Full wwPDB EM Validation Report ⓘ

Nov 7, 2026 – 10:05 am GMT

PDB ID	:	9TAP / pdb_00009tap
EMDB ID	:	EMD-55754
Title	:	Structural characterization of hibernating ribosomes in the Gram-negative pathogen Acinetobacter baumannii with no bS21 and no E-site tRNA
Authors	:	Vasanthakrishnan, R.K.B.S.; Olivier, D.; Sophie, C.; Yann, L.C.; Sylvie, G.D.; Sassi, M.; Emmanuel, G.; Reynald, G.
Deposited on	:	2025-11-18
Resolution	:	2.90 Å(reported)
Based on initial model	:	8B0X

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:

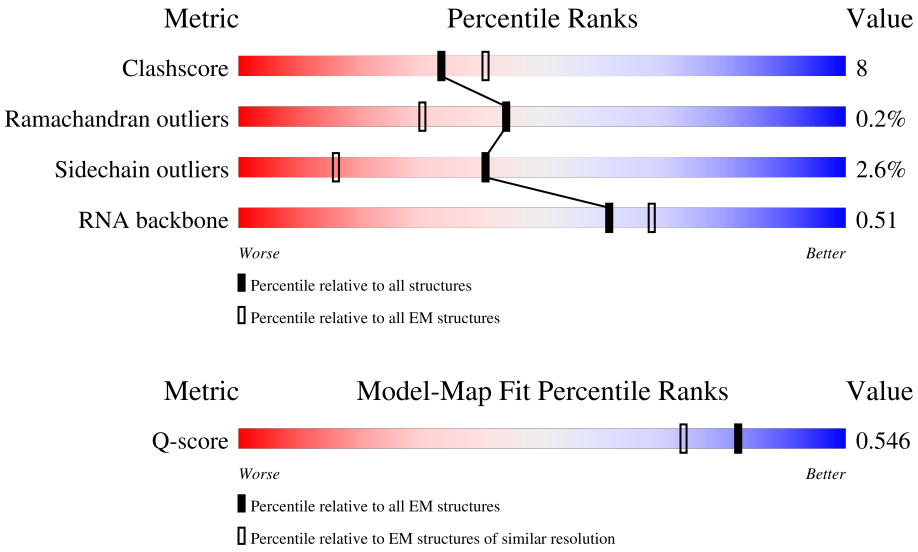
EMDB validation analysis	:	0.0.1.dev133
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	4-5-2 with Phenix2.2
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.51

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 2.90 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	13054 (2.40 - 3.40)

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

Mol	Chain	Length	Quality of chain
1	0	51	73% 71% 29%
2	1	44	20% 86% 14%
3	2	64	33% 78% 20%

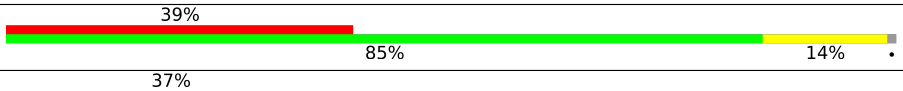
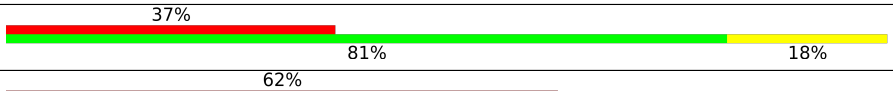
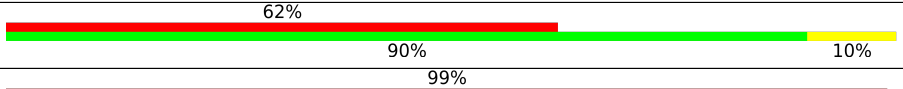
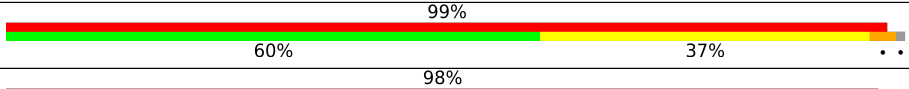
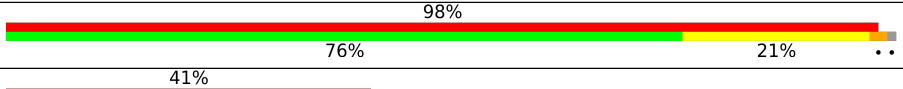
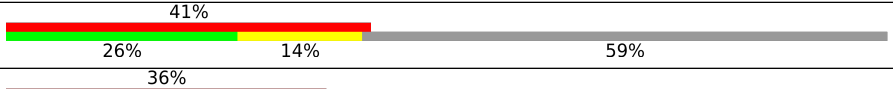
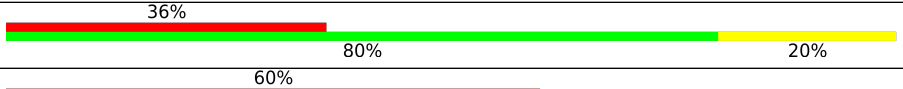
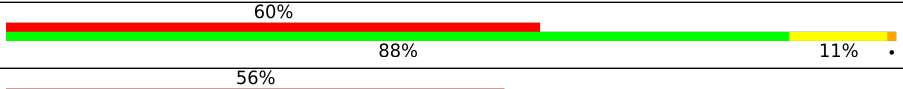
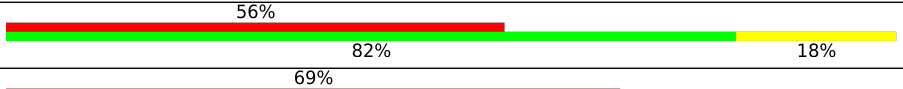
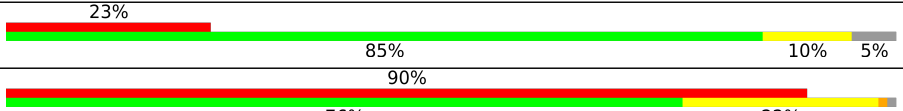
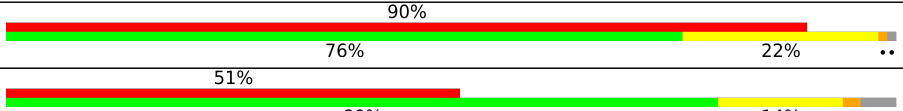
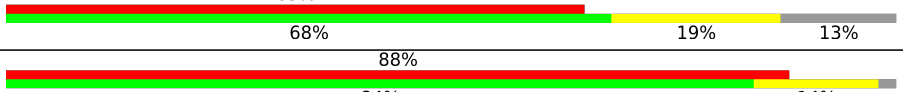
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Mol	Chain	Length	Quality of chain
4	3	38	68% 82% 18%
5	4	74	96% 61% 32%
6	A	1537	71% 52% 41% 7%
7	B	250	92% 60% 29% 8%
8	C	250	84% 68% 17% 14%
9	D	208	99% 76% 22%
10	E	165	80% 73% 21% 6%
11	F	127	83% 65% 17% 17%
12	G	156	98% 72% 26%
13	H	131	94% 79% 21%
14	I	128	99% 72% 27%
15	J	103	94% 74% 23%
16	K	128	91% 66% 23% 9%
17	L	124	94% 75% 23%
18	M	118	97% 73% 25%
19	N	101	98% 71% 28%
20	O	89	87% 74% 25%
21	P	83	96% 83% 14%
22	Q	85	91% 61% 31% 7%
23	R	75	88% 65% 21% 12%
24	S	91	92% 71% 19% 8%
25	T	88	95% 75% 22%
26	W	15	67% 47% 13% 7% 33%
27	X	116	85% 68% 22% 10%
28	a	2893	27% 55% 39% 6%

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Mol	Chain	Length	Quality of chain
29	b	115	
30	c	274	
31	d	212	
32	e	200	
33	f	178	
34	g	177	
35	h	148	
36	i	142	
37	j	122	
38	k	146	
39	l	137	
40	m	125	
41	n	116	
42	o	122	
43	p	119	
44	q	103	
45	r	109	
46	s	106	
47	t	105	
48	u	98	
49	v	85	
50	w	78	
51	x	65	
52	y	58	
53	z	61	

2 Entry composition (i)

There are 56 unique types of molecules in this entry. The entry contains 142374 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 Large ribosomal subunit protein bL33.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	0	51	427	274	77	73	3	0	0

- Molecule 2 is a protein called Large ribosomal subunit protein bL34.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	1	44	363	222	85	54	2	0	0

- Molecule 3 is a protein called Large ribosomal subunit protein bL35.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	2	63	509	319	110	76	4	0	0

- Molecule 4 is a protein called Large ribosomal subunit protein bL36.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	3	38	295	179	64	48	4	0	0

- Molecule 5 is a protein called Large ribosomal subunit protein bL31.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	4	71	552	343	101	102	6	0	0

- Molecule 6 is a RNA chain called 16S rRNA (1537-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
6	A	1536	32947	14705	6016	10690	1536	0	0

- Molecule 7 is a protein called Small ribosomal subunit protein uS2.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	B	229	Total	C	N	O	S	0	0
			1801	1130	333	332	6		

- Molecule 8 is a protein called Small ribosomal subunit protein uS3.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	C	215	Total	C	N	O	S	0	0
			1690	1065	318	299	8		

- Molecule 9 is a protein called Small ribosomal subunit protein uS4.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	D	207	Total	C	N	O	S	0	0
			1631	1017	313	299	2		

- Molecule 10 is a protein called Small ribosomal subunit protein uS5.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	E	155	Total	C	N	O	S	0	0
			1129	700	217	207	5		

- Molecule 11 is a protein called Small ribosomal subunit protein bS6.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	F	106	Total	C	N	O	S	0	0
			878	552	160	162	4		

- Molecule 12 is a protein called Small ribosomal subunit protein uS7.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	G	153	Total	C	N	O	S	0	0
			1210	758	229	216	7		

- Molecule 13 is a protein called Small ribosomal subunit protein uS8.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	H	130	Total	C	N	O	S	0	0
			985	615	177	187	6		

- Molecule 14 is a protein called Small ribosomal subunit protein uS9.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	I	127	Total	C	N	O	S	0	0
			995	621	198	175	1		

- Molecule 15 is a protein called Small ribosomal subunit protein uS10.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	J	100	Total	C	N	O	S	0	0
			801	500	150	148	3		

- Molecule 16 is a protein called Small ribosomal subunit protein uS11.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	K	117	Total	C	N	O	S	0	0
			862	535	166	160	1		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
K	118	IAS	ASN	modified residue	UNP D0CD20

- Molecule 17 is a protein called Small ribosomal subunit protein uS12.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	L	122	Total	C	N	O	S	0	0
			947	581	193	167	6		

- Molecule 18 is a protein called Small ribosomal subunit protein uS13.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	M	116	Total	C	N	O	S	0	0
			912	564	186	159	3		

- Molecule 19 is a protein called Small ribosomal subunit protein uS14.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	N	100	Total	C	N	O	S	0	0
			792	493	158	137	4		

- Molecule 20 is a protein called Small ribosomal subunit protein uS15.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	O	88	Total	C	N	O	S	0	0
			705	434	144	126	1		

- Molecule 21 is a protein called Small ribosomal subunit protein bS16.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	P	82	Total	C	N	O	S	0	0
			644	403	128	112	1		

- Molecule 22 is a protein called Small ribosomal subunit protein uS17.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	Q	79	Total	C	N	O	S	0	0
			621	390	116	114	1		

- Molecule 23 is a protein called Small ribosomal subunit protein bS18.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	R	66	Total	C	N	O	S	0	0
			545	349	96	99	1		

- Molecule 24 is a protein called Small ribosomal subunit protein uS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	S	84	Total	C	N	O	S	0	0
			657	419	127	109	2		

- Molecule 25 is a protein called 30S ribosomal protein bS20.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	T	86	Total	C	N	O	S	0	0
			663	409	139	113	2		

- Molecule 26 is a RNA chain called non-STOP mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	W	10	Total	C	N	O	P	0	0
			219	97	41	71	10		

- Molecule 27 is a protein called Putative ribosomal subunit interface protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	X	104	Total	C	N	O	S	0	0
			841	519	161	158	3		

- Molecule 28 is a RNA chain called 23S rRNA (2890-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
28	a	2890	Total	C	N	O	P	0	0
			61984	27671	11335	20088	2890		

- Molecule 29 is a RNA chain called RNA (115-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
29	b	115	Total	C	N	O	P	0	0
			2450	1095	440	800	115		

- Molecule 30 is a protein called Large ribosomal subunit protein uL2.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	c	272	Total	C	N	O	S	0	0
			2111	1302	436	365	8		

- Molecule 31 is a protein called Large ribosomal subunit protein uL3.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	d	211	Total	C	N	O	S	0	0
			1573	973	297	300	3		

- Molecule 32 is a protein called Large ribosomal subunit protein uL4.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	e	199	Total	C	N	O	S	0	0
			1511	950	280	276	5		

- Molecule 33 is a protein called Large ribosomal subunit protein uL5.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	f	177	Total	C	N	O	S	0	0
			1395	886	250	251	8		

- Molecule 34 is a protein called Large ribosomal subunit protein uL6.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	g	175	Total	C	N	O	S	0	0
			1327	838	238	250	1		

- Molecule 35 is a protein called Large ribosomal subunit protein bL9.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	h	60	Total	C	N	O	S	0	0
			458	287	84	86	1		

- Molecule 36 is a protein called Large ribosomal subunit protein uL13.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	i	142	Total	C	N	O	S	0	0
			1125	718	200	203	4		

- Molecule 37 is a protein called Large ribosomal subunit protein uL14.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	j	122	Total	C	N	O	S	0	0
			946	592	180	169	5		

- Molecule 38 is a protein called Large ribosomal subunit protein uL15.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	k	146	Total	C	N	O	S	0	0
			1089	673	215	200	1		

- Molecule 39 is a protein called Large ribosomal subunit protein uL16.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	l	137	Total	C	N	O	S	0	0
			1088	687	210	185	6		

- Molecule 40 is a protein called Large ribosomal subunit protein bL17.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	m	119	Total	C	N	O	S	0	0
			942	590	186	163	3		

- Molecule 41 is a protein called Large ribosomal subunit protein uL18.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	n	115	Total	C	N	O	S	0	0
			865	532	175	157	1		

- Molecule 42 is a protein called Large ribosomal subunit protein bL19.

Mol	Chain	Residues	Atoms				AltConf	Trace
42	o	117	Total	C	N	O	0	0
			919	578	177	164		

- Molecule 43 is a protein called Large ribosomal subunit protein bL20.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	p	117	Total	C	N	O	S	0	0
			934	589	197	146	2		

- Molecule 44 is a protein called Large ribosomal subunit protein bL21.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	q	103	Total	C	N	O	S	0	0
			807	506	155	143	3		

- Molecule 45 is a protein called Large ribosomal subunit protein uL22.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	r	109	Total	C	N	O	S	0	0
			826	514	158	150	4		

- Molecule 46 is a protein called Large ribosomal subunit protein uL23.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	s	92	Total	C	N	O	S	0	0
			717	457	129	130	1		

- Molecule 47 is a protein called Large ribosomal subunit protein uL24.

Mol	Chain	Residues	Atoms				AltConf	Trace
47	t	103	Total	C	N	O	0	0
			766	476	142	148		

- Molecule 48 is a protein called Large ribosomal subunit protein bL25.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	u	97	Total	C	N	O	S	0	0
			760	477	143	139	1		

- Molecule 49 is a protein called Large ribosomal subunit protein bL27.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	v	78	Total	C	N	O	S	0	0
			589	365	113	109	2		

- Molecule 50 is a protein called Large ribosomal subunit protein bL28.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	w	77	Total	C	N	O	S	0	0
			632	395	130	105	2		

- Molecule 51 is a protein called Large ribosomal subunit protein uL29.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	x	62	Total	C	N	O	S	0	0
			498	308	96	93	1		

- Molecule 52 is a protein called Large ribosomal subunit protein uL30.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	y	58	Total	C	N	O	S	0	0
			463	286	88	85	4		

- Molecule 53 is a protein called Large ribosomal subunit protein bL32.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	z	54	Total	C	N	O	S	0	0
			447	265	100	81	1		

- Molecule 54 is POTASSIUM ION (CCD ID: K) (formula: K).

Mol	Chain	Residues	Atoms		AltConf
54	1	1	Total	K	0
			1	1	
54	3	1	Total	K	0
			1	1	
54	A	47	Total	K	0
			47	47	

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Mol	Chain	Residues	Atoms	AltConf
54	L	1	Total K 1 1	0
54	a	111	Total K 111 111	0
54	b	1	Total K 1 1	0
54	c	4	Total K 4 4	0
54	d	2	Total K 2 2	0
54	t	1	Total K 1 1	0

- Molecule 55 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms	AltConf
55	3	1	Total Zn 1 1	0
55	4	1	Total Zn 1 1	0

- Molecule 56 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms	AltConf
56	A	96	Total Mg 96 96	0
56	J	1	Total Mg 1 1	0
56	X	1	Total Mg 1 1	0
56	a	249	Total Mg 249 249	0
56	b	5	Total Mg 5 5	0
56	c	2	Total Mg 2 2	0
56	d	1	Total Mg 1 1	0
56	k	1	Total Mg 1 1	0
56	p	1	Total Mg 1 1	0

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Mol	Chain	Residues	Atoms	AltConf
56	s	1	Total Mg 1 1	0
56	v	1	Total Mg 1 1	0
56	z	1	Total Mg 1 1	0

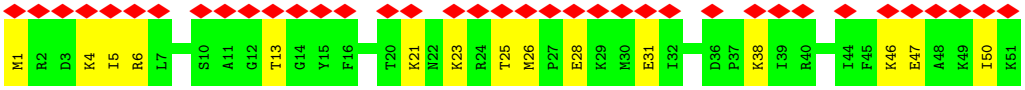
3 Residue-property plots (i)

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

• Molecule 1: Large ribosomal subunit protein bL33

Chain 0:

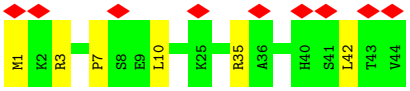




• Molecule 2: Large ribosomal subunit protein bL34

Chain 1:

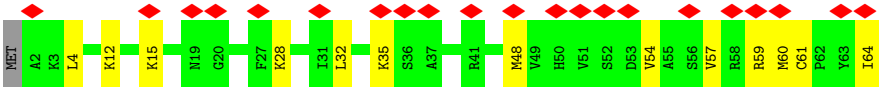




• Molecule 3: Large ribosomal subunit protein bL35

Chain 2:

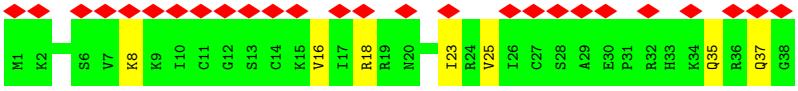




• Molecule 4: Large ribosomal subunit protein bL36

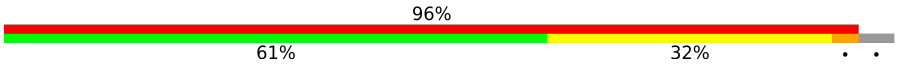
Chain 3:

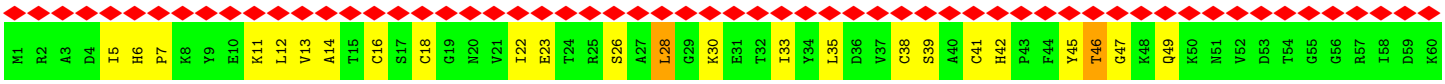


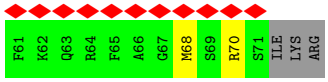


• Molecule 5: Large ribosomal subunit protein bL31

Chain 4:

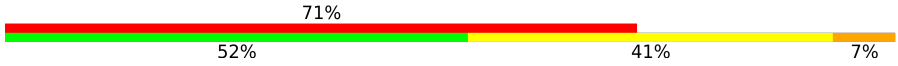


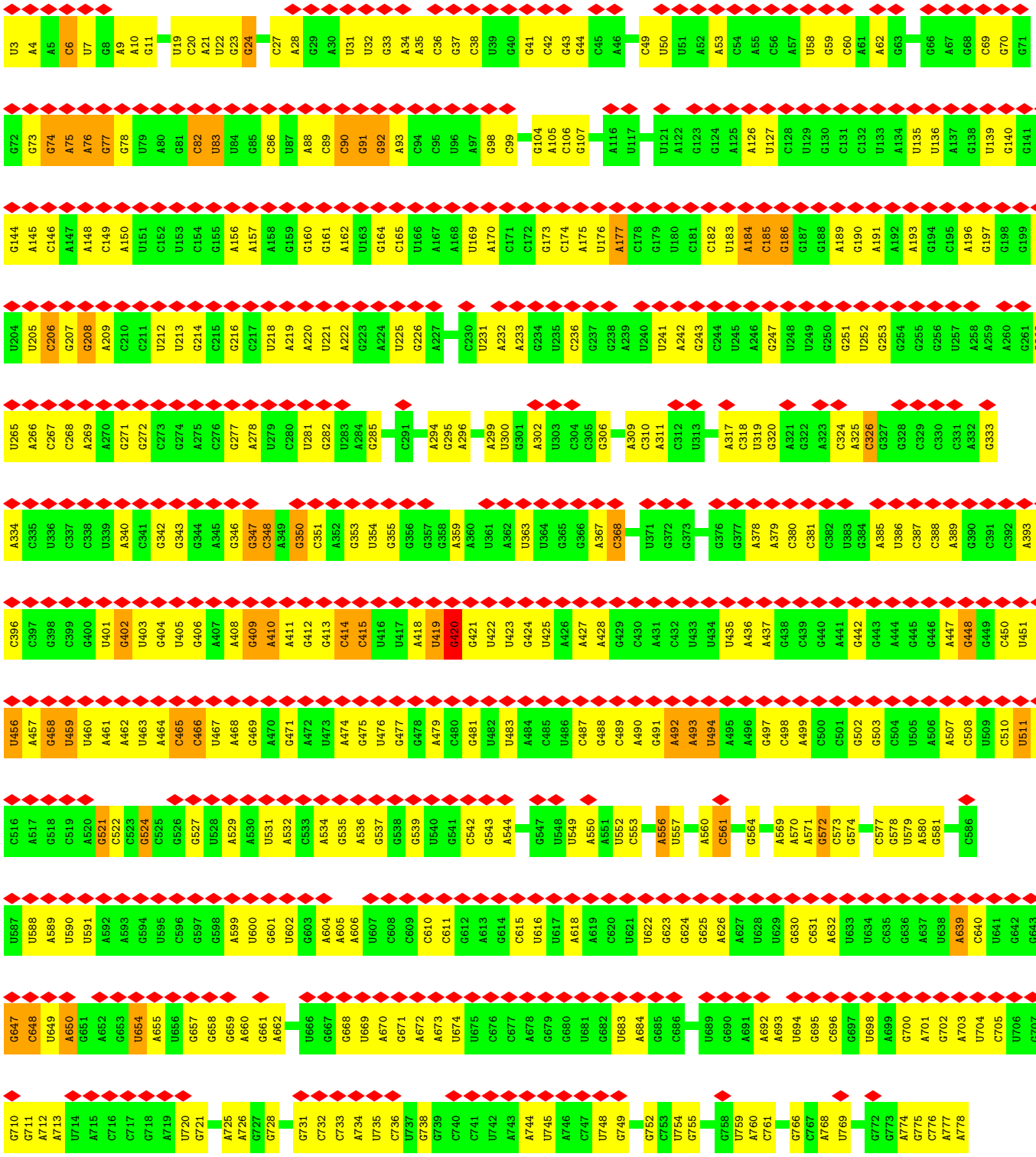


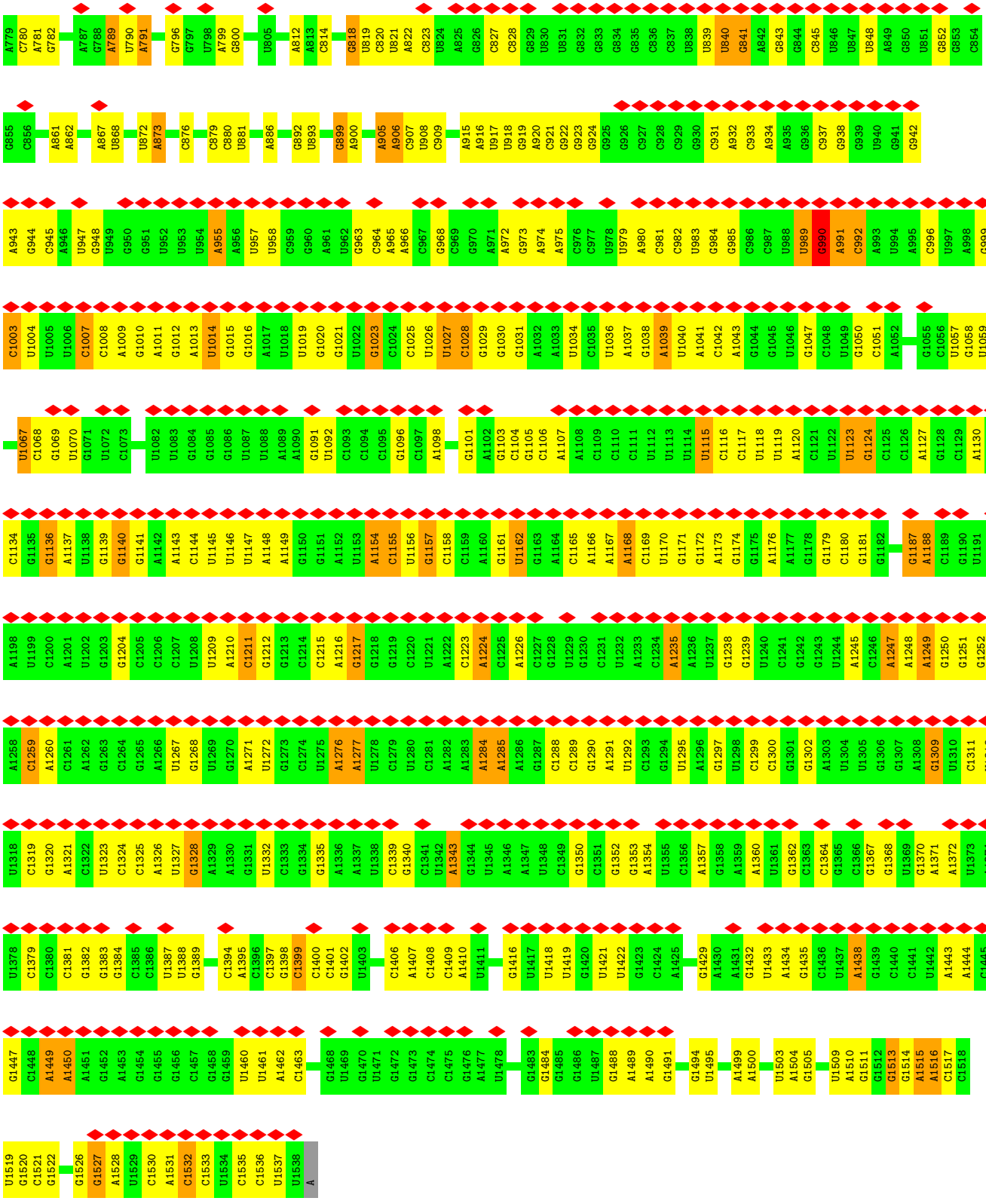


• Molecule 6: 16S rRNA (1537-MER)

Chain A:

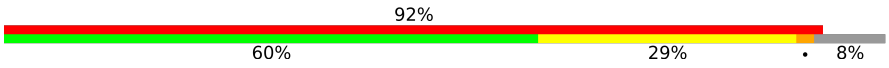






• Molecule 7: Small ribosomal subunit protein uS2

Chain B:

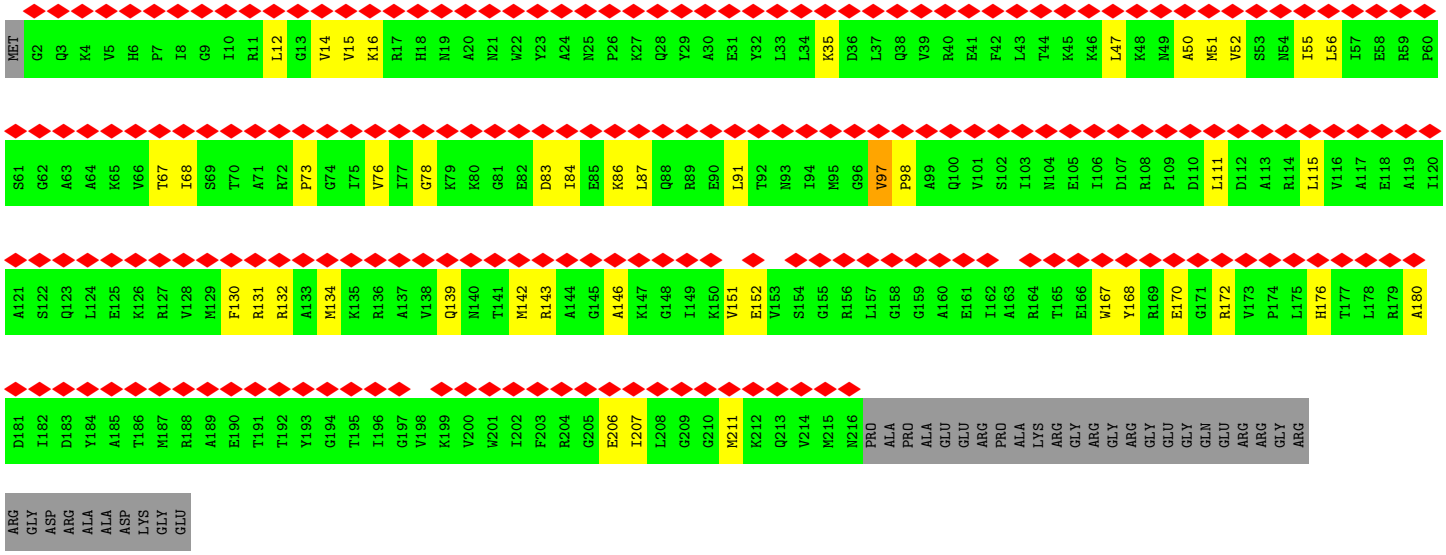




• Molecule 8: Small ribosomal subunit protein uS3

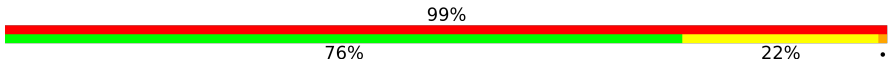
Chain C:

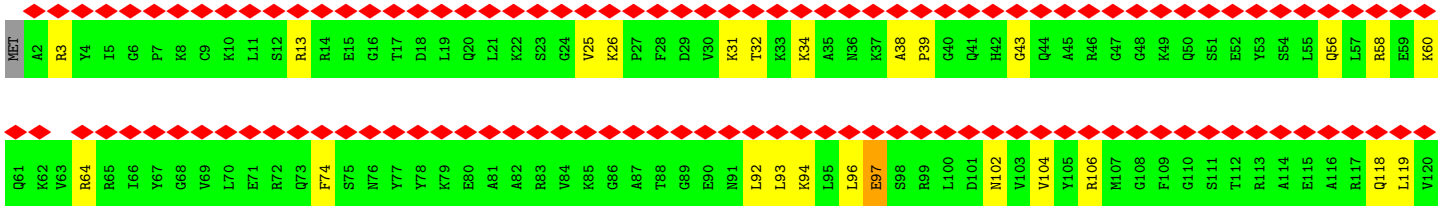


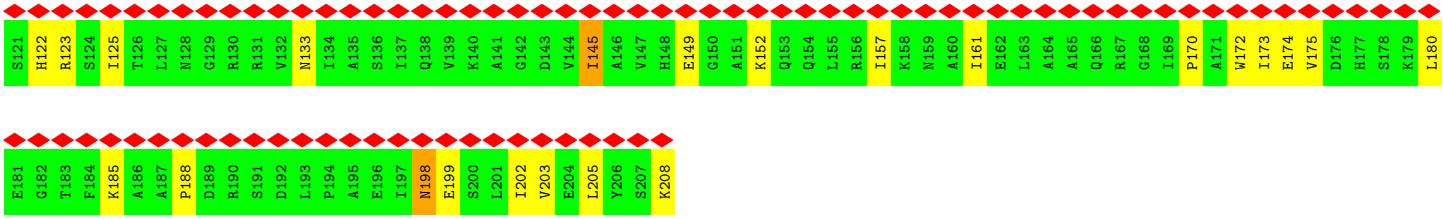


• Molecule 9: Small ribosomal subunit protein uS4

Chain D:



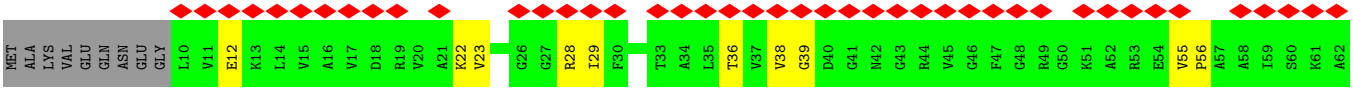


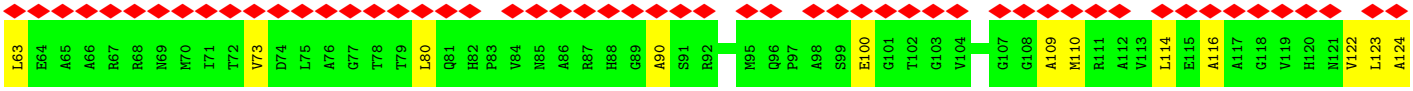


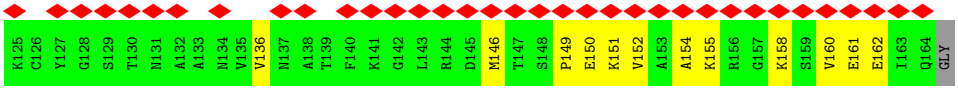
• Molecule 10: Small ribosomal subunit protein uS5

Chain E:





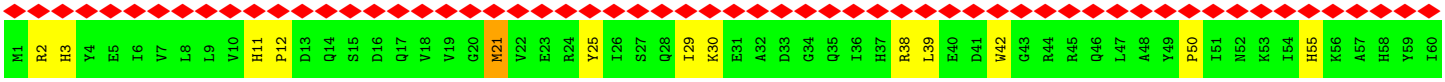


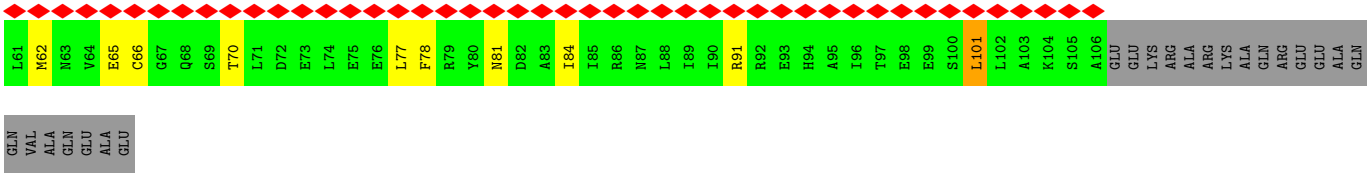


• Molecule 11: Small ribosomal subunit protein bS6

Chain F:

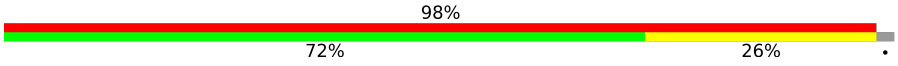


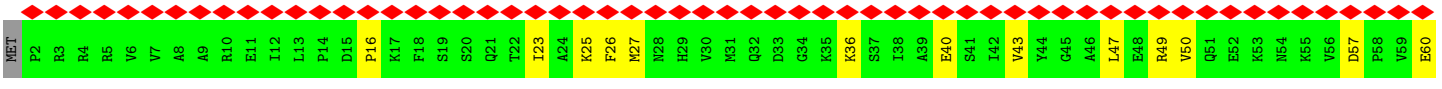




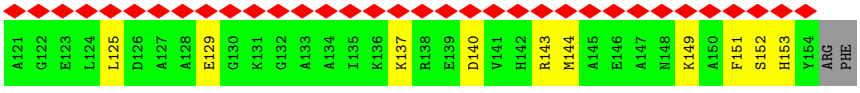
• Molecule 12: Small ribosomal subunit protein uS7

Chain G:



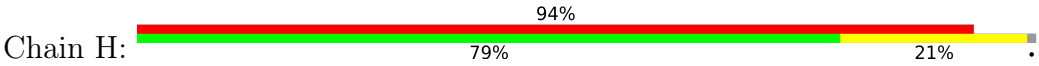


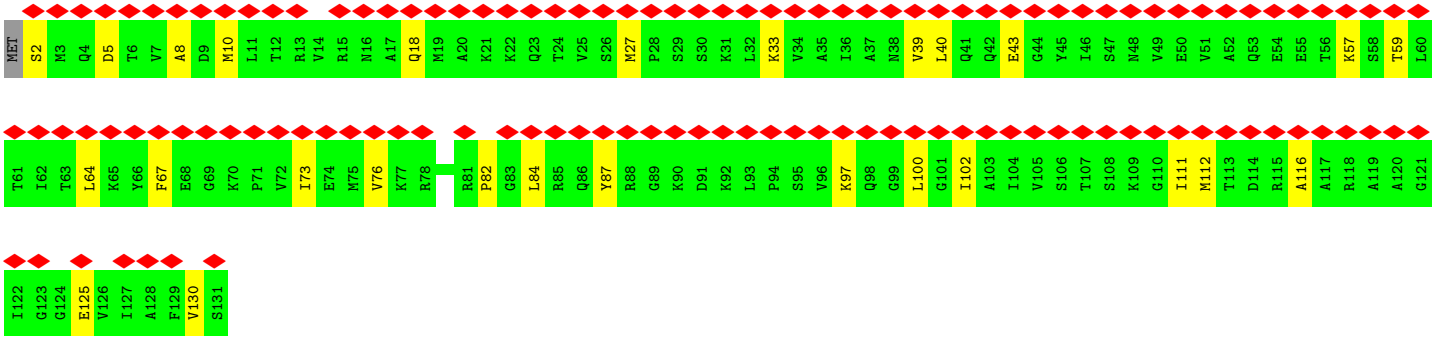




• Molecule 13: Small ribosomal subunit protein uS8

Chain H:

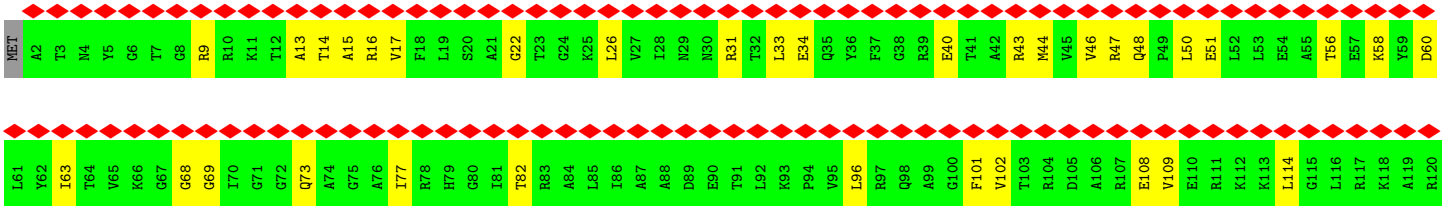




• Molecule 14: Small ribosomal subunit protein uS9

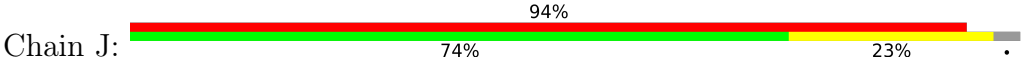
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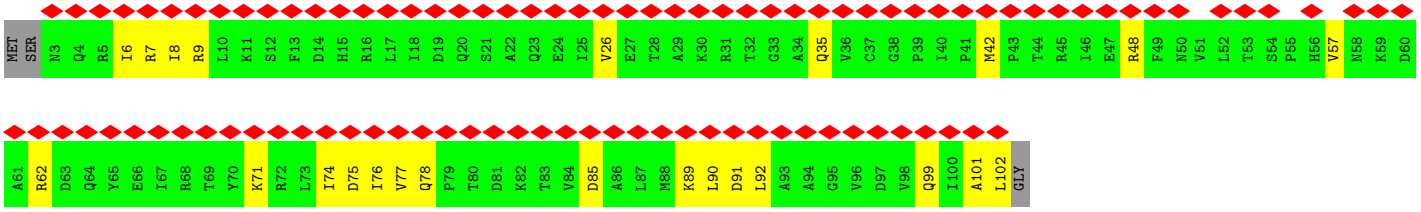




• Molecule 15: Small ribosomal subunit protein uS10

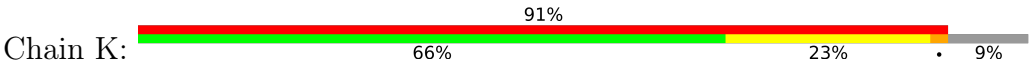
Chain J:

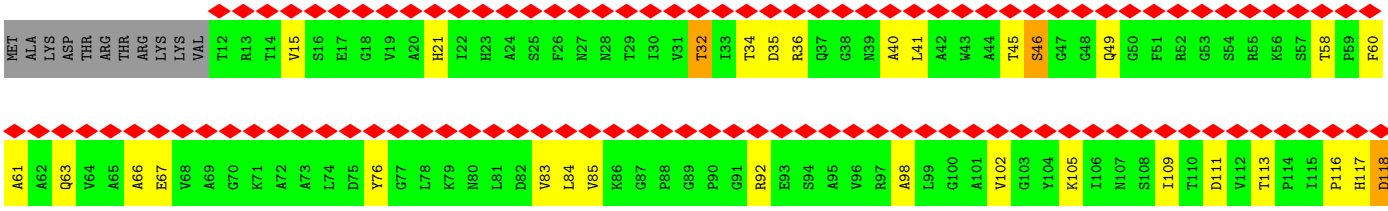


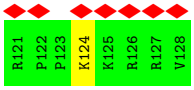


• Molecule 16: Small ribosomal subunit protein uS11

Chain K:

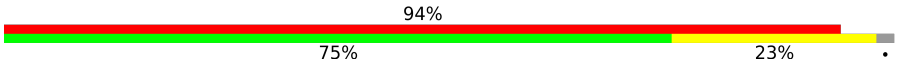


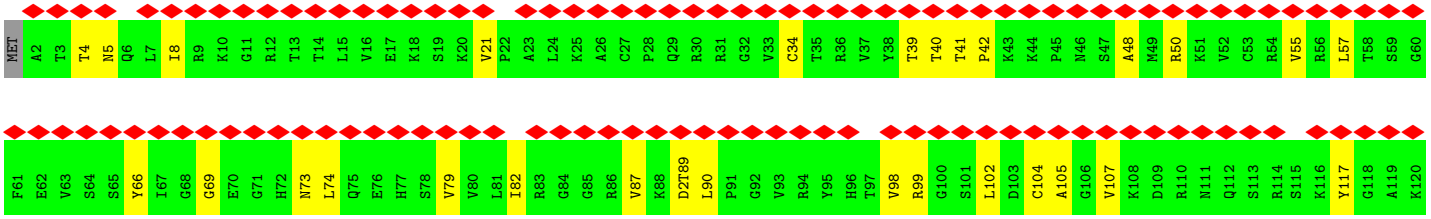




• Molecule 17: Small ribosomal subunit protein uS12

Chain L:

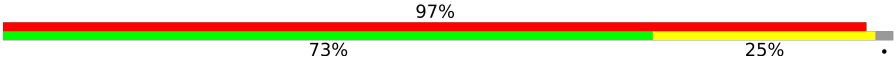


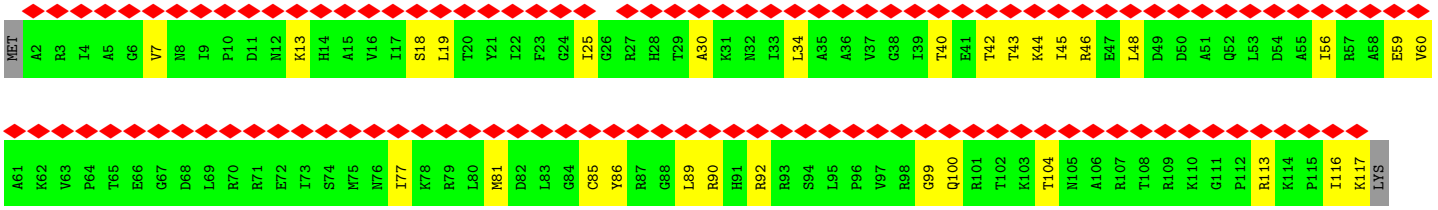




• Molecule 18: Small ribosomal subunit protein uS13

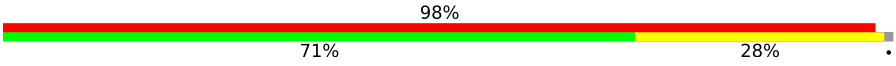
Chain M:

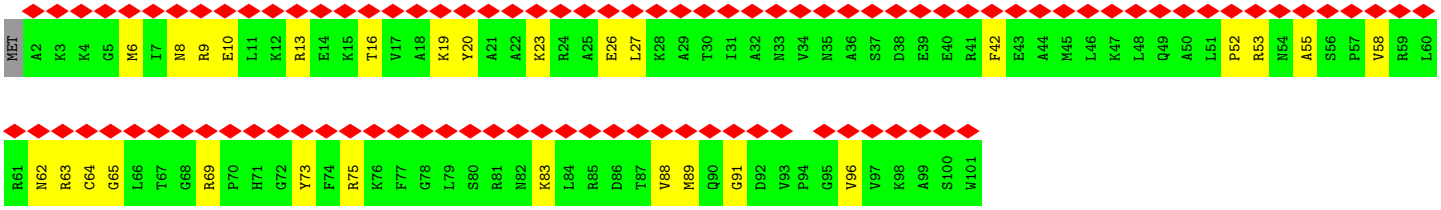




• Molecule 19: Small ribosomal subunit protein uS14

Chain N:

