Full wwPDB EM Validation Report

Mar 9, 2026 – 10:28 AM UTC

PDB ID	:	7SSO / pdb_00007sso
EMDB ID	:	EMD-25411
Title	:	Pre translocation 70S ribosome with A/A and P/E tRNA (Structure II-A)
Authors	:	Carbone, C.E.; Korostelev, A.A.
Deposited on	:	2021-11-11
Resolution	:	3.20 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:

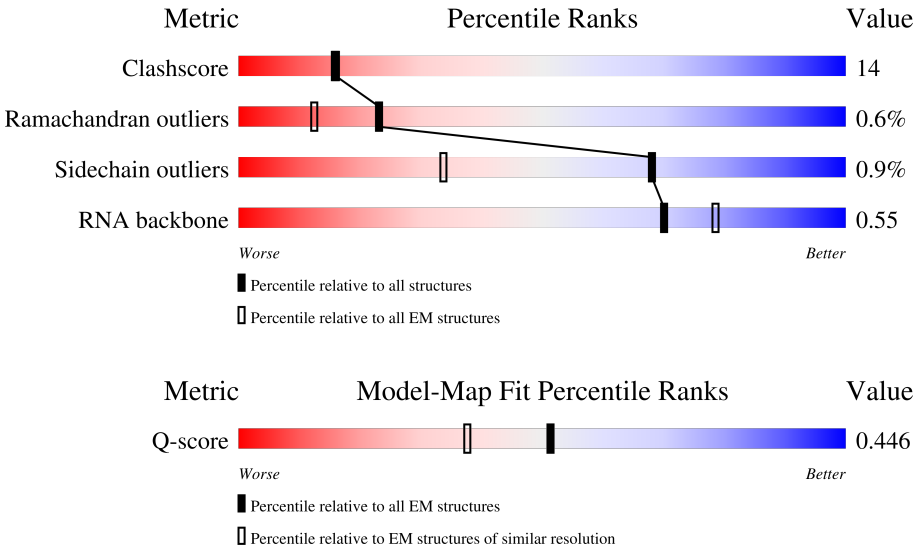
EMDB validation analysis	:	0.0.1.dev132
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4-5-2 with Phenix2.0
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data 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 3.20 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	15020 (2.70 - 3.70)

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	3	1539	42% 51% 6%
2	1	2903	38% 51% 10%
3	2	120	40% 49% 9%

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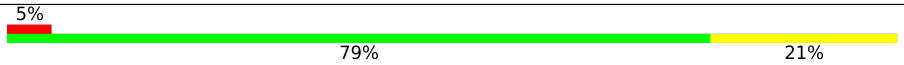
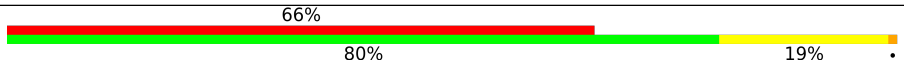
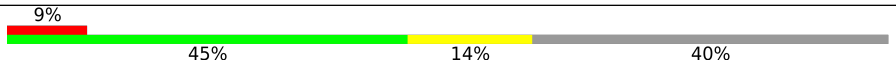
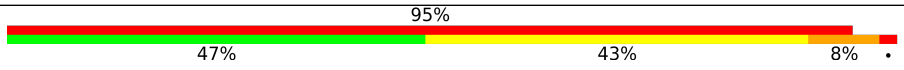
Mol	Chain	Length	Quality of chain
4	5	77	
5	b	271	
6	c	209	
7	d	201	
8	e	177	
9	f	176	
10	g	149	
11	a	223	
12	h	131	
13	i	141	
14	j	142	
15	k	122	
16	l	143	
17	m	136	
18	n	120	
19	o	116	
20	p	114	
21	q	117	
22	r	103	
23	s	110	
24	t	93	
25	u	102	
26	v	94	
27	w	75	
28	x	77	

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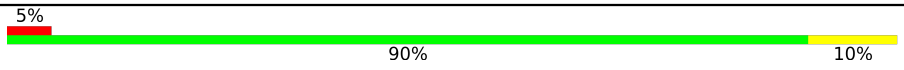
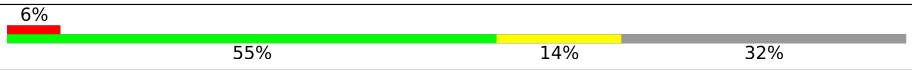
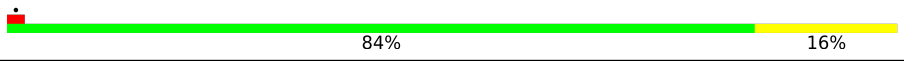
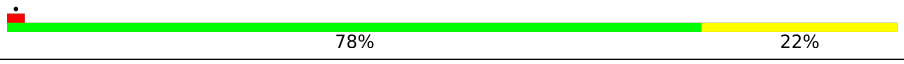
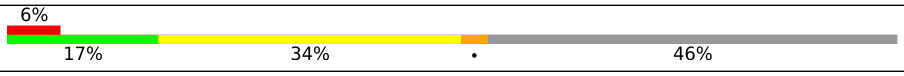
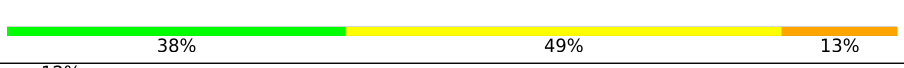
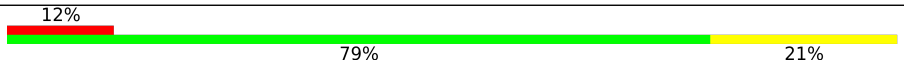
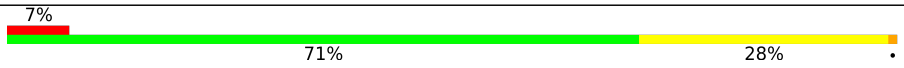
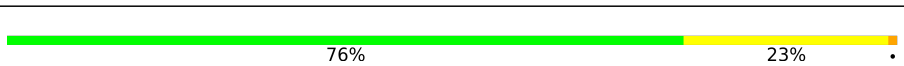
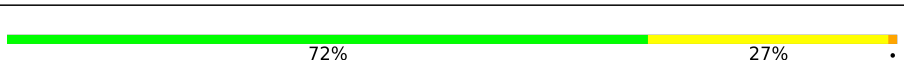
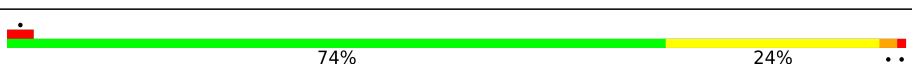
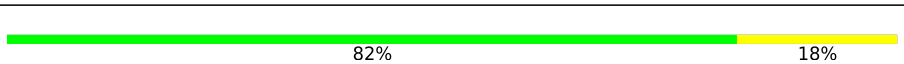
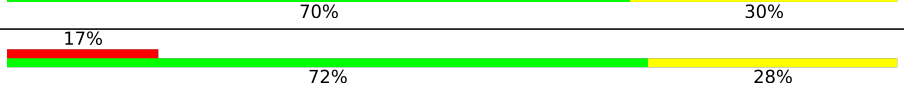
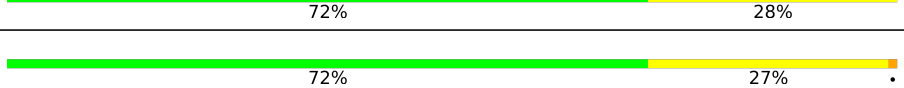
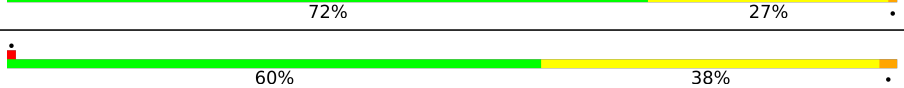
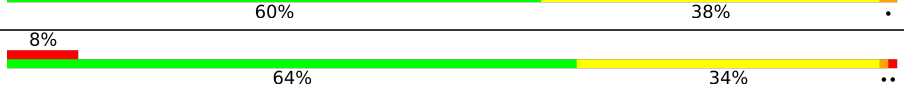
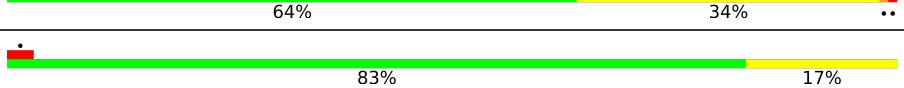
Mol	Chain	Length	Quality of chain
29	y	63	
30	z	58	
31	A	66	
32	B	56	
33	C	50	
34	D	46	
35	E	64	
36	F	38	
37	4	35	
38	6	77	
39	G	225	
40	H	206	
41	I	205	
42	J	157	
43	K	100	
44	L	151	
45	M	129	
46	N	127	
47	O	98	
48	P	116	
49	Q	123	
50	R	114	
51	S	100	
52	T	88	
53	U	82	

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Mol	Chain	Length	Quality of chain
54	V	80	72% 25%
55	W	65	83% 17%
56	X	79	8% 62% 38%
57	Y	85	72% 27%
58	Z	65	69% 28%

2 Entry composition

There are 60 unique types of molecules in this entry. The entry contains 148980 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 rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	3	1539	33012	14725	6052	10697	1538	0	0

- Molecule 2 is a RNA chain called 23S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	1	2903	62317	27801	11468	20146	2902	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
1	747	C	U	conflict	GB 802133627

- Molecule 3 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	2	120	2568	1145	471	833	119	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
2	120	A	-	insertion	GB 1266961702

- Molecule 4 is a RNA chain called tRNA Pro.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
4	5	77	1647	733	295	542	77	0	0

- Molecule 5 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	b	271	Total	C	N	O	S	0	0
			2083	1288	423	365	7		

- Molecule 6 is a protein called 50S ribosomal protein L3.

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

- Molecule 7 is a protein called 50S ribosomal protein L4.

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

- Molecule 8 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	e	177	Total	C	N	O	S	0	0
			1411	899	249	257	6		

- Molecule 9 is a protein called 50S ribosomal protein L6.

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

- Molecule 10 is a protein called 50S ribosomal protein L9.

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

- Molecule 11 is a protein called 50S ribosomal protein L1.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	a	134	Total	C	N	O	S	0	0
			1027	645	186	194	2		

- Molecule 12 is a protein called 50S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	h	131	Total	C	N	O	S	0	0
			989	625	175	184	5		

- Molecule 13 is a protein called 50S ribosomal protein L11.

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

- Molecule 14 is a protein called 50S ribosomal protein L13.

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

- Molecule 15 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	k	122	Total	C	N	O	S	0	0
			939	587	180	166	6		

- Molecule 16 is a protein called 50S ribosomal protein L15.

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

- Molecule 17 is a protein called 50S ribosomal protein L16.

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

- Molecule 18 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	n	120	Total	C	N	O	S	0	0
			961	593	196	167	5		

- Molecule 19 is a protein called 50S ribosomal protein L18.

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

- Molecule 20 is a protein called 50S ribosomal protein L19.

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

- Molecule 21 is a protein called 50S ribosomal protein L20.

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

- Molecule 22 is a protein called 50S ribosomal protein L21.

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

- Molecule 23 is a protein called 50S ribosomal protein L22.

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

- Molecule 24 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	t	93	Total 739	C 466	N 139	O 132	S 2	0	0

- Molecule 25 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms				AltConf	Trace
25	u	102	Total 780	C 492	N 146	O 142	0	0

- Molecule 26 is a protein called 50S ribosomal protein L25.

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

- Molecule 27 is a protein called 50S ribosomal protein L27.

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

- Molecule 28 is a protein called 50S ribosomal protein L28.

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

- Molecule 29 is a protein called 50S ribosomal protein L29.

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

- Molecule 30 is a protein called 50S ribosomal protein L30.

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

- Molecule 31 is a protein called 50S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	A	45	Total	C	N	O	S	0	0
			351	219	61	65	6		

- Molecule 32 is a protein called 50S ribosomal protein L32.

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

- Molecule 33 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms				AltConf	Trace
33	C	50	Total	C	N	O	0	0
			410	263	75	72		

- Molecule 34 is a protein called 50S ribosomal protein L34.

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

- Molecule 35 is a protein called 50S ribosomal protein L35.

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

- Molecule 36 is a protein called 50S ribosomal protein L36.

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

- Molecule 37 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	4	19	Total	C	N	O	P	0	0
			413	186	85	124	18		

- Molecule 38 is a RNA chain called tRNA fMet.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	6	77	Total	C	N	O	P	0	0
			1640	732	297	535	76		

- Molecule 39 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	G	225	Total	C	N	O	S	0	0
			1757	1111	315	323	8		

- Molecule 40 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	H	206	Total	C	N	O	S	0	0
			1625	1028	305	289	3		

- Molecule 41 is a protein called 30S ribosomal protein S4.

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

- Molecule 42 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	J	157	Total	C	N	O	S	0	0
			1157	719	218	214	6		

- Molecule 43 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	K	100	Total	C	N	O	S	0	0
			818	515	148	149	6		

- Molecule 44 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	L	151	Total	C	N	O	S	0	0
			1182	735	227	216	4		

- Molecule 45 is a protein called 30S ribosomal protein S8.

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

- Molecule 46 is a protein called 30S ribosomal protein S9.

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

- Molecule 47 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	O	98	Total	C	N	O	S	0	0
			787	493	150	143	1		

- Molecule 48 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	P	116	Total	C	N	O	S	0	0
			870	535	173	159	3		

- Molecule 49 is a protein called 30S ribosomal protein S12.

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

- Molecule 50 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	R	114	Total	C	N	O	S	0	0
			884	546	178	157	3		

- Molecule 51 is a protein called 30S ribosomal protein S14.

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

- Molecule 52 is a protein called 30S ribosomal protein S15.

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

- Molecule 53 is a protein called 30S ribosomal protein S16.

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

- Molecule 54 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	V	80	Total	C	N	O	S	0	0
			649	411	121	114	3		

- Molecule 55 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	W	65	Total	C	N	O	S	0	0
			536	339	100	96	1		

- Molecule 56 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	X	79	Total	C	N	O	S	0	0
			638	408	120	108	2		

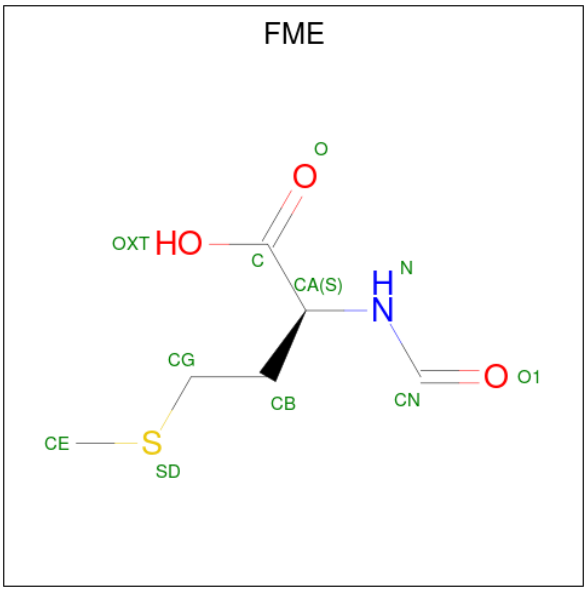
- Molecule 57 is a protein called 30S ribosomal protein S20.

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

- Molecule 58 is a protein called 30S ribosomal protein S21.

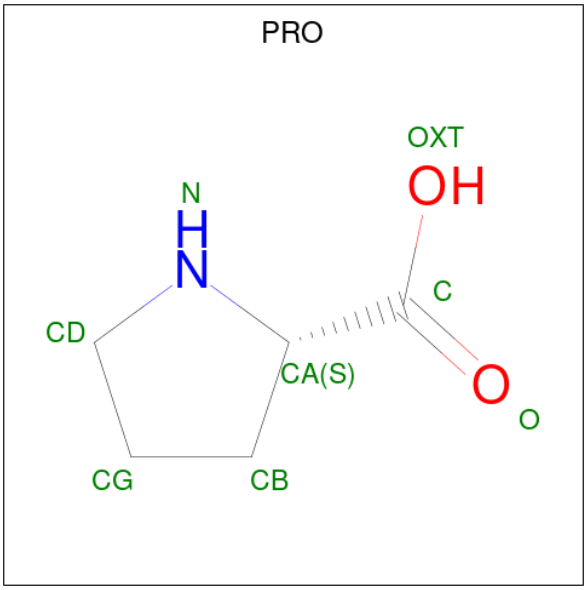
Mol	Chain	Residues	Atoms					AltConf	Trace
58	Z	65	Total	C	N	O	S	0	0
			545	335	117	92	1		

- Molecule 59 is N-FORMYLMETHIONINE (CCD ID: FME) (formula: $C_6H_{11}NO_3S$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
59	1	1	Total	C	N	O	S	0
			8	5	1	1	1	

- Molecule 60 is PROLINE (CCD ID: PRO) (formula: $C_5H_9NO_2$).



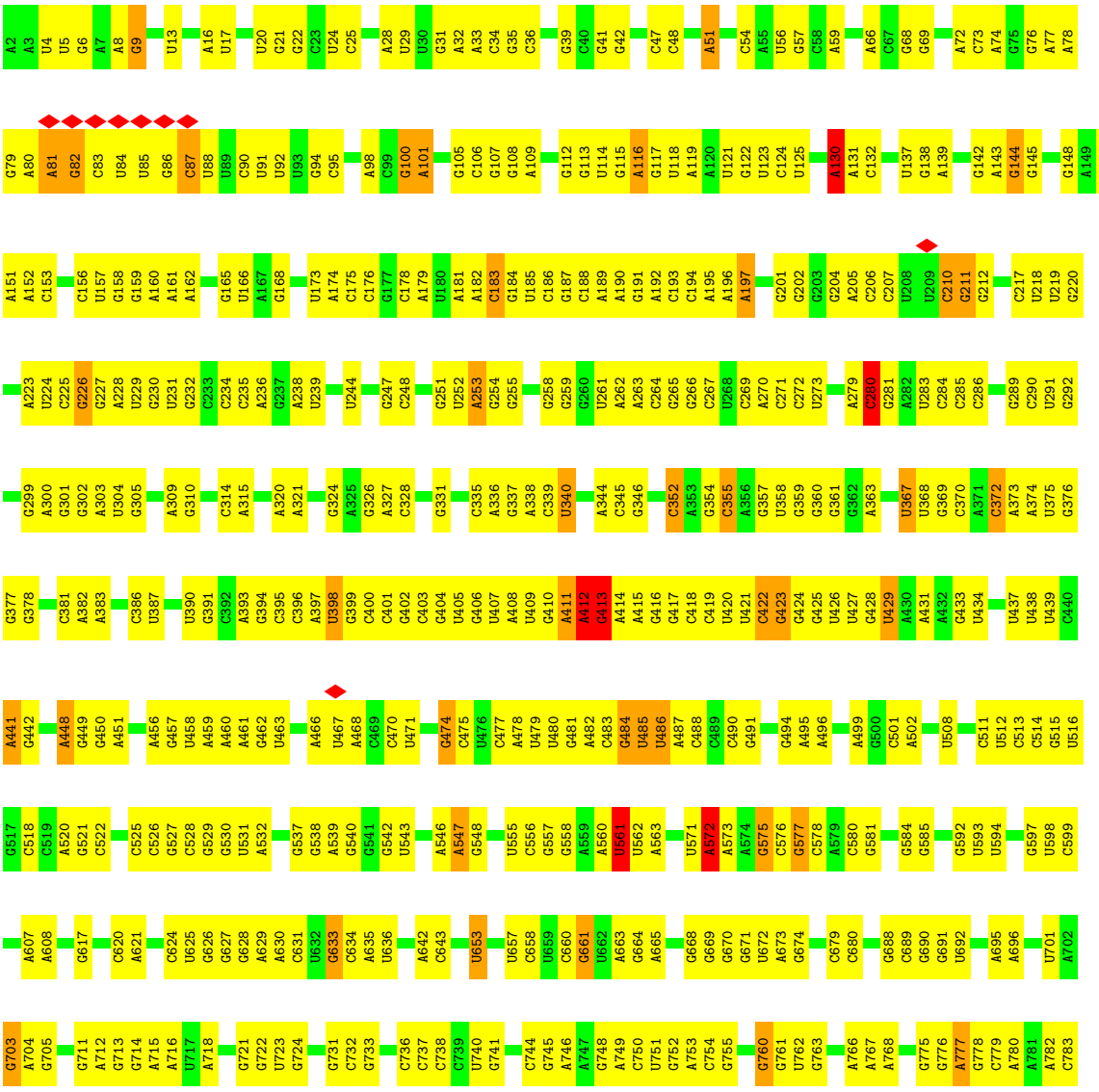
Mol	Chain	Residues	Atoms				AltConf
60	5	1	Total	C	N	O	0
			7	5	1	1	

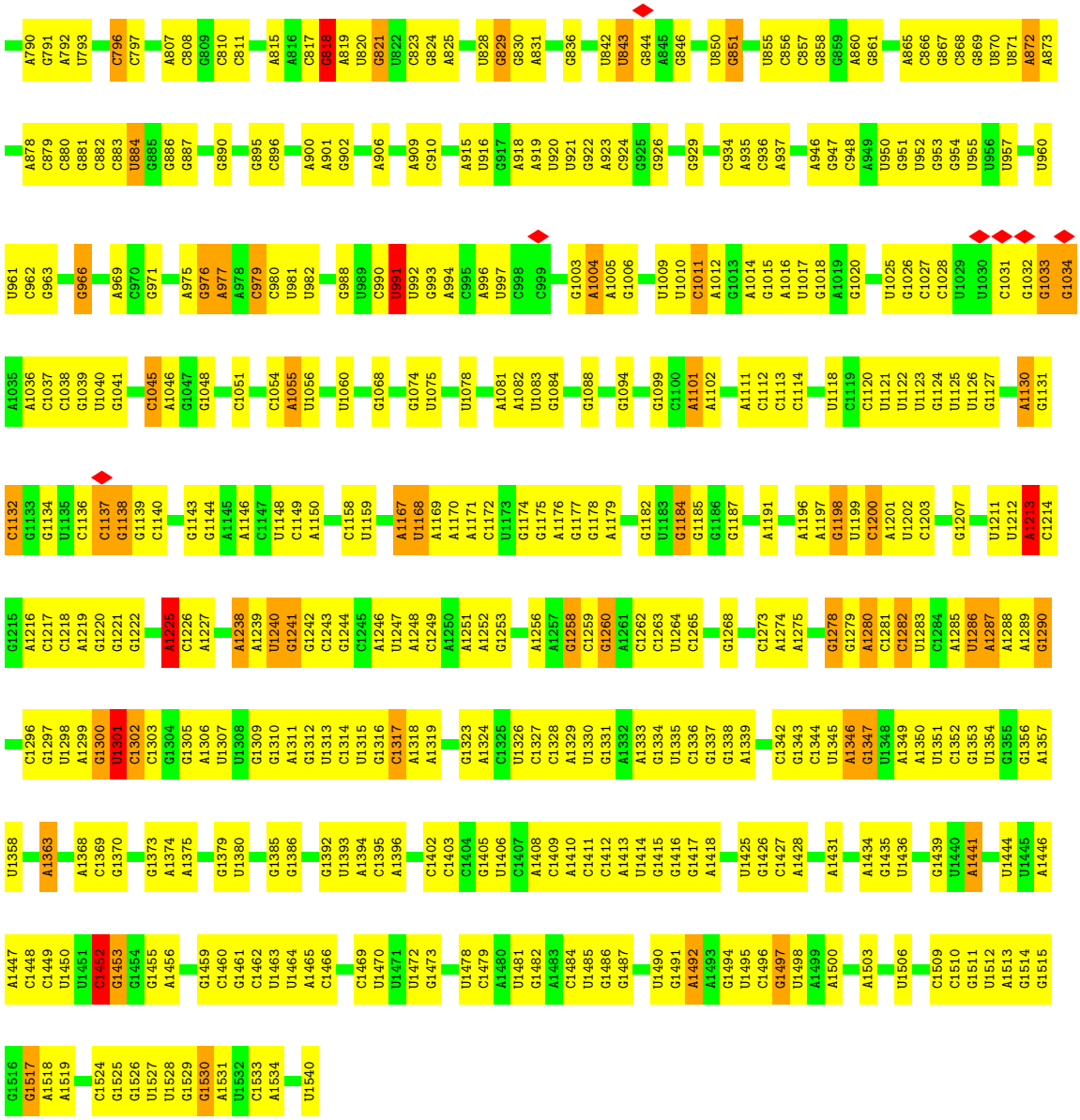
3 Residue-property plots (i)

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 rRNA

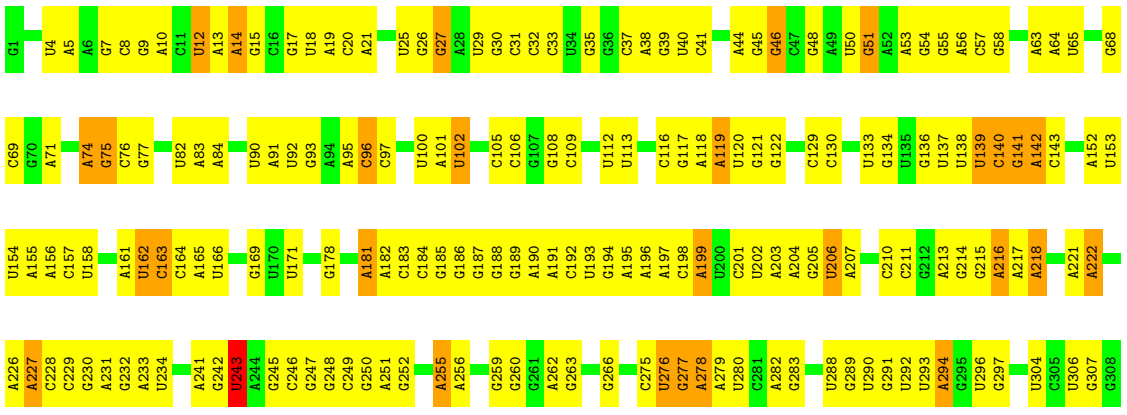
Chain 3:

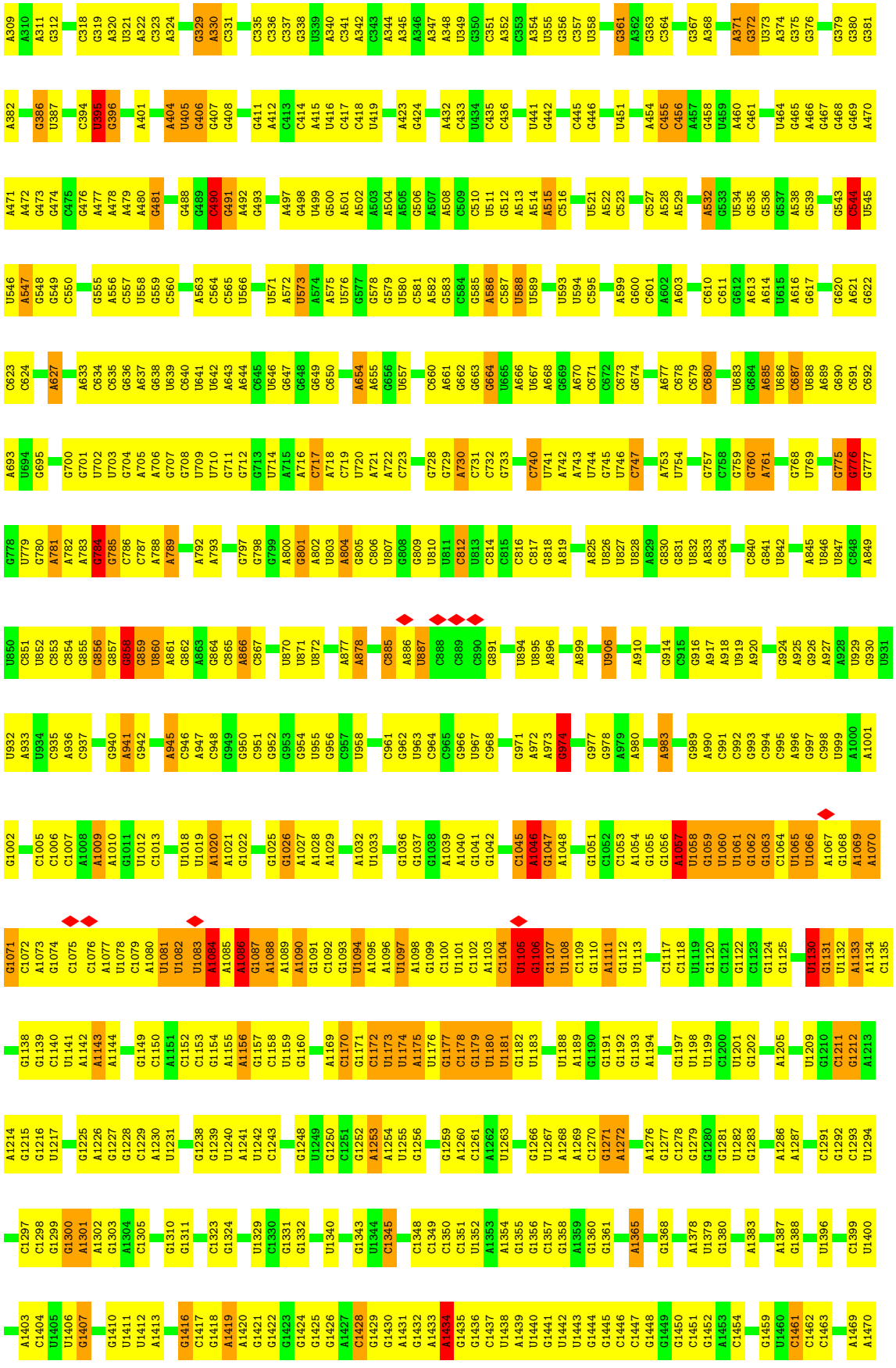


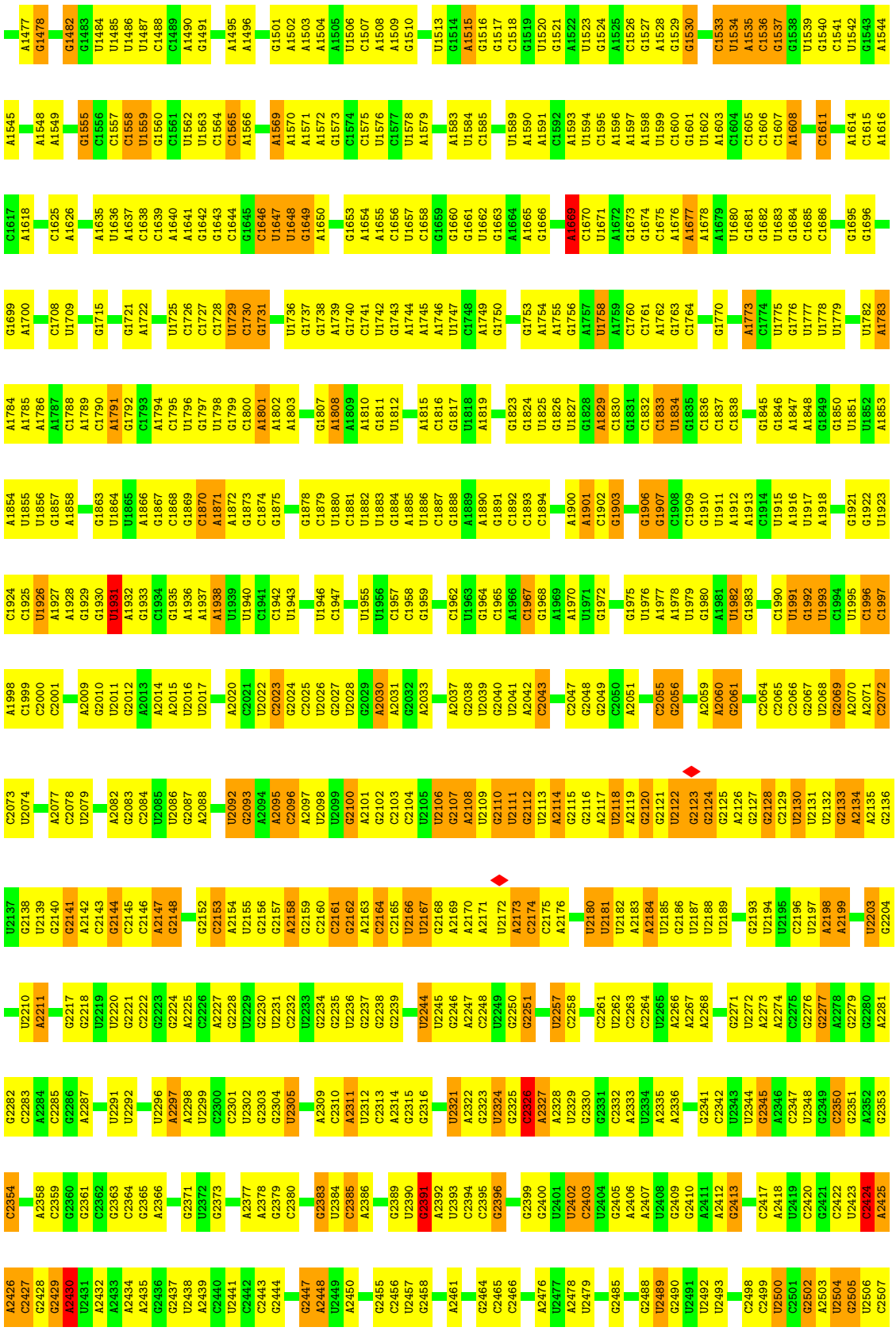


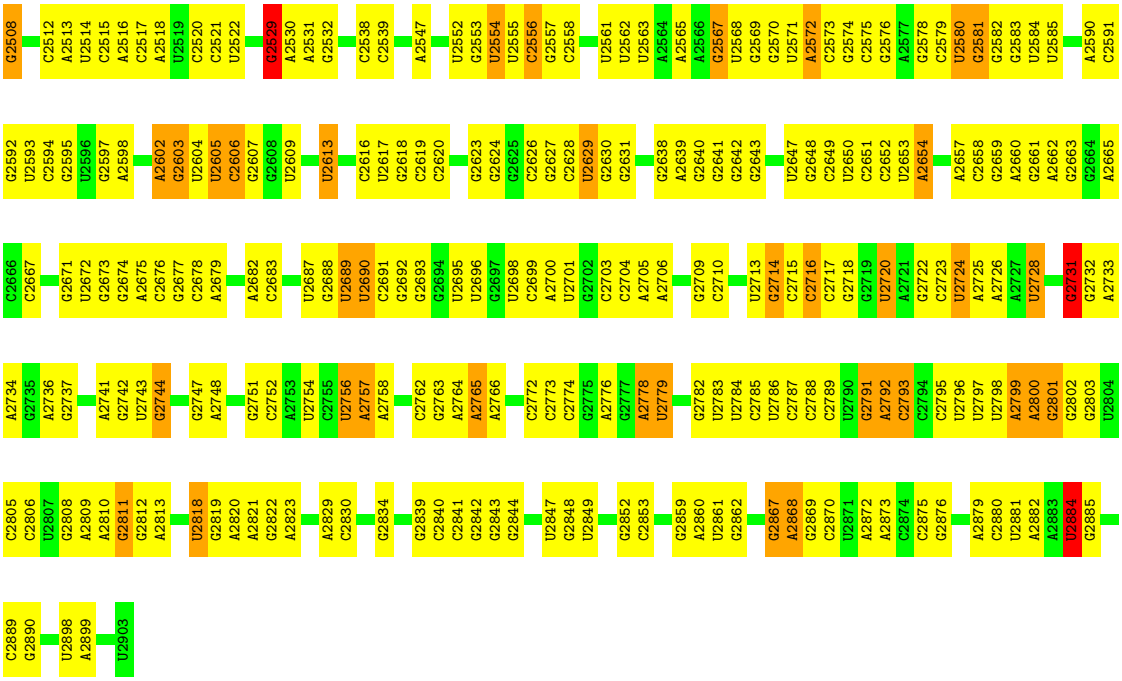
• Molecule 2: 23S rRNA

Chain 1:



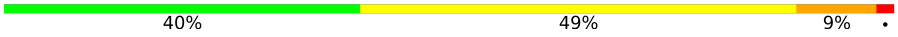


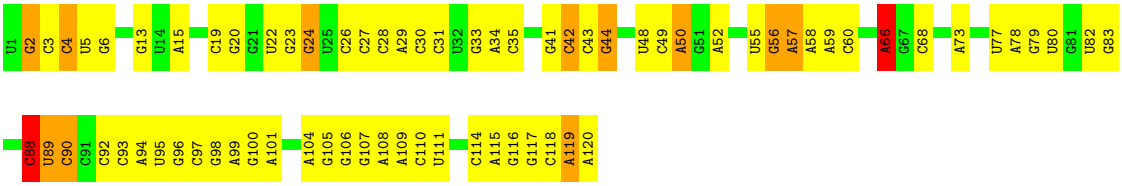




• Molecule 3: 5S rRNA

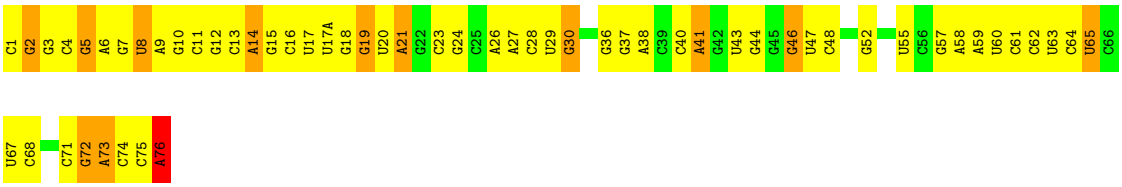
Chain 2:





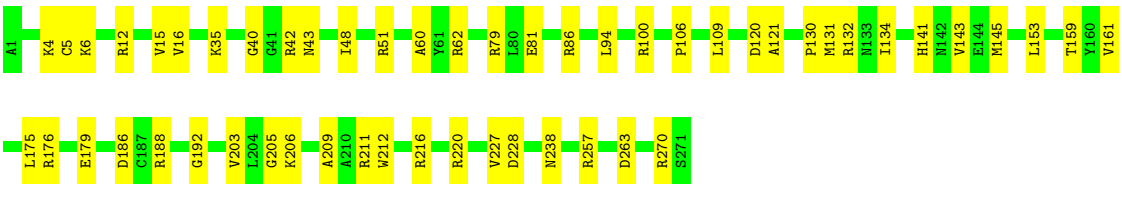
• Molecule 4: tRNA Pro

Chain 5:



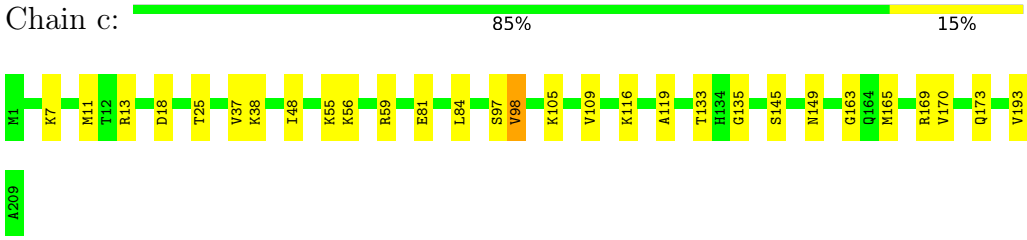
• Molecule 5: 50S ribosomal protein L2

Chain b:



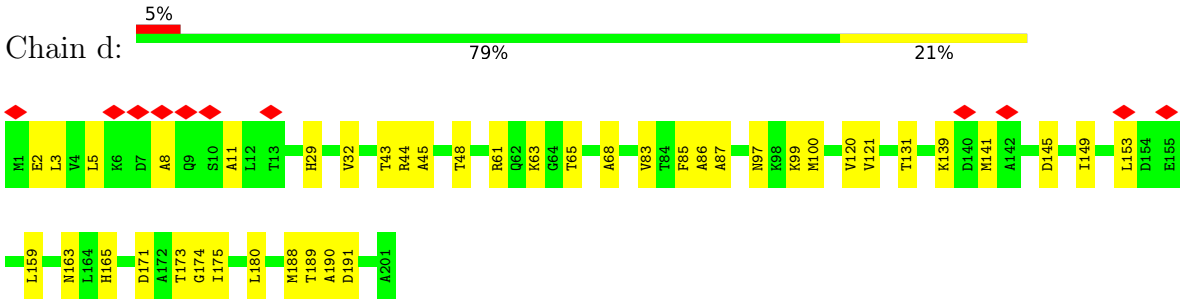
• Molecule 6: 50S ribosomal protein L3

Chain c:



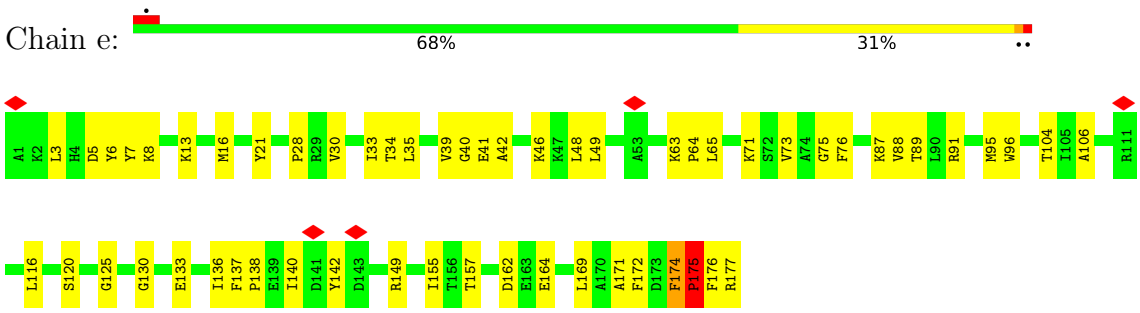
• Molecule 7: 50S ribosomal protein L4

Chain d:



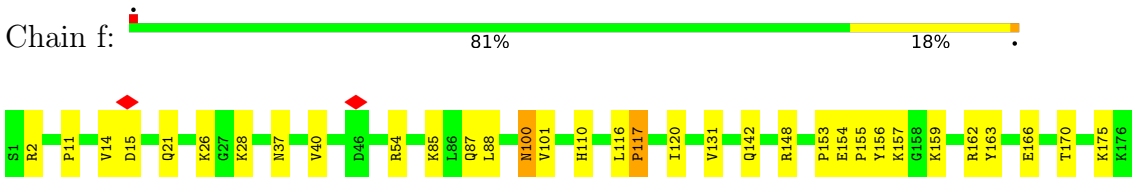
• Molecule 8: 50S ribosomal protein L5

Chain e:



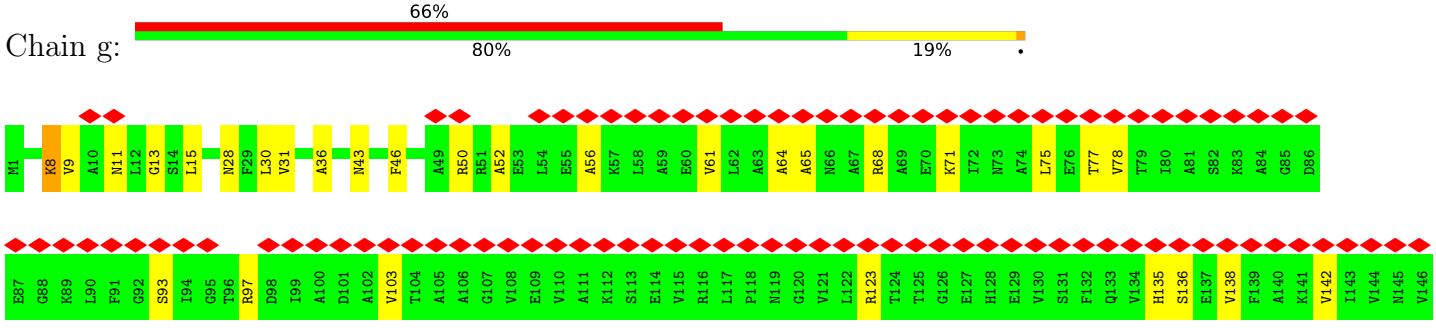
• Molecule 9: 50S ribosomal protein L6

Chain f:

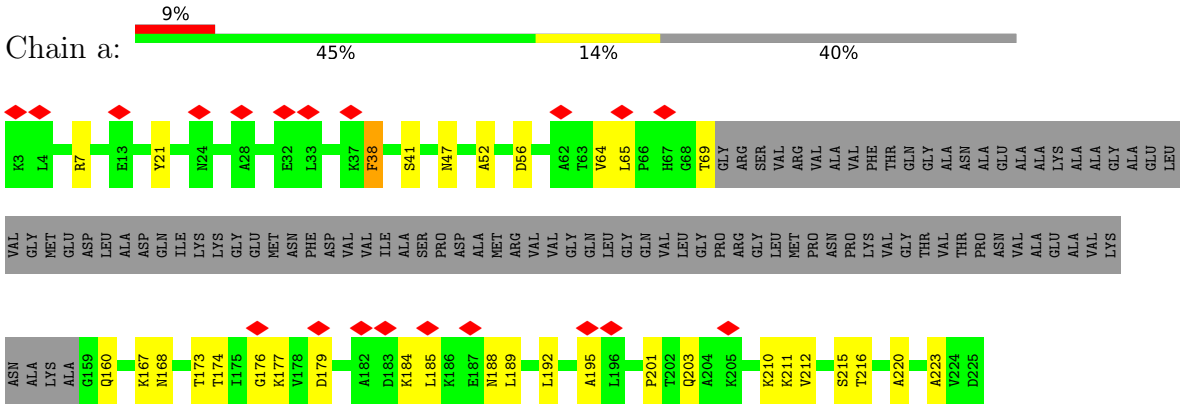


• Molecule 10: 50S ribosomal protein L9

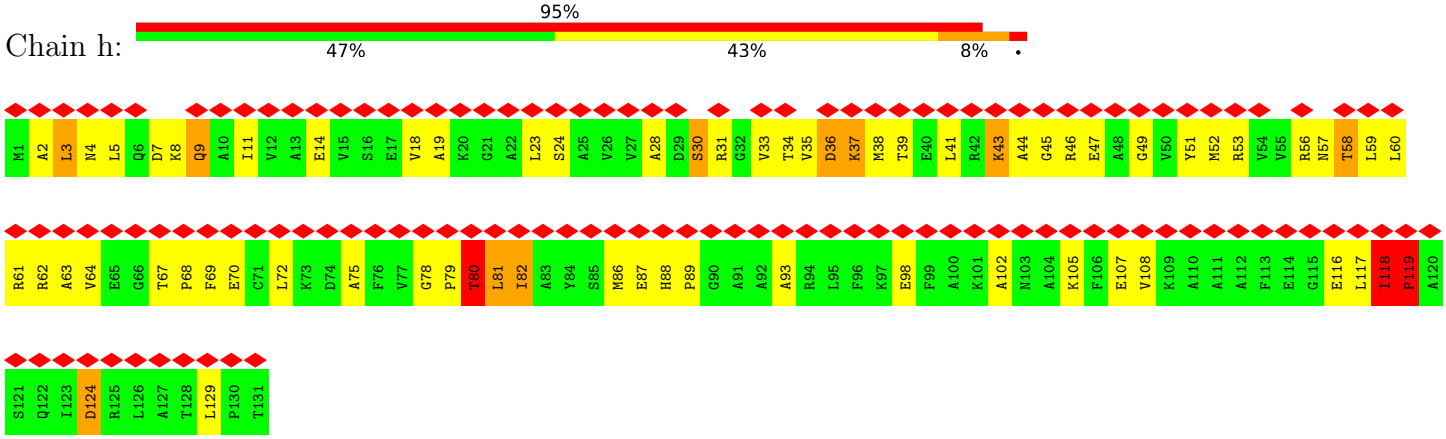
Chain g:



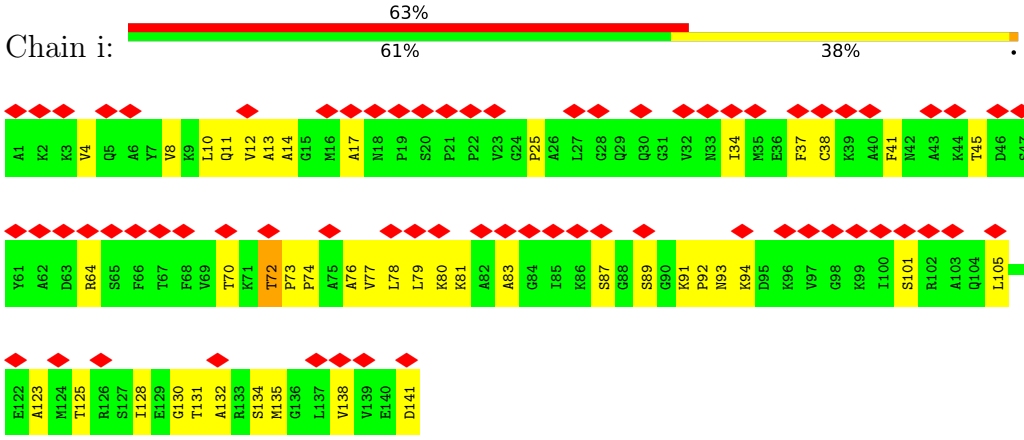
• Molecule 11: 50S ribosomal protein L1



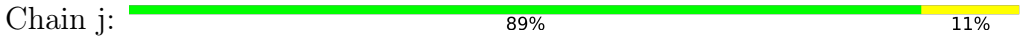
• Molecule 12: 50S ribosomal protein L10

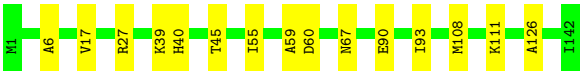


• Molecule 13: 50S ribosomal protein L11



• Molecule 14: 50S ribosomal protein L13





• Molecule 15: 50S ribosomal protein L14

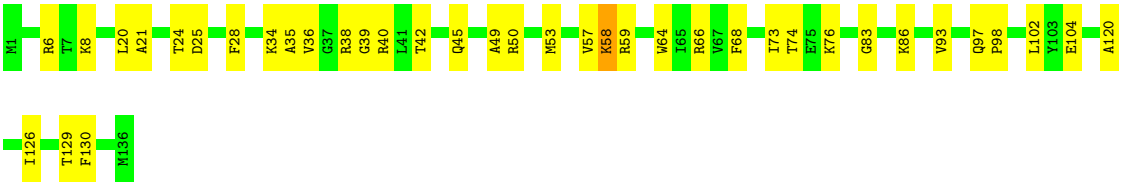
Chain k:

• Molecule 16: 50S ribosomal protein L15

Chain l:

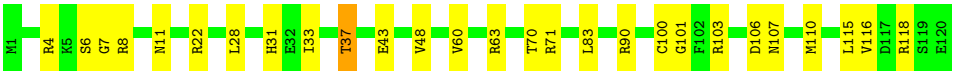
• Molecule 17: 50S ribosomal protein L16

Chain m:



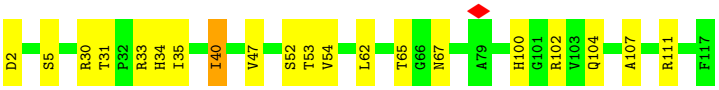
• Molecule 18: 50S ribosomal protein L17

Chain n:



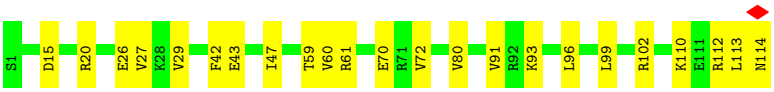
• Molecule 19: 50S ribosomal protein L18

Chain o:



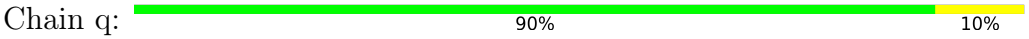
• Molecule 20: 50S ribosomal protein L19

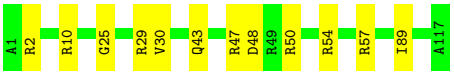
Chain p:



• Molecule 21: 50S ribosomal protein L20

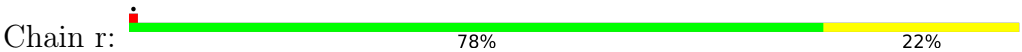
Chain q:

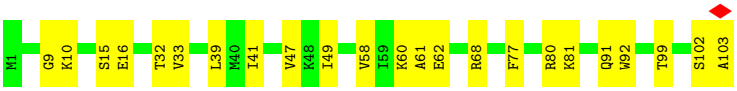




• Molecule 22: 50S ribosomal protein L21

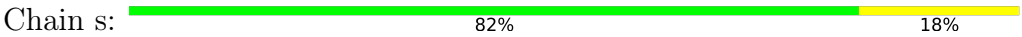
Chain r:

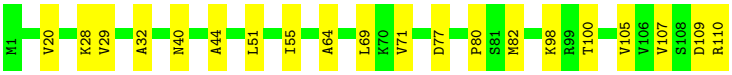




• Molecule 23: 50S ribosomal protein L22

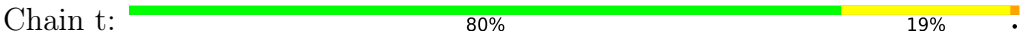
Chain s:





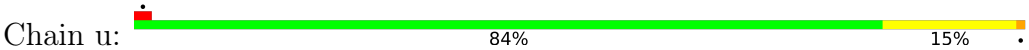
• Molecule 24: 50S ribosomal protein L23

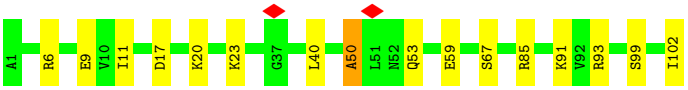
Chain t:



• Molecule 25: 50S ribosomal protein L24

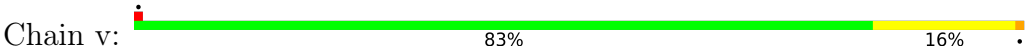
Chain u:

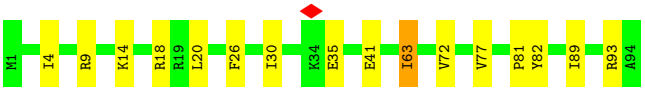




• Molecule 26: 50S ribosomal protein L25

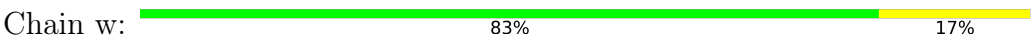
Chain v:

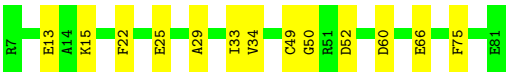




• Molecule 27: 50S ribosomal protein L27

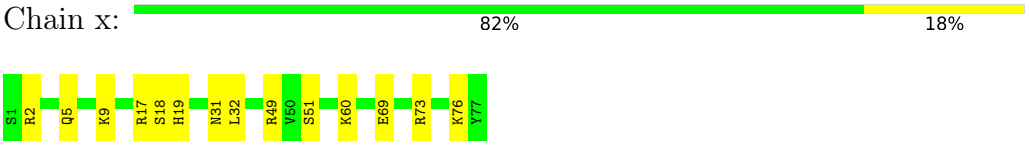
Chain w:





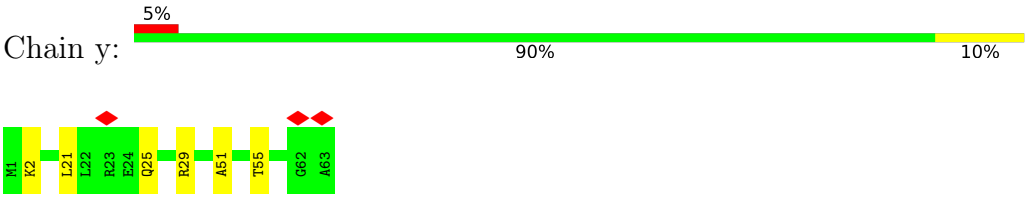
• Molecule 28: 50S ribosomal protein L28

Chain x:



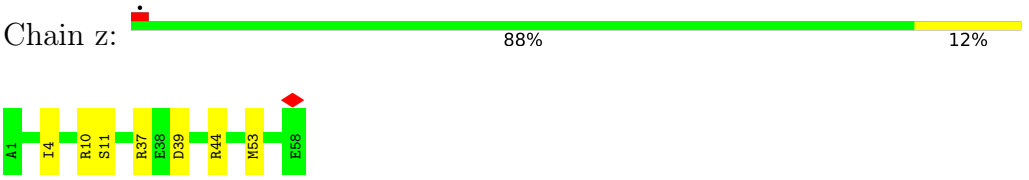
• Molecule 29: 50S ribosomal protein L29

Chain y:



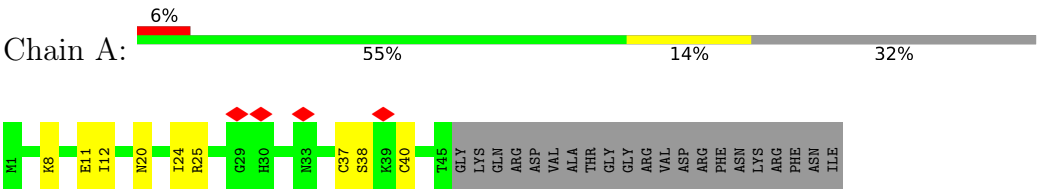
• Molecule 30: 50S ribosomal protein L30

Chain z:



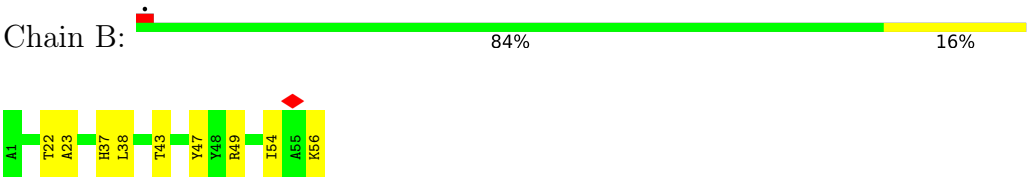
• Molecule 31: 50S ribosomal protein L31

Chain A:



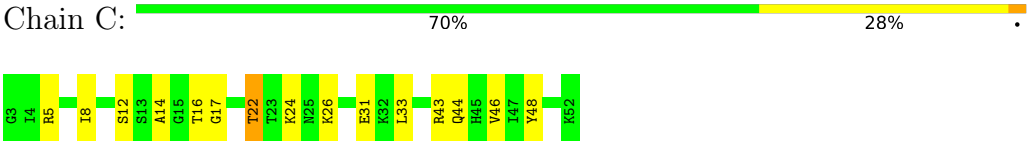
• Molecule 32: 50S ribosomal protein L32

Chain B:



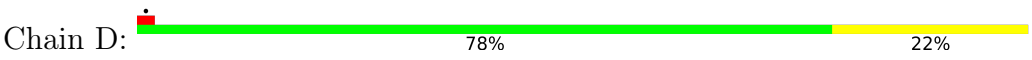
• Molecule 33: 50S ribosomal protein L33

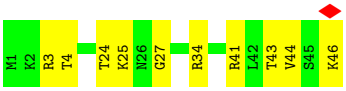
Chain C:



• Molecule 34: 50S ribosomal protein L34

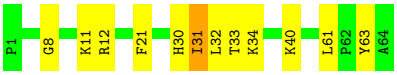
Chain D:





• Molecule 35: 50S ribosomal protein L35

Chain E:

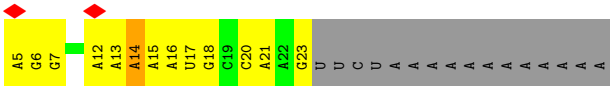


• Molecule 36: 50S ribosomal protein L36

Chain F:

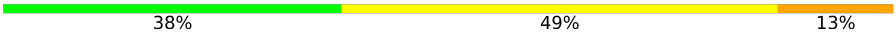
• Molecule 37: mRNA

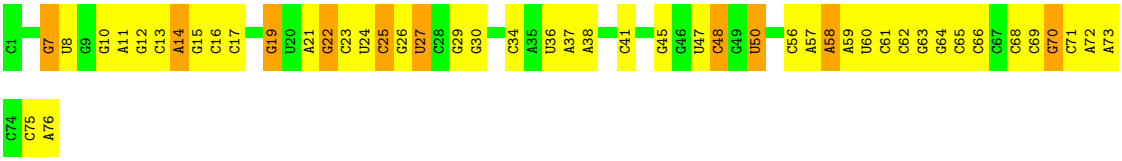
Chain 4:



• Molecule 38: tRNA fMet

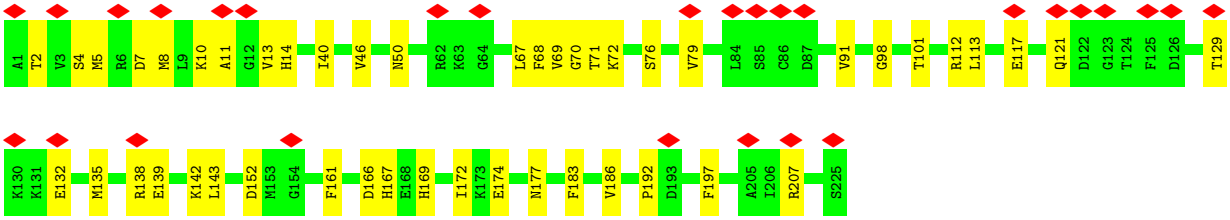
Chain 6:





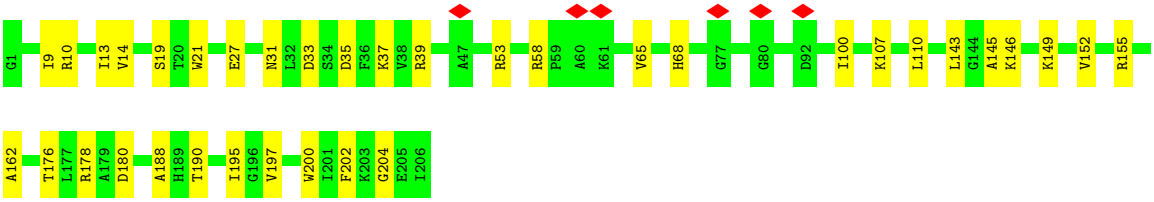
• Molecule 39: 30S ribosomal protein S2

Chain G:

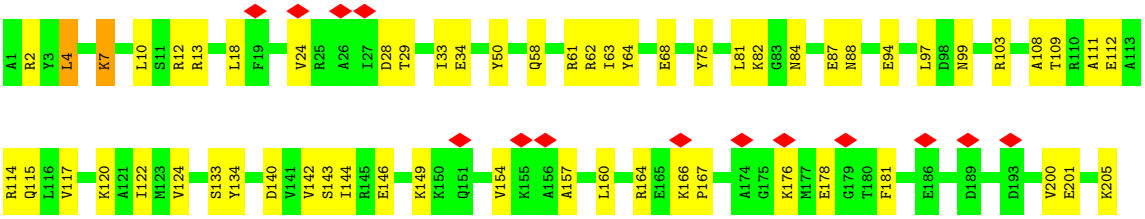


• Molecule 40: 30S ribosomal protein S3

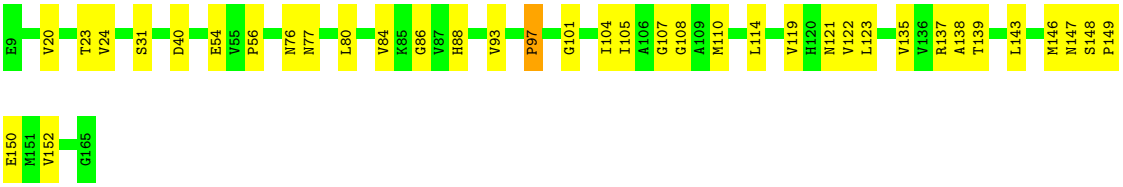
Chain H:



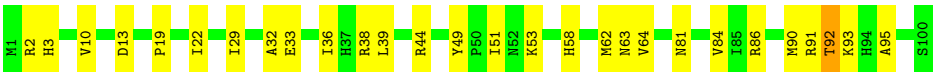
• Molecule 41: 30S ribosomal protein S4



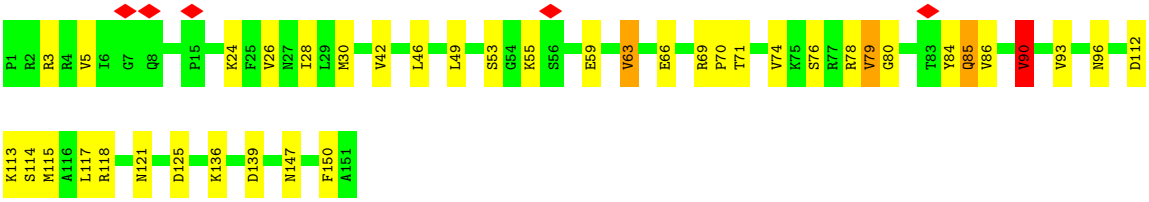
• Molecule 42: 30S ribosomal protein S5



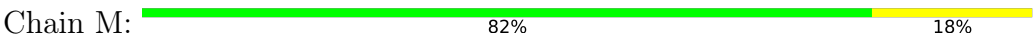
• Molecule 43: 30S ribosomal protein S6



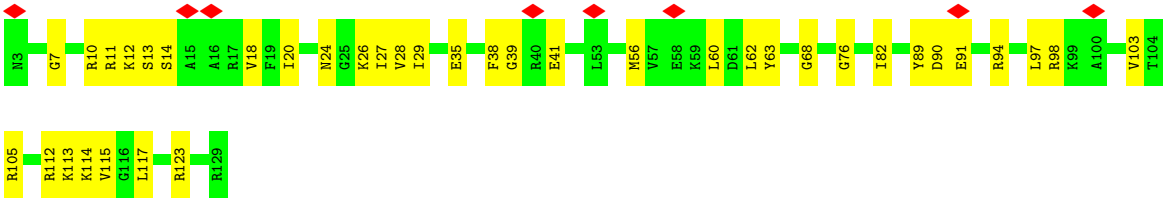
• Molecule 44: 30S ribosomal protein S7



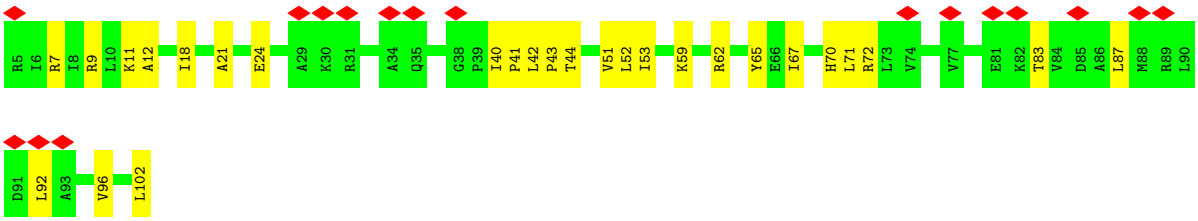
• Molecule 45: 30S ribosomal protein S8



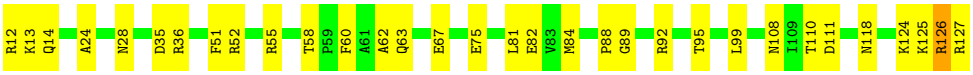
• Molecule 46: 30S ribosomal protein S9



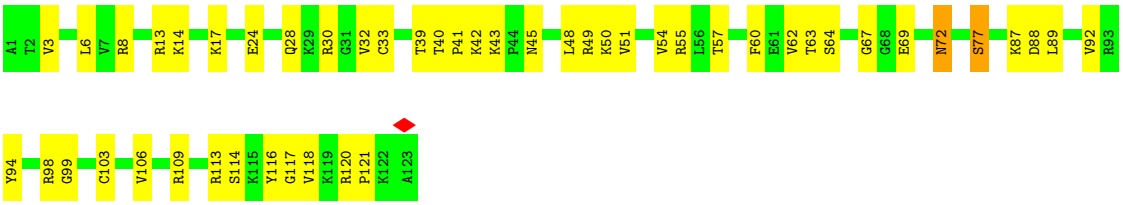
• Molecule 47: 30S ribosomal protein S10



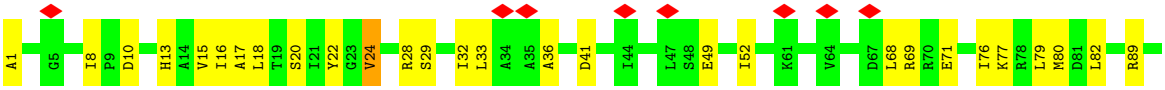
• Molecule 48: 30S ribosomal protein S11

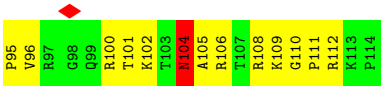


• Molecule 49: 30S ribosomal protein S12



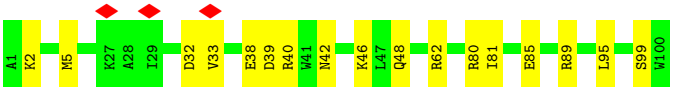
• Molecule 50: 30S ribosomal protein S13





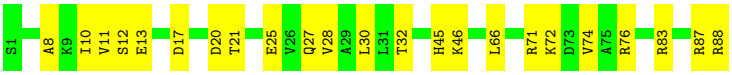
• Molecule 51: 30S ribosomal protein S14

Chain S:



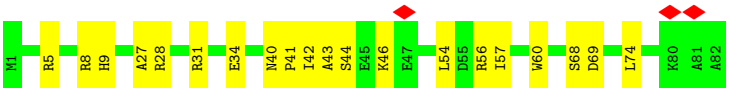
• Molecule 52: 30S ribosomal protein S15

Chain T:



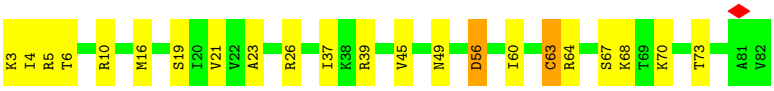
• Molecule 53: 30S ribosomal protein S16

Chain U:



• Molecule 54: 30S ribosomal protein S17

Chain V:

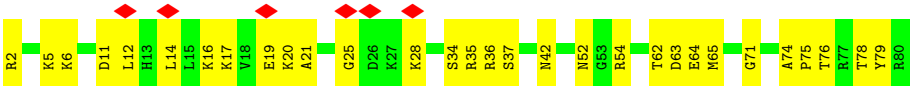


• Molecule 55: 30S ribosomal protein S18

Chain W:

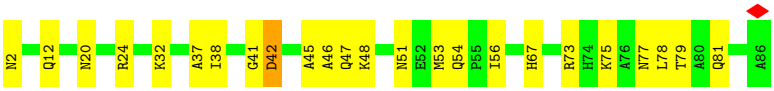
• Molecule 56: 30S ribosomal protein S19

Chain X:



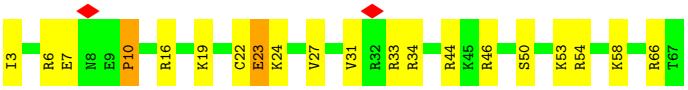
• Molecule 57: 30S ribosomal protein S20

Chain Y:



• Molecule 58: 30S ribosomal protein S21

Chain Z:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	7257	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	40.2	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	1500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	19.960	Depositor
Minimum map value	-7.347	Depositor
Average map value	-0.020	Depositor
Map value standard deviation	1.142	Depositor
Recommended contour level	2.3	Depositor
Map size (Å)	381.8, 381.8, 381.8	wwPDB
Map dimensions	460, 460, 460	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.83, 0.83, 0.83	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: FME

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	3	0.61	0/36963	0.59	16/57662 (0.0%)
2	1	0.61	4/69796 (0.0%)	0.63	44/108888 (0.0%)
3	2	0.62	0/2872	0.60	2/4479 (0.0%)
4	5	0.67	0/1840	0.65	2/2868 (0.1%)
5	b	0.54	0/2122	0.77	0/2852
6	c	0.47	0/1586	0.78	0/2134
7	d	0.43	1/1571 (0.1%)	0.76	2/2113 (0.1%)
8	e	0.31	0/1435	0.75	0/1926
9	f	0.36	0/1343	0.74	0/1816
10	g	0.33	0/1122	0.89	4/1515 (0.3%)
11	a	0.29	0/1034	0.84	1/1387 (0.1%)
12	h	0.36	0/1002	1.14	12/1350 (0.9%)
13	i	0.36	0/1046	0.90	2/1410 (0.1%)
14	j	0.46	1/1152 (0.1%)	0.69	1/1551 (0.1%)
15	k	0.51	0/948	0.80	0/1268
16	l	0.45	0/1054	0.83	0/1403
17	m	0.45	0/1093	0.71	1/1460 (0.1%)
18	n	0.48	0/974	0.76	0/1301
19	o	0.32	0/902	0.81	4/1209 (0.3%)
20	p	0.42	0/929	0.71	0/1242
21	q	0.48	0/960	0.66	0/1278
22	r	0.41	0/829	0.68	0/1107
23	s	0.44	0/864	0.70	0/1156
24	t	0.39	0/745	0.72	0/994
25	u	0.34	0/788	0.76	3/1051 (0.3%)
26	v	0.39	0/766	0.68	0/1025
27	w	0.46	0/582	0.66	0/769
28	x	0.47	0/635	0.72	0/848
29	y	0.29	0/510	0.65	0/677
30	z	0.37	0/453	0.63	0/605
31	A	0.26	0/358	0.72	0/480
32	B	0.43	0/450	0.71	0/599

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
33	C	0.36	0/417	0.68	0/554
34	D	0.55	0/380	0.78	0/498
35	E	0.48	0/513	0.70	0/676
36	F	0.46	0/303	0.75	0/397
37	4	0.64	0/465	0.58	0/725
38	6	0.68	0/1832	0.65	0/2855
39	G	0.32	0/1788	0.69	0/2408
40	H	0.34	0/1652	0.66	0/2225
41	I	0.32	0/1665	0.78	2/2227 (0.1%)
42	J	0.44	0/1170	0.86	2/1573 (0.1%)
43	K	0.39	0/836	0.92	4/1128 (0.4%)
44	L	0.48	0/1196	0.86	4/1602 (0.2%)
45	M	0.40	0/989	0.67	0/1326
46	N	0.33	0/1034	0.83	2/1375 (0.1%)
47	O	0.33	0/797	0.79	0/1077
48	P	0.42	0/886	0.82	1/1195 (0.1%)
49	Q	0.44	0/969	0.87	0/1300
50	R	0.31	0/893	0.84	2/1193 (0.2%)
51	S	0.33	0/817	0.75	0/1088
52	T	0.38	0/722	0.69	0/964
53	U	0.34	0/659	0.68	0/884
54	V	0.37	0/658	0.87	2/881 (0.2%)
55	W	0.35	0/545	0.75	2/731 (0.3%)
56	X	0.36	0/653	0.79	1/877 (0.1%)
57	Y	0.35	0/671	0.76	2/888 (0.2%)
58	Z	0.38	0/551	1.17	4/728 (0.5%)
All	All	0.56	6/161785 (0.0%)	0.66	122/241798 (0.1%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	3	0	6
2	1	0	43
3	2	0	1
4	5	0	2
5	b	0	1
8	e	0	3
10	g	0	2
11	a	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
13	i	0	1
15	k	0	2
17	m	0	2
35	E	0	1
36	F	0	1
42	J	0	1
43	K	0	1
44	L	0	1
46	N	0	1
47	O	0	1
48	P	0	1
49	Q	0	1
58	Z	0	1
All	All	0	74

All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	1	870	U	C3'-O3'	8.96	1.55	1.42
2	1	870	U	O3'-P	8.67	1.74	1.61
2	1	906	U	O3'-P	5.82	1.69	1.61
7	d	43	THR	CA-CB	-5.68	1.45	1.53
2	1	1057	A	C3'-O3'	5.50	1.50	1.42
14	j	108	MET	C-N	-5.49	1.24	1.33

All (122) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
54	V	63	CYS	CA-C-N	10.63	135.17	120.39
54	V	63	CYS	C-N-CA	10.63	135.17	120.39
2	1	1057	A	C3'-C2'-O2'	9.35	124.72	110.70
2	1	1105	U	C4'-C3'-O3'	-8.55	96.58	109.40
12	h	44	ALA	N-CA-C	-7.67	103.71	113.23
44	L	90	VAL	N-CA-C	7.51	118.24	110.05
12	h	30	SER	N-CA-C	-7.44	103.80	113.17
2	1	784	G	C4'-C3'-O3'	-7.07	102.40	113.00
58	Z	10	PRO	CA-C-N	-6.88	112.24	122.56
58	Z	10	PRO	C-N-CA	-6.88	112.24	122.56
2	1	974	G	N9-C1'-C2'	6.84	124.26	114.00
19	o	34	HIS	N-CA-C	6.74	118.80	110.91
2	1	395	U	N1-C1'-C2'	6.70	122.06	112.00
2	1	1057	A	C1'-C2'-O2'	6.69	118.44	108.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	1	1020	A	C2'-C3'-O3'	6.66	119.49	109.50
12	h	117	LEU	N-CA-C	6.66	119.31	107.80
1	3	413	G	N9-C1'-C2'	6.64	121.97	112.00
2	1	2324	U	N1-C1'-C2'	6.62	121.93	112.00
19	o	40	ILE	CA-C-N	6.55	131.34	120.86
19	o	40	ILE	C-N-CA	6.55	131.34	120.86
44	L	76	SER	N-CA-C	6.54	119.66	108.02
2	1	784	G	N9-C1'-C2'	6.49	121.73	112.00
2	1	1086	A	N9-C1'-C2'	6.43	121.64	112.00
2	1	2391	G	N9-C1'-C2'	6.36	121.53	112.00
2	1	1130	U	C2'-C3'-O3'	6.34	119.01	109.50
12	h	75	ALA	N-CA-C	-6.32	105.53	113.18
17	m	57	VAL	N-CA-C	-6.27	106.88	112.90
3	2	66	A	N9-C1'-C2'	6.23	121.35	112.00
58	Z	23	GLU	CA-C-N	6.22	133.43	121.54
58	Z	23	GLU	C-N-CA	6.22	133.43	121.54
2	1	1046	A	N9-C1'-C2'	6.21	121.32	112.00
14	j	40	HIS	N-CA-C	-6.18	106.96	114.75
46	N	7	GLY	CA-C-N	-6.05	114.28	121.90
46	N	7	GLY	C-N-CA	-6.05	114.28	121.90
2	1	1669	A	N9-C1'-C2'	5.99	120.99	112.00
42	J	24	VAL	CA-C-N	5.94	129.72	120.82
42	J	24	VAL	C-N-CA	5.94	129.72	120.82
2	1	278	A	N9-C1'-C2'	5.83	120.74	112.00
2	1	858	G	N9-C1'-C2'	5.82	120.73	112.00
10	g	13	GLY	CA-C-N	-5.80	114.59	121.90
10	g	13	GLY	C-N-CA	-5.80	114.59	121.90
12	h	37	LYS	N-CA-C	-5.77	105.73	112.89
2	1	1834	U	N1-C1'-C2'	5.77	120.66	112.00
2	1	2728	U	N1-C1'-C2'	5.76	120.64	112.00
2	1	1434	A	N9-C1'-C2'	5.70	120.54	112.00
41	I	7	LYS	N-CA-C	5.69	118.25	111.71
2	1	1180	U	N1-C1'-C2'	5.67	120.50	112.00
44	L	84	TYR	N-CA-C	5.63	118.80	110.46
48	P	126	ARG	N-CA-C	5.63	117.50	110.91
2	1	2731	G	N9-C1'-C2'	5.61	120.42	112.00
2	1	1263	U	N1-C1'-C2'	5.61	120.41	112.00
3	2	88	C	C2'-C3'-O3'	-5.60	105.30	113.70
2	1	2575	C	N1-C1'-C2'	5.59	120.39	112.00
2	1	2765	A	N9-C1'-C2'	5.59	120.38	112.00
2	1	2629	U	N1-C1'-C2'	5.58	120.37	112.00
50	R	104	ASN	CA-C-N	5.56	130.54	122.36

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
50	R	104	ASN	C-N-CA	5.56	130.54	122.36
12	h	124	ASP	N-CA-C	5.54	117.41	108.32
43	K	32	ALA	CA-C-N	5.54	132.12	121.54
43	K	32	ALA	C-N-CA	5.54	132.12	121.54
2	1	243	U	N1-C1'-C2'	5.52	120.29	112.00
2	1	1105	U	C5'-C4'-O4'	5.52	117.38	109.10
12	h	36	ASP	N-CA-C	-5.49	106.09	112.89
2	1	1057	A	C4'-C3'-O3'	5.47	121.20	113.00
1	3	280	C	N1-C1'-C2'	5.46	120.19	112.00
2	1	1106	G	C2'-C3'-O3'	5.46	121.89	113.70
1	3	1301	U	N1-C1'-C2'	5.46	120.19	112.00
2	1	2884	U	N1-C1'-C2'	5.46	120.19	112.00
1	3	991	U	N1-C1'-C2'	5.45	120.18	112.00
2	1	858	G	C2'-C3'-O3'	-5.45	105.53	113.70
7	d	83	VAL	CA-C-N	5.42	131.88	121.54
7	d	83	VAL	C-N-CA	5.42	131.88	121.54
25	u	6	ARG	N-CA-C	5.40	117.61	111.02
2	1	2391	G	C4'-C3'-O3'	-5.39	104.91	113.00
2	1	2405	G	N9-C1'-C2'	5.39	120.09	112.00
12	h	119	PRO	N-CA-C	-5.38	101.38	112.47
12	h	80	THR	N-CA-C	5.38	122.26	110.80
2	1	2405	G	C4'-C3'-O3'	-5.38	104.94	113.00
1	3	1200	C	C4'-C3'-O3'	-5.38	104.94	113.00
1	3	653	U	N1-C1'-C2'	5.37	120.06	112.00
19	o	54	VAL	N-CA-C	-5.37	105.71	113.07
1	3	1225	A	N9-C1'-C2'	5.31	119.96	112.00
11	a	179	ASP	N-CA-C	-5.27	108.11	114.75
12	h	72	LEU	N-CA-C	5.26	117.76	111.71
41	I	4	LEU	N-CA-C	5.25	117.06	110.91
44	L	93	VAL	N-CA-C	-5.25	105.27	110.62
2	1	980	A	N9-C1'-C2'	5.24	119.86	112.00
10	g	8	LYS	CA-C-N	5.22	131.36	121.97
10	g	8	LYS	C-N-CA	5.22	131.36	121.97
12	h	43	LYS	N-CA-C	-5.21	106.70	113.16
2	1	2174	C	N1-C1'-C2'	5.20	119.80	112.00
2	1	227	A	N9-C1'-C2'	5.20	119.79	112.00
1	3	130	A	N9-C1'-C2'	5.18	119.78	112.00
2	1	933	A	N9-C1'-C2'	5.18	119.77	112.00
2	1	2629	U	C4'-C3'-O3'	-5.17	105.24	113.00
1	3	368	U	N1-C1'-C2'	5.17	119.75	112.00
1	3	572	A	N9-C1'-C2'	5.17	119.75	112.00
55	W	16	GLY	CA-C-N	5.17	127.62	120.49

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
55	W	16	GLY	C-N-CA	5.17	127.62	120.49
12	h	87	GLU	N-CA-C	5.16	117.65	109.24
56	X	28	LYS	N-CA-C	-5.16	103.68	110.39
25	u	50	ALA	CA-C-N	5.15	128.54	120.82
25	u	50	ALA	C-N-CA	5.15	128.54	120.82
1	3	561	U	N1-C1'-C2'	5.14	119.72	112.00
1	3	421	U	N1-C1'-C2'	5.14	119.71	112.00
1	3	818	G	N9-C1'-C2'	5.14	119.70	112.00
2	1	781	A	C4'-C3'-O3'	-5.12	105.32	113.00
43	K	51	ILE	CA-C-N	5.11	131.30	121.54
43	K	51	ILE	C-N-CA	5.11	131.30	121.54
13	i	4	VAL	CA-C-N	5.10	131.78	123.93
13	i	4	VAL	C-N-CA	5.10	131.78	123.93
2	1	2324	U	C4'-C3'-O3'	-5.09	105.36	113.00
1	3	563	A	N9-C1'-C2'	5.09	119.63	112.00
2	1	490	C	C2'-C3'-O3'	5.07	117.10	109.50
4	5	76	A	C3'-C2'-O2'	5.07	118.30	110.70
2	1	2321	U	N1-C1'-C2'	5.05	119.57	112.00
4	5	76	A	C2'-C3'-O3'	5.04	121.27	113.70
2	1	2638	G	N9-C1'-C2'	5.04	119.56	112.00
57	Y	42	ASP	CA-C-N	5.04	127.28	120.38
57	Y	42	ASP	C-N-CA	5.04	127.28	120.38
1	3	412	A	N9-C1'-C2'	5.01	119.52	112.00
1	3	1452	C	N1-C1'-C2'	5.01	119.51	112.00

There are no chirality outliers.

All (74) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	1	1025	G	Sidechain
2	1	1046	A	Sidechain
2	1	1057	A	Sidechain
2	1	1084	A	Sidechain
2	1	1087	G	Sidechain
2	1	1125	G	Sidechain
2	1	1178	C	Sidechain
2	1	1434	A	Sidechain
2	1	1783	A	Sidechain
2	1	1834	U	Sidechain
2	1	1900	A	Sidechain
2	1	1926	U	Sidechain
2	1	1931	U	Sidechain

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Mol	Chain	Res	Type	Group
2	1	2009	A	Sidechain
2	1	2037	A	Sidechain
2	1	2049	G	Sidechain
2	1	206	U	Sidechain
2	1	2244	U	Sidechain
2	1	2257	U	Sidechain
2	1	2277	G	Sidechain
2	1	2324	U	Sidechain
2	1	2326	C	Sidechain
2	1	2396	G	Sidechain
2	1	2413	G	Sidechain
2	1	2424	C	Sidechain
2	1	243	U	Sidechain
2	1	2430	A	Sidechain
2	1	2489	U	Sidechain
2	1	2508	G	Sidechain
2	1	2529	G	Sidechain
2	1	2580	U	Sidechain
2	1	2581	G	Sidechain
2	1	27	G	Sidechain
2	1	2731	G	Sidechain
2	1	512	G	Sidechain
2	1	515	A	Sidechain
2	1	544	C	Sidechain
2	1	680	C	Sidechain
2	1	775	G	Sidechain
2	1	776	G	Sidechain
2	1	777	G	Sidechain
2	1	804	A	Sidechain
2	1	983	A	Sidechain
3	2	66	A	Sidechain
1	3	1167	A	Sidechain
1	3	1213	A	Sidechain
1	3	130	A	Sidechain
1	3	760	G	Sidechain
1	3	818	G	Sidechain
1	3	884	U	Sidechain
4	5	72	G	Sidechain
4	5	76	A	Sidechain
35	E	30	HIS	Peptide
36	F	36	ARG	Peptide
42	J	88	HIS	Peptide

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Mol	Chain	Res	Type	Group
43	K	33	GLU	Peptide
44	L	63	VAL	Peptide
46	N	56	MET	Peptide
47	O	43	PRO	Peptide
48	P	13	LYS	Peptide
49	Q	77	SER	Peptide
58	Z	7	GLU	Peptide
11	a	38	PHE	Peptide
5	b	120	ASP	Peptide
8	e	172	PHE	Peptide
8	e	174	PHE	Peptide
8	e	175	PRO	Peptide
10	g	135	HIS	Peptide
10	g	8	LYS	Peptide
13	i	120	ASP	Peptide
15	k	91	SER	Peptide
15	k	93	GLN	Peptide
17	m	58	LYS	Peptide
17	m	59	ARG	Peptide

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	3	33012	0	16618	758	0
2	1	62317	0	31346	1875	0
3	2	2568	0	1303	74	0
4	5	1647	0	831	78	0
5	b	2083	0	2157	41	0
6	c	1565	0	1616	27	0
7	d	1552	0	1619	27	0
8	e	1411	0	1447	42	0
9	f	1323	0	1374	28	0
10	g	1111	0	1148	15	0
11	a	1027	0	1092	23	0
12	h	989	0	1025	185	0
13	i	1032	0	1088	39	0
14	j	1129	0	1162	8	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
15	k	939	0	1012	23	0
16	l	1045	0	1117	23	0
17	m	1074	0	1157	41	0
18	n	961	0	1000	21	0
19	o	892	0	923	12	0
20	p	917	0	965	18	0
21	q	947	0	1022	10	0
22	r	816	0	839	18	0
23	s	857	0	922	13	0
24	t	739	0	807	13	0
25	u	780	0	834	9	0
26	v	753	0	780	14	0
27	w	575	0	592	8	0
28	x	625	0	655	11	0
29	y	509	0	543	5	0
30	z	449	0	491	4	0
31	A	351	0	350	7	0
32	B	444	0	461	5	0
33	C	410	0	440	10	0
34	D	377	0	418	8	0
35	E	504	0	574	8	0
36	F	302	0	343	7	0
37	4	413	0	209	14	0
38	6	1640	0	837	60	0
39	G	1757	0	1787	26	0
40	H	1625	0	1699	22	0
41	I	1643	0	1710	44	0
42	J	1157	0	1199	29	0
43	K	818	0	808	19	0
44	L	1182	0	1240	34	0
45	M	979	0	1034	18	0
46	N	1022	0	1070	27	0
47	O	787	0	828	20	0
48	P	870	0	878	25	0
49	Q	955	0	1019	41	0
50	R	884	0	944	31	0
51	S	805	0	847	14	0
52	T	714	0	737	20	0
53	U	649	0	666	19	0
54	V	649	0	691	14	0
55	W	536	0	552	7	0
56	X	638	0	665	25	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
57	Y	665	0	714	17	0
58	Z	545	0	579	26	0
59	1	8	0	8	0	0
60	5	7	0	7	0	0
All	All	148980	0	100799	3572	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 14.

All (3572) 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)
2:1:1057:A:C2'	12:h:34:THR:CG2	1.76	1.60
2:1:1057:A:H2'	12:h:34:THR:CG2	1.19	1.58
2:1:1057:A:C3'	12:h:34:THR:HG21	1.25	1.56
2:1:1046:A:H1'	12:h:8:LYS:NZ	1.11	1.42
2:1:871:U:H4'	17:m:68:PHE:CE1	1.61	1.35
2:1:1057:A:C3'	12:h:34:THR:CG2	1.91	1.32
2:1:1046:A:C1'	12:h:8:LYS:NZ	1.98	1.24
2:1:1084:A:C2	12:h:56:ARG:HB2	1.74	1.21
2:1:1046:A:C2	12:h:8:LYS:HD2	1.77	1.20
2:1:1107:G:H1'	12:h:81:LEU:CD1	1.71	1.19
2:1:1046:A:C4	12:h:8:LYS:HD2	1.78	1.19
2:1:1047:G:C5'	12:h:62:ARG:HH21	1.57	1.15
2:1:1107:G:H1'	12:h:81:LEU:HD12	1.23	1.13
2:1:1533:C:H3'	2:1:1534:U:H5"	1.29	1.13
2:1:1046:A:C1'	12:h:8:LYS:HZ2	1.60	1.11
38:6:26:G:H2'	38:6:27:U:H5"	1.30	1.11
2:1:2131:U:H5'	2:1:2132:U:H5"	1.26	1.11
2:1:1058:U:OP1	12:h:34:THR:OG1	1.66	1.11
2:1:1047:G:H5'	12:h:62:ARG:HH21	1.07	1.10
2:1:1057:A:C2'	12:h:34:THR:HG23	1.53	1.10
2:1:1047:G:H5'	12:h:62:ARG:NH2	1.67	1.09
2:1:1104:C:H3'	2:1:1105:U:H5"	1.33	1.09
2:1:45:G:H5"	2:1:46:G:H5'	1.23	1.08
2:1:1057:A:H2'	12:h:34:THR:HG22	1.09	1.08
2:1:1056:G:H5"	2:1:1057:A:O3'	1.55	1.06
2:1:2160:C:H3'	2:1:2161:C:H5"	1.39	1.03
2:1:855:G:H2'	2:1:856:G:H5"	1.39	1.02
2:1:1046:A:N3	12:h:8:LYS:HD2	1.73	1.02
2:1:1056:G:H22	2:1:1101:U:H3'	1.25	1.02

