Full wwPDB EM Validation Report

Aug 18, 2025 – 03:06 PM JST

PDB ID	:	8YDJ / pdb_00008ydj
EMDB ID	:	EMD-39173
Title	:	E.coli transcription translation coupling complex in TTC-P containing mRNA with 39-mer spacer, NusG, NusA, fMet-tRNA(iMet), Phe-tRNA(Phe), and viomycin
Authors	:	Zhang, J.; Lu, G.; Wang, C.; Lin, J.
Deposited on	:	2024-02-20
Resolution	:	5.10 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the (i) 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 (1)) were used in the production of this report:

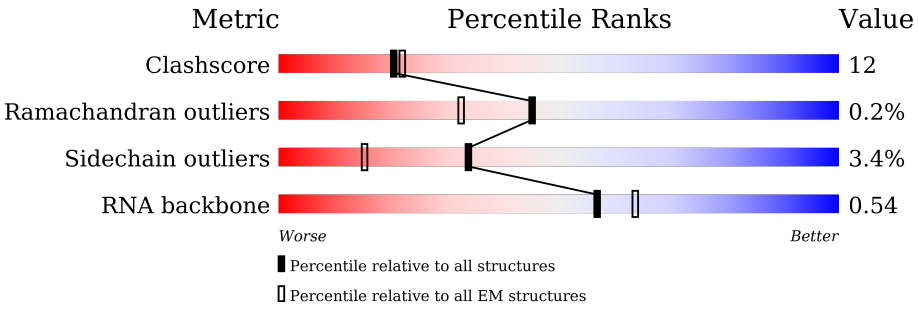
EMDB validation analysis	:	0.0.1.dev126
Mogul	:	1.8.5 (274361), CSD as541be (2020)
MolProbity	:	4-5-2 with Phenix2.0rc1
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)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

1 Overall quality at a glance

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

The reported resolution of this entry is 5.10 Å.

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



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

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

Mol	Chain	Length	Quality of chain
1	A	70	50% 16% 34%
2	B	57	68% 28%
3	C	55	49% 42% 9%
4	D	46	57% 39%
5	E	65	62% 34%
6	F	38	58% 42%
7	G	241	63% 26% 10%

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Mol	Chain	Length	Quality of chain
8	H	233	61% 26% 12%
9	I	206	71% 28%
10	J	167	66% 28% 6%
11	K	135	53% 19% 26%
12	L	179	59% 23% 16%
13	M	130	67% 32%
14	N	130	46% 52%
15	O	103	55% 38% 5%
16	P	129	60% 29% 10%
17	Q	124	70% 28%
18	R	118	68% 29%
19	S	101	61% 38%
20	T	89	79% 20%
21	U	82	72% 28%
22	V	84	67% 29% 5%
23	W	75	68% 19% 13%
24	X	92	65% 21% 14%
25	Y	87	64% 33%
26	Z	71	61% 24% 7% 8%
27	b	273	70% 29%
28	c	209	68% 31%
29	d	201	65% 34%
30	e	179	6% 70% 28%
31	f	177	77% 22%
32	g	149	12% 75% 21%

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Mol	Chain	Length	Quality of chain
33	i	142	17% 66% 33%
34	j	142	77% 23%
35	k	123	77% 20%
36	l	144	78% 19%
37	m	136	68% 31%
38	n	127	63% 30% 6%
39	o	117	69% 30%
40	p	115	77% 22%
41	q	118	77% 22%
42	r	103	71% 29%
43	s	110	72% 27%
44	t	100	64% 28% 7%
45	u	104	74% 23%
46	v	94	79% 21%
47	w	85	65% 24% 12%
48	x	78	68% 28%
49	y	63	78% 22%
50	z	59	75% 24%
51	1	2904	45% 47% 8%
52	2	120	52% 38% 10%
53	3	1542	45% 48% 6%
54	4	56	16% 36% 46%
55	8	37	27% 43% 27%
56	9	37	51% 46%
57	A1	329	62% 76% 15% 9%

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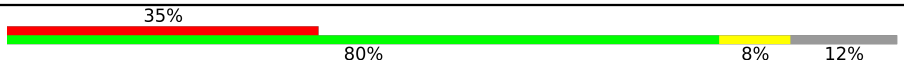
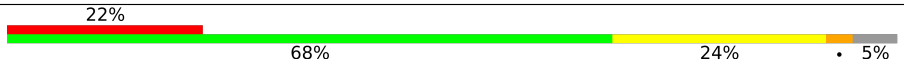
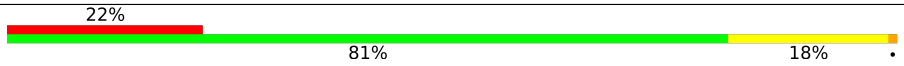
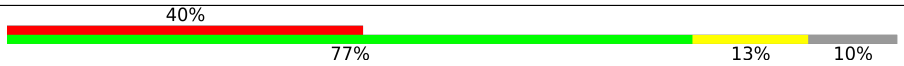
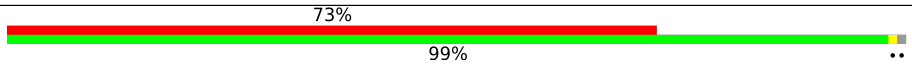
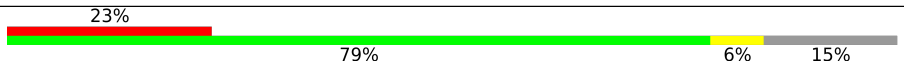
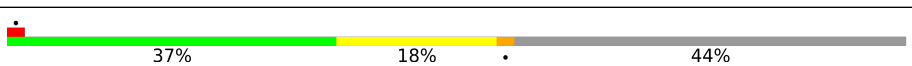
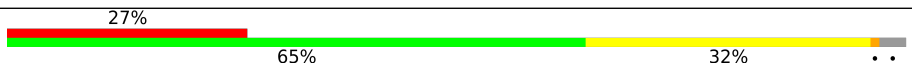
Mol	Chain	Length	Quality of chain
57	A2	329	
58	B1	1407	
59	B2	1342	
60	W0	91	
61	NA	495	
62	NG	181	
63	5	76	
64	6	77	
65	a	234	
66	0	716	
67	h	6	

2 Entry composition

There are 70 unique types of molecules in this entry. The entry contains 183377 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

There is a discrepancy between the modelled and reference sequences:

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

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

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

There is a discrepancy between the modelled and reference sequences:

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

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

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

- Molecule 54 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	4	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(Phe).

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

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

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

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

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

- Molecule 66 is a protein called Elongation factor G.

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

There are 12 discrepancies between the modelled and reference sequences:

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

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

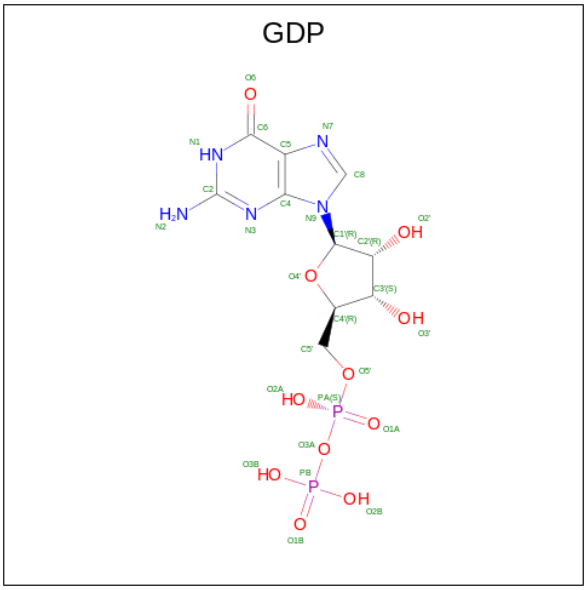
- Molecule 67 is a protein (with D amino acids) called Viomycin.

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

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

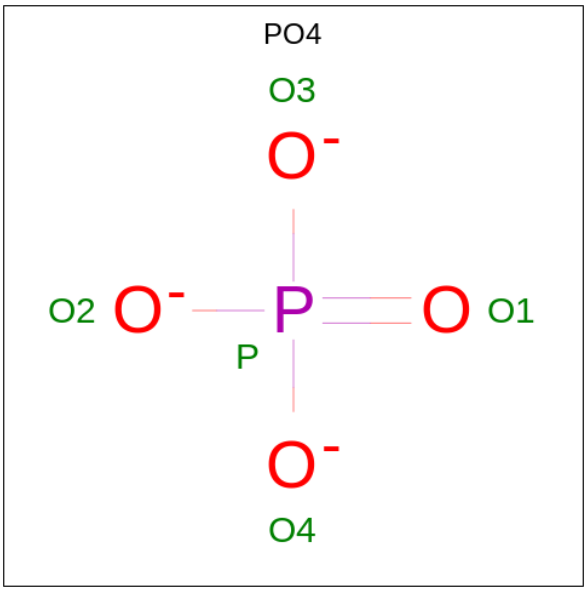
Mol	Chain	Residues	Atoms		AltConf
68	B1	1	Total	Mg	0
			1	1	

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



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

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



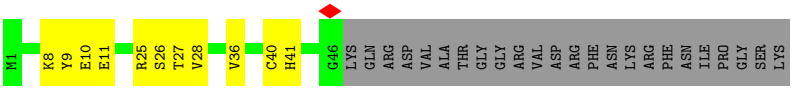
Mol	Chain	Residues	Atoms			AltConf
			Total	O	P	
70	0	1	5	4	1	0

3 Residue-property plots (i)

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

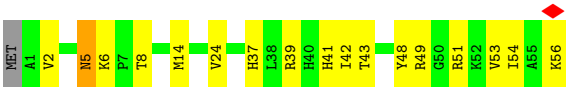
• Molecule 1: 50S ribosomal protein L31

Chain A:



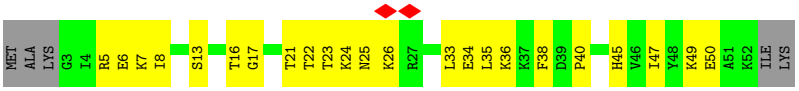
• Molecule 2: 50S ribosomal protein L32

Chain B:



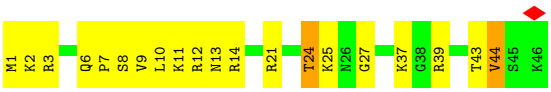
• Molecule 3: 50S ribosomal protein L33

Chain C:



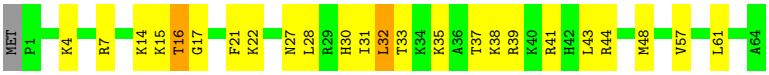
• Molecule 4: 50S ribosomal protein L34

Chain D:



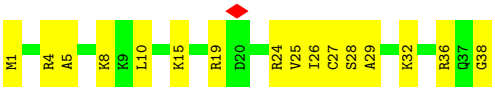
• Molecule 5: 50S ribosomal protein L35

Chain E:



• Molecule 6: 50S ribosomal protein L36

Chain F:

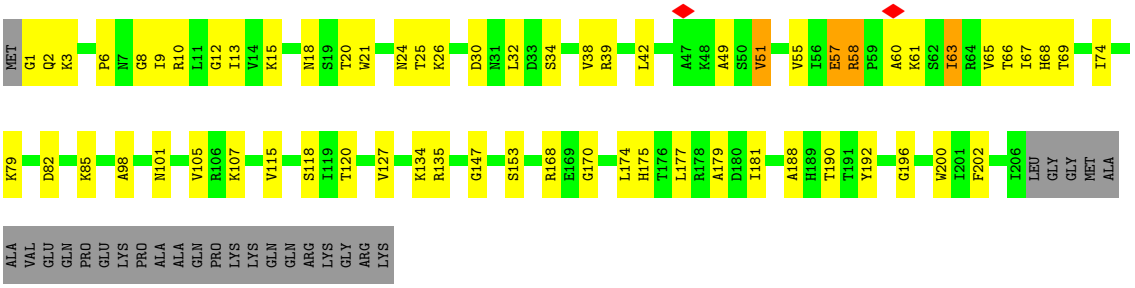


• Molecule 7: 30S ribosomal protein S2

Chain G:

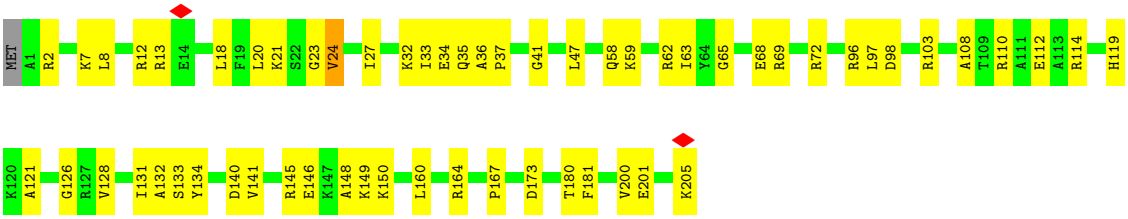
• Molecule 8: 30S ribosomal protein S3

Chain H:



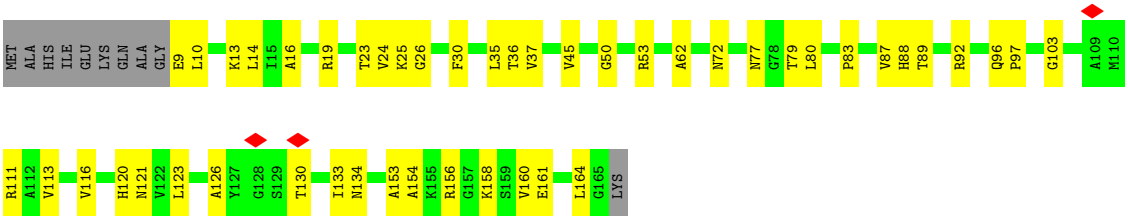
• Molecule 9: 30S ribosomal protein S4

Chain I:



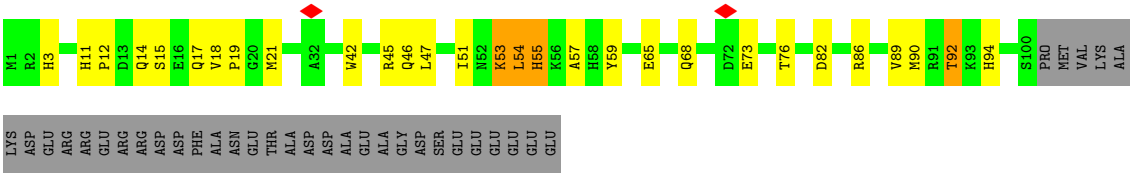
• Molecule 10: 30S ribosomal protein S5

Chain J:



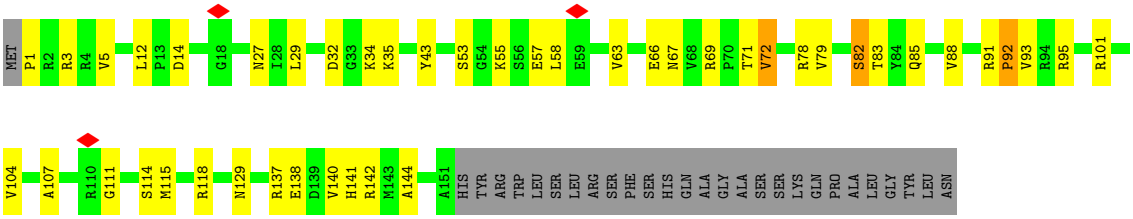
• Molecule 11: 30S ribosomal protein S6, fully modified isoform

Chain K:



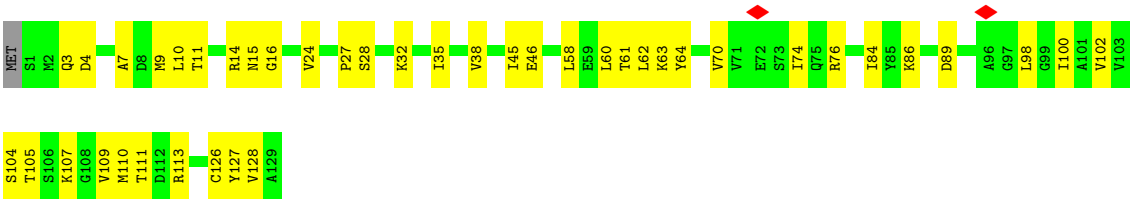
• Molecule 12: 30S ribosomal protein S7

Chain L:



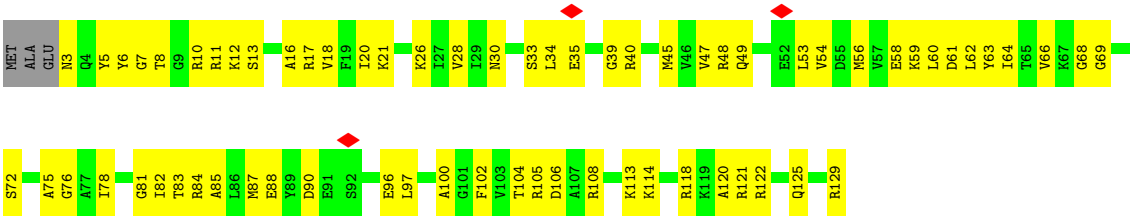
• Molecule 13: 30S ribosomal protein S8

Chain M:



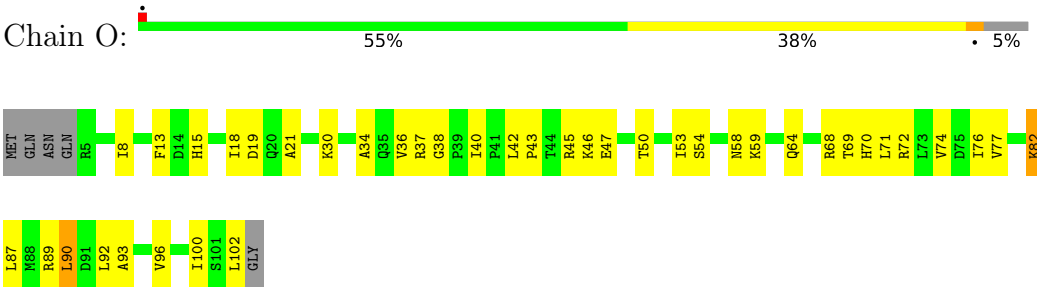
• Molecule 14: 30S ribosomal protein S9

Chain N:



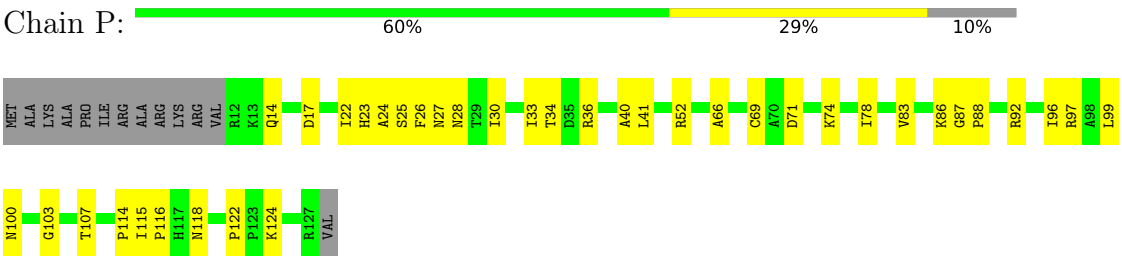
• Molecule 15: 30S ribosomal protein S10

Chain O:



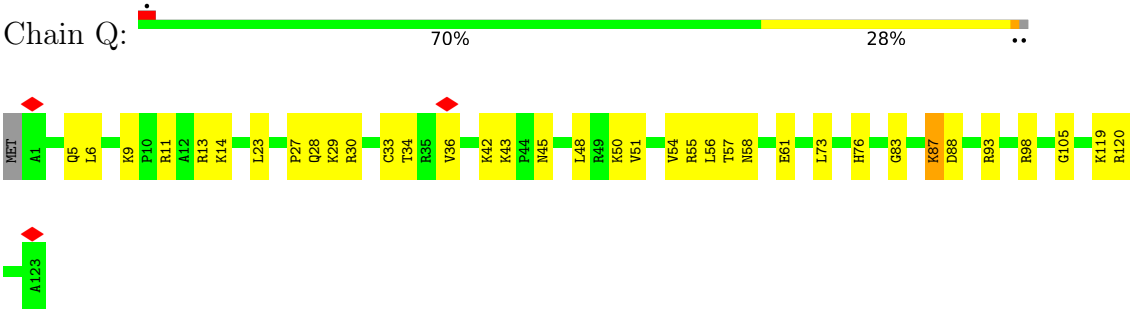
• Molecule 16: 30S ribosomal protein S11

Chain P:



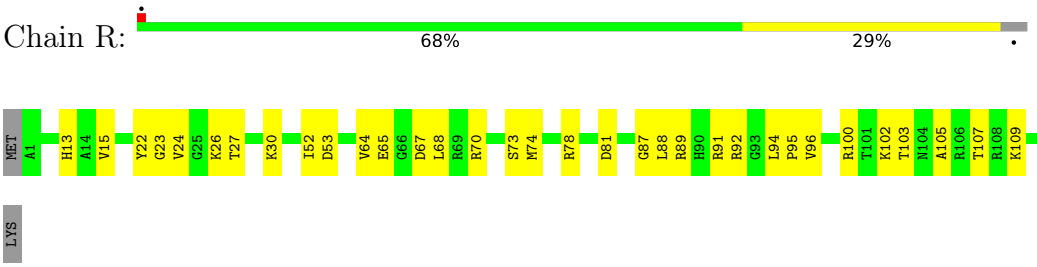
• Molecule 17: 30S ribosomal protein S12

Chain Q:



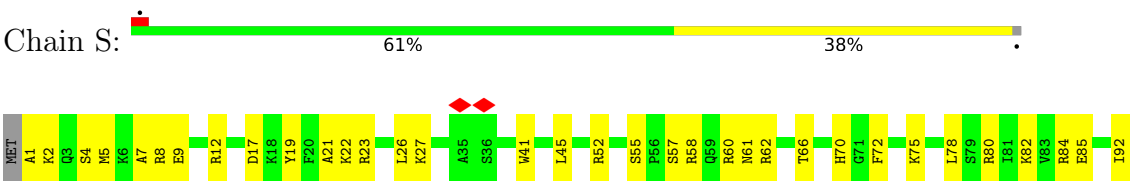
• Molecule 18: 30S ribosomal protein S13

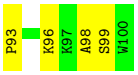
Chain R:



• Molecule 19: 30S ribosomal protein S14

Chain S:



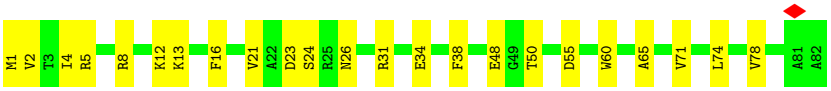


• Molecule 20: 30S ribosomal protein S15

Chain T:

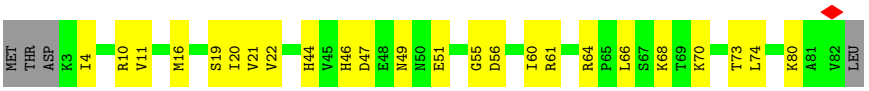
• Molecule 21: 30S ribosomal protein S16

Chain U:



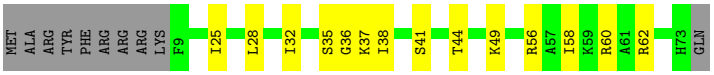
• Molecule 22: 30S ribosomal protein S17

Chain V:



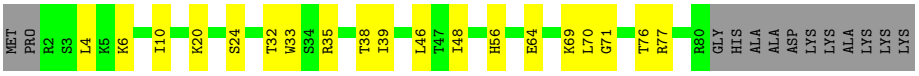
• Molecule 23: 30S ribosomal protein S18

Chain W:



• Molecule 24: 30S ribosomal protein S19

Chain X:



• Molecule 25: 30S ribosomal protein S20

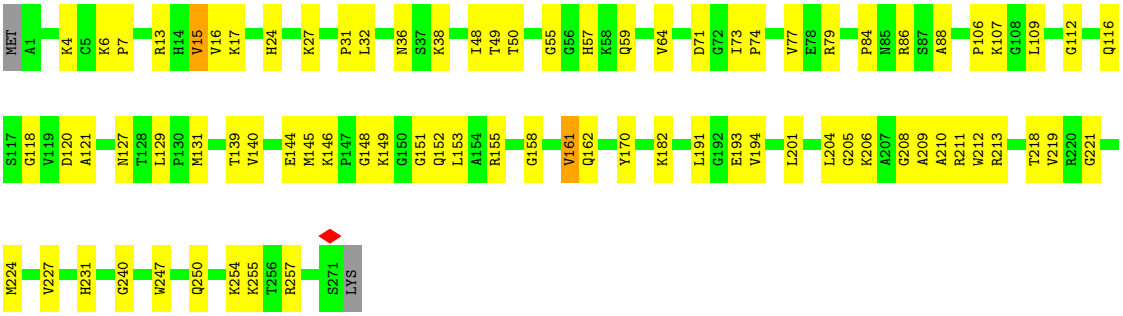
Chain Y:

• Molecule 26: 30S ribosomal protein S21

Chain Z:

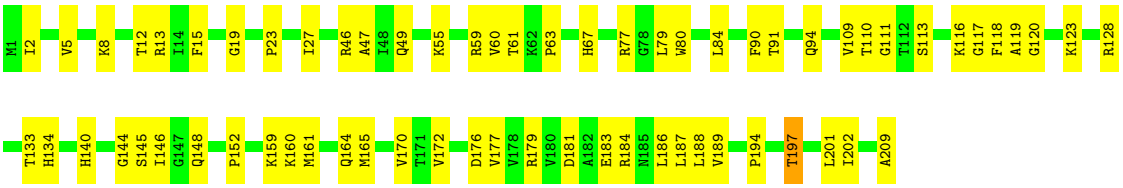
• Molecule 27: 50S ribosomal protein L2

Chain b:



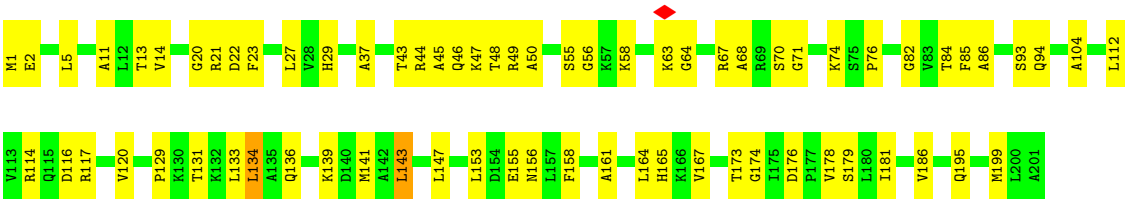
• Molecule 28: 50S ribosomal protein L3

Chain c:



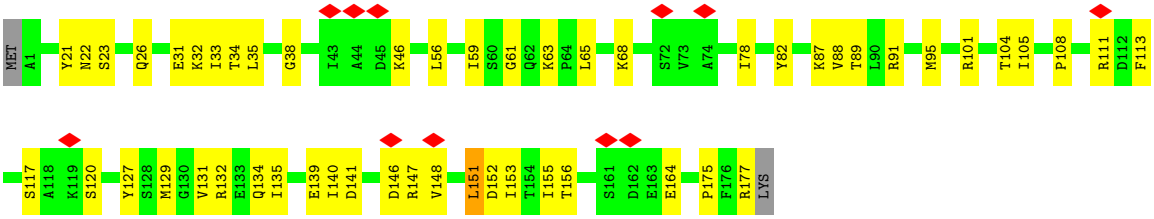
• Molecule 29: 50S ribosomal protein L4

Chain d:



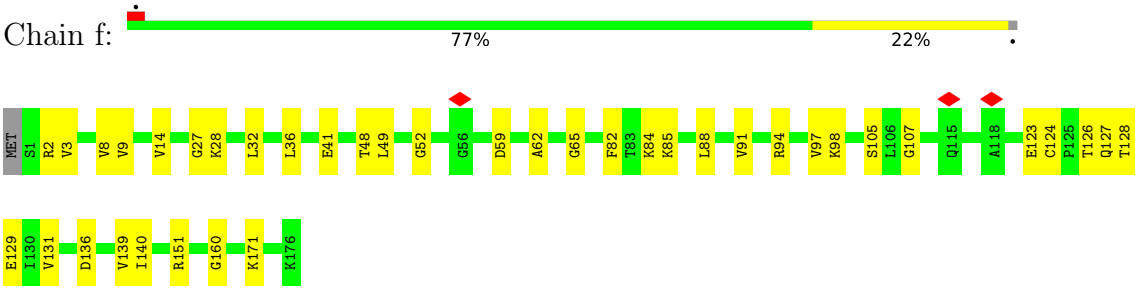
• Molecule 30: 50S ribosomal protein L5

Chain e:



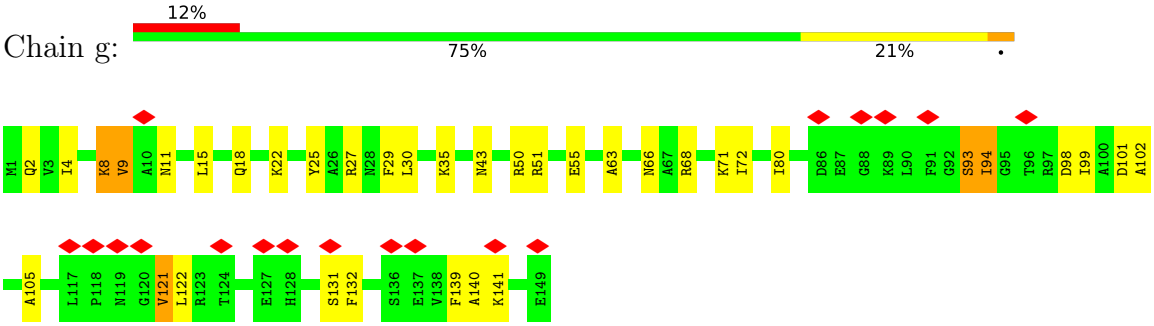
• Molecule 31: 50S ribosomal protein L6

Chain f:



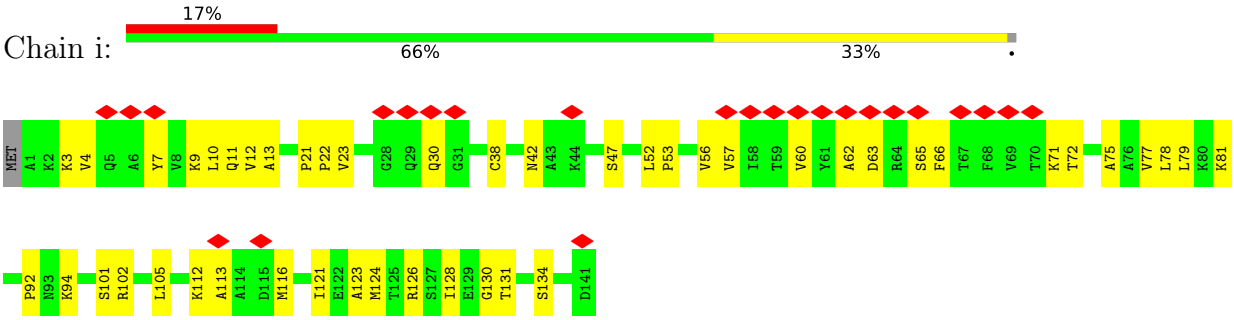
• Molecule 32: 50S ribosomal protein L9

Chain g:



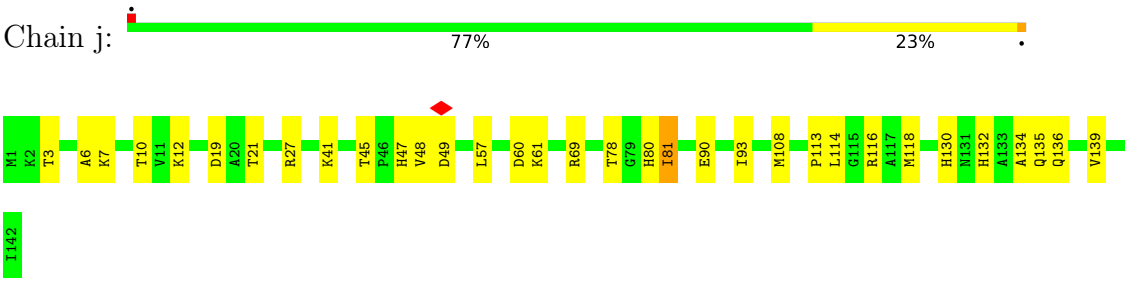
• Molecule 33: 50S ribosomal protein L11

Chain i:



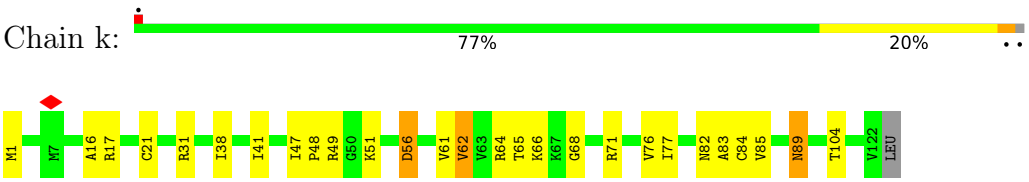
• Molecule 34: 50S ribosomal protein L13

Chain j:



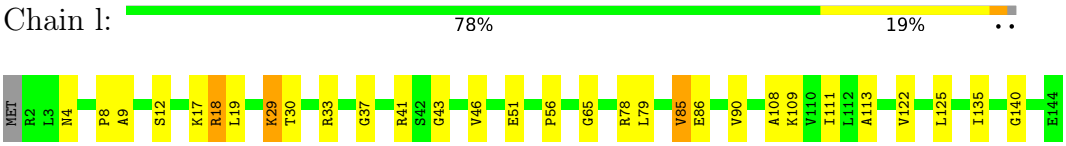
• Molecule 35: 50S ribosomal protein L14

Chain k:



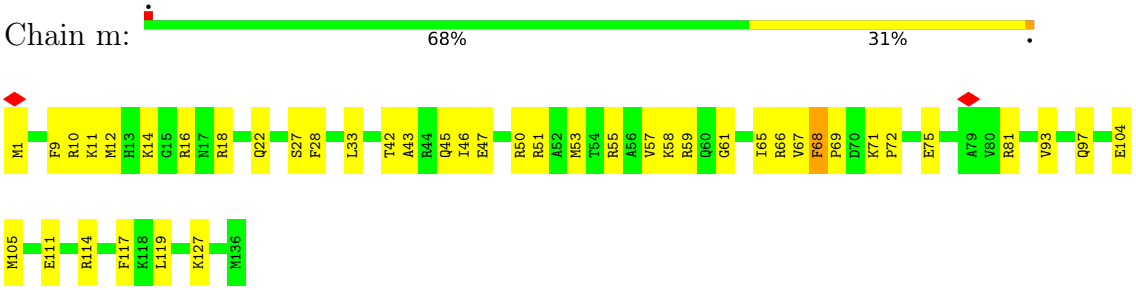
• Molecule 36: 50S ribosomal protein L15

Chain l:



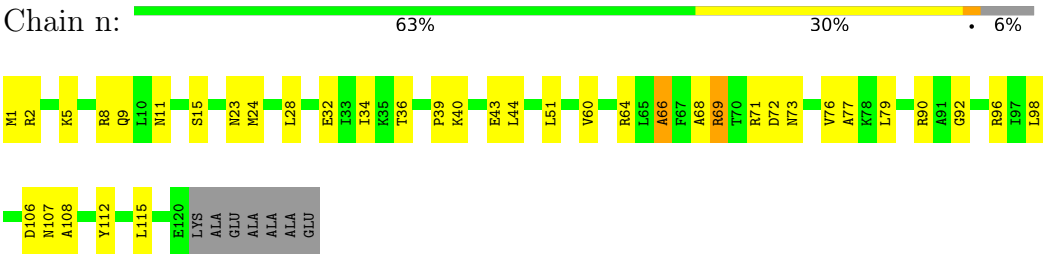
• Molecule 37: 50S ribosomal protein L16

Chain m:



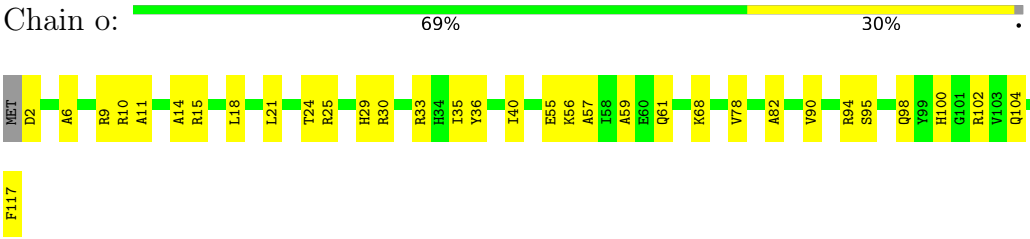
• Molecule 38: 50S ribosomal protein L17

Chain n:



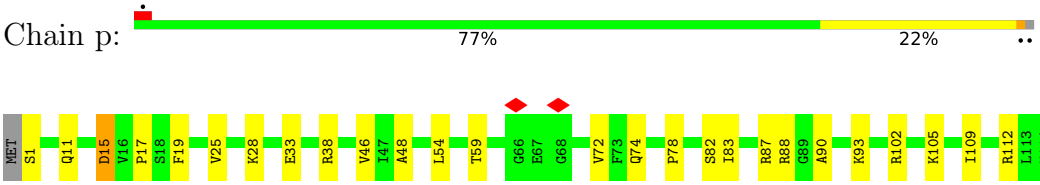
• Molecule 39: 50S ribosomal protein L18

Chain o:



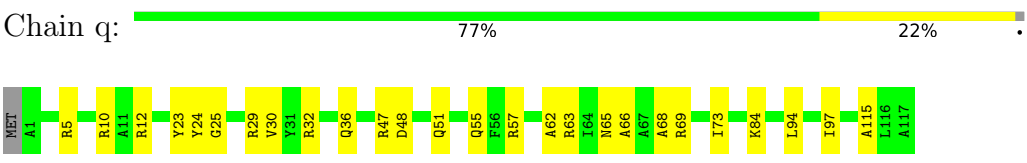
• Molecule 40: 50S ribosomal protein L19

Chain p:



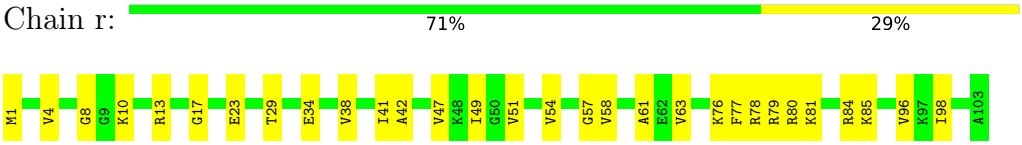
• Molecule 41: 50S ribosomal protein L20

Chain q:



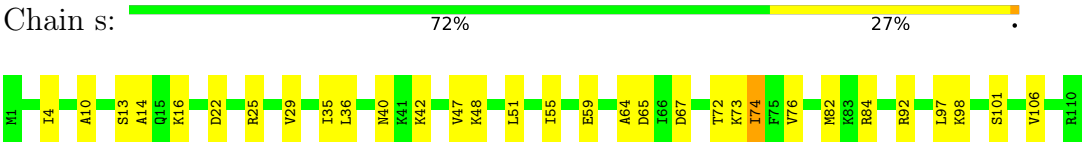
• Molecule 42: 50S ribosomal protein L21

Chain r:



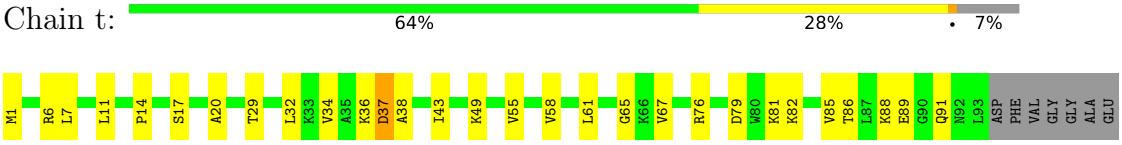
• Molecule 43: 50S ribosomal protein L22

Chain s:



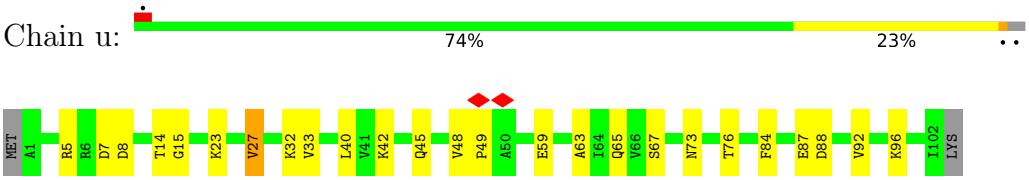
• Molecule 44: 50S ribosomal protein L23

Chain t:



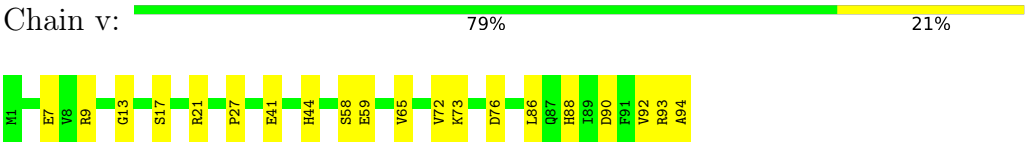
• Molecule 45: 50S ribosomal protein L24

Chain u:



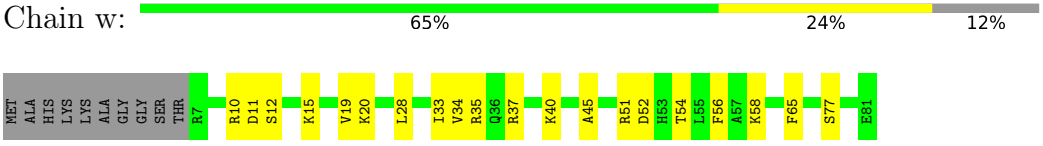
• Molecule 46: 50S ribosomal protein L25

Chain v:



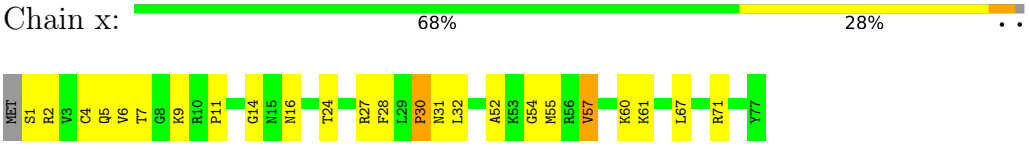
• Molecule 47: 50S ribosomal protein L27

Chain w:



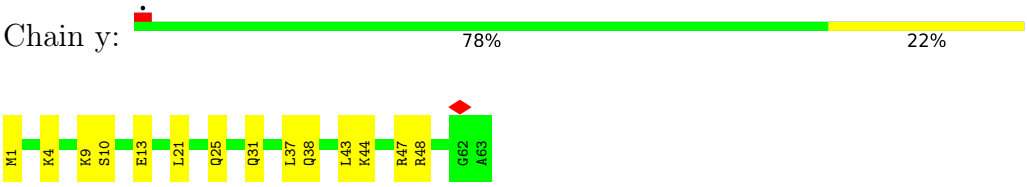
• Molecule 48: 50S ribosomal protein L28

Chain x:



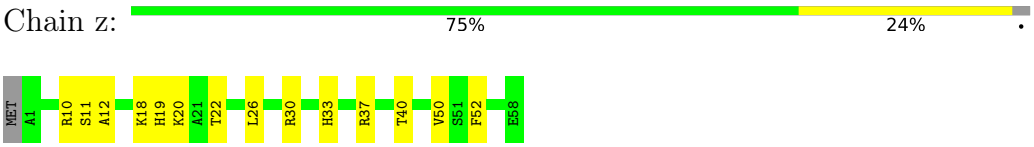
• Molecule 49: 50S ribosomal protein L29

Chain y:



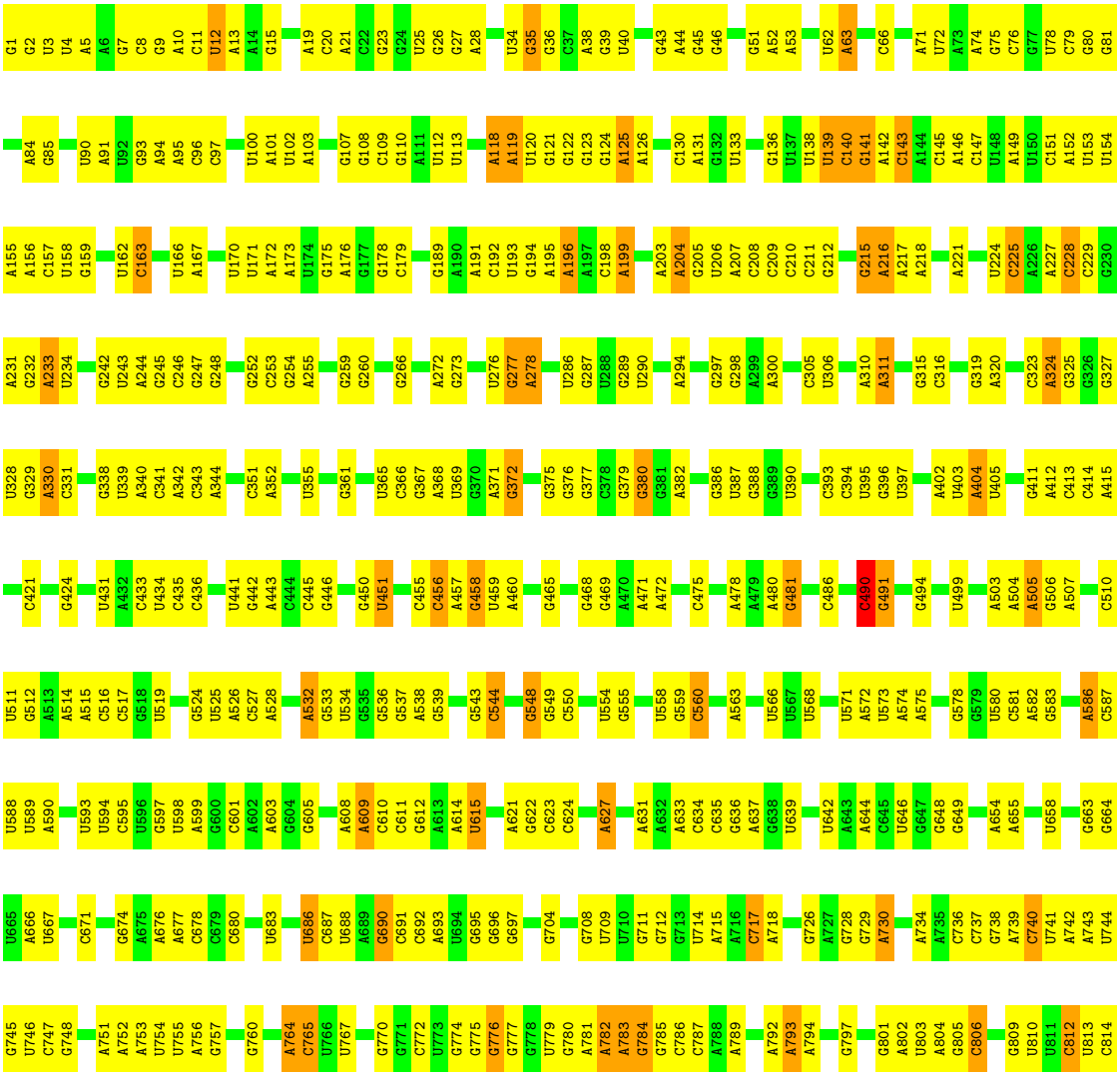
• Molecule 50: 50S ribosomal protein L30

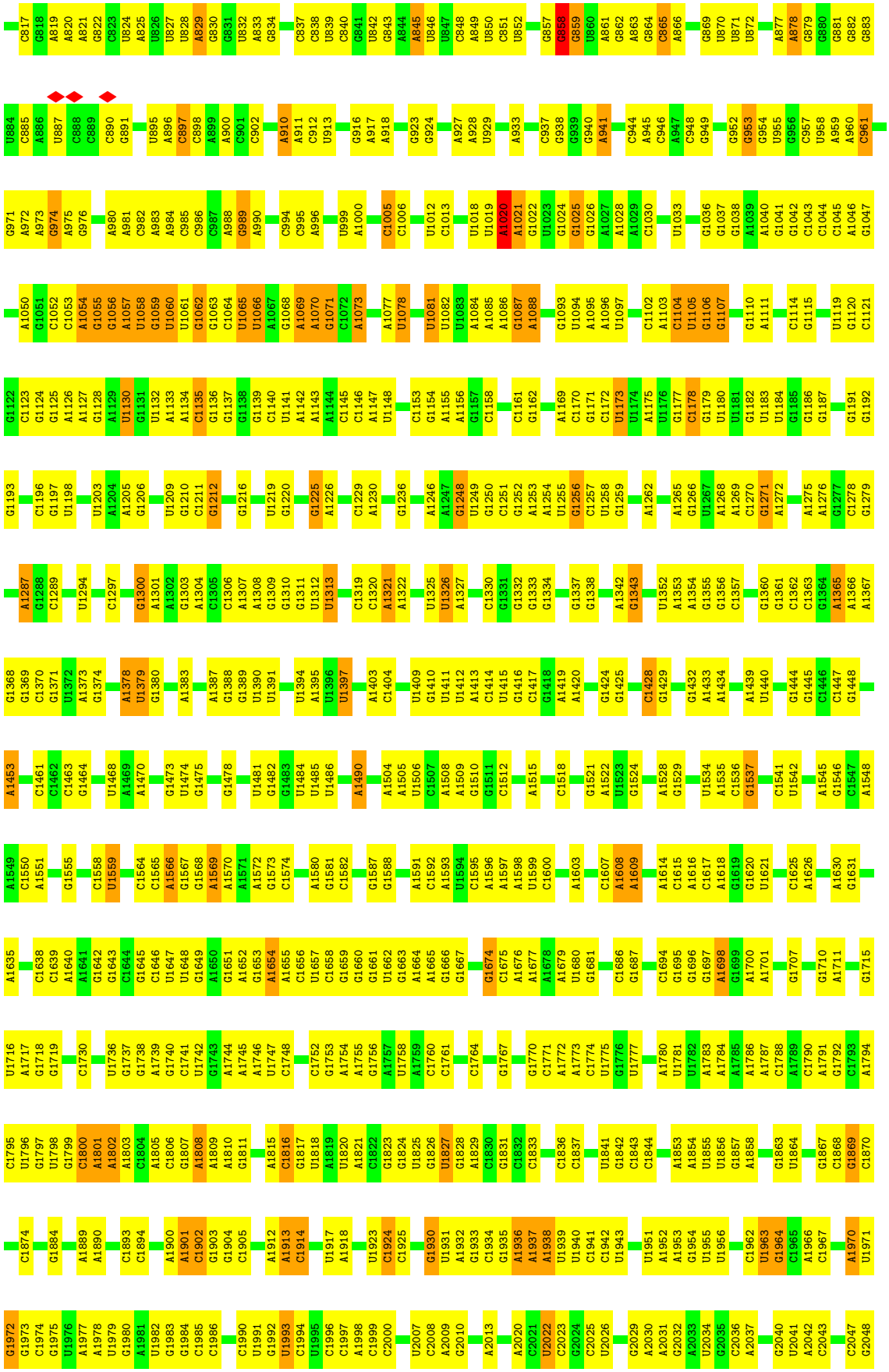
Chain z:

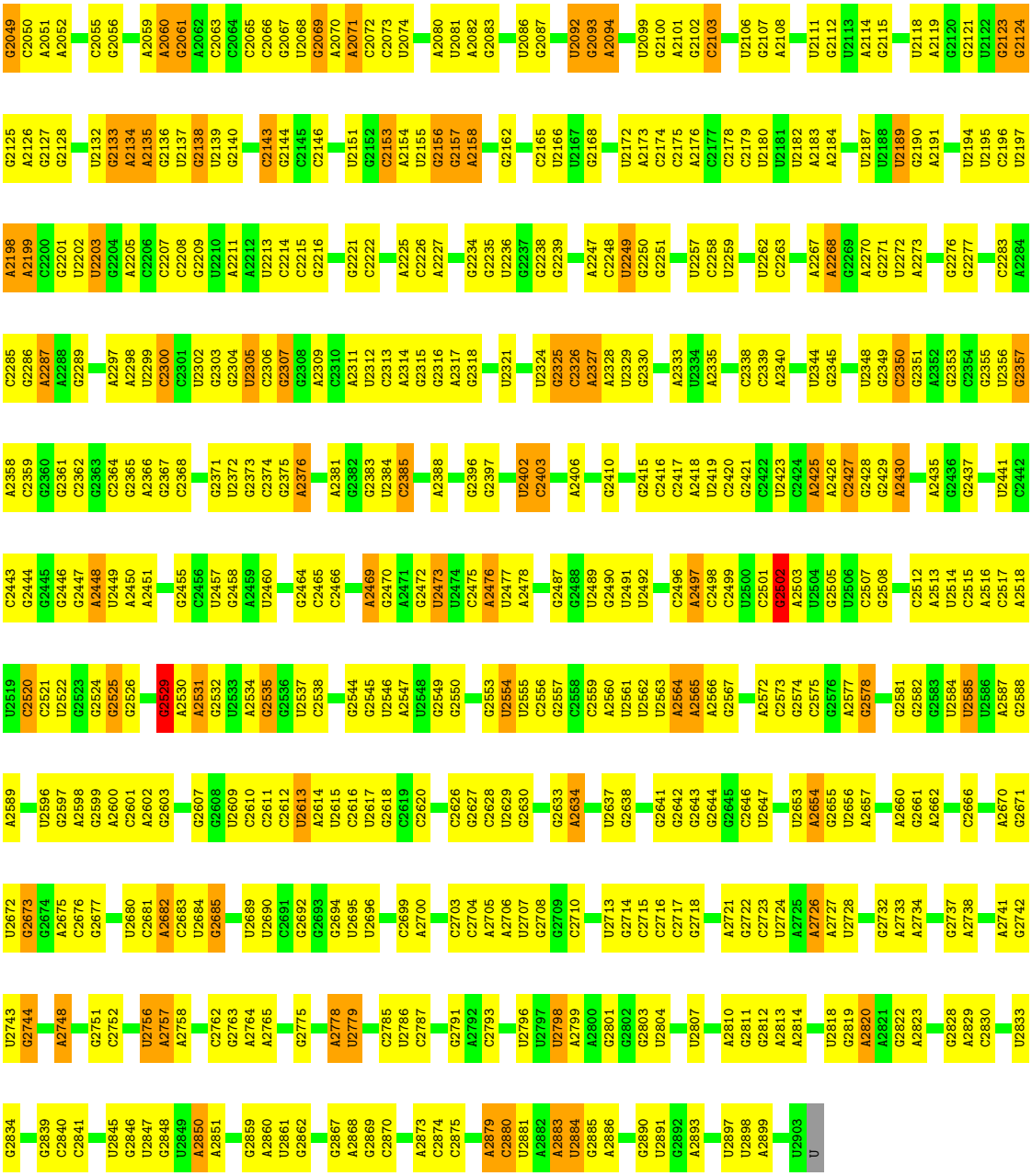


• Molecule 51: 23S rRNA

Chain 1:





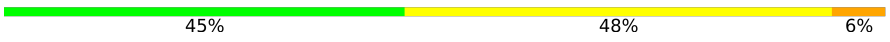


• Molecule 52: 5S rRNA

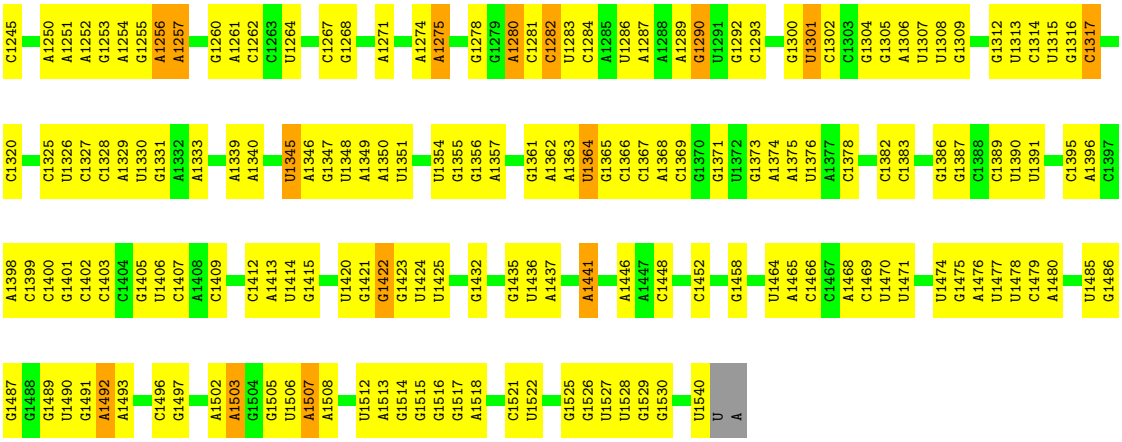
Chain 2:

• Molecule 53: 16S rRNA

Chain 3:



A A2 A3 G6 A7 A8 G9 A10 G11 G15 A16 U17 C18 A19 U20 G21 G22 C23 U24 C25 A26 G27 A28 A32 A33 C34 G35 C36 U37 G38 G39 C40 G41 G42 G46 C47 C48 U49 A50 A51 C54 A55 U56 G57 C58 A59 A60 G61 U62 C63 C67 G68 G69 U70
A71 G79 A80 A81 G82 C83 U84 U85 G86 C87 C90 U91 U92 U93 G94 C95 G100 G107 G108 A109 C110 G111 G112 G113 U114 G128 A129 A130 A131 C132 U133 G134 C135 C136 U137 G138 A139 G144 G145 G148 A152 C153 U154 A160 A161 A162 C163 A174 C175 C176
U180 A181 A182 C183 G184 C193 C194 A197 G204 A205 C206 C207 U208 U209 C210 G211 G212 G213 U218 U219 G220 C221 U224 C225 A228 U229 G230 U231 G232 C235 A236 G240 G241 A246 G247 A250 G251 U252 A253 G254 A262 A263 C264 C265 C266 C267 U268 C269
A270 C271 C272 U273 G276 A279 C280 G281 C284 C285 G289 C290 U291 U296 G297 A298 G299 A300 G301 G302 A303 U304 G305 C308 A309 G310 C314 A315 C316 U317 U323 G324 A325 G326 A327 C328 G332 U333 C334 C335 A336 G337 A338 U343 A344 G347 G348 A349 G350
G351 C352 A353 G354 C355 A356 G357 U358 C359 G362 A363 A366 U367 U368 G369 C372 A373 A374 U375 G376 G377 G378 C379 G380 G384 C385 C386 U387 G388 A389 U390 G391 C392 A393 A397 C401 G402 U405 G406 U407 A408 U409 G410 G413 A414 A415 G416 G417 C418 C419 U420 U421
C422 G423 G424 G425 U426 U427 G428 U429 A430 A431 A432 G433 U434 A435 C436 U437 U438 U439 C440 G445 A448 A452 G453 G454 G455 A456 G457 U458 A459 A460 A461 G462 U467 A468 A478 U479 U480 C483 G484 U485 U486 C492 A493 G494 G497 A498 C501 A502 G505 G506
A509 A510 C511 U512 C513 C514 G515 U516 G517 C518 C519 A520 C528 G529 G530 U531 A532 A533 U534 A535 C536 G537 G538 A539 G540 G541 C545 A546 A547 U552 A553 A554 U555 C556 C557 G558 A559 A560 U561 U562 A563 C564 U565 G566 C569 G570 U571 A572 A573 A574 G575 C576 G577 C578 A579
C580 G581 U593 U594 A595 A596 G597 U598 C599 A600 G601 A602 A607 A608 C613 C620 A621 A622 C623 G624 U625 G626 G627 G628 C631 U632 G633 C634 A635 U636 C637 U638 G639 A640 U641 A642 C643 U644 G650 C651 U652 U653 U657 C658 U659 C660 C661 A665 G666 G667 G668 G669
A673 G674 A675 A676 U677 U678 C679 U684 G685 G690 G691 U701 A702 G703 A706 U707 G710 G713 G714 A715 A718 C719 C720 G721 G722 U723 G724 G725 A728 G731 C732 G733 G734 C735 G736 C737 C738 C739 G742 A743 A747 G748 A749 C750 U751 G752 G755
C756 U757 C758 G761 U762 G763 A768 G769 C770 C771 U772 G773 A777 G778 C779 A782 A792 U793 A794 C795 C796 G803 U804 C805 C806 A807 G812 U813 A814 A815 A816 C817 G818 A819 U820 G821 C826 U827 A831 G832 U835 G836 U837 C840 C841 U842 U843 G844 A845
G846 U850 G851 U855 C856 C857 C858 G859 A860 C861 C862 U863 A864 A865 C866 C867 A872 A873 G874 U875 C876 G877 A878 G881 C882 C883 U884 G885 G886 A889 G894 G895 A900 A901 G902 G903 U904 A907 A908 A909 C910 A913 G917 A923 C924 G925 G926 G927
C934 A935 C936 A937 A938 G939 C940 G945 A946 G947 U950 G951 U952 G953 G954 U955 U956 U957 A958 A959 U960 U961 C962 G963 A964 U965 G966 C967 A968 A969 C970 G971 C972 G973 A974 A975 G976 A977 A978 C979 C980 U981 U992 G993 A994 A1000 C1001 A1004 A1005 G1006 U1007 U1008 A1012 G1013
A1014 G1015 A1016 U1017 G1018 A1019 A1022 U1023 G1024 U1025 G1026 C1027 C1028 U1029 U1030 C1031 G1032 G1033 G1034 A1035 A1042 G1043 G1047 G1048 U1049 G1050 G1053 C1054 G1057 G1058 C1059 U1060 G1061 U1062 C1063 G1064 U1065 C1069 U1070 C1071 G1072 U1073 G1074 G1077 U1078 G1079 G1084 G1088 U1091 A1092
A1093 G1094 U1095 C1096 C1097 C1098 G1099 C1100 A1101 A1102 C1103 G1104 A1105 G1106 C1107 G1108 C1109 A1110 A1111 A1117 U1118 C1119 C1120 U1121 U1122 U1123 G1124 U1125 U1126 G1127 C1128 C1129 G1134 U1135 C1136 C1137 G1138 G1139 C1140 C1147 U1148 C1149 A1150 A1151 A1152 G1153 G1154 A1155 G1156 A1157 C1158 U1159 G1160 C1161 C1162 U1168
A1169 A1170 A1171 C1172 U1173 G1174 A1179 A1180 G1181 G1182 U1183 G1184 G1187 A1188 C1192 G1193 U1194 C1195 A1196 A1197 G1198 U1199 C1200 A1201 C1210 U1211 U1212 A1213 C1214 G1215 A1216 C1217 C1218 A1219 G1220 G1221 A1225 C1226 A1229 C1230 G1231 U1232 G1233 C1234 U1235 A1236 C1237 A1238 A1239 U1240 G1241 G1242 C1243 G1244

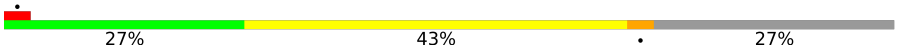


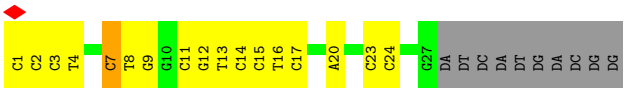
• Molecule 54: mRNA

Chain 4:

• Molecule 55: templete DNA strand

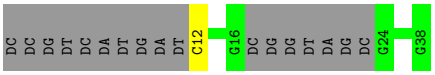
Chain 8:





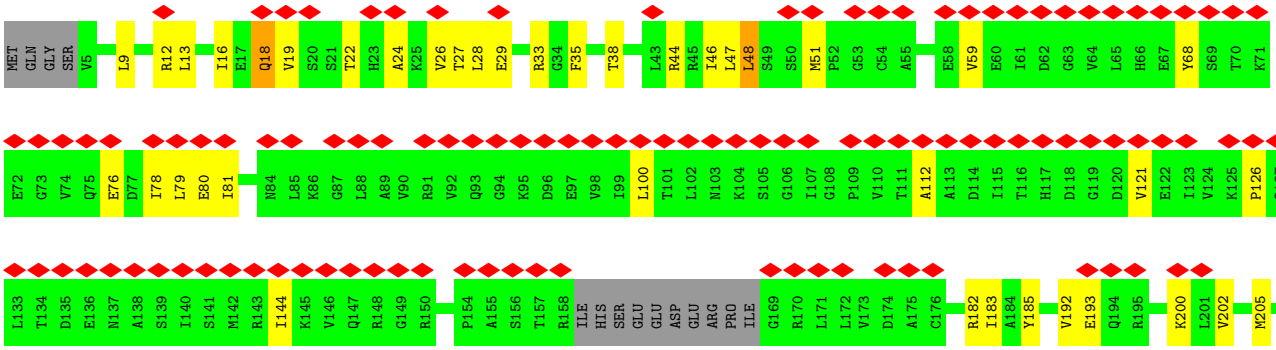
• Molecule 56: non-templete DNA strand

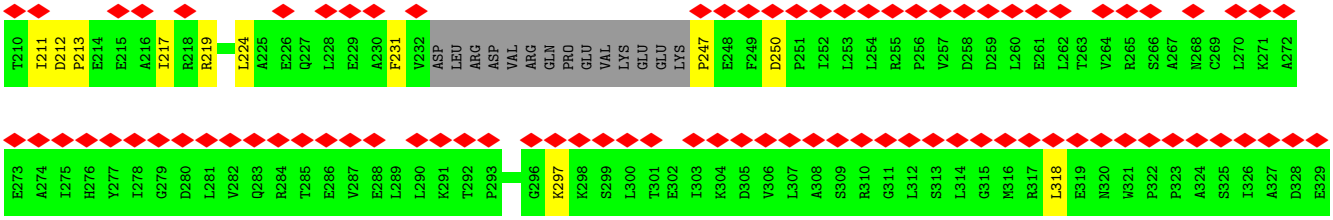
Chain 9:



• Molecule 57: DNA-directed RNA polymerase subunit alpha

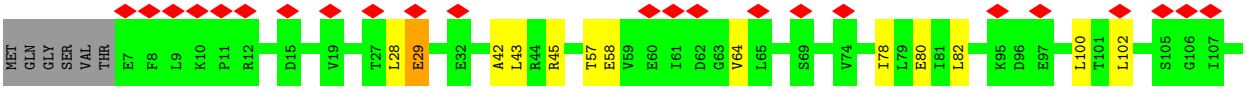
Chain A1:

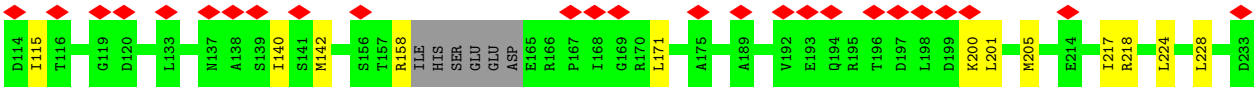


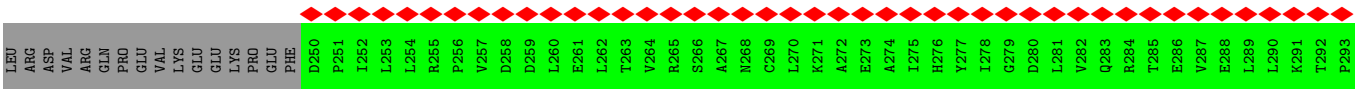


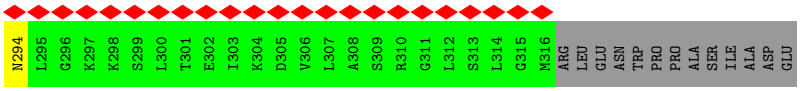
• Molecule 57: DNA-directed RNA polymerase subunit alpha

Chain A2:



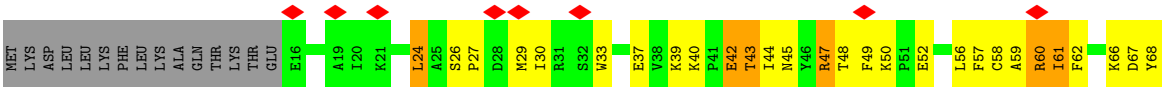


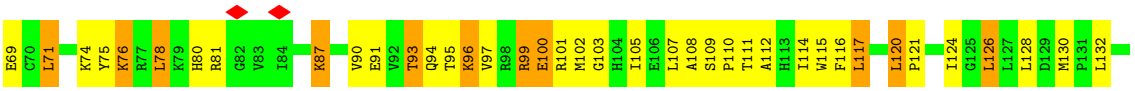


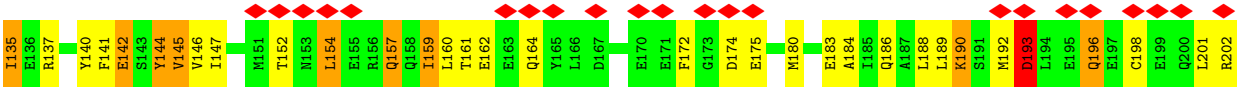


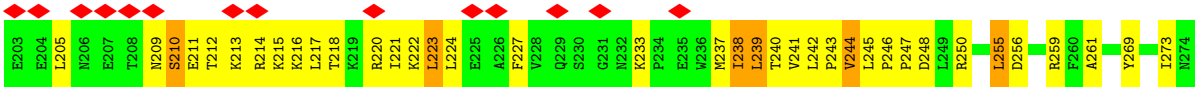
• Molecule 58: DNA-directed RNA polymerase subunit beta'

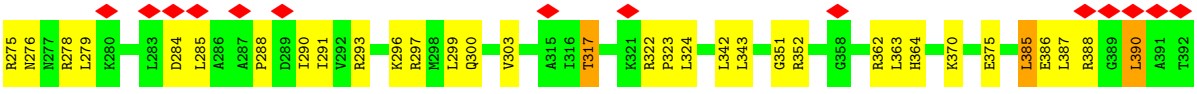
Chain B1:

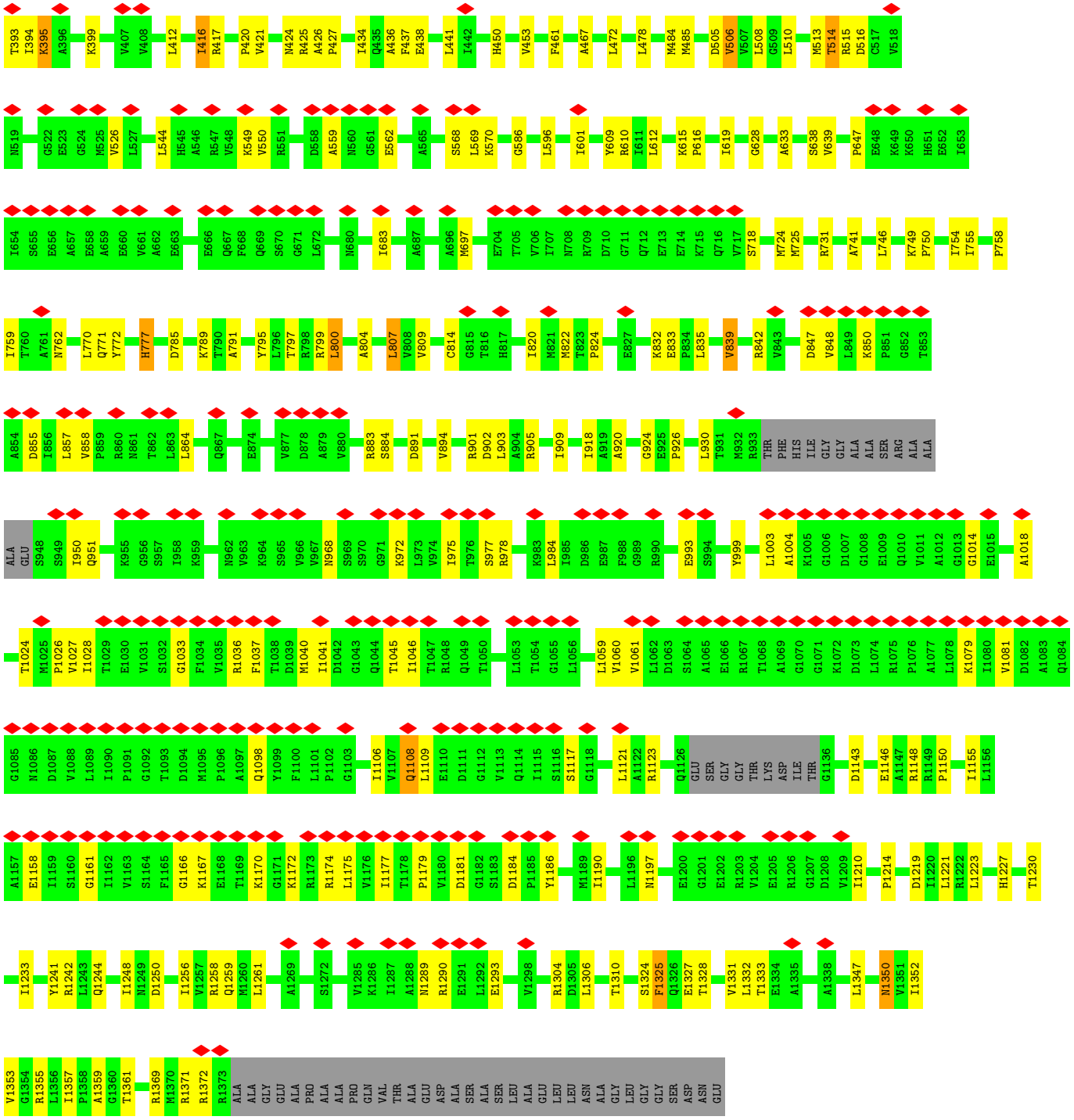






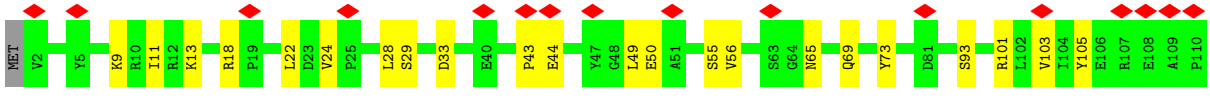


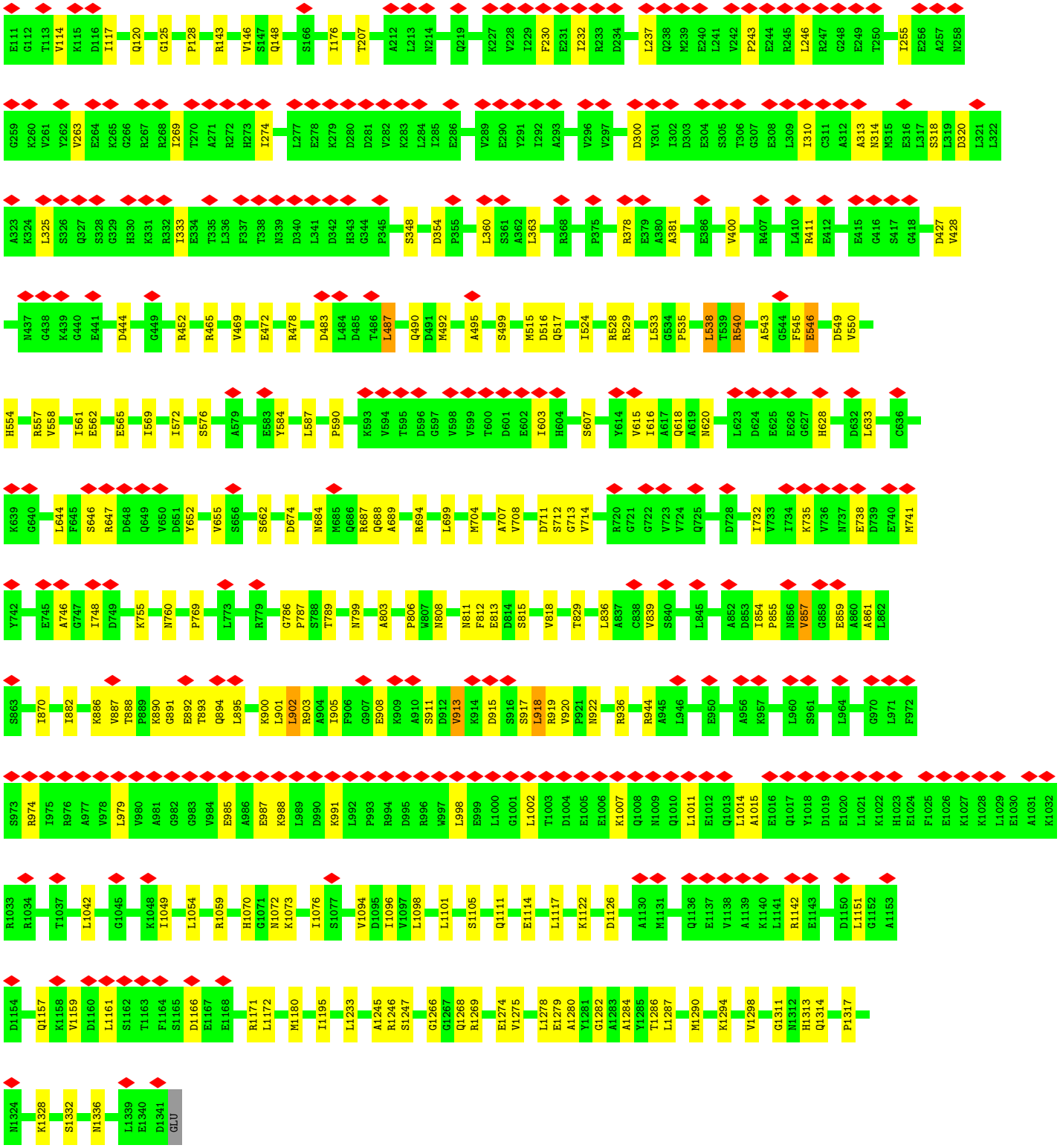




• Molecule 59: DNA-directed RNA polymerase subunit beta

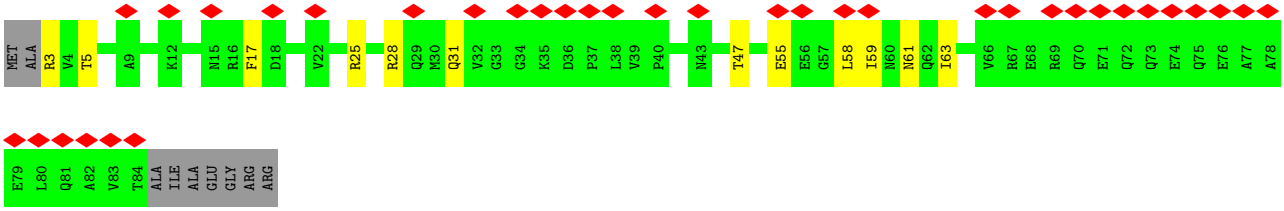
Chain B2:





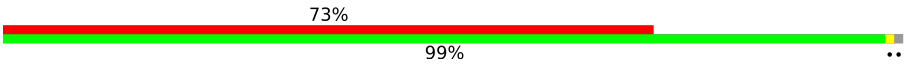
• Molecule 60: DNA-directed RNA polymerase subunit omega

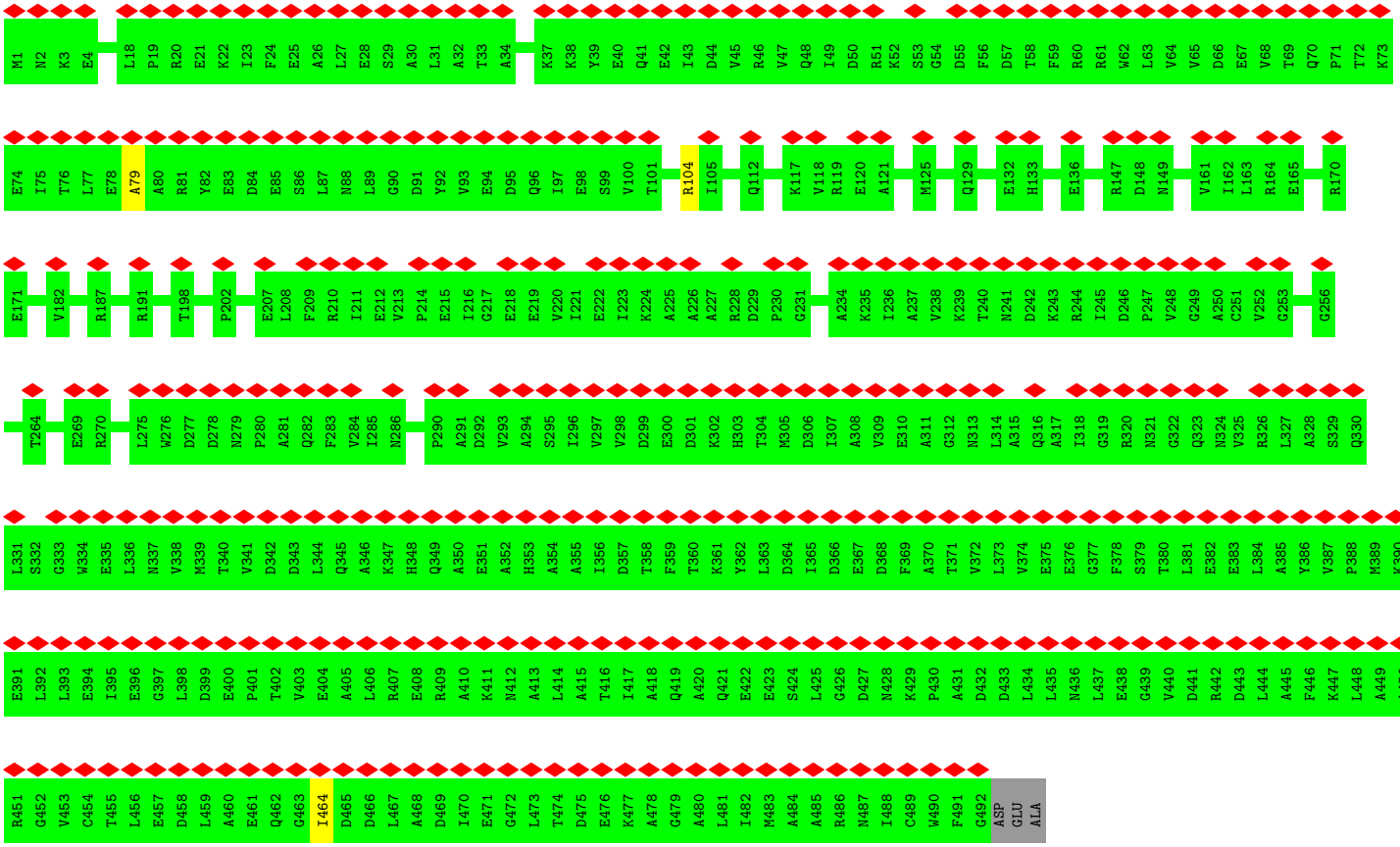
Chain W0:



• Molecule 61: Transcription termination/antitermination protein NusA

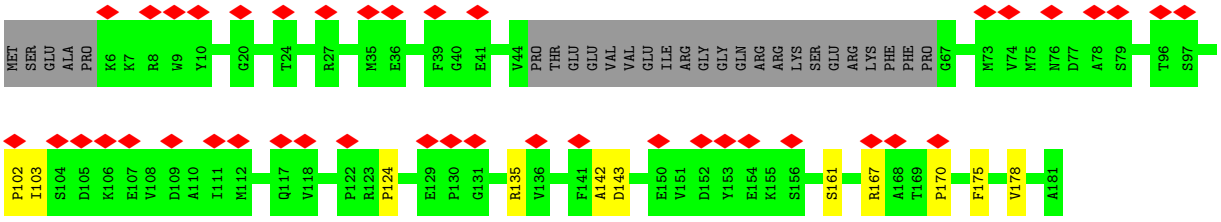
Chain NA:





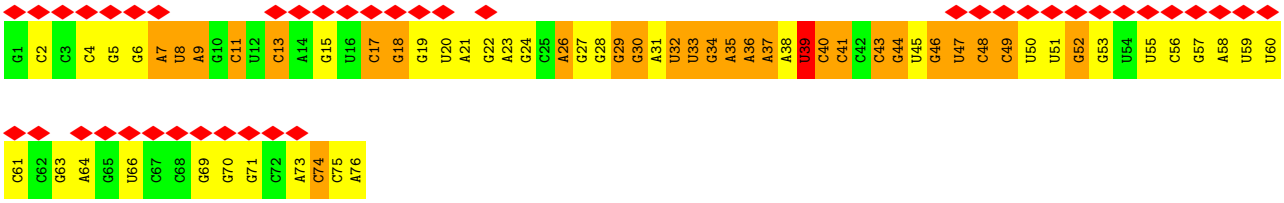
• Molecule 62: Transcription termination/antitermination protein NusG

Chain NG:



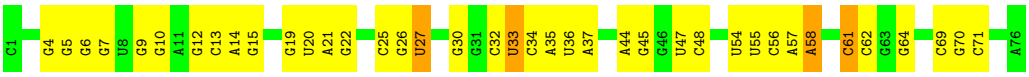
• Molecule 63: tRNA(Phe)

Chain 5:



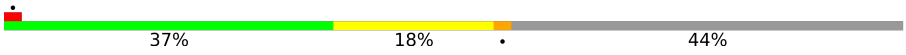
• Molecule 64: tRNA(fMet)

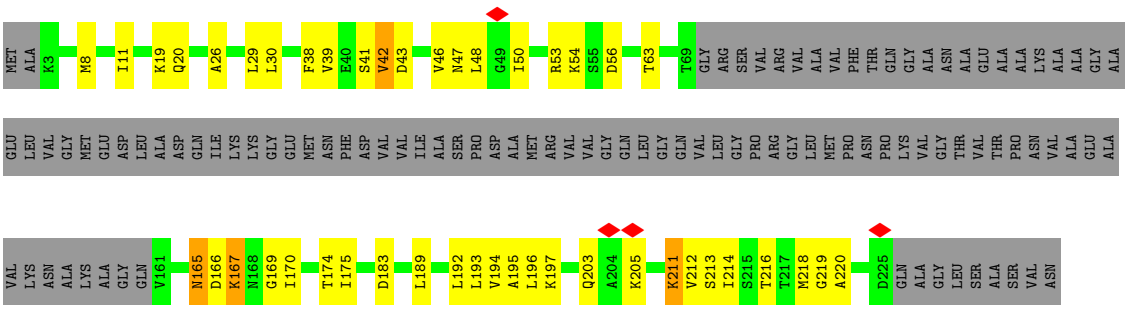
Chain 6:



• Molecule 65: Large ribosomal subunit protein uL1

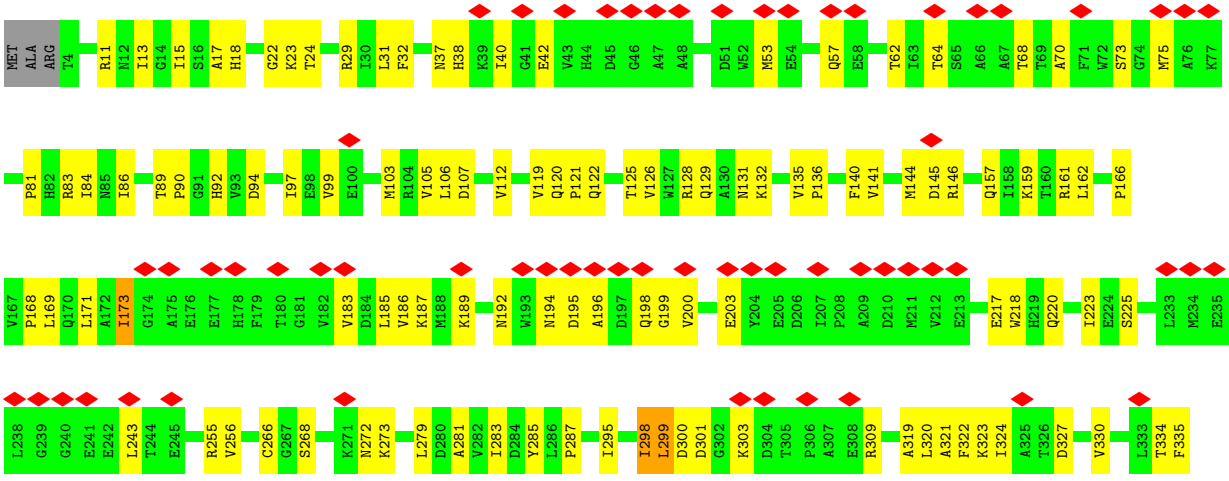
Chain a:

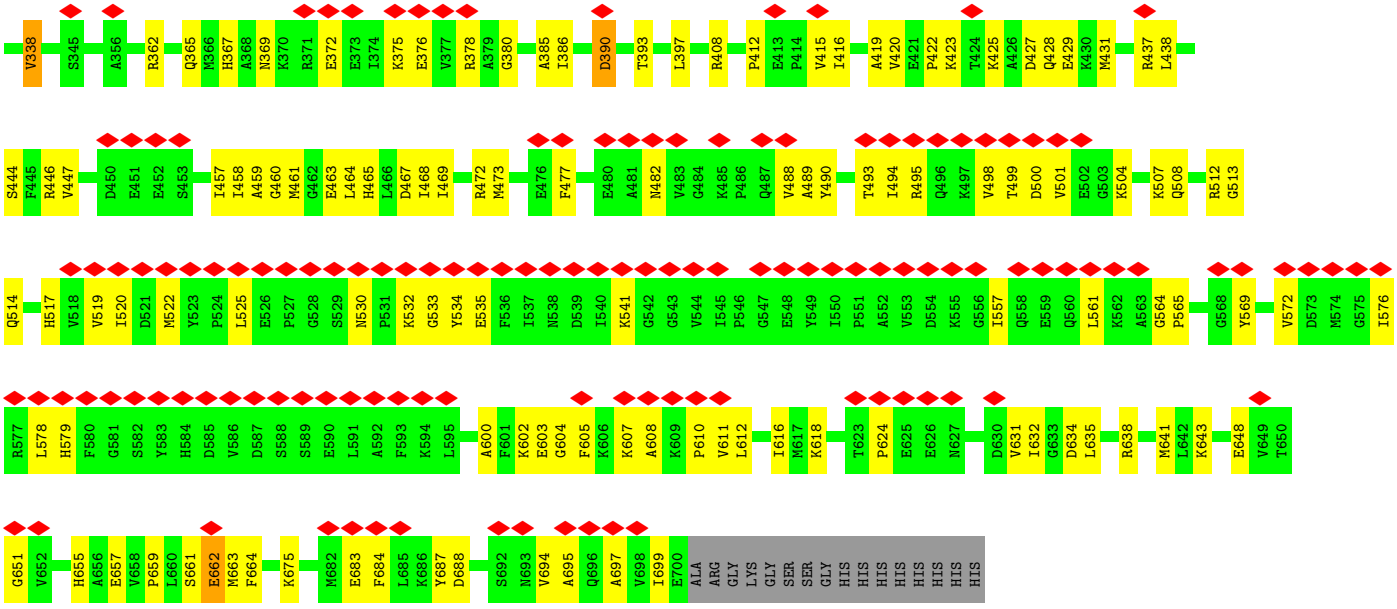




• Molecule 66: Elongation factor G

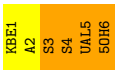
Chain 0:





• Molecule 67: Viomycin

Chain h:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	513759	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TALOS ARCTICA	Depositor
Voltage (kV)	200	Depositor
Electron dose ($e^-/Å^2$)	47	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	1500	Depositor
Magnification	Not provided	
Image detector	FEI FALCON III (4k x 4k)	Depositor
Maximum map value	0.156	Depositor
Minimum map value	-0.064	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.004	Depositor
Recommended contour level	0.011	Depositor
Map size (Å)	753.60004, 753.60004, 753.60004	wwPDB
Map dimensions	480, 480, 480	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.57, 1.57, 1.57	Depositor

5 Model quality

5.1 Standard geometry

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

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|>5$	RMSZ	#$\|Z\|>5$
1	A	0.25	0/362	0.73	0/485
2	B	0.37	0/450	0.80	2/599 (0.3%)
3	C	0.32	0/416	0.61	0/554
4	D	0.48	0/380	0.95	0/498
5	E	0.47	0/513	0.80	0/676
6	F	0.41	0/303	0.79	0/397
7	G	0.39	0/1735	0.83	0/2338
8	H	0.41	0/1651	0.80	0/2225
9	I	0.28	0/1665	0.76	1/2227 (0.0%)
10	J	0.46	0/1169	0.80	0/1573
11	K	0.42	0/835	0.86	0/1128
12	L	0.42	0/1195	0.82	2/1602 (0.1%)
13	M	0.31	0/989	0.75	0/1326
14	N	0.29	0/1034	0.74	0/1375
15	O	0.56	0/796	0.81	0/1077
16	P	0.42	0/885	0.76	0/1195
17	Q	0.43	0/969	0.81	0/1300
18	R	0.29	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	0.30	0/659	0.64	0/884
22	V	0.33	0/657	0.72	0/881
23	W	0.28	0/544	0.69	0/731
24	X	0.28	0/652	0.64	0/877
25	Y	0.26	0/671	0.64	2/888 (0.2%)
26	Z	0.56	0/550	1.09	1/728 (0.1%)
27	b	0.49	0/2121	0.82	0/2852
28	c	0.45	0/1586	0.77	0/2134
29	d	0.40	0/1571	0.80	3/2113 (0.1%)
30	e	0.30	0/1434	0.66	0/1926
31	f	0.29	0/1343	0.61	0/1816
32	g	0.34	0/1122	0.77	3/1515 (0.2%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
33	i	0.39	0/1046	0.80	1/1410 (0.1%)
34	j	0.46	0/1152	0.72	0/1551
35	k	0.42	0/947	0.91	1/1268 (0.1%)
36	l	0.41	1/1054 (0.1%)	0.80	2/1403 (0.1%)
37	m	0.40	0/1093	0.81	2/1460 (0.1%)
38	n	0.54	1/973 (0.1%)	0.88	0/1301
39	o	0.32	0/902	0.68	0/1209
40	p	0.39	0/929	0.72	2/1242 (0.2%)
41	q	0.43	0/960	0.72	0/1278
42	r	0.38	0/829	0.79	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	0.80	2/769 (0.3%)
48	x	0.62	0/635	1.16	5/848 (0.6%)
49	y	0.28	0/510	0.71	0/677
50	z	0.36	0/453	0.76	1/605 (0.2%)
51	1	0.59	0/69796	0.60	17/108888 (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	0.60	0/695	0.77	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	0.55	0/2106	0.81	0/2868
57	A2	0.49	0/2048	0.76	0/2786
58	B1	0.56	4/10510 (0.0%)	0.75	8/14196 (0.1%)
59	B2	0.46	0/10714	0.67	0/14459
60	W0	0.31	0/652	0.63	0/879
61	NA	0.76	0/2431	1.22	0/3385
62	NG	1.15	0/756	1.05	0/1048
63	5	0.59	0/1812	0.90	3/2823 (0.1%)
64	6	0.60	0/1832	0.59	0/2855
65	a	0.50	0/1020	0.81	0/1370
66	0	0.39	0/5501	0.72	3/7446 (0.0%)
67	h	3.21	2/11 (18.2%)	0.75	0/13
All	All	0.54	8/196700 (0.0%)	0.67	73/289390 (0.0%)

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
67	h	3	SER	CA-C	-6.76	1.38	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
67	h	4	SER	CA-C	-6.29	1.39	1.52
38	n	66	ALA	CA-C	-5.91	1.44	1.52
58	B1	1350	ASN	CG-ND2	-5.26	1.22	1.33
58	B1	777	HIS	ND1-CE1	5.12	1.37	1.32
58	B1	1108	GLN	CD-OE1	5.09	1.33	1.23
58	B1	424	ASN	CG-ND2	-5.08	1.22	1.33
36	l	18	ARG	CA-CB	-5.01	1.44	1.52

All (73) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
12	L	92	PRO	N-CA-C	-10.52	98.42	113.47
51	1	1020	A	C2'-C3'-O3'	7.36	120.54	109.50
48	x	11	PRO	N-CA-C	-7.32	99.55	111.77
51	1	2425	A	O3'-P-O5'	-6.93	93.61	104.00
12	L	82	SER	N-CA-C	6.88	116.41	108.49
58	B1	450	HIS	CB-CG-CD2	-6.57	122.67	131.20
48	x	30	PRO	N-CA-C	6.51	125.87	112.47
36	l	29	LYS	CA-C-N	6.46	133.87	121.54
36	l	29	LYS	C-N-CA	6.46	133.87	121.54
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
51	1	2428	G	O3'-P-O5'	-6.39	94.42	104.00
58	B1	777	HIS	CB-CG-CD2	-6.34	122.95	131.20
45	u	45	GLN	CA-C-N	6.33	129.48	120.49
45	u	45	GLN	C-N-CA	6.33	129.48	120.49
51	1	490	C	N1-C1'-C2'	6.33	121.50	112.00
9	I	24	VAL	N-CA-C	-6.28	107.74	113.71
32	g	8	LYS	CA-C-N	6.27	133.25	121.97
32	g	8	LYS	C-N-CA	6.27	133.25	121.97
53	3	1301	U	N1-C1'-C2'	6.25	121.37	112.00
48	x	71	ARG	N-CA-C	-6.20	105.71	113.28
48	x	67	LEU	N-CA-C	-6.09	104.56	111.14
66	0	367	HIS	CA-C-N	6.06	133.11	121.54
66	0	367	HIS	C-N-CA	6.06	133.11	121.54
19	S	21	ALA	N-CA-C	-6.05	107.72	114.62
32	g	121	VAL	N-CA-C	-5.92	106.64	111.91
63	5	39	U	C3'-C2'-O2'	5.87	119.51	110.70
51	1	1816	C	N1-C1'-C2'	5.77	120.66	112.00
2	B	5	ASN	CA-C-N	5.74	129.03	120.83
2	B	5	ASN	C-N-CA	5.74	129.03	120.83
26	Z	17	ARG	N-CA-C	-5.73	104.84	113.89

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
48	x	54	GLY	N-CA-C	5.72	120.73	113.24
58	B1	450	HIS	CB-CG-ND1	5.70	131.25	122.70
33	i	62	ALA	N-CA-C	5.58	117.05	110.97
51	1	1343	G	N9-C1'-C2'	5.58	120.36	112.00
29	d	74	LYS	CA-C-N	5.49	128.68	120.83
29	d	74	LYS	C-N-CA	5.49	128.68	120.83
51	1	2502	G	O3'-P-O5'	5.46	112.19	104.00
37	m	57	VAL	CA-C-N	5.46	131.96	121.54
37	m	57	VAL	C-N-CA	5.46	131.96	121.54
58	B1	777	HIS	CB-CG-ND1	5.44	130.86	122.70
42	r	51	VAL	N-CA-C	-5.43	97.14	108.88
53	3	130	A	N9-C1'-C2'	5.42	120.14	112.00
51	1	1106	G	C2'-C3'-O3'	5.42	121.83	113.70
55	8	7	DC	C2'-C3'-O3'	-5.41	103.39	111.50
53	3	813	U	N1-C1'-C2'	5.39	120.09	112.00
25	Y	53	MET	CA-C-N	5.33	127.61	120.58
25	Y	53	MET	C-N-CA	5.33	127.61	120.58
29	d	20	GLY	N-CA-C	-5.31	107.47	114.95
58	B1	27	PRO	N-CA-C	-5.27	106.17	113.81
35	k	89	ASN	N-CA-C	5.24	117.41	111.02
51	1	2529	G	N9-C1'-C2'	5.22	119.83	112.00
63	5	39	U	C4'-C3'-O3'	5.22	120.83	113.00
51	1	858	G	C4'-C3'-O3'	5.21	120.82	113.00
66	0	664	PHE	CA-CB-CG	5.21	119.01	113.80
51	1	1211	C	N1-C1'-C2'	5.21	119.81	112.00
52	2	66	A	N9-C1'-C2'	5.20	119.80	112.00
44	t	65	GLY	N-CA-C	5.19	117.43	111.36
47	w	15	LYS	CA-C-N	5.16	129.74	122.46
47	w	15	LYS	C-N-CA	5.16	129.74	122.46
51	1	1924	C	N1-C1'-C2'	5.16	119.74	112.00
50	z	40	THR	N-CA-C	-5.14	101.19	109.58
63	5	74	C	C4'-C3'-O3'	-5.14	105.29	113.00
53	3	722	G	N9-C1'-C2'	5.12	119.68	112.00
58	B1	61	ILE	CA-C-O	-5.10	115.64	120.95
51	1	278	A	N9-C1'-C2'	5.09	119.63	112.00
53	3	1043	G	N9-C1'-C2'	5.05	119.57	112.00
51	1	1087	G	N9-C1'-C2'	5.04	119.55	112.00
51	1	1508	A	N9-C1'-C2'	5.03	119.54	112.00
51	1	2071	A	N9-C1'-C2'	5.03	119.54	112.00
40	p	15	ASP	CA-C-N	5.01	131.41	122.13
40	p	15	ASP	C-N-CA	5.01	131.41	122.13
51	1	933	A	N9-C1'-C2'	5.01	119.52	112.00

