Full wwPDB EM Validation Report

Jun 1, 2025 – 02:57 PM EDT

PDB ID	:	3JCS / pdb_00003jcs
EMDB ID	:	EMD-6583
Title	:	2.8 Angstrom cryo-EM structure of the large ribosomal subunit from the eukaryotic parasite Leishmania
Authors	:	Shalev-Benami, M.; Zhang, Y.; Matzov, D.; Halfon, Y.; Zackay, A.; Rozenberg, H.; Zimmerman, E.; Bashan, A.; Jaffe, C.L.; Yonath, A.; Skiniotis, G.
Deposited on	:	2016-01-21
Resolution	:	2.80 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 (i) 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 (i)) were used in the production of this report:

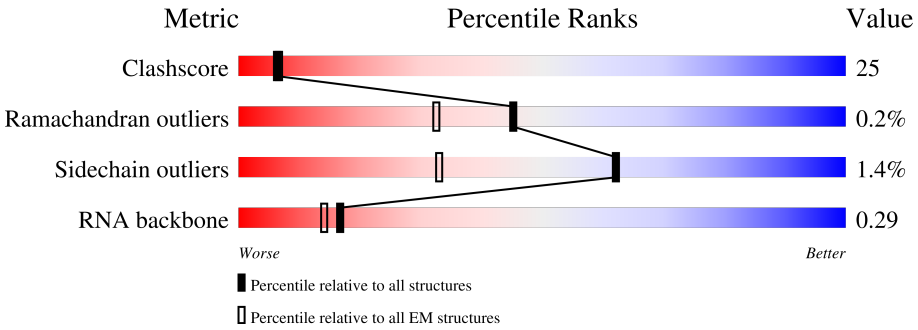
EMDB validation analysis	:	0.0.1.dev118
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4-5-2 with Phenix2.0rc1
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.43.1

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 2.80 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)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415
RNA backbone	6643	2191

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

Mol	Chain	Length	Quality of chain
1	1	1782	8% 24% 40% 23% • 13%
2	2	1527	11% 21% 33% 19% • 27%
3	3	213	17% 21% 38% 27% 14%
4	4	183	9% 27% 38% 17% 19%
5	5	133	• 15% 27% 18% 40%
6	6	76	17% • 18% 53% 8% 20%
7	7	171	• 26% 45% 19% • 10%

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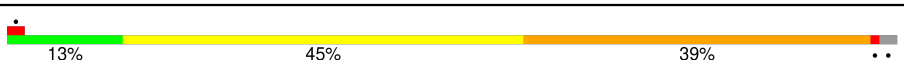
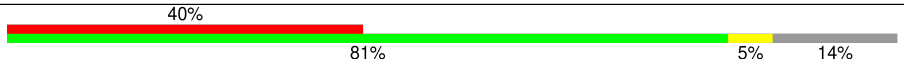
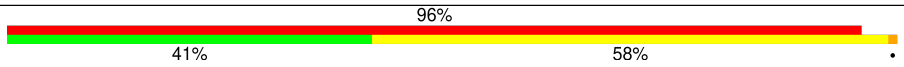
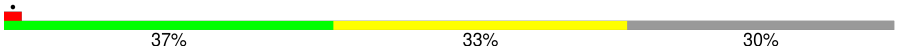
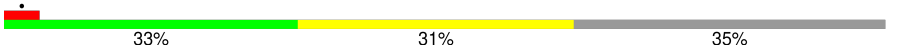
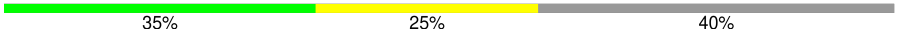
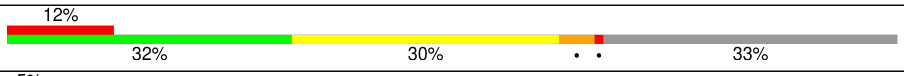
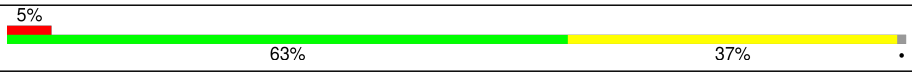
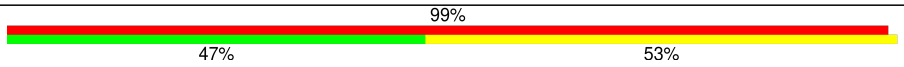
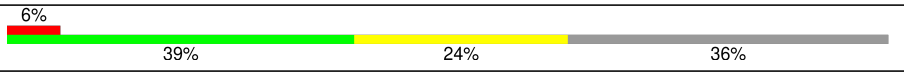
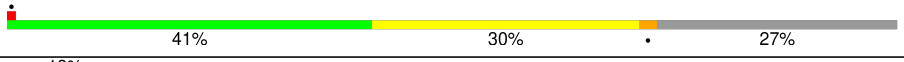
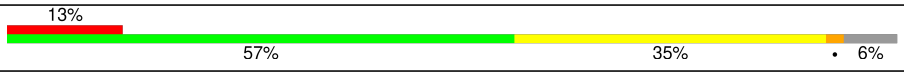
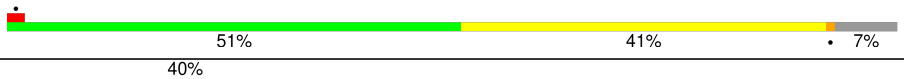
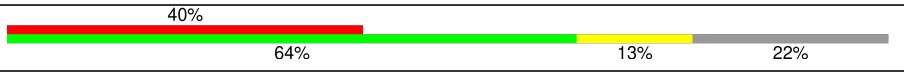
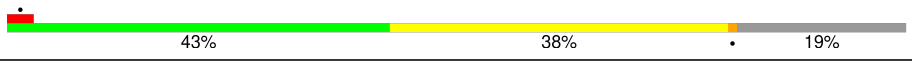
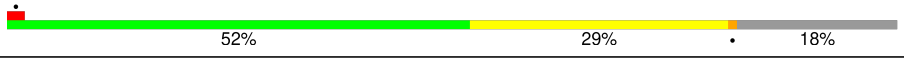
Mol	Chain	Length	Quality of chain
8	8	121	
9	A	260	
10	B	419	
11	C	373	
12	D	188	
13	E	190	
14	F	195	
15	G	348	
16	H	222	
17	I	220	
18	J	139	
19	K	233	
20	L	145	
21	M	204	
22	N	213	
23	O	305	
24	P	198	
25	Q	245	
26	R	179	
27	S	159	
28	T	166	
29	U	129	
30	V	145	
31	W	143	
32	X	124	

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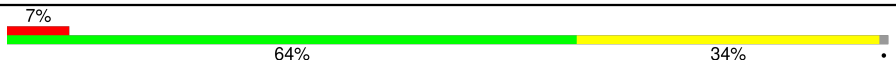
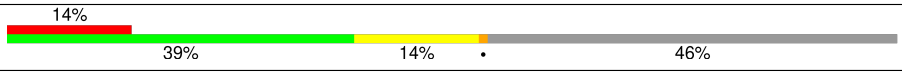
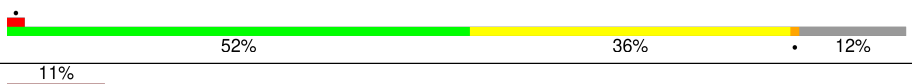
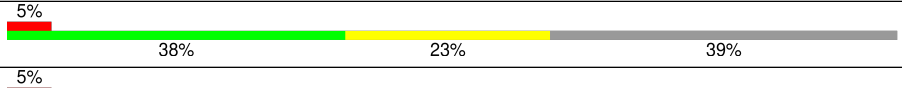
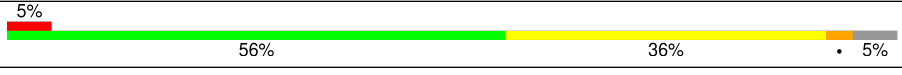
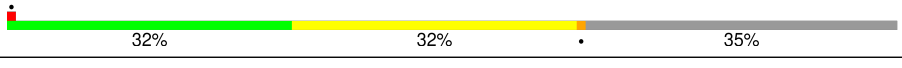
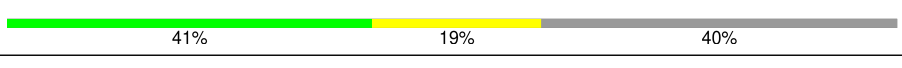
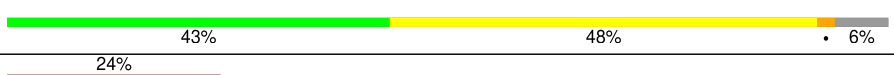
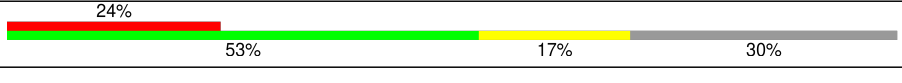
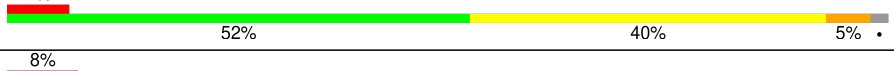
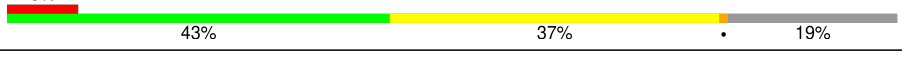
Mol	Chain	Length	Quality of chain
33	Y	134	
34	Z	147	
35	a	127	
36	b	70	
37	c	252	
38	d	104	
39	e	183	
40	f	133	
41	g	144	
42	h	168	
43	i	105	
44	j	83	
45	k	83	
46	l	51	
47	m	92	
48	n	106	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
1	OMU	1	36	-	-	X	-
1	OMG	1	959	-	-	X	-
2	OMU	2	1078	-	-	X	-
2	OMG	2	1079	-	-	X	-
2	OMG	2	1254	-	-	X	-
2	OMC	2	1318	-	-	X	-
2	OMC	2	443	-	-	X	-
2	A2M	2	527	-	-	X	-
2	OMU	2	667	-	-	X	-
2	OMG	2	71	-	-	X	-

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Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
7	OMU	7	7	-	-	X	-

2 Entry composition

There are 50 unique types of molecules in this entry. The entry contains 117257 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called 26S alpha ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	1	1554	33313	14886	6081	10792	1554	0	0

- Molecule 2 is a RNA chain called 26S delta ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	2	1119	23926	10702	4308	7797	1119	0	0

- Molecule 3 is a RNA chain called 26S gamma ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	3	184	3893	1740	662	1307	184	0	0

- Molecule 4 is a RNA chain called 26S delta ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
4	4	149	3177	1418	570	1040	149	0	0

- Molecule 5 is a RNA chain called 26S epsilon ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
5	5	80	1708	763	310	555	80	0	0

- Molecule 6 is a RNA chain called 26S zeta ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
6	6	61	1288	577	225	425	61	0	0

- Molecule 7 is a RNA chain called 5.8S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	7	154	Total	C	N	O	P	0	0
			3280	1469	584	1074	153		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
8	8	119	Total	C	N	O	P	0	0
			2531	1132	450	830	119		

- Molecule 9 is a protein called ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	A	245	Total	C	N	O	S	2	0
			1859	1158	384	307	10		

- Molecule 10 is a protein called ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	B	396	Total	C	N	O	S	2	0
			3020	1908	592	508	12		

- Molecule 11 is a protein called ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	C	301	Total	C	N	O	S	1	0
			2237	1413	428	384	12		

- Molecule 12 is a protein called ribosomal protein L5.

Mol	Chain	Residues	Atoms				AltConf	Trace
12	D	161	Total	C	N	O	0	0
			799	476	161	162		

- Molecule 13 is a protein called ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	E	190	Total	C	N	O	S	0	0
			1509	953	276	272	8		

- Molecule 14 is a protein called ribosomal protein L6e.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	F	137	Total	C	N	O	S	1	0
			1002	641	192	167	2		

- Molecule 15 is a protein called ribosomal protein L8e.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	G	226	Total	C	N	O	S	1	0
			1772	1113	353	299	7		

- Molecule 16 is a protein called ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	H	202	Total	C	N	O	S	0	0
			1596	1019	307	263	7		

- Molecule 17 is a protein called ribosomal protein L13e.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	I	132	Total	C	N	O	S	0	0
			1061	666	221	169	5		

- Molecule 18 is a protein called ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	J	128	Total	C	N	O	S	0	0
			924	588	171	160	5		

- Molecule 19 is a protein called ribosomal protein L14e.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	K	156	Total	C	N	O	S	0	0
			1061	661	212	184	4		

- Molecule 20 is a protein called ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	L	144	Total	C	N	O	S	0	0
			1096	691	223	177	5		

- Molecule 21 is a protein called ribosomal protein L15e.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	M	203	Total	C	N	O	S	0	0
			1714	1080	362	264	8		

- Molecule 22 is a protein called ribosomal protein L16.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	N	213	Total	C	N	O	S	0	0
			1714	1077	340	281	16		

- Molecule 23 is a protein called ribosomal protein L18.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	O	235	Total	C	N	O	S	0	0
			1557	986	300	268	3		

- Molecule 24 is a protein called ribosomal protein L18e.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	P	195	Total	C	N	O	S	1	0
			1494	942	299	247	6		

- Molecule 25 is a protein called ribosomal protein L19e.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	Q	156	Total	C	N	O	S	0	0
			1162	730	243	186	3		

- Molecule 26 is a protein called ribosomal protein L20e.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	R	131	Total	C	N	O	S	1	0
			1019	651	197	167	4		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
R	158	ILE	LEU	variant	UNP E9BRT7

- Molecule 27 is a protein called ribosomal protein L21e.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	S	149	Total	C	N	O	S	2	0
			1112	704	218	187	3		

- Molecule 28 is a protein called ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	T	154	Total	C	N	O	S	2	0
			1221	763	241	206	11		

- Molecule 29 is a protein called ribosomal protein L22e.

Mol	Chain	Residues	Atoms				AltConf	Trace
29	U	100	Total	C	N	O	0	0
			541	331	101	109		

- Molecule 30 is a protein called ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	V	118	Total	C	N	O	S	0	0
			892	566	171	153	2		

- Molecule 31 is a protein called ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	W	117	Total	C	N	O	S	1	0
			896	562	187	144	3		

- Molecule 32 is a protein called ribosomal protein L24e.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	X	64	Total	C	N	O	S	0	0
			508	333	96	76	3		

- Molecule 33 is a protein called ribosomal protein L27e.

Mol	Chain	Residues	Atoms				AltConf	Trace
33	Y	132	Total	C	N	O	0	0
			914	589	174	151		

- Molecule 34 is a protein called ribosomal protein L28e.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	Z	79	Total	C	N	O	S	0	0
			538	329	111	95	3		

- Molecule 35 is a protein called ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	a	124	Total	C	N	O	S	0	0
			982	613	203	163	3		

- Molecule 36 is a protein called ribosomal protein L29e.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	b	65	Total	C	N	O	S	0	0
			503	309	113	80	1		

- Molecule 37 is a protein called ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	c	222	Total	C	N	O	S	0	0
			1732	1105	327	289	11		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
c	49	ALA	GLY	variant	UNP E9BI29

- Molecule 38 is a protein called ribosomal protein L30e.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	d	75	Total	C	N	O	S	0	0
			518	325	93	97	3		

- Molecule 39 is a protein called ribosomal protein L31e.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	e	112	Total	C	N	O	S	1	0
			824	531	155	136	2		

- Molecule 40 is a protein called ribosomal protein L32e.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	f	126	Total	C	N	O	S	0	0
			982	616	195	167	4		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
f	105	LYS	THR	variant	UNP E9BFJ5

- Molecule 41 is a protein called ribosomal protein L33e.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	g	125	Total	C	N	O	S	0	0
			983	612	205	161	5		

- Molecule 42 is a protein called ribosomal protein L34e.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	h	109	Total	C	N	O	S	0	0
			856	529	182	140	5		

- Molecule 43 is a protein called ribosomal protein L36e.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	i	63	Total	C	N	O	S	1	0
			494	316	100	76	2		

- Molecule 44 is a protein called ribosomal protein L37e.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	j	78	Total	C	N	O	S	0	0
			639	385	149	99	6		

- Molecule 45 is a protein called ribosomal protein L38e.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	k	58	Total	C	N	O	S	0	0
			373	234	71	66	2		

- Molecule 46 is a protein called ribosomal protein L39e.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	l	50	Total	C	N	O	S	1	0
			457	294	98	64	1		

- Molecule 47 is a protein called ribosomal protein L43e.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	m	90	Total	C	N	O	S	0	0
			668	414	135	113	6		

- Molecule 48 is a protein called ribosomal protein L44e.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	n	86	Total	C	N	O	S	0	0
			659	418	129	110	2		

- Molecule 49 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
49	1	51	Total	Mg	0
			51	51	
49	2	25	Total	Mg	0
			25	25	
49	3	3	Total	Mg	0
			3	3	
49	4	2	Total	Mg	0
			2	2	
49	5	4	Total	Mg	0
			4	4	
49	7	9	Total	Mg	0
			9	9	
49	C	1	Total	Mg	0
			1	1	
49	K	1	Total	Mg	0
			1	1	
49	M	3	Total	Mg	0
			3	3	
49	V	1	Total	Mg	0
			1	1	
49	a	1	Total	Mg	0
			1	1	
49	f	2	Total	Mg	0
			2	2	

Continued on next page...

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Mol	Chain	Residues	Atoms	AltConf
49	g	1	Total Mg 1 1	0
49	h	1	Total Mg 1 1	0
49	j	4	Total Mg 4 4	0

- Molecule 50 is water.

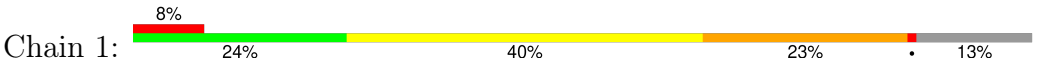
Mol	Chain	Residues	Atoms	AltConf
50	1	72	Total O 72 72	0
50	2	40	Total O 40 40	0
50	4	4	Total O 4 4	0
50	5	4	Total O 4 4	0
50	7	16	Total O 16 16	0
50	8	1	Total O 1 1	0
50	A	2	Total O 2 2	0
50	G	1	Total O 1 1	0
50	M	2	Total O 2 2	0
50	i	1	Total O 1 1	0
50	j	1	Total O 1 1	0

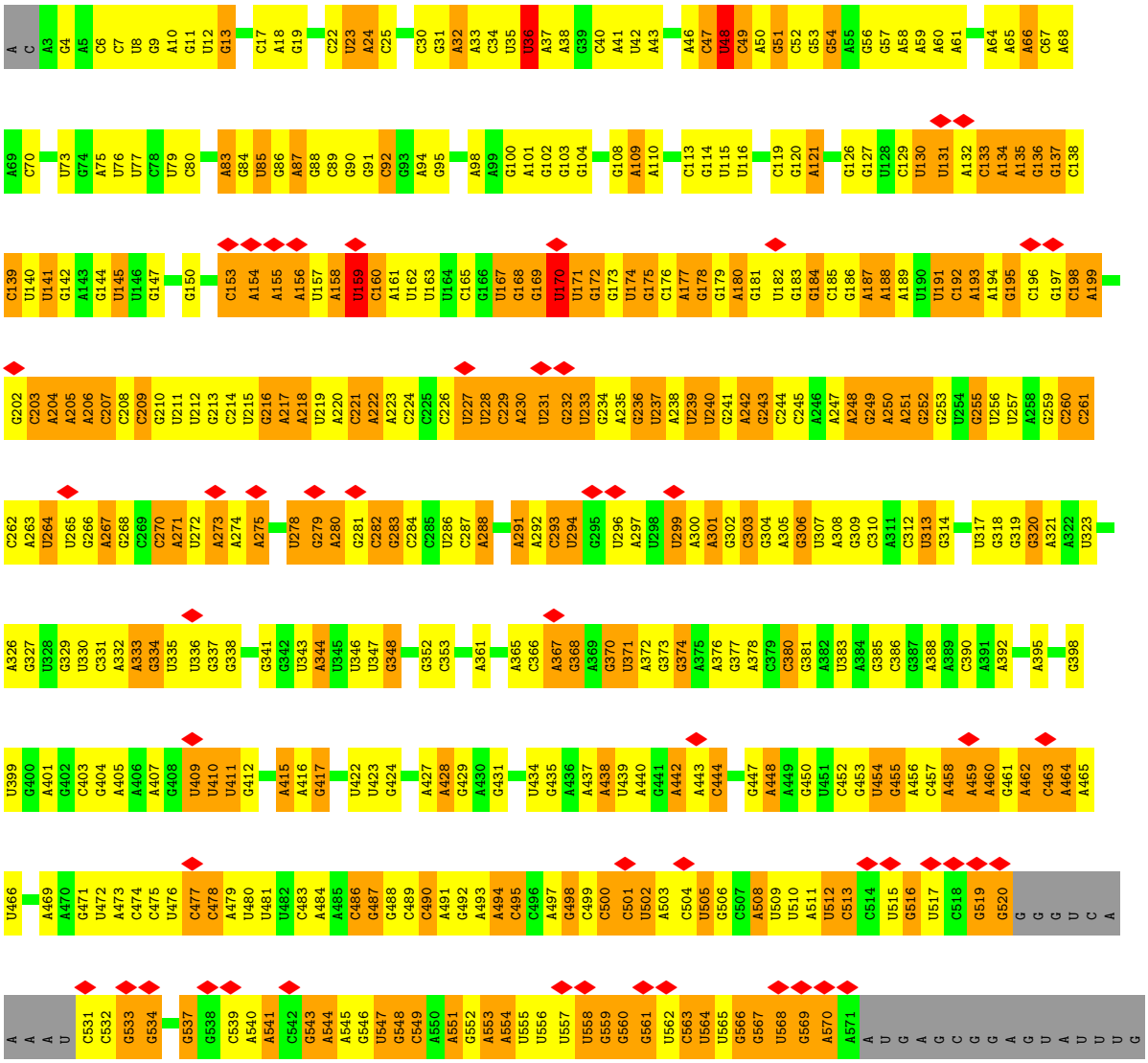
3 Residue-property plots (i)

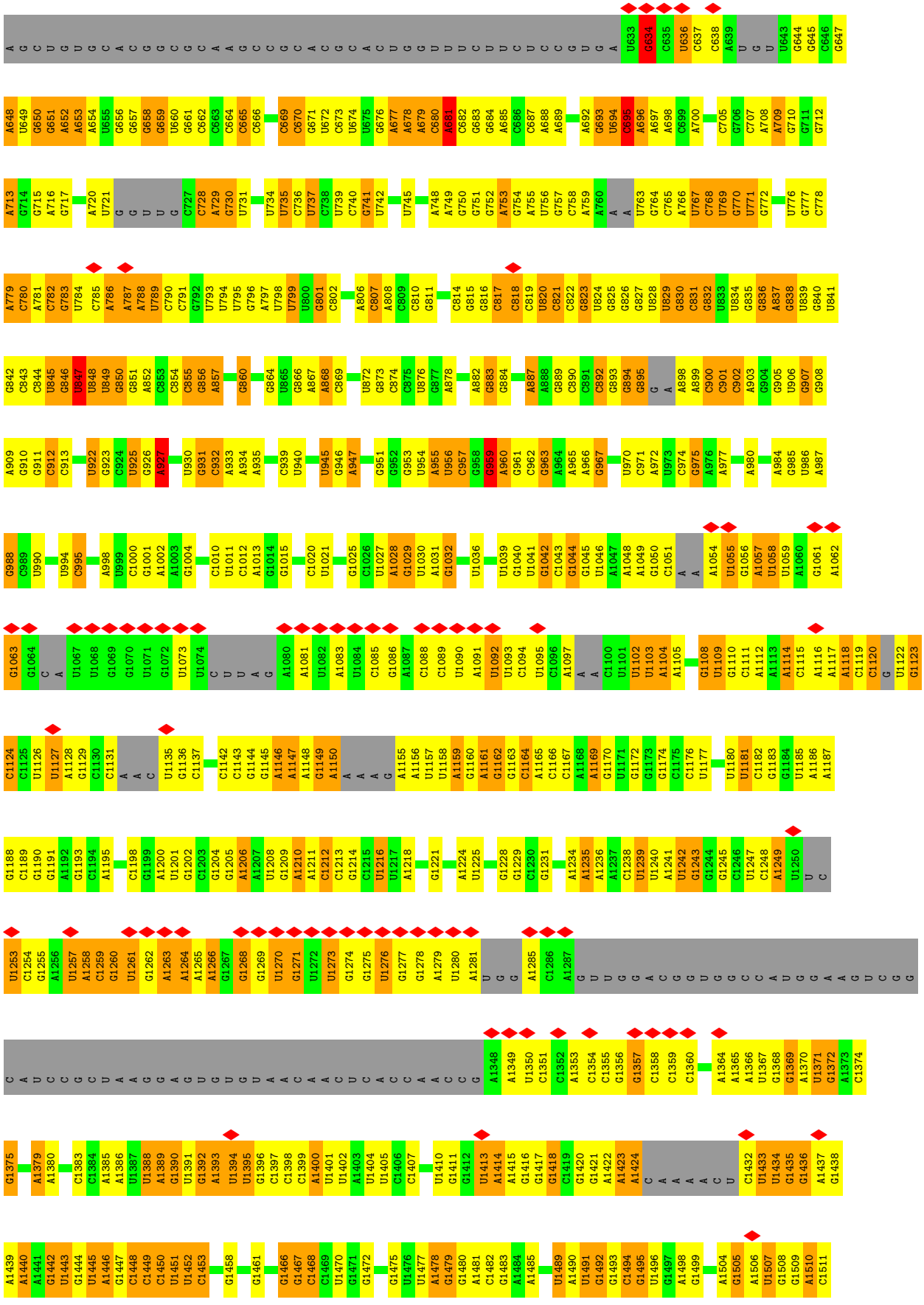
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion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

