



Full wwPDB EM Validation Report ⓘ

Mar 8, 2026 – 06:12 AM UTC

PDB ID : 3JCD / pdb_00003jcd
EMDB ID : EMD-6549
Title : Structure of Escherichia coli EF4 in posttranslocational ribosomes (Post EF4)
Authors : Zhang, D.; Yan, K.; Liu, G.; Song, G.; Luo, J.; Shi, Y.; Cheng, E.; Wu, S.;
Jiang, T.; Low, J.; Gao, N.; Qin, Y.
Deposited on : 2015-12-01
Resolution : 3.70 Å(reported)

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

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

A user guide is available at

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

The types of validation reports are described at

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

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

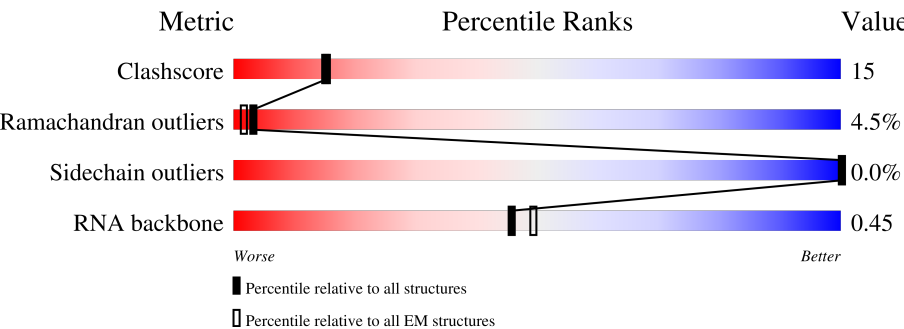
EMDB validation analysis : 0.0.1.dev132
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDb archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

1 Overall quality at a glance i

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

The reported resolution of this entry is 3.70 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	229148	23984
Ramachandran outliers	224038	23583
Sidechain outliers	223484	23102
RNA backbone	8273	3508

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

Mol	Chain	Length	Quality of chain
1	b	241	<div> <div>45%</div> <div>55%</div> <div>32%</div> <div>10%</div> </div>
2	c	233	<div> <div>42%</div> <div>62%</div> <div>27%</div> <div>12%</div> </div>
3	d	206	<div> <div>46%</div> <div>55%</div> <div>42%</div> <div>.</div> </div>
4	e	167	<div> <div>50%</div> <div>59%</div> <div>29%</div> <div>10%</div> </div>
5	f	135	<div> <div>23%</div> <div>52%</div> <div>20%</div> <div>24%</div> </div>
6	g	179	<div> <div>40%</div> <div>50%</div> <div>32%</div> <div>16%</div> </div>
7	h	130	<div> <div>39%</div> <div>59%</div> <div>38%</div> <div>..</div> </div>

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Mol	Chain	Length	Quality of chain
8	i	130	
9	j	103	
10	k	129	
11	l	124	
12	m	118	
13	n	101	
14	o	89	
15	p	82	
16	q	84	
17	r	75	
18	s	92	
19	t	87	
20	u	71	
21	0	57	
22	1	55	
23	2	46	
24	3	64	
25	4	38	
26	5	234	
27	C	273	
28	D	209	
29	E	201	
30	F	179	
31	G	177	
32	H	149	

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Mol	Chain	Length	Quality of chain
33	I	142	
34	J	142	
35	K	123	
36	L	144	
37	M	136	
38	N	127	
39	O	117	
40	P	115	
41	Q	118	
42	R	103	
43	S	110	
44	T	100	
45	U	104	
46	V	94	
47	W	85	
48	X	78	
49	Y	63	
50	Z	59	
51	x	599	
52	a	1533	
53	A	2904	
54	B	120	
55	7	15	
56	8	76	
56	9	76	

2 Entry composition

There are 56 unique types of molecules in this entry. The entry contains 147815 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 30S ribosomal protein S2.

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

- Molecule 2 is a protein called 30S ribosomal protein S3.

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

- Molecule 3 is a protein called 30S ribosomal protein S4.

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

- Molecule 4 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	e	150	Total	C	N	O	S	0	0
			1105	687	211	201	6		

- Molecule 5 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	f	102	Total	C	N	O	S	0	0
			832	525	150	150	7		

- Molecule 6 is a protein called 30S ribosomal protein S7.

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

- Molecule 7 is a protein called 30S ribosomal protein S8.

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

- Molecule 8 is a protein called 30S ribosomal protein S9.

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

- Molecule 9 is a protein called 30S ribosomal protein S10.

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

- Molecule 10 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	k	117	Total	C	N	O	S	0	0
			877	540	174	160	3		

- Molecule 11 is a protein called 30S ribosomal protein S12.

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

- Molecule 12 is a protein called 30S ribosomal protein S13.

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

- Molecule 13 is a protein called 30S ribosomal protein S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	n	96	Total	C	N	O	S	0	0
			774	483	160	128	3		

- Molecule 14 is a protein called 30S ribosomal protein S15.

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

- Molecule 15 is a protein called 30S ribosomal protein S16.

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

- Molecule 16 is a protein called 30S ribosomal protein S17.

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

- Molecule 17 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms				AltConf	Trace
17	r	55	Total	C	N	O	0	0
			455	288	86	81		

- Molecule 18 is a protein called 30S ribosomal protein S19.

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

- Molecule 19 is a protein called 30S ribosomal protein S20.

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

- Molecule 20 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	u	51	Total	C	N	O	S	0	0
			425	265	86	73	1		

- Molecule 21 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	0	56	Total	C	N	O	S	0	0
			444	269	94	80	1		

- Molecule 22 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	1	50	Total	C	N	O	S	0	0
			409	263	75	71			

- Molecule 23 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	2	46	Total	C	N	O	S	0	0
			377	228	90	57	2		

- Molecule 24 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	3	64	Total	C	N	O	S	0	0
			504	323	105	74	2		

- Molecule 25 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	4	38	Total	C	N	O	S	0	0
			302	185	65	48	4		

- Molecule 26 is a protein called 50S ribosomal protein L1.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	5	234	Total	C	N	O	S	0	0
			1733	1081	315	330	7		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
27	C	270	Total	C	N	O	S	0	0
			2076	1285	422	362	7		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
28	D	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	E	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	F	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	G	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	H	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	79	Total	C	N	O	S	0	0
			596	367	120	108	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 protein called Elongation factor 4.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	x	26	Total	C	N	O	S	0	0
			214	134	43	35	2		

- Molecule 52 is a RNA chain called 16S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	a	1533	Total	C	N	O	P	0	0
			32895	14671	6036	10655	1533		

- Molecule 53 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	A	2903	Total	C	N	O	P	0	0
			62320	27801	11467	20149	2903		

- Molecule 54 is a RNA chain called 5S ribosomal RNA.

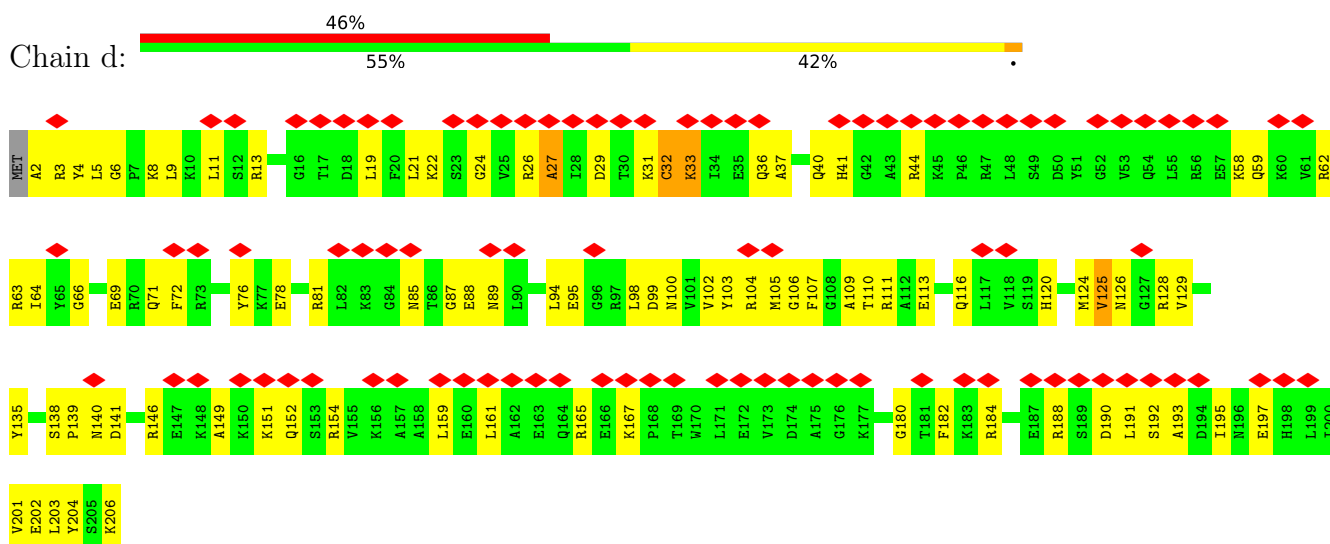
Mol	Chain	Residues	Atoms					AltConf	Trace
54	B	118	Total	C	N	O	P	0	0
			2529	1126	464	821	118		

- Molecule 55 is a RNA chain called mRNA.

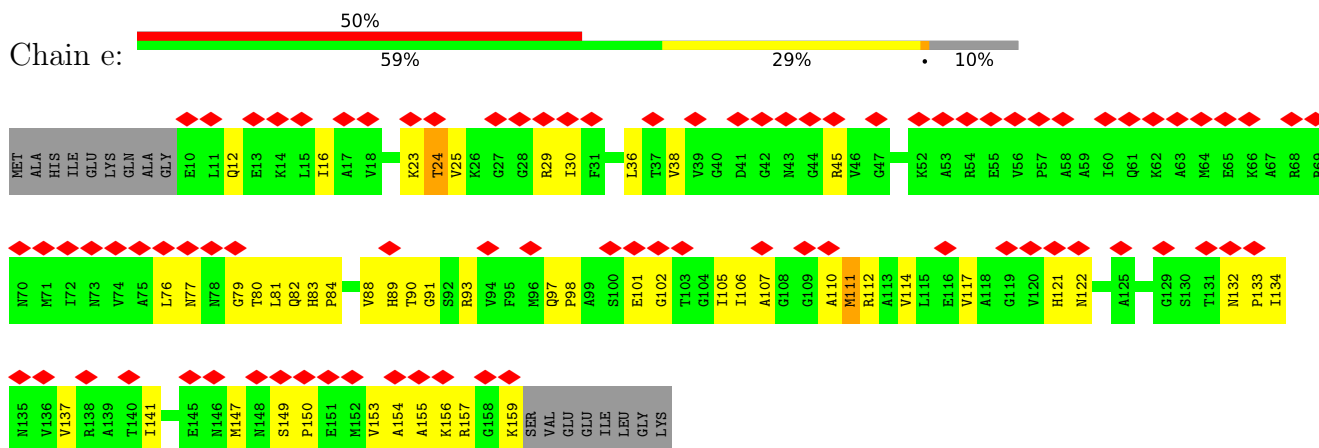
Mol	Chain	Residues	Atoms					AltConf	Trace
55	7	9	Total	C	N	O	P	0	0
			191	86	34	62	9		

- Molecule 56 is a RNA chain called tRNA.

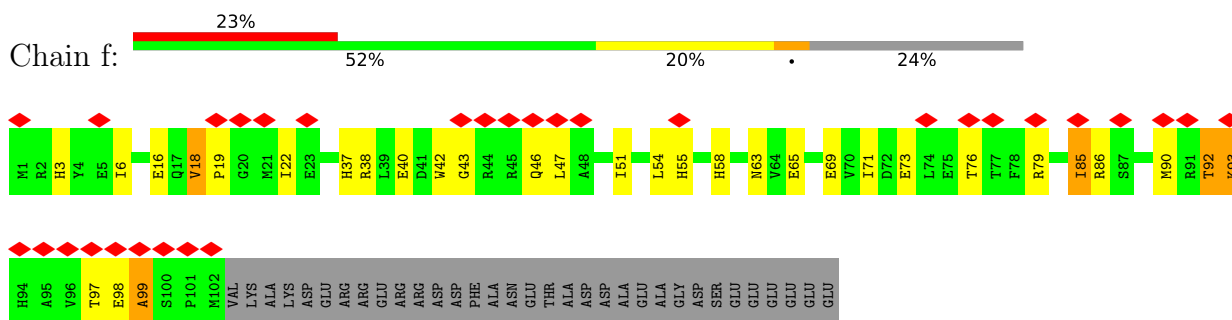
Mol	Chain	Residues	Atoms					AltConf	Trace
56	8	76	Total	C	N	O	P	0	0
			1623	723	290	534	76		
56	9	76	Total	C	N	O	P	0	0
			1623	723	290	534	76		



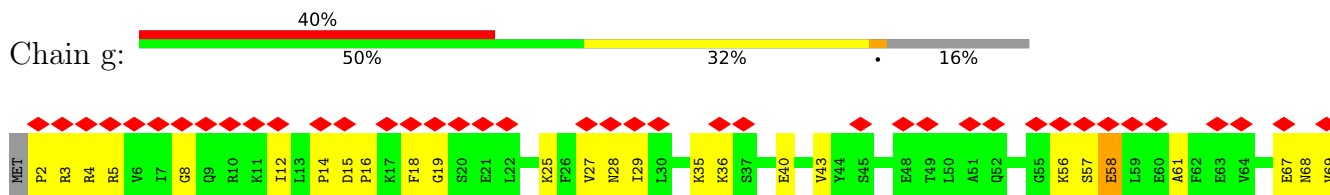
• Molecule 4: 30S ribosomal protein S5

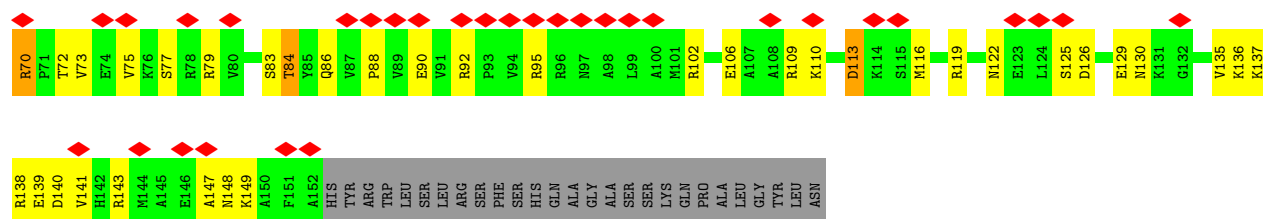


• Molecule 5: 30S ribosomal protein S6

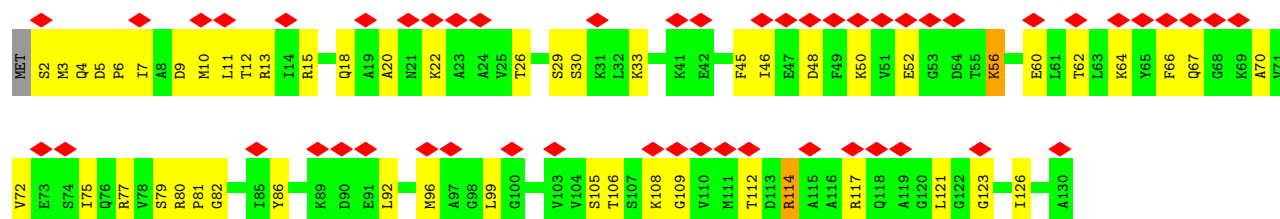
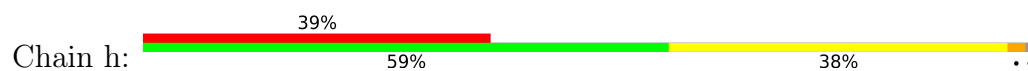


• Molecule 6: 30S ribosomal protein S7

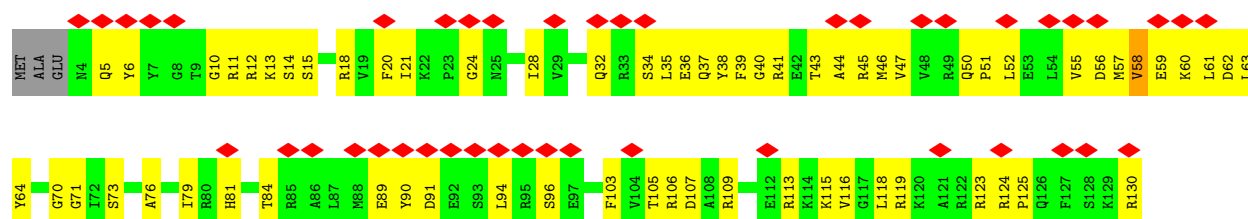




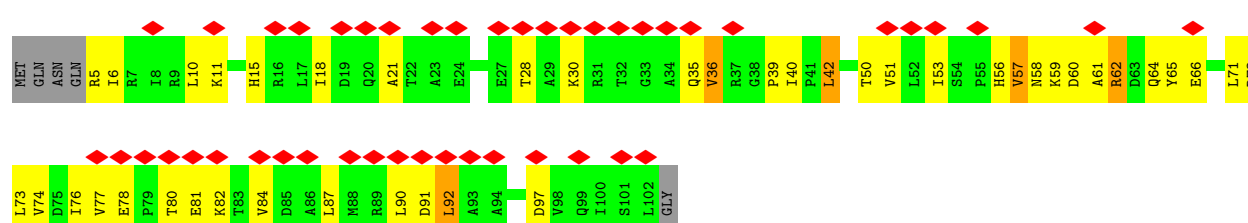
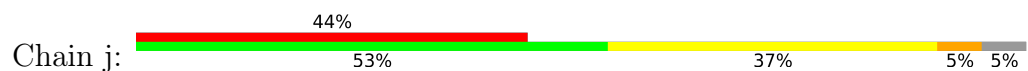
• Molecule 7: 30S ribosomal protein S8



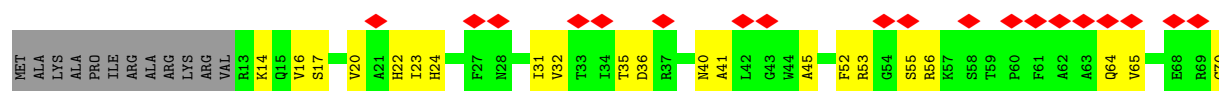
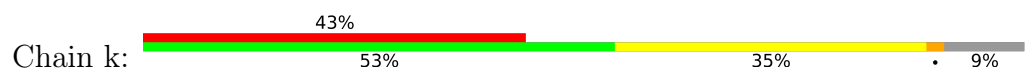
• Molecule 8: 30S ribosomal protein S9



• Molecule 9: 30S ribosomal protein S10

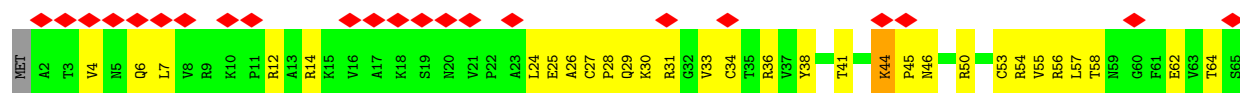


• Molecule 10: 30S ribosomal protein S11





- Molecule 11: 30S ribosomal protein S12



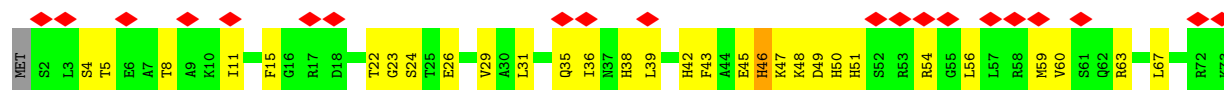
- Molecule 12: 30S ribosomal protein S13



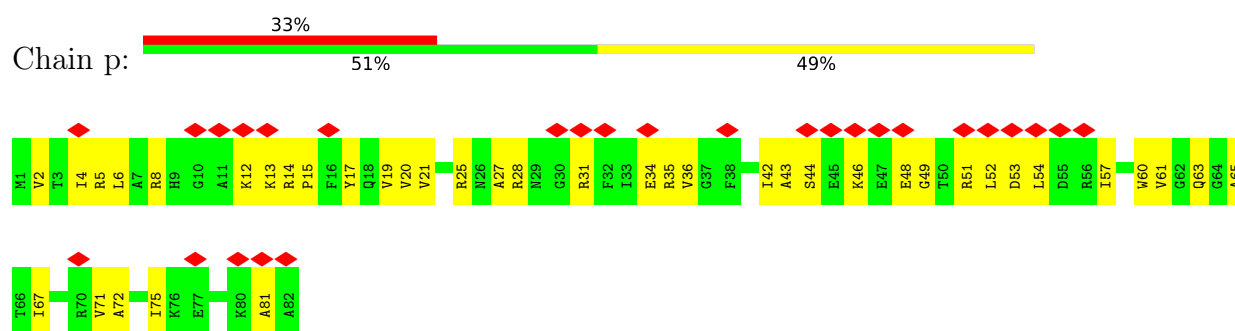
- Molecule 13: 30S ribosomal protein S14



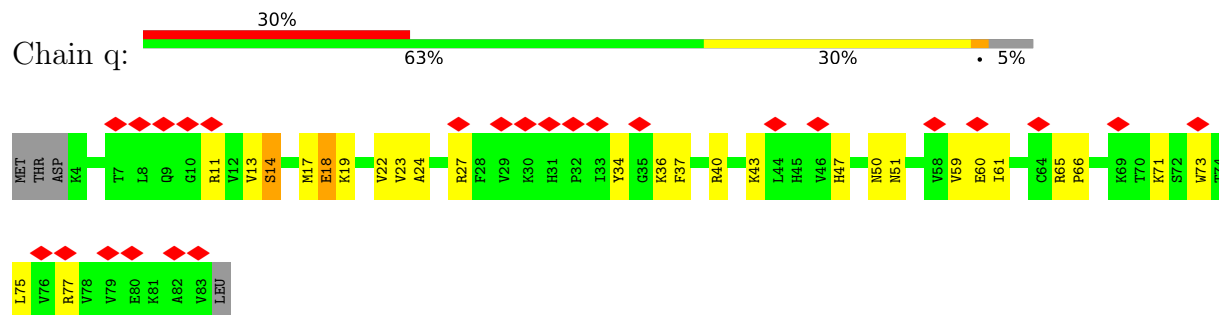
- Molecule 14: 30S ribosomal protein S15



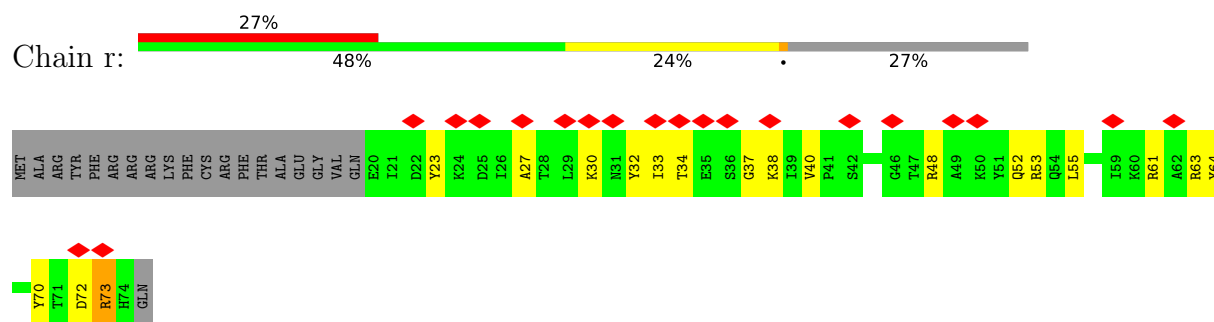
- Molecule 15: 30S ribosomal protein S16



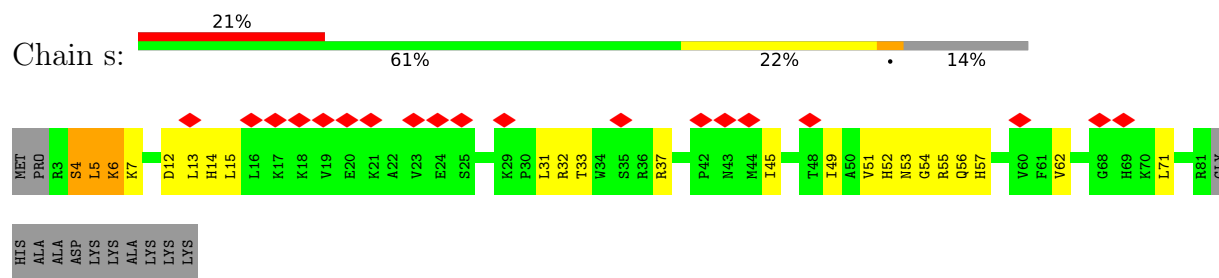
- Molecule 16: 30S ribosomal protein S17



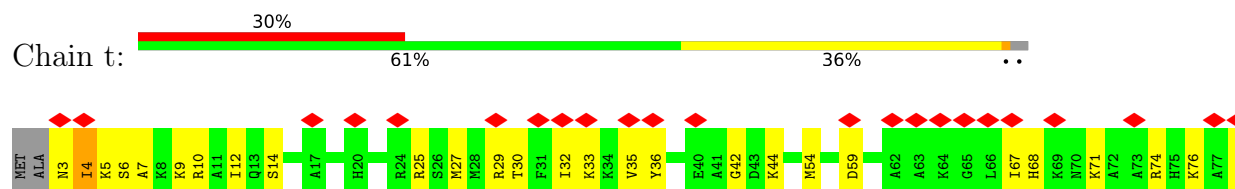
- Molecule 17: 30S ribosomal protein S18

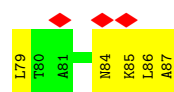


- Molecule 18: 30S ribosomal protein S19

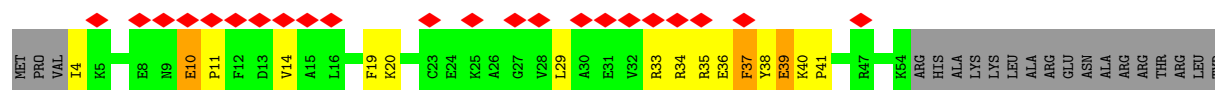


- Molecule 19: 30S ribosomal protein S20

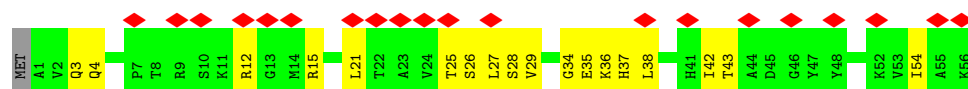




- Molecule 20: 30S ribosomal protein S21



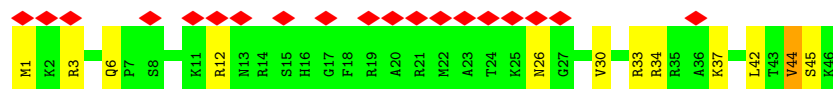
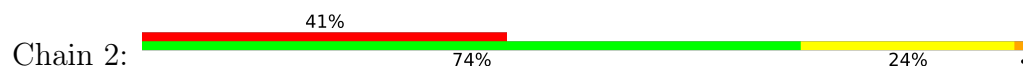
- Molecule 21: 50S ribosomal protein L32



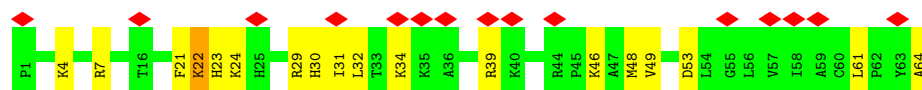
- Molecule 22: 50S ribosomal protein L33



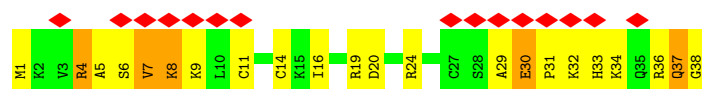
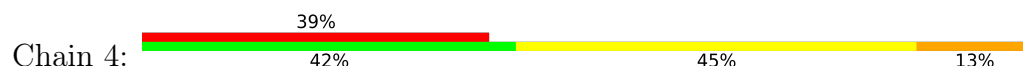
- Molecule 23: 50S ribosomal protein L34



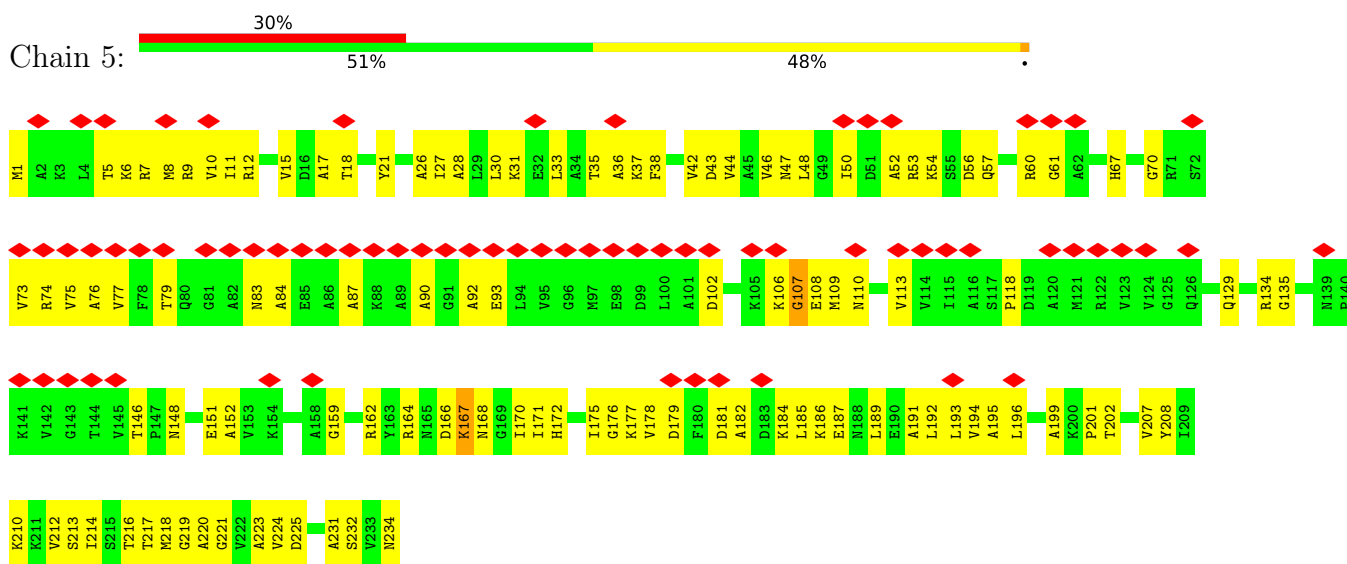
- Molecule 24: 50S ribosomal protein L35



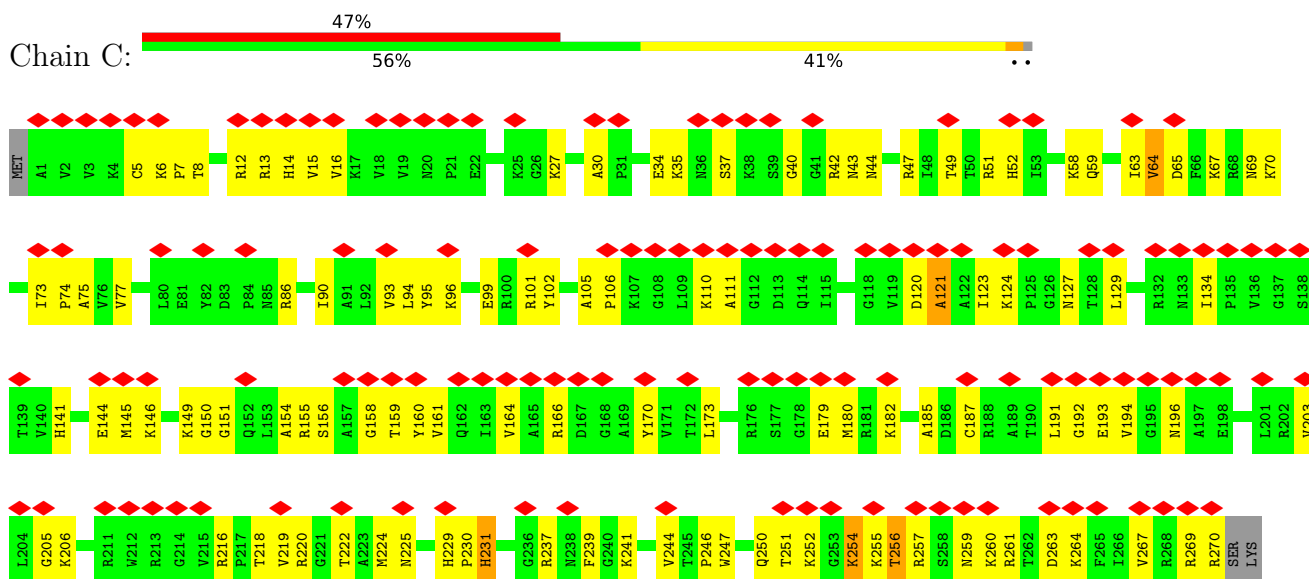
- Molecule 25: 50S ribosomal protein L36



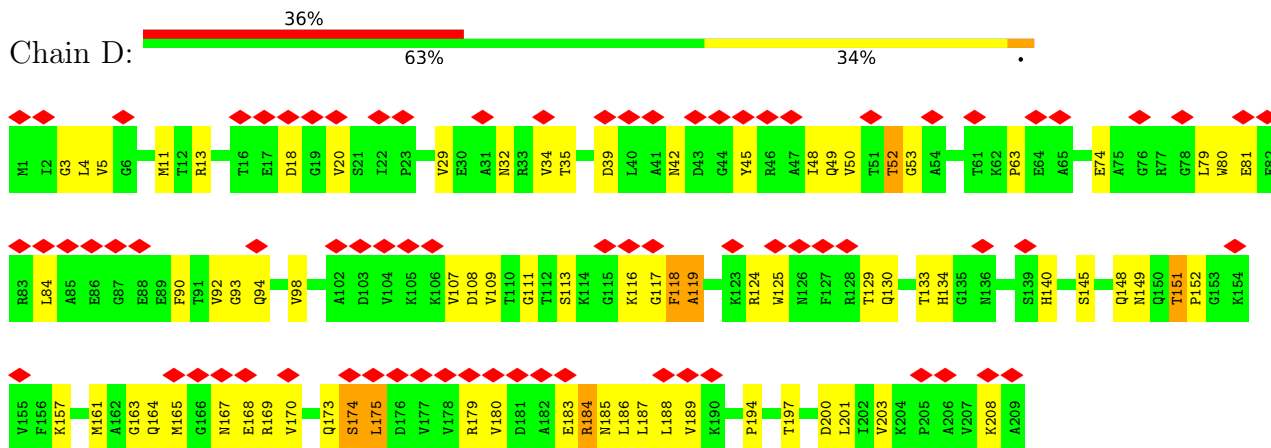
- Molecule 26: 50S ribosomal protein L1



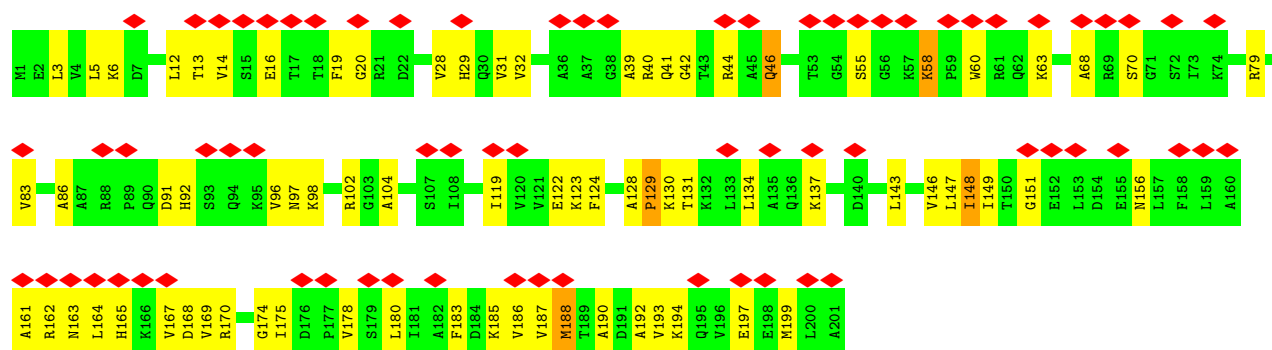
- Molecule 27: 50S ribosomal protein L2



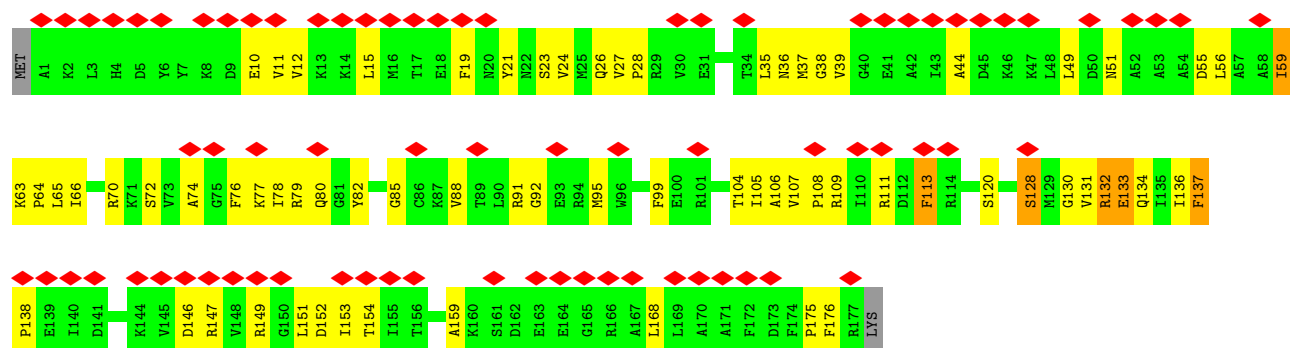
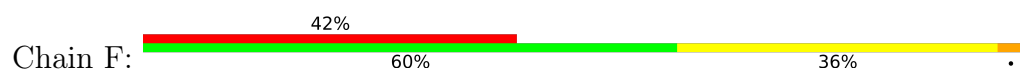
- Molecule 28: 50S ribosomal protein L3



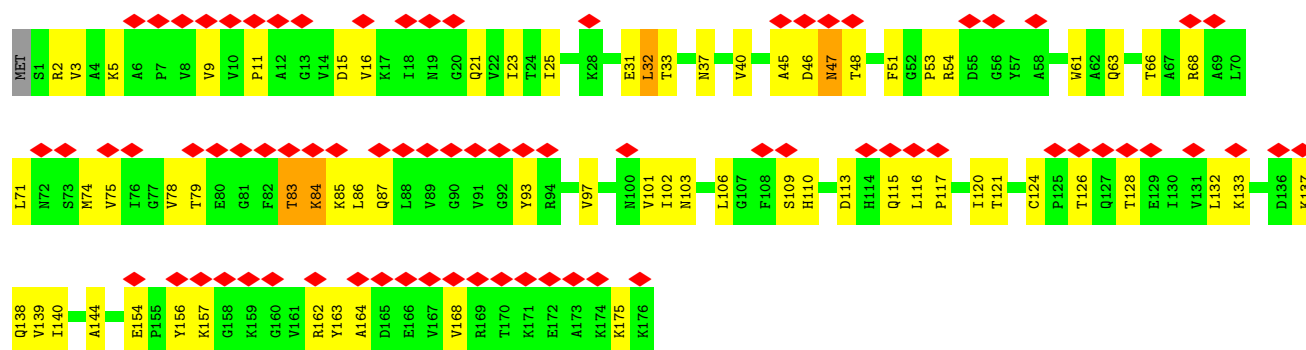
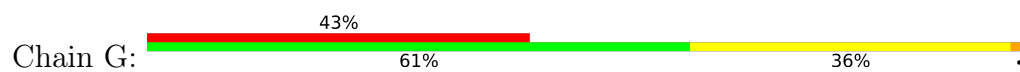
- Molecule 29: 50S ribosomal protein L4



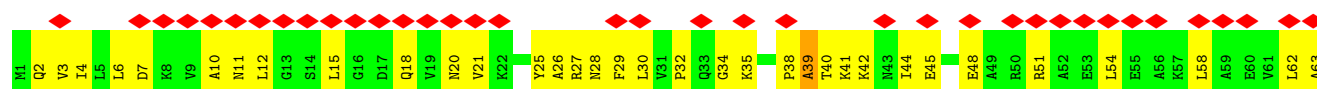
• Molecule 30: 50S ribosomal protein L5

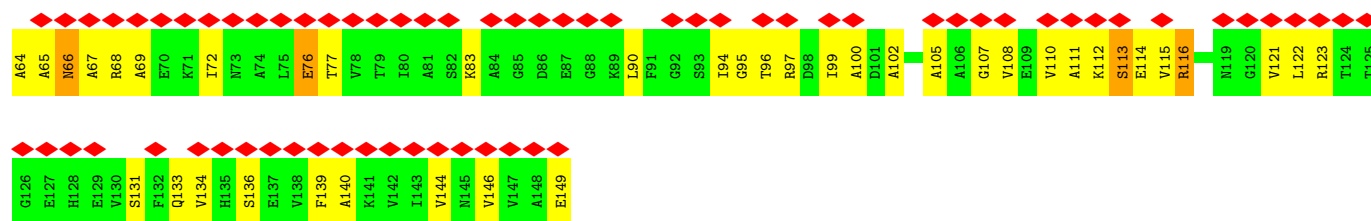


• Molecule 31: 50S ribosomal protein L6

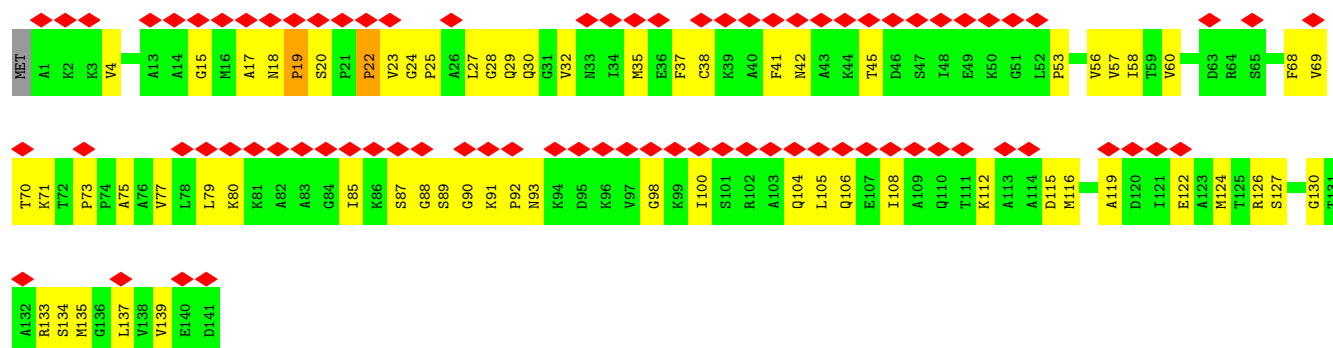


• Molecule 32: 50S ribosomal protein L9

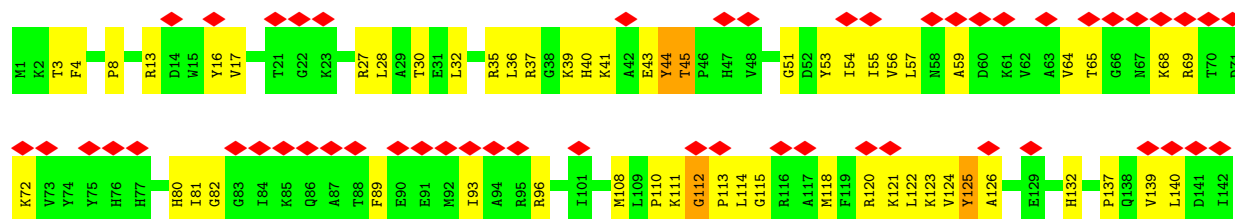




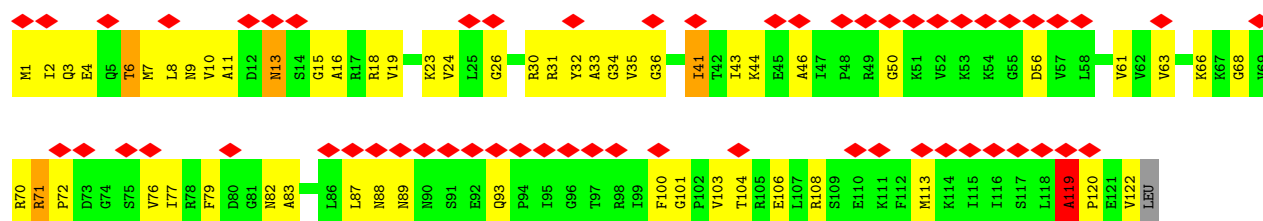
• Molecule 33: 50S ribosomal protein L11



• Molecule 34: 50S ribosomal protein L13

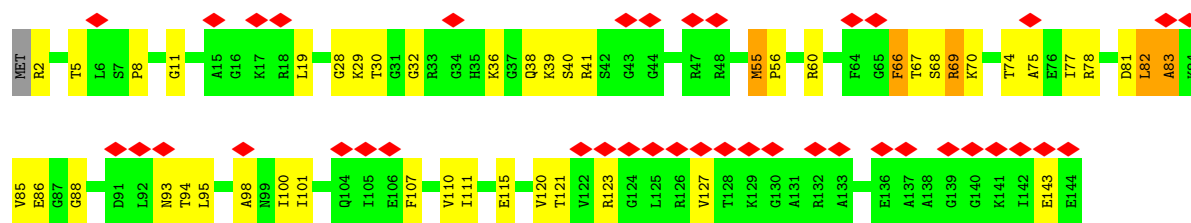


• Molecule 35: 50S ribosomal protein L14

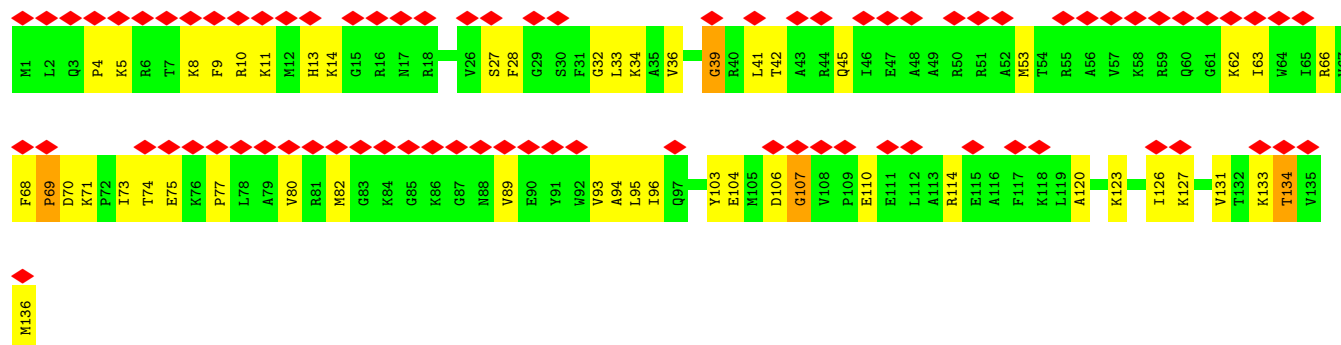


• Molecule 36: 50S ribosomal protein L15

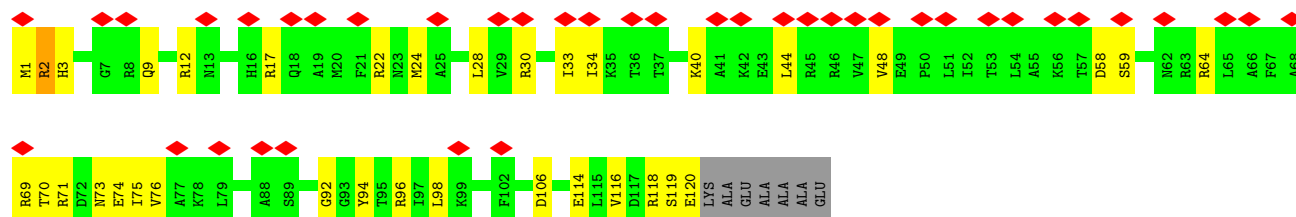




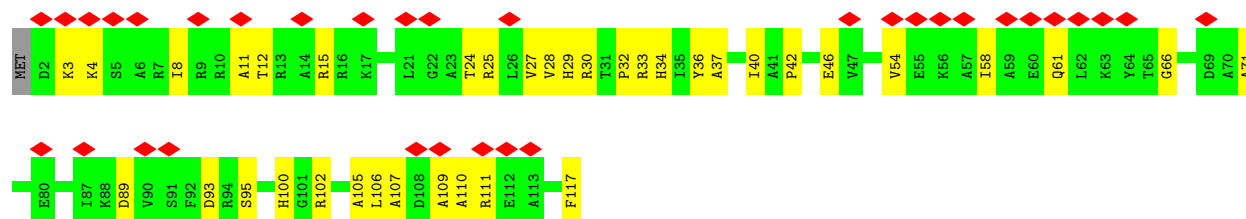
• Molecule 37: 50S ribosomal protein L16



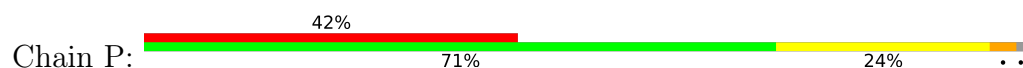
• Molecule 38: 50S ribosomal protein L17

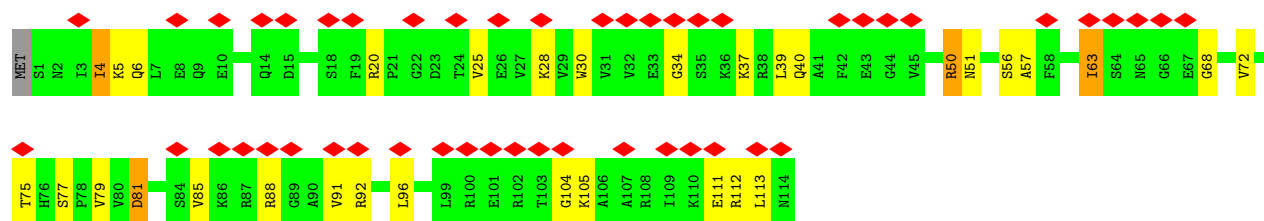


• Molecule 39: 50S ribosomal protein L18

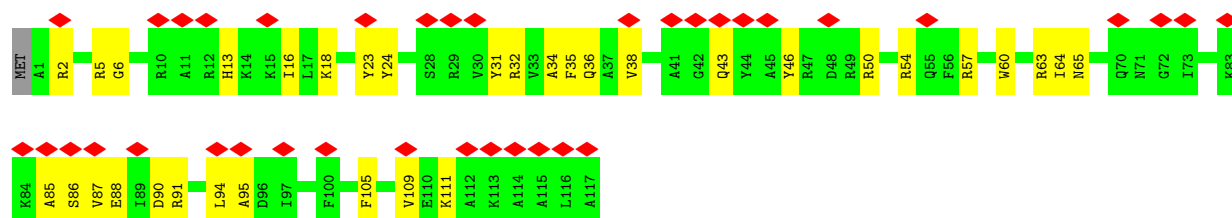


• Molecule 40: 50S ribosomal protein L19

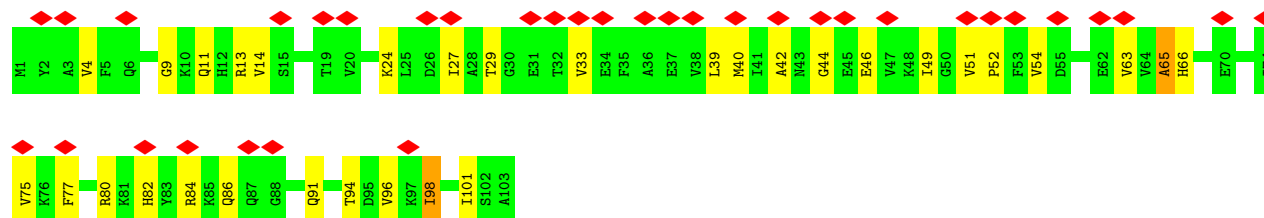




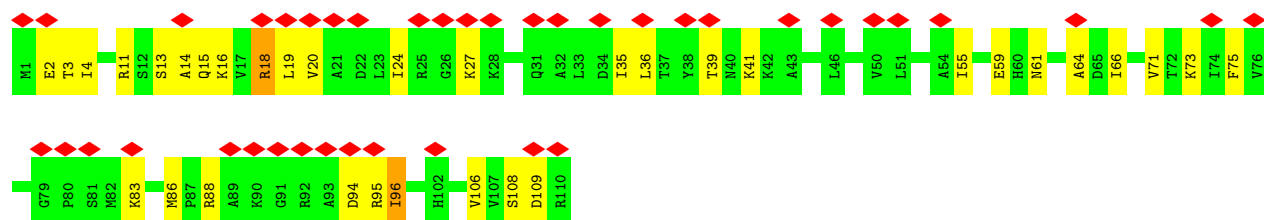
• Molecule 41: 50S ribosomal protein L20



• Molecule 42: 50S ribosomal protein L21

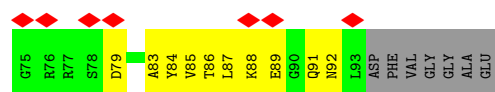


• Molecule 43: 50S ribosomal protein L22

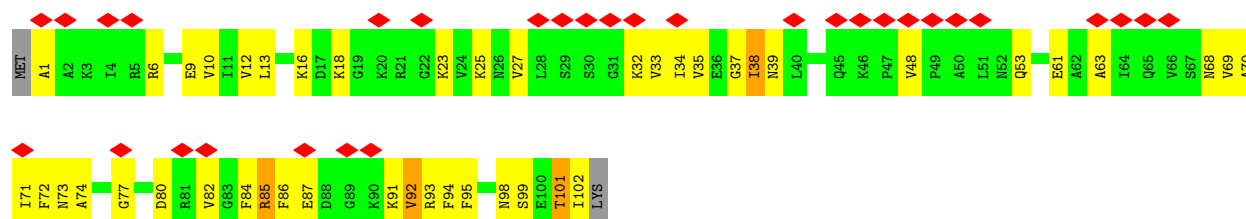


• Molecule 44: 50S ribosomal protein L23

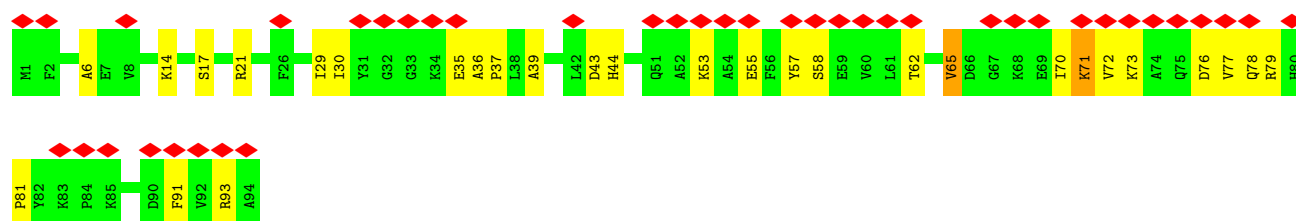




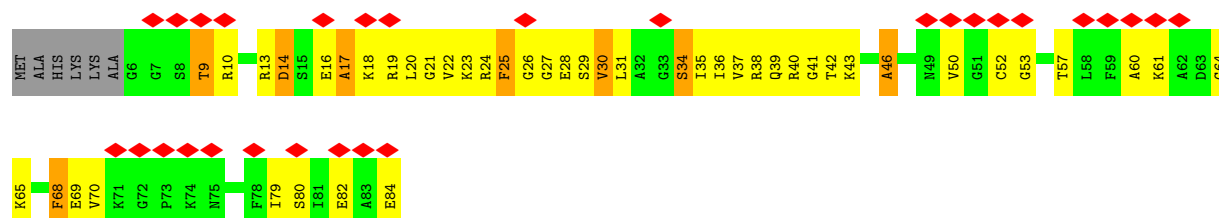
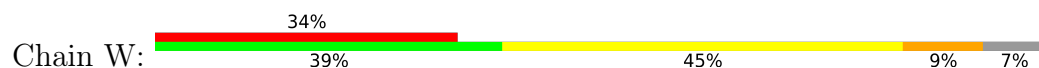
- Molecule 45: 50S ribosomal protein L24



