Full wwPDB EM Validation Report ⓘ

Nov 7, 2026 – 10:05 am GMT

PDB ID	:	9TA1 / pdb_00009ta1
EMDB ID	:	EMD-55742
Title	:	Structural characterization of hibernating ribosomes in the Gram-negative pathogen Acinetobacter baumannii with 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:

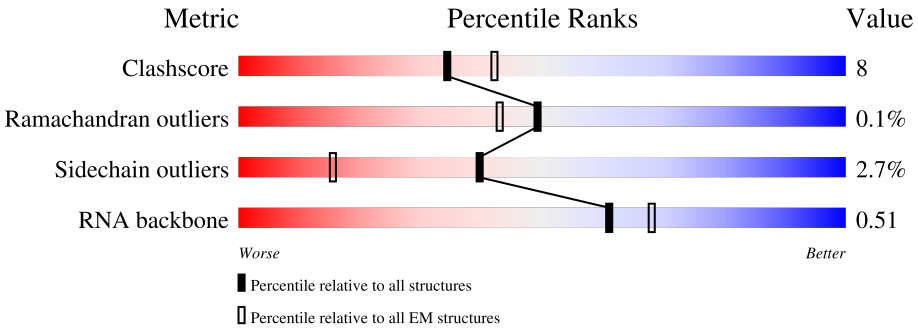
EMDB validation analysis	:	0.0.1.dev133
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	4-5-2 with Phenix2.2
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal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

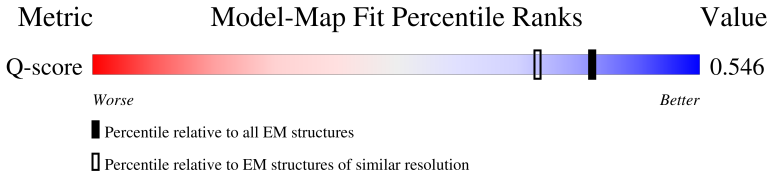
1 Overall quality at a glance

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.





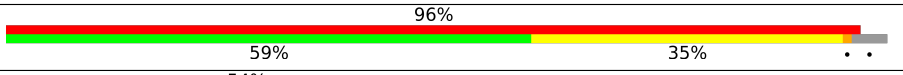
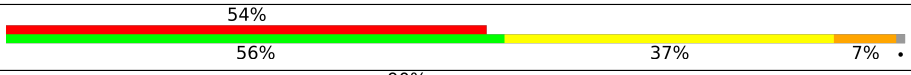
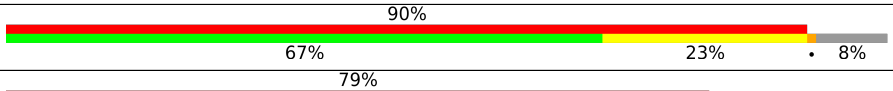
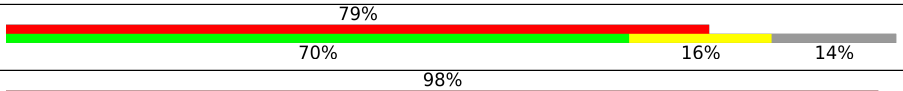
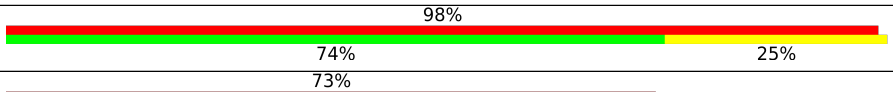
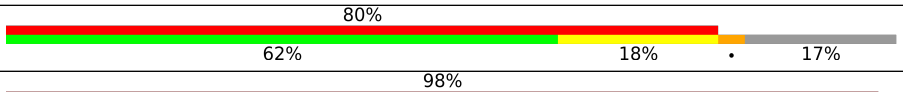
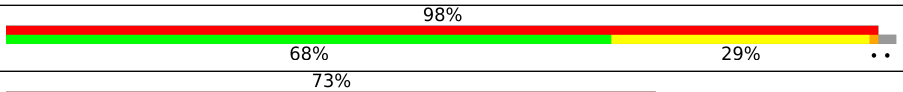
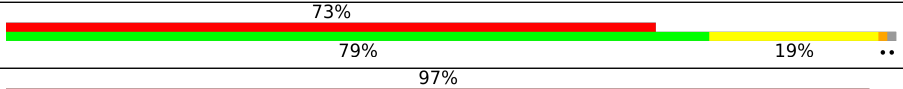
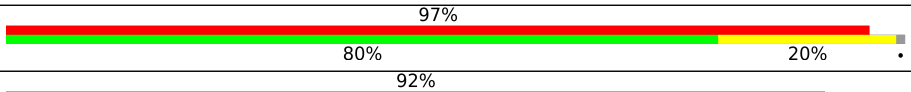
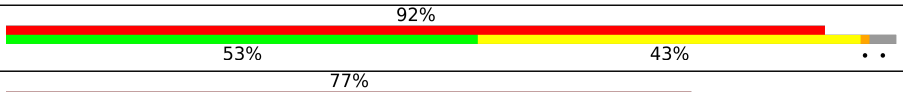
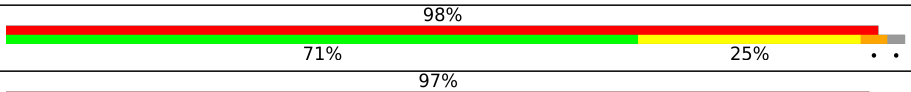
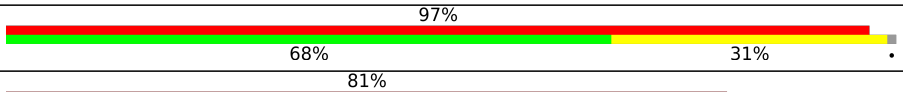
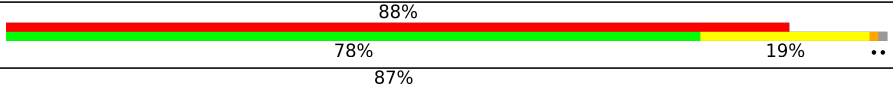
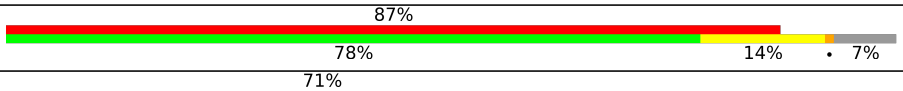
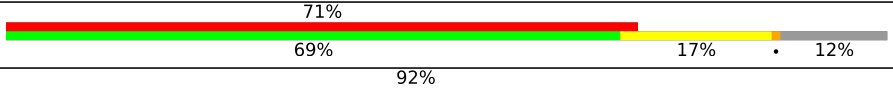
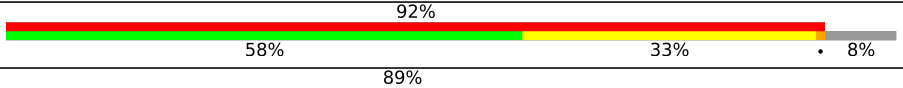
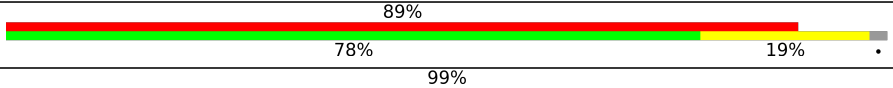
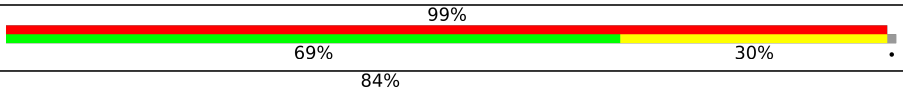
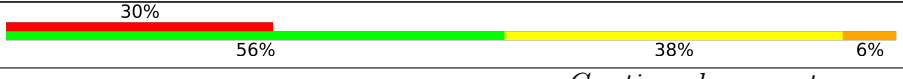
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	13054 (2.40 - 3.40)

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	80% 75% 25%
2	1	44	23% 86% 14%
3	2	64	42% 70% 28%

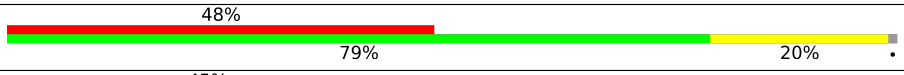
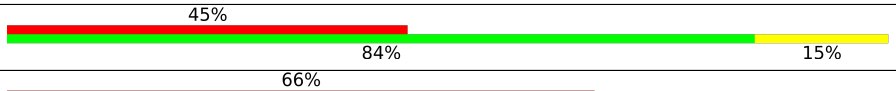
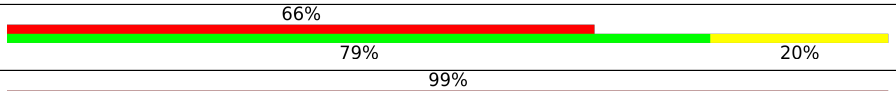
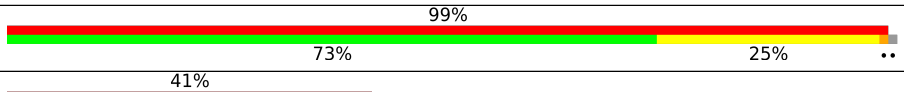
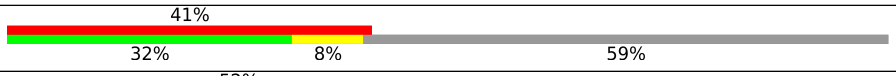
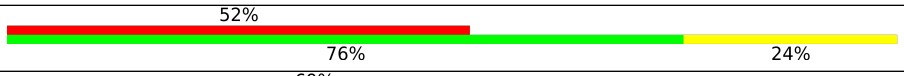
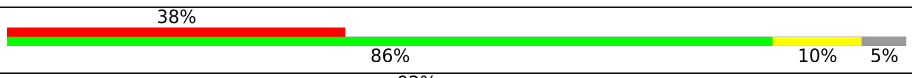
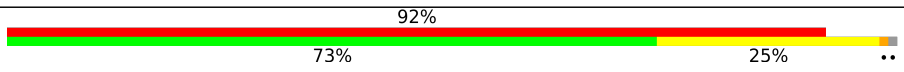
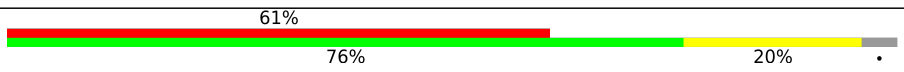
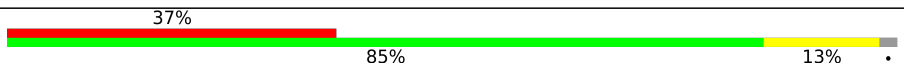
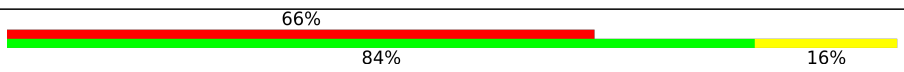
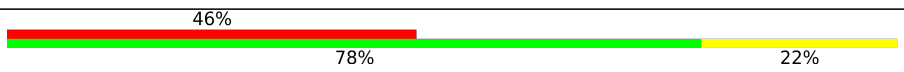
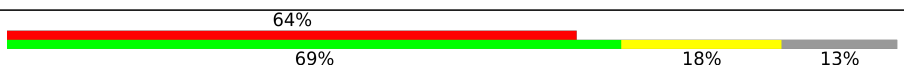
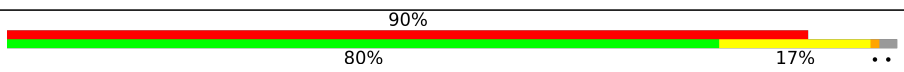
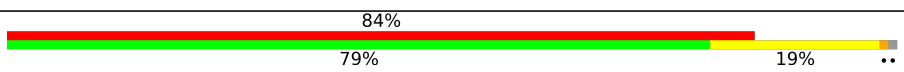
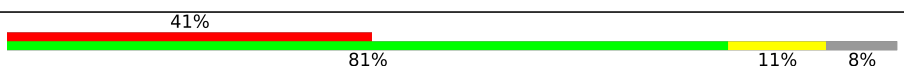
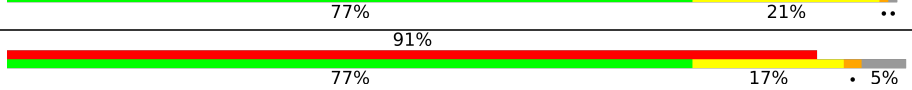
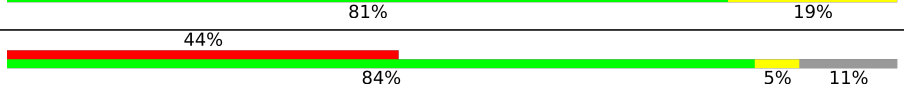
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Mol	Chain	Length	Quality of chain
4	3	38	
5	4	74	
6	A	1537	
7	B	250	
8	C	250	
9	D	208	
10	E	165	
11	F	127	
12	G	156	
13	H	131	
14	I	128	
15	J	103	
16	K	128	
17	L	124	
18	M	118	
19	N	101	
20	O	89	
21	P	83	
22	Q	85	
23	R	75	
24	S	91	
25	T	88	
26	U	71	
27	X	116	
28	a	2893	

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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 142578 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 (1529-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
6	A	1528	32785	14632	5993	10632	1528	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 protein called Small ribosomal subunit protein bS21.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	U	70	Total	C	N	O	S	0	0
			585	367	118	99	1		

- 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 5S rRNA (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	2	Total	K	0
			2	2	
54	A	45	Total	K	0
			45	45	
54	E	1	Total	K	0
			1	1	

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Mol	Chain	Residues	Atoms	AltConf
54	L	1	Total K 1 1	0
54	M	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

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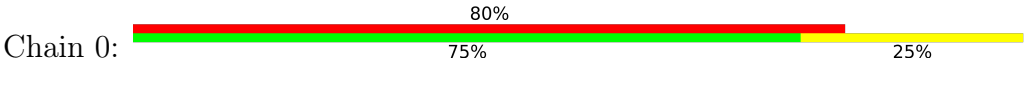
Mol	Chain	Residues	Atoms	AltConf
56	p	2	Total Mg 2 2	0
56	v	1	Total Mg 1 1	0
56	z	1	Total Mg 1 1	0

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.

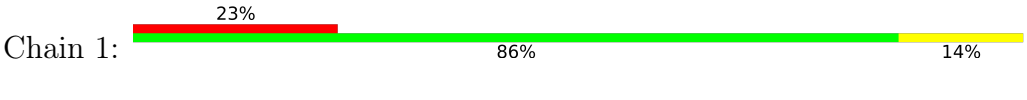
• Molecule 1: Large ribosomal subunit protein bL33

Chain 0:



• Molecule 2: Large ribosomal subunit protein bL34

Chain 1:



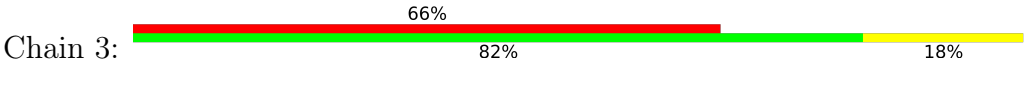
• Molecule 3: Large ribosomal subunit protein bL35

Chain 2:



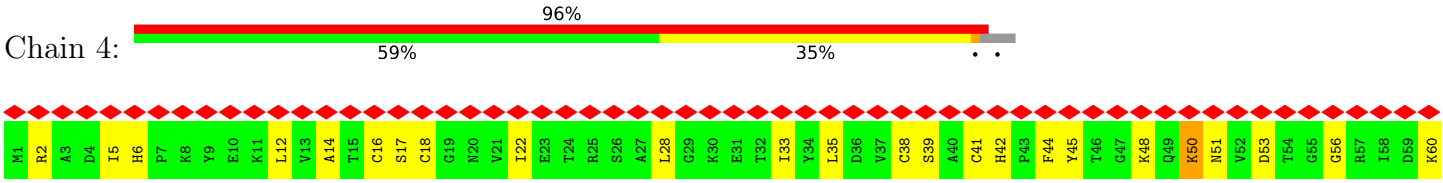
• Molecule 4: Large ribosomal subunit protein bL36

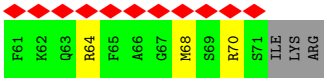
Chain 3:



• Molecule 5: Large ribosomal subunit protein bL31

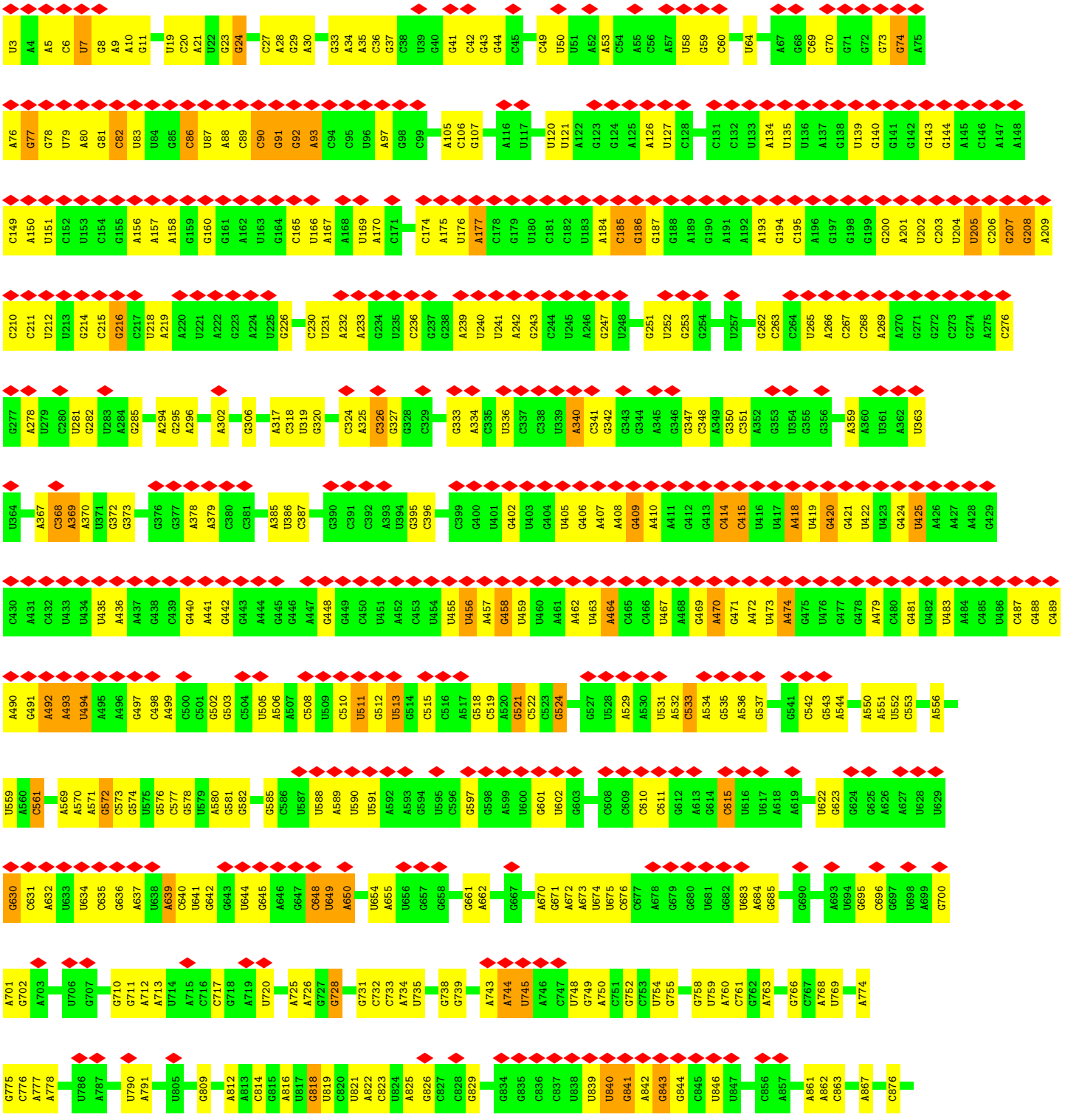
Chain 4:

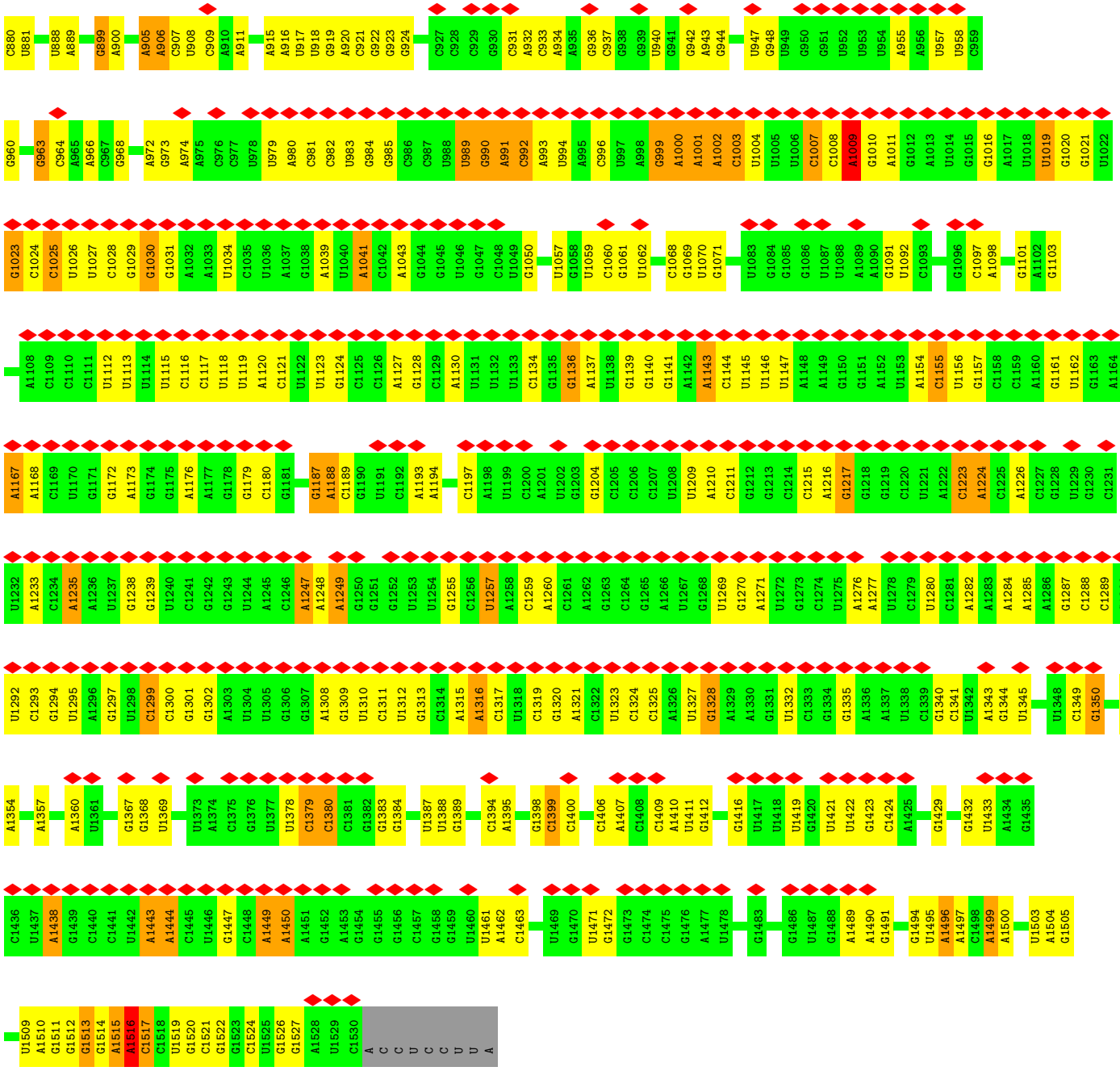




• Molecule 6: 16S rRNA (1529-MER)

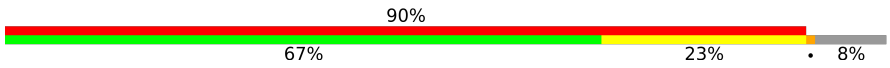


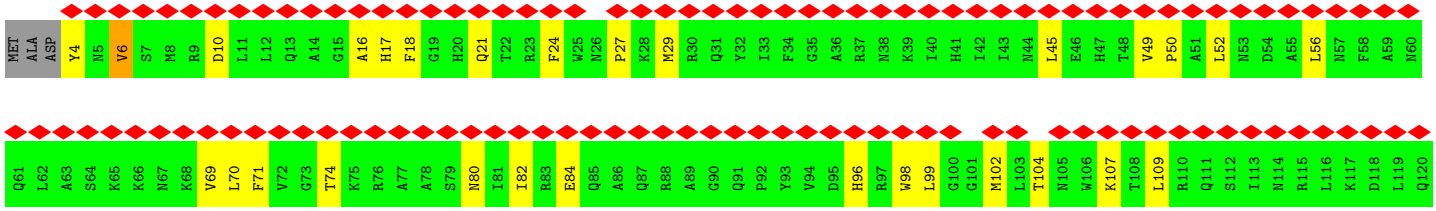


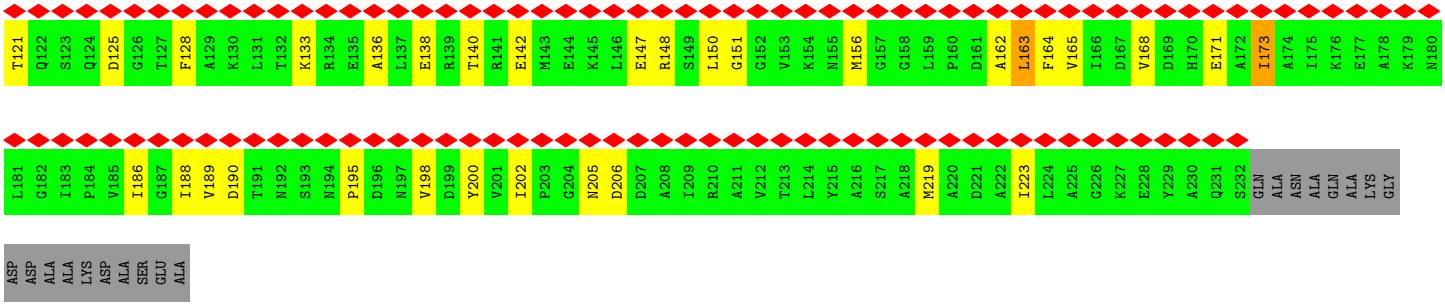


• Molecule 7: Small ribosomal subunit protein uS2

Chain B:



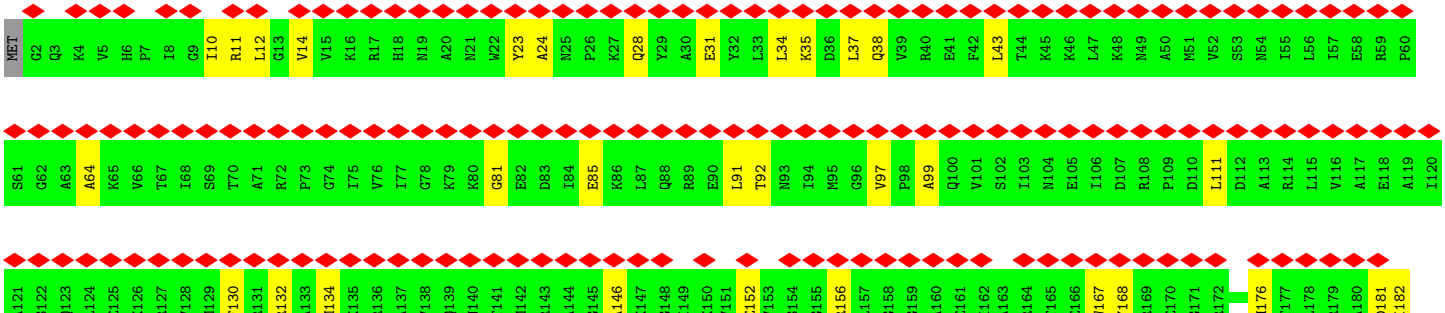




• Molecule 8: Small ribosomal subunit protein uS3

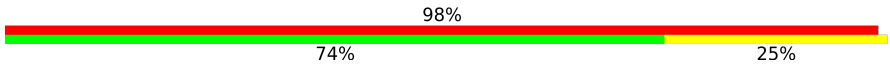
Chain C:





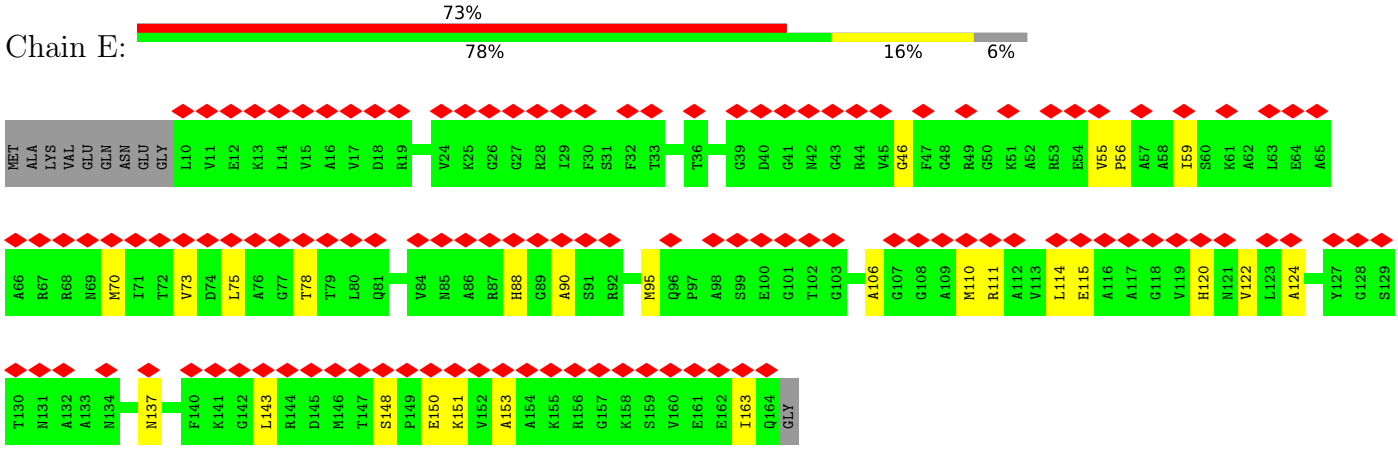
• Molecule 9: Small ribosomal subunit protein uS4

Chain D:

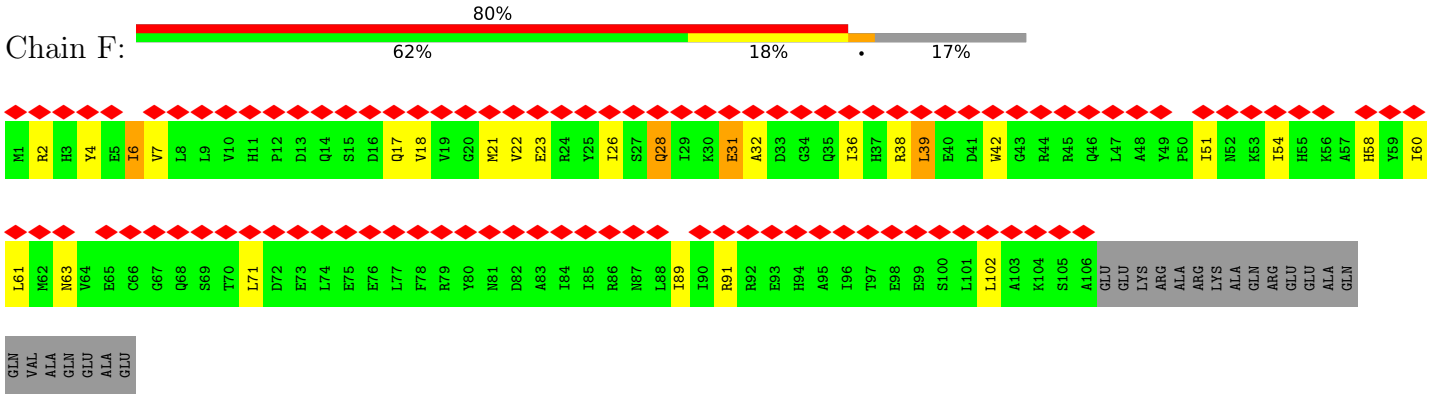




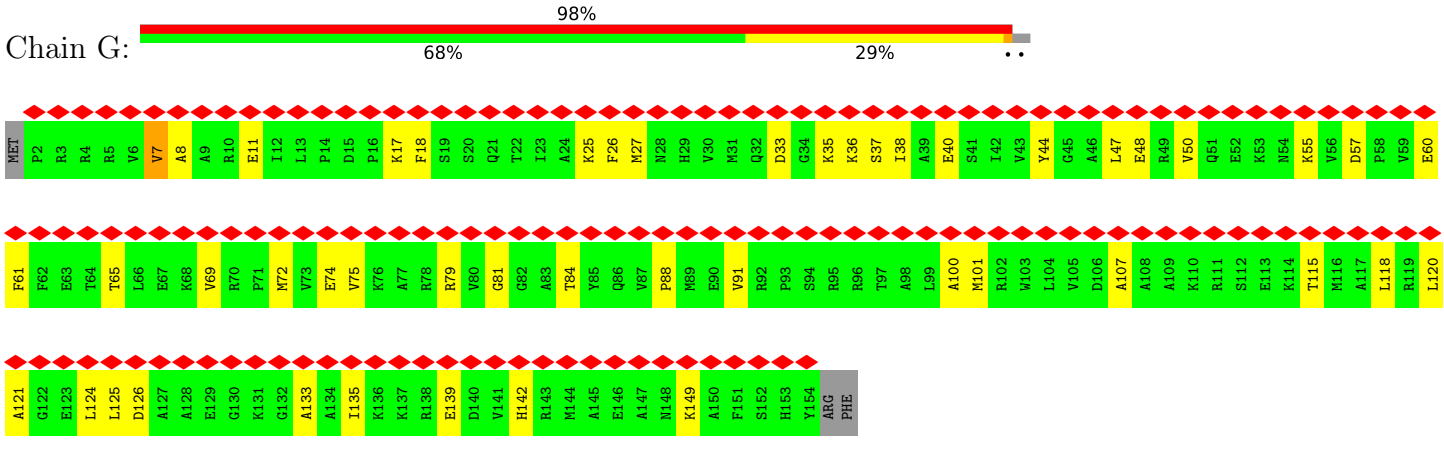
• Molecule 10: Small ribosomal subunit protein uS5



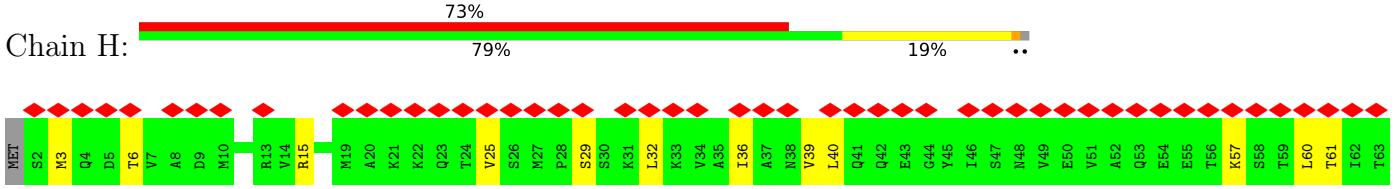
• Molecule 11: Small ribosomal subunit protein bS6

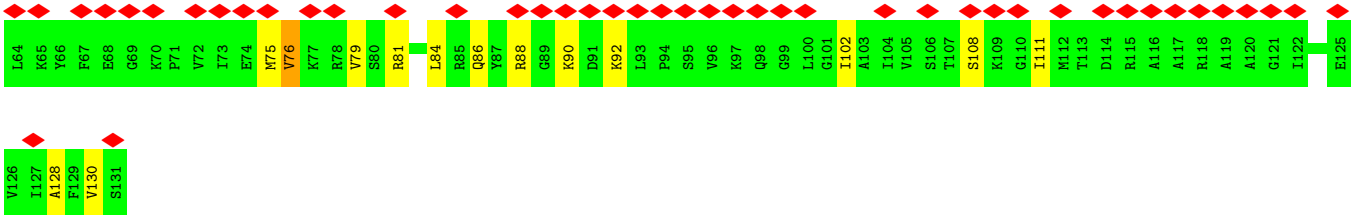


• Molecule 12: Small ribosomal subunit protein uS7



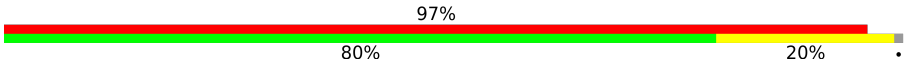
• Molecule 13: Small ribosomal subunit protein uS8

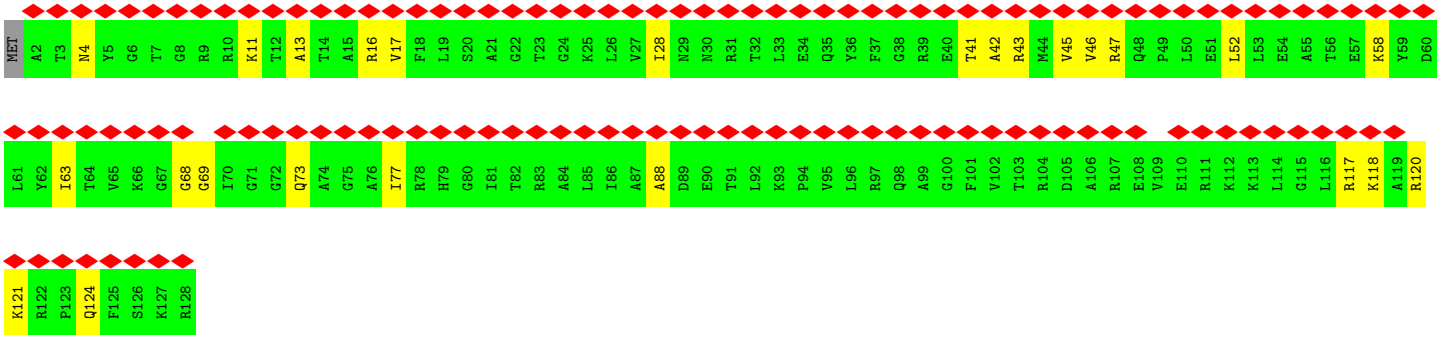




• Molecule 14: Small ribosomal subunit protein uS9

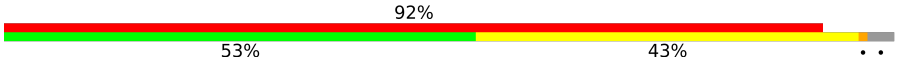
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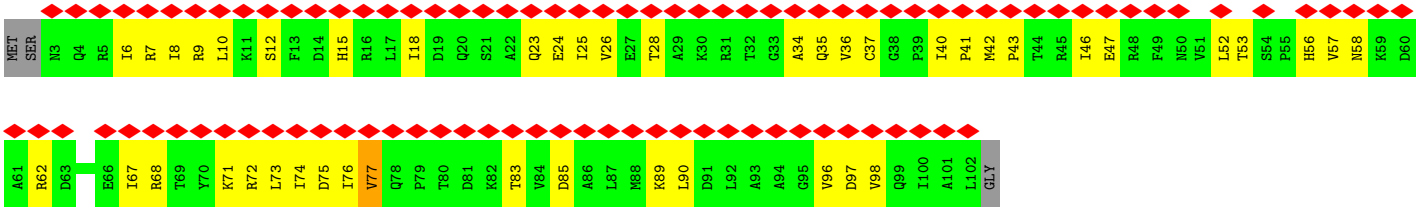




• Molecule 15: Small ribosomal subunit protein uS10

Chain J:

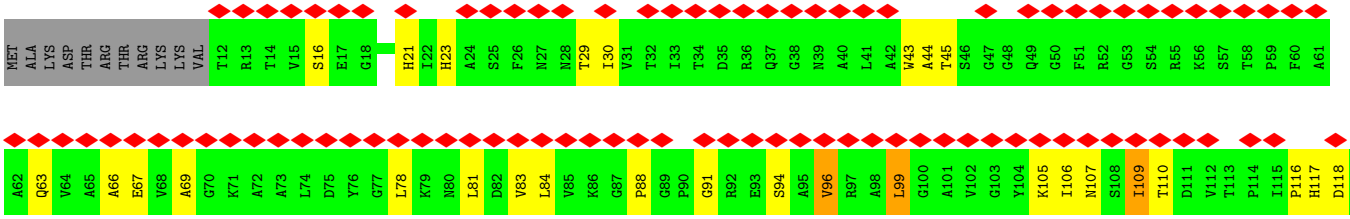


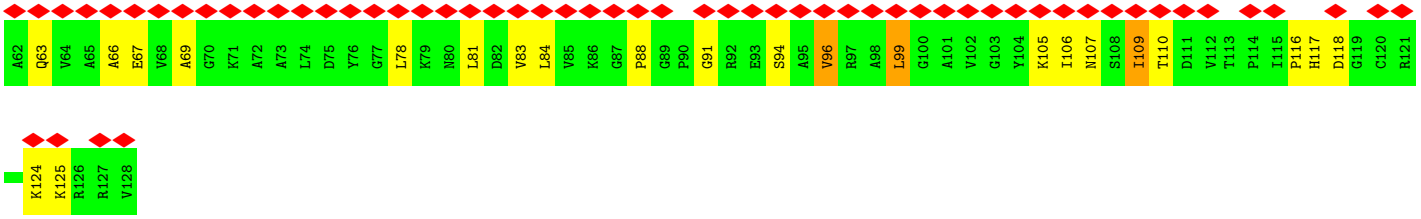


• Molecule 16: Small ribosomal subunit protein uS11

Chain K:

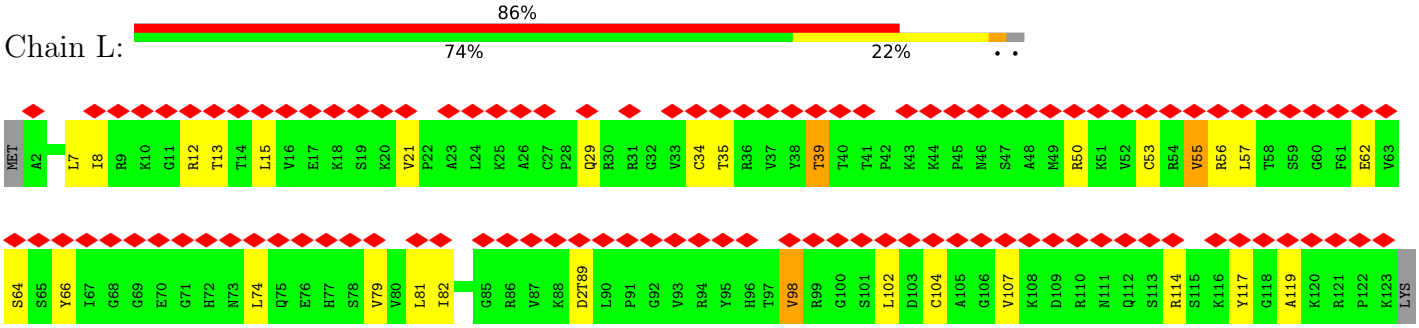






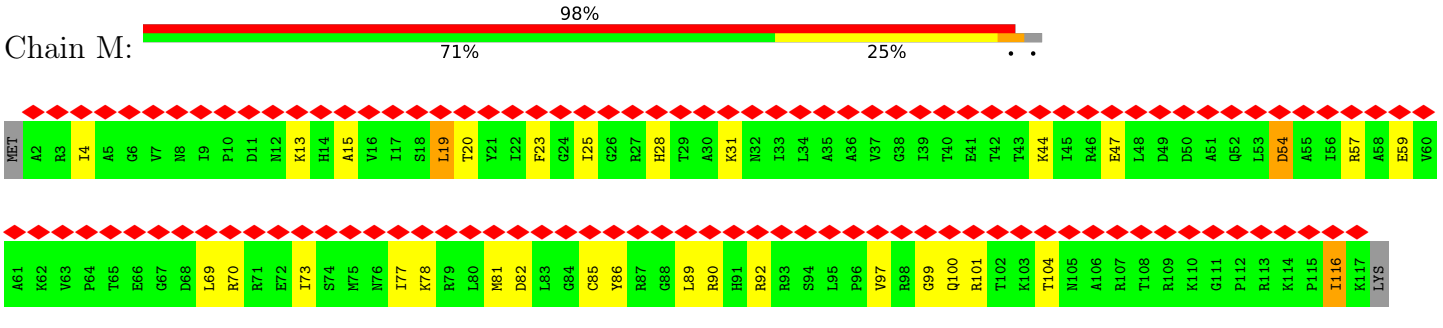
• Molecule 17: Small ribosomal subunit protein uS12