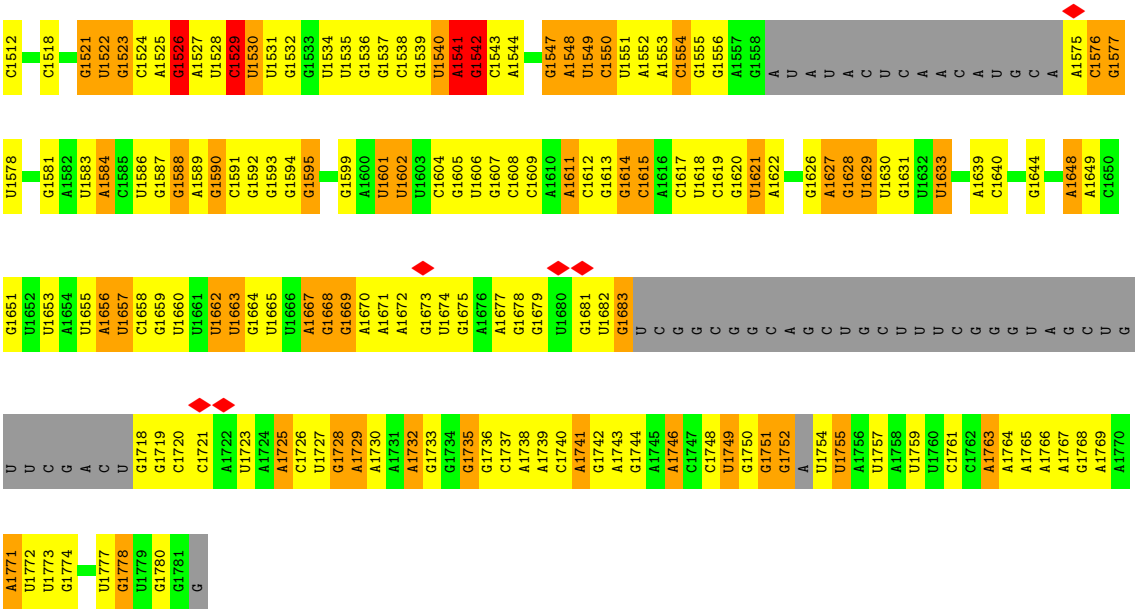
- Molecule 1: 26S alpha ribosomal RNA

Chain 1:



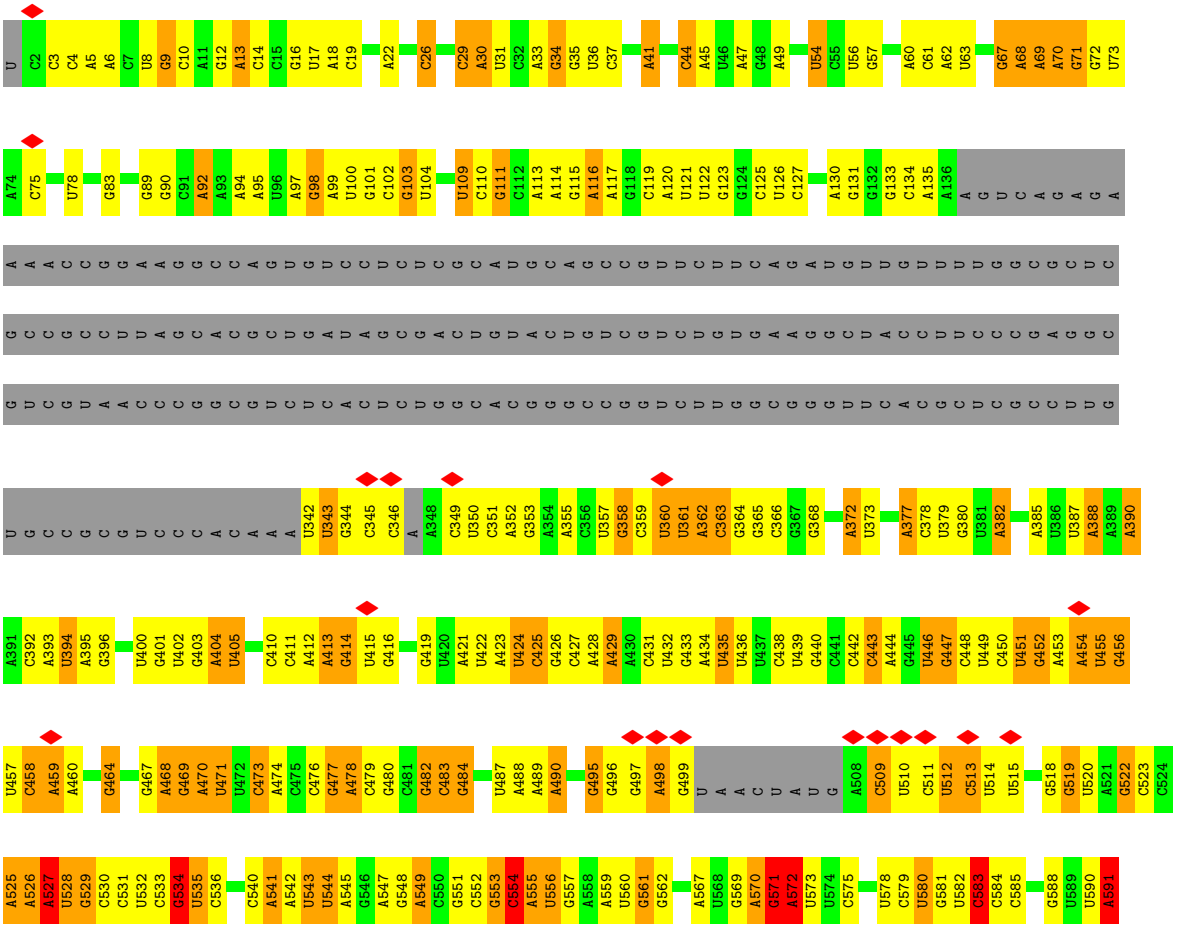


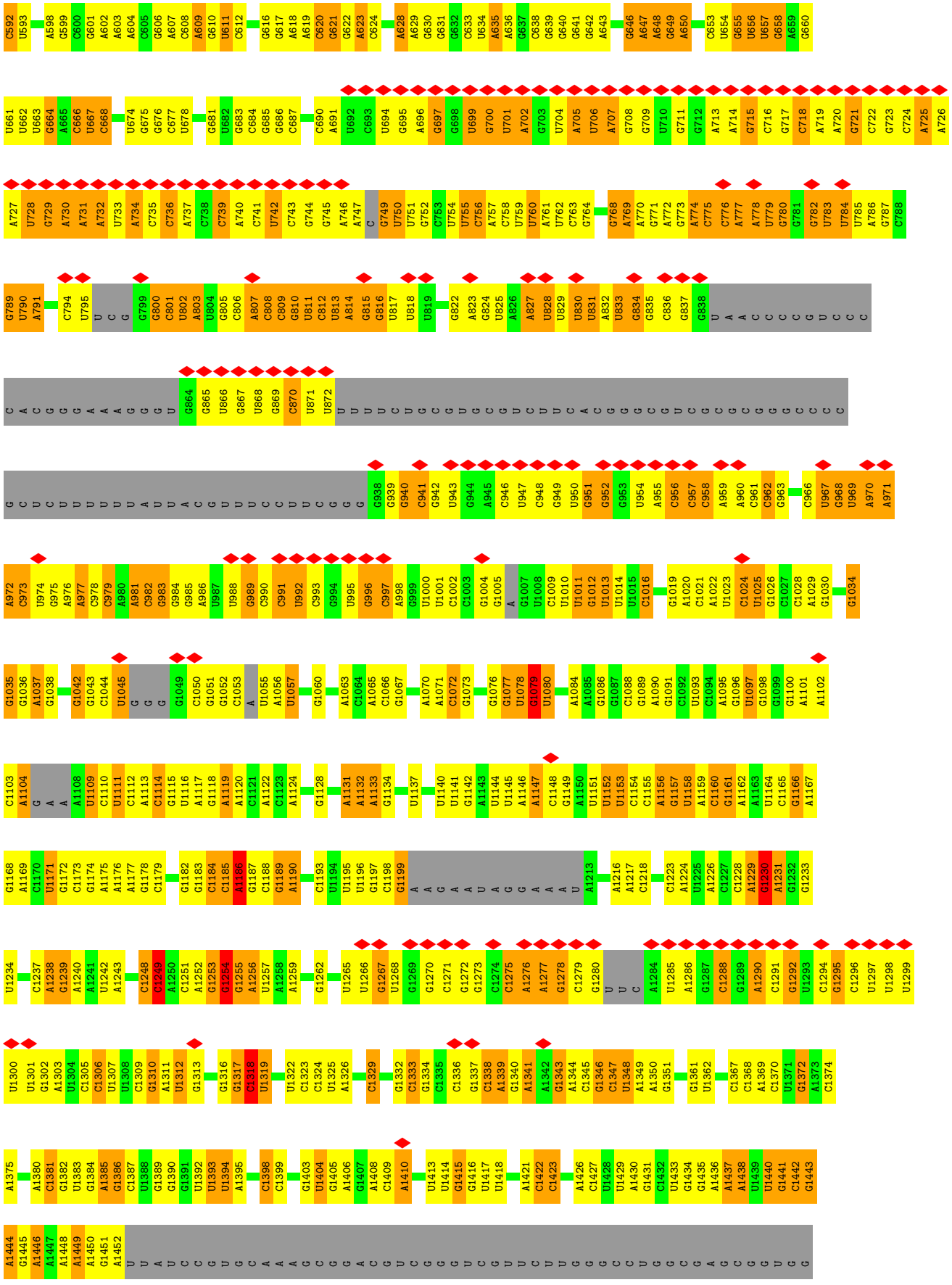




• Molecule 2: 26S delta ribosomal RNA

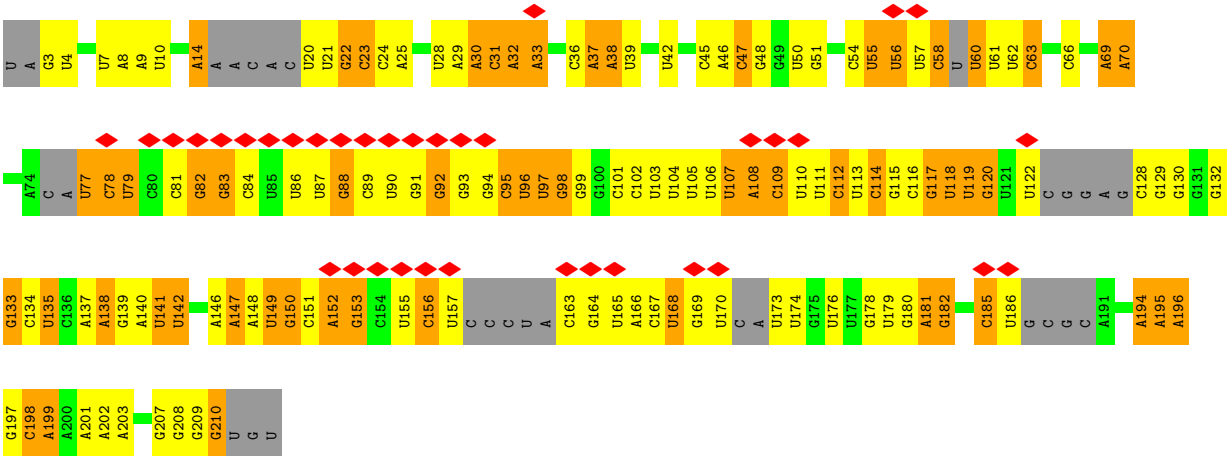
Chain 2:





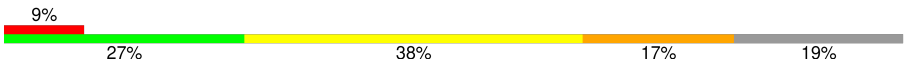
- Molecule 3: 26S gamma ribosomal RNA

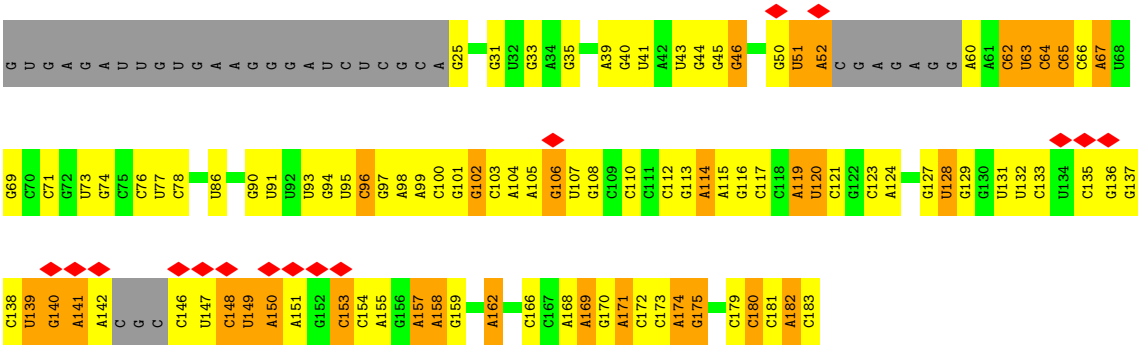
Chain 3:



- Molecule 4: 26S delta ribosomal RNA

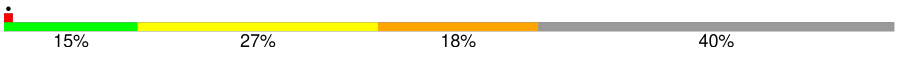
Chain 4:

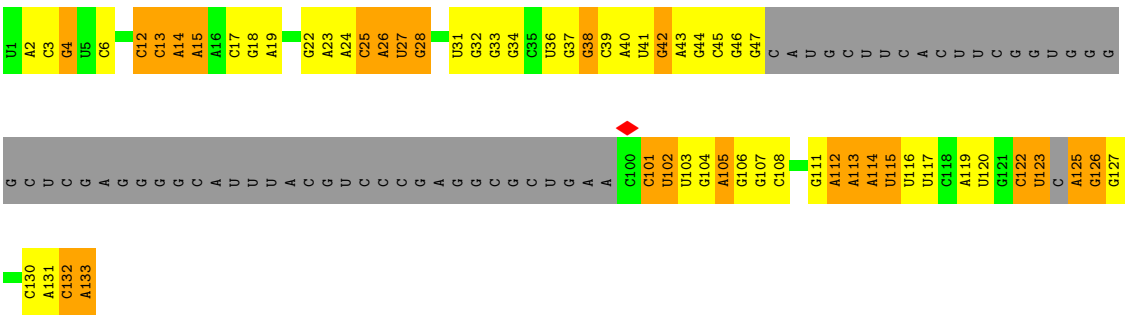




- Molecule 5: 26S epsilon ribosomal RNA

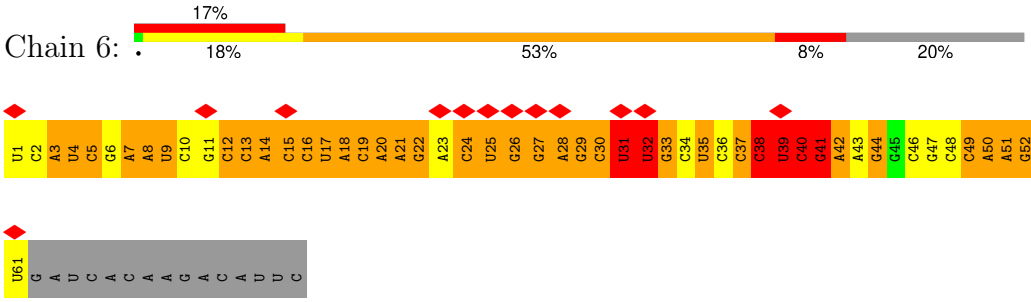
Chain 5:





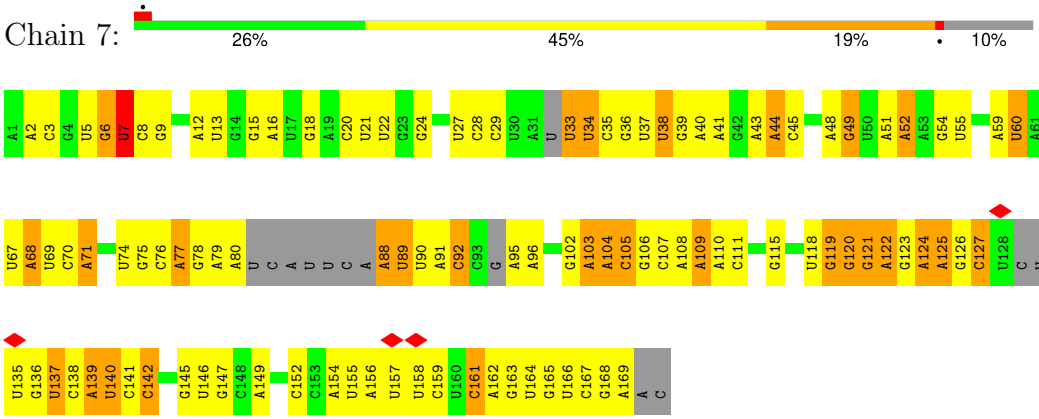
- Molecule 6: 26S zeta ribosomal RNA

Chain 6:



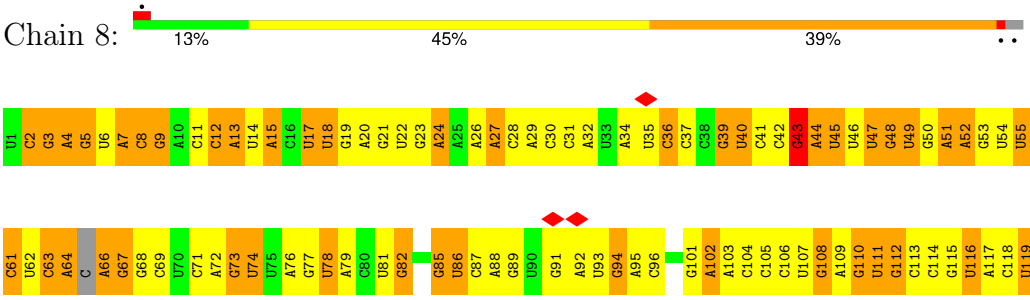
• Molecule 7: 5.8S ribosomal RNA

Chain 7:



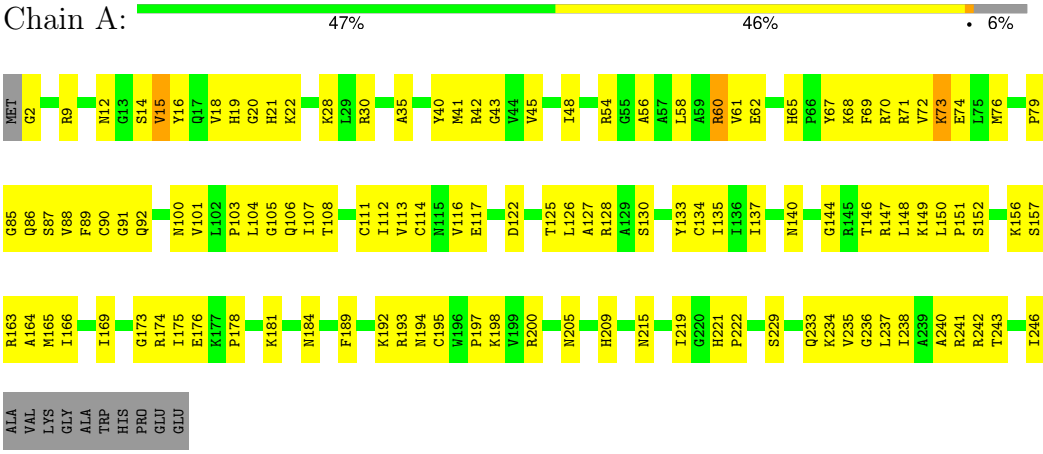
• Molecule 8: 5S ribosomal RNA

Chain 8:



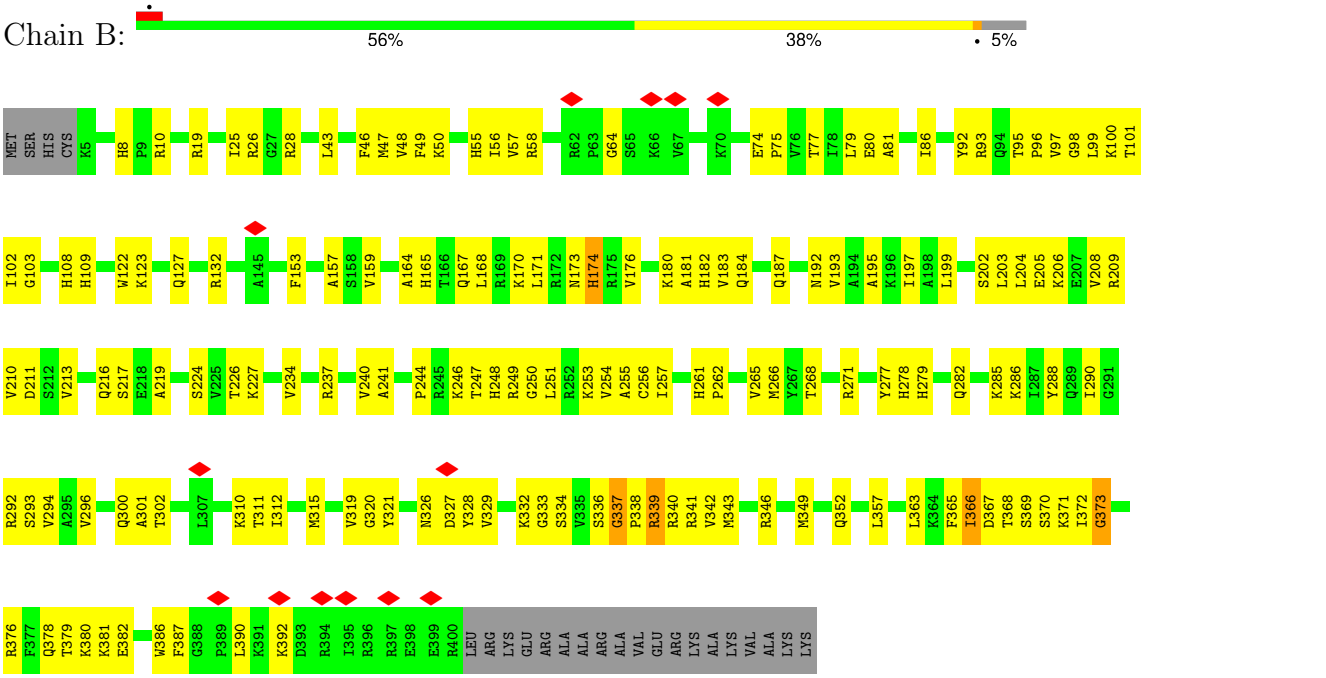
• Molecule 9: ribosomal protein L2

Chain A:



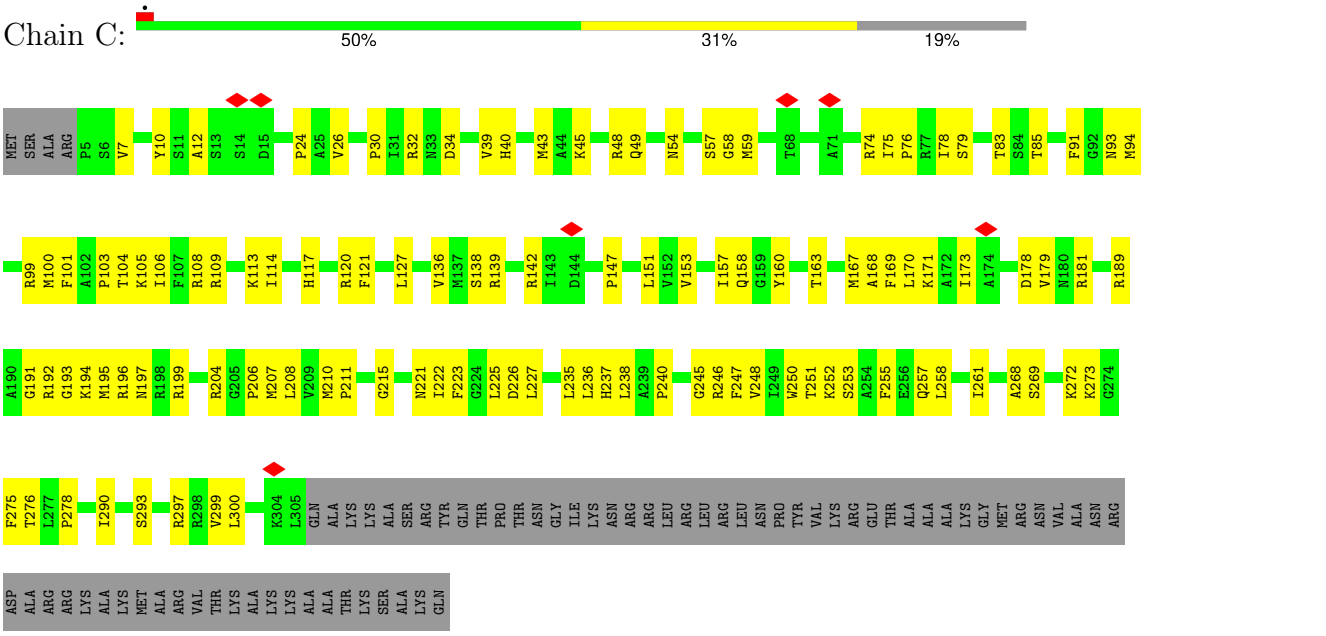
• Molecule 10: ribosomal protein L3

Chain B:



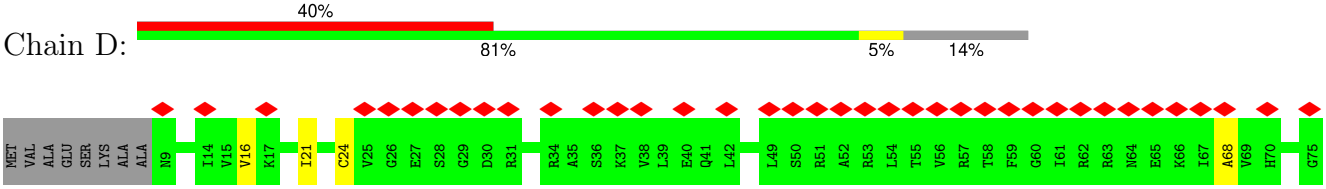
• Molecule 11: ribosomal protein L4

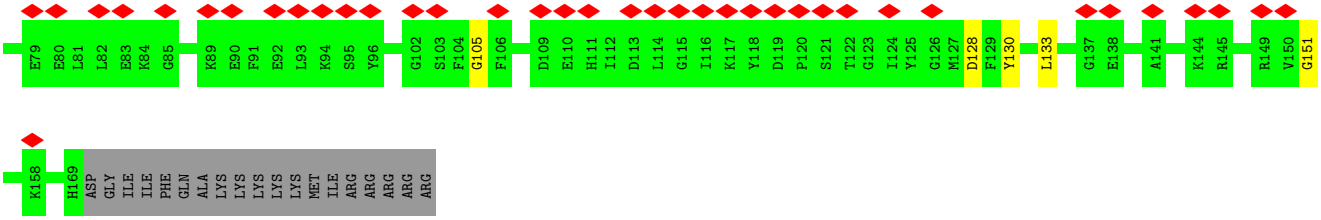
Chain C:



• Molecule 12: ribosomal protein L5

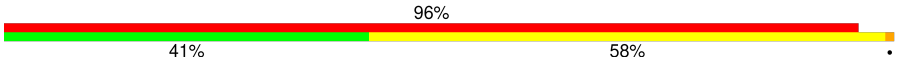
Chain D:





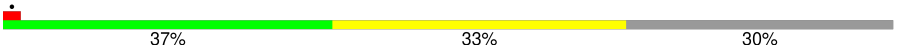
• Molecule 13: ribosomal protein L6

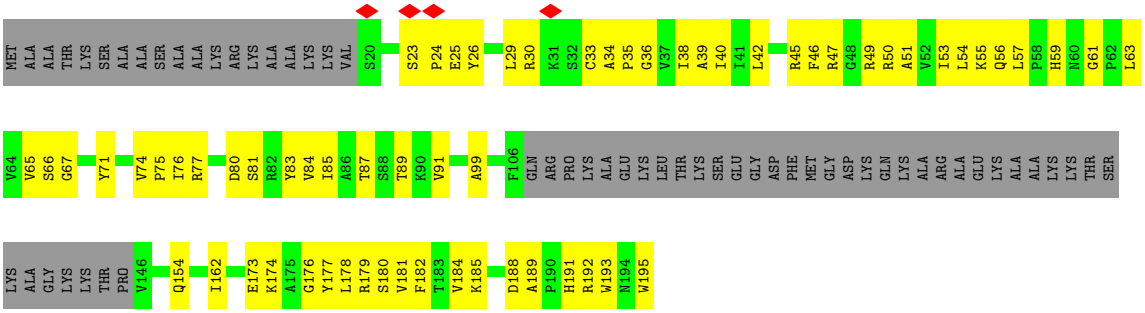
Chain E:



• Molecule 14: ribosomal protein L6e

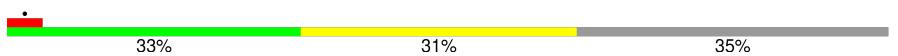
Chain F:

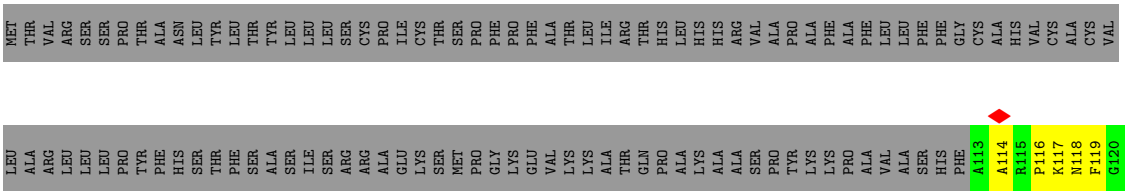




• Molecule 15: ribosomal protein L8e

Chain G:





I121 G122 Q123 D124 V125 A128 R129 D130 L131 S132 R133 F134 M135 R136 W137 P138 T139 F140 V141 T142 M143 Q144 R145 K146 K147 R148 V149 R153 L154 K155 V156 P157 P158 F163 V166 R172 N173 E174 A175 E185 T186 R187 K188 A189 R190 R191 E192 R193 A198 E199 E200 K203

D204 P205 K206 K207 T208 V209 S210 A213 P214 L215 V218 T219 G220 L221 Q222 E223 V224 T225 R226 A227 I228 K231 Q232 A233 R234 M235 V236 V237 I238 A239 N240 L247 V248 L249 W250 M251 P252 N253 L254 C255 R256 A257 N258 K259 I260 P261 Y262 A263 I264 V265 K266 D267 M268 L271 G272

D273 A274 K278 C282 V283 A284 V288 N289 A290 E291 L296 K297 N298 L299 I300 R301 S302 V303 N304 A305 R306 F307 L308 S309 R310 S311 D312 V313 R316 Q317 W318 Q322 L323 S324 L325 R326 S327 R328 R332 K333 K334 H335 N338 ALA GLY VAL ASP ALA ALA ILE ILE

GLN

- Molecule 16: ribosomal protein L13

Chain H: 44% 46% • 9%

MET ALA PHE PRO SER ARG LYS ASP ALA SER ARG ALA GLN ARG LYS SER ALA LYS LYS HIS R21 I25 V26 I27 D28 L29 K30 D31 H32 V33 R36 V40 V41 Q44 L45 K49 K50 I51 T52 V53 V54 R55 Q58 L59 N60 I61 E65 Y72 L73 Q74 Y75 L76

R77 K78 R79 K80 L81 P84 P88 F89 H90 H91 R92 A93 P94 S95 D96 V97 F98 V99 R100 T101 V102 R103 L106 P107 R108 Y109 T110 K111 R112 G113 M114 K115 S119 L120 V121 A122 Y123 E124 G125 I126 P127 P128 N129 V137 V138 I139 P140 R141 R144 H145 V146 C147 Y148 R149

S150 E151 R152 P153 Y154 T155 V156 L157 C161 K162 H163 V164 G165 W166 V172 L175 E176 E181 S184 R185 H186 H187 E188 K189 Q190 A191 K192 E195 K198 A199 A200 R201 K202 E203 M208 F219 G220 Y221 A222

- Molecule 17: ribosomal protein L13e

Chain I: 35% 25% 40%

MET P2 V11 H12 Q13 K14 K15 H16 W17 N18 P19 Q23 V27 K28 V29 F30 L31 N32 Q33 P34 A35 Q36 F52 P53 L59 R60 P61 Q62 V63 N64 C65 P66 R69 H70 N71 R74 R75 L76 G77 R78 G79 F80 S81 P82 A83 E84 L90 Y94 T97

R101 V102 D103 R106 K107 N108 M114 V118 T123 Y124 M125 S126 K127 L128 V129 L130 F131 P132 M133 ASN HIS LYS LYS VAL GLN LYS GLY GLU ALA SER GLU GLU GLU VAL LYS ALA ALA THR GLN ASP ARG SER ARG PHE GLY ASP ALA ALA VAL GLY ALA VAL VAL TYR PRO SER

ALA GLU THR PRO ARG ALA VAL SER ALA GLU GLU LYS SER MET CYS VAL TYR ALA PHE LEU LYS LYS ASN HIS SER ALA VAL ARG PHE GLY ALA ARG SER ALA ARG ALA ALA ARG LYS GLU ALA ALA LYS GLU GLU LYS ALA GLY LYS

- Molecule 18: ribosomal protein L14

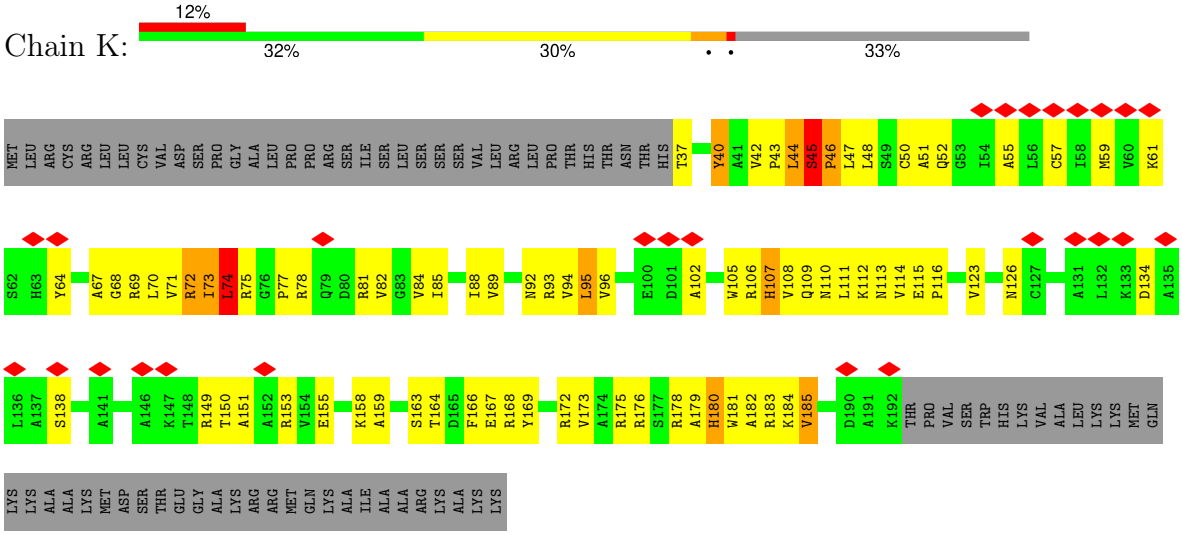
Chain J: 50% 40% • 8%

MET GLY LYS ASP GLN ALA ASN VAL LYS GLY CYS R12 F13 A18 L19 P20 V21 G22 V25 N26 C27 A28 D29 N30 L36 Y37 V38 I39 S40 V41 K42 R47 L48 N49 R50 S53 A54 A55 L56 M61 C62 S63 V64 K65 K66 G67 L71 R72 K73 K74 V75 L76 N77

A78 I81 R82 Q83 R84 K85 S86 V94 I95 Y96 F97 E98 V103 I104 V105 N106 P107 M111 K112 G113 S114 G115 I116 A117 G118 P119 V120 E123 S124 A125 S132 T133 H134 A135 P136 A137 I138 V139

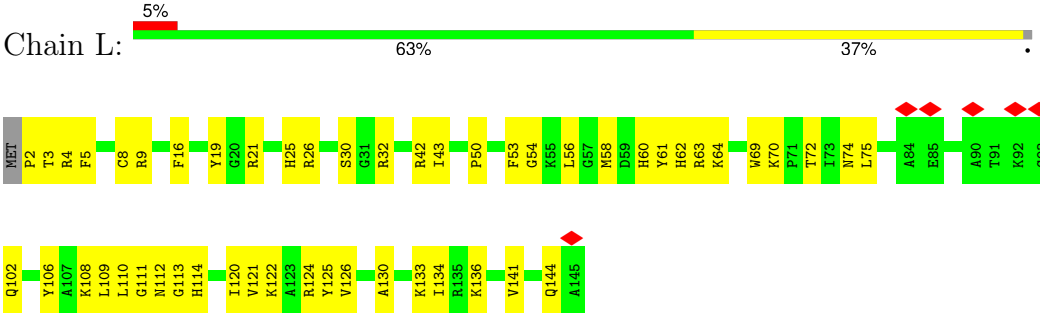
• Molecule 19: ribosomal protein L14e

Chain K:



• Molecule 20: ribosomal protein L15

Chain L:

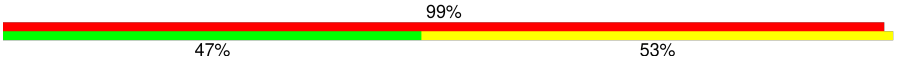


• Molecule 21: ribosomal protein L15e

Chain M:

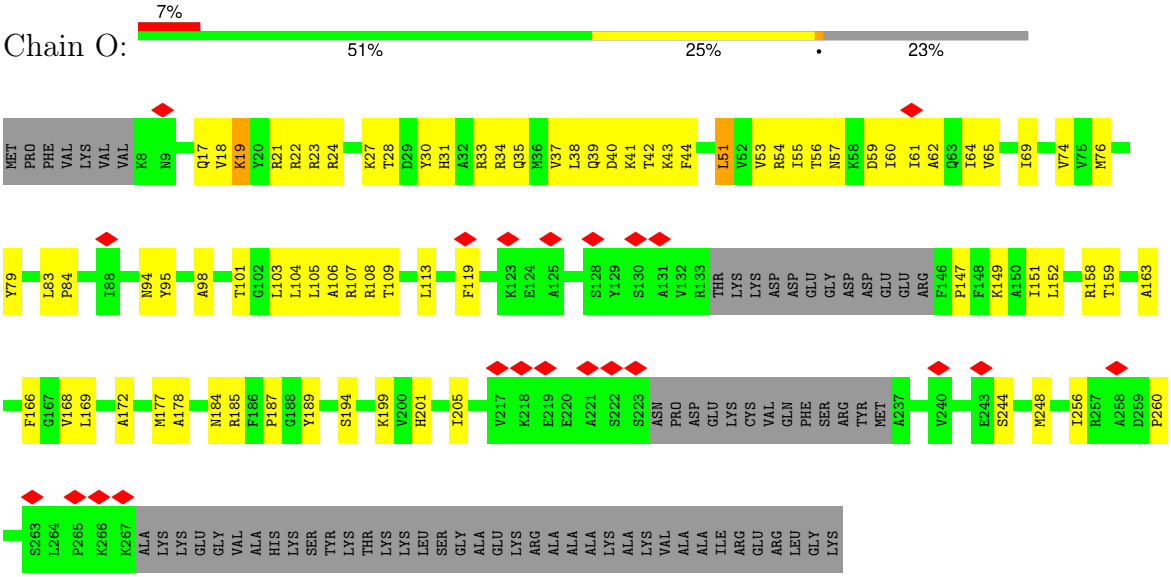
• Molecule 22: ribosomal protein L16

Chain N:



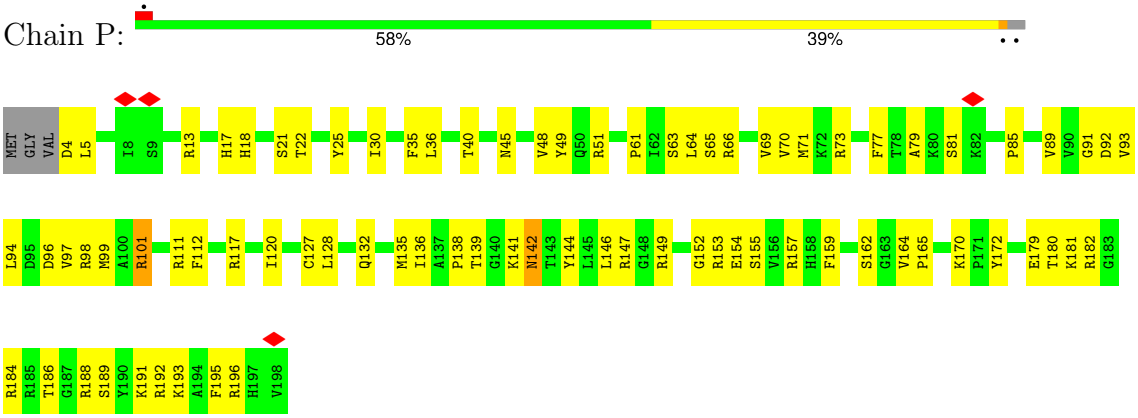
• Molecule 23: ribosomal protein L18

Chain O:



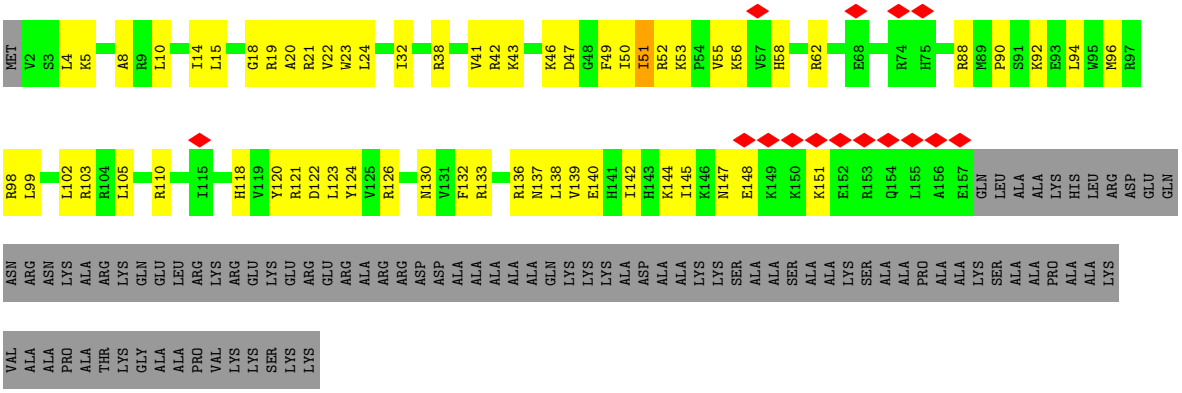
• Molecule 24: ribosomal protein L18e

Chain P:



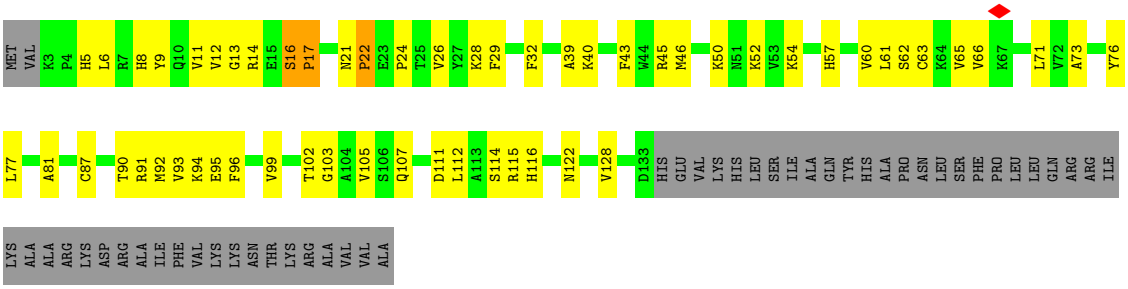
• Molecule 25: ribosomal protein L19e

Chain Q:



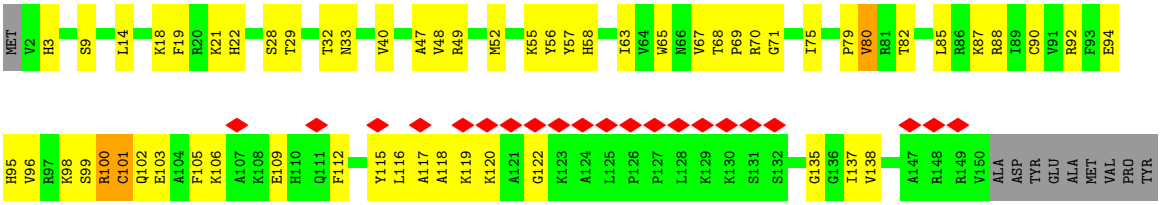
• Molecule 26: ribosomal protein L20e

Chain R:



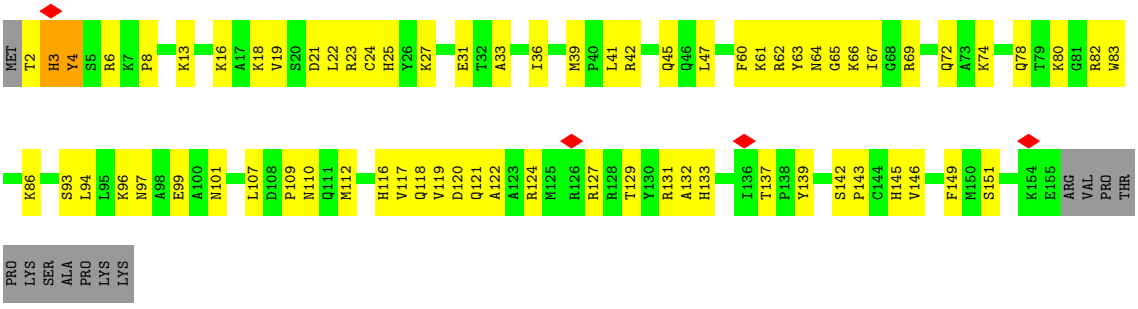
• Molecule 27: ribosomal protein L21e

Chain S:



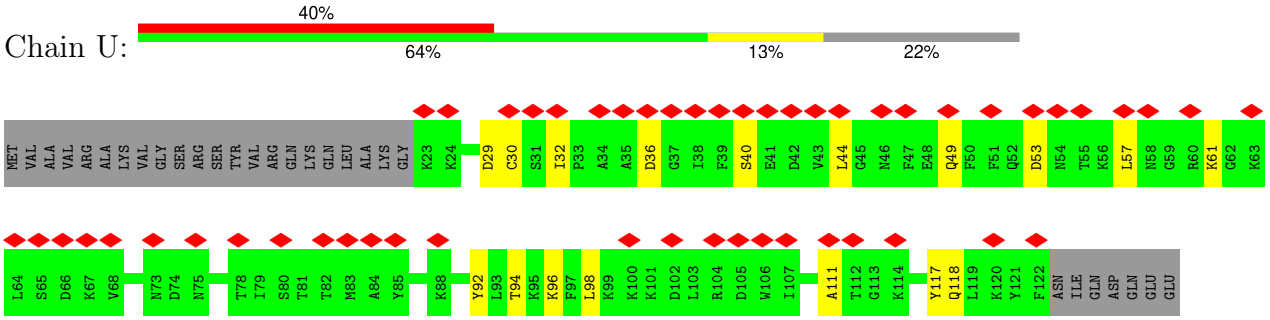
• Molecule 28: ribosomal protein L22

Chain T:



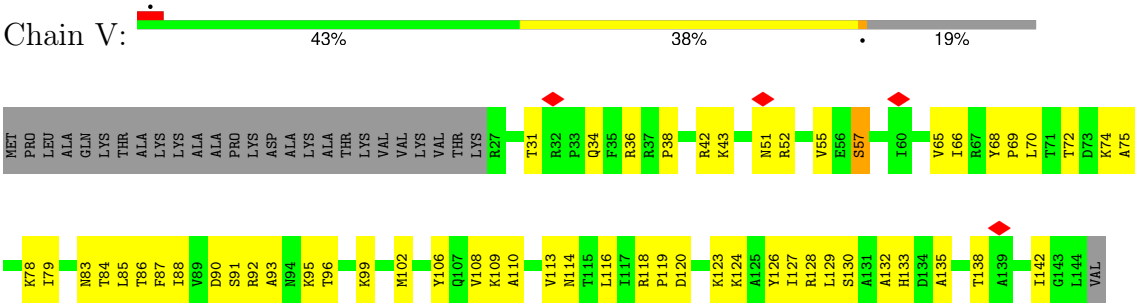
• Molecule 29: ribosomal protein L22e

Chain U:



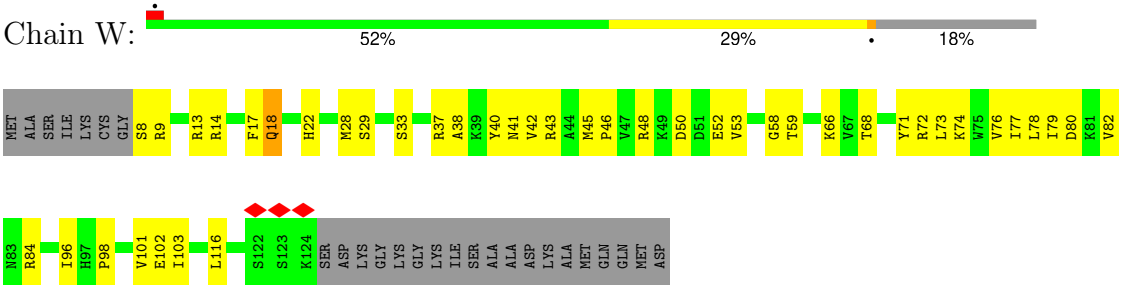
• Molecule 30: ribosomal protein L23

Chain V:



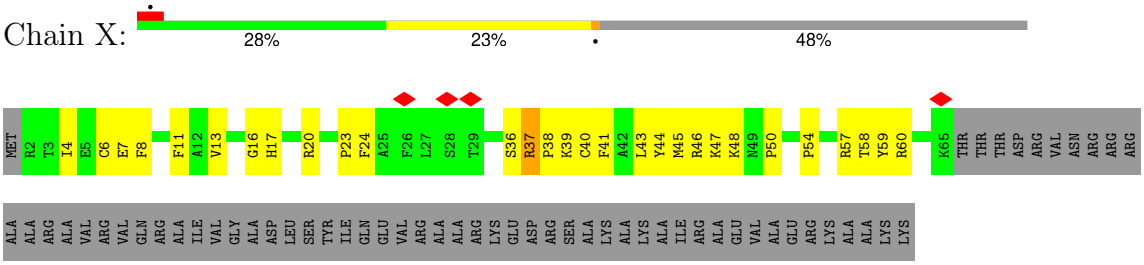
• Molecule 31: ribosomal protein L24

Chain W:



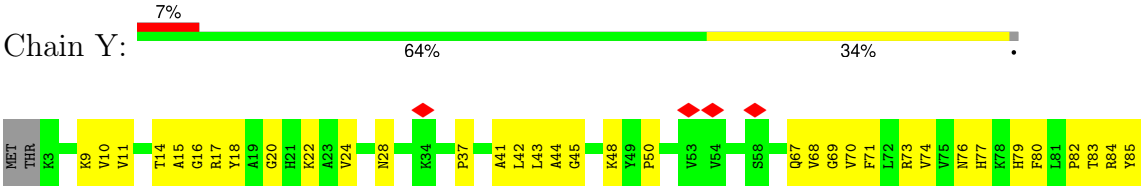
• Molecule 32: ribosomal protein L24e

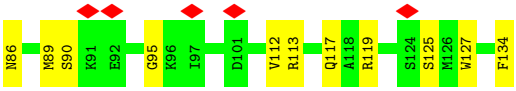
Chain X:



• Molecule 33: ribosomal protein L27e

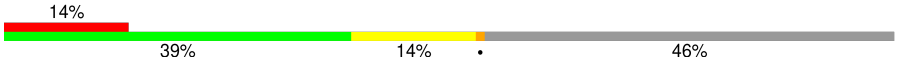
Chain Y:

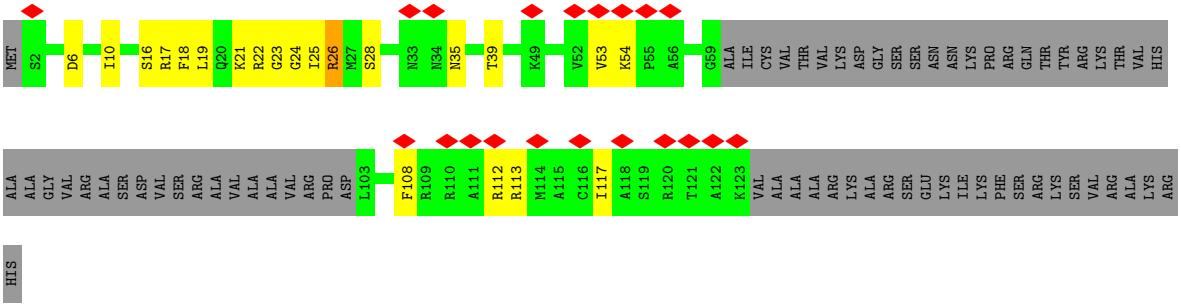




• Molecule 34: ribosomal protein L28e

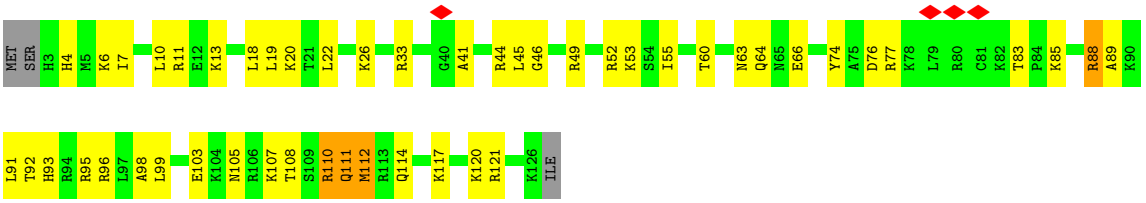
Chain Z:





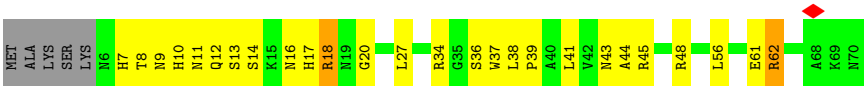
• Molecule 35: ribosomal protein L29

Chain a:



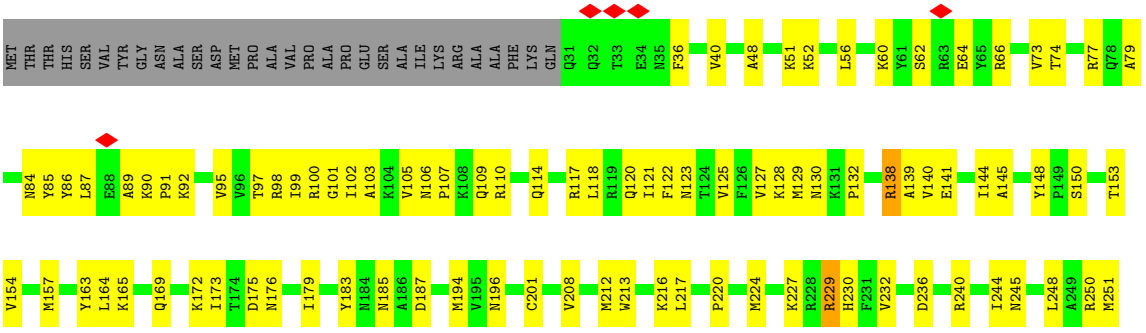
• Molecule 36: ribosomal protein L29e

Chain b:



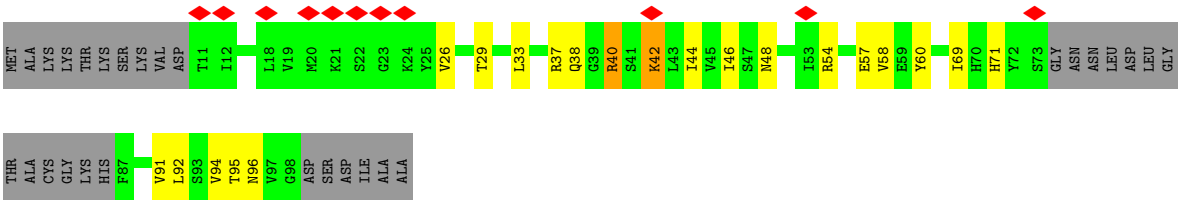
• Molecule 37: ribosomal protein L30

Chain c:



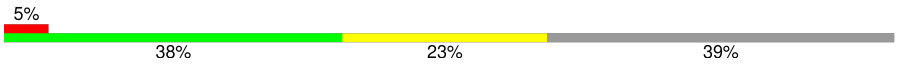
• Molecule 38: ribosomal protein L30e

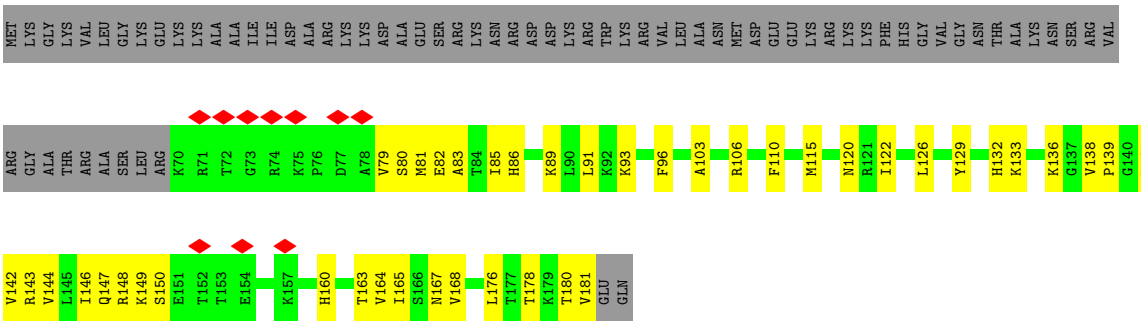
Chain d:



• Molecule 39: ribosomal protein L31e

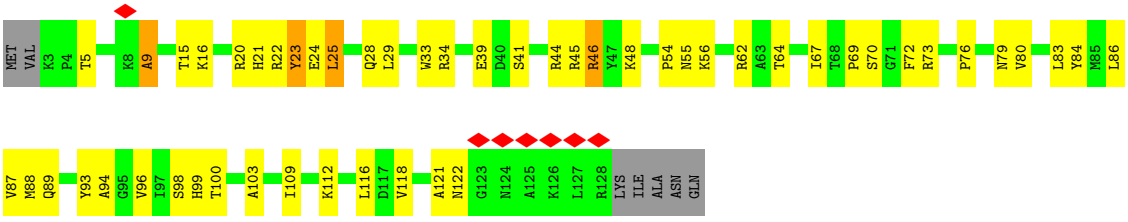
Chain e:





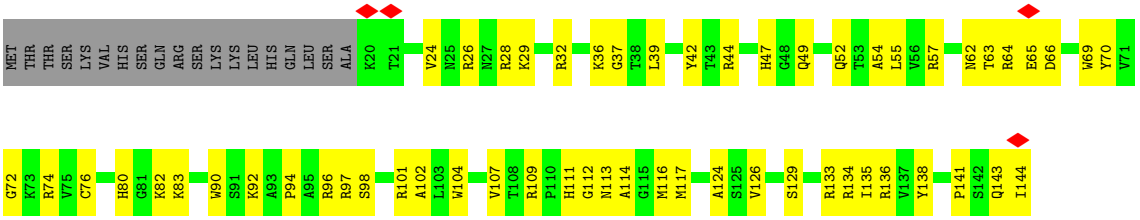
• Molecule 40: ribosomal protein L32e

Chain f:



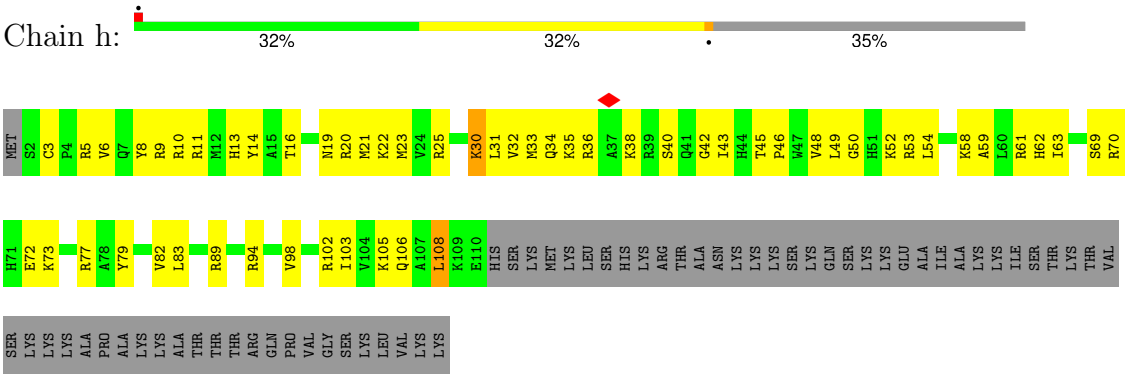
• Molecule 41: ribosomal protein L33e

Chain g:



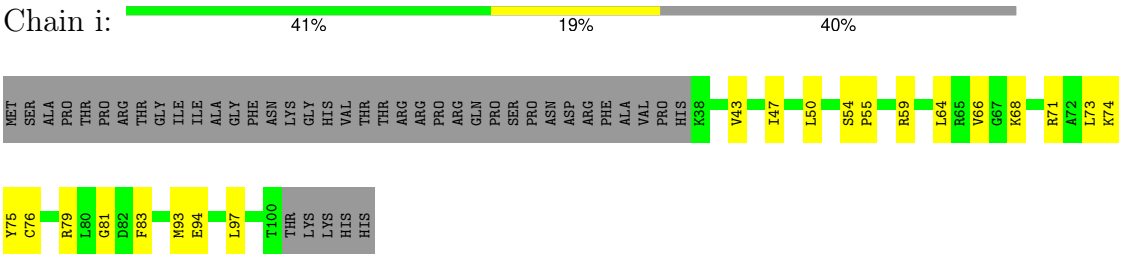
• Molecule 42: ribosomal protein L34e

Chain h:



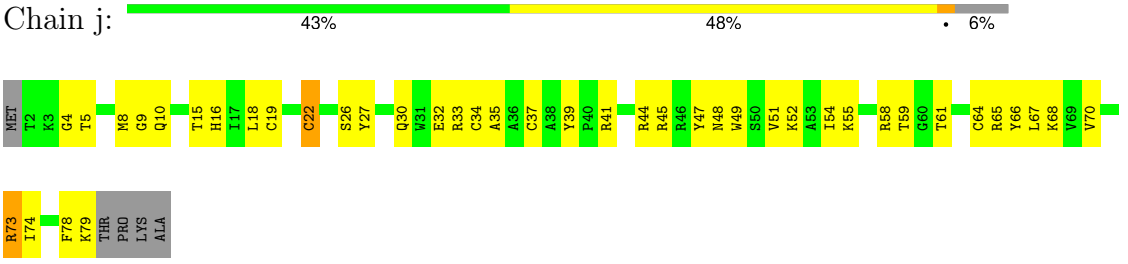
• Molecule 43: ribosomal protein L36e

Chain i:



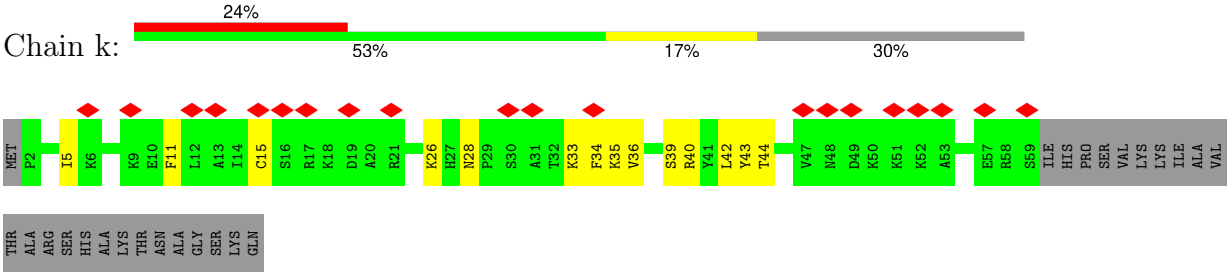
• Molecule 44: ribosomal protein L37e

Chain j:



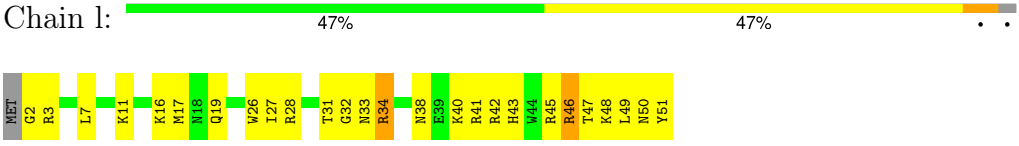
• Molecule 45: ribosomal protein L38e

Chain k:



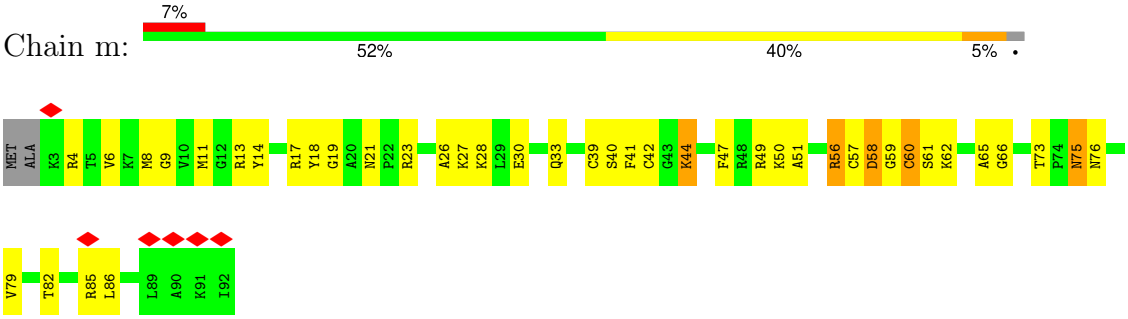
• Molecule 46: ribosomal protein L39e

Chain l:



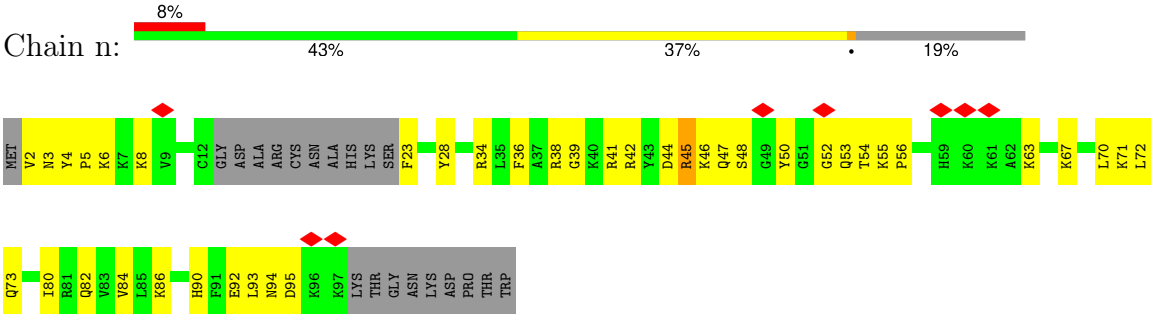
• Molecule 47: ribosomal protein L43e

Chain m:



• Molecule 48: ribosomal protein L44e

Chain n:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	107134	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	Not provided	
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	30	Depositor
Minimum defocus (nm)	600	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	25000	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.231	Depositor
Minimum map value	-0.118	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.006	Depositor
Recommended contour level	0.02	Depositor
Map size (Å)	384.0, 384.0, 384.0	wwPDB
Map dimensions	384, 384, 384	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.0, 1.0, 1.0	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: OMC, H2U, MG, OMU, A2M, OMG

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	1	0.37	9/36881 (0.0%)	0.41	2/57466 (0.0%)
2	2	0.30	0/26109	0.38	1/40668 (0.0%)
3	3	0.25	0/4337	0.37	0/6734
4	4	0.33	0/3549	0.37	0/5525
5	5	0.34	0/1908	0.41	0/2967
6	6	0.41	2/1437 (0.1%)	0.77	6/2234 (0.3%)
7	7	0.37	0/3615	0.37	0/5622
8	8	0.25	0/2828	0.38	2/4401 (0.0%)
9	A	0.41	0/1903	0.60	1/2559 (0.0%)
10	B	0.38	0/3086	0.58	0/4176
11	C	0.40	0/2284	0.61	0/3092
12	D	0.15	0/800	0.41	0/1111
13	E	0.24	0/1529	0.65	0/2056
14	F	0.33	0/1023	0.62	1/1390 (0.1%)
15	G	0.34	0/1798	0.66	1/2423 (0.0%)
16	H	0.37	0/1628	0.61	0/2194
17	I	0.36	0/1084	0.60	0/1454
18	J	0.36	0/941	0.67	2/1277 (0.2%)
19	K	0.31	0/1077	0.79	2/1475 (0.1%)
20	L	0.37	0/1123	0.56	0/1505
21	M	0.45	0/1754	0.60	0/2342
22	N	0.24	0/1747	0.62	1/2338 (0.0%)
23	O	0.25	0/1583	0.52	0/2157
24	P	0.35	0/1519	0.61	0/2040
25	Q	0.31	0/1179	0.66	0/1588
26	R	0.32	0/1044	0.70	5/1415 (0.4%)
27	S	0.34	0/1142	0.63	0/1547
28	T	0.39	0/1249	0.67	1/1679 (0.1%)
29	U	0.16	0/545	0.47	0/754
30	V	0.36	0/907	0.54	0/1227
31	W	0.32	0/910	0.64	0/1224
32	X	0.30	0/527	0.58	0/716

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
33	Y	0.28	0/934	0.57	0/1274
34	Z	0.24	0/545	0.49	0/739
35	a	0.29	0/992	0.57	0/1326
36	b	0.32	0/514	0.60	0/690
37	c	0.37	0/1763	0.57	0/2374
38	d	0.22	0/525	0.51	0/719
39	e	0.33	0/838	0.58	0/1131
40	f	0.40	0/1002	0.63	0/1346
41	g	0.42	0/1003	0.56	0/1352
42	h	0.33	0/868	0.62	0/1160
43	i	0.29	0/499	0.55	0/662
44	j	0.45	0/651	0.65	0/869
45	k	0.21	0/378	0.53	0/518
46	l	0.39	0/470	0.57	0/627
47	m	0.36	0/680	0.64	1/913 (0.1%)
48	n	0.29	0/667	0.64	0/889
All	All	0.34	11/125375 (0.0%)	0.48	26/185945 (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
9	A	0	1
10	B	0	2
13	E	0	1
15	G	0	1
16	H	0	1
19	K	0	3
26	R	0	1
27	S	0	1
28	T	0	1
40	f	0	1
All	All	0	13

All (11) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1	634	G	C1'-N9	-6.97	1.37	1.48
1	1	159	U	C1'-N1	6.37	1.58	1.48
1	1	568	U	C1'-N1	6.26	1.57	1.48

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1	564	U	C1'-N1	6.14	1.57	1.48
1	1	565	U	C1'-N1	6.11	1.57	1.48
1	1	562	U	C1'-N1	6.08	1.57	1.48
6	6	39	U	C1'-N1	6.02	1.56	1.47
1	1	170	U	C1'-N1	5.96	1.56	1.47
6	6	31	U	C1'-N1	5.48	1.56	1.48
1	1	153	C	C1'-N1	5.28	1.55	1.47
1	1	563	C	C1'-N1	5.18	1.56	1.48

All (26) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	1575	A	OP1-P-O3'	-9.59	79.22	108.00
15	G	326	ARG	N-CA-C	8.68	120.51	111.14
26	R	22	PRO	N-CA-CB	8.61	112.29	103.25
6	6	41	G	C2'-C3'-O3'	8.54	122.30	109.50
18	J	112	LYS	N-CA-C	8.27	128.41	110.80
28	T	4	TYR	N-CA-C	7.92	127.67	110.80
8	8	43	G	C4'-C3'-O3'	7.48	120.61	109.40
19	K	45	SER	C-N-CD	-7.44	94.48	125.00
6	6	40	C	C4'-C3'-O3'	7.34	120.41	109.40
1	1	1575	A	OP2-P-O3'	-6.85	87.44	108.00
18	J	112	LYS	CB-CA-C	-6.71	97.06	110.42
6	6	31	U	C2'-C3'-O3'	6.45	123.37	113.70
26	R	16	SER	CA-C-N	6.33	128.01	120.23
26	R	16	SER	C-N-CA	6.33	128.01	120.23
9	A	15	VAL	N-CA-C	-6.23	106.45	111.81
26	R	21	ASN	CA-C-N	5.94	127.26	119.84
26	R	21	ASN	C-N-CA	5.94	127.26	119.84
6	6	50	A	C4'-C3'-O3'	5.91	118.26	109.40
47	m	75	ASN	N-CA-C	-5.89	107.08	114.56
14	F	91	VAL	N-CA-C	-5.66	108.34	113.71
19	K	74	LEU	N-CA-C	5.43	117.00	111.14
22	N	120	GLY	N-CA-C	5.36	120.21	112.82
6	6	38	C	P-O3'-C3'	5.32	128.18	120.20
6	6	32	U	C3'-C2'-O2'	5.26	118.59	110.70
2	2	1404	H2U	P-O3'-C3'	-5.08	112.58	120.20
8	8	43	G	C2'-C3'-O3'	5.01	117.01	109.50

There are no chirality outliers.

All (13) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
9	A	60[B]	ARG	Mainchain
10	B	337	GLY	Peptide
10	B	373	GLY	Peptide
13	E	136	PRO	Peptide
15	G	114	ALA	Peptide
16	H	151	GLU	Peptide
19	K	107	HIS	Peptide
19	K	126	ASN	Peptide
19	K	40	TYR	Peptide
26	R	17	PRO	Peptide
27	S	100[B]	ARG	Mainchain
28	T	3	HIS	Peptide
40	f	9	ALA	Peptide

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	1	33313	0	16798	1225	0
2	2	23926	0	12113	785	0
3	3	3893	0	1971	165	0
4	4	3177	0	1611	111	0
5	5	1708	0	867	64	0
6	6	1288	0	657	205	0
7	7	3280	0	1664	113	0
8	8	2531	0	1281	155	0
9	A	1859	0	1901	138	0
10	B	3020	0	3003	180	0
11	C	2237	0	2231	122	0
12	D	799	0	374	5	0
13	E	1509	0	1595	124	0
14	F	1002	0	994	56	0
15	G	1772	0	1853	109	0
16	H	1596	0	1683	139	0
17	I	1061	0	1123	67	0
18	J	924	0	934	62	0
19	K	1061	0	939	210	0
20	L	1096	0	1096	58	0
21	M	1714	0	1793	107	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
22	N	1714	0	1786	112	0
23	O	1557	0	1351	87	0
24	P	1494	0	1554	92	0
25	Q	1162	0	1130	75	0
26	R	1019	0	981	54	0
27	S	1112	0	1051	67	0
28	T	1221	0	1230	98	0
29	U	541	0	295	9	0
30	V	892	0	903	50	0
31	W	896	0	915	39	0
32	X	508	0	477	27	0
33	Y	914	0	813	49	0
34	Z	538	0	479	25	0
35	a	982	0	1029	57	0
36	b	503	0	500	31	0
37	c	1732	0	1768	82	0
38	d	518	0	462	15	0
39	e	824	0	839	35	0
40	f	982	0	985	62	0
41	g	983	0	1006	81	0
42	h	856	0	873	88	0
43	i	494	0	535	20	0
44	j	639	0	641	44	0
45	k	373	0	302	11	0
46	l	457	0	484	28	0
47	m	668	0	648	58	0
48	n	659	0	672	52	0
49	1	51	0	0	0	0
49	2	25	0	0	0	0
49	3	3	0	0	0	0
49	4	2	0	0	0	0
49	5	4	0	0	0	0
49	7	9	0	0	0	0
49	C	1	0	0	0	0
49	K	1	0	0	0	0
49	M	3	0	0	0	0
49	V	1	0	0	0	0
49	a	1	0	0	0	0
49	f	2	0	0	0	0
49	g	1	0	0	0	0
49	h	1	0	0	0	0
49	j	4	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
50	1	72	0	0	18	0
50	2	40	0	0	17	0
50	4	4	0	0	1	0
50	5	4	0	0	0	0
50	7	16	0	0	2	0
50	8	1	0	0	1	0
50	A	2	0	0	1	0
50	G	1	0	0	0	0
50	M	2	0	0	0	0
50	i	1	0	0	0	0
50	j	1	0	0	0	0
All	All	117257	0	80190	4605	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 25.

