



Full wwPDB EM Validation Report ⓘ

Mar 8, 2026 – 12:48 PM UTC

PDB ID : 9J1M / pdb_00009j1m
EMDB ID : EMD-61076
Title : KU13-bond Mycobacterium tuberculosis 70S ribosome
Authors : Nishihara, D.; Fujino, M.; Tanaka, Y.; Yokoyama, T.
Deposited on : 2024-08-05
Resolution : 2.33 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

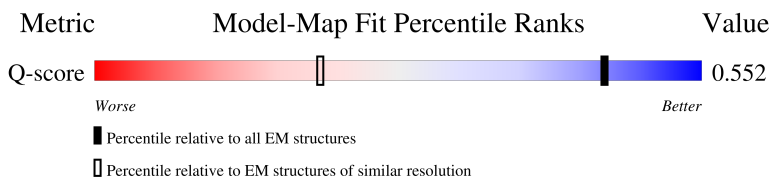
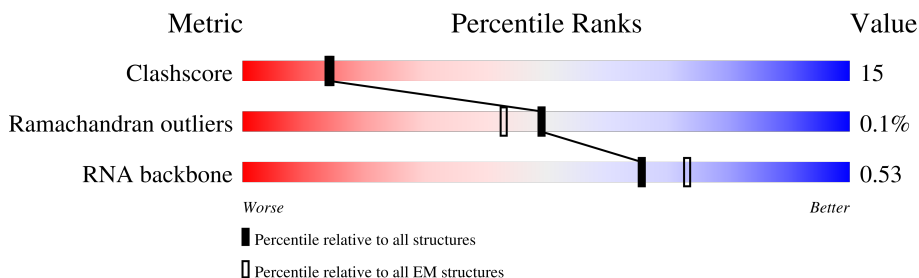
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 2.33 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	-
RNA backbone	8273	3508	-
Q-score	-	25397	4434 (1.83 - 2.83)

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

Mol	Chain	Length	Quality of chain
1	0	57	7% 79% 16% 5%
2	1	55	58% 29% 13%
3	2	47	64% 30% 6%
4	3	64	70% 27% .

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Mol	Chain	Length	Quality of chain
5	4	37	
6	7	24	
7	A	3138	
8	B	115	
9	C	280	
10	D	217	
11	E	223	
12	F	187	
13	G	179	
14	H	152	
15	J	195	
16	K	122	
17	L	146	
18	M	138	
19	N	180	
20	O	122	
21	P	113	
22	Q	129	
23	R	104	
24	S	197	
25	T	100	
26	U	105	
27	V	215	
28	W	86	
29	X	64	

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Mol	Chain	Length	Quality of chain
30	Y	77	
31	Z	65	
32	a	1537	
33	c	274	
34	d	201	
35	e	220	
36	f	96	
37	g	156	
38	h	132	
39	i	151	
40	j	101	
41	k	139	
42	l	124	
43	m	124	
44	n	61	
45	o	89	
46	p	162	
47	q	135	
48	r	84	
49	s	93	
50	t	86	
51	x	66	
52	u	3	

2 Entry composition

There are 55 unique types of molecules in this entry. The entry contains 139822 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called Large ribosomal subunit protein bL32.

Mol	Chain	Residues	Atoms				AltConf	Trace
1	0	54	Total	C	N	O	0	0
			429	266	94	69		

- Molecule 2 is a protein called Large ribosomal subunit protein bL33A.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	1	48	Total	C	N	O	S	0	0
			400	245	84	67	4		

- Molecule 3 is a protein called Large ribosomal subunit protein bL34.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	2	44	Total	C	N	O	S	0	0
			374	222	97	54	1		

- Molecule 4 is a protein called Large ribosomal subunit protein bL35.

Mol	Chain	Residues	Atoms				AltConf	Trace
4	3	62	Total	C	N	O	0	0
			494	298	112	84		

- Molecule 5 is a protein called Large ribosomal subunit protein bL36.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	4	37	Total	C	N	O	S	0	0
			300	182	66	47	5		

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

Mol	Chain	Residues	Atoms				AltConf	Trace
6	7	22	Total	C	N	O	0	0
			186	111	47	28		

- Molecule 7 is a RNA chain called 23S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	A	2904	Total	C	N	O	P	0	0
			62388	27811	11529	20144	2904		

- Molecule 8 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	B	115	Total	C	N	O	P	0	0
			2458	1097	456	790	115		

- Molecule 9 is a protein called Large ribosomal subunit protein uL2.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	C	272	Total	C	N	O	S	0	0
			2088	1277	437	369	5		

- Molecule 10 is a protein called Large ribosomal subunit protein uL3.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	D	213	Total	C	N	O	S	0	0
			1590	985	307	292	6		

- Molecule 11 is a protein called Large ribosomal subunit protein uL4.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	E	207	Total	C	N	O	S	0	0
			1552	958	303	289	2		

- Molecule 12 is a protein called Large ribosomal subunit protein uL5.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	F	178	Total	C	N	O	S	0	0
			1408	885	267	251	5		

- Molecule 13 is a protein called Large ribosomal subunit protein uL6.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	G	174	Total	C	N	O	S	0	0
			1330	836	249	244	1		

- Molecule 14 is a protein called Large ribosomal subunit protein bL9.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	H	47	Total	C	N	O	S	0	0
			350	220	64	65	1		

- Molecule 15 is a protein called Large ribosomal subunit protein uL13.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	J	146	Total	C	N	O	S	0	0
			1143	724	217	199	3		

- Molecule 16 is a protein called Large ribosomal subunit protein uL14.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	K	122	Total	C	N	O	S	0	0
			942	590	180	169	3		

- Molecule 17 is a protein called Large ribosomal subunit protein uL15.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	L	144	Total	C	N	O	S	0	0
			1074	664	217	191	2		

- Molecule 18 is a protein called Large ribosomal subunit protein uL16.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	M	134	Total	C	N	O	S	0	0
			1072	679	215	177	1		

- Molecule 19 is a protein called Large ribosomal subunit protein bL17.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	N	116	Total	C	N	O	S	0	0
			908	574	175	158	1		

- Molecule 20 is a protein called Large ribosomal subunit protein uL18.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	O	119	Total	C	N	O	S	0	0
			905	552	191	162			

- Molecule 21 is a protein called Large ribosomal subunit protein bL19.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	P	112	Total	C	N	O	S	0	0
			907	573	174	159	1		

- Molecule 22 is a protein called Large ribosomal subunit protein bL20.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	Q	124	Total	C	N	O		0	0
			993	616	207	170			

- Molecule 23 is a protein called Large ribosomal subunit protein bL21.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	R	100	Total	C	N	O		0	0
			757	482	138	137			

- Molecule 24 is a protein called Large ribosomal subunit protein uL22.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	S	113	Total	C	N	O		0	0
			860	533	178	149			

- Molecule 25 is a protein called Large ribosomal subunit protein uL23.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	T	95	Total	C	N	O		0	0
			741	469	138	134			

- Molecule 26 is a protein called Large ribosomal subunit protein uL24.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	U	90	Total	C	N	O	S	0	0
			699	430	138	129	2		

- Molecule 27 is a protein called Large ribosomal subunit protein bL25.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	V	177	Total	C	N	O		0	0
			1319	822	243	254			

- Molecule 28 is a protein called Large ribosomal subunit protein bL27.

Mol	Chain	Residues	Atoms				AltConf	Trace
28	W	77	Total	C	N	O	0	0
			564	345	117	102		

- Molecule 29 is a protein called Large ribosomal subunit protein bL28.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	X	62	Total	C	N	O	S	0	0
			468	284	100	80	4		

- Molecule 30 is a protein called Large ribosomal subunit protein uL29.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	Y	68	Total	C	N	O	S	0	0
			560	343	109	107	1		

- Molecule 31 is a protein called Large ribosomal subunit protein uL30.

Mol	Chain	Residues	Atoms				AltConf	Trace
31	Z	59	Total	C	N	O	0	0
			476	293	101	82		

- Molecule 32 is a RNA chain called 16S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	a	1519	Total	C	N	O	P	0	0
			32620	14535	5961	10605	1519		

- Molecule 33 is a protein called Small ribosomal subunit protein uS3.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	c	207	Total	C	N	O	S	0	0
			1654	1030	322	298	4		

- Molecule 34 is a protein called Small ribosomal subunit protein uS4.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	d	200	Total	C	N	O	S	0	0
			1650	1036	316	296	2		

- Molecule 35 is a protein called Small ribosomal subunit protein uS5.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	e	169	Total	C	N	O	S	0	0
			1222	770	231	218	3		

- Molecule 36 is a protein called Small ribosomal subunit protein bS6.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	f	95	Total	C	N	O	S	0	0
			757	480	133	141	3		

- Molecule 37 is a protein called Small ribosomal subunit protein uS7.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	g	155	Total	C	N	O	S	0	0
			1230	768	241	219	2		

- Molecule 38 is a protein called Small ribosomal subunit protein uS8.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	h	131	Total	C	N	O	S	0	0
			1006	631	188	186	1		

- Molecule 39 is a protein called Small ribosomal subunit protein uS9.

Mol	Chain	Residues	Atoms				AltConf	Trace
39	i	127	Total	C	N	O	0	0
			992	628	195	169		

- Molecule 40 is a protein called Small ribosomal subunit protein uS10.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	j	99	Total	C	N	O	S	0	0
			789	496	146	144	3		

- Molecule 41 is a protein called Small ribosomal subunit protein uS11.

Mol	Chain	Residues	Atoms				AltConf	Trace
41	k	117	Total	C	N	O	0	0
			872	538	175	159		

- Molecule 42 is a protein called Small ribosomal subunit protein uS12.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	l	122	Total	C	N	O	S	0	0
			959	594	197	166	2		

- Molecule 43 is a protein called Small ribosomal subunit protein uS13.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	m	116	Total	C	N	O	S	0	0
			945	578	196	168	3		

- Molecule 44 is a protein called Small ribosomal subunit protein uS14B.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	n	60	Total	C	N	O	S	0	0
			468	294	96	73	5		

- Molecule 45 is a protein called Small ribosomal subunit protein uS15.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	o	87	Total	C	N	O	S	0	0
			718	449	144	125			

- Molecule 46 is a protein called Small ribosomal subunit protein bS16.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	p	93	Total	C	N	O	S	0	0
			745	474	143	128			

- Molecule 47 is a protein called Small ribosomal subunit protein uS17.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	q	95	Total	C	N	O	S	0	0
			770	482	152	133	3		

- Molecule 48 is a protein called Small ribosomal subunit protein bS18A.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	r	64	Total	C	N	O	S	0	0
			506	315	98	90	3		

- Molecule 49 is a protein called Small ribosomal subunit protein uS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	s	83	Total	C	N	O	S	0	0
			672	432	125	114	1		

- Molecule 50 is a protein called Small ribosomal subunit protein bS20.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	t	85	Total	C	N	O		0	0
			652	394	141	117			

- Molecule 51 is a protein called Mitochondrial domain of uncharacterised function (DUF1713).

Mol	Chain	Residues	Atoms					AltConf	Trace
51	x	31	Total	C	N	O	S	0	0
			271	166	69	35	1		

- Molecule 52 is a RNA chain called tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	u	3	Total	C	N	O	P	0	0
			62	28	11	20	3		

- Molecule 53 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
53	1	1	Total	Zn	0
			1	1	
53	4	1	Total	Zn	0
			1	1	
53	X	1	Total	Zn	0
			1	1	
53	n	1	Total	Zn	0
			1	1	
53	r	1	Total	Zn	0
			1	1	

- Molecule 54 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

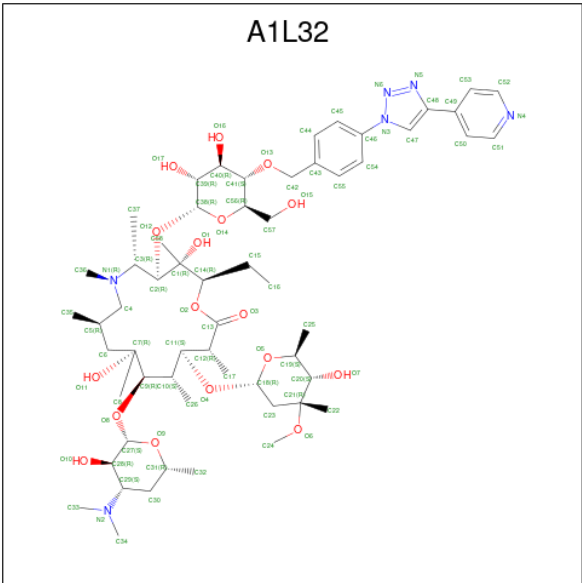
Mol	Chain	Residues	Atoms		AltConf
54	A	300	Total	Mg	0
			300	300	
54	B	5	Total	Mg	0
			5	5	

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Mol	Chain	Residues	Atoms		AltConf
54	C	2	Total	Mg	0
			2	2	
54	D	1	Total	Mg	0
			1	1	
54	L	1	Total	Mg	0
			1	1	
54	U	1	Total	Mg	0
			1	1	
54	a	129	Total	Mg	0
			129	129	
54	r	1	Total	Mg	0
			1	1	
54	u	1	Total	Mg	0
			1	1	

- Molecule 55 is (2 {R},3 {R},4 {R},5 {R},8 {R},10 {R},11 {R},12 {S},13 {S},14 {R})-11-[(2 {S},3 {R},4 {S},6 {R})-4-(dimethylamino)-6-methyl-3-oxidanyl-oxan-2-yl]oxy-2-ethyl-4-[(2 {R},3 {R},4 {R},5 {S},6 {R})-6-(hydroxymethyl)-3,4-bis(oxidanyl)-5-[[4-(4-pyridin-4-yl-1,2,3-triazol-1-yl)phenyl]methoxy]oxan-2-yl]oxy-13-[(2 {R},4 {R},5 {S},6 {S})-4-methoxy-4,6-dimethyl-5-oxidanyl-oxan-2-yl]oxy-3,5,6,8,10,12,14-heptamethyl-3,10-bis(oxidanyl)-1-oxa-6-azacyclopentadecan-15-one (CCD ID: A1L32) (formula: C₅₈H₉₂N₆O₁₇) (labeled as "Ligand of Interest" by depositor).

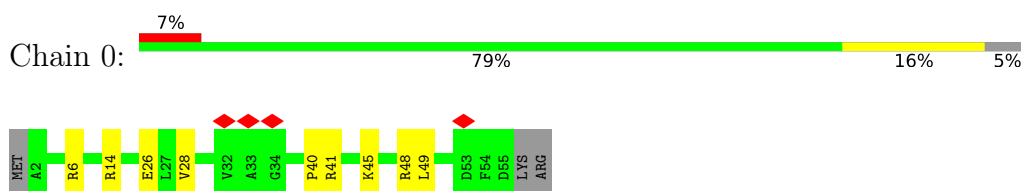


Mol	Chain	Residues	Atoms				AltConf
55	A	1	Total	C	N	O	0
			81	58	6	17	

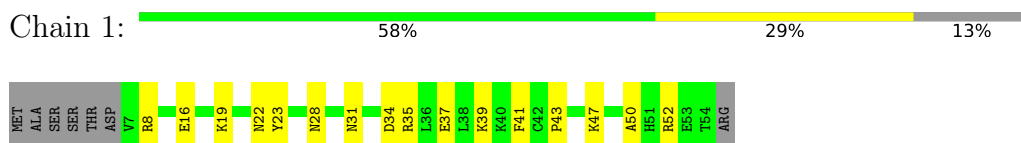
3 Residue-property plots [i](#)

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

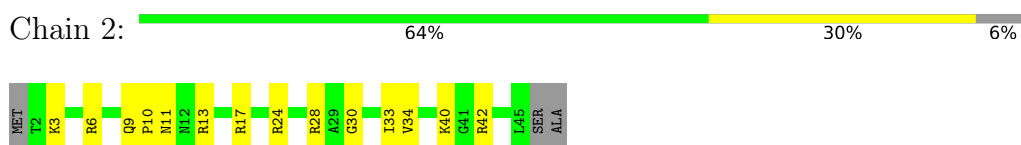
- Molecule 1: Large ribosomal subunit protein bL32



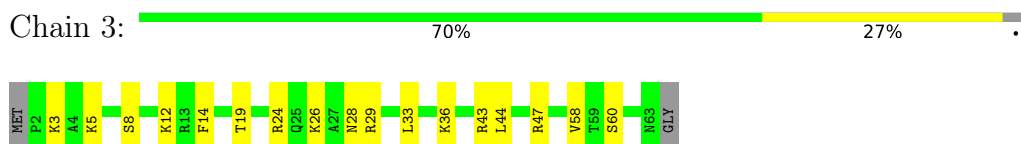
- Molecule 2: Large ribosomal subunit protein bL33A



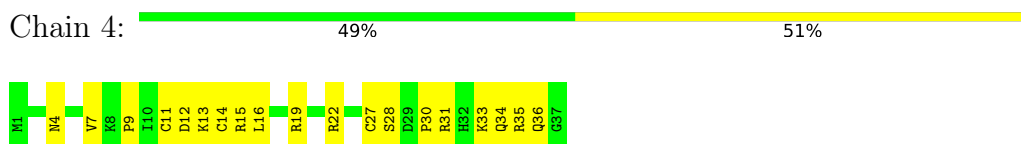
- Molecule 3: Large ribosomal subunit protein bL34



- Molecule 4: Large ribosomal subunit protein bL35



- Molecule 5: Large ribosomal subunit protein bL36



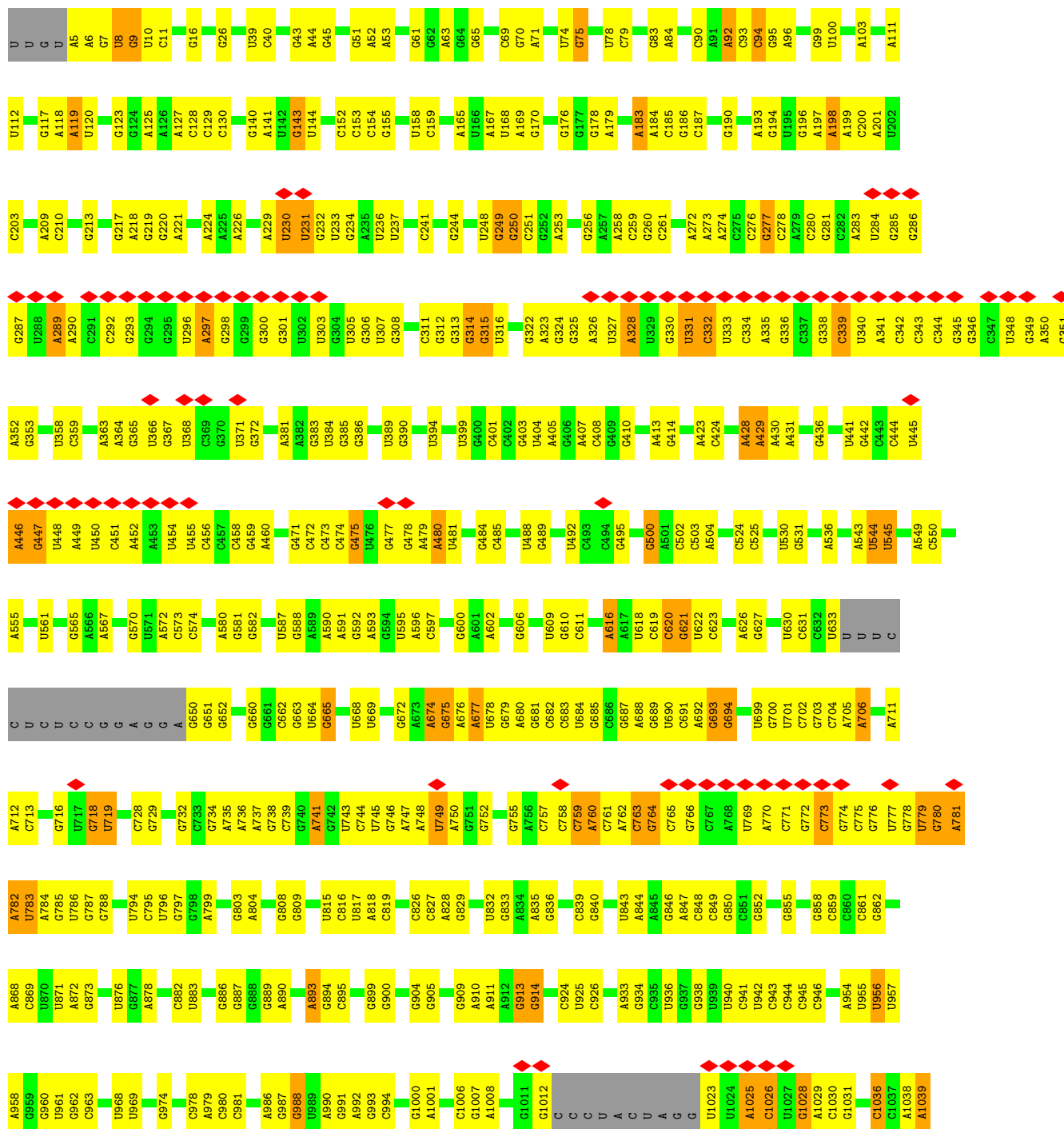
- Molecule 6: 30S ribosomal protein THX

Chain 7:  50% 42% 8%

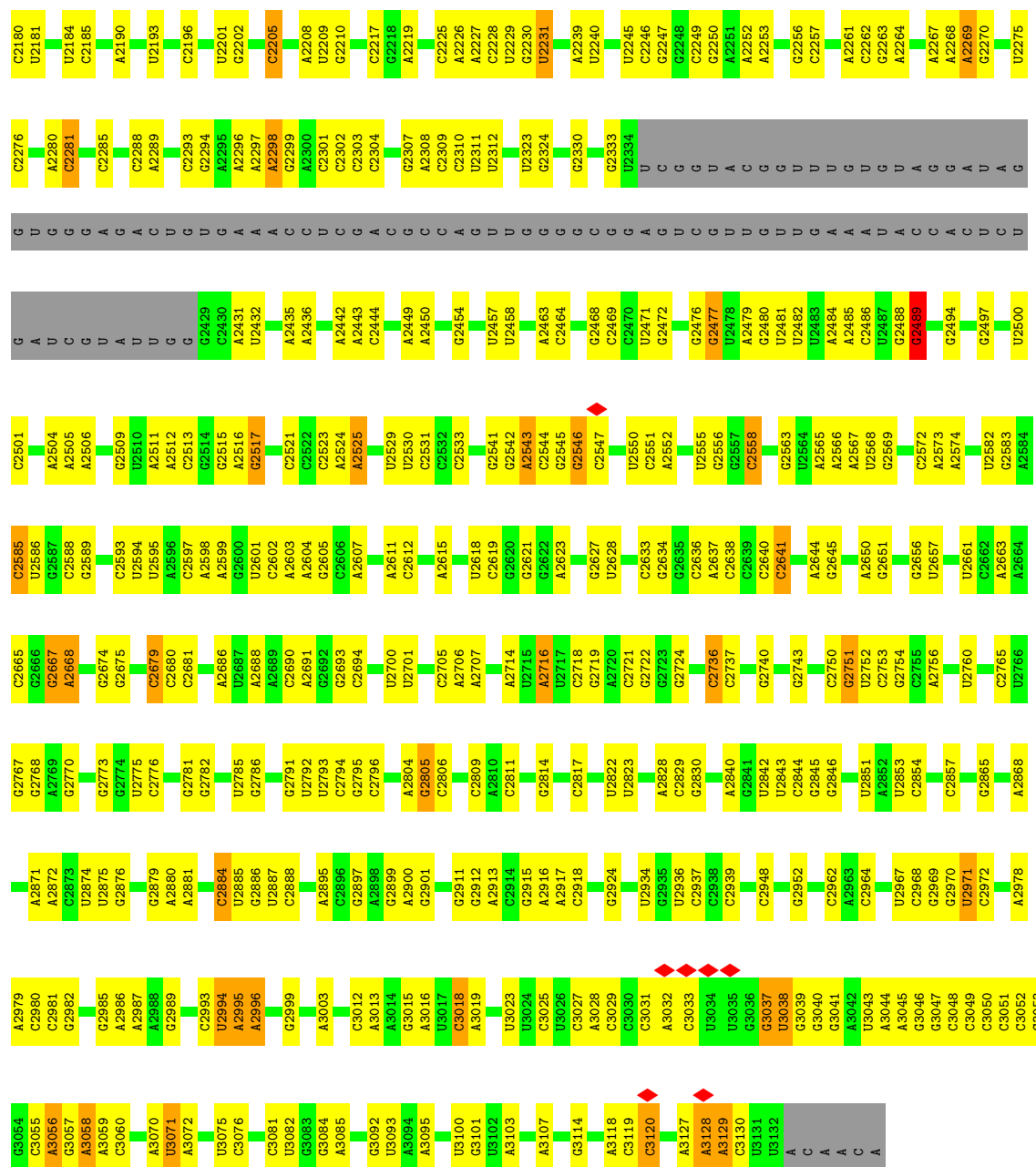


• Molecule 7: 23S rRNA

Chain A:  6% 48% 39% 5% 7%







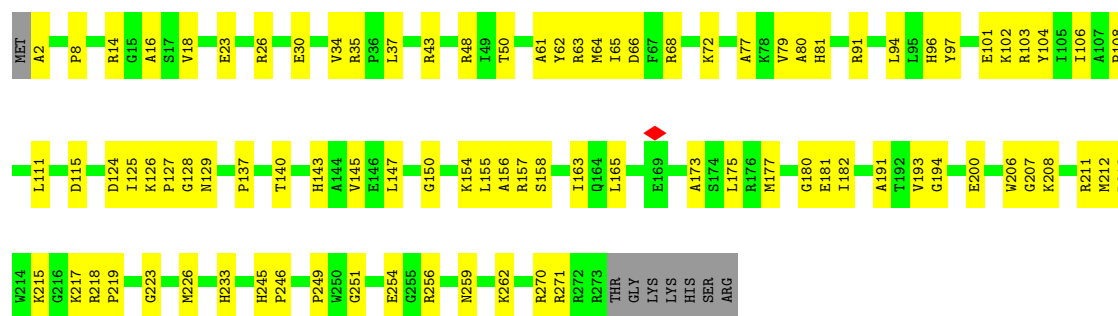
• Molecule 8: 5S rRNA

Chain B: 55% 36% 10%



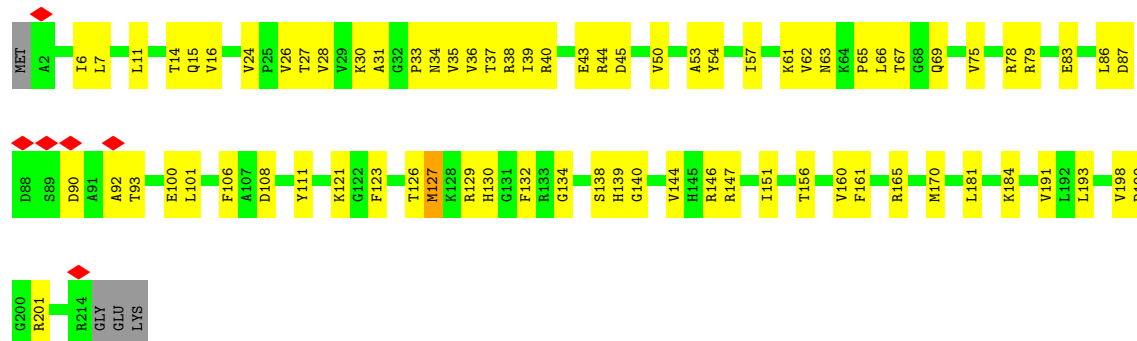
• Molecule 9: Large ribosomal subunit protein uL2

Chain C:  65% 32%



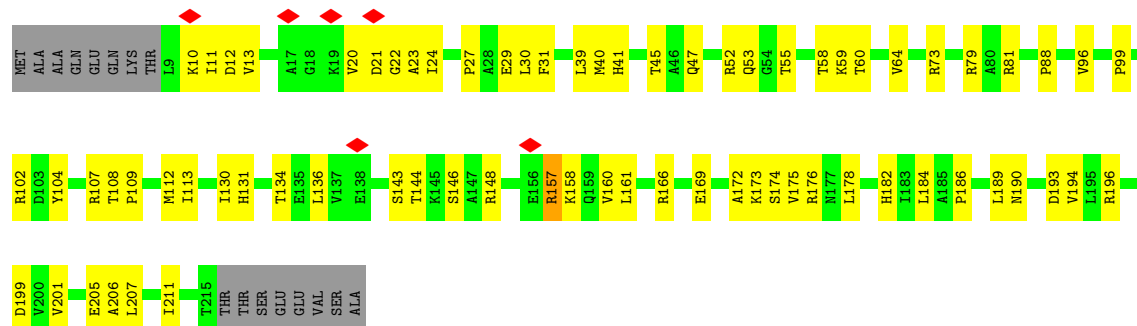
• Molecule 10: Large ribosomal subunit protein uL3

Chain D:  64% 34%

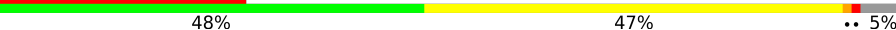


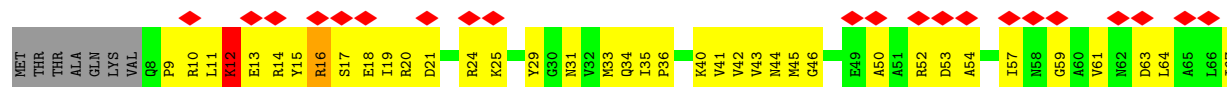
• Molecule 11: Large ribosomal subunit protein uL4

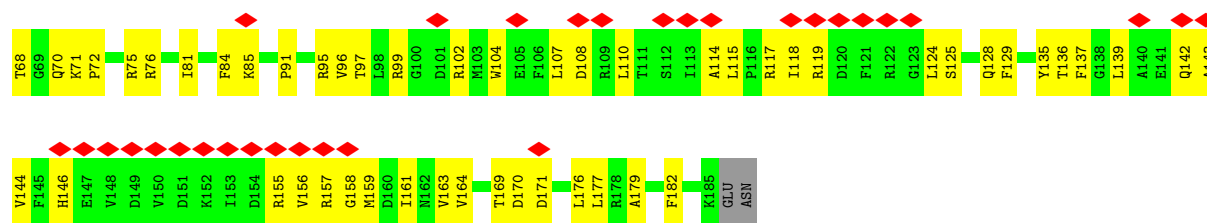
Chain E:  61% 32% 7%



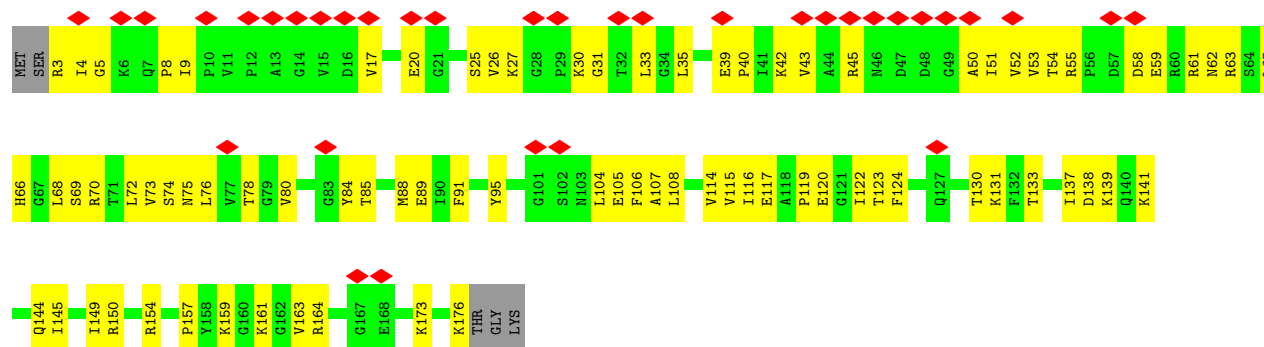
• Molecule 12: Large ribosomal subunit protein uL5

Chain F:  28% 48% 47% 5%

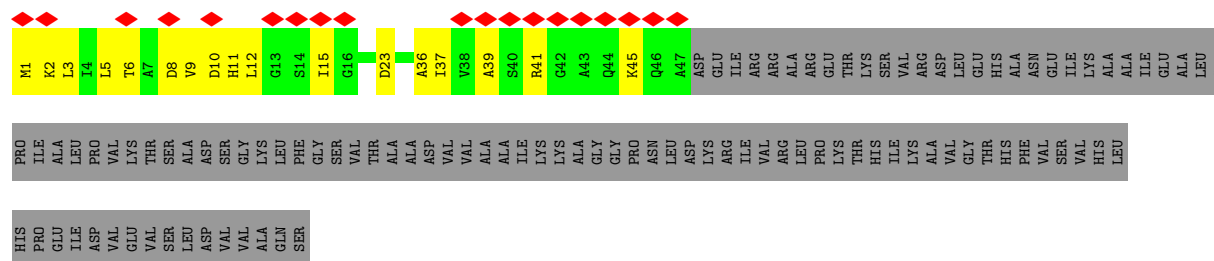




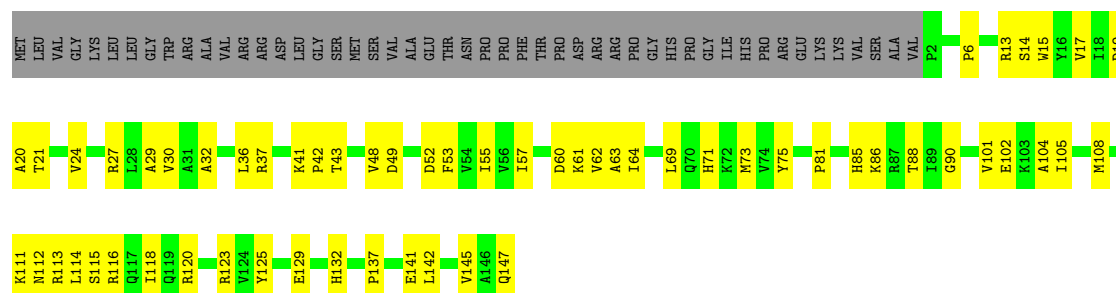
• Molecule 13: Large ribosomal subunit protein uL6



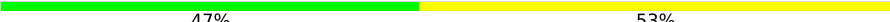
• Molecule 14: Large ribosomal subunit protein bL9

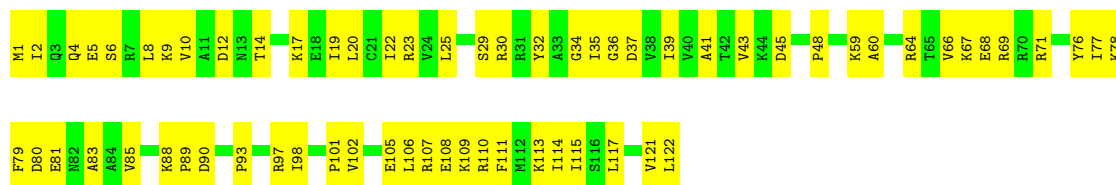


• Molecule 15: Large ribosomal subunit protein uL13



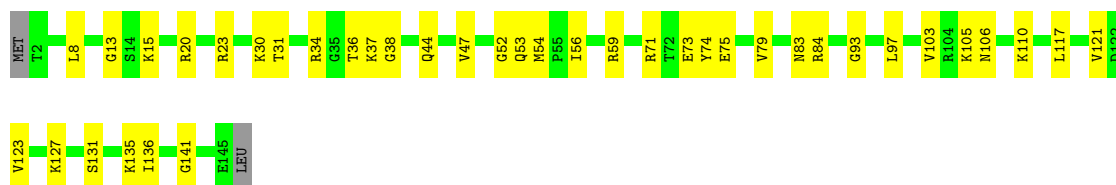
• Molecule 16: Large ribosomal subunit protein uL14

Chain K:  47% 53%



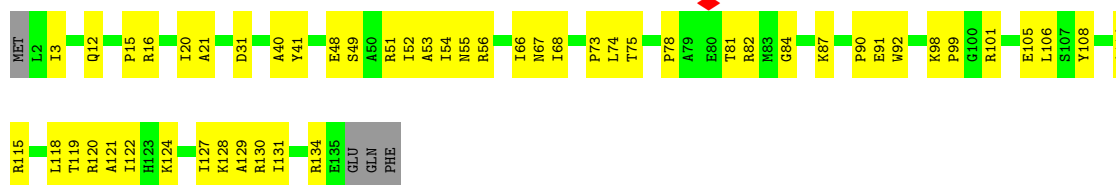
- Molecule 17: Large ribosomal subunit protein uL15

Chain L:  72% 27% .

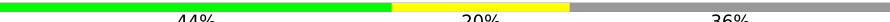


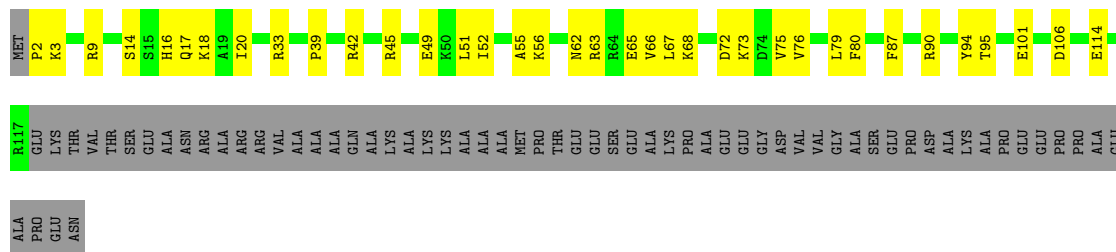
- Molecule 18: Large ribosomal subunit protein uL16

Chain M:  60% 37% .



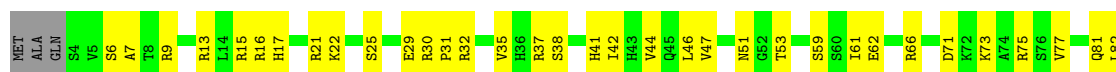
- Molecule 19: Large ribosomal subunit protein bL17

Chain N:  44% 20% 36%



- Molecule 20: Large ribosomal subunit protein uL18

Chain O:  64% 34% .





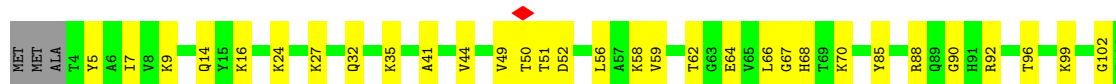
- Molecule 21: Large ribosomal subunit protein bL19



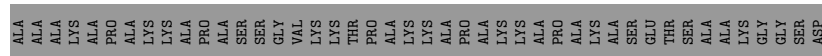
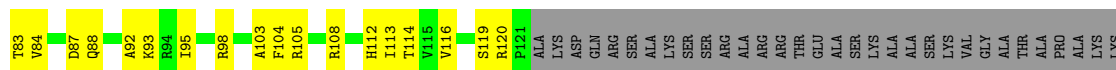
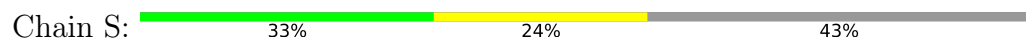
- Molecule 22: Large ribosomal subunit protein bL20



- Molecule 23: Large ribosomal subunit protein bL21

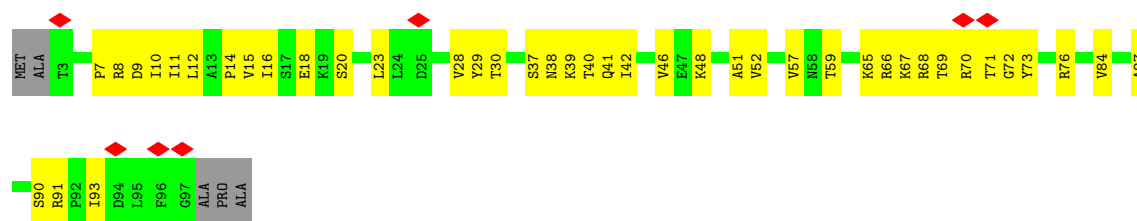


- Molecule 24: Large ribosomal subunit protein uL22

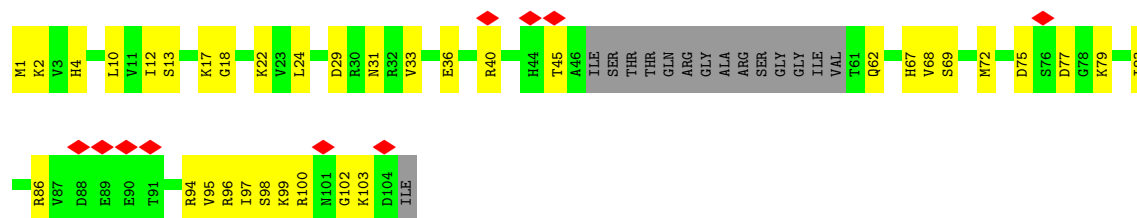


- Molecule 25: Large ribosomal subunit protein uL23

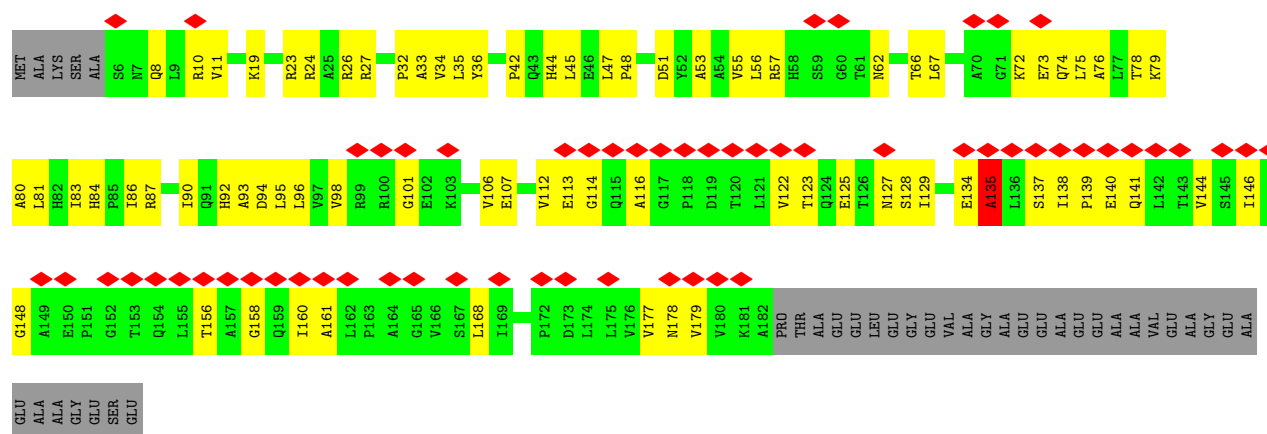




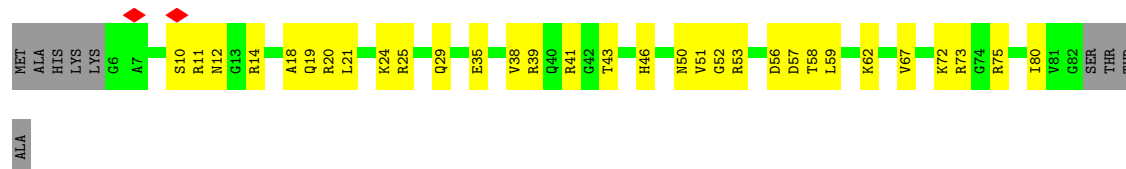
- Molecule 26: Large ribosomal subunit protein uL24



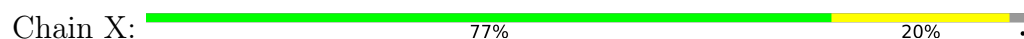
- Molecule 27: Large ribosomal subunit protein bL25



- Molecule 28: Large ribosomal subunit protein bL27

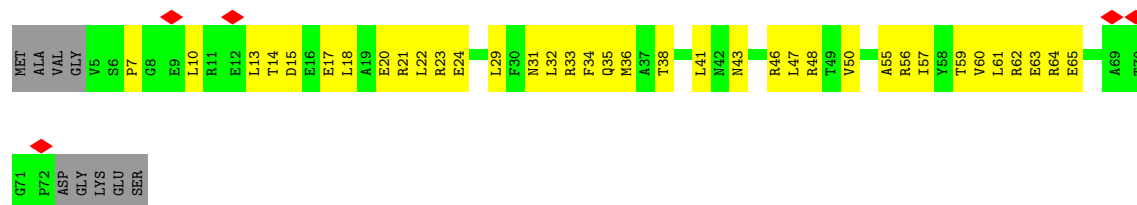


- Molecule 29: Large ribosomal subunit protein bL28

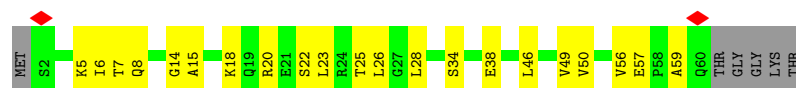




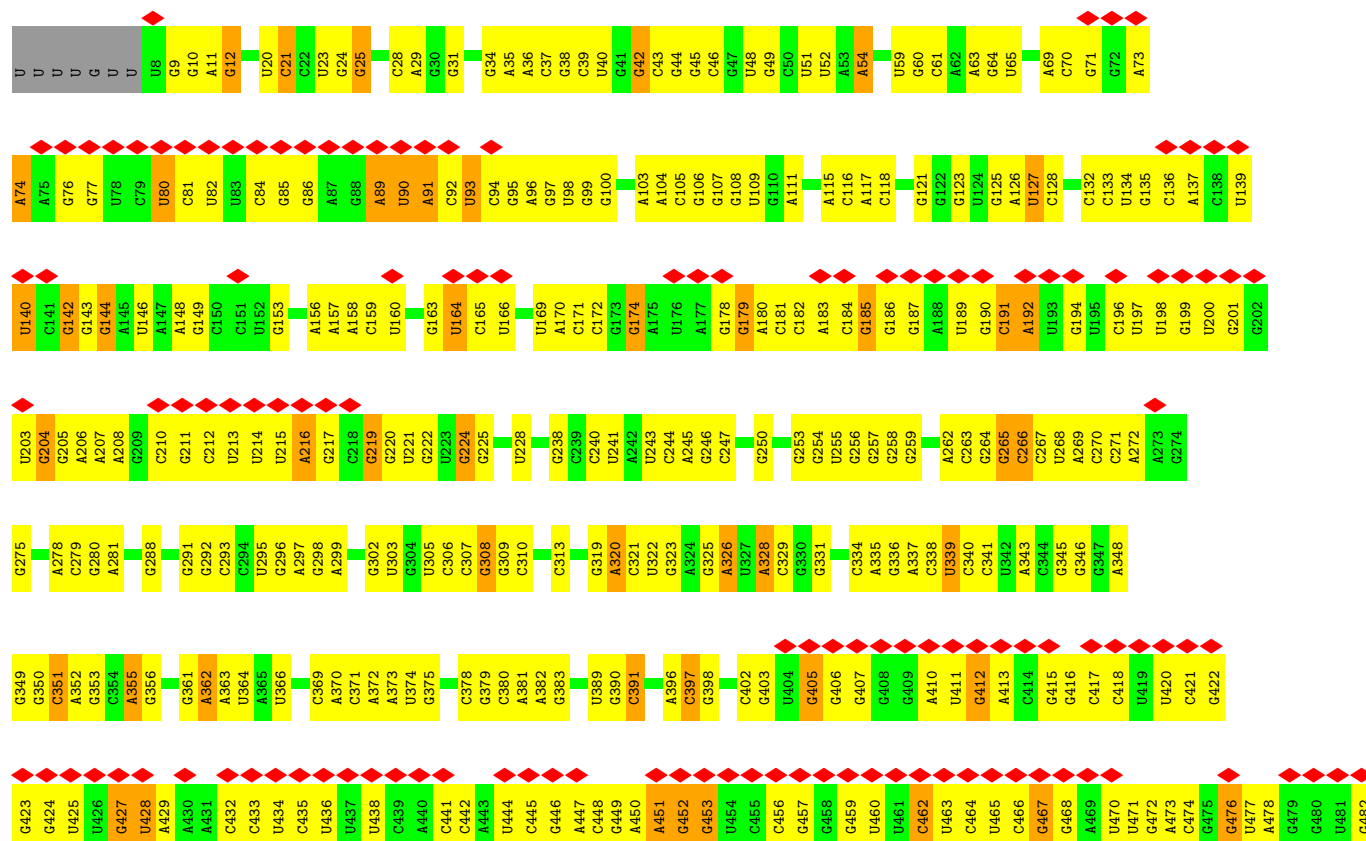
- Molecule 30: Large ribosomal subunit protein uL29

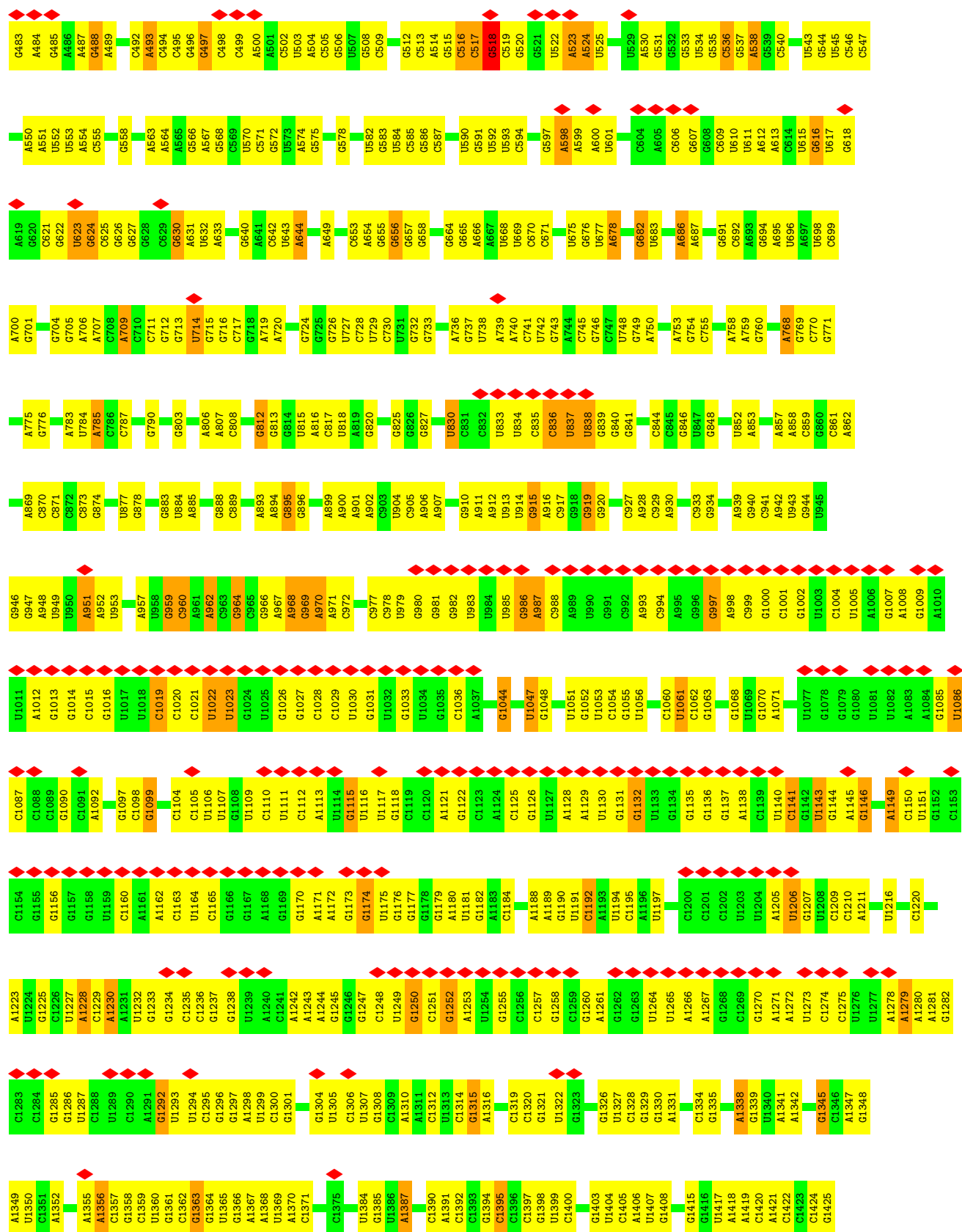


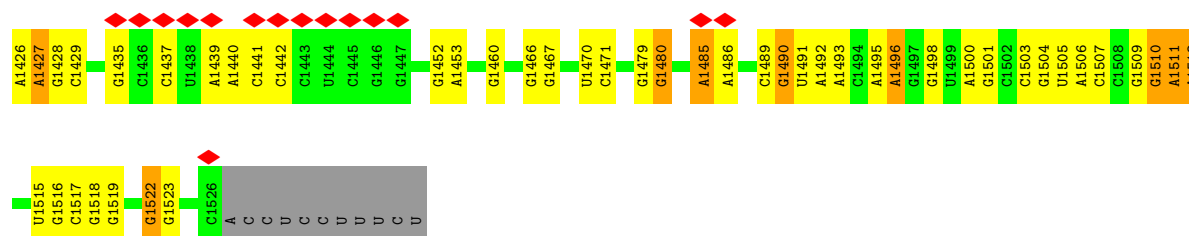
- Molecule 31: Large ribosomal subunit protein uL30



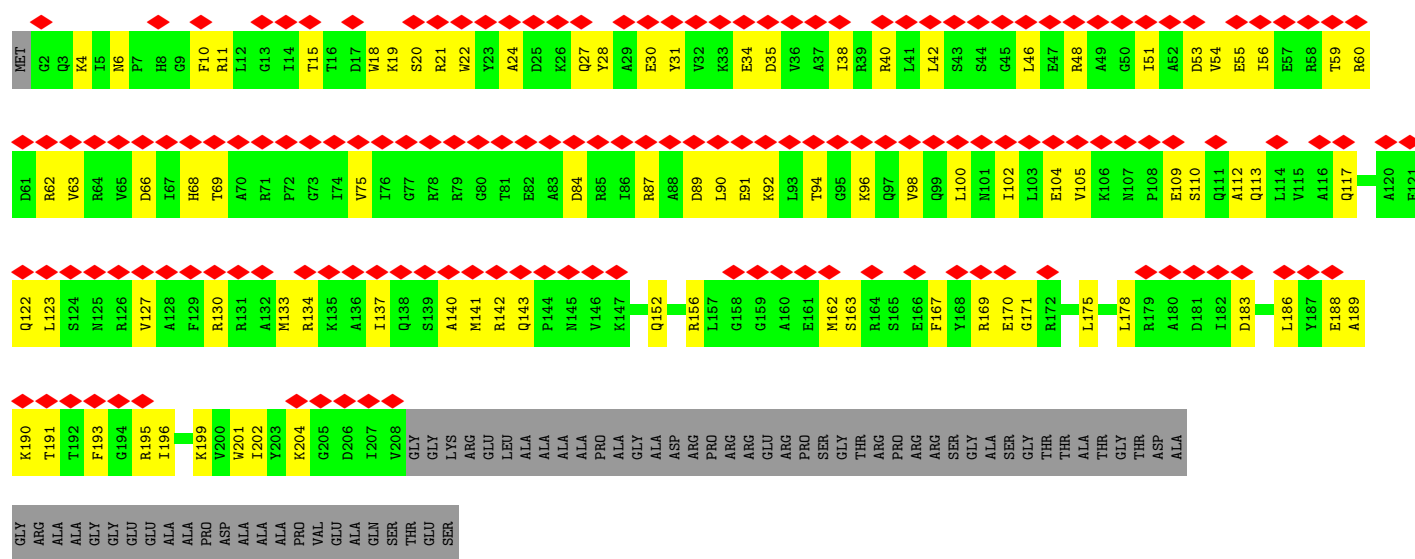
- Molecule 32: 16S rRNA



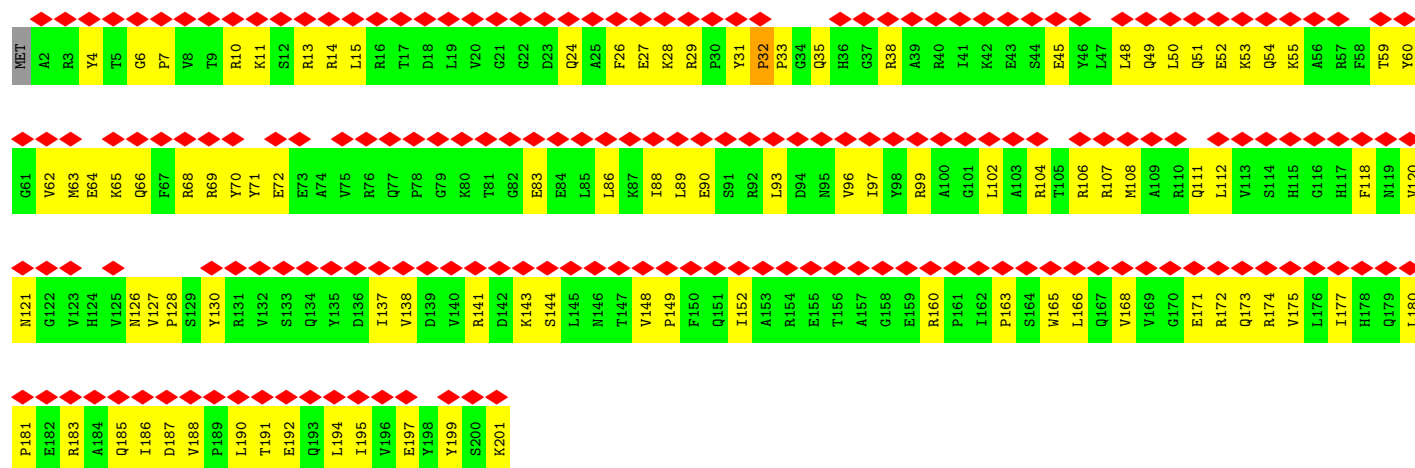
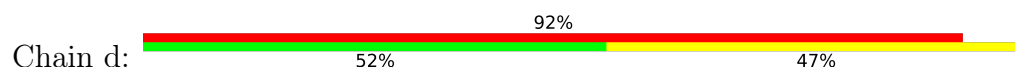