Chain L:



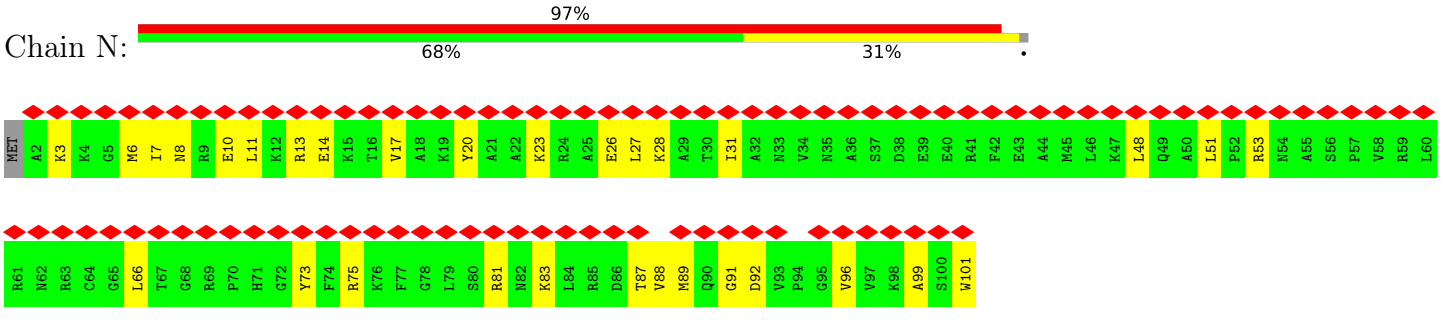
• Molecule 18: Small ribosomal subunit protein uS13

Chain M:



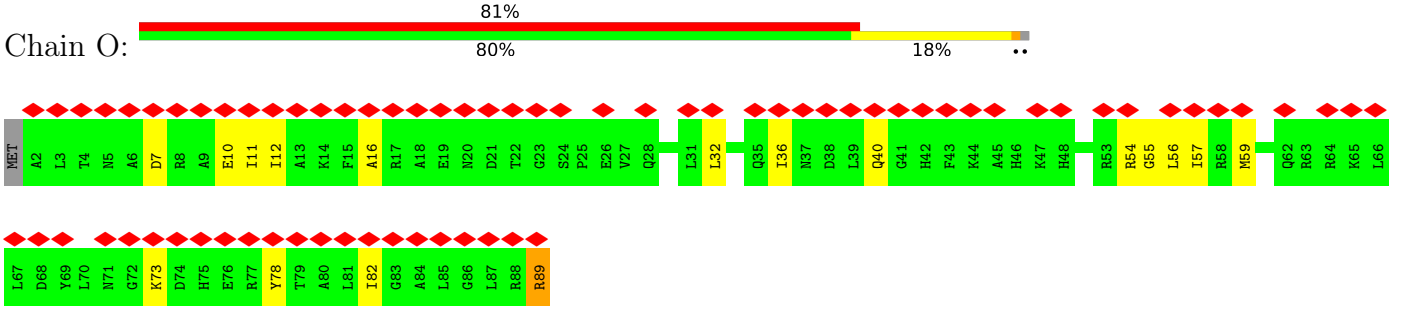
• Molecule 19: Small ribosomal subunit protein uS14

Chain N:



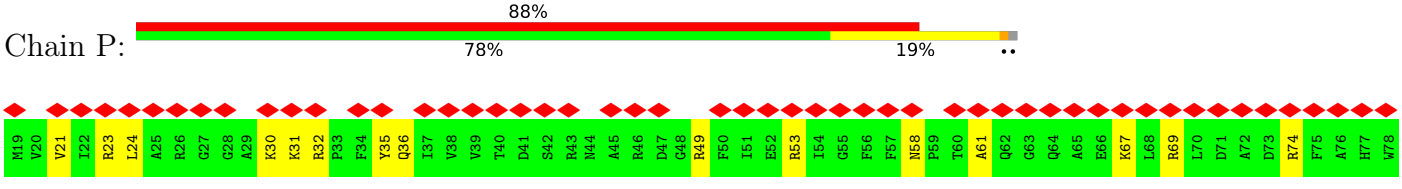
• Molecule 20: Small ribosomal subunit protein uS15

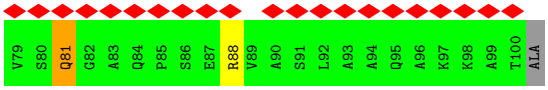
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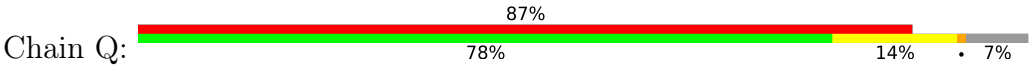
• Molecule 21: Small ribosomal subunit protein bS16

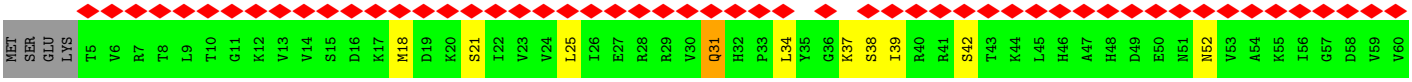
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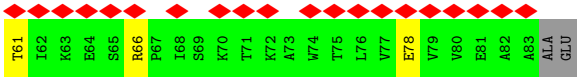




• Molecule 22: Small ribosomal subunit protein uS17

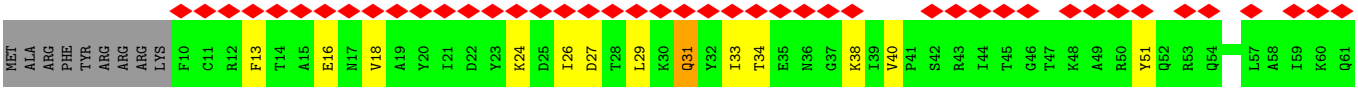


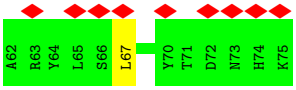




• Molecule 23: Small ribosomal subunit protein bS18

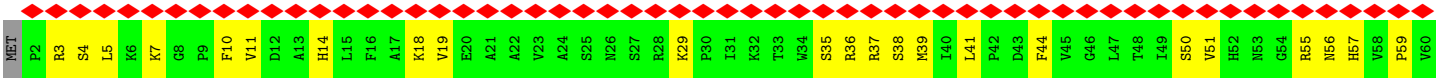


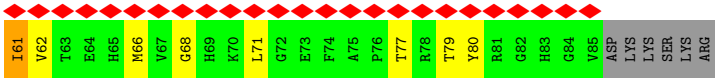




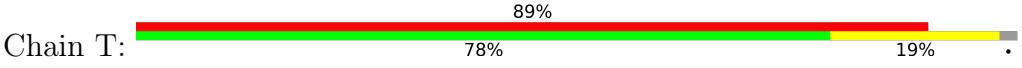
• Molecule 24: Small ribosomal subunit protein uS19

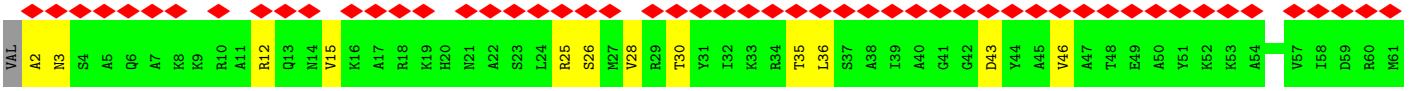


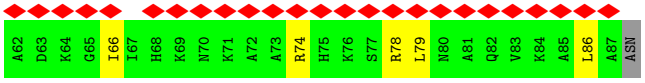




• Molecule 25: 30S ribosomal protein bS20

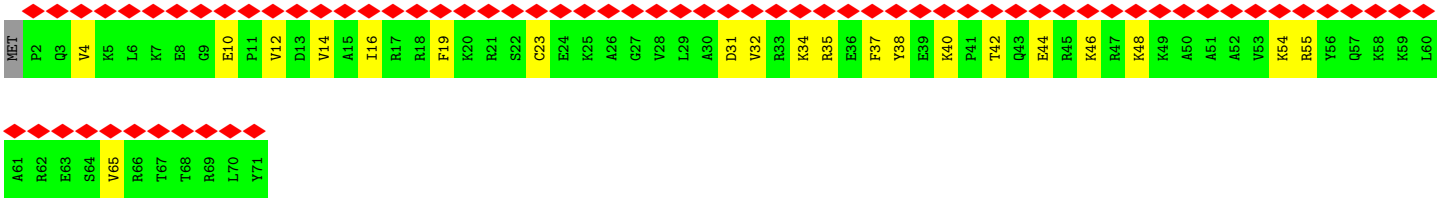






• Molecule 26: Small ribosomal subunit protein bS21





• Molecule 27: Putative ribosomal subunit interface protein

Chain X:

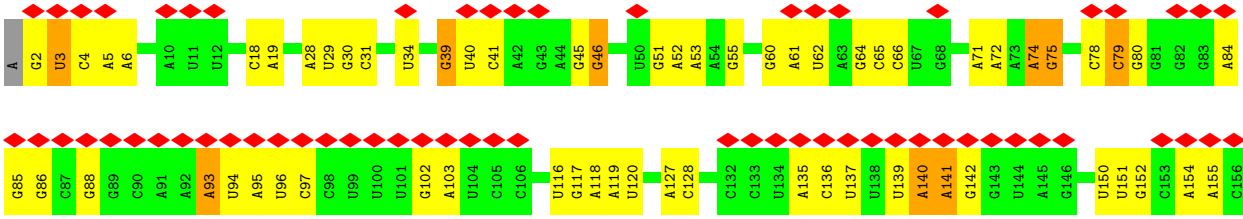


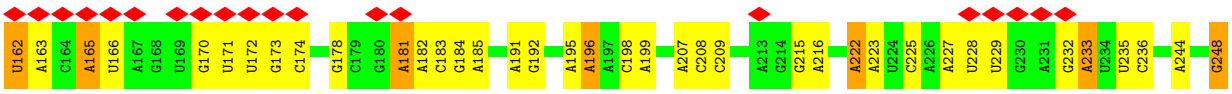


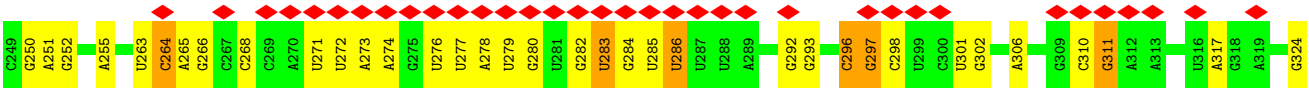
• Molecule 28: 23S rRNA (2890-MER)

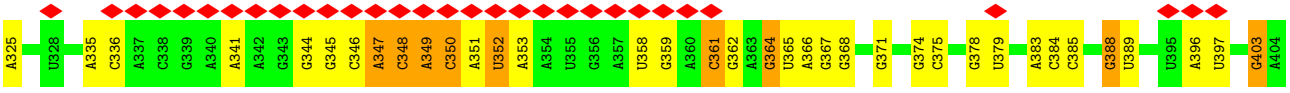
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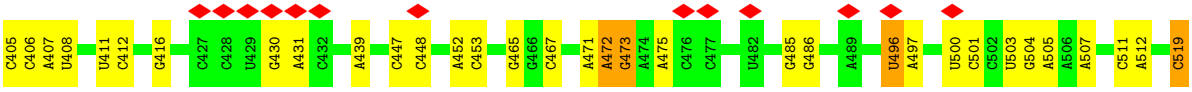


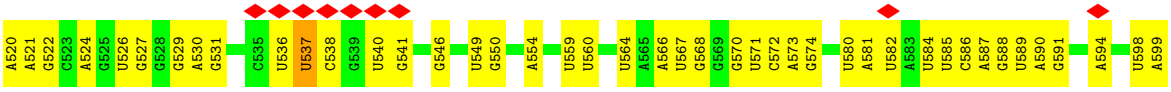


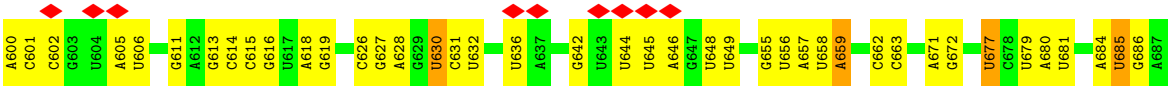


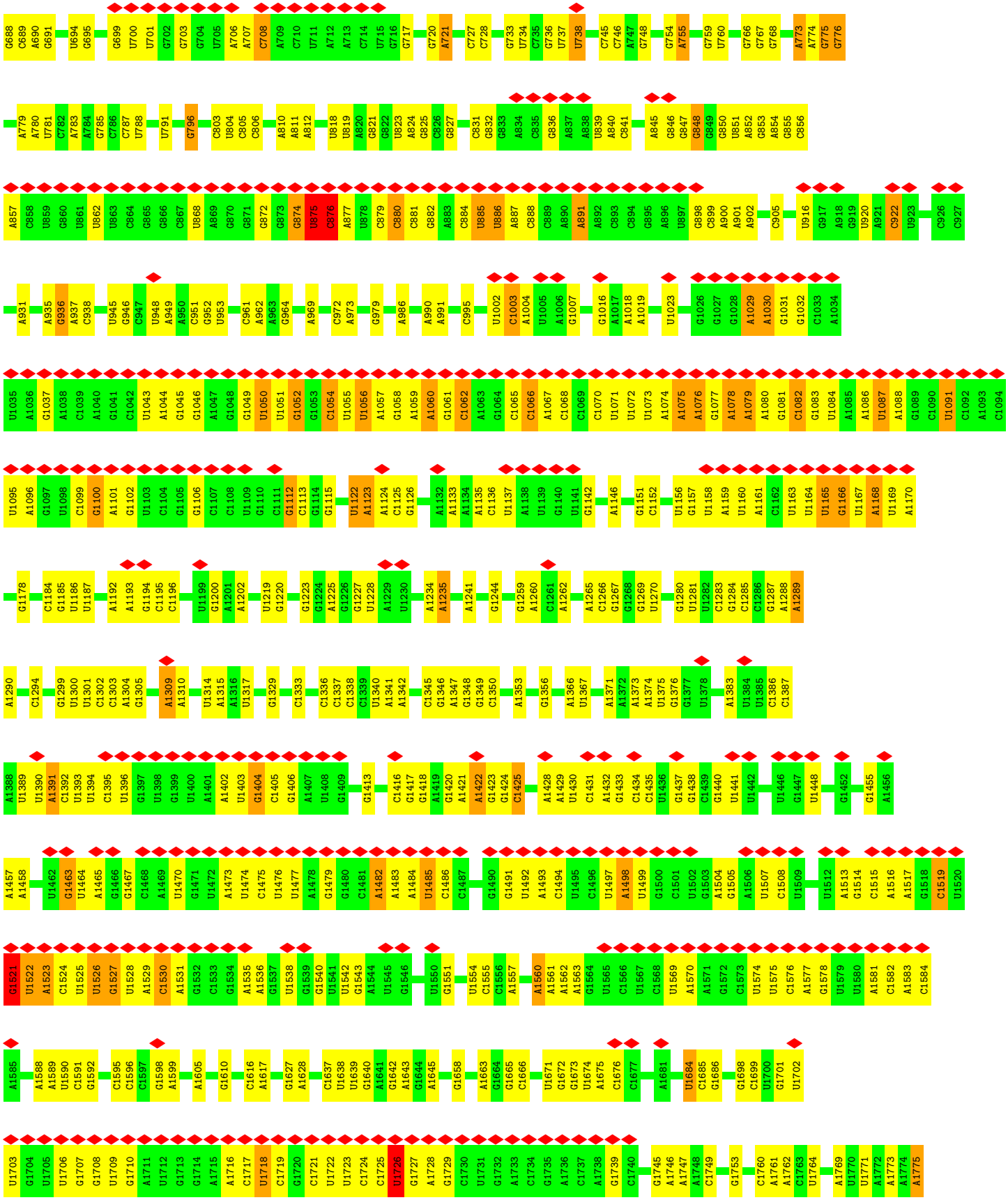


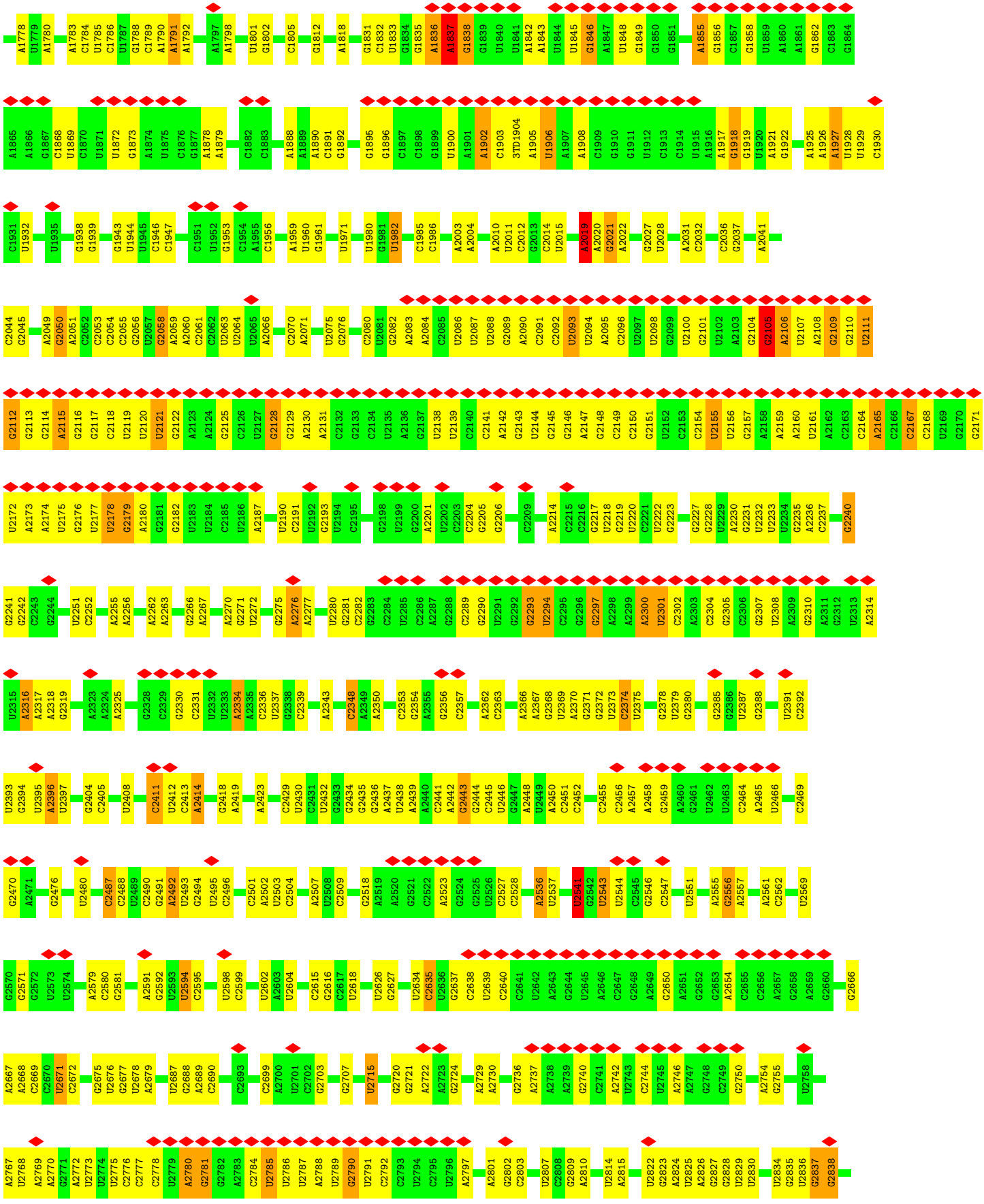


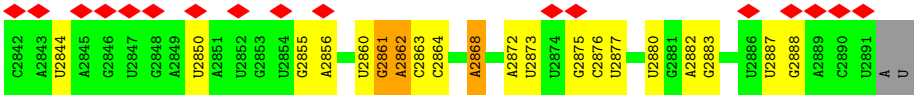







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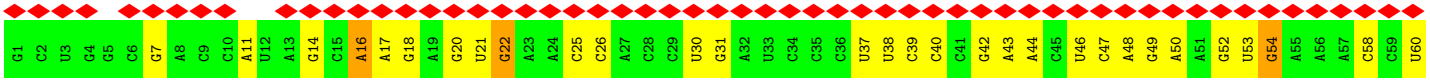

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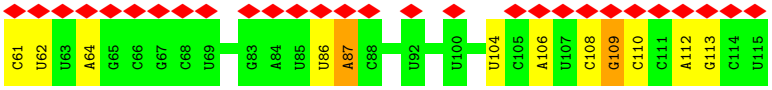


• Molecule 29: 5S rRNA (115-MER)

Chain b:

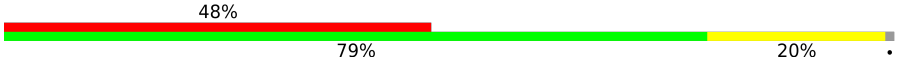


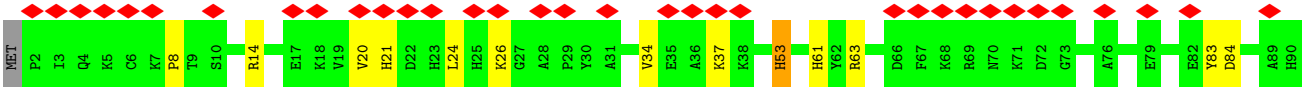


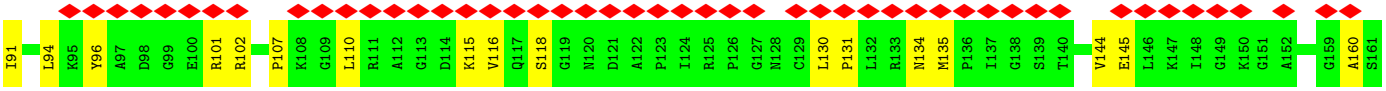


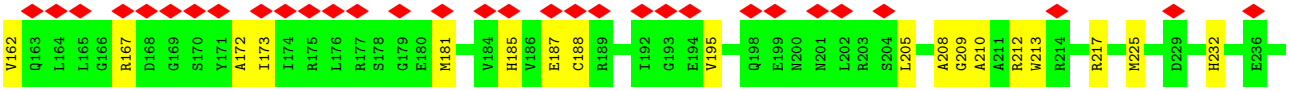
• Molecule 30: Large ribosomal subunit protein uL2

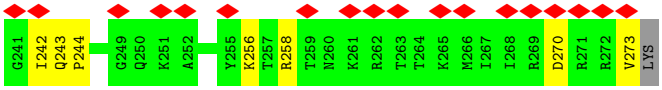
Chain c:







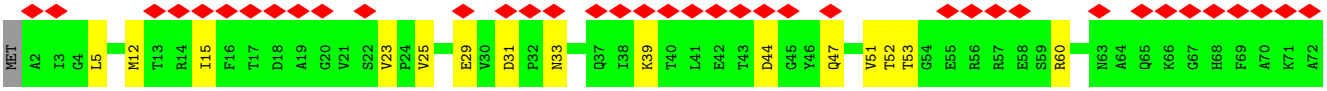


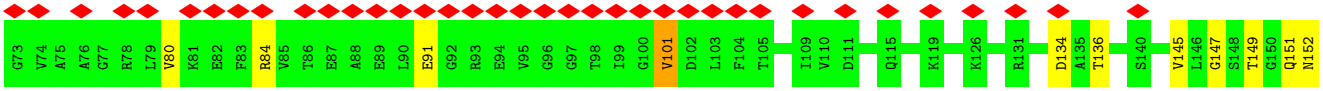


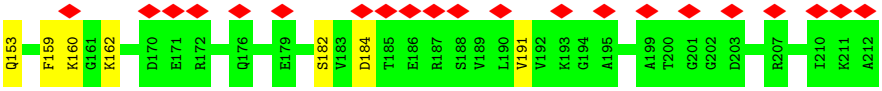
• Molecule 31: Large ribosomal subunit protein uL3

Chain d:



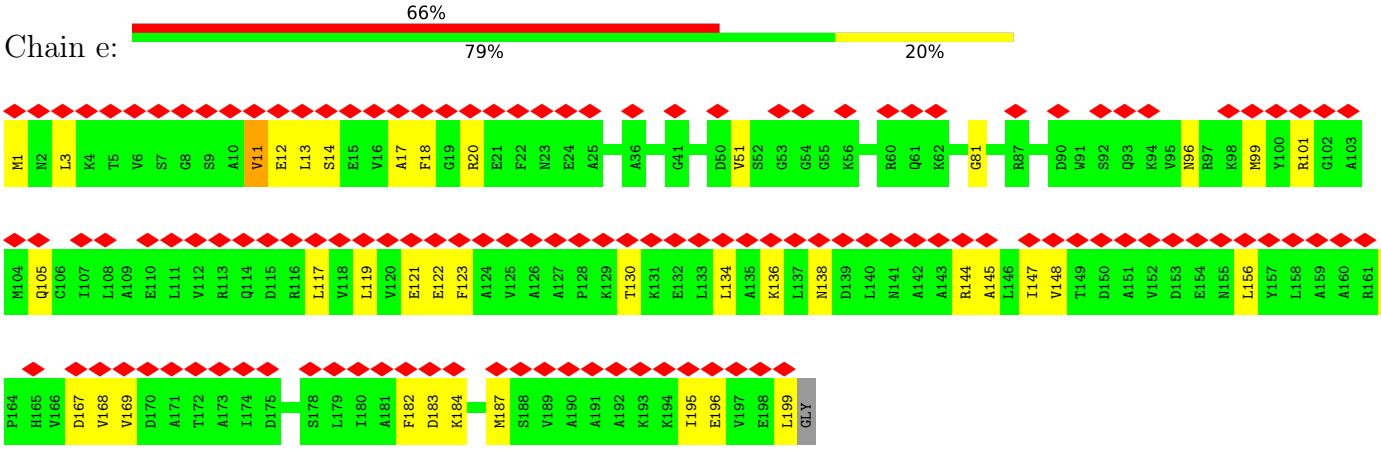






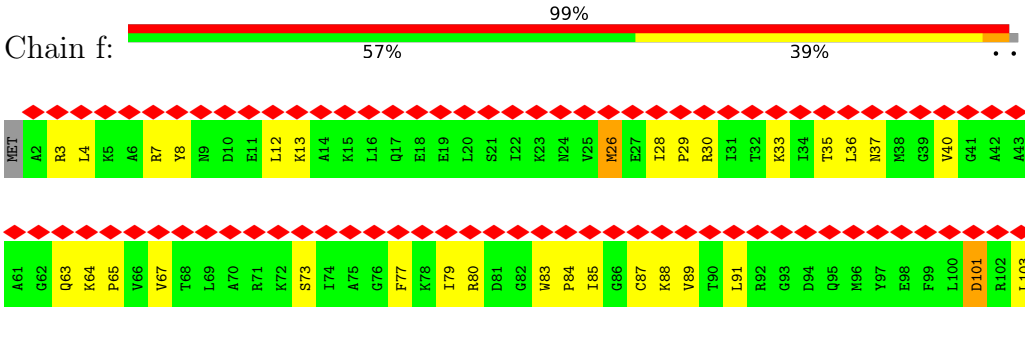
• Molecule 32: Large ribosomal subunit protein uL4

Chain e:



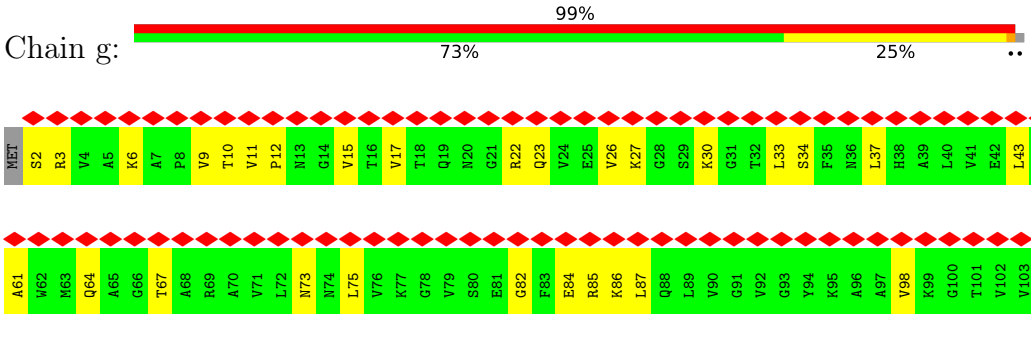
• Molecule 33: Large ribosomal subunit protein uL5

Chain f:



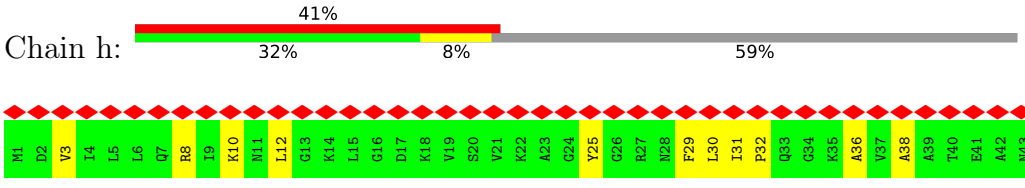
• Molecule 34: Large ribosomal subunit protein uL6

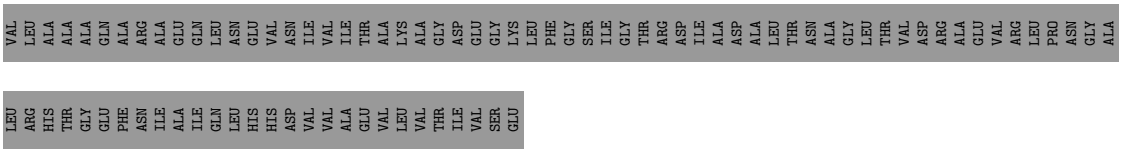
Chain g:



• Molecule 35: Large ribosomal subunit protein bL9

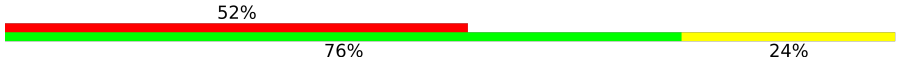
Chain h:

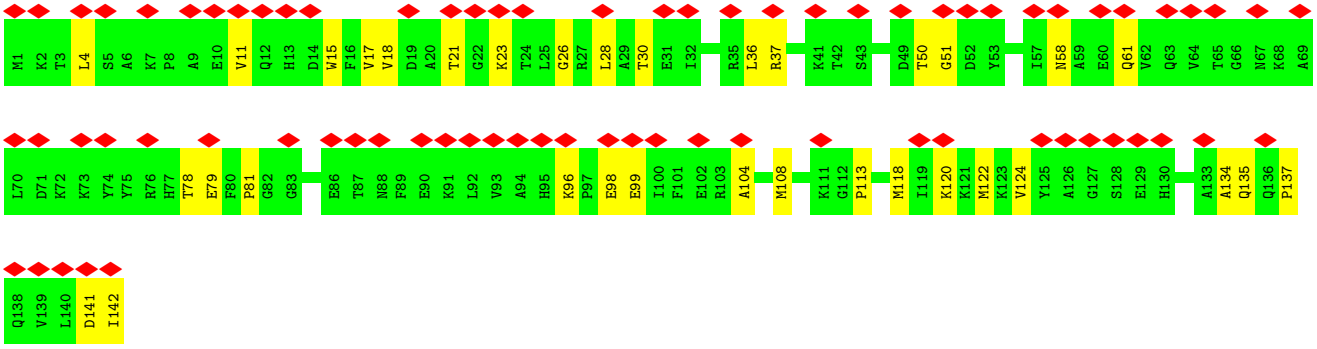




• Molecule 36: Large ribosomal subunit protein uL13

Chain i:

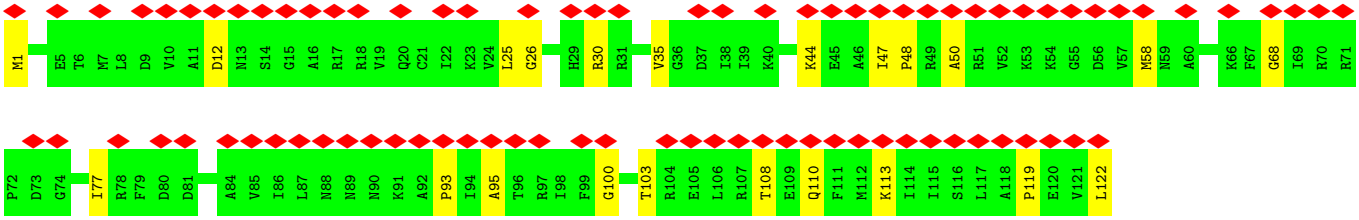




• Molecule 37: Large ribosomal subunit protein uL14

Chain j:

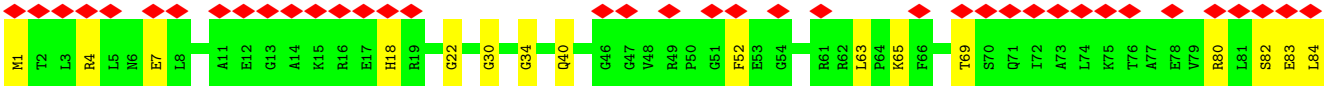


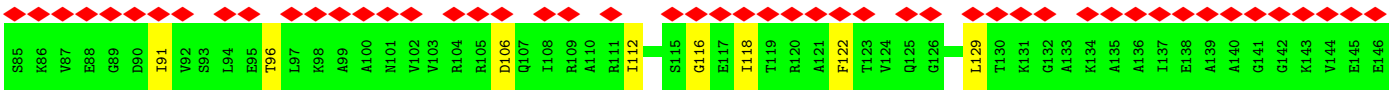


• Molecule 38: Large ribosomal subunit protein uL15

Chain k:



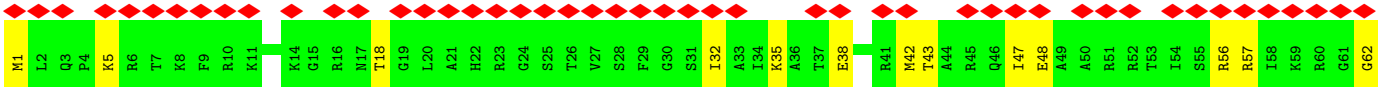


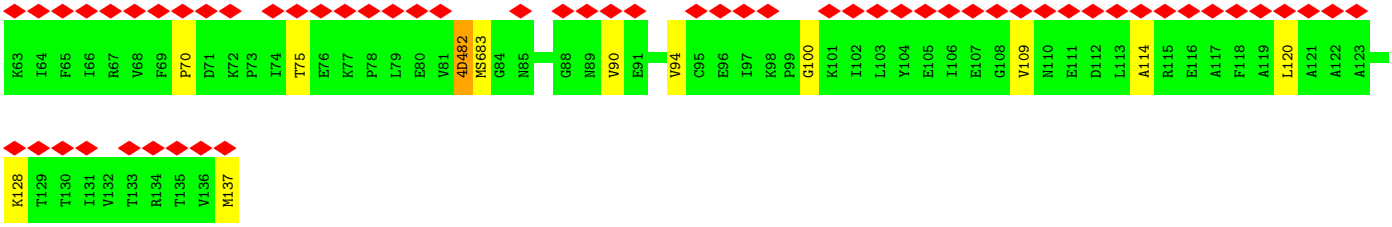


• Molecule 39: Large ribosomal subunit protein uL16

Chain l:



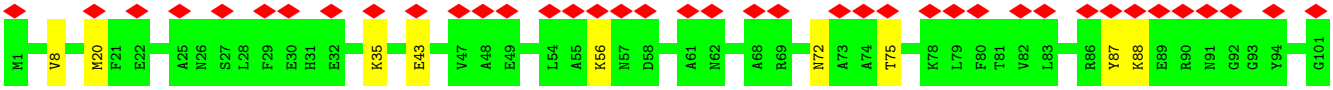




• Molecule 40: Large ribosomal subunit protein bL17

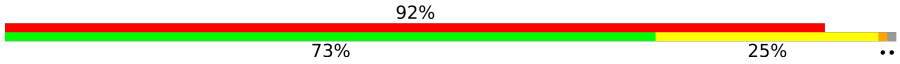
Chain m:

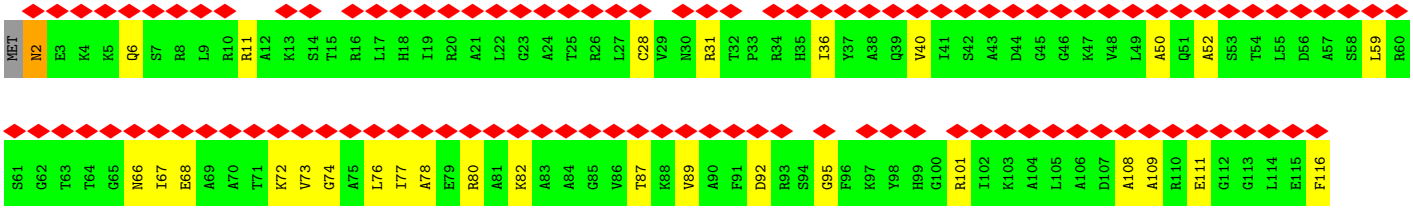




• Molecule 41: Large ribosomal subunit protein uL18

Chain n:

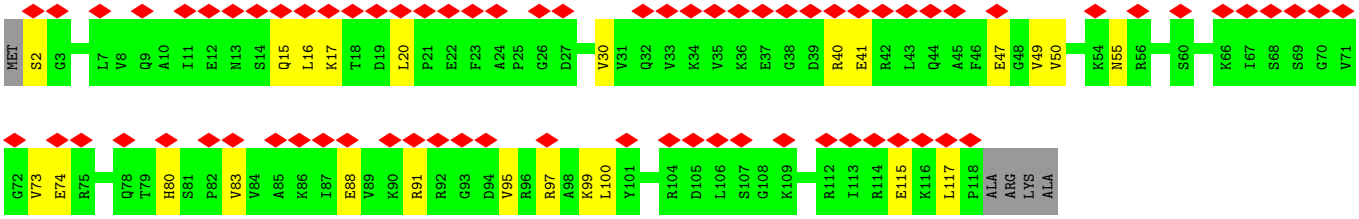




• Molecule 42: Large ribosomal subunit protein bL19

Chain o:

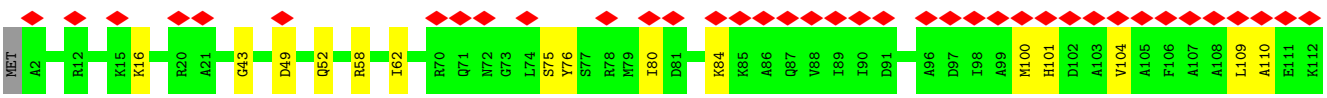


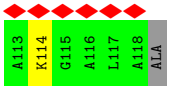


• Molecule 43: Large ribosomal subunit protein bL20

Chain p:



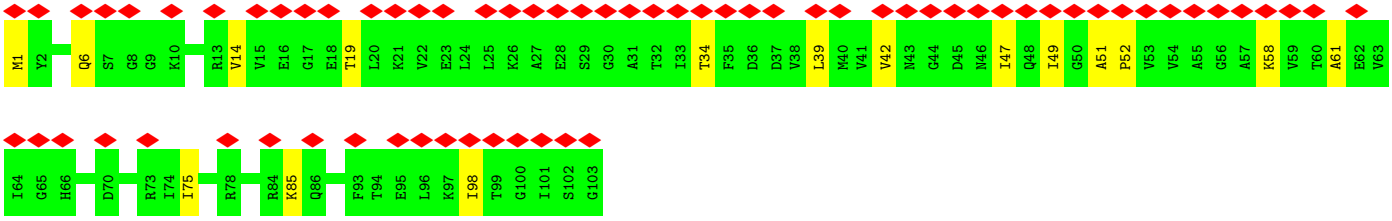




• Molecule 44: Large ribosomal subunit protein bL21

Chain q:

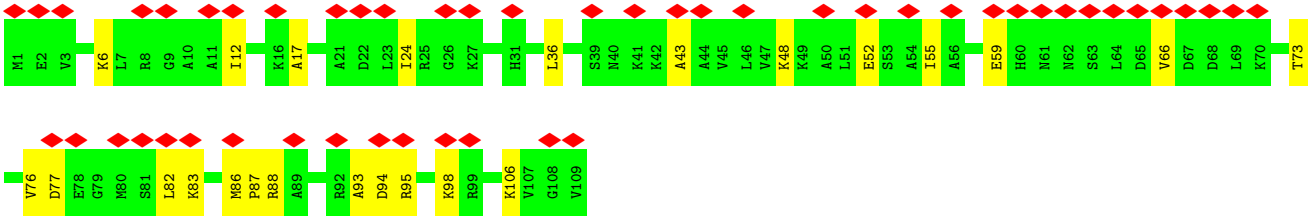




• Molecule 45: Large ribosomal subunit protein uL22

Chain r:

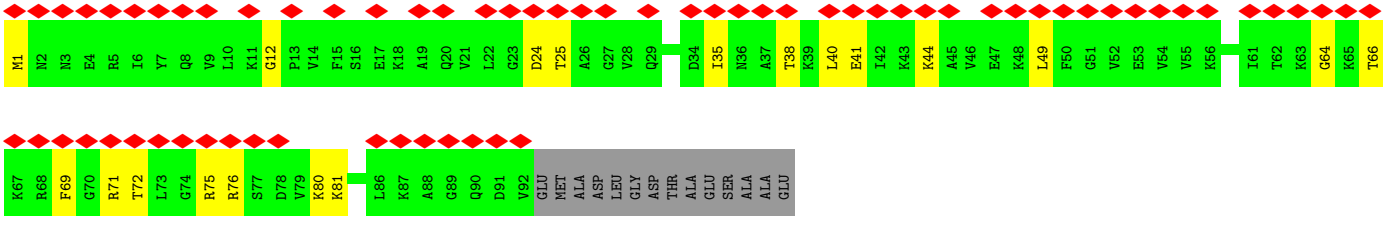




• Molecule 46: Large ribosomal subunit protein uL23

Chain s:

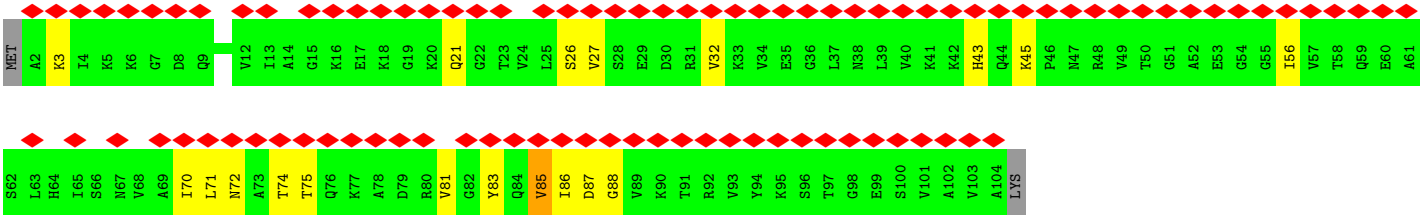




• Molecule 47: Large ribosomal subunit protein uL24

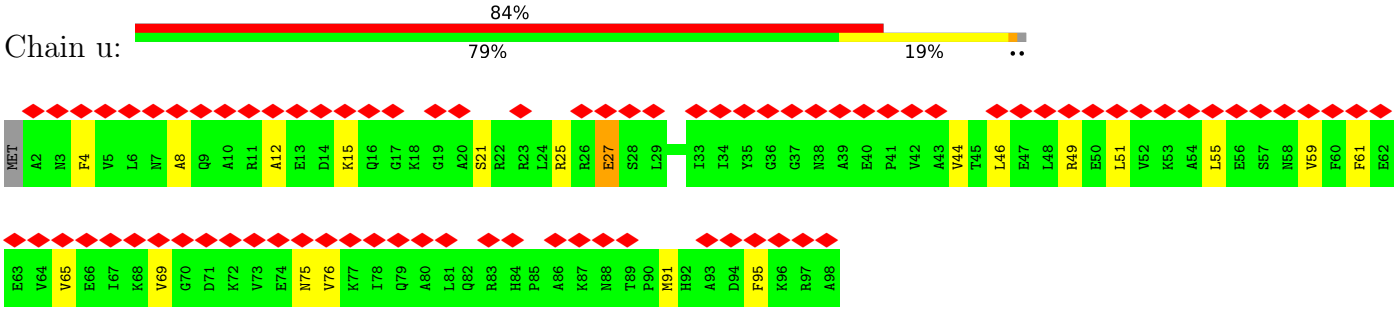
Chain t:





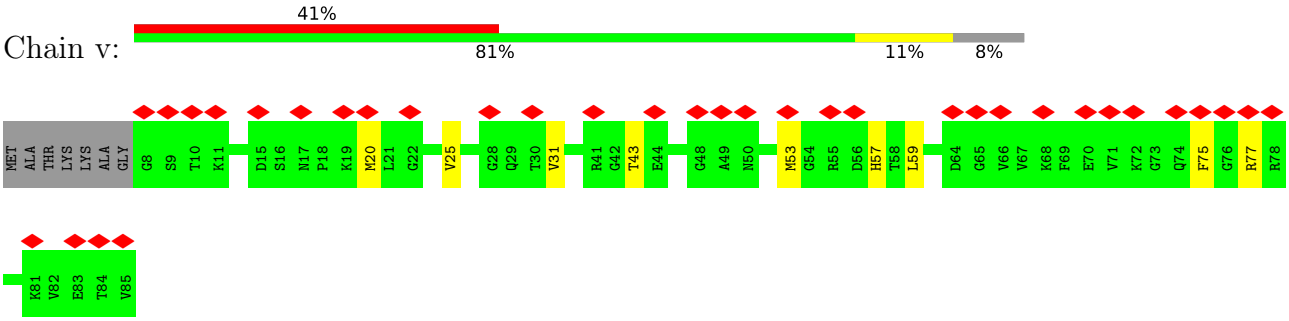
• Molecule 48: Large ribosomal subunit protein bL25

Chain u:



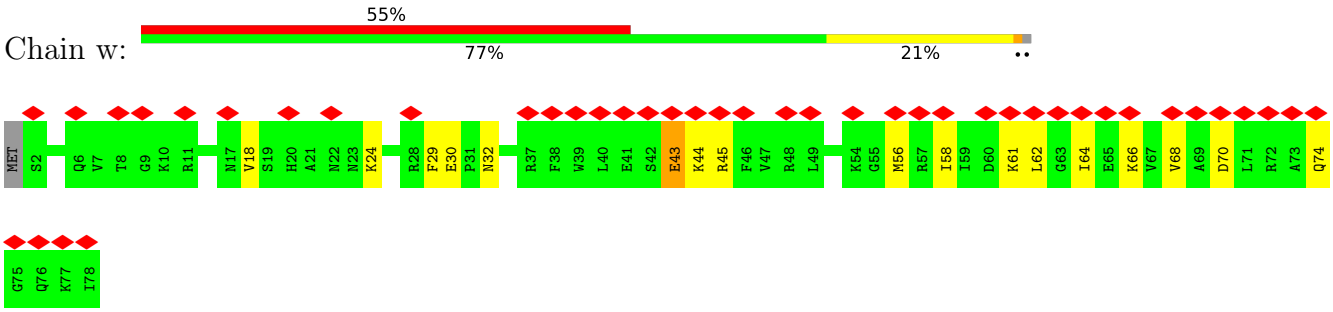
• Molecule 49: Large ribosomal subunit protein bL27

Chain v:



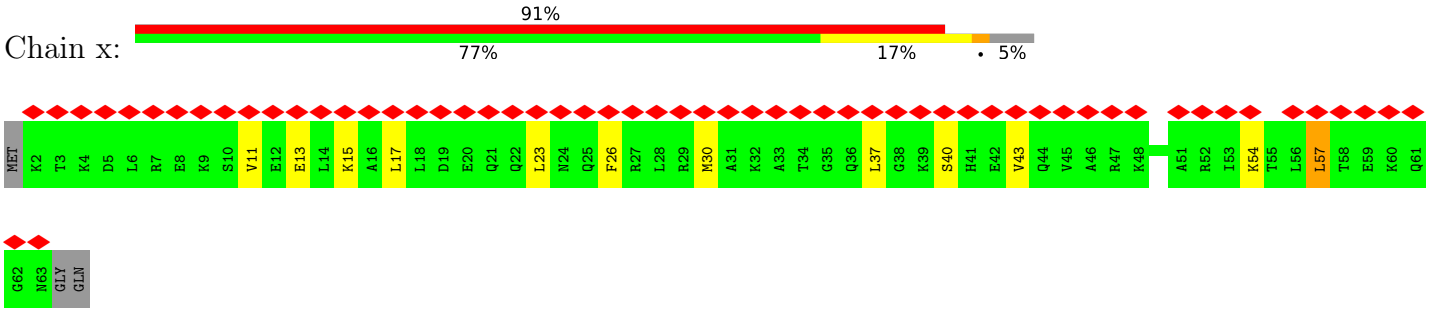
• Molecule 50: Large ribosomal subunit protein bL28

Chain w:



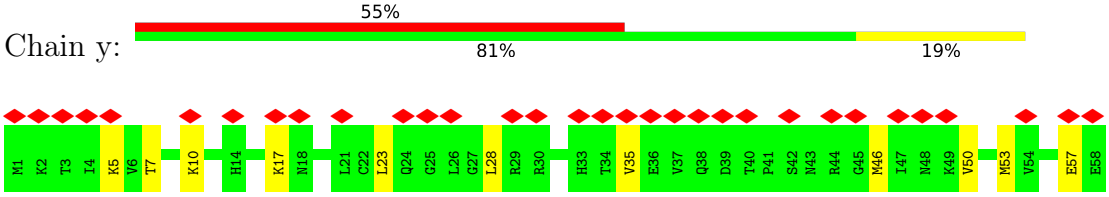
• Molecule 51: Large ribosomal subunit protein uL29

Chain x:



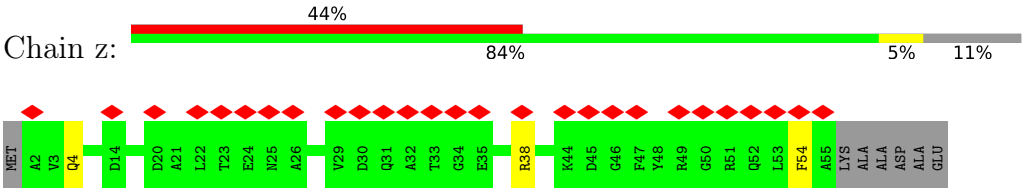
• Molecule 52: Large ribosomal subunit protein uL30

Chain y:



• Molecule 53: Large ribosomal subunit protein bL32

Chain z:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	17801	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	1.623	Depositor
Minimum map value	-0.590	Depositor
Average map value	-0.001	Depositor
Map value standard deviation	0.061	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 (i)

5.1 Standard geometry (i)

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

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	0.17	0/434	0.37	0/573
2	1	0.14	0/367	0.35	0/481
3	2	0.15	0/515	0.33	0/678
4	3	0.17	0/296	0.31	0/389
5	4	0.16	0/561	0.47	0/750
6	A	0.30	0/36452	0.76	6/56856 (0.0%)
7	B	0.15	0/1832	0.35	0/2474
8	C	0.14	0/1714	0.31	0/2304
9	D	0.14	0/1653	0.31	0/2213
10	E	0.17	0/1141	0.37	0/1537
11	F	0.15	0/893	0.36	0/1204
12	G	0.15	0/1229	0.36	0/1647
13	H	0.15	0/993	0.32	0/1331
14	I	0.16	0/1006	0.38	0/1346
15	J	0.18	0/811	0.48	0/1096
16	K	0.16	0/869	0.37	0/1175
17	L	0.16	0/949	0.42	0/1270
18	M	0.17	0/922	0.44	0/1237
19	N	0.15	0/803	0.35	0/1071
20	O	0.15	0/715	0.30	0/958
21	P	0.14	0/655	0.33	0/879
22	Q	0.13	0/628	0.37	0/847
23	R	0.16	0/555	0.33	0/749
24	S	0.14	0/675	0.34	0/912
25	T	0.19	0/669	0.31	0/892
26	U	0.17	0/592	0.41	0/784
27	X	0.17	0/858	0.39	0/1150
28	a	0.33	0/68962	0.77	25/107563 (0.0%)
29	b	0.28	0/2739	0.75	0/4266
30	c	0.14	0/2152	0.31	0/2891
31	d	0.16	0/1580	0.31	0/2127

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
32	e	0.15	0/1532	0.31	0/2068
33	f	0.20	0/1415	0.46	0/1895
34	g	0.14	0/1346	0.32	0/1818
35	h	0.12	0/461	0.37	0/616
36	i	0.16	0/1151	0.35	0/1551
37	j	0.15	0/956	0.33	0/1286
38	k	0.13	0/1097	0.29	0/1461
39	l	0.15	0/1084	0.32	0/1448
40	m	0.14	0/956	0.30	0/1282
41	n	0.15	0/873	0.35	0/1167
42	o	0.15	0/931	0.33	0/1249
43	p	0.18	0/947	0.36	0/1262
44	q	0.15	0/818	0.37	0/1094
45	r	0.16	0/831	0.36	0/1113
46	s	0.15	0/723	0.37	0/967
47	t	0.14	0/770	0.35	0/1034
48	u	0.15	0/770	0.41	1/1036 (0.1%)
49	v	0.14	0/597	0.26	0/798
50	w	0.15	0/642	0.33	0/856
51	x	0.14	0/499	0.39	0/662
52	y	0.16	0/468	0.34	0/624
53	z	0.16	0/453	0.35	0/604
All	All	0.28	0/153540	0.68	32/229541 (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
39	l	0	1

There are no bond length outliers.

All (32) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
28	a	1301	U	C2-N1-C1'	7.35	126.52	117.70
6	A	415	C	N3-C2-O2	-6.96	117.03	121.90
28	a	781	U	C2-N1-C1'	6.43	125.41	117.70
28	a	875	U	N3-C2-O2	-6.33	117.77	122.20
28	a	2105	G	O5'-C5'-C4'	6.31	114.45	109.40
28	a	876	C	O4'-C1'-N1	6.21	113.17	108.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
28	a	1301	U	N1-C2-O2	6.00	127.00	122.80
28	a	1082	C	N1-C2-O2	5.77	122.36	118.90
28	a	1095	U	C2-N1-C1'	5.74	124.59	117.70
28	a	1726	U	C2-N1-C1'	5.70	124.54	117.70
28	a	1302	C	C2-N1-C1'	5.66	125.03	118.80
6	A	533	C	N3-C2-O2	-5.54	118.02	121.90
6	A	533	C	N1-C2-O2	5.51	122.21	118.90
48	u	27	GLU	CA-CB-CG	5.50	125.09	114.10
28	a	880	C	N1-C2-O2	5.43	122.16	118.90
28	a	1336	C	N1-C2-O2	5.41	122.15	118.90
28	a	2443	G	O5'-C5'-C4'	5.36	113.69	109.40
28	a	496	U	N1-C2-O2	5.35	126.54	122.80
28	a	781	U	N1-C2-O2	5.34	126.54	122.80
28	a	1837	A	O4'-C1'-N9	5.30	112.44	108.20
28	a	283	U	C2-N1-C1'	5.29	124.05	117.70
28	a	1301	U	N3-C2-O2	-5.29	118.50	122.20
6	A	326	C	N1-C2-O2	5.28	122.07	118.90
28	a	880	C	C2-N1-C1'	5.22	124.54	118.80
6	A	1155	C	C2-N1-C1'	5.16	124.48	118.80
28	a	361	C	P-O3'-C3'	5.13	125.86	119.70
6	A	1009	A	C4-N9-C1'	5.08	135.44	126.30
28	a	1082	C	N3-C2-O2	-5.08	118.34	121.90
28	a	1519	C	C2-N1-C1'	5.06	124.37	118.80
28	a	1521	G	P-O3'-C3'	5.05	125.76	119.70
28	a	496	U	N3-C2-O2	-5.01	118.69	122.20
28	a	708	C	N1-C2-O2	5.00	121.90	118.90