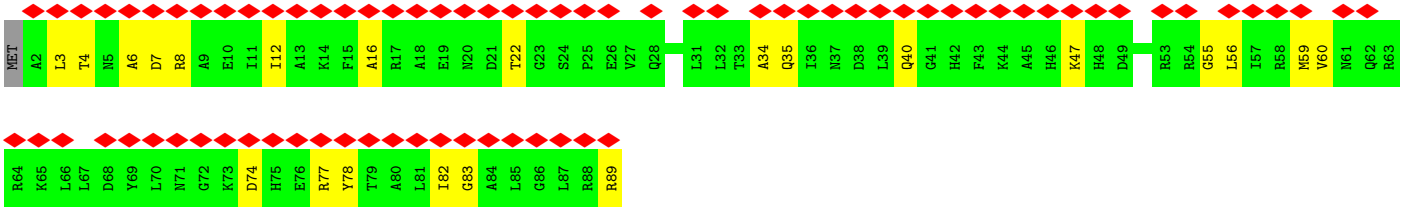




• Molecule 20: Small ribosomal subunit protein uS15

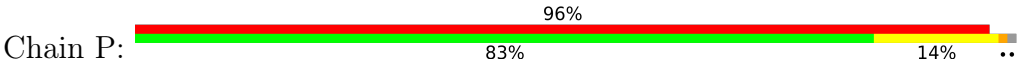
Chain O:

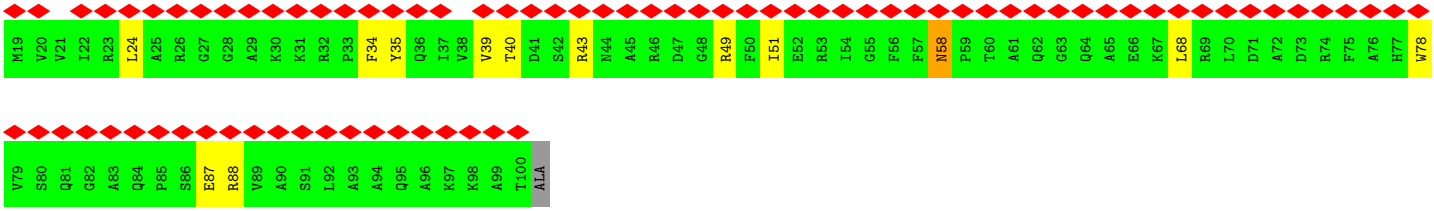




• Molecule 21: Small ribosomal subunit protein bS16

Chain P:

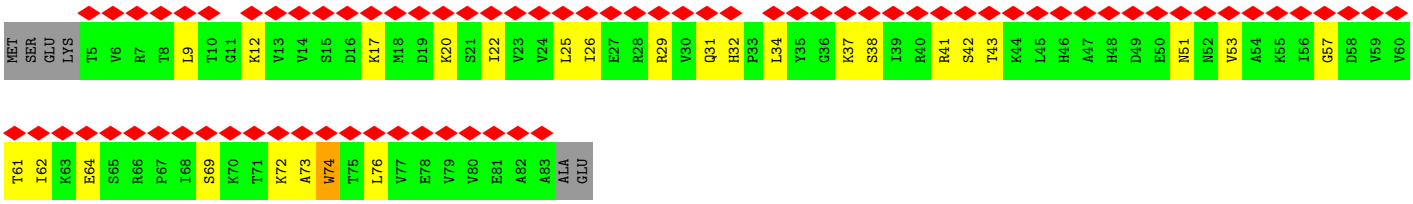




• Molecule 22: Small ribosomal subunit protein uS17

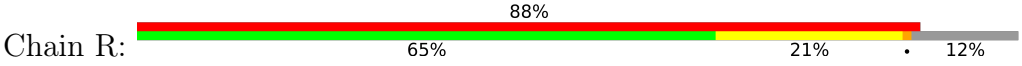
Chain Q:

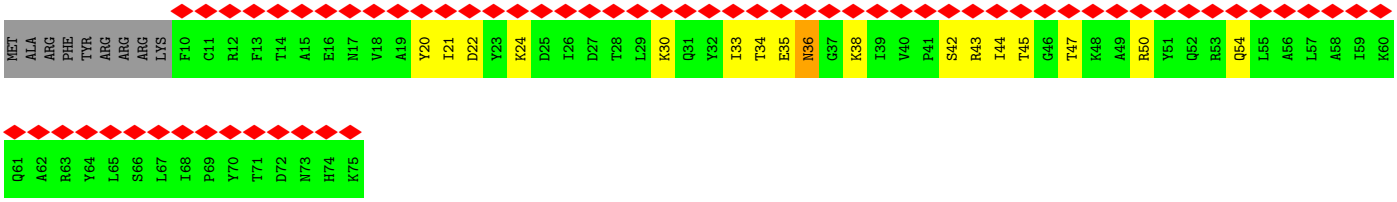




• Molecule 23: Small ribosomal subunit protein bS18

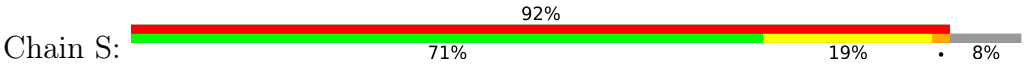
Chain R:

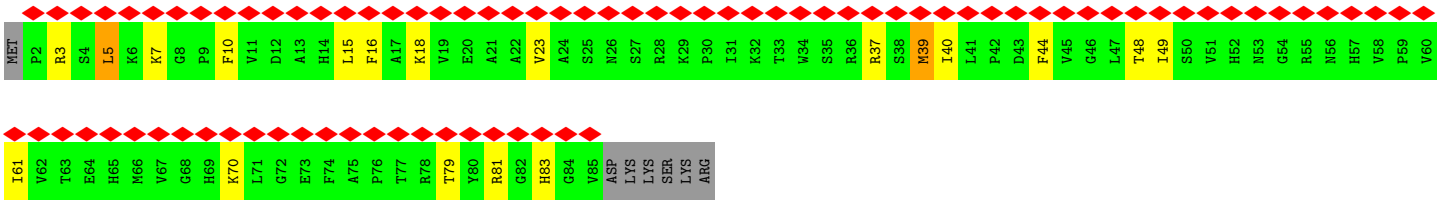




• Molecule 24: Small ribosomal subunit protein uS19

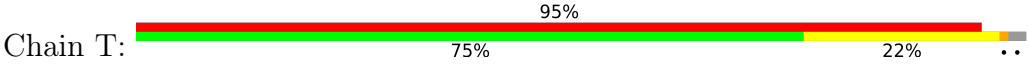
Chain S:

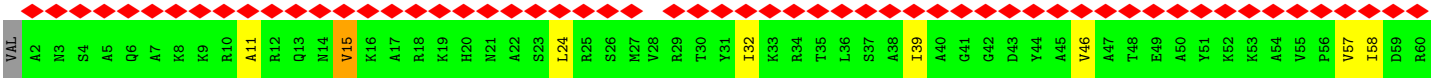




• Molecule 25: 30S ribosomal protein bS20

Chain T:

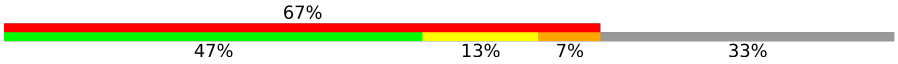


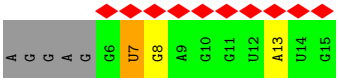




• Molecule 26: non-STOP mRNA

Chain W:

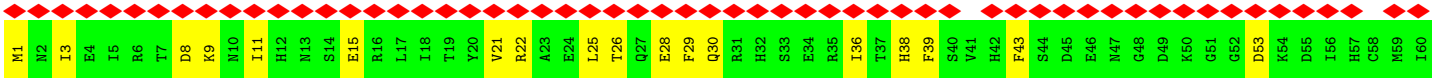


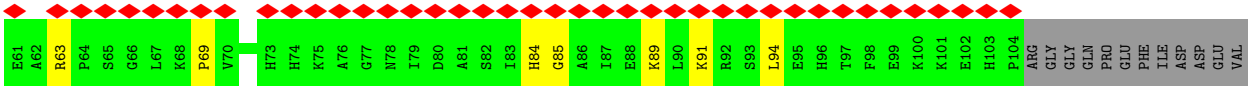


• Molecule 27: Putative ribosomal subunit interface protein

Chain X:



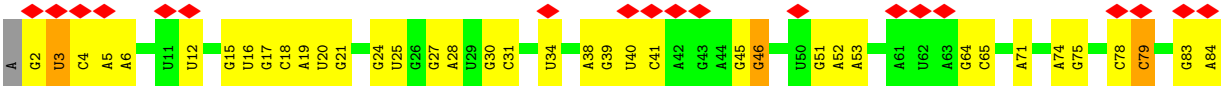


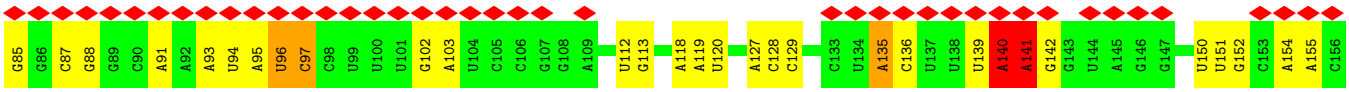


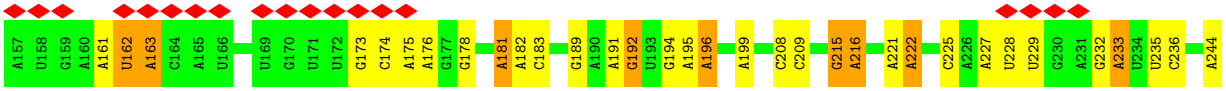
• Molecule 28: 23S rRNA (2890-MER)

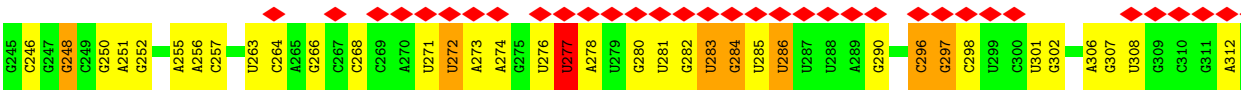
Chain a:



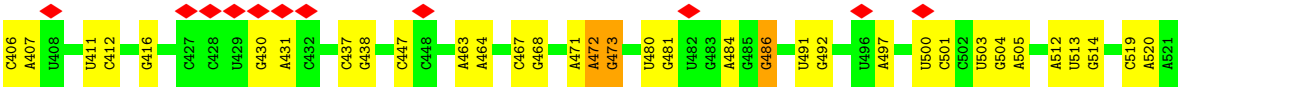


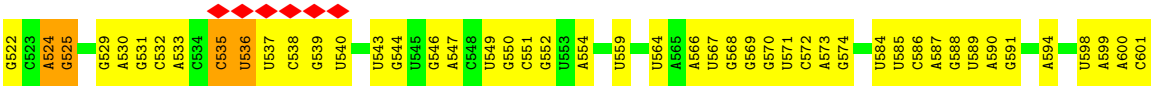


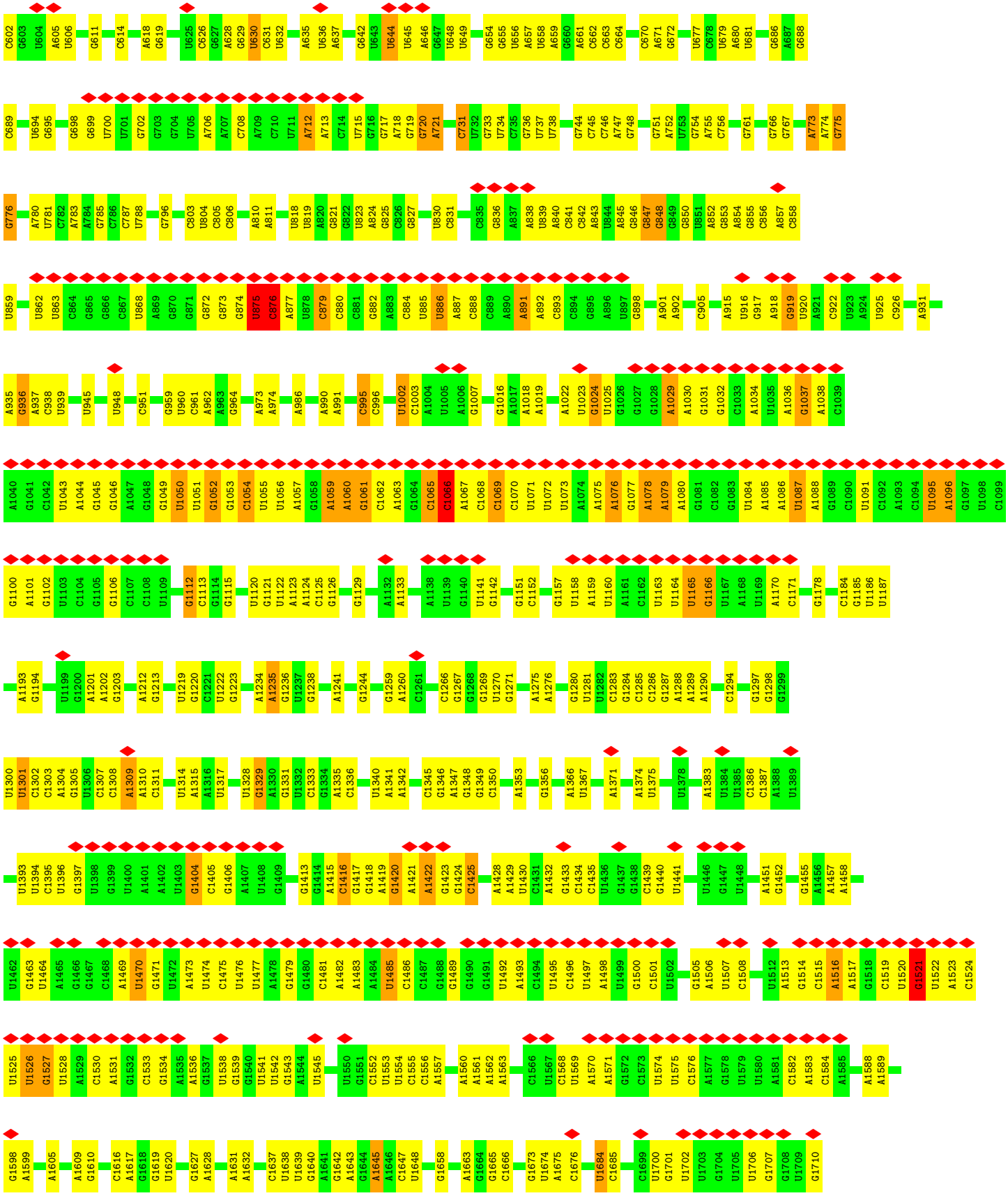


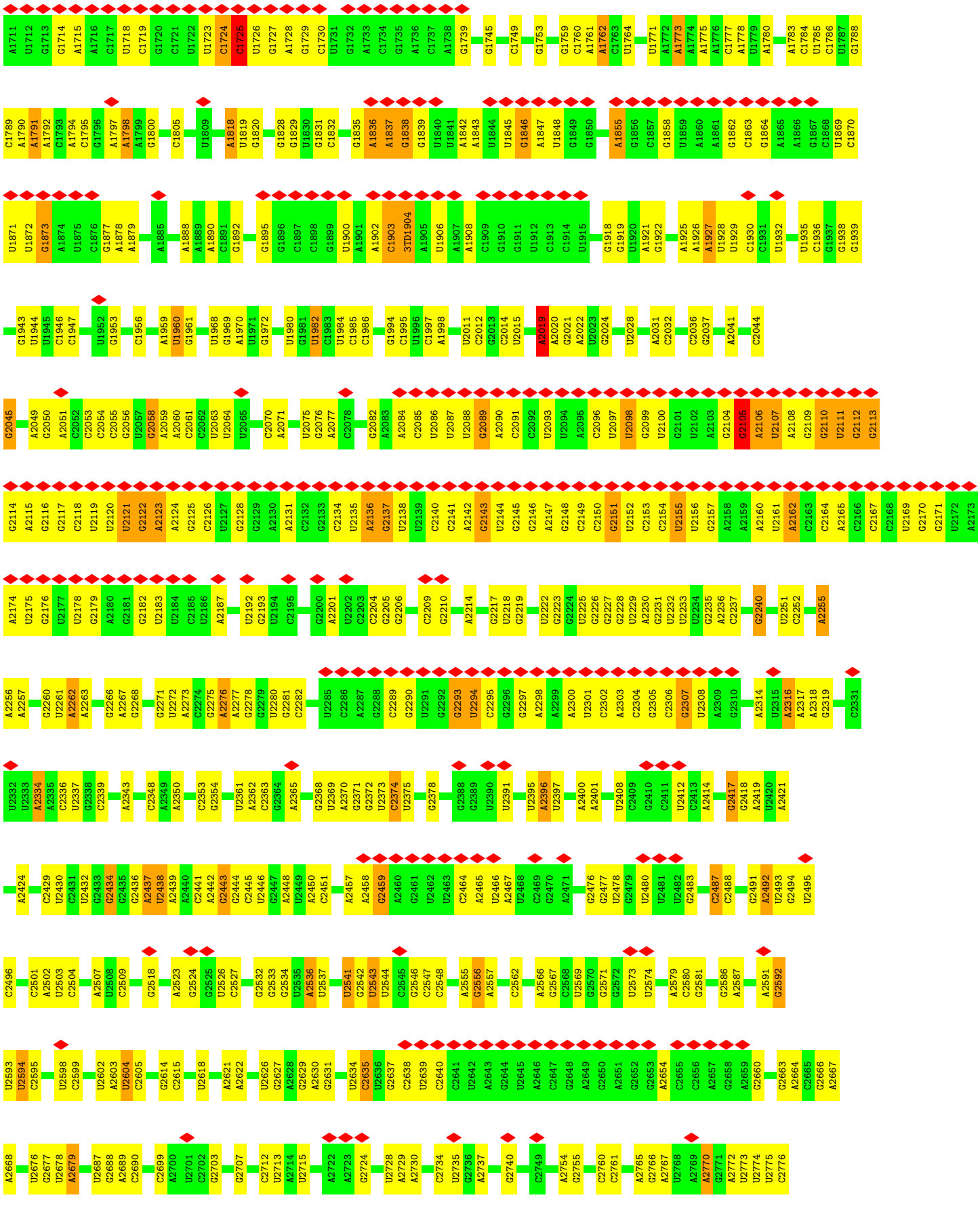


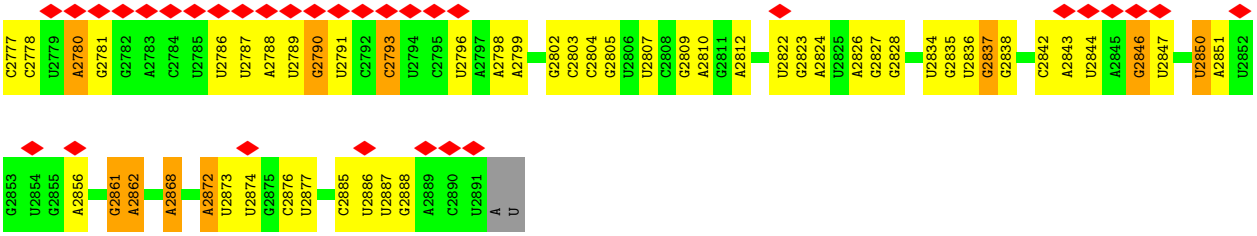







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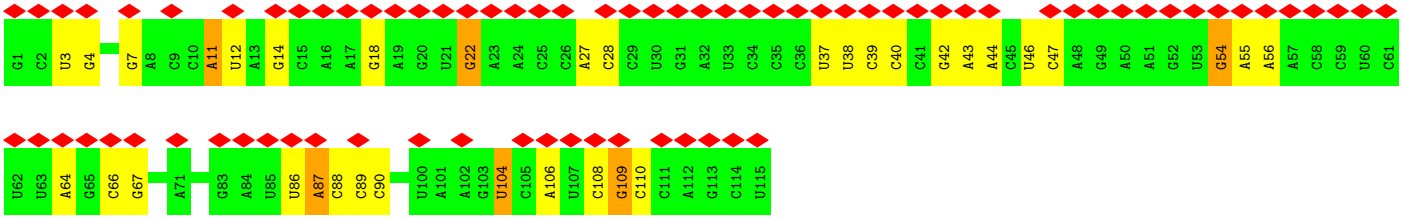

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• Molecule 29: RNA (115-MER)

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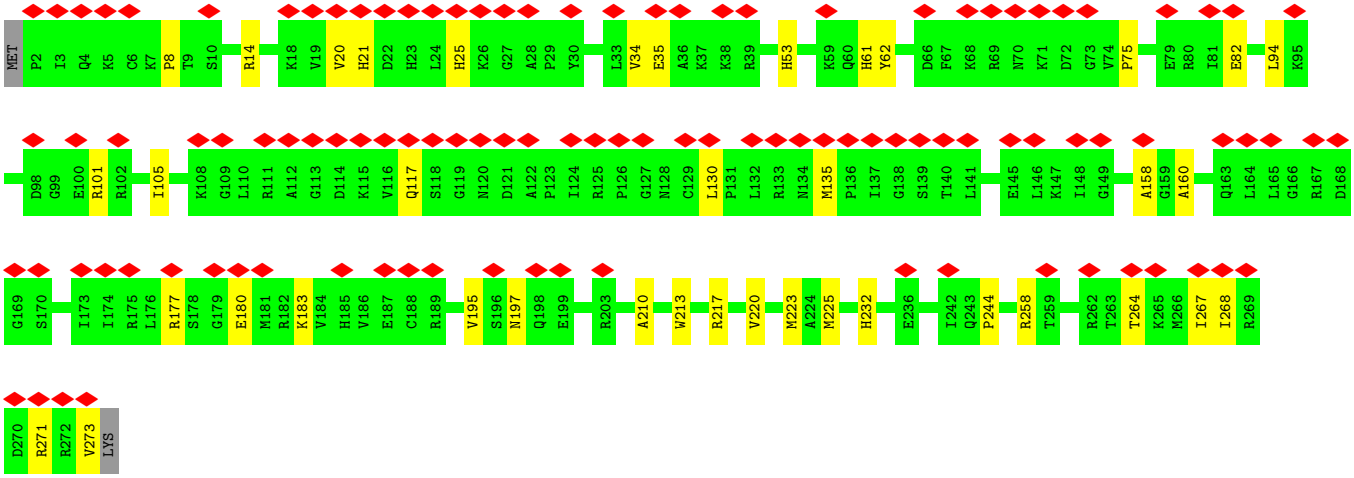




• Molecule 30: Large ribosomal subunit protein uL2

Chain c:

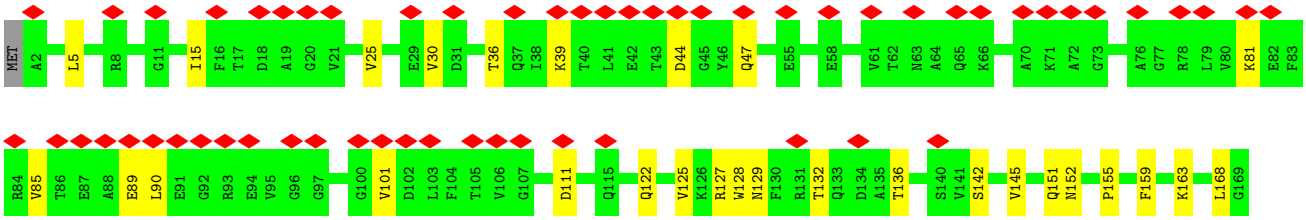


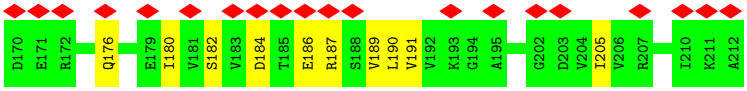


• Molecule 31: Large ribosomal subunit protein uL3

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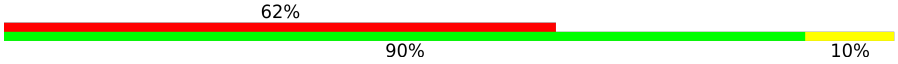


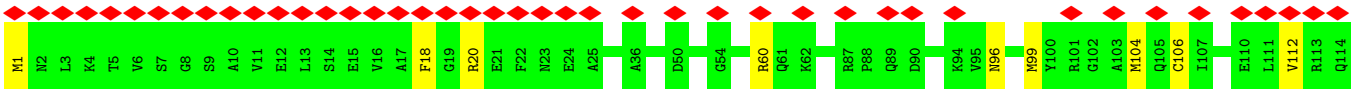


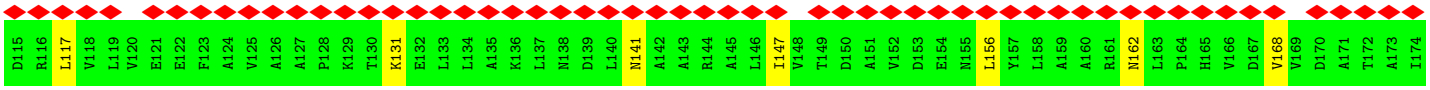


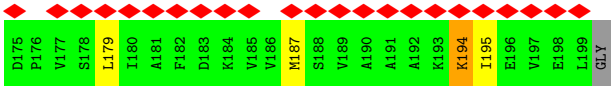
• Molecule 32: Large ribosomal subunit protein uL4

Chain e:



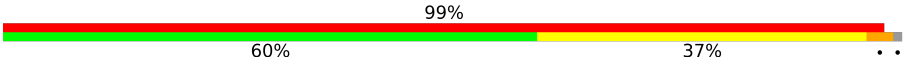


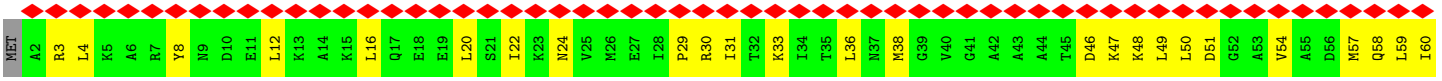


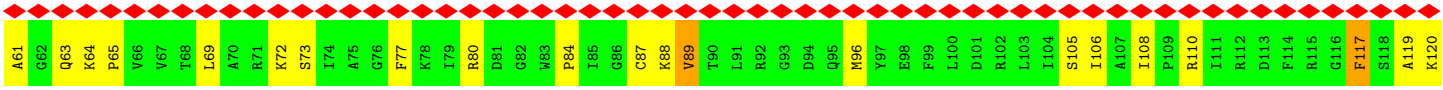


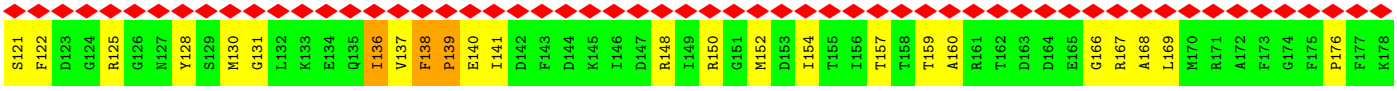
• Molecule 33: Large ribosomal subunit protein uL5

Chain f:



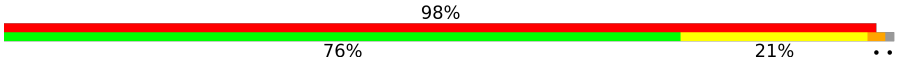




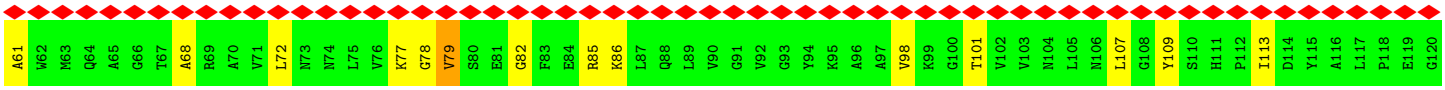


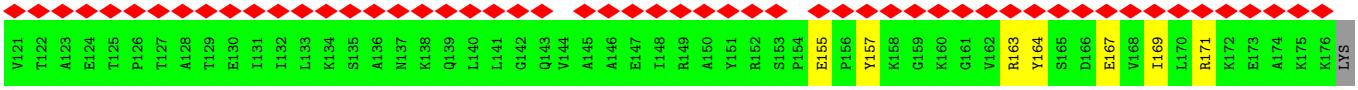
• Molecule 34: Large ribosomal subunit protein uL6

Chain g:





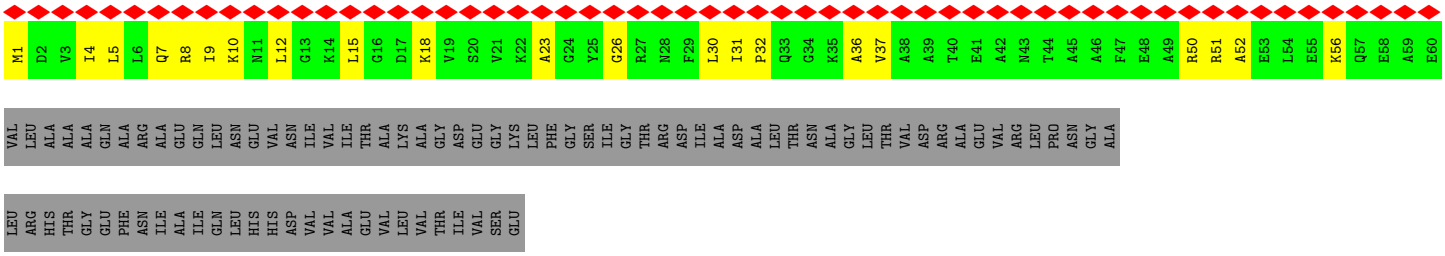




• Molecule 35: Large ribosomal subunit protein bL9

Chain h:

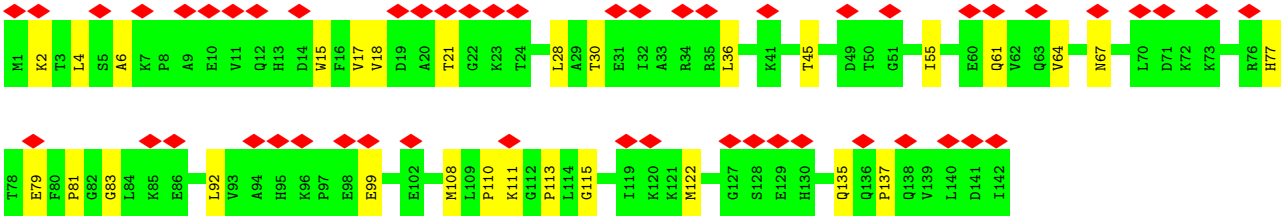




• Molecule 36: Large ribosomal subunit protein uL13

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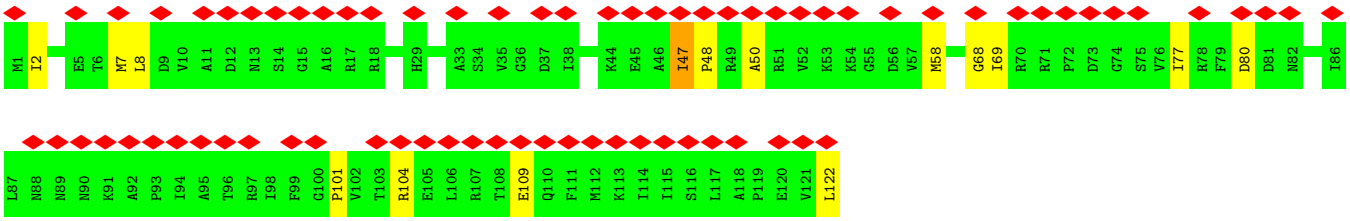




• Molecule 37: Large ribosomal subunit protein uL14

Chain j:

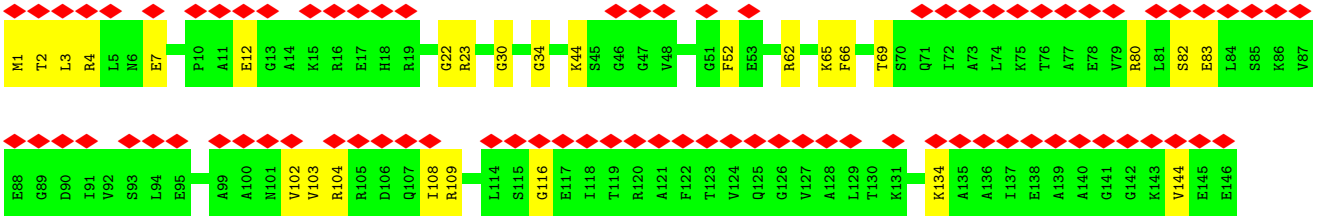




• Molecule 38: Large ribosomal subunit protein uL15

Chain k:

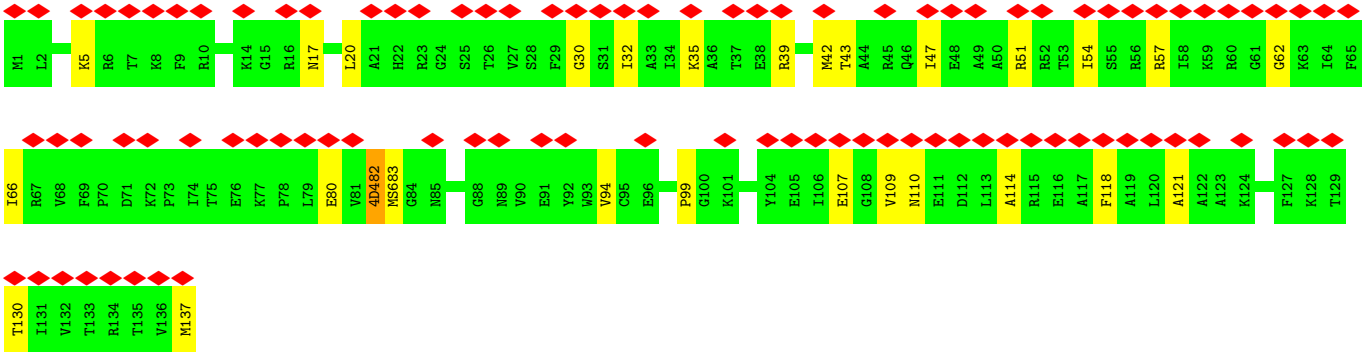




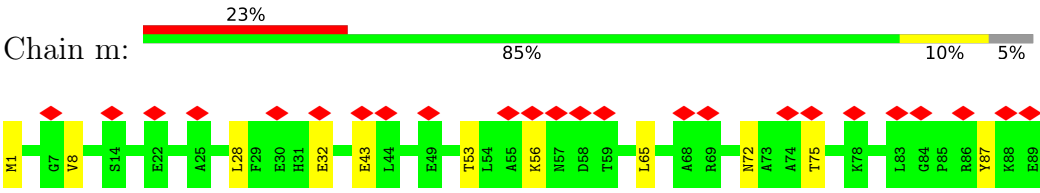
• Molecule 39: Large ribosomal subunit protein uL16

Chain l:

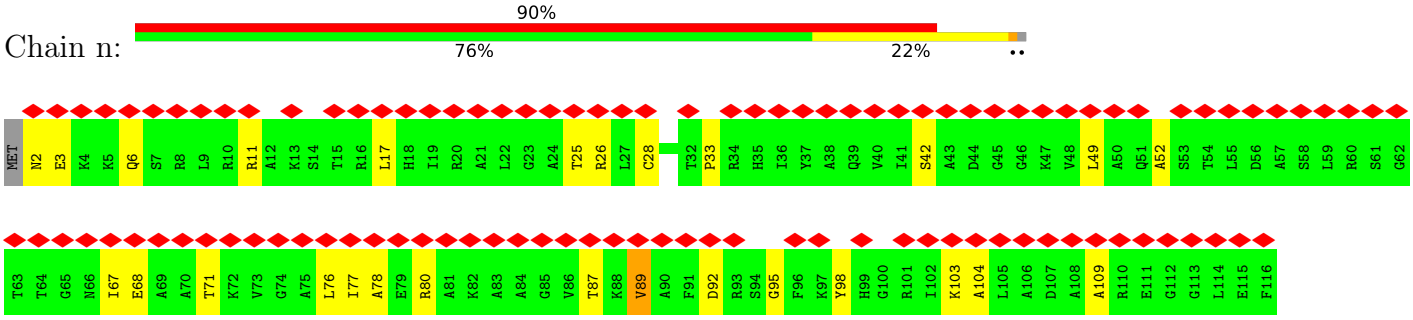




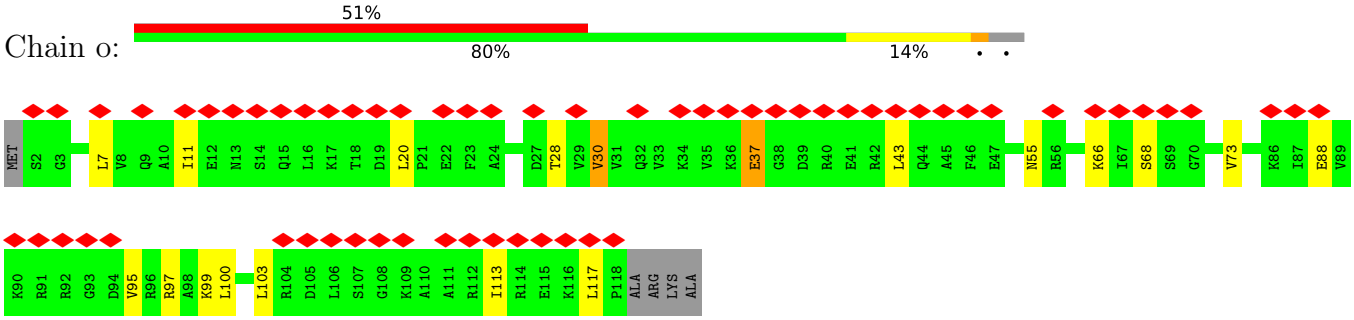
• Molecule 40: Large ribosomal subunit protein bL17



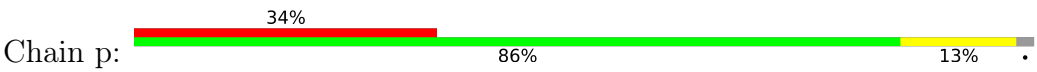
• Molecule 41: Large ribosomal subunit protein uL18

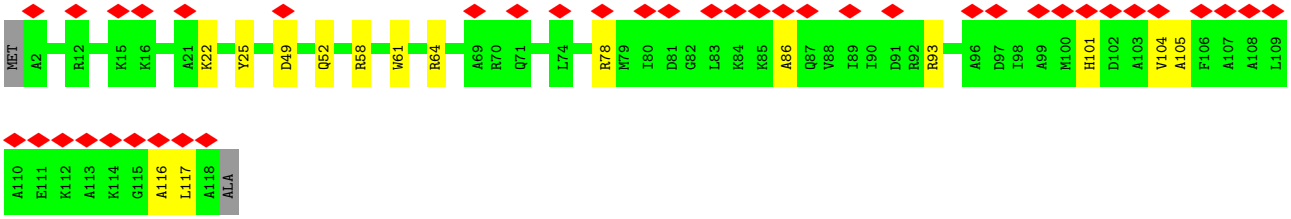


• Molecule 42: Large ribosomal subunit protein bL19

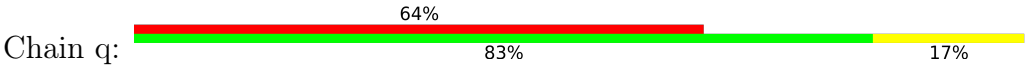


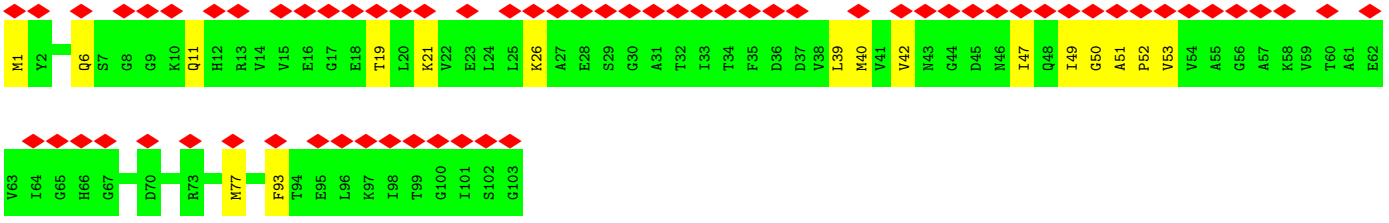
• Molecule 43: Large ribosomal subunit protein bL20



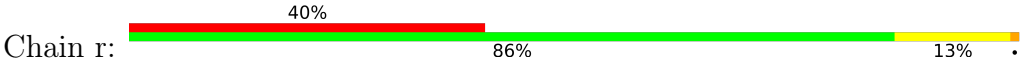


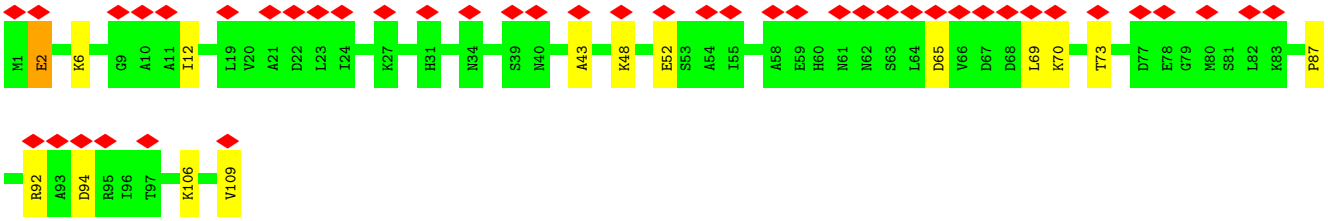
• Molecule 44: Large ribosomal subunit protein bL21





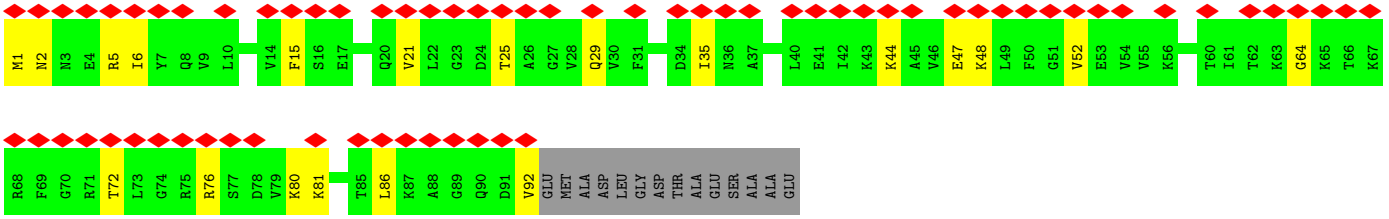
• Molecule 45: Large ribosomal subunit protein uL22



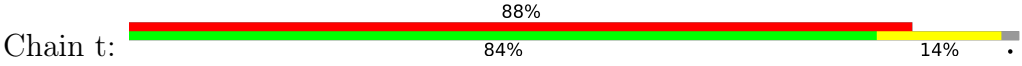


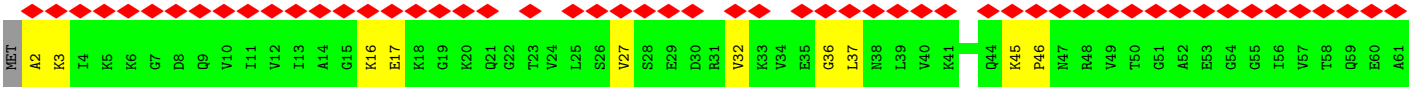
• Molecule 46: Large ribosomal subunit protein uL23

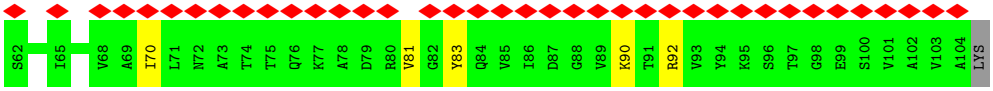




• Molecule 47: Large ribosomal subunit protein uL24



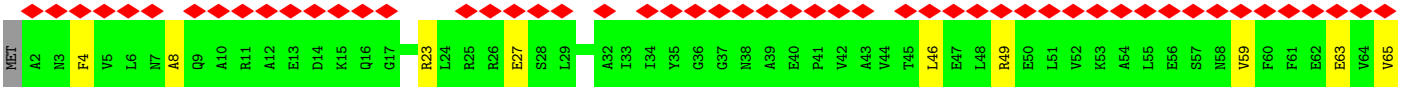


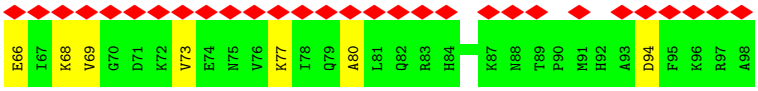


• Molecule 48: Large ribosomal subunit protein bL25

Chain u:



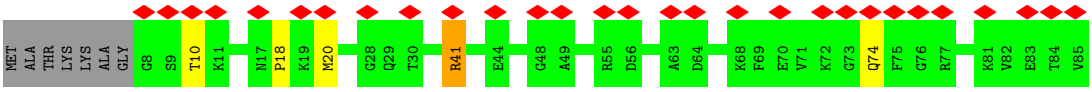




• Molecule 49: Large ribosomal subunit protein bL27

Chain v:

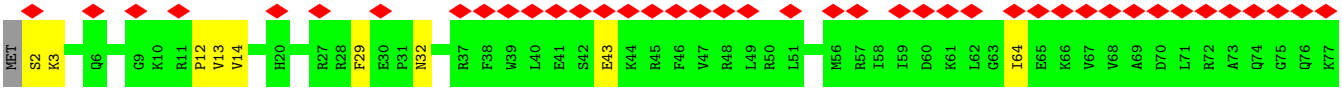




• Molecule 50: Large ribosomal subunit protein bL28

Chain w:



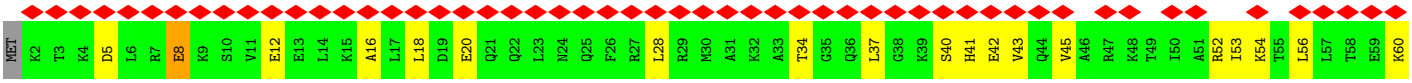


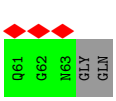


• Molecule 51: Large ribosomal subunit protein uL29

Chain x:



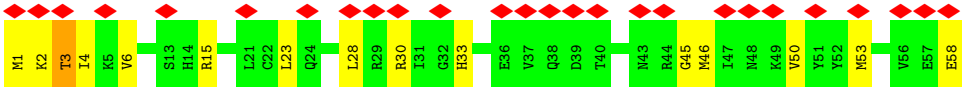




• Molecule 52: Large ribosomal subunit protein uL30

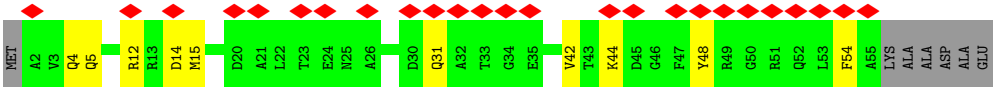
Chain y:





• Molecule 53: Large ribosomal subunit protein bL32





4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	26517	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	35	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	81000	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	1.666	Depositor
Minimum map value	-0.699	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.059	Depositor
Recommended contour level	0.55	Depositor
Map size (Å)	542.72, 542.72, 542.72	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.06, 1.06, 1.06	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: 5MU, IAS, OMU, 1MG, H2U, 2MG, MEQ, G7M, 4OC, MG, 6MZ, OMG, MS6, D2T, OMC, 5MC, 4D4, MA6, K, 2MA, 3TD, ZN, UR3, PSU

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	0	0.19	0/434	0.51	1/573 (0.2%)
2	1	0.10	0/367	0.27	0/481
3	2	0.11	0/515	0.32	0/678
4	3	0.14	0/296	0.28	0/389
5	4	0.12	0/561	0.37	0/750
6	A	0.26	0/36631	0.75	12/57133 (0.0%)
7	B	0.16	0/1832	0.45	0/2474
8	C	0.13	0/1714	0.31	0/2304
9	D	0.13	0/1653	0.31	0/2213
10	E	0.16	0/1141	0.35	0/1537
11	F	0.13	0/893	0.34	0/1204
12	G	0.15	0/1229	0.36	0/1647
13	H	0.14	0/993	0.38	0/1331
14	I	0.16	0/1006	0.35	0/1346
15	J	0.16	0/811	0.36	0/1096
16	K	0.18	0/869	0.40	0/1175
17	L	0.12	0/949	0.38	0/1270
18	M	0.17	0/922	0.46	0/1237
19	N	0.14	0/803	0.34	0/1071
20	O	0.15	0/715	0.33	0/958
21	P	0.14	0/655	0.33	0/879
22	Q	0.14	0/628	0.40	0/847
23	R	0.12	0/555	0.32	0/749
24	S	0.13	0/675	0.36	0/912
25	T	0.16	0/669	0.29	0/892
26	W	0.27	0/245	0.70	0/381
27	X	0.14	0/858	0.35	0/1150
28	a	0.28	0/68962	0.76	29/107563 (0.0%)
29	b	0.24	0/2739	0.74	0/4266
30	c	0.12	0/2152	0.31	0/2891
31	d	0.14	0/1580	0.31	0/2127

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
32	e	0.13	0/1532	0.32	0/2068
33	f	0.17	0/1415	0.45	0/1895
34	g	0.10	0/1346	0.28	0/1818
35	h	0.13	0/461	0.38	0/616
36	i	0.13	0/1151	0.32	0/1551
37	j	0.13	0/956	0.30	0/1286
38	k	0.11	0/1097	0.29	0/1461
39	l	0.15	0/1084	0.33	0/1448
40	m	0.13	0/956	0.31	0/1282
41	n	0.10	0/873	0.27	0/1167
42	o	0.12	0/931	0.31	0/1249
43	p	0.14	0/947	0.30	0/1262
44	q	0.13	0/818	0.35	0/1094
45	r	0.13	0/831	0.31	0/1113
46	s	0.12	0/723	0.32	0/967
47	t	0.10	0/770	0.30	0/1034
48	u	0.11	0/770	0.30	0/1036
49	v	0.12	0/597	0.26	0/798
50	w	0.14	0/642	0.33	0/856
51	x	0.12	0/499	0.31	0/662
52	y	0.16	0/468	0.41	0/624
53	z	0.14	0/453	0.36	0/604
All	All	0.24	0/153372	0.67	42/229415 (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
22	Q	0	1
39	l	0	2
All	All	0	3

There are no bond length outliers.