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2506:U:O2'	4:5:76:A:H4'	1.57	1.01
1:3:1286:U:H2'	1:3:1287:A:H5'	1.42	1.00
2:1:1057:A:H3'	12:h:34:THR:CG2	1.71	0.99
2:1:1056:G:H4'	2:1:1057:A:H4'	1.42	0.99
2:1:140:C:H2'	2:1:141:G:H4'	1.44	0.98
4:5:75:C:H2'	4:5:76:A:C8	1.98	0.98
1:3:9:G:H5'	42:J:107:GLY:HA3	1.42	0.98
2:1:1179:G:H2'	2:1:1180:U:H4'	1.43	0.98
2:1:2156:G:H2'	2:1:2157:G:H5'	1.42	0.97
2:1:1077:A:H4'	13:i:93:ASN:HB2	1.47	0.97
2:1:1084:A:N3	2:1:1106:G:O2'	1.95	0.97
1:3:1469:C:H2'	1:3:1470:U:H5'	1.47	0.96
2:1:1046:A:C4	12:h:8:LYS:CD	2.48	0.96
1:3:1010:U:H2'	1:3:1011:C:H5"	1.45	0.96
1:3:1187:G:H5'	46:N:114:LYS:HE2	1.48	0.95
2:1:1057:A:H2'	12:h:34:THR:HG23	0.98	0.94
1:3:664:G:H22	1:3:741:G:H1	1.05	0.94
2:1:2143:C:H42	2:1:2148:G:H1	0.96	0.94
4:5:40:C:H3'	4:5:41:A:H5"	1.48	0.94
3:2:118:C:H2'	3:2:119:A:H4'	1.47	0.94
2:1:1557:C:H3'	2:1:1558:C:H5"	1.50	0.93
1:3:948:C:OP1	50:R:105:ALA:HA	1.69	0.93
2:1:871:U:H5'	17:m:68:PHE:CZ	2.04	0.93
2:1:2583:G:N3	4:5:76:A:H2	1.66	0.93
2:1:2683:C:H4'	6:c:13:ARG:HH11	1.33	0.93
1:3:1033:G:H2'	1:3:1034:G:H4'	1.50	0.92
2:1:1055:G:H4'	12:h:33:VAL:HG12	1.49	0.92
2:1:275:C:H2'	2:1:276:U:H4'	1.50	0.92
2:1:1046:A:C8	12:h:4:ASN:OD1	2.22	0.92
2:1:2502:G:H5'	2:1:2503:A:H5"	1.50	0.92
4:5:5:G:HO2'	4:5:6:A:H8	1.17	0.92
2:1:544:C:H2'	2:1:545:U:O4'	1.70	0.92
2:1:1096:A:H3'	2:1:1097:U:H5"	1.52	0.91
2:1:1047:G:N7	12:h:61:ARG:CB	2.33	0.91
1:3:484:G:H4'	1:3:485:U:H5"	1.51	0.91
4:5:1:C:N4	4:5:73:A:N3	2.18	0.90
2:1:1047:G:N7	12:h:61:ARG:HB3	1.84	0.90
2:1:974:G:H8	2:1:990:A:H62	1.18	0.90
2:1:1046:A:N7	12:h:4:ASN:OD1	2.05	0.90
1:3:1056:U:H5'	40:H:162:ALA:HB2	1.52	0.89
2:1:1054:A:C1'	12:h:30:SER:O	2.21	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1057:A:C5	12:h:37:LYS:HE2	2.08	0.89
2:1:1064:C:H3'	2:1:1065:U:H5"	1.53	0.89
2:1:2064:C:H2'	2:1:2065:C:H6	1.38	0.88
2:1:760:G:H5'	2:1:760:G:H8	1.36	0.88
2:1:1046:A:C5	12:h:8:LYS:HD2	2.07	0.88
2:1:1104:C:H3'	2:1:1105:U:C5'	2.02	0.88
2:1:1936:A:H2	2:1:1943:U:H3	1.15	0.88
38:6:26:G:C2'	38:6:27:U:H5"	2.02	0.88
2:1:1046:A:C4	12:h:8:LYS:CE	2.57	0.88
2:1:1047:G:OP2	12:h:62:ARG:NH2	2.07	0.87
2:1:1084:A:H2	2:1:1107:G:H5'	1.38	0.87
2:1:871:U:C4'	17:m:68:PHE:CE1	2.53	0.87
2:1:714:U:H3'	52:T:88:ARG:HH22	1.38	0.87
2:1:2114:A:H61	2:1:2117:A:N6	1.72	0.86
2:1:2584:U:H2'	2:1:2585:U:H5'	1.58	0.86
38:6:50:U:N3	38:6:64:G:N1	2.15	0.86
2:1:2114:A:H61	2:1:2117:A:H62	0.90	0.86
2:1:2135:A:N6	2:1:2156:G:H1'	1.88	0.86
2:1:2114:A:N6	2:1:2117:A:H62	1.74	0.85
1:3:448:A:H62	1:3:486:U:H3	1.25	0.85
2:1:1565:C:O2'	2:1:1566:A:H2'	1.76	0.85
2:1:1046:A:H1'	12:h:8:LYS:HZ1	1.05	0.85
2:1:1092:C:H2'	2:1:1093:G:C8	2.11	0.85
3:2:41:G:H2'	8:e:65:LEU:HD21	1.56	0.85
4:5:40:C:C3'	4:5:41:A:H5"	2.07	0.85
2:1:855:G:C2'	2:1:856:G:H5"	2.06	0.85
2:1:414:C:H2'	2:1:415:A:H8	1.42	0.84
2:1:2395:C:H2'	2:1:2396:G:O4'	1.77	0.84
2:1:1019:U:H3	2:1:1142:A:N6	1.74	0.84
2:1:543:G:H2'	2:1:544:C:O4'	1.76	0.84
2:1:2170:A:C2	2:1:2171:A:H1'	2.12	0.84
4:5:72:G:O2'	4:5:73:A:C8	2.31	0.84
2:1:760:G:H5'	2:1:760:G:C8	2.13	0.84
2:1:2086:U:H2'	2:1:2087:G:C8	2.13	0.83
1:3:219:U:H2'	1:3:220:G:H8	1.40	0.83
2:1:1646:C:H5"	2:1:1647:U:H5'	1.57	0.83
2:1:2246:G:H2'	2:1:2247:A:H8	1.42	0.83
2:1:1057:A:C2'	12:h:34:THR:HG22	1.75	0.83
2:1:1072:C:H2'	2:1:1094:U:O4	1.78	0.83
2:1:2875:C:H2'	2:1:2876:G:H8	1.43	0.82
2:1:1063:G:H1	2:1:1075:C:H42	1.27	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1932:A:H2'	2:1:1933:G:O4'	1.79	0.82
1:3:850:U:H2'	1:3:851:G:H5"	1.62	0.82
2:1:2246:G:H2'	2:1:2247:A:C8	2.14	0.82
1:3:422:C:H4'	1:3:423:G:C2	2.14	0.82
38:6:50:U:O2	38:6:64:G:N2	2.13	0.82
2:1:1047:G:C8	12:h:59:LEU:HD21	2.15	0.82
12:h:46:ARG:HH22	12:h:98:GLU:HG3	1.43	0.82
1:3:405:U:H3'	1:3:406:G:H5'	1.62	0.81
1:3:1414:U:H2'	1:3:1415:G:H8	1.45	0.81
2:1:1084:A:C2	12:h:56:ARG:CB	2.61	0.81
2:1:2134:A:N7	2:1:2157:G:H4'	1.95	0.81
2:1:1484:U:H2'	2:1:1485:U:C6	2.16	0.81
2:1:2143:C:N4	2:1:2148:G:H1	1.78	0.81
2:1:1019:U:H3	2:1:1142:A:H62	1.27	0.81
1:3:1259:C:H3'	1:3:1260:G:H5"	1.63	0.80
1:3:1323:G:H2'	1:3:1324:A:C8	2.17	0.80
2:1:1047:G:P	12:h:7:ASP:OD2	2.40	0.80
2:1:2583:G:N3	4:5:76:A:C2	2.50	0.80
2:1:2800:A:H3'	2:1:2801:G:C5'	2.11	0.80
1:3:337:G:H2'	1:3:338:A:C8	2.16	0.80
2:1:2773:C:H2'	2:1:2774:C:H6	1.47	0.80
2:1:1056:G:N2	2:1:1101:U:H3'	1.96	0.80
1:3:1251:A:O2'	1:3:1370:G:H5'	1.82	0.80
2:1:1046:A:C6	12:h:8:LYS:HD2	2.17	0.80
2:1:1055:G:C4'	12:h:33:VAL:HG12	2.11	0.80
1:3:193:C:H2'	1:3:194:C:C6	2.16	0.80
2:1:543:G:H3'	2:1:544:C:H5"	1.64	0.80
2:1:2114:A:N3	2:1:2166:U:H2'	1.97	0.80
2:1:2593:U:H2'	2:1:2594:C:H6	1.46	0.79
2:1:1046:A:C2	12:h:8:LYS:CD	2.62	0.79
2:1:2875:C:H2'	2:1:2876:G:C8	2.17	0.79
3:2:2:G:H2'	3:2:3:C:C6	2.17	0.79
2:1:1046:A:OP2	12:h:61:ARG:CZ	2.30	0.79
3:2:115:A:H2'	3:2:116:G:H8	1.46	0.79
1:3:9:G:H4'	42:J:108:GLY:H	1.46	0.79
3:2:88:C:H5"	3:2:89:U:OP1	1.81	0.79
2:1:1936:A:H2	2:1:1943:U:N3	1.80	0.79
2:1:2593:U:H2'	2:1:2594:C:C6	2.18	0.79
4:5:75:C:H2'	4:5:76:A:N7	1.97	0.79
2:1:2606:C:H6	2:1:2606:C:H5'	1.48	0.79
1:3:331:G:HO2'	57:Y:2:ASN:N	1.81	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:414:C:H2'	2:1:415:A:C8	2.18	0.79
1:3:219:U:H2'	1:3:220:G:C8	2.18	0.79
2:1:1046:A:C1'	12:h:8:LYS:CE	2.61	0.79
1:3:1251:A:H2'	1:3:1252:A:C8	2.16	0.78
2:1:2391:G:H2'	2:1:2424:C:H41	1.47	0.78
12:h:118:ILE:H	12:h:119:PRO:HD2	1.47	0.78
2:1:2128:G:H1	2:1:2160:C:H42	1.32	0.78
1:3:828:U:H3'	1:3:829:G:H5"	1.64	0.78
1:3:537:G:H2'	1:3:538:G:H8	1.47	0.78
2:1:1681:G:H1'	2:1:1762:A:H2'	1.66	0.78
1:3:1279:G:H5"	47:O:9:ARG:HH12	1.49	0.78
1:3:1346:A:O2'	1:3:1347:G:H4'	1.83	0.78
1:3:1010:U:C2'	1:3:1011:C:H5"	2.12	0.78
2:1:161:A:H3'	2:1:162:U:H5"	1.66	0.78
2:1:2840:C:H2'	2:1:2841:C:H6	1.49	0.78
1:3:909:A:H2'	1:3:910:C:O4'	1.84	0.78
2:1:1092:C:H2'	2:1:1093:G:H8	1.49	0.78
1:3:1305:G:H22	1:3:1331:G:H2'	1.49	0.77
2:1:759:G:C2'	2:1:760:G:H5"	2.13	0.77
1:3:946:A:H2'	1:3:947:G:C8	2.19	0.77
2:1:548:G:H2'	2:1:549:G:O4'	1.85	0.77
2:1:1046:A:N9	12:h:8:LYS:HE3	2.00	0.77
2:1:906:U:O4'	17:m:28:PHE:CZ	2.38	0.77
2:1:2311:A:C2	8:e:40:GLY:HA2	2.19	0.77
2:1:1058:U:P	12:h:34:THR:OG1	2.43	0.77
2:1:2092:U:H4'	2:1:2093:G:H5"	1.64	0.77
1:3:1296:C:H5'	50:R:13:HIS:HE1	1.50	0.77
2:1:1872:A:H2'	2:1:1873:G:O4'	1.85	0.77
2:1:2555:U:H2'	2:1:2556:C:H5'	1.65	0.77
1:3:1131:G:H2'	1:3:1132:C:H5"	1.67	0.77
2:1:2183:A:H2'	2:1:2184:A:H5"	1.66	0.77
2:1:1454:C:H5'	18:n:63:ARG:NH2	2.00	0.76
2:1:4:U:H2'	2:1:5:A:H8	1.50	0.76
2:1:1056:G:C4'	2:1:1057:A:H4'	2.15	0.76
2:1:2715:C:H2'	2:1:2716:C:H5"	1.68	0.76
1:3:560:A:H4'	1:3:561:U:H5'	1.67	0.76
2:1:1866:A:H2'	2:1:1867:G:O4'	1.85	0.76
2:1:728:G:H4'	5:b:12:ARG:HD3	1.67	0.76
1:3:1296:C:H5'	50:R:13:HIS:CE1	2.20	0.76
2:1:522:A:H2'	2:1:523:C:C6	2.19	0.76
2:1:740:C:H6	2:1:740:C:H5'	1.50	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:962:G:H21	2:1:2250:G:H1	1.33	0.76
2:1:2506:U:O2'	4:5:76:A:C4'	2.32	0.76
2:1:2799:A:C2'	2:1:2800:A:H5'	2.16	0.76
37:4:14:A:H2'	37:4:15:A:H8	1.50	0.76
1:3:309:A:H2'	1:3:310:G:H8	1.50	0.76
2:1:1646:C:H5"	2:1:1647:U:C5'	2.15	0.76
2:1:634:C:H2'	2:1:635:C:H6	1.49	0.76
2:1:1046:A:N3	12:h:8:LYS:CD	2.49	0.76
2:1:1742:U:H2'	2:1:1743:G:O4'	1.85	0.76
1:3:1239:A:H3'	44:L:118:ARG:HH22	1.51	0.75
2:1:1173:U:H2'	2:1:1174:U:H4'	1.68	0.75
2:1:1746:A:H2'	2:1:1747:U:H6	1.51	0.75
2:1:2653:U:H3'	2:1:2654:A:H5"	1.66	0.75
48:P:125:LYS:HG3	48:P:126:ARG:HG2	1.68	0.75
2:1:522:A:H2'	2:1:523:C:H6	1.50	0.75
2:1:1057:A:H3'	12:h:34:THR:HG21	0.76	0.75
38:6:70:G:H5'	38:6:70:G:H8	1.51	0.75
1:3:1131:G:C3'	1:3:1132:C:H5"	2.16	0.75
2:1:1533:C:H3'	2:1:1534:U:C5'	2.13	0.75
2:1:1746:A:H2'	2:1:1747:U:C6	2.22	0.75
2:1:2506:U:H2'	4:5:76:A:O2'	1.85	0.75
38:6:22:G:H2'	38:6:23:C:C6	2.21	0.75
2:1:1680:U:C2'	2:1:1681:G:H5'	2.16	0.75
2:1:1509:A:H2'	2:1:1510:G:H8	1.49	0.75
2:1:1648:U:H2'	2:1:1649:G:H5"	1.68	0.75
2:1:2641:G:H2'	2:1:2642:G:H8	1.50	0.75
2:1:2683:C:C4'	6:c:13:ARG:HH11	2.00	0.75
1:3:1314:C:H2'	1:3:1315:U:C6	2.22	0.75
2:1:1155:A:H5"	21:q:54:ARG:HD3	1.68	0.75
2:1:1680:U:H2'	2:1:1681:G:H5'	1.69	0.75
1:3:1218:C:H2'	1:3:1219:A:C8	2.23	0.74
2:1:1046:A:N9	12:h:8:LYS:CE	2.50	0.74
2:1:2064:C:H2'	2:1:2065:C:C6	2.22	0.74
3:2:119:A:H2'	3:2:120:A:O4'	1.86	0.74
12:h:118:ILE:H	12:h:119:PRO:CD	1.99	0.74
2:1:2108:A:C2'	2:1:2109:U:H5'	2.16	0.74
2:1:1728:C:H2'	2:1:1729:U:H5"	1.69	0.74
2:1:2328:A:H2'	2:1:2329:U:C6	2.22	0.74
31:A:37:CYS:HB3	31:A:40:CYS:HB3	1.69	0.74
2:1:2153:C:H2'	2:1:2154:A:O4'	1.87	0.74
1:3:695:A:H2'	1:3:696:A:C8	2.22	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1268:A:H2'	2:1:1269:A:O4'	1.87	0.74
2:1:1507:C:H2'	2:1:1508:A:H4'	1.70	0.74
2:1:1909:C:H2'	2:1:1910:G:H8	1.53	0.74
2:1:1070:A:H2'	2:1:1097:U:OP1	1.88	0.74
2:1:1583:A:H5'	2:1:1584:U:C5	2.22	0.74
2:1:2108:A:H2'	2:1:2109:U:H5'	1.69	0.74
2:1:1721:G:H1'	2:1:1739:A:N6	2.02	0.73
2:1:1054:A:C2'	12:h:30:SER:O	2.36	0.73
2:1:1085:A:H4'	2:1:1104:C:O2'	1.88	0.73
2:1:1103:A:H3'	2:1:1104:C:H5"	1.71	0.73
2:1:2799:A:H2'	2:1:2800:A:H5'	1.68	0.73
1:3:513:C:H2'	1:3:514:C:C6	2.22	0.73
2:1:1047:G:OP2	12:h:62:ARG:CZ	2.37	0.73
2:1:1937:A:O2'	2:1:1938:A:H5'	1.87	0.73
2:1:2315:G:H2'	2:1:2316:G:C8	2.24	0.73
1:3:1313:U:OP1	56:X:5:LYS:HG3	1.88	0.73
2:1:1857:G:H1'	2:1:1885:A:N6	2.03	0.73
1:3:1333:A:H2'	1:3:1334:G:O4'	1.89	0.73
1:3:1411:C:H2'	1:3:1412:C:H6	1.54	0.73
2:1:1912:A:N7	2:1:1917:U:H5	1.86	0.73
2:1:2164:C:H5	2:1:2171:A:H61	1.37	0.73
2:1:2298:A:H2'	2:1:2299:U:O4'	1.89	0.73
2:1:871:U:H4'	17:m:68:PHE:CD1	2.23	0.73
47:O:65:TYR:HB3	51:S:95:LEU:HD11	1.71	0.73
1:3:484:G:H4'	1:3:485:U:C5'	2.19	0.72
3:2:3:C:H2'	3:2:4:C:H5"	1.70	0.72
38:6:15:G:H2'	38:6:59:A:N1	2.03	0.72
1:3:195:A:H2'	1:3:196:A:C8	2.24	0.72
1:3:271:C:H2'	1:3:272:C:C6	2.24	0.72
2:1:2383:G:H2'	2:1:2384:U:H6	1.54	0.72
1:3:1033:G:H2'	1:3:1034:G:C4'	2.19	0.72
2:1:1056:G:H5"	2:1:1057:A:C3'	2.19	0.72
2:1:690:G:H2'	2:1:691:C:C6	2.24	0.72
2:1:1058:U:P	12:h:34:THR:HG1	2.12	0.72
2:1:1107:G:H1'	12:h:81:LEU:CG	2.18	0.72
4:5:13:C:H2'	4:5:14:A:H5"	1.70	0.72
2:1:1047:G:C8	12:h:61:ARG:HB3	2.22	0.72
2:1:2671:G:H2'	2:1:2672:U:C6	2.23	0.72
2:1:1110:G:H1	12:h:59:LEU:HD11	1.54	0.72
2:1:1509:A:H2'	2:1:1510:G:C8	2.24	0.72
2:1:2840:C:H2'	2:1:2841:C:C6	2.24	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:2:42:C:O2	3:2:42:C:H2'	1.88	0.72
2:1:277:G:H4'	2:1:278:A:C8	2.24	0.72
2:1:1103:A:H3'	2:1:1104:C:C5'	2.20	0.72
2:1:2281:A:O2'	2:1:2282:G:H5'	1.90	0.72
12:h:58:THR:HG21	12:h:81:LEU:HA	1.72	0.72
2:1:871:U:C5'	17:m:68:PHE:CZ	2.73	0.72
2:1:1310:G:H3'	2:1:1311:G:C8	2.25	0.72
12:h:60:LEU:HD12	12:h:64:VAL:HG21	1.72	0.72
1:3:1137:C:H5'	1:3:1138:G:H5'	1.72	0.71
2:1:1107:G:C1'	12:h:81:LEU:HD12	2.14	0.71
1:3:1005:A:H2'	1:3:1006:G:O4'	1.91	0.71
1:3:131:A:H2'	1:3:132:C:C6	2.25	0.71
1:3:1411:C:H2'	1:3:1412:C:C6	2.25	0.71
2:1:1138:G:H2'	2:1:1139:G:O4'	1.91	0.71
12:h:118:ILE:HG22	12:h:119:PRO:HD3	1.72	0.71
1:3:1318:A:H2'	1:3:1319:A:H5'	1.70	0.71
2:1:623:C:H2'	2:1:624:C:C6	2.25	0.71
2:1:1607:C:H4'	2:1:1608:A:O5'	1.89	0.71
2:1:2159:G:H2'	2:1:2160:C:C6	2.24	0.71
2:1:801:G:H3'	2:1:802:A:H5'	1.70	0.71
1:3:1431:A:H2	1:3:1469:C:H41	1.39	0.71
2:1:181:A:H2'	2:1:182:A:C8	2.26	0.71
2:1:543:G:H2'	2:1:544:C:C4'	2.20	0.71
2:1:717:C:H2'	2:1:718:A:H5'	1.71	0.71
2:1:1252:G:O2'	2:1:1253:A:H5"	1.91	0.71
2:1:435:C:H2'	2:1:436:C:H5'	1.72	0.71
12:h:43:LYS:O	12:h:46:ARG:HG2	1.89	0.71
1:3:1353:G:H2'	1:3:1354:U:H6	1.54	0.71
2:1:566:U:O4	22:r:80:ARG:HD3	1.90	0.71
2:1:1046:A:N1	12:h:8:LYS:HD2	2.05	0.71
2:1:2161:C:H3'	2:1:2162:G:H5"	1.73	0.71
2:1:2489:U:O2'	2:1:2490:G:H5'	1.91	0.71
38:6:27:U:H6	38:6:27:U:H5'	1.55	0.71
2:1:404:A:H1'	2:1:406:G:C5	2.26	0.70
2:1:1046:A:N7	12:h:4:ASN:CG	2.48	0.70
38:6:59:A:H2'	38:6:60:U:H5'	1.70	0.70
1:3:165:G:H2'	1:3:166:U:C6	2.25	0.70
2:1:2305:U:H5"	8:e:130:GLY:HA3	1.71	0.70
2:1:1736:U:H2'	2:1:1737:G:O4'	1.92	0.70
1:3:1187:G:H5'	46:N:114:LYS:CE	2.22	0.70
2:1:759:G:H2'	2:1:760:G:H5"	1.72	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1175:A:H3’	2:1:1176:U:H5’	1.72	0.70
2:1:2443:C:O2’	2:1:2444:G:H5’	1.91	0.70
2:1:2014:A:H2’	2:1:2015:A:C8	2.27	0.70
2:1:1744:A:H3’	2:1:1745:A:H8	1.56	0.70
2:1:2455:G:H2’	2:1:2456:C:H6	1.57	0.70
1:3:537:G:H2’	1:3:538:G:C8	2.26	0.70
2:1:1047:G:N7	12:h:61:ARG:HB2	2.07	0.70
2:1:2569:G:H2’	2:1:2570:G:H8	1.56	0.70
2:1:1570:A:H2’	2:1:1571:A:C8	2.28	0.69
2:1:2521:C:O2’	2:1:2522:U:H5’	1.90	0.69
2:1:2683:C:H4’	6:c:13:ARG:NH1	2.06	0.69
22:r:58:VAL:H	22:r:102:SER:HB2	1.55	0.69
1:3:818:G:H2’	1:3:820:U:H5	1.58	0.69
2:1:1082:U:H2’	2:1:1083:U:O4’	1.93	0.69
2:1:279:A:H2’	2:1:280:U:H5’	1.73	0.69
2:1:1055:G:H2’	2:1:1056:G:H5’	1.74	0.69
2:1:1927:A:H2’	2:1:1928:A:C8	2.28	0.69
1:3:354:G:H2’	1:3:355:C:H5’	1.74	0.69
1:3:664:G:N2	1:3:741:G:H1	1.85	0.69
2:1:1039:A:H2’	2:1:1040:A:C8	2.27	0.69
2:1:2106:U:H2’	2:1:2107:G:O3’	1.92	0.69
41:I:94:GLU:HA	41:I:99:ASN:HD22	1.55	0.69
1:3:1131:G:C2’	1:3:1132:C:H5”	2.21	0.69
2:1:1046:A:N6	12:h:4:ASN:HD21	1.91	0.69
2:1:1096:A:C3’	2:1:1097:U:H5”	2.23	0.69
2:1:2131:U:C5’	2:1:2132:U:H5”	2.15	0.69
1:3:1251:A:H2’	1:3:1252:A:H8	1.56	0.69
1:3:1469:C:C2’	1:3:1470:U:H5’	2.20	0.69
2:1:226:A:H2’	2:1:227:A:O4’	1.92	0.69
2:1:564:C:O2’	2:1:565:C:H5’	1.93	0.69
2:1:1571:A:H8	2:1:1571:A:O5’	1.74	0.69
2:1:2156:G:C2’	2:1:2157:G:H5’	2.22	0.69
2:1:182:A:H2’	2:1:183:C:O4’	1.93	0.69
2:1:663:G:H2’	2:1:664:G:H5”	1.75	0.69
2:1:1943:U:OP2	4:5:73:A:N6	2.26	0.69
2:1:1054:A:H1’	12:h:30:SER:O	1.92	0.69
2:1:1091:G:H2’	2:1:1092:C:C6	2.28	0.69
2:1:1728:C:C2’	2:1:1729:U:H5”	2.22	0.69
1:3:1033:G:C2’	1:3:1034:G:H4’	2.23	0.68
2:1:1055:G:O2’	12:h:33:VAL:HA	1.93	0.68
4:5:16:C:H5’	4:5:59:A:N1	2.08	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:5:23:C:H2'	4:5:24:G:H8	1.57	0.68
1:3:1368:A:O2'	1:3:1369:C:H5'	1.94	0.68
1:3:1484:C:H2'	1:3:1485:U:O4'	1.92	0.68
2:1:1046:A:H1'	12:h:8:LYS:HZ2	0.85	0.68
1:3:403:C:H2'	1:3:404:G:H8	1.59	0.68
1:3:1323:G:H2'	1:3:1324:A:H8	1.58	0.68
2:1:1084:A:N1	12:h:56:ARG:HG3	2.08	0.68
2:1:1259:G:H2'	2:1:1260:A:H8	1.57	0.68
2:1:2377:A:H2'	2:1:2378:A:C8	2.28	0.68
2:1:2772:C:H2'	2:1:2773:C:C6	2.28	0.68
1:3:337:G:H2'	1:3:338:A:H8	1.59	0.68
1:3:1197:A:H2'	1:3:1198:G:H5"	1.74	0.68
2:1:578:G:H21	2:1:1252:G:N2	1.92	0.68
2:1:1046:A:C4	12:h:8:LYS:NZ	2.58	0.68
2:1:2383:G:H2'	2:1:2384:U:C6	2.29	0.68
2:1:2722:G:O2'	2:1:2723:C:H5'	1.93	0.68
1:3:357:G:O2'	1:3:358:U:H5'	1.92	0.68
1:3:1459:G:H2'	1:3:1460:C:C6	2.29	0.68
2:1:242:G:H5"	35:E:63:TYR:CE2	2.29	0.68
2:1:1439:A:H2'	2:1:1440:U:H5'	1.75	0.68
2:1:1486:U:H2'	2:1:1487:U:C6	2.29	0.68
3:2:3:C:H3'	3:2:4:C:H5"	1.75	0.68
39:G:70:GLY:HA3	39:G:79:VAL:HG21	1.75	0.68
1:3:1004:A:H2'	1:3:1005:A:O4'	1.93	0.68
1:3:1015:G:H2'	1:3:1016:A:C8	2.28	0.68
2:1:1801:A:H5"	2:1:2203:U:O2'	1.93	0.68
38:6:19:G:H1'	38:6:57:A:H2	1.56	0.68
1:3:522:C:H41	49:Q:49:ARG:NH2	1.92	0.68
2:1:404:A:O2'	2:1:405:U:H5'	1.93	0.68
2:1:2107:G:C2	2:1:2108:A:H1'	2.29	0.68
2:1:2488:G:H2'	2:1:2489:U:H6	1.58	0.68
2:1:2731:G:H2'	2:1:2732:G:C8	2.28	0.68
1:3:955:U:H3	1:3:1225:A:H61	1.41	0.68
3:2:104:A:H2'	3:2:105:G:O4'	1.92	0.68
1:3:187:G:H1'	1:3:190:A:N6	2.08	0.67
1:3:501:C:H2'	1:3:502:A:C8	2.29	0.67
2:1:296:U:H2'	2:1:297:G:C8	2.29	0.67
2:1:1486:U:H3	2:1:1503:A:H61	1.41	0.67
2:1:2227:A:H2'	2:1:2228:G:O4'	1.94	0.67
2:1:492:A:H2'	2:1:493:G:O4'	1.94	0.67
2:1:1046:A:C1'	12:h:8:LYS:HZ1	1.83	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1054:A:C4'	12:h:30:SER:O	2.43	0.67
2:1:1056:G:H4'	2:1:1057:A:C4'	2.19	0.67
2:1:1176:U:H2'	2:1:1177:G:C8	2.29	0.67
2:1:1779:U:H5	2:1:1784:A:N7	1.92	0.67
2:1:1046:A:H5'	12:h:61:ARG:HG3	1.76	0.67
2:1:1054:A:O2'	12:h:30:SER:O	2.11	0.67
2:1:499:U:H2'	2:1:500:G:O4'	1.94	0.67
2:1:1995:U:H2'	2:1:1996:C:C5	2.30	0.67
3:2:118:C:C2'	3:2:119:A:H4'	2.22	0.67
2:1:1478:G:H1	2:1:1513:U:H3	1.43	0.67
1:3:90:C:H2'	1:3:91:U:C5	2.30	0.67
2:1:691:C:H2'	2:1:692:C:H6	1.60	0.67
2:1:2595:G:H1	5:b:238:ASN:HD21	1.40	0.67
2:1:866:A:O2'	2:1:867:C:H5'	1.95	0.67
2:1:566:U:H5	22:r:80:ARG:HG2	1.60	0.67
3:2:3:C:C3'	3:2:4:C:H5"	2.24	0.67
2:1:691:C:H2'	2:1:692:C:C6	2.28	0.67
1:3:1459:G:H2'	1:3:1460:C:H6	1.59	0.66
2:1:227:A:C6	2:1:2407:A:H1'	2.30	0.66
2:1:730:A:O2'	2:1:731:C:H5'	1.95	0.66
2:1:1056:G:H5'	2:1:1057:A:O2'	1.95	0.66
2:1:2123:G:H2'	2:1:2124:G:C8	2.29	0.66
3:2:115:A:H2'	3:2:116:G:C8	2.29	0.66
1:3:560:A:C4'	1:3:561:U:H5'	2.25	0.66
2:1:1142:A:H4'	14:j:27:ARG:NH2	2.11	0.66
38:6:64:G:H2'	38:6:65:C:C6	2.30	0.66
56:X:52:ASN:ND2	56:X:75:PRO:O	2.27	0.66
2:1:1084:A:C2	2:1:1107:G:H5'	2.26	0.66
1:3:451:A:N6	1:3:480:U:H2'	2.09	0.66
2:1:30:G:H2'	2:1:31:C:C6	2.30	0.66
2:1:685:A:H5"	2:1:788:A:H62	1.60	0.66
1:3:335:C:H2'	1:3:336:A:H8	1.59	0.66
2:1:1526:C:H2'	2:1:1527:G:O4'	1.96	0.66
2:1:2142:A:H2'	2:1:2143:C:H4'	1.78	0.66
2:1:2160:C:H3'	2:1:2161:C:C5'	2.21	0.66
20:p:91:VAL:HG12	20:p:93:LYS:H	1.61	0.66
38:6:22:G:H2'	38:6:23:C:H6	1.59	0.66
1:3:1143:G:H2'	1:3:1144:G:H8	1.60	0.66
2:1:1794:A:H2'	2:1:1795:C:H6	1.60	0.66
2:1:2164:C:H5	2:1:2171:A:N6	1.93	0.66
2:1:2314:A:H2'	2:1:2315:G:H8	1.60	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1079:C:H1'	13:i:130:GLY:HA3	1.77	0.66
4:5:23:C:H2'	4:5:24:G:C8	2.30	0.66
2:1:371:A:H61	2:1:401:A:H3'	1.61	0.66
2:1:1057:A:O3'	12:h:34:THR:CG2	2.43	0.66
2:1:1082:U:H3	2:1:1086:A:H2	1.43	0.66
2:1:1108:U:OP1	12:h:58:THR:O	2.14	0.66
2:1:2066:C:O2'	2:1:2067:G:H5'	1.96	0.66
5:b:141:HIS:ND1	5:b:192:GLY:O	2.27	0.66
2:1:30:G:H2'	2:1:31:C:H6	1.61	0.66
2:1:2120:G:O2'	11:a:167:LYS:NZ	2.27	0.66
39:G:8:MET:HG2	39:G:13:VAL:HG11	1.78	0.66
1:3:1306:A:H62	1:3:1331:G:H1'	1.60	0.65
2:1:1637:A:H2'	2:1:1638:C:C6	2.31	0.65
1:3:721:G:H4'	1:3:722:G:O4'	1.96	0.65
1:3:1060:U:H4'	47:O:53:ILE:HG23	1.78	0.65
2:1:1424:G:H2'	2:1:1425:G:O4'	1.95	0.65
9:f:15:ASP:HB3	9:f:26:LYS:HB3	1.77	0.65
18:n:22:ARG:HG3	18:n:70:THR:HA	1.78	0.65
26:v:30:ILE:HD11	26:v:72:VAL:HG11	1.76	0.65
2:1:2389:G:H5"	2:1:2390:U:H5'	1.78	0.65
2:1:2391:G:H1'	2:1:2429:G:N2	2.11	0.65
2:1:2884:U:H2'	2:1:2885:G:C8	2.31	0.65
31:A:37:CYS:SG	31:A:38:SER:N	2.69	0.65
1:3:116:A:O2'	1:3:117:G:H5'	1.96	0.65
1:3:1273:C:H2'	1:3:1274:A:O4'	1.96	0.65
2:1:1990:C:H2'	2:1:1991:U:O4'	1.96	0.65
1:3:850:U:C2'	1:3:851:G:H5"	2.27	0.65
1:3:1202:U:H2'	1:3:1203:C:O4'	1.97	0.65
2:1:2146:C:H3'	2:1:2146:C:O2	1.97	0.65
1:3:363:A:H5"	49:Q:30:ARG:HH21	1.59	0.65
2:1:1057:A:C4	12:h:37:LYS:HE2	2.31	0.65
2:1:585:G:H5"	2:1:586:A:OP1	1.96	0.65
2:1:1310:G:H1'	2:1:1611:C:H5"	1.78	0.65
2:1:1790:C:H2'	2:1:1791:A:C5	2.32	0.65
2:1:1909:C:H2'	2:1:1910:G:C8	2.31	0.65
3:2:3:C:C2'	3:2:4:C:H5"	2.26	0.65
1:3:254:G:O3'	54:V:70:LYS:NZ	2.30	0.65
1:3:1178:G:H3'	46:N:98:ARG:HH22	1.61	0.65
2:1:372:G:H5"	28:x:60:LYS:HZ3	1.61	0.65
2:1:634:C:H2'	2:1:635:C:C6	2.31	0.65
2:1:1046:A:N3	12:h:8:LYS:NZ	2.45	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2394:C:O2'	2:1:2395:C:H5'	1.97	0.65
2:1:783:A:H2'	2:1:784:G:H4'	1.77	0.65
2:1:1924:C:H2'	2:1:1925:C:C5	2.32	0.65
2:1:703:U:C2'	2:1:704:G:H5'	2.26	0.65
2:1:2328:A:H2'	2:1:2329:U:H6	1.61	0.65
4:5:5:G:O2'	4:5:6:A:H5"	1.97	0.65
15:k:108:ARG:HA	15:k:116:ILE:HD11	1.77	0.65
1:3:695:A:H2'	1:3:696:A:H8	1.60	0.64
2:1:760:G:C2'	2:1:761:A:H5'	2.27	0.64
2:1:1179:G:C2'	2:1:1180:U:H4'	2.25	0.64
2:1:1557:C:C3'	2:1:1558:C:H5"	2.26	0.64
2:1:2455:G:H2'	2:1:2456:C:C6	2.31	0.64
2:1:1046:A:N9	12:h:8:LYS:NZ	2.43	0.64
2:1:1788:C:O2'	2:1:1789:A:H5'	1.97	0.64
2:1:2086:U:H2'	2:1:2087:G:H8	1.59	0.64
2:1:1139:G:O2'	2:1:1140:C:H5'	1.95	0.64
2:1:1677:A:H2'	2:1:1678:A:C8	2.32	0.64
41:I:124:VAL:HG12	41:I:142:VAL:HG23	1.78	0.64
2:1:575:A:O2'	2:1:576:U:H5'	1.96	0.64
2:1:2128:G:H2'	2:1:2129:C:O4'	1.97	0.64
4:5:2:G:C5	4:5:72:G:N1	2.66	0.64
1:3:722:G:H5"	58:Z:44:ARG:NH2	2.13	0.64
1:3:1218:C:H2'	1:3:1219:A:H8	1.61	0.64
2:1:906:U:O4'	17:m:28:PHE:HZ	1.81	0.64
2:1:1794:A:H2'	2:1:1795:C:C6	2.31	0.64
1:3:946:A:H2'	1:3:947:G:H8	1.60	0.64
2:1:1060:U:H6	2:1:1060:U:H5'	1.62	0.64
1:3:1131:G:H3'	1:3:1132:C:H5"	1.80	0.64
2:1:967:U:H2'	2:1:968:C:C6	2.33	0.64
2:1:1046:A:C2'	12:h:8:LYS:HZ1	2.10	0.64
2:1:1047:G:C5'	12:h:62:ARG:NH2	2.38	0.64
2:1:1669:A:H2'	2:1:1670:C:H5'	1.79	0.64
4:5:19:G:H1'	4:5:57:G:N2	2.12	0.64
1:3:1349:A:H61	1:3:1373:G:H1'	1.63	0.64
2:1:1005:C:H6	2:1:1005:C:O5'	1.80	0.64
2:1:1084:A:N1	12:h:56:ARG:CG	2.61	0.64
2:1:1101:U:H2'	2:1:1102:C:O4'	1.98	0.64
5:b:145:MET:HE3	5:b:153:LEU:HD21	1.79	0.64
37:4:6:G:H2'	37:4:7:G:C8	2.33	0.64
2:1:2231:U:H2'	2:1:2232:C:H6	1.63	0.64
38:6:50:U:O4	38:6:64:G:O6	2.16	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:16:A:O2'	1:3:17:U:H5'	1.99	0.63
2:1:593:U:H2'	2:1:594:U:C6	2.32	0.63
2:1:2393:U:H5'	16:l:60:ARG:O	1.98	0.63
8:e:104:THR:HA	31:A:38:SER:HB3	1.78	0.63
38:6:59:A:C2'	38:6:60:U:H5'	2.27	0.63
1:3:947:G:H2'	1:3:948:C:C6	2.33	0.63
1:3:994:A:C8	1:3:1216:A:H4'	2.33	0.63
1:3:1328:C:H2'	1:3:1329:A:O4'	1.98	0.63
1:3:1435:G:H2'	1:3:1436:U:C6	2.34	0.63
2:1:760:G:H2'	2:1:761:A:H5'	1.80	0.63
2:1:853:C:O2'	2:1:854:C:H5'	1.98	0.63
1:3:501:C:H2'	1:3:502:A:H8	1.61	0.63
2:1:1077:A:H4'	13:i:93:ASN:CB	2.26	0.63
2:1:2129:C:H41	11:a:7:ARG:HE	1.45	0.63
39:G:67:LEU:HD11	39:G:91:VAL:HG23	1.80	0.63
49:Q:98:ARG:HB2	49:Q:116:TYR:HA	1.79	0.63
2:1:580:U:H2'	2:1:581:C:C6	2.34	0.63
2:1:1046:A:C6	12:h:8:LYS:HG3	2.32	0.63
2:1:1104:C:H4'	2:1:1104:C:OP1	1.98	0.63
2:1:1323:C:H2'	2:1:1324:G:H5'	1.80	0.63
2:1:2073:C:O2'	2:1:2074:U:H5'	1.98	0.63
8:e:13:LYS:HA	8:e:16:MET:HE2	1.80	0.63
1:3:59:A:N6	1:3:331:G:H1'	2.14	0.63
2:1:1160:G:H21	22:r:9:GLY:HA3	1.64	0.63
2:1:1541:C:H2'	2:1:1542:U:H6	1.63	0.63
2:1:1880:U:H2'	2:1:1881:C:C6	2.33	0.63
2:1:2552:U:H2'	2:1:2554:U:H5"	1.80	0.63
20:p:59:THR:HG22	20:p:72:VAL:HG12	1.79	0.63
42:J:110:MET:HG3	42:J:139:THR:HG21	1.81	0.63
1:3:477:C:H2'	1:3:478:A:C8	2.33	0.63
1:3:731:G:O2'	1:3:732:C:H5'	1.99	0.63
1:3:1530:G:H2'	1:3:1531:A:C8	2.34	0.63
2:1:2552:U:C6	2:1:2554:U:H5'	2.34	0.63
2:1:12:U:O2	2:1:2626:C:H4'	1.99	0.63
2:1:488:G:N2	2:1:491:G:H5"	2.12	0.63
2:1:716:A:H2'	2:1:717:C:O4'	1.99	0.63
2:1:716:A:H2'	2:1:717:C:H5"	1.81	0.63
2:1:1046:A:C5	12:h:8:LYS:CD	2.76	0.63
2:1:1055:G:H4'	12:h:33:VAL:CG1	2.24	0.63
2:1:1931:U:O2'	2:1:1932:A:H5'	1.98	0.63
2:1:2160:C:C3'	2:1:2161:C:H5"	2.22	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2291:U:H2'	2:1:2292:U:C6	2.33	0.63
4:5:29:U:H2'	4:5:30:G:C8	2.34	0.63
1:3:722:G:H5"	58:Z:44:ARG:HH22	1.62	0.63
1:3:1464:U:H2'	1:3:1465:A:C8	2.33	0.63
2:1:1410:G:H2'	2:1:1411:U:C6	2.34	0.63
2:1:1583:A:H5'	2:1:1584:U:H5	1.64	0.63
2:1:2364:C:O2'	2:1:2365:G:H5'	1.99	0.63
2:1:2516:A:O2'	2:1:2517:C:H5'	1.99	0.63
2:1:2773:C:H2'	2:1:2774:C:C6	2.34	0.63
1:3:109:A:H2'	1:3:326:G:N2	2.13	0.63
1:3:191:G:H2'	1:3:192:A:H8	1.64	0.63
1:3:792:A:H4'	1:3:793:U:O5'	1.99	0.63
2:1:692:C:O2'	2:1:693:A:H5'	1.99	0.63
2:1:1101:U:O2'	2:1:1102:C:H5'	1.98	0.63
2:1:1758:U:C5	2:1:2696:U:H5'	2.34	0.63
2:1:2143:C:H41	2:1:2144:G:H21	1.45	0.63
11:a:69:THR:HA	11:a:176:GLY:HA2	1.81	0.63
2:1:2772:C:H2'	2:1:2773:C:H6	1.63	0.62
4:5:72:G:O2'	4:5:73:A:H8	1.79	0.62
20:p:29:VAL:HG12	20:p:80:VAL:HA	1.81	0.62
46:N:10:ARG:O	46:N:105:ARG:NH2	2.32	0.62
1:3:130:A:O2'	1:3:264:C:H5'	2.00	0.62
2:1:473:G:O2'	2:1:474:G:H5'	1.99	0.62
2:1:2715:C:C3'	2:1:2716:C:H5"	2.29	0.62
37:4:6:G:H2'	37:4:7:G:H8	1.63	0.62
2:1:858:G:H5'	2:1:859:G:OP2	2.00	0.62
2:1:1057:A:C6	12:h:37:LYS:HE2	2.34	0.62
3:2:4:C:H6	3:2:4:C:H5'	1.64	0.62
1:3:151:A:H2'	1:3:152:A:O4'	2.00	0.62
1:3:1240:U:OP1	44:L:115:MET:HB2	2.00	0.62
1:3:1349:A:N6	1:3:1373:G:H1'	2.14	0.62
2:1:2715:C:C2'	2:1:2716:C:H5"	2.28	0.62
1:3:413:G:N2	1:3:428:G:H1'	2.15	0.62
1:3:660:C:H2'	1:3:661:G:O4'	2.00	0.62
1:3:1099:G:C4'	58:Z:66:ARG:HG3	2.29	0.62
2:1:640:C:H2'	2:1:641:U:C6	2.34	0.62
2:1:2529:G:OP2	2:1:2530:A:H5"	1.98	0.62
2:1:2785:C:H2'	2:1:2786:U:O4'	1.98	0.62
37:4:17:U:O2'	37:4:18:G:H5'	2.00	0.62
38:6:36:U:H2'	38:6:37:A:H8	1.63	0.62
1:3:35:G:H2'	1:3:36:C:C6	2.34	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:252:U:O2	1:3:252:U:H2'	1.98	0.62
2:1:296:U:H2'	2:1:297:G:H8	1.64	0.62
48:P:108:ASN:HB3	58:Z:6:ARG:HG2	1.81	0.62
2:1:621:A:H2'	2:1:622:G:H5'	1.81	0.62
1:3:244:U:O4	1:3:906:A:H1'	1.99	0.62
1:3:406:G:H5"	41:I:4:LEU:HD21	1.82	0.62
1:3:1356:G:H2'	1:3:1357:A:C8	2.35	0.62
2:1:161:A:H3'	2:1:162:U:C5'	2.30	0.62
2:1:1708:C:H2'	2:1:1709:U:H6	1.65	0.62
2:1:2488:G:C4	2:1:2489:U:C5	2.87	0.62
2:1:2741:A:H2'	2:1:2742:G:H5'	1.82	0.62
38:6:16:C:H5'	38:6:59:A:N1	2.15	0.62
2:1:394:C:H2'	2:1:395:U:O4'	1.99	0.62
2:1:467:G:OP2	34:D:34:ARG:HD3	2.00	0.62
2:1:1046:A:H62	12:h:4:ASN:HD21	1.44	0.62
2:1:2377:A:H2'	2:1:2378:A:H8	1.65	0.62
2:1:2641:G:H2'	2:1:2642:G:C8	2.33	0.62
54:V:19:SER:OG	54:V:70:LYS:NZ	2.32	0.62
1:3:580:C:H2'	1:3:581:G:O4'	1.99	0.62
2:1:372:G:H5"	28:x:60:LYS:NZ	2.15	0.62
2:1:455:C:H3'	2:1:456:C:H5"	1.82	0.62
2:1:1047:G:H5"	12:h:62:ARG:HH21	1.60	0.62
2:1:1906:G:H2'	2:1:1907:G:O4'	1.98	0.62
2:1:2131:U:O2'	2:1:2133:G:H1'	2.00	0.62
2:1:2461:A:H1'	2:1:2492:U:N3	2.14	0.62
2:1:2762:C:H2'	2:1:2763:G:H5'	1.81	0.62
10:g:9:VAL:HG12	10:g:11:ASN:H	1.65	0.62
44:L:74:VAL:CG2	44:L:85:GLN:HG3	2.30	0.62
1:3:54:C:H2'	1:3:352:C:H41	1.64	0.61
1:3:81:A:H2	1:3:88:U:H3	1.48	0.61
1:3:1282:C:H2'	1:3:1283:U:C6	2.35	0.61
2:1:1084:A:C6	12:h:56:ARG:HG3	2.34	0.61
2:1:2183:A:H2'	2:1:2184:A:C5'	2.29	0.61
46:N:18:VAL:HG21	46:N:82:ILE:HG22	1.81	0.61
2:1:133:U:O2'	2:1:134:G:H5'	2.00	0.61
2:1:1064:C:H3'	2:1:1065:U:C5'	2.29	0.61
2:1:1107:G:C5'	12:h:56:ARG:O	2.48	0.61
2:1:1179:G:C5	2:1:1180:U:H1'	2.35	0.61
2:1:2107:G:N2	2:1:2108:A:H1'	2.15	0.61
2:1:2131:U:H5'	2:1:2132:U:C5'	2.18	0.61
2:1:2822:G:O5'	2:1:2822:G:H8	1.84	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:g:43:ASN:HA	10:g:46:PHE:HB2	1.81	0.61
1:3:494:G:O2'	1:3:496:A:H1'	2.00	0.61
2:1:1133:A:H4'	2:1:1134:A:H5"	1.82	0.61
2:1:1856:U:H2'	2:1:1857:G:O4'	1.99	0.61
1:3:738:C:OP2	43:K:91:ARG:NH1	2.34	0.61
1:3:796:C:O2'	1:3:797:C:H5'	2.00	0.61
2:1:668:A:H2'	2:1:670:A:H62	1.65	0.61
2:1:1041:G:H2'	2:1:1042:G:C8	2.35	0.61
2:1:1047:G:H8	12:h:59:LEU:HD21	1.65	0.61
2:1:2649:C:H2'	2:1:2650:U:C6	2.35	0.61
13:i:17:ALA:HB1	13:i:41:PHE:HB3	1.81	0.61
1:3:513:C:H2'	1:3:514:C:H6	1.62	0.61
1:3:1286:U:C2'	1:3:1287:A:H5'	2.24	0.61
2:1:663:G:C3'	2:1:664:G:H5"	2.30	0.61
2:1:1180:U:O2	2:1:1180:U:H2'	1.99	0.61
12:h:23:LEU:HD23	12:h:24:SER:N	2.16	0.61
1:3:1352:C:H2'	1:3:1353:G:C8	2.36	0.61
2:1:1046:A:C1'	12:h:8:LYS:HE3	2.29	0.61
2:1:1779:U:C5	2:1:1784:A:N7	2.67	0.61
2:1:2127:G:C5	2:1:2162:G:H1'	2.36	0.61
2:1:2859:G:H2'	2:1:2860:A:C8	2.35	0.61
3:2:28:C:H2'	3:2:29:A:C8	2.36	0.61
13:i:72:THR:HG22	13:i:73:PRO:HD2	1.82	0.61
2:1:543:G:H1	2:1:550:C:H42	1.49	0.61
2:1:742:A:H2'	2:1:743:A:H8	1.65	0.61
2:1:1169:A:H61	2:1:1180:U:H3	1.49	0.61
2:1:2402:U:C2'	2:1:2403:C:H5"	2.30	0.61
1:3:403:C:H2'	1:3:404:G:C8	2.36	0.61
1:3:1197:A:C2'	1:3:1198:G:H5"	2.30	0.61
2:1:1057:A:C3'	12:h:34:THR:HG23	1.93	0.61
12:h:64:VAL:O	12:h:67:THR:HG22	2.00	0.61
20:p:112:ARG:O	20:p:114:ASN:ND2	2.33	0.61
38:6:13:C:H2'	38:6:14:A:H5"	1.82	0.61
2:1:2102:G:C2	2:1:2103:C:H1'	2.36	0.61
2:1:2142:A:H2'	2:1:2143:C:C4'	2.30	0.61
1:3:264:C:H4'	54:V:64:ARG:HD2	1.83	0.61
1:3:376:G:H5"	53:U:5:ARG:HB2	1.83	0.61
1:3:1289:A:H2'	1:3:1290:G:H5'	1.83	0.61
1:3:1525:G:H2'	1:3:1526:G:H8	1.66	0.61
2:1:2165:C:H41	2:1:2171:A:N6	1.99	0.61
4:5:17:U:H2'	4:5:17(A):U:C5	2.36	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:h:37:LYS:HG2	12:h:41:LEU:HD12	1.83	0.61
1:3:410:G:H2'	1:3:429:U:C5	2.36	0.60
1:3:796:C:H2'	1:3:797:C:H6	1.66	0.60
1:3:1219:A:H2'	1:3:1220:G:C8	2.36	0.60
2:1:318:C:H2'	2:1:319:G:H8	1.66	0.60
1:3:114:U:O2'	1:3:115:G:H5'	2.01	0.60
1:3:1213:A:O2'	1:3:1214:C:H2'	2.01	0.60
2:1:2095:A:H4'	10:g:11:ASN:HD21	1.65	0.60
2:1:2153:C:H3'	2:1:2154:A:H8	1.66	0.60
2:1:2578:G:N7	6:c:145:SER:HB3	2.15	0.60
2:1:2795:C:H2'	2:1:2796:U:H6	1.66	0.60
41:I:164:ARG:O	41:I:166:LYS:NZ	2.34	0.60
1:3:33:A:H2'	1:3:34:C:C6	2.36	0.60
1:3:34:C:H1'	49:Q:28:GLN:HE22	1.65	0.60
2:1:2314:A:H2'	2:1:2315:G:C8	2.36	0.60
8:e:116:LEU:HD13	8:e:175:PRO:HD2	1.82	0.60
11:a:211:LYS:HZ1	11:a:223:ALA:HA	1.65	0.60
54:V:56:ASP:N	54:V:56:ASP:OD1	2.32	0.60
1:3:413:G:H22	1:3:428:G:H1'	1.66	0.60
2:1:1046:A:H62	12:h:4:ASN:ND2	1.99	0.60
2:1:2114:A:C2	2:1:2166:U:H2'	2.37	0.60
2:1:2128:G:H1	2:1:2160:C:N4	1.99	0.60
2:1:275:C:C2'	2:1:276:U:H4'	2.27	0.60
2:1:1046:A:C2'	12:h:8:LYS:NZ	2.64	0.60
2:1:1198:U:H2'	2:1:1199:U:C6	2.36	0.60
1:3:422:C:H4'	1:3:423:G:N2	2.16	0.60
2:1:742:A:H2'	2:1:743:A:C8	2.36	0.60
2:1:1065:U:H3'	2:1:1066:U:H5"	1.82	0.60
2:1:2391:G:H5"	2:1:2391:G:H8	1.65	0.60
2:1:2792:A:H2'	2:1:2793:C:H5"	1.84	0.60
4:5:2:G:N7	4:5:72:G:N1	2.50	0.60
37:4:20:C:H2'	37:4:21:A:H8	1.67	0.60
51:S:85:GLU:OE2	51:S:89:ARG:NH2	2.34	0.60
1:3:1130:A:H61	1:3:1144:G:H1'	1.66	0.60
2:1:1462:C:H2'	2:1:1463:C:C6	2.36	0.60
2:1:2183:A:C2'	2:1:2184:A:H5"	2.30	0.60
38:6:19:G:N1	38:6:56:C:N3	2.49	0.60
1:3:78:A:H2'	1:3:79:G:O4'	2.01	0.60
2:1:528:A:H2'	2:1:529:A:H5"	1.82	0.60
2:1:588:U:H2'	2:1:589:U:C6	2.37	0.60
2:1:1310:G:H3'	2:1:1311:G:H8	1.67	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1356:G:O2'	2:1:1357:C:H5'	2.02	0.60
2:1:2115:G:H4'	2:1:2166:U:O2	2.02	0.60
2:1:2660:A:H2'	2:1:2661:G:O4'	2.01	0.60
18:n:100:CYS:SG	18:n:101:GLY:N	2.72	0.60
41:I:58:GLN:OE1	41:I:62:ARG:NH1	2.33	0.60
41:I:108:ALA:H	41:I:112:GLU:HG2	1.66	0.60
48:P:84:MET:SD	48:P:110:THR:OG1	2.59	0.60
1:3:1379:G:O2'	1:3:1380:U:H5'	2.01	0.60
2:1:1926:U:H3'	2:1:1926:U:C6	2.37	0.60
2:1:2124:G:C5	2:1:2125:G:H1'	2.37	0.60
2:1:2394:C:C2'	2:1:2395:C:H5'	2.31	0.60
2:1:2639:A:H1'	2:1:2778:A:C2	2.37	0.60
2:1:2713:U:H3'	2:1:2714:G:H5"	1.83	0.60
17:m:50:ARG:HA	17:m:53:MET:HE2	1.83	0.60
26:v:77:VAL:HG23	26:v:89:ILE:HG12	1.83	0.60
56:X:35:ARG:NH2	56:X:71:GLY:O	2.35	0.60
2:1:962:G:N2	2:1:2250:G:H1	2.00	0.60
2:1:1046:A:H2'	12:h:7:ASP:CG	2.26	0.60
2:1:1057:A:C1'	12:h:34:THR:HG22	2.32	0.60
2:1:2040:G:H2'	2:1:2041:U:H6	1.67	0.60
31:A:11:GLU:HA	31:A:25:ARG:HA	1.84	0.60
49:Q:113:ARG:HB2	49:Q:118:VAL:HB	1.83	0.60
1:3:690:G:H2'	1:3:691:G:O4'	2.02	0.59
1:3:1305:G:N2	1:3:1331:G:H2'	2.17	0.59
2:1:140:C:H2'	2:1:141:G:C4'	2.28	0.59
2:1:141:G:H3'	2:1:142:A:O4'	2.02	0.59
2:1:1060:U:H5	13:i:76:ALA:HB2	1.67	0.59
2:1:1893:C:H2'	2:1:1894:C:H5'	1.82	0.59
38:6:15:G:H22	38:6:48:C:H42	1.50	0.59
41:I:149:LYS:NZ	41:I:176:LYS:O	2.35	0.59
1:3:181:A:N6	1:3:194:C:H2'	2.16	0.59
1:3:628:G:H2'	1:3:629:A:H8	1.67	0.59
2:1:136:G:H2'	2:1:137:U:O4'	2.02	0.59
2:1:2834:G:H2'	2:1:2879:A:H61	1.67	0.59
4:5:43:U:H2'	4:5:44:G:C8	2.36	0.59
4:5:43:U:H2'	4:5:44:G:H8	1.68	0.59
5:b:179:GLU:HB2	5:b:270:ARG:HB2	1.83	0.59
2:1:1073:A:H2'	2:1:1074:G:C8	2.37	0.59
2:1:1442:U:H2'	2:1:1443:U:C6	2.38	0.59
13:i:105:LEU:HD23	13:i:125:THR:HG23	1.84	0.59
44:L:63:VAL:HA	44:L:66:GLU:HG2	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:460:A:H2'	1:3:461:A:H8	1.67	0.59
1:3:1038:C:H2'	1:3:1039:G:C8	2.37	0.59
2:1:543:G:H1	2:1:550:C:N4	2.01	0.59
2:1:864:G:O2'	2:1:865:C:H5'	2.02	0.59
2:1:2327:A:H2'	2:1:2328:A:C8	2.37	0.59
4:5:40:C:H3'	4:5:41:A:C5'	2.27	0.59
42:J:54:GLU:HG2	42:J:56:PRO:HD2	1.85	0.59
1:3:842:U:H2'	1:3:843:U:O3'	2.02	0.59
2:1:1179:G:H2'	2:1:1180:U:C4'	2.26	0.59
2:1:1429:G:H2'	2:1:1430:G:H8	1.67	0.59
2:1:2117:A:H61	2:1:2170:A:H61	1.50	0.59
2:1:2843:G:H2'	2:1:2844:G:H8	1.68	0.59
13:i:64:ARG:O	13:i:64:ARG:NH1	2.35	0.59
1:3:1461:G:H2'	1:3:1462:C:C6	2.37	0.59
2:1:340:A:H2'	2:1:341:C:H5'	1.84	0.59
2:1:1057:A:H5'	2:1:1058:U:O5'	2.02	0.59
2:1:2078:C:O2'	2:1:2079:U:H5'	2.03	0.59
2:1:2113:U:H2'	2:1:2114:A:C8	2.38	0.59
1:3:690:G:OP2	48:P:28:ASN:ND2	2.36	0.59
1:3:1297:G:H4'	1:3:1299:A:H2	1.67	0.59
2:1:45:G:C5'	2:1:46:G:H5'	2.15	0.59
2:1:2402:U:H2'	2:1:2403:C:H5"	1.84	0.59
4:5:6:A:H2'	4:5:7:G:C8	2.38	0.59
2:1:543:G:C3'	2:1:544:C:H5"	2.32	0.59
2:1:973:A:OP2	22:r:81:LYS:HE3	2.03	0.59
2:1:2230:G:N3	28:x:31:ASN:ND2	2.50	0.59
2:1:2263:C:O2'	2:1:2264:C:H5'	2.03	0.59
4:5:37:G:H2'	4:5:38:A:O4'	2.03	0.59
18:n:90:ARG:HH22	18:n:116:VAL:HG11	1.67	0.59
51:S:40:ARG:NH2	56:X:6:LYS:O	2.36	0.59
1:3:522:C:H41	49:Q:49:ARG:HH22	1.50	0.59
1:3:842:U:H3'	1:3:843:U:H4'	1.85	0.59
1:3:1302:C:C2	50:R:16:ILE:HG21	2.37	0.59
2:1:717:C:C2'	2:1:718:A:H5'	2.33	0.59
2:1:1537:G:H3'	2:1:1537:G:N3	2.18	0.59
2:1:2311:A:N1	8:e:40:GLY:HA2	2.17	0.59
46:N:60:LEU:HD21	46:N:89:TYR:HE2	1.68	0.59
1:3:1197:A:C3'	1:3:1198:G:H5"	2.32	0.59
1:3:1297:G:H1'	1:3:1298:U:H5	1.68	0.59
2:1:282:A:H2'	2:1:283:G:H8	1.68	0.59
2:1:546:U:H4'	2:1:548:G:C6	2.38	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1057:A:C5	12:h:37:LYS:CE	2.85	0.59
2:1:2273:A:H2'	2:1:2274:A:C8	2.38	0.59
9:f:154:GLU:HG2	9:f:156:TYR:H	1.68	0.59
37:4:20:C:H2'	37:4:21:A:C8	2.38	0.59
1:3:189:A:H2'	1:3:190:A:O4'	2.03	0.58
1:3:1099:G:H4'	58:Z:66:ARG:HG3	1.84	0.58
2:1:1156:A:H5'	2:1:1156:A:H8	1.68	0.58
2:1:1605:C:H2'	2:1:1606:C:O4'	2.03	0.58
2:1:1775:U:H2'	2:1:1776:G:H5'	1.85	0.58
2:1:2126:A:H4'	2:1:2127:G:O4'	2.02	0.58
2:1:2313:C:H5"	8:e:87:LYS:HD2	1.85	0.58
2:1:2792:A:C3'	2:1:2793:C:H5"	2.33	0.58
48:P:111:ASP:HB3	58:Z:3:ILE:HG23	1.84	0.58
1:3:1241:G:H2'	1:3:1242:G:H8	1.68	0.58
1:3:1268:G:H1'	1:3:1326:U:O2'	2.03	0.58
2:1:336:C:O2'	2:1:337:C:H5'	2.02	0.58
2:1:1891:G:H2'	2:1:1892:C:C6	2.38	0.58
1:3:1330:U:H2'	1:3:1331:G:O4'	2.03	0.58
1:3:1375:A:H4'	44:L:28:ILE:HG22	1.84	0.58
2:1:4:U:H2'	2:1:5:A:C8	2.36	0.58
2:1:121:G:H2'	2:1:122:G:H8	1.69	0.58
2:1:351:C:O2'	2:1:352:A:H5'	2.03	0.58
2:1:1026:G:H1'	2:1:1134:A:C2	2.38	0.58
2:1:1064:C:H2'	2:1:1065:U:C6	2.38	0.58
2:1:1260:A:H2'	2:1:1261:C:H6	1.69	0.58
16:l:100:ILE:HG13	16:l:101:ILE:HG12	1.85	0.58
25:u:40:LEU:HD12	25:u:59:GLU:HG2	1.84	0.58
1:3:230:G:H5"	53:U:31:ARG:HH22	1.67	0.58
1:3:895:G:H2'	1:3:896:C:C6	2.38	0.58
1:3:950:U:OP2	50:R:100:ARG:HG3	2.03	0.58
1:3:1038:C:H2'	1:3:1039:G:H8	1.68	0.58
1:3:1414:U:H2'	1:3:1415:G:C8	2.34	0.58
2:1:282:A:H2'	2:1:283:G:C8	2.39	0.58
2:1:1107:G:O2'	12:h:81:LEU:CB	2.51	0.58
2:1:2103:C:O2	2:1:2103:C:H2'	2.03	0.58
12:h:118:ILE:N	12:h:119:PRO:CD	2.63	0.58
52:T:88:ARG:NH1	52:T:88:ARG:O	2.36	0.58
1:3:1187:G:H5"	46:N:114:LYS:HD2	1.85	0.58
2:1:291:G:H2'	2:1:292:U:C6	2.38	0.58
2:1:759:G:H2'	2:1:760:G:C5'	2.33	0.58
1:3:895:G:H2'	1:3:896:C:H6	1.68	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:1238:A:H2	1:3:1241:G:N3	2.01	0.58
1:3:1435:G:H2'	1:3:1436:U:H6	1.68	0.58
2:1:373:U:O2'	2:1:423:A:H1'	2.03	0.58
2:1:663:G:C2'	2:1:664:G:H5"	2.34	0.58
2:1:1597:A:H5"	2:1:1598:A:H5'	1.85	0.58
2:1:2157:G:H5"	2:1:2158:A:OP1	2.04	0.58
2:1:2165:C:H2'	2:1:2166:U:C2	2.39	0.58
2:1:2167:U:H2'	2:1:2168:G:C8	2.39	0.58
2:1:1648:U:C2'	2:1:1649:G:H5"	2.32	0.58
2:1:1858:A:H1'	2:1:1885:A:C2	2.38	0.58
2:1:1998:A:H4'	2:1:2724:U:O2'	2.04	0.58
48:P:12:ARG:HE	48:P:75:GLU:HB3	1.68	0.58
1:3:124:C:H2'	1:3:125:U:C6	2.38	0.58
1:3:767:A:O2'	1:3:768:A:H5'	2.04	0.58
1:3:1280:A:H5"	47:O:42:LEU:HD11	1.85	0.58
2:1:545:U:H2'	2:1:546:U:O4'	2.04	0.58
2:1:1749:A:H2'	2:1:1750:G:C8	2.39	0.58
2:1:2186:G:H2'	2:1:2187:U:O4'	2.03	0.58
2:1:2792:A:H3'	2:1:2793:C:H5"	1.86	0.58
2:1:2808:G:H2'	2:1:2890:G:O6	2.04	0.58
11:a:47:ASN:HB2	11:a:210:LYS:HB3	1.84	0.58
48:P:36:ARG:NH1	48:P:82:GLU:OE2	2.36	0.58
54:V:67:SER:OG	54:V:68:LYS:N	2.37	0.58
56:X:16:LYS:HB3	56:X:20:LYS:HE3	1.86	0.58
1:3:420:U:H2'	1:3:422:C:C6	2.39	0.58
2:1:1001:A:H2'	2:1:1002:G:O4'	2.04	0.58
2:1:1056:G:N1	2:1:1101:U:H5"	2.19	0.58
2:1:1360:G:H2'	2:1:1361:G:H5'	1.85	0.58
2:1:1810:A:H2'	2:1:1811:G:O4'	2.04	0.58
2:1:1868:C:H2'	2:1:1869:G:O4'	2.04	0.58
12:h:57:ASN:O	12:h:63:ALA:HB2	2.03	0.58
22:r:15:SER:OG	22:r:16:GLU:N	2.37	0.58
34:D:41:ARG:NH2	34:D:46:LYS:OXT	2.37	0.58
1:3:1472:U:H2'	1:3:1473:G:H8	1.69	0.58
2:1:357:C:H2'	2:1:358:U:C6	2.38	0.58
2:1:1057:A:O3'	12:h:34:THR:HG21	2.00	0.58
54:V:26:ARG:HH21	54:V:39:ARG:HG2	1.69	0.58
1:3:390:U:O3'	53:U:28:ARG:NH1	2.37	0.57
2:1:572:A:OP2	22:r:80:ARG:NH2	2.36	0.57
2:1:1086:A:O4'	2:1:1103:A:H2	1.87	0.57
2:1:1270:C:H5"	2:1:1271:G:O5'	2.04	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2437:G:H2'	2:1:2438:U:C6	2.39	0.57
2:1:2690:U:O2'	2:1:2872:A:H1'	2.03	0.57
2:1:2805:C:H2'	2:1:2806:C:H6	1.69	0.57
4:5:61:C:H2'	4:5:62:C:C6	2.39	0.57
18:n:8:ARG:NH2	18:n:43:GLU:OE1	2.37	0.57
19:o:31:THR:OG1	19:o:33:ARG:O	2.20	0.57
42:J:97:PRO:O	42:J:121:ASN:ND2	2.36	0.57
1:3:1258:G:H2'	1:3:1259:C:C6	2.39	0.57
1:3:1427:C:H2'	1:3:1428:A:H8	1.68	0.57
2:1:460:A:H2'	2:1:461:C:O4'	2.04	0.57
2:1:1046:A:P	12:h:61:ARG:NE	2.77	0.57
2:1:1056:G:C3'	2:1:1057:A:H4'	2.34	0.57
2:1:1158:C:O2'	2:1:1159:U:H5'	2.04	0.57
5:b:132:ARG:NH1	10:g:93:SER:OG	2.37	0.57
5:b:186:ASP:OD1	10:g:123:ARG:NH2	2.37	0.57
27:w:33:ILE:HG22	27:w:34:VAL:HG23	1.86	0.57
41:I:10:LEU:HD22	41:I:62:ARG:HE	1.67	0.57
1:3:1011:C:H2'	1:3:1012:A:C8	2.38	0.57
2:1:14:A:OP2	2:1:14:A:H3'	2.03	0.57
41:I:10:LEU:HD13	41:I:62:ARG:HD2	1.87	0.57
1:3:1003:G:H21	1:3:1005:A:H5'	1.68	0.57
2:1:1107:G:H5'	12:h:56:ARG:O	2.04	0.57
2:1:1817:G:OP1	5:b:86:ARG:NH2	2.37	0.57
4:5:6:A:H2'	4:5:7:G:H8	1.70	0.57
44:L:69:ARG:HH11	44:L:69:ARG:HG3	1.68	0.57
49:Q:49:ARG:HG3	49:Q:89:LEU:HD21	1.86	0.57
2:1:1055:G:O3'	12:h:33:VAL:HG12	2.05	0.57
2:1:1469:A:H2'	2:1:1470:A:C8	2.40	0.57
2:1:1996:C:P	15:k:31:ARG:HH12	2.28	0.57
2:1:2430:A:N3	2:1:2430:A:H2'	2.17	0.57
3:2:50:A:OP2	19:o:67:ASN:HA	2.04	0.57
39:G:5:MET:HG2	39:G:46:VAL:HG21	1.85	0.57
47:O:59:LYS:HE3	47:O:62:ARG:HH22	1.69	0.57
1:3:1342:C:O2'	1:3:1343:G:H5'	2.04	0.57
2:1:514:A:H2'	2:1:515:A:O4'	2.04	0.57
2:1:1057:A:C1'	12:h:34:THR:CG2	2.78	0.57
4:5:5:G:O2'	4:5:6:A:H8	1.83	0.57
12:h:78:GLY:N	12:h:79:PRO:HD2	2.19	0.57
1:3:31:G:N2	1:3:47:C:H5"	2.18	0.57
1:3:137:U:O2'	1:3:138:G:H5'	2.05	0.57
1:3:161:A:H2'	1:3:162:A:C8	2.40	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:64:A:H2'	2:1:65:U:C6	2.40	0.57
2:1:1082:U:H2'	2:1:1083:U:C4'	2.35	0.57
2:1:1192:G:O2'	2:1:1193:G:H5'	2.04	0.57
2:1:2169:A:H2'	2:1:2170:A:O4'	2.03	0.57
2:1:2555:U:H2'	2:1:2556:C:C5'	2.35	0.57
44:L:74:VAL:HB	44:L:85:GLN:HG3	1.87	0.57
49:Q:13:ARG:NH1	49:Q:14:LYS:O	2.37	0.57
1:3:81:A:H2'	1:3:82:G:H8	1.70	0.57
1:3:1402:C:H2'	1:3:1403:C:O4'	2.04	0.57
2:1:1103:A:O5'	2:1:1104:C:H5"	2.05	0.57
2:1:1507:C:H2'	2:1:1508:A:C4'	2.33	0.57
2:1:1565:C:HO2'	2:1:1566:A:H8	1.52	0.57
2:1:2554:U:H2'	2:1:2555:U:C6	2.39	0.57
1:3:1246:A:H2'	1:3:1247:U:O4'	2.05	0.57
2:1:1176:U:H2'	2:1:1177:G:N9	2.20	0.57
2:1:1260:A:H2'	2:1:1261:C:C6	2.40	0.57
2:1:1680:U:C5	2:1:1681:G:C5	2.93	0.57
2:1:1744:A:H3'	2:1:1745:A:C8	2.37	0.57
2:1:2322:A:H2'	2:1:2323:G:O4'	2.05	0.57
2:1:2705:A:H2'	2:1:2706:A:O4'	2.05	0.57
7:d:153:LEU:HB2	7:d:171:ASP:HB3	1.85	0.57
41:I:144:ILE:HD11	41:I:149:LYS:HD2	1.87	0.57
1:3:1226:C:H4'	56:X:79:TYR:CZ	2.39	0.57
2:1:1946:U:H2'	2:1:1947:C:H6	1.70	0.57
41:I:82:LYS:O	41:I:88:ASN:ND2	2.37	0.57
1:3:777:A:C2	1:3:778:G:H1'	2.39	0.56
1:3:830:G:O2'	1:3:831:A:H5'	2.05	0.56
1:3:1099:G:H4'	58:Z:66:ARG:CG	2.35	0.56
2:1:741:U:O2'	2:1:742:A:H5'	2.04	0.56
2:1:2741:A:C2'	2:1:2742:G:H5'	2.35	0.56
9:f:157:LYS:HD3	9:f:159:LYS:HB2	1.87	0.56
28:x:69:GLU:HB3	28:x:73:ARG:HE	1.70	0.56
55:W:39:VAL:HB	55:W:43:ILE:HD11	1.87	0.56
56:X:52:ASN:HB2	56:X:76:THR:HG22	1.87	0.56
1:3:354:G:C2'	1:3:355:C:H5'	2.35	0.56
2:1:1229:C:H2'	2:1:1230:A:H8	1.68	0.56
2:1:1924:C:H2'	2:1:1925:C:H5	1.70	0.56
5:b:5:CYS:SG	5:b:6:LYS:N	2.76	0.56
9:f:87:GLN:HB3	9:f:162:ARG:HB3	1.86	0.56
1:3:254:G:H2'	1:3:255:G:H8	1.70	0.56
1:3:412:A:H2'	1:3:413:G:H4'	1.86	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:1300:G:O2'	1:3:1301:U:H6	1.88	0.56
1:3:1353:G:H2'	1:3:1354:U:C6	2.39	0.56
2:1:95:A:H3'	2:1:96:C:H5"	1.87	0.56
2:1:406:G:O2'	2:1:407:G:H5'	2.06	0.56
2:1:1057:A:O2'	12:h:34:THR:HG23	2.01	0.56
2:1:1437:C:H2'	2:1:1438:U:H6	1.70	0.56
2:1:1508:A:H2'	2:1:1509:A:O4'	2.05	0.56
2:1:1958:C:O2'	2:1:1959:G:H5'	2.06	0.56
2:1:2127:G:O3'	11:a:38:PHE:HB3	2.05	0.56
2:1:2183:A:H2'	2:1:2184:A:O4'	2.06	0.56
2:1:2447:G:H2'	2:1:2500:U:OP2	2.06	0.56
2:1:2783:U:H2'	2:1:2784:U:C6	2.40	0.56
2:1:2841:C:H2'	2:1:2842:G:C8	2.39	0.56
2:1:2847:U:H2'	2:1:2848:G:H5'	1.85	0.56
41:I:28:ASP:OD1	41:I:28:ASP:N	2.37	0.56
57:Y:54:GLN:HG2	57:Y:75:LYS:HE3	1.87	0.56
2:1:1088:A:H61	13:i:131:THR:HA	1.70	0.56
2:1:1433:A:H2'	2:1:1434:A:O4'	2.04	0.56
2:1:1777:U:O2'	2:1:1778:U:H5'	2.05	0.56
2:1:1915:U:H3'	2:1:1916:A:H8	1.70	0.56
2:1:2261:C:O2'	2:1:2262:U:H5'	2.05	0.56
9:f:40:VAL:O	9:f:54:ARG:NH2	2.38	0.56
39:G:117:GLU:O	39:G:121:GLN:NE2	2.36	0.56
39:G:135:MET:HA	39:G:138:ARG:HB2	1.86	0.56
43:K:81:ASN:HB3	43:K:84:VAL:HG12	1.86	0.56
53:U:68:SER:OG	53:U:69:ASP:N	2.38	0.56
2:1:12:U:H2'	2:1:13:A:H5'	1.88	0.56
2:1:202:U:H2'	2:1:203:A:O4'	2.06	0.56
2:1:2127:G:N2	2:1:2173:A:H1'	2.21	0.56
2:1:2315:G:H2'	2:1:2316:G:H8	1.70	0.56
13:i:56:VAL:HG12	13:i:70:THR:HA	1.87	0.56
37:4:5:A:H5'	58:Z:58:LYS:HZ3	1.70	0.56
45:M:28:SER:HB3	45:M:56:PRO:HB2	1.87	0.56
53:U:5:ARG:NH2	53:U:27:ALA:O	2.39	0.56
1:3:1288:A:O2'	1:3:1353:G:H5'	2.05	0.56
2:1:1534:U:O2'	2:1:1535:A:H5"	2.05	0.56
3:2:19:C:H2'	3:2:20:G:C8	2.41	0.56
5:b:257:ARG:NH2	5:b:263:ASP:OD1	2.39	0.56
48:P:62:ALA:HB1	48:P:95:THR:HB	1.88	0.56
1:3:918:A:H2'	1:3:919:A:O4'	2.05	0.56
1:3:955:U:H1'	1:3:1227:A:H61	1.69	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:1010:U:C3’	1:3:1011:C:H5”	2.34	0.56
2:1:74:A:H4’	2:1:75:G:O5’	2.05	0.56
2:1:1084:A:C6	12:h:56:ARG:CG	2.88	0.56
2:1:1536:C:H4’	2:1:1537:G:C2	2.41	0.56
2:1:1801:A:H5”	2:1:2203:U:C2’	2.35	0.56
2:1:1832:C:N4	2:1:1833:C:C4	2.74	0.56
2:1:1967:C:H2’	2:1:1968:G:H5’	1.87	0.56
1:3:160:A:H1’	1:3:344:A:N7	2.20	0.56
1:3:1461:G:H2’	1:3:1462:C:H6	1.71	0.56
2:1:1046:A:C2’	12:h:8:LYS:CE	2.84	0.56
2:1:1775:U:C2’	2:1:1776:G:H5’	2.36	0.56
2:1:1922:G:H2’	2:1:1923:U:C6	2.40	0.56
3:2:114:C:H2’	3:2:115:A:C8	2.40	0.56
22:r:32:THR:HA	22:r:62:GLU:HA	1.88	0.56
2:1:760:G:H2’	2:1:761:A:C5’	2.36	0.56
2:1:769:U:HO2’	2:1:1379:U:H6	1.54	0.56
2:1:1655:A:H2’	2:1:1656:C:O4’	2.06	0.56
2:1:2140:G:H2’	2:1:2141:G:H4’	1.88	0.56
2:1:2147:A:H62	2:1:2148:G:H21	1.53	0.56
40:H:107:LYS:HD3	40:H:143:LEU:HD21	1.87	0.56
43:K:86:ARG:NH1	55:W:63:TYR:O	2.36	0.56
49:Q:42:LYS:NZ	49:Q:88:ASP:OD1	2.39	0.56
2:1:1098:A:H2’	2:1:1099:G:O4’	2.05	0.56
2:1:1507:C:C2’	2:1:1508:A:H4’	2.36	0.56
2:1:1782:U:H2’	2:1:1783:A:H5’	1.87	0.56
1:3:320:A:H2’	1:3:321:A:O4’	2.07	0.55
1:3:996:A:O2’	1:3:997:U:H5’	2.06	0.55
2:1:404:A:H1’	2:1:406:G:C4	2.41	0.55
2:1:481:G:H1’	2:1:506:G:N2	2.21	0.55
5:b:5:CYS:SG	5:b:12:ARG:NE	2.75	0.55
12:h:102:ALA:HA	12:h:105:LYS:HB2	1.88	0.55
1:3:460:A:H2’	1:3:461:A:C8	2.41	0.55
2:1:1101:U:C2’	2:1:1102:C:H5’	2.36	0.55
38:6:72:A:H2’	38:6:73:A:O4’	2.05	0.55
41:I:97:LEU:HD21	41:I:122:ILE:HD11	1.88	0.55
43:K:3:HIS:HB2	43:K:92:THR:HA	1.89	0.55
1:3:9:G:C5’	42:J:107:GLY:HA3	2.26	0.55
1:3:1226:C:O2’	50:R:109:LYS:NZ	2.36	0.55
2:1:293:U:C3’	2:1:294:A:H5”	2.36	0.55
2:1:2654:A:H8	2:1:2654:A:OP1	1.88	0.55
2:1:2800:A:H3’	2:1:2801:G:H5”	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:m:38:ARG:HG3	17:m:98:PRO:HD3	1.88	0.55
1:3:285:C:H2'	1:3:286:C:C6	2.41	0.55
1:3:966:G:C2	38:6:34:C:H5'	2.41	0.55
2:1:233:A:O2'	2:1:234:U:H5'	2.06	0.55
2:1:259:G:O2'	2:1:260:G:H5'	2.06	0.55
2:1:759:G:O2'	2:1:760:G:H5"	2.06	0.55
2:1:997:G:O2'	2:1:998:C:H5'	2.06	0.55
2:1:1098:A:C2'	2:1:1099:G:H5'	2.36	0.55
2:1:1982:U:H2'	2:1:1983:G:H8	1.70	0.55
2:1:2010:G:H2'	2:1:2011:U:H6	1.72	0.55
2:1:2554:U:H2'	2:1:2555:U:C5	2.41	0.55
2:1:2869:G:H2'	2:1:2870:C:C6	2.42	0.55
3:2:28:C:H2'	3:2:29:A:H8	1.70	0.55
3:2:106:G:H2'	3:2:107:G:O4'	2.07	0.55
48:P:108:ASN:N	48:P:108:ASN:OD1	2.37	0.55
55:W:11:ARG:HB2	55:W:14:ALA:HB3	1.88	0.55
1:3:235:C:H2'	1:3:236:A:C8	2.42	0.55
1:3:309:A:H2'	1:3:310:G:C8	2.37	0.55
2:1:455:C:H3'	2:1:456:C:C5'	2.36	0.55
2:1:1287:A:H5'	18:n:103:ARG:CZ	2.37	0.55
2:1:1484:U:H2'	2:1:1485:U:H6	1.70	0.55
2:1:1541:C:H2'	2:1:1542:U:C6	2.42	0.55
2:1:2291:U:H2'	2:1:2292:U:H6	1.71	0.55
2:1:2652:C:H2'	2:1:2653:U:O4'	2.07	0.55
38:6:19:G:H1'	38:6:57:A:C2	2.40	0.55
44:L:113:LYS:HB2	44:L:117:LEU:HD11	1.88	0.55
57:Y:73:ARG:O	57:Y:77:ASN:ND2	2.39	0.55
1:3:1533:C:H42	58:Z:46:ARG:CZ	2.18	0.55
2:1:935:C:H2'	2:1:936:A:H8	1.72	0.55
2:1:1046:A:O5'	12:h:61:ARG:NE	2.40	0.55
2:1:1152:C:O2'	2:1:1153:C:H5'	2.06	0.55
2:1:2127:G:C6	2:1:2162:G:H1'	2.42	0.55
2:1:2163:A:H2'	2:1:2164:C:H5'	1.89	0.55
2:1:2281:A:C2'	2:1:2282:G:H5'	2.36	0.55
7:d:48:THR:HG22	7:d:86:ALA:HB3	1.88	0.55
17:m:76:LYS:NZ	17:m:83:GLY:O	2.34	0.55
28:x:18:SER:OG	28:x:19:HIS:N	2.35	0.55
39:G:129:THR:HG23	39:G:132:GLU:H	1.71	0.55
1:3:701:U:H5"	1:3:703:G:H1'	1.89	0.55
1:3:1243:C:O2'	1:3:1244:G:H5'	2.06	0.55
2:1:1056:G:H1	2:1:1101:U:H5"	1.72	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1912:A:N7	2:1:1917:U:C5	2.71	0.55
2:1:2134:A:H4'	2:1:2159:G:H21	1.71	0.55
2:1:2590:A:H2'	2:1:2591:C:H6	1.70	0.55
7:d:3:LEU:HB3	7:d:120:VAL:HG11	1.88	0.55
9:f:21:GLN:NE2	9:f:37:ASN:O	2.40	0.55
49:Q:49:ARG:NH2	49:Q:88:ASP:OD2	2.39	0.55
1:3:663:A:H5'	1:3:836:G:OP1	2.07	0.55
1:3:1074:G:H2'	1:3:1075:U:O4'	2.07	0.55
2:1:155:A:H61	2:1:171:U:H3	1.55	0.55
2:1:476:G:H4'	2:1:502:A:N1	2.22	0.55
2:1:958:U:H5	17:m:40:ARG:HH11	1.53	0.55
3:2:29:A:H2'	3:2:30:C:O4'	2.06	0.55
8:e:162:ASP:OD1	8:e:162:ASP:N	2.38	0.55
11:a:56:ASP:OD2	11:a:203:GLN:NE2	2.40	0.55
17:m:21:ALA:HB2	17:m:97:GLN:HB2	1.89	0.55
38:6:62:C:H2'	38:6:63:G:H8	1.72	0.55
55:W:36:GLY:O	55:W:62:ARG:NH2	2.40	0.55
1:3:529:G:O6	49:Q:45:ASN:HA	2.06	0.55
1:3:671:G:C2	1:3:672:U:H1'	2.42	0.55
2:1:100:U:H4'	2:1:101:A:O4'	2.07	0.55
2:1:1047:G:H2'	2:1:1110:G:N2	2.21	0.55
2:1:1864:U:H5"	2:1:2410:G:O2'	2.07	0.55
2:1:2658:C:OP1	9:f:157:LYS:NZ	2.39	0.55
40:H:110:LEU:HD11	40:H:145:ALA:HB2	1.89	0.55
56:X:35:ARG:HB3	56:X:71:GLY:HA3	1.87	0.55
2:1:760:G:H8	2:1:760:G:C5'	2.12	0.55
2:1:840:C:O2'	2:1:841:G:H5'	2.06	0.55
2:1:1789:A:O2'	2:1:1790:C:H5'	2.06	0.55
2:1:2024:G:H2'	2:1:2025:C:O4'	2.07	0.55
2:1:2800:A:H3'	2:1:2801:G:H5'	1.89	0.55
16:l:20:GLY:HA2	16:l:28:GLY:HA2	1.89	0.55
18:n:28:LEU:HD23	18:n:48:VAL:HG11	1.88	0.55
20:p:61:ARG:NH2	20:p:70:GLU:OE2	2.40	0.55
46:N:20:ILE:HD11	46:N:60:LEU:HB3	1.89	0.55
1:3:77:A:H2	1:3:92:U:H3	1.54	0.54
1:3:1011:C:H2'	1:3:1012:A:H8	1.72	0.54
2:1:966:G:C5	2:1:967:U:C4	2.95	0.54
2:1:1170:C:H2'	2:1:1171:G:C5	2.42	0.54
2:1:1570:A:C6	2:1:1571:A:C6	2.95	0.54
2:1:1789:A:N7	2:1:1790:C:C4	2.74	0.54
2:1:2170:A:N3	2:1:2171:A:H1'	2.22	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:5:13:C:C2’	4:5:14:A:H5”	2.37	0.54
41:I:94:GLU:OE2	41:I:99:ASN:ND2	2.39	0.54
1:3:238:A:H2’	1:3:239:U:H5’	1.89	0.54
1:3:410:G:H2’	1:3:429:U:C4	2.42	0.54
1:3:760:G:H2’	1:3:761:G:H5’	1.89	0.54
2:1:784:G:O2’	2:1:785:G:H5’	2.08	0.54
2:1:859:G:O2’	2:1:860:U:H6	1.91	0.54
2:1:971:G:H2’	2:1:972:A:O4’	2.07	0.54
2:1:1669:A:C2’	2:1:1670:C:H5’	2.36	0.54
2:1:1749:A:H2’	2:1:1750:G:H8	1.71	0.54
2:1:1992:G:H4’	2:1:1993:U:OP1	2.07	0.54
2:1:2146:C:H4’	2:1:2148:G:N2	2.22	0.54
4:5:16:C:H4’	4:5:60:U:O2	2.06	0.54
11:a:65:LEU:HD13	11:a:188:ASN:HD21	1.71	0.54
12:h:118:ILE:N	12:h:119:PRO:HD2	2.18	0.54
25:u:50:ALA:O	25:u:53:GLN:NE2	2.40	0.54
42:J:101:GLY:H	42:J:121:ASN:HB2	1.72	0.54
47:O:44:THR:HG22	47:O:70:HIS:HA	1.89	0.54
56:X:62:THR:HG23	56:X:64:GLU:H	1.73	0.54
1:3:512:U:H2’	1:3:513:C:C6	2.42	0.54
2:1:1107:G:H5”	12:h:56:ARG:O	2.08	0.54
2:1:1602:U:OP2	24:t:64:LYS:NZ	2.39	0.54
2:1:2097:A:H2’	2:1:2098:U:C6	2.42	0.54
2:1:2389:G:C5’	2:1:2390:U:H5’	2.37	0.54
1:3:192:A:C2’	1:3:193:C:H5’	2.37	0.54
1:3:408:A:OP1	41:I:109:THR:HG21	2.06	0.54
2:1:182:A:O2’	2:1:183:C:H5’	2.07	0.54
2:1:847:U:O2	2:1:847:U:H2’	2.07	0.54
2:1:906:U:O2’	17:m:66:ARG:NE	2.41	0.54
2:1:1064:C:N3	2:1:1074:G:O6	2.40	0.54
2:1:2055:C:O2	2:1:2055:C:H3’	2.07	0.54
2:1:2590:A:H2’	2:1:2591:C:C6	2.42	0.54
30:z:4:ILE:N	30:z:37:ARG:O	2.39	0.54
1:3:414:A:H2’	1:3:415:A:O4’	2.07	0.54
1:3:1343:G:H2’	1:3:1344:C:C6	2.43	0.54
2:1:716:A:H2’	2:1:717:C:C5’	2.38	0.54
2:1:2126:A:H2’	2:1:2162:G:H21	1.72	0.54
48:P:124:LYS:HA	58:Z:34:ARG:HB3	1.89	0.54
1:3:486:U:O2	1:3:486:U:H2’	2.08	0.54
1:3:1427:C:H2’	1:3:1428:A:C8	2.43	0.54
2:1:182:A:H1’	2:1:433:C:O2’	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:579:G:H2'	2:1:580:U:C6	2.42	0.54
2:1:1108:U:H5'	12:h:81:LEU:H	1.72	0.54
2:1:1721:G:H1'	2:1:1739:A:H61	1.73	0.54
2:1:2677:G:H2'	2:1:2678:C:C6	2.43	0.54
3:2:82:U:O2'	3:2:83:G:H5'	2.08	0.54
41:I:33:ILE:HG23	41:I:34:GLU:HG2	1.88	0.54
1:3:20:U:H2'	1:3:21:G:O4'	2.08	0.54
1:3:624:C:H2'	1:3:625:U:H6	1.72	0.54
2:1:26:G:C6	2:1:27:G:N1	2.76	0.54
2:1:288:U:H2'	2:1:289:G:C8	2.43	0.54
2:1:288:U:H2'	2:1:289:G:O4'	2.07	0.54
2:1:435:C:C2'	2:1:436:C:H5'	2.38	0.54
2:1:497:A:H2'	2:1:498:G:O4'	2.08	0.54
2:1:2143:C:N4	2:1:2144:G:N3	2.55	0.54
2:1:2267:A:H5"	2:1:2268:A:H5'	1.89	0.54
2:1:2584:U:C2'	2:1:2585:U:H5'	2.34	0.54
14:j:6:ALA:H	14:j:45:THR:HG21	1.71	0.54
1:3:314:C:O2'	1:3:315:A:H5'	2.08	0.54
1:3:561:U:H2'	1:3:561:U:O2	2.08	0.54
1:3:626:G:H2'	1:3:627:G:C8	2.42	0.54
1:3:1300:G:O2'	1:3:1301:U:C6	2.59	0.54
2:1:53:A:H2'	2:1:54:G:O4'	2.07	0.54
2:1:833:A:H2'	2:1:834:G:H8	1.72	0.54
2:1:1009:A:C6	2:1:1010:A:N1	2.76	0.54
2:1:1085:A:C4'	2:1:1104:C:O2'	2.55	0.54
2:1:1259:G:H2'	2:1:1260:A:C8	2.40	0.54
2:1:2129:C:H5	11:a:7:ARG:HG2	1.72	0.54
2:1:2305:U:H5"	8:e:130:GLY:CA	2.38	0.54
2:1:2751:G:C8	9:f:2:ARG:HG2	2.41	0.54
7:d:121:VAL:O	7:d:190:ALA:N	2.41	0.54
10:g:68:ARG:HA	10:g:71:LYS:HG2	1.90	0.54
16:l:90:VAL:HG13	16:l:95:LEU:HD21	1.90	0.54
54:V:63:CYS:HG	54:V:73:THR:HG1	1.55	0.54
1:3:72:A:H61	1:3:98:A:H2	1.56	0.54
1:3:593:U:H2'	1:3:594:U:C6	2.43	0.54
2:1:535:G:H2'	2:1:536:G:H8	1.73	0.54
2:1:621:A:C2'	2:1:622:G:H5'	2.37	0.54
2:1:1437:C:H2'	2:1:1438:U:C6	2.42	0.54
2:1:1807:G:H2'	2:1:1808:A:H5'	1.90	0.54
2:1:2040:G:H2'	2:1:2041:U:C6	2.42	0.54
2:1:2654:A:N1	2:1:2665:A:H5"	2.23	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:C:14:ALA:HB2	33:C:46:VAL:HG21	1.88	0.54
1:3:1369:C:H2'	1:3:1370:G:C8	2.43	0.54
2:1:213:A:H2'	2:1:214:G:C8	2.43	0.54
2:1:306:U:H2'	2:1:307:G:O4'	2.08	0.54
2:1:321:U:H5"	7:d:131:THR:HG23	1.89	0.54
2:1:1239:G:H2'	2:1:1240:U:O4'	2.08	0.54
2:1:1891:G:H2'	2:1:1892:C:H6	1.73	0.54
2:1:2183:A:H2'	2:1:2184:A:C4'	2.38	0.54
2:1:2437:G:O2'	2:1:2438:U:H5'	2.06	0.54
7:d:175:ILE:HD12	7:d:180:LEU:HD11	1.90	0.54
40:H:65:VAL:HB	40:H:100:ILE:HG12	1.89	0.54
43:K:29:ILE:HD13	43:K:64:VAL:HG11	1.90	0.54
1:3:197:A:H3'	1:3:197:A:OP2	2.07	0.53
1:3:406:G:H2'	1:3:407:U:H6	1.73	0.53
1:3:439:U:O3'	41:I:120:LYS:HE3	2.08	0.53
1:3:1051:C:H42	1:3:1207:G:H1	1.55	0.53
2:1:48:G:O3'	2:1:51:G:H5'	2.07	0.53
2:1:705:A:H2'	2:1:706:A:C8	2.43	0.53
2:1:1102:C:H3'	2:1:1103:A:H8	1.73	0.53
2:1:1641:A:H2'	2:1:1642:G:O4'	2.07	0.53
2:1:2425:A:H4'	2:1:2426:A:H5"	1.88	0.53
2:1:2678:C:H2'	2:1:2679:A:H8	1.73	0.53
2:1:2762:C:C2'	2:1:2763:G:H5'	2.37	0.53
20:p:15:ASP:N	20:p:15:ASP:OD1	2.41	0.53
1:3:191:G:H2'	1:3:192:A:C8	2.42	0.53
1:3:1148:U:H2'	1:3:1149:C:O4'	2.07	0.53
2:1:588:U:H1'	7:d:85:PHE:CD1	2.43	0.53
2:1:1065:U:H3'	2:1:1066:U:C5'	2.38	0.53
2:1:1486:U:H2'	2:1:1487:U:H6	1.71	0.53
2:1:1708:C:H2'	2:1:1709:U:C6	2.43	0.53
2:1:1775:U:H2'	2:1:1776:G:C5'	2.37	0.53
9:f:100:ASN:OD1	9:f:100:ASN:N	2.41	0.53
19:o:52:SER:OG	19:o:53:THR:N	2.42	0.53
38:6:58:A:H1'	38:6:60:U:C5	2.43	0.53
50:R:49:GLU:HA	50:R:52:ILE:HD12	1.90	0.53
1:3:225:C:H2'	1:3:226:G:O4'	2.09	0.53
1:3:915:A:H2'	1:3:916:U:H5'	1.90	0.53
1:3:1226:C:OP2	50:R:101:THR:HG21	2.08	0.53
1:3:1264:U:H2'	1:3:1265:C:C6	2.43	0.53
2:1:14:A:OP2	2:1:15:G:OP2	2.27	0.53
2:1:643:A:H1'	33:C:43:ARG:NH2	2.23	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1175:A:H5'	2:1:1176:U:O4'	2.08	0.53
2:1:1193:G:H2'	2:1:1194:A:O4'	2.08	0.53
2:1:1443:U:H2'	2:1:1444:G:H8	1.72	0.53
2:1:1661:G:H2'	2:1:1662:U:H6	1.72	0.53
6:c:56:LYS:HD2	6:c:59:ARG:HG3	1.89	0.53
2:1:585:G:H1'	2:1:1254:A:N6	2.23	0.53
2:1:1040:A:O2'	2:1:1041:G:H5'	2.08	0.53
2:1:1657:U:O2'	2:1:1658:C:H5'	2.08	0.53
2:1:1661:G:H2'	2:1:1662:U:C6	2.43	0.53
2:1:1995:U:H2'	2:1:1996:C:H5	1.70	0.53
2:1:2068:U:H5'	2:1:2069:G:OP1	2.09	0.53
3:2:89:U:H5'	3:2:90:C:C6	2.43	0.53
4:5:1:C:N4	4:5:73:A:C2	2.76	0.53
15:k:113:MET:HA	15:k:116:ILE:HD12	1.89	0.53
51:S:48:GLN:HB3	56:X:12:LEU:HD23	1.90	0.53
1:3:866:C:C4	1:3:867:G:H1'	2.43	0.53
1:3:869:G:H4'	1:3:872:A:C8	2.43	0.53
2:1:1084:A:N1	12:h:56:ARG:HB2	2.20	0.53
2:1:1331:G:O2'	2:1:1332:G:H5'	2.08	0.53
2:1:2291:U:C2	2:1:2292:U:C5	2.96	0.53
6:c:109:VAL:HG11	6:c:193:VAL:HB	1.90	0.53
8:e:39:VAL:HG12	8:e:41:GLU:H	1.73	0.53
9:f:85:LYS:HG2	9:f:131:VAL:HG22	1.90	0.53
50:R:76:ILE:HD12	50:R:79:LEU:HD12	1.91	0.53
1:3:238:A:C2'	1:3:239:U:H5'	2.38	0.53
1:3:542:G:O3'	41:I:13:ARG:NH2	2.41	0.53
2:1:716:A:H2'	2:1:717:C:C4'	2.38	0.53
2:1:776:G:H1'	2:1:793:A:C2	2.44	0.53
2:1:783:A:C2	2:1:785:G:H1'	2.44	0.53
2:1:993:G:N3	22:r:91:GLN:NE2	2.57	0.53
2:1:1041:G:H2'	2:1:1042:G:H8	1.71	0.53
2:1:1084:A:N1	12:h:56:ARG:CB	2.71	0.53
2:1:1188:U:O2'	2:1:1189:A:H5'	2.09	0.53
2:1:1571:A:H2'	2:1:1572:A:C8	2.43	0.53
50:R:22:TYR:HE1	50:R:69:ARG:HG3	1.73	0.53
1:3:411:A:C2	1:3:413:G:O2'	2.61	0.53
1:3:865:A:H5'	1:3:1078:U:O4	2.08	0.53
1:3:871:U:H5"	1:3:872:A:OP2	2.09	0.53
1:3:1143:G:H2'	1:3:1144:G:C8	2.43	0.53
1:3:1410:A:H2'	1:3:1411:C:O4'	2.09	0.53
1:3:1524:C:OP2	48:P:124:LYS:NZ	2.39	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:293:U:H3'	2:1:294:A:H5"	1.91	0.53
2:1:654:A:H3'	2:1:654:A:N3	2.24	0.53
2:1:717:C:H2'	2:1:718:A:C5'	2.39	0.53
2:1:861:A:H2'	2:1:862:G:O4'	2.08	0.53
2:1:1356:G:H2'	2:1:1357:C:H6	1.74	0.53
2:1:1682:G:H2'	2:1:1683:U:C6	2.43	0.53
2:1:2391:G:H1'	2:1:2429:G:H21	1.74	0.53
2:1:2799:A:O2'	2:1:2800:A:H5'	2.07	0.53
16:l:56:PRO:HD2	16:l:59:ARG:HB2	1.89	0.53
17:m:36:VAL:HG13	26:v:82:TYR:HB2	1.89	0.53
2:1:871:U:H4'	17:m:68:PHE:HE1	1.55	0.53
2:1:1056:G:C5'	2:1:1057:A:O2'	2.56	0.53
2:1:1250:G:N7	16:l:18:ARG:NH1	2.57	0.53
2:1:1276:A:H2'	2:1:1277:G:H8	1.73	0.53
2:1:2569:G:H2'	2:1:2570:G:C8	2.42	0.53
39:G:101:THR:HG21	39:G:177:ASN:HD22	1.74	0.53
42:J:20:VAL:HG23	42:J:31:SER:HB2	1.91	0.53
45:M:10:LEU:HD22	45:M:74:ILE:HD11	1.89	0.53
50:R:24:VAL:HG23	50:R:28:ARG:HB3	1.90	0.53
1:3:1120:C:H2'	1:3:1121:U:H6	1.73	0.53
1:3:1187:G:C5'	46:N:114:LYS:HD2	2.39	0.53
1:3:1486:G:H2'	1:3:1487:G:O4'	2.08	0.53
2:1:20:C:H2'	2:1:21:A:H8	1.73	0.53
2:1:1728:C:O2	2:1:1730:C:H5"	2.09	0.53
2:1:2162:G:N3	2:1:2162:G:H2'	2.23	0.53
2:1:2230:G:H2'	2:1:2231:U:C6	2.43	0.53
13:i:79:LEU:HD22	13:i:128:ILE:HG22	1.90	0.53
15:k:34:GLY:N	15:k:37:ASP:OD2	2.36	0.53
40:H:19:SER:HB3	40:H:21:TRP:HE1	1.74	0.53
41:I:63:ILE:HG23	41:I:64:TYR:HD2	1.74	0.53
49:Q:42:LYS:NZ	49:Q:87:LYS:O	2.39	0.53
1:3:8:A:N6	41:I:201:GLU:O	2.42	0.53
1:3:487:A:C2	1:3:488:C:H1'	2.43	0.53
1:3:624:C:H2'	1:3:625:U:C6	2.44	0.53
2:1:833:A:H1'	16:l:51:GLU:HB3	1.91	0.53
8:e:33:ILE:HG23	8:e:155:ILE:HG12	1.91	0.53
50:R:15:VAL:HG13	50:R:16:ILE:HG23	1.90	0.53
1:3:248:C:H4'	1:3:283:U:O2'	2.09	0.52
1:3:860:A:H2'	1:3:861:G:O4'	2.09	0.52
2:1:1054:A:O2'	12:h:30:SER:C	2.51	0.52
2:1:1636:U:H2'	2:1:1637:A:H8	1.74	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2478:A:OP2	36:F:2:LYS:NZ	2.42	0.52
3:2:110:C:C2'	3:2:111:U:H5'	2.39	0.52
41:I:61:ARG:NH1	41:I:68:GLU:OE1	2.42	0.52
1:3:78:A:H61	1:3:91:U:H3	1.57	0.52
1:3:528:C:H41	49:Q:45:ASN:ND2	2.06	0.52
2:1:190:A:C4	2:1:207:A:C2	2.96	0.52
2:1:1440:U:H2'	2:1:1441:G:C8	2.44	0.52
2:1:1722:A:H62	2:1:1738:G:H1'	1.74	0.52
2:1:1911:U:H2'	2:1:1918:A:N1	2.24	0.52
2:1:2108:A:H2'	2:1:2109:U:C5'	2.39	0.52
2:1:2437:G:H2'	2:1:2438:U:H6	1.74	0.52
6:c:18:ASP:N	6:c:18:ASP:OD1	2.42	0.52
8:e:35:LEU:HB2	8:e:88:VAL:HB	1.91	0.52
12:h:5:LEU:HD23	12:h:5:LEU:H	1.74	0.52
49:Q:72:ASN:N	49:Q:72:ASN:OD1	2.40	0.52
1:3:185:U:H2'	1:3:186:C:C6	2.44	0.52
1:3:592:G:H2'	1:3:593:U:O4'	2.09	0.52
1:3:1256:A:H2'	1:3:1278:G:N7	2.24	0.52
2:1:7:G:H2'	2:1:8:C:C6	2.44	0.52
2:1:703:U:H2'	2:1:704:G:H5'	1.89	0.52
2:1:1053:C:N3	2:1:1106:G:O6	2.42	0.52
3:2:5:U:H2'	3:2:6:G:H8	1.74	0.52
4:5:55:U:H5	4:5:58:A:OP2	1.92	0.52
4:5:75:C:C2'	4:5:76:A:C8	2.83	0.52
37:4:6:G:H5"	58:Z:54:ARG:HH22	1.74	0.52
38:6:50:U:C2	38:6:64:G:N2	2.76	0.52
1:3:202:G:H21	1:3:466:A:H61	1.57	0.52
1:3:634:C:H2'	1:3:635:A:C8	2.44	0.52
1:3:722:G:H21	58:Z:44:ARG:NH2	2.08	0.52
2:1:340:A:C2'	2:1:341:C:H5'	2.39	0.52
2:1:521:U:H2'	2:1:522:A:H8	1.74	0.52
2:1:545:U:O2	2:1:548:G:O6	2.27	0.52
2:1:633:A:H2'	2:1:634:C:O4'	2.10	0.52
2:1:760:G:H2'	2:1:761:A:O4'	2.10	0.52
2:1:989:G:OP2	30:z:11:SER:HB2	2.08	0.52
2:1:1515:A:H2'	2:1:1516:G:O4'	2.10	0.52
2:1:1727:C:O2'	2:1:1728:C:H5'	2.10	0.52
2:1:2579:C:O2'	2:1:2580:U:H5'	2.09	0.52
2:1:2756:U:H1'	2:1:2757:A:H5"	1.90	0.52
12:h:129:LEU:HD12	12:h:129:LEU:O	2.09	0.52
46:N:24:ASN:HD21	46:N:26:LYS:HD3	1.74	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:Q:98:ARG:NE	49:Q:103:CYS:SG	2.82	0.52
1:3:357:G:OP1	1:3:367:U:H2'	2.10	0.52
1:3:358:U:O2'	1:3:359:G:H5'	2.10	0.52
1:3:423:G:H2'	1:3:424:G:H5'	1.91	0.52
1:3:458:U:H2'	1:3:459:A:C8	2.44	0.52
1:3:1517:G:H2'	1:3:1518:A:H5'	1.90	0.52
2:1:65:U:O2'	24:t:73:ARG:HD2	2.09	0.52
2:1:825:A:O2'	2:1:826:U:H5'	2.09	0.52
2:1:859:G:O2'	2:1:860:U:C6	2.63	0.52
2:1:1501:G:H2'	2:1:1502:A:H8	1.73	0.52
2:1:2555:U:C2'	2:1:2556:C:H5'	2.37	0.52
13:i:78:LEU:HB3	13:i:108:ILE:HD12	1.91	0.52
15:k:87:LEU:HD22	15:k:92:GLU:HB3	1.91	0.52
41:I:109:THR:H	41:I:112:GLU:HB3	1.75	0.52
43:K:49:TYR:OH	43:K:86:ARG:NH1	2.38	0.52
47:O:7:ARG:NH2	47:O:102:LEU:O	2.42	0.52
1:3:175:C:O2'	1:3:176:C:H5'	2.08	0.52
1:3:597:G:H2'	1:3:598:U:H5'	1.91	0.52
1:3:857:C:H2'	1:3:858:G:O4'	2.10	0.52
1:3:1465:A:H2'	1:3:1466:C:O4'	2.09	0.52
1:3:1533:C:H42	58:Z:46:ARG:NE	2.08	0.52
2:1:743:A:O2'	2:1:744:U:H5'	2.09	0.52
2:1:760:G:C8	2:1:760:G:C5'	2.91	0.52
2:1:855:G:C3'	2:1:856:G:H5"	2.40	0.52
2:1:1279:G:H4'	18:n:31:HIS:CD2	2.45	0.52
2:1:2314:A:C5'	8:e:34:THR:HG21	2.40	0.52
2:1:2733:A:O2'	2:1:2734:A:H5'	2.10	0.52
2:1:2791:G:H1	2:1:2805:C:H42	1.56	0.52
44:L:147:ASN:OD1	48:P:55:ARG:NH2	2.34	0.52
1:3:462:G:H3'	1:3:463:U:C6	2.45	0.52
2:1:666:A:O2'	2:1:667:U:H5'	2.10	0.52
2:1:2221:G:O2'	2:1:2222:C:H5'	2.09	0.52
2:1:2341:G:H2'	2:1:2342:C:H6	1.74	0.52
2:1:2792:A:C2'	2:1:2793:C:H5"	2.40	0.52
4:5:2:G:C2	4:5:3:G:H1'	2.44	0.52
5:b:40:GLY:O	5:b:42:ARG:NH1	2.40	0.52
5:b:79:ARG:NE	5:b:81:GLU:OE2	2.43	0.52
15:k:87:LEU:HD13	15:k:92:GLU:HG2	1.91	0.52
35:E:31:ILE:HD12	35:E:34:LYS:HE3	1.91	0.52
41:I:133:SER:O	41:I:133:SER:OG	2.23	0.52
1:3:124:C:H2'	1:3:125:U:H6	1.74	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:617:G:H5'	53:U:46:LYS:HD3	1.91	0.52
1:3:736:C:H2'	1:3:737:C:C6	2.45	0.52
1:3:1427:C:N4	1:3:1428:A:H62	2.08	0.52
2:1:624:C:O2'	2:1:657:U:H5"	2.10	0.52
2:1:2183:A:C3'	2:1:2184:A:H5"	2.40	0.52
2:1:2332:C:H5'	2:1:2336:A:N6	2.25	0.52
2:1:2391:G:H5"	2:1:2391:G:C8	2.44	0.52
42:J:147:ASN:ND2	45:M:72:GLU:OE1	2.43	0.52
46:N:115:VAL:HG21	47:O:62:ARG:HB2	1.92	0.52
53:U:34:GLU:OE2	53:U:56:ARG:NH2	2.42	0.52
1:3:272:C:H2'	1:3:273:U:C6	2.45	0.52
1:3:304:U:H2'	1:3:305:G:C8	2.45	0.52
1:3:1048:G:H5"	51:S:2:LYS:HD2	1.92	0.52
1:3:1150:A:C2	47:O:41:PRO:HG2	2.45	0.52
1:3:1358:U:H3	1:3:1363:A:H61	1.56	0.52
2:1:140:C:H3'	2:1:140:C:OP2	2.10	0.52
2:1:1792:G:H1	2:1:1827:U:H3	1.57	0.52
2:1:2143:C:H41	2:1:2144:G:N2	2.08	0.52
2:1:2783:U:H2'	2:1:2784:U:H6	1.75	0.52
2:1:2839:G:H2'	2:1:2840:C:O4'	2.10	0.52
3:2:77:U:O2'	3:2:78:A:H5'	2.09	0.52
24:t:54:GLU:HG3	24:t:88:LYS:HD2	1.92	0.52
45:M:28:SER:OG	45:M:29:SER:N	2.41	0.52
49:Q:67:GLY:O	49:Q:98:ARG:NH1	2.38	0.52
1:3:271:C:H2'	1:3:272:C:H6	1.75	0.52
1:3:1509:C:O2'	1:3:1510:C:H5'	2.10	0.52
2:1:445:C:H2'	2:1:446:G:H5'	1.92	0.52
2:1:926:G:H2'	2:1:927:A:H8	1.74	0.52
2:1:1055:G:C2'	2:1:1056:G:H5'	2.39	0.52
2:1:1057:A:N6	2:1:1082:U:H1'	2.25	0.52
2:1:1882:U:H2'	2:1:1883:U:C6	2.45	0.52
2:1:2492:U:O2'	2:1:2493:U:H5'	2.10	0.52
2:1:2506:U:C2'	4:5:76:A:O2'	2.55	0.52
12:h:45:GLY:HA2	12:h:49:GLY:HA2	1.92	0.52
15:k:65:THR:HG23	15:k:68:GLY:H	1.75	0.52
33:C:24:LYS:HE2	33:C:26:LYS:HZ3	1.75	0.52
39:G:186:VAL:HG11	39:G:192:PRO:HB3	1.91	0.52
1:3:401:C:H2'	1:3:402:G:H8	1.75	0.51
2:1:55:G:H2'	2:1:56:A:H8	1.74	0.51
2:1:291:G:H2'	2:1:292:U:H6	1.74	0.51
2:1:779:U:OP1	5:b:48:ILE:HG22	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:803:U:O2'	2:1:804:A:H5'	2.10	0.51
2:1:956:G:OP1	17:m:86:LYS:HG3	2.09	0.51
2:1:1046:A:C5'	12:h:61:ARG:HG3	2.40	0.51
2:1:1643:G:H2'	2:1:1644:C:O4'	2.10	0.51
2:1:1671:U:H2'	2:1:1673:G:OP2	2.10	0.51
2:1:2123:G:H22	2:1:2175:C:H2'	1.74	0.51
2:1:2648:G:H22	2:1:2673:G:H1'	1.76	0.51
2:1:2743:U:H2'	2:1:2744:G:O4'	2.10	0.51
5:b:48:ILE:HD11	5:b:51:ARG:HA	1.92	0.51
6:c:173:GLN:HG3	6:c:208:LYS:HD2	1.91	0.51
17:m:129:THR:OG1	17:m:130:PHE:N	2.38	0.51
23:s:28:LYS:HE2	23:s:69:LEU:H	1.75	0.51
44:L:71:THR:C	44:L:90:VAL:HG13	2.35	0.51
1:3:82:G:C5	1:3:83:C:H1'	2.46	0.51
1:3:283:U:H3'	1:3:284:C:C6	2.45	0.51
1:3:1045:C:H2'	1:3:1046:A:O4'	2.09	0.51
1:3:1238:A:C2	1:3:1241:G:H1'	2.45	0.51
2:1:361:G:H8	2:1:361:G:OP2	1.93	0.51
2:1:467:G:O2'	2:1:468:G:H5'	2.10	0.51
2:1:557:C:O2'	2:1:558:U:H5'	2.10	0.51
2:1:1171:G:H2'	2:1:1172:C:C4'	2.40	0.51
2:1:1267:U:H2'	2:1:1267:U:O2	2.10	0.51
2:1:1565:C:O2'	2:1:1566:A:H8	1.93	0.51
2:1:2047:C:O2'	2:1:2048:G:H5'	2.10	0.51
2:1:2231:U:H2'	2:1:2232:C:C6	2.44	0.51
2:1:2602:A:H5'	2:1:2603:G:OP1	2.09	0.51
12:h:88:HIS:H	12:h:89:PRO:HD2	1.74	0.51
35:E:32:LEU:O	35:E:40:LYS:NZ	2.40	0.51
1:3:35:G:H2'	1:3:36:C:H6	1.72	0.51
1:3:187:G:H1'	1:3:190:A:H62	1.76	0.51
1:3:484:G:C8	1:3:486:U:H1'	2.45	0.51
1:3:520:A:OP1	49:Q:48:LEU:HB2	2.09	0.51
1:3:633:G:H2'	1:3:634:C:C6	2.45	0.51
1:3:886:G:H2'	1:3:887:G:O4'	2.10	0.51
2:1:40:U:H2'	2:1:41:C:C6	2.45	0.51
2:1:322:A:OP2	7:d:163:ASN:HB2	2.09	0.51
2:1:691:C:O2'	2:1:692:C:H5'	2.10	0.51
2:1:1057:A:N9	12:h:34:THR:HG22	2.24	0.51
2:1:1281:G:H2'	2:1:1282:U:C6	2.45	0.51
2:1:2134:A:C8	2:1:2157:G:H4'	2.45	0.51
2:1:2798:U:H5'	2:1:2799:A:N3	2.25	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:5:10:G:H2'	4:5:11:C:C6	2.45	0.51
4:5:10:G:H2'	4:5:11:C:H6	1.75	0.51
9:f:156:TYR:O	9:f:170:THR:OG1	2.24	0.51
34:D:3:ARG:HE	34:D:4:THR:H	1.58	0.51
42:J:76:ASN:OD1	42:J:77:ASN:ND2	2.43	0.51
46:N:91:GLU:HA	46:N:94:ARG:HB2	1.92	0.51
47:O:11:LYS:HB3	47:O:71:LEU:HD23	1.90	0.51
53:U:8:ARG:NH1	53:U:9:HIS:O	2.43	0.51
1:3:253:A:H2'	1:3:254:G:H8	1.76	0.51
1:3:261:U:OP2	57:Y:73:ARG:NH2	2.43	0.51
1:3:674:G:H4'	55:W:69:TYR:CD2	2.46	0.51
1:3:920:U:H2'	1:3:921:U:C6	2.46	0.51
2:1:689:A:O2'	2:1:690:G:H5'	2.10	0.51
2:1:1061:U:OP2	2:1:1070:A:H1'	2.10	0.51
2:1:1181:U:H2'	2:1:1182:G:C8	2.45	0.51
2:1:1926:U:C6	2:1:1926:U:C3'	2.94	0.51
2:1:2092:U:C4'	2:1:2093:G:H5"	2.38	0.51
2:1:2118:U:C2	2:1:2147:A:H2	2.29	0.51
4:5:11:C:H2'	4:5:12:G:C8	2.45	0.51
18:n:37:THR:HG22	18:n:110:MET:HE1	1.93	0.51
48:P:35:ASP:OD1	48:P:35:ASP:N	2.39	0.51
50:R:17:ALA:O	50:R:20:SER:OG	2.25	0.51
56:X:17:LYS:HA	56:X:20:LYS:HB2	1.92	0.51
1:3:105:G:OP2	57:Y:12:GLN:NE2	2.44	0.51
1:3:1513:A:H2'	1:3:1514:G:H8	1.75	0.51
2:1:189:G:H2'	2:1:205:G:H22	1.76	0.51
2:1:1301:A:O2'	2:1:1302:A:H3'	2.10	0.51
2:1:1773:A:C5	2:1:1829:A:H1'	2.46	0.51
2:1:2043:C:O2	2:1:2043:C:H2'	2.10	0.51
2:1:2135:A:C4	2:1:2136:G:H1'	2.46	0.51
2:1:2572:A:OP2	6:c:149:ASN:HB3	2.11	0.51
5:b:15:VAL:HG22	5:b:205:GLY:HA3	1.92	0.51
8:e:140:ILE:HG22	8:e:142:TYR:H	1.75	0.51
13:i:51:GLY:O	13:i:81:LYS:NZ	2.43	0.51
38:6:71:C:H2'	38:6:72:A:C8	2.46	0.51
47:O:83:THR:O	47:O:87:LEU:N	2.43	0.51
56:X:11:ASP:OD2	56:X:34:SER:OG	2.28	0.51
1:3:382:A:H2'	1:3:383:A:O4'	2.11	0.51
1:3:882:C:O2'	1:3:883:C:H5'	2.11	0.51
1:3:1306:A:N6	1:3:1331:G:H1'	2.26	0.51
2:1:156:A:H2'	2:1:157:C:O4'	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1801:A:H5”	2:1:2203:U:H2’	1.91	0.51
3:2:24:G:N7	3:2:56:G:H2’	2.26	0.51
9:f:117:PRO:HD2	9:f:120:ILE:HG21	1.91	0.51
12:h:57:ASN:ND2	12:h:62:ARG:HG2	2.26	0.51
12:h:59:LEU:HB3	12:h:62:ARG:CB	2.41	0.51
23:s:77:ASP:OD1	23:s:77:ASP:N	2.41	0.51
36:F:16:ILE:HG12	36:F:25:VAL:HG22	1.91	0.51
1:3:363:A:OP2	49:Q:57:THR:HG21	2.10	0.51
1:3:575:G:O2’	1:3:821:G:H5’	2.11	0.51
1:3:1327:C:H2’	1:3:1328:C:C6	2.46	0.51
1:3:1352:C:H2’	1:3:1353:G:H8	1.74	0.51
2:1:354:A:H2’	2:1:355:U:C6	2.46	0.51
2:1:1046:A:C2’	12:h:8:LYS:HE3	2.41	0.51
2:1:1799:G:OP1	5:b:257:ARG:HD3	2.10	0.51
2:1:2345:G:H5’	2:1:2347:C:O4’	2.11	0.51
4:5:76:A:H8	4:5:76:A:O5’	1.94	0.51
17:m:20:LEU:HD13	26:v:81:PRO:HG2	1.91	0.51
26:v:35:GLU:OE2	26:v:93:ARG:NH1	2.43	0.51
47:O:71:LEU:O	47:O:72:ARG:NH1	2.37	0.51
1:3:258:G:N2	1:3:259:G:H1’	2.26	0.51
1:3:459:A:H2’	1:3:460:A:C8	2.45	0.51
1:3:929:G:H5”	1:3:1534:A:O2’	2.11	0.51
1:3:1123:U:C2’	1:3:1124:G:H5’	2.40	0.51
2:1:201:C:H4’	2:1:386:G:C2	2.45	0.51
2:1:416:U:H2’	2:1:417:C:C6	2.45	0.51
2:1:1039:A:H2’	2:1:1040:A:H8	1.72	0.51
2:1:2247:A:H2’	2:1:2248:C:H6	1.76	0.51
3:2:95:U:H2’	3:2:96:G:C8	2.45	0.51
4:5:8:U:H2’	4:5:13:C:N4	2.26	0.51
8:e:5:ASP:HA	8:e:8:LYS:HB2	1.92	0.51
38:6:72:A:O2’	38:6:73:A:H5’	2.11	0.51
39:G:152:ASP:N	39:G:152:ASP:OD1	2.41	0.51
41:I:18:LEU:HD22	41:I:63:ILE:HB	1.93	0.51
41:I:24:VAL:HG12	41:I:160:LEU:HD21	1.92	0.51
1:3:335:C:H2’	1:3:336:A:C8	2.45	0.51
1:3:386:C:H2’	1:3:387:U:H5’	1.93	0.51
1:3:437:U:H2’	1:3:438:U:O4’	2.10	0.51
1:3:633:G:H2’	1:3:634:C:H6	1.76	0.51
2:1:116:C:H2’	2:1:117:G:O4’	2.11	0.51
2:1:158:U:H1’	2:1:169:G:N2	2.26	0.51
2:1:247:G:N7	2:1:249:C:C2	2.79	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:952:G:C6	2:1:966:G:C6	2.99	0.51
2:1:1047:G:H2'	2:1:1110:G:H21	1.76	0.51
2:1:1054:A:H4'	12:h:30:SER:O	2.11	0.51
2:1:1654:A:O2'	2:1:1655:A:H5'	2.11	0.51
2:1:1837:C:H2'	2:1:1838:C:H5'	1.93	0.51
2:1:2795:C:H2'	2:1:2796:U:C6	2.46	0.51
3:2:96:G:H2'	3:2:97:C:H6	1.76	0.51
1:3:204:G:H2'	1:3:205:A:O4'	2.11	0.51
1:3:636:U:H5"	54:V:5:ARG:NE	2.26	0.51
1:3:1137:C:C5'	1:3:1138:G:H5'	2.41	0.51
1:3:1144:G:N2	1:3:1146:A:H62	2.09	0.51
1:3:1405:G:H21	1:3:1518:A:H1'	1.75	0.51
2:1:40:U:H2'	2:1:41:C:H6	1.76	0.51
2:1:733:G:H8	2:1:733:G:O5'	1.94	0.51
2:1:812:C:H1'	2:1:1250:G:C2	2.45	0.51
2:1:871:U:H4'	17:m:68:PHE:CZ	2.36	0.51
2:1:1201:U:O2'	2:1:1202:G:H5'	2.10	0.51
2:1:1351:C:O2'	2:1:1571:A:H1'	2.11	0.51
2:1:1935:G:N2	2:1:1962:C:O2'	2.41	0.51
2:1:2351:G:H1'	2:1:2366:A:N6	2.26	0.51
4:5:36:G:O2'	4:5:37:G:H5'	2.11	0.51
5:b:131:MET:HG2	5:b:134:ILE:HD12	1.93	0.51
6:c:37:VAL:HG22	6:c:48:ILE:HG22	1.92	0.51
45:M:1:SER:OG	45:M:3:GLN:NE2	2.43	0.51
49:Q:109:ARG:HB2	49:Q:118:VAL:HG21	1.92	0.51
1:3:283:U:H3'	1:3:284:C:H6	1.77	0.50
1:3:439:U:H4'	41:I:120:LYS:HG3	1.93	0.50
1:3:718:A:H5'	48:P:118:ASN:HB2	1.92	0.50
1:3:1137:C:H5'	1:3:1138:G:C5'	2.41	0.50
1:3:1310:G:H2'	1:3:1311:A:O4'	2.11	0.50
1:3:1513:A:H2'	1:3:1514:G:C8	2.46	0.50
2:1:1428:C:C5	2:1:1569:A:H5"	2.46	0.50
2:1:2168:G:H2'	2:1:2169:A:O4'	2.11	0.50
2:1:2297:A:N1	2:1:2321:U:C5	2.79	0.50
6:c:56:LYS:HB3	6:c:59:ARG:HB2	1.92	0.50
8:e:42:ALA:HA	8:e:48:LEU:HD11	1.93	0.50
12:h:14:GLU:O	12:h:18:VAL:HG23	2.11	0.50
17:m:25:ASP:OD1	17:m:25:ASP:N	2.42	0.50
38:6:36:U:H2'	38:6:37:A:C8	2.44	0.50
1:3:627:G:H2'	1:3:628:G:H8	1.76	0.50
1:3:1525:G:H2'	1:3:1526:G:C8	2.46	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:510:C:H2'	2:1:511:U:O4'	2.12	0.50
2:1:992:C:O2'	2:1:993:G:H5'	2.11	0.50
2:1:1081:U:O2'	13:i:119:ALA:HA	2.12	0.50
2:1:1216:G:H2'	2:1:1217:U:H6	1.75	0.50
2:1:1487:U:H2'	2:1:1488:C:C6	2.46	0.50
2:1:1533:C:H5'	2:1:1534:U:OP2	2.11	0.50
2:1:1722:A:N6	2:1:1738:G:H1'	2.26	0.50
2:1:2010:G:O2'	2:1:2011:U:H5'	2.11	0.50
2:1:2100:G:H2'	2:1:2101:A:O4'	2.11	0.50
2:1:2109:U:O2'	2:1:2110:G:H8	1.94	0.50
2:1:2131:U:OP1	2:1:2132:U:H3'	2.10	0.50
58:Z:22:CYS:SG	58:Z:23:GLU:N	2.81	0.50
1:3:818:G:H2'	1:3:820:U:C5	2.42	0.50
1:3:1315:U:H2'	1:3:1316:G:C8	2.46	0.50
2:1:878:A:N6	2:1:899:A:O2'	2.44	0.50
2:1:966:G:O4'	2:1:2267:A:N6	2.45	0.50
2:1:1046:A:C4	12:h:8:LYS:HE3	2.43	0.50
2:1:1178:C:O2	2:1:1178:C:H2'	2.10	0.50
2:1:1310:G:C1'	2:1:1611:C:H5"	2.41	0.50
2:1:1739:A:H2'	2:1:1740:G:O4'	2.12	0.50
2:1:1936:A:C2	2:1:1943:U:N3	2.65	0.50
2:1:2040:G:H2'	2:1:2041:U:O4'	2.11	0.50
2:1:2743:U:OP1	36:F:34:LYS:NZ	2.44	0.50
5:b:60:ALA:O	5:b:62:ARG:NH1	2.38	0.50
13:i:128:ILE:O	13:i:132:ALA:N	2.43	0.50
17:m:24:THR:O	17:m:34:LYS:NZ	2.35	0.50
18:n:107:ASN:HD21	23:s:40:ASN:HD22	1.59	0.50
1:3:957:U:H4'	56:X:78:THR:HG23	1.93	0.50
2:1:163:C:H2'	2:1:164:C:O4'	2.12	0.50
2:1:687:C:H2'	2:1:688:U:O4'	2.12	0.50
2:1:803:U:C2'	2:1:804:A:H5'	2.41	0.50
2:1:1045:C:O3'	12:h:61:ARG:HD3	2.12	0.50
2:1:1575:C:H2'	2:1:1576:U:C6	2.46	0.50
2:1:1979:U:O2'	2:1:1980:G:H5'	2.11	0.50
2:1:2485:G:OP1	17:m:45:GLN:NE2	2.43	0.50
2:1:2504:U:H2'	2:1:2505:G:H5'	1.92	0.50
42:J:84:VAL:HG11	42:J:146:MET:HB2	1.92	0.50
1:3:130:A:H2'	1:3:263:A:O2'	2.11	0.50
1:3:142:G:H2'	1:3:143:A:O4'	2.11	0.50
1:3:291:U:O2'	1:3:292:G:H5'	2.12	0.50
1:3:598:U:H2'	1:3:599:C:C6	2.47	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:868:C:H2'	1:3:869:G:O4'	2.10	0.50
1:3:1346:A:H2'	1:3:1346:A:N3	2.27	0.50
2:1:906:U:HO2'	17:m:66:ARG:NE	2.08	0.50
2:1:1077:A:N6	2:1:1088:A:H3'	2.27	0.50
2:1:1191:G:O2'	2:1:1192:G:H5'	2.12	0.50
2:1:2155:U:H3'	2:1:2156:G:C8	2.45	0.50
2:1:2199:A:N6	2:1:2224:G:O2'	2.43	0.50
30:z:39:ASP:OD2	30:z:44:ARG:NH1	2.44	0.50
40:H:152:VAL:HG13	40:H:197:VAL:HG12	1.93	0.50
1:3:79:G:H2'	1:3:80:A:O4'	2.11	0.50
1:3:408:A:H2'	1:3:409:U:O4'	2.11	0.50
1:3:628:G:H2'	1:3:629:A:C8	2.46	0.50
2:1:37:C:H4'	2:1:451:U:OP1	2.11	0.50
2:1:1005:C:N3	2:1:1143:A:C2	2.79	0.50
2:1:1029:A:H8	2:1:1029:A:O5'	1.94	0.50
3:2:95:U:H2'	3:2:96:G:H8	1.76	0.50
7:d:2:GLU:HB3	7:d:11:ALA:HB1	1.93	0.50
14:j:59:ALA:H	14:j:126:ALA:HA	1.77	0.50
41:I:154:VAL:HA	41:I:157:ALA:HB3	1.94	0.50
1:3:369:G:O2'	1:3:370:C:H5'	2.10	0.50
1:3:810:C:H2'	1:3:811:C:C6	2.46	0.50
1:3:1431:A:H2	1:3:1469:C:N4	2.09	0.50
2:1:866:A:C2'	2:1:867:C:H5'	2.41	0.50
2:1:1555:G:H5'	2:1:1555:G:H8	1.77	0.50
2:1:2639:A:H2	2:1:2778:A:O4'	1.94	0.50
2:1:2674:G:H4'	15:k:30:ARG:HD2	1.92	0.50
3:2:5:U:H2'	3:2:6:G:C8	2.47	0.50
12:h:59:LEU:HG	12:h:61:ARG:H	1.76	0.50
14:j:17:VAL:HG22	14:j:55:ILE:HB	1.94	0.50
25:u:85:ARG:NH1	25:u:99:SER:OG	2.37	0.50
2:1:8:C:O2'	2:1:9:G:H5'	2.12	0.50
2:1:779:U:P	5:b:48:ILE:HG22	2.52	0.50
2:1:1107:G:C1'	12:h:81:LEU:HG	2.41	0.50
2:1:1365:A:OP1	28:x:2:ARG:NH1	2.45	0.50
2:1:1836:C:O2'	2:1:1837:C:H5'	2.12	0.50
2:1:2715:C:H3'	2:1:2716:C:H5"	1.93	0.50
8:e:21:TYR:OH	8:e:164:GLU:OE2	2.29	0.50
8:e:116:LEU:O	8:e:177:ARG:N	2.42	0.50
16:l:77:ILE:HB	16:l:110:VAL:HA	1.94	0.50
39:G:11:ALA:HB1	39:G:207:ARG:HG3	1.94	0.50
44:L:49:LEU:O	44:L:53:SER:OG	2.28	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:L:70:PRO:O	44:L:90:VAL:HG21	2.11	0.50
1:3:426:U:H2'	1:3:427:U:C6	2.46	0.50
1:3:643:C:H5"	45:M:31:LEU:HD12	1.93	0.50
1:3:745:G:O2'	1:3:746:A:H5'	2.12	0.50
1:3:1296:C:C4'	1:3:1302:C:H41	2.24	0.50
2:1:108:G:O2'	2:1:109:C:H5'	2.12	0.50
2:1:319:G:H2'	2:1:320:A:O4'	2.11	0.50
2:1:347:A:H2'	2:1:348:A:C8	2.46	0.50
2:1:809:G:C6	2:1:810:U:N3	2.80	0.50
2:1:1046:A:OP2	12:h:61:ARG:NH2	2.45	0.50
2:1:1055:G:OP1	12:h:31:ARG:O	2.30	0.50
2:1:1293:C:H2'	2:1:1294:U:O4'	2.11	0.50
2:1:1625:C:H2'	2:1:1626:A:O4'	2.12	0.50
2:1:2303:G:C2'	2:1:2304:G:H5'	2.42	0.50
32:B:37:HIS:ND1	32:B:38:LEU:O	2.32	0.50
1:3:782:A:H2'	1:3:783:C:H5'	1.94	0.49
1:3:866:C:C5	1:3:867:G:H1'	2.47	0.49
2:1:228:C:H42	2:1:2407:A:H2	1.58	0.49
2:1:329:G:H4'	2:1:330:A:OP2	2.11	0.49
2:1:381:G:O2'	2:1:382:A:H5'	2.11	0.49
2:1:455:C:O2	2:1:473:G:H5'	2.12	0.49
2:1:660:C:H2'	2:1:661:A:H8	1.77	0.49
2:1:1045:C:O3'	12:h:61:ARG:CD	2.60	0.49
2:1:1084:A:C2	2:1:1106:G:O2'	2.52	0.49
2:1:2171:A:H2'	2:1:2171:A:N3	2.27	0.49
2:1:2210:U:H4'	2:1:2211:A:H2	1.77	0.49
2:1:2257:U:O2'	2:1:2258:C:H5'	2.12	0.49
2:1:2353:G:H2'	2:1:2354:C:O4'	2.12	0.49
12:h:69:PHE:C	12:h:70:GLU:HG3	2.35	0.49
27:w:49:CYS:SG	27:w:50:GLY:N	2.85	0.49
1:3:408:A:OP2	41:I:7:LYS:HE2	2.12	0.49
1:3:1120:C:H2'	1:3:1121:U:C6	2.47	0.49
2:1:579:G:H2'	2:1:580:U:H6	1.76	0.49
2:1:859:G:H2'	2:1:916:G:O6	2.12	0.49
2:1:1926:U:H3'	2:1:1926:U:H6	1.76	0.49
2:1:2114:A:N7	2:1:2115:G:H1'	2.26	0.49
2:1:2237:G:H8	2:1:2237:G:O5'	1.96	0.49
2:1:2489:U:C2'	2:1:2490:G:H5'	2.42	0.49
13:i:101:SER:OG	13:i:141:ASP:OD1	2.28	0.49
40:H:33:ASP:OD2	40:H:37:LYS:NZ	2.45	0.49
44:L:78:ARG:C	44:L:80:GLY:H	2.19	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:O:51:VAL:HG13	51:S:80:ARG:HB2	1.95	0.49
1:3:1262:C:H2'	1:3:1263:C:O4'	2.11	0.49
2:1:2432:A:H1'	38:6:75:C:O4'	2.13	0.49
2:1:2515:C:H2'	2:1:2516:A:H8	1.77	0.49
2:1:2861:U:H2'	2:1:2862:G:C8	2.47	0.49
4:5:57:G:H2'	4:5:58:A:H5'	1.93	0.49
20:p:96:LEU:HB3	20:p:99:LEU:HD23	1.93	0.49
40:H:9:ILE:HG23	40:H:10:ARG:HG3	1.93	0.49
45:M:14:ARG:HE	45:M:74:ILE:HG23	1.78	0.49
46:N:94:ARG:HA	46:N:97:LEU:HB2	1.93	0.49
1:3:8:A:C6	41:I:205:LYS:HB3	2.48	0.49
1:3:538:G:H2'	1:3:539:A:C8	2.47	0.49
1:3:669:G:O2'	1:3:670:G:H5'	2.12	0.49
2:1:95:A:C3'	2:1:96:C:H5"	2.42	0.49
2:1:230:G:O2'	2:1:231:A:H5'	2.12	0.49
2:1:613:A:H3'	2:1:613:A:N3	2.27	0.49
2:1:871:U:C5'	17:m:68:PHE:CE1	2.95	0.49
2:1:2276:G:O2'	2:1:2277:G:H5'	2.11	0.49
2:1:2562:U:O2	2:1:2562:U:H2'	2.12	0.49
3:2:48:U:H2'	3:2:49:C:C6	2.47	0.49
41:I:84:ASN:HB3	41:I:87:GLU:HB2	1.93	0.49
43:K:2:ARG:HD3	43:K:91:ARG:HH22	1.77	0.49
1:3:192:A:H2'	1:3:193:C:H5'	1.94	0.49
1:3:415:A:H2'	1:3:416:G:C8	2.47	0.49
2:1:477:A:H2'	2:1:478:A:O4'	2.13	0.49
2:1:620:G:H4'	2:1:621:A:O5'	2.12	0.49
2:1:1057:A:OP2	2:1:1102:C:N4	2.42	0.49
3:2:66:A:N1	3:2:107:G:H2'	2.28	0.49
4:5:15:G:H2'	4:5:59:A:N1	2.27	0.49
13:i:37:PHE:HZ	13:i:58:ILE:HD12	1.77	0.49
24:t:14:PRO:HA	24:t:32:LEU:HA	1.95	0.49
1:3:417:G:H2'	1:3:418:C:O4'	2.13	0.49
1:3:424:G:H2'	1:3:425:G:C8	2.48	0.49
1:3:689:C:OP2	48:P:52:ARG:NH1	2.46	0.49
2:1:57:C:H2'	2:1:58:G:O4'	2.13	0.49
2:1:247:G:C5	2:1:249:C:H1'	2.48	0.49
2:1:831:G:O2'	2:1:832:U:H5'	2.13	0.49
2:1:958:U:H5	17:m:40:ARG:NH1	2.09	0.49
2:1:1046:A:C6	12:h:8:LYS:CG	2.96	0.49
2:1:1572:A:H2'	2:1:1573:G:H8	1.77	0.49
2:1:2394:C:H2'	2:1:2395:C:H5'	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2606:C:O2'	2:1:2607:G:H5'	2.12	0.49
8:e:6:TYR:OH	8:e:171:ALA:O	2.30	0.49
50:R:77:LYS:HA	50:R:80:MET:HG2	1.94	0.49
1:3:41:G:H2'	1:3:42:G:H8	1.77	0.49
1:3:189:A:O2'	1:3:190:A:H5'	2.12	0.49
1:3:1012:A:H61	1:3:1017:U:H3	1.61	0.49
2:1:441:U:O2'	2:1:442:G:H5'	2.13	0.49
2:1:445:C:C2'	2:1:446:G:H5'	2.42	0.49
2:1:832:U:H2'	2:1:833:A:C8	2.48	0.49
2:1:962:G:O2'	2:1:963:U:H5'	2.12	0.49
2:1:1019:U:N3	2:1:1142:A:N6	2.54	0.49
2:1:1032:A:H2	2:1:1122:G:H22	1.60	0.49
2:1:2135:A:H62	2:1:2156:G:H1'	1.74	0.49
2:1:2345:G:C6	2:1:2347:C:N4	2.80	0.49