All (4605) 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)
3:3:57:U:H2'	3:3:58:C:C5	1.26	1.62
19:K:89:VAL:CG1	26:R:73:ALA:HB2	1.26	1.56
19:K:89:VAL:HG12	26:R:73:ALA:CB	1.38	1.50
24:P:17:HIS:CE1	24:P:18:HIS:HD1	1.29	1.50
25:Q:23:TRP:CE3	25:Q:51:ILE:CD1	2.02	1.42
2:2:667:OMU:HM21	48:n:52:GLY:CA	1.46	1.42
19:K:52:GLN:CD	41:g:63:THR:HG21	1.47	1.40
24:P:17:HIS:CE1	24:P:18:HIS:ND1	1.85	1.39
19:K:52:GLN:NE2	41:g:63:THR:HG21	1.11	1.39
19:K:78:ARG:HH12	19:K:107:HIS:CE1	1.41	1.38
19:K:52:GLN:CD	41:g:63:THR:CG2	1.98	1.36
16:H:200:ALA:HB1	19:K:185:VAL:CG1	1.51	1.36
1:1:1392:G:C6	19:K:105:TRP:HH2	1.43	1.36
1:1:1392:G:O6	19:K:105:TRP:CH2	1.78	1.36
16:H:203:GLU:OE2	19:K:185:VAL:CG2	1.75	1.34
19:K:95:LEU:HD11	19:K:106:ARG:CD	1.55	1.34
16:H:49:LYS:NZ	19:K:37:THR:N	1.73	1.34
3:3:57:U:C2'	3:3:58:C:C5	2.09	1.33
19:K:52:GLN:NE2	41:g:63:THR:CG2	1.90	1.32
19:K:89:VAL:CG1	26:R:73:ALA:CB	1.95	1.31
22:N:121:LYS:HD2	22:N:122:PRO:CD	1.61	1.30
1:1:1392:G:O6	19:K:105:TRP:HH2	1.02	1.30

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:6:17:U:H5	19:K:43:PRO:CG	1.42	1.29
19:K:78:ARG:NH1	19:K:107:HIS:HE1	1.31	1.28
1:1:439:U:O5'	28:T:2:THR:N	1.68	1.27
25:Q:23:TRP:CE3	25:Q:51:ILE:HD13	1.62	1.27
4:4:95:U:OP2	25:Q:62:ARG:NH2	1.65	1.26
3:3:106:U:O2	3:3:129:G:O6	1.53	1.26
19:K:69:ARG:O	19:K:84:VAL:HG23	1.10	1.26
10:B:282:GLN:NE2	10:B:336:SER:OG	1.68	1.26
25:Q:23:TRP:HE3	25:Q:51:ILE:CD1	1.42	1.25
6:6:56:A:OP1	41:g:96:ARG:NH2	1.68	1.24
1:1:238:A:N6	1:1:239:U:O4	1.71	1.24
6:6:17:U:C5	19:K:43:PRO:HG2	1.71	1.23
22:N:121:LYS:CD	22:N:122:PRO:HD2	1.68	1.23
16:H:49:LYS:HZ2	19:K:37:THR:N	1.27	1.22
18:J:106:ASN:OD1	18:J:107:PRO:HD2	1.38	1.20
24:P:17:HIS:CE1	24:P:18:HIS:CE1	2.28	1.20
2:2:667:OMU:CM2	48:n:52:GLY:HA2	1.71	1.19
1:1:1392:G:C6	19:K:105:TRP:CH2	2.30	1.18
14:F:195:TRP:O	19:K:164:THR:OG1	1.59	1.18
2:2:667:OMU:CM2	48:n:52:GLY:CA	2.21	1.17
28:T:6:ARG:NH2	28:T:116:HIS:HB2	1.57	1.17
10:B:369:SER:OG	10:B:378:GLN:OE1	1.62	1.17
13:E:137:SER:O	13:E:140:LYS:HG2	1.44	1.17
19:K:52:GLN:OE1	41:g:63:THR:HG22	1.44	1.17
1:1:439:U:C5'	28:T:2:THR:N	2.08	1.16
1:1:1674:U:O4	1:1:1728:G:N2	1.78	1.15
42:h:21:MET:CE	42:h:33:MET:HE3	1.75	1.15
8:8:48:G:N2	8:8:49:U:H1'	1.58	1.15
19:K:89:VAL:HG12	26:R:73:ALA:HB1	1.29	1.14
8:8:48:G:N2	8:8:49:U:C1'	2.10	1.13
22:N:121:LYS:CD	22:N:122:PRO:CD	2.25	1.13
3:3:182:G:H5'	42:h:20:ARG:NH2	1.62	1.12
6:6:17:U:C5	19:K:43:PRO:CG	2.30	1.11
3:3:106:U:O2	3:3:129:G:C6	2.04	1.11
42:h:21:MET:HE1	42:h:33:MET:HE3	1.27	1.10
19:K:78:ARG:NH1	19:K:107:HIS:CE1	2.08	1.10
48:n:8:LYS:O	48:n:23:PHE:CD1	2.04	1.10
2:2:1151:U:H2'	2:2:1152:U:H5'	1.34	1.09
1:1:439:U:O4	28:T:3:HIS:CE1	2.04	1.09
2:2:690:C:O2	2:2:749:G:N2	1.85	1.08
3:3:4:U:C4	33:Y:17:ARG:NH1	2.21	1.08

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:6:10:C:H2'	6:6:13:C:H41	1.16	1.08
8:8:2:C:C4	8:8:120:C:O2	2.07	1.08
19:K:180:HIS:NE2	19:K:184:LYS:HE2	1.67	1.08
8:8:40:U:O2'	8:8:44:A:N6	1.85	1.08
19:K:69:ARG:O	19:K:84:VAL:CG2	2.00	1.08
6:6:40:C:C5'	41:g:26:ARG:HH12	1.66	1.08
16:H:200:ALA:HB1	19:K:185:VAL:HG12	1.33	1.08
47:m:39:CYS:HB3	47:m:47:PHE:CE2	1.89	1.07
2:2:1079:OMG:N2	2:2:1237:C:O2	1.88	1.07
42:h:8:TYR:CD1	42:h:21:MET:CE	2.38	1.07
6:6:40:C:H5'	41:g:26:ARG:NH1	1.70	1.07
2:2:1318:OMC:H6	2:2:1318:OMC:H5'	1.19	1.06
7:7:95:A:OP1	44:j:73:ARG:NH2	1.87	1.06
3:3:209:G:H2'	3:3:210:G:H5'	1.33	1.06
18:J:106:ASN:CG	18:J:107:PRO:HD2	1.80	1.06
6:6:34:C:H3'	6:6:35:U:H6	1.19	1.06
16:H:200:ALA:CB	19:K:185:VAL:CG1	2.33	1.05
19:K:95:LEU:CD1	19:K:106:ARG:HD3	1.86	1.05
1:1:1729:A:C2	1:1:1730:A:N7	2.25	1.04
22:N:121:LYS:HD2	22:N:122:PRO:HD3	1.12	1.04
6:6:30:C:H6	6:6:30:C:H5'	1.19	1.04
18:J:112:LYS:HG3	18:J:112:LYS:O	1.24	1.04
16:H:148:TYR:CD1	19:K:59:MET:CB	2.40	1.04
6:6:40:C:H5'	41:g:26:ARG:HH12	0.87	1.04
18:J:106:ASN:OD1	18:J:107:PRO:CD	2.05	1.03
1:1:353:C:OP2	17:I:107:LYS:NZ	1.91	1.03
6:6:28:A:C2	6:6:29:G:C6	2.47	1.03
10:B:337:GLY:HA3	10:B:343:MET:HE1	1.38	1.03
25:Q:23:TRP:HE3	25:Q:51:ILE:HD12	1.21	1.03
25:Q:23:TRP:CZ3	25:Q:51:ILE:HD11	1.93	1.03
25:Q:23:TRP:CZ3	25:Q:51:ILE:CD1	2.41	1.03
6:6:41:G:H3'	19:K:180:HIS:CE1	1.93	1.02
10:B:367:ASP:OD2	32:X:17:HIS:NE2	1.91	1.02
2:2:1444:A:N7	6:6:6:G:N2	2.05	1.02
3:3:106:U:C2	3:3:129:G:O6	2.12	1.02
19:K:93:ARG:HD2	19:K:108:VAL:CG1	1.89	1.02
19:K:180:HIS:HA	19:K:183:ARG:HG2	1.40	1.02
1:1:48:OMU:HM22	1:1:49:C:C5'	1.90	1.02
2:2:591:A2M:HM'2	2:2:592:C:H5'	1.42	1.02
2:2:1079:OMG:N1	2:2:1237:C:N3	2.06	1.02
2:2:569:G:O2'	2:2:571:OMG:OP2	1.78	1.01

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:452:G:N2	2:2:482:G:N7	2.08	1.01
2:2:1151:U:C2'	2:2:1152:U:H5'	1.89	1.01
2:2:749:G:O2'	2:2:750:U:O5'	1.79	1.01
6:6:22:G:O6	6:6:27:G:OP2	1.76	1.01
8:8:37:C:N4	8:8:48:G:H1'	1.76	1.00
1:1:48:OMU:HM22	1:1:49:C:H5'	1.00	0.99
42:h:8:TYR:HD1	42:h:21:MET:CE	1.73	0.99
1:1:34:C:H2'	1:1:35:U:H5'	1.45	0.99
16:H:203:GLU:OE2	19:K:185:VAL:HG21	0.81	0.98
48:n:8:LYS:O	48:n:23:PHE:HD1	1.40	0.98
6:6:34:C:H3'	6:6:35:U:C6	1.98	0.98
42:h:21:MET:HE3	42:h:33:MET:HG3	1.45	0.98
22:N:121:LYS:CE	22:N:122:PRO:HD2	1.92	0.98
25:Q:8:ALA:HB1	25:Q:19:ARG:NH1	1.79	0.98
19:K:52:GLN:CD	41:g:63:THR:HG22	1.79	0.97
7:7:55:U:H3	7:7:62:A:H2	1.10	0.97
18:J:112:LYS:O	18:J:112:LYS:CG	2.10	0.97
6:6:7:A:N1	6:6:59:C:N4	2.13	0.97
24:P:101:ARG:HG2	24:P:101:ARG:HH21	1.27	0.97
1:1:959:OMG:HM23	21:M:81:TYR:OH	1.62	0.97
2:2:666:C:N4	2:2:1034:G:O6	1.96	0.97
3:3:182:G:C5'	42:h:20:ARG:NH2	2.27	0.96
21:M:71:ARG:HG2	21:M:94:LEU:HB2	1.47	0.96
1:1:439:U:P	28:T:2:THR:N	2.37	0.96
42:h:8:TYR:CE1	42:h:21:MET:HE2	1.99	0.96
2:2:667:OMU:HM21	48:n:52:GLY:HA3	0.97	0.96
8:8:3:G:H1	8:8:120:C:H42	1.04	0.95
23:O:18:VAL:CG2	23:O:24:ARG:HH21	1.78	0.95
1:1:1540:U:OP1	28:T:82:ARG:NH2	1.97	0.95
2:2:1317:G:O6	2:2:1387:C:N4	2.00	0.95
6:6:17:U:H4'	6:6:18:A:H5'	1.46	0.95
35:a:92:THR:OG1	35:a:95:ARG:HG3	1.65	0.95
2:2:973:C:N4	2:2:977:A:N7	2.15	0.95
1:1:454:U:HO2'	1:1:455:G:H8	0.99	0.95
10:B:19:ARG:HB2	10:B:237:ARG:HH21	1.31	0.95
39:e:143:ARG:HH12	39:e:176:LEU:HB3	1.32	0.94
16:H:203:GLU:CD	19:K:185:VAL:HG21	1.92	0.94
2:2:667:OMU:CM2	48:n:52:GLY:HA3	1.92	0.94
2:2:1254:OMG:H5"	2:2:1255:G:OP2	1.65	0.94
6:6:40:C:P	6:6:40:C:H3'	2.08	0.94
1:1:439:U:H5'	28:T:2:THR:N	1.78	0.94

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:7:145:G:H4'	30:V:52:ARG:HH11	1.32	0.93
47:m:44:LYS:HZ1	47:m:59:GLY:HA3	1.30	0.93
2:2:667:OMU:H6	2:2:667:OMU:C5'	1.98	0.93
19:K:68:GLY:HA2	19:K:85:ILE:O	1.69	0.93
2:2:628:A2M:OP1	16:H:103:ARG:NH1	2.02	0.93
25:Q:8:ALA:HB1	25:Q:19:ARG:HH12	1.30	0.93
44:j:22:CYS:SG	44:j:37:CYS:HB3	2.08	0.93
28:T:6:ARG:HH21	28:T:116:HIS:HB2	1.34	0.93
47:m:44:LYS:NZ	47:m:59:GLY:HA3	1.82	0.93
3:3:42:U:H3	3:3:178:G:H1	1.17	0.93
6:6:33:G:H5'	19:K:42:VAL:CG2	1.99	0.93
8:8:2:C:N3	8:8:120:C:O2	2.00	0.93
24:P:17:HIS:NE2	24:P:18:HIS:CE1	2.35	0.92
1:1:130:U:H3	1:1:136:G:H1	0.93	0.92
1:1:678:A2M:N6	2:2:617:G:N3	2.16	0.92
23:O:18:VAL:HG22	23:O:24:ARG:HH21	1.32	0.92
1:1:1674:U:C4	1:1:1728:G:N2	2.38	0.92
5:5:112:A:H8	39:e:89:LYS:HA	1.34	0.92
1:1:844:C:H5"	20:L:5:PHE:O	1.69	0.92
1:1:48:OMU:CM2	1:1:49:C:H5'	1.96	0.92
2:2:667:OMU:H6	2:2:667:OMU:H5'	1.52	0.92
2:2:443:OMC:H5"	2:2:488:A:N6	1.84	0.91
19:K:95:LEU:HD11	19:K:106:ARG:HD3	0.92	0.91
19:K:180:HIS:HB2	19:K:183:ARG:HH11	1.35	0.91
1:1:239:U:O2'	1:1:240:U:OP2	1.86	0.91
6:6:10:C:H2'	6:6:13:C:N4	1.84	0.91
6:6:28:A:N3	6:6:29:G:C5	2.38	0.91
40:f:22:ARG:HH11	40:f:25:LEU:HD23	1.33	0.91
11:C:100:MET:HE2	11:C:103:PRO:HA	1.52	0.91
1:1:174:U:H3	1:1:283:G:H1	0.92	0.91
8:8:2:C:N4	8:8:120:C:O2	2.03	0.90
1:1:895:G:H1	1:1:900:C:H42	1.18	0.90
8:8:74:U:H3	8:8:105:C:H42	1.18	0.90
37:c:138:ARG:HB2	37:c:138:ARG:HH11	1.34	0.90
6:6:30:C:H5'	6:6:30:C:C6	2.07	0.90
2:2:390:A:H1'	2:2:527:A2M:N6	1.85	0.90
19:K:73:ILE:HG13	19:K:114:VAL:HG22	1.52	0.90
2:2:103:G:N2	2:2:117:A:N7	2.19	0.90
3:3:57:U:O2'	3:3:58:C:C6	2.23	0.90
7:7:145:G:H4'	30:V:52:ARG:NH1	1.87	0.90
16:H:200:ALA:HB1	19:K:185:VAL:HG13	1.52	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:l:43:HIS:HB3	46:l:46:ARG:HD2	1.53	0.89
9:A:65:HIS:HB2	9:A:72:VAL:HG13	1.51	0.89
2:2:1318:OMC:HM21	10:B:244:PRO:HD3	1.55	0.89
42:h:22:LYS:CB	42:h:22:LYS:C	2.46	0.89
1:1:439:U:O4	28:T:3:HIS:HE1	1.50	0.89
22:N:121:LYS:CG	22:N:122:PRO:HD2	2.02	0.88
1:1:990:U:OP2	20:L:26:ARG:NH1	2.06	0.88
19:K:180:HIS:O	19:K:183:ARG:HG2	1.72	0.88
1:1:412:G:H22	1:1:415:A:H5”	1.38	0.88
1:1:1048:A:N6	1:1:1102:U:O4	2.06	0.88
2:2:70:A:C2’	2:2:71:OMG:H5’	2.03	0.88
4:4:133:C:N3	4:4:157:A:N6	2.20	0.88
2:2:1340:G:H5’	13:E:169:LYS:HE2	1.56	0.88
6:6:30:C:O2’	6:6:31:U:OP1	1.91	0.88
33:Y:14:THR:CG2	42:h:89:ARG:HD3	2.03	0.88
37:c:138:ARG:O	37:c:141:GLU:OE1	1.92	0.88
6:6:38:C:OP1	19:K:176:ARG:NH2	2.07	0.88
19:K:89:VAL:HG11	26:R:73:ALA:HB2	0.91	0.88
2:2:400:U:H5”	9:A:242:ARG:O	1.74	0.88
6:6:54:A:C2’	6:6:55:U:H5’	2.04	0.88
2:2:72:G:H5”	10:B:250:GLY:HA3	1.54	0.87
2:2:443:OMC:C5’	2:2:488:A:H61	1.86	0.87
6:6:41:G:H22	19:K:173:VAL:HG12	1.36	0.87
16:H:138:VAL:HG22	19:K:44:LEU:O	1.74	0.87
2:2:1318:OMC:HM21	10:B:244:PRO:CD	2.03	0.87
2:2:70:A:H2’	2:2:71:OMG:H5’	1.54	0.87
2:2:362:A:H8	4:4:90:G:H21	1.18	0.87
8:8:48:G:H21	8:8:49:U:C1’	1.83	0.87
19:K:180:HIS:CA	19:K:183:ARG:HG2	2.04	0.87
1:1:36:OMU:H4’	20:L:32:ARG:HD2	1.56	0.87
22:N:121:LYS:HE3	22:N:122:PRO:HD2	1.56	0.87
2:2:1157:G:N7	27:S:87:LYS:NZ	2.22	0.87
4:4:76:C:H5	4:4:119:A:H62	1.21	0.87
1:1:1443:U:H1’	24:P:17:HIS:CE1	2.09	0.87
13:E:8:CYS:SG	13:E:70:ASN:ND2	2.48	0.87
1:1:439:U:C6	28:T:2:THR:HA	2.10	0.86
7:7:70:C:N3	7:7:88:A:N6	2.23	0.86
19:K:180:HIS:O	19:K:183:ARG:CG	2.23	0.86
2:2:1005:G:O2’	15:G:119:PHE:CD2	2.28	0.86
35:a:95:ARG:NH1	35:a:95:ARG:HB3	1.90	0.86
1:1:36:OMU:CM2	1:1:94:A:O2’	2.23	0.86