• Molecule 33: Small ribosomal subunit protein uS3

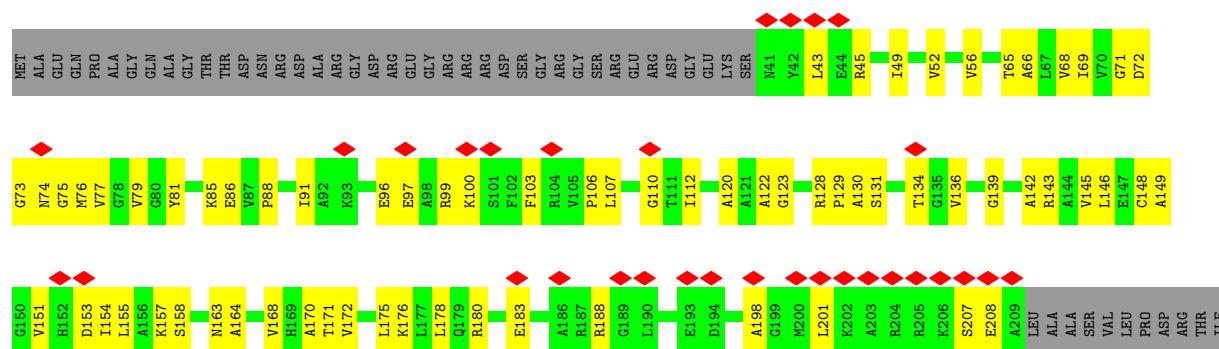


• Molecule 34: Small ribosomal subunit protein uS4

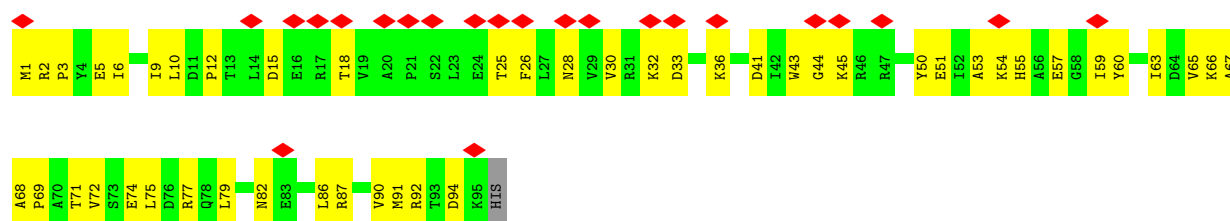


• Molecule 35: Small ribosomal subunit protein uS5

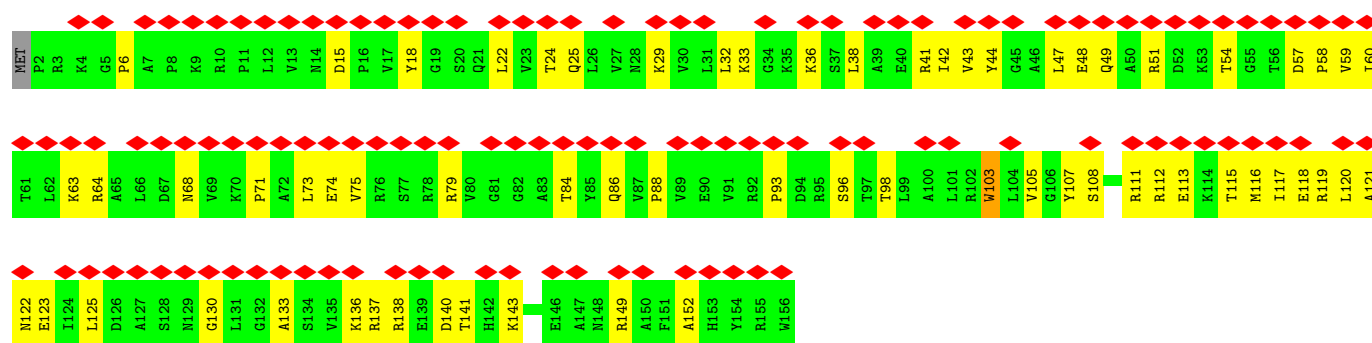
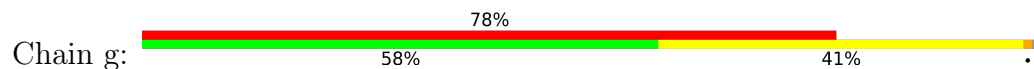




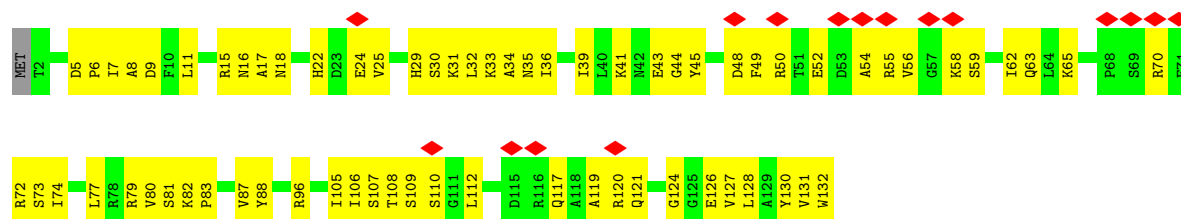
• Molecule 36: Small ribosomal subunit protein bS6



• Molecule 37: Small ribosomal subunit protein uS7



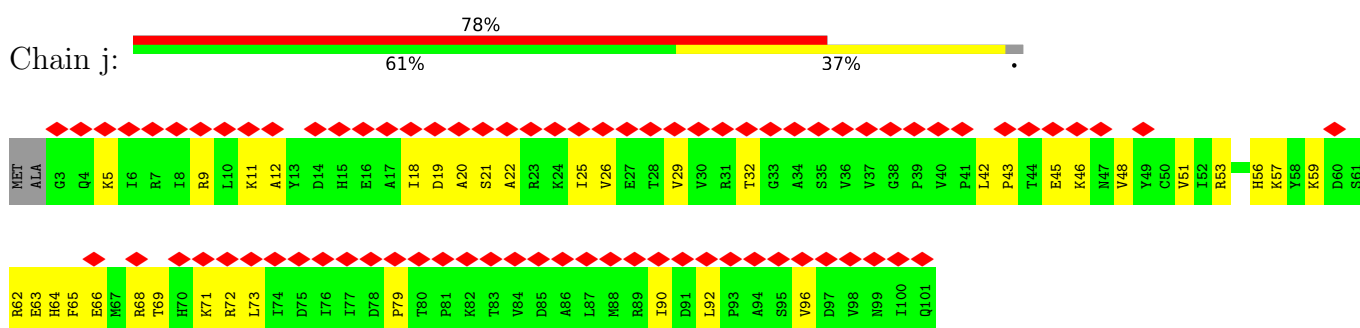
• Molecule 38: Small ribosomal subunit protein uS8



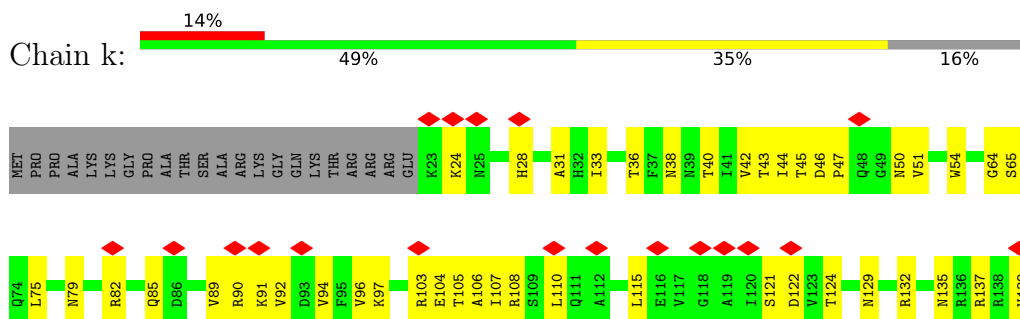
• Molecule 39: Small ribosomal subunit protein uS9



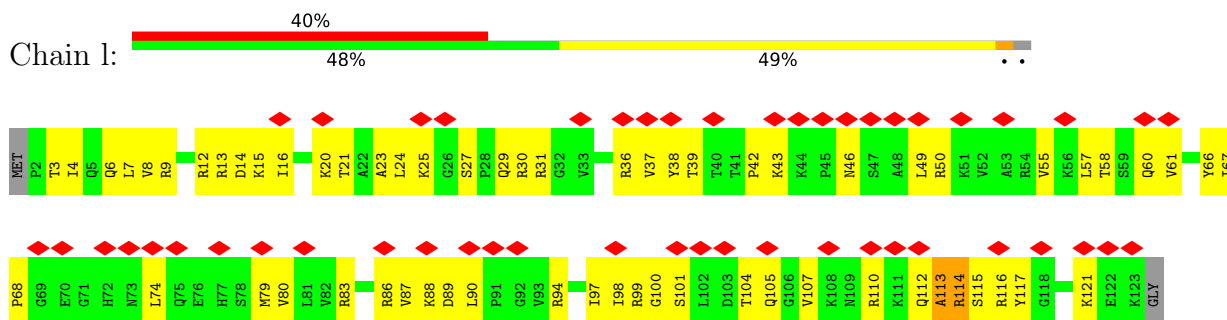
- Molecule 40: Small ribosomal subunit protein uS10



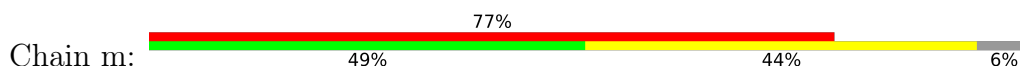
- Molecule 41: Small ribosomal subunit protein uS11

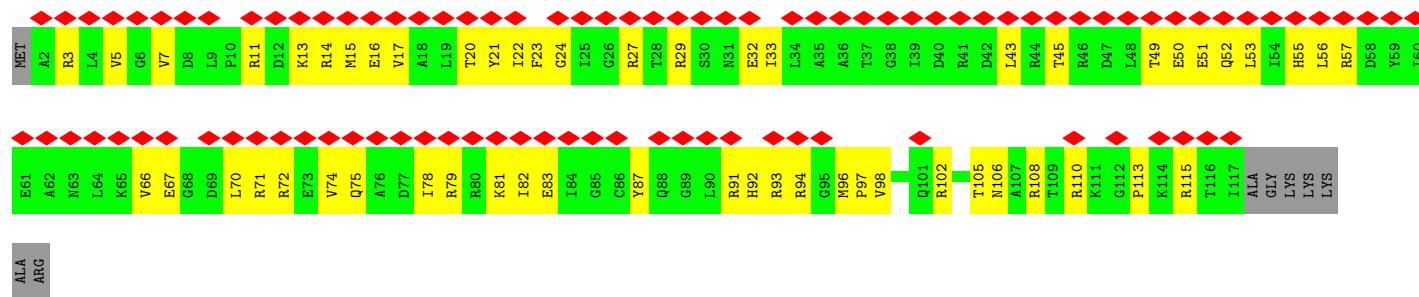


- Molecule 42: Small ribosomal subunit protein uS12

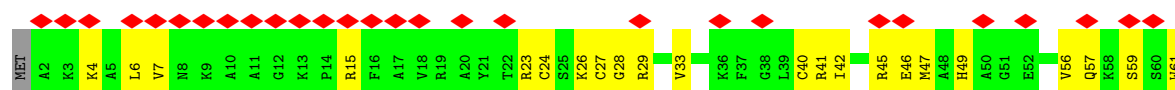


- Molecule 43: Small ribosomal subunit protein uS13

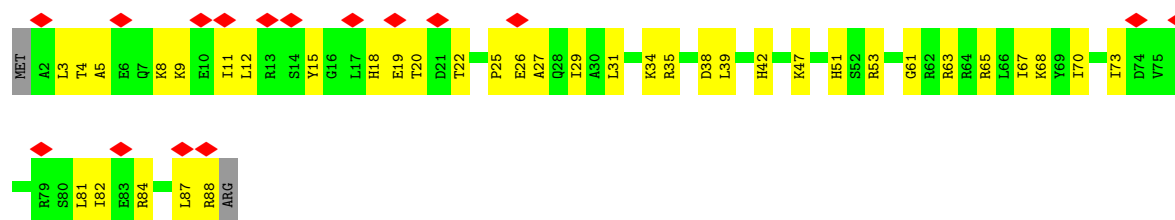




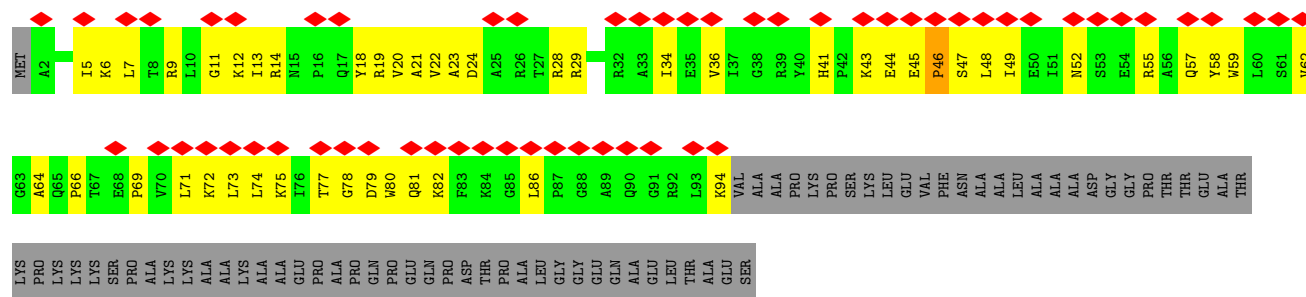
• Molecule 44: Small ribosomal subunit protein uS14B



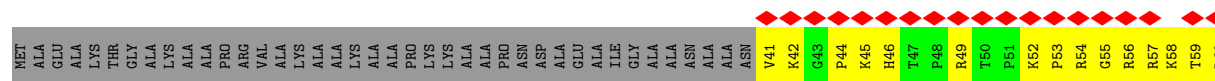
• Molecule 45: Small ribosomal subunit protein uS15

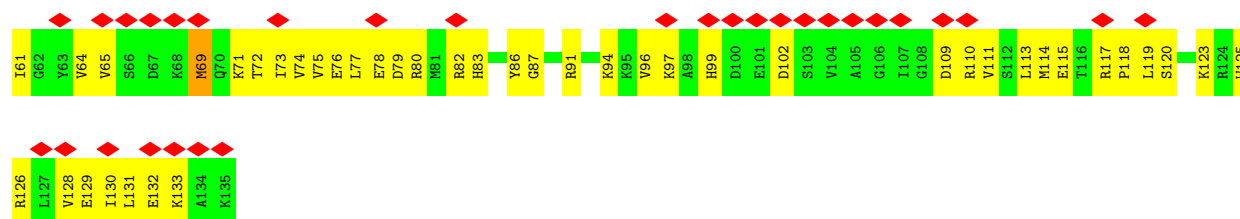


• Molecule 46: Small ribosomal subunit protein bS16

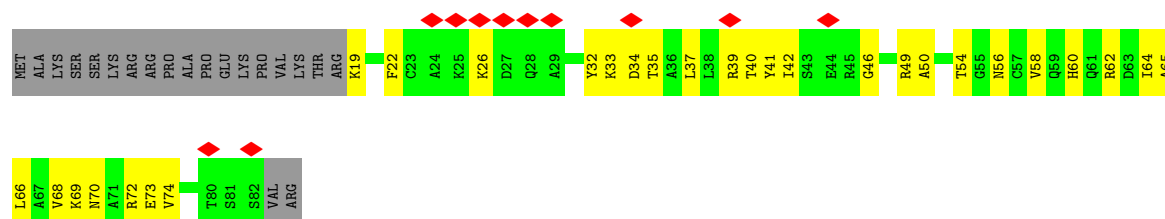
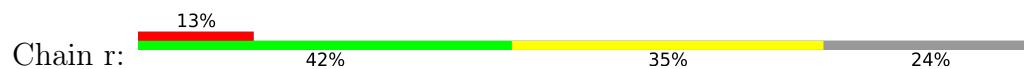


• Molecule 47: Small ribosomal subunit protein uS17

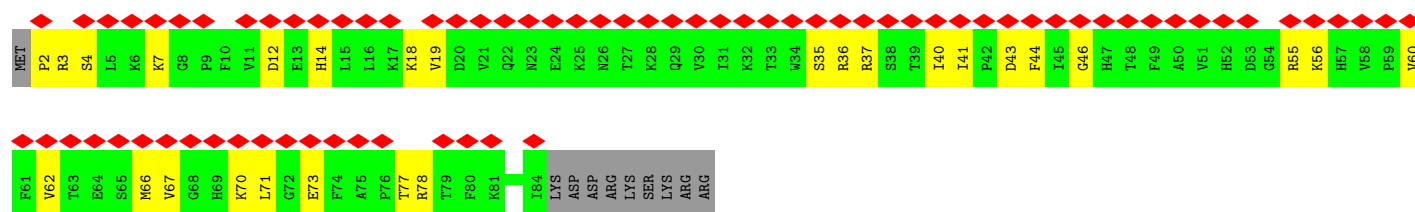
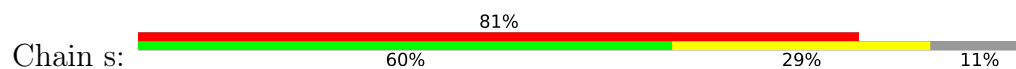




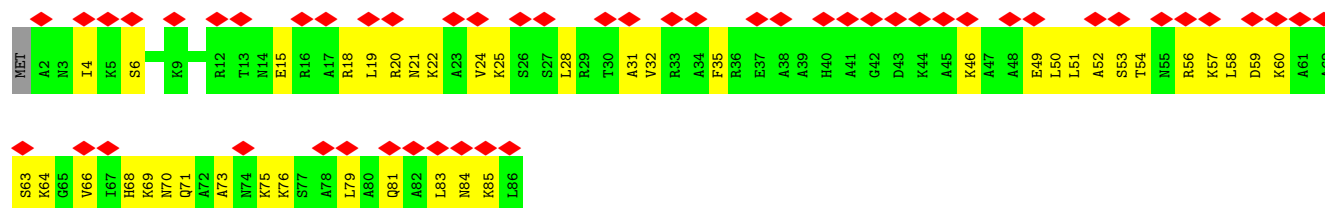
- Molecule 48: Small ribosomal subunit protein bS18A



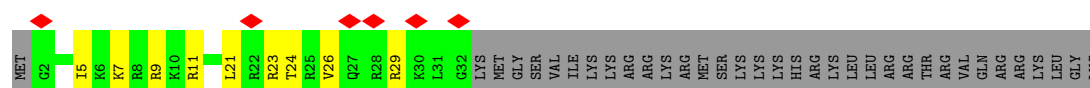
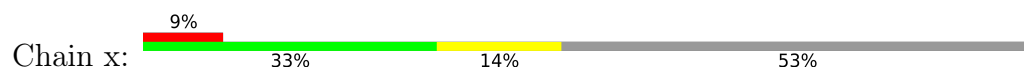
- Molecule 49: Small ribosomal subunit protein uS19



- Molecule 50: Small ribosomal subunit protein bS20



- Molecule 51: Mitochondrial domain of uncharacterised function (DUF1713)



- Molecule 52: tRNA



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	205461	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	JEOL CRYO ARM 300	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	40	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	2200	Depositor
Magnification	60000	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.083	Depositor
Minimum map value	-0.022	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.003	Depositor
Recommended contour level	0.0085	Depositor
Map size (Å)	403.456, 403.456, 403.456	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.788, 0.788, 0.788	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: MA6, 2MG, ZN, OMG, G7M, 5MC, 5MU, UR3, A1L32, MG, 4OC

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	0	0.27	0/435	0.47	0/581
2	1	0.31	0/407	0.51	0/543
3	2	0.28	0/377	0.53	0/494
4	3	0.25	0/499	0.45	0/664
5	4	0.23	0/304	0.48	0/402
6	7	0.33	0/188	0.59	0/243
7	A	0.27	0/69786	0.33	0/108882
8	B	0.22	0/2749	0.31	0/4284
9	C	0.29	0/2129	0.52	0/2861
10	D	0.30	0/1613	0.57	1/2174 (0.0%)
11	E	0.27	0/1575	0.53	0/2129
12	F	0.60	5/1429 (0.3%)	0.67	3/1921 (0.2%)
13	G	0.22	0/1351	0.55	0/1824
14	H	0.21	0/353	0.59	0/474
15	J	0.31	0/1170	0.49	0/1584
16	K	0.33	0/952	0.55	0/1278
17	L	0.28	0/1087	0.52	0/1452
18	M	0.29	0/1098	0.53	0/1481
19	N	0.27	0/925	0.52	0/1242
20	O	0.26	0/914	0.57	0/1228
21	P	0.26	0/922	0.51	0/1236
22	Q	0.31	0/1006	0.55	0/1349
23	R	0.32	0/766	0.58	0/1030
24	S	0.29	0/874	0.50	0/1186
25	T	0.28	0/751	0.57	0/1012
26	U	0.24	0/705	0.56	0/941
27	V	0.26	0/1336	0.50	0/1820
28	W	0.29	0/569	0.46	0/757
29	X	0.27	0/476	0.45	0/638
30	Y	0.26	0/564	0.60	0/756
31	Z	0.25	0/480	0.51	0/645
32	a	0.16	0/36331	0.27	0/56686

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	c	0.23	0/1678	0.55	0/2254
34	d	0.23	1/1683 (0.1%)	0.47	1/2269 (0.0%)
35	e	0.21	0/1238	0.48	0/1673
36	f	0.25	0/767	0.52	0/1036
37	g	0.38	2/1250 (0.2%)	0.58	0/1686
38	h	0.25	0/1021	0.54	0/1379
39	i	0.18	0/1010	0.50	0/1356
40	j	0.16	0/803	0.49	0/1086
41	k	0.23	0/890	0.57	0/1204
42	l	0.25	0/970	0.53	0/1295
43	m	0.21	0/953	0.53	0/1274
44	n	0.19	0/477	0.48	0/634
45	o	0.24	0/727	0.63	0/973
46	p	0.20	0/759	0.59	0/1022
47	q	0.26	0/782	0.59	0/1045
48	r	0.22	0/511	0.59	0/685
49	s	0.15	0/690	0.36	0/928
50	t	0.21	0/654	0.61	0/867
51	x	0.17	0/271	0.41	0/348
52	u	0.17	0/68	0.39	0/103
All	All	0.25	8/151323 (0.0%)	0.38	5/226914 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
11	E	0	1
12	F	0	1
22	Q	0	1
23	R	0	1
27	V	0	1
33	c	0	1
39	i	0	1
42	l	0	1
47	q	0	1
All	All	0	9

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
12	F	16	ARG	CZ-NH2	-15.12	1.13	1.33
37	g	103	TRP	CZ2-CH2	-7.94	1.22	1.37
12	F	12	LYS	CA-CB	7.34	1.65	1.53
12	F	16	ARG	CZ-NH1	-6.45	1.23	1.32
34	d	32	PRO	CA-C	5.34	1.55	1.52
12	F	12	LYS	CB-CG	5.28	1.68	1.52
12	F	12	LYS	C-N	5.02	1.40	1.33
37	g	103	TRP	CE3-CZ3	-5.00	1.23	1.38

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
12	F	16	ARG	NE-CZ-NH1	8.52	130.02	121.50
12	F	16	ARG	NH1-CZ-NH2	-7.63	109.39	119.30
12	F	12	LYS	CB-CA-C	7.44	122.66	110.90
34	d	32	PRO	O-C-N	5.18	123.59	121.15
10	D	127	MET	CB-CG-SD	-5.14	97.29	112.70

There are no chirality outliers.

All (9) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
11	E	157	ARG	Peptide
12	F	12	LYS	Mainchain
22	Q	6	ARG	Sidechain
23	R	50	THR	Peptide
27	V	135	ALA	Peptide
33	c	104	GLU	Peptide
39	i	66	GLN	Peptide
42	l	113	ALA	Peptide
47	q	69	MET	Peptide

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	0	429	0	465	8	0
2	1	400	0	409	14	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	2	374	0	410	12	0
4	3	494	0	533	15	0
5	4	300	0	323	21	0
6	7	186	0	202	11	0
7	A	62388	0	31426	996	0
8	B	2458	0	1253	48	0
9	C	2088	0	2123	77	0
10	D	1590	0	1632	71	0
11	E	1552	0	1593	58	0
12	F	1408	0	1449	114	0
13	G	1330	0	1390	86	0
14	H	350	0	367	15	0
15	J	1143	0	1173	56	0
16	K	942	0	1005	67	0
17	L	1074	0	1132	34	0
18	M	1072	0	1115	52	0
19	N	908	0	956	25	0
20	O	905	0	943	41	0
21	P	907	0	947	48	0
22	Q	993	0	1040	47	0
23	R	757	0	817	31	0
24	S	860	0	903	32	0
25	T	741	0	792	38	0
26	U	699	0	738	33	0
27	V	1319	0	1365	67	0
28	W	564	0	584	35	0
29	X	468	0	480	12	0
30	Y	560	0	570	31	0
31	Z	476	0	509	17	0
32	a	32620	0	16427	790	0
33	c	1654	0	1694	81	0
34	d	1650	0	1671	108	0
35	e	1222	0	1291	65	0
36	f	757	0	796	46	0
37	g	1230	0	1288	74	0
38	h	1006	0	1041	72	0
39	i	992	0	1052	49	0
40	j	789	0	821	40	0
41	k	872	0	880	42	0
42	l	959	0	1045	78	0
43	m	945	0	992	58	0
44	n	468	0	492	23	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
45	o	718	0	760	30	0
46	p	745	0	788	55	0
47	q	770	0	833	78	0
48	r	506	0	527	25	0
49	s	672	0	690	26	0
50	t	652	0	703	48	0
51	x	271	0	329	10	0
52	u	62	0	34	0	0
53	l	1	0	0	0	0
53	4	1	0	0	0	0
53	X	1	0	0	0	0
53	n	1	0	0	0	0
53	r	1	0	0	0	0
54	A	300	0	0	0	0
54	B	5	0	0	0	0
54	C	2	0	0	0	0
54	D	1	0	0	0	0
54	L	1	0	0	0	0
54	U	1	0	0	0	0
54	a	129	0	0	0	0
54	r	1	0	0	0	0
54	u	1	0	0	0	0
55	A	81	0	0	0	0
All	All	139822	0	92798	3538	0

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

All (3538) 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)
7:A:2177:5MU:C5	7:A:2177:5MU:C4	1.79	1.61
12:F:12:LYS:C	12:F:16:ARG:HH21	1.31	1.37
12:F:12:LYS:HG3	12:F:16:ARG:NH2	1.54	1.22
15:J:73:MET:HE2	15:J:86:LYS:HD2	1.17	1.15
12:F:15:TYR:HA	12:F:19:ILE:HD13	1.20	1.11
12:F:12:LYS:C	12:F:16:ARG:NH2	2.10	1.10
42:l:31:ARG:HH11	42:l:79:MET:HE2	0.96	1.10
42:l:31:ARG:HH11	42:l:79:MET:CE	1.66	1.09
42:l:31:ARG:NH1	42:l:79:MET:HE2	1.67	1.07
12:F:12:LYS:CG	12:F:16:ARG:NH2	2.20	1.05

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:732:G:H1	7:A:739:C:H5	1.06	1.01
7:A:1517:C:H5	7:A:1532:G:H1	1.09	0.99
46:p:19:ARG:HH12	46:p:21:ALA:HB2	1.25	0.98
7:A:2913:A:N6	7:A:2970:G:H1	1.62	0.97
12:F:13:GLU:HA	12:F:16:ARG:NE	1.80	0.96
37:g:103:TRP:CH2	37:g:138:ARG:NH2	2.34	0.96
12:F:12:LYS:CA	12:F:16:ARG:HH21	1.78	0.96
32:a:107:G:H21	32:a:353:G:H5'	1.30	0.96
37:g:103:TRP:CZ3	37:g:138:ARG:CZ	2.48	0.96
13:G:106:PHE:HB2	13:G:108:LEU:HD22	1.48	0.96
9:C:155:LEU:HD13	9:C:177:MET:HE1	1.44	0.95
7:A:946:C:H5	7:A:1322:G:H1	1.12	0.95
27:V:67:LEU:CD1	27:V:76:ALA:HB2	1.97	0.95
8:B:4:C:H2'	8:B:5:G:H8	1.30	0.95
32:a:607:G:H1	32:a:615:U:H3	1.14	0.95
13:G:130:THR:HG22	13:G:131:LYS:HE2	1.48	0.94
32:a:452:G:H1	32:a:471:U:H3	1.11	0.94
7:A:2006:G:H1	7:A:2217:C:H5	1.10	0.93
12:F:12:LYS:HG3	12:F:16:ARG:HH22	1.31	0.93
37:g:103:TRP:HH2	37:g:138:ARG:NH2	1.66	0.93
7:A:368:U:H3	7:A:436:G:H1	0.95	0.93
7:A:471:G:H22	7:A:481:U:H3	1.09	0.92
27:V:67:LEU:HD11	27:V:76:ALA:HB2	1.51	0.92
37:g:103:TRP:CZ3	37:g:138:ARG:NH1	2.37	0.92
32:a:65:U:H3	32:a:100:G:H1	1.01	0.92
7:A:2542:G:H22	7:A:2550:U:H3	1.15	0.92
12:F:12:LYS:O	12:F:16:ARG:NE	2.01	0.92
40:j:59:LYS:HD2	40:j:62:ARG:HH21	1.33	0.92
7:A:2309:C:H5	7:A:2675:G:H1	1.07	0.91
10:D:127:MET:HE3	10:D:146:ARG:HG2	1.50	0.91
7:A:2913:A:N1	7:A:2970:G:N2	2.17	0.91
32:a:117:A:H61	32:a:238:G:H1	1.18	0.90
46:p:74:LEU:HG	46:p:80:TRP:HB2	1.53	0.90
7:A:2174:A:H2	7:A:2181:U:H3	1.10	0.90
36:f:45:LYS:HD2	36:f:59:ILE:HD11	1.53	0.90
11:E:205:GLU:OE1	11:E:205:GLU:N	2.05	0.90
35:e:69:ILE:HG12	35:e:145:VAL:HG12	1.53	0.90
7:A:873:G:H1	7:A:882:C:H5	1.12	0.90
10:D:7:LEU:H	10:D:34:ASN:HD21	1.16	0.90
17:L:36:THR:HG22	17:L:38:GLY:H	1.37	0.89
35:e:86:GLU:HG3	35:e:88:PRO:HD2	1.54	0.88

