Full wwPDB EM Validation Report ⓘ

Apr 8, 2026 – 10:02 PM UTC

PDB ID	:	11GG / pdb_000011gg
EMDB ID	:	EMD-75676
Title	:	Chimeric Escherichia coli 70S ribosome containing an evolved 16S rRNA from Pseudomonas aeruginosa (PA-ST)
Authors	:	Raskar, T.
Deposited on	:	2026-02-22
Resolution	:	3.02 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

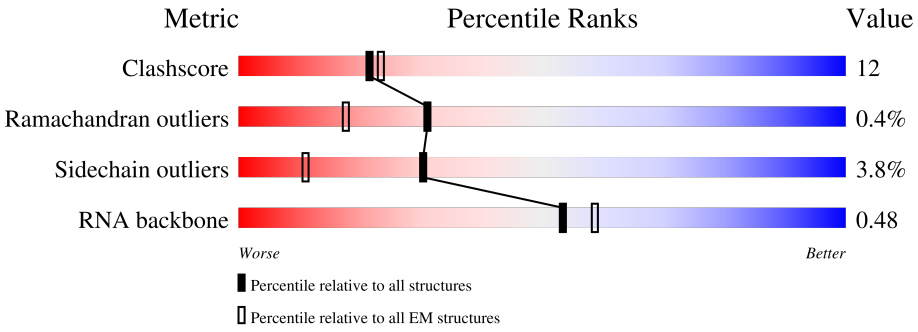
EMDB validation analysis	:	0.0.1.dev132
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

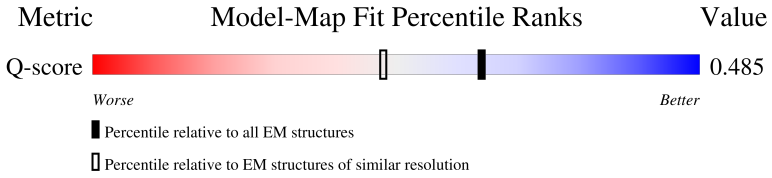
1 Overall quality at a glance

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

The reported resolution of this entry is 3.02 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	13913 (2.52 - 3.52)

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	C	1536	6% 39% 47% 13% ·
2	1	92	13% 51% 30% 7% 12%
3	Z	103	29% 82% 16% ·

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Mol	Chain	Length	Quality of chain
4	2	87	9% 60% 32% 5%
5	4	110	5% 73% 26%
6	3	71	45% 72% 25%
7	b	100	6% 72% 20% 7%
8	c	104	29% 66% 30%
9	D	241	81% 66% 23% 10%
10	d	94	57% 61% 37%
11	E	233	6% 63% 25% 12%
12	e	85	22% 64% 24% 12%
13	F	206	28% 61% 34%
14	f	78	71% 27%
15	G	167	67% 22% 10%
16	g	63	17% 81% 17%
17	H	135	50% 23% 26%
18	h	59	19% 73% 24%
19	I	2904	13% 47% 44% 9%
20	i	57	72% 25%
21	J	120	39% 35% 48% 15%
22	j	55	84% 69% 22% 9%
23	K	273	72% 26%
24	k	46	85% 15%
25	L	209	9% 80% 19%
26	l	65	58% 40%
27	M	201	24% 78% 22%
28	m	38	71% 26%

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Mol	Chain	Length	Quality of chain
29	N	179	66% 66% 31%
30	n	179	14% 55% 28% 16%
31	O	177	67% 71% 28%
32	o	130	73% 24%
33	P	149	76% 79% 21%
34	p	130	14% 58% 36%
35	Q	70	70% 59% 27% 14%
36	q	103	39% 61% 30% 5%
37	R	142	78% 22%
38	r	129	70% 19% 9%
39	S	123	74% 24%
40	t	124	61% 35%
41	T	144	28% 76% 22%
42	u	118	5% 68% 27%
43	U	136	7% 65% 34%
44	v	101	13% 57% 38% 5%
45	V	127	69% 25% 6%
46	w	89	82% 16%
47	W	117	73% 26%
48	x	82	26% 55% 43%
49	X	115	74% 24%
50	y	84	14% 60% 33% 5%
51	Y	118	10% 80% 19%
52	z	75	47% 25% 27%

2 Entry composition

There are 53 unique types of molecules in this entry. The entry contains 142146 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 RNA chain called 16S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	C	1526	32745	14606	6011	10603	1525	0	0

- Molecule 2 is a protein called Small ribosomal subunit protein uS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	1	81	651	416	124	109	2	0	0

- Molecule 3 is a protein called Ribosomal protein L21.

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

- Molecule 4 is a protein called Small ribosomal subunit protein bS20.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	2	84	659	408	136	112	3	0	0

- Molecule 5 is a protein called Large ribosomal subunit protein uL22.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	4	110	857	532	166	156	3	0	0

- Molecule 6 is a protein called Small ribosomal subunit protein bS21.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	3	70	590	366	125	98	1	0	0

- Molecule 7 is a protein called 50S ribosomal protein L23.

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

- Molecule 8 is a protein called 50S ribosomal protein L24.

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

- Molecule 9 is a protein called Small ribosomal subunit protein uS2.

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

- Molecule 10 is a protein called Large ribosomal subunit protein bL25.

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

- Molecule 11 is a protein called Small ribosomal subunit protein uS3.

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

- Molecule 12 is a protein called 50S ribosomal protein L27.

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

- Molecule 13 is a protein called Small ribosomal subunit protein uS4.

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

- Molecule 14 is a protein called 50S ribosomal protein L28.

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

- Molecule 15 is a protein called Small ribosomal subunit protein uS5.

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

- Molecule 16 is a protein called Large ribosomal subunit protein uL29.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	g	62	Total	C	N	O	S	0	0
			501	308	98	94	1		

- Molecule 17 is a protein called Small ribosomal subunit protein bS6.

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

- Molecule 18 is a protein called 50S ribosomal protein L30.

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

- Molecule 19 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	I	2898	Total	C	N	O	P	2	0
			62271	27787	11455	20129	2900		

- Molecule 20 is a protein called 50S ribosomal protein L32.

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

- Molecule 21 is a RNA chain called 5S ribosomal RNA.

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

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

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

- Molecule 23 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	K	271	Total	C	N	O	S	1	0
			2093	1294	427	365	7		

- Molecule 24 is a protein called 50S ribosomal protein L34.

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

- Molecule 25 is a protein called Large ribosomal subunit protein uL3.

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

- Molecule 26 is a protein called 50S ribosomal protein L35.

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

- Molecule 27 is a protein called Large ribosomal subunit protein uL4.

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

- Molecule 28 is a protein called 50S ribosomal protein L36.

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

- Molecule 29 is a protein called Large ribosomal subunit protein uL5.

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

- Molecule 30 is a protein called Small ribosomal subunit protein uS7.

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

- Molecule 31 is a protein called Large ribosomal subunit protein uL6.

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

- Molecule 32 is a protein called Small ribosomal subunit protein uS8.

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

- Molecule 33 is a protein called Large ribosomal subunit protein bL9.

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

- Molecule 34 is a protein called Small ribosomal subunit protein uS9.

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

- Molecule 35 is a protein called 50S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	Q	60	Total	C	N	O	S	0	0
			480	299	90	85	6		

- Molecule 36 is a protein called Small ribosomal subunit protein uS10.

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

- Molecule 37 is a protein called Large ribosomal subunit protein uL13.

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

- Molecule 38 is a protein called 30S ribosomal protein S11.

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

- Molecule 39 is a protein called Large ribosomal subunit protein uL14.

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

- Molecule 40 is a protein called 30S ribosomal protein S12.

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

- Molecule 41 is a protein called Large ribosomal subunit protein uL15.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	T	144	Total	C	N	O	S	0	0
			1053	654	207	190	2		

- Molecule 42 is a protein called Small ribosomal subunit protein uS13.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	u	115	Total	C	N	O	S	0	0
			891	552	179	157	3		

- Molecule 43 is a protein called Large ribosomal subunit protein uL16.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	U	136	Total	C	N	O	S	0	0
			1075	686	205	178	6		

- Molecule 44 is a protein called Small ribosomal subunit protein uS14.

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

- Molecule 45 is a protein called Large ribosomal subunit protein bL17.

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

- Molecule 46 is a protein called Small ribosomal subunit protein uS15.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	w	88	Total	C	N	O	S	0	0
			710	437	143	129	1		

- Molecule 47 is a protein called Large ribosomal subunit protein uL18.

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

- Molecule 48 is a protein called Small ribosomal subunit protein bS16.

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

- Molecule 49 is a protein called Large ribosomal subunit protein bL19.

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

- Molecule 50 is a protein called Small ribosomal subunit protein uS17.

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

- Molecule 51 is a protein called 50S ribosomal protein L20.

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

- Molecule 52 is a protein called Small ribosomal subunit protein bS18.

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

- Molecule 53 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
53	C	90	Total 90	Mg 90	0
53	I	204	Total 204	Mg 204	0
53	i	1	Total 1	Mg 1	0
53	J	5	Total 5	Mg 5	0
53	K	1	Total 1	Mg 1	0
53	L	1	Total 1	Mg 1	0
53	l	1	Total 1	Mg 1	0
53	q	1	Total 1	Mg 1	0
53	V	2	Total 2	Mg 2	0

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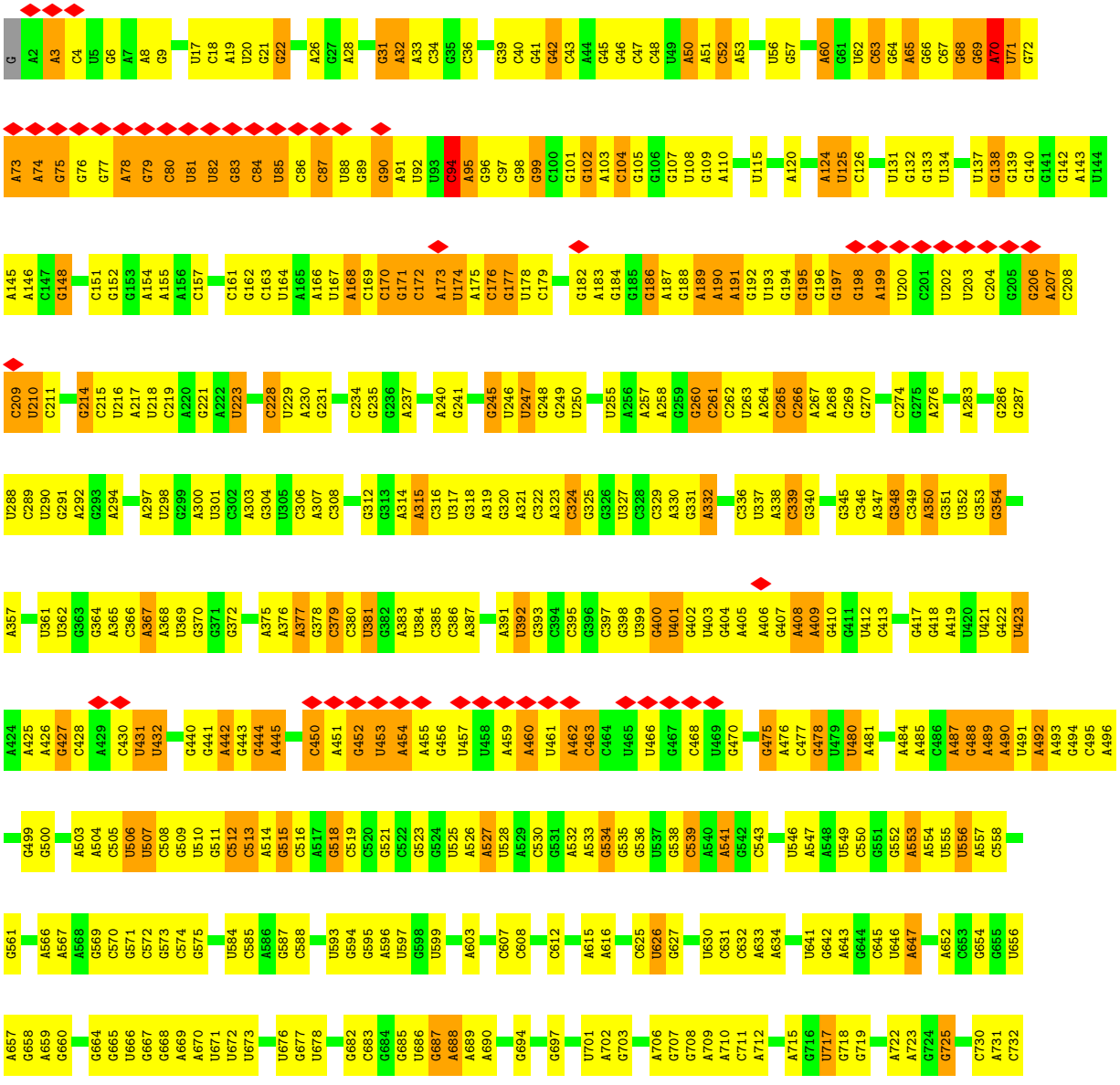
Mol	Chain	Residues	Atoms		AltConf
			Total	Mg	
53	Y	1	1	1	0

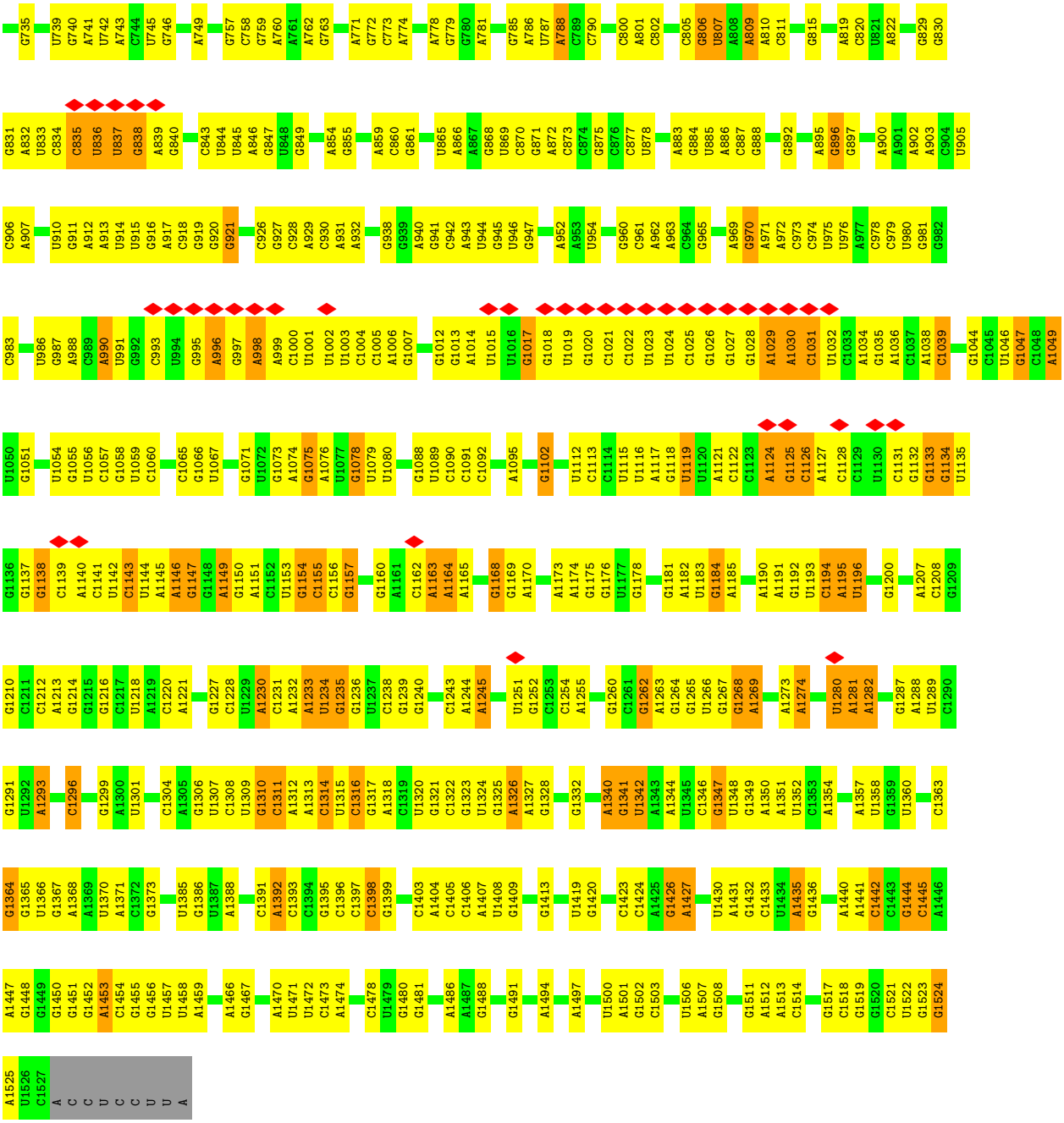
3 Residue-property plots (i)

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: 16S ribosomal RNA

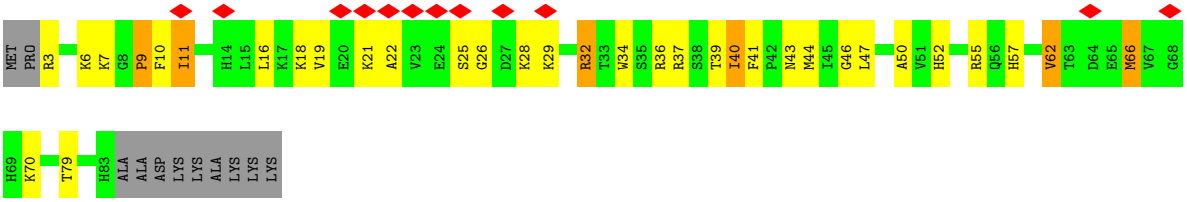
Chain C:





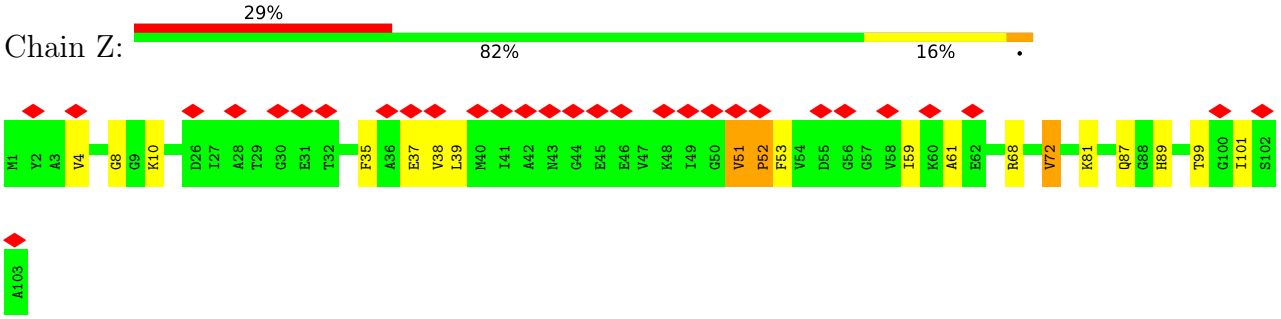
• Molecule 2: Small ribosomal subunit protein uS19

Chain 1:



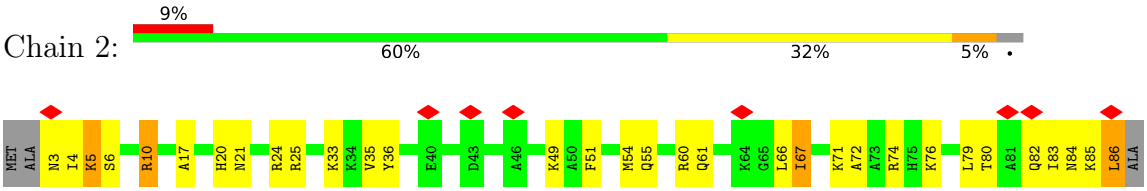
• Molecule 3: Ribosomal protein L21

Chain Z:



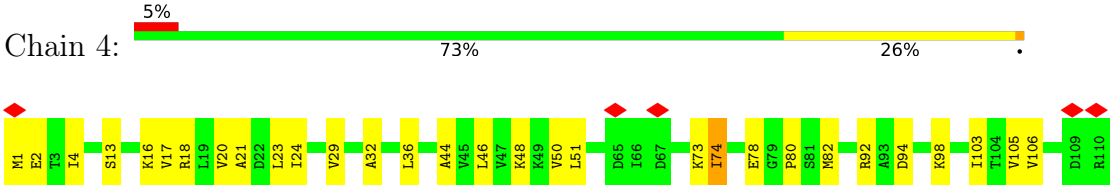
• Molecule 4: Small ribosomal subunit protein bS20

Chain 2:



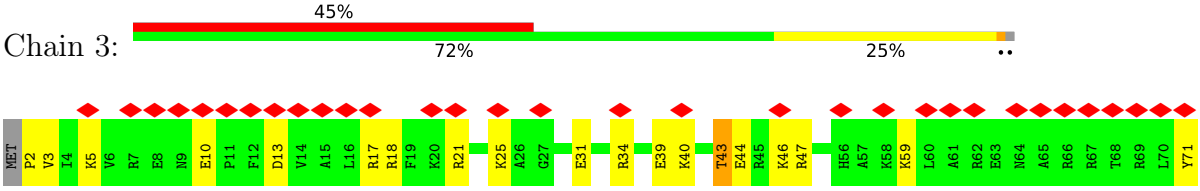
• Molecule 5: Large ribosomal subunit protein uL22

Chain 4:



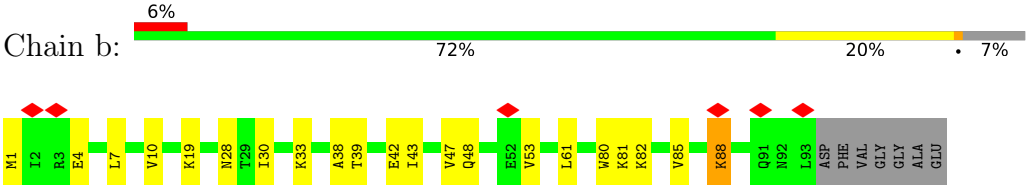
• Molecule 6: Small ribosomal subunit protein bS21

Chain 3:



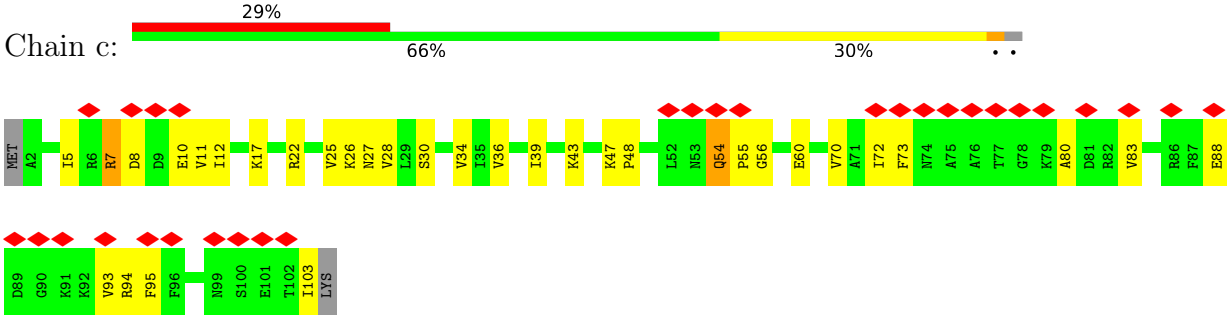
• Molecule 7: 50S ribosomal protein L23

Chain b:



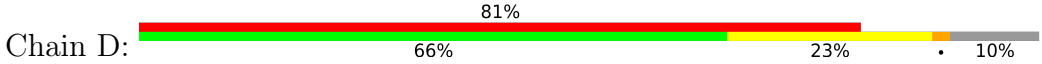
• Molecule 8: 50S ribosomal protein L24

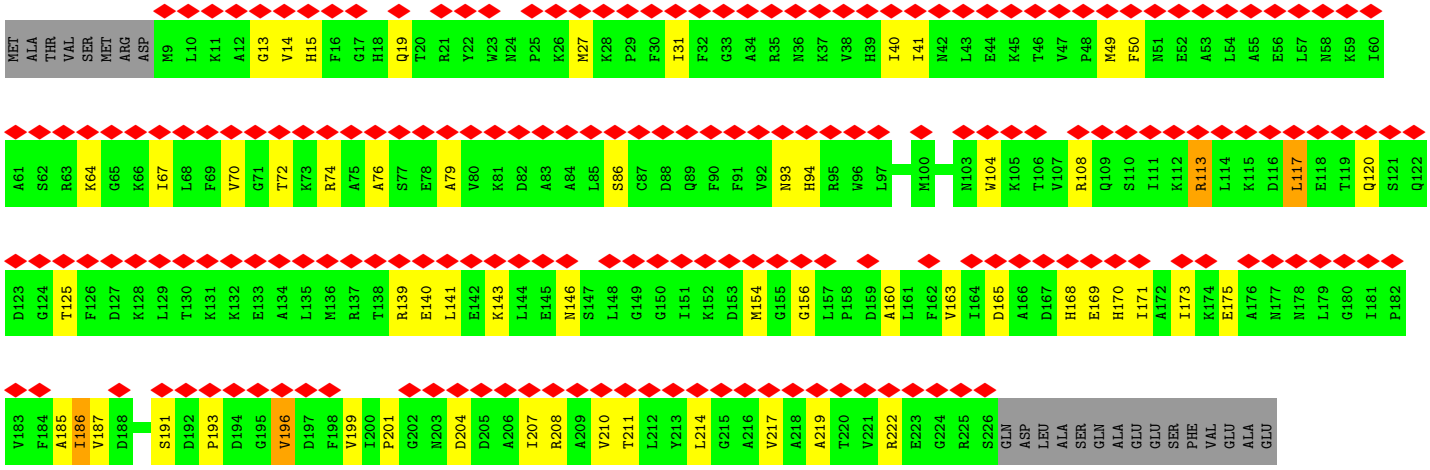
Chain c:



• Molecule 9: Small ribosomal subunit protein uS2

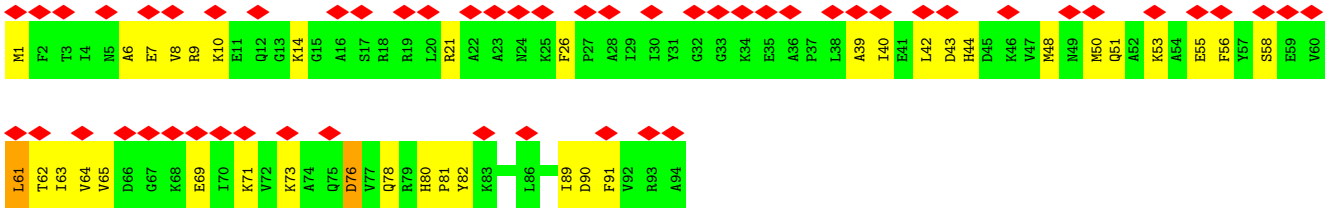
Chain D:





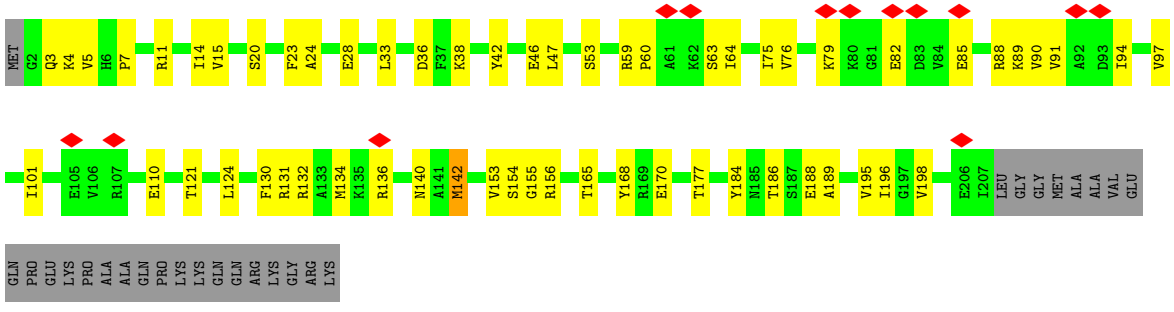
• Molecule 10: Large ribosomal subunit protein bL25

Chain d:



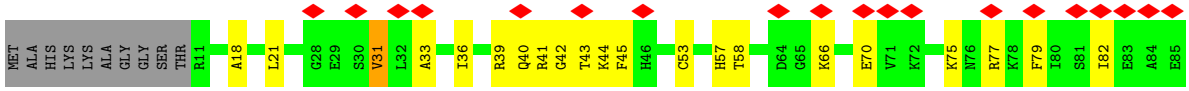
• Molecule 11: Small ribosomal subunit protein uS3

Chain E:



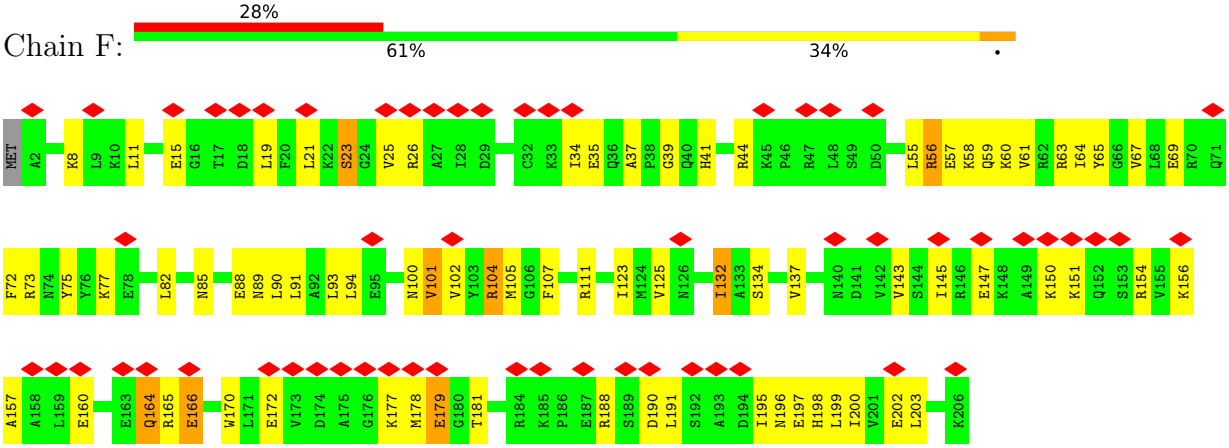
• Molecule 12: 50S ribosomal protein L27

Chain e:



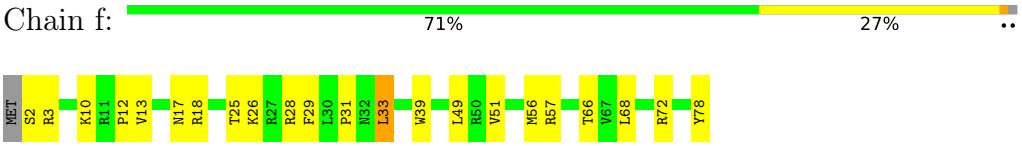
• Molecule 13: Small ribosomal subunit protein uS4

Chain F:



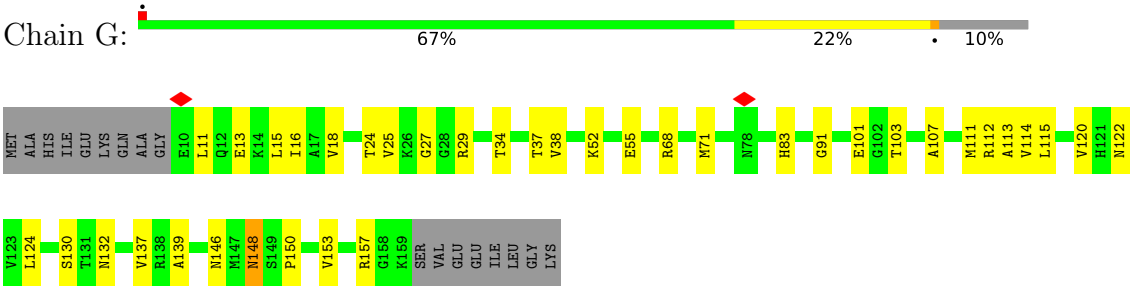
• Molecule 14: 50S ribosomal protein L28

Chain f:



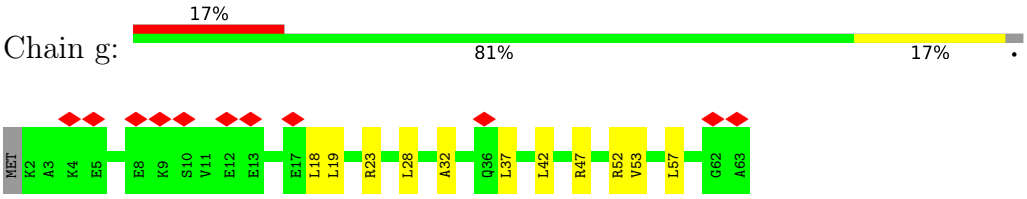
• Molecule 15: Small ribosomal subunit protein uS5

Chain G:



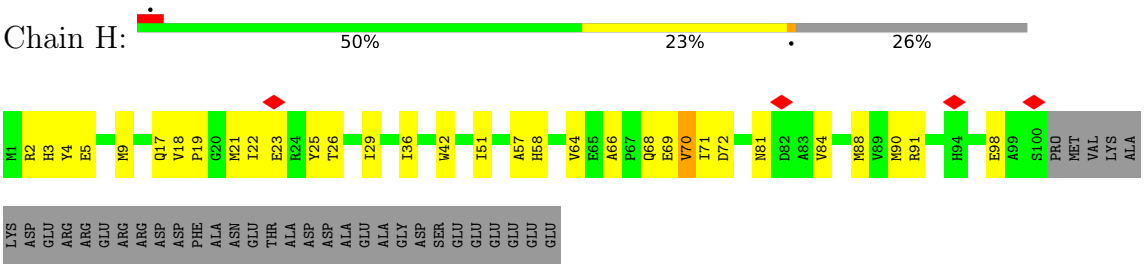
• Molecule 16: Large ribosomal subunit protein uL29

Chain g:



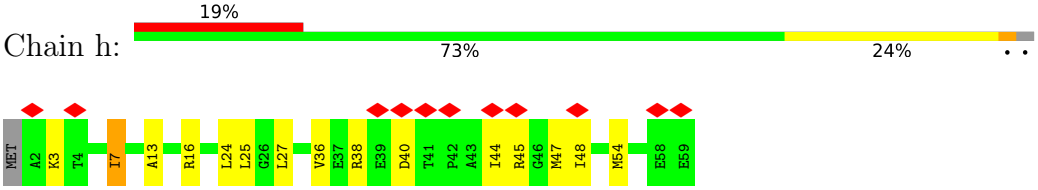
• Molecule 17: Small ribosomal subunit protein bS6

Chain H:



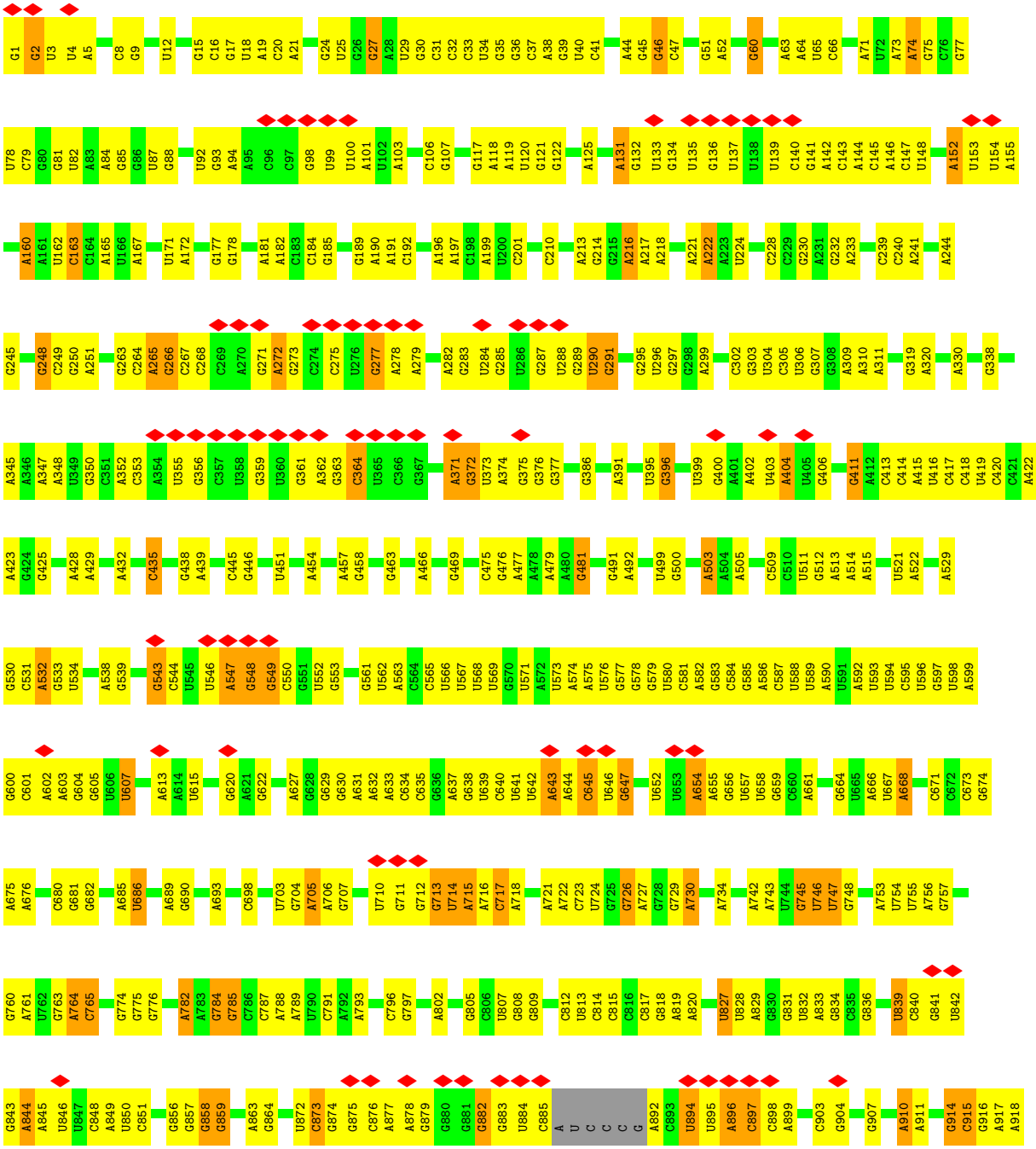
• Molecule 18: 50S ribosomal protein L30

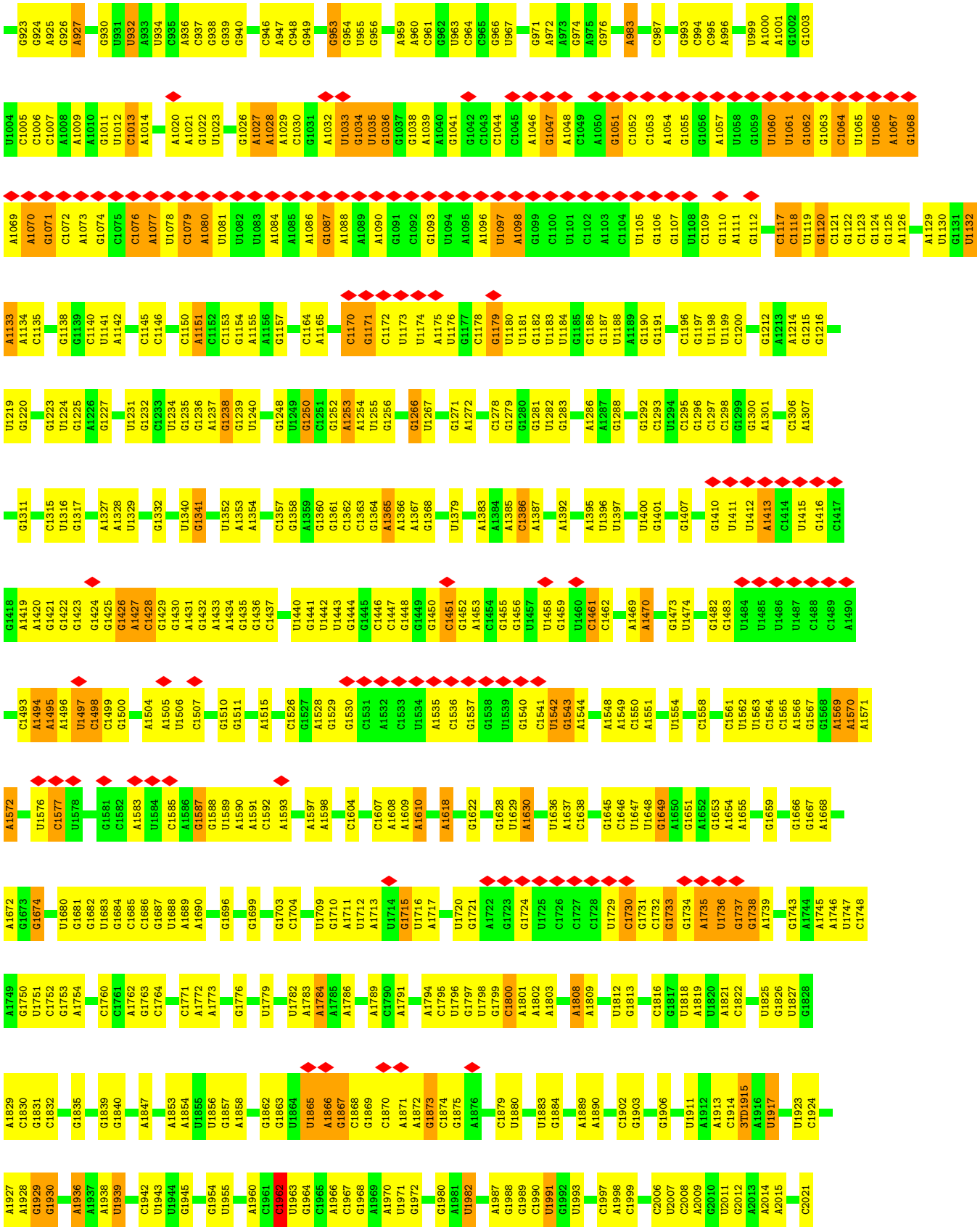
Chain h:

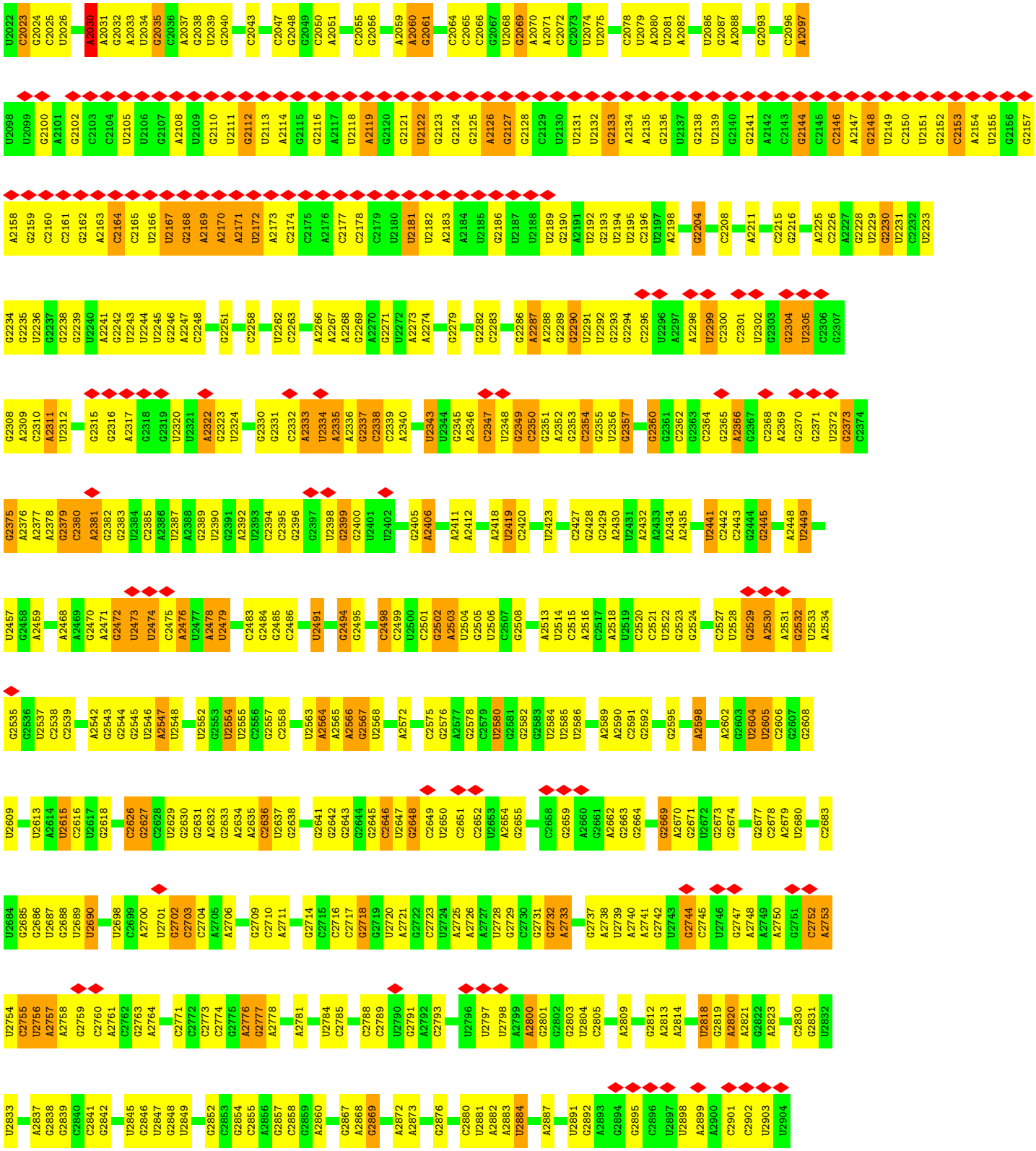


• Molecule 19: 23S ribosomal RNA

Chain I:

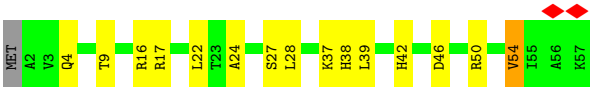




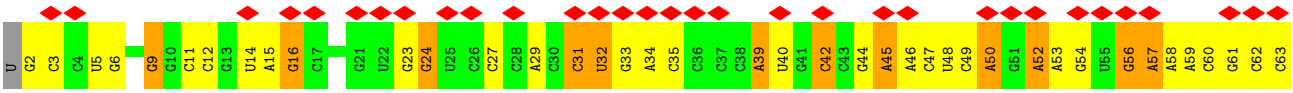


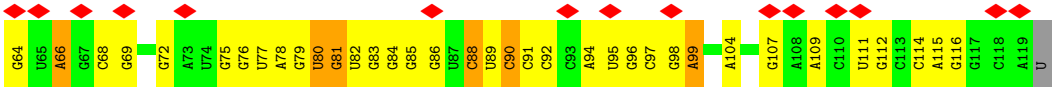
• Molecule 20: 50S ribosomal protein L32

Chain i:

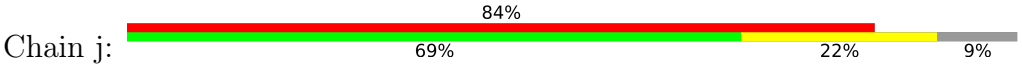


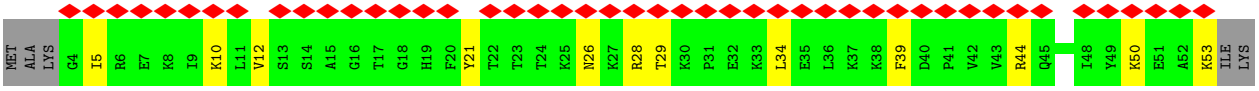
• Molecule 21: 5S ribosomal RNA



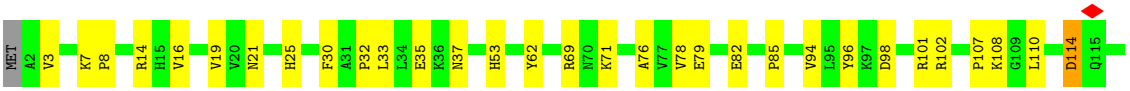


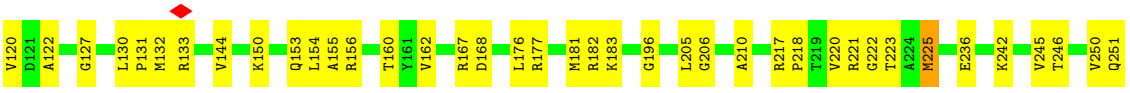
• Molecule 22: 50S ribosomal protein L33

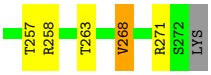




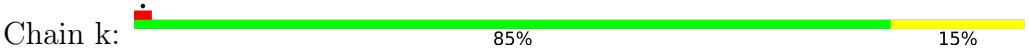
• Molecule 23: 50S ribosomal protein L2

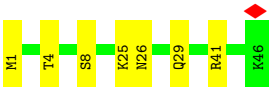




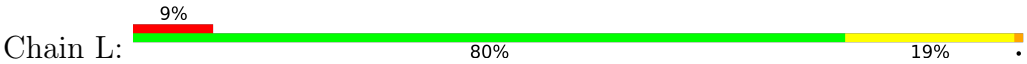


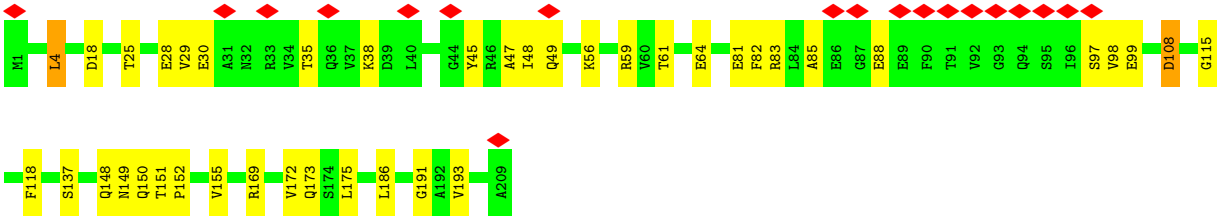
• Molecule 24: 50S ribosomal protein L34