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
39	l	82	4D4	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	8	0
2	1	363	0	401	7	0
3	2	509	0	566	16	0
4	3	295	0	326	5	0
5	4	552	0	552	21	0
6	A	32785	0	16503	433	0
7	B	1801	0	1814	34	0
8	C	1690	0	1774	27	0
9	D	1631	0	1691	42	0
10	E	1129	0	1172	17	0
11	F	878	0	878	16	0
12	G	1210	0	1255	28	0
13	H	985	0	1047	16	0
14	I	995	0	1053	20	0
15	J	801	0	832	34	0
16	K	862	0	872	20	0
17	L	947	0	997	18	0
18	M	912	0	975	21	0
19	N	792	0	833	22	0
20	O	705	0	712	13	0
21	P	644	0	655	17	0
22	Q	621	0	665	6	0
23	R	545	0	556	10	0
24	S	657	0	675	24	0
25	T	663	0	714	8	0
26	U	585	0	634	13	0
27	X	841	0	824	14	0
28	a	61984	0	31153	729	0
29	b	2450	0	1241	27	0
30	c	2111	0	2175	35	0
31	d	1573	0	1611	22	0
32	e	1511	0	1566	24	0
33	f	1395	0	1451	69	0
34	g	1327	0	1386	29	0
35	h	458	0	480	7	0
36	i	1125	0	1148	21	0
37	j	946	0	1007	13	0
38	k	1089	0	1158	16	0
39	l	1088	0	1150	15	0
40	m	942	0	987	8	0
41	n	865	0	905	22	0
42	o	919	0	973	17	0
43	p	934	0	997	12	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
44	q	807	0	842	11	0
45	r	826	0	894	16	0
46	s	717	0	777	12	0
47	t	766	0	816	13	0
48	u	760	0	783	11	0
49	v	589	0	592	5	0
50	w	632	0	667	12	0
51	x	498	0	537	8	0
52	y	463	0	488	5	0
53	z	447	0	435	3	0
54	1	2	0	0	0	0
54	A	45	0	0	0	0
54	E	1	0	0	0	0
54	L	1	0	0	0	0
54	M	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	2	0	0	0	0
56	v	1	0	0	0	0
56	z	1	0	0	0	0
All	All	142578	0	95657	1925	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 (1925) 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:872:G:H1	28:a:886:U:H3	1.07	1.00
45:r:83:LYS:HB3	45:r:95:ARG:HH22	1.34	0.93
5:4:38:CYS:SG	5:4:41:CYS:HB3	2.08	0.91
6:A:639:A:H2'	6:A:640:C:H6	1.41	0.85
15:J:57:VAL:HG12	15:J:58:ASN:H	1.41	0.84
41:n:2:ASN:HD22	41:n:2:ASN:N	1.75	0.84
47:t:72:ASN:HD22	47:t:75:THR:HG22	1.42	0.84
28:a:45:G:H5"	28:a:46:G:H5'	1.61	0.83
6:A:670:A:H2'	6:A:671:G:C8	2.14	0.82
28:a:2080:C:H4'	50:w:56:MET:HE1	1.63	0.81
28:a:1588:A:H5"	28:a:1589:A:H5'	1.63	0.81
6:A:74:G:H8	6:A:93:A:H62	1.25	0.81
28:a:467:C:O2	28:a:471:A:N6	2.12	0.80
28:a:2317:A:H2'	28:a:2318:A:C8	2.17	0.80
28:a:902:A:H8	28:a:2266:G:H21	1.26	0.80
50:w:62:LEU:HD22	50:w:66:LYS:HE2	1.63	0.79
6:A:1447:G:H21	6:A:1450:A:H2	1.31	0.79
33:f:138:PHE:CG	33:f:139:PRO:HD3	2.18	0.79
28:a:559:U:H1'	28:a:2019:6MZ:H9C1	1.64	0.78
28:a:2294:U:H5"	33:f:131:GLY:HA3	1.65	0.77
28:a:529:G:H22	28:a:546:G:H1'	1.49	0.77
34:g:17:VAL:HG21	34:g:50:LEU:HD21	1.67	0.76
28:a:1627:G:H2'	28:a:1628:A:C8	2.20	0.76
32:e:96:ASN:HB2	32:e:99:MET:HG3	1.66	0.76
42:o:30:VAL:HG12	42:o:47:GLU:HG3	1.67	0.75
28:a:140:A:HO2'	28:a:141:A:H8	1.34	0.75
28:a:1836:A:HO2'	28:a:1837:A:H8	1.33	0.75
8:C:152:GLU:HG3	8:C:167:TRP:HB3	1.68	0.75
41:n:59:LEU:HD21	41:n:72:LYS:HB2	1.67	0.74
29:b:52:G:H21	33:f:26:MET:HE3	1.51	0.74
33:f:8:TYR:HA	33:f:12:LEU:HB2	1.68	0.74
24:S:62:VAL:HA	24:S:66:MET:HE2	1.69	0.74
28:a:520:A:H5'	36:i:113:PRO:HG3	1.69	0.74
26:U:31:ASP:HA	26:U:34:LYS:HD3	1.68	0.73
7:B:109:LEU:HD12	7:B:150:LEU:HD11	1.70	0.73
15:J:37:CYS:HB3	15:J:75:ASP:HB2	1.69	0.73
47:t:86:ILE:HD12	47:t:87:ASP:H	1.53	0.73
4:3:16:VAL:HG22	4:3:25:VAL:HG22	1.71	0.73
5:4:12:LEU:HD11	5:4:33:ILE:HG12	1.70	0.73
6:A:1309:G:H5'	24:S:5:LEU:HD21	1.69	0.72
33:f:58:GLN:HG3	33:f:65:PRO:HD3	1.71	0.72
31:d:159:PHE:HB3	36:i:81:PRO:HG3	1.71	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:T:74:ARG:HG3	25:T:78:ARG:HD2	1.72	0.72
33:f:137:VAL:HG13	33:f:140:GLU:HB2	1.71	0.72
28:a:1925:A:H2	28:a:1932:U:H3	1.37	0.72
33:f:135:GLN:HE21	33:f:149:ILE:HD12	1.53	0.72
28:a:2458:A:H4'	39:l:56:ARG:HD2	1.72	0.72
28:a:1791:A:H2'	28:a:1792:A:C8	2.25	0.72
28:a:2837:G:H5"	42:o:97:ARG:HA	1.72	0.71
28:a:922:C:H42	28:a:1158:U:H1'	1.55	0.71
28:a:2280:U:H2'	28:a:2281:G:C8	2.25	0.71
7:B:121:THR:O	7:B:125:ASP:HB2	1.90	0.71
51:x:13:GLU:O	51:x:17:LEU:HD12	1.91	0.71
15:J:7:ARG:HD3	15:J:9:ARG:HH12	1.56	0.71
33:f:36:LEU:HD22	33:f:154:ILE:HG12	1.72	0.70
26:U:12:VAL:O	26:U:16:ILE:HG12	1.91	0.70
5:4:48:LYS:HZ3	5:4:50:LYS:H	1.39	0.70
6:A:231:U:H2'	6:A:232:A:C8	2.26	0.70
33:f:108:ILE:HG21	33:f:176:PRO:HG3	1.74	0.70
28:a:1837:A:HO2'	28:a:1838:G:H8	1.38	0.70
31:d:160:LYS:HE3	36:i:79:GLU:HB2	1.73	0.70
28:a:2125:G:H1	28:a:2144:U:H3	1.40	0.70
28:a:2075:U:H2'	28:a:2076:G:C8	2.27	0.70
28:a:1457:A:H2'	28:a:1458:A:H8	1.56	0.70
28:a:1029:A:H4'	48:u:49:ARG:HD3	1.74	0.69
28:a:1516:A:H61	28:a:1535:A:H5'	1.56	0.69
11:F:6:ILE:HG23	11:F:89:ILE:HG12	1.74	0.69
28:a:1043:U:H2'	28:a:1044:A:C8	2.27	0.69
6:A:6:C:H2'	6:A:7:U:H2'	1.74	0.69
27:X:79:ILE:O	27:X:83:ILE:HG13	1.93	0.69
39:l:43:THR:HG22	39:l:94:VAL:HG12	1.74	0.69
28:a:1457:A:H2'	28:a:1458:A:C8	2.27	0.69
13:H:39:VAL:HG21	13:H:111:ILE:HG22	1.74	0.69
50:w:61:LYS:HG2	50:w:62:LEU:HG	1.74	0.68
12:G:27:MET:HE3	12:G:40:GLU:HG2	1.74	0.68
28:a:2105:G:H3'	28:a:2106:A:H2'	1.76	0.68
6:A:1353:G:H2'	6:A:1354:A:C8	2.28	0.68
28:a:823:U:H2'	28:a:824:A:H8	1.59	0.68
28:a:2280:U:H2'	28:a:2281:G:H8	1.58	0.68
38:k:4:ARG:HB2	38:k:7:GLU:HG3	1.76	0.68
6:A:711:G:H2'	6:A:712:A:C8	2.29	0.68
27:X:7:THR:HG22	27:X:43:PHE:HB2	1.75	0.68
28:a:2125:G:N2	28:a:2144:U:O2	2.22	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:w:18:VAL:HG22	50:w:24:LYS:HD3	1.76	0.68
6:A:661:G:H22	6:A:738:G:H1	1.42	0.67
28:a:572:C:H2'	28:a:573:A:H8	1.60	0.67
6:A:943:A:H2'	6:A:944:G:C8	2.30	0.67
28:a:1590:U:H2'	28:a:1591:C:H6	1.59	0.67
14:I:46:VAL:HG13	14:I:77:ILE:HG21	1.77	0.67
28:a:1018:A:H2'	28:a:1019:A:C8	2.29	0.67
6:A:231:U:H2'	6:A:232:A:H8	1.60	0.67
6:A:386:U:H2'	6:A:387:C:C6	2.31	0.67
6:A:27:C:H5'	6:A:521:G:H1'	1.77	0.66
37:j:26:GLY:HA3	37:j:30:ARG:HH11	1.61	0.66
30:c:173:ILE:HD11	30:c:181:MET:HE3	1.77	0.66
6:A:670:A:H2'	6:A:671:G:H8	1.61	0.66
15:J:46:ILE:HG12	15:J:68:ARG:HD2	1.78	0.66
6:A:1353:G:H2'	6:A:1354:A:H8	1.61	0.66
13:H:15:ARG:HE	13:H:76:VAL:HG13	1.61	0.66
36:i:36:LEU:HD11	36:i:122:MET:HB2	1.78	0.66
7:B:80:ASN:O	7:B:84:GLU:HG3	1.96	0.66
28:a:2317:A:H2'	28:a:2318:A:H8	1.61	0.66
33:f:57:MET:HA	33:f:60:ILE:HG22	1.78	0.66
15:J:52:LEU:HB2	19:N:81:ARG:HD2	1.76	0.65
28:a:2316:A:H2'	28:a:2317:A:C8	2.32	0.65
28:a:2164:C:H2'	28:a:2165:A:C8	2.31	0.65
28:a:2056:G:H1	28:a:2432:U:H3	1.42	0.65
29:b:47:C:H2'	29:b:48:A:H8	1.61	0.65
35:h:30:LEU:HB3	35:h:36:ALA:HB3	1.77	0.65
6:A:333:G:H2'	6:A:334:A:C8	2.32	0.65
6:A:671:G:H2'	6:A:672:A:H8	1.61	0.65
28:a:1421:A:H2'	28:a:1422:A:C8	2.31	0.65
12:G:35:LYS:HB3	12:G:38:ILE:HD13	1.79	0.65
28:a:276:U:H2'	28:a:277:U:H6	1.61	0.64
30:c:145:GLU:HB3	30:c:188:CYS:HB3	1.78	0.64
6:A:470:A:H2'	6:A:471:G:C8	2.33	0.64
6:A:991:A:H8	19:N:8:ASN:HD22	1.46	0.64
6:A:1409:C:H2'	6:A:1410:A:C8	2.33	0.64
28:a:823:U:H2'	28:a:824:A:C8	2.31	0.64
29:b:87:A:H5'	39:l:18:THR:HG22	1.80	0.64
5:4:39:SER:HB3	33:f:105:SER:HA	1.80	0.64
28:a:2172:U:H2'	28:a:2173:A:C8	2.33	0.64
52:y:28:LEU:HD23	52:y:35:VAL:HG13	1.78	0.64
6:A:265:U:H2'	6:A:266:A:C8	2.32	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:K:88:PRO:HB3	26:U:32:VAL:HG21	1.79	0.64
28:a:140:A:O2'	28:a:141:A:H8	1.81	0.64
36:i:18:VAL:HG11	36:i:28:LEU:HD11	1.80	0.64
20:O:7:ASP:O	20:O:11:ILE:HG13	1.98	0.64
6:A:19:U:H2'	6:A:20:C:C6	2.32	0.64
6:A:79:U:H2'	6:A:80:A:C8	2.33	0.64
6:A:1238:G:H2'	6:A:1239:G:H8	1.62	0.64
14:I:42:ALA:O	14:I:46:VAL:HG23	1.98	0.64
28:a:1527:G:H2'	28:a:1528:U:C6	2.33	0.64
28:a:2141:C:H2'	28:a:2142:A:H8	1.63	0.64
11:F:26:ILE:HG23	11:F:36:ILE:HG13	1.79	0.63
18:M:20:THR:HA	18:M:25:ILE:HG22	1.79	0.63
28:a:2669:C:O2'	31:d:12:MET:HE1	1.98	0.63
24:S:3:ARG:HH21	24:S:7:LYS:HB3	1.61	0.63
28:a:2235:G:H2'	28:a:2236:A:H8	1.62	0.63
45:r:55:ILE:O	45:r:59:GLU:HG3	1.98	0.63
20:O:32:LEU:HD22	20:O:59:MET:HB3	1.78	0.63
34:g:164:TYR:HB2	34:g:167:GLU:HB2	1.80	0.63
8:C:130:PHE:O	8:C:134:MET:HG3	1.99	0.63
19:N:89:MET:HA	19:N:89:MET:HE2	1.79	0.63
41:n:76:LEU:HD22	41:n:80:ARG:HE	1.64	0.63
6:A:588:U:H2'	6:A:589:A:C8	2.34	0.63
6:A:710:G:H2'	6:A:711:G:C8	2.34	0.63
7:B:70:LEU:HD13	7:B:156:MET:HE1	1.79	0.63
9:D:157:ILE:O	9:D:161:ILE:HG12	1.98	0.63
29:b:47:C:H2'	29:b:48:A:C8	2.34	0.63
28:a:1043:U:H2'	28:a:1044:A:H8	1.63	0.63
36:i:17:VAL:HG23	36:i:137:PRO:HB2	1.78	0.63
6:A:899:G:H2'	6:A:900:A:H8	1.64	0.62
6:A:498:C:H2'	6:A:499:A:H8	1.65	0.62
47:t:27:VAL:HG22	47:t:32:VAL:HG22	1.81	0.62
6:A:207:G:C2	6:A:208:G:H1'	2.34	0.62
6:A:470:A:H2'	6:A:471:G:H8	1.61	0.62
17:L:29:GLN:HB3	17:L:81:LEU:HD22	1.81	0.62
28:a:161:A:H3'	28:a:162:U:H5"	1.81	0.62
33:f:30:ARG:H	33:f:159:THR:HG22	1.65	0.62
6:A:588:U:H2'	6:A:589:A:H8	1.64	0.62
28:a:839:U:H2'	28:a:840:A:H8	1.64	0.62
6:A:1172:G:H2'	6:A:1173:A:H8	1.64	0.62
6:A:639:A:H2'	6:A:640:C:C6	2.28	0.62
6:A:733:C:H2'	6:A:734:A:H8	1.63	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:733:G:H2'	28:a:734:U:C6	2.35	0.62
12:G:61:PHE:O	12:G:65:THR:HG22	2.00	0.62
26:U:10:GLU:OE2	26:U:14:VAL:HB	1.99	0.62
28:a:28:A:N6	28:a:504:G:H1'	2.14	0.62
28:a:573:A:H2'	28:a:574:G:C8	2.35	0.62
40:m:56:LYS:HG2	40:m:88:LYS:HD2	1.82	0.62
28:a:590:A:H2'	28:a:591:G:H8	1.65	0.62
19:N:28:LYS:HD3	19:N:48:LEU:HD21	1.81	0.62
28:a:630:U:H2'	28:a:631:C:H6	1.64	0.62
34:g:43:LEU:HD11	34:g:50:LEU:HD22	1.82	0.62
52:y:23:LEU:HD22	52:y:28:LEU:HD12	1.81	0.62
16:K:66:ALA:HB1	16:K:99:LEU:HD23	1.82	0.62
6:A:471:G:H2'	6:A:472:A:C8	2.35	0.61
12:G:36:LYS:O	12:G:40:GLU:HG3	2.01	0.61
15:J:85:ASP:O	15:J:89:LYS:HG3	2.00	0.61
6:A:333:G:H2'	6:A:334:A:H8	1.65	0.61
6:A:572:G:O2'	6:A:818:G:H5'	1.99	0.61
28:a:345:G:H2'	28:a:346:C:H6	1.65	0.61
28:a:1167:U:H2'	28:a:1168:A:C8	2.35	0.61
28:a:2404:G:H2'	28:a:2405:C:H6	1.66	0.61
28:a:277:U:H3	28:a:353:A:H62	1.46	0.61
28:a:630:U:H2'	28:a:631:C:C6	2.34	0.61
28:a:1050:U:H4'	28:a:1052:G:O4'	2.00	0.61
28:a:1054:C:C4	28:a:1059:A:H5"	2.35	0.61
33:f:4:LEU:HG	33:f:101:ASP:HB2	1.83	0.61
35:h:25:TYR:HE1	35:h:29:PHE:HD2	1.49	0.61
10:E:153:ALA:HB2	10:E:163:ILE:HG12	1.82	0.61
17:L:34:CYS:HA	17:L:55:VAL:HA	1.82	0.61
6:A:536:A:H2'	6:A:537:G:C8	2.36	0.61
6:A:725:A:H2'	6:A:726:A:C8	2.36	0.61
8:C:43:LEU:HD21	8:C:91:LEU:HD11	1.82	0.61
28:a:572:C:H2'	28:a:573:A:C8	2.35	0.61
28:a:868:U:O2	28:a:891:A:N7	2.33	0.61
3:2:61:CYS:HB3	3:2:64:ILE:HD12	1.83	0.61
15:J:56:HIS:CD2	15:J:57:VAL:HG23	2.36	0.61
28:a:276:U:H2'	28:a:277:U:C6	2.35	0.61
28:a:486:G:H4'	45:r:6:LYS:HB2	1.81	0.60
28:a:1178:G:H5'	38:k:34:GLY:HA2	1.81	0.60
28:a:2053:C:H2'	28:a:2054:C:C6	2.36	0.60
28:a:613:G:H2'	28:a:614:C:H6	1.65	0.60
28:a:733:G:H2'	28:a:734:U:H6	1.65	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:1165:U:H4'	28:a:1166:G:C2	2.35	0.60
36:i:4:LEU:HD23	43:p:101:HIS:HE1	1.64	0.60
48:u:51:LEU:O	48:u:55:LEU:HD23	2.00	0.60
16:K:125:LYS:HD3	26:U:37:PHE:CE2	2.36	0.60
28:a:181:A:H2'	28:a:182:A:C8	2.36	0.60
25:T:43:ASP:HB3	25:T:46:VAL:HG22	1.82	0.60
42:o:95:VAL:HG11	42:o:100:LEU:HD21	1.84	0.60
46:s:35:ILE:HD12	46:s:80:LYS:HB2	1.83	0.60
6:A:777:A:H5"	16:K:124:LYS:HD3	1.82	0.60
28:a:875:U:H2'	28:a:876:C:C6	2.36	0.60
28:a:154:A:H2'	28:a:155:A:C8	2.37	0.60
30:c:8:PRO:HB3	30:c:14:ARG:HG3	1.83	0.60
6:A:493:A:H2'	6:A:494:U:H5	1.66	0.60
24:S:50:SER:HB3	24:S:57:HIS:HB3	1.83	0.60
28:a:2088:U:H3	28:a:2179:G:H1	1.49	0.60
28:a:1627:G:H2'	28:a:1628:A:H8	1.64	0.60
28:a:2112:G:H2'	28:a:2113:G:H8	1.67	0.60
41:n:2:ASN:HA	41:n:6:GLN:HG2	1.83	0.60
6:A:143:G:H2'	6:A:144:G:C8	2.37	0.60
6:A:208:G:H2'	6:A:209:A:H8	1.66	0.60
6:A:766:G:H4'	6:A:1510:A:H4'	1.84	0.60
33:f:160:ALA:HB1	33:f:165:GLU:HB2	1.82	0.60
48:u:4:PHE:HB3	48:u:65:VAL:HG23	1.83	0.60
6:A:208:G:H2'	6:A:209:A:C8	2.37	0.60
6:A:933:C:C2	6:A:934:A:C8	2.90	0.60
41:n:67:ILE:HD13	41:n:101:ARG:HG2	1.84	0.60
33:f:166:GLY:O	33:f:170:MET:HG2	2.02	0.59
33:f:170:MET:HB2	33:f:177:PHE:HE2	1.66	0.59
45:r:48:LYS:HG3	45:r:52:GLU:OE1	2.02	0.59
47:t:86:ILE:HD12	47:t:87:ASP:N	2.17	0.59
6:A:419:U:H2'	6:A:420:G:O4'	2.01	0.59
28:a:273:A:H2'	28:a:274:A:C8	2.36	0.59
33:f:29:PRO:HB3	33:f:160:ALA:HB2	1.84	0.59
23:R:13:PHE:HD2	23:R:51:TYR:HB3	1.67	0.59
6:A:455:U:H2'	6:A:456:U:C6	2.37	0.59
15:J:57:VAL:CG1	15:J:58:ASN:H	2.13	0.59
19:N:10:GLU:O	19:N:14:GLU:HG3	2.01	0.59
28:a:840:A:H2'	28:a:841:C:H6	1.67	0.59
31:d:15:ILE:HG22	31:d:23:VAL:HB	1.83	0.59
6:A:648:C:HO2'	6:A:649:U:H6	1.49	0.59
12:G:120:LEU:O	12:G:124:LEU:HG	2.02	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:503:U:H4'	28:a:1223:G:H4'	1.83	0.59
28:a:614:C:H2'	28:a:615:C:H6	1.68	0.59
45:r:83:LYS:HB3	45:r:95:ARG:NH2	2.12	0.59
6:A:989:U:H4'	6:A:990:G:O5'	2.02	0.59
28:a:990:A:H2'	28:a:991:A:C8	2.37	0.59
28:a:1049:G:H3'	28:a:1050:U:C5'	2.32	0.59
28:a:2772:A:H2'	28:a:2773:U:H6	1.68	0.59
28:a:599:A:H2'	28:a:600:A:C8	2.37	0.59
28:a:2156:U:H2'	28:a:2157:G:C8	2.37	0.59
34:g:12:PRO:HD2	34:g:15:VAL:HG21	1.85	0.59
28:a:1521:G:HO2'	28:a:1522:U:H6	1.51	0.59
41:n:78:ALA:HB2	41:n:109:ALA:HA	1.85	0.59
6:A:725:A:H2'	6:A:726:A:H8	1.67	0.59
6:A:734:A:H2'	6:A:735:U:C6	2.38	0.59
6:A:1001:A:H5'	6:A:1023:G:H22	1.68	0.59
6:A:1443:A:H1'	6:A:1444:A:H5'	1.85	0.59
28:a:580:U:H2'	28:a:581:A:C8	2.37	0.59
28:a:1561:A:H2'	28:a:1562:A:C8	2.38	0.59
28:a:1582:C:H2'	28:a:1583:A:H8	1.67	0.59
37:j:47:ILE:HG22	37:j:50:ALA:HB2	1.85	0.59
6:A:268:C:H2'	6:A:269:A:H8	1.68	0.59
6:A:1003:C:N3	6:A:1019:U:O4	2.36	0.59
10:E:111:ARG:O	10:E:115:GLU:HG3	2.02	0.59
28:a:573:A:H2'	28:a:574:G:H8	1.68	0.59
15:J:42:MET:HG3	15:J:43:PRO:HD2	1.85	0.58
28:a:2090:A:H2'	28:a:2091:C:H6	1.67	0.58
46:s:66:THR:HG22	46:s:75:ARG:HB2	1.85	0.58
6:A:77:G:H3'	6:A:78:G:C8	2.38	0.58
28:a:2116:G:N2	28:a:2151:G:H1'	2.18	0.58
36:i:4:LEU:HD23	43:p:101:HIS:CE1	2.38	0.58
1:0:29:LYS:HE3	1:0:47:GLU:OE1	2.04	0.58
6:A:733:C:H2'	6:A:734:A:C8	2.38	0.58
6:A:963:2MG:H1'	27:X:61:GLU:OE1	2.04	0.58
28:a:2536:A:H2'	28:a:2537:U:C6	2.38	0.58
28:a:2791:U:H2'	28:a:2792:C:H6	1.67	0.58
33:f:134:GLU:HG3	33:f:136:ILE:H	1.68	0.58
6:A:201:A:N6	6:A:209:A:H61	2.01	0.58
51:x:30:MET:HA	51:x:30:MET:HE3	1.85	0.58
28:a:811:A:H4'	28:a:827:G:H22	1.69	0.58
28:a:2060:A:H2'	28:a:2061:C:C6	2.38	0.58
28:a:154:A:H2'	28:a:155:A:H8	1.69	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:173:G:H2'	28:a:174:C:C6	2.38	0.58
28:a:952:G:H2'	28:a:953:U:H6	1.67	0.58
6:A:201:A:H61	6:A:209:A:H61	1.51	0.58
6:A:943:A:H2'	6:A:944:G:H8	1.66	0.58
27:X:85:GLY:O	27:X:89:LYS:HG2	2.04	0.58
30:c:185:HIS:CE1	30:c:187:GLU:HG3	2.38	0.58
6:A:498:C:H2'	6:A:499:A:C8	2.38	0.58
21:P:61:ALA:HB3	21:P:67:LYS:HE2	1.86	0.58
28:a:787:C:H2'	28:a:788:U:C6	2.39	0.58
28:a:2777:C:H2'	28:a:2778:C:C6	2.39	0.58
36:i:58:ASN:HB3	36:i:61:GLN:HG3	1.85	0.58
28:a:5:A:H2'	28:a:6:A:H8	1.69	0.58
28:a:580:U:H2'	28:a:581:A:H8	1.68	0.58
17:L:107:VAL:HG12	17:L:117:TYR:HB3	1.86	0.57
28:a:2834:U:H2'	28:a:2835:G:C8	2.39	0.57
6:A:1000:A:H2'	6:A:1001:A:H5"	1.86	0.57
29:b:112:A:H2'	29:b:113:G:C8	2.38	0.57
1:0:6:ARG:HG3	1:0:50:ILE:HG13	1.85	0.57
9:D:8:LYS:HB3	9:D:21:LEU:HB3	1.85	0.57
28:a:2148:G:H2'	28:a:2149:C:C6	2.39	0.57
28:a:2689:A:H2'	28:a:2690:C:H6	1.70	0.57
33:f:138:PHE:CD2	33:f:139:PRO:HD3	2.38	0.57
5:4:22:ILE:HG23	33:f:3:ARG:HH12	1.69	0.57
14:I:117:ARG:HB2	14:I:121:LYS:HD3	1.86	0.57
52:y:46:MET:O	52:y:50:VAL:HG22	2.04	0.57
28:a:1791:A:H2'	28:a:1792:A:H8	1.69	0.57
28:a:2235:G:H2'	28:a:2236:A:C8	2.38	0.57
6:A:43:G:H2'	6:A:44:G:H8	1.69	0.57
6:A:650:A:C6	13:H:57:LYS:HB3	2.40	0.57
28:a:2160:A:H4'	28:a:2161:U:H5'	1.86	0.57
6:A:414:C:H2'	6:A:415:C:C6	2.40	0.57
6:A:712:A:H2'	6:A:713:A:C8	2.39	0.57
6:A:1215:C:H2'	6:A:1216:A:C8	2.39	0.57
6:A:1438:A:C4	42:o:117:LEU:HD11	2.39	0.57
6:A:1509:U:H2'	6:A:1510:A:C8	2.40	0.57
14:I:41:THR:O	14:I:45:VAL:HG23	2.05	0.57
32:e:17:ALA:HA	32:e:105:GLN:HG2	1.87	0.57
5:4:17:SER:HB2	18:M:54:ASP:OD1	2.04	0.57
6:A:674:U:H3	6:A:710:G:H22	1.51	0.57
15:J:24:GLU:O	15:J:28:THR:HG22	2.05	0.57
30:c:130:LEU:HB2	30:c:135:MET:HE2	1.87	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:4:2:ARG:HB2	5:4:5:ILE:HG12	1.86	0.57
8:C:24:ALA:HB1	8:C:28:GLN:HG3	1.86	0.57
28:a:773:A:C2	30:c:225:MET:HG2	2.39	0.57
28:a:1946:C:H2'	28:a:1947:C:H6	1.67	0.57
29:b:52:G:N2	33:f:26:MET:HE3	2.19	0.57
28:a:2172:U:H2'	28:a:2173:A:H8	1.70	0.57
34:g:30:LYS:HD2	34:g:82:GLY:H	1.70	0.57
52:y:10:LYS:HB2	52:y:53:MET:HB2	1.87	0.56
28:a:1314:U:H2'	28:a:1315:A:H8	1.70	0.56
6:A:673:A:H2'	6:A:674:U:H6	1.71	0.56
28:a:64:G:H2'	28:a:65:C:H6	1.69	0.56
28:a:1393:U:H2'	28:a:1394:U:C6	2.39	0.56
28:a:2105:G:H2'	28:a:2106:A:C8	2.39	0.56
28:a:2154:C:H2'	28:a:2155:U:C6	2.40	0.56
28:a:2232:U:H2'	28:a:2233:U:C6	2.40	0.56
28:a:2689:A:H2'	28:a:2690:C:C6	2.40	0.56
6:A:420:G:H2'	6:A:421:G:C8	2.41	0.56
6:A:821:U:H2'	6:A:822:A:H8	1.70	0.56
6:A:1247:A:H2'	6:A:1248:A:C8	2.40	0.56
28:a:277:U:H3	28:a:353:A:N6	2.03	0.56
28:a:1071:U:H2'	28:a:1072:U:C6	2.39	0.56
28:a:1526:U:H5"	28:a:1527:G:C8	2.40	0.56
28:a:2090:A:H2'	28:a:2091:C:C6	2.41	0.56
28:a:5:A:H2'	28:a:6:A:C8	2.40	0.56
28:a:301:U:H2'	28:a:302:G:O4'	2.06	0.56
28:a:2396:A:H2'	28:a:2397:U:H6	1.70	0.56
32:e:148:VAL:HB	32:e:187:MET:HG3	1.88	0.56
12:G:72:MET:HB2	12:G:142:HIS:HE1	1.70	0.56
28:a:182:A:H2'	28:a:183:C:H6	1.70	0.56
28:a:1530:C:H2'	28:a:1531:A:H8	1.70	0.56
28:a:2580:C:H2'	28:a:2581:G:C8	2.41	0.56
3:2:12:LYS:HB3	38:k:65:LYS:HG2	1.88	0.56
6:A:77:G:H3'	6:A:78:G:H8	1.70	0.56
6:A:218:U:H2'	6:A:219:A:H8	1.71	0.56
6:A:671:G:H2'	6:A:672:A:C8	2.39	0.56
6:A:1411:U:H2'	6:A:1412:G:H8	1.71	0.56
7:B:69:VAL:HG22	7:B:162:ALA:HB3	1.87	0.56
28:a:2063:U:H2'	28:a:2064:U:C6	2.41	0.56
28:a:2887:U:H2'	28:a:2888:G:H8	1.71	0.56
28:a:173:G:H2'	28:a:174:C:H6	1.70	0.56
28:a:1059:A:H1'	28:a:1086:A:H4'	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:1417:G:H2'	28:a:1418:G:H8	1.71	0.56
28:a:1582:C:H2'	28:a:1583:A:C8	2.40	0.56
28:a:2070:C:H2'	28:a:2071:A:H8	1.71	0.56
33:f:119:ALA:HB1	33:f:167:ARG:HD2	1.88	0.56
6:A:43:G:H2'	6:A:44:G:C8	2.41	0.55
6:A:369:A:H2'	6:A:370:A:H8	1.72	0.55
6:A:960:G:H5'	27:X:9:LYS:HD3	1.88	0.55
28:a:2059:A:H2'	28:a:2060:A:H8	1.71	0.55
44:q:1:MET:HA	44:q:42:VAL:O	2.06	0.55
6:A:455:U:H2'	6:A:456:U:H6	1.72	0.55
28:a:590:A:H2'	28:a:591:G:C8	2.42	0.55
11:F:2:ARG:HE	11:F:91:ARG:CZ	2.20	0.55
28:a:28:A:H61	28:a:504:G:H1'	1.70	0.55
28:a:2543:U:H2'	28:a:2544:U:C6	2.41	0.55
28:a:671:A:H2'	28:a:672:G:C8	2.42	0.55
28:a:2059:A:H2'	28:a:2060:A:C8	2.41	0.55
6:A:1443:A:HO2'	6:A:1444:A:H8	1.55	0.55
12:G:69:VAL:HG13	12:G:100:ALA:HB1	1.87	0.55
42:o:17:LYS:HD3	42:o:80:HIS:HA	1.88	0.55
28:a:2014:C:H2'	28:a:2015:U:C6	2.42	0.55
45:r:86:MET:HE3	45:r:87:PRO:HD2	1.89	0.55
2:1:1:MET:N	28:a:1610:G:H21	2.04	0.55
9:D:107:MET:HG3	9:D:173:ILE:HG21	1.88	0.55
28:a:840:A:H2'	28:a:841:C:C6	2.40	0.55
28:a:1590:U:H2'	28:a:1591:C:C6	2.41	0.55
32:e:121:GLU:H	32:e:121:GLU:CD	2.13	0.55
46:s:71:ARG:HE	46:s:71:ARG:C	2.15	0.55
1:0:2:ARG:HA	1:0:21:LYS:O	2.07	0.55
14:I:4:ASN:ND2	14:I:88:ALA:HA	2.22	0.55
28:a:411:U:H2'	28:a:412:C:C6	2.41	0.55
28:a:1031:G:H2'	28:a:1032:G:H8	1.70	0.55
28:a:1783:A:H2'	28:a:1784:C:C6	2.42	0.55
28:a:1837:A:O2'	28:a:1838:G:H8	1.90	0.55
6:A:456:U:H2'	6:A:457:A:H8	1.70	0.55
50:w:64:ILE:O	50:w:68:VAL:HG23	2.05	0.55
15:J:10:LEU:HD23	15:J:98:VAL:HG13	1.89	0.55
28:a:2790:G:H2'	28:a:2791:U:C6	2.42	0.55
33:f:110:ARG:HB3	33:f:136:ILE:HD11	1.89	0.55
6:A:73:G:C2	6:A:74:G:H1'	2.42	0.54
6:A:1019:U:H3'	6:A:1020:G:H8	1.73	0.54
28:a:567:U:H2'	28:a:568:G:C8	2.42	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:o:17:LYS:HE2	42:o:20:LEU:HD21	1.88	0.54
4:3:36:ARG:HD2	4:3:37:GLN:H	1.71	0.54
7:B:74:THR:HB	7:B:171:GLU:OE2	2.07	0.54
12:G:57:ASP:HB3	12:G:60:GLU:HB3	1.88	0.54
28:a:2441:C:H2'	28:a:2442:A:C8	2.42	0.54
28:a:2580:C:H2'	28:a:2581:G:H8	1.69	0.54
6:A:760:A:H2'	6:A:761:C:C6	2.42	0.54
6:A:1509:U:H2'	6:A:1510:A:H8	1.72	0.54
28:a:2667:A:H2'	28:a:2668:A:C8	2.41	0.54
32:e:134:LEU:O	32:e:138:ASN:ND2	2.36	0.54
6:A:725:A:N7	20:O:54:ARG:HD2	2.22	0.54
28:a:2594:PSU:C4	28:a:2595:C:C5	2.95	0.54
33:f:135:GLN:NE2	33:f:149:ILE:HA	2.22	0.54
28:a:2144:U:H2'	28:a:2145:G:C8	2.42	0.54
6:A:947:U:H2'	6:A:948:G:C8	2.42	0.54
6:A:1235:A:H2	6:A:1238:G:N3	2.05	0.54
15:J:15:HIS:HA	15:J:18:ILE:HG22	1.89	0.54
28:a:1081:G:C2	28:a:1091:U:C2	2.96	0.54
28:a:1569:U:H2'	28:a:1570:A:H8	1.73	0.54
3:2:50:HIS:CG	28:a:2348:C:H5'	2.43	0.54
6:A:989:U:H5	6:A:1041:A:H2	1.54	0.54
9:D:172:TRP:CD2	9:D:188:PRO:HB3	2.42	0.54
15:J:6:ILE:HB	15:J:76:ILE:HG13	1.89	0.54
19:N:99:ALA:HB1	19:N:101:TRP:HZ3	1.72	0.54
23:R:26:ILE:HD11	23:R:67:LEU:HD22	1.89	0.54
28:a:1760:C:H2'	28:a:1761:A:H8	1.72	0.54
28:a:1783:A:H2'	28:a:1784:C:H6	1.73	0.54
28:a:1785:U:H2'	28:a:1786:C:C6	2.43	0.54
15:J:26:VAL:HG22	15:J:36:VAL:HG11	1.90	0.54
34:g:11:VAL:HG13	34:g:15:VAL:HG23	1.90	0.54
28:a:406:C:H2'	28:a:407:A:C8	2.43	0.54
28:a:1018:A:N6	28:a:1115:G:H2'	2.22	0.54
28:a:1724:C:C2	28:a:1725:C:C5	2.96	0.54
6:A:919:G:H2'	6:A:920:A:C8	2.43	0.53
17:L:74:LEU:HD21	17:L:104:CYS:HB2	1.89	0.53
20:O:89:ARG:HH11	20:O:89:ARG:HB2	1.72	0.53
28:a:1018:A:H2'	28:a:1019:A:H8	1.70	0.53
28:a:1530:C:H2'	28:a:1531:A:C8	2.44	0.53
5:4:14:ALA:HB1	5:4:35:LEU:HG	1.90	0.53
6:A:818:G:H2'	6:A:819:U:C6	2.43	0.53
9:D:172:TRP:HZ3	9:D:192:ASP:HB3	1.73	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:745:C:H2'	28:a:746:C:H6	1.72	0.53
28:a:1474:U:H2'	28:a:1475:C:C6	2.44	0.53
28:a:2638:C:H2'	28:a:2639:U:H6	1.72	0.53
28:a:2887:U:H2'	28:a:2888:G:C8	2.43	0.53
43:p:49:ASP:HA	43:p:52:GLN:HB2	1.90	0.53
6:A:1388:U:H2'	6:A:1389:G:C8	2.43	0.53
6:A:1504:A:H2'	6:A:1505:G:C8	2.43	0.53
10:E:114:LEU:HD13	10:E:122:VAL:HG11	1.90	0.53
28:a:351:A:HO2'	28:a:352:U:H6	1.56	0.53
28:a:2615:C:H2'	28:a:2616:G:H8	1.73	0.53
33:f:138:PHE:N	33:f:138:PHE:CD1	2.76	0.53
5:4:16:CYS:C	5:4:18:CYS:H	2.14	0.53
6:A:1387:U:H2'	6:A:1388:U:H6	1.72	0.53
28:a:64:G:H2'	28:a:65:C:C6	2.43	0.53
6:A:734:A:H2'	6:A:735:U:H6	1.73	0.53
16:K:16:SER:HA	16:K:78:LEU:HA	1.90	0.53
28:a:1157:G:H2'	28:a:1158:U:C6	2.43	0.53
28:a:1341:A:H2'	28:a:1342:A:C8	2.43	0.53
28:a:1837:A:C4	28:a:1838:G:C8	2.96	0.53
28:a:1848:U:H2'	28:a:1849:G:C8	2.43	0.53
28:a:2615:C:H2'	28:a:2616:G:C8	2.43	0.53
6:A:378:A:H2'	6:A:379:A:C8	2.44	0.53
7:B:99:LEU:HD12	7:B:150:LEU:HD21	1.90	0.53
28:a:1526:U:H3'	28:a:1527:G:O4'	2.08	0.53
28:a:1724:C:H2'	28:a:1725:C:H6	1.72	0.53
45:r:12:ILE:HD13	45:r:43:ALA:HB2	1.91	0.53
6:A:915:A:H2'	6:A:916:A:C8	2.43	0.53
6:A:1011:A:H5"	24:S:14:HIS:CG	2.43	0.53
6:A:1144:C:H2'	6:A:1145:U:C6	2.43	0.53
12:G:33:ASP:HB3	12:G:35:LYS:HG3	1.91	0.53
15:J:57:VAL:HG12	15:J:58:ASN:N	2.16	0.53
18:M:4:ILE:HG23	18:M:57:ARG:HG2	1.90	0.53
20:O:55:GLY:O	20:O:59:MET:HG3	2.08	0.53
28:a:196:A:C2	38:k:52:PHE:HZ	2.27	0.53
28:a:1701:G:H2'	28:a:1702:U:C6	2.44	0.53
28:a:1482:A:H2'	28:a:1483:A:C8	2.44	0.53
28:a:2205:G:H2'	28:a:2206:G:H8	1.72	0.53
34:g:33:LEU:HD13	34:g:75:LEU:HD22	1.89	0.53
6:A:947:U:H2'	6:A:948:G:H8	1.74	0.53
14:I:63:ILE:HG21	14:I:77:ILE:HD12	1.90	0.53
28:a:52:A:H2'	28:a:53:A:C8	2.44	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:599:A:H2'	28:a:600:A:H8	1.73	0.53
28:a:1266:C:H2'	28:a:1267:G:H8	1.73	0.53
28:a:1474:U:H2'	28:a:1475:C:H6	1.74	0.53
6:A:3:U:H3	6:A:611:C:H4'	1.74	0.52
6:A:502:G:H2'	6:A:503:G:H8	1.74	0.52
12:G:74:GLU:HG2	12:G:75:VAL:H	1.73	0.52
28:a:1492:U:H2'	28:a:1493:A:H8	1.73	0.52
6:A:550:A:H2'	6:A:551:A:H8	1.74	0.52
6:A:1510:A:H2'	6:A:1511:G:C8	2.45	0.52
6:A:1516:MA6:OP2	6:A:1516:MA6:H8	2.10	0.52
7:B:21:GLN:HB2	7:B:24:PHE:CD2	2.44	0.52
14:I:28:ILE:HG13	14:I:63:ILE:HB	1.90	0.52
28:a:1314:U:O2	28:a:1315:A:C8	2.63	0.52
28:a:1341:A:H2'	28:a:1342:A:H8	1.74	0.52
36:i:15:TRP:CE2	36:i:135:GLN:HG2	2.44	0.52
6:A:230:C:H2'	6:A:231:U:H6	1.74	0.52
28:a:845:A:H2'	28:a:846:G:H8	1.74	0.52
28:a:2546:G:H2'	28:a:2547:C:C6	2.44	0.52
41:n:40:VAL:HB	41:n:50:ALA:HB3	1.91	0.52
6:A:1409:C:H2'	6:A:1410:A:H8	1.74	0.52
8:C:181:ASP:HB2	8:C:207:ILE:HG13	1.90	0.52
9:D:107:MET:HE1	9:D:145:ILE:HD13	1.91	0.52
11:F:42:TRP:CZ2	23:R:24:LYS:HD3	2.44	0.52
28:a:680:A:H2'	28:a:681:U:C6	2.44	0.52
28:a:2141:C:H2'	28:a:2142:A:C8	2.42	0.52
28:a:2772:A:H2'	28:a:2773:U:C6	2.44	0.52
41:n:2:ASN:N	41:n:2:ASN:ND2	2.49	0.52
5:4:42:HIS:HB3	5:4:45:TYR:CD1	2.45	0.52
7:B:168:VAL:HG21	7:B:189:VAL:HG13	1.92	0.52
8:C:37:LEU:HD13	19:N:66:LEU:HD11	1.90	0.52
28:a:847:G:H2'	28:a:848:G:C8	2.44	0.52
28:a:1157:G:H2'	28:a:1158:U:H6	1.75	0.52
28:a:2120:U:H5'	28:a:2121:U:H2'	1.90	0.52
20:O:78:TYR:O	20:O:82:ILE:HG23	2.09	0.52
28:a:285:U:H2'	28:a:286:U:C6	2.44	0.52
28:a:872:G:N2	28:a:886:U:O2	2.28	0.52
28:a:1842:A:H2'	28:a:1843:A:C8	2.45	0.52
28:a:2667:A:H2'	28:a:2668:A:H8	1.74	0.52
28:a:165:A:H2'	28:a:166:U:H6	1.75	0.52
28:a:406:C:H2'	28:a:407:A:H8	1.75	0.52
28:a:720:G:H5'	28:a:721:A:H5"	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:1514:G:H2'	28:a:1515:C:O4'	2.10	0.52
28:a:2503:U:H2'	28:a:2504:C:C6	2.44	0.52
28:a:2543:U:H2'	28:a:2544:U:H6	1.74	0.52
30:c:131:PRO:HD2	30:c:134:ASN:HD22	1.75	0.52
44:q:6:GLN:HG3	44:q:39:LEU:HD11	1.92	0.52
6:A:899:G:H2'	6:A:900:A:C8	2.44	0.52
6:A:1068:C:H2'	6:A:1069:G:H8	1.73	0.52
19:N:27:LEU:O	19:N:31:ILE:HG12	2.09	0.52
28:a:78:C:HO2'	28:a:79:C:H6	1.56	0.52
28:a:191:A:H2'	28:a:192:G:N3	2.25	0.52
33:f:156:ILE:HD13	33:f:170:MET:HE1	1.91	0.52
6:A:19:U:H2'	6:A:20:C:H6	1.73	0.52
6:A:1379:C:H1'	12:G:79:ARG:HH22	1.75	0.52
12:G:72:MET:HB2	12:G:142:HIS:CE1	2.44	0.52
13:H:79:VAL:HG12	13:H:86:GLN:NE2	2.25	0.52
21:P:24:LEU:HB3	21:P:35:TYR:HB3	1.92	0.52
28:a:1493:A:H2'	28:a:1494:C:C6	2.44	0.52
28:a:1673:G:H2'	28:a:1674:U:C6	2.45	0.52
29:b:16:A:H2'	29:b:17:A:H8	1.74	0.52
36:i:98:GLU:HB2	36:i:124:VAL:HB	1.92	0.52
6:A:493:A:H2'	6:A:494:U:C5	2.43	0.52
6:A:1310:U:OP2	24:S:4:SER:HA	2.10	0.52
28:a:2356:G:C2	28:a:2357:C:C5	2.97	0.52
6:A:1059:U:H2'	6:A:1060:C:C6	2.44	0.51
6:A:1248:A:H2'	6:A:1249:A:C8	2.45	0.51
10:E:73:VAL:HG11	10:E:143:LEU:HB3	1.91	0.51
28:a:694:U:H2'	28:a:695:G:O4'	2.10	0.51
28:a:1374:A:H2'	28:a:1375:U:C6	2.45	0.51
28:a:1522:U:C4	28:a:1523:A:H1'	2.45	0.51
43:p:76:TYR:CZ	43:p:80:ILE:HG13	2.45	0.51
6:A:203:C:H1'	6:A:208:G:N2	2.25	0.51
6:A:306:G:H5"	21:P:49:ARG:HB2	1.92	0.51
28:a:526:U:H2'	28:a:527:G:H8	1.75	0.51
28:a:2814:U:H3'	28:a:2815:A:H8	1.74	0.51
43:p:84:LYS:NZ	43:p:84:LYS:HB3	2.26	0.51
6:A:1187:G:H4'	6:A:1188:A:OP2	2.10	0.51
8:C:187:MET:HE3	8:C:188:ARG:H	1.75	0.51
9:D:194:PRO:HG2	9:D:197:ILE:HD12	1.93	0.51
13:H:32:LEU:O	13:H:36:ILE:HG13	2.10	0.51
28:a:2129:G:H2'	28:a:2130:A:H8	1.75	0.51
28:a:2396:A:H2'	28:a:2397:U:C6	2.44	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:b:46:U:H2'	29:b:47:C:C6	2.46	0.51
45:r:82:LEU:HB2	45:r:98:LYS:HB2	1.93	0.51
48:u:8:ALA:HB1	48:u:44:VAL:HB	1.92	0.51
6:A:21:A:H5"	10:E:90:ALA:HB3	1.93	0.51
6:A:597:G:H5"	13:H:90:LYS:HD3	1.91	0.51
7:B:98:TRP:HD1	7:B:173:ILE:HD11	1.76	0.51
28:a:589:U:H2'	28:a:590:A:H8	1.75	0.51
28:a:2443:G:C5	28:a:2444:G:C8	2.98	0.51
32:e:14:SER:H	32:e:196:GLU:CD	2.19	0.51
34:g:43:LEU:HD13	34:g:52:LEU:HD21	1.92	0.51
37:j:108:THR:HG22	37:j:110:GLN:H	1.74	0.51
6:A:610:C:H2'	6:A:611:C:C6	2.46	0.51
6:A:818:G:H2'	6:A:819:U:H6	1.75	0.51
6:A:1115:U:H1'	6:A:1176:A:C5	2.45	0.51
6:A:1136:G:H4'	6:A:1137:A:H5'	1.93	0.51
28:a:2112:G:H2'	28:a:2113:G:C8	2.45	0.51
31:d:15:ILE:HA	42:o:15:GLN:HE22	1.74	0.51
36:i:37:ARG:HA	36:i:118:MET:SD	2.50	0.51
37:j:93:PRO:HB2	37:j:113:LYS:HD2	1.92	0.51
46:s:49:LEU:HD13	51:x:26:PHE:CZ	2.46	0.51
6:A:79:U:H2'	6:A:80:A:H8	1.74	0.51
6:A:251:G:H2'	6:A:252:U:C6	2.45	0.51
13:H:88:ARG:HD3	13:H:92:LYS:HB3	1.91	0.51
27:X:54:LYS:HB3	27:X:75:LYS:HB3	1.93	0.51
28:a:1581:A:H2'	28:a:1582:C:H6	1.75	0.51
6:A:1118:U:H2'	6:A:1119:U:C6	2.45	0.51
6:A:1315:A:H4'	24:S:10:PHE:CD1	2.46	0.51
9:D:52:GLU:O	9:D:56:GLN:HG3	2.11	0.51
28:a:165:A:H2'	28:a:166:U:C6	2.45	0.51
28:a:2091:C:H2'	28:a:2092:C:H6	1.76	0.51
50:w:70:ASP:O	50:w:74:GLN:HG3	2.11	0.51
6:A:134:A:H2'	6:A:135:U:C6	2.46	0.51
6:A:1233:A:H4'	6:A:1301:G:H4'	1.92	0.51
7:B:6:VAL:HG23	7:B:10:ASP:HB2	1.93	0.51
7:B:147:GLU:OE2	7:B:151:GLY:HA3	2.11	0.51
9:D:60:LYS:HD3	9:D:205:LEU:HD23	1.93	0.51
21:P:69:ARG:HH11	21:P:69:ARG:HG3	1.76	0.51
6:A:1020:G:H2'	6:A:1021:G:H8	1.76	0.51
6:A:1320:G:H2'	6:A:1321:A:C8	2.46	0.51
6:A:1345:U:H4'	14:I:120:ARG:HG3	1.93	0.51
28:a:1349:G:H2'	28:a:1350:C:C6	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:2176:G:H2'	28:a:2177:U:C6	2.46	0.51
28:a:2637:G:H2'	28:a:2638:C:C6	2.46	0.51
28:a:2825:U:H2'	28:a:2826:A:C8	2.46	0.51
38:k:82:SER:HB2	38:k:116:GLY:HA3	1.93	0.51
44:q:61:ALA:HB2	44:q:98:ILE:HD13	1.91	0.51
5:4:5:ILE:HD12	33:f:64:LYS:HD2	1.92	0.51
28:a:585:U:H2'	28:a:586:C:C6	2.46	0.51
28:a:1087:U:H2'	28:a:1088:A:O4'	2.11	0.51
30:c:53:HIS:HA	30:c:217:ARG:HB2	1.91	0.51
32:e:117:LEU:HD11	32:e:187:MET:HE3	1.92	0.51
36:i:26:GLY:O	36:i:30:THR:HG23	2.11	0.51
6:A:1154:A:H5'	6:A:1155:C:C6	2.46	0.50
12:G:25:LYS:HG3	12:G:101:MET:HE1	1.93	0.50
28:a:297:G:H2'	28:a:298:C:H6	1.76	0.50
28:a:1122:U:H3'	28:a:1123:A:H5"	1.94	0.50
28:a:2368:G:H2'	28:a:2369:U:C6	2.46	0.50
41:n:68:GLU:O	41:n:72:LYS:HG3	2.11	0.50
6:A:319:U:H2'	6:A:320:G:O4'	2.11	0.50
6:A:533:C:C2	6:A:534:A:N7	2.79	0.50
6:A:655:A:H4'	20:O:12:ILE:HD11	1.93	0.50
46:s:38:THR:HG22	46:s:40:LEU:H	1.76	0.50
6:A:630:G:H2'	6:A:631:C:H6	1.76	0.50
27:X:68:LYS:HG3	27:X:69:PRO:HD2	1.92	0.50
28:a:570:G:H2'	28:a:571:U:C6	2.46	0.50
28:a:1583:A:H2'	28:a:1584:C:C6	2.47	0.50
6:A:58:U:H2'	6:A:59:G:C8	2.47	0.50
6:A:521:G:H2'	6:A:522:C:C6	2.47	0.50
18:M:85:CYS:O	18:M:89:LEU:HD13	2.12	0.50
19:N:73:TYR:CE2	19:N:75:ARG:HA	2.47	0.50
28:a:2457:A:P	28:a:2465:A:H61	2.34	0.50
28:a:2579:A:H2'	28:a:2580:C:C6	2.46	0.50
28:a:2834:U:H5"	42:o:55:ASN:O	2.12	0.50
33:f:8:TYR:HE1	33:f:13:LYS:HG3	1.77	0.50
43:p:58:ARG:O	43:p:62:ILE:HG12	2.12	0.50
7:B:163:LEU:HD22	7:B:165:VAL:HG23	1.94	0.50
28:a:139:U:H1'	28:a:140:A:H5"	1.94	0.50
28:a:824:A:H2'	28:a:825:G:C8	2.46	0.50
28:a:1287:G:H5"	28:a:1288:A:H5"	1.93	0.50
28:a:1430:U:H2'	28:a:1431:C:C6	2.47	0.50
28:a:1554:U:H2'	28:a:1555:C:C6	2.46	0.50
30:c:232:HIS:NE2	30:c:244:PRO:HA	2.26	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:C6	2.47	0.50
17:L:50:ARG:HB3	17:L:66:TYR:HE1	1.77	0.50
6:A:748:U:H2'	6:A:749:G:O4'	2.11	0.50
6:A:1069:G:H2'	6:A:1070:U:C6	2.47	0.50
10:E:110:MET:SD	10:E:124:ALA:HB1	2.52	0.50
28:a:1420:G:H2'	28:a:1421:A:C8	2.47	0.50
28:a:2116:G:H2'	28:a:2117:G:C8	2.46	0.50
28:a:2729:A:H2'	28:a:2730:A:C8	2.46	0.50
47:t:21:GLN:HG2	47:t:71:LEU:HD22	1.92	0.50
6:A:1115:U:H2'	6:A:1116:C:C6	2.47	0.50
8:C:211:MET:O	8:C:215:MET:HG3	2.12	0.50
9:D:28:PHE:O	9:D:32:THR:HG22	2.12	0.50
28:a:1309:A:C4	28:a:1310:A:C8	3.00	0.50
28:a:1430:U:H2'	28:a:1431:C:H6	1.77	0.50
28:a:1590:U:C2	28:a:1591:C:C5	3.00	0.50
28:a:2179:G:H3'	28:a:2180:A:H8	1.76	0.50
32:e:144:ARG:O	32:e:184:LYS:HB2	2.12	0.50
41:n:31:ARG:HB2	41:n:36:ILE:HD12	1.94	0.50
44:q:51:ALA:HB3	44:q:52:PRO:HD3	1.94	0.50
6:A:89:C:H5"	6:A:90:C:H6	1.76	0.50
6:A:232:A:H2'	6:A:233:A:C8	2.46	0.50
6:A:1026:U:H1'	6:A:1030:G:O6	2.12	0.50
6:A:1127:A:H2'	6:A:1128:G:H8	1.76	0.50
9:D:161:ILE:HD12	9:D:177:HIS:ND1	2.27	0.50
13:H:29:SER:HB2	13:H:60:LEU:HB2	1.94	0.50
28:a:182:A:H2'	28:a:183:C:C6	2.45	0.50
28:a:614:C:H2'	28:a:615:C:C6	2.47	0.50
28:a:1428:A:H2'	28:a:1429:A:H8	1.77	0.50
28:a:1473:A:H2'	28:a:1474:U:C6	2.47	0.50
28:a:2222:U:H2'	28:a:2223:G:C8	2.47	0.50
33:f:77:PHE:HB2	33:f:79:ILE:HG12	1.93	0.50
6:A:340:A:H5"	6:A:341:C:H5	1.76	0.49
6:A:378:A:H2'	6:A:379:A:H8	1.77	0.49
6:A:933:C:C4	6:A:934:A:N7	2.80	0.49
6:A:1217:G:P	19:N:53:ARG:HH12	2.35	0.49
11:F:22:VAL:HG11	11:F:39:LEU:HD21	1.93	0.49
20:O:36:ILE:O	20:O:40:GLN:HG2	2.11	0.49
28:a:1303:C:H2'	28:a:1304:A:H8	1.77	0.49
28:a:1760:C:H2'	28:a:1761:A:C8	2.47	0.49
28:a:2021:G:C5	31:d:153:MEQ:HE3	2.47	0.49
28:a:2164:C:H2'	28:a:2165:A:H8	1.76	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:2604:U:C2	53:z:4:GLN:HA	2.47	0.49
31:d:145:VAL:HG23	31:d:147:GLY:H	1.76	0.49
34:g:56:LYS:HG2	34:g:57:GLU:H	1.76	0.49
6:A:418:A:H1'	6:A:419:U:N3	2.27	0.49
9:D:154:GLN:HB2	9:D:157:ILE:HG13	1.93	0.49
28:a:745:C:H2'	28:a:746:C:C6	2.46	0.49
28:a:1269:G:H2'	28:a:1270:U:C6	2.47	0.49
28:a:1527:G:H2'	28:a:1528:U:H6	1.73	0.49
3:2:50:HIS:O	3:2:54:VAL:HG23	2.12	0.49
6:A:134:A:H2'	6:A:135:U:H6	1.78	0.49
16:K:23:HIS:HB3	16:K:30:ILE:HB	1.93	0.49
28:a:1135:A:H2'	28:a:1136:C:H6	1.76	0.49
28:a:2109:G:H2'	28:a:2110:G:H8	1.78	0.49
29:b:53:U:H1'	33:f:26:MET:HE1	1.93	0.49
43:p:109:LEU:HD23	44:q:49:ILE:HD13	1.93	0.49
45:r:88:ARG:HG3	45:r:94:ASP:OD2	2.12	0.49
16:K:96:VAL:HG21	16:K:109:ILE:HD13	1.95	0.49
16:K:105:LYS:HD3	16:K:106:ILE:N	2.28	0.49
18:M:28:HIS:HA	18:M:31:LYS:HE3	1.94	0.49
28:a:181:A:H2'	28:a:182:A:H8	1.78	0.49
28:a:2167:C:H2'	28:a:2168:C:C6	2.47	0.49
29:b:108:C:H2'	29:b:109:G:H8	1.76	0.49
34:g:145:ALA:HB1	34:g:164:TYR:HE1	1.77	0.49
35:h:3:VAL:HG12	35:h:38:ALA:HA	1.92	0.49
38:k:84:LEU:HD21	38:k:112:ILE:HD12	1.93	0.49
6:A:42:C:H2'	6:A:43:G:H8	1.77	0.49
6:A:821:U:H2'	6:A:822:A:C8	2.48	0.49
12:G:115:THR:OG1	12:G:118:LEU:HD12	2.13	0.49
28:a:475:A:H5"	47:t:45:LYS:HG2	1.95	0.49
28:a:839:U:H2'	28:a:840:A:C8	2.46	0.49
28:a:2366:A:H2'	28:a:2367:A:C8	2.47	0.49
28:a:2404:G:H2'	28:a:2405:C:C6	2.46	0.49
33:f:4:LEU:HD21	33:f:7:ARG:HH21	1.77	0.49
8:C:92:THR:HG22	8:C:99:ALA:H	1.77	0.49
11:F:18:VAL:HG21	11:F:58:HIS:ND1	2.27	0.49
11:F:39:LEU:O	11:F:39:LEU:HD13	2.13	0.49
19:N:13:ARG:O	19:N:17:VAL:HG12	2.13	0.49
24:S:14:HIS:O	24:S:18:LYS:HG3	2.13	0.49
28:a:1395:C:H2'	28:a:1396:U:H6	1.77	0.49
28:a:1474:U:H3	28:a:1491:G:H1	1.60	0.49
28:a:1605:A:C2	45:r:93:ALA:HB2	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:f:33:LYS:HG2	33:f:157:THR:HB	1.95	0.49
38:k:80:ARG:HB2	38:k:83:GLU:HG3	1.93	0.49
6:A:242:A:C2	6:A:278:A:C5	3.01	0.49
7:B:138:GLU:O	7:B:142:GLU:HG2	2.12	0.49
9:D:15:GLU:OE2	9:D:65:ARG:HD2	2.12	0.49
9:D:97:GLU:HG2	9:D:188:PRO:HG3	1.93	0.49
10:E:78:THR:HB	10:E:120:HIS:HB2	1.94	0.49
28:a:352:U:H2'	28:a:353:A:O4'	2.12	0.49
28:a:1348:G:N7	28:a:1349:G:C8	2.81	0.49
28:a:1473:A:H2'	28:a:1474:U:H6	1.78	0.49
28:a:1483:A:H2'	28:a:1484:A:C8	2.47	0.49
6:A:635:C:C4	6:A:636:G:N7	2.80	0.49
9:D:74:PHE:HE1	9:D:96:LEU:HD11	1.78	0.49
28:a:1785:U:H2'	28:a:1786:C:H6	1.78	0.49
28:a:1831:G:H2'	28:a:1832:C:C6	2.47	0.49
28:a:1831:G:H2'	28:a:1832:C:H6	1.78	0.49
48:u:21:SER:HB3	48:u:25:ARG:HH12	1.78	0.49
15:J:40:ILE:HD13	15:J:73:LEU:HD23	1.95	0.49
28:a:1775:A:H1'	28:a:1927:A:N6	2.26	0.49
28:a:2302:C:H5"	33:f:88:LYS:HD3	1.95	0.49
6:A:80:A:H2'	6:A:81:G:C8	2.47	0.49
6:A:759:U:H2'	6:A:760:A:C8	2.48	0.49
6:A:1223:C:H4'	24:S:80:TYR:HE2	1.78	0.49
9:D:5:ILE:O	9:D:5:ILE:HG13	2.13	0.49
28:a:614:C:C2	28:a:615:C:C5	3.00	0.49
28:a:700:U:H2'	28:a:701:U:C6	2.48	0.49
28:a:2148:G:H2'	28:a:2149:C:H6	1.77	0.49
29:b:64:A:H61	29:b:104:U:H2'	1.76	0.49
6:A:79:U:H3	6:A:80:A:H62	1.59	0.48
6:A:457:A:H2'	6:A:458:G:C8	2.48	0.48
6:A:552:U:H2'	6:A:553:C:C6	2.48	0.48
18:M:116:ILE:H	18:M:116:ILE:HG13	1.49	0.48
28:a:40:U:H2'	28:a:41:C:C6	2.48	0.48
28:a:1156:U:H2'	28:a:1157:G:H8	1.77	0.48
28:a:1428:A:H2'	28:a:1429:A:C8	2.48	0.48
28:a:2087:U:H2'	28:a:2088:U:C6	2.47	0.48
34:g:23:GLN:HE22	34:g:34:SER:HB2	1.78	0.48
36:i:96:LYS:HG2	36:i:99:GLU:HB2	1.94	0.48
41:n:76:LEU:O	41:n:80:ARG:HG3	2.12	0.48
6:A:58:U:H2'	6:A:59:G:H8	1.79	0.48
6:A:510:C:H2'	6:A:511:U:C6	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:590:U:H2'	6:A:591:U:C6	2.48	0.48
6:A:684:A:C2	6:A:701:A:C5	3.02	0.48
6:A:1387:U:H2'	6:A:1388:U:C6	2.47	0.48
7:B:164:PHE:HE1	7:B:188:ILE:HD11	1.78	0.48
15:J:12:SER:HB2	15:J:96:VAL:HG22	1.95	0.48
28:a:345:G:H2'	28:a:346:C:C6	2.46	0.48
28:a:1167:U:H2'	28:a:1168:A:H8	1.78	0.48
28:a:1280:G:H2'	28:a:1281:U:C6	2.48	0.48
28:a:2318:A:H2'	28:a:2319:G:C8	2.48	0.48
28:a:2863:C:H2'	28:a:2864:C:H6	1.79	0.48
33:f:13:LYS:HG2	33:f:28:ILE:HD13	1.96	0.48
46:s:1:MET:HE3	46:s:44:LYS:HD2	1.94	0.48
6:A:69:C:H2'	6:A:70:G:C8	2.48	0.48
6:A:743:A:O2'	6:A:744:A:H5'	2.13	0.48
6:A:1519:U:H2'	6:A:1520:G:H8	1.77	0.48
12:G:55:LYS:N	12:G:55:LYS:HD3	2.28	0.48
28:a:248:G:H5'	28:a:250:G:N7	2.29	0.48
28:a:804:U:H2'	28:a:805:C:H6	1.78	0.48
16:K:21:HIS:CD2	16:K:84:LEU:HD12	2.49	0.48
23:R:29:LEU:O	23:R:33:ILE:HG23	2.14	0.48
28:a:549:U:H2'	28:a:550:G:C8	2.47	0.48
28:a:589:U:H2'	28:a:590:A:C8	2.49	0.48
28:a:1288:A:H4'	28:a:1289:A:H5"	1.94	0.48
28:a:1701:G:H2'	28:a:1702:U:H6	1.78	0.48
28:a:2444:G:H2'	28:a:2445:C:C6	2.49	0.48
34:g:54:PRO:HB2	34:g:56:LYS:O	2.13	0.48
6:A:822:A:H2'	6:A:823:C:C6	2.49	0.48
6:A:1379:C:C2	6:A:1380:C:H5	2.31	0.48
7:B:29:MET:SD	7:B:195:PRO:HG3	2.53	0.48
28:a:671:A:H2'	28:a:672:G:H8	1.78	0.48
28:a:2281:G:H2'	28:a:2282:C:C6	2.49	0.48
28:a:2671:U:C2	28:a:2672:C:C6	3.01	0.48
32:e:11:VAL:HG11	32:e:119:LEU:HD13	1.95	0.48
33:f:50:LEU:O	33:f:54:VAL:HG12	2.13	0.48
36:i:23:LYS:HZ3	36:i:142:ILE:HG13	1.78	0.48
6:A:534:A:H2'	6:A:535:G:C8	2.48	0.48
6:A:639:A:C4	6:A:640:C:C5	3.02	0.48
15:J:12:SER:HB3	15:J:18:ILE:HB	1.95	0.48
6:A:1057:U:H4'	15:J:53:THR:HG23	1.96	0.48
18:M:23:PHE:HE2	18:M:69:LEU:HG	1.79	0.48
28:a:571:U:H2'	28:a:572:C:C6	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:1285:C:OP1	28:a:2699:C:H4'	2.14	0.48
28:a:2626:U:H2'	28:a:2627:G:O4'	2.13	0.48
39:l:42:MET:HE2	39:l:47:ILE:HG12	1.95	0.48
6:A:218:U:H2'	6:A:219:A:C8	2.49	0.48
6:A:534:A:H2'	6:A:535:G:H8	1.79	0.48
6:A:1116:C:H2'	6:A:1117:C:H6	1.79	0.48
8:C:31:GLU:HG2	8:C:35:LYS:HE2	1.94	0.48
9:D:38:ALA:HB3	9:D:43:GLY:HA2	1.95	0.48
17:L:114:ARG:HG2	17:L:119:ALA:HB3	1.95	0.48
22:Q:31:GLN:HA	22:Q:38:SER:HA	1.95	0.48
25:T:25:ARG:HG3	25:T:66:ILE:HG22	1.96	0.48
26:U:19:PHE:HE1	26:U:23:CYS:SG	2.37	0.48
28:a:279:U:H2'	28:a:280:G:C8	2.48	0.48
28:a:348:C:O2'	28:a:349:A:H5'	2.14	0.48
28:a:471:A:H4'	28:a:472:A:H5'	1.95	0.48
28:a:530:A:H2'	28:a:531:G:O4'	2.14	0.48
28:a:937:A:H2'	28:a:938:C:C6	2.49	0.48
28:a:2053:C:H2'	28:a:2054:C:H6	1.76	0.48
28:a:2205:G:H2'	28:a:2206:G:C8	2.48	0.48
33:f:8:TYR:CD1	33:f:8:TYR:C	2.92	0.48
51:x:15:LYS:HG2	51:x:57:LEU:HD21	1.96	0.48
12:G:7:VAL:HG13	12:G:8:ALA:H	1.78	0.48
14:I:46:VAL:HG13	14:I:77:ILE:CG2	2.43	0.48
21:P:58:ASN:HB3	21:P:61:ALA:HB2	1.96	0.48
24:S:19:VAL:HG21	24:S:44:PHE:CE2	2.49	0.48
28:a:648:U:H2'	28:a:649:U:C6	2.49	0.48
28:a:1373:A:H1'	28:a:1374:A:C8	2.48	0.48
28:a:2041:A:H4'	31:d:151:GLN:O	2.13	0.48
28:a:2289:C:H2'	28:a:2290:G:H8	1.78	0.48
34:g:54:PRO:HB3	34:g:61:ALA:HB1	1.95	0.48
6:A:194:G:H2'	6:A:195:C:C6	2.49	0.48
6:A:456:U:C2	6:A:457:A:C8	3.02	0.48
6:A:776:C:H2'	6:A:777:A:O4'	2.13	0.48
6:A:1461:U:H2'	6:A:1462:A:H8	1.79	0.48
6:A:1510:A:H2'	6:A:1511:G:H8	1.78	0.48
28:a:1003:C:H2'	28:a:1004:A:H8	1.79	0.48
28:a:2138:U:H2'	28:a:2139:U:C6	2.48	0.48
6:A:385:A:H3'	6:A:386:U:H6	1.79	0.47
6:A:640:C:N3	6:A:641:U:C5	2.82	0.47
6:A:936:G:H2'	6:A:937:C:C6	2.49	0.47
7:B:219:MET:HA	7:B:219:MET:HE3	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:2687:U:H2'	28:a:2688:G:C8	2.49	0.47
28:a:2863:C:H2'	28:a:2864:C:C6	2.49	0.47
30:c:107:PRO:HD2	30:c:110:LEU:HD22	1.95	0.47
53:z:38:ARG:HG2	53:z:38:ARG:HH11	1.79	0.47
6:A:1432:G:H2'	6:A:1433:U:C6	2.49	0.47
24:S:11:VAL:HA	24:S:38:SER:HB3	1.94	0.47
28:a:961:C:H2'	28:a:962:A:O4'	2.14	0.47
32:e:18:PHE:HZ	32:e:195:ILE:HD11	1.79	0.47
1:0:5:ILE:HD13	1:0:47:GLU:HG3	1.96	0.47
6:A:35:A:H2'	6:A:36:C:C6	2.49	0.47
6:A:210:C:H2'	6:A:211:C:C6	2.49	0.47
6:A:634:U:H2'	6:A:635:C:C6	2.50	0.47
19:N:83:LYS:HD3	19:N:83:LYS:HA	1.66	0.47
24:S:35:SER:O	24:S:71:LEU:HD12	2.14	0.47
28:a:388:G:H1'	50:w:29:PHE:HB3	1.96	0.47
28:a:853:G:H2'	28:a:854:A:O4'	2.14	0.47
28:a:1304:A:H2'	28:a:1305:G:H8	1.79	0.47
28:a:1917:A:H2'	28:a:1918:G:O4'	2.13	0.47
29:b:16:A:H2'	29:b:17:A:C8	2.48	0.47
32:e:130:THR:HG23	32:e:163:LEU:HG	1.96	0.47
6:A:550:A:H5"	17:L:21:VAL:HG21	1.96	0.47
6:A:675:U:H2'	6:A:676:C:H6	1.79	0.47
6:A:1115:U:H2'	6:A:1116:C:H6	1.80	0.47
8:C:34:LEU:O	8:C:38:GLN:HG3	2.14	0.47
14:I:13:ALA:HB2	14:I:68:GLY:HA3	1.95	0.47
28:a:364:G:H5"	50:w:61:LYS:HD3	1.96	0.47
28:a:2160:A:H1'	28:a:2161:U:C5	2.49	0.47
28:a:2334:A:N3	28:a:2370:A:H2'	2.30	0.47
30:c:34:VAL:HG13	30:c:61:HIS:HB3	1.95	0.47
33:f:103:LEU:HD12	33:f:107:ALA:HB3	1.97	0.47
33:f:116:GLY:HA3	33:f:178:LYS:HB2	1.96	0.47
45:r:24:ILE:HD13	45:r:36:LEU:HD11	1.97	0.47
6:A:487:C:H2'	6:A:488:G:H8	1.79	0.47
19:N:3:LYS:O	19:N:7:ILE:HG12	2.13	0.47
27:X:57:HIS:NE2	27:X:73:HIS:HB3	2.30	0.47
28:a:222:A:N1	28:a:233:A:H5"	2.29	0.47
28:a:389:U:H5"	50:w:32:ASN:HB2	1.97	0.47
28:a:1498:A:H2'	28:a:1499:U:C6	2.49	0.47
28:a:1522:U:C5	28:a:1523:A:H1'	2.49	0.47
28:a:2222:U:H2'	28:a:2223:G:H8	1.80	0.47
28:a:2270:A:O2'	28:a:2271:G:H5'	2.13	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:2671:U:N3	28:a:2672:C:C5	2.82	0.47
28:a:2707:G:O3'	42:o:99:LYS:HG3	2.15	0.47
33:f:167:ARG:HG2	33:f:171:ARG:NH1	2.30	0.47
52:y:5:LYS:HB2	52:y:57:GLU:HB3	1.96	0.47
6:A:1140:G:H2'	6:A:1141:G:H8	1.79	0.47
8:C:134:MET:HE2	8:C:168:TYR:HD2	1.79	0.47
16:K:83:VAL:HB	16:K:109:ILE:HG23	1.96	0.47
22:Q:25:LEU:HD11	22:Q:42:SER:HB2	1.95	0.47
27:X:46:GLU:HG2	27:X:75:LYS:HE3	1.97	0.47
28:a:1169:U:H2'	28:a:1170:A:C8	2.49	0.47
28:a:1577:A:H2'	28:a:1578:G:O4'	2.14	0.47
30:c:84:ASP:HB2	30:c:91:ILE:HG12	1.96	0.47
5:4:70:ARG:HD2	5:4:70:ARG:HA	1.58	0.47
6:A:23:G:H2'	6:A:24:G:H8	1.80	0.47
6:A:318:C:H2'	6:A:319:U:C6	2.50	0.47
6:A:641:U:C2	6:A:642:G:C8	3.02	0.47
7:B:49:VAL:HB	7:B:50:PRO:HD3	1.96	0.47
24:S:57:HIS:O	24:S:59:PRO:HD3	2.15	0.47
28:a:285:U:H3	28:a:345:G:H1	1.62	0.47
28:a:1836:A:O2'	28:a:1837:A:H8	1.96	0.47
28:a:2110:G:O2'	28:a:2111:U:H5'	2.14	0.47
28:a:2336:C:H2'	28:a:2337:U:C6	2.50	0.47
28:a:2457:A:H2'	28:a:2465:A:N1	2.29	0.47
28:a:2579:A:H2'	28:a:2580:C:H6	1.80	0.47
28:a:2637:G:H2'	28:a:2638:C:H6	1.79	0.47
28:a:2638:C:H2'	28:a:2639:U:C6	2.48	0.47
28:a:2825:U:H2'	28:a:2826:A:H8	1.79	0.47
5:4:44:PHE:HZ	33:f:178:LYS:HA	1.79	0.47
6:A:185:C:H4'	6:A:186:G:O5'	2.14	0.47
6:A:489:C:H2'	6:A:490:A:C8	2.49	0.47
6:A:908:U:H2'	6:A:909:C:C6	2.49	0.47
6:A:1324:C:H2'	6:A:1325:C:C6	2.49	0.47
28:a:30:G:H2'	28:a:31:C:C6	2.50	0.47
28:a:585:U:H2'	28:a:586:C:H6	1.80	0.47
28:a:613:G:H2'	28:a:614:C:C6	2.47	0.47
28:a:775:G:H5'	28:a:776:G:OP1	2.14	0.47
28:a:2070:C:H2'	28:a:2071:A:C8	2.50	0.47
28:a:2075:U:H2'	28:a:2076:G:H8	1.76	0.47
28:a:2114:G:H2'	28:a:2115:A:C5	2.50	0.47
33:f:136:ILE:O	33:f:138:PHE:HD1	1.98	0.47
3:2:30:HIS:CD2	3:2:31:ILE:HG13	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:456:U:H2'	6:A:457:A:C8	2.48	0.47
6:A:768:A:H2'	6:A:769:U:H6	1.80	0.47
7:B:96:HIS:CD2	7:B:148:ARG:HG2	2.50	0.47
16:K:66:ALA:HB1	16:K:99:LEU:CD2	2.44	0.47
21:P:81:GLN:HE21	21:P:81:GLN:HB2	1.54	0.47
29:b:109:G:H2'	29:b:110:C:H6	1.80	0.47
33:f:35:THR:HB	33:f:155:THR:HG22	1.96	0.47
39:l:1:MET:HE3	39:l:1:MET:HB3	1.75	0.47
43:p:100:MET:HG2	43:p:101:HIS:CD2	2.50	0.47
6:A:10:A:N6	9:D:208:LYS:HB2	2.30	0.47
6:A:156:A:H2'	6:A:157:A:O4'	2.15	0.47
6:A:1388:U:H2'	6:A:1389:G:H8	1.79	0.47
28:a:1186:U:H2'	28:a:1187:U:C6	2.50	0.47
28:a:1891:C:H5'	30:c:244:PRO:HD3	1.97	0.47
33:f:65:PRO:HA	33:f:89:VAL:HG12	1.97	0.47
38:k:1:MET:HA	38:k:1:MET:HE3	1.95	0.47
48:u:27:GLU:OE1	48:u:27:GLU:O	2.33	0.47
6:A:640:C:C2	6:A:641:U:C5	3.03	0.46
9:D:11:LEU:HD13	9:D:65:ARG:HD3	1.97	0.46
20:O:56:LEU:HA	20:O:59:MET:HE3	1.98	0.46
28:a:845:A:H2'	28:a:846:G:C8	2.51	0.46
28:a:1386:C:C2	28:a:1387:C:C5	3.03	0.46
28:a:1583:A:H2'	28:a:1584:C:H6	1.80	0.46
28:a:2204:C:H2'	28:a:2205:G:H8	1.80	0.46
33:f:67:VAL:CG1	33:f:84:PRO:HB3	2.45	0.46
34:g:23:GLN:NE2	34:g:34:SER:HB2	2.29	0.46
35:h:12:LEU:HD23	35:h:12:LEU:H	1.81	0.46
38:k:112:ILE:HB	38:k:129:LEU:HD23	1.96	0.46
40:m:87:TYR:OH	40:m:115:LEU:HB3	2.15	0.46
5:4:64:ARG:HG2	6:A:1309:G:OP1	2.15	0.46
6:A:386:U:H2'	6:A:387:C:H6	1.79	0.46
6:A:473:U:H2'	6:A:474:A:C8	2.50	0.46
6:A:888:U:H2'	6:A:889:A:H8	1.80	0.46
6:A:1323:U:H2'	6:A:1324:C:C6	2.50	0.46
10:E:46:GLY:HA3	10:E:70:MET:HG2	1.97	0.46
10:E:55:VAL:O	10:E:59:ILE:HG13	2.15	0.46
25:T:36:LEU:HD22	25:T:79:LEU:HD21	1.96	0.46
28:a:536:U:H4'	28:a:537:U:H5	1.78	0.46
28:a:720:G:O2'	28:a:754:G:H4'	2.16	0.46
28:a:1082:C:H2'	28:a:1083:G:O4'	2.15	0.46
28:a:1337:C:C2	28:a:1338:C:C5	3.03	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:2054:C:H2'	28:a:2055:C:H6	1.80	0.46
28:a:2204:C:H2'	28:a:2205:G:C8	2.50	0.46
28:a:2362:A:H2'	28:a:2363:C:C6	2.50	0.46
28:a:2802:G:H2'	28:a:2803:C:H6	1.80	0.46
34:g:98:VAL:HG23	34:g:125:THR:OG1	2.15	0.46
41:n:78:ALA:O	41:n:82:LYS:HG2	2.14	0.46
6:A:281:U:H2'	6:A:282:G:C8	2.50	0.46
6:A:580:A:H2'	6:A:581:G:O4'	2.15	0.46
6:A:1316:A:C8	6:A:1320:G:C6	3.03	0.46
18:M:15:ALA:O	18:M:19:LEU:HD23	2.15	0.46
28:a:688:G:H2'	28:a:689:C:C6	2.50	0.46
28:a:1675:A:H2'	28:a:1676:C:C6	2.50	0.46
28:a:1836:A:O2'	28:a:1837:A:H5'	2.16	0.46
28:a:2827:G:C4	28:a:2828:G:C8	3.03	0.46
34:g:60:ASP:O	34:g:64:GLN:HG2	2.15	0.46
36:i:21:THR:HA	36:i:61:GLN:HB2	1.97	0.46
13:H:25:VAL:O	13:H:61:THR:HA	2.14	0.46
17:L:62:GLU:OE2	17:L:62:GLU:N	2.49	0.46
28:a:1528:U:H2'	28:a:1529:A:O4'	2.15	0.46
28:a:2262:A:H2'	28:a:2263:A:C8	2.50	0.46
29:b:58:C:H5'	41:n:2:ASN:ND2	2.30	0.46
29:b:109:G:H2'	29:b:110:C:C6	2.51	0.46
3:2:4:LEU:HD21	28:a:657:A:H1'	1.98	0.46
6:A:252:U:H2'	6:A:253:G:H8	1.81	0.46
8:C:81:GLY:O	8:C:85:GLU:HG2	2.15	0.46
10:E:150:GLU:OE2	10:E:150:GLU:N	2.46	0.46
28:a:263:U:H2'	28:a:264:C:O4'	2.15	0.46
28:a:407:A:H2'	28:a:408:U:C6	2.51	0.46
28:a:430:G:H2'	28:a:431:A:C8	2.50	0.46
28:a:1393:U:H2'	28:a:1394:U:H6	1.80	0.46
28:a:2175:U:H2'	28:a:2176:G:C8	2.50	0.46
28:a:2502:A:H2'	28:a:2503:U:C6	2.51	0.46
28:a:2671:U:H5"	42:o:2:SER:HB2	1.98	0.46
30:c:20:VAL:HG23	30:c:21:HIS:H	1.81	0.46
6:A:295:G:H2'	6:A:296:A:C8	2.50	0.46
6:A:1011:A:N3	6:A:1216:A:H1'	2.31	0.46
6:A:1259:C:H2'	6:A:1260:A:C8	2.50	0.46
27:X:5:ILE:HD13	27:X:21:VAL:HB	1.97	0.46
28:a:52:A:H2'	28:a:53:A:H8	1.79	0.46
28:a:139:U:H4'	28:a:140:A:OP1	2.15	0.46
28:a:317:A:OP2	32:e:162:ASN:HB2	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:1158:U:H2'	28:a:1159:A:H8	1.81	0.46
28:a:2255:A:H4'	28:a:2256:A:N3	2.31	0.46
43:p:110:ALA:O	43:p:114:LYS:HG3	2.16	0.46
6:A:409:G:N2	6:A:424:G:H1'	2.30	0.46
6:A:768:A:H2'	6:A:769:U:C6	2.51	0.46
6:A:1139:G:H2'	6:A:1140:G:O4'	2.14	0.46
13:H:79:VAL:HG23	13:H:128:ALA:HA	1.97	0.46
15:J:37:CYS:SG	15:J:40:ILE:HD11	2.56	0.46
28:a:631:C:H2'	28:a:632:U:C6	2.50	0.46
28:a:1492:U:H2'	28:a:1493:A:C8	2.51	0.46
28:a:1628:A:H5'	28:a:1749:C:O2'	2.15	0.46
31:d:12:MET:HE2	31:d:12:MET:HB2	1.75	0.46
38:k:22:GLY:HA2	38:k:30:GLY:HA2	1.97	0.46
45:r:17:ALA:HB3	45:r:76:VAL:HG11	1.98	0.46
47:t:3:LYS:HA	47:t:3:LYS:HD2	1.72	0.46
6:A:502:G:H2'	6:A:503:G:C8	2.51	0.46
6:A:991:A:H3'	6:A:992:C:H5"	1.97	0.46
6:A:1288:C:H2'	6:A:1289:C:H6	1.81	0.46
6:A:1462:A:H2'	6:A:1463:C:H6	1.81	0.46
7:B:4:TYR:HE1	7:B:56:LEU:HB3	1.81	0.46
7:B:107:LYS:HE2	7:B:107:LYS:HB2	1.66	0.46
28:a:227:A:C2	28:a:2396:A:H1'	2.51	0.46
28:a:384:C:H2'	28:a:385:C:H6	1.80	0.46
28:a:1200:G:H1'	28:a:1225:A:N6	2.31	0.46
28:a:1395:C:H2'	28:a:1396:U:C6	2.50	0.46
28:a:1432:A:C4	28:a:1433:G:C8	3.04	0.46
31:d:12:MET:HG3	31:d:25:VAL:O	2.16	0.46
50:w:44:LYS:NZ	50:w:44:LYS:HB3	2.31	0.46
6:A:421:G:H2'	6:A:422:U:C6	2.51	0.46
6:A:1288:C:C2	6:A:1289:C:C5	3.03	0.46
6:A:1419:U:H5"	37:j:48:PRO:HB3	1.97	0.46
9:D:152:LYS:HG2	9:D:180:LEU:HD12	1.96	0.46
14:I:118:LYS:HB2	14:I:121:LYS:HB3	1.97	0.46
27:X:7:THR:OG1	27:X:13:ASN:HB2	2.16	0.46
28:a:184:G:H2'	28:a:185:A:C8	2.50	0.46
28:a:296:C:H1'	28:a:297:G:C8	2.51	0.46
28:a:787:C:H2'	28:a:788:U:H6	1.79	0.46
28:a:1283:C:C2	28:a:1284:G:C8	3.04	0.46
28:a:1434:C:H2'	28:a:1435:C:C6	2.50	0.46
28:a:1642:G:C4	28:a:1643:A:C8	3.03	0.46
28:a:2780:A:O2'	28:a:2781:G:H5"	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:g:87:LEU:HB2	34:g:131:ILE:HG23	1.97	0.46
39:l:48:GLU:HA	39:l:48:GLU:OE2	2.16	0.46
51:x:37:LEU:HD23	51:x:40:SER:HA	1.97	0.46
6:A:23:G:H2'	6:A:24:G:C8	2.51	0.46
6:A:601:G:H2'	6:A:602:U:O4'	2.16	0.46
6:A:728:G:H5'	6:A:763:A:H4'	1.98	0.46
17:L:57:LEU:HD21	17:L:82:ILE:HD11	1.97	0.46
25:T:26:SER:O	25:T:30:THR:HG22	2.16	0.46
28:a:74:A:H4'	28:a:75:G:O5'	2.16	0.46
28:a:170:G:H2'	28:a:171:U:C6	2.51	0.46
28:a:526:U:H2'	28:a:527:G:C8	2.50	0.46
28:a:1845:U:H2'	28:a:1846:G:O4'	2.16	0.46
28:a:2501:C:H2'	28:a:2502:A:O4'	2.16	0.46
31:d:182:SER:HB2	31:d:191:VAL:HB	1.98	0.46
6:A:266:A:H2'	6:A:267:C:H6	1.81	0.45
6:A:471:G:H2'	6:A:472:A:H8	1.77	0.45
6:A:1002:A:H3'	6:A:1003:C:H6	1.81	0.45
7:B:133:LYS:HD3	7:B:133:LYS:HA	1.64	0.45
10:E:153:ALA:HA	10:E:163:ILE:HG21	1.97	0.45
19:N:87:THR:HG22	19:N:92:ASP:HB2	1.97	0.45
28:a:79:C:H2'	28:a:80:G:H8	1.81	0.45
28:a:1702:U:H2'	28:a:1703:U:O4'	2.15	0.45
28:a:2666:G:H2'	28:a:2667:A:C8	2.51	0.45
30:c:24:LEU:HD13	30:c:83:TYR:HB2	1.98	0.45
33:f:8:TYR:C	33:f:8:TYR:HD1	2.25	0.45
34:g:64:GLN:HA	34:g:67:THR:HG22	1.99	0.45
36:i:11:VAL:HG11	36:i:50:THR:HA	1.97	0.45
6:A:822:A:H2'	6:A:823:C:H6	1.80	0.45
6:A:1421:U:H2'	6:A:1422:U:C6	2.52	0.45
10:E:75:LEU:HD23	10:E:75:LEU:H	1.80	0.45
14:I:58:LYS:NZ	14:I:58:LYS:HB3	2.32	0.45
15:J:41:PRO:HA	15:J:72:ARG:HE	1.80	0.45
28:a:310:C:H2'	28:a:311:G:O4'	2.17	0.45
28:a:2775:U:H2'	28:a:2776:C:H6	1.82	0.45
34:g:2:SER:O	34:g:6:LYS:HE2	2.16	0.45
40:m:72:ASN:HB3	40:m:75:THR:HB	1.97	0.45
6:A:1215:C:H2'	6:A:1216:A:H8	1.77	0.45
9:D:161:ILE:HG23	9:D:177:HIS:ND1	2.31	0.45
11:F:51:ILE:O	11:F:54:ILE:HG12	2.15	0.45
16:K:44:ALA:HB3	16:K:69:ALA:HB2	1.98	0.45
28:a:78:C:O2'	28:a:79:C:H6	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:891:A:H2'	28:a:891:A:N3	2.32	0.45
28:a:1485:U:H5"	28:a:1486:C:H5	1.81	0.45
28:a:1946:C:H2'	28:a:1947:C:C6	2.49	0.45
28:a:2113:G:H2'	28:a:2114:G:O4'	2.17	0.45
28:a:2154:C:O2'	28:a:2155:U:H5'	2.17	0.45
28:a:2236:A:H2'	28:a:2237:C:H6	1.81	0.45
28:a:2736:G:O6	28:a:2744:C:H5"	2.16	0.45
28:a:2829:U:H2'	28:a:2830:U:C6	2.52	0.45
33:f:111:ILE:HB	33:f:114:PHE:HB2	1.99	0.45
34:g:22:ARG:HD2	34:g:37:LEU:HB2	1.99	0.45
41:n:36:ILE:HG23	41:n:73:VAL:HG11	1.98	0.45
1:0:4:LYS:HB3	1:0:50:ILE:HD12	1.98	0.45
6:A:695:G:H2'	6:A:696:C:H6	1.81	0.45
6:A:760:A:H2'	6:A:761:C:H6	1.81	0.45
6:A:1315:A:H5"	6:A:1316:A:OP2	2.16	0.45
14:I:43:ARG:HD2	14:I:47:ARG:HH22	1.81	0.45
14:I:69:GLY:O	14:I:73:GLN:HG3	2.15	0.45
18:M:78:LYS:O	18:M:82:ASP:OD2	2.34	0.45
18:M:89:LEU:HA	18:M:92:ARG:HD3	1.99	0.45
28:a:520:A:C2	28:a:2031:A:H2'	2.50	0.45
28:a:699:G:H2'	28:a:700:U:C6	2.52	0.45
28:a:880:C:H2'	28:a:881:C:O4'	2.15	0.45
28:a:1051:U:H4'	28:a:1060:A:N3	2.32	0.45
28:a:1168:A:H2'	28:a:1169:U:C6	2.51	0.45
28:a:1716:A:H2'	28:a:1717:C:O4'	2.17	0.45
28:a:2094:U:H2'	28:a:2095:A:C8	2.51	0.45
28:a:2241:G:H2'	28:a:2242:G:H8	1.81	0.45
33:f:13:LYS:HG2	33:f:28:ILE:HG21	1.99	0.45
3:2:32:LEU:HB2	28:a:2408:U:H5"	1.98	0.45
6:A:905:A:HO2'	6:A:906:A:H8	1.65	0.45
6:A:982:C:H2'	6:A:983:U:H6	1.81	0.45
9:D:11:LEU:O	9:D:15:GLU:HG3	2.16	0.45
13:H:102:ILE:HG12	13:H:130:VAL:HB	1.97	0.45
15:J:6:ILE:HB	15:J:76:ILE:CG1	2.46	0.45
22:Q:18:MET:HE3	22:Q:18:MET:HB2	1.81	0.45
28:a:208:C:H2'	28:a:209:C:H6	1.82	0.45
28:a:1081:G:C2	28:a:1082:C:N4	2.85	0.45
28:a:1280:G:H2'	28:a:1281:U:H6	1.80	0.45
28:a:1605:A:H2	45:r:93:ALA:HB2	1.80	0.45
28:a:2666:G:H2'	28:a:2667:A:H8	1.82	0.45
29:b:60:U:H2'	29:b:61:C:H6	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:g:148:ILE:HG22	34:g:162:VAL:HG11	1.99	0.45
3:2:9:GLY:O	3:2:13:ARG:HD3	2.16	0.45
6:A:80:A:C2	6:A:81:G:C5	3.05	0.45
6:A:232:A:H2'	6:A:233:A:H8	1.81	0.45
6:A:744:A:H8	6:A:744:A:OP2	1.99	0.45
6:A:1524:C:OP2	26:U:42:THR:HG22	2.16	0.45
8:C:35:LYS:HE3	8:C:35:LYS:HB2	1.79	0.45
18:M:59:GLU:HA	18:M:59:GLU:OE2	2.17	0.45
28:a:598:U:C5	28:a:611:G:C5	3.05	0.45
28:a:1219:U:H2'	28:a:1220:G:H8	1.80	0.45
28:a:1391:A:H2'	28:a:1392:C:H6	1.80	0.45
28:a:1516:A:H1'	28:a:1517:A:C8	2.52	0.45
28:a:2823:G:H2'	28:a:2868:A:H61	1.81	0.45
33:f:55:ALA:O	33:f:59:LEU:HD23	2.17	0.45
38:k:118:ILE:HG12	38:k:122:PHE:HE2	1.82	0.45
5:4:6:HIS:CE1	33:f:63:GLN:HG3	2.51	0.45
6:A:92:G:H5'	6:A:93:A:OP1	2.17	0.45
7:B:52:LEU:HA	7:B:202:ILE:HD12	1.97	0.45
8:C:132:ARG:HD3	8:C:132:ARG:HA	1.74	0.45
28:a:549:U:H2'	28:a:550:G:H8	1.80	0.45
28:a:2036:C:H2'	28:a:2037:G:H8	1.81	0.45
36:i:104:ALA:O	36:i:108:MET:HG3	2.17	0.45
39:l:57:ARG:CZ	39:l:120:LEU:HD11	2.47	0.45
6:A:27:C:H2'	6:A:28:A:C8	2.52	0.45
6:A:982:C:H2'	6:A:983:U:C6	2.52	0.45
6:A:1071:G:O3'	7:B:104:THR:HG21	2.17	0.45
6:A:1146:U:H2'	6:A:1147:U:C6	2.52	0.45
6:A:1235:A:N7	6:A:1300:C:H1'	2.32	0.45
6:A:1288:C:N3	6:A:1289:C:C5	2.85	0.45
10:E:55:VAL:CG1	10:E:56:PRO:HD3	2.46	0.45
23:R:27:ASP:O	23:R:31:GLN:HG2	2.17	0.45
28:a:84:A:C2	28:a:103:A:C5	3.05	0.45
28:a:235:U:H2'	28:a:236:C:H6	1.82	0.45
28:a:615:C:C2	28:a:616:G:C8	3.04	0.45
28:a:969:A:H2'	28:a:972:C:N4	2.32	0.45
28:a:1051:U:H4'	28:a:1060:A:C2	2.52	0.45
28:a:1375:U:H2'	28:a:1376:G:C8	2.51	0.45
28:a:1504:A:H3'	28:a:1505:G:H8	1.82	0.45
28:a:2450:A:H2'	28:a:2451:C:C6	2.52	0.45
30:c:232:HIS:CE1	30:c:244:PRO:HA	2.52	0.45
6:A:435:U:C2	6:A:436:A:C8	3.05	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:622:U:H2'	6:A:623:G:C8	2.52	0.45
6:A:701:A:C4	6:A:702:G:C8	3.04	0.45
6:A:1399:4OC:H2'	6:A:1400:C:O4'	2.17	0.45
6:A:1406:C:H2'	6:A:1407:A:H8	1.82	0.45
7:B:71:PHE:HB3	7:B:82:ILE:HD12	1.98	0.45
28:a:72:A:C8	51:x:54:LYS:HD3	2.52	0.45
28:a:150:U:H2'	28:a:151:U:C6	2.52	0.45
28:a:471:A:N3	28:a:473:G:H5"	2.32	0.45
28:a:755:A:H5'	30:c:209:GLY:HA2	1.99	0.45
28:a:1345:C:H2'	28:a:1346:G:O4'	2.17	0.45
28:a:2230:A:H2'	28:a:2231:G:C8	2.52	0.45
28:a:2626:U:H5"	31:d:84:ARG:NH1	2.32	0.45
37:j:44:LYS:HA	37:j:44:LYS:HD2	1.80	0.45
39:l:38:GLU:OE2	39:l:128:LYS:HB2	2.17	0.45
6:A:905:A:O2'	6:A:906:A:H8	2.00	0.45
6:A:917:U:H2'	6:A:918:U:C6	2.52	0.45
8:C:156:ARG:HE	8:C:156:ARG:HB3	1.63	0.45
28:a:127:A:H5"	28:a:128:C:C6	2.51	0.45
28:a:384:C:C2	28:a:385:C:C5	3.05	0.45
28:a:507:A:H1'	28:a:572:C:H1'	1.98	0.45
28:a:874:G:H5'	28:a:875:U:OP2	2.17	0.45
28:a:1349:G:H2'	28:a:1350:C:H6	1.80	0.45
28:a:2219:G:H2'	28:a:2220:U:C6	2.52	0.45
28:a:2300:A:C2	33:f:77:PHE:HB3	2.52	0.45
6:A:36:C:H2'	6:A:37:G:H8	1.81	0.44
6:A:512:G:H2'	6:A:513:PSU:H6	1.82	0.44
9:D:15:GLU:OE1	9:D:62:LYS:HA	2.17	0.44
11:F:102:LEU:HD21	23:R:26:ILE:HG13	1.98	0.44
22:Q:18:MET:HB3	22:Q:21:SER:HB2	1.99	0.44
28:a:2556:G:H2'	28:a:2557:A:C8	2.52	0.44
46:s:12:GLY:HA2	51:x:30:MET:HE1	1.98	0.44
3:2:23:ARG:HD2	38:k:63:LEU:HD13	2.00	0.44
6:A:91:G:H2'	6:A:92:G:C8	2.52	0.44
6:A:204:U:H4'	6:A:205:U:H5	1.81	0.44
6:A:825:A:N3	7:B:27:PRO:HG2	2.32	0.44
6:A:942:G:C2	6:A:943:A:C8	3.06	0.44
6:A:1024:C:H2'	6:A:1025:C:C5	2.52	0.44
6:A:1299:C:OP1	18:M:13:LYS:HE3	2.17	0.44
28:a:804:U:H2'	28:a:805:C:C6	2.52	0.44
28:a:1542:U:H2'	28:a:1543:G:O4'	2.17	0.44
28:a:1848:U:H2'	28:a:1849:G:H8	1.81	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:2240:OMG:HM23	28:a:2240:OMG:H1'	1.79	0.44
28:a:2275:G:H4'	28:a:2276:A:O4'	2.16	0.44
36:i:141:ASP:C	36:i:141:ASP:OD2	2.60	0.44
2:1:1:MET:HG2	2:1:1:MET:O	2.17	0.44
3:2:57:VAL:HA	3:2:60:MET:HE2	1.98	0.44
6:A:174:C:H2'	6:A:175:A:H8	1.82	0.44
6:A:252:U:H2'	6:A:253:G:C8	2.53	0.44
6:A:470:A:C2	6:A:471:G:C5	3.06	0.44
6:A:1020:G:H2'	6:A:1021:G:C8	2.53	0.44
6:A:1399:4OC:O5'	6:A:1399:4OC:H6	2.17	0.44
7:B:18:PHE:O	7:B:205:ASN:HB2	2.17	0.44
19:N:23:LYS:O	19:N:26:GLU:HG3	2.17	0.44
19:N:27:LEU:HD23	19:N:27:LEU:HA	1.84	0.44
28:a:3:U:H2'	28:a:4:C:C6	2.52	0.44
28:a:1562:A:H2'	28:a:1563:A:C8	2.53	0.44
28:a:2003:A:H2'	28:a:2004:A:C8	2.52	0.44
28:a:2503:U:H2'	28:a:2504:C:H6	1.81	0.44
31:d:39:LYS:HD2	31:d:44:ASP:OD1	2.16	0.44
32:e:101:ARG:HH12	32:e:199:LEU:HA	1.82	0.44
44:q:47:ILE:HG22	44:q:49:ILE:HG13	1.98	0.44
48:u:12:ALA:H	48:u:15:LYS:NZ	2.16	0.44
4:3:10:ILE:HD12	4:3:10:ILE:N	2.32	0.44
7:B:219:MET:O	7:B:223:ILE:HG12	2.18	0.44
9:D:156:ARG:HG3	9:D:157:ILE:N	2.33	0.44
9:D:190:ARG:NH1	9:D:193:LEU:HB2	2.31	0.44
24:S:36:ARG:HA	24:S:71:LEU:HB2	2.00	0.44
28:a:405:C:H2'	28:a:406:C:C6	2.52	0.44
28:a:1394:U:H2'	28:a:1395:C:H6	1.83	0.44
28:a:1560:A:H4'	30:c:61:HIS:HE1	1.83	0.44
32:e:12:GLU:O	32:e:13:LEU:HD23	2.17	0.44
34:g:9:VAL:HG21	34:g:73:ASN:HA	1.98	0.44
6:A:194:G:H2'	6:A:195:C:H6	1.83	0.44
6:A:610:C:P	9:D:83:ARG:HH21	2.39	0.44
6:A:1141:G:N2	6:A:1143:A:H62	2.15	0.44
6:A:1349:C:H2'	6:A:1350:G:C8	2.53	0.44
9:D:140:LYS:HA	9:D:140:LYS:HD2	1.82	0.44
28:a:364:G:H5'	50:w:58:ILE:HD13	1.97	0.44
28:a:1434:C:H2'	28:a:1435:C:H6	1.82	0.44
28:a:1581:A:H2'	28:a:1582:C:C6	2.52	0.44
28:a:1764:U:O4	28:a:1778:A:H2	1.99	0.44
28:a:2086:U:H2'	28:a:2087:U:C6	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:2118:C:H2'	28:a:2119:U:O4'	2.18	0.44
28:a:2353:C:H2'	28:a:2354:G:O4'	2.16	0.44
28:a:2784:C:H2'	28:a:2785:U:O4'	2.17	0.44
42:o:49:VAL:HG22	42:o:50:VAL:O	2.17	0.44
4:3:3:VAL:HG13	4:3:37:GLN:HB2	1.99	0.44
6:A:239:A:H4'	6:A:240:U:H3'	2.00	0.44
6:A:505:U:H4'	9:D:53:TYR:HD2	1.82	0.44
6:A:543:G:P	9:D:71:GLU:HB3	2.58	0.44
6:A:880:C:O2'	6:A:881:U:H5'	2.18	0.44
6:A:922:G:C2	6:A:924:G:C8	3.05	0.44
13:H:79:VAL:HG12	13:H:86:GLN:HE22	1.82	0.44
18:M:86:TYR:O	18:M:90:ARG:HG2	2.16	0.44
21:P:74:ARG:HD2	21:P:74:ARG:HA	1.73	0.44
24:S:3:ARG:HH12	24:S:10:PHE:HD1	1.65	0.44
28:a:511:C:H2'	28:a:512:A:H8	1.83	0.44
28:a:1059:A:O2'	28:a:1062:C:H5'	2.18	0.44
28:a:2740:G:C5	34:g:3:ARG:HD3	2.53	0.44
32:e:167:ASP:HB2	32:e:182:PHE:CZ	2.52	0.44
1:0:9:SER:HB3	1:0:45:PHE:CZ	2.53	0.44
3:2:28:LYS:HD2	3:2:28:LYS:HA	1.70	0.44
6:A:202:U:H2'	6:A:203:C:C6	2.53	0.44
6:A:502:G:C2	6:A:503:G:C5	3.06	0.44
6:A:840:U:H3'	6:A:841:G:H8	1.82	0.44
11:F:38:ARG:HB3	11:F:63:ASN:HB2	1.99	0.44
12:G:26:PHE:HA	12:G:101:MET:HE3	2.00	0.44
14:I:63:ILE:HG21	14:I:77:ILE:CD1	2.48	0.44
15:J:10:LEU:O	15:J:71:LYS:HA	2.17	0.44
26:U:38:TYR:CE2	26:U:40:LYS:HD3	2.52	0.44
28:a:335:A:H2'	28:a:336:C:O4'	2.17	0.44
28:a:439:A:C4	28:a:465:G:N7	2.86	0.44
28:a:656:U:C2	28:a:657:A:C8	3.06	0.44
28:a:662:C:H2'	28:a:663:C:C6	2.52	0.44
28:a:759:G:H2'	28:a:760:U:H6	1.82	0.44
28:a:969:A:H2'	28:a:972:C:H41	1.82	0.44
29:b:43:A:C4	29:b:44:A:C8	3.05	0.44
41:n:111:GLU:HA	41:n:111:GLU:OE2	2.16	0.44
46:s:69:PHE:CD1	46:s:69:PHE:C	2.95	0.44
5:4:39:SER:C	5:4:41:CYS:H	2.25	0.44
6:A:750:A:OP1	20:O:73:LYS:HE2	2.18	0.44
6:A:999:G:H3'	6:A:1000:A:C8	2.53	0.44
8:C:189:ALA:HB3	8:C:196:ILE:HB	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:K:63:GLN:O	16:K:67:GLU:HG3	2.18	0.44
17:L:34:CYS:HB3	17:L:55:VAL:HG22	2.00	0.44
19:N:20:TYR:HD2	19:N:51:LEU:HD22	1.82	0.44
24:S:19:VAL:HG21	24:S:44:PHE:CZ	2.53	0.44
28:a:79:C:H2'	28:a:80:G:C8	2.53	0.44
28:a:475:A:C8	47:t:43:HIS:HD2	2.36	0.44
28:a:1184:C:H2'	28:a:1185:G:C8	2.53	0.44
28:a:1304:A:H2'	28:a:1305:G:C8	2.53	0.44
41:n:28:CYS:HA	41:n:92:ASP:HB3	2.00	0.44
2:1:35:ARG:HG3	2:1:42:LEU:HD11	1.99	0.44
6:A:215:C:C4	6:A:216:G:C8	3.06	0.44
6:A:1423:G:H2'	6:A:1424:C:C6	2.53	0.44
9:D:13:ARG:NH2	9:D:39:PRO:HA	2.32	0.44
13:H:81:ARG:HH21	13:H:84:LEU:HB3	1.83	0.44
25:T:12:ARG:O	25:T:15:VAL:HG22	2.18	0.44
25:T:35:THR:CG2	25:T:79:LEU:HD22	2.48	0.44
28:a:62:U:H5	28:a:93:A:N1	2.15	0.44
28:a:1674:U:H2'	28:a:1675:A:C8	2.53	0.44
28:a:2050:G:H2'	28:a:2490:C:O2'	2.18	0.44
28:a:2129:G:H2'	28:a:2130:A:C8	2.53	0.44
28:a:2791:U:H2'	28:a:2792:C:C6	2.50	0.44
28:a:2829:U:H2'	28:a:2830:U:H6	1.82	0.44
34:g:22:ARG:HD3	34:g:22:ARG:HA	1.70	0.44
46:s:38:THR:HB	46:s:41:GLU:HG3	1.99	0.44
51:x:40:SER:O	51:x:43:VAL:HG22	2.18	0.44
2:1:22:MET:HE2	2:1:31:LEU:HD12	2.00	0.43
6:A:8:G:H4'	6:A:294:A:H4'	1.99	0.43
6:A:1007:C:H2'	6:A:1009:A:C8	2.53	0.43
6:A:1340:G:H2'	6:A:1341:C:C6	2.53	0.43
7:B:186:ILE:HA	7:B:200:TYR:HB2	2.00	0.43
15:J:42:MET:HB3	15:J:71:LYS:HB3	2.00	0.43
21:P:32:ARG:HG3	21:P:32:ARG:NH1	2.33	0.43
21:P:36:GLN:OE1	21:P:53:ARG:HD2	2.18	0.43
28:a:590:A:C2	28:a:591:G:C5	3.06	0.43
28:a:1437:G:H2'	28:a:1438:G:H8	1.83	0.43
30:c:26:LYS:HE2	30:c:26:LYS:HB2	1.85	0.43
46:s:24:ASP:OD2	46:s:25:THR:HG23	2.18	0.43
49:v:20:MET:HE2	49:v:20:MET:HB2	1.86	0.43
3:2:17:THR:HG21	3:2:48:MET:HE1	1.99	0.43
6:A:536:A:H2'	6:A:537:G:H8	1.82	0.43
6:A:671:G:H21	16:K:117:HIS:HB2	1.82	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:855:G:H2'	28:a:856:C:C6	2.53	0.43
28:a:1420:G:H2'	28:a:1421:A:H8	1.83	0.43
28:a:1801:U:H2'	28:a:1802:G:H8	1.83	0.43
28:a:2527:C:H2'	28:a:2528:C:H6	1.83	0.43
28:a:2639:U:H2'	28:a:2640:C:H6	1.84	0.43
28:a:2836:U:H2'	28:a:2837:G:O4'	2.18	0.43
5:4:44:PHE:HB2	5:4:50:LYS:NZ	2.34	0.43
6:A:78:G:H2'	6:A:79:U:C6	2.52	0.43
6:A:1521:C:H2'	6:A:1522:G:C8	2.52	0.43
26:U:19:PHE:HD1	26:U:19:PHE:O	2.02	0.43
28:a:207:A:H2'	28:a:208:C:O4'	2.18	0.43
28:a:250:G:H2'	28:a:251:A:C8	2.53	0.43
28:a:1784:C:H2'	28:a:1785:U:O4'	2.18	0.43
28:a:2790:G:H2'	28:a:2791:U:H6	1.82	0.43
29:b:30:U:H2'	29:b:31:G:C8	2.54	0.43
40:m:20:MET:HE3	40:m:20:MET:HB3	1.83	0.43
6:A:80:A:H2'	6:A:81:G:H8	1.83	0.43
6:A:150:A:H2'	6:A:151:U:C6	2.53	0.43
6:A:395:G:H2'	6:A:396:C:C6	2.54	0.43
6:A:581:G:H2'	6:A:582:G:H8	1.84	0.43
8:C:14:VAL:O	8:C:211:MET:HG2	2.18	0.43
9:D:80:GLU:HA	9:D:83:ARG:HG2	1.99	0.43
26:U:38:TYR:HE2	26:U:40:LYS:HD3	1.84	0.43
28:a:405:C:H2'	28:a:406:C:H6	1.84	0.43
28:a:1054:C:C5	28:a:1056:U:H1'	2.53	0.43
28:a:1136:C:N3	28:a:1137:U:C5	2.87	0.43
28:a:1266:C:H2'	28:a:1267:G:C8	2.54	0.43
28:a:1463:G:O2'	28:a:1464:U:H6	2.01	0.43
28:a:2380:G:O6	28:a:2414:A:H8	2.01	0.43
28:a:2720:G:H2'	28:a:2721:G:C8	2.53	0.43
30:c:96:TYR:CE1	30:c:102:ARG:HG3	2.54	0.43
33:f:130:MET:HE2	33:f:130:MET:HB2	1.81	0.43
41:n:116:PHE:CD1	41:n:116:PHE:C	2.96	0.43
6:A:327:G:O2'	25:T:2:ALA:HB1	2.18	0.43
6:A:405:U:H2'	6:A:406:G:O4'	2.19	0.43
6:A:542:C:H5"	9:D:71:GLU:HG2	2.01	0.43
6:A:940:U:H1'	14:I:124:GLN:OE1	2.19	0.43
6:A:980:A:H2	6:A:981:C:C6	2.37	0.43
6:A:1166:A:H2'	6:A:1167:A:C8	2.54	0.43
6:A:1287:G:C4	6:A:1288:C:C5	3.06	0.43
6:A:1462:A:H2'	6:A:1463:C:C6	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:D:74:PHE:CE1	9:D:96:LEU:HD11	2.54	0.43
11:F:28:GLN:HA	11:F:31:GLU:HG2	2.00	0.43
19:N:6:MET:HB2	19:N:6:MET:HE2	1.80	0.43
28:a:1493:A:H2'	28:a:1494:C:H6	1.82	0.43
28:a:1671:U:H2'	28:a:1672:G:O4'	2.18	0.43
28:a:1760:C:C2	28:a:1761:A:C8	3.05	0.43
28:a:1982:U:H4'	31:d:136:THR:OG1	2.18	0.43
28:a:2091:C:C2	28:a:2092:C:C5	3.07	0.43
28:a:2304:C:C2	28:a:2305:G:C8	3.07	0.43
29:b:61:C:H2'	29:b:62:U:H6	1.84	0.43
30:c:242:ILE:HD12	30:c:243:GLN:O	2.18	0.43
32:e:145:ALA:HA	32:e:184:LYS:O	2.18	0.43
48:u:76:VAL:HB	48:u:95:PHE:HB3	1.99	0.43
6:A:462:A:H2'	6:A:464:A:C8	2.54	0.43
6:A:497:G:H2'	6:A:498:C:C6	2.53	0.43
6:A:744:A:C4	6:A:745:U:C5	3.07	0.43
6:A:1259:C:H2'	6:A:1260:A:H8	1.84	0.43
6:A:1489:A:H2'	28:a:1902:A:N1	2.34	0.43
8:C:212:LYS:HA	8:C:212:LYS:HD2	1.77	0.43
21:P:32:ARG:HG3	21:P:32:ARG:HH11	1.84	0.43
28:a:467:C:N3	28:a:471:A:N7	2.66	0.43
28:a:1476:U:H2'	28:a:1477:U:C6	2.54	0.43
28:a:1663:A:C2	28:a:2571:G:H5'	2.52	0.43
28:a:2387:U:H2'	28:a:2388:G:H8	1.84	0.43
33:f:40:VAL:HG11	33:f:49:LEU:HG	1.99	0.43
33:f:135:GLN:NE2	33:f:149:ILE:HD12	2.29	0.43
34:g:85:ARG:C	34:g:85:ARG:HD3	2.43	0.43
48:u:12:ALA:H	48:u:15:LYS:HZ3	1.66	0.43
6:A:542:C:P	9:D:64:ARG:HH12	2.41	0.43
6:A:639:A:C5	6:A:640:C:C5	3.07	0.43
23:R:16:GLU:HB2	23:R:18:VAL:HG23	2.00	0.43
28:a:439:A:C4	28:a:465:G:C8	3.07	0.43
28:a:946:G:N2	28:a:949:A:H3'	2.33	0.43
28:a:1724:C:N3	28:a:1725:C:C5	2.87	0.43
28:a:2091:C:H2'	28:a:2092:C:C6	2.54	0.43
28:a:2190:U:H2'	28:a:2191:C:C6	2.54	0.43
28:a:2876:C:H2'	28:a:2877:U:C6	2.53	0.43
30:c:270:ASP:OD2	30:c:273:VAL:HG23	2.18	0.43
6:A:149:C:H2'	6:A:150:A:H8	1.83	0.43
6:A:226:G:H5"	21:P:49:ARG:HH21	1.84	0.43
6:A:631:C:H2'	6:A:632:A:H8	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:1140:G:H2'	6:A:1141:G:C8	2.54	0.43
6:A:1223:C:H4'	6:A:1224:A:OP1	2.19	0.43
6:A:1520:G:H2'	6:A:1521:C:H6	1.83	0.43
28:a:195:A:H61	28:a:198:C:H3'	1.84	0.43
28:a:371:G:N1	28:a:388:G:C6	2.87	0.43
28:a:796:G:H5"	38:k:40:GLN:HG3	2.00	0.43
28:a:1684:U:H5"	28:a:1685:C:H5	1.83	0.43
29:b:49:G:H2'	29:b:50:A:C8	2.54	0.43
1:0:1:MET:HG3	1:0:1:MET:O	2.19	0.43
6:A:202:U:H2'	6:A:203:C:H6	1.84	0.43
6:A:204:U:H1'	6:A:207:G:H22	1.83	0.43
6:A:1011:A:H5"	24:S:14:HIS:CD2	2.54	0.43
6:A:1019:U:H2'	6:A:1020:G:O4'	2.19	0.43
7:B:16:ALA:HB3	7:B:45:LEU:HD21	2.01	0.43
12:G:17:LYS:HB2	12:G:17:LYS:HE2	1.88	0.43
12:G:81:GLY:HA2	27:X:104:PRO:HG3	1.99	0.43
13:H:40:LEU:HD21	13:H:130:VAL:HG21	2.01	0.43
26:U:54:LYS:HB3	26:U:54:LYS:HE3	1.79	0.43
28:a:30:G:H2'	28:a:31:C:H6	1.83	0.43
28:a:1099:C:H3'	28:a:1100:G:C8	2.53	0.43
28:a:1186:U:C2	28:a:1187:U:C5	3.07	0.43
28:a:1717:C:O2'	28:a:1718:U:H3'	2.19	0.43
28:a:1872:U:H2'	28:a:1873:G:O4'	2.19	0.43
28:a:1946:C:C2	28:a:1947:C:C5	3.07	0.43
36:i:36:LEU:O	36:i:51:GLY:HA3	2.18	0.43
46:s:64:GLY:HA3	46:s:76:ARG:O	2.19	0.43
4:3:8:LYS:HB2	4:3:8:LYS:HE2	1.61	0.43
6:A:266:A:H2'	6:A:267:C:C6	2.54	0.43
6:A:1308:A:H2'	6:A:1309:G:O4'	2.18	0.43
6:A:1496:A:H1'	6:A:1517:C:H5'	2.01	0.43
6:A:1512:G:H2'	6:A:1513:2MG:C8	2.53	0.43
8:C:12:LEU:HD11	19:N:91:GLY:HA2	2.01	0.43
14:I:17:VAL:HG22	14:I:63:ILE:HG23	2.01	0.43
15:J:40:ILE:HD12	15:J:73:LEU:O	2.18	0.43
17:L:7:LEU:HD23	17:L:7:LEU:HA	1.74	0.43
19:N:88:VAL:HG22	19:N:96:VAL:HG21	2.01	0.43
24:S:61:ILE:H	24:S:61:ILE:HG12	1.66	0.43
28:a:244:A:H5"	38:k:69:THR:HG21	2.00	0.43
28:a:350:C:H2'	28:a:351:A:C8	2.54	0.43
28:a:374:G:H2'	28:a:375:C:O4'	2.18	0.43
28:a:570:G:H2'	28:a:571:U:H6	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:581:A:H2'	28:a:582:U:C6	2.54	0.43
28:a:1391:A:H2'	28:a:1392:C:C6	2.53	0.43
28:a:2293:G:H22	28:a:2301:U:H3	1.66	0.43
28:a:2457:A:H2'	28:a:2465:A:C6	2.54	0.43
29:b:37:U:H2'	29:b:38:U:C6	2.54	0.43
30:c:160:ALA:O	30:c:195:VAL:HG23	2.19	0.43
31:d:60:ARG:HA	31:d:60:ARG:HD3	1.84	0.43
32:e:122:GLU:HG3	32:e:123:PHE:N	2.34	0.43
49:v:53:MET:HG2	49:v:57:HIS:HA	2.01	0.43
50:w:43:GLU:HB2	50:w:45:ARG:HG2	2.01	0.43
6:A:176:U:C2'	6:A:177:A:H5'	2.49	0.42
6:A:367:A:H2'	6:A:368:C:O4'	2.20	0.42
6:A:577:C:H2'	6:A:578:G:O4'	2.19	0.42
6:A:644:U:H2'	6:A:645:G:H8	1.84	0.42
6:A:983:U:H2'	6:A:984:G:O4'	2.19	0.42
6:A:993:A:H2'	6:A:994:U:C6	2.54	0.42
6:A:1312:U:O2	6:A:1357:A:H2	2.02	0.42
28:a:655:G:C5	28:a:656:U:C5	3.07	0.42
28:a:2676:U:H2'	28:a:2677:G:O4'	2.18	0.42
32:e:20:ARG:HE	32:e:20:ARG:HB3	1.55	0.42
38:k:91:ILE:O	38:k:96:THR:HG21	2.19	0.42
40:m:35:LYS:HD3	40:m:110:MET:HE3	2.00	0.42
40:m:112:TYR:CZ	53:z:54:PHE:HZ	2.37	0.42
9:D:149:GLU:HA	9:D:152:LYS:HD2	2.02	0.42
16:K:116:PRO:HG2	26:U:35:ARG:NE	2.34	0.42
28:a:65:C:H2'	28:a:66:C:H6	1.83	0.42
28:a:1159:A:H2'	28:a:1160:U:C6	2.54	0.42
28:a:1402:A:H2'	28:a:1403:U:O4'	2.20	0.42
28:a:1404:G:H2'	28:a:1405:C:C6	2.54	0.42
28:a:1405:C:H2'	28:a:1406:G:O4'	2.18	0.42
28:a:1422:A:H2'	28:a:1423:G:O4'	2.19	0.42
28:a:2054:C:H2'	28:a:2055:C:C6	2.54	0.42
28:a:2356:G:H2'	28:a:2357:C:H6	1.84	0.42
42:o:16:LEU:HA	42:o:16:LEU:HD12	1.84	0.42
2:1:31:LEU:HD23	2:1:31:LEU:HA	1.82	0.42
6:A:372:G:H4'	21:P:23:ARG:HD2	2.01	0.42
6:A:759:U:H2'	6:A:760:A:H8	1.83	0.42
6:A:920:A:H2'	6:A:921:C:C6	2.55	0.42
6:A:1145:U:H2'	6:A:1146:U:O4'	2.18	0.42
8:C:10:ILE:HG23	8:C:11:ARG:HG3	2.00	0.42
8:C:23:TYR:CD1	8:C:23:TYR:C	2.97	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:150:U:H2'	28:a:151:U:H6	1.84	0.42
28:a:584:U:H2'	28:a:585:U:C6	2.55	0.42
28:a:1728:A:H2'	28:a:1729:G:O4'	2.20	0.42
28:a:2634:U:H3'	28:a:2635:C:C5'	2.49	0.42
41:n:11:ARG:HD2	41:n:95:GLY:O	2.18	0.42
6:A:207:G:H21	6:A:207:G:P	2.43	0.42
6:A:407:A:C6	6:A:425:U:C4	3.07	0.42
6:A:457:A:C4	6:A:458:G:C8	3.07	0.42
6:A:533:C:O2	6:A:534:A:C8	2.73	0.42
6:A:861:A:H2'	6:A:862:A:C8	2.54	0.42
14:I:73:GLN:O	14:I:77:ILE:HG12	2.19	0.42
15:J:35:GLN:HE22	15:J:77:VAL:HB	1.85	0.42
20:O:12:ILE:O	20:O:16:ALA:HB2	2.20	0.42
21:P:88:ARG:HD2	21:P:88:ARG:HA	1.89	0.42
27:X:95:GLU:OE2	27:X:99:GLU:HG2	2.18	0.42
28:a:29:U:H2'	28:a:30:G:C8	2.55	0.42
28:a:885:U:O2'	28:a:886:U:H6	2.03	0.42
28:a:1595:C:C2	28:a:1596:C:C5	3.08	0.42
28:a:2281:G:H2'	28:a:2282:C:H6	1.83	0.42
31:d:134:ASP:HB3	31:d:136:THR:O	2.19	0.42
31:d:149:THR:HA	31:d:162:LYS:HE3	2.01	0.42
33:f:137:VAL:HG13	33:f:140:GLU:CB	2.47	0.42
37:j:35:VAL:HG11	37:j:103:THR:CG2	2.50	0.42
45:r:59:GLU:HG2	45:r:66:VAL:HG22	2.01	0.42
6:A:5:A:H5"	6:A:6:C:O4'	2.20	0.42
6:A:33:G:C5	6:A:302:A:H1'	2.54	0.42
6:A:120:U:H2'	6:A:121:U:C6	2.55	0.42
6:A:201:A:H61	6:A:209:A:N6	2.16	0.42
6:A:1188:A:H2'	6:A:1189:C:C6	2.55	0.42
6:A:1292:U:H2'	6:A:1293:C:C6	2.55	0.42
12:G:47:LEU:O	12:G:50:VAL:HG22	2.20	0.42
17:L:79:VAL:HG12	17:L:102:LEU:HD13	2.01	0.42
18:M:70:ARG:O	18:M:73:ILE:HG13	2.20	0.42
21:P:21:VAL:HG13	21:P:23:ARG:HG2	2.01	0.42
28:a:184:G:H2'	28:a:185:A:H8	1.84	0.42
28:a:571:U:H2'	28:a:572:C:H6	1.84	0.42
28:a:587:A:H2'	28:a:588:G:H8	1.85	0.42
28:a:601:C:H2'	28:a:602:C:H6	1.84	0.42
28:a:854:A:O2'	28:a:855:G:H5'	2.20	0.42
28:a:2019:6MZ:C2	28:a:2488:C:H5"	2.49	0.42
28:a:2176:G:H2'	28:a:2177:U:H6	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:2451:C:H2'	28:a:2452:C:C6	2.55	0.42
28:a:2551:U:H4'	37:j:25:LEU:HD22	2.00	0.42
28:a:2687:U:H2'	28:a:2688:G:H8	1.83	0.42
33:f:135:GLN:H	33:f:135:GLN:HG2	1.61	0.42
6:A:35:A:H2'	6:A:36:C:H6	1.84	0.42
6:A:559:U:H1'	17:L:12:ARG:HD2	2.01	0.42
6:A:675:U:H2'	6:A:676:C:C6	2.55	0.42
6:A:979:U:H4'	6:A:980:A:O4'	2.19	0.42
6:A:984:G:H2'	6:A:985:G:H8	1.84	0.42
6:A:1319:C:H5"	18:M:99:GLY:HA3	2.01	0.42
15:J:52:LEU:HD23	15:J:62:ARG:HG3	2.01	0.42
18:M:100:GLN:N	18:M:100:GLN:OE1	2.52	0.42
28:a:2:G:H2'	28:a:3:U:C6	2.54	0.42
28:a:677:U:H6	28:a:779:A:N1	2.18	0.42
28:a:1709:U:H2'	28:a:1710:G:O4'	2.19	0.42
28:a:2116:G:C2	28:a:2151:G:H1'	2.55	0.42
28:a:2164:C:O2'	28:a:2165:A:H5'	2.20	0.42
30:c:115:LYS:HE3	30:c:115:LYS:HB3	1.69	0.42
33:f:139:PRO:HD2	33:f:140:GLU:HG3	2.01	0.42
37:j:122:LEU:HD13	42:o:73:VAL:HG11	2.00	0.42
39:l:47:ILE:HD12	39:l:70:PRO:HD3	2.01	0.42
41:n:52:ALA:HB3	41:n:77:ILE:HB	2.02	0.42
6:A:251:G:H2'	6:A:252:U:H6	1.82	0.42
6:A:1069:G:H2'	6:A:1070:U:H6	1.83	0.42
6:A:1144:C:H2'	6:A:1145:U:H6	1.83	0.42
28:a:411:U:H2'	28:a:412:C:H6	1.84	0.42
28:a:452:A:H2'	28:a:453:C:O4'	2.19	0.42
28:a:738:U:O2	28:a:2003:A:H1'	2.19	0.42
28:a:1166:G:N3	28:a:1167:U:C5	2.88	0.42
28:a:1698:G:H2'	28:a:1699:C:H6	1.85	0.42
30:c:205:LEU:HB3	30:c:210:ALA:HB3	2.01	0.42
31:d:52:THR:HB	31:d:80:VAL:HG22	2.00	0.42
35:h:56:LYS:HA	35:h:56:LYS:HD3	1.77	0.42
6:A:1116:C:H2'	6:A:1117:C:C6	2.55	0.42
7:B:190:ASP:HB2	7:B:206:ASP:OD2	2.20	0.42
9:D:174:GLU:OE2	9:D:185:LYS:HB3	2.20	0.42
15:J:8:ILE:HB	15:J:74:ILE:HB	2.02	0.42
18:M:101:ARG:HG3	18:M:104:THR:O	2.20	0.42
23:R:34:THR:HG22	23:R:40:VAL:HG22	2.02	0.42
28:a:839:U:C2	28:a:840:A:C8	3.07	0.42
28:a:1722:U:H2'	28:a:1723:U:C6	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:2093:U:C2	28:a:2094:U:C5	3.08	0.42
29:b:49:G:OP2	41:n:66:ASN:ND2	2.53	0.42
48:u:25:ARG:NE	48:u:91:MET:HG2	2.35	0.42
6:A:561:C:C4	22:Q:34:LEU:HD11	2.55	0.42
7:B:21:GLN:HB2	7:B:24:PHE:HD2	1.85	0.42
12:G:135:ILE:HD13	12:G:135:ILE:HA	1.87	0.42
13:H:3:MET:HE2	13:H:3:MET:HB2	1.85	0.42
16:K:43:TRP:HZ3	16:K:45:THR:HG23	1.85	0.42
28:a:18:C:H2'	28:a:19:A:C8	2.55	0.42
28:a:485:G:H2'	28:a:486:G:O4'	2.20	0.42
28:a:679:U:H2'	28:a:680:A:H8	1.85	0.42
28:a:1136:C:C2	28:a:1137:U:C5	3.08	0.42
28:a:1184:C:H2'	28:a:1185:G:H8	1.85	0.42
28:a:1234:A:H2'	28:a:1235:A:O4'	2.20	0.42
46:s:81:LYS:HB2	46:s:81:LYS:HE2	1.85	0.42
49:v:53:MET:HG3	49:v:59:LEU:HD23	2.02	0.42
6:A:491:G:H2'	6:A:492:A:H5"	2.02	0.42
6:A:636:G:C2	6:A:637:A:N7	2.88	0.42
6:A:1513:2MG:H2'	6:A:1515:MA6:OP2	2.20	0.42
15:J:25:ILE:HD13	15:J:90:LEU:HD23	2.02	0.42
16:K:29:THR:O	16:K:30:ILE:HD13	2.19	0.42
16:K:81:LEU:HD12	16:K:81:LEU:HA	1.82	0.42
20:O:56:LEU:HD21	28:a:706:A:C2	2.55	0.42
28:a:2083:A:H2'	28:a:2084:A:H8	1.84	0.42
28:a:2330:G:H2'	28:a:2331:C:C6	2.55	0.42
28:a:2374:C:H2'	28:a:2375:U:C6	2.55	0.42
28:a:2887:U:O2	36:i:134:ALA:HB1	2.20	0.42
33:f:114:PHE:HE2	33:f:117:PHE:CE1	2.38	0.42
3:2:54:VAL:O	3:2:58:ARG:HG3	2.20	0.41
6:A:210:C:H2'	6:A:211:C:H6	1.84	0.41
6:A:989:U:H5	6:A:1041:A:C2	2.34	0.41
6:A:1238:G:H2'	6:A:1239:G:C8	2.49	0.41
6:A:1520:G:H2'	6:A:1521:C:C6	2.55	0.41
8:C:64:ALA:O	8:C:99:ALA:HA	2.20	0.41
9:D:134:ILE:HG22	9:D:136:SER:H	1.85	0.41
12:G:107:ALA:HB1	12:G:133:ALA:HB3	2.01	0.41
15:J:52:LEU:HA	15:J:62:ARG:HG2	2.02	0.41
24:S:39:MET:HE2	24:S:68:GLY:HA2	2.02	0.41
26:U:48:LYS:HA	26:U:48:LYS:HD3	1.90	0.41
28:a:208:C:H2'	28:a:209:C:C6	2.55	0.41
28:a:232:G:OP2	28:a:232:G:H8	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:601:C:H2'	28:a:602:C:C6	2.55	0.41
28:a:2251:U:H2'	28:a:2252:C:H6	1.84	0.41
28:a:2838:G:H1'	28:a:2855:G:H21	1.85	0.41
39:l:62:GLY:HA3	39:l:109:VAL:HG23	2.02	0.41
6:A:519:C:H41	17:L:50:ARG:NH2	2.17	0.41
6:A:840:U:H3'	6:A:841:G:C8	2.55	0.41
6:A:955:A:C6	24:S:55:ARG:HG2	2.55	0.41
8:C:92:THR:HG22	8:C:99:ALA:N	2.35	0.41
9:D:26:LYS:HE3	9:D:26:LYS:HB3	1.88	0.41
16:K:91:GLY:HA2	16:K:94:SER:HB3	2.02	0.41
21:P:32:ARG:HD2	21:P:32:ARG:HA	1.79	0.41
28:a:388:G:C6	28:a:389:U:C4	3.07	0.41
28:a:1066:C:H3'	28:a:1067:A:H8	1.85	0.41
28:a:1905:A:H2'	28:a:1906:PSU:O4'	2.19	0.41
6:A:862:A:H2'	6:A:863:C:C6	2.56	0.41
6:A:907:C:H2'	6:A:908:U:H6	1.85	0.41
6:A:1310:U:H2'	6:A:1311:C:H6	1.84	0.41
12:G:17:LYS:HB3	12:G:18:PHE:CD2	2.55	0.41
17:L:56:ARG:HG3	17:L:62:GLU:HG3	2.03	0.41
28:a:854:A:H2'	28:a:855:G:C8	2.55	0.41
28:a:1833:U:O3'	30:c:256:LYS:HE3	2.21	0.41
28:a:2561:A:N7	31:d:153:MEQ:HB3	2.35	0.41
30:c:208:ALA:O	30:c:212:ARG:HG2	2.21	0.41
33:f:57:MET:HE1	33:f:87:CYS:C	2.45	0.41
33:f:145:LYS:HE2	33:f:145:LYS:HB3	1.82	0.41
37:j:100:GLY:O	37:j:119:PRO:HD2	2.21	0.41
44:q:14:VAL:HB	44:q:98:ILE:HG13	2.02	0.41
3:2:58:ARG:HG2	3:2:58:ARG:NH1	2.34	0.41
6:A:922:G:H1'	6:A:1499:A:C4	2.56	0.41
6:A:1269:U:H2'	6:A:1270:G:C8	2.55	0.41
6:A:1399:4OC:HM43	6:A:1400:C:N3	2.36	0.41
8:C:85:GLU:OE1	8:C:85:GLU:HA	2.20	0.41
10:E:106:ALA:HB1	10:E:110:MET:HB2	2.03	0.41
15:J:34:ALA:HB2	15:J:83:THR:HG21	2.01	0.41
15:J:47:GLU:HB2	15:J:67:ILE:HG23	2.02	0.41
19:N:11:LEU:HD12	19:N:11:LEU:HA	1.91	0.41
21:P:30:LYS:HG3	21:P:31:LYS:HG2	2.02	0.41
28:a:285:U:H2'	28:a:286:U:H6	1.85	0.41
28:a:365:U:H2'	28:a:366:A:H8	1.85	0.41
28:a:805:C:H2'	28:a:806:C:H6	1.85	0.41
28:a:862:U:OP1	39:l:5:LYS:HG2	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:1075:A:H5'	28:a:1076:A:OP2	2.20	0.41
28:a:1424:G:H2'	28:a:1425:C:O4'	2.20	0.41
28:a:1788:G:OP1	30:c:258:ARG:HD2	2.20	0.41
28:a:1868:C:H2'	28:a:1869:U:O4'	2.21	0.41
28:a:1938:G:H2'	28:a:1939:G:C8	2.56	0.41
30:c:94:LEU:O	30:c:101:ARG:HA	2.20	0.41
41:n:76:LEU:HD22	41:n:80:ARG:NE	2.33	0.41
42:o:40:ARG:HE	42:o:40:ARG:HB3	1.68	0.41
43:p:43:GLY:HA3	44:q:75:ILE:HD12	2.03	0.41
2:1:1:MET:H3	28:a:1610:G:H21	1.67	0.41
2:1:3:ARG:HA	2:1:3:ARG:HD3	1.78	0.41
6:A:550:A:H2'	6:A:551:A:C8	2.55	0.41
6:A:947:U:OP2	18:M:101:ARG:HD2	2.20	0.41
6:A:1112:U:H2'	6:A:1113:U:C6	2.55	0.41
6:A:1188:A:OP2	6:A:1188:A:H8	2.03	0.41
6:A:1270:G:H2'	6:A:1271:A:O4'	2.21	0.41
6:A:1497:A:H5"	6:A:1505:G:H5"	2.03	0.41
7:B:136:ALA:O	7:B:140:THR:HG23	2.20	0.41
10:E:148:SER:OG	10:E:151:LYS:HG3	2.21	0.41
12:G:121:ALA:O	12:G:125:LEU:HG	2.21	0.41
17:L:39:THR:HA	17:L:50:ARG:O	2.20	0.41
19:N:87:THR:CG2	19:N:92:ASP:HB2	2.50	0.41
20:O:7:ASP:O	20:O:10:GLU:HG2	2.20	0.41
28:a:383:A:H1'	28:a:403:G:O4'	2.20	0.41
28:a:831:C:H2'	28:a:832:G:H8	1.86	0.41
28:a:1464:U:H2'	28:a:1465:A:H8	1.85	0.41
28:a:2027:G:H2'	28:a:2028:U:O4'	2.21	0.41
28:a:2086:U:H2'	28:a:2087:U:H6	1.86	0.41
28:a:2788:A:H2'	28:a:2790:G:OP2	2.21	0.41
33:f:47:LYS:HE2	33:f:47:LYS:HB2	1.84	0.41
33:f:73:SER:HA	33:f:80:ARG:HA	2.02	0.41
44:q:85:LYS:HE2	44:q:85:LYS:HB2	1.74	0.41
45:r:73:THR:HB	45:r:106:LYS:HB2	2.03	0.41
49:v:25:VAL:HG11	49:v:31:VAL:CG1	2.50	0.41
1:0:13:THR:HG21	1:0:39:ILE:HG23	2.03	0.41
5:4:56:GLY:O	5:4:60:LYS:HD2	2.20	0.41
7:B:99:LEU:H	7:B:102:MET:HE3	1.84	0.41
24:S:29:LYS:N	24:S:29:LYS:HD2	2.35	0.41
28:a:136:C:C2	28:a:137:U:C6	3.08	0.41
28:a:496:U:O2	28:a:496:U:H2'	2.21	0.41
28:a:1158:U:H2'	28:a:1159:A:C8	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:a:1921:A:H2'	28:a:1922:G:O4'	2.21	0.41
28:a:2063:U:H2'	28:a:2064:U:H6	1.86	0.41
31:d:5:LEU:HD11	31:d:101:VAL:HA	2.02	0.41
32:e:136:LYS:HB3	32:e:136:LYS:HE3	1.88	0.41
32:e:144:ARG:HB2	32:e:183:ASP:OD1	2.21	0.41
37:j:68:GLY:HA2	37:j:77:ILE:O	2.20	0.41
6:A:590:U:H2'	6:A:591:U:H6	1.84	0.41
6:A:754:U:H2'	6:A:755:G:O4'	2.20	0.41
6:A:1287:G:H2'	6:A:1288:C:H6	1.86	0.41
6:A:1423:G:H1	6:A:1471:U:H3	1.67	0.41
24:S:11:VAL:HG21	24:S:41:LEU:HD11	2.01	0.41
28:a:222:A:C2	28:a:233:A:H5"	2.55	0.41
28:a:851:U:H2'	28:a:852:A:H8	1.86	0.41
28:a:1046:G:H4'	28:a:1076:A:H8	1.85	0.41
28:a:1156:U:H2'	28:a:1157:G:C8	2.54	0.41
28:a:1833:U:H5"	30:c:256:LYS:HG3	2.02	0.41
28:a:2801:A:H2'	28:a:2802:G:O4'	2.21	0.41
34:g:17:VAL:HG12	34:g:26:VAL:HG13	2.01	0.41
34:g:30:LYS:HD2	34:g:82:GLY:N	2.36	0.41
37:j:12:ASP:OD2	37:j:95:ALA:HB2	2.21	0.41
42:o:30:VAL:HG22	42:o:88:GLU:HB3	2.02	0.41
47:t:85:VAL:HG23	47:t:88:GLY:H	1.84	0.41
6:A:166:U:H2'	6:A:167:A:C8	2.55	0.41
6:A:590:U:C2	6:A:591:U:C5	3.09	0.41
6:A:1187:G:H5'	8:C:176:HIS:NE2	2.35	0.41
6:A:1449:A:H4'	6:A:1450:A:OP1	2.20	0.41
9:D:170:PRO:HB3	9:D:172:TRP:CZ3	2.56	0.41
10:E:95:MET:HE3	10:E:95:MET:HB2	1.85	0.41
24:S:51:VAL:HG11	24:S:71:LEU:HB3	2.03	0.41
28:a:279:U:H2'	28:a:280:G:H8	1.86	0.41
28:a:662:C:H2'	28:a:663:C:H6	1.85	0.41
28:a:899:C:O2'	28:a:900:A:H5'	2.21	0.41
28:a:2378:G:H5"	28:a:2379:U:O4'	2.21	0.41
28:a:2469:C:H2'	28:a:2470:G:O4'	2.19	0.41
30:c:37:LYS:HB3	30:c:37:LYS:HE3	1.84	0.41
47:t:72:ASN:HD22	47:t:75:THR:CG2	2.24	0.41
5:4:28:LEU:HD13	33:f:139:PRO:HA	2.02	0.41
6:A:157:A:H2'	6:A:158:A:C8	2.56	0.41
6:A:268:C:H2'	6:A:269:A:C8	2.51	0.41
6:A:502:G:H5'	6:A:531:U:H2'	2.02	0.41
6:A:576:G:H2'	6:A:577:C:C6	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:A:615:C:H1'	21:P:32:ARG:HH12	1.86	0.41
6:A:639:A:C5	13:H:108:SER:HA	2.56	0.41
6:A:683:U:H1'	16:K:43:TRP:CZ2	2.56	0.41
6:A:843:G:H2'	6:A:844:G:H8	1.86	0.41
6:A:1119:U:C4	6:A:1120:A:N7	2.88	0.41
6:A:1144:C:O2'	14:I:16:ARG:HD2	2.21	0.41
6:A:1368:G:H2'	6:A:1369:U:C6	2.56	0.41
6:A:1398:G:H2'	6:A:1399:4OC:O4'	2.21	0.41
9:D:170:PRO:HB3	9:D:172:TRP:CH2	2.55	0.41
10:E:88:HIS:CD2	10:E:137:ASN:HD22	2.39	0.41
11:F:31:GLU:HG3	11:F:32:ALA:N	2.36	0.41
15:J:90:LEU:HD12	15:J:90:LEU:HA	1.81	0.41
18:M:90:ARG:HA	18:M:90:ARG:HD2	1.85	0.41
28:a:39:G:H2'	28:a:40:U:C6	2.56	0.41
28:a:519:C:N3	28:a:2768:U:H2'	2.36	0.41
28:a:952:G:H2'	28:a:953:U:C6	2.52	0.41
28:a:1078:A:H5'	28:a:1079:A:OP1	2.21	0.41
28:a:1166:G:C4	28:a:1167:U:C5	3.09	0.41
28:a:1168:A:H2'	28:a:1169:U:H6	1.86	0.41
28:a:1605:A:C6	45:r:87:PRO:HB3	2.56	0.41
28:a:1616:C:H2'	28:a:1617:A:O4'	2.20	0.41
28:a:1698:G:H2'	28:a:1699:C:C6	2.56	0.41
28:a:1835:G:H5'	28:a:1836:A:OP2	2.21	0.41
28:a:2217:G:H2'	28:a:2218:U:C6	2.56	0.41
28:a:2455:C:C2	28:a:2456:C:C5	3.09	0.41
28:a:2861:G:O2'	28:a:2862:A:H5'	2.20	0.41
29:b:20:G:H2'	29:b:21:U:C6	2.56	0.41
29:b:25:C:H2'	29:b:26:C:C6	2.56	0.41
30:c:210:ALA:HA	30:c:213:TRP:CE3	2.55	0.41
32:e:1:MET:HB3	32:e:13:LEU:O	2.21	0.41
33:f:178:LYS:HE2	33:f:178:LYS:HB3	1.89	0.41
34:g:84:GLU:HA	34:g:133:LEU:O	2.21	0.41
40:m:8:VAL:HG22	40:m:43:GLU:HG3	2.03	0.41
44:q:58:LYS:NZ	44:q:58:LYS:HB2	2.36	0.41
3:2:4:LEU:HA	3:2:4:LEU:HD23	1.81	0.41
3:2:30:HIS:HE1	28:a:2411:C:C5	2.39	0.41
5:4:48:LYS:NZ	5:4:51:ASN:H	2.18	0.41
6:A:150:A:H2'	6:A:151:U:H6	1.86	0.41
6:A:231:U:C2	6:A:232:A:N7	2.89	0.41
11:F:7:VAL:HG22	11:F:61:LEU:HD13	2.03	0.41
11:F:17:GLN:O	11:F:21:MET:HG2	2.22	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:R:13:PHE:CD2	23:R:51:TYR:HB3	2.52	0.41
23:R:34:THR:HG23	23:R:38:LYS:O	2.21	0.41
27:X:3:ILE:HG12	27:X:39:PHE:HB2	2.03	0.41
28:a:80:G:H5'	28:a:341:A:H1'	2.02	0.41
28:a:151:U:H2'	28:a:152:G:H8	1.86	0.41
28:a:292:G:H2'	28:a:293:G:O4'	2.20	0.41
28:a:296:C:C2	28:a:297:G:N7	2.89	0.41
28:a:475:A:C4	47:t:56:ILE:HD11	2.55	0.41
28:a:684:A:H2'	28:a:685:U:C6	2.55	0.41
28:a:690:A:H2'	28:a:691:G:O4'	2.21	0.41
28:a:707:A:H2'	28:a:708:C:O4'	2.21	0.41
28:a:1029:A:H5'	28:a:1030:A:OP2	2.20	0.41
28:a:1674:U:H2'	28:a:1675:A:H8	1.86	0.41
28:a:2089:G:H2'	28:a:2090:A:C8	2.56	0.41
28:a:2177:U:H3'	28:a:2178:U:H6	1.86	0.41
28:a:2297:G:H2'	28:a:2297:G:N3	2.36	0.41
28:a:2458:A:H2'	28:a:2459:G:O4'	2.21	0.41
30:c:63:ARG:HD3	30:c:84:ASP:OD1	2.20	0.41
33:f:170:MET:HE3	33:f:170:MET:HB3	1.89	0.41
34:g:15:VAL:HA	34:g:27:LYS:O	2.21	0.41
38:k:106:ASP:OD1	38:k:106:ASP:C	2.64	0.41
39:l:75:THR:HG22	39:l:90:VAL:HG22	2.02	0.41
49:v:75:PHE:HB2	49:v:77:ARG:HG3	2.02	0.41
5:4:45:TYR:CZ	33:f:176:PRO:HB3	2.56	0.40
6:A:42:C:H2'	6:A:43:G:C8	2.56	0.40
6:A:409:G:H2'	6:A:424:G:N2	2.36	0.40
6:A:1001:A:C5'	6:A:1023:G:H22	2.31	0.40
6:A:1421:U:H2'	6:A:1422:U:H6	1.86	0.40
12:G:27:MET:CE	12:G:40:GLU:HG2	2.49	0.40
17:L:8:ILE:HD11	22:Q:37:LYS:HB3	2.03	0.40
28:a:1202:A:H61	28:a:1223:G:H1'	1.86	0.40
28:a:1303:C:H2'	28:a:1304:A:C8	2.55	0.40
28:a:1314:U:H2'	28:a:1315:A:C8	2.52	0.40
28:a:1725:C:C2	28:a:1726:U:C5	3.09	0.40
28:a:1792:A:H2	28:a:1812:G:O4'	2.04	0.40
28:a:2095:A:H2'	28:a:2096:C:O4'	2.21	0.40
28:a:2157:G:H2'	28:a:2159:A:OP2	2.21	0.40
28:a:2318:A:H2'	28:a:2319:G:H8	1.86	0.40
28:a:2675:G:H2'	28:a:2676:U:C6	2.55	0.40
28:a:2838:G:H1'	28:a:2855:G:N2	2.36	0.40
30:c:144:VAL:HG21	30:c:162:VAL:HG21	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:e:156:LEU:HG	32:e:168:VAL:HG21	2.03	0.40
33:f:67:VAL:HG11	33:f:84:PRO:HB3	2.02	0.40
39:l:32:ILE:HG21	39:l:114:ALA:HB1	2.02	0.40
39:l:137:MET:HE3	48:u:61:PHE:HD1	1.86	0.40
42:o:91:ARG:HG2	42:o:115:GLU:OE1	2.21	0.40
6:A:29:G:H2'	6:A:30:A:C8	2.56	0.40
6:A:648:C:O2'	6:A:649:U:H6	2.04	0.40
6:A:758:G:H2'	6:A:759:U:O4'	2.21	0.40
9:D:3:ARG:HD2	9:D:117:ARG:HD3	2.03	0.40
12:G:44:TYR:O	12:G:48:GLU:HG2	2.22	0.40
12:G:88:PRO:HG3	12:G:149:LYS:HA	2.04	0.40
15:J:7:ARG:HD3	15:J:9:ARG:NH1	2.30	0.40
18:M:69:LEU:HD12	18:M:69:LEU:O	2.20	0.40
28:a:346:C:H2'	28:a:347:A:H8	1.87	0.40
28:a:367:G:C4	28:a:368:G:C8	3.10	0.40
28:a:658:U:H2'	28:a:659:A:O4'	2.20	0.40
28:a:1184:C:C2	28:a:1185:G:C8	3.09	0.40
28:a:1265:A:H2'	28:a:1266:C:C6	2.56	0.40
28:a:1855:A:H2'	28:a:1856:G:O4'	2.22	0.40
28:a:2143:G:C5	28:a:2144:U:C5	3.09	0.40
28:a:2167:C:H2'	28:a:2168:C:C5	2.57	0.40
29:b:22:G:N7	29:b:54:G:H2'	2.35	0.40
29:b:112:A:H2'	29:b:113:G:H8	1.85	0.40
31:d:31:ASP:HB3	31:d:53:THR:OG1	2.21	0.40
31:d:33:ASN:HB3	31:d:51:VAL:HB	2.03	0.40
41:n:74:GLY:HA3	41:n:108:ALA:HB3	2.03	0.40
43:p:109:LEU:HD23	43:p:109:LEU:HA	1.77	0.40
43:p:109:LEU:CD2	44:q:49:ILE:HD13	2.51	0.40
6:A:340:A:H5"	6:A:341:C:C5	2.55	0.40
6:A:1257:U:O2'	6:A:1280:U:H4'	2.21	0.40
6:A:1316:A:C8	6:A:1320:G:C5	3.09	0.40
9:D:172:TRP:CD1	9:D:173:ILE:HG13	2.56	0.40
11:F:4:TYR:CZ	11:F:71:LEU:HD22	2.57	0.40
12:G:11:GLU:OE2	12:G:11:GLU:C	2.65	0.40
24:S:37:ARG:H	24:S:37:ARG:HG2	1.75	0.40
28:a:1151:G:H2'	28:a:1152:C:H6	1.86	0.40
28:a:1195:C:C2	28:a:1196:C:C5	3.09	0.40
28:a:1389:U:H2'	28:a:1390:U:O4'	2.21	0.40
28:a:2128:G:C2	28:a:2129:G:C4	3.10	0.40
28:a:2393:U:H2'	28:a:2394:G:O4'	2.21	0.40
33:f:83:TRP:O	33:f:85:ILE:HG23	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:h:31:ILE:HG12	35:h:32:PRO:HD3	2.02	0.40
39:l:35:LYS:HE2	39:l:100:GLY:HA2	2.03	0.40
40:m:35:LYS:HB2	40:m:112:TYR:CE1	2.56	0.40
42:o:41:GLU:OE2	42:o:41:GLU:C	2.65	0.40
47:t:3:LYS:HB2	47:t:83:TYR:OH	2.21	0.40
6:A:86:C:C5	6:A:87:U:C2	3.10	0.40
6:A:510:C:H2'	6:A:511:U:H6	1.85	0.40
6:A:732:C:C2	6:A:733:C:C5	3.10	0.40
8:C:111:LEU:HD22	8:C:146:ALA:HB2	2.03	0.40
18:M:77:ILE:O	18:M:81:MET:HG3	2.20	0.40
28:a:297:G:H2'	28:a:298:C:C6	2.55	0.40
28:a:727:C:H2'	28:a:728:C:C6	2.56	0.40
28:a:1112:G:C2	28:a:1113:C:C6	3.09	0.40
28:a:1227:G:H2'	28:a:1228:U:O4'	2.21	0.40
28:a:1746:A:O2'	28:a:1747:A:H4'	2.22	0.40
28:a:2150:C:H2'	28:a:2151:G:O4'	2.22	0.40
29:b:53:U:H1'	33:f:26:MET:CE	2.50	0.40
30:c:167:ARG:HG2	30:c:172:ALA:HB2	2.03	0.40
32:e:147:ILE:HB	32:e:168:VAL:HG22	2.02	0.40
47:t:70:ILE:HG21	47:t:81:VAL:HG23	2.02	0.40
6:A:81:G:H3'	6:A:82:C:C6	2.56	0.40
6:A:1327:U:H2'	6:A:1328:G:O4'	2.22	0.40
6:A:1344:G:N7	14:I:11:LYS:HD2	2.37	0.40
6:A:1383:G:C2	6:A:1384:G:C8	3.09	0.40
11:F:22:VAL:CG1	11:F:39:LEU:HD21	2.52	0.40
17:L:81:LEU:O	17:L:98:VAL:HG13	2.21	0.40
28:a:116:U:H2'	28:a:117:G:O4'	2.20	0.40
28:a:135:A:H2'	28:a:136:C:H6	1.86	0.40
28:a:560:U:H5"	28:a:812:A:C2	2.57	0.40
28:a:936:G:H2'	28:a:937:A:H8	1.86	0.40
28:a:1507:U:H2'	28:a:1508:C:C6	2.56	0.40
28:a:1591:C:C2	28:a:1592:G:C8	3.09	0.40
28:a:2177:U:H3'	28:a:2178:U:C6	2.56	0.40
28:a:2541:OMU:OP2	28:a:2541:OMU:H6	2.22	0.40
28:a:2715:U:H4'	37:j:1:MET:HE1	2.03	0.40
32:e:51:VAL:HG21	32:e:81:GLY:HA2	2.03	0.40
33:f:54:VAL:HG23	33:f:65:PRO:HG2	2.04	0.40
35:h:10:LYS:HB3	35:h:10:LYS:HE2	1.84	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%)	60 (98%)	1 (2%)	0	100 100
4	3	36/38 (95%)	34 (94%)	2 (6%)	0	100 100
5	4	69/74 (93%)	58 (84%)	10 (14%)	1 (1%)	9 30
7	B	227/250 (91%)	211 (93%)	15 (7%)	1 (0%)	30 59
8	C	213/250 (85%)	207 (97%)	6 (3%)	0	100 100
9	D	205/208 (99%)	199 (97%)	6 (3%)	0	100 100
10	E	153/165 (93%)	150 (98%)	3 (2%)	0	100 100
11	F	104/127 (82%)	100 (96%)	4 (4%)	0	100 100
12	G	151/156 (97%)	143 (95%)	8 (5%)	0	100 100
13	H	128/131 (98%)	124 (97%)	4 (3%)	0	100 100
14	I	125/128 (98%)	118 (94%)	7 (6%)	0	100 100
15	J	98/103 (95%)	94 (96%)	4 (4%)	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%)	109 (96%)	5 (4%)	0	100 100
19	N	98/101 (97%)	93 (95%)	5 (5%)	0	100 100
20	O	86/89 (97%)	84 (98%)	2 (2%)	0	100 100
21	P	80/83 (96%)	79 (99%)	1 (1%)	0	100 100
22	Q	77/85 (91%)	75 (97%)	2 (3%)	0	100 100
23	R	64/75 (85%)	62 (97%)	2 (3%)	0	100 100
24	S	82/91 (90%)	82 (100%)	0	0	100 100
25	T	84/88 (96%)	84 (100%)	0	0	100 100
26	U	68/71 (96%)	66 (97%)	1 (2%)	1 (2%)	8 28