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	355	0	353	10	0
2	B	444	0	461	14	0
3	C	409	0	440	18	0
4	D	377	0	418	18	0
5	E	504	0	574	18	0
6	F	302	0	341	15	0
7	G	1704	0	1732	45	0
8	H	1624	0	1699	47	0
9	I	1643	0	1710	44	0
10	J	1156	0	1199	39	0
11	K	817	0	808	22	0
12	L	1181	0	1240	47	0
13	M	979	0	1034	30	0
14	N	1022	0	1070	54	0
15	O	786	0	828	34	0
16	P	869	0	878	28	0
17	Q	955	0	1019	34	0
18	R	883	0	944	26	0
19	S	805	0	847	33	0
20	T	714	0	737	16	0
21	U	649	0	666	21	0
22	V	648	0	691	17	0
23	W	535	0	552	14	0
24	X	637	0	665	16	0
25	Y	665	0	714	21	0
26	Z	544	0	579	17	0
27	b	2082	0	2157	68	0
28	c	1565	0	1616	53	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	29	0
33	i	1032	0	1088	38	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
34	j	1129	0	1162	34	0
35	k	938	0	1012	21	0
36	l	1045	0	1117	28	0
37	m	1074	0	1157	31	0
38	n	960	0	1000	34	0
39	o	892	0	923	21	0
40	p	917	0	965	22	0
41	q	947	0	1022	22	0
42	r	816	0	839	22	0
43	s	857	0	922	20	0
44	t	738	0	807	15	0
45	u	779	0	834	20	0
46	v	753	0	780	13	0
47	w	575	0	592	19	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	1354	0
52	2	2568	0	1303	56	0
53	3	33012	0	16618	731	0
54	4	627	0	313	6	0
55	8	539	0	305	28	0
56	9	417	0	224	1	0
57	A1	2088	0	1895	26	0
57	A2	2029	0	1864	19	0
58	B1	10353	0	10548	312	0
59	B2	10546	0	10550	162	0
60	W0	650	0	658	10	0
61	NA	2432	0	1171	5	0
62	NG	758	0	334	8	0
63	5	1622	0	821	33	0
64	6	1640	0	837	28	0
65	a	1013	0	1081	33	0
66	0	5399	0	5363	154	0
67	h	48	0	40	5	0
68	B1	1	0	0	0	0
69	0	28	0	12	1	0
70	0	5	0	0	0	0
All	All	183377	0	132752	3754	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 (3754) 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	1.11	1.14
53:3:112:G:H21	53:3:354:G:H5'	1.16	1.11
50:z:37:ARG:HH12	51:1:929:U:H5'	1.12	1.10
51:1:2061:G:H2'	51:1:2501:C:O2'	1.52	1.09
51:1:1060:U:H4'	51:1:1061:U:H5'	1.32	1.06
9:I:131:ILE:HG21	53:3:620:C:H1'	1.40	1.03
51:1:1796:U:H2'	51:1:1797:G:H8	1.18	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	1.02
51:1:1104:C:H2'	51:1:1105:U:H4'	1.38	1.01
58:B1:750:PRO:HB3	59:B2:549:ASP:OD2	1.60	1.01
58:B1:111:THR:HG23	58:B1:300:GLN:CD	1.86	0.99
51:1:1645:G:H5"	51:1:1646:C:H5'	1.44	0.98
51:1:2324:U:H3'	51:1:2325:G:H5"	1.45	0.98
58:B1:352:ARG:HD2	59:B2:1268:GLN:NE2	1.79	0.98
51:1:572:A:H61	51:1:2029:G:H21	1.04	0.98
51:1:2672:U:H2'	51:1:2673:G:H5"	1.43	0.97
51:1:1597:A:H5"	51:1:1598:A:H5'	1.45	0.97
52:2:118:C:H2'	52:2:119:A:H4'	1.46	0.96
57:A1:247:PRO:HA	57:A1:318:LEU:HA	1.48	0.96
52:2:90:C:H2'	52:2:91:C:H5"	1.44	0.95
10:J:120:HIS:ND1	10:J:121:ASN:ND2	2.14	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	0.95
51:1:413:C:H42	51:1:2410:G:H1	1.14	0.94
51:1:828:U:H2'	51:1:829:A:C8	2.02	0.94
42:r:79:ARG:HH22	51:1:572:A:H5'	1.33	0.94
38:n:39:PRO:HG3	51:1:1651:G:H5'	1.49	0.93
43:s:59:GLU:HA	43:s:64:ALA:HA	1.50	0.93
23:W:38:ILE:HD11	53:3:720:C:H1'	1.52	0.92
53:3:1156:G:H1'	53:3:1179:A:H61	1.32	0.92
51:1:2068:U:H3	51:1:2430:A:H62	1.15	0.92
53:3:674:G:H2'	53:3:675:A:C8	2.05	0.91
53:3:674:G:H2'	53:3:675:A:H8	1.34	0.91
53:3:91:U:H2'	53:3:92:U:H5"	1.53	0.91
58:B1:202:ARG:HG2	58:B1:202:ARG:HH11	1.35	0.90
53:3:409:U:H3	53:3:433:G:H1	1.12	0.90
54:4:56:G:H21	58:B1:427:PRO:HD3	1.34	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	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2653:U:H3'	51:1:2654:A:H5"	1.52	0.89
29:d:68:ALA:HA	51:1:1255:U:C5	2.08	0.89
12:L:92:PRO:HA	12:L:95:ARG:NE	1.88	0.88
51:1:1796:U:H2'	51:1:1797:G:C8	2.08	0.88
58:B1:68:TYR:C	58:B1:75:TYR:HE2	1.80	0.88
50:z:37:ARG:NH1	51:1:929:U:H5'	1.89	0.88
51:1:435:C:H2'	51:1:436:C:H5'	1.56	0.88
51:1:1473:G:H1	51:1:1518:C:H42	1.21	0.88
58:B1:317:THR:HA	58:B1:323:PRO:HA	1.55	0.88
52:2:78:A:H62	52:2:98:G:H21	1.17	0.87
53:3:1395:C:HO2'	53:3:1396:A:H8	0.87	0.87
53:3:1422:G:H22	53:3:1478:U:H3	1.22	0.87
63:5:9:A:H2'	63:5:11:C:H41	1.38	0.87
12:L:91:ARG:HB3	12:L:93:VAL:HG12	1.54	0.87
58:B1:68:TYR:O	58:B1:75:TYR:HE2	1.58	0.87
7:G:131:LYS:HD2	53:3:1158:C:H4'	1.57	0.87
14:N:68:GLY:HA2	53:3:1250:A:H5'	1.55	0.86
42:r:79:ARG:NH2	51:1:572:A:H5'	1.91	0.86
52:2:3:C:H2'	52:2:4:C:H5"	1.55	0.86
51:1:2128:G:OP1	65:a:38:PHE:CE1	2.29	0.85
51:1:2443:C:H2'	51:1:2444:G:H8	1.42	0.85
59:B2:855:PRO:HB3	61:NA:104:ARG:CB	2.07	0.85
58:B1:633:ALA:HB2	59:B2:808:ASN:H	1.41	0.85
53:3:1218:C:H2'	53:3:1219:A:H8	1.41	0.85
12:L:27:ASN:HD22	53:3:1374:A:H4'	1.42	0.84
34:j:116:ARG:NH2	51:1:528:A:H5"	1.92	0.84
51:1:1783:A:C6	51:1:2587:A:C2	2.66	0.84
51:1:2822:G:H2'	51:1:2823:A:H5"	1.58	0.84
19:S:70:HIS:HB2	53:3:974:A:H5'	1.59	0.84
37:m:12:MET:HA	51:1:910:A:H62	1.41	0.84
51:1:1783:A:N1	51:1:2587:A:C4	2.46	0.84
58:B1:68:TYR:HB3	58:B1:75:TYR:OH	1.76	0.84
53:3:835:U:H2'	53:3:836:G:H5"	1.60	0.83
53:3:3:A:H5'	53:3:613:C:H4'	1.58	0.83
58:B1:770:LEU:HD13	59:B2:618:GLN:HG3	1.61	0.83
53:3:1424:U:H3	53:3:1476:A:H61	1.26	0.83
23:W:37:LYS:HB3	53:3:719:C:H1'	1.60	0.83
66:0:40:ILE:HG23	66:0:198:GLN:OE1	1.79	0.83
51:1:554:U:H2'	51:1:555:G:O4'	1.79	0.83
51:1:2262:U:H2'	51:1:2263:C:C6	2.13	0.82
53:3:572:A:H5"	53:3:917:G:H4'	1.59	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1433:A:H2'	51:1:1434:A:O4'	1.79	0.82
51:1:2050:C:H2'	51:1:2051:A:H5'	1.62	0.82
14:N:13:SER:OG	53:3:1251:A:H5'	1.80	0.82
53:3:1512:U:H2'	53:3:1513:A:C8	2.14	0.82
58:B1:141:PHE:HE2	58:B1:296:LYS:HB2	1.44	0.82
51:1:1937:A:O2'	51:1:1938:A:H5'	1.78	0.82
51:1:1680:U:H2'	51:1:1681:G:H5'	1.60	0.81
58:B1:141:PHE:CE2	58:B1:296:LYS:HB2	2.15	0.81
27:b:55:GLY:HA2	51:1:692:C:OP1	1.81	0.81
55:8:1:DC:H5"	58:B1:210:SER:OG	1.80	0.81
53:3:555:U:H2'	53:3:556:C:C6	2.15	0.81
51:1:695:G:H1	51:1:767:U:H3	1.26	0.80
58:B1:111:THR:HG23	58:B1:300:GLN:OE1	1.81	0.80
51:1:1064:C:H3'	51:1:1065:U:H5"	1.62	0.80
26:Z:7:GLU:HB2	26:Z:11:PHE:HB3	1.63	0.80
51:1:2402:U:C2'	51:1:2403:C:H5"	2.11	0.80
53:3:769:G:H4'	53:3:1513:A:H4'	1.63	0.79
51:1:2128:G:OP1	65:a:38:PHE:CD1	2.34	0.79
29:d:76:PRO:HA	29:d:82:GLY:HA3	1.62	0.79
53:3:952:U:H4'	53:3:964:A:H61	1.47	0.79
53:3:1073:U:H3	53:3:1102:A:H61	1.29	0.79
58:B1:144:TYR:HE1	58:B1:162:GLU:OE2	1.64	0.79
58:B1:186:GLN:HG3	58:B1:238:ILE:HG13	1.65	0.79
51:1:1791:A:C2'	51:1:1792:G:H5'	2.13	0.79
58:B1:37:GLU:O	58:B1:61:ILE:HD11	1.81	0.79
66:0:498:VAL:HG11	66:0:522:MET:HE3	1.65	0.78
51:1:784:G:H5'	51:1:785:G:OP1	1.84	0.78
51:1:2402:U:H2'	51:1:2403:C:H5"	1.64	0.78
53:3:1422:G:N2	53:3:1478:U:H3	1.80	0.78
51:1:1783:A:C6	51:1:2587:A:N3	2.51	0.78
51:1:1052:C:H42	51:1:1107:G:H1	1.30	0.78
51:1:2124:G:O2'	65:a:41:SER:HB3	1.83	0.78
51:1:2524:G:H2'	51:1:2525:G:H5"	1.66	0.78
53:3:153:C:H3'	53:3:154:U:H5"	1.66	0.78
51:1:2036:C:H2'	51:1:2037:A:C8	2.18	0.78
52:2:65:U:H3'	52:2:108:A:H61	1.49	0.78
51:1:1661:G:H2'	51:1:1662:U:H6	1.49	0.77
8:H:175:HIS:ND1	53:3:1108:G:H5'	2.00	0.77
51:1:208:C:H2'	51:1:209:C:H6	1.49	0.77
51:1:20:C:H2'	51:1:21:A:C8	2.19	0.77
51:1:1853:A:H2'	51:1:1854:A:C8	2.19	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2259:U:C4	51:1:2427:C:N4	2.52	0.77
55:8:15:DC:H1'	58:B1:426:ALA:HB1	1.67	0.77
51:1:52:A:H2'	51:1:53:A:C8	2.20	0.76
51:1:1126:A:H4'	51:1:1127:A:H5"	1.67	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
28:c:148:GLN:O	51:1:2052:A:H4'	1.86	0.76
55:8:13:DT:H72	58:B1:791:ALA:HB2	1.67	0.76
58:B1:202:ARG:HG2	58:B1:202:ARG:NH1	2.00	0.76
66:0:40:ILE:CG2	66:0:198:GLN:OE1	2.33	0.76
51:1:2672:U:C2'	51:1:2673:G:H5"	2.16	0.76
51:1:687:C:H2'	51:1:688:U:H5'	1.66	0.76
51:1:1287:A:C2	51:1:1649:G:H4'	2.20	0.76
22:V:68:LYS:HB3	53:3:267:C:OP1	1.85	0.76
51:1:1020:A:H1'	51:1:1021:A:OP2	1.86	0.76
51:1:1935:G:H1'	51:1:1964:G:N2	2.00	0.76
53:3:1356:G:H2'	53:3:1357:A:H8	1.51	0.75
53:3:768:A:OP1	53:3:804:U:H4'	1.86	0.75
8:H:127:VAL:HG23	54:4:14:U:H4'	1.67	0.75
53:3:1330:U:H2'	53:3:1331:G:O4'	1.86	0.75
33:i:10:LEU:HD11	51:1:1070:A:H2	1.51	0.75
51:1:2124:G:O2'	65:a:41:SER:CB	2.34	0.75
51:1:2375:G:H2'	51:1:2376:A:H5"	1.69	0.75
53:3:57:G:H2'	53:3:58:C:C6	2.21	0.75
53:3:3:A:C5'	53:3:613:C:H4'	2.17	0.75
53:3:193:C:H2'	53:3:194:C:C6	2.21	0.75
51:1:1783:A:C2	51:1:2587:A:C5	2.75	0.74
53:3:850:U:H2'	53:3:851:G:H5"	1.69	0.74
53:3:1412:C:H2'	53:3:1413:A:C8	2.22	0.74
66:0:490:TYR:HA	66:0:612:LEU:HD13	1.69	0.74
30:e:34:THR:HG21	51:1:2314:A:H5'	1.69	0.74
51:1:633:A:H2'	51:1:634:C:O4'	1.87	0.74
51:1:1718:G:H2'	51:1:1719:G:H8	1.52	0.74
51:1:581:C:H2'	51:1:582:A:C8	2.23	0.74
53:3:354:G:H2'	53:3:355:C:C6	2.23	0.74
12:L:71:THR:HG23	12:L:72:VAL:HG12	1.68	0.74
53:3:212:G:H2'	53:3:213:G:H8	1.53	0.74
53:3:1236:A:H4'	53:3:1304:G:H4'	1.69	0.74
51:1:208:C:H2'	51:1:209:C:C6	2.23	0.74
51:1:917:A:H5"	51:1:2268:A:H61	1.53	0.74
47:w:28:LEU:HD22	51:1:2353:G:H4'	1.68	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2221:G:H2'	51:1:2222:C:C6	2.23	0.74
51:1:2743:U:H2'	51:1:2744:G:O4'	1.87	0.74
53:3:153:C:C3'	53:3:154:U:H5"	2.18	0.74
53:3:884:U:H4'	53:3:885:G:H5"	1.70	0.74
10:J:25:LYS:NZ	53:3:923:A:H5"	2.03	0.73
58:B1:157:GLN:OE1	58:B1:157:GLN:HA	1.88	0.73
53:3:279:A:H5"	53:3:281:G:H5'	1.69	0.73
51:1:1019:U:H3	51:1:1142:A:H62	1.36	0.73
51:1:1528:A:H2'	51:1:1529:G:H5'	1.69	0.73
51:1:1161:C:H2'	51:1:1162:G:C8	2.23	0.73
51:1:2859:G:H2'	51:1:2860:A:C8	2.22	0.73
58:B1:110:PRO:HG2	58:B1:183:GLU:HG3	1.68	0.73
58:B1:1143:ASP:OD1	58:B1:1148:ARG:NH1	2.21	0.73
51:1:2030:A:N3	51:1:2499:C:H5"	2.04	0.73
15:O:45:ARG:HB3	15:O:69:THR:HB	1.71	0.73
51:1:1940:U:H1'	51:1:1942:C:N4	2.04	0.73
52:2:87:U:H5"	52:2:88:C:C5	2.23	0.73
53:3:1306:A:H61	53:3:1331:G:H1'	1.54	0.73
58:B1:105:ILE:HD12	58:B1:242:LEU:HD22	1.71	0.73
58:B1:107:LEU:HD11	58:B1:242:LEU:HB2	1.70	0.73
51:1:1265:A:H61	51:1:2013:A:H5"	1.53	0.73
55:8:3:DC:H2'	55:8:4:DT:H72	1.69	0.73
30:e:65:LEU:HD22	52:2:42:C:C4	2.24	0.72
9:I:23:GLY:HA3	53:3:408:A:H4'	1.71	0.72
46:v:9:ARG:HB3	46:v:41:GLU:HB2	1.71	0.72
51:1:1310:G:H2'	51:1:1311:G:H5'	1.71	0.72
51:1:1868:C:H2'	51:1:1869:G:H5'	1.70	0.72
53:3:175:C:H2'	53:3:176:C:C6	2.24	0.72
36:l:79:LEU:HD12	36:l:113:ALA:H	1.52	0.72
53:3:1424:U:H2'	53:3:1425:U:C6	2.24	0.72
66:0:499:THR:HG23	66:0:500:ASP:H	1.53	0.72
21:U:5:ARG:HB2	53:3:376:G:H5"	1.72	0.72
53:3:1028:C:H3'	53:3:1029:U:H5"	1.70	0.72
58:B1:210:SER:HB3	58:B1:213:LYS:HB2	1.71	0.72
58:B1:211:GLU:HG2	58:B1:215:LYS:HE3	1.70	0.72
51:1:2562:U:H3	51:1:2566:A:H62	1.35	0.72
58:B1:220:ARG:HG2	58:B1:220:ARG:HH11	1.55	0.72
12:L:27:ASN:ND2	53:3:1374:A:H4'	2.05	0.72
34:j:116:ARG:HH22	51:1:528:A:H5"	1.53	0.72
51:1:2629:U:O2'	51:1:2630:G:H5"	1.90	0.72
53:3:1073:U:H2'	53:3:1074:G:C8	2.24	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:8:3:DC:C2'	55:8:4:DT:H72	2.19	0.72
48:x:2:ARG:HG2	48:x:32:LEU:HD12	1.73	0.71
51:1:777:G:N7	51:1:793:A:H2	1.87	0.71
51:1:2036:C:H2'	51:1:2037:A:H8	1.55	0.71
12:L:92:PRO:CA	12:L:95:ARG:HE	1.97	0.71
51:1:1791:A:H2'	51:1:1792:G:H5'	1.70	0.71
51:1:2125:G:H5'	65:a:39:VAL:O	1.89	0.71
51:1:2733:A:H2'	51:1:2734:A:C8	2.25	0.71
53:3:419:C:H2'	53:3:420:U:O4'	1.90	0.71
53:3:840:C:H2'	53:3:841:C:H5"	1.70	0.71
53:3:1507:A:H2'	53:3:1508:A:O4'	1.89	0.71
51:1:1064:C:H3'	51:1:1065:U:C5'	2.20	0.71
51:1:2086:U:H2'	51:1:2087:G:C8	2.25	0.71
53:3:1435:G:H2'	53:3:1436:U:C6	2.26	0.71
51:1:96:C:H2'	51:1:97:C:H6	1.54	0.71
51:1:435:C:C2'	51:1:436:C:H5'	2.21	0.71
51:1:952:G:H2'	51:1:953:G:H5"	1.71	0.71
51:1:2818:U:H2'	51:1:2819:G:H8	1.55	0.71
53:3:1374:A:H2'	53:3:1375:A:H8	1.56	0.71
58:B1:68:TYR:C	58:B1:75:TYR:CE2	2.65	0.71
51:1:2491:U:H2'	51:1:2492:U:H5'	1.71	0.71
12:L:92:PRO:HA	12:L:95:ARG:HG3	1.71	0.71
53:3:1412:C:H2'	53:3:1413:A:H8	1.56	0.71
58:B1:142:GLU:HG3	58:B1:142:GLU:O	1.89	0.71
59:B2:854:ILE:HG21	59:B2:917:SER:HB3	1.71	0.71
6:F:4:ARG:HB2	51:1:2466:C:OP1	1.89	0.71
51:1:1161:C:H2'	51:1:1162:G:H8	1.55	0.71
51:1:1170:C:H2'	51:1:1171:G:H8	1.54	0.71
53:3:1243:C:H2'	53:3:1244:G:C8	2.26	0.71
53:3:1395:C:H4'	53:3:1402:C:H4'	1.73	0.70
12:L:91:ARG:O	12:L:95:ARG:HG2	1.91	0.70
51:1:52:A:H2'	51:1:53:A:H8	1.56	0.70
51:1:1447:C:H2'	51:1:1448:G:H8	1.56	0.70
53:3:501:C:H2'	53:3:502:A:H8	1.57	0.70
53:3:939:G:H2'	53:3:940:C:C6	2.26	0.70
53:3:946:A:H2'	53:3:947:G:H8	1.56	0.70
51:1:100:U:H4'	51:1:101:A:O4'	1.91	0.70
52:2:90:C:C2'	52:2:91:C:H5"	2.20	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	1.57	0.70
64:6:26:G:H2'	64:6:27:U:H5"	1.73	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:X:77:ARG:NH1	53:3:1225:A:H4'	2.07	0.70
36:l:17:LYS:HB2	51:1:663:G:H5"	1.74	0.70
48:x:60:LYS:HD3	51:1:372:G:H5"	1.73	0.70
51:1:1739:A:H2'	51:1:1740:G:O4'	1.92	0.70
51:1:2818:U:H2'	51:1:2819:G:C8	2.27	0.70
51:1:2859:G:H2'	51:1:2860:A:H8	1.54	0.70
66:0:695:ALA:HA	66:0:699:ILE:HB	1.74	0.70
38:n:66:ALA:HA	38:n:69:ARG:HD2	1.72	0.70
51:1:677:A:H2'	51:1:678:C:H6	1.57	0.70
51:1:2514:U:H2'	51:1:2515:C:C6	2.27	0.70
53:3:86:G:H4'	53:3:87:C:C4	2.26	0.70
51:1:2030:A:C2	51:1:2499:C:H5"	2.27	0.69
59:B2:65:ASN:HB3	59:B2:105:TYR:HB2	1.73	0.69
57:A1:297:LYS:CB	61:NA:79:ALA:HB1	2.22	0.69
38:n:1:MET:HE3	51:1:2723:C:H4'	1.74	0.69
53:3:673:A:H2'	53:3:674:G:C8	2.26	0.69
58:B1:128:LEU:HD11	58:B1:189:LEU:HG	1.73	0.69
27:b:6:LYS:NZ	51:1:1695:G:H5'	2.08	0.69
51:1:1270:C:H5"	51:1:1271:G:C5'	2.21	0.69
67:h:6:5OH:N	67:h:6:5OH:HS	2.07	0.69
12:L:92:PRO:O	12:L:95:ARG:HG3	1.93	0.69
29:d:165:HIS:HB2	51:1:1205:A:C6	2.27	0.69
51:1:1077:A:H2'	51:1:1078:U:H5'	1.74	0.69
51:1:1935:G:H1'	51:1:1964:G:C2	2.28	0.69
53:3:960:U:H4'	53:3:961:U:H5"	1.74	0.69
14:N:17:ARG:CZ	53:3:1129:C:H4'	2.22	0.69
17:Q:23:LEU:HD12	17:Q:29:LYS:HG2	1.75	0.69
51:1:2446:G:H2'	51:1:2501:C:H5	1.57	0.69
53:3:520:A:H62	53:3:529:G:H21	1.38	0.69
63:5:47:U:H4'	63:5:48:C:H5'	1.75	0.69
64:6:56:C:H2'	64:6:57:A:H8	1.58	0.69
51:1:2061:G:H2'	51:1:2501:C:HO2'	1.55	0.69
53:3:70:U:H5"	53:3:71:A:OP1	1.92	0.69
58:B1:93:THR:HB	58:B1:97:VAL:HG21	1.73	0.69
64:6:69:C:H2'	64:6:70:G:H8	1.55	0.69
66:0:29:ARG:HH21	66:0:272:ASN:HD21	1.40	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
8:H:34:SER:HB3	8:H:58:ARG:HH12	1.57	0.69
51:1:740:C:H6	51:1:740:C:H5'	1.58	0.69
51:1:2553:G:H3'	51:1:2554:U:H5"	1.75	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1421:G:H2'	53:3:1422:G:H4'	1.74	0.68
14:N:10:ARG:HH22	53:3:1148:U:H5"	1.59	0.68
67:h:4:SER:O	67:h:5:UAL:N1	2.26	0.68
51:1:1697:G:H3'	51:1:1698:A:H5"	1.76	0.68
51:1:687:C:C2'	51:1:688:U:H5'	2.23	0.68
51:1:1979:U:H2'	51:1:1980:G:H5'	1.75	0.68
53:3:501:C:H2'	53:3:502:A:C8	2.29	0.68
58:B1:243:PRO:HG2	59:B2:1332:SER:O	1.93	0.68
58:B1:832:LYS:C	58:B1:1242:ARG:HH12	2.01	0.68
31:f:91:VAL:HG21	51:1:2657:A:O3'	1.93	0.68
51:1:1607:C:H4'	51:1:1608:A:C5'	2.19	0.68
51:1:2450:A:O2'	51:1:2451:A:H5'	1.93	0.68
51:1:2656:U:H5"	66:0:146:ARG:CZ	2.24	0.68
53:3:900:A:H2'	53:3:901:A:C8	2.29	0.68
26:Z:48:LYS:HB3	53:3:723:U:H5	1.58	0.68
51:1:1481:U:H3	51:1:1510:G:H1	1.42	0.68
53:3:478:A:H2'	53:3:479:U:H4'	1.76	0.68
51:1:1219:U:H2'	51:1:1220:G:C8	2.29	0.68
51:1:1801:A:H5"	51:1:2203:U:H2'	1.75	0.68
51:1:2628:C:H3'	51:1:2629:U:H5'	1.75	0.68
14:N:121:ARG:HG3	53:3:1348:U:H4'	1.75	0.68
28:c:181:ASP:HB2	28:c:186:LEU:H	1.59	0.68
58:B1:141:PHE:CD2	58:B1:293:ARG:O	2.47	0.68
51:1:781:A:H2'	51:1:1777:U:O2'	1.93	0.68
17:Q:13:ARG:HH21	53:3:303:A:H5'	1.60	0.67
51:1:869:G:H2'	51:1:870:U:O4'	1.93	0.67
58:B1:39:LYS:O	58:B1:273:ILE:CG2	2.41	0.67
58:B1:352:ARG:HD2	59:B2:1268:GLN:HE22	1.55	0.67
12:L:35:LYS:HB2	53:3:1373:G:H4'	1.76	0.67
51:1:2464:G:H2'	51:1:2465:C:C6	2.29	0.67
27:b:73:ILE:HG12	51:1:1490:A:C2	2.29	0.67
51:1:1024:G:H3'	51:1:1025:G:H5"	1.75	0.67
51:1:1697:G:H5"	51:1:1698:A:H5"	1.77	0.67
53:3:747:A:H3'	53:3:748:G:H5"	1.75	0.67
53:3:1346:A:H61	53:3:1374:A:H3'	1.57	0.67
55:8:3:DC:C6	55:8:4:DT:H72	2.29	0.67
55:8:23:DC:H2"	55:8:24:DC:C5	2.30	0.67
18:R:102:LYS:HG2	53:3:1226:C:C5	2.29	0.67
38:n:71:ARG:HH21	51:1:2708:G:H1'	1.59	0.67
58:B1:1355:ARG:NH1	58:B1:1369:ARG:HH12	1.92	0.67
36:l:111:ILE:HD12	51:1:627:A:N7	2.09	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:84:A:H4'	51:1:85:G:O5'	1.94	0.67
58:B1:161:THR:HG22	58:B1:164:GLN:HB2	1.75	0.67
64:6:69:C:H2'	64:6:70:G:C8	2.30	0.67
66:0:501:VAL:HG12	66:0:607:LYS:HZ1	1.60	0.67
29:d:27:LEU:HD22	29:d:104:ALA:HB2	1.75	0.67
51:1:1755:A:H2'	51:1:1756:G:H5'	1.76	0.67
18:R:113:LYS:HZ3	64:6:44:A:H4'	1.58	0.67
38:n:2:ARG:HD2	51:1:2822:G:O6	1.95	0.67
51:1:848:C:H2'	51:1:849:A:H8	1.59	0.66
51:1:1139:G:O2'	51:1:1140:C:H5'	1.96	0.66
51:1:1783:A:C2	51:1:2587:A:C4	2.83	0.66
51:1:2415:G:H2'	51:1:2416:C:C6	2.29	0.66
53:3:1007:U:H3	53:3:1022:A:H61	1.43	0.66
53:3:1172:C:H2'	53:3:1173:U:O4'	1.95	0.66
51:1:2086:U:H2'	51:1:2087:G:H8	1.59	0.66
53:3:924:C:H2'	53:3:925:G:H8	1.60	0.66
55:8:13:DT:OP2	58:B1:791:ALA:HB1	1.95	0.66
58:B1:108:ALA:HB3	58:B1:279:LEU:HD22	1.77	0.66
66:0:103:MET:HG3	66:0:129:GLN:HB3	1.77	0.66
39:o:68:LYS:HG2	52:2:50:A:OP1	1.94	0.66
51:1:1799:G:H4'	51:1:1800:C:O5'	1.95	0.66
51:1:2633:G:H2'	51:1:2634:A:H5"	1.77	0.66
53:3:1356:G:H2'	53:3:1357:A:C8	2.30	0.66
58:B1:108:ALA:CB	58:B1:279:LEU:HD22	2.25	0.66
48:x:27:ARG:NH2	51:1:1365:A:OP1	2.29	0.66
64:6:12:G:H2'	64:6:13:C:O4'	1.95	0.66
4:D:8:SER:HA	51:1:1309:G:H5"	1.78	0.66
38:n:96:ARG:HA	51:1:2881:U:O2'	1.95	0.66
51:1:849:A:H2'	51:1:850:U:C6	2.30	0.66
51:1:1824:G:O2'	51:1:1825:U:H5'	1.96	0.66
53:3:113:G:H2'	53:3:114:U:C6	2.31	0.66
58:B1:117:LEU:HD12	58:B1:117:LEU:O	1.94	0.66
10:J:25:LYS:HE2	53:3:923:A:OP1	1.96	0.66
51:1:621:A:H2'	51:1:622:G:O4'	1.95	0.66
51:1:1509:A:H2'	51:1:1510:G:C8	2.31	0.66
51:1:1661:G:H2'	51:1:1662:U:C6	2.29	0.66
29:d:176:ASP:HB2	29:d:179:SER:HB3	1.77	0.66
51:1:395:U:H2'	51:1:396:G:C8	2.31	0.66
51:1:1528:A:C2'	51:1:1529:G:H5'	2.26	0.66
51:1:1680:U:C2'	51:1:1681:G:H5'	2.26	0.66
53:3:1026:G:H1	53:3:1035:A:H61	1.43	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:B1:193:ASP:HB3	58:B1:196:GLN:HB2	1.78	0.66
51:1:1268:A:H2'	51:1:1269:A:C8	2.31	0.66
58:B1:978:ARG:HG2	58:B1:1197:ASN:HD21	1.60	0.66
58:B1:984:LEU:HB3	58:B1:993:GLU:HB2	1.77	0.66
58:B1:1037:PHE:HB3	58:B1:1040:MET:HB2	1.78	0.66
10:J:53:ARG:NH1	53:3:1071:C:H5'	2.12	0.65
53:3:955:U:H3	53:3:1225:A:H61	1.42	0.65
53:3:1125:U:H2'	53:3:1126:U:H2'	1.78	0.65
53:3:153:C:H2'	53:3:154:U:O4'	1.96	0.65
53:3:660:C:H2'	53:3:661:G:O4'	1.95	0.65
58:B1:461:PHE:HD2	59:B2:813:GLU:HB2	1.62	0.65
51:1:2008:C:H2'	51:1:2009:A:H8	1.61	0.65
53:3:1173:U:H2'	53:3:1174:G:H8	1.62	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	1.62	0.65
51:1:1170:C:H2'	51:1:1171:G:C8	2.32	0.65
51:1:2029:G:O6	51:1:2032:G:H5"	1.97	0.65
11:K:42:TRP:HB2	11:K:59:TYR:HB2	1.78	0.65
51:1:1718:G:H2'	51:1:1719:G:C8	2.30	0.65
51:1:2047:C:H2'	51:1:2048:G:C8	2.32	0.65
52:2:3:C:C2'	52:2:4:C:H5"	2.25	0.65
52:2:13:G:H2'	52:2:14:U:H5"	1.78	0.65
53:3:835:U:C2'	53:3:836:G:H5"	2.27	0.65
58:B1:975:ILE:HG22	58:B1:977:SER:H	1.62	0.65
3:C:5:ARG:NH1	51:1:2285:C:C5	2.65	0.65
51:1:2048:G:H2'	51:1:2049:G:H5"	1.79	0.65
51:1:203:A:H3'	51:1:204:A:H5"	1.79	0.65
51:1:581:C:H2'	51:1:582:A:H8	1.60	0.65
53:3:211:G:H2'	53:3:212:G:O4'	1.96	0.65
22:V:60:ILE:HG22	22:V:74:LEU:HA	1.78	0.65
51:1:195:A:H3'	51:1:196:A:H4'	1.78	0.65
53:3:738:C:H2'	53:3:739:C:H6	1.62	0.65
66:0:17:ALA:HB2	66:0:112:VAL:HG23	1.79	0.65
31:f:94:ARG:H	31:f:105:SER:HB3	1.62	0.64
47:w:40:LYS:NZ	51:1:2330:G:O2'	2.30	0.64
51:1:748:G:O6	51:1:751:A:H4'	1.97	0.64
51:1:1278:C:H2'	51:1:1279:G:H8	1.62	0.64
51:1:1474:U:H2'	51:1:1475:G:H5'	1.79	0.64
51:1:2704:C:H2'	51:1:2705:A:O4'	1.97	0.64
53:3:246:A:H62	53:3:281:G:N2	1.95	0.64
13:M:111:THR:HG22	13:M:113:ARG:H	1.62	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:i:112:LYS:NZ	33:i:124:MET:SD	2.69	0.64
51:1:1127:A:H2'	51:1:1128:G:H5"	1.80	0.64
51:1:1447:C:H2'	51:1:1448:G:C8	2.31	0.64
58:B1:68:TYR:HB3	58:B1:75:TYR:CE2	2.32	0.64
17:Q:33:CYS:H	17:Q:54:VAL:HG13	1.60	0.64
30:e:104:THR:HG23	30:e:105:ILE:HG13	1.79	0.64
32:g:94:ILE:HG12	32:g:122:LEU:HB2	1.78	0.64
51:1:2215:C:H2'	51:1:2216:G:C8	2.31	0.64
53:3:1306:A:N6	53:3:1331:G:H1'	2.12	0.64
53:3:1366:C:H2'	53:3:1367:C:C6	2.32	0.64
53:3:1436:U:H2'	53:3:1437:A:H8	1.62	0.64
59:B2:314:ASN:HD21	59:B2:348:SER:HA	1.62	0.64
17:Q:98:ARG:HB3	17:Q:105:GLY:HA2	1.79	0.64
23:W:41:SER:HA	23:W:44:THR:HG22	1.80	0.64
31:f:82:PHE:HB2	31:f:140:ILE:HG12	1.79	0.64
51:1:2267:A:H3'	51:1:2267:A:N3	2.13	0.64
51:1:2329:U:H2'	51:1:2330:G:C8	2.32	0.64
58:B1:111:THR:CG2	58:B1:300:GLN:CD	2.66	0.64
4:D:7:PRO:HA	51:1:686:U:O2	1.96	0.64
53:3:952:U:H2'	53:3:953:G:C8	2.32	0.64
53:3:966:G:C2	64:6:34:C:H5'	2.33	0.64
66:0:501:VAL:HG11	66:0:604:GLY:HA2	1.78	0.64
22:V:47:ASP:HB3	22:V:74:LEU:HB3	1.78	0.64
55:8:3:DC:C2'	55:8:4:DT:C7	2.75	0.64
27:b:155:ARG:NH1	51:1:1818:U:H5	1.96	0.64
51:1:2464:G:H2'	51:1:2465:C:H6	1.63	0.64
2:B:8:THR:HB	51:1:2020:A:H5'	1.79	0.64
4:D:14:ARG:HG2	51:1:125:A:H5'	1.80	0.64
17:Q:27:PRO:HB3	53:3:552:U:O2	1.98	0.64
32:g:4:ILE:HA	32:g:18:GLN:HE22	1.63	0.64
58:B1:918:ILE:HG22	59:B2:1280:ALA:HB1	1.79	0.64
66:0:624:PRO:HA	66:0:651:GLY:HA2	1.80	0.64
44:t:37:ASP:OD1	44:t:37:ASP:N	2.29	0.64
15:O:46:LYS:HE3	53:3:1253:G:OP1	1.98	0.64
51:1:20:C:H2'	51:1:21:A:H8	1.60	0.64
25:Y:54:GLN:HE22	53:3:193:C:C1'	2.11	0.63
53:3:56:U:O2	66:0:362:ARG:NH1	2.30	0.63
53:3:600:A:H61	53:3:638:U:H3	1.47	0.63
53:3:1148:U:H2'	53:3:1149:C:O4'	1.98	0.63
53:3:1156:G:H21	53:3:1179:A:H2	1.44	0.63
53:3:1474:U:H2'	53:3:1475:G:O4'	1.98	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
64:6:61:C:O2'	65:a:53:ARG:HD2	1.97	0.63
4:D:21:ARG:NH1	51:1:465:G:O3'	2.32	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
51:1:246:C:H2'	51:1:247:G:H5'	1.80	0.63
58:B1:128:LEU:HA	58:B1:192:MET:HE1	1.81	0.63
58:B1:162:GLU:HA	58:B1:162:GLU:OE1	1.97	0.63
48:x:1:SER:HB2	51:1:1366:A:OP2	1.99	0.63
51:1:1597:A:H5"	51:1:1598:A:C5'	2.24	0.63
53:3:1243:C:H2'	53:3:1244:G:H8	1.63	0.63
53:3:1345:U:H4'	53:3:1346:A:H5'	1.80	0.63
64:6:26:G:H3'	64:6:27:U:H5"	1.80	0.63
47:w:19:VAL:HG13	47:w:34:VAL:HG22	1.80	0.63
51:1:764:A:O2'	51:1:765:C:H5'	1.98	0.63
51:1:1297:C:OP1	51:1:2710:C:H4'	1.97	0.63
51:1:2123:G:H8	51:1:2125:G:H21	1.44	0.63
53:3:67:C:H2'	53:3:68:G:H8	1.64	0.63
58:B1:1357:ILE:HD11	59:B2:1287:LEU:HD13	1.81	0.63
51:1:2898:U:H2'	51:1:2899:A:C8	2.34	0.63
15:O:59:LYS:HE3	53:3:972:C:H5'	1.81	0.63
34:j:78:THR:HB	51:1:2641:G:H5"	1.81	0.63
51:1:746:U:H1'	51:1:748:G:H21	1.61	0.63
51:1:2066:C:O2'	51:1:2067:G:H5'	1.99	0.63
53:3:492:C:H2'	53:3:493:A:C8	2.34	0.63
14:N:17:ARG:NH2	53:3:1129:C:H4'	2.13	0.63
51:1:340:A:H2'	51:1:341:C:H5'	1.81	0.63
51:1:1063:G:H3'	51:1:1064:C:H6	1.63	0.63
52:2:13:G:N7	52:2:70:C:H4'	2.14	0.63
53:3:1007:U:H2'	53:3:1008:U:C6	2.34	0.63
21:U:34:GLU:OE1	21:U:60:TRP:NE1	2.30	0.63
42:r:41:ILE:HB	42:r:47:VAL:HB	1.80	0.63
58:B1:245:LEU:HG	58:B1:246:PRO:HD2	1.80	0.63
66:0:94:ASP:HB2	66:0:465:HIS:HB2	1.81	0.63
32:g:4:ILE:HD11	32:g:43:ASN:HB3	1.80	0.63
51:1:315:G:H2'	51:1:316:C:C6	2.33	0.63
51:1:948:C:H2'	51:1:949:G:H8	1.64	0.63
53:3:34:C:H2'	53:3:35:G:C8	2.33	0.63
58:B1:1355:ARG:NH1	58:B1:1369:ARG:NH1	2.47	0.63
64:6:54:U:H3	64:6:58:A:H8	1.47	0.63
14:N:105:ARG:HD2	53:3:1117:A:O2'	1.99	0.62
19:S:75:LYS:NZ	53:3:1357:A:H5"	2.14	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:158:U:H2'	51:1:159:G:O4'	1.97	0.62
51:1:1783:A:C5	51:1:2587:A:C2	2.87	0.62
53:3:946:A:H2'	53:3:947:G:C8	2.34	0.62
66:0:490:TYR:HA	66:0:612:LEU:CD1	2.29	0.62
6:F:1:MET:HG3	51:1:2742:G:H5'	1.79	0.62
14:N:68:GLY:HA2	53:3:1250:A:C5'	2.27	0.62
27:b:49:THR:OG1	27:b:50:THR:N	2.31	0.62
51:1:2339:C:H2'	51:1:2340:A:H8	1.64	0.62
64:6:26:G:C3'	64:6:27:U:H5"	2.29	0.62
8:H:10:ARG:HH12	8:H:181:ILE:H	1.46	0.62
12:L:1:PRO:HD2	12:L:5:VAL:HA	1.82	0.62
12:L:92:PRO:CA	12:L:95:ARG:HG3	2.28	0.62
16:P:17:ASP:HB2	16:P:36:ARG:HH22	1.65	0.62
30:e:35:LEU:HB3	30:e:151:LEU:HD11	1.81	0.62
59:B2:120:GLN:NE2	59:B2:490:GLN:OE1	2.32	0.62
23:W:38:ILE:CD1	53:3:720:C:H1'	2.27	0.62
41:q:12:ARG:NH1	51:1:1251:C:H5"	2.15	0.62
43:s:25:ARG:HH22	51:1:519:U:H5"	1.64	0.62
51:1:1173:U:H2'	51:1:1177:G:H1	1.64	0.62
51:1:1736:U:H2'	51:1:1737:G:O4'	1.99	0.62
51:1:2384:U:O2'	51:1:2385:C:H5'	1.98	0.62
9:I:8:LEU:HD23	9:I:21:LYS:HE2	1.82	0.62
51:1:481:G:H1'	51:1:506:G:N2	2.14	0.62
51:1:948:C:H2'	51:1:949:G:C8	2.34	0.62
51:1:1395:A:H4'	51:1:1397:U:C5	2.35	0.62
53:3:91:U:C2'	53:3:92:U:H5"	2.27	0.62
53:3:668:G:H1	53:3:738:C:H42	1.47	0.62
58:B1:100:GLU:HA	59:B2:1328:LYS:HE2	1.82	0.62
58:B1:395:LYS:HZ2	58:B1:399:LYS:CD	2.12	0.62
14:N:12:LYS:H	14:N:105:ARG:HH22	1.45	0.62
22:V:19:SER:OG	22:V:20:ILE:N	2.33	0.62
58:B1:111:THR:CG2	58:B1:300:GLN:NE2	2.63	0.62
58:B1:201:LEU:HB2	58:B1:221:ILE:HD13	1.80	0.62
51:1:66:C:H1'	51:1:456:C:O2	2.00	0.62
51:1:1867:G:H1	51:1:1874:C:H42	1.48	0.62
51:1:2810:A:H62	51:1:2890:G:H21	1.46	0.62
55:8:1:DC:H2"	55:8:2:DC:C5	2.35	0.62
63:5:32:U:H2'	63:5:33:U:C2	2.34	0.62
51:1:2512:C:H2'	51:1:2513:A:O4'	2.00	0.62
51:1:2656:U:H5"	66:0:146:ARG:NH1	2.14	0.62
52:2:90:C:H2'	52:2:91:C:C5'	2.24	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:119:HIS:CD2	53:3:438:U:H4'	2.35	0.62
51:1:848:C:H2'	51:1:849:A:C8	2.35	0.62
51:1:1675:C:H2'	51:1:1676:A:O4'	2.00	0.62
51:1:1901:A:H2'	51:1:1902:C:C6	2.35	0.62
53:3:939:G:H2'	53:3:940:C:H6	1.63	0.62
53:3:1110:A:H2'	53:3:1111:A:C8	2.35	0.62
53:3:1347:G:N2	53:3:1373:G:H2'	2.15	0.62
58:B1:395:LYS:NZ	58:B1:399:LYS:HD3	2.15	0.62
58:B1:770:LEU:HD13	59:B2:618:GLN:CG	2.30	0.62
7:G:67:LEU:HD12	7:G:160:LEU:HD12	1.82	0.62
51:1:812:C:H5"	51:1:1250:G:O2'	2.00	0.62
51:1:1746:A:H2'	51:1:1747:U:C6	2.34	0.62
37:m:58:LYS:O	37:m:59:ARG:NH2	2.32	0.61
51:1:2121:G:H1'	65:a:167:LYS:HB2	1.82	0.61
57:A1:211:ILE:HG12	57:A1:219:ARG:HH12	1.65	0.61
7:G:89:PHE:HB3	7:G:150:ILE:HD12	1.81	0.61
13:M:28:SER:HB2	13:M:58:LEU:HB2	1.82	0.61
53:3:737:C:H2'	53:3:738:C:C6	2.34	0.61
30:e:38:GLY:HA3	51:1:2312:U:O2	2.00	0.61
34:j:113:PRO:HG3	51:1:528:A:H5'	1.81	0.61
45:u:87:GLU:HG2	45:u:92:VAL:HG11	1.81	0.61
51:1:1740:G:H2'	51:1:1741:C:H6	1.66	0.61
51:1:2286:G:H4'	51:1:2287:A:O4'	2.00	0.61
51:1:2885:G:H2'	51:1:2886:A:O4'	2.00	0.61
53:3:1084:G:H5'	53:3:1102:A:OP2	2.00	0.61
55:8:3:DC:H2'	55:8:4:DT:C7	2.30	0.61
55:8:13:DT:C7	58:B1:791:ALA:HB2	2.29	0.61
8:H:21:TRP:CD1	8:H:58:ARG:H	2.18	0.61
51:1:1063:G:H5"	51:1:1064:C:H5	1.64	0.61
53:3:358:U:H2'	53:3:359:G:H8	1.64	0.61
53:3:452:A:H61	53:3:480:U:H3	1.49	0.61
6:F:27:CYS:SG	6:F:28:SER:N	2.71	0.61
7:G:32:GLY:HA2	7:G:39:ILE:H	1.65	0.61
17:Q:55:ARG:HA	17:Q:61:GLU:HA	1.83	0.61
19:S:23:ARG:HH11	19:S:26:LEU:HB3	1.65	0.61
34:j:113:PRO:HD2	51:1:558:U:OP1	2.00	0.61
51:1:1361:G:H2'	51:1:1362:C:C6	2.35	0.61
30:e:132:ARG:O	30:e:132:ARG:NH2	2.34	0.61
51:1:1270:C:H5"	51:1:1271:G:H5"	1.79	0.61
51:1:2082:A:C2	51:1:2083:G:H1'	2.35	0.61
53:3:657:U:H2'	53:3:658:C:C6	2.35	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:11:C:H2'	51:1:12:U:H5"	1.83	0.61
57:A1:38:THR:HB	57:A2:45:ARG:HD3	1.82	0.61
59:B2:1282:GLY:HA3	60:W0:17:PHE:HE1	1.63	0.61
18:R:81:ASP:OD1	30:e:111:ARG:NH2	2.34	0.61
42:r:63:VAL:HG12	42:r:96:VAL:HG12	1.83	0.61
48:x:4:CYS:HB3	48:x:9:LYS:H	1.65	0.61
51:1:368:A:O2'	51:1:369:U:H5'	2.00	0.61
51:1:1078:U:H4'	51:1:1088:A:H2	1.65	0.61
53:3:924:C:H2'	53:3:925:G:C8	2.34	0.61
58:B1:144:TYR:CE1	58:B1:162:GLU:OE2	2.51	0.61
58:B1:1161:GLY:HA3	58:B1:1179:PRO:HA	1.83	0.61
51:1:2327:A:H2'	51:1:2328:A:C8	2.35	0.61
53:3:367:U:H3	53:3:393:A:H2	1.47	0.61
46:v:17:SER:HB3	46:v:27:PRO:HG3	1.83	0.61
46:v:72:VAL:HG13	46:v:93:ARG:HA	1.82	0.61
51:1:572:A:N6	51:1:2029:G:H21	1.88	0.61
58:B1:68:TYR:HB3	58:B1:75:TYR:CZ	2.35	0.61
63:5:39:U:H2'	63:5:40:C:C6	2.36	0.61
51:1:677:A:H2'	51:1:678:C:C6	2.34	0.60
51:1:1053:C:H2'	51:1:1054:A:H5'	1.83	0.60
53:3:715:A:H5"	53:3:805:C:O2'	2.00	0.60
59:B2:55:SER:OG	59:B2:465:ARG:NH1	2.33	0.60
59:B2:855:PRO:CB	61:NA:104:ARG:CB	2.78	0.60
65:a:216:THR:H	65:a:220:ALA:HB3	1.66	0.60
15:O:50:THR:HG22	15:O:64:GLN:HG3	1.83	0.60
29:d:64:GLY:O	51:1:2059:A:H4'	2.01	0.60
51:1:139:U:H2'	51:1:140:C:H5	1.65	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
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
64:6:26:G:C2'	64:6:27:U:H5"	2.31	0.60
66:0:321:ALA:HB2	66:0:397:LEU:HD21	1.82	0.60
42:r:81:LYS:HD3	51:1:973:A:H5"	1.83	0.60
51:1:729:G:H2'	51:1:1775:U:O2	2.01	0.60
51:1:2699:C:H2'	51:1:2700:A:H8	1.66	0.60
59:B2:528:ARG:NH2	59:B2:576:SER:O	2.30	0.60
21:U:2:VAL:HB	53:3:229:U:H4'	1.83	0.60
22:V:10:ARG:NH1	22:V:11:VAL:O	2.33	0.60
40:p:90:ALA:HB2	40:p:112:ARG:HA	1.81	0.60
51:1:971:G:H2'	51:1:972:A:O4'	2.01	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1374:A:H2'	53:3:1375:A:C8	2.37	0.60
58:B1:395:LYS:HZ2	58:B1:399:LYS:HD3	1.67	0.60
51:1:1818:U:H4'	51:1:1821:A:H1'	1.83	0.60
53:3:454:G:H2'	53:3:455:G:C8	2.37	0.60
57:A1:112:ALA:HB3	57:A1:126:PRO:HA	1.83	0.60
27:b:201:LEU:HD22	53:3:773:G:H5"	1.82	0.60
37:m:14:LYS:NZ	51:1:955:U:OP2	2.35	0.60
29:d:155:GLU:HA	29:d:158:PHE:HB3	1.82	0.60
51:1:1308:A:H61	51:1:1608:A:H61	1.49	0.60
51:1:2048:G:C3'	51:1:2049:G:H5"	2.31	0.60
51:1:2208:C:H2'	51:1:2209:G:C8	2.37	0.60
51:1:2324:U:C3'	51:1:2325:G:H5"	2.26	0.60
58:B1:951:GLN:NE2	58:B1:1014:GLY:O	2.35	0.60
10:J:96:GLN:HG2	53:3:7:A:C6	2.36	0.60
18:R:95:PRO:HG2	18:R:105:ALA:HB1	1.83	0.60
32:g:51:ARG:HA	32:g:55:GLU:HB2	1.84	0.60
51:1:1674:G:H21	51:1:1677:A:H61	1.49	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
55:8:11:DC:H2'	55:8:12:DG:C8	2.37	0.60
36:l:108:ALA:HB3	36:l:125:LEU:HD11	1.83	0.60
51:1:1081:U:H3'	51:1:1081:U:O2	2.02	0.60
53:3:979:C:C2'	53:3:980:C:H5'	2.32	0.60
48:x:31:ASN:ND2	48:x:52:ALA:CB	2.65	0.60
51:1:192:C:H2'	51:1:193:U:H5'	1.84	0.60
51:1:468:G:H2'	51:1:469:G:H5'	1.83	0.60
51:1:729:G:H5"	51:1:730:A:H5"	1.83	0.60
51:1:1278:C:H2'	51:1:1279:G:C8	2.37	0.60
51:1:2303:G:O2'	51:1:2304:G:H5'	2.02	0.60
51:1:2356:U:H2'	51:1:2357:G:O4'	2.01	0.60
7:G:73:ARG:HH22	7:G:93:HIS:HA	1.67	0.59
51:1:445:C:C2'	51:1:446:G:H5'	2.32	0.59
51:1:1484:U:H2'	51:1:1485:U:C6	2.36	0.59
51:1:1889:A:H2'	51:1:1890:A:C8	2.37	0.59
51:1:2898:U:H2'	51:1:2899:A:H8	1.67	0.59
53:3:747:A:C3'	53:3:748:G:H5"	2.32	0.59
59:B2:891:GLY:HA3	59:B2:913:VAL:HB	1.84	0.59
59:B2:1072:ASN:ND2	59:B2:1111:GLN:OE1	2.35	0.59
17:Q:13:ARG:NH1	17:Q:14:LYS:O	2.35	0.59
19:S:12:ARG:NH1	19:S:58:ARG:O	2.35	0.59
43:s:42:LYS:HE3	51:1:2010:G:H4'	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:w:56:PHE:CE2	51:1:2365:G:H4'	2.37	0.59
51:1:589:U:H2'	51:1:590:A:C8	2.36	0.59
51:1:2521:C:O2'	51:1:2522:U:H5'	2.02	0.59
7:G:99:MET:HA	7:G:106:VAL:HG21	1.84	0.59
9:I:121:ALA:HA	9:I:145:ARG:HB2	1.83	0.59
27:b:48:ILE:HG22	51:1:779:U:P	2.43	0.59
51:1:1993:U:H2'	51:1:1994:C:H6	1.67	0.59
51:1:2653:U:C3'	51:1:2654:A:H5"	2.30	0.59
53:3:128:G:H2'	53:3:129:A:C8	2.37	0.59
53:3:419:C:H5"	53:3:513:C:H1'	1.83	0.59
53:3:1280:A:O2'	53:3:1281:C:H5'	2.02	0.59
45:u:40:LEU:HD12	45:u:59:GLU:HB3	1.84	0.59
51:1:35:G:H1	51:1:445:C:H42	1.50	0.59
51:1:635:C:O2'	51:1:639:U:H5"	2.02	0.59
51:1:911:A:H5'	51:1:912:C:H5"	1.84	0.59
51:1:2443:C:O2'	51:1:2444:G:H5'	2.02	0.59
51:1:2537:U:H2'	51:1:2538:C:C6	2.37	0.59
53:3:207:C:H3'	53:3:208:U:H5"	1.84	0.59
10:J:25:LYS:HB2	53:3:923:A:OP1	2.02	0.59
18:R:26:LYS:O	18:R:30:LYS:NZ	2.36	0.59
22:V:61:ARG:NH1	22:V:73:THR:OG1	2.36	0.59
36:l:79:LEU:HB2	36:l:113:ALA:HB3	1.83	0.59
41:q:12:ARG:HH12	51:1:1251:C:H5"	1.68	0.59
51:1:729:G:H5"	51:1:730:A:C5'	2.33	0.59
51:1:1062:G:H5'	51:1:1071:G:H5'	1.85	0.59
53:3:253:A:H2'	53:3:254:G:O4'	2.03	0.59
58:B1:154:LEU:HD21	58:B1:160:LEU:HD21	1.83	0.59
58:B1:370:LYS:HG2	58:B1:441:LEU:HD23	1.84	0.59
58:B1:926:PRO:HG2	58:B1:1248:ILE:HD11	1.84	0.59
17:Q:48:LEU:HB2	53:3:520:A:OP1	2.02	0.59
51:1:881:G:N2	51:1:897:C:N3	2.50	0.59
51:1:952:G:C2'	51:1:953:G:H5"	2.32	0.59
51:1:1638:C:H4'	51:1:2710:C:O2	2.02	0.59
53:3:235:C:H2'	53:3:236:A:C8	2.38	0.59
53:3:570:G:O2'	53:3:819:A:H2'	2.03	0.59
58:B1:97:VAL:HG11	58:B1:101:ARG:NH2	2.18	0.59
58:B1:223:LEU:HG	58:B1:223:LEU:O	2.00	0.59
58:B1:633:ALA:HA	59:B2:806:PRO:O	2.01	0.59
27:b:116:GLN:O	27:b:127:ASN:ND2	2.35	0.59
51:1:1063:G:H3'	51:1:1064:C:C6	2.37	0.59
53:3:1421:G:H3'	53:3:1422:G:C5'	2.33	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:B1:275:ARG:NH1	58:B1:278:ARG:NH1	2.51	0.59
64:6:55:U:H2'	64:6:56:C:H6	1.68	0.59
19:S:17:ASP:O	19:S:22:LYS:NZ	2.35	0.59
21:U:5:ARG:HD3	53:3:376:G:H4'	1.85	0.59
29:d:21:ARG:NH2	29:d:22:ASP:OD1	2.35	0.59
51:1:1802:A:H2'	51:1:1803:A:C8	2.38	0.59
51:1:2306:C:H2'	51:1:2307:G:C8	2.38	0.59
53:3:337:G:H2'	53:3:338:A:C8	2.38	0.59
53:3:448:A:H62	53:3:486:U:H3	1.48	0.59
53:3:579:A:H5'	53:3:728:A:H1'	1.85	0.59
53:3:1512:U:H2'	53:3:1513:A:H8	1.66	0.59
51:1:1982:U:H2'	51:1:1983:G:H8	1.68	0.59
51:1:2189:U:H2'	51:1:2190:G:C8	2.37	0.59
53:3:34:C:H2'	53:3:35:G:H8	1.68	0.59
58:B1:342:LEU:HD23	58:B1:1352:ILE:HG23	1.83	0.59
40:p:1:SER:OG	51:1:2875:C:H4'	2.03	0.59
51:1:704:G:H1'	51:1:726:G:H22	1.68	0.59
51:1:1065:U:O4	51:1:1069:A:H5"	2.03	0.59
51:1:2446:G:H2'	51:1:2501:C:C5	2.38	0.59
53:3:738:C:H2'	53:3:739:C:C6	2.38	0.59
53:3:836:G:H2'	53:3:837:U:O4'	2.02	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
58:B1:725:MET:SD	59:B2:1101:LEU:HD23	2.42	0.59
59:B2:918:LEU:O	59:B2:918:LEU:HD23	2.02	0.59
9:I:8:LEU:HD21	53:3:429:U:O5'	2.03	0.58
53:3:677:U:H3	53:3:713:G:H1	1.51	0.58
58:B1:201:LEU:HD11	58:B1:220:ARG:HH11	1.67	0.58
6:F:19:ARG:NE	51:1:2756:U:OP2	2.36	0.58
7:G:142:LYS:HE2	53:3:1098:C:OP1	2.03	0.58
28:c:46:ARG:HG2	28:c:84:LEU:HD12	1.85	0.58
50:z:12:ALA:O	50:z:20:LYS:NZ	2.36	0.58
51:1:1444:G:H2'	51:1:1445:G:C8	2.37	0.58
51:1:1770:G:H4'	51:1:1938:A:OP1	2.03	0.58
51:1:2032:G:OP2	51:1:2455:G:H5'	2.03	0.58
53:3:41:G:H2'	53:3:42:G:H8	1.69	0.58
53:3:59:A:H5"	53:3:387:U:H5"	1.84	0.58
53:3:1005:A:H2'	53:3:1006:G:H5'	1.85	0.58
55:8:7:DC:H2"	55:8:8:DT:H71	1.84	0.58
58:B1:514:THR:HG21	58:B1:596:LEU:HD12	1.84	0.58
58:B1:638:SER:OG	58:B1:639:VAL:N	2.36	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:B2:69:GLN:HE21	59:B2:101:ARG:HD2	1.67	0.58
5:E:21:PHE:HE2	5:E:61:LEU:HD23	1.68	0.58
7:G:103:TRP:HA	7:G:106:VAL:HB	1.86	0.58
28:c:118:PHE:HD2	51:1:1654:A:H2	1.52	0.58
29:d:55:SER:OG	29:d:56:GLY:N	2.36	0.58
43:s:25:ARG:NH2	51:1:519:U:H5"	2.18	0.58
51:1:1000:A:H62	51:1:1154:G:H2'	1.68	0.58
51:1:1836:C:O2'	51:1:1837:C:H5'	2.03	0.58
53:3:850:U:C2'	53:3:851:G:H5"	2.33	0.58
58:B1:99:ARG:NH1	58:B1:99:ARG:HG3	2.17	0.58
58:B1:615:LYS:HG2	60:W0:5:THR:HG21	1.85	0.58
63:5:29:G:H5'	66:0:513:GLY:HA3	1.85	0.58
3:C:7:LYS:HA	3:C:23:THR:HA	1.84	0.58
9:I:68:GLU:HB3	53:3:546:A:OP2	2.04	0.58
28:c:194:PRO:HA	51:1:2680:U:H5'	1.85	0.58
45:u:42:LYS:HG3	51:1:499:U:H4'	1.85	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
58:B1:241:VAL:O	58:B1:241:VAL:HG12	2.04	0.58
64:6:6:G:O2'	64:6:7:G:H5'	2.03	0.58
15:O:40:ILE:CD1	53:3:1124:G:H4'	2.34	0.58
51:1:36:G:H4'	51:1:451:U:C2	2.38	0.58
51:1:572:A:H61	51:1:2029:G:N2	1.88	0.58
51:1:1319:C:O2'	51:1:1320:C:H5'	2.02	0.58
53:3:885:G:H2'	53:3:886:G:C8	2.39	0.58
53:3:1521:C:H2'	53:3:1522:U:C6	2.37	0.58
58:B1:412:LEU:HD22	58:B1:441:LEU:HD21	1.84	0.58
9:I:12:ARG:HH21	9:I:35:GLN:H	1.50	0.58
13:M:38:VAL:HG11	13:M:110:MET:HA	1.83	0.58
25:Y:73:ARG:O	25:Y:77:ASN:ND2	2.35	0.58
29:d:164:LEU:HB2	29:d:167:VAL:HG22	1.84	0.58
35:k:16:ALA:O	35:k:17:ARG:NH1	2.36	0.58
51:1:1197:G:H2'	51:1:1198:U:H6	1.67	0.58
51:1:1806:C:H2'	51:1:1807:G:O4'	2.04	0.58
52:2:24:G:H4'	52:2:25:U:C5	2.38	0.58
64:6:14:A:H2'	64:6:15:G:H5'	1.85	0.58
66:0:223:ILE:HB	66:0:243:LEU:HD22	1.86	0.58
12:L:137:ARG:NH1	12:L:138:GLU:OE2	2.36	0.58
51:1:414:C:H2'	51:1:415:A:C8	2.39	0.58
53:3:742:G:H2'	53:3:743:A:C8	2.38	0.58
51:1:1197:G:H2'	51:1:1198:U:C6	2.39	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1924:C:H3'	51:1:1925:C:C6	2.38	0.58
53:3:308:C:H2'	53:3:309:A:H8	1.69	0.58
64:6:4:G:H2'	64:6:5:G:O4'	2.03	0.58
9:I:58:GLN:HB3	9:I:62:ARG:HH21	1.68	0.58
20:T:13:GLU:OE1	20:T:83:ARG:NH2	2.36	0.58
28:c:128:ARG:NH2	51:1:2512:C:OP2	2.37	0.58
51:1:12:U:O2	51:1:12:U:H2'	2.02	0.58
51:1:1787:A:C2	51:1:1788:C:C6	2.91	0.58
51:1:2333:A:H5'	51:1:2335:A:H1'	1.85	0.58
27:b:221:GLY:HA2	27:b:224:MET:HE3	1.85	0.58
40:p:11:GLN:HB2	40:p:54:LEU:HD11	1.85	0.58
47:w:51:ARG:NH2	51:1:2384:U:OP2	2.37	0.58
51:1:62:U:O2'	51:1:63:A:H5'	2.04	0.58
51:1:1565:C:H2'	51:1:1567:G:N7	2.18	0.58
51:1:2123:G:O6	51:1:2174:C:N4	2.37	0.58
51:1:2196:C:H2'	51:1:2197:U:C6	2.39	0.58
53:3:180:U:H2'	53:3:181:A:O4'	2.03	0.58
7:G:176:ASN:ND2	7:G:194:GLY:O	2.33	0.57
32:g:139:PHE:O	32:g:141:LYS:NZ	2.37	0.57
51:1:1270:C:H5"	51:1:1271:G:H5'	1.84	0.57
53:3:41:G:H2'	53:3:42:G:C8	2.38	0.57
53:3:626:G:H2'	53:3:627:G:C8	2.39	0.57
53:3:1195:C:H2'	53:3:1197:A:O4'	2.04	0.57
57:A2:82:LEU:HD11	57:A2:171:LEU:HD23	1.86	0.57
58:B1:42:GLU:HB3	58:B1:52:GLU:HG3	1.86	0.57
59:B2:1142:ARG:NH1	59:B2:1161:LEU:O	2.36	0.57
65:a:26:ALA:HA	65:a:29:LEU:HB3	1.85	0.57
8:H:105:VAL:HG22	8:H:107:LYS:H	1.69	0.57
23:W:56:ARG:NH1	53:3:735:C:OP1	2.37	0.57
32:g:15:LEU:HG	32:g:51:ARG:HH22	1.69	0.57
42:r:79:ARG:NH1	51:1:572:A:OP2	2.37	0.57
51:1:1843:C:H2'	51:1:1844:C:C6	2.38	0.57
53:3:16:A:O2'	53:3:17:U:H5'	2.03	0.57
53:3:721:G:H4'	53:3:722:G:O4'	2.04	0.57
59:B2:707:ALA:O	59:B2:711:ASP:HB2	2.03	0.57
10:J:87:VAL:HG13	10:J:92:ARG:HG3	1.86	0.57
14:N:69:GLY:N	53:3:1250:A:H4'	2.20	0.57
27:b:140:VAL:O	27:b:161:VAL:N	2.35	0.57
40:p:33:GLU:OE1	40:p:38:ARG:NH1	2.37	0.57
51:1:1368:G:H2'	51:1:1369:G:H8	1.68	0.57
53:3:408:A:H61	53:3:434:U:H3	1.52	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1069:C:O2'	53:3:1192:C:H1'	2.03	0.57
58:B1:1046:ILE:HD12	58:B1:1059:LEU:HB3	1.86	0.57
17:Q:119:LYS:HD3	53:3:36:C:H5"	1.86	0.57
59:B2:1122:LYS:NZ	59:B2:1126:ASP:OD1	2.38	0.57
5:E:4:LYS:HD3	51:1:242:G:C8	2.38	0.57
8:H:18:ASN:HD21	8:H:39:ARG:HH12	1.51	0.57
37:m:66:ARG:NH1	37:m:104:GLU:OE2	2.37	0.57
38:n:92:GLY:HA3	51:1:2839:G:H21	1.69	0.57
51:1:211:C:H2'	51:1:212:G:C8	2.40	0.57
51:1:2675:A:H2'	51:1:2676:C:C6	2.39	0.57
58:B1:161:THR:HG23	58:B1:164:GLN:H	1.68	0.57
58:B1:741:ALA:O	58:B1:762:ASN:ND2	2.38	0.57
3:C:5:ARG:HG3	3:C:25:ASN:HA	1.86	0.57
10:J:36:THR:OG1	10:J:37:VAL:N	2.38	0.57
44:t:38:ALA:O	44:t:81:LYS:NZ	2.37	0.57
51:1:1941:C:H2'	51:1:1942:C:O4'	2.04	0.57
51:1:2475:C:N4	51:1:2529:G:H22	2.03	0.57
53:3:19:A:H1'	53:3:864:A:N3	2.19	0.57
53:3:279:A:H5"	53:3:281:G:C5'	2.34	0.57
53:3:1004:A:H5'	53:3:1024:G:H1	1.70	0.57
58:B1:99:ARG:CG	58:B1:99:ARG:HH11	2.18	0.57
58:B1:750:PRO:CB	59:B2:549:ASP:OD2	2.45	0.57
58:B1:1361:THR:HB	59:B2:1284:ALA:HB3	1.86	0.57
15:O:13:PHE:O	15:O:70:HIS:ND1	2.36	0.57
29:d:76:PRO:CA	29:d:82:GLY:HA3	2.35	0.57
51:1:1069:A:H2'	51:1:1073:A:N7	2.20	0.57
51:1:1697:G:C5'	51:1:1698:A:H5"	2.35	0.57
53:3:539:A:H2'	53:3:540:G:C8	2.40	0.57
58:B1:160:LEU:HD22	58:B1:164:GLN:HB3	1.86	0.57
66:0:616:ILE:HG13	66:0:688:ASP:HB2	1.87	0.57
7:G:138:ARG:HH21	7:G:142:LYS:HG2	1.69	0.57
16:P:71:ASP:HA	16:P:74:LYS:HG3	1.86	0.57
16:P:116:PRO:HA	53:3:675:A:H2	1.70	0.57
30:e:31:GLU:OE1	30:e:32:LYS:NZ	2.37	0.57
51:1:1332:G:N7	51:1:1609:A:H2'	2.18	0.57
53:3:651:C:H2'	53:3:652:U:O4'	2.04	0.57
53:3:1271:A:H5'	53:3:1314:C:C5'	2.34	0.57
53:3:1399:C:N3	53:3:1502:A:N1	2.53	0.57
66:0:31:LEU:HD21	66:0:68:THR:HG21	1.87	0.57
2:B:5:ASN:ND2	51:1:2020:A:N7	2.52	0.57
16:P:33:ILE:HG22	16:P:41:LEU:HD12	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:601:C:O2	51:1:605:G:H4'	2.05	0.57
51:1:2554:U:H2'	51:1:2555:U:C6	2.40	0.57
53:3:1016:A:H4'	53:3:1218:C:H4'	1.86	0.57
51:1:78:U:H2'	51:1:79:C:C6	2.40	0.57
51:1:1120:G:H2'	51:1:1121:C:O4'	2.05	0.57
51:1:1177:G:H2'	51:1:1178:C:H5"	1.86	0.57
51:1:1791:A:H2'	51:1:1792:G:C5'	2.34	0.57
51:1:1933:G:O2'	51:1:1974:C:H4'	2.04	0.57
66:0:168:PRO:HG2	66:0:218:TRP:HE1	1.70	0.57
5:E:27:ASN:O	5:E:35:LYS:NZ	2.38	0.56
8:H:60:ALA:HB3	62:NG:167:ARG:HA	1.86	0.56
10:J:120:HIS:CE1	10:J:121:ASN:ND2	2.73	0.56
20:T:19:ASN:HB2	53:3:750:C:O4'	2.04	0.56
51:1:324:A:H62	51:1:338:G:N2	2.00	0.56
51:1:2420:C:O2'	51:1:2421:G:H5'	2.05	0.56
51:1:2743:U:C3'	51:1:2744:G:H5"	2.35	0.56
58:B1:37:GLU:O	58:B1:61:ILE:CD1	2.52	0.56
20:T:60:SER:HB2	53:3:581:G:H5'	1.86	0.56
40:p:88:ARG:HD3	40:p:112:ARG:HD3	1.86	0.56
51:1:2396:G:O2'	51:1:2397:G:H5'	2.05	0.56
53:3:302:G:H2'	53:3:303:A:C8	2.41	0.56
53:3:882:C:O2'	53:3:883:C:H5'	2.04	0.56
2:B:49:ARG:O	2:B:51:ARG:NH2	2.37	0.56
11:K:90:MET:SD	23:W:60:ARG:NH1	2.78	0.56
13:M:24:VAL:HG13	13:M:62:LEU:HD11	1.87	0.56
13:M:27:PRO:O	13:M:32:LYS:NZ	2.38	0.56
25:Y:13:SER:O	25:Y:17:ARG:N	2.38	0.56
31:f:59:ASP:OD1	31:f:59:ASP:N	2.36	0.56
34:j:45:THR:OG1	41:q:63:ARG:NH2	2.37	0.56
39:o:2:ASP:N	52:2:59:A:HO2'	2.03	0.56
46:v:21:ARG:HH22	52:2:77:U:H5'	1.70	0.56
47:w:52:ASP:OD2	51:1:2364:C:H5'	2.05	0.56
51:1:28:A:O2'	51:1:583:G:H5'	2.05	0.56
51:1:849:A:H2'	51:1:850:U:H6	1.68	0.56
51:1:1774:C:H4'	51:1:1979:U:O2	2.05	0.56
51:1:1827:U:C2'	51:1:1828:G:H5'	2.35	0.56
51:1:2208:C:H2'	51:1:2209:G:H8	1.70	0.56
51:1:2692:G:H1'	51:1:2847:U:H1'	1.87	0.56
53:3:24:U:H2'	53:3:25:C:C6	2.40	0.56
53:3:428:G:H4'	53:3:429:U:H4'	1.86	0.56
53:3:885:G:H2'	53:3:886:G:H8	1.69	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1513:A:H2'	53:3:1514:G:C8	2.40	0.56
57:A2:28:LEU:HB2	57:A2:201:LEU:HB3	1.85	0.56
58:B1:102:MET:HG2	58:B1:246:PRO:HG3	1.87	0.56
58:B1:247:PRO:HA	58:B1:250:ARG:HG3	1.87	0.56
59:B2:818:VAL:HG22	59:B2:1096:ILE:HG12	1.87	0.56
65:a:26:ALA:HB1	65:a:30:LEU:HB2	1.87	0.56
66:0:438:LEU:HD22	66:0:469:ILE:HD11	1.88	0.56
4:D:12:ARG:HD2	4:D:44:VAL:HG11	1.88	0.56
9:I:65:GLY:O	9:I:96:ARG:NH1	2.39	0.56
14:N:5:TYR:HB2	14:N:20:ILE:HD11	1.86	0.56
18:R:87:GLY:O	18:R:91:ARG:NH2	2.39	0.56
19:S:5:MET:O	19:S:62:ARG:NH1	2.38	0.56
27:b:158:GLY:HA3	51:1:1820:U:C4	2.40	0.56
45:u:32:LYS:HE3	51:1:478:A:H4'	1.87	0.56
47:w:20:LYS:HD2	51:1:2355:G:H4'	1.86	0.56
47:w:33:ILE:HG22	47:w:34:VAL:HG23	1.88	0.56
51:1:379:G:H2'	51:1:380:G:O4'	2.05	0.56
51:1:1370:C:H2'	51:1:1371:G:O4'	2.04	0.56
51:1:2637:U:H2'	51:1:2638:G:O4'	2.04	0.56
53:3:416:G:H2'	53:3:417:G:H8	1.70	0.56
53:3:1093:A:C2'	53:3:1094:G:H5'	2.36	0.56
58:B1:130:MET:HE2	58:B1:135:ILE:HG12	1.87	0.56
65:a:19:LYS:NZ	65:a:20:GLN:O	2.38	0.56
66:0:493:THR:O	66:0:610:PRO:HA	2.06	0.56
13:M:15:ASN:HB3	53:3:827:U:H4'	1.86	0.56
46:v:72:VAL:HA	46:v:94:ALA:H	1.71	0.56
51:1:1114:C:H2'	51:1:1115:G:C8	2.41	0.56
51:1:2050:C:C2'	51:1:2051:A:H5'	2.32	0.56
52:2:4:C:H2'	52:2:5:U:C6	2.41	0.56
53:3:936:C:H2'	53:3:937:A:O4'	2.04	0.56
58:B1:198:CYS:HA	58:B1:221:ILE:HD11	1.86	0.56
3:C:8:ILE:HB	3:C:24:LYS:HB2	1.88	0.56
8:H:32:LEU:HD13	19:S:92:ILE:HD11	1.88	0.56
14:N:47:VAL:HG23	14:N:48:ARG:HG3	1.88	0.56
30:e:113:PHE:HZ	30:e:175:PRO:HB3	1.71	0.56
44:t:55:VAL:O	44:t:88:LYS:NZ	2.37	0.56
47:w:35:ARG:HH21	51:1:2355:G:H1'	1.69	0.56
51:1:959:A:H1'	51:1:2457:U:O2'	2.06	0.56
51:1:2430:A:N3	51:1:2430:A:H2'	2.20	0.56
51:1:2584:U:H2'	51:1:2585:U:H2'	1.87	0.56
53:3:416:G:H2'	53:3:417:G:C8	2.41	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1513:A:H2'	53:3:1514:G:H8	1.70	0.56
53:3:1525:G:O2'	53:3:1526:G:H5'	2.06	0.56
12:L:91:ARG:CB	12:L:93:VAL:HG12	2.32	0.56
18:R:113:LYS:NZ	64:6:44:A:H4'	2.20	0.56
33:i:53:PRO:HD2	33:i:77:VAL:HG21	1.87	0.56
33:i:123:ALA:HB1	51:1:1081:U:H4'	1.87	0.56
51:1:259:G:O2'	51:1:260:G:H5'	2.06	0.56
51:1:1310:G:C2'	51:1:1311:G:H5'	2.34	0.56
51:1:1868:C:H2'	51:1:1869:G:C5'	2.35	0.56
51:1:2317:A:H2'	51:1:2318:G:O4'	2.06	0.56
53:3:212:G:H2'	53:3:213:G:C8	2.38	0.56
53:3:1395:C:O2'	53:3:1396:A:H8	1.70	0.56
59:B2:13:LYS:HB2	59:B2:1180:MET:HE2	1.87	0.56
63:5:38:A:C8	63:5:39:U:H1'	2.40	0.56
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
8:H:82:ASP:HA	8:H:85:LYS:HD2	1.86	0.56
27:b:17:LYS:HD3	51:1:1565:C:OP1	2.05	0.56
28:c:109:VAL:HG23	28:c:172:VAL:HG13	1.88	0.56
40:p:15:ASP:N	40:p:15:ASP:OD1	2.39	0.56
51:1:1783:A:N1	51:1:2587:A:H2'	2.21	0.56
66:0:11:ARG:NH2	66:0:283:ILE:O	2.39	0.56
21:U:1:MET:HB2	53:3:135:C:N3	2.21	0.56
26:Z:48:LYS:HB3	53:3:723:U:C5	2.41	0.56
33:i:3:LYS:HD3	51:1:1055:G:O5'	2.06	0.56
34:j:60:ASP:HA	34:j:93:ILE:HD11	1.88	0.56
50:z:10:ARG:NH2	50:z:52:PHE:O	2.39	0.56
51:1:27:G:N2	51:1:512:G:H1'	2.20	0.56
51:1:923:G:O2'	51:1:924:G:H5'	2.06	0.56
51:1:1186:G:N2	51:1:1187:G:H1'	2.20	0.56
51:1:1801:A:H5"	51:1:2203:U:C2'	2.35	0.56
51:1:2529:G:H5'	51:1:2530:A:H5"	1.87	0.56
58:B1:144:TYR:HE1	58:B1:162:GLU:CD	2.14	0.56
66:0:323:LYS:HB2	66:0:335:PHE:HB2	1.88	0.56
4:D:8:SER:OG	4:D:9:VAL:N	2.38	0.56
8:H:20:THR:HA	19:S:93:PRO:HB3	1.88	0.56
8:H:120:THR:HG23	8:H:188:ALA:HB2	1.87	0.56
13:M:74:ILE:HG22	13:M:128:VAL:HA	1.87	0.56
35:k:65:THR:HA	35:k:82:ASN:HA	1.88	0.56
51:1:683:U:H3	51:1:794:A:H61	1.53	0.56
51:1:1141:U:H4'	51:1:1142:A:O4'	2.05	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1740:G:H2'	51:1:1741:C:C6	2.41	0.56
51:1:2041:U:H2'	51:1:2042:A:C8	2.40	0.56
53:3:301:G:H2'	53:3:302:G:C8	2.41	0.56
57:A1:29:GLU:HB3	57:A1:200:LYS:HG3	1.88	0.56
58:B1:510:LEU:HD22	58:B1:601:ILE:HD12	1.86	0.56
14:N:11:ARG:NH1	14:N:106:ASP:O	2.39	0.55
25:Y:2:ASN:O	25:Y:7:LYS:NZ	2.38	0.55
26:Z:66:ARG:NH1	53:3:1098:C:O2'	2.38	0.55
28:c:63:PRO:O	28:c:67:HIS:N	2.39	0.55
51:1:2524:G:C2'	51:1:2525:G:H5"	2.34	0.55
51:1:2726:A:O2'	51:1:2727:A:H5'	2.06	0.55
52:2:105:G:H2'	52:2:106:G:H8	1.71	0.55
53:3:560:A:H5'	53:3:566:G:N2	2.21	0.55
53:3:971:G:OP1	53:3:971:G:H3'	2.07	0.55
66:0:322:PHE:HB3	66:0:323:LYS:HD2	1.86	0.55
10:J:120:HIS:CE1	10:J:121:ASN:HD21	2.23	0.55
15:O:42:LEU:HD22	15:O:71:LEU:HB2	1.88	0.55
29:d:2:GLU:HB2	29:d:11:ALA:HB1	1.87	0.55
30:e:32:LYS:HB3	30:e:91:ARG:HE	1.71	0.55
30:e:56:LEU:HG	30:e:59:ILE:HD12	1.89	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'	1.88	0.55
51:1:1923:U:H2'	51:1:1924:C:H6	1.70	0.55
53:3:1244:G:H2'	53:3:1245:C:C6	2.40	0.55
53:3:1257:A:H3'	53:3:1257:A:N3	2.21	0.55
53:3:1401:G:H2'	53:3:1402:C:O4'	2.06	0.55
14:N:83:THR:HG21	14:N:102:PHE:HB3	1.88	0.55
28:c:119:ALA:O	51:1:1655:A:H4'	2.06	0.55
30:e:46:LYS:NZ	30:e:82:TYR:OH	2.40	0.55
51:1:310:A:C2'	51:1:311:A:H5"	2.37	0.55
51:1:1257:C:O5'	51:1:1257:C:H6	1.90	0.55
51:1:2207:C:O2'	51:1:2208:C:H5'	2.07	0.55
51:1:2299:U:H2'	51:1:2300:C:C6	2.42	0.55
51:1:2496:C:C2'	51:1:2497:A:H5'	2.36	0.55
51:1:2508:G:C6	51:1:2582:G:O6	2.59	0.55
51:1:2563:U:H2'	51:1:2564:A:H5"	1.88	0.55
53:3:357:G:OP1	53:3:367:U:H5"	2.06	0.55
53:3:593:U:H2'	53:3:594:U:C6	2.41	0.55
7:G:59:ILE:HG12	7:G:62:ARG:HH21	1.71	0.55
17:Q:50:LYS:NZ	17:Q:51:VAL:O	2.39	0.55
21:U:5:ARG:NH2	21:U:23:ASP:O	2.40	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:d:112:LEU:HD22	29:d:117:ARG:HB3	1.88	0.55
40:p:87:ARG:NH2	40:p:109:ILE:O	2.36	0.55
41:q:68:ALA:HB1	41:q:73:ILE:HG13	1.87	0.55
51:1:36:G:H4'	51:1:451:U:N3	2.21	0.55
51:1:687:C:H2'	51:1:688:U:C5'	2.36	0.55
52:2:4:C:H6	52:2:4:C:H5'	1.71	0.55
58:B1:804:ALA:HA	58:B1:1259:GLN:HG3	1.88	0.55
58:B1:833:GLU:HB2	58:B1:1242:ARG:NH1	2.22	0.55
7:G:101:THR:HG22	53:3:1074:G:H4'	1.88	0.55
11:K:89:VAL:HG23	53:3:737:C:H5'	1.89	0.55
19:S:75:LYS:HZ3	53:3:1357:A:H5"	1.70	0.55
51:1:146:A:H2'	51:1:147:C:C6	2.41	0.55
51:1:490:C:H5'	51:1:491:G:OP2	2.06	0.55
51:1:881:G:H2'	51:1:882:G:H8	1.71	0.55
51:1:2796:U:H3	51:1:2799:A:H61	1.52	0.55
53:3:459:A:H2'	53:3:460:A:C8	2.42	0.55
53:3:684:U:H2'	53:3:685:G:O4'	2.06	0.55
58:B1:508:LEU:HD22	59:B2:1101:LEU:HD21	1.88	0.55
66:0:225:SER:O	66:0:255:ARG:NH1	2.39	0.55
5:E:43:LEU:HD11	51:1:2362:C:P	2.46	0.55
8:H:21:TRP:HD1	8:H:57:GLU:HA	1.71	0.55
9:I:96:ARG:NH2	9:I:98:ASP:OD2	2.39	0.55
10:J:25:LYS:HG3	53:3:923:A:H5'	1.87	0.55
13:M:14:ARG:NH1	13:M:74:ILE:O	2.39	0.55
22:V:64:ARG:HB2	53:3:130:A:H8	1.71	0.55
38:n:11:ASN:N	51:1:1653:G:O6	2.37	0.55
51:1:155:A:H2'	51:1:156:A:H8	1.71	0.55
51:1:1697:G:C3'	51:1:1698:A:H5"	2.36	0.55
53:3:596:A:H2'	53:3:597:G:O4'	2.07	0.55
59:B2:839:VAL:HG12	59:B2:1049:ILE:HG12	1.87	0.55
4:D:37:LYS:NZ	51:1:468:G:OP2	2.34	0.55
10:J:19:ARG:HG2	10:J:30:PHE:HB3	1.89	0.55
12:L:91:ARG:O	12:L:95:ARG:CG	2.55	0.55
13:M:84:ILE:HD11	13:M:86:LYS:HG2	1.89	0.55
27:b:140:VAL:HG12	27:b:191:LEU:HA	1.89	0.55
41:q:24:TYR:OH	51:1:2020:A:O3'	2.25	0.55
51:1:1255:U:OP1	51:1:1256:G:H5"	2.06	0.55
53:3:46:G:H2'	53:3:366:A:H62	1.72	0.55
53:3:1127:G:H2'	53:3:1128:C:C6	2.41	0.55
58:B1:39:LYS:O	58:B1:273:ILE:HG21	2.06	0.55
58:B1:759:ILE:HG23	58:B1:771:GLN:HB3	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
66:0:427:ASP:O	66:0:431:MET:N	2.39	0.55
3:C:21:THR:HG21	51:1:2419:U:H5"	1.89	0.55
12:L:32:ASP:HA	53:3:1350:A:O2'	2.06	0.55
51:1:1791:A:O2'	51:1:1792:G:H5'	2.07	0.55
51:1:1827:U:H2'	51:1:1828:G:H5'	1.88	0.55
51:1:2682:A:H61	51:1:2728:U:H1'	1.72	0.55
58:B1:1166:GLY:HA3	58:B1:1174:ARG:HB2	1.88	0.55
65:a:189:LEU:HA	65:a:192:LEU:HG	1.88	0.55
66:0:694:VAL:HA	66:0:697:ALA:HB3	1.87	0.55
3:C:36:LYS:NZ	3:C:45:HIS:O	2.38	0.55
28:c:110:THR:OG1	28:c:111:GLY:N	2.38	0.55
36:l:29:LYS:HG2	51:1:566:U:OP1	2.07	0.55
41:q:5:ARG:NH2	51:1:1251:C:OP2	2.40	0.55
51:1:171:U:H2'	51:1:172:A:C8	2.42	0.55
51:1:2008:C:H2'	51:1:2009:A:C8	2.42	0.55
53:3:1091:U:H2'	53:3:1093:A:OP2	2.07	0.55
53:3:1213:A:O2'	53:3:1214:C:H2'	2.06	0.55
66:0:103:MET:HB3	66:0:135:VAL:HG21	1.89	0.55
66:0:564:GLY:HA3	66:0:569:TYR:H	1.71	0.55
5:E:22:LYS:HZ1	51:1:631:A:H5"	1.72	0.55
26:Z:13:VAL:HG13	26:Z:15:LEU:HG	1.89	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
38:n:64:ARG:O	38:n:68:ALA:N	2.40	0.55
51:1:207:A:H2'	51:1:208:C:O4'	2.07	0.55
51:1:305:C:H2'	51:1:306:U:C6	2.42	0.55
51:1:1191:G:H2'	51:1:1192:G:H8	1.71	0.55
51:1:1343:G:H1'	51:1:1597:A:C4	2.42	0.55
53:3:1096:C:H2'	53:3:1097:C:C6	2.41	0.55
53:3:1390:U:H2'	53:3:1391:U:C6	2.42	0.55
66:0:192:ASN:HB3	66:0:203:GLU:HB2	1.87	0.55
1:A:28:VAL:HG23	30:e:139:GLU:HA	1.88	0.54
6:F:10:LEU:HD21	51:1:2477:U:C5	2.42	0.54
10:J:16:ALA:HB3	10:J:35:LEU:H	1.71	0.54
16:P:122:PRO:HG2	26:Z:34:ARG:HA	1.89	0.54
28:c:118:PHE:HD2	51:1:1654:A:C2	2.24	0.54
51:1:286:U:H2'	51:1:287:G:H8	1.73	0.54
51:1:486:C:H42	51:1:494:G:H1	1.56	0.54
51:1:1614:A:H2'	51:1:1615:C:H5'	1.89	0.54
51:1:1809:A:H2'	51:1:1810:A:C8	2.42	0.54
51:1:2048:G:C2'	51:1:2049:G:H5"	2.37	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1348:U:H2'	53:3:1349:A:H5'	1.87	0.54
58:B1:58:CYS:SG	58:B1:59:ALA:N	2.80	0.54
58:B1:1155:ILE:HG13	58:B1:1210:ILE:HB	1.89	0.54
66:0:488:VAL:HG11	66:0:661:SER:HA	1.88	0.54
27:b:206:LYS:HE3	27:b:209:ALA:HB2	1.89	0.54
29:d:147:LEU:HB3	29:d:186:VAL:HG12	1.88	0.54
30:e:120:SER:HA	51:1:2303:G:H4'	1.89	0.54
30:e:127:TYR:HB3	30:e:155:ILE:HG13	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
44:t:14:PRO:HA	44:t:32:LEU:HA	1.90	0.54
48:x:2:ARG:HG2	48:x:32:LEU:CD1	2.37	0.54
51:1:130:C:H2'	51:1:131:A:O4'	2.07	0.54
51:1:1040:A:H2'	51:1:1041:G:H8	1.72	0.54
51:1:1063:G:OP2	51:1:1070:A:H4'	2.06	0.54
51:1:1403:A:H2'	51:1:1404:C:C6	2.42	0.54
53:3:350:G:O2'	53:3:351:G:H5'	2.08	0.54
53:3:874:G:H2'	53:3:875:U:C6	2.42	0.54
53:3:1325:C:H2'	53:3:1326:U:C6	2.42	0.54
65:a:194:VAL:HA	65:a:197:LYS:HB2	1.89	0.54
8:H:26:LYS:HE3	53:3:1256:A:H3'	1.89	0.54
9:I:205:LYS:HE2	53:3:8:A:C6	2.42	0.54
13:M:9:MET:HB2	13:M:32:LYS:HE2	1.87	0.54
17:Q:23:LEU:HB2	17:Q:29:LYS:HD3	1.90	0.54
21:U:16:PHE:CE2	53:3:625:U:H5"	2.42	0.54
25:Y:14:GLU:O	25:Y:18:LYS:NZ	2.41	0.54
33:i:11:GLN:HB2	33:i:56:VAL:HG22	1.88	0.54
37:m:1:MET:HE1	63:5:63:G:H21	1.72	0.54
38:n:2:ARG:NH1	51:1:2820:A:OP2	2.41	0.54
51:1:310:A:H2'	51:1:311:A:H5"	1.90	0.54
51:1:605:G:H21	51:1:658:U:H5'	1.73	0.54
51:1:2128:G:H5'	65:a:218:MET:HE1	1.89	0.54
53:3:1042:A:H2'	53:3:1043:G:C4'	2.37	0.54
53:3:1105:A:H2'	53:3:1106:G:C8	2.42	0.54
58:B1:799:ARG:HG2	58:B1:1325:PHE:HZ	1.72	0.54
59:B2:29:SER:O	59:B2:33:ASP:HB2	2.07	0.54
10:J:153:ALA:HB1	10:J:160:VAL:HA	1.90	0.54
15:O:43:PRO:HA	53:3:1151:A:H5'	1.89	0.54
19:S:9:GLU:HA	19:S:12:ARG:HB2	1.89	0.54
27:b:204:LEU:HD21	27:b:213:ARG:HH21	1.72	0.54
39:o:33:ARG:HD3	52:2:52:A:N7	2.22	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:u:65:GLN:OE1	51:1:328:U:H4'	2.07	0.54
51:1:2813:A:H2'	51:1:2814:A:C8	2.42	0.54
53:3:866:C:C4	53:3:867:G:H1'	2.42	0.54
53:3:1042:A:H2'	53:3:1043:G:O4'	2.08	0.54
53:3:1347:G:H22	53:3:1373:G:H2'	1.72	0.54
57:A2:100:LEU:HD23	57:A2:115:ILE:HG21	1.89	0.54
63:5:31:A:H5'	63:5:33:U:O4	2.07	0.54
3:C:40:PRO:HG3	51:1:2348:U:H4'	1.89	0.54
11:K:46:GLN:NE2	11:K:47:LEU:O	2.39	0.54
27:b:257:ARG:HD3	51:1:1799:G:OP1	2.07	0.54
38:n:98:LEU:HB2	38:n:112:TYR:HB2	1.88	0.54
51:1:614:A:H5'	51:1:615:U:OP1	2.06	0.54
51:1:1192:G:O2'	51:1:1193:G:H5'	2.08	0.54
51:1:1652:A:H2'	51:1:1653:G:O4'	2.07	0.54
53:3:539:A:H2'	53:3:540:G:H8	1.72	0.54
59:B2:633:LEU:HD13	59:B2:644:LEU:HD23	1.89	0.54
59:B2:684:ASN:OD1	59:B2:687:ARG:NH2	2.41	0.54
59:B2:985:GLU:HB3	59:B2:988:LYS:HB2	1.88	0.54
59:B2:1117:LEU:HD12	59:B2:1195:ILE:HG12	1.90	0.54
66:0:393:THR:OG1	66:0:408:ARG:NH1	2.40	0.54
12:L:91:ARG:NE	12:L:91:ARG:HA	2.22	0.54
17:Q:120:ARG:HG2	53:3:37:U:H5'	1.89	0.54
51:1:1905:C:H2'	51:1:1930:G:C8	2.42	0.54
53:3:1414:U:H2'	53:3:1415:G:C8	2.43	0.54
66:0:416:ILE:N	66:0:460:GLY:O	2.40	0.54
9:I:141:VAL:HA	9:I:180:THR:HA	1.88	0.54
12:L:111:GLY:HA2	12:L:118:ARG:HG2	1.88	0.54
21:U:1:MET:SD	21:U:24:SER:OG	2.64	0.54
29:d:70:SER:C	51:1:674:G:H5"	2.33	0.54
42:r:76:LYS:NZ	42:r:85:LYS:O	2.40	0.54
51:1:471:A:H2'	51:1:472:A:O4'	2.08	0.54
51:1:1126:A:H4'	51:1:1127:A:C5'	2.38	0.54
66:0:171:LEU:HB2	66:0:183:VAL:HB	1.88	0.54
23:W:49:LYS:HB2	53:3:835:U:OP1	2.08	0.54
27:b:208:GLY:HA2	27:b:211:ARG:HB3	1.89	0.54
53:3:162:A:H2'	53:3:163:C:H5'	1.88	0.54
53:3:1399:C:H4'	53:3:1400:C:H3'	1.88	0.54
59:B2:811:ASN:HA	59:B2:815:SER:HB2	1.90	0.54
66:0:92:HIS:HD2	66:0:464:LEU:HD21	1.71	0.54
6:F:5:ALA:HB3	51:1:2466:C:H5'	1.88	0.54
51:1:121:G:H4'	51:1:149:A:H5'	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:142:A:H2'	51:1:143:C:C6	2.42	0.54
52:2:78:A:H62	52:2:98:G:N2	1.97	0.54
53:3:36:C:H2'	53:3:37:U:H6	1.73	0.54
53:3:1234:C:H1'	53:3:1364:U:O2	2.08	0.54
58:B1:785:ASP:O	58:B1:789:LYS:HB2	2.08	0.54
63:5:40:C:H2'	63:5:41:C:C6	2.42	0.54
5:E:48:MET:SD	5:E:48:MET:N	2.79	0.54
13:M:105:THR:HG22	13:M:107:LYS:H	1.73	0.54
24:X:4:LEU:HG	24:X:6:LYS:H	1.72	0.54
27:b:106:PRO:HG2	27:b:109:LEU:HB2	1.90	0.54
31:f:2:ARG:HG2	51:1:2751:G:C4	2.43	0.54
51:1:1319:C:H2'	51:1:1320:C:H6	1.73	0.54
51:1:1433:A:H2'	51:1:1434:A:C1'	2.38	0.54
51:1:1936:A:H2	51:1:1943:U:H3	1.50	0.54
51:1:2375:G:C2'	51:1:2376:A:H5"	2.38	0.54
58:B1:746:LEU:HG	58:B1:758:PRO:HG3	1.90	0.54
66:0:632:ILE:HA	66:0:635:LEU:HB3	1.89	0.54
8:H:58:ARG:HA	8:H:63:ILE:HA	1.90	0.53
14:N:45:MET:HE3	14:N:49:GLN:HA	1.90	0.53
14:N:104:THR:HG22	53:3:1180:A:OP1	2.08	0.53
32:g:29:PHE:HB2	51:1:2198:A:C2	2.43	0.53
39:o:15:ARG:NH2	39:o:95:SER:OG	2.39	0.53
51:1:772:C:H5"	51:1:1356:G:H5'	1.90	0.53
51:1:851:C:H2'	51:1:852:U:C6	2.42	0.53
51:1:1889:A:H2'	51:1:1890:A:H8	1.73	0.53
53:3:1013:G:N2	53:3:1015:G:H3'	2.23	0.53
53:3:1402:C:H2'	53:3:1403:C:O4'	2.08	0.53
58:B1:99:ARG:HG3	58:B1:99:ARG:HH11	1.73	0.53
59:B2:360:LEU:HD13	59:B2:378:ARG:HH11	1.72	0.53
16:P:124:LYS:HA	26:Z:34:ARG:HE	1.73	0.53
41:q:48:ASP:HA	41:q:51:GLN:HB3	1.89	0.53
51:1:737:C:H2'	51:1:738:G:H8	1.72	0.53
51:1:2092:U:C5	51:1:2199:A:H2	2.26	0.53
51:1:2155:U:OP1	51:1:2157:G:N2	2.41	0.53
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
53:3:563:A:H4'	53:3:566:G:O2'	2.09	0.53
53:3:1420:U:H3	53:3:1480:A:H2	1.54	0.53
58:B1:145:VAL:HG23	58:B1:159:ILE:HG22	1.89	0.53
58:B1:1175:LEU:HD22	58:B1:1190:ILE:HD11	1.88	0.53
59:B2:103:VAL:HB	59:B2:114:VAL:HG11	1.89	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:10:LYS:HG2	7:G:211:LEU:HD21	1.89	0.53
7:G:20:ARG:HD2	53:3:831:A:C5'	2.39	0.53
8:H:179:ALA:HB1	8:H:202:PHE:HE1	1.73	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
