2.36	0.40
51:1:1169:A:H2'	51:1:1170:C:O4'	2.22	0.40
51:1:1340:U:H4'	51:1:1394:U:O2'	2.22	0.40
51:1:1597:A:C5'	51:1:1598:A:H5'	2.32	0.40
51:1:1831:G:C2	51:1:1975:G:C2	3.10	0.40
51:1:2041:U:H2'	51:1:2042:A:H8	1.81	0.40
51:1:2798:U:H4'	51:1:2799:A:C6	2.56	0.40
51:1:2811:G:O2'	51:1:2812:G:H5'	2.21	0.40
52:2:78:A:H2'	52:2:79:G:O4'	2.20	0.40
53:3:866:C:C2	53:3:867:G:H1'	2.56	0.40
53:3:962:C:H1'	53:3:1201:A:N6	2.36	0.40
53:3:1093:A:O2'	53:3:1094:G:H5'	2.20	0.40
53:3:1536:C:H2'	53:3:1537:U:C6	2.56	0.40
57:A1:48:LEU:HD12	57:A1:48:LEU:HA	1.79	0.40
58:B1:596:LEU:HD23	58:B1:596:LEU:HA	1.91	0.40
58:B1:1050:THR:HG23	58:B1:1057:SER:HB3	2.03	0.40
58:B1:1154:ALA:N	58:B1:1214:PRO:O	2.50	0.40
59:B2:159:SER:HB2	59:B2:442:VAL:HG11	2.04	0.40
59:B2:310:ILE:HG21	59:B2:325:LEU:HB3	2.03	0.40
59:B2:524:ILE:HD12	59:B2:712:SER:HB2	2.02	0.40
59:B2:803:ALA:HB2	59:B2:1094:VAL:HG21	2.03	0.40
64:a:46:VAL:O	64:a:170:ILE:HA	2.21	0.40
64:a:211:LYS:HE2	64:a:211:LYS:HB2	1.57	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
65:0:489:ALA:HB3	65:0:615:PRO:HD3	2.03	0.40
3:C:10:LEU:HB2	3:C:20:TYR:HB2	2.03	0.40
9:I:49:ASP:OD1	9:I:49:ASP:N	2.55	0.40
13:M:126:CYS:SG	13:M:127:TYR:N	2.94	0.40
15:O:53:ILE:HD12	19:S:84:ARG:HD2	2.03	0.40
19:S:4:SER:OG	53:3:1216:A:H5''	2.21	0.40
24:X:46:LEU:HB3	24:X:48:ILE:HG12	2.03	0.40
27:b:152:GLN:HG2	51:1:1818:U:C4	2.56	0.40
28:c:118:PHE:CD2	51:1:1654:A:H2	2.35	0.40
30:e:78:ILE:HD11	30:e:82:TYR:HB3	2.03	0.40
30:e:93:GLU:H	30:e:93:GLU:HG3	1.65	0.40
32:g:90:LEU:HD11	32:g:93:SER:HA	2.02	0.40
37:m:47:GLU:O	37:m:51:ARG:N	2.48	0.40
45:u:84:PHE:HB2	51:1:297:G:O3'	2.21	0.40
51:1:43:G:H2'	51:1:44:A:O4'	2.22	0.40
51:1:191:A:H2'	51:1:192:C:C6	2.56	0.40
51:1:1521:G:H2'	51:1:1522:A:C8	2.56	0.40
51:1:2313:C:H2'	51:1:2314:A:C8	2.56	0.40
53:3:517:G:H4'	53:3:519:C:C2	2.56	0.40
53:3:706:A:H2'	53:3:707:U:H5'	2.04	0.40
53:3:986:U:H2'	53:3:987:G:O4'	2.21	0.40
53:3:1305:G:H22	53:3:1331:G:H2'	1.86	0.40
54:4:41:G:N2	58:B1:427:PRO:HD3	2.18	0.40
57:A1:224:LEU:HD23	57:A2:228:LEU:HD21	2.03	0.40
57:A2:48:LEU:HA	57:A2:48:LEU:HD23	1.86	0.40
58:B1:807:LEU:HD21	58:B1:894:VAL:HG21	2.04	0.40
59:B2:936:ARG:HB2	59:B2:1042:LEU:HD12	2.03	0.40
59:B2:1278:LEU:HD23	59:B2:1278:LEU:HA	1.86	0.40
64:a:48:LEU:HB2	64:a:169:GLY:O	2.21	0.40
65:0:468:ILE:O	65:0:472:ARG:N	2.51	0.40
2:B:42:ILE:HG22	2:B:48:TYR:HB2	2.03	0.40
3:C:13:SER:OG	3:C:47:ILE:O	2.27	0.40
8:H:148:ILE:HG23	8:H:169:GLU:HB3	2.04	0.40
13:M:86:LYS:HD2	13:M:86:LYS:HA	1.73	0.40
16:P:26:PHE:O	16:P:27:ASN:ND2	2.54	0.40
18:R:70:ARG:NE	30:e:141:ASP:O	2.53	0.40
27:b:77:VAL:HB	27:b:112:GLY:H	1.86	0.40
27:b:159:THR:OG1	27:b:160:TYR:N	2.54	0.40
27:b:247:TRP:CE2	51:1:1805:A:H5''	2.57	0.40
31:f:3:VAL:HG21	51:1:2748:A:O3'	2.21	0.40
32:g:78:VAL:HG21	32:g:103:VAL:HG23	2.04	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:k:71:ARG:HH22	40:p:79:VAL:HG11	1.86	0.40
36:l:29:LYS:HA	36:l:29:LYS:HD2	1.71	0.40
38:n:23:ASN:HD21	51:1:1294:U:H1'	1.87	0.40
45:u:42:LYS:HE2	45:u:42:LYS:HB3	1.90	0.40
51:1:126:A:C6	51:1:127:A:C2	3.10	0.40
51:1:277:G:H2'	51:1:361:G:O6	2.21	0.40
51:1:529:A:C5	51:1:2042:A:C2	3.10	0.40
51:1:677:A:C6	51:1:802:A:C6	3.09	0.40
51:1:729:G:O2'	51:1:763:G:H4'	2.21	0.40
51:1:1468:U:H2'	51:1:1522:A:H61	1.86	0.40
51:1:1679:A:H4'	51:1:1990:C:H4'	2.03	0.40
51:1:1917:U:O2	51:1:1917:U:O5'	2.39	0.40
51:1:2533:U:H2'	51:1:2534:A:O4'	2.21	0.40
51:1:2643:G:H2'	51:1:2644:G:O4'	2.20	0.40
51:1:2741:A:N6	51:1:2763:G:H1'	2.37	0.40
53:3:42:G:H1	53:3:400:C:H42	1.69	0.40
53:3:130:A:N3	53:3:130:A:H2'	2.36	0.40
53:3:990:C:H2'	53:3:991:U:O4'	2.21	0.40
53:3:1221:G:O2'	53:3:1222:G:H5'	2.22	0.40
57:A2:42:ALA:HB1	57:A2:224:LEU:HD11	2.03	0.40
59:B2:50:GLU:HG2	59:B2:73:TYR:HE1	1.85	0.40
59:B2:738:GLU:HA	59:B2:741:MET:HE2	2.03	0.40
59:B2:1247:SER:OG	59:B2:1248:THR:N	2.55	0.40
63:6:62:C:H5'	64:a:53:ARG:NE	2.36	0.40
65:0:158:ILE:HG23	65:0:162:LEU:HB2	2.03	0.40
66:h:5:UAL:C	66:h:6:5OH:HS	2.52	0.40
9:I:97:LEU:HG	9:I:134:TYR:HB3	2.04	0.40
12:L:55:LYS:H	12:L:55:LYS:HG2	1.76	0.40
27:b:28:PRO:HB2	27:b:62:ARG:HH12	1.87	0.40
27:b:116:GLN:NE2	27:b:120:ASP:OD2	2.54	0.40
27:b:255:LYS:HD3	51:1:1844:C:H5''	2.02	0.40
31:f:97:VAL:HG11	31:f:123:GLU:HA	2.04	0.40
33:i:71:LYS:HD3	33:i:116:MET:HE2	2.03	0.40
33:i:91:LYS:HD2	33:i:91:LYS:HA	1.93	0.40
36:l:2:ARG:O	36:l:5:THR:OG1	2.36	0.40
36:l:29:LYS:HD3	51:1:810:U:OP2	2.22	0.40
44:t:49:LYS:HD2	44:t:49:LYS:HA	1.75	0.40
51:1:375:G:O2'	51:1:376:G:H5'	2.21	0.40
51:1:713:G:H2'	51:1:714:U:O4'	2.22	0.40
51:1:1177:G:H3'	51:1:1178:C:H5''	2.02	0.40
51:1:1601:G:O2'	51:1:1602:U:H5'	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1700:A:C2'	51:1:1701:A:H5'	2.50	0.40
51:1:1955:U:H6	51:1:1955:U:H5'	1.86	0.40
51:1:2108:A:OP1	64:a:3:LYS:HB3	2.22	0.40
51:1:2140:G:H2'	51:1:2141:G:C8	2.56	0.40
53:3:392:C:H2'	53:3:393:A:O4'	2.21	0.40
53:3:408:A:N6	53:3:434:U:H3	2.18	0.40
53:3:904:U:H2'	53:3:905:U:C6	2.56	0.40
53:3:994:A:H61	53:3:1047:G:H4'	1.85	0.40
58:B1:117:LEU:HD22	58:B1:139:LEU:CD1	2.52	0.40
58:B1:182:ALA:HB1	58:B1:238:ILE:CG2	2.52	0.40
58:B1:244:VAL:HA	58:B1:269:TYR:CZ	2.57	0.40
58:B1:351:GLY:O	58:B1:467:ALA:HA	2.21	0.40
59:B2:162:GLY:H	59:B2:170:VAL:HG12	1.87	0.40
59:B2:176:ILE:HD12	59:B2:184:LEU:HD23	2.03	0.40
60:W0:26:ARG:HA	60:W0:26:ARG:HD2	1.92	0.40
63:6:27:U:H6	63:6:27:U:H5'	1.87	0.40
65:0:32:PHE:HA	65:0:37:ASN:HB2	2.03	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	44/70 (63%)	38 (86%)	6 (14%)	0	100	100
2	B	54/57 (95%)	48 (89%)	6 (11%)	0	100	100
3	C	48/55 (87%)	37 (77%)	11 (23%)	0	100	100
4	D	44/46 (96%)	35 (80%)	9 (20%)	0	100	100
5	E	62/65 (95%)	48 (77%)	13 (21%)	1 (2%)	8	38
6	F	36/38 (95%)	30 (83%)	6 (17%)	0	100	100
7	G	216/241 (90%)	182 (84%)	34 (16%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
8	H	204/233 (88%)	187 (92%)	17 (8%)	0	100	100
9	I	203/206 (98%)	171 (84%)	31 (15%)	1 (0%)	25	64
10	J	155/167 (93%)	129 (83%)	26 (17%)	0	100	100
11	K	98/135 (73%)	79 (81%)	19 (19%)	0	100	100
12	L	149/179 (83%)	129 (87%)	20 (13%)	0	100	100
13	M	127/130 (98%)	110 (87%)	17 (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	55
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%)	69 (90%)	8 (10%)	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