All (42) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
6	A	1532	C	C6-N1-C2	-8.58	116.87	120.30
6	A	1532	C	N3-C4-C5	-7.57	118.87	121.90
28	a	1066	C	N1-C2-O2	7.23	123.24	118.90
28	a	1301	U	C2-N1-C1'	7.20	126.34	117.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
6	A	415	C	N3-C2-O2	-7.12	116.92	121.90
28	a	1725	C	C4-C5-C6	7.03	120.91	117.40
28	a	1066	C	N3-C2-O2	-6.28	117.50	121.90
28	a	1724	C	C6-N1-C2	-6.27	117.79	120.30
28	a	781	U	C2-N1-C1'	6.23	125.18	117.70
1	0	1	MET	CB-CG-SD	6.20	131.29	112.70
28	a	1095	U	C2-N1-C1'	5.97	124.86	117.70
28	a	875	U	N3-C2-O2	-5.97	118.02	122.20
28	a	1301	U	N1-C2-O2	5.89	126.92	122.80
28	a	2793	C	C2-N1-C1'	5.81	125.19	118.80
6	A	420	G	N3-C4-N9	5.81	129.48	126.00
6	A	1155	C	C2-N1-C1'	5.74	125.11	118.80
6	A	1014	U	C2-N1-C1'	5.64	124.47	117.70
28	a	2443	G	O5'-C5'-C4'	5.61	113.89	109.40
28	a	2874	U	C2-N1-C1'	5.54	124.35	117.70
28	a	535	C	C2-N1-C1'	5.48	124.83	118.80
28	a	880	C	C2-N1-C1'	5.39	124.73	118.80
6	A	326	C	N1-C2-O2	5.39	122.13	118.90
28	a	876	C	O4'-C1'-N1	5.37	112.50	108.20
6	A	326	C	C2-N1-C1'	5.33	124.66	118.80
6	A	409	G	C4-N9-C1'	5.32	133.42	126.50
28	a	277	U	C2-N1-C1'	5.31	124.08	117.70
28	a	2105	G	O5'-C5'-C4'	5.30	113.64	109.40
28	a	141	A	O5'-C5'-C4'	5.28	113.62	109.40
28	a	277	U	N1-C2-O2	5.26	126.48	122.80
28	a	1301	U	N3-C2-O2	-5.25	118.52	122.20
6	A	420	G	C8-N9-C1'	-5.20	120.24	127.00
28	a	880	C	N1-C2-O2	5.19	122.01	118.90
6	A	420	G	C4-N9-C1'	5.18	133.24	126.50
28	a	1302	C	C2-N1-C1'	5.15	124.47	118.80
28	a	708	C	N1-C2-O2	5.13	121.97	118.90
28	a	140	A	O5'-C5'-C4'	5.11	113.49	109.40
28	a	192	G	C8-N9-C1'	-5.07	120.41	127.00
28	a	708	C	C2-N1-C1'	5.06	124.36	118.80
28	a	1521	G	P-O3'-C3'	5.04	125.75	119.70
28	a	283	U	C2-N1-C1'	5.02	123.72	117.70
6	A	990	G	C4-N9-C1'	5.02	133.02	126.50
28	a	1037	G	O4'-C1'-N9	5.00	112.20	108.20

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
22	Q	41	ARG	Sidechain
39	l	82	4D4	Peptide,Mainchain

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	0	427	0	462	11	0
2	1	363	0	401	5	0
3	2	509	0	566	11	0
4	3	295	0	325	4	0
5	4	552	0	552	24	0
6	A	32947	0	16584	480	0
7	B	1801	0	1814	58	0
8	C	1690	0	1774	29	0
9	D	1631	0	1691	45	0
10	E	1129	0	1173	21	0
11	F	878	0	878	17	0
12	G	1210	0	1255	30	0
13	H	985	0	1047	19	0
14	I	995	0	1053	29	0
15	J	801	0	832	15	0
16	K	862	0	871	20	0
17	L	947	0	997	17	0
18	M	912	0	975	18	0
19	N	792	0	833	21	0
20	O	705	0	712	16	0
21	P	644	0	655	10	0
22	Q	621	0	665	15	0
23	R	545	0	556	12	0
24	S	657	0	675	19	0
25	T	663	0	714	11	0
26	W	219	0	108	2	0
27	X	841	0	824	14	0
28	a	61984	0	31155	757	0
29	b	2450	0	1241	20	0
30	c	2111	0	2175	24	0
31	d	1573	0	1611	23	0
32	e	1511	0	1566	14	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
33	f	1395	0	1451	57	0
34	g	1327	0	1386	25	0
35	h	458	0	480	10	0
36	i	1125	0	1148	23	0
37	j	946	0	1007	11	0
38	k	1089	0	1158	19	0
39	l	1088	0	1150	16	0
40	m	942	0	987	7	0
41	n	865	0	905	13	0
42	o	919	0	973	17	0
43	p	934	0	997	13	0
44	q	807	0	842	12	0
45	r	826	0	894	9	0
46	s	717	0	777	11	0
47	t	766	0	816	9	0
48	u	760	0	783	8	0
49	v	589	0	592	5	0
50	w	632	0	667	9	0
51	x	498	0	537	13	0
52	y	463	0	488	11	0
53	z	447	0	435	8	0
54	1	1	0	0	0	0
54	3	1	0	0	0	0
54	A	47	0	0	0	0
54	L	1	0	0	0	0
54	a	111	0	0	0	0
54	b	1	0	0	0	0
54	c	4	0	0	0	0
54	d	2	0	0	0	0
54	t	1	0	0	0	0
55	3	1	0	0	0	0
55	4	1	0	0	0	0
56	A	96	0	0	0	0
56	J	1	0	0	0	0
56	X	1	0	0	0	0
56	a	249	0	0	0	0
56	b	5	0	0	0	0
56	c	2	0	0	0	0
56	d	1	0	0	0	0
56	k	1	0	0	0	0
56	p	1	0	0	0	0
56	s	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
56	v	1	0	0	0	0
56	z	1	0	0	0	0
All	All	142374	0	95213	1972	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 8.