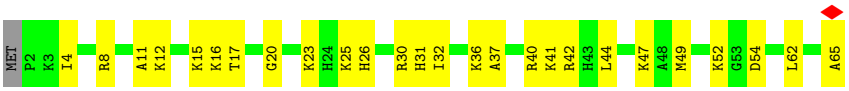


• Molecule 25: Large ribosomal subunit protein uL3

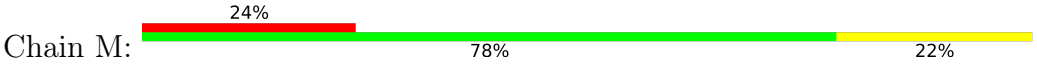


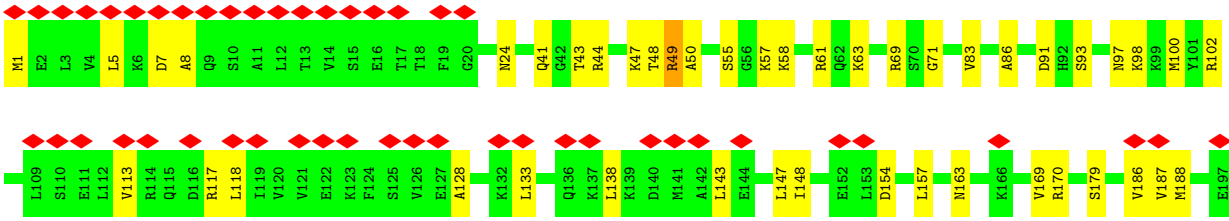


• Molecule 26: 50S ribosomal protein L35

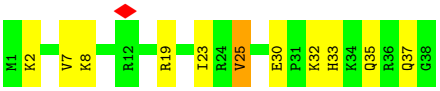


• Molecule 27: Large ribosomal subunit protein uL4

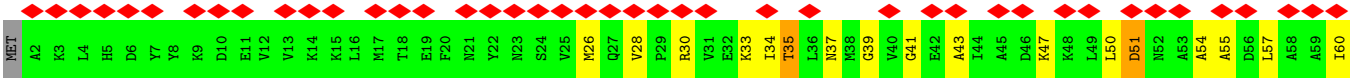


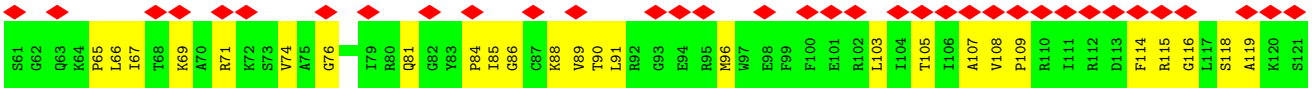


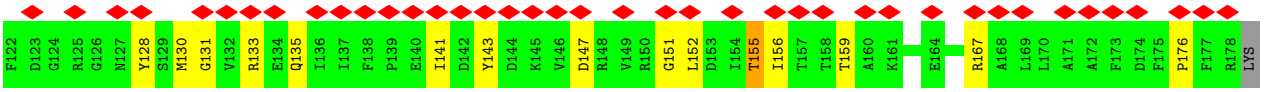
• Molecule 28: 50S ribosomal protein L36



• Molecule 29: Large ribosomal subunit protein uL5

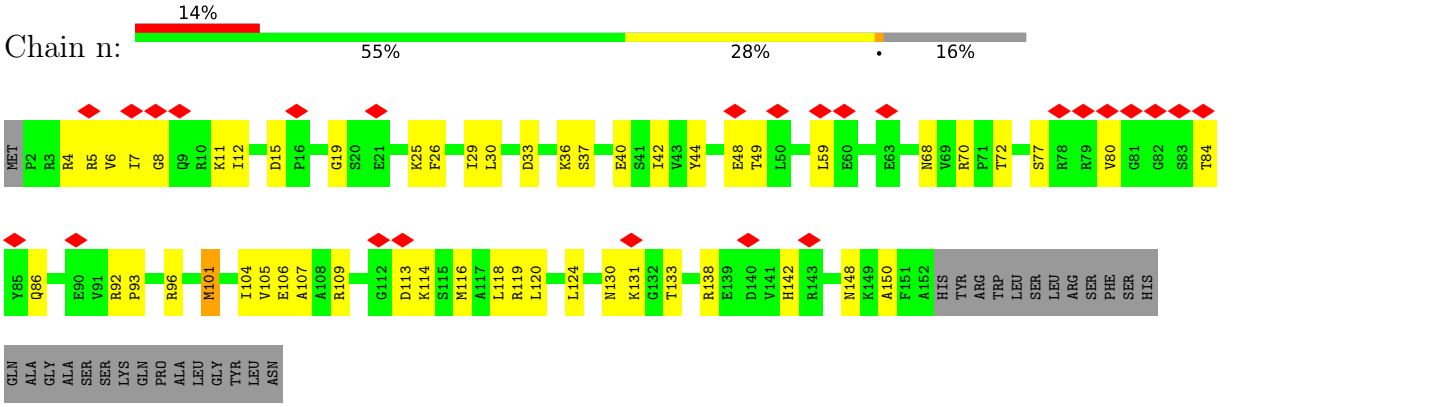






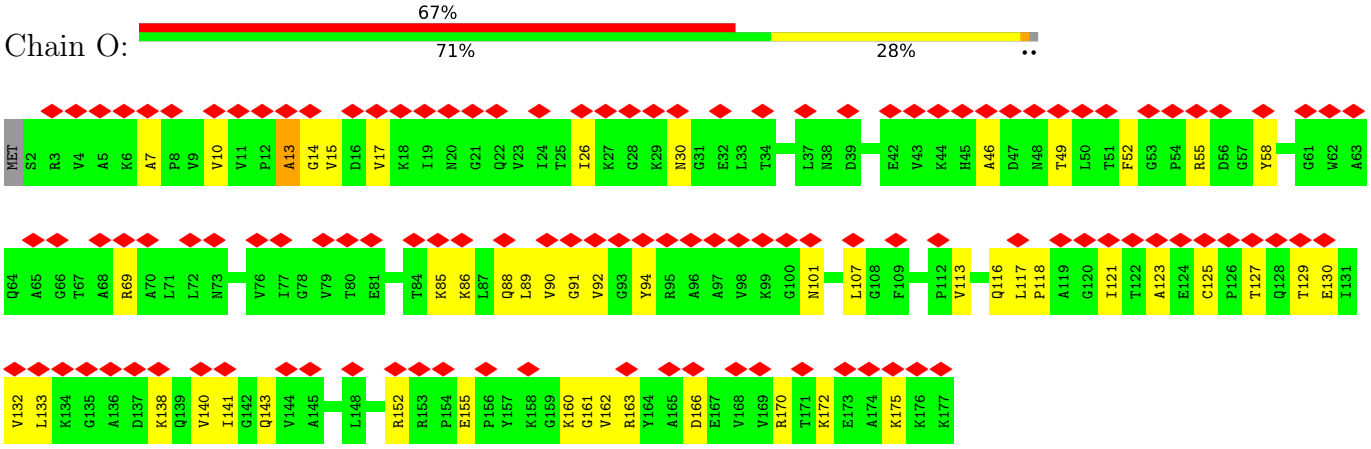
• Molecule 30: Small ribosomal subunit protein uS7

Chain n:



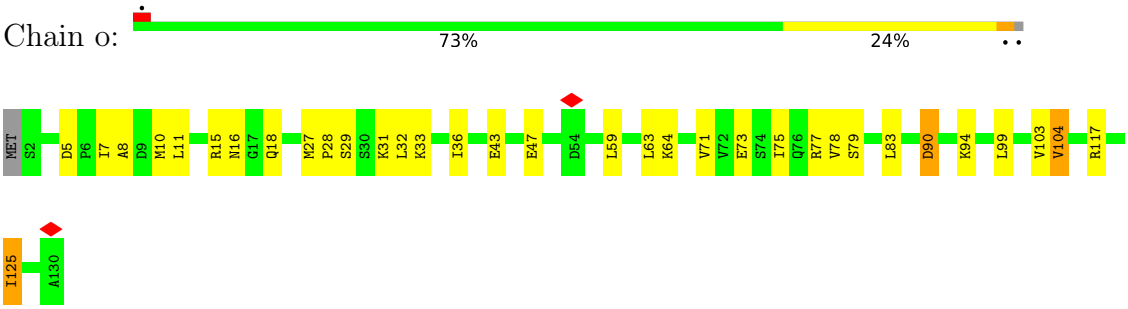
• Molecule 31: Large ribosomal subunit protein uL6

Chain O:



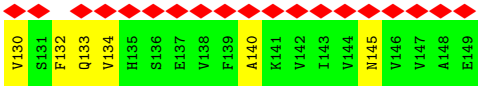
• Molecule 32: Small ribosomal subunit protein uS8

Chain o:

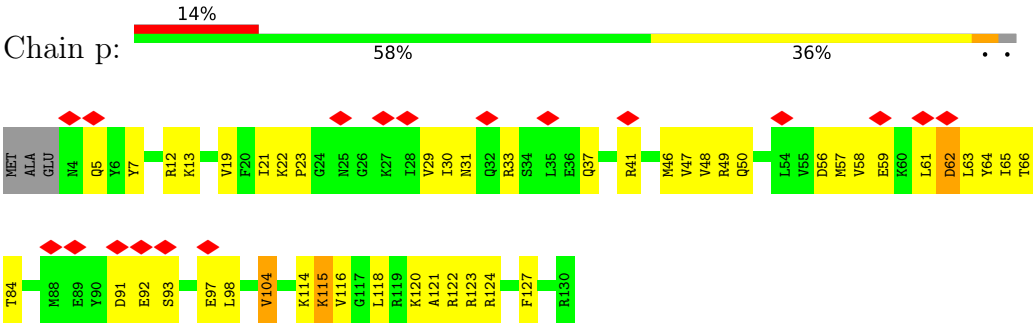


• Molecule 33: Large ribosomal subunit protein bL9

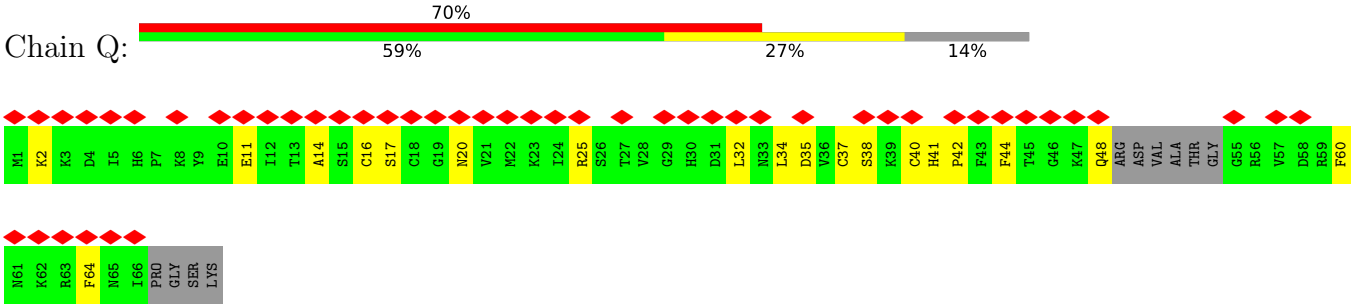
Chain P:



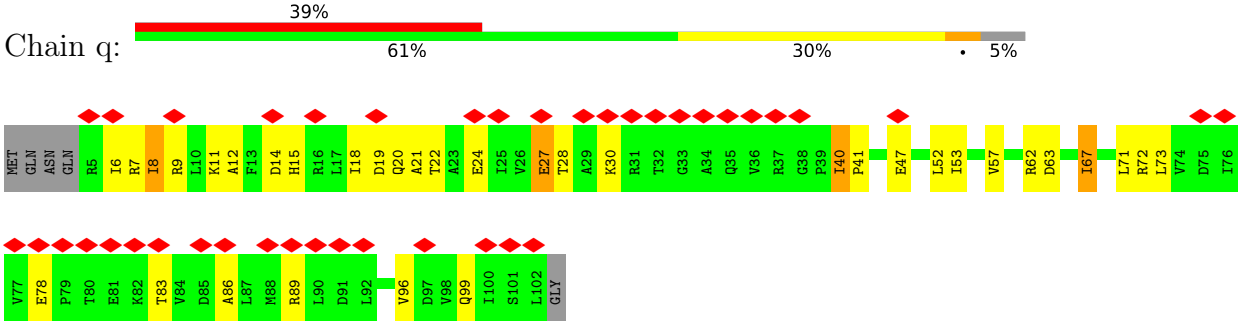
• Molecule 34: Small ribosomal subunit protein uS9



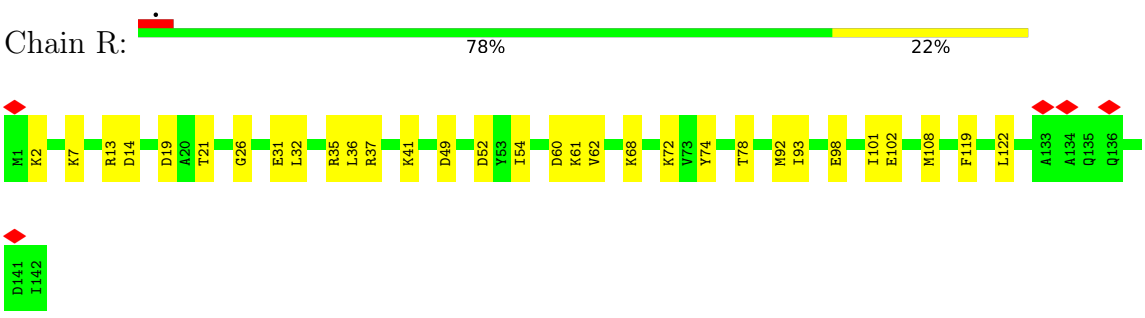
• Molecule 35: 50S ribosomal protein L31



• Molecule 36: Small ribosomal subunit protein uS10

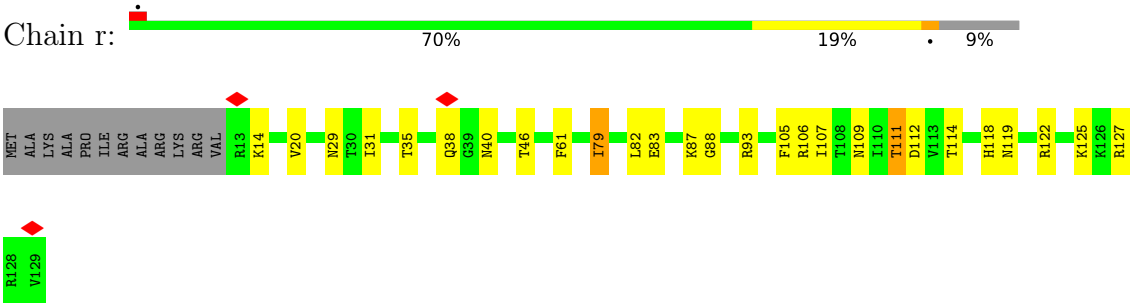


• Molecule 37: Large ribosomal subunit protein uL13



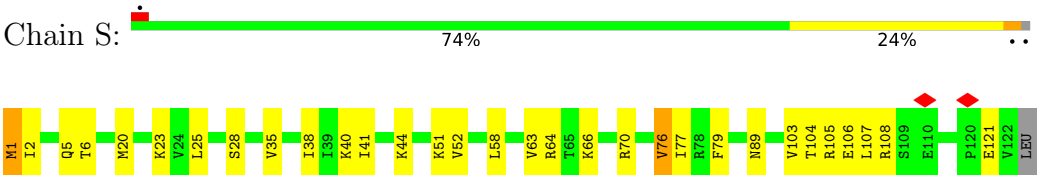
• Molecule 38: 30S ribosomal protein S11

Chain r:



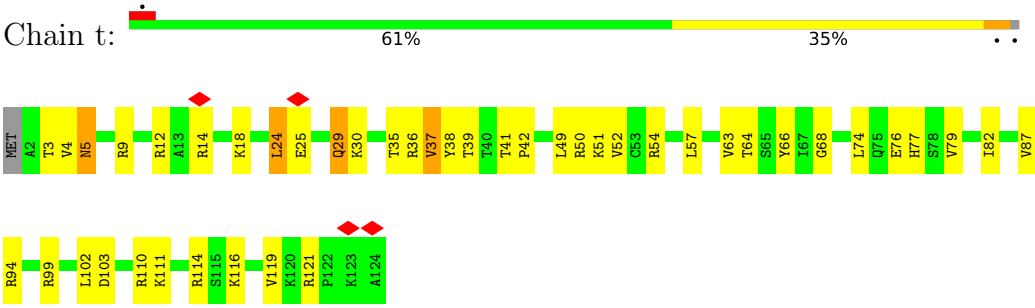
• Molecule 39: Large ribosomal subunit protein uL14

Chain S:



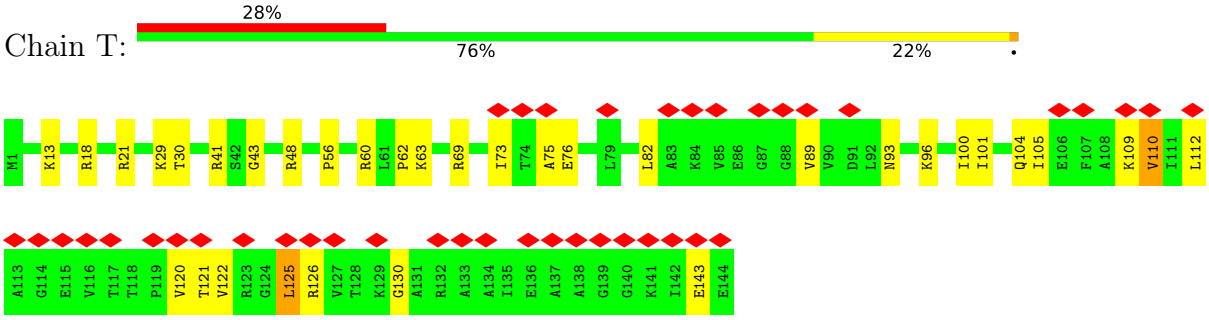
• Molecule 40: 30S ribosomal protein S12

Chain t:



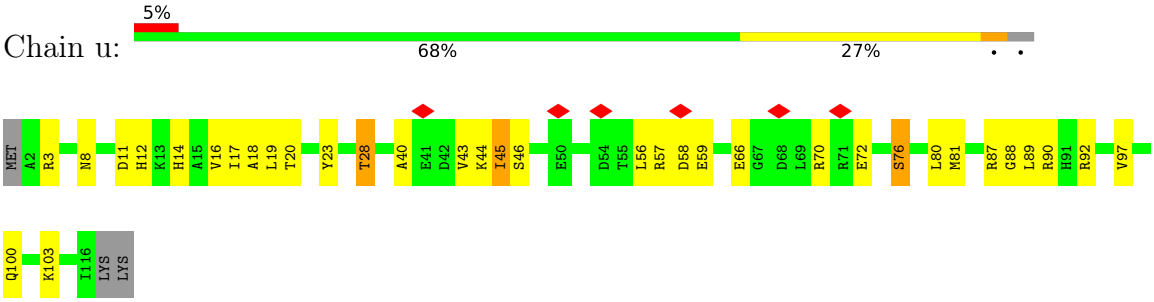
• Molecule 41: Large ribosomal subunit protein uL15

Chain T:

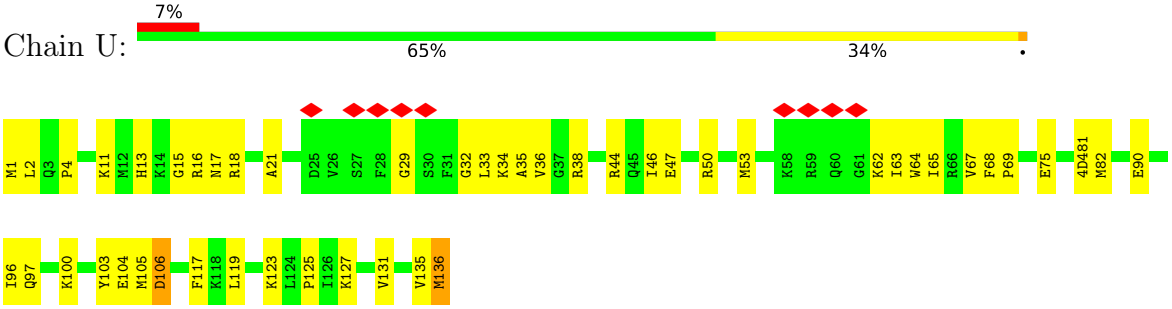


• Molecule 42: Small ribosomal subunit protein uS13

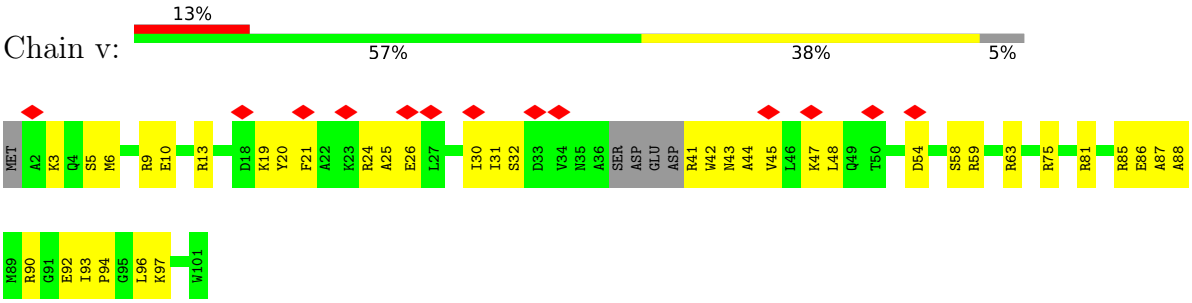
Chain u:



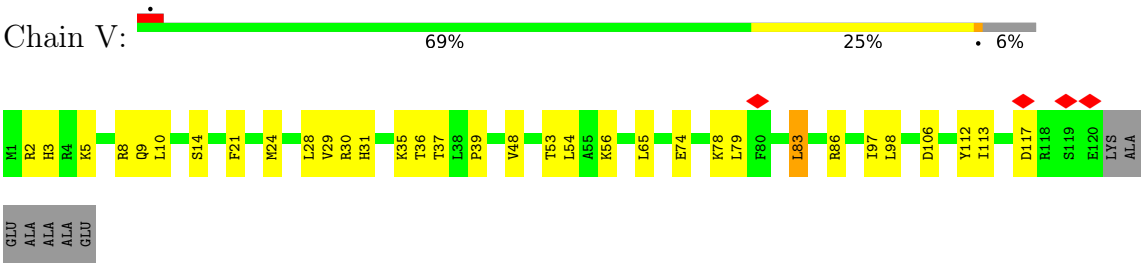
• Molecule 43: Large ribosomal subunit protein uL16



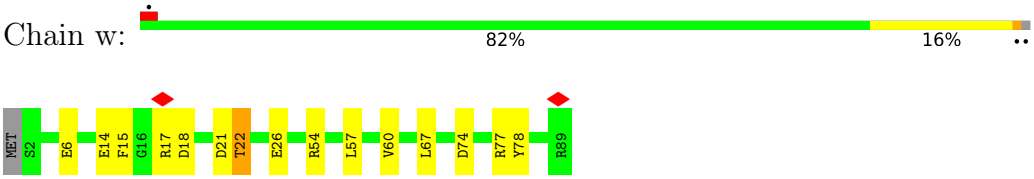
• Molecule 44: Small ribosomal subunit protein uS14



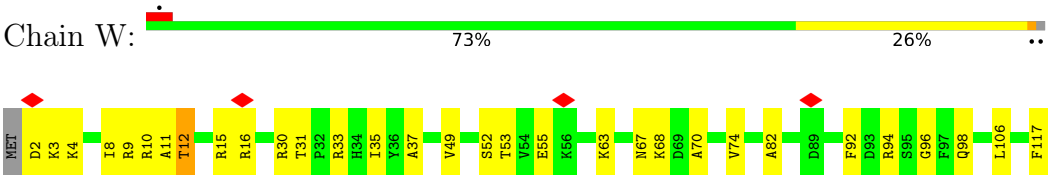
• Molecule 45: Large ribosomal subunit protein bL17



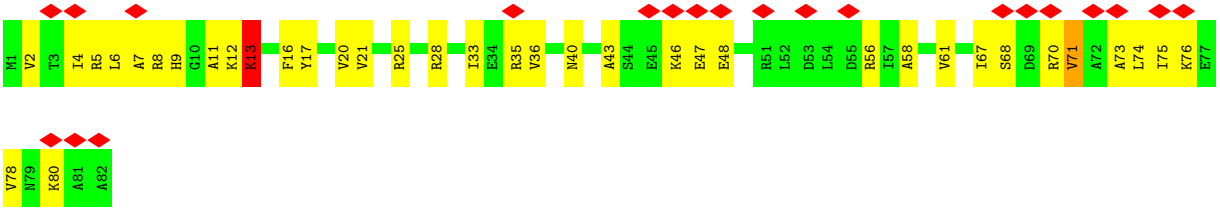
• Molecule 46: Small ribosomal subunit protein uS15



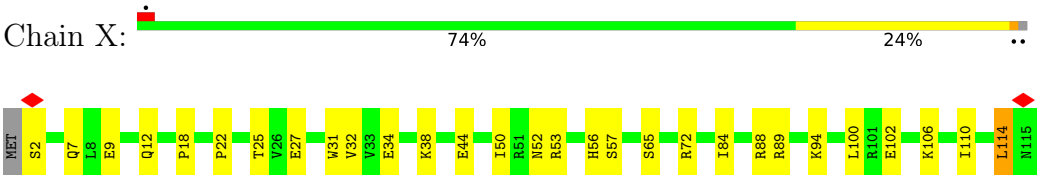
• Molecule 47: Large ribosomal subunit protein uL18



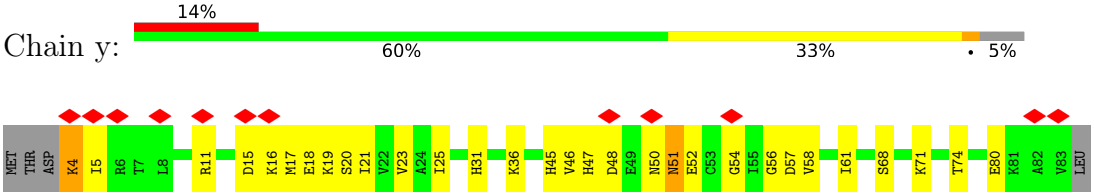
• Molecule 48: Small ribosomal subunit protein bS16



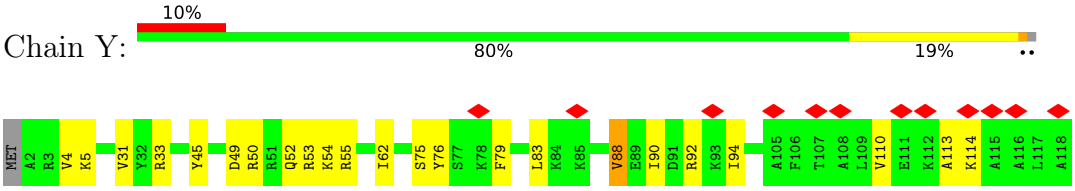
• Molecule 49: Large ribosomal subunit protein bL19



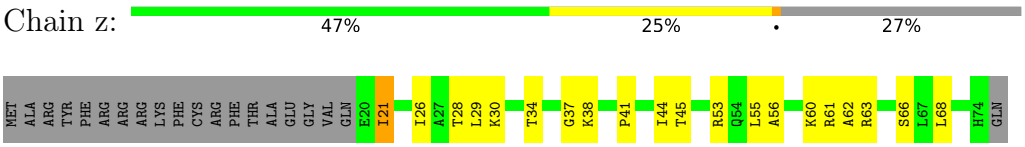
• Molecule 50: Small ribosomal subunit protein uS17



• Molecule 51: 50S ribosomal protein L20



• Molecule 52: Small ribosomal subunit protein bS18



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	560442	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 ($e^-/Å^2$)	60	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	FEI FALCON IV (4k x 4k)	Depositor
Maximum map value	30.211	Depositor
Minimum map value	-15.495	Depositor
Average map value	0.000	Depositor
Map value standard deviation	1.000	Depositor
Recommended contour level	3	Depositor
Map size (Å)	425.984, 425.984, 425.984	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.832, 0.832, 0.832	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: G7M, OMU, 4D4, 2MG, MG, OMG, 1MG, 5MC, 2MA, H2U, OMC, 6MZ, 5MU, 3TD, PSU

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|>5$	RMSZ	#$\|Z\|>5$
1	C	0.14	0/36668	0.33	9/57204 (0.0%)
2	1	0.24	0/667	0.58	0/897
3	Z	0.15	0/829	0.39	0/1107
4	2	0.19	0/665	0.40	0/881
5	4	0.12	0/864	0.29	0/1156
6	3	0.12	0/598	0.32	0/792
7	b	0.12	0/744	0.33	0/994
8	c	0.15	0/787	0.37	0/1051
9	D	0.14	0/1735	0.36	0/2338
10	d	0.16	0/766	0.42	0/1025
11	E	0.12	0/1651	0.32	0/2225
12	e	0.12	0/582	0.38	0/769
13	F	0.16	0/1665	0.44	0/2227
14	f	0.11	0/635	0.29	0/848
15	G	0.15	0/1118	0.41	0/1504
16	g	0.13	0/502	0.29	0/667
17	H	0.17	0/835	0.45	0/1128
18	h	0.12	0/453	0.30	0/605
19	I	0.12	0/69168	0.30	20/107901 (0.0%)
20	i	0.09	0/450	0.23	0/599
21	J	0.12	0/2828	0.29	0/4410
22	j	0.08	0/416	0.25	0/554
23	K	0.14	0/2132	0.32	0/2866
24	k	0.11	0/380	0.29	0/498
25	L	0.13	0/1586	0.32	0/2134
26	l	0.10	0/513	0.25	0/676
27	M	0.12	0/1571	0.29	0/2113
28	m	0.16	0/303	0.37	0/397
29	N	0.16	0/1434	0.39	0/1926
30	n	0.15	0/1195	0.41	0/1602
31	O	0.13	0/1343	0.36	0/1816
32	o	0.12	0/989	0.27	0/1326

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
33	P	0.12	0/1122	0.36	0/1515
34	p	0.22	0/1034	0.59	0/1375
35	Q	0.10	0/488	0.31	0/649
36	q	0.13	0/796	0.36	0/1077
37	R	0.11	0/1152	0.31	0/1551
38	r	0.14	0/893	0.35	0/1205
39	S	0.14	0/947	0.34	0/1268
40	t	0.16	0/969	0.44	2/1300 (0.2%)
41	T	0.10	0/1062	0.33	0/1413
42	u	0.16	0/900	0.49	0/1204
43	U	0.13	0/1081	0.34	0/1443
44	v	0.19	0/785	0.36	0/1043
45	V	0.10	0/973	0.27	0/1301
46	w	0.13	0/718	0.28	0/959
47	W	0.11	0/902	0.28	0/1209
48	x	0.21	0/659	0.68	0/884
49	X	0.13	0/929	0.29	0/1242
50	y	0.18	0/657	0.54	0/881
51	Y	0.11	0/960	0.24	0/1278
52	z	0.13	0/462	0.28	0/621
All	All	0.13	0/153561	0.33	31/229654 (0.0%)

There are no bond length outliers.

All (31) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	C	69	G	OP2-P-O3'	-11.99	72.03	108.00
1	C	70	A	O5'-P-OP2	-11.55	73.35	108.00
1	C	94	C	OP1-P-O3'	-9.34	79.98	108.00
19	I	673	C	OP1-P-O3'	-9.03	80.92	108.00
19	I	2723	C	OP1-P-O3'	-9.02	80.94	108.00
19	I	2230	G	OP1-P-O3'	-8.91	81.25	108.00
19	I	2674	G	OP1-P-O3'	-8.91	81.28	108.00
19	I	2050	C	OP1-P-O3'	-8.86	81.43	108.00
19	I	2360	G	OP1-P-O3'	-8.84	81.47	108.00
19	I	1655	A	OP1-P-O3'	-8.75	81.75	108.00
19	I	2598	A	OP1-P-O3'	-8.74	81.78	108.00
19	I	2717	C	OP1-P-O3'	-8.72	81.85	108.00
19	I	2564	A	OP1-P-O3'	-8.66	82.00	108.00
19	I	2717	C	OP2-P-O3'	-8.45	82.66	108.00
19	I	2598	A	OP2-P-O3'	-8.43	82.71	108.00
19	I	1655	A	OP2-P-O3'	-8.39	82.83	108.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
19	I	2564	A	OP2-P-O3'	-8.38	82.85	108.00
19	I	2360	G	OP2-P-O3'	-8.36	82.92	108.00
19	I	673	C	OP2-P-O3'	-8.24	83.28	108.00
19	I	2723	C	OP2-P-O3'	-8.14	83.58	108.00
1	C	69	G	OP1-P-O3'	-8.09	83.72	108.00
19	I	2230	G	OP2-P-O3'	-8.05	83.85	108.00
19	I	2050	C	OP2-P-O3'	-7.97	84.09	108.00
19	I	2674	G	OP2-P-O3'	-7.94	84.19	108.00
1	C	94	C	OP2-P-O3'	-7.05	86.86	108.00
1	C	70	A	OP1-P-OP2	6.62	139.47	119.60
1	C	70	A	O5'-P-OP1	-6.62	88.15	108.00
1	C	69	G	O3'-P-O5'	6.46	113.69	104.00
1	C	379	C	C4'-C3'-C2'	-5.19	97.41	102.60
40	t	74	LEU	CA-C-N	5.05	130.79	121.85
40	t	74	LEU	C-N-CA	5.05	130.79	121.85

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	C	32745	0	16474	700	0
2	1	651	0	675	27	0
3	Z	816	0	839	14	0
4	2	659	0	709	26	0
5	4	857	0	922	20	0
6	3	590	0	629	13	0
7	b	738	0	807	12	0
8	c	779	0	831	25	0
9	D	1704	0	1732	38	0
10	d	753	0	780	23	0
11	E	1624	0	1696	38	0
12	e	575	0	592	19	0
13	F	1643	0	1707	54	0
14	f	625	0	652	19	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
15	G	1105	0	1148	28	0
16	g	501	0	531	7	0
17	H	817	0	808	24	0
18	h	449	0	488	9	0
19	I	62271	0	31340	1060	0
20	i	444	0	458	12	0
21	J	2529	0	1281	80	0
22	j	409	0	440	8	0
23	K	2093	0	2166	56	0
24	k	377	0	418	6	0
25	L	1565	0	1616	29	0
26	l	504	0	572	22	0
27	M	1552	0	1619	34	0
28	m	302	0	343	8	0
29	N	1410	0	1444	44	0
30	n	1181	0	1238	34	0
31	O	1323	0	1371	37	0
32	o	979	0	1031	27	0
33	P	1111	0	1148	21	0
34	p	1022	0	1070	36	0
35	Q	480	0	482	14	0
36	q	786	0	828	23	0
37	R	1129	0	1162	23	0
38	r	877	0	887	29	0
39	S	938	0	1012	23	0
40	t	955	0	1016	31	0
41	T	1053	0	1129	29	0
42	u	891	0	952	24	0
43	U	1075	0	1154	30	0
44	v	774	0	824	30	0
45	V	960	0	1000	23	0
46	w	710	0	728	12	0
47	W	892	0	923	27	0
48	x	649	0	666	33	0
49	X	917	0	962	19	0
50	y	648	0	691	26	0
51	Y	947	0	1019	18	0
52	z	455	0	478	13	0
53	C	90	0	0	0	0
53	I	204	0	0	0	0
53	J	5	0	0	0	0
53	K	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
53	L	1	0	0	0	0
53	V	2	0	0	0	0
53	Y	1	0	0	0	0
53	i	1	0	0	0	0
53	l	1	0	0	0	0
53	q	1	0	0	0	0
All	All	142146	0	95488	2724	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 12.