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
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
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%)	274 (93%)	21 (7%)	0	100	100
57	A2	282/329 (86%)	271 (96%)	11 (4%)	0	100	100
58	B1	1329/1407 (94%)	1206 (91%)	119 (9%)	4 (0%)	37	73
59	B2	1338/1342 (100%)	1208 (90%)	126 (9%)	4 (0%)	37	73
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%)	133 (89%)	12 (8%)	5 (3%)	3	21
64	a	128/234 (55%)	105 (82%)	23 (18%)	0	100	100
65	0	695/716 (97%)	598 (86%)	87 (12%)	10 (1%)	9	41
66	h	2/6 (33%)	1 (50%)	1 (50%)	0	100	100
All	All	10486/11185 (94%)	9306 (89%)	1154 (11%)	26 (0%)	45	78

All (26) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
58	B1	121	PRO
62	NG	103	ILE
62	NG	122	PRO
59	B2	43	PRO
59	B2	918	LEU
62	NG	102	PRO
65	0	199	GLY

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Mol	Chain	Res	Type
65	0	516	GLY
65	0	611	VAL
59	B2	888	THR
65	0	298	ILE
65	0	299	LEU
17	Q	87	LYS
58	B1	43	THR
58	B1	193	ASP
62	NG	129	GLU
65	0	196	ALA
58	B1	1325	PHE
62	NG	115	LEU
65	0	552	ALA
5	E	16	THR
65	0	513	GLY
65	0	527	PRO
9	I	126	GLY
59	B2	1317	PRO
65	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%)	47	65
4	D	38/38 (100%)	35 (92%)	3 (8%)	10	29
5	E	51/52 (98%)	46 (90%)	5 (10%)	6	21
6	F	34/34 (100%)	33 (97%)	1 (3%)	37	56
7	G	180/199 (90%)	172 (96%)	8 (4%)	24	45
8	H	170/190 (90%)	162 (95%)	8 (5%)	22	44
9	I	172/173 (99%)	170 (99%)	2 (1%)	67	79

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
10	J	119/126 (94%)	113 (95%)	6 (5%)	20	41
11	K	87/116 (75%)	83 (95%)	4 (5%)	23	44
12	L	124/147 (84%)	121 (98%)	3 (2%)	44	62
13	M	104/105 (99%)	102 (98%)	2 (2%)	52	69
14	N	105/107 (98%)	105 (100%)	0	100	100
15	O	86/90 (96%)	78 (91%)	8 (9%)	7	23
16	P	89/99 (90%)	88 (99%)	1 (1%)	70	80
17	Q	103/104 (99%)	101 (98%)	2 (2%)	52	69
18	R	92/96 (96%)	91 (99%)	1 (1%)	70	80
19	S	83/84 (99%)	82 (99%)	1 (1%)	67	79
20	T	76/77 (99%)	76 (100%)	0	100	100
21	U	65/65 (100%)	65 (100%)	0	100	100
22	V	74/78 (95%)	74 (100%)	0	100	100
23	W	56/65 (86%)	56 (100%)	0	100	100
24	X	70/79 (89%)	70 (100%)	0	100	100
25	Y	65/66 (98%)	65 (100%)	0	100	100
26	Z	55/61 (90%)	46 (84%)	9 (16%)	2	10
27	b	216/218 (99%)	212 (98%)	4 (2%)	52	69
28	c	164/164 (100%)	163 (99%)	1 (1%)	84	88
29	d	165/165 (100%)	160 (97%)	5 (3%)	36	55
30	e	148/150 (99%)	146 (99%)	2 (1%)	62	75
31	f	137/138 (99%)	136 (99%)	1 (1%)	81	87
32	g	114/114 (100%)	111 (97%)	3 (3%)	41	59
33	i	109/110 (99%)	109 (100%)	0	100	100
34	j	116/116 (100%)	113 (97%)	3 (3%)	41	59
35	k	103/104 (99%)	100 (97%)	3 (3%)	37	56
36	l	102/103 (99%)	100 (98%)	2 (2%)	50	68
37	m	109/109 (100%)	108 (99%)	1 (1%)	75	83
38	n	100/103 (97%)	98 (98%)	2 (2%)	50	68
39	o	86/87 (99%)	86 (100%)	0	100	100
40	p	99/100 (99%)	99 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
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%)	86 (92%)	7 (8%)	11	31
44	t	80/84 (95%)	77 (96%)	3 (4%)	28	49
45	u	83/85 (98%)	82 (99%)	1 (1%)	67	79
46	v	78/78 (100%)	77 (99%)	1 (1%)	65	77
47	w	57/63 (90%)	57 (100%)	0	100	100
48	x	67/68 (98%)	65 (97%)	2 (3%)	36	55
49	y	55/55 (100%)	55 (100%)	0	100	100
50	z	48/49 (98%)	47 (98%)	1 (2%)	48	66
57	A1	185/286 (65%)	174 (94%)	11 (6%)	16	37
57	A2	186/286 (65%)	184 (99%)	2 (1%)	70	80
58	B1	1110/1168 (95%)	1021 (92%)	89 (8%)	10	29
59	B2	1150/1157 (99%)	1121 (98%)	29 (2%)	42	61
60	W0	70/75 (93%)	68 (97%)	2 (3%)	37	56
64	a	109/181 (60%)	98 (90%)	11 (10%)	6	20
65	o	574/588 (98%)	512 (89%)	62 (11%)	5	19
66	h	2/2 (100%)	2 (100%)	0	100	100
All	All	8120/8683 (94%)	7807 (96%)	313 (4%)	30	48

All (313) 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

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Mol	Chain	Res	Type
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
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	51	ILE
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

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Mol	Chain	Res	Type
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
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	74	ILE
43	s	76	VAL

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Mol	Chain	Res	Type
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
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	29	GLU
57	A2	74	VAL
58	B1	24	LEU
58	B1	40	LYS
58	B1	42	GLU
58	B1	44	ILE
58	B1	47	ARG
58	B1	49	PHE
58	B1	50	LYS
58	B1	60	ARG
58	B1	66	LYS
58	B1	69	GLU
58	B1	71	LEU
58	B1	74	LYS
58	B1	76	LYS
58	B1	78	LEU
58	B1	80	HIS
58	B1	81	ARG
58	B1	87	LYS
58	B1	91	GLU
58	B1	93	THR

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Mol	Chain	Res	Type
58	B1	94	GLN
58	B1	95	THR
58	B1	96	LYS
58	B1	99	ARG
58	B1	100	GLU
58	B1	114	ILE
58	B1	117	LEU
58	B1	120	LEU
58	B1	126	LEU
58	B1	132	LEU
58	B1	135	ILE
58	B1	142	GLU
58	B1	144	TYR
58	B1	145	VAL
58	B1	146	VAL
58	B1	147	ILE
58	B1	152	THR
58	B1	154	LEU
58	B1	157	GLN
58	B1	159	ILE
58	B1	172	PHE
58	B1	174	ASP
58	B1	175	GLU
58	B1	180	MET
58	B1	190	LYS
58	B1	193	ASP
58	B1	196	GLN
58	B1	210	SER
58	B1	212	THR
58	B1	216	LYS
58	B1	222	LYS
58	B1	223	LEU
58	B1	227	PHE
58	B1	233	LYS
58	B1	237	MET
58	B1	238	ILE
58	B1	239	LEU
58	B1	240	THR
58	B1	244	VAL
58	B1	255	LEU
58	B1	256	ASP
58	B1	259	ARG