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:R:64:GLU:OE2	23:R:66:LEU:HD23	1.73	0.87
27:V:67:LEU:HD11	27:V:76:ALA:CB	2.04	0.87
32:a:1234:G:H1	32:a:1287:U:H3	1.22	0.86
7:A:1381:G:N7	17:L:20:ARG:NH2	2.22	0.86
42:l:30:ARG:HG2	42:l:57:LEU:HG	1.58	0.86
47:q:99:HIS:CE1	47:q:119:LEU:HD12	2.10	0.86
40:j:53:ARG:HD3	40:j:63:GLU:HG2	1.58	0.85
25:T:10:ILE:HG22	25:T:11:ILE:HD12	1.58	0.85
12:F:12:LYS:CB	12:F:16:ARG:NH2	2.40	0.85
34:d:138:VAL:HB	34:d:175:VAL:HB	1.58	0.85
32:a:452:G:H5''	46:p:72:LYS:HE3	1.59	0.85
32:a:709:A:O5'	41:k:129:ASN:ND2	2.10	0.85
32:a:334:C:H2'	32:a:335:A:H8	1.40	0.85
7:A:1658:A:H61	7:A:1815:U:H3	1.21	0.84
4:3:5:LYS:NZ	7:A:256:G:N7	2.26	0.83
7:A:1689:C:O2'	7:A:1696:A:N6	2.11	0.83
7:A:1712:G:N2	7:A:1756:A:N1	2.27	0.83
32:a:406:G:H1	32:a:434:U:H3	1.28	0.82
32:a:402:C:H5''	34:d:128:PRO:HD2	1.60	0.82
32:a:134:U:H3	32:a:224:G:H1	1.26	0.81
37:g:88:PRO:HG3	37:g:149:ARG:HA	1.59	0.81
24:S:35:ARG:NH1	24:S:84:VAL:O	2.12	0.81
12:F:12:LYS:HG3	12:F:16:ARG:CZ	2.10	0.81
24:S:93:LYS:HG3	24:S:105:ARG:HD2	1.61	0.81
18:M:40:ALA:HB2	18:M:127:ILE:HD13	1.62	0.81
11:E:53:GLN:HG3	11:E:55:THR:HG23	1.63	0.80
8:B:4:C:H2'	8:B:5:G:C8	2.16	0.80
40:j:51:VAL:HG23	44:n:41:ARG:HB2	1.64	0.80
7:A:728:C:O2'	7:A:786:U:OP1	2.00	0.80
7:A:1712:G:H1	7:A:1756:A:H61	1.26	0.80
12:F:13:GLU:N	12:F:16:ARG:NH2	2.29	0.80
32:a:1062:C:H5''	35:e:85:LYS:NZ	1.95	0.80
32:a:1062:C:H5''	35:e:85:LYS:HZ3	1.45	0.80
32:a:375:G:H5''	46:p:6:LYS:HB2	1.64	0.80
37:g:48:GLU:O	37:g:51:ARG:NH1	2.15	0.80
22:Q:74:ILE:HD11	22:Q:78:ARG:HB2	1.65	0.79
7:A:1953:G:H1	7:A:1976:G:H1	1.29	0.79
7:A:746:G:N2	7:A:749:U:OP2	2.16	0.79
12:F:13:GLU:O	12:F:16:ARG:HG2	1.83	0.79
27:V:123:THR:HG23	27:V:125:GLU:OE1	1.83	0.79
39:i:34:LYS:HG3	39:i:35:GLU:OE1	1.82	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:a:871:C:H5'	38:h:83:PRO:HG2	1.65	0.79
7:A:1955:G:H22	7:A:1974:G:H1	1.30	0.79
13:G:33:LEU:HB3	13:G:76:LEU:HD12	1.63	0.78
20:O:77:VAL:O	20:O:81:GLN:HG3	1.83	0.78
13:G:89:GLU:OE1	13:G:131:LYS:NZ	2.16	0.78
8:B:54:C:H1'	12:F:33:MET:HE1	1.66	0.78
47:q:131:LEU:HD12	47:q:132:GLU:HG2	1.65	0.78
12:F:24:ARG:NH1	12:F:24:ARG:HA	1.99	0.78
22:Q:112:VAL:HG11	23:R:51:THR:HG21	1.64	0.77
43:m:23:PHE:HB3	43:m:67:GLU:HG3	1.65	0.77
40:j:56:HIS:HD2	40:j:57:LYS:HB3	1.48	0.77
50:t:68:HIS:NE2	50:t:70:ASN:OD1	2.18	0.77
28:W:25:ARG:NE	28:W:35:GLU:OE2	2.17	0.77
15:J:73:MET:HE2	15:J:86:LYS:CD	2.09	0.77
7:A:1234:U:H2'	7:A:1235:G:H8	1.47	0.77
30:Y:14:THR:O	30:Y:64:ARG:NH1	2.17	0.77
32:a:54:A:H61	32:a:313:C:H1'	1.50	0.77
32:a:413:A:OP2	32:a:427:G:N2	2.17	0.77
7:A:307:U:O2'	14:H:41:ARG:NH1	2.18	0.77
12:F:12:LYS:HZ3	12:F:15:TYR:HD2	1.31	0.77
26:U:33:VAL:HG13	26:U:68:VAL:HG12	1.66	0.77
32:a:208:A:O2'	32:a:219:G:N2	2.16	0.77
32:a:391:C:H5'	46:p:13:ILE:HG23	1.66	0.76
32:a:148:A:N6	32:a:165:C:O2	2.18	0.76
32:a:153:G:H1	32:a:160:U:H3	1.32	0.76
36:f:5:GLU:OE2	48:r:33:LYS:NZ	2.18	0.76
16:K:97:ARG:HA	16:K:117:LEU:HD12	1.67	0.76
33:c:141:MET:HE2	33:c:170:GLU:CG	2.15	0.76
32:a:543:U:H5'	42:l:83:ARG:HH11	1.51	0.76
42:l:60:GLN:O	42:l:60:GLN:NE2	2.17	0.76
16:K:106:LEU:HB2	16:K:115:ILE:HD11	1.68	0.76
12:F:119:ARG:NH1	43:m:5:VAL:O	2.17	0.76
50:t:22:LYS:HA	50:t:25:LYS:CE	2.15	0.76
27:V:53:ALA:O	27:V:57:ARG:NH1	2.18	0.76
45:o:87:LEU:HG	45:o:88:ARG:HG2	1.65	0.76
32:a:655:G:H22	32:a:732:G:H1	1.31	0.76
40:j:42:LEU:HB3	40:j:71:LYS:HB2	1.68	0.75
37:g:71:PRO:HB3	37:g:138:ARG:CZ	2.14	0.75
7:A:2913:A:H61	7:A:2970:G:H1	0.82	0.75
17:L:105:LYS:HG3	17:L:106:ASN:OD1	1.86	0.75
24:S:83:THR:HG23	24:S:116:VAL:HB	1.69	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:Z:38:GLU:OE2	31:Z:38:GLU:N	2.14	0.75
47:q:99:HIS:CE1	47:q:119:LEU:CD1	2.68	0.75
36:f:43:TRP:HB2	36:f:60:TYR:HB2	1.67	0.75
7:A:572:A:O2'	26:U:45:THR:O	2.05	0.75
7:A:2566:A:H2'	7:A:2567:A:C8	2.20	0.75
7:A:1955:G:N2	7:A:1974:G:H1	1.85	0.75
12:F:70:GLN:HB3	12:F:102:ARG:HH22	1.52	0.75
37:g:71:PRO:HB3	37:g:138:ARG:NH2	2.00	0.75
16:K:122:LEU:HD22	21:P:69:VAL:HG11	1.68	0.75
34:d:69:ARG:HA	34:d:72:GLU:OE1	1.86	0.75
45:o:25:PRO:O	45:o:29:ILE:HG12	1.87	0.75
7:A:1689:C:O2	7:A:1690:A:N6	2.20	0.74
10:D:129:ARG:HG3	10:D:170:MET:HG3	1.69	0.74
32:a:389:U:H4'	46:p:29:ARG:HH21	1.50	0.74
33:c:140:ALA:HA	33:c:143:GLN:HE22	1.52	0.74
20:O:62:GLU:OE2	20:O:62:GLU:N	2.14	0.74
34:d:96:VAL:HG22	34:d:165:TRP:HH2	1.50	0.74
16:K:107:ARG:HG2	16:K:115:ILE:HG13	1.70	0.74
23:R:44:VAL:HG22	23:R:49:VAL:HG22	1.68	0.74
37:g:42:ILE:HG21	37:g:116:MET:HE2	1.69	0.74
24:S:68:ALA:HB1	24:S:74:LEU:HD11	1.69	0.74
32:a:1156:G:H1	32:a:1164:U:H3	1.32	0.74
34:d:52:GLU:HG2	34:d:190:LEU:HD11	1.69	0.74
32:a:405:G:O2'	34:d:111:GLN:OE1	2.06	0.74
9:C:155:LEU:HD13	9:C:177:MET:CE	2.18	0.74
32:a:196:C:O3'	47:q:49:ARG:NH1	2.20	0.74
11:E:29:GLU:OE1	11:E:29:GLU:N	2.22	0.73
32:a:117:A:N6	32:a:238:G:H1	1.84	0.73
32:a:536:C:OP2	34:d:54:GLN:NE2	2.20	0.73
32:a:830:U:H3	32:a:840:G:H1	1.36	0.73
32:a:1305:U:O4	49:s:3:ARG:NH2	2.21	0.73
50:t:22:LYS:HA	50:t:25:LYS:HD3	1.70	0.73
7:A:764:G:N2	7:A:775:C:O2	2.20	0.73
13:G:55:ARG:HH12	13:G:58:ASP:H	1.34	0.73
7:A:330:G:O2'	7:A:446:A:N6	2.21	0.73
10:D:28:VAL:HG23	10:D:191:VAL:HG13	1.69	0.73
15:J:6:PRO:HG2	15:J:48:VAL:HG21	1.69	0.73
42:l:113:ALA:O	42:l:115:SER:N	2.20	0.73
48:r:66:LEU:O	48:r:70:ASN:ND2	2.21	0.73
16:K:34:GLY:N	16:K:37:ASP:OD2	2.20	0.73
18:M:91:GLU:OE2	18:M:92:TRP:CE2	2.41	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:p:9:ARG:HD2	46:p:11:GLY:H	1.52	0.73
32:a:607:G:N2	32:a:615:U:O2	2.20	0.73
12:F:12:LYS:CG	12:F:16:ARG:HH22	1.89	0.73
12:F:15:TYR:HA	12:F:19:ILE:CD1	2.10	0.73
13:G:119:PRO:HD2	13:G:122:ILE:HD11	1.69	0.73
7:A:1675:G:HO2'	7:A:1755:G:HO2'	1.32	0.73
32:a:308:G:OP1	46:p:28:ARG:NH2	2.22	0.73
9:C:108:PRO:HD2	9:C:111:LEU:HD12	1.71	0.73
7:A:1715:A:N6	7:A:1753:G:O2'	2.22	0.72
7:A:2494:G:O2'	28:W:10:SER:OG	2.07	0.72
35:e:99:ARG:HB2	35:e:100:LYS:HZ2	1.53	0.72
7:A:1960:C:N4	7:A:1970:G:O6	2.22	0.72
12:F:110:LEU:HA	12:F:114:ALA:HB3	1.71	0.72
22:Q:91:ASP:H	23:R:14:GLN:NE2	1.86	0.72
12:F:85:LYS:HA	12:F:85:LYS:HE3	1.72	0.72
41:k:40:THR:HG21	41:k:73:ALA:HA	1.70	0.72
8:B:5:G:O2'	8:B:26:A:O2'	2.05	0.72
47:q:52:LYS:HD2	47:q:53:PRO:HD2	1.72	0.72
7:A:1545:G:H1	7:A:1823:A:H61	1.35	0.72
24:S:70:ASN:ND2	24:S:71:ASN:OD1	2.22	0.72
32:a:457:G:N7	32:a:466:C:N4	2.38	0.72
32:a:1117:U:O4	40:j:9:ARG:NH1	2.23	0.72
42:l:31:ARG:NH1	42:l:79:MET:CE	2.37	0.72
13:G:104:LEU:HG	13:G:124:PHE:HD2	1.54	0.72
20:O:84:ALA:HA	20:O:120:LEU:HD22	1.70	0.72
32:a:517:C:O2'	32:a:518:G7M:O4'	2.07	0.72
32:a:1466:G:H2'	32:a:1467:G:C8	2.25	0.72
13:G:45:ARG:HH21	13:G:51:ILE:HG13	1.52	0.72
32:a:362:A:N7	42:l:27:SER:OG	2.23	0.72
33:c:110:SER:HB2	33:c:143:GLN:HG2	1.71	0.72
7:A:193:A:H2'	7:A:194:G:C8	2.25	0.72
24:S:41:ASP:O	24:S:45:ILE:HG13	1.89	0.72
32:a:1118:G:H22	32:a:1137:G:H1	1.35	0.72
26:U:103:LYS:H	26:U:103:LYS:HD3	1.54	0.71
7:A:340:U:H2'	7:A:341:A:H8	1.55	0.71
15:J:88:THR:HG22	15:J:90:GLY:H	1.54	0.71
32:a:665:G:H2'	32:a:666:A:H8	1.56	0.71
27:V:56:LEU:HD23	27:V:57:ARG:HH12	1.54	0.71
32:a:140:U:H3	32:a:174:G:H1	1.36	0.71
42:l:101:SER:OG	42:l:104:THR:OG1	2.07	0.71
10:D:7:LEU:H	10:D:34:ASN:ND2	1.87	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:S:57:VAL:O	24:S:61:ILE:HD12	1.91	0.71
37:g:103:TRP:CH2	37:g:138:ARG:CZ	2.73	0.71
25:T:68:ARG:HD3	25:T:73:TYR:CE1	2.26	0.71
32:a:1220:C:OP1	43:m:108:ARG:NH2	2.24	0.71
27:V:35:LEU:HD13	27:V:95:LEU:HB2	1.73	0.71
32:a:334:C:H2'	32:a:335:A:C8	2.23	0.71
34:d:14:ARG:HG2	34:d:33:PRO:HD2	1.73	0.71
45:o:27:ALA:O	45:o:31:LEU:HD23	1.91	0.71
10:D:28:VAL:HG11	21:P:4:LEU:HD22	1.72	0.71
11:E:143:SER:OG	11:E:146:SER:OG	2.09	0.71
28:W:56:ASP:OD1	28:W:58:THR:OG1	2.08	0.71
9:C:111:LEU:HD11	9:C:128:GLY:HA3	1.72	0.70
38:h:7:ILE:HD12	38:h:7:ILE:H	1.56	0.70
50:t:21:ASN:O	50:t:25:LYS:HD3	1.90	0.70
8:B:76:U:OP1	27:V:26:ARG:NH2	2.23	0.70
12:F:135:TYR:HB3	12:F:163:VAL:HG13	1.72	0.70
34:d:118:PHE:HZ	34:d:138:VAL:HG13	1.56	0.70
32:a:1348:G:H2'	32:a:1349:A:H8	1.56	0.70
46:p:6:LYS:HE2	46:p:23:ALA:HB3	1.72	0.70
7:A:1656:G:O2'	7:A:1816:A:N6	2.24	0.70
10:D:6:ILE:HG12	10:D:31:ALA:HB1	1.72	0.70
16:K:4:GLN:OE1	16:K:23:ARG:NH2	2.25	0.70
32:a:117:A:N1	32:a:238:G:N2	2.38	0.70
32:a:664:G:H2'	32:a:665:G:C8	2.27	0.70
33:c:141:MET:HE2	33:c:170:GLU:HG3	1.73	0.70
38:h:107:SER:HB3	38:h:126:GLU:HB3	1.72	0.70
32:a:760:G:H4'	32:a:1506:A:H4'	1.74	0.70
33:c:55:GLU:HB2	33:c:66:ASP:HB2	1.72	0.70
7:A:2543:A:N6	12:F:158:GLY:O	2.25	0.70
40:j:56:HIS:CD2	40:j:57:LYS:HB3	2.26	0.70
7:A:871:U:H2'	7:A:872:A:C8	2.26	0.70
20:O:51:ASN:OD1	20:O:53:THR:OG1	2.09	0.70
26:U:100:ARG:O	26:U:103:LYS:NZ	2.23	0.70
7:A:1711:C:H2'	7:A:1712:G:H8	1.57	0.70
16:K:97:ARG:HH22	32:a:337:A:P	2.14	0.69
32:a:12:G:H5'	35:e:139:GLY:HA3	1.73	0.69
32:a:968:A:H4'	32:a:969:G:H5''	1.73	0.69
33:c:130:ARG:CZ	33:c:130:ARG:HA	2.22	0.69
6:7:11:ARG:NH2	7:A:2267:A:OP1	2.24	0.69
7:A:1711:C:H2'	7:A:1712:G:C8	2.27	0.69
7:A:1953:G:N2	7:A:1976:G:H22	1.91	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:4:19:ARG:HH21	7:A:2993:C:H3'	1.57	0.69
7:A:1081:G:OP1	18:M:16:ARG:NH2	2.26	0.69
7:A:274:A:O2'	7:A:456:C:O2	2.10	0.69
32:a:225:G:H5''	47:q:49:ARG:HG2	1.75	0.69
46:p:12:LYS:HA	46:p:12:LYS:HE3	1.74	0.69
47:q:115:GLU:HB3	47:q:125:TRP:HZ3	1.57	0.69
32:a:389:U:H2'	32:a:390:G:H8	1.57	0.69
32:a:1051:U:H5'	44:n:45:ARG:HH12	1.57	0.69
39:i:60:PHE:O	39:i:66:GLN:NE2	2.26	0.69
7:A:719:U:H1'	11:E:47:GLN:HG3	1.73	0.69
34:d:181:PRO:HB2	34:d:185:GLN:HE21	1.56	0.69
7:A:1319:G:H5''	23:R:85:TYR:CE1	2.28	0.69
12:F:9:PRO:HG2	12:F:12:LYS:HB3	1.74	0.69
13:G:122:ILE:HD12	13:G:124:PHE:HE1	1.58	0.69
32:a:1251:C:O2'	32:a:1275:C:O2	2.11	0.69
7:A:2593:C:H1'	28:W:39:ARG:HH21	1.57	0.69
8:B:4:C:OP1	8:B:60:C:O2'	2.11	0.69
34:d:99:ARG:HH12	34:d:187:ASP:HB2	1.58	0.69
7:A:3071:U:H2'	7:A:3072:A:C8	2.28	0.69
32:a:582:U:OP2	38:h:31:LYS:NZ	2.24	0.69
34:d:180:LEU:HD12	34:d:181:PRO:HD2	1.73	0.69
46:p:19:ARG:NH1	46:p:21:ALA:HB2	2.05	0.69
32:a:771:G:H5''	41:k:135:ASN:ND2	2.08	0.68
32:a:1406:A:H61	32:a:1480:G:H1	1.41	0.68
9:C:147:LEU:HD12	9:C:154:LYS:HD3	1.74	0.68
32:a:1086:U:OP1	32:a:1099:G:N1	2.24	0.68
32:a:1452:G:H5''	50:t:22:LYS:HE3	1.73	0.68
7:A:872:A:O2'	7:A:1894:U:OP1	2.09	0.68
7:A:2516:A:H5''	28:W:12:ASN:HD22	1.58	0.68
8:B:3:A:N1	8:B:21:G:O2'	2.25	0.68
32:a:1008:A:O2'	44:n:15:ARG:NH2	2.24	0.68
34:d:97:ILE:HD11	34:d:118:PHE:HE2	1.59	0.68
32:a:962:A:OP1	40:j:57:LYS:NZ	2.25	0.68
33:c:19:LYS:HZ2	33:c:54:VAL:H	1.41	0.68
15:J:20:ALA:HB1	15:J:62:VAL:HG12	1.76	0.68
46:p:44:GLU:OE1	46:p:44:GLU:N	2.23	0.68
7:A:2013:U:H5	7:A:2018:A:N7	1.91	0.68
32:a:1348:G:H2'	32:a:1349:A:C8	2.28	0.68
50:t:24:VAL:HG11	50:t:66:VAL:HG11	1.75	0.68
50:t:54:THR:HA	50:t:57:LYS:HE3	1.76	0.68
8:B:54:C:H1'	12:F:33:MET:CE	2.24	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:F:13:GLU:CA	12:F:16:ARG:NE	2.56	0.68
25:T:91:ARG:HH11	25:T:91:ARG:HG3	1.58	0.68
32:a:705:G:H2'	32:a:706:A:C8	2.28	0.68
33:c:143:GLN:OE1	33:c:143:GLN:N	2.26	0.68
42:l:30:ARG:CG	42:l:57:LEU:HG	2.22	0.68
27:V:10:ARG:NH1	27:V:11:VAL:O	2.26	0.68
30:Y:31:ASN:O	30:Y:35:GLN:HG3	1.94	0.68
32:a:967:A:OP1	44:n:29:ARG:NH2	2.26	0.68
32:a:1242:A:OP1	39:i:90:GLY:N	2.26	0.68
33:c:38:ILE:HD11	33:c:56:ILE:HD11	1.75	0.68
43:m:91:ARG:HG2	43:m:98:VAL:HA	1.74	0.68
7:A:2513:C:O2'	18:M:84:GLY:O	2.11	0.68
27:V:67:LEU:HD12	27:V:76:ALA:HB2	1.72	0.68
30:Y:59:THR:O	30:Y:63:GLU:HG3	1.94	0.68
27:V:35:LEU:HD23	27:V:45:LEU:HD21	1.76	0.68
32:a:1001:C:H42	32:a:1014:G:H1	1.42	0.68
9:C:165:LEU:HD11	9:C:173:ALA:HB1	1.76	0.67
32:a:1121:A:O2'	39:i:41:ARG:NH2	2.26	0.67
32:a:1320:C:H2'	32:a:1321:G:C8	2.29	0.67
38:h:7:ILE:HA	38:h:33:LYS:HZ2	1.57	0.67
37:g:107:TYR:OH	37:g:137:ARG:NH1	2.27	0.67
7:A:942:U:H2'	7:A:943:C:C6	2.30	0.67
32:a:593:U:H3	32:a:627:G:H1	1.41	0.67
7:A:2036:A:H2'	7:A:2037:A:C8	2.30	0.67
11:E:108:THR:HB	11:E:113:ILE:HD11	1.74	0.67
12:F:12:LYS:CB	12:F:16:ARG:HH22	2.08	0.67
32:a:268:U:H2'	32:a:269:A:C8	2.29	0.67
18:M:40:ALA:CB	18:M:127:ILE:HD13	2.23	0.67
20:O:88:LYS:HZ2	20:O:120:LEU:HD13	1.57	0.67
39:i:43:VAL:O	39:i:82:PHE:HA	1.93	0.67
11:E:143:SER:HG	11:E:146:SER:HG	1.40	0.67
21:P:43:LYS:HE2	21:P:86:VAL:HG21	1.76	0.67
32:a:49:G:O2'	32:a:364:U:O2	2.12	0.67
5:4:30:PRO:HB2	7:A:2765:C:H5''	1.77	0.67
7:A:2106:C:H42	7:A:2108:A:H61	1.40	0.67
8:B:45:A:OP1	20:O:9:ARG:NH2	2.27	0.67
12:F:13:GLU:HA	12:F:16:ARG:CZ	2.25	0.67
38:h:24:GLU:OE1	38:h:63:GLN:NE2	2.28	0.67
38:h:58:LYS:HA	38:h:58:LYS:HE3	1.77	0.67
7:A:910:A:OP1	9:C:218:ARG:NH2	2.28	0.67
5:4:9:PRO:HD3	5:4:16:LEU:HD12	1.78	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:3023:U:O2	10:D:69:GLN:NE2	2.27	0.66
14:H:2:LYS:HG3	14:H:39:ALA:HB3	1.75	0.66
7:A:1904:A:O4'	16:K:5:GLU:HG3	1.94	0.66
24:S:56:PRO:O	24:S:60:VAL:HG23	1.95	0.66
32:a:108:G:H1'	32:a:353:G:H5''	1.78	0.66
18:M:52:ILE:HG22	18:M:56:ARG:HD2	1.76	0.66
39:i:39:ARG:HD3	39:i:87:HIS:HB2	1.77	0.66
7:A:338:G:OP2	7:A:338:G:N2	2.27	0.66
15:J:42:PRO:HD3	22:Q:71:LEU:HD11	1.76	0.66
32:a:254:G:H4'	47:q:71:LYS:HE2	1.78	0.66
32:a:293:C:OP1	32:a:601:U:O2'	2.13	0.66
34:d:7:PRO:HB2	34:d:10:ARG:HD2	1.76	0.66
32:a:1517:C:H2'	32:a:1518:G:C8	2.31	0.66
7:A:75:G:H22	7:A:111:A:H2	1.44	0.66
7:A:368:U:O2	7:A:436:G:N2	2.26	0.66
7:A:2574:A:H61	28:W:43:THR:HG21	1.60	0.66
12:F:13:GLU:HA	12:F:16:ARG:CD	2.25	0.66
32:a:986:G:O2'	32:a:987:A:N7	2.28	0.66
32:a:1051:U:H2'	32:a:1052:G:H8	1.60	0.66
43:m:91:ARG:HD2	43:m:96:MET:HG2	1.78	0.66
7:A:2572:C:OP2	20:O:15:ARG:NH1	2.28	0.66
8:B:10:C:OP2	28:W:72:LYS:NZ	2.28	0.66
32:a:191:C:N3	47:q:54:ARG:NH2	2.43	0.66
32:a:537:G:OP1	34:d:65:LYS:NZ	2.23	0.66
32:a:1030:U:H2'	32:a:1031:G:H8	1.61	0.66
50:t:22:LYS:HA	50:t:25:LYS:CD	2.25	0.66
7:A:1772:G:HO2'	7:A:1775:G:H1	1.42	0.66
12:F:57:ILE:O	12:F:61:VAL:HB	1.96	0.66
33:c:152:GLN:HG3	33:c:167:PHE:HB3	1.78	0.66
37:g:122:ASN:HA	37:g:125:LEU:HG	1.77	0.66
42:l:30:ARG:CD	42:l:57:LEU:HG	2.26	0.66
13:G:74:SER:O	13:G:78:THR:HG22	1.96	0.66
32:a:919:G:H2'	32:a:1498:G:C8	2.30	0.66
35:e:180:ARG:HB2	35:e:183:GLU:HG3	1.78	0.66
39:i:68:LEU:HD11	39:i:97:ALA:HB1	1.77	0.66
41:k:28:HIS:HD1	41:k:47:PRO:HG3	1.60	0.66
7:A:2533:C:OP1	20:O:16:ARG:NH1	2.28	0.66
8:B:48:C:O3'	20:O:73:LYS:NZ	2.29	0.66
27:V:34:VAL:HG12	27:V:44:HIS:HD2	1.61	0.66
32:a:698:U:OP1	41:k:97:LYS:NZ	2.29	0.66
38:h:80:VAL:HG12	38:h:87:VAL:HG11	1.77	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:335:A:H2'	7:A:336:G:H8	1.60	0.65
7:A:1952:C:H2'	7:A:1953:G:C8	2.31	0.65
7:A:2087:A:H2'	7:A:2088:A:C8	2.31	0.65
20:O:84:ALA:O	20:O:88:LYS:NZ	2.28	0.65
32:a:107:G:N2	32:a:353:G:H5'	2.10	0.65
47:q:72:THR:HG23	47:q:123:LYS:NZ	2.12	0.65
32:a:704:G:H2'	32:a:705:G:C8	2.31	0.65
41:k:92:VAL:HB	41:k:115:LEU:HD22	1.78	0.65
42:l:42:PRO:HB3	42:l:89:ASP:HB3	1.78	0.65
7:A:2515:G:H5'	18:M:87:LYS:HG3	1.77	0.65
13:G:17:VAL:HG11	13:G:51:ILE:HD11	1.77	0.65
15:J:125:TYR:HH	15:J:132:HIS:HE2	1.34	0.65
19:N:51:LEU:HD22	19:N:66:VAL:HG13	1.78	0.65
38:h:5:ASP:HB3	38:h:83:PRO:HG3	1.77	0.65
7:A:677:A:OP2	7:A:2737:C:O2'	2.13	0.65
32:a:466:C:H3'	32:a:467:G:H8	1.61	0.65
7:A:2897:G:O2'	13:G:176:LYS:NZ	2.28	0.65
18:M:78:PRO:HG2	18:M:81:THR:HG21	1.78	0.65
24:S:27:ALA:O	24:S:31:ILE:HG23	1.96	0.65
26:U:83:ILE:HG22	26:U:98:SER:HA	1.78	0.65
32:a:1315:G:H2'	32:a:1316:A:H8	1.61	0.65
37:g:133:ALA:HA	37:g:136:LYS:HD3	1.79	0.65
32:a:140:U:O2	32:a:174:G:N2	2.30	0.65
32:a:1051:U:OP1	44:n:45:ARG:NH2	2.30	0.65
7:A:1191:G:H1	7:A:1205:C:H2'	1.62	0.65
16:K:97:ARG:NH2	32:a:337:A:OP1	2.29	0.65
32:a:1020:C:O2	32:a:1026:G:N1	2.27	0.65
41:k:46:ASP:OD1	41:k:50:ASN:N	2.24	0.65
7:A:2202:G:O2'	7:A:2205:C:OP1	2.14	0.65
46:p:75:LYS:HB3	46:p:81:GLN:HE22	1.62	0.65
8:B:4:C:O2'	8:B:25:A:N1	2.24	0.64
13:G:75:ASN:O	13:G:84:TYR:OH	2.14	0.64
32:a:1299:U:OP1	43:m:110:ARG:NH2	2.30	0.64
46:p:52:ASN:OD1	46:p:55:ARG:N	2.23	0.64
19:N:52:ILE:HG21	19:N:87:PHE:HD2	1.62	0.64
38:h:117:GLN:OE1	38:h:117:GLN:N	2.26	0.64
43:m:78:ILE:O	43:m:82:ILE:HG12	1.97	0.64
7:A:1174:A:H5''	7:A:1176:G:H5'	1.79	0.64
7:A:2529:U:H2'	7:A:2530:U:C6	2.32	0.64
16:K:30:ARG:HH11	16:K:30:ARG:HG3	1.63	0.64
31:Z:18:LYS:O	31:Z:22:SER:OG	2.14	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:a:492:C:P	42:l:114:ARG:HH22	2.19	0.64
32:a:997:G:H2'	32:a:998:A:C8	2.33	0.64
32:a:1384:U:H2'	32:a:1385:G:C8	2.31	0.64
51:x:11:ARG:HG2	51:x:11:ARG:HH11	1.62	0.64
18:M:15:PRO:HG2	18:M:41:TYR:CE1	2.31	0.64
15:J:29:ALA:HB3	15:J:108:MET:HE3	1.78	0.64
16:K:113:LYS:O	16:K:117:LEU:HD23	1.98	0.64
21:P:51:GLY:HA2	21:P:56:GLU:HG3	1.80	0.64
27:V:156:THR:HG23	27:V:158:GLY:H	1.63	0.64
32:a:1181:U:H4'	33:c:10:PHE:CZ	2.31	0.64
32:a:1347:A:H2'	32:a:1348:G:H8	1.63	0.64
37:g:44:TYR:HE2	39:i:63:LYS:HE3	1.61	0.64
7:A:324:G:H22	7:A:452:A:H2	1.46	0.64
7:A:359:C:N4	7:A:363:A:N7	2.36	0.64
7:A:992:A:H2'	7:A:993:G:C8	2.32	0.64
24:S:78:THR:OG1	24:S:119:SER:OG	2.15	0.64
26:U:2:LYS:HB2	26:U:83:ILE:HD11	1.79	0.64
7:A:622:U:H2'	7:A:623:C:C6	2.33	0.64
12:F:43:VAL:HG22	12:F:161:ILE:HG13	1.78	0.64
35:e:69:ILE:HG21	35:e:145:VAL:HA	1.79	0.64
38:h:29:HIS:CE1	38:h:34:ALA:HB2	2.33	0.64
7:A:633:U:H3	7:A:650:G:H1	1.46	0.64
7:A:1900:A:H5''	16:K:66:VAL:HG23	1.79	0.64
32:a:121:G:H5'	32:a:624:G:N2	2.12	0.64
32:a:1506:A:H2'	32:a:1507:C:C6	2.32	0.64
47:q:99:HIS:HD2	47:q:123:LYS:CE	2.11	0.64
7:A:1234:U:H2'	7:A:1235:G:C8	2.31	0.64
27:V:122:VAL:HG22	27:V:179:VAL:HG12	1.79	0.64
32:a:425:U:OP1	34:d:31:TYR:OH	2.15	0.64
32:a:952:A:HO2'	32:a:977:C:HO2'	1.44	0.64
40:j:21:SER:HA	40:j:25:ILE:HD12	1.78	0.64
46:p:71:LEU:HD12	46:p:74:LEU:HD23	1.79	0.64
47:q:45:LYS:O	47:q:45:LYS:HD3	1.97	0.64
7:A:1707:A:H2'	7:A:1708:A:C8	2.32	0.64
34:d:64:GLU:HG3	34:d:68:ARG:HH12	1.63	0.64
35:e:66:ALA:HB1	35:e:91:ILE:HD13	1.80	0.64
7:A:616:A:OP2	15:J:116:ARG:NH1	2.31	0.63
10:D:16:VAL:HG23	10:D:24:VAL:HG13	1.81	0.63
18:M:115:ARG:O	18:M:119:THR:HG23	1.98	0.63
41:k:33:ILE:HG12	41:k:42:VAL:HG13	1.80	0.63
7:A:2918:C:H5'	10:D:199:PRO:HA	1.79	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:a:1068:G:N2	32:a:1071:A:OP2	2.28	0.63
39:i:33:ARG:O	39:i:127:ARG:NH1	2.31	0.63
42:l:14:ASP:OD1	42:l:15:LYS:N	2.31	0.63
43:m:15:MET:HE2	43:m:15:MET:N	2.13	0.63
7:A:296:U:O4	7:A:297:A:N6	2.31	0.63
7:A:448:U:H2'	7:A:449:A:C8	2.32	0.63
7:A:2127:A:H2'	7:A:2128:A:C8	2.33	0.63
20:O:13:ARG:NH1	20:O:100:GLY:O	2.30	0.63
22:Q:28:ARG:NH1	22:Q:38:GLN:OE1	2.29	0.63
32:a:1315:G:H2'	32:a:1316:A:C8	2.33	0.63
48:r:34:ASP:OD2	48:r:37:LEU:HD23	1.98	0.63
7:A:340:U:H2'	7:A:341:A:C8	2.33	0.63
7:A:2481:U:H2'	7:A:2482:U:C6	2.33	0.63
32:a:644:A:OP1	38:h:55:ARG:NH1	2.31	0.63
37:g:15:ASP:OD1	37:g:44:TYR:OH	2.13	0.63
41:k:45:THR:HG22	41:k:51:VAL:HG22	1.79	0.63
7:A:2936:U:H2'	7:A:2937:C:C6	2.34	0.63
10:D:7:LEU:N	10:D:34:ASN:HD21	1.93	0.63
12:F:12:LYS:O	12:F:12:LYS:NZ	2.27	0.63
13:G:154:ARG:HH11	13:G:154:ARG:HG3	1.64	0.63
16:K:9:LYS:HD3	16:K:81:GLU:OE1	1.99	0.63
17:L:75:GLU:HB3	17:L:103:VAL:HG23	1.81	0.63
30:Y:22:LEU:HB2	30:Y:57:ILE:HG21	1.80	0.63
32:a:1260:G:H2'	32:a:1261:A:C8	2.34	0.63
32:a:1339:G:N2	32:a:1367:A:OP2	2.31	0.63
7:A:248:U:H2'	7:A:249:G:H5''	1.80	0.63
36:f:9:ILE:HG12	36:f:87:ARG:HB3	1.80	0.63
38:h:17:ALA:HB1	38:h:22:HIS:HB2	1.79	0.63
7:A:308:G:O4'	14:H:41:ARG:NH1	2.32	0.63
7:A:1910:C:O2	10:D:138:SER:OG	2.17	0.63
8:B:47:C:OP1	20:O:37:ARG:NH2	2.32	0.63
9:C:37:LEU:HD13	9:C:62:TYR:HB2	1.81	0.63
16:K:85:VAL:HG21	16:K:114:ILE:HD13	1.80	0.63
37:g:115:THR:HG23	37:g:117:ILE:HG22	1.80	0.63
41:k:45:THR:HG22	41:k:51:VAL:HA	1.80	0.63
7:A:7:G:H2'	7:A:8:U:C6	2.34	0.63
7:A:2895:A:O2'	13:G:161:LYS:NZ	2.32	0.63
21:P:52:GLY:O	21:P:55:ARG:NH1	2.32	0.63
32:a:406:G:H2'	32:a:407:G:H8	1.63	0.63
43:m:57:ARG:HG2	43:m:57:ARG:HH11	1.64	0.62
32:a:44:G:H2'	32:a:45:G:C8	2.34	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:c:24:ALA:HB3	33:c:28:TYR:HB2	1.81	0.62
8:B:114:C:H2'	8:B:115:A:H2'	1.81	0.62
39:i:38:VAL:HG12	39:i:88:LEU:HD13	1.82	0.62
47:q:59:THR:HA	47:q:113:LEU:O	1.99	0.62
7:A:334:C:H2'	7:A:335:A:C8	2.34	0.62
7:A:335:A:H2'	7:A:336:G:C8	2.34	0.62
24:S:14:VAL:HG23	24:S:116:VAL:HG22	1.81	0.62
7:A:1084:G:O6	7:A:1086:U:O2'	2.17	0.62
12:F:70:GLN:HB3	12:F:102:ARG:NH2	2.14	0.62
32:a:623:U:H3'	32:a:624:G:H8	1.64	0.62
7:A:1182:C:H2'	7:A:1183:A:H8	1.63	0.62
35:e:96:GLU:O	35:e:100:LYS:NZ	2.33	0.62
38:h:39:ILE:HD11	38:h:112:LEU:HB3	1.81	0.62
25:T:38:ASN:O	25:T:42:ILE:HG12	2.00	0.62
7:A:1752:U:H2'	7:A:1753:G:O4'	1.99	0.62
7:A:2323:U:H2'	7:A:2324:G:C8	2.35	0.62
32:a:1087:C:O2	32:a:1162:A:O2'	2.17	0.62
45:o:70:ILE:HA	45:o:73:ILE:HG12	1.82	0.62
22:Q:68:ALA:HA	22:Q:71:LEU:HD12	1.79	0.62
28:W:52:GLY:O	28:W:59:LEU:HA	1.99	0.62
32:a:9:G:H2'	35:e:155:LEU:HD11	1.81	0.62
32:a:180:A:H62	32:a:203:U:H3	1.48	0.62
32:a:1339:G:O6	39:i:33:ARG:NH2	2.33	0.62
35:e:81:TYR:N	35:e:97:GLU:OE2	2.31	0.62
41:k:28:HIS:CD2	41:k:91:LYS:HG3	2.35	0.62
47:q:41:VAL:HG23	47:q:42:LYS:HG2	1.82	0.62
7:A:334:C:H2'	7:A:335:A:H8	1.65	0.62
16:K:48:PRO:HB3	32:a:1415:G:H5'	1.81	0.62
25:T:42:ILE:O	25:T:46:VAL:HG23	2.00	0.62
30:Y:36:MET:SD	30:Y:41:LEU:HD21	2.40	0.62
9:C:177:MET:O	9:C:180:GLY:N	2.32	0.61
13:G:5:GLY:HA2	13:G:70:ARG:HG3	1.81	0.61
27:V:123:THR:HG22	27:V:178:ASN:HB3	1.82	0.61
32:a:452:G:N2	32:a:471:U:O2	2.24	0.61
43:m:17:VAL:O	43:m:20:THR:OG1	2.15	0.61
10:D:6:ILE:HD12	10:D:34:ASN:ND2	2.15	0.61
32:a:43:C:H2'	32:a:44:G:H8	1.65	0.61
5:4:33:LYS:NZ	7:A:2981:C:OP1	2.30	0.61
7:A:1492:G:H2'	7:A:1493:C:C6	2.35	0.61
9:C:145:VAL:HG13	9:C:155:LEU:HB2	1.81	0.61
15:J:41:LYS:HG3	15:J:43:THR:HG22	1.82	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:a:522:U:H4'	32:a:523:A:H5'	1.82	0.61
32:a:1294:U:O4'	43:m:27:ARG:NH2	2.34	0.61
50:t:79:LEU:O	50:t:83:LEU:HD12	2.00	0.61
32:a:466:C:H3'	32:a:467:G:C8	2.36	0.61
7:A:782:A:H2	7:A:785:G:N7	1.98	0.61
7:A:1672:A:H2'	7:A:1673:A:C8	2.36	0.61
13:G:106:PHE:HE1	13:G:116:ILE:HG12	1.64	0.61
32:a:1271:A:H4'	32:a:1273:U:H5	1.65	0.61
7:A:2302:C:H2'	7:A:2303:C:C6	2.35	0.61
10:D:108:ASP:OD1	10:D:184:LYS:HA	2.00	0.61
20:O:61:ILE:O	20:O:66:ARG:NE	2.33	0.61
32:a:191:C:N4	47:q:55:GLY:O	2.33	0.61
32:a:296:G:N2	32:a:299:A:OP2	2.30	0.61
32:a:389:U:H2'	32:a:390:G:C8	2.36	0.61
32:a:1299:U:H5''	43:m:110:ARG:CZ	2.30	0.61
27:V:112:VAL:HG11	27:V:177:VAL:HG11	1.82	0.61
30:Y:20:GLU:OE2	30:Y:23:ARG:NH2	2.30	0.61
32:a:20:U:H2'	32:a:21:C:C6	2.36	0.61
32:a:44:G:H2'	32:a:45:G:H8	1.64	0.61
32:a:406:G:H2'	32:a:407:G:C8	2.36	0.61
35:e:71:GLY:HA3	35:e:148:CYS:HB3	1.82	0.61
47:q:99:HIS:HD2	47:q:123:LYS:HE3	1.66	0.61
7:A:679:G:O2'	7:A:1385:A:OP1	2.19	0.61
7:A:3082:U:OP1	21:P:95:LYS:NZ	2.32	0.61
8:B:44:A:O4'	12:F:99:ARG:NH1	2.34	0.61
12:F:12:LYS:C	12:F:16:ARG:CZ	2.71	0.61
13:G:25:SER:HB3	13:G:27:LYS:HZ1	1.65	0.61
32:a:268:U:H2'	32:a:269:A:H8	1.66	0.61
27:V:137:SER:OG	27:V:139:PRO:O	2.16	0.61
32:a:1062:C:H2'	32:a:1063:G:H8	1.65	0.61
13:G:39:GLU:CD	13:G:40:PRO:HD3	2.26	0.61
24:S:57:VAL:HG12	24:S:113:ILE:HD13	1.81	0.61
36:f:6:ILE:HG12	36:f:90:VAL:HG13	1.82	0.61
36:f:9:ILE:HD12	36:f:60:TYR:CD1	2.36	0.61
41:k:106:ALA:O	41:k:110:LEU:HD22	2.01	0.61
46:p:41:HIS:HB2	46:p:48:LEU:HB3	1.82	0.61
7:A:691:C:H2'	7:A:692:A:H8	1.66	0.60
35:e:99:ARG:HB2	35:e:100:LYS:NZ	2.16	0.60
7:A:683:C:H2'	7:A:684:U:C6	2.37	0.60
13:G:130:THR:HG22	13:G:131:LYS:CE	2.27	0.60
13:G:157:PRO:HB2	13:G:173:LYS:HG3	1.82	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:Q:106:PHE:O	22:Q:110:VAL:HG23	2.01	0.60
27:V:67:LEU:CD1	27:V:76:ALA:CB	2.68	0.60
32:a:572:G:OP1	45:o:65:ARG:NH1	2.34	0.60
32:a:1360:U:H5'	40:j:62:ARG:NH1	2.16	0.60
8:B:6:G:H5'	8:B:7:C:OP2	2.01	0.60
16:K:108:GLU:OE1	16:K:108:GLU:N	2.26	0.60
32:a:1453:A:OP1	50:t:22:LYS:NZ	2.34	0.60
37:g:111:ARG:HH22	37:g:122:ASN:HB2	1.65	0.60
12:F:117:ARG:HD2	12:F:144:VAL:HA	1.82	0.60
9:C:26:ARG:O	9:C:26:ARG:HG3	2.01	0.60
13:G:117:GLU:OE1	13:G:117:GLU:N	2.23	0.60
34:d:181:PRO:HB2	34:d:185:GLN:NE2	2.15	0.60
49:s:55:ARG:HG3	49:s:56:LYS:HD2	1.82	0.60
7:A:2572:C:H1'	20:O:22:LYS:HD3	1.83	0.60
8:B:47:C:P	20:O:37:ARG:HH22	2.25	0.60
9:C:16:ALA:HB2	9:C:207:GLY:HA3	1.84	0.60
32:a:546:C:H2'	32:a:547:C:C6	2.37	0.60
36:f:45:LYS:HD2	36:f:59:ILE:CD1	2.30	0.60
42:l:20:LYS:O	42:l:20:LYS:NZ	2.30	0.60
7:A:978:C:H2'	7:A:979:A:H8	1.67	0.60
7:A:1185:G:H5''	7:A:1186:A:H5'	1.84	0.60
7:A:458:C:OP2	7:A:492:U:O2'	2.17	0.60
7:A:2263:G:H2'	7:A:2264:A:C8	2.35	0.60
32:a:121:G:H5'	32:a:624:G:H22	1.66	0.60
32:a:423:G:H2'	32:a:424:G:H8	1.67	0.60
32:a:1012:A:H3'	32:a:1013:G:H21	1.66	0.60
7:A:430:A:H2'	7:A:431:A:H8	1.67	0.60
32:a:374:U:H2'	32:a:375:G:H8	1.67	0.60
32:a:665:G:H2'	32:a:666:A:C8	2.36	0.60
32:a:939:A:H2'	32:a:940:G:C8	2.37	0.60
33:c:11:ARG:HB3	33:c:15:THR:HB	1.83	0.60
35:e:198:ALA:HA	35:e:201:LEU:HD12	1.83	0.60
42:l:83:ARG:HG2	42:l:98:ILE:HG13	1.83	0.60
50:t:4:ILE:HG22	50:t:6:SER:H	1.64	0.60
6:7:9:ARG:O	6:7:12:LYS:HG3	2.01	0.60
7:A:687:G:N7	22:Q:6:ARG:NH2	2.50	0.60
7:A:1436:C:N4	7:A:1842:C:OP2	2.29	0.60
7:A:2939:C:O2'	19:N:73:LYS:HE3	2.02	0.60
21:P:28:HIS:HD2	21:P:82:HIS:CE1	2.19	0.60
22:Q:90:VAL:HG12	22:Q:95:LEU:HG	1.83	0.60
37:g:116:MET:HA	37:g:119:ARG:HB2	1.84	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:G:20:GLU:N	13:G:20:GLU:OE1	2.34	0.59
27:V:51:ASP:O	27:V:55:VAL:HG13	2.02	0.59
32:a:275:G:H4'	47:q:97:LYS:HZ1	1.67	0.59
37:g:44:TYR:CE2	39:i:63:LYS:HE3	2.36	0.59
7:A:616:A:C2	7:A:2280:A:H2'	2.37	0.59
7:A:2541:G:O2'	12:F:128:GLN:O	2.19	0.59
7:A:691:C:H2'	7:A:692:A:C8	2.37	0.59
7:A:1136:C:OP1	15:J:37:ARG:NH1	2.29	0.59
8:B:29:C:OP1	20:O:9:ARG:NH1	2.32	0.59
10:D:40:ARG:HA	10:D:45:ASP:OD2	2.02	0.59
32:a:89:A:N6	32:a:92:C:H41	2.01	0.59
32:a:969:G:OP2	32:a:1350:U:O2'	2.20	0.59
47:q:109:ASP:O	47:q:111:VAL:HG13	2.03	0.59
50:t:81:GLN:O	50:t:85:LYS:NZ	2.32	0.59
5:4:22:ARG:NH1	5:4:35:ARG:HE	2.00	0.59
7:A:2916:A:H2'	7:A:2917:A:C8	2.36	0.59
11:E:41:HIS:O	11:E:45:THR:HG22	2.03	0.59
12:F:12:LYS:CA	12:F:16:ARG:NH2	2.52	0.59
21:P:9:LYS:C	21:P:9:LYS:HD3	2.28	0.59
32:a:9:G:O6	35:e:131:SER:N	2.35	0.59
32:a:554:A:H8	42:l:12:ARG:NH1	2.00	0.59
32:a:736:A:OP1	32:a:844:C:O2'	2.20	0.59
32:a:999:C:H2'	32:a:1000:G:C8	2.38	0.59
33:c:193:PHE:HE1	33:c:196:ILE:HD11	1.67	0.59
35:e:154:ILE:HD12	35:e:155:LEU:H	1.68	0.59
35:e:180:ARG:N	35:e:183:GLU:OE2	2.34	0.59
39:i:140:LYS:HB2	39:i:144:LYS:HG3	1.82	0.59
7:A:747:A:N1	7:A:2607:A:O2'	2.35	0.59
7:A:2159:C:H2'	7:A:2160:A:H8	1.67	0.59
7:A:2516:A:OP2	28:W:12:ASN:ND2	2.35	0.59
38:h:126:GLU:OE2	38:h:127:VAL:N	2.34	0.59
8:B:58:G:H4'	20:O:7:ALA:HB2	1.84	0.59
10:D:28:VAL:HG23	10:D:191:VAL:CG1	2.33	0.59
32:a:253:G:OP1	47:q:120:SER:OG	2.16	0.59
7:A:2768:G:N7	13:G:173:LYS:NZ	2.50	0.59
27:V:66:THR:OG1	27:V:73:GLU:OE2	2.20	0.59
27:V:79:LYS:HE3	27:V:96:LEU:HD11	1.85	0.59
32:a:920:G:O2'	32:a:1496:A:N7	2.31	0.59
32:a:964:G:N2	32:a:1356:A:OP2	2.34	0.59
32:a:1522:G:N7	51:x:7:LYS:HE2	2.17	0.59
33:c:69:THR:O	33:c:105:VAL:HG12	2.03	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:g:149:ARG:HD2	37:g:149:ARG:O	2.03	0.59
7:A:782:A:C2	7:A:785:G:N7	2.71	0.59
7:A:2899:G:O6	13:G:176:LYS:NZ	2.34	0.59
32:a:179:G:OP1	32:a:205:G:N2	2.36	0.59
32:a:492:C:O2'	32:a:540:C:O2	2.20	0.59
32:a:1210:C:H2'	32:a:1211:A:C8	2.37	0.59
43:m:72:ARG:HH11	43:m:75:GLN:HE22	1.50	0.59
7:A:1306:G:H4'	7:A:1307:U:H5	1.68	0.59
19:N:45:ARG:O	19:N:49:GLU:HG3	2.02	0.59
32:a:815:U:H2'	32:a:816:A:H8	1.66	0.59
34:d:148:VAL:HB	34:d:149:PRO:HD3	1.84	0.59
37:g:111:ARG:HD2	37:g:112:ARG:H	1.68	0.59
38:h:7:ILE:HB	38:h:79:ARG:NH1	2.17	0.59
45:o:47:LYS:O	45:o:53:ARG:NH2	2.36	0.59
3:2:30:GLY:O	3:2:34:VAL:HG23	2.03	0.59
16:K:107:ARG:O	16:K:110:ARG:NH1	2.35	0.59
20:O:25:SER:O	20:O:32:ARG:HG3	2.02	0.59
32:a:1342:A:OP2	39:i:141:LYS:NZ	2.23	0.59
7:A:1658:A:H2'	7:A:1659:G:O4'	2.03	0.58
27:V:80:ALA:HB3	27:V:94:ASP:HB2	1.84	0.58
32:a:171:C:O2'	32:a:1440:A:N1	2.32	0.58
32:a:1055:G:O2'	32:a:1182:G:N2	2.36	0.58
37:g:25:GLN:HE22	37:g:98:THR:HG23	1.68	0.58
38:h:50:ARG:HH12	38:h:52:GLU:CD	2.11	0.58
48:r:46:GLY:O	48:r:72:ARG:NH2	2.36	0.58
7:A:2309:C:H5	7:A:2675:G:N1	1.90	0.58
26:U:2:LYS:O	26:U:96:ARG:NH1	2.36	0.58
32:a:323:G:N2	32:a:326:A:OP2	2.31	0.58
32:a:857:A:H5'	35:e:122:ALA:HB2	1.84	0.58
7:A:2700:U:H2'	7:A:2701:U:C6	2.39	0.58
7:A:2996:A:C4	13:G:68:LEU:HD21	2.38	0.58
11:E:79:ARG:HH11	11:E:79:ARG:HG3	1.68	0.58
32:a:462:C:H2'	46:p:86:LEU:HD11	1.84	0.58
42:l:3:THR:O	42:l:6:GLN:N	2.26	0.58
45:o:38:ASP:OD1	45:o:39:LEU:N	2.36	0.58
7:A:925:U:H2'	7:A:926:C:C6	2.37	0.58
9:C:259:ASN:HB3	9:C:262:LYS:HB2	1.84	0.58
16:K:78:LYS:HB3	21:P:70:GLU:HB2	1.85	0.58
32:a:77:G:H1	32:a:91:A:H2	1.51	0.58
32:a:727:U:H2'	32:a:728:C:C6	2.39	0.58
32:a:1248:C:H5'	32:a:1250:G:H1'	1.84	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:a:1420:C:H2'	32:a:1421:A:H8	1.66	0.58
7:A:1978:G:H2'	7:A:1979:A:C8	2.38	0.58
7:A:2177:5MU:OP1	7:A:2842:U:O2'	2.21	0.58
29:X:36:VAL:HG12	29:X:63:ARG:NH2	2.19	0.58
37:g:18:TYR:HE2	37:g:47:LEU:HD13	1.68	0.58
47:q:77:LEU:HB3	47:q:94:LYS:HB2	1.85	0.58
34:d:45:GLU:O	34:d:48:LEU:HD12	2.03	0.58
7:A:451:C:N4	7:A:452:A:H62	2.01	0.58
8:B:65:A:H8	8:B:67:C:H41	1.50	0.58
16:K:1:MET:HE3	16:K:67:LYS:HE2	1.83	0.58
30:Y:43:ASN:ND2	30:Y:46:ARG:HG2	2.18	0.58
32:a:869:A:O5'	38:h:15:ARG:NH1	2.36	0.58
32:a:1347:A:H2'	32:a:1348:G:C8	2.39	0.58
34:d:53:LYS:NZ	34:d:64:GLU:OE2	2.35	0.58
34:d:99:ARG:HB3	34:d:163:PRO:HG3	1.85	0.58
34:d:148:VAL:O	34:d:152:ILE:HG13	2.04	0.58
32:a:1181:U:H4'	33:c:10:PHE:HZ	1.68	0.58
32:a:1405:C:H2'	32:a:1406:A:C8	2.39	0.58
35:e:107:LEU:HD21	35:e:151:VAL:HG12	1.84	0.58
37:g:15:ASP:HB2	37:g:24:THR:HG22	1.85	0.58
38:h:5:ASP:O	38:h:5:ASP:OD2	2.22	0.58
43:m:78:ILE:HD12	43:m:79:ARG:N	2.19	0.58
44:n:57:GLN:OE1	44:n:57:GLN:N	2.35	0.58
48:r:42:ILE:O	48:r:49:ARG:NH2	2.37	0.58
7:A:858:G:C5	9:C:208:LYS:HB2	2.39	0.58
11:E:11:ILE:HG13	11:E:24:ILE:HG23	1.86	0.58
23:R:56:LEU:HA	23:R:59:VAL:HG12	1.85	0.58
31:Z:5:LYS:HE2	31:Z:34:SER:HB2	1.86	0.58
32:a:492:C:H1'	32:a:540:C:H1'	1.86	0.58
32:a:492:C:H2'	32:a:493:A:C8	2.38	0.58
32:a:570:U:H2'	32:a:571:C:C6	2.39	0.58
32:a:952:A:O2'	32:a:977:C:O2'	2.21	0.58
33:c:137:ILE:HG23	33:c:170:GLU:OE2	2.04	0.58
35:e:112:ILE:HG13	35:e:129:PRO:HG3	1.86	0.58
38:h:33:LYS:HE2	38:h:33:LYS:N	2.18	0.58
43:m:13:LYS:NZ	43:m:21:TYR:OH	2.35	0.58
7:A:459:G:H4'	7:A:460:A:OP2	2.03	0.58
7:A:2311:U:H2'	7:A:2312:U:C6	2.38	0.58
32:a:108:G:N3	32:a:352:A:O2'	2.36	0.58
32:a:515:G:H2'	32:a:516:C:C6	2.39	0.58
36:f:68:ALA:HB3	36:f:71:THR:HG23	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:o:5:ALA:O	45:o:9:LYS:HG2	2.04	0.58
7:A:2100:A:N6	7:A:2113:G:O2'	2.36	0.57
10:D:50:VAL:HG12	10:D:86:LEU:HD21	1.86	0.57
30:Y:32:LEU:HD21	30:Y:46:ARG:HB3	1.85	0.57
32:a:807:A:OP1	32:a:1519:G:O2'	2.22	0.57
32:a:1195:C:H5'	44:n:27:CYS:HB2	1.86	0.57
34:d:118:PHE:CZ	34:d:138:VAL:HG13	2.39	0.57
1:O:28:VAL:HG11	1:O:41:ARG:HD2	1.86	0.57
7:A:2529:U:OP1	7:A:2618:U:O2'	2.22	0.57
13:G:61:ARG:HD2	13:G:65:LEU:HD11	1.86	0.57
13:G:95:TYR:CE2	13:G:161:LYS:HB3	2.39	0.57
15:J:60:ASP:OD2	15:J:60:ASP:N	2.37	0.57
25:T:52:VAL:HG11	25:T:93:ILE:HG22	1.86	0.57
34:d:120:VAL:HG23	34:d:121:ASN:H	1.70	0.57
39:i:65:HIS:O	39:i:69:ILE:HG12	2.04	0.57
40:j:45:GLU:OE2	40:j:69:THR:OG1	2.19	0.57
7:A:430:A:H2'	7:A:431:A:C8	2.39	0.57
7:A:961:U:H2'	7:A:962:G:C8	2.40	0.57
7:A:2488:G:N2	18:M:84:GLY:HA3	2.19	0.57
8:B:85:U:H2'	8:B:86:C:H6	1.68	0.57
13:G:70:ARG:HH11	13:G:74:SER:HB3	1.68	0.57
32:a:355:A:H3'	32:a:356:G:H8	1.68	0.57
32:a:617:U:H2'	32:a:618:G:C8	2.39	0.57
43:m:29:ARG:O	43:m:33:ILE:HG12	2.03	0.57
45:o:9:LYS:HD3	45:o:12:LEU:HD12	1.84	0.57
7:A:1692:U:O2'	7:A:1693:G:N7	2.36	0.57
7:A:2275:U:H2'	7:A:2276:C:C6	2.40	0.57
9:C:212:MET:CE	9:C:217:LYS:HD3	2.34	0.57
13:G:120:GLU:OE1	13:G:120:GLU:N	2.20	0.57
32:a:467:G:H2'	32:a:468:G:H8	1.69	0.57
42:l:55:VAL:HG11	42:l:57:LEU:HD13	1.85	0.57
49:s:41:ILE:H	49:s:44:PHE:HE2	1.52	0.57
7:A:2032:U:OP2	9:C:271:ARG:NH2	2.36	0.57
18:M:134:ARG:NH1	27:V:127:ASN:HD22	2.02	0.57
26:U:12:ILE:HG21	26:U:72:MET:HG3	1.86	0.57
32:a:24:G:H2'	32:a:25:G:C8	2.40	0.57
32:a:1312:C:O2	49:s:36:ARG:NH2	2.36	0.57
35:e:142:ALA:O	35:e:145:VAL:HG22	2.04	0.57
10:D:44:ARG:HD3	10:D:45:ASP:OD1	2.04	0.57
23:R:64:GLU:OE2	23:R:66:LEU:CD2	2.48	0.57
32:a:298:G:H2'	32:a:299:A:C8	2.39	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:h:25:VAL:HG22	38:h:62:ILE:HG13	1.86	0.57
7:A:690:U:H2'	7:A:691:C:C6	2.39	0.57
12:F:19:ILE:HD12	12:F:19:ILE:H	1.68	0.57
22:Q:69:ALA:HB1	22:Q:74:ILE:HG23	1.86	0.57
27:V:140:GLU:HG3	27:V:141:GLN:H	1.70	0.57
32:a:336:G:H2'	32:a:337:A:H8	1.69	0.57
48:r:26:LYS:HA	48:r:26:LYS:HE2	1.87	0.57
7:A:61:G:H5'	30:Y:47:LEU:HD11	1.87	0.57
12:F:24:ARG:HD2	12:F:35:ILE:HD11	1.87	0.57
22:Q:62:ILE:HG23	22:Q:76:TYR:CE2	2.40	0.57
22:Q:66:ASN:O	22:Q:70:ARG:HG3	2.05	0.57
32:a:1210:C:H2'	32:a:1211:A:H8	1.68	0.57
35:e:142:ALA:O	35:e:146:LEU:HD12	2.04	0.57
47:q:114:MET:HG3	47:q:128:VAL:HG21	1.87	0.57
7:A:651:G:H2'	7:A:652:G:H8	1.70	0.57
7:A:2479:A:H2'	7:A:2480:G:C8	2.39	0.57
7:A:2912:G:H5''	16:K:30:ARG:NH1	2.19	0.57
10:D:36:VAL:HG13	10:D:50:VAL:HG23	1.87	0.57
22:Q:97:ASP:OD2	23:R:16:LYS:HD2	2.05	0.57
32:a:960:5MC:HO2'	39:i:148:TYR:HH	1.37	0.57
32:a:1053:U:H2'	32:a:1054:C:C6	2.39	0.57
32:a:1253:A:H5'	32:a:1275:C:H4'	1.86	0.57
39:i:104:ILE:O	39:i:108:LEU:CD1	2.53	0.57
40:j:18:ILE:HD12	40:j:72:ARG:HD3	1.87	0.57
7:A:609:U:H2'	7:A:610:G:C8	2.40	0.57
7:A:2024:C:H2'	7:A:2025:A:C5	2.40	0.57
27:V:78:THR:HA	27:V:95:LEU:HD23	1.87	0.57
30:Y:10:LEU:HD11	30:Y:60:VAL:HG21	1.86	0.57
17:L:30:LYS:HG3	17:L:31:THR:HG23	1.86	0.56
18:M:51:ARG:HD3	18:M:66:ILE:HD11	1.86	0.56
32:a:1232:U:H4'	37:g:38:LEU:HD11	1.86	0.56
32:a:1350:U:H3	32:a:1356:A:H62	1.52	0.56
34:d:66:GLN:OE1	34:d:66:GLN:N	2.27	0.56
7:A:8:U:H5''	15:J:53:PHE:HZ	1.70	0.56
13:G:84:TYR:CZ	13:G:139:LYS:HB2	2.39	0.56
19:N:16:HIS:O	19:N:20:ILE:HG13	2.04	0.56
32:a:139:U:H5''	32:a:140:U:H5'	1.87	0.56
32:a:482:G:H2'	32:a:483:G:H8	1.68	0.56
39:i:45:GLY:H	39:i:82:PHE:H	1.53	0.56
43:m:11:ARG:NH2	43:m:45:THR:OG1	2.30	0.56
4:3:19:THR:HG23	7:A:755:G:H5''	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:1953:G:H22	7:A:1976:G:H22	1.53	0.56
7:A:2751:G:OP1	10:D:165:ARG:NE	2.29	0.56
11:E:190:ASN:O	11:E:194:VAL:HG12	2.06	0.56
15:J:21:THR:HA	15:J:61:LYS:HG3	1.87	0.56
16:K:35:ILE:HG22	16:K:105:GLU:HB2	1.87	0.56
18:M:118:LEU:O	18:M:122:ILE:HG13	2.05	0.56
32:a:633:A:N3	38:h:107:SER:OG	2.36	0.56
33:c:51:ILE:O	33:c:117:GLN:NE2	2.37	0.56
43:m:71:ARG:O	43:m:75:GLN:HG3	2.05	0.56
43:m:92:HIS:CD2	43:m:98:VAL:HG11	2.40	0.56
50:t:57:LYS:HD2	50:t:58:LEU:N	2.21	0.56
7:A:285:G:H2'	7:A:286:G:C4	2.41	0.56
16:K:98:ILE:HG12	16:K:117:LEU:HG	1.86	0.56
32:a:483:G:H2'	32:a:484:A:C8	2.40	0.56
7:A:1060:A:H5''	7:A:1061:A:H5''	1.88	0.56
7:A:1953:G:H22	7:A:1976:G:N2	2.03	0.56
10:D:39:ILE:HG21	10:D:92:ALA:HB2	1.88	0.56
13:G:105:GLU:HB3	13:G:115:VAL:HG12	1.85	0.56
32:a:108:G:H2'	32:a:109:U:C6	2.41	0.56
32:a:999:C:H2'	32:a:1000:G:H8	1.69	0.56
37:g:64:ARG:NH1	37:g:64:ARG:O	2.36	0.56
7:A:480:A:H1'	7:A:500:G:O4'	2.04	0.56
7:A:759:C:O2'	7:A:760:A:OP1	2.21	0.56
7:A:1978:G:H2'	7:A:1979:A:H8	1.69	0.56
10:D:43:GLU:OE1	10:D:43:GLU:N	2.31	0.56
16:K:80:ASP:OD2	21:P:61:ARG:NH2	2.30	0.56
32:a:653:C:H2'	32:a:654:A:C8	2.40	0.56
7:A:1197:G:O6	7:A:1202:A:N6	2.38	0.56
7:A:2484:A:H2'	7:A:2485:A:C8	2.41	0.56
12:F:12:LYS:O	12:F:16:ARG:CZ	2.52	0.56
32:a:1242:A:H2	32:a:1363:G:H1'	1.71	0.56
4:3:8:SER:O	4:3:12:LYS:HG3	2.06	0.56
7:A:2569:G:O2'	28:W:43:THR:HG22	2.05	0.56
20:O:59:SER:HB2	20:O:61:ILE:HG12	1.87	0.56
31:Z:57:GLU:HG3	31:Z:59:ALA:HB2	1.87	0.56
32:a:63:A:OP1	32:a:106:G:N2	2.38	0.56
34:d:70:TYR:HD1	34:d:88:ILE:HD12	1.71	0.56
34:d:99:ARG:HH22	34:d:187:ASP:HB3	1.70	0.56
39:i:52:ASN:HB2	39:i:88:LEU:HD23	1.87	0.56
3:2:6:ARG:O	3:2:9:GLN:NE2	2.38	0.56
32:a:423:G:H2'	32:a:424:G:C8	2.40	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:a:706:A:H2'	32:a:707:A:C8	2.41	0.56
32:a:942:A:OP2	43:m:106:ASN:ND2	2.39	0.56
5:4:19:ARG:NH2	7:A:2993:C:H3'	2.21	0.56
7:A:199:A:H62	7:A:2668:A:H2'	1.71	0.56
7:A:2051:G:OP2	9:C:157:ARG:NH2	2.39	0.56
7:A:2565:A:H2'	7:A:2566:A:C8	2.40	0.56
12:F:21:ASP:HA	12:F:24:ARG:HG2	1.88	0.56
17:L:34:ARG:O	17:L:36:THR:OG1	2.23	0.56
32:a:939:A:H2'	32:a:940:G:H8	1.70	0.56
32:a:1517:C:OP1	41:k:132:ARG:NH2	2.39	0.56
47:q:69:MET:SD	47:q:72:THR:HB	2.46	0.56
7:A:530:U:H2'	7:A:531:G:C8	2.41	0.55
7:A:1007:G:N1	7:A:1028:G:O2'	2.35	0.55
7:A:1182:C:H2'	7:A:1183:A:C8	2.41	0.55
17:L:74:TYR:OH	17:L:127:LYS:HE2	2.05	0.55
20:O:82:LEU:O	20:O:86:ARG:HG2	2.06	0.55
22:Q:53:ARG:HA	22:Q:56:GLU:HB2	1.87	0.55
32:a:493:A:H2'	32:a:494:C:C6	2.41	0.55
32:a:597:G:N2	32:a:623:U:OP1	2.29	0.55
39:i:33:ARG:C	39:i:127:ARG:HH12	2.13	0.55
40:j:48:VAL:HG22	40:j:66:GLU:HG3	1.88	0.55
50:t:71:GLN:O	50:t:75:LYS:HG2	2.06	0.55
7:A:832:U:H2'	7:A:833:G:O4'	2.06	0.55
7:A:1129:A:H2'	7:A:1130:A:C8	2.41	0.55
7:A:1928:U:O2	9:C:14:ARG:NH1	2.38	0.55
8:B:11:C:C4	28:W:73:ARG:HD3	2.41	0.55
18:M:75:THR:HA	18:M:90:PRO:HA	1.87	0.55
32:a:126:A:O2'	32:a:127:U:O5'	2.19	0.55
32:a:351:C:H4'	32:a:353:G:OP1	2.07	0.55
32:a:1111:U:H2'	32:a:1112:C:C6	2.40	0.55
32:a:1406:A:N6	32:a:1480:G:H1	2.04	0.55
32:a:1420:C:H2'	32:a:1421:A:C8	2.40	0.55
45:o:61:GLY:O	45:o:65:ARG:HG3	2.06	0.55
46:p:19:ARG:NH1	46:p:36:VAL:HG22	2.21	0.55
7:A:450:U:H2'	7:A:451:C:C6	2.40	0.55
7:A:1667:G:H2'	7:A:1668:C:C6	2.40	0.55
15:J:27:ARG:HG2	15:J:142:LEU:HD23	1.87	0.55
17:L:93:GLY:O	17:L:97:LEU:HD22	2.06	0.55
32:a:80:U:H2'	32:a:81:C:C6	2.41	0.55
32:a:263:C:O3'	47:q:117:ARG:NH2	2.39	0.55
36:f:10:LEU:HB2	36:f:59:ILE:HB	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:q:83:HIS:CD2	47:q:86:TYR:H	2.24	0.55
47:q:99:HIS:ND1	47:q:119:LEU:HD12	2.20	0.55
3:2:17:ARG:HH21	7:A:900:G:H5''	1.72	0.55
7:A:383:G:O2'	7:A:385:G:OP2	2.22	0.55
24:S:80:VAL:HG11	24:S:120:ARG:NE	2.22	0.55
32:a:192:A:H61	47:q:57:ARG:HH21	1.54	0.55
32:a:361:G:N2	32:a:364:U:OP2	2.37	0.55
32:a:1338:A:N1	32:a:1367:A:H5''	2.22	0.55
34:d:104:ARG:H	34:d:108:MET:HE3	1.71	0.55
7:A:327:U:H2'	7:A:328:A:C8	2.42	0.55
7:A:582:G:H4'	24:S:16:LYS:HB2	1.86	0.55
7:A:786:U:H2'	7:A:787:G:C8	2.42	0.55
7:A:1444:U:H5	7:A:1838:A:N1	2.04	0.55
7:A:1509:A:O2'	7:A:1511:G:N7	2.40	0.55
7:A:2028:U:H2'	7:A:2029:C:C6	2.42	0.55
12:F:155:ARG:HH22	12:F:157:ARG:HB3	1.72	0.55
33:c:40:ARG:HH21	44:n:26:LYS:HG2	1.72	0.55