All (2724) 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)
19:I:2747:G:H21	19:I:2757:A:N6	1.38	1.20
19:I:2747:G:N2	19:I:2757:A:H62	1.41	1.18
19:I:2741:A:H62	19:I:2763:G:N2	1.44	1.13
19:I:2741:A:N6	19:I:2763:G:H21	1.47	1.12
21:J:72:G:N2	21:J:104:A:H62	1.56	1.03
19:I:707:G:H1	19:I:724:U:H3	1.02	1.02
21:J:72:G:H21	21:J:104:A:N6	1.58	1.01
21:J:78:A:H62	21:J:98:G:N2	1.58	1.01
19:I:2144:G:H21	19:I:2147:A:H62	1.00	0.96
21:J:72:G:H21	21:J:104:A:H62	0.95	0.94
19:I:2351:G:N2	19:I:2366:A:H62	1.66	0.93
19:I:1529:G:H1	19:I:1542:U:H3	1.00	0.92
19:I:2351:G:H21	19:I:2366:A:N6	1.68	0.91
21:J:78:A:H62	21:J:98:G:H21	0.93	0.89
21:J:78:A:N6	21:J:98:G:H21	1.68	0.89
19:I:1123:C:H2'	19:I:1124:G:H8	1.37	0.88
1:C:1020:G:H1	1:C:1029:A:H2	1.21	0.88
19:I:2351:G:H21	19:I:2366:A:H62	0.90	0.88
1:C:63:C:H5"	1:C:377:A:H61	1.39	0.87
19:I:1483:G:H1	19:I:1506:U:H3	1.21	0.87
19:I:2144:G:N2	19:I:2147:A:H62	1.74	0.85
19:I:2144:G:H21	19:I:2147:A:N6	1.74	0.84
1:C:658:G:H22	1:C:735:G:H1	1.22	0.83
19:I:1724:G:H1	19:I:1736:U:H3	0.88	0.83
1:C:916:G:H21	1:C:1392:A:H8	1.24	0.82
19:I:1421:G:H2'	19:I:1422:G:H8	1.46	0.81
19:I:2728:U:HO2'	19:I:2729:G:H8	1.26	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:I:177:G:OP2	19:I:177:G:N2	2.12	0.80
1:C:1311:C:O2	2:1:37:ARG:NH2	2.14	0.80
4:2:66:LEU:HD23	4:2:67:ILE:HD13	1.63	0.79
19:I:9:G:N2	19:I:2800:A:H61	1.80	0.79
36:q:47:GLU:HB2	36:q:67:ILE:HB	1.62	0.79
1:C:1020:G:O6	1:C:1029:A:N1	2.16	0.79
19:I:2529:G:H5'	31:O:175:LYS:HB2	1.64	0.78
47:W:12:THR:HA	47:W:15:ARG:HB2	1.64	0.78
19:I:820:A:H4'	19:I:836:G:H22	1.47	0.78
1:C:1153:U:H3	1:C:1175:G:H1	1.32	0.77
8:c:7:ARG:NH2	19:I:85:G:OP1	2.18	0.77
19:I:9:G:H21	19:I:2800:A:N6	1.83	0.77
1:C:431:U:H3	1:C:489:A:H2	1.32	0.77
9:D:67:ILE:HG13	9:D:160:ALA:HB3	1.67	0.76
47:W:31:THR:HG22	47:W:33:ARG:H	1.51	0.76
50:y:15:ASP:HA	50:y:21:ILE:HG22	1.68	0.76
19:I:976:G:HO2'	19:I:1155:A:HO2'	1.34	0.76
19:I:2153:C:H2'	19:I:2154:A:H8	1.51	0.76
21:J:46:A:H4'	47:W:3:LYS:HE3	1.66	0.76
44:v:54:ASP:OD1	44:v:59:ARG:NH1	2.18	0.76
21:J:42:C:H42	29:N:90:THR:HG22	1.49	0.75
1:C:926:C:H5"	30:n:4:ARG:HH21	1.51	0.75
17:H:26:THR:HG23	17:H:36:ILE:HD12	1.67	0.75
21:J:60:C:H2'	21:J:61:G:H8	1.51	0.75
19:I:1779:U:OP2	19:I:1784:A:N6	2.16	0.75
12:e:33:ALA:O	19:I:2353:G:O2'	2.03	0.75
7:b:1:MET:N	19:I:142:A:O2'	2.19	0.74
1:C:1391:C:H5"	1:C:1392:A:H5"	1.69	0.74
19:I:475:C:O2	19:I:479:A:N6	2.20	0.74
4:2:80:THR:HA	4:2:85:LYS:HB3	1.68	0.74
48:x:71:VAL:HA	48:x:74:LEU:HB2	1.70	0.74
1:C:667:G:H2'	1:C:668:G:C8	2.23	0.74
19:I:374:A:H3'	19:I:375:G:H8	1.52	0.74
1:C:1235:G:H2'	1:C:1236:G:H8	1.53	0.73
1:C:475:G:O2'	1:C:477:C:N4	2.21	0.73
3:Z:35:PHE:HB2	3:Z:59:ILE:HB	1.71	0.73
34:p:22:LYS:HB2	34:p:61:LEU:HB3	1.71	0.73
19:I:2139:U:H3	19:I:2152:G:H1	1.35	0.73
1:C:190:A:N7	1:C:215:C:O2'	2.19	0.73
1:C:1441:A:H3'	1:C:1442:C:H5"	1.70	0.73
19:I:807:U:OP2	41:T:41:ARG:NH2	2.21	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:I:1034:G:O6	19:I:1122:G:N2	2.18	0.73
19:I:1288:G:OP2	19:I:1288:G:N2	2.18	0.73
19:I:938:G:H2'	19:I:939:G:H8	1.54	0.73
1:C:1342:U:H4'	34:p:122:ARG:HD2	1.71	0.73
12:e:31:VAL:HG21	12:e:82:ILE:HD12	1.69	0.73
30:n:113:ASP:HB3	30:n:119:ARG:HG2	1.70	0.72
19:I:290:U:H3	19:I:350:G:H1	0.81	0.72
19:I:1311:G:OP2	19:I:1311:G:N2	2.16	0.72
19:I:266:G:H1	19:I:425:G:H22	1.35	0.72
19:I:1071:G:H22	19:I:1090:A:H62	1.37	0.72
27:M:187:VAL:C	27:M:188:MET:HE2	2.15	0.72
19:I:2618:G:H21	25:L:155:VAL:HG21	1.54	0.72
1:C:73:A:H8	1:C:90:G:H21	1.37	0.72
1:C:442:A:N6	1:C:478:G:O6	2.23	0.72
19:I:1123:C:H2'	19:I:1124:G:C8	2.23	0.72
1:C:532:A:H5'	40:t:111:LYS:HB2	1.71	0.72
1:C:707:G:H2'	1:C:708:G:C8	2.25	0.72
19:I:2635:A:O2'	25:L:81:GLU:OE2	2.08	0.72
1:C:453:U:H2'	1:C:454:A:C8	2.24	0.71
15:G:157:ARG:NH2	32:o:99:LEU:O	2.22	0.71
19:I:1461:C:O2'	19:I:2702:G:N2	2.22	0.71
1:C:1322:C:H5"	42:u:28:THR:HG21	1.70	0.71
1:C:573:G:O2'	46:w:54:ARG:NH1	2.24	0.71
19:I:2474:U:O4	19:I:2529:G:N2	2.21	0.71
15:G:24:THR:HA	15:G:29:ARG:HA	1.71	0.71
1:C:740:G:H2'	1:C:741:A:C8	2.26	0.71
33:P:38:PRO:O	33:P:43:ASN:ND2	2.23	0.71
19:I:1528:A:N6	19:I:1543:G:O2'	2.22	0.71
1:C:730:C:H2'	1:C:731:A:H8	1.54	0.70
17:H:69:GLU:OE1	17:H:69:GLU:N	2.23	0.70
11:E:154:SER:HB2	11:E:165:THR:HG23	1.73	0.70
19:I:9:G:N2	19:I:2800:A:N6	2.38	0.70
1:C:668:G:H2'	1:C:669:A:H8	1.56	0.70
19:I:414:C:O2'	19:I:1863:G:N2	2.24	0.70
25:L:38:LYS:HG3	25:L:47:ALA:HB3	1.72	0.70
34:p:46:MET:O	34:p:50:GLN:N	2.24	0.70
19:I:2683:C:O2	39:S:70:ARG:NH2	2.22	0.70
19:I:598:U:O4	19:I:659:G:O6	2.10	0.70
19:I:1798:U:OP2	23:K:271:ARG:NH2	2.25	0.70
19:I:1250:G:N7	41:T:18:ARG:NH2	2.40	0.70
33:P:1:MET:N	33:P:21:VAL:O	2.24	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:h:44:ILE:HG23	18:h:47:MET:HE2	1.73	0.70
19:I:2292:U:H2'	19:I:2293:G:C8	2.27	0.70
21:J:86:G:H3'	21:J:88:C:H41	1.57	0.70
32:o:18:GLN:HG2	32:o:63:LEU:HD13	1.73	0.69
1:C:249:G:H4'	50:y:19:LYS:HD3	1.75	0.69
1:C:255:U:OP2	4:2:74:ARG:NH1	2.24	0.69
1:C:719:G:OP1	1:C:847:G:N2	2.22	0.69
48:x:7:ALA:HB1	48:x:28:ARG:HG3	1.75	0.69
19:I:883:G:O6	19:I:894:U:O2	2.11	0.69
19:I:2700:A:H61	19:I:2706:A:H61	1.41	0.69
19:I:2848:G:O2'	19:I:2867:G:N2	2.26	0.69
1:C:538:G:OP1	13:F:56:ARG:NH2	2.26	0.69
19:I:1433:A:H2'	19:I:1434:A:C8	2.26	0.69
1:C:329:C:H2'	1:C:330:A:H8	1.58	0.69
13:F:90:LEU:O	13:F:94:LEU:HD12	1.93	0.69
19:I:411:G:OP2	19:I:2406:A:O2'	2.10	0.69
19:I:581:C:H2'	19:I:582:A:H8	1.57	0.69
19:I:932:U:O2'	19:I:934:U:O4	2.11	0.69
19:I:2134:A:H1'	19:I:2159:G:H1'	1.74	0.69
48:x:47:GLU:HG3	48:x:48:GLU:N	2.08	0.69
1:C:291:G:N2	1:C:294:A:OP2	2.23	0.69
1:C:1320:U:H2'	1:C:1321:G:H8	1.58	0.69
1:C:269:G:OP2	50:y:16:LYS:NZ	2.25	0.68
1:C:1065:C:H2'	1:C:1066:G:H8	1.57	0.68
1:C:1169:G:H2'	1:C:1170:A:H8	1.58	0.68
19:I:1248:G:OP1	27:M:44:ARG:NH1	2.24	0.68
19:I:2312:U:O2'	29:N:37:ASN:OD1	2.12	0.68
19:I:2291:U:H2'	19:I:2292:U:C6	2.28	0.68
19:I:1592:C:H2'	19:I:1593:A:C8	2.28	0.68
42:u:11:ASP:HB2	42:u:46:SER:HB3	1.75	0.68
19:I:1789:A:OP2	23:K:221:ARG:NH1	2.27	0.68
21:J:44:G:OP2	21:J:45:A:N6	2.26	0.68
19:I:2898:U:H2'	19:I:2899:A:C8	2.29	0.68
22:j:12:VAL:HG13	22:j:50:LYS:HB3	1.75	0.68
19:I:882:G:N3	19:I:896:A:N6	2.41	0.68
34:p:30:ILE:N	34:p:33:ARG:O	2.26	0.68
9:D:72:THR:O	9:D:74:ARG:NH1	2.27	0.68
19:I:2292:U:H2'	19:I:2293:G:H8	1.59	0.68
19:I:1443:U:H2'	19:I:1444:G:H8	1.59	0.68
30:n:68:ASN:OD1	30:n:130:ASN:ND2	2.27	0.68
31:O:170:ARG:HH22	31:O:172:LYS:HB2	1.57	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:L:30:GLU:N	25:L:30:GLU:OE2	2.27	0.67
8:c:43:LYS:HE2	19:I:499:U:H5"	1.75	0.67
1:C:138:G:N2	1:C:173:A:OP2	2.27	0.67
1:C:708:G:H2'	1:C:709:A:C8	2.29	0.67
19:I:1724:G:O6	19:I:1736:U:O4	2.13	0.67
19:I:1730:C:O2	19:I:1731:G:N1	2.28	0.67
19:I:2750:A:O2'	19:I:2753:A:N6	2.26	0.67
1:C:384:U:O2'	48:x:28:ARG:NH2	2.28	0.67
1:C:499:G:H2'	1:C:500:G:H8	1.60	0.67
19:I:874:G:N1	19:I:904:G:O6	2.28	0.67
1:C:526:A:N6	1:C:1200:G:O2'	2.27	0.67
12:e:36:ILE:H	19:I:2354:C:HO2'	1.40	0.67
19:I:2756:U:OP2	28:m:19:ARG:NH1	2.27	0.67
1:C:421:U:O2'	1:C:535:G:OP1	2.12	0.67
1:C:1245:A:N3	1:C:1363:C:O2'	2.28	0.67
1:C:1524:G:N7	6:3:46:LYS:NZ	2.43	0.67
19:I:601:C:H2'	19:I:602:A:O4'	1.94	0.67
19:I:1063:G:O6	19:I:1077:A:N6	2.29	0.66
19:I:2522:U:O2'	19:I:2647:U:OP1	2.11	0.66
39:S:104:THR:HG22	39:S:106:GLU:H	1.60	0.66
1:C:140:G:N2	1:C:172:C:OP1	2.29	0.66
26:l:32:ILE:O	26:l:36:LYS:NZ	2.26	0.66
38:r:93:ARG:NH2	38:r:112:ASP:OD1	2.28	0.66
19:I:993:G:OP1	51:Y:50:ARG:NH1	2.28	0.66
19:I:2122:U:H2'	19:I:2123:G:H8	1.60	0.66
6:3:17:ARG:O	6:3:21:ARG:HG2	1.96	0.66
19:I:2648:G:H2'	19:I:2649:C:C6	2.30	0.66
1:C:60:A:N1	1:C:101:G:O2'	2.29	0.66
1:C:1054:U:OP1	44:v:85:ARG:NH2	2.29	0.66
1:C:1281:A:H2'	1:C:1282:A:C8	2.31	0.66
47:W:10:ARG:NH1	47:W:96:GLY:O	2.28	0.66
43:U:50:ARG:HG3	43:U:65:ILE:HD11	1.76	0.66
48:x:9:HIS:O	48:x:16:PHE:N	2.28	0.66
30:n:107:ALA:HB1	30:n:133:THR:HB	1.78	0.66
1:C:84:C:H2'	1:C:85:U:C6	2.31	0.66
19:I:994:C:OP1	51:Y:53:ARG:NH2	2.28	0.66
1:C:21:G:H2'	1:C:22:G:C8	2.31	0.66
13:F:69:GLU:N	13:F:69:GLU:OE2	2.24	0.66
21:J:50:A:O5'	47:W:63:LYS:NZ	2.29	0.66
1:C:495:C:H2'	1:C:496:A:H8	1.61	0.65
19:I:2641:G:H5"	37:R:78:THR:HB	1.78	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:138:G:H22	1:C:172:C:H3'	1.60	0.65
9:D:117:LEU:HD22	9:D:141:LEU:HD21	1.78	0.65
40:t:79:VAL:HG22	40:t:102:LEU:HD23	1.77	0.65
1:C:820:C:O2	32:o:16:ASN:ND2	2.29	0.65
19:I:568:U:H1'	19:I:2030:6MZ:H9C1	1.77	0.65
19:I:2127:G:H21	19:I:2173:A:H1'	1.61	0.65
14:f:10:LYS:NZ	19:I:396:G:OP2	2.28	0.65
19:I:2645:G:OP2	19:I:2645:G:N2	2.21	0.65
52:z:37:GLY:O	52:z:63:ARG:NH2	2.29	0.65
1:C:612:C:N4	1:C:615:A:OP2	2.28	0.65
21:J:5:U:OP1	21:J:61:G:O2'	2.11	0.65
48:x:6:LEU:HD22	48:x:17:TYR:HB3	1.78	0.65
8:c:48:PRO:HG3	8:c:56:GLY:H	1.61	0.65
13:F:104:ARG:O	13:F:165:ARG:NH2	2.30	0.65
1:C:1124:A:C5	1:C:1125:G:H1'	2.32	0.65
2:1:62:VAL:HA	2:1:66:MET:HE2	1.78	0.65
11:E:60:PRO:O	11:E:63:SER:OG	2.15	0.65
19:I:1591:A:H2'	19:I:1592:C:C6	2.31	0.65
17:H:2:ARG:NH1	17:H:68:GLN:OE1	2.28	0.65
1:C:286:G:O2'	1:C:603:A:N6	2.29	0.64
1:C:709:A:H2'	1:C:710:A:C8	2.32	0.64
19:I:598:U:H3	19:I:659:G:H1	1.44	0.64
1:C:914:U:O2'	1:C:1075:G:O2'	2.14	0.64
1:C:1017:G:H2'	1:C:1018:G:H8	1.61	0.64
1:C:1426:G:H5'	49:X:106:LYS:HG3	1.78	0.64
12:e:43:THR:HG1	19:I:2331:G:HO2'	1.44	0.64
19:I:1070:A:O2'	19:I:1098:A:OP2	2.14	0.64
19:I:1434:A:H2'	19:I:1435:G:H8	1.63	0.64
19:I:2298:A:OP1	29:N:71:ARG:NH1	2.30	0.64
1:C:269:G:P	50:y:16:LYS:HZ3	2.20	0.64
1:C:932:A:N3	1:C:1370:U:O2'	2.27	0.64
1:C:1160:G:H22	1:C:1165:A:H2	1.45	0.64
12:e:43:THR:OG1	19:I:2331:G:O2'	2.15	0.64
19:I:171:U:H2'	19:I:172:A:H8	1.62	0.64
19:I:1038:G:H2'	19:I:1039:A:C8	2.32	0.64
19:I:2566:A:N1	39:S:28:SER:OG	2.30	0.64
19:I:1051:G:H5'	19:I:2752:C:H1'	1.80	0.64
19:I:2405:G:O2'	19:I:2411:A:N6	2.29	0.64
19:I:599:A:H2'	19:I:600:G:C8	2.32	0.64
19:I:1170:C:N4	19:I:1171:G:O6	2.31	0.64
19:I:2006:C:O2'	19:I:2823:A:N3	2.31	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:I:2322:A:H61	19:I:2333:A:H61	1.45	0.64
1:C:546:U:H2'	1:C:547:A:H8	1.62	0.64
1:C:1138:G:H21	1:C:1141:C:H41	1.45	0.64
11:E:11:ARG:NH1	11:E:177:THR:O	2.31	0.64
12:e:36:ILE:N	19:I:2354:C:O2'	2.30	0.64
7:b:28:ASN:ND2	7:b:88:LYS:O	2.31	0.64
19:I:47:C:HO2'	19:I:52:A:HO2'	1.45	0.64
19:I:581:C:H2'	19:I:582:A:C8	2.32	0.64
35:Q:41:HIS:HB3	35:Q:44:PHE:HB2	1.80	0.64
19:I:576:U:H2'	19:I:577:G:C8	2.33	0.64
19:I:1432:G:H2'	19:I:1433:A:C8	2.32	0.64
1:C:303:A:H2'	1:C:304:G:H8	1.63	0.64
8:c:10:GLU:HB3	8:c:73:PHE:HB3	1.77	0.64
19:I:2788:C:O2'	19:I:2809:A:N3	2.31	0.64
31:O:94:TYR:OH	31:O:152:ARG:NH1	2.31	0.64
1:C:1371:A:OP1	30:n:92:ARG:NH2	2.32	0.63
3:Z:59:ILE:HG12	3:Z:101:ILE:HG23	1.79	0.63
14:f:17:ASN:OD1	14:f:25:THR:OG1	2.15	0.63
1:C:914:U:HO2'	1:C:1075:G:HO2'	1.45	0.63
1:C:1156:C:H2'	1:C:1157:G:C8	2.33	0.63
19:I:1411:U:H2'	19:I:1412:U:C6	2.33	0.63
19:I:2289:G:O6	19:I:2343:U:O2	2.16	0.63
31:O:118:PRO:HD2	31:O:121:ILE:HB	1.80	0.63
12:e:40:GLN:OE1	12:e:45:PHE:N	2.31	0.63
19:I:373:U:O2'	19:I:423:A:N3	2.30	0.63
40:t:35:THR:HG22	40:t:36:ARG:HG3	1.79	0.63
11:E:36:ASP:OD1	11:E:59:ARG:NH1	2.31	0.63
9:D:186:ILE:HD11	9:D:204:ASP:HB3	1.81	0.63
29:N:35:THR:HG23	29:N:155:THR:HG23	1.81	0.63
30:n:116:MET:HA	30:n:119:ARG:HB2	1.79	0.63
1:C:829:G:OP1	52:z:53:ARG:NH2	2.30	0.63
13:F:26:ARG:HH12	13:F:164:GLN:HE22	1.46	0.63
21:J:75:G:H2'	21:J:76:G:C8	2.33	0.63
25:L:35:THR:OG1	25:L:49:GLN:O	2.16	0.63
19:I:639:U:H2'	19:I:640:C:C6	2.33	0.63
21:J:63:C:H2'	21:J:64:G:C8	2.34	0.63
23:K:33:LEU:HD21	23:K:102:ARG:HA	1.80	0.63
30:n:101:MET:HA	30:n:104:ILE:HD12	1.80	0.63
1:C:1354:A:C8	44:v:58:SER:HB2	2.34	0.62
27:M:48:THR:HG23	27:M:50:ALA:H	1.64	0.62
31:O:85:LYS:HB2	31:O:133:LEU:HB2	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:O:91:GLY:HA2	31:O:160:LYS:HG2	1.79	0.62
1:C:1116:U:O4	1:C:1117:A:N6	2.32	0.62
10:d:14:LYS:NZ	21:J:80:U:O4	2.24	0.62
19:I:856:G:H2'	19:I:857:G:C8	2.34	0.62
19:I:1068:G:O2'	19:I:1096:A:N3	2.32	0.62
19:I:2626:C:H2'	19:I:2627:G:C8	2.34	0.62
29:N:130:MET:HG3	29:N:131:GLY:H	1.63	0.62
34:p:115:LYS:NZ	34:p:121:ALA:O	2.30	0.62
19:I:1962:5MC:O2'	19:I:1964:G:OP2	2.17	0.62
21:J:83:G:H2'	21:J:84:G:C8	2.34	0.62
31:O:140:VAL:HA	31:O:143:GLN:HB2	1.80	0.62
1:C:191:A:O2'	1:C:214:G:N2	2.31	0.62
13:F:19:LEU:HG	13:F:64:ILE:HG12	1.80	0.62
23:K:107:PRO:HD2	23:K:110:LEU:HD22	1.80	0.62
1:C:171:G:O6	1:C:1442:C:O2'	2.15	0.62
1:C:384:U:H2'	1:C:385:C:C6	2.34	0.62
1:C:1441:A:O2'	1:C:1442:C:OP1	2.13	0.62
3:Z:81:LYS:NZ	19:I:568:U:O4	2.32	0.62
19:I:1130:U:N3	19:I:2025:C:OP1	2.26	0.62
33:P:3:VAL:HG12	33:P:38:PRO:HA	1.80	0.62
41:T:112:LEU:HD12	41:T:130:GLY:HA3	1.82	0.62
9:D:93:ASN:O	9:D:93:ASN:ND2	2.27	0.62
47:W:8:ILE:H	47:W:8:ILE:HD12	1.65	0.62
19:I:2478:A:H5'	19:I:2479:U:H5	1.64	0.62
19:I:885:C:H1'	19:I:892:A:H1'	1.80	0.62
19:I:1007:C:OP1	37:R:37:ARG:NH1	2.32	0.62
19:I:1592:C:H2'	19:I:1593:A:H8	1.64	0.62
1:C:940:A:O2'	1:C:1327:A:N3	2.32	0.62
19:I:704:G:O2'	19:I:726:G:N2	2.30	0.62
1:C:593:U:H2'	1:C:594:G:H8	1.65	0.61
1:C:1017:G:H2'	1:C:1018:G:C8	2.35	0.61
5:4:82:MET:HG3	5:4:98:LYS:HB2	1.82	0.61
19:I:841:G:H2'	19:I:842:U:C6	2.35	0.61
21:J:40:U:N3	21:J:44:G:OP2	2.33	0.61
47:W:67:ASN:H	47:W:70:ALA:HB3	1.65	0.61
1:C:327:U:OP1	4:2:3:ASN:ND2	2.26	0.61
1:C:683:C:OP1	38:r:29:ASN:ND2	2.28	0.61
10:d:9:ARG:HD3	10:d:39:ALA:HB1	1.82	0.61
18:h:45:ARG:HA	18:h:48:ILE:HD12	1.80	0.61
19:I:569:U:O2'	19:I:983:A:N1	2.33	0.61
19:I:1447:C:O2'	19:I:1544:A:N3	2.33	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:J:49:C:OP1	47:W:68:LYS:N	2.30	0.61
1:C:383:A:H3'	1:C:384:U:H6	1.65	0.61
19:I:1026:G:H2'	19:I:1027:A:H8	1.66	0.61
1:C:28:A:O2'	1:C:290:U:OP1	2.17	0.61
1:C:1218:U:O2'	1:C:1316:C:OP1	2.13	0.61
10:d:76:ASP:OD1	10:d:76:ASP:N	2.32	0.61
13:F:41:HIS:HA	13:F:44:ARG:HH21	1.64	0.61
19:I:1022:G:N2	19:I:1023:U:O4	2.32	0.61
19:I:1332:G:N7	19:I:1609:A:O2'	2.32	0.61
19:I:2700:A:H61	19:I:2706:A:N6	1.98	0.61
1:C:905:U:OP2	40:t:94:ARG:NH2	2.33	0.61
9:D:76:ALA:HB1	9:D:79:ALA:HB3	1.82	0.61
16:g:18:LEU:HB2	16:g:53:VAL:HG11	1.81	0.61
19:I:605:G:O2'	19:I:657:U:O2'	2.04	0.61
19:I:2139:U:O4	19:I:2152:G:O6	2.18	0.61
21:J:39:A:H1'	21:J:46:A:H61	1.66	0.61
35:Q:14:ALA:HB1	35:Q:34:LEU:HD23	1.82	0.61
19:I:131:A:H2'	19:I:132:G:C8	2.35	0.61
19:I:674:G:H1'	27:M:69:ARG:HD3	1.83	0.61
19:I:882:G:H1'	19:I:896:A:H61	1.64	0.61
34:p:81:HIS:NE2	34:p:104:VAL:O	2.33	0.61
35:Q:11:GLU:HA	35:Q:25:ARG:HA	1.82	0.61
1:C:196:G:H2'	1:C:197:G:C8	2.36	0.61
1:C:1113:C:H42	1:C:1149:A:H61	1.47	0.61
32:o:104:VAL:HG12	32:o:125:ILE:HG22	1.82	0.61
34:p:48:VAL:HG13	34:p:79:ILE:HG21	1.83	0.61
39:S:121:GLU:OE2	49:X:65:SER:OG	2.18	0.61
8:c:28:VAL:HG22	8:c:34:VAL:HG12	1.83	0.61
13:F:196:ASN:HB2	13:F:199:LEU:HD23	1.83	0.61
19:I:463:G:N2	19:I:466:A:OP2	2.29	0.61
19:I:2515:C:H2'	19:I:2516:A:H8	1.66	0.61
43:U:53:MET:HE3	43:U:117:PHE:HE1	1.64	0.61
1:C:1403:C:H2'	1:C:1404:A:H8	1.64	0.61
19:I:715:A:OP1	46:w:60:VAL:HG13	2.01	0.61
19:I:1496:A:H2'	19:I:1498:C:C5	2.35	0.61
21:J:52:A:N1	47:W:33:ARG:NH2	2.48	0.61
1:C:961:C:OP2	1:C:962:A:O2'	2.15	0.60
19:I:561:G:HO2'	51:Y:45:TYR:HH	1.45	0.60
19:I:1433:A:H2'	19:I:1434:A:H8	1.64	0.60
19:I:2144:G:N2	19:I:2146:C:OP2	2.34	0.60
27:M:91:ASP:OD2	27:M:93:SER:OG	2.17	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:916:G:H2'	1:C:917:A:C8	2.37	0.60
45:V:86:ARG:NH2	45:V:117:ASP:O	2.32	0.60
15:G:25:VAL:HG13	15:G:27:GLY:H	1.64	0.60
16:g:47:ARG:NH2	19:I:74:A:OP1	2.32	0.60
19:I:833:A:H2'	19:I:834:G:C8	2.36	0.60
19:I:874:G:H2'	19:I:875:G:C8	2.36	0.60
19:I:2747:G:H21	19:I:2757:A:H62	0.68	0.60
31:O:107:LEU:HD12	31:O:113:VAL:HG11	1.83	0.60
43:U:21:ALA:HB1	43:U:100:LYS:HG2	1.83	0.60
47:W:8:ILE:HA	47:W:11:ALA:HB3	1.82	0.60
1:C:81:U:H1'	1:C:82:U:H5	1.67	0.60
1:C:194:G:H2'	1:C:195:G:H8	1.66	0.60
1:C:263:U:H2'	1:C:264:A:C8	2.36	0.60
1:C:940:A:H2'	1:C:941:G:C8	2.36	0.60
1:C:998:A:OP1	1:C:1019:U:O2'	2.15	0.60
19:I:476:G:N1	19:I:479:A:OP2	2.34	0.60
21:J:31:C:H2'	21:J:32:U:C6	2.36	0.60
1:C:1244:A:H2'	1:C:1245:A:C8	2.37	0.60
19:I:2354:C:H2'	19:I:2355:G:C8	2.35	0.60
29:N:69:LYS:HA	29:N:84:PRO:HA	1.83	0.60
29:N:74:VAL:HG13	29:N:76:GLY:H	1.66	0.60
38:r:88:GLY:O	38:r:93:ARG:NH1	2.34	0.60
1:C:706:A:H2'	1:C:707:G:C8	2.37	0.60
19:I:213:A:H2'	19:I:214:G:C8	2.37	0.60
19:I:1645:G:H5"	19:I:1646:C:H5'	1.84	0.60
23:K:181:MET:HB2	23:K:268:VAL:HG22	1.83	0.60
1:C:397:C:H5'	13:F:132:ILE:HG22	1.84	0.60
1:C:539:C:OP2	13:F:59:GLN:NE2	2.31	0.60
2:1:39:THR:HG22	2:1:70:LYS:HD2	1.84	0.60
19:I:181:A:H1'	19:I:435:C:H5'	1.83	0.60
19:I:2637:U:H5"	25:L:83:ARG:HH12	1.66	0.60
19:I:2741:A:H62	19:I:2763:G:H21	0.71	0.60
5:4:17:VAL:HG11	5:4:103:ILE:HG12	1.83	0.60
19:I:1:G:N2	19:I:2:G:N7	2.50	0.60
23:K:122:ALA:HB3	23:K:130:LEU:HG	1.83	0.60
29:N:115:ARG:NH1	35:Q:48:GLN:OE1	2.35	0.60
1:C:1021:C:H2'	1:C:1022:C:H6	1.67	0.60
11:E:153:VAL:HG22	11:E:198:VAL:HG22	1.82	0.60
12:e:39:ARG:NH1	12:e:40:GLN:O	2.34	0.60
28:m:2:LYS:HG3	28:m:35:GLN:HB3	1.82	0.60
19:I:290:U:O4	19:I:350:G:O6	2.20	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:I:674:G:OP2	27:M:49:ARG:NH2	2.35	0.59
19:I:1009:A:N3	19:I:1153:C:O2'	2.35	0.59
19:I:1429:G:H2'	19:I:1430:G:H8	1.66	0.59
19:I:2162:G:N7	19:I:2164:C:N4	2.50	0.59
43:U:15:GLY:O	43:U:16:ARG:NH1	2.35	0.59
1:C:230:A:H2'	1:C:231:G:H8	1.67	0.59
7:b:38:ALA:O	7:b:81:LYS:NZ	2.34	0.59
19:I:1529:G:O6	19:I:1542:U:O4	2.20	0.59
19:I:2857:G:N2	19:I:2860:A:OP2	2.25	0.59
43:U:34:LYS:HE3	43:U:131:VAL:HG11	1.84	0.59
1:C:1349:G:H2'	1:C:1350:A:C8	2.37	0.59
3:Z:68:ARG:NH2	19:I:1224:U:OP2	2.34	0.59
19:I:793:A:OP2	19:I:2071:A:O2'	2.19	0.59
19:I:832:U:H2'	19:I:833:A:H8	1.67	0.59
19:I:2032:G:N2	25:L:151:THR:OG1	2.35	0.59
19:I:2350:C:H3'	19:I:2351:G:H8	1.67	0.59
48:x:67:ILE:HD12	48:x:68:SER:H	1.66	0.59
1:C:86:C:H2'	1:C:87:C:H6	1.67	0.59
1:C:370:G:H1	1:C:381:U:H3	1.51	0.59
7:b:43:ILE:O	7:b:47:VAL:HG23	2.02	0.59
14:f:3:ARG:NH1	19:I:1365:A:OP1	2.33	0.59
19:I:2758:A:H2'	19:I:2759:G:H8	1.67	0.59
4:2:4:ILE:HG22	4:2:5:LYS:HD2	1.83	0.59
29:N:37:ASN:HD22	29:N:88:LYS:HB2	1.68	0.59
41:T:122:VAL:HB	41:T:125:LEU:HD21	1.83	0.59
1:C:263:U:H2'	1:C:264:A:H8	1.67	0.59
19:I:875:G:H2'	19:I:876:C:C6	2.38	0.59
19:I:1386:C:H2'	19:I:1387:A:H8	1.67	0.59
45:V:83:LEU:HD12	45:V:86:ARG:HD3	1.84	0.59
12:e:40:GLN:NE2	12:e:42:GLY:O	2.36	0.59
15:G:148:ASN:N	15:G:148:ASN:OD1	2.35	0.59
19:I:807:U:O2'	19:I:2060:A:N1	2.35	0.59
29:N:51:ASP:OD1	29:N:51:ASP:N	2.33	0.59
1:C:8:A:N6	13:F:202:GLU:O	2.35	0.59
1:C:18:C:OP1	15:G:132:ASN:ND2	2.34	0.59
1:C:1317:G:H2'	1:C:1318:A:C8	2.38	0.59
23:K:30:PHE:HD2	23:K:33:LEU:HB2	1.68	0.59
1:C:702:A:H2'	1:C:703:G:H8	1.68	0.59
1:C:1349:G:H2'	1:C:1350:A:H8	1.64	0.59
19:I:1266:G:O2'	19:I:2012:G:O6	2.19	0.59
19:I:1712:U:OP2	19:I:1713:A:O2'	2.18	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:K:155:ALA:HB2	23:K:162:VAL:HG23	1.84	0.59
27:M:154:ASP:HB3	27:M:157:LEU:HB2	1.84	0.59
1:C:197:G:O2'	1:C:460:A:N6	2.36	0.59
1:C:730:C:H2'	1:C:731:A:C8	2.35	0.59
19:I:1026:G:H2'	19:I:1027:A:C8	2.38	0.59
19:I:1386:C:H2'	19:I:1387:A:C8	2.38	0.59
7:b:19:LYS:NZ	19:I:1340:U:OP1	2.35	0.58
19:I:1827:U:OP2	23:K:221:ARG:NE	2.35	0.58
19:I:2528:U:O5'	31:O:172:LYS:NZ	2.33	0.58
19:I:2771:C:O2'	25:L:173:GLN:NE2	2.32	0.58
31:O:107:LEU:HB2	31:O:113:VAL:HG21	1.85	0.58
1:C:1021:C:H2'	1:C:1022:C:C6	2.38	0.58
8:c:36:VAL:HB	8:c:39:ILE:HB	1.85	0.58
48:x:9:HIS:N	48:x:16:PHE:O	2.34	0.58
1:C:73:A:C5	1:C:91:A:H1'	2.37	0.58
13:F:65:TYR:O	13:F:67:VAL:HG12	2.03	0.58
19:I:2136:G:H1	19:I:2155:U:H3	1.52	0.58
27:M:186:VAL:HG13	27:M:188:MET:HE3	1.85	0.58
28:m:30:GLU:OE1	28:m:32:LYS:HB2	2.02	0.58
29:N:57:LEU:HA	29:N:60:ILE:HB	1.85	0.58
1:C:195:G:H1	1:C:210:U:H3	1.51	0.58
1:C:1308:C:H2'	1:C:1309:U:C6	2.38	0.58
4:2:82:GLN:O	4:2:86:LEU:N	2.34	0.58
19:I:1589:U:H2'	19:I:1590:A:C8	2.38	0.58
1:C:1112:U:H2'	1:C:1113:C:H6	1.69	0.58
19:I:2392:A:OP2	26:l:31:HIS:NE2	2.34	0.58
30:n:4:ARG:HG3	30:n:5:ARG:H	1.69	0.58
41:T:110:VAL:HG22	41:T:125:LEU:HD12	1.85	0.58
1:C:1238:C:H2'	1:C:1239:G:C8	2.39	0.58
1:C:1313:A:OP1	2:1:3:ARG:HD2	2.04	0.58
12:e:39:ARG:HH22	12:e:41:ARG:HG2	1.68	0.58
19:I:1638:C:O2	19:I:2698:U:O2'	2.22	0.58
38:r:79:ILE:HB	38:r:105:PHE:HE2	1.68	0.58
41:T:109:LYS:HB2	41:T:126:ARG:HE	1.68	0.58
45:V:53:THR:HA	45:V:56:LYS:HD3	1.86	0.58
1:C:998:A:H2'	1:C:999:A:O4'	2.03	0.58
1:C:1350:A:H2'	1:C:1351:A:C8	2.39	0.58
1:C:1507:A:H2'	1:C:1508:G:C8	2.38	0.58
4:2:84:ASN:OD1	4:2:85:LYS:N	2.37	0.58
19:I:729:G:O2'	19:I:763:G:H4'	2.04	0.58
19:I:1752:C:H2'	19:I:1753:G:C8	2.38	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:x:40:ASN:HB3	48:x:43:ALA:HB2	1.85	0.58
48:x:47:GLU:HG3	48:x:48:GLU:H	1.66	0.58
1:C:178:U:H3	1:C:187:A:H61	1.50	0.58
1:C:805:C:O2'	1:C:895:A:N1	2.34	0.58
9:D:168:HIS:ND1	9:D:169:GLU:OE2	2.28	0.58
19:I:842:U:H2'	19:I:843:G:H8	1.68	0.58
19:I:1153:C:OP1	51:Y:92:ARG:NH2	2.37	0.58
1:C:495:C:H2'	1:C:496:A:C8	2.38	0.58
1:C:975:U:OP1	44:v:9:ARG:NH1	2.36	0.58
1:C:1022:C:H2'	1:C:1023:U:O4'	2.04	0.58
1:C:1233:A:H4'	1:C:1234:U:O5'	2.03	0.58
4:2:67:ILE:HG23	4:2:71:LYS:HB3	1.84	0.58
10:d:6:ALA:HB1	10:d:40:ILE:HB	1.86	0.58
13:F:101:VAL:O	13:F:105:MET:HG2	2.04	0.58
17:H:5:GLU:HB2	17:H:90:MET:HB3	1.84	0.58
19:I:4:U:H2'	19:I:5:A:C8	2.39	0.58
19:I:265:A:H62	19:I:428:A:H1'	1.68	0.58
19:I:743:A:O2'	19:I:1659:G:OP1	2.20	0.58
19:I:1434:A:H2'	19:I:1435:G:C8	2.38	0.58
19:I:2471:A:N1	19:I:2478:A:N6	2.51	0.58
19:I:2537:U:H2'	19:I:2538:C:C6	2.39	0.58
21:J:50:A:OP1	47:W:67:ASN:ND2	2.35	0.58
40:t:37:VAL:HG23	40:t:76:GLU:HG2	1.86	0.58
1:C:1073:G:H2'	1:C:1074:A:C8	2.38	0.58
19:I:2591:C:H2'	19:I:2592:G:C8	2.39	0.58
1:C:677:G:H21	38:r:40:ASN:HA	1.68	0.57
13:F:60:LYS:HE3	13:F:195:ILE:HG22	1.86	0.57
21:J:82:U:H2'	21:J:83:G:C8	2.38	0.57
44:v:19:LYS:HE3	44:v:20:TYR:CE1	2.39	0.57
1:C:917:A:O2'	1:C:1393:C:OP2	2.19	0.57
2:1:50:ALA:HB1	2:1:57:HIS:HB3	1.84	0.57
19:I:8:C:H2'	19:I:9:G:H8	1.68	0.57
19:I:1215:G:H1	19:I:1234:U:H3	1.52	0.57
19:I:1415:U:H3	19:I:1587:G:H1	1.52	0.57
19:I:2047:C:H2'	19:I:2048:G:H8	1.70	0.57
19:I:2151:U:H2'	19:I:2152:G:H8	1.68	0.57
39:S:40:LYS:NZ	39:S:89:ASN:OD1	2.37	0.57
1:C:1255:A:OP2	1:C:1268:G:N2	2.37	0.57
5:4:74:ILE:HD12	5:4:105:VAL:HG22	1.85	0.57
11:E:91:VAL:HA	11:E:94:ILE:HG22	1.85	0.57
1:C:997:G:N2	1:C:998:A:O2'	2.37	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:Z:51:VAL:HG23	3:Z:52:PRO:HD3	1.85	0.57
11:E:14:ILE:HG13	11:E:15:VAL:HG22	1.86	0.57
13:F:72:PHE:HE1	13:F:94:LEU:HD21	1.69	0.57
19:I:827:U:O2'	19:I:2068:U:N3	2.37	0.57
36:q:22:THR:HG21	36:q:72:ARG:HG2	1.86	0.57
1:C:376:A:H2'	1:C:377:A:C8	2.40	0.57
1:C:1141:C:H2'	1:C:1142:U:O4'	2.05	0.57
1:C:1431:A:H2'	1:C:1432:G:H8	1.69	0.57
19:I:707:G:O6	19:I:724:U:O4	2.22	0.57
19:I:1800:C:OP2	23:K:182:ARG:NH2	2.36	0.57
1:C:884:G:O2'	1:C:900:A:N6	2.38	0.57
6:3:43:THR:O	6:3:47:ARG:HG3	2.04	0.57
19:I:184:C:H2'	19:I:185:G:H8	1.68	0.57
19:I:1097:U:H3'	19:I:1098:A:H8	1.70	0.57
19:I:2134:A:H2'	19:I:2135:A:H8	1.70	0.57
19:I:2151:U:H2'	19:I:2152:G:C8	2.40	0.57
19:I:698:C:O2'	19:I:734:A:N6	2.35	0.57
19:I:1550:C:OP1	19:I:1720:U:O2'	2.17	0.57
19:I:1796:U:H2'	19:I:1797:G:C8	2.39	0.57
21:J:81:G:O6	21:J:95:U:O2	2.21	0.57
50:y:21:ILE:HG12	50:y:48:ASP:HB3	1.86	0.57
1:C:1406:C:H2'	1:C:1407:A:C8	2.40	0.57
19:I:705:A:H4'	23:K:7:LYS:HD2	1.86	0.57
19:I:2233:U:H2'	19:I:2234:G:C8	2.39	0.57
34:p:22:LYS:O	34:p:61:LEU:N	2.38	0.57
37:R:102:GLU:HB3	37:R:119:PHE:HZ	1.70	0.57
1:C:995:G:HO2'	1:C:996:A:H8	1.51	0.57
19:I:2615:U:C2	20:i:4:GLN:HA	2.40	0.57
1:C:209:C:O2'	1:C:210:U:OP1	2.22	0.57
1:C:352:U:H2'	1:C:353:G:H8	1.70	0.57
1:C:480:U:H2'	1:C:481:A:H8	1.69	0.57
4:2:35:VAL:HG21	4:2:54:MET:HE3	1.86	0.57
41:T:100:ILE:HG22	41:T:101:ILE:HG23	1.86	0.57
5:4:92:ARG:NH2	5:4:94:ASP:OD2	2.37	0.56
19:I:2086:U:H2'	19:I:2087:G:C8	2.40	0.56
19:I:2646:C:OP2	19:I:2732:G:O2'	2.23	0.56
21:J:82:U:H2'	21:J:83:G:H8	1.70	0.56
44:v:88:ALA:HB2	44:v:96:LEU:HD23	1.86	0.56
1:C:103:A:N6	1:C:319:A:N1	2.53	0.56
1:C:892:G:N2	1:C:895:A:OP2	2.34	0.56
15:G:16:ILE:HD11	15:G:113:ALA:HB3	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:v:44:ALA:HA	44:v:47:LYS:HE3	1.85	0.56
1:C:556:U:H5"	1:C:557:A:C5	2.40	0.56
3:Z:51:VAL:HG23	3:Z:52:PRO:CD	2.36	0.56
13:F:61:VAL:HG21	13:F:200:ILE:HD11	1.87	0.56
19:I:1443:U:H2'	19:I:1444:G:C8	2.40	0.56
19:I:2152:G:O2'	19:I:2153:C:O4'	2.24	0.56
19:I:2258:C:O2'	19:I:2427:C:OP2	2.20	0.56
19:I:2293:G:H2'	19:I:2294:G:C8	2.41	0.56
23:K:8:PRO:HB3	23:K:14:ARG:HG3	1.87	0.56
24:k:41:ARG:HB3	24:k:41:ARG:NH1	2.20	0.56
33:P:40:THR:HG22	33:P:43:ASN:ND2	2.20	0.56
37:R:60:ASP:OD2	37:R:61:LYS:NZ	2.39	0.56
47:W:49:VAL:HG21	47:W:82:ALA:HA	1.88	0.56
50:y:15:ASP:OD2	50:y:54:GLY:HA2	2.05	0.56
1:C:869:U:O2'	32:o:15:ARG:NH1	2.32	0.56
1:C:1112:U:H2'	1:C:1113:C:C6	2.41	0.56
1:C:1137:G:H2'	1:C:1138:G:C8	2.41	0.56
1:C:1344:A:OP2	34:p:120:LYS:NZ	2.27	0.56
19:I:582:A:H2'	19:I:583:G:H8	1.71	0.56
19:I:710:U:N3	19:I:711:G:N7	2.54	0.56
19:I:2291:U:OP1	19:I:2380:C:O2'	2.23	0.56
35:Q:37:CYS:H	35:Q:40:CYS:HG	1.52	0.56
1:C:790:C:O3'	38:r:127:ARG:NH1	2.38	0.56
1:C:906:C:H2'	1:C:907:A:C8	2.40	0.56
1:C:1216:G:OP1	1:C:1315:U:O2'	2.21	0.56
10:d:42:LEU:HD21	10:d:63:ILE:HD11	1.88	0.56
13:F:172:GLU:HB3	13:F:181:THR:HB	1.87	0.56
19:I:2528:U:O2'	19:I:2530:A:OP1	2.17	0.56
27:M:7:ASP:OD1	27:M:7:ASP:N	2.38	0.56
49:X:89:ARG:HG3	49:X:89:ARG:HH11	1.69	0.56
1:C:194:G:H2'	1:C:195:G:C8	2.41	0.56
1:C:230:A:H2'	1:C:231:G:C8	2.40	0.56
1:C:1398:C:H2'	1:C:1399:G:C8	2.41	0.56
11:E:142:MET:SD	11:E:170:GLU:HG2	2.46	0.56
19:I:574:A:N6	19:I:2034:U:OP1	2.35	0.56
19:I:1746:A:H2'	19:I:1747:U:C6	2.41	0.56
1:C:17:U:H2'	1:C:18:C:C6	2.41	0.56
1:C:329:C:H2'	1:C:330:A:C8	2.39	0.56
1:C:668:G:H2'	1:C:669:A:C8	2.38	0.56
19:I:1266:G:OP1	20:i:16:ARG:NE	2.39	0.56
19:I:2483:C:N3	43:U:123:LYS:NZ	2.50	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:I:2642:G:H2'	19:I:2643:G:H8	1.71	0.56
22:j:44:ARG:HH21	26:l:37:ALA:HA	1.69	0.56
1:C:306:C:H2'	1:C:307:A:H8	1.69	0.56
1:C:489:A:O2'	1:C:490:A:OP2	2.21	0.56
1:C:1314:C:H42	2:1:36:ARG:HB2	1.70	0.56
19:I:676:A:HO2'	19:I:2442:C:HO2'	1.54	0.56
19:I:917:A:C2	21:J:80:U:H4'	2.41	0.56
19:I:1607:C:N4	19:I:1622:G:OP2	2.35	0.56
19:I:2168:G:O2'	19:I:2169:A:O4'	2.23	0.56
33:P:30:LEU:HB3	33:P:36:ALA:HB3	1.87	0.56
39:S:20:MET:HE3	39:S:44:LYS:HE3	1.87	0.56
40:t:68:GLY:O	40:t:99:ARG:NH1	2.39	0.56
45:V:29:VAL:O	45:V:78:LYS:NZ	2.35	0.56
1:C:1157:G:H22	1:C:1168:G:H22	1.54	0.56
19:I:586:A:N1	19:I:809:G:O2'	2.37	0.56
19:I:818:G:N1	19:I:1188:U:OP2	2.29	0.56
19:I:1796:U:H2'	19:I:1797:G:H8	1.69	0.56
21:J:44:G:H5"	21:J:45:A:N7	2.20	0.56
21:J:63:C:H2'	21:J:64:G:H8	1.70	0.56
23:K:71:LYS:NZ	23:K:98:ASP:OD2	2.37	0.56
30:n:40:GLU:OE2	34:p:41:ARG:NH1	2.38	0.56
32:o:11:LEU:HD22	32:o:75:ILE:HD11	1.87	0.56
36:q:15:HIS:HA	36:q:18:ILE:HG22	1.88	0.56
1:C:70:A:H2'	1:C:71:U:H5'	1.88	0.56
1:C:533:A:H2'	1:C:534:G:C8	2.41	0.56
1:C:995:G:O2'	1:C:996:A:H8	1.89	0.56
18:h:7:ILE:HG23	18:h:36:VAL:HG23	1.87	0.56
19:I:272:A:H2'	19:I:273:G:C8	2.41	0.56
19:I:911:A:N6	43:U:11:LYS:O	2.38	0.56
51:Y:49:ASP:OD1	51:Y:52:GLN:NE2	2.39	0.56
1:C:1233:A:H62	1:C:1293:A:N6	2.04	0.55
13:F:177:LYS:HE2	13:F:179:GLU:HG2	1.88	0.55
17:H:17:GLN:O	17:H:21:MET:HG3	2.06	0.55
19:I:2246:G:H2'	19:I:2247:A:H8	1.72	0.55
21:J:42:C:OP2	35:Q:2:LYS:NZ	2.29	0.55
35:Q:16:CYS:SG	35:Q:17:SER:N	2.79	0.55
36:q:24:GLU:OE1	36:q:24:GLU:N	2.36	0.55
40:t:24:LEU:HD21	40:t:82:ILE:HG22	1.88	0.55
47:W:37:ALA:HB2	47:W:106:LEU:HD11	1.88	0.55
1:C:188:G:H4'	4:2:60:ARG:HG2	1.88	0.55
1:C:741:A:H2'	1:C:742:U:C6	2.40	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:c:5:ILE:HG22	8:c:7:ARG:HH12	1.71	0.55
9:D:196:VAL:HG13	9:D:199:VAL:HG22	1.88	0.55
19:I:500:G:H22	19:I:503:A:H5'	1.70	0.55
1:C:584:U:OP1	32:o:31:LYS:N	2.36	0.55
1:C:1244:A:N3	1:C:1364:G:O2'	2.35	0.55
13:F:102:VAL:HG13	13:F:107:PHE:HB2	1.87	0.55
19:I:2246:G:H2'	19:I:2247:A:C8	2.42	0.55
19:I:2312:U:H4'	29:N:39:GLY:HA3	1.89	0.55
19:I:2649:C:H2'	19:I:2650:U:C6	2.41	0.55
27:M:83:VAL:HB	27:M:86:ALA:HB2	1.89	0.55
28:m:25:VAL:HG22	28:m:35:GLN:HG2	1.88	0.55
39:S:35:VAL:HG11	39:S:104:THR:HB	1.88	0.55
44:v:3:LYS:HG3	44:v:6:MET:HG2	1.88	0.55
1:C:306:C:H2'	1:C:307:A:C8	2.42	0.55
1:C:970:G:OP2	1:C:1352:U:O2'	2.23	0.55
11:E:38:LYS:HB3	11:E:94:ILE:HD11	1.87	0.55
19:I:742:A:H2'	19:I:743:A:H8	1.71	0.55
1:C:192:G:H2'	1:C:193:U:C6	2.42	0.55
1:C:940:A:H2'	1:C:941:G:H8	1.71	0.55
1:C:1341:G:H4'	1:C:1342:U:O5'	2.05	0.55
5:4:16:LYS:NZ	19:I:2012:G:N7	2.52	0.55
13:F:150:LYS:HG2	13:F:151:LYS:HD2	1.89	0.55
17:H:71:ILE:HD12	17:H:72:ASP:N	2.22	0.55
19:I:995:C:H42	37:R:2:LYS:HD3	1.72	0.55
19:I:2377:A:H2'	19:I:2378:A:C8	2.41	0.55
23:K:25:HIS:HB3	23:K:82:GLU:HB3	1.89	0.55
29:N:119:ALA:O	29:N:167:ARG:NH2	2.40	0.55
48:x:36:VAL:HG11	48:x:56:ARG:HG2	1.89	0.55
1:C:317:U:OP1	4:2:25:ARG:NH2	2.30	0.55
19:I:1084:A:N3	19:I:1105:U:O2'	2.36	0.55
39:S:52:VAL:HG21	39:S:58:LEU:HD11	1.89	0.55
1:C:368:A:H5"	1:C:445:A:C2	2.42	0.55
1:C:515:G:OP2	40:t:51:LYS:NZ	2.34	0.55
9:D:120:GLN:O	9:D:125:THR:OG1	2.25	0.55
11:E:130:PHE:O	11:E:134:MET:HG3	2.06	0.55
17:H:9:MET:HB2	17:H:57:ALA:HB1	1.88	0.55
19:I:146:A:H2'	19:I:147:C:C6	2.41	0.55
19:I:1316:U:H2'	19:I:1317:G:H8	1.71	0.55
19:I:1636:U:H2'	19:I:1637:A:C8	2.42	0.55
19:I:1721:G:N2	19:I:1738:G:O2'	2.39	0.55
19:I:2378:A:H2'	19:I:2379:G:H5'	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:k:25:LYS:NZ	24:k:26:ASN:OD1	2.36	0.55
29:N:91:LEU:HD13	29:N:96:MET:HA	1.88	0.55
1:C:74:A:H62	1:C:89:G:H21	1.54	0.55
1:C:499:G:H2'	1:C:500:G:C8	2.39	0.55
2:1:21:LYS:O	2:1:25:SER:OG	2.24	0.55
19:I:355:U:H2'	19:I:356:G:H8	1.71	0.55
19:I:1281:G:H2'	19:I:1282:U:C6	2.42	0.55
19:I:1415:U:O2	19:I:1587:G:N2	2.38	0.55
19:I:1812:U:H2'	19:I:1813:G:H8	1.72	0.55
19:I:2100:G:H1	19:I:2189:U:H3	1.55	0.55
19:I:2575:C:H5'	25:L:149:ASN:HB2	1.88	0.55
19:I:2589:A:H2'	19:I:2590:A:H8	1.71	0.55
38:r:14:LYS:N	38:r:14:LYS:HE2	2.22	0.55
39:S:105:ARG:NH1	39:S:105:ARG:HB2	2.21	0.55
1:C:364:G:H1	1:C:385:C:H42	1.53	0.55
1:C:1367:G:H5"	30:n:36:LYS:HD2	1.89	0.55
4:2:4:ILE:O	4:2:5:LYS:HB2	2.06	0.55
15:G:11:LEU:HD11	15:G:71:MET:HE1	1.89	0.55
19:I:797:G:OP1	27:M:55:SER:OG	2.22	0.55
19:I:1062:G:N7	19:I:1076:C:N4	2.55	0.55
19:I:1315:C:O2'	19:I:1392:A:N3	2.40	0.55
19:I:2153:C:H2'	19:I:2154:A:C8	2.36	0.55
1:C:914:U:H2'	1:C:915:U:C6	2.42	0.55
1:C:990:A:H2'	1:C:991:U:C6	2.42	0.55
13:F:188:ARG:HA	13:F:191:LEU:HD23	1.88	0.55
17:H:25:TYR:O	17:H:29:ILE:HG22	2.06	0.55
19:I:1441:G:H2'	19:I:1442:U:C6	2.41	0.55
19:I:1587:G:H2'	19:I:1588:G:H8	1.71	0.55
19:I:2305:U:O2'	29:N:133:ARG:NH1	2.39	0.55
21:J:52:A:N6	47:W:33:ARG:HH21	2.05	0.55
43:U:47:GLU:OE2	43:U:50:ARG:NH2	2.40	0.55
1:C:234:C:H2'	1:C:235:G:H8	1.72	0.54
19:I:1130:U:C2	19:I:2025:C:H5"	2.42	0.54
19:I:2514:U:H2'	19:I:2515:C:C6	2.41	0.54
23:K:144:VAL:HB	23:K:154:LEU:HB2	1.89	0.54
29:N:103:LEU:HA	29:N:107:ALA:HB3	1.88	0.54
37:R:31:GLU:OE2	37:R:35:ARG:NH1	2.41	0.54
1:C:78:A:H3'	1:C:79:G:H8	1.73	0.54
1:C:1385:U:H2'	1:C:1386:G:C8	2.42	0.54
8:c:47:LYS:HD3	8:c:48:PRO:HD2	1.88	0.54
13:F:60:LYS:O	13:F:64:ILE:HG13	2.06	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:J:91:C:O2	21:J:91:C:H2'	2.07	0.54
23:K:132:MET:O	23:K:167:ARG:NH1	2.40	0.54
37:R:41:LYS:NZ	37:R:52:ASP:OD1	2.41	0.54
46:w:67:LEU:HD22	46:w:78:TYR:HE2	1.73	0.54
1:C:331:G:H2'	1:C:332:A:C8	2.42	0.54
1:C:1065:C:H2'	1:C:1066:G:C8	2.42	0.54
1:C:1183:U:H5"	11:E:5:VAL:HG11	1.89	0.54
1:C:1507:A:H2'	1:C:1508:G:H8	1.72	0.54
13:F:85:ASN:HB3	13:F:88:GLU:HB2	1.89	0.54
19:I:192:C:O2	19:I:802:A:O2'	2.23	0.54
19:I:1306:C:H2'	19:I:1307:A:H8	1.71	0.54
19:I:1473:G:H2'	19:I:1474:U:H6	1.72	0.54
19:I:2122:U:OP2	19:I:2169:A:O2'	2.25	0.54
38:r:20:VAL:HG13	38:r:35:THR:HB	1.90	0.54
1:C:725:G:H5'	1:C:760:A:H4'	1.88	0.54
13:F:59:GLN:O	13:F:63:ARG:HG3	2.06	0.54
19:I:2547:A:H2'	19:I:2548:U:C6	2.42	0.54
19:I:2655:G:O2'	19:I:2664:G:O6	2.25	0.54
32:o:7:ILE:HG13	32:o:32:LEU:HD23	1.89	0.54
46:w:57:LEU:HA	46:w:60:VAL:HB	1.89	0.54
1:C:85:U:H2'	1:C:86:C:H6	1.71	0.54
1:C:168:A:N6	1:C:171:G:OP1	2.40	0.54
19:I:1442:U:H2'	19:I:1443:U:C6	2.42	0.54
19:I:1548:A:H2'	19:I:1549:A:C8	2.43	0.54
19:I:2037:A:H2'	19:I:2038:G:C8	2.42	0.54
19:I:652:U:OP1	19:I:654:A:N6	2.41	0.54
19:I:859:G:O2'	19:I:916:G:O6	2.24	0.54
1:C:41:G:H2'	1:C:42:G:C8	2.42	0.54
1:C:85:U:H2'	1:C:86:C:C6	2.43	0.54
1:C:105:G:H1	1:C:324:C:H42	1.56	0.54
1:C:151:C:H2'	1:C:152:G:H8	1.73	0.54
1:C:364:G:H2'	1:C:365:A:C8	2.43	0.54
11:E:85:GLU:OE2	11:E:88:ARG:NH1	2.40	0.54
13:F:56:ARG:HH12	13:F:63:ARG:HH21	1.54	0.54
14:f:28:ARG:NH2	19:I:1365:A:OP1	2.39	0.54
19:I:30:G:O2'	19:I:1214:A:N3	2.33	0.54
19:I:630:G:N2	19:I:633:A:OP2	2.29	0.54
19:I:873:C:N4	19:I:874:G:O6	2.41	0.54
19:I:1423:G:H2'	19:I:1424:G:C8	2.42	0.54
19:I:1818:U:O2'	23:K:153:GLN:O	2.23	0.54
19:I:2065:C:H1'	19:I:2449:H2U:HN3	1.73	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:W:8:ILE:O	47:W:12:THR:OG1	2.24	0.54
1:C:41:G:H2'	1:C:42:G:H8	1.73	0.54
1:C:190:A:H3'	1:C:190:A:N3	2.23	0.54
19:I:1819:A:H5"	23:K:160:THR:HG21	1.89	0.54
42:u:87:ARG:HG3	42:u:87:ARG:HH11	1.73	0.54
43:U:75:GLU:HB2	43:U:90:GLU:HG3	1.90	0.54
49:X:100:LEU:HD11	49:X:110:ILE:HD11	1.88	0.54
8:c:83:VAL:HG21	8:c:103:ILE:HD11	1.88	0.54
10:d:44:HIS:NE2	10:d:48:MET:SD	2.80	0.54
19:I:2025:C:H2'	19:I:2026:U:C6	2.43	0.54
19:I:2112:G:OP1	19:I:2114:A:N6	2.36	0.54
50:y:19:LYS:HB3	50:y:47:HIS:HE1	1.73	0.54
19:I:664:G:O2'	19:I:940:G:OP1	2.23	0.54
19:I:1715:G:O2'	19:I:1743:G:O6	2.21	0.54
19:I:1808:A:H3'	19:I:1809:A:C8	2.43	0.54
19:I:2134:A:H4'	19:I:2159:G:H21	1.72	0.54
19:I:2163:A:H3'	19:I:2164:C:H5"	1.88	0.54
19:I:2168:G:O2'	19:I:2169:A:O5'	2.23	0.54
31:O:127:THR:HB	31:O:130:GLU:HB2	1.90	0.54
34:p:29:VAL:HG13	34:p:64:TYR:HA	1.90	0.54
45:V:2:ARG:NH1	45:V:5:LYS:O	2.41	0.54
51:Y:110:VAL:O	51:Y:114:LYS:N	2.38	0.54
1:C:800:C:H2'	1:C:801:A:H8	1.72	0.53
33:P:62:LEU:O	33:P:66:ASN:ND2	2.41	0.53
40:t:30:LYS:O	40:t:82:ILE:HB	2.08	0.53
43:U:32:GLY:HA2	43:U:104:GLU:HA	1.90	0.53
45:V:28:LEU:HD23	45:V:48:VAL:HG21	1.90	0.53
1:C:88:U:H2'	1:C:89:G:O4'	2.08	0.53
1:C:587:G:H2'	1:C:588:C:H6	1.73	0.53
1:C:1185:A:H5"	11:E:4:LYS:HE3	1.88	0.53
19:I:244:A:OP2	26:l:8:ARG:NH2	2.34	0.53
19:I:910:A:H2'	19:I:911:A:C8	2.42	0.53
19:I:1361:G:H2'	19:I:1362:C:C6	2.44	0.53
21:J:83:G:H2'	21:J:84:G:H8	1.71	0.53
33:P:71:LYS:HD3	33:P:71:LYS:C	2.32	0.53
44:v:31:ILE:HG23	44:v:45:VAL:HG21	1.89	0.53
1:C:102:G:H5"	1:C:103:A:C2	2.43	0.53
1:C:1142:U:H4'	34:p:7:TYR:CE2	2.43	0.53
1:C:1212:C:H2'	1:C:1213:A:C8	2.43	0.53
15:G:38:VAL:HG11	15:G:114:VAL:HG22	1.91	0.53
19:I:599:A:H4'	27:M:24:ASN:HD21	1.73	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:I:863:A:H2'	19:I:864:G:H8	1.71	0.53
19:I:2136:G:O6	19:I:2155:U:O4	2.26	0.53
19:I:2530:A:H62	31:O:172:LYS:HD2	1.72	0.53
25:L:25:THR:OG1	25:L:191:GLY:O	2.26	0.53
30:n:15:ASP:OD1	30:n:19:GLY:N	2.30	0.53
3:Z:72:VAL:HG13	3:Z:89:HIS:HB3	1.90	0.53
19:I:248:G:O2'	19:I:2432:A:OP1	2.26	0.53
19:I:832:U:H2'	19:I:833:A:C8	2.43	0.53
19:I:2114:A:H62	19:I:2119:A:H62	1.57	0.53
19:I:2134:A:H2'	19:I:2135:A:C8	2.43	0.53
21:J:60:C:H2'	21:J:61:G:C8	2.39	0.53
29:N:30:ARG:N	29:N:159:THR:OG1	2.40	0.53
37:R:68:LYS:HG2	37:R:72:LYS:HG3	1.90	0.53
1:C:19:A:H2'	1:C:20:U:C6	2.44	0.53
10:d:53:LYS:HG2	10:d:55:GLU:HB3	1.90	0.53
19:I:548:G:O2'	19:I:549:G:O4'	2.25	0.53
19:I:577:G:O2'	19:I:1254:A:OP1	2.27	0.53
19:I:814:C:H1'	19:I:1225:G:H21	1.71	0.53
19:I:1563:U:H2'	19:I:1564:C:C6	2.43	0.53
21:J:9:G:O6	21:J:111:U:O2	2.26	0.53
25:L:4:LEU:HD13	25:L:29:VAL:HG11	1.89	0.53
34:p:33:ARG:NH1	34:p:37:GLN:O	2.41	0.53
1:C:573:G:H2'	1:C:574:C:C6	2.44	0.53
1:C:910:U:H2'	1:C:911:G:H8	1.73	0.53
1:C:1051:G:H5'	11:E:155:GLY:HA3	1.90	0.53
1:C:1326:A:H2'	1:C:1327:A:C8	2.44	0.53
1:C:1458:U:H2'	1:C:1459:A:H8	1.74	0.53
13:F:100:ASN:OD1	13:F:111:ARG:NE	2.35	0.53
19:I:2502:G:H5"	19:I:2503:2MA:H5"	1.91	0.53
29:N:118:SER:O	29:N:128:TYR:OH	2.18	0.53
32:o:83:LEU:HG	40:t:4:VAL:HG21	1.88	0.53
1:C:331:G:H2'	1:C:332:A:H8	1.73	0.53
19:I:2023:C:H2'	19:I:2024:G:H8	1.74	0.53
31:O:17:VAL:HG13	31:O:26:ILE:HD11	1.91	0.53
1:C:444:G:N3	1:C:445:A:N6	2.57	0.53
1:C:506:U:O2'	1:C:507:U:OP1	2.27	0.53
5:4:1:MET:HE3	5:4:2:GLU:N	2.23	0.53
9:D:15:HIS:HB2	9:D:40:ILE:HG23	1.91	0.53
9:D:94:HIS:ND1	9:D:146:ASN:O	2.39	0.53
19:I:1422:G:H2'	19:I:1423:G:C8	2.43	0.53
19:I:2291:U:H2'	19:I:2292:U:H6	1.73	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:I:2876:G:OP1	49:X:2:SER:N	2.41	0.53
1:C:1051:G:O2'	11:E:188:GLU:OE2	2.21	0.53
1:C:1212:C:H2'	1:C:1213:A:H8	1.73	0.53
1:C:1310:G:N1	1:C:1313:A:OP2	2.41	0.53
1:C:1350:A:H2'	1:C:1351:A:H8	1.72	0.53
1:C:1403:C:H2'	1:C:1404:A:C8	2.44	0.53
7:b:4:GLU:OE1	16:g:23:ARG:NH1	2.42	0.53
13:F:72:PHE:CE1	13:F:94:LEU:HD21	2.44	0.53
19:I:134:G:H2'	19:I:135:U:C6	2.44	0.53
19:I:2688:G:N1	19:I:2720:U:OP2	2.25	0.53
24:k:25:LYS:HG3	24:k:26:ASN:N	2.22	0.53
29:N:103:LEU:HG	29:N:108:VAL:HG23	1.91	0.53
1:C:32:A:H2'	1:C:33:A:C8	2.44	0.53
1:C:83:G:O2'	1:C:84:C:OP2	2.22	0.53
1:C:206:G:C2	1:C:207:A:H1'	2.44	0.53
1:C:806:G:O2'	1:C:807:U:O4'	2.27	0.53
19:I:210:C:OP1	24:k:29:GLN:NE2	2.40	0.53
19:I:414:C:H2'	19:I:415:A:C8	2.44	0.53
19:I:580:U:H2'	19:I:581:C:C6	2.43	0.53
19:I:742:A:H2'	19:I:743:A:C8	2.43	0.53
19:I:788:A:OP1	19:I:791:C:N4	2.35	0.53
19:I:1794:A:H2'	19:I:1795:C:C6	2.44	0.53
19:I:2162:G:H4'	19:I:2171:A:H2'	1.91	0.53
19:I:2742:G:H3'	19:I:2755:C:H41	1.74	0.53
31:O:89:LEU:HG	31:O:162:VAL:HG22	1.89	0.53
33:P:71:LYS:HD3	33:P:71:LYS:O	2.09	0.53
37:R:32:LEU:O	37:R:36:LEU:HG	2.09	0.53
45:V:30:ARG:NH1	45:V:74:GLU:OE1	2.42	0.53
1:C:248:G:OP1	50:y:68:SER:OG	2.26	0.52
1:C:911:G:H2'	1:C:912:A:C8	2.44	0.52
1:C:1370:U:H2'	1:C:1371:A:C8	2.44	0.52
1:C:1471:U:H2'	1:C:1472:U:C6	2.44	0.52
19:I:857:G:N2	19:I:2269:G:O4'	2.42	0.52
19:I:2301:C:H2'	19:I:2302:U:C6	2.43	0.52
27:M:148:ILE:HB	27:M:169:VAL:HG22	1.91	0.52
1:C:120:A:OP1	1:C:599:U:O2'	2.25	0.52
1:C:368:A:H5"	1:C:445:A:H2	1.74	0.52
1:C:495:C:H1'	1:C:543:C:H1'	1.91	0.52
1:C:896:G:H2'	1:C:897:G:H8	1.73	0.52
1:C:1124:A:H5'	34:p:64:TYR:HE2	1.74	0.52
1:C:1157:G:H1	1:C:1168:G:H22	1.57	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1348:U:H2'	1:C:1349:G:H8	1.74	0.52
1:C:1408:U:H2'	1:C:1409:G:H8	1.72	0.52
6:3:13:ASP:O	6:3:17:ARG:NH2	2.41	0.52
9:D:113:ARG:HH12	9:D:117:LEU:HD13	1.73	0.52
14:f:49:LEU:HB3	14:f:51:VAL:HG13	1.90	0.52
15:G:15:LEU:HD12	15:G:37:THR:HG22	1.90	0.52
18:h:25:LEU:HD21	19:I:930:G:H1'	1.89	0.52
19:I:52:A:H2	19:I:119:A:H62	1.57	0.52
19:I:729:G:H5'	19:I:730:A:H5"	1.90	0.52
19:I:918:A:O2'	21:J:81:G:O4'	2.19	0.52
19:I:953:G:H2'	19:I:954:G:H8	1.74	0.52
19:I:1079:C:HO2'	19:I:1080:A:H8	1.58	0.52
19:I:2337:G:H2'	19:I:2338:C:C6	2.44	0.52
30:n:6:VAL:O	30:n:8:GLY:N	2.33	0.52
31:O:117:LEU:HD21	31:O:123:ALA:HB2	1.90	0.52
42:u:72:GLU:O	42:u:76:SER:OG	2.27	0.52
1:C:33:A:H2'	1:C:34:C:C6	2.43	0.52
1:C:67:C:H2'	1:C:68:G:C8	2.45	0.52
1:C:270:G:H5'	50:y:17:MET:SD	2.49	0.52
1:C:972:A:C2	1:C:1313:A:C4	2.96	0.52
1:C:1281:A:H2	1:C:1347:G:H1'	1.73	0.52
6:3:39:GLU:HG2	6:3:44:GLU:HG2	1.92	0.52
9:D:13:GLY:HA3	9:D:208:ARG:HH12	1.74	0.52
19:I:64:A:H2'	19:I:65:U:C6	2.44	0.52
1:C:73:A:H5"	1:C:90:G:N2	2.24	0.52
19:I:842:U:H2'	19:I:843:G:C8	2.45	0.52
31:O:166:ASP:OD1	31:O:166:ASP:N	2.42	0.52
46:w:6:GLU:OE1	46:w:6:GLU:N	2.25	0.52
1:C:938:G:N1	1:C:1332:G:OP2	2.38	0.52
4:2:25:ARG:HG3	4:2:66:LEU:HD21	1.92	0.52
19:I:154:U:C2	19:I:155:A:C8	2.98	0.52
19:I:1682:G:H2'	19:I:1683:U:C6	2.45	0.52
19:I:2064:C:H2'	19:I:2065:C:H6	1.74	0.52
19:I:2521:C:O2'	19:I:2564:A:N3	2.40	0.52
19:I:2812:G:H2'	19:I:2813:A:C8	2.45	0.52
30:n:26:PHE:HE2	30:n:120:LEU:HD21	1.75	0.52
31:O:88:GLN:O	31:O:163:ARG:N	2.25	0.52
32:o:10:MET:HG3	32:o:33:LYS:HD3	1.92	0.52
1:C:314:A:H2'	1:C:315:A:C8	2.43	0.52
15:G:107:ALA:HB1	15:G:111:MET:HB2	1.92	0.52
19:I:511:U:H4'	19:I:1235:G:H4'	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:I:1084:A:H1'	19:I:1106:G:H5'	1.92	0.52
19:I:1654:A:O2'	25:L:118:PHE:O	2.22	0.52
19:I:2149:U:H2'	19:I:2150:C:C6	2.44	0.52
19:I:2301:C:H2'	19:I:2302:U:H6	1.75	0.52
19:I:2784:U:H2'	19:I:2785:C:H6	1.74	0.52
19:I:87:U:H3	19:I:94:A:H61	1.55	0.52
19:I:1353:A:H2'	19:I:1354:A:H8	1.75	0.52
19:I:1385:A:O2'	19:I:1396:U:O2	2.25	0.52
19:I:2233:U:H2'	19:I:2234:G:H8	1.73	0.52
19:I:2243:U:H2'	19:I:2244:U:C6	2.44	0.52
19:I:2315:G:H2'	19:I:2316:G:C8	2.45	0.52
21:J:56:G:H21	21:J:59:A:H2	1.48	0.52
30:n:113:ASP:OD1	30:n:114:LYS:N	2.34	0.52
1:C:494:G:H2'	1:C:495:C:C6	2.45	0.52
1:C:1501:A:H2'	1:C:1502:G:C8	2.43	0.52
19:I:631:A:OP2	26:l:23:LYS:NZ	2.43	0.52
19:I:1065:U:O2'	19:I:1066:U:O4'	2.28	0.52
19:I:1124:G:H1'	28:m:23:ILE:HD12	1.91	0.52
21:J:86:G:N2	21:J:91:C:H1'	2.24	0.52
43:U:36:VAL:HB	43:U:127:LYS:HB3	1.92	0.52
1:C:351:G:O2'	1:C:362:U:O2	2.26	0.52
1:C:646:U:O4	1:C:746:G:O2'	2.25	0.52
11:E:23:PHE:CZ	36:q:11:LYS:HG2	2.45	0.52
19:I:704:G:H1'	19:I:727:A:N6	2.25	0.52
19:I:2122:U:H2'	19:I:2123:G:C8	2.44	0.52
19:I:2636:C:O2'	25:L:45:TYR:OH	2.21	0.52
19:I:2701:U:H3'	19:I:2702:G:C5'	2.40	0.52
23:K:120:VAL:HG12	33:P:91:PHE:HB3	1.91	0.52
43:U:46:ILE:HD12	43:U:69:PRO:HG3	1.91	0.52
1:C:40:C:H2'	1:C:41:G:C8	2.45	0.52
19:I:419:U:H2'	19:I:420:C:C6	2.45	0.52
19:I:1424:G:H3'	19:I:1425:G:H8	1.74	0.52
19:I:1737:G:H2'	19:I:1738:G:C4	2.45	0.52
19:I:2339:C:H2'	19:I:2340:A:C8	2.45	0.52
19:I:2377:A:O2'	47:W:117:PHE:O	2.24	0.52
23:K:245:VAL:HG12	23:K:251:GLN:HA	1.92	0.52
50:y:23:VAL:HG21	50:y:61:ILE:HG21	1.92	0.52
1:C:557:A:H2'	1:C:561:G:C8	2.46	0.51
1:C:1235:G:H2'	1:C:1236:G:C8	2.40	0.51
1:C:1322:C:C2	1:C:1323:G:C8	2.98	0.51
1:C:1478:C:O2'	19:I:1960:A:O2'	2.22	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:I:106:C:H2'	19:I:107:G:H8	1.74	0.51
19:I:1410:G:H2'	19:I:1411:U:C6	2.45	0.51
19:I:2315:G:H2'	19:I:2316:G:H8	1.75	0.51
26:l:17:THR:HG21	26:l:49:MET:HE1	1.92	0.51
29:N:43:ALA:HB2	29:N:50:LEU:HD11	1.92	0.51
52:z:62:ALA:HB3	52:z:68:LEU:HD12	1.92	0.51
1:C:451:A:H2'	1:C:452:G:H8	1.75	0.51
1:C:512:C:H5"	1:C:513:C:C6	2.45	0.51
2:1:22:ALA:HB1	2:1:26:GLY:HA2	1.92	0.51
3:Z:8:GLY:O	3:Z:10:LYS:NZ	2.43	0.51
10:d:64:VAL:HG22	10:d:69:GLU:HG2	1.92	0.51
13:F:156:LYS:HE2	13:F:156:LYS:HA	1.92	0.51
19:I:863:A:H2'	19:I:864:G:C8	2.45	0.51
19:I:1007:C:H5"	37:R:37:ARG:NH1	2.25	0.51
21:J:16:G:N1	21:J:69:G:H1'	2.25	0.51
27:M:147:LEU:O	27:M:188:MET:HE1	2.10	0.51
1:C:367:A:O2'	1:C:444:G:N2	2.44	0.51
4:2:82:GLN:O	4:2:85:LYS:N	2.41	0.51
14:f:18:ARG:NH1	19:I:201:C:OP1	2.36	0.51
19:I:31:C:O2'	19:I:1238:G:OP1	2.28	0.51
19:I:306:U:H2'	19:I:307:G:O4'	2.10	0.51
19:I:685:A:N1	19:I:787:C:H1'	2.25	0.51
19:I:1710:G:H2'	19:I:1711:A:C8	2.45	0.51
19:I:1936:A:OP2	19:I:1962:5MC:N4	2.40	0.51
19:I:638:G:H2'	19:I:639:U:C6	2.45	0.51
19:I:1667:G:O2'	19:I:1991:U:O4	2.26	0.51
19:I:2589:A:H2'	19:I:2590:A:C8	2.46	0.51
25:L:25:THR:HG21	25:L:193:VAL:HG22	1.92	0.51
44:v:10:GLU:HG3	44:v:63:ARG:HD2	1.91	0.51
1:C:845:U:H2'	1:C:846:A:C8	2.46	0.51
1:C:1030:A:H3'	1:C:1031:C:C6	2.46	0.51
19:I:2812:G:H2'	19:I:2813:A:H8	1.76	0.51
39:S:25:LEU:HD12	39:S:38:ILE:HG22	1.93	0.51
46:w:26:GLU:OE2	46:w:77:ARG:NH2	2.43	0.51
48:x:58:ALA:HA	48:x:61:VAL:HG12	1.92	0.51
1:C:757:G:H2'	1:C:758:C:C6	2.45	0.51
9:D:207:ILE:HA	9:D:210:VAL:HG12	1.93	0.51
19:I:415:A:H2'	19:I:416:U:C6	2.46	0.51
19:I:1316:U:H2'	19:I:1317:G:C8	2.45	0.51
19:I:2304:G:H22	19:I:2312:U:H3	1.57	0.51
23:K:16:VAL:HG22	23:K:206:GLY:HA3	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:Z:4:VAL:HG23	3:Z:39:LEU:HB2	1.92	0.51
9:D:207:ILE:O	9:D:211:THR:HG23	2.10	0.51
10:d:43:ASP:OD1	10:d:43:ASP:N	2.42	0.51
18:h:13:ALA:HA	18:h:16:ARG:HG2	1.93	0.51
19:I:282:A:H2'	19:I:283:G:C8	2.45	0.51
26:l:12:LYS:HD2	41:T:63:LYS:HE3	1.92	0.51
26:l:25:LYS:HB3	26:l:47:LYS:HE3	1.92	0.51
30:n:93:PRO:HA	30:n:96:ARG:HD3	1.93	0.51
34:p:5:GLN:HA	34:p:22:LYS:NZ	2.25	0.51
1:C:392:U:H2'	1:C:393:G:H8	1.76	0.51
15:G:148:ASN:ND2	32:o:73:GLU:OE1	2.44	0.51
19:I:132:G:H2'	19:I:133:U:C6	2.46	0.51
19:I:303:G:H2'	19:I:304:U:C6	2.46	0.51
19:I:1296:G:OP1	19:I:2709:G:O2'	2.19	0.51
19:I:1819:A:H3'	23:K:177:ARG:HG2	1.92	0.51
22:j:10:LYS:O	22:j:53:LYS:N	2.37	0.51
44:v:41:ARG:HD3	44:v:43:ASN:H	1.75	0.51
1:C:806:G:OP2	1:C:896:G:N2	2.43	0.51
19:I:629:G:H1'	19:I:639:U:H1'	1.93	0.51
19:I:1469:A:H2'	19:I:1470:A:H8	1.76	0.51
19:I:1629:U:O4	19:I:1630:A:N6	2.44	0.51
19:I:2703:C:H2'	19:I:2704:C:H6	1.76	0.51
21:J:97:C:H2'	21:J:98:G:O4'	2.11	0.51
33:P:132:PHE:HB2	33:P:140:ALA:HB3	1.93	0.51
34:p:19:VAL:HG22	34:p:65:ILE:HG23	1.92	0.51
1:C:86:C:H2'	1:C:87:C:C6	2.46	0.51
1:C:423:U:H3	1:C:425:A:H62	1.58	0.51
1:C:686:U:O2'	1:C:688:A:N7	2.38	0.51
1:C:806:G:O2'	1:C:807:U:O5'	2.27	0.51
1:C:855:G:O2'	1:C:868:G:O2'	2.27	0.51
1:C:1268:G:O2'	1:C:1269:A:OP1	2.28	0.51
11:E:131:ARG:HH11	11:E:131:ARG:HG3	1.76	0.51
19:I:191:A:H2'	19:I:192:C:H6	1.76	0.51
19:I:629:G:N3	19:I:639:U:O2'	2.44	0.51
19:I:1672:A:C2	19:I:2582:G:H5'	2.46	0.51
19:I:2081:U:H2'	19:I:2082:A:H8	1.75	0.51
19:I:2229:U:H2'	19:I:2230:G:H8	1.76	0.51
19:I:2308:G:O2'	19:I:2310:C:OP2	2.29	0.51
29:N:105:THR:HA	35:Q:38:SER:HB3	1.92	0.51
34:p:84:THR:HG23	34:p:98:LEU:HD13	1.93	0.51
37:R:62:VAL:HG11	37:R:101:ILE:HD11	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:u:57:ARG:C	42:u:59:GLU:H	2.19	0.51
1:C:427:G:H2'	1:C:428:C:C6	2.47	0.50
19:I:374:A:C8	19:I:400:G:N2	2.72	0.50
19:I:995:C:N4	37:R:2:LYS:HD3	2.26	0.50
19:I:2014:A:H2'	19:I:2015:A:C8	2.46	0.50
23:K:3:VAL:HG22	23:K:19:VAL:HG22	1.93	0.50
29:N:26:MET:HE2	29:N:26:MET:O	2.11	0.50
38:r:111:THR:OG1	38:r:112:ASP:N	2.44	0.50
46:w:17:ARG:N	46:w:21:ASP:OD1	2.44	0.50
1:C:108:U:H2'	1:C:109:G:C8	2.46	0.50
1:C:641:U:H2'	1:C:642:G:H8	1.76	0.50
1:C:763:G:H4'	1:C:1507:A:H4'	1.93	0.50
1:C:916:G:H2'	1:C:917:A:H8	1.73	0.50
1:C:1144:U:C2	1:C:1145:A:C8	3.00	0.50
19:I:643:A:H3'	19:I:644:A:C8	2.46	0.50
19:I:987:C:O2'	19:I:1000:A:N3	2.36	0.50
19:I:2126:A:N6	19:I:2163:A:O4'	2.39	0.50
32:o:47:GLU:HG2	32:o:64:LYS:HB3	1.93	0.50
36:q:19:ASP:OD1	36:q:20:GLN:N	2.43	0.50
49:X:27:GLU:HG3	49:X:44:GLU:HB2	1.94	0.50
50:y:31:HIS:N	50:y:36:LYS:O	2.35	0.50
1:C:391:A:N7	1:C:541:A:O2'	2.41	0.50
1:C:587:G:H2'	1:C:588:C:C6	2.46	0.50
1:C:1113:C:H42	1:C:1149:A:N6	2.09	0.50
2:1:32:ARG:HH21	2:1:34:TRP:HH2	1.58	0.50
4:2:21:ASN:HD22	4:2:66:LEU:HD12	1.77	0.50
8:c:88:GLU:HG2	8:c:93:VAL:HG11	1.93	0.50
13:F:101:VAL:HG13	13:F:105:MET:HE3	1.93	0.50
19:I:374:A:H4'	19:I:422:A:C2	2.46	0.50
19:I:2071:A:H2'	19:I:2072:C:C6	2.46	0.50
19:I:2193:G:H2'	19:I:2194:U:C6	2.45	0.50
19:I:2398:U:N3	19:I:2399:G:N7	2.59	0.50
19:I:2845:U:H5"	49:X:52:ASN:O	2.11	0.50
30:n:42:ILE:HD13	30:n:116:MET:HB3	1.93	0.50
1:C:249:G:H2'	1:C:250:U:C6	2.47	0.50
1:C:574:C:H2'	1:C:575:G:O4'	2.12	0.50
1:C:1244:A:H2'	1:C:1245:A:H8	1.74	0.50
15:G:13:GLU:OE1	15:G:68:ARG:NH1	2.42	0.50
19:I:152:A:H2'	19:I:153:U:H6	1.76	0.50
19:I:589:U:H2'	19:I:590:A:H8	1.77	0.50
19:I:600:G:H22	19:I:605:G:H4'	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:I:1604:C:O2'	19:I:1610:A:N1	2.35	0.50
19:I:2591:C:H2'	19:I:2592:G:H8	1.76	0.50
21:J:115:A:H2'	21:J:116:G:C8	2.45	0.50
1:C:198:G:N3	1:C:199:A:H1'	2.27	0.50
1:C:395:C:O2'	1:C:615:A:N3	2.43	0.50
1:C:1304:C:OP2	42:u:87:ARG:NH2	2.45	0.50
3:Z:37:GLU:OE1	3:Z:37:GLU:N	2.42	0.50
6:3:5:LYS:HD2	38:r:109:ASN:HB3	1.91	0.50
9:D:27:MET:O	9:D:31:ILE:HG13	2.11	0.50
17:H:98:GLU:H	17:H:98:GLU:CD	2.18	0.50
19:I:64:A:H2'	19:I:65:U:H6	1.76	0.50
19:I:1026:G:OP2	19:I:1134:A:O2'	2.23	0.50
19:I:1052:C:H2'	19:I:1053:C:C6	2.45	0.50
35:Q:64:PHE:CG	35:Q:64:PHE:O	2.64	0.50
1:C:512:C:H4'	1:C:513:C:O5'	2.12	0.50
1:C:668:G:H21	38:r:118:HIS:HB2	1.75	0.50
1:C:1433:C:OP1	4:2:33:LYS:HD3	2.11	0.50
5:4:20:VAL:HG11	5:4:44:ALA:HA	1.93	0.50
19:I:1734:G:H2'	19:I:1735:A:H8	1.77	0.50
19:I:1798:U:O2'	19:I:1802:A:N3	2.42	0.50
1:C:1238:C:H2'	1:C:1239:G:H8	1.75	0.50
19:I:305:C:H2'	19:I:306:U:C6	2.46	0.50
19:I:589:U:H2'	19:I:590:A:C8	2.47	0.50
19:I:938:G:H2'	19:I:939:G:C8	2.39	0.50
19:I:1857:G:N2	19:I:1884:G:N3	2.60	0.50
19:I:2731:G:H2'	19:I:2732:G:C8	2.47	0.50
39:S:5:GLN:HA	39:S:20:MET:SD	2.52	0.50
1:C:418:G:H2'	1:C:419:A:H8	1.77	0.50
1:C:912:A:H2'	1:C:913:A:C8	2.47	0.50
1:C:1344:A:O2'	30:n:33:ASP:OD2	2.29	0.50
6:3:2:PRO:HG2	38:r:112:ASP:HB3	1.93	0.50
10:d:26:PHE:CE1	10:d:42:LEU:HB2	2.47	0.50
10:d:90:ASP:OD1	10:d:91:PHE:N	2.45	0.50
19:I:290:U:O2	19:I:350:G:N2	2.34	0.50
19:I:514:A:N3	19:I:581:C:O2'	2.37	0.50
19:I:532:A:H4'	19:I:533:G:C8	2.47	0.50
19:I:745:1MG:O2'	19:I:748:G:H1'	2.12	0.50
19:I:814:C:H1'	19:I:1225:G:N2	2.27	0.50
19:I:926:G:H2'	19:I:927:A:C8	2.47	0.50
19:I:1450:G:H2'	19:I:1451:C:C6	2.47	0.50
19:I:2215:C:H2'	19:I:2216:G:H8	1.77	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:j:28:ARG:HG3	22:j:29:THR:HG23	1.94	0.50
1:C:549:U:H2'	1:C:550:C:C6	2.46	0.50
12:e:70:GLU:HG2	12:e:79:PHE:HB2	1.93	0.50
19:I:438:G:H2'	19:I:439:A:C8	2.47	0.50
19:I:587:C:OP2	41:T:21:ARG:NH2	2.45	0.50
19:I:1278:C:H2'	19:I:1279:G:H8	1.76	0.50
19:I:2096:C:H2'	19:I:2097:A:H8	1.77	0.50
19:I:2352:A:H3'	19:I:2353:G:H8	1.77	0.50
52:z:56:ALA:O	52:z:60:LYS:HG3	2.12	0.50
1:C:40:C:H2'	1:C:41:G:H8	1.77	0.49
1:C:248:G:O2'	50:y:18:GLU:O	2.30	0.49
1:C:1346:C:H2'	1:C:1347:G:C8	2.47	0.49
13:F:107:PHE:CG	13:F:145:ILE:HD11	2.47	0.49
19:I:302:C:H2'	19:I:303:G:H8	1.77	0.49
19:I:2411:A:H2'	19:I:2412:A:H8	1.76	0.49
44:v:90:ARG:HG3	44:v:92:GLU:HG2	1.93	0.49
1:C:45:G:H4'	1:C:300:A:H2	1.77	0.49
1:C:975:U:H2'	1:C:976:U:C5	2.47	0.49
1:C:1419:U:H2'	1:C:1420:G:H8	1.77	0.49
11:E:24:ALA:HB1	11:E:28:GLU:HG2	1.92	0.49
19:I:347:A:H2'	19:I:348:A:C8	2.47	0.49
19:I:882:G:H2'	19:I:883:G:C8	2.47	0.49
19:I:2128:G:N3	19:I:2173:A:O2'	2.44	0.49
19:I:2241:A:H2'	19:I:2242:G:C8	2.47	0.49
42:u:81:MET:HE3	42:u:92:ARG:HG3	1.93	0.49
5:4:23:LEU:HD11	20:i:22:LEU:HB2	1.94	0.49
19:I:160:A:N3	19:I:2208:C:O2'	2.35	0.49
19:I:676:A:O2'	19:I:2442:C:O2'	2.26	0.49
19:I:1266:G:OP2	20:i:17:ARG:NE	2.36	0.49
19:I:1812:U:H2'	19:I:1813:G:C8	2.47	0.49
31:O:90:VAL:O	31:O:161:GLY:N	2.33	0.49
1:C:65:A:H2'	1:C:375:A:N1	2.27	0.49
1:C:1054:U:H4'	36:q:53:ILE:HG22	1.94	0.49
1:C:1071:G:N2	1:C:1074:A:OP2	2.40	0.49
19:I:177:G:H3'	19:I:178:G:H8	1.78	0.49
19:I:632:A:H2'	19:I:633:A:C8	2.46	0.49
19:I:1353:A:H2'	19:I:1354:A:C8	2.47	0.49
19:I:1853:A:N3	19:I:2233:U:O2'	2.42	0.49
19:I:2266:A:H4'	19:I:2267:A:N3	2.27	0.49
27:M:97:ASN:HB2	27:M:100:MET:HG3	1.94	0.49
38:r:106:ARG:HG2	38:r:107:ILE:N	2.26	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:x:46:LYS:HD3	48:x:47:GLU:N	2.27	0.49
51:Y:75:SER:OG	51:Y:76:TYR:N	2.41	0.49
1:C:103:A:H62	1:C:318:G:H21	1.58	0.49
1:C:138:G:N2	1:C:172:C:H3'	2.26	0.49
1:C:1360:U:O2'	36:q:62:ARG:NH1	2.41	0.49
2:1:40:ILE:HA	2:1:44:MET:SD	2.52	0.49
8:c:60:GLU:OE1	8:c:60:GLU:HA	2.12	0.49
17:H:88:MET:HE3	17:H:90:MET:HE2	1.94	0.49
19:I:77:G:H2'	19:I:78:U:C6	2.47	0.49
19:I:828:U:H2'	19:I:829:A:C8	2.48	0.49
19:I:1129:A:N6	19:I:2491:U:OP1	2.46	0.49
19:I:1794:A:H2'	19:I:1795:C:H6	1.78	0.49
19:I:2845:U:H2'	19:I:2846:G:C8	2.47	0.49
25:L:48:ILE:HD11	25:L:82:PHE:HD1	1.78	0.49
36:q:27:GLU:OE2	36:q:28:THR:N	2.46	0.49
1:C:451:A:H2'	1:C:452:G:C8	2.48	0.49
1:C:759:G:N2	1:C:807:U:OP2	2.31	0.49
2:1:10:PHE:CD1	2:1:11:ILE:N	2.80	0.49
8:c:5:ILE:O	8:c:7:ARG:NH2	2.42	0.49
13:F:156:LYS:HE3	13:F:178:MET:HE2	1.94	0.49
19:I:184:C:H2'	19:I:185:G:C8	2.46	0.49
19:I:666:A:H2'	19:I:667:U:C6	2.46	0.49
19:I:813:U:H2'	19:I:814:C:C6	2.47	0.49
19:I:1052:C:H2'	19:I:1053:C:H6	1.77	0.49
19:I:2133:G:H2'	19:I:2157:G:N1	2.27	0.49
27:M:128:ALA:HB3	27:M:133:LEU:HD12	1.95	0.49
1:C:45:G:H2'	1:C:46:G:H8	1.77	0.49
1:C:316:C:H2'	1:C:317:U:C6	2.47	0.49
1:C:1020:G:C6	1:C:1029:A:N1	2.79	0.49
1:C:1518:C:H2'	1:C:1519:G:C8	2.47	0.49
19:I:593:U:H2'	19:I:594:U:C6	2.48	0.49
19:I:1219:U:H2'	19:I:1220:G:H8	1.78	0.49
19:I:1506:U:H2'	19:I:1507:C:C6	2.48	0.49
19:I:2821:A:OP2	25:L:115:GLY:N	2.46	0.49
21:J:80:U:O2	21:J:96:G:O6	2.30	0.49
23:K:222:GLY:HA2	23:K:225:MET:HG3	1.94	0.49
32:o:11:LEU:HB3	32:o:75:ILE:HG12	1.95	0.49
46:w:18:ASP:OD2	46:w:18:ASP:N	2.44	0.49
1:C:45:G:H2'	1:C:46:G:C8	2.47	0.49
1:C:998:A:H3'	1:C:1018:G:H22	1.78	0.49
1:C:1301:U:OP1	42:u:100:GLN:NE2	2.46	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:b:30:ILE:HG13	7:b:85:VAL:HB	1.95	0.49
8:c:54:GLN:CB	8:c:55:PRO:HD3	2.42	0.49
19:I:52:A:OP2	19:I:117:G:N1	2.43	0.49
19:I:1124:G:N3	28:m:37:GLN:NE2	2.61	0.49
30:n:86:GLN:HB2	30:n:148:ASN:HD21	1.78	0.49
42:u:19:LEU:HD11	42:u:56:LEU:HD22	1.95	0.49
45:V:8:ARG:HG3	45:V:10:LEU:HG	1.95	0.49
1:C:480:U:H2'	1:C:481:A:C8	2.48	0.49
1:C:1308:C:H2'	1:C:1309:U:H6	1.75	0.49
6:3:5:LYS:O	6:3:18:ARG:NH2	2.43	0.49
13:F:25:VAL:HG23	13:F:26:ARG:H	1.78	0.49
15:G:157:ARG:NH1	32:o:43:GLU:OE2	2.46	0.49
19:I:8:C:H2'	19:I:9:G:C8	2.46	0.49
19:I:162:U:H1'	19:I:163:C:H5	1.78	0.49
19:I:263:G:O2'	19:I:429:A:N3	2.39	0.49
39:S:103:VAL:HB	39:S:107:LEU:HD12	1.93	0.49
40:t:57:LEU:HD11	40:t:63:VAL:HG22	1.94	0.49
1:C:533:A:H2'	1:C:534:G:H8	1.77	0.49
14:f:57:ARG:HH22	19:I:399:U:H5	1.59	0.49
19:I:1423:G:H2'	19:I:1424:G:H8	1.77	0.49
19:I:1510:G:H2'	19:I:1511:G:H8	1.77	0.49
19:I:2008:C:H2'	19:I:2009:A:H8	1.78	0.49
19:I:2064:C:H2'	19:I:2065:C:C6	2.48	0.49
21:J:5:U:H2'	21:J:6:G:H8	1.77	0.49
1:C:709:A:H2'	1:C:710:A:H8	1.75	0.48
1:C:778:A:H2'	1:C:779:G:C8	2.48	0.48
1:C:1157:G:H1	1:C:1168:G:H1	1.61	0.48
1:C:1506:U:H2'	1:C:1507:A:C8	2.48	0.48
3:Z:38:VAL:HG22	3:Z:59:ILE:HG13	1.95	0.48
9:D:139:ARG:HH22	9:D:143:LYS:HB2	1.76	0.48
11:E:7:PRO:HD2	11:E:184:TYR:CD2	2.48	0.48
11:E:79:LYS:O	11:E:82:GLU:HG2	2.13	0.48
15:G:24:THR:HG23	15:G:24:THR:O	2.13	0.48
19:I:78:U:H2'	19:I:79:C:C6	2.48	0.48
19:I:1027:A:H2	19:I:1028:A:H62	1.61	0.48
19:I:1689:A:H2'	19:I:1690:A:C8	2.48	0.48
19:I:2228:G:H2'	19:I:2229:U:C6	2.48	0.48
19:I:2557:G:H2'	19:I:2558:C:C6	2.47	0.48
21:J:52:A:H61	47:W:33:ARG:HH21	1.60	0.48
25:L:85:ALA:N	25:L:88:GLU:OE1	2.41	0.48
32:o:90:ASP:OD1	32:o:90:ASP:N	2.43	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:r:20:VAL:HG23	38:r:83:GLU:O	2.12	0.48
1:C:739:U:OP1	1:C:845:U:O2'	2.18	0.48
1:C:1143:C:H3'	1:C:1144:U:H6	1.78	0.48
19:I:936:A:H2'	19:I:937:C:C6	2.48	0.48
19:I:1497:U:O2'	19:I:1577:C:H5"	2.13	0.48
19:I:2847:U:H2'	19:I:2848:G:O4'	2.12	0.48
29:N:39:GLY:HA2	29:N:86:GLY:HA3	1.95	0.48
29:N:135:GLN:HE22	29:N:152:LEU:HD21	1.79	0.48
34:p:114:LYS:NZ	34:p:118:LEU:O	2.46	0.48
35:Q:16:CYS:HB3	35:Q:20:ASN:HB2	1.95	0.48
37:R:14:ASP:OD1	37:R:14:ASP:N	2.41	0.48
42:u:66:GLU:OE1	42:u:70:ARG:NH2	2.46	0.48
1:C:513:C:N4	1:C:523:G:O2'	2.40	0.48
1:C:666:U:H2'	1:C:667:G:H8	1.78	0.48
1:C:677:G:N2	38:r:40:ASN:HA	2.28	0.48
10:d:6:ALA:HB3	10:d:65:VAL:HG12	1.94	0.48
14:f:2:SER:O	14:f:2:SER:OG	2.20	0.48
19:I:2332:C:O2'	19:I:2335:A:H1'	2.13	0.48
19:I:2567:G:H2'	19:I:2568:U:C6	2.49	0.48
21:J:5:U:H2'	21:J:6:G:C8	2.48	0.48
30:n:37:SER:OG	34:p:41:ARG:NE	2.46	0.48
1:C:633:A:H2'	1:C:634:A:H8	1.77	0.48
1:C:836:U:O2'	1:C:837:U:O2	2.21	0.48
1:C:1020:G:N1	1:C:1029:A:C2	2.72	0.48
1:C:1296:C:C5	42:u:17:ILE:HG13	2.48	0.48
1:C:1457:U:H2'	1:C:1458:U:C6	2.49	0.48
9:D:187:VAL:HG13	9:D:191:SER:HB3	1.94	0.48
17:H:2:ARG:HE	17:H:91:ARG:HH11	1.60	0.48
19:I:171:U:H2'	19:I:172:A:C8	2.45	0.48
19:I:1797:G:O2'	23:K:257:THR:OG1	2.24	0.48
19:I:2051:A:H5'	19:I:2578:G:O4'	2.12	0.48
19:I:2181:U:H2'	19:I:2182:U:C6	2.48	0.48
19:I:2273:A:H2'	19:I:2274:A:C8	2.49	0.48
19:I:2531:A:H61	19:I:2662:A:H61	1.60	0.48
21:J:47:C:H5'	47:W:30:ARG:HH12	1.79	0.48
22:j:5:ILE:HD12	22:j:26:ASN:HD21	1.78	0.48
27:M:98:LYS:O	27:M:102:ARG:HD3	2.14	0.48
41:T:69:ARG:HG2	41:T:69:ARG:HH11	1.77	0.48
43:U:2:LEU:HD23	43:U:2:LEU:H	1.78	0.48
1:C:375:A:H2'	1:C:376:A:O4'	2.13	0.48
1:C:408:A:H1'	1:C:409:A:N3	2.28	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1115:U:H3	1:C:1147:G:H1	1.61	0.48
1:C:1470:A:H2'	1:C:1471:U:C6	2.49	0.48
13:F:198:HIS:CE1	13:F:199:LEU:HD22	2.48	0.48
19:I:874:G:H2'	19:I:875:G:H8	1.77	0.48
19:I:1286:A:H1'	19:I:1288:G:OP2	2.14	0.48
19:I:1866:A:N7	19:I:1867:G:O2'	2.42	0.48
19:I:2113:U:O4	19:I:2167:U:O2'	2.31	0.48
19:I:2368:C:H2'	19:I:2369:A:C8	2.49	0.48
19:I:2595:G:N2	19:I:2598:A:OP2	2.31	0.48
43:U:29:GLY:HA3	43:U:106:ASP:OD1	2.14	0.48
1:C:96:G:H2'	1:C:97:C:C6	2.48	0.48
1:C:307:A:H2'	1:C:308:C:C6	2.49	0.48
1:C:656:U:H2'	1:C:657:A:C8	2.48	0.48
1:C:1312:A:H5"	2:1:3:ARG:HH12	1.77	0.48
1:C:1518:C:H2'	1:C:1519:G:H8	1.78	0.48
19:I:675:A:N3	19:I:2443:C:O2'	2.44	0.48
23:K:76:ALA:HB2	23:K:96:TYR:CD2	2.49	0.48
27:M:41:GLN:NE2	27:M:43:THR:OG1	2.44	0.48
29:N:114:PHE:HZ	29:N:176:PRO:HG3	1.79	0.48
51:Y:83:LEU:HB3	51:Y:88:VAL:HG12	1.95	0.48
1:C:652:A:H1'	46:w:22:THR:HG21	1.95	0.48
19:I:712:G:H2'	19:I:713:G:C8	2.48	0.48
19:I:1120:G:H2'	19:I:1121:C:C6	2.48	0.48
19:I:1721:G:H1'	19:I:1739:A:N6	2.29	0.48
19:I:2868:A:H2'	19:I:2869:G:C8	2.49	0.48
32:o:64:LYS:HG3	32:o:71:VAL:HG21	1.95	0.48
40:t:3:THR:HG22	40:t:5:ASN:H	1.78	0.48
1:C:418:G:H2'	1:C:419:A:C8	2.49	0.48
1:C:672:U:H2'	1:C:673:U:H6	1.78	0.48
19:I:1495:A:H2'	19:I:1496:A:C8	2.49	0.48
19:I:1528:A:OP2	19:I:1543:G:N2	2.46	0.48
19:I:1721:G:N2	19:I:1738:G:N3	2.61	0.48
19:I:1802:A:H2'	19:I:1803:A:C8	2.48	0.48
19:I:2538:C:H2'	19:I:2539:C:C6	2.49	0.48
19:I:2615:U:H2'	19:I:2616:C:H6	1.78	0.48
29:N:65:PRO:HA	29:N:89:VAL:HG22	1.94	0.48
31:O:7:ALA:O	31:O:69:ARG:NE	2.47	0.48
47:W:52:SER:OG	47:W:53:THR:N	2.47	0.48
1:C:83:G:C4	1:C:84:C:C5	3.02	0.48
1:C:234:C:H2'	1:C:235:G:C8	2.49	0.48
1:C:387:A:H5'	1:C:477:C:O2'	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:687:G:OP1	38:r:127:ARG:NH2	2.47	0.48
1:C:1145:A:O2'	1:C:1146:A:H5'	2.14	0.48
1:C:1473:C:H2'	1:C:1474:A:C8	2.48	0.48
9:D:113:ARG:NH1	9:D:117:LEU:HD13	2.27	0.48
19:I:18:U:H2'	19:I:19:A:C8	2.48	0.48
19:I:1357:C:H2'	19:I:1358:G:O4'	2.13	0.48
19:I:2293:G:H5"	47:W:94:ARG:NH1	2.29	0.48
19:I:2316:G:H2'	19:I:2317:A:H8	1.79	0.48
19:I:2338:C:H2'	19:I:2339:C:C6	2.49	0.48
22:j:34:LEU:HD23	22:j:34:LEU:H	1.79	0.48
48:x:71:VAL:O	48:x:75:ILE:HG13	2.14	0.48
1:C:317:U:H2'	1:C:318:G:O4'	2.13	0.48
1:C:1047:G:N7	1:C:1194:C:H5'	2.29	0.48
9:D:13:GLY:C	9:D:15:HIS:H	2.22	0.48
12:e:66:LYS:O	12:e:82:ILE:HA	2.14	0.48
17:H:4:TYR:HB2	17:H:64:VAL:HG22	1.96	0.48
18:h:24:LEU:HD11	18:h:54:MET:HE1	1.96	0.48
19:I:18:U:H2'	19:I:19:A:H8	1.78	0.48
19:I:414:C:H2'	19:I:415:A:H8	1.78	0.48
19:I:878:A:H3'	19:I:879:G:H8	1.79	0.48
19:I:2074:U:H2'	19:I:2075:U:C6	2.49	0.48
19:I:2262:U:OP1	19:I:2387:U:O2'	2.32	0.48
19:I:2290:G:H2'	19:I:2291:U:C6	2.49	0.48
21:J:16:G:C6	21:J:69:G:H1'	2.48	0.48
39:S:77:ILE:HG12	49:X:72:ARG:HG3	1.95	0.48
50:y:11:ARG:NH2	50:y:56:GLY:O	2.43	0.48
1:C:161:C:H2'	1:C:162:G:H8	1.79	0.47
1:C:632:C:C2	1:C:633:A:C8	3.02	0.47
4:2:72:ALA:O	4:2:76:LYS:HG3	2.13	0.47
15:G:103:THR:O	15:G:122:ASN:ND2	2.32	0.47
19:I:661:A:H1'	41:T:13:LYS:HA	1.95	0.47
19:I:1853:A:H2'	19:I:1854:A:C8	2.48	0.47
19:I:2086:U:H2'	19:I:2087:G:H8	1.77	0.47
19:I:2527:C:H2'	19:I:2528:U:O4'	2.14	0.47
19:I:2679:A:H2'	19:I:2680:U:C6	2.48	0.47
23:K:69:ARG:NH1	23:K:127:GLY:O	2.41	0.47
25:L:97:SER:OG	25:L:98:VAL:N	2.47	0.47
1:C:56:U:H2'	1:C:57:G:H8	1.79	0.47
1:C:552:G:OP2	1:C:553:A:O2'	2.23	0.47
1:C:902:A:H2'	1:C:903:A:H8	1.79	0.47
1:C:1314:C:N4	2:1:36:ARG:HB2	2.29	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:I:375:G:H1	19:I:399:U:H3	1.62	0.47
19:I:566:U:H5"	41:T:29:LYS:HE3	1.95	0.47
19:I:658:U:O2	27:M:97:ASN:ND2	2.46	0.47
19:I:1106:G:H2'	19:I:1107:G:C8	2.49	0.47
41:T:101:ILE:HB	41:T:105:ILE:HG13	1.96	0.47
1:C:507:U:H2'	1:C:508:C:C6	2.48	0.47
1:C:1006:A:H2'	1:C:1007:G:C8	2.49	0.47
1:C:1049:A:H1'	11:E:156:ARG:HH21	1.79	0.47