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
27	X	102/116 (88%)	100 (98%)	2 (2%)	0	100	100
30	c	270/274 (98%)	260 (96%)	10 (4%)	0	100	100
31	d	208/212 (98%)	202 (97%)	5 (2%)	1 (0%)	24	54
32	e	197/200 (98%)	194 (98%)	3 (2%)	0	100	100
33	f	175/178 (98%)	158 (90%)	15 (9%)	2 (1%)	11	36
34	g	173/177 (98%)	164 (95%)	8 (5%)	1 (1%)	21	51
35	h	58/148 (39%)	51 (88%)	7 (12%)	0	100	100
36	i	140/142 (99%)	138 (99%)	2 (1%)	0	100	100
37	j	120/122 (98%)	115 (96%)	5 (4%)	0	100	100
38	k	144/146 (99%)	139 (96%)	5 (4%)	0	100	100
39	l	133/137 (97%)	132 (99%)	1 (1%)	0	100	100
40	m	117/125 (94%)	115 (98%)	2 (2%)	0	100	100
41	n	113/116 (97%)	109 (96%)	4 (4%)	0	100	100
42	o	115/122 (94%)	113 (98%)	2 (2%)	0	100	100
43	p	115/119 (97%)	115 (100%)	0	0	100	100
44	q	101/103 (98%)	94 (93%)	7 (7%)	0	100	100
45	r	107/109 (98%)	105 (98%)	2 (2%)	0	100	100
46	s	90/106 (85%)	88 (98%)	2 (2%)	0	100	100
47	t	101/105 (96%)	93 (92%)	8 (8%)	0	100	100
48	u	95/98 (97%)	90 (95%)	5 (5%)	0	100	100
49	v	76/85 (89%)	72 (95%)	4 (5%)	0	100	100
50	w	75/78 (96%)	74 (99%)	1 (1%)	0	100	100
51	x	60/65 (92%)	59 (98%)	1 (2%)	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	5639/6044 (93%)	5427 (96%)	205 (4%)	7 (0%)	49	77