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Mol	Chain	Res	Type
58	B1	317	THR
58	B1	322	ARG
58	B1	324	LEU
58	B1	363	LEU
58	B1	385	LEU
58	B1	386	GLU
58	B1	387	LEU
58	B1	390	LEU
58	B1	393	THR
58	B1	394	ILE
58	B1	395	LYS
58	B1	416	ILE
58	B1	417	ARG
58	B1	425	ARG
58	B1	506	VAL
58	B1	514	THR
58	B1	800	LEU
58	B1	807	LEU
58	B1	839	VAL
58	B1	901	ARG
58	B1	903	LEU
58	B1	1172	LYS
58	B1	1181	ASP
58	B1	1233	ILE
58	B1	1327	GLU
58	B1	1328	THR
58	B1	1331	VAL
58	B1	1332	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

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Mol	Chain	Res	Type
59	B2	887	VAL
59	B2	890	LYS
59	B2	894	GLN
59	B2	895	LEU
59	B2	899	GLU
59	B2	902	LEU
59	B2	903	ARG
59	B2	905	ILE
59	B2	908	GLU
59	B2	909	LYS
59	B2	918	LEU
59	B2	920	VAL
59	B2	922	ASN
59	B2	1076	ILE
59	B2	1151	LEU
60	W0	4	VAL
60	W0	63	ILE
64	a	8	MET
64	a	42	VAL
64	a	47	ASN
64	a	165	ASN
64	a	166	ASP
64	a	167	LYS
64	a	170	ILE
64	a	211	LYS
64	a	212	VAL
64	a	213	SER
64	a	214	ILE
65	0	42	GLU
65	0	173	ILE
65	0	195	ASP
65	0	298	ILE
65	0	299	LEU
65	0	300	ASP
65	0	301	ASP
65	0	303	LYS
65	0	338	VAL
65	0	390	ASP
65	0	485	LYS
65	0	494	ILE
65	0	496	GLN
65	0	498	VAL

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Mol	Chain	Res	Type
65	0	499	THR
65	0	501	VAL
65	0	502	GLU
65	0	507	LYS
65	0	508	GLN
65	0	512	ARG
65	0	519	VAL
65	0	520	ILE
65	0	522	MET
65	0	523	TYR
65	0	525	LEU
65	0	526	GLU
65	0	532	LYS
65	0	537	ILE
65	0	540	ILE
65	0	541	LYS
65	0	544	VAL
65	0	545	ILE
65	0	548	GLU
65	0	555	LYS
65	0	559	GLU
65	0	562	LYS
65	0	566	LEU
65	0	571	VAL
65	0	572	VAL
65	0	574	MET
65	0	576	ILE
65	0	578	LEU
65	0	583	TYR
65	0	584	HIS
65	0	594	LYS
65	0	599	ILE
65	0	601	PHE
65	0	602	LYS
65	0	606	LYS
65	0	607	LYS
65	0	611	VAL
65	0	612	LEU
65	0	614	GLU
65	0	616	ILE
65	0	617	MET
65	0	618	LYS

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Mol	Chain	Res	Type
65	0	662	GLU
65	0	663	MET
65	0	688	ASP
65	0	689	GLU
65	0	694	VAL
65	0	700	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (149) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	20	ASN
3	C	45	HIS
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	94	HIS
12	L	8	GLN
12	L	27	ASN
12	L	96	ASN
13	M	3	GLN
13	M	15	ASN

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Mol	Chain	Res	Type
13	M	20	ASN
14	N	3	ASN
16	P	27	ASN
16	P	80	ASN
17	Q	28	GLN
17	Q	72	ASN
17	Q	76	HIS
17	Q	111	GLN
18	R	90	HIS
19	S	48	GLN
19	S	59	GLN
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	14	HIS
27	b	24	HIS
27	b	85	ASN
27	b	250	GLN
28	c	32	ASN
28	c	49	GLN
28	c	67	HIS
28	c	130	GLN
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
31	f	110	HIS
32	g	18	GLN
32	g	33	GLN
32	g	66	ASN

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Mol	Chain	Res	Type
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
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	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	45	ASN
58	B1	196	GLN
58	B1	209	ASN
58	B1	364	HIS

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Mol	Chain	Res	Type
58	B1	424	ASN
58	B1	469	HIS
58	B1	805	GLN
58	B1	865	HIS
58	B1	1195	GLN
58	B1	1238	GLN
58	B1	1259	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
59	B2	688	GLN
59	B2	808	ASN
59	B2	894	GLN
59	B2	1237	HIS
59	B2	1268	GLN
59	B2	1313	HIS
60	W0	7	GLN
60	W0	31	GLN
60	W0	62	GLN
64	a	24	ASN
64	a	172	HIS
65	0	85	ASN
65	0	92	HIS
65	0	157	GLN
65	0	170	GLN
65	0	259	ASN
65	0	272	ASN
65	0	276	GLN
65	0	351	ASN
65	0	560	GLN

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	29/41 (70%)	15 (51%)	4 (13%)

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Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
63	6	76/77 (98%)	14 (18%)	0
All	All	4664/4684 (99%)	679 (14%)	11 (0%)

All (679) RNA backbone outliers are listed below:

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

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Mol	Chain	Res	Type
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
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

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Mol	Chain	Res	Type
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
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

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Mol	Chain	Res	Type
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
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

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Mol	Chain	Res	Type
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
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

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Mol	Chain	Res	Type
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
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

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Mol	Chain	Res	Type
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
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

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Mol	Chain	Res	Type
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
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

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Mol	Chain	Res	Type
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
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

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Mol	Chain	Res	Type
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
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

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Mol	Chain	Res	Type
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
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

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Mol	Chain	Res	Type
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
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

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Mol	Chain	Res	Type
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
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

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Mol	Chain	Res	Type
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
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

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Mol	Chain	Res	Type
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
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

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Mol	Chain	Res	Type
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
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	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	33	G
63	6	9	G

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Mol	Chain	Res	Type
63	6	10	G
63	6	19	G
63	6	20	U
63	6	21	A
63	6	22	G
63	6	27	U
63	6	33	U
63	6	45	G
63	6	47	U
63	6	48	C
63	6	58	A
63	6	61	C
63	6	64	G

All (11) 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	18	U
54	4	19	U
54	4	32	U

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

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
66	5OH	h	6	66	8,12,13	0.83	0	3,16,18	1.49	1 (33%)
66	DPP	h	2	66	3,5,6	0.57	0	1,5,7	0.07	0
66	UAL	h	5	66	7,8,9	2.28	3 (42%)	5,9,11	2.92	2 (40%)
66	KBE	h	1	66	8,8,9	0.64	0	7,8,10	1.21	1 (14%)

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
66	5OH	h	6	66	-	0/2/18/20	0/1/1/1
66	DPP	h	2	66	-	0/2/4/6	-
66	UAL	h	5	66	-	0/3/7/9	-
66	KBE	h	1	66	-	0/7/7/8	-

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
66	h	5	UAL	C1-N1	-4.76	1.32	1.40
66	h	5	UAL	C-CA	-2.89	1.40	1.45
66	h	5	UAL	CA-N	2.07	1.40	1.35

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
66	h	5	UAL	CA-CB-N1	-5.32	115.57	125.60
66	h	5	UAL	O-C-CA	-3.24	121.26	125.39
66	h	6	5OH	CR-CB-CA	-2.34	110.09	112.61
66	h	1	KBE	CB-CA-C	-2.08	109.19	112.25

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

3 monomers are involved in 6 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
66	h	6	5OH	4	0
66	h	2	DPP	1	0
66	h	5	UAL	2	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$
68	GDP	0	801	-	24,30,30	0.94	1 (4%)	30,47,47	1.34	4 (13%)
69	PO4	0	802	-	4,4,4	0.96	0	6,6,6	0.47	0

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

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

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
68	0	801	GDP	C6-N1	-2.60	1.34	1.37

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
68	0	801	GDP	PA-O3A-PB	-3.55	120.64	132.83
68	0	801	GDP	C5-C6-N1	2.53	118.42	113.95
68	0	801	GDP	C3'-C2'-C1'	2.53	104.79	100.98
68	0	801	GDP	C8-N7-C5	2.52	107.79	102.99

There are no chirality outliers.

All (2) torsion outliers are listed below:

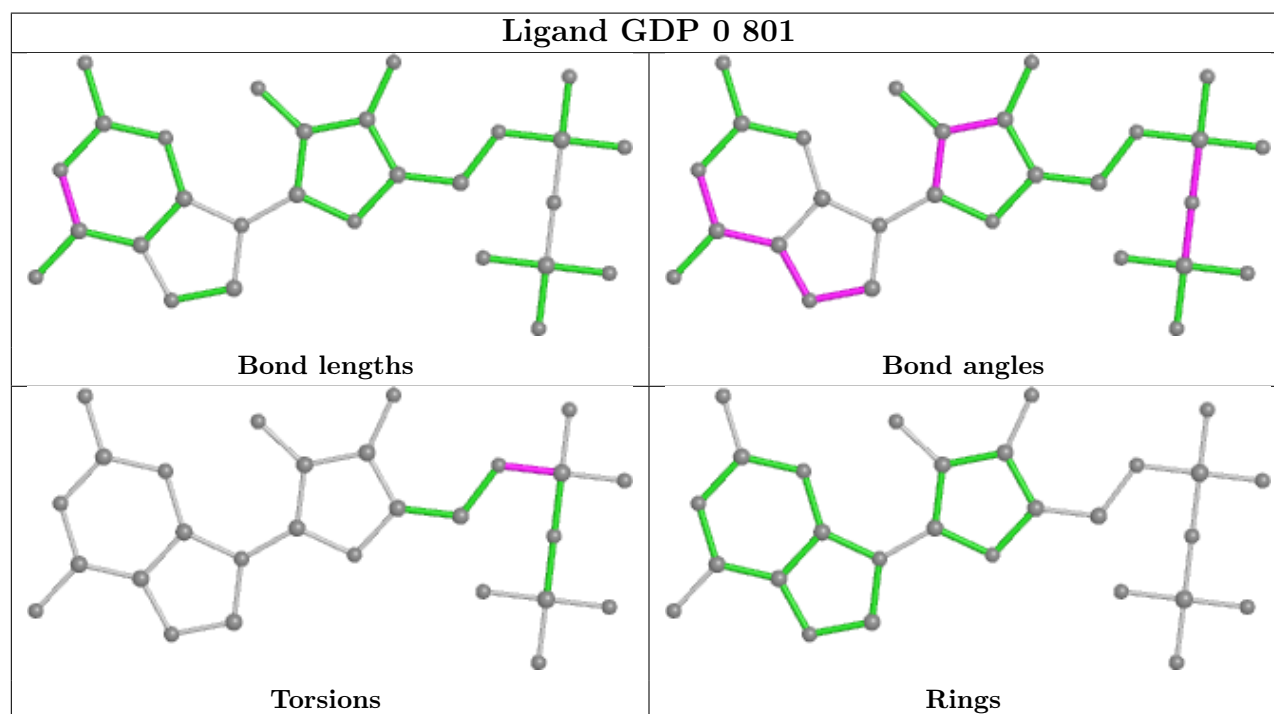
Mol	Chain	Res	Type	Atoms
68	0	801	GDP	C5'-O5'-PA-O3A
68	0	801	GDP	C5'-O5'-PA-O1A

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
68	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.

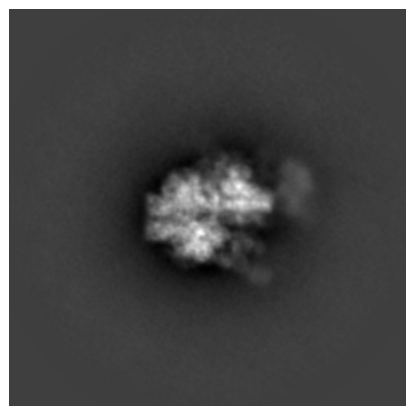
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-38945. These allow visual inspection of the internal detail of the map and identification of artifacts.

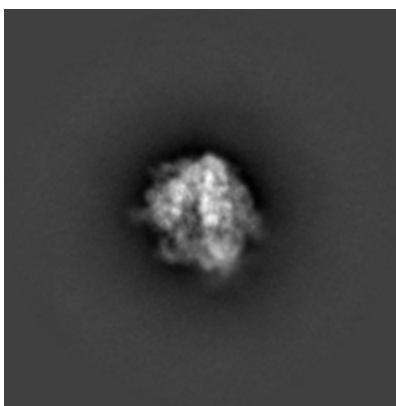
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

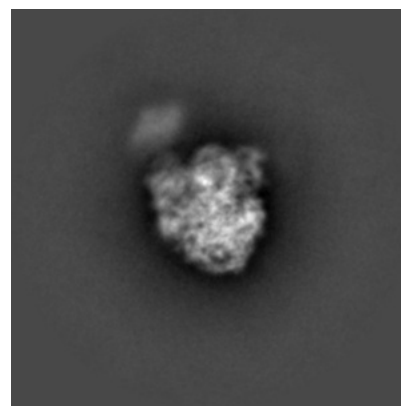
6.1.1 Primary map



X

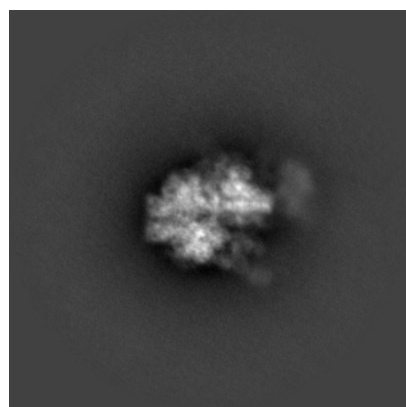


Y

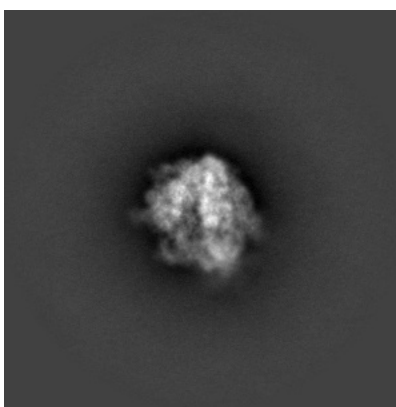


Z

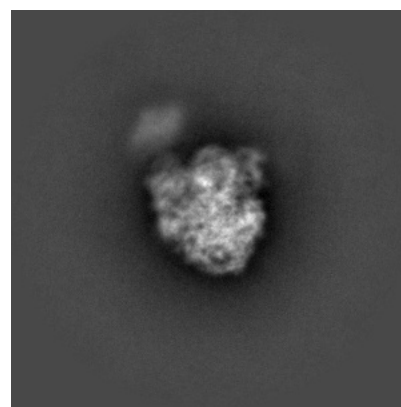
6.1.2 Raw map



X



Y

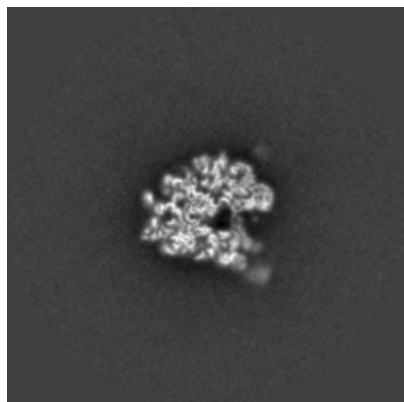


Z

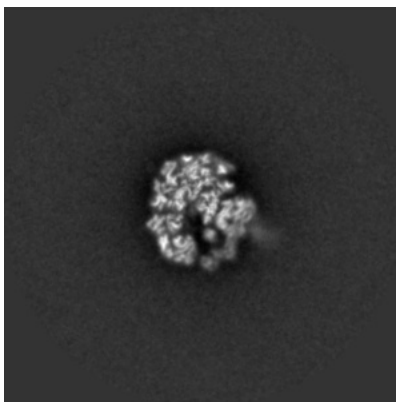
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

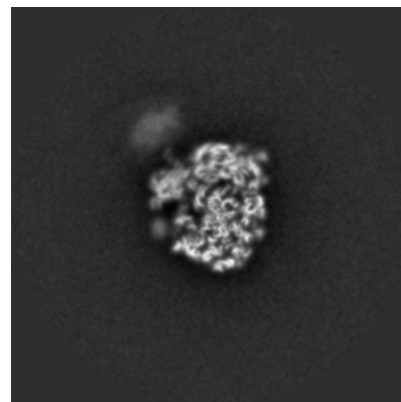
6.2.1 Primary map



X Index: 240

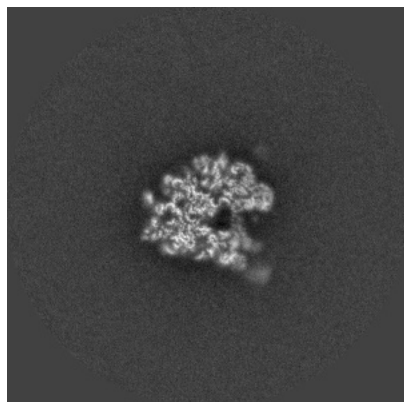


Y Index: 240

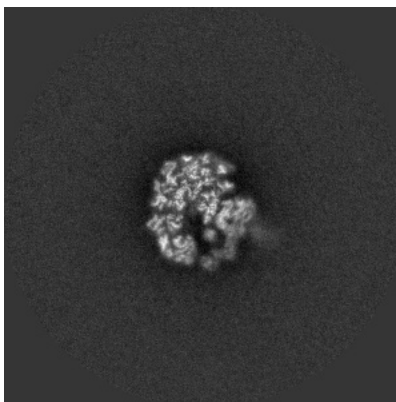


Z Index: 240

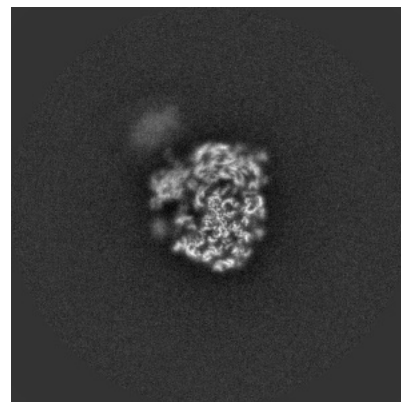
6.2.2 Raw map



X Index: 240



Y Index: 240

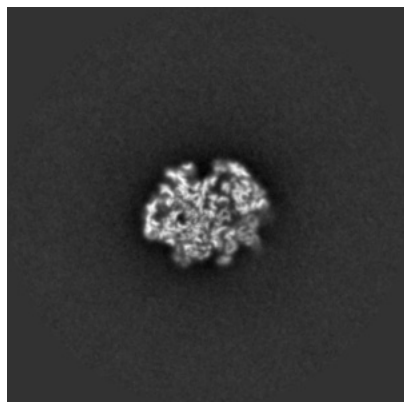


Z Index: 240

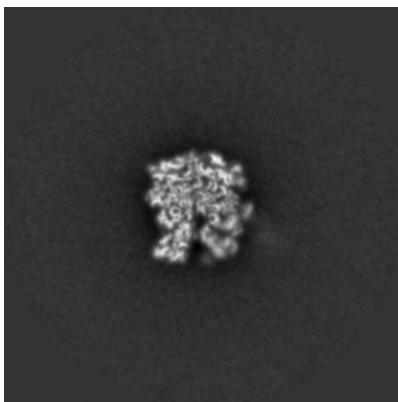
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