All (1972) 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)
28:a:140:A:HO2'	28:a:141:A:H8	1.04	1.02
6:A:905:A:HO2'	6:A:906:A:H8	1.07	0.95
28:a:467:C:O2	28:a:471:A:N6	2.08	0.85
24:S:3:ARG:HH21	24:S:7:LYS:HG2	1.42	0.83
30:c:130:LEU:HB2	30:c:135:MET:HE2	1.61	0.83
28:a:536:U:O2	28:a:539:G:O6	1.96	0.83
28:a:1588:A:H5"	28:a:1589:A:H5'	1.59	0.83
2:1:1:MET:H2	28:a:1610:G:H21	1.27	0.82
6:A:670:A:H2'	6:A:671:G:C8	2.15	0.81
47:t:45:LYS:HD3	47:t:46:PRO:HD2	1.62	0.81
6:A:1140:G:H2'	6:A:1141:G:H8	1.44	0.81
36:i:6:ALA:H	36:i:45:THR:HG21	1.46	0.80
35:h:4:ILE:HG22	35:h:18:LYS:HG3	1.62	0.80
31:d:5:LEU:HD13	31:d:30:VAL:HG11	1.61	0.80
28:a:1059:A:H1'	28:a:1086:A:H4'	1.64	0.80
30:c:232:HIS:HE2	30:c:244:PRO:HA	1.46	0.80
33:f:50:LEU:HD21	33:f:84:PRO:HB2	1.64	0.79
28:a:872:G:H1	28:a:886:U:H3	0.80	0.79
9:D:32:THR:HG22	9:D:34:LYS:H	1.47	0.78
6:A:661:G:H22	6:A:738:G:H1	1.31	0.78
28:a:2141:C:H2'	28:a:2142:A:H8	1.49	0.78
28:a:2217:G:H2'	28:a:2218:U:H6	1.50	0.77
28:a:1925:A:H2	28:a:1932:U:H3	1.31	0.77
28:a:45:G:H5"	28:a:46:G:H5'	1.67	0.77
28:a:2317:A:H2'	28:a:2318:A:C8	2.19	0.77
6:A:1003:C:N3	6:A:1019:U:O4	2.17	0.76
6:A:74:G:H8	6:A:93:A:H62	1.31	0.76
1:0:5:ILE:HD13	1:0:21:LYS:HB2	1.68	0.76
15:J:9:ARG:HG3	15:J:99:GLN:HB2	1.68	0.75
6:A:466:C:H2'	6:A:467:U:C6	2.22	0.75
28:a:520:A:H5'	36:i:113:PRO:HG3	1.69	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:t:27:VAL:HG22	47:t:32:VAL:HG22	1.69	0.74
6:A:271:G:H5'	22:Q:17:LYS:HE2	1.69	0.74
28:a:1723:U:H2'	28:a:1724:C:H6	1.52	0.74
1:0:21:LYS:HD2	1:0:26:MET:HG2	1.69	0.74
36:i:45:THR:HG22	43:p:64:ARG:HH21	1.52	0.73
28:a:1837:A:HO2'	28:a:1838:G:H8	1.34	0.73
28:a:902:A:H8	28:a:2266:G:H21	1.35	0.72
28:a:1018:A:H2'	28:a:1019:A:C8	2.24	0.72
28:a:572:C:H2'	28:a:573:A:H8	1.55	0.72
6:A:1447:G:H21	6:A:1450:A:H2	1.37	0.72
28:a:1457:A:H2'	28:a:1458:A:C8	2.24	0.72
6:A:639:A:H2'	6:A:640:C:H6	1.54	0.71
28:a:2280:U:H2'	28:a:2281:G:C8	2.25	0.71
6:A:1136:G:H4'	6:A:1137:A:H5'	1.72	0.71
6:A:671:G:H2'	6:A:672:A:H8	1.55	0.71
9:D:106:ARG:HB3	9:D:170:PRO:HG2	1.73	0.71
28:a:1457:A:H2'	28:a:1458:A:H8	1.56	0.71
38:k:4:ARG:HB2	38:k:7:GLU:HG3	1.73	0.71
12:G:93:PRO:HA	12:G:96:ARG:HD3	1.73	0.70
28:a:28:A:H61	28:a:504:G:H1'	1.56	0.70
28:a:2317:A:H2'	28:a:2318:A:H8	1.55	0.70
13:H:18:GLN:HE22	13:H:73:ILE:H	1.38	0.70
9:D:56:GLN:HB3	9:D:205:LEU:HB2	1.74	0.69
6:A:733:C:H2'	6:A:734:A:H8	1.56	0.69
9:D:60:LYS:HA	9:D:202:ILE:HD11	1.74	0.69
28:a:839:U:H2'	28:a:840:A:H8	1.56	0.69
6:A:498:C:H2'	6:A:499:A:H8	1.58	0.69
6:A:710:G:H2'	6:A:711:G:C8	2.28	0.69
6:A:943:A:H2'	6:A:944:G:C8	2.28	0.69
6:A:1419:U:H5"	37:j:48:PRO:HB3	1.75	0.69
28:a:872:G:N2	28:a:886:U:O2	2.22	0.69
6:A:943:A:H2'	6:A:944:G:H8	1.58	0.69
6:A:1536:C:N3	26:W:7:U:O4	2.25	0.69
6:A:711:G:H2'	6:A:712:A:C8	2.28	0.69
34:g:30:LYS:HD2	34:g:82:GLY:H	1.58	0.69
6:A:42:C:H2'	6:A:43:G:H8	1.58	0.68
15:J:35:GLN:HE22	15:J:78:GLN:HB2	1.58	0.68
28:a:512:A:H2'	28:a:513:U:H6	1.58	0.68
28:a:1052:G:H2'	28:a:1053:G:H8	1.58	0.68
28:a:2579:A:H2'	28:a:2580:C:H6	1.58	0.68
33:f:29:PRO:HB3	33:f:160:ALA:HB2	1.75	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:S:79:THR:HG21	24:S:81:ARG:HH21	1.59	0.68
28:a:2235:G:H2'	28:a:2236:A:H8	1.58	0.68
11:F:2:ARG:HG2	11:F:91:ARG:HE	1.58	0.68
14:I:17:VAL:HG23	14:I:63:ILE:HG12	1.76	0.68
28:a:2483:G:H4'	39:l:80:GLU:HG3	1.76	0.68
6:A:828:C:H4'	7:B:23:ARG:HH21	1.58	0.68
6:A:386:U:H2'	6:A:387:C:C6	2.30	0.67
15:J:42:MET:HB2	15:J:71:LYS:HB3	1.76	0.67
28:a:2546:G:H2'	28:a:2547:C:C6	2.30	0.67
6:A:6:C:H2'	6:A:7:U:H2'	1.75	0.67
6:A:220:A:H2'	6:A:221:U:H6	1.60	0.67
28:a:2217:G:H2'	28:a:2218:U:C6	2.29	0.67
28:a:1627:G:H2'	28:a:1628:A:C8	2.29	0.67
28:a:559:U:H1'	28:a:2019:6MZ:H9C1	1.76	0.67
6:A:704:U:H2'	6:A:705:C:H6	1.60	0.66
16:K:63:GLN:O	16:K:67:GLU:HG3	1.95	0.66
28:a:471:A:H4'	28:a:472:A:H5'	1.77	0.66
28:a:572:C:H2'	28:a:573:A:C8	2.30	0.66
6:A:1315:A:H5"	24:S:3:ARG:NH1	2.10	0.66
28:a:1421:A:H2'	28:a:1422:A:C8	2.30	0.66
5:4:7:PRO:HD3	33:f:58:GLN:HE22	1.60	0.66
6:A:231:U:H2'	6:A:232:A:H8	1.59	0.66
6:A:1224:A:H5"	24:S:83:HIS:HD2	1.61	0.66
13:H:39:VAL:HG21	13:H:111:ILE:HG22	1.78	0.66
30:c:183:LYS:HG3	30:c:268:ILE:HD11	1.77	0.66
6:A:466:C:H2'	6:A:467:U:H6	1.60	0.65
6:A:1215:C:H2'	6:A:1216:A:C8	2.31	0.65
6:A:1247:A:H2'	6:A:1248:A:C8	2.31	0.65
14:I:33:LEU:HD11	14:I:46:VAL:HG11	1.78	0.65
28:a:244:A:H5"	38:k:69:THR:HG21	1.78	0.65
8:C:130:PHE:O	8:C:134:MET:HG3	1.96	0.65
6:A:1324:C:H2'	6:A:1325:C:H6	1.61	0.65
28:a:891:A:H3'	28:a:892:A:H8	1.61	0.65
7:B:69:VAL:HG22	7:B:162:ALA:HB3	1.79	0.65
8:C:78:GLY:HA3	8:C:83:ASP:HB2	1.77	0.65
28:a:2120:U:H5'	28:a:2121:U:H2'	1.77	0.65
6:A:733:C:H2'	6:A:734:A:C8	2.32	0.65
7:B:11:LEU:HD23	7:B:214:LEU:HD22	1.78	0.65
7:B:85:GLN:HE22	7:B:220:ALA:HB2	1.61	0.65
28:a:1561:A:H2'	28:a:1562:A:C8	2.32	0.65
6:A:670:A:H2'	6:A:671:G:H8	1.61	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:1140:G:H2'	6:A:1141:G:C8	2.30	0.65
28:a:811:A:H4'	28:a:827:G:H22	1.62	0.65
28:a:1406:G:H21	28:a:1571:A:H62	1.45	0.65
6:A:1315:A:H5"	24:S:3:ARG:HH12	1.62	0.64
17:L:50:ARG:HB3	17:L:66:TYR:HE1	1.62	0.64
6:A:498:C:H2'	6:A:499:A:C8	2.32	0.64
17:L:34:CYS:HA	17:L:55:VAL:HA	1.79	0.64
6:A:420:G:H2'	6:A:421:G:C8	2.33	0.64
16:K:21:HIS:HB2	16:K:32:THR:HG22	1.80	0.64
6:A:572:G:O2'	6:A:818:G:H5'	1.98	0.64
6:A:1530:C:H2'	6:A:1531:A:H8	1.60	0.64
6:A:19:U:H2'	6:A:20:C:C6	2.32	0.64
33:f:30:ARG:H	33:f:159:THR:HG22	1.60	0.64
7:B:14:ALA:HB3	7:B:214:LEU:HD11	1.80	0.64
12:G:140:ASP:HA	12:G:143:ARG:HG2	1.80	0.64
28:a:2123:A:H2'	28:a:2124:A:C8	2.33	0.64
10:E:55:VAL:HG23	10:E:56:PRO:HD3	1.79	0.64
11:F:78:PHE:HD2	11:F:84:ILE:HD13	1.62	0.64
31:d:159:PHE:HB3	36:i:81:PRO:HG3	1.79	0.64
6:A:456:U:H2'	6:A:457:A:H8	1.62	0.64
28:a:2280:U:H2'	28:a:2281:G:H8	1.63	0.64
6:A:588:U:H2'	6:A:589:A:C8	2.33	0.64
19:N:19:LYS:HG2	19:N:20:TYR:HD1	1.63	0.64
28:a:745:C:H2'	28:a:746:C:H6	1.61	0.64
28:a:804:U:H2'	28:a:805:C:H6	1.62	0.63
6:A:143:G:H2'	6:A:144:G:C8	2.33	0.63
15:J:8:ILE:HB	15:J:74:ILE:HG23	1.80	0.63
14:I:43:ARG:O	14:I:46:VAL:HG12	1.99	0.63
28:a:5:A:H2'	28:a:6:A:C8	2.34	0.63
28:a:1530:C:H2'	28:a:1531:A:C8	2.34	0.63
28:a:2837:G:H5"	42:o:97:ARG:HA	1.81	0.63
28:a:28:A:N6	28:a:504:G:H1'	2.13	0.63
28:a:2075:U:H2'	28:a:2076:G:C8	2.33	0.63
34:g:164:TYR:HB2	34:g:167:GLU:HB3	1.81	0.63
19:N:19:LYS:HG2	19:N:20:TYR:CD1	2.33	0.63
6:A:69:C:H2'	6:A:70:G:C8	2.34	0.63
28:a:823:U:H2'	28:a:824:A:H8	1.62	0.63
28:a:589:U:H2'	28:a:590:A:H8	1.63	0.62
28:a:2396:A:H2'	28:a:2397:U:H6	1.64	0.62
33:f:31:ILE:HG12	33:f:169:LEU:HD21	1.80	0.62
6:A:27:C:H5'	6:A:521:G:H1'	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:1162:U:H3	6:A:1168:A:H62	1.46	0.62
2:1:35:ARG:HG3	2:1:42:LEU:HD11	1.82	0.62
5:4:26:SER:HB2	33:f:139:PRO:HB3	1.82	0.62
6:A:489:C:H2'	6:A:490:A:C8	2.34	0.62
28:a:1946:C:H2'	28:a:1947:C:H6	1.64	0.62
13:H:5:ASP:OD1	13:H:8:ALA:HB3	1.99	0.62
34:g:163:ARG:HH21	34:g:169:ILE:HG12	1.65	0.62
6:A:536:A:H2'	6:A:537:G:C8	2.34	0.62
28:a:2579:A:H2'	28:a:2580:C:C6	2.35	0.62
18:M:116:ILE:HG22	18:M:117:LYS:HG3	1.80	0.62
22:Q:12:LYS:HE3	22:Q:57:GLY:HA2	1.80	0.62
9:D:38:ALA:HB3	9:D:43:GLY:HA2	1.81	0.62
28:a:1783:A:H2'	28:a:1784:C:C6	2.35	0.62
28:a:2232:U:H2'	28:a:2233:U:C6	2.35	0.62
6:A:232:A:H2'	6:A:233:A:C8	2.35	0.62
28:a:990:A:H2'	28:a:991:A:C8	2.34	0.62
5:4:12:LEU:HD11	5:4:33:ILE:HG12	1.82	0.62
10:E:114:LEU:HD13	10:E:122:VAL:HG11	1.81	0.62
23:R:43:ARG:HG2	23:R:44:ILE:HD12	1.82	0.62
27:X:3:ILE:HD12	27:X:22:ARG:HG3	1.82	0.62
30:c:232:HIS:NE2	30:c:244:PRO:HA	2.15	0.62
40:m:32:GLU:HG2	40:m:115:LEU:HD12	1.81	0.62
28:a:1069:C:H41	28:a:1078:A:H5"	1.64	0.62
28:a:2170:G:H2'	28:a:2171:G:O4'	2.00	0.61
28:a:842:C:H2'	28:a:843:A:H8	1.65	0.61
28:a:273:A:H2'	28:a:274:A:C8	2.35	0.61
28:a:2235:G:H2'	28:a:2236:A:C8	2.34	0.61
39:l:39:ARG:HB3	39:l:99:PRO:HD3	1.82	0.61
6:A:1409:C:H2'	6:A:1410:A:C8	2.36	0.61
28:a:720:G:H5"	28:a:721:A:H5"	1.83	0.61
1:0:6:ARG:HG3	1:0:50:ILE:HG13	1.82	0.61
23:R:50:ARG:O	23:R:54:GLN:HG2	2.01	0.61
48:u:23:ARG:O	48:u:27:GLU:HG3	2.00	0.61
10:E:158:LYS:HB3	10:E:162:GLU:HG3	1.82	0.61
28:a:513:U:H2'	28:a:514:G:C8	2.35	0.61
28:a:1837:A:O2'	28:a:1838:G:H8	1.83	0.61
6:A:989:U:H5	6:A:1041:A:H2	1.47	0.61
6:A:1215:C:H2'	6:A:1216:A:H8	1.65	0.61
28:a:161:A:H3'	28:a:162:U:H5"	1.83	0.61
6:A:1406:C:H2'	6:A:1407:A:H8	1.64	0.61
6:A:1325:C:C2	6:A:1326:A:C8	2.89	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:M:19:LEU:HD23	18:M:30:ALA:HA	1.81	0.61
28:a:2105:G:H2'	28:a:2106:A:C5	2.36	0.61
28:a:2169:U:H2'	28:a:2170:G:C8	2.36	0.61
39:l:30:GLY:HA2	39:l:107:GLU:HB2	1.81	0.61
41:n:78:ALA:HB2	41:n:109:ALA:HA	1.83	0.61
31:d:184:ASP:HB3	31:d:189:VAL:HG22	1.82	0.61
38:k:82:SER:HB3	38:k:116:GLY:HA3	1.83	0.61
6:A:197:G:H21	6:A:465:C:H1'	1.64	0.60
6:A:231:U:H2'	6:A:232:A:C8	2.35	0.60
6:A:671:G:H21	16:K:117:HIS:HB2	1.66	0.60
7:B:45:LEU:HA	7:B:48:THR:HG22	1.82	0.60
28:a:2503:U:H2'	28:a:2504:C:C6	2.36	0.60
29:b:11:A:H8	29:b:67:G:H21	1.48	0.60
6:A:456:U:H2'	6:A:457:A:C8	2.36	0.60
28:a:2222:U:H2'	28:a:2223:G:C8	2.36	0.60
36:i:36:LEU:HD11	36:i:122:MET:HB2	1.84	0.60
6:A:820:C:HO2'	13:H:2:SER:N	1.99	0.60
28:a:486:G:H4'	45:r:6:LYS:HB2	1.83	0.60
28:a:823:U:H2'	28:a:824:A:C8	2.35	0.60
51:x:16:ALA:O	51:x:20:GLU:HG3	2.01	0.60
6:A:671:G:H2'	6:A:672:A:C8	2.36	0.60
28:a:1516:A:HO2'	28:a:1517:A:H8	1.49	0.60
28:a:2823:G:H2'	28:a:2868:A:H61	1.67	0.60
6:A:1324:C:C2	6:A:1325:C:C5	2.89	0.60
6:A:1007:C:H2'	6:A:1009:A:C8	2.36	0.60
28:a:1341:A:H2'	28:a:1342:A:C8	2.37	0.60
6:A:419:U:H2'	6:A:420:G:O4'	2.02	0.60
6:A:615:C:H5'	6:A:616:U:H5"	1.83	0.60
12:G:125:LEU:O	12:G:129:GLU:HG2	2.01	0.60
15:J:6:ILE:HB	15:J:76:ILE:HB	1.84	0.60
28:a:1783:A:H2'	28:a:1784:C:H6	1.67	0.60
28:a:1785:U:H2'	28:a:1786:C:H6	1.66	0.60
28:a:1791:A:H2'	28:a:1792:A:C8	2.36	0.60
18:M:85:CYS:O	18:M:89:LEU:HD12	2.02	0.60
28:a:2316:A:H2'	28:a:2317:A:C8	2.37	0.60
6:A:218:U:H2'	6:A:219:A:H8	1.67	0.60
6:A:467:U:H2'	6:A:468:A:C8	2.37	0.60
6:A:899:G:H2'	6:A:900:A:H8	1.67	0.60
6:A:1339:C:H2'	6:A:1340:G:C8	2.37	0.60
28:a:733:G:H2'	28:a:734:U:C6	2.37	0.60
6:A:1011:A:H2'	6:A:1012:G:C8	2.37	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:1123:U:P	15:J:7:ARG:HH22	2.24	0.59
14:I:13:ALA:HB2	14:I:68:GLY:HA3	1.84	0.59
28:a:584:U:H2'	28:a:585:U:C6	2.37	0.59
28:a:2053:C:H2'	28:a:2054:C:C6	2.37	0.59
6:A:1388:U:H2'	6:A:1389:G:C8	2.37	0.59
24:S:10:PHE:HE2	24:S:37:ARG:HG3	1.67	0.59
28:a:1527:G:H2'	28:a:1528:U:C6	2.37	0.59
28:a:1673:G:H2'	28:a:1674:U:C6	2.36	0.59
1:0:5:ILE:HD12	1:0:47:GLU:HG3	1.83	0.59
6:A:201:A:H61	6:A:209:A:H61	1.49	0.59
6:A:639:A:H2'	6:A:640:C:C6	2.37	0.59
6:A:1103:G:H5"	8:C:172:ARG:HG2	1.84	0.59
6:A:1323:U:H2'	6:A:1324:C:H6	1.66	0.59
24:S:3:ARG:NH1	24:S:10:PHE:HB2	2.17	0.59
28:a:349:A:C4	28:a:350:C:C5	2.91	0.59
33:f:51:ASP:HA	33:f:54:VAL:HG22	1.83	0.59
34:g:24:VAL:HG21	34:g:72:LEU:HD21	1.84	0.59
49:v:41:ARG:HA	49:v:41:ARG:HE	1.67	0.59
41:n:28:CYS:HA	41:n:92:ASP:HB3	1.85	0.59
28:a:2573:U:H2'	28:a:2574:U:H2'	1.84	0.59
6:A:1320:G:H2'	6:A:1321:A:C8	2.37	0.59
8:C:97:VAL:HG22	8:C:98:PRO:HD2	1.85	0.59
28:a:599:A:H2'	28:a:600:A:C8	2.37	0.59
5:4:35:LEU:HD11	33:f:106:ILE:HG13	1.85	0.59
6:A:386:U:H2'	6:A:387:C:H6	1.67	0.59
6:A:704:U:C2	6:A:705:C:C5	2.91	0.59
15:J:85:ASP:O	15:J:89:LYS:HG3	2.03	0.59
28:a:804:U:H2'	28:a:805:C:C6	2.38	0.59
28:a:2580:C:H2'	28:a:2581:G:H8	1.67	0.59
47:t:70:ILE:HG21	47:t:81:VAL:HG23	1.85	0.59
6:A:220:A:H2'	6:A:221:U:C6	2.38	0.59
6:A:549:U:H2'	6:A:550:A:H8	1.66	0.59
16:K:58:THR:HG22	16:K:60:PHE:H	1.67	0.59
28:a:512:A:H2'	28:a:513:U:C6	2.38	0.59
28:a:590:A:H2'	28:a:591:G:H8	1.66	0.59
28:a:787:C:H2'	28:a:788:U:C6	2.37	0.59
7:B:115:ARG:O	7:B:119:LEU:HD12	2.03	0.58
29:b:89:C:C2	29:b:90:C:C5	2.91	0.58
34:g:44:LYS:HD2	34:g:46:GLU:HG3	1.85	0.58
48:u:8:ALA:HB2	48:u:46:LEU:HD23	1.84	0.58
6:A:712:A:H2'	6:A:713:A:C8	2.38	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:E:151:LYS:O	10:E:155:LYS:HG2	2.03	0.58
28:a:1526:U:H3'	28:a:1527:G:O4'	2.03	0.58
46:s:21:VAL:O	46:s:25:THR:HG22	2.03	0.58
6:A:1248:A:H2'	6:A:1249:A:C8	2.38	0.58
23:R:34:THR:HG22	23:R:35:GLU:H	1.68	0.58
28:a:630:U:H2'	28:a:631:C:H6	1.68	0.58
28:a:1785:U:H2'	28:a:1786:C:C6	2.38	0.58
28:a:2063:U:H2'	28:a:2064:U:C6	2.38	0.58
6:A:818:G:H2'	6:A:819:U:C6	2.38	0.58
6:A:1001:A:H5'	6:A:1023:G:H22	1.68	0.58
28:a:1527:G:H2'	28:a:1528:U:H6	1.69	0.58
28:a:2222:U:H2'	28:a:2223:G:H8	1.68	0.58
30:c:35:GLU:HG3	30:c:62:TYR:HB3	1.85	0.58
6:A:821:U:H2'	6:A:822:A:H8	1.69	0.58
28:a:513:U:H2'	28:a:514:G:H8	1.69	0.58
33:f:8:TYR:HA	33:f:12:LEU:HB2	1.85	0.58
3:2:32:LEU:HB2	28:a:2408:U:H5"	1.84	0.58
6:A:265:U:H2'	6:A:266:A:C8	2.38	0.58
18:M:56:ILE:HA	18:M:59:GLU:OE2	2.04	0.58
6:A:42:C:H2'	6:A:43:G:C8	2.39	0.58
6:A:1309:G:H5'	24:S:5:LEU:HD21	1.85	0.58
28:a:5:A:H2'	28:a:6:A:H8	1.67	0.58
28:a:2056:G:H1	28:a:2432:U:H3	1.50	0.58
6:A:1259:C:H2'	6:A:1260:A:H8	1.69	0.58
28:a:1723:U:H2'	28:a:1724:C:C6	2.38	0.58
28:a:2396:A:C4	28:a:2397:U:C5	2.91	0.58
28:a:154:A:H2'	28:a:155:A:C8	2.38	0.58
28:a:2834:U:H2'	28:a:2835:G:C8	2.39	0.58
8:C:86:LYS:HE3	8:C:86:LYS:HA	1.85	0.57
14:I:63:ILE:HG21	14:I:77:ILE:HG13	1.85	0.57
15:J:7:ARG:HB2	15:J:101:ALA:HB3	1.86	0.57
18:M:77:ILE:O	18:M:81:MET:HG3	2.04	0.57
20:O:12:ILE:O	20:O:16:ALA:HB2	2.04	0.57
28:a:1349:G:H2'	28:a:1350:C:C6	2.39	0.57
28:a:2090:A:H2'	28:a:2091:C:H6	1.68	0.57
28:a:2457:A:P	28:a:2465:A:H61	2.27	0.57
6:A:610:C:H2'	6:A:611:C:C6	2.38	0.57
7:B:107:LYS:HA	7:B:110:ARG:HD3	1.86	0.57
28:a:2137:G:H2'	28:a:2138:U:C6	2.38	0.57
28:a:2205:G:H2'	28:a:2206:G:H8	1.68	0.57
28:a:2667:A:H2'	28:a:2668:A:C8	2.38	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:f:119:ALA:HB1	33:f:167:ARG:HD2	1.86	0.57
28:a:847:G:H2'	28:a:848:G:C8	2.39	0.57
2:1:10:LEU:HD23	28:a:761:G:H5"	1.85	0.57
6:A:43:G:H2'	6:A:44:G:C8	2.39	0.57
6:A:232:A:H2'	6:A:233:A:H8	1.69	0.57
28:a:2318:A:H2'	28:a:2319:G:C8	2.40	0.57
45:r:73:THR:HB	45:r:106:LYS:HB2	1.85	0.57
6:A:333:G:H2'	6:A:334:A:H8	1.70	0.57
6:A:704:U:H2'	6:A:705:C:C6	2.40	0.57
17:L:34:CYS:HB3	17:L:55:VAL:HG22	1.87	0.57
28:a:1374:A:H2'	28:a:1375:U:C6	2.40	0.57
6:A:725:A:H2'	6:A:726:A:C8	2.40	0.57
6:A:43:G:H2'	6:A:44:G:H8	1.70	0.57
28:a:733:G:H2'	28:a:734:U:H6	1.70	0.57
28:a:2580:C:H2'	28:a:2581:G:C8	2.39	0.57
39:l:51:ARG:HG3	39:l:66:ILE:HD11	1.86	0.57
6:A:1020:G:H2'	6:A:1021:G:C8	2.40	0.57
28:a:1724:C:C2	28:a:1725:C:C5	2.92	0.57
6:A:502:G:H5'	6:A:531:U:H2'	1.86	0.57
6:A:1504:A:H2'	6:A:1505:G:C8	2.40	0.57
28:a:536:U:O2	28:a:539:G:C6	2.57	0.57
36:i:2:LYS:HD3	43:p:93:ARG:HH21	1.70	0.57
7:B:70:LEU:HB2	7:B:163:LEU:HD13	1.87	0.56
14:I:127:LYS:HD3	27:X:69:PRO:HG2	1.85	0.56
20:O:3:LEU:HD21	20:O:34:ALA:HB1	1.87	0.56
28:a:2667:A:H2'	28:a:2668:A:H8	1.70	0.56
6:A:1520:G:H2'	6:A:1521:C:H6	1.71	0.56
19:N:88:VAL:HG22	19:N:96:VAL:HG21	1.87	0.56
28:a:573:A:H2'	28:a:574:G:C8	2.40	0.56
28:a:1071:U:H2'	28:a:1072:U:C6	2.39	0.56
28:a:2305:G:H1'	33:f:125:ARG:HH21	1.70	0.56
28:a:2687:U:H2'	28:a:2688:G:C8	2.40	0.56
6:A:502:G:H2'	6:A:503:G:H8	1.70	0.56
6:A:915:A:H2'	6:A:916:A:C8	2.40	0.56
7:B:78:ALA:O	7:B:82:ILE:HG22	2.06	0.56
27:X:28:GLU:HB3	27:X:91:LYS:HZ1	1.69	0.56
28:a:630:U:H2'	28:a:631:C:C6	2.39	0.56
28:a:1219:U:H2'	28:a:1220:G:H8	1.71	0.56
28:a:1303:C:H2'	28:a:1304:A:H8	1.70	0.56
32:e:117:LEU:HD11	32:e:187:MET:HE3	1.87	0.56
34:g:68:ALA:O	34:g:72:LEU:HD12	2.05	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:1510:A:H2'	6:A:1511:G:C8	2.40	0.56
22:Q:62:ILE:HG22	22:Q:76:LEU:HA	1.88	0.56
28:a:842:C:H2'	28:a:843:A:C8	2.40	0.56
38:k:134:LYS:HE3	38:k:144:VAL:HG21	1.87	0.56
6:A:1003:C:O2	6:A:1019:U:N3	2.26	0.56
6:A:1188:A:H8	6:A:1188:A:OP2	1.88	0.56
6:A:1387:U:H2'	6:A:1388:U:H6	1.70	0.56
25:T:32:ILE:HD11	25:T:58:ILE:HD11	1.87	0.56
28:a:1018:A:H2'	28:a:1019:A:H8	1.69	0.56
28:a:1049:G:H3'	28:a:1050:U:C5'	2.36	0.56
28:a:1341:A:H2'	28:a:1342:A:H8	1.71	0.56
34:g:19:GLN:HG3	34:g:24:VAL:HG12	1.86	0.56
6:A:650:A:C6	13:H:57:LYS:HB3	2.40	0.56
7:B:17:HIS:CD2	7:B:45:LEU:HD22	2.41	0.56
21:P:34:PHE:CD2	21:P:58:ASN:HB2	2.41	0.56
28:a:411:U:H2'	28:a:412:C:C6	2.41	0.56
6:A:659:G:H2'	6:A:660:A:C8	2.40	0.56
28:a:662:C:H2'	28:a:663:C:H6	1.69	0.56
28:a:868:U:O2	28:a:891:A:N7	2.39	0.56
28:a:1049:G:H3'	28:a:1050:U:H5'	1.87	0.56
28:a:2594:PSU:C4	28:a:2595:C:C5	2.93	0.56
37:j:122:LEU:HD13	42:o:73:VAL:HG11	1.87	0.56
6:A:3:U:H3'	6:A:4:A:C8	2.41	0.56
10:E:109:ALA:HB1	10:E:136:VAL:HG23	1.87	0.56
28:a:2604:U:H1'	53:z:4:GLN:HB3	1.87	0.56
11:F:25:TYR:O	11:F:29:ILE:HG22	2.06	0.56
22:Q:25:LEU:HD11	22:Q:42:SER:HB2	1.88	0.56
22:Q:29:ARG:HD2	22:Q:38:SER:HB2	1.88	0.56
28:a:173:G:H2'	28:a:174:C:H6	1.71	0.56
28:a:840:A:H2'	28:a:841:C:H6	1.71	0.56
28:a:2396:A:H2'	28:a:2397:U:C6	2.41	0.56
29:b:89:C:H2'	29:b:90:C:H6	1.69	0.56
6:A:218:U:H2'	6:A:219:A:C8	2.41	0.56
28:a:1151:G:H2'	28:a:1152:C:H6	1.69	0.56
34:g:43:LEU:HD11	34:g:50:LEU:HD22	1.87	0.56
28:a:599:A:H2'	28:a:600:A:H8	1.70	0.55
28:a:2090:A:H2'	28:a:2091:C:C6	2.42	0.55
6:A:319:U:H2'	6:A:320:G:O4'	2.07	0.55
6:A:766:G:H4'	6:A:1510:A:H4'	1.87	0.55
9:D:170:PRO:HB3	9:D:172:TRP:CZ2	2.41	0.55
28:a:805:C:H2'	28:a:806:C:H6	1.71	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:1714:G:H2'	28:a:1715:A:H8	1.71	0.55
28:a:2798:A:H2'	28:a:2799:A:C8	2.41	0.55
42:o:30:VAL:HG13	42:o:88:GLU:HG2	1.88	0.55
28:a:2834:U:H5"	42:o:55:ASN:O	2.07	0.55
6:A:457:A:H2'	6:A:458:G:C8	2.41	0.55
6:A:1038:G:H2'	6:A:1039:A:C8	2.42	0.55
6:A:589:A:H2'	6:A:590:U:H6	1.70	0.55
6:A:1364:C:H5"	14:I:114:LEU:HD12	1.88	0.55
28:a:154:A:H2'	28:a:155:A:H8	1.70	0.55
28:a:406:C:H2'	28:a:407:A:C8	2.42	0.55
28:a:745:C:H2'	28:a:746:C:C6	2.41	0.55
40:m:72:ASN:HB3	40:m:75:THR:HB	1.87	0.55
6:A:821:U:H2'	6:A:822:A:C8	2.42	0.55
19:N:89:MET:HA	19:N:89:MET:HE2	1.88	0.55
24:S:40:ILE:HG23	24:S:44:PHE:HB2	1.88	0.55
28:a:839:U:H2'	28:a:840:A:C8	2.40	0.55
28:a:1158:U:H2'	28:a:1159:A:H8	1.71	0.55
28:a:2014:C:H2'	28:a:2015:U:C6	2.42	0.55
28:a:2790:G:H2'	28:a:2791:U:C6	2.42	0.55
6:A:521:G:H2'	6:A:522:C:C6	2.42	0.55
6:A:684:A:C2	6:A:701:A:C5	2.95	0.55
28:a:875:U:H2'	28:a:876:C:C6	2.42	0.55
28:a:1018:A:N6	28:a:1115:G:H2'	2.22	0.55
28:a:1050:U:H4'	28:a:1052:G:O4'	2.06	0.55
28:a:1562:A:H2'	28:a:1563:A:H8	1.72	0.55
5:4:11:LYS:HE3	5:4:23:GLU:HB3	1.89	0.55
6:A:1509:U:H2'	6:A:1510:A:C8	2.41	0.55
7:B:29:MET:HG2	7:B:191:THR:HA	1.89	0.55
22:Q:20:LYS:O	22:Q:20:LYS:HG3	2.07	0.55
28:a:273:A:H2'	28:a:274:A:H8	1.72	0.55
6:A:1434:A:H2'	6:A:1435:G:H8	1.71	0.54
28:a:1482:A:H2'	28:a:1483:A:C8	2.42	0.54
28:a:2089:G:H3'	28:a:2090:A:H8	1.71	0.54
36:i:2:LYS:HD3	43:p:93:ARG:NH2	2.22	0.54
48:u:4:PHE:HB3	48:u:65:VAL:HG13	1.89	0.54
6:A:414:C:H2'	6:A:415:C:C6	2.42	0.54
19:N:10:GLU:HG2	19:N:63:ARG:HD3	1.89	0.54
28:a:1052:G:H2'	28:a:1053:G:C8	2.41	0.54
44:q:42:VAL:HG22	44:q:47:ILE:HG23	1.89	0.54
6:A:511:U:H2'	6:A:512:G:H8	1.71	0.54
6:A:1007:C:H2'	6:A:1009:A:H8	1.72	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:64:G:H2'	28:a:65:C:H6	1.72	0.54
28:a:862:U:H2'	28:a:863:U:C6	2.42	0.54
28:a:1280:G:H2'	28:a:1281:U:C6	2.43	0.54
13:H:5:ASP:HB2	13:H:82:PRO:HG2	1.90	0.54
28:a:173:G:H2'	28:a:174:C:C6	2.42	0.54
28:a:1842:A:H2'	28:a:1843:A:C8	2.43	0.54
28:a:2175:U:H2'	28:a:2176:G:C8	2.42	0.54
28:a:2729:A:H2'	28:a:2730:A:C8	2.43	0.54
53:z:12:ARG:HA	53:z:15:MET:HG3	1.89	0.54
6:A:58:U:H2'	6:A:59:G:H8	1.72	0.54
12:G:101:MET:O	12:G:105:VAL:HG23	2.06	0.54
28:a:589:U:H2'	28:a:590:A:C8	2.42	0.54
28:a:1066:C:H3'	28:a:1067:A:H8	1.72	0.54
33:f:138:PHE:HB2	33:f:139:PRO:HD3	1.89	0.54
5:4:5:ILE:HD12	33:f:64:LYS:HD2	1.90	0.54
6:A:161:G:H2'	6:A:162:A:H8	1.71	0.54
7:B:71:PHE:HB3	7:B:82:ILE:HD11	1.87	0.54
16:K:83:VAL:HB	16:K:109:ILE:HG22	1.90	0.54
28:a:78:C:HO2'	28:a:79:C:H6	1.54	0.54
6:A:225:U:H5"	21:P:51:ILE:HD13	1.90	0.54
6:A:385:A:H3'	6:A:386:U:H6	1.72	0.54
6:A:1353:G:H2'	6:A:1354:A:C8	2.43	0.54
7:B:85:GLN:NE2	7:B:220:ALA:HB2	2.22	0.54
6:A:21:A:H5"	10:E:90:ALA:HB3	1.89	0.54
28:a:467:C:N3	28:a:471:A:N7	2.55	0.54
28:a:2144:U:H2'	28:a:2145:G:C8	2.43	0.54
6:A:1145:U:O3'	14:I:14:THR:HG21	2.08	0.54
8:C:15:VAL:HB	8:C:207:ILE:HD12	1.88	0.54
18:M:19:LEU:HG	18:M:25:ILE:HG21	1.90	0.54
25:T:74:ARG:O	25:T:78:ARG:HG3	2.07	0.54
28:a:671:A:H2'	28:a:672:G:C8	2.43	0.54
28:a:1569:U:H2'	28:a:1570:A:H8	1.72	0.54
28:a:2679:A:H5"	28:a:2861:G:N2	2.23	0.54
34:g:22:ARG:HH21	34:g:37:LEU:HB3	1.73	0.54
51:x:18:LEU:HD11	51:x:54:LYS:HG3	1.89	0.54
6:A:465:C:H2'	6:A:466:C:O4'	2.07	0.54
6:A:982:C:H2'	6:A:983:U:C6	2.43	0.54
28:a:2294:U:H5"	33:f:131:GLY:HA3	1.89	0.54
6:A:1217:G:P	19:N:53:ARG:HH12	2.31	0.53
10:E:12:GLU:HG2	10:E:63:LEU:HD22	1.89	0.53
28:a:52:A:H2'	28:a:53:A:H8	1.74	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:1029:A:H4'	48:u:49:ARG:HD2	1.89	0.53
28:a:1526:U:H5"	28:a:1527:G:C8	2.42	0.53
28:a:2121:U:H5'	28:a:2122:G:C4	2.43	0.53
6:A:1530:C:H2'	6:A:1531:A:C8	2.41	0.53
28:a:503:U:H4'	28:a:1223:G:H4'	1.91	0.53
34:g:28:GLY:HA3	34:g:79:VAL:HG13	1.90	0.53
36:i:92:LEU:HD21	36:i:99:GLU:HG2	1.89	0.53
28:a:406:C:H2'	28:a:407:A:H8	1.73	0.53
28:a:824:A:H2'	28:a:825:G:C8	2.43	0.53
6:A:989:U:H4'	6:A:990:G:O5'	2.08	0.53
12:G:23:ILE:HG22	12:G:27:MET:HE2	1.91	0.53
24:S:3:ARG:NH2	24:S:7:LYS:HG2	2.20	0.53
27:X:38:HIS:HB3	27:X:63:ARG:HG3	1.90	0.53
28:a:2362:A:H2'	28:a:2363:C:C6	2.43	0.53
28:a:2887:U:H2'	28:a:2888:G:C8	2.44	0.53
37:j:104:ARG:NH2	42:o:37:GLU:HB3	2.24	0.53
6:A:1059:U:H2'	6:A:1060:C:C6	2.43	0.53
28:a:2096:C:H2'	28:a:2097:U:C6	2.44	0.53
28:a:2637:G:H2'	28:a:2638:C:H6	1.74	0.53
8:C:152:GLU:HG3	8:C:167:TRP:HB3	1.89	0.53
28:a:2109:G:H2'	28:a:2110:G:H8	1.73	0.53
28:a:2230:A:H2'	28:a:2231:G:C8	2.44	0.53
41:n:2:ASN:HA	41:n:6:GLN:HG2	1.90	0.53
6:A:457:A:H2'	6:A:458:G:H8	1.73	0.53
28:a:227:A:C2	28:a:2396:A:H1'	2.44	0.53
28:a:1583:A:H2'	28:a:1584:C:H6	1.74	0.53
46:s:29:GLN:HG3	46:s:92:VAL:HB	1.91	0.53
12:G:27:MET:HG2	12:G:43:VAL:HG21	1.91	0.53
28:a:181:A:H2'	28:a:182:A:C8	2.44	0.53
28:a:2262:A:H2'	28:a:2263:A:C8	2.43	0.53
35:h:5:LEU:HD23	35:h:36:ALA:HB2	1.91	0.53
6:A:1536:C:H2'	6:A:1537:U:C6	2.44	0.53
11:F:11:HIS:CG	11:F:12:PRO:HD2	2.43	0.53
28:a:670:C:H2'	28:a:671:A:H8	1.74	0.53
28:a:1043:U:H2'	28:a:1044:A:C8	2.44	0.53
28:a:1583:A:H2'	28:a:1584:C:C6	2.43	0.53
33:f:136:ILE:HG23	33:f:138:PHE:HE1	1.73	0.53
6:A:333:G:H2'	6:A:334:A:C8	2.44	0.53
6:A:561:C:C4	22:Q:34:LEU:HD11	2.44	0.53
6:A:1187:G:H4'	6:A:1188:A:OP2	2.07	0.53
9:D:97:GLU:HG2	9:D:188:PRO:HG2	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:64:G:H2'	28:a:65:C:C6	2.43	0.53
28:a:573:A:H2'	28:a:574:G:H8	1.74	0.53
28:a:1794:A:H2'	28:a:1795:C:H6	1.74	0.53
28:a:2070:C:H2'	28:a:2071:A:H8	1.73	0.53
6:A:252:U:H2'	6:A:253:G:H8	1.74	0.52
6:A:268:C:H2'	6:A:269:A:H8	1.74	0.52
9:D:123:ARG:HG2	9:D:133:ASN:HB3	1.90	0.52
9:D:149:GLU:HA	9:D:152:LYS:HZ3	1.74	0.52
22:Q:73:ALA:O	22:Q:74:TRP:HB2	2.09	0.52
28:a:744:G:H2'	28:a:745:C:H6	1.74	0.52
28:a:787:C:H2'	28:a:788:U:H6	1.73	0.52
28:a:1314:U:O2	28:a:1315:A:C8	2.62	0.52
6:A:673:A:H2'	6:A:674:U:H6	1.74	0.52
28:a:30:G:H2'	28:a:31:C:C6	2.45	0.52
28:a:2772:A:H2'	28:a:2773:U:H6	1.75	0.52
34:g:109:TYR:HD2	34:g:113:ILE:HD11	1.75	0.52
41:n:25:THR:HG22	41:n:89:VAL:HG23	1.91	0.52
1:0:13:THR:HB	1:0:38:LYS:HE3	1.91	0.52
6:A:647:G:H2'	6:A:648:C:H5'	1.90	0.52
6:A:1406:C:H2'	6:A:1407:A:C8	2.43	0.52
7:B:11:LEU:HB3	7:B:16:ALA:HB3	1.89	0.52
14:I:114:LEU:HD21	15:J:62:ARG:HB2	1.91	0.52
18:M:45:ILE:HA	18:M:48:LEU:HD13	1.90	0.52
28:a:840:A:H2'	28:a:841:C:C6	2.43	0.52
28:a:996:C:H1'	36:i:108:MET:HG2	1.92	0.52
28:a:1309:A:C4	28:a:1310:A:C8	2.97	0.52
28:a:2836:U:H2'	28:a:2837:G:O4'	2.10	0.52
33:f:130:MET:HG2	33:f:154:ILE:HB	1.91	0.52
6:A:1510:A:H2'	6:A:1511:G:H8	1.72	0.52
18:M:13:LYS:HB3	18:M:18:SER:OG	2.09	0.52
28:a:301:U:H2'	28:a:302:G:O4'	2.10	0.52
28:a:1417:G:H2'	28:a:1418:G:H8	1.73	0.52
6:A:487:C:H2'	6:A:488:G:H8	1.73	0.52
6:A:493:A:H2'	6:A:494:U:H5	1.74	0.52
6:A:1339:C:H2'	6:A:1340:G:H8	1.75	0.52
19:N:23:LYS:O	19:N:27:LEU:HG	2.10	0.52
28:a:139:U:H4'	28:a:140:A:OP1	2.09	0.52
28:a:1420:G:H2'	28:a:1421:A:C8	2.44	0.52
28:a:1476:U:H2'	28:a:1477:U:C6	2.44	0.52
6:A:37:G:H2'	6:A:38:C:C6	2.44	0.52
7:B:52:LEU:HD13	7:B:202:ILE:HG12	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:E:12:GLU:HG2	10:E:38:VAL:HG12	1.92	0.52
13:H:97:LYS:HB3	13:H:100:LEU:HB2	1.91	0.52
24:S:39:MET:HA	24:S:70:LYS:HA	1.92	0.52
28:a:2097:U:H2'	28:a:2098:U:C6	2.44	0.52
6:A:91:G:H2'	6:A:92:G:C8	2.44	0.52
6:A:1173:A:H2'	6:A:1174:G:C8	2.44	0.52
6:A:1401:C:H2'	6:A:1402:G:C8	2.45	0.52
14:I:48:GLN:HG2	14:I:101:PHE:CZ	2.45	0.52
19:N:64:CYS:HB2	19:N:69:ARG:H	1.74	0.52
28:a:30:G:H2'	28:a:31:C:H6	1.74	0.52
28:a:571:U:H2'	28:a:572:C:C6	2.45	0.52
28:a:2053:C:H2'	28:a:2054:C:H6	1.74	0.52
28:a:2205:G:H2'	28:a:2206:G:C8	2.44	0.52
6:A:281:U:H2'	6:A:282:G:C8	2.45	0.52
6:A:1026:U:H2'	6:A:1028:C:C2	2.45	0.52
13:H:84:LEU:HD22	17:L:4:THR:HG21	1.91	0.52
28:a:1835:G:H5'	28:a:1836:A:OP2	2.09	0.52
28:a:2156:U:H2'	28:a:2157:G:C8	2.45	0.52
33:f:33:LYS:HG2	33:f:157:THR:HB	1.92	0.52
6:A:58:U:H2'	6:A:59:G:C8	2.44	0.52
28:a:87:C:H5"	28:a:88:G:H5'	1.91	0.52
28:a:2594:PSU:H2'	28:a:2595:C:C6	2.45	0.52
44:q:40:MET:HG3	44:q:49:ILE:HG12	1.92	0.52
6:A:942:G:C2	6:A:943:A:C8	2.98	0.52
6:A:1069:G:H2'	6:A:1070:U:C6	2.45	0.52
28:a:1474:U:H2'	28:a:1475:C:H6	1.75	0.52
41:n:76:LEU:HD21	41:n:80:ARG:HH21	1.75	0.52
6:A:212:U:H2'	6:A:213:U:C6	2.45	0.51
6:A:725:A:H2'	6:A:726:A:H8	1.74	0.51
28:a:858:C:C2	28:a:859:U:C5	2.98	0.51
28:a:990:A:H2'	28:a:991:A:H8	1.75	0.51
28:a:1562:A:H2'	28:a:1563:A:C8	2.44	0.51
28:a:2137:G:H2'	28:a:2138:U:H6	1.75	0.51
6:A:732:C:H2'	6:A:733:C:H6	1.75	0.51
24:S:48:THR:OG1	24:S:61:ILE:HD13	2.10	0.51
28:a:1158:U:H2'	28:a:1159:A:C8	2.45	0.51
28:a:1582:C:H2'	28:a:1583:A:H8	1.74	0.51
28:a:2450:A:H2'	28:a:2451:C:C6	2.45	0.51
28:a:2604:U:C2	53:z:4:GLN:HA	2.44	0.51
31:d:182:SER:HB3	31:d:191:VAL:HB	1.92	0.51
7:B:76:ARG:HD3	7:B:76:ARG:H	1.76	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:127:A:H5”	28:a:128:C:C6	2.45	0.51
28:a:1202:A:H61	28:a:1223:G:H1’	1.76	0.51
28:a:1492:U:H2’	28:a:1493:A:H8	1.74	0.51
31:d:39:LYS:HD2	31:d:44:ASP:OD1	2.11	0.51
41:n:52:ALA:HB3	41:n:77:ILE:HB	1.91	0.51
53:z:31:GLN:OE1	53:z:31:GLN:HA	2.10	0.51
6:A:73:G:C2	6:A:74:G:H1’	2.45	0.51
6:A:527:G:N1	27:X:53:ASP:HB2	2.25	0.51
6:A:776:C:H2’	6:A:777:A:O4’	2.10	0.51
6:A:947:U:H2’	6:A:948:G:C8	2.46	0.51
11:F:25:TYR:CE1	11:F:77:LEU:HD22	2.46	0.51
25:T:39:ILE:HD13	25:T:82:GLN:HB3	1.92	0.51
27:X:26:THR:O	27:X:30:GLN:HG3	2.09	0.51
28:a:1675:A:H2’	28:a:1676:C:H6	1.75	0.51
28:a:2116:G:H2’	28:a:2117:G:C8	2.44	0.51
6:A:395:G:H2’	6:A:396:C:C6	2.45	0.51
6:A:818:G:H2’	6:A:819:U:H6	1.74	0.51
6:A:989:U:H5	6:A:1041:A:C2	2.26	0.51
28:a:52:A:H2’	28:a:53:A:C8	2.45	0.51
28:a:365:U:H2’	28:a:366:A:H8	1.74	0.51
28:a:1184:C:H2’	28:a:1185:G:C8	2.46	0.51
28:a:1349:G:H2’	28:a:1350:C:H6	1.73	0.51
28:a:1474:U:H2’	28:a:1475:C:C6	2.45	0.51
28:a:1903:C:H2’	28:a:1904:3TD:H6	1.93	0.51
29:b:108:C:H2’	29:b:109:G:H8	1.74	0.51
6:A:208:G:H2’	6:A:209:A:H8	1.75	0.51
6:A:1050:G:N7	6:A:1197:C:H5’	2.26	0.51
13:H:43:GLU:HG3	13:H:102:ILE:HD13	1.92	0.51
28:a:585:U:H2’	28:a:586:C:C6	2.45	0.51
28:a:2054:C:H2’	28:a:2055:C:H6	1.76	0.51
28:a:2164:C:H2’	28:a:2165:A:C8	2.46	0.51
28:a:2689:A:H2’	28:a:2690:C:H6	1.75	0.51
44:q:1:MET:HA	44:q:42:VAL:O	2.11	0.51
7:B:8:MET:O	7:B:12:LEU:HD12	2.10	0.51
9:D:32:THR:HG22	9:D:34:LYS:N	2.23	0.51
27:X:21:VAL:O	27:X:25:LEU:HD23	2.10	0.51
28:a:1714:G:H2’	28:a:1715:A:C8	2.45	0.51
36:i:4:LEU:HD23	43:p:101:HIS:CE1	2.45	0.51
39:l:43:THR:HG22	39:l:94:VAL:HG12	1.93	0.51
42:o:103:LEU:HD11	42:o:113:ILE:HD11	1.92	0.51
6:A:251:G:H2’	6:A:252:U:C6	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:E:36:THR:HG21	10:E:63:LEU:HD23	1.92	0.51
28:a:937:A:H2'	28:a:938:C:C6	2.46	0.51
28:a:2209:C:H2'	28:a:2210:G:H8	1.74	0.51
43:p:86:ALA:HB2	43:p:116:ALA:HB2	1.93	0.51
45:r:70:LYS:HE3	45:r:109:VAL:HG21	1.93	0.51
6:A:1259:C:H2'	6:A:1260:A:C8	2.45	0.51
11:F:21:MET:HE1	11:F:84:ILE:HD11	1.92	0.51
22:Q:9:LEU:HD23	22:Q:26:ILE:HG21	1.93	0.51
28:a:317:A:OP2	32:e:162:ASN:HB2	2.11	0.51
28:a:657:A:H2'	28:a:658:U:C6	2.46	0.51
28:a:995:C:H1'	28:a:1002:U:N3	2.26	0.51
28:a:1760:C:H2'	28:a:1761:A:C8	2.46	0.51
28:a:2666:G:H2'	28:a:2667:A:H8	1.76	0.51
30:c:180:GLU:OE2	30:c:267:ILE:HG12	2.11	0.51
6:A:693:A:H2'	6:A:694:U:H6	1.76	0.51
10:E:149:PRO:HB2	10:E:160:VAL:HG23	1.92	0.51
21:P:40:THR:HA	21:P:51:ILE:HG13	1.92	0.51
28:a:222:A:C2	28:a:233:A:H5"	2.46	0.51
28:a:1393:U:H2'	28:a:1394:U:C6	2.46	0.51
28:a:1760:C:H2'	28:a:1761:A:H8	1.76	0.51
28:a:2164:C:H2'	28:a:2165:A:H8	1.74	0.51
28:a:2437:A:H3'	28:a:2438:H2U:H2'	1.93	0.51
5:4:11:LYS:HE2	5:4:13:VAL:HG22	1.93	0.50
6:A:732:C:C2	6:A:733:C:C5	2.99	0.50
6:A:1245:A:H4'	14:I:31:ARG:HH12	1.76	0.50
6:A:1407:A:H2'	6:A:1408:C:C6	2.46	0.50
6:A:1410:A:H2	6:A:1484:G:H22	1.59	0.50
9:D:102:ASN:O	9:D:106:ARG:HG2	2.11	0.50
25:T:79:LEU:O	25:T:83:VAL:HG12	2.11	0.50
28:a:591:G:H1'	32:e:99:MET:HG2	1.91	0.50
28:a:670:C:H2'	28:a:671:A:C8	2.46	0.50
28:a:2543:U:H2'	28:a:2544:U:C6	2.46	0.50
28:a:2734:C:H2'	28:a:2735:U:C6	2.46	0.50
6:A:435:U:C2	6:A:436:A:C8	2.99	0.50
9:D:25:VAL:HG22	9:D:26:LYS:H	1.76	0.50
12:G:72:MET:HA	12:G:96:ARG:NH1	2.26	0.50
28:a:20:U:H2'	28:a:21:G:H8	1.76	0.50
28:a:191:A:H2'	28:a:192:G:N3	2.25	0.50
28:a:1186:U:H2'	28:a:1187:U:C6	2.46	0.50
28:a:1520:U:H2'	28:a:1521:G:C8	2.47	0.50
28:a:1837:A:C4	28:a:1838:G:C8	2.99	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:2687:U:H2'	28:a:2688:G:H8	1.75	0.50
6:A:684:A:C8	6:A:698:U:C4	3.00	0.50
6:A:822:A:H2'	6:A:823:C:C6	2.46	0.50
6:A:1144:C:H2'	6:A:1145:U:C6	2.46	0.50
6:A:1216:A:H2'	6:A:1217:G:C8	2.46	0.50
7:B:21:GLN:HG3	7:B:22:THR:H	1.75	0.50
28:a:875:U:H2'	28:a:876:C:H6	1.77	0.50
37:j:47:ILE:HG22	37:j:50:ALA:HB2	1.94	0.50
39:l:32:ILE:HG21	39:l:114:ALA:HB1	1.93	0.50
6:A:1036:U:H2'	6:A:1037:A:C8	2.47	0.50
9:D:172:TRP:NE1	9:D:188:PRO:HG3	2.27	0.50
10:E:39:GLY:HA3	10:E:116:ALA:HB1	1.93	0.50
23:R:45:THR:HG23	23:R:47:THR:H	1.76	0.50
28:a:694:U:H2'	28:a:695:G:O4'	2.12	0.50
28:a:2536:A:H2'	28:a:2537:U:C6	2.47	0.50
41:n:67:ILE:O	41:n:71:THR:HG23	2.11	0.50
42:o:95:VAL:HG11	42:o:100:LEU:HD21	1.92	0.50
6:A:174:C:C2	6:A:175:A:C8	2.99	0.50
6:A:1407:A:H2'	6:A:1408:C:H6	1.76	0.50
13:H:18:GLN:HG3	13:H:64:LEU:HG	1.94	0.50
16:K:46:SER:HB3	16:K:61:ALA:HB1	1.93	0.50
28:a:1054:C:N3	28:a:1059:A:H8	2.09	0.50
28:a:1151:G:H2'	28:a:1152:C:C6	2.46	0.50
28:a:1628:A:H5'	28:a:1749:C:O2'	2.11	0.50
28:a:1701:G:H2'	28:a:1702:U:C6	2.47	0.50
28:a:2887:U:H2'	28:a:2888:G:H8	1.76	0.50
30:c:20:VAL:HG23	30:c:21:HIS:H	1.76	0.50
45:r:48:LYS:O	45:r:52:GLU:HG3	2.11	0.50
28:a:590:A:H2'	28:a:591:G:C8	2.45	0.50
28:a:712:A:H2'	28:a:713:A:C8	2.46	0.50
28:a:1395:C:H2'	28:a:1396:U:H6	1.76	0.50
28:a:2639:U:H2'	28:a:2640:C:H6	1.76	0.50
38:k:102:VAL:HG23	38:k:103:VAL:HG23	1.93	0.50
6:A:759:U:H2'	6:A:760:A:C8	2.47	0.50
15:J:35:GLN:HE21	15:J:77:VAL:HG23	1.77	0.50
17:L:79:VAL:HG12	17:L:102:LEU:HD13	1.93	0.50
32:e:18:PHE:CZ	32:e:195:ILE:HD11	2.46	0.50
37:j:68:GLY:HA2	37:j:77:ILE:O	2.11	0.50
52:y:46:MET:O	52:y:50:VAL:HG22	2.11	0.50
5:4:38:CYS:SG	5:4:41:CYS:HB2	2.52	0.50
5:4:46:THR:HB	5:4:49:GLN:OE1	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:1311:C:H2'	6:A:1312:U:H6	1.77	0.50
16:K:21:HIS:CD2	16:K:84:LEU:HD12	2.47	0.50
28:a:12:U:O2	28:a:2615:C:H4'	2.11	0.50
28:a:1645:A:H1'	28:a:2812:A:H5'	1.92	0.50
32:e:104:MET:HE1	32:e:179:LEU:HD12	1.94	0.50
6:A:75:A:H1'	6:A:92:G:H22	1.76	0.50
6:A:502:G:H2'	6:A:503:G:C8	2.47	0.50
6:A:917:U:H2'	6:A:918:U:C6	2.46	0.50
14:I:82:THR:HG23	14:I:96:LEU:HD22	1.93	0.50
17:L:73:ASN:HD21	17:L:105:ALA:HB3	1.76	0.50
17:L:87:VAL:HB	17:L:90:LEU:HB2	1.94	0.50
29:b:64:A:H61	29:b:104:U:H2'	1.77	0.50
6:A:660:A:H5"	23:R:50:ARG:HH11	1.76	0.49
6:A:908:U:H2'	6:A:909:C:C6	2.46	0.49
6:A:1324:C:H2'	6:A:1325:C:C6	2.45	0.49
7:B:168:VAL:HG21	7:B:189:VAL:HG13	1.94	0.49
10:E:152:VAL:HG21	13:H:100:LEU:HD12	1.94	0.49
28:a:1266:C:H2'	28:a:1267:G:H8	1.77	0.49
28:a:2823:G:H1'	28:a:2872:A:N6	2.27	0.49
52:y:1:MET:HE3	52:y:2:LYS:H	1.77	0.49
6:A:907:C:H2'	6:A:908:U:H6	1.78	0.49
28:a:346:C:H2'	28:a:347:A:H8	1.77	0.49
28:a:1280:G:H2'	28:a:1281:U:H6	1.75	0.49
28:a:1605:A:C6	45:r:87:PRO:HB3	2.48	0.49
33:f:108:ILE:HG21	33:f:176:PRO:HG3	1.94	0.49
16:K:34:THR:HG22	16:K:40:ALA:HA	1.94	0.49
23:R:20:TYR:CZ	23:R:22:ASP:HA	2.46	0.49
28:a:307:G:C2	28:a:308:U:C6	3.00	0.49
28:a:1386:C:C2	28:a:1387:C:C5	3.00	0.49
28:a:1419:A:H2'	28:a:1420:G:C8	2.46	0.49
28:a:2088:U:H3	28:a:2179:G:H1	1.60	0.49
44:q:6:GLN:HG2	44:q:11:GLN:HG2	1.95	0.49
6:A:552:U:H2'	6:A:553:C:C6	2.47	0.49
6:A:1461:U:H2'	6:A:1462:A:H8	1.77	0.49
6:A:1509:U:H2'	6:A:1510:A:H8	1.77	0.49
8:C:16:LYS:O	8:C:211:MET:HE1	2.11	0.49
24:S:10:PHE:HZ	24:S:37:ARG:HH21	1.59	0.49
28:a:1724:C:N3	28:a:1725:C:C5	2.80	0.49
28:a:2637:G:H2'	28:a:2638:C:C6	2.46	0.49
6:A:184:A:C4	25:T:84:LYS:HD2	2.48	0.49
6:A:947:U:H2'	6:A:948:G:H8	1.76	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:1050:G:H4'	6:A:1051:C:H3'	1.93	0.49
6:A:1438:A:C4	42:o:117:LEU:HD11	2.47	0.49
8:C:151:VAL:O	8:C:167:TRP:HA	2.12	0.49
9:D:157:ILE:O	9:D:161:ILE:HG23	2.12	0.49
28:a:648:U:H2'	28:a:649:U:C6	2.47	0.49
28:a:1764:U:O4	28:a:1778:A:H2	1.95	0.49
28:a:2630:A:H2'	28:a:2631:G:C8	2.47	0.49
30:c:25:HIS:HB2	30:c:82:GLU:HG2	1.94	0.49
5:4:68:MET:HE2	19:N:42:PHE:HD2	1.78	0.49
7:B:81:ILE:HD11	7:B:212:VAL:HG23	1.94	0.49
7:B:110:ARG:O	7:B:113:ILE:HG13	2.12	0.49
13:H:10:MET:HB2	13:H:33:LYS:HD3	1.95	0.49
18:M:92:ARG:HG2	28:a:879:C:C4	2.48	0.49
20:O:56:LEU:O	20:O:60:VAL:HG13	2.12	0.49
28:a:285:U:H2'	28:a:286:U:C6	2.46	0.49
28:a:2626:U:H2'	28:a:2627:G:O4'	2.11	0.49
28:a:2827:G:C4	28:a:2828:G:C8	3.01	0.49
6:A:89:C:H4'	6:A:91:G:N7	2.28	0.49
6:A:493:A:H2'	6:A:494:U:C5	2.47	0.49
19:N:73:TYR:CE2	19:N:75:ARG:HA	2.48	0.49
26:W:7:U:H2'	26:W:8:G:O4'	2.12	0.49
28:a:40:U:H2'	28:a:41:C:C6	2.47	0.49
28:a:658:U:H2'	28:a:659:A:O4'	2.13	0.49
6:A:77:G:H3'	6:A:78:G:C8	2.48	0.49
6:A:674:U:H3	6:A:710:G:H22	1.59	0.49
6:A:1148:A:HO2'	6:A:1149:A:H8	1.59	0.49
6:A:1187:G:H5'	8:C:176:HIS:NE2	2.27	0.49
6:A:1409:C:H2'	6:A:1410:A:H8	1.78	0.49
28:a:530:A:H2'	28:a:531:G:O4'	2.13	0.49
28:a:1582:C:H2'	28:a:1583:A:C8	2.47	0.49
28:a:1627:G:H2'	28:a:1628:A:H8	1.73	0.49
28:a:2096:C:H2'	28:a:2097:U:H6	1.78	0.49
40:m:87:TYR:OH	40:m:115:LEU:HB3	2.13	0.49
42:o:7:LEU:O	42:o:11:ILE:HG12	2.13	0.49
6:A:1323:U:H2'	6:A:1324:C:C6	2.48	0.49
11:F:2:ARG:HE	11:F:91:ARG:NH2	2.11	0.49
14:I:73:GLN:O	14:I:77:ILE:HD13	2.12	0.49
28:a:680:A:H2'	28:a:681:U:C6	2.47	0.49
28:a:1076:A:H3'	28:a:1076:A:N3	2.27	0.49
6:A:22:U:H2'	6:A:23:G:O4'	2.13	0.49
6:A:76:A:N3	6:A:76:A:H2'	2.28	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:306:G:H5”	21:P:49:ARG:HB3	1.94	0.49
7:B:22:THR:HG22	7:B:41:HIS:CD2	2.48	0.49
28:a:2125:G:H2’	28:a:2126:C:C6	2.48	0.49
5:4:6:HIS:CE1	33:f:64:LYS:H	2.31	0.48
6:A:536:A:H2’	6:A:537:G:H8	1.75	0.48
9:D:172:TRP:CD1	9:D:188:PRO:HG3	2.48	0.48
28:a:529:G:H22	28:a:546:G:H1’	1.78	0.48
28:a:872:G:H2’	28:a:873:G:H8	1.77	0.48
28:a:1395:C:H2’	28:a:1396:U:C6	2.48	0.48
28:a:2218:U:O2	28:a:2219:G:C8	2.66	0.48
28:a:2777:C:H2’	28:a:2778:C:C6	2.48	0.48
23:R:36:ASN:HB2	23:R:38:LYS:HG3	1.95	0.48
28:a:1287:G:H5”	28:a:1288:A:H5”	1.95	0.48
31:d:180:ILE:HD12	31:d:190:LEU:HD22	1.93	0.48
32:e:156:LEU:HG	32:e:168:VAL:HG21	1.95	0.48
34:g:169:ILE:HG22	34:g:171:ARG:HD2	1.94	0.48
37:j:104:ARG:HH22	42:o:37:GLU:HB3	1.78	0.48
6:A:1252:G:H3’	6:A:1276:A:H61	1.78	0.48
6:A:1352:G:H2’	6:A:1353:G:H8	1.78	0.48
7:B:56:LEU:HD11	7:B:218:ALA:HB1	1.94	0.48
28:a:162:U:H1’	28:a:163:A:N7	2.28	0.48
28:a:1178:G:H5’	38:k:34:GLY:HA2	1.94	0.48
28:a:1505:G:H2’	28:a:1506:A:H8	1.78	0.48
28:a:2236:A:H2’	28:a:2237:C:H6	1.78	0.48
33:f:137:VAL:HA	33:f:140:GLU:HB3	1.94	0.48
39:l:32:ILE:HG23	39:l:118:PHE:HE2	1.79	0.48
52:y:4:ILE:HG22	52:y:58:GLU:HA	1.94	0.48
4:3:16:VAL:HG22	4:3:25:VAL:HG22	1.96	0.48
4:3:18:ARG:HD3	28:a:1024:G:H5’	1.95	0.48
5:4:70:ARG:HE	24:S:16:PHE:HE2	1.60	0.48
6:A:226:G:H5”	21:P:49:ARG:HH21	1.78	0.48
6:A:589:A:H2’	6:A:590:U:C6	2.48	0.48
14:I:26:LEU:HD13	14:I:33:LEU:HB2	1.96	0.48
16:K:111:ASP:OD1	16:K:113:THR:HG22	2.12	0.48
20:O:40:GLN:OE1	20:O:40:GLN:HA	2.13	0.48
28:a:2104:G:H2’	28:a:2106:A:N7	2.28	0.48
28:a:2594:PSU:H2’	28:a:2595:C:H6	1.79	0.48
35:h:1:MET:SD	35:h:23:ALA:HA	2.53	0.48
6:A:1532:C:C2	6:A:1533:C:C5	3.01	0.48
9:D:119:LEU:HB3	9:D:125:ILE:HD11	1.96	0.48
12:G:16:PRO:HB3	14:I:40:GLU:HG2	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:O:12:ILE:HD13	20:O:22:THR:HG22	1.95	0.48
28:a:19:A:H5"	43:p:22:LYS:HG2	1.95	0.48
28:a:585:U:H2'	28:a:586:C:H6	1.78	0.48
28:a:773:A:C2	30:c:225:MET:HG2	2.48	0.48
28:a:1406:G:N2	28:a:1571:A:H62	2.10	0.48
28:a:2114:G:H22	28:a:2161:U:H5"	1.79	0.48
29:b:87:A:H2'	29:b:88:C:O4'	2.12	0.48
6:A:281:U:H2'	6:A:282:G:H8	1.79	0.48
6:A:295:G:H2'	6:A:296:A:C8	2.48	0.48
6:A:908:U:C2	6:A:909:C:C5	3.01	0.48
17:L:107:VAL:HG22	17:L:117:TYR:HB3	1.95	0.48
22:Q:51:ASN:HB2	22:Q:53:VAL:HG13	1.95	0.48
23:R:30:LYS:HA	23:R:33:ILE:HG12	1.95	0.48
28:a:845:A:H2'	28:a:846:G:H8	1.77	0.48
28:a:1184:C:H2'	28:a:1185:G:H8	1.78	0.48
28:a:1420:G:H2'	28:a:1421:A:H8	1.79	0.48
28:a:1492:U:H2'	28:a:1493:A:C8	2.49	0.48
28:a:2547:C:H2'	28:a:2548:C:H6	1.78	0.48
34:g:9:VAL:HG13	34:g:50:LEU:HB2	1.94	0.48
34:g:107:LEU:HD12	34:g:113:ILE:HD13	1.95	0.48
51:x:12:GLU:CD	51:x:12:GLU:H	2.22	0.48
3:2:57:VAL:HA	3:2:60:MET:HE2	1.94	0.48
6:A:252:U:H2'	6:A:253:G:C8	2.49	0.48
6:A:410:A:P	6:A:424:G:H22	2.36	0.48
6:A:1288:C:N3	6:A:1289:C:C5	2.82	0.48
17:L:57:LEU:HD11	17:L:82:ILE:HD11	1.95	0.48
20:O:55:GLY:O	20:O:59:MET:HG3	2.13	0.48
28:a:855:G:H2'	28:a:856:C:C6	2.48	0.48
28:a:1303:C:H2'	28:a:1304:A:C8	2.47	0.48
28:a:1684:U:H5"	28:a:1685:C:H5	1.78	0.48
28:a:1872:U:H2'	28:a:1873:G:O4'	2.13	0.48
28:a:2305:G:H1'	33:f:125:ARG:NH2	2.29	0.48
5:4:22:ILE:HG23	33:f:3:ARG:NH1	2.29	0.48
6:A:451:U:C2	6:A:452:A:C8	3.01	0.48
28:a:2209:C:H2'	28:a:2210:G:C8	2.48	0.48
28:a:2630:A:H2'	28:a:2631:G:H8	1.77	0.48
46:s:15:PHE:HE2	51:x:34:THR:HA	1.78	0.48
3:2:59:ARG:NH1	28:a:656:U:H4'	2.29	0.48
6:A:3:U:H3'	6:A:4:A:H8	1.78	0.48
6:A:206:C:H3'	6:A:207:G:H5'	1.95	0.48
6:A:221:U:C2	6:A:222:A:C8	3.02	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:266:A:H2'	6:A:267:C:C6	2.49	0.48
6:A:502:G:C2	6:A:503:G:C5	3.02	0.48
6:A:906:A:H2'	6:A:907:C:O4'	2.14	0.48
6:A:1388:U:H2'	6:A:1389:G:H8	1.76	0.48
6:A:1398:G:H2'	6:A:1399:4OC:O4'	2.13	0.48
8:C:55:ILE:HD12	8:C:68:ILE:HG12	1.95	0.48
28:a:1345:C:H2'	28:a:1346:G:O4'	2.12	0.48
28:a:1516:A:O2'	28:a:1517:A:H8	1.97	0.48
28:a:2125:G:H1	28:a:2144:U:H3	1.60	0.48
28:a:2260:G:H5"	49:v:18:PRO:HB2	1.96	0.48
30:c:94:LEU:O	30:c:101:ARG:HA	2.13	0.48
35:h:31:ILE:HG12	35:h:32:PRO:HD3	1.96	0.48
6:A:497:G:H2'	6:A:498:C:C6	2.49	0.48
6:A:577:C:H2'	6:A:578:G:O4'	2.13	0.48
6:A:695:G:H2'	6:A:696:C:H6	1.78	0.48
6:A:754:U:H2'	6:A:755:G:O4'	2.14	0.48
11:F:101:LEU:HD22	11:F:101:LEU:H	1.79	0.48
28:a:16:U:H5"	53:z:14:ASP:HB2	1.96	0.48
28:a:1157:G:H2'	28:a:1158:U:C6	2.49	0.48
28:a:1165:U:H4'	28:a:1166:G:C2	2.48	0.48
28:a:1269:G:H2'	28:a:1270:U:C6	2.49	0.48
28:a:1348:G:N7	28:a:1349:G:C8	2.82	0.48
28:a:2614:G:H2'	28:a:2615:C:C6	2.49	0.48
29:b:28:C:H1'	29:b:55:A:H61	1.79	0.48
6:A:318:C:H2'	6:A:319:U:C6	2.49	0.47
6:A:1145:U:H2'	6:A:1146:U:O4'	2.13	0.47
28:a:1034:A:H1'	28:a:1038:A:H1'	1.96	0.47
28:a:1845:U:H2'	28:a:1846:G:O4'	2.14	0.47
28:a:2142:A:H2'	28:a:2143:G:C8	2.49	0.47
28:a:2790:G:H2'	28:a:2791:U:H6	1.79	0.47
51:x:42:GLU:HA	51:x:45:VAL:HG22	1.95	0.47
6:A:37:G:H2'	6:A:38:C:H6	1.78	0.47
6:A:149:C:H2'	6:A:150:A:H8	1.78	0.47
6:A:1176:A:H5"	14:I:102:VAL:HG12	1.95	0.47
7:B:85:GLN:OE1	7:B:220:ALA:HB2	2.14	0.47
25:T:11:ALA:O	25:T:15:VAL:HG12	2.14	0.47
28:a:2336:C:H2'	28:a:2337:U:C6	2.50	0.47
46:s:86:LEU:HD11	46:s:92:VAL:HG23	1.96	0.47
6:A:1216:A:H2'	6:A:1217:G:H8	1.79	0.47
14:I:22:GLY:HA3	14:I:60:ASP:CG	2.40	0.47
20:O:82:ILE:HG13	20:O:83:GLY:N	2.28	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:598:U:C5	28:a:611:G:C5	3.02	0.47
28:a:1212:A:H2'	28:a:1213:G:C8	2.50	0.47
28:a:1314:U:H2'	28:a:1315:A:H8	1.78	0.47
28:a:1520:U:O2'	28:a:1521:G:H5'	2.15	0.47
28:a:2556:G:H2'	28:a:2557:A:C8	2.49	0.47
33:f:47:LYS:HB2	33:f:47:LYS:HE2	1.62	0.47
34:g:10:THR:HA	34:g:49:LYS:HG2	1.96	0.47
39:l:20:LEU:HD23	39:l:99:PRO:HG2	1.96	0.47
48:u:4:PHE:HE2	48:u:59:VAL:HG23	1.79	0.47
6:A:144:G:O2'	6:A:1443:A:H8	1.98	0.47
6:A:353:G:C2	6:A:354:U:C5	3.02	0.47
6:A:450:C:C2	6:A:451:U:C5	3.03	0.47
6:A:654:U:H2'	6:A:655:A:C8	2.49	0.47
6:A:1019:U:H3'	6:A:1020:G:H8	1.80	0.47
12:G:36:LYS:O	12:G:40:GLU:HG3	2.13	0.47
12:G:92:ARG:HG3	12:G:95:ARG:HB3	1.96	0.47
28:a:1542:U:H2'	28:a:1543:G:O4'	2.14	0.47
28:a:2638:C:H2'	28:a:2639:U:H6	1.79	0.47
33:f:121:SER:HB2	33:f:128:TYR:HE1	1.79	0.47
48:u:66:GLU:OE1	48:u:73:VAL:HG13	2.14	0.47
51:x:37:LEU:HD23	51:x:40:SER:HA	1.96	0.47
11:F:3:HIS:CD2	11:F:65:GLU:HG3	2.49	0.47
27:X:1:MET:HE3	27:X:1:MET:HB2	1.83	0.47
28:a:2458:A:H2'	28:a:2459:G:O4'	2.14	0.47
28:a:2503:U:H2'	28:a:2504:C:H6	1.79	0.47
28:a:2666:G:H2'	28:a:2667:A:C8	2.49	0.47
6:A:149:C:H2'	6:A:150:A:C8	2.49	0.47
6:A:173:G:C5	6:A:174:C:C5	3.03	0.47
6:A:1001:A:P	6:A:1023:G:H22	2.38	0.47
28:a:3:U:H2'	28:a:4:C:C6	2.50	0.47
28:a:151:U:H2'	28:a:152:G:H8	1.80	0.47
28:a:629:G:H2'	28:a:630:U:C6	2.50	0.47
28:a:1095:U:H3'	28:a:1096:A:H8	1.80	0.47
28:a:1186:U:C2	28:a:1187:U:C5	3.02	0.47
28:a:2444:G:H2'	28:a:2445:C:C6	2.49	0.47
28:a:2451:C:H1'	28:a:2480:U:O4	2.15	0.47
28:a:2676:U:H2'	28:a:2677:G:O4'	2.15	0.47
47:t:83:TYR:HE1	47:t:92:ARG:HG2	1.79	0.47
51:x:41:HIS:O	51:x:45:VAL:HG13	2.14	0.47
6:A:422:U:H2'	6:A:423:U:C6	2.49	0.47
6:A:1116:C:H2'	6:A:1117:C:H6	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:1343:A:N1	6:A:1371:A:H5”	2.29	0.47
6:A:1372:A:H5”	12:G:25:LYS:HE3	1.97	0.47
12:G:87:VAL:HG22	12:G:151:PHE:HB3	1.94	0.47
14:I:69:GLY:O	14:I:73:GLN:HG3	2.15	0.47
18:M:19:LEU:HD11	18:M:60:VAL:HG21	1.97	0.47
28:a:27:G:H22	28:a:504:G:H2’	1.80	0.47
28:a:39:G:H2’	28:a:40:U:C6	2.49	0.47
28:a:662:C:H2’	28:a:663:C:C6	2.48	0.47
28:a:872:G:O6	28:a:886:U:O4	2.32	0.47
28:a:1304:A:H2’	28:a:1305:G:H8	1.78	0.47
28:a:1997:C:H2’	28:a:1998:A:H8	1.79	0.47
36:i:15:TRP:HE3	36:i:55:ILE:HD11	1.80	0.47
38:k:108:ILE:HG13	38:k:109:ARG:HG2	1.96	0.47
40:m:1:MET:HB2	40:m:1:MET:HE3	1.73	0.47
41:n:71:THR:HG22	41:n:104:ALA:HB1	1.95	0.47
43:p:104:VAL:HG12	44:q:47:ILE:HD11	1.97	0.47
51:x:56:LEU:O	51:x:60:LYS:HG3	2.15	0.47
53:z:42:VAL:HG13	53:z:48:TYR:HB2	1.95	0.47
6:A:173:G:C8	6:A:174:C:C6	3.03	0.47
6:A:491:G:H2’	6:A:492:A:H5”	1.96	0.47
6:A:1238:G:H2’	6:A:1239:G:H8	1.78	0.47
7:B:81:ILE:HD11	7:B:212:VAL:CG2	2.45	0.47
27:X:36:ILE:HG21	27:X:39:PHE:CZ	2.50	0.47
28:a:374:G:H2’	28:a:375:C:O4’	2.15	0.47
28:a:858:C:N3	28:a:859:U:C5	2.83	0.47
28:a:1184:C:C2	28:a:1185:G:C8	3.03	0.47
28:a:1429:A:H2’	28:a:1430:U:C6	2.49	0.47
28:a:1554:U:H2’	28:a:1555:C:C6	2.50	0.47
28:a:2441:C:H2’	28:a:2442:A:C8	2.49	0.47
31:d:81:LYS:HE3	31:d:205:ILE:HG12	1.97	0.47
52:y:15:ARG:HG3	52:y:53:MET:SD	2.55	0.47
6:A:23:G:H2’	6:A:24:G:C8	2.50	0.47
6:A:36:C:H2’	6:A:37:G:H8	1.79	0.47
6:A:385:A:H3’	6:A:386:U:C6	2.50	0.47
7:B:168:VAL:HG23	7:B:193:SER:OG	2.14	0.47
14:I:108:GLU:HG2	14:I:109:VAL:N	2.30	0.47
28:a:873:G:H1	28:a:885:U:H3	1.61	0.47
28:a:938:C:H2’	28:a:939:U:C6	2.50	0.47
29:b:66:C:H2’	29:b:67:G:O4’	2.14	0.47
51:x:28:LEU:HB3	51:x:43:VAL:HG12	1.97	0.47