2:1:2512:C:H2'	2:1:2513:A:O4'	2.12	0.49
2:1:2751:G:OP2	9:f:2:ARG:NH1	2.45	0.49
4:5:29:U:O2	4:5:41:A:N1	2.45	0.49
4:5:59:A:H2'	4:5:60:U:H5'	1.92	0.49
5:b:106:PRO:HD2	5:b:109:LEU:HD22	1.95	0.49
11:a:211:LYS:NZ	11:a:212:VAL:O	2.42	0.49
24:t:56:GLU:HG2	24:t:57:VAL:HG23	1.95	0.49
1:3:620:C:H2'	1:3:621:A:O4'	2.12	0.49
1:3:630:A:H2'	1:3:631:C:H6	1.78	0.49
2:1:206:U:H2'	2:1:206:U:O2	2.11	0.49
2:1:1260:A:O2'	2:1:1261:C:H5'	2.13	0.49
2:1:1754:A:C2	2:1:2717:C:H5'	2.47	0.49
2:1:1857:G:N2	2:1:1884:G:H2'	2.28	0.49
2:1:2147:A:H62	2:1:2148:G:N2	2.10	0.49
2:1:2274:A:C5	2:1:2276:G:C8	3.01	0.49
16:l:2:ARG:NH1	16:l:5:THR:OG1	2.46	0.49
32:B:54:ILE:HG23	32:B:56:LYS:H	1.78	0.49
38:6:62:C:H2'	38:6:63:G:C8	2.48	0.49
57:Y:37:ALA:O	57:Y:41:GLY:N	2.46	0.49
1:3:258:G:C2	1:3:259:G:H1'	2.48	0.49
1:3:381:C:H2'	1:3:382:A:O4'	2.12	0.49
1:3:521:G:OP2	49:Q:50:LYS:NZ	2.44	0.49
1:3:890:G:O2'	1:3:906:A:N6	2.46	0.49
1:3:962:C:H2'	1:3:963:G:H8	1.78	0.49
2:1:40:U:H2'	2:1:41:C:O4'	2.13	0.49
2:1:962:G:H2'	2:1:963:U:H6	1.78	0.49
2:1:1046:A:N7	12:h:4:ASN:ND2	2.61	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1107:G:H1'	12:h:81:LEU:HG	1.93	0.49
2:1:1378:A:O2'	2:1:1380:G:N7	2.43	0.49
2:1:1564:C:H2'	2:1:1565:C:O4'	2.12	0.49
2:1:1886:U:O2'	2:1:1887:C:H5'	2.13	0.49
2:1:2126:A:C2'	2:1:2162:G:H21	2.26	0.49
8:e:133:GLU:HB2	8:e:136:ILE:HG13	1.95	0.49
13:i:8:VAL:HB	13:i:58:ILE:HB	1.94	0.49
20:p:91:VAL:HG21	20:p:96:LEU:HD21	1.93	0.49
24:t:37:ASP:OD1	24:t:37:ASP:N	2.43	0.49
49:Q:120:ARG:NH2	49:Q:121:PRO:O	2.45	0.49
52:T:28:VAL:O	52:T:32:THR:OG1	2.26	0.49
1:3:56:U:H2'	1:3:57:G:C8	2.48	0.49
2:1:678:C:H2'	2:1:679:C:C6	2.48	0.49
2:1:1209:U:O3'	2:1:1212:G:H5'	2.12	0.49
2:1:2741:A:H2'	2:1:2742:G:C5'	2.42	0.49
10:g:61:VAL:O	10:g:65:ALA:N	2.46	0.49
11:a:41:SER:HA	11:a:177:LYS:HA	1.94	0.49
15:k:64:ARG:HB2	15:k:83:ALA:HB3	1.94	0.49
41:I:143:SER:HA	41:I:178:GLU:HA	1.95	0.49
45:M:65:PHE:N	45:M:68:LYS:O	2.43	0.49
1:3:1238:A:N7	1:3:1303:C:H1'	2.28	0.48
2:1:638:G:H3'	2:1:639:U:C6	2.48	0.48
2:1:906:U:H1'	17:m:28:PHE:CE2	2.48	0.48
2:1:1071:G:H1'	2:1:1089:A:C5	2.48	0.48
2:1:1103:A:H3'	2:1:1104:C:C4'	2.43	0.48
2:1:1416:G:H2'	2:1:1417:C:C6	2.48	0.48
2:1:1416:G:H2'	2:1:1417:C:H6	1.78	0.48
2:1:2698:U:H2'	2:1:2699:C:C6	2.48	0.48
3:2:42:C:O2	3:2:42:C:C2'	2.61	0.48
12:h:67:THR:CG2	12:h:68:PRO:HD3	2.43	0.48
21:q:25:GLY:O	21:q:29:ARG:NH1	2.45	0.48
42:J:80:LEU:HB2	42:J:97:PRO:HB3	1.94	0.48
51:S:5:MET:O	51:S:62:ARG:NH2	2.43	0.48
1:3:441:A:H2'	1:3:441:A:N3	2.28	0.48
1:3:1176:A:H2'	1:3:1177:G:O4'	2.13	0.48
1:3:1296:C:H4'	1:3:1302:C:H41	1.78	0.48
1:3:1511:G:H2'	1:3:1512:U:H6	1.77	0.48
2:1:83:A:H5"	2:1:84:A:OP1	2.13	0.48
2:1:945:A:C5	2:1:2448:A:C2	3.01	0.48
2:1:1054:A:O4'	12:h:30:SER:O	2.31	0.48
2:1:1181:U:H6	2:1:1181:U:O5'	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2561:U:O3'	15:k:40:LYS:NZ	2.44	0.48
2:1:2648:G:N2	2:1:2673:G:H1'	2.28	0.48
2:1:2720:U:H6	2:1:2720:U:H5'	1.78	0.48
7:d:61:ARG:HH22	7:d:65:THR:HB	1.78	0.48
23:s:20:VAL:HG11	23:s:44:ALA:HA	1.94	0.48
46:N:12:LYS:H	46:N:105:ARG:HH22	1.60	0.48
46:N:35:GLU:HA	46:N:39:GLY:HA3	1.95	0.48
46:N:117:LEU:HD22	46:N:123:ARG:HG2	1.95	0.48
49:Q:24:GLU:OE1	49:Q:24:GLU:N	2.44	0.48
56:X:35:ARG:NH2	56:X:74:ALA:O	2.47	0.48
1:3:34:C:H2'	1:3:35:G:C8	2.49	0.48
1:3:109:A:C6	1:3:326:G:C6	3.01	0.48
1:3:229:U:H2'	1:3:230:G:O4'	2.13	0.48
2:1:165:A:H2'	2:1:166:U:O4'	2.14	0.48
2:1:189:G:H2'	2:1:205:G:N2	2.28	0.48
2:1:251:A:H2'	2:1:252:G:O4'	2.14	0.48
2:1:621:A:H2'	2:1:622:G:C5'	2.43	0.48
2:1:1680:U:H2'	2:1:1681:G:C5'	2.41	0.48
2:1:2747:G:O6	2:1:2754:U:H2'	2.12	0.48
45:M:105:THR:N	45:M:108:GLY:O	2.45	0.48
48:P:92:ARG:NH2	48:P:111:ASP:OD1	2.43	0.48
1:3:112:G:H22	1:3:315:A:H2	1.62	0.48
1:3:304:U:O2'	1:3:305:G:H5'	2.14	0.48
2:1:407:G:O2'	2:1:408:G:H5'	2.14	0.48
2:1:859:G:O2'	2:1:860:U:P	2.71	0.48
2:1:1059:G:H3'	2:1:1060:U:H3'	1.95	0.48
2:1:1071:G:OP1	2:1:1071:G:H3'	2.14	0.48
2:1:1182:G:H2'	2:1:1183:U:O4'	2.12	0.48
2:1:1728:C:H2'	2:1:1729:U:C5'	2.41	0.48
2:1:1815:A:H8	2:1:1815:A:OP1	1.95	0.48
2:1:1878:G:H2'	2:1:1879:C:O4'	2.14	0.48
2:1:2170:A:H2	2:1:2171:A:H1'	1.76	0.48
2:1:2303:G:H2'	2:1:2304:G:H5'	1.96	0.48
2:1:2801:G:H2'	2:1:2802:G:C8	2.48	0.48
9:f:148:ARG:HH21	9:f:153:PRO:HG2	1.78	0.48
11:a:64:VAL:HG13	11:a:160:GLN:HG2	1.95	0.48
12:h:67:THR:HG22	12:h:68:PRO:HD3	1.96	0.48
23:s:80:PRO:O	23:s:100:THR:OG1	2.27	0.48
1:3:66:A:H4'	1:3:173:U:C5	2.49	0.48
1:3:470:C:O2'	1:3:471:U:H5'	2.14	0.48
1:3:731:G:H5'	1:3:766:A:H4'	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:1220:G:OP1	56:X:36:ARG:NH2	2.46	0.48
1:3:1462:C:H2'	1:3:1463:U:O4'	2.14	0.48
2:1:801:G:H3'	2:1:802:A:C5'	2.41	0.48
2:1:851:C:H2'	2:1:852:U:C6	2.48	0.48
2:1:935:C:H2'	2:1:936:A:C8	2.48	0.48
2:1:1801:A:H5'	2:1:1801:A:H8	1.78	0.48
2:1:1887:C:H2'	2:1:1888:G:O4'	2.14	0.48
2:1:2412:A:H2'	2:1:2413:G:O4'	2.13	0.48
2:1:2417:C:H2'	2:1:2418:A:C8	2.48	0.48
2:1:2626:C:H2'	2:1:2627:G:O4'	2.13	0.48
8:e:7:TYR:OH	8:e:28:PRO:O	2.30	0.48
9:f:154:GLU:HB3	9:f:159:LYS:H	1.77	0.48
13:i:131:THR:O	13:i:135:MET:N	2.47	0.48
44:L:136:LYS:HA	44:L:139:ASP:HB2	1.96	0.48
49:Q:3:VAL:HA	49:Q:6:LEU:HB2	1.96	0.48
2:1:951:C:H2'	2:1:952:G:H8	1.79	0.48
2:1:1149:G:H2'	2:1:1150:C:C6	2.48	0.48
2:1:1277:G:H2'	2:1:1278:C:H6	1.79	0.48
2:1:1298:C:H2'	2:1:1299:G:O4'	2.13	0.48
2:1:1565:C:O2'	2:1:1566:A:C8	2.66	0.48
2:1:1695:G:H2'	2:1:1696:G:O4'	2.13	0.48
2:1:2124:G:H2'	2:1:2125:G:C4'	2.44	0.48
2:1:2302:U:H2'	2:1:2303:G:C8	2.48	0.48
2:1:2717:C:H2'	2:1:2718:G:O4'	2.13	0.48
6:c:97:SER:OG	6:c:98:VAL:N	2.42	0.48
13:i:14:ALA:HB1	13:i:45:THR:HG23	1.95	0.48
40:H:27:GLU:N	40:H:27:GLU:OE1	2.46	0.48
43:K:10:VAL:HG23	43:K:58:HIS:HB3	1.95	0.48
43:K:13:ASP:OD2	43:K:13:ASP:N	2.42	0.48
52:T:25:GLU:OE2	52:T:76:ARG:NH1	2.46	0.48
1:3:360:G:H2'	1:3:361:G:O4'	2.14	0.48
1:3:1199:U:H2'	1:3:1200:C:H5'	1.96	0.48
1:3:1258:G:H2'	1:3:1259:C:H6	1.78	0.48
1:3:1312:G:N7	56:X:2:ARG:N	2.61	0.48
1:3:1368:A:OP1	46:N:112:ARG:NH2	2.47	0.48
1:3:1472:U:H2'	1:3:1473:G:C8	2.49	0.48
2:1:133:U:C2'	2:1:134:G:H5'	2.43	0.48
2:1:578:G:H21	2:1:1252:G:H21	1.60	0.48
2:1:639:U:H2'	2:1:640:C:C6	2.48	0.48
2:1:809:G:O2'	2:1:810:U:H5'	2.14	0.48
2:1:2012:G:H8	2:1:2012:G:O5'	1.97	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2478:A:H2'	2:1:2479:U:O4'	2.14	0.48
2:1:2736:A:O2'	2:1:2737:G:H5'	2.13	0.48
13:i:34:ILE:O	13:i:38:CYS:N	2.38	0.48
38:6:59:A:H2'	38:6:60:U:C5'	2.42	0.48
49:Q:51:VAL:HG21	49:Q:92:VAL:HG11	1.96	0.48
1:3:138:G:O2'	1:3:139:A:H5'	2.14	0.48
1:3:449:G:H2'	1:3:450:G:O4'	2.14	0.48
1:3:715:A:H2'	1:3:716:A:C8	2.48	0.48
1:3:954:G:O6	50:R:102:LYS:NZ	2.46	0.48
1:3:1344:C:O2'	1:3:1345:U:H5'	2.13	0.48
2:1:396:G:OP2	28:x:9:LYS:NZ	2.46	0.48
2:1:861:A:C2'	2:1:862:G:H5'	2.43	0.48
2:1:1046:A:C6	12:h:8:LYS:CD	2.92	0.48
2:1:1098:A:H2'	2:1:1099:G:H5'	1.95	0.48
2:1:2465:C:H2'	2:1:2466:C:H6	1.79	0.48
2:1:2498:C:O2'	2:1:2499:C:H5'	2.13	0.48
2:1:2653:U:C3'	2:1:2654:A:H5"	2.41	0.48
2:1:2869:G:H2'	2:1:2870:C:H6	1.79	0.48
1:3:1494:G:H2'	1:3:1495:U:C6	2.48	0.48
1:3:1533:C:H42	58:Z:46:ARG:NH2	2.11	0.48
2:1:194:G:H2'	2:1:195:A:O4'	2.13	0.48
2:1:259:G:H2'	2:1:260:G:H8	1.78	0.48
2:1:623:C:H2'	2:1:624:C:H6	1.78	0.48
2:1:1229:C:H2'	2:1:1230:A:C8	2.48	0.48
2:1:1867:G:C2'	2:1:1868:C:H5'	2.44	0.48
2:1:2097:A:H2'	2:1:2098:U:H6	1.79	0.48
2:1:2188:U:C4	2:1:2189:U:C4	3.02	0.48
2:1:2217:G:O2'	2:1:2218:G:H5'	2.13	0.48
2:1:2244:U:H2'	2:1:2245:U:O4'	2.13	0.48
2:1:2444:G:OP2	7:d:63:LYS:HE2	2.13	0.48
2:1:2812:G:H2'	2:1:2813:A:O4'	2.13	0.48
4:5:2:G:C5	4:5:72:G:C2	3.01	0.48
4:5:4:C:O2'	4:5:5:G:C8	2.67	0.48
11:a:185:LEU:O	11:a:189:LEU:N	2.42	0.48
19:o:35:ILE:HG12	19:o:102:ARG:HD3	1.96	0.48
1:3:253:A:H2'	1:3:254:G:C8	2.49	0.48
1:3:711:G:O2'	1:3:712:A:H5'	2.14	0.48
1:3:923:A:H2'	1:3:924:C:C6	2.49	0.48
1:3:1517:G:C2'	1:3:1518:A:H5'	2.44	0.48
2:1:416:U:H3	2:1:2407:A:H61	1.62	0.48
2:1:956:G:OP2	17:m:86:LYS:HE3	2.12	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1047:G:C8	12:h:61:ARG:CB	2.91	0.48
2:1:1216:G:H2'	2:1:1217:U:C6	2.49	0.48
2:1:1721:G:H2'	2:1:1738:G:H22	1.77	0.48
2:1:1728:C:H2'	2:1:1728:C:O2	2.14	0.48
24:t:17:SER:OG	24:t:18:GLU:N	2.47	0.48
41:I:97:LEU:HB2	41:I:134:TYR:HB3	1.96	0.48
45:M:89:ASP:OD1	45:M:89:ASP:N	2.41	0.48
53:U:44:SER:HB3	53:U:46:LYS:HG2	1.96	0.48
1:3:522:C:N4	49:Q:49:ARG:HH22	2.12	0.47
1:3:807:A:H2'	1:3:808:C:C6	2.49	0.47
1:3:981:U:H2'	1:3:982:U:C5	2.49	0.47
1:3:1174:G:O2'	1:3:1175:G:H5'	2.15	0.47
1:3:1452:C:H4'	1:3:1453:G:C2	2.49	0.47
2:1:195:A:H2'	2:1:198:C:H41	1.79	0.47
2:1:490:C:H4'	2:1:491:G:OP2	2.14	0.47
2:1:885:C:H2'	2:1:886:A:H8	1.77	0.47
2:1:1077:A:H61	2:1:1088:A:H3'	1.78	0.47
2:1:1156:A:H5'	2:1:1156:A:C8	2.49	0.47
2:1:1649:G:O2'	2:1:1650:A:H5'	2.13	0.47
2:1:2430:A:OP2	2:1:2430:A:H4'	2.14	0.47
2:1:2488:G:H2'	2:1:2489:U:C6	2.45	0.47
2:1:2506:U:O2'	4:5:76:A:C3'	2.62	0.47
12:h:28:ALA:HB2	12:h:82:ILE:HG22	1.95	0.47
15:k:76:VAL:H	20:p:72:VAL:HG22	1.79	0.47
45:M:105:THR:HB	45:M:120:LEU:HD11	1.95	0.47
48:P:63:GLN:O	48:P:67:GLU:N	2.45	0.47
53:U:40:ASN:HB3	53:U:43:ALA:HB2	1.95	0.47
1:3:81:A:H5"	1:3:81:A:H8	1.79	0.47
1:3:1444:U:H1'	1:3:1459:G:N2	2.29	0.47
2:1:1141:U:H4'	2:1:1142:A:O4'	2.13	0.47
2:1:1276:A:H2'	2:1:1277:G:C8	2.48	0.47
2:1:1279:G:C2	2:1:1292:G:C2	3.02	0.47
2:1:1348:C:H2'	2:1:1349:C:H5'	1.94	0.47
2:1:2341:G:H2'	2:1:2342:C:C6	2.49	0.47
2:1:2417:C:H2'	2:1:2418:A:H8	1.79	0.47
12:h:129:LEU:HD12	12:h:129:LEU:C	2.39	0.47
19:o:107:ALA:O	19:o:111:ARG:N	2.42	0.47
1:3:192:A:O2'	1:3:193:C:H5'	2.14	0.47
1:3:701:U:C4'	1:3:703:G:H1'	2.44	0.47
1:3:1494:G:H2'	1:3:1495:U:H6	1.79	0.47
2:1:906:U:H1'	17:m:28:PHE:HE2	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1412:U:H2'	2:1:1413:A:C8	2.49	0.47
2:1:1648:U:C3'	2:1:1649:G:H5"	2.45	0.47
2:1:2138:G:H2'	2:1:2139:U:H5'	1.94	0.47
2:1:2722:G:H4'	18:n:4:ARG:HB2	1.95	0.47
2:1:2848:G:H1'	2:1:2867:G:N2	2.29	0.47
4:5:15:G:H22	4:5:48:C:H42	1.62	0.47
5:b:143:VAL:HB	5:b:153:LEU:HB2	1.96	0.47
9:f:163:TYR:HB2	9:f:166:GLU:HB2	1.96	0.47
12:h:33:VAL:HG23	12:h:35:VAL:H	1.78	0.47
12:h:59:LEU:HB3	12:h:62:ARG:HB3	1.96	0.47
24:t:40:LYS:HE3	24:t:60:THR:HG22	1.96	0.47
1:3:86:G:H4'	1:3:87:C:C5	2.50	0.47
1:3:1241:G:O2'	1:3:1242:G:H5'	2.14	0.47
2:1:262:A:H2'	2:1:263:G:O4'	2.14	0.47
2:1:466:A:H2'	2:1:467:G:H5'	1.97	0.47
2:1:833:A:H2'	2:1:834:G:C8	2.47	0.47
2:1:1090:A:H2'	2:1:1091:G:O4'	2.14	0.47
2:1:1635:A:H2'	2:1:1636:U:O4'	2.14	0.47
2:1:1817:G:H5"	5:b:86:ARG:NH1	2.30	0.47
2:1:1824:G:O2'	2:1:1825:U:H5'	2.15	0.47
2:1:2678:C:H2'	2:1:2679:A:O4'	2.15	0.47
11:a:216:THR:HG22	11:a:220:ALA:HB2	1.97	0.47
12:h:37:LYS:NZ	12:h:38:MET:HE2	2.29	0.47
20:p:47:ILE:HD11	20:p:61:ARG:HB2	1.96	0.47
38:6:47:U:H2'	38:6:50:U:OP1	2.14	0.47
44:L:112:ASP:O	44:L:113:LYS:NZ	2.37	0.47
45:M:6:ILE:HD12	45:M:31:LEU:HD22	1.96	0.47
46:N:14:SER:OG	46:N:68:GLY:O	2.32	0.47
1:3:24:U:O2'	1:3:25:C:H5'	2.15	0.47
1:3:264:C:H2'	1:3:265:G:O4'	2.14	0.47
1:3:396:C:H3'	1:3:397:A:H5"	1.95	0.47
1:3:607:A:H2'	1:3:608:A:C8	2.48	0.47
1:3:1170:A:H2'	1:3:1171:A:O4'	2.15	0.47
1:3:1305:G:HO2'	1:3:1306:A:H8	1.63	0.47
2:1:492:A:H8	2:1:492:A:O5'	1.98	0.47
2:1:702:U:O2	2:1:702:U:H2'	2.13	0.47
2:1:709:U:O2'	2:1:710:U:H5'	2.13	0.47
2:1:1871:A:H2'	2:1:1872:A:C8	2.49	0.47
2:1:2532:G:O2'	2:1:2657:A:N1	2.44	0.47
11:a:56:ASP:N	11:a:56:ASP:OD1	2.46	0.47
38:6:17:C:H5'	38:6:61:C:OP1	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:M:101:ALA:HB3	45:M:112:ASP:HB3	1.97	0.47
48:P:125:LYS:H	58:Z:34:ARG:HD3	1.80	0.47
57:Y:75:LYS:O	57:Y:79:THR:OG1	2.29	0.47
1:3:193:C:H2'	1:3:194:C:H6	1.75	0.47
1:3:422:C:H5'	1:3:423:G:C6	2.50	0.47
1:3:546:A:H4'	1:3:548:G:O3'	2.14	0.47
1:3:634:C:H2'	1:3:635:A:H8	1.78	0.47
1:3:712:A:H2'	1:3:713:G:O4'	2.14	0.47
2:1:154:U:O2'	2:1:155:A:H5'	2.15	0.47
2:1:515:A:C8	2:1:516:C:C5	3.03	0.47
2:1:535:G:C6	2:1:559:G:C6	3.03	0.47
2:1:594:U:H2'	2:1:595:C:C6	2.50	0.47
2:1:1056:G:N2	2:1:1102:C:OP2	2.48	0.47
2:1:2010:G:H2'	2:1:2011:U:C6	2.49	0.47
27:w:66:GLU:O	27:w:75:PHE:N	2.40	0.47
38:6:13:C:C2'	38:6:14:A:H5"	2.43	0.47
38:6:69:C:H2'	38:6:70:G:H5'	1.95	0.47
39:G:98:GLY:N	39:G:174:GLU:OE2	2.48	0.47
1:3:16:A:C2'	1:3:17:U:H5'	2.44	0.47
1:3:131:A:H2'	1:3:132:C:H6	1.75	0.47
1:3:626:G:H2'	1:3:627:G:H8	1.80	0.47
1:3:1111:A:N1	40:H:176:THR:HG22	2.30	0.47
1:3:1143:G:O2'	1:3:1144:G:H5'	2.15	0.47
1:3:1168:U:H5"	1:3:1169:A:OP2	2.14	0.47
1:3:1282:C:H2'	1:3:1283:U:H6	1.78	0.47
1:3:1456:A:H8	1:3:1456:A:O5'	1.98	0.47
2:1:768:G:O2'	2:1:769:U:H5'	2.15	0.47
2:1:769:U:O2'	2:1:1379:U:C6	2.66	0.47
2:1:1046:A:O2'	12:h:7:ASP:OD1	2.30	0.47
2:1:1106:G:N2	12:h:81:LEU:HD11	2.29	0.47
2:1:1429:G:H2'	2:1:1430:G:C8	2.48	0.47
2:1:1443:U:H2'	2:1:1444:G:C8	2.50	0.47
2:1:1447:C:H2'	2:1:1448:G:C8	2.49	0.47
2:1:2055:C:H5'	2:1:2056:G:O5'	2.15	0.47
2:1:2220:U:H2'	2:1:2221:G:C8	2.50	0.47
2:1:2221:G:C2'	2:1:2222:C:H5'	2.45	0.47
2:1:2266:A:H4'	2:1:2267:A:C4	2.50	0.47
2:1:2364:C:H5"	27:w:52:ASP:HB2	1.97	0.47
2:1:2677:G:C6	2:1:2678:C:N4	2.83	0.47
2:1:2731:G:O2'	2:1:2732:G:H5'	2.14	0.47
3:2:13:G:O2'	3:2:15:A:H2'	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:2:19:C:H2'	3:2:20:G:H8	1.79	0.47
4:5:64:C:C3'	4:5:65:U:H5"	2.45	0.47
8:e:30:VAL:HG12	8:e:157:THR:HG22	1.95	0.47
8:e:34:THR:HG22	8:e:89:THR:HG22	1.96	0.47
9:f:175:LYS:HD3	9:f:175:LYS:HA	1.76	0.47
24:t:8:LEU:O	29:y:29:ARG:NH1	2.39	0.47
33:C:24:LYS:HD2	33:C:33:LEU:HD23	1.97	0.47
41:I:2:ARG:HH22	41:I:111:ALA:HB1	1.79	0.47
44:L:42:VAL:O	44:L:46:LEU:N	2.47	0.47
44:L:71:THR:HA	44:L:90:VAL:CG2	2.43	0.47
47:O:12:ALA:HB2	47:O:96:VAL:HG23	1.96	0.47
48:P:124:LYS:HE2	48:P:127:ARG:HH22	1.78	0.47
1:3:483:C:H2'	1:3:484:G:C8	2.50	0.47
2:1:277:G:H4'	2:1:278:A:N7	2.29	0.47
2:1:964:C:O2'	2:1:2273:A:H1'	2.15	0.47
2:1:977:G:O2'	2:1:978:G:H5'	2.15	0.47
2:1:1090:A:H8	2:1:1090:A:O5'	1.97	0.47
2:1:1721:G:H2'	2:1:1738:G:N2	2.29	0.47
2:1:1745:A:O2'	2:1:1746:A:H5'	2.15	0.47
2:1:2109:U:O2'	2:1:2110:G:H5"	2.15	0.47
2:1:2120:G:H2'	2:1:2121:G:C8	2.50	0.47
2:1:2578:G:N2	2:1:2579:C:C2	2.82	0.47
3:2:4:C:H6	3:2:4:C:C5'	2.27	0.47
30:z:10:ARG:HB3	30:z:53:MET:HB2	1.96	0.47
42:J:104:ILE:HG22	42:J:122:VAL:HG22	1.97	0.47
48:P:125:LYS:HE3	48:P:126:ARG:HE	1.79	0.47
50:R:1:ALA:HB3	50:R:8:ILE:HG23	1.96	0.47
1:3:657:U:H2'	1:3:658:C:C6	2.50	0.47
1:3:950:U:H3'	50:R:100:ARG:HH12	1.79	0.47
1:3:1306:A:N6	1:3:1331:G:O2'	2.48	0.47
2:1:121:G:H2'	2:1:122:G:C8	2.49	0.47
2:1:861:A:H2'	2:1:862:G:H5'	1.96	0.47
2:1:1248:G:H2'	21:q:2:ARG:H	1.80	0.47
2:1:1469:A:H2'	2:1:1470:A:H8	1.79	0.47
2:1:1548:A:H2'	2:1:1549:A:H8	1.80	0.47
2:1:1760:C:H3'	2:1:1761:C:C6	2.49	0.47
2:1:2422:C:O4'	38:6:76:A:N6	2.48	0.47
3:2:27:C:H2'	3:2:28:C:O4'	2.14	0.47
3:2:77:U:O5'	3:2:77:U:H6	1.98	0.47
8:e:48:LEU:HB2	8:e:149:ARG:HH22	1.79	0.47
17:m:35:ALA:HB2	17:m:102:LEU:HD11	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:C:8:ILE:N	33:C:22:THR:O	2.42	0.47
1:3:404:G:OP2	41:I:114:ARG:NH2	2.48	0.47
2:1:33:C:N4	2:1:446:G:H1'	2.30	0.47
2:1:191:A:O2'	2:1:192:C:H5'	2.15	0.47
2:1:242:G:H5"	35:E:63:TYR:CZ	2.49	0.47
2:1:251:A:OP1	16:l:58:TYR:OH	2.30	0.47
2:1:535:G:O2'	2:1:536:G:H5'	2.14	0.47
2:1:729:G:C5	5:b:206:LYS:HB2	2.49	0.47
2:1:783:A:C8	2:1:783:A:H3'	2.49	0.47
2:1:1176:U:H2'	2:1:1177:G:C1'	2.46	0.47
2:1:2811:G:H2'	2:1:2812:G:O4'	2.15	0.47
12:h:24:SER:HB3	12:h:116:GLU:HB2	1.97	0.47
12:h:118:ILE:HD12	12:h:118:ILE:HA	1.67	0.47
13:i:11:GLN:HB3	13:i:55:PRO:HA	1.97	0.47
13:i:80:LYS:HA	13:i:83:ALA:HB3	1.97	0.47
44:L:74:VAL:CB	44:L:85:GLN:HG3	2.44	0.47
46:N:24:ASN:OD1	46:N:24:ASN:N	2.48	0.47
1:3:339:C:H2'	1:3:340:U:C6	2.50	0.46
1:3:627:G:H2'	1:3:628:G:C8	2.49	0.46
1:3:1305:G:H22	1:3:1331:G:C2'	2.25	0.46
2:1:118:A:OP2	2:1:119:A:H2'	2.14	0.46
2:1:1107:G:O2'	12:h:81:LEU:HG	2.15	0.46
2:1:1399:C:H2'	2:1:1400:U:H6	1.79	0.46
2:1:1536:C:H4'	2:1:1537:G:N1	2.30	0.46
2:1:1660:G:N2	2:1:2001:C:C2	2.83	0.46
2:1:2113:U:H2'	2:1:2114:A:H8	1.78	0.46
2:1:2271:G:H2'	2:1:2272:U:O4'	2.15	0.46
3:2:94:A:H2'	3:2:95:U:O4'	2.14	0.46
12:h:57:ASN:HD21	12:h:62:ARG:HG2	1.80	0.46
43:K:62:MET:HB3	43:K:64:VAL:HG23	1.96	0.46
48:P:125:LYS:O	58:Z:34:ARG:NH1	2.48	0.46
49:Q:33:CYS:HA	49:Q:54:VAL:HG22	1.97	0.46
1:3:952:U:O2'	1:3:953:G:H5'	2.15	0.46
1:3:1259:C:C3'	1:3:1260:G:H5"	2.42	0.46
1:3:1368:A:OP2	46:N:113:LYS:NZ	2.41	0.46
2:1:528:A:N1	2:1:2042:A:H2'	2.30	0.46
2:1:742:A:O2'	2:1:743:A:H5'	2.15	0.46
2:1:797:G:O2'	2:1:798:G:H5'	2.15	0.46
2:1:1080:A:H2'	2:1:1081:U:C5'	2.45	0.46
2:1:1107:G:O2'	12:h:81:LEU:CA	2.63	0.46
2:1:1926:U:H2'	2:1:1927:A:N7	2.30	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:f:100:ASN:HA	9:f:116:LEU:HD12	1.97	0.46
15:k:1:MET:HE3	15:k:67:LYS:HG2	1.97	0.46
38:6:29:G:H2'	38:6:30:G:O4'	2.15	0.46
44:L:79:VAL:O	44:L:79:VAL:HG12	2.15	0.46
1:3:310:G:H4'	53:U:31:ARG:HG3	1.97	0.46
1:3:1040:U:H2'	1:3:1041:G:C8	2.51	0.46
1:3:1524:C:H2'	1:3:1525:G:C8	2.51	0.46
2:1:164:C:H2'	2:1:165:A:H5'	1.96	0.46
2:1:192:C:H2'	2:1:193:U:H5'	1.97	0.46
2:1:679:C:O2'	2:1:680:C:H5'	2.15	0.46
2:1:1056:G:O3'	2:1:1057:A:H4'	2.14	0.46
2:1:1057:A:H61	2:1:1082:U:H1'	1.79	0.46
2:1:2170:A:H2'	2:1:2171:A:O4'	2.15	0.46
2:1:2176:A:H4'	11:a:215:SER:OG	2.15	0.46
2:1:2409:G:C5	2:1:2410:G:C8	3.03	0.46
2:1:2420:C:OP1	35:E:33:THR:HG23	2.15	0.46
2:1:2802:G:H2'	2:1:2803:G:H8	1.80	0.46
8:e:3:LEU:HD21	8:e:96:TRP:HB3	1.97	0.46
18:n:106:ASP:N	18:n:106:ASP:OD1	2.47	0.46
34:D:43:THR:OG1	34:D:44:VAL:N	2.48	0.46
44:L:3:ARG:HD3	44:L:3:ARG:HA	1.69	0.46
1:3:258:G:H2'	1:3:259:G:O4'	2.16	0.46
1:3:399:G:H2'	1:3:400:C:C6	2.51	0.46
2:1:53:A:H8	2:1:53:A:O5'	1.98	0.46
2:1:513:A:O2'	21:q:10:ARG:NH1	2.43	0.46
2:1:534:U:O2'	21:q:48:ASP:OD2	2.27	0.46
2:1:747:C:C5	2:1:2613:U:C5	3.04	0.46
2:1:769:U:O2'	2:1:1379:U:H6	1.98	0.46
2:1:1754:A:N6	2:1:1755:A:C6	2.84	0.46
2:1:1881:C:H2'	2:1:1882:U:O4'	2.15	0.46
2:1:1928:A:O2'	2:1:1929:G:H5'	2.15	0.46
2:1:2250:G:H8	2:1:2250:G:O5'	1.98	0.46
2:1:2530:A:N1	9:f:155:PRO:HG3	2.30	0.46
2:1:2616:C:O2'	2:1:2617:U:H5'	2.15	0.46
2:1:2626:C:O2'	2:1:2627:G:H5'	2.15	0.46
2:1:2629:U:O2'	2:1:2630:G:H5"	2.16	0.46
2:1:2667:C:O2'	9:f:110:HIS:HE1	1.98	0.46
2:1:2676:C:O2'	2:1:2677:G:H5'	2.15	0.46
2:1:2849:U:H4'	2:1:2868:A:C2	2.51	0.46
3:2:42:C:H6	8:e:65:LEU:HB2	1.81	0.46
3:2:93:C:H2'	3:2:94:A:H8	1.79	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:b:161:VAL:HG23	5:b:175:LEU:HA	1.97	0.46
24:t:11:LEU:O	29:y:29:ARG:NH2	2.48	0.46
1:3:458:U:H2'	1:3:459:A:H8	1.80	0.46
1:3:1239:A:C3'	44:L:118:ARG:HH22	2.25	0.46
1:3:1316:G:H2'	1:3:1317:C:H5"	1.97	0.46
1:3:1350:A:H2'	1:3:1351:U:O4'	2.16	0.46
1:3:1484:C:O2'	1:3:1485:U:H5'	2.15	0.46
2:1:817:C:H2'	2:1:818:G:O4'	2.15	0.46
2:1:1571:A:C8	2:1:1571:A:O5'	2.62	0.46
2:1:1845:G:O2'	2:1:1846:G:H5'	2.16	0.46
2:1:1867:G:H2'	2:1:1868:C:H5'	1.98	0.46
2:1:2126:A:H5'	2:1:2127:G:O5'	2.16	0.46
2:1:2354:C:H5"	2:1:2354:C:H6	1.80	0.46
14:j:60:ASP:N	14:j:60:ASP:OD1	2.40	0.46
16:l:95:LEU:HD22	16:l:100:ILE:HD11	1.96	0.46
38:6:70:G:H5'	38:6:70:G:C8	2.41	0.46
41:I:146:GLU:HA	41:I:149:LYS:HB2	1.98	0.46
43:K:63:ASN:HD21	43:K:95:ALA:HB1	1.79	0.46
49:Q:54:VAL:N	49:Q:62:VAL:O	2.44	0.46
1:3:73:C:H2'	1:3:74:A:H8	1.81	0.46
1:3:748:G:H2'	1:3:749:A:O4'	2.15	0.46
1:3:1169:A:H2'	1:3:1170:A:C8	2.51	0.46
1:3:1434:A:H2'	1:3:1435:G:O4'	2.16	0.46
2:1:210:C:O2'	2:1:211:C:H5'	2.16	0.46
2:1:700:G:H2'	2:1:701:G:O4'	2.15	0.46
2:1:814:C:H1'	2:1:1225:G:N2	2.30	0.46
2:1:856:G:H2'	2:1:857:G:C8	2.51	0.46
2:1:1027:A:H8	2:1:1027:A:O5'	1.98	0.46
2:1:1062:G:N3	13:i:135:MET:HE1	2.31	0.46
2:1:2230:G:H2'	2:1:2231:U:H6	1.81	0.46
2:1:2394:C:N3	38:6:76:A:O2'	2.44	0.46
2:1:2630:G:H2'	2:1:2631:G:C8	2.50	0.46
3:2:97:C:H2'	3:2:98:G:H5'	1.98	0.46
4:5:64:C:H3'	4:5:65:U:H5"	1.98	0.46
6:c:109:VAL:HG22	6:c:203:VAL:HG22	1.98	0.46
11:a:52:ALA:HB1	11:a:168:ASN:HA	1.98	0.46
31:A:12:ILE:N	31:A:24:ILE:O	2.46	0.46
37:4:5:A:H5'	58:Z:58:LYS:NZ	2.31	0.46
56:X:19:GLU:OE1	56:X:42:ASN:ND2	2.49	0.46
58:Z:27:VAL:HG12	58:Z:31:VAL:HG23	1.96	0.46
1:3:1011:C:H42	1:3:1018:G:H1	1.62	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1103:A:H3'	2:1:1104:C:H4'	1.96	0.46
2:1:1418:G:H2'	2:1:1579:A:H62	1.81	0.46
2:1:1789:A:H2'	2:1:1790:C:O4'	2.16	0.46
2:1:1901:A:H2'	2:1:1902:C:C6	2.50	0.46
2:1:2027:G:O2'	2:1:2028:U:H5'	2.15	0.46
3:2:3:C:H3'	3:2:4:C:C5'	2.43	0.46
3:2:3:C:H6	3:2:3:C:O5'	1.99	0.46
18:n:6:SER:OG	18:n:7:GLY:N	2.48	0.46
39:G:169:HIS:HA	39:G:172:ILE:HG12	1.98	0.46
52:T:17:ASP:H	52:T:20:ASP:HB3	1.81	0.46
56:X:21:ALA:O	56:X:25:GLY:N	2.49	0.46
1:3:1211:U:H4'	1:3:1213:A:N3	2.31	0.46
1:3:1300:G:C2	1:3:1335:U:C2	3.03	0.46
2:1:217:A:H2'	2:1:218:A:C8	2.51	0.46
2:1:477:A:O2'	2:1:478:A:H5'	2.16	0.46
2:1:663:G:H3'	2:1:664:G:H5"	1.97	0.46
2:1:714:U:H3'	52:T:88:ARG:NH2	2.18	0.46
2:1:743:A:H2'	2:1:744:U:O4'	2.16	0.46
2:1:807:U:OP2	16:l:41:ARG:NH1	2.38	0.46
2:1:962:G:H2'	2:1:963:U:C6	2.51	0.46
2:1:1006:C:O2'	2:1:1007:C:H5'	2.15	0.46
2:1:1070:A:N6	13:i:10:LEU:HD21	2.31	0.46
2:1:1487:U:H2'	2:1:1488:C:H6	1.81	0.46
2:1:1922:G:H2'	2:1:1923:U:H6	1.80	0.46
2:1:2083:G:H2'	2:1:2084:C:O4'	2.15	0.46
2:1:2647:U:O2'	2:1:2648:G:H5'	2.15	0.46
4:5:21:A:H2'	4:5:46:G:O6	2.15	0.46
11:a:215:SER:HA	11:a:220:ALA:HB3	1.97	0.46
23:s:40:ASN:OD1	23:s:40:ASN:N	2.49	0.46
49:Q:51:VAL:HG22	49:Q:63:THR:HG22	1.98	0.46
1:3:386:C:C2'	1:3:387:U:H5'	2.46	0.46
1:3:441:A:H5'	1:3:442:G:OP2	2.16	0.46
1:3:584:G:H2'	1:3:585:G:H8	1.80	0.46
1:3:744:C:H2'	1:3:745:G:H8	1.79	0.46
1:3:951:G:O2'	1:3:952:U:H5'	2.16	0.46
1:3:966:G:N2	38:6:34:C:H5'	2.31	0.46
1:3:1055:A:N3	40:H:155:ARG:NH1	2.64	0.46
1:3:1158:C:H3'	1:3:1158:C:O2	2.16	0.46
1:3:1248:A:O2'	1:3:1249:C:H5'	2.15	0.46
2:1:363:G:H2'	2:1:364:C:C6	2.50	0.46
2:1:418:C:H2'	2:1:419:U:C6	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:786:C:O2'	2:1:787:C:H5'	2.15	0.46
2:1:1197:G:O2'	2:1:1198:U:H5'	2.16	0.46
2:1:1214:A:H2'	2:1:1215:G:H5'	1.97	0.46
2:1:1446:C:H2'	2:1:1447:C:C6	2.51	0.46
2:1:1637:A:H2'	2:1:1638:C:H6	1.78	0.46
2:1:2095:A:H4'	10:g:11:ASN:ND2	2.30	0.46
2:1:2114:A:H2'	2:1:2166:U:O2'	2.15	0.46
4:5:59:A:C2'	4:5:60:U:H5'	2.46	0.46
15:k:66:LYS:NZ	15:k:80:ASP:O	2.41	0.46
37:4:14:A:H2'	37:4:15:A:C8	2.41	0.46
38:6:13:C:C3'	38:6:14:A:H5"	2.46	0.46
38:6:15:G:H22	38:6:48:C:N4	2.13	0.46
43:K:22:ILE:HD12	43:K:39:LEU:HD21	1.98	0.46
43:K:44:ARG:HA	43:K:58:HIS:HA	1.98	0.46
51:S:42:ASN:O	51:S:46:LYS:N	2.45	0.46
1:3:148:G:H1	1:3:174:A:H61	1.63	0.46
1:3:372:C:N4	1:3:387:U:H2'	2.30	0.46
1:3:751:U:C2'	1:3:752:G:H5'	2.46	0.46
2:1:1069:A:H1'	2:1:1096:A:H5"	1.97	0.46
2:1:1105:U:O2'	2:1:1106:G:OP2	2.27	0.46
2:1:1850:G:H2'	2:1:1851:U:O4'	2.16	0.46
2:1:2104:C:N4	2:1:2184:A:H62	2.14	0.46
2:1:2171:A:H5"	2:1:2173:A:N6	2.31	0.46
2:1:2330:G:C2	2:1:2386:A:C2	3.04	0.46
2:1:2773:C:OP1	6:c:169:ARG:NH2	2.48	0.46
12:h:8:LYS:O	12:h:11:ILE:HG22	2.16	0.46
15:k:104:THR:OG1	15:k:106:GLU:OE1	2.34	0.46
23:s:28:LYS:O	23:s:32:ALA:N	2.48	0.46
1:3:1238:A:H2'	1:3:1238:A:N3	2.31	0.45
1:3:1288:A:H1'	1:3:1353:G:C4'	2.46	0.45
1:3:1418:A:O5'	1:3:1418:A:H8	1.99	0.45
1:3:1425:U:H2'	1:3:1426:G:H8	1.81	0.45
2:1:582:A:H2'	2:1:583:G:C8	2.52	0.45
2:1:1046:A:H2'	12:h:8:LYS:HE3	1.97	0.45
2:1:1130:U:O2'	2:1:1131:G:OP1	2.30	0.45
2:1:1299:G:O6	2:1:1639:C:H5"	2.16	0.45
2:1:1445:G:H2'	2:1:1446:C:O4'	2.15	0.45
2:1:1558:C:H4'	2:1:1559:U:H5"	1.97	0.45
2:1:1996:C:OP1	15:k:31:ARG:NH2	2.44	0.45
2:1:2505:G:O6	2:1:2576:G:H2'	2.17	0.45
3:2:30:C:H2'	3:2:31:C:H5'	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:2:110:C:H2'	3:2:111:U:H5'	1.97	0.45
4:5:63:U:H2'	4:5:64:C:C6	2.51	0.45
10:g:52:ALA:HA	10:g:56:ALA:HB2	1.98	0.45
13:i:11:GLN:HB2	13:i:56:VAL:HG22	1.98	0.45
13:i:52:LEU:HA	13:i:81:LYS:HE3	1.97	0.45
1:3:422:C:C4'	1:3:423:G:C2	2.94	0.45
1:3:513:C:C2	1:3:514:C:C5	3.04	0.45
1:3:1171:A:H2'	1:3:1172:C:H6	1.82	0.45
1:3:1408:A:O2'	1:3:1409:C:H5'	2.15	0.45
2:1:501:A:H2'	2:1:502:A:C8	2.51	0.45
2:1:804:A:H2'	2:1:806:C:C4	2.52	0.45
2:1:1287:A:OP1	18:n:103:ARG:HG3	2.16	0.45
2:1:1387:A:H2'	2:1:1388:G:H8	1.82	0.45
2:1:1902:C:H2'	2:1:1903:G:O5'	2.16	0.45
2:1:2426:A:H3'	2:1:2427:C:C5'	2.46	0.45
39:G:4:SER:OG	39:G:5:MET:N	2.49	0.45
44:L:112:ASP:OD1	44:L:112:ASP:N	2.44	0.45
1:3:262:A:H2'	1:3:263:A:O4'	2.17	0.45
1:3:880:C:O2'	1:3:881:G:H5'	2.17	0.45
1:3:1123:U:H2'	1:3:1124:G:H5'	1.97	0.45
2:1:186:G:H2'	2:1:187:G:H8	1.81	0.45
2:1:479:A:H4'	2:1:480:A:OP1	2.16	0.45
2:1:544:C:N4	2:1:549:G:C6	2.84	0.45
2:1:917:A:C2	2:1:918:A:H1'	2.51	0.45
2:1:924:G:H2'	2:1:925:A:H8	1.82	0.45
2:1:1046:A:C8	12:h:8:LYS:HE3	2.51	0.45
2:1:1047:G:OP1	12:h:7:ASP:OD2	2.33	0.45
2:1:1323:C:C2'	2:1:1324:G:H5'	2.46	0.45
2:1:1911:U:H2'	2:1:1918:A:C2	2.52	0.45
2:1:2000:C:O2'	2:1:2001:C:H5'	2.17	0.45
2:1:2123:G:H22	2:1:2175:C:C2'	2.30	0.45
2:1:2176:A:O2'	11:a:215:SER:HB3	2.16	0.45
3:2:57:A:O2'	3:2:58:A:H5'	2.15	0.45
52:T:28:VAL:HG11	52:T:66:LEU:HD21	1.98	0.45
1:3:9:G:H4'	42:J:108:GLY:N	2.23	0.45
1:3:555:U:H2'	1:3:556:C:C6	2.52	0.45
1:3:824:G:O2'	1:3:825:A:H5'	2.16	0.45
1:3:1339:A:H1'	38:6:41:C:H1'	1.98	0.45
1:3:1478:U:H2'	1:3:1479:C:C6	2.51	0.45
2:1:1171:G:H2'	2:1:1172:C:H4'	1.97	0.45
2:1:1669:A:OP2	2:1:1670:C:OP2	2.34	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1730:C:H4’	2:1:1731:G:C6	2.51	0.45
2:1:2623:G:H2’	2:1:2624:G:H8	1.82	0.45
6:c:119:ALA:N	6:c:163:GLY:O	2.46	0.45
33:C:16:THR:OG1	33:C:17:GLY:N	2.48	0.45
34:D:24:THR:OG1	34:D:25:LYS:N	2.49	0.45
39:G:2:THR:HG21	39:G:50:ASN:HA	1.98	0.45
47:O:18:ILE:HA	47:O:21:ALA:HB3	1.96	0.45
49:Q:32:VAL:HB	49:Q:55:ARG:HB3	1.99	0.45
1:3:373:A:H1’	1:3:481:G:N3	2.32	0.45
1:3:423:G:H3’	1:3:423:G:N3	2.31	0.45
1:3:691:G:H2’	1:3:692:U:C6	2.51	0.45
1:3:922:G:H2’	1:3:923:A:C8	2.51	0.45
1:3:1416:G:H2’	1:3:1417:G:H5’	1.99	0.45
2:1:18:U:H2’	2:1:19:A:C8	2.51	0.45
2:1:191:A:C2	2:1:192:C:C2	3.04	0.45
2:1:1967:C:C2’	2:1:1968:G:H5’	2.46	0.45
2:1:1993:U:H4’	6:c:133:THR:HG22	1.99	0.45
2:1:2106:U:C6	2:1:2107:G:H4’	2.52	0.45
2:1:2140:G:H2’	2:1:2141:G:C4’	2.46	0.45
2:1:2500:U:HO2’	2:1:2504:U:H5	1.57	0.45
2:1:2553:G:H3’	2:1:2554:U:H5”	1.98	0.45
2:1:2650:U:H2’	2:1:2651:C:O4’	2.17	0.45
2:1:2881:U:H2’	2:1:2882:A:O4’	2.16	0.45
4:5:40:C:C2’	4:5:41:A:H5”	2.46	0.45
16:l:80:SER:OG	16:l:114:GLY:O	2.27	0.45
40:H:35:ASP:OD2	40:H:58:ARG:NH2	2.50	0.45
41:I:75:TYR:HE1	41:I:200:VAL:HA	1.81	0.45
42:J:93:VAL:HG21	42:J:139:THR:HG22	1.98	0.45
1:3:156:C:H2’	1:3:157:U:O4’	2.17	0.45
1:3:234:C:H2’	1:3:235:C:C6	2.52	0.45
1:3:1514:G:O2’	1:3:1515:G:H5’	2.17	0.45
2:1:184:C:H2’	2:1:185:G:H8	1.82	0.45
2:1:288:U:H2’	2:1:289:G:H8	1.78	0.45
2:1:367:G:H2’	2:1:368:A:C8	2.52	0.45
2:1:871:U:H2’	2:1:872:U:C6	2.52	0.45
2:1:1080:A:H2’	2:1:1081:U:H5”	1.99	0.45
2:1:1108:U:H5”	12:h:80:THR:HA	1.99	0.45
2:1:1255:U:C2	7:d:68:ALA:HA	2.52	0.45
2:1:1291:C:O2’	2:1:1292:G:H5’	2.16	0.45
2:1:2247:A:H2’	2:1:2248:C:C6	2.51	0.45
2:1:2507:C:H2’	2:1:2508:G:H8	1.80	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2756:U:H4'	2:1:2757:A:OP1	2.16	0.45
2:1:2786:U:H2'	2:1:2787:C:C6	2.52	0.45
12:h:19:ALA:HB2	12:h:70:GLU:OE2	2.16	0.45
12:h:67:THR:N	12:h:68:PRO:CD	2.80	0.45
27:w:13:GLU:O	27:w:15:LYS:NZ	2.50	0.45
1:3:20:U:C2'	1:3:21:G:H5'	2.47	0.45
1:3:68:G:C5	1:3:69:G:H1'	2.52	0.45
1:3:217:C:O2'	1:3:218:U:H5'	2.15	0.45
1:3:393:A:H5'	1:3:483:C:O2'	2.16	0.45
1:3:740:U:O2'	1:3:741:G:H5'	2.17	0.45
1:3:915:A:C2'	1:3:916:U:H5'	2.46	0.45
1:3:976:G:H5'	1:3:977:A:OP1	2.17	0.45
1:3:1134:G:H1	1:3:1140:C:H42	1.63	0.45
1:3:1318:A:C2'	1:3:1319:A:H5'	2.44	0.45
2:1:926:G:H2'	2:1:927:A:C8	2.51	0.45
2:1:2399:G:H2'	2:1:2400:G:H8	1.82	0.45
2:1:2504:U:O5'	2:1:2504:U:H6	2.00	0.45
2:1:2678:C:H2'	2:1:2679:A:C8	2.51	0.45
2:1:2689:U:O2	2:1:2713:U:H5"	2.17	0.45
2:1:2805:C:H2'	2:1:2806:C:C6	2.50	0.45
7:d:29:HIS:HD2	16:l:6:LEU:HB3	1.81	0.45
45:M:82:LEU:HD12	49:Q:3:VAL:HG21	1.97	0.45
51:S:32:ASP:HB3	51:S:33:VAL:H	1.57	0.45
1:3:178:C:O2'	1:3:179:A:H5'	2.16	0.45
1:3:1252:A:H2'	1:3:1253:G:O4'	2.17	0.45
2:1:255:A:H2'	2:1:256:A:C8	2.52	0.45
2:1:416:U:H2'	2:1:417:C:H6	1.82	0.45
2:1:1107:G:H2'	2:1:1108:U:O5'	2.17	0.45
2:1:1451:C:H4'	2:1:1452:G:O4'	2.16	0.45
2:1:1548:A:H2'	2:1:1549:A:C8	2.51	0.45
2:1:1558:C:H6	2:1:1558:C:OP1	1.99	0.45
2:1:2788:C:O2'	2:1:2809:A:N3	2.48	0.45
5:b:94:LEU:HD13	5:b:100:ARG:HE	1.81	0.45
13:i:87:SER:O	13:i:87:SER:OG	2.33	0.45
22:r:33:VAL:N	22:r:61:ALA:O	2.50	0.45
25:u:9:GLU:HA	25:u:23:LYS:HA	1.96	0.45
37:4:16:A:O2'	37:4:17:U:H5'	2.17	0.45
1:3:150:U:H2'	1:3:151:A:C8	2.51	0.45
1:3:630:A:H2'	1:3:631:C:C6	2.52	0.45
2:1:188:G:C6	2:1:189:G:C4	3.05	0.45
2:1:993:G:OP2	21:q:50:ARG:NH2	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1153:C:H2’	2:1:1154:G:O4’	2.16	0.45
2:1:1170:C:H2’	2:1:1171:G:C4	2.52	0.45
2:1:1297:C:OP1	2:1:2710:C:H4’	2.17	0.45
2:1:1477:A:C4	2:1:1515:A:N6	2.85	0.45
2:1:2153:C:H3’	2:1:2154:A:C8	2.48	0.45
2:1:2389:G:H5”	2:1:2390:U:O4’	2.17	0.45
4:5:19:G:H1’	4:5:57:G:C2	2.52	0.45
7:d:189:THR:HG22	7:d:191:ASP:H	1.81	0.45
8:e:169:LEU:HB3	8:e:174:PHE:HD2	1.81	0.45
12:h:5:LEU:O	12:h:9:GLN:NE2	2.50	0.45
18:n:33:ILE:HB	18:n:118:ARG:HD2	1.98	0.45
27:w:22:PHE:N	27:w:25:GLU:OE1	2.42	0.45
36:F:18:LYS:HG3	36:F:23:ILE:HG12	1.98	0.45
39:G:7:ASP:HA	39:G:10:LYS:HE3	1.99	0.45
40:H:27:GLU:O	40:H:31:ASN:ND2	2.46	0.45
1:3:41:G:H2’	1:3:42:G:C8	2.51	0.45
1:3:391:G:H5”	53:U:8:ARG:HE	1.82	0.45
2:1:181:A:H2’	2:1:182:A:H8	1.79	0.45
2:1:199:A:N6	2:1:2434:A:C5	2.85	0.45
2:1:719:C:H2’	2:1:720:U:O4’	2.17	0.45
2:1:999:U:H5”	2:1:1154:G:O6	2.16	0.45
2:1:1111:A:H2’	2:1:1111:A:N3	2.30	0.45
2:1:1117:C:O2’	2:1:1118:C:H5’	2.17	0.45
2:1:1198:U:H2’	2:1:1199:U:H6	1.82	0.45
2:1:1583:A:H4’	2:1:1585:C:C4	2.52	0.45
2:1:1801:A:H5’	2:1:1801:A:C8	2.52	0.45
2:1:2123:G:N2	2:1:2175:C:O2’	2.50	0.45
2:1:2427:C:H5”	2:1:2429:G:H5’	1.99	0.45
2:1:2834:G:H2’	2:1:2879:A:N6	2.31	0.45
4:5:14:A:H2’	4:5:15:G:O4’	2.17	0.45
10:g:75:LEU:HG	10:g:77:THR:HG22	1.98	0.45
11:a:184:LYS:HB2	11:a:184:LYS:HE3	1.62	0.45
12:h:33:VAL:H	12:h:36:ASP:HB2	1.81	0.45
39:G:183:PHE:HD1	39:G:197:PHE:HB2	1.82	0.45
50:R:33:LEU:HA	50:R:36:ALA:HB3	1.99	0.45
1:3:254:G:O2’	1:3:255:G:H5’	2.17	0.44
1:3:753:A:OP1	52:T:72:LYS:NZ	2.46	0.44
1:3:1014:A:H2’	1:3:1015:G:C8	2.53	0.44
1:3:1088:G:H21	1:3:1167:A:H61	1.65	0.44
1:3:1309:G:O2’	1:3:1310:G:H5’	2.17	0.44
2:1:1064:C:C3’	2:1:1065:U:H5”	2.35	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1589:U:O2'	2:1:1590:A:H5'	2.15	0.44
2:1:1754:A:OP1	20:p:93:LYS:NZ	2.50	0.44
2:1:2112:G:H3'	2:1:2113:U:H5'	1.99	0.44
2:1:2579:C:C2'	2:1:2580:U:H5'	2.46	0.44
2:1:2801:G:H2'	2:1:2802:G:H8	1.82	0.44
3:2:79:G:O2'	3:2:80:U:H5'	2.17	0.44
4:5:26:A:H2'	4:5:27:A:H5'	1.99	0.44
8:e:46:LYS:HA	8:e:49:LEU:HD23	1.98	0.44
28:x:17:ARG:HD3	28:x:17:ARG:HA	1.77	0.44
33:C:24:LYS:NZ	33:C:31:GLU:O	2.49	0.44
39:G:166:ASP:O	39:G:169:HIS:ND1	2.44	0.44
50:R:18:LEU:HD23	50:R:29:SER:HA	1.99	0.44
50:R:41:ASP:N	50:R:41:ASP:OD1	2.50	0.44
1:3:182:A:H2'	1:3:183:C:H5"	1.99	0.44
1:3:679:C:O2'	1:3:680:C:H5'	2.16	0.44
2:1:191:A:H2'	2:1:192:C:C6	2.52	0.44
2:1:677:A:O2'	2:1:2071:A:H5'	2.18	0.44
2:1:947:A:H2'	2:1:948:C:C6	2.52	0.44
2:1:1180:U:H3'	2:1:1181:U:C5	2.52	0.44
2:1:1686:C:O2	2:1:1686:C:H2'	2.17	0.44
2:1:1754:A:H4'	20:p:102:ARG:HH12	1.82	0.44
2:1:2026:U:O5'	2:1:2026:U:H6	2.00	0.44
2:1:2122:U:H2'	2:1:2123:G:H4'	1.99	0.44
2:1:2161:C:C3'	2:1:2162:G:H5"	2.44	0.44
3:2:96:G:O2'	3:2:97:C:H5'	2.17	0.44
11:a:21:TYR:HD2	11:a:223:ALA:H	1.63	0.44
23:s:109:ASP:OD1	23:s:110:ARG:NH1	2.50	0.44
38:6:19:G:N3	38:6:57:A:C2	2.84	0.44
57:Y:53:MET:HE3	57:Y:56:ILE:HD12	1.99	0.44
1:3:82:G:H3'	1:3:83:C:O4'	2.17	0.44
1:3:210:C:H4'	1:3:211:G:C2	2.53	0.44
1:3:1349:A:H1'	1:3:1374:A:N6	2.33	0.44
1:3:1406:U:H1'	1:3:1518:A:H4'	1.99	0.44
2:1:26:G:H2'	2:1:27:G:O4'	2.17	0.44
2:1:1154:G:OP2	21:q:57:ARG:NH1	2.51	0.44
2:1:1241:A:H2'	2:1:1242:U:O4'	2.17	0.44
2:1:1270:C:H5"	2:1:1271:G:C5'	2.48	0.44
2:1:1853:A:O2'	2:1:2234:G:H5'	2.18	0.44
2:1:1910:G:H2'	2:1:1911:U:O4'	2.17	0.44
2:1:1996:C:H5	15:k:32:TYR:HH	1.63	0.44
2:1:2630:G:H2'	2:1:2631:G:H8	1.81	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:e:125:GLY:O	8:e:157:THR:OG1	2.30	0.44
12:h:52:MET:HE1	12:h:86:MET:O	2.17	0.44
12:h:64:VAL:O	12:h:68:PRO:HD3	2.17	0.44
13:i:92:PRO:HB3	13:i:134:SER:HA	2.00	0.44
39:G:113:LEU:HD13	39:G:143:LEU:HB3	1.98	0.44
1:3:51:A:N7	1:3:114:U:O2'	2.51	0.44
2:1:566:U:C5	22:r:80:ARG:HG2	2.47	0.44
2:1:593:U:H2'	2:1:594:U:H6	1.82	0.44
2:1:950:G:H2'	2:1:951:C:C6	2.53	0.44
2:1:1301:A:C5	2:1:1303:G:C8	3.05	0.44
2:1:1354:A:H2'	2:1:1355:G:O4'	2.18	0.44
2:1:2027:G:C5	2:1:2028:U:C5	3.05	0.44
2:1:2847:U:C2'	2:1:2848:G:H5'	2.47	0.44
6:c:55:LYS:NZ	6:c:59:ARG:O	2.41	0.44
38:6:15:G:N2	38:6:48:C:H42	2.16	0.44
44:L:115:MET:HB2	44:L:118:ARG:HH21	1.82	0.44
51:S:2:LYS:HD2	51:S:2:LYS:HA	1.76	0.44
53:U:54:LEU:HA	53:U:57:ILE:HD12	2.00	0.44
1:3:28:A:H2'	1:3:29:U:O4'	2.17	0.44
1:3:290:C:H2'	1:3:291:U:H6	1.82	0.44
1:3:525:C:O5'	1:3:525:C:H6	2.00	0.44
1:3:584:G:H2'	1:3:585:G:C8	2.53	0.44
1:3:883:C:O2'	1:3:884:U:H5'	2.16	0.44
1:3:1113:C:O2'	1:3:1114:C:H5'	2.17	0.44
1:3:1121:U:C2'	1:3:1122:U:H5'	2.46	0.44
2:1:703:U:O2'	2:1:704:G:H5'	2.17	0.44
2:1:789:A:H5'	34:D:3:ARG:NH1	2.33	0.44
2:1:1082:U:N3	2:1:1086:A:H2	2.13	0.44
2:1:1097:U:H2'	2:1:1098:A:O4'	2.16	0.44
2:1:1590:A:H2'	2:1:1591:A:C8	2.53	0.44
2:1:1675:C:H2'	2:1:1676:A:O4'	2.17	0.44
2:1:2016:U:H2'	2:1:2017:U:H6	1.81	0.44
2:1:2116:G:H2'	2:1:2117:A:O4'	2.17	0.44
2:1:2180:U:OP2	2:1:2180:U:H6	2.01	0.44
2:1:2502:G:C5'	2:1:2503:A:H5"	2.36	0.44
2:1:2648:G:H2'	2:1:2649:C:O4'	2.17	0.44
2:1:2674:G:H5"	15:k:30:ARG:HE	1.82	0.44
2:1:2700:A:H2'	2:1:2701:U:C6	2.52	0.44
2:1:2889:C:O2'	2:1:2890:G:H5'	2.17	0.44
3:2:98:G:H1	26:v:14:LYS:HB2	1.83	0.44
11:a:173:THR:OG1	11:a:174:THR:N	2.50	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:i:74:PRO:HG2	13:i:77:VAL:HG22	1.99	0.44
58:Z:27:VAL:O	58:Z:31:VAL:N	2.49	0.44
1:3:107:G:H2'	1:3:108:G:O4'	2.18	0.44
1:3:165:G:H2'	1:3:166:U:C5	2.53	0.44
1:3:1449:C:H1'	1:3:1455:G:N2	2.32	0.44
2:1:1028:A:H2'	2:1:1029:A:C8	2.52	0.44
2:1:1406:U:H2'	2:1:1407:G:C8	2.52	0.44
2:1:1418:G:H2'	2:1:1579:A:N6	2.33	0.44
2:1:1796:U:H2'	2:1:1797:G:C8	2.52	0.44
2:1:2485:G:H5"	17:m:45:GLN:HE21	1.83	0.44
18:n:71:ARG:HD2	18:n:71:ARG:HA	1.79	0.44
43:K:90:MET:HE3	43:K:91:ARG:H	1.83	0.44
52:T:13:GLU:O	52:T:83:ARG:NH2	2.51	0.44
1:3:28:A:O2'	1:3:29:U:H5'	2.18	0.44
1:3:1167:A:O2'	1:3:1168:U:H5	2.00	0.44
1:3:1221:G:O2'	1:3:1222:G:H5'	2.18	0.44
2:1:296:U:O3'	25:u:91:LYS:NZ	2.49	0.44
2:1:528:A:C2	2:1:2042:A:H2'	2.53	0.44
2:1:776:G:C8	2:1:793:A:N3	2.86	0.44
2:1:1054:A:N1	2:1:1106:G:C6	2.86	0.44
2:1:1558:C:C2	2:1:1560:G:C5	3.05	0.44
2:1:1639:C:O2'	2:1:1640:A:H5'	2.18	0.44
2:1:1825:U:O2'	2:1:1826:G:H5'	2.18	0.44
2:1:2118:U:C2	2:1:2147:A:C2	3.05	0.44
9:f:88:LEU:HD12	9:f:88:LEU:HA	1.86	0.44
22:r:60:LYS:O	22:r:99:THR:OG1	2.30	0.44
42:J:105:ILE:HG13	42:J:123:LEU:HA	2.00	0.44
42:J:152:VAL:HG21	45:M:98:LEU:HD13	2.00	0.44
43:K:92:THR:OG1	43:K:93:LYS:N	2.50	0.44
52:T:8:ALA:HA	52:T:11:VAL:HG12	2.00	0.44
1:3:33:A:H2'	1:3:34:C:H6	1.79	0.44
1:3:235:C:H2'	1:3:236:A:H8	1.81	0.44
1:3:490:C:H2'	1:3:491:G:C8	2.53	0.44
1:3:701:U:C5'	1:3:703:G:H1'	2.48	0.44
2:1:621:A:H2'	2:1:622:G:O4'	2.17	0.44
2:1:958:U:H2'	3:2:89:U:O2	2.17	0.44
2:1:1099:G:H2'	2:1:1100:C:C6	2.52	0.44
2:1:1846:G:H2'	2:1:1847:A:O4'	2.18	0.44
2:1:1915:U:H3'	2:1:1916:A:C8	2.53	0.44
2:1:2592:G:C2'	2:1:2593:U:H5'	2.47	0.44
12:h:36:ASP:O	12:h:39:THR:OG1	2.34	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:L:71:THR:HA	44:L:90:VAL:HG22	2.00	0.44
1:3:230:G:H2'	1:3:231:U:C6	2.52	0.44
1:3:352:C:H4'	1:3:354:G:OP1	2.18	0.44
1:3:955:U:C1'	1:3:1227:A:H61	2.31	0.44
2:1:538:A:H2'	2:1:539:G:C8	2.53	0.44
2:1:581:C:H2'	2:1:582:A:H8	1.83	0.44
2:1:716:A:C2'	2:1:717:C:H5"	2.46	0.44
2:1:721:A:H2'	2:1:722:A:C8	2.53	0.44
2:1:1036:G:H2'	2:1:1037:G:H8	1.83	0.44
2:1:1059:G:H3'	2:1:1060:U:H2'	2.00	0.44
2:1:1070:A:H5'	2:1:1097:U:OP1	2.17	0.44
2:1:1084:A:H2	2:1:1107:G:C5'	2.19	0.44
2:1:1462:C:H2'	2:1:1463:C:H6	1.83	0.44
2:1:1753:G:N2	2:1:1756:G:O5'	2.44	0.44
2:1:1936:A:C4	2:1:1940:U:O2	2.71	0.44
2:1:2193:G:O2'	2:1:2194:U:H5'	2.18	0.44
2:1:2538:C:H2'	2:1:2539:C:H6	1.82	0.44
2:1:2671:G:H2'	2:1:2672:U:H6	1.77	0.44
2:1:2704:C:H2'	2:1:2705:A:O4'	2.17	0.44
2:1:2852:G:H2'	2:1:2853:C:O4'	2.18	0.44
3:2:22:U:H2'	3:2:23:G:C8	2.53	0.44
3:2:98:G:C6	26:v:14:LYS:HB2	2.53	0.44
9:f:15:ASP:N	9:f:26:LYS:O	2.51	0.44
9:f:28:LYS:HE2	9:f:28:LYS:HB3	1.83	0.44
25:u:93:ARG:HG3	25:u:102:ILE:HG13	2.00	0.44
29:y:21:LEU:HA	29:y:25:GLN:HB3	1.98	0.44
50:R:89:ARG:HB2	50:R:96:VAL:HG12	1.99	0.44
56:X:14:LEU:HD12	56:X:14:LEU:HA	1.86	0.44
1:3:158:G:H2'	1:3:159:G:C8	2.53	0.43
1:3:824:G:O4'	45:M:1:SER:HA	2.17	0.43
1:3:979:C:OP2	1:3:980:C:H5	2.01	0.43
1:3:1084:G:H5'	1:3:1102:A:OP2	2.18	0.43
2:1:68:G:H2'	2:1:69:C:O4'	2.17	0.43
2:1:367:G:H2'	2:1:368:A:O4'	2.18	0.43
2:1:375:G:H2'	2:1:376:G:O4'	2.18	0.43
2:1:1063:G:H2'	13:i:89:SER:OG	2.18	0.43
2:1:1520:U:H2'	2:1:1521:G:O4'	2.18	0.43
2:1:2138:G:O6	2:1:2154:A:N3	2.51	0.43
2:1:2829:A:C6	2:1:2830:C:C4	3.06	0.43
2:1:2861:U:H2'	2:1:2862:G:H8	1.83	0.43
5:b:4:LYS:HG2	5:b:16:VAL:HG22	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:r:39:LEU:HD12	22:r:49:ILE:HD13	1.98	0.43
39:G:142:LYS:HA	39:G:142:LYS:HD2	1.86	0.43
1:3:775:G:O2'	1:3:776:G:H5'	2.17	0.43
1:3:810:C:H2'	1:3:811:C:H6	1.83	0.43
1:3:1498:U:C4	37:4:17:U:H5"	2.53	0.43
2:1:155:A:H2'	2:1:156:A:C8	2.53	0.43
2:1:691:C:OP1	5:b:216:ARG:NH1	2.50	0.43
2:1:776:G:C1'	2:1:793:A:C2	3.01	0.43
2:1:1095:A:N1	13:i:25:PRO:HG3	2.33	0.43
2:1:1130:U:O5'	2:1:1130:U:H6	2.01	0.43
2:1:1238:G:O2'	2:1:1239:G:H5'	2.18	0.43
2:1:1754:A:H2'	2:1:1755:A:O4'	2.18	0.43
2:1:2557:G:H2'	2:1:2558:C:C6	2.53	0.43
5:b:159:THR:HB	5:b:176:ARG:HD3	1.99	0.43
7:d:139:LYS:HA	7:d:139:LYS:HD2	1.80	0.43
18:n:22:ARG:HE	18:n:22:ARG:HB2	1.51	0.43
32:B:43:THR:OG1	32:B:47:TYR:N	2.51	0.43
40:H:149:LYS:HB3	40:H:200:TRP:HB2	2.00	0.43
44:L:55:LYS:HE3	44:L:59:GLU:HG3	1.99	0.43
50:R:110:GLY:HA2	50:R:111:PRO:HD3	1.77	0.43
1:3:418:C:H2'	1:3:419:C:O4'	2.18	0.43
1:3:1121:U:O2'	1:3:1122:U:H5'	2.18	0.43
1:3:1417:G:C6	1:3:1482:G:C6	3.06	0.43
2:1:355:U:O2'	2:1:356:G:H5'	2.18	0.43
2:1:546:U:H2'	2:1:547:A:O4'	2.18	0.43
2:1:564:C:C2'	2:1:565:C:H5'	2.47	0.43
2:1:582:A:H2'	2:1:583:G:H8	1.81	0.43
2:1:1563:U:H2'	2:1:1564:C:C6	2.53	0.43
2:1:1599:U:H2'	2:1:1600:C:C6	2.53	0.43
2:1:1798:U:C4	2:1:1819:A:C2	3.06	0.43
2:1:1925:C:O5'	2:1:1925:C:H6	2.01	0.43
2:1:1999:C:O2'	2:1:2000:C:H5'	2.18	0.43
2:1:2143:C:N4	2:1:2144:G:H21	2.15	0.43
3:2:98:G:N1	26:v:14:LYS:HB2	2.33	0.43
22:r:41:ILE:HD13	22:r:103:ALA:HA	2.00	0.43
26:v:9:ARG:HD2	26:v:41:GLU:HB2	2.01	0.43
38:6:19:G:C4	38:6:57:A:C2	3.06	0.43
38:6:37:A:H2'	38:6:38:A:O4'	2.18	0.43
38:6:64:G:H2'	38:6:65:C:H6	1.82	0.43
38:6:66:C:O5'	38:6:66:C:H6	2.01	0.43
57:Y:38:ILE:HD13	57:Y:81:GLN:HG3	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:Y:78:LEU:HD13	57:Y:78:LEU:HA	1.87	0.43
1:3:73:C:H2'	1:3:74:A:C8	2.54	0.43
1:3:796:C:H2'	1:3:797:C:C6	2.50	0.43
1:3:990:C:C2	1:3:991:U:H1'	2.54	0.43
1:3:1078:U:O3'	42:J:137:ARG:NH1	2.51	0.43
1:3:1125:U:O2'	1:3:1126:U:H6	2.01	0.43
1:3:1198:G:H5'	1:3:1198:G:H8	1.84	0.43
1:3:1217:C:H2'	1:3:1218:C:C6	2.53	0.43
1:3:1217:C:H2'	1:3:1218:C:H6	1.82	0.43
1:3:1439:G:OP1	57:Y:32:LYS:HD3	2.17	0.43
1:3:1533:C:N3	58:Z:46:ARG:NH2	2.65	0.43
2:1:784:G:O2'	2:1:785:G:C5'	2.67	0.43
2:1:1045:C:H5'	2:1:1046:A:H5"	2.00	0.43
2:1:1343:G:N3	2:1:1343:G:H2'	2.32	0.43
2:1:1523:U:H3'	2:1:1523:U:H6	1.82	0.43
2:1:1910:G:C4	2:1:1921:G:N2	2.87	0.43
2:1:2108:A:O2'	2:1:2109:U:H5'	2.17	0.43
2:1:2169:A:H2'	2:1:2170:A:H8	1.84	0.43
2:1:2426:A:H3'	2:1:2427:C:H5'	2.00	0.43
2:1:2657:A:O2'	9:f:159:LYS:NZ	2.51	0.43
2:1:2809:A:C2	2:1:2810:A:C4	3.06	0.43
12:h:46:ARG:NH2	12:h:98:GLU:HG3	2.22	0.43
14:j:90:GLU:HA	14:j:93:ILE:HB	2.01	0.43
26:v:20:LEU:HD13	26:v:41:GLU:HG3	2.00	0.43
38:6:15:G:H2'	38:6:59:A:C2	2.53	0.43
44:L:46:LEU:HD12	44:L:49:LEU:HD11	2.00	0.43
46:N:27:ILE:HA	46:N:62:LEU:HB2	2.00	0.43
1:3:130:A:N3	1:3:264:C:O4'	2.51	0.43
1:3:279:A:H5"	1:3:280:C:H3'	2.00	0.43
1:3:767:A:H2'	1:3:768:A:O4'	2.18	0.43
1:3:878:A:H2'	1:3:879:C:O4'	2.18	0.43
1:3:1112:C:H1'	40:H:178:ARG:HD2	2.00	0.43
1:3:1385:G:H2'	1:3:1386:G:O4'	2.18	0.43
1:3:1469:C:H2'	1:3:1470:U:C5'	2.34	0.43
2:1:95:A:H2'	2:1:96:C:C4'	2.49	0.43
2:1:250:G:H4'	16:l:59:ARG:HD2	2.00	0.43
2:1:318:C:H2'	2:1:319:G:C8	2.48	0.43
2:1:660:C:O2'	16:l:13:LYS:NZ	2.52	0.43
2:1:841:G:H2'	2:1:842:U:C6	2.54	0.43
2:1:936:A:H2'	2:1:937:C:C6	2.54	0.43
2:1:1048:A:H2	2:1:1112:G:N3	2.15	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:1357:C:H2'	2:1:1358:G:O4'	2.17	0.43
2:1:1410:G:H2'	2:1:1411:U:H6	1.81	0.43
2:1:1441:G:H2'	2:1:1442:U:C6	2.54	0.43
2:1:1798:U:O2'	2:1:1802:A:H1'	2.19	0.43
2:1:1812:U:O2'	5:b:43:ASN:HB2	2.17	0.43
2:1:2059:A:N6	2:1:2503:A:H2'	2.33	0.43
2:1:2718:G:H21	2:1:2847:U:H4'	1.84	0.43
23:s:82:MET:HB2	23:s:98:LYS:HB2	2.01	0.43
37:4:5:A:C5'	58:Z:58:LYS:NZ	2.82	0.43
38:6:14:A:H2'	38:6:15:G:O4'	2.19	0.43
39:G:68:PHE:HB3	39:G:79:VAL:HG13	2.01	0.43
39:G:112:ARG:NH2	39:G:139:GLU:OE2	2.51	0.43
39:G:161:PHE:HD1	39:G:183:PHE:HB2	1.84	0.43
1:3:427:U:OP1	41:I:12:ARG:NH2	2.51	0.43
1:3:736:C:OP1	55:W:60:ARG:NH1	2.51	0.43
1:3:1239:A:O2'	44:L:114:SER:HA	2.17	0.43
1:3:1316:G:H2'	1:3:1317:C:C5'	2.48	0.43
2:1:309:A:N3	2:1:329:G:O2'	2.49	0.43
2:1:616:A:H2'	2:1:617:G:H5'	1.99	0.43
2:1:1396:U:O2	2:1:1396:U:O4'	2.35	0.43
2:1:1506:U:H2'	2:1:1507:C:C6	2.54	0.43
2:1:1557:C:OP2	2:1:1558:C:H3'	2.19	0.43
2:1:1789:A:C5	2:1:1790:C:N3	2.87	0.43
2:1:1870:C:O2'	2:1:1871:A:H5'	2.18	0.43
2:1:1942:C:C5	2:1:1943:U:C2	3.07	0.43
2:1:2038:G:H2'	2:1:2039:U:O4'	2.19	0.43
2:1:2329:U:H2'	2:1:2330:G:O4'	2.19	0.43
2:1:2507:C:H2'	2:1:2508:G:C8	2.54	0.43
2:1:2515:C:O2'	2:1:2516:A:H5'	2.19	0.43
2:1:2619:C:O2'	2:1:2620:C:H5'	2.19	0.43
4:5:61:C:H2'	4:5:62:C:H6	1.81	0.43
6:c:11:MET:HE2	6:c:11:MET:HB3	1.88	0.43
6:c:116:LYS:HB2	6:c:165:MET:HB3	2.01	0.43
15:k:43:ILE:HB	15:k:55:GLY:H	1.82	0.43
27:w:29:ALA:N	27:w:60:ASP:OD1	2.51	0.43
34:D:24:THR:HG23	34:D:27:GLY:H	1.83	0.43
40:H:188:ALA:N	40:H:195:ILE:O	2.52	0.43
48:P:51:PHE:HB3	48:P:55:ARG:HB3	2.00	0.43
54:V:16:MET:HB3	54:V:19:SER:HB2	2.01	0.43
1:3:106:C:O2'	1:3:107:G:H5'	2.19	0.43
1:3:643:C:C5'	45:M:31:LEU:HD12	2.48	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:1009:U:O2'	1:3:1010:U:H5'	2.19	0.43
2:1:527:C:C5	2:1:2779:U:C6	3.06	0.43
2:1:585:G:O5'	2:1:585:G:H8	2.01	0.43
2:1:712:G:N2	2:1:720:U:H1'	2.33	0.43
2:1:1559:U:H3'	2:1:1560:G:H5'	2.01	0.43
2:1:1654:A:C8	2:1:2823:A:O4'	2.72	0.43
2:1:1663:G:N1	2:1:1998:A:C6	2.87	0.43
2:1:1926:U:H2'	2:1:1927:A:C8	2.54	0.43
2:1:2113:U:N3	2:1:2119:A:N6	2.67	0.43
2:1:2744:G:H21	9:f:142:GLN:HE22	1.66	0.43
4:5:14:A:H2'	4:5:15:G:H5'	1.99	0.43
10:g:78:VAL:HG21	10:g:103:VAL:HG22	2.00	0.43
19:o:100:HIS:O	19:o:104:GLN:N	2.46	0.43
27:w:15:LYS:HD3	27:w:15:LYS:HA	1.83	0.43
44:L:26:VAL:O	44:L:30:MET:N	2.45	0.43
1:3:521:G:H4'	49:Q:69:GLU:HG2	2.00	0.43
1:3:577:G:O2'	1:3:578:C:H5'	2.19	0.43
1:3:988:G:H4'	1:3:1014:A:H61	1.84	0.43
1:3:1202:U:C2	51:S:81:ILE:HG21	2.54	0.43
2:1:560:C:H1'	21:q:47:ARG:HH22	1.84	0.43
2:1:781:A:OP1	5:b:216:ARG:NH2	2.47	0.43
2:1:1045:C:O2'	12:h:61:ARG:HD3	2.19	0.43
2:1:1057:A:C4	2:1:1086:A:N6	2.87	0.43
2:1:1057:A:O4'	2:1:1086:A:N7	2.51	0.43
2:1:1159:U:O2'	2:1:1160:G:H5'	2.19	0.43
2:1:1975:G:C6	2:1:1976:U:C2	3.07	0.43
2:1:1977:A:N6	2:1:1978:A:C6	2.87	0.43
2:1:2394:C:H2'	2:1:2395:C:C5'	2.49	0.43
2:1:2776:A:C6	2:1:2782:G:H1'	2.53	0.43
16:l:13:LYS:HA	16:l:13:LYS:HD3	1.89	0.43
29:y:51:ALA:O	29:y:55:THR:OG1	2.29	0.43
57:Y:20:ASN:O	57:Y:24:ARG:N	2.51	0.43
1:3:82:G:H2'	1:3:82:G:N3	2.34	0.43
1:3:206:C:H2'	1:3:207:C:O4'	2.19	0.43
1:3:990:C:H2'	1:3:991:U:C1'	2.48	0.43
1:3:994:A:C4	1:3:1216:A:H4'	2.54	0.43
2:1:101:A:O2'	2:1:102:U:H5"	2.19	0.43
2:1:197:A:H2'	2:1:198:C:O4'	2.19	0.43
2:1:321:U:C2	7:d:159:LEU:HD13	2.54	0.43
2:1:662:G:O2'	2:1:663:G:H5'	2.19	0.43
2:1:753:A:H2'	2:1:754:U:C6	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:810:U:C6	16:l:29:LYS:HA	2.54	0.43
2:1:941:A:C2	2:1:942:G:C4	3.06	0.43
2:1:1297:C:O2'	2:1:1298:C:H5'	2.18	0.43
2:1:1681:G:C2	2:1:1762:A:C8	3.06	0.43
2:1:2529:G:O6	36:F:32:LYS:NZ	2.51	0.43
2:1:2597:G:H2'	2:1:2598:A:C8	2.54	0.43
2:1:2841:C:H2'	2:1:2842:G:H8	1.82	0.43
8:e:137:PHE:HA	8:e:138:PRO:HD3	1.88	0.43
13:i:91:LYS:HB3	13:i:94:LYS:HB2	2.00	0.43
20:p:26:GLU:HG3	20:p:43:GLU:HB2	2.01	0.43
38:6:7:G:H3'	38:6:8:U:H5'	2.01	0.43
43:K:53:LYS:HD3	43:K:53:LYS:HA	1.79	0.43
52:T:8:ALA:O	52:T:12:SER:OG	2.29	0.43
1:3:526:C:OP1	49:Q:87:LYS:HE3	2.18	0.43
2:1:25:U:C5	2:1:26:G:C6	3.07	0.43
2:1:184:C:H2'	2:1:185:G:C8	2.54	0.43
2:1:189:G:O2'	2:1:207:A:N6	2.50	0.43
2:1:1601:G:O2'	2:1:1602:U:H5'	2.18	0.43
2:1:1725:U:H2'	2:1:1726:C:C6	2.53	0.43
2:1:1778:U:C4	2:1:1784:A:C4	3.06	0.43
2:1:2108:A:H61	2:1:2181:U:H3	1.67	0.43
2:1:2251:G:H1'	2:1:2450:A:O4'	2.19	0.43
2:1:2314:A:H5"	8:e:34:THR:HG21	2.01	0.43
2:1:2631:G:HO2'	2:1:2810:A:H2	1.64	0.43
2:1:2797:U:H5"	2:1:2798:U:H5	1.83	0.43
7:d:141:MET:HE3	7:d:141:MET:HB2	1.95	0.43
8:e:71:LYS:HD3	8:e:71:LYS:HA	1.86	0.43
10:g:28:ASN:OD1	10:g:28:ASN:N	2.49	0.43
28:x:32:LEU:HA	28:x:51:SER:HA	2.01	0.43
38:6:72:A:C2'	38:6:73:A:H5'	2.49	0.43
50:R:68:LEU:HD12	50:R:71:GLU:HB2	2.01	0.43
52:T:88:ARG:H	52:T:88:ARG:HD3	1.84	0.43
1:3:113:G:H2'	1:3:114:U:C6	2.54	0.42
1:3:620:C:H2'	1:3:621:A:C8	2.54	0.42
1:3:1179:A:H5"	46:N:103:VAL:HG12	2.01	0.42
1:3:1374:A:H2'	1:3:1375:A:C8	2.54	0.42
1:3:1375:A:H5"	44:L:24:LYS:NZ	2.34	0.42
2:1:105:C:H2'	2:1:106:C:C6	2.53	0.42
2:1:1018:U:O3'	2:1:1120:G:N2	2.52	0.42
2:1:2070:A:H2'	2:1:2071:A:C8	2.54	0.42
2:1:2152:G:H2'	2:1:2153:C:C5'	2.49	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2563:U:H2'	2:1:2565:A:OP2	2.19	0.42
2:1:2843:G:H2'	2:1:2844:G:C8	2.50	0.42
2:1:2898:U:H2'	2:1:2899:A:C8	2.54	0.42
15:k:58:LEU:HD11	15:k:86:LEU:HD22	2.00	0.42
17:m:73:ILE:HD13	17:m:73:ILE:HA	1.89	0.42
17:m:74:THR:HG21	17:m:86:LYS:HE2	2.00	0.42
28:x:5:GLN:NE2	28:x:49:ARG:H	2.17	0.42
40:H:53:ARG:HG2	40:H:68:HIS:HB2	2.01	0.42
42:J:146:MET:HE2	42:J:146:MET:HB3	1.82	0.42
43:K:36:ILE:HG13	43:K:64:VAL:HG22	2.01	0.42
56:X:62:THR:OG1	56:X:63:ASP:N	2.49	0.42
1:3:539:A:H2'	1:3:540:G:C8	2.54	0.42
1:3:850:U:C3'	1:3:851:G:H5"	2.49	0.42
1:3:855:U:O2'	1:3:856:C:H5'	2.18	0.42
1:3:1026:G:C2	1:3:1027:C:H1'	2.53	0.42
1:3:1396:A:H2	42:J:23:THR:HG21	1.84	0.42
1:3:1511:G:H2'	1:3:1512:U:C6	2.54	0.42
2:1:192:C:C2'	2:1:193:U:H5'	2.48	0.42
2:1:582:A:C6	2:1:1259:G:N1	2.87	0.42
2:1:587:C:C6	2:1:671:C:H1'	2.54	0.42
2:1:780:G:H1	5:b:228:ASP:CG	2.27	0.42
2:1:851:C:H2'	2:1:852:U:H6	1.83	0.42
2:1:1051:G:H4'	2:1:2752:C:O2'	2.19	0.42
2:1:1080:A:O2'	13:i:123:ALA:O	2.37	0.42
2:1:1227:G:H2'	2:1:1228:G:O4'	2.19	0.42
2:1:1345:C:H5"	2:1:1396:U:H5	1.84	0.42
2:1:1399:C:H2'	2:1:1400:U:C6	2.53	0.42
2:1:2082:A:N6	2:1:2237:G:H1'	2.34	0.42
2:1:2530:A:C6	9:f:155:PRO:HG3	2.54	0.42
2:1:2766:A:N3	2:1:2766:A:H2'	2.34	0.42
2:1:2776:A:C4	2:1:2782:G:C8	3.07	0.42
6:c:48:ILE:HG23	6:c:84:LEU:HD11	2.00	0.42
12:h:24:SER:CB	12:h:116:GLU:HB2	2.49	0.42
13:i:131:THR:HA	13:i:134:SER:HB2	2.02	0.42
19:o:40:ILE:HG13	19:o:47:VAL:HG23	2.00	0.42
20:p:110:LYS:HE2	20:p:110:LYS:HB3	1.73	0.42
33:C:12:SER:HB2	33:C:48:TYR:CZ	2.53	0.42
52:T:87:ARG:HD3	52:T:87:ARG:HA	1.80	0.42
1:3:230:G:H5"	53:U:31:ARG:NH2	2.32	0.42
1:3:530:G:H3'	1:3:531:U:C5'	2.49	0.42
1:3:858:G:O6	1:3:869:G:H3'	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:900:A:H2'	1:3:901:A:C8	2.55	0.42
1:3:977:A:H3'	1:3:977:A:N3	2.35	0.42
1:3:1040:U:H2'	1:3:1041:G:H8	1.83	0.42
2:1:57:C:OP1	24:t:76:ARG:NH2	2.47	0.42
2:1:784:G:C6	5:b:227:VAL:HG11	2.54	0.42
2:1:1080:A:O2'	13:i:123:ALA:HB1	2.19	0.42
2:1:1107:G:O3'	12:h:58:THR:HG23	2.19	0.42
2:1:1192:G:C2'	2:1:1193:G:H5'	2.50	0.42
2:1:1205:A:N6	7:d:165:HIS:HB2	2.34	0.42
2:1:1660:G:C2	2:1:2001:C:N3	2.88	0.42
2:1:1890:A:C5	2:1:1891:G:C8	3.08	0.42
2:1:1999:C:H5"	2:1:2723:C:O2'	2.18	0.42
2:1:2016:U:H2'	2:1:2017:U:C6	2.53	0.42
2:1:2402:U:O2'	2:1:2403:C:H5"	2.19	0.42
2:1:2584:U:O5'	2:1:2584:U:H6	2.02	0.42
2:1:2661:G:O2'	2:1:2662:A:H5'	2.18	0.42
2:1:2720:U:H5'	2:1:2720:U:C6	2.55	0.42
3:2:82:U:C2'	3:2:83:G:H5'	2.49	0.42
3:2:93:C:H2'	3:2:94:A:C8	2.54	0.42
4:5:27:A:H2'	4:5:28:C:C6	2.54	0.42
6:c:170:VAL:HG13	6:c:194:PRO:HG3	2.02	0.42
25:u:17:ASP:HB3	25:u:20:LYS:HD2	2.01	0.42
43:K:38:ARG:HB2	43:K:63:ASN:HB3	2.01	0.42
1:3:405:U:C3'	1:3:406:G:H5'	2.42	0.42
2:1:571:U:C4	2:1:2030:A:C6	3.07	0.42
2:1:861:A:H2'	2:1:862:G:C5'	2.48	0.42
2:1:1055:G:C3'	12:h:33:VAL:HG12	2.49	0.42
2:1:1069:A:OP1	2:1:1096:A:O3'	2.37	0.42
2:1:1419:A:H2'	2:1:1421:G:C8	2.53	0.42
2:1:1754:A:H8	2:1:1754:A:O5'	2.02	0.42
2:1:1795:C:O2'	2:1:1796:U:H5'	2.19	0.42
2:1:1823:G:O2'	2:1:1824:G:H5'	2.18	0.42
2:1:2285:C:OP2	33:C:5:ARG:NH1	2.52	0.42
3:2:92:C:H2'	3:2:93:C:C6	2.54	0.42
8:e:63:LYS:HD3	8:e:64:PRO:HD2	2.00	0.42
10:g:30:LEU:HB3	10:g:36:ALA:HB3	2.02	0.42
10:g:61:VAL:HA	10:g:64:ALA:HB3	2.01	0.42
13:i:53:PRO:HG2	13:i:77:VAL:HG21	1.99	0.42
17:m:42:THR:HA	17:m:93:VAL:HG12	2.01	0.42
21:q:43:GLN:HE21	22:r:77:PHE:HB3	1.84	0.42
42:J:40:ASP:OD1	42:J:40:ASP:N	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:O:52:LEU:HD13	47:O:59:LYS:HA	2.01	0.42
48:P:24:ALA:HB1	48:P:89:GLY:HA3	2.02	0.42
1:3:192:A:H2'	1:3:193:C:C5'	2.49	0.42
1:3:231:U:H2'	1:3:232:G:H8	1.83	0.42
1:3:948:C:OP2	50:R:104:ASN:HB3	2.19	0.42
1:3:1114:C:H1'	51:S:99:SER:OG	2.20	0.42
1:3:1125:U:O2'	1:3:1126:U:C6	2.72	0.42
2:1:29:U:O5'	2:1:29:U:H6	2.03	0.42
2:1:255:A:H2'	2:1:256:A:H8	1.84	0.42
2:1:289:G:H2'	2:1:290:U:O4'	2.19	0.42
2:1:335:C:H2'	2:1:336:C:C6	2.54	0.42
2:1:464:U:H2'	2:1:465:G:O4'	2.20	0.42
2:1:753:A:O2'	2:1:754:U:H5'	2.19	0.42
2:1:1054:A:C2	2:1:1106:G:N1	2.88	0.42
2:1:1102:C:H3'	2:1:1103:A:C8	2.53	0.42
2:1:1180:U:H3'	2:1:1181:U:H5	1.85	0.42
2:1:1231:U:O5'	2:1:1231:U:H6	2.01	0.42
2:1:1593:A:H2'	2:1:1594:U:O4'	2.18	0.42
2:1:1760:C:C6	2:1:1761:C:C5	3.07	0.42
2:1:2109:U:O2'	2:1:2110:G:C8	2.72	0.42
2:1:2184:A:O2'	2:1:2185:U:H5'	2.19	0.42
2:1:2464:G:C2	2:1:2465:C:C2	3.08	0.42
2:1:2639:A:C2	2:1:2778:A:O4'	2.72	0.42
2:1:2692:G:H2'	2:1:2693:G:O4'	2.19	0.42
31:A:8:LYS:HD3	31:A:8:LYS:HA	1.88	0.42
41:I:103:ARG:HD3	41:I:167:PRO:HG2	2.01	0.42
42:J:148:SER:OG	42:J:150:GLU:OE1	2.37	0.42
49:Q:99:GLY:HA3	49:Q:117:GLY:HA3	2.02	0.42
49:Q:106:VAL:HG23	49:Q:109:ARG:HG3	2.02	0.42
50:R:28:ARG:HG3	50:R:32:ILE:HG12	2.00	0.42
50:R:106:ARG:HB3	50:R:111:PRO:HA	2.02	0.42
56:X:17:LYS:HA	56:X:20:LYS:HD2	2.01	0.42
56:X:54:ARG:H	56:X:54:ARG:HD3	1.85	0.42
57:Y:45:ALA:HA	57:Y:48:LYS:HB3	2.00	0.42
1:3:181:A:H61	1:3:194:C:H2'	1.82	0.42
1:3:223:A:H2'	1:3:224:U:C6	2.55	0.42
1:3:425:G:O2'	1:3:426:U:H5'	2.20	0.42
1:3:571:U:O5'	1:3:571:U:H6	2.02	0.42
1:3:737:C:H2'	1:3:738:C:H6	1.84	0.42
1:3:750:C:H4'	52:T:20:ASP:HA	2.00	0.42
1:3:762:U:H2'	1:3:763:G:H8	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:779:C:H2'	1:3:780:A:O4'	2.20	0.42
1:3:1075:U:H4'	1:3:1101:A:N6	2.34	0.42
1:3:1184:G:C2	1:3:1185:G:C8	3.08	0.42
1:3:1225:A:H5"	50:R:101:THR:OG1	2.19	0.42
2:1:683:U:O5'	2:1:683:U:H6	2.03	0.42
2:1:1057:A:C6	12:h:37:LYS:CE	3.02	0.42
2:1:1340:U:C5	2:1:1603:A:C8	3.08	0.42
2:1:1677:A:H2'	2:1:1678:A:O4'	2.19	0.42
2:1:2328:A:H8	2:1:2328:A:O5'	2.03	0.42
3:2:78:A:C2	3:2:99:A:C4	3.07	0.42
12:h:39:THR:O	12:h:43:LYS:HG2	2.20	0.42
23:s:71:VAL:HG12	23:s:107:VAL:HG12	2.02	0.42
31:A:20:ASN:ND2	31:A:37:CYS:SG	2.92	0.42
35:E:8:GLY:O	35:E:12:ARG:NH2	2.50	0.42
38:6:27:U:H6	38:6:27:U:C5'	2.26	0.42
38:6:70:G:H2'	38:6:71:C:C6	2.54	0.42
42:J:149:PRO:HA	42:J:152:VAL:HG22	2.01	0.42
43:K:19:PRO:HA	43:K:22:ILE:HG12	2.02	0.42
46:N:13:SER:O	46:N:13:SER:OG	2.31	0.42
46:N:38:PHE:HB2	46:N:41:GLU:HB2	2.01	0.42
1:3:100:G:N3	1:3:100:G:H2'	2.35	0.42
1:3:132:C:H5"	57:Y:67:HIS:CE1	2.55	0.42
1:3:152:A:H2'	1:3:153:C:H5'	2.01	0.42
1:3:272:C:H2'	1:3:273:U:H6	1.84	0.42
1:3:775:G:H2'	1:3:776:G:O4'	2.20	0.42
1:3:1150:A:N3	47:O:41:PRO:HG2	2.34	0.42
1:3:1449:C:H6	1:3:1449:C:O5'	2.02	0.42
2:1:340:A:H2'	2:1:341:C:C5'	2.49	0.42
2:1:470:A:H2'	2:1:471:A:O4'	2.20	0.42
2:1:649:G:H2'	2:1:650:C:C6	2.54	0.42
2:1:707:G:H2'	2:1:708:G:O4'	2.20	0.42
2:1:894:U:H2'	2:1:895:U:O4'	2.20	0.42
2:1:991:C:H2'	2:1:992:C:C6	2.55	0.42
2:1:1495:A:H2'	2:1:1496:A:C8	2.55	0.42
2:1:1770:G:H4'	2:1:1938:A:OP1	2.20	0.42
2:1:1957:C:C2	2:1:1958:C:C5	3.08	0.42
2:1:2122:U:H3	2:1:2176:A:H61	1.68	0.42
2:1:2266:A:H4'	2:1:2267:A:N3	2.35	0.42
4:5:2:G:O6	4:5:71:C:N3	2.52	0.42
17:m:49:ALA:HB1	17:m:120:ALA:HB1	2.01	0.42
20:p:27:VAL:O	20:p:42:PHE:N	2.42	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:s:51:LEU:HD13	23:s:105:VAL:HG11	2.01	0.42
32:B:22:THR:OG1	32:B:23:ALA:N	2.51	0.42
54:V:3:LYS:HB2	54:V:4:ILE:H	1.59	0.42
1:3:68:G:H22	1:3:101:A:H2	1.68	0.42
1:3:144:G:H2'	1:3:145:G:C8	2.54	0.42
1:3:870:U:H4'	1:3:872:A:OP2	2.20	0.42
1:3:1238:A:C8	1:3:1303:C:H1'	2.55	0.42
2:1:37:C:H2'	2:1:38:A:C8	2.55	0.42
2:1:44:A:H2'	2:1:45:G:O4'	2.20	0.42
2:1:788:A:H1'	34:D:4:THR:HG21	2.02	0.42
2:1:792:A:N3	2:1:2072:C:O2'	2.46	0.42
2:1:856:G:H8	2:1:856:G:H5'	1.85	0.42
2:1:886:A:C5	2:1:887:U:H1'	2.55	0.42
2:1:1106:G:H2'	2:1:1107:G:H8	1.85	0.42
2:1:1528:A:H2'	2:1:1529:G:H5'	2.01	0.42
2:1:1788:C:C2'	2:1:1789:A:H5'	2.50	0.42
4:5:72:G:O2'	4:5:73:A:O5'	2.37	0.42
5:b:130:PRO:HA	5:b:188:ARG:HA	2.01	0.42
15:k:23:LYS:HD3	15:k:23:LYS:HA	1.90	0.42
16:l:77:ILE:HG21	16:l:82:LEU:HD23	2.02	0.42
22:r:68:ARG:HH21	22:r:92:TRP:HE1	1.68	0.42
50:R:95:PRO:HA	50:R:108:ARG:HG2	2.02	0.42
57:Y:42:ASP:O	57:Y:46:ALA:N	2.34	0.42
1:3:90:C:H2'	1:3:91:U:C6	2.54	0.42
1:3:254:G:H2'	1:3:255:G:C8	2.52	0.42
1:3:422:C:H5'	1:3:423:G:C5	2.54	0.42
1:3:424:G:H2'	1:3:425:G:H8	1.83	0.42
1:3:668:G:O2'	52:T:45:HIS:HB3	2.20	0.42
1:3:669:G:H2'	1:3:670:G:O4'	2.19	0.42
1:3:895:G:O2'	1:3:896:C:H5'	2.20	0.42
1:3:1492:A:OP1	49:Q:43:LYS:HG2	2.19	0.42
2:1:232:G:OP2	2:1:232:G:H8	2.03	0.42
2:1:312:G:H4'	2:1:331:C:N3	2.35	0.42
2:1:374:A:C2	2:1:401:A:C4	3.07	0.42
2:1:951:C:H2'	2:1:952:G:C8	2.55	0.42
2:1:1350:C:H2'	2:1:1351:C:H5'	2.02	0.42
2:1:1426:G:H1'	2:1:1573:G:O6	2.20	0.42
2:1:2093:G:H1'	2:1:2198:A:C2	2.55	0.42
2:1:2363:G:O2'	2:1:2364:C:H5'	2.20	0.42
2:1:2604:U:O2	2:1:2604:U:H2'	2.19	0.42
2:1:2691:C:H2'	2:1:2692:G:H8	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2722:G:C2’	2:1:2723:C:H5’	2.49	0.42
2:1:2818:U:H2’	2:1:2819:G:H8	1.85	0.42
3:2:26:C:O2’	3:2:117:G:H4’	2.20	0.42
24:t:58:VAL:HG13	24:t:85:VAL:HG22	2.01	0.42
56:X:62:THR:HG22	56:X:65:MET:HE3	2.02	0.42
1:3:429:U:H3	1:3:431:A:H62	1.68	0.42
1:3:1306:A:H2’	1:3:1307:U:O4’	2.19	0.42
1:3:1527:U:H2’	1:3:1528:U:C6	2.54	0.42
2:1:204:A:O4’	2:1:206:U:C6	2.72	0.42
2:1:341:C:H2’	2:1:342:A:O4’	2.19	0.42
2:1:538:A:H2’	2:1:539:G:H8	1.84	0.42
2:1:906:U:C1’	17:m:28:PHE:CZ	3.03	0.42
2:1:1175:A:C3’	2:1:1176:U:H5’	2.46	0.42
2:1:1225:G:C2	2:1:1226:A:C2	3.07	0.42
2:1:1637:A:H5’	2:1:1760:C:O2’	2.20	0.42
2:1:1857:G:H22	2:1:1884:G:H2’	1.85	0.42
2:1:2127:G:C2	2:1:2173:A:H1’	2.55	0.42
2:1:2314:A:H5’	8:e:34:THR:HG21	2.02	0.42
2:1:2674:G:H2’	2:1:2675:A:H8	1.85	0.42
2:1:2703:C:H2’	2:1:2704:C:H6	1.83	0.42
2:1:2884:U:C6	32:B:49:ARG:HG2	2.55	0.42
4:5:8:U:H2’	4:5:13:C:H42	1.84	0.42
4:5:17(A):U:OP1	4:5:17(A):U:H6	2.02	0.42
7:d:32:VAL:HG11	16:l:6:LEU:HD13	2.01	0.42
16:l:55:MET:HA	16:l:56:PRO:HD3	1.93	0.42
18:n:83:LEU:HD11	18:n:115:LEU:HD13	2.01	0.42
20:p:20:ARG:HE	20:p:112:ARG:NH1	2.17	0.42
49:Q:64:SER:HB2	49:Q:94:TYR:HB2	2.02	0.42
54:V:10:ARG:O	54:V:23:ALA:N	2.45	0.42
1:3:188:C:H2’	1:3:189:A:O4’	2.19	0.41
1:3:501:C:O3’	49:Q:114:SER:OG	2.36	0.41
1:3:1171:A:H2’	1:3:1172:C:C6	2.54	0.41
1:3:1285:A:H4’	1:3:1286:U:C5	2.55	0.41
1:3:1392:G:O2’	1:3:1393:U:H5’	2.19	0.41
1:3:1413:A:C2	1:3:1414:U:C2	3.08	0.41
2:1:529:A:C8	2:1:2023:C:N4	2.88	0.41
2:1:1179:G:C4	2:1:1180:U:H1’	2.55	0.41
2:1:1665:A:H2’	2:1:1666:G:O4’	2.20	0.41
2:1:1853:A:N1	2:1:2087:G:H1’	2.34	0.41
2:1:2358:A:H2’	2:1:2359:C:O4’	2.19	0.41
2:1:2569:G:N3	2:1:2570:G:C8	2.88	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:2:33:G:O2'	3:2:34:A:H5'	2.20	0.41
3:2:105:G:O2'	3:2:106:G:H5'	2.20	0.41
10:g:50:ARG:HA	10:g:50:ARG:HD2	1.84	0.41
14:j:39:LYS:HB3	14:j:39:LYS:HE2	1.81	0.41
17:m:39:GLY:HA3	17:m:126:ILE:HD11	2.01	0.41
53:U:74:LEU:HD23	53:U:74:LEU:HA	1.89	0.41
1:3:474:G:O2'	1:3:475:C:H5'	2.19	0.41
1:3:508:U:H4'	41:I:50:TYR:CD2	2.55	0.41
1:3:543:U:OP1	41:I:13:ARG:NE	2.53	0.41
1:3:990:C:H2'	1:3:991:U:C4'	2.50	0.41
1:3:1025:U:O3'	1:3:1026:G:H8	2.03	0.41
1:3:1402:C:O2	1:3:1500:A:N1	2.53	0.41
1:3:1441:A:H1'	20:p:113:LEU:CD2	2.51	0.41
1:3:1490:U:O2'	1:3:1491:G:H5'	2.20	0.41
2:1:38:A:H5'	7:d:45:ALA:HB3	2.02	0.41
2:1:84:A:H62	2:1:101:A:H2	1.66	0.41
2:1:139:U:H2'	2:1:140:C:C5	2.55	0.41
2:1:233:A:C2'	2:1:234:U:H5'	2.50	0.41
2:1:572:A:H5"	2:1:573:U:OP2	2.20	0.41
2:1:575:A:H4'	2:1:2500:U:H5'	2.03	0.41
2:1:642:U:O2	2:1:644:A:H3'	2.19	0.41
2:1:1112:G:H2'	2:1:1113:U:O4'	2.19	0.41
2:1:1300:G:C2	2:1:1626:A:N6	2.88	0.41
2:1:1529:G:H2'	2:1:1530:G:O4'	2.21	0.41
2:1:1867:G:O2'	2:1:1868:C:H5'	2.20	0.41
2:1:1874:C:H2'	2:1:1875:G:O4'	2.20	0.41
2:1:2060:A:O2'	2:1:2061:G:OP2	2.35	0.41
2:1:2143:C:C4	2:1:2144:G:H1'	2.55	0.41
2:1:2301:C:H2'	2:1:2302:U:C6	2.55	0.41
2:1:2802:G:H2'	2:1:2803:G:C8	2.53	0.41
3:2:100:G:H2'	3:2:101:A:O4'	2.20	0.41
7:d:173:THR:OG1	7:d:174:GLY:N	2.53	0.41
11:a:192:LEU:HA	11:a:195:ALA:HB3	2.01	0.41
19:o:2:ASP:O	19:o:5:SER:OG	2.38	0.41
40:H:39:ARG:HA	40:H:39:ARG:HD2	1.92	0.41
46:N:28:VAL:HG23	46:N:63:TYR:HA	2.01	0.41
58:Z:33:ARG:HB2	58:Z:34:ARG:H	1.67	0.41
1:3:76:G:H2'	1:3:77:A:O4'	2.19	0.41
1:3:301:G:H2'	1:3:302:G:C8	2.55	0.41
1:3:394:G:H2'	1:3:395:C:C6	2.55	0.41
1:3:672:U:H2'	1:3:673:A:C8	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:744:C:H2'	1:3:745:G:C8	2.55	0.41
1:3:936:C:H2'	1:3:937:A:O4'	2.20	0.41
2:1:8:C:C2'	2:1:9:G:H5'	2.50	0.41
2:1:20:C:O2'	2:1:21:A:H5'	2.19	0.41
2:1:152:A:H2'	2:1:153:U:C6	2.56	0.41
2:1:578:G:N2	2:1:1252:G:N2	2.66	0.41
2:1:585:G:H1'	2:1:1254:A:H61	1.85	0.41
2:1:1097:U:O2'	2:1:1098:A:H5'	2.20	0.41
2:1:1283:G:N2	2:1:1286:A:C8	2.89	0.41
2:1:1283:G:H1'	2:1:1329:U:H3	1.85	0.41
2:1:1431:A:O2'	2:1:1432:G:H5'	2.20	0.41
2:1:1432:G:N2	2:1:1562:U:C2	2.88	0.41
2:1:1559:U:H3'	2:1:1560:G:C5'	2.50	0.41
2:1:1785:A:O2'	2:1:1786:A:H2'	2.19	0.41
2:1:1893:C:C2'	2:1:1894:C:H5'	2.50	0.41
2:1:2139:U:H1'	2:1:2153:C:H41	1.86	0.41
2:1:2583:G:H8	2:1:2583:G:O5'	2.03	0.41
2:1:2653:U:C5	2:1:2654:A:H2'	2.56	0.41
2:1:2674:G:H4'	15:k:30:ARG:CD	2.50	0.41
6:c:25:THR:HG21	6:c:193:VAL:HG22	2.03	0.41
8:e:65:LEU:HD12	8:e:65:LEU:HA	1.89	0.41
9:f:11:PRO:HG2	9:f:14:VAL:HG21	2.01	0.41
42:J:86:GLY:O	42:J:138:ALA:HB1	2.20	0.41
42:J:135:VAL:O	42:J:139:THR:HG23	2.20	0.41
52:T:21:THR:O	52:T:21:THR:OG1	2.39	0.41
1:3:326:G:H2'	1:3:327:A:H5'	2.02	0.41
1:3:514:C:O2'	1:3:515:G:H5'	2.19	0.41
1:3:515:G:H2'	1:3:516:U:O4'	2.21	0.41
1:3:1081:A:O2'	1:3:1082:A:H5'	2.19	0.41
2:1:587:C:C5	2:1:671:C:H1'	2.54	0.41
2:1:601:C:H4'	7:d:99:LYS:HD3	2.02	0.41
2:1:705:A:H2'	2:1:706:A:H8	1.84	0.41
2:1:732:C:O2'	2:1:733:G:H5'	2.21	0.41
2:1:783:A:H2'	2:1:784:G:C4'	2.48	0.41
2:1:994:C:O2	22:r:10:LYS:NZ	2.54	0.41
2:1:1077:A:H2'	2:1:1078:U:H5'	2.02	0.41
2:1:1421:G:C2	2:1:1422:G:C8	3.08	0.41
2:1:1450:G:H21	2:1:1452:G:H1	1.67	0.41
2:1:1555:G:H5'	2:1:1555:G:C8	2.54	0.41
2:1:1854:A:H2'	2:1:1855:U:O4'	2.19	0.41
2:1:2088:A:O5'	2:1:2088:A:H8	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2303:G:O3'	8:e:120:SER:HA	2.21	0.41
2:1:2448:A:OP2	2:1:2499:C:OP2	2.38	0.41
2:1:2659:G:H2'	2:1:2661:G:OP2	2.21	0.41
2:1:2682:A:H61	2:1:2728:U:H1'	1.86	0.41
2:1:2695:U:H2'	2:1:2696:U:C5	2.56	0.41
5:b:16:VAL:HB	5:b:203:VAL:HG22	2.02	0.41
7:d:44:ARG:HH11	7:d:87:ALA:HB2	1.85	0.41
15:k:88:ASN:O	15:k:92:GLU:HA	2.20	0.41
17:m:64:TRP:HB2	17:m:104:GLU:HB2	2.02	0.41
47:O:24:GLU:HG3	47:O:92:LEU:HD13	2.02	0.41
51:S:39:ASP:HA	51:S:42:ASN:HD21	1.85	0.41
1:3:571:U:H2'	1:3:572:A:H5"	2.03	0.41
1:3:790:A:C6	1:3:791:G:C6	3.08	0.41
1:3:915:A:H2'	1:3:916:U:C5'	2.51	0.41
1:3:1124:G:H4'	47:O:40:ILE:HD11	2.01	0.41
2:1:92:U:H2'	2:1:93:G:O4'	2.21	0.41
2:1:102:U:O2	29:y:2:LYS:HG2	2.20	0.41
2:1:677:A:O2'	2:1:678:C:H5'	2.20	0.41
2:1:685:A:H1'	2:1:688:U:O4	2.20	0.41
2:1:743:A:OP1	6:c:135:GLY:HA2	2.20	0.41
2:1:816:C:O2'	2:1:817:C:H5'	2.20	0.41
2:1:1403:A:H2'	2:1:1404:C:C6	2.56	0.41
2:1:1501:G:H2'	2:1:1502:A:C8	2.55	0.41
2:1:1595:C:H2'	2:1:1596:A:H8	1.86	0.41
2:1:1846:G:C6	2:1:1847:A:C2	3.08	0.41
2:1:1982:U:OP2	2:1:1982:U:H6	2.03	0.41
2:1:2134:A:H1'	2:1:2159:G:H1'	2.03	0.41
2:1:2231:U:O2'	2:1:2232:C:H5'	2.21	0.41
2:1:2379:G:H2'	2:1:2380:C:C6	2.55	0.41
2:1:2516:A:C2'	2:1:2517:C:H5'	2.50	0.41
2:1:2617:U:C2'	2:1:2618:G:H5'	2.50	0.41
4:5:8:U:O2'	4:5:21:A:N1	2.51	0.41
4:5:57:G:H2'	4:5:58:A:C5'	2.50	0.41
4:5:67:U:C2'	4:5:68:C:H5'	2.50	0.41
25:u:67:SER:O	25:u:67:SER:OG	2.37	0.41
26:v:26:PHE:HE1	26:v:89:ILE:HG13	1.84	0.41
37:4:6:G:OP1	58:Z:58:LYS:HE2	2.20	0.41
49:Q:40:THR:HA	49:Q:41:PRO:HD3	1.86	0.41
51:S:38:GLU:O	51:S:42:ASN:ND2	2.53	0.41
1:3:324:G:N2	1:3:327:A:C8	2.88	0.41
1:3:607:A:H2'	1:3:608:A:H8	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:1496:C:H2'	1:3:1497:G:O4'	2.21	0.41
2:1:76:C:O2'	2:1:77:G:H5'	2.21	0.41
2:1:136:G:H1	2:1:143:C:H42	1.67	0.41
2:1:538:A:H2'	2:1:539:G:O4'	2.21	0.41
2:1:555:G:O2'	2:1:556:A:C8	2.74	0.41
2:1:635:C:H2'	2:1:636:G:O4'	2.21	0.41
2:1:954:G:C5	2:1:955:U:C5	3.09	0.41
2:1:1080:A:H2'	2:1:1081:U:C4'	2.50	0.41
2:1:1124:G:N3	36:F:38:GLY:HA2	2.35	0.41
2:1:1354:A:OP1	5:b:35:LYS:NZ	2.52	0.41
2:1:1529:G:H2'	2:1:1530:G:C1'	2.51	0.41
2:1:1539:U:O2'	2:1:1540:G:H5'	2.20	0.41
2:1:1775:U:H2'	2:1:1776:G:O4'	2.20	0.41
2:1:1829:A:H2'	2:1:1830:C:H5'	2.01	0.41
2:1:1992:G:C2	2:1:1997:C:N3	2.88	0.41
2:1:2112:G:H3'	2:1:2113:U:C5'	2.51	0.41
2:1:2134:A:C8	2:1:2156:G:N2	2.89	0.41
2:1:2165:C:H2'	2:1:2166:U:N3	2.35	0.41
2:1:2325:G:C6	2:1:2326:C:N4	2.88	0.41
2:1:2798:U:H5"	2:1:2799:A:OP1	2.21	0.41
38:6:19:G:C1'	38:6:57:A:H2	2.29	0.41
39:G:14:HIS:HA	39:G:40:ILE:HG22	2.03	0.41
41:I:111:ALA:O	41:I:115:GLN:N	2.50	0.41
42:J:93:VAL:HG11	42:J:139:THR:HG22	2.01	0.41
44:L:86:VAL:HG12	44:L:150:PHE:CB	2.49	0.41
44:L:121:ASN:O	44:L:125:ASP:N	2.51	0.41
48:P:99:LEU:HD23	48:P:99:LEU:HA	1.87	0.41
1:3:299:G:H2'	1:3:300:A:C8	2.56	0.41
1:3:303:A:C2'	1:3:304:U:H5'	2.51	0.41
1:3:658:C:H5'	52:T:30:LEU:HD21	2.02	0.41
2:1:37:C:H2'	2:1:38:A:H8	1.84	0.41
2:1:48:G:C2	2:1:178:G:C6	3.09	0.41
2:1:139:U:H2'	2:1:140:C:H5	1.86	0.41
2:1:245:G:C2	2:1:246:C:C6	3.09	0.41
2:1:304:U:O5'	2:1:304:U:H6	2.04	0.41
2:1:929:U:O2'	2:1:930:G:H5'	2.20	0.41
2:1:2571:U:C4	2:1:2574:G:C8	3.09	0.41
2:1:2604:U:H5'	2:1:2605:U:OP2	2.20	0.41
3:2:52:A:N6	19:o:33:ARG:HH21	2.19	0.41
4:5:29:U:H3	4:5:41:A:H61	1.68	0.41
7:d:97:ASN:HB2	7:d:100:MET:HB2	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:h:47:GLU:HG3	12:h:51:TYR:OH	2.20	0.41
12:h:81:LEU:O	12:h:82:ILE:HG23	2.20	0.41
15:k:71:ARG:HD3	15:k:71:ARG:HA	1.84	0.41
35:E:21:PHE:HE1	35:E:61:LEU:HD11	1.85	0.41
38:6:61:C:H2'	38:6:62:C:C6	2.55	0.41
1:3:714:G:H2'	1:3:715:A:C8	2.55	0.41
1:3:1309:G:N2	1:3:1329:A:H1'	2.36	0.41
2:1:55:G:H2'	2:1:56:A:C8	2.56	0.41
2:1:90:U:H2'	2:1:91:A:C8	2.55	0.41
2:1:216:A:C4	2:1:432:A:C2	3.09	0.41
2:1:222:A:C2	2:1:233:A:H5"	2.55	0.41
2:1:455:C:O2'	2:1:472:A:H2	2.04	0.41
2:1:627:A:O2'	16:l:76:GLU:OE2	2.37	0.41
2:1:640:C:H2'	2:1:641:U:O4'	2.20	0.41
2:1:849:A:H61	2:1:929:U:H3	1.69	0.41
2:1:1056:G:H1	2:1:1101:U:C5'	2.32	0.41
2:1:1425:G:N1	2:1:1426:G:C2	2.88	0.41
2:1:1601:G:H2'	2:1:1602:U:O4'	2.20	0.41
2:1:1699:G:C6	2:1:1763:G:N3	2.89	0.41
2:1:2111:U:O2	2:1:2111:U:O4'	2.39	0.41
2:1:2156:G:N7	2:1:2157:G:N3	2.69	0.41
2:1:2196:C:O2'	2:1:2197:U:H5'	2.19	0.41
2:1:2428:G:H5"	2:1:2429:G:O5'	2.20	0.41
2:1:2443:C:C2'	2:1:2444:G:H5'	2.50	0.41
2:1:2578:G:H4'	2:1:2578:G:OP2	2.21	0.41
3:2:73:A:H2'	3:2:73:A:N3	2.35	0.41
3:2:93:C:OP2	26:v:18:ARG:NH1	2.54	0.41
5:b:153:LEU:HD13	5:b:175:LEU:HD21	2.03	0.41
8:e:64:PRO:HB3	8:e:88:VAL:HG22	2.03	0.41
8:e:91:ARG:HA	8:e:95:MET:HB3	2.01	0.41
14:j:67:ASN:OD1	14:j:67:ASN:N	2.53	0.41
19:o:62:LEU:HD21	19:o:65:THR:HA	2.03	0.41
21:q:89:ILE:HG13	22:r:49:ILE:HD11	2.01	0.41
38:6:12:G:N2	38:6:13:C:H1'	2.35	0.41
40:H:180:ASP:HB3	40:H:204:GLY:H	1.85	0.41
44:L:115:MET:HA	44:L:118:ARG:HB2	2.03	0.41
54:V:6:THR:OG1	54:V:60:ILE:O	2.29	0.41
1:3:20:U:H2'	1:3:21:G:H5'	2.02	0.41
1:3:201:G:H2'	1:3:202:G:C8	2.55	0.41
1:3:433:G:H2'	1:3:434:U:C6	2.55	0.41
1:3:704:A:H3'	1:3:705:G:H8	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:823:C:H2'	1:3:824:G:C8	2.56	0.41
1:3:1068:G:N2	1:3:1191:A:N3	2.58	0.41
1:3:1287:A:H2'	1:3:1288:A:C8	2.56	0.41
1:3:1330:U:H5"	50:R:22:TYR:HD2	1.86	0.41
1:3:1441:A:C8	1:3:1441:A:O5'	2.74	0.41
1:3:1465:A:O2'	1:3:1466:C:H5'	2.20	0.41
1:3:1465:A:C2'	1:3:1466:C:H5'	2.51	0.41
2:1:17:G:H2'	2:1:18:U:O4'	2.20	0.41
2:1:324:A:N6	2:1:338:G:O2'	2.52	0.41
2:1:344:A:O2'	2:1:345:A:H5'	2.21	0.41
2:1:458:G:O2'	2:1:469:G:O6	2.36	0.41
2:1:545:U:C2	2:1:546:U:H1'	2.55	0.41
2:1:610:C:H2'	2:1:611:C:H6	1.85	0.41
2:1:673:C:C2'	2:1:674:G:H5'	2.50	0.41
2:1:716:A:C3'	2:1:717:C:H5"	2.50	0.41
2:1:745:G:C2'	2:1:746:U:H5'	2.50	0.41
2:1:871:U:C4'	17:m:68:PHE:CD1	2.97	0.41
2:1:1047:G:N2	2:1:1110:G:H2'	2.35	0.41
2:1:1107:G:O2'	12:h:81:LEU:HB2	2.20	0.41
2:1:1171:G:N2	2:1:1178:C:C2	2.89	0.41
2:1:1211:C:H5"	2:1:1212:G:C8	2.56	0.41
2:1:1266:G:O2'	2:1:2012:G:O6	2.33	0.41
2:1:1446:C:H2'	2:1:1447:C:H6	1.84	0.41
2:1:1454:C:O2'	18:n:60:VAL:HG13	2.21	0.41
2:1:1684:G:H2'	2:1:1685:C:C6	2.56	0.41
2:1:1726:C:H2'	2:1:1727:C:O4'	2.21	0.41
2:1:2095:A:H5'	2:1:2096:C:OP2	2.21	0.41
2:1:2113:U:C5	2:1:2115:G:N2	2.86	0.41
2:1:2123:G:H2'	2:1:2124:G:H8	1.83	0.41
2:1:2344:U:H5'	2:1:2373:G:H4'	2.02	0.41
2:1:2492:U:H6	2:1:2492:U:O5'	2.04	0.41
2:1:2531:A:C6	2:1:2532:G:C5	3.08	0.41
2:1:2580:U:C5	2:1:2581:G:C6	3.09	0.41
2:1:2628:C:H3'	2:1:2629:U:H5'	2.02	0.41
2:1:2639:A:H2'	2:1:2640:G:H5'	2.03	0.41
2:1:2661:G:H2'	2:1:2662:A:O4'	2.21	0.41
2:1:2751:G:O4'	9:f:2:ARG:HB2	2.21	0.41
2:1:2792:A:H3'	2:1:2793:C:C5'	2.48	0.41
3:2:55:U:H2'	3:2:56:G:O4'	2.20	0.41
3:2:98:G:O6	26:v:14:LYS:HB2	2.21	0.41
4:5:11:C:H2'	4:5:12:G:H8	1.84	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:5:36:G:H2'	4:5:37:G:H8	1.86	0.41
4:5:52:G:H1	4:5:62:C:H42	1.69	0.41
5:b:220:ARG:HE	5:b:220:ARG:HB2	1.55	0.41
6:c:7:LYS:HE2	6:c:7:LYS:HB3	1.88	0.41
7:d:5:LEU:HD13	7:d:8:ALA:HB3	2.03	0.41
7:d:149:ILE:HD13	7:d:188:MET:HE2	2.01	0.41
8:e:73:VAL:HG22	8:e:75:GLY:H	1.85	0.41
13:i:12:VAL:HG22	13:i:13:ALA:H	1.85	0.41
18:n:107:ASN:HD21	23:s:40:ASN:ND2	2.19	0.41
23:s:28:LYS:HZ3	23:s:29:VAL:N	2.19	0.41
39:G:71:THR:OG1	39:G:167:HIS:NE2	2.53	0.41
40:H:146:LYS:HB2	40:H:202:PHE:HD2	1.85	0.41
41:I:81:LEU:HD23	41:I:81:LEU:HA	1.87	0.41
41:I:117:VAL:HG12	41:I:122:ILE:HG12	2.03	0.41
42:J:114:LEU:HD21	42:J:143:LEU:HD11	2.01	0.41
46:N:11:ARG:HD2	46:N:76:GLY:HA3	2.03	0.41
49:Q:17:LYS:HE2	49:Q:17:LYS:HB2	1.95	0.41
49:Q:39:THR:OG1	49:Q:40:THR:N	2.50	0.41
54:V:45:VAL:HG21	54:V:60:ILE:HG21	2.03	0.41
1:3:187:G:H5'	57:Y:79:THR:HG21	2.02	0.41
1:3:269:C:H2'	1:3:270:A:C8	2.56	0.41
1:3:390:U:O2'	53:U:28:ARG:NH2	2.54	0.41
1:3:456:A:H2'	1:3:457:G:C8	2.56	0.41
1:3:754:C:OP1	52:T:71:ARG:NH2	2.54	0.41
1:3:994:A:C5	1:3:1216:A:H4'	2.56	0.41
1:3:1279:G:H5"	47:O:9:ARG:NH1	2.27	0.41
2:1:19:A:N6	2:1:522:A:N6	2.69	0.41
2:1:96:C:H2'	2:1:97:C:C6	2.56	0.41
2:1:112:U:H2'	2:1:113:U:H5'	2.03	0.41
2:1:255:A:H2'	2:1:256:A:O4'	2.21	0.41
2:1:532:A:N1	2:1:2020:A:H1'	2.36	0.41
2:1:955:U:OP1	17:m:86:LYS:NZ	2.40	0.41
2:1:971:G:OP1	2:1:974:G:O2'	2.39	0.41
2:1:1109:C:H41	2:1:1110:G:N2	2.19	0.41
2:1:1356:G:H2'	2:1:1357:C:C6	2.54	0.41
2:1:1482:G:H1'	2:1:1509:A:N1	2.36	0.41
2:1:1517:G:C2'	2:1:1518:C:H5'	2.51	0.41
2:1:1614:A:H2'	2:1:1615:C:H5'	2.02	0.41
2:1:1635:A:O2'	2:1:1636:U:H5'	2.21	0.41
2:1:1722:A:C2	2:1:1739:A:H1'	2.56	0.41
2:1:1797:G:C6	2:1:1798:U:C4	3.09	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2134:A:H2'	2:1:2135:A:O4'	2.21	0.41
2:1:2347:C:C2	2:1:2348:U:C5	3.09	0.41
6:c:38:LYS:NZ	6:c:81:GLU:OE2	2.36	0.41
13:i:91:LYS:HA	13:i:92:PRO:HD3	1.96	0.41
28:x:76:LYS:HD2	28:x:76:LYS:HA	1.91	0.41
36:F:33:HIS:O	36:F:35:GLN:NE2	2.37	0.41
38:6:24:U:H2'	38:6:25:C:O4'	2.21	0.41
42:J:104:ILE:HG21	42:J:119:VAL:HG23	2.03	0.41
48:P:58:THR:HG23	48:P:60:PHE:H	1.86	0.41
50:R:82:LEU:HD21	56:X:64:GLU:HB3	2.03	0.41
55:W:47:ARG:HD3	55:W:47:ARG:HA	1.82	0.41
56:X:11:ASP:OD2	56:X:37:SER:OG	2.30	0.41
1:3:377:G:H2'	1:3:378:G:C8	2.57	0.40
1:3:1238:A:C2	1:3:1241:G:N3	2.87	0.40
1:3:1299:A:C5	1:3:1301:U:C2	3.10	0.40
2:1:108:G:C2'	2:1:109:C:H5'	2.50	0.40
2:1:112:U:C2'	2:1:113:U:H5'	2.51	0.40
2:1:711:G:C2	2:1:721:A:N3	2.89	0.40
2:1:1259:G:C5	2:1:1260:A:N7	2.89	0.40
2:1:1754:A:N1	2:1:2716:C:O2'	2.50	0.40
2:1:1817:G:N3	2:1:1817:G:H2'	2.36	0.40
2:1:2159:G:H2'	2:1:2160:C:H6	1.80	0.40
2:1:2169:A:H2'	2:1:2170:A:C8	2.55	0.40
2:1:2310:C:H2'	8:e:76:PHE:HE2	1.85	0.40
2:1:2457:U:O2'	2:1:2458:G:H5'	2.22	0.40
2:1:2567:G:H2'	2:1:2568:U:C6	2.56	0.40
2:1:2595:G:H1	5:b:238:ASN:ND2	2.14	0.40
2:1:2788:C:H2'	2:1:2789:C:C6	2.57	0.40
2:1:2842:G:N2	2:1:2843:G:H1'	2.37	0.40
3:2:59:A:H2'	3:2:60:C:C6	2.56	0.40
5:b:209:ALA:HA	5:b:212:TRP:CE2	2.56	0.40
12:h:37:LYS:HE3	12:h:37:LYS:HB3	1.84	0.40
12:h:88:HIS:N	12:h:89:PRO:HD2	2.36	0.40
17:m:6:ARG:HH12	17:m:8:LYS:HA	1.86	0.40
1:3:398:U:H2'	1:3:399:G:H8	1.87	0.40
1:3:557:G:H2'	1:3:558:G:O4'	2.21	0.40
1:3:1026:G:N2	1:3:1027:C:H1'	2.36	0.40
1:3:1118:U:H5'	46:N:105:ARG:HG3	2.03	0.40
1:3:1337:G:H5"	1:3:1338:G:OP1	2.22	0.40
1:3:1356:G:H2'	1:3:1357:A:H8	1.80	0.40
2:1:14:A:H2'	2:1:15:G:O4'	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:330:A:H2'	2:1:330:A:N3	2.36	0.40
2:1:783:A:C8	2:1:783:A:C3'	3.04	0.40
2:1:919:U:C2	2:1:920:A:C8	3.10	0.40
2:1:1153:C:N4	2:1:1154:G:N1	2.69	0.40
2:1:1171:G:H2'	2:1:1172:C:O4'	2.21	0.40
2:1:1242:U:C4	2:1:1243:C:C4	3.09	0.40
2:1:1271:G:OP2	2:1:1272:A:OP1	2.39	0.40
2:1:1435:G:O2'	2:1:1436:G:H5'	2.21	0.40
2:1:1437:C:H2'	2:1:1438:U:O4'	2.21	0.40
2:1:2146:C:O2	2:1:2146:C:C3'	2.67	0.40
2:1:2152:G:H2'	2:1:2153:C:H5"	2.02	0.40
2:1:2818:U:H2'	2:1:2819:G:C8	2.56	0.40
4:5:18:G:H21	4:5:58:A:H5'	1.87	0.40
4:5:64:C:H2'	4:5:65:U:H5"	2.04	0.40
8:e:106:ALA:HB2	8:e:138:PRO:HD3	2.03	0.40
17:m:58:LYS:HE2	17:m:58:LYS:HB3	1.81	0.40
19:o:30:ARG:HB2	19:o:35:ILE:HG23	2.02	0.40
40:H:13:ILE:HG22	40:H:14:VAL:HG13	2.04	0.40
44:L:74:VAL:HG21	44:L:85:GLN:HG3	2.01	0.40
45:M:25:THR:HA	45:M:59:GLU:HA	2.03	0.40
53:U:41:PRO:HG2	53:U:42:ILE:HD12	2.04	0.40
57:Y:47:GLN:O	57:Y:51:ASN:N	2.47	0.40
58:Z:16:ARG:CZ	58:Z:19:LYS:HE2	2.51	0.40
1:3:118:U:H2'	1:3:119:A:H5'	2.02	0.40
1:3:122:G:H2'	1:3:123:U:O4'	2.22	0.40
1:3:658:C:H1'	52:T:21:THR:HG21	2.04	0.40
1:3:880:C:OP1	49:Q:8:ARG:NH2	2.54	0.40
1:3:881:G:O2'	1:3:882:C:H5'	2.21	0.40
1:3:1082:A:H2'	1:3:1083:U:O4'	2.21	0.40
2:1:129:C:H2'	2:1:130:C:C6	2.56	0.40
2:1:214:G:O2'	2:1:215:G:H5'	2.21	0.40
2:1:379:G:C6	2:1:380:G:C5	3.09	0.40
2:1:1107:G:O2'	12:h:81:LEU:CG	2.69	0.40
2:1:1544:A:H2'	2:1:1545:A:O4'	2.21	0.40
2:1:1661:G:C4	2:1:1662:U:C5	3.09	0.40
2:1:1721:G:C6	2:1:1738:G:C6	3.10	0.40
2:1:1802:A:H2'	2:1:1803:A:C8	2.56	0.40
2:1:1863:G:H2'	2:1:1864:U:O4'	2.21	0.40
2:1:2156:G:H8	2:1:2156:G:O5'	2.03	0.40
2:1:2389:G:H5"	2:1:2390:U:C5'	2.48	0.40
2:1:2569:G:C2	2:1:2570:G:N7	2.89	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:2597:G:O2'	2:1:2598:A:H5'	2.21	0.40
2:1:2642:G:H2'	2:1:2643:G:H8	1.86	0.40
2:1:2709:G:H2'	2:1:2710:C:C6	2.56	0.40
3:2:43:C:H2'	3:2:44:G:H5"	2.02	0.40
3:2:57:A:OP2	3:2:57:A:H3'	2.21	0.40
3:2:59:A:H2'	3:2:60:C:O4'	2.22	0.40
6:c:105:LYS:HE2	6:c:105:LYS:HB2	1.78	0.40
26:v:4:ILE:HB	26:v:63:ILE:HG13	2.03	0.40
39:G:72:LYS:O	39:G:76:SER:OG	2.32	0.40
54:V:49:ASN:OD1	54:V:49:ASN:N	2.54	0.40
1:3:227:G:H2'	1:3:228:A:C8	2.56	0.40
1:3:499:A:C2	1:3:547:A:C5	3.09	0.40
1:3:962:C:H2'	1:3:963:G:C8	2.57	0.40
1:3:1125:U:C4	1:3:1127:G:C4	3.10	0.40
1:3:1481:U:H2'	1:3:1482:G:C8	2.57	0.40
2:1:32:C:H2'	2:1:33:C:C6	2.56	0.40
2:1:599:A:O2'	2:1:600:G:H5'	2.21	0.40
2:1:940:G:H2'	2:1:941:A:O4'	2.22	0.40
2:1:1653:G:O6	18:n:11:ASN:OD1	2.40	0.40
2:1:2129:C:H2'	2:1:2130:U:C6	2.57	0.40
2:1:2235:G:H2'	2:1:2236:U:O4'	2.21	0.40
2:1:2371:G:H4'	33:C:44:GLN:OE1	2.21	0.40
2:1:2385:C:O2'	2:1:2386:A:H5'	2.20	0.40
2:1:2532:G:H22	2:1:2663:G:C2'	2.34	0.40
2:1:2687:U:H2'	2:1:2688:G:O4'	2.21	0.40
3:2:52:A:H62	19:o:33:ARG:HH21	1.68	0.40
5:b:211:ARG:HA	5:b:211:ARG:HD2	1.89	0.40
6:c:13:ARG:HH21	6:c:13:ARG:HD3	1.78	0.40
16:l:63:LYS:HD2	35:E:11:LYS:HE3	2.04	0.40
24:t:17:SER:OG	24:t:19:LYS:N	2.49	0.40
25:u:40:LEU:HD13	25:u:40:LEU:HA	1.96	0.40
44:L:69:ARG:NH1	44:L:96:ASN:HA	2.36	0.40
53:U:34:GLU:OE2	53:U:60:TRP:NE1	2.38	0.40
53:U:69:ASP:N	53:U:69:ASP:OD1	2.54	0.40
58:Z:50:SER:HA	58:Z:53:LYS:HG2	2.04	0.40
1:3:374:A:H2'	1:3:375:U:C6	2.56	0.40
1:3:657:U:O4'	52:T:27:GLN:NE2	2.52	0.40
1:3:947:G:OP2	50:R:112:ARG:NH2	2.54	0.40
1:3:1037:C:O5'	1:3:1037:C:H6	2.04	0.40
1:3:1350:A:H2'	1:3:1351:U:C6	2.56	0.40
1:3:1396:A:C2	42:J:23:THR:HG21	2.57	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:3:1450:U:H2'	1:3:1452:C:O4'	2.21	0.40
2:1:53:A:C2'	2:1:54:G:H5'	2.51	0.40
2:1:105:C:H2'	2:1:106:C:H6	1.86	0.40
2:1:190:A:C6	2:1:191:A:C6	3.10	0.40
2:1:227:A:N1	2:1:2407:A:H1'	2.36	0.40
2:1:241:A:O4'	2:1:243:U:C6	2.75	0.40
2:1:1058:U:H5	2:1:1080:A:H61	1.65	0.40
2:1:1255:U:N3	7:d:68:ALA:HA	2.36	0.40
2:1:1459:G:C2	2:1:1461:C:C2	3.09	0.40
2:1:1740:G:O2'	2:1:1741:C:H5'	2.22	0.40
2:1:1925:C:C4	2:1:1926:U:C4	3.09	0.40
2:1:2350:C:H2'	2:1:2351:G:H5'	2.04	0.40
2:1:2691:C:H2'	2:1:2692:G:C8	2.56	0.40
20:p:27:VAL:N	20:p:42:PHE:O	2.46	0.40
38:6:68:C:H2'	38:6:69:C:H6	1.85	0.40
40:H:19:SER:HB3	40:H:21:TRP:NE1	2.36	0.40
41:I:140:ASP:O	41:I:181:PHE:N	2.49	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
5	b	269/271 (99%)	235 (87%)	33 (12%)	1 (0%)	30 62
6	c	207/209 (99%)	188 (91%)	19 (9%)	0	100 100
7	d	199/201 (99%)	184 (92%)	15 (8%)	0	100 100
8	e	175/177 (99%)	158 (90%)	15 (9%)	2 (1%)	11 43
9	f	174/176 (99%)	156 (90%)	17 (10%)	1 (1%)	21 56
10	g	147/149 (99%)	121 (82%)	24 (16%)	2 (1%)	9 39
11	a	130/223 (58%)	109 (84%)	20 (15%)	1 (1%)	16 50