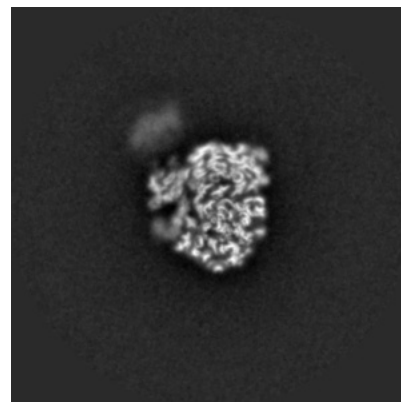
6.3.1 Primary map



X Index: 263

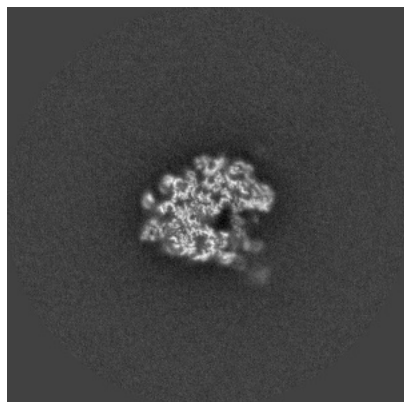


Y Index: 225

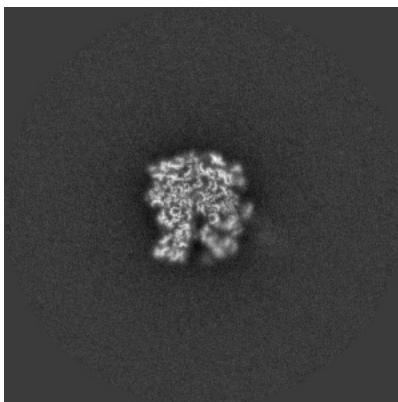


Z Index: 244

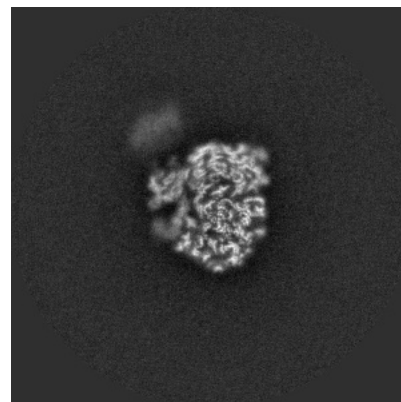
6.3.2 Raw map



X Index: 243



Y Index: 225

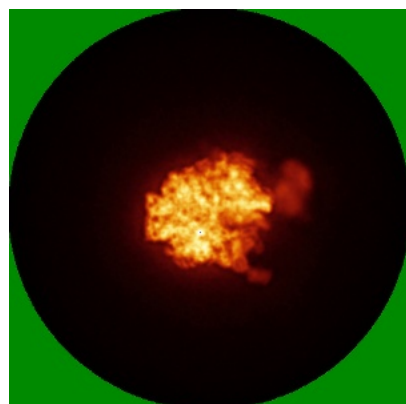


Z Index: 244

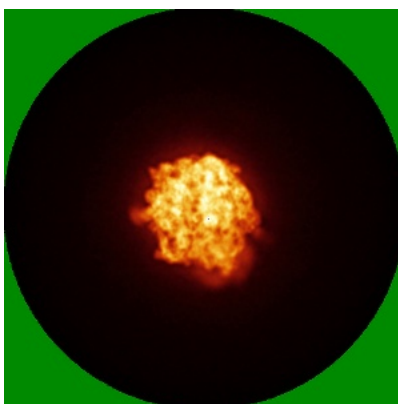
The images above show the largest variance slices of the map in three orthogonal directions.

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

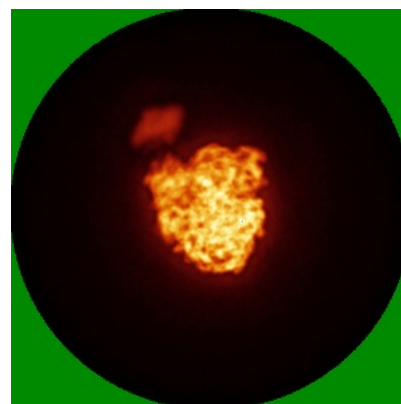
6.4.1 Primary map



X

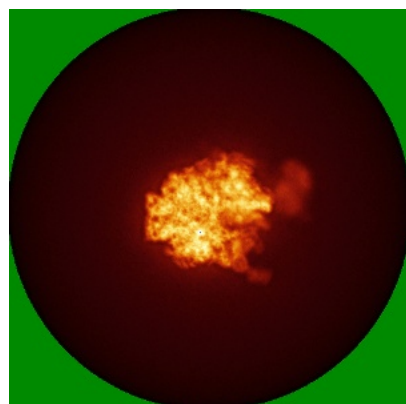


Y

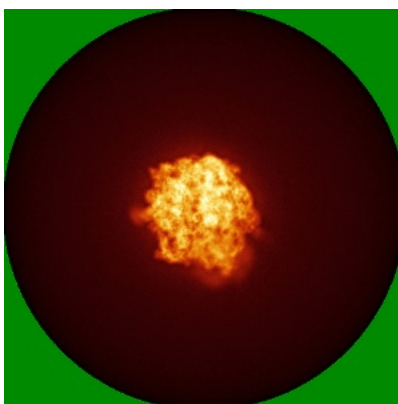


Z

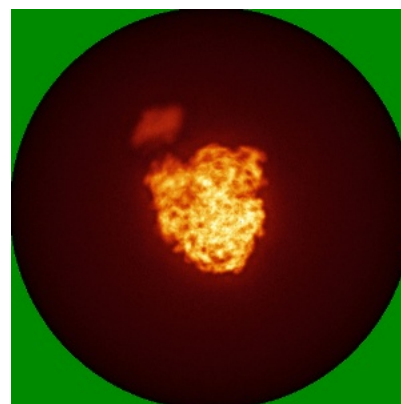
6.4.2 Raw map



X



Y



Z

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

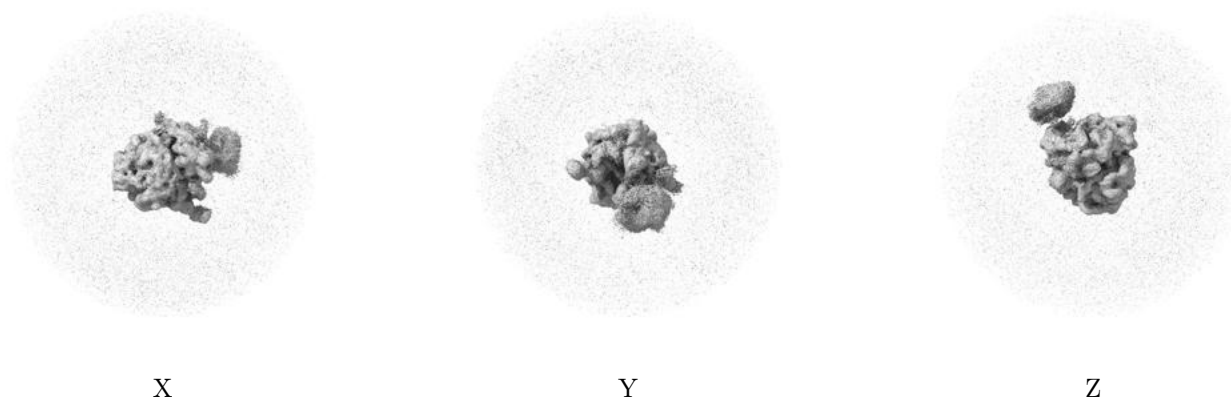
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.006. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



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

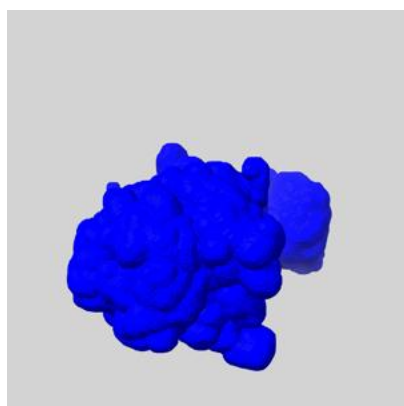
6.6 Mask visualisation [i](#)

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

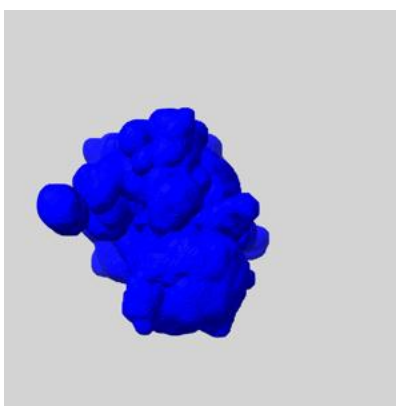
A mask typically either:

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

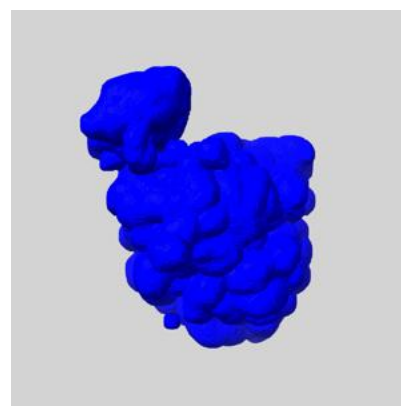
6.6.1 emd_38945_msk_1.map [i](#)



X



Y

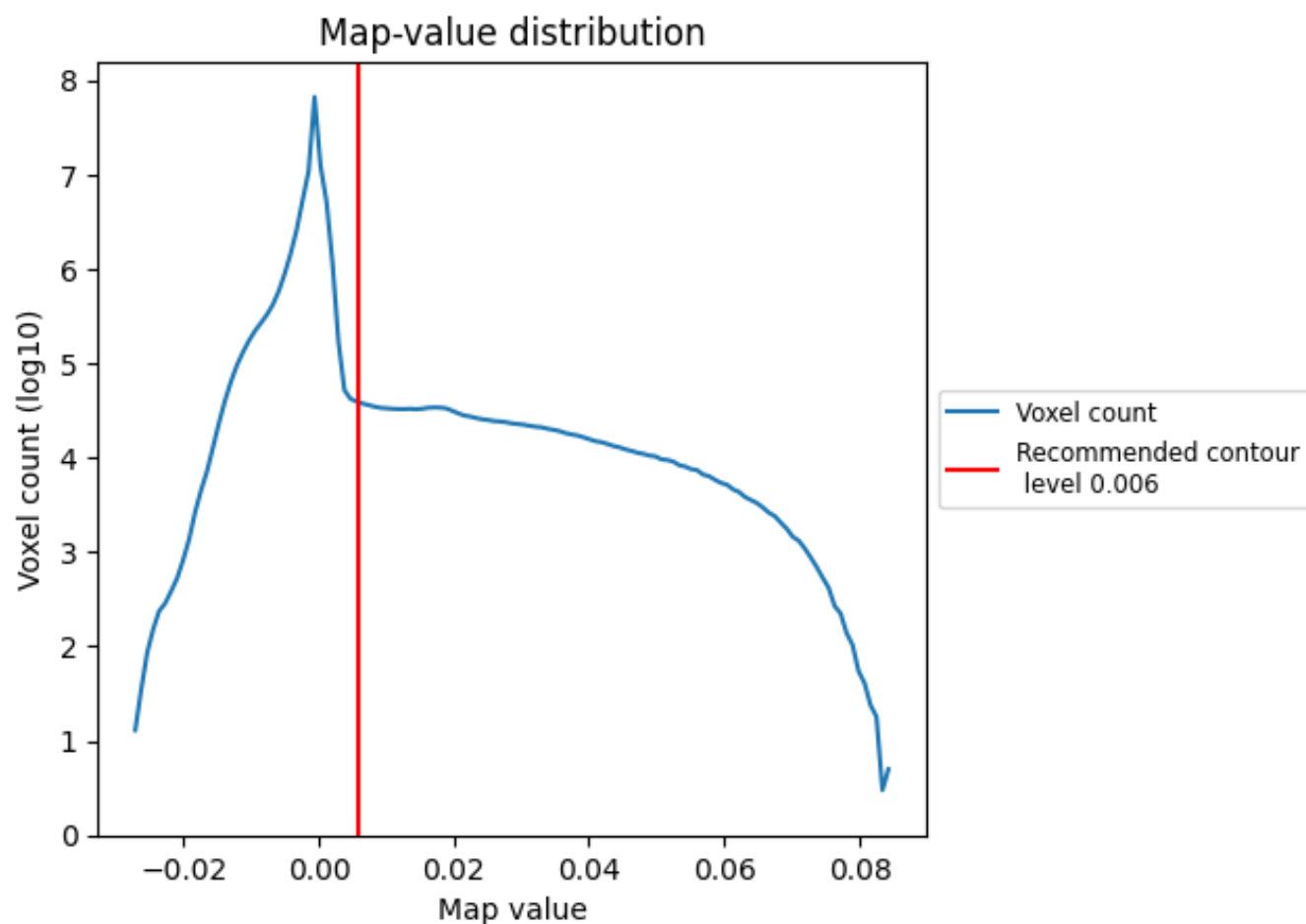


Z

7 Map analysis [i](#)

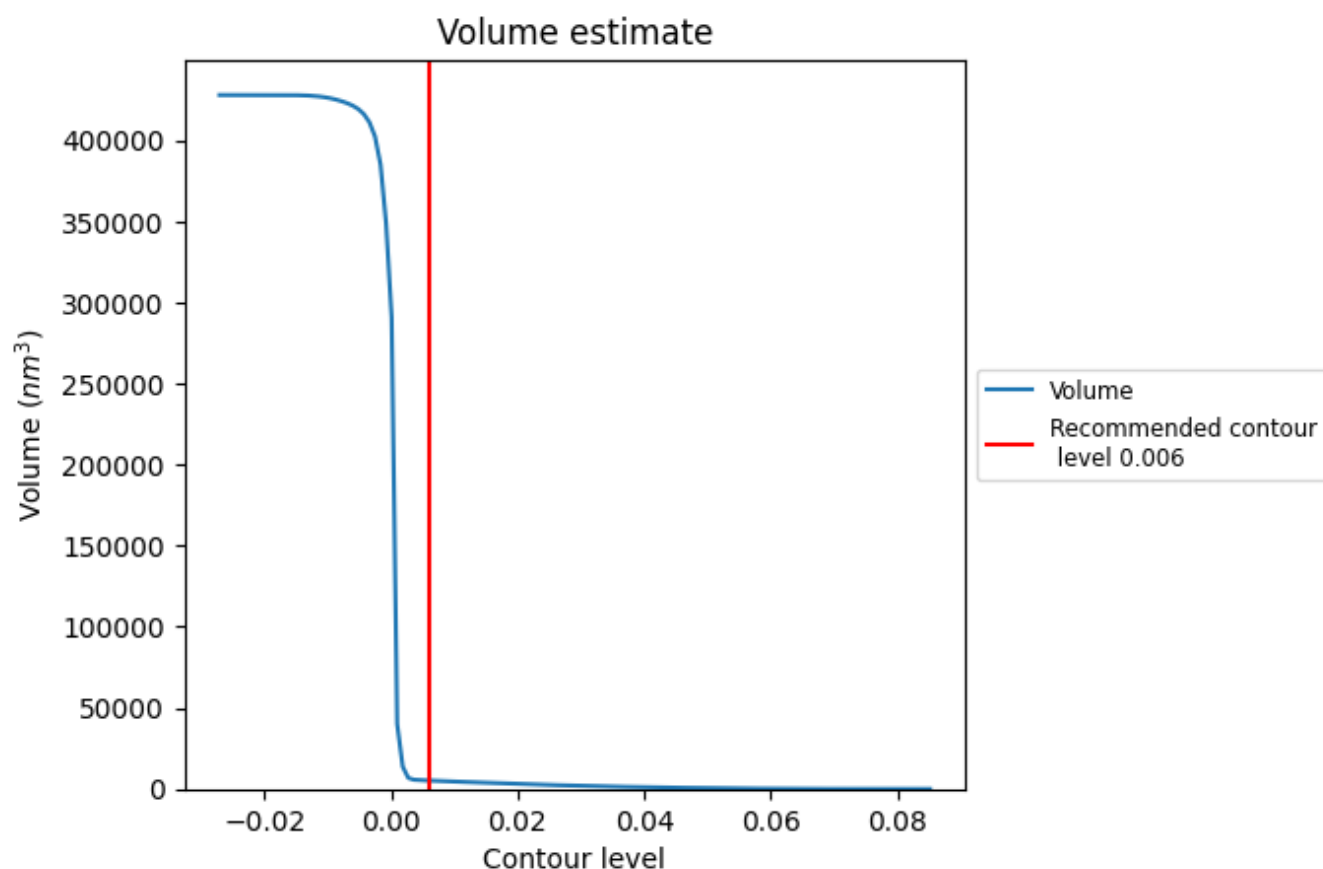
This section contains the results of statistical analysis of the map.

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.