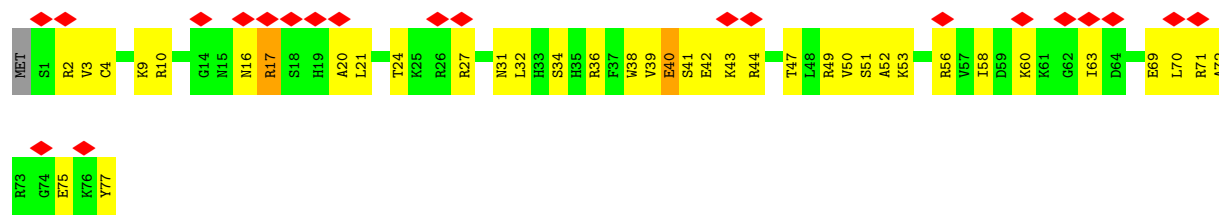
- Molecule 46: 50S ribosomal protein L25



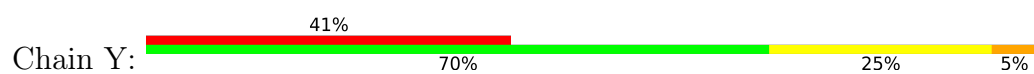
- Molecule 47: 50S ribosomal protein L27



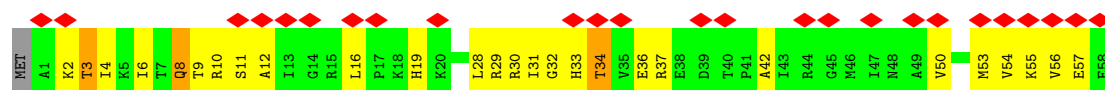
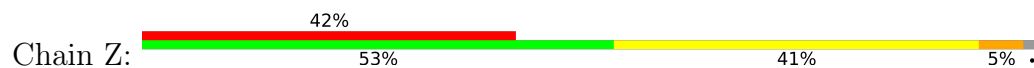
- Molecule 48: 50S ribosomal protein L28



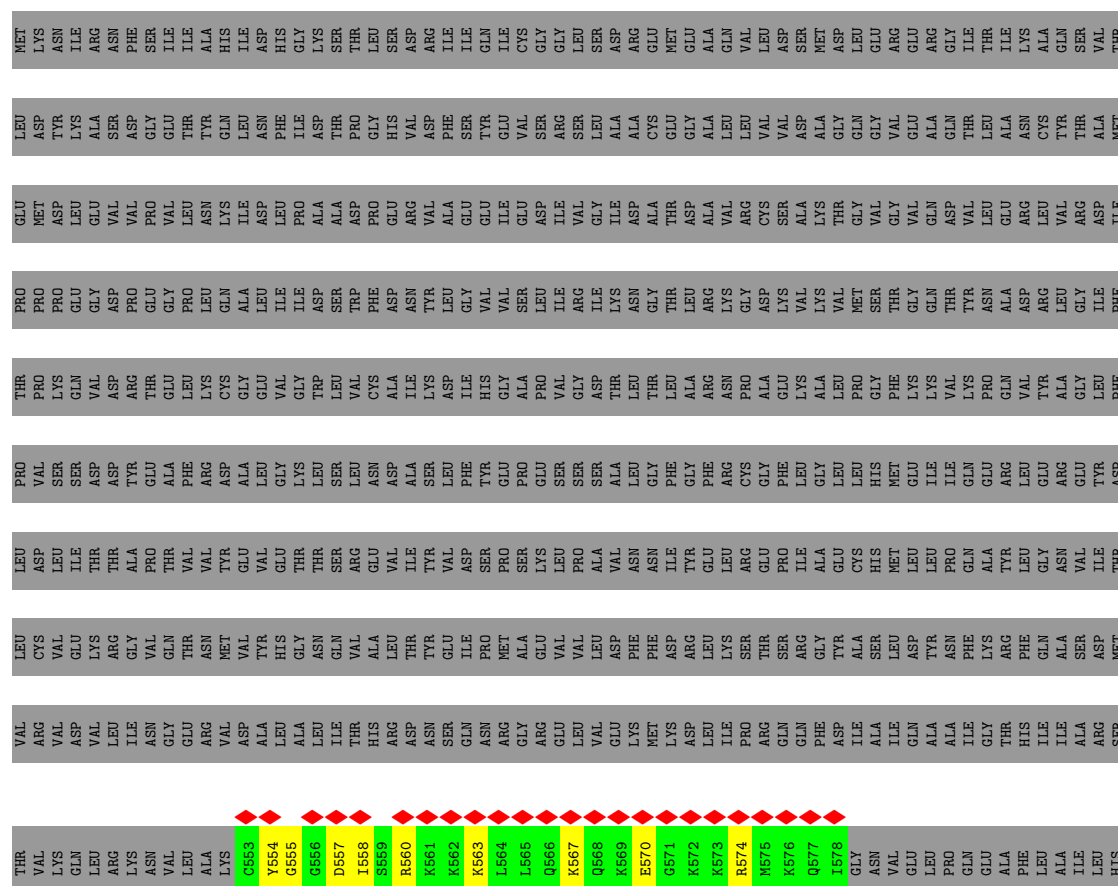
- Molecule 49: 50S ribosomal protein L29



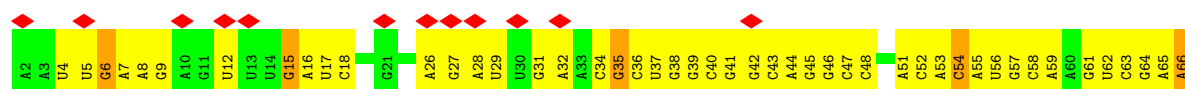
- Molecule 50: 50S ribosomal protein L30

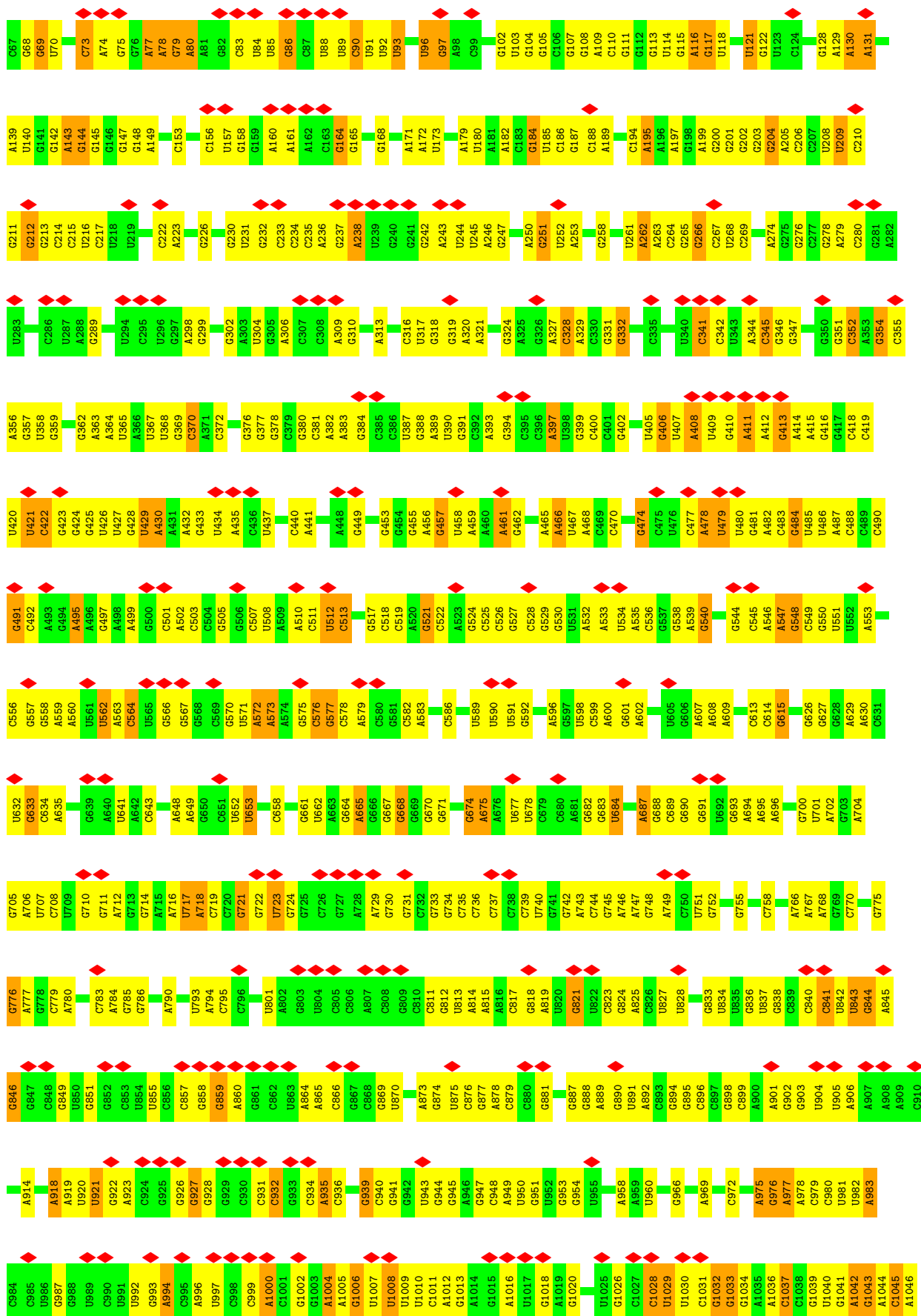


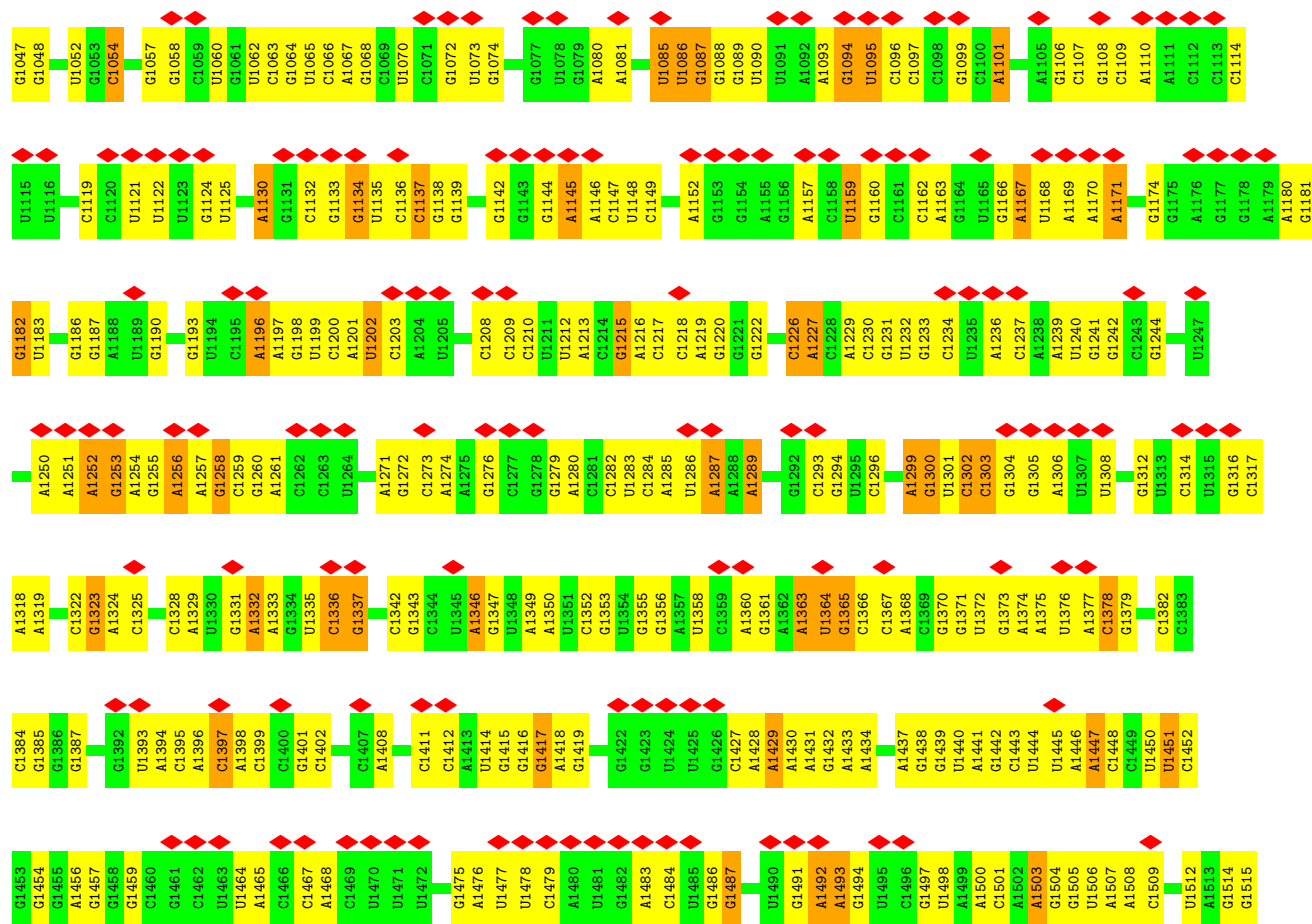
- Molecule 51: Elongation factor 4



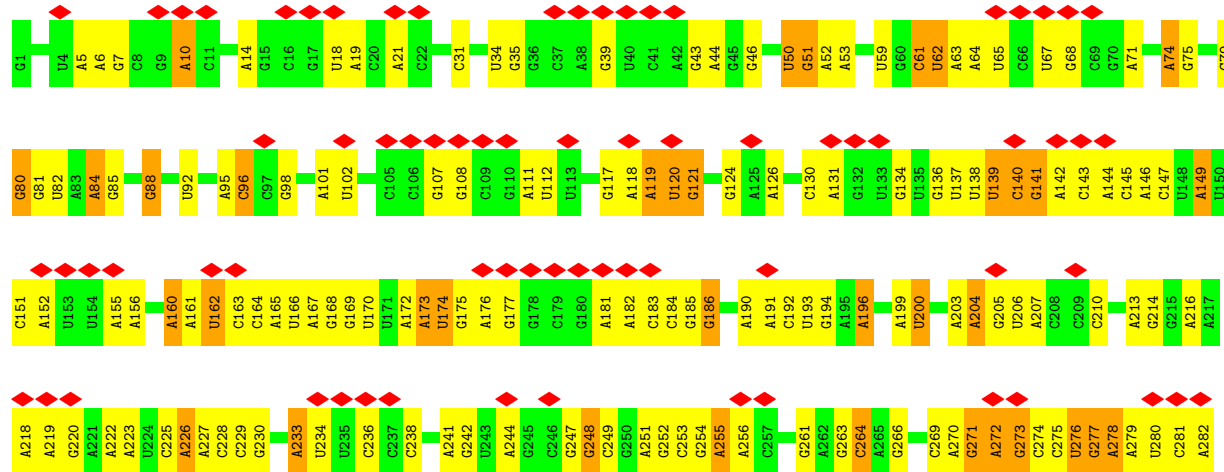
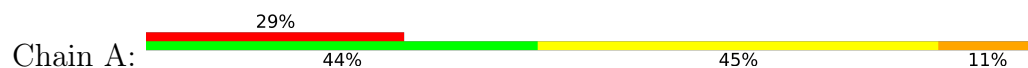
- Molecule 52: 16S ribosomal RNA

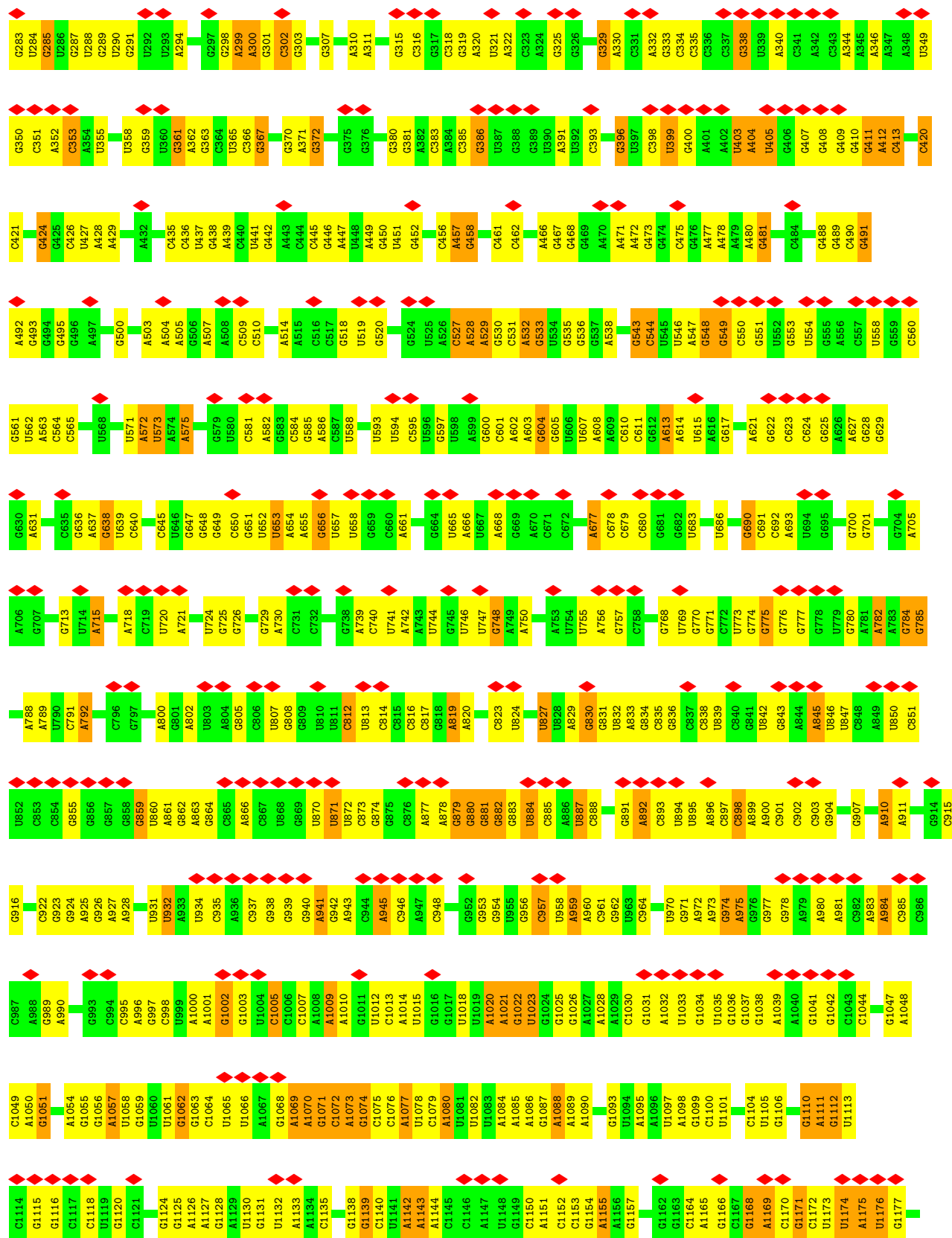


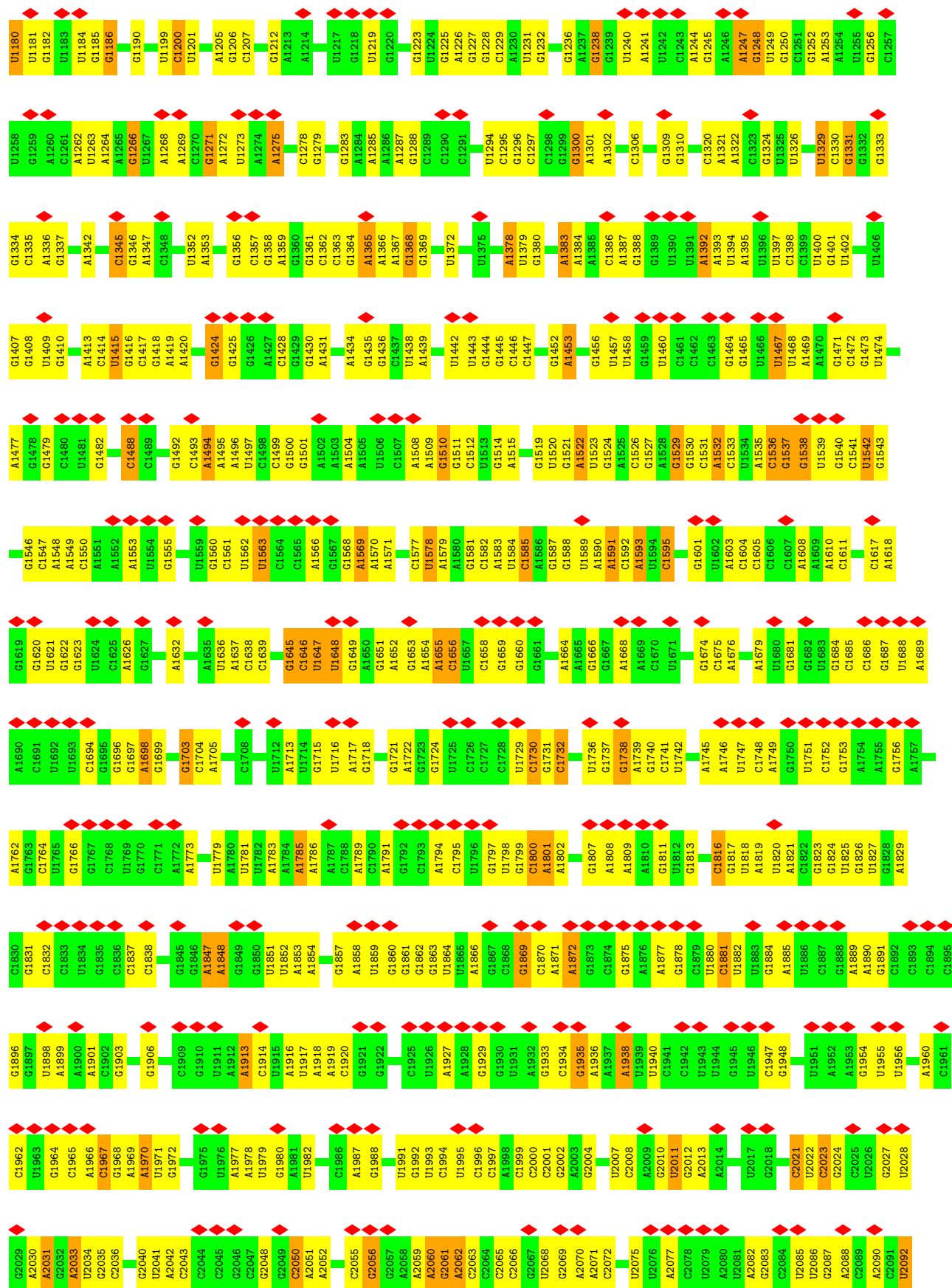


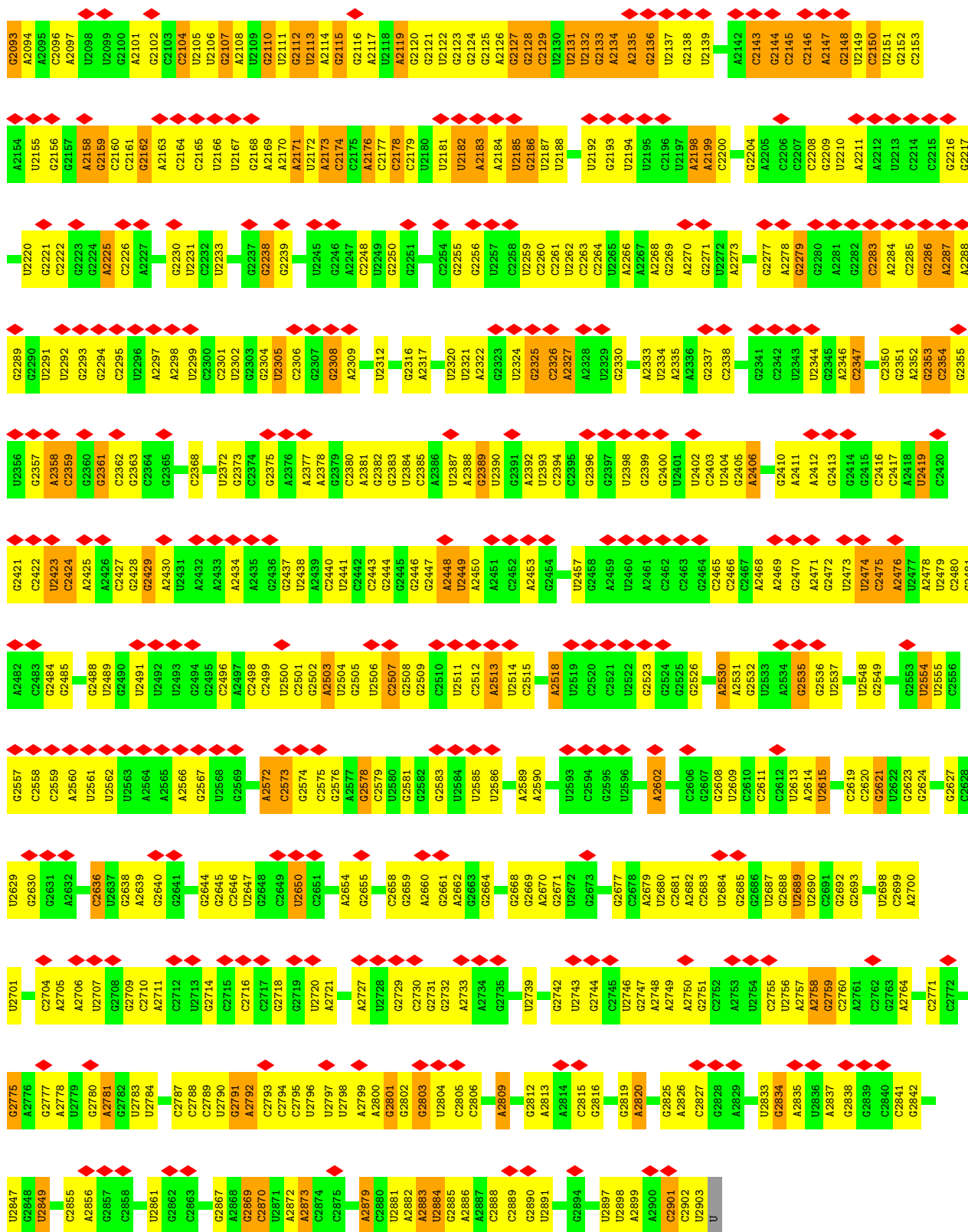


• Molecule 53: 23S ribosomal RNA



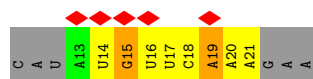




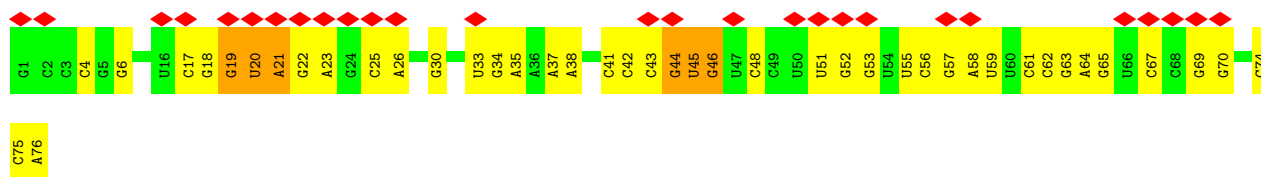




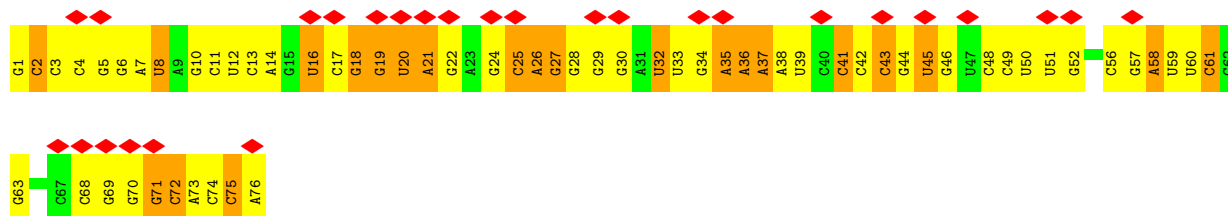
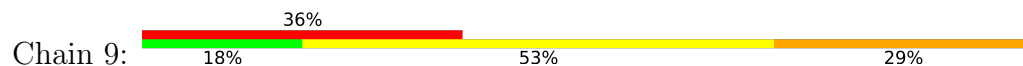
• Molecule 55: mRNA



• Molecule 56: tRNA



• Molecule 56: tRNA



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	18772	Depositor
Resolution determination method	Not provided	
CTF correction method	Not provided	
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	Not provided	
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.028	Depositor
Minimum map value	-0.010	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.002	Depositor
Recommended contour level	0.0035	Depositor
Map size (\AA)	422.40002, 422.40002, 422.40002	wwPDB
Map dimensions	320, 320, 320	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.32, 1.32, 1.32	Depositor

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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	b	0.41	0/1735	0.89	5/2338 (0.2%)
2	c	0.44	0/1651	0.80	0/2225
3	d	0.43	0/1665	0.81	0/2227
4	e	0.49	0/1118	0.88	0/1504
5	f	0.43	0/851	0.89	1/1150 (0.1%)
6	g	0.45	0/1195	0.85	2/1602 (0.1%)
7	h	0.48	0/989	0.87	2/1326 (0.2%)
8	i	0.42	0/1034	0.83	0/1375
9	j	0.42	0/796	0.92	1/1077 (0.1%)
10	k	0.49	0/893	0.95	6/1205 (0.5%)
11	l	0.44	0/969	0.93	3/1300 (0.2%)
12	m	0.46	0/892	0.90	1/1193 (0.1%)
13	n	0.43	0/785	0.87	2/1043 (0.2%)
14	o	0.45	0/722	0.72	0/964
15	p	0.42	0/659	0.84	2/884 (0.2%)
16	q	0.40	0/657	0.82	0/881
17	r	0.46	0/462	0.78	1/621 (0.2%)
18	s	0.38	0/652	0.90	0/877
19	t	0.52	0/671	0.82	0/888
20	u	0.45	0/430	0.87	2/570 (0.4%)
21	0	0.47	0/450	0.82	1/599 (0.2%)
22	1	0.43	0/416	0.96	2/554 (0.4%)
23	2	0.50	0/380	0.82	2/498 (0.4%)
24	3	0.52	0/513	0.85	0/676
25	4	0.45	0/303	1.03	4/397 (1.0%)
26	5	0.40	0/1748	0.98	8/2355 (0.3%)
27	C	0.51	0/2115	0.95	6/2844 (0.2%)
28	D	0.49	0/1586	0.93	3/2134 (0.1%)
29	E	0.45	0/1571	0.84	3/2113 (0.1%)
30	F	0.43	0/1434	0.89	3/1926 (0.2%)
31	G	0.42	0/1343	0.87	1/1816 (0.1%)
32	H	0.42	0/1122	0.91	2/1515 (0.1%)
33	I	0.41	0/1046	0.92	2/1410 (0.1%)
34	J	0.50	0/1152	0.87	2/1551 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
35	K	0.54	0/947	0.95	5/1268 (0.4%)
36	L	0.45	0/1054	0.95	3/1403 (0.2%)
37	M	0.49	0/1093	0.89	3/1460 (0.2%)
38	N	0.51	0/973	0.82	0/1301
39	O	0.43	0/902	0.78	0/1209
40	P	0.46	0/929	0.88	1/1242 (0.1%)
41	Q	0.53	0/960	0.77	0/1278
42	R	0.41	0/829	0.84	2/1107 (0.2%)
43	S	0.51	0/864	0.92	2/1156 (0.2%)
44	T	0.48	0/744	1.01	2/994 (0.2%)
45	U	0.43	0/787	0.89	0/1051
46	V	0.42	0/766	0.84	0/1025
47	W	0.48	0/603	0.96	1/797 (0.1%)
48	X	0.47	0/635	0.84	0/848
49	Y	0.45	0/510	0.77	0/677
50	Z	0.45	0/453	0.93	1/605 (0.2%)
51	x	0.34	0/214	0.76	0/275
52	a	0.24	0/36834	0.28	0/57462
53	A	0.27	0/69799	0.29	0/108892
54	B	0.21	0/2828	0.26	0/4410
55	7	0.23	0/213	0.32	0/329
56	8	0.22	0/1813	0.33	0/2823
56	9	0.17	0/1813	0.32	0/2823
All	All	0.33	0/160568	0.52	87/240073 (0.0%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
20	u	0	1
31	G	0	1
35	K	0	1
All	All	0	3

There are no bond length outliers.

All (87) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
28	D	151	THR	CA-C-N	-8.33	109.42	119.84
28	D	151	THR	C-N-CA	-8.33	109.42	119.84

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
34	J	112	GLY	CA-C-N	7.88	129.70	119.84
34	J	112	GLY	C-N-CA	7.88	129.70	119.84
6	g	70	ARG	CA-C-N	7.88	127.81	119.85
6	g	70	ARG	C-N-CA	7.88	127.81	119.85
36	L	55	MET	CA-C-N	7.79	127.81	119.78
36	L	55	MET	C-N-CA	7.79	127.81	119.78
10	k	122	ARG	CA-C-N	7.33	125.01	119.66
10	k	122	ARG	C-N-CA	7.33	125.01	119.66
10	k	126	LYS	N-CA-C	7.33	117.69	108.45
26	5	102	ASP	N-CA-C	7.26	119.19	111.28
22	1	39	ASP	CA-C-N	7.09	126.92	119.05
22	1	39	ASP	C-N-CA	7.09	126.92	119.05
32	H	107	GLY	N-CA-C	-6.99	106.12	115.21
1	b	191	ASP	CA-C-N	6.81	126.77	119.28
1	b	191	ASP	C-N-CA	6.81	126.77	119.28
27	C	30	ALA	CA-C-N	-6.74	113.96	120.83
27	C	30	ALA	C-N-CA	-6.74	113.96	120.83
11	l	41	THR	CA-C-N	6.63	126.54	119.85
11	l	41	THR	C-N-CA	6.63	126.54	119.85
27	C	63	ILE	N-CA-C	6.61	116.76	110.42
26	5	146	THR	CA-C-N	6.54	126.47	119.28
26	5	146	THR	C-N-CA	6.54	126.47	119.28
25	4	30	GLU	CA-C-N	6.51	126.44	119.28
25	4	30	GLU	C-N-CA	6.51	126.44	119.28
26	5	61	GLY	N-CA-C	6.51	118.91	110.45
21	0	25	THR	CB-CA-C	-6.50	109.09	116.63
5	f	18	VAL	CB-CA-C	-6.50	107.53	113.70
10	k	90	GLY	CA-C-N	6.42	126.39	119.78
10	k	90	GLY	C-N-CA	6.42	126.39	119.78
1	b	156	LEU	CA-C-N	6.35	126.33	119.78
1	b	156	LEU	C-N-CA	6.35	126.33	119.78
13	n	51	LEU	CA-C-N	6.23	127.63	119.84
13	n	51	LEU	C-N-CA	6.23	127.63	119.84
12	m	66	GLU	CB-CA-C	-6.23	109.38	116.54
36	L	83	ALA	N-CA-C	-6.22	105.69	113.28
28	D	174	SER	CB-CA-C	-6.09	108.95	117.23
44	T	18	GLU	CB-CA-C	-6.05	109.58	116.54
50	Z	8	GLN	N-CA-C	6.00	117.49	111.07
35	K	41	ILE	N-CA-C	5.98	116.24	108.35
26	5	107	GLY	N-CA-C	-5.97	107.52	115.40
33	I	73	PRO	N-CA-C	5.96	116.19	110.47
29	E	58	LYS	CA-C-N	5.84	125.71	119.28

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
29	E	58	LYS	C-N-CA	5.84	125.71	119.28
25	4	7	VAL	N-CA-C	5.80	115.87	110.42
27	C	27	LYS	CA-C-N	5.78	125.73	119.78
27	C	27	LYS	C-N-CA	5.78	125.73	119.78
7	h	56	LYS	CA-C-N	5.77	125.72	119.78
7	h	56	LYS	C-N-CA	5.77	125.72	119.78
27	C	164	VAL	N-CA-C	5.76	116.96	112.12
32	H	66	ASN	N-CA-C	5.66	118.65	110.28
26	5	36	ALA	CA-C-N	5.65	131.86	121.70
26	5	36	ALA	C-N-CA	5.65	131.86	121.70
33	I	15	GLY	N-CA-C	5.64	119.49	112.73
11	l	94	ARG	N-CA-C	5.60	117.02	110.41
42	R	9	GLY	N-CA-C	-5.59	107.48	115.64
35	K	119	ALA	CA-C-N	5.56	125.39	119.28
35	K	119	ALA	C-N-CA	5.56	125.39	119.28
37	M	39	GLY	N-CA-C	5.50	117.60	110.45
44	T	35	ALA	CB-CA-C	-5.50	110.22	116.54
1	b	127	LYS	N-CA-C	5.49	118.19	110.23
25	4	20	ASP	CB-CA-C	-5.49	110.23	116.54
35	K	101	GLY	CA-C-N	5.48	125.38	119.85
35	K	101	GLY	C-N-CA	5.48	125.38	119.85
30	F	99	PHE	N-CA-C	-5.45	105.42	111.36
37	M	133	LYS	N-CA-C	5.45	117.98	111.71
9	j	92	LEU	CB-CA-C	-5.32	110.00	117.23
20	u	10	GLU	CA-C-N	-5.24	114.37	119.76
20	u	10	GLU	C-N-CA	-5.24	114.37	119.76
31	G	15	ASP	N-CA-C	-5.17	106.91	113.43
15	p	14	ARG	CA-C-N	5.17	125.11	119.78
15	p	14	ARG	C-N-CA	5.17	125.11	119.78
43	S	86	MET	CA-C-N	5.14	125.06	119.76
43	S	86	MET	C-N-CA	5.14	125.06	119.76
37	M	32	GLY	N-CA-C	5.14	120.64	110.83
17	r	40	VAL	N-CA-C	5.11	113.02	108.63
29	E	39	ALA	N-CA-C	-5.05	107.07	113.18
30	F	137	PHE	CA-C-N	5.03	124.81	119.28
30	F	137	PHE	C-N-CA	5.03	124.81	119.28
23	2	6	GLN	CA-C-N	5.03	124.96	119.78
23	2	6	GLN	C-N-CA	5.03	124.96	119.78
47	W	25	PHE	N-CA-C	-5.02	103.09	110.52
42	R	44	GLY	N-CA-C	-5.01	108.75	115.32
40	P	81	ASP	CB-CA-C	-5.01	110.78	116.54
10	k	74	VAL	N-CA-C	-5.01	107.06	113.22

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
26	5	53	ARG	N-CA-C	-5.00	107.13	113.18

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
31	G	83	THR	Peptide
35	K	71	ARG	Peptide
20	u	39	GLU	Peptide

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	b	1704	0	1732	58	0
2	c	1624	0	1696	41	0
3	d	1643	0	1707	80	0
4	e	1105	0	1148	38	0
5	f	832	0	824	23	0
6	g	1181	0	1238	44	0
7	h	979	0	1031	45	0
8	i	1022	0	1070	57	0
9	j	786	0	828	33	0
10	k	877	0	887	38	0
11	l	955	0	1016	53	0
12	m	883	0	941	39	0
13	n	774	0	824	44	0
14	o	714	0	734	28	0
15	p	649	0	666	28	0
16	q	648	0	691	19	0
17	r	455	0	478	17	0
18	s	637	0	665	19	0
19	t	665	0	714	23	0
20	u	425	0	449	17	0
21	0	444	0	461	12	0
22	1	409	0	440	19	0
23	2	377	0	418	6	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
24	3	504	0	574	14	0
25	4	302	0	340	17	0
26	5	1733	0	1824	101	0
27	C	2076	0	2152	72	0
28	D	1565	0	1616	56	0
29	E	1552	0	1619	50	0
30	F	1410	0	1447	53	0
31	G	1323	0	1374	50	0
32	H	1111	0	1148	49	0
33	I	1032	0	1088	53	0
34	J	1129	0	1162	50	0
35	K	938	0	1012	37	0
36	L	1045	0	1117	26	0
37	M	1074	0	1157	36	0
38	N	960	0	1000	28	0
39	O	892	0	923	29	0
40	P	917	0	965	23	0
41	Q	947	0	1022	36	0
42	R	816	0	839	21	0
43	S	857	0	922	24	0
44	T	738	0	807	29	0
45	U	779	0	834	29	0
46	V	753	0	780	21	0
47	W	596	0	610	52	0
48	X	625	0	655	33	0
49	Y	509	0	543	12	0
50	Z	449	0	491	21	0
51	x	214	0	244	8	0
52	a	32895	0	16553	712	0
53	A	62320	0	31343	1197	0
54	B	2529	0	1281	50	0
55	7	191	0	97	8	0
56	8	1623	0	821	51	0
56	9	1623	0	821	99	0
All	All	147815	0	99839	3446	0