All (7) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
5	4	53	ASP
31	d	152	ASN
7	B	128	PHE

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Mol	Chain	Res	Type
33	f	139	PRO
33	f	137	VAL
34	g	86	LYS
26	U	65	VAL

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%)	52 (100%)	0	100	100
4	3	33/33 (100%)	33 (100%)	0	100	100
5	4	60/63 (95%)	58 (97%)	2 (3%)	33	67
7	B	188/200 (94%)	183 (97%)	5 (3%)	39	73
8	C	175/198 (88%)	173 (99%)	2 (1%)	65	88
9	D	170/171 (99%)	168 (99%)	2 (1%)	63	86
10	E	113/120 (94%)	113 (100%)	0	100	100
11	F	95/111 (86%)	89 (94%)	6 (6%)	16	45
12	G	125/128 (98%)	119 (95%)	6 (5%)	23	55
13	H	108/109 (99%)	105 (97%)	3 (3%)	38	72
14	I	99/100 (99%)	98 (99%)	1 (1%)	68	89
15	J	89/91 (98%)	86 (97%)	3 (3%)	32	66
16	K	87/97 (90%)	82 (94%)	5 (6%)	18	49
17	L	103/105 (98%)	95 (92%)	8 (8%)	11	35
18	M	96/98 (98%)	90 (94%)	6 (6%)	16	45
19	N	81/82 (99%)	81 (100%)	0	100	100
20	O	71/72 (99%)	69 (97%)	2 (3%)	38	72
21	P	63/63 (100%)	62 (98%)	1 (2%)	55	83

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
22	Q	71/76 (93%)	65 (92%)	6 (8%)	10 31
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%)	62 (95%)	3 (5%)	24 57
26	U	61/62 (98%)	57 (93%)	4 (7%)	15 43
27	X	92/102 (90%)	91 (99%)	1 (1%)	65 88
30	c	218/220 (99%)	215 (99%)	3 (1%)	59 85
31	d	165/166 (99%)	160 (97%)	5 (3%)	36 70
32	e	155/155 (100%)	152 (98%)	3 (2%)	50 79
33	f	146/147 (99%)	139 (95%)	7 (5%)	23 55
34	g	140/142 (99%)	136 (97%)	4 (3%)	37 71
35	h	45/112 (40%)	44 (98%)	1 (2%)	45 77
36	i	118/118 (100%)	116 (98%)	2 (2%)	53 82
37	j	103/103 (100%)	102 (99%)	1 (1%)	68 89
38	k	108/108 (100%)	107 (99%)	1 (1%)	70 90
39	l	111/111 (100%)	111 (100%)	0	100 100
40	m	96/101 (95%)	96 (100%)	0	100 100
41	n	84/85 (99%)	81 (96%)	3 (4%)	31 65
42	o	99/102 (97%)	97 (98%)	2 (2%)	48 78
43	p	85/86 (99%)	82 (96%)	3 (4%)	32 66
44	q	84/84 (100%)	82 (98%)	2 (2%)	43 75
45	r	88/88 (100%)	87 (99%)	1 (1%)	65 88
46	s	78/87 (90%)	77 (99%)	1 (1%)	61 86
47	t	83/85 (98%)	80 (96%)	3 (4%)	31 65
48	u	79/80 (99%)	75 (95%)	4 (5%)	21 53
49	v	60/64 (94%)	59 (98%)	1 (2%)	53 82
50	w	69/70 (99%)	67 (97%)	2 (3%)	37 71
51	x	54/56 (96%)	51 (94%)	3 (6%)	19 50
52	y	54/54 (100%)	52 (96%)	2 (4%)	30 64
53	z	46/50 (92%)	46 (100%)	0	100 100
All	All	4677/4902 (95%)	4552 (97%)	125 (3%)	40 73

All (125) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
5	4	50	LYS
5	4	68	MET
7	B	6	VAL
7	B	17	HIS
7	B	163	LEU
7	B	173	ILE
7	B	198	VAL
8	C	97	VAL
8	C	182	ILE
9	D	174	GLU
9	D	199	GLU
11	F	6	ILE
11	F	23	GLU
11	F	28	GLN
11	F	31	GLU
11	F	39	LEU
11	F	60	ILE
12	G	7	VAL
12	G	37	SER
12	G	84	THR
12	G	91	VAL
12	G	126	ASP
12	G	139	GLU
13	H	6	THR
13	H	75	MET
13	H	76	VAL
14	I	52	LEU
15	J	23	GLN
15	J	77	VAL
15	J	97	ASP
16	K	96	VAL
16	K	99	LEU
16	K	107	ASN
16	K	109	ILE
16	K	110	THR
17	L	13	THR
17	L	15	LEU
17	L	35	THR
17	L	39	THR
17	L	53	CYS
17	L	55	VAL
17	L	64	SER

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Mol	Chain	Res	Type
17	L	98	VAL
18	M	19	LEU
18	M	44	LYS
18	M	47	GLU
18	M	54	ASP
18	M	97	VAL
18	M	116	ILE
20	O	57	ILE
20	O	89	ARG
21	P	81	GLN
22	Q	31	GLN
22	Q	39	ILE
22	Q	52	ASN
22	Q	61	THR
22	Q	66	ARG
22	Q	78	GLU
23	R	31	GLN
24	S	56	ASN
24	S	61	ILE
24	S	77	THR
24	S	79	THR
25	T	3	ASN
25	T	28	VAL
25	T	86	LEU
26	U	4	VAL
26	U	44	GLU
26	U	46	LYS
26	U	55	ARG
27	X	88	GLU
30	c	53	HIS
30	c	116	VAL
30	c	118	SER
31	d	29	GLU
31	d	47	GLN
31	d	91	GLU
31	d	101	VAL
31	d	184	ASP
32	e	3	LEU
32	e	11	VAL
32	e	169	VAL
33	f	26	MET
33	f	37	ASN

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Mol	Chain	Res	Type
33	f	91	LEU
33	f	101	ASP
33	f	138	PHE
33	f	141	ILE
33	f	155	THR
34	g	10	THR
34	g	121	VAL
34	g	122	THR
34	g	131	ILE
35	h	8	ARG
36	i	78	THR
36	i	120	LYS
37	j	58	MET
38	k	18	HIS
41	n	2	ASN
41	n	87	THR
41	n	89	VAL
42	o	74	GLU
42	o	83	VAL
43	p	16	LYS
43	p	75	SER
43	p	104	VAL
44	q	19	THR
44	q	34	THR
45	r	77	ASP
46	s	72	THR
47	t	26	SER
47	t	74	THR
47	t	85	VAL
48	u	46	LEU
48	u	59	VAL
48	u	69	VAL
48	u	75	ASN
49	v	43	THR
50	w	30	GLU
50	w	43	GLU
51	x	11	VAL
51	x	23	LEU
51	x	57	LEU
52	y	7	THR
52	y	17	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (47)

such sidechains are listed below:

Mol	Chain	Res	Type
4	3	37	GLN
7	B	5	ASN
7	B	38	ASN
7	B	61	GLN
7	B	67	ASN
7	B	111	GLN
7	B	197	ASN
9	D	50	GLN
10	E	85	ASN
11	F	68	GLN
12	G	86	GLN
12	G	142	HIS
13	H	86	GLN
13	H	98	GLN
14	I	35	GLN
15	J	50	ASN
15	J	56	HIS
16	K	21	HIS
16	K	39	ASN
16	K	80	ASN
19	N	82	ASN
20	O	48	HIS
21	P	81	GLN
24	S	57	HIS
24	S	65	HIS
25	T	3	ASN
27	X	57	HIS
30	c	4	GLN
30	c	128	ASN
33	f	135	GLN
34	g	73	ASN
35	h	7	GLN
36	i	47	HIS
36	i	61	GLN
39	l	13	HIS
42	o	32	GLN
42	o	59	ASN
43	p	44	GLN
43	p	71	GLN
43	p	101	HIS
44	q	87	GLN
47	t	21	GLN