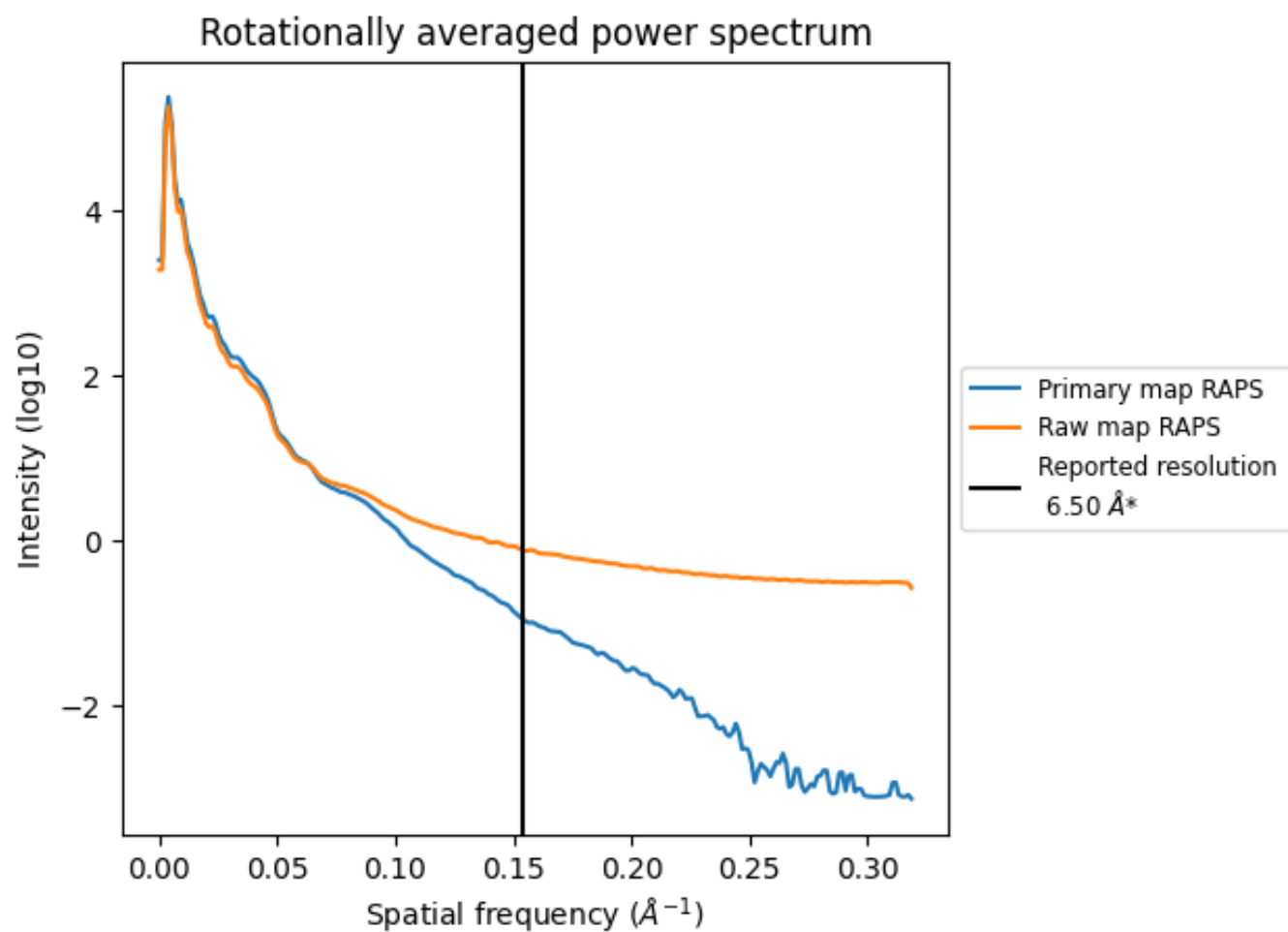
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 5183 nm^3 ; this corresponds to an approximate mass of 4682 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 ⓘ

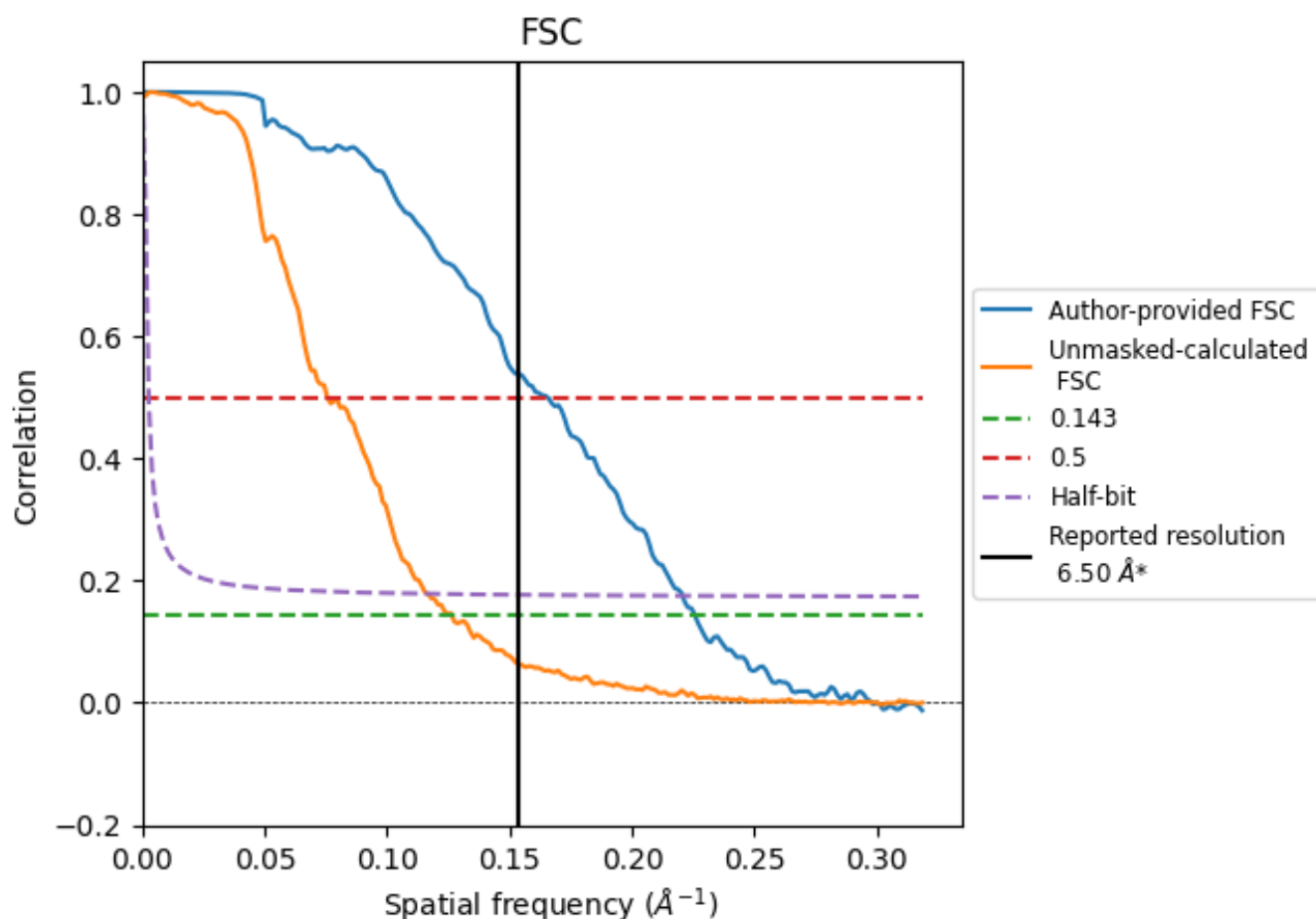


*Reported resolution corresponds to spatial frequency of 0.154 Å⁻¹

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 0.154 Å⁻¹

8.2 Resolution estimates [i](#)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	6.50	-	-
Author-provided FSC curve	4.43	6.04	4.53
Unmasked-calculated*	7.91	13.23	8.58

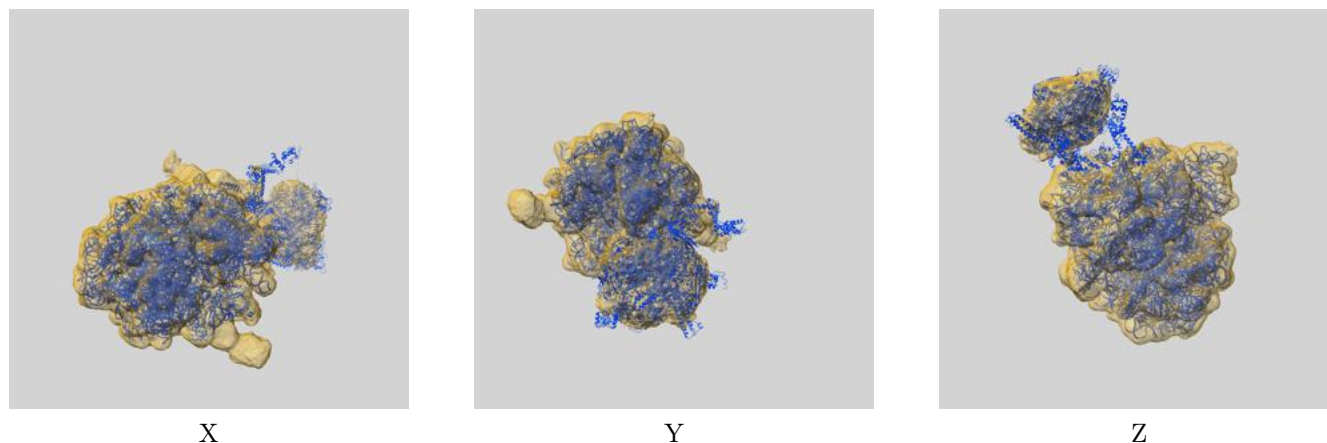
*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from author-provided FSC intersecting FSC 0.143 CUT-OFF 4.43 differs from the reported value 6.5 by more than 10 %

The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 7.91 differs from the reported value 6.5 by more than 10 %

9 Map-model fit [i](#)

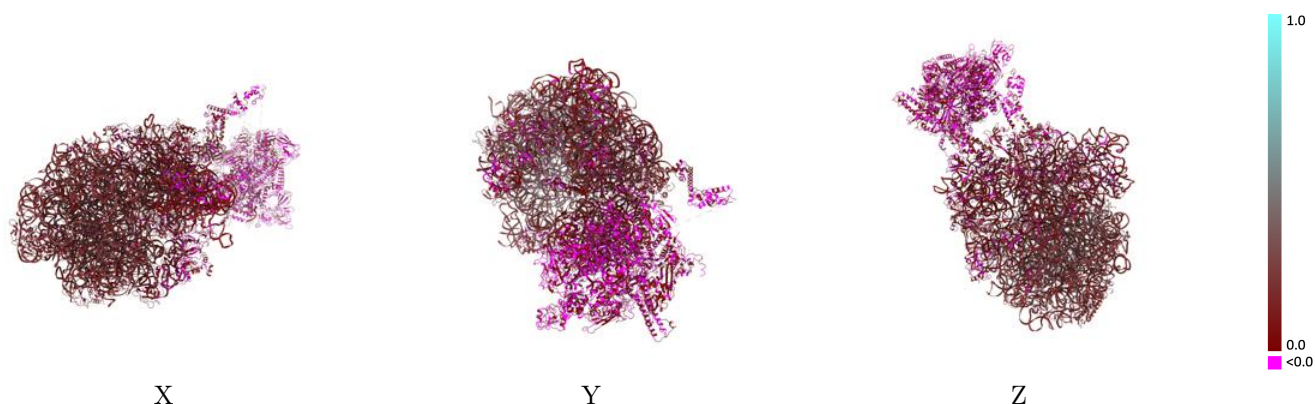
This section contains information regarding the fit between EMDB map EMD-38945 and PDB model 8Y5P. Per-residue inclusion information can be found in section [3](#) on page [18](#).