4:2:83:ILE:HD12	4:2:84:ASN:N	2.29	0.47
13:F:154:ARG:N	13:F:154:ARG:HD2	2.28	0.47
19:I:1504:A:H2'	19:I:1505:A:C8	2.50	0.47
19:I:1540:G:H2'	19:I:1541:C:C6	2.49	0.47
19:I:1791:A:H5"	23:K:205:LEU:HD12	1.95	0.47
19:I:1856:U:H2'	19:I:1857:G:O4'	2.14	0.47
19:I:2061:G:H2'	19:I:2501:C:O2'	2.14	0.47
19:I:2651:C:N4	19:I:2652:C:N4	2.62	0.47
22:j:10:LYS:HB3	22:j:53:LYS:HA	1.95	0.47
23:K:30:PHE:CE2	23:K:32:PRO:HG2	2.49	0.47
33:P:145:ASN:OD1	33:P:145:ASN:N	2.47	0.47
1:C:722:A:H2'	1:C:723:A:C8	2.49	0.47
4:2:36:TYR:CZ	4:2:79:LEU:HD21	2.49	0.47
5:4:4:ILE:HG22	5:4:106:VAL:HG13	1.96	0.47
19:I:948:C:H2'	19:I:949:G:H8	1.80	0.47
19:I:1122:G:N2	19:I:1123:C:H41	2.12	0.47
19:I:2007:U:C2	19:I:2008:C:C5	3.02	0.47
19:I:2532:G:O2'	19:I:2663:G:N2	2.47	0.47
26:l:12:LYS:HB3	41:T:63:LYS:HG2	1.95	0.47
32:o:94:LYS:HG2	32:o:117:ARG:HH22	1.79	0.47
35:Q:35:ASP:OD1	35:Q:35:ASP:N	2.42	0.47
1:C:677:G:H2'	1:C:678:U:H6	1.80	0.47
1:C:712:A:H2	52:z:38:LYS:HD3	1.79	0.47
1:C:854:A:H3'	1:C:855:G:H8	1.80	0.47
19:I:65:U:H2'	19:I:66:C:H6	1.80	0.47
19:I:376:G:H2'	19:I:376:G:N3	2.30	0.47
19:I:667:U:H2'	19:I:668:A:O4'	2.15	0.47
19:I:705:A:C2	19:I:727:A:H1'	2.49	0.47
19:I:1224:U:H2'	19:I:1225:G:C8	2.49	0.47
19:I:2441:U:OP2	19:I:2586:U:O2'	2.31	0.47
19:I:2685:G:H2'	19:I:2686:G:H8	1.80	0.47
21:J:42:C:C6	29:N:66:LEU:HD13	2.49	0.47
37:R:36:LEU:HD23	37:R:54:ILE:HD12	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:x:76:LYS:O	48:x:80:LYS:N	2.38	0.47
1:C:676:U:H2'	1:C:677:G:H8	1.80	0.47
1:C:774:A:H5"	38:r:125:LYS:HD3	1.95	0.47
1:C:1213:A:H2'	1:C:1214:G:C8	2.50	0.47
10:d:80:HIS:CD2	10:d:81:PRO:HD2	2.50	0.47
19:I:903:C:H2'	19:I:904:G:C8	2.50	0.47
19:I:1079:C:O2'	19:I:1080:A:H8	1.98	0.47
19:I:1387:A:H5'	19:I:1469:A:H1'	1.96	0.47
19:I:1826:G:OP1	23:K:223:THR:N	2.47	0.47
19:I:1930:G:O2'	19:I:1968:G:O6	2.29	0.47
19:I:2349:G:O5'	26:l:42:ARG:NH2	2.47	0.47
19:I:2357:G:N2	19:I:2360:G:OP2	2.36	0.47
27:M:117:ARG:O	27:M:186:VAL:HB	2.14	0.47
32:o:8:ALA:HB2	32:o:77:ARG:HD2	1.97	0.47
42:u:23:TYR:H	42:u:66:GLU:HG2	1.78	0.47
1:C:288:U:H2'	1:C:289:C:C6	2.49	0.47
1:C:536:G:H5'	13:F:39:GLY:HA2	1.96	0.47
1:C:595:G:H2'	1:C:596:A:H8	1.80	0.47
1:C:772:G:H21	38:r:122:ARG:HD2	1.79	0.47
3:Z:37:GLU:H	3:Z:37:GLU:CD	2.23	0.47
5:4:36:LEU:HD13	5:4:48:LYS:HA	1.97	0.47
19:I:1198:U:H2'	19:I:1199:U:C6	2.49	0.47
19:I:1587:G:H2'	19:I:1588:G:C8	2.49	0.47
19:I:2070:A:H2'	19:I:2071:A:C8	2.50	0.47
19:I:2322:A:H61	19:I:2333:A:N6	2.11	0.47
19:I:2514:U:H2'	19:I:2515:C:H6	1.79	0.47
19:I:2529:G:H5"	19:I:2530:A:H5"	1.97	0.47
19:I:2651:C:C4	19:I:2652:C:N4	2.83	0.47
23:K:168:ASP:OD1	23:K:168:ASP:N	2.46	0.47
26:l:16:LYS:HE2	26:l:20:GLY:HA2	1.96	0.47
31:O:101:ASN:O	31:O:116:GLN:NE2	2.44	0.47
34:p:12:ARG:HG3	34:p:13:LYS:HG3	1.96	0.47
34:p:62:ASP:O	34:p:63:LEU:HD22	2.15	0.47
41:T:82:LEU:HD21	41:T:120:VAL:HG21	1.96	0.47
42:u:44:LYS:O	42:u:45:ILE:HG22	2.15	0.47
44:v:26:GLU:O	44:v:30:ILE:HG12	2.15	0.47
1:C:6:G:H4'	1:C:292:A:H4'	1.96	0.47
1:C:1154:G:H21	1:C:1156:C:H41	1.63	0.47
9:D:163:VAL:HG12	9:D:165:ASP:H	1.80	0.47
11:E:88:ARG:O	11:E:91:VAL:HG12	2.15	0.47
19:I:362:A:H3'	19:I:363:G:H8	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:I:1086:A:O2'	19:I:1087:G:N7	2.48	0.47
19:I:2627:G:N2	19:I:2781:A:H2'	2.29	0.47
26:l:11:ALA:HA	26:l:62:LEU:HD21	1.97	0.47
43:U:62:LYS:HG3	43:U:63:ILE:N	2.29	0.47
50:y:19:LYS:HB3	50:y:47:HIS:CE1	2.49	0.47
1:C:43:C:H5"	48:x:11:ALA:O	2.15	0.47
1:C:919:G:C2	1:C:921:G:C8	3.03	0.47
1:C:1220:C:N4	42:u:103:LYS:HD3	2.29	0.47
1:C:1312:A:H5"	2:1:3:ARG:NH1	2.30	0.47
17:H:19:PRO:O	17:H:23:GLU:HG2	2.14	0.47
19:I:45:G:H5'	19:I:46:G:OP1	2.15	0.47
19:I:796:C:H2'	19:I:797:G:C8	2.50	0.47
21:J:66:A:H1'	21:J:68:C:H41	1.80	0.47
23:K:108:LYS:HA	23:K:196:GLY:HA2	1.97	0.47
31:O:13:ALA:O	31:O:15:VAL:N	2.48	0.47
34:p:47:VAL:O	34:p:80:ARG:HG3	2.14	0.47
39:S:1:MET:HE3	39:S:1:MET:HB2	1.69	0.47
42:u:44:LYS:C	42:u:46:SER:H	2.21	0.47
1:C:538:G:H2'	1:C:539:C:O4'	2.14	0.47
1:C:642:G:H2'	1:C:643:A:H8	1.80	0.47
1:C:917:A:H2'	1:C:918:C:C6	2.49	0.47
1:C:1092:C:O2'	6:3:71:TYR:O	2.21	0.47
9:D:214:LEU:HA	9:D:217:VAL:HG12	1.97	0.47
19:I:17:G:H2'	19:I:18:U:C6	2.50	0.47
19:I:843:G:H2'	19:I:844:A:O4'	2.15	0.47
19:I:1047:G:O2'	19:I:1110:G:O6	2.33	0.47
19:I:1219:U:H2'	19:I:1220:G:C8	2.48	0.47
19:I:2701:U:H3'	19:I:2702:G:H5"	1.97	0.47
20:i:54:VAL:HG21	45:V:98:LEU:HD22	1.97	0.47
21:J:53:A:H2'	21:J:54:G:C8	2.49	0.47
31:O:46:ALA:O	31:O:49:THR:OG1	2.31	0.47
48:x:12:LYS:O	48:x:13:LYS:NZ	2.45	0.47
1:C:72:G:H21	1:C:91:A:H8	1.63	0.46
1:C:268:A:H4'	1:C:269:G:O5'	2.14	0.46
1:C:516:C:H41	40:t:50:ARG:NH2	2.13	0.46
1:C:572:C:O2'	1:C:722:A:N3	2.41	0.46
1:C:573:G:H5'	1:C:722:A:H1'	1.97	0.46
1:C:809:A:N7	1:C:1503:C:O2'	2.40	0.46
19:I:272:A:H2'	19:I:273:G:H8	1.79	0.46
19:I:594:U:H2'	19:I:595:C:C6	2.50	0.46
19:I:1747:U:H2'	19:I:1748:C:C6	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:I:2776:A:H4'	19:I:2777:G:O5'	2.15	0.46
21:J:32:U:H2'	21:J:33:G:C8	2.50	0.46
27:M:113:VAL:HG22	27:M:118:LEU:HD22	1.98	0.46
29:N:34:ILE:HG13	29:N:96:MET:HE3	1.97	0.46
40:t:52:VAL:HG12	40:t:66:TYR:HA	1.97	0.46
48:x:12:LYS:O	48:x:12:LYS:HD3	2.16	0.46
1:C:228:C:H2'	1:C:229:U:H6	1.80	0.46
1:C:509:G:H2'	1:C:510:U:H6	1.81	0.46
9:D:27:MET:SD	9:D:193:PRO:HG3	2.55	0.46
9:D:171:ILE:O	9:D:175:GLU:HG3	2.16	0.46
15:G:83:HIS:NE2	15:G:148:ASN:OD1	2.47	0.46
19:I:1597:A:H5"	19:I:1598:A:H5'	1.97	0.46
19:I:1771:C:H2'	19:I:1772:A:H8	1.80	0.46
19:I:2289:G:H2'	19:I:2290:G:C8	2.50	0.46
19:I:2881:U:H2'	19:I:2882:A:C8	2.50	0.46
21:J:115:A:H2'	21:J:116:G:H8	1.80	0.46
27:M:147:LEU:HD12	27:M:148:ILE:H	1.79	0.46
31:O:92:VAL:HG13	31:O:160:LYS:HD2	1.97	0.46
39:S:66:LYS:HE2	39:S:66:LYS:HB3	1.65	0.46
44:v:21:PHE:HD1	44:v:25:ALA:HB2	1.80	0.46
49:X:88:ARG:HE	49:X:88:ARG:HB3	1.58	0.46
1:C:630:U:H2'	1:C:631:C:C6	2.50	0.46
1:C:712:A:H5'	38:r:119:ASN:OD1	2.15	0.46
1:C:717:U:O2	1:C:849:G:H4'	2.15	0.46
1:C:1519:G:OP2	6:3:40:LYS:NZ	2.46	0.46
2:1:3:ARG:HH21	2:1:7:LYS:HD3	1.80	0.46
12:e:39:ARG:HG2	12:e:58:THR:HG22	1.97	0.46
17:H:66:ALA:HB1	17:H:70:VAL:HG11	1.96	0.46
19:I:395:U:O2'	19:I:396:G:N7	2.40	0.46
19:I:656:G:H2'	19:I:657:U:C6	2.50	0.46
19:I:682:G:H5'	24:k:26:ASN:CG	2.41	0.46
19:I:1447:C:H2'	19:I:1448:G:H8	1.80	0.46
19:I:2245:U:H5"	19:I:2246:G:H5'	1.96	0.46
31:O:55:ARG:HB3	31:O:58:TYR:CE2	2.51	0.46
32:o:125:ILE:O	32:o:125:ILE:HD12	2.16	0.46
38:r:112:ASP:OD2	38:r:114:THR:HG22	2.15	0.46
50:y:19:LYS:O	50:y:47:HIS:ND1	2.46	0.46
1:C:68:G:H1	1:C:95:A:H61	1.63	0.46
1:C:511:G:H1	1:C:527:A:P	2.38	0.46
1:C:672:U:H2'	1:C:673:U:C6	2.51	0.46
1:C:731:A:H2'	1:C:732:C:C6	2.49	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:979:C:H2'	1:C:980:U:C6	2.50	0.46
1:C:1154:G:H21	1:C:1156:C:N4	2.13	0.46
1:C:1281:A:C2	1:C:1347:G:H1'	2.51	0.46
2:1:44:MET:O	2:1:47:LEU:HB2	2.15	0.46
19:I:1093:G:H21	19:I:1098:A:H62	1.63	0.46
19:I:1469:A:H2'	19:I:1470:A:C8	2.50	0.46
19:I:1685:C:H2'	19:I:1686:C:H6	1.80	0.46
19:I:2039:U:H2'	19:I:2040:G:C8	2.49	0.46
19:I:2070:A:H2'	19:I:2071:A:H8	1.81	0.46
21:J:2:G:H2'	21:J:3:C:C6	2.51	0.46
30:n:6:VAL:C	30:n:8:GLY:H	2.23	0.46
36:q:9:ARG:HB2	36:q:99:GLN:HB2	1.98	0.46
1:C:161:C:H2'	1:C:162:G:C8	2.51	0.46
1:C:487:A:H3'	1:C:488:G:C8	2.50	0.46
1:C:869:U:O2'	32:o:15:ARG:HD2	2.16	0.46
1:C:1115:U:H2'	1:C:1116:U:C6	2.51	0.46
1:C:1169:G:H2'	1:C:1170:A:C8	2.46	0.46
1:C:1452:G:H2'	1:C:1453:A:C8	2.50	0.46
8:c:22:ARG:NH1	8:c:73:PHE:HB2	2.31	0.46
16:g:28:LEU:HD11	16:g:42:LEU:HB3	1.98	0.46
17:H:29:ILE:CD1	17:H:64:VAL:HB	2.45	0.46
19:I:81:G:HO2'	19:I:295:G:HO2'	1.63	0.46
19:I:671:C:OP1	41:T:43:GLY:N	2.34	0.46
19:I:703:U:H2'	19:I:704:G:O4'	2.15	0.46
19:I:755:U:H2'	19:I:756:A:C8	2.51	0.46
19:I:1013:C:H2'	19:I:1014:A:H8	1.79	0.46
19:I:1023:U:O2	19:I:1023:U:H2'	2.15	0.46
19:I:1283:G:N1	19:I:1286:A:OP2	2.47	0.46
19:I:1865:U:H4'	19:I:1866:A:OP1	2.15	0.46
19:I:1980:G:O2'	19:I:1982:U:OP2	2.28	0.46
19:I:2345:G:H4'	19:I:2347:C:OP2	2.15	0.46
50:y:57:ASP:HB3	50:y:80:GLU:O	2.15	0.46
1:C:209:C:HO2'	1:C:210:U:P	2.38	0.46
1:C:1506:U:H2'	1:C:1507:A:H8	1.79	0.46
2:1:19:VAL:HA	2:1:22:ALA:HB2	1.97	0.46
11:E:20:SER:HB2	44:v:94:PRO:HG3	1.97	0.46
19:I:291:G:C6	19:I:350:G:C6	3.04	0.46
19:I:307:G:N1	19:I:310:A:OP2	2.28	0.46
19:I:552:U:H2'	19:I:553:G:H8	1.81	0.46
19:I:1733:G:H2'	19:I:1734:G:H8	1.81	0.46
19:I:2531:A:H61	19:I:2662:A:N6	2.14	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:I:2744:G:H2'	19:I:2745:C:C6	2.50	0.46
25:L:38:LYS:HB2	25:L:47:ALA:H	1.80	0.46
1:C:198:G:C2	1:C:199:A:H1'	2.50	0.46
1:C:460:A:H5"	1:C:462:A:C2	2.51	0.46
1:C:596:A:H2'	1:C:597:U:C6	2.51	0.46
1:C:990:A:N1	1:C:1039:C:O2'	2.45	0.46
1:C:1521:C:H2'	1:C:1522:U:C6	2.50	0.46
7:b:61:LEU:HD11	7:b:82:LYS:HE2	1.97	0.46
9:D:86:SER:HB3	9:D:222:ARG:HH21	1.80	0.46
11:E:134:MET:HE2	11:E:168:TYR:CD2	2.51	0.46
19:I:592:A:H2	26:l:4:ILE:HD11	1.80	0.46
19:I:2818:U:H2'	19:I:2819:G:C8	2.51	0.46
21:J:9:G:C5	21:J:112:G:C6	3.04	0.46
21:J:90:C:H5'	43:U:18:ARG:HG2	1.97	0.46
33:P:88:GLY:O	33:P:125:THR:OG1	2.30	0.46
36:q:8:ILE:O	36:q:73:LEU:HD12	2.15	0.46
42:u:18:ALA:C	42:u:20:THR:H	2.24	0.46
43:U:53:MET:HE1	43:U:103:TYR:CG	2.51	0.46
49:X:31:TRP:CE3	49:X:38:LYS:HG2	2.50	0.46
1:C:173:A:O5'	1:C:174:U:H5"	2.15	0.46
1:C:262:C:H2'	1:C:263:U:H6	1.80	0.46
1:C:773:C:H1'	38:r:122:ARG:HD3	1.97	0.46
19:I:355:U:H2'	19:I:356:G:C8	2.51	0.46
19:I:640:C:H2'	19:I:641:U:O4'	2.15	0.46
19:I:1077:A:H2	19:I:1088:A:H62	1.64	0.46
19:I:1440:U:H2'	19:I:1441:G:C8	2.51	0.46
19:I:1510:G:H2'	19:I:1511:G:C8	2.50	0.46
19:I:2011:U:H2'	19:I:2012:G:O4'	2.16	0.46
19:I:2687:U:H2'	19:I:2688:G:O4'	2.15	0.46
20:i:28:LEU:HD12	20:i:37:LYS:HD2	1.97	0.46
21:J:115:A:H4'	47:W:55:GLU:HG2	1.98	0.46
30:n:25:LYS:HB2	30:n:25:LYS:HE2	1.59	0.46
1:C:352:U:C2	1:C:353:G:C8	3.04	0.46
1:C:944:U:H2'	1:C:945:G:C8	2.50	0.46
1:C:1366:U:H5"	34:p:73:SER:HB2	1.98	0.46
1:C:1472:U:H2'	1:C:1473:C:C6	2.51	0.46
5:4:46:LEU:O	5:4:50:VAL:HG23	2.16	0.46
15:G:15:LEU:HD21	15:G:18:VAL:HG23	1.98	0.46
19:I:153:U:H2'	19:I:154:U:H6	1.81	0.46
19:I:1038:G:H2'	19:I:1039:A:H8	1.77	0.46
19:I:2584:U:H2'	19:I:2585:U:H2'	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:L:172:VAL:HB	25:L:175:LEU:HD11	1.97	0.46
29:N:33:LYS:HD2	29:N:35:THR:HB	1.98	0.46
29:N:128:TYR:O	29:N:156:ILE:N	2.49	0.46
30:n:124:LEU:HA	30:n:124:LEU:HD23	1.77	0.46
1:C:707:G:H2'	1:C:708:G:H8	1.78	0.46
2:1:43:ASN:OD1	2:1:43:ASN:C	2.58	0.46
17:H:90:MET:SD	52:z:61:ARG:NH2	2.74	0.46
19:I:796:C:H2'	19:I:797:G:H8	1.80	0.46
19:I:925:A:H2'	19:I:926:G:H8	1.80	0.46
19:I:1432:G:H2'	19:I:1433:A:H8	1.77	0.46
19:I:1771:C:H2'	19:I:1772:A:C8	2.51	0.46
19:I:2530:A:N7	31:O:172:LYS:NZ	2.42	0.46
19:I:2818:U:H2'	19:I:2819:G:H8	1.80	0.46
29:N:116:GLY:HA2	29:N:176:PRO:HB2	1.98	0.46
1:C:488:G:H2'	1:C:490:A:H8	1.81	0.45
1:C:657:A:O3'	52:z:53:ARG:NH1	2.48	0.45
1:C:708:G:H2'	1:C:709:A:H8	1.78	0.45
1:C:1452:G:H2'	1:C:1453:A:H8	1.81	0.45
7:b:39:THR:OG1	7:b:42:GLU:OE1	2.27	0.45
12:e:21:LEU:HD22	12:e:39:ARG:NE	2.31	0.45
17:H:51:ILE:HD11	52:z:66:SER:HB2	1.98	0.45
19:I:277:G:H2'	19:I:361:G:C6	2.51	0.45
19:I:858:G:H3'	19:I:859:G:C8	2.51	0.45
19:I:1295:C:C2	19:I:1296:G:C8	3.04	0.45
19:I:1422:G:N2	19:I:1498:C:O2	2.47	0.45
19:I:2530:A:N6	31:O:172:LYS:HD2	2.29	0.45
21:J:114:C:H2'	21:J:115:A:H8	1.81	0.45
23:K:258:ARG:HH22	23:K:263:THR:HB	1.81	0.45
1:C:43:C:P	48:x:12:LYS:HD2	2.56	0.45
1:C:317:U:H4'	4:2:17:ALA:HB3	1.99	0.45
1:C:412:U:H2'	1:C:413:C:C6	2.51	0.45
1:C:556:U:H1'	40:t:12:ARG:HB3	1.98	0.45
1:C:630:U:H2'	1:C:631:C:H6	1.81	0.45
1:C:739:U:H5'	1:C:829:G:N2	2.31	0.45
1:C:1307:U:H2'	1:C:1308:C:H6	1.82	0.45
5:4:29:VAL:HG12	5:4:51:LEU:HD11	1.98	0.45
5:4:78:GLU:O	19:I:24:G:O2'	2.25	0.45
13:F:58:LYS:HD3	13:F:203:LEU:HD12	1.98	0.45
13:F:202:GLU:OE1	15:G:112:ARG:NH2	2.41	0.45
19:I:796:C:OP1	27:M:57:LYS:HD2	2.15	0.45
19:I:807:U:C2	19:I:808:G:C8	3.04	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:I:1494:A:H2'	19:I:1495:A:C8	2.51	0.45
19:I:1571:A:H2'	19:I:1572:A:O4'	2.16	0.45
19:I:2282:G:H4'	19:I:2389:G:O2'	2.16	0.45
19:I:2345:G:H21	19:I:2381:A:H1'	1.82	0.45
19:I:2350:C:H3'	19:I:2351:G:C8	2.48	0.45
19:I:2641:G:H2'	19:I:2642:G:H8	1.81	0.45
19:I:2813:A:H2'	19:I:2814:A:H8	1.81	0.45
36:q:12:ALA:HB2	36:q:96:VAL:HG12	1.98	0.45
1:C:102:G:C5	4:2:10:ARG:HD3	2.51	0.45
1:C:265:C:HO2'	1:C:266:C:P	2.39	0.45
1:C:647:A:H2	32:o:28:PRO:HB3	1.81	0.45
1:C:885:U:H2'	1:C:886:A:H8	1.82	0.45
1:C:952:A:C6	2:1:55:ARG:HB2	2.52	0.45
1:C:1471:U:H2'	1:C:1472:U:H6	1.81	0.45
10:d:7:GLU:OE2	10:d:10:LYS:NZ	2.48	0.45
13:F:34:ILE:HG23	13:F:35:GLU:HG2	1.99	0.45
19:I:374:A:H3'	19:I:375:G:C8	2.42	0.45
19:I:833:A:H2'	19:I:834:G:H8	1.79	0.45
19:I:1079:C:H41	19:I:1088:A:P	2.40	0.45
19:I:1253:A:OP1	51:Y:33:ARG:NH2	2.49	0.45
19:I:1825:U:H2'	19:I:1826:G:C8	2.50	0.45
19:I:2375:G:H5'	19:I:2376:A:OP2	2.16	0.45
19:I:2700:A:N6	19:I:2706:A:H61	2.10	0.45
21:J:29:A:H2	21:J:57:A:H61	1.64	0.45
21:J:62:C:H2'	21:J:63:C:C6	2.51	0.45
29:N:54:ALA:HB1	29:N:65:PRO:HG3	1.99	0.45
48:x:73:ALA:HA	48:x:76:LYS:HE3	1.99	0.45
1:C:45:G:H5"	1:C:301:U:H1'	1.99	0.45
1:C:104:C:O2'	48:x:25:ARG:O	2.33	0.45
1:C:189:A:O4'	1:C:216:U:O2'	2.30	0.45
1:C:442:A:H3'	1:C:443:G:H21	1.82	0.45
1:C:1341:G:O6	34:p:12:ARG:NH2	2.41	0.45
17:H:18:VAL:HG11	17:H:58:HIS:CD2	2.52	0.45
19:I:582:A:H2'	19:I:583:G:C8	2.49	0.45
19:I:1035:U:O2'	19:I:1036:G:H5"	2.17	0.45
19:I:1198:U:H2'	19:I:1199:U:H6	1.82	0.45
19:I:1297:C:H2'	19:I:1298:C:H6	1.81	0.45
19:I:1435:G:H2'	19:I:1436:G:H8	1.80	0.45
19:I:1499:C:C2	19:I:1500:G:C8	3.04	0.45
19:I:2485:G:O3'	43:U:125:PRO:HB3	2.15	0.45
30:n:72:THR:HG22	30:n:142:HIS:CE1	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:z:21:ILE:HD11	52:z:55:LEU:HA	1.99	0.45
52:z:41:PRO:HD2	52:z:44:ILE:HD12	1.99	0.45
1:C:999:A:H5"	1:C:1000:C:C5	2.51	0.45
19:I:3:U:H2'	19:I:4:U:C6	2.51	0.45
19:I:244:A:H2'	19:I:245:G:O4'	2.16	0.45
19:I:547:A:N3	19:I:548:G:N2	2.47	0.45
19:I:722:A:H2'	19:I:723:C:C6	2.51	0.45
19:I:1360:G:C8	19:I:1361:G:C8	3.04	0.45
19:I:1363:C:O2'	19:I:1809:A:N3	2.41	0.45
19:I:1751:U:H2'	19:I:1752:C:C6	2.51	0.45
19:I:1862:G:H2'	19:I:1863:G:H8	1.81	0.45
19:I:1928:A:H2'	19:I:1929:G:O4'	2.17	0.45
19:I:2352:A:H3'	19:I:2353:G:C8	2.51	0.45
23:K:78:VAL:HG22	23:K:94:VAL:HG12	1.99	0.45
36:q:27:GLU:HA	36:q:30:LYS:HG2	1.98	0.45
40:t:50:ARG:HG2	40:t:66:TYR:CE1	2.51	0.45
1:C:171:G:O2'	1:C:172:C:P	2.74	0.45
1:C:245:G:N2	1:C:260:G:O6	2.49	0.45
1:C:329:C:O2'	1:C:1427:A:N3	2.42	0.45
1:C:404:G:H2'	1:C:423:U:C4	2.51	0.45
1:C:546:U:H2'	1:C:547:A:C8	2.47	0.45
1:C:952:A:OP1	2:1:55:ARG:NH1	2.47	0.45
1:C:996:A:H2'	1:C:997:G:C8	2.51	0.45
1:C:1054:U:H2'	1:C:1055:G:H8	1.81	0.45
1:C:1260:G:N2	1:C:1262:G:O2'	2.50	0.45
1:C:1307:U:H2'	1:C:1308:C:C6	2.50	0.45
13:F:8:LYS:HB3	13:F:21:LEU:HB3	1.98	0.45
19:I:239:C:O2'	19:I:622:G:O2'	2.23	0.45
19:I:1199:U:H2'	19:I:1200:C:H6	1.81	0.45
19:I:1292:G:H2'	19:I:1293:C:C6	2.51	0.45
19:I:2670:A:H2'	19:I:2671:G:C8	2.51	0.45
21:J:34:A:N6	21:J:44:G:H1'	2.30	0.45
43:U:4:PRO:HG3	43:U:68:PHE:HE2	1.81	0.45
47:W:92:PHE:HB2	47:W:117:PHE:CD1	2.51	0.45
1:C:75:G:H1	1:C:88:U:H3	1.65	0.45
1:C:397:C:OP1	13:F:134:SER:OG	2.28	0.45
1:C:902:A:H2'	1:C:903:A:C8	2.51	0.45
1:C:1480:G:H2'	1:C:1481:G:O4'	2.17	0.45
6:3:31:GLU:OE1	6:3:34:ARG:NH2	2.50	0.45
13:F:15:GLU:HG3	13:F:19:LEU:HD21	1.99	0.45
19:I:914:G:H5'	19:I:915:C:OP2	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:I:936:A:C6	19:I:937:C:N4	2.85	0.45
19:I:947:A:H2'	19:I:948:C:C6	2.51	0.45
19:I:1077:A:O2'	19:I:1078:U:O4'	2.35	0.45
19:I:1190:G:H2'	19:I:1191:G:H8	1.82	0.45
19:I:1564:C:H2'	19:I:1565:C:C6	2.51	0.45
19:I:1649:G:O2'	45:V:106:ASP:OD2	2.29	0.45
19:I:1736:U:C4	19:I:1737:G:C6	3.05	0.45
27:M:61:ARG:HG3	27:M:63:LYS:O	2.17	0.45
29:N:143:TYR:OH	42:u:11:ASP:OD2	2.25	0.45
43:U:67:VAL:HG21	43:U:96:ILE:HD11	1.99	0.45
47:W:12:THR:HG22	47:W:16:ARG:HG2	1.99	0.45
1:C:19:A:H5"	15:G:91:GLY:HA3	1.98	0.45
1:C:94:C:O2'	1:C:95:A:C8	2.69	0.45
1:C:216:U:H2'	1:C:217:A:C8	2.52	0.45
1:C:516:C:OP2	40:t:66:TYR:OH	2.22	0.45
1:C:573:G:H2'	1:C:574:C:H6	1.82	0.45
10:d:80:HIS:CG	10:d:81:PRO:HD2	2.51	0.45
18:h:44:ILE:HA	18:h:47:MET:HG2	1.98	0.45
19:I:117:G:OP2	19:I:119:A:O2'	2.24	0.45
19:I:721:A:H2'	19:I:722:A:C8	2.52	0.45
19:I:1006:C:O2'	37:R:108:MET:O	2.33	0.45
19:I:2891:U:H2'	19:I:2892:G:C8	2.52	0.45
33:P:116:ARG:NH2	33:P:133:GLN:OE1	2.49	0.45
1:C:229:U:H2'	1:C:230:A:C8	2.52	0.45
1:C:364:G:H2'	1:C:365:A:H8	1.81	0.45
1:C:507:U:H2'	1:C:508:C:H6	1.82	0.45
1:C:668:G:N2	38:r:118:HIS:HB2	2.32	0.45
1:C:930:C:C4	1:C:931:A:N7	2.85	0.45
1:C:1181:G:H2'	1:C:1182:A:C8	2.52	0.45
1:C:1181:G:H2'	1:C:1182:A:H8	1.82	0.45
19:I:16:C:H2'	19:I:17:G:H8	1.82	0.45
19:I:693:A:O2'	19:I:1353:A:N3	2.45	0.45
19:I:782:A:N7	23:K:220:VAL:HG21	2.31	0.45
19:I:1032:A:O2'	19:I:1033:U:H5'	2.16	0.45
19:I:1063:G:H2'	19:I:1064:C:O4'	2.17	0.45
19:I:1117:C:HO2'	19:I:1118:C:H6	1.65	0.45
19:I:1341:G:OP1	19:I:1397:U:N3	2.47	0.45
19:I:1400:U:H2'	19:I:1401:G:C8	2.52	0.45
19:I:1529:G:H2'	19:I:1530:G:C8	2.52	0.45
19:I:1750:G:H2'	19:I:1751:U:C6	2.52	0.45
19:I:1927:A:H2'	19:I:1928:A:C8	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:x:6:LEU:HD12	48:x:70:ARG:HB3	1.99	0.45
49:X:22:PRO:HD3	49:X:50:ILE:HD12	1.99	0.45
52:z:26:ILE:HG22	52:z:30:LYS:HG2	1.97	0.45
1:C:125:U:H2'	1:C:126:C:C6	2.52	0.45
1:C:454:A:H2'	1:C:455:A:O4'	2.16	0.45
2:1:46:GLY:O	2:1:47:LEU:HD22	2.16	0.45
19:I:500:G:N1	19:I:503:A:OP2	2.49	0.45
19:I:674:G:P	27:M:49:ARG:HH22	2.40	0.45
19:I:2096:C:H2'	19:I:2097:A:C8	2.51	0.45
19:I:2323:G:H2'	19:I:2323:G:N3	2.32	0.45
19:I:2820:A:H4'	45:V:3:HIS:CD2	2.52	0.45
38:r:31:ILE:HG23	38:r:46:THR:HG22	1.99	0.45
47:W:4:LYS:O	47:W:8:ILE:HD12	2.17	0.45
1:C:349:C:H2'	1:C:350:A:O4'	2.17	0.44
1:C:859:A:H2'	1:C:860:C:C6	2.52	0.44
1:C:871:G:O2'	32:o:5:ASP:OD1	2.28	0.44
1:C:1239:G:H2'	1:C:1240:G:H8	1.82	0.44
11:E:91:VAL:HG11	11:E:101:ILE:HD11	1.98	0.44
19:I:37:C:H2'	19:I:38:A:C8	2.52	0.44
19:I:152:A:H2'	19:I:153:U:C6	2.52	0.44
19:I:266:G:H1	19:I:425:G:N2	2.09	0.44
19:I:712:G:C6	19:I:713:G:C6	3.06	0.44
19:I:1703:G:H2'	19:I:1704:C:C6	2.52	0.44
19:I:2300:C:H2'	19:I:2301:C:C6	2.52	0.44
19:I:2347:C:H2'	19:I:2348:U:H6	1.83	0.44
19:I:2508:G:H1	19:I:2580:PSU:HN3	1.65	0.44
23:K:133:ARG:NE	33:P:123:ARG:HH11	2.15	0.44
29:N:135:GLN:HG3	29:N:141:ILE:HD11	1.98	0.44
30:n:29:ILE:HG22	30:n:105:VAL:HG21	1.99	0.44
36:q:53:ILE:HD11	36:q:63:ASP:CG	2.42	0.44
37:R:74:TYR:CG	37:R:92:MET:HE2	2.52	0.44
38:r:82:LEU:HD23	38:r:82:LEU:HA	1.77	0.44
45:V:97:ILE:HG12	45:V:113:ILE:HG12	1.99	0.44
8:c:26:LYS:HG3	8:c:27:ASN:OD1	2.17	0.44
14:f:13:VAL:HG23	14:f:29:PHE:HB2	2.00	0.44
14:f:56:MET:HE3	14:f:56:MET:HB2	1.77	0.44
14:f:72:ARG:NE	14:f:78:TYR:OH	2.35	0.44
19:I:143:C:H2'	19:I:144:A:C8	2.52	0.44
19:I:417:C:H2'	19:I:418:C:H6	1.81	0.44
19:I:538:A:H2'	19:I:539:G:O4'	2.17	0.44
19:I:2345:G:N1	19:I:2373:G:O6	2.50	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:I:2690:U:OP1	45:V:14:SER:OG	2.27	0.44
19:I:2901:C:H3'	19:I:2902:C:H6	1.82	0.44
21:J:94:A:H2'	21:J:95:U:O4'	2.16	0.44
25:L:148:GLN:HB2	25:L:152:PRO:HG3	1.99	0.44
26:l:15:LYS:HB2	26:l:23:LYS:HE3	2.00	0.44
32:o:43:GLU:OE1	32:o:43:GLU:C	2.61	0.44
40:t:30:LYS:HA	40:t:30:LYS:HD2	1.90	0.44
41:T:21:ARG:HA	41:T:21:ARG:HD3	1.82	0.44
44:v:45:VAL:O	44:v:48:LEU:HD12	2.18	0.44
50:y:4:LYS:HG2	50:y:5:ILE:H	1.81	0.44
2:1:28:LYS:HB3	2:1:28:LYS:HE2	1.67	0.44
15:G:137:VAL:C	15:G:139:ALA:H	2.25	0.44
18:h:27:LEU:O	18:h:38:ARG:NH2	2.32	0.44
19:I:643:A:H2'	19:I:643:A:N3	2.33	0.44
19:I:898:C:H2'	19:I:899:A:O4'	2.17	0.44
19:I:959:A:H2'	19:I:960:A:C8	2.52	0.44
19:I:1462:C:O2'	19:I:2702:G:O2'	2.18	0.44
19:I:2215:C:H2'	19:I:2216:G:C8	2.52	0.44
19:I:2651:C:H2'	19:I:2652:C:C6	2.52	0.44
19:I:2773:C:H2'	19:I:2774:C:H6	1.82	0.44
19:I:2784:U:H2'	19:I:2785:C:C6	2.51	0.44
19:I:2841:C:H2'	19:I:2842:G:H8	1.82	0.44
23:K:120:VAL:HG13	23:K:131:PRO:HG2	1.98	0.44
23:K:205:LEU:HB3	23:K:210:ALA:HB3	1.99	0.44
29:N:143:TYR:CD2	42:u:8:ASN:HB3	2.51	0.44
45:V:35:LYS:HB2	45:V:112:TYR:CE1	2.52	0.44
48:x:74:LEU:O	48:x:78:VAL:HG23	2.18	0.44
1:C:124:A:H1'	1:C:257:A:O2'	2.18	0.44
1:C:312:G:C6	1:C:330:A:C6	3.06	0.44
1:C:490:A:H61	1:C:492:A:N6	2.16	0.44
1:C:1027:G:H2'	1:C:1028:G:O4'	2.17	0.44
1:C:1404:A:H2'	1:C:1405:C:C6	2.52	0.44
10:d:89:ILE:HD12	10:d:89:ILE:HA	1.79	0.44
13:F:11:LEU:HD13	13:F:63:ARG:HD3	1.99	0.44
13:F:170:TRP:CZ3	13:F:190:ASP:HB3	2.53	0.44
19:I:755:U:H2'	19:I:756:A:H8	1.82	0.44
19:I:1297:C:H2'	19:I:1298:C:C6	2.53	0.44
19:I:1426:G:H2'	19:I:1427:A:N7	2.33	0.44
27:M:186:VAL:CG1	27:M:188:MET:HE3	2.46	0.44
42:u:3:ARG:HE	42:u:3:ARG:HB3	1.58	0.44
45:V:83:LEU:HA	45:V:86:ARG:HD3	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:Y:90:ILE:HD11	51:Y:94:ILE:HG21	1.97	0.44
52:z:29:LEU:HD23	52:z:68:LEU:HD11	1.98	0.44
1:C:91:A:H2'	1:C:91:A:N3	2.33	0.44
1:C:370:G:H4'	48:x:5:ARG:HG3	1.99	0.44
5:4:80:PRO:HD3	19:I:25:U:H5"	1.99	0.44
19:I:214:G:H1'	19:I:217:A:H5'	2.00	0.44
19:I:415:A:H2'	19:I:416:U:H6	1.82	0.44
19:I:817:C:O2'	19:I:839:U:OP1	2.27	0.44
19:I:1053:C:H2'	19:I:1054:A:C8	2.51	0.44
19:I:1060:U:H1'	19:I:1061:U:H5'	2.00	0.44
19:I:1412:U:H3	19:I:1591:A:H2	1.66	0.44
19:I:1939:5MU:OP1	19:I:2604:PSU:O2'	2.30	0.44
19:I:2333:A:H4'	19:I:2334:U:H3'	1.98	0.44
19:I:2468:A:H2'	19:I:2476:A:C6	2.52	0.44
19:I:2590:A:H2'	19:I:2591:C:H6	1.81	0.44
19:I:2760:C:H3'	19:I:2761:A:H8	1.83	0.44
21:J:24:G:H1'	21:J:27:C:N4	2.32	0.44
34:p:23:PRO:C	34:p:61:LEU:HB2	2.42	0.44
37:R:19:ASP:OD2	37:R:21:THR:HG23	2.17	0.44
41:T:56:PRO:O	41:T:60:ARG:HG3	2.18	0.44
42:u:81:MET:HE2	42:u:81:MET:HB3	1.87	0.44
50:y:17:MET:HE1	50:y:45:HIS:HD2	1.82	0.44
1:C:56:U:H2'	1:C:57:G:C8	2.52	0.44
1:C:407:G:H3'	1:C:408:A:H3'	1.99	0.44
1:C:786:A:H1'	1:C:788:A:N7	2.32	0.44
1:C:944:U:H2'	1:C:945:G:H8	1.81	0.44
1:C:961:C:H4'	34:p:127:PHE:HE2	1.82	0.44
1:C:1000:C:H2'	1:C:1001:U:C6	2.53	0.44
1:C:1134:G:H2'	1:C:1135:U:C6	2.52	0.44
2:1:18:LYS:HD3	2:1:18:LYS:HA	1.82	0.44
11:E:134:MET:HE2	11:E:168:TYR:HD2	1.83	0.44
19:I:538:A:H5"	37:R:7:LYS:HE2	1.98	0.44
19:I:562:U:H1'	19:I:2035:G:O2'	2.18	0.44
19:I:1431:A:H2'	19:I:1432:G:H8	1.82	0.44
19:I:1529:G:H2'	19:I:1530:G:H8	1.82	0.44
19:I:1567:G:H2'	23:K:85:PRO:HG3	1.99	0.44
19:I:1628:G:H2'	19:I:1629:U:C6	2.53	0.44
19:I:1682:G:OP2	19:I:1699:G:N2	2.48	0.44
19:I:1873:G:H2'	19:I:1874:C:H6	1.83	0.44
19:I:1883:U:H2'	19:I:1884:G:O4'	2.17	0.44
19:I:2148:G:H2'	19:I:2149:U:C6	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:I:2266:A:H4'	19:I:2267:A:C2	2.53	0.44
19:I:2364:C:H2'	19:I:2365:G:O4'	2.18	0.44
25:L:28:GLU:HG3	25:L:28:GLU:O	2.17	0.44
25:L:108:ASP:OD1	25:L:173:GLN:HG2	2.17	0.44
26:l:26:HIS:HB3	26:l:44:LEU:HD22	1.99	0.44
28:m:7:VAL:HG12	28:m:35:GLN:HG3	2.00	0.44
29:N:34:ILE:HG12	29:N:156:ILE:HD13	1.99	0.44
32:o:77:ARG:NE	32:o:79:SER:O	2.50	0.44
38:r:38:GLN:CD	38:r:38:GLN:N	2.76	0.44
49:X:9:GLU:OE2	49:X:56:HIS:NE2	2.50	0.44
1:C:74:A:H62	1:C:89:G:N2	2.14	0.44
1:C:79:G:H2'	1:C:80:C:O4'	2.18	0.44
1:C:216:U:H2'	1:C:217:A:H8	1.82	0.44
1:C:757:G:H2'	1:C:758:C:H6	1.82	0.44
1:C:910:U:H2'	1:C:911:G:C8	2.52	0.44
1:C:1056:U:H2'	1:C:1057:C:C6	2.53	0.44
16:g:32:ALA:HB2	16:g:37:LEU:HD22	1.99	0.44
19:I:81:G:H2'	19:I:82:U:O4'	2.16	0.44
19:I:372:G:H4'	19:I:373:U:H5'	2.00	0.44
19:I:417:C:H2'	19:I:418:C:C6	2.53	0.44
19:I:561:G:O2'	51:Y:45:TYR:OH	2.23	0.44
22:j:39:PHE:CZ	22:j:44:ARG:HA	2.53	0.44
29:N:47:LYS:HA	29:N:50:LEU:HD13	1.98	0.44
39:S:70:ARG:HD3	39:S:76:VAL:HB	2.00	0.44
45:V:28:LEU:HD23	45:V:48:VAL:HG11	2.00	0.44
1:C:265:C:O2'	1:C:266:C:OP1	2.30	0.44
1:C:297:A:H2'	1:C:298:U:O4'	2.18	0.44
1:C:315:A:H2'	1:C:316:C:H6	1.83	0.44
1:C:785:G:O6	1:C:786:A:N6	2.49	0.44
1:C:1146:A:O2'	1:C:1147:G:H8	2.01	0.44
4:2:20:HIS:CD2	4:2:24:ARG:HE	2.35	0.44
4:2:61:GLN:OE1	4:2:61:GLN:HA	2.17	0.44
19:I:451:U:H4'	27:M:47:LYS:NZ	2.32	0.44
19:I:814:C:H2'	19:I:815:C:H6	1.83	0.44
19:I:966:G:H2'	19:I:967:U:C6	2.53	0.44
19:I:1429:G:H2'	19:I:1430:G:C8	2.51	0.44
19:I:1588:G:H2'	19:I:1589:U:C6	2.53	0.44
19:I:2831:G:N2	19:I:2884:U:OP2	2.51	0.44
40:t:39:THR:OG1	40:t:49:LEU:O	2.35	0.44
41:T:122:VAL:O	41:T:143:GLU:HB2	2.18	0.44
49:X:25:THR:HB	49:X:88:ARG:HB2	1.98	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:20:U:H2'	1:C:21:G:O4'	2.18	0.44
1:C:151:C:H2'	1:C:152:G:C8	2.51	0.44
1:C:186:G:H2'	1:C:186:G:N3	2.33	0.44
1:C:999:A:C5	1:C:1000:C:H1'	2.52	0.44
1:C:1195:A:H1'	1:C:1196:U:OP2	2.18	0.44
1:C:1435:A:C6	49:X:114:LEU:HD21	2.53	0.44
5:4:1:MET:HE3	5:4:2:GLU:H	1.83	0.44
19:I:27:G:N1	19:I:512:G:H1'	2.33	0.44
19:I:647:G:H2'	19:I:647:G:N3	2.32	0.44
19:I:1361:G:H2'	19:I:1362:C:H6	1.81	0.44
19:I:1830:C:H2'	19:I:1831:G:H8	1.82	0.44
19:I:2347:C:H2'	19:I:2348:U:C6	2.53	0.44
19:I:2445:2MG:OP1	27:M:69:ARG:NH1	2.40	0.44
21:J:57:A:H2'	21:J:58:A:C8	2.52	0.44
37:R:13:ARG:NH2	37:R:49:ASP:O	2.30	0.44
39:S:64:ARG:HB2	39:S:79:PHE:CD1	2.52	0.44
49:X:53:ARG:H	49:X:57:SER:HB3	1.83	0.44
1:C:642:G:H2'	1:C:643:A:C8	2.52	0.43
1:C:1293:A:H2'	1:C:1293:A:N3	2.33	0.43
7:b:33:LYS:HG2	7:b:80:TRP:CZ3	2.53	0.43
14:f:39:TRP:CE3	33:P:32:PRO:HA	2.53	0.43
15:G:115:LEU:O	15:G:120:VAL:HG22	2.18	0.43
19:I:87:U:H3	19:I:94:A:N6	2.16	0.43
19:I:282:A:N6	19:I:359:G:O6	2.51	0.43
19:I:287:G:H2'	19:I:288:U:C6	2.53	0.43
19:I:1668:A:O2'	19:I:1674:G:N7	2.39	0.43
19:I:1818:U:H2'	23:K:156:ARG:HB2	2.00	0.43
20:i:46:ASP:OD1	20:i:46:ASP:N	2.41	0.43
38:r:79:ILE:HB	38:r:105:PHE:CE2	2.52	0.43
40:t:50:ARG:HG2	40:t:66:TYR:HE1	1.83	0.43
1:C:21:G:H2'	1:C:22:G:H8	1.77	0.43
1:C:218:U:H2'	1:C:219:C:C6	2.53	0.43
1:C:508:C:H2'	1:C:509:G:H8	1.82	0.43
1:C:701:U:H2'	1:C:702:A:C8	2.53	0.43
2:1:32:ARG:HD2	2:1:57:HIS:CG	2.53	0.43
4:2:55:GLN:HG3	4:2:76:LYS:HD2	2.00	0.43
13:F:147:GLU:H	13:F:147:GLU:CD	2.26	0.43
19:I:403:U:H4'	19:I:404:A:H8	1.83	0.43
19:I:760:G:H2'	19:I:761:A:O4'	2.18	0.43
19:I:925:A:H2'	19:I:926:G:C8	2.53	0.43
19:I:1561:C:H2'	19:I:1562:U:C6	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:I:1709:U:H2'	19:I:1710:G:H8	1.83	0.43
19:I:1710:G:H2'	19:I:1711:A:H8	1.83	0.43
19:I:2669:G:H2'	19:I:2670:A:H8	1.82	0.43
19:I:2838:G:C4	19:I:2839:G:C8	3.06	0.43
21:J:66:A:H1'	21:J:68:C:N4	2.33	0.43
23:K:21:ASN:OD1	23:K:21:ASN:N	2.51	0.43
30:n:77:SER:OG	30:n:86:GLN:OE1	2.21	0.43
31:O:52:PHE:CD2	31:O:69:ARG:HG2	2.53	0.43
1:C:176:C:H3'	1:C:177:G:C2	2.53	0.43
1:C:260:G:O2'	1:C:261:C:H3'	2.18	0.43
1:C:399:U:H3'	1:C:400:G:H5'	2.00	0.43
1:C:745:U:H2'	1:C:746:G:O4'	2.17	0.43
1:C:1405:C:H2'	1:C:1406:C:C6	2.54	0.43
19:I:20:C:H2'	19:I:21:A:H8	1.83	0.43
19:I:299:A:N3	19:I:319:G:O2'	2.42	0.43
19:I:345:A:N3	19:I:347:A:N6	2.66	0.43
19:I:723:C:H2'	19:I:724:U:C6	2.53	0.43
19:I:807:U:H2'	19:I:808:G:H8	1.83	0.43
19:I:1315:C:H2'	19:I:1316:U:C6	2.54	0.43
19:I:2305:U:O4	29:N:151:GLY:N	2.51	0.43
19:I:2411:A:H2'	19:I:2412:A:C8	2.52	0.43
19:I:2543:G:H2'	19:I:2544:G:C8	2.54	0.43
19:I:2710:C:H2'	19:I:2711:A:C8	2.53	0.43
21:J:57:A:H2'	21:J:58:A:H8	1.83	0.43
50:y:11:ARG:HD2	50:y:58:VAL:HG22	1.99	0.43
1:C:615:A:H2'	1:C:616:A:C8	2.53	0.43
1:C:625:C:H5"	1:C:626:U:H6	1.83	0.43
1:C:739:U:H2'	1:C:740:G:C8	2.52	0.43
1:C:1324:U:H2'	1:C:1325:G:O4'	2.18	0.43
1:C:1395:G:H2'	1:C:1396:C:O4'	2.18	0.43
8:c:7:ARG:HD3	8:c:25:VAL:HB	2.00	0.43
9:D:163:VAL:HG21	9:D:173:ILE:HD11	2.01	0.43
9:D:185:ALA:H	9:D:196:VAL:HG21	1.84	0.43
13:F:166:GLU:H	13:F:166:GLU:HG2	1.60	0.43
19:I:458:G:O2'	19:I:469:G:O6	2.34	0.43
19:I:513:A:H5'	19:I:1216:G:HO2'	1.83	0.43
19:I:580:U:H2'	19:I:581:C:H6	1.83	0.43
19:I:963:U:H2'	19:I:964:C:C6	2.52	0.43
19:I:1153:C:H5"	51:Y:62:ILE:HD13	1.99	0.43
19:I:1239:G:H2'	19:I:1240:U:O4'	2.18	0.43
19:I:1791:A:H4'	23:K:205:LEU:HB2	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:I:1865:U:H1'	19:I:1866:A:O5'	2.17	0.43
19:I:1873:G:H2'	19:I:1874:C:C6	2.54	0.43
19:I:1942:C:OP2	19:I:1943:U:O2'	2.31	0.43
19:I:2241:A:H2'	19:I:2242:G:H8	1.82	0.43
19:I:2322:A:N6	19:I:2333:A:H61	2.14	0.43
21:J:23:G:H2'	21:J:24:G:C5	2.53	0.43
32:o:29:SER:HB2	32:o:59:LEU:HB2	1.99	0.43
33:P:4:ILE:HD11	33:P:37:VAL:HG22	2.00	0.43
35:Q:60:PHE:O	35:Q:64:PHE:HB3	2.18	0.43
42:u:88:GLY:O	42:u:89:LEU:HB2	2.18	0.43
1:C:248:G:H5"	50:y:71:LYS:HD2	1.99	0.43
1:C:553:A:H4'	1:C:554:A:H3'	1.99	0.43
1:C:942:C:H2'	1:C:943:A:H8	1.83	0.43
1:C:1288:A:H2'	1:C:1289:U:C6	2.54	0.43
17:H:81:ASN:HD21	17:H:84:VAL:HG23	1.84	0.43
19:I:289:G:C6	19:I:352:A:C6	3.07	0.43
19:I:971:G:H2'	19:I:972:A:O4'	2.18	0.43
19:I:1182:G:H2'	19:I:1183:U:O4'	2.18	0.43
19:I:2065:C:H2'	19:I:2066:C:H6	1.82	0.43
19:I:2139:U:C4	19:I:2152:G:O6	2.71	0.43
19:I:2228:G:H2'	19:I:2229:U:H6	1.82	0.43
19:I:2632:A:H2'	19:I:2633:G:H8	1.84	0.43
41:T:69:ARG:HG2	41:T:69:ARG:NH1	2.34	0.43
51:Y:79:PHE:O	51:Y:83:LEU:HG	2.19	0.43
1:C:3:A:H2'	1:C:4:C:C6	2.54	0.43
1:C:139:G:H1	1:C:140:G:N2	2.15	0.43
1:C:166:A:N6	1:C:168:A:O2'	2.52	0.43
1:C:484:A:H2'	1:C:485:A:C8	2.54	0.43
1:C:489:A:HO2'	1:C:490:A:P	2.40	0.43
1:C:819:A:H2'	1:C:820:C:C6	2.53	0.43
1:C:1175:G:O2'	1:C:1176:G:N7	2.45	0.43
1:C:1317:G:H2'	1:C:1318:A:H8	1.81	0.43
1:C:1473:C:H2'	1:C:1474:A:H8	1.84	0.43
13:F:75:TYR:CD1	13:F:93:LEU:HB3	2.53	0.43
19:I:132:G:H2'	19:I:133:U:H6	1.82	0.43
19:I:515:A:H1'	19:I:581:C:H1'	1.99	0.43
19:I:1196:C:C2	19:I:1197:G:C8	3.07	0.43
19:I:1252:G:N2	51:Y:33:ARG:HB3	2.34	0.43
19:I:1754:A:C8	49:X:94:LYS:HE2	2.54	0.43
21:J:79:G:H2'	21:J:80:U:O4'	2.17	0.43
45:V:36:THR:OG1	45:V:37:THR:N	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:207:A:H3'	1:C:208:C:C5	2.54	0.43
1:C:702:A:H2'	1:C:703:G:C8	2.51	0.43
1:C:1126:C:H2'	1:C:1127:A:H8	1.84	0.43
1:C:1323:G:C5	1:C:1324:U:C5	3.07	0.43
11:E:124:LEU:HD21	11:E:130:PHE:HB3	2.00	0.43
13:F:157:ALA:O	13:F:160:GLU:HG3	2.18	0.43
16:g:19:LEU:HD12	16:g:19:LEU:HA	1.91	0.43
19:I:197:A:H2	19:I:2434:A:H62	1.67	0.43
19:I:222:A:N6	19:I:232:G:H1'	2.34	0.43
19:I:848:C:H2'	19:I:849:A:C8	2.53	0.43
19:I:994:C:OP2	51:Y:54:LYS:NZ	2.39	0.43
19:I:1125:G:H3'	19:I:1126:A:C8	2.54	0.43
19:I:2038:G:H2'	19:I:2039:U:O4'	2.19	0.43
19:I:2247:A:H2'	19:I:2248:C:H6	1.84	0.43
19:I:2311:A:O2'	19:I:2312:U:H6	2.01	0.43
19:I:2641:G:H2'	19:I:2642:G:C8	2.54	0.43
19:I:2737:G:H2'	19:I:2738:A:C8	2.53	0.43
19:I:2848:G:H1'	19:I:2868:A:N6	2.34	0.43
34:p:46:MET:HA	34:p:49:ARG:HG2	2.00	0.43
38:r:87:LYS:HG3	38:r:114:THR:HA	2.00	0.43
43:U:33:LEU:HG	43:U:34:LYS:H	1.83	0.43
43:U:64:TRP:HB2	43:U:104:GLU:HB2	2.01	0.43
1:C:19:A:H2'	1:C:20:U:H6	1.82	0.43
1:C:73:A:N6	1:C:90:G:O2'	2.52	0.43
1:C:262:C:H2'	1:C:263:U:C6	2.54	0.43
1:C:337:U:H2'	1:C:339:C:N3	2.34	0.43
1:C:926:C:H2'	1:C:927:G:C8	2.53	0.43
1:C:1213:A:H2'	1:C:1214:G:H8	1.83	0.43
1:C:1450:G:H3'	1:C:1451:G:H8	1.84	0.43
2:1:9:PRO:HG2	2:1:41:PHE:CE2	2.53	0.43
14:f:26:LYS:HD2	19:I:190:A:OP2	2.19	0.43
19:I:548:G:H2'	19:I:548:G:N3	2.33	0.43
19:I:645:C:H2'	19:I:647:G:N7	2.33	0.43
19:I:1145:C:N3	19:I:1146:C:C5	2.87	0.43
19:I:2370:G:H2'	19:I:2371:G:O4'	2.18	0.43
19:I:2545:G:H2'	19:I:2546:U:O4'	2.19	0.43
19:I:2677:G:H2'	19:I:2678:C:C6	2.54	0.43
27:M:58:LYS:HG2	27:M:71:GLY:HA2	2.00	0.43
31:O:89:LEU:HB2	31:O:129:THR:HB	2.01	0.43
34:p:123:ARG:NH1	34:p:124:ARG:O	2.49	0.43
41:T:48:ARG:HE	41:T:48:ARG:HB2	1.72	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:z:26:ILE:HA	52:z:29:LEU:HB2	2.00	0.43
1:C:17:U:H2'	1:C:18:C:H6	1.83	0.43
1:C:731:A:H2'	1:C:732:C:H6	1.84	0.43
1:C:1078:G:OP2	1:C:1078:G:H8	2.01	0.43
1:C:1133:G:H4'	1:C:1134:G:H5'	2.00	0.43
1:C:1153:U:C5	1:C:1155:C:H1'	2.53	0.43
9:D:49:MET:HG3	9:D:50:PHE:N	2.32	0.43
10:d:62:THR:HG22	10:d:71:LYS:HD3	2.01	0.43
19:I:266:G:H22	19:I:425:G:H22	1.66	0.43
19:I:2334:U:OP2	47:W:9:ARG:HA	2.19	0.43
19:I:2362:C:OP1	26:l:40:ARG:NE	2.51	0.43
23:K:160:THR:HA	23:K:177:ARG:HD3	2.01	0.43
34:p:31:ASN:HD21	34:p:66:THR:HG23	1.84	0.43
39:S:23:LYS:HD3	39:S:23:LYS:HA	1.84	0.43
1:C:64:G:H4'	1:C:65:A:H5'	2.01	0.43
1:C:875:G:P	40:t:9:ARG:HH22	2.42	0.43
1:C:1119:U:H4'	36:q:7:ARG:NH1	2.34	0.43
1:C:1146:A:O4'	36:q:41:PRO:HB2	2.19	0.43
1:C:1227:G:H2'	1:C:1228:C:C6	2.53	0.43
11:E:42:TYR:OH	11:E:46:GLU:OE1	2.28	0.43
11:E:168:TYR:OH	15:G:55:GLU:OE2	2.19	0.43
14:f:31:PRO:HB2	14:f:33:LEU:HD13	2.01	0.43
15:G:29:ARG:HG2	15:G:29:ARG:O	2.19	0.43
19:I:578:G:OP1	19:I:1255:U:O2'	2.37	0.43
19:I:937:C:OP1	26:l:52:LYS:HD2	2.18	0.43
19:I:1186:G:H2'	19:I:1187:G:O4'	2.18	0.43
19:I:2030:6MZ:C2	19:I:2499:C:H5"	2.48	0.43
19:I:2651:C:H2'	19:I:2652:C:H6	1.84	0.43
19:I:2669:G:H2'	19:I:2670:A:C8	2.54	0.43
21:J:33:G:H2'	21:J:34:A:C8	2.54	0.43
42:u:88:GLY:C	42:u:90:ARG:H	2.26	0.43
46:w:14:GLU:HG2	46:w:15:PHE:CD1	2.54	0.43
1:C:52:C:H2'	1:C:53:A:C8	2.54	0.42
1:C:98:G:C2	1:C:99:G:C5	3.07	0.42
1:C:194:G:O2'	1:C:195:G:H5'	2.19	0.42
1:C:402:G:O3'	13:F:23:SER:OG	2.36	0.42
1:C:1163:A:H2'	1:C:1164:A:C8	2.54	0.42
1:C:1348:U:H2'	1:C:1349:G:C8	2.54	0.42
5:4:18:ARG:HA	5:4:21:ALA:HB3	2.01	0.42
5:4:73:LYS:HB3	5:4:106:VAL:HB	2.01	0.42
8:c:48:PRO:HB3	8:c:55:PRO:HA	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:F:125:VAL:HB	13:F:143:VAL:HG22	2.00	0.42
19:I:363:G:H2'	19:I:364:C:C6	2.54	0.42
19:I:917:A:H2	21:J:80:U:H4'	1.80	0.42
19:I:1153:C:H2'	19:I:1154:G:O4'	2.19	0.42
19:I:1862:G:O6	19:I:1880:U:O2	2.36	0.42
19:I:2530:A:P	19:I:2535:G:H22	2.42	0.42
19:I:2742:G:H3'	19:I:2755:C:N4	2.34	0.42
23:K:53:HIS:HA	23:K:217:ARG:HB2	2.01	0.42
40:t:79:VAL:O	40:t:103:ASP:HB2	2.19	0.42
43:U:17:ASN:O	43:U:38:ARG:NH1	2.52	0.42
1:C:50:A:O2'	1:C:354:G:N2	2.52	0.42
1:C:172:C:O2'	1:C:173:A:H5"	2.19	0.42
1:C:306:C:C2	1:C:307:A:C8	3.07	0.42
1:C:450:C:H2'	1:C:451:A:C8	2.54	0.42
1:C:1020:G:C2	1:C:1030:A:C5	3.07	0.42
1:C:1118:G:O2'	1:C:1121:A:N6	2.52	0.42
1:C:1472:U:H2'	1:C:1473:C:H6	1.84	0.42
8:c:83:VAL:HG13	8:c:95:PHE:O	2.19	0.42
10:d:58:SER:O	10:d:73:LYS:NZ	2.52	0.42
19:I:181:A:H2'	19:I:182:A:C8	2.54	0.42
19:I:419:U:H2'	19:I:420:C:H6	1.84	0.42
19:I:1183:U:H2'	19:I:1184:U:C6	2.54	0.42
19:I:1680:U:H2'	19:I:1681:G:O4'	2.19	0.42
19:I:1831:G:H2'	19:I:1832:C:C6	2.55	0.42
19:I:2195:U:H2'	19:I:2196:C:H6	1.84	0.42
19:I:2204:G:H4'	23:K:150:LYS:HG3	2.01	0.42
19:I:2287:A:O2'	19:I:2288:A:O5'	2.34	0.42
27:M:5:LEU:HD12	27:M:8:ALA:HB3	2.00	0.42
32:o:10:MET:HG2	32:o:27:MET:SD	2.59	0.42
51:Y:110:VAL:HA	51:Y:113:ALA:HB3	2.02	0.42
1:C:89:G:H5'	1:C:90:G:OP2	2.20	0.42
1:C:288:U:H2'	1:C:289:C:H6	1.83	0.42
1:C:593:U:H2'	1:C:594:G:C8	2.50	0.42
1:C:835:C:N4	1:C:838:G:O6	2.52	0.42
1:C:1112:U:H3	1:C:1150:G:H1	1.67	0.42
1:C:1173:A:H2'	1:C:1174:A:O4'	2.19	0.42
1:C:1327:A:H2'	1:C:1328:G:O4'	2.19	0.42
2:1:6:LYS:HB2	2:1:6:LYS:HE2	1.73	0.42
11:E:47:LEU:HD22	11:E:76:VAL:HG22	2.01	0.42
13:F:82:LEU:HB2	13:F:89:ASN:HD22	1.83	0.42
18:h:3:LYS:HG2	18:h:40:ASP:OD2	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:I:145:C:H2'	19:I:146:A:C8	2.53	0.42
19:I:584:C:N4	19:I:585:G:O6	2.52	0.42
19:I:713:G:H2'	19:I:714:U:C6	2.54	0.42
19:I:917:A:H5"	19:I:2268:A:H61	1.83	0.42
19:I:1327:A:H2'	19:I:1328:A:O4'	2.18	0.42
19:I:1412:U:H3'	19:I:1413:A:H5"	2.00	0.42
19:I:1653:G:C6	45:V:9:GLN:HB3	2.55	0.42
19:I:2087:G:H2'	19:I:2088:A:H8	1.85	0.42
19:I:2133:G:H2'	19:I:2157:G:H1	1.85	0.42
19:I:2523:G:H2'	19:I:2523:G:N3	2.33	0.42
19:I:2532:G:H2'	19:I:2533:U:C6	2.55	0.42
19:I:2637:U:H2'	19:I:2638:G:O4'	2.20	0.42
19:I:2830:C:OP2	25:L:59:ARG:NH1	2.52	0.42
23:K:114:ASP:OD1	23:K:114:ASP:N	2.46	0.42
30:n:26:PHE:CE2	30:n:120:LEU:HD21	2.52	0.42
31:O:125:CYS:C	31:O:127:THR:H	2.27	0.42
50:y:23:VAL:HG12	50:y:25:ILE:HG13	2.00	0.42
1:C:246:U:H2'	1:C:247:U:C5	2.54	0.42
1:C:352:U:H2'	1:C:353:G:C8	2.51	0.42
1:C:453:U:H2'	1:C:454:A:H8	1.81	0.42
1:C:607:C:H2'	1:C:608:C:C6	2.54	0.42
1:C:1320:U:H2'	1:C:1321:G:C8	2.47	0.42
1:C:1409:G:C6	1:C:1480:G:C6	3.08	0.42
3:Z:61:ALA:HA	3:Z:99:THR:HG23	2.01	0.42
9:D:139:ARG:HG3	9:D:140:GLU:N	2.34	0.42
9:D:219:ALA:HA	9:D:222:ARG:HG2	2.00	0.42
13:F:69:GLU:O	13:F:73:ARG:HB3	2.20	0.42
15:G:146:ASN:C	15:G:146:ASN:OD1	2.62	0.42
19:I:320:A:N3	27:M:163:ASN:ND2	2.68	0.42
19:I:764:A:O2'	19:I:765:C:H5'	2.20	0.42
19:I:1011:G:C6	19:I:1151:A:C6	3.08	0.42
19:I:1295:C:H2'	19:I:1296:G:H8	1.85	0.42
19:I:1889:A:H2'	19:I:1890:A:C8	2.54	0.42
19:I:2235:G:H2'	19:I:2236:U:C6	2.55	0.42
19:I:2445:2MG:P	27:M:69:ARG:HH22	2.42	0.42
19:I:2472:G:H3'	19:I:2473:U:C5'	2.50	0.42
19:I:2478:A:H1'	19:I:2529:G:C8	2.53	0.42
19:I:2634:A:H2'	19:I:2635:A:C8	2.54	0.42
19:I:2636:C:H2'	19:I:2637:U:H6	1.85	0.42
23:K:120:VAL:HA	23:K:131:PRO:HD3	2.00	0.42
23:K:246:THR:HG23	23:K:250:VAL:O	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:o:36:ILE:HG23	32:o:103:VAL:HG11	2.02	0.42
48:x:21:VAL:O	48:x:33:ILE:HB	2.20	0.42
1:C:462:A:H2'	1:C:463:C:O4'	2.18	0.42
1:C:515:G:O2'	1:C:530:C:O2'	2.36	0.42
1:C:1312:A:H8	1:C:1312:A:O5'	2.02	0.42
1:C:1512:A:H2'	1:C:1513:A:C8	2.54	0.42
14:f:3:ARG:O	14:f:12:PRO:HD3	2.18	0.42
19:I:216:A:C8	19:I:432:A:C6	3.07	0.42
19:I:402:A:H2'	19:I:403:U:O4'	2.20	0.42
19:I:576:U:H2'	19:I:577:G:H8	1.78	0.42
19:I:1000:A:H2'	19:I:1001:A:C8	2.53	0.42
19:I:1435:G:H2'	19:I:1436:G:C8	2.54	0.42
19:I:1446:C:H2'	19:I:1447:C:C6	2.54	0.42
19:I:1710:G:H4'	19:I:2858:C:O2	2.19	0.42
19:I:1998:A:H2'	19:I:1999:C:H6	1.84	0.42
19:I:2163:A:H5"	19:I:2170:A:O2'	2.20	0.42
19:I:2563:U:H2'	19:I:2565:A:OP2	2.20	0.42
19:I:2688:G:H1'	19:I:2721:A:H61	1.85	0.42
19:I:2728:U:O2'	19:I:2729:G:H8	1.94	0.42
19:I:2756:U:H1'	19:I:2757:A:H5"	2.00	0.42
19:I:2846:G:H2'	19:I:2847:U:C6	2.55	0.42
19:I:2887:A:N3	20:i:27:SER:OG	2.46	0.42
21:J:11:C:H2'	21:J:12:C:O4'	2.19	0.42
21:J:77:U:H2'	21:J:78:A:C8	2.55	0.42
34:p:97:GLU:H	34:p:97:GLU:CD	2.28	0.42
39:S:2:ILE:HD13	39:S:6:THR:HG21	2.02	0.42
43:U:136:MET:HE2	43:U:136:MET:HB3	1.93	0.42
44:v:32:SER:HA	44:v:42:TRP:HB2	2.01	0.42
48:x:46:LYS:NZ	48:x:47:GLU:HB3	2.34	0.42
1:C:6:G:C4	15:G:124:LEU:HD11	2.55	0.42
1:C:17:U:O2'	1:C:1073:G:H1'	2.18	0.42
1:C:268:A:H1'	1:C:269:G:C8	2.55	0.42
1:C:369:U:H2'	1:C:370:G:H8	1.85	0.42
1:C:1005:C:H2'	1:C:1006:A:H8	1.84	0.42
4:2:51:PHE:CD1	4:2:51:PHE:C	2.98	0.42
11:E:33:LEU:HD21	44:v:93:ILE:HG12	2.02	0.42
11:E:89:LYS:HB3	11:E:89:LYS:HE3	1.74	0.42
19:I:347:A:H2'	19:I:348:A:H8	1.85	0.42
19:I:1989:G:H2'	19:I:1990:C:O4'	2.20	0.42
19:I:2030:6MZ:N3	19:I:2499:C:H5"	2.34	0.42
19:I:2287:A:C6	19:I:2289:G:C8	3.07	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:I:2854:G:H2'	19:I:2855:C:C6	2.55	0.42
34:p:91:ASP:O	34:p:93:SER:N	2.52	0.42
44:v:87:ALA:HB1	44:v:92:GLU:HB2	2.01	0.42
47:W:2:ASP:OD1	47:W:2:ASP:N	2.53	0.42
48:x:21:VAL:O	48:x:21:VAL:HG23	2.19	0.42
50:y:68:SER:HB3	50:y:71:LYS:HD3	2.02	0.42
1:C:369:U:O2'	48:x:7:ALA:O	2.37	0.42
1:C:645:C:H2'	1:C:646:U:C6	2.55	0.42
1:C:773:C:H2'	1:C:774:A:O4'	2.19	0.42
8:c:93:VAL:HG22	8:c:94:ARG:H	1.85	0.42
14:f:57:ARG:HB3	19:I:372:G:N7	2.33	0.42
16:g:47:ARG:NH1	19:I:60:G:H5"	2.35	0.42
19:I:35:G:H1'	19:I:454:A:C4	2.55	0.42
19:I:106:C:H2'	19:I:107:G:C8	2.53	0.42
19:I:224:U:O4	19:I:419:U:O2'	2.37	0.42
19:I:680:C:H2'	19:I:681:G:C8	2.54	0.42
19:I:948:C:H2'	19:I:949:G:C8	2.54	0.42
19:I:1196:C:H2'	19:I:1197:G:H8	1.85	0.42
19:I:2804:U:H2'	19:I:2805:C:H6	1.85	0.42
21:J:24:G:H1'	21:J:27:C:H42	1.85	0.42
21:J:32:U:H2'	21:J:33:G:O4'	2.19	0.42
21:J:84:G:N2	21:J:85:G:H1'	2.34	0.42
29:N:81:GLN:H	29:N:81:GLN:HG2	1.66	0.42
34:p:57:MET:HE3	34:p:57:MET:HB3	1.91	0.42
40:t:14:ARG:HD3	40:t:14:ARG:HA	1.84	0.42
40:t:35:THR:N	40:t:54:ARG:O	2.47	0.42
41:T:75:ALA:HB2	41:T:105:ILE:HG21	2.01	0.42
51:Y:52:GLN:HA	51:Y:55:ARG:HB2	2.01	0.42
1:C:73:A:H3'	1:C:74:A:H8	1.85	0.42
1:C:229:U:H2'	1:C:230:A:H8	1.84	0.42
1:C:240:A:C2	1:C:276:A:C5	3.07	0.42
1:C:450:C:H2'	1:C:451:A:O4'	2.20	0.42
1:C:996:A:H2'	1:C:997:G:O4'	2.20	0.42
1:C:1090:C:H2'	1:C:1091:C:C6	2.54	0.42
6:3:59:LYS:H	6:3:59:LYS:HG2	1.61	0.42
8:c:12:ILE:O	8:c:70:VAL:HA	2.19	0.42
10:d:50:MET:HE1	10:d:56:PHE:HB2	2.01	0.42
17:H:18:VAL:O	17:H:22:ILE:HG13	2.19	0.42
19:I:1442:U:H2'	19:I:1443:U:H6	1.84	0.42
19:I:1561:C:H2'	19:I:1562:U:H6	1.84	0.42
19:I:1783:A:H5'	19:I:2608:G:H4'	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:I:2078:C:H2’	19:I:2079:U:C6	2.54	0.42
19:I:2389:G:H5”	19:I:2390:U:O4’	2.19	0.42
19:I:2484:G:OP1	43:U:44:ARG:HD2	2.20	0.42
19:I:2804:U:H2’	19:I:2805:C:C6	2.54	0.42
39:S:108:ARG:NE	49:X:34:GLU:OE2	2.53	0.42
1:C:73:A:H8	1:C:90:G:N2	2.10	0.42
1:C:105:G:H1	1:C:324:C:N4	2.16	0.42
1:C:170:C:H1’	1:C:171:G:H5’	2.02	0.42
1:C:192:G:H2’	1:C:193:U:H6	1.83	0.42
1:C:678:U:H1’	38:r:40:ASN:HB3	2.02	0.42
1:C:973:C:H2’	44:v:59:ARG:HH21	1.85	0.42
1:C:1230:A:H2’	1:C:1231:C:C6	2.54	0.42
1:C:1466:A:H2’	1:C:1467:G:C8	2.54	0.42
3:Z:39:LEU:HG	3:Z:53:PHE:CD1	2.55	0.42
13:F:57:GLU:HG2	13:F:199:LEU:HB2	2.01	0.42
17:H:90:MET:HE3	17:H:90:MET:HB2	1.71	0.42
19:I:44:A:H2’	19:I:45:G:O4’	2.20	0.42
19:I:414:C:H4’	19:I:1879:C:O2	2.20	0.42
19:I:689:A:H2’	19:I:690:G:C8	2.54	0.42
19:I:1637:A:H4’	19:I:2711:A:O2’	2.20	0.42
27:M:170:ARG:NH2	27:M:179:SER:OG	2.50	0.42
44:v:96:LEU:HD12	44:v:96:LEU:HA	1.93	0.42
50:y:46:VAL:HG13	50:y:74:THR:HA	2.01	0.42
1:C:94:C:O2’	1:C:95:A:H8	2.01	0.42
1:C:739:U:H5’	1:C:829:G:H21	1.85	0.42
1:C:1054:U:P	44:v:85:ARG:HH22	2.43	0.42
1:C:1121:A:H1’	1:C:1274:A:C6	2.54	0.42
1:C:1494:A:H5”	1:C:1502:G:H5”	2.01	0.42
7:b:10:VAL:HG21	7:b:42:GLU:HB3	2.02	0.42
14:f:2:SER:N	19:I:1364:G:H3’	2.35	0.42
19:I:27:G:N2	19:I:512:G:H1’	2.35	0.42
19:I:30:G:H2’	19:I:31:C:C6	2.55	0.42
19:I:371:A:H8	19:I:371:A:OP2	2.03	0.42
19:I:592:A:C2	26:l:4:ILE:HD11	2.54	0.42
19:I:634:C:H2’	19:I:635:C:C6	2.55	0.42
19:I:753:A:H2’	19:I:754:U:H6	1.85	0.42
19:I:954:G:H5”	43:U:13:HIS:CG	2.55	0.42
19:I:1064:C:H2’	19:I:1065:U:C4	2.54	0.42
19:I:1278:C:H2’	19:I:1279:G:C8	2.55	0.42
19:I:1588:G:H2’	19:I:1589:U:H6	1.84	0.42
19:I:2300:C:H2’	19:I:2301:C:H6	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:I:2605:PSU:H2'	19:I:2606:C:C6	2.54	0.42
24:k:41:ARG:HB3	24:k:41:ARG:HH11	1.85	0.42
39:S:63:VAL:HG12	39:S:107:LEU:HD11	2.02	0.42
1:C:392:U:H2'	1:C:393:G:C8	2.55	0.41
1:C:427:G:H2'	1:C:428:C:H6	1.84	0.41
1:C:1021:C:C2	1:C:1022:C:C5	3.07	0.41
1:C:1354:A:OP2	44:v:75:ARG:NH2	2.53	0.41
1:C:1423:C:H2'	1:C:1424:C:H6	1.85	0.41
4:2:49:LYS:O	4:2:49:LYS:HD3	2.20	0.41
19:I:135:U:H2'	19:I:136:G:O4'	2.20	0.41
19:I:479:A:N3	19:I:481:G:H5"	2.35	0.41
19:I:716:A:H3'	19:I:717:C:H5"	2.02	0.41
19:I:1250:G:OP2	41:T:21:ARG:NH1	2.53	0.41
19:I:1550:C:H2'	19:I:1551:A:C8	2.55	0.41
19:I:1938:A:C6	19:I:2590:A:H1'	2.55	0.41
19:I:2192:U:H2'	19:I:2193:G:H8	1.84	0.41
19:I:2247:A:H2'	19:I:2248:C:C6	2.55	0.41
19:I:2720:U:C2	19:I:2721:A:C8	3.08	0.41
19:I:2732:G:H3'	19:I:2733:A:O4'	2.19	0.41
25:L:61:THR:OG1	25:L:64:GLU:HG3	2.20	0.41
30:n:150:ALA:HA	38:r:61:PHE:HB3	2.02	0.41
34:p:22:LYS:CB	34:p:61:LEU:HB3	2.44	0.41
40:t:116:LYS:HE3	40:t:116:LYS:HB2	1.62	0.41
49:X:18:PRO:HG3	49:X:84:ILE:O	2.19	0.41
1:C:303:A:H2'	1:C:304:G:C8	2.51	0.41
1:C:488:G:O2'	1:C:490:A:H1'	2.19	0.41
1:C:778:A:H2'	1:C:779:G:H8	1.84	0.41
11:E:110:GLU:HG2	11:E:140:ASN:HB3	2.02	0.41
19:I:32:C:H2'	19:I:33:C:C6	2.55	0.41
19:I:240:C:OP2	19:I:241:A:O2'	2.37	0.41
19:I:956:G:O2'	43:U:82:MET:HE1	2.20	0.41
19:I:1044:C:O2	19:I:1048:A:O2'	2.38	0.41
19:I:1282:U:H2'	19:I:1283:G:O4'	2.19	0.41
19:I:1570:A:H2'	19:I:1570:A:N3	2.36	0.41
33:P:4:ILE:O	33:P:4:ILE:HD12	2.20	0.41
33:P:40:THR:OG1	33:P:41:LYS:N	2.50	0.41
34:p:124:ARG:HG3	34:p:124:ARG:NH1	2.35	0.41
36:q:14:ASP:OD1	36:q:14:ASP:N	2.52	0.41
48:x:7:ALA:O	48:x:8:ARG:HB2	2.19	0.41
1:C:26:A:H61	1:C:552:G:H1'	1.84	0.41
1:C:31:G:O2'	1:C:32:A:O5'	2.32	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:82:U:H1'	1:C:83:G:O4'	2.20	0.41
1:C:146:A:N6	1:C:163:C:C2	2.88	0.41
1:C:257:A:H2'	1:C:258:A:C8	2.54	0.41
1:C:689:A:H2'	1:C:690:A:C8	2.55	0.41
1:C:1075:G:C5	1:C:1076:A:C8	3.08	0.41
2:1:36:ARG:HD2	2:1:52:HIS:O	2.19	0.41
9:D:41:ILE:HG21	9:D:201:PRO:HB2	2.03	0.41
11:E:155:GLY:O	11:E:196:ILE:HG12	2.21	0.41
17:H:21:MET:HE3	17:H:25:TYR:OH	2.21	0.41
19:I:153:U:H2'	19:I:154:U:C6	2.56	0.41
19:I:565:C:H2'	19:I:566:U:C6	2.55	0.41
19:I:566:U:H2'	19:I:567:U:C6	2.55	0.41
19:I:1140:C:H5'	37:R:26:GLY:HA3	2.01	0.41
19:I:1666:G:H4'	39:S:6:THR:HG23	2.01	0.41
19:I:2193:G:H2'	19:I:2194:U:H6	1.85	0.41
19:I:2506[A]:U:OP2	19:I:2576:G:N1	2.39	0.41
19:I:2649:C:H2'	19:I:2650:U:H6	1.85	0.41
19:I:2773:C:H5"	25:L:169:ARG:HG2	2.02	0.41
23:K:183:LYS:HE3	23:K:183:LYS:HB2	1.69	0.41
30:n:131:LYS:HA	30:n:131:LYS:HD3	1.75	0.41
31:O:10:VAL:HA	31:O:49:THR:HG22	2.01	0.41
36:q:71:LEU:HD23	36:q:71:LEU:HA	1.84	0.41
37:R:68:LYS:HB2	37:R:68:LYS:HE3	1.91	0.41
47:W:35:ILE:HG23	47:W:74:VAL:HG11	2.03	0.41
1:C:193:U:H2'	1:C:194:G:H8	1.84	0.41
1:C:431:U:H4'	1:C:432:U:OP1	2.20	0.41
1:C:833:U:H2'	1:C:834:C:C6	2.55	0.41
1:C:1144:U:H2'	1:C:1145:A:C8	2.55	0.41
1:C:1192:G:H2'	1:C:1193:U:C6	2.55	0.41
5:4:23:LEU:HD22	20:i:24:ALA:HB2	2.02	0.41
9:D:64:LYS:HA	9:D:64:LYS:HD2	1.90	0.41
19:I:428:A:H2'	19:I:429:A:C8	2.56	0.41
19:I:579:G:H2'	19:I:580:U:C6	2.55	0.41
19:I:713:G:H21	19:I:718:A:N6	2.18	0.41
19:I:1027:A:N1	19:I:1126:A:C5	2.88	0.41
19:I:1047:G:H4'	19:I:1048:A:H5'	2.02	0.41
19:I:1164:C:H2'	19:I:1165:A:H8	1.85	0.41
19:I:1234:U:C4	19:I:1235:G:C5	3.08	0.41
19:I:1713:A:H61	19:I:1745:A:H61	1.68	0.41
19:I:2531:A:C2	19:I:2659:G:H1'	2.55	0.41
23:K:176:LEU:HD23	23:K:176:LEU:HA	1.88	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:l:30:ARG:HH21	41:T:62:PRO:HB2	1.86	0.41
31:O:92:VAL:HG22	31:O:160:LYS:HZ3	1.85	0.41
31:O:140:VAL:C	31:O:143:GLN:H	2.28	0.41
42:u:80:LEU:HD13	42:u:87:ARG:HB3	2.02	0.41
44:v:86:GLU:O	44:v:90:ARG:HG2	2.21	0.41
49:X:32:VAL:HG12	49:X:34:GLU:HG2	2.03	0.41
1:C:101:G:C6	1:C:102:G:H1'	2.55	0.41
1:C:107:G:O2'	1:C:348:G:H5'	2.20	0.41
1:C:494:G:H2'	1:C:495:C:H6	1.84	0.41
1:C:806:G:HO2'	1:C:807:U:P	2.43	0.41
1:C:1470:A:H2'	1:C:1471:U:H6	1.84	0.41
11:E:132:ARG:O	11:E:136:ARG:HG2	2.20	0.41
15:G:150:PRO:HA	15:G:153:VAL:HG12	2.03	0.41
19:I:307:G:N2	19:I:309:A:H3'	2.35	0.41
19:I:534:U:O2'	51:Y:49:ASP:OD2	2.36	0.41
19:I:652:U:P	19:I:654:A:H61	2.44	0.41
19:I:715:A:H2'	19:I:716:A:H8	1.85	0.41
19:I:828:U:H4'	19:I:831:G:C6	2.55	0.41
19:I:1178:C:H5"	19:I:1179:G:OP1	2.19	0.41
19:I:1366:A:H2'	19:I:1367:A:O4'	2.20	0.41
19:I:1576:U:O4	19:I:1577:C:N4	2.54	0.41
19:I:1799:G:C5	23:K:176:LEU:HD13	2.56	0.41
19:I:1902:C:H4'	23:K:242:LYS:O	2.20	0.41
19:I:2192:U:H2'	19:I:2193:G:C8	2.56	0.41
19:I:2845:U:H2'	19:I:2846:G:H8	1.86	0.41
28:m:33:HIS:O	28:m:35:GLN:NE2	2.51	0.41
29:N:41:GLY:HA2	29:N:85:ILE:HG23	2.01	0.41
48:x:13:LYS:HA	48:x:13:LYS:HD3	1.85	0.41
1:C:223:U:H4'	48:x:33:ILE:HD13	2.03	0.41
1:C:265:C:H2'	1:C:266:C:C6	2.56	0.41
1:C:409:A:C4	1:C:410:G:C8	3.09	0.41
1:C:762:A:H4'	1:C:1517:G:N2	2.36	0.41
1:C:1058:G:H21	1:C:1184:G:H2'	1.86	0.41
1:C:1430:U:O4	1:C:1431:A:N6	2.53	0.41
8:c:54:GLN:HB2	8:c:55:PRO:HD3	2.03	0.41
9:D:117:LEU:HA	9:D:120:GLN:HB2	2.02	0.41
13:F:73:ARG:HH11	13:F:77:LYS:HE2	1.86	0.41
19:I:39:G:H2'	19:I:40:U:C6	2.56	0.41
19:I:656:G:H2'	19:I:657:U:N1	2.36	0.41
19:I:813:U:H2'	19:I:814:C:H6	1.85	0.41
19:I:1070:A:H2'	19:I:1097:U:OP1	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:I:1132:U:H2'	19:I:1133:A:C8	2.56	0.41
19:I:1292:G:H2'	19:I:1293:C:H6	1.86	0.41
19:I:1441:G:H2'	19:I:1442:U:H6	1.85	0.41
19:I:1637:A:H5'	19:I:1760:C:O2'	2.20	0.41
19:I:1839:G:C2	19:I:1840:G:C8	3.08	0.41
19:I:2087:G:H2'	19:I:2088:A:C8	2.55	0.41
31:O:30:ASN:C	31:O:30:ASN:OD1	2.63	0.41
31:O:138:LYS:O	31:O:141:ILE:HG22	2.21	0.41
33:P:26:ALA:HA	33:P:30:LEU:HB2	2.01	0.41
33:P:57:LYS:HE2	33:P:57:LYS:HB2	1.81	0.41
35:Q:42:PRO:HB2	35:Q:48:GLN:HE21	1.86	0.41
44:v:19:LYS:HE3	44:v:20:TYR:CD1	2.55	0.41
1:C:33:A:N3	40:t:29:GLN:NE2	2.65	0.41
1:C:518:G:H2'	1:C:519:C:C6	2.55	0.41
1:C:554:A:H4'	1:C:555:U:H5"	2.02	0.41
1:C:742:U:H2'	1:C:743:A:C8	2.56	0.41
1:C:831:G:H2'	1:C:832:A:H8	1.85	0.41
1:C:974:C:H2'	1:C:975:U:O4'	2.21	0.41
15:G:111:MET:HB3	15:G:111:MET:HE2	1.71	0.41
17:H:42:TRP:CD1	17:H:42:TRP:N	2.88	0.41
19:I:84:A:N6	19:I:98:G:O2'	2.52	0.41
19:I:607:U:O4	19:I:620:G:H5"	2.21	0.41
19:I:896:A:H5"	19:I:897:C:H5	1.84	0.41
19:I:1138:G:N3	37:R:108:MET:HE2	2.36	0.41
19:I:1636:U:H2'	19:I:1637:A:H8	1.84	0.41
19:I:1684:G:H2'	19:I:1685:C:C6	2.56	0.41
21:J:39:A:H1'	21:J:46:A:N6	2.34	0.41
23:K:35:GLU:N	23:K:62:TYR:O	2.52	0.41
23:K:79:GLU:OE2	23:K:101:ARG:NH1	2.42	0.41
1:C:264:A:H2'	1:C:265:C:C6	2.56	0.41
1:C:398:G:O2'	1:C:492:A:N1	2.53	0.41
1:C:495:C:O2	1:C:543:C:O2'	2.29	0.41
1:C:670:A:H2'	1:C:671:U:H6	1.86	0.41
1:C:872:A:H2'	1:C:873:C:C6	2.55	0.41
5:4:13:SER:O	5:4:17:VAL:HG23	2.20	0.41
10:d:26:PHE:CZ	10:d:42:LEU:HD12	2.56	0.41
12:e:53:CYS:SG	12:e:57:HIS:HA	2.61	0.41
19:I:362:A:H3'	19:I:363:G:C8	2.55	0.41
19:I:445:C:H2'	19:I:446:G:C8	2.56	0.41
19:I:1422:G:H22	19:I:1498:C:H1'	1.86	0.41
19:I:1428:C:C5	19:I:1569:A:H5"	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:I:1638:C:H1'	19:I:2698:U:O2'	2.21	0.41
19:I:2262:U:H2'	19:I:2263:C:H6	1.86	0.41
21:J:66:A:N6	21:J:107:G:H2'	2.36	0.41
25:L:186:LEU:HD12	25:L:186:LEU:HA	1.97	0.41
30:n:44:TYR:O	30:n:48:GLU:HG2	2.20	0.41
41:T:76:GLU:N	41:T:76:GLU:OE1	2.54	0.41
45:V:54:LEU:HD21	45:V:65:LEU:HB3	2.01	0.41
1:C:138:G:H1	1:C:172:C:C5'	2.33	0.41
1:C:154:A:H2'	1:C:155:A:O4'	2.21	0.41
1:C:208:C:H2'	1:C:209:C:C5	2.56	0.41
1:C:312:G:O6	1:C:330:A:N6	2.54	0.41
1:C:460:A:H2'	1:C:462:A:N3	2.36	0.41
1:C:595:G:H2'	1:C:596:A:C8	2.55	0.41
1:C:664:G:H2'	1:C:665:G:H8	1.84	0.41
1:C:887:C:C2	1:C:888:G:C8	3.09	0.41
1:C:1049:A:C6	1:C:1200:G:C5	3.09	0.41
1:C:1075:G:N2	15:G:52:LYS:HZ1	2.18	0.41
1:C:1144:U:H2'	1:C:1145:A:H8	1.86	0.41
1:C:1157:G:H22	1:C:1168:G:N2	2.19	0.41
1:C:1340:A:N1	1:C:1368:A:H5"	2.36	0.41
1:C:1396:C:H2'	1:C:1397:C:O4'	2.21	0.41
5:4:24:ILE:HG23	5:4:32:ALA:HB1	2.03	0.41
6:3:25:LYS:HA	6:3:25:LYS:HD2	1.94	0.41
9:D:70:VAL:HB	9:D:163:VAL:HA	2.01	0.41
9:D:113:ARG:NH2	9:D:140:GLU:HG2	2.36	0.41
10:d:8:VAL:HA	10:d:39:ALA:O	2.21	0.41
10:d:21:ARG:HG2	10:d:26:PHE:HA	2.03	0.41
10:d:61:LEU:HD21	10:d:73:LYS:HA	2.03	0.41
12:e:75:LYS:HG3	12:e:77:ARG:HG3	2.03	0.41
19:I:249:C:O2	26:l:12:LYS:NZ	2.47	0.41
19:I:250:G:H2'	19:I:251:A:C8	2.56	0.41
19:I:552:U:C2	19:I:553:G:C8	3.09	0.41
19:I:588:U:H2'	19:I:589:U:C6	2.56	0.41
19:I:878:A:H3'	19:I:879:G:C8	2.56	0.41
19:I:1028:A:N3	19:I:2486:C:O2'	2.49	0.41
19:I:1231:U:H2'	19:I:1232:G:H8	1.86	0.41
19:I:1687:G:H2'	19:I:1688:U:C6	2.56	0.41
19:I:1733:G:N3	19:I:1734:G:C8	2.89	0.41
19:I:2298:A:H2'	19:I:2299:U:H5'	2.03	0.41
19:I:2419:U:OP1	26:l:41:LYS:NZ	2.50	0.41
19:I:2494:G:C2	19:I:2495:G:C8	3.08	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:I:2531:A:OP2	31:O:175:LYS:N	2.42	0.41
19:I:2703:C:H2'	19:I:2704:C:C6	2.55	0.41
19:I:2803:G:H2'	19:I:2804:U:H6	1.86	0.41
19:I:2830:C:H5"	25:L:56:LYS:HE3	2.02	0.41
20:i:38:HIS:ND1	20:i:39:LEU:O	2.53	0.41
26:l:62:LEU:HB3	26:l:65:ALA:HB2	2.03	0.41
31:O:86:LYS:HD3	31:O:132:VAL:HG22	2.01	0.41
34:p:19:VAL:HG11	34:p:83:ILE:HA	2.03	0.41
39:S:51:LYS:HZ3	39:S:51:LYS:HG3	1.76	0.41
41:T:29:LYS:HB3	41:T:30:THR:H	1.71	0.41
43:U:53:MET:HG2	43:U:105:MET:HE1	2.03	0.41
45:V:79:LEU:HD23	45:V:83:LEU:HD23	2.03	0.41
46:w:21:ASP:O	46:w:21:ASP:OD2	2.39	0.41
50:y:51:ASN:OD1	50:y:51:ASN:N	2.54	0.41
1:C:257:A:H2'	1:C:258:A:H8	1.86	0.41
1:C:331:G:C2	1:C:332:A:C5	3.09	0.41
1:C:400:G:H2'	1:C:401:U:C6	2.56	0.41
1:C:641:U:H2'	1:C:642:G:C8	2.55	0.41
1:C:974:C:O2'	44:v:13:ARG:NH1	2.54	0.41
1:C:1210:G:H5"	44:v:5:SER:OG	2.21	0.41
1:C:1282:A:N1	1:C:1365:G:H1'	2.36	0.41
19:I:40:U:H2'	19:I:41:C:C6	2.56	0.41
19:I:249:C:OP2	19:I:2394:C:O2'	2.24	0.41
19:I:521:U:H2'	19:I:522:A:C8	2.55	0.41
19:I:543:G:H2'	19:I:544:C:H5'	2.03	0.41
19:I:686:U:H6	19:I:788:A:N1	2.19	0.41
19:I:689:A:H2'	19:I:690:G:H8	1.86	0.41
19:I:1421:G:H2'	19:I:1422:G:C8	2.38	0.41
19:I:1754:A:N1	19:I:2716:C:O2'	2.42	0.41
19:I:2478:A:H5'	19:I:2479:U:C5	2.51	0.41
19:I:2533:U:H2'	19:I:2534:A:O4'	2.20	0.41
19:I:2777:G:H21	19:I:2781:A:H2	1.68	0.41
25:L:149:ASN:OD1	25:L:150:GLN:N	2.54	0.41
27:M:138:LEU:HD23	27:M:143:LEU:HB2	2.03	0.41
30:n:30:LEU:HD12	30:n:105:VAL:HG13	2.03	0.41
30:n:70:ARG:O	30:n:138:ARG:NH1	2.53	0.41
31:O:92:VAL:HG22	31:O:160:LYS:NZ	2.36	0.41
33:P:96:THR:HA	33:P:99:ILE:HG22	2.03	0.41
36:q:52:LEU:HB2	44:v:81:ARG:HD2	2.03	0.41
41:T:89:VAL:HG22	41:T:121:THR:HB	2.02	0.41
48:x:2:VAL:HG11	48:x:5:ARG:HB2	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:x:20:VAL:HA	48:x:35:ARG:HA	2.02	0.41
1:C:877:C:H2'	1:C:878:U:C6	2.56	0.40
1:C:1066:G:H2'	1:C:1067:U:C6	2.57	0.40
1:C:1156:C:H2'	1:C:1157:G:H8	1.85	0.40
1:C:1266:U:H2'	1:C:1267:G:C8	2.56	0.40
8:c:72:ILE:O	8:c:80:ALA:HA	2.21	0.40
9:D:154:MET:HE2	9:D:156:GLY:C	2.45	0.40
11:E:75:ILE:H	11:E:75:ILE:HG12	1.69	0.40
13:F:11:LEU:HD22	13:F:63:ARG:NH1	2.36	0.40
19:I:1196:C:H2'	19:I:1197:G:C8	2.56	0.40
19:I:1410:G:C6	19:I:1593:A:N6	2.89	0.40
19:I:1716:U:H2'	19:I:1717:A:H8	1.86	0.40
19:I:1923:U:H2'	19:I:1924:C:C6	2.56	0.40
19:I:2399:G:H2'	19:I:2400:G:C8	2.57	0.40
19:I:2554:U:H2'	19:I:2555:U:C6	2.56	0.40
19:I:2679:A:H2'	19:I:2680:U:H6	1.85	0.40
20:i:38:HIS:ND1	20:i:42:HIS:O	2.54	0.40
29:N:66:LEU:HG	29:N:67:ILE:H	1.86	0.40
40:t:42:PRO:HB3	40:t:89:ASP:OD2	2.21	0.40
43:U:21:ALA:HB2	43:U:97:GLN:HB2	2.03	0.40
1:C:96:G:H2'	1:C:97:C:H6	1.85	0.40
1:C:148:G:C6	1:C:162:G:C6	3.09	0.40
1:C:494:G:OP1	40:t:121:ARG:NH2	2.54	0.40
1:C:656:U:O2'	1:C:830:G:OP1	2.39	0.40
1:C:685:G:H2'	1:C:686:U:C6	2.56	0.40
8:c:17:LYS:H	8:c:17:LYS:HG2	1.73	0.40
8:c:83:VAL:HG11	8:c:94:ARG:HB3	2.02	0.40
9:D:104:TRP:HE1	9:D:108:ARG:NH2	2.19	0.40
11:E:121:THR:HG23	11:E:189:ALA:HB2	2.03	0.40
14:f:26:LYS:HD3	19:I:189:G:OP1	2.22	0.40
14:f:68:LEU:HD23	14:f:68:LEU:HA	1.83	0.40
17:H:3:HIS:CD2	17:H:3:HIS:N	2.89	0.40
19:I:598:U:O4	19:I:599:A:N6	2.55	0.40
19:I:1212:G:H1'	19:I:1237:A:N6	2.36	0.40
19:I:1410:G:N1	19:I:1593:A:N6	2.69	0.40
19:I:1651:G:H4'	45:V:39:PRO:HG3	2.03	0.40
19:I:1734:G:N3	19:I:1735:A:C8	2.89	0.40
19:I:2171:A:O2'	19:I:2172:U:H3'	2.21	0.40
19:I:2230:G:H2'	19:I:2231:U:C6	2.56	0.40
19:I:2883:A:OP2	20:i:50:ARG:NH1	2.54	0.40
23:K:37:ASN:HB2	23:K:62:TYR:HB2	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:N:109:PRO:HG3	35:Q:44:PHE:CE2	2.55	0.40
36:q:40:ILE:HD11	36:q:73:LEU:HB3	2.03	0.40
40:t:110:ARG:HD2	40:t:110:ARG:HA	1.94	0.40
40:t:114:ARG:HG2	40:t:119:VAL:O	2.21	0.40
44:v:21:PHE:CD1	44:v:25:ALA:HB2	2.55	0.40
50:y:50:ASN:O	50:y:52:GLU:N	2.53	0.40
1:C:506:U:H2'	1:C:507:U:C6	2.56	0.40
1:C:1454:C:C2	1:C:1455:G:C8	3.10	0.40
8:c:8:ASP:OD1	8:c:8:ASP:N	2.54	0.40
12:e:40:GLN:O	12:e:57:HIS:HB2	2.21	0.40
12:e:66:LYS:HE2	12:e:66:LYS:HB3	1.91	0.40
19:I:2:G:N3	19:I:2:G:H2'	2.35	0.40
19:I:29:U:H2'	19:I:30:G:C8	2.56	0.40
19:I:391:A:H1'	19:I:411:G:O4'	2.21	0.40
19:I:577:G:H2'	19:I:578:G:C8	2.56	0.40
19:I:604:G:O2'	19:I:656:G:N2	2.53	0.40
19:I:764:A:H2	23:K:218:PRO:HG3	1.86	0.40
19:I:784:G:H5'	19:I:785:G:OP1	2.21	0.40
19:I:1067:A:H8	19:I:1067:A:OP1	2.03	0.40
19:I:1431:A:H2'	19:I:1432:G:C8	2.55	0.40
21:J:56:G:O2'	21:J:59:A:N6	2.54	0.40
21:J:98:G:O2'	21:J:99:A:H5"	2.21	0.40
36:q:40:ILE:O	36:q:40:ILE:HD12	2.21	0.40
37:R:102:GLU:HB3	37:R:119:PHE:CZ	2.53	0.40
45:V:30:ARG:HD2	45:V:31:HIS:NE2	2.36	0.40
1:C:350:A:N3	1:C:362:U:O2'	2.37	0.40
1:C:801:A:H2'	1:C:802:C:C6	2.56	0.40
1:C:905:U:H2'	1:C:906:C:C6	2.55	0.40
1:C:946:U:H2'	1:C:947:G:H8	1.86	0.40
1:C:1405:C:H2'	1:C:1406:C:H6	1.87	0.40
1:C:1444:G:H3'	1:C:1445:C:H5"	2.04	0.40
7:b:48:GLN:HA	7:b:53:VAL:O	2.22	0.40
9:D:74:ARG:HA	9:D:74:ARG:CZ	2.51	0.40
11:E:42:TYR:OH	11:E:90:VAL:HG11	2.20	0.40
19:I:1190:G:H2'	19:I:1191:G:C8	2.57	0.40
19:I:1987:A:H2'	19:I:1988:G:H8	1.84	0.40
21:J:14:U:O3'	21:J:107:G:O2'	2.40	0.40
36:q:18:ILE:HA	36:q:21:ALA:HB3	2.03	0.40
40:t:87:VAL:HG23	40:t:90:LEU:H	1.86	0.40
41:T:93:ASN:HA	41:T:96:LYS:HD2	2.03	0.40
43:U:34:LYS:HG3	43:U:35:ALA:N	2.36	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:v:30:ILE:HG13	44:v:31:ILE:N	2.37	0.40
50:y:46:VAL:HG21	50:y:61:ILE:HG21	2.02	0.40
1:C:315:A:H2'	1:C:316:C:C6	2.56	0.40
1:C:664:G:H2'	1:C:665:G:C8	2.56	0.40
1:C:895:A:O2'	1:C:1507:A:OP1	2.25	0.40
1:C:1046:U:O2'	1:C:1049:A:OP2	2.26	0.40
1:C:1102:G:N3	1:C:1102:G:H2'	2.36	0.40
1:C:1280:U:O2'	1:C:1281:A:H4'	2.22	0.40
1:C:1340:A:OP1	34:p:122:ARG:NH1	2.55	0.40
12:e:18:ALA:HB1	19:I:2271:G:OP1	2.21	0.40
19:I:296:U:H2'	19:I:297:G:C8	2.57	0.40
19:I:713:G:H21	19:I:718:A:H62	1.69	0.40
19:I:923:G:H2'	19:I:924:G:H8	1.86	0.40
19:I:1197:G:H2'	19:I:1198:U:H6	1.86	0.40
19:I:1223:G:C6	19:I:1227:G:C6	3.10	0.40
19:I:1422:G:H2'	19:I:1423:G:H8	1.86	0.40
19:I:1689:A:H2'	19:I:1690:A:H8	1.84	0.40
19:I:1724:G:C6	19:I:1737:G:C2	3.10	0.40
19:I:1821:A:H2'	19:I:1822:C:C6	2.57	0.40
19:I:2034:U:O2'	19:I:2035:G:H5'	2.21	0.40
19:I:2718:G:O2'	19:I:2847:U:OP1	2.39	0.40
21:J:85:G:C2	21:J:86:G:C8	3.09	0.40
29:N:51:ASP:O	29:N:55:ALA:N	2.38	0.40
29:N:91:LEU:HA	29:N:91:LEU:HD23	1.74	0.40
30:n:25:LYS:HG3	30:n:29:ILE:HG13	2.03	0.40
30:n:86:GLN:HB2	30:n:148:ASN:ND2	2.36	0.40
30:n:105:VAL:O	30:n:109:ARG:HG3	2.21	0.40
36:q:86:ALA:HA	36:q:89:ARG:HE	1.87	0.40
41:T:73:ILE:HD12	41:T:104:GLN:O	2.21	0.40
42:u:40:ALA:HB3	42:u:43:VAL:HG13	2.04	0.40
45:V:21:PHE:HA	45:V:24:MET:HB3	2.02	0.40
46:w:74:ASP:HB2	46:w:77:ARG:HD3	2.04	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
2	1	79/92 (86%)	72 (91%)	5 (6%)	2 (2%)	4 21
3	Z	101/103 (98%)	99 (98%)	1 (1%)	1 (1%)	12 43
4	2	82/87 (94%)	79 (96%)	2 (2%)	1 (1%)	10 38
5	4	108/110 (98%)	108 (100%)	0	0	100 100
6	3	68/71 (96%)	68 (100%)	0	0	100 100
7	b	91/100 (91%)	90 (99%)	1 (1%)	0	100 100
8	c	100/104 (96%)	91 (91%)	8 (8%)	1 (1%)	12 43
9	D	216/241 (90%)	207 (96%)	8 (4%)	1 (0%)	24 59
10	d	92/94 (98%)	86 (94%)	6 (6%)	0	100 100
11	E	204/233 (88%)	197 (97%)	7 (3%)	0	100 100
12	e	73/85 (86%)	68 (93%)	5 (7%)	0	100 100
13	F	203/206 (98%)	184 (91%)	18 (9%)	1 (0%)	24 59
14	f	75/78 (96%)	74 (99%)	1 (1%)	0	100 100
15	G	148/167 (89%)	142 (96%)	6 (4%)	0	100 100
16	g	60/63 (95%)	58 (97%)	2 (3%)	0	100 100
17	H	98/135 (73%)	95 (97%)	3 (3%)	0	100 100
18	h	56/59 (95%)	50 (89%)	6 (11%)	0	100 100
20	i	54/57 (95%)	54 (100%)	0	0	100 100
22	j	48/55 (87%)	44 (92%)	4 (8%)	0	100 100
23	K	270/273 (99%)	259 (96%)	11 (4%)	0	100 100
24	k	44/46 (96%)	43 (98%)	1 (2%)	0	100 100
25	L	207/209 (99%)	197 (95%)	10 (5%)	0	100 100
26	l	62/65 (95%)	60 (97%)	2 (3%)	0	100 100
27	M	199/201 (99%)	191 (96%)	8 (4%)	0	100 100
28	m	36/38 (95%)	36 (100%)	0	0	100 100
29	N	175/179 (98%)	165 (94%)	10 (6%)	0	100 100
30	n	149/179 (83%)	137 (92%)	10 (7%)	2 (1%)	9 36
31	O	174/177 (98%)	157 (90%)	15 (9%)	2 (1%)	11 41
32	o	127/130 (98%)	123 (97%)	4 (3%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
33	P	147/149 (99%)	141 (96%)	6 (4%)	0	100 100
34	p	125/130 (96%)	99 (79%)	20 (16%)	6 (5%)	2 10
35	Q	56/70 (80%)	53 (95%)	3 (5%)	0	100 100
36	q	96/103 (93%)	93 (97%)	2 (2%)	1 (1%)	12 43
37	R	140/142 (99%)	136 (97%)	4 (3%)	0	100 100
38	r	115/129 (89%)	111 (96%)	4 (4%)	0	100 100
39	S	120/123 (98%)	117 (98%)	3 (2%)	0	100 100
40	t	121/124 (98%)	111 (92%)	10 (8%)	0	100 100
41	T	142/144 (99%)	138 (97%)	4 (3%)	0	100 100
42	u	113/118 (96%)	95 (84%)	15 (13%)	3 (3%)	4 20
43	U	133/136 (98%)	127 (96%)	6 (4%)	0	100 100
44	v	92/101 (91%)	89 (97%)	3 (3%)	0	100 100
45	V	118/127 (93%)	115 (98%)	3 (2%)	0	100 100
46	w	86/89 (97%)	82 (95%)	4 (5%)	0	100 100
47	W	114/117 (97%)	113 (99%)	1 (1%)	0	100 100
48	x	80/82 (98%)	63 (79%)	16 (20%)	1 (1%)	9 36
49	X	112/115 (97%)	109 (97%)	3 (3%)	0	100 100
50	y	78/84 (93%)	70 (90%)	8 (10%)	0	100 100
51	Y	115/118 (98%)	114 (99%)	1 (1%)	0	100 100
52	z	53/75 (71%)	52 (98%)	1 (2%)	0	100 100
All	All	5555/5913 (94%)	5262 (95%)	271 (5%)	22 (0%)	31 63