6:A:580:A:H2’	6:A:581:G:O4’	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:759:U:H2'	6:A:760:A:H8	1.80	0.47
6:A:781:A:H2'	6:A:782:G:C8	2.50	0.47
6:A:789:A:H1'	6:A:791:A:N7	2.29	0.47
6:A:1312:U:O2	6:A:1357:A:H2	1.98	0.47
12:G:26:PHE:HD1	12:G:62:PHE:CZ	2.33	0.47
12:G:27:MET:SD	12:G:40:GLU:HG2	2.55	0.47
23:R:34:THR:HG22	23:R:35:GLU:HG2	1.96	0.47
28:a:571:U:H2'	28:a:572:C:H6	1.80	0.47
28:a:853:G:H2'	28:a:854:A:O4'	2.14	0.47
28:a:1070:C:H2'	28:a:1071:U:C6	2.51	0.47
28:a:1285:C:OP1	28:a:2699:C:H4'	2.15	0.47
28:a:1386:C:H2'	28:a:1387:C:H6	1.80	0.47
28:a:2097:U:H2'	28:a:2098:U:H6	1.79	0.47
28:a:2141:C:H2'	28:a:2142:A:C8	2.39	0.47
28:a:2305:G:H2'	28:a:2306:C:H6	1.80	0.47
46:s:35:ILE:HD12	46:s:80:LYS:HB2	1.96	0.47
6:A:74:G:H5'	6:A:75:A:OP2	2.15	0.46
6:A:1002:A:H3'	6:A:1003:C:H6	1.79	0.46
6:A:1115:U:H2'	6:A:1116:C:C6	2.50	0.46
12:G:16:PRO:HA	14:I:44:MET:SD	2.54	0.46
28:a:182:A:H2'	28:a:183:C:H6	1.80	0.46
28:a:1473:A:H2'	28:a:1474:U:C6	2.50	0.46
28:a:1555:C:H2'	28:a:1556:C:C6	2.50	0.46
28:a:2123:A:H2'	28:a:2124:A:H8	1.80	0.46
35:h:52:ALA:O	35:h:56:LYS:HE2	2.15	0.46
37:j:7:MET:HE3	37:j:7:MET:HB3	1.81	0.46
6:A:510:C:H2'	6:A:511:U:C6	2.50	0.46
6:A:944:G:H2'	6:A:945:C:H6	1.80	0.46
7:B:21:GLN:HG3	7:B:22:THR:N	2.31	0.46
9:D:104:VAL:HG22	9:D:145:ILE:HD11	1.96	0.46
15:J:35:GLN:NE2	15:J:77:VAL:HG23	2.30	0.46
28:a:1304:A:H2'	28:a:1305:G:C8	2.51	0.46
28:a:1500:G:H2'	28:a:1501:C:C6	2.50	0.46
30:c:264:THR:HA	30:c:267:ILE:HD12	1.97	0.46
6:A:919:G:H2'	6:A:920:A:C8	2.49	0.46
6:A:1324:C:N3	6:A:1325:C:C5	2.84	0.46
28:a:2:G:H2'	28:a:3:U:C6	2.50	0.46
28:a:656:U:O2	28:a:657:A:C8	2.68	0.46
28:a:1432:A:C4	28:a:1433:G:C8	3.04	0.46
28:a:2294:U:H2'	28:a:2295:C:C6	2.50	0.46
28:a:2861:G:O2'	28:a:2862:A:H5'	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:f:38:MET:SD	33:f:152:MET:HB3	2.55	0.46
33:f:57:MET:HE1	33:f:87:CYS:C	2.40	0.46
33:f:137:VAL:HG22	33:f:140:GLU:HB3	1.97	0.46
46:s:1:MET:HE2	46:s:44:LYS:HE3	1.97	0.46
6:A:822:A:H2'	6:A:823:C:H6	1.79	0.46
6:A:1247:A:H2'	6:A:1248:A:H8	1.79	0.46
28:a:208:C:H2'	28:a:209:C:H6	1.81	0.46
28:a:348:C:O2'	28:a:349:A:H5'	2.16	0.46
28:a:1185:G:C2	28:a:1186:U:C5	3.04	0.46
36:i:17:VAL:HG23	36:i:137:PRO:HB2	1.97	0.46
38:k:22:GLY:HA2	38:k:30:GLY:HA2	1.98	0.46
4:3:23:ILE:HD13	28:a:1022:A:H1'	1.98	0.46
6:A:920:A:H2'	6:A:921:C:C6	2.50	0.46
6:A:944:G:H2'	6:A:945:C:C6	2.51	0.46
6:A:1311:C:H2'	6:A:1312:U:C6	2.50	0.46
6:A:1432:G:H2'	6:A:1433:U:C6	2.50	0.46
6:A:1521:C:H2'	6:A:1522:G:C8	2.50	0.46
9:D:97:GLU:HA	9:D:102:ASN:ND2	2.31	0.46
19:N:20:TYR:HE2	19:N:52:PRO:HD2	1.80	0.46
28:a:773:A:N7	30:c:220:VAL:HG21	2.30	0.46
28:a:1051:U:H4'	28:a:1060:A:C4	2.51	0.46
28:a:1960:U:O2'	30:c:223:MET:HE1	2.16	0.46
28:a:2063:U:H2'	28:a:2064:U:H6	1.81	0.46
28:a:2110:G:H2'	28:a:2111:U:C6	2.51	0.46
28:a:2293:G:H5'	28:a:2294:U:OP2	2.15	0.46
28:a:2368:G:H2'	28:a:2369:U:C6	2.50	0.46
28:a:2604:U:H2'	28:a:2605:C:H6	1.81	0.46
6:A:33:G:C5	6:A:302:A:H1'	2.51	0.46
6:A:208:G:H2'	6:A:209:A:C8	2.49	0.46
6:A:861:A:H2'	6:A:862:A:C8	2.50	0.46
6:A:991:A:H3'	6:A:992:C:H5"	1.97	0.46
6:A:1139:G:H2'	6:A:1140:G:O4'	2.14	0.46
6:A:1519:U:H2'	6:A:1520:G:H8	1.80	0.46
17:L:99:ARG:HA	17:L:104:CYS:SG	2.56	0.46
28:a:280:G:H2'	28:a:281:U:H6	1.80	0.46
28:a:1451:A:H2'	28:a:1452:G:C8	2.51	0.46
28:a:1946:C:H2'	28:a:1947:C:C6	2.48	0.46
28:a:2060:A:H2'	28:a:2061:C:C6	2.51	0.46
28:a:2639:U:H2'	28:a:2640:C:C6	2.51	0.46
30:c:34:VAL:HG13	30:c:61:HIS:HB3	1.97	0.46
34:g:15:VAL:HA	34:g:27:LYS:O	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:E:22:LYS:HG2	10:E:29:ILE:HB	1.96	0.46
10:E:155:LYS:HA	13:H:67:PHE:CD2	2.51	0.46
19:N:62:ASN:HB3	19:N:73:TYR:CG	2.51	0.46
39:l:62:GLY:HA3	39:l:109:VAL:HG23	1.96	0.46
44:q:21:LYS:HD3	44:q:93:PHE:CE1	2.50	0.46
6:A:346:G:H2'	6:A:347:G:C8	2.50	0.46
9:D:173:ILE:HD13	9:D:175:VAL:HG23	1.96	0.46
13:H:10:MET:HG3	13:H:27:MET:SD	2.56	0.46
28:a:1700:U:H2'	28:a:1701:G:H8	1.81	0.46
28:a:2019:6MZ:C2	28:a:2488:C:H5"	2.46	0.46
28:a:2098:U:H2'	28:a:2099:G:C8	2.51	0.46
33:f:48:LYS:HA	33:f:48:LYS:HD3	1.74	0.46
6:A:189:A:H2'	6:A:190:G:C8	2.50	0.46
6:A:748:U:H2'	6:A:749:G:O4'	2.16	0.46
6:A:840:U:H3'	6:A:841:G:C8	2.51	0.46
6:A:968:G:H1'	6:A:1362:G:O2'	2.15	0.46
7:B:14:ALA:HB1	7:B:210:ARG:HB2	1.98	0.46
20:O:78:TYR:O	20:O:82:ILE:HG23	2.16	0.46
28:a:135:A:H2'	28:a:136:C:C6	2.51	0.46
28:a:235:U:H2'	28:a:236:C:H6	1.81	0.46
28:a:297:G:H2'	28:a:298:C:H6	1.81	0.46
36:i:17:VAL:CG2	36:i:137:PRO:HB2	2.46	0.46
38:k:1:MET:HG2	38:k:4:ARG:NH1	2.30	0.46
7:B:119:LEU:HD23	7:B:139:ARG:HG3	1.98	0.46
7:B:209:ILE:H	7:B:209:ILE:HG13	1.41	0.46
13:H:40:LEU:HD21	13:H:130:VAL:HG21	1.98	0.46
28:a:480:U:H1'	28:a:484:A:N6	2.31	0.46
28:a:631:C:H2'	28:a:632:U:C6	2.51	0.46
28:a:1203:G:H1	28:a:1222:U:H3	1.63	0.46
28:a:1283:C:C2	28:a:1284:G:C8	3.04	0.46
28:a:1701:G:H2'	28:a:1702:U:H6	1.81	0.46
33:f:106:ILE:HG23	33:f:110:ARG:HD3	1.98	0.46
6:A:82:C:H4'	6:A:83:U:C5	2.51	0.45
6:A:164:G:H2'	6:A:165:C:O4'	2.15	0.45
6:A:176:U:C2'	6:A:177:A:H5'	2.46	0.45
6:A:624:G:H2'	6:A:625:G:O4'	2.15	0.45
6:A:1532:C:H2'	6:A:1533:C:C6	2.51	0.45
8:C:14:VAL:HG12	8:C:15:VAL:HG13	1.97	0.45
20:O:8:ARG:NH1	20:O:8:ARG:HB2	2.32	0.45
24:S:15:LEU:HA	24:S:18:LYS:HD2	1.98	0.45
28:a:196:A:C2	38:k:52:PHE:HZ	2.34	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:1516:A:N6	28:a:1534:G:H2'	2.32	0.45
28:a:1647:C:H2'	28:a:1648:U:H6	1.81	0.45
47:t:16:LYS:HG3	47:t:17:GLU:HG2	1.98	0.45
6:A:294:A:H2'	6:A:295:G:C8	2.51	0.45
6:A:542:C:H2'	6:A:543:G:O4'	2.15	0.45
6:A:979:U:H4'	6:A:980:A:O4'	2.15	0.45
6:A:1383:G:C2	6:A:1384:G:C8	3.04	0.45
8:C:134:MET:HE2	8:C:168:TYR:HD2	1.81	0.45
12:G:57:ASP:HB3	12:G:60:GLU:HB3	1.98	0.45
28:a:4:C:H2'	28:a:5:A:H8	1.81	0.45
28:a:751:G:H2'	28:a:752:A:O4'	2.16	0.45
28:a:2045:G:H4'	53:z:5:GLN:NE2	2.31	0.45
28:a:2161:U:H3'	28:a:2162:A:H8	1.80	0.45
28:a:2240:OMG:HM23	28:a:2240:OMG:H1'	1.66	0.45
33:f:138:PHE:CD2	33:f:139:PRO:HD3	2.51	0.45
3:2:15:LYS:HG3	38:k:66:PHE:CZ	2.52	0.45
6:A:242:A:C2	6:A:278:A:C5	3.04	0.45
6:A:1169:C:C2	6:A:1170:U:C5	3.05	0.45
14:I:50:LEU:HB3	14:I:56:THR:HA	1.97	0.45
16:K:85:VAL:CG1	16:K:92:ARG:HG2	2.46	0.45
16:K:105:LYS:HA	16:K:105:LYS:HD2	1.81	0.45
18:M:86:TYR:O	18:M:90:ARG:HG2	2.16	0.45
21:P:87:GLU:HG2	21:P:88:ARG:N	2.31	0.45
28:a:1120:U:O2'	28:a:1121:G:H2'	2.16	0.45
30:c:160:ALA:O	30:c:195:VAL:HG23	2.15	0.45
45:r:2:GLU:HG2	45:r:106:LYS:HD2	1.98	0.45
5:4:28:LEU:HD22	5:4:30:LYS:HB2	1.97	0.45
6:A:461:A:H2'	6:A:462:A:C8	2.51	0.45
6:A:588:U:H2'	6:A:589:A:H8	1.79	0.45
6:A:669:U:H2'	6:A:670:A:H8	1.81	0.45
7:B:20:HIS:O	7:B:41:HIS:HB2	2.16	0.45
7:B:210:ARG:H	7:B:210:ARG:HG2	1.53	0.45
28:a:175:A:H2'	28:a:176:A:C8	2.51	0.45
28:a:584:U:H2'	28:a:585:U:H6	1.79	0.45
28:a:655:G:C5	28:a:656:U:C5	3.05	0.45
28:a:1045:G:H2'	28:a:1046:G:O4'	2.16	0.45
28:a:1838:G:H2'	28:a:1839:G:H8	1.81	0.45
47:t:83:TYR:CE1	47:t:92:ARG:HG2	2.52	0.45
6:A:999:G:H3'	6:A:1000:A:H8	1.82	0.45
28:a:405:C:H2'	28:a:406:C:C6	2.51	0.45
32:e:131:LYS:HB3	32:e:131:LYS:HE3	1.83	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:p:105:ALA:HA	44:q:47:ILE:HD13	1.98	0.45
47:t:3:LYS:HD2	47:t:3:LYS:HA	1.71	0.45
4:3:25:VAL:HB	4:3:35:GLN:HB2	1.99	0.45
6:A:760:A:H2'	6:A:761:C:C6	2.51	0.45
7:B:166:ILE:HD12	7:B:167:ASP:HB2	1.99	0.45
9:D:64:ARG:HG3	9:D:74:PHE:CD2	2.50	0.45
9:D:152:LYS:HG2	9:D:180:LEU:HD12	1.98	0.45
16:K:15:VAL:HG21	16:K:35:ASP:HB2	1.98	0.45
16:K:98:ALA:O	16:K:102:VAL:HG23	2.16	0.45
18:M:81:MET:HB3	18:M:92:ARG:HG3	1.99	0.45
28:a:570:G:H2'	28:a:571:U:C6	2.52	0.45
28:a:830:U:H2'	28:a:831:C:C6	2.52	0.45
28:a:995:C:O2'	36:i:30:THR:HG21	2.17	0.45
28:a:1489:G:P	30:c:101:ARG:HH22	2.39	0.45
28:a:1642:G:C4	28:a:1643:A:C8	3.05	0.45
28:a:1675:A:H2'	28:a:1676:C:C6	2.50	0.45
28:a:2443:G:C5	28:a:2444:G:C8	3.05	0.45
28:a:2532:G:H2'	28:a:2533:G:C8	2.51	0.45
28:a:2580:C:C2	28:a:2581:G:N7	2.85	0.45
39:l:35:LYS:HG2	39:l:130:THR:HG22	1.98	0.45
6:A:161:G:H2'	6:A:162:A:C8	2.52	0.45
6:A:1235:A:H2	6:A:1238:G:N3	2.15	0.45
28:a:411:U:H2'	28:a:412:C:H6	1.82	0.45
28:a:590:A:C2	28:a:591:G:C5	3.05	0.45
28:a:635:A:H2'	28:a:637:A:C8	2.52	0.45
28:a:1631:A:H2'	28:a:1632:A:C8	2.52	0.45
28:a:2140:C:H2'	28:a:2141:C:C6	2.52	0.45
28:a:2304:C:C2	28:a:2305:G:C8	3.05	0.45
28:a:2546:G:H2'	28:a:2547:C:H6	1.77	0.45
6:A:475:G:H2'	6:A:476:U:C6	2.51	0.45
6:A:899:G:H2'	6:A:900:A:C8	2.48	0.45
7:B:14:ALA:HA	7:B:210:ARG:HH21	1.82	0.45
7:B:21:GLN:HG2	7:B:23:ARG:HG2	1.97	0.45
12:G:74:GLU:O	12:G:88:PRO:HA	2.16	0.45
21:P:43:ARG:HE	21:P:43:ARG:HB2	1.65	0.45
28:a:2120:U:H4'	28:a:2121:U:H5"	1.98	0.45
28:a:2306:C:C2	28:a:2307:G:C8	3.05	0.45
28:a:2444:G:C4	28:a:2445:C:C5	3.05	0.45
31:d:90:LEU:HD12	31:d:90:LEU:HA	1.85	0.45
35:h:7:GLN:HG2	35:h:8:ARG:H	1.80	0.45
47:t:36:GLY:C	47:t:37:LEU:HD23	2.42	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:4:14:ALA:HB3	5:4:22:ILE:HB	1.98	0.45
6:A:933:C:C2	6:A:934:A:C8	3.05	0.45
6:A:1154:A:H5'	6:A:1155:C:C6	2.52	0.45
6:A:1250:G:H2'	6:A:1251:G:H8	1.81	0.45
6:A:1370:G:H5"	12:G:36:LYS:HE3	1.98	0.45
11:F:30:LYS:HD2	11:F:30:LYS:HA	1.75	0.45
27:X:85:GLY:O	27:X:89:LYS:HG3	2.16	0.45
28:a:151:U:H2'	28:a:152:G:C8	2.52	0.45
28:a:222:A:N1	28:a:233:A:H5"	2.31	0.45
28:a:635:A:H2'	28:a:637:A:N7	2.32	0.45
28:a:862:U:OP1	39:l:5:LYS:HG3	2.17	0.45
28:a:1794:A:H2'	28:a:1795:C:C6	2.51	0.45
28:a:1921:A:H2'	28:a:1922:G:O4'	2.17	0.45
28:a:2740:G:H4'	34:g:4:VAL:HG23	1.99	0.45
43:p:78:ARG:O	43:p:117:LEU:HD11	2.17	0.45
46:s:5:ARG:HA	46:s:5:ARG:HD2	1.65	0.45
51:x:52:ARG:O	51:x:56:LEU:HG	2.16	0.45
6:A:605:A:H2'	6:A:606:A:O4'	2.17	0.45
7:B:70:LEU:HD12	7:B:160:PRO:HG3	1.98	0.45
8:C:134:MET:HE2	8:C:168:TYR:CD2	2.52	0.45
25:T:57:VAL:O	25:T:61:MET:HG2	2.17	0.45
28:a:520:A:C2	28:a:2031:A:H2'	2.51	0.45
28:a:1463:G:O2'	28:a:1464:U:H6	2.00	0.45
28:a:1831:G:H2'	28:a:1832:C:C6	2.52	0.45
28:a:2112:G:H2'	28:a:2113:G:C8	2.52	0.45
28:a:2586:G:H2'	28:a:2587:A:C8	2.52	0.45
28:a:2689:A:H2'	28:a:2690:C:C6	2.51	0.45
30:c:8:PRO:HB3	30:c:14:ARG:HG3	1.99	0.45
6:A:1118:U:H2'	6:A:1119:U:C6	2.51	0.44
6:A:1326:A:C5	6:A:1327:U:C5	3.06	0.44
6:A:1387:U:H2'	6:A:1388:U:C6	2.50	0.44
7:B:43:ILE:HG21	7:B:203:PRO:HB2	1.99	0.44
9:D:32:THR:C	9:D:34:LYS:H	2.26	0.44
28:a:543:U:H2'	28:a:544:G:H8	1.82	0.44
28:a:661:A:OP1	38:k:44:LYS:HE3	2.17	0.44
28:a:679:U:H2'	28:a:680:A:H8	1.83	0.44
28:a:1843:A:N6	28:a:1877:G:H1'	2.32	0.44
28:a:1938:G:H2'	28:a:1939:G:C8	2.52	0.44
28:a:2526:U:H2'	28:a:2527:C:C6	2.52	0.44
28:a:2621:A:H2'	28:a:2622:A:C8	2.52	0.44
28:a:2634:U:H3'	28:a:2635:C:C5'	2.47	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:b:3:U:H2'	29:b:4:G:H8	1.83	0.44
32:e:60:ARG:HE	32:e:60:ARG:HB3	1.64	0.44
43:p:49:ASP:HA	43:p:52:GLN:HB2	1.98	0.44
52:y:1:MET:CE	52:y:2:LYS:H	2.29	0.44
3:2:61:CYS:HB3	3:2:64:ILE:HB	1.97	0.44
6:A:89:C:H5"	6:A:90:C:H6	1.82	0.44
6:A:655:A:H4'	20:O:12:ILE:HD11	1.99	0.44
6:A:701:A:C4	6:A:702:G:C8	3.05	0.44
6:A:980:A:H5'	6:A:981:C:OP2	2.17	0.44
6:A:1115:U:H2'	6:A:1116:C:H6	1.81	0.44
6:A:1520:G:H2'	6:A:1521:C:C6	2.51	0.44
11:F:25:TYR:HE1	11:F:77:LEU:HD22	1.79	0.44
12:G:79:ARG:HD3	12:G:83:ALA:O	2.17	0.44
17:L:39:THR:HA	17:L:50:ARG:O	2.17	0.44
27:X:15:GLU:OE1	27:X:15:GLU:HA	2.17	0.44
28:a:2353:C:H2'	28:a:2354:G:O4'	2.17	0.44
28:a:2826:A:H2'	28:a:2827:G:H8	1.80	0.44
30:c:271:ARG:CZ	30:c:273:VAL:HG22	2.46	0.44
39:l:54:ILE:HG13	39:l:121:ALA:HB2	1.99	0.44
1:0:46:LYS:HE2	1:0:46:LYS:HB2	1.79	0.44
6:A:668:G:H2'	6:A:669:U:C6	2.53	0.44
8:C:111:LEU:HD22	8:C:146:ALA:HB2	1.99	0.44
8:C:131:ARG:HG2	8:C:168:TYR:OH	2.17	0.44
8:C:142:MET:HG3	8:C:170:GLU:OE1	2.17	0.44
15:J:90:LEU:HD12	15:J:91:ASP:N	2.32	0.44
27:X:29:PHE:HE2	27:X:94:LEU:HD12	1.82	0.44
28:a:20:U:H2'	28:a:21:G:C8	2.53	0.44
28:a:248:G:H5'	28:a:250:G:N7	2.32	0.44
28:a:1087:U:H2'	28:a:1088:A:O4'	2.17	0.44
28:a:2151:G:H2'	28:a:2151:G:N3	2.32	0.44
28:a:2154:C:C2'	28:a:2155:U:H5'	2.46	0.44
28:a:2300:A:C2	33:f:77:PHE:HB3	2.52	0.44
28:a:2850:U:H2'	28:a:2851:A:C8	2.53	0.44
33:f:96:MET:HE3	33:f:96:MET:HB3	1.74	0.44
39:l:57:ARG:HD3	39:l:57:ARG:HA	1.72	0.44
51:x:5:ASP:O	51:x:8:GLU:HG2	2.17	0.44
6:A:185:C:H1'	6:A:186:G:OP2	2.17	0.44
6:A:579:U:H2'	6:A:580:A:H8	1.83	0.44
6:A:601:G:H2'	6:A:602:U:O4'	2.17	0.44
6:A:625:G:H2'	6:A:626:A:C8	2.53	0.44
6:A:1421:U:H2'	6:A:1422:U:C6	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:G:49:ARG:HD2	12:G:49:ARG:HA	1.84	0.44
12:G:153:HIS:CE1	16:K:58:THR:HG23	2.52	0.44
28:a:520:A:H5'	36:i:113:PRO:CG	2.45	0.44
28:a:845:A:H2'	28:a:846:G:C8	2.52	0.44
28:a:1170:A:H2'	28:a:1171:C:C6	2.53	0.44
28:a:1500:G:H2'	28:a:1501:C:H6	1.81	0.44
28:a:1946:C:C2	28:a:1947:C:C5	3.05	0.44
30:c:75:PRO:HA	30:c:117:GLN:HG3	1.98	0.44
3:2:28:LYS:HD2	3:2:28:LYS:HA	1.79	0.44
7:B:73:GLY:HA2	7:B:166:ILE:HG12	1.99	0.44
7:B:185:VAL:HB	7:B:198:VAL:HG23	1.98	0.44
8:C:180:ALA:HA	8:C:206:GLU:HA	2.00	0.44
9:D:74:PHE:CE1	9:D:96:LEU:HD11	2.53	0.44
10:E:110:MET:SD	10:E:124:ALA:HB1	2.57	0.44
14:I:34:GLU:OE2	14:I:34:GLU:N	2.45	0.44
28:a:463:A:H2'	28:a:464:A:O4'	2.18	0.44
28:a:586:C:H2'	28:a:587:A:H8	1.83	0.44
28:a:1568:C:H2'	28:a:1569:U:C6	2.53	0.44
28:a:1784:C:H2'	28:a:1785:U:O4'	2.18	0.44
28:a:2502:A:H2'	28:a:2503:U:C6	2.52	0.44
28:a:2594:PSU:O4	28:a:2595:C:C5	2.71	0.44
35:h:26:GLY:HA2	35:h:30:LEU:HD12	2.00	0.44
6:A:378:A:H2'	6:A:379:A:C8	2.52	0.44
6:A:427:A:C4	6:A:428:A:C8	3.06	0.44
6:A:654:U:H2'	6:A:655:A:H8	1.82	0.44
12:G:88:PRO:HG2	12:G:152:SER:OG	2.17	0.44
17:L:8:ILE:HD11	22:Q:37:LYS:HB3	2.00	0.44
19:N:10:GLU:HA	19:N:10:GLU:OE2	2.18	0.44
28:a:524:A:H4'	28:a:525:G:C8	2.53	0.44
28:a:568:G:H2'	28:a:569:G:C8	2.53	0.44
28:a:1470:U:H2'	28:a:1471:G:C8	2.52	0.44
28:a:1728:A:H2'	28:a:1729:G:O4'	2.17	0.44
28:a:1775:A:H1'	28:a:1927:A:N6	2.32	0.44
28:a:2772:A:H2'	28:a:2773:U:C6	2.52	0.44
31:d:111:ASP:OD2	31:d:176:GLN:HG2	2.18	0.44
31:d:184:ASP:OD1	31:d:187:ARG:HB2	2.17	0.44
51:x:18:LEU:HD12	51:x:53:ILE:HG22	1.98	0.44
6:A:148:A:H62	6:A:165:C:H42	1.66	0.44
6:A:703:A:H2'	6:A:704:U:H6	1.83	0.44
6:A:933:C:C4	6:A:934:A:N7	2.86	0.44
6:A:1068:C:H2'	6:A:1069:G:H8	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:1140:G:C2	6:A:1141:G:C5	3.06	0.44
7:B:109:LEU:O	7:B:113:ILE:HG23	2.18	0.44
9:D:118:GLN:HG3	9:D:122:HIS:CD2	2.53	0.44
18:M:100:GLN:N	18:M:100:GLN:OE1	2.51	0.44
23:R:42:SER:HA	23:R:45:THR:HG22	2.00	0.44
28:a:4:C:H2'	28:a:5:A:C8	2.53	0.44
28:a:389:U:H5"	50:w:32:ASN:HB2	1.99	0.44
28:a:699:G:H2'	28:a:700:U:C6	2.53	0.44
28:a:915:A:H2'	28:a:916:U:H6	1.82	0.44
28:a:1530:C:H2'	28:a:1531:A:H8	1.77	0.44
28:a:2834:U:H2'	28:a:2835:G:H8	1.82	0.44
29:b:37:U:H2'	29:b:38:U:C6	2.52	0.44
32:e:96:ASN:HB2	32:e:99:MET:HG3	1.99	0.44
42:o:99:LYS:HA	42:o:99:LYS:HD3	1.73	0.44
50:w:13:VAL:HG22	50:w:29:PHE:HB2	1.99	0.44
6:A:309:A:H2'	6:A:310:C:C6	2.52	0.44
6:A:487:C:H2'	6:A:488:G:C8	2.53	0.44
6:A:915:A:H2'	6:A:916:A:H8	1.83	0.44
16:K:66:ALA:HB3	16:K:98:ALA:HB3	2.00	0.44
28:a:2707:G:O3'	42:o:99:LYS:HG3	2.17	0.44
31:d:85:VAL:HG21	31:d:90:LEU:HD13	2.00	0.44
40:m:56:LYS:HE2	40:m:87:TYR:O	2.18	0.44
2:1:7:PRO:HB2	28:a:1297:G:H4'	2.00	0.44
6:A:1144:C:H1'	14:I:16:ARG:HH21	1.82	0.44
10:E:23:VAL:HG22	10:E:28:ARG:HG3	2.00	0.44
14:I:15:ALA:HB2	14:I:77:ILE:HD12	2.00	0.44
28:a:128:C:H2'	28:a:129:C:C6	2.53	0.44
28:a:513:U:C2	28:a:514:G:N7	2.86	0.44
28:a:1234:A:H2'	28:a:1235:A:O4'	2.18	0.44
28:a:1485:U:H5"	28:a:1486:C:H5	1.83	0.44
28:a:2121:U:H5'	28:a:2122:G:C5	2.53	0.44
28:a:2457:A:H2'	28:a:2465:A:N1	2.33	0.44
33:f:140:GLU:HG2	33:f:141:ILE:H	1.82	0.44
3:2:4:LEU:HD23	3:2:4:LEU:HA	1.80	0.43
6:A:625:G:H2'	6:A:626:A:H8	1.83	0.43
7:B:81:ILE:O	7:B:85:GLN:HB3	2.18	0.43
8:C:47:LEU:HB3	8:C:50:ALA:HB3	2.00	0.43
8:C:132:ARG:HD3	8:C:132:ARG:HA	1.71	0.43
11:F:42:TRP:CZ2	23:R:24:LYS:HD3	2.53	0.43
15:J:7:ARG:HG2	15:J:75:ASP:OD1	2.18	0.43
18:M:113:ARG:HA	18:M:113:ARG:HH11	1.82	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:N:64:CYS:HB3	19:N:65:GLY:H	1.63	0.43
19:N:83:LYS:HD3	19:N:83:LYS:HA	1.77	0.43
23:R:21:ILE:HD12	23:R:54:GLN:HB2	2.00	0.43
28:a:656:U:C2	28:a:657:A:C8	3.06	0.43
28:a:1186:U:H2'	28:a:1187:U:H6	1.83	0.43
28:a:1405:C:H2'	28:a:1406:G:O4'	2.17	0.43
28:a:1434:C:H2'	28:a:1435:C:H6	1.83	0.43
28:a:2444:G:H2'	28:a:2445:C:H6	1.83	0.43
33:f:110:ARG:HB3	33:f:136:ILE:HD11	2.00	0.43
33:f:117:PHE:HD1	33:f:117:PHE:HA	1.68	0.43
44:q:50:GLY:HA3	44:q:53:VAL:C	2.43	0.43
6:A:780:C:H2'	6:A:781:A:H8	1.83	0.43
6:A:892:G:H2'	6:A:893:U:C6	2.53	0.43
6:A:1327:U:H2'	6:A:1328:G:O4'	2.17	0.43
8:C:51:MET:HG2	8:C:115:LEU:HD22	2.00	0.43
12:G:23:ILE:O	12:G:27:MET:HG3	2.18	0.43
28:a:18:C:H2'	28:a:19:A:C8	2.53	0.43
28:a:84:A:C2	28:a:103:A:C5	3.06	0.43
28:a:208:C:C2	28:a:209:C:C5	3.06	0.43
28:a:746:C:H2'	28:a:747:A:C8	2.54	0.43
28:a:775:G:H5'	28:a:776:G:OP1	2.18	0.43
28:a:1553:U:H2'	28:a:1554:U:C6	2.54	0.43
28:a:2059:A:H2'	28:a:2060:A:C8	2.52	0.43
28:a:2217:G:C4	28:a:2218:U:C5	3.06	0.43
41:n:26:ARG:HD2	41:n:92:ASP:OD2	2.17	0.43
3:2:12:LYS:HB3	38:k:65:LYS:HG2	1.99	0.43
6:A:388:C:C2	6:A:389:A:C8	3.06	0.43
6:A:405:U:H2'	6:A:406:G:O4'	2.17	0.43
6:A:1352:G:H2'	6:A:1353:G:C8	2.53	0.43
6:A:1527:G:H2'	6:A:1528:A:C8	2.53	0.43
12:G:47:LEU:O	12:G:50:VAL:HG12	2.18	0.43
28:a:1078:A:H5'	28:a:1079:A:OP1	2.18	0.43
28:a:1505:G:C2	28:a:1506:A:C8	3.07	0.43
29:b:89:C:N3	29:b:90:C:C5	2.86	0.43
30:c:210:ALA:HA	30:c:213:TRP:CE3	2.53	0.43
33:f:140:GLU:HG2	33:f:141:ILE:N	2.34	0.43
36:i:4:LEU:HD23	43:p:101:HIS:HE1	1.82	0.43
6:A:1140:G:C4	6:A:1141:G:N7	2.86	0.43
6:A:1418:U:H2'	6:A:1419:U:C6	2.54	0.43
6:A:1449:A:H4'	6:A:1450:A:OP1	2.19	0.43
19:N:9:ARG:O	19:N:13:ARG:HG3	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:355:U:H2'	28:a:356:G:O4'	2.18	0.43
28:a:1541:U:H2'	28:a:1542:U:C6	2.53	0.43
28:a:2089:G:H3'	28:a:2090:A:C8	2.52	0.43
28:a:2105:G:H3'	28:a:2106:A:C8	2.53	0.43
28:a:2118:C:H2'	28:a:2119:U:O4'	2.19	0.43
28:a:2846:G:H5'	28:a:2847:U:OP2	2.19	0.43
29:b:43:A:C4	29:b:44:A:C8	3.06	0.43
33:f:110:ARG:HE	33:f:136:ILE:HD11	1.82	0.43
50:w:64:ILE:HD12	50:w:64:ILE:HA	1.83	0.43
6:A:387:C:C4	6:A:388:C:C5	3.07	0.43
6:A:395:G:H2'	6:A:396:C:H6	1.83	0.43
6:A:799:A:H3'	6:A:800:G:H8	1.83	0.43
6:A:1047:G:H1'	6:A:1211:C:O2	2.19	0.43
6:A:1106:C:C2	6:A:1107:A:C8	3.07	0.43
6:A:1291:A:H2'	6:A:1292:U:C6	2.54	0.43
11:F:66:CYS:HB2	11:F:70:THR:OG1	2.18	0.43
28:a:1616:C:H2'	28:a:1617:A:O4'	2.19	0.43
28:a:1855:A:H62	28:a:1864:G:H21	1.64	0.43
29:b:27:A:OP2	41:n:33:PRO:HD2	2.18	0.43
46:s:64:GLY:HA3	46:s:76:ARG:O	2.18	0.43
47:t:2:ALA:HA	47:t:81:VAL:HG12	2.00	0.43
6:A:145:A:H2'	6:A:146:C:C6	2.54	0.43
6:A:401:U:H3'	6:A:402:G:H5'	2.01	0.43
6:A:450:C:H2'	6:A:451:U:H6	1.83	0.43
6:A:872:U:C4	6:A:873:A:N7	2.86	0.43
6:A:982:C:H2'	6:A:983:U:H6	1.83	0.43
6:A:1124:G:H1'	6:A:1277:A:C5	2.54	0.43
6:A:1323:U:C2	6:A:1324:C:C5	3.07	0.43
6:A:1460:U:H2'	6:A:1461:U:C6	2.53	0.43
7:B:121:THR:O	7:B:125:ASP:HB2	2.19	0.43
9:D:97:GLU:HA	9:D:102:ASN:HD22	1.83	0.43
11:F:38:ARG:O	11:F:62:MET:HA	2.19	0.43
12:G:75:VAL:HG21	12:G:144:MET:SD	2.59	0.43
12:G:103:TRP:NE1	12:G:137:LYS:HD2	2.33	0.43
28:a:601:C:H2'	28:a:602:C:H6	1.82	0.43
28:a:2028:U:OP1	36:i:111:LYS:HE2	2.18	0.43
28:a:2084:A:H2'	28:a:2085:C:C6	2.53	0.43
34:g:51:GLN:OE1	34:g:51:GLN:HA	2.18	0.43
1:0:4:LYS:HB3	1:0:50:ILE:CD1	2.48	0.43
5:4:6:HIS:HE1	33:f:63:GLN:HG3	1.84	0.43
6:A:599:A:H2'	6:A:600:U:C6	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:1157:G:C2	6:A:1158:C:C6	3.07	0.43
11:F:50:PRO:HB3	11:F:55:HIS:CE1	2.54	0.43
16:K:116:PRO:HB2	16:K:118:IAS:CG	2.49	0.43
28:a:250:G:H2'	28:a:251:A:C8	2.53	0.43
28:a:284:G:O2'	28:a:285:U:H5"	2.18	0.43
28:a:296:C:H1'	28:a:297:G:C8	2.53	0.43
28:a:567:U:H2'	28:a:568:G:C8	2.54	0.43
28:a:601:C:H2'	28:a:602:C:C6	2.54	0.43
28:a:852:A:H2'	28:a:853:G:O4'	2.19	0.43
28:a:938:C:H2'	28:a:939:U:H6	1.82	0.43
28:a:961:C:H2'	28:a:962:A:O4'	2.19	0.43
28:a:2059:A:H2'	28:a:2060:A:O4'	2.19	0.43
33:f:122:PHE:HE1	33:f:166:GLY:HA3	1.83	0.43
34:g:155:GLU:HG2	34:g:157:TYR:H	1.83	0.43
52:y:6:VAL:HG12	52:y:28:LEU:HD11	1.99	0.43
6:A:27:C:H2'	6:A:28:A:C8	2.53	0.43
6:A:367:A:H2'	6:A:368:C:O4'	2.19	0.43
6:A:459:U:H2'	6:A:460:U:O4'	2.18	0.43
6:A:512:G:H2'	6:A:513:PSU:H6	1.83	0.43
6:A:560:A:H2'	6:A:564:G:C8	2.54	0.43
6:A:781:A:H2'	6:A:782:G:H8	1.84	0.43
6:A:1057:U:H2'	6:A:1058:G:H8	1.84	0.43
18:M:40:THR:O	18:M:43:THR:HG22	2.18	0.43
28:a:112:U:H2'	28:a:113:G:O4'	2.18	0.43
28:a:1418:G:H2'	28:a:1419:A:O4'	2.19	0.43
28:a:2417:G:H21	38:k:62:ARG:NH1	2.16	0.43
33:f:148:ARG:HH11	33:f:150:ARG:NH2	2.17	0.43
46:s:47:GLU:HG2	46:s:52:VAL:O	2.18	0.43
6:A:476:U:H2'	6:A:477:G:C8	2.53	0.43
6:A:556:A:H4'	6:A:557:U:H3'	2.01	0.43
6:A:1001:A:H8	6:A:1023:G:C2	2.36	0.43
6:A:1170:U:C2	6:A:1171:G:C8	3.06	0.43
8:C:139:GLN:HB3	8:C:143:ARG:HH21	1.83	0.43
16:K:45:THR:O	16:K:49:GLN:HG2	2.18	0.43
28:a:1307:C:O2'	28:a:1308:C:H5'	2.18	0.43
28:a:1507:U:H2'	28:a:1508:C:C6	2.53	0.43
33:f:137:VAL:HG13	33:f:140:GLU:H	1.84	0.43
48:u:63:GLU:O	48:u:77:LYS:HG3	2.18	0.43
50:w:43:GLU:N	50:w:43:GLU:OE2	2.52	0.43
6:A:622:U:H2'	6:A:623:G:H8	1.84	0.43
7:B:138:GLU:O	7:B:142:GLU:HG2	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:E:80:LEU:HB3	10:E:146:MET:SD	2.58	0.43
17:L:69:GLY:HA3	17:L:107:VAL:HG11	2.01	0.43
28:a:671:A:H2'	28:a:672:G:H8	1.82	0.43
28:a:1060:A:H4'	28:a:1061:G:OP1	2.19	0.43
28:a:1335:A:C4	28:a:1336:C:C6	3.07	0.43
28:a:2036:C:H2'	28:a:2037:G:H8	1.84	0.43
28:a:2041:A:H4'	31:d:151:GLN:O	2.19	0.43
28:a:2086:U:H2'	28:a:2087:U:C6	2.54	0.43
29:b:109:G:H2'	29:b:110:C:H6	1.84	0.43
37:j:109:GLU:H	37:j:109:GLU:CD	2.26	0.43
45:r:12:ILE:HD13	45:r:43:ALA:HB2	2.00	0.43
6:A:735:U:H2'	6:A:736:C:C6	2.54	0.42
6:A:880:C:O2'	6:A:881:U:H5'	2.19	0.42
9:D:74:PHE:HE1	9:D:96:LEU:HD11	1.83	0.42
9:D:198:ASN:HD22	9:D:198:ASN:HA	1.65	0.42
28:a:549:U:H2'	28:a:550:G:C8	2.53	0.42
28:a:843:A:H5'	52:y:45:GLY:HA3	2.01	0.42
28:a:919:G:H21	52:y:46:MET:HE1	1.83	0.42
28:a:1031:G:H2'	28:a:1032:G:H8	1.84	0.42
28:a:1404:G:H2'	28:a:1405:C:C6	2.54	0.42
28:a:1847:A:H2'	28:a:1848:U:O4'	2.19	0.42
28:a:2149:C:H2'	28:a:2150:C:C6	2.54	0.42
46:s:6:ILE:HD12	46:s:48:LYS:HD2	1.99	0.42
6:A:454:U:H2'	6:A:455:U:C6	2.55	0.42
6:A:937:C:H2'	6:A:938:G:C8	2.54	0.42
15:J:8:ILE:HB	15:J:74:ILE:CG2	2.47	0.42
20:O:74:ASP:HB3	20:O:77:ARG:HD3	2.02	0.42
28:a:215:G:H4'	28:a:216:A:H4'	2.02	0.42
28:a:350:C:H2'	28:a:351:A:C8	2.54	0.42
28:a:491:U:H2'	28:a:492:G:O4'	2.17	0.42
28:a:659:A:H2'	28:a:661:A:H62	1.85	0.42
28:a:2303:A:H2'	28:a:2304:C:C6	2.54	0.42
33:f:46:ASP:OD1	33:f:49:LEU:HB2	2.20	0.42
33:f:60:ILE:HG23	33:f:138:PHE:CE2	2.54	0.42
41:n:11:ARG:HD2	41:n:95:GLY:O	2.19	0.42
5:4:16:CYS:C	5:4:18:CYS:H	2.26	0.42
5:4:70:ARG:HD2	5:4:70:ARG:HA	1.49	0.42
6:A:1513:2MG:H2'	6:A:1515:MA6:OP2	2.19	0.42
19:N:6:MET:HE3	19:N:6:MET:HB3	1.89	0.42
28:a:388:G:H1'	50:w:29:PHE:HB3	2.02	0.42
28:a:1514:G:H2'	28:a:1515:C:O4'	2.18	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:2261:U:H5”	28:a:2262:A:OP1	2.19	0.42
28:a:2289:C:H2’	28:a:2290:G:H8	1.84	0.42
33:f:64:LYS:HA	33:f:65:PRO:HD3	1.89	0.42
33:f:73:SER:HA	33:f:80:ARG:HA	2.01	0.42
6:A:31:U:O2’	6:A:32:U:H5’	2.18	0.42
6:A:265:U:H2’	6:A:266:A:H8	1.81	0.42
6:A:402:G:H21	9:D:118:GLN:HE22	1.65	0.42
6:A:511:U:H2’	6:A:512:G:C8	2.53	0.42
6:A:1117:C:H2’	6:A:1118:U:C6	2.54	0.42
6:A:1224:A:H5”	24:S:83:HIS:CD2	2.48	0.42
20:O:4:THR:HG22	20:O:7:ASP:OD1	2.20	0.42
28:a:349:A:N3	28:a:350:C:C6	2.87	0.42
28:a:2150:C:H2’	28:a:2151:G:O4’	2.19	0.42
28:a:2204:C:H2’	28:a:2205:G:C8	2.54	0.42
28:a:2760:C:H2’	28:a:2761:C:H6	1.84	0.42
28:a:2804:C:C2	28:a:2805:G:C8	3.07	0.42
33:f:36:LEU:HD22	33:f:154:ILE:HG12	2.01	0.42
36:i:15:TRP:CE2	36:i:135:GLN:HG2	2.54	0.42
6:A:1000:A:H2	6:A:1034:U:H3	1.66	0.42
28:a:1393:U:H2’	28:a:1394:U:H6	1.84	0.42
28:a:1663:A:C2	28:a:2571:G:H5’	2.54	0.42
28:a:2225:U:H2’	28:a:2226:G:O4’	2.20	0.42
28:a:2281:G:H2’	28:a:2282:C:C6	2.54	0.42
28:a:2318:A:H2’	28:a:2319:G:H8	1.82	0.42
39:l:17:ASN:ND2	39:l:39:ARG:HB2	2.33	0.42
44:q:39:LEU:HD23	44:q:53:VAL:HG12	2.00	0.42
44:q:51:ALA:HB3	44:q:52:PRO:HD3	2.01	0.42
49:v:41:ARG:HA	49:v:41:ARG:NE	2.34	0.42
6:A:35:A:H2’	6:A:36:C:C6	2.54	0.42
6:A:907:C:C2	6:A:908:U:C5	3.08	0.42
6:A:922:G:C2	6:A:924:G:C8	3.08	0.42
6:A:1067:U:OP1	10:E:29:ILE:HD11	2.19	0.42
6:A:1521:C:H2’	6:A:1522:G:H8	1.84	0.42
7:B:34:PHE:HB2	7:B:44:ASN:HB3	2.02	0.42
8:C:12:LEU:HD11	19:N:91:GLY:HA2	2.02	0.42
16:K:41:LEU:HD12	16:K:76:TYR:CD2	2.54	0.42
27:X:11:ILE:HD12	27:X:43:PHE:HB3	2.00	0.42
28:a:38:A:H2’	28:a:39:G:O4’	2.19	0.42
28:a:437:C:H2’	28:a:438:G:O4’	2.19	0.42
28:a:2152:U:H2’	28:a:2153:C:O4’	2.20	0.42
31:d:15:ILE:HD12	31:d:25:VAL:HG21	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:m:8:VAL:HG22	40:m:43:GLU:HG2	2.02	0.42
41:n:42:SER:HB3	41:n:49:LEU:HD11	2.00	0.42
49:v:74:GLN:H	49:v:74:GLN:HG2	1.67	0.42
6:A:62:A:N7	6:A:104:G:H4'	2.35	0.42
6:A:156:A:H2'	6:A:157:A:O4'	2.20	0.42
6:A:436:A:C4	6:A:437:A:C8	3.08	0.42
6:A:879:C:C2	6:A:880:C:C5	3.08	0.42
6:A:1038:G:C6	6:A:1039:A:C6	3.08	0.42
6:A:1169:C:N3	6:A:1170:U:C5	2.88	0.42
9:D:13:ARG:NH2	9:D:39:PRO:HA	2.35	0.42
14:I:9:ARG:HG3	14:I:14:THR:HG23	2.01	0.42
18:M:90:ARG:HA	18:M:90:ARG:HD2	1.83	0.42
28:a:276:U:H2'	28:a:277:U:C6	2.54	0.42
28:a:365:U:H2'	28:a:366:A:C8	2.53	0.42
28:a:688:G:H2'	28:a:689:C:C6	2.55	0.42
28:a:698:G:H1	28:a:715:U:H3	1.66	0.42
28:a:1673:G:H2'	28:a:1674:U:H6	1.83	0.42
28:a:2374:C:H2'	28:a:2375:U:C6	2.55	0.42
33:f:136:ILE:HG23	33:f:138:PHE:CE1	2.53	0.42
3:2:32:LEU:HA	3:2:35:LYS:HG3	2.01	0.42
3:2:48:MET:HE3	3:2:48:MET:HB3	1.81	0.42
6:A:542:C:P	9:D:64:ARG:HH12	2.42	0.42
6:A:1001:A:H5'	6:A:1023:G:N2	2.32	0.42
6:A:1011:A:N3	6:A:1216:A:H1'	2.35	0.42
6:A:1235:A:N7	6:A:1300:C:H1'	2.35	0.42
6:A:1289:C:C2	6:A:1290:G:C8	3.07	0.42
9:D:26:LYS:O	9:D:31:LYS:HB2	2.19	0.42
14:I:51:GLU:H	14:I:51:GLU:HG2	1.71	0.42
16:K:36:ARG:HE	16:K:36:ARG:HB3	1.47	0.42
28:a:17:G:H4'	43:p:25:TYR:HE1	1.85	0.42
28:a:1298:G:N2	28:a:1301:U:C4	2.88	0.42
28:a:1374:A:H2'	28:a:1375:U:H6	1.84	0.42
28:a:1819:U:H2'	28:a:1820:G:H8	1.85	0.42
28:a:2271:G:H4'	28:a:2378:G:O2'	2.19	0.42
29:b:11:A:O2'	29:b:12:U:H3'	2.20	0.42
52:y:1:MET:HE2	52:y:3:THR:H	1.85	0.42
5:4:42:HIS:HB3	5:4:45:TYR:CD1	2.54	0.42
6:A:348:C:H4'	6:A:350:G:OP1	2.20	0.42
6:A:380:C:H2'	6:A:381:C:C6	2.55	0.42
6:A:539:G:H5"	9:D:39:PRO:O	2.19	0.42
6:A:631:C:H2'	6:A:632:A:H8	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:1155:C:C5	6:A:1157:G:H1'	2.55	0.42
8:C:35:LYS:HE3	8:C:35:LYS:HB2	1.83	0.42
8:C:87:LEU:HD12	8:C:87:LEU:HA	1.96	0.42
9:D:92:LEU:CD2	9:D:202:ILE:HG21	2.49	0.42
17:L:74:LEU:HA	17:L:74:LEU:HD13	1.81	0.42
21:P:34:PHE:CE2	21:P:58:ASN:HB2	2.55	0.42
28:a:150:U:H2'	28:a:151:U:C6	2.54	0.42
28:a:189:G:OP2	50:w:14:VAL:HG11	2.20	0.42
28:a:352:U:H2'	28:a:353:A:O4'	2.19	0.42
28:a:532:C:H2'	28:a:533:A:H8	1.84	0.42
28:a:1070:C:H2'	28:a:1071:U:H6	1.84	0.42
28:a:2075:U:H2'	28:a:2076:G:H8	1.81	0.42
28:a:2107:U:H2'	28:a:2137:G:O2'	2.19	0.42
28:a:2136:A:H2'	28:a:2137:G:O4'	2.20	0.42
30:c:53:HIS:HA	30:c:217:ARG:HB2	2.00	0.42
31:d:5:LEU:HD11	31:d:101:VAL:HA	2.02	0.42
31:d:128:TRP:CG	31:d:163:LYS:HB3	2.55	0.42
31:d:155:PRO:HG3	31:d:159:PHE:CZ	2.55	0.42
35:h:9:ILE:HD11	35:h:12:LEU:HB2	2.02	0.42
38:k:23:ARG:HD3	38:k:23:ARG:HA	1.83	0.42
42:o:30:VAL:HG13	42:o:88:GLU:CG	2.50	0.42
6:A:10:A:N6	9:D:208:LYS:HB2	2.35	0.42
6:A:1172:G:H2'	6:A:1173:A:H8	1.84	0.42
6:A:1271:A:H2'	6:A:1272:U:C6	2.55	0.42
6:A:1368:G:O3'	14:I:69:GLY:HA3	2.19	0.42
9:D:58:ARG:HA	9:D:58:ARG:NE	2.35	0.42
20:O:89:ARG:H	20:O:89:ARG:HG3	1.63	0.42
22:Q:31:GLN:HA	22:Q:38:SER:HA	2.01	0.42
28:a:272:U:H2'	28:a:357:A:C6	2.55	0.42
28:a:1201:A:H2'	28:a:1202:A:H8	1.85	0.42
28:a:1526:U:C2	28:a:1527:G:H1'	2.55	0.42
28:a:1831:G:H2'	28:a:1832:C:H6	1.85	0.42
28:a:1994:G:C8	28:a:1995:C:H5	2.37	0.42
28:a:2802:G:H2'	28:a:2803:C:H6	1.83	0.42
29:b:55:A:H2'	29:b:56:A:H8	1.84	0.42
30:c:158:ALA:HB1	30:c:197:ASN:O	2.20	0.42
37:j:2:ILE:HG21	37:j:8:LEU:HD21	2.01	0.42
45:r:92:ARG:HD3	45:r:94:ASP:OD2	2.19	0.42
50:w:3:LYS:O	50:w:12:PRO:HD3	2.20	0.42
6:A:185:C:H4'	6:A:186:G:O5'	2.20	0.41
6:A:403:U:H2'	6:A:404:G:H8	1.83	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:1319:C:H5"	18:M:99:GLY:HA3	2.02	0.41
6:A:1462:A:H2'	6:A:1463:C:C6	2.55	0.41
6:A:1532:C:H2'	6:A:1533:C:H6	1.84	0.41
7:B:8:MET:C	7:B:12:LEU:HD12	2.44	0.41
7:B:66:LYS:HG2	7:B:66:LYS:O	2.20	0.41
9:D:93:LEU:HG	9:D:199:GLU:HG2	2.02	0.41
9:D:170:PRO:HB3	9:D:172:TRP:CE2	2.55	0.41
12:G:27:MET:SD	12:G:40:GLU:HA	2.59	0.41
12:G:115:THR:HG22	12:G:118:LEU:HG	2.00	0.41
22:Q:20:LYS:HE3	22:Q:20:LYS:HB2	1.87	0.41
24:S:79:THR:HG22	24:S:81:ARG:HE	1.85	0.41
28:a:194:G:H2'	28:a:195:A:O4'	2.19	0.41
28:a:549:U:H2'	28:a:550:G:H8	1.84	0.41
28:a:589:U:C2	28:a:590:A:N7	2.88	0.41
28:a:915:A:H2'	28:a:916:U:C6	2.55	0.41
28:a:959:G:H2'	28:a:960:U:C6	2.54	0.41
28:a:1314:U:C2	28:a:1315:A:C8	3.08	0.41
28:a:2276:A:C5	28:a:2278:G:C8	3.08	0.41
28:a:2400:A:H2'	28:a:2401:A:H8	1.85	0.41
28:a:2533:G:H2'	28:a:2534:G:O4'	2.20	0.41
28:a:2566:A:H2'	28:a:2603:A:N6	2.35	0.41
28:a:2773:U:H2'	28:a:2774:U:H6	1.85	0.41
32:e:147:ILE:HB	32:e:168:VAL:HG22	2.01	0.41
33:f:120:LYS:H	33:f:120:LYS:HG2	1.66	0.41
38:k:2:THR:HG22	38:k:3:LEU:H	1.85	0.41
6:A:98:G:H2'	6:A:99:C:H6	1.85	0.41
6:A:149:C:C2	6:A:150:A:N7	2.88	0.41
6:A:768:A:H2'	6:A:769:U:C6	2.55	0.41
6:A:975:A:C4	6:A:1316:A:C2	3.08	0.41
6:A:1140:G:N3	6:A:1141:G:C8	2.88	0.41
6:A:1146:U:H2'	6:A:1147:U:C6	2.56	0.41
6:A:1316:A:C8	6:A:1320:G:C6	3.08	0.41
7:B:72:VAL:HG12	7:B:94:VAL:HB	2.01	0.41
7:B:73:GLY:HA2	7:B:166:ILE:CG1	2.49	0.41
8:C:56:LEU:HB3	8:C:67:THR:HB	2.01	0.41
9:D:172:TRP:CE2	9:D:188:PRO:HG3	2.54	0.41
10:E:154:ALA:HB1	13:H:67:PHE:HE2	1.85	0.41
28:a:1394:U:H2'	28:a:1395:C:H6	1.85	0.41
28:a:2579:A:C4	28:a:2580:C:C5	3.09	0.41
28:a:2592:G:H2'	28:a:2593:U:O4'	2.20	0.41
28:a:2770:A:OP2	28:a:2770:A:H8	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:c:160:ALA:HA	30:c:177:ARG:HD3	2.01	0.41
31:d:127:ARG:HG3	31:d:168:LEU:HB2	2.00	0.41
42:o:43:LEU:HD23	42:o:43:LEU:HA	1.90	0.41
42:o:66:LYS:HD3	42:o:68:SER:OG	2.20	0.41
1:0:31:GLU:HG3	1:0:46:LYS:HG3	2.02	0.41
6:A:1002:A:H3'	6:A:1003:C:C6	2.55	0.41
6:A:1316:A:C8	6:A:1320:G:C5	3.08	0.41
28:a:78:C:O2'	28:a:79:C:H6	2.03	0.41
28:a:371:G:N1	28:a:388:G:C6	2.88	0.41
28:a:1424:G:H2'	28:a:1425:C:O4'	2.21	0.41
28:a:1495:U:H2'	28:a:1496:C:C6	2.55	0.41
33:f:36:LEU:HD12	33:f:61:ALA:HB2	2.02	0.41
33:f:59:LEU:HD23	33:f:59:LEU:HA	1.87	0.41
34:g:25:GLU:OE2	34:g:32:THR:HG23	2.20	0.41
38:k:80:ARG:HB2	38:k:83:GLU:HG3	2.01	0.41
6:A:1399:4OC:H2'	6:A:1400:C:O4'	2.20	0.41
7:B:224:LEU:HA	7:B:227:LYS:HG2	2.02	0.41
8:C:87:LEU:O	8:C:91:LEU:HG	2.20	0.41
18:M:44:LYS:HE2	18:M:46:ARG:NH1	2.36	0.41
21:P:24:LEU:HB3	21:P:35:TYR:HB3	2.03	0.41
28:a:695:G:H1'	28:a:718:A:N6	2.36	0.41
28:a:1631:A:H2'	28:a:1632:A:H8	1.85	0.41
28:a:1724:C:O2	28:a:1724:C:H2'	2.21	0.41
28:a:1984:U:H3'	28:a:1985:C:H2'	2.02	0.41
28:a:2143:G:H2'	28:a:2144:U:C6	2.56	0.41
31:d:39:LYS:O	31:d:47:GLN:HA	2.21	0.41
31:d:125:VAL:HG21	31:d:132:THR:HG22	2.03	0.41
39:l:42:MET:HE2	39:l:47:ILE:HG12	2.03	0.41
49:v:20:MET:HB2	49:v:20:MET:HE2	1.80	0.41
5:4:39:SER:HB3	33:f:105:SER:HA	2.02	0.41
6:A:148:A:H62	6:A:165:C:N4	2.17	0.41
6:A:692:A:H2'	6:A:693:A:C8	2.55	0.41
6:A:1144:C:H2'	6:A:1145:U:H6	1.84	0.41
12:G:47:LEU:HD23	12:G:47:LEU:HA	1.83	0.41
17:L:8:ILE:HG12	22:Q:32:HIS:CD2	2.55	0.41
28:a:24:G:H2'	28:a:25:U:C6	2.55	0.41
28:a:246:C:O2'	28:a:377:C:H4'	2.21	0.41
28:a:1619:G:H2'	28:a:1620:U:C6	2.55	0.41
28:a:1797:A:H2'	28:a:1798:A:C8	2.55	0.41
28:a:1863:C:H2'	28:a:1864:G:O4'	2.20	0.41
28:a:2099:G:H2'	28:a:2109:G:H5'	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:2107:U:C4	28:a:2138:U:H1'	2.54	0.41
31:d:85:VAL:HB	31:d:89:GLU:HB2	2.01	0.41
6:A:196:A:H2'	6:A:197:G:H8	1.85	0.41
6:A:354:U:C2	6:A:355:G:C8	3.09	0.41
6:A:447:A:H4'	6:A:448:G:O4'	2.21	0.41
7:B:81:ILE:O	7:B:84:GLU:HG3	2.21	0.41
14:I:47:ARG:O	14:I:51:GLU:HG2	2.21	0.41
15:J:102:LEU:HD12	15:J:102:LEU:HA	1.91	0.41
19:N:23:LYS:O	19:N:26:GLU:HG2	2.21	0.41
20:O:4:THR:HG23	20:O:6:ALA:H	1.86	0.41
25:T:66:ILE:HD13	25:T:66:ILE:HA	1.93	0.41
25:T:72:ALA:O	25:T:76:LYS:HG3	2.21	0.41
28:a:811:A:H4'	28:a:827:G:N2	2.33	0.41
28:a:1434:C:H2'	28:a:1435:C:C6	2.56	0.41
28:a:1788:G:OP1	30:c:258:ARG:HD2	2.21	0.41
28:a:1828:G:C2	28:a:1829:G:C8	3.09	0.41
28:a:1968:U:O2'	28:a:1969:G:H5'	2.20	0.41
28:a:2142:A:H2'	28:a:2143:G:H8	1.84	0.41
28:a:2302:C:H5"	33:f:88:LYS:HD3	2.03	0.41
28:a:2876:C:H2'	28:a:2877:U:C6	2.55	0.41
33:f:20:LEU:HD11	33:f:168:ALA:HB3	2.02	0.41
5:4:22:ILE:HG23	33:f:3:ARG:HH12	1.85	0.41
5:4:47:GLY:O	5:4:49:GLN:HG3	2.21	0.41
6:A:534:A:H2'	6:A:535:G:C8	2.55	0.41
6:A:733:C:C2	6:A:734:A:C8	3.08	0.41
6:A:983:U:H2'	6:A:984:G:O4'	2.20	0.41
6:A:1096:G:P	7:B:148:ARG:HH22	2.44	0.41
6:A:1381:C:H2'	6:A:1382:G:C8	2.56	0.41
6:A:1535:C:H2'	6:A:1536:C:C6	2.56	0.41
10:E:150:GLU:OE2	10:E:150:GLU:N	2.53	0.41
13:H:18:GLN:OE1	13:H:73:ILE:HB	2.21	0.41
14:I:48:GLN:HG2	14:I:101:PHE:HZ	1.84	0.41
28:a:315:G:H4'	28:a:317:A:C8	2.55	0.41
28:a:1112:G:C2	28:a:1113:C:C6	3.09	0.41
28:a:2148:G:H2'	28:a:2149:C:C6	2.55	0.41
28:a:2251:U:H2'	28:a:2252:C:H6	1.85	0.41
28:a:2365:A:H8	28:a:2365:A:OP1	2.04	0.41
28:a:2842:C:C2	28:a:2843:A:C8	3.09	0.41
28:a:2885:C:H2'	28:a:2886:U:C6	2.55	0.41
34:g:37:LEU:HD23	34:g:37:LEU:HA	1.83	0.41
40:m:28:LEU:HD21	40:m:95:LEU:HD22	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:y:30:ARG:HG2	52:y:33:HIS:HB2	2.01	0.41
3:2:15:LYS:HG3	38:k:66:PHE:HZ	1.86	0.41
6:A:182:C:H2'	6:A:183:U:O4'	2.21	0.41
6:A:1170:U:H2'	6:A:1171:G:H8	1.85	0.41
6:A:1530:C:C2	6:A:1531:A:C8	3.09	0.41
10:E:152:VAL:O	10:E:155:LYS:HG3	2.21	0.41
17:L:42:PRO:HD3	17:L:48:ALA:O	2.20	0.41
28:a:805:C:H2'	28:a:806:C:C6	2.54	0.41
28:a:936:G:H2'	28:a:937:A:H8	1.85	0.41
28:a:1415:A:H4'	28:a:1416:C:O5'	2.21	0.41
28:a:1700:U:H2'	28:a:1701:G:C8	2.55	0.41
28:a:2304:C:H2'	28:a:2305:G:H8	1.86	0.41
28:a:2638:C:H2'	28:a:2639:U:C6	2.55	0.41
34:g:78:GLY:HA2	34:g:82:GLY:HA2	2.02	0.41
44:q:26:LYS:HE2	44:q:26:LYS:HB2	1.93	0.41
5:4:28:LEU:HD12	33:f:139:PRO:HA	2.03	0.41
6:A:10:A:C6	9:D:208:LYS:HB2	2.56	0.41
6:A:35:A:H2'	6:A:36:C:H6	1.86	0.41
6:A:590:U:C2	6:A:591:U:C5	3.09	0.41
7:B:48:THR:HB	7:B:203:PRO:HG2	2.01	0.41
13:H:87:TYR:CD1	13:H:125:GLU:HB2	2.56	0.41
21:P:39:VAL:HG21	21:P:78:TRP:CD1	2.56	0.41
27:X:8:ASP:OD2	27:X:8:ASP:C	2.64	0.41
28:a:96:U:H5'	28:a:97:C:OP2	2.20	0.41
28:a:189:G:P	50:w:14:VAL:HG11	2.61	0.41
28:a:232:G:H8	28:a:232:G:OP2	2.04	0.41
28:a:467:C:H2'	28:a:468:G:O4'	2.21	0.41
28:a:471:A:N3	28:a:473:G:H5"	2.35	0.41
28:a:512:A:C4	28:a:513:U:C5	3.08	0.41
28:a:663:C:C2	28:a:664:C:C5	3.09	0.41
28:a:731:C:H5'	28:a:1773:A:H3'	2.02	0.41
28:a:872:G:H2'	28:a:873:G:C8	2.56	0.41
28:a:1018:A:H61	28:a:1115:G:H2'	1.86	0.41
28:a:1396:U:H2'	28:a:1397:G:C8	2.55	0.41
28:a:1417:G:H2'	28:a:1418:G:C8	2.54	0.41
28:a:1759:G:C6	28:a:1972:G:C6	3.09	0.41
28:a:1762:A:N7	28:a:1818:A:H1'	2.36	0.41
28:a:1837:A:H2'	28:a:1837:A:OP2	2.21	0.41
28:a:2151:G:H3'	28:a:2152:U:H6	1.86	0.41
28:a:2477:G:H2'	28:a:2478:U:C6	2.56	0.41
28:a:2501:C:H2'	28:a:2502:A:O4'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:2712:C:H2'	28:a:2713:U:O4'	2.21	0.41
28:a:2826:A:H2'	28:a:2827:G:C8	2.56	0.41
28:a:2850:U:H2'	28:a:2851:A:H8	1.85	0.41
29:b:22:G:N7	29:b:54:G:H2'	2.35	0.41
29:b:109:G:H2'	29:b:110:C:C6	2.56	0.41
36:i:21:THR:HA	36:i:61:GLN:HB3	2.02	0.41
36:i:77:HIS:HA	36:i:83:GLY:O	2.20	0.41
37:j:47:ILE:HA	37:j:47:ILE:HD12	1.87	0.41
39:l:51:ARG:CG	39:l:66:ILE:HD11	2.50	0.41
46:s:81:LYS:HB2	46:s:81:LYS:HE2	1.85	0.41
52:y:23:LEU:HD23	52:y:23:LEU:HA	1.90	0.41
6:A:135:U:H2'	6:A:136:U:C6	2.56	0.41
6:A:184:A:H3'	6:A:185:C:O2	2.20	0.41
6:A:200:G:C4	6:A:201:A:C8	3.09	0.41
6:A:310:C:O2'	6:A:311:A:H5'	2.21	0.41
6:A:403:U:H2'	6:A:404:G:C8	2.56	0.41
6:A:1387:U:C2	6:A:1388:U:C5	3.09	0.41
7:B:26:ASN:O	7:B:29:MET:HB2	2.21	0.41
7:B:168:VAL:HA	7:B:175:ILE:HD11	2.03	0.41
8:C:134:MET:HG3	8:C:134:MET:H	1.74	0.41
9:D:93:LEU:HD23	9:D:93:LEU:HA	1.90	0.41
9:D:174:GLU:HB3	9:D:185:LYS:HE3	2.02	0.41
20:O:56:LEU:HD21	28:a:706:A:C2	2.56	0.41
25:T:24:LEU:HD22	25:T:61:MET:SD	2.61	0.41
28:a:297:G:H2'	28:a:298:C:C6	2.56	0.41
28:a:614:C:OP2	38:k:104:ARG:HD3	2.21	0.41
28:a:1069:C:H2'	28:a:1070:C:C6	2.56	0.41
28:a:1285:C:H2'	28:a:1286:C:H6	1.86	0.41
28:a:2543:U:H2'	28:a:2544:U:H6	1.86	0.41
28:a:2663:G:H2'	28:a:2664:A:C8	2.56	0.41
28:a:2780:A:O2'	28:a:2781:G:H5"	2.21	0.41
31:d:122:GLN:HG3	31:d:168:LEU:HD23	2.03	0.41
33:f:4:LEU:HD23	33:f:4:LEU:HA	1.80	0.41
36:i:110:PRO:O	36:i:115:GLY:HA3	2.21	0.41
36:i:122:MET:HE2	36:i:122:MET:HB3	1.78	0.41
51:x:40:SER:O	51:x:43:VAL:HG22	2.21	0.41
6:A:412:G:C4	6:A:413:G:C8	3.09	0.40
6:A:1520:G:C4	6:A:1521:C:C5	3.09	0.40
9:D:199:GLU:O	9:D:203:VAL:HG23	2.21	0.40
11:F:81:ASN:HB3	11:F:84:ILE:HD12	2.03	0.40
22:Q:69:SER:HB3	22:Q:72:LYS:HE3	2.02	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:256:A:H2'	28:a:257:C:H6	1.86	0.40
28:a:917:G:H2'	28:a:918:A:H8	1.85	0.40
28:a:1112:G:C6	28:a:1113:C:C5	3.09	0.40
28:a:1270:U:H2'	28:a:1271:G:O4'	2.21	0.40
28:a:1328:U:H3'	28:a:1329:G:H5'	2.03	0.40
28:a:1396:U:H2'	28:a:1397:G:H8	1.86	0.40
28:a:1935:U:H2'	28:a:1936:C:C6	2.56	0.40
28:a:1935:U:H2'	28:a:1936:C:H6	1.85	0.40
28:a:2112:G:H2'	28:a:2113:G:H8	1.86	0.40
28:a:2255:A:H4'	28:a:2256:A:N3	2.37	0.40
28:a:2275:G:H2'	28:a:2275:G:N3	2.35	0.40
32:e:194:LYS:HE2	32:e:194:LYS:HB2	1.86	0.40
33:f:36:LEU:HB2	33:f:89:VAL:HG23	2.03	0.40
34:g:54:PRO:HB3	34:g:61:ALA:HB1	2.02	0.40
34:g:77:LYS:HB2	34:g:77:LYS:HE2	1.84	0.40
37:j:101:PRO:HG3	42:o:68:SER:HB2	2.02	0.40
43:p:58:ARG:HA	43:p:61:TRP:CE3	2.55	0.40
44:q:77:MET:HE3	44:q:77:MET:HB3	1.89	0.40
1:0:25:THR:HG21	28:a:2275:G:OP1	2.21	0.40
5:4:68:MET:C	5:4:70:ARG:H	2.28	0.40
6:A:410:A:C4	6:A:411:A:C8	3.09	0.40
6:A:1026:U:H4'	6:A:1027:U:C5	2.56	0.40
6:A:1104:C:C4	6:A:1105:G:C8	3.09	0.40
6:A:1267:U:H2'	6:A:1268:G:H8	1.86	0.40
11:F:21:MET:HE3	11:F:21:MET:HB3	1.89	0.40
12:G:50:VAL:HG21	12:G:61:PHE:CE2	2.56	0.40
19:N:16:THR:HG22	19:N:55:ALA:HA	2.04	0.40
20:O:47:LYS:HB3	20:O:47:LYS:HE2	1.92	0.40
24:S:10:PHE:HE2	24:S:37:ARG:HE	1.69	0.40
28:a:430:G:H2'	28:a:431:A:C8	2.56	0.40
28:a:551:C:H2'	28:a:552:G:O4'	2.21	0.40
28:a:1065:C:H2'	28:a:1066:C:C6	2.56	0.40
28:a:1871:U:C2	28:a:1872:U:C5	3.09	0.40
28:a:1982:U:H4'	31:d:136:THR:OG1	2.21	0.40
28:a:2161:U:H3'	28:a:2162:A:C8	2.56	0.40
28:a:2729:A:H2'	28:a:2730:A:H8	1.86	0.40
28:a:2775:U:H2'	28:a:2776:C:H6	1.86	0.40
29:b:88:C:H2'	29:b:89:C:H6	1.87	0.40
32:e:20:ARG:HD3	32:e:106:CYS:SG	2.62	0.40
34:g:85:ARG:HD2	34:g:85:ARG:HA	1.72	0.40
35:h:15:LEU:HD23	35:h:15:LEU:HA	1.97	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:z:44:LYS:HE3	53:z:44:LYS:HB3	1.92	0.40
1:0:23:LYS:HB3	1:0:23:LYS:HE2	1.80	0.40
6:A:299:A:H2'	6:A:300:U:O4'	2.22	0.40
6:A:657:G:H2'	6:A:658:G:O4'	2.22	0.40
6:A:777:A:H5"	16:K:124:LYS:HD3	2.03	0.40
7:B:8:MET:SD	7:B:49:VAL:HG21	2.61	0.40
28:a:315:G:OP2	32:e:131:LYS:HD2	2.21	0.40
28:a:720:G:O2'	28:a:754:G:H4'	2.21	0.40
28:a:1159:A:H2'	28:a:1160:U:C6	2.56	0.40
28:a:1314:U:C2	28:a:1315:A:N7	2.90	0.40
28:a:1552:C:H2'	28:a:1553:U:C6	2.55	0.40
28:a:2334:A:N3	28:a:2370:A:H2'	2.36	0.40
29:b:46:U:H2'	29:b:47:C:C6	2.56	0.40
42:o:20:LEU:HD23	42:o:20:LEU:HA	1.92	0.40
45:r:65:ASP:O	45:r:69:LEU:HG	2.21	0.40
1:0:28:GLU:H	1:0:28:GLU:CD	2.29	0.40
6:A:173:G:N7	6:A:174:C:C5	2.89	0.40
6:A:955:A:H1'	6:A:982:C:O2'	2.21	0.40
7:B:17:HIS:O	7:B:43:ILE:HD12	2.21	0.40
7:B:169:ASP:HB3	7:B:193:SER:OG	2.21	0.40
8:C:73:PRO:HA	8:C:76:VAL:HG12	2.03	0.40
9:D:119:LEU:HB3	9:D:125:ILE:CD1	2.51	0.40
13:H:112:MET:HG3	13:H:116:ALA:HB3	2.02	0.40
24:S:10:PHE:CE2	24:S:37:ARG:HG3	2.52	0.40
25:T:67:ILE:HB	25:T:71:LYS:HD2	2.04	0.40
28:a:1310:A:C5	28:a:1311:C:C5	3.09	0.40
28:a:1335:A:C5	28:a:1336:C:C5	3.09	0.40
28:a:2765:A:H4'	28:a:2766:G:O5'	2.22	0.40
35:h:10:LYS:HB3	35:h:10:LYS:HE2	1.73	0.40
48:u:80:ALA:HB3	48:u:94:ASP:HB2	2.04	0.40
50:w:12:PRO:HA	50:w:29:PHE:O	2.22	0.40
2:1:3:ARG:HD3	2:1:3:ARG:HA	1.82	0.40
6:A:82:C:H4'	6:A:83:U:H5	1.87	0.40
6:A:550:A:H5"	17:L:21:VAL:HG21	2.04	0.40
6:A:684:A:N7	6:A:698:U:C4	2.89	0.40
6:A:991:A:H8	19:N:8:ASN:HD22	1.69	0.40
6:A:1127:A:C8	6:A:1143:A:N1	2.89	0.40
6:A:1167:A:H3'	6:A:1168:A:H5"	2.02	0.40
6:A:1284:A:C6	6:A:1285:A:C6	3.10	0.40
9:D:94:LYS:HE3	9:D:94:LYS:HB2	1.81	0.40
9:D:202:ILE:HD13	9:D:202:ILE:HA	1.85	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:263:U:H2'	28:a:264:C:O4'	2.21	0.40
28:a:644:U:H6	28:a:644:U:H2'	1.72	0.40
28:a:656:U:C2	28:a:657:A:N7	2.89	0.40
28:a:925:U:H2'	28:a:926:C:H6	1.87	0.40
28:a:1725:C:C2	28:a:1726:U:C5	3.09	0.40
28:a:1869:U:H2'	28:a:1870:C:C6	2.56	0.40
28:a:2076:G:H2'	28:a:2077:A:H8	1.86	0.40
28:a:2087:U:H2'	28:a:2088:U:C6	2.57	0.40
28:a:2160:A:H4'	28:a:2161:U:H5'	2.03	0.40
28:a:2688:G:H2'	28:a:2689:A:C8	2.57	0.40
31:d:142:SER:HB3	31:d:145:VAL:HG21	2.03	0.40
32:e:1:MET:HE1	32:e:112:VAL:HG11	2.04	0.40
36:i:18:VAL:HG11	36:i:28:LEU:HD11	2.03	0.40
41:n:98:TYR:CE2	41:n:103:LYS:HG3	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	0	49/51 (96%)	48 (98%)	1 (2%)	0	100	100
2	1	42/44 (96%)	41 (98%)	1 (2%)	0	100	100
3	2	61/64 (95%)	58 (95%)	3 (5%)	0	100	100
4	3	36/38 (95%)	34 (94%)	2 (6%)	0	100	100
5	4	69/74 (93%)	54 (78%)	15 (22%)	0	100	100
7	B	227/250 (91%)	208 (92%)	17 (8%)	2 (1%)	14	41
8	C	213/250 (85%)	208 (98%)	5 (2%)	0	100	100
9	D	205/208 (99%)	198 (97%)	7 (3%)	0	100	100
10	E	153/165 (93%)	148 (97%)	5 (3%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
11	F	104/127 (82%)	102 (98%)	2 (2%)	0	100	100
12	G	151/156 (97%)	144 (95%)	7 (5%)	0	100	100
13	H	128/131 (98%)	122 (95%)	6 (5%)	0	100	100
14	I	125/128 (98%)	118 (94%)	7 (6%)	0	100	100
15	J	98/103 (95%)	95 (97%)	3 (3%)	0	100	100
16	K	113/128 (88%)	107 (95%)	6 (5%)	0	100	100
17	L	119/124 (96%)	114 (96%)	5 (4%)	0	100	100
18	M	114/118 (97%)	110 (96%)	4 (4%)	0	100	100
19	N	98/101 (97%)	91 (93%)	7 (7%)	0	100	100
20	O	86/89 (97%)	84 (98%)	2 (2%)	0	100	100
21	P	80/83 (96%)	76 (95%)	4 (5%)	0	100	100
22	Q	77/85 (91%)	75 (97%)	1 (1%)	1 (1%)	9	32
23	R	64/75 (85%)	64 (100%)	0	0	100	100
24	S	82/91 (90%)	80 (98%)	2 (2%)	0	100	100
25	T	84/88 (96%)	84 (100%)	0	0	100	100
27	X	102/116 (88%)	100 (98%)	2 (2%)	0	100	100
30	c	270/274 (98%)	262 (97%)	8 (3%)	0	100	100
31	d	208/212 (98%)	202 (97%)	5 (2%)	1 (0%)	24	54
32	e	197/200 (98%)	193 (98%)	4 (2%)	0	100	100
33	f	175/178 (98%)	159 (91%)	13 (7%)	3 (2%)	7	26
34	g	173/177 (98%)	167 (96%)	5 (3%)	1 (1%)	21	51
35	h	58/148 (39%)	54 (93%)	4 (7%)	0	100	100
36	i	140/142 (99%)	137 (98%)	3 (2%)	0	100	100
37	j	120/122 (98%)	115 (96%)	5 (4%)	0	100	100
38	k	144/146 (99%)	140 (97%)	4 (3%)	0	100	100
39	l	133/137 (97%)	130 (98%)	3 (2%)	0	100	100
40	m	117/125 (94%)	115 (98%)	2 (2%)	0	100	100
41	n	113/116 (97%)	109 (96%)	3 (3%)	1 (1%)	14	41
42	o	115/122 (94%)	112 (97%)	3 (3%)	0	100	100
43	p	115/119 (97%)	114 (99%)	1 (1%)	0	100	100
44	q	101/103 (98%)	94 (93%)	7 (7%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
45	r	107/109 (98%)	105 (98%)	2 (2%)	0	100	100
46	s	90/106 (85%)	87 (97%)	3 (3%)	0	100	100
47	t	101/105 (96%)	98 (97%)	3 (3%)	0	100	100
48	u	95/98 (97%)	90 (95%)	5 (5%)	0	100	100
49	v	76/85 (89%)	74 (97%)	2 (3%)	0	100	100
50	w	75/78 (96%)	74 (99%)	1 (1%)	0	100	100
51	x	60/65 (92%)	56 (93%)	4 (7%)	0	100	100
52	y	56/58 (97%)	55 (98%)	1 (2%)	0	100	100
53	z	52/61 (85%)	50 (96%)	2 (4%)	0	100	100
All	All	5571/5973 (93%)	5355 (96%)	207 (4%)	9 (0%)	44	72