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:a:85:LYS:HA	35:a:88:ARG:HD3	1.58	0.86
1:1:1057:A:H61	1:1:1095:U:H3	1.21	0.86
2:2:425:C:H5	9:A:173:GLY:H	1.22	0.86
26:R:40:LYS:NZ	26:R:63:CYS:SG	2.48	0.86
1:1:243:G:H1	1:1:259:G:H1	1.22	0.86
25:Q:51:ILE:HD12	25:Q:51:ILE:H	1.38	0.86
1:1:778:C:HO2'	1:1:779:A:H8	1.23	0.86
2:2:1398:OMC:HM22	2:2:1399:C:O4'	1.76	0.86
6:6:17:U:H5	19:K:43:PRO:HG3	1.41	0.86
28:T:6:ARG:HH22	28:T:116:HIS:HB2	1.40	0.86
1:1:1543:C:O2	2:2:599:G:N2	2.09	0.86
19:K:52:GLN:HE22	41:g:63:THR:CB	1.89	0.86
19:K:52:GLN:HE22	41:g:63:THR:CG2	1.88	0.85
19:K:95:LEU:HD11	19:K:106:ARG:NE	1.90	0.85
2:2:590:U:OP1	39:e:93:LYS:NZ	2.09	0.85
1:1:778:C:H42	1:1:797:A:H61	1.23	0.85
3:3:182:G:H5'	42:h:20:ARG:HH21	1.37	0.85
42:h:8:TYR:CD1	42:h:21:MET:HE1	2.10	0.85
47:m:57:CYS:SG	47:m:60:CYS:HB3	2.17	0.85
19:K:95:LEU:CD1	19:K:106:ARG:CD	2.50	0.85
23:O:152:LEU:HG	23:O:169:LEU:HD12	1.59	0.85
42:h:8:TYR:HD1	42:h:21:MET:HE1	1.41	0.85
1:1:35:U:C2'	1:1:36:OMU:H5"	2.06	0.85
1:1:547:U:C5	1:1:1393:A:C6	2.65	0.85
4:4:95:U:H5	25:Q:62:ARG:CZ	1.90	0.84
2:2:535:U:O2'	2:2:536:C:H5'	1.75	0.84
3:3:22:G:O6	3:3:209:G:N1	2.10	0.84
2:2:749:G:H2'	2:2:750:U:C6	2.13	0.84
3:3:57:U:O2'	3:3:58:C:C5	2.29	0.84
25:Q:23:TRP:HZ3	25:Q:51:ILE:HD11	1.42	0.84
4:4:95:U:C5	25:Q:62:ARG:CZ	2.60	0.84
6:6:17:U:C6	19:K:43:PRO:HG2	2.12	0.84
1:1:1778:G:H1	2:2:6:A:H61	1.26	0.84
25:Q:19:ARG:HD2	25:Q:20:ALA:H	1.42	0.84
22:N:99:ILE:HG22	22:N:121:LYS:O	1.78	0.84
8:8:48:G:H21	8:8:49:U:H1'	1.41	0.83
8:8:66:A:H3'	8:8:67:G:H21	1.43	0.83
23:O:38:LEU:HD21	27:S:70:ARG:HE	1.43	0.83
1:1:1588:G:H1	42:h:3:CYS:HG	1.25	0.83
3:3:107:U:O4	3:3:128:C:C5	2.31	0.83
5:5:125:A:H5'	5:5:125:A:C8	2.14	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:K:180:HIS:CB	19:K:183:ARG:HH11	1.92	0.83
4:4:43:U:H3	4:4:67:A:H61	1.27	0.83
42:h:21:MET:HE3	42:h:33:MET:CG	2.08	0.83
1:1:959:OMG:HN21	21:M:76:HIS:CG	1.96	0.83
40:f:22:ARG:HE	40:f:25:LEU:HD22	1.43	0.83
1:1:204:A:N6	1:1:228:U:O4	2.12	0.83
2:2:1012:G:H21	15:G:149:VAL:HG23	1.40	0.83
10:B:49:PHE:CE1	10:B:342:VAL:CG2	2.62	0.83
15:G:118:ASN:ND2	15:G:123:GLN:OE1	2.12	0.83
3:3:28:U:H3	3:3:203:A:H61	1.25	0.83
13:E:24:LYS:NZ	13:E:37:ASP:OD1	2.11	0.83
2:2:602:A:N3	28:T:131:ARG:NH2	2.26	0.82
3:3:58:C:O2'	3:3:60:U:C5'	2.26	0.82
8:8:3:G:H1	8:8:120:C:N4	1.76	0.82
25:Q:43:LYS:O	25:Q:47:ASP:OD1	1.97	0.82
1:1:831:C:OP1	24:P:192:ARG:NH2	2.12	0.82
19:K:93:ARG:HD2	19:K:108:VAL:HG12	1.61	0.82
2:2:1077:G:O2'	2:2:1078:OMU:H5"	1.79	0.82
42:h:21:MET:CE	42:h:33:MET:CE	2.56	0.82
1:1:186:G:H1	1:1:267:A:H61	1.27	0.82
16:H:146:VAL:CG1	19:K:55:ALA:HB1	2.09	0.82
1:1:1012:C:N4	2:2:1043:G:O2'	2.12	0.82
3:3:182:G:H5'	42:h:20:ARG:HH22	1.44	0.82
13:E:59:TRP:CH2	19:K:64:TYR:CB	2.63	0.82
1:1:35:U:H2'	1:1:36:OMU:H5"	1.61	0.81
3:3:182:G:C5'	42:h:20:ARG:HH21	1.91	0.81
8:8:72:A:N6	8:8:107:U:O4	2.11	0.81
10:B:10:ARG:NH2	10:B:268:THR:O	2.13	0.81
3:3:95:C:N3	3:3:139:G:N2	2.26	0.81
7:7:75:G:OP2	31:W:71:TYR:OH	1.97	0.81
2:2:616:G:N2	2:2:621:G:O6	2.12	0.81
6:6:26:G:N3	6:6:26:G:H5"	1.95	0.81
8:8:2:C:N4	8:8:120:C:C2	2.46	0.81
27:S:100[A]:ARG:O	27:S:102:GLN:N	2.12	0.81
31:W:37:ARG:O	31:W:41:ASN:N	2.12	0.81
1:1:1392:G:O2'	1:1:1393:A:OP2	1.96	0.81
2:2:458:C:N3	2:2:479:C:N4	2.28	0.81
1:1:836:G:OP1	24:P:149:ARG:NH1	2.13	0.81
1:1:1674:U:O4	1:1:1728:G:C2	2.34	0.81
2:2:71:OMG:HM22	2:2:72:G:O4'	1.81	0.81
16:H:148:TYR:CG	19:K:59:MET:CB	2.63	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:V:118:ARG:HD3	30:V:124:LYS:HE3	1.62	0.81
1:1:370:G:N2	1:1:374:G:N7	2.29	0.81
1:1:424:G:H21	1:1:427:A:H8	1.27	0.81
3:3:209:G:C2'	3:3:210:G:H5'	2.09	0.81
22:N:67:ALA:O	22:N:71:GLN:N	2.12	0.81
26:R:71:LEU:HD12	26:R:99:VAL:HG11	1.63	0.81
6:6:4:U:H4'	6:6:4:U:OP1	1.80	0.81
16:H:200:ALA:CB	19:K:185:VAL:HG13	2.10	0.81
3:3:129:G:H21	3:3:130:G:H1'	1.44	0.81
19:K:89:VAL:HG11	26:R:73:ALA:CB	1.83	0.81
1:1:329:G:OP2	21:M:68:ARG:NH2	2.13	0.81
2:2:1057:U:O2	2:2:1077:G:N2	2.14	0.81
2:2:1131:A:C2	23:O:23:ARG:NH1	2.49	0.81
4:4:77:U:H4'	10:B:371:LYS:HE3	1.60	0.81
35:a:110:ARG:HB3	35:a:110:ARG:HH21	1.45	0.81
1:1:659:G:O2'	7:7:7:OMU:HM21	1.81	0.80
1:1:959:OMG:HN21	21:M:76:HIS:CD2	1.98	0.80
42:h:40:SER:HB3	42:h:61:ARG:HH21	1.46	0.80
4:4:128:U:H3	4:4:162:A:H61	1.28	0.80
8:8:34:A:C6	8:8:43:G:N3	2.49	0.80
1:1:423:U:O4	1:1:428:A:N6	2.12	0.80
9:A:40:TYR:HA	9:A:91:GLY:HA3	1.63	0.80
37:c:236:ASP:HB2	37:c:240:ARG:HH22	1.47	0.80
1:1:1540:U:O2	2:2:602:A:N6	2.14	0.80
46:l:28:ARG:HA	46:l:33:ASN:HD21	1.46	0.80
3:3:57:U:C2'	3:3:58:C:C6	2.63	0.80
19:K:74:LEU:HD23	19:K:74:LEU:H	1.43	0.80
14:F:51:ALA:HB2	14:F:74:VAL:HG21	1.63	0.80
16:H:148:TYR:HB3	19:K:59:MET:H	1.45	0.80
17:I:83:ALA:HB3	17:I:108:ASN:ND2	1.97	0.80
23:O:23:ARG:O	23:O:23:ARG:HD3	1.81	0.80
40:f:22:ARG:HE	40:f:25:LEU:CD2	1.95	0.80
1:1:1253:U:H5'	16:H:74:GLN:HE22	1.47	0.80
1:1:1278:G:H1	1:1:1351:C:H42	1.25	0.80
3:3:39:U:O4	3:3:181:A:N6	2.12	0.80
40:f:20:ARG:HD2	40:f:29:LEU:HB3	1.64	0.80
10:B:321:TYR:CD1	10:B:340:ARG:HG2	2.16	0.80
3:3:195:A:OP2	47:m:49:ARG:NH1	2.14	0.79
16:H:146:VAL:CG1	19:K:55:ALA:CB	2.60	0.79
10:B:93:ARG:HG3	10:B:102:ILE:HG21	1.62	0.79
2:2:654:U:O2'	2:2:655:OMG:H5'	1.82	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:J:28:ALA:O	18:J:116:ILE:HG23	1.82	0.79
37:c:73:VAL:O	37:c:77:ARG:HG2	1.83	0.79
1:1:779:A:N6	1:1:796:G:O6	2.14	0.79
5:5:38:G:OP1	32:X:37:ARG:NH2	2.15	0.79
18:J:116:ILE:H	18:J:116:ILE:HD12	1.46	0.79
9:A:35:ALA:HA	15:G:121:ILE:HD11	1.64	0.79
1:1:543:G:N3	1:1:543:G:H5'	1.98	0.79
2:2:1318:OMC:H5'	2:2:1318:OMC:C6	2.15	0.79
35:a:110:ARG:O	35:a:110:ARG:HD2	1.83	0.79
1:1:779:A:OP1	24:P:141:LYS:HB3	1.83	0.79
19:K:180:HIS:C	19:K:183:ARG:HG2	2.08	0.78
22:N:76:MET:SD	22:N:147:GLN:NE2	2.55	0.78
19:K:52:GLN:OE1	41:g:63:THR:CG2	2.16	0.78
42:h:22:LYS:CB	42:h:22:LYS:N	2.46	0.78
1:1:1247:U:O2	1:1:1379:A:N6	2.15	0.78
2:2:655:OMG:CM2	2:2:657:U:H5"	2.14	0.78
19:K:93:ARG:HD2	19:K:108:VAL:HG11	1.64	0.78
1:1:116:U:H5"	21:M:5:MET:HE3	1.64	0.78
2:2:734:A:OP2	2:2:736:C:N4	2.16	0.78
24:P:77:PHE:CE2	36:b:62:ARG:NH2	2.52	0.78
43:i:75:TYR:OH	43:i:79[B]:ARG:NH2	2.17	0.78
2:2:1253:G:OP1	11:C:74:ARG:NH1	2.16	0.78
47:m:56:ARG:CZ	47:m:56:ARG:HB2	2.13	0.78
1:1:109:A:OP1	17:I:101:ARG:NH1	2.17	0.78
1:1:713:A:H62	1:1:737:U:H3	1.31	0.78
1:1:1529:OMC:CM2	11:C:94:MET:HG2	2.14	0.78
9:A:80:GLU:HG3	47:m:66:GLY:HA3	1.66	0.78
48:n:45:ARG:HA	48:n:45:ARG:HE	1.49	0.78
1:1:34:C:C2'	1:1:35:U:H5'	2.14	0.78
13:E:107:GLN:NE2	13:E:125:VAL:O	2.16	0.78
25:Q:15:LEU:HD13	25:Q:52:ARG:HB3	1.66	0.78
37:c:74:THR:HA	37:c:77:ARG:HG3	1.64	0.78
2:2:729:G:N1	2:2:732:A:OP2	2.17	0.78
3:3:106:U:C2	3:3:129:G:C6	2.70	0.78
1:1:244:C:H42	1:1:248:A:H61	1.28	0.78
1:1:1659:G:H1'	2:2:414:G:H22	1.47	0.78
2:2:1255:G:H1	2:2:1259:A:H62	1.29	0.78
9:A:9:ARG:NH2	9:A:16:TYR:OH	2.16	0.78
26:R:14:ARG:HG3	26:R:61:LEU:HD11	1.66	0.78
33:Y:76:ASN:HB3	33:Y:79:HIS:HD2	1.49	0.78
10:B:234:VAL:HG11	10:B:254:VAL:HG23	1.66	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:H:103:ARG:HH11	16:H:103:ARG:HG3	1.49	0.77
27:S:49:ARG:HA	27:S:52:MET:HE2	1.66	0.77
1:1:845:OMU:O5'	1:1:845:OMU:H6	1.84	0.77
2:2:1044:C:O2	2:2:1052:G:N2	2.13	0.77
2:2:1280:G:O2'	2:2:1286:A:N6	2.16	0.77
19:K:70:LEU:HA	19:K:84:VAL:HA	1.65	0.77
2:2:654:U:C2'	2:2:655:OMG:H5'	2.15	0.77
41:g:69:TRP:HE1	41:g:144:ILE:HD11	1.49	0.77
47:m:39:CYS:HB3	47:m:47:PHE:HE2	1.48	0.77
4:4:71:C:OP1	18:J:47:ARG:NH2	2.16	0.77
8:8:37:C:H42	8:8:48:G:H1'	1.47	0.77
11:C:34:ASP:OD1	24:P:22:THR:OG1	2.01	0.77
1:1:490:C:N3	1:1:645:G:N2	2.31	0.77
1:1:1042:G:OP1	27:S:100[B]:ARG:NH1	2.18	0.77
2:2:443:OMC:H5"	2:2:488:A:H61	1.44	0.77
6:6:22:G:H2'	6:6:22:G:N3	1.98	0.77
27:S:48:VAL:HG21	27:S:94:GLU:HG3	1.66	0.77
1:1:183:G:O6	1:1:270:C:N4	2.16	0.77
2:2:1145:U:H3	2:2:1168:G:H1	1.28	0.77
3:3:129:G:N2	3:3:130:G:N9	2.32	0.77
6:6:7:A:C2	6:6:60:A:C2	2.72	0.77
2:2:655:OMG:HM21	2:2:657:U:H5"	1.67	0.77
8:8:71:C:H2'	8:8:72:A:H5"	1.65	0.77
6:6:30:C:O2'	6:6:31:U:P	2.42	0.77
7:7:29:C:OP1	17:I:36:GLN:NE2	2.19	0.77
1:1:1732:A:O2'	30:V:36:ARG:NH2	2.18	0.76
14:F:49:ARG:HH11	14:F:181:VAL:HG13	1.50	0.76
1:1:35:U:O2'	1:1:36:OMU:H5"	1.84	0.76
4:4:140:G:H21	4:4:150:A:H62	1.33	0.76
10:B:337:GLY:HA3	10:B:343:MET:CE	2.15	0.76
16:H:141:ARG:NH2	19:K:48:LEU:O	2.14	0.76
16:H:195:GLU:HA	16:H:198:LYS:HG2	1.67	0.76
25:Q:8:ALA:CB	25:Q:19:ARG:HH12	1.97	0.76
33:Y:14:THR:HG22	42:h:89:ARG:HD3	1.67	0.76
42:h:8:TYR:CD1	42:h:21:MET:SD	2.78	0.76
47:m:57:CYS:SG	47:m:62:LYS:O	2.42	0.76
1:1:233:U:O2	1:1:255:G:N2	2.16	0.76
3:3:4:U:O4	33:Y:17:ARG:NH1	2.18	0.76
4:4:62:C:O2	13:E:119:ARG:NH1	2.18	0.76
10:B:26:ARG:NH2	10:B:183:VAL:O	2.18	0.76
15:G:298:ASN:OD1	15:G:301[B]:ARG:NH2	2.17	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:W:14:ARG:O	31:W:18:GLN:HB2	1.84	0.76
1:1:970:U:OP1	50:1:1955:HOH:O	2.03	0.76
6:6:19:C:OP1	6:6:19:C:H4'	1.84	0.76
17:I:80:PHE:O	17:I:106:ARG:NH1	2.17	0.76
2:2:467:G:O6	43:i:74:LYS:NZ	2.14	0.76
35:a:95:ARG:HB3	35:a:95:ARG:HH11	1.50	0.76
1:1:239:U:H1'	1:1:240:U:H5'	1.67	0.76
1:1:1260:G:N2	1:1:1261:U:O4	2.19	0.76
2:2:1369:A:O2'	18:J:40:SER:OG	2.03	0.76
13:E:103:SER:HB2	13:E:110:GLU:HB2	1.66	0.76
2:2:436:U:H5'	47:m:21:ASN:ND2	2.01	0.76
24:P:71:MET:HE1	24:P:85:PRO:HG2	1.65	0.76
42:h:8:TYR:HD1	42:h:21:MET:SD	2.07	0.76
8:8:66:A:OP2	8:8:67:G:N2	2.18	0.76
9:A:130:SER:OG	9:A:174:ARG:NH1	2.18	0.76
2:2:1333:C:H5'	13:E:167:LYS:HG2	1.67	0.75
6:6:38:C:O2'	14:F:179:ARG:O	2.02	0.75
8:8:8:C:OP1	23:O:54:ARG:NE	2.19	0.75
28:T:41:LEU:HD21	28:T:99:GLU:HG2	1.68	0.75
6:6:33:G:H5'	19:K:42:VAL:HG21	1.67	0.75
19:K:95:LEU:CD1	19:K:106:ARG:HE	1.99	0.75
6:6:30:C:H6	6:6:30:C:C5'	1.97	0.75
8:8:48:G:N2	8:8:49:U:N1	2.34	0.75
19:K:95:LEU:CD1	19:K:106:ARG:NE	2.49	0.75
27:S:118:ALA:HA	27:S:122:GLY:HA3	1.68	0.75
28:T:33:ALA:HB1	28:T:117:VAL:HG11	1.67	0.75
2:2:54:U:OP2	50:2:1710:HOH:O	2.05	0.75
5:5:46:G:O6	5:5:101:C:N4	2.19	0.75
9:A:116:VAL:HG23	9:A:126:LEU:HB2	1.67	0.75
1:1:995:C:H5	1:1:1467:G:H1	1.32	0.75
8:8:48:G:C2	8:8:49:U:N1	2.55	0.75
18:J:104:ILE:N	18:J:104:ILE:HD12	2.02	0.75
34:Z:35:ASN:O	40:f:89:GLN:NE2	2.18	0.75
8:8:34:A:C6	8:8:43:G:C2	2.75	0.75
1:1:1205:G:O6	1:1:1212:C:N4	2.19	0.75
1:1:1586:U:OP2	50:2:1710:HOH:O	2.05	0.75
2:2:457:U:N3	2:2:480:G:O6	2.19	0.75
3:3:4:U:C5	33:Y:17:ARG:NH1	2.43	0.75
27:S:100[B]:ARG:O	27:S:102:GLN:N	2.18	0.75
16:H:108:ARG:HH11	16:H:108:ARG:HG2	1.49	0.75
19:K:81:ARG:NH1	19:K:102:ALA:O	2.19	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1228:G:H1	1:1:1398:C:H5	1.32	0.74
2:2:782:G:O2'	2:2:784:U:OP1	2.04	0.74
16:H:49:LYS:HZ1	19:K:37:THR:N	1.85	0.74
19:K:180:HIS:HA	19:K:183:ARG:CG	2.16	0.74
2:2:1338:C:H2'	13:E:170:ASP:HB2	1.69	0.74
4:4:76:C:OP2	10:B:227[A]:LYS:NZ	2.20	0.74
37:c:138:ARG:HH11	37:c:138:ARG:CB	1.99	0.74
42:h:22:LYS:C	42:h:22:LYS:N	2.44	0.74
2:2:1318:OMC:H6	2:2:1318:OMC:C5'	1.99	0.74
23:O:18:VAL:CG2	23:O:24:ARG:NH2	2.50	0.74
24:P:77:PHE:HE2	36:b:62:ARG:NH2	1.85	0.74
44:j:67:LEU:HA	44:j:70:VAL:HG12	1.68	0.74
2:2:1254:OMG:N7	2:2:1309:C:O2'	2.20	0.74
5:5:125:A:H5'	5:5:125:A:H8	1.52	0.74
8:8:28:C:O2	8:8:58:G:N2	2.20	0.74
48:n:53:GLN:NE2	48:n:55:LYS:O	2.20	0.74
1:1:855:C:OP1	11:C:99:ARG:NH2	2.20	0.74
6:6:17:U:O2	6:6:30:C:O2'	2.03	0.74
18:J:86:SER:HA	18:J:96:TYR:HB3	1.70	0.74
19:K:69:ARG:C	19:K:84:VAL:HG23	2.09	0.74
2:2:591:A2M:HM'2	2:2:592:C:C5'	2.16	0.74
2:2:762:U:OP1	21:M:31:ARG:NH1	2.20	0.74
3:3:78:C:O2'	3:3:79:U:OP1	2.04	0.74
8:8:37:C:C4	8:8:48:G:H1'	2.22	0.74
1:1:193:A:H2'	1:1:194:A:H8	1.53	0.74
2:2:783:U:O2	2:2:810:G:N1	2.19	0.74
9:A:65:HIS:HD2	9:A:68:LYS:H	1.34	0.74
12:D:16:VAL:HA	12:D:133:LEU:HA	1.69	0.74
1:1:511:A:N1	1:1:541:A:N6	2.35	0.74
9:A:229:SER:O	9:A:234:LYS:NZ	2.20	0.74
19:K:52:GLN:NE2	41:g:63:THR:CB	2.49	0.74
35:a:10:LEU:HD12	35:a:13:LYS:HD3	1.69	0.74
2:2:1319:U:O2	10:B:255:ALA:HB3	1.87	0.74
22:N:121:LYS:HG3	22:N:122:PRO:HD2	1.68	0.74
1:1:260:C:O2'	1:1:261:C:OP1	2.06	0.74
19:K:73:ILE:HD12	19:K:73:ILE:N	2.02	0.74
2:2:1043:G:O6	2:2:1053:C:N4	2.18	0.73
1:1:501:C:N4	1:1:553:A:N3	2.36	0.73
1:1:934:A:OP1	50:1:1971:HOH:O	2.06	0.73
1:1:1159:A:OP2	37:c:165:LYS:NZ	2.21	0.73
2:2:639:G:O2'	2:2:1421:A:N6	2.19	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:4:104:A:OP1	39:e:136:LYS:NZ	2.21	0.73
33:Y:28:ASN:HA	33:Y:41:ALA:HA	1.69	0.73
1:1:163:U:H3	1:1:292:A:H61	1.33	0.73
2:2:104:U:O2'	2:2:116:A:N7	2.20	0.73
13:E:58:ARG:HD2	13:E:69:LEU:HD22	1.70	0.73
16:H:108:ARG:HG3	16:H:109:TYR:CE2	2.24	0.73
1:1:1266:A:H4'	22:N:162:ARG:HD3	1.71	0.73
1:1:1615:C:N4	2:2:62:A:OP1	2.21	0.73
3:3:58:C:O2'	3:3:60:U:O5'	2.06	0.73
6:6:41:G:C2	19:K:176:ARG:HD2	2.24	0.73
13:E:5:LYS:HD2	13:E:66:ILE:HG21	1.69	0.73
48:n:6:LYS:HD3	48:n:93:LEU:HB3	1.70	0.73
1:1:781:A:H61	1:1:794:U:H3	1.34	0.73
1:1:1540:U:H2'	1:1:1541:A2M:H8	1.68	0.73
13:E:137:SER:O	13:E:140:LYS:CG	2.31	0.73
15:G:146:LYS:HB3	21:M:28:TRP:HH2	1.53	0.73
2:2:986:A:H61	2:2:1000:U:H3	1.35	0.73
11:C:54:ASN:HB3	11:C:57:SER:HB3	1.70	0.73
19:K:180:HIS:HE2	19:K:184:LYS:HE2	1.50	0.73
2:2:71:OMG:HM22	2:2:72:G:C4'	2.19	0.73
2:2:459:A:O2'	2:2:1029:A:O2'	2.06	0.73
2:2:1238:A:O2'	20:L:42:ARG:NH1	2.22	0.73
1:1:237:U:OP1	1:1:257:U:O2'	2.05	0.73
1:1:411:U:O2	1:1:415:A:N6	2.19	0.73
1:1:1392:G:O6	19:K:105:TRP:CZ3	2.42	0.73
2:2:760:U:OP1	15:G:153:ARG:NE	2.17	0.73
6:6:11:G:O2'	16:H:190:GLN:NE2	2.21	0.73
15:G:166:VAL:HG21	15:G:266:LYS:HD3	1.70	0.73
47:m:39:CYS:C	47:m:41:PHE:H	1.97	0.73
1:1:1369:G:H5'	16:H:78:LYS:HE3	1.71	0.73
2:2:1100:G:H1	2:2:1110:C:H42	1.37	0.73
2:2:1338:C:H4'	2:2:1343:G:H22	1.52	0.73
7:7:7:OMU:H6	7:7:7:OMU:OP2	1.89	0.73
19:K:180:HIS:NE2	19:K:184:LYS:CE	2.50	0.73
24:P:17:HIS:NE2	24:P:18:HIS:ND1	2.35	0.73
1:1:1041:U:OP1	27:S:100[B]:ARG:NH2	2.22	0.72
8:8:2:C:N3	8:8:120:C:C2	2.55	0.72
10:B:368:THR:H	10:B:378:GLN:NE2	1.87	0.72
1:1:955:A2M:HM'1	9:A:14:SER:O	1.89	0.72
2:2:422:U:OP1	9:A:54:ARG:NH2	2.22	0.72
8:8:54:U:O2'	8:8:56:A:N7	2.22	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:E:23:ARG:NH1	13:E:43:LEU:O	2.22	0.72
42:h:8:TYR:HE1	42:h:21:MET:HE2	1.50	0.72
1:1:172:G:H2'	1:1:173:G:H8	1.54	0.72
2:2:523:C:N4	2:2:553:G:O6	2.16	0.72
7:7:6:G:H2'	7:7:7:OMU:H6	1.70	0.72
1:1:85:U:O2	1:1:98:A:N6	2.19	0.72
2:2:1159:A:H8	2:2:1159:A:H5"	1.55	0.72
22:N:184:LEU:HD22	22:N:189:LYS:HG3	1.71	0.72
23:O:107:ARG:NH1	23:O:119:PHE:O	2.17	0.72
1:1:90:G:OP2	1:1:92:C:N4	2.20	0.72
2:2:655:OMG:HM21	2:2:657:U:C5'	2.19	0.72
2:2:1310:G:H5'	2:2:1311:A:H5"	1.70	0.72
3:3:112:C:O2	3:3:120:G:N2	2.15	0.72
1:1:12:U:O4	7:7:156:A:N6	2.19	0.72
2:2:957:C:H1'	2:2:958:C:OP1	1.89	0.72
2:2:1310:G:OP2	50:2:1735:HOH:O	2.07	0.72
7:7:145:G:C4'	30:V:52:ARG:NH1	2.51	0.72
16:H:148:TYR:HB3	19:K:59:MET:N	2.04	0.72
1:1:19:G:H1	7:7:149:A:H61	1.37	0.72
2:2:1153:OMU:OP1	27:S:57:TYR:OH	2.06	0.72
6:6:46:C:N4	14:F:179:ARG:HE	1.88	0.72
8:8:34:A:N1	8:8:43:G:N2	2.37	0.72
8:8:42:C:O2'	8:8:44:A:N7	2.23	0.72
18:J:116:ILE:HD12	18:J:116:ILE:N	2.03	0.72
1:1:1548:A:H61	1:1:1584:A:H4'	1.54	0.72
14:F:51:ALA:HA	14:F:67:GLY:HA2	1.71	0.72
21:M:71:ARG:CG	21:M:94:LEU:HB2	2.20	0.72
2:2:360:U:OP2	32:X:48:LYS:NZ	2.19	0.72
9:A:246:ILE:HD12	9:A:246:ILE:C	2.15	0.72
2:2:1280:G:N2	2:2:1285:U:OP1	2.22	0.71
11:C:222:ILE:HG21	11:C:225:LEU:HD23	1.71	0.71
17:I:28:LYS:HB2	21:M:197:ARG:HD2	1.71	0.71
23:O:53:VAL:HG21	23:O:168:VAL:HG21	1.72	0.71