33:c:87:ARG:NH2	33:c:100:LEU:O	2.40	0.55
7:A:220:G:H22	7:A:237:U:H4'	1.72	0.55
7:A:307:U:H2'	7:A:308:G:C8	2.40	0.55
7:A:381:A:N1	7:A:405:A:O2'	2.33	0.55
7:A:1808:A:H2'	7:A:1809:A:C8	2.41	0.55
16:K:64:ARG:HD2	16:K:81:GLU:HG2	1.88	0.55
23:R:66:LEU:HD11	23:R:99:LYS:HB2	1.89	0.55
32:a:336:G:H2'	32:a:337:A:C8	2.41	0.55
32:a:551:A:H4'	32:a:552:U:H5''	1.88	0.55
32:a:656:G:O6	32:a:715:G:O6	2.24	0.55
33:c:53:ASP:OD2	33:c:53:ASP:N	2.40	0.55
36:f:15:ASP:OD1	36:f:18:THR:OG1	2.22	0.55
46:p:9:ARG:NH2	46:p:12:LYS:O	2.37	0.55
7:A:404:U:O2	11:E:173:LYS:NZ	2.39	0.55
7:A:1742:U:H2'	7:A:1743:C:C6	2.41	0.55
8:B:23:G:N7	8:B:55:U:H2'	2.21	0.55
18:M:20:ILE:HD12	18:M:99:PRO:HB2	1.87	0.55
20:O:75:ARG:HG3	20:O:75:ARG:HH11	1.71	0.55
26:U:86:ARG:HE	26:U:97:ILE:HG21	1.70	0.55
30:Y:62:ARG:HD2	30:Y:65:GLU:OE2	2.07	0.55
32:a:185:G:C6	32:a:199:G:C6	2.95	0.55
32:a:275:G:H4'	47:q:97:LYS:NZ	2.22	0.55
32:a:668:U:H3	32:a:704:G:H22	1.55	0.55
33:c:27:GLN:HG2	33:c:31:TYR:CZ	2.42	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:l:21:THR:HA	42:l:94:ARG:NH2	2.22	0.55
7:A:168:U:H2'	7:A:169:A:C8	2.42	0.55
7:A:682:C:H5''	22:Q:34:LYS:HE2	1.89	0.55
7:A:752:G:O2'	7:A:2589:G:OP1	2.23	0.55
18:M:21:ALA:HB2	18:M:98:LYS:HB2	1.88	0.55
32:a:1510:G:H3'	32:a:1511:MA6:H8	1.87	0.55
36:f:51:GLU:OE2	36:f:55:HIS:N	2.39	0.55
7:A:272:A:H2'	7:A:273:A:O4'	2.06	0.55
7:A:1516:A:O2'	7:A:1527:U:O2	2.24	0.55
13:G:59:GLU:HB2	13:G:62:ASN:OD1	2.07	0.55
21:P:38:ARG:NH2	32:a:345:G:OP1	2.38	0.55
21:P:42:PHE:CE1	21:P:62:LYS:HE2	2.42	0.55
27:V:81:LEU:HD11	27:V:90:ILE:HD13	1.89	0.55
32:a:43:C:H2'	32:a:44:G:C8	2.41	0.55
34:d:13:ARG:CZ	34:d:33:PRO:HB3	2.36	0.55
35:e:76:MET:HA	35:e:76:MET:HE3	1.88	0.55
7:A:349:G:H2'	7:A:350:A:C8	2.41	0.55
7:A:672:G:H2'	7:A:2268:A:N7	2.22	0.55
7:A:956:U:HO2'	7:A:2668:A:H2	1.54	0.55
7:A:3031:C:H2'	7:A:3032:A:C8	2.42	0.55
17:L:110:LYS:HB2	17:L:127:LYS:O	2.06	0.55
27:V:112:VAL:HG12	27:V:144:VAL:HB	1.89	0.55
32:a:615:U:H5'	46:p:12:LYS:HD3	1.89	0.55
36:f:1:MET:HA	36:f:1:MET:HE3	1.87	0.55
42:l:110:ARG:NH2	42:l:112:GLN:O	2.39	0.55
7:A:1295:A:H2'	7:A:1296:C:C6	2.42	0.54
7:A:2987:A:H4'	13:G:63:ARG:HB3	1.89	0.54
10:D:36:VAL:O	10:D:37:THR:OG1	2.21	0.54
10:D:63:ASN:O	10:D:67:THR:HG23	2.06	0.54
18:M:31:ASP:HA	18:M:134:ARG:HG3	1.89	0.54
32:a:1405:C:H2'	32:a:1406:A:H8	1.72	0.54
39:i:27:ILE:HD11	39:i:42:LEU:HB3	1.89	0.54
41:k:108:ARG:NH1	41:k:108:ARG:HB3	2.22	0.54
45:o:67:ILE:HD12	45:o:68:LYS:N	2.22	0.54
47:q:115:GLU:HB3	47:q:125:TRP:CZ3	2.40	0.54
50:t:15:GLU:HA	50:t:18:ARG:HG2	1.90	0.54
30:Y:13:LEU:CD1	30:Y:21:ARG:HD2	2.36	0.54
33:c:34:GLU:O	33:c:38:ILE:HG23	2.06	0.54
39:i:63:LYS:N	39:i:63:LYS:HD3	2.23	0.54
7:A:284:U:N3	7:A:285:G:O6	2.39	0.54
7:A:780:G:H5'	7:A:781:A:H4'	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:1203:G:H2'	7:A:1204:C:C5	2.43	0.54
7:A:1714:U:OP2	7:A:1753:G:N1	2.39	0.54
21:P:75:VAL:HG23	21:P:76:HIS:CE1	2.43	0.54
33:c:21:ARG:HH12	33:c:55:GLU:HB3	1.72	0.54
33:c:112:ALA:HB3	33:c:183:ASP:OD1	2.08	0.54
38:h:120:ARG:HD2	38:h:120:ARG:N	2.22	0.54
7:A:168:U:H2'	7:A:169:A:H8	1.72	0.54
7:A:803:G:O2'	11:E:81:ARG:HG3	2.07	0.54
8:B:109:C:O2	8:B:109:C:H2'	2.07	0.54
18:M:106:LEU:HD12	18:M:118:LEU:HG	1.90	0.54
33:c:53:ASP:OD2	33:c:68:HIS:HB2	2.08	0.54
37:g:108:SER:HB2	37:g:120:LEU:HD22	1.89	0.54
38:h:7:ILE:HG13	38:h:33:LYS:NZ	2.23	0.54
38:h:29:HIS:HB3	38:h:58:LYS:HB2	1.89	0.54
2:1:28:ASN:ND2	2:1:31:ASN:OD1	2.40	0.54
7:A:403:G:H4'	7:A:405:A:N7	2.22	0.54
7:A:743:U:H2'	7:A:744:C:C6	2.41	0.54
7:A:2161:U:H2'	7:A:2162:C:C6	2.43	0.54
13:G:55:ARG:NH1	13:G:58:ASP:H	2.03	0.54
28:W:43:THR:HG23	28:W:43:THR:O	2.08	0.54
32:a:256:G:O6	32:a:269:A:N6	2.41	0.54
32:a:322:U:H3	32:a:326:A:H62	1.56	0.54
32:a:719:A:H2'	32:a:720:A:C8	2.43	0.54
32:a:1498:G:N3	32:a:1498:G:H2'	2.22	0.54
36:f:44:GLY:C	36:f:59:ILE:HD12	2.33	0.54
7:A:272:A:C8	7:A:315:G:N2	2.75	0.54
7:A:1235:G:H2'	7:A:1236:G:C8	2.43	0.54
12:F:68:THR:HG21	12:F:96:VAL:HG21	1.89	0.54
16:K:71:ARG:HD3	21:P:71:ARG:HH12	1.72	0.54
16:K:76:TYR:HB2	21:P:72:THR:HB	1.89	0.54
32:a:38:G:O2'	42:l:115:SER:O	2.17	0.54
32:a:40:U:O2'	32:a:538:A:N1	2.40	0.54
32:a:340:C:H2'	32:a:341:C:H6	1.73	0.54
35:e:43:LEU:HD21	35:e:45:ARG:NH1	2.22	0.54
7:A:410:G:N2	26:U:69:SER:OG	2.41	0.54
7:A:974:G:OP2	7:A:974:G:N2	2.26	0.54
8:B:74:G:H5'	27:V:44:HIS:CE1	2.43	0.54
30:Y:7:PRO:HG3	30:Y:56:ARG:HD3	1.90	0.54
32:a:609:C:N4	32:a:612:A:OP2	2.38	0.54
32:a:713:G:O2'	32:a:714:U:H2'	2.08	0.54
38:h:52:GLU:OE1	38:h:52:GLU:N	2.41	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:7:8:LYS:NZ	7:A:1089:G:O6	2.41	0.54
7:A:794:U:OP1	17:L:44:GLN:NE2	2.41	0.54
7:A:1053:U:H2'	7:A:1054:G:C8	2.42	0.54
7:A:1187:G:H2'	7:A:1188:G:C8	2.43	0.54
17:L:123:VAL:HG11	17:L:136:ILE:HD13	1.89	0.54
32:a:126:A:C8	47:q:117:ARG:HB3	2.43	0.54
32:a:143:G:H2'	32:a:144:G:C8	2.42	0.54
33:c:46:LEU:HD23	33:c:46:LEU:O	2.07	0.54
39:i:83:ASP:OD1	39:i:83:ASP:N	2.40	0.54
43:m:96:MET:HB2	43:m:97:PRO:HD2	1.90	0.54
7:A:428:A:H1'	7:A:429:A:C2	2.43	0.54
7:A:503:C:H2'	7:A:504:A:C8	2.42	0.54
7:A:943:C:H2'	7:A:944:C:H6	1.71	0.54
7:A:1545:G:H1	7:A:1823:A:N6	2.05	0.54
12:F:177:LEU:HD12	12:F:182:PHE:CD2	2.43	0.54
30:Y:18:LEU:HD23	30:Y:61:LEU:HD13	1.88	0.54
32:a:1164:U:H2'	32:a:1165:C:C6	2.43	0.54
32:a:1366:G:H5''	37:g:36:LYS:HG3	1.89	0.54
35:e:72:ASP:OD1	35:e:73:GLY:N	2.41	0.54
39:i:104:ILE:O	39:i:108:LEU:HD12	2.08	0.54
7:A:5:A:H2'	7:A:6:A:C8	2.43	0.54
10:D:14:THR:HG22	10:D:15:GLN:N	2.23	0.54
16:K:17:LYS:HE2	16:K:45:ASP:OD2	2.08	0.54
32:a:748:U:OP1	32:a:813:G:O2'	2.25	0.54
32:a:869:A:H4'	38:h:15:ARG:HH22	1.73	0.54
33:c:189:ALA:HB3	33:c:196:ILE:HB	1.90	0.54
34:d:6:GLY:O	34:d:107:ARG:NH1	2.35	0.54
36:f:30:VAL:HG21	36:f:75:LEU:HD22	1.90	0.54
36:f:77:ARG:HB3	36:f:77:ARG:CZ	2.38	0.54
43:m:53:LEU:O	43:m:57:ARG:HB2	2.08	0.54
6:7:15:LYS:HG2	7:A:1131:G:H5''	1.88	0.53
7:A:220:G:N2	7:A:237:U:H4'	2.23	0.53
7:A:873:G:N1	7:A:882:C:H5	1.94	0.53
7:A:1707:A:H2'	7:A:1708:A:H8	1.72	0.53
7:A:2171:G:H5''	51:x:26:VAL:HG21	1.90	0.53
7:A:3018:C:N4	15:J:102:GLU:OE1	2.41	0.53
11:E:169:GLU:O	11:E:173:LYS:HG2	2.08	0.53
17:L:121:VAL:O	17:L:141:GLY:HA3	2.08	0.53
22:Q:72:ASN:O	22:Q:114:ARG:NH2	2.40	0.53
25:T:87:ALA:HB3	25:T:90:SER:HB3	1.90	0.53
29:X:36:VAL:HG12	29:X:63:ARG:HH21	1.73	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:a:1062:C:H2'	32:a:1063:G:C8	2.43	0.53
37:g:103:TRP:HZ3	37:g:138:ARG:CZ	2.15	0.53
42:l:67:ILE:HG12	42:l:97:ILE:HD13	1.90	0.53
47:q:56:ARG:HH12	47:q:58:LYS:HG3	1.74	0.53
7:A:484:G:H2'	7:A:485:C:C6	2.42	0.53
7:A:1039:A:H2'	7:A:1040:A:C8	2.43	0.53
7:A:2566:A:H2'	7:A:2567:A:H8	1.72	0.53
7:A:2627:G:H5''	7:A:2628:U:O4'	2.09	0.53
7:A:3071:U:H2'	7:A:3072:A:H8	1.70	0.53
18:M:48:GLU:HG3	18:M:52:ILE:HD11	1.90	0.53
32:a:915:G:H2'	32:a:916:A:C8	2.44	0.53
32:a:1265:U:H2'	32:a:1266:A:O4'	2.08	0.53
38:h:18:ASN:HD21	38:h:72:ARG:HG3	1.72	0.53
50:t:84:ASN:HB2	50:t:85:LYS:HZ2	1.73	0.53
7:A:1156:A:N1	7:A:1256:U:H5	2.06	0.53
9:C:223:GLY:HA2	9:C:226:MET:HG3	1.90	0.53
12:F:13:GLU:N	12:F:16:ARG:CZ	2.71	0.53
13:G:108:LEU:HD23	13:G:108:LEU:H	1.73	0.53
14:H:6:THR:O	14:H:15:ILE:HG22	2.08	0.53
21:P:46:VAL:HG22	21:P:60:VAL:HG12	1.90	0.53
32:a:492:C:H2'	32:a:493:A:H8	1.71	0.53
34:d:24:GLN:O	34:d:28:LYS:NZ	2.36	0.53
40:j:42:LEU:HD13	40:j:43:PRO:HD2	1.90	0.53
1:0:48:ARG:NH2	7:A:3120:C:O2'	2.37	0.53
7:A:2511:A:H2'	7:A:2512:A:C8	2.44	0.53
7:A:3084:G:H4'	7:A:3085:A:H5'	1.91	0.53
32:a:90:U:H2'	32:a:91:A:H8	1.73	0.53
32:a:472:G:O2'	32:a:474:C:N4	2.42	0.53
32:a:1320:C:H2'	32:a:1321:G:H8	1.72	0.53
37:g:103:TRP:CE3	37:g:138:ARG:NH1	2.76	0.53
7:A:711:A:H2'	7:A:712:A:C8	2.44	0.53
7:A:1216:G:N2	7:A:1219:U:OP1	2.42	0.53
7:A:1386:U:H5''	7:A:1387:G:H5''	1.89	0.53
7:A:2151:A:N6	32:a:1485:A:O2'	2.41	0.53
7:A:2574:A:H61	28:W:43:THR:CG2	2.20	0.53
9:C:23:GLU:OE1	9:C:23:GLU:N	2.28	0.53
12:F:11:LEU:HD13	12:F:108:ASP:HB2	1.89	0.53
32:a:727:U:H2'	32:a:728:C:H6	1.74	0.53
32:a:1427:A:H2'	32:a:1428:G:O4'	2.09	0.53
7:A:123:G:H5''	7:A:1506:U:O2'	2.08	0.53
7:A:1901:G:HO2'	16:K:6:SER:HG	1.57	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:2489:OMG:OP2	18:M:82:ARG:NH1	2.41	0.53
13:G:70:ARG:NH1	13:G:74:SER:HB3	2.23	0.53
24:S:98:ARG:HG3	24:S:104:PHE:CD2	2.44	0.53
25:T:18:GLU:CD	25:T:18:GLU:H	2.17	0.53
26:U:10:LEU:HD11	26:U:18:GLY:HA2	1.90	0.53
32:a:505:C:H2'	32:a:506:G:H8	1.73	0.53
32:a:1225:G:O5'	39:i:140:LYS:NZ	2.40	0.53
42:l:55:VAL:CG1	42:l:57:LEU:HD13	2.38	0.53
43:m:72:ARG:HH11	43:m:75:GLN:NE2	2.06	0.53
7:A:1281:G:H21	22:Q:77:ASN:ND2	2.07	0.53
7:A:2583:G:N3	7:A:2619:C:H2'	2.24	0.53
34:d:168:VAL:HG22	34:d:175:VAL:HG22	1.90	0.53
8:B:85:U:H2'	8:B:86:C:C6	2.43	0.53
9:C:35:ARG:NH2	9:C:64:MET:SD	2.82	0.53
11:E:52:ARG:HD2	11:E:104:TYR:CD1	2.44	0.53
15:J:19:ASP:HA	15:J:57:ILE:HD12	1.89	0.53
15:J:145:VAL:HG21	22:Q:70:ARG:HB3	1.90	0.53
32:a:323:G:N2	32:a:325:G:H3'	2.24	0.53
32:a:340:C:H2'	32:a:341:C:C6	2.44	0.53
32:a:444:U:H2'	32:a:445:C:C6	2.43	0.53
40:j:22:ALA:O	40:j:26:VAL:HG22	2.08	0.53
47:q:114:MET:HE3	47:q:128:VAL:HG21	1.89	0.53
7:A:307:U:HO2'	14:H:41:ARG:NH1	2.07	0.53
7:A:780:G:O2'	7:A:783:U:OP1	2.22	0.53
7:A:872:A:OP1	10:D:140:GLY:HA2	2.08	0.53
7:A:1122:G:OP2	22:Q:51:ARG:NH2	2.37	0.53
7:A:1917:C:H2'	7:A:1918:C:C6	2.43	0.53
7:A:2550:U:O2	12:F:44:ASN:ND2	2.32	0.53
21:P:19:PHE:O	21:P:49:ARG:NH1	2.42	0.53
32:a:374:U:O2'	46:p:7:LEU:O	2.27	0.53
32:a:1384:U:H2'	32:a:1385:G:H8	1.72	0.53
41:k:36:THR:HG23	41:k:38:ASN:H	1.73	0.53
44:n:46:GLU:OE1	44:n:47:MET:N	2.41	0.53
45:o:18:HIS:O	45:o:20:THR:N	2.41	0.53
7:A:2431:A:H2'	7:A:2432:U:C6	2.44	0.53
10:D:35:VAL:HG23	10:D:37:THR:HG23	1.91	0.53
13:G:9:ILE:HB	13:G:51:ILE:HB	1.90	0.53
21:P:58:PHE:CE1	21:P:73:PHE:HB2	2.44	0.53
25:T:91:ARG:HG3	25:T:91:ARG:NH1	2.24	0.53
32:a:28:C:H4'	32:a:515:G:N3	2.24	0.53
32:a:534:U:OP1	34:d:14:ARG:HG3	2.09	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:a:716:G:OP1	32:a:846:G:N2	2.33	0.53
32:a:1310:A:H1'	49:s:37:ARG:HH21	1.73	0.53
32:a:1365:U:OP1	39:i:94:SER:OG	2.27	0.53
32:a:1517:C:H2'	32:a:1518:G:H8	1.71	0.53
43:m:52:GLN:O	43:m:56:LEU:HD23	2.09	0.53
7:A:580:A:H2'	7:A:581:G:O4'	2.10	0.52
7:A:2887:U:H2'	7:A:2888:C:C6	2.44	0.52
7:A:2985:G:O6	7:A:2993:C:H5''	2.09	0.52
21:P:100:ARG:HG3	21:P:101:GLU:OE2	2.09	0.52
23:R:62:THR:H	23:R:102:GLY:HA3	1.73	0.52
27:V:8:GLN:HA	27:V:66:THR:HG23	1.91	0.52
32:a:220:G:H2'	32:a:221:U:C6	2.44	0.52
32:a:1051:U:H2'	32:a:1052:G:C8	2.44	0.52
33:c:110:SER:O	33:c:204:LYS:NZ	2.42	0.52
51:x:11:ARG:HG2	51:x:11:ARG:NH1	2.21	0.52
7:A:1083:G:H5''	18:M:87:LYS:HD3	1.90	0.52
7:A:1184:G:H2'	7:A:1185:G:C8	2.44	0.52
7:A:2231:U:H4'	10:D:138:SER:HB3	1.90	0.52
8:B:2:U:O4	8:B:4:C:N4	2.41	0.52
10:D:37:THR:HG22	10:D:75:VAL:HG21	1.90	0.52
12:F:97:THR:HG22	12:F:99:ARG:HE	1.73	0.52
12:F:143:ALA:HB1	43:m:3:ARG:HD2	1.91	0.52
16:K:35:ILE:HD11	16:K:64:ARG:HA	1.91	0.52
32:a:1234:G:O6	32:a:1287:U:O4	2.27	0.52
32:a:1237:G:H2'	32:a:1238:G:C8	2.44	0.52
32:a:1365:U:H2'	32:a:1366:G:O4'	2.09	0.52
32:a:1426:A:OP2	32:a:1460:G:N1	2.42	0.52
36:f:53:ALA:HB3	36:f:86:LEU:HD23	1.90	0.52
43:m:15:MET:HE1	43:m:45:THR:N	2.25	0.52
7:A:349:G:H2'	7:A:350:A:H8	1.74	0.52
7:A:1299:C:H2'	7:A:1300:C:C6	2.45	0.52
7:A:2567:A:H2'	7:A:2568:U:C6	2.45	0.52
12:F:52:ARG:HG2	12:F:52:ARG:HH11	1.74	0.52
13:G:84:TYR:CE2	13:G:139:LYS:HB2	2.43	0.52
26:U:13:SER:HA	26:U:17:LYS:HE3	1.91	0.52
32:a:748:U:H2'	32:a:749:G:O4'	2.08	0.52
33:c:113:GLN:O	33:c:117:GLN:NE2	2.31	0.52
39:i:29:THR:OG1	39:i:40:VAL:HB	2.09	0.52
50:t:22:LYS:CA	50:t:25:LYS:HZ3	2.22	0.52
4:3:12:LYS:NZ	7:A:251:C:O2	2.38	0.52
4:3:28:ASN:O	4:3:36:LYS:NZ	2.34	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:441:U:H2'	7:A:442:G:H8	1.74	0.52
7:A:682:C:H2'	7:A:683:C:C6	2.43	0.52
7:A:1495:G:OP1	29:X:2:ALA:N	2.43	0.52
16:K:68:GLU:HB3	16:K:78:LYS:HD3	1.90	0.52
16:K:110:ARG:N	16:K:110:ARG:HD2	2.24	0.52
19:N:101:GLU:HG3	24:S:48:TRP:HZ3	1.75	0.52
26:U:24:LEU:HD21	26:U:36:GLU:HG3	1.91	0.52
27:V:129:ILE:HG21	27:V:168:LEU:HD11	1.91	0.52
32:a:156:A:H2'	32:a:157:A:O4'	2.09	0.52
32:a:297:A:H2'	32:a:298:G:C8	2.43	0.52
32:a:362:A:H2'	32:a:363:A:C8	2.44	0.52
32:a:616:G:H2'	32:a:617:U:C6	2.45	0.52
32:a:1144:G:H2'	32:a:1145:A:H8	1.75	0.52
32:a:1264:U:H2'	32:a:1265:U:C6	2.44	0.52
33:c:48:ARG:NH1	33:c:48:ARG:HA	2.24	0.52
43:m:14:ARG:NH2	43:m:16:GLU:HB3	2.25	0.52
7:A:1672:A:H2'	7:A:1673:A:H8	1.74	0.52
8:B:39:U:N3	8:B:43:G:OP2	2.32	0.52
13:G:95:TYR:HE2	13:G:161:LYS:HB3	1.73	0.52
15:J:69:LEU:HD22	15:J:90:GLY:HA2	1.91	0.52
32:a:519:C:H2'	32:a:520:G:C8	2.44	0.52
41:k:121:SER:OG	41:k:122:ASP:N	2.39	0.52
42:l:50:ARG:HD2	42:l:66:TYR:OH	2.09	0.52
7:A:83:G:P	26:U:94:ARG:HH21	2.33	0.52
7:A:273:A:C2	7:A:274:A:C8	2.97	0.52
7:A:682:C:H4'	22:Q:31:LEU:HD13	1.91	0.52
7:A:1186:A:N6	7:A:1216:G:OP2	2.42	0.52
7:A:2020:A:H1'	7:A:2176:A:N6	2.24	0.52
13:G:30:LYS:HG3	13:G:31:GLY:H	1.74	0.52
18:M:122:ILE:HG23	18:M:129:ALA:HB3	1.91	0.52
28:W:11:ARG:O	28:W:14:ARG:NH2	2.31	0.52
32:a:192:A:H61	47:q:57:ARG:HE	1.57	0.52
32:a:653:C:O2'	32:a:827:G:OP1	2.24	0.52
32:a:675:U:O2'	41:k:51:VAL:O	2.18	0.52
32:a:894:A:O2'	32:a:1506:A:OP1	2.23	0.52
34:d:183:ARG:HH22	34:d:188:VAL:HG22	1.74	0.52
38:h:41:LYS:HE2	38:h:48:ASP:HA	1.91	0.52
40:j:63:GLU:HB3	40:j:65:PHE:CE1	2.45	0.52
47:q:64:VAL:HG21	47:q:73:ILE:HD11	1.92	0.52
5:4:19:ARG:NH2	7:A:2994:U:OP2	2.39	0.52
7:A:2544:C:N4	12:F:46:GLY:O	2.42	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:3044:A:H2'	7:A:3045:A:C8	2.45	0.52
12:F:11:LEU:HD22	12:F:108:ASP:HB2	1.91	0.52
13:G:91:PHE:HE1	13:G:164:ARG:HB2	1.74	0.52
22:Q:98:ILE:HG22	23:R:16:LYS:HE3	1.91	0.52
26:U:40:ARG:HH12	26:U:62:GLN:C	2.18	0.52
27:V:86:ILE:HG22	27:V:87:ARG:HD3	1.92	0.52
32:a:74:A:H61	32:a:94:C:H1'	1.75	0.52
32:a:1515:U:H2'	32:a:1516:G:H8	1.74	0.52
34:d:190:LEU:HD12	34:d:191:THR:N	2.25	0.52
35:e:146:LEU:HD22	35:e:154:ILE:HG21	1.91	0.52
49:s:2:PRO:HD2	49:s:7:LYS:HG3	1.91	0.52
5:4:13:LYS:HA	5:4:15:ARG:HH22	1.74	0.52
7:A:449:A:H2'	7:A:450:U:C6	2.45	0.52
7:A:762:A:H2'	7:A:763:C:C6	2.45	0.52
7:A:1030:C:H2'	7:A:1031:G:O4'	2.09	0.52
12:F:63:ASP:OD1	12:F:64:LEU:N	2.41	0.52
25:T:14:PRO:HD3	30:Y:34:PHE:CD1	2.45	0.52
30:Y:34:PHE:O	30:Y:38:THR:HG23	2.09	0.52
32:a:23:U:H2'	32:a:24:G:O4'	2.09	0.52
32:a:895:G:H2'	32:a:896:G:H8	1.74	0.52
32:a:1428:G:H2'	32:a:1429:C:C6	2.45	0.52
32:a:1503:C:OP1	51:x:11:ARG:HB2	2.08	0.52
37:g:64:ARG:HH11	37:g:64:ARG:C	2.17	0.52
46:p:22:VAL:HG21	46:p:59:TRP:CG	2.45	0.52
46:p:71:LEU:HG	46:p:75:LYS:NZ	2.24	0.52
7:A:474:C:O2'	7:A:477:G:N2	2.42	0.52
7:A:700:G:O2'	17:L:13:GLY:O	2.25	0.52
7:A:2485:A:H2'	7:A:2486:C:H6	1.75	0.52
11:E:186:PRO:HG3	11:E:206:ALA:HB1	1.92	0.52
12:F:13:GLU:CA	12:F:16:ARG:CZ	2.88	0.52
12:F:142:GLN:HE22	12:F:157:ARG:C	2.18	0.52
20:O:73:LYS:O	20:O:77:VAL:HG13	2.09	0.52
32:a:504:A:H2'	32:a:505:C:C6	2.45	0.52
32:a:516:C:N4	32:a:517:C:H41	2.08	0.52
32:a:1489:C:H2'	32:a:1490:G:O4'	2.10	0.52
47:q:72:THR:HG23	47:q:123:LYS:HZ3	1.74	0.52
7:A:1188:G:N2	7:A:1209:C:O2	2.43	0.52
7:A:1467:A:OP2	25:T:67:LYS:HE3	2.10	0.52
8:B:6:G:N3	8:B:6:G:H2'	2.25	0.52
8:B:54:C:O2'	12:F:31:ASN:ND2	2.36	0.52
9:C:2:ALA:HB3	9:C:200:GLU:HG3	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:K:77:ILE:HD13	21:P:71:ARG:HD3	1.91	0.52
25:T:67:LYS:HE2	25:T:76:ARG:HH21	1.75	0.52
29:X:23:ARG:HH11	29:X:23:ARG:HG2	1.74	0.52
32:a:592:U:H2'	32:a:593:U:C6	2.44	0.52
32:a:668:U:O2	32:a:768:A:O2'	2.28	0.52
32:a:815:U:H2'	32:a:816:A:C8	2.45	0.52
32:a:1170:G:OP2	39:i:120:LYS:NZ	2.37	0.52
39:i:73:LEU:HG	39:i:79:VAL:HA	1.90	0.52
47:q:60:ARG:HB3	47:q:77:LEU:HD11	1.92	0.52
50:t:56:ARG:NH1	50:t:60:LYS:HB2	2.23	0.52
7:A:479:A:H4'	7:A:480:A:H5'	1.91	0.51
7:A:1098:G:H2'	7:A:1099:U:C6	2.45	0.51
7:A:1771:G:H1	7:A:1776:A:H61	1.57	0.51
7:A:1903:A:O2'	7:A:1909:G:N7	2.34	0.51
7:A:2477:G:H5'	9:C:251:GLY:HA3	1.92	0.51
7:A:2750:C:H2'	7:A:2751:G:O4'	2.10	0.51
8:B:27:C:OP1	20:O:38:SER:OG	2.20	0.51
9:C:106:ILE:O	9:C:108:PRO:HD3	2.09	0.51
21:P:8:ASP:OD1	21:P:54:ILE:HB	2.10	0.51
32:a:134:U:O2	32:a:224:G:N2	2.34	0.51
32:a:1013:G:H2'	32:a:1014:G:O4'	2.09	0.51
32:a:1060:C:H2'	32:a:1061:U:O4'	2.10	0.51
32:a:1359:C:H2'	32:a:1360:U:C6	2.45	0.51
33:c:130:ARG:HH22	33:c:133:MET:HB2	1.76	0.51
34:d:63:MET:HB3	34:d:66:GLN:CD	2.35	0.51
43:m:57:ARG:HG2	43:m:57:ARG:NH1	2.25	0.51
7:A:2033:G:O2'	9:C:181:GLU:OE2	2.20	0.51
7:A:2886:G:H2'	7:A:2887:U:C6	2.45	0.51
7:A:2989:G:H4'	13:G:4:ILE:HG12	1.91	0.51
11:E:160:VAL:HG12	11:E:199:ASP:HB2	1.93	0.51
15:J:114:LEU:O	15:J:118:ILE:HD13	2.10	0.51
32:a:70:C:H2'	32:a:71:G:C8	2.44	0.51
32:a:1007:G:N2	32:a:1211:A:N3	2.58	0.51
7:A:668:U:H2'	7:A:669:U:O4'	2.11	0.51
7:A:978:C:H2'	7:A:979:A:C8	2.45	0.51
7:A:1544:G:H2'	7:A:1545:G:C8	2.45	0.51
12:F:81:ILE:HG22	12:F:84:PHE:H	1.75	0.51
16:K:12:ASP:CG	16:K:14:THR:HG23	2.36	0.51
21:P:75:VAL:HG23	21:P:76:HIS:ND1	2.25	0.51
22:Q:14:ARG:HA	22:Q:32:TYR:CD1	2.46	0.51
32:a:108:G:H2'	32:a:109:U:H6	1.75	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:a:322:U:H2'	32:a:323:G:O4'	2.10	0.51
32:a:726:G:H1'	48:r:73:GLU:OE1	2.10	0.51
7:A:1866:G:H1'	7:A:1870:A:N6	2.25	0.51
7:A:1884:G:O2'	19:N:106:ASP:OD2	2.23	0.51
7:A:2431:A:H2'	7:A:2432:U:H6	1.75	0.51
7:A:2471:U:H2'	7:A:2472:G:C8	2.46	0.51
12:F:125:SER:HB3	12:F:128:GLN:HG3	1.93	0.51
15:J:13:ARG:NH1	15:J:49:ASP:O	2.40	0.51
26:U:98:SER:O	26:U:102:GLY:HA2	2.10	0.51
32:a:192:A:N6	47:q:57:ARG:HE	2.09	0.51
32:a:200:U:H2'	32:a:201:G:C8	2.45	0.51
32:a:348:A:N6	32:a:349:G:O6	2.44	0.51
32:a:901:A:H2'	32:a:902:A:H8	1.75	0.51
32:a:1071:A:H5''	35:e:52:VAL:HG11	1.93	0.51
32:a:1300:C:H2'	32:a:1301:G:C8	2.45	0.51
7:A:65:G:H1'	25:T:71:THR:HG21	1.92	0.51
7:A:221:A:N3	7:A:236:U:O2'	2.35	0.51
7:A:1038:A:H2'	7:A:1041:C:C5	2.46	0.51
7:A:3059:A:H3'	7:A:3060:C:O2	2.11	0.51
10:D:126:THR:HB	10:D:132:PHE:CD2	2.46	0.51
12:F:12:LYS:C	12:F:16:ARG:NE	2.68	0.51
31:Z:22:SER:O	31:Z:26:LEU:HD22	2.10	0.51
33:c:190:LYS:HA	33:c:195:ARG:HH11	1.74	0.51
45:o:8:LYS:HB2	45:o:9:LYS:NZ	2.25	0.51
47:q:115:GLU:HA	47:q:125:TRP:HE3	1.76	0.51
50:t:53:SER:O	50:t:57:LYS:HG3	2.11	0.51
7:A:945:C:H2'	7:A:946:C:O2	2.11	0.51
7:A:1203:G:H2'	7:A:1204:C:C6	2.45	0.51
7:A:1484:A:H2'	7:A:1485:A:C8	2.45	0.51
9:C:96:HIS:CE1	9:C:102:LYS:HE2	2.46	0.51
15:J:101:VAL:O	15:J:105:ILE:HG12	2.10	0.51
32:a:36:A:H2'	32:a:37:C:C6	2.45	0.51
32:a:488:G:H2'	32:a:489:A:C8	2.45	0.51
32:a:709:A:OP2	32:a:711:C:N4	2.42	0.51
32:a:729:U:P	36:f:92:ARG:HD3	2.51	0.51
33:c:40:ARG:NH2	44:n:26:LYS:HG2	2.25	0.51
46:p:22:VAL:HG21	46:p:59:TRP:CD2	2.45	0.51
50:t:68:HIS:ND1	50:t:69:LYS:N	2.58	0.51
4:3:29:ARG:NH2	7:A:2656:G:OP2	2.39	0.51
7:A:1157:A:H2'	7:A:1158:A:C8	2.46	0.51
7:A:1503:U:O2'	7:A:2450:A:N3	2.44	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:1543:U:H2'	7:A:1544:G:C8	2.46	0.51
7:A:1667:G:H2'	7:A:1668:C:H6	1.74	0.51
9:C:124:ASP:O	9:C:129:ASN:ND2	2.43	0.51
9:C:163:ILE:CG2	9:C:175:LEU:HB2	2.41	0.51
32:a:451:A:H62	46:p:49:ILE:HD12	1.75	0.51
32:a:593:U:H2'	32:a:594:C:C6	2.46	0.51
32:a:1112:C:H2'	32:a:1113:A:C8	2.45	0.51
32:a:1118:G:N2	32:a:1137:G:H1	2.06	0.51
37:g:32:LEU:HB3	37:g:33:LYS:NZ	2.25	0.51
40:j:19:ASP:OD1	40:j:20:ALA:N	2.43	0.51
46:p:79:ASP:HA	46:p:82:LYS:HG2	1.92	0.51
49:s:19:VAL:HG21	49:s:44:PHE:HE1	1.75	0.51
7:A:446:A:O2'	7:A:447:G:O4'	2.29	0.51
7:A:651:G:H2'	7:A:652:G:C8	2.46	0.51
7:A:1200:G:H2'	7:A:1201:C:O4'	2.11	0.51
7:A:1242:U:H5'	13:G:3:ARG:HH22	1.75	0.51
7:A:1745:C:H4'	7:A:1747:A:C5	2.46	0.51
7:A:2636:C:H2'	7:A:2637:A:C8	2.46	0.51
13:G:55:ARG:HD3	13:G:66:HIS:HB2	1.92	0.51
13:G:59:GLU:O	13:G:63:ARG:HG3	2.11	0.51
24:S:17:ALA:HB2	24:S:60:VAL:HG22	1.93	0.51
34:d:52:GLU:OE2	34:d:195:ILE:HD12	2.10	0.51
38:h:39:ILE:HG21	38:h:105:ILE:HG13	1.93	0.51
40:j:66:GLU:HB2	44:n:57:GLN:HE22	1.76	0.51
42:l:46:ASN:ND2	42:l:89:ASP:OD2	2.44	0.51
48:r:65:ALA:O	48:r:69:LYS:HG3	2.11	0.51
49:s:12:ASP:OD2	49:s:35:SER:OG	2.26	0.51
6:7:17:ASN:OD1	6:7:21:ARG:NE	2.43	0.51
7:A:292:C:H2'	7:A:339:C:C5	2.46	0.51
7:A:2302:C:H2'	7:A:2303:C:H6	1.75	0.51
7:A:2707:A:H4'	18:M:56:ARG:HG3	1.93	0.51
7:A:2978:A:H2'	7:A:2979:A:C8	2.46	0.51
10:D:138:SER:OG	10:D:139:HIS:N	2.43	0.51
16:K:105:GLU:O	16:K:109:LYS:HG3	2.10	0.51
32:a:498:C:OP2	32:a:499:C:O2'	2.21	0.51
32:a:1307:U:O2'	32:a:1352:A:N3	2.37	0.51
50:t:56:ARG:HH12	50:t:60:LYS:HB2	1.76	0.51
2:1:16:GLU:HG2	2:1:50:ALA:O	2.10	0.51
7:A:524:C:H2'	7:A:525:C:H5'	1.93	0.51
7:A:748:A:H2'	7:A:750:A:C8	2.46	0.51
7:A:849:C:H2'	7:A:850:G:H8	1.76	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:1428:C:OP1	7:A:2948:C:H4'	2.11	0.51
32:a:1028:C:H2'	32:a:1029:C:C6	2.46	0.51
37:g:88:PRO:HG2	37:g:152:ALA:HB2	1.93	0.51
7:A:209:A:H2'	7:A:210:C:O4'	2.11	0.50
7:A:366:U:H2'	7:A:367:G:H8	1.75	0.50
7:A:1130:A:H2'	7:A:1131:G:O4'	2.11	0.50
7:A:1945:G:H4'	7:A:3093:U:O2	2.11	0.50
7:A:3037:G:N2	7:A:3128:A:OP1	2.39	0.50
13:G:104:LEU:HG	13:G:124:PHE:CD2	2.40	0.50
32:a:97:G:H4'	32:a:148:A:H4'	1.93	0.50
32:a:982:G:H2'	32:a:983:U:O4'	2.11	0.50
32:a:1306:C:H2'	32:a:1307:U:C6	2.46	0.50
34:d:63:MET:HE2	34:d:63:MET:HA	1.93	0.50
36:f:33:ASP:OD1	36:f:33:ASP:N	2.38	0.50
37:g:75:VAL:HG22	37:g:86:GLN:HG2	1.93	0.50
37:g:117:ILE:HG23	37:g:118:GLU:H	1.76	0.50
38:h:131:VAL:HG13	38:h:132:TRP:H	1.76	0.50
45:o:4:THR:O	45:o:8:LYS:HG3	2.11	0.50
46:p:59:TRP:HB3	46:p:64:ALA:HB3	1.93	0.50
12:F:76:ARG:HH12	12:F:91:PRO:HD3	1.77	0.50
27:V:33:ALA:HA	27:V:93:ALA:O	2.10	0.50
32:a:12:G:OP2	35:e:157:LYS:NZ	2.35	0.50
32:a:134:U:H2'	32:a:135:G:H8	1.76	0.50
32:a:142:G:H2'	32:a:143:G:C8	2.46	0.50
32:a:1115:G:N2	32:a:1116:U:O4	2.44	0.50
33:c:63:VAL:HB	33:c:96:LYS:HE2	1.93	0.50
34:d:52:GLU:CD	34:d:194:LEU:HB2	2.36	0.50
38:h:6:PRO:HA	38:h:9:ASP:HB3	1.93	0.50
41:k:82:ARG:HA	41:k:85:GLN:OE1	2.11	0.50
47:q:79:ASP:OD1	47:q:80:ARG:N	2.44	0.50
50:t:76:LYS:HA	50:t:79:LEU:CD2	2.41	0.50
5:4:7:VAL:HA	5:4:34:GLN:HE21	1.76	0.50
7:A:2829:C:H2'	7:A:2830:G:C8	2.46	0.50
9:C:156:ALA:HB2	9:C:163:ILE:HD12	1.92	0.50
24:S:92:ALA:HB3	24:S:108:ARG:HB2	1.92	0.50
28:W:20:ARG:O	28:W:24:LYS:NZ	2.34	0.50
32:a:103:A:H5''	32:a:105:C:C5	2.46	0.50
32:a:861:C:H2'	32:a:862:A:O4'	2.11	0.50
32:a:966:G:OP1	40:j:59:LYS:HE3	2.11	0.50
32:a:1197:U:O3'	33:c:195:ARG:NH2	2.44	0.50
37:g:116:MET:HB3	37:g:119:ARG:HH21	1.77	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:h:126:GLU:HG3	38:h:128:LEU:HD23	1.93	0.50
47:q:97:LYS:O	47:q:125:TRP:HB2	2.11	0.50
48:r:32:TYR:H	48:r:32:TYR:HD1	1.57	0.50
7:A:1194:U:O2'	7:A:1202:A:N1	2.43	0.50
7:A:3055:C:O2'	10:D:201:ARG:HD2	2.11	0.50
10:D:14:THR:HG22	10:D:15:GLN:H	1.77	0.50
13:G:72:LEU:O	13:G:76:LEU:HD22	2.11	0.50
25:T:20:SER:OG	25:T:30:THR:CG2	2.59	0.50
32:a:132:C:H2'	32:a:133:C:H6	1.76	0.50
32:a:144:G:H1	32:a:170:A:H61	1.58	0.50
32:a:204:G:H2'	32:a:205:G:C8	2.47	0.50
32:a:391:C:OP2	46:p:9:ARG:NH2	2.44	0.50
32:a:451:A:N7	46:p:47:SER:OG	2.43	0.50
32:a:582:U:H2'	32:a:583:G:H8	1.77	0.50
32:a:874:G:P	42:l:9:ARG:HH22	2.34	0.50
35:e:171:THR:O	35:e:175:LEU:HG	2.12	0.50
38:h:87:VAL:HG13	38:h:127:VAL:HG13	1.92	0.50
44:n:41:ARG:HG3	44:n:42:ILE:HG13	1.92	0.50
45:o:3:LEU:HD11	45:o:34:LYS:HG3	1.92	0.50
1:0:14:ARG:NH2	7:A:606:G:OP2	2.44	0.50
7:A:292:C:H2'	7:A:339:C:H5	1.77	0.50
7:A:705:A:H1'	7:A:785:G:N2	2.27	0.50
7:A:773:C:H2'	7:A:774:G:O4'	2.11	0.50
7:A:828:A:H4'	7:A:1869:C:C4	2.47	0.50
7:A:1485:A:H2'	7:A:1486:G:O4'	2.11	0.50
9:C:217:LYS:NZ	9:C:217:LYS:HB3	2.27	0.50
12:F:19:ILE:HG23	12:F:179:ALA:HB1	1.93	0.50
13:G:42:LYS:HB2	13:G:54:THR:HG22	1.93	0.50
15:J:71:HIS:O	15:J:73:MET:HG2	2.11	0.50
32:a:291:G:C5	32:a:292:G:H1'	2.47	0.50
32:a:1299:U:H3	32:a:1322:U:H3	1.59	0.50
33:c:112:ALA:HB2	33:c:202:ILE:HD12	1.93	0.50
34:d:15:LEU:HD13	34:d:55:LYS:HA	1.94	0.50
40:j:63:GLU:HB3	40:j:65:PHE:HE1	1.77	0.50
41:k:96:VAL:HG21	41:k:103:ARG:HG3	1.92	0.50
7:A:306:G:H2'	7:A:307:U:O4'	2.11	0.50
7:A:1270:U:O2	7:A:1272:A:N6	2.45	0.50
9:C:145:VAL:HB	9:C:191:ALA:HB2	1.93	0.50
22:Q:74:ILE:HG21	22:Q:110:VAL:HG13	1.93	0.50
32:a:361:G:OP2	42:l:31:ARG:NH2	2.44	0.50
32:a:753:A:H2'	32:a:754:G:C8	2.47	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:a:904:U:H2'	32:a:905:C:C6	2.47	0.50
32:a:970:A:N6	32:a:1216:U:O4'	2.45	0.50
7:A:84:A:N1	7:A:99:G:O2'	2.40	0.50
7:A:688:A:N1	7:A:938:G:O2'	2.37	0.50
7:A:979:A:H2'	7:A:980:C:C6	2.46	0.50
7:A:1340:A:O2'	7:A:1368:A:N1	2.34	0.50
7:A:1714:U:O4	7:A:1753:G:H2'	2.12	0.50
10:D:26:VAL:HG21	10:D:193:LEU:HG	1.94	0.50
12:F:29:TYR:HB3	12:F:34:GLN:HB2	1.94	0.50
25:T:65:LYS:O	25:T:76:ARG:HG2	2.11	0.50
32:a:134:U:H2'	32:a:135:G:C8	2.46	0.50
32:a:262:A:H2'	32:a:263:C:C6	2.46	0.50
32:a:429:A:H4'	34:d:7:PRO:HG3	1.92	0.50
32:a:497:G:H2'	32:a:498:C:C6	2.46	0.50
32:a:775:A:H2'	32:a:776:G:C8	2.46	0.50
32:a:1242:A:N3	32:a:1363:G:O2'	2.43	0.50
33:c:59:THR:HB	33:c:60:ARG:NH1	2.27	0.50
33:c:133:MET:O	33:c:137:ILE:HG12	2.11	0.50
42:l:66:TYR:O	42:l:97:ILE:HD12	2.11	0.50
7:A:620:C:H4'	7:A:621:G:C8	2.47	0.50
7:A:718:G:O6	11:E:182:HIS:NE2	2.45	0.50
8:B:48:C:H5''	20:O:73:LYS:HZ1	1.77	0.50
16:K:115:ILE:HG23	16:K:121:VAL:HG21	1.93	0.50
32:a:38:G:H2'	32:a:39:C:C6	2.47	0.50
32:a:451:A:H4'	32:a:452:G:OP2	2.12	0.50
32:a:1106:U:H1'	44:n:61:TRP:HA	1.93	0.50
32:a:1116:U:O2'	32:a:1117:U:O5'	2.28	0.50
37:g:60:ILE:HD13	37:g:63:LYS:NZ	2.27	0.50
38:h:41:LYS:NZ	38:h:48:ASP:HA	2.26	0.50
7:A:678:U:H2'	7:A:679:G:C8	2.46	0.50
7:A:871:U:H2'	7:A:872:A:H8	1.71	0.50
7:A:1331:C:H2'	7:A:1332:C:C6	2.47	0.50
7:A:1942:A:H2'	7:A:1943:C:H6	1.76	0.50
7:A:2127:A:H2'	7:A:2128:A:H8	1.75	0.50
7:A:2156:A:O2'	7:A:2157:A:N7	2.42	0.50
10:D:57:ILE:HD12	10:D:79:ARG:HE	1.76	0.50
12:F:20:ARG:HD2	12:F:35:ILE:HG21	1.93	0.50
32:a:69:A:H5''	32:a:210:C:O2'	2.12	0.50
32:a:397:C:H2'	32:a:398:G:H8	1.76	0.50
32:a:1143:U:O2'	32:a:1144:G:H5''	2.12	0.50
40:j:46:LYS:HZ2	40:j:66:GLU:HB3	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:k:28:HIS:HD2	41:k:91:LYS:HG3	1.76	0.50
45:o:18:HIS:C	45:o:20:THR:H	2.20	0.50
1:0:14:ARG:HB3	7:A:16:G:H5''	1.93	0.49
7:A:760:A:H2'	7:A:761:C:C6	2.47	0.49
7:A:1548:G:O2'	7:A:1820:A:N1	2.42	0.49
7:A:2884:C:H2'	7:A:2885:U:O4'	2.11	0.49
23:R:52:ASP:O	23:R:56:LEU:HG	2.12	0.49
26:U:79:LYS:HE2	26:U:79:LYS:HA	1.94	0.49
32:a:136:C:H1'	47:q:45:LYS:HE2	1.92	0.49
32:a:625:C:H2'	32:a:626:G:H8	1.77	0.49
32:a:869:A:H2'	32:a:870:C:C6	2.47	0.49
33:c:35:ASP:O	33:c:38:ILE:HG13	2.11	0.49
34:d:14:ARG:NH2	34:d:33:PRO:O	2.45	0.49
37:g:41:ARG:HH21	37:g:42:ILE:HG12	1.75	0.49
7:A:1525:U:H2'	7:A:1526:A:O4'	2.12	0.49
7:A:2994:U:H1'	7:A:2995:A:H5''	1.94	0.49
21:P:19:PHE:CD2	21:P:46:VAL:HG21	2.47	0.49
25:T:12:LEU:O	30:Y:33:ARG:HG2	2.12	0.49
32:a:104:A:H5'	32:a:105:C:H5	1.75	0.49
32:a:617:U:H2'	32:a:618:G:H8	1.77	0.49
32:a:631:A:H2'	32:a:632:U:C6	2.47	0.49
32:a:943:U:H2'	32:a:944:G:C8	2.47	0.49
37:g:112:ARG:CZ	37:g:112:ARG:HA	2.42	0.49
38:h:32:LEU:HD12	38:h:112:LEU:HD11	1.93	0.49
39:i:64:VAL:HA	39:i:67:GLN:OE1	2.11	0.49
41:k:45:THR:HG22	41:k:51:VAL:CG2	2.41	0.49
49:s:41:ILE:O	49:s:43:ASP:N	2.39	0.49
50:t:46:LYS:HA	50:t:49:GLU:HG3	1.95	0.49
7:A:1282:C:H5''	22:Q:80:ILE:CG2	2.42	0.49
9:C:137:PRO:O	9:C:140:THR:HG22	2.12	0.49
11:E:30:LEU:O	11:E:30:LEU:HD13	2.11	0.49
31:Z:6:ILE:HG23	31:Z:56:VAL:HG12	1.94	0.49
32:a:322:U:O4	32:a:326:A:N7	2.46	0.49
32:a:1306:C:H2'	32:a:1307:U:H6	1.78	0.49
34:d:52:GLU:HG3	34:d:194:LEU:HD12	1.94	0.49
36:f:25:THR:HA	36:f:28:ASN:HD21	1.77	0.49
39:i:62:ASN:HD22	39:i:65:HIS:CE1	2.31	0.49
47:q:60:ARG:HE	47:q:77:LEU:HD11	1.77	0.49
7:A:622:U:O2'	22:Q:49:ASP:OD2	2.27	0.49
7:A:1741:C:H2'	7:A:1742:U:C6	2.47	0.49
7:A:2530:U:H2'	7:A:2531:C:C6	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:F:45:MET:HA	12:F:45:MET:HE3	1.94	0.49
13:G:76:LEU:O	13:G:80:VAL:HG22	2.12	0.49
16:K:10:VAL:HG12	16:K:12:ASP:OD1	2.12	0.49
19:N:87:PHE:CE2	19:N:94:TYR:HB3	2.47	0.49
27:V:81:LEU:HD23	27:V:83:ILE:HD11	1.93	0.49
32:a:599:A:H2'	32:a:600:A:O4'	2.11	0.49
32:a:759:A:H4'	32:a:1516:G:N2	2.27	0.49
35:e:68:VAL:C	35:e:69:ILE:HD12	2.36	0.49
37:g:112:ARG:HA	37:g:112:ARG:NE	2.28	0.49
45:o:15:TYR:OH	45:o:84:ARG:HG2	2.12	0.49
7:A:441:U:H2'	7:A:442:G:C8	2.46	0.49
7:A:849:C:H2'	7:A:850:G:C8	2.47	0.49
7:A:993:G:H2'	7:A:994:C:C6	2.48	0.49
7:A:1157:A:N6	7:A:1254:G:H2'	2.28	0.49
7:A:1826:C:H2'	7:A:1827:A:H8	1.78	0.49
11:E:158:LYS:H	11:E:158:LYS:HZ3	1.61	0.49
13:G:123:THR:C	13:G:124:PHE:HD1	2.20	0.49
17:L:36:THR:HG22	17:L:37:LYS:N	2.27	0.49
18:M:68:ILE:HD11	18:M:101:ARG:HG2	1.93	0.49
19:N:33:ARG:HB2	19:N:114:GLU:HB2	1.94	0.49
31:Z:15:ALA:O	31:Z:20:ARG:NH1	2.45	0.49
32:a:339:U:H2'	32:a:340:C:H6	1.78	0.49
32:a:362:A:P	42:l:31:ARG:HG2	2.52	0.49
32:a:669:U:H2'	32:a:670:C:C6	2.48	0.49
37:g:29:LYS:HG3	37:g:105:VAL:HG21	1.95	0.49
37:g:111:ARG:HG3	37:g:123:GLU:OE2	2.12	0.49
47:q:99:HIS:NE2	47:q:119:LEU:HD12	2.27	0.49
47:q:102:ASP:OD1	47:q:102:ASP:N	2.46	0.49
7:A:2161:U:H2'	7:A:2162:C:H6	1.76	0.49
7:A:2442:A:H2'	7:A:2443:A:H8	1.77	0.49
7:A:2551:C:H2'	7:A:2552:A:H8	1.77	0.49
7:A:2693:G:H2'	7:A:2694:C:C6	2.48	0.49
19:N:45:ARG:HG3	19:N:95:THR:OG1	2.12	0.49
20:O:21:ARG:NH1	20:O:25:SER:HA	2.27	0.49
21:P:28:HIS:ND1	21:P:41:VAL:HG23	2.28	0.49
28:W:53:ARG:HA	28:W:59:LEU:HD23	1.93	0.49
32:a:263:C:H2'	32:a:264:G:O4'	2.12	0.49
32:a:447:A:P	32:a:476:G:H22	2.34	0.49
32:a:467:G:C2'	32:a:468:G:H8	2.24	0.49
38:h:11:LEU:HB2	38:h:77:LEU:CD1	2.42	0.49
41:k:107:ILE:HD12	41:k:108:ARG:N	2.27	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:l:24:LEU:HA	42:l:30:ARG:HE	1.77	0.49
7:A:545:U:H5''	25:T:70:ARG:HH12	1.76	0.49
7:A:1148:U:OP1	7:A:1164:U:O2'	2.25	0.49
7:A:2150:A:N1	32:a:1400:C:O2'	2.40	0.49
8:B:92:G:O6	27:V:19:LYS:NZ	2.45	0.49
14:H:10:ASP:O	14:H:11:HIS:ND1	2.45	0.49
19:N:55:ALA:HB2	19:N:79:LEU:HG	1.93	0.49
32:a:108:G:C1'	32:a:353:G:H5''	2.42	0.49
32:a:585:C:H2'	32:a:586:G:O4'	2.13	0.49
32:a:656:G:OP1	48:r:62:ARG:HD2	2.12	0.49
32:a:916:A:O2'	32:a:1392:C:OP2	2.24	0.49
32:a:951:A:C2	49:s:55:ARG:HB3	2.48	0.49
32:a:1055:G:H21	32:a:1182:G:H1'	1.77	0.49
37:g:15:ASP:HB3	37:g:18:TYR:O	2.12	0.49
38:h:11:LEU:HB2	38:h:77:LEU:HD12	1.92	0.49
47:q:120:SER:OG	47:q:123:LYS:HB2	2.13	0.49
50:t:35:PHE:CZ	50:t:79:LEU:HB2	2.48	0.49
7:A:365:G:H2'	7:A:366:U:C6	2.47	0.49
7:A:868:A:H1'	7:A:869:C:H5	1.77	0.49
7:A:1451:C:C5	7:A:1460:U:H5''	2.48	0.49
7:A:2003:A:O2'	7:A:2196:C:OP1	2.20	0.49
7:A:2303:C:H2'	7:A:2304:C:C6	2.48	0.49
10:D:144:VAL:HA	10:D:147:ARG:HD3	1.93	0.49
12:F:119:ARG:HH12	43:m:5:VAL:HG22	1.78	0.49
18:M:118:LEU:HB3	18:M:131:ILE:HD12	1.95	0.49
24:S:20:VAL:HG23	24:S:22:VAL:HG12	1.94	0.49
32:a:535:G:H2'	32:a:536:C:O4'	2.13	0.49
32:a:582:U:H2'	32:a:583:G:C8	2.46	0.49
32:a:678:A:C2	32:a:695:A:C5	3.01	0.49
32:a:686:A:OP2	41:k:65:SER:N	2.45	0.49
32:a:901:A:H2'	32:a:902:A:C8	2.48	0.49
32:a:1070:G:H5''	35:e:81:TYR:CE2	2.47	0.49
34:d:62:VAL:HG21	34:d:89:LEU:HD22	1.95	0.49
34:d:141:ARG:HG3	34:d:144:SER:HB3	1.95	0.49
34:d:171:GLU:OE2	34:d:172:ARG:HG2	2.12	0.49
36:f:44:GLY:O	36:f:59:ILE:HA	2.13	0.49
42:l:66:TYR:O	42:l:68:PRO:HD3	2.12	0.49
48:r:19:LYS:HE3	48:r:19:LYS:HB3	1.62	0.49
3:2:10:PRO:HG2	7:A:1440:G:H4'	1.93	0.49
7:A:913:G:H5'	7:A:914:G:OP1	2.12	0.49
7:A:1070:G:H5''	17:L:34:ARG:O	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:1232:A:H5''	7:A:1233:C:H5	1.78	0.49
7:A:2307:G:H2'	7:A:2308:A:C8	2.48	0.49
10:D:57:ILE:HB	10:D:79:ARG:HB2	1.94	0.49
12:F:124:LEU:HD13	12:F:125:SER:N	2.28	0.49
15:J:55:ILE:HG13	15:J:123:ARG:HB2	1.93	0.49
16:K:88:LYS:HB3	16:K:89:PRO:HD2	1.95	0.49
32:a:533:G:H4'	34:d:14:ARG:NH2	2.28	0.49
32:a:1009:G:H5'	44:n:15:ARG:HH21	1.77	0.49
37:g:38:LEU:O	37:g:41:ARG:HG3	2.12	0.49
42:l:39:THR:HA	42:l:50:ARG:O	2.13	0.49
43:m:51:GLU:OE2	43:m:55:HIS:NE2	2.45	0.49
43:m:74:VAL:O	43:m:78:ILE:HG13	2.12	0.49
46:p:22:VAL:HG12	46:p:34:ILE:HD12	1.95	0.49
7:A:78:U:H2'	7:A:79:C:C6	2.48	0.49
7:A:1531:C:H2'	7:A:1532:G:C8	2.48	0.49
7:A:3057:G:O2'	7:A:3059:A:OP2	2.22	0.49
11:E:207:LEU:O	11:E:211:ILE:HG12	2.13	0.49
12:F:70:GLN:HE21	12:F:102:ARG:NH1	2.11	0.49
13:G:26:VAL:HG23	13:G:80:VAL:HG11	1.95	0.49
13:G:61:ARG:HD2	13:G:65:LEU:CD1	2.42	0.49
16:K:35:ILE:H	16:K:69:ARG:NH1	2.11	0.49
16:K:39:ILE:CG1	16:K:60:ALA:HB3	2.43	0.49
16:K:106:LEU:HB3	16:K:111:PHE:HB2	1.95	0.49
18:M:52:ILE:HG23	18:M:56:ARG:HH11	1.76	0.49
21:P:25:ILE:HD11	21:P:60:VAL:HG11	1.95	0.49
32:a:339:U:H2'	32:a:340:C:C6	2.47	0.49
32:a:369:C:H2'	32:a:370:A:C8	2.47	0.49
32:a:412:G:H22	32:a:428:U:P	2.35	0.49
32:a:944:G:O6	43:m:105:THR:HG21	2.12	0.49
32:a:1014:G:H2'	32:a:1015:C:H6	1.77	0.49
32:a:1097:G:H2'	32:a:1098:C:C6	2.48	0.49
32:a:1106:U:H2'	32:a:1107:U:C6	2.48	0.49
32:a:1235:C:H2'	32:a:1236:C:C6	2.48	0.49
32:a:1334:C:H2'	32:a:1335:G:C8	2.47	0.49
36:f:63:ILE:HG22	36:f:65:VAL:HG13	1.94	0.49
40:j:56:HIS:O	40:j:57:LYS:HG2	2.13	0.49
42:l:97:ILE:HD12	42:l:97:ILE:H	1.78	0.49
46:p:79:ASP:OD1	46:p:79:ASP:N	2.46	0.49
5:4:22:ARG:HH11	5:4:35:ARG:HE	1.59	0.48
7:A:2572:C:N4	28:W:75:ARG:HG3	2.28	0.48
8:B:26:A:OP1	20:O:41:HIS:NE2	2.46	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:F:11:LEU:HD21	12:F:104:TRP:HB3	1.94	0.48
24:S:24:PRO:HG2	24:S:88:GLN:HB3	1.95	0.48
27:V:84:HIS:CG	27:V:87:ARG:HE	2.30	0.48
27:V:101:GLY:HA2	27:V:134:GLU:OE2	2.12	0.48
28:W:46:HIS:NE2	28:W:75:ARG:HD2	2.27	0.48
28:W:52:GLY:N	28:W:62:LYS:HD3	2.27	0.48
32:a:591:G:H2'	32:a:592:U:C6	2.48	0.48
32:a:1280:A:N1	32:a:1364:G:H1'	2.28	0.48
34:d:86:LEU:HD21	34:d:192:GLU:HG3	1.95	0.48
35:e:164:ALA:O	35:e:168:VAL:HG13	2.12	0.48
37:g:57:ASP:HB3	37:g:60:ILE:HG12	1.95	0.48
40:j:59:LYS:HD2	40:j:62:ARG:NH2	2.15	0.48
7:A:403:G:H4'	7:A:405:A:C8	2.48	0.48
7:A:936:U:O2'	7:A:2298:A:N1	2.38	0.48
7:A:992:A:H2'	7:A:993:G:H8	1.73	0.48
7:A:1714:U:H2'	7:A:1715:A:H8	1.77	0.48
7:A:1834:C:P	25:T:39:LYS:HG2	2.53	0.48
7:A:1939:G:H2'	7:A:1940:G:H8	1.78	0.48
8:B:24:A:H2'	8:B:25:A:C8	2.48	0.48
9:C:143:HIS:ND1	9:C:194:GLY:O	2.32	0.48
21:P:28:HIS:CD2	21:P:82:HIS:CE1	3.00	0.48
31:Z:26:LEU:HD13	31:Z:46:LEU:HD13	1.94	0.48
32:a:613:A:H5'	34:d:69:ARG:NH1	2.28	0.48
32:a:1144:G:H2'	32:a:1145:A:C8	2.48	0.48
34:d:83:GLU:OE1	34:d:83:GLU:N	2.33	0.48
35:e:103:PHE:HE2	35:e:175:LEU:HB2	1.78	0.48
37:g:22:LEU:HD13	37:g:22:LEU:C	2.37	0.48
42:l:107:VAL:CG2	42:l:117:TYR:HB3	2.44	0.48
47:q:96:VAL:C	47:q:97:LYS:HD3	2.38	0.48
5:4:7:VAL:HA	5:4:34:GLN:NE2	2.29	0.48
7:A:488:U:H2'	7:A:489:G:O4'	2.13	0.48
7:A:2809:C:O2'	10:D:156:THR:O	2.31	0.48
12:F:10:ARG:O	12:F:13:GLU:HG3	2.13	0.48
16:K:69:ARG:NH1	16:K:69:ARG:HG2	2.28	0.48
22:Q:75:THR:OG1	22:Q:77:ASN:HB3	2.14	0.48
32:a:149:G:H1	32:a:164:U:H3	1.61	0.48
32:a:171:C:H2'	32:a:172:C:C6	2.49	0.48
32:a:199:G:H2'	32:a:200:U:C6	2.48	0.48
32:a:265:G:OP2	32:a:266:C:N4	2.45	0.48
32:a:669:U:H2'	32:a:670:C:H6	1.78	0.48
32:a:1296:G:H1'	32:a:1326:G:N2	2.29	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:a:1299:U:H2'	32:a:1300:C:C6	2.49	0.48
32:a:1479:G:H2'	32:a:1480:G:C8	2.48	0.48
47:q:99:HIS:CD2	47:q:123:LYS:HE2	2.47	0.48
7:A:581:G:H2'	7:A:582:G:O4'	2.13	0.48
7:A:795:C:H2'	7:A:796:U:C6	2.47	0.48
7:A:1280:C:O2'	22:Q:121:VAL:O	2.29	0.48
7:A:1980:U:H2'	7:A:1981:C:C6	2.48	0.48
7:A:2637:A:H2'	7:A:2638:C:C6	2.48	0.48
9:C:26:ARG:HG2	9:C:81:HIS:CG	2.48	0.48
11:E:10:LYS:HE2	11:E:10:LYS:HA	1.95	0.48
12:F:129:PHE:CD1	12:F:135:TYR:HD2	2.31	0.48
15:J:75:TYR:CE1	15:J:86:LYS:HG2	2.48	0.48
17:L:131:SER:O	17:L:135:LYS:HG2	2.13	0.48
32:a:308:G:H2'	32:a:309:G:H8	1.79	0.48
32:a:1255:G:H1	32:a:1264:U:H3	1.62	0.48
33:c:186:LEU:HD13	33:c:199:LYS:HB3	1.95	0.48
35:e:76:MET:HE3	35:e:76:MET:CA	2.43	0.48
37:g:140:ASP:OD1	37:g:141:THR:N	2.46	0.48
48:r:60:HIS:O	48:r:64:ILE:HG23	2.12	0.48
2:1:22:ASN:HD21	2:1:43:PRO:CD	2.27	0.48
7:A:2028:U:H2'	7:A:2029:C:H6	1.77	0.48
7:A:2309:C:H2'	7:A:2310:C:H6	1.79	0.48
10:D:11:LEU:HD11	10:D:30:LYS:HB3	1.95	0.48
12:F:40:LYS:HG3	12:F:164:VAL:HB	1.96	0.48
16:K:35:ILE:HB	16:K:69:ARG:NH1	2.29	0.48
29:X:23:ARG:HG2	29:X:23:ARG:NH1	2.28	0.48
32:a:410:A:H62	32:a:412:G:H21	1.61	0.48
32:a:448:C:O2	46:p:43:LYS:HE3	2.13	0.48
32:a:513:C:H2'	32:a:514:A:C8	2.49	0.48
32:a:730:C:O2'	45:o:42:HIS:ND1	2.39	0.48
32:a:1109:U:H1'	32:a:1171:A:C5	2.49	0.48
32:a:1121:A:H2'	32:a:1122:G:H8	1.78	0.48
32:a:1209:C:H2'	32:a:1210:C:C6	2.49	0.48
32:a:1339:G:O2'	32:a:1366:G:O6	2.29	0.48
42:l:83:ARG:HG2	42:l:98:ILE:CG1	2.43	0.48
51:x:24:THR:HB	51:x:29:ARG:HB2	1.93	0.48
13:G:35:LEU:HD22	13:G:76:LEU:HD21	1.95	0.48
19:N:62:ASN:O	19:N:66:VAL:HG23	2.12	0.48
26:U:40:ARG:NH1	26:U:40:ARG:HA	2.29	0.48
32:a:54:A:N1	32:a:313:C:O2'	2.41	0.48
32:a:84:C:H4'	32:a:85:G:H5'	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:a:180:A:H4'	50:t:69:LYS:NZ	2.29	0.48
34:d:50:LEU:O	34:d:54:GLN:HG2	2.14	0.48
47:q:69:MET:N	47:q:69:MET:HE3	2.28	0.48
49:s:40:ILE:HG23	49:s:44:PHE:HD2	1.78	0.48
49:s:40:ILE:HG23	49:s:44:PHE:CD2	2.48	0.48
7:A:455:U:H2'	7:A:456:C:C6	2.49	0.48
7:A:626:A:H2'	7:A:627:G:O4'	2.14	0.48
7:A:835:A:H2'	7:A:836:G:O4'	2.14	0.48
7:A:1409:C:H2'	7:A:1410:A:H8	1.78	0.48
7:A:2721:C:O2	18:M:49:SER:OG	2.30	0.48
7:A:2871:A:H2'	7:A:2872:A:C8	2.49	0.48
12:F:24:ARG:CD	12:F:35:ILE:HD11	2.44	0.48
13:G:30:LYS:HG3	13:G:31:GLY:N	2.29	0.48
22:Q:24:TYR:HB2	22:Q:29:SER:HB3	1.96	0.48
32:a:1500:A:H2'	32:a:1501:G:C8	2.49	0.48
32:a:1503:C:H2'	32:a:1504:G:C8	2.49	0.48
34:d:93:LEU:HD23	34:d:93:LEU:H	1.79	0.48
35:e:157:LYS:HD2	35:e:158:SER:N	2.29	0.48
36:f:6:ILE:HB	36:f:63:ILE:HB	1.96	0.48
39:i:109:ILE:HG23	39:i:119:LEU:HD12	1.96	0.48
49:s:60:VAL:CG2	49:s:66:MET:HE1	2.44	0.48
7:A:741:A:N1	7:A:755:G:O2'	2.46	0.48
7:A:743:U:H2'	7:A:744:C:H6	1.79	0.48
7:A:808:G:H2'	7:A:809:G:H8	1.79	0.48
7:A:954:A:O2'	17:L:53:GLN:HB3	2.14	0.48
11:E:12:ASP:HB2	11:E:20:VAL:HG11	1.95	0.48
17:L:117:LEU:HD23	17:L:136:ILE:HA	1.96	0.48
21:P:9:LYS:HD3	21:P:10:PRO:N	2.29	0.48
32:a:31:G:O2'	32:a:295:U:OP1	2.27	0.48
32:a:52:U:H3	32:a:361:G:H1'	1.78	0.48
32:a:211:G:H2'	32:a:212:C:C6	2.48	0.48
32:a:571:C:H2'	32:a:572:G:O4'	2.13	0.48
32:a:1334:C:H2'	32:a:1335:G:H8	1.79	0.48
33:c:112:ALA:O	33:c:113:GLN:HB2	2.13	0.48
34:d:185:GLN:NE2	34:d:186:ILE:HG12	2.29	0.48
39:i:51:LEU:HB3	39:i:88:LEU:HD21	1.94	0.48
40:j:5:LYS:HD2	40:j:79:PRO:HG3	1.96	0.48
40:j:11:LYS:HB2	40:j:71:LYS:NZ	2.29	0.48
47:q:78:GLU:CD	47:q:91:ARG:HE	2.21	0.48
50:t:22:LYS:HA	50:t:25:LYS:HE2	1.95	0.48
7:A:184:A:H2'	7:A:185:C:H6	1.79	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:339:C:H2'	7:A:340:U:C6	2.48	0.48