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

All (3446) 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)
53:A:271:G:C5	53:A:367:G:C2	1.87	1.62
53:A:271:G:C8	53:A:367:G:N2	1.70	1.54
53:A:271:G:N7	53:A:367:G:C2	1.77	1.45
53:A:271:G:N7	53:A:367:G:N1	1.67	1.40
53:A:272:A:C2	53:A:273:G:C5	2.10	1.39
56:8:19:G:C8	56:8:57:G:N2	2.02	1.28
56:9:26:A:H8	56:9:27:G:C8	1.53	1.27
56:9:24:G:H2'	56:9:25:C:C5'	1.67	1.24
53:A:271:G:N7	53:A:367:G:N2	1.73	1.23
56:9:10:G:O6	56:9:25:C:N4	1.69	1.23
52:a:921:U:O4	52:a:1396:A:N1	1.75	1.19
56:9:10:G:O6	56:9:25:C:C4	1.97	1.18
53:A:272:A:C2	53:A:273:G:C4	2.33	1.17
56:9:26:A:C8	56:9:27:G:C4	2.35	1.14
56:9:26:A:N7	56:9:27:G:C4	2.20	1.07
53:A:269:C:C2	53:A:270:A:C8	2.42	1.07
56:9:24:G:H2'	56:9:25:C:H5'	1.14	1.07
53:A:272:A:N3	53:A:273:G:C8	2.24	1.05
56:9:26:A:C8	56:9:27:G:C5	2.45	1.04
53:A:271:G:C6	53:A:367:G:C2	2.45	1.04
56:9:26:A:C8	56:9:27:G:C8	2.46	1.03
53:A:271:G:C5	53:A:367:G:N1	2.13	1.02
56:9:25:C:H2'	56:9:26:A:H4'	1.40	1.00
56:9:24:G:C2'	56:9:25:C:C5'	2.40	0.98
52:a:922:G:N2	52:a:923:A:C2	2.33	0.97
52:a:15:G:N1	52:a:921:U:O2	1.98	0.96
52:a:15:G:C2	52:a:921:U:O2	2.17	0.96
53:A:272:A:H2	53:A:273:G:C4	1.74	0.96
56:9:27:G:N2	56:9:45:U:H3	1.62	0.96
56:9:26:A:C8	56:9:27:G:N9	2.35	0.94
56:9:26:A:H8	56:9:27:G:N9	1.66	0.94
40:P:50:ARG:HB2	40:P:56:SER:HB3	1.48	0.93
52:a:922:G:N2	52:a:923:A:N3	2.16	0.93
56:9:24:G:C2'	56:9:25:C:H5''	1.99	0.93
56:9:27:G:H22	56:9:45:U:H3	1.03	0.92
53:A:269:C:N3	53:A:270:A:N7	2.18	0.92
53:A:272:A:HO2'	53:A:273:G:H8	1.10	0.92
53:A:269:C:C4	53:A:270:A:N7	2.38	0.91
19:t:10:ARG:NH2	52:a:107:G:N7	2.17	0.91
53:A:272:A:O2'	53:A:273:G:H8	1.53	0.91
12:m:101:ARG:HH22	52:a:950:U:H3'	1.37	0.90
53:A:272:A:N3	53:A:273:G:N7	2.21	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:9:29:G:H1	56:9:41:C:H42	1.20	0.89
53:A:272:A:C2	53:A:273:G:C6	2.59	0.89
56:9:27:G:N2	56:9:45:U:N3	2.20	0.88
8:i:52:LEU:HB3	8:i:57:MET:HB3	1.53	0.88
45:U:38:ILE:HG23	45:U:39:ASN:H	1.37	0.87
52:a:921:U:H5	52:a:922:G:C5	1.92	0.87
53:A:271:G:C5	53:A:367:G:N2	2.29	0.87
56:9:25:C:H2'	56:9:26:A:C4'	2.04	0.86
53:A:269:C:C2	53:A:270:A:N7	2.43	0.86
27:C:134:ILE:O	27:C:166:ARG:NH1	2.08	0.86
33:I:29:GLN:HG3	33:I:32:VAL:HB	1.56	0.85
56:9:24:G:H2'	56:9:25:C:H5''	1.59	0.84
52:a:922:G:C2	52:a:923:A:C2	2.65	0.84
44:T:28:ASN:HB2	44:T:91:GLN:HE22	1.40	0.84
52:a:1395:C:HO2'	52:a:1401:G:HO2'	1.24	0.84
20:u:37:PHE:HB3	20:u:41:PRO:HD3	1.60	0.83
52:a:77:A:N6	52:a:91:U:O4	2.11	0.83
56:9:10:G:N1	56:9:25:C:N3	2.27	0.83
53:A:271:G:C5	53:A:367:G:N3	2.45	0.83
53:A:272:A:N3	53:A:273:G:C5	2.46	0.83
52:a:15:G:N2	52:a:921:U:O2	2.11	0.83
26:5:166:ASP:HA	53:A:2122:U:H1'	1.60	0.82
33:I:126:ARG:HB3	53:A:1080:A:H4'	1.61	0.82
43:S:73:LYS:HB3	43:S:106:VAL:HB	1.60	0.82
11:l:99:ARG:HB2	11:l:117:TYR:HA	1.62	0.82
52:a:203:G:O6	52:a:214:C:N4	2.13	0.81
52:a:409:U:H3	52:a:433:G:H1	1.25	0.81
53:A:271:G:C6	53:A:367:G:N1	2.41	0.81
37:M:82:MET:HE3	53:A:960:A:H61	1.44	0.81
48:X:36:ARG:HG2	48:X:47:THR:HG22	1.63	0.81
52:a:1088:G:N2	52:a:1097:C:O2	2.14	0.81
5:f:3:HIS:H	5:f:92:THR:HG23	1.46	0.80
52:a:921:U:O4	52:a:1396:A:C6	2.33	0.80
53:A:2796:U:H3	53:A:2799:A:H61	1.30	0.80
10:k:88:GLY:H	10:k:114:THR:HG22	1.44	0.79
10:k:89:PRO:HG3	20:u:29:LEU:HD22	1.62	0.79
53:A:155:A:H2'	53:A:156:A:H8	1.47	0.79
32:H:4:ILE:HG12	32:H:18:GLN:HE22	1.47	0.79
52:a:922:G:N1	52:a:923:A:N1	2.31	0.79
19:t:5:LYS:HG3	19:t:7:ALA:H	1.46	0.79
29:E:163:ASN:ND2	53:A:320:A:N3	2.30	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:M:66:ARG:NH1	37:M:104:GLU:OE2	2.16	0.79
28:D:49:GLN:HE21	28:D:79:LEU:HD13	1.45	0.78
9:j:65:TYR:OH	13:n:85:ARG:NH1	2.17	0.78
27:C:269:ARG:NH2	53:A:1799:G:OP2	2.17	0.78
52:a:1029:U:O2	52:a:1033:G:N1	2.17	0.77
34:J:43:GLU:O	34:J:45:THR:N	2.17	0.77
53:A:2576:G:O2'	53:A:2579:C:OP2	2.02	0.77
1:b:221:ARG:O	1:b:224:ARG:NH1	2.18	0.77
53:A:184:C:H2'	53:A:185:G:H8	1.50	0.77
8:i:32:GLN:NE2	8:i:64:TYR:OH	2.17	0.77
2:c:11:ARG:HH21	2:c:182:ILE:HD12	1.50	0.77
13:n:89:MET:HE1	13:n:98:LYS:HD2	1.65	0.76
33:I:85:ILE:HG22	33:I:87:SER:H	1.50	0.76
43:S:24:ILE:HD11	43:S:36:LEU:HD13	1.67	0.76
56:9:11:C:H42	56:9:25:C:H42	1.33	0.76
53:A:191:A:HO2'	53:A:678:C:HO2'	1.32	0.76
15:p:34:GLU:OE2	15:p:60:TRP:NE1	2.16	0.76
9:j:36:VAL:HG22	9:j:76:ILE:HG12	1.67	0.76
30:F:70:ARG:NH2	53:A:2298:A:OP1	2.17	0.76
8:i:10:GLY:HA2	8:i:81:HIS:HD2	1.51	0.76
47:W:16:GLU:OE2	53:A:2270:A:O2'	2.02	0.76
52:a:40:C:H2'	52:a:41:G:H8	1.48	0.76
52:a:999:C:H42	52:a:1041:G:H1	1.33	0.76
3:d:2:ALA:N	52:a:405:U:O4	2.18	0.76
56:9:26:A:N6	56:9:45:U:O2	2.19	0.76
21:0:15:ARG:NH1	53:A:1264:A:OP1	2.16	0.76
15:p:28:ARG:HH11	52:a:390:U:H4'	1.50	0.75
33:I:127:SER:HA	53:A:1080:A:H1'	1.67	0.75
53:A:411:G:OP2	53:A:2406:A:O2'	2.02	0.75
56:9:26:A:H8	56:9:27:G:N7	1.83	0.75
29:E:147:LEU:HB3	29:E:186:VAL:HG23	1.69	0.75
53:A:2368:C:N4	53:A:2382:G:O6	2.19	0.75
50:Z:8:GLN:HG2	50:Z:31:ILE:HA	1.68	0.75
2:c:40:ARG:NH1	13:n:92:GLU:OE1	2.20	0.75
46:V:57:TYR:OH	46:V:79:ARG:NH2	2.19	0.75
53:A:107:G:H2'	53:A:108:G:H8	1.50	0.75
53:A:271:G:N9	53:A:367:G:N2	2.31	0.75
53:A:1696:G:N2	53:A:1977:A:O2'	2.18	0.75
6:g:102:ARG:NH1	52:a:939:G:OP1	2.17	0.75
53:A:1530:G:N1	53:A:1541:C:O2	2.20	0.75
7:h:56:LYS:HE2	52:a:653:U:H5'	1.68	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:i:55:VAL:O	8:i:60:LYS:NZ	2.19	0.75
52:a:362:G:N2	52:a:365:U:OP2	2.19	0.75
37:M:53:MET:HB2	37:M:120:ALA:HB2	1.66	0.75
33:I:127:SER:O	53:A:1059:G:N2	2.20	0.75
34:J:4:PHE:N	34:J:44:TYR:OH	2.20	0.74
47:W:40:ARG:NH1	47:W:52:CYS:SG	2.61	0.74
52:a:921:U:C4	52:a:1396:A:N1	2.55	0.74
53:A:1176:U:H2'	53:A:1177:G:C8	2.22	0.74
4:e:101:GLU:HA	4:e:122:ASN:HD22	1.50	0.74
12:m:3:ARG:HB2	12:m:57:ARG:HH12	1.51	0.74
26:5:18:THR:OG1	26:5:221:GLY:O	2.06	0.74
27:C:251:THR:HG22	27:C:252:LYS:H	1.50	0.74
52:a:811:C:O2'	52:a:901:A:N1	2.20	0.74
52:a:15:G:N1	52:a:921:U:C2	2.56	0.74
52:a:15:G:C6	52:a:921:U:N3	2.53	0.74
52:a:1342:C:H2'	52:a:1343:G:H8	1.52	0.74
56:9:26:A:H5''	56:9:27:G:C8	2.23	0.74
56:8:19:G:N7	56:8:57:G:N2	2.35	0.74
37:M:75:GLU:HG2	53:A:957:C:H5'	1.70	0.74
17:r:30:LYS:HA	17:r:33:ILE:HG12	1.70	0.74
38:N:28:LEU:HD23	38:N:48:VAL:HG21	1.70	0.74
20:u:10:GLU:HG3	20:u:11:PRO:HD3	1.70	0.74
48:X:9:LYS:NZ	53:A:396:G:OP2	2.21	0.74
54:B:95:U:H2'	54:B:96:G:H8	1.53	0.74
10:k:20:VAL:HG22	10:k:83:GLU:HB2	1.69	0.73
53:A:1173:U:H2'	53:A:1174:U:H4'	1.70	0.73
9:j:35:GLN:HG2	9:j:77:VAL:HB	1.70	0.73
26:5:106:LYS:O	53:A:2162:G:N2	2.21	0.73
45:U:27:VAL:HG23	45:U:33:VAL:HG12	1.70	0.73
52:a:890:G:O2'	52:a:906:A:N6	2.21	0.73
34:J:35:ARG:HA	34:J:40:HIS:HD2	1.53	0.73
3:d:26:ARG:NE	52:a:410:G:OP1	2.21	0.73
12:m:113:ARG:NH1	52:a:1229:A:OP2	2.21	0.73
26:5:9:ARG:NH2	53:A:2107:G:OP2	2.21	0.73
27:C:123:ILE:HG23	27:C:191:LEU:HD21	1.71	0.73
47:W:19:ARG:HH11	47:W:22:VAL:HG11	1.53	0.73
49:Y:16:THR:O	49:Y:20:ASN:ND2	2.22	0.73
56:9:10:G:C6	56:9:25:C:C4	2.77	0.73
26:5:77:VAL:HG11	26:5:92:ALA:HA	1.71	0.73
52:a:921:U:H5	52:a:922:G:N7	1.86	0.73
53:A:807:U:H2'	53:A:808:G:H8	1.54	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:8:6:G:N2	56:8:67:C:O2	2.21	0.73
56:8:21:A:N6	56:8:46:G:C4	2.56	0.73
47:W:13:ARG:NH2	53:A:2260:C:OP1	2.22	0.73
53:A:1175:A:H5'	53:A:1176:U:H1'	1.71	0.73
28:D:184:ARG:HG2	28:D:186:LEU:HD13	1.70	0.73
52:a:1316:G:N1	52:a:1319:A:OP2	2.22	0.73
53:A:2033:A:O2'	53:A:2035:G:OP2	2.07	0.73
3:d:95:GLU:OE2	3:d:104:ARG:NE	2.21	0.73
31:G:40:VAL:O	31:G:54:ARG:NH2	2.20	0.73
48:X:17:ARG:NH2	48:X:21:LEU:O	2.22	0.73
11:l:44:LYS:HB3	11:l:45:PRO:HD2	1.69	0.73
23:2:37:LYS:NZ	53:A:468:G:OP2	2.22	0.73
52:a:73:C:N4	52:a:97:G:O6	2.16	0.72
8:i:38:TYR:HD2	8:i:39:PHE:HD2	1.36	0.72
13:n:54:ASP:OD1	13:n:59:ARG:NH1	2.22	0.72
26:5:168:ASN:OD1	53:A:2121:G:N2	2.22	0.72
28:D:119:ALA:HB1	28:D:124:ARG:HB2	1.68	0.72
33:I:105:LEU:H	33:I:108:ILE:HB	1.53	0.72
56:9:26:A:C8	56:9:27:G:N7	2.56	0.72
30:F:132:ARG:NH1	53:A:2305:U:O2'	2.22	0.72
10:k:125:LYS:HG2	20:u:36:GLU:H	1.52	0.72
40:P:63:ILE:HA	40:P:68:GLY:HA2	1.72	0.72
18:s:4:SER:O	18:s:6:LYS:NZ	2.21	0.72
22:1:7:LYS:NZ	53:A:2421:G:OP1	2.22	0.72
40:P:4:ILE:O	40:P:6:GLN:N	2.22	0.72
45:U:6:ARG:NH2	45:U:25:LYS:O	2.23	0.72
22:1:8:ILE:HG23	22:1:51:ALA:HA	1.71	0.72
37:M:14:LYS:NZ	53:A:956:G:N7	2.36	0.72
41:Q:63:ARG:NH1	41:Q:95:ALA:O	2.22	0.72
52:a:421:U:H5'	52:a:422:C:H5''	1.72	0.72
53:A:1917:U:O4	53:A:1918:A:N6	2.23	0.72
53:A:2116:G:H1	53:A:2147:A:HO2'	1.32	0.72
26:5:12:ARG:HD3	26:5:17:ALA:HA	1.70	0.72
52:a:922:G:C6	52:a:923:A:C6	2.78	0.72
1:b:49:PHE:HA	1:b:52:ALA:HB3	1.72	0.72
7:h:82:GLY:O	16:q:36:LYS:NZ	2.20	0.72
11:l:34:CYS:H	11:l:55:VAL:HG13	1.55	0.72
30:F:23:SER:HB3	30:F:26:GLN:HB2	1.71	0.72
52:a:744:C:O2'	52:a:851:G:N2	2.22	0.72
52:a:1040:U:H2'	52:a:1041:G:H8	1.55	0.72
53:A:370:G:O2'	53:A:424:G:OP1	2.07	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:1069:A:N7	53:A:1074:G:N1	2.38	0.72
52:a:380:G:N2	52:a:383:A:OP2	2.22	0.71
52:a:922:G:C2	52:a:923:A:C4	2.77	0.71
35:K:10:VAL:HG11	35:K:16:ALA:HB3	1.72	0.71
4:e:82:GLN:H	4:e:147:MET:HE3	1.54	0.71
31:G:31:GLU:O	31:G:33:THR:N	2.22	0.71
50:Z:9:THR:OG1	50:Z:53:MET:O	2.08	0.71
53:A:2324:U:H3'	53:A:2325:G:H5''	1.70	0.71
56:8:21:A:N6	56:8:46:G:N9	2.38	0.71
56:9:10:G:C6	56:9:25:C:N3	2.58	0.71
12:m:84:GLY:N	53:A:887:U:O4	2.22	0.71
14:o:24:SER:OG	14:o:26:GLU:OE1	2.09	0.71
52:a:928:G:O2'	52:a:1533:C:OP1	2.08	0.71
21:0:42:ILE:HD11	38:N:98:LEU:HB3	1.71	0.71
30:F:147:ARG:HG3	30:F:149:ARG:H	1.56	0.71
53:A:878:A:N6	53:A:899:A:O2'	2.23	0.71
53:A:2120:G:N2	53:A:2178:C:O2	2.23	0.71
52:a:927:G:O2'	52:a:1503:A:N7	2.24	0.71
53:A:2450:A:O2'	56:8:76:A:N6	2.23	0.71
11:l:27:CYS:SG	52:a:363:A:N6	2.64	0.71
33:I:57:VAL:HB	33:I:69:VAL:HB	1.73	0.70
52:a:324:G:N2	52:a:327:A:OP2	2.23	0.70
52:a:745:G:H2'	52:a:746:A:H8	1.56	0.70
52:a:1028:C:N4	52:a:1029:U:O2	2.24	0.70
21:0:12:ARG:NH1	53:A:1263:U:OP1	2.24	0.70
28:D:48:ILE:HG23	28:D:84:LEU:HD11	1.72	0.70
41:Q:18:LYS:NZ	53:A:1219:U:OP2	2.24	0.70
56:9:26:A:H4'	56:9:26:A:OP1	1.90	0.70
53:A:271:G:H1'	53:A:272:A:OP1	1.90	0.70
22:1:3:GLY:O	22:1:5:ARG:N	2.22	0.70
29:E:131:THR:HG23	53:A:321:U:H5''	1.72	0.70
43:S:18:ARG:O	43:S:20:VAL:N	2.25	0.70
11:l:14:ARG:NH1	52:a:562:U:OP2	2.18	0.70
34:J:72:LYS:HB3	34:J:89:PHE:HB2	1.72	0.70
53:A:271:G:C4	53:A:367:G:C2	2.73	0.70
9:j:71:LEU:O	9:j:72:ARG:NH1	2.23	0.70
26:5:37:LYS:NZ	26:5:218:MET:SD	2.64	0.70
53:A:1278:C:H2'	53:A:1279:G:H8	1.56	0.70
32:H:68:ARG:NH2	32:H:113:SER:OG	2.24	0.70
3:d:58:LYS:NZ	3:d:69:GLU:OE2	2.25	0.70
34:J:56:VAL:HB	34:J:124:VAL:HA	1.74	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:S:11:ARG:HH21	53:A:1322:A:H5'	1.56	0.70
53:A:272:A:N1	53:A:273:G:C6	2.60	0.70
45:U:92:VAL:HG22	45:U:93:ARG:H	1.57	0.70
47:W:23:LYS:NZ	53:A:923:G:N3	2.39	0.70
53:A:2129:C:N4	53:A:2159:G:O6	2.25	0.70
53:A:2185:U:H2'	53:A:2186:G:H5''	1.74	0.70
13:n:30:ILE:HA	13:n:33:ASP:HB3	1.72	0.69
52:a:411:A:H1'	52:a:413:G:H5''	1.74	0.69
53:A:2126:A:N6	53:A:2173:A:OP2	2.23	0.69
7:h:66:PHE:CD2	7:h:67:GLN:HG2	2.27	0.69
12:m:49:SER:HB2	12:m:52:GLN:HB2	1.74	0.69
53:A:269:C:H2'	53:A:270:A:H8	1.56	0.69
53:A:1336:A:H2'	53:A:1337:G:H8	1.56	0.69
5:f:46:GLN:HE22	5:f:55:HIS:HB3	1.57	0.69
28:D:13:ARG:HH11	53:A:2683:C:H4'	1.57	0.69
52:a:1094:G:O2'	52:a:1108:G:N2	2.25	0.69
21:0:37:HIS:ND1	21:0:38:LEU:O	2.23	0.69
31:G:97:VAL:HG22	31:G:102:ILE:HG13	1.72	0.69
53:A:532:A:N7	53:A:2021:C:O2'	2.26	0.69
4:e:155:ALA:O	4:e:159:LYS:NZ	2.24	0.69
26:5:8:MET:HB3	26:5:12:ARG:HH12	1.57	0.69
34:J:110:PRO:HB2	34:J:111:LYS:HG2	1.73	0.69
42:R:49:ILE:HD12	42:R:52:PRO:HA	1.75	0.69
52:a:921:U:C5	52:a:922:G:C8	2.80	0.69
53:A:1999:C:O2	53:A:2687:U:O2'	2.11	0.69
40:P:28:LYS:HB3	40:P:39:LEU:HD23	1.72	0.69
52:a:477:C:H2'	52:a:478:A:C8	2.28	0.69
52:a:922:G:N1	52:a:923:A:C6	2.60	0.69
1:b:166:ASP:OD2	1:b:189:ASN:ND2	2.26	0.69
52:a:1067:A:N1	52:a:1108:G:O2'	2.26	0.69
53:A:2530:A:O2'	53:A:2532:G:OP2	2.10	0.69
9:j:50:THR:HG22	9:j:64:GLN:HG2	1.74	0.69
27:C:145:MET:HE1	53:A:1800:C:H5'	1.74	0.69
30:F:38:GLY:O	53:A:2306:C:N4	2.26	0.69
34:J:37:ARG:NH2	53:A:1007:C:OP1	2.25	0.69
53:A:2156:G:O2'	53:A:2158:A:N7	2.26	0.69
56:9:26:A:H5''	56:9:27:G:N7	2.08	0.69
41:Q:91:ARG:NH2	53:A:996:A:OP2	2.22	0.69
52:a:78:A:N6	52:a:93:U:O2	2.23	0.69
53:A:1799:G:N2	53:A:1818:U:O2'	2.26	0.69
1:b:71:THR:HG22	1:b:72:LYS:H	1.58	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:e:132:ASN:ND2	52:a:18:C:OP1	2.25	0.68
33:I:133:ARG:NH1	53:A:1078:U:OP1	2.26	0.68
14:o:35:GLN:HG2	14:o:59:MET:HE1	1.75	0.68
26:5:48:LEU:HD21	26:5:171:ILE:HD12	1.74	0.68
29:E:143:LEU:HD13	29:E:146:VAL:HG11	1.74	0.68
2:c:16:LYS:NZ	2:c:181:ASP:OD1	2.26	0.68
36:L:32:GLY:HA2	53:A:1190:G:H5''	1.75	0.68
41:Q:35:PHE:HZ	42:R:84:ARG:HH22	1.39	0.68
48:X:42:GLU:OE1	48:X:44:ARG:NH2	2.26	0.68
52:a:34:C:N4	52:a:35:G:O6	2.26	0.68
53:A:1713:A:H61	53:A:1745:A:H61	1.41	0.68
2:c:60:PRO:HG3	2:c:65:ARG:HH12	1.57	0.68
37:M:5:LYS:N	53:A:871:U:OP1	2.26	0.68
53:A:1438:U:H2'	53:A:1439:A:H8	1.59	0.68
44:T:39:THR:H	44:T:42:GLU:HB3	1.57	0.68
52:a:1237:C:O2'	52:a:1300:G:N1	2.26	0.68
13:n:2:ALA:N	52:a:1203:C:OP1	2.27	0.68
38:N:9:GLN:NE2	53:A:2002:G:OP2	2.27	0.68
3:d:103:TYR:O	3:d:165:ARG:NH2	2.25	0.68
4:e:29:ARG:NH2	52:a:1397:C:OP2	2.26	0.68
52:a:922:G:N1	52:a:923:A:C2	2.61	0.68
34:J:55:ILE:HG22	34:J:123:LYS:HB2	1.74	0.68
44:T:4:GLU:OE2	53:A:143:C:O2'	2.11	0.68
49:Y:45:GLN:O	49:Y:47:ARG:N	2.27	0.68
52:a:922:G:C2	52:a:923:A:N3	2.62	0.68
27:C:99:GLU:OE2	27:C:101:ARG:NE	2.27	0.68
53:A:1864:U:OP1	53:A:2410:G:O2'	2.12	0.68
17:r:27:ALA:HA	17:r:30:LYS:HE3	1.76	0.68
52:a:921:U:C5	52:a:922:G:C5	2.81	0.67
53:A:880:G:N2	53:A:881:G:O6	2.26	0.67
53:A:2114:A:N7	53:A:2170:A:N6	2.42	0.67
11:l:115:SER:O	52:a:35:G:O2'	2.12	0.67
52:a:68:G:C5	52:a:69:G:H1'	2.30	0.67
53:A:1918:A:O2'	53:A:1920:C:N4	2.27	0.67
33:I:130:GLY:O	53:A:1088:A:N6	2.27	0.67
52:a:843:U:OP1	52:a:846:G:N2	2.27	0.67
56:9:29:G:H1	56:9:41:C:N4	1.92	0.67
56:9:51:U:H3	56:9:63:G:H1	1.39	0.67
12:m:86:TYR:OH	12:m:90:ARG:NH2	2.27	0.67
29:E:161:ALA:HB1	29:E:167:VAL:HG11	1.76	0.67
43:S:2:GLU:HA	43:S:108:SER:HB3	1.77	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:l:121:ARG:NH1	52:a:501:C:OP2	2.27	0.67
25:4:5:ALA:HB3	53:A:2466:C:H5'	1.77	0.67
33:I:116:MET:HE2	33:I:124:MET:HB3	1.76	0.67
52:a:517:G:N1	52:a:533:A:OP2	2.24	0.67
53:A:117:G:OP2	53:A:119:A:O2'	2.10	0.67
53:A:271:G:C4	53:A:367:G:N2	2.62	0.67
53:A:2375:G:N2	53:A:2378:A:OP2	2.26	0.67
56:9:26:A:N7	56:9:27:G:N3	2.42	0.67
32:H:30:LEU:O	32:H:34:GLY:N	2.26	0.67
56:8:20:U:H4'	56:8:21:A:OP1	1.93	0.67
56:9:26:A:H5'	56:9:27:G:OP2	1.93	0.67
5:f:37:HIS:NE2	5:f:65:GLU:OE1	2.21	0.67
7:h:9:ASP:O	7:h:13:ARG:HG2	1.94	0.67
32:H:4:ILE:HD11	32:H:44:ILE:HG22	1.75	0.67
35:K:7:MET:HE1	35:K:44:LYS:HE3	1.77	0.67
39:O:102:ARG:N	54:B:49:C:OP1	2.27	0.67
2:c:151:VAL:HG12	2:c:200:VAL:HG22	1.74	0.67
11:l:24:LEU:HG	11:l:25:GLU:HG3	1.77	0.67
32:H:94:ILE:HA	32:H:114:GLU:HA	1.76	0.67
53:A:548:G:O2'	53:A:549:G:N2	2.27	0.67
53:A:1068:G:O2'	53:A:1070:A:N6	2.28	0.67
1:b:182:VAL:H	1:b:196:ASP:HB2	1.60	0.67
33:I:135:MET:SD	53:A:1063:G:O2'	2.53	0.67
7:h:106:THR:HG22	7:h:108:LYS:H	1.60	0.66
20:u:34:ARG:HG2	20:u:35:ARG:H	1.61	0.66
52:a:1377:A:O2'	52:a:1379:G:N7	2.28	0.66
56:9:19:G:OP1	56:9:60:U:N3	2.28	0.66
26:5:31:LYS:NZ	26:5:234:ASN:HD22	1.92	0.66
28:D:179:ARG:HB3	28:D:188:LEU:HD12	1.75	0.66
53:A:1689:A:OP2	53:A:1698:A:N6	2.25	0.66
1:b:166:ASP:HA	1:b:169:HIS:HB2	1.77	0.66
3:d:102:VAL:HG13	3:d:107:PHE:HB2	1.77	0.66
3:d:190:ASP:OD1	3:d:191:LEU:N	2.27	0.66
7:h:15:ARG:NH1	52:a:875:U:O2'	2.29	0.66
9:j:80:THR:HG22	9:j:82:LYS:H	1.60	0.66
34:J:35:ARG:HA	34:J:40:HIS:CD2	2.29	0.66
46:V:35:GLU:OE2	46:V:93:ARG:NH1	2.20	0.66
48:X:20:ALA:HA	56:9:75:C:H41	1.58	0.66
52:a:1160:G:O6	52:a:1182:G:N1	2.18	0.66
53:A:1288:G:OP2	53:A:1288:G:N2	2.27	0.66
6:g:136:LYS:NZ	6:g:140:ASP:OD2	2.28	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:G:121:THR:OG1	31:G:133:LYS:O	2.13	0.66
53:A:972:A:N1	53:A:973:A:N6	2.43	0.66
53:A:2443:C:H2'	53:A:2444:G:H8	1.60	0.66
11:l:112:GLN:N	52:a:538:G:OP1	2.27	0.66
28:D:173:GLN:NE2	53:A:2771:C:O2'	2.29	0.66
52:a:462:G:N1	52:a:470:C:N3	2.41	0.66
52:a:1086:U:O2'	52:a:1087:G:O4'	2.08	0.66
8:i:38:TYR:HD2	8:i:39:PHE:CD2	2.13	0.66
26:5:167:LYS:HB2	53:A:2121:G:H1'	1.78	0.66
29:E:97:ASN:ND2	53:A:658:U:O2	2.28	0.66
33:I:89:SER:HB2	53:A:1063:G:H21	1.60	0.66
1:b:156:LEU:HB2	1:b:180:ILE:HD11	1.78	0.66
6:g:16:PRO:HG3	8:i:43:THR:HG23	1.78	0.66
40:P:91:VAL:HG11	40:P:96:LEU:HD21	1.77	0.66
52:a:711:G:H2'	52:a:712:A:C8	2.31	0.66
53:A:1275:A:N1	53:A:1295:C:O2'	2.29	0.66
34:J:17:VAL:HG22	34:J:139:VAL:HA	1.78	0.66
53:A:1128:G:N7	53:A:2489:U:O2'	2.29	0.66
53:A:2114:A:O4'	53:A:2169:A:N6	2.22	0.66
1:b:76:SER:O	1:b:92:ASN:ND2	2.28	0.66
10:k:64:GLN:HG3	10:k:99:ALA:HB2	1.78	0.66
10:k:118:HIS:CD2	52:a:675:A:H1'	2.31	0.66
13:n:13:ARG:NH1	52:a:980:C:O2'	2.29	0.66
52:a:1253:G:N2	52:a:1355:G:O3'	2.25	0.66
53:A:272:A:N1	53:A:365:U:O4	2.27	0.66
53:A:307:G:N1	53:A:310:A:OP2	2.29	0.66
53:A:1285:A:H61	53:A:1329:U:H5'	1.61	0.66
53:A:2473:U:O5'	53:A:2475:C:N4	2.29	0.66
53:A:2589:A:H2'	53:A:2590:A:H8	1.59	0.66
41:Q:2:ARG:HB2	53:A:1248:G:C5	2.31	0.65
46:V:21:ARG:NH1	54:B:77:U:OP1	2.29	0.65
52:a:250:A:N7	52:a:274:A:N6	2.43	0.65
52:a:674:G:O6	52:a:716:A:N6	2.27	0.65
53:A:219:A:N3	53:A:234:U:O2'	2.28	0.65
53:A:833:A:H2'	53:A:834:G:H8	1.60	0.65
41:Q:65:ASN:ND2	53:A:1010:A:OP1	2.28	0.65
48:X:2:ARG:NH2	53:A:1365:A:OP1	2.29	0.65
52:a:571:U:O4	52:a:864:A:N6	2.29	0.65
52:a:921:U:O4	52:a:1396:A:N6	2.29	0.65
53:A:155:A:H2'	53:A:156:A:C8	2.30	0.65
53:A:242:G:O2'	53:A:254:G:O6	2.12	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:2163:A:OP2	53:A:2171:A:O2'	2.08	0.65
56:9:10:G:N1	56:9:25:C:C2	2.63	0.65
26:5:18:THR:HG23	26:5:223:ALA:H	1.61	0.65
53:A:2450:A:N6	53:A:2501:C:O2	2.30	0.65
24:3:29:ARG:NH2	53:A:2394:C:OP2	2.29	0.65
43:S:61:ASN:ND2	53:A:495:G:N3	2.45	0.65
52:a:201:G:H2'	52:a:202:G:C8	2.31	0.65
53:A:1105:U:H2'	53:A:1106:G:H8	1.61	0.65
53:A:2050:C:N4	53:A:2051:A:N1	2.45	0.65
11:l:12:ARG:NH1	52:a:562:U:O2	2.29	0.65
44:T:38:ALA:HB1	44:T:43:ILE:HG22	1.78	0.65
47:W:24:ARG:HH12	47:W:26:GLY:HA2	1.62	0.65
56:8:21:A:N1	56:8:48:C:C6	2.52	0.65
3:d:40:GLN:OE1	52:a:540:G:N2	2.29	0.65
3:d:76:TYR:HE1	3:d:201:VAL:HG13	1.62	0.65
3:d:110:THR:HG23	3:d:113:GLU:H	1.61	0.65
6:g:15:ASP:O	6:g:19:GLY:N	2.29	0.65
46:V:14:LYS:NZ	54:B:80:U:O4	2.29	0.65
23:2:12:ARG:HE	23:2:44:VAL:HG11	1.61	0.65
33:I:124:MET:O	33:I:127:SER:OG	2.12	0.65
38:N:33:ILE:HD13	38:N:114:GLU:HB3	1.78	0.65
42:R:75:VAL:HG22	42:R:86:GLN:HG2	1.77	0.65
53:A:1266:G:O2'	53:A:2012:G:O6	2.15	0.65
53:A:1940:U:N3	53:A:1965:C:OP2	2.30	0.65
6:g:113:ASP:OD2	6:g:122:ASN:ND2	2.25	0.65
12:m:29:ARG:NH2	12:m:63:PHE:HB2	2.12	0.65
15:p:35:ARG:HH22	52:a:626:G:H5''	1.61	0.64
53:A:272:A:C2	53:A:273:G:N7	2.60	0.64
53:A:2121:G:O6	53:A:2176:A:N6	2.23	0.64
53:A:2809:A:OP2	53:A:2890:G:N1	2.28	0.64
38:N:40:LYS:NZ	53:A:1651:G:OP1	2.27	0.64
53:A:2449:U:O2'	53:A:2501:C:N4	2.30	0.64
35:K:61:VAL:HG23	35:K:87:LEU:HD11	1.80	0.64
53:A:1324:G:O2'	53:A:1326:U:OP2	2.15	0.64
51:x:560:ARG:NH1	53:A:2602:A:N7	2.45	0.64
52:a:236:A:H2'	52:a:237:G:H8	1.62	0.64
12:m:16:VAL:HG23	12:m:17:ILE:HG13	1.80	0.64
12:m:18:ALA:HB2	12:m:45:ILE:HD11	1.78	0.64
52:a:147:G:H2'	52:a:148:G:C8	2.32	0.64
53:A:833:A:H2'	53:A:834:G:C8	2.32	0.64
53:A:2659:G:O2'	53:A:2661:G:N7	2.28	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:1:5:ARG:NH1	53:A:2285:C:OP2	2.30	0.64
33:I:56:VAL:HG21	33:I:68:PHE:HB2	1.79	0.64
42:R:4:VAL:HG12	42:R:40:MET:HB3	1.79	0.64
53:A:271:G:H4'	53:A:272:A:OP2	1.97	0.64
53:A:1057:A:N6	53:A:1087:G:OP2	2.30	0.64
53:A:2788:C:O2'	53:A:2809:A:N3	2.29	0.64
26:5:60:ARG:HD3	26:5:164:ARG:HG3	1.80	0.64
43:S:55:ILE:HG23	43:S:66:ILE:HG21	1.79	0.64
53:A:910:A:N3	53:A:2264:C:O2'	2.30	0.64
17:r:63:ARG:HB3	17:r:70:TYR:CZ	2.32	0.64
27:C:206:LYS:NZ	53:A:729:G:OP2	2.31	0.64
36:L:93:ASN:O	36:L:95:LEU:N	2.31	0.64
37:M:53:MET:HE3	37:M:63:ILE:HD13	1.80	0.64
53:A:2474:U:OP2	53:A:2475:C:N4	2.27	0.64
56:8:43:C:N4	56:8:44:G:O6	2.31	0.64
4:e:16:ILE:HD13	4:e:110:ALA:HA	1.78	0.64
32:H:102:ALA:HA	32:H:105:ALA:HB3	1.78	0.64
52:a:96:U:N3	52:a:97:G:O6	2.31	0.64
53:A:279:A:N6	53:A:361:G:H1'	2.13	0.64
22:1:25:ASN:OD1	22:1:26:LYS:N	2.31	0.64
26:5:77:VAL:HG23	26:5:93:GLU:HG2	1.80	0.64
41:Q:2:ARG:NH2	53:A:446:G:OP1	2.30	0.64
48:X:16:ASN:ND2	48:X:24:THR:OG1	2.29	0.64
52:a:1414:U:O2	52:a:1487:G:N2	2.30	0.64
53:A:1477:A:N6	53:A:1514:G:O2'	2.31	0.64
53:A:1794:A:H2'	53:A:1795:C:H6	1.62	0.64
49:Y:49:ASP:OD1	49:Y:52:ARG:NH2	2.32	0.63
52:a:1013:G:N2	52:a:1016:A:OP2	2.27	0.63
8:i:34:SER:OG	8:i:36:GLU:OE1	2.12	0.63
8:i:130:ARG:NH1	56:8:35:A:OP1	2.31	0.63
34:J:96:ARG:NH1	53:A:2640:G:OP1	2.30	0.63
35:K:43:ILE:HD12	35:K:56:ASP:HB2	1.79	0.63
39:O:29:HIS:CE1	54:B:7:G:H5'	2.34	0.63
43:S:18:ARG:HH21	53:A:518:G:H4'	1.62	0.63
52:a:632:U:H5''	52:a:633:G:C8	2.32	0.63
53:A:203:A:N6	53:A:204:A:N1	2.45	0.63
53:A:880:G:O2'	53:A:882:G:N7	2.27	0.63
4:e:24:THR:HA	4:e:29:ARG:HA	1.81	0.63
11:l:12:ARG:NE	52:a:564:C:OP2	2.29	0.63
19:t:42:GLY:HA2	19:t:86:LEU:HD21	1.80	0.63
25:4:4:ARG:HG3	53:A:2466:C:OP1	1.98	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:a:921:U:C6	52:a:922:G:C8	2.86	0.63
52:a:1134:G:N2	52:a:1138:G:O6	2.29	0.63
53:A:1309:G:HO2'	53:A:1611:C:HO2'	1.46	0.63
53:A:2106:U:N3	53:A:2107:G:N7	2.46	0.63
55:7:19:A:N1	55:7:20:A:N6	2.47	0.63
41:Q:36:GLN:NE2	53:A:1252:G:H22	1.97	0.63
52:a:652:U:O2'	52:a:752:G:N2	2.31	0.63
52:a:1047:G:H21	52:a:1215:G:H1'	1.63	0.63
2:c:42:TYR:HD2	2:c:43:LEU:HD12	1.63	0.63
16:q:19:LYS:H	16:q:51:ASN:HD21	1.45	0.63
30:F:12:VAL:HG23	30:F:27:VAL:HG21	1.81	0.63
30:F:51:ASN:ND2	30:F:146:ASP:OD2	2.32	0.63
36:L:39:LYS:NZ	53:A:833:A:OP2	2.23	0.63
36:L:95:LEU:HD13	36:L:100:ILE:HD11	1.80	0.63
37:M:123:LYS:HD2	53:A:2484:G:H1'	1.81	0.63
43:S:4:ILE:HG22	43:S:106:VAL:HG22	1.80	0.63
49:Y:56:LEU:O	49:Y:58:ASN:N	2.31	0.63
52:a:351:G:OP2	52:a:351:G:N2	2.31	0.63
53:A:272:A:O2'	53:A:273:G:C8	2.33	0.63
53:A:332:A:O2'	53:A:334:C:OP2	2.13	0.63
53:A:2508:G:H2'	53:A:2509:G:H8	1.62	0.63
53:A:2644:G:H3'	53:A:2645:G:H21	1.64	0.63
1:b:19:THR:O	1:b:20:ARG:NH1	2.32	0.63
26:5:177:LYS:HG3	26:5:179:ASP:H	1.63	0.63
33:I:89:SER:OG	33:I:135:MET:O	2.14	0.63
45:U:13:LEU:O	45:U:18:LYS:NZ	2.25	0.63
47:W:64:GLY:HA2	47:W:84:GLU:HG2	1.81	0.63
30:F:72:SER:HB2	30:F:80:GLN:N	2.14	0.63
53:A:287:G:H1	53:A:353:C:H42	1.47	0.63
53:A:1358:G:N1	53:A:1372:U:OP2	2.27	0.63
53:A:2116:G:N1	53:A:2147:A:O2'	2.22	0.63
29:E:161:ALA:HA	29:E:164:LEU:HD13	1.80	0.63
4:e:82:GLN:HG3	4:e:149:SER:HA	1.80	0.62
9:j:28:THR:HG21	9:j:90:LEU:HD13	1.81	0.62
10:k:122:ARG:HE	20:u:36:GLU:HG3	1.63	0.62
53:A:948:C:O2	53:A:984:A:O2'	2.16	0.62
53:A:269:C:C2	53:A:270:A:H8	2.11	0.62
56:8:21:A:N6	56:8:46:G:C8	2.61	0.62
2:c:85:GLU:OE1	2:c:88:ARG:NH1	2.33	0.62
6:g:75:VAL:HG11	6:g:148:ASN:HD22	1.63	0.62
13:n:28:LYS:HB3	13:n:48:LEU:HD12	1.80	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:5:67:HIS:NE2	26:5:187:GLU:OE1	2.32	0.62
26:5:75:VAL:HG22	26:5:113:VAL:HG21	1.81	0.62
29:E:16:GLU:O	29:E:20:GLY:N	2.31	0.62
31:G:175:LYS:NZ	53:A:2659:G:O3'	2.32	0.62
43:S:13:SER:O	43:S:15:GLN:N	2.31	0.62
52:a:921:U:C5	52:a:922:G:N7	2.65	0.62
3:d:85:ASN:O	3:d:89:ASN:ND2	2.32	0.62
26:5:31:LYS:HZ1	26:5:234:ASN:HD22	1.47	0.62
52:a:341:C:N3	52:a:342:C:N4	2.47	0.62
52:a:999:C:N3	52:a:1042:A:N6	2.47	0.62
52:a:1033:G:H2'	52:a:1034:G:H8	1.63	0.62
52:a:1261:A:N6	52:a:1274:A:O2'	2.32	0.62
53:A:134:G:O6	53:A:144:A:N6	2.32	0.62
53:A:1721:G:N2	53:A:1740:G:O6	2.30	0.62
53:A:2796:U:H3	53:A:2799:A:N6	1.97	0.62
3:d:8:LYS:HD3	3:d:21:LEU:HB3	1.81	0.62
8:i:47:VAL:HG21	8:i:76:ALA:HB1	1.80	0.62
27:C:161:VAL:HG11	27:C:173:LEU:HD23	1.81	0.62
31:G:138:GLN:HE22	53:A:2760:C:H1'	1.64	0.62
45:U:12:VAL:HA	45:U:69:VAL:HG12	1.81	0.62
46:V:30:ILE:HG12	46:V:91:PHE:HB2	1.80	0.62
52:a:327:A:O2'	52:a:328:C:O4'	2.13	0.62
52:a:936:C:H1'	52:a:1382:C:H42	1.65	0.62
53:A:281:C:H2'	53:A:282:A:H8	1.63	0.62
53:A:477:A:N6	53:A:500:G:O2'	2.32	0.62
2:c:120:ILE:HD11	2:c:137:ALA:HB2	1.80	0.62
49:Y:56:LEU:HA	49:Y:59:GLU:HG2	1.82	0.62
53:A:1062:G:H2'	53:A:1063:G:H8	1.64	0.62
53:A:2133:G:N2	53:A:2159:G:O2'	2.32	0.62
3:d:100:ASN:OD1	3:d:111:ARG:NH1	2.33	0.62
8:i:10:GLY:HA2	8:i:81:HIS:CD2	2.33	0.62
15:p:54:LEU:HD23	15:p:57:ILE:HD12	1.82	0.62
52:a:641:U:O2	52:a:643:C:N4	2.32	0.62
53:A:2126:A:H4'	53:A:2127:G:H5'	1.80	0.62
5:f:18:VAL:HG21	5:f:58:HIS:CD2	2.35	0.62
11:l:50:ARG:HH22	52:a:522:C:H41	1.45	0.62
14:o:38:HIS:NE2	52:a:740:U:OP1	2.31	0.62
30:F:105:ILE:HD12	30:F:138:PRO:HG2	1.81	0.62
52:a:711:G:H2'	52:a:712:A:H8	1.63	0.62
52:a:975:A:N1	52:a:1366:C:O2'	2.29	0.62
52:a:1095:U:OP1	52:a:1108:G:N2	2.33	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:9:25:C:C2'	56:9:26:A:H4'	2.23	0.62
10:k:119:ASN:ND2	52:a:717:U:O3'	2.31	0.62
22:1:25:ASN:OD1	22:1:27:ARG:N	2.32	0.62
26:5:84:ALA:HA	26:5:87:ALA:HB3	1.81	0.62
53:A:1184:U:H2'	53:A:1185:G:H8	1.65	0.62
54:B:70:C:H2'	54:B:71:C:C6	2.35	0.62
10:k:36:ASP:OD1	10:k:40:ASN:N	2.33	0.62
27:C:160:TYR:HB3	27:C:193:GLU:HG2	1.81	0.62
41:Q:94:LEU:HG	42:R:4:VAL:HG21	1.82	0.62
46:V:6:ALA:HB3	46:V:65:VAL:HB	1.80	0.62
52:a:235:C:H2'	52:a:236:A:C8	2.34	0.62
14:o:54:ARG:HH12	52:a:579:A:HO2'	1.48	0.61
27:C:170:TYR:OH	27:C:264:LYS:NZ	2.33	0.61
32:H:7:ASP:OD2	32:H:10:ALA:N	2.33	0.61
33:I:19:PRO:HG2	33:I:22:PRO:HD2	1.83	0.61
37:M:10:ARG:NH1	53:A:2278:A:OP1	2.32	0.61
53:A:488:G:O2'	53:A:491:G:O6	2.18	0.61
56:9:16:U:O2'	56:9:18:G:OP1	2.18	0.61
56:9:72:C:H2'	56:9:73:A:H8	1.65	0.61
3:d:202:GLU:O	52:a:8:A:N6	2.32	0.61
52:a:458:U:H3	52:a:474:G:H22	1.48	0.61
53:A:1862:G:H1	53:A:1880:U:H3	1.48	0.61
53:A:2815:C:H2'	53:A:2816:G:H8	1.66	0.61
31:G:83:THR:HB	31:G:84:LYS:HG2	1.82	0.61
53:A:5:A:H2'	53:A:6:A:H8	1.65	0.61
12:m:9:ILE:HG12	12:m:11:ASP:HB2	1.83	0.61
27:C:259:ASN:O	27:C:261:ARG:N	2.32	0.61
22:1:33:LEU:HD21	22:1:35:LEU:HG	1.82	0.61
28:D:168:GLU:HG3	28:D:169:ARG:H	1.65	0.61
29:E:44:ARG:HH12	53:A:1248:G:P	2.23	0.61
48:X:69:GLU:O	48:X:71:ARG:N	2.34	0.61
53:A:160:A:H2'	53:A:161:A:C8	2.36	0.61
9:j:11:LYS:HB3	9:j:71:LEU:HD23	1.82	0.61
10:k:22:HIS:CD2	52:a:707:U:H4'	2.35	0.61
27:C:86:ARG:HH11	53:A:1817:G:H5''	1.66	0.61
31:G:23:ILE:HG21	31:G:71:LEU:HD21	1.81	0.61
32:H:2:GLN:HE22	32:H:20:ASN:HB2	1.65	0.61
53:A:269:C:N4	53:A:270:A:H62	1.98	0.61
33:I:24:GLY:H	33:I:27:LEU:HG	1.66	0.61
40:P:88:ARG:HH22	40:P:112:ARG:HB3	1.65	0.61
43:S:88:ARG:NH1	53:A:748:G:OP1	2.32	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:a:533:A:O2'	52:a:535:A:OP2	2.17	0.61
53:A:233:A:H61	53:A:428:A:H61	1.48	0.61
53:A:1713:A:N6	53:A:1746:A:N1	2.48	0.61
10:k:98:ARG:HH12	20:u:14:VAL:HG23	1.65	0.61
53:A:720:U:H2'	53:A:721:A:C8	2.35	0.61
26:5:44:VAL:HG21	26:5:212:VAL:HG13	1.82	0.61
52:a:462:G:O6	52:a:470:C:N4	2.29	0.61
52:a:1036:A:N7	52:a:1037:C:N4	2.49	0.61
52:a:1301:U:O2'	52:a:1303:C:OP2	2.18	0.61
53:A:223:A:O2'	53:A:420:C:O2	2.18	0.61
53:A:1383:A:H2'	53:A:1384:A:C8	2.36	0.61
53:A:1968:G:O2'	53:A:1969:A:O4'	2.19	0.61
30:F:39:VAL:HG11	30:F:49:LEU:HD13	1.82	0.61
37:M:110:GLU:OE2	37:M:114:ARG:NE	2.34	0.61
10:k:23:ILE:HD11	10:k:86:VAL:HG22	1.83	0.60
17:r:64:TYR:HE1	52:a:734:G:H21	1.49	0.60
27:C:65:ASP:OD2	27:C:101:ARG:NH1	2.33	0.60
52:a:1432:G:O2'	52:a:1468:A:N6	2.34	0.60
53:A:2795:C:H42	53:A:2801:G:H1	1.48	0.60
56:8:51:U:H3	56:8:63:G:H1	1.49	0.60
4:e:76:LEU:HD23	4:e:147:MET:HE1	1.83	0.60
7:h:13:ARG:NH2	7:h:26:THR:O	2.34	0.60
8:i:12:ARG:NH2	52:a:1347:G:O6	2.23	0.60
26:5:52:ALA:HB2	26:5:56:ASP:H	1.65	0.60
26:5:74:ARG:HH12	53:A:2126:A:P	2.24	0.60
32:H:7:ASP:HB2	32:H:35:LYS:HB3	1.82	0.60
8:i:123:ARG:NH1	52:a:1350:A:OP1	2.35	0.60
16:q:61:ILE:HG22	16:q:75:LEU:HA	1.82	0.60
26:5:135:GLY:N	53:A:2124:G:O6	2.33	0.60
27:C:257:ARG:NH1	27:C:263:ASP:OD1	2.34	0.60
37:M:71:LYS:HD3	37:M:95:LEU:HD13	1.82	0.60
52:a:153:C:H42	52:a:168:G:H1	1.50	0.60
52:a:517:G:N2	52:a:530:G:OP1	2.32	0.60
52:a:575:G:H4'	52:a:576:C:H5''	1.84	0.60
53:A:746:U:O2'	53:A:2611:C:O2'	2.17	0.60
52:a:891:U:H2'	52:a:892:A:C8	2.36	0.60
52:a:1090:U:O2'	52:a:1171:A:O2'	2.19	0.60
8:i:36:GLU:HB3	8:i:41:ARG:HE	1.66	0.60
26:5:108:GLU:OE2	53:A:2162:G:N1	2.32	0.60
29:E:44:ARG:NH1	53:A:1248:G:OP1	2.35	0.60
34:J:36:LEU:HD11	34:J:121:LYS:HB2	1.83	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:c:153:VAL:HG12	2:c:198:VAL:HG22	1.82	0.60
6:g:72:THR:HG22	6:g:73:VAL:HG13	1.82	0.60
11:l:31:ARG:NH2	52:a:362:G:OP2	2.35	0.60
13:n:74:LEU:HD12	13:n:84:VAL:HG21	1.84	0.60
19:t:3:ASN:OD1	19:t:4:ILE:N	2.35	0.60
44:T:57:VAL:O	44:T:86:THR:OG1	2.20	0.60
52:a:208:U:H2'	52:a:209:U:H5''	1.83	0.60
52:a:393:A:H2'	52:a:394:G:H8	1.66	0.60
52:a:1162:C:H42	52:a:1174:G:H1	1.48	0.60
53:A:1044:C:O2'	53:A:1111:A:N1	2.24	0.60
53:A:2114:A:C4	53:A:2115:G:H1'	2.37	0.60
28:D:161:MET:SD	53:A:2619:C:O2'	2.57	0.60
43:S:11:ARG:NH2	53:A:1322:A:H5'	2.17	0.60
47:W:23:LYS:HG2	47:W:24:ARG:H	1.66	0.60
53:A:1009:A:N3	53:A:1153:C:O2'	2.34	0.60
1:b:182:VAL:HB	1:b:196:ASP:H	1.66	0.60
13:n:9:ARG:NH2	52:a:1217:C:OP2	2.23	0.60
35:K:70:ARG:HG2	35:K:76:VAL:HG22	1.84	0.60
54:B:30:C:H1'	54:B:57:A:H61	1.66	0.60
56:9:26:A:H8	56:9:27:G:C4	1.98	0.60
10:k:53:ARG:NH2	52:a:691:G:O6	2.35	0.60
38:N:64:ARG:NH2	53:A:2706:A:O2'	2.34	0.60
47:W:23:LYS:HE2	53:A:855:G:N2	2.15	0.60
52:a:1323:G:H2'	52:a:1324:A:C8	2.36	0.60
52:a:1530:G:N2	52:a:1531:A:N1	2.49	0.60
8:i:11:ARG:NH2	52:a:1119:C:OP2	2.34	0.60
27:C:43:ASN:OD1	27:C:44:ASN:N	2.34	0.60
32:H:68:ARG:HH11	32:H:110:VAL:HG22	1.67	0.60
43:S:59:GLU:HA	43:S:64:ALA:HA	1.83	0.60
52:a:86:G:N2	52:a:88:U:O4	2.35	0.60
52:a:279:A:H5''	52:a:280:C:H3'	1.84	0.60
47:W:21:GLY:HA2	47:W:25:PHE:CD1	2.37	0.59
52:a:43:C:H2'	52:a:44:A:H8	1.67	0.59
53:A:2557:G:H2'	53:A:2558:C:C6	2.37	0.59
3:d:62:ARG:NH1	3:d:69:GLU:OE2	2.35	0.59
35:K:11:ALA:O	35:K:100:PHE:N	2.34	0.59
40:P:20:ARG:NH1	53:A:2849:U:O4	2.35	0.59
48:X:75:GLU:HG3	48:X:77:TYR:H	1.66	0.59
53:A:2114:A:N1	53:A:2117:A:N6	2.50	0.59
3:d:124:MET:HE3	3:d:146:ARG:HG2	1.83	0.59
5:f:40:GLU:OE1	5:f:42:TRP:NE1	2.28	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:l:26:ALA:O	52:a:553:A:O2'	2.19	0.59
12:m:25:VAL:HA	52:a:1329:A:H5''	1.85	0.59
11:l:25:GLU:OE1	11:l:30:LYS:NZ	2.34	0.59
24:3:7:ARG:NH2	53:A:244:A:OP2	2.33	0.59
29:E:98:LYS:HB3	29:E:102:ARG:HH22	1.67	0.59
52:a:1166:G:N1	52:a:1169:A:OP2	2.35	0.59
53:A:1153:C:H2'	53:A:1154:G:O4'	2.02	0.59
38:N:12:ARG:O	38:N:17:ARG:NH2	2.36	0.59
44:T:64:LYS:NZ	53:A:1601:G:OP1	2.34	0.59
52:a:358:U:H2'	52:a:359:G:H8	1.67	0.59
52:a:842:U:O2'	52:a:846:G:O6	2.19	0.59
53:A:1038:G:H2'	53:A:1039:A:H8	1.67	0.59
53:A:2048:G:N2	53:A:2621:G:N3	2.51	0.59
53:A:287:G:H2'	53:A:288:U:C6	2.36	0.59
34:J:44:TYR:HB2	41:Q:63:ARG:HB3	1.85	0.59
48:X:3:VAL:HG22	48:X:10:ARG:HG2	1.84	0.59
52:a:891:U:H2'	52:a:892:A:H8	1.68	0.59
1:b:13:VAL:HB	1:b:207:ARG:HD2	1.85	0.59
24:3:24:LYS:HB2	24:3:46:LYS:HE2	1.83	0.59
24:3:39:ARG:NE	53:A:2362:C:OP1	2.36	0.59
27:C:180:MET:HB2	27:C:267:VAL:HB	1.85	0.59
32:H:3:VAL:HA	32:H:39:ALA:H	1.68	0.59
35:K:2:ILE:HD12	35:K:8:LEU:HD21	1.84	0.59
46:V:29:ILE:HA	46:V:39:ALA:HA	1.84	0.59
46:V:76:ASP:OD1	46:V:77:VAL:N	2.36	0.59
52:a:58:C:O2'	52:a:388:G:N7	2.32	0.59
52:a:1087:G:H22	52:a:1099:G:H1'	1.67	0.59
6:g:28:ASN:OD1	6:g:36:LYS:NZ	2.35	0.59
8:i:84:THR:HG21	8:i:103:PHE:HB3	1.85	0.59
35:K:23:LYS:NZ	53:A:2561:U:O2	2.35	0.59
53:A:1345:C:H42	53:A:1601:G:H1	1.51	0.59
27:C:155:ARG:NH1	53:A:1818:U:OP2	2.36	0.59
29:E:5:LEU:HD21	29:E:122:GLU:H	1.67	0.59
39:O:71:ALA:HB1	39:O:106:LEU:HD23	1.84	0.59
11:l:73:ASN:CG	11:l:74:LEU:H	2.11	0.58
33:I:79:LEU:HD21	33:I:105:LEU:HD21	1.85	0.58
52:a:75:G:N2	52:a:96:U:O2'	2.36	0.58
52:a:674:G:H1	52:a:717:U:H3	1.51	0.58
52:a:948:C:H2'	52:a:949:A:H8	1.67	0.58
53:A:593:U:H2'	53:A:594:U:H6	1.67	0.58
53:A:1435:G:H2'	53:A:1436:G:H8	1.68	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:1696:G:N2	53:A:1977:A:HO2'	2.01	0.58
7:h:4:GLN:NE2	52:a:586:C:O2	2.36	0.58
27:C:270:ARG:NH2	53:A:1798:U:OP2	2.35	0.58
47:W:18:LYS:HG2	53:A:2270:A:H5'	1.85	0.58
52:a:40:C:H2'	52:a:41:G:C8	2.36	0.58
52:a:261:U:N3	52:a:264:C:OP2	2.33	0.58
52:a:1114:C:H42	52:a:1186:G:H1	1.49	0.58
52:a:1376:U:H2'	52:a:1377:A:C8	2.38	0.58
52:a:1501:C:OP2	52:a:1504:G:O2'	2.16	0.58
53:A:351:C:H2'	53:A:352:A:H8	1.68	0.58
53:A:1738:G:HO2'	53:A:1739:A:H8	1.51	0.58
53:A:1889:A:N3	53:A:2086:U:O2'	2.33	0.58
53:A:1934:C:H2'	53:A:1935:G:H8	1.66	0.58
54:B:34:A:N6	54:B:44:G:O2'	2.34	0.58
54:B:116:G:H2'	54:B:117:G:H8	1.68	0.58
4:e:101:GLU:HA	4:e:122:ASN:ND2	2.17	0.58
9:j:62:ARG:NH1	52:a:1366:C:O3'	2.31	0.58
32:H:97:ARG:HH22	32:H:111:ALA:HB1	1.68	0.58
33:I:17:ALA:HB3	33:I:38:CYS:HA	1.84	0.58
52:a:142:G:H3'	52:a:143:A:H8	1.67	0.58
52:a:1427:C:H2'	52:a:1428:A:C8	2.38	0.58
53:A:690:G:N2	53:A:773:U:O2	2.37	0.58
11:l:83:ARG:NH1	52:a:551:U:O2'	2.35	0.58
26:5:193:LEU:HD23	26:5:196:LEU:HD12	1.84	0.58
28:D:111:GLY:HA3	28:D:194:PRO:HG2	1.86	0.58
53:A:269:C:H2'	53:A:270:A:C8	2.37	0.58
53:A:1038:G:H2'	53:A:1039:A:C8	2.37	0.58
53:A:2169:A:H2'	53:A:2170:A:C8	2.39	0.58
3:d:13:ARG:NH1	3:d:37:ALA:O	2.37	0.58
10:k:84:VAL:HB	10:k:110:ILE:HA	1.84	0.58
32:H:26:ALA:O	32:H:28:ASN:N	2.36	0.58
45:U:68:ASN:ND2	53:A:329:G:OP2	2.31	0.58
52:a:52:C:H42	52:a:359:G:H1	1.52	0.58
52:a:940:C:N4	52:a:941:G:O6	2.36	0.58
52:a:1493:A:H3'	53:A:1913:A:N6	2.18	0.58
9:j:78:GLU:OE2	9:j:80:THR:OG1	2.22	0.58
39:O:117:PHE:OXT	53:A:2377:A:O2'	2.21	0.58
41:Q:23:TYR:CD1	53:A:533:G:H5'	2.39	0.58
52:a:1096:C:HO2'	52:a:1170:A:HO2'	1.39	0.58
53:A:593:U:H2'	53:A:594:U:C6	2.39	0.58
53:A:755:U:H2'	53:A:756:A:H8	1.68	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:1069:A:N3	53:A:1073:A:N6	2.52	0.58
53:A:1532:A:H1'	53:A:1540:G:H1	1.69	0.58
56:9:11:C:N4	56:9:25:C:H42	1.98	0.58
1:b:96:LEU:HB2	1:b:99:MET:HE2	1.86	0.58
4:e:107:ALA:HB1	4:e:111:MET:HG2	1.86	0.58
27:C:58:LYS:HB3	53:A:1568:G:H4'	1.86	0.58
47:W:50:VAL:H	47:W:61:LYS:HE2	1.68	0.58
53:A:600:G:O6	53:A:656:G:N1	2.36	0.58
1:b:163:ILE:HG12	1:b:164:ASP:H	1.68	0.58
7:h:123:GLY:H	52:a:599:C:H4'	1.69	0.58
18:s:51:VAL:HG21	18:s:71:LEU:HB3	1.86	0.58
29:E:31:VAL:HG21	29:E:104:ALA:HB2	1.85	0.58
50:Z:8:GLN:HB3	50:Z:32:GLY:H	1.68	0.58
52:a:766:A:OP2	52:a:812:G:N2	2.37	0.58
53:A:52:A:H2'	53:A:53:A:C8	2.38	0.58
56:9:26:A:N7	56:9:27:G:C5	2.63	0.58
1:b:110:ILE:HG22	1:b:114:LYS:HE3	1.84	0.58
10:k:119:ASN:ND2	52:a:718:A:O5'	2.36	0.58
15:p:4:ILE:HG13	15:p:21:VAL:HG22	1.86	0.58
15:p:57:ILE:O	15:p:61:VAL:HG23	2.04	0.58
26:5:26:ALA:HB3	26:5:224:VAL:HG22	1.86	0.58
26:5:196:LEU:HA	26:5:199:ALA:HB3	1.85	0.58
27:C:231:HIS:O	27:C:241:LYS:NZ	2.32	0.58
37:M:69:PRO:HA	37:M:94:ALA:HB2	1.85	0.58
52:a:865:A:N3	52:a:918:A:O2'	2.34	0.58
53:A:978:G:HO2'	53:A:1002:G:HO2'	1.52	0.58
53:A:1247:A:N7	53:A:1249:U:N3	2.52	0.58
54:B:93:C:H2'	54:B:94:A:H8	1.68	0.58
6:g:68:ASN:O	6:g:138:ARG:NE	2.37	0.58
11:l:114:ARG:NH2	52:a:501:C:OP1	2.37	0.58
19:t:44:LYS:HB2	19:t:87:ALA:HB2	1.85	0.58
28:D:52:THR:OG1	28:D:53:GLY:N	2.35	0.58
36:L:82:LEU:HD13	36:L:120:VAL:HG11	1.86	0.58
52:a:501:C:O2'	52:a:549:C:O2	2.22	0.58
53:A:879:G:H22	53:A:898:C:H2'	1.69	0.58
53:A:1722:A:H62	53:A:1738:G:H1'	1.69	0.58
53:A:2112:G:N2	53:A:2119:A:O2'	2.36	0.58
9:j:15:HIS:HA	9:j:18:ILE:HG22	1.86	0.57
32:H:131:SER:OG	32:H:140:ALA:N	2.34	0.57
34:J:125:TYR:OH	34:J:132:HIS:NE2	2.37	0.57
36:L:60:ARG:HH21	53:A:2428:G:H21	1.52	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:U:10:VAL:HG12	45:U:71:ILE:HA	1.85	0.57
52:a:977:A:O2'	52:a:979:C:OP2	2.19	0.57
53:A:2023:C:H2'	53:A:2024:G:H8	1.69	0.57
3:d:98:LEU:HD12	3:d:135:TYR:HD2	1.68	0.57
6:g:40:GLU:OE1	8:i:43:THR:OG1	2.22	0.57
8:i:38:TYR:CD2	8:i:39:PHE:HD2	2.18	0.57
15:p:28:ARG:NH1	52:a:390:U:H4'	2.19	0.57
18:s:37:ARG:NH1	52:a:1220:G:OP1	2.34	0.57
31:G:103:ASN:HA	31:G:113:ASP:OD1	2.05	0.57
47:W:31:LEU:HD22	53:A:2354:C:H4'	1.85	0.57
52:a:1040:U:H2'	52:a:1041:G:C8	2.38	0.57
53:A:2287:A:O2'	53:A:2288:A:H2'	2.04	0.57
53:A:2749:A:OP2	53:A:2750:A:O2'	2.19	0.57
14:o:36:ILE:HG23	14:o:56:LEU:HD11	1.86	0.57
26:5:191:ALA:HA	26:5:194:VAL:HG22	1.86	0.57
27:C:216:ARG:NE	53:A:691:C:OP1	2.38	0.57
31:G:51:PHE:CE2	31:G:68:ARG:HA	2.38	0.57
32:H:83:LYS:HB3	32:H:90:LEU:HD22	1.85	0.57
41:Q:57:ARG:NH1	53:A:1154:G:OP2	2.37	0.57
44:T:28:ASN:HB2	44:T:91:GLN:NE2	2.16	0.57
53:A:564:C:H2'	53:A:565:C:H6	1.68	0.57
53:A:624:C:H2'	53:A:625:G:H8	1.69	0.57
53:A:720:U:H2'	53:A:721:A:H8	1.69	0.57
53:A:2185:U:N3	53:A:2186:G:N7	2.52	0.57
12:m:90:ARG:HG2	12:m:97:VAL:HA	1.86	0.57
25:4:11:CYS:SG	25:4:33:HIS:ND1	2.75	0.57
34:J:118:MET:HA	34:J:121:LYS:HE2	1.87	0.57
39:O:106:LEU:HA	39:O:109:ALA:HB3	1.86	0.57
47:W:19:ARG:HA	47:W:34:SER:HA	1.86	0.57
52:a:1451:U:OP2	52:a:1452:C:N4	2.37	0.57
53:A:1417:C:OP1	53:A:1588:G:O2'	2.21	0.57
3:d:26:ARG:NH2	52:a:411:A:OP1	2.37	0.57
5:f:73:GLU:O	5:f:76:THR:OG1	2.18	0.57
8:i:46:MET:O	8:i:50:GLN:N	2.37	0.57
34:J:44:TYR:CD1	41:Q:63:ARG:HD3	2.39	0.57
35:K:71:ARG:HE	35:K:106:GLU:HG3	1.70	0.57
48:X:36:ARG:NH1	53:A:2199:A:OP1	2.36	0.57
52:a:1087:G:N2	52:a:1099:G:N3	2.53	0.57
52:a:1144:G:H21	52:a:1146:A:H62	1.51	0.57
53:A:1296:G:OP1	53:A:2709:G:O2'	2.20	0.57
54:B:66:A:H61	54:B:107:G:H2'	1.70	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:q:19:LYS:H	16:q:51:ASN:ND2	2.02	0.57
27:C:16:VAL:H	27:C:203:VAL:HG12	1.70	0.57
28:D:107:VAL:HG22	28:D:108:ASP:H	1.69	0.57
44:T:69:ARG:HG3	44:T:70:HIS:CD2	2.40	0.57
52:a:784:A:H2'	52:a:785:G:C8	2.39	0.57
52:a:1239:A:H62	52:a:1299:A:N6	2.03	0.57
53:A:84:A:H62	53:A:101:A:H2	1.53	0.57
53:A:1721:G:H1'	53:A:1739:A:N6	2.20	0.57
2:c:111:LEU:HB3	2:c:204:LYS:HE2	1.86	0.57
34:J:16:TYR:CD1	34:J:140:LEU:HD23	2.39	0.57
47:W:22:VAL:H	47:W:25:PHE:HB2	1.70	0.57
53:A:488:G:N2	53:A:493:G:O6	2.37	0.57
53:A:2453:A:H61	53:A:2500:U:H3	1.50	0.57
56:9:24:G:O2'	56:9:25:C:H5''	2.03	0.57
5:f:47:LEU:HD13	5:f:51:ILE:HG22	1.86	0.57
26:5:178:VAL:HA	26:5:185:LEU:HD11	1.86	0.57
35:K:70:ARG:NH2	53:A:2683:C:O2	2.37	0.57
44:T:87:LEU:HB2	44:T:91:GLN:HG2	1.86	0.57
52:a:66:A:H4'	52:a:173:U:C4	2.40	0.57
52:a:320:A:H2'	52:a:321:A:H8	1.70	0.57
53:A:271:G:N2	53:A:272:A:C5	2.73	0.57
2:c:185:ASN:OD1	2:c:186:THR:N	2.37	0.57
3:d:193:ALA:HB3	3:d:195:ILE:HG23	1.87	0.57
8:i:73:SER:OG	52:a:1372:U:OP1	2.18	0.57
14:o:5:THR:O	14:o:8:THR:OG1	2.16	0.57
14:o:42:HIS:ND1	52:a:739:C:O2'	2.38	0.57
26:5:185:LEU:O	26:5:189:LEU:HG	2.05	0.57
39:O:3:LYS:NZ	54:B:30:C:OP1	2.38	0.57
47:W:28:GLU:O	47:W:31:LEU:HG	2.04	0.57
53:A:543:G:H3'	53:A:544:C:H5''	1.87	0.57
53:A:1065:U:N3	53:A:1069:A:N7	2.53	0.57
53:A:2623:G:H2'	53:A:2624:G:H8	1.68	0.57
56:8:20:U:C2'	56:8:21:A:H5''	2.35	0.57
4:e:154:ALA:HA	4:e:157:ARG:HG2	1.87	0.57
9:j:5:ARG:HG3	9:j:6:ILE:HG13	1.87	0.57
28:D:92:VAL:O	28:D:94:GLN:N	2.38	0.57
35:K:31:ARG:NE	53:A:1996:C:OP1	2.38	0.57
52:a:201:G:H2'	52:a:202:G:H8	1.69	0.57
52:a:892:A:O2'	52:a:1415:G:O2'	2.22	0.57
52:a:1242:G:H21	52:a:1302:C:H2'	1.70	0.57
53:A:2523:G:HO2'	53:A:2764:A:HO2'	1.53	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:8:26:A:H61	56:8:44:G:H1	1.52	0.57
6:g:25:LYS:O	6:g:29:ILE:HG12	2.04	0.56
6:g:106:GLU:O	6:g:110:LYS:HG2	2.05	0.56
17:r:72:ASP:OD1	17:r:73:ARG:N	2.38	0.56
19:t:59:ASP:OD2	19:t:76:LYS:NZ	2.36	0.56
31:G:9:VAL:HA	31:G:48:THR:HG22	1.85	0.56
47:W:23:LYS:HE2	53:A:855:G:H21	1.70	0.56
52:a:407:U:H2'	52:a:408:A:C8	2.40	0.56
52:a:1331:G:O2'	52:a:1332:A:O5'	2.21	0.56
53:A:271:G:N2	53:A:272:A:C6	2.73	0.56
53:A:636:G:HO2'	53:A:638:G:HO2'	1.48	0.56
53:A:1287:A:H3'	53:A:1288:G:H21	1.69	0.56
53:A:2659:G:N2	53:A:2662:A:OP2	2.37	0.56
53:A:2718:G:O2'	53:A:2847:U:OP1	2.19	0.56
56:8:63:G:H2'	56:8:64:A:C8	2.40	0.56
1:b:40:ILE:HD13	1:b:201:GLY:HA2	1.86	0.56
5:f:85:ILE:HG13	5:f:86:ARG:H	1.68	0.56
6:g:109:ARG:HB3	6:g:116:MET:HE1	1.86	0.56
30:F:104:THR:HG22	30:F:105:ILE:HG23	1.87	0.56
32:H:83:LYS:HB2	32:H:95:GLY:HA3	1.87	0.56
47:W:19:ARG:NH1	47:W:22:VAL:HG11	2.19	0.56
47:W:30:VAL:HG11	53:A:2352:A:C6	2.41	0.56
52:a:608:A:H2'	52:a:609:A:O4'	2.05	0.56
53:A:318:C:H2'	53:A:319:G:H8	1.69	0.56
53:A:2372:U:H2'	53:A:2373:G:H8	1.69	0.56
53:A:2499:C:N4	53:A:2500:U:O4	2.38	0.56
1:b:166:ASP:OD1	1:b:167:HIS:N	2.38	0.56
3:d:188:ARG:HH12	3:d:192:SER:HB2	1.69	0.56
6:g:14:PRO:HB2	6:g:19:GLY:HA2	1.87	0.56
7:h:50:LYS:HB3	7:h:52:GLU:HG2	1.86	0.56
11:l:33:VAL:HG22	11:l:56:ARG:HB3	1.86	0.56
13:n:42:TRP:HD1	13:n:44:ALA:HB3	1.70	0.56
26:5:47:ASN:HB2	26:5:210:LYS:HB2	1.86	0.56
27:C:144:GLU:HB2	27:C:187:CYS:HB3	1.87	0.56
32:H:69:ALA:HA	32:H:72:ILE:HG22	1.86	0.56
41:Q:91:ARG:CZ	53:A:996:A:H4'	2.34	0.56
44:T:65:GLY:N	44:T:79:ASP:OD1	2.33	0.56
52:a:1134:G:C2	52:a:1135:U:H1'	2.39	0.56
52:a:1493:A:H3'	53:A:1913:A:H61	1.71	0.56
53:A:891:G:N2	53:A:892:A:O2'	2.37	0.56
53:A:2144:G:N2	53:A:2144:G:OP2	2.37	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:e:38:VAL:HG11	4:e:114:VAL:HG12	1.86	0.56
7:h:112:THR:HG22	7:h:114:ARG:H	1.70	0.56
8:i:116:VAL:HA	52:a:1367:C:H5''	1.88	0.56
16:q:18:GLU:HA	16:q:51:ASN:HD21	1.70	0.56
29:E:60:TRP:NE1	29:E:68:ALA:O	2.35	0.56
52:a:823:C:H2'	52:a:824:G:H8	1.71	0.56
53:A:2146:C:H5'	53:A:2148:G:C8	2.40	0.56
54:B:24:G:N7	54:B:56:G:H2'	2.19	0.56
7:h:12:THR:HG21	52:a:876:C:H1'	1.87	0.56
34:J:17:VAL:HG13	34:J:137:PRO:HB2	1.88	0.56
43:S:16:LYS:NZ	53:A:2011:U:OP2	2.30	0.56
52:a:309:A:H2'	52:a:310:G:H8	1.71	0.56
52:a:352:C:O2	52:a:356:A:N6	2.38	0.56
52:a:634:C:H2'	52:a:635:A:H8	1.69	0.56
52:a:1005:A:H5''	52:a:1037:C:H1'	1.88	0.56
52:a:1033:G:H2'	52:a:1034:G:C8	2.40	0.56
53:A:437:U:H2'	53:A:438:G:C8	2.40	0.56
53:A:1434:A:H2'	53:A:1435:G:C8	2.40	0.56
53:A:1799:G:N1	53:A:1819:A:OP2	2.29	0.56
53:A:2465:C:H2'	53:A:2466:C:C6	2.40	0.56
8:i:115:LYS:HB2	8:i:118:LEU:HD12	1.87	0.56
46:V:30:ILE:HG21	46:V:70:ILE:HG21	1.87	0.56
48:X:39:VAL:O	48:X:41:SER:N	2.35	0.56
52:a:530:G:N2	52:a:530:G:OP2	2.38	0.56
52:a:996:A:H2'	52:a:997:U:C6	2.40	0.56
52:a:1074:G:O2'	52:a:1101:A:N1	2.36	0.56
53:A:272:A:N3	53:A:273:G:C4	2.70	0.56
53:A:980:A:N6	53:A:981:A:N1	2.54	0.56
53:A:1827:U:O2'	53:A:1970:A:N3	2.37	0.56
53:A:2793:C:H2'	53:A:2794:C:C6	2.40	0.56
56:8:53:G:H1	56:8:61:C:H42	1.51	0.56
2:c:87:LEU:HA	2:c:90:VAL:HG22	1.86	0.56
5:f:79:ARG:NH2	52:a:671:G:O2'	2.39	0.56
53:A:1794:A:H2'	53:A:1795:C:C6	2.40	0.56
6:g:92:ARG:HH11	52:a:1378:C:H5''	1.70	0.56
9:j:53:ILE:HD12	52:a:1060:U:H5''	1.88	0.56
24:3:22:LYS:HA	24:3:48:MET:HA	1.88	0.56
29:E:41:GLN:NE2	53:A:442:G:O4'	2.39	0.56
36:L:110:VAL:HB	36:L:127:VAL:HG23	1.87	0.56
46:V:58:SER:O	46:V:73:LYS:NZ	2.38	0.56
52:a:1096:C:H2'	52:a:1097:C:C6	2.41	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:a:1121:U:H3	52:a:1152:A:H61	1.52	0.56
53:A:959:A:N3	53:A:2457:U:O2'	2.38	0.56
54:B:63:C:H2'	54:B:64:G:H8	1.71	0.56
1:b:221:ARG:HG2	1:b:224:ARG:HH12	1.71	0.56
5:f:6:ILE:HD11	5:f:71:ILE:HD13	1.88	0.56
26:5:30:LEU:HD21	26:5:216:THR:H	1.69	0.56
28:D:119:ALA:HB2	28:D:165:MET:HB2	1.88	0.56
52:a:320:A:H2'	52:a:321:A:C8	2.41	0.56
53:A:68:G:N2	53:A:74:A:O4'	2.39	0.56
53:A:1722:A:N6	53:A:1738:G:H1'	2.20	0.56
53:A:2131:U:H4'	53:A:2132:U:H4'	1.86	0.56
11:l:83:ARG:HB2	11:l:98:VAL:HG23	1.87	0.56
52:a:55:A:H62	52:a:357:G:H21	1.54	0.56
53:A:605:G:H1	53:A:623:C:H42	1.53	0.56
53:A:768:G:N2	53:A:1379:U:O2'	2.38	0.56
53:A:1062:G:H2'	53:A:1063:G:C8	2.40	0.56
8:i:71:GLY:HA3	52:a:1371:G:O3'	2.07	0.55
12:m:52:GLN:O	12:m:55:THR:OG1	2.21	0.55
24:3:34:LYS:NZ	53:A:2390:U:O5'	2.38	0.55
24:3:53:ASP:OD2	53:A:2359:C:O2'	2.22	0.55
31:G:154:GLU:OE2	31:G:156:TYR:HB2	2.05	0.55
35:K:1:MET:HA	35:K:32:TYR:HB3	1.87	0.55
52:a:783:C:OP1	52:a:1515:G:O2'	2.22	0.55
53:A:1748:C:H2'	53:A:1749:A:C8	2.41	0.55
15:p:5:ARG:HD2	52:a:376:G:H5''	1.88	0.55
29:E:134:LEU:HD23	29:E:161:ALA:HB2	1.89	0.55
52:a:222:C:H2'	52:a:223:A:C8	2.41	0.55
52:a:413:G:H1'	52:a:428:G:H21	1.70	0.55
53:A:271:G:N3	53:A:272:A:N7	2.54	0.55
53:A:845:A:H61	53:A:932:U:H3	1.55	0.55
3:d:69:GLU:HG3	52:a:545:C:H5''	1.87	0.55
4:e:89:HIS:O	4:e:91:GLY:N	2.39	0.55
25:4:34:LYS:NZ	53:A:2743:U:OP1	2.31	0.55
26:5:31:LYS:HZ1	26:5:234:ASN:HA	1.72	0.55
28:D:45:TYR:OH	28:D:81:GLU:OE1	2.24	0.55
46:V:72:VAL:HG21	46:V:91:PHE:HB3	1.87	0.55
52:a:842:U:H3'	52:a:843:U:H4'	1.87	0.55
53:A:2028:U:H3	53:A:2033:A:H62	1.52	0.55
53:A:2136:G:H2'	53:A:2137:U:C6	2.41	0.55
56:8:63:G:H2'	56:8:64:A:H8	1.70	0.55
25:4:7:VAL:HG23	25:4:8:LYS:H	1.71	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:C:40:GLY:O	27:C:42:ARG:NH1	2.40	0.55
34:J:36:LEU:O	34:J:51:GLY:HA3	2.07	0.55
35:K:108:ARG:HH22	35:K:113:MET:HE1	1.70	0.55
51:x:560:ARG:HG3	56:8:74:C:OP2	2.06	0.55
56:9:68:C:N4	56:9:69:G:O6	2.39	0.55
56:9:70:G:H2'	56:9:71:G:C8	2.41	0.55
2:c:191:THR:OG1	2:c:194:GLY:O	2.21	0.55
26:5:46:VAL:HG22	26:5:212:VAL:HG22	1.88	0.55
32:H:41:LYS:H	32:H:44:ILE:HG23	1.71	0.55
36:L:38:GLN:N	53:A:832:U:OP1	2.40	0.55
47:W:10:ARG:NH2	53:A:2279:G:N7	2.47	0.55
48:X:53:LYS:NZ	53:A:372:G:O2'	2.39	0.55
52:a:104:G:H2'	52:a:105:G:H8	1.71	0.55
53:A:1048:A:OP2	53:A:1110:G:N2	2.40	0.55
53:A:2530:A:OP2	53:A:2535:G:N2	2.39	0.55
3:d:116:GLN:HE22	52:a:406:G:H21	1.53	0.55
3:d:139:PRO:HB3	3:d:184:ARG:HA	1.89	0.55
18:s:55:ARG:HB3	52:a:958:A:C2	2.41	0.55
33:I:93:ASN:N	53:A:1076:C:O2'	2.39	0.55
46:V:17:SER:HB3	46:V:21:ARG:HH12	1.72	0.55
46:V:62:THR:HA	46:V:71:LYS:HA	1.88	0.55
52:a:203:G:N2	52:a:204:G:N7	2.54	0.55
53:A:404:A:H1'	53:A:405:U:OP2	2.06	0.55
53:A:932:U:O2'	53:A:934:U:O4	2.20	0.55
52:a:203:G:N3	52:a:465:A:N6	2.54	0.55
52:a:458:U:H3	52:a:474:G:H1	1.55	0.55
53:A:1387:A:H2'	53:A:1388:G:H8	1.70	0.55
53:A:2182:U:H2'	53:A:2183:A:C8	2.42	0.55
53:A:2559:C:H2'	53:A:2560:A:H8	1.72	0.55
7:h:11:LEU:HD12	7:h:77:ARG:HB2	1.88	0.55
9:j:57:VAL:HG12	9:j:58:ASN:H	1.70	0.55
21:0:27:LEU:HD23	21:0:36:LYS:HD3	1.88	0.55
33:I:133:ARG:HD2	53:A:1079:C:H1'	1.89	0.55
38:N:28:LEU:HD13	38:N:34:ILE:HG12	1.87	0.55
52:a:108:G:H5'	52:a:109:A:H5''	1.88	0.55
52:a:477:C:H2'	52:a:478:A:H8	1.71	0.55
53:A:1547:C:H2'	53:A:1548:A:H8	1.72	0.55
53:A:2286:G:H4'	53:A:2287:A:O4'	2.07	0.55
53:A:2589:A:H2'	53:A:2590:A:C8	2.40	0.55
12:m:3:ARG:HB2	12:m:57:ARG:NH1	2.19	0.55
30:F:65:LEU:HD13	54:B:41:G:H2'	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:K:3:GLN:NE2	53:A:1995:U:O2	2.40	0.55
48:X:56:ARG:HH22	53:A:399:U:H5''	1.71	0.55
52:a:538:G:H2'	52:a:539:A:H8	1.70	0.55
52:a:682:G:H2'	52:a:683:G:H8	1.71	0.55
53:A:285:G:H1	53:A:355:U:H3	1.54	0.55
53:A:438:G:H2'	53:A:439:A:H8	1.71	0.55
53:A:1042:G:H1	53:A:1113:U:H3	1.55	0.55
53:A:2292:U:H2'	53:A:2293:G:C8	2.42	0.55
26:5:135:GLY:N	53:A:2125:G:O6	2.40	0.55
27:C:121:ALA:HB3	27:C:129:LEU:HD11	1.88	0.55
30:F:120:SER:OG	53:A:2304:G:OP1	2.25	0.55
31:G:3:VAL:HG22	31:G:68:ARG:HD3	1.89	0.55
50:Z:11:SER:OG	53:A:989:G:OP2	2.20	0.55
52:a:977:A:H2'	52:a:978:A:H5''	1.89	0.55
52:a:1259:C:O2'	52:a:1283:U:O2	2.25	0.55
53:A:812:C:O2'	53:A:1226:A:O2'	2.18	0.55
3:d:19:LEU:HG	3:d:64:ILE:HG12	1.88	0.54
14:o:45:GLU:HG3	14:o:46:HIS:CD2	2.42	0.54
56:9:25:C:H3'	56:9:25:C:H6	1.72	0.54
52:a:1296:C:H4'	52:a:1302:C:C4	2.41	0.54
53:A:964:C:O2'	53:A:2273:A:N3	2.39	0.54
53:A:2514:U:H2'	53:A:2515:C:C6	2.41	0.54
53:A:2650:U:O2	53:A:2671:G:N2	2.39	0.54
28:D:98:VAL:HG12	28:D:180:VAL:HG13	1.89	0.54
32:H:96:THR:HB	32:H:100:ALA:HB2	1.90	0.54
42:R:14:VAL:HG11	42:R:98:ILE:HG21	1.89	0.54
53:A:139:U:H1'	53:A:141:G:H1	1.73	0.54
53:A:1386:C:H2'	53:A:1387:A:C8	2.43	0.54
56:9:60:U:H5''	56:9:61:C:H5	1.73	0.54
2:c:83:ASP:HA	2:c:86:LYS:HG2	1.89	0.54
5:f:16:GLU:OE1	5:f:16:GLU:N	2.36	0.54
15:p:8:ARG:HE	15:p:15:PRO:HB3	1.72	0.54
24:3:23:HIS:HD2	24:3:49:VAL:HG12	1.72	0.54
26:5:196:LEU:HD13	26:5:208:TYR:HB3	1.90	0.54
31:G:53:PRO:HG3	31:G:61:TRP:CZ2	2.42	0.54
38:N:30:ARG:HH12	38:N:74:GLU:CD	2.15	0.54
52:a:246:A:N1	52:a:278:G:O2'	2.40	0.54
53:A:299:A:N1	53:A:322:A:O2'	2.38	0.54
53:A:1062:G:C8	53:A:1088:A:H2'	2.43	0.54
53:A:1582:C:O2'	53:A:1585:C:N4	2.40	0.54
53:A:1786:A:H1'	53:A:1938:A:N6	2.23	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:1980:G:O2'	53:A:1982:U:OP2	2.25	0.54
56:9:27:G:H2'	56:9:28:G:H8	1.73	0.54
12:m:92:ARG:HG2	53:A:887:U:H1'	1.89	0.54
33:I:104:GLN:HB3	33:I:108:ILE:HD12	1.88	0.54
36:L:68:SER:O	36:L:70:LYS:N	2.38	0.54
37:M:41:LEU:HD13	37:M:96:ILE:HG12	1.89	0.54
37:M:62:LYS:HB3	37:M:106:ASP:HB2	1.90	0.54
41:Q:54:ARG:NH2	53:A:1155:A:O3'	2.38	0.54
44:T:54:GLU:HG2	44:T:88:LYS:HB3	1.89	0.54
48:X:34:SER:HA	48:X:49:ARG:HA	1.90	0.54
52:a:1332:A:N6	52:a:1333:A:N1	2.55	0.54
53:A:136:G:H1	53:A:143:C:H42	1.55	0.54
53:A:263:G:N2	53:A:264:C:O2	2.40	0.54
53:A:1330:C:N4	53:A:1331:G:O6	2.41	0.54
53:A:1570:A:H2'	53:A:1571:A:C8	2.42	0.54
53:A:2291:U:H2'	53:A:2292:U:C6	2.43	0.54
53:A:2437:G:H2'	53:A:2438:U:H6	1.72	0.54
8:i:44:ALA:O	8:i:47:VAL:HG22	2.08	0.54
15:p:27:ALA:HB2	52:a:111:G:H5''	1.89	0.54
18:s:32:ARG:HH11	18:s:57:HIS:CD2	2.26	0.54
27:C:34:GLU:OE2	53:A:1816:C:N4	2.26	0.54
27:C:77:VAL:HG23	27:C:111:ALA:HA	1.88	0.54
28:D:45:TYR:OH	53:A:2636:C:O2'	2.24	0.54
36:L:74:THR:HG22	36:L:107:PHE:HB2	1.89	0.54
47:W:9:THR:HG23	47:W:10:ARG:HG3	1.90	0.54
52:a:695:A:H2'	52:a:696:A:C8	2.42	0.54
52:a:1137:C:O2	52:a:1138:G:N2	2.40	0.54
53:A:5:A:H2'	53:A:6:A:C8	2.42	0.54
53:A:820:A:N3	53:A:943:A:O2'	2.41	0.54
53:A:1590:A:H2'	53:A:1591:A:C8	2.43	0.54
6:g:86:GLN:HE22	56:9:32:U:H4'	1.72	0.54
32:H:66:ASN:O	32:H:68:ARG:HA	2.08	0.54
35:K:8:LEU:HD23	35:K:82:ASN:HB3	1.89	0.54
53:A:59:U:O2'	53:A:74:A:OP2	2.22	0.54
53:A:271:G:C6	53:A:367:G:N3	2.51	0.54
53:A:807:U:H2'	53:A:808:G:C8	2.40	0.54
53:A:971:G:OP2	53:A:974:G:N2	2.41	0.54
53:A:1753:G:N2	53:A:1756:G:O5'	2.38	0.54
53:A:1825:U:H2'	53:A:1826:G:H8	1.72	0.54
53:A:2447:G:N2	53:A:2450:A:OP2	2.41	0.54
53:A:2531:A:N3	53:A:2658:C:O2'	2.36	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:2692:G:H2'	53:A:2693:G:C8	2.43	0.54
56:9:57:G:H2'	56:9:58:A:H5'	1.90	0.54
3:d:58:LYS:HD2	3:d:204:TYR:OH	2.07	0.54
11:l:12:ARG:NH2	52:a:567:G:O6	2.36	0.54