9.1 Map-model overlay [i](#)



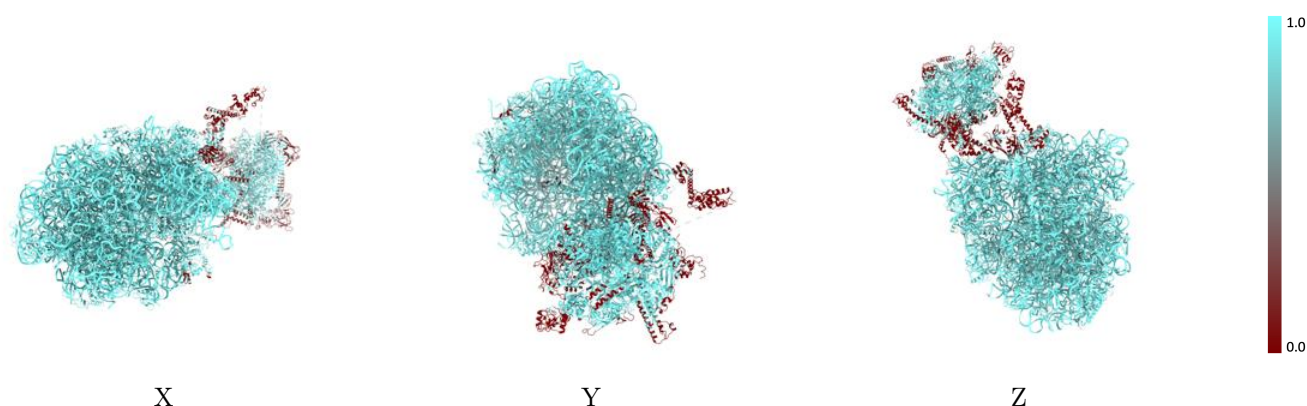
The images above show the 3D surface view of the map at the recommended contour level 0.006 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



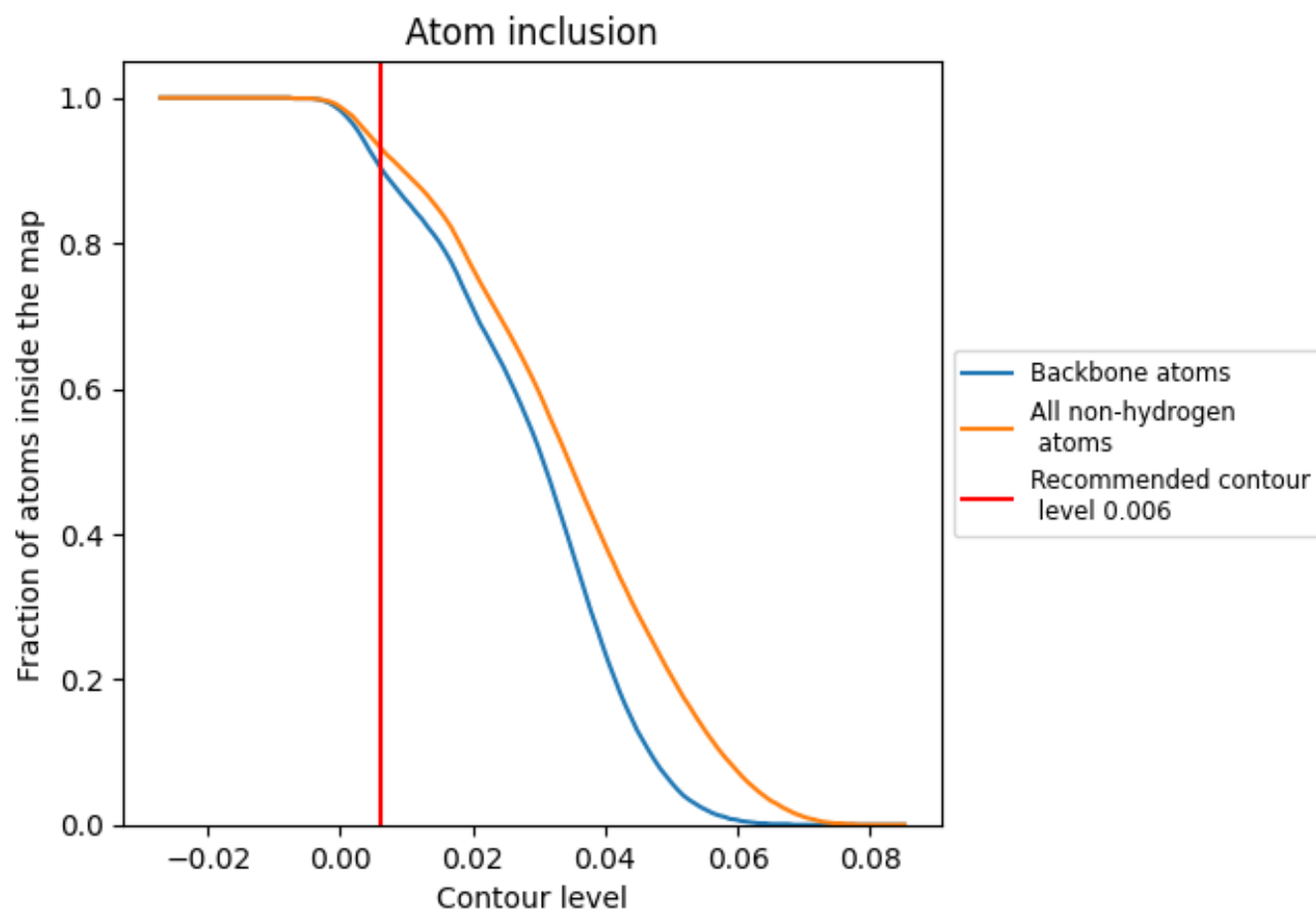
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.006).

9.4 Atom inclusion [i](#)



At the recommended contour level, 90% of all backbone atoms, 93% 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 (0.006) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9320	 0.1390
0	 0.8770	 0.0760
1	 0.9990	 0.2080
2	 1.0000	 0.1520
3	 0.9970	 0.1390
4	 0.8760	 0.0290
6	 0.9510	 0.1390
8	 0.9670	 0.0360
9	 0.9300	 0.0510
A	 1.0000	 0.0870
A1	 0.4560	 0.0160
A2	 0.7130	 0.0400
B	 1.0000	 0.1670
B1	 0.6540	 0.0120
B2	 0.7320	 0.0340
C	 0.9730	 0.1540
D	 0.9940	 0.1610
E	 1.0000	 0.1390
F	 1.0000	 0.1210
G	 0.9930	 0.1290
H	 0.9860	 0.1040
I	 0.9930	 0.0840
J	 0.9990	 0.1090
K	 0.9550	 0.1190
L	 0.9370	 0.0950
M	 0.9820	 0.1010
N	 0.9710	 0.0680
NA	 0.2450	 0.1180
NG	 0.6730	 0.0300
O	 0.9960	 0.0660
P	 0.9700	 0.0930
Q	 0.9650	 0.1240
R	 0.9360	 0.1010
S	 1.0000	 0.0860
T	 0.9970	 0.1080



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Chain	Atom inclusion	Q-score
U	 0.9950	 0.0520
V	 0.9980	 0.0940
W	 1.0000	 0.1040
W0	 0.4040	 -0.0020
X	 0.9860	 0.0820
Y	 0.9850	 0.1080
Z	 0.9630	 0.1060
a	 0.9890	 0.0730
b	 0.9940	 0.1870
c	 0.9970	 0.1620
d	 0.9960	 0.1610
e	 0.9570	 0.0890
f	 0.9850	 0.1310
g	 0.9140	 0.1290
h	 1.0000	 0.1790
i	 0.8740	 0.0240
j	 1.0000	 0.1700
k	 0.9840	 0.1860
l	 0.9990	 0.1430
m	 0.9780	 0.1480
n	 0.9970	 0.1640
o	 1.0000	 0.0910
p	 0.9960	 0.1660
q	 0.9990	 0.1430
r	 1.0000	 0.1600
s	 0.9980	 0.1810
t	 0.9990	 0.1660
u	 0.9950	 0.1500
v	 0.9990	 0.1440
w	 0.9980	 0.1150
x	 1.0000	 0.1710
y	 0.9980	 0.1460
z	 0.9930	 0.1560