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
12	h	129/131 (98%)	92 (71%)	27 (21%)	10 (8%)	1 5
13	i	139/141 (99%)	116 (84%)	22 (16%)	1 (1%)	18 52
14	j	140/142 (99%)	126 (90%)	13 (9%)	1 (1%)	18 52
15	k	120/122 (98%)	99 (82%)	21 (18%)	0	100 100
16	l	141/143 (99%)	120 (85%)	21 (15%)	0	100 100
17	m	134/136 (98%)	120 (90%)	14 (10%)	0	100 100
18	n	118/120 (98%)	104 (88%)	14 (12%)	0	100 100
19	o	114/116 (98%)	105 (92%)	9 (8%)	0	100 100
20	p	112/114 (98%)	104 (93%)	8 (7%)	0	100 100
21	q	115/117 (98%)	111 (96%)	4 (4%)	0	100 100
22	r	101/103 (98%)	85 (84%)	16 (16%)	0	100 100
23	s	108/110 (98%)	104 (96%)	3 (3%)	1 (1%)	14 47
24	t	91/93 (98%)	82 (90%)	9 (10%)	0	100 100
25	u	100/102 (98%)	88 (88%)	12 (12%)	0	100 100
26	v	92/94 (98%)	88 (96%)	4 (4%)	0	100 100
27	w	73/75 (97%)	68 (93%)	5 (7%)	0	100 100
28	x	75/77 (97%)	68 (91%)	7 (9%)	0	100 100
29	y	61/63 (97%)	56 (92%)	5 (8%)	0	100 100
30	z	56/58 (97%)	55 (98%)	1 (2%)	0	100 100
31	A	43/66 (65%)	34 (79%)	9 (21%)	0	100 100
32	B	54/56 (96%)	49 (91%)	5 (9%)	0	100 100
33	C	48/50 (96%)	43 (90%)	5 (10%)	0	100 100
34	D	44/46 (96%)	42 (96%)	2 (4%)	0	100 100
35	E	62/64 (97%)	57 (92%)	4 (6%)	1 (2%)	7 36
36	F	36/38 (95%)	27 (75%)	9 (25%)	0	100 100
39	G	223/225 (99%)	207 (93%)	16 (7%)	0	100 100
40	H	204/206 (99%)	185 (91%)	19 (9%)	0	100 100
41	I	203/205 (99%)	174 (86%)	28 (14%)	1 (0%)	24 59
42	J	155/157 (99%)	133 (86%)	21 (14%)	1 (1%)	21 56
43	K	98/100 (98%)	71 (72%)	26 (26%)	1 (1%)	12 45
44	L	149/151 (99%)	134 (90%)	14 (9%)	1 (1%)	18 52