All (22) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	1	9	PRO
4	2	5	LYS
8	c	54	GLN
30	n	59	LEU
34	p	73	SER
42	u	12	HIS
42	u	28	THR
42	u	45	ILE
34	p	58	VAL
34	p	92	GLU

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Mol	Chain	Res	Type
36	q	57	VAL
48	x	13	LYS
30	n	7	ILE
9	D	14	VAL
31	O	14	GLY
34	p	56	ASP
34	p	62	ASP
31	O	13	ALA
2	1	29	LYS
13	F	37	ALA
3	Z	52	PRO
34	p	104	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	
2	1	71/79 (90%)	64 (90%)	7 (10%)	7	28
3	Z	84/84 (100%)	81 (96%)	3 (4%)	31	64
4	2	65/66 (98%)	61 (94%)	4 (6%)	16	47
5	4	93/93 (100%)	92 (99%)	1 (1%)	65	82
6	3	60/61 (98%)	57 (95%)	3 (5%)	22	54
7	b	80/84 (95%)	78 (98%)	2 (2%)	42	71
8	c	83/85 (98%)	80 (96%)	3 (4%)	31	64
9	D	180/199 (90%)	174 (97%)	6 (3%)	33	65
10	d	78/78 (100%)	72 (92%)	6 (8%)	12	38
11	E	170/190 (90%)	163 (96%)	7 (4%)	27	60
12	e	57/63 (90%)	55 (96%)	2 (4%)	32	64
13	F	172/173 (99%)	159 (92%)	13 (8%)	12	39
14	f	67/68 (98%)	65 (97%)	2 (3%)	36	68
15	G	113/126 (90%)	109 (96%)	4 (4%)	32	64