All (9) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
31	d	152	ASN
33	f	136	ILE
7	B	128	PHE
7	B	38	ASN
33	f	72	LYS
33	f	139	PRO
41	n	3	GLU
22	Q	74	TRP
34	g	86	LYS

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	0	47/47 (100%)	47 (100%)	0	100	100
2	1	36/36 (100%)	36 (100%)	0	100	100
3	2	52/53 (98%)	51 (98%)	1 (2%)	50	79

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
4	3	33/33 (100%)	31 (94%)	2 (6%)	17 46
5	4	60/63 (95%)	58 (97%)	2 (3%)	33 67
7	B	188/200 (94%)	176 (94%)	12 (6%)	16 44
8	C	175/198 (88%)	172 (98%)	3 (2%)	53 82
9	D	170/171 (99%)	166 (98%)	4 (2%)	43 75
10	E	113/120 (94%)	109 (96%)	4 (4%)	32 66
11	F	95/111 (86%)	92 (97%)	3 (3%)	34 68
12	G	125/128 (98%)	124 (99%)	1 (1%)	73 90
13	H	108/109 (99%)	106 (98%)	2 (2%)	50 79
14	I	99/100 (99%)	98 (99%)	1 (1%)	68 89
15	J	89/91 (98%)	85 (96%)	4 (4%)	24 58
16	K	87/97 (90%)	85 (98%)	2 (2%)	44 76
17	L	103/105 (98%)	99 (96%)	4 (4%)	28 63
18	M	96/98 (98%)	92 (96%)	4 (4%)	26 60
19	N	81/82 (99%)	80 (99%)	1 (1%)	63 86
20	O	71/72 (99%)	70 (99%)	1 (1%)	59 85
21	P	63/63 (100%)	61 (97%)	2 (3%)	34 68
22	Q	71/76 (93%)	67 (94%)	4 (6%)	19 50
23	R	58/66 (88%)	57 (98%)	1 (2%)	53 82
24	S	71/78 (91%)	67 (94%)	4 (6%)	19 50
25	T	65/67 (97%)	63 (97%)	2 (3%)	35 69
27	X	92/102 (90%)	90 (98%)	2 (2%)	45 77
30	c	218/220 (99%)	217 (100%)	1 (0%)	81 93
31	d	165/166 (99%)	162 (98%)	3 (2%)	51 80
32	e	155/155 (100%)	153 (99%)	2 (1%)	61 86
33	f	146/147 (99%)	139 (95%)	7 (5%)	23 55
34	g	140/142 (99%)	134 (96%)	6 (4%)	26 60
35	h	45/112 (40%)	42 (93%)	3 (7%)	15 43
36	i	118/118 (100%)	115 (98%)	3 (2%)	42 74
37	j	103/103 (100%)	99 (96%)	4 (4%)	28 63
38	k	108/108 (100%)	107 (99%)	1 (1%)	70 90

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
39	l	111/111 (100%)	109 (98%)	2 (2%)	51 80
40	m	96/101 (95%)	94 (98%)	2 (2%)	47 77
41	n	84/85 (99%)	80 (95%)	4 (5%)	23 55
42	o	99/102 (97%)	96 (97%)	3 (3%)	36 70
43	p	85/86 (99%)	85 (100%)	0	100 100
44	q	84/84 (100%)	83 (99%)	1 (1%)	63 86
45	r	88/88 (100%)	87 (99%)	1 (1%)	65 88
46	s	78/87 (90%)	76 (97%)	2 (3%)	40 73
47	t	83/85 (98%)	82 (99%)	1 (1%)	63 86
48	u	79/80 (99%)	77 (98%)	2 (2%)	42 74
49	v	60/64 (94%)	58 (97%)	2 (3%)	33 67
50	w	69/70 (99%)	67 (97%)	2 (3%)	37 71
51	x	54/56 (96%)	53 (98%)	1 (2%)	50 79
52	y	54/54 (100%)	53 (98%)	1 (2%)	50 79
53	z	46/50 (92%)	45 (98%)	1 (2%)	45 77
All	All	4616/4840 (95%)	4495 (97%)	121 (3%)	41 73

All (121) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
3	2	54	VAL
4	3	8	LYS
4	3	37	GLN
5	4	28	LEU
5	4	46	THR
7	B	25	TRP
7	B	29	MET
7	B	31	GLN
7	B	45	LEU
7	B	46	GLU
7	B	76	ARG
7	B	118	ASP
7	B	119	LEU
7	B	161	ASP
7	B	165	VAL
7	B	173	ILE
7	B	209	ILE

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Mol	Chain	Res	Type
8	C	52	VAL
8	C	84	ILE
8	C	97	VAL
9	D	3	ARG
9	D	97	GLU
9	D	145	ILE
9	D	198	ASN
10	E	73	VAL
10	E	100	GLU
10	E	123	LEU
10	E	161	GLU
11	F	21	MET
11	F	39	LEU
11	F	101	LEU
12	G	149	LYS
13	H	59	THR
13	H	76	VAL
14	I	58	LYS
15	J	26	VAL
15	J	48	ARG
15	J	57	VAL
15	J	92	LEU
16	K	32	THR
16	K	46	SER
17	L	5	ASN
17	L	40	THR
17	L	41	THR
17	L	98	VAL
18	M	7	VAL
18	M	34	LEU
18	M	42	THR
18	M	104	THR
19	N	58	VAL
20	O	35	GLN
21	P	58	ASN
21	P	68	LEU
22	Q	22	ILE
22	Q	43	THR
22	Q	61	THR
22	Q	64	GLU
23	R	36	ASN
24	S	5	LEU

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Mol	Chain	Res	Type
24	S	23	VAL
24	S	39	MET
24	S	49	ILE
25	T	15	VAL
25	T	46	VAL
27	X	9	LYS
27	X	84	HIS
30	c	105	ILE
31	d	36	THR
31	d	129	ASN
31	d	186	GLU
32	e	141	ASN
32	e	194	LYS
33	f	16	LEU
33	f	22	ILE
33	f	24	ASN
33	f	69	LEU
33	f	89	VAL
33	f	117	PHE
33	f	138	PHE
34	g	9	VAL
34	g	15	VAL
34	g	24	VAL
34	g	79	VAL
34	g	98	VAL
34	g	101	THR
35	h	37	VAL
35	h	50	ARG
35	h	51	ARG
36	i	64	VAL
36	i	67	ASN
36	i	79	GLU
37	j	47	ILE
37	j	58	MET
37	j	69	ILE
37	j	80	ASP
38	k	12	GLU
39	l	110	ASN
39	l	137	MET
40	m	53	THR
40	m	65	LEU
41	n	17	LEU

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Mol	Chain	Res	Type
41	n	68	GLU
41	n	87	THR
41	n	89	VAL
42	o	28	THR
42	o	30	VAL
42	o	37	GLU
44	q	19	THR
45	r	2	GLU
46	s	2	ASN
46	s	72	THR
47	t	90	LYS
48	u	68	LYS
48	u	69	VAL
49	v	10	THR
49	v	41	ARG
50	w	2	SER
50	w	78	ILE
51	x	8	GLU
52	y	3	THR
53	z	54	PHE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (53) such sidechains are listed below:

Mol	Chain	Res	Type
3	2	19	ASN
4	3	4	GLN
4	3	35	GLN
5	4	20	ASN
7	B	17	HIS
7	B	47	HIS
7	B	80	ASN
7	B	155	ASN
7	B	180	ASN
9	D	42	HIS
9	D	128	ASN
9	D	154	GLN
9	D	198	ASN
10	E	81	GLN
11	F	55	HIS
11	F	94	HIS
13	H	4	GLN
13	H	18	GLN

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Mol	Chain	Res	Type
16	K	21	HIS
16	K	39	ASN
16	K	117	HIS
20	O	50	HIS
20	O	62	GLN
21	P	62	GLN
21	P	77	HIS
21	P	81	GLN
25	T	3	ASN
25	T	20	HIS
30	c	4	GLN
30	c	53	HIS
30	c	239	ASN
31	d	108	GLN
33	f	24	ASN
33	f	58	GLN
35	h	11	ASN
35	h	33	GLN
35	h	43	ASN
36	i	130	HIS
37	j	3	GLN
38	k	71	GLN
41	n	39	GLN
42	o	32	GLN
43	p	44	GLN
43	p	52	GLN
44	q	69	HIS
44	q	87	GLN
46	s	90	GLN
48	u	79	GLN
49	v	12	ASN
49	v	57	HIS
51	x	24	ASN
52	y	24	GLN
53	z	4	GLN

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
26	W	9/15 (60%)	2 (22%)	0
28	a	2889/2893 (99%)	536 (18%)	0

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Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
29	b	114/115 (99%)	14 (12%)	0
6	A	1535/1537 (99%)	272 (17%)	12 (0%)
All	All	4547/4560 (99%)	824 (18%)	12 (0%)

All (824) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
6	A	6	C
6	A	9	A
6	A	11	G
6	A	24	G
6	A	34	A
6	A	41	G
6	A	49	C
6	A	50	U
6	A	53	A
6	A	60	C
6	A	74	G
6	A	75	A
6	A	76	A
6	A	77	G
6	A	82	C
6	A	83	U
6	A	86	C
6	A	88	A
6	A	90	C
6	A	91	G
6	A	92	G
6	A	105	A
6	A	106	C
6	A	107	G
6	A	126	A
6	A	127	U
6	A	140	G
6	A	160	G
6	A	169	U
6	A	170	A
6	A	177	A
6	A	184	A
6	A	186	G
6	A	191	A
6	A	193	A

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Mol	Chain	Res	Type
6	A	201	A
6	A	205	U
6	A	206	C
6	A	208	G
6	A	214	G
6	A	216	G
6	A	236	C
6	A	241	U
6	A	243	G
6	A	247	G
6	A	262	G
6	A	263	C
6	A	272	G
6	A	277	G
6	A	285	G
6	A	317	A
6	A	324	C
6	A	325	A
6	A	326	C
6	A	340	A
6	A	342	G
6	A	343	G
6	A	347	G
6	A	348	C
6	A	350	G
6	A	351	C
6	A	359	A
6	A	363	U
6	A	368	C
6	A	393	A
6	A	394	U
6	A	402	G
6	A	408	A
6	A	409	G
6	A	410	A
6	A	414	C
6	A	418	A
6	A	419	U
6	A	420	G
6	A	425	U
6	A	442	G
6	A	448	G

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Mol	Chain	Res	Type
6	A	456	U
6	A	458	G
6	A	459	U
6	A	463	U
6	A	464	A
6	A	465	C
6	A	466	C
6	A	469	G
6	A	471	G
6	A	474	A
6	A	479	A
6	A	481	G
6	A	483	U
6	A	493	A
6	A	494	U
6	A	507	A
6	A	508	C
6	A	511	U
6	A	513	PSU
6	A	515	C
6	A	521	G
6	A	524	G7M
6	A	529	A
6	A	532	A
6	A	544	A
6	A	556	A
6	A	561	C
6	A	569	A
6	A	570	A
6	A	571	A
6	A	572	G
6	A	573	C
6	A	574	G
6	A	604	A
6	A	630	G
6	A	639	A
6	A	647	G
6	A	648	C
6	A	649	U
6	A	650	A
6	A	654	U
6	A	662	A

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Mol	Chain	Res	Type
6	A	683	U
6	A	700	G
6	A	720	U
6	A	721	G
6	A	728	G
6	A	731	G
6	A	744	A
6	A	745	U
6	A	752	G
6	A	774	A
6	A	778	A
6	A	789	A
6	A	790	U
6	A	791	A
6	A	796	G
6	A	812	A
6	A	814	C
6	A	818	G
6	A	827	C
6	A	839	U
6	A	840	U
6	A	841	G
6	A	843	G
6	A	845	C
6	A	848	U
6	A	852	G
6	A	867	A
6	A	868	U
6	A	873	A
6	A	886	A
6	A	899	G
6	A	906	A
6	A	923	G
6	A	931	C
6	A	932	A
6	A	955	A
6	A	957	U
6	A	958	U
6	A	965	A
6	A	966	A
6	A	972	A
6	A	973	G