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
45	M	127/129 (98%)	119 (94%)	8 (6%)	0	100 100
46	N	125/127 (98%)	108 (86%)	16 (13%)	1 (1%)	16 50
47	O	96/98 (98%)	81 (84%)	15 (16%)	0	100 100
48	P	114/116 (98%)	97 (85%)	15 (13%)	2 (2%)	6 34
49	Q	121/123 (98%)	100 (83%)	20 (16%)	1 (1%)	16 50
50	R	112/114 (98%)	98 (88%)	13 (12%)	1 (1%)	14 47
51	S	98/100 (98%)	84 (86%)	14 (14%)	0	100 100
52	T	86/88 (98%)	77 (90%)	8 (9%)	1 (1%)	10 42
53	U	80/82 (98%)	71 (89%)	9 (11%)	0	100 100
54	V	78/80 (98%)	65 (83%)	13 (17%)	0	100 100
55	W	63/65 (97%)	61 (97%)	2 (3%)	0	100 100
56	X	77/79 (98%)	72 (94%)	5 (6%)	0	100 100
57	Y	83/85 (98%)	81 (98%)	2 (2%)	0	100 100
58	Z	63/65 (97%)	40 (64%)	21 (33%)	2 (3%)	3 21
All	All	5962/6178 (96%)	5252 (88%)	677 (11%)	33 (1%)	23 56