51:1:1127:A:C2'	51:1:1128:G:H5"	2.37	0.53
51:1:1550:C:H2'	51:1:1551:A:H8	1.73	0.53
51:1:1659:G:H2'	51:1:1660:G:O4'	2.08	0.53
51:1:1760:C:H2'	51:1:1761:C:H5'	1.91	0.53
51:1:1836:C:C2'	51:1:1837:C:H5'	2.37	0.53
53:3:1084:G:HO2'	53:3:1103:C:H5	1.56	0.53
57:A1:47:LEU:HD23	57:A1:51:MET:HG3	1.89	0.53
59:B2:243:PRO:HB2	59:B2:274:ILE:HG23	1.90	0.53
22:V:49:ASN:ND2	22:V:51:GLU:OE2	2.42	0.53
28:c:15:PHE:HB3	40:p:78:PRO:HD3	1.89	0.53
29:d:68:ALA:HA	51:1:1255:U:C6	2.42	0.53
29:d:141:MET:HB2	29:d:143:LEU:HD11	1.90	0.53
52:2:102:G:H2'	52:2:103:U:O4'	2.08	0.53
53:3:951:G:H2'	53:3:952:U:C6	2.43	0.53
53:3:1093:A:C6	53:3:1095:U:H1'	2.43	0.53
53:3:1271:A:C5'	53:3:1314:C:H5"	2.38	0.53
57:A2:29:GLU:HG3	57:A2:200:LYS:HG3	1.88	0.53
58:B1:39:LYS:O	58:B1:273:ILE:HG23	2.08	0.53
58:B1:209:ASN:HA	58:B1:214:ARG:HH21	1.74	0.53
58:B1:352:ARG:HD2	59:B2:1268:GLN:HE21	1.68	0.53
58:B1:800:LEU:HB3	58:B1:920:ALA:HB1	1.89	0.53
59:B2:628:HIS:HB3	59:B2:647:ARG:HH21	1.74	0.53
65:a:11:ILE:HG13	65:a:219:GLY:HA3	1.91	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
28:c:146:ILE:O	28:c:159:LYS:NZ	2.41	0.53
38:n:8:ARG:NH2	38:n:43:GLU:OE1	2.42	0.53
38:n:60:VAL:HG12	38:n:64:ARG:HH22	1.73	0.53
46:v:73:LYS:O	46:v:92:VAL:N	2.41	0.53
51:1:155:A:H2'	51:1:156:A:C8	2.44	0.53
51:1:231:A:H2'	51:1:232:G:O4'	2.08	0.53
51:1:351:C:H2'	51:1:352:A:C8	2.44	0.53
51:1:2516:A:O2'	51:1:2517:C:H5'	2.08	0.53
51:1:2638:G:H1	51:1:2775:G:H2'	1.74	0.53
53:3:952:U:H2'	53:3:953:G:H8	1.73	0.53
58:B1:30:ILE:HG21	58:B1:241:VAL:O	2.08	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:B1:78:LEU:O	58:B1:78:LEU:HD13	2.08	0.53
66:0:415:VAL:H	66:0:461:MET:HA	1.73	0.53
10:J:53:ARG:CZ	53:3:1071:C:H5'	2.39	0.53
10:J:154:ALA:O	10:J:158:LYS:NZ	2.41	0.53
11:K:11:HIS:ND1	11:K:14:GLN:OE1	2.41	0.53
29:d:133:LEU:O	29:d:136:GLN:NE2	2.40	0.53
33:i:9:LYS:HD2	51:1:1059:G:OP2	2.07	0.53
37:m:27:SER:OG	37:m:66:ARG:NH1	2.42	0.53
43:s:40:ASN:OD1	43:s:40:ASN:N	2.40	0.53
49:y:21:LEU:HA	49:y:25:GLN:HB3	1.90	0.53
51:1:533:G:H1	51:1:560:C:H42	1.56	0.53
51:1:2124:G:N1	51:1:2175:C:O2	2.42	0.53
53:3:337:G:H2'	53:3:338:A:H8	1.74	0.53
53:3:737:C:H2'	53:3:738:C:H6	1.74	0.53
53:3:1077:G:N2	53:3:1079:G:H3'	2.23	0.53
53:3:1507:A:H61	53:3:1528:U:H3	1.56	0.53
4:D:11:LYS:HE2	51:1:770:G:OP2	2.09	0.53
4:D:13:ASN:HB3	51:1:125:A:C4'	2.39	0.53
28:c:23:PRO:HB3	51:1:2682:A:C2	2.43	0.53
37:m:127:LYS:HE2	51:1:1030:C:OP2	2.08	0.53
38:n:103:ARG:HB3	38:n:108:ALA:H	1.74	0.53
51:1:1352:U:O2'	51:1:1353:A:H5'	2.08	0.53
51:1:2048:G:H3'	51:1:2049:G:H5"	1.91	0.53
51:1:2125:G:H5'	65:a:39:VAL:C	2.34	0.53
51:1:2373:G:H2'	51:1:2374:C:C6	2.43	0.53
53:3:36:C:H2'	53:3:37:U:C6	2.44	0.53
57:A2:28:LEU:HD22	57:A2:201:LEU:HD23	1.90	0.53
58:B1:770:LEU:CD1	59:B2:618:GLN:HG3	2.37	0.53
63:5:38:A:H2'	63:5:39:U:H4'	1.91	0.53
65:a:63:THR:HG21	65:a:195:ALA:HB1	1.90	0.53
66:0:501:VAL:CG1	66:0:607:LYS:HZ1	2.21	0.53
66:0:641:MET:HB3	66:0:657:GLU:HB2	1.90	0.53
6:F:24:ARG:HE	6:F:36:ARG:HG3	1.73	0.53
12:L:53:SER:HB2	12:L:55:LYS:HE3	1.91	0.53
13:M:9:MET:HE1	13:M:35:ILE:HD13	1.91	0.53
14:N:11:ARG:HH11	14:N:105:ARG:HH12	1.57	0.53
22:V:46:HIS:HB2	22:V:70:LYS:HD3	1.91	0.53
28:c:144:GLY:HA2	51:1:2578:G:H1'	1.91	0.53
36:l:29:LYS:HE3	51:1:566:U:H5"	1.90	0.53
51:1:534:U:H3	51:1:559:G:H1	1.55	0.53
51:1:1065:U:H3'	51:1:1066:U:H5"	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2276:G:O2'	51:1:2277:G:H5'	2.09	0.53
51:1:2699:C:H2'	51:1:2700:A:C8	2.44	0.53
52:2:24:G:H4'	52:2:25:U:H5	1.73	0.53
53:3:601:G:H2'	53:3:602:A:C8	2.44	0.53
58:B1:814:CYS:SG	58:B1:883:ARG:NH2	2.81	0.53
66:0:327:ASP:O	66:0:437:ARG:NH2	2.42	0.53
12:L:63:VAL:HA	12:L:66:GLU:HG2	1.91	0.53
16:P:99:LEU:O	16:P:103:GLY:N	2.38	0.53
25:Y:14:GLU:OE2	25:Y:18:LYS:NZ	2.41	0.53
36:l:29:LYS:HA	51:1:810:U:C5	2.44	0.53
39:o:29:HIS:HB3	39:o:36:TYR:HD2	1.74	0.53
39:o:30:ARG:HG3	39:o:102:ARG:HD2	1.89	0.53
51:1:838:C:H2'	51:1:839:U:C6	2.44	0.53
51:1:859:G:N2	51:1:916:G:H2'	2.23	0.53
51:1:937:C:H2'	51:1:938:G:C8	2.43	0.53
51:1:1357:C:H42	51:1:1374:G:H1	1.57	0.53
51:1:2694:G:H2'	51:1:2695:U:O4'	2.09	0.53
53:3:690:G:H2'	53:3:691:G:O4'	2.08	0.53
57:A1:16:ILE:HG23	57:A1:26:VAL:HG22	1.91	0.53
58:B1:111:THR:HG22	58:B1:300:GLN:NE2	2.23	0.53
58:B1:832:LYS:HB3	58:B1:1242:ARG:NH1	2.24	0.53
59:B2:1070:HIS:NE2	59:B2:1114:GLU:OE1	2.36	0.53
59:B2:1142:ARG:NH2	59:B2:1166:ASP:OD1	2.38	0.53
13:M:32:LYS:HA	13:M:35:ILE:HD12	1.90	0.53
17:Q:6:LEU:HD21	17:Q:11:ARG:HH21	1.73	0.53
19:S:8:ARG:HB2	19:S:62:ARG:HH12	1.74	0.53
29:d:45:ALA:HB3	51:1:38:A:H4'	1.91	0.53
30:e:33:ILE:HD12	30:e:155:ILE:HG22	1.90	0.53
38:n:39:PRO:CG	51:1:1651:G:H5'	2.33	0.53
43:s:4:ILE:HG23	43:s:106:VAL:HG22	1.91	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
51:1:1674:G:N2	51:1:1677:A:H61	2.07	0.53
51:1:1783:A:C6	51:1:2587:A:C4	2.96	0.53
52:2:33:G:H2'	52:2:34:A:O4'	2.09	0.53
53:3:1169:A:H2'	53:3:1170:A:O4'	2.09	0.53
66:0:217:GLU:O	66:0:220:GLN:NE2	2.41	0.53
8:H:18:ASN:HA	8:H:55:VAL:HG22	1.91	0.52
32:g:2:GLN:HB3	32:g:18:GLN:HB3	1.91	0.52
51:1:351:C:H2'	51:1:352:A:H8	1.73	0.52
51:1:1303:G:H2'	51:1:1304:A:H8	1.74	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:722:G:H1	53:3:733:G:H1	1.56	0.52
53:3:1421:G:H3'	53:3:1422:G:H5"	1.90	0.52
57:A2:140:ILE:HD12	57:A2:142:MET:HE3	1.91	0.52
58:B1:205:LEU:HG	58:B1:217:LEU:HB3	1.90	0.52
58:B1:975:ILE:HD11	58:B1:1003:LEU:HD11	1.91	0.52
66:0:136:PRO:HG2	66:0:287:PRO:HG3	1.90	0.52
7:G:210:THR:HA	7:G:213:LEU:HB2	1.90	0.52
33:i:101:SER:OG	33:i:102:ARG:N	2.42	0.52
40:p:19:PHE:HE2	40:p:46:VAL:HG21	1.74	0.52
51:1:1536:C:H4'	51:1:1537:G:C2	2.44	0.52
51:1:1655:A:H2'	51:1:1656:C:H5'	1.91	0.52
53:3:884:U:OP2	53:3:884:U:H6	1.92	0.52
53:3:1274:A:C2'	53:3:1275:A:H5"	2.40	0.52
58:B1:112:ALA:HA	58:B1:238:ILE:HA	1.91	0.52
66:0:107:ASP:OD1	66:0:107:ASP:N	2.40	0.52
66:0:334:THR:OG1	66:0:385:ALA:N	2.40	0.52
66:0:446:ARG:HH11	66:0:447:VAL:H	1.54	0.52
66:0:520:ILE:HB	66:0:576:ILE:HD11	1.90	0.52
12:L:14:ASP:OD1	12:L:43:TYR:OH	2.24	0.52
25:Y:76:ALA:O	25:Y:79:THR:OG1	2.27	0.52
29:d:1:MET:N	29:d:14:VAL:O	2.35	0.52
33:i:92:PRO:HB3	33:i:134:SER:HA	1.89	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
51:1:133:U:H3	51:1:146:A:H61	1.57	0.52
51:1:532:A:H2'	51:1:532:A:N3	2.24	0.52
51:1:2345:G:N3	51:1:2381:A:H2'	2.24	0.52
51:1:2402:U:O2'	51:1:2403:C:H5"	2.09	0.52
57:A2:43:LEU:HD13	57:A2:217:ILE:HD11	1.90	0.52
58:B1:215:LYS:HA	58:B1:218:THR:HG22	1.92	0.52
66:0:53:MET:O	66:0:57:GLN:NE2	2.43	0.52
7:G:67:LEU:HD11	7:G:157:PRO:HG3	1.91	0.52
16:P:87:GLY:O	16:P:92:ARG:NH1	2.43	0.52
18:R:89:ARG:NH2	18:R:95:PRO:O	2.34	0.52
22:V:11:VAL:HG23	22:V:55:GLY:H	1.74	0.52
29:d:63:LYS:HE3	51:1:2060:A:H3'	1.91	0.52
32:g:25:TYR:HB2	51:1:2093:G:O3'	2.08	0.52
51:1:803:U:O2'	51:1:804:A:H5'	2.10	0.52
51:1:1635:A:H2	51:1:1761:C:O2'	1.92	0.52
53:3:153:C:H2'	53:3:154:U:C4'	2.39	0.52
53:3:369:G:H22	53:3:393:A:H1'	1.75	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:437:U:H2'	53:3:438:U:H5'	1.91	0.52
53:3:1479:C:H2'	53:3:1480:A:O4'	2.09	0.52
57:A1:100:LEU:HD21	57:A1:121:VAL:HG11	1.90	0.52
58:B1:68:TYR:CA	58:B1:75:TYR:HE2	2.22	0.52
15:O:15:HIS:CD2	53:3:1152:A:H5'	2.44	0.52
20:T:2:LEU:HD11	20:T:30:LEU:HD11	1.90	0.52
25:Y:67:HIS:HD2	25:Y:69:ASN:HB2	1.73	0.52
27:b:36:ASN:HB3	27:b:38:LYS:HG2	1.91	0.52
35:k:64:ARG:O	35:k:83:ALA:N	2.42	0.52
36:l:85:VAL:HG22	36:l:86:GLU:HG2	1.92	0.52
38:n:32:GLU:HG2	38:n:115:LEU:HD13	1.92	0.52
51:1:277:G:H4'	51:1:278:A:C8	2.44	0.52
51:1:958:U:H2'	52:2:89:U:C1'	2.39	0.52
51:1:1229:C:H2'	51:1:1230:A:H8	1.74	0.52
53:3:1366:C:H2'	53:3:1367:C:H6	1.72	0.52
66:0:541:LYS:NZ	66:0:579:HIS:O	2.41	0.52
13:M:16:GLY:O	13:M:64:TYR:OH	2.28	0.52
32:g:2:GLN:NE2	32:g:18:GLN:O	2.40	0.52
34:j:135:GLN:HE22	51:1:7:G:H1'	1.75	0.52
51:1:413:C:N4	51:1:2410:G:H1	1.96	0.52
51:1:1864:U:H5"	51:1:2410:G:O2'	2.10	0.52
53:3:224:U:H2'	53:3:225:C:C6	2.44	0.52
53:3:977:A:H2'	53:3:977:A:N3	2.25	0.52
53:3:1064:G:O3'	53:3:1065:U:H4'	2.09	0.52
5:E:38:LYS:HG3	5:E:41:ARG:HH22	1.74	0.52
8:H:181:ILE:HD11	8:H:200:TRP:HB3	1.91	0.52
11:K:47:LEU:HD21	11:K:55:HIS:HA	1.92	0.52
12:L:12:LEU:HD13	53:3:1374:A:OP1	2.09	0.52
16:P:17:ASP:N	16:P:17:ASP:OD1	2.42	0.52
27:b:7:PRO:HB3	27:b:13:ARG:HA	1.92	0.52
32:g:50:ARG:O	32:g:55:GLU:N	2.38	0.52
42:r:29:THR:HA	42:r:63:VAL:HG23	1.92	0.52
51:1:1841:U:H2'	51:1:1842:G:H8	1.73	0.52
51:1:2415:G:H2'	51:1:2416:C:H6	1.75	0.52
53:3:67:C:H2'	53:3:68:G:C8	2.44	0.52
53:3:148:G:H1	53:3:174:A:H61	1.58	0.52
53:3:1239:A:H5"	53:3:1240:U:C5	2.44	0.52
58:B1:144:TYR:CE1	58:B1:162:GLU:CD	2.88	0.52
58:B1:850:LYS:HB2	58:B1:857:LEU:HB2	1.91	0.52
14:N:122:ARG:NH1	53:3:1350:A:OP1	2.43	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)
32:g:94:ILE:HD12	32:g:99:ILE:HD13	1.91	0.52
34:j:49:ASP:N	34:j:49:ASP:OD1	2.39	0.52
36:l:9:ALA:HB3	36:l:12:SER:HB3	1.91	0.52
51:1:1903:G:C2	51:1:1904:G:C8	2.98	0.52
52:2:30:C:C2'	52:2:31:C:H5'	2.40	0.52
53:3:358:U:H2'	53:3:359:G:C8	2.44	0.52
53:3:1406:U:H2'	53:3:1407:C:O4'	2.10	0.52
57:A1:205:MET:HE3	57:A1:213:PRO:HB3	1.91	0.52
66:0:192:ASN:ND2	66:0:203:GLU:OE1	2.43	0.52
12:L:92:PRO:HA	12:L:95:ARG:CG	2.38	0.52
14:N:64:ILE:HG21	14:N:78:ILE:HG13	1.91	0.52
27:b:6:LYS:HZ1	51:1:1695:G:H5'	1.74	0.52
31:f:151:ARG:HG3	31:f:160:GLY:HA2	1.92	0.52
51:1:25:U:H2'	51:1:26:G:O4'	2.10	0.52
51:1:1332:G:N3	51:1:1332:G:H5'	2.25	0.52
51:1:1333:G:H2'	51:1:1334:G:H8	1.75	0.52
51:1:2061:G:H8	51:1:2501:C:H4'	1.73	0.52
51:1:2272:U:H5"	51:1:2273:A:OP1	2.10	0.52
51:1:2660:A:OP1	66:0:675:LYS:HD2	2.10	0.52
53:3:299:G:N2	53:3:565:U:H3	2.06	0.52
59:B2:246:LEU:HB3	59:B2:269:ILE:HD13	1.91	0.52
65:a:183:ASP:OD1	65:a:183:ASP:N	2.43	0.52
66:0:223:ILE:HG13	66:0:237:TYR:HE1	1.73	0.52
66:0:499:THR:HG23	66:0:500:ASP:N	2.23	0.52
10:J:133:ILE:HD11	53:3:1079:G:H5'	1.92	0.52
14:N:114:LYS:HE3	53:3:1188:A:P	2.49	0.52
19:S:7:ALA:HB1	53:3:994:A:O2'	2.09	0.52
30:e:23:SER:HB3	30:e:26:GLN:HB2	1.92	0.52
41:q:57:ARG:NH2	51:1:1154:G:OP2	2.43	0.52
51:1:376:G:H2'	51:1:377:G:H8	1.74	0.52
51:1:543:G:H3'	51:1:544:C:H5"	1.92	0.52
51:1:2082:A:H2'	51:1:2083:G:O4'	2.10	0.52
51:1:2507:C:H6	51:1:2507:C:O5'	1.93	0.52
51:1:2577:A:H2'	51:1:2614:A:H61	1.75	0.52
53:3:19:A:H1'	53:3:864:A:C2	2.45	0.52
53:3:90:C:H2'	53:3:91:U:C6	2.45	0.52
53:3:1105:A:H2'	53:3:1106:G:H8	1.75	0.52
62:NG:161:SER:HA	62:NG:170:PRO:HA	1.92	0.52
13:M:11:THR:OG1	53:3:876:C:H1'	2.10	0.51
14:N:33:SER:OG	14:N:34:LEU:N	2.43	0.51
14:N:35:GLU:HA	14:N:39:GLY:HA3	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:Q:28:GLN:HB2	53:3:363:A:H1'	1.92	0.51
35:k:21:CYS:HA	35:k:41:ILE:HA	1.92	0.51
38:n:64:ARG:HD3	51:1:2706:A:O2'	2.10	0.51
41:q:23:TYR:HD1	51:1:533:G:H5'	1.75	0.51
51:1:1361:G:H2'	51:1:1362:C:H6	1.74	0.51
51:1:1470:A:H61	51:1:1521:G:H1'	1.75	0.51
51:1:1951:U:C2	51:1:1953:A:OP2	2.63	0.51
51:1:1954:G:H1	51:1:1986:C:H5"	1.75	0.51
53:3:1073:U:H2'	53:3:1074:G:H8	1.69	0.51
53:3:1225:A:H2'	53:3:1225:A:N3	2.25	0.51
53:3:1496:C:H2'	53:3:1497:G:O4'	2.10	0.51
58:B1:633:ALA:HB2	59:B2:808:ASN:N	2.19	0.51
59:B2:974:ARG:HD2	59:B2:1014:LEU:HD21	1.92	0.51
9:I:18:LEU:HB3	9:I:20:LEU:HD22	1.91	0.51
9:I:146:GLU:HA	9:I:149:LYS:HE2	1.92	0.51
11:K:82:ASP:OD1	11:K:82:ASP:N	2.38	0.51
17:Q:45:ASN:OD1	17:Q:45:ASN:N	2.43	0.51
27:b:231:HIS:ND1	51:1:1826:G:OP1	2.38	0.51
30:e:117:SER:HB3	30:e:177:ARG:HH21	1.76	0.51
51:1:12:U:H2'	51:1:13:A:H5'	1.91	0.51
51:1:745:G:H2'	51:1:746:U:O4'	2.09	0.51
51:1:1024:G:H3'	51:1:1025:G:C5'	2.37	0.51
51:1:1268:A:H2'	51:1:1269:A:H8	1.74	0.51
51:1:1599:U:H2'	51:1:1600:C:H6	1.75	0.51
53:3:174:A:C2'	53:3:175:C:H5'	2.41	0.51
53:3:218:U:H2'	53:3:219:U:O4'	2.09	0.51
66:0:473:MET:HA	66:0:477:PHE:HB2	1.91	0.51
21:U:55:ASP:OD1	21:U:55:ASP:N	2.41	0.51
27:b:31:PRO:HG2	27:b:32:LEU:HD12	1.92	0.51
28:c:161:MET:HE1	51:1:2050:C:H1'	1.91	0.51
32:g:22:LYS:HB2	51:1:2094:A:OP1	2.11	0.51
51:1:3:U:H2'	51:1:4:U:C6	2.45	0.51
51:1:1409:U:H2'	51:1:1410:G:C8	2.46	0.51
51:1:1889:A:H2'	51:1:1890:A:O4'	2.10	0.51
53:3:731:G:O2'	53:3:732:C:H5'	2.10	0.51
66:0:530:ASN:ND2	66:0:535:GLU:OE1	2.42	0.51
2:B:54:ILE:HG13	2:B:56:LYS:H	1.76	0.51
29:d:67:ARG:O	51:1:1255:U:H5	1.94	0.51
51:1:838:C:H2'	51:1:839:U:H6	1.75	0.51
51:1:2656:U:H2'	51:1:2657:A:H8	1.75	0.51
53:3:1485:U:O2'	53:3:1486:G:H5'	2.10	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:B1:99:ARG:HA	58:B1:248:ASP:HB2	1.92	0.51
8:H:9:ILE:HG13	8:H:177:LEU:HD21	1.91	0.51
30:e:32:LYS:O	30:e:156:THR:OG1	2.27	0.51
31:f:126:THR:OG1	31:f:127:GLN:N	2.44	0.51
33:i:4:VAL:HB	51:1:1055:G:OP2	2.10	0.51
39:o:110:ALA:HB1	39:o:115:LEU:HD12	1.92	0.51
44:t:61:LEU:HD21	44:t:82:LYS:HD2	1.92	0.51
51:1:44:A:H2'	51:1:45:G:H5'	1.93	0.51
51:1:243:U:O2'	51:1:244:A:H5'	2.11	0.51
51:1:2022:U:O2'	51:1:2617:U:H5'	2.10	0.51
51:1:2372:U:H2'	51:1:2373:G:C8	2.46	0.51
51:1:2417:C:H2'	51:1:2418:A:H8	1.76	0.51
58:B1:390:LEU:N	58:B1:390:LEU:CD1	2.73	0.51
65:a:165:ASN:HD22	65:a:169:GLY:HA2	1.75	0.51
1:A:26:SER:OG	30:e:139:GLU:OE2	2.28	0.51
24:X:35:ARG:HB2	53:3:1320:C:N4	2.25	0.51
34:j:69:ARG:NH1	34:j:90:GLU:OE2	2.38	0.51
51:1:203:A:H3'	51:1:204:A:C5'	2.39	0.51
51:1:1082:U:H3	51:1:1086:A:H2	1.56	0.51
51:1:2850:A:H2'	51:1:2851:A:O4'	2.11	0.51
53:3:49:U:O2'	53:3:50:A:H2'	2.10	0.51
53:3:410:G:H21	53:3:432:A:H62	1.57	0.51
53:3:515:G:O2'	53:3:516:U:H5'	2.10	0.51
66:0:603:GLU:O	66:0:607:LYS:NZ	2.41	0.51
11:K:68:GLN:NE2	53:3:738:C:O3'	2.44	0.51
51:1:178:G:O2'	51:1:179:C:H5'	2.10	0.51
51:1:526:A:N6	51:1:2626:C:H4'	2.25	0.51
51:1:755:U:H2'	51:1:756:A:H8	1.75	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
51:1:1505:A:H2'	51:1:1506:U:O4'	2.10	0.51
51:1:2248:C:H3'	51:1:2249:U:C6	2.46	0.51
51:1:2656:U:H5"	66:0:146:ARG:NH2	2.25	0.51
53:3:955:U:H2'	53:3:956:U:H6	1.74	0.51
53:3:1230:C:H5'	64:6:30:G:H5"	1.93	0.51
53:3:1271:A:H4'	53:3:1314:C:OP1	2.10	0.51
59:B2:125:GLY:HA2	59:B2:499:SER:HB2	1.92	0.51
59:B2:255:ILE:HB	59:B2:263:VAL:HB	1.92	0.51
66:0:17:ALA:H	66:0:23:LYS:HZ1	1.59	0.51
15:O:59:LYS:HE3	53:3:972:C:C5'	2.41	0.51
19:S:78:LEU:HD13	19:S:82:LYS:HB3	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:Z:27:VAL:HG22	26:Z:31:VAL:HB	1.93	0.51
29:d:58:LYS:HE2	51:1:676:A:OP1	2.11	0.51
32:g:8:LYS:NZ	32:g:11:ASN:O	2.44	0.51
51:1:1710:G:H2'	51:1:1711:A:H8	1.74	0.51
51:1:1767:G:O5'	51:1:1767:G:H8	1.93	0.51
51:1:2489:U:H2'	51:1:2490:G:O4'	2.11	0.51
53:3:894:G:H2'	53:3:895:G:H8	1.75	0.51
66:0:295:ILE:HG13	66:0:309:ARG:HB2	1.91	0.51
51:1:1473:G:H1	51:1:1518:C:N4	2.00	0.51
51:1:1937:A:C2'	51:1:1938:A:H5'	2.41	0.51
51:1:2545:G:H2'	51:1:2546:U:O4'	2.11	0.51
53:3:265:G:H2'	53:3:267:C:H5	1.75	0.51
53:3:379:C:H2'	53:3:380:G:O4'	2.10	0.51
53:3:1400:C:N4	64:6:34:C:H1'	2.25	0.51
53:3:1421:G:C2'	53:3:1422:G:H4'	2.40	0.51
58:B1:505:ASP:OD2	59:B2:812:PHE:HA	2.11	0.51
58:B1:902:ASP:HB3	58:B1:905:ARG:HB2	1.93	0.51
58:B1:1179:PRO:HD2	58:B1:1184:ASP:HA	1.93	0.51
11:K:92:THR:OG1	11:K:94:HIS:O	2.29	0.51
32:g:131:SER:OG	32:g:140:ALA:O	2.28	0.51
36:l:51:GLU:HG3	36:l:56:PRO:HB3	1.93	0.51
42:r:61:ALA:HB1	42:r:96:VAL:HB	1.92	0.51
51:1:216:A:O2'	51:1:217:A:H5'	2.11	0.51
51:1:801:G:H3'	51:1:802:A:H5'	1.92	0.51
51:1:1597:A:H4'	51:1:1598:A:H8	1.76	0.51
53:3:574:A:N3	53:3:883:C:H1'	2.25	0.51
53:3:1251:A:H2'	53:3:1252:A:C8	2.46	0.51
53:3:1516:G:H2'	53:3:1518:A:OP2	2.10	0.51
58:B1:412:LEU:HD23	58:B1:416:ILE:HG13	1.92	0.51
59:B2:524:ILE:HG21	59:B2:708:VAL:HG13	1.92	0.51
4:D:3:ARG:O	4:D:6:GLN:NE2	2.40	0.50
9:I:24:VAL:HG12	53:3:409:U:H5"	1.93	0.50
9:I:160:LEU:HD21	9:I:164:ARG:HH21	1.75	0.50
11:K:17:GLN:O	11:K:21:MET:N	2.44	0.50
14:N:118:ARG:NH2	53:3:1366:C:OP1	2.44	0.50
18:R:89:ARG:HB3	18:R:96:VAL:HG22	1.93	0.50
28:c:27:ILE:HD11	28:c:187:LEU:HD23	1.93	0.50
28:c:177:VAL:HA	28:c:189:VAL:HA	1.93	0.50
33:i:113:ALA:HB2	33:i:121:ILE:HD11	1.94	0.50
39:o:100:HIS:O	39:o:104:GLN:NE2	2.43	0.50
40:p:93:LYS:HE2	51:1:1754:A:OP1	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:x:14:GLY:HA3	48:x:28:PHE:HE1	1.76	0.50
51:1:286:U:H2'	51:1:287:G:C8	2.46	0.50
51:1:402:A:H2'	51:1:403:U:O4'	2.12	0.50
51:1:1439:A:H2'	51:1:1440:U:H5'	1.93	0.50
51:1:1794:A:H1'	51:1:1900:A:C2	2.46	0.50
51:1:2616:C:H2'	51:1:2617:U:H6	1.76	0.50
53:3:284:C:O2'	53:3:285:C:H5'	2.11	0.50
53:3:793:U:O2	53:3:1516:G:H4'	2.11	0.50
53:3:1271:A:H5'	53:3:1314:C:H5"	1.91	0.50
59:B2:714:VAL:HB	59:B2:787:PRO:HD2	1.92	0.50
8:H:67:ILE:N	8:H:101:ASN:O	2.42	0.50
15:O:37:ARG:HG2	15:O:77:VAL:HB	1.93	0.50
16:P:22:ILE:HD13	16:P:83:VAL:HG13	1.92	0.50
51:1:548:G:H2'	51:1:549:G:O4'	2.10	0.50
51:1:558:U:H2'	51:1:559:G:C8	2.46	0.50
51:1:622:G:O2'	51:1:623:C:H5'	2.10	0.50
51:1:871:U:H2'	51:1:872:U:C6	2.47	0.50
51:1:1187:G:O5'	51:1:1187:G:H8	1.93	0.50
51:1:1394:U:H4'	51:1:1603:A:H4'	1.92	0.50
51:1:1917:U:O2'	51:1:1918:A:H5'	2.11	0.50
51:1:1963:U:C2'	51:1:1964:G:H5"	2.41	0.50
51:1:1977:A:H2'	51:1:1978:A:O4'	2.12	0.50
51:1:2372:U:H2'	51:1:2373:G:H8	1.77	0.50
51:1:2549:G:H2'	51:1:2550:G:H8	1.76	0.50
53:3:135:C:H2'	53:3:136:C:H5'	1.92	0.50
53:3:138:G:H2'	53:3:139:A:C8	2.46	0.50
53:3:993:G:N3	53:3:993:G:H2'	2.25	0.50
66:0:141:VAL:HB	66:0:266:CYS:HA	1.92	0.50
66:0:490:TYR:HB2	66:0:569:TYR:CD1	2.46	0.50
66:0:659:PRO:HB2	66:0:662:GLU:HB2	1.93	0.50
12:L:92:PRO:C	12:L:95:ARG:HG3	2.36	0.50
15:O:8:ILE:HB	15:O:74:VAL:HB	1.91	0.50
34:j:108:MET:HB3	51:1:1006:C:O2'	2.11	0.50
41:q:24:TYR:N	51:1:533:G:OP1	2.38	0.50
51:1:216:A:H2'	51:1:217:A:O4'	2.11	0.50
51:1:990:A:N6	51:1:1186:G:H1'	2.27	0.50
51:1:1934:C:H2'	51:1:1935:G:O4'	2.12	0.50
52:2:88:C:H4'	52:2:90:C:N3	2.27	0.50
53:3:678:U:H2'	53:3:679:C:O4'	2.11	0.50
53:3:903:G:H2'	53:3:904:U:O4'	2.11	0.50
58:B1:437:PHE:HZ	58:B1:453:VAL:HG11	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
66:0:194:ASN:OD1	66:0:200:VAL:N	2.44	0.50
7:G:53:LEU:HD11	7:G:215:ALA:HB1	1.93	0.50
14:N:62:LEU:HD12	14:N:64:ILE:HD11	1.92	0.50
15:O:47:GLU:HG3	53:3:1254:A:OP1	2.12	0.50
25:Y:10:ALA:O	25:Y:13:SER:OG	2.28	0.50
25:Y:54:GLN:HE22	53:3:193:C:H1'	1.75	0.50
26:Z:16:ARG:HG3	26:Z:19:LYS:HB2	1.94	0.50
40:p:102:ARG:HH22	51:1:1755:A:P	2.34	0.50
43:s:47:VAL:O	43:s:51:LEU:N	2.39	0.50
51:1:1390:U:O2'	51:1:1391:U:H5'	2.11	0.50
51:1:1937:A:C3'	51:1:1938:A:H5'	2.41	0.50
51:1:2259:U:C5	51:1:2427:C:N4	2.80	0.50
52:2:29:A:H2'	52:2:30:C:O4'	2.11	0.50
53:3:62:U:H2'	53:3:63:C:C6	2.46	0.50
53:3:554:A:H2'	53:3:555:U:H5'	1.93	0.50
53:3:599:C:H2'	53:3:600:A:H8	1.77	0.50
55:8:13:DT:OP2	58:B1:791:ALA:CB	2.59	0.50
66:0:70:ALA:HB3	66:0:84:ILE:HB	1.94	0.50
66:0:446:ARG:O	66:0:459:ALA:N	2.38	0.50
51:1:598:U:H2'	51:1:599:A:H8	1.76	0.50
51:1:1783:A:N6	51:1:2587:A:N3	2.59	0.50
53:3:207:C:C3'	53:3:208:U:H5"	2.40	0.50
53:3:953:G:H2'	53:3:954:G:O4'	2.12	0.50
53:3:1515:G:H2'	53:3:1516:G:C8	2.46	0.50
58:B1:375:GLU:HG2	59:B2:1245:ALA:O	2.10	0.50
59:B2:400:VAL:HG21	59:B2:452:ARG:HE	1.76	0.50
8:H:8:GLY:O	19:S:96:LYS:NZ	2.42	0.50
8:H:38:VAL:O	8:H:42:LEU:N	2.43	0.50
10:J:25:LYS:HZ1	53:3:923:A:H5"	1.75	0.50
29:d:195:GLN:HE22	29:d:199:MET:HE2	1.77	0.50
48:x:57:VAL:O	48:x:61:LYS:NZ	2.44	0.50
51:1:198:C:O2'	51:1:199:A:H5'	2.12	0.50
51:1:403:U:O3'	51:1:404:A:H4'	2.11	0.50
51:1:1700:A:H2'	51:1:1701:A:H5'	1.93	0.50
51:1:2262:U:H2'	51:1:2263:C:H6	1.72	0.50
51:1:2297:A:N1	51:1:2321:U:H5	2.09	0.50
51:1:2339:C:H2'	51:1:2340:A:C8	2.45	0.50
51:1:2358:A:H2'	51:1:2359:C:O4'	2.11	0.50
53:3:570:G:H2'	53:3:571:U:O4'	2.11	0.50
58:B1:124:ILE:HG23	58:B1:128:LEU:HD12	1.94	0.50
59:B2:9:LYS:HG2	59:B2:1171:ARG:HH12	1.77	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:B2:93:SER:HA	59:B2:128:PRO:HA	1.92	0.50
59:B2:400:VAL:HG11	59:B2:452:ARG:HD2	1.94	0.50
60:W0:3:ARG:NH1	60:W0:55:GLU:OE2	2.40	0.50
5:E:35:LYS:HE2	5:E:39:ARG:HE	1.76	0.50
9:I:131:ILE:HD12	53:3:620:C:C2	2.47	0.50
30:e:129:MET:HG3	30:e:153:ILE:HB	1.94	0.50
33:i:9:LYS:HZ3	51:1:1059:G:H5'	1.77	0.50
35:k:1:MET:HE1	51:1:1664:A:H2	1.77	0.50
41:q:62:ALA:O	41:q:66:ALA:N	2.43	0.50
51:1:108:G:O2'	51:1:109:C:H5'	2.11	0.50
51:1:704:G:H1'	51:1:726:G:N2	2.27	0.50
51:1:866:A:H61	51:1:913:U:H1'	1.76	0.50
51:1:1040:A:H2'	51:1:1041:G:C8	2.47	0.50
51:1:1686:C:H2'	51:1:1687:G:O4'	2.12	0.50
53:3:162:A:C2'	53:3:163:C:H5'	2.42	0.50
53:3:454:G:H2'	53:3:455:G:H8	1.77	0.50
53:3:559:A:H4'	53:3:560:A:H3'	1.94	0.50
53:3:812:G:OP1	53:3:903:G:H1'	2.12	0.50
53:3:1017:U:H2'	53:3:1018:G:O4'	2.11	0.50
53:3:1267:C:H2'	53:3:1268:G:O4'	2.11	0.50
58:B1:201:LEU:HD12	58:B1:224:LEU:HD12	1.92	0.50
58:B1:683:ILE:HD12	58:B1:754:ILE:HG21	1.93	0.50
67:h:6:5OH:N	67:h:6:5OH:CS	2.75	0.50
42:r:10:LYS:HE2	51:1:994:C:O2'	2.11	0.50
42:r:80:ARG:HD3	51:1:566:U:C5	2.47	0.50
51:1:123:G:H2'	51:1:124:G:H8	1.77	0.50
51:1:737:C:H2'	51:1:738:G:C8	2.47	0.50
51:1:1424:G:H2'	51:1:1425:G:O4'	2.12	0.50
51:1:1867:G:H1	51:1:1874:C:N4	2.08	0.50
51:1:2549:G:H2'	51:1:2550:G:C8	2.47	0.50
52:2:53:A:C2	52:2:54:G:H1'	2.47	0.50
53:3:302:G:H2'	53:3:303:A:H8	1.75	0.50
53:3:439:U:H2'	53:3:440:C:O4'	2.12	0.50
53:3:1231:G:H2'	53:3:1232:U:C6	2.47	0.50
58:B1:421:VAL:O	58:B1:436:ALA:HA	2.12	0.50
58:B1:1167:LYS:HZ2	58:B1:1170:LYS:HB2	1.77	0.50
58:B1:1361:THR:OG1	59:B2:1282:GLY:O	2.28	0.50
59:B2:786:GLY:N	59:B2:789:THR:OG1	2.41	0.50
1:A:8:LYS:O	1:A:27:THR:OG1	2.28	0.50
9:I:96:ARG:NE	9:I:132:ALA:O	2.44	0.50
10:J:37:VAL:HG11	10:J:113:VAL:HA	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:N:3:ASN:N	14:N:88:GLU:OE1	2.45	0.50
14:N:26:LYS:HG2	14:N:61:ASP:HB2	1.93	0.50
15:O:19:ASP:OD1	15:O:19:ASP:N	2.45	0.50
24:X:76:THR:HG21	53:3:1221:G:H4'	1.94	0.50
25:Y:4:LYS:HB3	25:Y:6:ALA:H	1.76	0.50
27:b:24:HIS:CD2	27:b:79:ARG:HH21	2.29	0.50
40:p:102:ARG:NH2	51:1:1755:A:H5'	2.26	0.50
47:w:10:ARG:HD2	51:1:2258:C:OP1	2.12	0.50
51:1:227:A:O2'	51:1:228:C:H4'	2.11	0.50
51:1:1550:C:H2'	51:1:1551:A:C8	2.46	0.50
51:1:1810:A:H2'	51:1:1811:G:O4'	2.12	0.50
51:1:1984:G:H2'	51:1:1985:C:C6	2.47	0.50
53:3:269:C:H2'	53:3:270:A:H8	1.76	0.50
53:3:650:G:H2'	53:3:651:C:C6	2.47	0.50
53:3:1327:C:O2'	53:3:1328:C:H5'	2.12	0.50
59:B2:18:ARG:HE	59:B2:620:ASN:HA	1.77	0.50
22:V:4:ILE:HD11	22:V:61:ARG:HD3	1.94	0.49
23:W:49:LYS:NZ	53:3:836:G:OP1	2.45	0.49
28:c:160:LYS:HD2	51:1:2513:A:OP1	2.12	0.49
35:k:71:ARG:HG3	35:k:77:ILE:HD11	1.92	0.49
37:m:12:MET:H	37:m:72:PRO:HG2	1.77	0.49
41:q:10:ARG:NH1	51:1:1216:G:H5"	2.25	0.49
42:r:76:LYS:HZ1	42:r:85:LYS:HE2	1.77	0.49
45:u:73:ASN:HD22	45:u:76:THR:H	1.60	0.49
51:1:233:A:H2'	51:1:234:U:H5'	1.92	0.49
51:1:341:C:H2'	51:1:342:A:C8	2.46	0.49
51:1:1042:G:H2'	51:1:1043:C:C6	2.46	0.49
51:1:1289:C:O2'	51:1:1330:C:H4'	2.12	0.49
52:2:87:U:H5"	52:2:88:C:H5	1.74	0.49
53:3:7:A:O2'	53:3:8:A:H5'	2.12	0.49
53:3:162:A:C2	53:3:348:G:H4'	2.47	0.49
53:3:860:A:H2'	53:3:861:G:O4'	2.13	0.49
53:3:967:C:H2'	53:3:968:A:N7	2.26	0.49
53:3:1351:U:H3	53:3:1371:G:H1	1.59	0.49
65:a:46:VAL:HG11	65:a:196:LEU:HD13	1.94	0.49
66:0:92:HIS:CD2	66:0:464:LEU:HD21	2.47	0.49
7:G:71:THR:OG1	7:G:72:LYS:N	2.45	0.49
10:J:79:THR:OG1	10:J:80:LEU:N	2.44	0.49
20:T:27:GLN:HE21	20:T:31:LEU:HG	1.77	0.49
20:T:88:ARG:HH22	51:1:715:A:H5"	1.76	0.49
38:n:107:ASN:HD22	51:1:2009:A:H4'	1.74	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:t:34:VAL:HG11	44:t:43:ILE:HD13	1.93	0.49
46:v:58:SER:OG	46:v:59:GLU:OE1	2.31	0.49
48:x:2:ARG:CG	48:x:32:LEU:HD12	2.41	0.49
51:1:306:U:H3	51:1:310:A:H62	1.61	0.49
51:1:375:G:C2'	51:1:376:G:H5'	2.42	0.49
51:1:475:C:H4'	51:1:510:C:H5'	1.93	0.49
51:1:664:G:O2'	51:1:940:G:H5"	2.12	0.49
51:1:839:U:H2'	51:1:840:C:C6	2.47	0.49
53:3:128:G:H2'	53:3:129:A:H8	1.76	0.49
53:3:579:A:H2'	53:3:580:C:C6	2.48	0.49
53:3:945:G:H2'	53:3:945:G:N3	2.27	0.49
53:3:1382:C:H3'	53:3:1382:C:O2	2.13	0.49
58:B1:972:LYS:HD2	58:B1:1004:ALA:HA	1.93	0.49
66:0:390:ASP:OD1	66:0:390:ASP:N	2.44	0.49
9:I:32:LYS:HB3	53:3:429:U:OP2	2.12	0.49
12:L:107:ALA:HB1	12:L:115:MET:HE1	1.94	0.49
14:N:108:ARG:HB3	53:3:1347:G:C8	2.47	0.49
17:Q:33:CYS:HA	17:Q:54:VAL:HG22	1.94	0.49
19:S:9:GLU:HA	19:S:12:ARG:HE	1.76	0.49
21:U:5:ARG:NH1	21:U:26:ASN:O	2.43	0.49
28:c:12:THR:OG1	28:c:13:ARG:N	2.45	0.49
32:g:80:ILE:HG13	32:g:102:ALA:HB1	1.94	0.49
47:w:52:ASP:HB2	47:w:54:THR:HG23	1.94	0.49
51:1:458:G:N2	51:1:469:G:H2'	2.27	0.49
51:1:2040:G:H2'	51:1:2041:U:O4'	2.12	0.49
53:3:184:G:H4'	53:3:224:U:O3'	2.12	0.49
53:3:803:G:H2'	53:3:804:U:C6	2.47	0.49
59:B2:533:LEU:HD13	59:B2:540:ARG:HH21	1.77	0.49
64:6:26:G:H3'	64:6:27:U:C5'	2.42	0.49
64:6:61:C:HO2'	65:a:53:ARG:HD2	1.76	0.49
66:0:365:GLN:N	66:0:372:GLU:O	2.38	0.49
66:0:419:ALA:HA	66:0:457:ILE:HA	1.93	0.49
11:K:73:GLU:O	11:K:76:THR:OG1	2.31	0.49
12:L:34:LYS:HE2	53:3:1290:G:H4'	1.95	0.49
15:O:54:SER:O	19:S:80:ARG:NH2	2.44	0.49
18:R:24:VAL:HA	53:3:1329:A:H5"	1.94	0.49
33:i:9:LYS:HD3	51:1:1060:U:OP2	2.13	0.49
33:i:30:GLN:HG3	33:i:60:VAL:HG11	1.93	0.49
41:q:10:ARG:HH11	51:1:1216:G:H5"	1.78	0.49
41:q:65:ASN:HD21	41:q:69:ARG:HH11	1.61	0.49
44:t:58:VAL:HG22	44:t:85:VAL:HG22	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1952:A:H2'	51:1:1953:A:O4'	2.13	0.49
51:1:2416:C:H2'	51:1:2417:C:C6	2.47	0.49
53:3:770:C:O2'	53:3:771:G:H5'	2.12	0.49
59:B2:232:ILE:HG12	59:B2:237:LEU:HG	1.94	0.49
59:B2:857:VAL:HG13	59:B2:919:ARG:HH21	1.78	0.49
66:0:128:ARG:HA	66:0:131:ASN:HD22	1.77	0.49
14:N:72:SER:O	14:N:76:GLY:N	2.45	0.49
30:e:65:LEU:HD22	52:2:42:C:C5	2.47	0.49
31:f:2:ARG:HD3	51:1:2751:G:OP2	2.12	0.49
37:m:18:ARG:O	37:m:97:GLN:NE2	2.46	0.49
43:s:10:ALA:N	43:s:101:SER:O	2.43	0.49
43:s:16:LYS:HE3	51:1:1266:G:N7	2.27	0.49
51:1:90:U:H1'	51:1:456:C:H42	1.77	0.49
51:1:1130:U:H5	51:1:2026:U:P	2.35	0.49
51:1:1219:U:H2'	51:1:1220:G:H8	1.78	0.49
51:1:1366:A:H2'	51:1:1367:A:O4'	2.11	0.49
52:2:49:C:H2'	52:2:50:A:C8	2.48	0.49
53:3:17:U:H2'	53:3:18:C:C6	2.48	0.49
53:3:153:C:C2'	53:3:154:U:H5"	2.43	0.49
57:A1:100:LEU:HB2	57:A1:144:ILE:HG23	1.95	0.49
59:B2:529:ARG:HH11	59:B2:572:ILE:HG22	1.77	0.49
4:D:13:ASN:HB3	51:1:125:A:H4'	1.93	0.49
17:Q:76:HIS:O	66:0:425:LYS:NZ	2.45	0.49
19:S:1:ALA:N	19:S:66:THR:O	2.45	0.49
43:s:42:LYS:HB2	51:1:2010:G:H5"	1.94	0.49
51:1:376:G:H2'	51:1:377:G:C8	2.47	0.49
51:1:1620:G:O2'	51:1:1621:U:H5'	2.13	0.49
51:1:1657:U:H2'	51:1:1658:C:C6	2.48	0.49
51:1:1963:U:H2'	51:1:1964:G:H5"	1.93	0.49
53:3:636:U:H2'	53:3:637:C:C6	2.47	0.49
53:3:1049:U:H4'	53:3:1050:G:H5"	1.94	0.49
27:b:155:ARG:CZ	51:1:1818:U:H5	2.26	0.49
33:i:10:LEU:HD11	51:1:1070:A:C2	2.41	0.49
35:k:65:THR:OG1	35:k:66:LYS:N	2.44	0.49
36:l:65:GLY:HA2	51:1:631:A:O2'	2.12	0.49
40:p:28:LYS:HD3	40:p:82:SER:HB3	1.93	0.49
42:r:8:GLY:HA3	42:r:23:GLU:HG3	1.93	0.49
46:v:13:GLY:N	52:2:76:G:OP1	2.39	0.49
50:z:30:ARG:HG2	50:z:33:HIS:HB2	1.94	0.49
51:1:594:U:H2'	51:1:595:C:H6	1.77	0.49
51:1:739:A:H8	51:1:739:A:O5'	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:864:G:O5'	51:1:864:G:H8	1.95	0.49
51:1:1326:U:H2'	51:1:1327:A:H8	1.78	0.49
51:1:1528:A:H2'	51:1:1529:G:C5'	2.40	0.49
51:1:2716:C:O2'	51:1:2717:C:H5'	2.13	0.49
53:3:23:C:H2'	53:3:24:U:C6	2.48	0.49
53:3:666:G:H5'	53:3:725:G:N2	2.27	0.49
53:3:1253:G:H2'	53:3:1254:A:H8	1.78	0.49
54:4:1:A:H2'	54:4:2:U:H6	1.78	0.49
59:B2:836:LEU:HD13	59:B2:1054:LEU:HD13	1.95	0.49
63:5:51:U:H2'	63:5:52:G:C8	2.48	0.49
66:0:169:LEU:HD11	66:0:186:VAL:HG13	1.95	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
14:N:87:MET:HA	14:N:90:ASP:HB3	1.94	0.49
35:k:89:ASN:N	35:k:89:ASN:OD1	2.45	0.49
37:m:53:MET:HE3	37:m:119:LEU:HB3	1.94	0.49
47:w:65:PHE:CD2	51:1:857:G:H5'	2.48	0.49
51:1:1378:A:H1'	51:1:1379:U:C5	2.48	0.49
51:1:1581:G:H2'	51:1:1582:C:O4'	2.12	0.49
51:1:1999:C:O2'	51:1:2000:C:H5'	2.12	0.49
51:1:2194:U:H2'	51:1:2195:U:H6	1.77	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
53:3:865:A:H8	53:3:865:A:O5'	1.96	0.49
53:3:955:U:H2'	53:3:956:U:C6	2.48	0.49
53:3:1339:A:H2'	53:3:1340:A:O4'	2.12	0.49
53:3:1354:U:H2'	53:3:1355:G:H8	1.78	0.49
58:B1:102:MET:HG2	58:B1:246:PRO:HD3	1.95	0.49
58:B1:749:LYS:HB3	58:B1:755:ILE:HD11	1.94	0.49
58:B1:1371:ARG:HE	58:B1:1372:ARG:NH1	2.10	0.49
66:0:530:ASN:ND2	66:0:532:LYS:O	2.45	0.49
7:G:187:ASP:OD1	7:G:187:ASP:N	2.42	0.49
14:N:8:THR:H	14:N:84:ARG:HB2	1.78	0.49
19:S:19:TYR:HB3	19:S:23:ARG:HH21	1.77	0.49
36:l:46:VAL:HG21	51:1:832:U:H4'	1.94	0.49
48:x:7:THR:HG23	48:x:9:LYS:HG3	1.95	0.49
51:1:445:C:H2'	51:1:446:G:H5'	1.94	0.49
51:1:1893:C:H2'	51:1:1894:C:O4'	2.13	0.49
51:1:2314:A:H2'	51:1:2315:G:C8	2.48	0.49
51:1:2638:G:H1'	51:1:2778:A:H61	1.78	0.49
55:8:14:DC:H2'	55:8:15:DC:C6	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:A1:18:GLN:HA	57:A1:24:ALA:HA	1.94	0.49
66:0:105:VAL:HG23	66:0:106:LEU:HD12	1.93	0.49
66:0:631:VAL:O	66:0:635:LEU:N	2.42	0.49
3:C:35:LEU:CD2	51:1:2286:G:H22	2.26	0.49
35:k:65:THR:HG23	35:k:68:GLY:H	1.78	0.49
51:1:1807:G:H2'	51:1:1808:A:H5'	1.95	0.49
51:1:2531:A:H2'	51:1:2532:G:H5'	1.95	0.49
53:3:505:G:H2'	53:3:506:G:C8	2.47	0.49
53:3:513:C:H2'	53:3:514:C:O4'	2.13	0.49
7:G:210:THR:O	7:G:214:GLY:N	2.40	0.48
8:H:6:PRO:O	8:H:10:ARG:NE	2.41	0.48
26:Z:6:ARG:HD2	26:Z:6:ARG:HA	1.61	0.48
34:j:47:HIS:CG	51:1:536:G:H21	2.31	0.48
51:1:153:U:O2'	51:1:154:U:H5'	2.13	0.48
51:1:319:G:H2'	51:1:320:A:O4'	2.13	0.48
51:1:2235:G:H2'	51:1:2236:U:O4'	2.12	0.48
51:1:2247:A:H2'	51:1:2248:C:O4'	2.13	0.48
53:3:1012:A:H5'	53:3:1012:A:H8	1.77	0.48
59:B2:554:HIS:HD2	59:B2:558:VAL:HB	1.77	0.48
59:B2:565:GLU:HA	59:B2:569:ILE:HG12	1.95	0.48
66:0:565:PRO:HD3	66:0:602:LYS:HZ2	1.77	0.48
9:I:12:ARG:HG3	9:I:37:PRO:HG3	1.94	0.48
25:Y:34:VAL:HG22	25:Y:49:ALA:HB1	1.95	0.48
27:b:59:GLN:NE2	51:1:1567:G:OP1	2.46	0.48
28:c:133:THR:OG1	28:c:134:HIS:N	2.38	0.48
37:m:28:PHE:N	37:m:104:GLU:OE1	2.44	0.48
42:r:4:VAL:HG22	42:r:13:ARG:HA	1.95	0.48
43:s:72:THR:OG1	43:s:73:LYS:N	2.45	0.48
51:1:881:G:H1	51:1:895:U:H3	1.61	0.48
51:1:1225:G:O2'	51:1:1226:A:H5'	2.13	0.48
51:1:1595:C:H2'	51:1:1596:A:C8	2.48	0.48
51:1:2364:C:H2'	51:1:2365:G:O4'	2.13	0.48
51:1:2807:U:H3	51:1:2891:U:H3	1.61	0.48
58:B1:220:ARG:HH11	58:B1:220:ARG:CG	2.26	0.48
66:0:145:ASP:OD1	66:0:273:LYS:NZ	2.45	0.48
22:V:56:ASP:HB3	22:V:80:LYS:HA	1.94	0.48
24:X:76:THR:HG21	53:3:1221:G:O2'	2.13	0.48
25:Y:16:ALA:O	25:Y:20:ASN:N	2.45	0.48
27:b:146:LYS:HB2	27:b:149:LYS:HB2	1.94	0.48
29:d:2:GLU:HA	29:d:13:THR:HA	1.96	0.48
33:i:75:ALA:HA	33:i:78:LEU:HB2	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:175:G:H2'	51:1:176:A:C8	2.49	0.48
51:1:210:C:H2'	51:1:211:C:C6	2.48	0.48
51:1:387:U:H4'	51:1:388:G:O4'	2.14	0.48
51:1:445:C:O2	51:1:450:G:H1'	2.14	0.48
51:1:532:A:N1	51:1:2020:A:H1'	2.28	0.48
51:1:1005:C:H2'	51:1:1006:C:H6	1.77	0.48
51:1:1178:C:H2'	51:1:1179:G:C8	2.48	0.48
51:1:1755:A:C2'	51:1:1756:G:H5'	2.40	0.48
51:1:2786:U:H2'	51:1:2787:C:C6	2.48	0.48
51:1:2803:G:H2'	51:1:2804:U:C6	2.48	0.48
51:1:2810:A:H62	51:1:2890:G:N2	2.11	0.48
53:3:423:G:C2	53:3:424:G:H1'	2.48	0.48
53:3:792:A:H4'	53:3:793:U:H5"	1.95	0.48
58:B1:103:GLY:H	58:B1:244:VAL:HG22	1.79	0.48
7:G:100:LEU:HD11	7:G:160:LEU:HD13	1.95	0.48
9:I:59:LYS:O	9:I:63:ILE:N	2.44	0.48
23:W:32:ILE:HD12	23:W:36:GLY:HA2	1.95	0.48
30:e:21:TYR:OH	30:e:164:GLU:OE1	2.31	0.48
31:f:91:VAL:CG2	51:1:2657:A:H4'	2.43	0.48
51:1:93:G:O2'	51:1:94:A:H5'	2.13	0.48
51:1:189:G:N2	51:1:206:U:C5	2.82	0.48
51:1:1658:C:O5'	51:1:1658:C:H6	1.95	0.48
51:1:2298:A:H2'	51:1:2299:U:O4'	2.13	0.48
52:2:45:A:H2'	52:2:46:A:O4'	2.13	0.48
53:3:153:C:H2'	53:3:154:U:H5"	1.95	0.48
53:3:714:G:H2'	53:3:715:A:C8	2.48	0.48
57:A1:182:ARG:O	57:A1:205:MET:HA	2.14	0.48
58:B1:115:TRP:O	58:B1:1333:THR:HG21	2.13	0.48
58:B1:141:PHE:HE2	58:B1:296:LYS:CB	2.22	0.48
58:B1:201:LEU:HD11	58:B1:220:ARG:HG2	1.95	0.48
58:B1:275:ARG:HH12	58:B1:278:ARG:NH1	2.09	0.48
58:B1:550:VAL:O	58:B1:569:LEU:HA	2.13	0.48
59:B2:363:LEU:HB3	59:B2:381:ALA:HB1	1.96	0.48
65:a:43:ASP:OD1	65:a:174:THR:OG1	2.32	0.48
29:d:112:LEU:O	29:d:117:ARG:N	2.43	0.48
31:f:8:VAL:O	31:f:49:LEU:N	2.43	0.48
36:l:41:ARG:HG2	51:1:806:C:H41	1.78	0.48
37:m:61:GLY:HA3	37:m:105:MET:HE1	1.95	0.48
38:n:68:ALA:HA	51:1:2707:U:O2'	2.13	0.48
51:1:999:U:H5"	51:1:1154:G:O6	2.13	0.48
51:1:1343:G:N3	51:1:1343:G:H2'	2.28	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2556:C:H2'	51:1:2557:G:H5'	1.96	0.48
53:3:83:C:O2'	53:3:84:U:H3'	2.13	0.48
64:6:36:U:H2'	64:6:37:A:C8	2.48	0.48
1:A:36:VAL:HG13	1:A:40:CYS:HB3	1.94	0.48
3:C:16:THR:OG1	3:C:17:GLY:N	2.44	0.48
27:b:48:ILE:HG22	51:1:779:U:OP2	2.13	0.48
28:c:59:ARG:O	28:c:59:ARG:NH2	2.37	0.48
51:1:157:C:H2'	51:1:158:U:O4'	2.13	0.48
51:1:441:U:H2'	51:1:442:G:C8	2.49	0.48
51:1:459:U:H2'	51:1:460:A:O4'	2.13	0.48
51:1:821:A:H5"	51:1:822:G:C8	2.49	0.48
51:1:1333:G:H2'	51:1:1334:G:C8	2.49	0.48
51:1:2834:G:H2'	51:1:2879:A:N6	2.29	0.48
53:3:193:C:H2'	53:3:194:C:C5	2.49	0.48
53:3:701:U:O4'	53:3:703:G:H1'	2.14	0.48
53:3:1251:A:H2'	53:3:1252:A:H8	1.79	0.48
4:D:24:THR:HG23	4:D:27:GLY:H	1.78	0.48
9:I:12:ARG:NH1	9:I:36:ALA:O	2.46	0.48
9:I:37:PRO:HD2	9:I:41:GLY:HA3	1.96	0.48
17:Q:36:VAL:HG13	17:Q:73:LEU:HD11	1.96	0.48
21:U:8:ARG:NH1	53:3:391:G:H5"	2.29	0.48
37:m:65:ILE:HG22	37:m:67:VAL:H	1.78	0.48
41:q:84:LYS:HB3	41:q:115:ALA:HB1	1.94	0.48
51:1:166:U:H2'	51:1:167:A:H8	1.78	0.48
51:1:340:A:C2'	51:1:341:C:H5'	2.43	0.48
51:1:443:A:H2	51:1:1246:A:H1'	1.78	0.48
51:1:2884:U:O2	51:1:2884:U:H3'	2.14	0.48
53:3:483:C:C3'	53:3:484:G:H5'	2.44	0.48
53:3:1308:U:H2'	53:3:1309:G:C8	2.49	0.48
59:B2:207:THR:OG1	59:B2:354:ASP:OD2	2.32	0.48
1:A:26:SER:OG	1:A:27:THR:N	2.47	0.48
15:O:15:HIS:HA	15:O:18:ILE:HG22	1.96	0.48
28:c:8:LYS:HB2	28:c:201:LEU:HD11	1.96	0.48
29:d:23:PHE:H	29:d:114:ARG:HH22	1.60	0.48
35:k:48:PRO:HB3	53:3:1422:G:OP1	2.13	0.48
37:m:22:GLN:HE21	51:1:864:G:P	2.36	0.48
37:m:22:GLN:NE2	51:1:864:G:OP1	2.47	0.48
51:1:1036:G:H1	51:1:1119:U:H3	1.60	0.48
51:1:1258:U:H2'	51:1:1259:G:C8	2.48	0.48
51:1:2600:A:H2'	51:1:2601:C:C6	2.48	0.48
53:3:129:A:O2'	53:3:130:A:H5"	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1349:A:H2'	53:3:1350:A:O4'	2.13	0.48
55:8:3:DC:H2"	55:8:4:DT:C7	2.42	0.48
58:B1:108:ALA:HB1	58:B1:279:LEU:HD22	1.96	0.48
58:B1:395:LYS:NZ	58:B1:399:LYS:CD	2.74	0.48
58:B1:833:GLU:N	58:B1:1242:ARG:HH12	2.12	0.48
62:NG:161:SER:CA	62:NG:170:PRO:HA	2.43	0.48
12:L:78:ARG:NH1	12:L:82:SER:O	2.46	0.48
16:P:83:VAL:HG11	16:P:96:ILE:HG12	1.95	0.48
28:c:134:HIS:CD2	51:1:1675:C:H42	2.32	0.48
30:e:132:ARG:NH1	30:e:148:VAL:O	2.46	0.48
36:l:43:GLY:N	51:1:671:C:OP1	2.47	0.48
38:n:34:ILE:HA	51:1:1279:G:OP1	2.13	0.48
51:1:404:A:H2	51:1:421:C:N3	2.11	0.48
51:1:858:G:H5'	51:1:859:G:OP2	2.14	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
58:B1:202:ARG:HH11	58:B1:202:ARG:CG	2.14	0.48
58:B1:1036:ARG:HE	58:B1:1081:VAL:HG11	1.79	0.48
58:B1:1221:LEU:HD22	58:B1:1306:LEU:HB2	1.96	0.48
66:0:157:GLN:HE22	66:0:161:ARG:HE	1.61	0.48
66:0:319:ALA:HB3	66:0:397:LEU:HB2	1.96	0.48
66:0:330:VAL:HG11	66:0:386:ILE:HD11	1.96	0.48
20:T:19:ASN:HB2	53:3:750:C:C4'	2.43	0.48
22:V:11:VAL:HA	22:V:22:VAL:HA	1.95	0.48
37:m:43:ALA:HB2	37:m:69:PRO:HG3	1.96	0.48
45:u:5:ARG:HH11	51:1:84:A:H5"	1.77	0.48
51:1:80:G:H2'	51:1:81:G:C8	2.49	0.48
51:1:511:U:H2'	51:1:512:G:H5'	1.95	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
53:3:230:G:O2'	53:3:231:U:H5'	2.14	0.48
53:3:483:C:H3'	53:3:484:G:H5'	1.94	0.48
53:3:1465:A:H2'	53:3:1466:C:C6	2.48	0.48
58:B1:29:MET:HG2	59:B2:1336:ASN:ND2	2.29	0.48
66:0:99:VAL:HG11	66:0:126:VAL:HG12	1.95	0.48
66:0:501:VAL:HG11	66:0:604:GLY:CA	2.43	0.48
66:0:530:ASN:HD22	66:0:532:LYS:HB2	1.79	0.48
27:b:15:VAL:HB	27:b:205:GLY:HA3	1.95	0.47
29:d:67:ARG:NH2	51:1:1257:C:H5"	2.29	0.47
33:i:65:SER:OG	33:i:66:PHE:N	2.46	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:j:118:MET:HB2	34:j:118:MET:HE3	1.75	0.47
49:y:43:LEU:HD21	49:y:47:ARG:HH11	1.79	0.47
51:1:367:G:H2'	51:1:368:A:O4'	2.14	0.47
51:1:1993:U:H2'	51:1:1994:C:O4'	2.14	0.47
51:1:2143:C:H3'	51:1:2144:G:C8	2.49	0.47
51:1:2276:G:C2'	51:1:2277:G:H5'	2.44	0.47
51:1:2588:G:C6	51:1:2607:G:C2	3.02	0.47
52:2:3:C:C3'	52:2:4:C:H5"	2.42	0.47
53:3:751:U:C2'	53:3:752:G:H5'	2.44	0.47
58:B1:145:VAL:HG12	58:B1:184:ALA:HB1	1.94	0.47
58:B1:255:LEU:HD23	58:B1:261:ALA:HB2	1.95	0.47
59:B2:411:ARG:NH2	59:B2:427:ASP:OD2	2.44	0.47
66:0:422:PRO:HG3	66:0:428:GLN:HB2	1.96	0.47
1:A:8:LYS:NZ	1:A:10:GLU:OE1	2.45	0.47
3:C:5:ARG:NH2	3:C:23:THR:O	2.48	0.47
7:G:53:LEU:HA	7:G:56:LEU:HB2	1.96	0.47
12:L:91:ARG:HG2	12:L:91:ARG:HH11	1.78	0.47
20:T:74:VAL:HA	20:T:77:TYR:HB3	1.96	0.47
24:X:39:ILE:HD11	24:X:70:LEU:HD23	1.96	0.47
29:d:178:VAL:HA	29:d:181:ILE:HG22	1.95	0.47
37:m:111:GLU:HA	37:m:114:ARG:HB3	1.96	0.47
51:1:118:A:H5'	51:1:119:A:H8	1.79	0.47
51:1:145:C:H2'	51:1:146:A:C8	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
51:1:2257:U:O2'	51:1:2258:C:H5'	2.14	0.47
51:1:2367:G:O2'	51:1:2368:C:H5'	2.14	0.47
55:8:14:DC:H2'	55:8:15:DC:H6	1.79	0.47
7:G:72:LYS:HZ2	7:G:74:ALA:HB3	1.78	0.47
10:J:83:PRO:HD3	10:J:97:PRO:HG3	1.96	0.47
34:j:116:ARG:HH22	51:1:528:A:H8	1.60	0.47
36:l:30:THR:O	36:l:33:ARG:N	2.46	0.47
38:n:40:LYS:O	38:n:44:LEU:N	2.48	0.47
51:1:1710:G:H2'	51:1:1711:A:C8	2.49	0.47
51:1:1810:A:H2'	51:1:1811:G:H5'	1.96	0.47
51:1:2654:A:H8	51:1:2654:A:OP1	1.97	0.47
53:3:211:G:H3'	53:3:211:G:N3	2.29	0.47
53:3:563:A:H5'	53:3:566:G:C2	2.48	0.47
53:3:840:C:C2'	53:3:841:C:H5"	2.41	0.47
53:3:1414:U:H2'	53:3:1415:G:H8	1.79	0.47
53:3:1478:U:H2'	53:3:1479:C:C6	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:1493:A:N7	67:h:6:5OH:NQ	2.61	0.47
58:B1:1150:PRO:HG3	58:B1:1214:PRO:HB2	1.97	0.47
59:B2:562:GLU:OE1	59:B2:662:SER:OG	2.28	0.47
66:0:463:GLU:O	66:0:467:ASP:N	2.42	0.47
2:B:37:HIS:HB3	2:B:43:THR:HG22	1.97	0.47
7:G:18:GLN:NE2	7:G:189:ASN:HB3	2.30	0.47
10:J:24:VAL:HG13	10:J:26:GLY:H	1.79	0.47
10:J:87:VAL:HA	10:J:92:ARG:HA	1.96	0.47
11:K:86:ARG:NH2	53:3:673:A:O3'	2.48	0.47
17:Q:87:LYS:HE3	17:Q:87:LYS:HB3	1.69	0.47
31:f:107:GLY:O	51:1:2666:C:N4	2.47	0.47
34:j:7:LYS:HE2	51:1:539:G:H5'	1.95	0.47
51:1:139:U:H2'	51:1:140:C:C5	2.49	0.47
51:1:524:G:O2'	51:1:525:U:H5'	2.14	0.47
51:1:833:A:H2'	51:1:834:G:H8	1.78	0.47
51:1:937:C:H2'	51:1:938:G:H8	1.78	0.47
51:1:1414:C:H42	51:1:1588:G:H1	1.62	0.47
51:1:2475:C:H2'	51:1:2476:A:H5'	1.97	0.47
53:3:316:C:H2'	53:3:317:U:H6	1.79	0.47
53:3:631:C:H5"	53:3:632:U:O4'	2.15	0.47
53:3:1015:G:H2'	53:3:1016:A:O4'	2.14	0.47
57:A2:102:LEU:HD12	57:A2:115:ILE:HG12	1.96	0.47
58:B1:526:VAL:HG12	58:B1:549:LYS:HB2	1.96	0.47
58:B1:891:ASP:OD2	58:B1:1290:ARG:NH2	2.47	0.47
58:B1:1146:GLU:OE2	58:B1:1310:THR:HG22	2.14	0.47
59:B2:1286:THR:O	59:B2:1290:MET:HB2	2.14	0.47
9:I:140:ASP:O	9:I:181:PHE:N	2.46	0.47
10:J:23:THR:HG21	53:3:15:G:N3	2.29	0.47
19:S:41:TRP:HZ2	24:X:10:ILE:HG22	1.79	0.47
27:b:158:GLY:HA3	51:1:1820:U:C5	2.50	0.47
48:x:4:CYS:SG	48:x:5:GLN:N	2.86	0.47
51:1:341:C:H2'	51:1:342:A:H8	1.79	0.47
51:1:739:A:H1'	51:1:740:C:H5	1.79	0.47
51:1:1463:C:H2'	51:1:1464:G:C8	2.48	0.47
51:1:1856:U:H2'	51:1:1857:G:O4'	2.15	0.47
51:1:1914:C:N4	53:3:1409:C:O3'	2.47	0.47
51:1:2316:G:O2'	51:1:2317:A:H5'	2.14	0.47
53:3:1435:G:H1	53:3:1466:C:H42	1.63	0.47
58:B1:1261:LEU:HD12	58:B1:1304:ARG:HH21	1.79	0.47
2:B:2:VAL:O	51:1:2615:U:C4	2.67	0.47
8:H:32:LEU:HD21	19:S:78:LEU:HD11	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:51:VAL:HA	8:H:69:THR:HA	1.97	0.47
13:M:63:LYS:HG2	13:M:70:VAL:HG21	1.95	0.47
18:R:23:GLY:HA2	18:R:68:LEU:HD13	1.97	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
51:1:215:G:O3'	51:1:216:A:H4'	2.15	0.47
51:1:696:G:O2'	51:1:697:G:H5'	2.15	0.47
51:1:1103:A:H2'	51:1:1103:A:N3	2.29	0.47
51:1:2450:A:OP1	51:1:2497:A:O2'	2.31	0.47
51:1:2537:U:H2'	51:1:2538:C:H6	1.78	0.47
51:1:2721:A:H2'	51:1:2722:G:O4'	2.14	0.47
51:1:2813:A:H2'	51:1:2814:A:H8	1.78	0.47
53:3:253:A:H4'	53:3:276:G:O2'	2.15	0.47
53:3:343:U:O2'	53:3:344:A:H2'	2.14	0.47
53:3:1436:U:H2'	53:3:1437:A:C8	2.45	0.47
53:3:1465:A:H2'	53:3:1466:C:H6	1.80	0.47
58:B1:1347:LEU:HG	58:B1:1357:ILE:HG23	1.96	0.47
66:0:22:GLY:N	69:0:801:GDP:O1B	2.47	0.47
7:G:66:ILE:HD11	7:G:161:PHE:HB2	1.96	0.47
17:Q:58:ASN:OD1	17:Q:58:ASN:N	2.46	0.47
30:e:22:ASN:ND2	30:e:26:GLN:OE1	2.48	0.47
30:e:31:GLU:HG2	30:e:32:LYS:H	1.80	0.47
32:g:93:SER:HB3	32:g:121:VAL:HG12	1.97	0.47
33:i:7:TYR:CE1	51:1:1058:U:H5'	2.49	0.47
34:j:60:ASP:OD1	34:j:60:ASP:N	2.41	0.47
44:t:89:GLU:OE1	44:t:91:GLN:NE2	2.48	0.47
51:1:593:U:H2'	51:1:594:U:C6	2.49	0.47
51:1:744:U:H5"	51:1:1658:C:H5"	1.96	0.47
51:1:820:A:O2'	51:1:821:A:H5'	2.15	0.47
51:1:1095:A:C8	66:0:632:ILE:HD11	2.50	0.47
51:1:1153:C:H2'	51:1:1154:G:O4'	2.15	0.47
52:2:51:G:N3	52:2:52:A:H1'	2.30	0.47
53:3:325:A:H2'	53:3:326:G:O4'	2.15	0.47
53:3:554:A:C2'	53:3:555:U:H5'	2.43	0.47
53:3:1059:C:H2'	53:3:1060:U:C6	2.49	0.47
53:3:1161:C:H2'	53:3:1162:C:C6	2.50	0.47
53:3:1424:U:H3	53:3:1476:A:N6	2.05	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
59:B2:400:VAL:HG22	59:B2:584:TYR:HB3	1.96	0.47
59:B2:517:GLN:HB3	59:B2:760:ASN:H	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:B2:689:ALA:HB2	59:B2:1233:LEU:HD23	1.97	0.47
59:B2:1314:GLN:HB2	60:W0:28:ARG:HH12	1.79	0.47
63:5:50:U:H2'	63:5:51:U:C6	2.49	0.47
64:6:62:C:H5'	65:a:53:ARG:CZ	2.45	0.47
66:0:369:ASN:OD1	66:0:369:ASN:N	2.48	0.47
7:G:132:GLU:OE2	7:G:136:ARG:NE	2.47	0.47
13:M:4:ASP:OD2	13:M:76:ARG:NH2	2.47	0.47
13:M:89:ASP:OD1	13:M:89:ASP:N	2.37	0.47
15:O:21:ALA:HB2	15:O:93:ALA:HB2	1.97	0.47
27:b:240:GLY:HA2	51:1:2597:G:H5"	1.97	0.47
31:f:85:LYS:HE2	31:f:129:GLU:HB3	1.97	0.47
34:j:47:HIS:CD2	51:1:536:G:H21	2.32	0.47
36:l:109:LYS:HB3	51:1:636:G:O6	2.15	0.47
44:t:67:VAL:HG12	44:t:76:ARG:HA	1.96	0.47
46:v:21:ARG:HH12	52:2:77:U:H5"	1.80	0.47
47:w:45:ALA:N	47:w:77:SER:OG	2.42	0.47
47:w:56:PHE:HE2	51:1:2365:G:H5'	1.80	0.47
51:1:1018:U:H2'	51:1:1019:U:O4'	2.13	0.47
51:1:1572:A:O2'	51:1:1573:G:H5'	2.15	0.47
52:2:30:C:H2'	52:2:31:C:H5'	1.95	0.47
53:3:1268:G:H21	53:3:1327:C:H1'	1.79	0.47
53:3:1441:A:N3	53:3:1441:A:H2'	2.30	0.47
53:3:1486:G:H2'	53:3:1487:G:O4'	2.15	0.47
59:B2:732:ILE:HD11	59:B2:769:PRO:HB3	1.95	0.47
59:B2:1311:GLY:O	60:W0:31:GLN:NE2	2.47	0.47
15:O:64:GLN:HB3	19:S:98:ALA:HB3	1.96	0.47
33:i:79:LEU:HD22	33:i:131:THR:HG23	1.97	0.47
48:x:1:SER:HG	51:1:1365:A:H5'	1.80	0.47
51:1:1595:C:H2'	51:1:1596:A:H8	1.79	0.47
51:1:1900:A:H5'	51:1:1970:A:H5'	1.96	0.47
51:1:2248:C:C2'	51:1:2249:U:H5'	2.44	0.47
51:1:2515:C:O2'	51:1:2516:A:H5'	2.15	0.47
52:2:116:G:O2'	52:2:117:G:H5'	2.15	0.47
53:3:1170:A:H2'	53:3:1171:A:H5'	1.97	0.47
53:3:1382:C:H2'	53:3:1383:C:C6	2.50	0.47
58:B1:1167:LYS:NZ	58:B1:1170:LYS:HB2	2.30	0.47
59:B2:1314:GLN:HA	60:W0:28:ARG:HH22	1.80	0.47
62:NG:142:ALA:O	62:NG:143:ASP:CB	2.63	0.47
66:0:420:VAL:HB	66:0:458:ILE:HD11	1.97	0.47
16:P:23:HIS:HB3	16:P:30:ILE:HG23	1.96	0.47
51:1:1196:C:O2'	51:1:1197:G:H5'	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1388:G:H2'	51:1:1389:G:C8	2.50	0.47
51:1:1414:C:H2'	51:1:1415:U:H5'	1.95	0.47
51:1:1858:A:N6	51:1:1884:G:O2'	2.48	0.47
51:1:2153:C:H3'	51:1:2154:A:H8	1.78	0.47
51:1:2521:C:H42	51:1:2544:G:H1	1.62	0.47
51:1:2682:A:O2'	51:1:2683:C:H5'	2.14	0.47
53:3:344:A:OP1	66:0:38:HIS:NE2	2.48	0.47
53:3:835:U:C3'	53:3:836:G:H5"	2.45	0.47
53:3:859:G:O2'	53:3:860:A:H5'	2.15	0.47
53:3:1161:C:H2'	53:3:1162:C:H6	1.78	0.47
58:B1:198:CYS:HA	58:B1:221:ILE:CD1	2.45	0.47
58:B1:395:LYS:NZ	58:B1:399:LYS:CE	2.78	0.47
58:B1:420:PRO:HA	58:B1:437:PHE:O	2.15	0.47
63:5:29:G:H3'	63:5:30:G:C8	2.50	0.47
66:0:24:THR:HG21	66:0:62:THR:HG21	1.97	0.47
66:0:498:VAL:HG22	66:0:499:THR:H	1.79	0.47
3:C:6:GLU:HG2	3:C:26:LYS:HD3	1.96	0.46
24:X:32:THR:O	24:X:56:HIS:NE2	2.45	0.46
25:Y:22:SER:HB2	53:3:1458:G:H4'	1.98	0.46
33:i:47:SER:O	33:i:47:SER:OG	2.31	0.46
51:1:680:C:H42	51:1:797:G:H1	1.63	0.46
51:1:1209:U:H2'	51:1:1210:G:H21	1.80	0.46
51:1:1321:A:C2	51:1:1322:A:H1'	2.50	0.46
51:1:1470:A:N6	51:1:1521:G:H1'	2.31	0.46
51:1:1663:G:O2'	51:1:1664:A:H8	1.98	0.46
51:1:1924:C:H3'	51:1:1925:C:C5	2.49	0.46
51:1:1933:G:H2'	51:1:1934:C:H6	1.80	0.46
53:3:556:C:H2'	53:3:557:G:O4'	2.15	0.46
53:3:1084:G:O2'	53:3:1103:C:H5	1.98	0.46
53:3:1093:A:H2'	53:3:1094:G:H5'	1.95	0.46
53:3:1274:A:H2'	53:3:1275:A:H5"	1.96	0.46
54:4:1:A:H2'	54:4:2:U:C6	2.50	0.46
58:B1:395:LYS:HE3	58:B1:395:LYS:HB3	1.45	0.46
66:0:136:PRO:HB3	66:0:256:VAL:HG12	1.97	0.46
66:0:376:GLU:OE1	66:0:378:ARG:NE	2.48	0.46
66:0:494:ILE:HG21	66:0:605:PHE:CD1	2.50	0.46
3:C:8:ILE:HD11	3:C:50:GLU:HB2	1.96	0.46
8:H:2:GLN:NE2	53:3:1062:U:O4	2.48	0.46
13:M:102:VAL:HB	13:M:126:CYS:HB3	1.96	0.46
28:c:49:GLN:HE21	28:c:79:LEU:HB3	1.79	0.46
28:c:119:ALA:C	51:1:1655:A:H4'	2.40	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:i:9:LYS:HZ2	51:1:1059:G:P	2.38	0.46
42:r:80:ARG:HD3	51:1:566:U:H5	1.80	0.46
43:s:82:MET:HE1	51:1:1322:A:H4'	1.97	0.46
51:1:1444:G:H2'	51:1:1445:G:H8	1.76	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	2.50	0.46
51:1:2080:A:C6	51:1:2081:U:C4	3.04	0.46
51:1:2134:A:C5	51:1:2157:G:H4'	2.51	0.46
51:1:2861:U:O2'	51:1:2862:G:H5'	2.15	0.46
53:3:1000:A:H2'	53:3:1001:C:O4'	2.15	0.46
58:B1:809:VAL:HG21	58:B1:909:ILE:HG12	1.95	0.46
58:B1:1027:VAL:HB	58:B1:1121:LEU:HB2	1.96	0.46
58:B1:1357:ILE:HD13	59:B2:1279:GLU:HG2	1.97	0.46
5:E:7:ARG:NH2	51:1:245:G:N7	2.63	0.46
6:F:15:LYS:N	6:F:26:ILE:O	2.41	0.46
7:G:33:ALA:N	7:G:37:VAL:O	2.46	0.46
8:H:30:ASP:OD1	8:H:30:ASP:N	2.47	0.46
14:N:56:MET:HB2	14:N:60:LEU:HB2	1.97	0.46
25:Y:79:THR:HA	25:Y:82:ILE:HB	1.97	0.46
29:d:22:ASP:OD1	29:d:22:ASP:N	2.48	0.46
29:d:173:THR:OG1	29:d:174:GLY:N	2.48	0.46
31:f:98:LYS:HD2	31:f:98:LYS:HA	1.79	0.46
51:1:233:A:H5'	51:1:233:A:C8	2.51	0.46
51:1:786:C:O2'	51:1:787:C:H5'	2.16	0.46
51:1:1136:G:H2'	51:1:1137:G:H8	1.80	0.46
51:1:1842:G:O2'	51:1:1843:C:H5'	2.15	0.46
51:1:2491:U:C2'	51:1:2492:U:H5'	2.42	0.46
53:3:528:C:H4'	53:3:535:A:C6	2.51	0.46
53:3:857:C:H2'	53:3:858:G:O4'	2.14	0.46
58:B1:109:SER:HB2	58:B1:296:LYS:HG2	1.98	0.46
59:B2:148:GLN:NE2	59:B2:535:PRO:O	2.40	0.46
63:5:26:A:H61	63:5:44:G:H22	1.64	0.46
2:B:14:MET:HG2	51:1:15:G:O2'	2.16	0.46
7:G:17:HIS:CE1	7:G:187:ASP:HB2	2.50	0.46
8:H:49:ALA:O	8:H:69:THR:OG1	2.34	0.46
8:H:147:GLY:HA2	8:H:170:GLY:HA3	1.97	0.46
31:f:88:LEU:O	31:f:128:THR:OG1	2.33	0.46
36:l:37:GLY:O	36:l:41:ARG:NH2	2.44	0.46
43:s:82:MET:HB2	43:s:98:LYS:HB2	1.97	0.46
51:1:441:U:H2'	51:1:442:G:H8	1.81	0.46
51:1:1639:C:H2'	51:1:1640:A:H5'	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1943:U:OP1	51:1:1943:U:H6	1.98	0.46
51:1:2135:A:H8	51:1:2156:G:H21	1.64	0.46
51:1:2646:C:H2'	51:1:2647:U:O4'	2.16	0.46
53:3:980:C:H2'	53:3:981:U:O4'	2.15	0.46
58:B1:772:TYR:HE2	59:B2:561:ILE:HG21	1.81	0.46
59:B2:28:LEU:HD21	59:B2:524:ILE:HG13	1.98	0.46
59:B2:1002:LEU:HD21	59:B2:1007:LYS:HB2	1.98	0.46
63:5:8:U:H2'	63:5:13:C:N4	2.30	0.46
5:E:32:LEU:HD12	5:E:32:LEU:HA	1.73	0.46
8:H:39:ARG:HA	8:H:42:LEU:HB3	1.97	0.46
27:b:120:ASP:N	27:b:120:ASP:OD1	2.49	0.46
27:b:210:ALA:HA	27:b:213:ARG:HG3	1.96	0.46
27:b:250:GLN:HB3	27:b:254:LYS:HD2	1.96	0.46
29:d:47:LYS:HG2	51:1:451:U:OP2	2.15	0.46
32:g:30:LEU:HA	32:g:35:LYS:HE3	1.97	0.46
35:k:31:ARG:HH12	51:1:2676:C:P	2.39	0.46
45:u:8:ASP:O	45:u:23:LYS:NZ	2.45	0.46
46:v:7:GLU:HG3	46:v:41:GLU:HB3	1.97	0.46
51:1:2845:U:H2'	51:1:2846:G:C8	2.50	0.46
53:3:951:G:H2'	53:3:952:U:H6	1.79	0.46
55:8:20:DA:H4'	59:B2:143:ARG:NH1	2.31	0.46
58:B1:352:ARG:HB2	59:B2:1268:GLN:NE2	2.30	0.46
9:I:103:ARG:HD2	9:I:167:PRO:HG3	1.97	0.46
12:L:101:ARG:HH22	53:3:940:C:P	2.37	0.46
14:N:30:ASN:N	14:N:64:ILE:O	2.48	0.46
14:N:40:ARG:NE	53:3:1292:G:H5"	2.31	0.46
14:N:72:SER:HA	14:N:75:ALA:HB3	1.98	0.46
27:b:155:ARG:NH1	51:1:1818:U:C5	2.81	0.46
28:c:55:LYS:HG3	28:c:77:ARG:HB3	1.97	0.46
51:1:175:G:H2'	51:1:176:A:H8	1.81	0.46
51:1:365:U:H2'	51:1:366:C:O4'	2.16	0.46
51:1:690:G:H2'	51:1:691:C:H5'	1.98	0.46
51:1:704:G:N3	51:1:726:G:C2	2.84	0.46
51:1:866:A:H61	51:1:913:U:C1'	2.28	0.46
51:1:1569:A:H2'	51:1:1570:A:C8	2.51	0.46
51:1:1868:C:C2'	51:1:1869:G:H5'	2.42	0.46
51:1:2259:U:C6	51:1:2427:C:C5	3.04	0.46
51:1:2531:A:C2'	51:1:2532:G:H5'	2.45	0.46
53:3:460:A:H2'	53:3:461:A:C8	2.51	0.46
53:3:1018:G:O2'	53:3:1019:A:H5'	2.16	0.46
59:B2:318:SER:OG	59:B2:320:ASP:OD1	2.31	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:91:ARG:HG2	12:L:91:ARG:NH1	2.30	0.46
17:Q:34:THR:HG22	17:Q:76:HIS:CD2	2.51	0.46
17:Q:83:GLY:H	53:3:552:U:H4'	1.80	0.46
31:f:136:ASP:HB3	31:f:139:VAL:HG12	1.97	0.46
51:1:233:A:H5'	51:1:233:A:H8	1.81	0.46
51:1:433:C:O2'	51:1:434:U:H5'	2.15	0.46
51:1:717:C:H2'	51:1:718:A:H5'	1.98	0.46
51:1:845:A:N3	51:1:845:A:H3'	2.31	0.46
51:1:1085:A:H2'	51:1:1086:A:N7	2.30	0.46
51:1:1313:U:O2	51:1:1313:U:C2'	2.64	0.46
51:1:1587:G:H2'	51:1:1588:G:C8	2.50	0.46
51:1:1642:G:O2'	51:1:1643:G:H5'	2.15	0.46
51:1:2785:C:H2'	51:1:2786:U:C6	2.51	0.46
53:3:138:G:H2'	53:3:139:A:H8	1.79	0.46
53:3:1260:G:H4'	53:3:1284:C:H5'	1.98	0.46
57:A2:64:VAL:HG11	57:A2:78:ILE:HG21	1.97	0.46
58:B1:209:ASN:HA	58:B1:214:ARG:NH2	2.30	0.46
3:C:35:LEU:HD21	51:1:2286:G:H22	1.81	0.46
5:E:57:VAL:O	5:E:61:LEU:N	2.41	0.46
13:M:104:SER:OG	53:3:642:A:N3	2.48	0.46
14:N:96:GLU:O	14:N:100:ALA:N	2.41	0.46
16:P:97:ARG:HA	16:P:100:ASN:HD22	1.81	0.46
25:Y:60:GLN:HA	25:Y:63:LYS:HD2	1.98	0.46
29:d:49:ARG:NH1	51:1:674:G:OP2	2.48	0.46
51:1:1086:A:H1'	51:1:1103:A:H2	1.81	0.46
51:1:1695:G:H2'	51:1:1696:G:O4'	2.15	0.46
51:1:1841:U:H2'	51:1:1842:G:C8	2.51	0.46
53:3:37:U:H2'	53:3:38:G:H5'	1.98	0.46
53:3:250:A:O4'	53:3:252:U:H1'	2.15	0.46
53:3:556:C:O2'	53:3:557:G:H5'	2.16	0.46
53:3:1069:C:H4'	53:3:1192:C:O2	2.16	0.46
58:B1:220:ARG:HG2	58:B1:220:ARG:NH1	2.26	0.46
58:B1:375:GLU:HB3	59:B2:1245:ALA:HB3	1.97	0.46
59:B2:735:LYS:HA	59:B2:748:ILE:HG22	1.97	0.46
1:A:9:TYR:HE1	30:e:61:GLY:H	1.63	0.46
8:H:10:ARG:HA	8:H:13:ILE:HD11	1.97	0.46
12:L:79:VAL:O	12:L:79:VAL:HG12	2.16	0.46
14:N:16:ALA:HA	14:N:66:VAL:HA	1.98	0.46
17:Q:11:ARG:NH1	53:3:563:A:H2	2.13	0.46
20:T:50:HIS:ND1	53:3:667:G:H4'	2.31	0.46
34:j:7:LYS:HG2	34:j:10:THR:HG23	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:o:6:ALA:HA	39:o:9:ARG:HE	1.81	0.46
49:y:10:SER:HA	49:y:13:GLU:HB3	1.98	0.46
51:1:44:A:C2'	51:1:45:G:H5'	2.45	0.46
51:1:1661:G:O2'	51:1:1662:U:H5'	2.16	0.46
51:1:2695:U:H2'	51:1:2696:U:C6	2.51	0.46
53:3:478:A:H2'	53:3:479:U:C4'	2.46	0.46
53:3:1104:G:H2'	53:3:1105:A:O4'	2.16	0.46
57:A2:80:GLU:HG3	59:B2:694:ARG:HH22	1.81	0.46
65:a:193:LEU:O	65:a:197:LYS:N	2.42	0.46
10:J:161:GLU:HA	10:J:164:LEU:HD12	1.98	0.46
12:L:66:GLU:HA	12:L:69:ARG:HG3	1.96	0.46
15:O:36:VAL:HG22	15:O:38:GLY:H	1.80	0.46
27:b:71:ASP:HB3	27:b:118:GLY:HA2	1.98	0.46
51:1:742:A:O2'	51:1:743:A:H5'	2.15	0.46
51:1:824:U:H2'	51:1:825:A:O4'	2.15	0.46
51:1:940:G:H2'	51:1:941:A:H5"	1.97	0.46
51:1:1177:G:C2'	51:1:1178:C:H5"	2.45	0.46
51:1:1790:C:H2'	51:1:1791:A:C5	2.51	0.46
51:1:2190:G:H2'	51:1:2191:A:O4'	2.16	0.46
51:1:2741:A:H61	51:1:2763:G:H1'	1.80	0.46
53:3:10:A:H2'	53:3:11:G:C8	2.51	0.46
53:3:545:C:O2'	53:3:546:A:H5'	2.14	0.46
53:3:569:C:H4'	53:3:574:A:N7	2.31	0.46
53:3:1448:C:O2	53:3:1448:C:H2'	2.15	0.46
57:A1:35:PHE:HA	57:A1:38:THR:HG22	1.97	0.46
57:A1:59:VAL:HG22	57:A1:144:ILE:HA	1.97	0.46
58:B1:484:MET:CE	59:B2:1278:LEU:HD21	2.46	0.46
58:B1:1060:VAL:HG13	58:B1:1106:ILE:HG12	1.96	0.46
59:B2:902:LEU:HD11	59:B2:908:GLU:HB3	1.97	0.46
66:0:533:GLY:HA3	66:0:572:VAL:HG22	1.97	0.46
4:D:1:MET:HE3	4:D:3:ARG:HH21	1.80	0.45
7:G:115:ASP:OD1	7:G:115:ASP:N	2.42	0.45
13:M:46:GLU:O	13:M:61:THR:OG1	2.28	0.45
16:P:115:ILE:HD12	16:P:116:PRO:HD2	1.98	0.45
18:R:53:ASP:OD1	18:R:53:ASP:N	2.48	0.45
20:T:38:LEU:HD23	20:T:55:LEU:HD12	1.98	0.45
21:U:4:ILE:HD13	21:U:21:VAL:HA	1.98	0.45
29:d:131:THR:HA	29:d:134:LEU:HB3	1.98	0.45
48:x:16:ASN:HB2	48:x:24:THR:HB	1.97	0.45
51:1:107:G:H2'	51:1:108:G:C8	2.51	0.45
51:1:141:G:C8	51:1:142:A:H1'	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2680:U:O2'	51:1:2681:C:H5'	2.17	0.45
53:3:113:G:O2'	53:3:353:A:H4'	2.16	0.45
53:3:271:C:H2'	53:3:272:C:C6	2.51	0.45
53:3:323:U:H3	53:3:327:A:H62	1.64	0.45
53:3:684:U:H3	53:3:706:A:H61	1.63	0.45
53:3:994:A:H3'	53:3:994:A:OP2	2.15	0.45
53:3:1121:U:H2'	53:3:1122:U:C6	2.51	0.45
58:B1:105:ILE:HD12	58:B1:242:LEU:CD2	2.44	0.45
58:B1:506:VAL:HG23	58:B1:628:GLY:HA3	1.98	0.45
59:B2:103:VAL:HG12	59:B2:117:ILE:HG22	1.97	0.45
59:B2:230:PHE:HB2	59:B2:333:ILE:HB	1.97	0.45
63:5:6:G:H2'	63:5:7:A:C8	2.51	0.45
63:5:70:G:H2'	63:5:71:G:C8	2.51	0.45
5:E:7:ARG:NH1	51:1:243:U:OP2	2.49	0.45
15:O:15:HIS:CG	53:3:1152:A:H5'	2.51	0.45
16:P:71:ASP:OD1	16:P:71:ASP:N	2.43	0.45
22:V:21:VAL:HG22	22:V:44:HIS:HA	1.98	0.45
23:W:37:LYS:HE2	23:W:37:LYS:HB2	1.73	0.45
27:b:86:ARG:HB3	27:b:88:ALA:H	1.80	0.45
27:b:155:ARG:CZ	51:1:1818:U:C5	2.99	0.45
32:g:68:ARG:O	32:g:72:ILE:N	2.48	0.45
35:k:61:VAL:O	35:k:85:VAL:N	2.47	0.45
40:p:74:GLN:NE2	51:1:2683:C:O2'	2.49	0.45
51:1:2101:A:H2'	51:1:2102:G:C8	2.50	0.45
53:3:334:C:H2'	53:3:335:C:O4'	2.16	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:B1:1227:HIS:HA	58:B1:1230:THR:HG22	1.99	0.45
60:W0:25:ARG:NH1	60:W0:61:ASN:OD1	2.49	0.45
66:0:15:ILE:O	66:0:89:THR:OG1	2.35	0.45
66:0:520:ILE:HD12	66:0:576:ILE:HD11	1.99	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
10:J:156:ARG:NH1	13:M:98:LEU:O	2.49	0.45
11:K:18:VAL:HG13	11:K:19:PRO:HD3	1.97	0.45
28:c:61:THR:HB	28:c:63:PRO:HD2	1.96	0.45
42:r:49:ILE:HG22	42:r:54:VAL:HG22	1.98	0.45
48:x:57:VAL:HG12	48:x:61:LYS:HZ3	1.81	0.45
51:1:642:U:H2'	51:1:644:A:OP2	2.16	0.45
51:1:1069:A:H2'	51:1:1073:A:C5	2.51	0.45
51:1:2751:G:O2'	51:1:2752:C:H5'	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:3:131:A:H2'	53:3:132:C:C6	2.51	0.45
53:3:433:G:H2'	53:3:434:U:C6	2.51	0.45
53:3:607:A:H2'	53:3:608:A:O4'	2.17	0.45
53:3:1289:A:H2'	53:3:1290:G:H5'	1.98	0.45
53:3:1316:G:H2'	53:3:1317:C:H5"	1.99	0.45
58:B1:128:LEU:HD21	58:B1:188:LEU:HB3	1.97	0.45
58:B1:141:PHE:CE2	58:B1:296:LYS:CB	2.94	0.45
58:B1:201:LEU:CD1	58:B1:224:LEU:HD12	2.47	0.45
58:B1:385:LEU:HD23	58:B1:390:LEU:HB2	1.97	0.45
58:B1:1219:ASP:O	58:B1:1223:LEU:HB2	2.15	0.45
12:L:140:VAL:O	12:L:144:ALA:N	2.46	0.45
15:O:47:GLU:OE2	15:O:69:THR:OG1	2.29	0.45
19:S:23:ARG:HH12	19:S:27:LYS:HB3	1.82	0.45
32:g:94:ILE:HD12	32:g:99:ILE:HG21	1.98	0.45
34:j:19:ASP:OD2	34:j:21:THR:OG1	2.29	0.45
36:l:18:ARG:NE	51:1:1249:U:C5	2.79	0.45
51:1:393:C:H2'	51:1:394:C:H6	1.81	0.45
51:1:514:A:N3	51:1:581:C:O2'	2.45	0.45
51:1:817:C:O2'	51:1:839:U:H5"	2.16	0.45
51:1:912:C:O2'	51:1:913:U:H5'	2.15	0.45
51:1:2123:G:N3	51:1:2176:A:N6	2.65	0.45
51:1:2226:C:H2'	51:1:2227:A:O4'	2.17	0.45
51:1:2457:U:O2'	51:1:2458:G:H5'	2.15	0.45
51:1:2643:G:O2'	51:1:2644:G:H5'	2.16	0.45
53:3:280:C:H5"	53:3:281:G:OP2	2.17	0.45
53:3:782:A:O3'	53:3:1515:G:H4'	2.16	0.45
55:8:13:DT:C6	58:B1:791:ALA:HA	2.51	0.45
58:B1:75:TYR:CD2	58:B1:75:TYR:O	2.70	0.45
58:B1:213:LYS:HA	58:B1:213:LYS:HE3	1.99	0.45
15:O:59:LYS:HD3	53:3:972:C:O3'	2.17	0.45
24:X:71:GLY:HA3	53:3:1320:C:C2	2.51	0.45
27:b:6:LYS:HD2	27:b:7:PRO:HD2	1.99	0.45
28:c:194:PRO:HA	51:1:2680:U:C5'	2.46	0.45
31:f:28:LYS:HE3	31:f:28:LYS:HB2	1.86	0.45
31:f:88:LEU:HB3	31:f:128:THR:HA	1.97	0.45
40:p:48:ALA:N	40:p:59:THR:OG1	2.50	0.45
45:u:5:ARG:NH1	51:1:84:A:H5"	2.31	0.45
51:1:753:A:H2'	51:1:754:U:C6	2.52	0.45
51:1:1979:U:O5'	51:1:1979:U:H6	1.99	0.45
51:1:2041:U:H2'	51:1:2042:A:H8	1.81	0.45
51:1:2599:G:H2'	51:1:2600:A:H8	1.80	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:2:30:C:H2'	52:2:31:C:C5'	2.47	0.45
53:3:962:C:H1'	53:3:1201:A:C6	2.51	0.45
56:9:12:DC:H3'	58:B1:47:ARG:HH12	1.82	0.45
58:B1:43:THR:HG22	58:B1:57:PHE:HE1	1.80	0.45
58:B1:1158:GLU:HA	58:B1:1223:LEU:HD21	1.99	0.45
59:B2:557:ARG:NH2	59:B2:607:SER:O	2.50	0.45
63:5:27:G:H1	63:5:43:C:H42	1.64	0.45