7:A:712:A:H2'	7:A:713:C:O4'	2.14	0.48
7:A:1942:A:H2'	7:A:1943:C:C6	2.48	0.48
7:A:2006:G:N1	7:A:2217:C:H5	1.93	0.48
7:A:2516:A:H5''	28:W:12:ASN:ND2	2.28	0.48
17:L:73:GLU:OE2	17:L:73:GLU:HA	2.13	0.48
30:Y:17:GLU:OE1	30:Y:17:GLU:N	2.44	0.48
32:a:1387:A:N1	32:a:1493:A:O2'	2.39	0.48
34:d:165:TRP:CG	34:d:181:PRO:HB3	2.48	0.48
36:f:2:ARG:HD2	36:f:69:PRO:HG3	1.96	0.48
42:l:36:ARG:HG2	42:l:38:TYR:CD1	2.49	0.48
7:A:8:U:H5''	15:J:53:PHE:CZ	2.48	0.48
7:A:250:G:O5'	7:A:251:C:H5''	2.13	0.48
7:A:1006:C:H2'	7:A:1007:G:O4'	2.14	0.48
7:A:1038:A:H2'	7:A:1041:C:H5	1.79	0.48
7:A:1446:C:H2'	7:A:1447:U:C6	2.48	0.48
7:A:1488:C:H2'	7:A:1489:G:O4'	2.14	0.48
7:A:1754:A:H5'	7:A:1755:G:OP2	2.13	0.48
7:A:2505:A:H5''	7:A:2506:A:H5'	1.96	0.48
7:A:2794:C:H2'	7:A:2795:G:O4'	2.13	0.48
10:D:7:LEU:HB2	10:D:34:ASN:HD21	1.79	0.48
12:F:139:LEU:HD12	12:F:159:MET:SD	2.54	0.48
13:G:116:ILE:HG13	13:G:149:ILE:HD12	1.94	0.48
32:a:374:U:H2'	32:a:375:G:C8	2.48	0.48
32:a:493:A:H2'	32:a:494:C:H6	1.76	0.48
32:a:611:U:C4	34:d:127:VAL:HG11	2.49	0.48
36:f:9:ILE:HD12	36:f:60:TYR:HD1	1.79	0.48
38:h:45:TYR:CD1	38:h:74:ILE:HG22	2.49	0.48
7:A:333:U:H2'	7:A:334:C:C6	2.48	0.47
7:A:544:U:HO2'	7:A:561:U:H3	1.59	0.47
7:A:734:G:N2	7:A:737:A:OP2	2.42	0.47
7:A:1517:C:H2'	7:A:1518:G:C8	2.49	0.47
7:A:1781:A:H2'	7:A:1782:A:C8	2.48	0.47
7:A:1886:G:H4'	19:N:39:PRO:HG2	1.94	0.47
15:J:73:MET:HE3	15:J:73:MET:HB3	1.75	0.47
32:a:64:G:N7	50:t:6:SER:OG	2.37	0.47
32:a:682:G:H2'	32:a:683:U:C6	2.48	0.47
32:a:852:U:H2'	32:a:853:A:H8	1.79	0.47
7:A:423:A:H2'	7:A:424:C:O4'	2.14	0.47
7:A:701:U:H2'	7:A:702:C:C6	2.50	0.47
7:A:808:G:H2'	7:A:809:G:C8	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:1409:C:H2'	7:A:1410:A:C8	2.49	0.47
7:A:2225:C:H2'	7:A:2226:A:H8	1.79	0.47
7:A:2775:U:H2'	7:A:2776:C:C6	2.49	0.47
10:D:27:THR:HG21	10:D:198:VAL:HB	1.96	0.47
15:J:115:SER:HA	15:J:118:ILE:HB	1.95	0.47
15:J:129:GLU:HA	15:J:129:GLU:OE2	2.14	0.47
16:K:4:GLN:HG3	16:K:5:GLU:HG2	1.96	0.47
32:a:92:C:H3'	32:a:93:U:C5	2.50	0.47
32:a:516:C:H2'	32:a:517:C:C6	2.49	0.47
32:a:592:U:H2'	32:a:593:U:H6	1.79	0.47
32:a:943:U:H2'	32:a:944:G:H8	1.79	0.47
32:a:960:5MC:O2'	39:i:148:TYR:OH	2.14	0.47
34:d:69:ARG:HA	34:d:72:GLU:CG	2.45	0.47
50:t:59:ASP:OD1	50:t:76:LYS:NZ	2.48	0.47
3:2:13:ARG:HG3	7:A:125:A:C6	2.49	0.47
4:3:3:LYS:HG2	7:A:244:G:C8	2.49	0.47
7:A:797:G:H2'	7:A:799:A:H62	1.79	0.47
7:A:1670:G:H2'	7:A:1671:G:O4'	2.15	0.47
7:A:2059:A:H2'	7:A:2060:C:C6	2.49	0.47
9:C:23:GLU:OE2	9:C:91:ARG:NE	2.45	0.47
10:D:16:VAL:HG23	10:D:24:VAL:CG1	2.44	0.47
10:D:111:TYR:CE1	10:D:181:LEU:HD13	2.49	0.47
12:F:155:ARG:NH2	12:F:156:VAL:O	2.47	0.47
13:G:17:VAL:HG13	13:G:26:VAL:HG12	1.94	0.47
21:P:25:ILE:HG22	21:P:85:VAL:HA	1.95	0.47
23:R:32:GLN:HG3	23:R:67:GLY:HA2	1.97	0.47
24:S:87:ASP:OD1	24:S:112:HIS:HB2	2.14	0.47
32:a:670:C:H2'	32:a:671:C:H6	1.80	0.47
32:a:714:U:O2'	32:a:715:G:H5'	2.14	0.47
32:a:1314:C:OP1	49:s:78:ARG:NH2	2.45	0.47
32:a:1480:G:OP1	51:x:23:ARG:NH2	2.47	0.47
34:d:71:TYR:C	34:d:71:TYR:CD2	2.91	0.47
35:e:76:MET:HE1	35:e:103:PHE:C	2.39	0.47
36:f:28:ASN:O	36:f:32:LYS:HG2	2.14	0.47
43:m:113:PRO:O	43:m:115:ARG:HD2	2.14	0.47
50:t:46:LYS:O	50:t:50:LEU:HG	2.13	0.47
7:A:184:A:H2'	7:A:185:C:C6	2.49	0.47
7:A:342:C:H2'	7:A:343:C:C6	2.49	0.47
7:A:1825:A:H2'	7:A:1826:C:C6	2.49	0.47
7:A:2442:A:H2'	7:A:2443:A:C8	2.49	0.47
8:B:87:C:C4	8:B:88:G:H1'	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:D:127:MET:HE3	10:D:146:ARG:CG	2.33	0.47
14:H:1:MET:SD	14:H:3:LEU:HD11	2.54	0.47
14:H:1:MET:HE2	14:H:23:ASP:HA	1.96	0.47
30:Y:33:ARG:HG2	30:Y:33:ARG:HH11	1.79	0.47
32:a:196:C:H2'	32:a:197:U:C6	2.49	0.47
32:a:197:U:P	47:q:49:ARG:HH12	2.36	0.47
32:a:204:G:O2'	50:t:59:ASP:OD2	2.22	0.47
32:a:334:C:O2'	32:a:1426:A:N3	2.44	0.47
32:a:381:A:H2'	32:a:382:A:C8	2.49	0.47
32:a:951:A:N6	49:s:77:THR:O	2.47	0.47
32:a:1001:C:H2'	32:a:1002:G:C8	2.49	0.47
39:i:66:GLN:HA	39:i:69:ILE:HG12	1.94	0.47
41:k:33:ILE:HD11	41:k:110:LEU:HD21	1.95	0.47
44:n:33:VAL:HA	44:n:40:CYS:HA	1.96	0.47
7:A:230:U:O2'	7:A:231:U:OP2	2.32	0.47
7:A:606:G:H4'	24:S:28:ARG:NE	2.30	0.47
7:A:1221:C:H3'	7:A:1222:G:H8	1.79	0.47
7:A:1331:C:H2'	7:A:1332:C:H6	1.80	0.47
7:A:1501:C:H2'	7:A:1502:G:O4'	2.15	0.47
7:A:2077:C:H4'	9:C:254:GLU:O	2.15	0.47
7:A:2500:U:P	28:W:19:GLN:HE21	2.38	0.47
10:D:34:ASN:OD1	10:D:54:TYR:HB2	2.14	0.47
13:G:55:ARG:HD3	13:G:66:HIS:CB	2.45	0.47
24:S:16:LYS:HG2	24:S:114:THR:HG23	1.96	0.47
28:W:41:ARG:HD3	28:W:41:ARG:HA	1.60	0.47
32:a:434:U:H2'	32:a:435:C:C6	2.49	0.47
32:a:1044:G:N7	32:a:1192:C:H5'	2.29	0.47
32:a:1184:C:OP2	33:c:4:LYS:NZ	2.47	0.47
33:c:130:ARG:O	33:c:134:ARG:HG3	2.14	0.47
35:e:106:PRO:HG2	35:e:178:LEU:HB3	1.97	0.47
43:m:29:ARG:O	43:m:32:GLU:HG2	2.15	0.47
49:s:14:HIS:C	49:s:18:LYS:HZ3	2.21	0.47
4:3:43:ARG:NH2	7:A:2601:U:OP2	2.41	0.47
5:4:13:LYS:HB3	5:4:13:LYS:HE3	1.72	0.47
7:A:384:U:H3'	7:A:385:G:C5'	2.45	0.47
7:A:737:A:OP1	17:L:71:ARG:HG3	2.14	0.47
7:A:1310:U:H2'	7:A:1311:G:C8	2.49	0.47
7:A:2256:G:HO2'	22:Q:34:LYS:HZ1	1.57	0.47
7:A:2289:A:P	10:D:147:ARG:HH21	2.37	0.47
7:A:2555:U:H2'	7:A:2556:G:O4'	2.14	0.47
13:G:159:LYS:HB2	13:G:161:LYS:HG3	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:L:83:ASN:HB2	17:L:117:LEU:HD12	1.95	0.47
21:P:42:PHE:CE2	21:P:60:VAL:HG23	2.49	0.47
32:a:77:G:N1	32:a:91:A:H2	2.12	0.47
32:a:127:U:H2'	32:a:128:C:H6	1.80	0.47
32:a:211:G:O2'	32:a:216:A:N6	2.48	0.47
32:a:467:G:HO2'	32:a:468:G:H8	1.61	0.47
32:a:555:C:OP1	42:l:12:ARG:NH1	2.47	0.47
32:a:1027:G:H2'	32:a:1028:C:C6	2.49	0.47
32:a:1321:G:O2'	43:m:24:GLY:HA2	2.15	0.47
32:a:1417:U:H2'	32:a:1418:A:C8	2.49	0.47
32:a:1509:G:N1	32:a:1512:MA6:OP2	2.47	0.47
42:l:13:ARG:HH12	42:l:16:ILE:HD12	1.80	0.47
45:o:15:TYR:OH	45:o:84:ARG:O	2.33	0.47
7:A:565:G:H4'	7:A:590:A:N1	2.28	0.47
7:A:878:A:H4'	7:A:1402:G:N3	2.29	0.47
7:A:1295:A:H2'	7:A:1296:C:H6	1.80	0.47
7:A:1653:A:H2'	7:A:1654:G:O4'	2.14	0.47
7:A:1714:U:H2'	7:A:1715:A:C8	2.50	0.47
7:A:1871:U:H2'	7:A:1872:A:C8	2.50	0.47
7:A:1898:U:O2'	7:A:2924:G:H4'	2.14	0.47
7:A:1917:C:OP2	7:A:1934:G:N2	2.43	0.47
7:A:1939:G:H2'	7:A:1940:G:C8	2.49	0.47
7:A:2097:G:H2'	7:A:2098:U:H6	1.80	0.47
7:A:2170:A:H2'	7:A:2171:G:O4'	2.14	0.47
8:B:73:U:H2'	8:B:74:G:O4'	2.15	0.47
16:K:5:GLU:HA	16:K:20:LEU:HD21	1.96	0.47
21:P:26:ASN:HB2	21:P:84:GLU:HG2	1.97	0.47
26:U:1:MET:O	26:U:4:HIS:NE2	2.48	0.47
26:U:75:ASP:C	26:U:77:ASP:H	2.22	0.47
27:V:107:GLU:HG3	27:V:128:SER:OG	2.14	0.47
32:a:81:C:H2'	32:a:82:U:O4'	2.14	0.47
32:a:613:A:H5'	34:d:69:ARG:HH12	1.80	0.47
32:a:738:U:H2'	32:a:739:A:O4'	2.14	0.47
32:a:957:A:O2'	40:j:57:LYS:HE2	2.14	0.47
32:a:1140:U:H2'	32:a:1141:C:O4'	2.15	0.47
32:a:1184:C:P	33:c:4:LYS:HZ1	2.37	0.47
32:a:1237:G:H2'	32:a:1238:G:H8	1.80	0.47
33:c:110:SER:OG	33:c:204:LYS:NZ	2.47	0.47
36:f:69:PRO:HA	36:f:72:VAL:HG12	1.97	0.47
39:i:63:LYS:HE2	39:i:64:VAL:HG23	1.97	0.47
42:l:3:THR:O	42:l:3:THR:OG1	2.33	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:l:25:LYS:HD3	42:l:25:LYS:N	2.29	0.47
42:l:87:VAL:HG23	42:l:90:LEU:H	1.79	0.47
43:m:7:VAL:HG11	43:m:22:ILE:HG12	1.97	0.47
43:m:11:ARG:NE	43:m:11:ARG:HA	2.30	0.47
7:A:117:G:OP2	7:A:119:A:O2'	2.29	0.47
7:A:127:A:H5''	7:A:128:C:C6	2.50	0.47
7:A:711:A:H5''	11:E:107:ARG:HH12	1.80	0.47
7:A:1334:U:H2'	7:A:1335:C:C6	2.50	0.47
7:A:1658:A:H3'	7:A:1659:G:H8	1.79	0.47
7:A:2814:G:O2'	7:A:2817:C:OP2	2.25	0.47
13:G:89:GLU:HG3	13:G:91:PHE:CE1	2.49	0.47
16:K:25:LEU:HD11	16:K:59:LYS:HD2	1.96	0.47
25:T:29:TYR:CE2	25:T:93:ILE:HG12	2.50	0.47
27:V:160:ILE:HG13	27:V:161:ALA:H	1.80	0.47
32:a:1029:C:H2'	32:a:1030:U:C6	2.50	0.47
34:d:70:TYR:CD1	34:d:88:ILE:HD12	2.49	0.47
37:g:140:ASP:HA	37:g:143:LYS:HG3	1.96	0.47
38:h:54:ALA:HB2	38:h:59:SER:HB2	1.96	0.47
42:l:30:ARG:HG2	42:l:57:LEU:CG	2.39	0.47
1:0:45:LYS:O	1:0:49:LEU:HG	2.15	0.47
5:4:36:GLN:NE2	7:A:1160:G:N3	2.60	0.47
7:A:93:C:H2'	7:A:94:C:O4'	2.15	0.47
7:A:2142:G:O2'	7:A:2166:A:N1	2.38	0.47
9:C:77:ALA:HB2	9:C:97:TYR:CD1	2.49	0.47
11:E:131:HIS:HE1	11:E:199:ASP:OD2	1.98	0.47
11:E:160:VAL:HA	11:E:199:ASP:O	2.15	0.47
13:G:105:GLU:HA	13:G:114:VAL:O	2.15	0.47
27:V:128:SER:C	27:V:129:ILE:HD13	2.40	0.47
30:Y:47:LEU:HD12	30:Y:48:ARG:H	1.80	0.47
31:Z:5:LYS:HG3	31:Z:57:GLU:OE2	2.15	0.47
32:a:738:U:H3'	32:a:739:A:C8	2.50	0.47
35:e:154:ILE:HD12	35:e:155:LEU:N	2.30	0.47
47:q:72:THR:HG23	47:q:123:LYS:HZ2	1.79	0.47
49:s:40:ILE:HG22	49:s:67:VAL:HG23	1.96	0.47
5:4:22:ARG:HH12	5:4:35:ARG:HH21	1.63	0.47
7:A:350:A:H2'	7:A:351:G:H8	1.80	0.47
7:A:549:A:H2'	7:A:550:C:O4'	2.15	0.47
7:A:2829:C:H2'	7:A:2830:G:H8	1.80	0.47
7:A:2875:U:H2'	7:A:2876:G:O4'	2.15	0.47
7:A:2915:G:H2'	7:A:2916:A:C8	2.50	0.47
12:F:36:PRO:HB2	12:F:176:LEU:HD23	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:F:170:ASP:N	12:F:170:ASP:OD1	2.47	0.47
15:J:32:ALA:O	15:J:36:LEU:HB3	2.15	0.47
18:M:55:ASN:OD1	18:M:55:ASN:C	2.58	0.47
25:T:20:SER:OG	25:T:30:THR:HG21	2.15	0.47
25:T:37:SER:HA	25:T:41:GLN:NE2	2.30	0.47
26:U:98:SER:OG	26:U:99:LYS:N	2.48	0.47
32:a:76:G:N1	32:a:93:U:H1'	2.29	0.47
32:a:494:C:H2'	32:a:495:C:C6	2.49	0.47
32:a:980:G:H2'	32:a:981:G:C8	2.50	0.47
32:a:1112:C:H2'	32:a:1113:A:H8	1.80	0.47
32:a:1190:G:H2'	32:a:1191:U:C6	2.50	0.47
32:a:1421:A:H2'	32:a:1422:C:C6	2.50	0.47
32:a:1437:C:C2	32:a:1452:G:C2	3.03	0.47
34:d:10:ARG:CG	34:d:11:LYS:N	2.78	0.47
35:e:76:MET:HA	35:e:76:MET:CE	2.39	0.47
37:g:73:LEU:HD21	37:g:88:PRO:HB2	1.96	0.47
42:l:31:ARG:O	42:l:58:THR:HG23	2.15	0.47
46:p:58:TYR:O	46:p:62:VAL:HG12	2.15	0.47
47:q:60:ARG:NE	47:q:77:LEU:HD21	2.30	0.47
7:A:280:C:H2'	7:A:281:G:H8	1.80	0.46
7:A:909:G:OP1	9:C:218:ARG:NH1	2.45	0.46
7:A:1007:G:H2'	7:A:1008:A:C2	2.51	0.46
7:A:1140:G:N2	15:J:147:GLN:OE1	2.38	0.46
7:A:1876:A:H2'	7:A:1877:G:O4'	2.15	0.46
7:A:2650:A:H2'	7:A:2651:G:O4'	2.15	0.46
12:F:81:ILE:HG21	12:F:84:PHE:CD2	2.50	0.46
15:J:111:LYS:HE2	15:J:111:LYS:HB2	1.74	0.46
28:W:72:LYS:HD2	28:W:72:LYS:HA	1.69	0.46
32:a:89:A:C2	32:a:91:A:H3'	2.50	0.46
32:a:570:U:H2'	32:a:571:C:H6	1.80	0.46
32:a:625:C:H2'	32:a:626:G:C8	2.51	0.46
32:a:664:G:H5''	36:f:87:ARG:NH1	2.29	0.46
32:a:825:G:H5''	48:r:58:VAL:HG21	1.97	0.46
32:a:1116:U:C2	32:a:1118:G:C8	3.03	0.46
37:g:43:VAL:O	37:g:47:LEU:HD12	2.15	0.46
41:k:97:LYS:HG3	41:k:124:THR:HA	1.97	0.46
7:A:389:U:H2'	7:A:390:G:O4'	2.16	0.46
7:A:991:G:H2'	7:A:992:A:O4'	2.15	0.46
7:A:1061:A:H2'	7:A:1062:G:O4'	2.14	0.46
7:A:1953:G:C2	7:A:1977:G:C2	3.03	0.46
8:B:48:C:H2'	8:B:49:G:H8	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:E:172:ALA:O	11:E:176:ARG:HB2	2.15	0.46
27:V:178:ASN:OD1	27:V:179:VAL:N	2.48	0.46
32:a:38:G:H2'	32:a:39:C:H6	1.80	0.46
32:a:416:G:H2'	32:a:417:C:C6	2.51	0.46
32:a:583:G:H2'	32:a:584:U:H6	1.80	0.46
32:a:986:G:H2'	32:a:988:C:H41	1.80	0.46
35:e:76:MET:HE1	35:e:103:PHE:O	2.15	0.46
39:i:38:VAL:HG21	39:i:100:LEU:HA	1.96	0.46
2:1:22:ASN:HD21	2:1:43:PRO:HD2	1.80	0.46
7:A:52:A:H2'	7:A:53:A:C8	2.50	0.46
7:A:196:G:H2'	7:A:197:A:O4'	2.15	0.46
7:A:471:G:N2	7:A:481:U:H3	1.93	0.46
7:A:961:U:H2'	7:A:962:G:H8	1.80	0.46
7:A:1181:C:H2'	7:A:1182:C:C6	2.50	0.46
7:A:1834:C:OP2	25:T:39:LYS:HE3	2.15	0.46
9:C:65:ILE:HD12	9:C:65:ILE:N	2.30	0.46
9:C:182:ILE:CD1	9:C:270:ARG:HH21	2.28	0.46
9:C:212:MET:HE2	9:C:217:LYS:HD3	1.97	0.46
12:F:41:VAL:HG21	12:F:107:LEU:HD21	1.97	0.46
12:F:71:LYS:HA	12:F:72:PRO:HD3	1.80	0.46
25:T:8:ARG:HG2	25:T:8:ARG:HH11	1.80	0.46
30:Y:55:ALA:O	30:Y:59:THR:OG1	2.31	0.46
32:a:1406:A:N1	32:a:1480:G:N2	2.56	0.46
40:j:9:ARG:HD2	40:j:73:LEU:HD11	1.97	0.46
2:1:28:ASN:HB3	2:1:31:ASN:HB2	1.98	0.46
7:A:219:G:H2'	7:A:220:G:C8	2.51	0.46
7:A:1915:U:H2'	7:A:1916:G:O4'	2.15	0.46
7:A:2636:C:H2'	7:A:2637:A:H8	1.80	0.46
10:D:36:VAL:HG12	10:D:38:ARG:H	1.80	0.46
12:F:115:LEU:HD12	12:F:118:ILE:HD11	1.97	0.46
16:K:64:ARG:HG3	16:K:81:GLU:O	2.15	0.46
40:j:12:ALA:HB3	40:j:18:ILE:HG23	1.97	0.46
7:A:332:C:H2'	7:A:333:U:C6	2.49	0.46
7:A:893:A:H2	9:C:219:PRO:HG3	1.80	0.46
7:A:1467:A:H2'	7:A:1468:G:C8	2.50	0.46
9:C:30:GLU:O	9:C:34:VAL:HG23	2.16	0.46
9:C:206:TRP:CZ2	9:C:215:LYS:HE2	2.51	0.46
32:a:60:G:H2'	32:a:61:C:C6	2.50	0.46
32:a:245:A:C2	32:a:281:A:C5	3.03	0.46
32:a:494:C:H2'	32:a:495:C:H6	1.80	0.46
32:a:514:A:C2	42:l:88:LYS:HB3	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:a:873:C:H2'	32:a:874:G:H8	1.79	0.46
32:a:1004:C:H2'	32:a:1005:U:C6	2.50	0.46
32:a:1307:U:H2'	32:a:1308:G:O4'	2.15	0.46
34:d:60:TYR:CD2	34:d:89:LEU:HB3	2.50	0.46
34:d:165:TRP:CZ3	34:d:177:ILE:HD12	2.51	0.46
40:j:66:GLU:CD	44:n:59:SER:HB3	2.40	0.46
47:q:99:HIS:CD2	47:q:123:LYS:CE	2.97	0.46
2:l:34:ASP:N	2:l:34:ASP:OD1	2.46	0.46
7:A:1114:C:H2'	7:A:1115:C:H6	1.80	0.46
7:A:1283:C:H2'	7:A:1284:G:O4'	2.16	0.46
7:A:2174:A:H62	7:A:2201:U:H3	1.64	0.46
7:A:2174:A:N6	7:A:2201:U:H3	2.13	0.46
13:G:120:GLU:H	13:G:120:GLU:CD	2.16	0.46
27:V:24:ARG:HG3	27:V:24:ARG:NH1	2.31	0.46
32:a:319:G:O2'	32:a:1428:G:O2'	2.32	0.46
37:g:57:ASP:OD2	37:g:59:VAL:HG22	2.16	0.46
42:l:43:LYS:HG3	42:l:89:ASP:O	2.16	0.46
42:l:116:ARG:HB2	42:l:117:TYR:CD1	2.50	0.46
7:A:143:G:H5'	7:A:144:U:OP2	2.16	0.46
7:A:325:G:H2'	7:A:326:A:C8	2.51	0.46
7:A:385:G:H2'	7:A:386:G:H8	1.81	0.46
7:A:943:C:H2'	7:A:944:C:C6	2.50	0.46
7:A:1416:G:N2	7:A:1459:G:H5''	2.31	0.46
7:A:1525:U:H4'	7:A:1838:A:H4'	1.97	0.46
7:A:2039:U:O2	9:C:50:THR:HB	2.15	0.46
7:A:2078:U:H5''	9:C:256:ARG:HG2	1.97	0.46
7:A:2752:U:H2'	7:A:2753:C:C6	2.51	0.46
7:A:2760:U:O2'	7:A:2885:U:OP1	2.20	0.46
7:A:2795:G:H2'	7:A:2796:C:C6	2.50	0.46
21:P:19:PHE:HD2	21:P:46:VAL:HG21	1.81	0.46
30:Y:46:ARG:HH11	30:Y:46:ARG:HG3	1.80	0.46
32:a:11:A:N6	34:d:201:LYS:HB2	2.31	0.46
32:a:243:U:O4	32:a:899:A:H1'	2.16	0.46
36:f:3:PRO:HG2	36:f:94:ASP:HB3	1.97	0.46
37:g:47:LEU:HD23	37:g:58:PRO:HB2	1.96	0.46
42:l:30:ARG:HD2	42:l:57:LEU:HG	1.97	0.46
48:r:41:TYR:O	48:r:42:ILE:HD13	2.16	0.46
50:t:50:LEU:HD12	50:t:51:LEU:HD22	1.98	0.46
7:A:630:U:H2'	7:A:631:C:C6	2.50	0.46
7:A:1751:C:H2'	7:A:1752:U:C6	2.51	0.46
7:A:2052:U:H2'	9:C:157:ARG:HG2	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:3052:C:OP1	19:N:42:ARG:NH2	2.49	0.46
12:F:50:ALA:O	12:F:54:ALA:HA	2.16	0.46
16:K:19:ILE:HG22	16:K:43:VAL:HA	1.97	0.46
18:M:74:LEU:HB2	18:M:92:TRP:HB2	1.97	0.46
30:Y:33:ARG:HG2	30:Y:33:ARG:NH1	2.30	0.46
32:a:554:A:H3'	42:l:12:ARG:NH1	2.31	0.46
32:a:658:G:H4'	45:o:51:HIS:ND1	2.31	0.46
32:a:944:G:C6	32:a:1223:A:C6	3.04	0.46
34:d:48:LEU:HD12	34:d:49:GLN:N	2.30	0.46
42:l:3:THR:OG1	42:l:6:GLN:HB2	2.16	0.46
50:t:31:ALA:HB3	50:t:57:LYS:HE2	1.98	0.46
1:0:6:ARG:NH1	7:A:2257:C:H41	2.13	0.46
7:A:152:C:H2'	7:A:153:C:C6	2.51	0.46
7:A:259:C:H2'	7:A:260:G:O4'	2.16	0.46
7:A:858:G:C6	9:C:208:LYS:HB2	2.50	0.46
7:A:887:G:N3	7:A:2219:A:H2	2.14	0.46
7:A:1665:A:H4'	7:A:1666:C:O4'	2.16	0.46
7:A:1779:C:H2'	7:A:1780:G:O4'	2.16	0.46
7:A:1917:C:H2'	7:A:1918:C:H6	1.81	0.46
22:Q:58:ARG:HA	22:Q:61:TRP:CE3	2.51	0.46
25:T:68:ARG:HD2	25:T:69:THR:H	1.80	0.46
29:X:27:ARG:HD2	29:X:29:TRP:CH2	2.50	0.46
31:Z:46:LEU:O	31:Z:50:VAL:HG22	2.16	0.46
32:a:452:G:O2'	32:a:453:G:O5'	2.32	0.46
32:a:691:G:H2'	32:a:692:C:C6	2.50	0.46
32:a:964:G:H1'	32:a:1358:G:O2'	2.16	0.46
32:a:1293:U:O2'	32:a:1294:U:H3'	2.16	0.46
32:a:1397:C:H2'	32:a:1398:G:C8	2.51	0.46
35:e:43:LEU:HD21	35:e:45:ARG:HH12	1.81	0.46
36:f:50:TYR:OH	48:r:72:ARG:O	2.32	0.46
41:k:89:VAL:N	41:k:90:ARG:HH21	2.14	0.46
42:l:29:GLN:HG3	42:l:83:ARG:HB3	1.98	0.46
4:3:60:SER:HB3	17:L:47:VAL:HG11	1.97	0.46
5:4:4:ASN:O	5:4:36:GLN:HA	2.16	0.46
7:A:536:A:N1	7:A:543:A:O2'	2.46	0.46
7:A:588:G:N1	7:A:591:A:OP2	2.48	0.46
7:A:1408:G:H2'	7:A:1409:C:C6	2.51	0.46
7:A:1839:C:O2'	7:A:1845:A:N1	2.45	0.46
7:A:2524:A:H4'	7:A:2525:A:O4'	2.16	0.46
15:J:29:ALA:HA	15:J:105:ILE:CD1	2.46	0.46
23:R:49:VAL:HG12	23:R:51:THR:HB	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:a:816:A:H2'	32:a:817:C:C6	2.51	0.46
32:a:1181:U:H5''	32:a:1182:G:OP2	2.15	0.46
32:a:1293:U:HO2'	32:a:1294:U:H3'	1.81	0.46
32:a:1403:G:H2'	32:a:1404:U:C6	2.51	0.46
37:g:111:ARG:NE	37:g:113:GLU:OE1	2.36	0.46
39:i:62:ASN:HB3	39:i:65:HIS:ND1	2.31	0.46
42:l:4:ILE:O	42:l:8:VAL:HG13	2.15	0.46
43:m:72:ARG:HA	43:m:75:GLN:NE2	2.31	0.46
50:t:18:ARG:HG3	50:t:19:LEU:N	2.31	0.46
7:A:313:G:H3'	7:A:314:G:C8	2.52	0.45
7:A:1012:G:H1	7:A:1023:U:H3	1.64	0.45
7:A:1134:C:O2'	15:J:30:VAL:HG11	2.15	0.45
7:A:2865:G:N2	7:A:3015:G:OP2	2.46	0.45
32:a:295:U:H2'	32:a:296:G:C8	2.50	0.45
32:a:1295:C:H2'	32:a:1296:G:O4'	2.16	0.45
34:d:63:MET:HG3	34:d:64:GLU:H	1.82	0.45
35:e:85:LYS:H	35:e:85:LYS:HG2	1.52	0.45
35:e:120:ALA:HB3	35:e:123:GLY:H	1.81	0.45
41:k:70:PRO:HB3	41:k:105:THR:HG21	1.97	0.45
47:q:76:GLU:CD	47:q:76:GLU:N	2.75	0.45
5:4:13:LYS:HA	5:4:15:ARG:NH2	2.31	0.45
7:A:404:U:O2'	7:A:423:A:N3	2.48	0.45
7:A:685:G:OP1	22:Q:11:HIS:NE2	2.48	0.45
7:A:1767:A:N6	7:A:1780:G:O2'	2.46	0.45
7:A:3018:C:OP2	15:J:120:ARG:HD3	2.17	0.45
19:N:68:LYS:HE3	19:N:68:LYS:HB2	1.64	0.45
22:Q:36:LYS:O	22:Q:40:LEU:HG	2.16	0.45
22:Q:92:ARG:HA	22:Q:95:LEU:HB2	1.99	0.45
22:Q:108:ALA:O	22:Q:112:VAL:HG13	2.15	0.45
23:R:7:ILE:HG22	23:R:41:ALA:HB3	1.99	0.45
23:R:9:LYS:HB2	23:R:9:LYS:HE3	1.64	0.45
23:R:58:LYS:HE3	23:R:58:LYS:HB2	1.78	0.45
32:a:271:C:H2'	32:a:272:A:H8	1.81	0.45
32:a:611:U:H2'	32:a:612:A:O4'	2.16	0.45
33:c:87:ARG:O	33:c:91:GLU:HG2	2.16	0.45
34:d:108:MET:O	34:d:112:LEU:HG	2.15	0.45
46:p:55:ARG:NH1	46:p:55:ARG:HB3	2.31	0.45
49:s:14:HIS:O	49:s:18:LYS:HG2	2.16	0.45
7:A:703:G:H5'	11:E:39:LEU:HD23	1.97	0.45
7:A:1075:A:H2'	7:A:1076:C:C6	2.51	0.45
7:A:1472:G:C2	7:A:1529:C:H4'	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:2035:G:OP2	9:C:154:LYS:HE2	2.16	0.45
7:A:2076:G:H1'	9:C:245:HIS:CD2	2.52	0.45
10:D:151:ILE:HG13	10:D:160:VAL:HG11	1.99	0.45
23:R:9:LYS:HD3	23:R:41:ALA:HB2	1.96	0.45
26:U:2:LYS:CB	26:U:83:ILE:HD11	2.46	0.45
30:Y:13:LEU:HD22	30:Y:17:GLU:CG	2.47	0.45
32:a:334:C:C2	32:a:335:A:C8	3.04	0.45
32:a:572:G:N1	32:a:750:A:OP2	2.39	0.45
32:a:1125:C:H2'	32:a:1126:G:O4'	2.16	0.45
32:a:1194:U:O2'	44:n:29:ARG:HB2	2.17	0.45
32:a:1470:U:H2'	32:a:1471:C:C6	2.51	0.45
33:c:162:MET:HE3	33:c:163:SER:N	2.31	0.45
34:d:83:GLU:H	34:d:83:GLU:CD	2.23	0.45
36:f:75:LEU:O	36:f:79:LEU:HG	2.17	0.45
44:n:6:LEU:HB3	44:n:23:ARG:NH2	2.32	0.45
50:t:60:LYS:O	50:t:64:LYS:HG2	2.17	0.45
6:7:4:ARG:HH21	7:A:2694:C:H5'	1.80	0.45
7:A:1060:A:H5''	7:A:1061:A:C5'	2.46	0.45
7:A:1276:A:H2'	7:A:1277:C:C6	2.51	0.45
7:A:1333:C:H2'	7:A:1334:U:C6	2.52	0.45
7:A:2055:A:H2'	7:A:2056:C:C6	2.51	0.45
7:A:2853:U:H2'	7:A:2854:C:H6	1.82	0.45
9:C:8:PRO:HB3	9:C:14:ARG:HD3	1.99	0.45
11:E:47:GLN:OE1	11:E:190:ASN:ND2	2.50	0.45
12:F:95:ARG:HE	12:F:95:ARG:HB3	1.63	0.45
15:J:14:SER:O	15:J:52:ASP:HB3	2.15	0.45
15:J:17:VAL:CG2	15:J:137:PRO:HB2	2.46	0.45
18:M:48:GLU:OE2	18:M:51:ARG:NH2	2.44	0.45
21:P:42:PHE:HE2	21:P:60:VAL:HG23	1.82	0.45
21:P:108:LYS:HA	21:P:108:LYS:HD2	1.62	0.45
28:W:50:ASN:C	28:W:62:LYS:HG2	2.42	0.45
32:a:307:C:H2'	32:a:308:G:C8	2.51	0.45
32:a:508:G:N1	32:a:524:A:OP1	2.50	0.45
38:h:79:ARG:NE	38:h:81:SER:O	2.49	0.45
42:l:113:ALA:C	42:l:115:SER:H	2.22	0.45
7:A:169:A:H2'	7:A:170:G:O4'	2.16	0.45
7:A:2184:U:H2'	7:A:2185:C:C6	2.51	0.45
7:A:2604:A:H2'	7:A:2605:G:O4'	2.16	0.45
7:A:2656:G:H2'	7:A:2657:U:O4'	2.16	0.45
10:D:161:PHE:HB3	15:J:81:PRO:HG3	1.98	0.45
11:E:161:LEU:HD11	11:E:184:LEU:HG	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:F:12:LYS:O	12:F:16:ARG:NH2	2.34	0.45
15:J:62:VAL:HG23	15:J:64:ILE:HG13	1.98	0.45
18:M:134:ARG:HH12	27:V:127:ASN:HD22	1.63	0.45
32:a:369:C:H2'	32:a:370:A:H8	1.81	0.45
32:a:378:C:H2'	32:a:379:G:C8	2.51	0.45
32:a:432:C:H2'	32:a:433:C:C6	2.52	0.45
42:l:37:VAL:HG11	42:l:74:LEU:O	2.16	0.45
43:m:91:ARG:HG3	43:m:96:MET:O	2.17	0.45
47:q:44:PRO:C	47:q:46:HIS:H	2.24	0.45
50:t:4:ILE:HG22	50:t:6:SER:N	2.31	0.45
7:A:8:U:C4	7:A:9:G:C5	3.05	0.45
7:A:8:U:H2'	7:A:9:G:C8	2.52	0.45
7:A:283:A:H2'	7:A:284:U:C6	2.51	0.45
7:A:567:A:N1	7:A:588:G:H4'	2.32	0.45
7:A:1182:C:C2	7:A:1183:A:C8	3.05	0.45
7:A:1397:G:O5'	24:S:25:ARG:NH2	2.34	0.45
7:A:1720:G:H2'	7:A:1721:A:C8	2.51	0.45
7:A:2718:C:H2'	7:A:2719:G:O4'	2.17	0.45
9:C:108:PRO:HG3	9:C:143:HIS:CE1	2.51	0.45
12:F:137:PHE:CE1	12:F:161:ILE:HB	2.52	0.45
16:K:69:ARG:HG2	16:K:69:ARG:HH11	1.81	0.45
21:P:97:TYR:O	21:P:100:ARG:HG2	2.16	0.45
27:V:11:VAL:HG12	27:V:47:LEU:HA	1.98	0.45
27:V:23:ARG:O	27:V:27:ARG:HG3	2.17	0.45
32:a:492:C:P	42:l:121:LYS:HZ1	2.39	0.45
32:a:884:U:H2'	32:a:885:A:H8	1.82	0.45
32:a:916:A:H2'	32:a:917:C:C6	2.52	0.45
33:c:59:THR:OG1	33:c:62:ARG:NH2	2.50	0.45
34:d:52:GLU:CG	34:d:190:LEU:HD11	2.42	0.45
43:m:94:ARG:HB3	43:m:96:MET:SD	2.56	0.45
49:s:46:GLY:N	49:s:62:VAL:O	2.41	0.45
2:l:22:ASN:HB3	2:l:23:TYR:CD2	2.52	0.45
7:A:330:G:H2'	7:A:331:U:C6	2.52	0.45
7:A:1200:G:N1	7:A:1218:G:O2'	2.48	0.45
7:A:1267:G:N2	15:J:108:MET:SD	2.73	0.45
7:A:1682:U:H2'	7:A:1683:A:H8	1.82	0.45
7:A:1701:U:H2'	7:A:1702:G:H8	1.82	0.45
7:A:2252:A:H2'	7:A:2253:A:C8	2.52	0.45
7:A:2489:OMG:HM23	7:A:2489:OMG:H1'	1.58	0.45
7:A:2501:C:H4'	7:A:2567:A:H4'	1.98	0.45
7:A:2887:U:H2'	7:A:2888:C:H6	1.80	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:E:193:ASP:OD1	11:E:196:ARG:NH2	2.49	0.45
13:G:31:GLY:O	13:G:80:VAL:HG12	2.16	0.45
22:Q:91:ASP:H	23:R:14:GLN:HE22	1.62	0.45
32:a:92:C:H3'	32:a:93:U:C6	2.52	0.45
32:a:334:C:C2	32:a:335:A:N7	2.85	0.45
32:a:374:U:OP1	46:p:69:PRO:HB3	2.17	0.45
32:a:787:C:H4'	41:k:139:VAL:CG1	2.47	0.45
32:a:817:C:H2'	32:a:818:U:C6	2.51	0.45
33:c:20:SER:HB3	33:c:22:TRP:CZ3	2.51	0.45
33:c:21:ARG:NH1	33:c:55:GLU:HB3	2.30	0.45
33:c:191:THR:HG21	33:c:193:PHE:CE1	2.52	0.45
36:f:36:LYS:HD3	36:f:66:LYS:HB3	1.97	0.45
36:f:82:ASN:C	36:f:82:ASN:OD1	2.60	0.45
38:h:41:LYS:CE	38:h:48:ASP:HA	2.45	0.45
43:m:93:ARG:HB3	43:m:94:ARG:HH12	1.82	0.45
50:t:52:ALA:O	50:t:56:ARG:HB2	2.17	0.45
7:A:198:A:H62	7:A:960:G:H21	1.63	0.45
7:A:610:G:H2'	7:A:611:C:C6	2.52	0.45
7:A:957:U:H4'	7:A:960:G:N1	2.32	0.45
7:A:1299:C:H2'	7:A:1300:C:H6	1.82	0.45
7:A:1866:G:H1'	7:A:1870:A:H61	1.82	0.45
7:A:2969:G:H2'	7:A:2970:G:C8	2.52	0.45
7:A:3032:A:H2'	7:A:3033:C:C6	2.52	0.45
15:J:147:GLN:HG2	22:Q:78:ARG:HE	1.82	0.45
16:K:35:ILE:HB	16:K:69:ARG:HH12	1.81	0.45
18:M:53:ALA:HB1	18:M:120:ARG:HG3	1.98	0.45
20:O:30:ARG:HA	20:O:94:THR:O	2.17	0.45
32:a:48:U:H2'	32:a:49:G:C8	2.51	0.45
32:a:171:C:H4'	50:t:20:ARG:NE	2.32	0.45
32:a:467:G:H2'	32:a:468:G:C8	2.52	0.45
32:a:470:U:H2'	32:a:471:U:C6	2.52	0.45
32:a:1104:C:H2'	32:a:1105:C:H6	1.82	0.45
38:h:119:ALA:HB3	38:h:120:ARG:HD2	1.99	0.45
41:k:43:THR:C	41:k:44:ILE:HD13	2.42	0.45
42:l:24:LEU:HD13	42:l:27:SER:H	1.82	0.45
7:A:779:U:H2'	7:A:780:G:O4'	2.17	0.45
7:A:924:C:H2'	7:A:925:U:C6	2.52	0.45
7:A:940:U:H2'	17:L:23:ARG:HA	1.98	0.45
7:A:1222:G:H21	7:A:1227:A:H62	1.65	0.45
7:A:1720:G:H2'	7:A:1721:A:H8	1.82	0.45
7:A:1751:C:H2'	7:A:1752:U:H6	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:1979:A:H2'	7:A:1980:U:H6	1.81	0.45
7:A:2053:A:H5''	9:C:158:SER:OG	2.17	0.45
7:A:2529:U:H2'	7:A:2530:U:H6	1.77	0.45
10:D:33:PRO:HB2	10:D:100:GLU:OE2	2.16	0.45
10:D:43:GLU:H	10:D:43:GLU:CD	2.21	0.45
11:E:21:ASP:OD1	11:E:22:GLY:N	2.49	0.45
11:E:58:THR:CG2	11:E:99:PRO:HD2	2.46	0.45
18:M:127:ILE:HD12	18:M:127:ILE:HA	1.78	0.45
21:P:26:ASN:OD1	21:P:43:LYS:HD3	2.16	0.45
26:U:17:LYS:HA	26:U:17:LYS:HD2	1.81	0.45
27:V:74:GLN:HG3	27:V:75:LEU:N	2.32	0.45
28:W:50:ASN:O	28:W:62:LYS:HG2	2.17	0.45
32:a:118:C:H5''	32:a:310:C:O2'	2.16	0.45
32:a:438:U:O2'	34:d:126:ASN:OD1	2.35	0.45
32:a:857:A:H2'	32:a:858:A:C8	2.52	0.45
36:f:91:MET:HG3	48:r:32:TYR:OH	2.17	0.45
37:g:138:ARG:NE	37:g:138:ARG:HA	2.31	0.45
38:h:36:ILE:CD1	38:h:105:ILE:HG21	2.47	0.45
39:i:70:LYS:O	39:i:74:VAL:HG13	2.17	0.45
45:o:25:PRO:HB2	45:o:70:ILE:HD12	1.99	0.45
7:A:502:C:H2'	7:A:503:C:C6	2.52	0.45
7:A:1138:A:N3	7:A:1283:C:O2'	2.47	0.45
7:A:1140:G:OP1	22:Q:77:ASN:HB2	2.17	0.45
7:A:2043:A:H2'	7:A:2044:A:C8	2.52	0.45
7:A:2517:G:OP2	28:W:11:ARG:NH1	2.46	0.45
7:A:2751:G:H2'	7:A:2752:U:C6	2.51	0.45
7:A:3047:G:H2'	7:A:3048:C:H6	1.81	0.45
11:E:148:ARG:HB2	11:E:178:LEU:HD21	1.99	0.45
12:F:19:ILE:HD12	12:F:19:ILE:N	2.31	0.45
21:P:48:ARG:HG3	21:P:95:LYS:HE3	1.99	0.45
29:X:38:ALA:HA	29:X:62:THR:O	2.17	0.45
30:Y:14:THR:H	30:Y:17:GLU:CD	2.25	0.45
30:Y:20:GLU:OE1	30:Y:24:GLU:OE2	2.35	0.45
32:a:496:G:H4'	32:a:525:U:N3	2.32	0.45
37:g:117:ILE:HG23	37:g:118:GLU:N	2.32	0.45
38:h:81:SER:HA	38:h:87:VAL:HG12	1.99	0.45
39:i:48:LYS:H	39:i:83:ASP:HB3	1.81	0.45
45:o:8:LYS:O	45:o:12:LEU:HG	2.17	0.45
47:q:99:HIS:CG	47:q:119:LEU:HD12	2.52	0.45
7:A:154:C:H2'	7:A:155:G:C8	2.52	0.44
7:A:273:A:C4	7:A:274:A:C8	3.05	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:681:G:O2'	7:A:2257:C:OP1	2.32	0.44
7:A:1381:G:H5''	22:Q:6:ARG:HD3	1.99	0.44
7:A:1822:C:H2'	7:A:1823:A:C8	2.52	0.44
10:D:127:MET:HE2	10:D:146:ARG:HA	1.99	0.44
11:E:13:VAL:HG11	11:E:134:THR:HG22	1.98	0.44
12:F:11:LEU:HA	12:F:14:ARG:HG3	1.98	0.44
13:G:43:VAL:HA	13:G:52:VAL:O	2.17	0.44
16:K:9:LYS:O	16:K:83:ALA:HA	2.17	0.44
16:K:39:ILE:O	16:K:39:ILE:HG13	2.16	0.44
21:P:28:HIS:CE1	21:P:41:VAL:HG23	2.52	0.44
28:W:51:VAL:HG23	28:W:80:ILE:HD12	1.99	0.44
32:a:334:C:H1'	32:a:1427:A:H1'	1.99	0.44
32:a:726:G:H2'	32:a:727:U:C6	2.52	0.44
32:a:1109:U:H2'	32:a:1110:C:C6	2.52	0.44
32:a:1179:G:H2'	32:a:1180:A:H8	1.81	0.44
34:d:165:TRP:CZ2	34:d:166:LEU:HD23	2.53	0.44
36:f:74:GLU:OE1	36:f:74:GLU:HA	2.17	0.44
38:h:30:SER:OG	38:h:33:LYS:HG2	2.17	0.44
38:h:35:ASN:CB	38:h:112:LEU:HD12	2.47	0.44
42:l:7:LEU:CD2	42:l:12:ARG:HG2	2.47	0.44
42:l:74:LEU:HD21	42:l:104:THR:HG22	1.99	0.44
50:t:25:LYS:HA	50:t:28:LEU:HG	1.98	0.44
4:3:33:LEU:HD13	7:A:2657:U:OP2	2.18	0.44
7:A:311:C:H2'	7:A:312:G:O4'	2.17	0.44
7:A:1191:G:N1	7:A:1205:C:H2'	2.29	0.44
7:A:1673:A:H2'	7:A:1674:G:C8	2.52	0.44
7:A:1701:U:H2'	7:A:1702:G:C8	2.53	0.44
7:A:2269:A:N3	7:A:2693:G:O2'	2.39	0.44
7:A:2468:G:H2'	7:A:2469:C:C6	2.53	0.44
26:U:24:LEU:HD11	26:U:36:GLU:HG3	1.99	0.44
32:a:406:G:O2'	34:d:108:MET:HB3	2.17	0.44
32:a:451:A:N1	46:p:94:LYS:HG2	2.31	0.44
32:a:537:G:OP2	34:d:63:MET:SD	2.75	0.44
32:a:1228:A:H4'	32:a:1296:G:H4'	1.99	0.44
34:d:7:PRO:HB2	34:d:10:ARG:CD	2.45	0.44
34:d:69:ARG:HA	34:d:72:GLU:HG2	1.98	0.44
47:q:61:ILE:HD11	47:q:110:ARG:HG3	2.00	0.44
47:q:119:LEU:HB2	47:q:123:LYS:HG2	1.99	0.44
50:t:31:ALA:CB	50:t:57:LYS:HE2	2.47	0.44
7:A:325:G:H2'	7:A:326:A:H8	1.82	0.44
7:A:407:A:H2'	7:A:408:C:O4'	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:968:U:H2'	7:A:969:U:C6	2.52	0.44
7:A:990:A:H2'	7:A:991:G:O4'	2.18	0.44
7:A:1275:C:H2'	7:A:1276:A:H8	1.83	0.44
7:A:1742:U:H2'	7:A:1743:C:H6	1.82	0.44
7:A:2705:C:H2'	7:A:2706:A:O4'	2.16	0.44
9:C:68:ARG:NH1	9:C:150:GLY:O	2.49	0.44
18:M:67:ASN:OD1	18:M:67:ASN:N	2.42	0.44
27:V:24:ARG:HG3	27:V:24:ARG:HH11	1.81	0.44
32:a:450:A:H1'	32:a:452:G:C8	2.52	0.44
32:a:613:A:H5'	34:d:69:ARG:NH2	2.32	0.44
32:a:642:C:H2'	32:a:643:U:C6	2.52	0.44
32:a:870:C:H5''	38:h:82:LYS:HD3	2.00	0.44
32:a:1054:C:OP2	32:a:1055:G:O2'	2.29	0.44
32:a:1235:C:H2'	32:a:1236:C:H6	1.82	0.44
32:a:1242:A:H4'	39:i:90:GLY:HA2	1.98	0.44
32:a:1392:C:O2	32:a:1495:A:N6	2.50	0.44
34:d:59:THR:O	34:d:106:ARG:NH1	2.50	0.44
34:d:93:LEU:HD22	34:d:130:TYR:HD1	1.83	0.44
38:h:96:ARG:HD3	38:h:96:ARG:HA	1.65	0.44
46:p:7:LEU:HD11	46:p:18:TYR:HB3	1.99	0.44
4:3:47:ARG:NH2	7:A:734:G:OP1	2.48	0.44
5:4:27:CYS:SG	5:4:28:SER:N	2.90	0.44
7:A:203:C:OP1	29:X:24:ARG:NH1	2.51	0.44
7:A:289:A:H2'	7:A:290:A:O4'	2.18	0.44
7:A:783:U:O2'	7:A:784:A:H2'	2.17	0.44
7:A:1057:G:O2'	31:Z:25:THR:O	2.35	0.44
7:A:1213:A:H8	7:A:1214:A:C8	2.36	0.44
7:A:1414:G:O2'	7:A:1416:G:N7	2.47	0.44
7:A:2303:C:H2'	7:A:2304:C:H6	1.83	0.44
7:A:3048:C:H2'	7:A:3049:C:H6	1.83	0.44
7:A:3050:C:C4	7:A:3051:C:C5	3.05	0.44
8:B:4:C:C2	8:B:5:G:C8	3.06	0.44
8:B:61:U:H2'	8:B:62:G:C8	2.52	0.44
10:D:130:HIS:CD2	10:D:165:ARG:HB3	2.52	0.44
12:F:14:ARG:HA	12:F:17:SER:HB2	1.99	0.44
12:F:21:ASP:HB2	12:F:25:LYS:NZ	2.32	0.44
18:M:15:PRO:O	18:M:41:TYR:OH	2.30	0.44
22:Q:78:ARG:HB3	22:Q:117:LEU:HD11	1.99	0.44
31:Z:5:LYS:HE2	31:Z:34:SER:CB	2.48	0.44
32:a:142:G:H2'	32:a:143:G:H8	1.81	0.44
32:a:530:A:H2'	32:a:531:G:C8	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:a:583:G:H2'	32:a:584:U:C6	2.53	0.44
32:a:948:A:H2'	32:a:949:U:C6	2.52	0.44
33:c:30:GLU:OE1	33:c:30:GLU:N	2.33	0.44
33:c:89:ASP:HA	33:c:92:LYS:HG3	2.00	0.44
33:c:156:ARG:HB2	33:c:193:PHE:CE1	2.53	0.44
41:k:31:ALA:HB3	41:k:94:VAL:HG22	1.99	0.44
43:m:70:LEU:O	43:m:74:VAL:HG12	2.18	0.44
47:q:82:ARG:HH11	47:q:82:ARG:HG2	1.82	0.44
47:q:126:ARG:NH1	47:q:128:VAL:HG22	2.32	0.44
48:r:42:ILE:HD11	48:r:68:VAL:HG11	1.99	0.44
7:A:183:A:H1'	7:A:524:C:H5'	1.99	0.44
7:A:274:A:H4'	7:A:456:C:O2'	2.18	0.44
7:A:816:C:H2'	7:A:817:U:O4'	2.17	0.44
7:A:828:A:H2'	7:A:829:G:O4'	2.18	0.44
7:A:980:C:H2'	7:A:981:C:C6	2.53	0.44
7:A:2096:C:H2'	7:A:2097:G:H8	1.81	0.44
7:A:2227:A:H2'	7:A:2228:C:O4'	2.17	0.44
7:A:2247:G:OP1	24:S:51:GLN:NE2	2.50	0.44
7:A:2722:G:O2'	18:M:124:LYS:O	2.31	0.44
7:A:2753:C:H2'	7:A:2754:G:H8	1.83	0.44
7:A:3038:U:H2'	7:A:3039:G:C8	2.53	0.44
9:C:77:ALA:HB2	9:C:97:TYR:CE1	2.52	0.44
12:F:142:GLN:OE1	12:F:157:ARG:N	2.38	0.44
13:G:45:ARG:NH2	13:G:51:ILE:HG13	2.28	0.44
16:K:66:VAL:HA	16:K:79:PHE:O	2.18	0.44
20:O:75:ARG:HG3	20:O:75:ARG:NH1	2.32	0.44
21:P:13:ARG:HD2	21:P:76:HIS:HA	1.99	0.44
22:Q:82:GLY:HA3	22:Q:113:ALA:HB1	2.00	0.44
25:T:7:PRO:HG3	25:T:48:LYS:HD3	1.99	0.44
32:a:165:C:H2'	32:a:166:U:C6	2.53	0.44
32:a:278:A:H5''	32:a:280:G:O4'	2.17	0.44
32:a:321:C:H2'	32:a:322:U:C6	2.53	0.44
32:a:328:A:O2'	32:a:331:G:N7	2.31	0.44
32:a:699:C:H2'	32:a:700:A:H8	1.82	0.44
32:a:895:G:H2'	32:a:896:G:C8	2.52	0.44
32:a:1360:U:H5'	40:j:62:ARG:HH12	1.83	0.44
37:g:116:MET:HB2	37:g:116:MET:HE3	1.72	0.44
41:k:79:ASN:O	41:k:82:ARG:HG3	2.18	0.44
46:p:7:LEU:HD13	46:p:20:VAL:HG22	1.98	0.44
50:t:22:LYS:HA	50:t:25:LYS:NZ	2.32	0.44
50:t:50:LEU:O	50:t:54:THR:HG23	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:26:GLU:O	1:0:40:PRO:HA	2.17	0.44
2:1:19:LYS:HD3	2:1:19:LYS:HA	1.75	0.44
7:A:600:G:OP1	7:A:1365:U:O2'	2.30	0.44
7:A:1148:U:H2'	7:A:1149:A:C8	2.52	0.44
7:A:1247:G:H2'	7:A:1248:U:O4'	2.17	0.44
7:A:1349:A:H2'	7:A:1350:C:C6	2.53	0.44
7:A:1733:A:H2'	7:A:1735:C:C4	2.53	0.44
7:A:1733:A:H2'	7:A:1735:C:C5	2.53	0.44
7:A:2485:A:H2'	7:A:2486:C:C6	2.53	0.44
7:A:3028:A:H5'	7:A:3029:C:OP2	2.18	0.44
8:B:1:U:H2'	8:B:2:U:C6	2.53	0.44
10:D:6:ILE:HG22	10:D:106:PHE:HE2	1.83	0.44
12:F:71:LYS:HB3	12:F:71:LYS:HE2	1.79	0.44
12:F:155:ARG:HG3	12:F:155:ARG:HH11	1.83	0.44
15:J:88:THR:HG22	15:J:90:GLY:N	2.26	0.44
32:a:77:G:N2	32:a:92:C:N3	2.66	0.44
32:a:516:C:C4	32:a:517:C:N4	2.79	0.44
32:a:736:A:H2'	32:a:737:G:H8	1.83	0.44
32:a:970:A:O2'	32:a:972:C:OP2	2.29	0.44
32:a:1407:U:H2'	32:a:1408:G:H8	1.83	0.44
33:c:18:TRP:NE1	44:n:56:VAL:O	2.47	0.44
33:c:109:GLU:OE1	33:c:109:GLU:N	2.50	0.44
34:d:165:TRP:CE3	34:d:181:PRO:HD3	2.53	0.44
38:h:108:THR:HG22	38:h:124:GLY:O	2.17	0.44
4:3:3:LYS:HD2	7:A:244:G:O5'	2.16	0.44
7:A:197:A:H61	7:A:200:C:H3'	1.83	0.44
7:A:664:U:H6	7:A:664:U:H2'	1.63	0.44
7:A:680:A:OP1	7:A:1386:U:O2'	2.26	0.44
7:A:1394:U:C4	7:A:1395:G:C6	3.05	0.44
7:A:1905:C:O2	10:D:139:HIS:NE2	2.41	0.44
7:A:2843:U:H2'	7:A:2844:C:C6	2.53	0.44
7:A:3012:C:H2'	7:A:3013:A:O4'	2.18	0.44
9:C:72:LYS:HE3	9:C:101:GLU:HG2	2.00	0.44
15:J:29:ALA:CB	15:J:108:MET:HE3	2.46	0.44
24:S:55:GLY:O	24:S:59:LYS:HG2	2.17	0.44
32:a:127:U:H2'	32:a:128:C:C6	2.52	0.44
32:a:599:A:C2	32:a:600:A:H1'	2.52	0.44
36:f:25:THR:HA	36:f:28:ASN:ND2	2.33	0.44
39:i:66:GLN:HB3	39:i:70:LYS:NZ	2.32	0.44
41:k:89:VAL:HG13	41:k:115:LEU:HD21	2.00	0.44
50:t:28:LEU:O	50:t:32:VAL:HG12	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:t:84:ASN:HB2	50:t:85:LYS:NZ	2.32	0.44
7:A:26:G:H1'	7:A:602:A:N6	2.33	0.44
7:A:338:G:H21	7:A:338:G:P	2.39	0.44
7:A:616:A:C2	7:A:2281:C:H4'	2.53	0.44
7:A:883:U:O2'	7:A:1403:A:N1	2.51	0.44
7:A:943:C:H1'	7:A:1356:G:N2	2.33	0.44
7:A:1866:G:N1	7:A:1869:C:OP2	2.41	0.44
7:A:2597:C:O2	17:L:59:ARG:NH1	2.50	0.44
7:A:2604:A:H4'	28:W:62:LYS:HE2	1.99	0.44
12:F:12:LYS:NZ	12:F:16:ARG:NE	2.65	0.44
12:F:44:ASN:OD1	12:F:45:MET:N	2.50	0.44
16:K:39:ILE:HD12	16:K:41:ALA:HB2	2.00	0.44
18:M:54:ILE:HD11	18:M:121:ALA:HB2	1.99	0.44
20:O:32:ARG:O	20:O:46:LEU:HA	2.17	0.44
32:a:228:U:O2'	46:p:24:ASP:OD1	2.31	0.44
32:a:382:A:C5	32:a:383:G:H1'	2.53	0.44
32:a:415:G:C4	32:a:416:G:C8	3.06	0.44
32:a:574:A:H2'	32:a:575:G:O4'	2.18	0.44
32:a:593:U:H2'	32:a:594:C:H6	1.81	0.44
32:a:742:U:H2'	32:a:743:G:O4'	2.18	0.44
32:a:870:C:H4'	38:h:5:ASP:OD1	2.17	0.44
32:a:1274:C:H2'	32:a:1275:C:C6	2.52	0.44
37:g:74:GLU:O	37:g:88:PRO:HA	2.17	0.44
38:h:55:ARG:HG2	38:h:56:VAL:HG23	1.98	0.44
38:h:106:ILE:HG22	38:h:108:THR:HG23	1.99	0.44
42:l:20:LYS:HD2	42:l:20:LYS:HA	1.80	0.44
7:A:703:G:H2'	7:A:704:C:C6	2.52	0.44
7:A:818:A:H2'	7:A:819:C:C6	2.52	0.44
7:A:1880:G:H5'	7:A:1881:U:H5'	1.99	0.44
7:A:2139:A:H2'	7:A:2140:C:C6	2.53	0.44
7:A:2558:C:O2	7:A:2558:C:H2'	2.17	0.44
7:A:2593:C:H1'	28:W:39:ARG:NH2	2.29	0.44
7:A:2693:G:H2'	7:A:2694:C:H6	1.82	0.44
13:G:4:ILE:HD13	13:G:4:ILE:HA	1.83	0.44
13:G:116:ILE:HG21	13:G:149:ILE:HD11	1.99	0.44
18:M:108:TYR:HB3	18:M:114:ALA:HB2	1.99	0.44
25:T:29:TYR:N	25:T:29:TYR:CD1	2.86	0.44
25:T:68:ARG:NH1	25:T:69:THR:O	2.50	0.44
26:U:22:LYS:HD3	26:U:22:LYS:C	2.43	0.44
27:V:56:LEU:CD2	27:V:57:ARG:HH12	2.26	0.44
27:V:114:GLY:HA3	27:V:146:ILE:O	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:V:138:ILE:N	27:V:139:PRO:HD2	2.33	0.44
32:a:372:A:H2'	32:a:373:A:H8	1.82	0.44
32:a:492:C:O2	32:a:540:C:O2'	2.27	0.44
32:a:670:C:H2'	32:a:671:C:C6	2.53	0.44
32:a:951:A:N1	49:s:55:ARG:HB3	2.32	0.44
32:a:1230:A:OP1	32:a:1327:U:O2'	2.33	0.44
32:a:1279:A:H2	32:a:1345:G:H1'	1.83	0.44
32:a:1294:U:O4	43:m:14:ARG:NH1	2.42	0.44
32:a:1506:A:H2'	32:a:1507:C:H6	1.79	0.44
33:c:90:LEU:HD23	33:c:98:VAL:HG11	2.00	0.44
39:i:44:PRO:HA	39:i:82:PHE:HA	1.99	0.44
46:p:73:LEU:O	46:p:77:THR:HG22	2.18	0.44
48:r:56:ASN:C	48:r:56:ASN:OD1	2.60	0.44
7:A:350:A:H2'	7:A:351:G:C8	2.52	0.43
7:A:847:A:H3'	7:A:848:C:H6	1.82	0.43
7:A:1153:G:O2'	7:A:1274:G:O2'	2.33	0.43
21:P:48:ARG:HB3	21:P:59:THR:HB	2.00	0.43
32:a:451:A:H5'	32:a:452:G:O5'	2.17	0.43
32:a:929:C:C2	32:a:930:A:C8	3.06	0.43
32:a:1047:U:H2'	32:a:1048:G:H8	1.83	0.43
32:a:1106:U:H2'	32:a:1107:U:H6	1.82	0.43
32:a:1298:A:H2'	32:a:1299:U:H5'	1.99	0.43
3:2:11:ASN:ND2	7:A:899:G:OP1	2.38	0.43
7:A:241:C:OP1	7:A:694:G:N2	2.51	0.43
7:A:258:A:H2'	7:A:259:C:H6	1.83	0.43
7:A:451:C:H2'	7:A:452:A:C8	2.54	0.43
7:A:1157:A:N3	7:A:2724:G:O2'	2.42	0.43
7:A:1306:G:H1'	7:A:1308:G:C8	2.53	0.43
7:A:1518:G:H5'	7:A:1707:A:H1'	1.99	0.43
7:A:1891:C:H2'	7:A:1892:U:H6	1.82	0.43
7:A:1957:A:N6	7:A:1972:G:H1'	2.33	0.43
7:A:2309:C:H2'	7:A:2310:C:C6	2.53	0.43
7:A:2781:G:H2'	7:A:2782:G:C8	2.53	0.43
8:B:61:U:H2'	8:B:62:G:H8	1.83	0.43
9:C:66:ASP:OD2	9:C:103:ARG:NE	2.46	0.43
9:C:79:VAL:HG23	9:C:115:ASP:O	2.18	0.43
9:C:108:PRO:CD	9:C:111:LEU:HD12	2.46	0.43
9:C:182:ILE:HD11	9:C:270:ARG:HH21	1.83	0.43
11:E:144:THR:HA	11:E:174:SER:O	2.18	0.43
18:M:87:LYS:HE3	18:M:87:LYS:HB3	1.87	0.43
22:Q:50:ARG:O	22:Q:54:LYS:NZ	2.46	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:a:103:A:OP2	32:a:325:G:N2	2.37	0.43
32:a:126:A:O4'	47:q:117:ARG:HD2	2.18	0.43
32:a:163:G:H2'	32:a:164:U:H6	1.84	0.43
32:a:979:U:H2'	32:a:980:G:O4'	2.18	0.43
32:a:1364:G:H2'	32:a:1365:U:H6	1.83	0.43
35:e:69:ILE:HG13	35:e:79:VAL:HG22	2.00	0.43
38:h:35:ASN:HB2	38:h:112:LEU:HD12	2.01	0.43
40:j:12:ALA:HB2	40:j:96:VAL:HG22	1.99	0.43
40:j:64:HIS:HB3	40:j:66:GLU:OE2	2.17	0.43
40:j:72:ARG:O	40:j:73:LEU:HD13	2.18	0.43
47:q:76:GLU:N	47:q:76:GLU:OE1	2.51	0.43
6:7:6:ARG:NH2	7:A:1263:G:O6	2.45	0.43
7:A:1297:A:H2'	7:A:1298:U:C6	2.54	0.43
7:A:1354:G:OP2	23:R:92:ARG:NH1	2.51	0.43
7:A:2115:A:H2'	7:A:2116:G:O4'	2.18	0.43
13:G:8:PRO:O	13:G:70:ARG:NH2	2.51	0.43
15:J:125:TYR:HH	15:J:132:HIS:CD2	2.35	0.43
21:P:96:LEU:HD13	21:P:99:LEU:HD11	2.00	0.43
23:R:24:LYS:HE3	23:R:24:LYS:HB2	1.70	0.43
27:V:62:ASN:OD1	27:V:106:VAL:HG11	2.17	0.43
32:a:787:C:C5'	41:k:139:VAL:HG13	2.48	0.43
32:a:852:U:H2'	32:a:853:A:C8	2.53	0.43
32:a:1359:C:H2'	32:a:1360:U:H6	1.83	0.43
32:a:1505:U:H2'	32:a:1506:A:C8	2.52	0.43
33:c:19:LYS:NZ	33:c:54:VAL:H	2.14	0.43
34:d:66:GLN:CD	34:d:66:GLN:H	2.20	0.43
34:d:197:GLU:OE2	35:e:143:ARG:NH2	2.50	0.43
35:e:207:SER:OG	35:e:208:GLU:OE1	2.36	0.43
51:x:24:THR:O	51:x:29:ARG:NE	2.37	0.43
2:1:35:ARG:NH2	2:1:52:ARG:NH1	2.67	0.43
3:2:28:ARG:NH2	7:A:213:G:OP1	2.51	0.43
7:A:297:A:H2'	7:A:298:G:C8	2.53	0.43
7:A:788:G:H4'	11:E:107:ARG:O	2.19	0.43
7:A:979:A:H2'	7:A:980:C:H6	1.84	0.43
7:A:1141:C:N3	15:J:27:ARG:HD3	2.33	0.43
7:A:1356:G:H4'	23:R:88:ARG:HB3	2.00	0.43
7:A:1839:C:H2'	7:A:1840:C:H6	1.83	0.43
7:A:2552:A:H5''	12:F:42:VAL:HG21	2.01	0.43
7:A:2899:G:H2'	7:A:2900:A:C8	2.53	0.43
9:C:18:VAL:HG23	9:C:211:ARG:NH2	2.33	0.43
12:F:52:ARG:HG2	12:F:52:ARG:NH1	2.32	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:K:36:GLY:HA2	16:K:106:LEU:HD23	2.00	0.43
19:N:65:GLU:O	19:N:68:LYS:HB3	2.19	0.43
32:a:183:A:H2'	32:a:184:C:C6	2.54	0.43
32:a:701:G:H5''	36:f:54:LYS:NZ	2.32	0.43
32:a:944:G:OP2	43:m:102:ARG:NH1	2.52	0.43
32:a:1243:A:H2'	32:a:1244:A:C8	2.53	0.43
35:e:65:THR:HG21	35:e:81:TYR:OH	2.18	0.43
35:e:66:ALA:CB	35:e:91:ILE:HD13	2.48	0.43
38:h:49:PHE:CD1	38:h:49:PHE:C	2.96	0.43
38:h:80:VAL:HG21	38:h:130:TYR:CE1	2.53	0.43
42:l:99:ARG:HB2	42:l:117:TYR:HA	2.01	0.43
46:p:46:PRO:O	46:p:47:SER:OG	2.36	0.43
49:s:55:ARG:HE	49:s:56:LYS:HZ3	1.67	0.43
7:A:178:G:O2'	7:A:179:A:H5'	2.18	0.43
7:A:199:A:N6	7:A:2668:A:H2'	2.32	0.43
7:A:2782:G:H1'	7:A:2884:C:H5'	2.00	0.43
7:A:2967:U:H2'	7:A:2968:C:C6	2.54	0.43
12:F:155:ARG:HG3	12:F:155:ARG:NH1	2.33	0.43
15:J:141:GLU:N	15:J:141:GLU:OE1	2.52	0.43
16:K:64:ARG:HG2	16:K:83:ALA:HB3	1.99	0.43
27:V:72:LYS:HZ1	27:V:74:GLN:HB2	1.83	0.43
32:a:630:G:C6	32:a:631:A:C5	3.06	0.43
32:a:633:A:N7	38:h:109:SER:HA	2.33	0.43
32:a:873:C:H5	42:l:3:THR:HG21	1.83	0.43
32:a:1014:G:H2'	32:a:1015:C:C6	2.54	0.43
35:e:188:ARG:HH21	38:h:43:GLU:HG3	1.83	0.43
43:m:83:GLU:OE1	43:m:83:GLU:HA	2.18	0.43
3:2:24:ARG:O	3:2:30:GLY:HA3	2.18	0.43
5:4:14:CYS:HA	5:4:27:CYS:HB2	2.00	0.43
7:A:78:U:H2'	7:A:79:C:H6	1.82	0.43
7:A:152:C:H2'	7:A:153:C:H6	1.83	0.43