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
16	g	54/55 (98%)	52 (96%)	2 (4%)	30 63
17	H	87/116 (75%)	86 (99%)	1 (1%)	65 82
18	h	48/49 (98%)	47 (98%)	1 (2%)	47 74
20	i	47/48 (98%)	45 (96%)	2 (4%)	26 59
22	j	45/49 (92%)	44 (98%)	1 (2%)	45 73
23	K	217/218 (100%)	213 (98%)	4 (2%)	51 76
24	k	38/38 (100%)	35 (92%)	3 (8%)	11 37
25	L	164/164 (100%)	159 (97%)	5 (3%)	36 68
26	l	51/52 (98%)	50 (98%)	1 (2%)	48 75
27	M	165/165 (100%)	163 (99%)	2 (1%)	63 81
28	m	34/34 (100%)	32 (94%)	2 (6%)	18 49
29	N	148/150 (99%)	143 (97%)	5 (3%)	32 64
30	n	124/147 (84%)	116 (94%)	8 (6%)	15 45
31	O	137/138 (99%)	136 (99%)	1 (1%)	76 85
32	o	104/105 (99%)	100 (96%)	4 (4%)	29 62
33	P	114/114 (100%)	109 (96%)	5 (4%)	25 58
34	p	105/107 (98%)	101 (96%)	4 (4%)	29 62
35	Q	55/62 (89%)	54 (98%)	1 (2%)	51 76
36	q	86/90 (96%)	79 (92%)	7 (8%)	11 36
37	R	116/116 (100%)	113 (97%)	3 (3%)	40 71
38	r	90/99 (91%)	88 (98%)	2 (2%)	45 73
39	S	103/104 (99%)	100 (97%)	3 (3%)	37 68
40	t	103/104 (99%)	92 (89%)	11 (11%)	6 25
41	T	103/103 (100%)	101 (98%)	2 (2%)	50 75
42	u	93/96 (97%)	88 (95%)	5 (5%)	20 52
43	U	108/108 (100%)	103 (95%)	5 (5%)	24 57
44	v	79/84 (94%)	77 (98%)	2 (2%)	42 71
45	V	100/103 (97%)	99 (99%)	1 (1%)	68 83
46	w	75/77 (97%)	74 (99%)	1 (1%)	61 80
47	W	86/87 (99%)	84 (98%)	2 (2%)	44 72
48	x	65/65 (100%)	62 (95%)	3 (5%)	24 57