66:0:171:LEU:HD11	66:0:218:TRP:HD1	1.82	0.45
66:0:618:LYS:N	66:0:683:GLU:O	2.49	0.45
15:O:36:VAL:HA	15:O:76:ILE:HA	1.97	0.45
16:P:114:PRO:O	26:Z:28:LEU:HD21	2.17	0.45
31:f:91:VAL:HG21	51:1:2657:A:H4'	1.97	0.45
31:f:94:ARG:HA	31:f:127:GLN:HB2	1.99	0.45
33:i:126:ARG:O	33:i:130:GLY:N	2.50	0.45
40:p:28:LYS:HB2	40:p:82:SER:H	1.81	0.45
51:1:1337:G:O2'	51:1:1338:G:H5'	2.17	0.45
53:3:520:A:H62	53:3:529:G:N2	2.11	0.45
53:3:1096:C:H2'	53:3:1097:C:H6	1.80	0.45
2:B:49:ARG:NH2	51:1:2884:U:H1'	2.32	0.45
8:H:58:ARG:HB3	8:H:63:ILE:HB	1.98	0.45
11:K:12:PRO:O	11:K:15:SER:OG	2.32	0.45
15:O:85:ASP:OD2	58:B1:87:LYS:NZ	2.50	0.45
18:R:107:THR:HG21	53:3:1307:U:H4'	1.99	0.45
19:S:2:LYS:HG2	19:S:4:SER:H	1.81	0.45
30:e:35:LEU:HD22	30:e:151:LEU:HD21	1.99	0.45
30:e:91:ARG:HA	30:e:95:MET:HG2	1.99	0.45
33:i:52:LEU:HD13	33:i:77:VAL:HG13	1.97	0.45
34:j:57:LEU:HD11	34:j:130:HIS:HD2	1.82	0.45
45:u:65:GLN:CD	51:1:328:U:H4'	2.42	0.45
51:1:224:U:H2'	51:1:225:C:O4'	2.17	0.45
51:1:623:C:H2'	51:1:624:C:C6	2.52	0.45
51:1:1024:G:O5'	51:1:1025:G:H5"	2.16	0.45
51:1:1044:C:O5'	51:1:1044:C:H6	2.00	0.45
51:1:1087:G:H1	51:1:1102:C:H42	1.64	0.45
51:1:1954:G:H21	51:1:1956:U:H3	1.65	0.45
52:2:6:G:O2'	52:2:7:G:H5'	2.17	0.45
53:3:144:G:H2'	53:3:145:G:O4'	2.16	0.45
53:3:1147:C:H2'	53:3:1148:U:C6	2.52	0.45
57:A1:231:PHE:O	57:A2:218:ARG:NH1	2.49	0.45
58:B1:375:GLU:O	59:B2:1247:SER:HB3	2.16	0.45
63:5:22:G:H2'	63:5:23:A:C8	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
66:0:144:MET:HG2	66:0:266:CYS:HB2	1.99	0.45
66:0:320:LEU:HD12	66:0:320:LEU:HA	1.85	0.45
1:A:41:HIS:HD2	30:e:108:PRO:HA	1.81	0.45
9:I:145:ARG:HB3	9:I:148:ALA:HB3	1.99	0.45
11:K:45:ARG:N	11:K:57:ALA:O	2.44	0.45
12:L:57:GLU:HG3	12:L:58:LEU:HD12	1.99	0.45
14:N:28:VAL:HG13	14:N:63:TYR:HA	1.99	0.45
19:S:61:ASN:HB3	19:S:72:PHE:CE2	2.52	0.45
29:d:43:THR:O	51:1:38:A:H1'	2.17	0.45
42:r:38:VAL:HG21	42:r:57:GLY:HA3	1.97	0.45
43:s:25:ARG:NE	43:s:74:ILE:O	2.45	0.45
43:s:72:THR:OG1	43:s:73:LYS:NZ	2.42	0.45
45:u:88:ASP:OD1	45:u:88:ASP:N	2.47	0.45
51:1:708:G:O2'	51:1:709:U:H5'	2.17	0.45
51:1:918:A:H4'	52:2:97:C:O2	2.16	0.45
51:1:952:G:H3'	51:1:953:G:H5"	1.98	0.45
51:1:960:A:H5"	51:1:961:C:OP1	2.17	0.45
51:1:1300:G:N7	51:1:1626:A:H2'	2.32	0.45
51:1:1432:G:H2'	51:1:1433:A:C8	2.52	0.45
51:1:1565:C:O2'	51:1:1566:A:H2'	2.16	0.45
51:1:1786:A:O2'	51:1:1787:A:H5'	2.17	0.45
51:1:1792:G:H1	51:1:1827:U:H3	1.65	0.45
51:1:2099:U:H2'	51:1:2100:G:C8	2.51	0.45
51:1:2560:A:O2'	51:1:2561:U:H5'	2.17	0.45
51:1:2869:G:H2'	51:1:2870:C:O4'	2.16	0.45
53:3:347:G:H2'	53:3:348:G:O4'	2.17	0.45
53:3:384:G:H2'	53:3:385:C:C6	2.52	0.45
53:3:437:U:C2'	53:3:438:U:H5'	2.46	0.45
53:3:771:G:H2'	53:3:772:U:C6	2.51	0.45
53:3:792:A:H4'	53:3:793:U:C5'	2.47	0.45
53:3:962:C:H42	53:3:973:G:H1	1.65	0.45
53:3:1255:G:H1	53:3:1282:C:H42	1.64	0.45
58:B1:343:LEU:HD11	58:B1:1324:SER:HB3	1.97	0.45
58:B1:388:ARG:HG2	58:B1:388:ARG:NH1	2.32	0.45
63:5:8:U:H2'	63:5:13:C:H41	1.81	0.45
8:H:153:SER:O	8:H:196:GLY:N	2.50	0.45
9:I:96:ARG:HG2	9:I:133:SER:HA	1.99	0.45
20:T:19:ASN:O	53:3:750:C:H1'	2.16	0.45
27:b:212:TRP:NE1	51:1:1566:A:O4'	2.50	0.45
29:d:134:LEU:HD11	29:d:161:ALA:HB2	1.99	0.45
31:f:41:GLU:N	31:f:52:GLY:O	2.49	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:g:98:ASP:O	32:g:102:ALA:N	2.49	0.45
33:i:9:LYS:HA	33:i:57:VAL:HA	1.99	0.45
33:i:52:LEU:HD11	33:i:81:LYS:HD3	1.99	0.45
35:k:62:VAL:HA	35:k:84:CYS:HA	1.99	0.45
36:l:135:ILE:HG23	36:l:140:GLY:HA3	1.99	0.45
39:o:94:ARG:NH2	39:o:98:GLN:OE1	2.50	0.45
51:1:927:A:H2'	51:1:928:A:O4'	2.17	0.45
51:1:1573:G:H2'	51:1:1574:C:O4'	2.17	0.45
51:1:2127:G:H2'	51:1:2128:G:C8	2.52	0.45
51:1:2194:U:H2'	51:1:2195:U:C6	2.52	0.45
51:1:2757:A:H2'	51:1:2757:A:N3	2.32	0.45
53:3:768:A:C2	53:3:1512:U:H4'	2.52	0.45
53:3:1098:C:H2'	53:3:1099:G:O4'	2.17	0.45
57:A1:68:TYR:HE1	57:A1:79:LEU:HD13	1.82	0.45
58:B1:352:ARG:CD	59:B2:1268:GLN:NE2	2.67	0.45
58:B1:515:ARG:NH2	58:B1:718:SER:O	2.48	0.45
58:B1:847:ASP:N	58:B1:847:ASP:OD1	2.49	0.45
59:B2:176:ILE:HD11	59:B2:428:VAL:HG21	1.98	0.45
62:NG:135:ARG:O	62:NG:178:VAL:HA	2.16	0.45
65:a:211:LYS:HE2	65:a:211:LYS:HB2	1.58	0.45
66:0:618:LYS:H	66:0:684:PHE:HA	1.82	0.45
66:0:643:LYS:HE3	66:0:655:HIS:HB3	1.99	0.45
2:B:6:LYS:HZ3	51:1:1262:A:H2	1.64	0.45
10:J:72:ASN:OD1	10:J:72:ASN:N	2.50	0.45
14:N:113:LYS:NZ	53:3:1368:A:OP2	2.39	0.45
17:Q:57:THR:HG21	53:3:362:G:H5"	1.99	0.45
29:d:37:ALA:HB1	29:d:94:GLN:H	1.82	0.45
43:s:13:SER:OG	43:s:14:ALA:N	2.50	0.45
51:1:191:A:H2'	51:1:192:C:H6	1.81	0.45
51:1:586:A:N1	51:1:809:G:O2'	2.45	0.45
51:1:598:U:H2'	51:1:599:A:C8	2.52	0.45
51:1:885:C:H2'	51:1:891:G:H22	1.83	0.45
51:1:1028:A:N6	51:1:1125:G:H2'	2.31	0.45
51:1:1094:U:H2'	51:1:1096:A:OP2	2.17	0.45
51:1:1429:G:C2	51:1:1568:G:C2	3.05	0.45
51:1:2737:G:H2'	51:1:2738:A:C8	2.52	0.45
53:3:757:U:H2'	53:3:758:C:H5'	1.99	0.45
53:3:962:C:H1'	53:3:1201:A:N1	2.32	0.45
53:3:973:G:H2'	53:3:974:A:C8	2.52	0.45
57:A2:294:ASN:HA	61:NA:464:ILE:N	2.28	0.45
58:B1:115:TRP:HB3	58:B1:1333:THR:CG2	2.46	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
66:0:75:MET:HG3	66:0:279:LEU:HD11	1.99	0.45
5:E:15:LYS:HA	5:E:21:PHE:HA	1.99	0.44
11:K:11:HIS:HB3	11:K:14:GLN:HB2	1.99	0.44
24:X:46:LEU:HD12	24:X:48:ILE:HD11	1.99	0.44
27:b:57:HIS:CE1	51:1:1567:G:H4'	2.52	0.44
30:e:35:LEU:HB2	30:e:88:VAL:HG12	1.98	0.44
35:k:56:ASP:N	35:k:56:ASP:OD1	2.49	0.44
40:p:105:LYS:HG2	53:3:1464:U:OP1	2.17	0.44
51:1:91:A:H8	51:1:91:A:OP1	1.99	0.44
51:1:162:U:H6	51:1:163:C:H5	1.64	0.44
51:1:252:G:H2'	51:1:253:C:H6	1.81	0.44
51:1:397:U:O5'	51:1:397:U:H6	2.00	0.44
51:1:776:G:C8	51:1:793:A:C2	3.05	0.44
51:1:864:G:H2'	51:1:865:C:O4'	2.16	0.44
51:1:1276:A:H61	51:1:1294:U:H3	1.65	0.44
51:1:1614:A:C2'	51:1:1615:C:H5'	2.46	0.44
53:3:806:C:H2'	53:3:807:A:C8	2.52	0.44
53:3:1361:G:H2'	53:3:1362:A:O4'	2.16	0.44
58:B1:850:LYS:HB3	58:B1:855:ASP:HB2	1.99	0.44
62:NG:161:SER:CB	62:NG:170:PRO:HA	2.47	0.44
63:5:49:C:H2'	63:5:50:U:C6	2.52	0.44
63:5:69:G:H2'	63:5:70:G:C8	2.52	0.44
66:0:97:ILE:HD13	66:0:412:PRO:HG3	2.00	0.44
66:0:498:VAL:CG1	66:0:522:MET:HE3	2.43	0.44
3:C:45:HIS:ND1	51:1:2372:U:H4'	2.32	0.44
9:I:47:LEU:HD22	53:3:510:A:OP1	2.17	0.44
17:Q:120:ARG:HG2	53:3:37:U:C5'	2.46	0.44
21:U:26:ASN:HD21	21:U:31:ARG:N	2.15	0.44
25:Y:4:LYS:NZ	53:3:332:G:P	2.91	0.44
27:b:73:ILE:HG12	51:1:1490:A:H2	1.79	0.44
27:b:84:PRO:HG3	51:1:1568:G:OP1	2.16	0.44
30:e:134:GLN:NE2	30:e:147:ARG:O	2.41	0.44
37:m:27:SER:H	37:m:104:GLU:CD	2.24	0.44
39:o:10:ARG:HE	39:o:10:ARG:HB2	1.61	0.44
40:p:25:VAL:HG21	40:p:83:ILE:HG22	1.99	0.44
49:y:38:GLN:O	51:1:95:A:H4'	2.16	0.44
50:z:37:ARG:NH1	51:1:928:A:O2'	2.50	0.44
51:1:468:G:C2'	51:1:469:G:H5'	2.46	0.44
51:1:740:C:H5'	51:1:740:C:C6	2.46	0.44
51:1:777:G:N7	51:1:793:A:C2	2.78	0.44
51:1:1697:G:H3'	51:1:1698:A:C5'	2.45	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1954:G:N2	51:1:1956:U:H3	2.15	0.44
51:1:2066:C:H2'	51:1:2067:G:H8	1.81	0.44
53:3:622:A:H2'	53:3:623:C:H5'	1.99	0.44
58:B1:213:LYS:HE3	58:B1:213:LYS:CA	2.47	0.44
58:B1:434:ILE:HD11	59:B2:1274:GLU:HG3	2.00	0.44
58:B1:472:LEU:CD1	59:B2:1294:LYS:HG2	2.47	0.44
58:B1:478:LEU:HD21	60:W0:47:THR:HG23	1.99	0.44
66:0:73:SER:O	66:0:73:SER:OG	2.29	0.44
10:J:50:GLY:HA3	10:J:62:ALA:HB2	1.99	0.44
11:K:53:LYS:HD3	11:K:53:LYS:HA	1.75	0.44
16:P:52:ARG:HA	16:P:52:ARG:HD3	1.85	0.44
17:Q:11:ARG:HH11	53:3:563:A:H2	1.64	0.44
18:R:94:LEU:HD12	18:R:95:PRO:HD2	2.00	0.44
23:W:35:SER:OG	23:W:37:LYS:NZ	2.37	0.44
38:n:73:ASN:O	38:n:77:ALA:N	2.50	0.44
45:u:7:ASP:OD1	45:u:7:ASP:N	2.46	0.44
48:x:31:ASN:ND2	48:x:52:ALA:HB3	2.32	0.44
51:1:1130:U:C5	51:1:2025:C:H5"	2.53	0.44
51:1:1545:A:H2'	51:1:1546:G:O4'	2.17	0.44
51:1:2069:G:H2'	51:1:2070:A:H8	1.82	0.44
51:1:2073:C:O5'	51:1:2073:C:H6	1.99	0.44
51:1:2102:G:H1	51:1:2187:U:H3	1.65	0.44
52:2:16:G:N2	52:2:69:G:H1'	2.31	0.44
53:3:20:U:O2'	53:3:21:G:H5'	2.17	0.44
53:3:925:G:H1'	53:3:1502:A:C4	2.53	0.44
55:8:1:DC:H2"	55:8:2:DC:C6	2.51	0.44
58:B1:395:LYS:NZ	58:B1:399:LYS:HE2	2.32	0.44
58:B1:1357:ILE:HG22	58:B1:1359:ALA:H	1.82	0.44
66:0:173:ILE:HD13	66:0:173:ILE:HA	1.90	0.44
66:0:600:ALA:HA	66:0:603:GLU:HB2	1.98	0.44
8:H:63:ILE:HG23	8:H:98:ALA:HA	1.99	0.44
12:L:91:ARG:O	12:L:92:PRO:C	2.59	0.44
14:N:6:TYR:OH	53:3:1148:U:H5'	2.16	0.44
22:V:64:ARG:CB	53:3:130:A:H8	2.31	0.44
27:b:106:PRO:HD2	27:b:109:LEU:HD22	1.99	0.44
29:d:153:LEU:HD11	29:d:158:PHE:HB2	1.98	0.44
34:j:81:ILE:HG21	51:1:2514:U:H4'	1.99	0.44
39:o:18:LEU:HD23	39:o:21:LEU:HD12	1.99	0.44
51:1:368:A:C2'	51:1:369:U:H5'	2.47	0.44
51:1:878:A:H3'	51:1:879:G:H8	1.82	0.44
51:1:2007:U:O5'	51:1:2007:U:H6	2.01	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2723:C:H2'	51:1:2724:U:O4'	2.17	0.44
52:2:118:C:C2'	52:2:119:A:H4'	2.33	0.44
53:3:563:A:H2'	53:3:563:A:N3	2.32	0.44
53:3:971:G:H4'	53:3:972:C:H5"	2.00	0.44
53:3:1312:G:H2'	53:3:1313:U:C6	2.52	0.44
58:B1:62:PHE:CD1	58:B1:62:PHE:N	2.85	0.44
58:B1:161:THR:H	58:B1:164:GLN:HB2	1.82	0.44
59:B2:11:ILE:HG22	59:B2:1172:LEU:HD11	1.99	0.44
59:B2:546:GLU:H	59:B2:546:GLU:HG3	1.53	0.44
66:0:11:ARG:HG3	66:0:283:ILE:HA	1.99	0.44
66:0:119:VAL:HG21	66:0:162:LEU:HD11	1.99	0.44
7:G:20:ARG:HD2	53:3:831:A:H5"	1.98	0.44
15:O:70:HIS:HD2	15:O:72:ARG:HH22	1.64	0.44
37:m:42:THR:N	37:m:45:GLN:OE1	2.40	0.44
50:z:19:HIS:CD2	50:z:50:VAL:HG12	2.52	0.44
51:1:754:U:O5'	51:1:754:U:H6	2.01	0.44
51:1:1147:A:O2'	51:1:1148:U:H5'	2.17	0.44
51:1:1656:C:H2'	51:1:1657:U:H6	1.82	0.44
51:1:1747:U:H2'	51:1:1748:C:C6	2.52	0.44
53:3:290:C:H2'	53:3:291:U:O4'	2.18	0.44
53:3:865:A:H2'	53:3:866:C:C6	2.52	0.44
53:3:946:A:H4'	53:3:1333:A:O2'	2.17	0.44
53:3:994:A:H61	53:3:1047:G:C4'	2.30	0.44
57:A1:212:ASP:OD1	57:A1:212:ASP:N	2.48	0.44
58:B1:67:ASP:OD1	58:B1:67:ASP:O	2.35	0.44
58:B1:770:LEU:HD13	59:B2:618:GLN:CD	2.42	0.44
58:B1:800:LEU:HD12	58:B1:800:LEU:HA	1.79	0.44
58:B1:1033:GLY:HA3	58:B1:1081:VAL:O	2.18	0.44
58:B1:1108:GLN:HG3	58:B1:1109:LEU:HD12	1.99	0.44
59:B2:24:VAL:HG11	59:B2:704:MET:HE1	1.99	0.44
59:B2:1246:ARG:HH11	59:B2:1266:GLY:HA2	1.82	0.44
64:6:70:G:H2'	64:6:71:C:C6	2.52	0.44
66:0:13:ILE:HG22	66:0:86:ILE:HA	1.98	0.44
12:L:34:LYS:NZ	53:3:1289:A:C2	2.86	0.44
12:L:114:SER:O	12:L:118:ARG:N	2.38	0.44
14:N:129:ARG:NH1	64:6:32:C:OP2	2.50	0.44
32:g:27:ARG:NH2	48:x:55:MET:HB3	2.32	0.44
37:m:81:ARG:NH1	51:1:2251:G:OP1	2.51	0.44
51:1:233:A:C2'	51:1:234:U:H5'	2.48	0.44
51:1:324:A:N6	51:1:338:G:H21	2.10	0.44
51:1:388:G:H2'	51:1:390:U:H5	1.81	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1057:A:H5"	51:1:1058:U:O2	2.17	0.44
51:1:2524:G:C3'	51:1:2525:G:H5"	2.48	0.44
53:3:253:A:O4'	53:3:276:G:H1'	2.18	0.44
53:3:272:C:H2'	53:3:273:U:H6	1.83	0.44
53:3:369:G:N2	53:3:393:A:H1'	2.33	0.44
53:3:596:A:H61	53:3:644:U:H3	1.66	0.44
53:3:777:A:C2	53:3:778:G:H1'	2.52	0.44
58:B1:33:TRP:HZ2	59:B2:1336:ASN:OD1	2.00	0.44
58:B1:245:LEU:CG	58:B1:246:PRO:HD2	2.47	0.44
58:B1:926:PRO:HB2	58:B1:1241:TYR:HE1	1.82	0.44
12:L:67:ASN:HB3	12:L:129:ASN:HD21	1.83	0.44
17:Q:48:LEU:HD12	17:Q:48:LEU:HA	1.85	0.44
19:S:55:SER:OG	19:S:57:SER:OG	2.30	0.44
28:c:2:ILE:HG12	28:c:90:PHE:HZ	1.82	0.44
28:c:120:GLY:H	28:c:123:LYS:HB2	1.82	0.44
30:e:135:ILE:HA	30:e:140:ILE:HD11	1.99	0.44
31:f:62:ALA:HA	51:1:2748:A:O2'	2.18	0.44
33:i:94:LYS:HD3	33:i:94:LYS:HA	1.72	0.44
39:o:90:VAL:HG23	39:o:117:PHE:HB3	2.00	0.44
41:q:25:GLY:O	41:q:29:ARG:NH1	2.50	0.44
41:q:51:GLN:O	41:q:55:GLN:N	2.48	0.44
47:w:58:LYS:HD3	51:1:2366:A:H4'	1.99	0.44
51:1:146:A:H2'	51:1:147:C:H6	1.81	0.44
51:1:435:C:H2'	51:1:436:C:C5'	2.37	0.44
51:1:514:A:O2'	51:1:515:A:H5'	2.17	0.44
51:1:755:U:H2'	51:1:756:A:C8	2.52	0.44
51:1:1541:C:H2'	51:1:1542:U:O4'	2.18	0.44
51:1:1913:A:H61	53:3:1493:A:H2'	1.83	0.44
51:1:2073:C:O2'	51:1:2074:U:H5'	2.17	0.44
51:1:2125:G:C5'	65:a:39:VAL:HG22	2.47	0.44
51:1:2845:U:H2'	51:1:2846:G:H8	1.83	0.44
53:3:505:G:C6	53:3:535:A:C2	3.05	0.44
53:3:570:G:H5'	53:3:820:U:O4'	2.18	0.44
53:3:894:G:H2'	53:3:895:G:C8	2.53	0.44
53:3:1508:A:H61	53:3:1527:U:H3	1.66	0.44
58:B1:288:PRO:HG2	58:B1:291:ILE:HG13	2.00	0.44
59:B2:674:ASP:OD2	59:B2:1070:HIS:ND1	2.50	0.44
65:a:203:GLN:HG2	65:a:205:LYS:H	1.82	0.44
8:H:68:HIS:HE2	8:H:105:VAL:HB	1.81	0.44
11:K:47:LEU:HD21	11:K:54:LEU:O	2.17	0.44
14:N:45:MET:HA	14:N:48:ARG:HH21	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:P:25:SER:OG	16:P:28:ASN:N	2.48	0.44
18:R:70:ARG:O	18:R:73:SER:OG	2.36	0.44
28:c:197:THR:HG23	51:1:2820:A:C6	2.52	0.44
29:d:5:LEU:HG	29:d:120:VAL:HG13	2.00	0.44
34:j:80:HIS:CD2	51:1:2642:G:H5'	2.53	0.44
39:o:55:GLU:OE2	52:2:116:G:H5"	2.17	0.44
47:w:56:PHE:HE1	47:w:58:LYS:HE2	1.83	0.44
51:1:298:G:C2	51:1:339:U:H5	2.36	0.44
51:1:537:G:H22	51:1:555:G:H2'	1.83	0.44
51:1:728:G:H3'	51:1:729:G:H5'	2.00	0.44
51:1:974:G:C6	51:1:1186:G:C6	3.06	0.44
51:1:974:G:O2'	51:1:989:G:N2	2.51	0.44
51:1:1308:A:N6	51:1:1608:A:H61	2.16	0.44
51:1:2270:A:H2'	51:1:2271:G:O4'	2.18	0.44
53:3:152:A:H2'	53:3:153:C:H5'	1.99	0.44
53:3:240:G:H2'	53:3:241:G:C8	2.53	0.44
53:3:1134:G:H1	53:3:1140:C:H42	1.66	0.44
53:3:1475:G:C2	53:3:1476:A:H1'	2.52	0.44
58:B1:76:LYS:NZ	58:B1:76:LYS:HB3	2.32	0.44
58:B1:804:ALA:HB2	58:B1:1256:ILE:CD1	2.48	0.44
59:B2:557:ARG:HB3	59:B2:587:LEU:HD13	2.00	0.44
66:0:338:VAL:HG13	66:0:380:GLY:H	1.83	0.44
66:0:499:THR:CG2	66:0:500:ASP:H	2.23	0.44
66:0:607:LYS:HE2	66:0:607:LYS:HB2	1.83	0.44
5:E:44:ARG:NH2	51:1:2349:G:OP1	2.48	0.44
15:O:68:ARG:HD3	15:O:68:ARG:HA	1.68	0.44
27:b:227:VAL:HG11	51:1:784:G:C2	2.52	0.44
34:j:41:LYS:HB2	34:j:41:LYS:HE3	1.86	0.44
34:j:134:ALA:HB1	51:1:2898:U:O2	2.17	0.44
37:m:16:ARG:HD3	37:m:16:ARG:HA	1.90	0.44
42:r:17:GLY:H	42:r:98:ILE:HB	1.83	0.44
51:1:118:A:H5'	51:1:119:A:C8	2.53	0.44
51:1:152:A:H2'	51:1:153:U:C6	2.53	0.44
51:1:578:G:H21	51:1:1252:G:N2	2.16	0.44
51:1:1086:A:H3'	51:1:1086:A:N3	2.33	0.44
51:1:1093:G:H22	51:1:1097:U:H3'	1.82	0.44
51:1:1368:G:H2'	51:1:1369:G:C8	2.51	0.44
51:1:2703:C:H2'	51:1:2704:C:H6	1.82	0.44
53:3:37:U:C2'	53:3:38:G:H5'	2.48	0.44
53:3:68:G:H2'	53:3:69:G:O4'	2.17	0.44
53:3:182:A:N1	53:3:224:U:H5'	2.33	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:A1:48:LEU:HD12	57:A1:48:LEU:HA	1.79	0.44
59:B2:811:ASN:ND2	59:B2:1098:LEU:O	2.51	0.44
3:C:33:LEU:HD21	51:1:2286:G:C5	2.53	0.43
6:F:1:MET:N	51:1:2526:G:H1'	2.32	0.43
10:J:158:LYS:HD3	10:J:158:LYS:HA	1.73	0.43
11:K:3:HIS:ND1	11:K:65:GLU:HB2	2.33	0.43
13:M:45:ILE:HG12	13:M:60:LEU:HD23	2.00	0.43
14:N:47:VAL:HG12	14:N:78:ILE:HG21	2.00	0.43
21:U:13:LYS:CD	53:3:392:C:H5'	2.48	0.43
26:Z:66:ARG:O	53:3:1088:G:O2'	2.36	0.43
34:j:12:LYS:HA	34:j:12:LYS:HD2	1.78	0.43
34:j:93:ILE:HD12	34:j:93:ILE:HA	1.72	0.43
42:r:1:MET:N	42:r:42:ALA:O	2.42	0.43
45:u:27:VAL:HA	45:u:33:VAL:HG13	1.99	0.43
51:1:138:U:H3'	51:1:139:U:H5'	1.99	0.43
51:1:2599:G:H2'	51:1:2600:A:C8	2.53	0.43
53:3:563:A:H5'	53:3:566:G:N2	2.33	0.43
53:3:635:A:H2'	53:3:636:U:C6	2.53	0.43
53:3:675:A:C2	53:3:676:A:H1'	2.52	0.43
53:3:1042:A:H2'	53:3:1043:G:H4'	2.00	0.43
53:3:1057:G:H2'	53:3:1058:G:O4'	2.18	0.43
58:B1:111:THR:HG21	58:B1:303:VAL:HB	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
63:5:17:C:H6	63:5:17:C:H2'	1.69	0.43
7:G:23:ASN:HA	7:G:24:PRO:HD3	1.85	0.43
9:I:33:ILE:HG23	9:I:34:GLU:HG2	1.99	0.43
9:I:200:VAL:HG11	10:J:103:GLY:HA2	2.00	0.43
14:N:53:LEU:HD12	14:N:54:VAL:HG13	2.00	0.43
14:N:125:GLN:HG3	53:3:1232:U:H5"	1.99	0.43
20:T:60:SER:HB2	53:3:581:G:C5'	2.48	0.43
26:Z:24:LYS:HA	26:Z:24:LYS:HD3	1.80	0.43
27:b:209:ALA:HA	27:b:212:TRP:CE2	2.54	0.43
28:c:5:VAL:HG22	28:c:202:ILE:HG12	2.00	0.43
29:d:129:PRO:HG3	29:d:156:ASN:HA	2.00	0.43
41:q:32:ARG:HB2	51:1:581:C:OP1	2.18	0.43
51:1:252:G:H2'	51:1:253:C:C6	2.53	0.43
51:1:861:A:H2'	51:1:862:G:O4'	2.18	0.43
51:1:1028:A:C2	51:1:2487:G:H1'	2.52	0.43
51:1:1943:U:OP1	51:1:1943:U:C6	2.71	0.43
51:1:2183:A:H2'	51:1:2184:A:C8	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2248:C:H3'	51:1:2249:U:H6	1.82	0.43
52:2:115:A:H2'	52:2:116:G:C8	2.53	0.43
57:A1:78:ILE:HA	57:A1:81:ILE:HG22	2.00	0.43
58:B1:126:LEU:H	58:B1:126:LEU:HG	1.67	0.43
58:B1:128:LEU:CD2	58:B1:188:LEU:HB3	2.47	0.43
58:B1:978:ARG:HD3	58:B1:999:TYR:H	1.83	0.43
63:5:63:G:H2'	63:5:64:A:C8	2.53	0.43
66:0:498:VAL:HG22	66:0:499:THR:N	2.33	0.43
7:G:33:ALA:HB3	7:G:37:VAL:HB	1.99	0.43
16:P:118:ASN:OD1	53:3:718:A:H5'	2.18	0.43
20:T:80:LEU:O	20:T:84:LEU:N	2.42	0.43
38:n:36:THR:HG22	51:1:1278:C:OP1	2.18	0.43
48:x:9:LYS:HB3	48:x:30:PRO:CB	2.48	0.43
51:1:812:C:H1'	51:1:1250:G:C2	2.53	0.43
51:1:1020:A:C1'	51:1:1021:A:OP2	2.61	0.43
51:1:1191:G:H2'	51:1:1192:G:C8	2.51	0.43
51:1:1744:A:H3'	51:1:1745:A:H8	1.83	0.43
51:1:2065:C:H2'	51:1:2066:C:C6	2.53	0.43
51:1:2102:G:H2'	51:1:2103:C:O4'	2.18	0.43
51:1:2762:C:H2'	51:1:2763:G:H5'	2.00	0.43
53:3:599:C:H2'	53:3:600:A:C8	2.53	0.43
53:3:964:A:H2'	53:3:965:U:H5'	2.00	0.43
53:3:969:A:H2'	53:3:970:C:O4'	2.18	0.43
53:3:1252:A:H2'	53:3:1253:G:O4'	2.19	0.43
53:3:1489:G:H2'	53:3:1490:U:C6	2.53	0.43
55:8:3:DC:N1	55:8:4:DT:H72	2.34	0.43
55:8:16:DT:H2'	55:8:17:DC:C6	2.52	0.43
58:B1:58:CYS:SG	58:B1:60:ARG:HG2	2.58	0.43
58:B1:824:PRO:HD3	58:B1:835:LEU:HD12	2.00	0.43
58:B1:1079:LYS:HD3	58:B1:1098:GLN:HB3	1.99	0.43
59:B2:300:ASP:OD1	59:B2:313:ALA:N	2.52	0.43
59:B2:998:LEU:HG	59:B2:1011:LEU:HB3	1.99	0.43
66:0:73:SER:HB2	66:0:81:PRO:HG3	2.00	0.43
66:0:112:VAL:HG12	66:0:140:PHE:HB3	2.00	0.43
66:0:159:LYS:HG3	66:0:166:PRO:HD2	2.00	0.43
66:0:423:LYS:HA	66:0:482:ASN:HD21	1.82	0.43
8:H:66:THR:HA	8:H:101:ASN:HB2	1.99	0.43
10:J:123:LEU:HD22	53:3:7:A:H2'	1.99	0.43
12:L:82:SER:HB3	12:L:83:THR:H	1.60	0.43
23:W:58:ILE:O	23:W:62:ARG:N	2.49	0.43
24:X:38:THR:HG23	24:X:69:LYS:HD3	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:d:136:GLN:HA	29:d:139:LYS:HB2	1.99	0.43
31:f:9:VAL:HA	31:f:48:THR:HA	2.01	0.43
33:i:128:ILE:HA	33:i:131:THR:HG22	2.00	0.43
37:m:68:PHE:CE2	51:1:871:U:H5"	2.53	0.43
37:m:71:LYS:HD3	37:m:72:PRO:HD2	2.00	0.43
51:1:824:U:H1'	51:1:2358:A:N7	2.34	0.43
51:1:1135:C:O2	51:1:1135:C:H2'	2.18	0.43
51:1:1177:G:H2'	51:1:1178:C:C5'	2.48	0.43
51:1:1412:U:H2'	51:1:1413:A:O4'	2.18	0.43
51:1:2259:U:C2	51:1:2427:C:C4	3.06	0.43
51:1:2564:A:C2	51:1:2647:U:H4'	2.54	0.43
51:1:2638:G:H22	51:1:2775:G:H2'	1.83	0.43
53:3:296:U:H2'	53:3:297:G:O4'	2.19	0.43
53:3:1095:U:OP1	53:3:1108:G:N2	2.52	0.43
53:3:1233:G:O2'	53:3:1365:G:H5"	2.18	0.43
53:3:1382:C:H2'	53:3:1383:C:C5	2.54	0.43
55:8:12:DG:OP1	58:B1:795:TYR:CE1	2.71	0.43
58:B1:375:GLU:HB3	59:B2:1245:ALA:CB	2.48	0.43
58:B1:568:SER:HB3	58:B1:570:LYS:NZ	2.34	0.43
58:B1:1026:PRO:HB2	58:B1:1028:ILE:HG23	2.00	0.43
63:5:13:C:H42	63:5:46:G:N2	2.16	0.43
66:0:634:ASP:O	66:0:638:ARG:NH1	2.52	0.43
7:G:136:ARG:O	7:G:140:LEU:N	2.47	0.43
16:P:25:SER:HG	16:P:28:ASN:N	2.16	0.43
31:f:85:LYS:HE3	31:f:131:VAL:HG22	2.00	0.43
31:f:171:LYS:NZ	51:1:2529:G:OP2	2.40	0.43
34:j:130:HIS:HB2	34:j:132:HIS:HD2	1.84	0.43
36:l:37:GLY:H	36:l:41:ARG:HH22	1.66	0.43
38:n:107:ASN:HD22	51:1:2009:A:C4'	2.31	0.43
39:o:56:LYS:HA	39:o:59:ALA:HB3	2.01	0.43
43:s:36:LEU:HD23	43:s:48:LYS:HB2	2.01	0.43
51:1:330:A:H8	51:1:1210:G:C5	2.36	0.43
51:1:395:U:H2'	51:1:396:G:H8	1.80	0.43
51:1:728:G:O2'	51:1:730:A:H8	2.01	0.43
51:1:1428:C:C5	51:1:1569:A:H5"	2.53	0.43
51:1:1630:A:H2'	51:1:1631:G:H5'	2.00	0.43
51:1:2553:G:C3'	51:1:2554:U:H5"	2.47	0.43
51:1:2556:C:H2'	51:1:2557:G:C5'	2.48	0.43
53:3:160:A:H2'	53:3:161:A:O4'	2.19	0.43
53:3:973:G:H2'	53:3:974:A:H8	1.84	0.43
53:3:1242:G:H4'	53:3:1304:G:OP1	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:B1:96:LYS:NZ	59:B2:1298:VAL:HG11	2.34	0.43
59:B2:538:LEU:HD13	59:B2:543:ALA:HB2	2.00	0.43
63:5:37:A:H2'	63:5:38:A:C8	2.53	0.43
11:K:89:VAL:HG23	53:3:737:C:C4'	2.49	0.43
14:N:58:GLU:HG2	14:N:59:LYS:HG3	2.01	0.43
29:d:131:THR:HG21	51:1:320:A:H2'	1.99	0.43
35:k:49:ARG:HH22	53:3:1423:G:H5'	1.84	0.43
35:k:51:LYS:HD3	35:k:51:LYS:HA	1.75	0.43
40:p:59:THR:HG22	40:p:72:VAL:HG23	2.00	0.43
45:u:48:VAL:HA	45:u:49:PRO:HD3	1.92	0.43
51:1:597:G:H2'	51:1:598:U:O4'	2.18	0.43
51:1:608:A:H2'	51:1:609:A:O4'	2.18	0.43
51:1:648:G:H2'	51:1:649:G:H8	1.82	0.43
51:1:984:A:P	51:1:985:C:H5	2.41	0.43
51:1:1056:G:H1'	51:1:1103:A:N6	2.33	0.43
51:1:1313:U:O2	51:1:1313:U:H2'	2.19	0.43
51:1:1675:C:O2'	51:1:1676:A:H5'	2.19	0.43
51:1:2581:G:N1	51:1:2610:C:O2'	2.52	0.43
53:3:640:A:H2'	53:3:641:U:H5'	2.01	0.43
53:3:723:U:O2	53:3:855:U:H4'	2.17	0.43
53:3:1236:A:H2'	53:3:1237:C:O4'	2.19	0.43
53:3:1515:G:H2'	53:3:1516:G:H8	1.82	0.43
57:A1:192:VAL:HG12	57:A1:193:GLU:H	1.82	0.43
6:F:38:GLY:OXT	51:1:1124:G:H1'	2.19	0.43
7:G:22:TRP:HA	7:G:189:ASN:HA	2.01	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
12:L:29:LEU:HD23	12:L:104:VAL:HG23	2.01	0.43
12:L:138:GLU:HA	12:L:141:HIS:HB2	1.99	0.43
14:N:18:VAL:HG21	14:N:81:GLY:HA3	2.01	0.43
16:P:24:ALA:N	16:P:86:LYS:O	2.39	0.43
16:P:25:SER:HG	16:P:28:ASN:H	1.64	0.43
28:c:176:ASP:OD1	28:c:176:ASP:N	2.37	0.43
32:g:71:LYS:HD3	32:g:71:LYS:HA	1.66	0.43
36:l:29:LYS:HA	36:l:29:LYS:HD2	1.71	0.43
51:1:74:A:H2'	51:1:74:A:N3	2.33	0.43
51:1:960:A:O3'	51:1:961:C:H3'	2.18	0.43
51:1:1123:C:O2'	51:1:1124:G:H5'	2.18	0.43
51:1:1931:U:H2'	51:1:1932:A:C8	2.54	0.43
51:1:1962:C:H1'	51:1:1963:U:C5	2.53	0.43
51:1:2598:A:N7	51:1:2599:G:H1'	2.34	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2672:U:C3'	51:1:2673:G:H5"	2.48	0.43
52:2:4:C:H6	52:2:4:C:C5'	2.31	0.43
53:3:304: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
53:3:1158:C:H2'	53:3:1159:U:H4'	2.01	0.43
55:8:15:DC:H5'	59:B2:1269:ARG:HD3	2.00	0.43
58:B1:731:ARG:HB3	59:B2:1105:SER:HB2	2.00	0.43
59:B2:712:SER:OG	59:B2:713:GLY:N	2.49	0.43
60:W0:58:LEU:HD12	60:W0:59:ILE:HG12	2.00	0.43
65:a:48:LEU:HB3	65:a:50:ILE:HG23	2.01	0.43
4:D:10:LEU:HD13	51:1:125:A:C2	2.54	0.43
8:H:3:LYS:HA	8:H:3:LYS:HD3	1.95	0.43
9:I:110:ARG:O	9:I:114:ARG:N	2.52	0.43
33:i:3:LYS:HB3	51:1:1055:G:O5'	2.19	0.43
36:l:29:LYS:HA	51:1:810:U:H5	1.81	0.43
37:m:46:ILE:O	37:m:50:ARG:N	2.45	0.43
38:n:72:ASP:O	38:n:76:VAL:HG23	2.19	0.43
43:s:84:ARG:NH1	51:1:1322:A:O2'	2.51	0.43
44:t:17:SER:OG	44:t:20:ALA:N	2.48	0.43
51:1:1064:C:H5"	51:1:1065:U:C5	2.54	0.43
51:1:1592:C:H2'	51:1:1593:A:H8	1.83	0.43
51:1:1771:C:H2'	51:1:1772:A:O4'	2.19	0.43
51:1:1815:A:O4'	51:1:1817:G:H1'	2.18	0.43
51:1:1823:G:C6	51:1:1824:G:C6	3.06	0.43
51:1:2626:C:O2'	51:1:2627:G:H5'	2.19	0.43
51:1:2633:G:C2'	51:1:2634:A:H5"	2.47	0.43
53:3:927:G:H4'	53:3:1503:A:N7	2.33	0.43
53:3:1014:A:C2	53:3:1219:A:H1'	2.54	0.43
58:B1:1046:ILE:HG22	58:B1:1061:VAL:HA	2.00	0.43
59:B2:515:MET:HE2	59:B2:515:MET:HB3	1.82	0.43
59:B2:1313:HIS:CD2	60:W0:31:GLN:HE22	2.37	0.43
5:E:28:LEU:HD12	5:E:32:LEU:HD11	2.01	0.43
9:I:173:ASP:OD1	9:I:173:ASP:N	2.44	0.43
14:N:7:GLY:HA3	14:N:85:ALA:HB2	2.00	0.43
31:f:140:ILE:HD12	31:f:140:ILE:HA	1.91	0.43
33:i:12:VAL:HG12	33:i:13:ALA:H	1.83	0.43
37:m:9:PHE:HB3	37:m:10:ARG:H	1.67	0.43
39:o:57:ALA:O	39:o:61:GLN:NE2	2.52	0.43
42:r:34:GLU:HB2	42:r:58:VAL:HB	1.99	0.43
51:1:170:U:H2'	51:1:171:U:C6	2.53	0.43
51:1:1716:U:C2'	51:1:1717:A:H5'	2.49	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1803:A:C2	51:1:1823:G:H1’	2.53	0.43
51:1:1983:G:C2	51:1:1984:G:C8	3.07	0.43
51:1:2101:A:H2’	51:1:2102:G:H8	1.84	0.43
51:1:2234:G:O2’	51:1:2235:G:H5’	2.19	0.43
51:1:2267:A:H5”	51:1:2268:A:H5’	2.01	0.43
51:1:2311:A:H3’	51:1:2312:U:C6	2.54	0.43
53:3:439:U:O2’	53:3:440:C:H5’	2.19	0.43
53:3:865:A:H5’	53:3:1078:U:O4	2.19	0.43
53:3:1061:G:H2’	53:3:1062:U:O4’	2.19	0.43
58:B1:362:ARG:HB2	58:B1:364:HIS:HD2	1.83	0.43
58:B1:388:ARG:HG2	58:B1:388:ARG:HH11	1.84	0.43
58:B1:515:ARG:HH12	58:B1:724:MET:HG2	1.84	0.43
59:B2:487:LEU:HD22	59:B2:487:LEU:HA	1.77	0.43
65:a:193:LEU:HG	65:a:197:LYS:HG3	2.00	0.43
8:H:1:GLY:HA2	53:3:1060:U:C5	2.54	0.43
8:H:174:LEU:HB3	53:3:1108:G:OP1	2.19	0.43
17:Q:5:GLN:NE2	53:3:881:G:N7	2.67	0.43
17:Q:43:LYS:HG3	53:3:1492:A:H4’	2.00	0.43
19:S:92:ILE:HD13	19:S:92:ILE:HA	1.84	0.43
20:T:27:GLN:O	20:T:27:GLN:NE2	2.52	0.43
29:d:93:SER:O	29:d:93:SER:OG	2.32	0.43
33:i:105:LEU:HD13	33:i:128:ILE:HG23	2.01	0.43
38:n:9:GLN:HB2	51:1:1653:G:C6	2.54	0.43
44:t:29:THR:HG22	44:t:86:THR:HA	2.01	0.43
50:z:11:SER:OG	51:1:988:A:H5”	2.18	0.43
51:1:533:G:H5”	51:1:533:G:H8	1.83	0.43
51:1:786:C:H2’	51:1:787:C:H6	1.83	0.43
51:1:1037:G:O2’	51:1:1038:G:H5’	2.18	0.43
51:1:1984:G:H2’	51:1:1985:C:H6	1.82	0.43
51:1:2489:U:O2’	51:1:2490:G:H5’	2.18	0.43
51:1:2556:C:C2’	51:1:2557:G:H5’	2.48	0.43
51:1:2617:U:H2’	51:1:2618:G:H5’	2.01	0.43
53:3:301:G:H2’	53:3:302:G:H8	1.83	0.43
53:3:778:G:H2’	53:3:779:C:O4’	2.19	0.43
53:3:1364:U:O2’	53:3:1365:G:H5’	2.19	0.43
58:B1:45:ASN:HD22	58:B1:48:THR:H	1.65	0.43
58:B1:609:TYR:HD2	58:B1:610:ARG:NH1	2.17	0.43
58:B1:1024:THR:HG23	58:B1:1123:ARG:HA	2.00	0.43
59:B2:125:GLY:H	59:B2:495:ALA:HB1	1.84	0.43
66:0:129:GLN:HG3	66:0:132:LYS:HE2	2.00	0.43
7:G:26:MET:HG3	7:G:29:PHE:HB2	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:119:HIS:HA	53:3:439:U:H5"	2.01	0.42
18:R:78:ARG:HD3	24:X:64:GLU:HG2	2.01	0.42
26:Z:44:ARG:HD3	26:Z:44:ARG:HA	1.77	0.42
29:d:46:GLN:HE21	29:d:86:ALA:HA	1.84	0.42
30:e:88:VAL:HA	52:2:42:C:O2	2.19	0.42
32:g:22:LYS:HD3	32:g:22:LYS:HA	1.86	0.42
41:q:47:ARG:NH2	51:1:560:C:O2'	2.52	0.42
51:1:172:A:H2'	51:1:173:A:C8	2.54	0.42
51:1:343:C:C2'	51:1:344:A:H5'	2.49	0.42
51:1:571:U:C4	51:1:575:A:C5	3.07	0.42
51:1:666:A:H2'	51:1:667:U:C6	2.54	0.42
51:1:793:A:OP2	51:1:793:A:H8	2.01	0.42
51:1:1050:A:O2'	51:1:2752:C:H1'	2.19	0.42
51:1:1794:A:O2'	51:1:1795:C:H5'	2.18	0.42
51:1:1801:A:C8	51:1:1801:A:H5'	2.54	0.42
51:1:1998:A:H4'	51:1:2724:U:O2'	2.19	0.42
51:1:2326:C:O2'	51:1:2327:A:OP1	2.31	0.42
51:1:2475:C:H42	51:1:2529:G:H22	1.66	0.42
53:3:405:U:O2	53:3:498:A:H2'	2.19	0.42
53:3:1229:A:H2'	53:3:1230:C:C6	2.54	0.42
53:3:1423:G:H1	53:3:1477:U:H3	1.65	0.42
58:B1:586:GLY:HA3	58:B1:612:LEU:HD11	2.01	0.42
58:B1:894:VAL:HG22	58:B1:1258:ARG:HH11	1.83	0.42
59:B2:1275:VAL:HG13	59:B2:1287:LEU:HD11	2.01	0.42
63:5:35:A:H1'	63:5:36:A:OP1	2.19	0.42
17:Q:50:LYS:HA	17:Q:50:LYS:HD2	1.86	0.42
27:b:204:LEU:O	27:b:206:LYS:N	2.48	0.42
30:e:131:VAL:N	30:e:152:ASP:OD1	2.49	0.42
32:g:63:ALA:HA	32:g:66:ASN:HD22	1.84	0.42
36:l:18:ARG:NE	51:1:1249:U:C4	2.88	0.42
39:o:35:ILE:HD13	39:o:35:ILE:HA	1.95	0.42
46:v:88:HIS:CE1	52:2:75:G:H21	2.37	0.42
51:1:481:G:H2'	51:1:507:A:N1	2.34	0.42
51:1:690:G:C2'	51:1:691:C:H5'	2.49	0.42
51:1:742:A:H2'	51:1:743:A:O4'	2.19	0.42
51:1:820:A:H5'	51:1:837:C:O2'	2.19	0.42
51:1:878:A:H3'	51:1:879:G:C8	2.54	0.42
51:1:1060:U:OP2	51:1:1060:U:H3'	2.19	0.42
51:1:1177:G:C3'	51:1:1178:C:H5"	2.49	0.42
51:1:1388:G:H2'	51:1:1389:G:H8	1.84	0.42
51:1:1404:C:O5'	51:1:1404:C:H6	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:1794:A:H1'	51:1:1900:A:N3	2.34	0.42
51:1:2897:U:H2'	51:1:2898:U:C6	2.54	0.42
58:B1:68:TYR:O	58:B1:75:TYR:CD2	2.70	0.42
58:B1:107:LEU:HA	58:B1:276:ASN:ND2	2.33	0.42
58:B1:820:ILE:HG12	58:B1:884:SER:HB2	2.01	0.42
59:B2:1157:GLN:HG3	59:B2:1159:VAL:HG13	2.00	0.42
8:H:79:LYS:HE2	8:H:79:LYS:HB2	1.95	0.42
13:M:15:ASN:HB3	53:3:827:U:C4'	2.48	0.42
14:N:113:LYS:HA	14:N:120:ALA:HB2	2.01	0.42
21:U:38:PHE:HZ	21:U:48:GLU:HG3	1.84	0.42
28:c:183:GLU:OE2	28:c:184:ARG:NE	2.53	0.42
31:f:84:LYS:HD2	31:f:84:LYS:HA	1.78	0.42
37:m:33:LEU:HD12	37:m:117:PHE:HB3	2.00	0.42
38:n:51:LEU:HD23	38:n:79:LEU:HD11	2.02	0.42
43:s:29:VAL:HG21	43:s:55:ILE:HG21	2.01	0.42
51:1:441:U:O2'	51:1:442:G:H5'	2.19	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
51:1:784:G:N7	51:1:792:A:C5	2.87	0.42
51:1:809:G:O4'	51:1:1254:A:H1'	2.19	0.42
51:1:862:G:H2'	51:1:863:A:O4'	2.18	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'	2.20	0.42
51:1:1797:G:C4	51:1:1798:U:C6	3.07	0.42
51:1:2061:G:C8	51:1:2501:C:H4'	2.53	0.42
51:1:2338:C:H6	51:1:2338:C:O5'	2.01	0.42
53:3:7:A:H5'	53:3:298:A:O4'	2.19	0.42
53:3:1195:C:O5'	53:3:1195:C:H6	2.01	0.42
58:B1:242:LEU:C	58:B1:242:LEU:HD23	2.44	0.42
58:B1:385:LEU:CD2	58:B1:390:LEU:HB2	2.50	0.42
58:B1:797:THR:HG22	58:B1:924:GLY:HA3	2.01	0.42
2:B:24:VAL:H	43:s:35:ILE:HD11	1.84	0.42
13:M:86:LYS:HD2	13:M:86:LYS:HA	1.73	0.42
16:P:14:GLN:H	16:P:14:GLN:HG3	1.69	0.42
18:R:13:HIS:HB3	18:R:15:VAL:HG12	2.00	0.42
18:R:22:TYR:HD2	18:R:65:GLU:HA	1.84	0.42
27:b:73:ILE:HA	27:b:74:PRO:HD3	1.90	0.42
27:b:148:GLY:O	51:1:2205:A:H5'	2.20	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
28:c:152:PRO:HA	51:1:1130:U:O2	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:l:90:VAL:HG22	36:l:122:VAL:HA	2.02	0.42
38:n:73:ASN:HB3	51:1:1453:A:C8	2.54	0.42
49:y:9:LYS:HD3	49:y:10:SER:H	1.84	0.42
51:1:1:G:H2'	51:1:2:G:C8	2.55	0.42
51:1:832:U:C5	51:1:944:C:N4	2.87	0.42
51:1:1183:U:O2'	51:1:1184:U:H5'	2.19	0.42
51:1:1797:G:N2	51:1:1798:U:H1'	2.34	0.42
51:1:2656:U:H2'	51:1:2657:A:C8	2.55	0.42
51:1:2670:A:H2'	51:1:2671:G:C8	2.55	0.42
53:3:112:G:N2	53:3:354:G:H5'	2.02	0.42
53:3:228:A:H2'	53:3:229:U:O4'	2.20	0.42
53:3:1210:C:H2'	53:3:1211:U:H5'	2.00	0.42
58:B1:141:PHE:CD2	58:B1:297:ARG:HB2	2.54	0.42
59:B2:616:ILE:HG13	59:B2:652:TYR:HB2	2.01	0.42
63:5:34:G:H5'	63:5:35:A:C8	2.55	0.42
66:0:375:LYS:HE2	66:0:375:LYS:HB2	1.89	0.42
66:0:498:VAL:HG11	66:0:522:MET:CE	2.43	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
18:R:105:ALA:HB3	18:R:109:LYS:HE3	2.02	0.42
44:t:1:MET:HG3	51:1:136:G:H21	1.84	0.42
44:t:7:LEU:HD23	44:t:7:LEU:HA	1.89	0.42
47:w:37:ARG:HA	47:w:37:ARG:HD3	1.69	0.42
49:y:1:MET:HA	49:y:4:LYS:HE2	2.01	0.42
51:1:19:A:H2'	51:1:20:C:C6	2.54	0.42
51:1:39:G:H2'	51:1:40:U:C6	2.54	0.42
51:1:458:G:H21	51:1:469:G:H2'	1.84	0.42
51:1:976:G:H5'	51:1:1156:A:N6	2.35	0.42
51:1:2061:G:C2'	51:1:2501:C:HO2'	2.27	0.42
51:1:2138:G:N1	51:1:2154:A:O2'	2.47	0.42
51:1:2350:C:H2'	51:1:2351:G:O4'	2.19	0.42
51:1:2469:A:H2'	51:1:2470:G:O4'	2.20	0.42
51:1:2520:C:H1'	51:1:2565:A:O2'	2.19	0.42
51:1:2654:A:H1'	51:1:2656:U:C6	2.54	0.42
53:3:182:A:H2'	53:3:183:C:H5"	2.01	0.42
53:3:250:A:H4'	53:3:251:G:O5'	2.19	0.42
53:3:540:G:H2'	53:3:541:G:O4'	2.20	0.42
53:3:1271:A:H5'	53:3:1314:C:H5'	2.01	0.42
53:3:1292:G:H2'	53:3:1293:C:C6	2.55	0.42
53:3:1405:G:H21	53:3:1518:A:H8	1.66	0.42
58:B1:111:THR:CG2	58:B1:300:GLN:HA	2.48	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:B1:839:VAL:HG12	58:B1:864:LEU:HD12	2.02	0.42
59:B2:469:VAL:HA	59:B2:472:GLU:HG2	2.01	0.42
59:B2:741:MET:HE3	59:B2:974:ARG:HH12	1.84	0.42
66:0:493:THR:OG1	66:0:525:LEU:CD1	2.68	0.42
7:G:96:LEU:HD23	7:G:96:LEU:HA	1.93	0.42
10:J:126:ALA:H	53:3:9:G:P	2.43	0.42
11:K:47:LEU:CD2	11:K:55:HIS:HA	2.49	0.42
13:M:10:LEU:HD13	13:M:74:ILE:HG13	2.00	0.42
15:O:90:LEU:HD13	15:O:90:LEU:HA	1.79	0.42
21:U:5:ARG:NH2	53:3:377:G:H5"	2.35	0.42
23:W:25:ILE:HA	23:W:28:LEU:HD12	2.01	0.42
25:Y:4:LYS:HE2	53:3:332:G:OP1	2.20	0.42
27:b:144:GLU:HA	27:b:151:GLY:HA2	2.00	0.42
28:c:161:MET:CE	51:1:2050:C:H1'	2.49	0.42
35:k:38:ILE:HG22	35:k:61:VAL:HG22	2.01	0.42
37:m:55:ARG:HA	37:m:58:LYS:HA	2.02	0.42
45:u:14:THR:OG1	45:u:15:GLY:N	2.51	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
51:1:8:C:H2'	51:1:9:G:O4'	2.20	0.42
51:1:76:C:H42	51:1:110:G:H1	1.68	0.42
51:1:974:G:C8	51:1:989:G:C2	3.07	0.42
51:1:1145:C:H2'	51:1:1146:C:C6	2.54	0.42
51:1:1321:A:H3'	51:1:1322:A:H8	1.84	0.42
51:1:1741:C:C2'	51:1:1742:U:H5'	2.50	0.42
51:1:2472:G:H5"	51:1:2473:U:OP2	2.20	0.42
53:3:58:C:H2'	53:3:59:A:H5'	2.01	0.42
58:B1:24:LEU:HD21	58:B1:116:PHE:CE2	2.54	0.42
58:B1:647:PRO:HG3	58:B1:697:MET:HB3	2.01	0.42
58:B1:1350:ASN:HA	58:B1:1353:VAL:HG12	2.01	0.42
59:B2:524:ILE:HD12	59:B2:712:SER:HB2	2.02	0.42
62:NG:135:ARG:O	62:NG:178:VAL:CA	2.68	0.42
17:Q:56:LEU:HD13	17:Q:56:LEU:HA	1.91	0.42
21:U:12:LYS:HB3	53:3:392:C:OP2	2.20	0.42
27:b:17:LYS:HB3	27:b:17:LYS:HE3	1.80	0.42
28:c:118:PHE:CD2	51:1:1654:A:H2	2.35	0.42
28:c:118:PHE:O	51:1:1655:A:H5'	2.18	0.42
29:d:85:PHE:CG	51:1:588:U:H1'	2.54	0.42
34:j:116:ARG:HH21	51:1:528:A:H5"	1.81	0.42
51:1:503:A:H4'	51:1:505:A:H5"	2.02	0.42
51:1:2060:A:O2'	51:1:2061:G:OP2	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2114:A:C5	51:1:2115:G:H1'	2.55	0.42
51:1:2521:C:C2'	51:1:2522:U:H5'	2.50	0.42
52:2:79:G:H2'	52:2:80:U:O4'	2.19	0.42
53:3:269:C:H2'	53:3:270:A:C8	2.55	0.42
53:3:971:G:N7	53:3:1233:G:H1'	2.34	0.42
53:3:1194:U:H2'	53:3:1195:C:C6	2.54	0.42
53:3:1199:U:H2'	53:3:1200:C:H5'	2.01	0.42
58:B1:71:LEU:HD23	58:B1:71:LEU:HA	1.75	0.42
58:B1:244:VAL:HA	58:B1:269:TYR:OH	2.19	0.42
63:5:9:A:H1'	63:5:45:U:H2'	2.01	0.42
66:0:324:ILE:HA	66:0:334:THR:HA	2.01	0.42
8:H:12:GLY:N	8:H:15:LYS:O	2.35	0.42
9:I:12:ARG:NH2	9:I:36:ALA:H	2.17	0.42
24:X:32:THR:OG1	24:X:33:TRP:N	2.53	0.42
30:e:32:LYS:H	30:e:32:LYS:HG2	1.68	0.42
32:g:50:ARG:H	32:g:50:ARG:HG2	1.55	0.42
34:j:136:GLN:NE2	51:1:2899:A:H5'	2.34	0.42
38:n:106:ASP:OD2	51:1:1287:A:C5	2.72	0.42
51:1:45:G:C5'	51:1:46:G:H5'	2.25	0.42
51:1:72:U:C4	51:1:112:U:H4'	2.55	0.42
51:1:516:C:H2'	51:1:517:C:H5'	2.02	0.42
51:1:736:C:H42	51:1:760:G:H1	1.67	0.42
51:1:813:U:H2'	51:1:814:C:C6	2.54	0.42
51:1:1086:A:C1'	51:1:1103:A:H2	2.33	0.42
51:1:1310:G:C3'	51:1:1311:G:H5'	2.50	0.42
51:1:1379:U:H2'	51:1:1380:G:H5'	2.01	0.42
51:1:2114:A:N6	51:1:2119:A:H61	2.18	0.42
51:1:2577:A:H2'	51:1:2614:A:N6	2.33	0.42
53:3:492:C:H2'	53:3:493:A:H8	1.83	0.42
53:3:668:G:H2'	53:3:669:G:C8	2.55	0.42
53:3:1032:G:H21	53:3:1033:G:H4'	1.85	0.42
53:3:1119:C:O2'	53:3:1120:C:H5'	2.20	0.42
53:3:1173:U:H2'	53:3:1174:G:C8	2.48	0.42
58:B1:201:LEU:HD11	58:B1:220:ARG:NH1	2.32	0.42
58:B1:434:ILE:HD11	59:B2:1274:GLU:CG	2.49	0.42
58:B1:950:ILE:HB	58:B1:1018:ALA:HB3	2.01	0.42
66:0:281:ALA:O	66:0:285:TYR:N	2.53	0.42
4:D:13:ASN:HB3	51:1:125:A:O4'	2.20	0.42
7:G:53:LEU:HD23	7:G:56:LEU:HD12	2.00	0.42
7:G:218:ALA:HA	7:G:221:ARG:HE	1.85	0.42
13:M:7:ALA:HA	13:M:10:LEU:HB2	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:N:21:LYS:HZ1	14:N:63:TYR:H	1.68	0.42
20:T:3:SER:OG	20:T:4:THR:N	2.52	0.42
22:V:16:MET:HE2	22:V:16:MET:HB3	1.84	0.42
27:b:131:MET:HE3	27:b:131:MET:HB2	1.84	0.42
29:d:29:HIS:CE1	36:l:8:PRO:HB3	2.55	0.42
29:d:85:PHE:CE2	51:1:587:C:H5'	2.54	0.42
31:f:97:VAL:HG12	31:f:124:CYS:HB2	2.02	0.42
38:n:90:ARG:NH2	51:1:2880:C:O2'	2.48	0.42
51:1:191:A:N3	51:1:192:C:C6	2.88	0.42
51:1:382:A:C2	51:1:393:C:N3	2.88	0.42
51:1:445:C:O2'	51:1:446:G:H5'	2.20	0.42
51:1:2133:G:H8	51:1:2158:A:C2	2.38	0.42
51:1:2139:U:H2'	51:1:2140:G:C8	2.54	0.42
51:1:2402:U:H2'	51:1:2403:C:C5'	2.42	0.42
51:1:2733:A:H2'	51:1:2734:A:H8	1.81	0.42
51:1:2873:A:O2'	51:1:2874:C:H5'	2.20	0.42
53:3:1264:U:H3	53:3:1271:A:H61	1.67	0.42
53:3:1386:G:O2'	53:3:1387:G:H5'	2.20	0.42
58:B1:137:ARG:HA	58:B1:142:GLU:HG2	2.02	0.42
58:B1:201:LEU:CB	58:B1:221:ILE:HD13	2.47	0.42
63:5:4:C:H2'	63:5:5:G:C8	2.55	0.42
65:a:42:VAL:HG13	65:a:175:ILE:HG13	2.02	0.42
67:h:2:DPP:NG	67:h:3:SER:N	2.65	0.42
1:A:26:SER:HB2	30:e:101:ARG:HH11	1.84	0.42
12:L:35:LYS:HD3	53:3:1373:G:H5"	2.01	0.42
27:b:107:LYS:N	27:b:193:GLU:O	2.49	0.42
28:c:59:ARG:HA	28:c:59:ARG:HD2	1.85	0.42
32:g:101:ASP:O	32:g:105:ALA:N	2.46	0.42
45:u:96:LYS:HE2	51:1:300:A:P	2.60	0.42
51:1:877:A:O2'	51:1:900:A:N6	2.53	0.42
51:1:917:A:H5"	51:1:2268:A:N6	2.30	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
51:1:2448:A:H3'	51:1:2449:U:H2'	2.01	0.42
51:1:2544:G:H2'	51:1:2545:G:C8	2.55	0.42
52:2:53:A:H2'	52:2:54:G:O4'	2.20	0.42
53:3:111:G:O2'	53:3:389:A:H1'	2.20	0.42
53:3:316:C:H2'	53:3:317:U:C6	2.55	0.42
53:3:678:U:H2'	53:3:679:C:C6	2.55	0.42
53:3:1368:A:O2'	53:3:1369:C:H5'	2.19	0.42
53:3:1469:C:C2'	53:3:1470:U:H5'	2.50	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:B1:144:TYR:CE1	58:B1:162:GLU:OE1	2.73	0.42
58:B1:246:PRO:HA	58:B1:247:PRO:HD3	1.96	0.42
58:B1:1289:ASN:O	58:B1:1293:GLU:HB2	2.20	0.42
66:0:520:ILE:HG22	66:0:578:LEU:HA	2.02	0.42
5:E:7:ARG:NH1	51:1:254:G:H22	2.18	0.41
11:K:89:VAL:HG23	53:3:737:C:C5'	2.48	0.41
17:Q:9:LYS:HE2	17:Q:9:LYS:HB2	1.85	0.41
18:R:100:ARG:HG2	53:3:950:U:C5	2.55	0.41
21:U:31:ARG:HB2	53:3:310:G:H5"	2.00	0.41
27:b:27:LYS:NZ	51:1:1428:C:OP2	2.44	0.41
27:b:219:VAL:HG21	51:1:782:A:N7	2.35	0.41
28:c:19:GLY:HA2	40:p:78:PRO:HD2	2.02	0.41
28:c:116:LYS:HB2	28:c:165:MET:HB3	2.02	0.41
28:c:117:GLY:H	28:c:164:GLN:HE22	1.69	0.41
37:m:42:THR:HA	37:m:93:VAL:HA	2.02	0.41
41:q:30:VAL:HG11	51:1:580:U:H4'	2.02	0.41
51:1:272:A:H2'	51:1:273:G:C8	2.54	0.41
51:1:538:A:H2'	51:1:539:G:O4'	2.20	0.41
51:1:842:U:H2'	51:1:843:G:O4'	2.19	0.41
51:1:1024:G:P	51:1:1025:G:H3'	2.60	0.41
51:1:1512:C:O5'	51:1:1512:C:H6	2.03	0.41
51:1:1564:C:C4	51:1:1565:C:C4	3.08	0.41
51:1:2081:U:H2'	51:1:2082:A:H8	1.85	0.41
51:1:2588:G:C2'	51:1:2589:A:H5'	2.50	0.41
51:1:2596:U:H2'	51:1:2597:G:O4'	2.19	0.41
51:1:2840:C:H2'	51:1:2841:C:C6	2.55	0.41
53:3:627:G:H2'	53:3:628:G:C8	2.54	0.41
53:3:1153:G:H2'	53:3:1154:G:O4'	2.20	0.41
58:B1:559:ALA:HB3	58:B1:562:GLU:HB3	2.01	0.41
7:G:56:LEU:HD23	7:G:56:LEU:HA	1.93	0.41
8:H:24:ASN:OD1	8:H:25:THR:N	2.53	0.41
14:N:13:SER:HG	53:3:1251:A:H5'	1.81	0.41
15:O:40:ILE:HD11	53:3:1124:G:H4'	2.01	0.41
33:i:123:ALA:CB	51:1:1081:U:H4'	2.50	0.41
35:k:62:VAL:H	35:k:62:VAL:HG12	1.65	0.41
39:o:11:ALA:HB1	39:o:14:ALA:HB3	2.01	0.41
50:z:18:LYS:HE2	50:z:18:LYS:HB3	1.89	0.41
51:1:4:U:H2'	51:1:5:A:O4'	2.20	0.41
51:1:52:A:C5	51:1:118:A:C2	3.08	0.41
51:1:324:A:H2'	51:1:325:G:H5'	2.01	0.41
51:1:481:G:H1'	51:1:506:G:H22	1.82	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:711:G:H2'	51:1:712:G:O4'	2.21	0.41
51:1:958:U:C2'	52:2:89:U:H1'	2.47	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
51:1:2139:U:H2'	51:1:2140:G:H8	1.85	0.41
51:1:2302:U:H2'	51:1:2303:G:C8	2.55	0.41
53:3:264:C:H2'	53:3:265:G:O4'	2.19	0.41
53:3:762:U:H2'	53:3:763:G:C8	2.55	0.41
53:3:866:C:N3	53:3:867:G:H1'	2.36	0.41
53:3:909:A:H2'	53:3:910:C:O4'	2.20	0.41
53:3:938:A:H1'	53:3:1376:U:O2'	2.20	0.41
53:3:1007:U:H2'	53:3:1008:U:C5	2.54	0.41
53:3:1422:G:N2	53:3:1479:C:N4	2.68	0.41
58:B1:390:LEU:H	58:B1:390:LEU:HD13	1.85	0.41
59:B2:50:GLU:HG2	59:B2:73:TYR:HE1	1.85	0.41
59:B2:590:PRO:HB2	59:B2:655:VAL:HG21	2.01	0.41
66:0:493:THR:OG1	66:0:525:LEU:HD11	2.20	0.41
3:C:38:PHE:HD1	3:C:45:HIS:HD2	1.68	0.41
7:G:23:ASN:H	7:G:189:ASN:HA	1.86	0.41
9:I:149:LYS:HG2	9:I:150:LYS:HG2	2.02	0.41
13:M:4:ASP:HB3	13:M:7:ALA:HB3	2.02	0.41
28:c:91:THR:H	28:c:94:GLN:HE21	1.66	0.41
38:n:24:MET:O	38:n:28:LEU:N	2.54	0.41
44:t:36:LYS:NZ	44:t:79:ASP:OD1	2.38	0.41
51:1:43:G:O2'	51:1:44:A:H5'	2.20	0.41
51:1:194:G:H2'	51:1:195:A:O4'	2.19	0.41
51:1:1158:C:O5'	51:1:1158:C:H6	2.02	0.41
51:1:1387:A:H2'	51:1:1388:G:C8	2.55	0.41
51:1:1591:A:H2'	51:1:1592:C:C6	2.55	0.41
51:1:1639:C:C2'	51:1:1640:A:H5'	2.51	0.41
51:1:1680:U:H2'	51:1:1681:G:C5'	2.40	0.41
51:1:2553:G:H2'	51:1:2554:U:C4'	2.49	0.41
51:1:2556:C:H2'	51:1:2557:G:O4'	2.19	0.41
51:1:2676:C:O5'	51:1:2676:C:H6	2.03	0.41
53:3:1093:A:O2'	53:3:1094:G:H5'	2.20	0.41
57:A1:76:GLU:HB3	57:A1:80:GLU:HB3	2.01	0.41
58:B1:279:LEU:HD13	58:B1:299:LEU:HD13	2.02	0.41
59:B2:22:LEU:HB3	59:B2:655:VAL:HG11	2.01	0.41
66:0:64:THR:HG23	66:0:472:ARG:HH22	1.86	0.41
4:D:24:THR:OG1	4:D:25:LYS:N	2.53	0.41
5:E:16:THR:OG1	5:E:17:GLY:N	2.52	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:P:34:THR:HA	16:P:40:ALA:HA	2.03	0.41
18:R:64:VAL:H	18:R:67:ASP:HB3	1.85	0.41
19:S:52:ARG:HD3	53:3:1317:C:N3	2.35	0.41
21:U:50:THR:HB	21:U:78:VAL:HB	2.02	0.41
27:b:145:MET:SD	51:1:1800:C:H5"	2.61	0.41
27:b:170:TYR:HB3	27:b:182:LYS:HB3	2.02	0.41
34:j:114:LEU:O	34:j:118:MET:N	2.54	0.41
39:o:24:THR:HB	39:o:90:VAL:HG12	2.02	0.41
48:x:57:VAL:HG13	51:1:372:G:H5'	2.02	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
51:1:1509:A:H2'	51:1:1510:G:H8	1.82	0.41
51:1:1972:G:H2'	51:1:1973:G:H8	1.85	0.41
53:3:79:G:H2'	53:3:80:A:H5'	2.03	0.41
53:3:224:U:H2'	53:3:225:C:C5	2.55	0.41
53:3:426:U:H2'	53:3:427:U:C6	2.54	0.41
53:3:520:A:N6	53:3:529:G:H21	2.13	0.41
58:B1:190:LYS:HB2	58:B1:190:LYS:HE3	1.41	0.41
58:B1:513:MET:HG3	58:B1:544:LEU:HD11	2.01	0.41
66:0:444:SER:O	66:0:444:SER:OG	2.31	0.41
66:0:494:ILE:HB	66:0:608:ALA:HB1	2.03	0.41
1:A:11:GLU:HG2	1:A:25:ARG:HG2	2.02	0.41
6:F:8:LYS:HD2	6:F:8:LYS:HA	1.80	0.41
6:F:32:LYS:HD2	51:1:2478:A:OP1	2.20	0.41
10:J:37:VAL:HG21	10:J:113:VAL:HG13	2.02	0.41
15:O:45:ARG:NH1	15:O:47:GLU:OE1	2.53	0.41
17:Q:42:LYS:HA	17:Q:42:LYS:HD2	1.79	0.41
23:W:62:ARG:NH1	53:3:718:A:N6	2.69	0.41
28:c:145:SER:HB3	51:1:2578:G:N7	2.35	0.41
28:c:170:VAL:HG13	28:c:194:PRO:HG3	2.01	0.41
34:j:61:LYS:HE2	34:j:61:LYS:HB2	1.88	0.41
35:k:1:MET:HE3	51:1:1665:A:H1'	2.02	0.41
36:l:78:ARG:HE	36:l:111:ILE:HD11	1.86	0.41
51:1:1625:C:H2'	51:1:1626:A:O4'	2.20	0.41
51:1:1716:U:O2'	51:1:1717:A:H5'	2.19	0.41
51:1:1741:C:H2'	51:1:1742:U:H5'	2.01	0.41
51:1:1900:A:H5'	51:1:1970:A:C5'	2.50	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	2.73	0.41
51:1:2575:C:O5'	51:1:2575:C:H6	2.03	0.41
53:3:458:U:H2'	53:3:459:A:C8	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
53:3:1389:C:H2'	53:3:1390:U:O4'	2.21	0.41
54:4:55:G:H5'	59:B2:688:GLN:HE22	1.85	0.41
59:B2:310:ILE:HG21	59:B2:325:LEU:HB3	2.02	0.41
59:B2:699:LEU:HG	59:B2:799:ASN:HD22	1.85	0.41
59:B2:870:ILE:HB	59:B2:944:ARG:HD3	2.02	0.41
62:NG:175:PHE:O	62:NG:178:VAL:O	2.38	0.41
66:0:495:ARG:HG3	66:0:495:ARG:NH1	2.36	0.41
66:0:520:ILE:HD13	66:0:557:ILE:HD11	2.01	0.41
2:B:53:VAL:HG23	2:B:54:ILE:HG23	2.02	0.41
15:O:46:LYS:HB3	53:3:1253:G:OP1	2.21	0.41
19:S:99:SER:HG	53:3:1187:G:H21	1.69	0.41
28:c:209:ALA:OXT	51:1:2733:A:C2	2.74	0.41
47:w:56:PHE:HE2	51:1:2365:G:C5'	2.34	0.41
51:1:140:C:C6	51:1:141:G:H4'	2.55	0.41
51:1:2305:U:H2'	51:1:2306:C:H5'	2.02	0.41
51:1:2643:G:H2'	51:1:2644:G:O4'	2.20	0.41
52:2:78:A:H2'	52:2:79:G:O4'	2.20	0.41
53:3:130:A:N3	53:3:130:A:H2'	2.36	0.41
53:3:1005:A:C2'	53:3:1006:G:H5'	2.49	0.41
53:3:1315:U:H2'	53:3:1316:G:O4'	2.21	0.41
53:3:1490:U:H2'	53:3:1491:G:O4'	2.19	0.41
58:B1:59:ALA:HB1	58:B1:90:VAL:HG23	2.01	0.41
58:B1:102:MET:HG2	58:B1:246:PRO:CG	2.49	0.41
58:B1:616:PRO:HA	58:B1:619:ILE:HG22	2.02	0.41
59:B2:444:ASP:N	59:B2:444:ASP:OD1	2.51	0.41
59:B2:478:ARG:HD2	59:B2:492:MET:HA	2.02	0.41
66:0:83:ARG:HE	66:0:83:ARG:HB2	1.75	0.41
66:0:446:ARG:HB3	66:0:459:ALA:HB3	2.02	0.41
2:B:39:ARG:CZ	51:1:2884:U:H3	2.34	0.41
15:O:53:ILE:HD12	19:S:84:ARG:HD2	2.03	0.41
16:P:86:LYS:HG3	16:P:114:PRO:HD3	2.02	0.41
21:U:71:VAL:HA	21:U:74:LEU:HB2	2.02	0.41
25:Y:78:LEU:HA	25:Y:78:LEU:HD13	1.85	0.41
28:c:47:ALA:HA	28:c:84:LEU:HG	2.01	0.41
28:c:80:TRP:CD1	28:c:202:ILE:HD11	2.55	0.41
31:f:32:LEU:HD23	31:f:32:LEU:HA	1.86	0.41
36:l:4:ASN:OD1	51:1:1203:U:O2	2.39	0.41
51:1:151:C:H5"	51:1:1360:G:OP1	2.21	0.41
51:1:1354:A:H2'	51:1:1355:G:O4'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2356:U:H3'	51:1:2357:G:H5"	2.03	0.41
53:3:26:A:H61	53:3:558:G:H1'	1.86	0.41
53:3:562:U:H4'	53:3:563:A:O5'	2.20	0.41
53:3:862:C:O2'	53:3:863:U:H5'	2.20	0.41
53:3:946:A:H4'	53:3:1333:A:HO2'	1.85	0.41
53:3:1305:G:H22	53:3:1331:G:H2'	1.86	0.41
57:A1:205:MET:HE1	57:A1:217:ILE:HG13	2.02	0.41
58:B1:68:TYR:HB3	58:B1:75:TYR:HE2	1.81	0.41
59:B2:861:ALA:HB1	59:B2:882:ILE:HD13	2.02	0.41
66:0:18:HIS:ND1	66:0:120:GLN:HB3	2.36	0.41
66:0:468:ILE:O	66:0:472:ARG:N	2.51	0.41
3:C:13:SER:OG	3:C:47:ILE:O	2.27	0.41
12:L:3:ARG:HE	12:L:3:ARG:HB3	1.68	0.41
15:O:30:LYS:HA	15:O:34:ALA:HA	2.02	0.41
16:P:25:SER:HA	16:P:88:PRO:HD2	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	2.53	0.41
29:d:50:ALA:HB2	51:1:801:G:C8	2.55	0.41
30:e:63:LYS:O	52:2:42:C:H1'	2.21	0.41
48:x:31:ASN:ND2	48:x:52:ALA:HB2	2.34	0.41
50:z:18:LYS:O	50:z:22:THR:OG1	2.31	0.41
51:1:413:C:H2'	51:1:414:C:C6	2.56	0.41
51:1:772:C:H5"	51:1:1356:G:C5'	2.50	0.41
51:1:940:G:C3'	51:1:941:A:H5"	2.51	0.41
51:1:1609:A:H5'	51:1:1609:A:C8	2.55	0.41
51:1:1752:C:O2'	51:1:1753:G:H5'	2.21	0.41
51:1:1863:G:H2'	51:1:1864:U:C6	2.56	0.41
51:1:2259:U:H1'	51:1:2427:C:H2'	2.02	0.41
51:1:2638:G:H1'	51:1:2778:A:N6	2.34	0.41
53:3:153:C:H2'	53:3:154:U:C5'	2.51	0.41
53:3:794:A:O2'	53:3:795:C:H5'	2.20	0.41
53:3:1327:C:H2'	53:3:1328:C:H6	1.84	0.41
57:A2:42:ALA:HB1	57:A2:224:LEU:HD11	2.03	0.41
58:B1:144:TYR:N	58:B1:144:TYR:CD1	2.88	0.41
58:B1:848:VAL:HB	58:B1:858:VAL:HG22	2.02	0.41
59:B2:746:ALA:O	59:B2:974:ARG:NH2	2.45	0.41
63:5:32:U:H3'	63:5:33:U:C6	2.55	0.41
66:0:268:SER:N	66:0:273:LYS:O	2.44	0.41
5:E:14:LYS:HD3	5:E:14:LYS:HA	1.84	0.41
7:G:17:HIS:HB2	7:G:202:ASN:HD22	1.86	0.41
9:I:201:GLU:OE1	10:J:111:ARG:NH1	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:13:LYS:NZ	10:J:14:LEU:O	2.53	0.41
13:M:3:GLN:HE21	53:3:878:A:H1'	1.86	0.41
16:P:26:PHE:O	16:P:27:ASN:ND2	2.54	0.41
19:S:1:ALA:HB1	53:3:1049:U:C4	2.56	0.41
25:Y:21:ALA:HA	25:Y:24:ARG:HD3	2.02	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:152:GLN:HG2	51:1:1818:U:C4	2.55	0.41
28:c:55:LYS:HE3	28:c:60:VAL:HG22	2.03	0.41
28:c:113:SER:HB3	28:c:194:PRO:HB3	2.03	0.41
29:d:45:ALA:CB	51:1:38:A:H4'	2.50	0.41
31:f:123:GLU:HB2	31:f:131:VAL:HB	2.03	0.41
33:i:52:LEU:HD21	33:i:81:LYS:HB2	2.03	0.41
34:j:27:ARG:NH2	51:1:1142:A:H4'	2.35	0.41
45:u:73:ASN:ND2	45:u:76:THR:H	2.19	0.41
45:u:84:PHE:HB2	51:1:297:G:O3'	2.21	0.41
51:1:549:G:H2'	51:1:550:C:C6	2.56	0.41
51:1:740:C:O2'	51:1:741:U:H5'	2.21	0.41
51:1:1047:G:N2	51:1:1110:G:H2'	2.36	0.41
51:1:1177:G:H3'	51:1:1178:C:H5"	2.02	0.41
51:1:1229:C:H2'	51:1:1230:A:C8	2.53	0.41
51:1:1698:A:N7	51:1:1700:A:C8	2.89	0.41
51:1:1823:G:C6	51:1:1824:G:C5	3.09	0.41
51:1:1853:A:H2'	51:1:1854:A:H8	1.82	0.41
51:1:1917:U:O5'	51:1:1917:U:O2	2.39	0.41
51:1:2070:A:C2	51:1:2071:A:C4	3.08	0.41
51:1:2498:C:O2'	51:1:2499:C:H5'	2.20	0.41
51:1:2534:A:C2	51:1:2535:G:H1'	2.56	0.41
51:1:2559:C:H2'	51:1:2560:A:H8	1.86	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
53:3:68:G:C2	53:3:69:G:H1'	2.55	0.41
53:3:107:G:H2'	53:3:108:G:O4'	2.20	0.41
53:3:270:A:H2'	53:3:271:C:O4'	2.20	0.41
53:3:520:A:H61	53:3:533:A:H61	1.67	0.41
55:8:2:DC:C6	55:8:2:DC:H5'	2.56	0.41
57:A2:57:THR:HG23	57:A2:158:ARG:HH21	1.86	0.41
58:B1:71:LEU:HB2	58:B1:90:VAL:HG11	2.03	0.41
58:B1:108:ALA:HB2	58:B1:276:ASN:OD1	2.21	0.41
58:B1:390:LEU:N	58:B1:390:LEU:HD13	2.35	0.41
58:B1:820:ILE:HD11	58:B1:822:MET:HE2	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:B1:1177:ILE:HD12	58:B1:1186:TYR:HE2	1.85	0.41
59:B2:738:GLU:HA	59:B2:741:MET:HE2	2.03	0.41
59:B2:755:LYS:HA	59:B2:755:LYS:HD2	1.86	0.41
59:B2:987:GLU:HG2	59:B2:991:LYS:HE3	2.03	0.41
59:B2:998:LEU:HD21	59:B2:1015:ALA:HB2	2.02	0.41
64:6:33:U:H2'	64:6:35:A:OP2	2.21	0.41
65:a:167:LYS:HE2	65:a:167:LYS:HB3	1.52	0.41
66:0:161:ARG:HD2	66:0:162:LEU:HD23	2.02	0.41
66:0:534:TYR:HB2	66:0:561:LEU:HD11	2.03	0.41
4:D:39:ARG:CZ	51:1:469:G:O6	2.69	0.41
9:I:108:ALA:N	9:I:112:GLU:OE2	2.43	0.41
21:U:60:TRP:HB3	21:U:65:ALA:HB2	2.03	0.41
24:X:46:LEU:HB3	24:X:48:ILE:HG12	2.03	0.41
27:b:153:LEU:HA	51:1:1799:G:N2	2.35	0.41
30:e:78:ILE:HD11	30:e:82:TYR:HB3	2.03	0.41
31:f:14:VAL:HG12	31:f:27:GLY:HA2	2.01	0.41
32:g:132:PHE:HB2	32:g:140:ALA:HB3	2.03	0.41
35:k:47:ILE:HA	35:k:47:ILE:HD13	1.85	0.41
48:x:1:SER:OG	51:1:1365:A:H5'	2.20	0.41
49:y:31:GLN:HB3	49:y:37:LEU:HD12	2.02	0.41
51:1:121:G:H2'	51:1:122:G:H8	1.86	0.41
51:1:289:G:H2'	51:1:290:U:O4'	2.20	0.41
51:1:692:C:H2'	51:1:693:A:H8	1.86	0.41
51:1:1146:C:O2'	51:1:1147:A:H5'	2.21	0.41
51:1:1597:A:C5'	51:1:1598:A:H5'	2.32	0.41
51:1:1679:A:H4'	51:1:1990:C:H4'	2.03	0.41
51:1:2063:C:O2	51:1:2450:A:N1	2.54	0.41
51:1:2140:G:H1	51:1:2151:U:H3	1.68	0.41
51:1:2656:U:OP1	66:0:146:ARG:NH2	2.52	0.41
51:1:2798:U:H4'	51:1:2799:A:C6	2.56	0.41
51:1:2811:G:O2'	51:1:2812:G:H5'	2.21	0.41
53:3:461:A:H2'	53:3:462:G:C8	2.56	0.41
53:3:1346:A:N1	53:3:1374:A:H5"	2.35	0.41
53:3:1468:A:H2'	53:3:1469:C:O4'	2.21	0.41
58:B1:140:TYR:HD1	58:B1:140:TYR:HA	1.79	0.41
58:B1:243:PRO:HG2	59:B2:1332:SER:C	2.44	0.41
58:B1:472:LEU:HD11	59:B2:1294:LYS:HG2	2.02	0.41
58:B1:777:HIS:CD2	59:B2:550:VAL:HG13	2.56	0.41
59:B2:22:LEU:HD22	59:B2:603:ILE:HG21	2.02	0.41
59:B2:936:ARG:HB2	59:B2:1042:LEU:HD12	2.03	0.41
63:5:23:A:H2'	63:5:24:G:C8	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
66:0:489:ALA:HB3	66:0:687:TYR:HE1	1.85	0.41
6:F:10:LEU:HD21	51:1:2477:U:H5	1.82	0.40
7:G:95:TRP:HZ3	7:G:99:MET:HE2	1.85	0.40
9:I:97:LEU:HG	9:I:134:TYR:HB3	2.04	0.40
10:J:83:PRO:HB3	10:J:97:PRO:HD3	2.02	0.40
12:L:34:LYS:CE	53:3:1290:G:H4'	2.51	0.40
14:N:21:LYS:HE2	14:N:21:LYS:HB2	1.85	0.40
15:O:58:ASN:HD21	53:3:1061:G:H4'	1.85	0.40
19:S:4:SER:OG	53:3:1216:A:H5"	2.21	0.40
22:V:46:HIS:CG	22:V:66:LEU:HD22	2.56	0.40
24:X:20:LYS:O	24:X:24:SER:OG	2.38	0.40
27:b:139:THR:OG1	27:b:162:GLN:OE1	2.30	0.40
30:e:68:LYS:HD3	30:e:68:LYS:HA	1.86	0.40
37:m:47:GLU:O	37:m:51:ARG:N	2.48	0.40
38:n:5:LYS:NZ	51:1:2000:C:OP1	2.48	0.40
41:q:94:LEU:HA	41:q:97:ILE:HG22	2.03	0.40
44:t:49:LYS:HD2	44:t:49:LYS:HA	1.75	0.40
45:u:67:SER:HB2	51:1:327:G:H21	1.85	0.40
49:y:31:GLN:HG2	49:y:37:LEU:HB2	2.04	0.40
51:1:272:A:H2'	51:1:273:G:H8	1.86	0.40
51:1:986:C:H6	51:1:986:C:O5'	2.04	0.40
51:1:1063:G:OP2	51:1:1070:A:C4'	2.69	0.40
51:1:1642:G:H2'	51:1:1643:G:O4'	2.21	0.40
51:1:1801:A:H5'	51:1:1801:A:H8	1.86	0.40
51:1:2136:G:N1	51:1:2137:U:O2	2.54	0.40
53:3:204:G:H2'	53:3:205:A:C8	2.55	0.40
53:3:456:A:H2'	53:3:457:G:C8	2.56	0.40
53:3:883:C:H2'	53:3:884:U:C6	2.56	0.40
57:A1:224:LEU:HD23	57:A2:228:LEU:HD21	2.03	0.40
58:B1:515:ARG:HG2	58:B1:516:ASP:H	1.85	0.40
58:B1:930:LEU:HA	58:B1:1244:GLN:HG3	2.02	0.40
59:B2:1072:ASN:OD1	59:B2:1072:ASN:N	2.52	0.40
2:B:42:ILE:HG22	2:B:48:TYR:HB2	2.03	0.40
10:J:25:LYS:HZ3	53:3:923:A:H5"	1.81	0.40
18:R:52:ILE:HD12	18:R:52:ILE:HA	1.96	0.40
18:R:70:ARG:NE	30:e:141:ASP:O	2.53	0.40
26:Z:36:PHE:CE1	26:Z:40:PRO:HD3	2.57	0.40
27:b:247:TRP:CE2	51:1:1805:A:H5"	2.57	0.40
30:e:146:ASP:OD1	30:e:146:ASP:N	2.52	0.40
51:1:527:C:OP2	51:1:2779:U:N3	2.51	0.40
51:1:1169:A:H2'	51:1:1170:C:O4'	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:1:2313:C:H2'	51:1:2314:A:C8	2.56	0.40
51:1:2741:A:N6	51:1:2763:G:H1'	2.37	0.40
53:3:354:G:H2'	53:3:355:C:H6	1.77	0.40
53:3:374:A:H2'	53:3:375:U:C6	2.55	0.40
53:3:706:A:H2'	53:3:707:U:H5'	2.04	0.40
53:3:795:C:C5	53:3:796:C:C5	3.09	0.40
55:8:14:DC:C2	55:8:15:DC:C5	3.09	0.40
58:B1:211:GLU:CG	58:B1:215:LYS:HE3	2.44	0.40
58:B1:239:LEU:N	58:B1:239:LEU:HD23	2.36	0.40
63:5:17:C:H2'	63:5:18:G:C8	2.56	0.40
64:6:62:C:H5'	65:a:53:ARG:NE	2.36	0.40
66:0:169:LEU:HD12	66:0:185:LEU:HB3	2.01	0.40
4:D:1:MET:SD	4:D:2:LYS:N	2.95	0.40
9:I:21:LYS:HD2	9:I:21:LYS:HA	1.77	0.40
12:L:138:GLU:O	12:L:142:ARG:N	2.52	0.40
14:N:82:ILE:HA	14:N:85:ALA:HB3	2.03	0.40
16:P:66:ALA:HA	16:P:69:CYS:HB3	2.04	0.40
17:Q:30:ARG:NH1	66:0:429:GLU:OE2	2.54	0.40
26:Z:66:ARG:HB2	53:3:1088:G:H1'	2.03	0.40
27:b:145:MET:HE3	27:b:153:LEU:HD11	2.02	0.40
27:b:255:LYS:HD3	51:1:1844:C:H5"	2.02	0.40
30:e:65:LEU:N	30:e:87:LYS:O	2.53	0.40
33:i:63:ASP:OD1	33:i:63:ASP:N	2.53	0.40
39:o:25:ARG:HG3	39:o:40:ILE:HB	2.03	0.40
40:p:17:PRO:HD2	40:p:83:ILE:HB	2.04	0.40
41:q:36:GLN:OE1	51:1:1252:G:N2	2.38	0.40
51:1:324:A:C2'	51:1:325:G:H5'	2.51	0.40
51:1:571:U:C5	51:1:575:A:C6	3.10	0.40
51:1:954:G:C6	51:1:955:U:C2	3.10	0.40
51:1:1054:A:H2	51:1:1105:U:H3	1.69	0.40
51:1:1255:U:H3	51:1:2060:A:H8	1.65	0.40
51:1:1810:A:H2'	51:1:1811:G:C5'	2.51	0.40
51:1:2201:G:H2'	51:1:2202:U:O4'	2.21	0.40
53:3:220:G:O2'	53:3:221:C:H5'	2.21	0.40
53:3:262:A:H2'	53:3:263:A:C8	2.55	0.40
53:3:407:U:H3	53:3:435:A:H61	1.69	0.40
53:3:413:G:N3	53:3:413:G:H2'	2.36	0.40
53:3:866:C:C2	53:3:867:G:H1'	2.57	0.40
53:3:994:A:H61	53:3:1047:G:H4'	1.85	0.40
53:3:1028:C:H3'	53:3:1029:U:C5'	2.45	0.40
53:3:1034:G:H2'	53:3:1035:A:H8	1.86	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:A1:44:ARG:HA	57:A1:183:ILE:HD12	2.03	0.40
57:A2:205:MET:HE2	57:A2:205:MET:HB3	2.00	0.40
58:B1:351:GLY:O	58:B1:467:ALA:HA	2.21	0.40
58:B1:1041:ILE:N	58:B1:1045:THR:OG1	2.53	0.40
59:B2:886:LYS:HE2	59:B2:918:LEU:HD13	2.03	0.40
65:a:54:LYS:NZ	65:a:56:ASP:OD1	2.53	0.40
66:0:187:LYS:HE2	66:0:189:LYS:HB2	2.02	0.40
3:C:34:GLU:OE1	3:C:49:LYS:NZ	2.51	0.40
12:L:115:MET:HA	12:L:118:ARG:HB2	2.04	0.40
13:M:126:CYS:SG	13:M:127:TYR:N	2.93	0.40
15:O:82:LYS:HD2	15:O:82:LYS:HA	1.53	0.40
18:R:74:MET:HE2	18:R:74:MET:HB3	1.84	0.40
24:X:77:ARG:HH11	53:3:1225:A:H4'	1.83	0.40
25:Y:27:MET:H	25:Y:27:MET:HG3	1.74	0.40
27:b:4:LYS:HA	27:b:16:VAL:HG22	2.03	0.40
27:b:77:VAL:HB	27:b:112:GLY:H	1.86	0.40
28:c:179:ARG:HB3	28:c:188:LEU:HB2	2.03	0.40
29:d:71:GLY:N	51:1:674:G:H5"	2.37	0.40
33:i:10:LEU:HG	33:i:23:VAL:HG13	2.03	0.40
33:i:21:PRO:HB2	33:i:22:PRO:HD3	2.03	0.40
34:j:81:ILE:H	34:j:81:ILE:HG13	1.47	0.40
42:r:78:ARG:HH22	51:1:975:A:H4'	1.86	0.40
51:1:191:A:H2'	51:1:192:C:C6	2.56	0.40
51:1:838:C:C2	51:1:941:A:C6	3.09	0.40
51:1:1444:G:H2'	51:1:1445:G:O4'	2.21	0.40
51:1:1607:C:C4'	51:1:1608:A:C5'	2.97	0.40
51:1:2153:C:H3'	51:1:2154:A:C8	2.56	0.40
53:3:240:G:H2'	53:3:241:G:H8	1.87	0.40
53:3:410:G:H2'	53:3:429:U:O4	2.21	0.40
59:B2:741:MET:SD	59:B2:974:ARG:NH2	2.93	0.40
59:B2:803:ALA:HB2	59:B2:1094:VAL:HG21	2.03	0.40
64:6:25:C:H2'	64:6:26:G:H8	1.85	0.40
8:H:68:HIS:NE2	8:H:105:VAL:HB	2.37	0.40
8:H:115:VAL:O	8:H:118:SER:OG	2.36	0.40
9:I:2:ARG:HD3	53:3:405:U:OP2	2.22	0.40
14:N:6:TYR:CZ	53:3:1147:C:H4'	2.56	0.40
20:T:27:GLN:O	20:T:31:LEU:N	2.47	0.40
32:g:9:VAL:HG12	32:g:11:ASN:H	1.85	0.40
33:i:71:LYS:HD3	33:i:116:MET:HE2	2.03	0.40
33:i:81:LYS:HE2	33:i:81:LYS:HB3	1.94	0.40
37:m:11:LYS:O	51:1:910:A:N6	2.54	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:m:75:GLU:CD	51:1:957:C:H5'	2.47	0.40
38:n:23:ASN:HD21	51:1:1294:U:H1'	1.87	0.40
39:o:78:VAL:O	39:o:82:ALA:N	2.55	0.40
47:w:11:ASP:OD1	47:w:12:SER:N	2.54	0.40
51:1:1468:U:H2'	51:1:1522:A:H61	1.87	0.40
51:1:1666:G:N7	51:1:1667:G:C6	2.89	0.40
51:1:1831:G:C2	51:1:1975:G:C2	3.10	0.40
51:1:2684:U:C4	51:1:2685:G:N7	2.90	0.40
53:3:231:U:O2'	53:3:232:G:H5'	2.21	0.40
53:3:408:A:N6	53:3:434:U:H3	2.18	0.40
53:3:537:G:H2'	53:3:538:G:C8	2.57	0.40
53:3:581:G:N2	53:3:761:G:C6	2.89	0.40
53:3:1283:U:O2'	53:3:1284:C:H5'	2.22	0.40
54:4:56:G:OP1	59:B2:1073:LYS:NZ	2.35	0.40
57:A2:57:THR:HG22	57:A2:58:GLU:HG3	2.04	0.40
58:B1:26:SER:HB3	58:B1:29:MET:H	1.86	0.40
58:B1:56:LEU:HD12	58:B1:56:LEU:HA	1.84	0.40
58:B1:210:SER:HB3	58:B1:213:LYS:CB	2.48	0.40
58:B1:807:LEU:HD21	58:B1:894:VAL:HG21	2.04	0.40
59:B2:979:LEU:HD11	59:B2:1011:LEU:HD11	2.03	0.40
66:0:23:LYS:HD2	66:0:90:PRO:HA	2.03	0.40
66:0:32:PHE:HA	66:0:37:ASN:HB2	2.03	0.40
66:0:122:GLN:O	66:0:125:THR:OG1	2.36	0.40
66:0:648:GLU:N	66:0:651:GLY:O	2.48	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	44/70 (63%)	38 (86%)	6 (14%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	B	54/57 (95%)	48 (89%)	6 (11%)	0	100	100
3	C	48/55 (87%)	37 (77%)	11 (23%)	0	100	100
4	D	44/46 (96%)	35 (80%)	9 (20%)	0	100	100
5	E	62/65 (95%)	48 (77%)	13 (21%)	1 (2%)	8	37
6	F	36/38 (95%)	29 (81%)	7 (19%)	0	100	100
7	G	216/241 (90%)	182 (84%)	34 (16%)	0	100	100
8	H	204/233 (88%)	187 (92%)	17 (8%)	0	100	100
9	I	203/206 (98%)	171 (84%)	31 (15%)	1 (0%)	25	63
10	J	155/167 (93%)	129 (83%)	26 (17%)	0	100	100
11	K	98/135 (73%)	81 (83%)	17 (17%)	0	100	100
12	L	149/179 (83%)	130 (87%)	19 (13%)	0	100	100
13	M	127/130 (98%)	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	53
18	R	112/118 (95%)	99 (88%)	13 (12%)	0	100	100
19	S	98/101 (97%)	86 (88%)	12 (12%)	0	100	100
20	T	86/89 (97%)	80 (93%)	6 (7%)	0	100	100
21	U	80/82 (98%)	69 (86%)	11 (14%)	0	100	100
22	V	78/84 (93%)	69 (88%)	9 (12%)	0	100	100
23	W	63/75 (84%)	59 (94%)	4 (6%)	0	100	100
24	X	77/92 (84%)	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