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Mol	Chain	Res	Type
47	t	47	ASN
48	u	3	ASN
49	v	46	HIS
49	v	57	HIS
53	z	4	GLN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
28	a	2889/2893 (99%)	525 (18%)	0
29	b	114/115 (99%)	14 (12%)	0
6	A	1527/1537 (99%)	278 (18%)	12 (0%)
All	All	4530/4545 (99%)	817 (18%)	12 (0%)

All (817) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
6	A	7	U
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	64	U
6	A	74	G
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	93	A
6	A	97	A
6	A	105	A

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Mol	Chain	Res	Type
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	165	C
6	A	169	U
6	A	170	A
6	A	177	A
6	A	184	A
6	A	185	C
6	A	186	G
6	A	187	G
6	A	193	A
6	A	200	G
6	A	205	U
6	A	206	C
6	A	207	G
6	A	208	G
6	A	212	U
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	276	C
6	A	285	G
6	A	317	A
6	A	324	C
6	A	325	A
6	A	326	C
6	A	336	U
6	A	340	A
6	A	342	G
6	A	347	G
6	A	348	C
6	A	350	G
6	A	351	C

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Mol	Chain	Res	Type
6	A	359	A
6	A	363	U
6	A	368	C
6	A	369	A
6	A	373	G
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	420	G
6	A	425	U
6	A	440	G
6	A	441	A
6	A	442	G
6	A	448	G
6	A	456	U
6	A	458	G
6	A	459	U
6	A	463	U
6	A	464	A
6	A	467	U
6	A	469	G
6	A	470	A
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	506	A
6	A	508	C
6	A	511	U
6	A	515	C
6	A	518	G
6	A	521	G
6	A	524	G7M
6	A	529	A
6	A	532	A
6	A	544	A
6	A	556	A

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Mol	Chain	Res	Type
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	585	G
6	A	615	C
6	A	630	G
6	A	639	A
6	A	648	C
6	A	649	U
6	A	650	A
6	A	654	U
6	A	662	A
6	A	685	G
6	A	700	G
6	A	717	C
6	A	720	U
6	A	728	G
6	A	731	G
6	A	739	G
6	A	744	A
6	A	745	U
6	A	752	G
6	A	774	A
6	A	778	A
6	A	790	U
6	A	791	A
6	A	809	G
6	A	812	A
6	A	814	C
6	A	816	A
6	A	818	G
6	A	826	G
6	A	829	G
6	A	839	U
6	A	840	U
6	A	841	G
6	A	842	A
6	A	843	G

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Mol	Chain	Res	Type
6	A	846	U
6	A	867	A
6	A	899	G
6	A	906	A
6	A	911	A
6	A	923	G
6	A	931	C
6	A	932	A
6	A	957	U
6	A	958	U
6	A	966	A
6	A	968	G
6	A	972	A
6	A	973	G
6	A	974	A
6	A	990	G
6	A	991	A
6	A	992	C
6	A	996	C
6	A	999	G
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	1009	A
6	A	1010	G
6	A	1016	G
6	A	1019	U
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	1034	U
6	A	1039	A
6	A	1041	A
6	A	1043	A

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Mol	Chain	Res	Type
6	A	1050	G
6	A	1061	G
6	A	1062	U
6	A	1091	G
6	A	1092	U
6	A	1097	C
6	A	1098	A
6	A	1101	G
6	A	1103	G
6	A	1121	C
6	A	1123	U
6	A	1124	G
6	A	1130	A
6	A	1134	C
6	A	1136	G
6	A	1143	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	1167	A
6	A	1168	A
6	A	1179	G
6	A	1180	C
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	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

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Mol	Chain	Res	Type
6	A	1276	A
6	A	1277	A
6	A	1282	A
6	A	1284	A
6	A	1285	A
6	A	1294	G
6	A	1295	U
6	A	1297	G
6	A	1299	C
6	A	1302	G
6	A	1313	G
6	A	1316	A
6	A	1317	C
6	A	1328	G
6	A	1332	U
6	A	1335	G
6	A	1343	A
6	A	1350	G
6	A	1360	A
6	A	1367	G
6	A	1378	U
6	A	1379	C
6	A	1380	C
6	A	1394	C
6	A	1395	A
6	A	1416	G
6	A	1429	G
6	A	1438	A
6	A	1443	A
6	A	1444	A
6	A	1450	A
6	A	1472	G
6	A	1490	A
6	A	1491	G
6	A	1494	G
6	A	1496	A
6	A	1499	A
6	A	1500	A
6	A	1503	U
6	A	1514	G
6	A	1516	MA6
6	A	1517	C

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Mol	Chain	Res	Type
6	A	1526	G
6	A	1527	G
28	a	3	U
28	a	34	U
28	a	39	G
28	a	46	G
28	a	51	G
28	a	55	G
28	a	60	G
28	a	61	A
28	a	71	A
28	a	74	A
28	a	75	G
28	a	79	C
28	a	85	G
28	a	86	G
28	a	88	G
28	a	93	A
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	140	A
28	a	141	A
28	a	142	G
28	a	162	U
28	a	163	A
28	a	165	A
28	a	172	U
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	222	A
28	a	223	A
28	a	225	C

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Mol	Chain	Res	Type
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	264	C
28	a	265	A
28	a	266	G
28	a	268	C
28	a	271	U
28	a	272	U
28	a	278	A
28	a	282	G
28	a	283	U
28	a	284	G
28	a	286	U
28	a	296	C
28	a	297	G
28	a	306	A
28	a	311	G
28	a	324	G
28	a	325	A
28	a	344	G
28	a	347	A
28	a	348	C
28	a	349	A
28	a	350	C
28	a	352	U
28	a	358	U
28	a	359	G
28	a	361	C
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

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Mol	Chain	Res	Type
28	a	448	C
28	a	472	A
28	a	473	G
28	a	497	A
28	a	500	U
28	a	501	C
28	a	505	A
28	a	519	C
28	a	521	A
28	a	522	G
28	a	524	A
28	a	537	U
28	a	538	C
28	a	540	U
28	a	541	G
28	a	554	A
28	a	564	U
28	a	566	A
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	627	G
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	659	A
28	a	677	U
28	a	685	U
28	a	686	G
28	a	703	G
28	a	717	G
28	a	721	A
28	a	738	U
28	a	748	G
28	a	755	A

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Mol	Chain	Res	Type
28	a	766	G
28	a	767	G
28	a	768	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	791	U
28	a	796	G
28	a	803	C
28	a	810	A
28	a	818	U
28	a	819	U
28	a	821	G
28	a	836	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	885	U
28	a	886	U
28	a	887	A
28	a	888	C
28	a	891	A
28	a	898	G
28	a	901	A
28	a	905	C
28	a	916	U
28	a	920	U
28	a	922	C
28	a	931	A
28	a	935	A
28	a	936	G

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Mol	Chain	Res	Type
28	a	948	U
28	a	951	C
28	a	964	G
28	a	973	A
28	a	979	G
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	1029	A
28	a	1030	A
28	a	1037	G
28	a	1045	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	1058	G
28	a	1060	A
28	a	1061	G
28	a	1062	C
28	a	1065	C
28	a	1066	C
28	a	1068	C
28	a	1070	C
28	a	1073	U
28	a	1074	A
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	1087	U
28	a	1091	U
28	a	1096	A

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Mol	Chain	Res	Type
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	1133	A
28	a	1142	G
28	a	1146	A
28	a	1161	A
28	a	1163	U
28	a	1164	U
28	a	1165	U
28	a	1166	G
28	a	1168	A
28	a	1192	A
28	a	1193	A
28	a	1194	G
28	a	1235	A
28	a	1241	A
28	a	1244	G
28	a	1259	G
28	a	1260	A
28	a	1262	A
28	a	1289	A
28	a	1290	A
28	a	1294	C
28	a	1299	G
28	a	1300	U
28	a	1309	A
28	a	1317	U
28	a	1329	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

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Mol	Chain	Res	Type
28	a	1367	U
28	a	1371	A
28	a	1383	A
28	a	1391	A
28	a	1404	G
28	a	1413	G
28	a	1416	C
28	a	1422	A
28	a	1425	C
28	a	1440	G
28	a	1441	U
28	a	1448	U
28	a	1455	G
28	a	1463	G
28	a	1467	G
28	a	1470	U
28	a	1479	G
28	a	1482	A
28	a	1485	U
28	a	1497	U
28	a	1498	A
28	a	1513	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	1530	C
28	a	1536	A
28	a	1538	U
28	a	1540	G
28	a	1551	G
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

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Mol	Chain	Res	Type
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
28	a	1684	U
28	a	1686	G
28	a	1706	U
28	a	1707	G
28	a	1708	G
28	a	1718	U
28	a	1719	C
28	a	1721	C
28	a	1726	U
28	a	1727	G
28	a	1739	G
28	a	1745	G
28	a	1753	G
28	a	1762	A
28	a	1769	A
28	a	1771	U
28	a	1773	A
28	a	1775	A
28	a	1780	A
28	a	1789	C
28	a	1790	A
28	a	1791	A
28	a	1798	A
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	1878	A
28	a	1879	A

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Mol	Chain	Res	Type
28	a	1888	A
28	a	1890	A
28	a	1892	G
28	a	1895	G
28	a	1896	G
28	a	1902	A
28	a	1903	C
28	a	1908	A
28	a	1918	G
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	1971	U
28	a	1980	U
28	a	1982	U
28	a	1985	C
28	a	1986	C
28	a	2010	A
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	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	2066	A
28	a	2082	G

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Mol	Chain	Res	Type
28	a	2093	U
28	a	2098	U
28	a	2100	U
28	a	2101	G
28	a	2104	G
28	a	2105	G
28	a	2106	A
28	a	2107	U
28	a	2108	A
28	a	2109	G
28	a	2111	U
28	a	2112	G
28	a	2115	A
28	a	2121	U
28	a	2122	G
28	a	2128	G
28	a	2131	A
28	a	2146	G
28	a	2147	A
28	a	2155	U
28	a	2165	A
28	a	2167	C
28	a	2171	G
28	a	2174	A
28	a	2178	U
28	a	2179	G
28	a	2182	G
28	a	2187	A
28	a	2193	G
28	a	2201	A
28	a	2214	A
28	a	2227	G
28	a	2228	G
28	a	2267	A
28	a	2272	U
28	a	2276	A
28	a	2277	A
28	a	2293	G
28	a	2294	U
28	a	2297	G
28	a	2300	A
28	a	2301	U

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Mol	Chain	Res	Type
28	a	2307	G
28	a	2308	U
28	a	2310	G
28	a	2314	A
28	a	2316	A
28	a	2325	A
28	a	2334	A
28	a	2339	C
28	a	2343	A
28	a	2348	C
28	a	2350	A
28	a	2371	G
28	a	2372	G
28	a	2373	U
28	a	2374	C
28	a	2385	G
28	a	2391	U
28	a	2392	C
28	a	2395	U
28	a	2396	A
28	a	2411	C
28	a	2412	U
28	a	2413	C
28	a	2414	A
28	a	2418	G
28	a	2419	A
28	a	2423	A
28	a	2429	C
28	a	2430	U
28	a	2435	G
28	a	2436	G
28	a	2437	A
28	a	2439	A
28	a	2448	A
28	a	2464	C
28	a	2466	U
28	a	2476	G
28	a	2480	U
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	2536	A
28	a	2541	OMU
28	a	2543	U
28	a	2555	A
28	a	2556	G
28	a	2562	C
28	a	2591	A
28	a	2592	G
28	a	2598	U
28	a	2599	C
28	a	2602	U
28	a	2618	U
28	a	2635	C
28	a	2650	G
28	a	2654	A
28	a	2671	U
28	a	2678	U
28	a	2679	A
28	a	2703	G
28	a	2715	U
28	a	2722	A
28	a	2724	G
28	a	2737	A
28	a	2742	A
28	a	2746	A
28	a	2750	G
28	a	2754	A
28	a	2755	G
28	a	2767	A
28	a	2769	A
28	a	2770	A
28	a	2780	A
28	a	2781	G
28	a	2785	U
28	a	2786	U
28	a	2787	U

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Mol	Chain	Res	Type
28	a	2789	U
28	a	2790	G
28	a	2797	A
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	2850	U
28	a	2856	A
28	a	2860	U
28	a	2861	G
28	a	2862	A
28	a	2868	A
28	a	2872	A
28	a	2873	U
28	a	2875	G
28	a	2880	U
28	a	2882	A
28	a	2883	G
29	b	7	G
29	b	11	A
29	b	14	G
29	b	16	A
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	106	A
29	b	109	G

All (12) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
6	A	139	U

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Mol	Chain	Res	Type
6	A	185	C
6	A	463	U
6	A	492	A
6	A	775	G
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	$\#\|Z\| > 2$
6	MA6	A	1516	6	23,26,27	1.18	3 (13%)	34,38,41	2.24	9 (26%)
28	PSU	a	945	28	18,21,22	1.99	7 (38%)	22,30,33	1.89	4 (18%)
28	G7M	a	2058	28	23,26,27	2.19	5 (21%)	35,39,42	1.79	7 (20%)
6	2MG	A	1204	54,6	23,26,27	2.57	4 (17%)	32,38,41	2.03	10 (31%)
6	4OC	A	1399	6	20,23,24	2.26	3 (15%)	26,32,35	0.95	2 (7%)
28	H2U	a	2438	28	18,21,22	4.24	5 (27%)	21,30,33	5.20	7 (33%)
6	PSU	A	513	6	18,21,22	1.97	7 (38%)	22,30,33	1.82	5 (22%)
28	6MZ	a	2019	28	22,25,26	2.38	3 (13%)	30,36,39	2.49	11 (36%)
39	4D4	l	82	39	9,11,12	0.83	0	8,13,15	1.63	2 (25%)
28	2MA	a	2492	28,56,54	22,25,26	1.32	1 (4%)	33,37,40	1.99	8 (24%)
28	PSU	a	2493	28,54	18,21,22	2.01	7 (38%)	22,30,33	1.87	4 (18%)
28	5MU	a	1928	28,54	19,22,23	2.48	7 (36%)	28,32,35	3.88	10 (35%)
28	PSU	a	2594	28	18,21,22	1.96	7 (38%)	22,30,33	1.77	4 (18%)
28	OMU	a	2541	28	19,22,23	2.57	7 (36%)	26,31,34	1.71	5 (19%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
28	2MG	a	2434	28	23,26,27	2.58	6 (26%)	32,38,41	1.99	9 (28%)
28	OMC	a	2487	28,56	19,22,23	1.75	3 (15%)	26,31,34	0.94	2 (7%)
28	PSU	a	737	28,56	18,21,22	1.98	7 (38%)	22,30,33	1.78	3 (13%)
28	PSU	a	2569	28	18,21,22	2.01	8 (44%)	22,30,33	1.95	5 (22%)
28	OMG	a	2240	28,54	23,26,27	2.35	6 (26%)	33,38,41	1.80	9 (27%)
6	UR3	A	1495	6	19,22,23	2.54	6 (31%)	26,32,35	1.30	2 (7%)
16	IAS	K	118	16	6,7,8	1.78	1 (16%)	6,8,10	2.57	1 (16%)
6	5MC	A	964	6	18,22,23	1.87	5 (27%)	26,32,35	1.30	2 (7%)
28	PSU	a	1900	28	18,21,22	1.95	7 (38%)	22,30,33	1.83	4 (18%)
28	3TD	a	1904	28	18,22,23	2.70	7 (38%)	22,32,35	1.79	3 (13%)
6	2MG	A	1513	6	23,26,27	2.58	5 (21%)	32,38,41	2.03	11 (34%)
17	D2T	L	89	17	7,9,10	1.23	1 (14%)	6,11,13	1.59	1 (16%)
28	1MG	a	736	28	22,26,27	2.53	5 (22%)	33,39,42	2.00	7 (21%)
28	PSU	a	1906	28	18,21,22	1.96	7 (38%)	22,30,33	1.85	4 (18%)
31	MEQ	d	153	31	8,9,10	0.85	0	5,10,12	0.83	0
6	2MG	A	963	6	23,26,27	2.57	4 (17%)	32,38,41	2.06	10 (31%)
6	MA6	A	1515	6	23,26,27	1.17	2 (8%)	34,38,41	2.21	9 (26%)
28	PSU	a	2446	28	18,21,22	2.00	7 (38%)	22,30,33	1.86	5 (22%)
39	MS6	l	83	39	5,7,8	0.50	0	2,7,9	1.69	1 (50%)
6	G7M	A	524	54,6	23,26,27	2.20	5 (21%)	35,39,42	1.80	7 (20%)

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
6	MA6	A	1516	6	-	1/11/29/30	0/3/3/3
28	PSU	a	945	28	-	0/7/25/26	0/2/2/2
28	G7M	a	2058	28	-	1/7/25/26	0/3/3/3
6	2MG	A	1204	54,6	-	2/9/27/28	0/3/3/3
6	4OC	A	1399	6	-	0/9/29/30	0/2/2/2
28	H2U	a	2438	28	-	2/7/38/39	0/2/2/2
6	PSU	A	513	6	-	0/7/25/26	0/2/2/2
28	6MZ	a	2019	28	-	2/9/27/28	0/3/3/3
39	4D4	l	82	39	-	2/11/12/14	-
28	2MA	a	2492	28,56,54	-	2/7/25/26	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
28	PSU	a	2493	28,54	-	1/7/25/26	0/2/2/2
28	5MU	a	1928	28,54	-	0/7/25/26	0/2/2/2
28	PSU	a	2594	28	-	0/7/25/26	0/2/2/2
28	OMU	a	2541	28	-	2/9/27/28	0/2/2/2
28	2MG	a	2434	28	-	0/9/27/28	0/3/3/3
28	OMC	a	2487	28,56	-	1/9/27/28	0/2/2/2
28	PSU	a	737	28,56	-	2/7/25/26	0/2/2/2
28	PSU	a	2569	28	-	0/7/25/26	0/2/2/2
28	OMG	a	2240	28,54	-	1/9/27/28	0/3/3/3
6	UR3	A	1495	6	-	0/7/25/26	0/2/2/2
16	IAS	K	118	16	-	4/7/7/8	-
6	5MC	A	964	6	-	0/7/25/26	0/2/2/2
28	PSU	a	1900	28	-	0/7/25/26	0/2/2/2
28	3TD	a	1904	28	-	0/7/25/26	0/2/2/2
6	2MG	A	1513	6	-	0/9/27/28	0/3/3/3
17	D2T	L	89	17	-	3/7/12/14	-
28	1MG	a	736	28	-	0/7/25/26	0/3/3/3
28	PSU	a	1906	28	-	0/7/25/26	0/2/2/2
31	MEQ	d	153	31	-	3/8/9/11	-
6	2MG	A	963	6	-	0/9/27/28	0/3/3/3
6	MA6	A	1515	6	-	0/11/29/30	0/3/3/3
28	PSU	a	2446	28	-	0/7/25/26	0/2/2/2
39	MS6	l	83	39	-	3/4/6/8	-
6	G7M	A	524	54,6	-	3/7/25/26	0/3/3/3

All (158) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
28	a	2019	6MZ	C6-N6	10.10	1.45	1.34
28	a	2438	H2U	O4-C4	10.07	1.43	1.23
6	A	1513	2MG	O6-C6	9.17	1.41	1.23
6	A	963	2MG	O6-C6	9.16	1.41	1.23
6	A	1204	2MG	O6-C6	9.16	1.41	1.23
28	a	2434	2MG	O6-C6	9.11	1.40	1.23
6	A	1495	UR3	O4-C4	8.80	1.42	1.23
28	a	2240	OMG	O6-C6	8.64	1.40	1.23
28	a	2438	H2U	C2-N1	8.64	1.48	1.35
28	a	1904	3TD	O4-C4	8.31	1.40	1.23
28	a	2438	H2U	O2-C2	8.30	1.38	1.23
28	a	736	1MG	O6-C6	8.24	1.40	1.23
6	A	524	G7M	O6-C6	8.15	1.39	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
28	a	2058	G7M	O6-C6	8.13	1.39	1.23
28	a	2541	OMU	O4-C4	8.04	1.40	1.24
28	a	2438	H2U	C2-N3	7.04	1.50	1.38
6	A	1399	4OC	O2-C2	6.71	1.36	1.23
28	a	736	1MG	C2-N2	6.26	1.45	1.34
28	a	1928	5MU	C2-N1	-6.02	1.28	1.38
6	A	963	2MG	C2-N2	6.01	1.46	1.33
6	A	1513	2MG	C2-N2	5.97	1.46	1.33
6	A	1204	2MG	C2-N2	5.91	1.46	1.33
28	a	2434	2MG	C2-N2	5.76	1.46	1.33
6	A	1399	4OC	C4-N4	5.72	1.47	1.35
28	a	2438	H2U	C4-N3	5.19	1.46	1.37
28	a	2487	OMC	C4-N4	4.85	1.45	1.33
28	a	1928	5MU	C2-N3	-4.76	1.29	1.38
28	a	2492	2MA	C6-N6	4.64	1.45	1.34
28	a	1928	5MU	C6-N1	-4.35	1.30	1.38
28	a	2240	OMG	C2-N2	4.31	1.44	1.34
6	A	964	5MC	C4-N4	4.16	1.44	1.34
28	a	2487	OMC	C2-N1	-3.93	1.31	1.40
28	a	2541	OMU	C2-N1	-3.86	1.32	1.38
28	a	2446	PSU	C4-N3	-3.73	1.31	1.38
28	a	736	1MG	C6-N1	-3.73	1.32	1.40
28	a	1904	3TD	C2-N1	-3.73	1.32	1.37
28	a	1904	3TD	C4-N3	-3.70	1.32	1.40
6	A	524	G7M	C5-N7	-3.68	1.34	1.39
28	a	737	PSU	C4-N3	-3.65	1.32	1.38
28	a	945	PSU	C4-N3	-3.63	1.32	1.38
28	a	2240	OMG	C6-N1	-3.62	1.32	1.38
16	K	118	IAS	OD1-CG	3.62	1.40	1.19
28	a	2569	PSU	C2-N1	-3.61	1.31	1.36
6	A	964	5MC	C2-N1	-3.60	1.32	1.40
28	a	2493	PSU	C4-N3	-3.59	1.32	1.38
28	a	2493	PSU	C2-N1	-3.59	1.31	1.36
28	a	1928	5MU	C6-C5	3.58	1.40	1.34
28	a	2058	G7M	C5-N7	-3.54	1.35	1.39
28	a	2541	OMU	C4-N3	-3.54	1.32	1.38
6	A	1515	MA6	C6-N6	3.54	1.47	1.36
28	a	1900	PSU	C4-N3	-3.52	1.32	1.38
28	a	1906	PSU	C4-N3	-3.51	1.32	1.38
6	A	513	PSU	C2-N1	-3.48	1.32	1.36
6	A	1495	UR3	C4-N3	-3.48	1.32	1.40
6	A	513	PSU	C4-N3	-3.46	1.32	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	A	1516	MA6	C6-N6	3.45	1.47	1.36
28	a	2569	PSU	C4-N3	-3.45	1.32	1.38
6	A	1399	4OC	C2-N1	-3.44	1.32	1.40
28	a	945	PSU	C2-N1	-3.42	1.32	1.36
28	a	2594	PSU	C4-N3	-3.42	1.32	1.38
28	a	2446	PSU	C2-N1	-3.42	1.32	1.36
28	a	1906	PSU	C2-N1	-3.41	1.32	1.36
28	a	2594	PSU	C2-N1	-3.40	1.32	1.36
28	a	2541	OMU	C2-N3	-3.38	1.31	1.38
28	a	1904	3TD	C6-C5	3.36	1.39	1.35
6	A	524	G7M	C2-N2	3.33	1.42	1.34
28	a	1900	PSU	C2-N1	-3.32	1.32	1.36
28	a	1928	5MU	C4-N3	-3.31	1.32	1.38
28	a	737	PSU	C2-N1	-3.31	1.32	1.36
28	a	2446	PSU	C2-N3	-3.29	1.31	1.37
28	a	1900	PSU	C6-C5	3.28	1.39	1.35
28	a	2493	PSU	C6-C5	3.28	1.39	1.35
28	a	2594	PSU	C2-N3	-3.28	1.31	1.37
6	A	1495	UR3	C2-N3	-3.26	1.32	1.39
28	a	1906	PSU	C6-C5	3.23	1.39	1.35
28	a	945	PSU	C2-N3	-3.23	1.32	1.37
28	a	737	PSU	C2-N3	-3.23	1.32	1.37
6	A	513	PSU	C6-C5	3.22	1.39	1.35
28	a	2594	PSU	C6-C5	3.21	1.39	1.35
28	a	2058	G7M	C2-N2	3.19	1.41	1.34
6	A	524	G7M	C6-N1	-3.18	1.32	1.38
28	a	945	PSU	C6-C5	3.18	1.39	1.35
28	a	2493	PSU	C2-N3	-3.17	1.32	1.37
28	a	1900	PSU	C2-N3	-3.15	1.32	1.37
28	a	1906	PSU	C2-N3	-3.13	1.32	1.37
6	A	1516	MA6	C8-N9	-3.12	1.31	1.37
6	A	513	PSU	C2-N3	-3.11	1.32	1.37
28	a	2058	G7M	C6-N1	-3.11	1.33	1.38
28	a	2446	PSU	C6-C5	3.10	1.38	1.35
28	a	737	PSU	C6-C5	3.10	1.38	1.35
6	A	964	5MC	C6-N1	-3.07	1.32	1.38
28	a	2569	PSU	C6-C5	3.04	1.38	1.35
28	a	2569	PSU	C2-N3	-3.00	1.32	1.37
6	A	1515	MA6	C8-N9	-2.99	1.32	1.37
28	a	2434	2MG	C6-N1	-2.94	1.33	1.38
6	A	1204	2MG	C6-N1	-2.89	1.33	1.38
6	A	963	2MG	C6-N1	-2.89	1.33	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
28	a	1904	3TD	C2-N3	-2.85	1.32	1.38
6	A	1513	2MG	C6-N1	-2.85	1.33	1.38
28	a	2019	6MZ	C8-N9	-2.82	1.32	1.37
6	A	1513	2MG	C5-N7	-2.78	1.33	1.39
6	A	1204	2MG	C5-N7	-2.75	1.33	1.39
28	a	2434	2MG	C5-N7	-2.74	1.33	1.39
6	A	964	5MC	O2-C2	-2.74	1.18	1.23
6	A	964	5MC	C6-C5	2.73	1.39	1.34
6	A	963	2MG	C5-N7	-2.66	1.33	1.39
28	a	1928	5MU	O4-C4	-2.63	1.18	1.23
6	A	1495	UR3	C2-N1	-2.62	1.34	1.38
28	a	2493	PSU	O4-C4	-2.60	1.18	1.23
28	a	945	PSU	O4-C4	-2.60	1.18	1.23
28	a	2240	OMG	C8-N9	-2.59	1.31	1.37
28	a	2569	PSU	O4-C4	-2.58	1.18	1.23
6	A	513	PSU	O4-C4	-2.57	1.18	1.23
28	a	1900	PSU	O4-C4	-2.56	1.18	1.23
28	a	737	PSU	O4-C4	-2.56	1.18	1.23
28	a	1906	PSU	O4-C4	-2.55	1.18	1.23
28	a	2446	PSU	O4-C4	-2.55	1.18	1.23
28	a	1928	5MU	O2-C2	-2.49	1.18	1.23
28	a	2594	PSU	O4-C4	-2.48	1.18	1.23
28	a	2569	PSU	C6-N1	-2.45	1.32	1.36
28	a	2541	OMU	O2-C2	-2.43	1.18	1.23
28	a	2569	PSU	O4'-C1'	-2.42	1.40	1.43
28	a	736	1MG	C5-N7	-2.40	1.34	1.39
28	a	2240	OMG	C5-N7	-2.39	1.34	1.39
6	A	1495	UR3	O2-C2	2.38	1.27	1.22
28	a	2493	PSU	C6-N1	-2.37	1.32	1.36
28	a	737	PSU	C6-N1	-2.37	1.32	1.36
28	a	736	1MG	C8-N9	-2.37	1.32	1.37
28	a	2541	OMU	C6-N1	-2.34	1.32	1.38
28	a	2446	PSU	C6-N1	-2.34	1.32	1.36
6	A	513	PSU	C6-N1	-2.34	1.32	1.36
28	a	2493	PSU	O2-C2	-2.32	1.18	1.23
28	a	945	PSU	C6-N1	-2.32	1.32	1.36
28	a	1904	3TD	O2-C2	-2.31	1.18	1.23
28	a	1906	PSU	C6-N1	-2.30	1.32	1.36
28	a	945	PSU	O2-C2	-2.29	1.18	1.23
28	a	2019	6MZ	C5-N7	-2.29	1.34	1.39
28	a	2446	PSU	O2-C2	-2.27	1.18	1.23
28	a	1904	3TD	C6-N1	-2.26	1.32	1.36

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
28	a	2434	2MG	C4-N9	-2.24	1.32	1.38
6	A	524	G7M	C2-N1	-2.23	1.32	1.37
28	a	1900	PSU	C6-N1	-2.23	1.32	1.36
28	a	2569	PSU	O2-C2	-2.22	1.18	1.23
28	a	1906	PSU	O2-C2	-2.22	1.18	1.23
28	a	1900	PSU	O2-C2	-2.20	1.18	1.23
28	a	2058	G7M	C2-N1	-2.18	1.32	1.37
28	a	737	PSU	O2-C2	-2.18	1.18	1.23
6	A	513	PSU	O2-C2	-2.17	1.18	1.23
28	a	2594	PSU	O2-C2	-2.15	1.18	1.23
28	a	2541	OMU	C5-C4	-2.15	1.38	1.43
6	A	1495	UR3	C6-N1	-2.13	1.32	1.38
28	a	2434	2MG	CM2-N2	-2.13	1.41	1.45
28	a	2594	PSU	C6-N1	-2.11	1.32	1.36
28	a	2487	OMC	C6-C5	2.09	1.39	1.35
17	L	89	D2T	CB-CG	2.08	1.55	1.52
6	A	1513	2MG	C4-N9	-2.02	1.32	1.38
28	a	2240	OMG	C2-N1	-2.02	1.32	1.37
6	A	1516	MA6	C5-N7	-2.00	1.35	1.39

All (183) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
28	a	2438	H2U	C4-N3-C2	-16.44	112.15	125.79
28	a	2438	H2U	O2-C2-N1	-10.79	109.56	123.11
28	a	1928	5MU	C4-N3-C2	-8.85	115.89	127.35
28	a	1928	5MU	N3-C2-N1	8.56	126.25	114.89
28	a	1928	5MU	C5M-C5-C4	8.21	127.80	118.77
28	a	1928	5MU	C5-C6-N1	-7.92	115.19	123.34
28	a	2438	H2U	O4-C4-N3	-7.29	108.73	120.28
28	a	2492	2MA	C5-C4-N3	-7.14	119.15	127.19
6	A	963	2MG	C2-N3-C4	7.00	120.72	112.04
28	a	736	1MG	C5-C4-N3	-6.93	117.22	128.46
6	A	1513	2MG	C2-N3-C4	6.92	120.62	112.04
6	A	1204	2MG	C2-N3-C4	6.90	120.60	112.04
28	a	1904	3TD	N1-C2-N3	6.75	121.46	116.14
28	a	2434	2MG	C2-N3-C4	6.68	120.32	112.04
28	a	1928	5MU	C5M-C5-C6	-6.65	113.97	122.85
28	a	2019	6MZ	C9-N6-C6	-6.54	117.24	122.87
28	a	2438	H2U	O4-C4-C5	-6.44	108.41	122.17
28	a	1928	5MU	C5-C4-N3	6.36	120.74	115.31
28	a	2438	H2U	O2-C2-N3	-6.16	110.03	121.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
28	a	2438	H2U	N3-C2-N1	-6.05	110.25	116.65
28	a	945	PSU	N1-C2-N3	5.81	121.71	115.13
6	A	1516	MA6	C5-C4-N3	-5.76	119.23	126.75
28	a	2493	PSU	N1-C2-N3	5.69	121.57	115.13
28	a	2446	PSU	N1-C2-N3	5.68	121.57	115.13
28	a	2569	PSU	N1-C2-N3	5.66	121.54	115.13
16	K	118	IAS	OD1-CG-CB	-5.65	108.96	125.43
28	a	1906	PSU	N1-C2-N3	5.62	121.50	115.13
28	a	737	PSU	N1-C2-N3	5.59	121.46	115.13
6	A	1515	MA6	C5-C4-N3	-5.57	119.48	126.75
28	a	1900	PSU	N1-C2-N3	5.56	121.43	115.13
6	A	513	PSU	N1-C2-N3	5.39	121.24	115.13
28	a	2019	6MZ	N1-C2-N3	-5.29	120.33	128.60
28	a	2541	OMU	N3-C2-N1	5.23	121.84	114.89
6	A	524	G7M	C2-N3-C4	5.15	121.47	112.30
28	a	2240	OMG	C5-C4-N3	-5.13	120.14	128.46
28	a	2594	PSU	N1-C2-N3	5.10	120.91	115.13
6	A	1516	MA6	N1-C2-N3	-5.07	120.67	128.60
6	A	1204	2MG	C5-C4-N3	-5.06	120.25	128.46
6	A	1515	MA6	N1-C2-N3	-5.05	120.70	128.60
28	a	2492	2MA	N3-C4-N9	5.03	133.97	126.99
28	a	736	1MG	N9-C4-N3	5.00	135.97	125.94
6	A	964	5MC	C5-C6-N1	-4.99	118.20	123.34
28	a	736	1MG	C2-N3-C4	4.98	123.17	111.98
6	A	963	2MG	C5-C4-N3	-4.98	120.39	128.46
6	A	1513	2MG	C5-C4-N3	-4.97	120.39	128.46
28	a	2058	G7M	C2-N3-C4	4.94	121.11	112.30
28	a	2019	6MZ	C5-C4-N3	-4.83	120.45	126.75
6	A	524	G7M	C5-C4-N3	-4.70	119.13	128.15
28	a	2434	2MG	C5-C4-N3	-4.67	120.89	128.46
28	a	2240	OMG	C2-N3-C4	4.51	120.34	112.30
6	A	1495	UR3	C4-N3-C2	-4.51	120.32	124.56
6	A	1515	MA6	N3-C4-N9	4.35	134.26	127.08
6	A	1515	MA6	C2-N1-C6	4.34	122.01	111.75
6	A	1516	MA6	N3-C4-N9	4.33	134.22	127.08
6	A	1516	MA6	C2-N3-C4	4.30	121.90	111.75
28	a	2058	G7M	C5-C4-N3	-4.24	120.02	128.15
28	a	1928	5MU	O2-C2-N1	-4.21	117.19	122.79
6	A	1516	MA6	C2-N1-C6	4.18	121.63	111.75
6	A	1515	MA6	C2-N3-C4	4.11	121.46	111.75
28	a	2541	OMU	C4-N3-C2	-4.08	121.20	126.58
6	A	524	G7M	C5-C6-N1	4.07	120.29	111.79

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
28	a	2019	6MZ	C6-C5-N7	4.06	136.78	132.39
28	a	1928	5MU	O4-C4-N3	-3.98	112.48	120.12
28	a	2058	G7M	C5-C6-N1	3.98	120.09	111.79
28	a	2019	6MZ	C2-N3-C4	3.94	121.06	111.75
6	A	524	G7M	N9-C4-N3	3.82	133.60	125.94
28	a	945	PSU	C4-N3-C2	-3.69	121.02	126.34
28	a	737	PSU	C4-N3-C2	-3.69	121.02	126.34
28	a	1900	PSU	C4-N3-C2	-3.64	121.10	126.34
28	a	2058	G7M	C6-C5-N7	3.60	136.61	132.25
28	a	1906	PSU	C4-N3-C2	-3.60	121.15	126.34
6	A	1515	MA6	N9-C8-N7	-3.59	109.01	113.91
28	a	2569	PSU	C4-N3-C2	-3.54	121.24	126.34
6	A	1516	MA6	N9-C8-N7	-3.52	109.09	113.91
28	a	2569	PSU	O2-C2-N1	-3.52	118.91	122.79
28	a	2240	OMG	N9-C4-N3	3.52	133.01	125.94
28	a	2493	PSU	C4-N3-C2	-3.51	121.29	126.34
28	a	2446	PSU	C4-N3-C2	-3.50	121.29	126.34
28	a	2594	PSU	C4-N3-C2	-3.47	121.33	126.34
6	A	1516	MA6	C5-N7-C8	3.46	108.42	103.51
6	A	1515	MA6	C5-N7-C8	3.43	108.38	103.51
28	a	2019	6MZ	C5-N7-C8	3.41	108.35	103.51
6	A	1204	2MG	N9-C4-N3	3.38	132.72	125.94
6	A	513	PSU	C4-N3-C2	-3.35	121.52	126.34
6	A	1515	MA6	C4-N9-C8	3.34	109.34	105.73
6	A	963	2MG	N9-C4-N3	3.32	132.61	125.94
6	A	1513	2MG	N9-C4-N3	3.32	132.60	125.94
28	a	2019	6MZ	N9-C8-N7	-3.31	109.39	113.91
28	a	2019	6MZ	C4-C5-N7	-3.29	106.61	110.62
39	l	82	4D4	NE-CZ-NH2	3.28	126.46	120.70
6	A	524	G7M	O6-C6-C5	-3.27	120.68	128.06
6	A	513	PSU	O2-C2-N1	-3.24	119.22	122.79
28	a	2493	PSU	O2-C2-N1	-3.24	119.22	122.79
28	a	2058	G7M	O6-C6-C5	-3.21	120.82	128.06
28	a	2058	G7M	N9-C4-N3	3.18	132.32	125.94
28	a	1906	PSU	O2-C2-N1	-3.16	119.31	122.79
6	A	1516	MA6	C4-N9-C8	3.15	109.14	105.73
6	A	1516	MA6	C4-C5-N7	-3.14	106.79	110.62
28	a	945	PSU	O2-C2-N1	-3.08	119.39	122.79
28	a	1900	PSU	O2-C2-N1	-3.06	119.42	122.79
28	a	2434	2MG	C6-C5-N7	3.06	135.93	130.25
28	a	2019	6MZ	N3-C4-N9	3.05	132.10	127.08
28	a	737	PSU	O2-C2-N1	-3.03	119.45	122.79

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
28	a	2438	H2U	C5-C4-N3	-2.99	113.29	116.65
28	a	2446	PSU	O2-C2-N1	-2.99	119.50	122.79
6	A	1515	MA6	C4-C5-N7	-2.97	107.00	110.62
28	a	2434	2MG	N9-C4-N3	2.97	131.91	125.94
6	A	524	G7M	C6-C5-N7	2.95	135.81	132.25
28	a	2492	2MA	C5-N7-C8	2.94	107.69	103.51
6	A	963	2MG	C6-C5-N7	2.93	135.70	130.25
28	a	2240	OMG	C6-C5-N7	2.85	135.55	130.25
28	a	2492	2MA	N9-C8-N7	-2.82	110.06	113.91
17	L	89	D2T	OD1-CG-CB	-2.78	116.63	122.44
28	a	2492	2MA	C4-C5-N7	-2.77	107.24	110.62
6	A	1204	2MG	C6-C5-N7	2.76	135.38	130.25
6	A	1513	2MG	C6-C5-N7	2.76	135.37	130.25
28	a	2487	OMC	O2-C2-N3	-2.75	117.85	122.33
28	a	2594	PSU	O2-C2-N1	-2.74	119.77	122.79
28	a	1904	3TD	C4-N3-C2	-2.70	121.68	124.61
28	a	1928	5MU	O2-C2-N3	-2.65	116.56	121.50
28	a	2569	PSU	O4'-C1'-C2'	2.62	108.84	105.14
28	a	2541	OMU	C5-C4-N3	2.56	118.67	114.84
6	A	524	G7M	C2-N1-C6	-2.53	120.49	125.10
28	a	2493	PSU	C6-N1-C2	-2.51	120.11	122.68
28	a	2434	2MG	CM2-N2-C2	-2.50	118.34	123.86
28	a	2058	G7M	C2-N1-C6	-2.50	120.55	125.10
28	a	2240	OMG	C4-C5-N7	-2.47	106.82	110.72
28	a	2434	2MG	C4-C5-N7	-2.45	106.84	110.72
28	a	2541	OMU	O4-C4-C5	-2.42	120.90	125.16
6	A	963	2MG	C4-C5-N7	-2.42	106.88	110.72
28	a	2569	PSU	C6-N1-C2	-2.41	120.22	122.68
28	a	2240	OMG	C8-N7-C5	2.40	108.59	104.24
28	a	945	PSU	C6-N1-C2	-2.36	120.27	122.68
28	a	1928	5MU	C6-N1-C2	2.36	123.69	121.30
6	A	1204	2MG	C4-C5-N7	-2.35	107.00	110.72
6	A	1513	2MG	C4-C5-N7	-2.34	107.01	110.72
6	A	513	PSU	O4'-C1'-C2'	2.34	108.44	105.14
6	A	1513	2MG	O6-C6-C5	-2.33	120.41	126.60
39	l	83	MS6	CE-SD-CG	2.32	108.37	100.40
28	a	2446	PSU	C6-N1-C2	-2.32	120.32	122.68
28	a	2541	OMU	O2-C2-N1	-2.29	119.74	122.79
28	a	2019	6MZ	C4-N9-C8	2.28	108.20	105.73
28	a	2240	OMG	C5-C6-N1	2.27	118.96	113.19
28	a	736	1MG	C5-C6-N1	2.27	119.29	114.91
28	a	736	1MG	C4-C5-N7	-2.26	107.14	110.72

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
6	A	963	2MG	CM2-N2-C2	-2.26	118.87	123.86
6	A	1204	2MG	CM2-N2-C2	-2.23	118.93	123.86
6	A	1204	2MG	O6-C6-C5	-2.23	120.69	126.60
28	a	2492	2MA	C4-N9-C8	2.22	108.13	105.73
28	a	2594	PSU	C6-C5-C4	-2.22	116.65	118.20
28	a	2240	OMG	N9-C8-N7	-2.22	109.22	113.39
6	A	1399	4OC	O2-C2-N3	-2.22	118.73	122.33
6	A	513	PSU	C6-N1-C2	-2.21	120.42	122.68
6	A	964	5MC	C5-C4-N3	-2.21	119.29	121.67
28	a	2240	OMG	O6-C6-C5	-2.20	120.75	126.60
28	a	2446	PSU	O4'-C1'-C2'	2.20	108.24	105.14
28	a	1906	PSU	C6-N1-C2	-2.19	120.45	122.68
6	A	1399	4OC	C5-C4-N3	-2.17	119.10	122.59
39	l	82	4D4	NH1-CZ-NE	-2.17	114.19	119.19
6	A	963	2MG	N1-C2-N3	-2.16	120.61	123.95
6	A	1495	UR3	C5-C6-N1	-2.14	118.22	121.81
28	a	2492	2MA	N3-C2-N1	-2.14	121.78	125.72
28	a	1904	3TD	C5-C6-N1	-2.14	118.91	122.11
6	A	963	2MG	C8-N7-C5	2.13	108.10	104.24
6	A	1204	2MG	C5-C6-N1	2.13	118.59	113.19
6	A	1204	2MG	C2-N1-C6	-2.12	122.04	124.48
6	A	963	2MG	C5-C6-N1	2.12	118.58	113.19
28	a	2434	2MG	O6-C6-C5	-2.12	120.97	126.60
28	a	2492	2MA	N6-C6-N1	2.10	120.00	117.03
6	A	1513	2MG	C5-C6-N1	2.09	118.49	113.19
6	A	1513	2MG	N1-C2-N3	-2.08	120.73	123.95
6	A	963	2MG	O6-C6-C5	-2.08	121.09	126.60
28	a	2434	2MG	C5-C6-N1	2.07	118.46	113.19
6	A	1513	2MG	CM2-N2-C2	-2.07	119.28	123.86
28	a	736	1MG	C6-C5-N7	2.06	134.01	129.35
28	a	736	1MG	C8-N7-C5	2.05	107.95	104.24
28	a	1900	PSU	C6-N1-C2	-2.04	120.60	122.68
6	A	1204	2MG	C8-N7-C5	2.03	107.92	104.24
28	a	2434	2MG	C8-N7-C5	2.03	107.92	104.24
6	A	1513	2MG	C8-N7-C5	2.03	107.91	104.24
6	A	1513	2MG	C2-N1-C6	-2.03	122.15	124.48
28	a	2487	OMC	N1-C2-N3	2.03	122.50	118.81
28	a	2019	6MZ	C2-N1-C6	2.00	121.98	115.25

There are no chirality outliers.