18:s:53:ASN:HD21	18:s:56:GLN:HB3	1.72	0.54
27:C:47:ARG:NH2	53:A:774:G:OP1	2.39	0.54
27:C:220:ARG:HG2	53:A:1789:A:OP1	2.08	0.54
29:E:168:ASP:OD1	29:E:169:VAL:N	2.40	0.54
35:K:7:MET:HB3	35:K:18:ARG:HD2	1.89	0.54
36:L:2:ARG:O	36:L:5:THR:HG22	2.07	0.54
42:R:39:LEU:HD22	42:R:49:ILE:HD13	1.89	0.54
52:a:381:C:H2'	52:a:382:A:O4'	2.07	0.54
52:a:483:C:H3'	52:a:484:G:H2'	1.89	0.54
52:a:976:G:OP2	52:a:1358:U:O2'	2.26	0.54
53:A:1054:A:H2'	53:A:1055:G:C8	2.42	0.54
53:A:1150:C:H2'	53:A:1151:A:C8	2.43	0.54
53:A:2119:A:H2	53:A:2170:A:H2'	1.71	0.54
7:h:121:LEU:HA	52:a:600:A:H5'	1.90	0.54
15:p:25:ARG:O	52:a:110:C:O2'	2.25	0.54
15:p:67:ILE:HD13	15:p:75:ILE:HD11	1.90	0.54
37:M:127:LYS:NZ	53:A:1030:C:OP2	2.41	0.54
38:N:9:GLN:HB3	53:A:1653:G:C6	2.43	0.54
39:O:106:LEU:O	39:O:110:ALA:N	2.37	0.54
45:U:38:ILE:HG23	45:U:39:ASN:N	2.15	0.54
52:a:68:G:H4'	52:a:171:A:H1'	1.89	0.54
53:A:107:G:H2'	53:A:108:G:C8	2.37	0.54
53:A:1417:C:H42	53:A:1581:G:H1	1.56	0.54
3:d:3:ARG:NH1	3:d:66:GLY:O	2.41	0.54
27:C:49:THR:HG21	53:A:1813:G:H1'	1.89	0.54
35:K:71:ARG:HB3	35:K:72:PRO:HD2	1.89	0.54
36:L:123:ARG:NE	36:L:143:GLU:OE2	2.41	0.54
54:B:31:C:O2'	54:B:53:A:N1	2.38	0.54
15:p:6:LEU:HD23	15:p:17:TYR:CG	2.43	0.53
38:N:94:TYR:O	38:N:116:VAL:N	2.40	0.53
53:A:272:A:C4	53:A:273:G:N7	2.76	0.53
53:A:1978:A:H2'	53:A:1979:U:H6	1.72	0.53
55:7:18:C:H42	56:8:34:G:H1	1.55	0.53
2:c:118:ASP:HA	2:c:121:THR:HG22	1.89	0.53
27:C:222:THR:N	53:A:1826:G:OP1	2.42	0.53
28:D:116:LYS:HA	38:N:1:MET:SD	2.48	0.53
36:L:67:THR:HG22	36:L:69:ARG:H	1.74	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:X:36:ARG:NH1	53:A:2200:C:OP2	2.40	0.53
52:a:490:C:H2'	52:a:491:G:H8	1.74	0.53
53:A:1479:G:H1	53:A:1512:C:H42	1.56	0.53
53:A:2092:U:OP1	53:A:2199:A:O2'	2.26	0.53
53:A:2216:G:H2'	53:A:2217:G:H8	1.72	0.53
53:A:2292:U:H2'	53:A:2293:G:H8	1.72	0.53
12:m:17:ILE:O	12:m:20:THR:OG1	2.22	0.53
30:F:92:GLY:O	30:F:95:MET:HB3	2.08	0.53
52:a:26:A:H61	52:a:558:G:H1'	1.72	0.53
52:a:147:G:H2'	52:a:148:G:H8	1.71	0.53
52:a:1347:G:O2'	52:a:1373:G:O6	2.26	0.53
53:A:177:G:N2	53:A:177:G:OP2	2.41	0.53
54:B:14:U:OP2	54:B:70:C:O2'	2.26	0.53
56:8:22:G:H2'	56:8:23:A:H8	1.72	0.53
9:j:66:GLU:HG2	13:n:99:ALA:HB3	1.90	0.53
15:p:72:ALA:HA	15:p:75:ILE:HD12	1.90	0.53
26:5:87:ALA:HA	26:5:90:ALA:HB3	1.89	0.53
29:E:149:ILE:HG13	29:E:188:MET:HA	1.89	0.53
45:U:94:PHE:HA	45:U:101:THR:HA	1.91	0.53
50:Z:30:ARG:O	50:Z:33:HIS:HB2	2.09	0.53
52:a:237:G:N2	52:a:238:A:N3	2.56	0.53
52:a:983:A:H2	52:a:1222:G:H22	1.56	0.53
53:A:1645:G:H5''	53:A:1646:C:H5'	1.89	0.53
54:B:40:U:O3'	54:B:43:C:N4	2.33	0.53
54:B:87:U:H3'	54:B:88:C:H5''	1.91	0.53
56:9:35:A:H2'	56:9:36:A:C8	2.42	0.53
6:g:27:VAL:HG12	6:g:43:VAL:HG21	1.90	0.53
31:G:120:ILE:HD11	31:G:139:VAL:HG12	1.90	0.53
35:K:13:ASN:C	35:K:15:GLY:H	2.15	0.53
47:W:38:ARG:HB2	53:A:2330:G:N3	2.23	0.53
52:a:15:G:N1	52:a:921:U:N3	2.56	0.53
52:a:1352:C:H42	52:a:1370:G:H1	1.54	0.53
52:a:1397:C:H42	55:7:21:A:N6	2.07	0.53
53:A:351:C:H2'	53:A:352:A:C8	2.43	0.53
53:A:412:A:N6	53:A:2411:A:O2'	2.41	0.53
53:A:2749:A:N1	53:A:2750:A:N6	2.55	0.53
53:A:2792:A:H61	53:A:2804:U:H3	1.55	0.53
1:b:202:ASN:OD1	1:b:203:ASP:N	2.42	0.53
26:5:8:MET:HB3	26:5:12:ARG:NH1	2.21	0.53
27:C:5:CYS:SG	27:C:12:ARG:NH2	2.67	0.53
40:P:92:ARG:NH2	53:A:2849:U:OP1	2.41	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:a:440:C:H2'	52:a:441:A:H8	1.74	0.53
53:A:52:A:H2'	53:A:53:A:H8	1.72	0.53
53:A:2805:C:H2'	53:A:2806:C:C6	2.44	0.53
56:9:26:A:C5'	56:9:27:G:C8	2.92	0.53
1:b:45:THR:OG1	1:b:200:PRO:HG2	2.09	0.53
12:m:78:LYS:HD3	12:m:81:MET:HE3	1.90	0.53
33:I:98:GLY:HA3	33:I:137:LEU:HD22	1.91	0.53
34:J:124:VAL:HG23	34:J:125:TYR:H	1.73	0.53
52:a:999:C:H2'	52:a:1000:A:O4'	2.08	0.53
53:A:925:A:H2'	53:A:926:G:H8	1.73	0.53
53:A:1724:G:N2	53:A:1737:G:O2'	2.41	0.53
6:g:77:SER:OG	56:9:32:U:O3'	2.24	0.53
13:n:20:TYR:O	13:n:24:ARG:N	2.42	0.53
29:E:58:LYS:NZ	29:E:70:SER:O	2.42	0.53
31:G:101:VAL:HG12	31:G:115:GLN:HA	1.90	0.53
37:M:106:ASP:CG	37:M:107:GLY:H	2.16	0.53
38:N:71:ARG:NH2	53:A:2707:U:O2	2.42	0.53
40:P:30:TRP:CD2	40:P:37:LYS:HE2	2.44	0.53
52:a:195:A:N3	52:a:222:C:O2'	2.41	0.53
52:a:723:U:O2'	52:a:724:G:H5'	2.09	0.53
53:A:1152:C:H2'	53:A:1153:C:H6	1.74	0.53
53:A:2065:C:H2'	53:A:2066:C:O4'	2.09	0.53
53:A:2398:U:H2'	53:A:2399:G:H8	1.73	0.53
11:l:55:VAL:HG21	11:l:80:ILE:HD11	1.91	0.53
12:m:89:LEU:HA	12:m:92:ARG:HG3	1.89	0.53
48:X:27:ARG:NH2	53:A:1365:A:OP1	2.31	0.53
53:A:438:G:H2'	53:A:439:A:C8	2.44	0.53
53:A:1014:A:H2'	53:A:1015:U:H6	1.74	0.53
53:A:1020:A:H5'	53:A:1021:A:C8	2.43	0.53
53:A:1818:U:H4'	53:A:1821:A:H1'	1.90	0.53
56:8:4:C:N4	56:8:70:G:O6	2.42	0.53
3:d:78:GLU:OE2	3:d:81:ARG:NH2	2.37	0.53
6:g:73:VAL:HG12	6:g:90:GLU:HA	1.91	0.53
10:k:72:ASP:OD1	10:k:73:ALA:N	2.42	0.53
19:t:84:ASN:OD1	19:t:85:LYS:N	2.42	0.53
25:4:36:ARG:NH1	53:A:2742:G:OP1	2.42	0.53
26:5:7:ARG:HA	26:5:10:VAL:HG22	1.90	0.53
27:C:7:PRO:HB3	27:C:13:ARG:HG3	1.91	0.53
27:C:64:VAL:HG21	27:C:86:ARG:NH2	2.24	0.53
33:I:119:ALA:H	53:A:1082:U:H5'	1.73	0.53
37:M:74:THR:HG22	37:M:89:VAL:HA	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:O:28:VAL:HG12	39:O:37:ALA:HA	1.91	0.53
52:a:1252:A:H61	52:a:1285:A:H61	1.57	0.53
53:A:1464:G:H2'	53:A:1465:G:C8	2.44	0.53
53:A:2128:G:H2'	53:A:2129:C:H4'	1.91	0.53
53:A:2146:C:H5''	53:A:2147:A:C2	2.43	0.53
2:c:155:GLY:O	2:c:196:ILE:HG12	2.09	0.52
6:g:147:ALA:O	10:k:56:ARG:NH1	2.42	0.52
8:i:105:THR:HG22	8:i:106:ARG:O	2.09	0.52
25:4:30:GLU:HG3	25:4:32:LYS:H	1.73	0.52
26:5:109:MET:O	26:5:110:ASN:ND2	2.42	0.52
29:E:175:ILE:HG21	29:E:199:MET:HE1	1.91	0.52
35:K:104:THR:HB	35:K:106:GLU:OE1	2.09	0.52
53:A:2077:A:HO2'	53:A:2434:A:HO2'	1.57	0.52
56:8:18:G:O2'	56:8:19:G:C8	2.62	0.52
56:9:42:C:H2'	56:9:43:C:H5''	1.90	0.52
1:b:119:GLN:HE22	1:b:136:ARG:HE	1.56	0.52
26:5:12:ARG:NH2	26:5:221:GLY:O	2.36	0.52
39:O:3:LYS:HG3	39:O:4:LYS:H	1.74	0.52
45:U:73:ASN:HB2	45:U:80:ASP:HB2	1.91	0.52
51:x:554:TYR:C	53:A:2602:A:H61	2.18	0.52
52:a:570:G:N2	52:a:571:U:O2	2.42	0.52
52:a:1342:C:H2'	52:a:1343:G:C8	2.41	0.52
53:A:573:U:N3	53:A:2031:A:OP1	2.36	0.52
53:A:1031:G:H2'	53:A:1032:A:C8	2.44	0.52
53:A:1058:U:H2'	53:A:1059:G:C8	2.44	0.52
53:A:1526:C:H2'	53:A:1527:G:O4'	2.10	0.52
53:A:2837:A:H2'	53:A:2838:G:H8	1.74	0.52
56:9:71:G:O2'	56:9:72:C:OP1	2.27	0.52
3:d:58:LYS:HD3	3:d:203:LEU:HD23	1.89	0.52
7:h:26:THR:HG22	7:h:60:GLU:HG3	1.90	0.52
14:o:29:VAL:HG11	14:o:67:LEU:HD21	1.91	0.52
30:F:64:PRO:HA	30:F:88:VAL:HG22	1.91	0.52
34:J:64:VAL:HG12	34:J:69:ARG:HH21	1.74	0.52
37:M:45:GLN:HE21	53:A:2485:G:H5''	1.73	0.52
38:N:96:ARG:NH2	38:N:116:VAL:O	2.43	0.52
42:R:24:LYS:HA	42:R:94:THR:HG23	1.91	0.52
46:V:43:ASP:OD1	46:V:44:HIS:N	2.42	0.52
52:a:79:G:H21	52:a:90:C:H42	1.56	0.52
52:a:923:A:O2'	52:a:1399:C:OP2	2.23	0.52
53:A:883:G:N2	53:A:894:U:O2'	2.42	0.52
2:c:81:GLY:O	2:c:85:GLU:N	2.42	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:f:3:HIS:N	5:f:92:THR:HG23	2.22	0.52
7:h:48:ASP:OD1	7:h:62:THR:OG1	2.21	0.52
7:h:81:PRO:HG2	52:a:878:A:H5''	1.90	0.52
30:F:39:VAL:HG12	30:F:85:GLY:HA2	1.92	0.52
52:a:79:G:H21	52:a:90:C:N4	2.08	0.52
52:a:823:C:H2'	52:a:824:G:C8	2.44	0.52
53:A:1287:A:H3'	53:A:1288:G:N2	2.23	0.52
53:A:2443:C:H2'	53:A:2444:G:C8	2.41	0.52
17:r:32:TYR:CG	17:r:55:LEU:HD21	2.45	0.52
52:a:122:G:O6	52:a:238:A:N6	2.36	0.52
52:a:461:A:N3	52:a:462:G:H5''	2.24	0.52
53:A:280:U:H2'	53:A:281:C:C6	2.45	0.52
53:A:1169:A:H61	53:A:1180:U:H3	1.58	0.52
53:A:1785:A:O2'	53:A:1786:A:H2'	2.09	0.52
54:B:95:U:H2'	54:B:96:G:C8	2.39	0.52
4:e:81:LEU:HB2	4:e:98:PRO:HB3	1.91	0.52
13:n:6:MET:SD	13:n:9:ARG:NH1	2.82	0.52
30:F:72:SER:OG	30:F:78:ILE:O	2.22	0.52
45:U:48:VAL:H	45:U:53:GLN:HB3	1.75	0.52
53:A:146:A:H2'	53:A:147:C:C6	2.44	0.52
53:A:923:G:H2'	53:A:924:G:H8	1.74	0.52
4:e:97:GLN:OE1	4:e:98:PRO:HD2	2.09	0.52
29:E:149:ILE:HG22	29:E:170:ARG:HB2	1.90	0.52
35:K:122:VAL:HG22	40:P:40:GLN:HE22	1.75	0.52
39:O:25:ARG:NH1	54:B:8:C:O2'	2.43	0.52
48:X:39:VAL:HG22	48:X:44:ARG:O	2.09	0.52
52:a:887:G:H3'	52:a:888:G:H8	1.75	0.52
53:A:1853:A:N3	53:A:2233:U:O2'	2.42	0.52
56:9:3:C:H2'	56:9:4:C:C6	2.45	0.52
8:i:130:ARG:HH12	56:8:35:A:P	2.33	0.52
11:l:111:LYS:O	11:l:114:ARG:HB2	2.10	0.52
31:G:32:LEU:O	31:G:33:THR:OG1	2.27	0.52
33:I:122:GLU:HG2	33:I:126:ARG:NH1	2.24	0.52
35:K:19:VAL:HG13	35:K:41:ILE:HG23	1.91	0.52
44:T:39:THR:O	44:T:41:ALA:N	2.43	0.52
51:x:570:GLU:OE2	51:x:574:ARG:NH2	2.43	0.52
52:a:878:A:H2'	52:a:879:C:C6	2.44	0.52
53:A:79:C:O2'	53:A:346:A:N3	2.39	0.52
53:A:741:U:O4	53:A:742:A:N6	2.43	0.52
53:A:2112:G:H2'	53:A:2113:U:C5	2.44	0.52
56:8:74:C:C2	56:8:75:C:H5	2.27	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:l:34:CYS:HA	11:l:55:VAL:HG22	1.92	0.52
27:C:6:LYS:O	27:C:8:THR:N	2.42	0.52
28:D:35:THR:OG1	28:D:49:GLN:O	2.28	0.52
31:G:126:THR:HG22	31:G:128:THR:H	1.75	0.52
52:a:652:U:O4	52:a:752:G:O2'	2.26	0.52
53:A:271:G:H1	53:A:366:C:H42	1.56	0.52
53:A:1438:U:O2	53:A:1555:G:N2	2.43	0.52
53:A:1891:G:N2	56:9:72:C:OP1	2.43	0.52
8:i:13:LYS:O	8:i:14:SER:OG	2.26	0.52
19:t:32:ILE:HG22	19:t:36:TYR:HE2	1.74	0.52
28:D:117:GLY:HA2	28:D:164:GLN:HE22	1.74	0.52
38:N:118:ARG:O	38:N:120:GLU:N	2.43	0.52
50:Z:29:ARG:HH21	50:Z:33:HIS:CE1	2.28	0.52
53:A:2216:G:H2'	53:A:2217:G:C8	2.45	0.52
53:A:2644:G:H3'	53:A:2645:G:N2	2.25	0.52
1:b:208:ALA:HA	1:b:211:LEU:HD13	1.91	0.51
2:c:114:LYS:HD3	2:c:185:ASN:ND2	2.25	0.51
14:o:39:LEU:HD23	14:o:43:PHE:HE2	1.75	0.51
27:C:230:PRO:O	27:C:241:LYS:NZ	2.32	0.51
32:H:115:VAL:HG12	32:H:136:SER:HA	1.92	0.51
47:W:37:VAL:O	47:W:38:ARG:HG2	2.11	0.51
52:a:1271:A:H2'	52:a:1272:G:C8	2.44	0.51
53:A:528:A:H2'	53:A:529:A:H5''	1.90	0.51
53:A:1592:C:H2'	53:A:1593:A:C8	2.45	0.51
53:A:1838:C:C2	53:A:1898:U:C4	2.98	0.51
53:A:2512:C:H2'	53:A:2513:A:O4'	2.10	0.51
54:B:70:C:H2'	54:B:71:C:H6	1.74	0.51
56:8:55:U:N3	56:8:58:A:OP2	2.30	0.51
13:n:43:ASN:OD1	13:n:47:LYS:NZ	2.41	0.51
22:1:7:LYS:HG2	22:1:23:THR:HG22	1.92	0.51
26:5:47:ASN:HA	26:5:170:ILE:HG13	1.92	0.51
53:A:601:C:O2'	53:A:605:G:OP1	2.27	0.51
53:A:705:A:OP2	53:A:725:G:N1	2.40	0.51
53:A:1310:G:N2	53:A:1605:C:N3	2.57	0.51
53:A:1469:A:OP2	53:A:1522:A:N6	2.36	0.51
56:9:29:G:H2'	56:9:30:G:H8	1.75	0.51
2:c:3:GLN:OE1	2:c:3:GLN:N	2.43	0.51
18:s:5:LEU:O	18:s:7:LYS:N	2.43	0.51
25:4:24:ARG:NH1	53:A:2742:G:OP2	2.35	0.51
35:K:88:ASN:OD1	35:K:89:ASN:N	2.42	0.51
48:X:56:ARG:NH1	53:A:400:G:OP2	2.43	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:a:1493:A:H1'	55:7:19:A:H1'	1.92	0.51
53:A:1779:U:O2	53:A:1783:A:N6	2.43	0.51
53:A:2646:C:H2'	53:A:2647:U:O4'	2.10	0.51
4:e:25:VAL:HA	52:a:922:G:H4'	1.93	0.51
26:5:134:ARG:NE	53:A:2172:U:H5''	2.25	0.51
39:O:111:ARG:HB2	39:O:117:PHE:HE2	1.75	0.51
40:P:111:GLU:HB2	40:P:113:LEU:HD23	1.91	0.51
52:a:211:G:C2	52:a:212:G:H1'	2.45	0.51
53:A:192:C:H2'	53:A:193:U:H5'	1.92	0.51
53:A:269:C:N4	53:A:270:A:N6	2.59	0.51
53:A:281:C:H2'	53:A:282:A:C8	2.45	0.51
1:b:203:ASP:OD1	1:b:204:ASP:N	2.43	0.51
6:g:18:PHE:CE1	6:g:58:GLU:HG2	2.46	0.51
10:k:52:PHE:CE2	10:k:65:VAL:HG11	2.45	0.51
16:q:14:SER:OG	52:a:276:G:OP1	2.23	0.51
30:F:10:GLU:O	30:F:12:VAL:N	2.43	0.51
31:G:102:ILE:O	31:G:113:ASP:HA	2.10	0.51
34:J:120:ARG:NE	53:A:2780:G:OP2	2.41	0.51
52:a:37:U:N3	52:a:38:G:N7	2.58	0.51
52:a:1323:G:H2'	52:a:1324:A:H8	1.75	0.51
56:9:27:G:N2	56:9:45:U:C4	2.76	0.51
2:c:20:SER:HB3	2:c:22:TRP:CD1	2.45	0.51
2:c:20:SER:OG	2:c:40:ARG:NH2	2.44	0.51
3:d:59:GLN:HE21	3:d:63:ARG:HH21	1.57	0.51
22:1:8:ILE:HD13	22:1:24:LYS:HG2	1.92	0.51
27:C:224:MET:HE2	53:A:782:A:C6	2.45	0.51
37:M:53:MET:HE3	37:M:63:ILE:HG21	1.93	0.51
52:a:572:A:H5'	52:a:573:A:OP2	2.10	0.51
52:a:1319:A:H61	52:a:1361:G:H21	1.57	0.51
53:A:272:A:N3	53:A:273:G:N9	2.56	0.51
53:A:1014:A:H2'	53:A:1015:U:C6	2.46	0.51
7:h:20:ALA:HB3	7:h:22:LYS:HG2	1.93	0.51
15:p:42:ILE:O	15:p:44:SER:N	2.36	0.51
25:4:19:ARG:HD2	25:4:24:ARG:HD2	1.92	0.51
34:J:96:ARG:NH2	53:A:2639:A:O3'	2.30	0.51
37:M:4:PRO:HG3	37:M:68:PHE:HE2	1.76	0.51
47:W:50:VAL:HG23	47:W:61:LYS:HE3	1.93	0.51
54:B:86:G:H2'	54:B:87:U:H5''	1.93	0.51
6:g:56:LYS:HB2	6:g:61:ALA:HB2	1.91	0.51
10:k:24:HIS:HB3	10:k:31:ILE:HG13	1.93	0.51
14:o:46:HIS:CE1	52:a:668:G:H21	2.28	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:o:48:LYS:O	14:o:50:HIS:N	2.44	0.51
21:0:26:SER:OG	53:A:2888:C:O4'	2.29	0.51
29:E:175:ILE:HD11	29:E:180:LEU:HD11	1.92	0.51
35:K:3:GLN:HG2	35:K:4:GLU:H	1.75	0.51
39:O:27:VAL:HA	39:O:93:ASP:HB3	1.93	0.51
40:P:91:VAL:HG21	40:P:96:LEU:HD11	1.93	0.51
41:Q:91:ARG:NH2	53:A:996:A:H4'	2.25	0.51
43:S:24:ILE:HG22	43:S:71:VAL:HG11	1.92	0.51
47:W:46:ALA:HB3	47:W:80:SER:HB3	1.93	0.51
52:a:382:A:H2'	52:a:383:A:C8	2.46	0.51
52:a:632:U:H5''	52:a:633:G:H8	1.74	0.51
52:a:875:U:O4	52:a:876:C:N4	2.44	0.51
52:a:1166:G:O2'	52:a:1169:A:N6	2.44	0.51
53:A:358:U:H2'	53:A:359:G:H8	1.76	0.51
53:A:850:U:O4	53:A:927:A:N6	2.43	0.51
53:A:873:C:H42	53:A:904:G:H1	1.58	0.51
53:A:945:A:C5	53:A:2448:A:C2	2.98	0.51
53:A:1446:C:H2'	53:A:1447:C:H6	1.76	0.51
53:A:1532:A:C2	53:A:1533:C:H1'	2.46	0.51
53:A:2125:G:N2	53:A:2174:C:O2	2.44	0.51
53:A:2679:A:H2'	53:A:2680:U:H6	1.75	0.51
53:A:2855:C:H2'	53:A:2856:A:C8	2.46	0.51
5:f:43:GLY:HA2	5:f:58:HIS:CE1	2.46	0.51
8:i:20:PHE:CE2	52:a:1130:A:H5'	2.46	0.51
13:n:41:ARG:HH11	13:n:45:VAL:HG11	1.76	0.51
13:n:73:PHE:CZ	13:n:78:GLY:HA2	2.45	0.51
15:p:12:LYS:HG2	15:p:13:LYS:HG2	1.91	0.51
48:X:56:ARG:NH2	53:A:399:U:H5''	2.26	0.51
50:Z:3:THR:HA	50:Z:37:ARG:O	2.09	0.51
52:a:55:A:OP2	52:a:352:C:N4	2.42	0.51
52:a:878:A:H2'	52:a:879:C:H6	1.76	0.51
53:A:700:G:O2'	53:A:1632:A:N3	2.42	0.51
53:A:882:G:N2	53:A:895:U:O2'	2.43	0.51
53:A:1859:U:H2'	53:A:1860:G:H8	1.76	0.51
9:j:91:ASP:CG	9:j:92:LEU:H	2.19	0.51
13:n:46:LEU:HG	13:n:49:GLN:HE22	1.76	0.51
22:1:41:VAL:HG13	22:1:42:VAL:HG23	1.93	0.51
31:G:84:LYS:HB3	31:G:132:LEU:H	1.76	0.51
52:a:1064:G:O2'	52:a:1190:G:N2	2.43	0.51
52:a:1283:U:H2'	52:a:1284:C:C6	2.46	0.51
53:A:140:C:O4'	53:A:141:G:N2	2.43	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:365:U:H2'	53:A:366:C:C6	2.46	0.51
53:A:461:C:H2'	53:A:462:C:H6	1.76	0.51
53:A:910:A:N1	53:A:2277:G:H1'	2.26	0.51
53:A:1918:A:H2	53:A:1919:A:H62	1.58	0.51
53:A:2066:C:N4	53:A:2444:G:O6	2.36	0.51
53:A:2655:G:O2'	53:A:2664:G:O6	2.25	0.51
53:A:2660:A:H2'	53:A:2661:G:O4'	2.10	0.51
2:c:154:SER:HB3	2:c:165:THR:HG23	1.93	0.50
3:d:149:ALA:HA	3:d:152:GLN:HE22	1.76	0.50
10:k:52:PHE:HE2	10:k:65:VAL:HG11	1.76	0.50
26:5:107:GLY:O	26:5:134:ARG:NH2	2.36	0.50
29:E:162:ARG:NH1	53:A:340:A:O2'	2.43	0.50
34:J:59:ALA:HB3	34:J:126:ALA:HA	1.91	0.50
37:M:42:THR:HA	37:M:93:VAL:HG12	1.93	0.50
47:W:38:ARG:HG3	53:A:2330:G:H1'	1.93	0.50
52:a:250:A:H4'	52:a:251:G:O5'	2.10	0.50
52:a:736:C:H2'	52:a:737:C:C6	2.46	0.50
52:a:1009:U:H2'	52:a:1010:U:H6	1.74	0.50
53:A:452:G:N2	53:A:458:G:O4'	2.44	0.50
53:A:2150:C:N4	53:A:2151:U:O2	2.43	0.50
53:A:2812:G:H2'	53:A:2813:A:C8	2.46	0.50
6:g:79:ARG:NH1	6:g:83:SER:O	2.45	0.50
35:K:66:LYS:HA	35:K:79:PHE:O	2.12	0.50
50:Z:42:ALA:O	53:A:851:C:O2'	2.28	0.50
52:a:1444:U:H2'	52:a:1445:U:C6	2.46	0.50
53:A:1434:A:H2'	53:A:1435:G:H8	1.74	0.50
7:h:92:LEU:HB2	7:h:117:ARG:HH21	1.75	0.50
28:D:145:SER:HB2	53:A:2578:G:N7	2.26	0.50
50:Z:12:ALA:HB2	50:Z:53:MET:HE1	1.93	0.50
52:a:432:A:H3'	52:a:433:G:H8	1.77	0.50
52:a:742:G:H2'	52:a:743:A:H8	1.77	0.50
52:a:1054:C:OP2	52:a:1196:A:O2'	2.29	0.50
53:A:2108:A:H2	53:A:2181:U:H3	1.57	0.50
53:A:2137:U:H2'	53:A:2138:G:H8	1.76	0.50
53:A:2669:G:H2'	53:A:2670:A:H8	1.76	0.50
6:g:88:PRO:HG3	6:g:149:LYS:HA	1.93	0.50
10:k:87:LYS:NZ	10:k:113:VAL:O	2.44	0.50
19:t:10:ARG:HG2	52:a:108:G:O6	2.11	0.50
25:4:9:LYS:NZ	25:4:14:CYS:O	2.43	0.50
26:5:11:ILE:HB	26:5:220:ALA:HB2	1.94	0.50
52:a:258:G:N1	52:a:269:C:O2	2.44	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:a:1498:U:O2'	55:7:17:U:OP1	2.28	0.50
53:A:656:G:H2'	53:A:657:U:C6	2.46	0.50
53:A:713:G:O2'	53:A:718:A:N6	2.37	0.50
53:A:830:G:N3	53:A:2448:A:N6	2.59	0.50
53:A:2508:G:H2'	53:A:2509:G:C8	2.46	0.50
4:e:83:HIS:CE1	7:h:96:MET:HE3	2.47	0.50
8:i:5:GLN:OE1	8:i:20:PHE:HB3	2.11	0.50
10:k:122:ARG:NE	20:u:36:GLU:HG3	2.26	0.50
26:5:43:ASP:H	26:5:214:ILE:HD11	1.76	0.50
27:C:90:ILE:HD12	27:C:102:TYR:CD1	2.47	0.50
28:D:18:ASP:OD1	28:D:18:ASP:N	2.43	0.50
33:I:89:SER:O	33:I:91:LYS:N	2.45	0.50
52:a:128:G:H1	52:a:233:C:H42	1.60	0.50
52:a:202:G:H21	52:a:465:A:H62	1.58	0.50
52:a:352:C:H4'	52:a:354:G:OP1	2.10	0.50
52:a:519:C:N4	52:a:529:G:O2'	2.44	0.50
52:a:1352:C:N4	52:a:1370:G:H1	2.09	0.50
52:a:1445:U:O2	52:a:1457:G:N2	2.39	0.50
53:A:426:C:H2'	53:A:427:U:C6	2.47	0.50
53:A:819:A:N3	53:A:942:G:N2	2.59	0.50
53:A:974:G:H1'	53:A:975:A:C8	2.46	0.50
53:A:1063:G:H2'	53:A:1064:C:O4'	2.12	0.50
6:g:67:GLU:HG2	6:g:70:ARG:NH2	2.26	0.50
8:i:12:ARG:HH11	8:i:13:LYS:HB2	1.76	0.50
19:t:29:ARG:HB3	19:t:33:LYS:NZ	2.27	0.50
43:S:83:LYS:HD3	43:S:95:ARG:NH1	2.26	0.50
45:U:35:VAL:HB	45:U:38:ILE:HG21	1.93	0.50
52:a:1209:C:H2'	52:a:1210:C:C6	2.46	0.50
53:A:226:A:N6	53:A:227:A:N1	2.59	0.50
53:A:271:G:H1	53:A:366:C:N4	2.10	0.50
53:A:273:G:H2'	53:A:274:C:H6	1.77	0.50
53:A:413:C:H42	53:A:2410:G:H1	1.60	0.50
53:A:1687:G:H2'	53:A:1688:U:C6	2.47	0.50
2:c:88:ARG:HE	2:c:100:GLN:HA	1.76	0.50
8:i:34:SER:HB3	8:i:37:GLN:HG2	1.94	0.50
12:m:29:ARG:O	12:m:33:ILE:HG12	2.11	0.50
24:3:4:LYS:NZ	53:A:253:C:OP2	2.33	0.50
26:5:6:LYS:HE3	53:A:2151:U:H5''	1.94	0.50
30:F:15:LEU:HB3	30:F:21:TYR:HE2	1.77	0.50
30:F:134:GLN:NE2	30:F:147:ARG:O	2.40	0.50
45:U:13:LEU:HD11	45:U:70:ALA:HB2	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:a:199:A:H2'	52:a:200:G:H8	1.77	0.50
52:a:455:G:H1	52:a:477:C:H42	1.60	0.50
52:a:633:G:H2'	52:a:634:C:C6	2.47	0.50
52:a:1063:C:H42	52:a:1193:G:H1	1.59	0.50
53:A:1397:U:OP2	53:A:1398:C:N4	2.35	0.50
53:A:2101:A:H2'	53:A:2102:G:H8	1.75	0.50
53:A:2883:A:H5'	53:A:2884:U:H5'	1.94	0.50
56:9:8:U:N3	56:9:14:A:N7	2.60	0.50
3:d:76:TYR:CE1	3:d:201:VAL:HG13	2.46	0.50
3:d:98:LEU:HD12	3:d:135:TYR:CD2	2.45	0.50
3:d:154:ARG:CZ	52:a:437:U:H4'	2.42	0.50
8:i:58:VAL:HG12	8:i:59:GLU:HG2	1.94	0.50
11:l:28:PRO:HB2	11:l:29:GLN:OE1	2.12	0.50
13:n:87:ALA:O	13:n:92:GLU:HB2	2.11	0.50
16:q:65:ARG:NH1	52:a:264:C:O3'	2.44	0.50
29:E:40:ARG:HH21	29:E:92:HIS:CE1	2.29	0.50
38:N:58:ASP:OD1	38:N:59:SER:N	2.45	0.50
52:a:16:A:N3	52:a:1080:A:O2'	2.38	0.50
52:a:1514:G:H2'	52:a:1515:G:H8	1.77	0.50
53:A:298:G:O2'	53:A:322:A:N1	2.43	0.50
53:A:391:A:O2'	53:A:410:G:OP1	2.29	0.50
53:A:2033:A:N6	53:A:2036:C:N3	2.59	0.50
54:B:116:G:H2'	54:B:117:G:C8	2.47	0.50
56:9:11:C:N4	56:9:24:G:H1	2.10	0.50
27:C:156:SER:O	27:C:194:VAL:HG11	2.12	0.50
31:G:37:ASN:HB3	31:G:40:VAL:HB	1.93	0.50
33:I:53:PRO:HG2	33:I:77:VAL:HG11	1.94	0.50
33:I:135:MET:HB3	33:I:137:LEU:HG	1.94	0.50
36:L:75:ALA:HB3	36:L:101:ILE:HG23	1.94	0.50
38:N:70:THR:HB	38:N:75:ILE:HD11	1.93	0.50
47:W:18:LYS:HE2	53:A:2269:G:O3'	2.12	0.50
48:X:17:ARG:HH21	48:X:21:LEU:HB3	1.76	0.50
52:a:115:G:H4'	52:a:116:A:O5'	2.12	0.50
52:a:1029:U:O2'	52:a:1032:G:O6	2.28	0.50
52:a:1198:G:H2'	52:a:1199:U:C6	2.46	0.50
53:A:607:U:H2'	53:A:608:A:H8	1.76	0.50
53:A:884:U:H3	53:A:892:A:H2	1.60	0.50
53:A:1736:U:H2'	53:A:1737:G:O4'	2.12	0.50
1:b:82:ALA:O	1:b:85:SER:OG	2.25	0.49
15:p:20:VAL:HG23	15:p:35:ARG:HA	1.94	0.49
16:q:13:VAL:HG23	16:q:22:VAL:HG13	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:C:141:HIS:HD2	27:C:192:GLY:O	1.95	0.49
27:C:146:LYS:HB2	27:C:149:LYS:HB2	1.93	0.49
32:H:29:PHE:HB2	53:A:2198:A:C2	2.47	0.49
32:H:51:ARG:HA	32:H:54:LEU:HB3	1.93	0.49
44:T:11:LEU:HD23	44:T:34:VAL:HG12	1.94	0.49
47:W:20:LEU:HD13	53:A:2355:G:H4'	1.93	0.49
52:a:996:A:N1	52:a:1045:C:O2'	2.41	0.49
52:a:1093:A:N3	52:a:1109:C:O2'	2.43	0.49
52:a:1397:C:H42	55:7:21:A:H62	1.58	0.49
53:A:1271:G:N2	53:A:1617:C:O4'	2.44	0.49
53:A:1638:C:OP1	53:A:2710:C:O2'	2.29	0.49
53:A:2143:C:O2	53:A:2146:C:O2'	2.30	0.49
3:d:188:ARG:NH1	3:d:191:LEU:O	2.45	0.49
16:q:24:ALA:HA	16:q:43:LYS:HA	1.94	0.49
21:0:29:VAL:HG12	21:0:36:LYS:HA	1.93	0.49
26:5:35:THR:HG23	26:5:219:GLY:HA2	1.93	0.49
52:a:1162:C:H2'	52:a:1163:A:C8	2.47	0.49
53:A:120:U:H4'	53:A:121:G:H5''	1.94	0.49
53:A:604:G:H2'	53:A:605:G:H8	1.77	0.49
53:A:1499:C:H2'	53:A:1500:G:H8	1.77	0.49
54:B:114:C:H2'	54:B:115:A:H8	1.77	0.49
56:8:19:G:N7	56:8:57:G:C2	2.80	0.49
7:h:15:ARG:NH2	52:a:876:C:O5'	2.44	0.49
7:h:46:ILE:HA	7:h:64:LYS:HG3	1.94	0.49
8:i:107:ASP:OD2	8:i:109:ARG:NH2	2.45	0.49
34:J:37:ARG:HG3	34:J:118:MET:HE1	1.95	0.49
47:W:65:LYS:HD2	47:W:82:GLU:OE1	2.12	0.49
52:a:1201:A:H1'	52:a:1202:U:OP2	2.12	0.49
53:A:141:G:H2'	53:A:141:G:N3	2.27	0.49
53:A:200:U:O2	53:A:386:G:N2	2.45	0.49
53:A:1150:C:H2'	53:A:1151:A:H8	1.76	0.49
53:A:1992:G:O4'	53:A:1994:C:N4	2.39	0.49
56:8:48:C:H2'	56:8:59:U:H4'	1.94	0.49
8:i:105:THR:OG1	52:a:1180:A:OP1	2.24	0.49
12:m:29:ARG:HH21	12:m:63:PHE:HB2	1.75	0.49
26:5:74:ARG:NH2	53:A:2125:G:O5'	2.45	0.49
30:F:128:SER:HA	30:F:154:THR:HA	1.94	0.49
31:G:109:SER:HB2	53:A:2668:G:H1'	1.95	0.49
37:M:96:ILE:HD11	37:M:126:ILE:HG21	1.94	0.49
41:Q:90:ASP:OD1	41:Q:94:LEU:HD22	2.13	0.49
45:U:95:PHE:O	45:U:99:SER:HA	2.11	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:W:39:GLN:HE21	47:W:43:LYS:HB2	1.76	0.49
49:Y:31:GLN:O	49:Y:34:SER:OG	2.26	0.49
52:a:1121:U:H2'	52:a:1122:U:C6	2.47	0.49
52:a:1219:A:N6	52:a:1220:G:O6	2.45	0.49
53:A:457:A:H2	53:A:458:G:H21	1.59	0.49
53:A:547:A:H3'	53:A:548:G:C5'	2.42	0.49
53:A:877:A:H1'	53:A:900:A:N6	2.27	0.49
53:A:2507:C:H5'	53:A:2573:C:C4	2.47	0.49
54:B:106:G:H2'	54:B:107:G:O4'	2.12	0.49
8:i:28:ILE:HG23	8:i:63:LEU:HD11	1.93	0.49
18:s:31:LEU:HB2	18:s:49:ILE:HG13	1.95	0.49
33:I:134:SER:HB3	53:A:1062:G:H1'	1.95	0.49
44:T:44:LYS:O	44:T:48:GLN:HG2	2.12	0.49
45:U:37:GLY:N	45:U:61:GLU:OE2	2.43	0.49
53:A:1174:U:O2'	53:A:1176:U:N3	2.40	0.49
53:A:1378:A:O2'	53:A:1380:G:N7	2.39	0.49
53:A:1496:A:N3	53:A:1577:C:O2'	2.45	0.49
53:A:2184:A:H2'	53:A:2185:U:C6	2.48	0.49
56:9:27:G:O2'	56:9:28:G:H5'	2.12	0.49
56:9:56:C:H2'	56:9:57:G:C8	2.47	0.49
3:d:72:PHE:CE1	3:d:94:LEU:HD11	2.47	0.49
3:d:124:MET:HG3	3:d:146:ARG:HG2	1.94	0.49
8:i:46:MET:O	8:i:50:GLN:HG3	2.12	0.49
12:m:7:ILE:HD11	30:F:109:ARG:NH2	2.28	0.49
28:D:129:THR:HG22	28:D:130:GLN:O	2.13	0.49
52:a:945:G:H22	52:a:1236:A:H2	1.60	0.49
52:a:1430:A:H2'	52:a:1431:A:O4'	2.12	0.49
53:A:161:A:OP2	53:A:162:U:O2'	2.29	0.49
53:A:1271:G:O2'	53:A:1618:A:OP1	2.30	0.49
5:f:46:GLN:OE1	5:f:47:LEU:N	2.41	0.49
10:k:88:GLY:N	10:k:114:THR:HG22	2.22	0.49
20:u:10:GLU:CG	20:u:11:PRO:HD3	2.42	0.49
31:G:33:THR:O	31:G:74:MET:HE3	2.12	0.49
34:J:3:THR:HG21	41:Q:60:TRP:HE1	1.76	0.49
41:Q:85:ALA:HB1	41:Q:111:LYS:HE3	1.93	0.49
44:T:85:VAL:O	44:T:86:THR:OG1	2.31	0.49
47:W:39:GLN:HG3	47:W:42:THR:HB	1.95	0.49
47:W:39:GLN:NE2	47:W:43:LYS:HB2	2.27	0.49
52:a:79:G:C2	52:a:80:A:H1'	2.47	0.49
52:a:1427:C:H2'	52:a:1428:A:H8	1.74	0.49
53:A:277:G:H4'	53:A:278:A:N7	2.28	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:2354:C:H42	53:A:2363:G:H1	1.59	0.49
56:9:10:G:N1	56:9:26:A:N3	2.29	0.49
1:b:119:GLN:O	1:b:124:THR:OG1	2.27	0.49
4:e:36:LEU:HD22	4:e:134:ILE:HG13	1.95	0.49
8:i:62:ASP:OD1	8:i:63:LEU:N	2.44	0.49
9:j:10:LEU:HB2	9:j:72:ARG:HB2	1.95	0.49
16:q:47:HIS:N	16:q:73:TRP:O	2.31	0.49
20:u:40:LYS:N	20:u:41:PRO:HD2	2.27	0.49
30:F:56:LEU:HD23	30:F:59:ILE:HD12	1.94	0.49
39:O:30:ARG:HH12	54:B:48:U:P	2.35	0.49
52:a:662:U:O2'	52:a:836:G:OP1	2.30	0.49
52:a:729:A:H2'	52:a:730:G:H8	1.77	0.49
52:a:931:C:O2'	52:a:932:C:O5'	2.29	0.49
52:a:1134:G:H2'	52:a:1135:U:O4'	2.13	0.49
53:A:191:A:H2'	53:A:192:C:C6	2.48	0.49
53:A:299:A:N7	53:A:300:A:N6	2.61	0.49
53:A:2062:A:H8	53:A:2503:A:H62	1.59	0.49
53:A:2208:C:H2'	53:A:2209:G:H8	1.77	0.49
56:8:44:G:O2'	56:8:45:U:H2'	2.13	0.49
11:l:118:GLY:HA2	52:a:35:G:O2'	2.13	0.49
14:o:74:ASP:OD1	14:o:75:VAL:N	2.46	0.49
28:D:124:ARG:NH1	28:D:164:GLN:O	2.43	0.49
36:L:77:ILE:HG22	36:L:78:ARG:H	1.78	0.49
36:L:82:LEU:HA	36:L:85:VAL:HB	1.95	0.49
47:W:36:ILE:HG22	47:W:37:VAL:O	2.13	0.49
52:a:575:G:O2'	52:a:821:G:OP2	2.28	0.49
52:a:1085:U:O4'	52:a:1094:G:N1	2.46	0.49
53:A:218:A:H2'	53:A:219:A:H8	1.76	0.49
53:A:271:G:C2	53:A:272:A:C5	3.01	0.49
53:A:527:C:H4'	53:A:528:A:O5'	2.12	0.49
53:A:792:A:O2'	53:A:2440:C:N3	2.41	0.49
53:A:2172:U:O2'	53:A:2173:A:H5'	2.13	0.49
53:A:2704:C:H2'	53:A:2705:A:O4'	2.13	0.49
56:9:71:G:H2'	56:9:72:C:C6	2.47	0.49
24:3:23:HIS:CD2	24:3:49:VAL:HG12	2.47	0.49
28:D:98:VAL:HG21	28:D:185:ASN:HA	1.95	0.49
30:F:130:GLY:HA3	53:A:2305:U:H5''	1.95	0.49
31:G:25:ILE:HD12	31:G:74:MET:HE2	1.94	0.49
31:G:86:LEU:HD11	31:G:144:ALA:HB1	1.95	0.49
42:R:49:ILE:HG22	42:R:54:VAL:HG13	1.95	0.49
52:a:943:U:H2'	52:a:944:G:H8	1.78	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:a:1251:A:H2'	52:a:1252:A:O4'	2.12	0.49
53:A:278:A:N1	53:A:361:G:H2'	2.27	0.49
53:A:624:C:H2'	53:A:625:G:C8	2.47	0.49
53:A:1057:A:C8	53:A:1086:A:H2'	2.47	0.49
53:A:1409:U:H2'	53:A:1410:G:C8	2.48	0.49
53:A:1637:A:H2'	53:A:1638:C:C6	2.48	0.49
56:9:11:C:H42	56:9:25:C:N4	2.08	0.49
56:9:41:C:H2'	56:9:42:C:O4'	2.13	0.49
1:b:172:ILE:HG23	1:b:182:VAL:HG11	1.94	0.48
3:d:8:LYS:HB3	3:d:21:LEU:HD13	1.94	0.48
17:r:48:ARG:O	17:r:52:GLN:N	2.43	0.48
19:t:67:ILE:HG22	19:t:71:LYS:HB3	1.94	0.48
22:1:39:ASP:O	22:1:43:ARG:N	2.46	0.48
26:5:186:LYS:HD3	26:5:231:ALA:HA	1.94	0.48
27:C:244:VAL:HG12	27:C:250:GLN:HA	1.95	0.48
30:F:107:VAL:HB	30:F:108:PRO:HD3	1.94	0.48
52:a:104:G:H2'	52:a:105:G:C8	2.47	0.48
52:a:233:C:H2'	52:a:234:C:H6	1.78	0.48
52:a:242:G:C2	52:a:245:U:C4	3.01	0.48
52:a:1384:C:H2'	52:a:1385:G:H8	1.78	0.48
53:A:528:A:N1	53:A:2042:A:H2'	2.28	0.48
53:A:1656:C:H42	53:A:2004:G:H1	1.61	0.48
1:b:65:LYS:HD2	1:b:153:MET:HG3	1.94	0.48
3:d:63:ARG:NH2	52:a:544:G:OP2	2.45	0.48
13:n:3:LYS:HG3	52:a:1048:G:H5''	1.94	0.48
25:4:4:ARG:HG2	25:4:6:SER:H	1.78	0.48
26:5:74:ARG:HH22	53:A:2125:G:H3'	1.79	0.48
27:C:35:LYS:NZ	53:A:1353:A:O3'	2.46	0.48
45:U:85:ARG:N	45:U:91:LYS:O	2.40	0.48
46:V:72:VAL:HG12	46:V:93:ARG:HA	1.93	0.48
52:a:784:A:H2'	52:a:785:G:H8	1.78	0.48
52:a:1009:U:H2'	52:a:1010:U:C6	2.48	0.48
52:a:1062:U:H2'	52:a:1063:C:C6	2.48	0.48
52:a:1332:A:N7	52:a:1333:A:C4	2.80	0.48
53:A:1055:G:H1	53:A:1104:C:H42	1.60	0.48
53:A:1418:G:N2	53:A:1579:A:N7	2.60	0.48
53:A:2669:G:H2'	53:A:2670:A:C8	2.47	0.48
56:9:24:G:C3'	56:9:25:C:C5'	2.91	0.48
1:b:44:LYS:O	1:b:47:PRO:HD2	2.13	0.48
3:d:95:GLU:HA	3:d:100:ASN:ND2	2.28	0.48
3:d:102:VAL:O	3:d:106:GLY:N	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:h:106:THR:HB	7:h:109:GLY:O	2.13	0.48
9:j:5:ARG:HB3	9:j:77:VAL:HA	1.93	0.48
11:l:36:ARG:HG2	11:l:38:TYR:HD2	1.78	0.48
27:C:246:PRO:HG2	27:C:247:TRP:CE3	2.49	0.48
34:J:112:GLY:O	34:J:115:GLY:N	2.38	0.48
36:L:81:ASP:C	36:L:83:ALA:H	2.20	0.48
50:Z:2:LYS:O	50:Z:3:THR:OG1	2.27	0.48
50:Z:4:ILE:HD12	50:Z:56:VAL:HG23	1.95	0.48
50:Z:6:ILE:HG22	50:Z:28:LEU:HD11	1.94	0.48
52:a:262:A:H2'	52:a:263:A:C8	2.48	0.48
52:a:1106:G:H2'	52:a:1107:C:C6	2.49	0.48
53:A:139:U:O2'	53:A:141:G:N2	2.35	0.48
53:A:255:A:H2'	53:A:256:A:O4'	2.12	0.48
53:A:863:A:O3'	54:B:100:G:N2	2.45	0.48
53:A:1346:G:H2'	53:A:1347:A:C8	2.48	0.48
53:A:2392:A:OP2	53:A:2422:C:N4	2.41	0.48
56:9:24:G:C2'	56:9:25:C:H5'	2.07	0.48
7:h:18:GLN:NE2	7:h:70:ALA:HB1	2.28	0.48
7:h:45:PHE:HB3	7:h:72:VAL:HG22	1.95	0.48
14:o:15:PHE:HE1	14:o:84:ARG:HD3	1.78	0.48
16:q:60:GLU:OE1	16:q:77:ARG:NH2	2.46	0.48
17:r:37:GLY:O	17:r:63:ARG:NH2	2.47	0.48
19:t:78:ASN:OD1	19:t:79:LEU:N	2.47	0.48
27:C:219:VAL:HG21	53:A:782:A:N7	2.28	0.48
31:G:138:GLN:NE2	53:A:2760:C:H1'	2.27	0.48
35:K:63:VAL:HG11	35:K:103:VAL:HG12	1.95	0.48
38:N:22:ARG:HG3	38:N:70:THR:HA	1.94	0.48
39:O:105:ALA:O	39:O:107:ALA:N	2.39	0.48
47:W:9:THR:OG1	47:W:10:ARG:N	2.41	0.48
52:a:687:A:N1	52:a:700:G:O2'	2.42	0.48
52:a:1507:A:C8	52:a:1530:G:N2	2.81	0.48
53:A:445:C:O2'	53:A:449:A:N3	2.36	0.48
53:A:1200:C:N4	53:A:1201:U:O4	2.46	0.48
53:A:1438:U:H2'	53:A:1439:A:C8	2.44	0.48
53:A:2070:A:H2'	53:A:2071:A:O4'	2.13	0.48
3:d:62:ARG:O	3:d:66:GLY:N	2.43	0.48
6:g:113:ASP:HB2	6:g:119:ARG:HG2	1.96	0.48
11:l:53:CYS:HB3	11:l:67:ILE:HD11	1.95	0.48
12:m:26:GLY:H	52:a:1329:A:H5''	1.78	0.48
14:o:29:VAL:HG13	14:o:63:ARG:HG3	1.96	0.48
26:5:18:THR:HG23	26:5:223:ALA:N	2.26	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:G:157:LYS:NZ	53:A:2659:G:OP2	2.46	0.48
37:M:82:MET:HE3	53:A:960:A:N6	2.21	0.48
52:a:64:G:H4'	52:a:65:A:H3'	1.94	0.48
52:a:118:U:O2'	52:a:121:U:O4	2.29	0.48
52:a:182:A:H62	52:a:194:C:H42	1.62	0.48
52:a:556:C:H2'	52:a:557:G:O4'	2.14	0.48
53:A:31:C:O2'	53:A:1238:G:OP1	2.30	0.48
53:A:61:C:C4	53:A:62:U:H5	2.32	0.48
53:A:167:A:H2'	53:A:168:G:O4'	2.13	0.48
53:A:791:C:O2'	53:A:792:A:OP2	2.25	0.48
53:A:2193:G:H2'	53:A:2194:U:H6	1.78	0.48
56:9:5:G:H2'	56:9:6:G:C8	2.48	0.48
6:g:3:ARG:NH1	52:a:932:C:H5	2.11	0.48
18:s:55:ARG:NH2	52:a:958:A:O4'	2.47	0.48
45:U:86:PHE:CZ	45:U:101:THR:HG21	2.48	0.48
49:Y:24:GLU:OE1	49:Y:46:VAL:HG13	2.13	0.48
52:a:203:G:H2'	52:a:204:G:H5''	1.94	0.48
52:a:252:U:O4	52:a:253:A:N6	2.43	0.48
53:A:151:C:H42	53:A:175:G:H1	1.62	0.48
53:A:2187:U:H2'	53:A:2188:U:C6	2.48	0.48
2:c:5:VAL:N	52:a:1190:G:OP1	2.40	0.48
7:h:77:ARG:NE	7:h:79:SER:O	2.47	0.48
23:2:34:ARG:NE	23:2:42:LEU:O	2.47	0.48
26:5:7:ARG:HH12	26:5:218:MET:HG3	1.79	0.48
31:G:110:HIS:HE1	53:A:2668:G:H4'	1.79	0.48
36:L:77:ILE:HG22	36:L:78:ARG:N	2.28	0.48
47:W:53:GLY:N	47:W:57:THR:O	2.43	0.48
52:a:1279:G:H2'	52:a:1279:G:N3	2.29	0.48
52:a:1408:A:O2'	53:A:1916:A:N1	2.46	0.48
52:a:1411:C:H2'	52:a:1412:C:C6	2.48	0.48
53:A:2476:A:H2	53:A:2481:G:H1	1.62	0.48
53:A:2679:A:H2'	53:A:2680:U:C6	2.49	0.48
13:n:75:ARG:NH2	52:a:1360:A:OP2	2.47	0.48
13:n:97:LYS:HE2	13:n:99:ALA:HB2	1.94	0.48
18:s:52:HIS:CD2	18:s:54:GLY:H	2.31	0.48
23:2:26:ASN:O	23:2:30:VAL:HG23	2.13	0.48
26:5:56:ASP:O	26:5:202:THR:OG1	2.28	0.48
52:a:767:A:H2'	52:a:768:A:H8	1.78	0.48
53:A:974:G:H1'	53:A:975:A:H8	1.78	0.48
53:A:2122:U:N3	53:A:2123:G:N7	2.62	0.48
53:A:2230:G:H2'	53:A:2231:U:C6	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:2301:C:H2'	53:A:2302:U:C6	2.49	0.48
53:A:2788:C:H2'	53:A:2789:C:C6	2.49	0.48
2:c:77:ILE:HA	2:c:84:VAL:HG23	1.95	0.48
8:i:18:ARG:HH11	8:i:20:PHE:HE2	1.62	0.48
37:M:10:ARG:HE	37:M:11:LYS:HE3	1.78	0.48
42:R:66:HIS:CD2	42:R:94:THR:HG22	2.49	0.48
47:W:30:VAL:HA	47:W:60:ALA:O	2.14	0.48
52:a:139:A:C5	52:a:140:U:C4	3.02	0.48
52:a:1086:U:H2'	52:a:1087:G:C8	2.49	0.48
53:A:182:A:H2'	53:A:183:C:O4'	2.14	0.48
53:A:233:A:N6	53:A:428:A:H61	2.11	0.48
53:A:478:A:N6	53:A:480:A:N1	2.62	0.48
53:A:594:U:H2'	53:A:595:C:C6	2.48	0.48
53:A:1424:G:H2'	53:A:1425:G:O4'	2.14	0.48
53:A:1877:A:H2'	53:A:1878:G:O4'	2.14	0.48
53:A:2573:C:OP1	53:A:2574:G:H5''	2.14	0.48
10:k:120:GLY:HA2	52:a:716:A:C2	2.49	0.48
38:N:24:MET:HE2	38:N:44:LEU:HD22	1.95	0.48
49:Y:13:GLU:O	49:Y:16:THR:OG1	2.32	0.48
52:a:478:A:C2	52:a:479:U:H1'	2.48	0.48
52:a:591:U:H2'	52:a:592:G:H8	1.79	0.48
52:a:1028:C:N4	52:a:1033:G:H1	2.11	0.48
52:a:1251:A:O2'	52:a:1370:G:H5'	2.14	0.48
53:A:124:G:N2	53:A:126:A:O2'	2.45	0.48
53:A:962:G:O2'	53:A:2496:C:O2'	2.32	0.48
53:A:1184:U:H2'	53:A:1185:G:C8	2.48	0.48
53:A:1730:C:O2	53:A:1731:G:N1	2.47	0.48
53:A:1859:U:C2	53:A:1860:G:C8	3.01	0.48
53:A:2260:C:O2'	53:A:2388:A:O2'	2.31	0.48
53:A:2287:A:HO2'	53:A:2288:A:H2'	1.79	0.48
1:b:106:VAL:O	1:b:110:ILE:HD12	2.13	0.47
6:g:2:PRO:HB2	52:a:1379:G:O6	2.13	0.47
32:H:100:ALA:H	32:H:112:LYS:HD3	1.79	0.47
33:I:18:ASN:HA	33:I:23:VAL:HG21	1.95	0.47
40:P:88:ARG:HD2	40:P:112:ARG:NH2	2.30	0.47
48:X:31:ASN:O	48:X:32:LEU:HD12	2.14	0.47
51:x:557:ASP:OD2	56:8:74:C:N4	2.47	0.47
51:x:563:LYS:O	51:x:567:LYS:HG2	2.14	0.47
52:a:129:A:H1'	52:a:130:A:C8	2.49	0.47
52:a:785:G:H2'	52:a:786:G:H8	1.78	0.47
52:a:994:A:N7	52:a:1216:A:H4'	2.29	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:692:C:C2	53:A:771:G:C2	3.02	0.47
53:A:1569:A:H2'	53:A:1570:A:C8	2.49	0.47
53:A:1620:G:H2'	53:A:1621:U:C6	2.48	0.47
53:A:2304:G:H22	53:A:2312:U:H3	1.62	0.47
53:A:2453:A:N6	53:A:2500:U:H3	2.12	0.47
56:8:69:G:H2'	56:8:70:G:C8	2.49	0.47
11:l:79:VAL:HG12	11:l:102:LEU:HD23	1.96	0.47
14:o:60:VAL:HG21	53:A:715:A:H1'	1.96	0.47
34:J:40:HIS:HE1	34:J:41:LYS:HE3	1.78	0.47
44:T:32:LEU:H	44:T:83:ALA:HB3	1.79	0.47
47:W:43:LYS:HD2	47:W:79:ILE:HG13	1.94	0.47
52:a:370:C:H42	52:a:391:G:H1	1.62	0.47
52:a:507:C:OP2	52:a:508:U:O2'	2.23	0.47
52:a:824:G:H2'	52:a:825:A:C8	2.48	0.47
52:a:978:A:N6	52:a:1316:G:H21	2.12	0.47
52:a:1335:U:H5''	52:a:1336:C:H5''	1.95	0.47
52:a:1346:A:N1	52:a:1374:A:H5''	2.29	0.47
53:A:489:G:O6	53:A:491:G:N2	2.47	0.47
53:A:1713:A:C6	53:A:1716:U:H1'	2.49	0.47
53:A:2128:G:O6	53:A:2133:G:N2	2.47	0.47
8:i:60:LYS:HG2	8:i:61:LEU:HD13	1.94	0.47
11:l:86:ARG:HA	11:l:94:ARG:HA	1.95	0.47
30:F:28:PRO:HB3	30:F:159:ALA:HB2	1.97	0.47
32:H:96:THR:OG1	32:H:112:LYS:O	2.17	0.47
34:J:68:LYS:NZ	53:A:1140:C:OP2	2.36	0.47
45:U:9:GLU:HA	45:U:23:LYS:HA	1.95	0.47
52:a:427:U:OP2	52:a:428:G:O2'	2.28	0.47
52:a:1447:A:H5'	52:a:1448:C:C5	2.49	0.47
53:A:269:C:O2	53:A:270:A:C8	2.64	0.47
53:A:573:U:O2'	53:A:575:A:OP1	2.27	0.47
53:A:1488:C:H42	53:A:1501:G:H1	1.61	0.47
53:A:1748:C:H2'	53:A:1749:A:H8	1.78	0.47
3:d:107:PHE:CD1	3:d:159:LEU:HD21	2.49	0.47
5:f:93:LYS:HG3	5:f:93:LYS:O	2.14	0.47
12:m:107:ARG:HH21	12:m:113:ARG:HH21	1.61	0.47
13:n:25:ALA:O	13:n:28:LYS:HG2	2.15	0.47
15:p:5:ARG:HA	15:p:71:VAL:HG21	1.95	0.47
15:p:5:ARG:NH1	52:a:376:G:O3'	2.47	0.47
19:t:3:ASN:O	19:t:5:LYS:N	2.47	0.47
31:G:2:ARG:HD3	53:A:2751:G:C4	2.49	0.47
32:H:121:VAL:O	32:H:122:LEU:HB3	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:P:88:ARG:NH2	40:P:112:ARG:HB3	2.29	0.47
46:V:17:SER:HB3	46:V:21:ARG:NH1	2.28	0.47
52:a:840:C:N3	52:a:842:U:O2'	2.47	0.47
53:A:1164:C:H2'	53:A:1165:A:H8	1.78	0.47
53:A:1400:U:H2'	53:A:1401:G:C8	2.50	0.47
1:b:150:ILE:HD11	1:b:153:MET:HE2	1.96	0.47
3:d:72:PHE:HE1	3:d:94:LEU:HD11	1.80	0.47
13:n:73:PHE:CE1	13:n:78:GLY:HA2	2.49	0.47
17:r:61:ARG:NH2	52:a:736:C:OP1	2.42	0.47
26:5:37:LYS:HE2	26:5:38:PHE:CE2	2.48	0.47
28:D:113:SER:OG	28:D:167:ASN:N	2.47	0.47
48:X:4:CYS:HB2	48:X:51:SER:HB3	1.96	0.47
52:a:317:U:H2'	52:a:318:G:H8	1.79	0.47
52:a:577:G:H2'	52:a:578:C:C6	2.49	0.47
52:a:902:G:H2'	52:a:903:G:H8	1.80	0.47
52:a:1376:U:H2'	52:a:1377:A:H8	1.79	0.47
53:A:21:A:H61	53:A:519:U:H3	1.61	0.47
53:A:1871:A:O2'	53:A:1872:A:N7	2.41	0.47
53:A:2101:A:H2'	53:A:2102:G:C8	2.50	0.47
53:A:2162:G:OP2	53:A:2163:A:N6	2.48	0.47
54:B:84:G:H1	54:B:92:C:H42	1.62	0.47
56:9:1:G:C2	56:9:73:A:H1'	2.49	0.47
1:b:44:LYS:C	1:b:47:PRO:HD2	2.39	0.47
10:k:127:ARG:HH21	20:u:34:ARG:HA	1.79	0.47
11:l:57:LEU:HD21	11:l:82:ILE:HG21	1.96	0.47
16:q:11:ARG:O	16:q:23:VAL:HG13	2.13	0.47
26:5:1:MET:HE2	53:A:2177:C:H42	1.80	0.47
26:5:52:ALA:HB1	26:5:54:LYS:H	1.78	0.47
28:D:151:THR:HG22	28:D:152:PRO:HD3	1.97	0.47
41:Q:16:ILE:HD13	41:Q:35:PHE:HD1	1.79	0.47
41:Q:24:TYR:OH	53:A:2021:C:OP1	2.28	0.47
48:X:58:ILE:HG23	48:X:63:ILE:HG12	1.96	0.47
50:Z:16:LEU:HB2	50:Z:19:HIS:HD2	1.79	0.47
52:a:266:G:H1'	52:a:268:U:OP2	2.15	0.47
52:a:1363:A:O2'	52:a:1365:G:N7	2.36	0.47
53:A:564:C:H2'	53:A:565:C:C6	2.48	0.47
53:A:693:A:O2'	53:A:1353:A:N3	2.45	0.47
53:A:1018:U:O3'	53:A:1120:G:N2	2.48	0.47
53:A:1112:G:H2'	53:A:1113:U:C6	2.49	0.47
53:A:1668:A:H61	53:A:1676:A:H61	1.63	0.47
53:A:2437:G:H2'	53:A:2438:U:C6	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:88:GLN:HE22	1:b:217:ALA:HA	1.79	0.47
4:e:153:VAL:HG21	7:h:99:LEU:HB2	1.96	0.47
5:f:90:MET:HE1	17:r:23:TYR:CE2	2.50	0.47
7:h:106:THR:HG22	7:h:108:LYS:N	2.27	0.47
9:j:57:VAL:HG12	9:j:58:ASN:N	2.29	0.47
14:o:15:PHE:CE1	14:o:84:ARG:HD3	2.49	0.47
22:1:25:ASN:ND2	22:1:28:THR:HG23	2.30	0.47
24:3:32:LEU:HB2	53:A:2419:U:H5''	1.95	0.47
26:5:5:THR:HG22	26:5:8:MET:HE3	1.96	0.47
26:5:67:HIS:O	26:5:159:GLY:HA3	2.14	0.47
26:5:213:SER:OG	26:5:224:VAL:O	2.32	0.47
28:D:20:VAL:HG13	35:K:72:PRO:HB2	1.97	0.47
29:E:148:ILE:HA	29:E:187:VAL:HB	1.96	0.47
29:E:151:GLY:HA2	29:E:192:ALA:HB2	1.96	0.47
29:E:165:HIS:HE1	53:A:1205:A:H2'	1.80	0.47
40:P:30:TRP:CD1	40:P:81:ASP:HB2	2.49	0.47
42:R:80:ARG:NH2	53:A:572:A:OP2	2.48	0.47
44:T:43:ILE:HD11	44:T:58:VAL:HG11	1.95	0.47
50:Z:6:ILE:O	50:Z:34:THR:HA	2.14	0.47
52:a:53:A:N6	52:a:54:C:N3	2.63	0.47
52:a:199:A:H2'	52:a:200:G:C8	2.50	0.47
52:a:517:G:H1	52:a:533:A:P	2.35	0.47
53:A:238:C:O2'	53:A:608:A:N3	2.46	0.47
53:A:270:A:H2'	53:A:270:A:N3	2.30	0.47
53:A:679:C:H2'	53:A:680:C:H6	1.79	0.47
53:A:690:G:O2'	53:A:780:G:OP1	2.33	0.47
53:A:855:G:H22	53:A:922:C:N4	2.13	0.47
53:A:1041:G:N3	53:A:1115:G:N2	2.62	0.47
53:A:1334:G:C6	53:A:1335:C:C4	3.03	0.47
53:A:1529:G:H1	53:A:1542:U:H3	1.62	0.47
53:A:1687:G:H2'	53:A:1688:U:H6	1.79	0.47
53:A:2572:A:OP1	53:A:2574:G:O2'	2.25	0.47
56:8:19:G:H8	56:8:19:G:OP2	1.97	0.47
1:b:185:ILE:HG12	1:b:199:ILE:HD11	1.97	0.47
3:d:26:ARG:HH12	3:d:31:LYS:HD2	1.80	0.47
4:e:12:GLN:HG3	4:e:117:VAL:HG12	1.96	0.47
6:g:4:ARG:HG3	6:g:5:ARG:N	2.30	0.47
9:j:18:ILE:HA	9:j:21:ALA:HB3	1.97	0.47
28:D:118:PHE:CD1	53:A:1655:A:H4'	2.50	0.47
52:a:92:U:H2'	52:a:93:U:C6	2.49	0.47
52:a:1234:C:H1'	52:a:1364:U:H6	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:471:A:H2'	53:A:472:A:O4'	2.14	0.47
53:A:813:U:H2'	53:A:814:C:C6	2.50	0.47
53:A:884:U:H2'	53:A:885:C:O4'	2.14	0.47
53:A:1326:U:HO2'	53:A:2010:G:HO2'	1.57	0.47
53:A:2110:G:H1	53:A:2179:C:H42	1.61	0.47
53:A:2208:C:H2'	53:A:2209:G:C8	2.49	0.47
53:A:2380:C:H2'	53:A:2381:A:C8	2.50	0.47
4:e:80:THR:HB	4:e:122:ASN:OD1	2.14	0.47
5:f:19:PRO:HA	5:f:22:ILE:HD12	1.96	0.47
13:n:34:VAL:O	13:n:35:ASN:ND2	2.48	0.47
19:t:74:ARG:NH2	52:a:261:U:OP2	2.47	0.47
24:3:21:PHE:O	24:3:22:LYS:HG2	2.15	0.47
26:5:162:ARG:NH2	53:A:2124:G:OP2	2.47	0.47
33:I:92:PRO:HA	53:A:1076:C:H4'	1.97	0.47
38:N:92:GLY:HA2	38:N:94:TYR:CE1	2.50	0.47
41:Q:85:ALA:HB1	41:Q:111:LYS:HG3	1.96	0.47
52:a:922:G:H2'	52:a:923:A:C8	2.50	0.47
52:a:1252:A:H61	52:a:1285:A:N6	2.12	0.47
52:a:1393:U:O2'	52:a:1501:C:O2'	2.24	0.47
52:a:1433:A:N6	52:a:1434:A:N1	2.63	0.47
53:A:10:A:C5	53:A:2800:A:C6	3.03	0.47
53:A:277:G:H4'	53:A:278:A:C8	2.50	0.47
53:A:349:U:H2'	53:A:350:G:H8	1.80	0.47
53:A:547:A:H3'	53:A:548:G:H5'	1.96	0.47
53:A:608:A:C6	53:A:621:A:C5	3.03	0.47
53:A:1295:C:H2'	53:A:1296:G:H8	1.79	0.47
3:d:152:GLN:O	3:d:154:ARG:N	2.44	0.47
11:l:58:THR:OG1	52:a:362:G:OP1	2.33	0.47
26:5:182:ALA:HB1	26:5:232:SER:HA	1.97	0.47
28:D:3:GLY:HA3	28:D:203:VAL:O	2.15	0.47
30:F:133:GLU:O	30:F:136:ILE:HG12	2.15	0.47
42:R:63:VAL:HA	42:R:96:VAL:HG12	1.97	0.47
50:Z:50:VAL:O	50:Z:54:VAL:HG22	2.15	0.47
52:a:144:G:H2'	52:a:145:G:C8	2.50	0.47
52:a:1182:G:H4'	52:a:1183:U:H5''	1.96	0.47
52:a:1328:C:H2'	52:a:1329:A:O4'	2.15	0.47
53:A:320:A:O2'	53:A:322:A:OP2	2.25	0.47
53:A:1414:C:H2'	53:A:1415:U:C6	2.50	0.47
56:9:11:C:H2'	56:9:12:U:C6	2.50	0.47
11:l:115:SER:OG	52:a:35:G:N3	2.48	0.46
26:5:170:ILE:HD13	53:A:2177:C:H4'	1.96	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:D:29:VAL:HB	28:D:98:VAL:HG22	1.97	0.46
30:F:109:ARG:HD3	30:F:136:ILE:O	2.14	0.46
33:I:80:LYS:NZ	53:A:1064:C:H5'	2.30	0.46
34:J:53:TYR:CE1	34:J:121:LYS:HG2	2.50	0.46
35:K:24:VAL:HG13	35:K:33:ALA:HB2	1.97	0.46
47:W:17:ALA:HB2	47:W:37:VAL:HG23	1.97	0.46
53:A:1320:C:N4	53:A:1333:G:O6	2.48	0.46
56:8:42:C:H2'	56:8:43:C:O4'	2.14	0.46
3:d:105:MET:SD	3:d:180:GLY:HA3	2.55	0.46
15:p:43:ALA:HA	15:p:46:LYS:HE2	1.97	0.46
19:t:27:MET:O	19:t:30:THR:OG1	2.32	0.46
25:4:1:MET:N	53:A:2526:G:N3	2.63	0.46
28:D:148:GLN:HB2	28:D:152:PRO:HG2	1.96	0.46
29:E:14:VAL:HG21	29:E:19:PHE:HD2	1.79	0.46
29:E:124:PHE:CE1	29:E:137:LYS:HE3	2.50	0.46
32:H:68:ARG:HH21	32:H:133:GLN:H	1.61	0.46
36:L:55:MET:HA	36:L:56:PRO:HD3	1.67	0.46
39:O:34:HIS:HE1	54:B:27:C:OP1	1.98	0.46
52:a:157:U:O2	52:a:165:G:N1	2.48	0.46
53:A:740:C:H42	53:A:757:G:H1	1.62	0.46
53:A:1072:C:N4	53:A:1098:A:OP2	2.49	0.46
53:A:1751:U:H2'	53:A:1752:C:C6	2.50	0.46
53:A:2122:U:O4	53:A:2174:C:N4	2.49	0.46
53:A:2423:U:H4'	53:A:2424:C:O5'	2.15	0.46
56:9:17:C:O2'	56:9:18:G:H5''	2.15	0.46
56:9:29:G:H2'	56:9:30:G:C8	2.51	0.46
56:9:37:A:H2'	56:9:38:A:O4'	2.15	0.46
1:b:48:MET:HB3	1:b:199:ILE:HG22	1.97	0.46
3:d:9:LEU:HD12	52:a:429:U:H3'	1.97	0.46
5:f:46:GLN:NE2	5:f:55:HIS:HB3	2.27	0.46
9:j:84:VAL:O	9:j:87:LEU:HB3	2.15	0.46
13:n:43:ASN:O	13:n:47:LYS:NZ	2.45	0.46
14:o:23:GLY:O	52:a:751:U:H1'	2.16	0.46
21:0:42:ILE:HG22	21:0:43:THR:O	2.16	0.46
26:5:134:ARG:HE	53:A:2126:A:N6	2.14	0.46
31:G:85:LYS:HB3	31:G:164:ALA:HB2	1.96	0.46
45:U:95:PHE:CZ	45:U:102:ILE:HB	2.50	0.46
52:a:38:G:H22	52:a:397:A:H5'	1.80	0.46
52:a:590:U:H2'	52:a:591:U:C6	2.50	0.46
52:a:918:A:N6	52:a:919:A:N1	2.64	0.46
52:a:1273:C:H2'	52:a:1274:A:O4'	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:244:A:C2	53:A:255:A:C4	3.03	0.46
53:A:271:G:N2	53:A:366:C:N3	2.60	0.46
53:A:1058:U:H2'	53:A:1059:G:H8	1.81	0.46
53:A:2469:A:N6	53:A:2481:G:O2'	2.49	0.46
53:A:2638:G:O2'	53:A:2775:G:N2	2.39	0.46
3:d:27:ALA:O	3:d:29:ASP:N	2.48	0.46
6:g:95:ARG:HH22	52:a:939:G:P	2.39	0.46
11:l:7:LEU:HD23	16:q:34:TYR:CE1	2.51	0.46
19:t:10:ARG:O	19:t:14:SER:N	2.44	0.46
29:E:91:ASP:OD1	29:E:92:HIS:N	2.49	0.46
33:I:80:LYS:HE2	33:I:135:MET:HE1	1.97	0.46
44:T:25:GLU:HA	44:T:28:ASN:O	2.16	0.46
48:X:16:ASN:ND2	48:X:24:THR:O	2.48	0.46
50:Z:29:ARG:HH21	50:Z:33:HIS:HE1	1.64	0.46
52:a:420:U:N3	52:a:422:C:O2	2.48	0.46
52:a:524:G:H2'	52:a:525:C:C6	2.51	0.46
52:a:935:A:H2'	52:a:936:C:H6	1.79	0.46
52:a:1011:C:H2'	52:a:1012:A:H8	1.80	0.46
52:a:1296:C:H4'	52:a:1302:C:N3	2.30	0.46
53:A:213:A:H2'	53:A:214:G:C8	2.51	0.46
53:A:842:U:H2'	53:A:843:G:C8	2.50	0.46
53:A:1357:C:H2'	53:A:1358:G:O4'	2.16	0.46
53:A:2119:A:C2	53:A:2170:A:H2'	2.50	0.46
53:A:2888:C:H2'	53:A:2889:C:H6	1.80	0.46
56:9:4:C:N4	56:9:69:G:H1	2.13	0.46
56:9:25:C:C6	56:9:25:C:C3'	2.99	0.46
11:l:12:ARG:HB3	52:a:562:U:O2'	2.16	0.46
12:m:83:LEU:N	53:A:887:U:O4	2.49	0.46
13:n:5:SER:O	13:n:9:ARG:HG3	2.15	0.46
34:J:39:LYS:HA	34:J:43:GLU:HG3	1.97	0.46
53:A:1066:U:N3	53:A:1069:A:O5'	2.35	0.46
53:A:2150:C:C4	53:A:2151:U:H1'	2.50	0.46
56:8:20:U:O2	56:8:20:U:H2'	2.16	0.46
56:8:22:G:H2'	56:8:23:A:C8	2.49	0.46
2:c:20:SER:HA	2:c:57:ILE:O	2.15	0.46
6:g:122:ASN:O	6:g:126:ASP:HB2	2.16	0.46
9:j:56:HIS:CD2	9:j:57:VAL:HG23	2.51	0.46
13:n:64:CYS:SG	13:n:80:SER:N	2.82	0.46
26:5:11:ILE:O	26:5:33:LEU:HD11	2.16	0.46
27:C:255:LYS:HA	53:A:1797:G:O3'	2.16	0.46
52:a:114:U:H2'	52:a:115:G:C8	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:a:1439:G:C2	52:a:1440:U:C2	3.04	0.46
52:a:1456:A:H2'	52:a:1457:G:O4'	2.16	0.46
5:f:38:ARG:NH1	5:f:99:ALA:HB3	2.30	0.46
29:E:119:ILE:HG13	29:E:187:VAL:HA	1.98	0.46
29:E:194:LYS:O	29:E:197:GLU:HB3	2.15	0.46
31:G:63:GLN:O	31:G:66:THR:OG1	2.26	0.46
32:H:63:ALA:O	32:H:108:VAL:HG13	2.15	0.46
34:J:39:LYS:NZ	53:A:1009:A:OP1	2.46	0.46
52:a:299:G:N2	52:a:566:G:O6	2.49	0.46
52:a:483:C:H2'	52:a:484:G:C8	2.51	0.46
52:a:1009:U:H3	52:a:1020:G:H1	1.64	0.46
53:A:437:U:H2'	53:A:438:G:H8	1.80	0.46
53:A:2654:A:H8	53:A:2654:A:OP1	1.99	0.46
1:b:17:HIS:CD2	1:b:202:ASN:HD21	2.34	0.46
4:e:122:ASN:OD1	4:e:122:ASN:N	2.49	0.46
7:h:15:ARG:HD3	7:h:75:ILE:O	2.15	0.46
8:i:115:LYS:NZ	52:a:1187:G:OP1	2.32	0.46
9:j:53:ILE:HG13	52:a:1060:U:H4'	1.97	0.46
39:O:3:LYS:HG3	39:O:4:LYS:N	2.31	0.46
39:O:54:VAL:HG22	54:B:116:G:H4'	1.98	0.46
47:W:19:ARG:HE	47:W:22:VAL:HG21	1.81	0.46
52:a:56:U:H2'	52:a:57:G:C8	2.51	0.46
52:a:707:U:H2'	52:a:708:C:C6	2.51	0.46
53:A:81:G:C6	53:A:82:U:C2	3.03	0.46
53:A:149:A:H62	53:A:176:A:H61	1.64	0.46
53:A:652:U:H2'	53:A:653:U:H5'	1.98	0.46
53:A:1851:U:O2'	56:9:71:G:O2'	2.22	0.46
53:A:2730:C:H2'	53:A:2731:G:C8	2.50	0.46
53:A:2747:G:O6	53:A:2755:C:H5''	2.16	0.46
56:8:61:C:H2'	56:8:62:C:C6	2.51	0.46
56:9:29:G:N2	56:9:42:C:O2	2.49	0.46
1:b:102:ASN:ND2	52:a:1073:U:O2	2.43	0.46
3:d:206:LYS:HA	52:a:8:A:C5	2.50	0.46
7:h:2:SER:OG	7:h:3:MET:N	2.39	0.46
10:k:35:THR:HG1	10:k:40:ASN:C	2.17	0.46
10:k:128:ARG:O	52:a:795:C:O2'	2.31	0.46
24:3:30:HIS:ND1	24:3:31:ILE:HG23	2.31	0.46
32:H:41:LYS:N	32:H:44:ILE:HG23	2.30	0.46
48:X:52:ALA:O	48:X:53:LYS:HB3	2.16	0.46
52:a:775:G:H2'	52:a:776:G:O4'	2.16	0.46
52:a:895:G:N2	52:a:905:U:O2	2.49	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:a:947:G:H2'	52:a:948:C:C6	2.51	0.46
53:A:269:C:C5	53:A:270:A:N7	2.84	0.46
53:A:878:A:C5	53:A:879:G:C8	3.04	0.46
53:A:1181:U:H2'	53:A:1182:G:C8	2.51	0.46
53:A:2128:G:N2	53:A:2160:C:H42	2.13	0.46
13:n:5:SER:OG	52:a:1216:A:H5''	2.16	0.46
14:o:75:VAL:O	14:o:78:TYR:HB3	2.16	0.46
14:o:87:LEU:C	14:o:89:ARG:H	2.24	0.46
22:1:25:ASN:HB3	22:1:28:THR:OG1	2.16	0.46
28:D:39:ASP:H	28:D:42:ASN:HB2	1.80	0.46
32:H:4:ILE:HG12	32:H:18:GLN:NE2	2.24	0.46
44:T:54:GLU:CG	44:T:88:LYS:HB3	2.46	0.46
52:a:429:U:H1'	52:a:430:A:H5''	1.98	0.46
52:a:714:G:H21	52:a:777:A:H1'	1.80	0.46
52:a:1039:G:C2	52:a:1040:U:N3	2.84	0.46
52:a:1218:C:H2'	52:a:1219:A:C8	2.50	0.46
53:A:236:C:H42	53:A:261:G:H1	1.64	0.46
53:A:842:U:H2'	53:A:843:G:H8	1.80	0.46
53:A:900:A:H2'	53:A:901:C:O4'	2.16	0.46
53:A:1152:C:H2'	53:A:1153:C:C6	2.51	0.46
53:A:1326:U:N3	53:A:1648:U:O2'	2.49	0.46
53:A:2133:G:H1'	53:A:2160:C:C5	2.52	0.46
11:l:83:ARG:HB2	11:l:98:VAL:CG2	2.47	0.45
21:0:28:SER:OG	21:0:37:HIS:O	2.22	0.45
31:G:45:ALA:O	31:G:47:ASN:N	2.49	0.45
31:G:71:LEU:HA	31:G:74:MET:SD	2.56	0.45
39:O:29:HIS:HB3	39:O:36:TYR:HB2	1.98	0.45
52:a:117:G:N2	52:a:313:A:O2'	2.50	0.45
52:a:601:G:H2'	52:a:602:A:C8	2.51	0.45
52:a:1250:A:N3	52:a:1287:A:N6	2.64	0.45
53:A:281:C:N4	53:A:359:G:H1	2.13	0.45
53:A:398:C:OP1	53:A:2090:A:O2'	2.26	0.45
53:A:1738:G:O2'	53:A:1739:A:O4'	2.31	0.45
53:A:2007:U:H2'	53:A:2008:C:H6	1.82	0.45
53:A:2114:A:C5	53:A:2115:G:H1'	2.50	0.45
53:A:2262:U:H2'	53:A:2263:C:H6	1.80	0.45
53:A:2757:A:H2'	53:A:2757:A:N3	2.32	0.45
8:i:52:LEU:O	8:i:57:MET:N	2.49	0.45
28:D:149:ASN:HB2	53:A:2575:C:H5'	1.97	0.45
31:G:25:ILE:HD12	31:G:74:MET:HB3	1.98	0.45
35:K:71:ARG:HE	35:K:106:GLU:CG	2.28	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:N:69:ARG:O	38:N:70:THR:OG1	2.23	0.45
41:Q:91:ARG:NH1	42:R:11:GLN:H	2.15	0.45
47:W:38:ARG:HH21	53:A:2387:U:H1'	1.81	0.45
52:a:35:G:C2	52:a:550:G:C2	3.04	0.45
52:a:501:C:H2'	52:a:502:A:H8	1.81	0.45
52:a:583:A:N6	52:a:758:C:O2	2.49	0.45
52:a:779:C:N4	52:a:780:A:N1	2.63	0.45
52:a:1516:G:N2	52:a:1520:C:O2	2.49	0.45
53:A:194:G:N2	53:A:251:A:N3	2.64	0.45
53:A:301:G:O2'	53:A:302:C:H5''	2.15	0.45
53:A:864:G:H21	53:A:866:A:N6	2.14	0.45
53:A:937:C:H2'	53:A:938:G:H8	1.80	0.45
53:A:2346:A:H3'	53:A:2347:C:H5''	1.97	0.45
54:B:29:A:H2'	54:B:30:C:H6	1.82	0.45
56:8:19:G:C5	56:8:57:G:C2	3.03	0.45
8:i:91:ASP:OD1	8:i:94:LEU:HD13	2.16	0.45
26:5:27:ILE:O	26:5:31:LYS:N	2.50	0.45
26:5:28:ALA:HA	26:5:31:LYS:HB2	1.98	0.45
34:J:122:LEU:O	34:J:123:LYS:HD2	2.17	0.45
35:K:2:ILE:HG21	35:K:8:LEU:HD11	1.99	0.45
45:U:35:VAL:O	45:U:38:ILE:HG22	2.16	0.45
52:a:41:G:H2'	52:a:42:G:C8	2.52	0.45
52:a:418:C:H2'	52:a:419:C:C6	2.51	0.45
52:a:521:G:O2'	52:a:536:C:O2'	2.34	0.45
52:a:1088:G:H21	52:a:1167:A:N6	2.15	0.45
53:A:43:G:C4	53:A:44:A:C8	3.05	0.45
53:A:768:G:H2'	53:A:769:U:O4'	2.16	0.45
53:A:1020:A:H4'	53:A:1021:A:O5'	2.16	0.45
53:A:2787:C:H2'	53:A:2788:C:C6	2.50	0.45
53:A:2881:U:H2'	53:A:2882:A:H8	1.81	0.45
1:b:208:ALA:O	1:b:211:LEU:HB2	2.16	0.45
6:g:69:VAL:O	6:g:138:ARG:HD3	2.17	0.45
13:n:10:GLU:O	13:n:14:VAL:HG23	2.17	0.45
13:n:20:TYR:HB2	13:n:55:SER:OG	2.16	0.45
27:C:156:SER:O	27:C:159:THR:OG1	2.31	0.45
28:D:174:SER:OG	28:D:175:LEU:N	2.46	0.45
29:E:46:GLN:NE2	53:A:1248:G:C5	2.85	0.45
29:E:147:LEU:HB2	29:E:183:PHE:HD2	1.81	0.45
30:F:66:ILE:O	30:F:66:ILE:HG13	2.17	0.45
36:L:28:GLY:O	36:L:30:THR:N	2.50	0.45
52:a:43:C:H2'	52:a:44:A:C8	2.49	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:a:505:G:H4'	52:a:534:U:N3	2.31	0.45
52:a:874:G:C6	52:a:875:U:C4	3.05	0.45
53:A:1078:U:H4'	53:A:1079:C:C6	2.51	0.45
53:A:1342:A:C6	53:A:1397:U:C5	3.04	0.45
53:A:1494:A:H2'	53:A:1495:A:H8	1.81	0.45
56:8:64:A:H2'	56:8:65:G:C8	2.51	0.45
1:b:141:GLU:HA	1:b:144:GLU:HB3	1.97	0.45
7:h:29:SER:HA	7:h:33:LYS:HD2	1.97	0.45
10:k:112:ASP:H	20:u:4:ILE:HG23	1.81	0.45
16:q:27:ARG:HG3	16:q:40:ARG:HB2	1.99	0.45
27:C:149:LYS:NZ	53:A:1801:A:OP2	2.50	0.45
30:F:74:ALA:C	30:F:77:LYS:H	2.23	0.45
32:H:64:ALA:HA	32:H:108:VAL:HG13	1.98	0.45
32:H:68:ARG:NH1	32:H:110:VAL:HG22	2.31	0.45
38:N:9:GLN:O	38:N:17:ARG:HD3	2.17	0.45
52:a:837:U:H2'	52:a:838:G:C8	2.51	0.45
52:a:1032:G:C5	52:a:1033:G:H1'	2.51	0.45
52:a:1109:C:C2	52:a:1110:A:C8	3.04	0.45
52:a:1531:A:N7	52:a:1532:U:N3	2.65	0.45
53:A:910:A:C6	53:A:911:A:C6	3.04	0.45
53:A:1413:A:H3'	53:A:1414:C:H6	1.80	0.45
53:A:2350:C:H2'	53:A:2351:G:O4'	2.16	0.45
53:A:2802:G:H2'	53:A:2803:G:O4'	2.15	0.45
56:9:4:C:H2'	56:9:5:G:C8	2.51	0.45
56:9:41:C:C4	56:9:42:C:C4	3.04	0.45
2:c:130:PHE:HD1	2:c:134:MET:HE2	1.81	0.45
2:c:183:ASP:OD1	2:c:184:TYR:N	2.49	0.45
7:h:3:MET:HE1	7:h:9:ASP:HB2	1.98	0.45
7:h:29:SER:OG	7:h:30:SER:N	2.49	0.45
9:j:40:ILE:HB	9:j:73:LEU:HD12	1.99	0.45
19:t:25:ARG:O	19:t:29:ARG:HG3	2.16	0.45
26:5:148:ASN:O	26:5:152:ALA:N	2.50	0.45
28:D:81:GLU:OE1	53:A:2636:C:H4'	2.15	0.45
30:F:151:LEU:HA	53:A:2305:U:C4	2.51	0.45
34:J:114:LEU:CD2	34:J:118:MET:HE3	2.46	0.45
37:M:13:HIS:CD2	53:A:910:A:C4	3.05	0.45
45:U:72:PHE:CE1	45:U:77:GLY:HA2	2.51	0.45
45:U:85:ARG:HG3	45:U:86:PHE:O	2.17	0.45
52:a:61:G:H2'	52:a:62:U:O4'	2.16	0.45
52:a:577:G:H2'	52:a:578:C:H6	1.80	0.45
52:a:1293:C:H2'	52:a:1294:G:H8	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:a:1355:G:H2'	52:a:1356:G:H8	1.82	0.45
52:a:1523:G:H2'	52:a:1524:C:H6	1.82	0.45
53:A:248:G:O5'	53:A:249:C:H5''	2.17	0.45
53:A:273:G:H2'	53:A:274:C:C6	2.50	0.45
53:A:1037:G:H1	53:A:1118:C:H42	1.65	0.45
53:A:1079:C:H41	53:A:1088:A:H5''	1.82	0.45
53:A:1206:G:C6	53:A:1207:C:C4	3.05	0.45
53:A:1697:G:H4'	53:A:1978:A:H5''	1.99	0.45
53:A:2193:G:H2'	53:A:2194:U:C6	2.51	0.45
53:A:2554:U:H2'	53:A:2555:U:C5	2.51	0.45
3:d:85:ASN:OD1	3:d:87:GLY:N	2.49	0.45
6:g:35:LYS:NZ	52:a:1289:A:O3'	2.48	0.45
11:l:83:ARG:HD3	11:l:98:VAL:HG22	1.99	0.45
15:p:31:ARG:NH2	52:a:230:G:OP1	2.42	0.45