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Mol	Chain	Res	Type
6	A	974	A
6	A	985	G
6	A	990	G
6	A	991	A
6	A	992	C
6	A	996	C
6	A	1000	A
6	A	1001	A
6	A	1002	A
6	A	1003	C
6	A	1004	U
6	A	1007	C
6	A	1008	C
6	A	1010	G
6	A	1013	A
6	A	1014	U
6	A	1015	G
6	A	1016	G
6	A	1023	G
6	A	1025	C
6	A	1027	U
6	A	1028	C
6	A	1029	G
6	A	1030	G
6	A	1031	G
6	A	1039	A
6	A	1040	U
6	A	1042	C
6	A	1043	A
6	A	1061	G
6	A	1062	U
6	A	1067	U
6	A	1091	G
6	A	1092	U
6	A	1098	A
6	A	1101	G
6	A	1115	U
6	A	1120	A
6	A	1124	G
6	A	1130	A
6	A	1133	U
6	A	1134	C

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Mol	Chain	Res	Type
6	A	1136	G
6	A	1140	G
6	A	1154	A
6	A	1156	U
6	A	1157	G
6	A	1161	G
6	A	1162	U
6	A	1165	C
6	A	1166	A
6	A	1168	A
6	A	1180	C
6	A	1181	G
6	A	1188	A
6	A	1193	A
6	A	1194	A
6	A	1197	C
6	A	1209	U
6	A	1210	A
6	A	1211	C
6	A	1212	G
6	A	1217	G
6	A	1223	C
6	A	1224	A
6	A	1226	A
6	A	1235	A
6	A	1247	A
6	A	1249	A
6	A	1255	G
6	A	1257	U
6	A	1259	C
6	A	1276	A
6	A	1277	A
6	A	1284	A
6	A	1285	A
6	A	1295	U
6	A	1297	G
6	A	1299	C
6	A	1302	G
6	A	1309	G
6	A	1317	C
6	A	1328	G
6	A	1332	U

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Mol	Chain	Res	Type
6	A	1335	G
6	A	1343	A
6	A	1350	G
6	A	1360	A
6	A	1367	G
6	A	1379	C
6	A	1394	C
6	A	1395	A
6	A	1397	C
6	A	1416	G
6	A	1429	G
6	A	1438	A
6	A	1444	A
6	A	1450	A
6	A	1488	G
6	A	1489	A
6	A	1490	A
6	A	1491	G
6	A	1494	G
6	A	1499	A
6	A	1500	A
6	A	1503	U
6	A	1514	G
6	A	1516	MA6
6	A	1517	C
6	A	1526	G
6	A	1527	G
26	W	7	U
26	W	13	A
28	a	3	U
28	a	15	G
28	a	34	U
28	a	46	G
28	a	51	G
28	a	71	A
28	a	74	A
28	a	75	G
28	a	79	C
28	a	83	G
28	a	85	G
28	a	91	A
28	a	93	A

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Mol	Chain	Res	Type
28	a	94	U
28	a	95	A
28	a	96	U
28	a	97	C
28	a	102	G
28	a	118	A
28	a	119	A
28	a	120	U
28	a	135	A
28	a	140	A
28	a	141	A
28	a	142	G
28	a	162	U
28	a	163	A
28	a	178	G
28	a	181	A
28	a	196	A
28	a	199	A
28	a	215	G
28	a	216	A
28	a	221	A
28	a	222	A
28	a	225	C
28	a	228	U
28	a	229	U
28	a	233	A
28	a	248	G
28	a	252	G
28	a	255	A
28	a	266	G
28	a	268	C
28	a	271	U
28	a	272	U
28	a	277	U
28	a	278	A
28	a	282	G
28	a	283	U
28	a	284	G
28	a	286	U
28	a	290	G
28	a	296	C
28	a	297	G

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Mol	Chain	Res	Type
28	a	306	A
28	a	312	A
28	a	324	G
28	a	325	A
28	a	345	G
28	a	349	A
28	a	350	C
28	a	352	U
28	a	354	A
28	a	359	G
28	a	362	G
28	a	364	G
28	a	378	G
28	a	379	U
28	a	388	G
28	a	396	A
28	a	397	U
28	a	403	G
28	a	416	G
28	a	447	C
28	a	472	A
28	a	473	G
28	a	481	G
28	a	486	G
28	a	497	A
28	a	500	U
28	a	501	C
28	a	505	A
28	a	519	C
28	a	522	G
28	a	524	A
28	a	525	G
28	a	535	C
28	a	536	U
28	a	537	U
28	a	538	C
28	a	540	U
28	a	547	A
28	a	554	A
28	a	564	U
28	a	566	A
28	a	588	G

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Mol	Chain	Res	Type
28	a	594	A
28	a	605	A
28	a	606	U
28	a	618	A
28	a	619	G
28	a	626	C
28	a	628	A
28	a	630	U
28	a	636	U
28	a	642	G
28	a	644	U
28	a	645	U
28	a	646	A
28	a	654	G
28	a	677	U
28	a	686	G
28	a	702	G
28	a	712	A
28	a	717	G
28	a	719	G
28	a	720	G
28	a	721	A
28	a	731	C
28	a	738	U
28	a	748	G
28	a	755	A
28	a	756	C
28	a	766	G
28	a	767	G
28	a	773	A
28	a	774	A
28	a	775	G
28	a	776	G
28	a	780	A
28	a	783	A
28	a	785	G
28	a	796	G
28	a	803	C
28	a	810	A
28	a	818	U
28	a	819	U
28	a	821	G

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Mol	Chain	Res	Type
28	a	836	G
28	a	838	A
28	a	847	G
28	a	848	G
28	a	850	G
28	a	857	A
28	a	874	G
28	a	875	U
28	a	876	C
28	a	877	A
28	a	879	C
28	a	882	G
28	a	884	C
28	a	886	U
28	a	887	A
28	a	888	C
28	a	891	A
28	a	893	C
28	a	898	G
28	a	901	A
28	a	905	C
28	a	919	G
28	a	920	U
28	a	922	C
28	a	931	A
28	a	935	A
28	a	936	G
28	a	948	U
28	a	951	C
28	a	964	G
28	a	973	A
28	a	974	A
28	a	986	A
28	a	995	C
28	a	1002	U
28	a	1003	C
28	a	1007	G
28	a	1016	G
28	a	1023	U
28	a	1024	G
28	a	1025	U
28	a	1029	A

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Mol	Chain	Res	Type
28	a	1030	A
28	a	1036	A
28	a	1037	G
28	a	1050	U
28	a	1052	G
28	a	1054	C
28	a	1055	U
28	a	1056	U
28	a	1057	A
28	a	1059	A
28	a	1060	A
28	a	1061	G
28	a	1062	C
28	a	1063	A
28	a	1065	C
28	a	1066	C
28	a	1068	C
28	a	1069	C
28	a	1073	U
28	a	1075	A
28	a	1076	A
28	a	1077	G
28	a	1078	A
28	a	1079	A
28	a	1080	A
28	a	1084	U
28	a	1085	A
28	a	1087	U
28	a	1091	U
28	a	1096	A
28	a	1100	G
28	a	1101	A
28	a	1102	G
28	a	1106	G
28	a	1112	G
28	a	1122	U
28	a	1123	A
28	a	1124	A
28	a	1125	C
28	a	1126	G
28	a	1129	G
28	a	1133	A

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Mol	Chain	Res	Type
28	a	1141	U
28	a	1142	G
28	a	1163	U
28	a	1164	U
28	a	1165	U
28	a	1166	G
28	a	1193	A
28	a	1194	G
28	a	1235	A
28	a	1236	G
28	a	1238	G
28	a	1241	A
28	a	1244	G
28	a	1259	G
28	a	1260	A
28	a	1275	A
28	a	1276	A
28	a	1289	A
28	a	1290	A
28	a	1294	C
28	a	1300	U
28	a	1309	A
28	a	1317	U
28	a	1329	G
28	a	1331	G
28	a	1333	C
28	a	1340	U
28	a	1347	A
28	a	1353	A
28	a	1356	G
28	a	1366	A
28	a	1367	U
28	a	1371	A
28	a	1383	A
28	a	1404	G
28	a	1413	G
28	a	1416	C
28	a	1420	G
28	a	1422	A
28	a	1423	G
28	a	1425	C
28	a	1428	A

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Mol	Chain	Res	Type
28	a	1439	C
28	a	1440	G
28	a	1441	U
28	a	1455	G
28	a	1469	A
28	a	1470	U
28	a	1479	G
28	a	1481	C
28	a	1485	U
28	a	1497	U
28	a	1498	A
28	a	1513	A
28	a	1516	A
28	a	1519	C
28	a	1521	G
28	a	1522	U
28	a	1523	A
28	a	1524	C
28	a	1525	U
28	a	1526	U
28	a	1527	G
28	a	1533	C
28	a	1536	A
28	a	1538	U
28	a	1539	G
28	a	1545	U
28	a	1557	A
28	a	1560	A
28	a	1574	U
28	a	1575	U
28	a	1576	C
28	a	1598	G
28	a	1599	A
28	a	1609	A
28	a	1637	C
28	a	1638	U
28	a	1639	U
28	a	1640	G
28	a	1645	A
28	a	1658	G
28	a	1665	G
28	a	1666	C

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Mol	Chain	Res	Type
28	a	1684	U
28	a	1706	U
28	a	1707	G
28	a	1710	G
28	a	1718	U
28	a	1719	C
28	a	1725	C
28	a	1727	G
28	a	1730	C
28	a	1739	G
28	a	1745	G
28	a	1753	G
28	a	1762	A
28	a	1771	U
28	a	1773	A
28	a	1777	C
28	a	1780	A
28	a	1789	C
28	a	1790	A
28	a	1791	A
28	a	1798	A
28	a	1800	G
28	a	1805	C
28	a	1818	A
28	a	1836	A
28	a	1837	A
28	a	1838	G
28	a	1846	G
28	a	1855	A
28	a	1858	G
28	a	1862	G
28	a	1873	G
28	a	1878	A
28	a	1879	A
28	a	1888	A
28	a	1890	A
28	a	1892	G
28	a	1895	G
28	a	1902	A
28	a	1903	C
28	a	1908	A
28	a	1918	G

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Mol	Chain	Res	Type
28	a	1919	G
28	a	1926	A
28	a	1927	A
28	a	1929	U
28	a	1930	C
28	a	1943	G
28	a	1944	U
28	a	1953	G
28	a	1956	C
28	a	1959	A
28	a	1960	U
28	a	1961	G
28	a	1970	A
28	a	1980	U
28	a	1982	U
28	a	1986	C
28	a	2011	U
28	a	2012	C
28	a	2019	6MZ
28	a	2020	A
28	a	2021	G
28	a	2022	A
28	a	2024	G
28	a	2032	C
28	a	2044	C
28	a	2045	G
28	a	2049	A
28	a	2050	G
28	a	2051	A
28	a	2058	G7M
28	a	2082	G
28	a	2089	G
28	a	2093	U
28	a	2098	U
28	a	2100	U
28	a	2105	G
28	a	2106	A
28	a	2107	U
28	a	2108	A
28	a	2110	G
28	a	2111	U
28	a	2112	G

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Mol	Chain	Res	Type
28	a	2113	G
28	a	2115	A
28	a	2121	U
28	a	2122	G
28	a	2123	A
28	a	2128	G
28	a	2131	A
28	a	2134	C
28	a	2135	U
28	a	2136	A
28	a	2137	G
28	a	2143	G
28	a	2146	G
28	a	2147	A
28	a	2151	G
28	a	2155	U
28	a	2162	A
28	a	2167	C
28	a	2174	A
28	a	2178	U
28	a	2182	G
28	a	2183	U
28	a	2187	A
28	a	2192	U
28	a	2193	G
28	a	2201	A
28	a	2214	A
28	a	2227	G
28	a	2228	G
28	a	2229	U
28	a	2255	A
28	a	2257	A
28	a	2262	A
28	a	2267	A
28	a	2268	G
28	a	2272	U
28	a	2273	A
28	a	2276	A
28	a	2277	A
28	a	2293	G
28	a	2294	U
28	a	2297	G

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Mol	Chain	Res	Type
28	a	2298	A
28	a	2301	U
28	a	2307	G
28	a	2308	U
28	a	2314	A
28	a	2316	A
28	a	2334	A
28	a	2339	C
28	a	2343	A
28	a	2348	C
28	a	2350	A
28	a	2361	U
28	a	2371	G
28	a	2372	G
28	a	2373	U
28	a	2374	C
28	a	2391	U
28	a	2395	U
28	a	2396	A
28	a	2412	U
28	a	2414	A
28	a	2417	G
28	a	2418	G
28	a	2419	A
28	a	2421	A
28	a	2424	A
28	a	2429	C
28	a	2430	U
28	a	2434	2MG
28	a	2436	G
28	a	2437	A
28	a	2439	A
28	a	2448	A
28	a	2459	G
28	a	2464	C
28	a	2466	U
28	a	2467	A
28	a	2476	G
28	a	2487	OMC
28	a	2491	G
28	a	2492	2MA
28	a	2494	G

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Mol	Chain	Res	Type
28	a	2495	U
28	a	2496	C
28	a	2507	A
28	a	2509	C
28	a	2518	G
28	a	2523	A
28	a	2524	G
28	a	2536	A
28	a	2541	OMU
28	a	2542	G
28	a	2543	U
28	a	2555	A
28	a	2556	G
28	a	2562	C
28	a	2567	G
28	a	2591	A
28	a	2592	G
28	a	2598	U
28	a	2599	C
28	a	2602	U
28	a	2604	U
28	a	2618	U
28	a	2629	G
28	a	2635	C
28	a	2654	A
28	a	2660	G
28	a	2678	U
28	a	2679	A
28	a	2703	G
28	a	2715	U
28	a	2724	G
28	a	2728	U
28	a	2737	A
28	a	2754	A
28	a	2755	G
28	a	2767	A
28	a	2770	A
28	a	2780	A
28	a	2786	U
28	a	2787	U
28	a	2788	A
28	a	2789	U

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Mol	Chain	Res	Type
28	a	2790	G
28	a	2793	C
28	a	2796	U
28	a	2807	U
28	a	2809	G
28	a	2810	A
28	a	2822	U
28	a	2824	A
28	a	2837	G
28	a	2838	G
28	a	2844	U
28	a	2846	G
28	a	2850	U
28	a	2856	A
28	a	2861	G
28	a	2862	A
28	a	2868	A
28	a	2872	A
28	a	2873	U
29	b	7	G
29	b	11	A
29	b	14	G
29	b	18	G
29	b	22	G
29	b	39	C
29	b	40	C
29	b	42	G
29	b	54	G
29	b	86	U
29	b	87	A
29	b	104	U
29	b	106	A
29	b	109	G

All (12) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
6	A	139	U
6	A	185	C
6	A	492	A
6	A	618	A
6	A	775	G

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Mol	Chain	Res	Type
6	A	876	C
6	A	905	A
6	A	989	U
6	A	1123	U
6	A	1179	G
6	A	1187	G
6	A	1449	A

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

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
28	2MA	a	2492	28,56,54	22,25,26	1.31	1 (4%)	33,37,40	2.02	7 (21%)
6	2MG	A	1204	6,54	23,26,27	2.57	4 (17%)	32,38,41	2.09	10 (31%)
28	G7M	a	2058	28	23,26,27	2.16	5 (21%)	35,39,42	1.84	7 (20%)
6	MA6	A	1515	6	23,26,27	1.16	2 (8%)	34,38,41	2.25	9 (26%)
6	MA6	A	1516	6	23,26,27	1.16	3 (13%)	34,38,41	2.28	9 (26%)
28	PSU	a	2446	28	18,21,22	1.97	7 (38%)	22,30,33	1.82	4 (18%)
28	OMC	a	2487	28,56	19,22,23	1.72	3 (15%)	26,31,34	1.02	2 (7%)
28	PSU	a	945	28	18,21,22	1.95	7 (38%)	22,30,33	1.86	4 (18%)
28	6MZ	a	2019	28	22,25,26	2.41	3 (13%)	30,36,39	2.33	10 (33%)
6	2MG	A	1513	6	23,26,27	2.57	4 (17%)	32,38,41	2.09	9 (28%)
28	1MG	a	736	28	22,26,27	2.50	5 (22%)	33,39,42	1.99	7 (21%)
6	G7M	A	524	6,54	23,26,27	2.17	5 (21%)	35,39,42	1.80	7 (20%)
28	PSU	a	2594	28	18,21,22	1.93	7 (38%)	22,30,33	1.77	4 (18%)
39	4D4	l	82	39	9,11,12	0.83	0	8,13,15	1.62	2 (25%)
28	PSU	a	2569	28	18,21,22	1.98	8 (44%)	22,30,33	1.87	4 (18%)
28	PSU	a	1900	28	18,21,22	1.93	7 (38%)	22,30,33	1.82	3 (13%)
17	D2T	L	89	17	7,9,10	1.26	1 (14%)	6,11,13	1.52	1 (16%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
28	3TD	a	1904	28	18,22,23	2.71	7 (38%)	22,32,35	1.73	2 (9%)
6	PSU	A	513	6	18,21,22	1.98	8 (44%)	22,30,33	1.81	5 (22%)
16	IAS	K	118	16	6,7,8	1.80	1 (16%)	6,8,10	2.36	1 (16%)
28	OMU	a	2541	28	19,22,23	2.56	7 (36%)	26,31,34	1.73	5 (19%)
28	PSU	a	2493	28,54	18,21,22	1.96	7 (38%)	22,30,33	1.81	3 (13%)
39	MS6	l	83	39	5,7,8	0.50	0	2,7,9	1.71	1 (50%)
28	2MG	a	2434	28	23,26,27	2.58	6 (26%)	32,38,41	2.02	11 (34%)
28	H2U	a	2438	28	18,21,22	4.27	5 (27%)	21,30,33	5.18	7 (33%)
6	UR3	A	1495	6	19,22,23	2.54	7 (36%)	26,32,35	1.30	2 (7%)
31	MEQ	d	153	31	8,9,10	0.84	0	5,10,12	0.60	0
6	5MC	A	964	6	18,22,23	1.86	5 (27%)	26,32,35	1.33	2 (7%)
28	PSU	a	737	28,56	18,21,22	1.95	7 (38%)	22,30,33	1.78	3 (13%)
6	2MG	A	963	6	23,26,27	2.56	4 (17%)	32,38,41	2.08	11 (34%)
6	4OC	A	1399	6	20,23,24	2.26	4 (20%)	26,32,35	1.00	2 (7%)
28	PSU	a	1906	28	18,21,22	1.95	7 (38%)	22,30,33	1.81	3 (13%)
28	5MU	a	1928	28,54	19,22,23	2.43	7 (36%)	28,32,35	3.81	10 (35%)
28	OMG	a	2240	28,54	23,26,27	2.35	6 (26%)	33,38,41	1.81	10 (30%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
28	2MA	a	2492	28,56,54	-	2/7/25/26	0/3/3/3
6	2MG	A	1204	6,54	-	2/9/27/28	0/3/3/3
28	G7M	a	2058	28	-	2/7/25/26	0/3/3/3
6	MA6	A	1515	6	-	0/11/29/30	0/3/3/3
6	MA6	A	1516	6	-	2/11/29/30	0/3/3/3
28	PSU	a	2446	28	-	0/7/25/26	0/2/2/2
28	OMC	a	2487	28,56	-	1/9/27/28	0/2/2/2
28	PSU	a	945	28	-	0/7/25/26	0/2/2/2
28	6MZ	a	2019	28	-	2/9/27/28	0/3/3/3
6	2MG	A	1513	6	-	0/9/27/28	0/3/3/3
28	1MG	a	736	28	-	0/7/25/26	0/3/3/3
6	G7M	A	524	6,54	-	3/7/25/26	0/3/3/3
28	PSU	a	2594	28	-	0/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
39	4D4	l	82	39	-	2/11/12/14	-
28	PSU	a	2569	28	-	0/7/25/26	0/2/2/2
28	PSU	a	1900	28	-	0/7/25/26	0/2/2/2
17	D2T	L	89	17	-	4/7/12/14	-
28	3TD	a	1904	28	-	0/7/25/26	0/2/2/2
6	PSU	A	513	6	-	0/7/25/26	0/2/2/2
16	IAS	K	118	16	-	1/7/7/8	-
28	OMU	a	2541	28	-	2/9/27/28	0/2/2/2
28	PSU	a	2493	28,54	-	2/7/25/26	0/2/2/2
39	MS6	l	83	39	-	3/4/6/8	-
28	2MG	a	2434	28	-	2/9/27/28	0/3/3/3
28	H2U	a	2438	28	-	2/7/38/39	0/2/2/2
6	UR3	A	1495	6	-	0/7/25/26	0/2/2/2
31	MEQ	d	153	31	-	3/8/9/11	-
6	5MC	A	964	6	-	0/7/25/26	0/2/2/2
28	PSU	a	737	28,56	-	2/7/25/26	0/2/2/2
6	2MG	A	963	6	-	1/9/27/28	0/3/3/3
6	4OC	A	1399	6	-	0/9/29/30	0/2/2/2
28	PSU	a	1906	28	-	0/7/25/26	0/2/2/2
28	5MU	a	1928	28,54	-	0/7/25/26	0/2/2/2
28	OMG	a	2240	28,54	-	1/9/27/28	0/3/3/3

All (160) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
28	a	2019	6MZ	C6-N6	10.35	1.45	1.34
28	a	2438	H2U	O4-C4	10.10	1.43	1.23
6	A	1513	2MG	O6-C6	9.21	1.41	1.23
6	A	1204	2MG	O6-C6	9.18	1.41	1.23
6	A	963	2MG	O6-C6	9.13	1.41	1.23
28	a	2434	2MG	O6-C6	9.11	1.40	1.23
6	A	1495	UR3	O4-C4	8.86	1.42	1.23
28	a	2438	H2U	C2-N1	8.77	1.48	1.35
28	a	2240	OMG	O6-C6	8.62	1.40	1.23
28	a	2438	H2U	O2-C2	8.32	1.38	1.23
28	a	1904	3TD	O4-C4	8.28	1.40	1.23
28	a	736	1MG	O6-C6	8.23	1.40	1.23
28	a	2541	OMU	O4-C4	8.19	1.40	1.24
28	a	2058	G7M	O6-C6	8.13	1.39	1.23
6	A	524	G7M	O6-C6	8.10	1.39	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
28	a	2438	H2U	C2-N3	7.10	1.50	1.38
6	A	1399	4OC	O2-C2	6.68	1.36	1.23
28	a	736	1MG	C2-N2	6.18	1.45	1.34
6	A	1204	2MG	C2-N2	6.09	1.46	1.33
6	A	1513	2MG	C2-N2	6.06	1.46	1.33
6	A	963	2MG	C2-N2	6.03	1.46	1.33
28	a	2434	2MG	C2-N2	5.83	1.46	1.33
28	a	1928	5MU	C2-N1	-5.81	1.29	1.38
6	A	1399	4OC	C4-N4	5.73	1.47	1.35
28	a	2438	H2U	C4-N3	5.21	1.46	1.37
28	a	2487	OMC	C4-N4	4.88	1.45	1.33
28	a	1928	5MU	C2-N3	-4.62	1.29	1.38
28	a	2492	2MA	C6-N6	4.61	1.45	1.34
28	a	2240	OMG	C2-N2	4.25	1.44	1.34
28	a	1928	5MU	C6-N1	-4.20	1.30	1.38
6	A	964	5MC	C4-N4	4.19	1.45	1.34
28	a	1904	3TD	C2-N1	-3.76	1.32	1.37
28	a	1928	5MU	C6-C5	3.75	1.40	1.34
28	a	2487	OMC	C2-N1	-3.74	1.31	1.40
28	a	2541	OMU	C2-N1	-3.73	1.32	1.38
28	a	2240	OMG	C6-N1	-3.71	1.32	1.38
28	a	2446	PSU	C4-N3	-3.70	1.32	1.38
16	K	118	IAS	OD1-CG	3.69	1.40	1.19
28	a	1904	3TD	C4-N3	-3.67	1.32	1.40
28	a	736	1MG	C6-N1	-3.67	1.32	1.40
6	A	1515	MA6	C6-N6	3.57	1.47	1.36
28	a	2493	PSU	C4-N3	-3.56	1.32	1.38
6	A	1516	MA6	C6-N6	3.55	1.47	1.36
28	a	2541	OMU	C4-N3	-3.54	1.32	1.38
28	a	2569	PSU	C2-N1	-3.53	1.31	1.36
6	A	964	5MC	C2-N1	-3.51	1.32	1.40
28	a	1900	PSU	C4-N3	-3.49	1.32	1.38
28	a	945	PSU	C4-N3	-3.49	1.32	1.38
6	A	513	PSU	C2-N1	-3.48	1.32	1.36
28	a	737	PSU	C4-N3	-3.47	1.32	1.38
28	a	1906	PSU	C4-N3	-3.45	1.32	1.38
28	a	2569	PSU	C4-N3	-3.44	1.32	1.38
6	A	1495	UR3	C4-N3	-3.44	1.32	1.40
6	A	524	G7M	C5-N7	-3.43	1.35	1.39
6	A	513	PSU	C4-N3	-3.41	1.32	1.38
6	A	1399	4OC	C2-N1	-3.41	1.32	1.40
28	a	1904	3TD	C6-C5	3.39	1.39	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
28	a	2594	PSU	C4-N3	-3.37	1.32	1.38
28	a	2493	PSU	C6-C5	3.37	1.39	1.35
28	a	2594	PSU	C2-N1	-3.37	1.32	1.36
28	a	1906	PSU	C2-N1	-3.36	1.32	1.36
28	a	945	PSU	C2-N1	-3.36	1.32	1.36
28	a	2446	PSU	C2-N1	-3.36	1.32	1.36
28	a	2594	PSU	C6-C5	3.35	1.39	1.35
28	a	2493	PSU	C2-N1	-3.35	1.32	1.36
28	a	945	PSU	C6-C5	3.33	1.39	1.35
28	a	1900	PSU	C6-C5	3.33	1.39	1.35
28	a	2446	PSU	C2-N3	-3.31	1.31	1.37
28	a	737	PSU	C2-N1	-3.31	1.32	1.36
28	a	2541	OMU	C2-N3	-3.30	1.32	1.38
28	a	2058	G7M	C5-N7	-3.29	1.35	1.39
28	a	1906	PSU	C6-C5	3.29	1.39	1.35
28	a	1928	5MU	C4-N3	-3.28	1.32	1.38
6	A	524	G7M	C2-N2	3.28	1.42	1.34
28	a	1900	PSU	C2-N1	-3.24	1.32	1.36
28	a	2493	PSU	C2-N3	-3.20	1.32	1.37
28	a	2058	G7M	C2-N2	3.20	1.41	1.34
28	a	737	PSU	C6-C5	3.19	1.39	1.35
6	A	524	G7M	C6-N1	-3.17	1.33	1.38
28	a	2594	PSU	C2-N3	-3.16	1.32	1.37
6	A	513	PSU	C6-C5	3.16	1.39	1.35
28	a	2569	PSU	C2-N3	-3.16	1.32	1.37
28	a	1900	PSU	C2-N3	-3.15	1.32	1.37
28	a	1906	PSU	C2-N3	-3.14	1.32	1.37
6	A	513	PSU	C2-N3	-3.13	1.32	1.37
28	a	945	PSU	C2-N3	-3.13	1.32	1.37
28	a	737	PSU	C2-N3	-3.11	1.32	1.37
6	A	1495	UR3	C2-N3	-3.10	1.33	1.39
28	a	2446	PSU	C6-C5	3.05	1.38	1.35
28	a	2058	G7M	C6-N1	-3.03	1.33	1.38
6	A	964	5MC	C6-N1	-3.02	1.32	1.38
6	A	1516	MA6	C8-N9	-2.99	1.32	1.37
6	A	1515	MA6	C8-N9	-2.98	1.32	1.37
28	a	2434	2MG	C6-N1	-2.96	1.33	1.38
28	a	2569	PSU	C6-C5	2.88	1.38	1.35
28	a	1904	3TD	C2-N3	-2.88	1.32	1.38
6	A	1204	2MG	C6-N1	-2.87	1.33	1.38
6	A	963	2MG	C6-N1	-2.82	1.33	1.38
28	a	2019	6MZ	C8-N9	-2.80	1.32	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	A	964	5MC	C6-C5	2.79	1.39	1.34
6	A	1513	2MG	C6-N1	-2.78	1.33	1.38
28	a	2434	2MG	C5-N7	-2.71	1.33	1.39
6	A	1204	2MG	C5-N7	-2.69	1.33	1.39
6	A	964	5MC	O2-C2	-2.67	1.18	1.23
6	A	1513	2MG	C5-N7	-2.62	1.34	1.39
6	A	963	2MG	C5-N7	-2.61	1.34	1.39
28	a	1928	5MU	O4-C4	-2.60	1.18	1.23
6	A	1495	UR3	C2-N1	-2.57	1.34	1.38
28	a	2569	PSU	O4-C4	-2.56	1.18	1.23
28	a	1900	PSU	O4-C4	-2.53	1.18	1.23
28	a	2240	OMG	C8-N9	-2.53	1.31	1.37
28	a	1906	PSU	O4-C4	-2.51	1.18	1.23
28	a	737	PSU	O4-C4	-2.50	1.18	1.23
6	A	513	PSU	O4-C4	-2.50	1.18	1.23
28	a	2493	PSU	O4-C4	-2.49	1.18	1.23
28	a	2446	PSU	O4-C4	-2.49	1.18	1.23
28	a	2569	PSU	C6-N1	-2.48	1.32	1.36
28	a	945	PSU	O4-C4	-2.47	1.18	1.23
6	A	1495	UR3	O2-C2	2.47	1.27	1.22
28	a	2240	OMG	C5-N7	-2.42	1.34	1.39
28	a	2019	6MZ	C5-N7	-2.40	1.34	1.39
6	A	513	PSU	O4'-C1'	-2.36	1.40	1.43
28	a	2594	PSU	O4-C4	-2.35	1.19	1.23
28	a	2446	PSU	C6-N1	-2.34	1.32	1.36
28	a	945	PSU	C6-N1	-2.34	1.32	1.36
28	a	1928	5MU	O2-C2	-2.33	1.18	1.23
28	a	737	PSU	C6-N1	-2.32	1.32	1.36
28	a	736	1MG	C8-N9	-2.32	1.32	1.37
28	a	736	1MG	C5-N7	-2.32	1.34	1.39
6	A	513	PSU	C6-N1	-2.32	1.32	1.36
28	a	2541	OMU	O2-C2	-2.32	1.18	1.23
28	a	1904	3TD	O2-C2	-2.30	1.18	1.23
28	a	1906	PSU	C6-N1	-2.30	1.32	1.36
28	a	2541	OMU	C6-N1	-2.28	1.32	1.38
28	a	2493	PSU	C6-N1	-2.28	1.32	1.36
28	a	945	PSU	O2-C2	-2.26	1.18	1.23
28	a	1904	3TD	C6-N1	-2.25	1.32	1.36
28	a	2569	PSU	O4'-C1'	-2.23	1.40	1.43
6	A	524	G7M	C2-N1	-2.22	1.32	1.37
28	a	1900	PSU	C6-N1	-2.21	1.32	1.36
28	a	2446	PSU	O2-C2	-2.19	1.18	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
28	a	2493	PSU	O2-C2	-2.18	1.18	1.23
28	a	2569	PSU	O2-C2	-2.18	1.18	1.23
28	a	2058	G7M	C2-N1	-2.18	1.32	1.37
28	a	1906	PSU	O2-C2	-2.17	1.18	1.23
28	a	2434	2MG	C4-N9	-2.17	1.32	1.38
28	a	1900	PSU	O2-C2	-2.15	1.18	1.23
28	a	2487	OMC	C6-C5	2.14	1.40	1.35
28	a	2594	PSU	C6-N1	-2.14	1.32	1.36
28	a	2434	2MG	CM2-N2	-2.14	1.41	1.45
28	a	737	PSU	O2-C2	-2.13	1.18	1.23
6	A	513	PSU	O2-C2	-2.13	1.18	1.23
17	L	89	D2T	CB-CG	2.11	1.55	1.52
28	a	2594	PSU	O2-C2	-2.10	1.19	1.23
6	A	1399	4OC	C6-C5	2.07	1.39	1.35
6	A	1495	UR3	C6-N1	-2.06	1.33	1.38
28	a	2240	OMG	C2-N1	-2.06	1.32	1.37
6	A	1495	UR3	C6-C5	2.06	1.39	1.35
6	A	1516	MA6	C5-N7	-2.02	1.35	1.39
28	a	2541	OMU	C5-C4	-2.02	1.39	1.43

All (177) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
28	a	2438	H2U	C4-N3-C2	-16.20	112.35	125.79
28	a	2438	H2U	O2-C2-N1	-10.74	109.63	123.11
28	a	1928	5MU	C4-N3-C2	-8.87	115.86	127.35
28	a	1928	5MU	N3-C2-N1	8.55	126.24	114.89
28	a	1928	5MU	C5-C6-N1	-8.08	115.03	123.34
28	a	1928	5MU	C5M-C5-C4	7.54	127.07	118.77
28	a	2438	H2U	O4-C4-N3	-7.28	108.75	120.28
28	a	2492	2MA	C5-C4-N3	-7.22	119.06	127.19
6	A	1204	2MG	C2-N3-C4	7.19	120.95	112.04
6	A	963	2MG	C2-N3-C4	7.15	120.90	112.04
6	A	1513	2MG	C2-N3-C4	7.12	120.87	112.04
28	a	736	1MG	C5-C4-N3	-6.88	117.30	128.46
28	a	2434	2MG	C2-N3-C4	6.75	120.40	112.04
28	a	1904	3TD	N1-C2-N3	6.64	121.38	116.14
28	a	2438	H2U	O4-C4-C5	-6.56	108.16	122.17
28	a	1928	5MU	C5-C4-N3	6.43	120.80	115.31
28	a	2438	H2U	O2-C2-N3	-6.33	109.71	121.50
28	a	1928	5MU	C5M-C5-C6	-6.23	114.53	122.85
6	A	1516	MA6	C5-C4-N3	-6.00	118.92	126.75

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
28	a	2438	H2U	N3-C2-N1	-5.97	110.34	116.65
6	A	1515	MA6	C5-C4-N3	-5.71	119.29	126.75
28	a	945	PSU	N1-C2-N3	5.70	121.58	115.13
28	a	2446	PSU	N1-C2-N3	5.57	121.44	115.13
28	a	2493	PSU	N1-C2-N3	5.52	121.38	115.13
28	a	1906	PSU	N1-C2-N3	5.51	121.38	115.13
28	a	737	PSU	N1-C2-N3	5.50	121.36	115.13
28	a	1900	PSU	N1-C2-N3	5.50	121.36	115.13
28	a	2569	PSU	N1-C2-N3	5.45	121.30	115.13
28	a	2541	OMU	N3-C2-N1	5.41	122.08	114.89
28	a	2240	OMG	C5-C4-N3	-5.37	119.75	128.46
6	A	1204	2MG	C5-C4-N3	-5.33	119.82	128.46
6	A	513	PSU	N1-C2-N3	5.26	121.09	115.13
16	K	118	IAS	OD1-CG-CB	-5.26	110.11	125.43
6	A	964	5MC	C5-C6-N1	-5.16	118.03	123.34
28	a	2019	6MZ	C5-C4-N3	-5.14	120.05	126.75
28	a	2492	2MA	N3-C4-N9	5.08	134.03	126.99
28	a	2594	PSU	N1-C2-N3	5.08	120.88	115.13
28	a	2058	G7M	C2-N3-C4	5.07	121.33	112.30
6	A	524	G7M	C2-N3-C4	5.07	121.33	112.30
6	A	1516	MA6	N1-C2-N3	-5.02	120.76	128.60
28	a	2019	6MZ	N1-C2-N3	-5.00	120.78	128.60
6	A	963	2MG	C5-C4-N3	-5.00	120.35	128.46
6	A	1515	MA6	N1-C2-N3	-4.98	120.82	128.60
6	A	1513	2MG	C5-C4-N3	-4.97	120.39	128.46
28	a	736	1MG	C2-N3-C4	4.92	123.04	111.98
28	a	736	1MG	N9-C4-N3	4.88	135.73	125.94
28	a	2434	2MG	C5-C4-N3	-4.75	120.75	128.46
28	a	2019	6MZ	C9-N6-C6	-4.75	118.78	122.87
6	A	524	G7M	C5-C4-N3	-4.67	119.20	128.15
6	A	1495	UR3	C4-N3-C2	-4.61	120.22	124.56
6	A	1516	MA6	N3-C4-N9	4.57	134.61	127.08
28	a	2240	OMG	C2-N3-C4	4.46	120.24	112.30
6	A	1515	MA6	N3-C4-N9	4.36	134.27	127.08
28	a	2058	G7M	C5-C4-N3	-4.33	119.84	128.15
6	A	1515	MA6	C2-N1-C6	4.29	121.89	111.75
6	A	1516	MA6	C2-N3-C4	4.29	121.88	111.75
28	a	2541	OMU	C4-N3-C2	-4.24	120.99	126.58
6	A	1516	MA6	C2-N1-C6	4.21	121.70	111.75
6	A	1515	MA6	C2-N3-C4	4.14	121.54	111.75
28	a	1928	5MU	O2-C2-N1	-4.14	117.29	122.79
6	A	524	G7M	C5-C6-N1	4.11	120.38	111.79

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
28	a	2058	G7M	C5-C6-N1	4.10	120.35	111.79
6	A	524	G7M	N9-C4-N3	3.87	133.71	125.94
28	a	2019	6MZ	C2-N3-C4	3.87	120.89	111.75
28	a	1928	5MU	O4-C4-N3	-3.84	112.75	120.12
28	a	2240	OMG	N9-C4-N3	3.80	133.58	125.94
28	a	737	PSU	C4-N3-C2	-3.71	120.99	126.34
28	a	1900	PSU	C4-N3-C2	-3.71	121.00	126.34
6	A	1515	MA6	N9-C8-N7	-3.71	108.84	113.91
28	a	2058	G7M	C6-C5-N7	3.67	136.68	132.25
28	a	945	PSU	C4-N3-C2	-3.66	121.06	126.34
6	A	1515	MA6	C5-N7-C8	3.66	108.72	103.51
6	A	1204	2MG	N9-C4-N3	3.65	133.28	125.94
6	A	1516	MA6	C5-N7-C8	3.61	108.64	103.51
28	a	1906	PSU	C4-N3-C2	-3.61	121.14	126.34
28	a	2493	PSU	C4-N3-C2	-3.60	121.15	126.34
28	a	2569	PSU	C4-N3-C2	-3.59	121.17	126.34
28	a	2446	PSU	C4-N3-C2	-3.59	121.17	126.34
6	A	1516	MA6	N9-C8-N7	-3.59	109.01	113.91
28	a	2019	6MZ	C5-N7-C8	3.56	108.57	103.51
28	a	2019	6MZ	C6-C5-N7	3.53	136.21	132.39
28	a	2594	PSU	C4-N3-C2	-3.51	121.29	126.34
28	a	2019	6MZ	C4-C5-N7	-3.38	106.50	110.62
28	a	2058	G7M	O6-C6-C5	-3.37	120.46	128.06
6	A	524	G7M	O6-C6-C5	-3.34	120.52	128.06
28	a	2058	G7M	N9-C4-N3	3.31	132.59	125.94
6	A	1515	MA6	C4-N9-C8	3.29	109.30	105.73
6	A	513	PSU	C4-N3-C2	-3.29	121.60	126.34
28	a	2019	6MZ	N3-C4-N9	3.28	132.48	127.08
6	A	963	2MG	N9-C4-N3	3.25	132.47	125.94
28	a	2019	6MZ	N9-C8-N7	-3.24	109.48	113.91
6	A	1513	2MG	N9-C4-N3	3.23	132.43	125.94
39	l	82	4D4	NE-CZ-NH2	3.22	126.36	120.70
6	A	1515	MA6	C4-C5-N7	-3.21	106.70	110.62
28	a	945	PSU	O2-C2-N1	-3.21	119.26	122.79
28	a	2569	PSU	O2-C2-N1	-3.18	119.28	122.79
6	A	1516	MA6	C4-C5-N7	-3.16	106.77	110.62
28	a	737	PSU	O2-C2-N1	-3.15	119.33	122.79
28	a	1906	PSU	O2-C2-N1	-3.14	119.33	122.79
6	A	1516	MA6	C4-N9-C8	3.13	109.12	105.73
28	a	2434	2MG	N9-C4-N3	3.12	132.21	125.94
6	A	513	PSU	O2-C2-N1	-3.09	119.39	122.79
28	a	2438	H2U	C5-C4-N3	-3.08	113.19	116.65

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
6	A	963	2MG	C6-C5-N7	3.03	135.89	130.25
6	A	1513	2MG	C6-C5-N7	3.02	135.87	130.25
28	a	1900	PSU	O2-C2-N1	-3.02	119.47	122.79
28	a	2487	OMC	O2-C2-N3	-3.00	117.45	122.33
28	a	2492	2MA	C5-N7-C8	3.00	107.77	103.51
28	a	2434	2MG	C6-C5-N7	2.97	135.77	130.25
28	a	2493	PSU	O2-C2-N1	-2.92	119.57	122.79
6	A	524	G7M	C6-C5-N7	2.91	135.76	132.25
28	a	2492	2MA	N9-C8-N7	-2.88	109.98	113.91
28	a	2594	PSU	O2-C2-N1	-2.84	119.67	122.79
28	a	2492	2MA	C4-C5-N7	-2.79	107.22	110.62
28	a	2446	PSU	O2-C2-N1	-2.72	119.80	122.79
28	a	2434	2MG	CM2-N2-C2	-2.71	117.89	123.86
28	a	1928	5MU	O2-C2-N3	-2.70	116.47	121.50
17	L	89	D2T	OD1-CG-CB	-2.68	116.82	122.44
6	A	1204	2MG	C6-C5-N7	2.65	135.17	130.25
28	a	2240	OMG	C6-C5-N7	2.64	135.16	130.25
28	a	2058	G7M	C2-N1-C6	-2.64	120.28	125.10
6	A	524	G7M	C2-N1-C6	-2.62	120.32	125.10
6	A	1513	2MG	C4-C5-N7	-2.53	106.71	110.72
28	a	1904	3TD	C4-N3-C2	-2.53	121.87	124.61
28	a	2569	PSU	O4'-C1'-C2'	2.52	108.69	105.14
6	A	963	2MG	C4-C5-N7	-2.49	106.77	110.72
6	A	1399	4OC	O2-C2-N3	-2.44	118.37	122.33
28	a	2541	OMU	C5-C4-N3	2.42	118.47	114.84
28	a	2240	OMG	C8-N7-C5	2.42	108.62	104.24
28	a	2541	OMU	O2-C2-N1	-2.42	119.57	122.79
28	a	2434	2MG	C4-C5-N7	-2.41	106.90	110.72
28	a	2240	OMG	C4-C5-N7	-2.40	106.92	110.72
28	a	736	1MG	C4-C5-N7	-2.38	106.95	110.72
39	l	83	MS6	CE-SD-CG	2.37	108.54	100.40
6	A	1204	2MG	C4-C5-N7	-2.35	107.00	110.72
28	a	1928	5MU	C6-N1-C2	2.34	123.67	121.30
28	a	736	1MG	C5-C6-N1	2.32	119.40	114.91
28	a	2240	OMG	C5-C6-N1	2.30	119.03	113.19
28	a	2541	OMU	O4-C4-C5	-2.30	121.12	125.16
6	A	964	5MC	C5-C4-N3	-2.26	119.23	121.67
6	A	513	PSU	O4'-C1'-C2'	2.25	108.32	105.14
6	A	1513	2MG	N1-C2-N3	-2.24	120.48	123.95
28	a	2492	2MA	N3-C2-N1	-2.24	121.59	125.72
6	A	1204	2MG	O6-C6-C5	-2.24	120.65	126.60
6	A	1495	UR3	C5-C6-N1	-2.24	118.06	121.81

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
28	a	2492	2MA	C4-N9-C8	2.22	108.14	105.73
6	A	963	2MG	CM2-N2-C2	-2.21	118.97	123.86
6	A	1513	2MG	C8-N7-C5	2.21	108.24	104.24
6	A	963	2MG	N1-C2-N3	-2.20	120.54	123.95
28	a	2240	OMG	O6-C6-C5	-2.20	120.77	126.60
28	a	2434	2MG	O6-C6-C5	-2.20	120.77	126.60
28	a	2446	PSU	O4'-C1'-C2'	2.19	108.23	105.14
6	A	963	2MG	C8-N7-C5	2.17	108.17	104.24
6	A	1399	4OC	C5-C4-N3	-2.17	119.11	122.59
6	A	963	2MG	C5-C6-N1	2.17	118.69	113.19
28	a	736	1MG	C6-C5-N7	2.17	134.25	129.35
6	A	1513	2MG	O6-C6-C5	-2.16	120.86	126.60
28	a	2487	OMC	N1-C2-N3	2.15	122.73	118.81
6	A	1204	2MG	C8-N7-C5	2.14	108.11	104.24
28	a	2240	OMG	N9-C8-N7	-2.14	109.36	113.39
6	A	1204	2MG	C5-C6-N1	2.14	118.62	113.19
28	a	2434	2MG	C8-N7-C5	2.14	108.11	104.24
28	a	736	1MG	C8-N7-C5	2.13	108.09	104.24
6	A	1204	2MG	N1-C2-N3	-2.12	120.68	123.95
6	A	513	PSU	C6-N1-C2	-2.11	120.52	122.68
6	A	963	2MG	O6-C6-C5	-2.11	121.01	126.60
6	A	1513	2MG	C5-C6-N1	2.10	118.53	113.19
28	a	2434	2MG	N1-C2-N3	-2.09	120.73	123.95
39	l	82	4D4	NH1-CZ-NE	-2.08	114.38	119.19
28	a	2594	PSU	C6-C5-C4	-2.08	116.74	118.20
28	a	2019	6MZ	C4-N9-C8	2.08	107.98	105.73
28	a	945	PSU	C6-N1-C2	-2.07	120.57	122.68
6	A	1204	2MG	C2-N1-C6	-2.07	122.10	124.48
28	a	2434	2MG	C5-C6-N1	2.06	118.42	113.19
28	a	2434	2MG	N9-C8-N7	-2.05	109.53	113.39
28	a	2240	OMG	C2-N1-C6	-2.03	121.41	125.10
6	A	963	2MG	C2-N1-C6	-2.01	122.17	124.48

There are no chirality outliers.