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
33	i	139/142 (98%)	124 (89%)	15 (11%)	0	100	100
34	j	140/142 (99%)	120 (86%)	20 (14%)	0	100	100
35	k	120/123 (98%)	98 (82%)	22 (18%)	0	100	100
36	l	141/144 (98%)	117 (83%)	24 (17%)	0	100	100
37	m	134/136 (98%)	116 (87%)	18 (13%)	0	100	100
38	n	118/127 (93%)	104 (88%)	14 (12%)	0	100	100
39	o	114/117 (97%)	103 (90%)	11 (10%)	0	100	100
40	p	112/115 (97%)	105 (94%)	7 (6%)	0	100	100
41	q	115/118 (98%)	108 (94%)	7 (6%)	0	100	100
42	r	101/103 (98%)	89 (88%)	12 (12%)	0	100	100
43	s	108/110 (98%)	92 (85%)	16 (15%)	0	100	100
44	t	91/100 (91%)	77 (85%)	14 (15%)	0	100	100
45	u	100/104 (96%)	83 (83%)	17 (17%)	0	100	100
46	v	92/94 (98%)	79 (86%)	13 (14%)	0	100	100
47	w	73/85 (86%)	63 (86%)	10 (14%)	0	100	100
48	x	75/78 (96%)	66 (88%)	9 (12%)	0	100	100
49	y	61/63 (97%)	61 (100%)	0	0	100	100
50	z	56/59 (95%)	50 (89%)	6 (11%)	0	100	100
57	A1	295/329 (90%)	275 (93%)	19 (6%)	1 (0%)	37	72
57	A2	282/329 (86%)	272 (96%)	10 (4%)	0	100	100
58	B1	1329/1407 (94%)	1206 (91%)	119 (9%)	4 (0%)	37	72
59	B2	1338/1342 (100%)	1208 (90%)	126 (9%)	4 (0%)	37	72
60	W0	80/91 (88%)	77 (96%)	3 (4%)	0	100	100
61	NA	490/495 (99%)	475 (97%)	15 (3%)	0	100	100
62	NG	150/181 (83%)	136 (91%)	11 (7%)	3 (2%)	6	31
65	a	128/234 (55%)	107 (84%)	21 (16%)	0	100	100
66	0	695/716 (97%)	618 (89%)	72 (10%)	5 (1%)	19	56
67	h	2/6 (33%)	1 (50%)	1 (50%)	0	100	100
All	All	10486/11185 (94%)	9335 (89%)	1131 (11%)	20 (0%)	45	78