1:1:385:G:O2'	7:7:24:G:N3	2.22	0.71
25:Q:123:LEU:HD21	25:Q:138:LEU:HD11	1.71	0.71
1:1:24:A:N3	1:1:366:C:O2'	2.22	0.71
1:1:36:OMU:HM22	1:1:37:A:H5'	1.73	0.71
3:3:129:G:N2	3:3:130:G:C4	2.58	0.71
10:B:56:ILE:HD12	10:B:363:LEU:HD22	1.70	0.71
16:H:49:LYS:HZ3	19:K:37:THR:N	1.87	0.71
16:H:108:ARG:HG2	16:H:108:ARG:NH1	2.02	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:c:236:ASP:HB2	37:c:240:ARG:NH2	2.05	0.71
1:1:1202:G:H1'	40:f:46:ARG:NH1	2.05	0.71
3:3:91:G:N2	3:3:92:G:O2'	2.24	0.71
8:8:107:U:H3'	22:N:203:LYS:HE3	1.71	0.71
16:H:44:GLN:CD	19:K:48:LEU:HD21	2.15	0.71
18:J:81:ILE:HG22	18:J:82:ARG:HG3	1.72	0.71
1:1:439:U:OP2	28:T:2:THR:N	2.23	0.71
1:1:1757:U:H4'	2:2:18:A:H4'	1.72	0.71
10:B:49:PHE:CE1	10:B:342:VAL:HG23	2.25	0.71
10:B:337:GLY:CA	10:B:343:MET:HE1	2.19	0.71
11:C:237:HIS:O	11:C:246:ARG:NH1	2.24	0.71
42:h:8:TYR:CE1	42:h:21:MET:CE	2.65	0.71
1:1:1440:A:O2'	1:1:1442:G:N1	2.23	0.71
2:2:459:A:HO2'	2:2:1029:A:HO2'	1.33	0.71
2:2:1056:A:H61	2:2:1078:OMU:HN3	1.36	0.71
23:O:60:ILE:HD11	23:O:101:THR:HG21	1.73	0.71
33:Y:11:VAL:HG12	33:Y:82:PRO:HA	1.71	0.71
1:1:439:U:O4'	28:T:2:THR:OG1	2.07	0.71
2:2:421:A:N6	9:A:20:GLY:O	2.22	0.71
10:B:310:LYS:HE3	10:B:368:THR:OG1	1.90	0.71
15:G:153:ARG:NH1	15:G:322:GLN:O	2.23	0.71
4:4:41:U:H3	4:4:69:G:H1	1.38	0.71
16:H:55:ARG:HE	16:H:126:ILE:HD11	1.56	0.71
18:J:74:LYS:HE3	18:J:76:LEU:HD13	1.72	0.71
2:2:1090:A:OP1	50:2:1727:HOH:O	2.07	0.71
4:4:25:G:O6	4:4:180:C:N4	2.20	0.71
27:S:68:THR:HB	27:S:69:PRO:HD2	1.71	0.71
1:1:326:A:O2'	21:M:93:LYS:O	2.08	0.71
2:2:1268:U:N3	2:2:1300:U:O2	2.24	0.71
3:3:57:U:C2'	3:3:58:C:H5	1.71	0.71
6:6:42:A:N6	19:K:169:TYR:OH	2.24	0.71
6:6:40:C:H3'	6:6:40:C:OP2	1.89	0.70
10:B:216:GLN:NE2	10:B:288:TYR:O	2.23	0.70
16:H:137:VAL:HG13	19:K:45:SER:O	1.91	0.70
16:H:146:VAL:HG13	19:K:55:ALA:HB3	1.73	0.70
23:O:65:VAL:HG22	23:O:74:VAL:HG22	1.74	0.70
2:2:585:C:OP1	18:J:50:ARG:NH1	2.25	0.70
6:6:13:C:O2'	6:6:14:A:H5'	1.91	0.70
8:8:96:C:OP1	26:R:45:ARG:NH1	2.23	0.70
23:O:64:ILE:HD12	23:O:109:THR:HG21	1.72	0.70
1:1:253:G:OP1	31:W:13:ARG:NH2	2.24	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:546:G:N1	26:R:63:CYS:SG	2.64	0.70
10:B:56:ILE:HG22	10:B:366:ILE:HG23	1.73	0.70
16:H:140:PRO:HD3	19:K:46:PRO:HB3	1.74	0.70
41:g:90:TRP:O	41:g:97:ARG:NH2	2.24	0.70
1:1:409:U:O2'	1:1:410:U:OP2	2.09	0.70
1:1:1651:G:H21	2:2:414:G:H21	1.39	0.70
1:1:892:C:O2'	25:Q:126:ARG:NH2	2.24	0.70
1:1:1269:G:O2'	1:1:1270:U:O2	2.09	0.70
2:2:1131:A:N6	23:O:27:LYS:O	2.24	0.70
6:6:14:A:H4'	6:6:15:C:OP1	1.91	0.70
11:C:290:ILE:HB	24:P:135:MET:HE3	1.73	0.70
13:E:18:VAL:HG22	13:E:27:VAL:HG22	1.73	0.70
13:E:135:ASP:HB2	13:E:136:PRO:HD3	1.71	0.70
1:1:385:G:O6	50:1:1954:HOH:O	2.08	0.70
2:2:1079:OMG:H4'	2:2:1080:U:OP2	1.91	0.70
6:6:34:C:C4	6:6:35:U:C4	2.79	0.70
16:H:53:VAL:HB	16:H:122:ALA:HA	1.73	0.70
28:T:19:VAL:HG13	28:T:94:LEU:HD12	1.72	0.70
1:1:1235:A:OP2	50:1:1960:HOH:O	2.09	0.70
2:2:1392:U:H3'	2:2:1393:U:H3'	1.74	0.70
10:B:365:PHE:CE2	10:B:367:ASP:OD1	2.45	0.70
16:H:200:ALA:HB1	19:K:185:VAL:HG11	1.64	0.70
1:1:1615:C:OP1	28:T:127:ARG:NH1	2.25	0.70
21:M:13:LYS:NZ	43:i:47:ILE:HG22	2.06	0.70
1:1:291:A:H2'	1:1:292:A:H8	1.56	0.69
1:1:753:A:N1	1:1:832:G:O2'	2.22	0.69
2:2:378:C:OP1	50:2:1716:HOH:O	2.09	0.69
13:E:89:PHE:HB2	13:E:145:PHE:HB2	1.74	0.69
16:H:28:ASP:OD2	16:H:55:ARG:NH1	2.25	0.69
22:N:121:LYS:CG	22:N:122:PRO:CD	2.67	0.69
1:1:1729:A:H3'	1:1:1729:A:N3	2.07	0.69
2:2:1078:OMU:O2	2:2:1078:OMU:HM23	1.92	0.69
10:B:290:ILE:HG13	10:B:329:VAL:HG22	1.72	0.69
21:M:5:MET:HB3	43:i:43:VAL:HG11	1.74	0.69
23:O:21:ARG:C	23:O:21:ARG:HD3	2.18	0.69
16:H:138:VAL:O	19:K:46:PRO:HA	1.92	0.69
19:K:163:SER:O	19:K:168:ARG:NH1	2.26	0.69
37:c:150:SER:H	37:c:245:ASN:HD21	1.39	0.69
47:m:41:PHE:HB2	47:m:60:CYS:SG	2.33	0.69
1:1:238:A:C6	1:1:239:U:O4	2.46	0.69
1:1:435:G:N1	1:1:438:A:OP2	2.23	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:978:C:O2'	2:2:979:C:O5'	2.10	0.69
27:S:138:VAL:N	37:c:85:TYR:O	2.25	0.69
36:b:18:ARG:NH1	36:b:18:ARG:HG2	2.07	0.69
2:2:1183:G:O6	48:n:86:LYS:NZ	2.26	0.69
3:3:42:U:OP1	42:h:25:ARG:NH1	2.25	0.69
1:1:461:G:N2	1:1:462:A:N7	2.36	0.69
1:1:1480:G:O2'	1:1:1510:A:N1	2.24	0.69
2:2:990:C:O2'	2:2:996:G:N2	2.25	0.69
4:4:52:A:O2'	13:E:176:ASP:OD1	2.07	0.69
8:8:48:G:H22	8:8:49:U:H1'	1.55	0.69
14:F:77:ARG:HH11	14:F:77:ARG:HG3	1.57	0.69
15:G:175:ALA:HA	15:G:299:LEU:HD11	1.73	0.69
18:J:56:LEU:HD23	18:J:123:GLU:HB2	1.74	0.69
21:M:121:VAL:HG21	21:M:131:GLU:HG3	1.75	0.69
28:T:45:GLN:NE2	28:T:99:GLU:OE2	2.24	0.69
1:1:735:U:OP1	11:C:273:LYS:NZ	2.24	0.69
2:2:19:C:N4	46:l:2:GLY:O	2.26	0.69
2:2:1443:G:H1	41:g:80:HIS:HE1	1.39	0.69
10:B:240:VAL:HG23	10:B:241:ALA:H	1.58	0.69
16:H:200:ALA:CA	19:K:185:VAL:HG11	2.23	0.69
1:1:669:C:O2'	40:f:22:ARG:NH2	2.25	0.69
1:1:1599:G:H1'	2:2:26:C:H5"	1.75	0.69
2:2:19:C:OP2	50:2:1712:HOH:O	2.09	0.69
2:2:749:G:C2'	2:2:750:U:C6	2.76	0.69
2:2:866:U:H2'	2:2:867:G:H8	1.58	0.69
2:2:1231:A:H5'	48:n:84:VAL:HG21	1.74	0.69
2:2:1275:C:O2'	22:N:154:ARG:NH2	2.26	0.69
3:3:129:G:H21	3:3:130:G:C1'	2.05	0.69
6:6:54:A:H2'	6:6:55:U:H5'	1.74	0.69
13:E:5:LYS:H	13:E:58:ARG:NH1	1.90	0.69
18:J:115:GLY:HA2	18:J:134:HIS:HB3	1.74	0.69
23:O:18:VAL:HG21	23:O:24:ARG:NH2	2.07	0.69
27:S:98:LYS:O	27:S:100[A]:ARG:NH1	2.26	0.69
1:1:404:G:OP2	44:j:52:LYS:NZ	2.26	0.69
2:2:1057:U:H3	2:2:1077:G:H1	1.38	0.69
18:J:19:LEU:HB2	18:J:54:ALA:HB3	1.75	0.69
35:a:85:LYS:HA	35:a:88:ARG:CD	2.22	0.69
47:m:50:LYS:HE2	47:m:56:ARG:HD2	1.74	0.69
1:1:956:U:H2'	1:1:957:C:H5"	1.75	0.69
1:1:1208:U:N3	1:1:1260:G:O6	2.23	0.69
2:2:1043:G:N1	2:2:1053:C:N3	2.38	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1079:OMG:OP1	2:2:1080:U:H1'	1.93	0.69
4:4:141:A:N7	4:4:146:C:N4	2.35	0.69
1:1:1186:A:N3	2:2:1265:U:O2'	2.25	0.68
6:6:38:C:C5'	41:g:28:ARG:HH11	2.06	0.68
9:A:89:PHE:H	9:A:100:ASN:HD22	1.41	0.68
1:1:1763:A:H2'	30:V:128:ARG:NH2	2.08	0.68
1:1:1778:G:H1	2:2:6:A:N6	1.92	0.68
2:2:806:C:N3	2:2:807:A:N6	2.41	0.68
8:8:117:A:N6	8:8:118:C:N4	2.41	0.68
10:B:310:LYS:CE	10:B:368:THR:OG1	2.41	0.68
19:K:93:ARG:CD	19:K:108:VAL:HG12	2.24	0.68
39:e:147:GLN:HB2	39:e:164:VAL:HB	1.75	0.68
42:h:21:MET:HE3	42:h:33:MET:SD	2.34	0.68
1:1:238:A:C6	1:1:239:U:C4	2.82	0.68
2:2:390:A:H1'	2:2:527:A2M:H61	1.56	0.68
2:2:1254:OMG:H4'	2:2:1254:OMG:HM23	1.75	0.68
4:4:95:U:P	25:Q:62:ARG:NH2	2.65	0.68
13:E:117:GLU:OE2	13:E:119:ARG:NE	2.27	0.68
25:Q:23:TRP:CE3	25:Q:51:ILE:HD12	2.03	0.68
36:b:18:ARG:HG2	36:b:18:ARG:HH11	1.58	0.68
1:1:884:G:H1	1:1:912:C:H5	1.41	0.68
3:3:77:U:O4	3:3:140:A:N6	2.20	0.68
8:8:13:A:N1	8:8:68:G:O2'	2.24	0.68
16:H:181:GLU:OE1	16:H:185:ARG:NH1	2.25	0.68
40:f:22:ARG:NH1	40:f:25:LEU:HD23	2.07	0.68
1:1:251:A:N1	31:W:8:SER:N	2.41	0.68
1:1:417:G:O2'	1:1:442:A:N6	2.27	0.68
1:1:498:G:H1	1:1:555:U:H3	1.39	0.68
1:1:1002:A:O3'	36:b:18:ARG:NH2	2.26	0.68
2:2:973:C:H3'	9:A:89:PHE:HZ	1.58	0.68
4:4:157:A:O2'	4:4:158:A:OP1	2.11	0.68
19:K:52:GLN:HE22	41:g:63:THR:HB	1.57	0.68
37:c:92:LYS:HB3	37:c:201:CYS:HB2	1.75	0.68
42:h:69:SER:O	42:h:73:LYS:NZ	2.27	0.68
1:1:776:U:H3'	1:1:777:G:H8	1.59	0.68
1:1:1248:C:N3	16:H:152:ARG:NH2	2.41	0.68
1:1:1749:U:OP2	42:h:9:ARG:NH1	2.26	0.68
5:5:125:A:C2'	5:5:126:G:H5'	2.23	0.68
21:M:138:MET:HG2	21:M:143:ARG:HH21	1.58	0.68
24:P:77:PHE:HE2	36:b:62:ARG:HH22	1.39	0.68
42:h:14:TYR:O	42:h:19:ASN:ND2	2.27	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1273:U:OP1	13:E:62:SER:OG	2.10	0.68
1:1:1602:U:H5	2:2:18:A:N1	1.92	0.68
2:2:1198:C:H3'	2:2:1199:G:H5"	1.76	0.68
24:P:165:PRO:HB3	24:P:193:LYS:HB3	1.76	0.68
28:T:6:ARG:HD3	28:T:116:HIS:CD2	2.29	0.68
1:1:697:A:H1'	17:I:13:GLN:HE22	1.57	0.68
3:3:209:G:H2'	3:3:210:G:C5'	2.17	0.68
6:6:13:C:H2'	6:6:14:A:H2'	1.74	0.68
6:6:41:G:H1	19:K:176:ARG:NH1	1.91	0.68
19:K:67:ALA:HB3	19:K:123:VAL:HA	1.75	0.68
1:1:754:G:C6	20:L:114:HIS:HB3	2.29	0.68
1:1:1258:A:O2'	1:1:1259:C:O5'	2.12	0.68
2:2:1174:G:N2	2:2:1177:A:OP2	2.27	0.68
4:4:140:G:H2'	4:4:141:A:C8	2.29	0.68
8:8:30:C:OP2	23:O:57:ASN:ND2	2.27	0.68
22:N:152:LEU:O	22:N:156:LYS:N	2.22	0.68
1:1:380:C:OP2	11:C:196:ARG:NH2	2.18	0.68
1:1:740:C:H2'	1:1:741:G:H5'	1.74	0.68
1:1:1062:A:OP1	22:N:39:ARG:NE	2.26	0.68
1:1:1541:A2M:H2'	1:1:1542:OMG:O4'	1.94	0.68
1:1:1746:A:O2'	1:1:1771:A:N3	2.27	0.68
2:2:1310:G:N7	50:2:1737:HOH:O	2.27	0.68
8:8:44:A:C8	8:8:45:U:C5	2.82	0.68
16:H:73:LEU:HD23	16:H:76:LEU:HD12	1.75	0.68
1:1:679:A:H4'	1:1:680:C:OP2	1.93	0.67
1:1:839:U:H2'	1:1:840:G:H8	1.60	0.67
1:1:889:G:N2	3:3:118:U:OP1	2.27	0.67
2:2:443:OMC:H5'	2:2:488:A:H61	1.57	0.67
6:6:20:A:N1	6:6:27:G:N7	2.42	0.67
1:1:174:U:O2	1:1:283:G:N2	2.27	0.67
1:1:242:A:H61	1:1:260:C:H42	1.41	0.67
1:1:799:U:OP2	24:P:73:ARG:NH1	2.27	0.67
1:1:1672:A:C2	1:1:1729:A:N6	2.62	0.67
1:1:1769:A:O2'	3:3:70:A:N1	2.24	0.67
2:2:98:G:OP1	2:2:115:G:N1	2.27	0.67
2:2:1386:G:OP1	2:2:1421:A:N6	2.23	0.67
1:1:1594:G:O6	50:1:1970:HOH:O	2.10	0.67
11:C:30:PRO:HB3	24:P:25:TYR:HE2	1.59	0.67
15:G:323:LEU:HB2	15:G:328:ARG:HD2	1.75	0.67
18:J:30:ASN:CB	18:J:114:SER:HB2	2.24	0.67
28:T:64:ASN:O	28:T:67:ILE:HG23	1.95	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:d:42:LYS:HE3	38:d:96:ASN:HA	1.77	0.67
1:1:77:U:H5”	21:M:186:PRO:HG3	1.75	0.67
1:1:176:C:HO2’	1:1:177:A:H8	1.40	0.67
1:1:843:C:H5”	20:L:2:PRO:HG2	1.75	0.67
1:1:1061:G:OP1	22:N:39:ARG:NH1	2.21	0.67
1:1:1062:A:H61	1:1:1090:U:H3	1.41	0.67
1:1:376:A:O2’	11:C:49:GLN:NE2	2.28	0.67
1:1:487:G:H22	1:1:648:A:H2	1.43	0.67
1:1:1778:G:N2	2:2:6:A:N1	2.40	0.67
2:2:1159:A:H5”	2:2:1159:A:C8	2.29	0.67
19:K:71:VAL:O	19:K:82:VAL:HG23	1.93	0.67
35:a:111:GLN:OE1	35:a:111:GLN:HA	1.93	0.67
1:1:1529:OMC:HM22	11:C:94:MET:HG2	1.76	0.67
2:2:749:G:HO2’	2:2:750:U:H6	1.42	0.67
8:8:48:G:H2’	8:8:48:G:N3	2.08	0.67
23:O:185:ARG:NH2	23:O:185:ARG:O	2.28	0.67
41:g:64:ARG:HB2	41:g:113:ASN:HA	1.77	0.67
1:1:828:U:OP1	36:b:34:ARG:NH1	2.28	0.67
1:1:1144:G:H2’	1:1:1145:G:H8	1.59	0.67
2:2:70:A:O2’	2:2:71:OMG:H5’	1.95	0.67
3:3:129:G:N2	3:3:130:G:C1’	2.57	0.67
5:5:34:G:H1	5:5:116:U:H3	1.42	0.67
6:6:28:A:C2	6:6:29:G:N1	2.62	0.67
8:8:13:A:O2’	8:8:15:A:OP2	2.12	0.67
1:1:953:G:C2’	1:1:954:U:H5’	2.25	0.67
1:1:1538:C:H5	2:2:603:A:H62	1.43	0.67
2:2:387:U:OP1	50:2:1706:HOH:O	2.11	0.67
3:3:129:G:N2	3:3:130:G:H1’	2.09	0.67
8:8:95:A:O2’	26:R:122:ASN:ND2	2.28	0.67
21:M:13:LYS:HZ1	43:i:47:ILE:HG22	1.60	0.67
21:M:181:ALA:HB1	21:M:184:LEU:HB2	1.76	0.67
1:1:490:C:H42	1:1:645:G:H1	1.41	0.67
1:1:647:G:H5”	41:g:92:LYS:HG3	1.74	0.67
1:1:868:A:H8	44:j:15:THR:HG1	1.39	0.67
1:1:1443:U:H1’	24:P:17:HIS:HE1	1.58	0.67
2:2:769:A:O2’	15:G:134:PHE:O	2.06	0.67
2:2:1178:G:O2’	23:O:35:GLN:OE1	2.13	0.67
14:F:80:ASP:OD1	14:F:81:SER:N	2.25	0.67
19:K:180:HIS:CB	19:K:183:ARG:NH1	2.58	0.67
11:C:206:PRO:HB3	11:C:247:PHE:HD2	1.58	0.67
22:N:45:GLU:O	22:N:141:LYS:NZ	2.26	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:S:68:THR:HG22	36:b:37:TRP:HB2	1.77	0.67
1:1:752:G:HO2'	1:1:810:C:HO2'	1.37	0.66
2:2:446:U:O2'	2:2:664:G:N2	2.28	0.66
6:6:26:G:N3	6:6:26:G:H3'	2.09	0.66
14:F:53:ILE:HA	14:F:65:VAL:HG12	1.77	0.66
1:1:79:U:OP1	21:M:197:ARG:NH2	2.28	0.66
2:2:667:OMU:O2'	48:n:52:GLY:HA2	1.95	0.66
2:2:749:G:OP2	2:2:749:G:H4'	1.94	0.66
9:A:65:HIS:CD2	9:A:68:LYS:H	2.13	0.66
10:B:86:ILE:HD13	10:B:164:ALA:HB2	1.77	0.66
15:G:193:ARG:HH12	15:G:213:ALA:HA	1.59	0.66
1:1:222:A:H2'	1:1:223:A:H8	1.60	0.66
3:3:20:U:OP1	42:h:70:ARG:NH1	2.28	0.66
6:6:6:G:OP1	41:g:136:ARG:NH2	2.27	0.66
7:7:127:C:O2	7:7:136:G:N2	2.26	0.66
23:O:23:ARG:HD3	23:O:23:ARG:C	2.20	0.66
2:2:390:A:C1'	2:2:527:A2M:N6	2.58	0.66
5:5:33:G:H1	5:5:117:U:H3	1.41	0.66
6:6:17:U:C2	6:6:30:C:O2'	2.49	0.66
8:8:117:A:C6	8:8:118:C:N4	2.63	0.66
13:E:135:ASP:O	13:E:140:LYS:HD2	1.96	0.66
21:M:88:GLY:HA3	48:n:50:TYR:CZ	2.29	0.66
23:O:108:ARG:NE	23:O:260:PRO:O	2.25	0.66
24:P:101:ARG:HG2	24:P:101:ARG:NH2	2.01	0.66
25:Q:15:LEU:HD12	25:Q:22:VAL:HG12	1.75	0.66
1:1:1537:G:H21	2:2:604:A:H62	1.43	0.66
1:1:1621:U:OP1	50:1:1968:HOH:O	2.14	0.66
5:5:112:A:C8	39:e:89:LYS:HA	2.24	0.66
6:6:42:A:N3	6:6:43:A:N7	2.44	0.66
18:J:81:ILE:HD11	18:J:103:VAL:HG13	1.77	0.66
37:c:173:ILE:HD13	37:c:194:MET:HE1	1.78	0.66
48:n:36:PHE:O	48:n:41:ARG:NH1	2.28	0.66
48:n:92:GLU:OE1	48:n:94:ASN:ND2	2.25	0.66
1:1:19:G:N2	7:7:149:A:N1	2.32	0.66
1:1:135:A:C4	35:a:112:MET:CE	2.78	0.66
1:1:819:C:O2	1:1:821:C:O2'	2.13	0.66
2:2:749:G:O2'	2:2:750:U:O4'	2.13	0.66
2:2:1343:G:H2'	2:2:1344:A:H8	1.61	0.66
6:6:10:C:H42	6:6:33:G:H1	1.41	0.66
8:8:48:G:C2	8:8:49:U:C2	2.83	0.66
10:B:176:VAL:HG22	10:B:340:ARG:HB3	1.76	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:N:65:LEU:HD21	22:N:135:LEU:HD22	1.78	0.66
23:O:31:HIS:CD2	23:O:34:ARG:HH21	2.14	0.66
37:c:36:PHE:O	37:c:40:VAL:N	2.27	0.66
47:m:39:CYS:CB	47:m:47:PHE:CE2	2.76	0.66
1:1:47:C:N4	21:M:188:TYR:CE1	2.64	0.66
1:1:894:G:O6	1:1:901:C:N4	2.28	0.66
2:2:751:U:H2'	2:2:752:G:C8	2.31	0.66
2:2:1151:U:O2'	27:S:88:ARG:O	2.11	0.66
36:b:44:ALA:O	36:b:48:ARG:NH1	2.29	0.66
1:1:135:A:N3	35:a:112:MET:HE2	2.10	0.66
1:1:931:G:OP1	28:T:131:ARG:NH1	2.29	0.66
1:1:1285:A:H2	1:1:1350:U:H1'	1.61	0.66
1:1:36:OMU:HM22	1:1:37:A:C5'	2.26	0.66
1:1:429:G:H4'	28:T:18:LYS:HB2	1.77	0.66
1:1:672:U:O4	50:1:1946:HOH:O	2.14	0.66
1:1:1445:U:O4'	1:1:1466:G:O2'	2.13	0.66
2:2:70:A:H2'	2:2:71:OMG:C5'	2.26	0.66
2:2:490:A:O4'	9:A:243:THR:HG21	1.96	0.66
2:2:619:A:H62	2:2:1306:C:H1'	1.61	0.66
5:5:37:G:H4'	10:B:373:GLY:HA3	1.77	0.66
7:7:145:G:C4'	30:V:52:ARG:HH11	2.06	0.66
10:B:57:VAL:HB	10:B:365:PHE:HB3	1.78	0.66
2:2:44:C:O2'	4:4:94:G:OP1	2.14	0.66
2:2:439:U:H5"	2:2:440:G:H5'	1.77	0.66
7:7:36:G:O2'	7:7:103:A:N1	2.24	0.66
16:H:29:LEU:HD13	16:H:59:LEU:HD21	1.77	0.66
19:K:180:HIS:CE1	19:K:181:TRP:CD1	2.84	0.66
22:N:99:ILE:HD12	22:N:123:ASN:HD22	1.59	0.66
33:Y:14:THR:HG21	42:h:89:ARG:HD3	1.76	0.66
48:n:71:LYS:HG2	48:n:82:GLN:HG2	1.77	0.66
4:4:116:G:OP1	10:B:339:ARG:NH1	2.29	0.65
4:4:168:A:O2'	4:4:169:A:OP2	2.12	0.65
40:f:86:LEU:HD22	40:f:118:VAL:HG13	1.77	0.65
2:2:392:C:OP1	9:A:200:ARG:NH2	2.30	0.65
2:2:1450:A:H2'	2:2:1451:G:C8	2.31	0.65
10:B:93:ARG:HG3	10:B:102:ILE:CG2	2.27	0.65
37:c:99:ILE:HD12	37:c:100:ARG:HG3	1.78	0.65
47:m:44:LYS:NZ	47:m:59:GLY:CA	2.57	0.65
1:1:1578:U:H5"	25:Q:5:LYS:HD3	1.76	0.65
1:1:1608:C:N4	1:1:1620:G:OP2	2.28	0.65
6:6:16:C:O2	6:6:30:C:H1'	1.95	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:E:5:LYS:H	13:E:58:ARG:HH12	1.42	0.65
19:K:180:HIS:HE1	19:K:181:TRP:CD1	2.15	0.65
31:W:82:VAL:HG21	31:W:96:ILE:HD11	1.77	0.65
1:1:931:G:H5'	28:T:132:ALA:HB2	1.77	0.65
2:2:1248:C:H2'	2:2:1249:OMC:H4'	1.79	0.65
9:A:74:GLU:HG2	9:A:76:MET:HE3	1.77	0.65
1:1:959:OMG:HN1	21:M:76:HIS:HD2	1.44	0.65
3:3:182:G:O5'	42:h:20:ARG:NH2	2.29	0.65
3:3:209:G:C5	3:3:210:G:H2'	2.32	0.65
10:B:311:THR:O	10:B:368:THR:HG21	1.97	0.65
16:H:200:ALA:CB	19:K:185:VAL:HG11	2.23	0.65
1:1:83:A:H61	1:1:98:A:H3'	1.61	0.65
2:2:575:C:OP1	50:2:1725:HOH:O	2.15	0.65
2:2:1133:A:H2	27:S:49:ARG:HH21	1.45	0.65
6:6:28:A:C4	6:6:29:G:C5	2.84	0.65
6:6:38:C:N4	41:g:29:LYS:O	2.30	0.65
24:P:30:ILE:HG23	24:P:49:TYR:HE1	1.61	0.65
1:1:511:A:N6	1:1:541:A:N7	2.45	0.65
1:1:1738:A:OP2	50:1:1969:HOH:O	2.13	0.65
2:2:526:A:O2'	2:2:527:A2M:O5'	2.12	0.65
2:2:591:A2M:CM'	2:2:592:C:H5'	2.21	0.65
6:6:28:A:N3	6:6:29:G:C6	2.63	0.65
19:K:180:HIS:CD2	19:K:184:LYS:HE2	2.32	0.65
27:S:40:VAL:HB	27:S:96:VAL:HG13	1.78	0.65