7:A:324:G:C6	7:A:325:G:N7	2.86	0.43
7:A:327:U:H2'	7:A:328:A:H8	1.83	0.43
7:A:946:C:O2'	7:A:968:U:OP1	2.30	0.43
7:A:986:A:H2'	7:A:987:G:O4'	2.19	0.43
7:A:1849:A:C2	24:S:103:ALA:HB2	2.53	0.43
7:A:2770:G:O2'	7:A:2895:A:N1	2.45	0.43
7:A:3025:C:H1'	10:D:65:PRO:HG3	2.00	0.43
7:A:3075:U:H2'	7:A:3076:C:C6	2.53	0.43
7:A:3129:A:C5	7:A:3130:C:C5	3.07	0.43
10:D:7:LEU:HD23	10:D:7:LEU:HA	1.89	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:F:136:THR:HA	12:F:161:ILE:O	2.19	0.43
13:G:85:THR:HG23	13:G:133:THR:HG23	2.00	0.43
16:K:35:ILE:CG2	16:K:105:GLU:HB2	2.49	0.43
16:K:102:VAL:CG1	16:K:106:LEU:HD12	2.48	0.43
20:O:31:PRO:HB2	20:O:46:LEU:CD1	2.49	0.43
32:a:323:G:H22	32:a:325:G:H3'	1.83	0.43
32:a:544:G:H2'	32:a:545:U:C6	2.54	0.43
32:a:787:C:O2'	41:k:137:ARG:NH2	2.46	0.43
32:a:941:C:H2'	32:a:942:A:H8	1.84	0.43
32:a:1109:U:H2'	32:a:1110:C:H6	1.83	0.43
32:a:1281:A:N1	32:a:1364:G:O2'	2.42	0.43
34:d:35:GLN:O	34:d:38:ARG:NH2	2.48	0.43
35:e:49:ILE:HD11	35:e:91:ILE:HD11	2.01	0.43
39:i:141:LYS:HB2	39:i:144:LYS:HB3	2.00	0.43
51:x:21:LEU:O	51:x:24:THR:C	2.61	0.43
7:A:128:C:H2'	7:A:129:C:H6	1.83	0.43
7:A:345:G:H2'	7:A:346:G:H8	1.84	0.43
7:A:744:C:H2'	7:A:745:U:C6	2.54	0.43
7:A:962:G:H2'	7:A:963:C:C6	2.54	0.43
7:A:1025:A:O2'	7:A:1026:C:H5'	2.18	0.43
7:A:1431:A:H4'	7:A:1432:A:H5''	2.00	0.43
7:A:1824:C:H2'	7:A:1825:A:C8	2.53	0.43
9:C:126:LYS:HB2	9:C:129:ASN:ND2	2.34	0.43
11:E:189:LEU:HD23	11:E:189:LEU:HA	1.92	0.43
12:F:97:THR:CG2	12:F:99:ARG:HE	2.32	0.43
13:G:73:VAL:HA	13:G:76:LEU:HD23	2.00	0.43
16:K:77:ILE:HD12	16:K:78:LYS:H	1.84	0.43
25:T:51:ALA:HB3	25:T:91:ARG:NH2	2.34	0.43
27:V:32:PRO:HG2	27:V:92:HIS:HD1	1.83	0.43
32:a:132:C:H2'	32:a:133:C:C6	2.53	0.43
32:a:612:A:O2'	34:d:69:ARG:NH2	2.52	0.43
32:a:1135:G:H2'	32:a:1136:G:C8	2.54	0.43
33:c:42:LEU:HD11	33:c:54:VAL:HG21	2.00	0.43
40:j:29:VAL:O	40:j:32:THR:OG1	2.31	0.43
42:l:31:ARG:HD2	42:l:79:MET:HE2	2.00	0.43
48:r:40:THR:C	48:r:42:ILE:H	2.27	0.43
1:0:6:ARG:HH11	1:0:6:ARG:HG2	1.83	0.43
6:7:4:ARG:O	6:7:8:LYS:HG3	2.19	0.43
7:A:144:U:H4'	25:T:40:THR:HB	2.01	0.43
7:A:485:C:H1'	29:X:29:TRP:HB3	2.00	0.43
7:A:660:G:H5''	15:J:112:ASN:ND2	2.34	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:958:A:N7	7:A:2485:A:O2'	2.52	0.43
7:A:1807:A:H2'	7:A:1808:A:C8	2.53	0.43
7:A:1918:C:H2'	7:A:1919:C:C6	2.53	0.43
7:A:2087:A:N3	7:A:2471:U:O2'	2.48	0.43
7:A:2884:C:H6	7:A:2884:C:O5'	2.02	0.43
10:D:61:LYS:HE2	10:D:61:LYS:HB2	1.73	0.43
13:G:117:GLU:H	13:G:117:GLU:CD	2.19	0.43
17:L:56:ILE:HD12	17:L:56:ILE:HA	1.84	0.43
21:P:88:ARG:HE	21:P:88:ARG:HB2	1.61	0.43
32:a:89:A:H2	32:a:91:A:H3'	1.83	0.43
32:a:105:C:H2'	32:a:106:G:O4'	2.18	0.43
32:a:153:G:N2	32:a:160:U:O2	2.38	0.43
32:a:228:U:H5''	46:p:34:ILE:HD13	2.00	0.43
32:a:537:G:OP1	34:d:63:MET:HG3	2.19	0.43
32:a:733:G:P	45:o:35:ARG:HH22	2.41	0.43
32:a:905:C:H2'	32:a:906:A:C8	2.53	0.43
32:a:1098:C:C4	32:a:1099:G:C8	3.06	0.43
32:a:1149:A:H4'	32:a:1150:C:O4'	2.18	0.43
32:a:1364:G:H2'	32:a:1365:U:C6	2.53	0.43
32:a:1452:G:H2'	32:a:1453:A:H8	1.84	0.43
35:e:130:ALA:HB1	35:e:134:THR:HG23	2.00	0.43
38:h:70:ARG:HA	38:h:70:ARG:HD2	1.73	0.43
42:l:50:ARG:HH11	42:l:50:ARG:HG3	1.84	0.43
49:s:35:SER:O	49:s:71:LEU:HD23	2.19	0.43
2:l:47:LYS:HB3	2:l:47:LYS:HE2	1.83	0.43
7:A:2443:A:H2'	7:A:2444:C:C6	2.54	0.43
7:A:2633:C:H2'	7:A:2634:G:O4'	2.18	0.43
7:A:2857:C:O4'	10:D:160:VAL:HG23	2.19	0.43
7:A:2999:G:H1'	13:G:144:GLN:OE1	2.19	0.43
9:C:213:ARG:HD2	9:C:217:LYS:O	2.19	0.43
9:C:233:HIS:NE2	9:C:246:PRO:HA	2.34	0.43
12:F:53:ASP:CG	12:F:53:ASP:O	2.62	0.43
13:G:69:SER:O	13:G:73:VAL:HG23	2.18	0.43
18:M:130:ARG:NH2	27:V:86:ILE:O	2.41	0.43
32:a:48:U:OP1	32:a:306:C:O2'	2.21	0.43
32:a:270:C:H2'	32:a:271:C:C6	2.54	0.43
32:a:649:A:H1'	45:o:22:THR:HG21	2.00	0.43
32:a:1252:G:H21	32:a:1267:A:H62	1.65	0.43
34:d:93:LEU:HA	34:d:96:VAL:HB	2.00	0.43
34:d:137:ILE:HD13	34:d:174:ARG:HH21	1.83	0.43
35:e:188:ARG:NH2	38:h:43:GLU:HG3	2.34	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:m:91:ARG:CD	43:m:96:MET:HG2	2.46	0.43
6:7:7:LYS:HG2	7:A:1263:G:C2	2.53	0.43
7:A:573:C:H2'	7:A:574:C:H6	1.83	0.43
7:A:587:U:H2'	7:A:588:G:O4'	2.19	0.43
7:A:1658:A:H3'	7:A:1659:G:C8	2.54	0.43
7:A:1744:A:H2'	7:A:1745:C:O4'	2.19	0.43
7:A:2822:U:H2'	7:A:2823:U:H2'	2.00	0.43
7:A:3027:C:H1'	7:A:3127:A:H61	1.83	0.43
10:D:111:TYR:CZ	10:D:181:LEU:HD13	2.54	0.43
12:F:124:LEU:HD12	12:F:135:TYR:OH	2.19	0.43
22:Q:27:GLN:HB3	22:Q:31:LEU:HD12	2.01	0.43
23:R:68:HIS:ND1	23:R:96:THR:HG23	2.34	0.43
26:U:97:ILE:C	26:U:97:ILE:HD12	2.44	0.43
27:V:134:GLU:CD	27:V:135:ALA:H	2.26	0.43
27:V:134:GLU:CD	27:V:135:ALA:N	2.76	0.43
32:a:46:C:OP1	46:p:14:ARG:HD3	2.19	0.43
32:a:417:C:H2'	32:a:418:C:C6	2.53	0.43
32:a:726:G:H2'	32:a:727:U:H6	1.84	0.43
32:a:741:C:H2'	32:a:742:U:H6	1.84	0.43
32:a:1257:C:H2'	32:a:1258:G:C8	2.54	0.43
33:c:21:ARG:N	33:c:21:ARG:HD2	2.33	0.43
33:c:169:ARG:NH2	33:c:171:GLY:O	2.52	0.43
45:o:26:GLU:OE1	45:o:70:ILE:HD11	2.18	0.43
2:1:41:PHE:HE2	7:A:2586:U:H1'	1.83	0.42
7:A:306:G:H21	14:H:45:LYS:HE2	1.83	0.42
7:A:957:U:H2'	7:A:958:A:C8	2.54	0.42
7:A:2828:A:H2'	7:A:2829:C:H6	1.84	0.42
10:D:101:LEU:HD12	10:D:101:LEU:O	2.19	0.42
18:M:67:ASN:ND2	18:M:105:GLU:OE2	2.52	0.42
19:N:14:SER:O	19:N:17:GLN:HB3	2.18	0.42
25:T:70:ARG:NH2	25:T:71:THR:HB	2.33	0.42
32:a:434:U:H2'	32:a:435:C:H6	1.84	0.42
32:a:477:U:H2'	32:a:478:A:H8	1.83	0.42
32:a:657:G:H5'	32:a:717:C:H1'	2.00	0.42
32:a:699:C:H2'	32:a:700:A:C8	2.54	0.42
32:a:1394:G:H2'	32:a:1395:4OC:O4'	2.18	0.42
35:e:128:ARG:O	35:e:154:ILE:HD12	2.19	0.42
37:g:73:LEU:HD21	37:g:88:PRO:CB	2.49	0.42
38:h:50:ARG:NH1	38:h:52:GLU:OE2	2.43	0.42
38:h:110:SER:OG	38:h:121:GLN:NE2	2.52	0.42
41:k:45:THR:CG2	41:k:51:VAL:HG22	2.46	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:m:87:TYR:OH	43:m:91:ARG:NH2	2.51	0.42
46:p:5:ILE:HG12	46:p:22:VAL:HG22	2.01	0.42
47:q:65:VAL:HG23	47:q:76:GLU:CD	2.44	0.42
7:A:140:G:H2'	7:A:141:A:C8	2.54	0.42
7:A:683:C:H2'	7:A:684:U:H6	1.81	0.42
7:A:889:G:H2'	7:A:890:A:O4'	2.18	0.42
7:A:1133:C:H2'	7:A:1140:G:H2'	2.01	0.42
7:A:1241:G:H2'	7:A:1242:U:C6	2.54	0.42
7:A:2301:C:O2	7:A:2688:A:N1	2.52	0.42
7:A:2640:C:H1'	7:A:2641:C:H5	1.84	0.42
7:A:2865:G:O2'	7:A:3019:A:N1	2.43	0.42
7:A:2871:A:H2'	7:A:2872:A:H8	1.83	0.42
7:A:2880:A:H2'	7:A:2881:A:C8	2.54	0.42
7:A:3100:U:OP2	7:A:3101:G:O2'	2.24	0.42
9:C:155:LEU:HD13	9:C:177:MET:SD	2.59	0.42
11:E:13:VAL:CG1	11:E:134:THR:HG22	2.49	0.42
12:F:33:MET:HE3	12:F:33:MET:HB2	1.88	0.42
12:F:117:ARG:NH2	12:F:146:HIS:CE1	2.87	0.42
12:F:118:ILE:H	12:F:118:ILE:HG13	1.66	0.42
15:J:24:VAL:HA	15:J:63:ALA:HB3	2.01	0.42
16:K:2:ILE:HG13	16:K:8:LEU:HD21	2.01	0.42
21:P:25:ILE:HD11	21:P:58:PHE:HE2	1.85	0.42
23:R:5:TYR:CE1	23:R:44:VAL:HB	2.55	0.42
24:S:30:VAL:HG21	24:S:54:SER:HB3	2.01	0.42
24:S:43:LEU:HD23	24:S:43:LEU:HA	1.88	0.42
27:V:11:VAL:HG12	27:V:48:PRO:HD2	2.01	0.42
32:a:221:U:H2'	32:a:222:G:H8	1.85	0.42
32:a:470:U:H2'	32:a:471:U:H6	1.84	0.42
32:a:1301:G:H5''	43:m:81:LYS:HE3	1.99	0.42
37:g:47:LEU:CD2	37:g:58:PRO:HB2	2.49	0.42
37:g:49:GLN:OE1	37:g:121:ALA:HB1	2.19	0.42
37:g:75:VAL:HG22	37:g:75:VAL:O	2.18	0.42
41:k:64:GLY:O	41:k:67:LYS:HG3	2.18	0.42
42:l:105:GLN:OE1	42:l:105:GLN:N	2.50	0.42
44:n:4:LYS:HA	44:n:7:VAL:HG22	2.00	0.42
48:r:50:ALA:O	48:r:54:THR:HG23	2.19	0.42
3:2:33:ILE:HD13	7:A:555:A:H4'	2.00	0.42
6:7:8:LYS:O	6:7:11:ARG:HG2	2.19	0.42
7:A:8:U:H2'	7:A:9:G:O4'	2.20	0.42
7:A:272:A:O4'	7:A:459:G:N2	2.52	0.42
7:A:352:A:H2'	7:A:353:G:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:803:G:H2'	7:A:933:A:H61	1.83	0.42
7:A:1000:G:H2'	7:A:1001:A:O4'	2.20	0.42
7:A:1098:G:O3'	31:Z:14:GLY:HA2	2.19	0.42
7:A:1159:G:OP2	18:M:128:LYS:NZ	2.52	0.42
7:A:1281:G:H2'	7:A:1282:C:O4'	2.19	0.42
7:A:1399:A:H2'	7:A:1400:G:O4'	2.20	0.42
7:A:1413:U:H2'	7:A:1414:G:O4'	2.19	0.42
7:A:1668:C:H2'	7:A:1669:A:C8	2.53	0.42
7:A:1743:C:H2'	7:A:1744:A:C8	2.53	0.42
7:A:1924:A:H2'	7:A:1925:A:C8	2.54	0.42
7:A:2245:U:H2'	7:A:2246:C:C6	2.54	0.42
7:A:2545:G:H4'	7:A:2546:G:O4'	2.19	0.42
7:A:3048:C:H2'	7:A:3049:C:C6	2.54	0.42
15:J:32:ALA:HB3	15:J:105:ILE:HD12	2.01	0.42
15:J:57:ILE:HG22	15:J:125:TYR:HB2	2.00	0.42
32:a:185:G:C2	32:a:186:G:C8	3.06	0.42
32:a:302:G:H2'	32:a:303:U:O4'	2.19	0.42
32:a:504:A:H2'	32:a:505:C:H6	1.84	0.42
32:a:877:U:H4'	32:a:878:G:H5''	2.02	0.42
33:c:141:MET:C	33:c:142:ARG:HE	2.27	0.42
34:d:13:ARG:HB2	34:d:33:PRO:HD3	2.01	0.42
34:d:14:ARG:HD3	34:d:32:PRO:CB	2.49	0.42
35:e:74:ASN:OD1	35:e:75:GLY:N	2.52	0.42
38:h:8:ALA:HA	38:h:11:LEU:HG	2.00	0.42
40:j:90:ILE:HG22	40:j:92:LEU:HD22	2.00	0.42
41:k:45:THR:HG22	41:k:51:VAL:CA	2.49	0.42
42:l:86:ARG:HH21	42:l:94:ARG:HD2	1.83	0.42
45:o:82:ILE:HG23	45:o:87:LEU:HB3	2.01	0.42
48:r:35:THR:O	48:r:39:ARG:HG2	2.18	0.42
7:A:7:G:H2'	7:A:8:U:H6	1.81	0.42
7:A:351:G:H2'	7:A:352:A:C8	2.55	0.42
7:A:993:G:H2'	7:A:994:C:H6	1.84	0.42
7:A:1165:G:C6	7:A:1249:G:C6	3.07	0.42
7:A:1375:G:O2'	11:E:41:HIS:NE2	2.49	0.42
7:A:2064:C:H2'	7:A:2065:G:H8	1.84	0.42
7:A:2443:A:H2'	7:A:2444:C:H6	1.83	0.42
7:A:2879:G:H5'	15:J:85:HIS:NE2	2.34	0.42
7:A:2886:G:H2'	7:A:2887:U:H6	1.84	0.42
8:B:58:G:H1'	20:O:6:SER:OG	2.20	0.42
11:E:40:MET:HB2	17:L:8:LEU:HD11	2.01	0.42
11:E:59:LYS:NZ	11:E:59:LYS:HB2	2.34	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:E:88:PRO:HB3	11:E:96:VAL:HG23	2.00	0.42
13:G:43:VAL:HG12	13:G:53:VAL:HG12	2.01	0.42
20:O:35:VAL:HG12	20:O:44:VAL:HG23	2.01	0.42
23:R:27:LYS:HA	23:R:96:THR:HG1	1.85	0.42
26:U:67:HIS:ND1	26:U:69:SER:HB2	2.34	0.42
30:Y:13:LEU:HD11	30:Y:21:ARG:HH11	1.84	0.42
32:a:20:U:H2'	32:a:21:C:H6	1.84	0.42
32:a:205:G:O2'	50:t:63:SER:HB3	2.19	0.42
32:a:256:G:C6	32:a:269:A:C6	3.08	0.42
32:a:946:G:H2'	32:a:947:G:O4'	2.19	0.42
32:a:1022:U:O5'	32:a:1023:U:H5'	2.20	0.42
32:a:1206:U:O2'	32:a:1207:G:H5'	2.19	0.42
32:a:1227:U:H2'	32:a:1228:A:O4'	2.20	0.42
32:a:1362:C:H2'	32:a:1363:G:C8	2.54	0.42
32:a:1418:A:H2'	32:a:1419:A:O4'	2.20	0.42
36:f:9:ILE:HD12	36:f:60:TYR:CE1	2.54	0.42
36:f:51:GLU:OE1	36:f:51:GLU:HA	2.20	0.42
37:g:68:ASN:OD1	37:g:68:ASN:C	2.62	0.42
38:h:50:ARG:HG2	38:h:50:ARG:HH11	1.84	0.42
42:l:39:THR:CG2	42:l:49:LEU:HB3	2.49	0.42
43:m:50:GLU:O	43:m:53:LEU:HG	2.19	0.42
45:o:29:ILE:HG13	45:o:81:LEU:HD21	2.02	0.42
46:p:57:GLN:HE21	46:p:79:ASP:HB3	1.84	0.42
2:1:8:ARG:NH1	7:A:2523:C:OP2	2.53	0.42
7:A:300:G:H3'	7:A:301:G:C8	2.54	0.42
7:A:1076:C:H2'	7:A:1077:G:H8	1.84	0.42
7:A:1174:A:OP1	7:A:1175:A:O2'	2.27	0.42
7:A:1365:U:H2'	7:A:1366:G:O4'	2.20	0.42
7:A:1682:U:H2'	7:A:1683:A:C8	2.55	0.42
7:A:1724:G:H2'	7:A:1725:A:H8	1.85	0.42
7:A:1784:U:H2'	7:A:1785:C:C6	2.55	0.42
7:A:2166:A:H2'	7:A:2167:G:O4'	2.19	0.42
7:A:2454:G:OP1	29:X:48:ARG:NH1	2.45	0.42
7:A:2551:C:O4'	12:F:44:ASN:ND2	2.52	0.42
8:B:100:A:H2'	8:B:101:G:O4'	2.18	0.42
9:C:165:LEU:HD12	9:C:165:LEU:HA	1.90	0.42
9:C:177:MET:HE3	9:C:177:MET:HB3	1.69	0.42
12:F:169:THR:HG23	12:F:171:ASP:OD1	2.19	0.42
16:K:64:ARG:HD3	21:P:67:VAL:HG11	2.02	0.42
23:R:27:LYS:HA	23:R:96:THR:OG1	2.18	0.42
23:R:51:THR:O	23:R:51:THR:OG1	2.33	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:T:57:VAL:HG22	25:T:84:VAL:HG13	2.00	0.42
32:a:373:A:H2'	32:a:374:U:C6	2.54	0.42
32:a:410:A:C8	32:a:412:G:H1'	2.54	0.42
32:a:543:U:H4'	42:l:83:ARG:HD2	2.01	0.42
32:a:775:A:H2'	32:a:776:G:H8	1.85	0.42
34:d:14:ARG:CG	34:d:33:PRO:HD2	2.47	0.42
34:d:185:GLN:OE1	34:d:185:GLN:N	2.48	0.42
35:e:110:GLY:O	35:e:153:ASP:N	2.50	0.42
37:g:93:PRO:HA	37:g:96:SER:OG	2.19	0.42
41:k:24:LYS:HE2	41:k:24:LYS:HA	2.02	0.42
41:k:71:PHE:O	41:k:75:LEU:HG	2.19	0.42
42:l:80:VAL:HB	42:l:97:ILE:HG23	2.02	0.42
43:m:13:LYS:O	43:m:45:THR:HG22	2.20	0.42
43:m:15:MET:HE3	43:m:43:LEU:C	2.44	0.42
43:m:72:ARG:HA	43:m:75:GLN:HE21	1.83	0.42
43:m:87:TYR:HB2	49:s:73:GLU:O	2.19	0.42
7:A:154:C:H2'	7:A:155:G:H8	1.84	0.42
7:A:203:C:O2'	7:A:253:A:N1	2.48	0.42
7:A:285:G:O2'	7:A:286:G:O4'	2.22	0.42
7:A:1198:A:C2	7:A:1201:C:H5''	2.54	0.42
7:A:1979:A:H2'	7:A:1980:U:C6	2.54	0.42
7:A:2497:G:C8	7:A:2665:C:C4	3.08	0.42
7:A:2509:G:OP1	28:W:18:ALA:HB1	2.19	0.42
10:D:127:MET:CE	10:D:146:ARG:HA	2.50	0.42
15:J:17:VAL:HG23	15:J:137:PRO:HB2	2.01	0.42
16:K:9:LYS:HD3	16:K:81:GLU:CD	2.45	0.42
21:P:5:ASP:HA	21:P:8:ASP:HB3	2.02	0.42
32:a:42:G:C6	32:a:403:G:C6	3.08	0.42
32:a:126:A:OP2	47:q:117:ARG:HG2	2.18	0.42
32:a:190:G:O3'	32:a:191:C:H2'	2.20	0.42
32:a:1116:U:N3	32:a:1118:G:C8	2.87	0.42
32:a:1404:U:H2'	32:a:1405:C:C6	2.54	0.42
33:c:199:LYS:HG3	33:c:201:TRP:CH2	2.55	0.42
34:d:71:TYR:CZ	34:d:199:TYR:HB2	2.55	0.42
36:f:12:PRO:HG3	36:f:57:GLU:HB2	2.01	0.42
36:f:41:ASP:OD2	36:f:43:TRP:NE1	2.52	0.42
39:i:27:ILE:HD12	39:i:27:ILE:C	2.44	0.42
42:l:88:LYS:HE3	42:l:88:LYS:HB2	1.65	0.42
43:m:15:MET:HE3	43:m:43:LEU:O	2.19	0.42
48:r:22:PHE:HB2	48:r:60:HIS:CD2	2.55	0.42
7:A:190:G:H5''	29:X:14:PHE:CG	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:662:C:H2'	7:A:663:G:O4'	2.20	0.42
7:A:861:C:H2'	7:A:862:G:O4'	2.19	0.42
7:A:1116:C:H2'	7:A:1117:A:O4'	2.20	0.42
7:A:1281:G:H4'	22:Q:81:GLN:CD	2.45	0.42
7:A:1423:G:H2'	7:A:1424:C:O4'	2.20	0.42
7:A:1776:A:H8	7:A:1776:A:OP2	2.03	0.42
7:A:1826:C:H2'	7:A:1827:A:C8	2.53	0.42
7:A:2249:C:H2'	7:A:2250:G:O4'	2.20	0.42
7:A:2436:A:N1	7:A:2464:C:N4	2.66	0.42
7:A:2611:A:H2'	7:A:2612:C:C6	2.54	0.42
7:A:2897:G:OP2	13:G:159:LYS:NZ	2.53	0.42
7:A:3081:C:H2'	7:A:3082:U:C6	2.55	0.42
10:D:53:ALA:HB1	10:D:78:ARG:CB	2.49	0.42
11:E:109:PRO:O	11:E:113:ILE:HG12	2.20	0.42
12:F:21:ASP:O	12:F:24:ARG:HB2	2.20	0.42
13:G:45:ARG:HA	13:G:50:ALA:O	2.20	0.42
17:L:117:LEU:HD12	17:L:117:LEU:HA	1.79	0.42
19:N:63:ARG:HA	19:N:80:PHE:CZ	2.55	0.42
21:P:24:THR:HB	21:P:87:THR:HG22	2.01	0.42
26:U:12:ILE:HD13	26:U:72:MET:HG3	2.01	0.42
32:a:73:A:N1	32:a:89:A:N6	2.68	0.42
32:a:90:U:O2'	32:a:91:A:O5'	2.37	0.42
32:a:391:C:OP2	46:p:13:ILE:HA	2.20	0.42
32:a:435:C:H2'	32:a:436:U:C6	2.55	0.42
32:a:591:G:H2'	32:a:592:U:H6	1.84	0.42
32:a:686:A:H2'	32:a:687:A:C8	2.55	0.42
32:a:753:A:H2'	32:a:754:G:H8	1.83	0.42
33:c:59:THR:HB	33:c:60:ARG:HH11	1.84	0.42
38:h:65:LYS:O	38:h:73:SER:OG	2.26	0.42
7:A:39:U:H2'	7:A:40:C:C6	2.55	0.42
7:A:130:C:H4'	7:A:1480:A:H4'	2.01	0.42
7:A:692:A:H2'	7:A:693:G:C8	2.55	0.42
7:A:736:A:H2'	7:A:737:A:C8	2.54	0.42
7:A:794:U:H2'	7:A:795:C:H6	1.84	0.42
7:A:1008:A:H61	7:A:1028:G:H1'	1.84	0.42
7:A:1158:A:OP1	18:M:128:LYS:NZ	2.44	0.42
7:A:2046:A:H2'	7:A:2047:C:C6	2.55	0.42
7:A:2551:C:OP1	12:F:75:ARG:NE	2.52	0.42
8:B:74:G:HO2'	27:V:92:HIS:CE1	2.36	0.42
9:C:102:LYS:HD3	9:C:102:LYS:HA	1.88	0.42
11:E:12:ASP:HA	11:E:23:ALA:HA	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:G:95:TYR:HA	13:G:107:ALA:O	2.20	0.42
13:G:154:ARG:HG3	13:G:154:ARG:NH1	2.32	0.42
15:J:120:ARG:O	15:J:123:ARG:NH1	2.52	0.42
17:L:93:GLY:O	17:L:97:LEU:CD2	2.68	0.42
32:a:59:U:H2'	32:a:60:G:C8	2.55	0.42
32:a:621:C:H2'	32:a:622:G:O4'	2.19	0.42
32:a:656:G:H1'	32:a:724:G:O4'	2.20	0.42
32:a:695:A:C5	32:a:696:U:C5	3.08	0.42
32:a:817:C:O2	38:h:16:ASN:ND2	2.53	0.42
32:a:1061:U:OP1	35:e:56:VAL:HG11	2.20	0.42
32:a:1130:U:O2'	32:a:1132:G:OP1	2.31	0.42
32:a:1230:A:N3	32:a:1230:A:H2'	2.35	0.42
33:c:122:GLN:NE2	33:c:123:LEU:HD23	2.34	0.42
34:d:69:ARG:HA	34:d:72:GLU:CD	2.45	0.42
34:d:102:LEU:HD21	34:d:173:GLN:HG3	2.02	0.42
46:p:57:GLN:NE2	46:p:79:ASP:HB3	2.35	0.42
46:p:66:PRO:HG2	46:p:71:LEU:HD13	2.01	0.42
47:q:56:ARG:O	47:q:56:ARG:HD3	2.20	0.42
50:t:22:LYS:CA	50:t:25:LYS:HD3	2.43	0.42
7:A:95:G:H2'	7:A:96:A:O4'	2.20	0.42
7:A:233:U:H2'	7:A:234:G:O4'	2.20	0.42
7:A:682:C:H4'	22:Q:31:LEU:CD1	2.49	0.42
7:A:804:A:N3	7:A:2681:C:O2'	2.49	0.42
7:A:1333:C:H2'	7:A:1334:U:H6	1.85	0.42
7:A:1663:U:H2'	7:A:1664:G:O4'	2.19	0.42
7:A:2113:G:OP2	7:A:2113:G:H8	2.03	0.42
7:A:2594:U:H2'	7:A:2595:U:O4'	2.20	0.42
14:H:5:LEU:HA	14:H:36:ALA:HA	2.02	0.42
16:K:90:ASP:C	16:K:90:ASP:OD1	2.63	0.42
24:S:93:LYS:HG3	24:S:105:ARG:CD	2.42	0.42
25:T:66:ARG:NH1	25:T:73:TYR:CD2	2.88	0.42
32:a:181:C:H2'	32:a:182:C:C6	2.55	0.42
32:a:184:C:H2'	32:a:185:G:O4'	2.20	0.42
32:a:335:A:H2'	32:a:336:G:H8	1.85	0.42
35:e:172:VAL:O	35:e:176:LYS:HD3	2.20	0.42
46:p:71:LEU:C	46:p:75:LYS:HZ2	2.28	0.42
46:p:74:LEU:CD1	46:p:79:ASP:HB2	2.50	0.42
47:q:75:VAL:HG13	47:q:96:VAL:HG23	2.01	0.42
4:3:24:ARG:NH1	7:A:2599:A:OP1	2.46	0.42
7:A:92:A:H2'	7:A:93:C:O4'	2.20	0.42
7:A:276:C:H2'	7:A:277:G:C8	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:305:U:H2'	7:A:306:G:C8	2.55	0.42
7:A:444:C:H2'	7:A:445:U:C6	2.54	0.42
7:A:1428:C:O2'	7:A:1433:A:N1	2.49	0.42
7:A:1545:G:N2	7:A:1823:A:N1	2.59	0.42
7:A:2585:C:C2	7:A:2586:U:C5	3.08	0.42
7:A:3045:A:H2'	7:A:3046:G:O4'	2.20	0.42
9:C:43:ARG:HA	9:C:48:ARG:O	2.20	0.42
10:D:87:ASP:OD1	10:D:87:ASP:C	2.63	0.42
11:E:31:PHE:CE2	11:E:130:ILE:HD13	2.54	0.42
12:F:129:PHE:CE1	12:F:135:TYR:HB2	2.55	0.42
14:H:8:ASP:OD1	14:H:15:ILE:HG23	2.19	0.42
18:M:12:GLN:HG3	18:M:73:PRO:HG2	2.01	0.42
19:N:72:ASP:O	19:N:76:VAL:HG23	2.20	0.42
25:T:39:LYS:HE2	25:T:59:THR:OG1	2.19	0.42
27:V:113:GLU:N	27:V:113:GLU:OE1	2.51	0.42
28:W:43:THR:HG21	28:W:46:HIS:CE1	2.55	0.42
30:Y:29:LEU:HB2	30:Y:50:VAL:CG1	2.50	0.42
32:a:21:C:O5'	35:e:163:ASN:ND2	2.53	0.42
32:a:1175:U:O2'	32:a:1177:G:OP2	2.38	0.42
32:a:1245:G:OP1	40:j:46:LYS:HB3	2.19	0.42
39:i:29:THR:HG21	39:i:107:ALA:HA	2.02	0.42
42:l:23:ALA:HB1	42:l:61:VAL:HG21	2.02	0.42
42:l:107:VAL:HG23	42:l:117:TYR:O	2.20	0.42
46:p:41:HIS:ND1	46:p:48:LEU:HD13	2.35	0.42
2:l:39:LYS:O	7:A:2582:U:H3'	2.19	0.41
7:A:502:C:H4'	7:A:2118:G:O2'	2.20	0.41
7:A:1087:A:H2'	7:A:1088:A:C8	2.55	0.41
7:A:2180:C:OP2	7:A:2181:U:O2'	2.32	0.41
7:A:2828:A:H2'	7:A:2829:C:C6	2.55	0.41
7:A:2845:G:H2'	7:A:2846:G:O4'	2.20	0.41
26:U:95:VAL:HG12	26:U:97:ILE:HG23	2.01	0.41
32:a:97:G:H2'	32:a:98:U:H6	1.84	0.41
32:a:727:U:O2'	36:f:90:VAL:O	2.27	0.41
32:a:1019:C:H41	32:a:1027:G:N2	2.18	0.41
32:a:1341:A:H5''	39:i:144:LYS:HB2	2.01	0.41
33:c:19:LYS:HB3	33:c:19:LYS:HE3	1.78	0.41
33:c:175:LEU:HD12	33:c:175:LEU:H	1.85	0.41
34:d:14:ARG:HD3	34:d:32:PRO:HB2	2.02	0.41
47:q:83:HIS:HD2	47:q:86:TYR:H	1.65	0.41
7:A:186:G:H2'	7:A:187:C:C6	2.55	0.41
7:A:955:U:O2'	17:L:52:GLY:HA3	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:1084:G:OP2	18:M:87:LYS:HD2	2.20	0.41
7:A:1462:C:H2'	7:A:1464:C:C5	2.55	0.41
7:A:1708:A:H2'	7:A:1709:G:O4'	2.20	0.41
7:A:1957:A:H61	7:A:1972:G:H1'	1.85	0.41
13:G:5:GLY:CA	13:G:70:ARG:HG3	2.50	0.41
13:G:88:MET:HE2	13:G:88:MET:HB3	1.81	0.41
18:M:68:ILE:HD13	18:M:68:ILE:HA	1.94	0.41
19:N:72:ASP:HB3	19:N:75:VAL:HB	2.02	0.41
25:T:69:THR:HG22	25:T:72:GLY:O	2.20	0.41
27:V:84:HIS:CD2	27:V:87:ARG:HH21	2.38	0.41
32:a:328:A:H2'	32:a:331:G:O6	2.20	0.41
32:a:590:U:H4'	38:h:124:GLY:O	2.20	0.41
32:a:837:U:O2'	32:a:838:U:O4'	2.35	0.41
32:a:951:A:H2'	32:a:952:A:C8	2.55	0.41
32:a:1048:G:O2'	33:c:188:GLU:OE1	2.35	0.41
32:a:1173:G:H1'	32:a:1174:G:C8	2.55	0.41
32:a:1310:A:H5''	49:s:2:PRO:HB3	2.01	0.41
33:c:10:PHE:CD2	33:c:178:LEU:HD21	2.55	0.41
34:d:104:ARG:NH2	34:d:160:ARG:HD2	2.35	0.41
40:j:59:LYS:HD3	40:j:59:LYS:HA	1.82	0.41
42:l:39:THR:HG21	42:l:49:LEU:HB3	2.02	0.41
42:l:68:PRO:O	42:l:99:ARG:NH1	2.53	0.41
43:m:66:VAL:O	43:m:70:LEU:HG	2.20	0.41
49:s:4:SER:HB3	49:s:7:LYS:HG2	2.02	0.41
50:t:22:LYS:CA	50:t:25:LYS:NZ	2.83	0.41
50:t:73:ALA:HA	50:t:76:LYS:HG2	2.02	0.41
7:A:674:A:H2'	7:A:675:G:O4'	2.20	0.41
7:A:1517:C:H5	7:A:1532:G:N1	1.93	0.41
7:A:1731:A:H2'	7:A:1732:A:C8	2.54	0.41
7:A:2225:C:H2'	7:A:2226:A:C8	2.54	0.41
7:A:2602:C:H2'	7:A:2603:A:O4'	2.21	0.41
7:A:2679:C:H2'	7:A:2680:C:H6	1.85	0.41
7:A:2979:A:H2'	7:A:2980:C:O4'	2.19	0.41
9:C:80:ALA:N	9:C:94:LEU:O	2.53	0.41
17:L:79:VAL:HG21	17:L:135:LYS:HD2	2.02	0.41
19:N:2:PRO:HB2	19:N:3:LYS:H	1.66	0.41
21:P:102:LEU:C	21:P:103:ARG:HD3	2.45	0.41
27:V:101:GLY:CA	27:V:134:GLU:OE2	2.68	0.41
32:a:258:G:C4	32:a:259:G:C8	3.09	0.41
32:a:836:C:O3'	32:a:837:U:H2'	2.20	0.41
32:a:1145:A:H2'	32:a:1146:G:O4'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:a:1247:G:H3'	32:a:1271:A:H61	1.85	0.41
32:a:1330:G:H2'	32:a:1331:A:C8	2.55	0.41
38:h:41:LYS:O	38:h:44:GLY:N	2.52	0.41
5:4:11:CYS:SG	5:4:13:LYS:HG2	2.60	0.41
5:4:12:ASP:O	5:4:15:ARG:NH2	2.53	0.41
7:A:44:A:H2'	7:A:45:G:O4'	2.21	0.41
7:A:70:G:H5''	7:A:112:U:O2	2.20	0.41
7:A:158:U:H2'	7:A:159:C:C6	2.55	0.41
7:A:1007:G:H22	7:A:1028:G:H1'	1.86	0.41
7:A:1209:C:N4	7:A:1217:A:OP1	2.53	0.41
7:A:1923:U:O2'	7:A:1935:A:N7	2.36	0.41
7:A:2044:A:H2'	7:A:2045:G:O4'	2.20	0.41
7:A:2239:A:H2'	7:A:2240:U:C6	2.55	0.41
7:A:2457:U:H2'	7:A:2458:U:O4'	2.21	0.41
7:A:3038:U:H2'	7:A:3039:G:H8	1.86	0.41
11:E:58:THR:HG21	11:E:99:PRO:HD2	2.02	0.41
13:G:33:LEU:HD21	13:G:137:ILE:HD12	2.02	0.41
16:K:93:PRO:HD2	16:K:113:LYS:HG2	2.02	0.41
19:N:67:LEU:HD23	19:N:76:VAL:HG21	2.02	0.41
25:T:23:LEU:HB3	25:T:28:VAL:HB	2.02	0.41
28:W:21:LEU:HD21	28:W:41:ARG:NH2	2.36	0.41
32:a:769:G:H2'	32:a:770:C:O4'	2.20	0.41
32:a:870:C:OP1	38:h:82:LYS:HE2	2.19	0.41
34:d:141:ARG:NH1	34:d:143:LYS:HE3	2.36	0.41
46:p:78:GLY:HA2	46:p:81:GLN:OE1	2.20	0.41
47:q:129:GLU:OE1	47:q:131:LEU:HD23	2.21	0.41
7:A:484:G:H2'	7:A:485:C:H6	1.85	0.41
7:A:716:G:O2'	11:E:166:ARG:NH2	2.54	0.41
7:A:1084:G:P	18:M:87:LYS:HD2	2.60	0.41
7:A:1770:C:H2'	7:A:1771:G:C8	2.55	0.41
7:A:3056:A:H2'	7:A:3057:G:O4'	2.20	0.41
13:G:25:SER:HB3	13:G:27:LYS:NZ	2.32	0.41
23:R:70:LYS:HG2	23:R:92:ARG:CZ	2.51	0.41
28:W:29:GLN:O	28:W:67:VAL:HG23	2.21	0.41
28:W:53:ARG:NH2	28:W:57:ASP:OD1	2.51	0.41
32:a:256:G:H2'	32:a:257:G:O4'	2.21	0.41
32:a:758:A:H2'	32:a:759:A:O4'	2.21	0.41
32:a:888:G:H2'	32:a:889:C:C6	2.56	0.41
32:a:1371:C:OP2	37:g:6:PRO:HA	2.21	0.41
35:e:120:ALA:HB2	35:e:170:ALA:N	2.35	0.41
39:i:109:ILE:HD12	39:i:110:LEU:N	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:l:7:LEU:HD22	47:q:86:TYR:OH	2.20	0.41
50:t:21:ASN:ND2	50:t:66:VAL:HG23	2.36	0.41
2:1:37:GLU:C	2:1:37:GLU:OE1	2.63	0.41
7:A:8:U:C4	7:A:9:G:C6	3.09	0.41
7:A:780:G:H3'	7:A:781:A:H4'	2.02	0.41
7:A:2159:C:H2'	7:A:2160:A:C8	2.52	0.41
7:A:2190:A:C4	16:K:22:ILE:HD12	2.56	0.41
7:A:2792:U:H2'	7:A:2793:U:C6	2.56	0.41
7:A:2805:G:H2'	7:A:2806:C:C6	2.56	0.41
8:B:44:A:C4	8:B:45:A:C8	3.08	0.41
11:E:136:LEU:HD22	11:E:175:VAL:HG11	2.03	0.41
12:F:64:LEU:HA	12:F:67:ILE:HB	2.03	0.41
20:O:107:ARG:H	20:O:107:ARG:HG3	1.73	0.41
27:V:146:ILE:O	27:V:146:ILE:HD12	2.21	0.41
32:a:38:G:H5''	42:l:100:GLY:O	2.20	0.41
32:a:320:A:H61	32:a:331:G:H1	1.67	0.41
32:a:380:C:H2'	32:a:381:A:O4'	2.20	0.41
32:a:736:A:H2'	32:a:737:G:C8	2.55	0.41
32:a:754:G:H2'	32:a:755:C:C6	2.55	0.41
32:a:1020:C:HO2'	32:a:1026:G:N2	2.18	0.41
32:a:1229:C:H3'	32:a:1328:C:N4	2.35	0.41
34:d:26:PHE:CD2	34:d:27:GLU:HG2	2.56	0.41
37:g:29:LYS:HA	37:g:29:LYS:HE3	2.03	0.41
38:h:88:TYR:HD2	47:q:82:ARG:HH21	1.69	0.41
44:n:24:CYS:HB3	44:n:28:GLY:H	1.84	0.41
47:q:57:ARG:HG3	47:q:115:GLU:OE2	2.20	0.41
47:q:99:HIS:CD2	47:q:119:LEU:HD12	2.56	0.41
4:3:26:LYS:HE3	4:3:44:LEU:C	2.46	0.41
6:7:4:ARG:NH2	7:A:2693:G:O3'	2.49	0.41
7:A:69:C:H4'	7:A:75:G:N7	2.35	0.41
7:A:616:A:H2'	7:A:2280:A:N1	2.35	0.41
7:A:1372:U:H2'	7:A:1373:G:C8	2.56	0.41
7:A:2484:A:H2'	7:A:2485:A:H8	1.85	0.41
7:A:2598:A:O4'	17:L:59:ARG:NH1	2.54	0.41
7:A:3092:G:N2	7:A:3095:A:OP2	2.35	0.41
9:C:124:ASP:OD1	9:C:125:ILE:N	2.54	0.41
11:E:109:PRO:HD2	11:E:112:MET:SD	2.61	0.41
16:K:29:SER:O	16:K:29:SER:OG	2.29	0.41
16:K:64:ARG:NH2	16:K:101:PRO:O	2.48	0.41
27:V:35:LEU:O	27:V:42:PRO:HA	2.20	0.41
27:V:116:ALA:HA	27:V:148:GLY:HA3	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:a:34:G:C6	32:a:305:U:H4'	2.55	0.41
32:a:362:A:OP2	42:l:31:ARG:HG2	2.20	0.41
32:a:372:A:N1	32:a:390:G:O2'	2.49	0.41
32:a:445:C:H2'	32:a:446:G:O4'	2.21	0.41
32:a:463:U:H2'	32:a:464:C:C6	2.55	0.41
32:a:729:U:H5''	36:f:69:PRO:HB3	2.03	0.41
32:a:840:G:C6	32:a:841:G:N7	2.88	0.41
32:a:1279:A:H2'	32:a:1280:A:C8	2.56	0.41
37:g:22:LEU:HD13	37:g:22:LEU:O	2.21	0.41
37:g:68:ASN:ND2	37:g:130:GLY:HA2	2.35	0.41
39:i:30:VAL:O	39:i:106:ARG:NH1	2.35	0.41
43:m:78:ILE:HA	43:m:81:LYS:HG3	2.02	0.41
5:4:31:ARG:NH1	7:A:2716:A:H5'	2.35	0.41
7:A:84:A:C2	7:A:103:A:C5	3.09	0.41
7:A:141:A:N1	7:A:1830:C:O2'	2.41	0.41
7:A:826:C:H2'	7:A:827:C:C6	2.56	0.41
7:A:1261:U:H3'	7:A:1262:A:H5''	2.03	0.41
7:A:1981:C:H2'	7:A:1982:C:C6	2.56	0.41
7:A:3058:A:OP1	10:D:123:PHE:HB2	2.21	0.41
9:C:127:PRO:HA	9:C:193:VAL:O	2.21	0.41
9:C:163:ILE:HG23	9:C:175:LEU:HB2	2.03	0.41
11:E:131:HIS:ND1	11:E:201:VAL:HG12	2.36	0.41
13:G:138:ASP:HB3	13:G:141:LYS:HB2	2.03	0.41
15:J:104:ALA:O	15:J:108:MET:HG2	2.20	0.41
20:O:41:HIS:HE1	20:O:66:ARG:NH1	2.18	0.41
25:T:9:ASP:OD1	25:T:9:ASP:C	2.64	0.41
26:U:29:ASP:OD1	26:U:29:ASP:N	2.44	0.41
26:U:31:ASN:C	26:U:68:VAL:HG13	2.46	0.41
32:a:95:G:C4	32:a:96:A:C8	3.08	0.41
32:a:123:G:H5''	47:q:56:ARG:O	2.20	0.41
32:a:207:A:C8	32:a:221:U:H1'	2.56	0.41
32:a:372:A:H61	32:a:390:G:H1'	1.85	0.41
32:a:537:G:OP1	34:d:64:GLU:HB3	2.21	0.41
32:a:597:G:O5'	32:a:598:A:H5'	2.20	0.41
32:a:613:A:H5'	34:d:69:ARG:HH22	1.86	0.41
32:a:783:A:H1'	32:a:785:A:N7	2.36	0.41
32:a:1285:G:H2'	32:a:1286:G:H8	1.86	0.41
33:c:27:GLN:HA	33:c:30:GLU:OE1	2.21	0.41
33:c:122:GLN:HE22	33:c:123:LEU:HD23	1.85	0.41
33:c:162:MET:HE3	33:c:163:SER:H	1.84	0.41
34:d:163:PRO:HB2	34:d:165:TRP:CD1	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:g:115:THR:O	37:g:119:ARG:HG3	2.21	0.41
46:p:7:LEU:HG	46:p:18:TYR:CD1	2.56	0.41
49:s:70:LYS:HE3	49:s:70:LYS:HB2	1.78	0.41
3:2:40:LYS:HD3	3:2:42:ARG:HD3	2.03	0.41
4:3:14:PHE:CD2	4:3:58:VAL:HG13	2.56	0.41
7:A:6:A:C6	7:A:7:G:C5	3.08	0.41
7:A:248:U:C2'	7:A:249:G:H5''	2.48	0.41
7:A:616:A:H5'	15:J:113:ARG:HD3	2.02	0.41
7:A:691:C:O3'	11:E:102:ARG:HD3	2.21	0.41
7:A:844:A:O4'	45:o:63:ARG:NH2	2.53	0.41
7:A:1029:A:H2'	7:A:1030:C:O4'	2.20	0.41
7:A:1355:U:H4'	23:R:90:GLY:O	2.20	0.41
7:A:1418:A:N1	7:A:1883:C:O2'	2.47	0.41
7:A:1668:C:H2'	7:A:1669:A:H8	1.86	0.41
7:A:1719:A:H2'	7:A:1720:G:H4'	2.03	0.41
7:A:1747:A:H2'	7:A:1748:A:C8	2.56	0.41
7:A:1863:G:H2'	7:A:1864:U:C6	2.56	0.41
7:A:1872:A:H5'	7:A:1994:C:O2'	2.21	0.41
7:A:1891:C:H2'	7:A:1892:U:C6	2.56	0.41
7:A:1992:A:H3'	7:A:1993:A:C8	2.56	0.41
7:A:2097:G:H2'	7:A:2098:U:C6	2.56	0.41
7:A:2269:A:C6	7:A:2736:C:H1'	2.56	0.41
7:A:2971:U:H2'	7:A:2972:C:O4'	2.21	0.41
7:A:3085:A:N7	7:A:3103:A:O2'	2.52	0.41
9:C:64:MET:O	9:C:104:TYR:HB2	2.21	0.41
10:D:121:LYS:HB2	10:D:170:MET:CB	2.51	0.41
11:E:73:ARG:HG2	11:E:73:ARG:HH11	1.86	0.41
13:G:122:ILE:HD13	13:G:145:ILE:HG13	2.02	0.41
14:H:37:ILE:HD12	14:H:37:ILE:C	2.46	0.41
17:L:15:LYS:HD3	17:L:15:LYS:HA	1.89	0.41
19:N:14:SER:O	19:N:18:LYS:HG3	2.21	0.41
21:P:90:ASP:OD2	21:P:110:LYS:HE3	2.21	0.41
22:Q:17:ILE:HD12	22:Q:36:LYS:HG3	2.03	0.41
23:R:70:LYS:HG3	23:R:92:ARG:HB3	2.02	0.41
25:T:15:VAL:C	25:T:16:ILE:HD13	2.46	0.41
26:U:103:LYS:H	26:U:103:LYS:CD	2.26	0.41
27:V:36:TYR:O	27:V:96:LEU:HA	2.21	0.41
29:X:33:ILE:CG2	29:X:50:ASN:HB2	2.51	0.41
32:a:48:U:H5''	32:a:306:C:H1'	2.03	0.41
32:a:207:A:HO2'	32:a:208:A:H8	1.69	0.41
32:a:397:C:H2'	32:a:398:G:C8	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:a:432:C:H2'	32:a:433:C:H6	1.86	0.41
32:a:566:G:O2'	32:a:812:G:H5'	2.21	0.41
32:a:631:A:N3	38:h:109:SER:OG	2.42	0.41
32:a:1156:G:N2	32:a:1164:U:O2	2.41	0.41
32:a:1319:C:H2'	32:a:1320:C:C6	2.55	0.41
33:c:27:GLN:HG2	33:c:31:TYR:CE1	2.55	0.41
33:c:27:GLN:OE1	33:c:27:GLN:N	2.39	0.41
33:c:84:ASP:HA	33:c:87:ARG:HB2	2.03	0.41
33:c:90:LEU:O	33:c:94:THR:HG22	2.20	0.41
35:e:72:ASP:OD1	35:e:74:ASN:N	2.45	0.41
35:e:77:VAL:HB	35:e:149:ALA:HA	2.03	0.41
36:f:9:ILE:O	36:f:86:LEU:N	2.46	0.41
36:f:67:ALA:HB1	36:f:71:THR:OG1	2.21	0.41
36:f:91:MET:HB3	36:f:91:MET:HE3	1.87	0.41
37:g:51:ARG:HA	37:g:54:THR:OG1	2.21	0.41
37:g:79:ARG:NH1	37:g:84:THR:H	2.18	0.41
38:h:105:ILE:C	38:h:106:ILE:HD13	2.46	0.41
43:m:53:LEU:HA	43:m:56:LEU:HD23	2.02	0.41
45:o:38:ASP:OD1	45:o:38:ASP:C	2.64	0.41
46:p:45:GLU:HB3	46:p:46:PRO:HD3	2.03	0.41
47:q:82:ARG:HD2	47:q:87:GLY:HA2	2.02	0.41
3:2:13:ARG:HG3	7:A:125:A:C5	2.56	0.41
7:A:128:C:H2'	7:A:129:C:C6	2.56	0.41
7:A:839:C:H2'	7:A:840:G:C8	2.55	0.41
7:A:1090:C:H2'	7:A:1091:U:C6	2.56	0.41
7:A:1170:C:H2'	7:A:1171:G:H8	1.85	0.41
7:A:1446:C:H2'	7:A:1447:U:H6	1.86	0.41
7:A:1476:C:H2'	7:A:1477:G:H8	1.86	0.41
7:A:1684:C:P	7:A:1698:C:H42	2.44	0.41
7:A:1772:G:O2'	7:A:1775:G:N1	2.37	0.41
7:A:1953:G:N2	7:A:1976:G:N2	2.62	0.41
7:A:2785:U:H2'	7:A:2786:G:C8	2.56	0.41
8:B:47:C:P	20:O:37:ARG:NH2	2.93	0.41
10:D:90:ASP:OD1	10:D:93:THR:HG21	2.21	0.41
10:D:127:MET:HE2	10:D:134:GLY:HA3	2.01	0.41
12:F:159:MET:SD	12:F:159:MET:N	2.94	0.41
13:G:115:VAL:C	13:G:116:ILE:HD13	2.46	0.41
14:H:3:LEU:HB3	14:H:36:ALA:HB1	2.03	0.41
18:M:134:ARG:HB3	18:M:134:ARG:HH11	1.84	0.41
20:O:88:LYS:HA	20:O:88:LYS:HD3	1.84	0.41
32:a:503:U:H2'	32:a:504:A:H8	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:a:677:U:C4'	41:k:54:TRP:HE1	2.33	0.41
32:a:695:A:C4	32:a:696:U:C6	3.09	0.41
32:a:977:C:H2'	32:a:978:C:C6	2.56	0.41
32:a:1013:G:OP2	32:a:1013:G:N2	2.54	0.41
32:a:1300:C:H2'	32:a:1301:G:H8	1.85	0.41
32:a:1424:C:H2'	32:a:1425:G:O4'	2.21	0.41
33:c:6:ASN:HD22	44:n:49:HIS:HB3	1.86	0.41
34:d:4:TYR:HD2	34:d:107:ARG:NH2	2.19	0.41
35:e:45:ARG:NH1	35:e:45:ARG:HB2	2.36	0.41
36:f:26:PHE:HE2	36:f:82:ASN:HD22	1.68	0.41
37:g:68:ASN:HD21	37:g:130:GLY:HA2	1.86	0.41
47:q:130:ILE:HG21	47:q:133:LYS:HZ3	1.86	0.41
3:2:3:LYS:O	7:A:1855:G:H4'	2.21	0.40
7:A:229:A:C2	7:A:2645:G:H1'	2.56	0.40
7:A:348:U:H2'	7:A:349:G:C8	2.56	0.40
7:A:665:G:H5'	7:A:674:A:H4'	2.02	0.40
7:A:776:G:H5'	17:L:84:ARG:HG3	2.03	0.40
7:A:779:U:H2'	7:A:780:G:C4'	2.51	0.40
7:A:988:G:O2'	7:A:1045:G:O6	2.34	0.40
7:A:1953:G:H22	7:A:1976:G:H1	1.68	0.40
7:A:2262:C:H2'	7:A:2263:G:C8	2.56	0.40
7:A:2936:U:H2'	7:A:2937:C:H6	1.82	0.40
8:B:49:G:H5''	20:O:71:ASP:OD2	2.21	0.40
9:C:61:ALA:O	9:C:63:ARG:NH1	2.53	0.40
10:D:62:VAL:HG13	10:D:66:LEU:HD23	2.02	0.40
11:E:11:ILE:HG13	11:E:11:ILE:O	2.21	0.40
11:E:52:ARG:HD2	11:E:104:TYR:CE1	2.56	0.40
11:E:60:THR:O	11:E:64:VAL:HG23	2.21	0.40
11:E:157:ARG:NH1	11:E:199:ASP:OD1	2.38	0.40
12:F:18:GLU:HG2	12:F:19:ILE:HD12	2.03	0.40
16:K:1:MET:HB2	16:K:32:TYR:CD1	2.57	0.40
18:M:3:ILE:HD13	18:M:3:ILE:HA	1.94	0.40
21:P:91:VAL:HG11	21:P:96:LEU:HD11	2.03	0.40
25:T:68:ARG:HD2	25:T:69:THR:N	2.35	0.40
31:Z:7:THR:OG1	31:Z:34:SER:HB3	2.21	0.40
31:Z:49:VAL:HG12	31:Z:50:VAL:HG13	2.03	0.40
32:a:90:U:O2'	32:a:91:A:O4'	2.39	0.40
32:a:240:C:H2'	32:a:241:U:O4'	2.21	0.40
32:a:265:G:H1'	32:a:267:C:OP2	2.21	0.40
32:a:441:C:H2'	32:a:442:C:C6	2.56	0.40
32:a:578:G:N1	32:a:745:C:OP2	2.46	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:a:770:C:H2'	32:a:771:G:O4'	2.21	0.40
32:a:1403:G:H2'	32:a:1404:U:H6	1.86	0.40
33:c:122:GLN:HE21	33:c:127:VAL:HG23	1.86	0.40
34:d:10:ARG:HB2	34:d:10:ARG:CZ	2.51	0.40
34:d:14:ARG:HA	34:d:32:PRO:HB3	2.02	0.40
34:d:90:GLU:OE2	34:d:99:ARG:HG3	2.21	0.40
37:g:111:ARG:HH21	37:g:113:GLU:CD	2.29	0.40
37:g:122:ASN:HA	37:g:125:LEU:CG	2.48	0.40
43:m:49:THR:HG22	43:m:51:GLU:H	1.86	0.40
45:o:11:ILE:O	45:o:15:TYR:HB2	2.20	0.40
7:A:84:A:C8	7:A:100:U:C4	3.09	0.40
7:A:1036:C:O2'	18:M:101:ARG:NH2	2.54	0.40
7:A:1215:A:O2'	7:A:1232:A:N6	2.34	0.40
7:A:1747:A:OP2	7:A:1747:A:H8	2.04	0.40
7:A:1992:A:C8	7:A:2934:U:H4'	2.56	0.40
7:A:2690:C:H2'	7:A:2691:A:C8	2.56	0.40
7:A:3044:A:H2'	7:A:3045:A:H8	1.87	0.40
7:A:3047:G:H2'	7:A:3048:C:C6	2.56	0.40
7:A:3049:C:C4	7:A:3050:C:C5	3.08	0.40
14:H:5:LEU:HD23	14:H:5:LEU:H	1.86	0.40
14:H:9:VAL:HB	14:H:12:LEU:HB3	2.04	0.40
18:M:91:GLU:OE2	18:M:92:TRP:CZ2	2.74	0.40
20:O:17:HIS:HB2	20:O:100:GLY:C	2.46	0.40
20:O:37:ARG:HA	20:O:42:ILE:HA	2.03	0.40
27:V:75:LEU:HB3	27:V:98:VAL:HG22	2.03	0.40
28:W:38:VAL:HG13	28:W:59:LEU:HB2	2.03	0.40
32:a:816:A:H2'	32:a:817:C:H6	1.86	0.40
32:a:1229:C:O3'	32:a:1292:G:N2	2.54	0.40
32:a:1347:A:C6	32:a:1361:G:C6	3.09	0.40
33:c:75:VAL:HG21	33:c:102:ILE:HG21	2.03	0.40
34:d:13:ARG:NH2	34:d:33:PRO:HB3	2.36	0.40
37:g:107:TYR:N	37:g:107:TYR:CD1	2.89	0.40
40:j:46:LYS:NZ	40:j:68:ARG:HG3	2.36	0.40
40:j:66:GLU:CD	40:j:66:GLU:N	2.79	0.40
41:k:104:GLU:CD	41:k:104:GLU:N	2.80	0.40
42:l:50:ARG:HA	42:l:50:ARG:HD3	1.80	0.40
47:q:60:ARG:HE	47:q:77:LEU:HD21	1.86	0.40
7:A:84:A:OP1	26:U:4:HIS:NE2	2.54	0.40
7:A:344:C:H2'	7:A:345:G:O4'	2.21	0.40
7:A:699:U:H2'	7:A:700:G:C8	2.57	0.40
7:A:706:A:N1	7:A:729:G:O2'	2.53	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:735:A:H2'	7:A:736:A:O4'	2.22	0.40
7:A:763:C:H2'	7:A:764:G:H8	1.86	0.40
7:A:839:C:H2'	7:A:840:G:H8	1.86	0.40
7:A:1161:A:H2	7:A:1251:G:H1	1.69	0.40
7:A:1397:G:O2'	7:A:2250:G:O6	2.37	0.40
7:A:1954:U:H2'	7:A:1955:G:C8	2.56	0.40
7:A:2058:G:O3'	9:C:249:PRO:HD3	2.21	0.40
7:A:2110:G:H2'	7:A:2111:G:C8	2.57	0.40
7:A:2285:C:O2'	7:A:3058:A:N1	2.47	0.40
7:A:2667:G:C8	17:L:54:MET:HE3	2.56	0.40
9:C:26:ARG:HG2	9:C:81:HIS:CD2	2.56	0.40
15:J:15:TRP:CZ3	15:J:55:ILE:HD11	2.56	0.40
20:O:29:GLU:N	20:O:29:GLU:CD	2.80	0.40
23:R:35:LYS:HA	23:R:35:LYS:HE2	2.03	0.40
31:Z:8:GLN:HB2	31:Z:28:LEU:HD13	2.03	0.40
32:a:28:C:H2'	32:a:29:A:C8	2.57	0.40
32:a:36:A:H2'	32:a:37:C:H6	1.84	0.40
32:a:664:G:H1'	48:r:73:GLU:HG2	2.03	0.40
32:a:858:A:H2'	32:a:859:C:C6	2.57	0.40
32:a:912:A:O2'	32:a:1071:A:N1	2.47	0.40
32:a:913:U:H2'	32:a:914:U:C6	2.56	0.40
32:a:1004:C:H2'	32:a:1005:U:H6	1.86	0.40
32:a:1149:A:N7	32:a:1172:A:N6	2.69	0.40
32:a:1230:A:H2	32:a:1233:G:N3	2.20	0.40
32:a:1243:A:N3	32:a:1362:C:O2'	2.36	0.40
46:p:13:ILE:HG22	46:p:14:ARG:HD2	2.04	0.40
47:q:64:VAL:HG23	47:q:74:VAL:O	2.21	0.40
47:q:118:PRO:HA	47:q:123:LYS:O	2.21	0.40
48:r:70:ASN:O	48:r:74:VAL:HG22	2.21	0.40
51:x:5:ILE:O	51:x:9:ARG:HG3	2.21	0.40
7:A:249:G:O2'	7:A:475:G:N1	2.54	0.40
7:A:260:G:H2'	7:A:261:C:H6	1.86	0.40
7:A:1197:G:O2'	7:A:1199:A:N7	2.36	0.40
7:A:1307:U:N3	7:A:1308:G:H1'	2.36	0.40
7:A:2256:G:O2'	22:Q:34:LYS:NZ	2.29	0.40
7:A:2288:C:O2'	10:D:151:ILE:HG21	2.21	0.40
7:A:2480:G:H2'	7:A:2481:U:O4'	2.22	0.40
7:A:2504:A:H4'	7:A:2505:A:O5'	2.22	0.40
7:A:3046:G:H2'	7:A:3047:G:O4'	2.21	0.40
19:N:9:ARG:N	19:N:9:ARG:HD2	2.36	0.40
24:S:95:ILE:HD13	24:S:95:ILE:HA	1.83	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:V:74:GLN:HG3	27:V:75:LEU:H	1.86	0.40
30:Y:13:LEU:HD22	30:Y:17:GLU:HG2	2.03	0.40
31:Z:23:LEU:HD23	31:Z:23:LEU:HA	1.87	0.40
32:a:623:U:H3'	32:a:624:G:C8	2.51	0.40
33:c:137:ILE:HD12	33:c:170:GLU:OE1	2.22	0.40
34:d:45:GLU:OE2	34:d:49:GLN:NE2	2.54	0.40
34:d:51:GLN:O	34:d:55:LYS:HG3	2.21	0.40
35:e:120:ALA:HB2	35:e:170:ALA:HB2	2.03	0.40
35:e:136:VAL:HG23	35:e:154:ILE:HG22	2.03	0.40
48:r:32:TYR:CD1	48:r:32:TYR:N	2.85	0.40
7:A:746:G:N2	7:A:748:A:H3'	2.36	0.40
7:A:894:G:H2'	7:A:895:C:C6	2.56	0.40
7:A:987:G:N3	7:A:2506:A:H2'	2.36	0.40
7:A:1246:U:H2'	7:A:1247:G:C8	2.56	0.40
7:A:1676:U:H2'	7:A:1677:A:H8	1.87	0.40
7:A:1815:U:H2'	7:A:1816:A:H8	1.86	0.40
7:A:1900:A:H2'	7:A:1901:G:O4'	2.22	0.40
7:A:1948:A:H8	7:A:1948:A:OP1	2.04	0.40
7:A:2471:U:H2'	7:A:2472:G:H8	1.86	0.40
7:A:2874:U:H4'	10:D:83:GLU:OE1	2.22	0.40
11:E:27:PRO:HD2	11:E:211:ILE:HD12	2.03	0.40
12:F:59:GLY:O	12:F:157:ARG:NH1	2.55	0.40
13:G:150:ARG:HA	13:G:163:VAL:CG2	2.52	0.40
19:N:56:LYS:NZ	19:N:90:ARG:O	2.51	0.40
20:O:32:ARG:HH21	20:O:47:VAL:HG11	1.86	0.40
22:Q:27:GLN:OE1	22:Q:34:LYS:HE3	2.22	0.40
24:S:31:ILE:HD12	24:S:84:VAL:HG22	2.04	0.40
27:V:178:ASN:OD1	27:V:178:ASN:C	2.64	0.40
30:Y:14:THR:OG1	30:Y:15:ASP:N	2.53	0.40
30:Y:29:LEU:HB2	30:Y:50:VAL:HG11	2.03	0.40
32:a:158:A:C5	32:a:159:C:H1'	2.57	0.40
32:a:337:A:H2'	32:a:338:C:H6	1.85	0.40
32:a:425:U:P	34:d:29:ARG:HH11	2.44	0.40
32:a:533:G:H2'	32:a:534:U:C6	2.56	0.40
32:a:627:G:H5'	47:q:56:ARG:HH21	1.86	0.40
32:a:893:A:H2'	32:a:894:A:C8	2.56	0.40
32:a:933:C:H2'	32:a:934:G:O4'	2.22	0.40
32:a:993:A:C6	32:a:1033:G:C6	3.09	0.40
32:a:1242:A:N7	32:a:1279:A:C8	2.90	0.40
32:a:1441:C:H2'	32:a:1442:C:H6	1.86	0.40
40:j:9:ARG:O	40:j:9:ARG:HG3	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:k:71:PHE:CE2	41:k:75:LEU:HD11	2.57	0.40
44:n:47:MET:HE2	44:n:47:MET:HB2	1.83	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	0	52/57 (91%)	52 (100%)	0	0	100	100
2	1	46/55 (84%)	45 (98%)	1 (2%)	0	100	100
3	2	42/47 (89%)	41 (98%)	1 (2%)	0	100	100
4	3	60/64 (94%)	60 (100%)	0	0	100	100
5	4	35/37 (95%)	35 (100%)	0	0	100	100
6	7	20/24 (83%)	19 (95%)	1 (5%)	0	100	100
9	C	270/280 (96%)	254 (94%)	16 (6%)	0	100	100
10	D	211/217 (97%)	196 (93%)	15 (7%)	0	100	100
11	E	205/223 (92%)	201 (98%)	4 (2%)	0	100	100
12	F	176/187 (94%)	158 (90%)	18 (10%)	0	100	100
13	G	172/179 (96%)	159 (92%)	13 (8%)	0	100	100
14	H	45/152 (30%)	39 (87%)	6 (13%)	0	100	100
15	J	144/195 (74%)	141 (98%)	3 (2%)	0	100	100
16	K	120/122 (98%)	119 (99%)	1 (1%)	0	100	100
17	L	142/146 (97%)	135 (95%)	7 (5%)	0	100	100
18	M	132/138 (96%)	122 (92%)	10 (8%)	0	100	100
19	N	114/180 (63%)	112 (98%)	2 (2%)	0	100	100
20	O	117/122 (96%)	113 (97%)	4 (3%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
21	P	110/113 (97%)	106 (96%)	4 (4%)	0	100	100
22	Q	122/129 (95%)	120 (98%)	2 (2%)	0	100	100
23	R	98/104 (94%)	92 (94%)	6 (6%)	0	100	100
24	S	111/197 (56%)	110 (99%)	1 (1%)	0	100	100
25	T	93/100 (93%)	90 (97%)	3 (3%)	0	100	100
26	U	86/105 (82%)	79 (92%)	7 (8%)	0	100	100
27	V	175/215 (81%)	153 (87%)	21 (12%)	1 (1%)	21	22
28	W	75/86 (87%)	71 (95%)	4 (5%)	0	100	100
29	X	60/64 (94%)	57 (95%)	3 (5%)	0	100	100
30	Y	66/77 (86%)	64 (97%)	2 (3%)	0	100	100
31	Z	57/65 (88%)	55 (96%)	2 (4%)	0	100	100
33	c	205/274 (75%)	187 (91%)	18 (9%)	0	100	100
34	d	198/201 (98%)	179 (90%)	19 (10%)	0	100	100
35	e	167/220 (76%)	155 (93%)	12 (7%)	0	100	100
36	f	93/96 (97%)	91 (98%)	2 (2%)	0	100	100
37	g	153/156 (98%)	147 (96%)	6 (4%)	0	100	100
38	h	129/132 (98%)	120 (93%)	9 (7%)	0	100	100
39	i	125/151 (83%)	110 (88%)	15 (12%)	0	100	100
40	j	97/101 (96%)	88 (91%)	9 (9%)	0	100	100
41	k	115/139 (83%)	111 (96%)	4 (4%)	0	100	100
42	l	120/124 (97%)	96 (80%)	23 (19%)	1 (1%)	16	16
43	m	114/124 (92%)	104 (91%)	10 (9%)	0	100	100
44	n	58/61 (95%)	55 (95%)	3 (5%)	0	100	100
45	o	85/89 (96%)	77 (91%)	7 (8%)	1 (1%)	10	8
46	p	91/162 (56%)	82 (90%)	8 (9%)	1 (1%)	11	10
47	q	93/135 (69%)	79 (85%)	14 (15%)	0	100	100
48	r	62/84 (74%)	60 (97%)	2 (3%)	0	100	100
49	s	81/93 (87%)	73 (90%)	8 (10%)	0	100	100
50	t	83/86 (96%)	80 (96%)	3 (4%)	0	100	100
51	x	29/66 (44%)	26 (90%)	3 (10%)	0	100	100
All	All	5254/6174 (85%)	4918 (94%)	332 (6%)	4 (0%)	49	57