22:1:9:LYS:HD3	22:1:52:LYS:C	2.42	0.45
30:F:28:PRO:HB2	30:F:168:LEU:HD22	1.99	0.45
34:J:53:TYR:HE1	34:J:121:LYS:HG2	1.80	0.45
35:K:68:GLY:HA3	35:K:77:ILE:O	2.17	0.45
45:U:37:GLY:H	45:U:61:GLU:CD	2.23	0.45
52:a:345:C:O2	52:a:346:G:N1	2.50	0.45
52:a:999:C:N4	52:a:1041:G:H1	2.08	0.45
52:a:1237:C:N4	52:a:1336:C:N3	2.64	0.45
52:a:1242:G:N1	52:a:1296:C:O2	2.50	0.45
52:a:1331:G:HO2'	52:a:1332:A:P	2.37	0.45
52:a:1516:G:H2'	52:a:1518:A:OP2	2.17	0.45
53:A:225:C:H2'	53:A:226:A:O4'	2.17	0.45
53:A:481:G:O2'	53:A:507:A:N1	2.43	0.45
53:A:530:G:C2	53:A:2035:G:H5'	2.52	0.45
53:A:613:A:H5''	53:A:614:A:H8	1.81	0.45
53:A:812:C:HO2'	53:A:1226:A:HO2'	1.54	0.45
53:A:940:G:H2'	53:A:941:A:O4'	2.17	0.45
53:A:1088:A:H5'	53:A:1089:A:H5'	1.98	0.45
53:A:1172:C:C4	53:A:1173:U:C2	3.05	0.45
53:A:1520:U:H2'	53:A:1521:G:O4'	2.15	0.45
53:A:1825:U:H2'	53:A:1826:G:C8	2.52	0.45
53:A:1861:G:H1	53:A:1881:C:H42	1.64	0.45
4:e:77:ASN:HB2	4:e:82:GLN:NE2	2.32	0.45
9:j:15:HIS:O	9:j:18:ILE:HG22	2.16	0.45
10:k:23:ILE:HG22	10:k:32:VAL:HG13	1.99	0.45
28:D:140:HIS:NE2	53:A:1658:C:OP1	2.50	0.45
30:F:107:VAL:HG11	30:F:175:PRO:HG2	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:G:9:VAL:HG13	31:G:11:PRO:HD3	1.99	0.45
50:Z:55:LYS:HE3	50:Z:57:GLU:OE2	2.17	0.45
52:a:648:A:H2'	52:a:649:A:C8	2.52	0.45
52:a:1445:U:H3	52:a:1457:G:H1	1.64	0.45
53:A:247:G:N2	53:A:252:G:N7	2.64	0.45
53:A:491:G:C6	53:A:492:A:C6	3.05	0.45
53:A:584:C:H2'	53:A:585:G:O4'	2.17	0.45
53:A:1228:G:C2	53:A:1229:C:C2	3.05	0.45
53:A:2125:G:N2	53:A:2126:A:H62	2.15	0.45
4:e:137:VAL:O	4:e:141:ILE:HG12	2.16	0.45
7:h:86:TYR:CD2	52:a:598:U:H4'	2.52	0.45
12:m:107:ARG:HH21	12:m:113:ARG:NH2	2.14	0.45
27:C:16:VAL:N	27:C:203:VAL:HG12	2.32	0.45
31:G:132:LEU:O	31:G:140:ILE:HD11	2.16	0.45
44:T:19:LYS:HG3	53:A:1393:A:H61	1.82	0.45
47:W:65:LYS:HB2	47:W:82:GLU:HB2	1.98	0.45
52:a:113:G:O6	52:a:313:A:N6	2.50	0.45
52:a:607:A:C2	52:a:608:A:C4	3.05	0.45
52:a:920:U:O2	52:a:920:U:H2'	2.15	0.45
52:a:1492:A:H2'	52:a:1492:A:N3	2.31	0.45
53:A:1430:G:H2'	53:A:1431:A:O4'	2.17	0.45
53:A:2135:A:H5''	53:A:2136:G:N7	2.32	0.45
53:A:2746:U:N3	53:A:2756:U:O4	2.39	0.45
2:c:30:ALA:HB2	13:n:76:LYS:O	2.17	0.45
7:h:7:ILE:O	7:h:10:MET:HB3	2.17	0.45
8:i:24:GLY:H	8:i:61:LEU:HA	1.80	0.45
9:j:51:VAL:O	9:j:62:ARG:HA	2.17	0.45
9:j:59:LYS:HD3	52:a:972:C:H4'	1.98	0.45
12:m:77:ILE:HG22	12:m:81:MET:HE2	1.98	0.45
27:C:75:ALA:HB2	27:C:95:TYR:CD1	2.51	0.45
33:I:56:VAL:HG23	33:I:70:THR:HA	1.99	0.45
33:I:80:LYS:HZ1	53:A:1064:C:H5'	1.82	0.45
52:a:202:G:H2'	52:a:203:G:C8	2.52	0.45
52:a:704:A:H3'	52:a:705:G:H8	1.82	0.45
52:a:920:U:O2	52:a:921:U:C2	2.70	0.45
52:a:922:G:C6	52:a:923:A:N6	2.85	0.45
52:a:1437:A:H2'	52:a:1438:G:H8	1.81	0.45
53:A:1130:U:O2'	53:A:1131:G:H2'	2.16	0.45
53:A:1231:U:H2'	53:A:1232:G:H8	1.82	0.45
53:A:1847:A:H4'	53:A:1848:A:OP2	2.15	0.45
53:A:1863:G:O2'	53:A:2411:A:O2'	2.34	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:8:19:G:C8	56:8:19:G:OP2	2.70	0.45
56:9:1:G:C2	56:9:2:C:C2	3.04	0.45
56:9:71:G:C2	56:9:72:C:C2	3.04	0.45
1:b:153:MET:SD	1:b:157:PRO:HG3	2.57	0.44
2:c:3:GLN:NE2	52:a:1193:G:O6	2.50	0.44
3:d:109:ALA:HA	3:d:161:LEU:HD11	1.98	0.44
7:h:5:ASP:HB2	7:h:81:PRO:HG3	1.99	0.44
11:l:46:ASN:OD1	52:a:528:C:N4	2.30	0.44
26:5:83:ASN:ND2	26:5:118:PRO:HG2	2.32	0.44
26:5:113:VAL:HG12	26:5:162:ARG:HH12	1.81	0.44
28:D:130:GLN:HE21	53:A:2511:U:H1'	1.81	0.44
33:I:37:PHE:CZ	33:I:41:PHE:HB2	2.52	0.44
35:K:6:THR:OG1	53:A:1666:G:O2'	2.16	0.44
39:O:8:ILE:O	39:O:12:THR:OG1	2.23	0.44
52:a:264:C:H2'	52:a:265:G:O4'	2.17	0.44
52:a:457:G:C2	52:a:458:U:C4	3.05	0.44
53:A:172:A:H2'	53:A:173:A:C8	2.51	0.44
53:A:219:A:C6	53:A:220:G:C6	3.05	0.44
53:A:1443:U:H2'	53:A:1444:G:H8	1.82	0.44
56:8:52:G:C6	56:8:53:G:C4	3.05	0.44
1:b:88:GLN:HG3	1:b:220:VAL:HG21	1.97	0.44
7:h:80:ARG:HB3	52:a:878:A:OP1	2.17	0.44
9:j:11:LYS:CG	9:j:97:ASP:HB3	2.47	0.44
12:m:11:ASP:OD1	12:m:12:HIS:ND1	2.51	0.44
13:n:34:VAL:HA	18:s:7:LYS:HE2	1.99	0.44
17:r:38:LYS:HB3	52:a:719:C:O2'	2.17	0.44
36:L:95:LEU:HA	36:L:98:ALA:HB3	1.99	0.44
43:S:95:ARG:O	43:S:96:ILE:C	2.60	0.44
52:a:26:A:N6	52:a:558:G:H1'	2.32	0.44
52:a:1437:A:H2'	52:a:1438:G:C8	2.53	0.44
53:A:192:C:O2'	53:A:802:A:N3	2.51	0.44
53:A:447:A:C5	53:A:473:G:C5	3.06	0.44
53:A:827:U:O2'	53:A:2068:U:C2	2.69	0.44
53:A:838:C:H2'	53:A:839:U:C6	2.53	0.44
53:A:1456:G:C6	53:A:1457:U:C4	3.05	0.44
53:A:2024:G:C5	53:A:2040:G:C2	3.05	0.44
53:A:2326:C:O2'	53:A:2327:A:OP1	2.31	0.44
1:b:156:LEU:HA	1:b:157:PRO:HD3	1.86	0.44
3:d:95:GLU:HA	3:d:100:ASN:HD22	1.82	0.44
8:i:123:ARG:HB2	52:a:1349:A:H5''	1.99	0.44
33:I:100:ILE:HB	33:I:139:VAL:HG23	1.98	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:Q:43:GLN:NE2	42:R:77:PHE:HB3	2.32	0.44
41:Q:63:ARG:HH12	41:Q:95:ALA:C	2.25	0.44
43:S:2:GLU:HB3	43:S:106:VAL:HG13	1.99	0.44
47:W:23:LYS:HD2	53:A:855:G:N3	2.32	0.44
52:a:767:A:H2'	52:a:768:A:C8	2.52	0.44
52:a:833:G:N1	52:a:834:U:O2	2.50	0.44
52:a:859:G:C6	52:a:860:A:C5	3.05	0.44
52:a:935:A:H2'	52:a:936:C:C6	2.53	0.44
52:a:1004:A:H1'	52:a:1026:G:C6	2.52	0.44
52:a:1087:G:C5	52:a:1088:G:N7	2.86	0.44
53:A:639:U:H2'	53:A:640:C:C6	2.51	0.44
53:A:1127:A:N7	53:A:2488:G:O2'	2.48	0.44
53:A:1168:G:C6	53:A:1169:A:C6	3.05	0.44
53:A:1519:G:C6	53:A:1520:U:C4	3.06	0.44
53:A:1947:C:H2'	53:A:1948:G:H8	1.82	0.44
53:A:2077:A:OP1	53:A:2238:G:N1	2.37	0.44
53:A:2897:U:H2'	53:A:2898:U:C6	2.52	0.44
3:d:21:LEU:O	3:d:22:LYS:HD2	2.17	0.44
8:i:113:ARG:NH2	52:a:1368:A:OP1	2.42	0.44
12:m:17:ILE:HD11	52:a:1302:C:C2	2.52	0.44
13:n:80:SER:O	13:n:84:VAL:HG23	2.17	0.44
14:o:45:GLU:O	14:o:47:LYS:N	2.50	0.44
14:o:49:ASP:OD2	52:a:667:G:N2	2.35	0.44
15:p:20:VAL:HG22	15:p:21:VAL:O	2.17	0.44
26:5:27:ILE:HG22	26:5:31:LYS:HE3	2.00	0.44
26:5:79:THR:HG23	26:5:84:ALA:HB2	2.00	0.44
29:E:14:VAL:HG21	29:E:19:PHE:CD2	2.53	0.44
29:E:170:ARG:HD3	29:E:174:GLY:O	2.17	0.44
33:I:89:SER:HB2	53:A:1063:G:N2	2.30	0.44
37:M:33:LEU:HD12	37:M:103:TYR:HD2	1.83	0.44
52:a:369:G:OP2	52:a:388:G:N1	2.46	0.44
52:a:1144:G:N2	52:a:1146:A:H62	2.14	0.44
53:A:119:A:O2'	53:A:120:U:OP2	2.34	0.44
53:A:953:G:C2	53:A:954:G:C8	3.06	0.44
53:A:1084:A:H1'	53:A:1105:U:O2'	2.18	0.44
53:A:1268:A:C2	53:A:2013:A:C4	3.05	0.44
53:A:2470:G:C2	53:A:2471:A:C8	3.04	0.44
55:7:15:G:H2'	55:7:15:G:N3	2.32	0.44
1:b:22:TRP:HA	1:b:189:ASN:HA	1.99	0.44
4:e:106:ILE:HD12	52:a:7:A:H3'	1.99	0.44
12:m:54:ASP:OD1	12:m:55:THR:N	2.50	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:t:9:LYS:O	19:t:12:ILE:HG22	2.18	0.44
28:D:34:VAL:HG21	28:D:90:PHE:O	2.17	0.44
29:E:32:VAL:HG23	29:E:178:VAL:HG12	2.00	0.44
30:F:91:ARG:NH2	54:B:43:C:O2	2.51	0.44
33:I:27:LEU:HD12	33:I:28:GLY:O	2.17	0.44
39:O:40:ILE:HG23	39:O:46:GLU:O	2.18	0.44
43:S:88:ARG:HD3	43:S:94:ASP:OD2	2.18	0.44
47:W:19:ARG:HH11	47:W:22:VAL:HG21	1.82	0.44
47:W:35:ILE:HG12	47:W:35:ILE:O	2.18	0.44
52:a:59:A:H2'	52:a:331:G:H22	1.83	0.44
52:a:1010:U:C4	52:a:1011:C:C4	3.05	0.44
52:a:1125:U:OP2	52:a:1145:A:N6	2.50	0.44
52:a:1256:A:C8	52:a:1258:G:C2	3.06	0.44
52:a:1475:G:H2'	52:a:1476:A:H8	1.83	0.44
53:A:18:U:O4	53:A:19:A:N6	2.51	0.44
53:A:85:G:C5	53:A:98:G:C2	3.05	0.44
53:A:408:G:H2'	53:A:409:G:H8	1.81	0.44
53:A:1837:C:H2'	53:A:1899:A:H61	1.82	0.44
53:A:1853:A:H2'	53:A:1854:A:C8	2.52	0.44
53:A:2297:A:N1	53:A:2321:U:H5	2.16	0.44
4:e:114:VAL:HG11	4:e:137:VAL:HG23	2.00	0.44
8:i:21:ILE:HG23	8:i:62:ASP:O	2.18	0.44
12:m:3:ARG:HB2	12:m:57:ARG:HH22	1.83	0.44
15:p:46:LYS:HE3	15:p:48:GLU:HB3	2.00	0.44
16:q:59:VAL:HG12	16:q:61:ILE:HG23	1.99	0.44
22:l:22:THR:OG1	53:A:2286:G:O6	2.17	0.44
26:5:201:PRO:HG2	26:5:207:VAL:HG22	1.99	0.44
27:C:225:ASN:ND2	53:A:784:G:H5'	2.33	0.44
28:D:116:LYS:HD2	38:N:1:MET:HE1	2.00	0.44
33:I:24:GLY:O	33:I:28:GLY:N	2.51	0.44
33:I:25:PRO:C	33:I:28:GLY:H	2.26	0.44
49:Y:1:MET:HE2	49:Y:52:ARG:HD2	1.99	0.44
52:a:215:C:H2'	52:a:216:U:C6	2.52	0.44
52:a:331:G:OP1	52:a:332:G:H8	2.01	0.44
52:a:841:C:H3'	52:a:843:U:OP2	2.18	0.44
53:A:196:A:N3	53:A:196:A:H2'	2.33	0.44
53:A:252:G:C2	53:A:253:C:C2	3.06	0.44
53:A:1366:A:H2'	53:A:1367:A:O4'	2.18	0.44
53:A:1495:A:N3	53:A:1578:U:O2'	2.43	0.44
53:A:2114:A:H1'	53:A:2167:U:H4'	2.00	0.44
56:8:20:U:H2'	56:8:21:A:H5''	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:9:28:G:C6	56:9:43:C:C4	3.06	0.44
1:b:65:LYS:N	1:b:158:ASP:HB2	2.33	0.44
1:b:100:LEU:HD22	1:b:174:GLU:HB3	1.99	0.44
1:b:183:PHE:HD1	1:b:197:PHE:HB2	1.83	0.44
3:d:107:PHE:HD1	3:d:159:LEU:HD21	1.82	0.44
7:h:66:PHE:HD2	7:h:67:GLN:HG2	1.76	0.44
9:j:39:PRO:HA	9:j:74:VAL:H	1.83	0.44
11:l:46:ASN:HA	52:a:529:G:O6	2.17	0.44
13:n:6:MET:HE3	13:n:63:ARG:NH2	2.32	0.44
14:o:22:THR:HG21	52:a:658:C:C2	2.53	0.44
28:D:63:PRO:HG3	53:A:2787:C:H1'	1.99	0.44
28:D:194:PRO:HA	53:A:2680:U:H5'	2.00	0.44
34:J:27:ARG:NH1	53:A:1143:A:N7	2.65	0.44
42:R:82:HIS:O	42:R:82:HIS:ND1	2.51	0.44
52:a:35:G:H2'	52:a:36:C:C6	2.52	0.44
52:a:45:G:C4	52:a:46:G:C8	3.05	0.44
52:a:200:G:H1	52:a:217:C:H42	1.64	0.44
52:a:377:G:H2'	52:a:378:G:H8	1.83	0.44
52:a:434:U:N3	52:a:435:A:N7	2.65	0.44
52:a:626:G:C2	52:a:627:G:C4	3.06	0.44
52:a:903:G:C2	52:a:904:U:C2	3.05	0.44
53:A:1345:C:N4	53:A:1601:G:H1	2.16	0.44
53:A:1363:C:O2'	53:A:1809:A:N3	2.51	0.44
53:A:2472:G:C6	53:A:2475:C:H2'	2.53	0.44
53:A:2901:C:H2'	53:A:2902:C:O4'	2.18	0.44
15:p:63:GLN:OE1	15:p:63:GLN:N	2.50	0.44
20:u:37:PHE:CD1	20:u:40:LYS:HD2	2.52	0.44
26:5:33:LEU:HD21	26:5:220:ALA:HB3	1.98	0.44
26:5:42:VAL:HA	26:5:214:ILE:HD11	2.00	0.44
26:5:129:GLN:HB2	53:A:2113:U:O4	2.18	0.44
27:C:93:VAL:N	27:C:101:ARG:O	2.51	0.44
27:C:179:GLU:OE1	53:A:1799:G:H8	2.01	0.44
30:F:37:MET:HE1	30:F:149:ARG:HD3	1.98	0.44
31:G:97:VAL:HG23	31:G:124:CYS:SG	2.57	0.44
32:H:3:VAL:HA	32:H:39:ALA:N	2.33	0.44
37:M:134:THR:HG22	37:M:136:MET:H	1.82	0.44
39:O:66:GLY:HA2	39:O:102:ARG:NH2	2.33	0.44
40:P:25:VAL:HG12	40:P:85:VAL:HA	1.99	0.44
42:R:49:ILE:HB	42:R:51:VAL:O	2.18	0.44
45:U:82:VAL:HG11	45:U:93:ARG:HB3	1.98	0.44
52:a:376:G:H1	52:a:387:U:H3	1.66	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:a:530:G:H21	52:a:530:G:P	2.40	0.44
52:a:922:G:O2'	52:a:1398:A:N1	2.49	0.44
52:a:1478:U:H2'	52:a:1479:C:C6	2.53	0.44
53:A:974:G:N3	53:A:1186:G:N2	2.66	0.44
53:A:1142:A:C5	53:A:1144:A:C5	3.05	0.44
53:A:1165:A:H2'	53:A:1166:G:H8	1.83	0.44
53:A:1413:A:H61	53:A:1589:U:H3	1.66	0.44
53:A:2110:G:N2	53:A:2120:G:H1'	2.33	0.44
53:A:2316:G:C2	53:A:2317:A:C4	3.06	0.44
53:A:2841:C:H2'	53:A:2842:G:C8	2.53	0.44
54:B:4:C:C2	54:B:117:G:C2	3.06	0.44
56:9:25:C:H3'	56:9:25:C:C6	2.51	0.44
3:d:152:GLN:C	3:d:154:ARG:H	2.25	0.44
7:h:86:TYR:HE2	16:q:37:PHE:HE2	1.66	0.44
26:5:44:VAL:HG23	26:5:213:SER:C	2.43	0.44
26:5:195:ALA:O	26:5:199:ALA:N	2.51	0.44
27:C:124:LYS:HB3	27:C:127:ASN:ND2	2.32	0.44
27:C:158:GLY:HA3	53:A:1820:U:C4	2.53	0.44
42:R:42:ALA:HA	42:R:46:GLU:HA	1.99	0.44
44:T:19:LYS:NZ	53:A:1392:A:OP1	2.47	0.44
44:T:68:LYS:NZ	53:A:1337:G:OP2	2.51	0.44
52:a:1411:C:H2'	52:a:1412:C:H6	1.82	0.44
52:a:1450:U:H2'	52:a:1452:C:C4	2.52	0.44
52:a:1486:G:H2'	52:a:1487:G:O4'	2.18	0.44
53:A:255:A:C6	53:A:256:A:C4	3.06	0.44
53:A:381:G:H1	53:A:393:C:H42	1.66	0.44
53:A:755:U:H2'	53:A:756:A:C8	2.50	0.44
53:A:834:G:H1'	53:A:2358:A:N3	2.33	0.44
53:A:1685:C:H2'	53:A:1686:C:C6	2.53	0.44
53:A:1869:G:N1	53:A:1871:A:H2'	2.32	0.44
53:A:2221:G:H2'	53:A:2222:C:C6	2.53	0.44
53:A:2684:U:C4	53:A:2685:G:N7	2.86	0.44
1:b:110:ILE:O	1:b:114:LYS:HG3	2.18	0.43
3:d:32:CYS:HA	52:a:429:U:OP2	2.18	0.43
5:f:38:ARG:HH12	5:f:99:ALA:HB3	1.82	0.43
8:i:35:LEU:HG	8:i:40:GLY:HA3	1.99	0.43
10:k:41:ALA:O	52:a:684:U:O2'	2.27	0.43
20:u:40:LYS:N	20:u:41:PRO:CD	2.81	0.43
27:C:170:TYR:CD1	27:C:182:LYS:HB3	2.52	0.43
31:G:115:GLN:HG2	31:G:116:LEU:O	2.18	0.43
32:H:32:PRO:HA	48:X:38:TRP:CD1	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:I:93:ASN:HB3	53:A:1077:A:H4'	2.00	0.43
34:J:17:VAL:HG12	34:J:55:ILE:HD11	1.99	0.43
43:S:73:LYS:HE2	43:S:75:PHE:CE2	2.53	0.43
52:a:690:G:H2'	52:a:691:G:O4'	2.18	0.43
52:a:950:U:H3	52:a:1231:G:H1	1.66	0.43
52:a:1087:G:C2	52:a:1099:G:N3	2.86	0.43
53:A:50:U:O2'	53:A:51:G:OP1	2.33	0.43
53:A:404:A:H4'	53:A:405:U:O5'	2.18	0.43
53:A:1073:A:H8	53:A:1074:G:N7	2.16	0.43
53:A:2488:G:H2'	53:A:2489:U:C6	2.53	0.43
2:c:172:ARG:HB3	52:a:1106:G:H5''	2.00	0.43
3:d:4:TYR:O	3:d:6:GLY:N	2.50	0.43
4:e:132:ASN:HA	4:e:133:PRO:HD3	1.89	0.43
10:k:24:HIS:HB3	10:k:31:ILE:CG1	2.48	0.43
18:s:6:LYS:HD3	52:a:1314:C:H5	1.83	0.43
30:F:79:ARG:HB3	30:F:82:TYR:CE2	2.54	0.43
34:J:32:LEU:HD22	34:J:54:ILE:HD13	2.00	0.43
42:R:29:THR:HG23	42:R:65:ALA:HA	2.00	0.43
47:W:23:LYS:H	47:W:68:PHE:HE2	1.65	0.43
48:X:20:ALA:HA	56:9:75:C:N4	2.29	0.43
52:a:1057:G:H2'	52:a:1058:G:O4'	2.18	0.43
53:A:535:G:H2'	53:A:536:G:O4'	2.18	0.43
53:A:1028:A:N6	53:A:1125:G:H2'	2.33	0.43
53:A:1050:A:H2'	53:A:1051:G:O4'	2.18	0.43
53:A:1444:G:H2'	53:A:1445:G:C8	2.53	0.43
53:A:2230:G:H2'	53:A:2231:U:H6	1.83	0.43
1:b:163:ILE:HG12	1:b:164:ASP:N	2.33	0.43
1:b:200:PRO:HB2	1:b:201:GLY:H	1.71	0.43
2:c:114:LYS:HB2	2:c:185:ASN:HD22	1.82	0.43
3:d:85:ASN:HB3	3:d:88:GLU:HG2	2.00	0.43
3:d:138:SER:HB2	3:d:141:ASP:OD2	2.18	0.43
6:g:92:ARG:NH1	52:a:1378:C:H5''	2.34	0.43
21:0:4:GLN:NE2	53:A:2056:G:H4'	2.33	0.43
28:D:34:VAL:HA	28:D:50:VAL:HG12	2.00	0.43
29:E:5:LEU:O	29:E:5:LEU:HD23	2.18	0.43
30:F:15:LEU:HA	30:F:19:PHE:HD2	1.83	0.43
31:G:87:GLN:HE21	31:G:162:ARG:HD2	1.83	0.43
32:H:3:VAL:HG12	32:H:38:PRO:HA	2.01	0.43
32:H:76:GLU:HG3	32:H:77:THR:O	2.18	0.43
32:H:97:ARG:HB2	32:H:114:GLU:HB2	2.00	0.43
34:J:30:THR:HG21	53:A:1005:C:O2'	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:J:89:PHE:O	34:J:93:ILE:HG12	2.19	0.43
37:M:8:LYS:HE3	37:M:9:PHE:HE2	1.83	0.43
52:a:427:U:C4	52:a:428:G:C6	3.07	0.43
52:a:601:G:H2'	52:a:602:A:H8	1.83	0.43
52:a:922:G:C2	52:a:923:A:C5	3.06	0.43
52:a:922:G:O2'	52:a:1398:A:C2	2.69	0.43
52:a:1374:A:N3	52:a:1374:A:H2'	2.33	0.43
53:A:383:C:O2	53:A:385:C:N4	2.51	0.43
53:A:1164:C:H2'	53:A:1165:A:C8	2.54	0.43
53:A:1173:U:C2'	53:A:1174:U:H4'	2.46	0.43
53:A:1268:A:H3'	53:A:1269:A:H8	1.83	0.43
53:A:1713:A:H61	53:A:1745:A:N6	2.13	0.43
53:A:1859:U:H2'	53:A:1860:G:C8	2.53	0.43
53:A:2337:G:N1	53:A:2338:C:N3	2.67	0.43
54:B:117:G:H2'	54:B:118:C:C6	2.53	0.43
3:d:125:VAL:N	3:d:128:ARG:O	2.47	0.43
8:i:15:SER:OG	8:i:70:GLY:HA3	2.18	0.43
11:l:83:ARG:N	11:l:96:HIS:O	2.44	0.43
17:r:64:TYR:CZ	52:a:735:C:H1'	2.53	0.43
19:t:5:LYS:HD2	19:t:6:SER:H	1.83	0.43
24:3:61:LEU:HB3	24:3:64:ALA:HB2	2.00	0.43
26:5:166:ASP:OD2	53:A:2121:G:N2	2.51	0.43
28:D:107:VAL:N	28:D:174:SER:O	2.45	0.43
52:a:130:A:N3	52:a:263:A:O2'	2.41	0.43
52:a:358:U:H2'	52:a:359:G:C8	2.50	0.43
52:a:613:C:H2'	52:a:614:C:C6	2.54	0.43
52:a:677:U:C4	52:a:678:U:C4	3.06	0.43
52:a:859:G:OP2	52:a:869:G:N1	2.51	0.43
52:a:877:G:H2'	52:a:878:A:H8	1.83	0.43
52:a:920:U:H2'	52:a:921:U:O5'	2.19	0.43
52:a:981:U:H2'	52:a:982:U:C5	2.54	0.43
52:a:1068:G:OP1	52:a:1387:G:O2'	2.36	0.43
52:a:1477:U:H2'	52:a:1478:U:C6	2.54	0.43
53:A:611:C:H42	53:A:617:G:H1	1.64	0.43
53:A:748:G:H8	53:A:750:A:OP2	2.01	0.43
53:A:835:C:H2'	53:A:836:G:C8	2.53	0.43
53:A:1297:C:OP1	53:A:2710:C:H4'	2.17	0.43
53:A:1472:C:H42	53:A:1519:G:H1	1.65	0.43
53:A:1537:G:C4	53:A:1538:G:H1'	2.53	0.43
53:A:2093:G:N7	53:A:2225:A:H2'	2.33	0.43
53:A:2220:U:H2'	53:A:2221:G:H8	1.82	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:2581:G:H2'	53:A:2581:G:N3	2.33	0.43
1:b:137:THR:HA	1:b:140:LEU:HD13	1.99	0.43
25:4:37:GLN:HE21	53:A:1125:G:H4'	1.84	0.43
29:E:129:PRO:HG3	29:E:156:ASN:OD1	2.19	0.43
33:I:19:PRO:HD2	33:I:23:VAL:HG22	2.00	0.43
52:a:1134:G:N3	52:a:1135:U:H1'	2.33	0.43
52:a:1287:A:H2	52:a:1353:G:H1'	1.83	0.43
53:A:95:A:C2	53:A:96:C:H1'	2.53	0.43
53:A:831:G:C6	53:A:832:U:N3	2.87	0.43
53:A:924:G:H2'	53:A:925:A:H8	1.84	0.43
53:A:977:G:O2'	53:A:1001:A:N1	2.44	0.43
53:A:1099:G:C6	53:A:1100:C:C4	3.06	0.43
53:A:1361:G:H2'	53:A:1362:C:C6	2.53	0.43
53:A:1934:C:N4	53:A:1935:G:O6	2.52	0.43
54:B:18:G:C6	54:B:19:C:C4	3.06	0.43
54:B:49:C:H2'	54:B:50:A:C8	2.54	0.43
6:g:135:VAL:O	6:g:139:GLU:HG3	2.18	0.43
8:i:50:GLN:N	8:i:51:PRO:HD2	2.34	0.43
10:k:84:VAL:HG23	10:k:107:ILE:HD11	2.01	0.43
10:k:89:PRO:HA	10:k:93:ARG:HH11	1.82	0.43
14:o:51:HIS:ND1	52:a:667:G:H4'	2.33	0.43
26:5:181:ASP:HB2	26:5:184:LYS:HB2	2.00	0.43
30:F:36:ASN:HB3	30:F:152:ASP:OD1	2.19	0.43
32:H:11:ASN:OD1	32:H:12:LEU:N	2.51	0.43
39:O:25:ARG:NH1	54:B:8:C:O3'	2.52	0.43
52:a:670:G:H2'	52:a:671:G:H8	1.82	0.43
52:a:1283:U:H2'	52:a:1284:C:H6	1.83	0.43
52:a:1285:A:H4'	52:a:1286:U:H5''	2.01	0.43
52:a:1293:C:H2'	52:a:1294:G:C8	2.53	0.43
53:A:272:A:N1	53:A:365:U:C4	2.87	0.43
53:A:281:C:H42	53:A:359:G:H1	1.65	0.43
53:A:652:U:C2'	53:A:653:U:H5'	2.48	0.43
53:A:873:C:H2'	53:A:874:G:H8	1.82	0.43
53:A:1181:U:H2'	53:A:1182:G:H8	1.84	0.43
54:B:93:C:H2'	54:B:94:A:C8	2.51	0.43
5:f:86:ARG:NH2	17:r:64:TYR:HB3	2.34	0.43
27:C:156:SER:OG	53:A:1820:U:O2'	2.33	0.43
29:E:46:GLN:O	29:E:86:ALA:HB1	2.18	0.43
29:E:63:LYS:NZ	53:A:2060:A:O2'	2.52	0.43
36:L:88:GLY:O	36:L:121:THR:OG1	2.32	0.43
51:x:555:GLY:N	53:A:2602:A:H61	2.16	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:a:317:U:H2'	52:a:318:G:C8	2.54	0.43
52:a:440:C:H2'	52:a:441:A:C8	2.53	0.43
52:a:521:G:HO2'	52:a:536:C:HO2'	1.62	0.43
52:a:827:U:H2'	52:a:870:U:O4	2.19	0.43
52:a:865:A:C5	52:a:866:C:C4	3.07	0.43
52:a:1043:G:H2'	52:a:1044:A:O4'	2.18	0.43
53:A:500:G:N1	53:A:503:A:OP2	2.50	0.43
53:A:1300:G:C2	53:A:1626:A:N6	2.86	0.43
53:A:1346:G:H2'	53:A:1347:A:H8	1.84	0.43
53:A:1987:A:H2'	53:A:1988:G:C8	2.54	0.43
53:A:2104:C:H2'	53:A:2105:U:C6	2.53	0.43
53:A:2261:C:H42	53:A:2279:G:H1	1.66	0.43
53:A:2416:C:H2'	53:A:2417:C:C6	2.53	0.43
1:b:75:ALA:O	1:b:79:VAL:HG23	2.18	0.43
3:d:41:HIS:O	3:d:44:ARG:HG2	2.19	0.43
3:d:104:ARG:HA	3:d:165:ARG:HH12	1.84	0.43
4:e:105:ILE:HG13	4:e:112:ARG:NH1	2.33	0.43
7:h:105:SER:HB2	7:h:126:ILE:HD11	2.01	0.43
11:l:99:ARG:HA	11:l:104:CYS:SG	2.59	0.43
13:n:69:ARG:HD3	13:n:80:SER:HB3	2.01	0.43
18:s:12:ASP:HB3	18:s:14:HIS:CE1	2.54	0.43
28:D:157:LYS:HA	53:A:2619:C:H5''	2.01	0.43
30:F:37:MET:HG2	30:F:151:LEU:HB3	2.01	0.43
32:H:41:LYS:O	32:H:44:ILE:HG12	2.19	0.43
32:H:100:ALA:HB3	32:H:112:LYS:HG2	2.01	0.43
52:a:212:G:H2'	52:a:213:G:H8	1.83	0.43
52:a:222:C:H2'	52:a:223:A:H8	1.81	0.43
52:a:491:G:N2	52:a:492:C:O2	2.52	0.43
52:a:718:A:H8	52:a:718:A:OP2	2.02	0.43
52:a:874:G:C2	52:a:875:U:C2	3.07	0.43
53:A:924:G:H2'	53:A:925:A:C8	2.52	0.43
53:A:1704:C:H2'	53:A:1705:A:C8	2.54	0.43
53:A:2133:G:H2'	53:A:2134:A:H4'	2.01	0.43
53:A:2135:A:OP1	53:A:2160:C:H1'	2.19	0.43
53:A:2137:U:H2'	53:A:2138:G:C8	2.52	0.43
53:A:2398:U:H2'	53:A:2399:G:C8	2.51	0.43
7:h:6:PRO:O	7:h:9:ASP:HB3	2.19	0.43
7:h:96:MET:HE2	7:h:99:LEU:HD11	2.01	0.43
11:l:6:GLN:NE2	52:a:881:G:OP2	2.35	0.43
12:m:26:GLY:N	52:a:1329:A:H5''	2.34	0.43
15:p:36:VAL:HG23	15:p:53:ASP:HB3	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:q:19:LYS:N	16:q:51:ASN:HD21	2.13	0.43
28:D:119:ALA:HB3	28:D:163:GLY:O	2.19	0.43
31:G:137:LYS:O	31:G:140:ILE:HG22	2.19	0.43
33:I:88:GLY:HA3	53:A:1064:C:H4'	2.01	0.43
37:M:34:LYS:HE3	37:M:131:VAL:HG11	2.01	0.43
39:O:24:THR:HG22	39:O:42:PRO:HD3	2.01	0.43
39:O:33:ARG:NH1	54:B:52:A:N7	2.67	0.43
41:Q:57:ARG:NH2	53:A:998:C:OP2	2.52	0.43
52:a:363:A:N6	52:a:364:A:N1	2.67	0.43
52:a:818:G:O2'	52:a:819:A:H5'	2.19	0.43
52:a:843:U:H5'	52:a:844:G:N7	2.33	0.43
52:a:1004:A:H1'	52:a:1026:G:O6	2.19	0.43
52:a:1007:U:H2'	52:a:1008:U:H6	1.83	0.43
53:A:466:A:N3	53:A:683:U:H1'	2.34	0.43
53:A:1413:A:H3'	53:A:1414:C:C6	2.54	0.43
53:A:1471:G:C6	53:A:1472:C:C4	3.06	0.43
3:d:139:PRO:O	3:d:140:ASN:HB2	2.19	0.43
4:e:79:GLY:HA3	4:e:121:HIS:HD2	1.84	0.43
11:l:45:PRO:HB3	55:7:21:A:O3'	2.19	0.43
13:n:73:PHE:HE2	13:n:75:ARG:HD3	1.84	0.43
20:u:4:ILE:HG12	20:u:19:PHE:CE2	2.54	0.43
22:1:37:LYS:HB2	22:1:48:TYR:CE2	2.54	0.43
25:4:11:CYS:HB3	25:4:33:HIS:CE1	2.54	0.43
26:5:172:HIS:NE2	53:A:2176:A:N3	2.67	0.43
27:C:15:VAL:HG22	27:C:205:GLY:HA3	2.00	0.43
29:E:29:HIS:NE2	36:L:8:PRO:HD3	2.34	0.43
30:F:105:ILE:O	30:F:108:PRO:HD2	2.19	0.43
37:M:34:LYS:HD3	46:V:81:PRO:O	2.19	0.43
52:a:184:G:H2'	52:a:185:U:H6	1.83	0.43
52:a:465:A:C6	52:a:466:A:C6	3.07	0.43
52:a:693:G:C6	52:a:694:A:C5	3.07	0.43
52:a:987:G:H1	52:a:1218:C:H42	1.67	0.43
53:A:560:C:H2'	53:A:561:G:O4'	2.18	0.43
53:A:601:C:H2'	53:A:602:A:O4'	2.19	0.43
53:A:610:C:H2'	53:A:611:C:C6	2.54	0.43
53:A:925:A:H2'	53:A:926:G:C8	2.53	0.43
53:A:1039:A:H2	53:A:1116:G:H22	1.67	0.43
53:A:1531:C:H2'	53:A:1532:A:H4'	2.01	0.43
53:A:1660:G:H1	53:A:2000:C:H42	1.67	0.43
56:8:61:C:H2'	56:8:62:C:H6	1.84	0.43
10:k:16:VAL:O	10:k:17:SER:OG	2.31	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:l:73:ASN:CG	11:l:74:LEU:N	2.77	0.42
12:m:18:ALA:CB	12:m:45:ILE:HD11	2.46	0.42
26:5:50:ILE:HG22	26:5:57:GLN:OE1	2.19	0.42
27:C:158:GLY:H	27:C:194:VAL:HG13	1.84	0.42
28:D:124:ARG:HE	28:D:125:TRP:NE1	2.17	0.42
29:E:161:ALA:HA	29:E:164:LEU:HB2	2.01	0.42
30:F:55:ASP:O	30:F:59:ILE:HG13	2.19	0.42
41:Q:13:HIS:ND1	53:A:582:A:OP1	2.51	0.42
46:V:53:LYS:HB3	46:V:55:GLU:OE1	2.19	0.42
52:a:158:G:C2	52:a:164:G:H1'	2.53	0.42
52:a:665:A:C5	52:a:733:G:C5	3.07	0.42
52:a:711:G:C2	52:a:712:A:C5	3.07	0.42
53:A:974:G:H8	53:A:990:A:H62	1.66	0.42
53:A:1079:C:N4	53:A:1088:A:H5''	2.34	0.42
53:A:1223:G:C6	53:A:1227:G:C6	3.07	0.42
53:A:1410:G:C2	53:A:1593:A:C2	3.07	0.42
53:A:2143:C:H4'	53:A:2145:C:H41	1.84	0.42
53:A:2795:C:N4	53:A:2801:G:H1	2.16	0.42
4:e:149:SER:HB2	4:e:150:PRO:HD2	2.01	0.42
7:h:30:SER:HB3	52:a:589:U:H5''	2.01	0.42
12:m:11:ASP:OD1	12:m:12:HIS:N	2.52	0.42
12:m:74:SER:O	12:m:78:LYS:HG2	2.19	0.42
17:r:64:TYR:OH	52:a:734:G:N3	2.52	0.42
18:s:45:ILE:HA	18:s:62:VAL:HG11	2.01	0.42
27:C:51:ARG:HG2	27:C:52:HIS:CD2	2.54	0.42
27:C:105:ALA:HA	27:C:106:PRO:HD2	1.87	0.42
28:D:208:LYS:HZ3	53:A:2732:G:P	2.41	0.42
30:F:63:LYS:HA	30:F:64:PRO:HD3	1.87	0.42
32:H:25:TYR:CE1	53:A:2094:A:H4'	2.53	0.42
33:I:30:GLN:H	33:I:32:VAL:HG23	1.84	0.42
35:K:70:ARG:O	35:K:71:ARG:HB2	2.18	0.42
39:O:105:ALA:O	39:O:106:LEU:HG	2.19	0.42
44:T:1:MET:HG2	53:A:139:U:O4	2.19	0.42
47:W:13:ARG:HG2	47:W:14:ASP:H	1.83	0.42
52:a:42:G:H1	52:a:400:C:H42	1.67	0.42
52:a:319:G:H2'	52:a:320:A:H8	1.83	0.42
52:a:570:G:C2	52:a:571:U:C2	3.07	0.42
52:a:978:A:H61	52:a:1316:G:H21	1.66	0.42
52:a:994:A:C8	52:a:1216:A:H4'	2.53	0.42
52:a:1255:G:C6	52:a:1279:G:C5	3.07	0.42
53:A:39:G:C2	53:A:441:U:C2	3.07	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:291:G:C5	53:A:350:G:C6	3.07	0.42
53:A:407:G:N1	53:A:421:C:N3	2.66	0.42
53:A:903:C:H2'	53:A:904:G:H8	1.83	0.42
53:A:934:U:H2'	53:A:935:C:C6	2.54	0.42
53:A:1036:G:C6	53:A:1120:G:C6	3.07	0.42
53:A:1223:G:N1	53:A:1227:G:C5	2.88	0.42
53:A:1283:G:N2	53:A:1285:A:H3'	2.35	0.42
53:A:1430:G:C6	53:A:1431:A:C5	3.07	0.42
53:A:1823:G:C5	53:A:1824:G:N7	2.87	0.42
53:A:2096:C:H2'	53:A:2097:A:H8	1.84	0.42
53:A:2126:A:H2	53:A:2162:G:N7	2.17	0.42
53:A:2259:U:H2'	53:A:2260:C:H6	1.85	0.42
3:d:4:TYR:C	3:d:6:GLY:H	2.27	0.42
6:g:4:ARG:HE	52:a:932:C:H5'	1.84	0.42
6:g:125:SER:O	6:g:129:GLU:HG2	2.19	0.42
9:j:42:LEU:HD11	9:j:73:LEU:HD21	2.01	0.42
19:t:36:TYR:CZ	19:t:79:LEU:HD21	2.55	0.42
26:5:42:VAL:HG21	26:5:175:ILE:HB	2.00	0.42
26:5:217:THR:O	53:A:2174:C:O2'	2.37	0.42
30:F:24:VAL:O	30:F:27:VAL:HG12	2.19	0.42
31:G:47:ASN:HB3	31:G:48:THR:H	1.60	0.42
32:H:40:THR:O	32:H:42:LYS:N	2.47	0.42
32:H:45:GLU:O	32:H:48:GLU:HB3	2.19	0.42
32:H:90:LEU:HD21	32:H:149:GLU:OXT	2.19	0.42
37:M:8:LYS:HG2	37:M:9:PHE:CE2	2.54	0.42
38:N:73:ASN:HB3	53:A:1453:A:N7	2.34	0.42
41:Q:31:TYR:OH	53:A:1252:G:OP1	2.35	0.42
48:X:17:ARG:NH2	48:X:21:LEU:HB3	2.34	0.42
52:a:615:G:C6	52:a:626:G:C5	3.07	0.42
53:A:173:A:C6	53:A:174:U:C4	3.08	0.42
53:A:597:G:C6	53:A:661:A:C6	3.07	0.42
53:A:665:U:H2'	53:A:666:A:C8	2.54	0.42
53:A:1536:C:O2	53:A:1537:G:N1	2.51	0.42
53:A:1716:U:H2'	53:A:1717:A:C8	2.54	0.42
53:A:1731:G:O2'	53:A:1732:C:H3'	2.19	0.42
53:A:1746:A:H2'	53:A:1747:U:C6	2.54	0.42
53:A:2530:A:H2'	53:A:2531:A:H5''	2.00	0.42
53:A:2688:G:N1	53:A:2720:U:OP2	2.44	0.42
56:9:43:C:H2'	56:9:45:U:O4	2.18	0.42
1:b:131:LYS:NZ	52:a:1159:U:O5'	2.53	0.42
8:i:39:PHE:HZ	8:i:79:ILE:HD12	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:n:87:ALA:HA	13:n:92:GLU:HG3	2.01	0.42
15:p:51:ARG:C	15:p:52:LEU:HD12	2.44	0.42
20:u:39:GLU:HB2	52:a:1526:G:OP2	2.17	0.42
37:M:8:LYS:HE3	37:M:9:PHE:CE2	2.55	0.42
38:N:1:MET:HG3	38:N:3:HIS:CD2	2.55	0.42
52:a:171:A:H2'	52:a:172:A:C8	2.55	0.42
52:a:243:A:H4'	52:a:244:U:H3'	2.00	0.42
52:a:419:C:H5''	52:a:513:C:H1'	2.01	0.42
52:a:582:C:OP2	52:a:758:C:N4	2.52	0.42
52:a:770:C:H1'	52:a:899:C:H42	1.83	0.42
52:a:895:G:C2	52:a:896:C:C2	3.08	0.42
52:a:1443:C:O2	52:a:1459:G:N1	2.49	0.42
53:A:136:G:C2	53:A:137:U:C2	3.07	0.42
53:A:358:U:H2'	53:A:359:G:C8	2.54	0.42
53:A:562:U:H1'	53:A:2035:G:O2'	2.19	0.42
53:A:1227:G:N2	53:A:1228:G:H1'	2.35	0.42
53:A:1310:G:H1	53:A:1604:C:H42	1.67	0.42
53:A:1831:G:H2'	53:A:1832:C:C6	2.54	0.42
53:A:2283:C:H2'	53:A:2284:A:H8	1.84	0.42
53:A:2710:C:H2'	53:A:2711:A:C8	2.54	0.42
53:A:2841:C:H2'	53:A:2842:G:H8	1.84	0.42
53:A:2888:C:H2'	53:A:2889:C:C6	2.54	0.42
1:b:14:HIS:O	1:b:14:HIS:ND1	2.53	0.42
1:b:26:MET:HE3	1:b:192:PRO:HD3	2.01	0.42
6:g:69:VAL:C	6:g:138:ARG:HD3	2.45	0.42
11:l:54:ARG:HE	11:l:62:GLU:HG2	1.84	0.42
12:m:95:LEU:HB3	12:m:96:PRO:HD2	2.01	0.42
29:E:3:LEU:HD12	29:E:12:LEU:HB3	2.01	0.42
30:F:70:ARG:NH1	53:A:2299:U:OP2	2.41	0.42
35:K:76:VAL:H	40:P:72:VAL:HG22	1.85	0.42
37:M:39:GLY:O	37:M:96:ILE:HG13	2.20	0.42
52:a:425:G:C2	52:a:426:U:C2	3.08	0.42
52:a:512:U:H2'	52:a:513:C:C6	2.55	0.42
52:a:629:A:C6	52:a:630:A:C5	3.08	0.42
52:a:1149:C:O2'	52:a:1280:A:N1	2.50	0.42
53:A:271:G:O2'	53:A:272:A:C8	2.70	0.42
53:A:600:G:C5	53:A:601:C:C4	3.07	0.42
53:A:974:G:C4	53:A:1186:G:C2	3.07	0.42
53:A:1408:G:N2	53:A:1595:C:H1'	2.34	0.42
53:A:2107:G:C5	53:A:2183:A:C2	3.08	0.42
53:A:2132:U:H2'	53:A:2133:G:H8	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:2135:A:H5''	53:A:2136:G:C8	2.54	0.42
9:j:59:LYS:HG3	9:j:60:ASP:OD1	2.19	0.42
26:5:43:ASP:HB3	53:A:2124:G:H1'	2.02	0.42
27:C:74:PRO:HG2	27:C:96:LYS:HG3	2.02	0.42
28:D:5:VAL:HG11	28:D:80:TRP:CZ3	2.54	0.42
36:L:66:PHE:HB3	53:A:631:A:O2'	2.19	0.42
44:T:40:LYS:O	44:T:43:ILE:HG13	2.19	0.42
52:a:102:G:H2'	52:a:103:U:C6	2.55	0.42
52:a:188:C:H2'	52:a:189:A:O4'	2.20	0.42
52:a:355:C:C4	52:a:356:A:N7	2.88	0.42
53:A:436:C:N4	53:A:437:U:O4	2.52	0.42
53:A:1954:G:H21	53:A:1956:U:H3	1.68	0.42
53:A:2700:A:H2'	53:A:2701:U:H6	1.85	0.42
1:b:207:ARG:HG3	1:b:208:ALA:N	2.35	0.42
12:m:101:ARG:NH2	52:a:951:G:OP2	2.53	0.42
14:o:79:THR:HA	14:o:82:ILE:HG12	2.02	0.42
17:r:53:ARG:NE	52:a:664:G:OP1	2.45	0.42
21:0:3:GLN:HA	53:A:2615:U:C2	2.54	0.42
27:C:229:HIS:CD2	27:C:246:PRO:HB3	2.55	0.42
34:J:108:MET:HE2	53:A:1138:G:H21	1.85	0.42
34:J:108:MET:HE2	53:A:1138:G:N2	2.35	0.42
38:N:73:ASN:HA	38:N:76:VAL:HG12	2.00	0.42
52:a:1254:A:H2'	52:a:1255:G:C8	2.54	0.42
53:A:152:A:H61	53:A:173:A:N6	2.18	0.42
53:A:247:G:OP1	53:A:386:G:O2'	2.37	0.42
53:A:884:U:H1'	53:A:893:C:O2	2.20	0.42
53:A:970:U:H5''	53:A:989:G:O6	2.20	0.42
53:A:2033:A:N6	53:A:2036:C:C2	2.88	0.42
53:A:2266:A:N6	53:A:2273:A:OP2	2.53	0.42
2:c:123:GLN:HE22	2:c:136:ARG:HD2	1.85	0.42
4:e:83:HIS:HB2	4:e:84:PRO:HD2	2.02	0.42
6:g:16:PRO:O	8:i:45:ARG:NH2	2.52	0.42
8:i:130:ARG:CZ	56:8:33:U:C4	3.02	0.42
11:l:54:ARG:HA	11:l:64:THR:HA	2.02	0.42
12:m:114:LYS:HB2	12:m:115:PRO:HD3	2.01	0.42
29:E:128:ALA:O	29:E:130:LYS:N	2.51	0.42
33:I:134:SER:HB3	53:A:1062:G:O2'	2.20	0.42
37:M:53:MET:HE1	37:M:103:TYR:CD1	2.55	0.42
40:P:57:ALA:HA	40:P:75:THR:HG23	2.01	0.42
40:P:105:LYS:HG2	52:a:1432:G:P	2.60	0.42
44:T:50:LEU:C	44:T:52:GLU:H	2.27	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:W:37:VAL:C	47:W:38:ARG:HG2	2.44	0.42
52:a:57:G:H2'	52:a:58:C:C6	2.55	0.42
52:a:1394:A:N1	52:a:1500:A:O2'	2.53	0.42
53:A:67:U:C2	53:A:88:G:C2	3.08	0.42
53:A:191:A:H2'	53:A:192:C:H6	1.84	0.42
53:A:271:G:O2'	53:A:272:A:H8	2.03	0.42
53:A:1034:G:C5	53:A:1035:U:C4	3.07	0.42
53:A:1170:C:H2'	53:A:1171:G:C8	2.55	0.42
53:A:1538:G:C6	53:A:1539:U:N3	2.88	0.42
53:A:1553:A:N6	53:A:1555:G:N3	2.68	0.42
53:A:2758:A:C2	53:A:2759:G:H1'	2.55	0.42
56:8:19:G:C8	56:8:57:G:C2	2.96	0.42
56:9:7:A:O2'	56:9:49:C:OP2	2.25	0.42
3:d:33:LYS:NZ	52:a:426:U:OP1	2.48	0.42
3:d:125:VAL:HG23	3:d:126:ASN:H	1.85	0.42
4:e:106:ILE:HB	52:a:8:A:C8	2.54	0.42
6:g:79:ARG:HD2	6:g:84:THR:HA	2.00	0.42
29:E:98:LYS:HB3	29:E:102:ARG:NH2	2.35	0.42
30:F:113:PHE:HZ	30:F:175:PRO:HB3	1.84	0.42
35:K:34:GLY:O	35:K:36:GLY:N	2.52	0.42
42:R:27:ILE:HG13	42:R:33:VAL:HG12	2.02	0.42
46:V:37:PRO:HG2	54:B:74:U:H1'	2.02	0.42
50:Z:36:GLU:O	50:Z:37:ARG:NH1	2.53	0.42
52:a:17:U:H2'	52:a:18:C:C6	2.55	0.42
52:a:186:C:H2'	52:a:187:G:O4'	2.20	0.42
52:a:499:A:C2	52:a:547:A:C5	3.08	0.42
52:a:1072:G:C6	52:a:1073:U:C4	3.08	0.42
52:a:1147:C:H2'	52:a:1148:U:C6	2.55	0.42
52:a:1276:G:H21	52:a:1282:C:H1'	1.83	0.42
53:A:165:A:H2'	53:A:166:U:O4'	2.20	0.42
53:A:300:A:H2	53:A:333:G:N3	2.18	0.42
53:A:1078:U:H4'	53:A:1079:C:C2	2.55	0.42
53:A:1244:A:C4	53:A:1245:G:C8	3.08	0.42
53:A:2001:C:H1'	53:A:2689:U:C4	2.54	0.42
53:A:2221:G:H2'	53:A:2222:C:H6	1.84	0.42
56:8:30:G:C2	56:8:41:C:C2	3.08	0.42
2:c:3:GLN:H	2:c:3:GLN:CD	2.27	0.42
3:d:154:ARG:NH2	52:a:437:U:H4'	2.34	0.42
4:e:16:ILE:HG21	4:e:110:ALA:HB2	2.01	0.42
10:k:20:VAL:O	10:k:35:THR:HG22	2.20	0.42
11:l:82:ILE:HD11	11:l:95:TYR:CG	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:s:53:ASN:OD1	18:s:56:GLN:N	2.50	0.42
27:C:52:HIS:CE1	27:C:218:THR:HG23	2.55	0.42
31:G:66:THR:HG21	53:A:2757:A:N1	2.34	0.42
31:G:93:TYR:CD1	31:G:106:LEU:HA	2.55	0.42
41:Q:105:PHE:O	41:Q:109:VAL:HG23	2.20	0.42
52:a:356:A:H2'	52:a:357:G:O4'	2.19	0.42
52:a:415:A:H2'	52:a:416:G:O4'	2.20	0.42
53:A:315:G:C6	53:A:316:C:C4	3.08	0.42
53:A:1660:G:N2	53:A:2001:C:N3	2.67	0.42
53:A:2158:A:O2'	53:A:2159:G:N3	2.52	0.42
53:A:2815:C:H2'	53:A:2816:G:C8	2.50	0.42
2:c:159:GLY:HA2	2:c:193:TYR:CE1	2.54	0.41
4:e:23:LYS:HB3	4:e:30:ILE:HG23	2.03	0.41
6:g:86:GLN:HE22	56:9:32:U:C4'	2.33	0.41
8:i:6:TYR:CD2	8:i:89:GLU:HG3	2.55	0.41
14:o:56:LEU:O	14:o:60:VAL:HG23	2.20	0.41
15:p:2:VAL:HG23	15:p:65:ALA:HA	2.02	0.41
28:D:5:VAL:H	28:D:32:ASN:ND2	2.18	0.41
28:D:208:LYS:NZ	53:A:2731:G:O3'	2.52	0.41
43:S:27:LYS:O	43:S:71:VAL:HG12	2.20	0.41
52:a:898:G:C2	52:a:902:G:C2	3.08	0.41
52:a:1464:U:H2'	52:a:1465:A:H8	1.84	0.41
52:a:1508:A:H2'	52:a:1509:C:H6	1.83	0.41
53:A:272:A:H2	53:A:273:G:N3	2.13	0.41
53:A:303:G:C6	53:A:315:G:C6	3.07	0.41
53:A:677:A:O2'	53:A:2070:A:O2'	2.17	0.41
53:A:829:A:N7	53:A:2248:C:H5'	2.35	0.41
53:A:1049:C:H2'	53:A:1050:A:H8	1.85	0.41
53:A:1346:G:C2	53:A:1601:G:C2	3.08	0.41
53:A:1622:G:C2	53:A:1623:G:C8	3.08	0.41
53:A:1717:A:H2'	53:A:1718:G:O4'	2.20	0.41
53:A:1858:A:H1'	53:A:1885:A:C2	2.55	0.41
53:A:2061:G:O2'	53:A:2062:A:H3'	2.20	0.41
53:A:2062:A:H4'	53:A:2063:C:OP1	2.20	0.41
53:A:2128:G:C2'	53:A:2129:C:H4'	2.49	0.41
53:A:2209:G:C2	53:A:2210:U:O4	2.73	0.41
53:A:2262:U:H2'	53:A:2263:C:C6	2.54	0.41
53:A:2627:G:N2	53:A:2777:G:C4	2.88	0.41
53:A:2793:C:H2'	53:A:2794:C:H6	1.84	0.41
53:A:2901:C:C4	53:A:2902:C:C4	3.08	0.41
56:8:45:U:O2'	56:8:46:G:OP2	2.29	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:9:26:A:N7	56:9:27:G:C2	2.88	0.41
1:b:119:GLN:HB2	1:b:124:THR:OG1	2.20	0.41
3:d:59:GLN:O	3:d:63:ARG:HG3	2.19	0.41
3:d:188:ARG:NE	3:d:197:GLU:OE2	2.53	0.41
10:k:20:VAL:HG11	10:k:85:MET:HE3	2.03	0.41
19:t:29:ARG:NH1	52:a:1438:G:OP2	2.53	0.41
26:5:189:LEU:O	26:5:192:LEU:HB3	2.20	0.41
38:N:17:ARG:NH2	53:A:2002:G:OP1	2.51	0.41
40:P:77:SER:OG	40:P:79:VAL:HG22	2.20	0.41
43:S:35:ILE:O	43:S:39:THR:OG1	2.31	0.41
48:X:60:LYS:HD2	53:A:372:G:H5'	2.02	0.41
50:Z:9:THR:OG1	50:Z:10:ARG:N	2.46	0.41
52:a:722:G:H3'	52:a:722:G:N3	2.35	0.41
52:a:1319:A:N6	52:a:1361:G:H21	2.17	0.41
52:a:1523:G:H2'	52:a:1524:C:C6	2.55	0.41
53:A:130:C:H2'	53:A:131:A:O4'	2.20	0.41
53:A:651:G:H2'	53:A:652:U:C6	2.55	0.41
53:A:816:C:H2'	53:A:817:C:H6	1.84	0.41
53:A:938:G:H2'	53:A:939:G:H8	1.85	0.41
53:A:1854:A:N1	53:A:2087:G:O2'	2.50	0.41
53:A:2507:C:C2	53:A:2583:G:C2	3.08	0.41
53:A:2627:G:O2'	53:A:2781:A:N1	2.49	0.41
53:A:2869:G:N7	53:A:2870:C:C4	2.88	0.41
56:8:19:G:N9	56:8:57:G:N2	2.62	0.41
16:q:65:ARG:HA	16:q:66:PRO:HD3	1.96	0.41
26:5:52:ALA:HB2	26:5:56:ASP:HB2	2.01	0.41
27:C:120:ASP:OD1	27:C:120:ASP:N	2.46	0.41
27:C:144:GLU:HA	27:C:151:GLY:HA2	2.02	0.41
30:F:132:ARG:HH12	53:A:2306:C:H5'	1.86	0.41
33:I:18:ASN:HD22	33:I:35:MET:HA	1.85	0.41
34:J:56:VAL:O	34:J:57:LEU:HD12	2.20	0.41
34:J:80:HIS:HB3	34:J:81:ILE:H	1.59	0.41
35:K:119:ALA:HA	35:K:120:PRO:HD2	1.89	0.41
39:O:32:PRO:HD2	54:B:29:A:OP2	2.21	0.41
47:W:23:LYS:NZ	53:A:923:G:H1'	2.35	0.41
47:W:69:GLU:HB3	47:W:70:VAL:H	1.71	0.41
52:a:919:A:C5	52:a:920:U:H5	2.38	0.41
52:a:1467:C:H2'	52:a:1468:A:H8	1.84	0.41
53:A:290:U:N3	53:A:291:G:N7	2.68	0.41
53:A:478:A:C6	53:A:480:A:C6	3.08	0.41
53:A:862:G:C4	53:A:863:A:C8	3.08	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:1030:C:N3	53:A:1125:G:N2	2.68	0.41
53:A:1510:G:N2	53:A:1511:G:N3	2.68	0.41
53:A:1918:A:HO2'	53:A:1919:A:P	2.44	0.41
53:A:2294:G:H2'	53:A:2295:C:H6	1.85	0.41
54:B:29:A:H2'	54:B:30:C:C6	2.55	0.41
1:b:134:LEU:HD21	1:b:138:ARG:HH21	1.85	0.41
1:b:170:ILE:O	1:b:174:GLU:HG3	2.20	0.41
2:c:154:SER:OG	52:a:1057:G:H5'	2.21	0.41
3:d:11:LEU:HD21	3:d:63:ARG:HH11	1.85	0.41
3:d:116:GLN:HE21	3:d:120:HIS:HE1	1.67	0.41
4:e:88:VAL:HG12	4:e:93:ARG:HG2	2.02	0.41
11:l:64:THR:HG21	11:l:93:VAL:HG22	2.02	0.41
23:2:1:MET:O	23:2:3:ARG:HG2	2.21	0.41
25:4:38:GLY:O	53:A:1124:G:N2	2.39	0.41
26:5:76:ALA:HA	26:5:93:GLU:OE2	2.19	0.41
27:C:67:LYS:HG2	27:C:150:GLY:HA2	2.02	0.41
27:C:254:LYS:O	27:C:256:THR:N	2.44	0.41
30:F:74:ALA:HB2	56:8:56:C:O2	2.21	0.41
40:P:104:GLY:HA3	52:a:1432:G:OP1	2.20	0.41
42:R:4:VAL:HG23	42:R:13:ARG:HA	2.02	0.41
44:T:39:THR:O	44:T:40:LYS:C	2.64	0.41
47:W:13:ARG:HG2	47:W:14:ASP:N	2.36	0.41
52:a:262:A:H2'	52:a:263:A:H8	1.85	0.41
52:a:399:G:H2'	52:a:400:C:H6	1.86	0.41
53:A:144:A:H2'	53:A:145:C:C6	2.55	0.41
53:A:190:A:C5	53:A:207:A:C2	3.09	0.41
53:A:739:A:H1'	53:A:740:C:H5	1.85	0.41
53:A:861:A:N3	54:B:79:G:O2'	2.51	0.41
53:A:927:A:H2'	53:A:928:A:C8	2.55	0.41
53:A:1467:U:C4	53:A:1546:G:C2	3.09	0.41
53:A:1933:G:H1	53:A:1967:C:H42	1.68	0.41
53:A:2041:U:H2'	53:A:2042:A:H8	1.84	0.41
53:A:2105:U:H2'	53:A:2106:U:O4'	2.21	0.41
53:A:2221:G:C2	53:A:2222:C:C2	3.08	0.41
53:A:2297:A:N7	53:A:2320:U:N3	2.68	0.41
53:A:2424:C:O2	53:A:2429:G:O2'	2.38	0.41
53:A:2699:C:H2'	53:A:2700:A:H8	1.85	0.41
56:8:25:C:H2'	56:8:26:A:O4'	2.21	0.41
6:g:143:ARG:HD3	56:9:41:C:H4'	2.02	0.41
10:k:55:SER:HB3	52:a:694:A:OP1	2.19	0.41
13:n:42:TRP:CD1	13:n:44:ALA:HB3	2.51	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:t:3:ASN:CG	19:t:4:ILE:HD12	2.45	0.41
23:2:30:VAL:HG22	23:2:33:ARG:NH1	2.35	0.41
26:5:70:GLY:HA2	26:5:176:GLY:HA2	2.02	0.41
26:5:148:ASN:HB2	26:5:151:GLU:HG2	2.02	0.41
27:C:67:LYS:HB3	27:C:69:ASN:OD1	2.21	0.41
28:D:133:THR:OG1	28:D:134:HIS:N	2.53	0.41
32:H:20:ASN:OD1	32:H:21:VAL:N	2.54	0.41
34:J:27:ARG:HG2	53:A:1143:A:H62	1.85	0.41
52:a:27:G:C4	52:a:557:G:N2	2.89	0.41
52:a:184:G:H2'	52:a:185:U:C6	2.56	0.41
52:a:302:G:H21	52:a:556:C:H4'	1.85	0.41
52:a:591:U:H2'	52:a:592:G:C8	2.55	0.41
52:a:1157:A:C6	52:a:1180:A:C6	3.08	0.41
52:a:1483:A:H3'	52:a:1484:C:H6	1.85	0.41
53:A:319:G:C4	53:A:320:A:C8	3.08	0.41
53:A:1078:U:H4'	53:A:1079:C:N1	2.35	0.41
53:A:1368:G:H2'	53:A:1369:G:C8	2.55	0.41
53:A:1962:C:O2'	53:A:1964:G:OP2	2.35	0.41
53:A:2149:U:C4	53:A:2150:C:C4	3.09	0.41
53:A:2405:G:H1'	53:A:2412:A:N6	2.35	0.41
53:A:2881:U:H2'	53:A:2882:A:C8	2.55	0.41
3:d:124:MET:HA	3:d:129:VAL:HA	2.01	0.41
10:k:45:ALA:HB3	10:k:70:CYS:HB2	2.02	0.41
11:l:34:CYS:HA	11:l:55:VAL:HA	2.02	0.41
26:5:193:LEU:HA	26:5:196:LEU:HD12	2.02	0.41
28:D:197:THR:HB	53:A:2820:A:C2	2.56	0.41
33:I:42:ASN:O	33:I:45:THR:HB	2.21	0.41
33:I:58:ILE:HG22	33:I:60:VAL:HG23	2.02	0.41
45:U:25:LYS:HB3	45:U:34:ILE:O	2.21	0.41
52:a:153:C:N4	52:a:168:G:H1	2.15	0.41
52:a:790:A:OP1	56:8:38:A:O2'	2.32	0.41
53:A:80:G:C2	53:A:107:G:C2	3.08	0.41
53:A:449:A:C4	53:A:450:G:C8	3.09	0.41
53:A:514:A:H1'	53:A:581:C:O2'	2.20	0.41
53:A:1055:G:H2'	53:A:1056:G:O4'	2.20	0.41
53:A:1356:G:C6	53:A:1357:C:C4	3.09	0.41
53:A:1394:U:N3	53:A:1395:A:C6	2.89	0.41
53:A:2536:G:C6	53:A:2537:U:C4	3.09	0.41
53:A:2660:A:C6	53:A:2661:G:C4	3.09	0.41
53:A:2681:C:N3	53:A:2727:A:H2	2.17	0.41
53:A:2751:G:H2'	53:A:2751:G:N3	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:8:20:U:O2'	56:8:21:A:P	2.78	0.41
56:9:11:C:H2'	56:9:12:U:H6	1.86	0.41
3:d:26:ARG:HH21	52:a:410:G:C5'	2.33	0.41
6:g:12:ILE:HG21	6:g:28:ASN:HD21	1.84	0.41
6:g:137:LYS:O	6:g:141:VAL:HG23	2.21	0.41
8:i:6:TYR:CG	8:i:89:GLU:HB2	2.56	0.41
9:j:81:GLU:HA	9:j:84:VAL:HG12	2.02	0.41
11:l:4:VAL:CG2	16:q:34:TYR:HB3	2.50	0.41
13:n:79:LEU:HB2	13:n:84:VAL:HG22	2.03	0.41
18:s:15:LEU:HD13	18:s:33:THR:HG21	2.01	0.41
27:C:252:LYS:NZ	53:A:1901:A:OP2	2.41	0.41
28:D:187:LEU:HG	28:D:189:VAL:HG13	2.03	0.41
30:F:15:LEU:HD13	30:F:28:PRO:HD2	2.02	0.41
41:Q:5:ARG:HG2	41:Q:6:GLY:N	2.36	0.41
52:a:1005:A:C2	52:a:1006:G:H1'	2.56	0.41
52:a:1271:A:H2'	52:a:1272:G:H8	1.85	0.41
52:a:1375:A:H2'	52:a:1376:U:O4'	2.21	0.41
53:A:169:G:C6	53:A:170:U:C4	3.09	0.41
53:A:185:G:C2	53:A:186:G:C4	3.08	0.41
53:A:1442:U:H3	53:A:1549:A:H61	1.67	0.41
53:A:1492:G:N1	53:A:1499:C:N3	2.68	0.41
53:A:1561:C:H2'	53:A:1562:U:H6	1.86	0.41
53:A:1786:A:C4	53:A:1938:A:C6	3.08	0.41
53:A:2116:G:H3'	53:A:2117:A:H8	1.85	0.41
53:A:2131:U:H4'	53:A:2132:U:C4'	2.50	0.41
53:A:2513:A:C6	53:A:2574:G:C6	3.09	0.41
53:A:2819:G:H1	53:A:2827:C:H42	1.69	0.41
53:A:2834:G:H2'	53:A:2879:A:H61	1.86	0.41
56:9:1:G:N3	56:9:73:A:H1'	2.36	0.41
56:9:26:A:C5'	56:9:27:G:H8	2.34	0.41
2:c:65:ARG:CZ	2:c:65:ARG:HB2	2.51	0.41
3:d:140:ASN:N	3:d:182:PHE:O	2.54	0.41
4:e:105:ILE:O	4:e:112:ARG:NH1	2.53	0.41
13:n:93:ILE:HA	13:n:94:PRO:HD3	1.92	0.41
14:o:4:SER:O	14:o:8:THR:HG23	2.21	0.41
21:0:21:LEU:HD21	43:S:41:LYS:HE3	2.03	0.41
26:5:27:ILE:O	26:5:31:LYS:HG3	2.21	0.41
26:5:44:VAL:O	26:5:172:HIS:HA	2.21	0.41
26:5:52:ALA:HB1	26:5:54:LYS:N	2.36	0.41
29:E:28:VAL:O	29:E:32:VAL:HG12	2.21	0.41
29:E:146:VAL:HA	29:E:185:LYS:O	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:E:190:ALA:O	29:E:193:VAL:HB	2.21	0.41
31:G:78:VAL:HG13	31:G:79:THR:HG23	2.01	0.41
39:O:11:ALA:HB2	39:O:95:SER:C	2.46	0.41
39:O:58:ILE:O	39:O:61:GLN:HG2	2.21	0.41
44:T:28:ASN:CB	44:T:91:GLN:HE22	2.21	0.41
52:a:179:A:H2'	52:a:180:U:C6	2.56	0.41
52:a:768:A:N3	52:a:1512:U:O2'	2.54	0.41
52:a:838:G:C6	52:a:849:G:C6	3.09	0.41
52:a:951:G:C2	52:a:1231:G:C2	3.09	0.41
52:a:951:G:C4	52:a:1231:G:N2	2.89	0.41
52:a:1145:A:O2'	52:a:1146:A:H8	2.03	0.41
52:a:1532:U:H2'	52:a:1534:A:H5'	2.01	0.41
53:A:136:G:H1	53:A:143:C:N4	2.19	0.41
53:A:362:A:C4	53:A:363:G:C8	3.08	0.41
53:A:553:G:H2'	53:A:554:U:O4'	2.21	0.41
53:A:629:G:H5''	53:A:650:C:O2'	2.21	0.41
53:A:1394:U:H4'	53:A:1603:A:H4'	2.02	0.41
53:A:1401:G:H2'	53:A:1402:U:C6	2.55	0.41
53:A:1435:G:H2'	53:A:1436:G:C8	2.51	0.41
53:A:2082:A:H2'	53:A:2083:G:O4'	2.21	0.41
53:A:2187:U:H2'	53:A:2188:U:H6	1.85	0.41
53:A:2518:A:H2'	53:A:2518:A:N3	2.35	0.41
53:A:2623:G:OP1	53:A:2826:A:O2'	2.28	0.41
1:b:162:VAL:O	1:b:184:ALA:HA	2.21	0.41
3:d:149:ALA:CA	3:d:152:GLN:HE22	2.34	0.41
9:j:30:LYS:HB3	9:j:36:VAL:HG21	2.03	0.41
11:l:114:ARG:HG3	11:l:119:VAL:HB	2.03	0.41
12:m:97:VAL:HB	52:a:1308:U:H5''	2.02	0.41
22:1:18:HIS:ND1	22:1:40:PRO:HD2	2.36	0.41
22:1:29:LYS:HA	22:1:30:PRO:HD2	1.88	0.41
25:4:30:GLU:HA	25:4:31:PRO:HD3	1.85	0.41
26:5:43:ASP:HB2	53:A:2123:G:N3	2.35	0.41
26:5:108:GLU:CD	53:A:2162:G:H1	2.26	0.41
27:C:14:HIS:O	27:C:203:VAL:HG11	2.21	0.41
29:E:55:SER:HB3	53:A:468:G:H5''	2.01	0.41
30:F:105:ILE:HG13	30:F:106:ALA:N	2.36	0.41
30:F:131:VAL:HG23	30:F:132:ARG:N	2.36	0.41
30:F:137:PHE:HA	30:F:138:PRO:HD3	1.82	0.41
31:G:2:ARG:HA	31:G:5:LYS:HE2	2.03	0.41
31:G:21:GLN:NE2	31:G:37:ASN:O	2.54	0.41
31:G:85:LYS:C	31:G:86:LEU:HD12	2.45	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:G:154:GLU:OE1	31:G:157:LYS:N	2.44	0.41
32:H:144:VAL:HG23	32:H:146:VAL:HG13	2.02	0.41
33:I:75:ALA:O	33:I:79:LEU:HG	2.20	0.41
33:I:112:LYS:O	33:I:116:MET:HG3	2.20	0.41
35:K:9:ASN:O	35:K:83:ALA:HA	2.20	0.41
36:L:11:GLY:O	53:A:597:G:O2'	2.33	0.41
37:M:80:VAL:HA	51:x:558:ILE:HD11	2.03	0.41
40:P:88:ARG:HD2	40:P:112:ARG:HH22	1.83	0.41
41:Q:34:ALA:O	41:Q:38:VAL:HG23	2.21	0.41
45:U:86:PHE:CE2	45:U:92:VAL:HG21	2.56	0.41
46:V:36:ALA:HA	46:V:37:PRO:HD3	1.88	0.41
46:V:78:GLN:NE2	54:B:76:G:H21	2.19	0.41
48:X:69:GLU:HA	48:X:72:ALA:HB3	2.03	0.41
49:Y:57:LEU:O	49:Y:61:ALA:N	2.52	0.41
50:Z:16:LEU:HB2	50:Z:19:HIS:CD2	2.56	0.41
52:a:5:U:O2'	52:a:6:G:N3	2.53	0.41
52:a:28:A:H8	52:a:28:A:O5'	2.03	0.41
52:a:164:G:H2'	52:a:164:G:N3	2.36	0.41
52:a:406:G:C4	52:a:495:A:C6	3.09	0.41
52:a:487:A:H3'	52:a:488:C:C6	2.56	0.41
52:a:503:C:O2'	52:a:510:A:N1	2.51	0.41
52:a:689:C:O2'	52:a:705:G:O2'	2.27	0.41
52:a:1169:A:C6	52:a:1170:A:C6	3.09	0.41
53:A:519:U:H2'	53:A:520:G:C8	2.56	0.41
53:A:784:G:O2'	53:A:785:G:O5'	2.37	0.41
53:A:859:G:O2'	53:A:860:U:OP2	2.36	0.41
53:A:981:A:N1	53:A:2027:G:O2'	2.49	0.41
53:A:1000:A:OP2	53:A:1154:G:N1	2.45	0.41
53:A:1031:G:H2'	53:A:1032:A:H8	1.86	0.41
53:A:1071:G:H8	53:A:1071:G:OP1	2.04	0.41
53:A:1562:U:H2'	53:A:1563:U:O4'	2.21	0.41
53:A:1857:G:C2	53:A:1884:G:N3	2.89	0.41
53:A:2051:A:C5	53:A:2614:A:C6	3.09	0.41
53:A:2135:A:O2'	53:A:2160:C:H4'	2.21	0.41
53:A:2270:A:H2'	53:A:2271:G:O4'	2.21	0.41
53:A:2297:A:C5	53:A:2320:U:C2	3.09	0.41
53:A:2361:G:H2'	53:A:2362:C:O4'	2.21	0.41
53:A:2446:G:O2'	53:A:2448:A:H8	2.03	0.41
53:A:2559:C:H2'	53:A:2560:A:C8	2.53	0.41
53:A:2620:C:C4	53:A:2621:G:N7	2.89	0.41
53:A:2639:A:H2'	53:A:2640:G:O4'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:B:28:C:H2'	54:B:29:A:C8	2.56	0.41
54:B:33:G:N2	54:B:34:A:N3	2.68	0.41
54:B:68:C:H2'	54:B:69:G:H8	1.86	0.41
56:9:20:U:OP1	56:9:21:A:H5'	2.21	0.41
56:9:51:U:C2	56:9:52:G:C8	3.09	0.41
2:c:60:PRO:HG3	2:c:65:ARG:NH1	2.30	0.41
7:h:96:MET:O	7:h:99:LEU:HG	2.21	0.41
22:1:38:PHE:HA	22:1:45:HIS:HA	2.03	0.41
26:5:135:GLY:HA2	53:A:2122:U:C5	2.56	0.41
27:C:70:LYS:HE3	27:C:73:ILE:HD12	2.02	0.41
31:G:120:ILE:CD1	31:G:139:VAL:HG12	2.51	0.41
33:I:71:LYS:HB3	33:I:115:ASP:OD2	2.21	0.41
47:W:30:VAL:HG13	53:A:2353:G:N3	2.35	0.41
49:Y:9:LYS:O	49:Y:13:GLU:HG3	2.21	0.41
50:Z:3:THR:HB	50:Z:36:GLU:HG3	2.02	0.41
52:a:721:G:N1	52:a:733:G:C4	2.89	0.41
52:a:857:C:H2'	52:a:858:G:C8	2.56	0.41
53:A:64:A:H2'	53:A:65:U:C6	2.56	0.41
53:A:255:A:C2	53:A:256:A:H1'	2.56	0.41
53:A:870:U:H2'	53:A:871:U:O4'	2.21	0.41
53:A:1151:A:H2'	53:A:1152:C:O4'	2.21	0.41
53:A:1681:G:C6	53:A:1762:A:C6	3.09	0.41
53:A:1954:G:N2	53:A:1956:U:H3	2.19	0.41
53:A:2293:G:H2'	53:A:2294:G:H8	1.86	0.41
56:9:4:C:H42	56:9:69:G:H1	1.69	0.41
56:9:60:U:H5''	56:9:61:C:C5	2.55	0.41
2:c:29:PHE:CD2	13:n:76:LYS:HE2	2.57	0.40
5:f:38:ARG:HD3	5:f:97:THR:HA	2.04	0.40
8:i:124:ARG:HG3	8:i:125:PRO:HD2	2.03	0.40
11:l:33:VAL:CG2	11:l:56:ARG:HB3	2.51	0.40
13:n:34:VAL:HG22	18:s:7:LYS:HD2	2.03	0.40
14:o:11:ILE:HD12	14:o:31:LEU:HD23	2.03	0.40
19:t:35:VAL:HG21	19:t:54:MET:SD	2.61	0.40
26:5:73:VAL:HB	26:5:75:VAL:HG23	2.02	0.40
28:D:3:GLY:C	28:D:4:LEU:HD12	2.45	0.40
36:L:66:PHE:HZ	53:A:2404:U:H1'	1.87	0.40
41:Q:46:TYR:O	41:Q:50:ARG:NH1	2.54	0.40
45:U:1:ALA:HB1	45:U:84:PHE:HE2	1.86	0.40
45:U:32:LYS:HB3	45:U:63:ALA:HB1	2.02	0.40
48:X:40:GLU:C	48:X:43:LYS:H	2.28	0.40
52:a:160:A:C6	52:a:161:A:C4	3.09	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:a:331:G:H8	52:a:331:G:O5'	2.03	0.40
52:a:482:A:N3	52:a:482:A:H2'	2.35	0.40
52:a:1475:G:H2'	52:a:1476:A:C8	2.56	0.40
53:A:403:U:HO2'	53:A:404:A:P	2.44	0.40
53:A:648:G:C2	53:A:649:G:C5	3.08	0.40
53:A:1684:G:C6	53:A:1685:C:C4	3.09	0.40
53:A:2287:A:C6	53:A:2289:G:C4	3.09	0.40
53:A:2478:A:H2'	53:A:2479:U:O4'	2.21	0.40
53:A:2721:A:H1'	53:A:2873:A:O2'	2.21	0.40
3:d:102:VAL:CG1	3:d:107:PHE:HB2	2.50	0.40
5:f:85:ILE:HG13	5:f:86:ARG:N	2.35	0.40
11:l:44:LYS:HB3	11:l:45:PRO:CD	2.47	0.40
18:s:45:ILE:HA	18:s:62:VAL:CG1	2.52	0.40
20:u:20:LYS:HA	20:u:20:LYS:HD2	1.91	0.40
25:4:7:VAL:HG23	25:4:8:LYS:N	2.34	0.40
26:5:21:TYR:H	26:5:225:ASP:N	2.19	0.40
32:H:121:VAL:C	32:H:123:ARG:H	2.29	0.40
33:I:4:VAL:HG13	33:I:60:VAL:H	1.85	0.40
34:J:28:LEU:O	34:J:32:LEU:HG	2.21	0.40
34:J:64:VAL:HG11	34:J:69:ARG:HE	1.86	0.40
38:N:2:ARG:O	38:N:3:HIS:C	2.64	0.40
41:Q:63:ARG:HG3	41:Q:64:ILE:N	2.36	0.40
48:X:50:VAL:HG12	48:X:51:SER:O	2.20	0.40
52:a:116:A:C2	52:a:117:G:H1'	2.56	0.40
52:a:130:A:O2'	52:a:131:A:O5'	2.35	0.40
52:a:634:C:H2'	52:a:635:A:C8	2.54	0.40
52:a:945:G:C6	52:a:1337:G:C6	3.10	0.40
52:a:1032:G:H2'	52:a:1033:G:H4'	2.03	0.40
52:a:1244:G:C6	52:a:1294:G:C6	3.09	0.40
52:a:1530:G:C2	52:a:1531:A:C6	3.09	0.40
53:A:283:G:C2	53:A:284:U:H1'	2.56	0.40
53:A:614:A:H3'	53:A:614:A:OP2	2.21	0.40
53:A:775:G:N7	53:A:777:G:N2	2.69	0.40
53:A:1072:C:H42	53:A:1093:G:H22	1.69	0.40
53:A:1464:G:H2'	53:A:1465:G:H8	1.85	0.40
53:A:1571:A:H8	53:A:1571:A:O5'	2.04	0.40
53:A:1889:A:H2'	53:A:1890:A:C8	2.56	0.40
53:A:2087:G:H2'	53:A:2088:A:C8	2.56	0.40
53:A:2470:G:O6	53:A:2476:A:O2'	2.25	0.40
53:A:2790:U:H4'	53:A:2791:G:H5''	2.03	0.40
56:8:21:A:N6	56:8:46:G:C5	2.87	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:b:23:ASN:HB2	1:b:189:ASN:O	2.22	0.40
3:d:125:VAL:HG23	3:d:126:ASN:N	2.36	0.40
8:i:18:ARG:NH1	8:i:20:PHE:HE2	2.19	0.40
17:r:34:THR:HG22	17:r:38:LYS:O	2.22	0.40
28:D:200:ASP:O	28:D:201:LEU:HD12	2.22	0.40
34:J:4:PHE:HB3	34:J:44:TYR:HE2	1.86	0.40
34:J:8:PRO:HD2	53:A:538:A:O2'	2.22	0.40
34:J:111:LYS:HE3	53:A:558:U:H4'	2.03	0.40
35:K:26:GLY:O	35:K:30:ARG:HD2	2.22	0.40
39:O:15:ARG:NH1	54:B:8:C:H5''	2.37	0.40
52:a:231:U:H2'	52:a:232:G:H8	1.86	0.40
52:a:951:G:C2	52:a:1231:G:N3	2.89	0.40
52:a:1226:C:H4'	52:a:1227:A:OP1	2.21	0.40
52:a:1306:A:N6	52:a:1331:G:H1'	2.36	0.40
52:a:1429:A:O2'	53:A:1703:G:O2'	2.32	0.40
53:A:275:C:H3'	53:A:276:U:H4'	2.01	0.40
53:A:1055:G:H21	53:A:1085:A:H2	1.67	0.40
53:A:1125:G:H3'	53:A:1126:A:C8	2.56	0.40
53:A:1199:U:N3	53:A:1247:A:H2	2.19	0.40
53:A:1309:G:O2'	53:A:1611:C:O2'	2.21	0.40
53:A:1473:G:H2'	53:A:1474:U:O4'	2.21	0.40
53:A:1766:G:C6	53:A:1987:A:C6	3.10	0.40
54:B:28:C:H2'	54:B:29:A:H8	1.85	0.40
3:d:71:GLN:HG2	52:a:402:G:OP1	2.22	0.40
3:d:99:ASP:OD1	3:d:100:ASN:N	2.55	0.40
7:h:66:PHE:CE2	7:h:67:GLN:HG2	2.57	0.40
8:i:119:ARG:NH1	52:a:1233:G:OP1	2.55	0.40
12:m:107:ARG:NH1	12:m:113:ARG:HB3	2.36	0.40
15:p:19:VAL:HG23	15:p:36:VAL:O	2.22	0.40
30:F:35:LEU:HD23	30:F:153:ILE:HG22	2.02	0.40
32:H:58:LEU:O	32:H:62:LEU:N	2.54	0.40
37:M:27:SER:OG	37:M:28:PHE:N	2.54	0.40
40:P:30:TRP:CE3	40:P:37:LYS:HG2	2.56	0.40
41:Q:32:ARG:HB2	53:A:581:C:OP1	2.21	0.40
41:Q:43:GLN:HE21	42:R:77:PHE:HB3	1.85	0.40
44:T:9:LYS:HB2	49:Y:29:ARG:HH12	1.87	0.40
44:T:50:LEU:O	44:T:51:PHE:HB2	2.21	0.40
47:W:25:PHE:HD2	47:W:27:GLY:H	1.70	0.40
52:a:129:A:H61	52:a:232:G:H1	1.70	0.40
52:a:487:A:H2'	52:a:488:C:O4'	2.21	0.40
52:a:688:G:C6	52:a:700:G:C2	3.10	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:a:1324:A:H2'	52:a:1325:C:C6	2.56	0.40
52:a:1486:G:C6	52:a:1487:G:C6	3.09	0.40
53:A:6:A:H2'	53:A:7:G:C8	2.56	0.40
53:A:111:A:C6	53:A:112:U:C4	3.09	0.40
53:A:204:A:C8	53:A:206:U:C2	3.09	0.40
53:A:325:G:N7	53:A:338:G:N2	2.69	0.40
53:A:1139:G:O2'	53:A:1143:A:N1	2.50	0.40
53:A:1444:G:H2'	53:A:1445:G:H8	1.84	0.40
53:A:1636:U:H2'	53:A:1637:A:C8	2.57	0.40
53:A:1646:C:H5''	53:A:1647:U:H5'	2.04	0.40
53:A:2116:G:N2	53:A:2146:C:OP1	2.39	0.40
53:A:2283:C:C2	53:A:2389:G:C2	3.10	0.40
53:A:2783:U:H2'	53:A:2784:U:H6	1.86	0.40
2:c:114:LYS:HB2	2:c:185:ASN:ND2	2.36	0.40
2:c:147:LYS:HA	2:c:147:LYS:HD2	1.92	0.40
4:e:156:LYS:HA	4:e:159:LYS:NZ	2.37	0.40
13:n:47:LYS:HD2	18:s:13:LEU:HD12	2.04	0.40
17:r:72:ASP:OD1	17:r:73:ARG:HG2	2.22	0.40
26:5:43:ASP:O	53:A:2123:G:N2	2.46	0.40
30:F:76:PHE:HE1	53:A:2308:G:N7	2.19	0.40
31:G:71:LEU:O	31:G:75:VAL:HG23	2.21	0.40
32:H:116:ARG:HD3	32:H:139:PHE:HB3	2.03	0.40
41:Q:86:SER:O	41:Q:88:GLU:N	2.54	0.40
43:S:83:LYS:HD3	43:S:95:ARG:HH12	1.86	0.40
52:a:389:A:N7	52:a:390:U:C2	2.89	0.40
52:a:546:A:HO2'	52:a:548:G:HO2'	1.66	0.40
52:a:706:A:C5	52:a:707:U:C5	3.09	0.40
52:a:748:G:C5	52:a:749:A:C5	3.10	0.40
52:a:953:G:H2'	52:a:954:G:O4'	2.22	0.40
52:a:1303:C:H2'	52:a:1304:G:O4'	2.21	0.40
52:a:1416:G:C6	52:a:1417:G:C4	3.09	0.40
53:A:151:C:N4	53:A:175:G:H1	2.19	0.40
53:A:823:C:C4	53:A:824:U:C4	3.10	0.40
53:A:838:C:H2'	53:A:839:U:H6	1.86	0.40
53:A:1022:G:H4'	53:A:1023:U:H5'	2.03	0.40
53:A:1392:A:N7	53:A:1393:A:C5	2.90	0.40
53:A:1659:G:H1	53:A:2001:C:H42	1.69	0.40
53:A:1741:C:H2'	53:A:1742:U:O4'	2.22	0.40
53:A:2255:G:H2'	53:A:2256:G:O4'	2.21	0.40
53:A:2393:U:H2'	53:A:2394:C:O4'	2.22	0.40
53:A:2677:G:C2	53:A:2731:G:C2	3.09	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A:2698:U:H2'	53:A:2699:C:C6	2.57	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	b	216/241 (90%)	181 (84%)	23 (11%)	12 (6%)	1	16
2	c	204/233 (88%)	190 (93%)	7 (3%)	7 (3%)	3	25
3	d	203/206 (98%)	179 (88%)	15 (7%)	9 (4%)	2	19
4	e	148/167 (89%)	128 (86%)	15 (10%)	5 (3%)	3	25
5	f	100/135 (74%)	79 (79%)	13 (13%)	8 (8%)	1	9
6	g	149/179 (83%)	125 (84%)	18 (12%)	6 (4%)	2	21
7	h	127/130 (98%)	115 (91%)	11 (9%)	1 (1%)	16	48
8	i	125/130 (96%)	109 (87%)	12 (10%)	4 (3%)	3	25
9	j	96/103 (93%)	78 (81%)	13 (14%)	5 (5%)	1	17
10	k	115/129 (89%)	104 (90%)	8 (7%)	3 (3%)	4	28
11	l	121/124 (98%)	105 (87%)	14 (12%)	2 (2%)	7	34
12	m	112/118 (95%)	103 (92%)	5 (4%)	4 (4%)	2	23
13	n	92/101 (91%)	77 (84%)	8 (9%)	7 (8%)	1	10
14	o	86/89 (97%)	78 (91%)	7 (8%)	1 (1%)	10	40
15	p	80/82 (98%)	70 (88%)	8 (10%)	2 (2%)	4	29
16	q	78/84 (93%)	65 (83%)	8 (10%)	5 (6%)	1	14
17	r	53/75 (71%)	51 (96%)	1 (2%)	1 (2%)	6	33
18	s	77/92 (84%)	68 (88%)	6 (8%)	3 (4%)	2	21
19	t	83/87 (95%)	80 (96%)	1 (1%)	2 (2%)	4	29