All (20) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
58	B1	121	PRO
62	NG	124	PRO
59	B2	43	PRO
59	B2	911	SER
62	NG	102	PRO
66	0	199	GLY
66	0	298	ILE
66	0	299	LEU
17	Q	87	LYS
58	B1	43	THR
58	B1	193	ASP
59	B2	888	THR
66	0	196	ALA
5	E	16	THR
58	B1	1325	PHE
57	A1	250	ASP
62	NG	103	ILE
9	I	126	GLY
59	B2	1317	PRO
66	0	121	PRO

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	42/62 (68%)	42 (100%)	0	100	100
2	B	47/48 (98%)	47 (100%)	0	100	100
3	C	45/49 (92%)	44 (98%)	1 (2%)	47	65
4	D	38/38 (100%)	35 (92%)	3 (8%)	10	29
5	E	51/52 (98%)	46 (90%)	5 (10%)	6	22
6	F	34/34 (100%)	33 (97%)	1 (3%)	37	57
7	G	180/199 (90%)	172 (96%)	8 (4%)	24	46
8	H	170/190 (90%)	162 (95%)	8 (5%)	22	44
9	I	172/173 (99%)	170 (99%)	2 (1%)	67	79

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
10	J	119/126 (94%)	112 (94%)	7 (6%)	16 38
11	K	87/116 (75%)	82 (94%)	5 (6%)	17 39
12	L	124/147 (84%)	121 (98%)	3 (2%)	44 62
13	M	104/105 (99%)	102 (98%)	2 (2%)	52 70
14	N	105/107 (98%)	105 (100%)	0	100 100
15	O	86/90 (96%)	78 (91%)	8 (9%)	7 23
16	P	89/99 (90%)	87 (98%)	2 (2%)	47 65
17	Q	103/104 (99%)	101 (98%)	2 (2%)	52 70
18	R	92/96 (96%)	91 (99%)	1 (1%)	70 80
19	S	83/84 (99%)	82 (99%)	1 (1%)	67 79
20	T	76/77 (99%)	76 (100%)	0	100 100
21	U	65/65 (100%)	65 (100%)	0	100 100
22	V	74/78 (95%)	74 (100%)	0	100 100
23	W	56/65 (86%)	56 (100%)	0	100 100
24	X	70/79 (89%)	70 (100%)	0	100 100
25	Y	65/66 (98%)	65 (100%)	0	100 100
26	Z	55/61 (90%)	46 (84%)	9 (16%)	2 10
27	b	216/218 (99%)	212 (98%)	4 (2%)	52 70
28	c	164/164 (100%)	163 (99%)	1 (1%)	84 88
29	d	165/165 (100%)	160 (97%)	5 (3%)	36 56
30	e	148/150 (99%)	146 (99%)	2 (1%)	62 76
31	f	137/138 (99%)	136 (99%)	1 (1%)	81 87
32	g	114/114 (100%)	111 (97%)	3 (3%)	41 60
33	i	109/110 (99%)	108 (99%)	1 (1%)	75 83
34	j	116/116 (100%)	113 (97%)	3 (3%)	41 60
35	k	103/104 (99%)	100 (97%)	3 (3%)	37 57
36	l	102/103 (99%)	100 (98%)	2 (2%)	50 68
37	m	109/109 (100%)	108 (99%)	1 (1%)	75 83
38	n	100/103 (97%)	98 (98%)	2 (2%)	50 68
39	o	86/87 (99%)	86 (100%)	0	100 100
40	p	99/100 (99%)	99 (100%)	0	100 100

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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 56
49	y	55/55 (100%)	55 (100%)	0	100 100
50	z	48/49 (98%)	47 (98%)	1 (2%)	48 67
57	A1	185/286 (65%)	174 (94%)	11 (6%)	16 38
57	A2	186/286 (65%)	185 (100%)	1 (0%)	86 90
58	B1	1110/1168 (95%)	1018 (92%)	92 (8%)	9 28
59	B2	1150/1157 (99%)	1118 (97%)	32 (3%)	38 58
60	W0	70/75 (93%)	69 (99%)	1 (1%)	62 76
65	a	109/181 (60%)	98 (90%)	11 (10%)	6 21
66	0	574/588 (98%)	554 (96%)	20 (4%)	31 51
67	h	2/2 (100%)	2 (100%)	0	100 100
All	All	8120/8683 (94%)	7841 (97%)	279 (3%)	34 52

All (279) 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	45	VAL
10	J	77	ASN
10	J	89	THR
10	J	116	VAL
10	J	130	THR
11	K	51	ILE
11	K	53	LYS
11	K	54	LEU
11	K	55	HIS
11	K	92	THR
12	L	72	VAL
12	L	85	GLN
12	L	88	VAL
13	M	100	ILE
13	M	109	VAL
15	O	82	LYS
15	O	87	LEU
15	O	89	ARG
15	O	90	LEU
15	O	92	LEU
15	O	96	VAL
15	O	100	ILE
15	O	102	LEU
16	P	78	ILE
16	P	107	THR

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Mol	Chain	Res	Type
17	Q	88	ASP
17	Q	93	ARG
18	R	103	THR
19	S	45	LEU
26	Z	6	ARG
26	Z	8	ASN
26	Z	23	GLU
26	Z	24	LYS
26	Z	36	PHE
26	Z	43	GLU
26	Z	44	ARG
26	Z	46	ARG
26	Z	48	LYS
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
33	i	72	THR
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

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Mol	Chain	Res	Type
43	s	65	ASP
43	s	67	ASP
43	s	74	ILE
43	s	76	VAL
43	s	92	ARG
43	s	97	LEU
44	t	6	ARG
44	t	11	LEU
44	t	37	ASP
45	u	27	VAL
46	v	65	VAL
48	x	6	VAL
48	x	57	VAL
50	z	26	LEU
57	A1	9	LEU
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
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

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Mol	Chain	Res	Type
58	B1	87	LYS
58	B1	91	GLU
58	B1	93	THR
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

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Mol	Chain	Res	Type
58	B1	255	LEU
58	B1	256	ASP
58	B1	259	ARG
58	B1	284	ASP
58	B1	285	LEU
58	B1	290	ILE
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