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
42	l	114	ARG
27	V	135	ALA
45	o	19	GLU
46	p	46	PRO

5.3.2 Protein sidechains [i](#)

There are no protein residues with a non-rotameric sidechain to report in this entry.

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
32	a	1518/1537 (98%)	254 (16%)	0
52	u	2/3 (66%)	1 (50%)	0
7	A	2899/3138 (92%)	377 (13%)	4 (0%)
8	B	114/115 (99%)	19 (16%)	0
All	All	4533/4793 (94%)	651 (14%)	4 (0%)

All (651) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
7	A	8	U
7	A	9	G
7	A	10	U
7	A	11	C
7	A	43	G
7	A	51	G
7	A	63	A
7	A	71	A
7	A	74	U
7	A	75	G
7	A	90	C
7	A	92	A
7	A	94	C
7	A	118	A
7	A	119	A
7	A	120	U
7	A	143	G
7	A	165	A
7	A	167	A

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Mol	Chain	Res	Type
7	A	176	G
7	A	183	A
7	A	198	A
7	A	201	A
7	A	217	G
7	A	218	A
7	A	224	A
7	A	226	A
7	A	230	U
7	A	231	U
7	A	232	G
7	A	249	G
7	A	250	G
7	A	277	G
7	A	278	C
7	A	287	G
7	A	289	A
7	A	293	G
7	A	297	A
7	A	303	U
7	A	314	G
7	A	315	G
7	A	316	U
7	A	322	G
7	A	323	A
7	A	328	A
7	A	331	U
7	A	332	C
7	A	339	C
7	A	358	U
7	A	364	A
7	A	371	U
7	A	372	G
7	A	394	U
7	A	399	U
7	A	401	C
7	A	413	A
7	A	414	G
7	A	428	A
7	A	429	A
7	A	446	A
7	A	447	G

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Mol	Chain	Res	Type
7	A	454	U
7	A	472	C
7	A	473	C
7	A	475	G
7	A	478	G
7	A	480	A
7	A	495	G
7	A	500	G
7	A	544	U
7	A	545	U
7	A	570	G
7	A	592	G
7	A	593	A
7	A	595	U
7	A	596	A
7	A	597	C
7	A	616	A
7	A	618	U
7	A	619	C
7	A	620	C
7	A	621	G
7	A	665	G
7	A	674	A
7	A	675	G
7	A	676	A
7	A	677	A
7	A	689	G
7	A	693	G
7	A	694	G
7	A	706	A
7	A	718	G
7	A	719	U
7	A	738	G
7	A	741	A
7	A	749	U
7	A	757	C
7	A	758	C
7	A	759	C
7	A	760	A
7	A	764	G
7	A	765	C
7	A	766	G

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Mol	Chain	Res	Type
7	A	769	U
7	A	770	A
7	A	771	C
7	A	772	G
7	A	773	C
7	A	777	U
7	A	778	G
7	A	779	U
7	A	780	G
7	A	781	A
7	A	782	A
7	A	783	U
7	A	815	U
7	A	843	U
7	A	846	G
7	A	852	G
7	A	855	G
7	A	859	C
7	A	876	U
7	A	886	G
7	A	893	A
7	A	904	G
7	A	905	G
7	A	911	A
7	A	913	G
7	A	914	G
7	A	934	G
7	A	941	C
7	A	956	U
7	A	988	G
7	A	1025	A
7	A	1026	C
7	A	1028	G
7	A	1036	C
7	A	1039	A
7	A	1043	C
7	A	1044	C
7	A	1059	A
7	A	1061	A
7	A	1074	G
7	A	1087	A
7	A	1089	G

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Mol	Chain	Res	Type
7	A	1096	A
7	A	1103	A
7	A	1112	A
7	A	1118	G
7	A	1125	G
7	A	1142	G
7	A	1155	G
7	A	1162	U
7	A	1167	A
7	A	1187	G
7	A	1189	U
7	A	1195	U
7	A	1199	A
7	A	1200	G
7	A	1202	A
7	A	1205	C
7	A	1206	A
7	A	1207	C
7	A	1211	U
7	A	1212	G
7	A	1216	G
7	A	1217	A
7	A	1218	G
7	A	1227	A
7	A	1233	C
7	A	1240	A
7	A	1241	G
7	A	1243	G
7	A	1244	A
7	A	1249	G
7	A	1257	A
7	A	1258	A
7	A	1261	U
7	A	1262	A
7	A	1264	C
7	A	1271	C
7	A	1273	A
7	A	1301	A
7	A	1302	C
7	A	1304	U
7	A	1306	G
7	A	1307	U

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Mol	Chain	Res	Type
7	A	1308	G
7	A	1309	G
7	A	1313	G
7	A	1342	C
7	A	1384	A
7	A	1386	U
7	A	1387	G
7	A	1402	G
7	A	1403	A
7	A	1406	A
7	A	1425	C
7	A	1431	A
7	A	1432	A
7	A	1452	C
7	A	1456	C
7	A	1483	U
7	A	1491	G
7	A	1496	A
7	A	1509	A
7	A	1510	U
7	A	1515	A
7	A	1534	A
7	A	1656	G
7	A	1657	A
7	A	1665	A
7	A	1666	C
7	A	1675	G
7	A	1689	C
7	A	1690	A
7	A	1692	U
7	A	1693	G
7	A	1697	A
7	A	1698	C
7	A	1699	A
7	A	1714	U
7	A	1720	G
7	A	1722	G
7	A	1727	A
7	A	1730	C
7	A	1734	U
7	A	1746	U
7	A	1747	A

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Mol	Chain	Res	Type
7	A	1754	A
7	A	1755	G
7	A	1770	C
7	A	1773	U
7	A	1774	U
7	A	1775	G
7	A	1777	G
7	A	1802	C
7	A	1803	A
7	A	1806	A
7	A	1821	G
7	A	1830	C
7	A	1832	G
7	A	1833	C
7	A	1842	C
7	A	1843	A
7	A	1845	A
7	A	1869	C
7	A	1881	U
7	A	1883	C
7	A	1888	U
7	A	1889	A
7	A	1909	G
7	A	1910	C
7	A	1949	U
7	A	1950	A
7	A	1962	C
7	A	1964	U
7	A	1992	A
7	A	1998	U
7	A	2007	A
7	A	2010	G
7	A	2015	C
7	A	2020	A
7	A	2034	C
7	A	2035	G
7	A	2041	G
7	A	2043	A
7	A	2050	U
7	A	2063	A
7	A	2092	G
7	A	2105	G

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Mol	Chain	Res	Type
7	A	2107	A
7	A	2108	A
7	A	2109	G
7	A	2114	A
7	A	2144	G
7	A	2150	A
7	A	2152	C
7	A	2167	G
7	A	2168	G
7	A	2175	A
7	A	2176	A
7	A	2193	U
7	A	2205	C
7	A	2208	A
7	A	2209	U
7	A	2210	G
7	A	2229	U
7	A	2230	G
7	A	2231	U
7	A	2261	A
7	A	2269	A
7	A	2270	G
7	A	2281	C
7	A	2293	C
7	A	2294	G
7	A	2296	A
7	A	2297	A
7	A	2298	A
7	A	2299	G
7	A	2330	G
7	A	2333	G
7	A	2435	A
7	A	2449	A
7	A	2463	A
7	A	2476	G
7	A	2477	G
7	A	2489	OMG
7	A	2517	G
7	A	2521	C
7	A	2525	A
7	A	2543	A
7	A	2546	G

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Mol	Chain	Res	Type
7	A	2547	C
7	A	2558	C
7	A	2563	G
7	A	2573	A
7	A	2585	C
7	A	2588	C
7	A	2615	A
7	A	2621	G
7	A	2623	A
7	A	2641	C
7	A	2644	A
7	A	2661	U
7	A	2663	A
7	A	2667	G
7	A	2668	A
7	A	2674	G
7	A	2679	C
7	A	2686	A
7	A	2714	A
7	A	2716	A
7	A	2736	C
7	A	2740	G
7	A	2743	G
7	A	2751	G
7	A	2756	A
7	A	2767	G
7	A	2773	G
7	A	2804	A
7	A	2805	G
7	A	2811	C
7	A	2840	A
7	A	2851	U
7	A	2868	A
7	A	2884	C
7	A	2901	G
7	A	2911	G
7	A	2952	G
7	A	2962	C
7	A	2964	C
7	A	2971	U
7	A	2982	G
7	A	2986	A

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Mol	Chain	Res	Type
7	A	2995	A
7	A	2996	A
7	A	3003	A
7	A	3016	A
7	A	3018	C
7	A	3037	G
7	A	3038	U
7	A	3040	G
7	A	3041	G
7	A	3043	U
7	A	3053	C
7	A	3056	A
7	A	3058	A
7	A	3070	A
7	A	3071	U
7	A	3107	A
7	A	3114	G
7	A	3118	A
7	A	3119	C
7	A	3120	C
7	A	3128	A
7	A	3129	A
8	B	2	U
8	B	3	A
8	B	4	C
8	B	6	G
8	B	7	C
8	B	33	G
8	B	36	C
8	B	41	C
8	B	55	U
8	B	56	A
8	B	65	A
8	B	68	G
8	B	88	G
8	B	101	G
8	B	105	A
8	B	109	C
8	B	110	C
8	B	113	A
8	B	115	A
32	a	10	G

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Mol	Chain	Res	Type
32	a	12	G
32	a	21	C
32	a	25	G
32	a	35	A
32	a	42	G
32	a	51	U
32	a	54	A
32	a	74	A
32	a	80	U
32	a	86	G
32	a	89	A
32	a	90	U
32	a	91	A
32	a	93	U
32	a	99	G
32	a	111	A
32	a	115	A
32	a	116	C
32	a	125	G
32	a	127	U
32	a	137	A
32	a	140	U
32	a	142	G
32	a	144	G
32	a	146	U
32	a	164	U
32	a	169	U
32	a	174	G
32	a	178	G
32	a	179	G
32	a	185	G
32	a	187	G
32	a	189	U
32	a	191	C
32	a	192	A
32	a	194	G
32	a	198	U
32	a	204	G
32	a	206	A
32	a	213	U
32	a	214	U
32	a	215	U

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Mol	Chain	Res	Type
32	a	216	A
32	a	217	G
32	a	219	G
32	a	224	G
32	a	244	C
32	a	246	G
32	a	247	C
32	a	250	G
32	a	255	U
32	a	265	G
32	a	266	C
32	a	279	C
32	a	288	G
32	a	308	G
32	a	320	A
32	a	326	A
32	a	328	A
32	a	329	C
32	a	339	U
32	a	343	A
32	a	346	G
32	a	350	G
32	a	351	C
32	a	355	A
32	a	362	A
32	a	366	U
32	a	371	C
32	a	391	C
32	a	396	A
32	a	397	C
32	a	405	G
32	a	411	U
32	a	412	G
32	a	420	U
32	a	421	C
32	a	422	G
32	a	427	G
32	a	428	U
32	a	449	G
32	a	451	A
32	a	452	G
32	a	453	G

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Mol	Chain	Res	Type
32	a	456	C
32	a	459	G
32	a	460	U
32	a	462	C
32	a	465	U
32	a	467	G
32	a	473	A
32	a	476	G
32	a	485	G
32	a	487	A
32	a	488	G
32	a	493	A
32	a	497	G
32	a	500	A
32	a	502	C
32	a	509	C
32	a	512	G
32	a	516	C
32	a	517	C
32	a	518	G7M
32	a	523	A
32	a	524	A
32	a	536	C
32	a	538	A
32	a	550	A
32	a	553	U
32	a	558	G
32	a	563	A
32	a	564	A
32	a	567	A
32	a	568	G
32	a	587	C
32	a	598	A
32	a	606	C
32	a	610	U
32	a	616	G
32	a	623	U
32	a	624	G
32	a	630	G
32	a	640	G
32	a	644	A
32	a	656	G

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Mol	Chain	Res	Type
32	a	676	G
32	a	678	A
32	a	682	G
32	a	686	A
32	a	694	G
32	a	709	A
32	a	712	G
32	a	714	U
32	a	740	A
32	a	746	G
32	a	768	A
32	a	784	U
32	a	785	A
32	a	790	G
32	a	803	G
32	a	806	A
32	a	808	C
32	a	812	G
32	a	820	G
32	a	830	U
32	a	833	U
32	a	834	U
32	a	835	C
32	a	836	C
32	a	837	U
32	a	838	U
32	a	839	G
32	a	848	G
32	a	883	G
32	a	895	G
32	a	900	A
32	a	907	A
32	a	910	G
32	a	911	A
32	a	915	G
32	a	919	G
32	a	927	C
32	a	928	A
32	a	951	A
32	a	953	U
32	a	959	2MG
32	a	962	A

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Mol	Chain	Res	Type
32	a	964	G
32	a	968	A
32	a	969	G
32	a	970	A
32	a	971	A
32	a	985	U
32	a	986	G
32	a	987	A
32	a	994	C
32	a	997	G
32	a	1016	G
32	a	1019	C
32	a	1021	C
32	a	1022	U
32	a	1023	U
32	a	1036	C
32	a	1044	G
32	a	1047	U
32	a	1056	U
32	a	1061	U
32	a	1085	G
32	a	1086	U
32	a	1090	G
32	a	1092	A
32	a	1099	G
32	a	1115	G
32	a	1128	A
32	a	1129	A
32	a	1131	G
32	a	1132	G
32	a	1138	A
32	a	1141	C
32	a	1143	U
32	a	1146	G
32	a	1149	A
32	a	1151	U
32	a	1160	C
32	a	1163	C
32	a	1174	G
32	a	1176	G
32	a	1188	A
32	a	1189	A

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Mol	Chain	Res	Type
32	a	1192	C
32	a	1205	A
32	a	1206	U
32	a	1228	A
32	a	1230	A
32	a	1249	U
32	a	1250	G
32	a	1252	G
32	a	1270	G
32	a	1272	A
32	a	1278	A
32	a	1279	A
32	a	1282	G
32	a	1292	G
32	a	1297	G
32	a	1304	G
32	a	1315	G
32	a	1329	G
32	a	1338	A
32	a	1345	G
32	a	1355	A
32	a	1356	A
32	a	1357	C
32	a	1363	G
32	a	1368	A
32	a	1369	U
32	a	1370	A
32	a	1387	A
32	a	1390	C
32	a	1391	A
32	a	1399	U
32	a	1427	A
32	a	1435	G
32	a	1439	A
32	a	1480	G
32	a	1485	A
32	a	1486	A
32	a	1490	G
32	a	1492	A
32	a	1496	A
32	a	1510	G
32	a	1522	G

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Mol	Chain	Res	Type
32	a	1523	G
52	u	77	A

All (4) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
7	A	759	C
7	A	763	C
7	A	913	G
7	A	2994	U

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

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
32	5MC	a	960	32	19,22,23	4.25	9 (47%)	26,32,35	1.03	2 (7%)
7	OMG	A	2791	7	23,26,27	2.40	9 (39%)	32,38,41	2.02	9 (28%)
32	2MG	a	959	32	23,26,27	2.87	8 (34%)	33,38,41	2.33	12 (36%)
7	5MU	A	2177	7	19,22,23	7.29	8 (42%)	27,32,35	3.59	10 (37%)
32	MA6	a	1512	32	23,26,27	1.38	4 (17%)	33,38,41	4.37	13 (39%)
32	4OC	a	1395	32	20,23,24	3.11	8 (40%)	25,32,35	0.99	1 (4%)
32	MA6	a	1511	32	23,26,27	1.42	4 (17%)	33,38,41	4.29	13 (39%)
7	OMG	A	2489	52,7	23,26,27	2.41	8 (34%)	32,38,41	2.03	9 (28%)
32	UR3	a	1491	32	19,22,23	2.77	8 (42%)	26,32,35	1.60	3 (11%)
32	G7M	a	518	32	23,26,27	2.88	9 (39%)	34,39,42	1.80	9 (26%)

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
32	5MC	a	960	32	-	0/7/25/26	0/2/2/2
7	OMG	A	2791	7	-	1/9/27/28	0/3/3/3
32	2MG	a	959	32	-	2/9/27/28	0/3/3/3
7	5MU	A	2177	7	-	0/7/25/26	0/2/2/2
32	MA6	a	1512	32	-	2/11/29/30	0/3/3/3
32	4OC	a	1395	32	-	1/9/29/30	0/2/2/2
32	MA6	a	1511	32	-	2/11/29/30	0/3/3/3
7	OMG	A	2489	52,7	-	3/9/27/28	0/3/3/3
32	UR3	a	1491	32	-	0/7/25/26	0/2/2/2
32	G7M	a	518	32	-	0/7/25/26	0/3/3/3

All (75) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
7	A	2177	5MU	C4-C5	21.34	1.79	1.44
7	A	2177	5MU	C6-N1	16.32	1.65	1.38
7	A	2177	5MU	C4-N3	-10.98	1.18	1.38
7	A	2177	5MU	C6-C5	-10.74	1.17	1.34
32	a	960	5MC	C6-C5	9.42	1.50	1.34
32	a	960	5MC	C5-C4	9.26	1.51	1.44
32	a	959	2MG	C2-N3	7.36	1.46	1.32
32	a	1491	UR3	C2-N1	7.23	1.48	1.38
32	a	1395	4OC	C4-N3	7.04	1.44	1.32
32	a	518	G7M	C4-N3	6.89	1.50	1.34
32	a	960	5MC	C2-N3	6.74	1.49	1.36
32	a	518	G7M	C2-N2	6.66	1.49	1.34
32	a	960	5MC	C4-N3	6.60	1.44	1.34
7	A	2489	OMG	C4-N3	6.44	1.49	1.34
7	A	2791	OMG	C4-N3	6.28	1.48	1.34
32	a	1395	4OC	C6-C5	6.24	1.49	1.35
32	a	1491	UR3	C6-C5	6.20	1.49	1.35
32	a	959	2MG	C4-N3	6.15	1.48	1.34
32	a	1395	4OC	C2-N3	5.98	1.48	1.36
32	a	959	2MG	C2-N2	5.95	1.45	1.33
32	a	518	G7M	C2-N3	5.85	1.47	1.33
7	A	2489	OMG	C2-N3	5.34	1.46	1.33
32	a	960	5MC	C2-N1	5.30	1.51	1.40
7	A	2791	OMG	C2-N3	5.27	1.46	1.33
7	A	2177	5MU	C2-N3	4.99	1.46	1.38
32	a	1491	UR3	C2-N3	4.88	1.48	1.39
7	A	2791	OMG	C2-N2	4.71	1.45	1.34
32	a	960	5MC	C6-N1	4.66	1.45	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
32	a	959	2MG	C2-N1	4.63	1.44	1.36
7	A	2489	OMG	C2-N2	4.62	1.45	1.34
32	a	960	5MC	C4-N4	4.47	1.45	1.34
32	a	1395	4OC	C4-N4	4.39	1.45	1.36
32	a	518	G7M	C5-N7	-4.16	1.34	1.39
32	a	1395	4OC	C2-N1	4.00	1.48	1.40
32	a	518	G7M	C5-C6	3.97	1.54	1.43
32	a	1395	4OC	C5-C4	3.76	1.49	1.41
7	A	2489	OMG	C5-N7	-3.29	1.32	1.39
32	a	1512	MA6	C6-N6	3.20	1.45	1.36
7	A	2791	OMG	C5-N7	-3.19	1.32	1.39
32	a	1511	MA6	C5-C4	-3.18	1.33	1.39
32	a	1511	MA6	C6-N6	3.18	1.45	1.36
32	a	518	G7M	C2-N1	3.12	1.45	1.37
32	a	959	2MG	C5-N7	-3.11	1.32	1.39
32	a	1395	4OC	O2-C2	-3.11	1.17	1.23
32	a	1395	4OC	C6-N1	3.08	1.45	1.38
32	a	1512	MA6	C5-C4	-3.08	1.33	1.39
7	A	2177	5MU	O2-C2	-3.03	1.17	1.23
32	a	518	G7M	C6-N1	3.01	1.44	1.38
32	a	959	2MG	O6-C6	-2.98	1.17	1.23
32	a	1491	UR3	C6-N1	2.97	1.45	1.38
7	A	2177	5MU	C2-N1	2.84	1.42	1.38
32	a	1512	MA6	C5-N7	-2.84	1.33	1.39
32	a	1511	MA6	C5-N7	-2.77	1.34	1.39
7	A	2177	5MU	O4-C4	-2.75	1.18	1.23
7	A	2489	OMG	O6-C6	-2.70	1.18	1.23
7	A	2791	OMG	O6-C6	-2.69	1.18	1.23
32	a	1511	MA6	C8-N9	-2.62	1.33	1.37
7	A	2791	OMG	C2-N1	2.59	1.43	1.37
7	A	2489	OMG	C2-N1	2.58	1.43	1.37
32	a	1512	MA6	C8-N9	-2.45	1.33	1.37
32	a	518	G7M	O6-C6	-2.38	1.19	1.23
32	a	1491	UR3	O4-C4	-2.34	1.18	1.23
7	A	2791	OMG	C5-C6	2.31	1.53	1.44
7	A	2489	OMG	C5-C6	2.31	1.53	1.44
32	a	960	5MC	CM5-C5	2.30	1.56	1.50
32	a	1491	UR3	C5-C4	2.30	1.49	1.43
32	a	959	2MG	C6-N1	2.28	1.43	1.38
32	a	1491	UR3	C4-N3	2.27	1.45	1.40
32	a	518	G7M	C8-N7	2.25	1.36	1.33
32	a	1491	UR3	O2-C2	-2.17	1.18	1.22