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
49	X	99/100 (99%)	95 (96%)	4 (4%)	28 60
50	y	74/78 (95%)	71 (96%)	3 (4%)	27 60
51	Y	89/90 (99%)	85 (96%)	4 (4%)	24 57
52	z	48/65 (74%)	44 (92%)	4 (8%)	10 35
All	All	4627/4829 (96%)	4450 (96%)	177 (4%)	30 62

All (177) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	1	11	ILE
2	1	16	LEU
2	1	32	ARG
2	1	40	ILE
2	1	62	VAL
2	1	66	MET
2	1	79	THR
3	Z	51	VAL
3	Z	72	VAL
3	Z	87	GLN
4	2	6	SER
4	2	10	ARG
4	2	67	ILE
4	2	86	LEU
5	4	74	ILE
6	3	3	VAL
6	3	10	GLU
6	3	43	THR
7	b	7	LEU
7	b	88	LYS
8	c	7	ARG
8	c	11	VAL
8	c	30	SER
9	D	19	GLN
9	D	113	ARG
9	D	117	LEU
9	D	170	HIS
9	D	186	ILE
9	D	196	VAL
10	d	1	MET
10	d	51	GLN
10	d	61	LEU

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Mol	Chain	Res	Type
10	d	76	ASP
10	d	78	GLN
10	d	82	TYR
11	E	3	GLN
11	E	53	SER
11	E	64	ILE
11	E	97	VAL
11	E	142	MET
11	E	186	THR
11	E	195	VAL
12	e	31	VAL
12	e	44	LYS
13	F	23	SER
13	F	55	LEU
13	F	56	ARG
13	F	91	LEU
13	F	101	VAL
13	F	104	ARG
13	F	123	ILE
13	F	132	ILE
13	F	137	VAL
13	F	164	GLN
13	F	166	GLU
13	F	179	GLU
13	F	197	GLU
14	f	33	LEU
14	f	66	THR
15	G	34	THR
15	G	101	GLU
15	G	130	SER
15	G	148	ASN
16	g	52	ARG
16	g	57	LEU
17	H	70	VAL
18	h	7	ILE
20	i	9	THR
20	i	54	VAL
22	j	21	TYR
23	K	114	ASP
23	K	225	MET
23	K	236	GLU
23	K	268	VAL

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Mol	Chain	Res	Type
24	k	1	MET
24	k	4	THR
24	k	8	SER
25	L	4	LEU
25	L	18	ASP
25	L	99	GLU
25	L	108	ASP
25	L	137	SER
26	l	54	ASP
27	M	1	MET
27	M	49	ARG
28	m	8	LYS
28	m	25	VAL
29	N	28	VAL
29	N	35	THR
29	N	51	ASP
29	N	147	ASP
29	N	155	THR
30	n	11	LYS
30	n	12	ILE
30	n	49	THR
30	n	80	VAL
30	n	84	THR
30	n	101	MET
30	n	106	GLU
30	n	118	LEU
31	O	155	GLU
32	o	78	VAL
32	o	90	ASP
32	o	104	VAL
32	o	125	ILE
33	P	21	VAL
33	P	77	THR
33	P	115	VAL
33	P	130	VAL
33	P	134	VAL
34	p	21	ILE
34	p	59	GLU
34	p	115	LYS
34	p	116	VAL
35	Q	32	LEU
36	q	6	ILE

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Mol	Chain	Res	Type
36	q	8	ILE
36	q	27	GLU
36	q	40	ILE
36	q	67	ILE
36	q	78	GLU
36	q	83	THR
37	R	93	ILE
37	R	98	GLU
37	R	122	LEU
38	r	79	ILE
38	r	111	THR
39	S	1	MET
39	S	41	ILE
39	S	76	VAL
40	t	5	ASN
40	t	18	LYS
40	t	24	LEU
40	t	25	GLU
40	t	29	GLN
40	t	37	VAL
40	t	38	TYR
40	t	41	THR
40	t	64	THR
40	t	77	HIS
40	t	93	VAL
41	T	110	VAL
41	T	125	LEU
42	u	14	HIS
42	u	16	VAL
42	u	58	ASP
42	u	76	SER
42	u	97	VAL
43	U	1	MET
43	U	106	ASP
43	U	119	LEU
43	U	135	VAL
43	U	136	MET
44	v	24	ARG
44	v	97	LYS
45	V	83	LEU
46	w	22	THR
47	W	12	THR

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Mol	Chain	Res	Type
47	W	98	GLN
48	x	4	ILE
48	x	13	LYS
48	x	71	VAL
49	X	7	GLN
49	X	12	GLN
49	X	102	GLU
49	X	114	LEU
50	y	4	LYS
50	y	20	SER
50	y	51	ASN
51	Y	4	VAL
51	Y	5	LYS
51	Y	31	VAL
51	Y	88	VAL
52	z	21	ILE
52	z	28	THR
52	z	34	THR
52	z	45	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (27) such sidechains are listed below:

Mol	Chain	Res	Type
4	2	13	GLN
10	d	12	GLN
11	E	8	ASN
11	E	123	GLN
11	E	190	HIS
12	e	76	ASN
13	F	40	GLN
13	F	136	GLN
14	f	16	ASN
16	g	41	HIS
17	H	17	GLN
23	K	60	GLN
23	K	70	ASN
25	L	150	GLN
26	l	28	ASN
27	M	24	ASN
30	n	148	ASN
33	P	2	GLN
36	q	56	HIS

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Mol	Chain	Res	Type
38	r	64	GLN
38	r	118	HIS
39	S	90	ASN
42	u	105	ASN
47	W	38	GLN
48	x	59	HIS
49	X	66	ASN
51	Y	44	GLN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	C	1525/1536 (99%)	398 (26%)	20 (1%)
19	I	2894/2904 (99%)	564 (19%)	11 (0%)
21	J	117/120 (97%)	24 (20%)	0
All	All	4536/4560 (99%)	986 (21%)	31 (0%)

All (986) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	C	3	A
1	C	9	G
1	C	22	G
1	C	31	G
1	C	32	A
1	C	36	C
1	C	39	G
1	C	42	G
1	C	47	C
1	C	48	C
1	C	50	A
1	C	51	A
1	C	52	C
1	C	60	A
1	C	62	U
1	C	63	C
1	C	65	A
1	C	66	G
1	C	68	G
1	C	69	G
1	C	70	A

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Mol	Chain	Res	Type
1	C	71	U
1	C	73	A
1	C	74	A
1	C	75	G
1	C	76	G
1	C	77	G
1	C	78	A
1	C	79	G
1	C	80	C
1	C	81	U
1	C	82	U
1	C	83	G
1	C	84	C
1	C	85	U
1	C	87	C
1	C	90	G
1	C	92	U
1	C	94	C
1	C	95	A
1	C	99	G
1	C	102	G
1	C	104	C
1	C	110	A
1	C	115	U
1	C	124	A
1	C	125	U
1	C	131	U
1	C	132	G
1	C	133	G
1	C	134	U
1	C	137	U
1	C	138	G
1	C	142	G
1	C	143	A
1	C	145	A
1	C	148	G
1	C	157	C
1	C	164	U
1	C	167	U
1	C	168	A
1	C	169	C
1	C	170	C

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Mol	Chain	Res	Type
1	C	171	G
1	C	172	C
1	C	173	A
1	C	174	U
1	C	175	A
1	C	176	C
1	C	177	G
1	C	179	C
1	C	182	G
1	C	183	A
1	C	184	G
1	C	186	G
1	C	189	A
1	C	190	A
1	C	191	A
1	C	195	G
1	C	197	G
1	C	198	G
1	C	199	A
1	C	200	U
1	C	202	U
1	C	203	U
1	C	204	C
1	C	206	G
1	C	207	A
1	C	209	C
1	C	210	U
1	C	211	C
1	C	214	G
1	C	221	G
1	C	223	U
1	C	228	C
1	C	237	A
1	C	241	G
1	C	245	G
1	C	247	U
1	C	260	G
1	C	261	C
1	C	266	C
1	C	267	A
1	C	274	C
1	C	283	A

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Mol	Chain	Res	Type
1	C	287	G
1	C	315	A
1	C	320	G
1	C	321	A
1	C	322	C
1	C	323	A
1	C	324	C
1	C	325	G
1	C	332	A
1	C	336	C
1	C	338	A
1	C	339	C
1	C	340	G
1	C	345	G
1	C	346	C
1	C	347	A
1	C	348	G
1	C	350	A
1	C	354	G
1	C	357	A
1	C	361	U
1	C	366	C
1	C	367	A
1	C	372	G
1	C	377	A
1	C	378	G
1	C	380	C
1	C	381	U
1	C	386	C
1	C	392	U
1	C	400	G
1	C	401	U
1	C	403	U
1	C	405	A
1	C	406	A
1	C	408	A
1	C	409	A
1	C	417	G
1	C	422	G
1	C	423	U
1	C	426	A
1	C	427	G

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Mol	Chain	Res	Type
1	C	430	C
1	C	432	U
1	C	440	G
1	C	441	G
1	C	442	A
1	C	444	G
1	C	445	A
1	C	450	C
1	C	452	G
1	C	453	U
1	C	454	A
1	C	456	G
1	C	457	U
1	C	459	A
1	C	460	A
1	C	461	U
1	C	462	A
1	C	463	C
1	C	466	U
1	C	468	C
1	C	470	G
1	C	475	G
1	C	476	A
1	C	478	G
1	C	480	U
1	C	487	A
1	C	488	G
1	C	489	A
1	C	490	A
1	C	491	U
1	C	492	A
1	C	493	A
1	C	503	A
1	C	504	A
1	C	505	C
1	C	507	U
1	C	512	C
1	C	513	C
1	C	514	A
1	C	515	G
1	C	518	G
1	C	521	G

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Mol	Chain	Res	Type
1	C	525	U
1	C	527	A
1	C	528	U
1	C	534	G
1	C	539	C
1	C	541	A
1	C	553	A
1	C	556	U
1	C	558	C
1	C	566	A
1	C	567	A
1	C	569	G
1	C	570	C
1	C	571	G
1	C	585	C
1	C	626	U
1	C	627	G
1	C	647	A
1	C	654	G
1	C	659	A
1	C	660	G
1	C	682	G
1	C	687	G
1	C	688	A
1	C	694	G
1	C	697	G
1	C	711	C
1	C	715	A
1	C	717	U
1	C	718	G
1	C	725	G
1	C	749	A
1	C	771	A
1	C	781	A
1	C	787	U
1	C	788	A
1	C	806	G
1	C	807	U
1	C	809	A
1	C	810	A
1	C	811	C
1	C	815	G

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Mol	Chain	Res	Type
1	C	822	A
1	C	835	C
1	C	837	U
1	C	838	G
1	C	839	A
1	C	840	G
1	C	843	C
1	C	844	U
1	C	861	G
1	C	865	U
1	C	866	A
1	C	870	C
1	C	883	A
1	C	896	G
1	C	920	G
1	C	921	G
1	C	928	C
1	C	929	A
1	C	954	U
1	C	960	G
1	C	963	A
1	C	965	G
1	C	969	A
1	C	970	G
1	C	971	A
1	C	978	C
1	C	981	G
1	C	983	C
1	C	986	U
1	C	987	G
1	C	988	A
1	C	990	A
1	C	993	C
1	C	996	A
1	C	998	A
1	C	1002	U
1	C	1003	U
1	C	1004	C
1	C	1012	G
1	C	1013	G
1	C	1014	A
1	C	1015	U

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Mol	Chain	Res	Type
1	C	1017	G
1	C	1024	U
1	C	1025	C
1	C	1026	G
1	C	1029	A
1	C	1030	A
1	C	1031	C
1	C	1032	U
1	C	1034	A
1	C	1035	G
1	C	1036	A
1	C	1038	A
1	C	1039	C
1	C	1044	G
1	C	1047	G
1	C	1049	A
1	C	1059	U
1	C	1060	C
1	C	1075	G
1	C	1078	G
1	C	1079	U
1	C	1080	U
1	C	1088	G
1	C	1089	U
1	C	1095	A
1	C	1102	G
1	C	1119	U
1	C	1122	C
1	C	1124	A
1	C	1125	G
1	C	1126	C
1	C	1128	C
1	C	1131	C
1	C	1132	G
1	C	1133	G
1	C	1134	G
1	C	1138	G
1	C	1139	C
1	C	1140	A
1	C	1143	C
1	C	1146	A
1	C	1147	G

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Mol	Chain	Res	Type
1	C	1149	A
1	C	1151	A
1	C	1154	G
1	C	1155	C
1	C	1157	G
1	C	1162	C
1	C	1163	A
1	C	1164	A
1	C	1168	G
1	C	1178	G
1	C	1184	G
1	C	1190	A
1	C	1191	A
1	C	1194	C
1	C	1196	U
1	C	1207	A
1	C	1208	C
1	C	1221	A
1	C	1230	A
1	C	1232	A
1	C	1234	U
1	C	1235	G
1	C	1243	C
1	C	1245	A
1	C	1251	U
1	C	1252	G
1	C	1254	C
1	C	1262	G
1	C	1263	A
1	C	1264	G
1	C	1265	G
1	C	1268	G
1	C	1269	A
1	C	1273	A
1	C	1274	A
1	C	1280	U
1	C	1281	A
1	C	1282	A
1	C	1287	G
1	C	1291	G
1	C	1293	A
1	C	1296	C

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Mol	Chain	Res	Type
1	C	1299	G
1	C	1306	G
1	C	1310	G
1	C	1311	C
1	C	1314	C
1	C	1316	C
1	C	1326	A
1	C	1340	A
1	C	1341	G
1	C	1342	U
1	C	1347	G
1	C	1357	A
1	C	1358	U
1	C	1364	G
1	C	1373	G
1	C	1388	A
1	C	1392	A
1	C	1398	C
1	C	1413	G
1	C	1426	G
1	C	1427	A
1	C	1435	A
1	C	1436	G
1	C	1440	A
1	C	1442	C
1	C	1444	G
1	C	1445	C
1	C	1447	A
1	C	1448	G
1	C	1453	A
1	C	1456	G
1	C	1486	A
1	C	1488	G
1	C	1491	G
1	C	1497	A
1	C	1500	U
1	C	1511	G
1	C	1514	C
1	C	1523	G
1	C	1524	G
1	C	1525	A
19	I	2	G

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Mol	Chain	Res	Type
19	I	12	U
19	I	15	G
19	I	27	G
19	I	34	U
19	I	36	G
19	I	46	G
19	I	51	G
19	I	60	G
19	I	63	A
19	I	71	A
19	I	73	A
19	I	74	A
19	I	75	G
19	I	88	G
19	I	92	U
19	I	93	G
19	I	99	U
19	I	100	U
19	I	101	A
19	I	103	A
19	I	118	A
19	I	120	U
19	I	121	G
19	I	122	G
19	I	125	A
19	I	131	A
19	I	137	U
19	I	139	U
19	I	140	C
19	I	141	G
19	I	148	U
19	I	152	A
19	I	160	A
19	I	163	C
19	I	165	A
19	I	167	A
19	I	196	A
19	I	199	A
19	I	216	A
19	I	218	A
19	I	221	A
19	I	222	A

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Mol	Chain	Res	Type
19	I	228	C
19	I	230	G
19	I	233	A
19	I	248	G
19	I	264	C
19	I	265	A
19	I	266	G
19	I	267	C
19	I	268	C
19	I	271	G
19	I	272	A
19	I	275	C
19	I	277	G
19	I	278	A
19	I	279	A
19	I	284	U
19	I	285	G
19	I	290	U
19	I	291	G
19	I	311	A
19	I	330	A
19	I	338	G
19	I	353	C
19	I	364	C
19	I	371	A
19	I	372	G
19	I	377	G
19	I	386	G
19	I	396	G
19	I	404	A
19	I	406	G
19	I	411	G
19	I	413	C
19	I	435	C
19	I	457	A
19	I	477	A
19	I	481	G
19	I	491	G
19	I	492	A
19	I	503	A
19	I	505	A
19	I	509	C

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Mol	Chain	Res	Type
19	I	529	A
19	I	530	G
19	I	531	C
19	I	532	A
19	I	543	G
19	I	546	U
19	I	547	A
19	I	548	G
19	I	549	G
19	I	550	C
19	I	563	A
19	I	571	U
19	I	573	U
19	I	575	A
19	I	596	U
19	I	597	G
19	I	603	A
19	I	607	U
19	I	613	A
19	I	615	U
19	I	627	A
19	I	637	A
19	I	642	U
19	I	643	A
19	I	645	C
19	I	646	U
19	I	647	G
19	I	654	A
19	I	655	A
19	I	668	A
19	I	686	U
19	I	705	A
19	I	706	A
19	I	713	G
19	I	714	U
19	I	715	A
19	I	717	C
19	I	726	G
19	I	730	A
19	I	746	PSU
19	I	747	5MU
19	I	757	G

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Mol	Chain	Res	Type
19	I	764	A
19	I	765	C
19	I	774	G
19	I	775	G
19	I	776	G
19	I	782	A
19	I	784	G
19	I	785	G
19	I	789	A
19	I	805	G
19	I	812	C
19	I	819	A
19	I	827	U
19	I	839	U
19	I	840	C
19	I	844	A
19	I	845	A
19	I	846	U
19	I	850	U
19	I	851	C
19	I	858	G
19	I	859	G
19	I	872	U
19	I	873	C
19	I	877	A
19	I	882	G
19	I	884	U
19	I	894	U
19	I	895	U
19	I	896	A
19	I	897	C
19	I	907	G
19	I	910	A
19	I	914	G
19	I	915	C
19	I	927	A
19	I	932	U
19	I	946	C
19	I	953	G
19	I	961	C
19	I	974	G
19	I	983	A

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Mol	Chain	Res	Type
19	I	996	A
19	I	999	U
19	I	1003	G
19	I	1005	C
19	I	1012	U
19	I	1013	C
19	I	1020	A
19	I	1021	A
19	I	1027	A
19	I	1028	A
19	I	1029	A
19	I	1030	C
19	I	1033	U
19	I	1034	G
19	I	1035	U
19	I	1036	G
19	I	1041	G
19	I	1046	A
19	I	1047	G
19	I	1051	G
19	I	1055	G
19	I	1057	A
19	I	1060	U
19	I	1061	U
19	I	1062	G
19	I	1064	C
19	I	1066	U
19	I	1067	A
19	I	1068	G
19	I	1069	A
19	I	1070	A
19	I	1071	G
19	I	1072	C
19	I	1073	A
19	I	1074	G
19	I	1076	C
19	I	1077	A
19	I	1079	C
19	I	1080	A
19	I	1081	U
19	I	1087	G
19	I	1097	U

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Mol	Chain	Res	Type
19	I	1098	A
19	I	1109	C
19	I	1111	A
19	I	1112	G
19	I	1118	C
19	I	1119	U
19	I	1120	G
19	I	1132	U
19	I	1133	A
19	I	1135	C
19	I	1141	U
19	I	1142	A
19	I	1150	C
19	I	1151	A
19	I	1157	G
19	I	1170	C
19	I	1171	G
19	I	1172	C
19	I	1173	U
19	I	1174	U
19	I	1175	A
19	I	1176	U
19	I	1179	G
19	I	1180	U
19	I	1181	U
19	I	1236	G
19	I	1238	G
19	I	1250	G
19	I	1253	A
19	I	1256	G
19	I	1266	G
19	I	1267	U
19	I	1271	G
19	I	1272	A
19	I	1300	G
19	I	1301	A
19	I	1329	U
19	I	1341	G
19	I	1352	U
19	I	1365	A
19	I	1368	G
19	I	1379	U

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Mol	Chain	Res	Type
19	I	1383	A
19	I	1386	C
19	I	1395	A
19	I	1407	G
19	I	1413	A
19	I	1416	G
19	I	1419	A
19	I	1420	A
19	I	1426	G
19	I	1427	A
19	I	1428	C
19	I	1437	C
19	I	1451	C
19	I	1452	G
19	I	1453	A
19	I	1455	G
19	I	1456	G
19	I	1458	U
19	I	1459	G
19	I	1461	C
19	I	1470	A
19	I	1482	G
19	I	1493	C
19	I	1494	A
19	I	1495	A
19	I	1497	U
19	I	1498	C
19	I	1515	A
19	I	1526	C
19	I	1535	A
19	I	1536	C
19	I	1537	G
19	I	1543	G
19	I	1554	U
19	I	1558	C
19	I	1566	A
19	I	1569	A
19	I	1570	A
19	I	1572	A
19	I	1577	C
19	I	1583	A
19	I	1585	C

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Mol	Chain	Res	Type
19	I	1587	G
19	I	1608	A
19	I	1610	A
19	I	1618	6MZ
19	I	1630	A
19	I	1647	U
19	I	1648	U
19	I	1649	G
19	I	1674	G
19	I	1696	G
19	I	1715	G
19	I	1729	U
19	I	1730	C
19	I	1732	C
19	I	1733	G
19	I	1735	A
19	I	1736	U
19	I	1737	G
19	I	1738	G
19	I	1762	A
19	I	1763	G
19	I	1764	C
19	I	1773	A
19	I	1776	G
19	I	1782	U
19	I	1784	A
19	I	1786	A
19	I	1800	C
19	I	1801	A
19	I	1808	A
19	I	1816	C
19	I	1829	A
19	I	1847	A
19	I	1858	A
19	I	1866	A
19	I	1867	G
19	I	1868	C
19	I	1869	G
19	I	1870	C
19	I	1872	A
19	I	1873	G
19	I	1875	G

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Mol	Chain	Res	Type
19	I	1903	G
19	I	1906	G
19	I	1913	A
19	I	1914	C
19	I	1915	3TD
19	I	1917	PSU
19	I	1929	G
19	I	1930	G
19	I	1936	A
19	I	1945	G
19	I	1954	G
19	I	1955	U
19	I	1962	5MC
19	I	1963	U
19	I	1966	A
19	I	1967	C
19	I	1970	A
19	I	1971	U
19	I	1972	G
19	I	1982	U
19	I	1991	U
19	I	1993	U
19	I	1997	C
19	I	2021	C
19	I	2023	C
19	I	2030	6MZ
19	I	2031	A
19	I	2033	A
19	I	2035	G
19	I	2043	C
19	I	2055	C
19	I	2056	G
19	I	2059	A
19	I	2060	A
19	I	2061	G
19	I	2069	G7M
19	I	2080	A
19	I	2093	G
19	I	2097	A
19	I	2102	G
19	I	2105	U
19	I	2108	A

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Mol	Chain	Res	Type
19	I	2110	G
19	I	2111	U
19	I	2112	G
19	I	2116	G
19	I	2118	U
19	I	2119	A
19	I	2121	G
19	I	2122	U
19	I	2124	G
19	I	2125	G
19	I	2126	A
19	I	2127	G
19	I	2131	U
19	I	2132	U
19	I	2133	G
19	I	2138	G
19	I	2141	G
19	I	2144	G
19	I	2146	C
19	I	2148	G
19	I	2153	C
19	I	2158	A
19	I	2160	C
19	I	2161	C
19	I	2164	C
19	I	2165	C
19	I	2166	U
19	I	2167	U
19	I	2168	G
19	I	2169	A
19	I	2170	A
19	I	2171	A
19	I	2172	U
19	I	2174	C
19	I	2177	C
19	I	2178	C
19	I	2181	U
19	I	2183	A
19	I	2186	G
19	I	2190	G
19	I	2198	A
19	I	2204	G

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Mol	Chain	Res	Type
19	I	2211	A
19	I	2225	A
19	I	2226	C
19	I	2238	G
19	I	2239	G
19	I	2279	G
19	I	2283	C
19	I	2286	G
19	I	2287	A
19	I	2290	G
19	I	2295	C
19	I	2299	U
19	I	2304	G
19	I	2305	U
19	I	2309	A
19	I	2311	A
19	I	2320	U
19	I	2322	A
19	I	2324	U
19	I	2330	G
19	I	2333	A
19	I	2334	U
19	I	2335	A
19	I	2336	A
19	I	2337	G
19	I	2338	C
19	I	2343	U
19	I	2346	A
19	I	2347	C
19	I	2349	G
19	I	2350	C
19	I	2354	C
19	I	2356	U
19	I	2357	G
19	I	2366	A
19	I	2372	U
19	I	2373	G
19	I	2375	G
19	I	2379	G
19	I	2380	C
19	I	2381	A
19	I	2382	G

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Mol	Chain	Res	Type
19	I	2383	G
19	I	2385	C
19	I	2395	C
19	I	2396	G
19	I	2399	G
19	I	2406	A
19	I	2418	A
19	I	2419	U
19	I	2420	C
19	I	2423	U
19	I	2428	G
19	I	2429	G
19	I	2430	A
19	I	2435	A
19	I	2441	U
19	I	2448	A
19	I	2459	A
19	I	2470	G
19	I	2472	G
19	I	2473	U
19	I	2474	U
19	I	2475	C
19	I	2476	A
19	I	2478	A
19	I	2479	U
19	I	2491	U
19	I	2494	G
19	I	2498	OMC
19	I	2502	G
19	I	2505	G
19	I	2513	A
19	I	2518	A
19	I	2520	C
19	I	2524	G
19	I	2529	G
19	I	2530	A
19	I	2532	G
19	I	2542	A
19	I	2547	A
19	I	2554	U
19	I	2566	A
19	I	2567	G

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Mol	Chain	Res	Type
19	I	2572	A
19	I	2602	A
19	I	2609	U
19	I	2613	U
19	I	2615	U
19	I	2626	C
19	I	2627	G
19	I	2629	U
19	I	2630	G
19	I	2631	G
19	I	2636	C
19	I	2646	C
19	I	2648	G
19	I	2654	A
19	I	2669	G
19	I	2673	G
19	I	2689	U
19	I	2690	U
19	I	2702	G
19	I	2703	C
19	I	2714	G
19	I	2718	G
19	I	2725	A
19	I	2726	A
19	I	2732	G
19	I	2733	A
19	I	2739	U
19	I	2740	A
19	I	2744	G
19	I	2748	A
19	I	2752	C
19	I	2753	A
19	I	2754	U
19	I	2755	C
19	I	2757	A
19	I	2764	A
19	I	2776	A
19	I	2777	G
19	I	2778	A
19	I	2789	C
19	I	2791	G
19	I	2793	C

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Mol	Chain	Res	Type
19	I	2797	U
19	I	2798	U
19	I	2800	A
19	I	2801	G
19	I	2818	U
19	I	2820	A
19	I	2833	U
19	I	2837	A
19	I	2849	U
19	I	2852	G
19	I	2869	G
19	I	2872	A
19	I	2873	A
19	I	2880	C
19	I	2884	U
19	I	2895	G
19	I	2903	U
21	J	9	G
21	J	15	A
21	J	16	G
21	J	24	G
21	J	31	C
21	J	32	U
21	J	35	C
21	J	39	A
21	J	42	C
21	J	45	A
21	J	48	U
21	J	50	A
21	J	52	A
21	J	56	G
21	J	57	A
21	J	66	A
21	J	80	U
21	J	81	G
21	J	88	C
21	J	89	U
21	J	90	C
21	J	92	C
21	J	99	A
21	J	109	A

All (31) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	C	81	U
1	C	83	G
1	C	94	C
1	C	171	G
1	C	209	C
1	C	260	G
1	C	265	C
1	C	322	C
1	C	339	C
1	C	379	C
1	C	431	U
1	C	506	U
1	C	512	C
1	C	806	G
1	C	836	U
1	C	1195	A
1	C	1233	A
1	C	1268	G
1	C	1340	A
1	C	1341	G
19	I	784	G
19	I	1046	A
19	I	1070	A
19	I	1117	C
19	I	1542	U
19	I	1865	U
19	I	1871	A
19	I	1962	5MC
19	I	2170	A
19	I	2349	G
19	I	2756	U

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

25 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	$\#\|Z\|>2$
19	2MA	I	2503	19,53	22,25,26	1.34	3 (13%)	32,37,40	2.04	7 (21%)
19	5MU	I	747	19	19,22,23	1.02	2 (10%)	27,32,35	2.10	5 (18%)
19	PSU	I	2504	19	18,21,22	0.92	1 (5%)	21,30,33	2.02	4 (19%)
19	PSU	I	2580	19	18,21,22	1.07	1 (5%)	21,30,33	1.99	4 (19%)
19	OMU	I	2552	19	19,22,23	0.97	2 (10%)	25,31,34	1.93	6 (24%)
19	OMC	I	2498	19,53	19,22,23	0.89	1 (5%)	25,31,34	1.07	2 (8%)
19	PSU	I	955	19	18,21,22	0.95	0	21,30,33	1.95	4 (19%)
19	PSU	I	1917	19	18,21,22	0.91	0	21,30,33	1.91	5 (23%)
19	PSU	I	746	19,53	18,21,22	1.00	2 (11%)	21,30,33	1.88	4 (19%)
19	G7M	I	2069	19	23,26,27	0.54	0	34,39,42	0.91	1 (2%)
19	H2U	I	2449	19	18,21,22	0.45	0	19,30,33	1.10	1 (5%)
19	6MZ	I	2030	19	22,25,26	1.06	1 (4%)	29,36,39	2.31	9 (31%)
19	1MG	I	745	19	23,26,27	0.93	1 (4%)	33,39,42	1.76	5 (15%)
19	3TD	I	1915	19	19,22,23	1.06	2 (10%)	23,32,35	1.95	3 (13%)
19	2MG	I	1835	19	23,26,27	0.77	0	33,38,41	2.19	9 (27%)
19	PSU	I	2605	19	18,21,22	0.95	0	21,30,33	1.90	4 (19%)
19	PSU	I	2457	19	18,21,22	0.96	0	21,30,33	1.98	5 (23%)
19	PSU	I	2604	19	18,21,22	0.93	0	21,30,33	1.87	4 (19%)
19	5MU	I	1939	19	19,22,23	1.05	3 (15%)	27,32,35	2.14	6 (22%)
19	PSU	I	1911	19	18,21,22	0.91	1 (5%)	21,30,33	1.96	4 (19%)
19	OMG	I	2251	19	23,26,27	0.72	0	32,38,41	1.99	10 (31%)
19	5MC	I	1962	19	19,22,23	1.25	2 (10%)	26,32,35	1.13	2 (7%)
43	4D4	U	81	43	9,11,12	0.88	0	7,13,15	1.75	2 (28%)
19	2MG	I	2445	19	23,26,27	0.77	1 (4%)	33,38,41	2.18	10 (30%)
19	6MZ	I	1618	19	22,25,26	1.11	1 (4%)	29,36,39	2.16	8 (27%)

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
19	2MA	I	2503	19,53	-	3/7/25/26	0/3/3/3
19	5MU	I	747	19	-	0/7/25/26	0/2/2/2
19	PSU	I	2504	19	-	1/7/25/26	0/2/2/2
19	PSU	I	2580	19	-	1/7/25/26	0/2/2/2
19	OMU	I	2552	19	-	0/9/27/28	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
19	OMC	I	2498	19,53	-	0/9/27/28	0/2/2/2
19	PSU	I	955	19	-	0/7/25/26	0/2/2/2
19	PSU	I	1917	19	-	2/7/25/26	0/2/2/2
19	PSU	I	746	19,53	-	1/7/25/26	0/2/2/2
19	G7M	I	2069	19	-	0/7/25/26	0/3/3/3
19	H2U	I	2449	19	-	0/7/38/39	0/2/2/2
19	6MZ	I	2030	19	-	2/9/27/28	0/3/3/3
19	1MG	I	745	19	-	0/7/25/26	0/3/3/3
19	3TD	I	1915	19	-	5/7/25/26	0/2/2/2
19	2MG	I	1835	19	-	1/9/27/28	0/3/3/3
19	PSU	I	2605	19	-	0/7/25/26	0/2/2/2
19	PSU	I	2457	19	-	0/7/25/26	0/2/2/2
19	PSU	I	2604	19	-	0/7/25/26	0/2/2/2
19	5MU	I	1939	19	-	0/7/25/26	0/2/2/2
19	PSU	I	1911	19	-	0/7/25/26	0/2/2/2
19	OMG	I	2251	19	-	0/9/27/28	0/3/3/3
19	5MC	I	1962	19	-	0/7/25/26	0/2/2/2
43	4D4	U	81	43	-	1/11/12/14	-
19	2MG	I	2445	19	-	1/9/27/28	0/3/3/3
19	6MZ	I	1618	19	-	2/9/27/28	0/3/3/3

All (24) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
19	I	1962	5MC	C5-C4	-4.02	1.41	1.44
19	I	2503	2MA	C6-N1	4.01	1.40	1.35
19	I	1618	6MZ	C6-N6	3.99	1.38	1.34
19	I	2030	6MZ	C6-N6	3.59	1.38	1.34
19	I	2503	2MA	C5-N7	-2.88	1.33	1.39
19	I	2580	PSU	O4'-C1'	-2.68	1.40	1.43
19	I	745	1MG	C6-N1	-2.65	1.34	1.40
19	I	1939	5MU	C2-N1	-2.54	1.34	1.38
19	I	1962	5MC	C2-N1	-2.53	1.34	1.40
19	I	2498	OMC	C2-N1	-2.52	1.34	1.40
19	I	1915	3TD	C4-N3	-2.52	1.35	1.40
19	I	2503	2MA	C5-C6	2.47	1.47	1.41
19	I	2552	OMU	C2-N1	-2.46	1.34	1.38
19	I	747	5MU	C2-N1	-2.34	1.34	1.38
19	I	746	PSU	O4'-C1'	-2.23	1.40	1.43
19	I	1915	3TD	C4-C5	-2.14	1.42	1.47
19	I	747	5MU	C4-N3	-2.11	1.34	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
19	I	2552	OMU	C4-N3	-2.10	1.35	1.38
19	I	1939	5MU	C4-N3	-2.08	1.35	1.38
19	I	2504	PSU	C4-N3	-2.07	1.35	1.38
19	I	1939	5MU	C4-C5	-2.03	1.41	1.44
19	I	746	PSU	C4-N3	-2.02	1.35	1.38
19	I	2445	2MG	C6-N1	-2.02	1.35	1.38
19	I	1911	PSU	C4-N3	-2.01	1.35	1.38

All (124) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
19	I	1835	2MG	C2-N3-C4	7.29	121.11	112.00
19	I	2445	2MG	C2-N3-C4	7.16	120.95	112.00
19	I	1915	3TD	N1-C2-N3	6.47	120.84	116.13
19	I	2503	2MA	C5-C4-N3	-6.13	120.72	127.18
19	I	745	1MG	C5-C4-N3	-5.70	119.31	128.39
19	I	2504	PSU	N1-C2-N3	5.66	121.13	115.17
19	I	1835	2MG	C5-C4-N3	-5.65	119.39	128.39
19	I	1618	6MZ	C5-C4-N3	-5.60	119.01	126.72
19	I	2251	OMG	C5-C4-N3	-5.50	119.64	128.39
19	I	955	PSU	N1-C2-N3	5.48	120.94	115.17
19	I	1939	5MU	C4-N3-C2	-5.47	120.17	127.34
19	I	1911	PSU	N1-C2-N3	5.45	120.92	115.17
19	I	2457	PSU	N1-C2-N3	5.44	120.91	115.17
19	I	2445	2MG	C5-C4-N3	-5.44	119.73	128.39
19	I	2580	PSU	N1-C2-N3	5.42	120.88	115.17
19	I	746	PSU	N1-C2-N3	5.42	120.88	115.17
19	I	2030	6MZ	C5-C4-N3	-5.39	119.29	126.72
19	I	1917	PSU	N1-C2-N3	5.37	120.84	115.17
19	I	747	5MU	C4-N3-C2	-5.29	120.40	127.34
19	I	2604	PSU	N1-C2-N3	5.21	120.67	115.17
19	I	2251	OMG	C2-N3-C4	5.17	121.20	112.30
19	I	2605	PSU	N1-C2-N3	5.13	120.58	115.17
19	I	2552	OMU	C4-N3-C2	-5.13	120.24	126.61
19	I	2030	6MZ	C9-N6-C6	-5.01	118.20	122.85
19	I	2503	2MA	N3-C4-N9	4.89	133.19	126.99
19	I	2552	OMU	N3-C2-N1	4.86	121.22	114.89
19	I	1939	5MU	C5-C4-N3	4.75	119.46	115.32
19	I	1939	5MU	N3-C2-N1	4.73	121.04	114.89
19	I	747	5MU	N3-C2-N1	4.64	120.94	114.89
19	I	1618	6MZ	N3-C4-N9	4.61	135.01	127.17
19	I	747	5MU	C5-C4-N3	4.56	119.28	115.32

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
19	I	2504	PSU	C4-N3-C2	-4.54	120.12	126.37
19	I	1911	PSU	C4-N3-C2	-4.46	120.23	126.37
19	I	2457	PSU	C4-N3-C2	-4.44	120.25	126.37
19	I	955	PSU	C4-N3-C2	-4.43	120.27	126.37
19	I	745	1MG	N9-C4-N3	4.42	134.80	125.95
19	I	2605	PSU	C4-N3-C2	-4.36	120.36	126.37
19	I	746	PSU	C4-N3-C2	-4.34	120.39	126.37
19	I	1835	2MG	N9-C4-N3	4.32	134.59	125.95
19	I	1917	PSU	C4-N3-C2	-4.26	120.50	126.37
19	I	2251	OMG	N9-C4-N3	4.22	134.38	125.95
19	I	2604	PSU	C4-N3-C2	-4.21	120.57	126.37
19	I	2030	6MZ	N3-C4-N9	4.20	134.30	127.17
19	I	1939	5MU	O4-C4-C5	-4.18	120.13	124.92
19	I	2030	6MZ	N1-C2-N3	-4.18	122.26	128.58
19	I	2503	2MA	N6-C6-N1	4.17	122.65	117.03
19	I	2580	PSU	C4-N3-C2	-4.16	120.65	126.37
19	I	1618	6MZ	N1-C2-N3	-4.09	122.40	128.58
19	I	2445	2MG	N9-C4-N3	4.08	134.11	125.95
19	I	745	1MG	C2-N3-C4	4.06	121.11	111.98
19	I	1915	3TD	C1'-C5-C4	4.03	123.72	117.61
19	I	747	5MU	O4-C4-C5	-4.02	120.32	124.92
19	I	2030	6MZ	C5-N7-C8	3.90	109.58	103.45
19	I	2580	PSU	O2-C2-N1	-3.84	118.82	122.79
19	I	2503	2MA	C5-N7-C8	3.77	109.37	103.45
19	I	1618	6MZ	C5-N7-C8	3.75	109.34	103.45
19	I	1915	3TD	C4-N3-C2	-3.75	120.65	124.61
19	I	2030	6MZ	C2-N3-C4	3.65	120.75	111.83
19	I	2449	H2U	C5-C4-N3	-3.64	112.81	116.69
19	I	1618	6MZ	C2-N3-C4	3.64	120.72	111.83
19	I	1835	2MG	C2-N1-C6	-3.60	120.20	124.55
19	I	2445	2MG	C2-N1-C6	-3.54	120.27	124.55
19	I	1962	5MC	C5-C6-N1	-3.53	119.47	123.31
19	I	1939	5MU	C5-C6-N1	-3.53	119.48	123.31
43	U	81	4D4	NE-CZ-NH2	3.43	126.56	120.67
19	I	2457	PSU	O2-C2-N1	-3.40	119.28	122.79
19	I	2030	6MZ	C4-C5-N7	-3.27	106.84	110.58
19	I	2605	PSU	O2-C2-N1	-3.27	119.42	122.79
19	I	2552	OMU	C5-C4-N3	3.23	119.33	114.80
19	I	747	5MU	C5-C6-N1	-3.23	119.81	123.31
19	I	2503	2MA	N9-C8-N7	-3.16	109.45	113.94
19	I	955	PSU	O2-C2-N1	-3.16	119.53	122.79
19	I	2069	G7M	C8-N7-C5	-3.12	103.88	107.78

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
19	I	1911	PSU	O2-C2-N1	-3.11	119.58	122.79
19	I	2604	PSU	O2-C2-N1	-3.11	119.58	122.79
19	I	746	PSU	O2-C2-N1	-3.08	119.61	122.79
19	I	1917	PSU	O2-C2-N1	-3.05	119.64	122.79
19	I	2552	OMU	CM2-O2'-C2'	-3.05	106.64	114.47
19	I	2504	PSU	O2-C2-N1	-3.02	119.67	122.79
19	I	2498	OMC	CM2-O2'-C2'	-2.96	106.89	114.47
19	I	2030	6MZ	N9-C8-N7	-2.92	109.80	113.94
19	I	1618	6MZ	C4-C5-N7	-2.91	107.26	110.58
19	I	2251	OMG	CM2-O2'-C2'	-2.85	107.15	114.47
19	I	745	1MG	C8-N7-C5	2.84	109.31	104.26
19	I	2251	OMG	C8-N7-C5	2.83	109.31	104.26
19	I	2503	2MA	C5-C6-N1	-2.83	114.51	118.90
19	I	2552	OMU	O4-C4-C5	-2.80	120.34	125.16
19	I	2030	6MZ	C6-C5-N7	2.80	135.48	132.43
19	I	1835	2MG	C8-N7-C5	2.77	109.19	104.26
19	I	2445	2MG	C8-N7-C5	2.75	109.16	104.26
19	I	1939	5MU	O2-C2-N1	-2.74	119.23	122.80
19	I	2580	PSU	C6-N1-C2	-2.74	120.15	122.69
19	I	1618	6MZ	N9-C8-N7	-2.70	110.10	113.94
19	I	1618	6MZ	C9-N6-C6	-2.69	120.35	122.85
19	I	2251	OMG	C2-N1-C6	-2.68	120.25	125.11
19	I	2503	2MA	C4-C5-N7	-2.67	107.53	110.58
19	I	2445	2MG	N1-C2-N2	2.65	119.26	116.56
19	I	2552	OMU	O2-C2-N1	-2.53	119.51	122.80
19	I	1917	PSU	C6-N1-C2	-2.42	120.45	122.69
19	I	2504	PSU	C6-N1-C2	-2.41	120.46	122.69
19	I	2498	OMC	O2-C2-N3	-2.39	118.56	122.33
19	I	746	PSU	C6-N1-C2	-2.35	120.51	122.69
19	I	955	PSU	C6-N1-C2	-2.35	120.51	122.69
19	I	2604	PSU	C6-N1-C2	-2.34	120.52	122.69
43	U	81	4D4	NH1-CZ-NE	-2.33	113.97	119.27
19	I	2445	2MG	CM2-N2-C2	-2.31	118.69	123.65
19	I	2457	PSU	C6-N1-C2	-2.31	120.55	122.69
19	I	2605	PSU	C6-N1-C2	-2.27	120.59	122.69
19	I	1835	2MG	N1-C2-N2	2.22	118.82	116.56
19	I	1911	PSU	C6-N1-C2	-2.21	120.64	122.69
19	I	2251	OMG	O6-C6-C5	-2.19	120.76	126.53
19	I	2457	PSU	O4'-C1'-C2'	2.17	108.15	105.15
19	I	1835	2MG	O6-C6-C5	-2.15	120.85	126.53
19	I	2445	2MG	O6-C6-C5	-2.10	120.99	126.53
19	I	2445	2MG	C4-C5-N7	-2.10	107.35	110.67

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
19	I	2251	OMG	C6-C5-N7	2.09	134.08	130.29
19	I	2251	OMG	C4-C5-N7	-2.08	107.37	110.67
19	I	745	1MG	C4-C5-N7	-2.08	107.37	110.67
19	I	2445	2MG	C6-C5-N7	2.07	134.05	130.29
19	I	1962	5MC	C5-C4-N3	-2.05	119.65	121.75
19	I	1917	PSU	O4'-C1'-C2'	2.05	107.98	105.15
19	I	1835	2MG	C4-C5-N7	-2.04	107.44	110.67
19	I	2251	OMG	C5-C6-N1	2.03	118.42	113.25
19	I	1835	2MG	C5-C6-N1	2.01	118.38	113.25

There are no chirality outliers.