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Mol	Chain	Res	Type
59	B2	540	ARG
59	B2	545	PHE
59	B2	546	GLU
59	B2	615	VAL
59	B2	857	VAL
59	B2	859	GLU
59	B2	887	VAL
59	B2	890	LYS
59	B2	892	GLU
59	B2	893	THR
59	B2	894	GLN
59	B2	895	LEU
59	B2	900	LYS
59	B2	901	LEU
59	B2	902	LEU
59	B2	903	ARG
59	B2	905	ILE
59	B2	913	VAL
59	B2	915	ASP
59	B2	918	LEU
59	B2	920	VAL
59	B2	922	ASN
59	B2	1076	ILE
59	B2	1151	LEU
60	W0	63	ILE
65	a	8	MET
65	a	42	VAL
65	a	47	ASN
65	a	165	ASN
65	a	166	ASP
65	a	167	LYS
65	a	170	ILE
65	a	211	LYS
65	a	212	VAL
65	a	213	SER
65	a	214	ILE
66	0	42	GLU
66	0	173	ILE
66	0	195	ASP
66	0	298	ILE
66	0	299	LEU
66	0	300	ASP

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Mol	Chain	Res	Type
66	0	301	ASP
66	0	303	LYS
66	0	338	VAL
66	0	390	ASP
66	0	504	LYS
66	0	507	LYS
66	0	508	GLN
66	0	512	ARG
66	0	514	GLN
66	0	517	HIS
66	0	519	VAL
66	0	611	VAL
66	0	662	GLU
66	0	663	MET

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (145) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	20	ASN
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

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Mol	Chain	Res	Type
10	J	131	ASN
10	J	147	ASN
11	K	52	ASN
11	K	55	HIS
11	K	94	HIS
12	L	8	GLN
12	L	27	ASN
12	L	96	ASN
12	L	129	ASN
13	M	3	GLN
13	M	15	ASN
13	M	20	ASN
14	N	3	ASN
16	P	27	ASN
16	P	80	ASN
17	Q	72	ASN
17	Q	76	HIS
17	Q	111	GLN
18	R	90	HIS
19	S	48	GLN
19	S	59	GLN
20	T	45	HIS
21	U	26	ASN
21	U	29	ASN
21	U	40	ASN
21	U	79	ASN
22	V	46	HIS
23	W	53	GLN
25	Y	74	HIS
25	Y	81	GLN
25	Y	83	ASN
26	Z	55	HIS
27	b	24	HIS
27	b	85	ASN
27	b	250	GLN
28	c	32	ASN
28	c	49	GLN
28	c	67	HIS
28	c	136	ASN
28	c	148	GLN
28	c	164	GLN
28	c	185	ASN

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Mol	Chain	Res	Type
29	d	62	GLN
29	d	195	GLN
30	e	22	ASN
31	f	63	GLN
32	g	18	GLN
32	g	33	GLN
32	g	66	ASN
32	g	135	HIS
33	i	18	ASN
33	i	42	ASN
34	j	80	HIS
34	j	128	ASN
34	j	130	HIS
34	j	135	GLN
35	k	9	ASN
36	l	93	ASN
37	m	22	GLN
38	n	9	GLN
38	n	23	ASN
38	n	107	ASN
39	o	38	GLN
39	o	104	GLN
39	o	116	GLN
40	p	74	GLN
41	q	65	ASN
41	q	70	GLN
43	s	31	GLN
43	s	60	HIS
44	t	59	ASN
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	66	HIS
57	A1	84	ASN
57	A1	117	HIS
57	A1	128	HIS
57	A1	227	GLN

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Mol	Chain	Res	Type
57	A2	23	HIS
57	A2	227	GLN
58	B1	45	ASN
58	B1	364	HIS
58	B1	424	ASN
58	B1	469	HIS
58	B1	805	GLN
58	B1	865	HIS
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	1237	HIS
59	B2	1268	GLN
59	B2	1313	HIS
60	W0	7	GLN
60	W0	31	GLN
60	W0	62	GLN
65	a	24	ASN
66	0	85	ASN
66	0	92	HIS
66	0	157	GLN
66	0	170	GLN
66	0	259	ASN
66	0	272	ASN
66	0	276	GLN
66	0	351	ASN
66	0	455	GLN
66	0	487	GLN
66	0	514	GLN
66	0	530	ASN

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Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
51	1	2902/2904 (99%)	440 (15%)	6 (0%)
52	2	119/120 (99%)	18 (15%)	0
53	3	1538/1542 (99%)	193 (12%)	1 (0%)
54	4	28/56 (50%)	17 (60%)	4 (14%)
63	5	75/76 (98%)	45 (60%)	10 (13%)
64	6	76/77 (98%)	14 (18%)	0
All	All	4738/4775 (99%)	727 (15%)	21 (0%)

All (727) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
51	1	10	A
51	1	12	U
51	1	23	G
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	199	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

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Mol	Chain	Res	Type
51	1	225	C
51	1	228	C
51	1	229	C
51	1	233	A
51	1	248	G
51	1	255	A
51	1	266	G
51	1	276	U
51	1	277	G
51	1	294	A
51	1	311	A
51	1	323	C
51	1	324	A
51	1	329	G
51	1	330	A
51	1	331	C
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

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Mol	Chain	Res	Type
51	1	560	C
51	1	563	A
51	1	568	U
51	1	573	U
51	1	574	A
51	1	586	A
51	1	603	A
51	1	609	A
51	1	610	C
51	1	615	U
51	1	627	A
51	1	637	A
51	1	646	U
51	1	654	A
51	1	655	A
51	1	686	U
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

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Mol	Chain	Res	Type
51	1	858	G
51	1	859	G
51	1	865	C
51	1	878	A
51	1	883	G
51	1	887	U
51	1	890	C
51	1	896	A
51	1	897	C
51	1	898	C
51	1	902	C
51	1	910	A
51	1	941	A
51	1	945	A
51	1	946	C
51	1	953	G
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

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Mol	Chain	Res	Type
51	1	1065	U
51	1	1066	U
51	1	1068	G
51	1	1069	A
51	1	1070	A
51	1	1071	G
51	1	1073	A
51	1	1078	U
51	1	1081	U
51	1	1084	A
51	1	1088	A
51	1	1104	C
51	1	1105	U
51	1	1106	G
51	1	1107	G
51	1	1111	A
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

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Mol	Chain	Res	Type
51	1	1313	U
51	1	1321	A
51	1	1325	U
51	1	1326	U
51	1	1342	A
51	1	1365	A
51	1	1378	A
51	1	1379	U
51	1	1383	A
51	1	1397	U
51	1	1416	G
51	1	1417	C
51	1	1419	A
51	1	1420	A
51	1	1428	C
51	1	1453	A
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

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Mol	Chain	Res	Type
51	1	1707	G
51	1	1715	G
51	1	1730	C
51	1	1738	G
51	1	1758	U
51	1	1764	C
51	1	1773	A
51	1	1780	A
51	1	1781	U
51	1	1784	A
51	1	1800	C
51	1	1801	A
51	1	1802	A
51	1	1808	A
51	1	1816	C
51	1	1827	U
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

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Mol	Chain	Res	Type
51	1	1997	C
51	1	2022	U
51	1	2023	C
51	1	2031	A
51	1	2034	U
51	1	2043	C
51	1	2049	G
51	1	2055	C
51	1	2056	G
51	1	2060	A
51	1	2061	G
51	1	2069	G
51	1	2072	C
51	1	2092	U
51	1	2093	G
51	1	2094	A
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

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Mol	Chain	Res	Type
51	1	2173	A
51	1	2178	C
51	1	2179	C
51	1	2180	U
51	1	2182	U
51	1	2189	U
51	1	2198	A
51	1	2199	A
51	1	2203	U
51	1	2211	A
51	1	2213	U
51	1	2214	C
51	1	2225	A
51	1	2238	G
51	1	2239	G
51	1	2249	U
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

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Mol	Chain	Res	Type
51	1	2427	C
51	1	2429	G
51	1	2430	A
51	1	2435	A
51	1	2441	U
51	1	2447	G
51	1	2448	A
51	1	2460	U
51	1	2469	A
51	1	2473	U
51	1	2476	A
51	1	2497	A
51	1	2502	G
51	1	2505	G
51	1	2518	A
51	1	2520	C
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

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Mol	Chain	Res	Type
51	1	2685	G
51	1	2689	U
51	1	2690	U
51	1	2713	U
51	1	2714	G
51	1	2715	C
51	1	2718	G
51	1	2726	A
51	1	2732	G
51	1	2744	G
51	1	2748	A
51	1	2757	A
51	1	2758	A
51	1	2764	A
51	1	2765	A
51	1	2778	A
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

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Mol	Chain	Res	Type
52	2	88	C
52	2	89	U
52	2	90	C
52	2	91	C
52	2	98	G
52	2	108	A
52	2	109	A
52	2	119	A
53	3	3	A
53	3	6	G
53	3	8	A
53	3	9	G
53	3	32	A
53	3	39	G
53	3	47	C
53	3	48	C
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

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Mol	Chain	Res	Type
53	3	280	C
53	3	281	G
53	3	289	G
53	3	308	C
53	3	316	C
53	3	328	C
53	3	352	C
53	3	354	G
53	3	367	U
53	3	369	G
53	3	372	C
53	3	397	A
53	3	406	G
53	3	408	A
53	3	413	G
53	3	414	A
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

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Mol	Chain	Res	Type
53	3	573	A
53	3	575	G
53	3	576	C
53	3	577	G
53	3	596	A
53	3	633	G
53	3	642	A
53	3	653	U
53	3	665	A
53	3	675	A
53	3	702	A
53	3	703	G
53	3	710	G
53	3	713	G
53	3	721	G
53	3	748	G
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

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Mol	Chain	Res	Type
53	3	960	U
53	3	961	U
53	3	966	G
53	3	968	A
53	3	969	A
53	3	971	G
53	3	974	A
53	3	975	A
53	3	976	G
53	3	977	A
53	3	992	U
53	3	993	G
53	3	994	A
53	3	1004	A
53	3	1012	A
53	3	1029	U
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

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Mol	Chain	Res	Type
53	3	1261	A
53	3	1262	C
53	3	1275	A
53	3	1278	G
53	3	1280	A
53	3	1282	C
53	3	1286	U
53	3	1287	A
53	3	1290	G
53	3	1300	G
53	3	1301	U
53	3	1302	C
53	3	1317	C
53	3	1345	U
53	3	1363	A
53	3	1364	U
53	3	1378	C
53	3	1398	A
53	3	1422	G
53	3	1432	G
53	3	1441	A
53	3	1446	A
53	3	1452	C
53	3	1471	U
53	3	1492	A
53	3	1503	A
53	3	1505	G
53	3	1506	U
53	3	1507	A
53	3	1517	G
53	3	1529	G
53	3	1530	G
53	3	1540	U
54	4	4	U
54	4	6	U
54	4	7	C
54	4	8	U
54	4	9	U
54	4	10	C
54	4	11	U
54	4	12	U
54	4	14	U

Continued on next page...

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Mol	Chain	Res	Type
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	48	G
54	4	49	G
63	5	2	C
63	5	7	A
63	5	8	U
63	5	9	A
63	5	11	C
63	5	13	C
63	5	15	G
63	5	17	C
63	5	18	G
63	5	19	G
63	5	20	U
63	5	21	A
63	5	26	A
63	5	28	G
63	5	29	G
63	5	30	G
63	5	32	U
63	5	33	U
63	5	34	G
63	5	35	A
63	5	36	A
63	5	37	A
63	5	39	U
63	5	40	C
63	5	41	C
63	5	43	C
63	5	44	G
63	5	46	G
63	5	47	U
63	5	48	C
63	5	49	C
63	5	52	G
63	5	53	G
63	5	55	U

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Mol	Chain	Res	Type
63	5	56	C
63	5	57	G
63	5	58	A
63	5	59	U
63	5	60	U
63	5	61	C
63	5	66	U
63	5	73	A
63	5	74	C
63	5	75	C
63	5	76	A
64	6	9	G
64	6	10	G
64	6	19	G
64	6	20	U
64	6	21	A
64	6	22	G
64	6	27	U
64	6	33	U
64	6	45	G
64	6	47	U
64	6	48	C
64	6	58	A
64	6	61	C
64	6	64	G

All (21) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
51	1	858	G
51	1	1020	A
51	1	1106	G
51	1	1801	A
51	1	2326	C
51	1	2756	U
53	3	413	G
54	4	10	C
54	4	11	U
54	4	18	U
54	4	19	U
63	5	7	A
63	5	29	G

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Mol	Chain	Res	Type
63	5	32	U
63	5	35	A
63	5	39	U
63	5	48	C
63	5	57	G
63	5	60	U
63	5	73	A
63	5	75	C

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

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
67	UAL	h	5	67	7,8,9	2.28	3 (42%)	5,9,11	2.91	2 (40%)
67	KBE	h	1	67	8,8,9	0.62	0	7,8,10	1.21	1 (14%)
67	5OH	h	6	67	8,12,13	0.81	0	3,16,18	1.51	1 (33%)
67	DPP	h	2	67	3,5,6	0.58	0	1,5,7	0.07	0

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

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

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
67	h	5	UAL	C1-N1	-4.77	1.32	1.40
67	h	5	UAL	C-CA	-2.88	1.40	1.45
67	h	5	UAL	CA-N	2.05	1.40	1.35

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
67	h	5	UAL	CA-CB-N1	-5.30	115.61	125.60
67	h	5	UAL	O-C-CA	-3.23	121.28	125.39
67	h	6	5OH	CR-CB-CA	-2.35	110.07	112.61
67	h	1	KBE	CB-CA-C	-2.07	109.22	112.25

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

3 monomers are involved in 5 short contacts:

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

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
70	PO4	0	802	-	4,4,4	0.97	0	6,6,6	0.48	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
69	GDP	0	801	-	24,30,30	0.96	1 (4%)	30,47,47	1.34	4 (13%)

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

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

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
69	0	801	GDP	C6-N1	-2.67	1.33	1.37

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
69	0	801	GDP	PA-O3A-PB	-3.56	120.62	132.83
69	0	801	GDP	C5-C6-N1	2.55	118.45	113.95
69	0	801	GDP	C3'-C2'-C1'	2.52	104.78	100.98
69	0	801	GDP	C8-N7-C5	2.51	107.78	102.99

There are no chirality outliers.

All (2) torsion outliers are listed below:

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

There are no ring outliers.

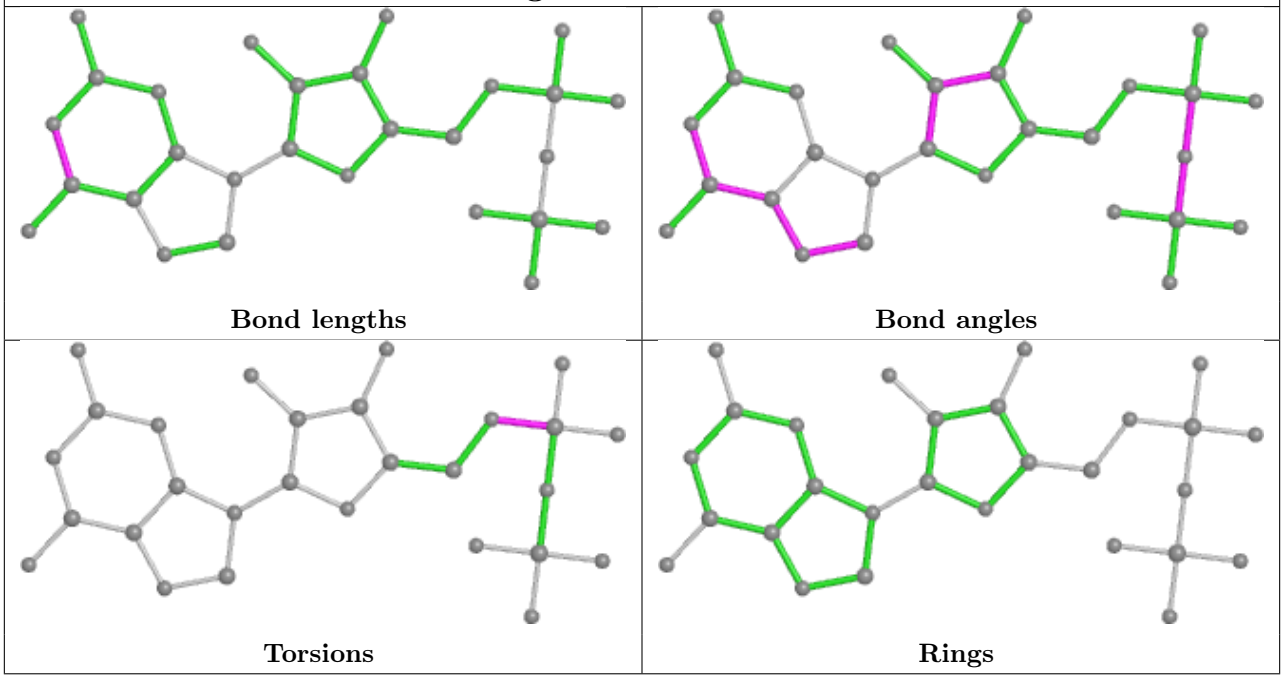
1 monomer is involved in 1 short contact:

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

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is

within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

Ligand GDP 0 801



5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

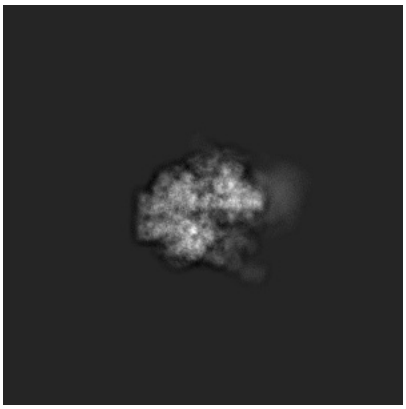
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-39173. These allow visual inspection of the internal detail of the map and identification of artifacts.

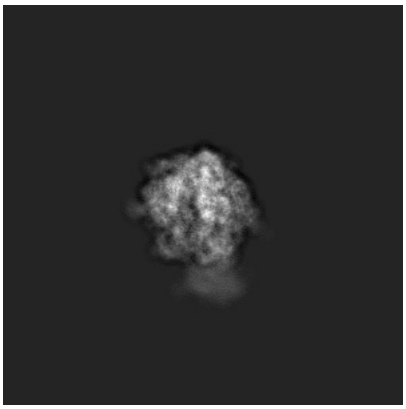
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

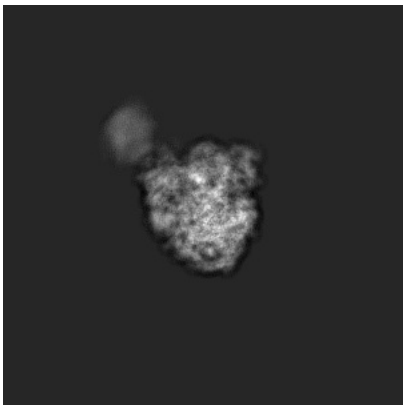
6.1.1 Primary map



X

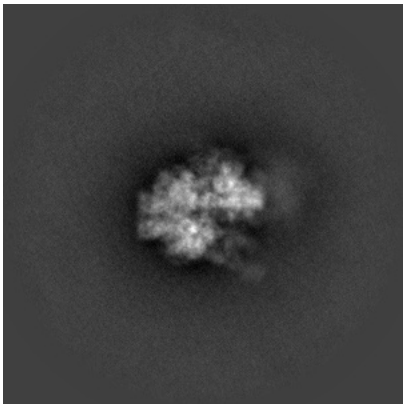


Y

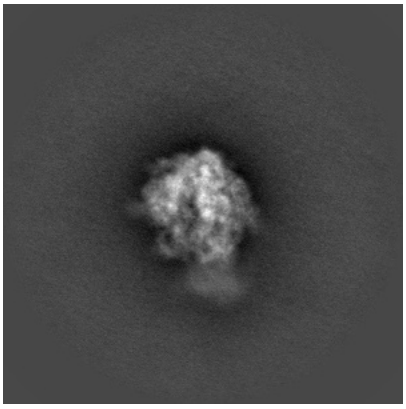


Z

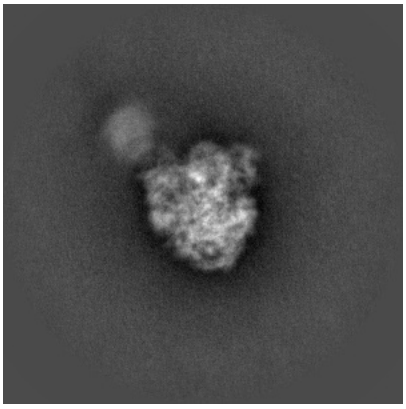
6.1.2 Raw map



X



Y

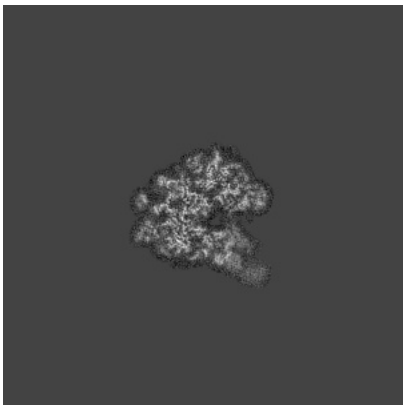


Z

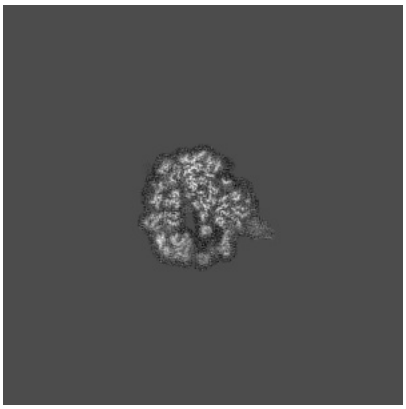
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

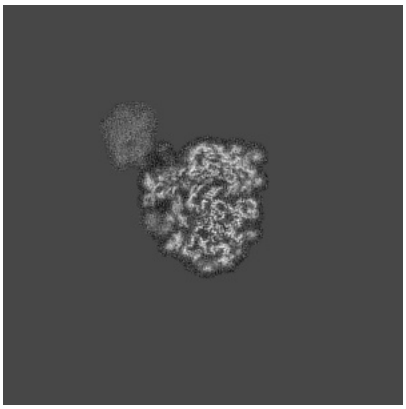
6.2.1 Primary map



X Index: 240

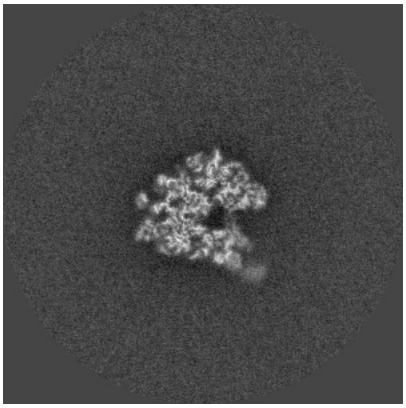


Y Index: 240

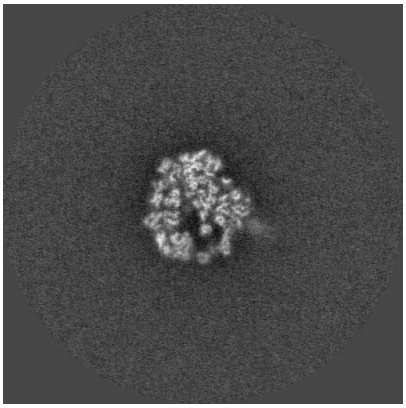


Z Index: 240

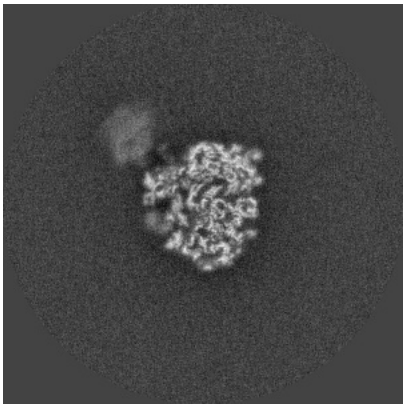
6.2.2 Raw map



X Index: 240



Y Index: 240

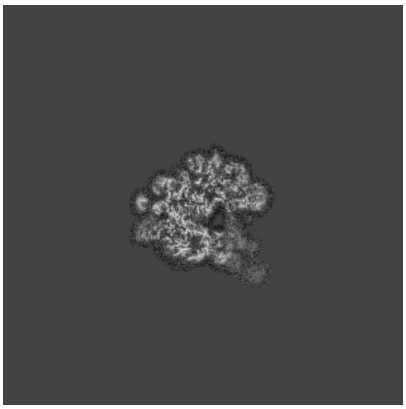


Z Index: 240

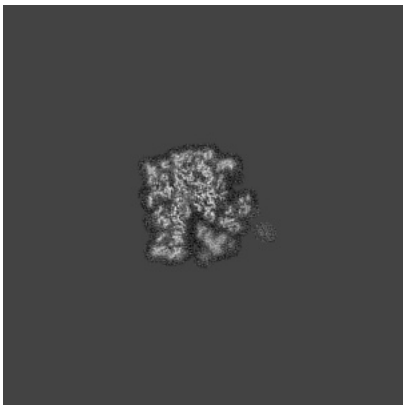
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

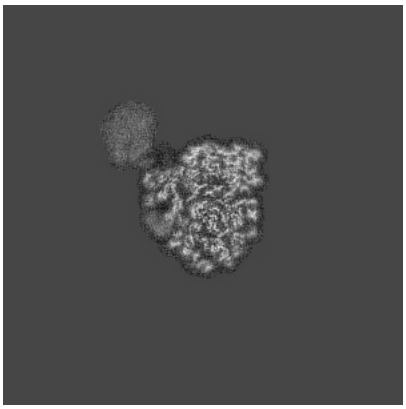
6.3.1 Primary map



X Index: 243

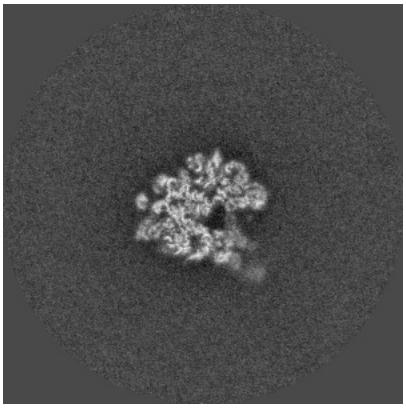


Y Index: 228

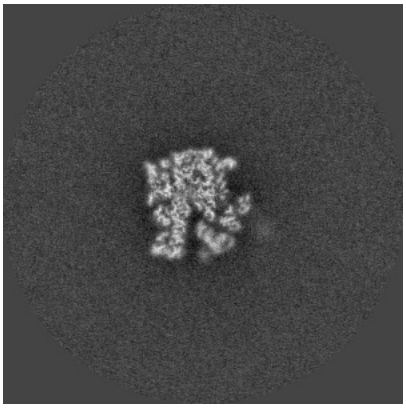


Z Index: 243

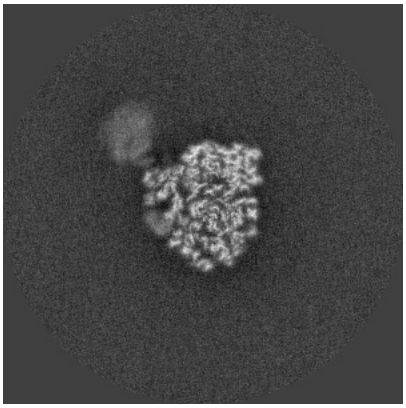
6.3.2 Raw map



X Index: 242



Y Index: 227

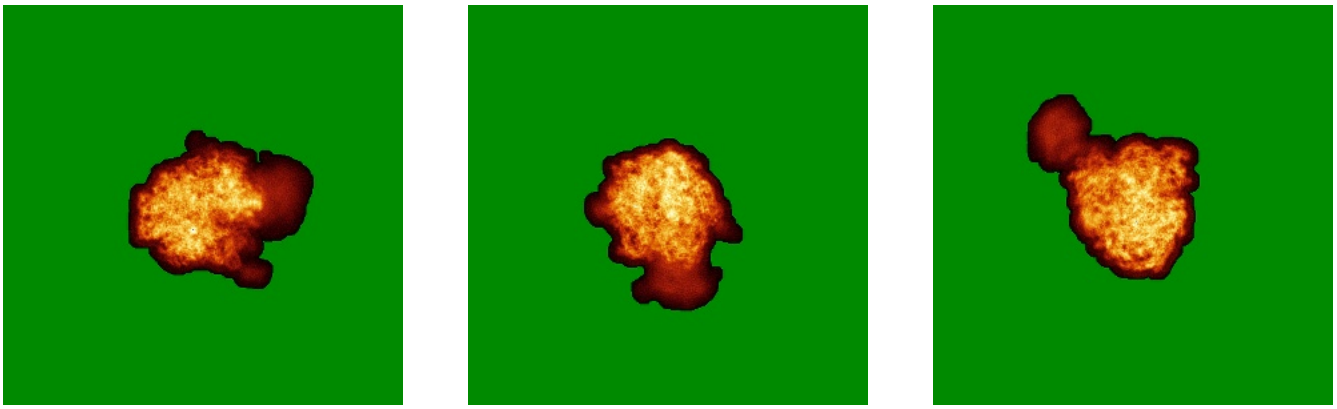


Z Index: 243

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

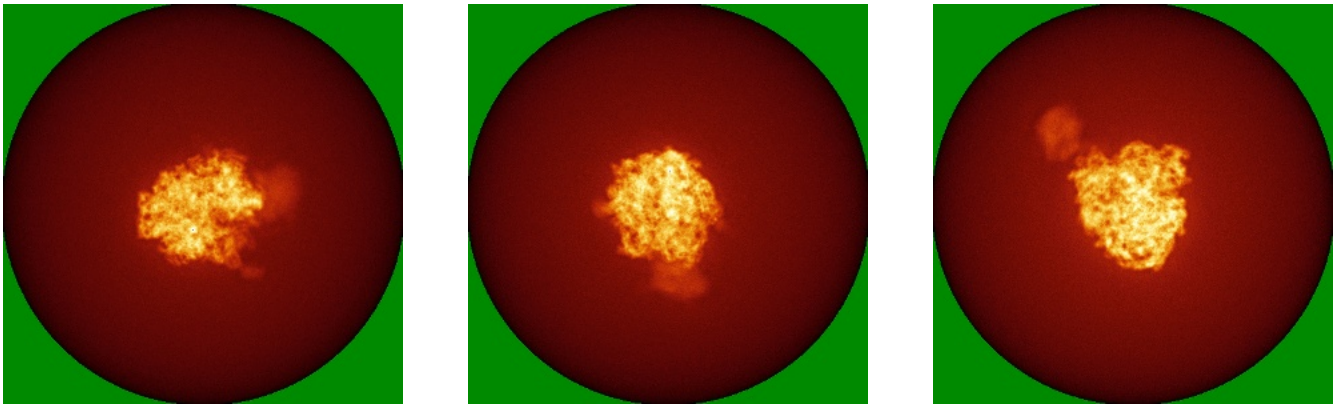
6.4 Orthogonal standard-deviation projections (False-color) (i)

6.4.1 Primary map



X Y Z

6.4.2 Raw map



X Y Z

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

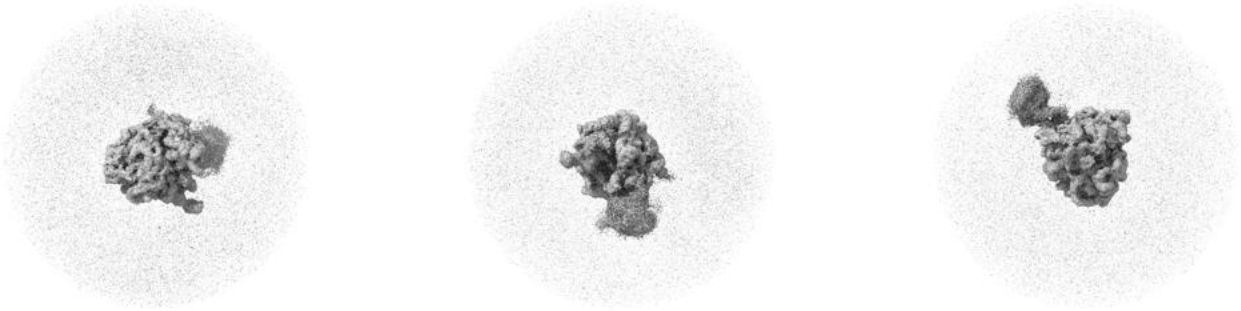
6.5 Orthogonal surface views (i)

6.5.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.011. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X Y Z

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

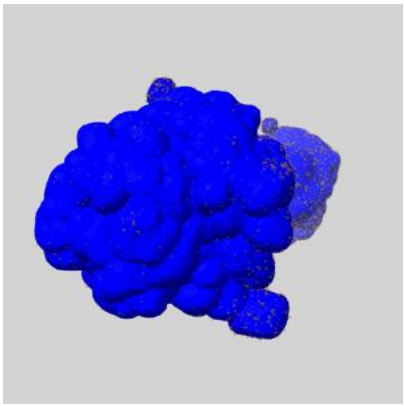
6.6 Mask visualisation

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

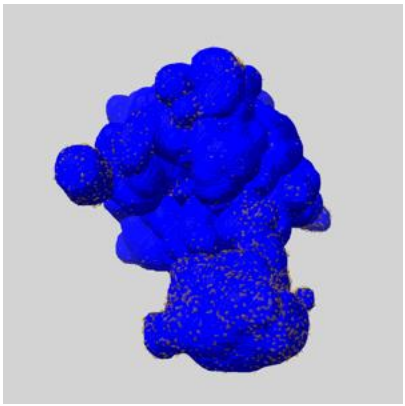
A mask typically either:

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

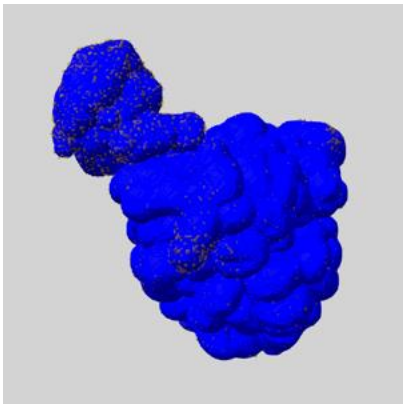
6.6.1 emd_39173_msk_1.map



X



Y

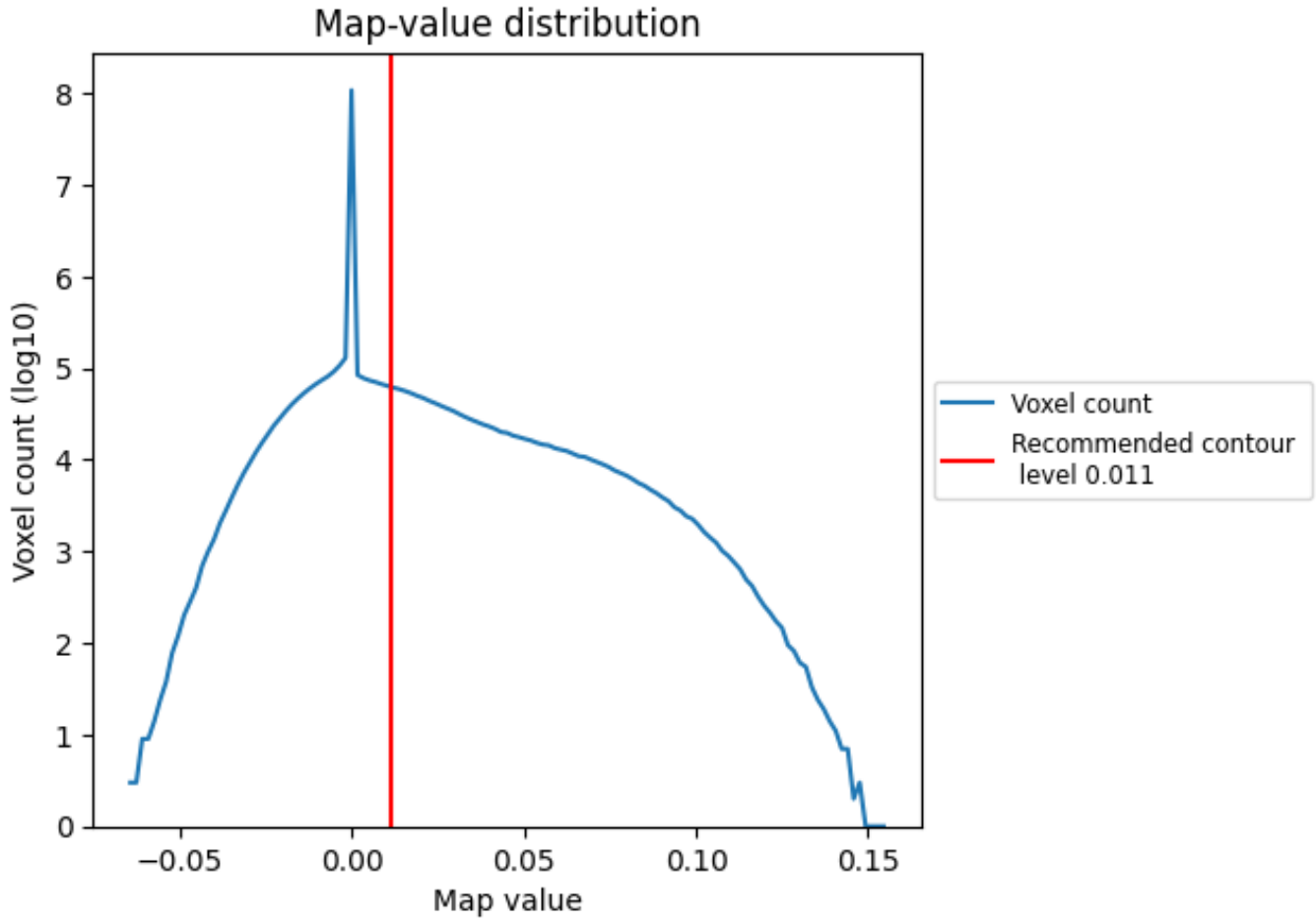


Z

7 Map analysis

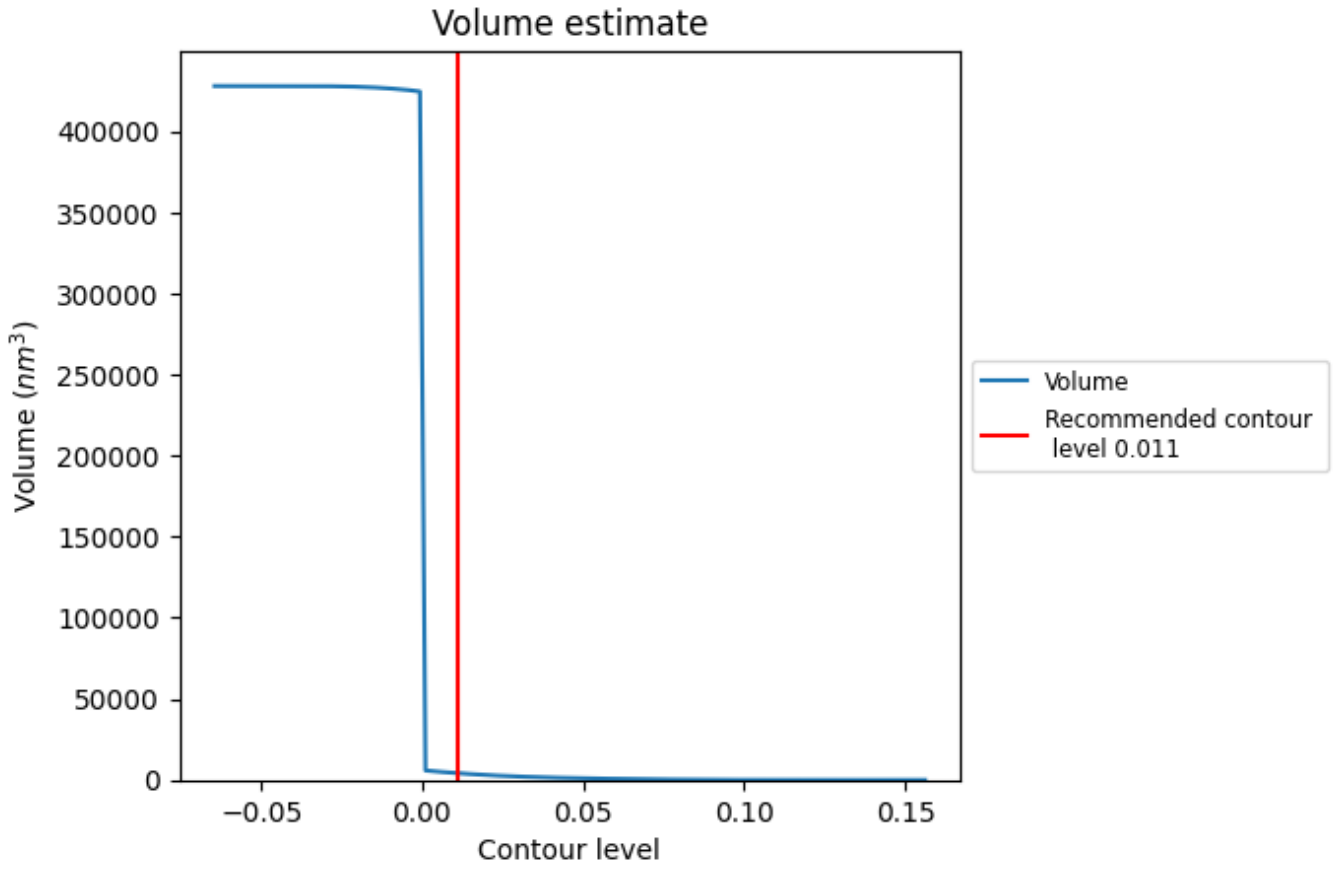
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

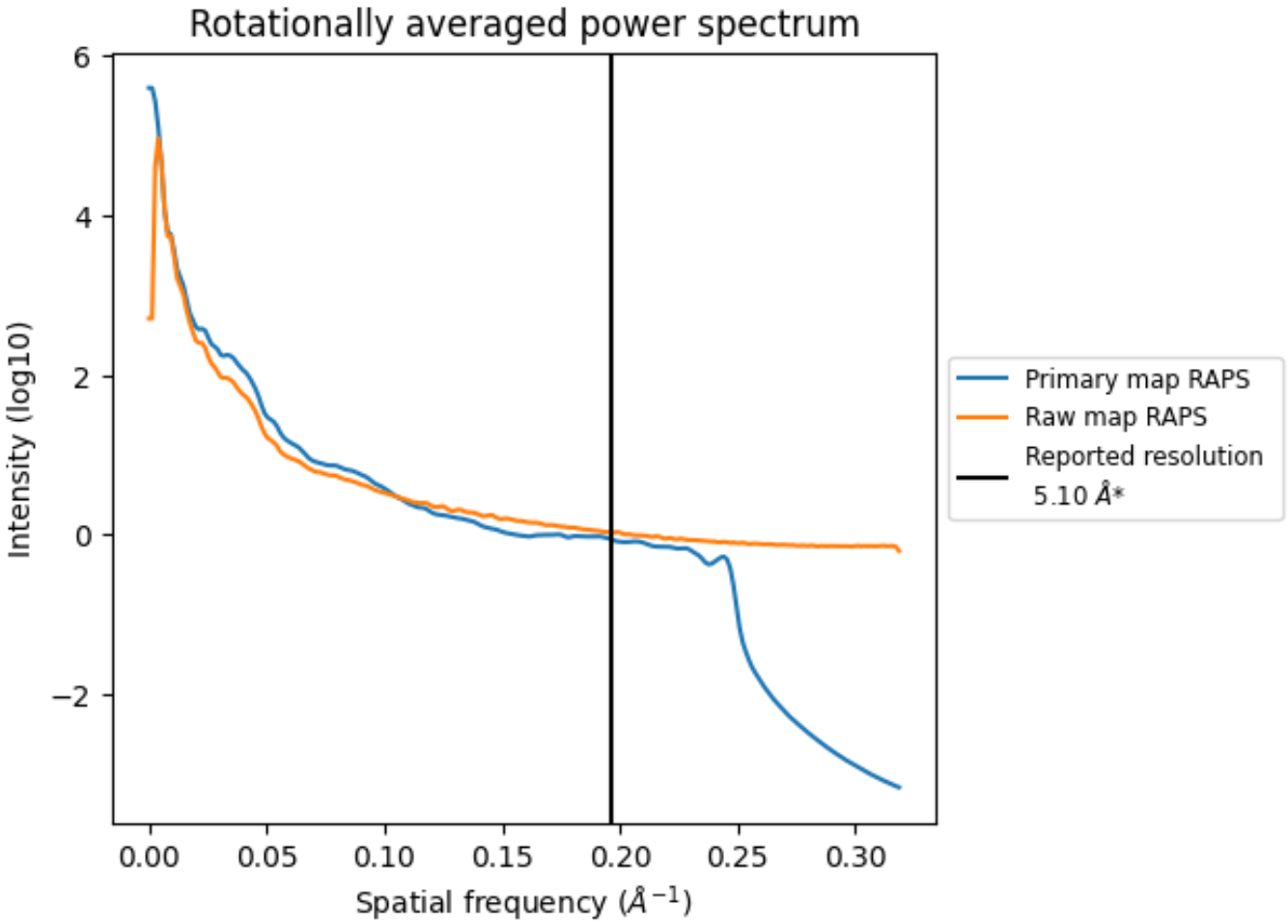
7.2 Volume estimate



The volume at the recommended contour level is 4189 nm^3; this corresponds to an approximate mass of 3784 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum (i)

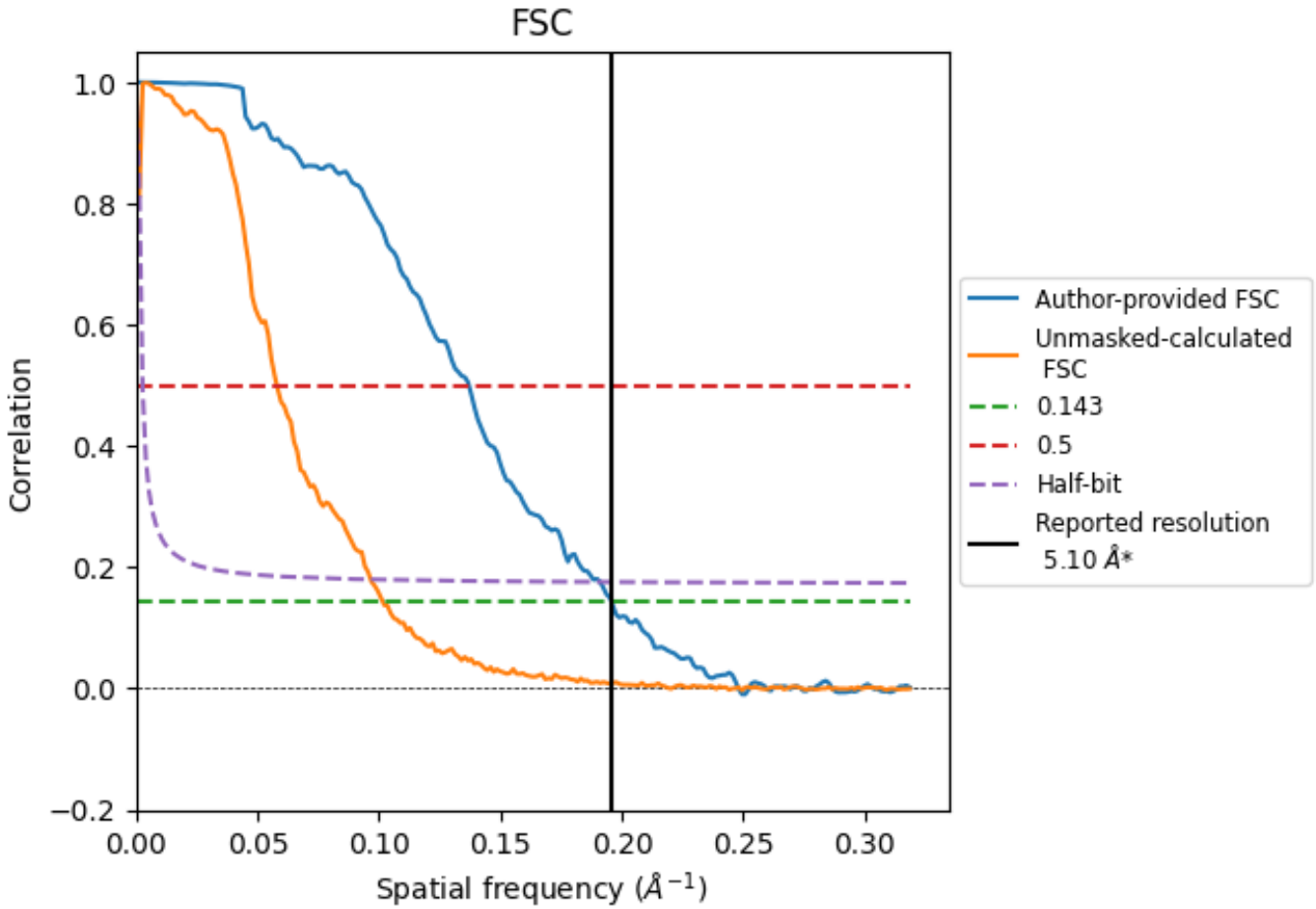


*Reported resolution corresponds to spatial frequency of 0.196 Å^{-1}

8 Fourier-Shell correlation

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

8.1 FSC



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

8.2 Resolution estimates (i)

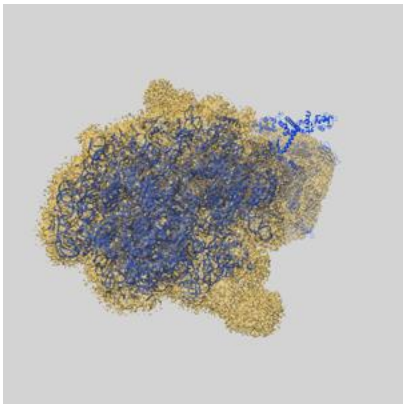
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	5.10	-	-
Author-provided FSC curve	5.11	7.30	5.23
Unmasked-calculated*	9.84	17.27	714.29

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 9.84 differs from the reported value 5.1 by more than 10 %

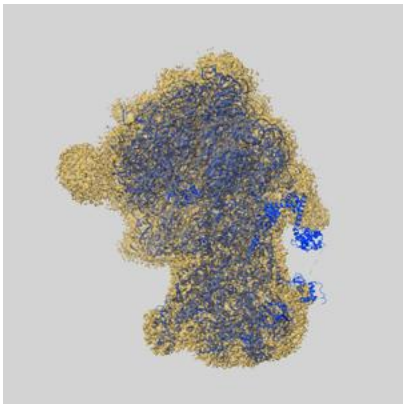
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-39173 and PDB model 8YDJ. Per-residue inclusion information can be found in section 3 on page 18.

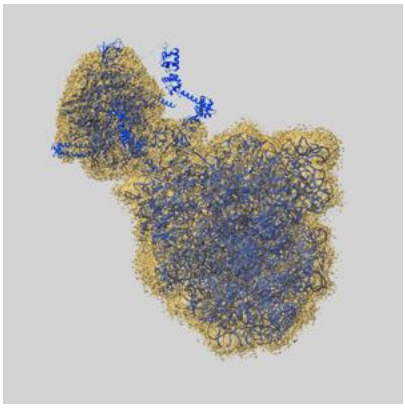
9.1 Map-model overlay



X



Y



Z

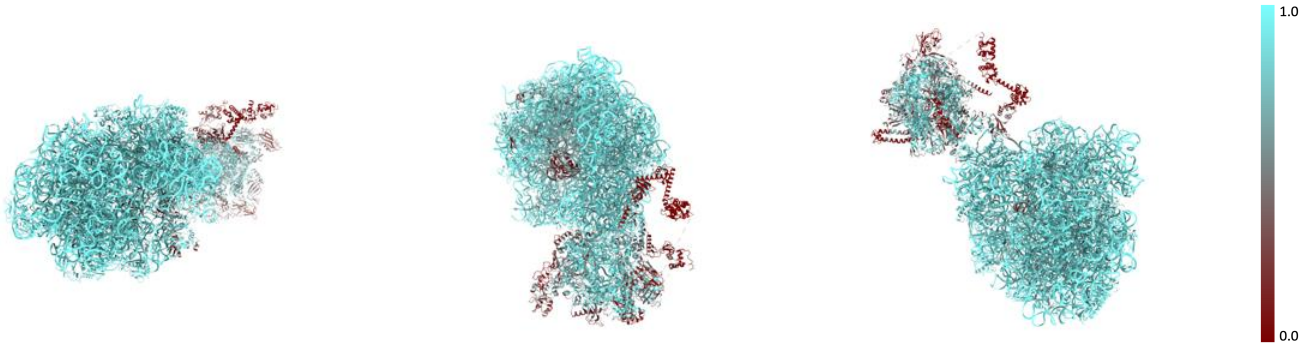
The images above show the 3D surface view of the map at the recommended contour level 0.011 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model

X Y Z

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

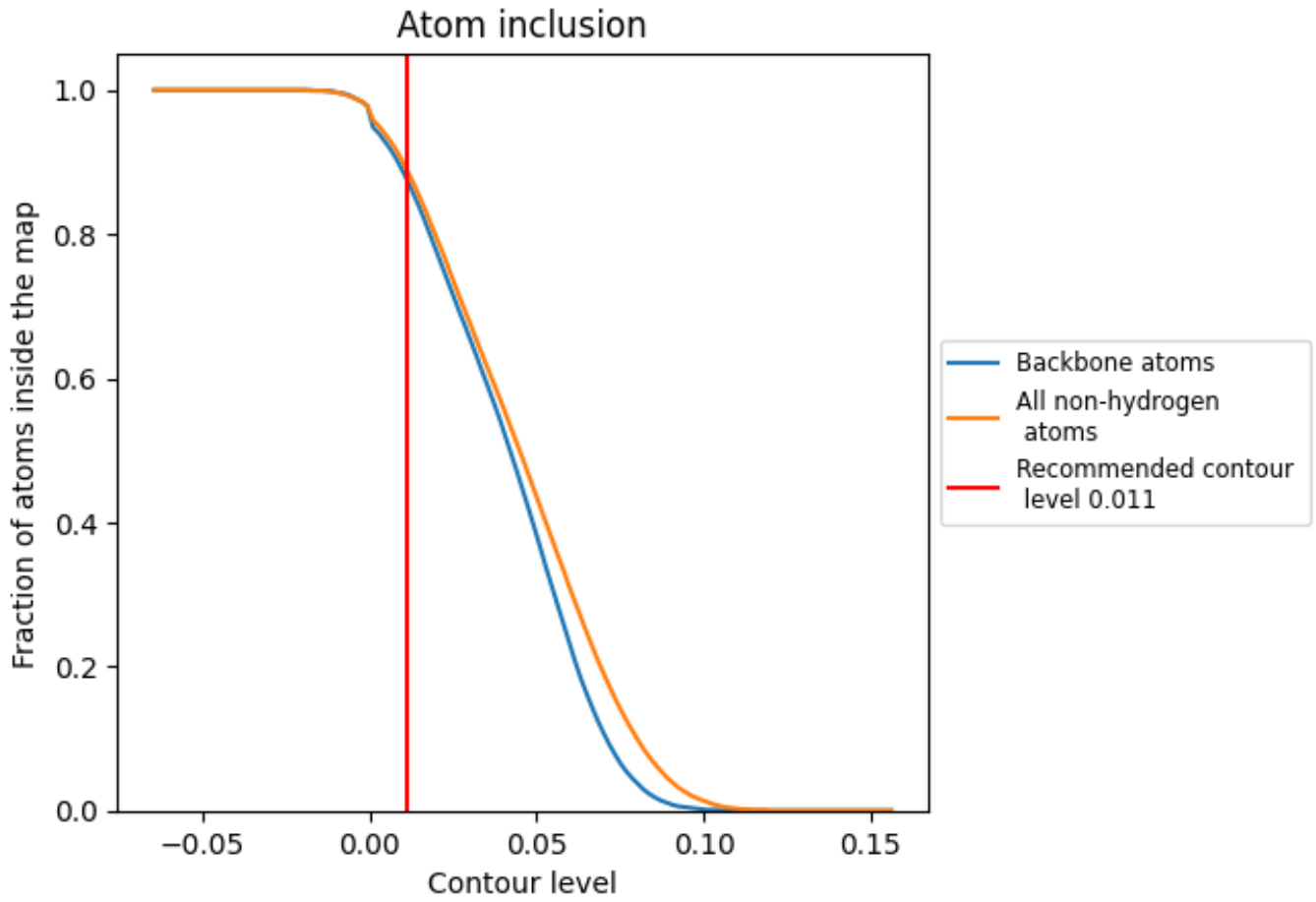
9.3 Atom inclusion mapped to coordinate model



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.011).

9.4 Atom inclusion (i)



At the recommended contour level, 88% of all backbone atoms, 89% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.011) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8910	0.1630
0	0.6170	0.0440
1	0.9880	0.2460
2	0.9790	0.1390
3	0.9820	0.1930
4	0.8500	0.0680
5	0.4280	0.0410
6	0.9630	0.1960
8	0.8200	0.0220
9	0.9040	0.0500
A	0.9090	0.0620
A1	0.3200	-0.0120
A2	0.5590	-0.0060
B	0.9390	0.2500
B1	0.6730	-0.0000
B2	0.6840	0.0120
C	0.8780	0.1010
D	0.9320	0.2970
E	0.9180	0.1920
F	0.9310	0.1730
G	0.9120	0.1110
H	0.9000	0.1300
I	0.9330	0.1280
J	0.8870	0.1270
K	0.9260	0.1350
L	0.8950	0.1080
M	0.9040	0.1100
N	0.9070	0.1000
NA	0.2630	0.0020
NG	0.6940	0.0110
O	0.9030	0.0950
P	0.9420	0.1640
Q	0.8600	0.1700
R	0.9110	0.1240
S	0.9130	0.1000

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Chain	Atom inclusion	Q-score
T	0.9330	0.1470
U	0.9390	0.1010
V	0.9110	0.0880
W	0.9300	0.1570
W0	0.4950	0.0110
X	0.9400	0.1370
Y	0.9260	0.1060
Z	0.8320	0.1120
a	0.9280	0.0560
b	0.9220	0.2740
c	0.9500	0.2320
d	0.9390	0.1670
e	0.8860	0.0790
f	0.9180	0.1040
g	0.7470	0.0830
h	1.0000	0.2940
i	0.7790	0.0160
j	0.9410	0.2390
k	0.8860	0.2540
l	0.9250	0.1730
m	0.8740	0.1600
n	0.9610	0.2530
o	0.9550	0.0450
p	0.9210	0.2120
q	0.9580	0.2380
r	0.9520	0.1800
s	0.9270	0.2590
t	0.9210	0.1640
u	0.9530	0.1540
v	0.9390	0.1100
w	0.9270	0.1120
x	0.9370	0.2230
y	0.9360	0.1350
z	0.9200	0.1250