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
20	u	49/71 (69%)	36 (74%)	10 (20%)	3 (6%)	1	14
21	0	54/57 (95%)	49 (91%)	2 (4%)	3 (6%)	1	16
22	1	48/55 (87%)	43 (90%)	3 (6%)	2 (4%)	2	20
23	2	44/46 (96%)	39 (89%)	3 (7%)	2 (4%)	2	18
24	3	62/64 (97%)	54 (87%)	7 (11%)	1 (2%)	7	35
25	4	36/38 (95%)	29 (81%)	2 (6%)	5 (14%)	0	3
26	5	232/234 (99%)	198 (85%)	32 (14%)	2 (1%)	14	45
27	C	268/273 (98%)	233 (87%)	20 (8%)	15 (6%)	1	16
28	D	207/209 (99%)	168 (81%)	28 (14%)	11 (5%)	1	16
29	E	199/201 (99%)	170 (85%)	18 (9%)	11 (6%)	1	16
30	F	175/179 (98%)	153 (87%)	13 (7%)	9 (5%)	1	17
31	G	174/177 (98%)	142 (82%)	24 (14%)	8 (5%)	2	18
32	H	147/149 (99%)	114 (78%)	22 (15%)	11 (8%)	1	11
33	I	139/142 (98%)	121 (87%)	13 (9%)	5 (4%)	2	23
34	J	140/142 (99%)	120 (86%)	13 (9%)	7 (5%)	1	17
35	K	120/123 (98%)	96 (80%)	17 (14%)	7 (6%)	1	15
36	L	141/144 (98%)	115 (82%)	14 (10%)	12 (8%)	0	8
37	M	134/136 (98%)	114 (85%)	13 (10%)	7 (5%)	1	17
38	N	118/127 (93%)	105 (89%)	10 (8%)	3 (2%)	4	29
39	O	114/117 (97%)	105 (92%)	7 (6%)	2 (2%)	6	34
40	P	112/115 (97%)	98 (88%)	8 (7%)	6 (5%)	1	16
41	Q	115/118 (98%)	109 (95%)	5 (4%)	1 (1%)	14	45
42	R	101/103 (98%)	86 (85%)	11 (11%)	4 (4%)	2	21
43	S	108/110 (98%)	93 (86%)	9 (8%)	6 (6%)	1	16
44	T	91/100 (91%)	65 (71%)	17 (19%)	9 (10%)	0	6
45	U	100/104 (96%)	79 (79%)	13 (13%)	8 (8%)	1	9
46	V	92/94 (98%)	84 (91%)	6 (6%)	2 (2%)	5	31
47	W	77/85 (91%)	55 (71%)	13 (17%)	9 (12%)	0	4
48	X	75/78 (96%)	65 (87%)	7 (9%)	3 (4%)	2	21
49	Y	61/63 (97%)	51 (84%)	7 (12%)	3 (5%)	1	17
50	Z	56/59 (95%)	48 (86%)	6 (11%)	2 (4%)	2	23