All (33) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
12	h	80	THR
12	h	108	VAL
12	h	118	ILE
50	R	104	ASN
52	T	46	LYS
10	g	136	SER
11	a	201	PRO
12	h	3	LEU
12	h	58	THR
13	i	121	ILE
44	L	79	VAL
49	Q	77	SER
8	e	176	PHE
9	f	117	PRO
12	h	93	ALA
12	h	107	GLU
35	E	31	ILE
41	I	29	THR

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Mol	Chain	Res	Type
43	K	92	THR
48	P	14	GLN
58	Z	24	LYS
10	g	97	ARG
12	h	2	ALA
12	h	119	PRO
14	j	111	LYS
8	e	175	PRO
12	h	81	LEU
46	N	90	ASP
58	Z	10	PRO
5	b	121	ALA
23	s	64	ALA
48	P	88	PRO
42	J	97	PRO

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
5	b	216/216 (100%)	216 (100%)	0	100	100
6	c	164/164 (100%)	163 (99%)	1 (1%)	78	84
7	d	165/165 (100%)	164 (99%)	1 (1%)	78	84
8	e	148/148 (100%)	148 (100%)	0	100	100
9	f	137/137 (100%)	135 (98%)	2 (2%)	57	76
10	g	114/114 (100%)	110 (96%)	4 (4%)	32	64
11	a	110/174 (63%)	110 (100%)	0	100	100
12	h	100/100 (100%)	94 (94%)	6 (6%)	17	50
13	i	109/109 (100%)	106 (97%)	3 (3%)	38	68
14	j	116/116 (100%)	116 (100%)	0	100	100
15	k	103/103 (100%)	100 (97%)	3 (3%)	37	67
16	l	102/102 (100%)	102 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
17	m	109/109 (100%)	109 (100%)	0	100	100
18	n	100/100 (100%)	99 (99%)	1 (1%)	68	80
19	o	86/86 (100%)	86 (100%)	0	100	100
20	p	99/99 (100%)	98 (99%)	1 (1%)	68	80
21	q	89/89 (100%)	88 (99%)	1 (1%)	65	79
22	r	84/84 (100%)	83 (99%)	1 (1%)	63	79
23	s	93/93 (100%)	92 (99%)	1 (1%)	65	79
24	t	80/80 (100%)	79 (99%)	1 (1%)	61	78
25	u	83/83 (100%)	82 (99%)	1 (1%)	63	79
26	v	78/78 (100%)	77 (99%)	1 (1%)	61	78
27	w	57/57 (100%)	57 (100%)	0	100	100
28	x	67/67 (100%)	67 (100%)	0	100	100
29	y	55/55 (100%)	55 (100%)	0	100	100
30	z	48/48 (100%)	48 (100%)	0	100	100
31	A	42/59 (71%)	42 (100%)	0	100	100
32	B	47/47 (100%)	47 (100%)	0	100	100
33	C	45/45 (100%)	44 (98%)	1 (2%)	45	71
34	D	38/38 (100%)	38 (100%)	0	100	100
35	E	51/51 (100%)	51 (100%)	0	100	100
36	F	34/34 (100%)	34 (100%)	0	100	100
39	G	186/186 (100%)	185 (100%)	1 (0%)	81	85
40	H	170/170 (100%)	169 (99%)	1 (1%)	78	84
41	I	172/172 (100%)	172 (100%)	0	100	100
42	J	119/119 (100%)	119 (100%)	0	100	100
43	K	87/87 (100%)	87 (100%)	0	100	100
44	L	124/124 (100%)	121 (98%)	3 (2%)	43	70
45	M	104/104 (100%)	104 (100%)	0	100	100
46	N	105/105 (100%)	104 (99%)	1 (1%)	68	80
47	O	86/86 (100%)	85 (99%)	1 (1%)	63	79
48	P	89/89 (100%)	88 (99%)	1 (1%)	65	79
49	Q	103/103 (100%)	101 (98%)	2 (2%)	50	73

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
50	R	92/92 (100%)	90 (98%)	2 (2%)	45 71
51	S	83/83 (100%)	83 (100%)	0	100 100
52	T	76/76 (100%)	74 (97%)	2 (3%)	40 69
53	U	65/65 (100%)	65 (100%)	0	100 100
54	V	74/74 (100%)	71 (96%)	3 (4%)	27 60
55	W	56/56 (100%)	56 (100%)	0	100 100
56	X	70/70 (100%)	70 (100%)	0	100 100
57	Y	65/65 (100%)	65 (100%)	0	100 100
58	Z	55/55 (100%)	55 (100%)	0	100 100
All	All	4950/5031 (98%)	4904 (99%)	46 (1%)	68 81

All (46) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
6	c	98	VAL
7	d	145	ASP
9	f	100	ASN
9	f	101	VAL
10	g	15	LEU
10	g	31	VAL
10	g	138	VAL
10	g	142	VAL
12	h	3	LEU
12	h	9	GLN
12	h	53	ARG
12	h	82	ILE
12	h	118	ILE
12	h	124	ASP
13	i	72	THR
13	i	117	THR
13	i	138	VAL
15	k	32	TYR
15	k	61	VAL
15	k	76	VAL
18	n	37	THR
20	p	60	VAL
21	q	30	VAL
22	r	47	VAL
23	s	55	ILE

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Mol	Chain	Res	Type
24	t	32	LEU
25	u	11	ILE
26	v	63	ILE
33	C	22	THR
39	G	69	VAL
40	H	190	THR
44	L	5	VAL
44	L	85	GLN
44	L	90	VAL
46	N	29	ILE
47	O	67	ILE
48	P	81	LEU
49	Q	60	PHE
49	Q	72	ASN
50	R	10	ASP
50	R	24	VAL
52	T	10	ILE
52	T	74	VAL
54	V	21	VAL
54	V	37	ILE
54	V	56	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (98) such sidechains are listed below:

Mol	Chain	Res	Type
5	b	52	HIS
5	b	133	ASN
5	b	162	GLN
5	b	196	ASN
5	b	238	ASN
6	c	32	ASN
6	c	49	GLN
6	c	136	ASN
6	c	164	GLN
7	d	24	ASN
8	e	26	GLN
8	e	51	ASN
8	e	80	GLN
9	f	37	ASN
9	f	110	HIS
9	f	114	HIS
9	f	142	GLN

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Mol	Chain	Res	Type
10	g	11	ASN
11	a	67	HIS
12	h	4	ASN
12	h	6	GLN
12	h	9	GLN
14	j	58	ASN
14	j	130	HIS
14	j	138	GLN
15	k	5	GLN
15	k	29	HIS
15	k	88	ASN
15	k	89	ASN
16	l	99	ASN
17	m	13	HIS
18	n	23	ASN
18	n	31	HIS
18	n	107	ASN
21	q	55	GLN
22	r	82	HIS
23	s	9	HIS
23	s	31	GLN
23	s	60	HIS
24	t	72	GLN
25	u	68	ASN
26	v	5	ASN
26	v	49	ASN
27	w	8	ASN
27	w	72	ASN
29	y	15	ASN
29	y	36	GLN
30	z	8	GLN
31	A	20	ASN
31	A	41	HIS
32	B	41	HIS
34	D	6	GLN
34	D	26	ASN
39	G	38	HIS
39	G	121	GLN
39	G	177	ASN
40	H	68	HIS
40	H	139	ASN
40	H	184	ASN

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Mol	Chain	Res	Type
41	I	70	GLN
41	I	73	ASN
41	I	99	ASN
41	I	125	ASN
41	I	151	GLN
41	I	163	GLN
42	J	76	ASN
42	J	77	ASN
43	K	11	HIS
43	K	63	ASN
44	L	8	GLN
44	L	51	GLN
44	L	85	GLN
44	L	129	ASN
45	M	3	GLN
45	M	66	GLN
46	N	30	ASN
46	N	49	GLN
47	O	99	GLN
48	P	27	ASN
49	Q	28	GLN
49	Q	45	ASN
49	Q	58	ASN
49	Q	71	HIS
50	R	13	HIS
50	R	99	GLN
52	T	39	GLN
52	T	45	HIS
53	U	9	HIS
53	U	29	ASN
54	V	30	HIS
54	V	50	ASN
55	W	51	GLN
56	X	42	ASN
57	Y	12	GLN
57	Y	47	GLN
57	Y	77	ASN
58	Z	55	HIS
58	Z	63	ASN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	3	1538/1539 (99%)	184 (11%)	4 (0%)
2	1	2902/2903 (99%)	422 (14%)	19 (0%)
3	2	119/120 (99%)	16 (13%)	1 (0%)
37	4	18/35 (51%)	4 (22%)	0
38	6	76/77 (98%)	14 (18%)	0
4	5	76/77 (98%)	15 (19%)	0
All	All	4729/4751 (99%)	655 (13%)	24 (0%)

All (655) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	3	4	U
1	3	5	U
1	3	6	G
1	3	9	G
1	3	13	U
1	3	22	G
1	3	32	A
1	3	39	G
1	3	48	C
1	3	51	A
1	3	81	A
1	3	82	G
1	3	84	U
1	3	85	U
1	3	87	C
1	3	94	G
1	3	95	C
1	3	100	G
1	3	101	A
1	3	116	A
1	3	121	U
1	3	130	A
1	3	144	G
1	3	168	G
1	3	183	C
1	3	184	G
1	3	197	A
1	3	210	C
1	3	211	G
1	3	212	G
1	3	226	G
1	3	247	G

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Mol	Chain	Res	Type
1	3	251	G
1	3	253	A
1	3	266	G
1	3	267	C
1	3	280	C
1	3	281	G
1	3	289	G
1	3	328	C
1	3	340	U
1	3	345	C
1	3	346	G
1	3	352	C
1	3	355	C
1	3	367	U
1	3	372	C
1	3	398	U
1	3	411	A
1	3	412	A
1	3	413	G
1	3	422	C
1	3	423	G
1	3	429	U
1	3	441	A
1	3	448	A
1	3	467	U
1	3	468	A
1	3	474	G
1	3	479	U
1	3	482	A
1	3	484	G
1	3	485	U
1	3	486	U
1	3	495	A
1	3	511	C
1	3	518	C
1	3	527	G
1	3	532	A
1	3	547	A
1	3	561	U
1	3	562	U
1	3	572	A
1	3	573	A

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Mol	Chain	Res	Type
1	3	575	G
1	3	576	C
1	3	577	G
1	3	633	G
1	3	642	A
1	3	653	U
1	3	661	G
1	3	665	A
1	3	688	G
1	3	703	G
1	3	723	U
1	3	724	G
1	3	733	G
1	3	755	G
1	3	777	A
1	3	796	C
1	3	815	A
1	3	817	C
1	3	818	G
1	3	819	A
1	3	821	G
1	3	829	G
1	3	843	U
1	3	844	G
1	3	846	G
1	3	851	G
1	3	872	A
1	3	873	A
1	3	902	G
1	3	926	G
1	3	934	C
1	3	935	A
1	3	960	U
1	3	961	U
1	3	966	G
1	3	969	A
1	3	971	G
1	3	975	A
1	3	976	G
1	3	977	A
1	3	979	C
1	3	991	U

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Mol	Chain	Res	Type
1	3	992	U
1	3	993	G
1	3	1004	A
1	3	1011	C
1	3	1020	G
1	3	1028	C
1	3	1031	C
1	3	1032	G
1	3	1033	G
1	3	1034	G
1	3	1036	A
1	3	1045	C
1	3	1054	C
1	3	1055	A
1	3	1094	G
1	3	1101	A
1	3	1130	A
1	3	1132	C
1	3	1136	C
1	3	1137	C
1	3	1138	G
1	3	1139	G
1	3	1159	U
1	3	1168	U
1	3	1182	G
1	3	1184	G
1	3	1196	A
1	3	1198	G
1	3	1201	A
1	3	1212	U
1	3	1213	A
1	3	1225	A
1	3	1238	A
1	3	1240	U
1	3	1241	G
1	3	1258	G
1	3	1260	G
1	3	1275	A
1	3	1278	G
1	3	1280	A
1	3	1282	C
1	3	1286	U

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Mol	Chain	Res	Type
1	3	1287	A
1	3	1290	G
1	3	1300	G
1	3	1301	U
1	3	1302	C
1	3	1317	C
1	3	1336	C
1	3	1346	A
1	3	1347	G
1	3	1363	A
1	3	1394	A
1	3	1395	C
1	3	1441	A
1	3	1446	A
1	3	1448	C
1	3	1452	C
1	3	1453	G
1	3	1492	A
1	3	1497	G
1	3	1503	A
1	3	1506	U
1	3	1517	G
1	3	1519	A
1	3	1529	G
1	3	1530	G
1	3	1540	U
2	1	10	A
2	1	12	U
2	1	14	A
2	1	35	G
2	1	39	G
2	1	46	G
2	1	50	U
2	1	51	G
2	1	63	A
2	1	71	A
2	1	74	A
2	1	75	G
2	1	82	U
2	1	96	C
2	1	102	U
2	1	119	A

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Mol	Chain	Res	Type
2	1	120	U
2	1	138	U
2	1	139	U
2	1	140	C
2	1	141	G
2	1	142	A
2	1	162	U
2	1	163	C
2	1	181	A
2	1	196	A
2	1	199	A
2	1	216	A
2	1	218	A
2	1	221	A
2	1	222	A
2	1	229	C
2	1	248	G
2	1	255	A
2	1	266	G
2	1	276	U
2	1	277	G
2	1	294	A
2	1	311	A
2	1	323	C
2	1	329	G
2	1	330	A
2	1	349	U
2	1	361	G
2	1	371	A
2	1	372	G
2	1	386	G
2	1	387	U
2	1	395	U
2	1	396	G
2	1	404	A
2	1	405	U
2	1	406	G
2	1	411	G
2	1	412	A
2	1	424	G
2	1	454	A
2	1	455	C

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Mol	Chain	Res	Type
2	1	456	C
2	1	481	G
2	1	491	G
2	1	504	A
2	1	508	A
2	1	532	A
2	1	544	C
2	1	547	A
2	1	563	A
2	1	573	U
2	1	586	A
2	1	588	U
2	1	603	A
2	1	614	A
2	1	627	A
2	1	637	A
2	1	646	U
2	1	647	G
2	1	654	A
2	1	655	A
2	1	664	G
2	1	685	A
2	1	686	U
2	1	687	C
2	1	695	G
2	1	717	C
2	1	723	C
2	1	730	A
2	1	740	C
2	1	747	C
2	1	757	G
2	1	760	G
2	1	761	A
2	1	775	G
2	1	776	G
2	1	782	A
2	1	784	G
2	1	785	G
2	1	789	A
2	1	800	A
2	1	801	G
2	1	805	G

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Mol	Chain	Res	Type
2	1	812	C
2	1	819	A
2	1	827	U
2	1	828	U
2	1	830	G
2	1	845	A
2	1	846	U
2	1	856	G
2	1	858	G
2	1	860	U
2	1	866	A
2	1	877	A
2	1	878	A
2	1	885	C
2	1	887	U
2	1	891	G
2	1	896	A
2	1	910	A
2	1	914	G
2	1	932	U
2	1	941	A
2	1	945	A
2	1	946	C
2	1	961	C
2	1	974	G
2	1	983	A
2	1	995	C
2	1	996	A
2	1	1009	A
2	1	1012	U
2	1	1013	C
2	1	1021	A
2	1	1022	G
2	1	1026	G
2	1	1033	U
2	1	1045	C
2	1	1046	A
2	1	1047	G
2	1	1057	A
2	1	1058	U
2	1	1059	G
2	1	1060	U

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Mol	Chain	Res	Type
2	1	1061	U
2	1	1062	G
2	1	1063	G
2	1	1065	U
2	1	1066	U
2	1	1067	A
2	1	1068	G
2	1	1069	A
2	1	1070	A
2	1	1071	G
2	1	1076	C
2	1	1081	U
2	1	1082	U
2	1	1083	U
2	1	1084	A
2	1	1086	A
2	1	1087	G
2	1	1088	A
2	1	1090	A
2	1	1094	U
2	1	1097	U
2	1	1104	C
2	1	1105	U
2	1	1107	G
2	1	1108	U
2	1	1111	A
2	1	1131	G
2	1	1132	U
2	1	1133	A
2	1	1135	C
2	1	1143	A
2	1	1144	A
2	1	1156	A
2	1	1157	G
2	1	1170	C
2	1	1172	C
2	1	1173	U
2	1	1174	U
2	1	1175	A
2	1	1177	G
2	1	1179	G
2	1	1181	U

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Mol	Chain	Res	Type
2	1	1211	C
2	1	1212	G
2	1	1253	A
2	1	1256	G
2	1	1271	G
2	1	1272	A
2	1	1300	G
2	1	1301	A
2	1	1305	C
2	1	1345	C
2	1	1352	U
2	1	1365	A
2	1	1368	G
2	1	1383	A
2	1	1407	G
2	1	1416	G
2	1	1419	A
2	1	1420	A
2	1	1428	C
2	1	1461	C
2	1	1478	G
2	1	1482	G
2	1	1490	A
2	1	1491	G
2	1	1504	A
2	1	1515	A
2	1	1524	G
2	1	1530	G
2	1	1533	C
2	1	1534	U
2	1	1535	A
2	1	1536	C
2	1	1537	G
2	1	1555	G
2	1	1558	C
2	1	1559	U
2	1	1565	C
2	1	1569	A
2	1	1578	U
2	1	1608	A
2	1	1611	C
2	1	1616	A

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Mol	Chain	Res	Type
2	1	1618	A
2	1	1646	C
2	1	1647	U
2	1	1648	U
2	1	1649	G
2	1	1669	A
2	1	1674	G
2	1	1677	A
2	1	1700	A
2	1	1715	G
2	1	1729	U
2	1	1730	C
2	1	1731	G
2	1	1758	U
2	1	1764	C
2	1	1773	A
2	1	1791	A
2	1	1800	C
2	1	1801	A
2	1	1808	A
2	1	1816	C
2	1	1829	A
2	1	1833	C
2	1	1848	A
2	1	1870	C
2	1	1871	A
2	1	1901	A
2	1	1903	G
2	1	1906	G
2	1	1907	G
2	1	1913	A
2	1	1930	G
2	1	1931	U
2	1	1938	A
2	1	1955	U
2	1	1964	G
2	1	1965	C
2	1	1967	C
2	1	1970	A
2	1	1972	G
2	1	1982	U
2	1	1991	U

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Mol	Chain	Res	Type
2	1	1992	G
2	1	1993	U
2	1	1996	C
2	1	1997	C
2	1	2022	U
2	1	2023	C
2	1	2030	A
2	1	2031	A
2	1	2033	A
2	1	2043	C
2	1	2051	A
2	1	2055	C
2	1	2056	G
2	1	2060	A
2	1	2061	G
2	1	2069	G
2	1	2072	C
2	1	2077	A
2	1	2092	U
2	1	2093	G
2	1	2095	A
2	1	2096	C
2	1	2100	G
2	1	2106	U
2	1	2107	G
2	1	2108	A
2	1	2110	G
2	1	2111	U
2	1	2112	G
2	1	2114	A
2	1	2118	U
2	1	2120	G
2	1	2122	U
2	1	2123	G
2	1	2124	G
2	1	2128	G
2	1	2130	U
2	1	2133	G
2	1	2134	A
2	1	2141	G
2	1	2144	G
2	1	2145	C

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Mol	Chain	Res	Type
2	1	2147	A
2	1	2148	G
2	1	2153	C
2	1	2158	A
2	1	2161	C
2	1	2162	G
2	1	2164	C
2	1	2166	U
2	1	2167	U
2	1	2172	U
2	1	2173	A
2	1	2174	C
2	1	2180	U
2	1	2181	U
2	1	2182	U
2	1	2184	A
2	1	2198	A
2	1	2199	A
2	1	2203	U
2	1	2204	G
2	1	2211	A
2	1	2225	A
2	1	2238	G
2	1	2239	G
2	1	2251	G
2	1	2279	G
2	1	2283	C
2	1	2287	A
2	1	2297	A
2	1	2305	U
2	1	2309	A
2	1	2311	A
2	1	2312	U
2	1	2327	A
2	1	2333	A
2	1	2335	A
2	1	2345	G
2	1	2350	C
2	1	2354	C
2	1	2361	G
2	1	2383	G
2	1	2385	C

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Mol	Chain	Res	Type
2	1	2391	G
2	1	2392	A
2	1	2402	U
2	1	2403	C
2	1	2406	A
2	1	2423	U
2	1	2424	C
2	1	2425	A
2	1	2426	A
2	1	2427	C
2	1	2429	G
2	1	2430	A
2	1	2435	A
2	1	2439	A
2	1	2441	U
2	1	2447	G
2	1	2448	A
2	1	2476	A
2	1	2500	U
2	1	2502	G
2	1	2504	U
2	1	2505	G
2	1	2514	U
2	1	2518	A
2	1	2520	C
2	1	2529	G
2	1	2547	A
2	1	2554	U
2	1	2556	C
2	1	2567	G
2	1	2572	A
2	1	2573	C
2	1	2582	G
2	1	2602	A
2	1	2603	G
2	1	2605	U
2	1	2606	C
2	1	2609	U
2	1	2613	U
2	1	2654	A
2	1	2689	U
2	1	2690	U

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Mol	Chain	Res	Type
2	1	2714	G
2	1	2716	C
2	1	2720	U
2	1	2724	U
2	1	2725	A
2	1	2726	A
2	1	2744	G
2	1	2748	A
2	1	2757	A
2	1	2758	A
2	1	2764	A
2	1	2765	A
2	1	2778	A
2	1	2779	U
2	1	2791	G
2	1	2792	A
2	1	2793	C
2	1	2799	A
2	1	2800	A
2	1	2801	G
2	1	2811	G
2	1	2818	U
2	1	2820	A
2	1	2821	A
2	1	2867	G
2	1	2868	A
2	1	2880	C
2	1	2884	U
3	2	2	G
3	2	4	C
3	2	24	G
3	2	35	C
3	2	42	C
3	2	44	G
3	2	50	A
3	2	56	G
3	2	57	A
3	2	68	C
3	2	88	C
3	2	89	U
3	2	90	C
3	2	108	A

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Mol	Chain	Res	Type
3	2	109	A
3	2	119	A
4	5	2	G
4	5	5	G
4	5	8	U
4	5	9	A
4	5	14	A
4	5	19	G
4	5	20	U
4	5	21	A
4	5	30	G
4	5	41	A
4	5	46	G
4	5	47	U
4	5	65	U
4	5	73	A
4	5	74	C
37	4	12	A
37	4	13	A
37	4	14	A
37	4	23	G
38	6	7	G
38	6	10	G
38	6	11	A
38	6	14	A
38	6	19	G
38	6	21	A
38	6	22	G
38	6	25	C
38	6	27	U
38	6	45	G
38	6	48	C
38	6	50	U
38	6	58	A
38	6	70	G

All (24) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	3	411	A
1	3	1281	C
1	3	1300	G

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Mol	Chain	Res	Type
1	3	1447	A
2	1	196	A
2	1	490	C
2	1	760	G
2	1	800	A
2	1	859	G
2	1	1020	A
2	1	1057	A
2	1	1105	U
2	1	1106	G
2	1	1130	U
2	1	1156	A
2	1	1801	A
2	1	2296	U
2	1	2311	A
2	1	2326	C
2	1	2391	G
2	1	2724	U
2	1	2756	U
2	1	2873	A
3	2	88	C

5.4 Non-standard residues in protein, DNA, RNA chains

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

5.5 Carbohydrates

There are no oligosaccharides in this entry.