All (39) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	A	963	2MG	N3-C2-N2-CM2
6	A	1204	2MG	N1-C2-N2-CM2
6	A	1204	2MG	N3-C2-N2-CM2
17	L	89	D2T	CG-CB-SB-CB1
17	L	89	D2T	CA-CB-CG-OD1

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Mol	Chain	Res	Type	Atoms
17	L	89	D2T	CA-CB-CG-OD2
28	a	737	PSU	C2'-C1'-C5-C4
28	a	2240	OMG	C1'-C2'-O2'-CM2
28	a	2541	OMU	C3'-C4'-C5'-O5'
39	l	83	MS6	CA-CB-CG-SD
6	A	524	G7M	C3'-C4'-C5'-O5'
28	a	2019	6MZ	O4'-C4'-C5'-O5'
28	a	2019	6MZ	C3'-C4'-C5'-O5'
28	a	2434	2MG	C3'-C4'-C5'-O5'
28	a	2492	2MA	O4'-C4'-C5'-O5'
28	a	2493	PSU	C3'-C4'-C5'-O5'
28	a	2493	PSU	O4'-C4'-C5'-O5'
28	a	2541	OMU	O4'-C4'-C5'-O5'
28	a	2492	2MA	C3'-C4'-C5'-O5'
39	l	83	MS6	CB-CG-SD-CE
6	A	524	G7M	O4'-C4'-C5'-O5'
28	a	2434	2MG	O4'-C4'-C5'-O5'
6	A	1516	MA6	C5-C6-N6-C10
31	d	153	MEQ	OE1-CD-CG-CB
31	d	153	MEQ	NE2-CD-CG-CB
28	a	2438	H2U	C2'-C1'-N1-C2
6	A	1516	MA6	C4'-C5'-O5'-P
31	d	153	MEQ	N-CA-CB-CG
28	a	2438	H2U	O4'-C1'-N1-C2
6	A	524	G7M	C4'-C5'-O5'-P
16	K	118	IAS	CA-CB-CG-OD1
39	l	82	4D4	CG-CD-NE-CZ
17	L	89	D2T	SB-CB-CG-OD2
39	l	83	MS6	N-CA-CB-CG
28	a	737	PSU	O4'-C1'-C5-C6
28	a	2058	G7M	O4'-C4'-C5'-O5'
28	a	2487	OMC	C4'-C5'-O5'-P
39	l	82	4D4	O-C-CA-CB
28	a	2058	G7M	C4'-C5'-O5'-P

There are no ring outliers.

10 monomers are involved in 14 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	A	1515	MA6	1	0
28	a	2019	6MZ	2	0
6	A	1513	2MG	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
28	a	2594	PSU	4	0
28	a	1904	3TD	1	0
6	A	513	PSU	1	0
16	K	118	IAS	1	0
28	a	2438	H2U	1	0
6	A	1399	4OC	2	0
28	a	2240	OMG	1	0

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 531 ligands modelled in this entry, 531 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
16	K	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	K	118:IAS	CG	119:GLY	N	1.79

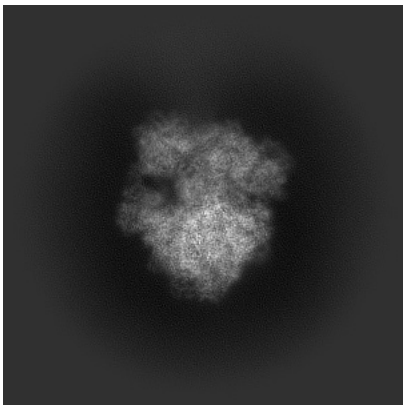
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-55754. These allow visual inspection of the internal detail of the map and identification of artifacts.

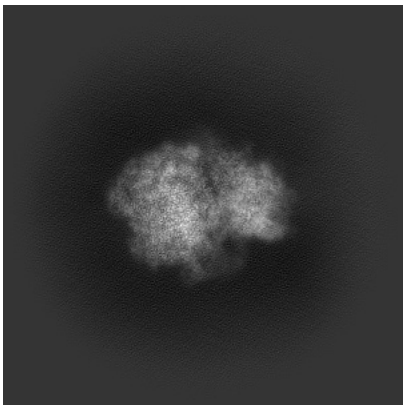
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

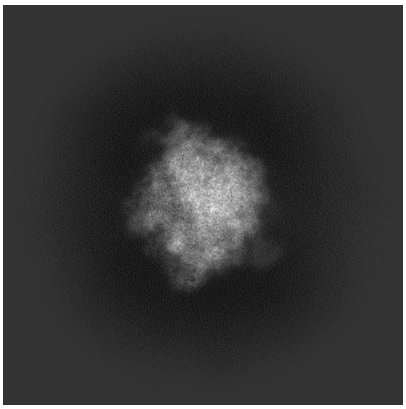
6.1.1 Primary map



X

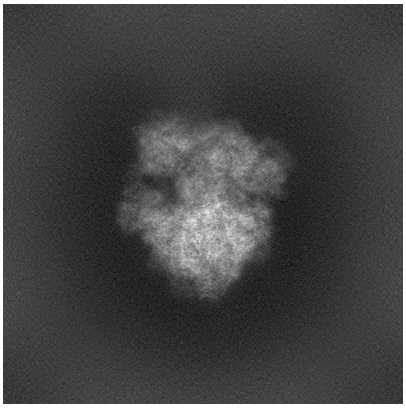


Y

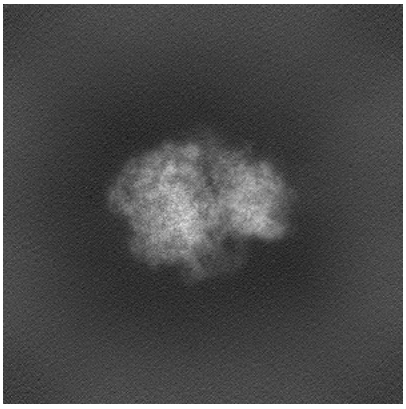


Z

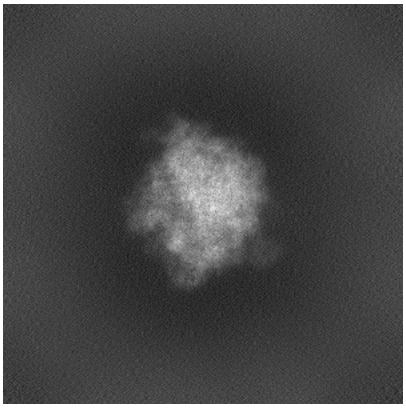
6.1.2 Raw map



X



Y

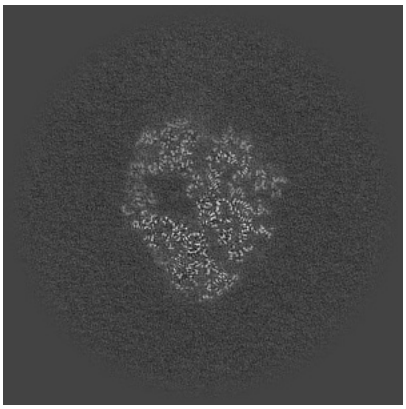


Z

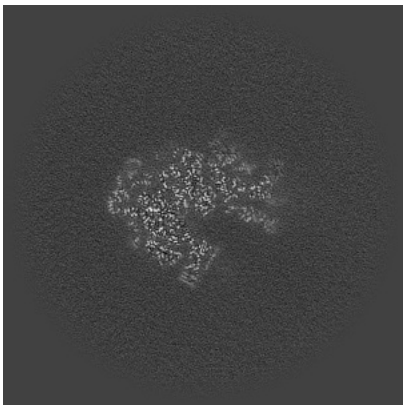
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

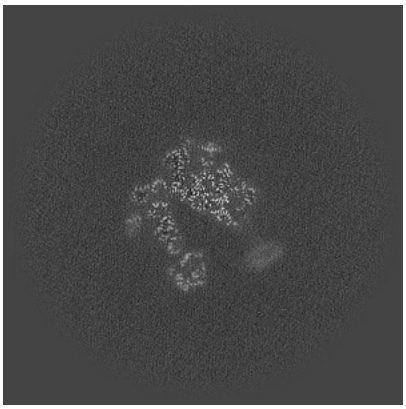
6.2.1 Primary map



X Index: 256

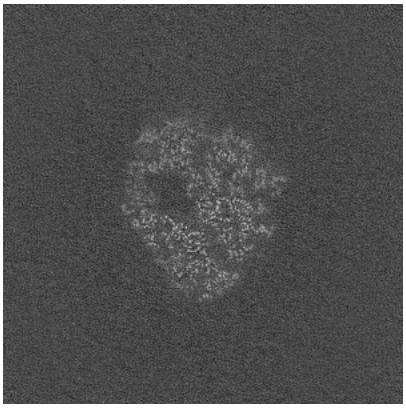


Y Index: 256

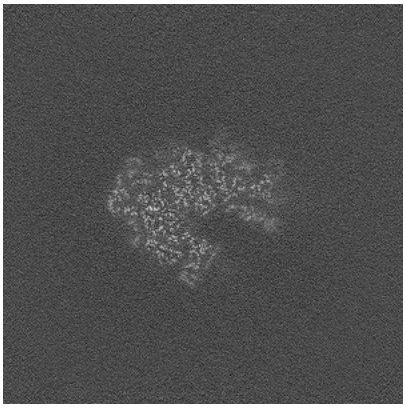


Z Index: 256

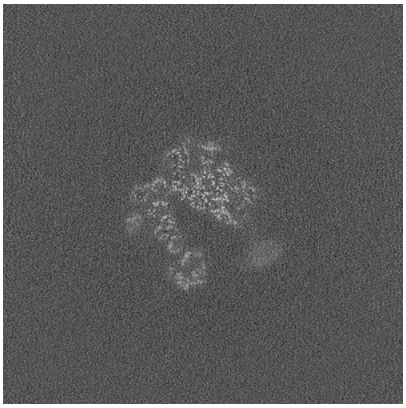
6.2.2 Raw map



X Index: 256



Y Index: 256

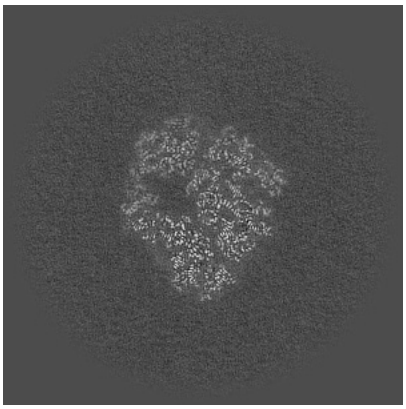


Z Index: 256

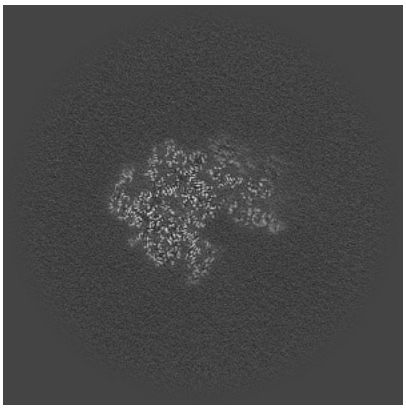
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

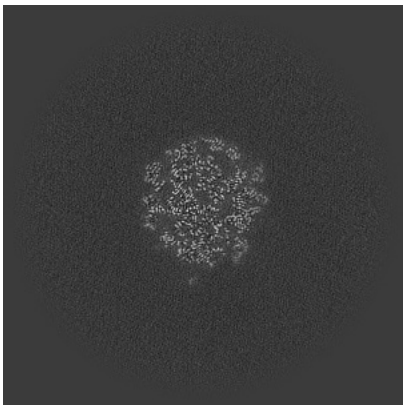
6.3.1 Primary map



X Index: 253

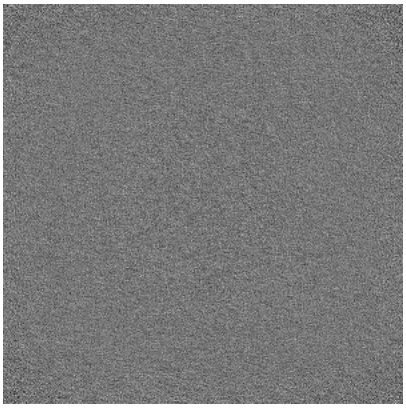


Y Index: 262

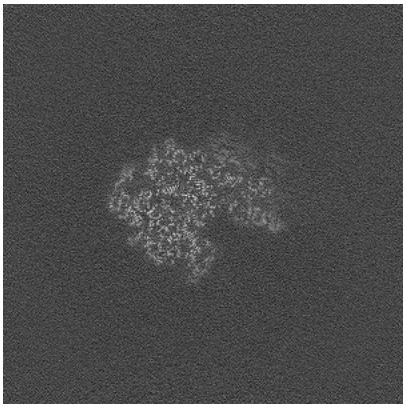


Z Index: 216

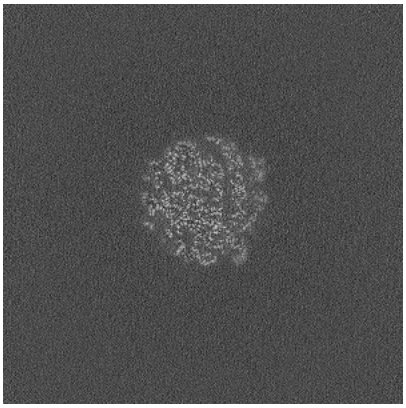
6.3.2 Raw map



X Index: 0



Y Index: 262

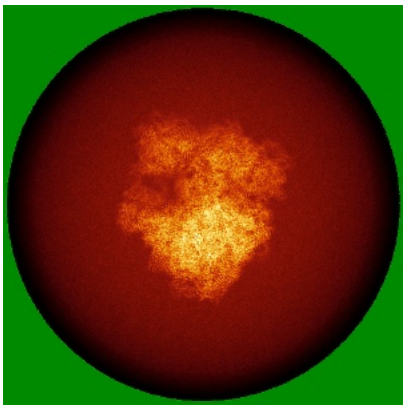


Z Index: 212

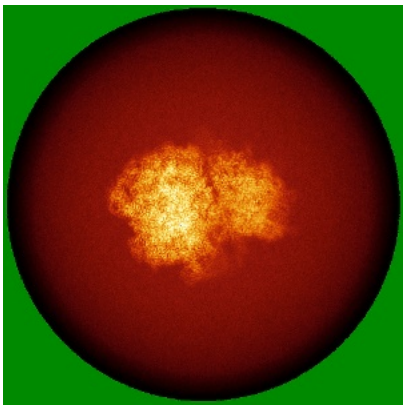
The images above show the largest variance slices of the map in three orthogonal directions.

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

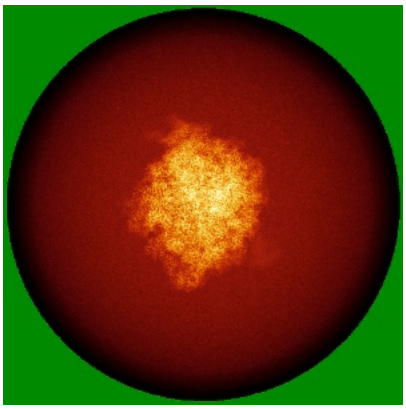
6.4.1 Primary map



X

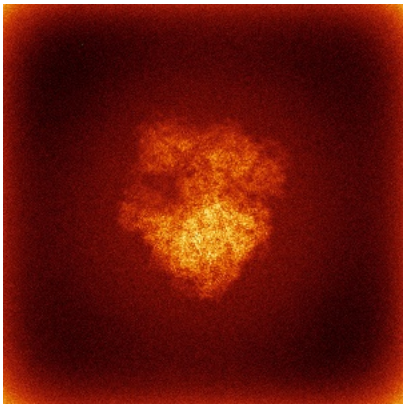


Y

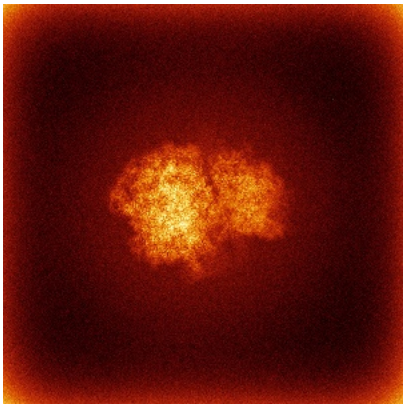


Z

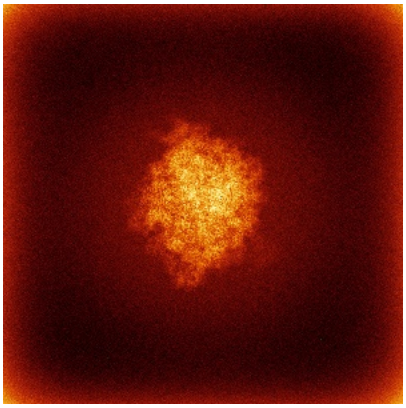
6.4.2 Raw map



X



Y

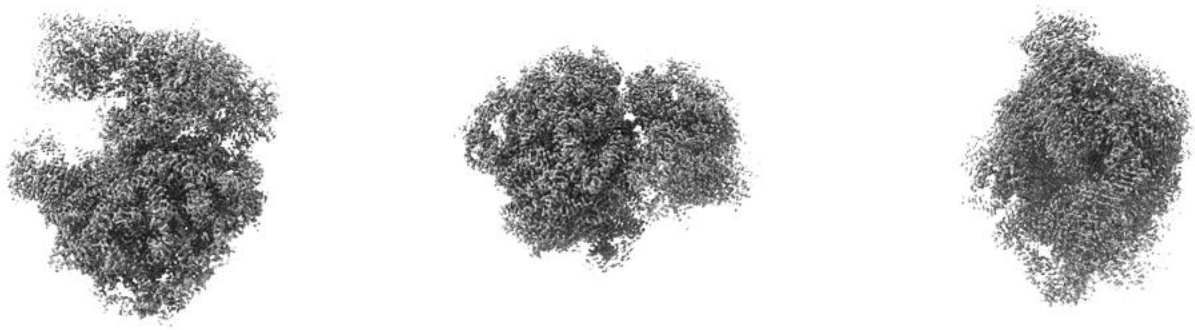


Z

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

6.5 Orthogonal surface views (i)

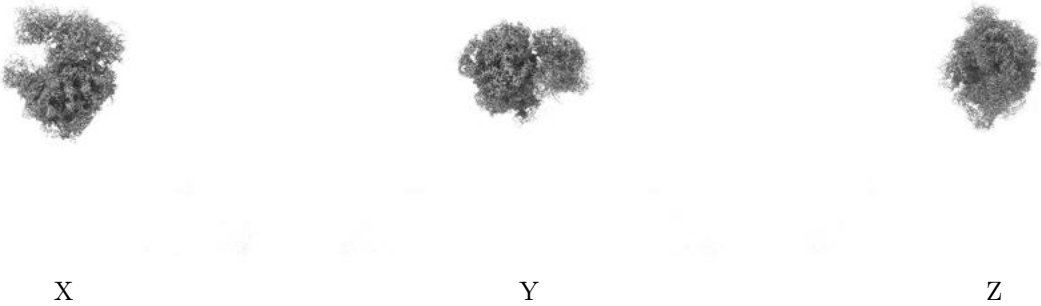
6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.55. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X Y Z

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

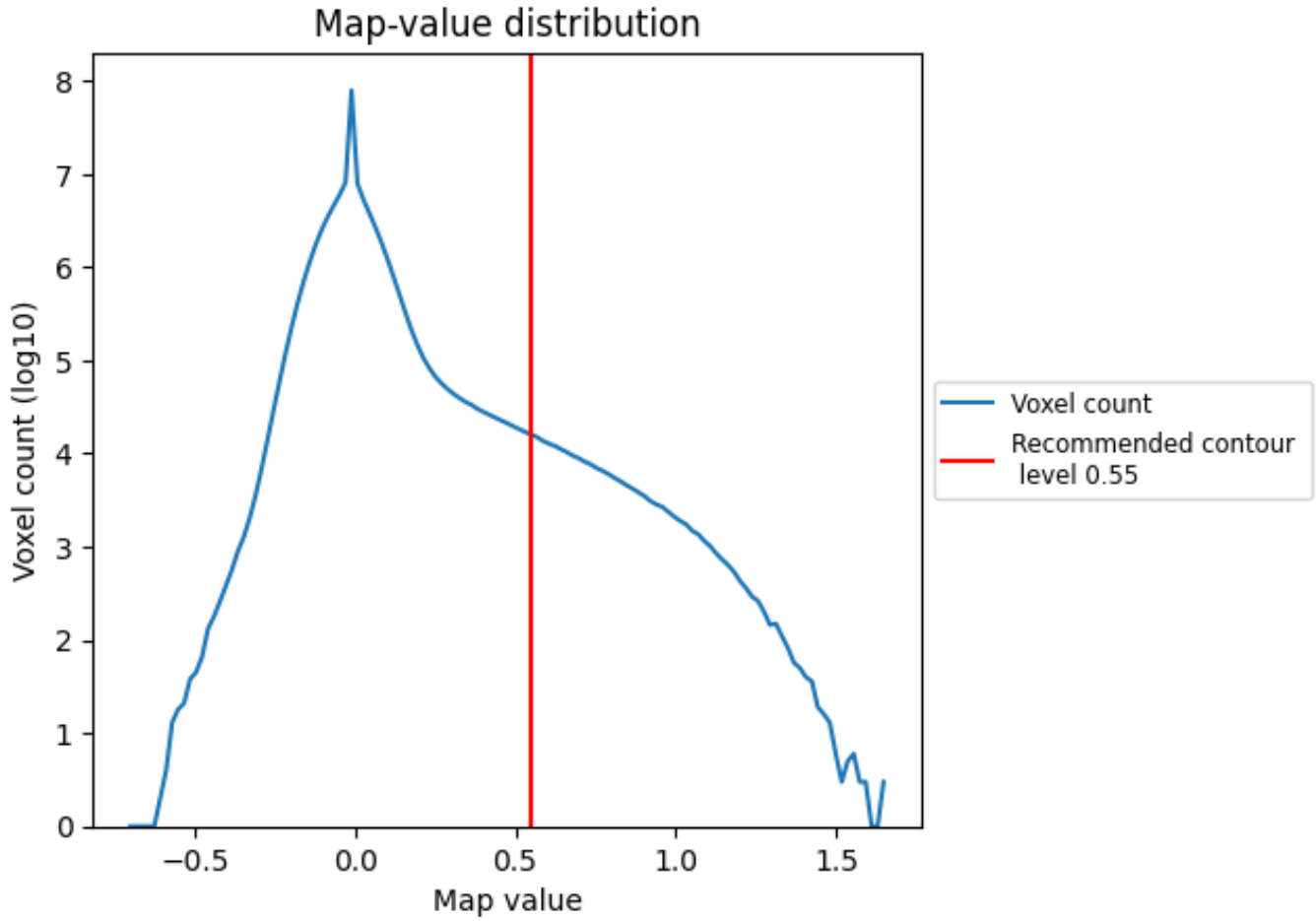
6.6 Mask visualisation (i)

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

7 Map analysis

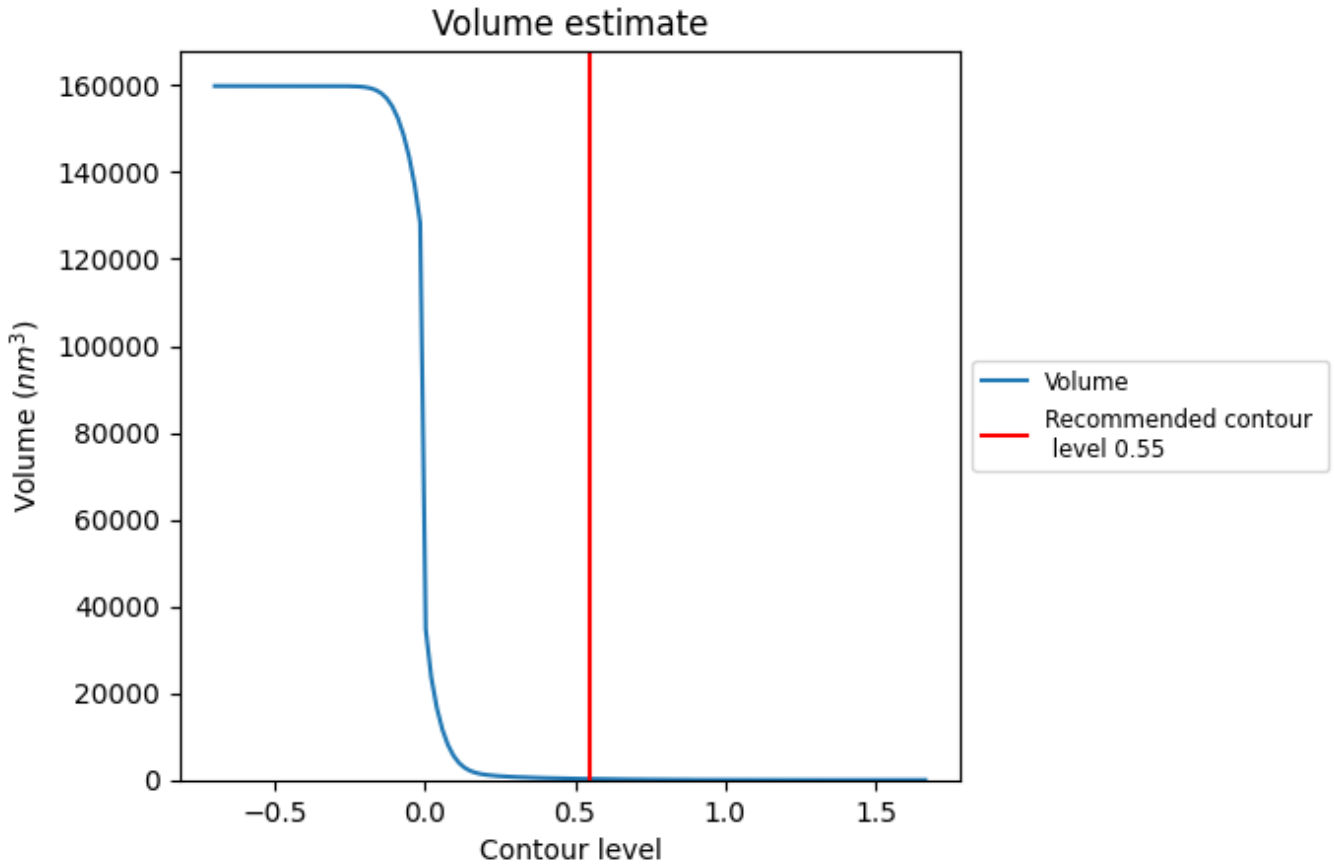
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

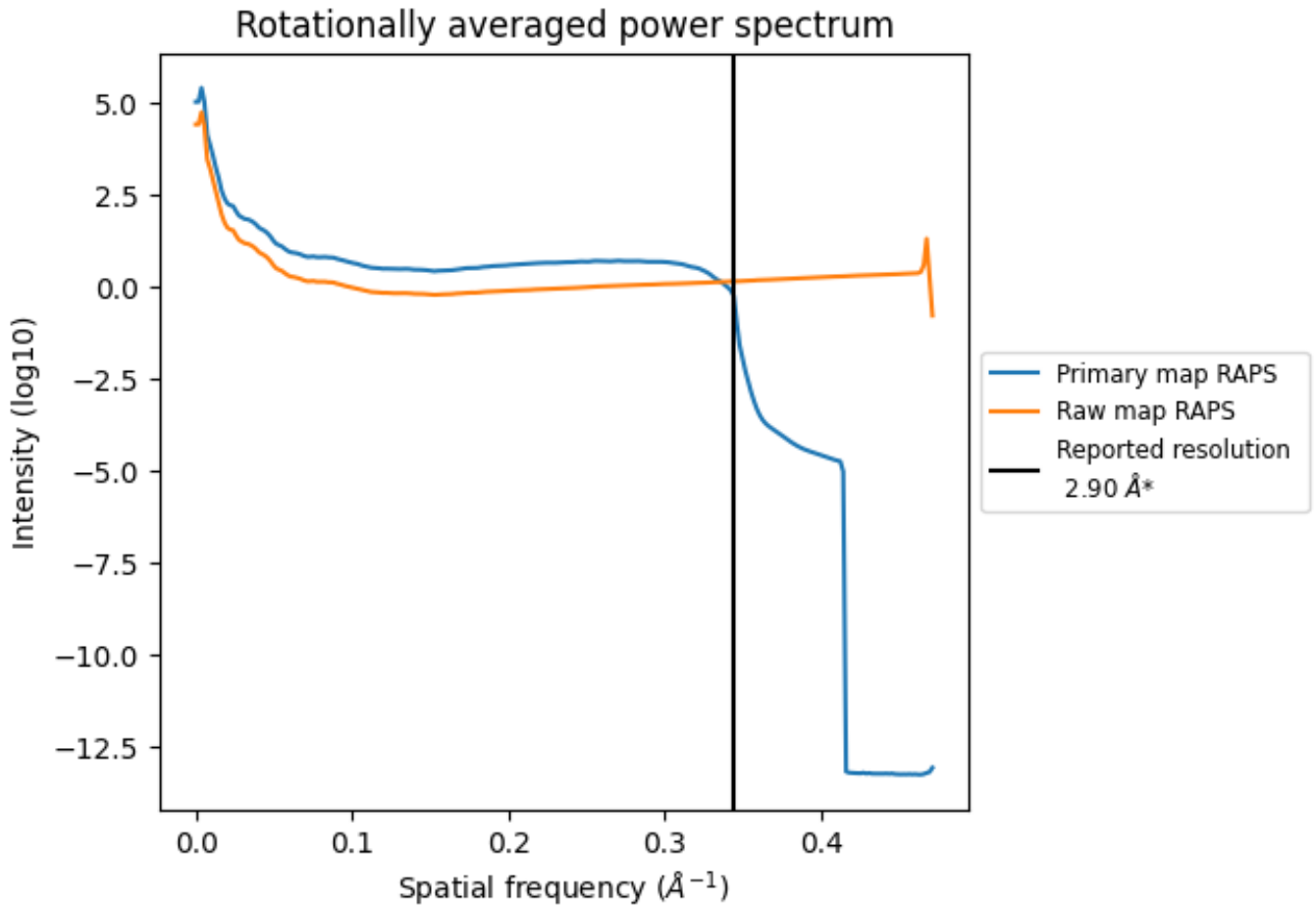
7.2 Volume estimate



The volume at the recommended contour level is 235 nm^3; this corresponds to an approximate mass of 212 kDa.

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

7.3 Rotationally averaged power spectrum (i)

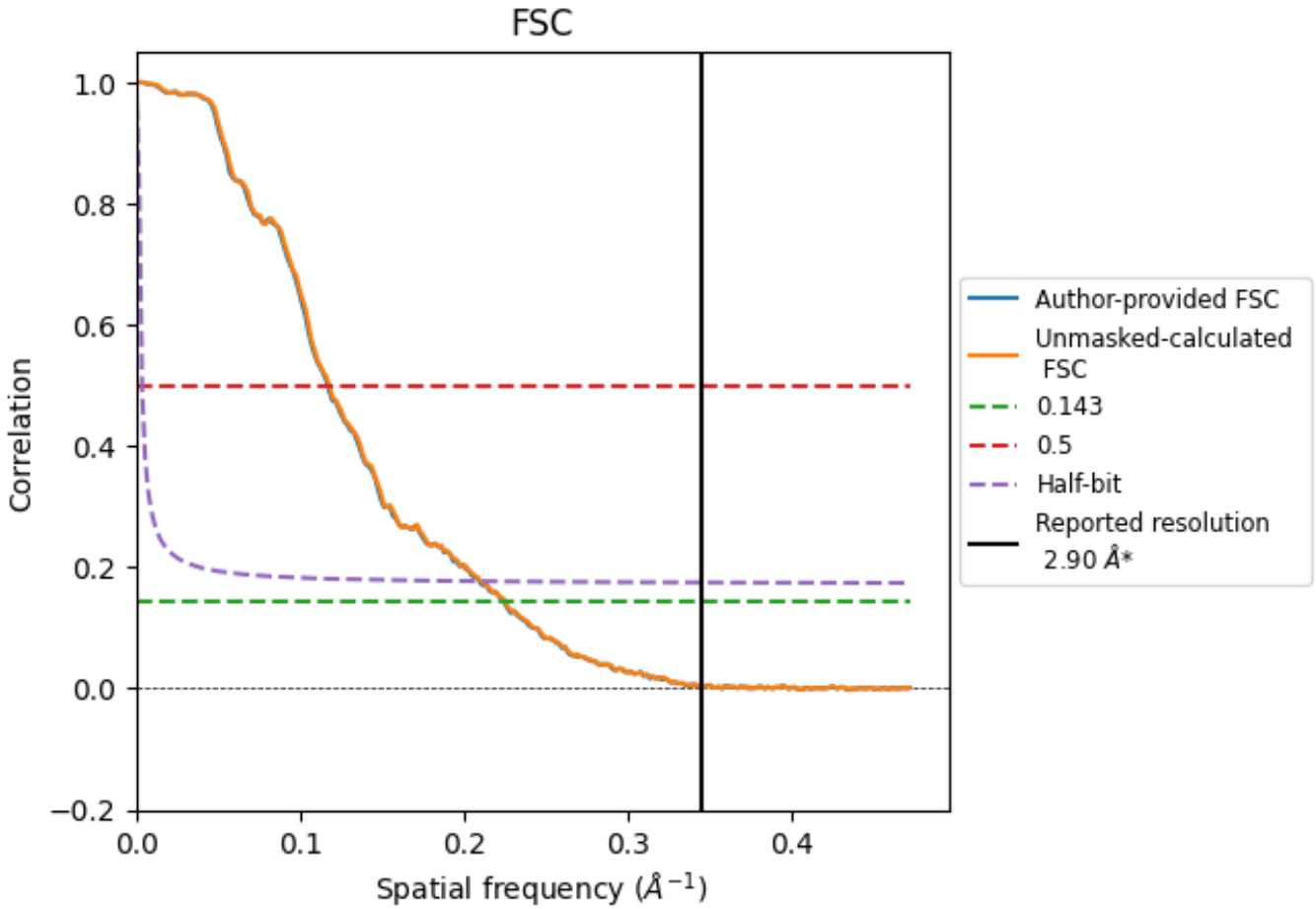


*Reported resolution corresponds to spatial frequency of 0.345 $Å^{-1}$

8 Fourier-Shell correlation

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

8.1 FSC



*Reported resolution corresponds to spatial frequency of 0.345 Å^{-1}

8.2 Resolution estimates (i)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.90	-	-
Author-provided FSC curve	4.46	8.56	4.78
Unmasked-calculated*	4.44	8.48	4.76

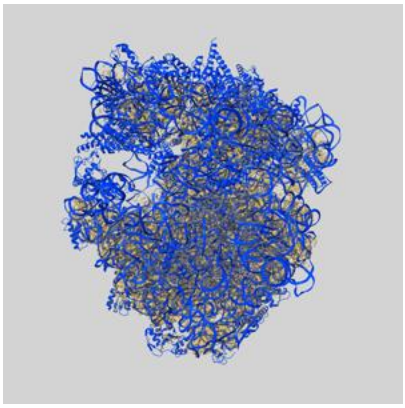
*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from author-provided FSC intersecting FSC 0.143 CUT-OFF 4.46 differs from the reported value 2.9 by more than 10 %

The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.44 differs from the reported value 2.9 by more than 10 %

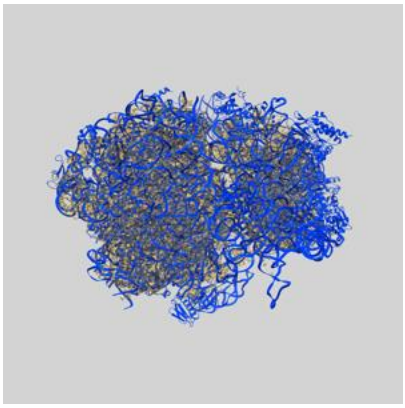
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-55754 and PDB model 9TAP. Per-residue inclusion information can be found in section 3 on page 15.

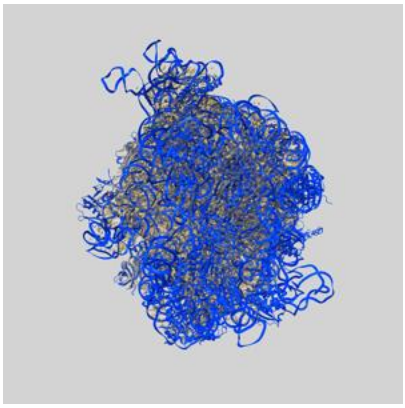
9.1 Map-model overlay



X



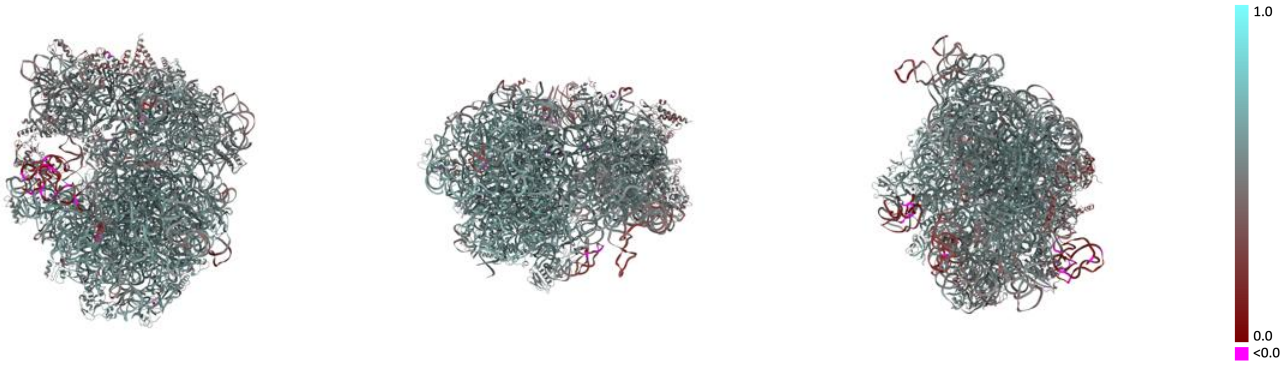
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.55 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

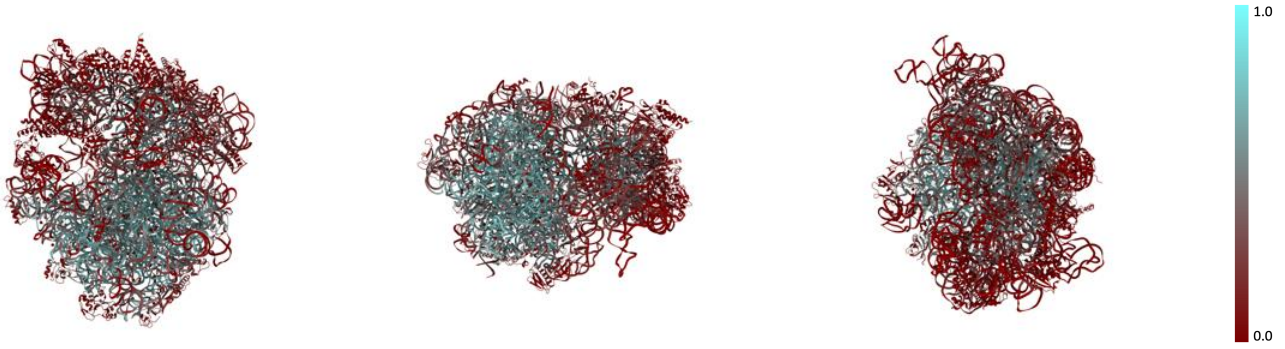
9.2 Q-score mapped to coordinate model (i)



X Y Z

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

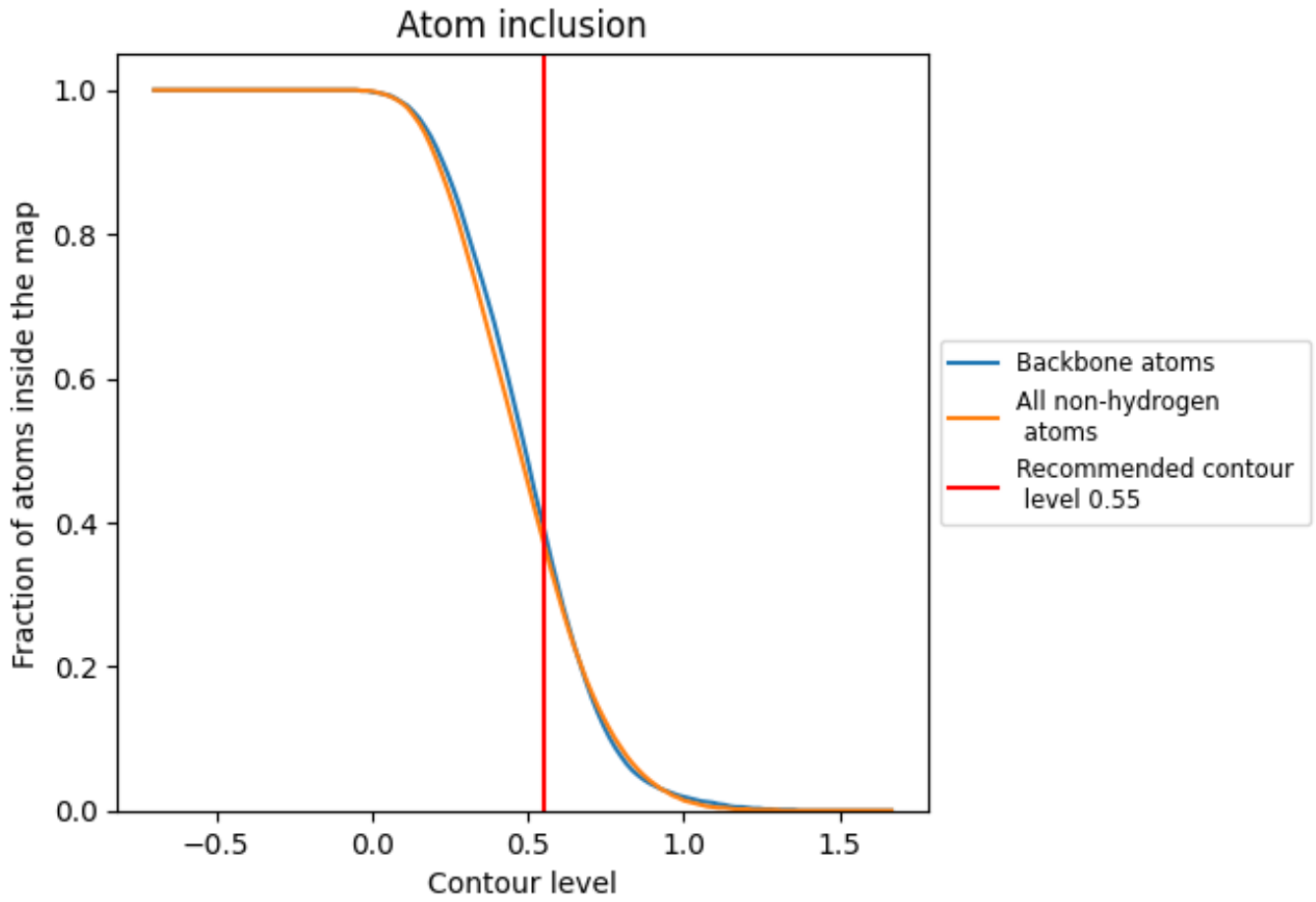
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.55).

9.4 Atom inclusion (i)



At the recommended contour level, 39% of all backbone atoms, 37% 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 (0.55) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.3720	0.5460
0	0.2760	0.5760
1	0.6130	0.6100
2	0.5000	0.6130
3	0.3480	0.6010
4	0.0000	0.3230
A	0.2820	0.5260
B	0.0000	0.3970
C	0.0850	0.5210
D	0.0290	0.4950
E	0.2120	0.5650
F	0.0000	0.4470
G	0.0030	0.4730
H	0.1400	0.5590
I	0.0490	0.4970
J	0.0670	0.5010
K	0.0640	0.5220
L	0.1070	0.5630
M	0.0160	0.4940
N	0.0540	0.5200
O	0.1770	0.5400
P	0.0970	0.5320
Q	0.0770	0.5390
R	0.0000	0.4540
S	0.0030	0.4950
T	0.1140	0.5440
W	0.0270	0.4660
X	0.1210	0.5390
a	0.5300	0.5600
b	0.3230	0.5570
c	0.4720	0.6050
d	0.4630	0.5980
e	0.3060	0.5860
f	0.0180	0.4670
g	0.0810	0.5390



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Chain	Atom inclusion	Q-score
h	0.0000	0.2890
i	0.4670	0.6050
j	0.3350	0.5950
k	0.3890	0.5870
l	0.3210	0.5910
m	0.5190	0.6080
n	0.2110	0.5660
o	0.3670	0.5960
p	0.5390	0.6060
q	0.3430	0.5960
r	0.4550	0.5960
s	0.2890	0.5850
t	0.1650	0.5520
u	0.2260	0.5650
v	0.4840	0.6140
w	0.3650	0.5980
x	0.1660	0.5510
y	0.3970	0.5940
z	0.4660	0.6010