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
51	x	24/599 (4%)	23 (96%)	1 (4%)	0	100	100
All	All	5878/6817 (86%)	5045 (86%)	567 (10%)	266 (4%)	3	18

All (266) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	b	72	LYS
1	b	163	ILE
3	d	151	LYS
5	f	63	ASN
5	f	93	LYS
5	f	98	GLU
8	i	58	VAL
12	m	4	ILE
13	n	29	ALA
13	n	52	PRO
16	q	50	ASN
22	1	4	ILE
24	3	22	LYS
25	4	8	LYS
28	D	170	VAL
29	E	79	ARG
31	G	16	VAL
31	G	47	ASN
31	G	84	LYS
31	G	168	VAL
32	H	65	ALA
32	H	67	ALA
32	H	99	ILE
33	I	22	PRO
34	J	44	TYR
40	P	50	ARG
43	S	96	ILE
43	S	109	ASP
44	T	29	THR
44	T	40	LYS
45	U	92	VAL
1	b	18	GLN
1	b	76	SER
1	b	85	SER
1	b	120	SER
1	b	136	ARG

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Mol	Chain	Res	Type
2	c	206	GLU
3	d	24	GLY
3	d	32	CYS
3	d	125	VAL
4	e	90	THR
5	f	69	GLU
5	f	92	THR
6	g	113	ASP
6	g	130	ASN
8	i	90	TYR
8	i	96	SER
9	j	61	ALA
12	m	10	PRO
12	m	47	GLU
13	n	23	LYS
13	n	53	ARG
16	q	14	SER
16	q	71	LYS
19	t	4	ILE
19	t	68	HIS
21	0	34	GLY
21	0	35	GLU
25	4	4	ARG
25	4	29	ALA
26	5	167	LYS
27	C	231	HIS
27	C	239	PHE
28	D	11	MET
28	D	74	GLU
28	D	93	GLY
28	D	175	LEU
28	D	184	ARG
29	E	148	ILE
30	F	11	VAL
30	F	44	ALA
30	F	59	ILE
30	F	111	ARG
30	F	176	PHE
31	G	117	PRO
31	G	163	TYR
32	H	27	ARG
32	H	76	GLU

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Mol	Chain	Res	Type
32	H	134	VAL
33	I	90	GLY
34	J	45	THR
34	J	65	THR
35	K	13	ASN
36	L	29	LYS
36	L	111	ILE
37	M	69	PRO
40	P	4	ILE
40	P	5	LYS
43	S	14	ALA
43	S	18	ARG
44	T	55	VAL
44	T	89	GLU
45	U	87	GLU
45	U	98	ASN
47	W	9	THR
47	W	17	ALA
48	X	17	ARG
50	Z	34	THR
1	b	67	LEU
1	b	200	PRO
2	c	61	ALA
2	c	82	GLU
2	c	146	ALA
3	d	5	LEU
3	d	27	ALA
4	e	24	THR
4	e	45	ARG
5	f	54	LEU
6	g	58	GLU
9	j	57	VAL
10	k	120	GLY
12	m	114	LYS
15	p	81	ALA
18	s	4	SER
18	s	5	LEU
18	s	6	LYS
23	2	45	SER
27	C	37	SER
27	C	94	LEU
27	C	110	LYS

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Mol	Chain	Res	Type
27	C	121	ALA
27	C	185	ALA
27	C	237	ARG
27	C	256	THR
27	C	260	LYS
29	E	6	LYS
29	E	13	THR
30	F	133	GLU
31	G	32	LEU
32	H	116	ARG
33	I	19	PRO
34	J	82	GLY
34	J	125	TYR
35	K	6	THR
35	K	46	ALA
36	L	69	ARG
36	L	82	LEU
36	L	86	GLU
37	M	70	ASP
37	M	107	GLY
37	M	134	THR
40	P	51	ASN
41	Q	87	VAL
42	R	65	ALA
42	R	91	GLN
43	S	3	THR
43	S	19	LEU
44	T	49	LYS
45	U	16	LYS
45	U	74	ALA
45	U	101	THR
46	V	65	VAL
46	V	71	LYS
47	W	29	SER
47	W	41	GLY
47	W	68	PHE
49	Y	57	LEU
5	f	99	ALA
6	g	84	THR
7	h	114	ARG
9	j	36	VAL
9	j	62	ARG

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Mol	Chain	Res	Type
13	n	3	LYS
14	o	46	HIS
15	p	49	GLY
16	q	17	MET
17	r	73	ARG
20	u	33	ARG
20	u	37	PHE
27	C	64	VAL
27	C	154	ALA
27	C	196	ASN
27	C	254	LYS
28	D	52	THR
29	E	42	GLY
29	E	46	GLN
29	E	96	VAL
29	E	123	LYS
29	E	188	MET
30	F	128	SER
30	F	132	ARG
31	G	46	ASP
32	H	6	LEU
32	H	15	LEU
32	H	113	SER
35	K	93	GLN
35	K	119	ALA
36	L	36	LYS
36	L	40	SER
36	L	41	ARG
36	L	115	GLU
37	M	73	ILE
38	N	106	ASP
39	O	89	ASP
39	O	100	HIS
40	P	63	ILE
44	T	70	HIS
45	U	38	ILE
47	W	34	SER
48	X	40	GLU
48	X	70	LEU
49	Y	9	LYS
50	Z	3	THR
1	b	219	THR

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Mol	Chain	Res	Type
2	c	66	VAL
2	c	101	ILE
3	d	33	LYS
6	g	57	SER
8	i	56	ASP
10	k	89	PRO
11	l	98	VAL
13	n	70	PRO
13	n	92	GLU
16	q	18	GLU
21	0	54	ILE
22	1	28	THR
23	2	44	VAL
25	4	16	ILE
25	4	37	GLN
27	C	59	GLN
28	D	109	VAL
28	D	118	PHE
28	D	119	ALA
29	E	83	VAL
32	H	39	ALA
33	I	20	SER
33	I	106	GLN
34	J	13	ARG
34	J	113	PRO
35	K	50	GLY
36	L	19	LEU
36	L	94	THR
37	M	77	PRO
38	N	2	ARG
38	N	119	SER
42	R	98	ILE
44	T	84	TYR
44	T	92	ASN
45	U	85	ARG
47	W	14	ASP
1	b	71	THR
1	b	128	LEU
3	d	36	GLN
4	e	111	MET
5	f	85	ILE
10	k	14	LYS

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Mol	Chain	Res	Type
20	u	38	TYR
28	D	183	GLU
30	F	113	PHE
36	L	66	PHE
42	R	101	ILE
47	W	46	ALA
3	d	167	LYS
6	g	8	GLY
35	K	35	VAL
44	T	53	VAL
9	j	42	LEU
11	l	44	LYS
26	5	15	VAL
40	P	34	GLY
47	W	30	VAL
2	c	15	VAL
4	e	102	GLY
49	Y	46	VAL
29	E	129	PRO
37	M	36	VAL

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	b	180/199 (90%)	180 (100%)	0	100	100
2	c	170/190 (90%)	170 (100%)	0	100	100
3	d	172/173 (99%)	172 (100%)	0	100	100
4	e	113/126 (90%)	113 (100%)	0	100	100
5	f	89/116 (77%)	89 (100%)	0	100	100
6	g	124/147 (84%)	124 (100%)	0	100	100
7	h	104/105 (99%)	104 (100%)	0	100	100
8	i	105/107 (98%)	105 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
9	j	86/90 (96%)	86 (100%)	0	100	100
10	k	90/99 (91%)	90 (100%)	0	100	100
11	l	103/104 (99%)	103 (100%)	0	100	100
12	m	92/96 (96%)	92 (100%)	0	100	100
13	n	79/84 (94%)	79 (100%)	0	100	100
14	o	76/77 (99%)	76 (100%)	0	100	100
15	p	65/65 (100%)	65 (100%)	0	100	100
16	q	74/78 (95%)	74 (100%)	0	100	100
17	r	48/65 (74%)	48 (100%)	0	100	100
18	s	70/79 (89%)	70 (100%)	0	100	100
19	t	65/66 (98%)	65 (100%)	0	100	100
20	u	44/61 (72%)	44 (100%)	0	100	100
21	0	47/48 (98%)	47 (100%)	0	100	100
22	1	45/49 (92%)	45 (100%)	0	100	100
23	2	38/38 (100%)	38 (100%)	0	100	100
24	3	51/51 (100%)	51 (100%)	0	100	100
25	4	34/34 (100%)	34 (100%)	0	100	100
26	5	181/181 (100%)	181 (100%)	0	100	100
27	C	215/218 (99%)	215 (100%)	0	100	100
28	D	164/164 (100%)	164 (100%)	0	100	100
29	E	165/165 (100%)	165 (100%)	0	100	100
30	F	148/150 (99%)	148 (100%)	0	100	100
31	G	137/138 (99%)	137 (100%)	0	100	100
32	H	114/114 (100%)	114 (100%)	0	100	100
33	I	109/110 (99%)	109 (100%)	0	100	100
34	J	116/116 (100%)	116 (100%)	0	100	100
35	K	103/104 (99%)	103 (100%)	0	100	100
36	L	102/103 (99%)	102 (100%)	0	100	100
37	M	109/109 (100%)	109 (100%)	0	100	100
38	N	100/103 (97%)	100 (100%)	0	100	100
39	O	86/87 (99%)	86 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
40	P	99/100 (99%)	99 (100%)	0	100	100
41	Q	89/90 (99%)	89 (100%)	0	100	100
42	R	84/84 (100%)	84 (100%)	0	100	100
43	S	93/93 (100%)	93 (100%)	0	100	100
44	T	80/84 (95%)	79 (99%)	1 (1%)	61	71
45	U	83/85 (98%)	83 (100%)	0	100	100
46	V	78/78 (100%)	78 (100%)	0	100	100
47	W	59/63 (94%)	59 (100%)	0	100	100
48	X	67/68 (98%)	67 (100%)	0	100	100
49	Y	55/55 (100%)	55 (100%)	0	100	100
50	Z	48/49 (98%)	48 (100%)	0	100	100
51	x	23/511 (4%)	23 (100%)	0	100	100
All	All	4871/5569 (88%)	4870 (100%)	1 (0%)	100	100

All (1) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
44	T	43	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (72) such sidechains are listed below:

Mol	Chain	Res	Type
1	b	38	HIS
1	b	176	ASN
2	c	69	HIS
2	c	123	GLN
2	c	139	GLN
3	d	120	HIS
3	d	152	GLN
4	e	121	HIS
5	f	3	HIS
5	f	55	HIS
6	g	86	GLN
6	g	148	ASN
7	h	67	GLN
8	i	32	GLN
10	k	22	HIS

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Mol	Chain	Res	Type
12	m	91	HIS
13	n	4	GLN
13	n	71	HIS
14	o	35	GLN
16	q	45	HIS
16	q	51	ASN
18	s	57	HIS
19	t	13	GLN
19	t	70	ASN
21	0	5	ASN
21	0	18	HIS
23	2	26	ASN
24	3	23	HIS
25	4	13	ASN
25	4	37	GLN
26	5	83	ASN
26	5	110	ASN
26	5	234	ASN
27	C	52	HIS
27	C	57	HIS
27	C	85	ASN
27	C	199	HIS
27	C	259	ASN
28	D	32	ASN
28	D	49	GLN
28	D	134	HIS
28	D	164	GLN
29	E	136	GLN
29	E	165	HIS
30	F	62	GLN
30	F	80	GLN
31	G	21	GLN
31	G	87	GLN
31	G	110	HIS
31	G	114	HIS
31	G	138	GLN
32	H	2	GLN
32	H	18	GLN
32	H	135	HIS
32	H	145	ASN
34	J	40	HIS
35	K	29	HIS

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Mol	Chain	Res	Type
35	K	93	GLN
38	N	31	HIS
39	O	29	HIS
39	O	34	HIS
40	P	6	GLN
40	P	40	GLN
41	Q	36	GLN
41	Q	43	GLN
42	R	66	HIS
44	T	70	HIS
44	T	91	GLN
45	U	65	GLN
46	V	44	HIS
47	W	39	GLN
49	Y	41	HIS

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
52	a	1532/1533 (99%)	301 (19%)	0
53	A	2902/2904 (99%)	597 (20%)	16 (0%)
54	B	117/120 (97%)	21 (17%)	0
55	7	8/15 (53%)	4 (50%)	0
56	8	75/76 (98%)	8 (10%)	2 (2%)
56	9	75/76 (98%)	33 (44%)	1 (1%)
All	All	4709/4724 (99%)	964 (20%)	19 (0%)

All (964) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
52	a	4	U
52	a	6	G
52	a	9	G
52	a	12	U
52	a	15	G
52	a	29	U
52	a	31	G
52	a	32	A
52	a	35	G
52	a	39	G
52	a	47	C

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Mol	Chain	Res	Type
52	a	48	C
52	a	51	A
52	a	54	C
52	a	63	C
52	a	66	A
52	a	69	G
52	a	70	U
52	a	73	C
52	a	74	A
52	a	77	A
52	a	78	A
52	a	79	G
52	a	80	A
52	a	83	C
52	a	84	U
52	a	85	U
52	a	86	G
52	a	89	U
52	a	90	C
52	a	93	U
52	a	96	U
52	a	97	G
52	a	116	A
52	a	117	G
52	a	121	U
52	a	130	A
52	a	131	A
52	a	143	A
52	a	144	G
52	a	149	A
52	a	156	C
52	a	164	G
52	a	184	G
52	a	195	A
52	a	197	A
52	a	204	G
52	a	205	A
52	a	206	C
52	a	209	U
52	a	210	C
52	a	212	G
52	a	226	G