5.6 Ligand geometry

2 ligands 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	$\#\|Z\|>2$
59	FME	1	3001	60	6,7,10	0.86	0	2,7,11	1.32	0
60	PRO	5	101	4,59	6,7,8	4.47	4 (66%)	7,8,10	1.56	1 (14%)

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
59	FME	1	3001	60	-	4/5/6/11	-
60	PRO	5	101	4,59	-	0/0/9/11	0/1/1/1

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
60	5	101	PRO	CA-N	7.21	1.61	1.48
60	5	101	PRO	CD-N	-5.57	1.29	1.49
60	5	101	PRO	O-C	5.20	1.39	1.20
60	5	101	PRO	CB-CA	-2.66	1.31	1.51

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
60	5	101	PRO	O-C-CA	-3.52	115.71	124.77

There are no chirality outliers.

All (4) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
59	1	3001	FME	N-CA-CB-CG
59	1	3001	FME	C-CA-CB-CG
59	1	3001	FME	O-C-CA-CB
59	1	3001	FME	CA-CB-CG-SD

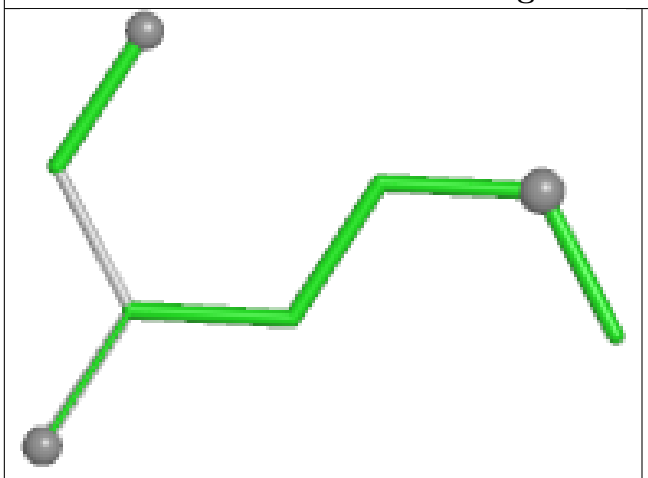
There are no ring outliers.

No monomer is involved in short contacts.

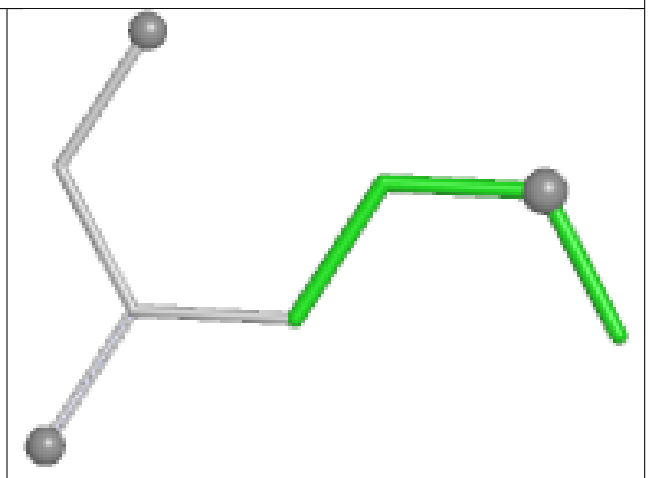
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

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

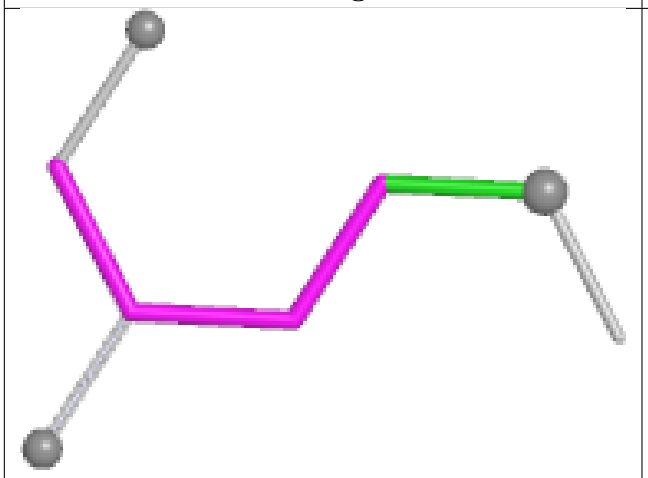
Ligand FME 1 3001



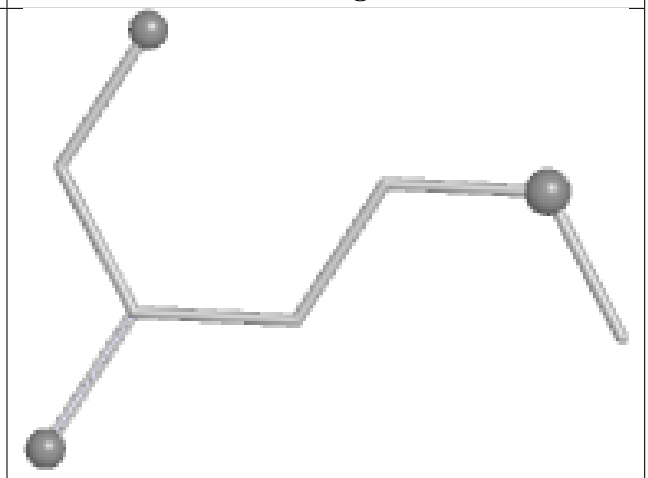
Bond lengths



Bond angles



Torsions



Rings

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.

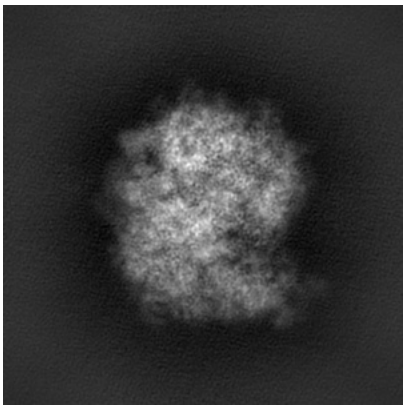
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-25411. These allow visual inspection of the internal detail of the map and identification of artifacts.

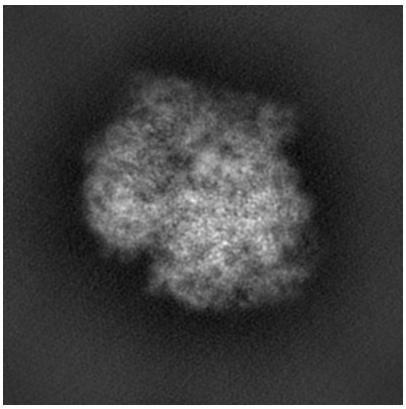
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

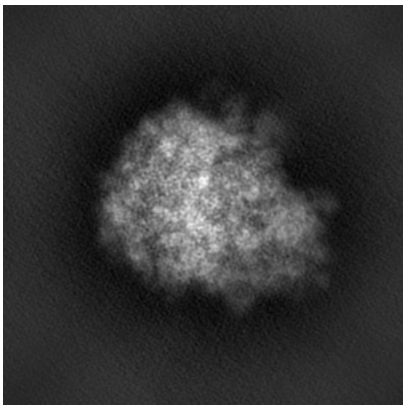
6.1.1 Primary map



X

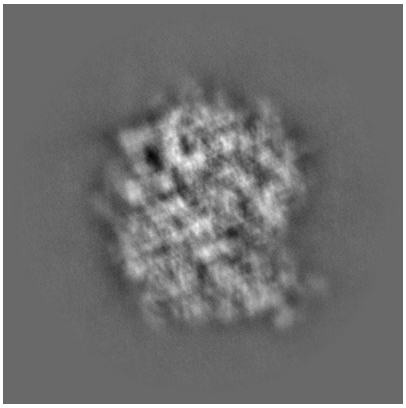


Y

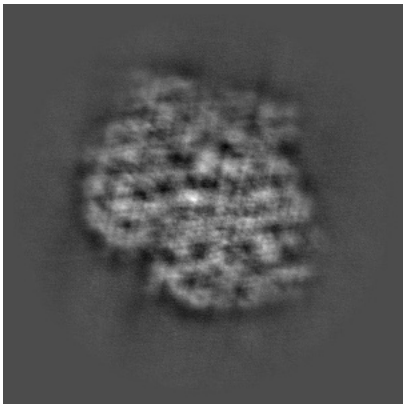


Z

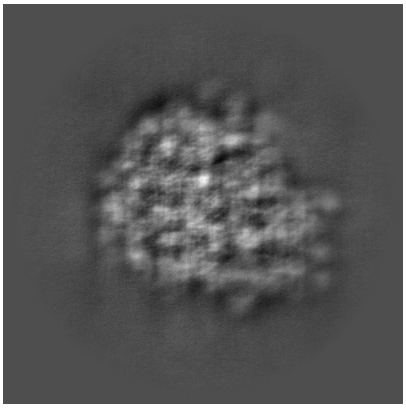
6.1.2 Raw map



X



Y

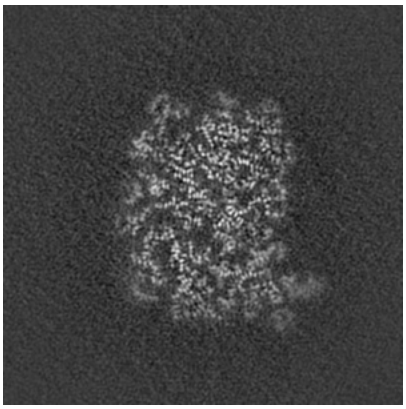


Z

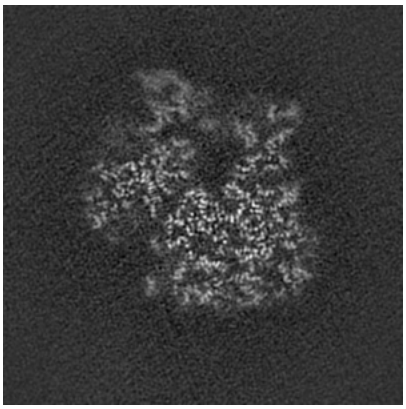
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

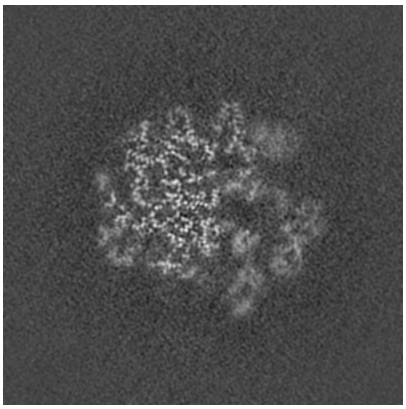
6.2.1 Primary map



X Index: 230

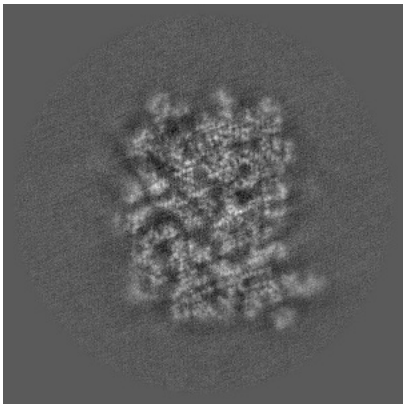


Y Index: 230

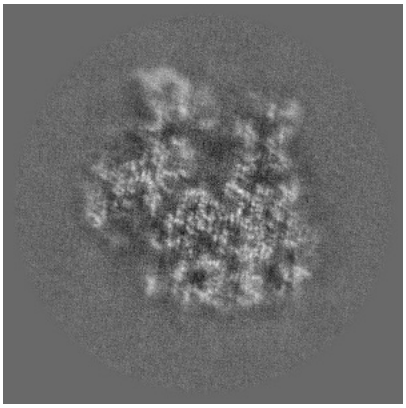


Z Index: 230

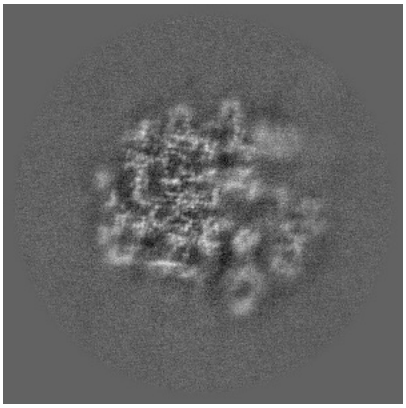
6.2.2 Raw map



X Index: 230



Y Index: 230

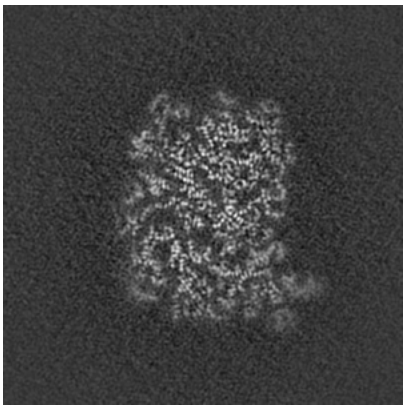


Z Index: 230

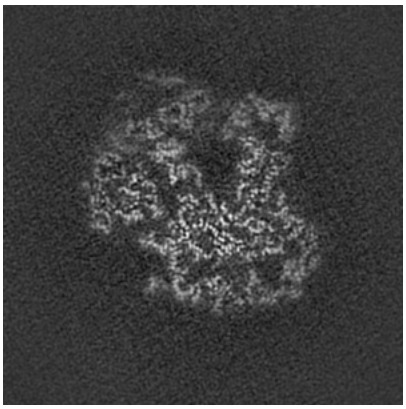
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

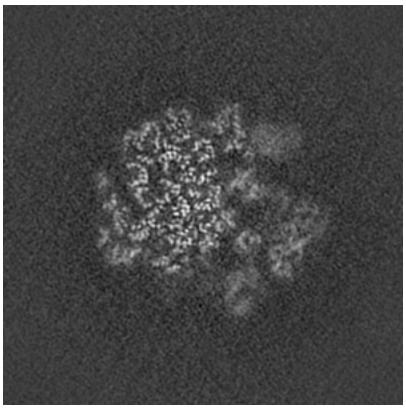
6.3.1 Primary map



X Index: 229

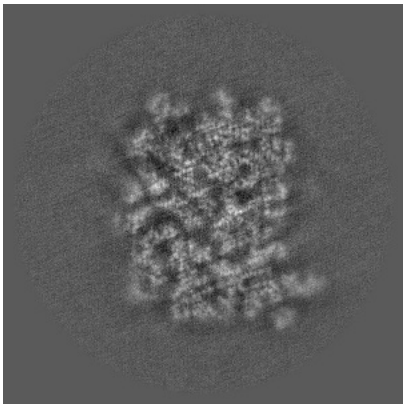


Y Index: 222

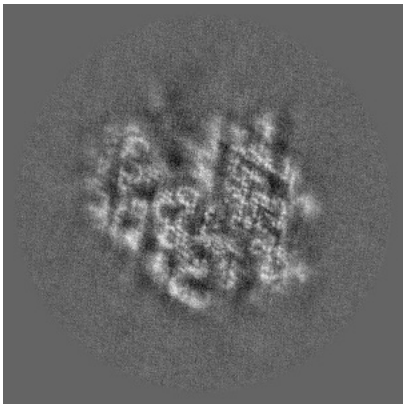


Z Index: 227

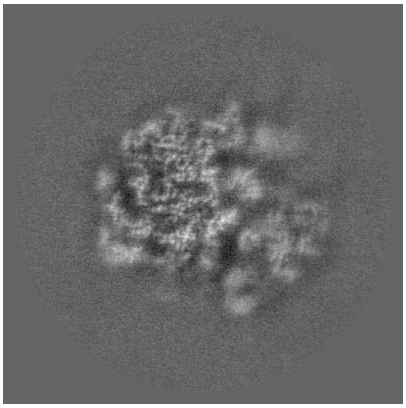
6.3.2 Raw map



X Index: 230



Y Index: 253

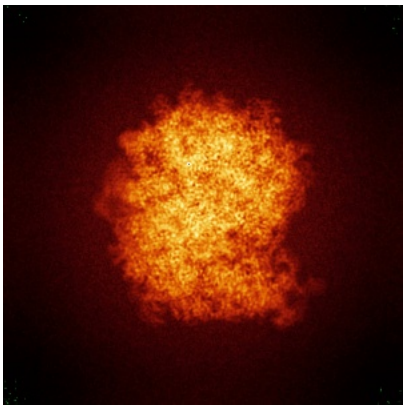


Z Index: 224

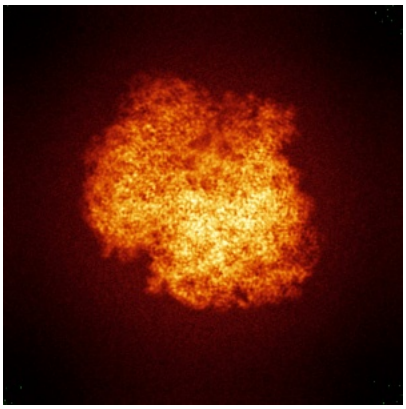
The images above show the largest variance slices of the map in three orthogonal directions.

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

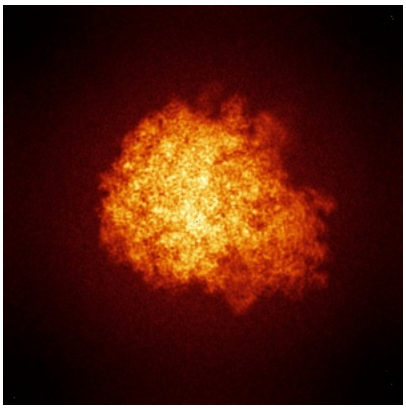
6.4.1 Primary map



X

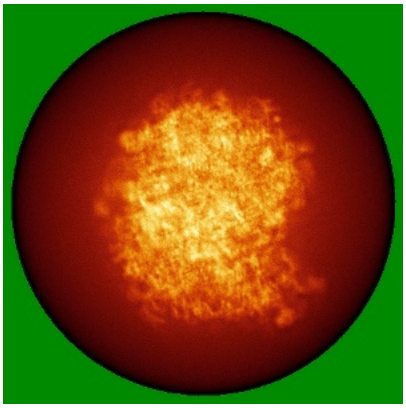


Y

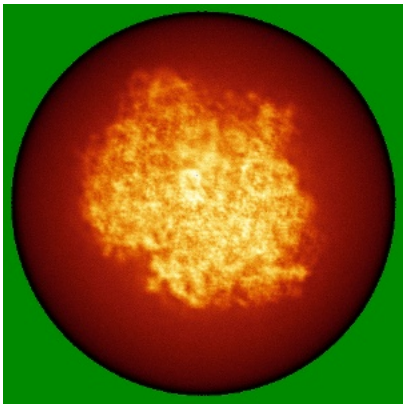


Z

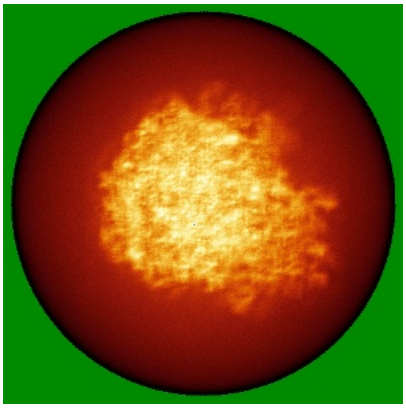
6.4.2 Raw map



X



Y

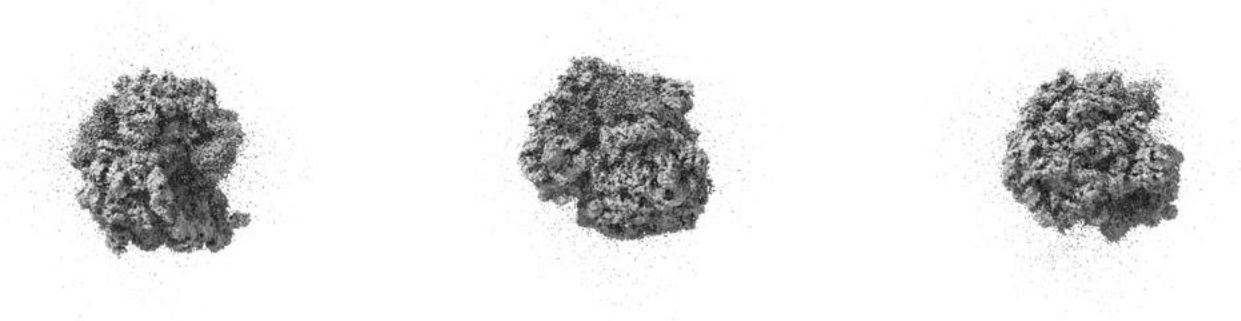


Z

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)

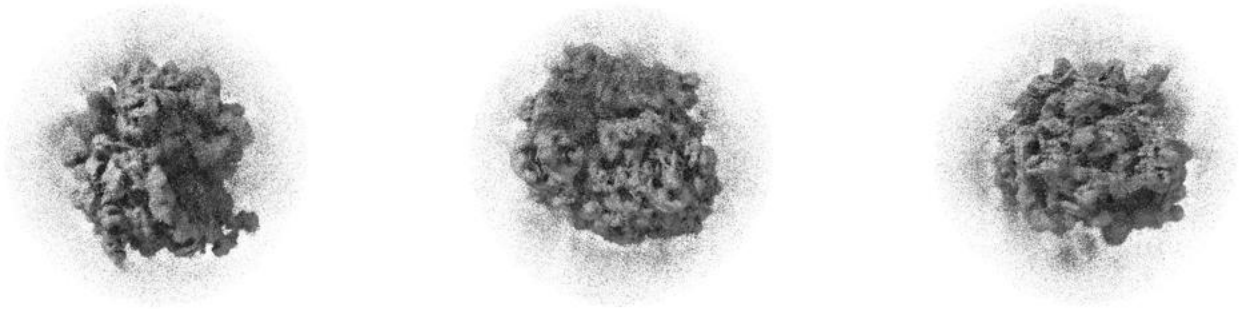
6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 2.3. 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.

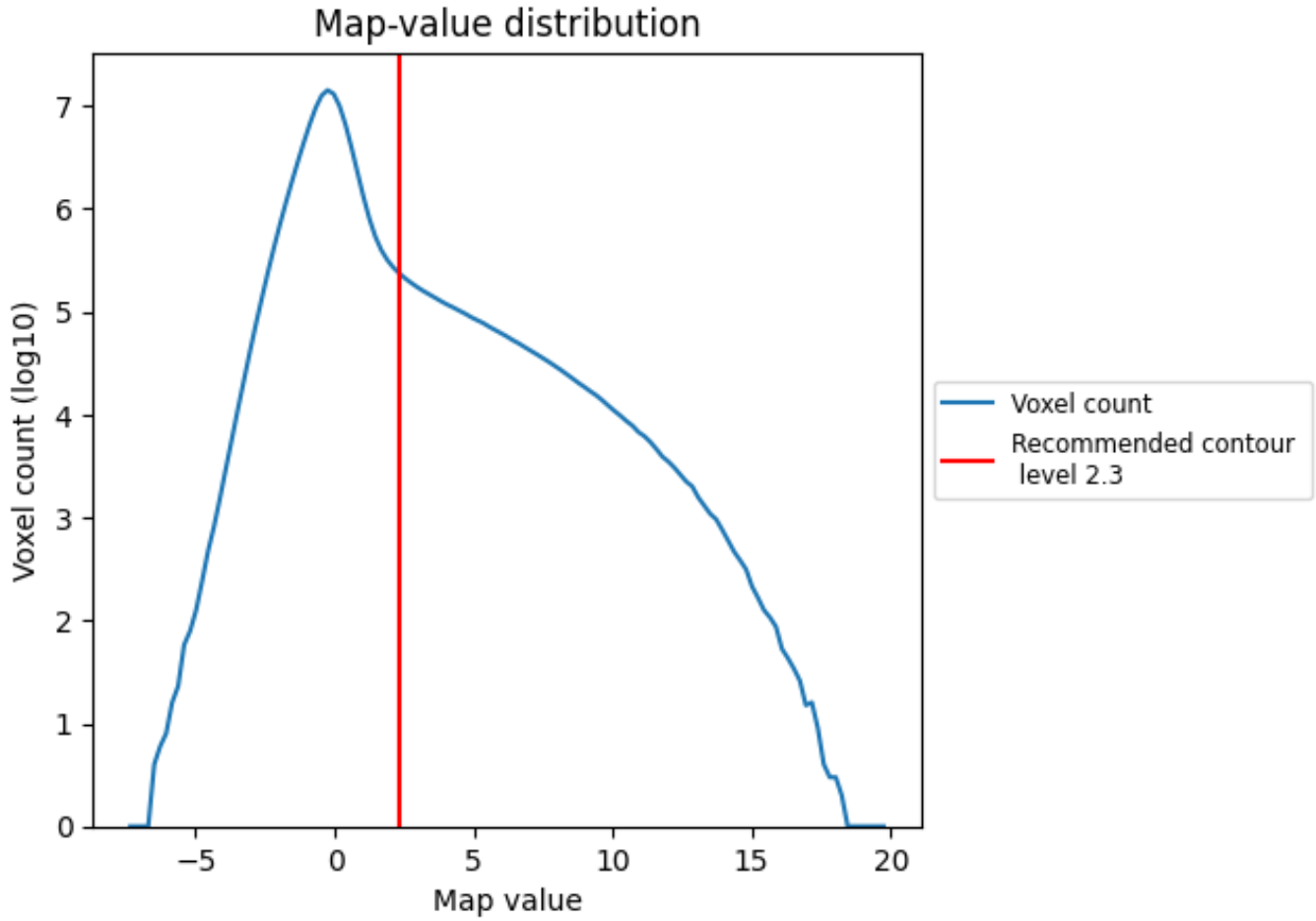
6.6 Mask visualisation (i)

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

7 Map analysis

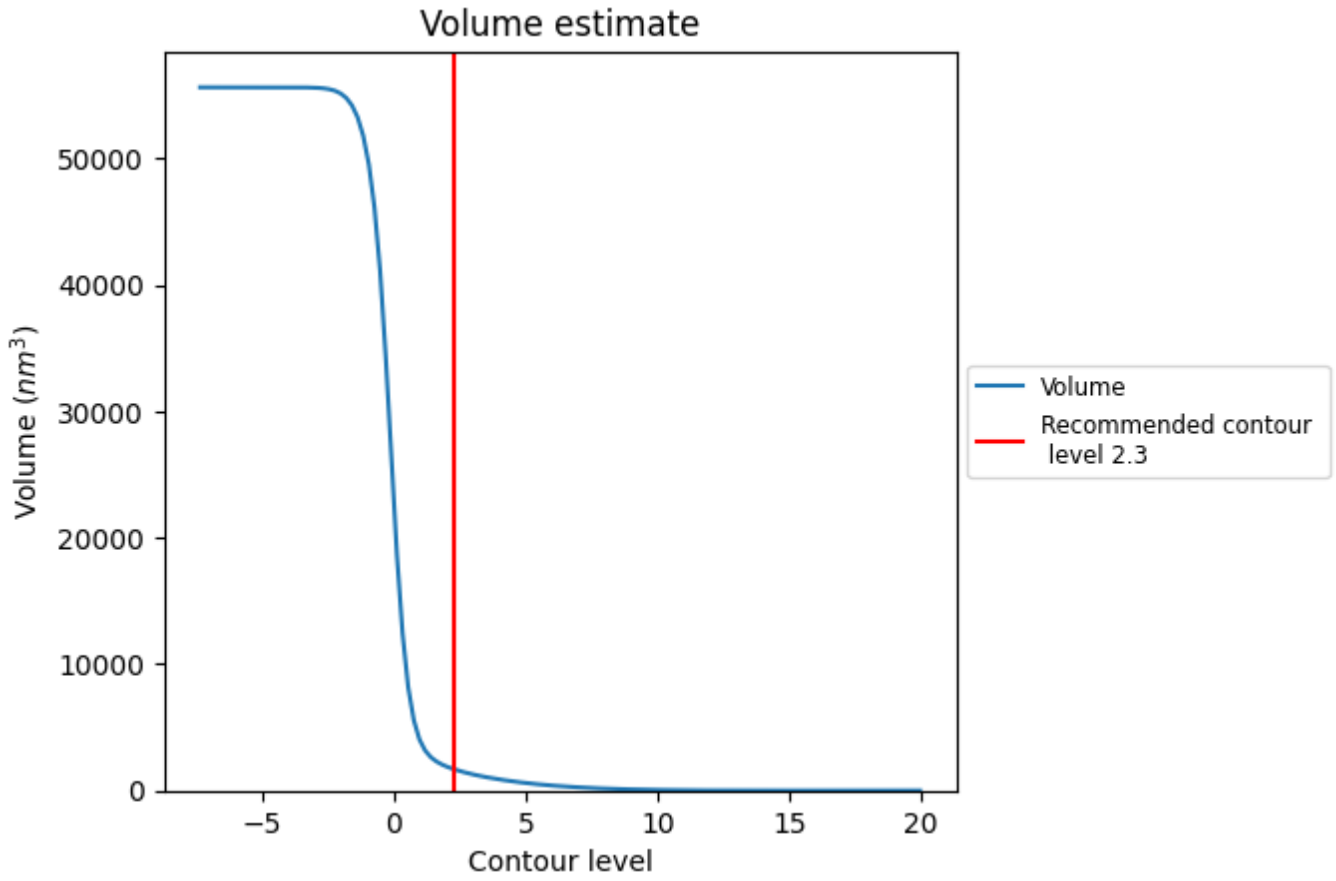
This section contains the results of statistical analysis of the map.

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.

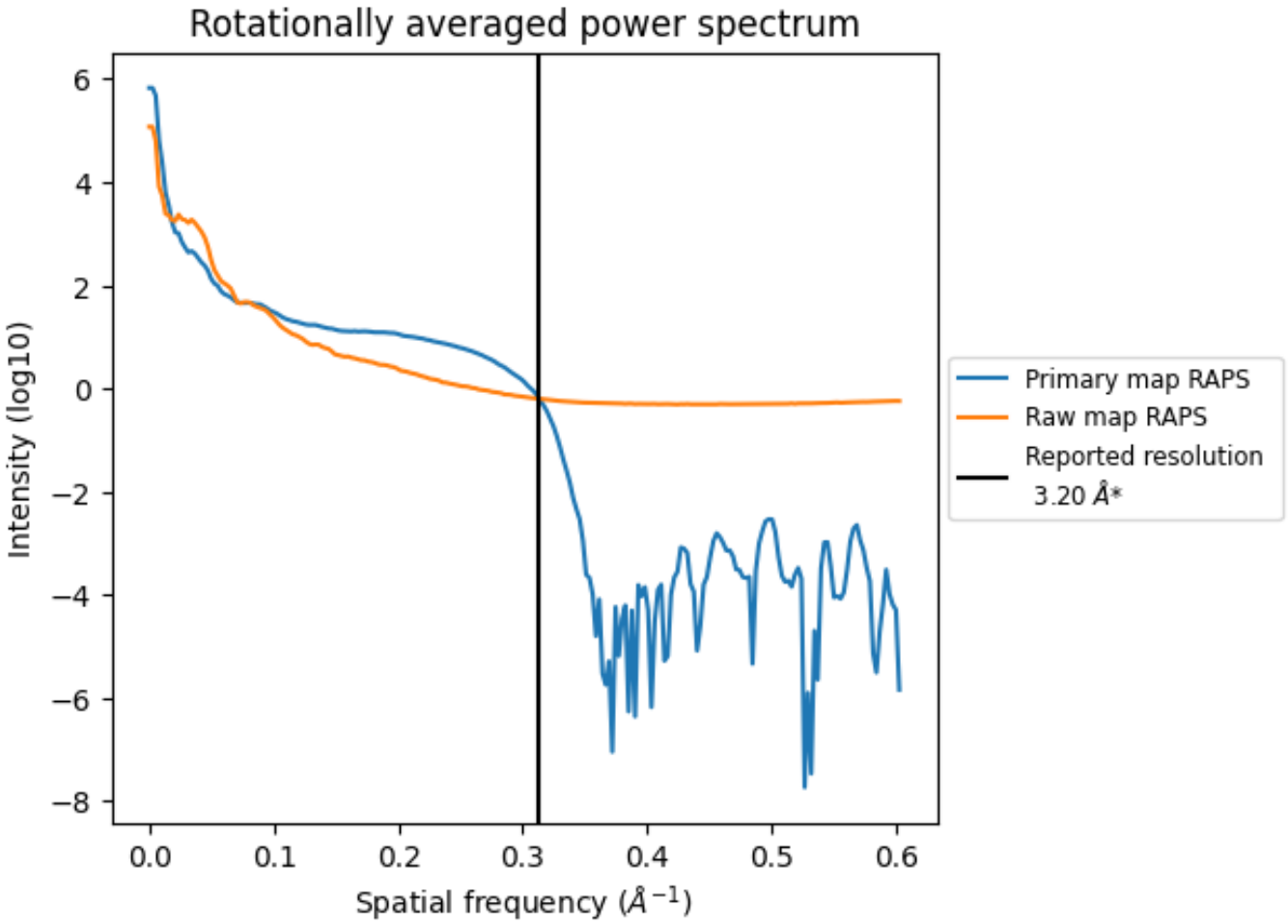
7.2 Volume estimate (i)



The volume at the recommended contour level is 1677 nm^3; this corresponds to an approximate mass of 1515 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)

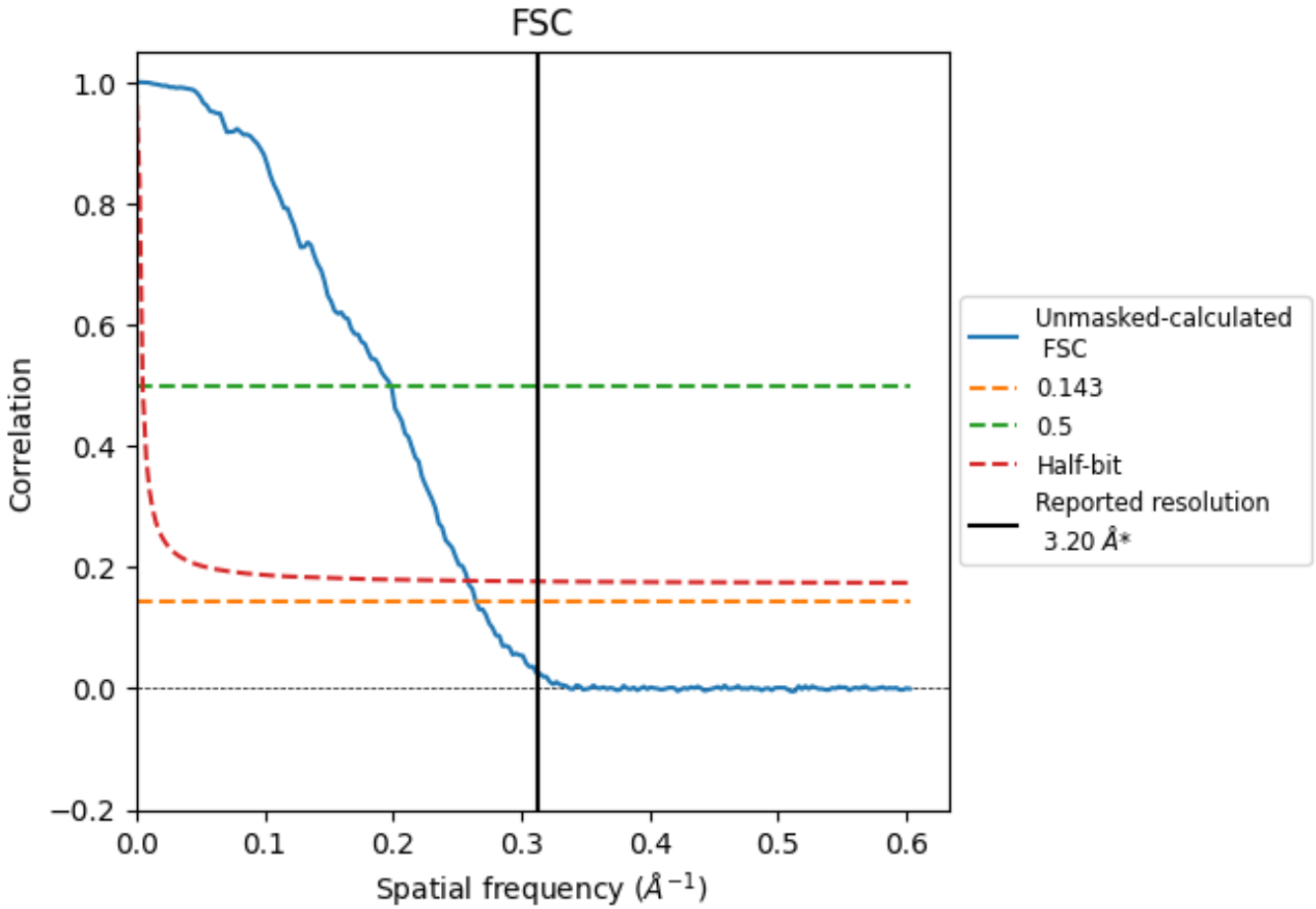


*Reported resolution corresponds to spatial frequency of 0.312 Å^{-1}

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 0.312 Å^{-1}

8.2 Resolution estimates (i)

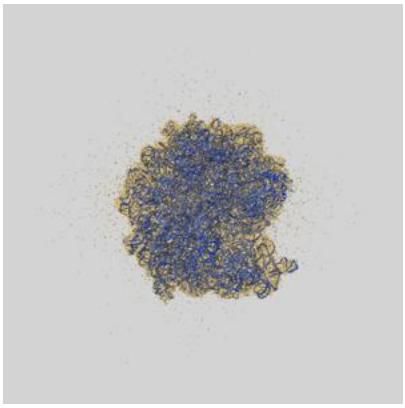
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.20	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.78	5.05	3.87

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.78 differs from the reported value 3.2 by more than 10 %

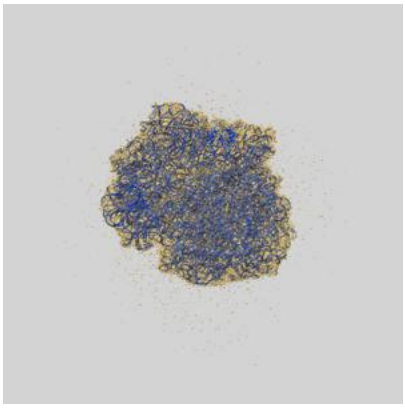
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-25411 and PDB model 7SSO. Per-residue inclusion information can be found in section 3 on page 16.

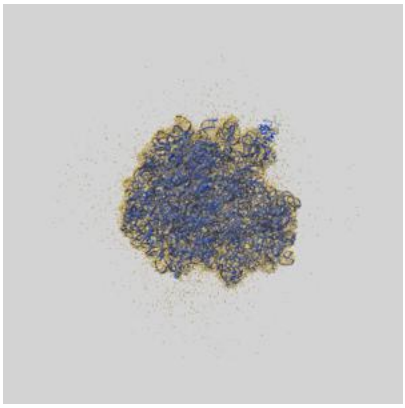
9.1 Map-model overlay



X



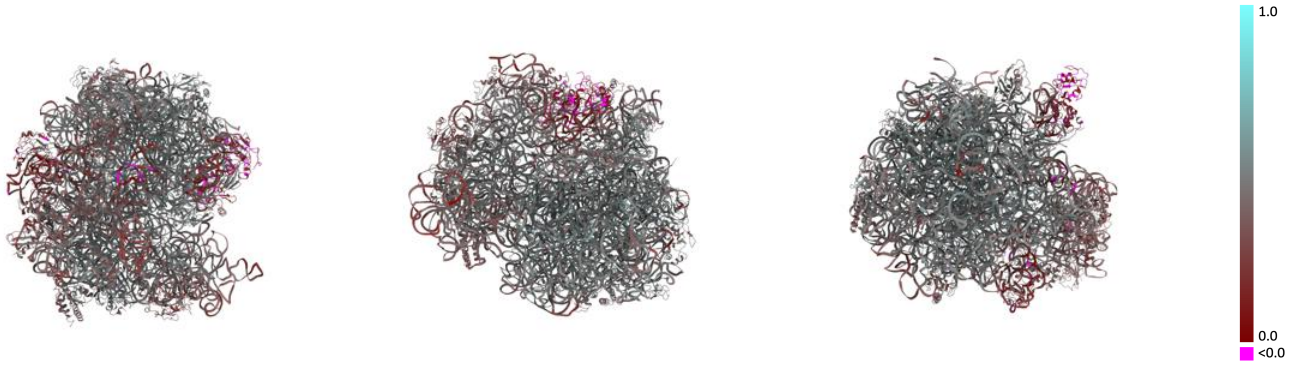
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 2.3 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.

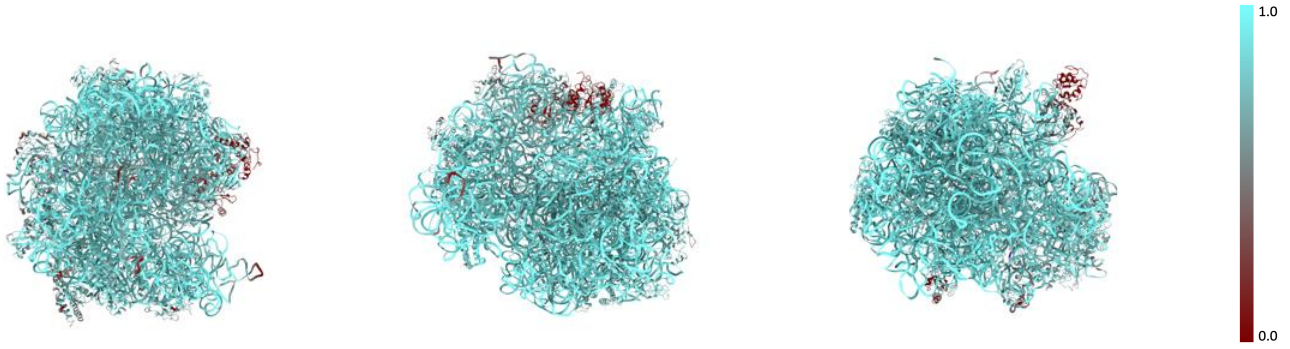
9.2 Q-score mapped to coordinate model (i)



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.

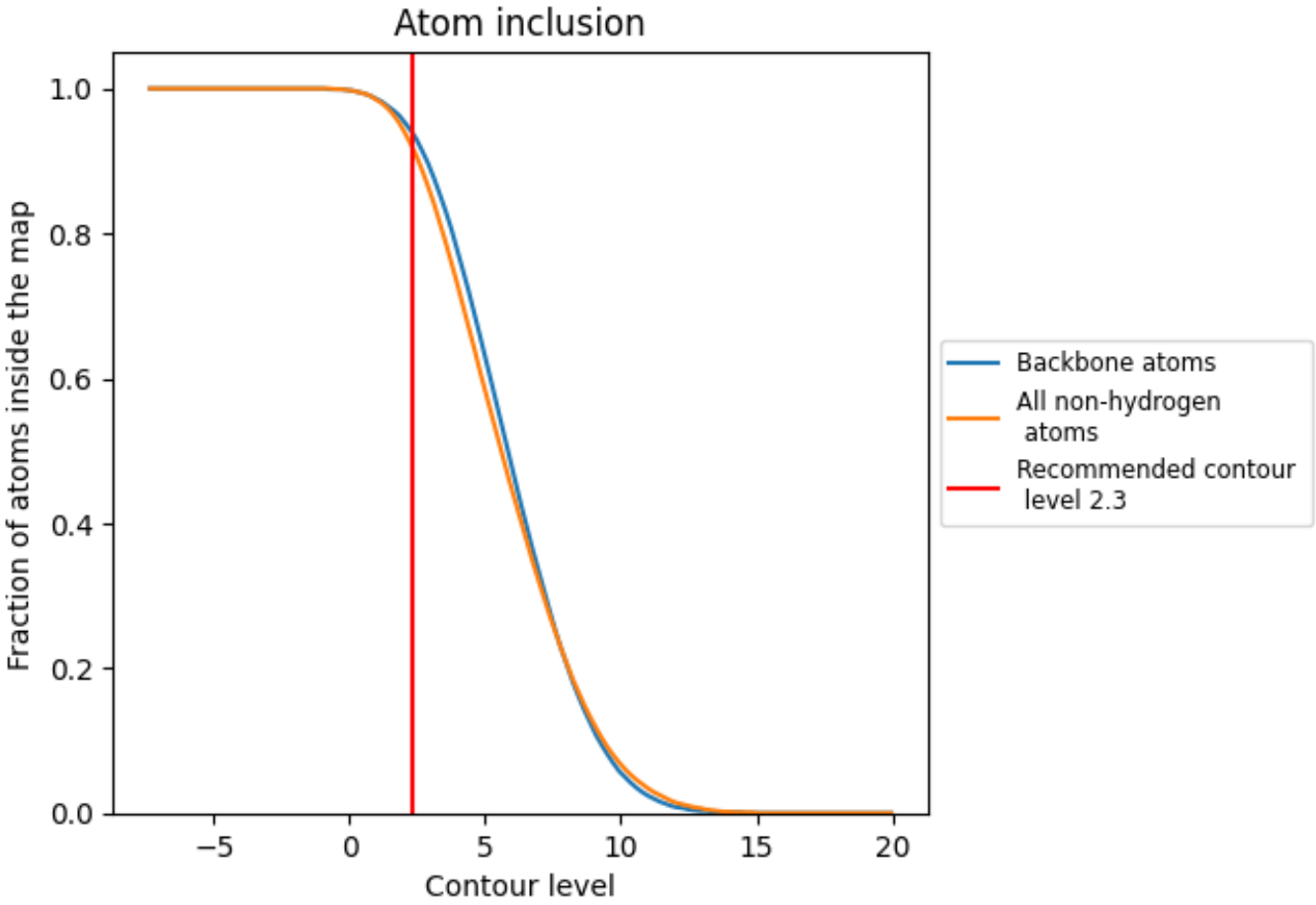
9.3 Atom inclusion mapped to coordinate model (i)



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 (2.3).

9.4 Atom inclusion (i)



At the recommended contour level, 94% of all backbone atoms, 92% 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 (2.3) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9200	0.4460
1	0.9760	0.4670
2	0.9680	0.4370
3	0.9550	0.4360
4	0.8230	0.2980
5	0.9760	0.3960
6	0.9620	0.3490
A	0.7440	0.2950
B	0.9230	0.4840
C	0.8560	0.4700
D	0.9470	0.5180
E	0.9530	0.5220
F	0.9280	0.5100
G	0.6860	0.4110
H	0.8120	0.4430
I	0.7650	0.3900
J	0.8980	0.4730
K	0.8720	0.4210
L	0.7720	0.3560
M	0.8810	0.4840
N	0.7840	0.4140
O	0.6430	0.4050
P	0.9080	0.4570
Q	0.9070	0.4620
R	0.7660	0.3600
S	0.8050	0.4070
T	0.9260	0.4640
U	0.8880	0.4600
V	0.8880	0.4480
W	0.9130	0.4730
X	0.7880	0.3620
Y	0.8450	0.4010
Z	0.7720	0.3790
a	0.6600	0.3070
b	0.9630	0.5200

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Chain	Atom inclusion	Q-score
c	0.9170	0.4980
d	0.8220	0.4620
e	0.8060	0.3520
f	0.8690	0.4380
g	0.3140	0.3340
h	0.0900	0.0500
i	0.3540	0.2350
j	0.9290	0.4990
k	0.9400	0.5110
l	0.9050	0.4880
m	0.9190	0.4980
n	0.9200	0.4940
o	0.8670	0.4370
p	0.8960	0.4880
q	0.9440	0.5130
r	0.8780	0.4950
s	0.9130	0.5020
t	0.8750	0.4710
u	0.8270	0.4530
v	0.8710	0.4780
w	0.9520	0.5230
x	0.9420	0.5080
y	0.8110	0.4110
z	0.8830	0.4910