All (35) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	A	1204	2MG	N1-C2-N2-CM2
6	A	1204	2MG	N3-C2-N2-CM2
16	K	118	IAS	N-CA-CB-CG
28	a	737	PSU	C2'-C1'-C5-C6
28	a	737	PSU	O4'-C1'-C5-C6
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	2492	2MA	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	2438	H2U	C2'-C1'-N1-C2
39	l	82	4D4	OB-CB-CG-CD
17	L	89	D2T	CG-CB-SB-CB1
39	l	83	MS6	N-CA-CB-CG
6	A	1516	MA6	C4'-C5'-O5'-P
31	d	153	MEQ	N-CA-CB-CG
17	L	89	D2T	CA-CB-CG-OD2
28	a	2438	H2U	O4'-C1'-N1-C2
6	A	524	G7M	C4'-C5'-O5'-P
31	d	153	MEQ	OE1-CD-CG-CB
31	d	153	MEQ	NE2-CD-CG-CB
39	l	82	4D4	CA-CB-CG-CD
17	L	89	D2T	SB-CB-CG-OD2
28	a	2240	OMG	C1'-C2'-O2'-CM2
28	a	2487	OMC	C4'-C5'-O5'-P
28	a	2058	G7M	O4'-C4'-C5'-O5'
28	a	2493	PSU	O4'-C4'-C5'-O5'
16	K	118	IAS	OXT-C-CA-CB
16	K	118	IAS	CA-CB-CG-OD1
16	K	118	IAS	C-CA-CB-CG

There are no ring outliers.

12 monomers are involved in 17 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	A	1516	MA6	1	0
6	A	1399	4OC	4	0
6	A	513	PSU	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
28	a	2019	6MZ	2	0
28	a	2594	PSU	1	0
28	a	2541	OMU	1	0
28	a	2240	OMG	1	0
6	A	1513	2MG	2	0
28	a	1906	PSU	1	0
31	d	153	MEQ	2	0
6	A	963	2MG	1	0
6	A	1515	MA6	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)

There are no chain breaks in this entry.

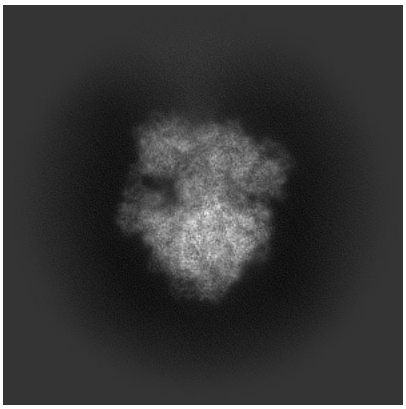
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-55742. These allow visual inspection of the internal detail of the map and identification of artifacts.

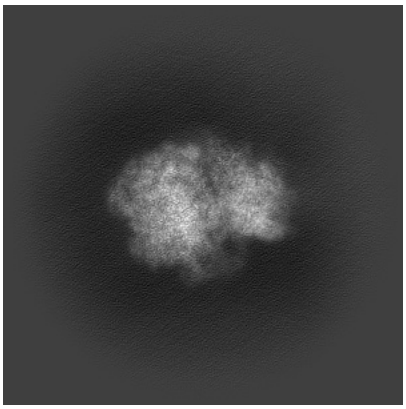
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

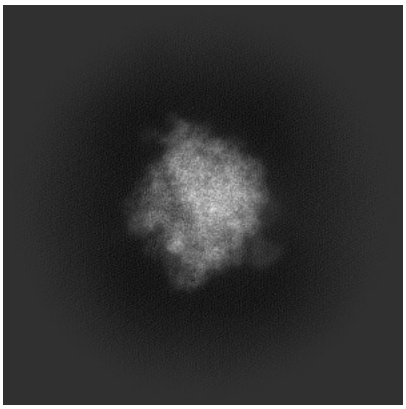
6.1.1 Primary map



X

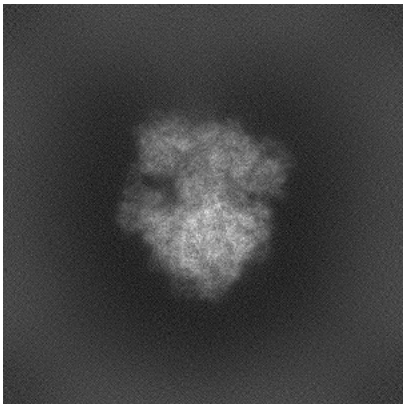


Y

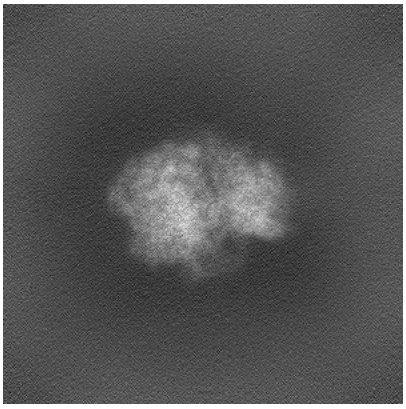


Z

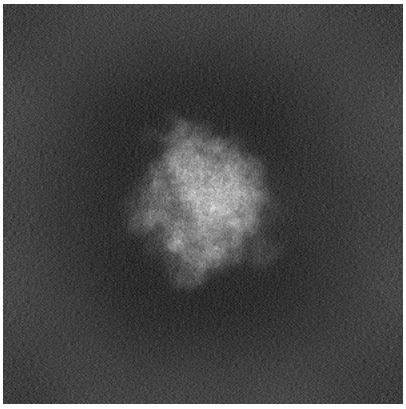
6.1.2 Raw map



X



Y

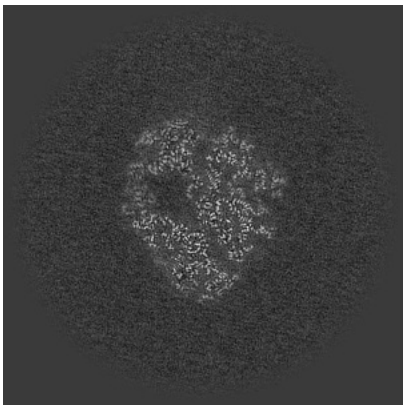


Z

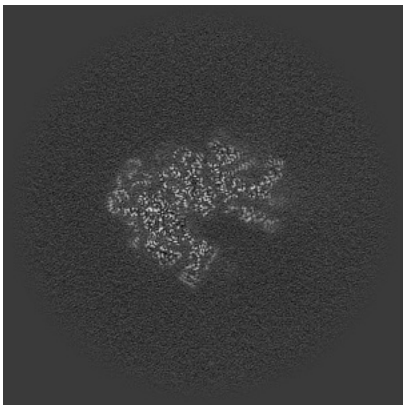
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

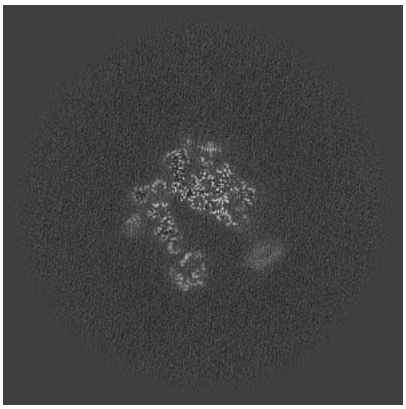
6.2.1 Primary map



X Index: 256

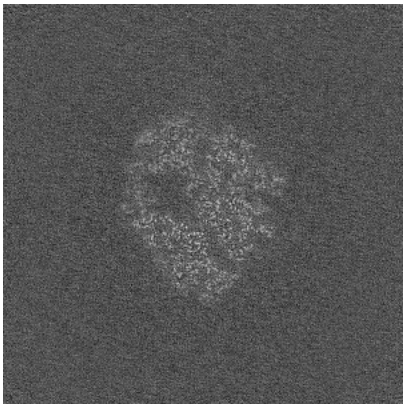


Y Index: 256

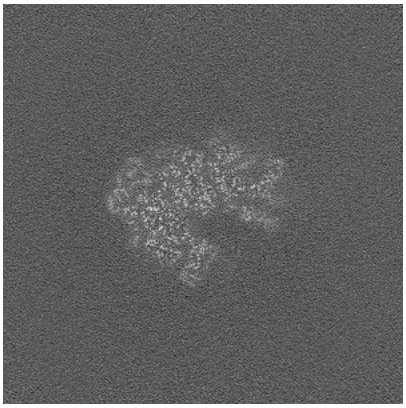


Z Index: 256

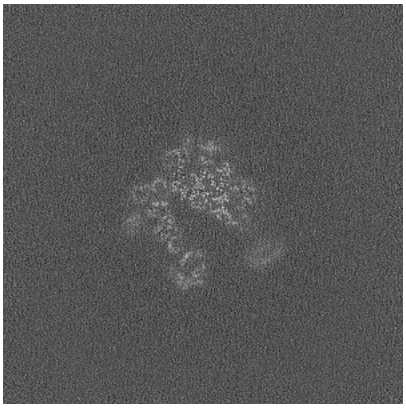
6.2.2 Raw map



X Index: 256



Y Index: 256

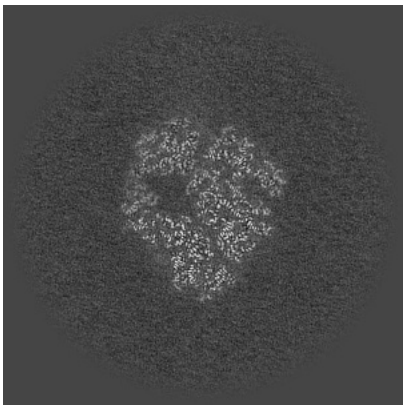


Z Index: 256

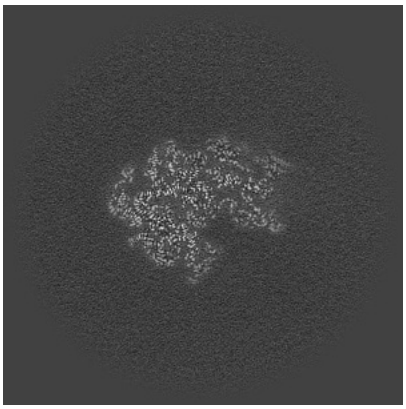
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

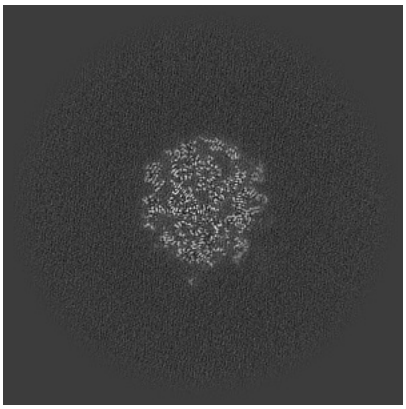
6.3.1 Primary map



X Index: 253

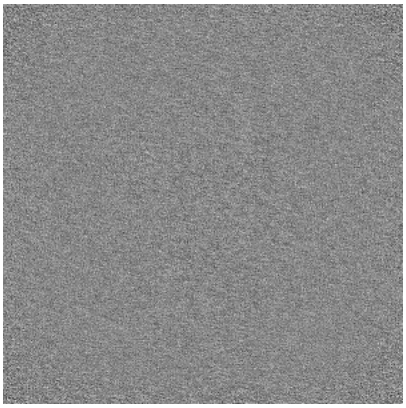


Y Index: 263

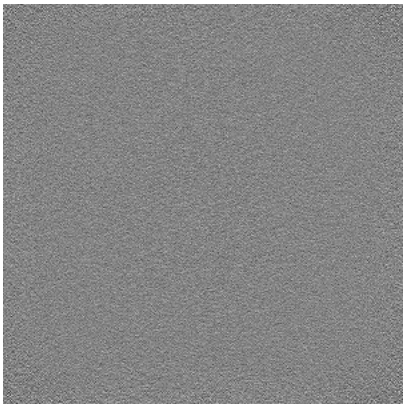


Z Index: 216

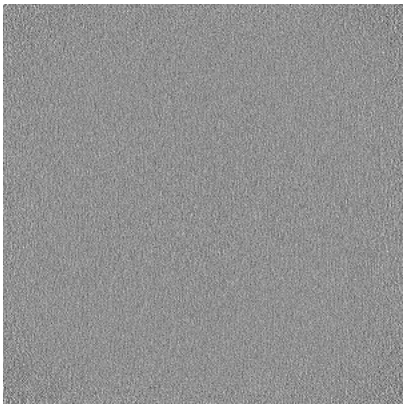
6.3.2 Raw map



X Index: 0



Y Index: 0

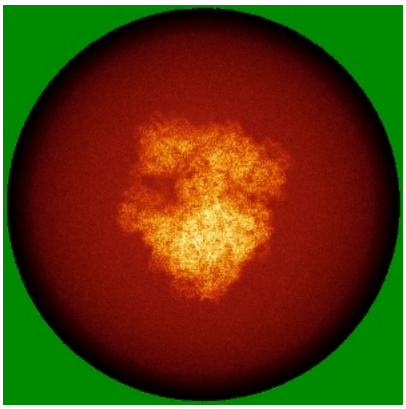


Z Index: 0

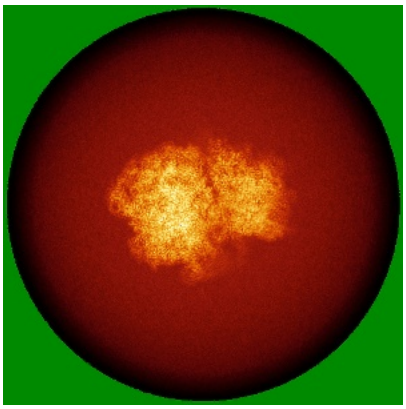
The images above show the largest variance slices of the map in three orthogonal directions.

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

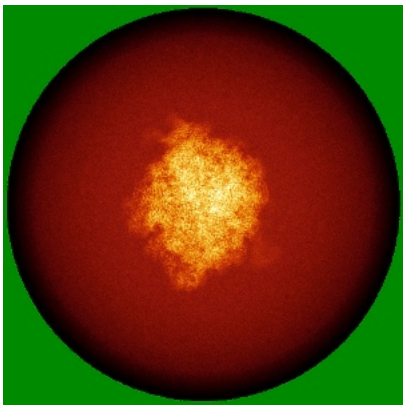
6.4.1 Primary map



X

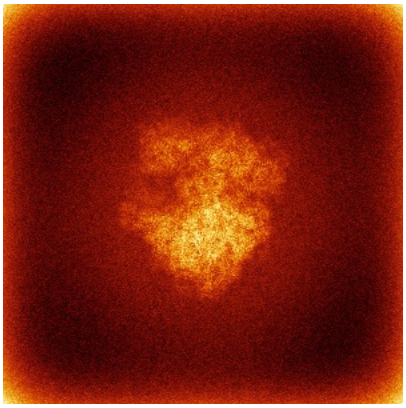


Y

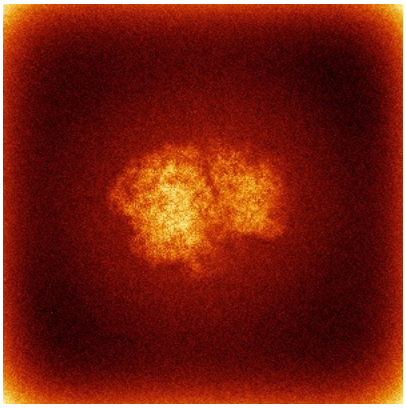


Z

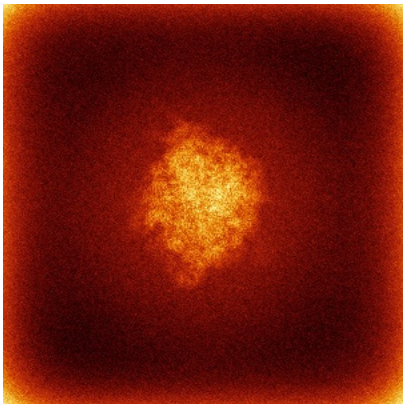
6.4.2 Raw map



X



Y

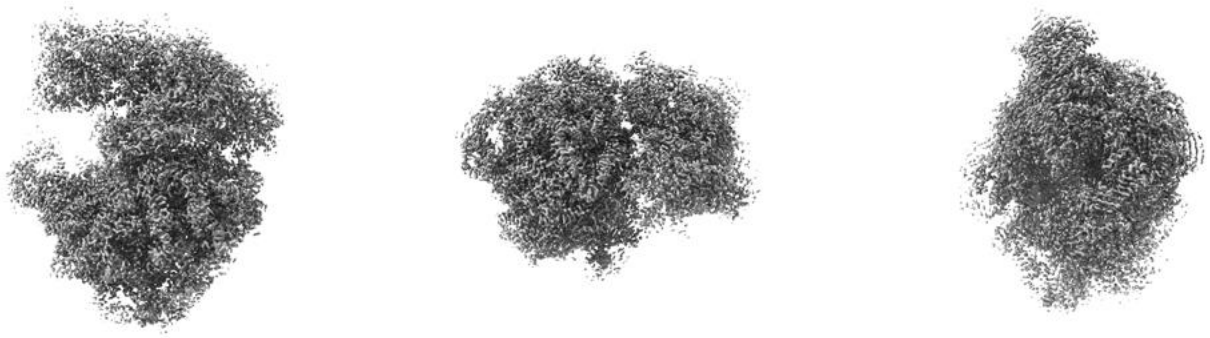


Z

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)

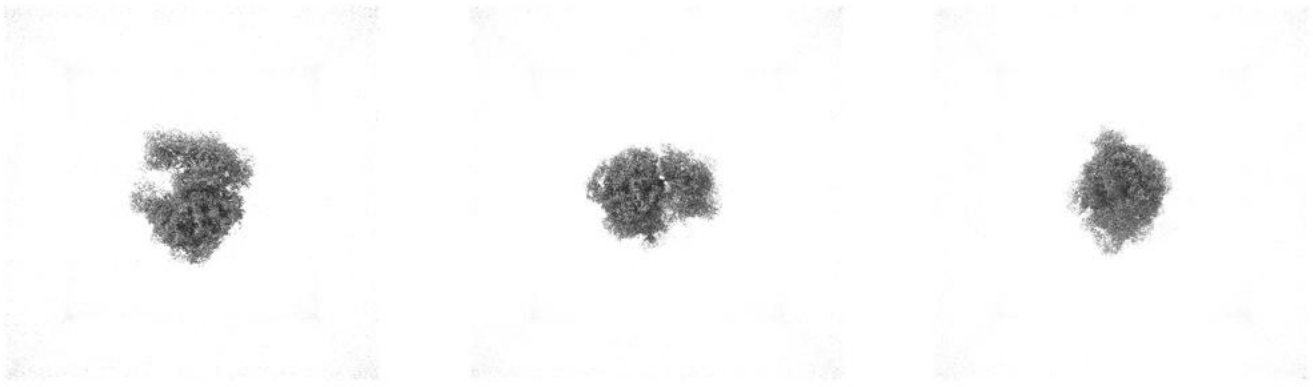
6.5.1 Primary map



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.

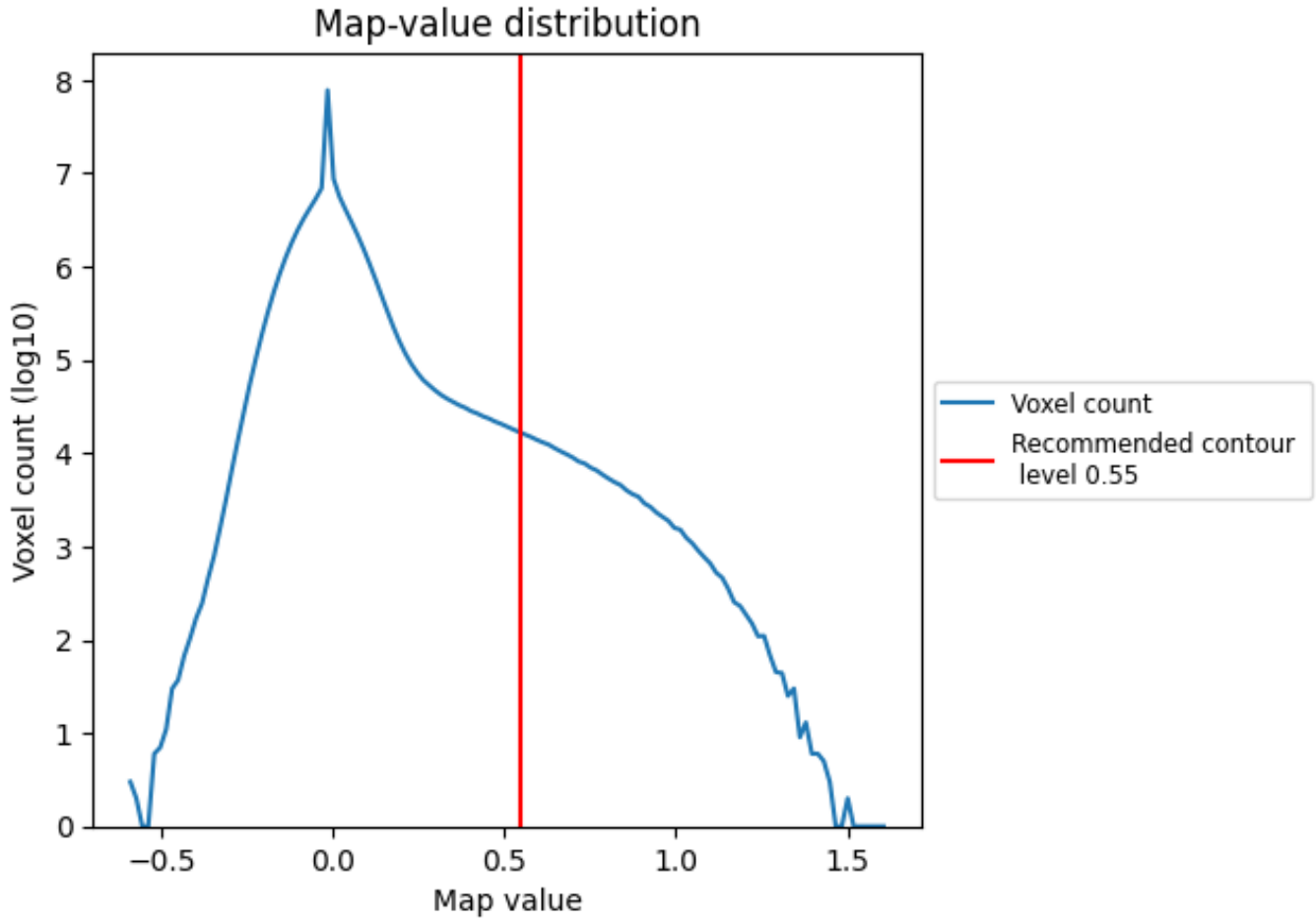
6.6 Mask visualisation (i)

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

7 Map analysis

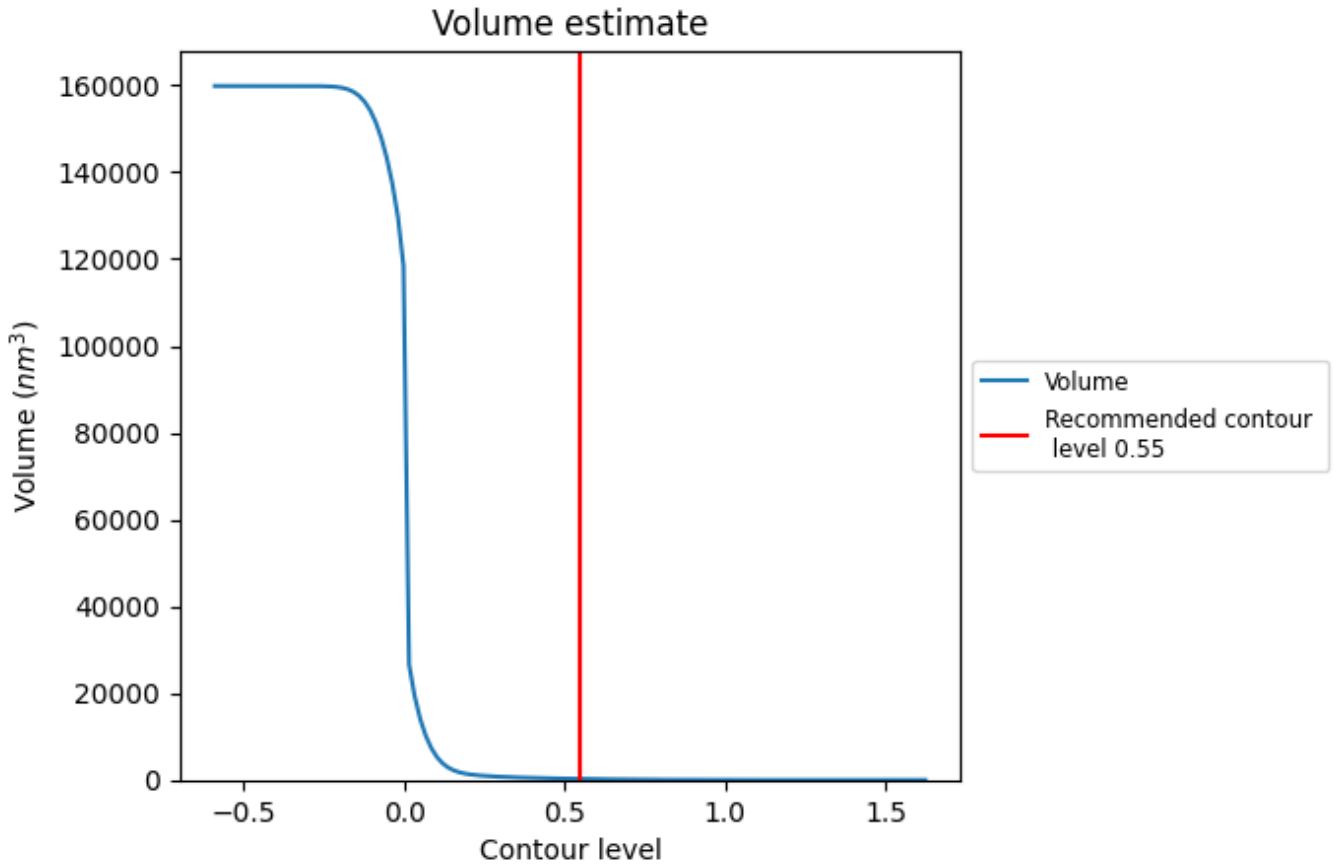
This section contains the results of statistical analysis of the map.

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.

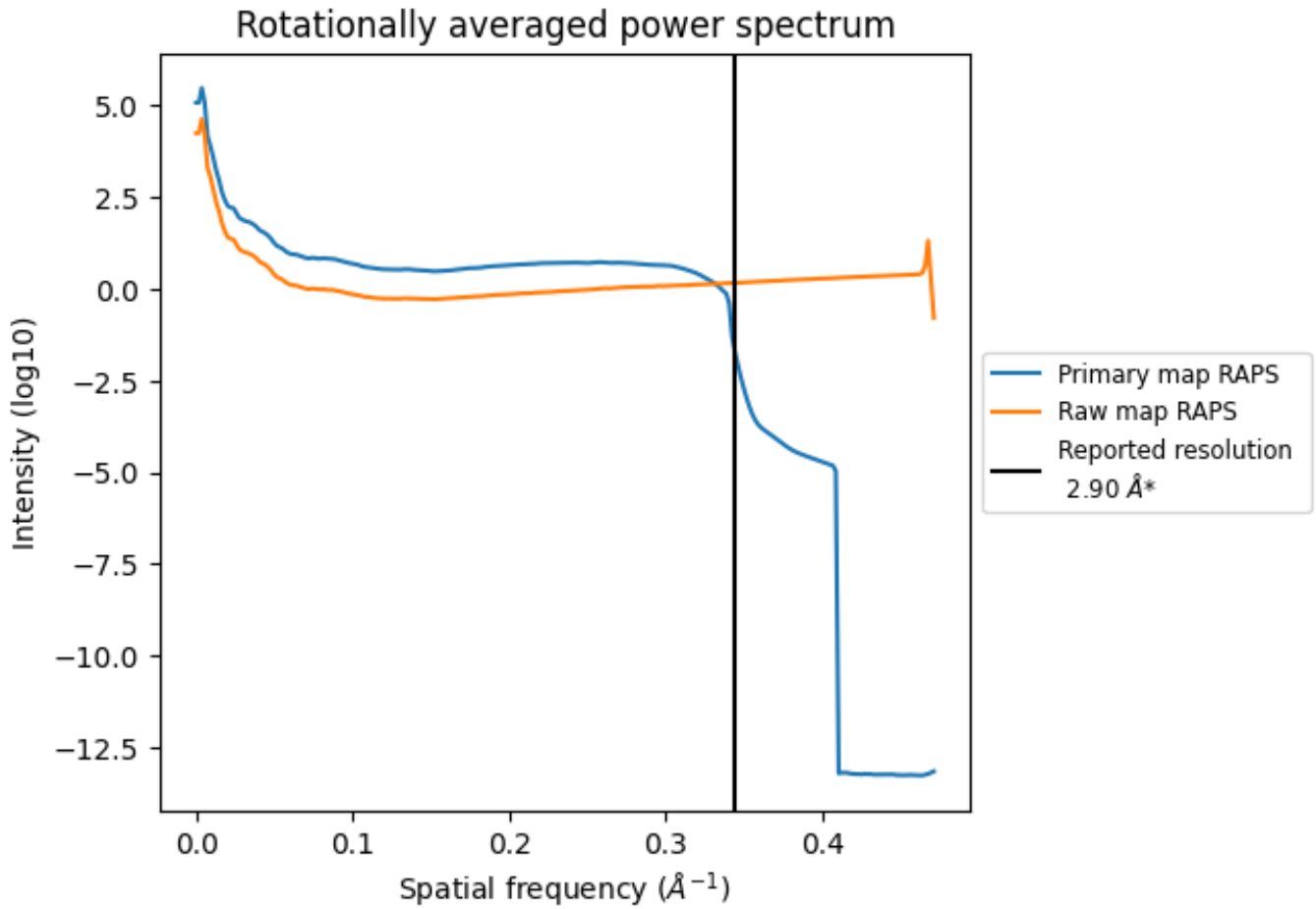
7.2 Volume estimate



The volume at the recommended contour level is 242 nm^3; this corresponds to an approximate mass of 219 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)

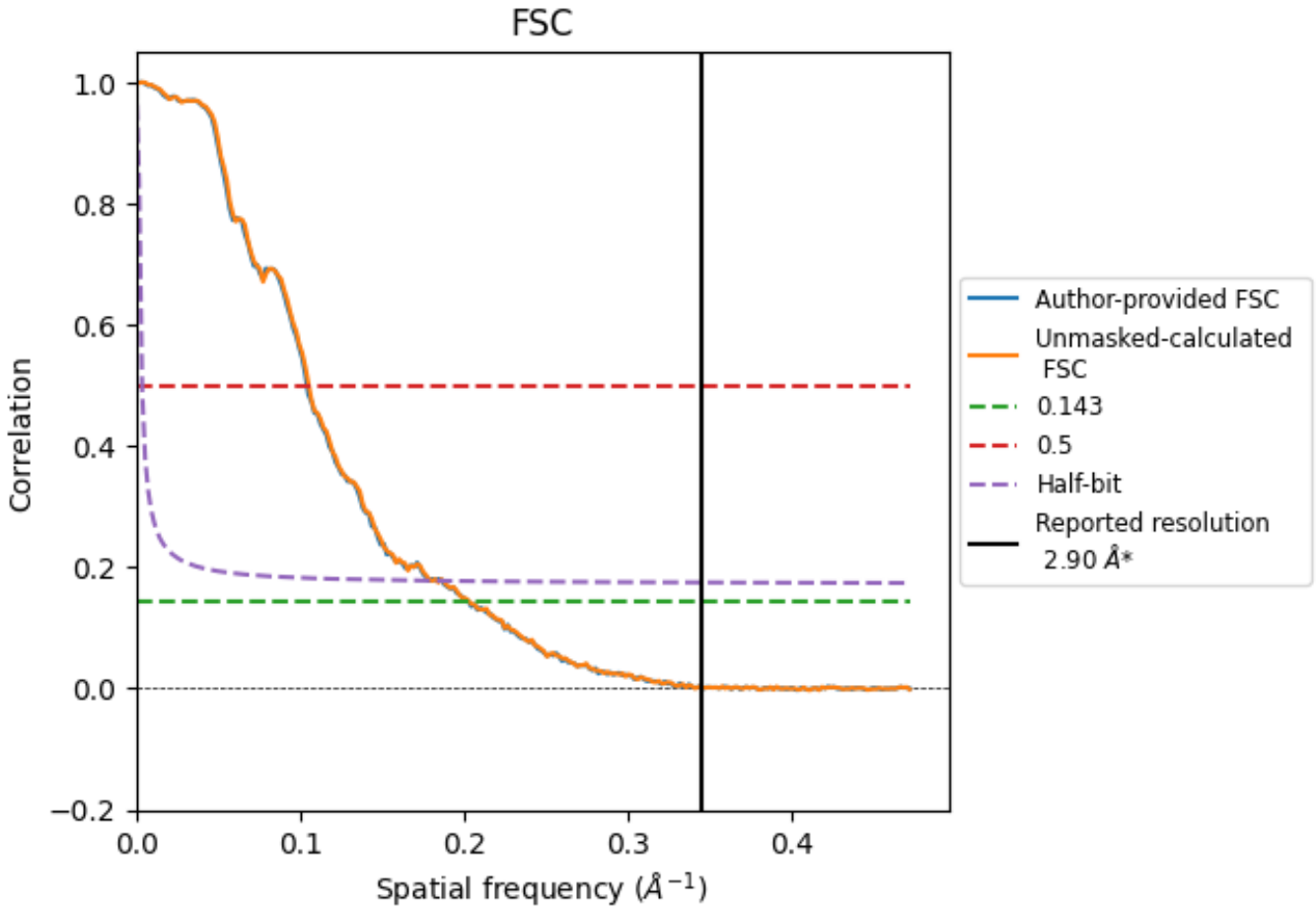


*Reported resolution corresponds to spatial frequency of 0.345 Å^{-1}

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	4.93	9.60	5.36
Unmasked-calculated*	4.92	9.50	5.55

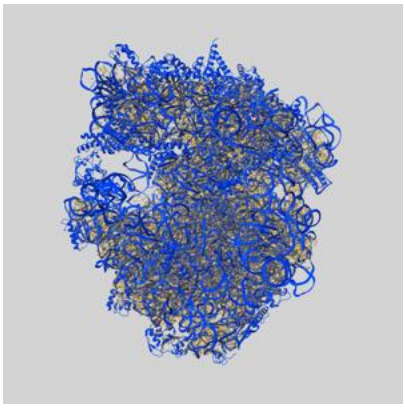
*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from author-provided FSC intersecting FSC 0.143 CUT-OFF 4.93 differs from the reported value 2.9 by more than 10 %

The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.92 differs from the reported value 2.9 by more than 10 %

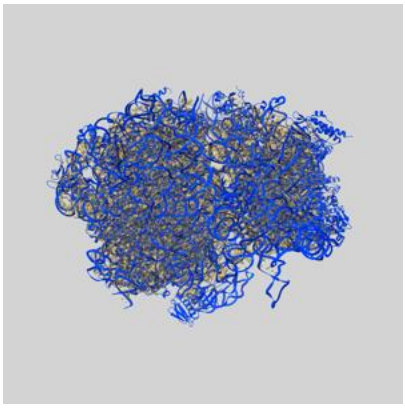
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-55742 and PDB model 9TA1. Per-residue inclusion information can be found in section 3 on page 15.

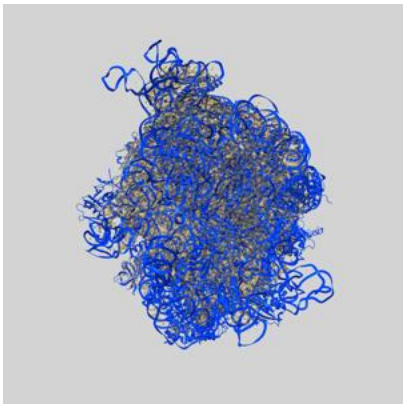
9.1 Map-model overlay



X



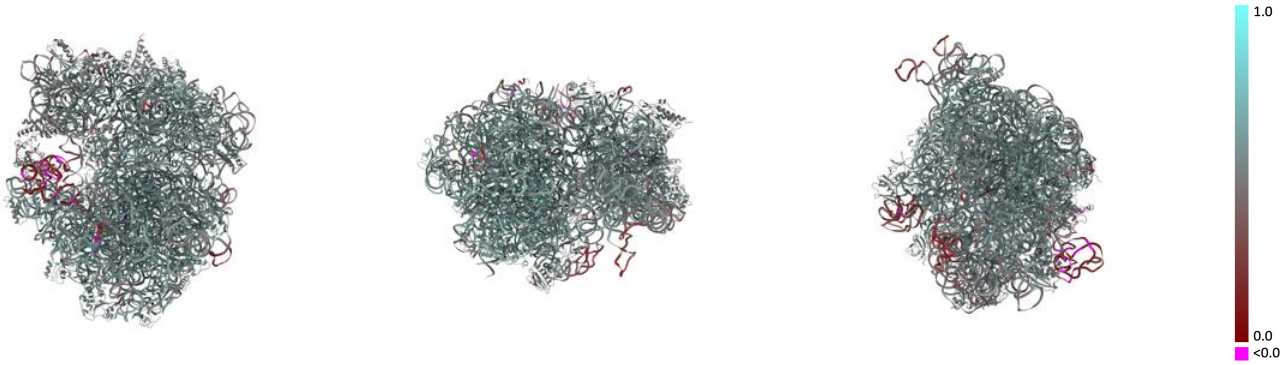
Y



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.

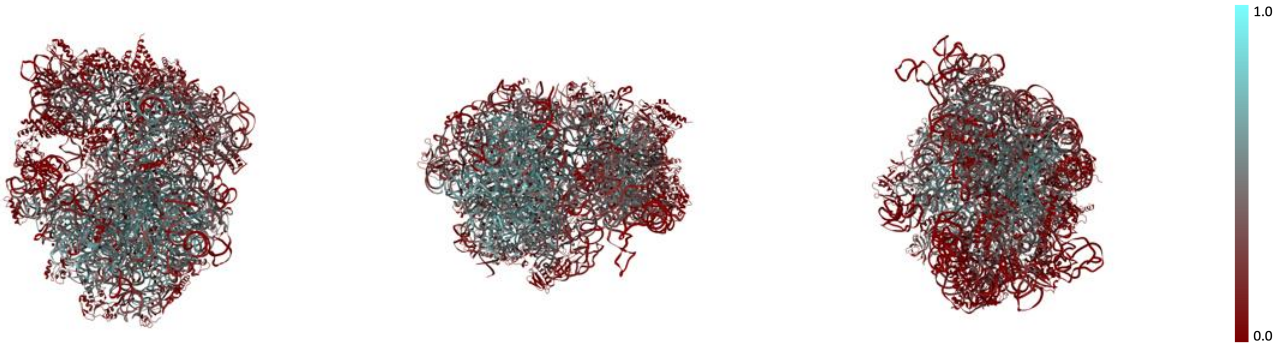
9.2 Q-score mapped to coordinate model (i)



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.

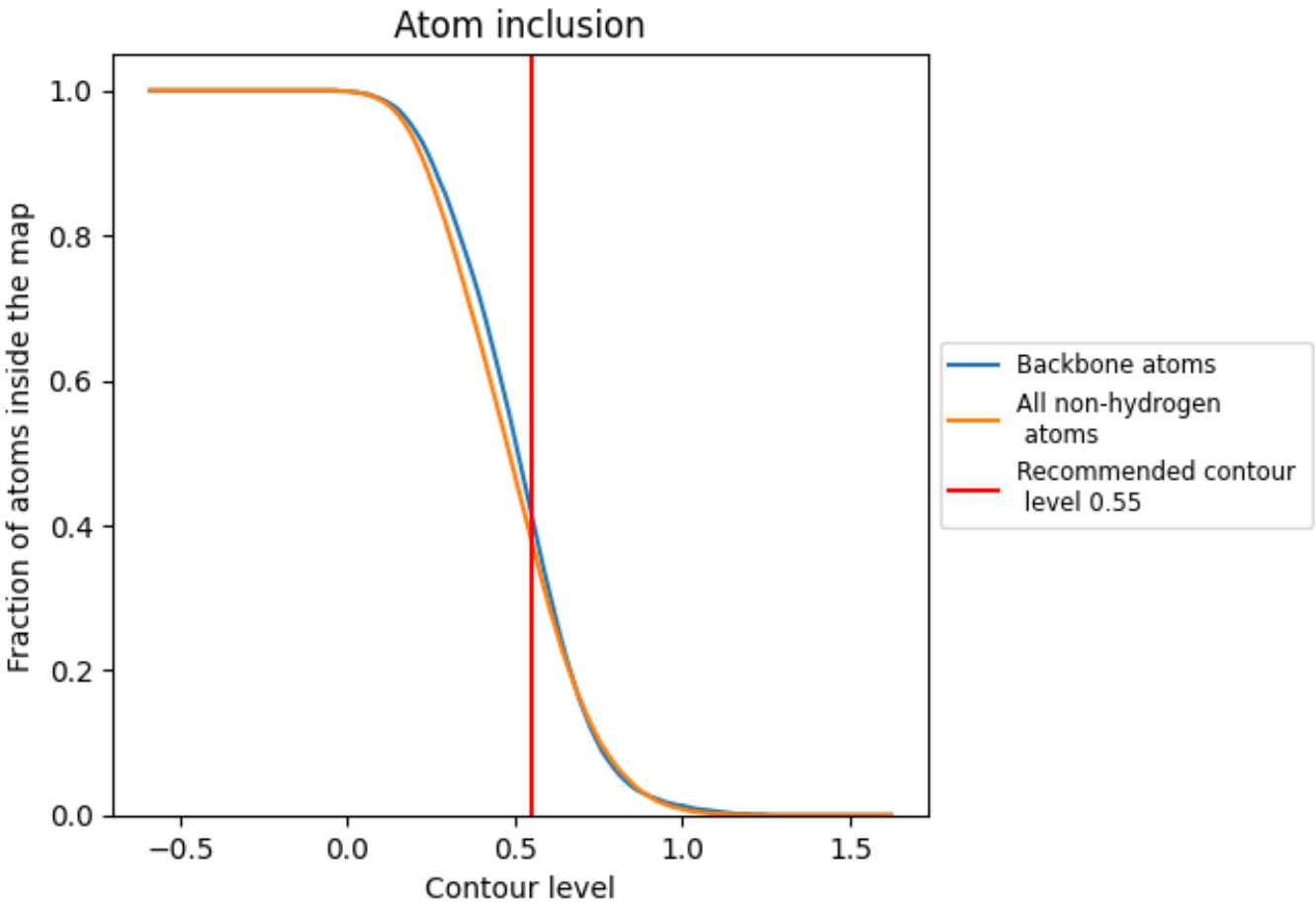
9.3 Atom inclusion mapped to coordinate model (i)



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, 41% of all backbone atoms, 38% 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	0.3770	0.5460
0	0.2230	0.5770
1	0.5620	0.6050
2	0.4470	0.6050
3	0.3460	0.5870
4	0.0000	0.3450
A	0.3620	0.5360
B	0.0530	0.4950
C	0.1400	0.5300
D	0.0980	0.5220
E	0.2830	0.5720
F	0.1180	0.5380
G	0.0290	0.4850
H	0.2710	0.5750
I	0.0990	0.5260
J	0.0950	0.5000
K	0.1990	0.5550
L	0.1760	0.5620
M	0.0270	0.4970
N	0.1020	0.5140
O	0.2430	0.5630
P	0.2220	0.5570
Q	0.1270	0.5520
R	0.2100	0.5370
S	0.0200	0.5080
T	0.2130	0.5550
U	0.0250	0.4850
X	0.1550	0.5290
a	0.4960	0.5500
b	0.2850	0.5430
c	0.4330	0.5990
d	0.4110	0.5880
e	0.2950	0.5770
f	0.0160	0.4800
g	0.0430	0.5230



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Chain	Atom inclusion	Q-score
h	0.0000	0.2760
i	0.4020	0.5890
j	0.2980	0.5860
k	0.3490	0.5810
l	0.2710	0.5760
m	0.4490	0.5980
n	0.1650	0.5440
o	0.3150	0.5840
p	0.4750	0.5940
q	0.3120	0.5860
r	0.4080	0.5860
s	0.2510	0.5650
t	0.1450	0.5390
u	0.1980	0.5640
v	0.4250	0.5990
w	0.3440	0.5840
x	0.1190	0.5260
y	0.3660	0.5890
z	0.4240	0.5880