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
7	A	2791	OMG	C4-N9	-2.16	1.32	1.38
7	A	2791	OMG	C6-N1	2.13	1.42	1.38
32	a	959	2MG	C5-C6	2.12	1.52	1.44
7	A	2489	OMG	C6-N1	2.04	1.42	1.38
32	a	960	5MC	O2-C2	-2.01	1.20	1.23

All (81) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
32	a	1512	MA6	N1-C6-N6	-15.73	97.69	116.86
32	a	1511	MA6	N1-C6-N6	-15.06	98.50	116.86
32	a	1512	MA6	C5-C6-N6	10.84	142.48	125.33
7	A	2177	5MU	C5-C4-N3	10.58	124.52	115.32
32	a	1511	MA6	C5-C6-N6	10.49	141.94	125.33
7	A	2177	5MU	C5-C6-N1	-8.82	113.74	123.31
32	a	1511	MA6	C4-N9-C1'	-7.66	108.71	126.63
7	A	2177	5MU	C4-N3-C2	-7.47	117.55	127.34
32	a	1512	MA6	C4-N9-C1'	-6.96	110.37	126.63
32	a	1511	MA6	C1'-N9-C8	6.59	141.73	127.09
32	a	1512	MA6	C1'-N9-C8	6.18	140.81	127.09
32	a	959	2MG	C2-N3-C4	6.17	119.71	112.00
32	a	1491	UR3	C4-N3-C2	-5.73	119.97	124.58
32	a	1512	MA6	C5-C4-N3	-5.69	118.88	126.72
32	a	1512	MA6	N1-C2-N3	-5.56	120.17	128.58
7	A	2489	OMG	C5-C4-N3	-5.54	119.58	128.39
32	a	1511	MA6	N1-C2-N3	-5.44	120.34	128.58
7	A	2791	OMG	C5-C4-N3	-5.21	120.09	128.39
7	A	2177	5MU	N3-C2-N1	5.05	121.47	114.89
32	a	1511	MA6	C5-C4-N3	-4.96	119.88	126.72
32	a	959	2MG	C5-C4-N3	-4.95	120.51	128.39
32	a	1512	MA6	C4-C5-C6	4.89	120.96	115.91
32	a	1511	MA6	C4-C5-C6	4.72	120.79	115.91
32	a	959	2MG	C1'-N9-C8	-4.70	113.38	126.73
32	a	1511	MA6	N9-C8-N7	-4.68	107.30	113.94
32	a	518	G7M	C2-N3-C4	4.60	120.23	112.30
7	A	2791	OMG	C2-N3-C4	4.55	120.13	112.30
7	A	2489	OMG	C2-N3-C4	4.53	120.10	112.30
32	a	1512	MA6	N9-C8-N7	-4.40	107.70	113.94
7	A	2177	5MU	C5M-C5-C6	-4.29	117.05	122.85
32	a	1512	MA6	N3-C4-N9	4.26	134.41	127.17
32	a	518	G7M	C5-C4-N3	-4.08	120.43	128.15
32	a	959	2MG	C2-N1-C6	-4.05	119.65	124.55

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
32	a	518	G7M	C5-C6-N1	3.94	119.99	111.84
32	a	1511	MA6	N3-C4-N9	3.89	133.78	127.17
7	A	2177	5MU	O4-C4-C5	-3.89	120.47	124.92
32	a	1491	UR3	C5-C4-N3	3.70	119.91	115.04
7	A	2177	5MU	C6-C5-C4	3.67	121.04	118.02
32	a	959	2MG	C1'-N9-C4	3.63	137.20	126.49
32	a	1511	MA6	C4-N9-C8	3.63	109.55	105.74
7	A	2791	OMG	C1'-N9-C4	-3.59	115.88	126.49
32	a	1512	MA6	C2-N3-C4	3.53	120.46	111.83
32	a	960	5MC	C5-C6-N1	-3.53	119.48	123.31
32	a	959	2MG	N9-C8-N7	-3.41	107.08	113.40
32	a	518	G7M	O6-C6-C5	-3.40	120.42	128.01
7	A	2489	OMG	N9-C4-N3	3.39	132.72	125.95
7	A	2791	OMG	C1'-N9-C8	3.32	136.15	126.73
32	a	1511	MA6	C2-N1-C6	3.30	119.90	111.83
7	A	2489	OMG	C1'-N9-C4	-3.28	116.81	126.49
7	A	2489	OMG	C2-N1-C6	-3.23	119.26	125.11
32	a	1512	MA6	C2-N1-C6	3.22	119.70	111.83
32	a	959	2MG	N9-C4-N3	3.16	132.27	125.95
32	a	1511	MA6	C2-N3-C4	3.16	119.54	111.83
32	a	518	G7M	N9-C4-N3	3.15	132.26	125.95
7	A	2177	5MU	O2-C2-N1	-3.07	118.80	122.80
7	A	2791	OMG	C2-N1-C6	-3.05	119.58	125.11
7	A	2489	OMG	C1'-N9-C8	3.04	135.38	126.73
7	A	2791	OMG	N9-C4-N3	3.02	131.98	125.95
32	a	1512	MA6	C4-N9-C8	2.94	108.82	105.74
32	a	1512	MA6	C5-N7-C8	2.93	108.06	103.45
7	A	2177	5MU	C5M-C5-C4	2.93	121.91	118.78
32	a	518	G7M	C2-N1-C6	-2.92	119.81	125.11
32	a	1511	MA6	C5-N7-C8	2.87	107.96	103.45
7	A	2791	OMG	N9-C8-N7	-2.79	108.23	113.40
32	a	959	2MG	N1-C2-N2	2.78	119.40	116.56
7	A	2177	5MU	O4-C4-N3	-2.71	115.01	120.11
7	A	2489	OMG	N9-C8-N7	-2.67	108.45	113.40
7	A	2489	OMG	C5-C6-N1	2.65	120.00	113.25
32	a	959	2MG	C5-C6-N1	2.64	119.96	113.25
7	A	2791	OMG	C5-C6-N1	2.61	119.90	113.25
32	a	1395	4OC	C6-C5-C4	2.57	120.10	117.00
7	A	2489	OMG	O6-C6-C5	-2.51	119.90	126.53
32	a	518	G7M	CN7-N7-C5	2.49	129.90	126.80
7	A	2791	OMG	O6-C6-C5	-2.44	120.10	126.53
32	a	959	2MG	O6-C6-C5	-2.42	120.14	126.53

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
32	a	959	2MG	C8-N7-C5	2.26	108.28	104.26
32	a	518	G7M	N9-C8-N7	-2.16	107.25	112.48
32	a	960	5MC	CM5-C5-C6	-2.10	120.01	122.85
32	a	518	G7M	CN7-N7-C8	-2.09	121.63	124.79
32	a	1491	UR3	C6-N1-C2	-2.07	120.11	121.80
32	a	959	2MG	N1-C2-N3	-2.00	120.30	123.68

There are no chirality outliers.

All (11) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
7	A	2489	OMG	O4'-C4'-C5'-O5'
7	A	2489	OMG	C1'-C2'-O2'-CM2
32	a	959	2MG	O4'-C4'-C5'-O5'
32	a	959	2MG	C3'-C4'-C5'-O5'
7	A	2489	OMG	C3'-C4'-C5'-O5'
32	a	1512	MA6	O4'-C4'-C5'-O5'
32	a	1511	MA6	O4'-C4'-C5'-O5'
32	a	1511	MA6	C3'-C4'-C5'-O5'
7	A	2791	OMG	C3'-C2'-O2'-CM2
32	a	1512	MA6	C3'-C4'-C5'-O5'
32	a	1395	4OC	O4'-C4'-C5'-O5'

There are no ring outliers.

7 monomers are involved in 10 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
32	a	960	5MC	2	0
7	A	2177	5MU	2	0
32	a	1512	MA6	1	0
32	a	1395	4OC	1	0
32	a	1511	MA6	1	0
7	A	2489	OMG	2	0
32	a	518	G7M	1	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry

Of 447 ligands modelled in this entry, 446 are monoatomic - leaving 1 for Mogul analysis.

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$
55	A1L32	A	3501	-	87,87,87	2.45	18 (20%)	128,130,130	1.73	28 (21%)

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
55	A1L32	A	3501	-	-	21/91/146/146	0/7/7/7

All (18) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
55	A	3501	A1L32	C45-C44	10.32	1.55	1.38
55	A	3501	A1L32	C55-C43	7.87	1.54	1.38
55	A	3501	A1L32	C54-C46	7.46	1.53	1.39
55	A	3501	A1L32	O2-C13	6.24	1.48	1.34
55	A	3501	A1L32	C48-N5	6.07	1.48	1.36
55	A	3501	A1L32	N5-N6	5.27	1.40	1.32
55	A	3501	A1L32	O1-C1	-4.52	1.36	1.44
55	A	3501	A1L32	C6-C7	4.37	1.61	1.54
55	A	3501	A1L32	C49-C48	4.05	1.53	1.47
55	A	3501	A1L32	N3-N6	-3.99	1.28	1.35
55	A	3501	A1L32	C47-C48	3.68	1.43	1.37
55	A	3501	A1L32	C42-C43	3.59	1.59	1.50
55	A	3501	A1L32	C45-C46	-3.42	1.32	1.39
55	A	3501	A1L32	C44-C43	-3.29	1.32	1.38
55	A	3501	A1L32	C55-C54	-2.75	1.34	1.38
55	A	3501	A1L32	C46-N3	2.36	1.47	1.43
55	A	3501	A1L32	O11-C7	-2.35	1.40	1.44
55	A	3501	A1L32	O7-C20	-2.02	1.38	1.42

All (28) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
55	A	3501	A1L32	C46-N3-C47	-6.34	119.96	129.12
55	A	3501	A1L32	C47-N3-N6	6.04	117.50	110.31
55	A	3501	A1L32	O2-C13-C12	3.99	120.06	111.53
55	A	3501	A1L32	C1-C2-C3	-3.92	107.01	115.80
55	A	3501	A1L32	O12-C2-C1	3.84	110.97	106.40
55	A	3501	A1L32	C15-C14-C1	-3.69	108.46	115.20
55	A	3501	A1L32	C48-N5-N6	-3.65	105.32	109.23
55	A	3501	A1L32	C49-C48-N5	3.48	127.64	122.05
55	A	3501	A1L32	C7-C9-C10	-3.44	108.89	113.89
55	A	3501	A1L32	C38-O14-C56	3.10	119.78	113.72
55	A	3501	A1L32	C6-C5-C4	-3.07	107.76	112.10
55	A	3501	A1L32	O6-C21-C20	3.06	108.29	103.86
55	A	3501	A1L32	C21-C20-C19	-2.86	106.97	111.12
55	A	3501	A1L32	C42-O13-C41	2.63	119.01	114.22
55	A	3501	A1L32	C37-C3-C2	-2.52	110.60	113.71
55	A	3501	A1L32	C47-C48-N5	-2.50	105.44	107.85
55	A	3501	A1L32	C4-N1-C3	-2.39	108.09	112.06
55	A	3501	A1L32	O13-C41-C40	2.36	114.57	109.83
55	A	3501	A1L32	C5-C4-N1	-2.35	109.27	113.95
55	A	3501	A1L32	O5-C19-C25	2.29	111.83	106.74
55	A	3501	A1L32	O16-C40-C39	-2.28	105.00	110.38
55	A	3501	A1L32	O8-C9-C10	-2.26	108.31	111.58
55	A	3501	A1L32	C7-C6-C5	-2.16	111.21	117.11
55	A	3501	A1L32	C58-C1-C14	-2.13	108.38	111.26
55	A	3501	A1L32	O6-C21-C23	-2.07	109.76	112.95
55	A	3501	A1L32	C36-N1-C3	-2.05	109.91	113.59
55	A	3501	A1L32	O2-C13-O3	-2.01	120.32	123.95
55	A	3501	A1L32	C14-O2-C13	-2.00	114.70	118.20

There are no chirality outliers.

All (21) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
55	A	3501	A1L32	C2-C3-N1-C4
55	A	3501	A1L32	C37-C3-N1-C4
55	A	3501	A1L32	C2-C3-N1-C36
55	A	3501	A1L32	C37-C3-N1-C36
55	A	3501	A1L32	N1-C4-C5-C6
55	A	3501	A1L32	N1-C4-C5-C35
55	A	3501	A1L32	C58-C1-C2-O12
55	A	3501	A1L32	O1-C1-C2-O12

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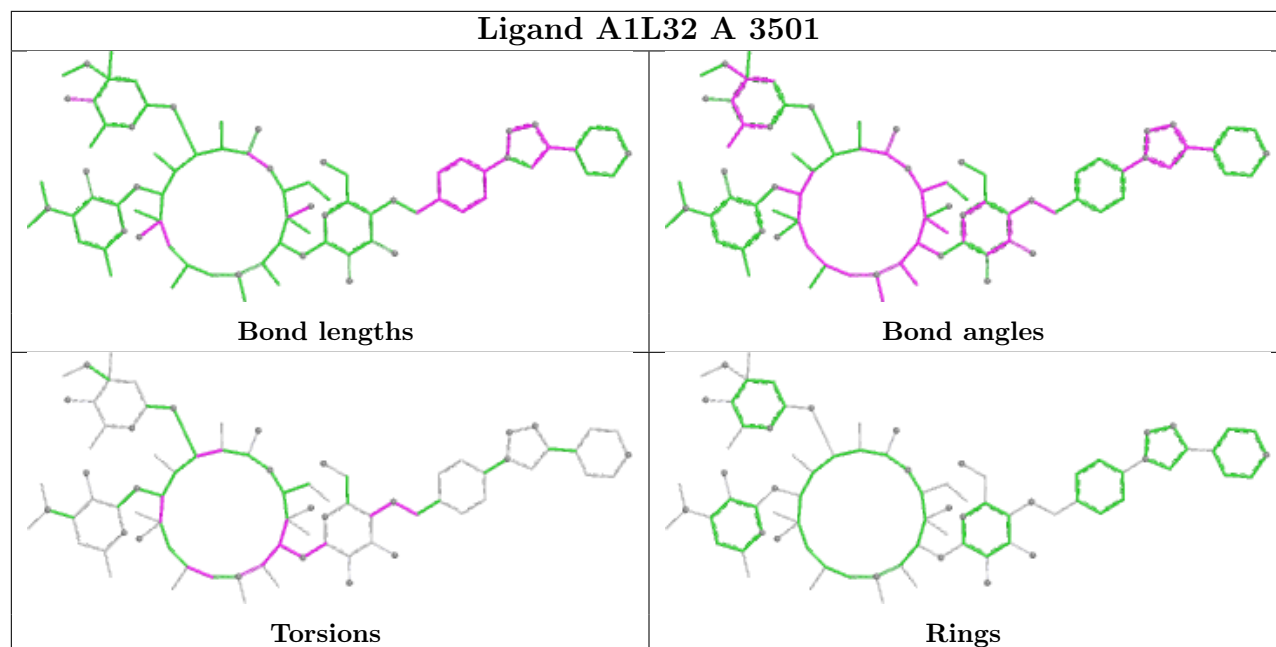
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Mol	Chain	Res	Type	Atoms
55	A	3501	A1L32	O12-C2-C3-N1
55	A	3501	A1L32	C40-C41-O13-C42
55	A	3501	A1L32	O14-C38-O12-C2
55	A	3501	A1L32	C39-C38-O12-C2
55	A	3501	A1L32	C14-C1-C2-O12
55	A	3501	A1L32	C58-C1-C2-C3
55	A	3501	A1L32	C3-C2-O12-C38
55	A	3501	A1L32	C1-C2-O12-C38
55	A	3501	A1L32	C1-C2-C3-N1
55	A	3501	A1L32	C8-C7-C9-C10
55	A	3501	A1L32	C1-C2-C3-C37
55	A	3501	A1L32	C10-C11-C12-C17
55	A	3501	A1L32	C43-C42-O13-C41

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 than 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.



5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

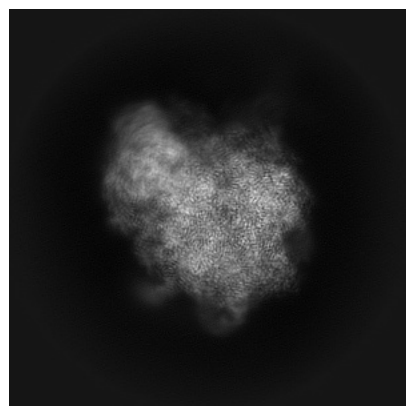
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-61076. These allow visual inspection of the internal detail of the map and identification of artifacts.

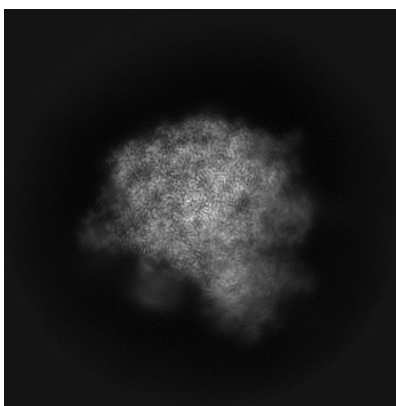
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

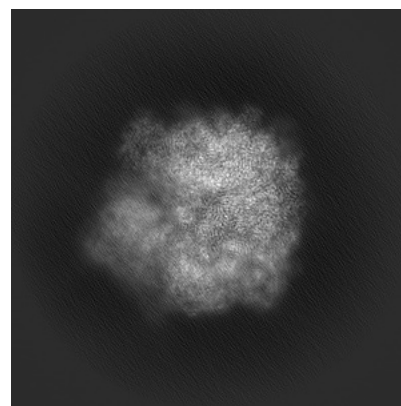
6.1.1 Primary map



X

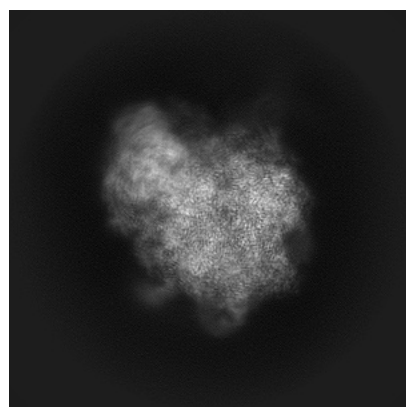


Y

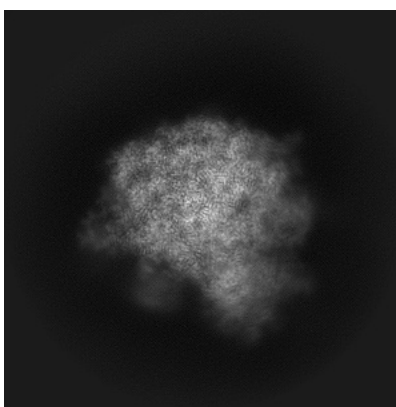


Z

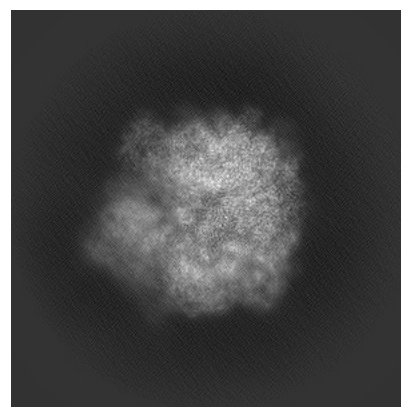
6.1.2 Raw map



X



Y

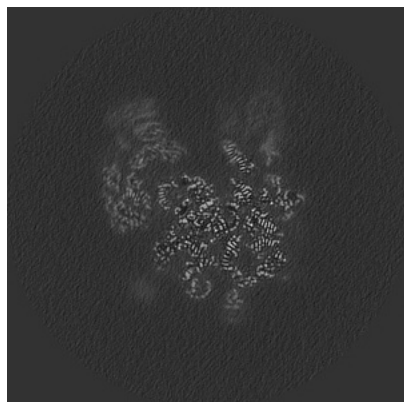


Z

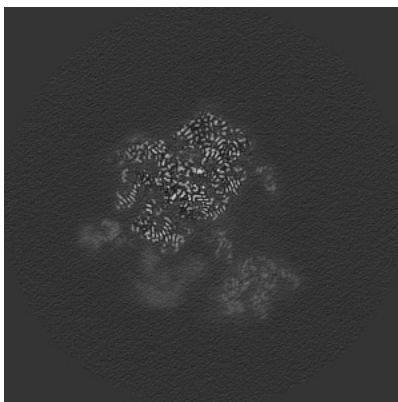
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

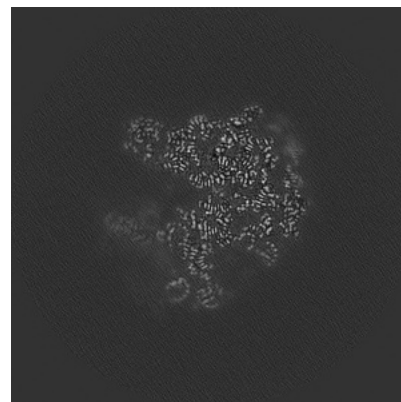
6.2.1 Primary map



X Index: 256

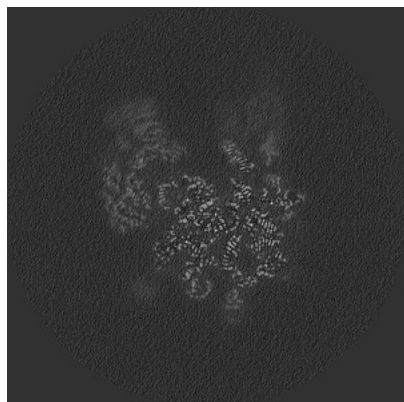


Y Index: 256

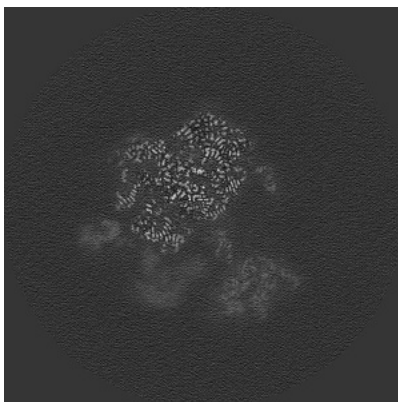


Z Index: 256

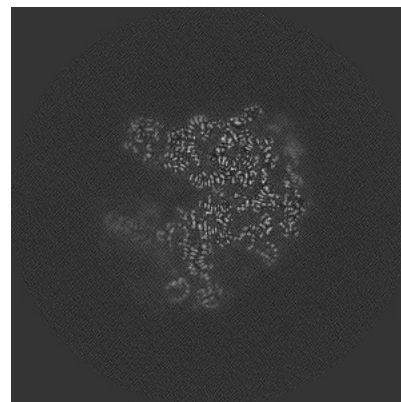
6.2.2 Raw map



X Index: 256



Y Index: 256

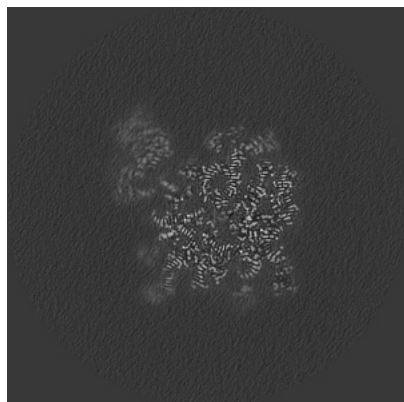


Z Index: 256

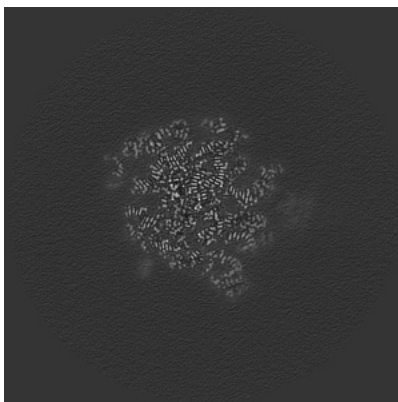
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

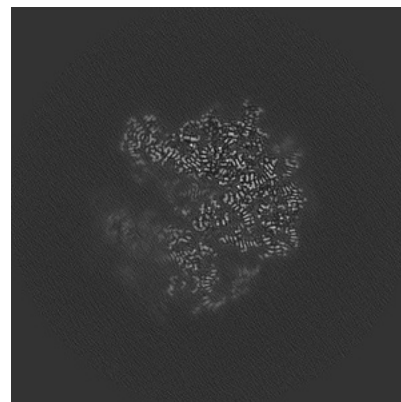
6.3.1 Primary map



X Index: 288

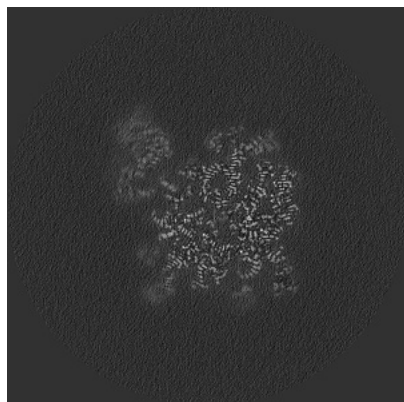


Y Index: 314

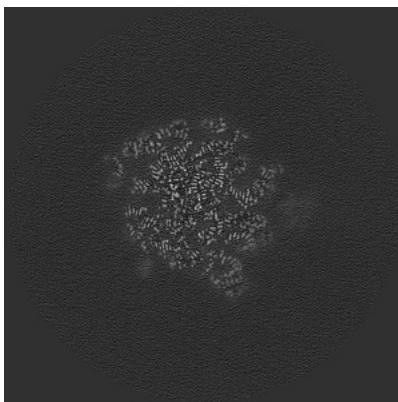


Z Index: 266

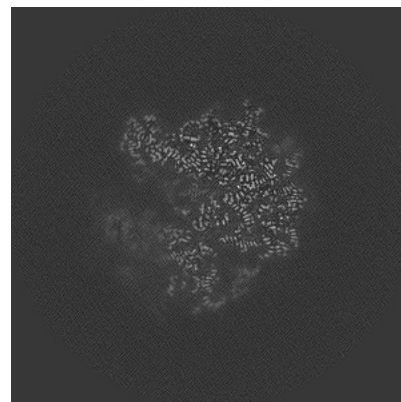
6.3.2 Raw map



X Index: 288



Y Index: 314

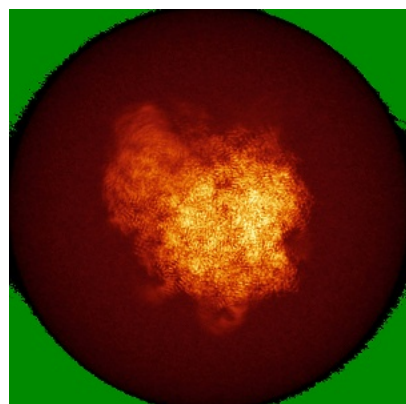


Z Index: 266

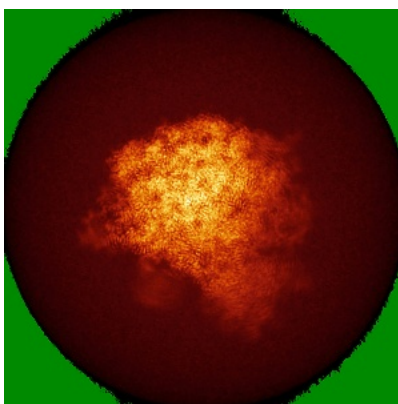
The images above show the largest variance slices of the map in three orthogonal directions.

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

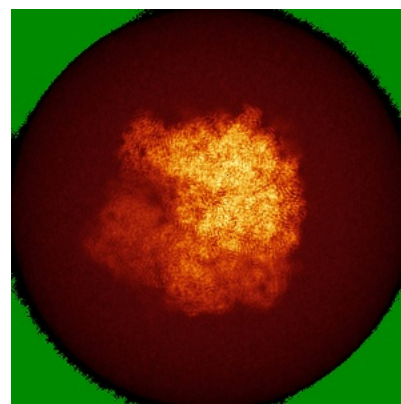
6.4.1 Primary map



X

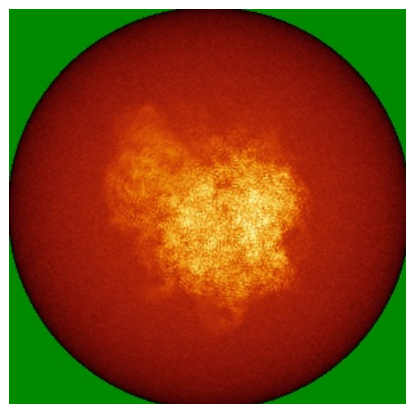


Y

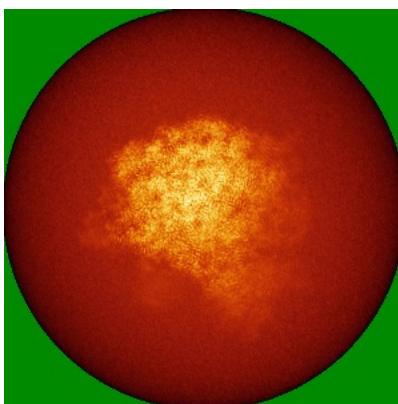


Z

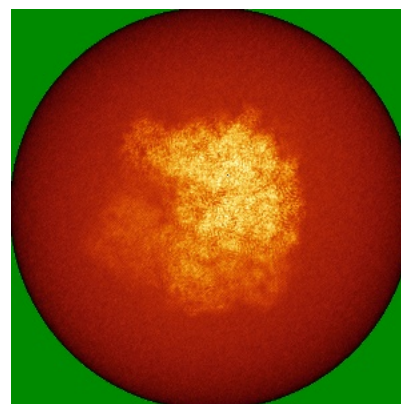
6.4.2 Raw map



X



Y

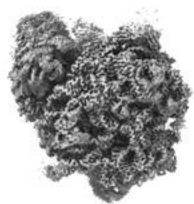


Z

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

6.5 Orthogonal surface views [i](#)

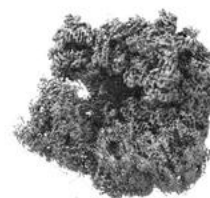
6.5.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.0085. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

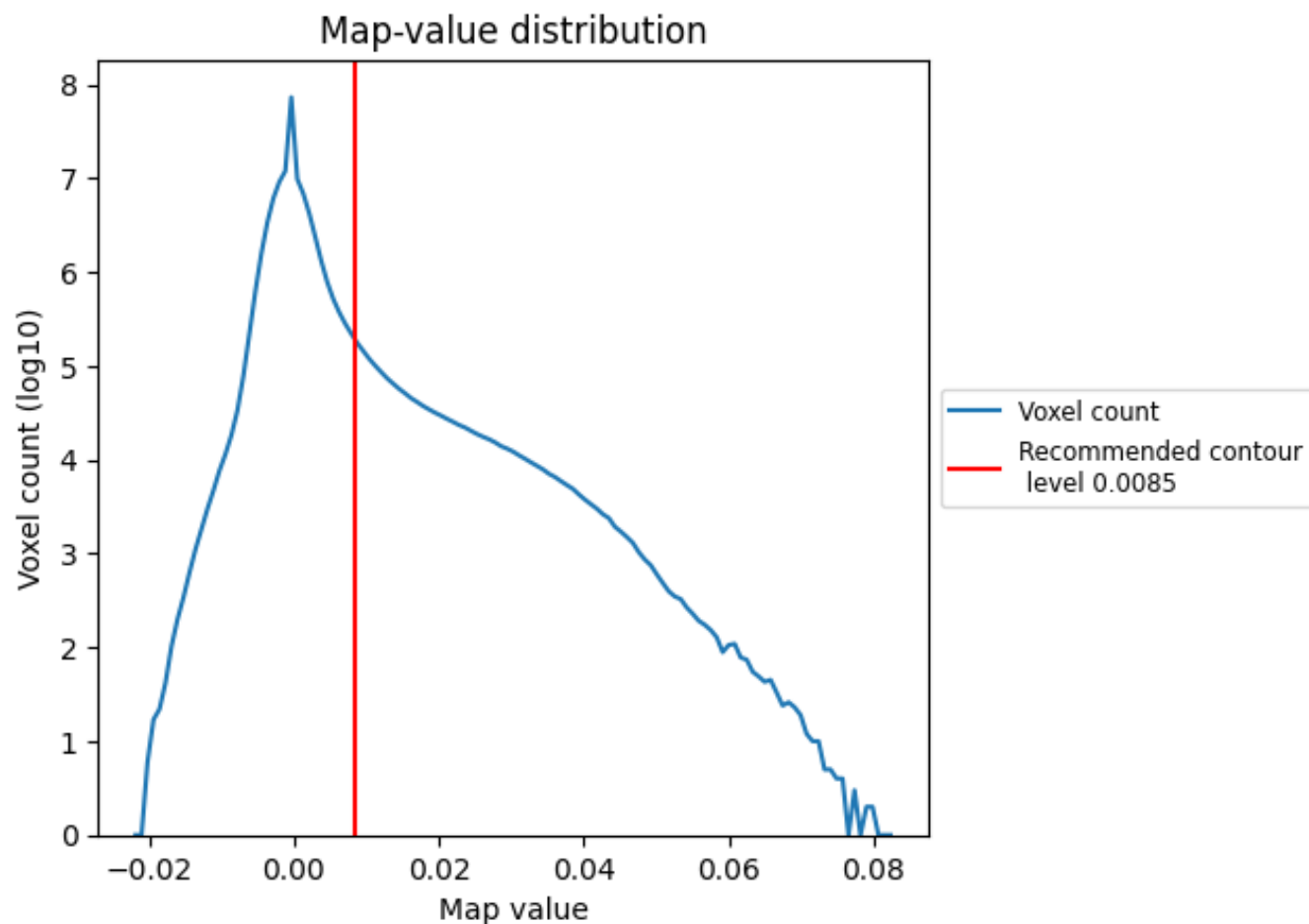
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

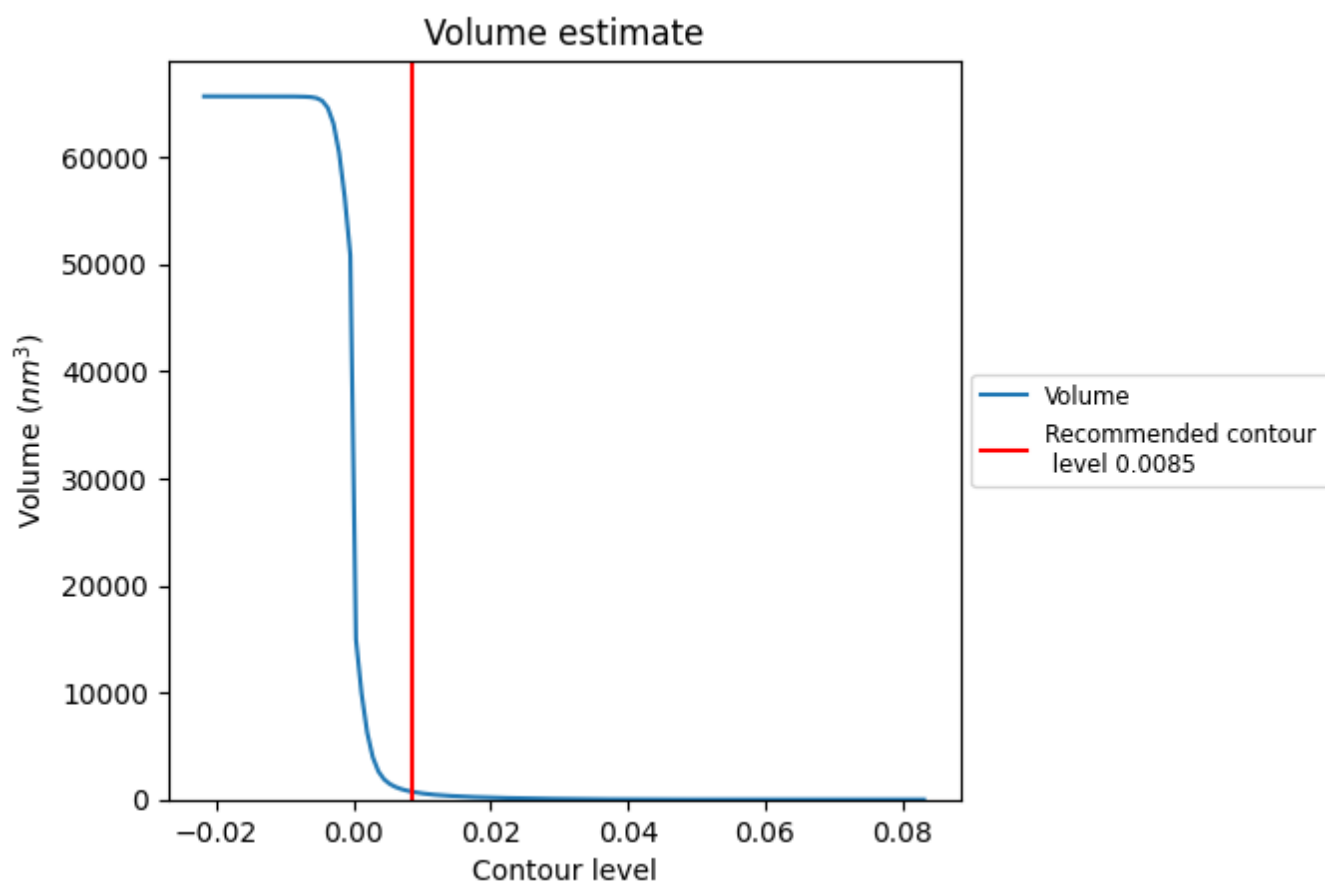
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

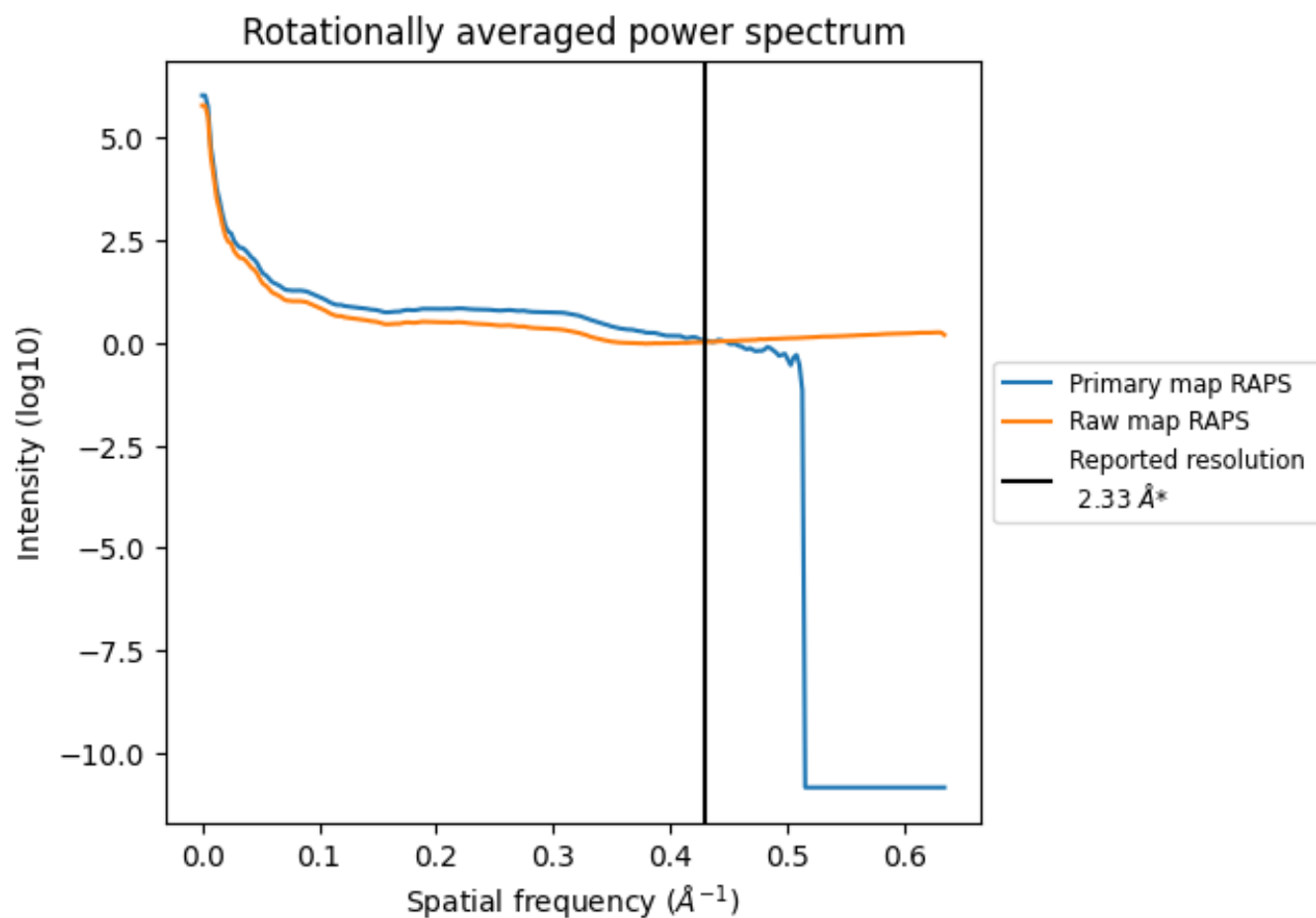
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 731 nm³; this corresponds to an approximate mass of 660 kDa.

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

7.3 Rotationally averaged power spectrum ⓘ

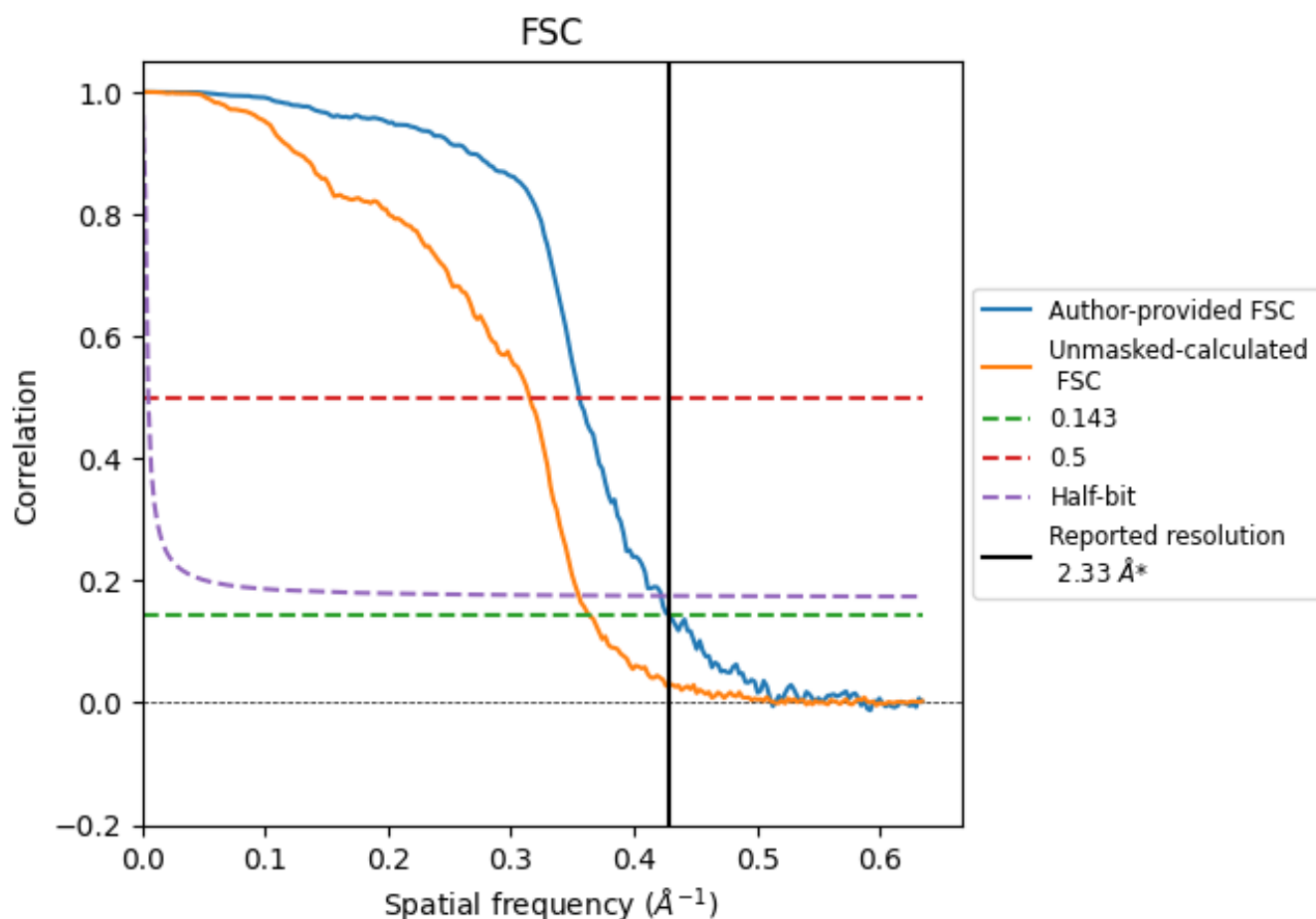


*Reported resolution corresponds to spatial frequency of 0.429 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.429 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.33	-	-
Author-provided FSC curve	2.33	2.81	2.37
Unmasked-calculated*	2.75	3.17	2.82

*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 2.75 differs from the reported value 2.33 by more than 10 %

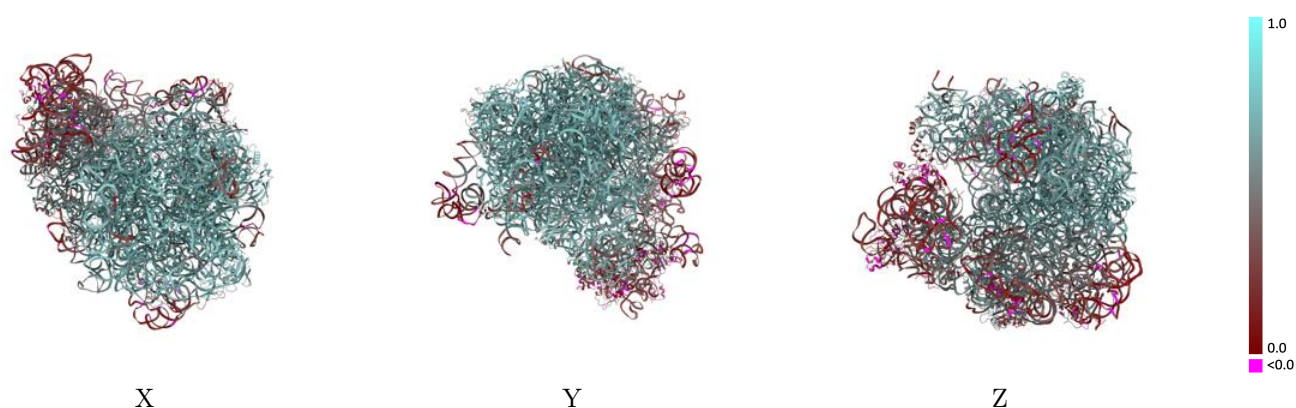
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-61076 and PDB model 9J1M. Per-residue inclusion information can be found in section 3 on page 14.

9.1 Map-model overlay [i](#)

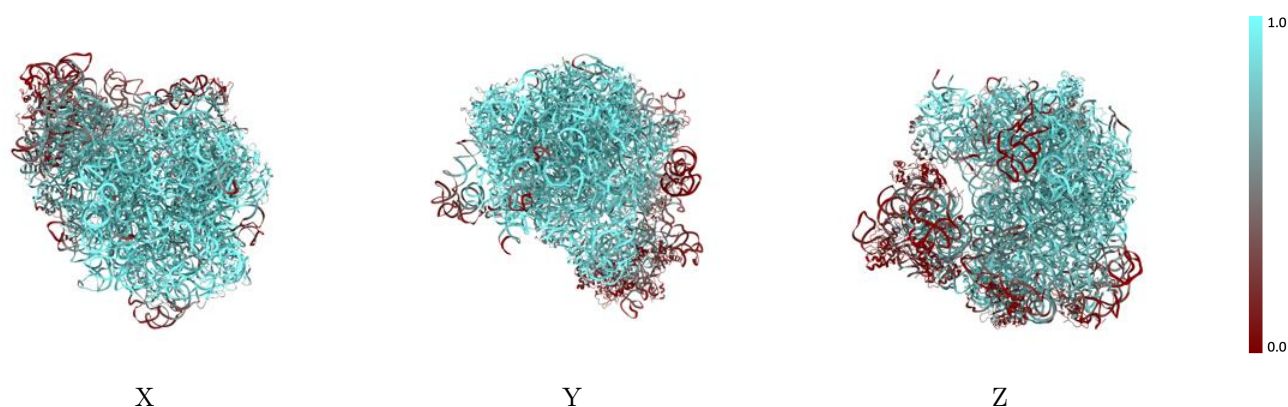
This section was not generated.

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



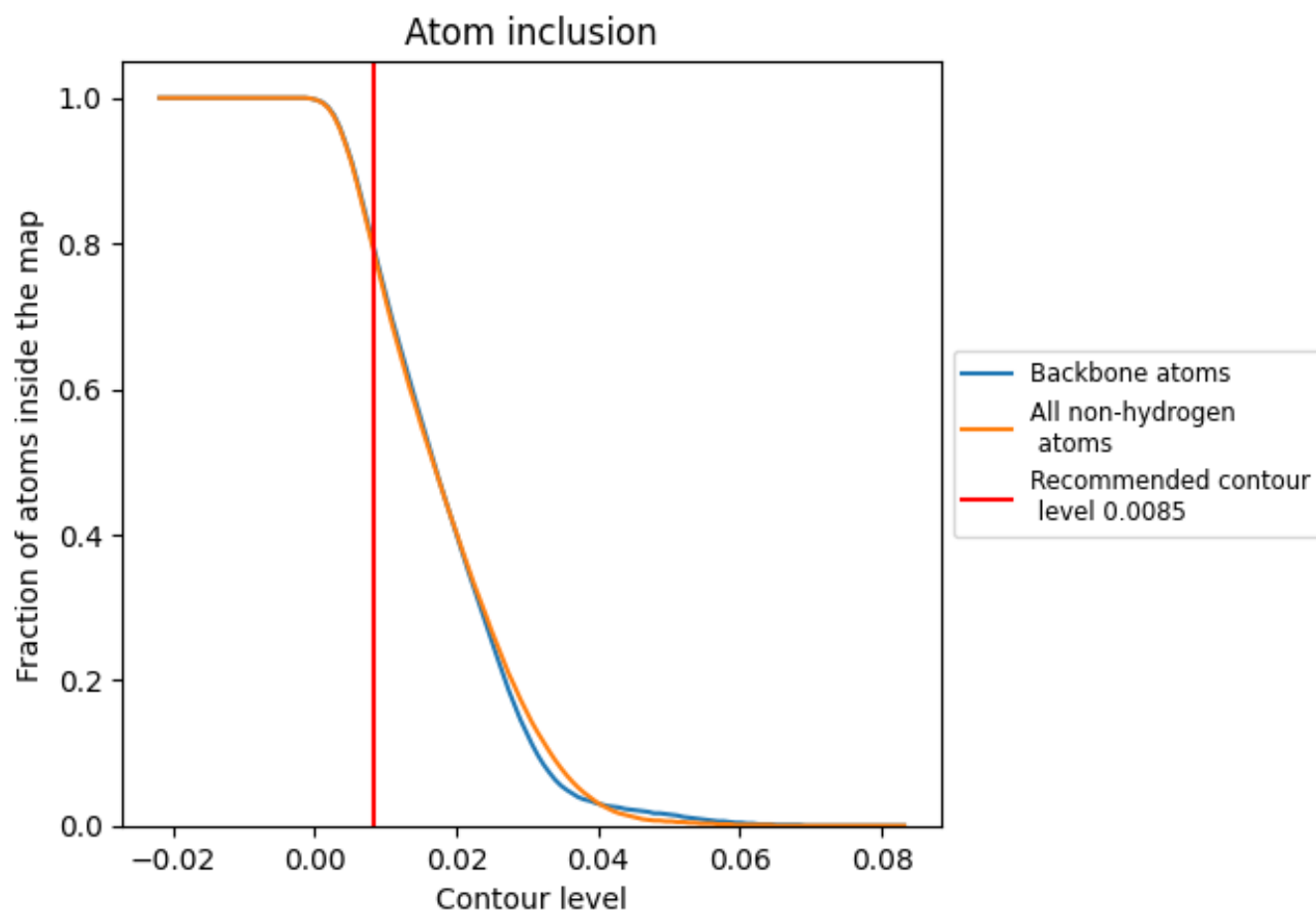
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.0085).

9.4 Atom inclusion [i](#)



At the recommended contour level, 79% of all backbone atoms, 78% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.0085) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7840	 0.5520
0	 0.9000	 0.6620
1	 0.9020	 0.6430
2	 0.9880	 0.7180
3	 0.9830	 0.7150
4	 0.9170	 0.6460
7	 0.9890	 0.6910
A	 0.9060	 0.6310
B	 0.9000	 0.5810
C	 0.9580	 0.6930
D	 0.9170	 0.6680
E	 0.9150	 0.6640
F	 0.5710	 0.4130
G	 0.6230	 0.4850
H	 0.5160	 0.4600
J	 0.9490	 0.6870
K	 0.9380	 0.6690
L	 0.9160	 0.6570
M	 0.9350	 0.6630
N	 0.9640	 0.6930
O	 0.8950	 0.6250
P	 0.8570	 0.6380
Q	 0.9670	 0.7070
R	 0.8940	 0.6590
S	 0.9610	 0.6920
T	 0.8640	 0.6340
U	 0.7590	 0.5550
V	 0.5690	 0.4570
W	 0.9340	 0.6660
X	 0.9690	 0.6960
Y	 0.8290	 0.5840
Z	 0.9300	 0.6750
a	 0.6810	 0.4430
c	 0.2510	 0.3750
d	 0.0960	 0.2050



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Chain	Atom inclusion	Q-score
e	 0.6340	 0.5290
f	 0.5900	 0.5080
g	 0.2460	 0.2600
h	 0.6920	 0.5290
i	 0.2330	 0.2400
j	 0.1950	 0.2430
k	 0.6610	 0.5090
l	 0.4710	 0.3970
m	 0.1810	 0.1740
n	 0.4530	 0.4590
o	 0.7060	 0.5290
p	 0.3380	 0.3070
q	 0.4140	 0.3120
r	 0.6930	 0.5320
s	 0.1170	 0.1640
t	 0.3660	 0.2070
u	 0.9210	 0.6560
x	 0.6880	 0.5640