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Mol	Chain	Res	Type
52	a	238	A
52	a	247	G
52	a	251	G
52	a	262	A
52	a	266	G
52	a	267	C
52	a	289	G
52	a	298	A
52	a	304	U
52	a	306	A
52	a	316	C
52	a	328	C
52	a	329	A
52	a	332	G
52	a	341	C
52	a	344	A
52	a	345	C
52	a	347	G
52	a	352	C
52	a	354	G
52	a	367	U
52	a	368	U
52	a	370	C
52	a	372	C
52	a	384	G
52	a	397	A
52	a	406	G
52	a	408	A
52	a	411	A
52	a	412	A
52	a	413	G
52	a	414	A
52	a	421	U
52	a	422	C
52	a	423	G
52	a	424	G
52	a	429	U
52	a	430	A
52	a	449	G
52	a	453	G
52	a	456	A
52	a	457	G

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Mol	Chain	Res	Type
52	a	459	A
52	a	461	A
52	a	466	A
52	a	467	U
52	a	468	A
52	a	474	G
52	a	478	A
52	a	479	U
52	a	480	U
52	a	481	G
52	a	484	G
52	a	485	U
52	a	486	U
52	a	491	G
52	a	495	A
52	a	497	G
52	a	511	C
52	a	512	U
52	a	513	C
52	a	518	C
52	a	521	G
52	a	526	C
52	a	527	G
52	a	532	A
52	a	540	G
52	a	547	A
52	a	548	G
52	a	559	A
52	a	560	A
52	a	562	U
52	a	563	A
52	a	564	C
52	a	572	A
52	a	573	A
52	a	576	C
52	a	577	G
52	a	596	A
52	a	615	G
52	a	633	G
52	a	653	U
52	a	661	G
52	a	665	A

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Mol	Chain	Res	Type
52	a	668	G
52	a	674	G
52	a	675	A
52	a	684	U
52	a	687	A
52	a	701	U
52	a	702	A
52	a	710	G
52	a	717	U
52	a	718	A
52	a	721	G
52	a	723	U
52	a	731	G
52	a	747	A
52	a	755	G
52	a	776	G
52	a	793	U
52	a	794	A
52	a	801	U
52	a	813	U
52	a	814	A
52	a	815	A
52	a	817	C
52	a	821	G
52	a	828	U
52	a	841	C
52	a	843	U
52	a	844	G
52	a	845	A
52	a	846	G
52	a	855	U
52	a	859	G
52	a	873	A
52	a	889	A
52	a	894	G
52	a	914	A
52	a	918	A
52	a	921	U
52	a	926	G
52	a	927	G
52	a	932	C
52	a	934	C

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Mol	Chain	Res	Type
52	a	935	A
52	a	939	G
52	a	960	U
52	a	966	G
52	a	969	A
52	a	975	A
52	a	976	G
52	a	977	A
52	a	983	A
52	a	992	U
52	a	993	G
52	a	994	A
52	a	1000	A
52	a	1002	G
52	a	1004	A
52	a	1006	G
52	a	1008	U
52	a	1018	G
52	a	1028	C
52	a	1029	U
52	a	1030	U
52	a	1031	C
52	a	1032	G
52	a	1033	G
52	a	1037	C
52	a	1042	A
52	a	1043	G
52	a	1045	C
52	a	1046	A
52	a	1052	U
52	a	1054	C
52	a	1065	U
52	a	1066	C
52	a	1070	U
52	a	1081	A
52	a	1085	U
52	a	1086	U
52	a	1087	G
52	a	1089	G
52	a	1094	G
52	a	1095	U
52	a	1101	A

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Mol	Chain	Res	Type
52	a	1124	G
52	a	1130	A
52	a	1132	C
52	a	1133	G
52	a	1134	G
52	a	1136	C
52	a	1137	C
52	a	1139	G
52	a	1142	G
52	a	1145	A
52	a	1159	U
52	a	1167	A
52	a	1168	U
52	a	1171	A
52	a	1181	G
52	a	1182	G
52	a	1196	A
52	a	1197	A
52	a	1200	C
52	a	1202	U
52	a	1208	C
52	a	1212	U
52	a	1213	A
52	a	1215	G
52	a	1226	C
52	a	1227	A
52	a	1230	C
52	a	1232	U
52	a	1240	U
52	a	1241	G
52	a	1252	A
52	a	1253	G
52	a	1256	A
52	a	1257	A
52	a	1258	G
52	a	1260	G
52	a	1287	A
52	a	1289	A
52	a	1299	A
52	a	1300	G
52	a	1302	C
52	a	1303	C

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Mol	Chain	Res	Type
52	a	1305	G
52	a	1312	G
52	a	1317	C
52	a	1318	A
52	a	1322	C
52	a	1323	G
52	a	1332	A
52	a	1336	C
52	a	1337	G
52	a	1346	A
52	a	1363	A
52	a	1364	U
52	a	1365	G
52	a	1378	C
52	a	1397	C
52	a	1402	C
52	a	1417	G
52	a	1418	A
52	a	1419	G
52	a	1429	A
52	a	1441	A
52	a	1442	G
52	a	1446	A
52	a	1447	A
52	a	1451	U
52	a	1454	G
52	a	1487	G
52	a	1491	G
52	a	1492	A
52	a	1493	A
52	a	1494	G
52	a	1497	G
52	a	1503	A
52	a	1505	G
52	a	1506	U
52	a	1517	G
52	a	1529	G
52	a	1530	G
53	A	10	A
53	A	14	A
53	A	34	U
53	A	35	G

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Mol	Chain	Res	Type
53	A	46	G
53	A	50	U
53	A	51	G
53	A	61	C
53	A	62	U
53	A	63	A
53	A	71	A
53	A	74	A
53	A	75	G
53	A	80	G
53	A	84	A
53	A	88	G
53	A	92	U
53	A	96	C
53	A	102	U
53	A	118	A
53	A	120	U
53	A	121	G
53	A	138	U
53	A	139	U
53	A	140	C
53	A	141	G
53	A	142	A
53	A	149	A
53	A	160	A
53	A	162	U
53	A	163	C
53	A	164	C
53	A	173	A
53	A	174	U
53	A	181	A
53	A	186	G
53	A	196	A
53	A	199	A
53	A	200	U
53	A	204	A
53	A	205	G
53	A	210	C
53	A	216	A
53	A	222	A
53	A	226	A
53	A	228	C

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Mol	Chain	Res	Type
53	A	229	C
53	A	230	G
53	A	233	A
53	A	241	A
53	A	248	G
53	A	255	A
53	A	264	C
53	A	266	G
53	A	271	G
53	A	272	A
53	A	273	G
53	A	276	U
53	A	277	G
53	A	278	A
53	A	285	G
53	A	289	G
53	A	294	A
53	A	299	A
53	A	300	A
53	A	302	C
53	A	311	A
53	A	329	G
53	A	330	A
53	A	335	C
53	A	338	G
53	A	353	C
53	A	361	G
53	A	367	G
53	A	371	A
53	A	372	G
53	A	380	G
53	A	386	G
53	A	396	G
53	A	399	U
53	A	404	A
53	A	405	U
53	A	411	G
53	A	412	A
53	A	413	C
53	A	420	C
53	A	424	G
53	A	429	A

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Mol	Chain	Res	Type
53	A	435	C
53	A	451	U
53	A	456	C
53	A	457	A
53	A	458	G
53	A	467	G
53	A	475	C
53	A	481	G
53	A	490	C
53	A	491	G
53	A	504	A
53	A	505	A
53	A	509	C
53	A	510	C
53	A	528	A
53	A	529	A
53	A	531	C
53	A	532	A
53	A	533	G
53	A	543	G
53	A	544	C
53	A	546	U
53	A	548	G
53	A	549	G
53	A	550	C
53	A	551	G
53	A	563	A
53	A	571	U
53	A	572	A
53	A	573	U
53	A	575	A
53	A	586	A
53	A	588	U
53	A	603	A
53	A	604	G
53	A	613	A
53	A	615	U
53	A	622	G
53	A	627	A
53	A	628	G
53	A	637	A
53	A	638	G

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Mol	Chain	Res	Type
53	A	645	C
53	A	647	G
53	A	653	U
53	A	654	A
53	A	655	A
53	A	656	G
53	A	668	A
53	A	677	A
53	A	686	U
53	A	690	G
53	A	701	G
53	A	715	A
53	A	724	U
53	A	726	G
53	A	730	A
53	A	744	U
53	A	747	U
53	A	748	G
53	A	770	G
53	A	775	G
53	A	776	G
53	A	782	A
53	A	784	G
53	A	785	G
53	A	788	A
53	A	789	A
53	A	792	A
53	A	800	A
53	A	805	G
53	A	812	C
53	A	819	A
53	A	827	U
53	A	830	G
53	A	845	A
53	A	846	U
53	A	847	U
53	A	859	G
53	A	871	U
53	A	872	U
53	A	879	G
53	A	880	G
53	A	881	G

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Mol	Chain	Res	Type
53	A	882	G
53	A	884	U
53	A	887	U
53	A	888	C
53	A	892	A
53	A	896	A
53	A	897	C
53	A	898	C
53	A	902	C
53	A	907	G
53	A	910	A
53	A	915	C
53	A	916	G
53	A	931	U
53	A	932	U
53	A	941	A
53	A	945	A
53	A	946	C
53	A	957	C
53	A	958	U
53	A	959	A
53	A	961	C
53	A	974	G
53	A	975	A
53	A	983	A
53	A	984	A
53	A	985	C
53	A	995	C
53	A	997	G
53	A	1002	G
53	A	1003	G
53	A	1005	C
53	A	1009	A
53	A	1012	U
53	A	1013	C
53	A	1021	A
53	A	1022	G
53	A	1023	U
53	A	1026	G
53	A	1033	U
53	A	1047	G
53	A	1051	G

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Mol	Chain	Res	Type
53	A	1057	A
53	A	1061	U
53	A	1062	G
53	A	1069	A
53	A	1070	A
53	A	1071	G
53	A	1072	C
53	A	1073	A
53	A	1074	G
53	A	1075	C
53	A	1077	A
53	A	1080	A
53	A	1088	A
53	A	1090	A
53	A	1095	A
53	A	1097	U
53	A	1101	U
53	A	1110	G
53	A	1111	A
53	A	1112	G
53	A	1132	U
53	A	1133	A
53	A	1135	C
53	A	1139	G
53	A	1142	A
53	A	1143	A
53	A	1155	A
53	A	1157	G
53	A	1168	G
53	A	1169	A
53	A	1171	G
53	A	1174	U
53	A	1175	A
53	A	1176	U
53	A	1180	U
53	A	1186	G
53	A	1200	C
53	A	1212	G
53	A	1225	G
53	A	1236	G
53	A	1238	G
53	A	1240	U

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Mol	Chain	Res	Type
53	A	1241	A
53	A	1247	A
53	A	1248	G
53	A	1250	G
53	A	1253	A
53	A	1256	G
53	A	1262	A
53	A	1266	G
53	A	1271	G
53	A	1272	A
53	A	1273	U
53	A	1275	A
53	A	1294	U
53	A	1300	G
53	A	1301	A
53	A	1302	A
53	A	1306	C
53	A	1321	A
53	A	1329	U
53	A	1345	C
53	A	1352	U
53	A	1359	A
53	A	1364	G
53	A	1365	A
53	A	1368	G
53	A	1378	A
53	A	1383	A
53	A	1392	A
53	A	1407	G
53	A	1415	U
53	A	1416	G
53	A	1419	A
53	A	1420	A
53	A	1424	G
53	A	1428	C
53	A	1452	G
53	A	1453	A
53	A	1458	U
53	A	1460	U
53	A	1467	U
53	A	1468	U
53	A	1482	G

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Mol	Chain	Res	Type
53	A	1488	C
53	A	1493	C
53	A	1494	A
53	A	1497	U
53	A	1504	A
53	A	1508	A
53	A	1509	A
53	A	1510	G
53	A	1515	A
53	A	1522	A
53	A	1523	U
53	A	1524	G
53	A	1529	G
53	A	1532	A
53	A	1535	A
53	A	1536	C
53	A	1537	G
53	A	1538	G
53	A	1542	U
53	A	1543	G
53	A	1550	C
53	A	1560	G
53	A	1563	U
53	A	1566	A
53	A	1569	A
53	A	1578	U
53	A	1583	A
53	A	1584	U
53	A	1585	C
53	A	1587	G
53	A	1591	A
53	A	1593	A
53	A	1595	C
53	A	1608	A
53	A	1610	A
53	A	1639	C
53	A	1645	G
53	A	1646	C
53	A	1647	U
53	A	1648	U
53	A	1649	G
53	A	1652	A

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Mol	Chain	Res	Type
53	A	1654	A
53	A	1655	A
53	A	1656	C
53	A	1664	A
53	A	1674	G
53	A	1675	C
53	A	1679	A
53	A	1694	C
53	A	1698	A
53	A	1699	G
53	A	1703	G
53	A	1715	G
53	A	1729	U
53	A	1730	C
53	A	1732	C
53	A	1738	G
53	A	1764	C
53	A	1773	A
53	A	1781	U
53	A	1785	A
53	A	1791	A
53	A	1800	C
53	A	1801	A
53	A	1802	A
53	A	1807	G
53	A	1808	A
53	A	1811	G
53	A	1816	C
53	A	1829	A
53	A	1848	A
53	A	1852	U
53	A	1866	A
53	A	1869	G
53	A	1870	C
53	A	1872	A
53	A	1875	G
53	A	1881	C
53	A	1882	U
53	A	1896	G
53	A	1903	G
53	A	1906	G
53	A	1913	A

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Mol	Chain	Res	Type
53	A	1914	C
53	A	1927	A
53	A	1929	G
53	A	1936	A
53	A	1938	A
53	A	1955	U
53	A	1960	A
53	A	1966	A
53	A	1967	C
53	A	1970	A
53	A	1971	U
53	A	1972	G
53	A	1991	U
53	A	1993	U
53	A	1997	C
53	A	2011	U
53	A	2021	C
53	A	2022	U
53	A	2023	C
53	A	2030	A
53	A	2031	A
53	A	2033	A
53	A	2034	U
53	A	2043	C
53	A	2050	C
53	A	2052	A
53	A	2055	C
53	A	2056	G
53	A	2059	A
53	A	2060	A
53	A	2061	G
53	A	2062	A
53	A	2069	G
53	A	2072	C
53	A	2075	U
53	A	2085	U
53	A	2092	U
53	A	2093	G
53	A	2104	C
53	A	2107	G
53	A	2110	G
53	A	2111	U

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Mol	Chain	Res	Type
53	A	2112	G
53	A	2113	U
53	A	2115	G
53	A	2119	A
53	A	2127	G
53	A	2128	G
53	A	2129	C
53	A	2131	U
53	A	2132	U
53	A	2133	G
53	A	2134	A
53	A	2135	A
53	A	2136	G
53	A	2139	U
53	A	2143	C
53	A	2144	G
53	A	2145	C
53	A	2146	C
53	A	2147	A
53	A	2148	G
53	A	2150	C
53	A	2152	G
53	A	2153	C
53	A	2155	U
53	A	2158	A
53	A	2159	G
53	A	2161	C
53	A	2162	G
53	A	2164	C
53	A	2165	C
53	A	2166	U
53	A	2168	G
53	A	2171	A
53	A	2173	A
53	A	2174	C
53	A	2176	A
53	A	2178	C
53	A	2182	U
53	A	2183	A
53	A	2185	U
53	A	2186	G
53	A	2192	U

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Mol	Chain	Res	Type
53	A	2198	A
53	A	2199	A
53	A	2204	G
53	A	2211	A
53	A	2225	A
53	A	2226	C
53	A	2238	G
53	A	2239	G
53	A	2250	G
53	A	2268	A
53	A	2279	G
53	A	2283	C
53	A	2286	G
53	A	2287	A
53	A	2305	U
53	A	2308	G
53	A	2309	A
53	A	2322	A
53	A	2325	G
53	A	2327	A
53	A	2333	A
53	A	2334	U
53	A	2335	A
53	A	2344	U
53	A	2347	C
53	A	2353	G
53	A	2354	C
53	A	2357	G
53	A	2358	A
53	A	2359	C
53	A	2361	G
53	A	2383	G
53	A	2384	U
53	A	2385	C
53	A	2389	G
53	A	2396	G
53	A	2400	G
53	A	2402	U
53	A	2403	C
53	A	2406	A
53	A	2413	G
53	A	2419	U

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Mol	Chain	Res	Type
53	A	2423	U
53	A	2424	C
53	A	2425	A
53	A	2427	C
53	A	2429	G
53	A	2430	A
53	A	2441	U
53	A	2448	A
53	A	2449	U
53	A	2468	A
53	A	2475	C
53	A	2476	A
53	A	2480	C
53	A	2491	U
53	A	2498	C
53	A	2502	G
53	A	2503	A
53	A	2504	U
53	A	2505	G
53	A	2506	U
53	A	2507	C
53	A	2513	A
53	A	2518	A
53	A	2530	A
53	A	2535	G
53	A	2548	U
53	A	2549	G
53	A	2554	U
53	A	2562	U
53	A	2566	A
53	A	2567	G
53	A	2572	A
53	A	2573	C
53	A	2578	G
53	A	2585	U
53	A	2586	U
53	A	2602	A
53	A	2608	G
53	A	2609	U
53	A	2613	U
53	A	2615	U
53	A	2621	G

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Mol	Chain	Res	Type
53	A	2629	U
53	A	2630	G
53	A	2636	C
53	A	2650	U
53	A	2682	A
53	A	2689	U
53	A	2690	U
53	A	2714	G
53	A	2716	C
53	A	2729	G
53	A	2733	A
53	A	2739	U
53	A	2744	G
53	A	2748	A
53	A	2758	A
53	A	2759	G
53	A	2775	G
53	A	2778	A
53	A	2781	A
53	A	2791	G
53	A	2792	A
53	A	2797	U
53	A	2798	U
53	A	2801	G
53	A	2803	G
53	A	2809	A
53	A	2820	A
53	A	2825	G
53	A	2833	U
53	A	2834	G
53	A	2835	A
53	A	2849	U
53	A	2861	U
53	A	2867	G
53	A	2869	G
53	A	2870	C
53	A	2872	A
53	A	2873	A
53	A	2879	A
53	A	2883	A
53	A	2884	U
53	A	2885	G

Continued on next page...

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Mol	Chain	Res	Type
53	A	2886	A
53	A	2891	U
53	A	2899	A
53	A	2901	C
53	A	2903	U
54	B	9	G
54	B	15	A
54	B	35	C
54	B	37	C
54	B	42	C
54	B	44	G
54	B	54	G
54	B	56	G
54	B	57	A
54	B	66	A
54	B	67	G
54	B	82	U
54	B	87	U
54	B	88	C
54	B	89	U
54	B	90	C
54	B	96	G
54	B	99	A
54	B	109	A
54	B	114	C
54	B	119	A
55	7	14	U
55	7	15	G
55	7	16	U
55	7	19	A
56	8	17	C
56	8	19	G
56	8	20	U
56	8	21	A
56	8	37	A
56	8	44	G
56	8	45	U
56	8	46	G
56	9	2	C
56	9	8	U
56	9	13	C
56	9	16	U

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Mol	Chain	Res	Type
56	9	18	G
56	9	19	G
56	9	20	U
56	9	21	A
56	9	22	G
56	9	25	C
56	9	26	A
56	9	27	G
56	9	32	U
56	9	33	U
56	9	34	G
56	9	35	A
56	9	36	A
56	9	37	A
56	9	39	U
56	9	41	C
56	9	43	C
56	9	44	G
56	9	45	U
56	9	46	G
56	9	48	C
56	9	50	U
56	9	58	A
56	9	59	U
56	9	61	C
56	9	72	C
56	9	74	C
56	9	75	C
56	9	76	A

All (19) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
53	A	119	A
53	A	271	G
53	A	344	A
53	A	403	U
53	A	404	A
53	A	527	C
53	A	784	G
53	A	880	G
53	A	1020	A

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Mol	Chain	Res	Type
53	A	1025	G
53	A	1331	G
53	A	1847	A
53	A	1935	G
53	A	2326	C
53	A	2423	U
53	A	2474	U
56	8	20	U
56	8	45	U
56	9	71	G

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

There are no non-standard protein/DNA/RNA residues in this entry.

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

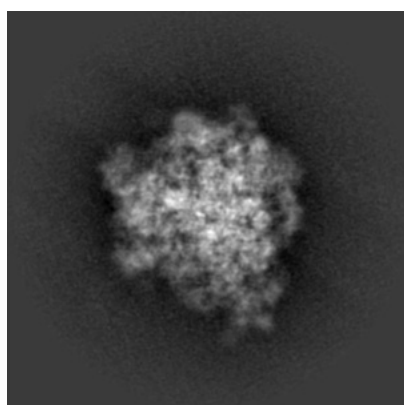
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-6549. These allow visual inspection of the internal detail of the map and identification of artifacts.

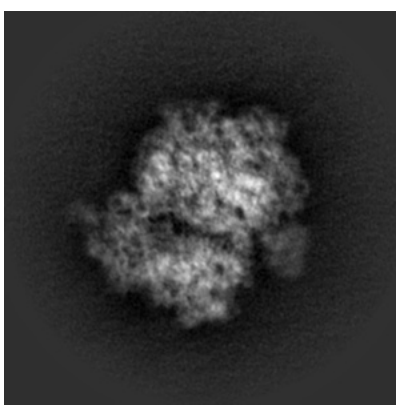
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

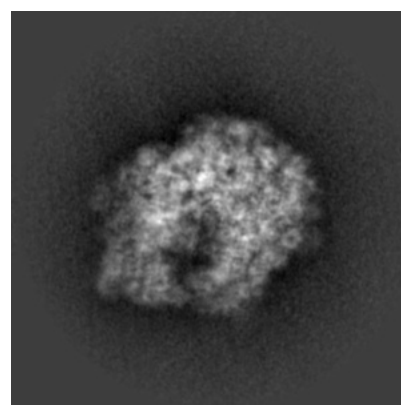
6.1.1 Primary map



X



Y

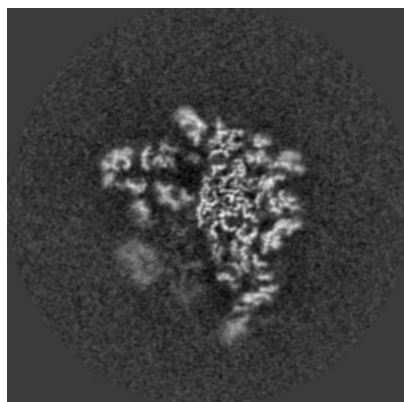


Z

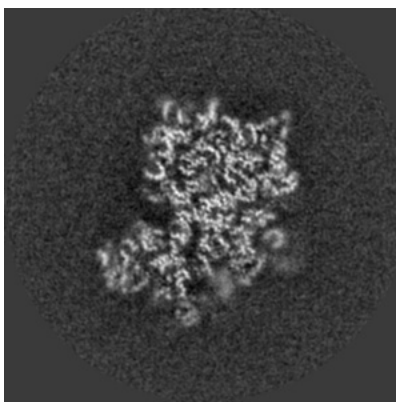
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

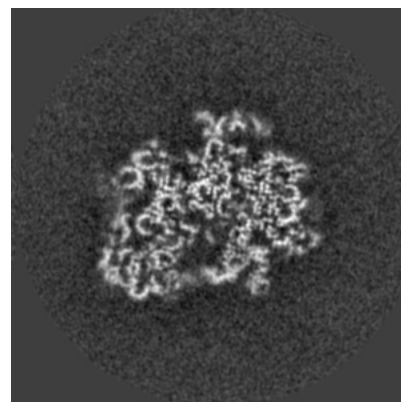
6.2.1 Primary map



X Index: 160



Y Index: 160

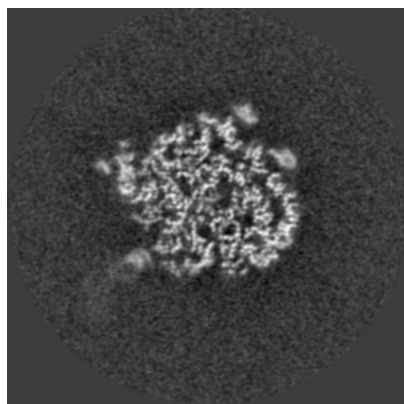


Z Index: 160

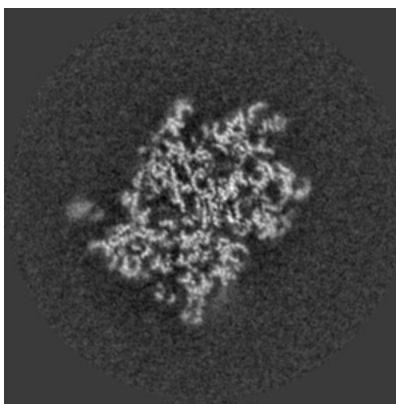
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

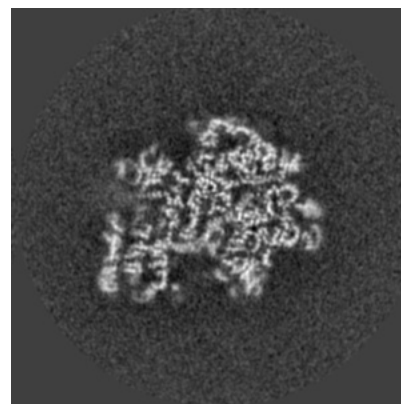
6.3.1 Primary map



X Index: 185



Y Index: 178

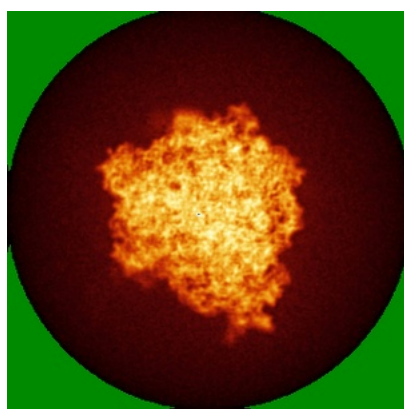


Z Index: 167

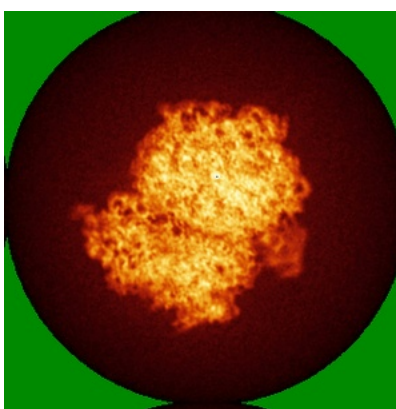
The images above show the largest variance slices of the map in three orthogonal directions.

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

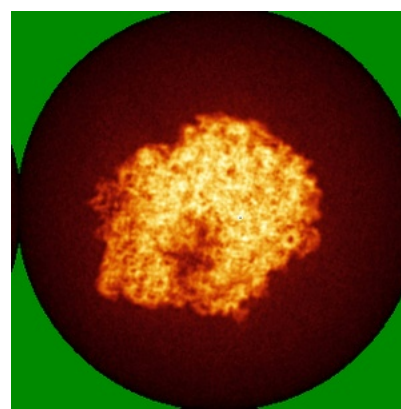
6.4.1 Primary map



X



Y

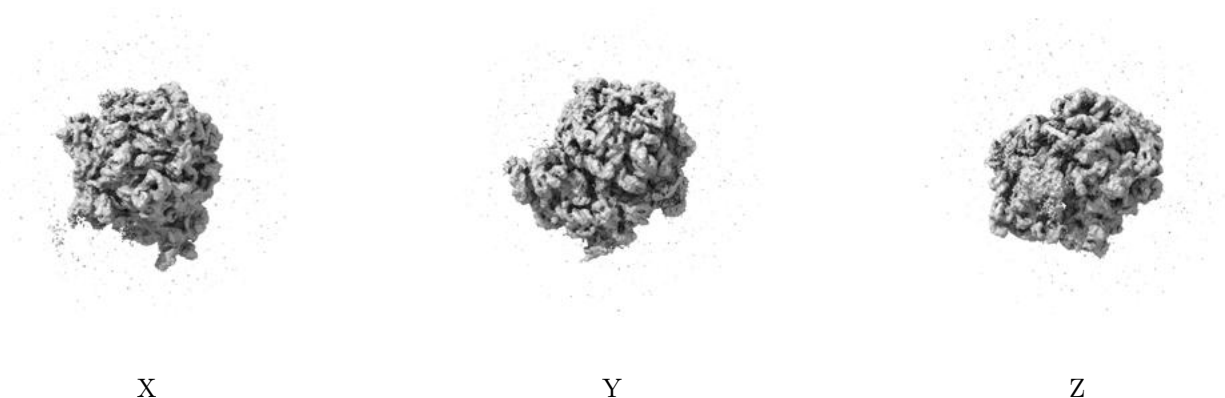


Z

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

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.0035. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

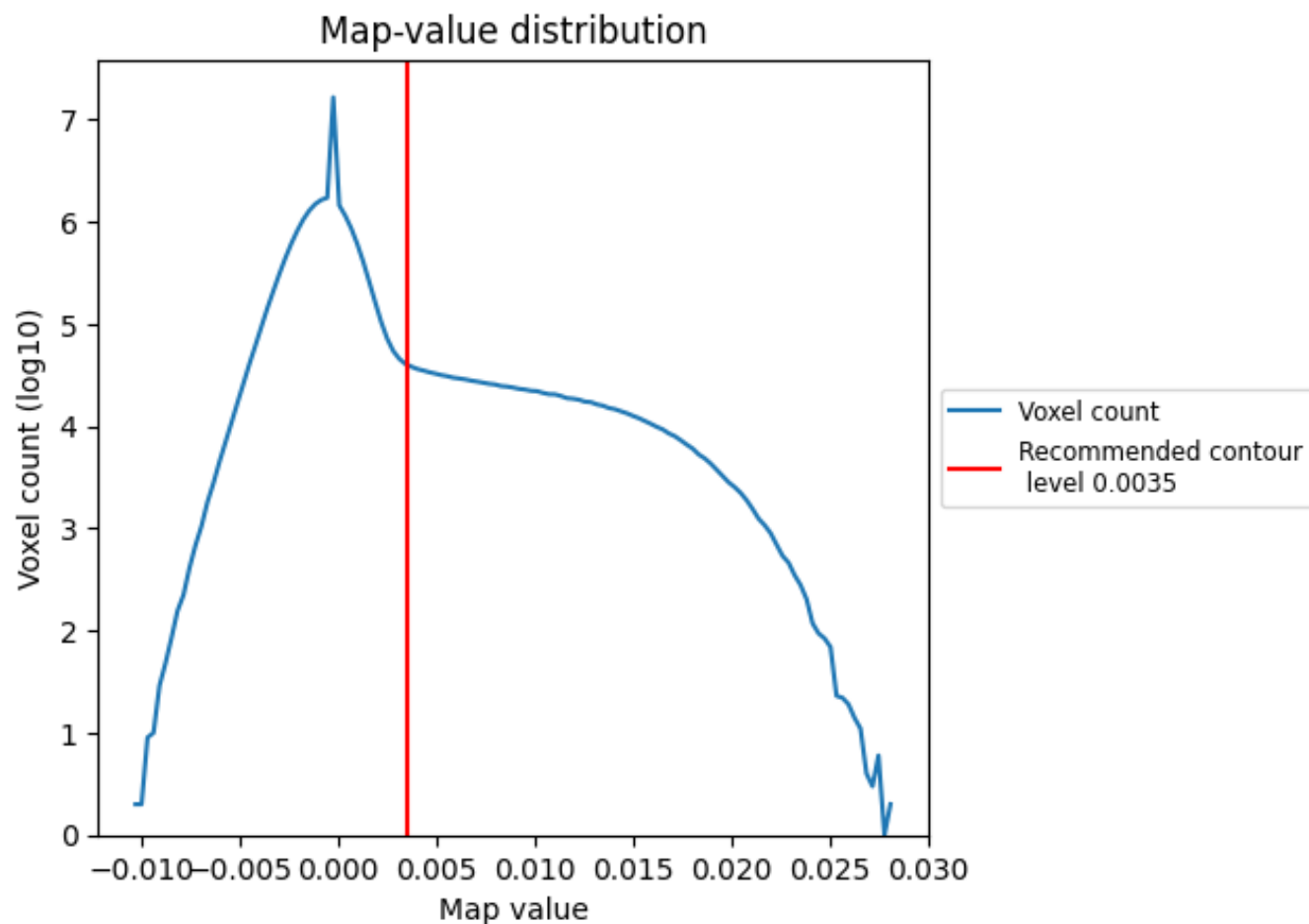
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

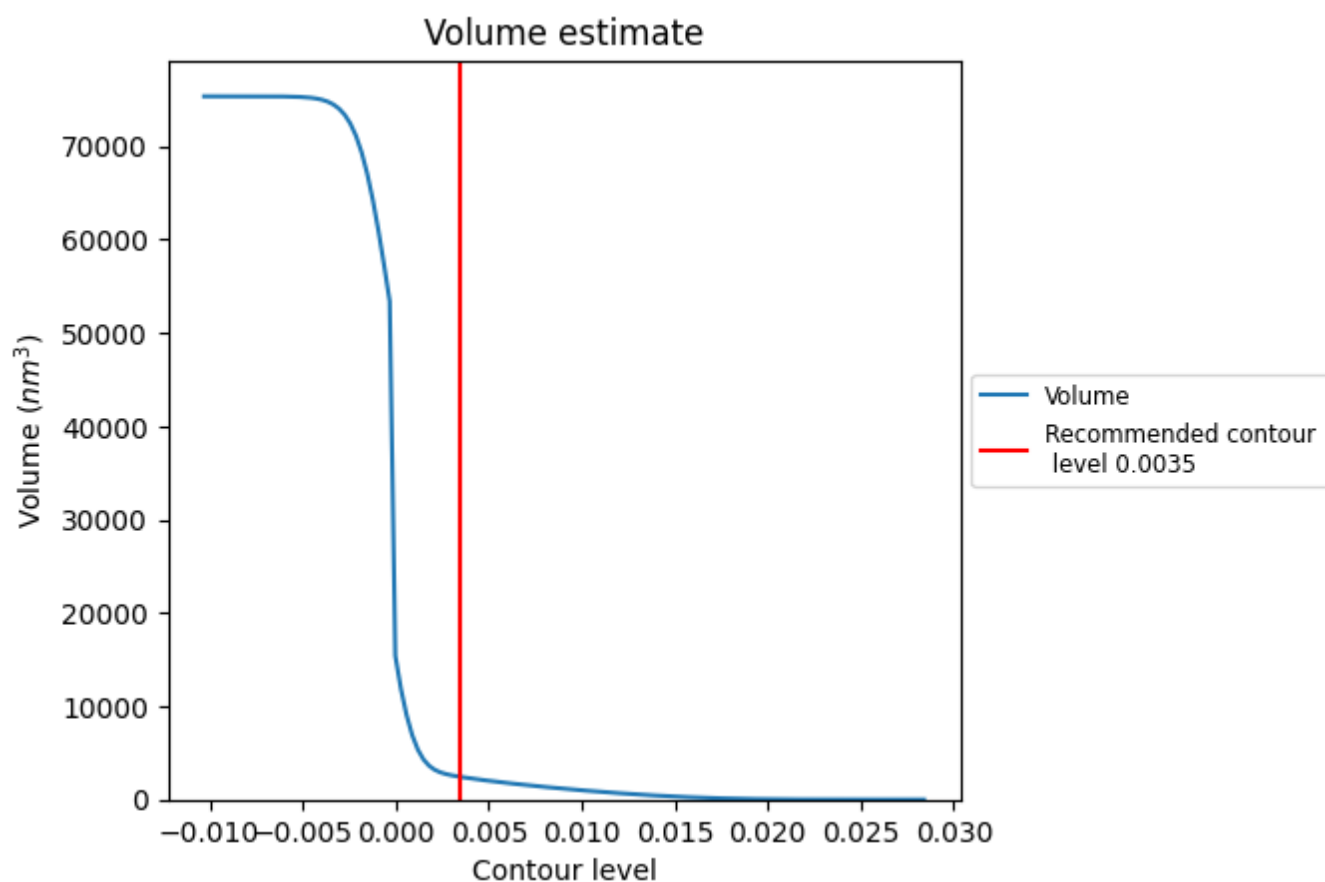
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

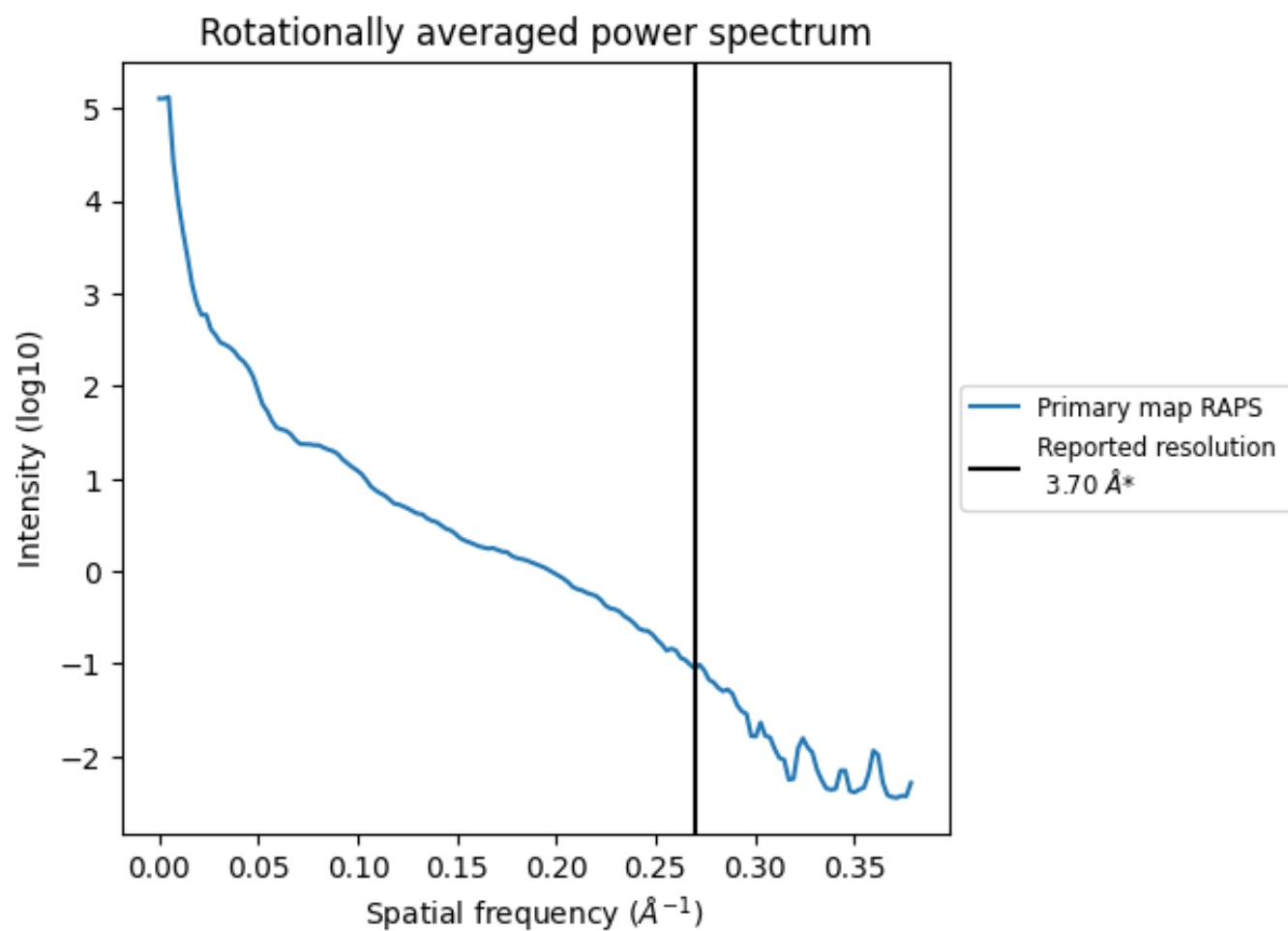
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 2427 nm³; this corresponds to an approximate mass of 2193 kDa.

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

7.3 Rotationally averaged power spectrum ⓘ

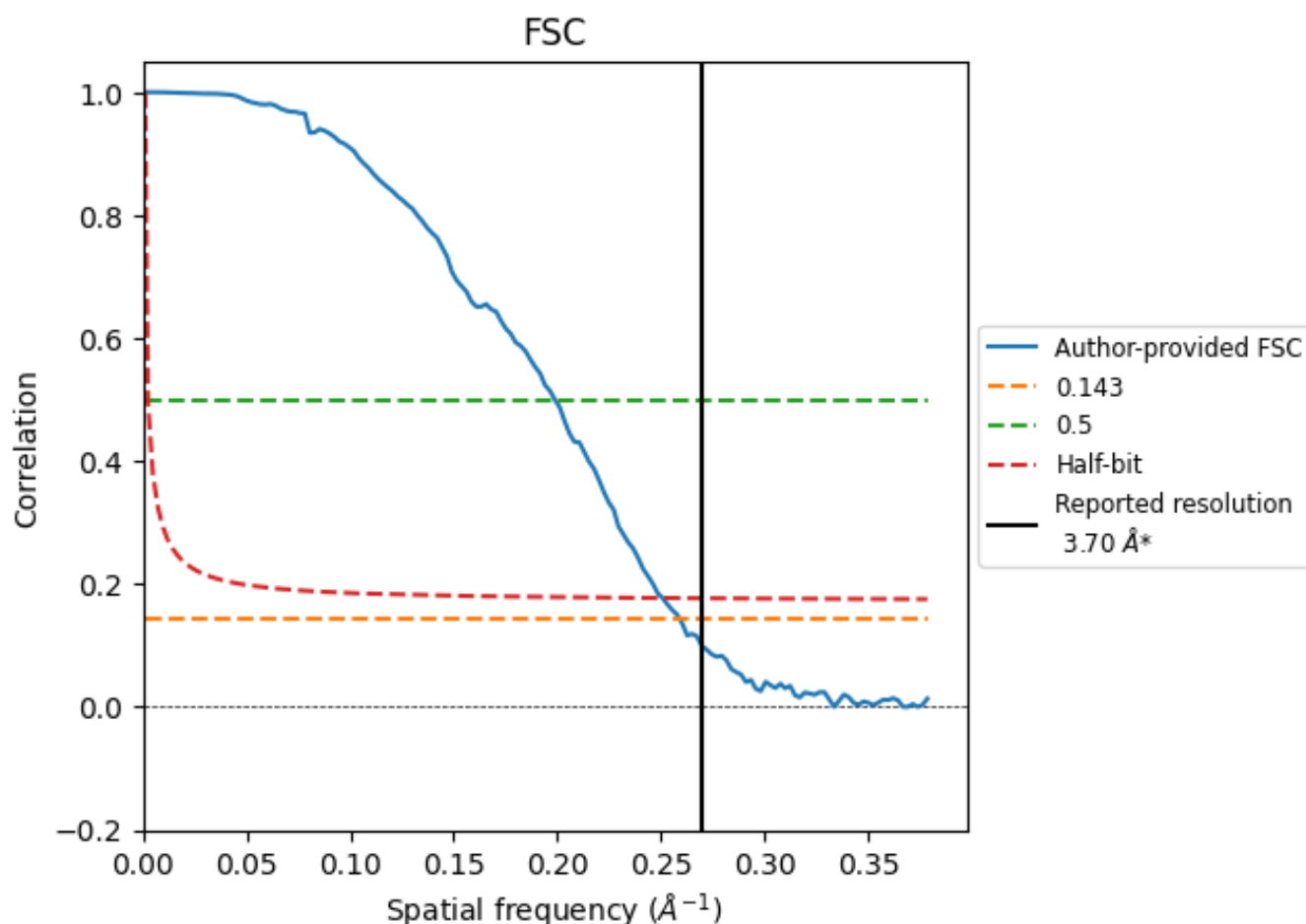


*Reported resolution corresponds to spatial frequency of 0.270 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.270 Å⁻¹

8.2 Resolution estimates [i](#)

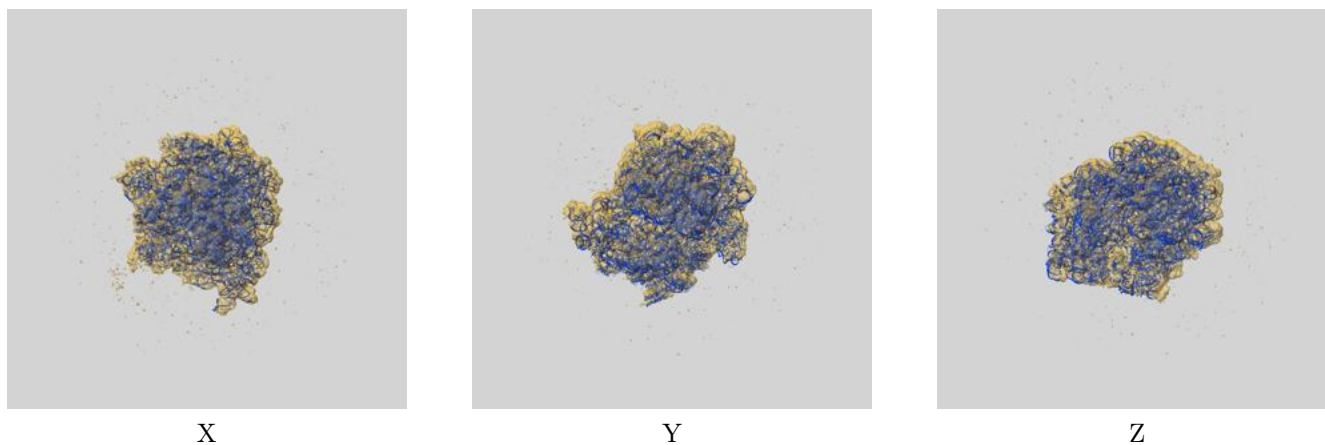
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	-	-	-
Author-provided FSC curve	3.86	5.03	3.98
Unmasked-calculated*	-	-	-

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

9 Map-model fit [i](#)

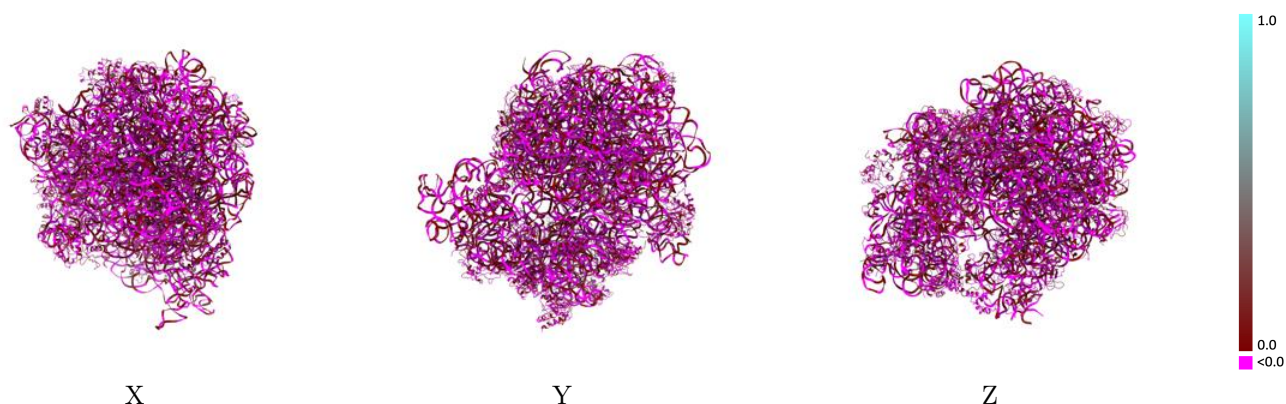
This section contains information regarding the fit between EMDB map EMD-6549 and PDB model 3JCD. Per-residue inclusion information can be found in [section 3](#) on [page 14](#).

9.1 Map-model overlay [i](#)



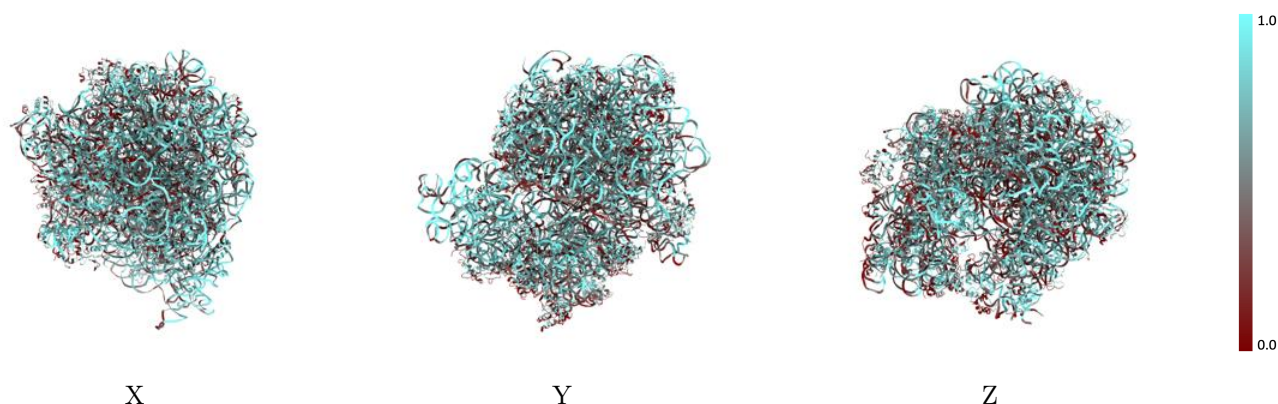
The images above show the 3D surface view of the map at the recommended contour level 0.0035 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



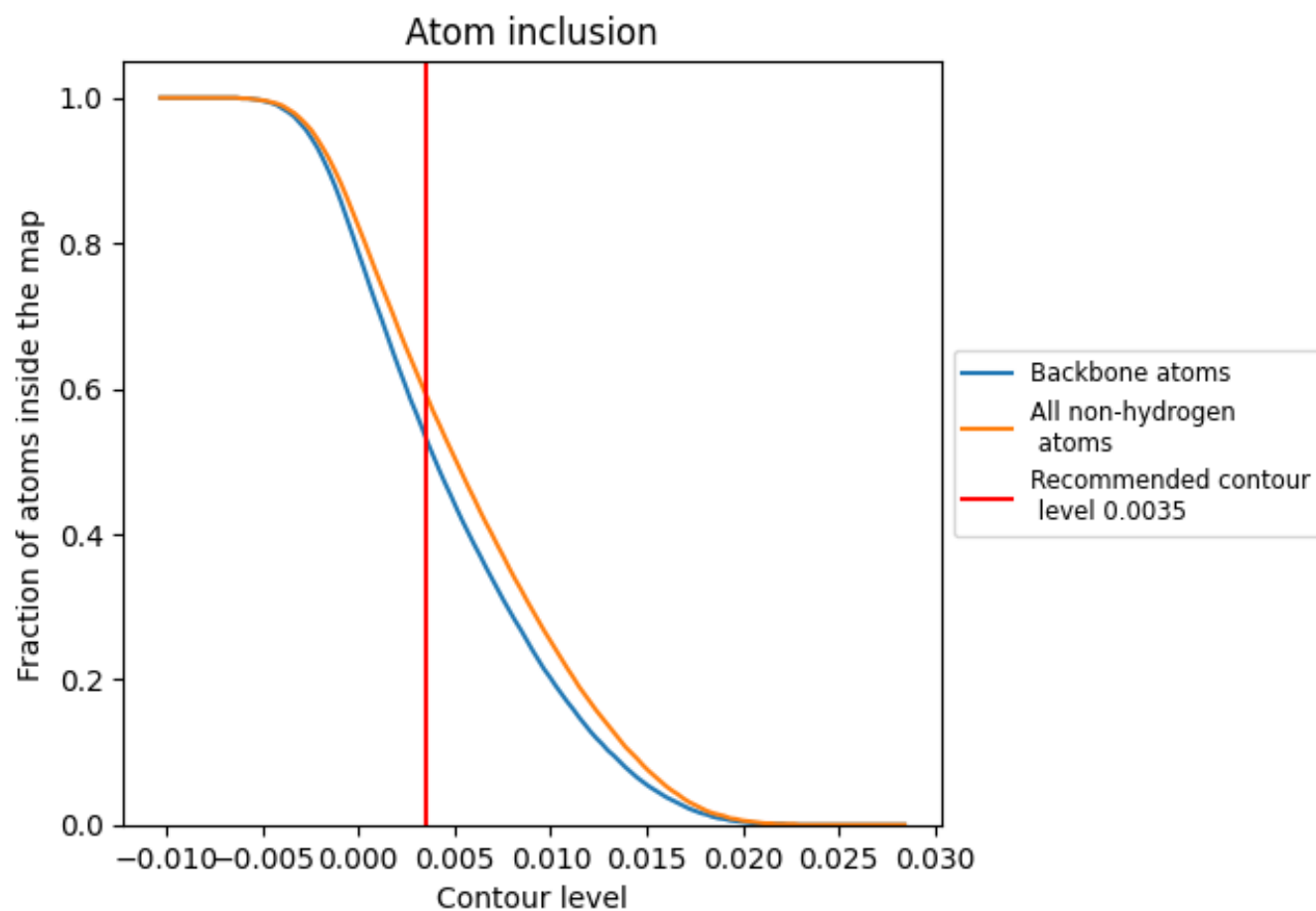
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.0035).







































































9.4 Atom inclusion ⓘ



At the recommended contour level, 53% of all backbone atoms, 59% 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 (0.0035) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.5920	 -0.0090
0	 0.5490	 -0.0360
1	 0.3140	 -0.0230
2	 0.5100	 -0.0410
3	 0.6660	 -0.0270
4	 0.4790	 -0.0150
5	 0.6300	 0.0140
7	 0.4140	 -0.0520
8	 0.5510	 -0.0050
9	 0.5780	 0.0000
A	 0.6100	 -0.0110
B	 0.5990	 -0.0120
C	 0.4640	 0.0000
D	 0.5440	 -0.0090
E	 0.5630	 0.0040
F	 0.5040	 -0.0110
G	 0.5140	 -0.0030
H	 0.2990	 0.0010
I	 0.3980	 0.0020
J	 0.5480	 -0.0380
K	 0.4380	 0.0030
L	 0.6290	 0.0130
M	 0.3790	 -0.0370
N	 0.6090	 -0.0160
O	 0.6730	 0.0110
P	 0.4950	 -0.0160
Q	 0.6070	 -0.0210
R	 0.5910	 -0.0250
S	 0.5840	 -0.0010
T	 0.5720	 -0.0090
U	 0.6310	 0.0030
V	 0.4950	 0.0040
W	 0.6020	 -0.0170
X	 0.6040	 -0.0110
Y	 0.5490	 -0.0290



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Chain	Atom inclusion	Q-score
Z	 0.4940	 -0.0240
a	 0.6580	 -0.0050
b	 0.4560	 -0.0090
c	 0.4420	 -0.0260
d	 0.4670	 -0.0240
e	 0.4180	 -0.0140
f	 0.6020	 0.0060
g	 0.4870	 -0.0360
h	 0.5180	 0.0140
i	 0.5540	 -0.0090
j	 0.4800	 0.0130
k	 0.4820	 -0.0170
l	 0.6490	 -0.0000
m	 0.4540	 -0.0300
n	 0.4270	 -0.0300
o	 0.6380	 -0.0380
p	 0.6250	 0.0420
q	 0.5810	 -0.0220
r	 0.5480	 -0.0020
s	 0.6880	 -0.0120
t	 0.6260	 -0.0280
u	 0.4800	 0.0160
x	 0.0910	 -0.0350