All (20) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
19	I	746	PSU	O4'-C1'-C5-C6
19	I	1618	6MZ	O4'-C4'-C5'-O5'
19	I	1618	6MZ	C3'-C4'-C5'-O5'
19	I	1915	3TD	O4'-C1'-C5-C4
19	I	1915	3TD	O4'-C1'-C5-C6
19	I	1915	3TD	O4'-C4'-C5'-O5'
19	I	1917	PSU	O4'-C4'-C5'-O5'
19	I	1915	3TD	C3'-C4'-C5'-O5'
19	I	1917	PSU	C3'-C4'-C5'-O5'
19	I	2030	6MZ	O4'-C4'-C5'-O5'
19	I	2030	6MZ	C3'-C4'-C5'-O5'
19	I	2503	2MA	O4'-C4'-C5'-O5'
19	I	2503	2MA	C3'-C4'-C5'-O5'
19	I	2504	PSU	O4'-C4'-C5'-O5'
19	I	2445	2MG	C3'-C4'-C5'-O5'
19	I	2580	PSU	O4'-C4'-C5'-O5'
43	U	81	4D4	OB-CB-CG-CD
19	I	1915	3TD	C2'-C1'-C5-C6
19	I	2503	2MA	C4'-C5'-O5'-P
19	I	1835	2MG	C3'-C4'-C5'-O5'

There are no ring outliers.

10 monomers are involved in 13 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
19	I	2503	2MA	1	0
19	I	2580	PSU	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
19	I	2449	H2U	1	0
19	I	2030	6MZ	3	0
19	I	745	1MG	1	0
19	I	2605	PSU	1	0
19	I	2604	PSU	1	0
19	I	1939	5MU	1	0
19	I	1962	5MC	2	0
19	I	2445	2MG	2	0

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 307 ligands modelled in this entry, 307 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.

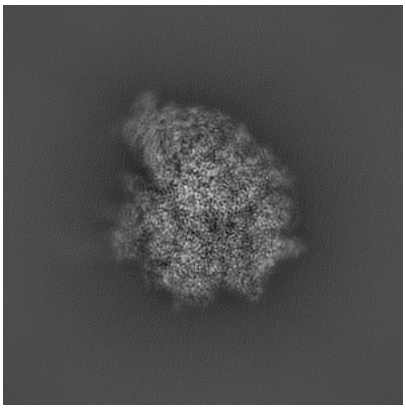
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-75676. These allow visual inspection of the internal detail of the map and identification of artifacts.

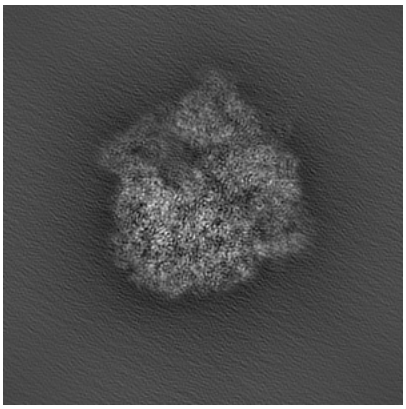
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

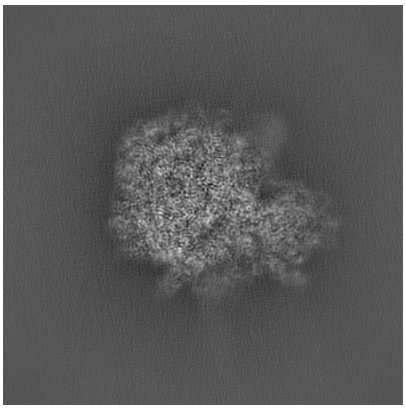
6.1.1 Primary map



X

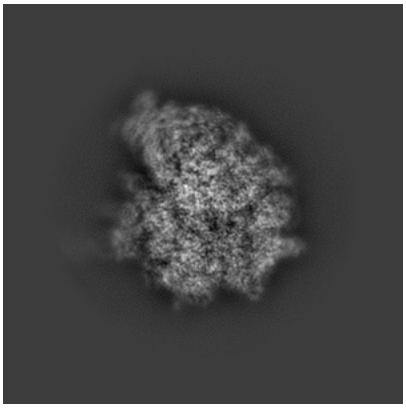


Y

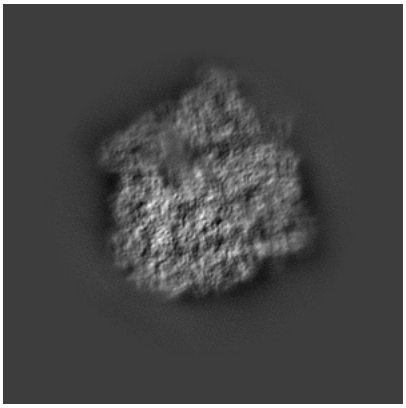


Z

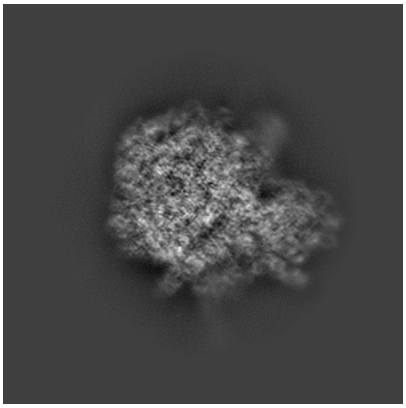
6.1.2 Raw map



X



Y

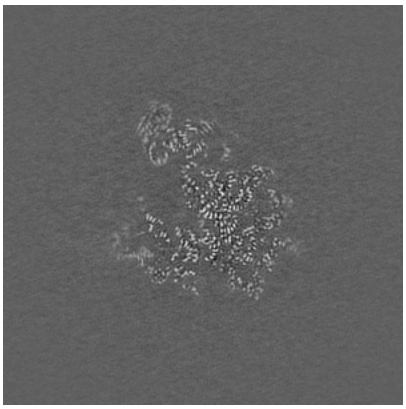


Z

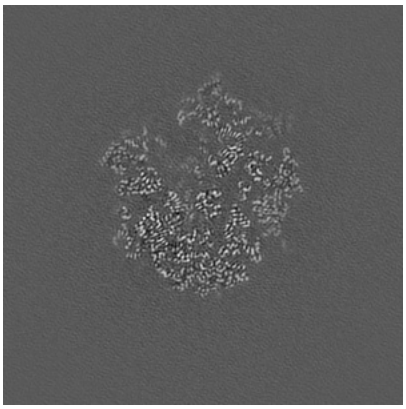
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

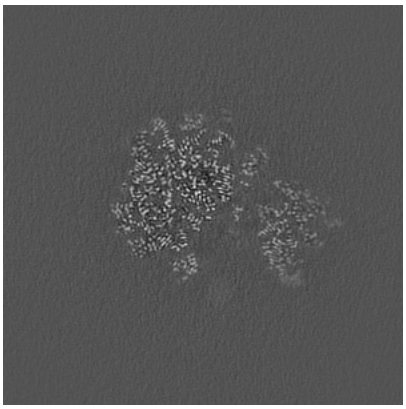
6.2.1 Primary map



X Index: 256

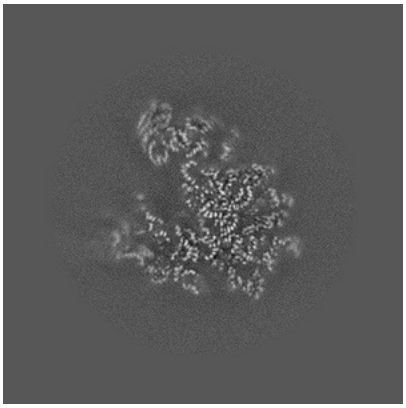


Y Index: 256

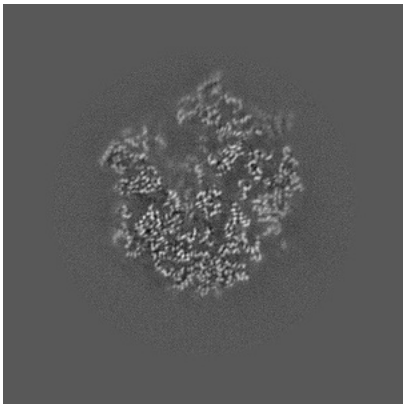


Z Index: 256

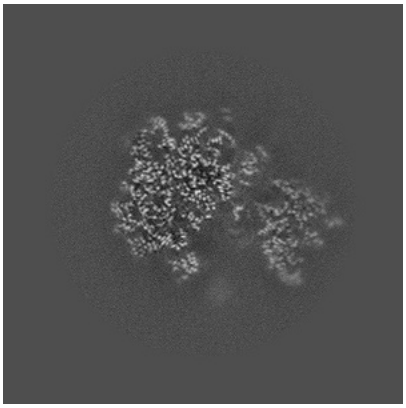
6.2.2 Raw map



X Index: 256



Y Index: 256

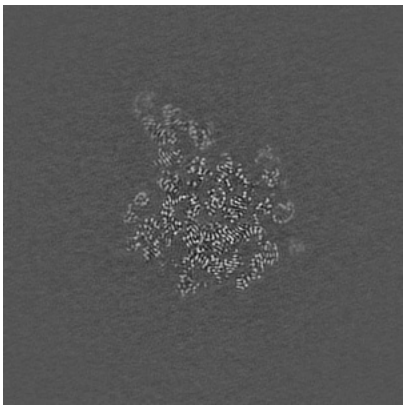


Z Index: 256

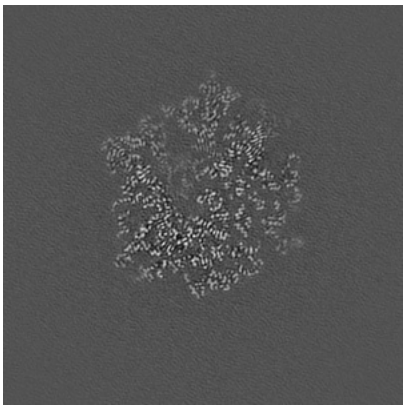
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

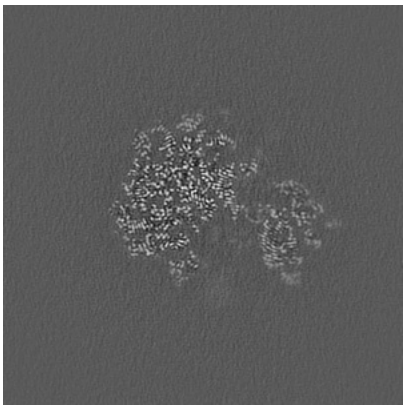
6.3.1 Primary map



X Index: 234

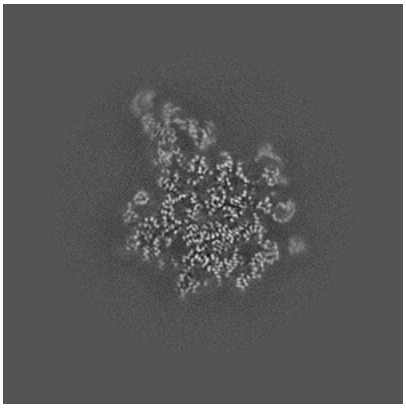


Y Index: 247

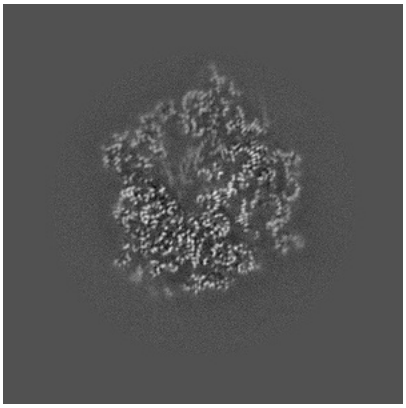


Z Index: 253

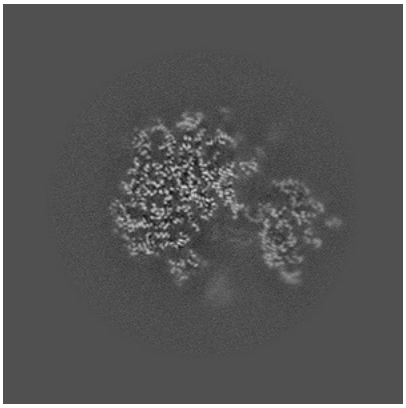
6.3.2 Raw map



X Index: 234



Y Index: 241

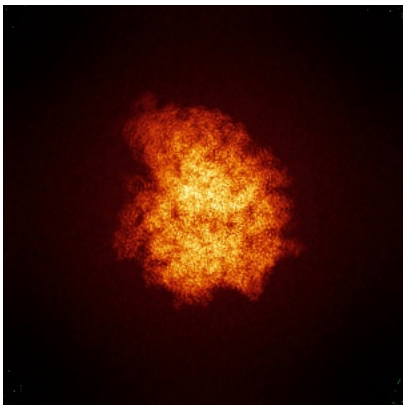


Z Index: 253

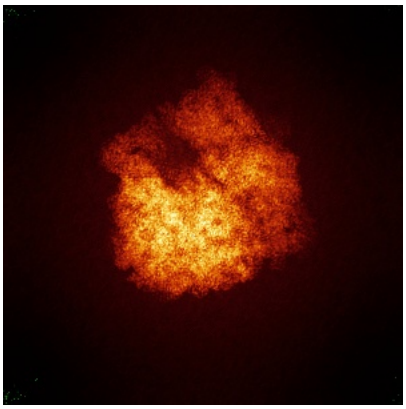
The images above show the largest variance slices of the map in three orthogonal directions.

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

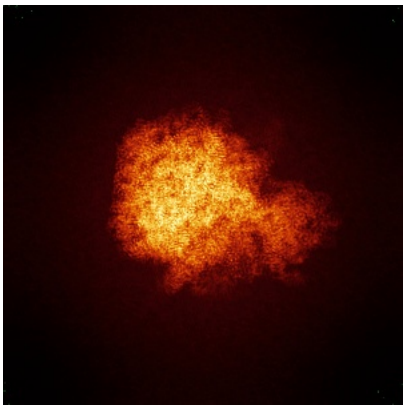
6.4.1 Primary map



X

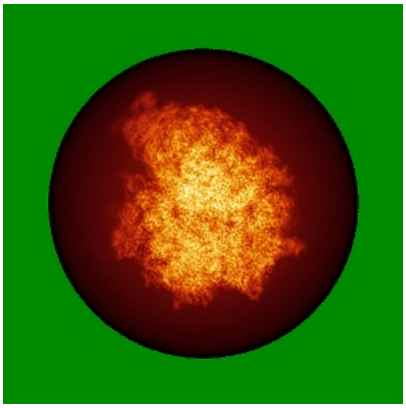


Y

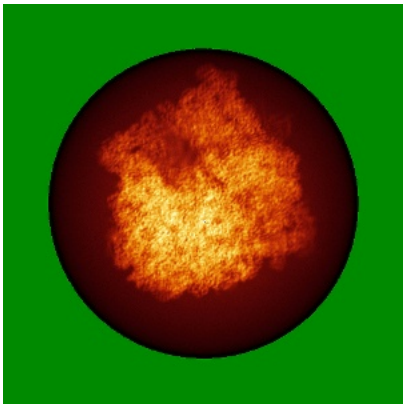


Z

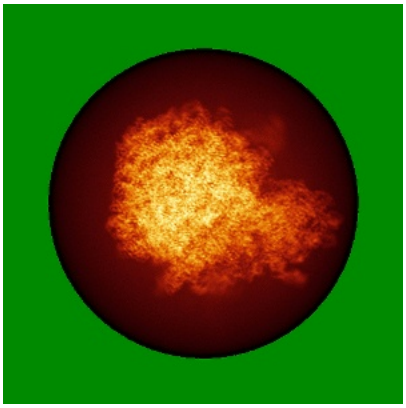
6.4.2 Raw map



X



Y

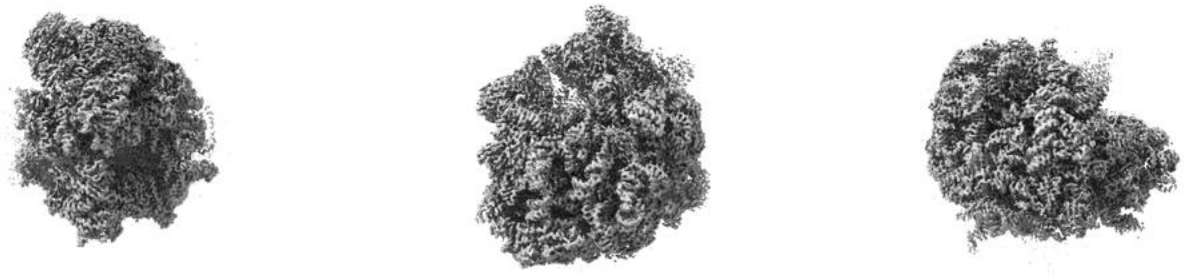


Z

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)

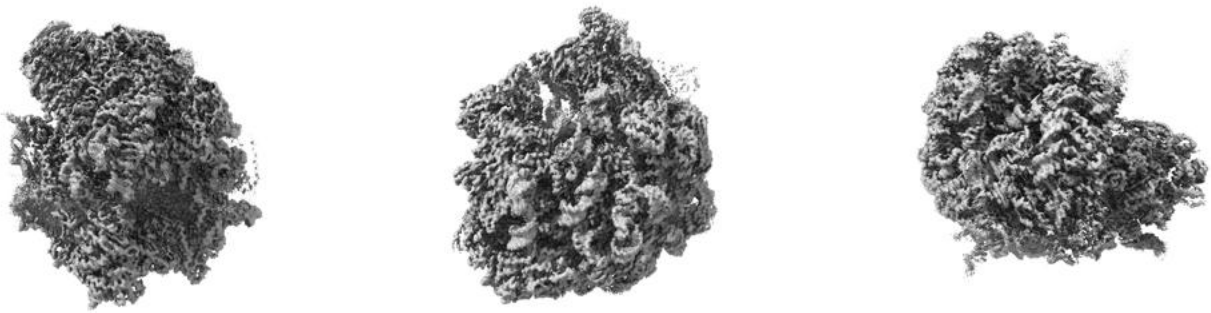
6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 3.0. 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.

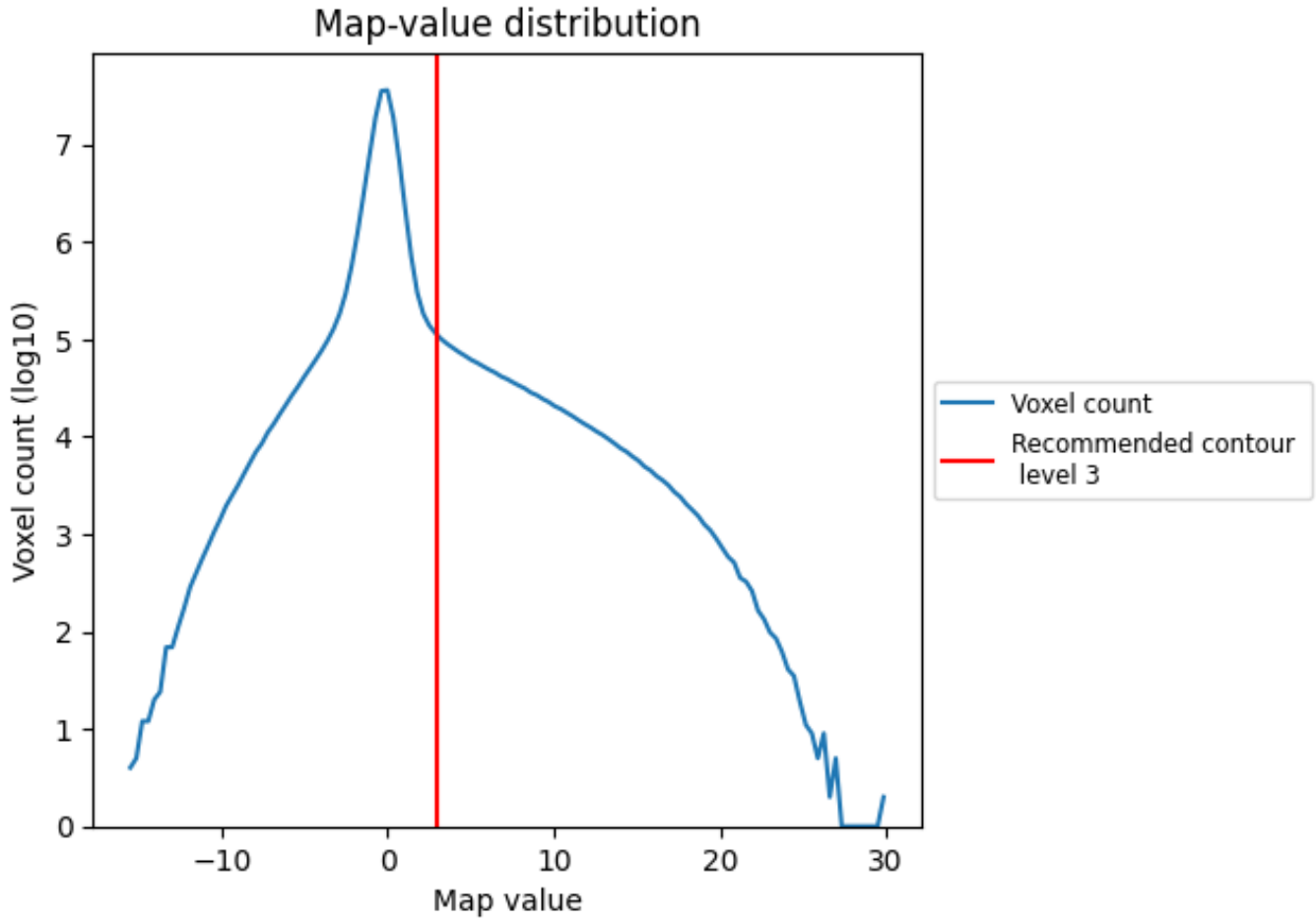
6.6 Mask visualisation (i)

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

7 Map analysis

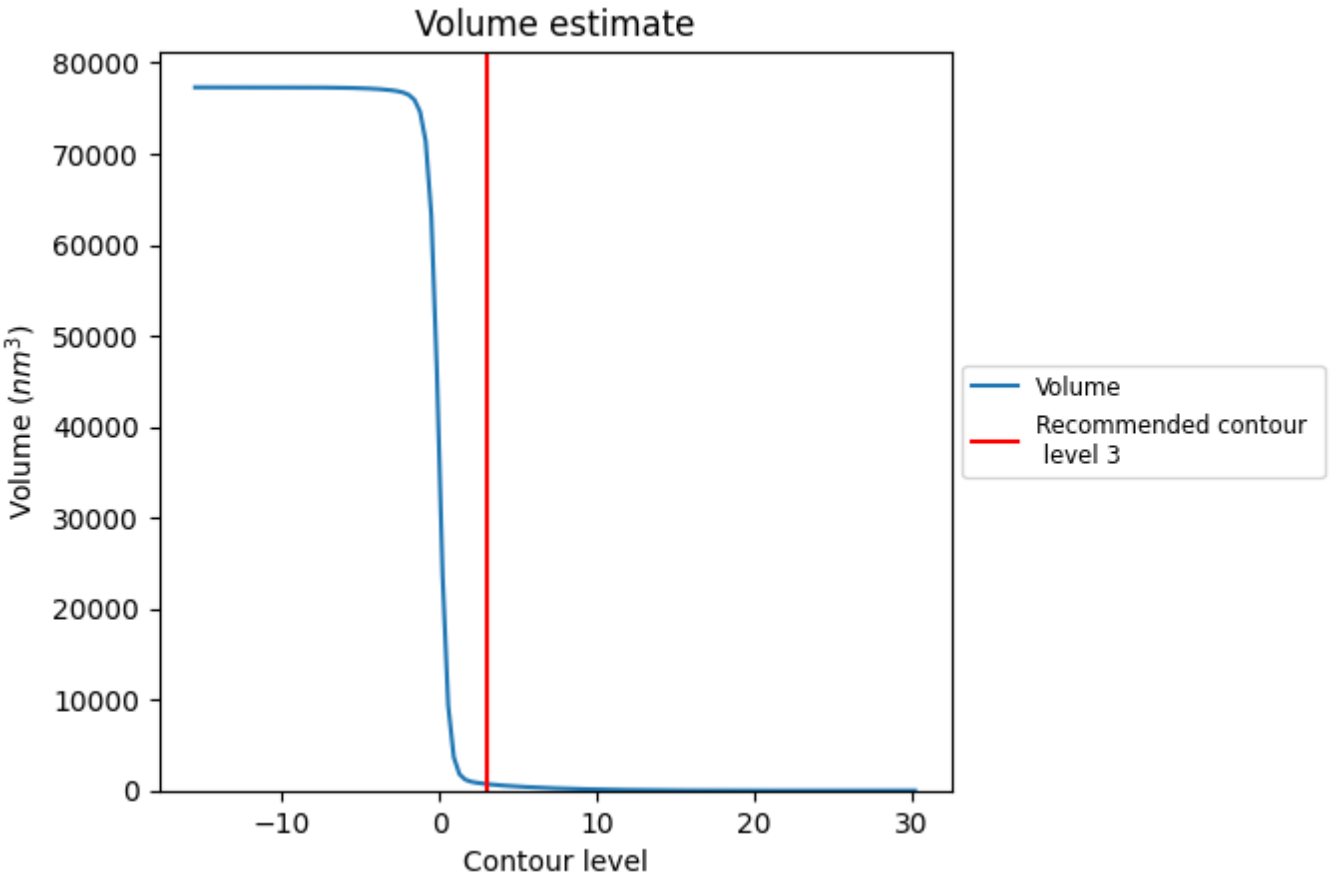
This section contains the results of statistical analysis of the map.

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.

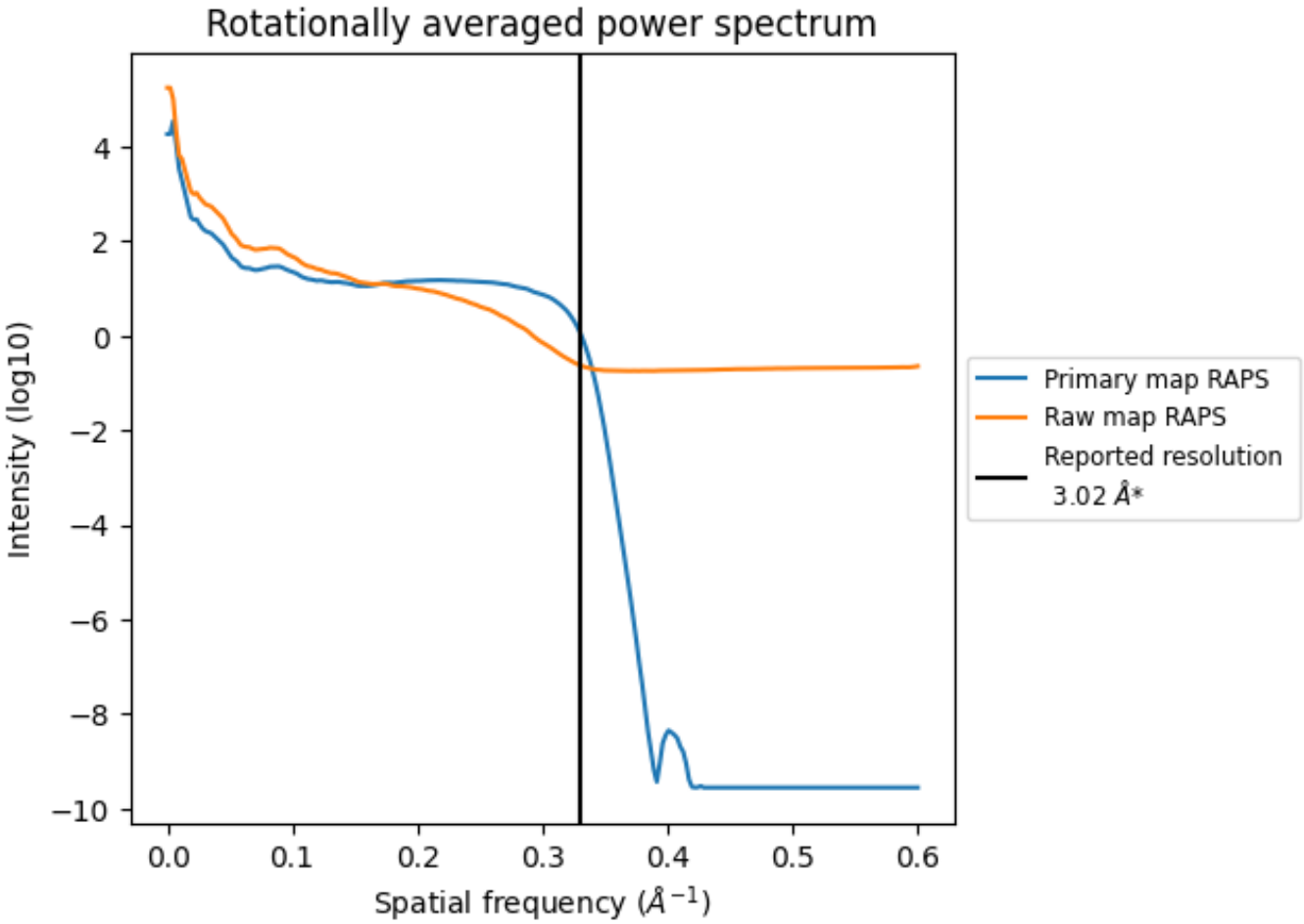
7.2 Volume estimate



The volume at the recommended contour level is 720 nm^3; this corresponds to an approximate mass of 651 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)

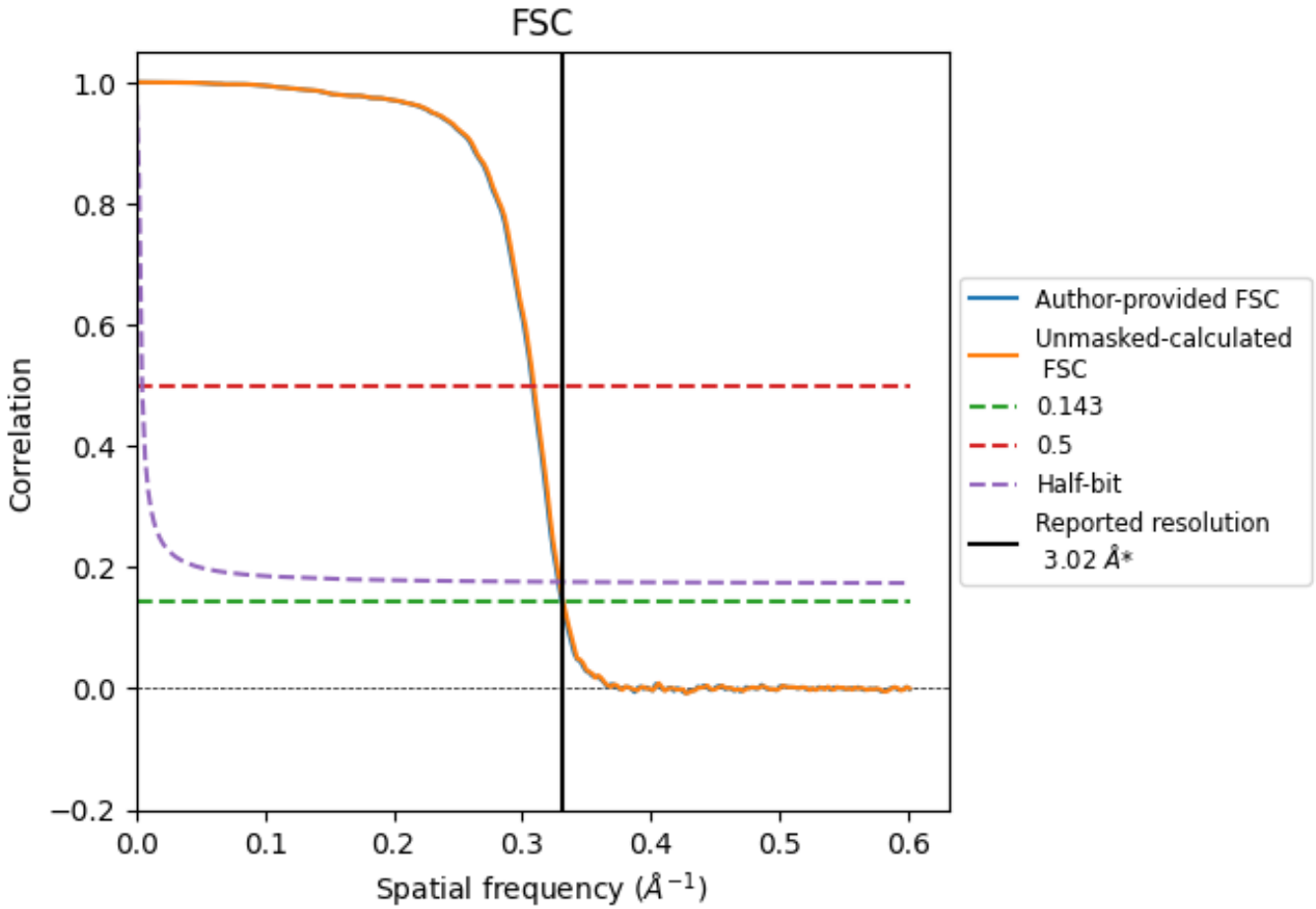


*Reported resolution corresponds to spatial frequency of 0.331 $Å^{-1}$

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 0.331 Å^{-1}

8.2 Resolution estimates (i)

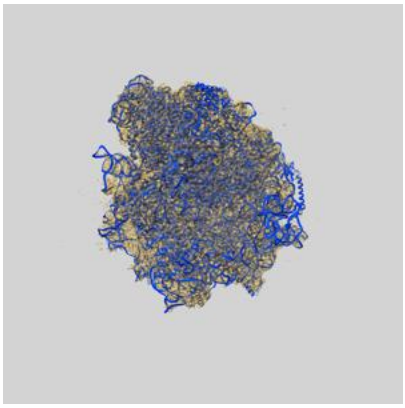
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.02	-	-
Author-provided FSC curve	3.02	3.25	3.05
Unmasked-calculated*	3.01	3.24	3.04

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

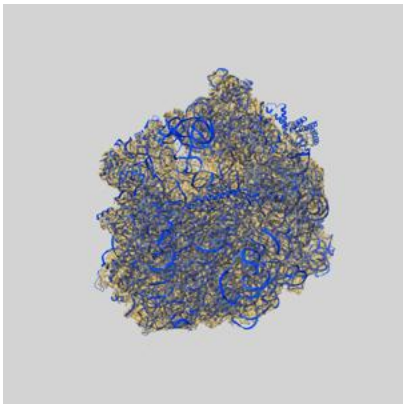
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-75676 and PDB model 11GG. Per-residue inclusion information can be found in section 3 on page 14.

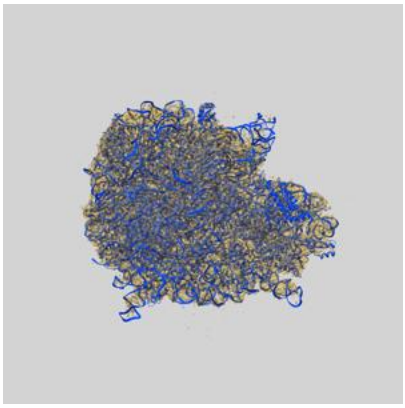
9.1 Map-model overlay



X



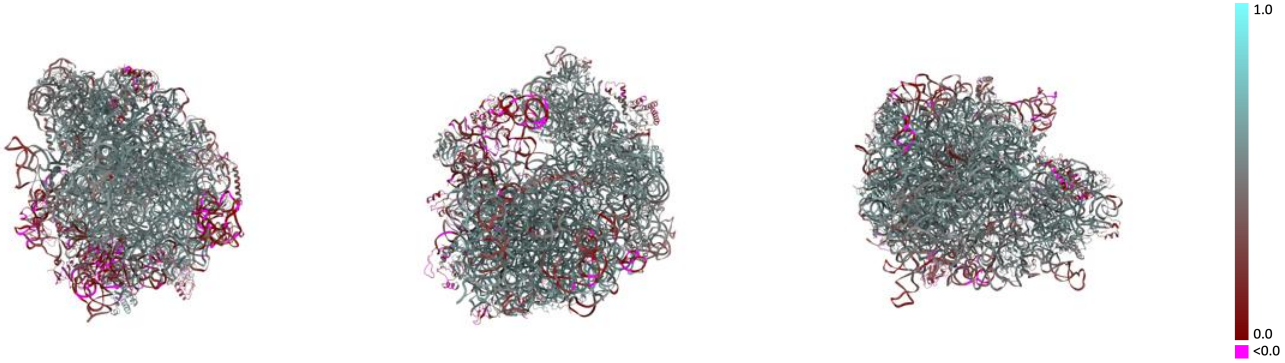
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 3.0 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.

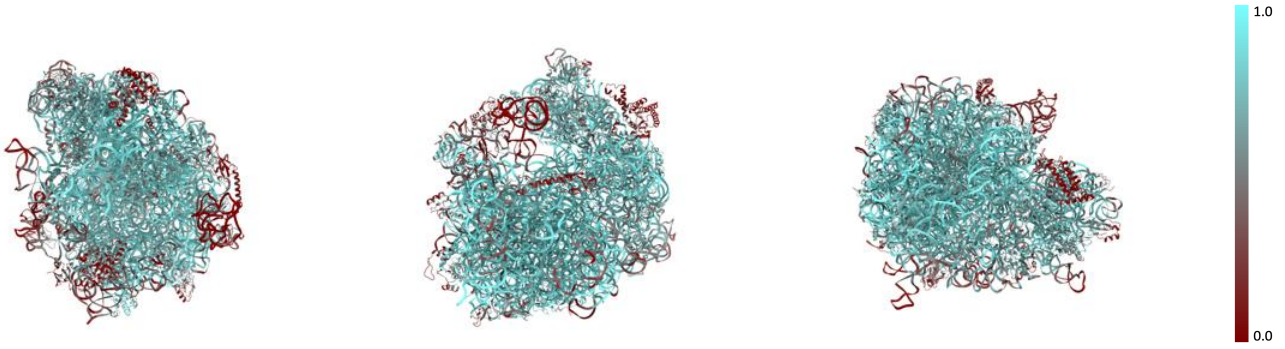
9.2 Q-score mapped to coordinate model (i)



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.

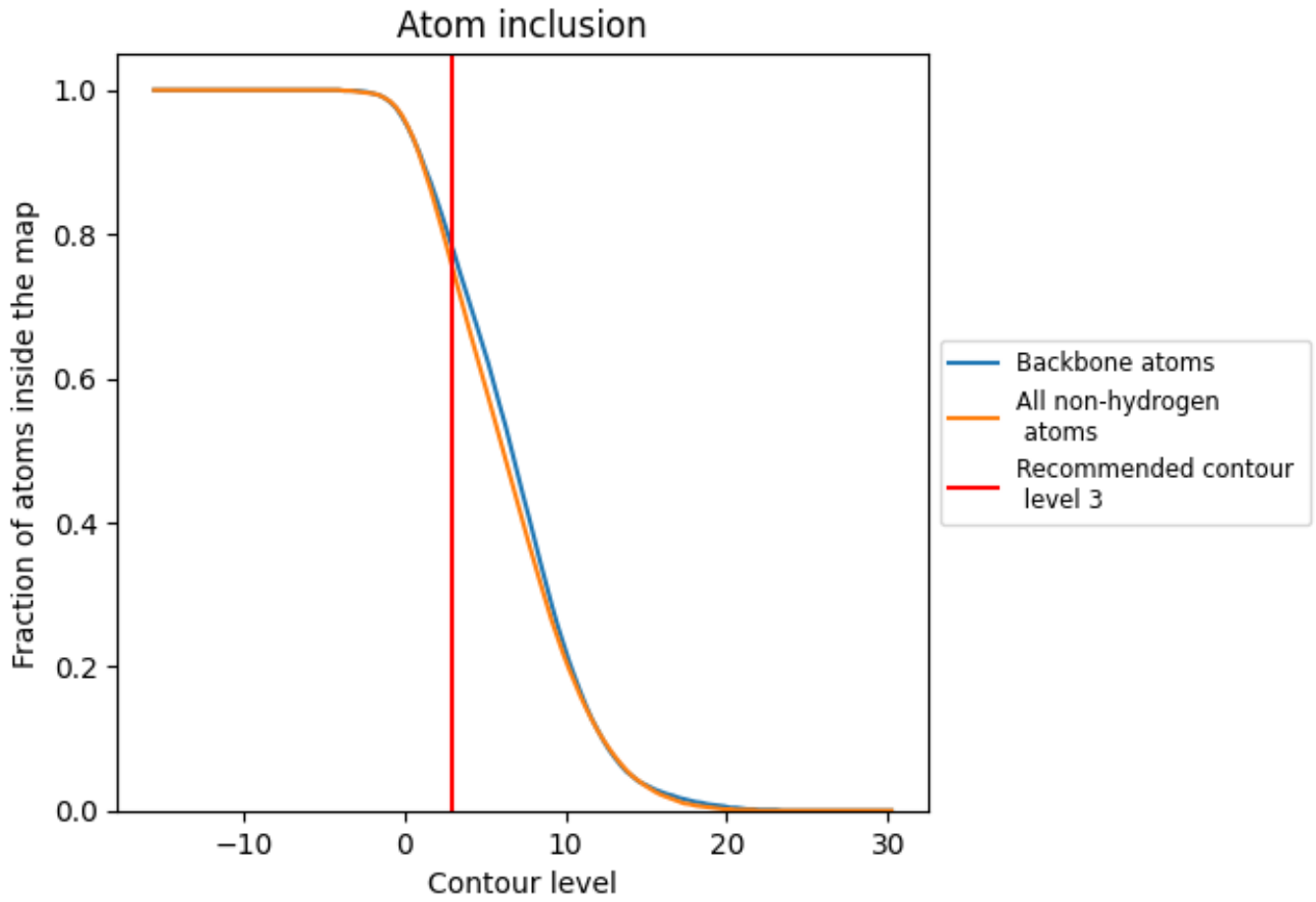
9.3 Atom inclusion mapped to coordinate model (i)



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 (3).

9.4 Atom inclusion (i)



At the recommended contour level, 78% of all backbone atoms, 75% 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 (3) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7530	0.4850
1	0.6690	0.5010
2	0.6910	0.5140
3	0.4230	0.4620
4	0.8230	0.5830
C	0.8220	0.5230
D	0.1490	0.3410
E	0.7160	0.5490
F	0.5380	0.5120
G	0.7670	0.5590
H	0.7060	0.5180
I	0.8030	0.4840
J	0.4450	0.2020
K	0.8770	0.5860
L	0.7940	0.5350
M	0.6480	0.4210
N	0.2910	0.1390
O	0.2880	0.1360
P	0.2610	0.3880
Q	0.1800	0.1440
R	0.8380	0.5640
S	0.8470	0.5840
T	0.6480	0.3860
U	0.7970	0.5350
V	0.8700	0.5860
W	0.7580	0.5360
X	0.8450	0.6030
Y	0.7870	0.5110
Z	0.6150	0.3710
b	0.7510	0.5480
c	0.5500	0.3680
d	0.3560	0.1850
e	0.6310	0.3790
f	0.8590	0.5850
g	0.6360	0.4360

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Chain	Atom inclusion	Q-score
h	0.6960	0.4400
i	0.8460	0.5970
j	0.1200	0.1290
k	0.9070	0.6160
l	0.8920	0.6110
m	0.8360	0.5460
n	0.5870	0.5160
o	0.7790	0.5690
p	0.6460	0.5170
q	0.4950	0.4560
r	0.7540	0.5450
t	0.7360	0.5170
u	0.6990	0.5330
v	0.7030	0.5180
w	0.7940	0.5510
x	0.6120	0.4740
y	0.6770	0.5250
z	0.8190	0.5510