40:f:23:TYR:CD2	40:f:24:GLU:OE2	2.50	0.65
1:1:373:G:N2	7:7:29:C:O2	2.23	0.65
2:2:779:U:O2'	15:G:328:ARG:NH1	2.29	0.65
6:6:17:U:C5	19:K:43:PRO:CD	2.79	0.65
13:E:93:CYS:N	13:E:141:ASP:OD2	2.28	0.65
17:I:59:LEU:HD22	17:I:80:PHE:HZ	1.61	0.65
21:M:73:ARG:HH12	21:M:86:THR:HB	1.62	0.65
40:f:23:TYR:CE2	40:f:24:GLU:OE2	2.50	0.65
7:7:6:G:H2'	7:7:7:OMU:C6	2.26	0.65
10:B:48:VAL:HG21	10:B:79:LEU:HD13	1.78	0.65
17:I:79:GLY:HA3	17:I:103:ASP:HB2	1.79	0.65
40:f:87:VAL:HG21	40:f:116:LEU:HD12	1.79	0.65
1:1:831:C:N4	24:P:179:GLU:O	2.30	0.64
7:7:52:A:OP2	50:7:313:HOH:O	2.14	0.64
11:C:170:LEU:HD11	11:C:225:LEU:HD22	1.79	0.64
11:C:189:ARG:HD2	11:C:193:GLY:HA3	1.79	0.64
23:O:185:ARG:O	23:O:185:ARG:HD2	1.97	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1041:U:H5”	27:S:100[B]:ARG:CZ	2.28	0.64
1:1:1525:A:H4’	40:f:28:GLN:NE2	2.11	0.64
8:8:85:G:H5”	8:8:85:G:C8	2.32	0.64
10:B:366:ILE:HD12	10:B:366:ILE:N	2.13	0.64
21:M:159:ARG:HB2	21:M:164:LEU:HB2	1.79	0.64
37:c:106:ASN:OD1	37:c:107:PRO:HD2	1.98	0.64
46:l:27:ILE:O	46:l:33:ASN:ND2	2.30	0.64
1:1:852:A:N6	17:I:18:ASN:OD1	2.30	0.64
1:1:1115:C:H4’	1:1:1116:A:H5’	1.79	0.64
2:2:1436:A:O2’	2:2:1438:A:OP2	2.15	0.64
11:C:43:MET:HB2	11:C:236:LEU:HD11	1.80	0.64
11:C:45:LYS:O	11:C:48:ARG:HG2	1.98	0.64
13:E:34:LEU:HD22	13:E:149:ASP:HA	1.80	0.64
24:P:152:GLY:HA2	24:P:157:ARG:HH21	1.63	0.64
1:1:395:A:N1	11:C:83:THR:HG22	2.13	0.64
1:1:1539:G:OP1	28:T:65:GLY:HA3	1.96	0.64
2:2:749:G:H2’	2:2:750:U:C5	2.32	0.64
2:2:815:G:H4’	2:2:816:G:OP1	1.98	0.64
2:2:1385:A:H5”	2:2:1386:G:H5’	1.79	0.64
8:8:2:C:C4	8:8:120:C:C2	2.85	0.64
9:A:82:MET:HG3	9:A:86:GLN:OE1	1.97	0.64
21:M:122:ASN:HD22	21:M:123:MET:H	1.45	0.64
28:T:127:ARG:O	28:T:139:TYR:HB3	1.97	0.64
1:1:962:C:OP1	9:A:14:SER:OG	2.15	0.64
3:3:22:G:O6	3:3:209:G:C2	2.35	0.64
4:4:139:U:H4’	13:E:150:LEU:HD21	1.79	0.64
8:8:72:A:HO2’	8:8:73:G:H8	1.45	0.64
14:F:42:LEU:HD11	14:F:85:ILE:HG13	1.79	0.64
21:M:73:ARG:NH1	21:M:86:THR:HB	2.12	0.64
24:P:186:THR:HA	24:P:191:LYS:HB2	1.79	0.64
1:1:171:U:H3’	1:1:172:G:H8	1.61	0.64
1:1:1672:A:C6	1:1:1729:A:N6	2.66	0.64
2:2:828:U:O2	2:2:956:C:N4	2.30	0.64
3:3:88:G:O2’	3:3:89:C:O4’	2.15	0.64
37:c:120:GLN:HG2	37:c:123:ASN:HD21	1.61	0.64
1:1:1555:G:H1	1:1:1576:C:H42	1.46	0.64
2:2:1151:U:C2’	2:2:1152:U:C5’	2.71	0.64
8:8:14:U:OP2	8:8:69:C:O2’	2.15	0.64
1:1:179:G:O2’	1:1:180:A:O5’	2.15	0.64
1:1:238:A:N6	1:1:239:U:C4	2.61	0.64
2:2:1042:G:H1	2:2:1055:U:H3	1.46	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:6:54:A:O2'	6:6:55:U:H5'	1.97	0.64
7:7:139:A:O2'	7:7:140:U:OP1	2.15	0.64
10:B:102:ILE:HD11	10:B:157:ALA:HB2	1.80	0.64
13:E:95:TYR:CZ	13:E:100:ILE:HG12	2.33	0.64
7:7:41:A:H5'	44:j:67:LEU:HD13	1.80	0.64
23:O:17:GLN:NE2	27:S:21:LYS:HA	2.13	0.64
31:W:33:SER:HA	31:W:102:GLU:OE2	1.97	0.64
1:1:490:C:O2'	6:6:54:A:H2	1.81	0.64
1:1:728:C:H1'	1:1:730:G:C6	2.33	0.64
1:1:1253:U:OP1	16:H:74:GLN:NE2	2.31	0.64
1:1:1278:G:N2	1:1:1351:C:N3	2.35	0.64
2:2:997:C:H2'	2:2:998:A:H8	1.61	0.64
7:7:28:C:H5"	17:I:32:ASN:HB3	1.80	0.64
13:E:43:LEU:HD21	13:E:72:THR:HG21	1.79	0.64
22:N:100:ASN:ND2	22:N:118:ALA:O	2.30	0.64
23:O:107:ARG:HG3	23:O:256:ILE:HG22	1.81	0.64
1:1:1750:G:HO2'	3:3:149:U:HO2'	1.43	0.63
3:3:137:A:O2'	3:3:138:A:O5'	2.16	0.63
17:I:108:ASN:HB3	17:I:114:MET:HE2	1.80	0.63
1:1:136:G:H4'	1:1:137:G:OP1	1.98	0.63
1:1:171:U:O2'	1:1:172:G:OP1	2.15	0.63
1:1:560:G:H4'	1:1:561:G:OP2	1.98	0.63
2:2:667:OMU:H4'	48:n:53:GLN:HB2	1.79	0.63
2:2:1184:C:O2'	2:2:1185:C:OP1	2.15	0.63
4:4:153:C:O2	13:E:155:ARG:NH2	2.31	0.63
6:6:10:C:N4	6:6:33:G:H1	1.96	0.63
8:8:2:C:H2'	8:8:3:G:C8	2.33	0.63
14:F:184:VAL:O	41:g:32:ARG:NH1	2.30	0.63
2:2:436:U:H5'	47:m:21:ASN:HD22	1.62	0.63
2:2:459:A:OP2	2:2:477:G:N1	2.31	0.63
8:8:48:G:N2	8:8:49:U:C2	2.67	0.63
9:A:112:ILE:HD11	9:A:133:TYR:CD1	2.33	0.63
22:N:76:MET:O	22:N:80:ALA:N	2.30	0.63
24:P:139:THR:HG23	24:P:141:LYS:HG2	1.80	0.63
13:E:91:VAL:HG21	13:E:160:LEU:HD11	1.80	0.63
19:K:180:HIS:HE2	19:K:184:LYS:CE	2.09	0.63
22:N:53:VAL:C	22:N:163:GLN:HE22	2.05	0.63
25:Q:14:ILE:HD11	25:Q:38:ARG:HB2	1.81	0.63
39:e:85:ILE:HD12	39:e:144:VAL:HG21	1.81	0.63
1:1:1394:U:H2'	1:1:1395:U:H5'	1.79	0.63
2:2:351:C:OP1	25:Q:88:ARG:NH2	2.32	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:803:A:H4'	15:G:313:VAL:HG21	1.81	0.63
2:2:806:C:H2'	2:2:807:A:C8	2.32	0.63
2:2:972:A:OP1	15:G:123:GLN:NE2	2.31	0.63
3:3:92:G:O2'	3:3:93:G:N7	2.30	0.63
6:6:40:C:H42	41:g:24:VAL:H	1.46	0.63
9:A:137:ILE:HD11	9:A:149:LYS:HB2	1.79	0.63
16:H:92:ARG:HG2	16:H:165:GLY:HA3	1.79	0.63
33:Y:48:LYS:HB3	33:Y:69:GLY:H	1.64	0.63
2:2:1322:U:H4'	10:B:266:MET:HE1	1.79	0.63
4:4:112:C:O2'	5:5:39:C:OP1	2.16	0.63
8:8:4:A:O2'	8:8:5:G:H8	1.80	0.63
15:G:263:ALA:HB2	15:G:303:VAL:HG21	1.80	0.63
18:J:111:MET:HG2	18:J:134:HIS:CD2	2.34	0.63
21:M:71:ARG:O	21:M:71:ARG:HD3	1.98	0.63
28:T:6:ARG:NH2	28:T:116:HIS:CB	2.50	0.63
48:n:5:PRO:HA	48:n:95:ASP:HA	1.81	0.63
48:n:47:GLN:HE22	48:n:53:GLN:HG2	1.63	0.63
1:1:1551:U:H2'	1:1:1552:A:C8	2.34	0.63
2:2:16:G:O2'	46:l:3[A]:ARG:O	2.17	0.63
2:2:871:U:O2	2:2:939:G:N2	2.31	0.63
2:2:1175:A:H1'	23:O:185:ARG:HH11	1.63	0.63
4:4:115:A:HO2'	5:5:111:G:H22	1.46	0.63
6:6:53:U:O2	14:F:80:ASP:HB2	1.98	0.63
8:8:81:U:H2'	8:8:82:G:C8	2.34	0.63
19:K:180:HIS:O	19:K:183:ARG:HG3	1.99	0.63
1:1:1143:C:H2'	1:1:1144:G:C8	2.34	0.63
8:8:34:A:N6	8:8:43:G:N3	2.45	0.63
10:B:292:ARG:HG2	10:B:293:SER:H	1.64	0.63
15:G:218:VAL:HB	15:G:284:ALA:HB3	1.80	0.63
21:M:200:PHE:HB3	21:M:204:ARG:HH21	1.63	0.63
37:c:106:ASN:HB3	37:c:109:GLN:HG2	1.79	0.63
2:2:1408:A:N7	9:A:215:ASN:ND2	2.46	0.63
3:3:139:G:H2'	3:3:140:A:H8	1.64	0.63
6:6:37:C:C5	14:F:185:LYS:HD3	2.33	0.63
7:7:33:U:O2'	7:7:34:U:OP2	2.16	0.63
8:8:11:C:C5'	8:8:12:C:OP2	2.47	0.63
13:E:88:ARG:HB2	13:E:186:ILE:HB	1.81	0.63
1:1:491:A:N1	1:1:644:G:N2	2.47	0.62
1:1:568:U:C4	1:1:634:G:O6	2.51	0.62
1:1:923:G:O2'	2:2:92:A:OP1	2.13	0.62
1:1:995:C:H5	1:1:1467:G:N1	1.97	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1780:G:N2	3:3:14:A:O2'	2.32	0.62
2:2:442:C:H2'	2:2:488:A:N6	2.14	0.62
5:5:36:U:O2'	10:B:372:ILE:CG2	2.47	0.62
7:7:168:G:H2'	7:7:169:A:C8	2.34	0.62
10:B:368:THR:H	10:B:378:GLN:HE22	1.47	0.62
16:H:95:SER:OG	16:H:124:GLU:OE1	2.16	0.62
24:P:117:ARG:NH1	24:P:127:CYS:SG	2.71	0.62
26:R:103:GLY:O	26:R:107:GLN:NE2	2.32	0.62
1:1:193:A:H2'	1:1:194:A:C8	2.34	0.62
1:1:1122:U:O2'	1:1:1144:G:N2	2.32	0.62
2:2:1270:G:N2	2:2:1297:U:O2	2.21	0.62
6:6:41:G:N2	19:K:173:VAL:HG12	2.12	0.62
8:8:63:C:O2'	8:8:64:A:O5'	2.17	0.62
9:A:112:ILE:HG21	47:m:79:VAL:HG13	1.81	0.62
1:1:1611:A:N1	1:1:1622:A:O2'	2.30	0.62
3:3:82:G:N2	3:3:91:G:O6	2.16	0.62
14:F:40:ILE:HB	14:F:85:ILE:HB	1.81	0.62
14:F:174:LYS:HA	14:F:177:TYR:HB3	1.81	0.62
8:8:85:G:C5'	8:8:85:G:H8	2.11	0.62
10:B:321:TYR:HD1	10:B:340:ARG:CG	2.11	0.62
15:G:224:VAL:HG13	15:G:284:ALA:HB2	1.80	0.62
16:H:52:THR:HG23	16:H:121:VAL:HB	1.80	0.62
16:H:108:ARG:HH11	16:H:108:ARG:CG	2.12	0.62
23:O:41:LYS:NZ	27:S:32:THR:O	2.33	0.62
39:e:167:ASN:OD1	39:e:168:VAL:N	2.32	0.62
1:1:754:G:N2	1:1:768:C:OP2	2.33	0.62
1:1:1180:U:H1'	1:1:1181:U:H5'	1.82	0.62
6:6:16:C:N3	6:6:17:U:C4	2.67	0.62
6:6:42:A:O2'	6:6:43:A:O4'	2.16	0.62
1:1:491:A:H61	1:1:644:G:H1	1.47	0.62
1:1:953:G:H2'	1:1:954:U:H5'	1.80	0.62
1:1:1063:G:N2	1:1:1089:C:O2	2.32	0.62
1:1:1268:G:O6	1:1:1360:C:N4	2.30	0.62
1:1:1727:U:H3'	1:1:1728:G:C8	2.34	0.62
2:2:606:G:O2'	2:2:608:C:OP2	2.16	0.62
2:2:1011:U:O3'	15:G:148:ARG:NH1	2.32	0.62
10:B:292:ARG:HE	10:B:296:VAL:HG11	1.64	0.62
13:E:26:THR:HA	13:E:35:THR:HG22	1.82	0.62
42:h:21:MET:CE	42:h:33:MET:HG3	2.25	0.62
1:1:154:A:H8	1:1:301:A:H62	1.46	0.62
1:1:251:A:N6	1:1:376:A:OP1	2.32	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:892:C:O3'	25:Q:126:ARG:NH1	2.31	0.62
1:1:1481:A:N6	1:1:1510:A:O2'	2.32	0.62
6:6:21:A:H1'	6:6:22:G:P	2.39	0.62
16:H:103:ARG:HH11	16:H:103:ARG:CG	2.12	0.62
35:a:92:THR:HG1	35:a:95:ARG:HG3	1.65	0.62
48:n:28:TYR:HB2	48:n:71:LYS:HG3	1.82	0.62
1:1:980:A:O2'	44:j:49:TRP:O	2.12	0.62
1:1:988:G:N2	1:1:1012:C:OP1	2.33	0.62
2:2:1012:G:H22	15:G:153:ARG:HH12	1.48	0.62
4:4:173:C:O2'	4:4:175:G:OP1	2.16	0.62
4:4:180:C:H1'	5:5:3:C:H1'	1.82	0.62
6:6:51:A:C8	14:F:45:ARG:NH1	2.68	0.62
9:A:28:LYS:O	9:A:74:GLU:OE2	2.17	0.62
10:B:25:ILE:HG22	10:B:277:TYR:HE1	1.65	0.62
1:1:208:C:N3	1:1:209:C:N4	2.47	0.62
1:1:398:G:N1	1:1:401:A:OP2	2.31	0.62
1:1:543:G:N3	1:1:543:G:H3'	2.15	0.62
1:1:847:OMU:H5'	17:I:2:PRO:O	2.00	0.62
18:J:116:ILE:H	18:J:116:ILE:CD1	2.12	0.62
1:1:1057:A:H3'	1:1:1058:U:C6	2.35	0.62
2:2:362:A:N6	4:4:90:G:O2'	2.31	0.62
2:2:526:A:H4'	2:2:527:A2M:OP1	2.00	0.62
2:2:663:U:O2'	2:2:1404:H2U:H52	2.00	0.62
2:2:834:G:O6	2:2:951:G:N2	2.31	0.62
39:e:86:HIS:CD2	39:e:89:LYS:HB2	2.35	0.62
1:1:458:A:C2	1:1:459:A:H1'	2.35	0.61
1:1:1163:G:O6	24:P:13:ARG:NH2	2.29	0.61
3:3:36:C:H5"	25:Q:96:MET:HE1	1.82	0.61
9:A:105:GLY:HA3	9:A:160:SER:HB3	1.81	0.61
20:L:75:LEU:HG	20:L:111:GLY:HA2	1.81	0.61
25:Q:147:ASN:O	25:Q:151:LYS:N	2.33	0.61
1:1:555:U:OP1	41:g:143:GLN:NE2	2.32	0.61
2:2:771:G:N7	9:A:67:TYR:OH	2.24	0.61
2:2:1449:A:H3'	2:2:1450:A:C8	2.35	0.61
13:E:150:LEU:HD23	13:E:151:GLU:HB2	1.82	0.61
22:N:43:VAL:HG12	22:N:171:TRP:HE1	1.64	0.61
1:1:905:G:H4'	25:Q:130:ASN:HD22	1.65	0.61
1:1:1202:G:N2	1:1:1401:U:O2'	2.33	0.61
2:2:1152:U:H2'	2:2:1153:OMU:H6	1.82	0.61
3:3:39:U:H1'	3:3:139:G:H5"	1.82	0.61
10:B:321:TYR:HD1	10:B:340:ARG:HG2	1.64	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:H:137:VAL:HA	19:K:45:SER:O	2.00	0.61
16:H:146:VAL:HG12	19:K:55:ALA:HB1	1.81	0.61
27:S:100[B]:ARG:C	27:S:102:GLN:H	2.08	0.61
48:n:6:LYS:H	48:n:95:ASP:HB2	1.64	0.61
1:1:770:G:H22	1:1:806:A:H2	1.49	0.61
1:1:801:G:N3	24:P:147:ARG:NH1	2.48	0.61
1:1:831:C:OP1	24:P:184:ARG:NH2	2.33	0.61
2:2:787:G:H1	2:2:807:A:H61	1.48	0.61
6:6:41:G:H3'	19:K:180:HIS:NE2	2.14	0.61
11:C:158:GLN:HA	11:C:215:GLY:HA3	1.82	0.61
15:G:143:MET:HE2	21:M:29:GLU:HA	1.82	0.61
18:J:64:VAL:HG21	18:J:71:LEU:HD13	1.82	0.61
18:J:82:ARG:NH1	18:J:118:GLY:HA3	2.15	0.61
19:K:94:VAL:CG2	19:K:109:GLN:O	2.49	0.61
35:a:85:LYS:HA	35:a:88:ARG:HG3	1.82	0.61
42:h:58:LYS:HE2	42:h:72:GLU:HB3	1.83	0.61
1:1:317:U:O2'	1:1:319:G:N7	2.28	0.61
1:1:839:U:H2'	1:1:840:G:C8	2.35	0.61
8:8:34:A:N1	8:8:43:G:C2	2.69	0.61
8:8:40:U:C2'	8:8:44:A:H62	2.13	0.61
10:B:346:ARG:HH12	10:B:349:MET:HG2	1.64	0.61
1:1:367:A:H4'	1:1:368:G:OP2	2.01	0.61
1:1:752:G:N7	20:L:108:LYS:NZ	2.37	0.61
1:1:1245:G:N3	26:R:114:SER:OG	2.28	0.61
1:1:1495:G:N2	1:1:1498:A:OP2	2.30	0.61
2:2:455:U:H3'	2:2:456:G:H8	1.63	0.61
2:2:610:G:H1	2:2:642:G:H21	1.49	0.61
2:2:729:G:H2'	2:2:730:A:H3'	1.83	0.61
2:2:772:A:O2'	2:2:1016:C:OP1	2.15	0.61
16:H:146:VAL:HG13	19:K:55:ALA:CB	2.28	0.61
41:g:76:CYS:HB3	41:g:136:ARG:HB2	1.81	0.61
1:1:849:U:O2'	1:1:850:G:O5'	2.19	0.61
1:1:1440:A:O4'	34:Z:39:THR:OG1	2.17	0.61
15:G:130:ASP:OD2	15:G:132:SER:OG	2.17	0.61
20:L:72:THR:HB	20:L:110:LEU:HD23	1.81	0.61
1:1:381:G:N2	7:7:21:U:O2'	2.34	0.61
1:1:1242:U:O2'	1:1:1243:G:O4'	2.18	0.61
1:1:1743:A:O2'	3:3:201:A:N1	2.31	0.61
2:2:590:U:H2'	2:2:591:A2M:C8	2.30	0.61
2:2:747:A:N6	2:2:749:G:C6	2.68	0.61
2:2:771:G:N2	2:2:969:U:H3	1.98	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:125:A:H2'	5:5:126:G:H5'	1.81	0.61
11:C:139:ARG:HD2	11:C:245:GLY:HA3	1.81	0.61
15:G:131:LEU:O	15:G:133:ARG:N	2.34	0.61
16:H:147:CYS:HA	19:K:57:CYS:O	2.00	0.61
32:X:37:ARG:HD3	32:X:39:LYS:HE2	1.81	0.61
39:e:79:VAL:HG22	39:e:148:ARG:HB3	1.82	0.61
47:m:39:CYS:O	47:m:41:PHE:N	2.34	0.61
1:1:848:U:H6	1:1:848:U:C5'	2.13	0.61
2:2:527:A2M:HM'1	2:2:1399:C:H1'	1.83	0.61
8:8:2:C:N3	8:8:120:C:N3	2.49	0.61
18:J:18:ALA:HB2	18:J:83:GLN:HE21	1.66	0.61
33:Y:17:ARG:NH2	33:Y:18:TYR:OH	2.34	0.61
47:m:44:LYS:HZ1	47:m:59:GLY:CA	2.11	0.61
1:1:1062:A:H5'	22:N:39:ARG:HG2	1.83	0.61
1:1:1530:U:H5"	11:C:75:ILE:HD11	1.83	0.61
2:2:1273:G:N1	2:2:1294:C:N3	2.49	0.61
5:5:37:G:H4'	10:B:373:GLY:CA	2.31	0.61
22:N:141:LYS:HB2	22:N:144:TYR:HD2	1.66	0.61
31:W:28:MET:SD	31:W:72:ARG:HG3	2.41	0.61
1:1:229:C:HO2'	1:1:230:A:H8	1.47	0.60
1:1:1549:U:OP2	2:2:60:A:O2'	2.16	0.60
2:2:685:G:N2	2:2:754:U:O2	2.22	0.60
3:3:195:A:H5"	3:3:195:A:H8	1.66	0.60
9:A:108:THR:HG21	47:m:86:LEU:HB3	1.83	0.60
22:N:176:ILE:HG13	22:N:190:LEU:HD11	1.83	0.60
28:T:120:ASP:OD1	28:T:145:HIS:HB2	2.01	0.60
35:a:49:ARG:NH1	35:a:53:LYS:HG3	2.15	0.60
48:n:6:LYS:HG2	48:n:95:ASP:HB2	1.82	0.60
1:1:1482:C:H1'	40:f:103:ALA:HB3	1.82	0.60
4:4:63:U:O4'	13:E:119:ARG:NH2	2.33	0.60
19:K:108:VAL:HG12	19:K:108:VAL:O	1.99	0.60
21:M:73:ARG:NH2	21:M:92:MET:HE2	2.16	0.60
29:U:29:ASP:HB3	29:U:118:GLN:HA	1.83	0.60
36:b:14:SER:O	36:b:18:ARG:HD3	2.02	0.60
1:1:806:A:O2'	1:1:807:C:O5'	2.19	0.60
1:1:1126:U:H2'	1:1:1127:U:H4'	1.83	0.60
2:2:35:G:O2'	44:j:10:GLN:OE1	2.18	0.60
6:6:16:C:H3'	6:6:16:C:H6	1.66	0.60
9:A:89:PHE:H	9:A:100:ASN:ND2	1.97	0.60
22:N:86:HIS:HB2	22:N:139:ARG:HB2	1.83	0.60
22:N:100:ASN:HD21	22:N:118:ALA:HB1	1.64	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:m:82:THR:HA	47:m:85:ARG:HB3	1.83	0.60
1:1:216:G:O2'	4:4:183:C:N3	2.34	0.60
1:1:660:U:H5'	7:7:7:OMU:HM22	1.83	0.60
1:1:1122:U:H1'	1:1:1144:G:H22	1.65	0.60
2:2:97:A:O2'	2:2:366:C:O2	2.17	0.60
2:2:451:U:H3	2:2:483:C:H42	1.49	0.60
10:B:282:GLN:NE2	10:B:336:SER:HG	1.95	0.60
10:B:288:TYR:CZ	10:B:332:LYS:HG3	2.36	0.60
13:E:89:PHE:O	13:E:145:PHE:N	2.32	0.60
18:J:106:ASN:OD1	18:J:107:PRO:HD3	1.98	0.60
25:Q:55:VAL:HG13	25:Q:56:LYS:H	1.65	0.60
36:b:18:ARG:HH11	36:b:18:ARG:CG	2.14	0.60
1:1:236:G:O2'	1:1:237:U:OP1	2.19	0.60
1:1:1061:G:H2'	1:1:1062:A:C8	2.36	0.60
3:3:8:A:OP2	33:Y:73:ARG:NH2	2.35	0.60
9:A:91:GLY:O	9:A:103:PRO:HD3	2.01	0.60
18:J:61:MET:HE2	18:J:77:ASN:HD21	1.66	0.60
1:1:388:A:H4'	1:1:407:A:N6	2.16	0.60
1:1:669:C:O2'	1:1:670:C:O5'	2.18	0.60
1:1:696:A:H5"	11:C:108:ARG:HA	1.84	0.60
1:1:778:C:O2'	1:1:779:A:H8	1.83	0.60
2:2:1317:G:N1	2:2:1387:C:N3	2.50	0.60
6:6:38:C:H5'	41:g:28:ARG:HE	1.64	0.60
2:2:1434:G:N2	4:4:170:G:N7	2.37	0.60
4:4:74:G:N2	4:4:123:C:O2	2.24	0.60
8:8:4:A:N6	8:8:119:U:O4	2.34	0.60
8:8:12:C:O2	8:8:15:A:C2	2.55	0.60
1:1:1674:U:N3	1:1:1728:G:N2	2.50	0.60
2:2:16:G:O2'	46:l:3[B]:ARG:O	2.20	0.60
2:2:443:OMC:N4	2:2:487:U:H2'	2.16	0.60
2:2:957:C:H1'	2:2:958:C:P	2.41	0.60
2:2:996:G:H2'	2:2:997:C:C6	2.37	0.60
2:2:1146:A:O2'	2:2:1167:A:N1	2.35	0.60
6:6:36:C:H4'	41:g:26:ARG:HA	1.82	0.60
16:H:45:LEU:HD11	16:H:120:LEU:HG	1.84	0.60
17:I:83:ALA:CB	17:I:108:ASN:ND2	2.64	0.60
37:c:229:ARG:CG	37:c:229:ARG:HH11	2.15	0.60
42:h:22:LYS:HE3	42:h:36:ARG:NE	2.17	0.60
48:n:2:VAL:N	48:n:90:HIS:O	2.34	0.60
1:1:1209:G:OP2	1:1:1209:G:N2	2.24	0.60
4:4:181:C:H1'	5:5:2:A:C4	2.36	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1042:G:H1	1:1:1109:U:H5	1.50	0.60
1:1:1058:U:H1'	22:N:94:PHE:HE1	1.67	0.60
2:2:676:G:OP2	50:2:1702:HOH:O	2.16	0.60
10:B:376:ARG:NH2	32:X:11:PHE:HD1	1.99	0.60
11:C:7:VAL:HG11	11:C:255:PHE:HE2	1.67	0.60
28:T:13:LYS:HA	28:T:107:LEU:HD21	1.84	0.60
1:1:1433:U:O2'	1:1:1434:U:H5"	2.02	0.59
1:1:1458:G:O6	50:1:1956:HOH:O	2.15	0.59
3:3:32:A:N1	3:3:33:A:N6	2.49	0.59
5:5:44:G:H1	5:5:103:U:H3	1.49	0.59
8:8:85:G:C8	8:8:85:G:C5'	2.85	0.59
33:Y:50:PRO:HD3	33:Y:68:VAL:HG22	1.84	0.59
39:e:129:TYR:HE2	39:e:142:VAL:HG22	1.67	0.59
47:m:8:MET:SD	47:m:23:ARG:NH1	2.75	0.59
1:1:1238:C:H5'	1:1:1239:U:H5"	1.84	0.59
2:2:590:U:H2'	2:2:591:A2M:H8	1.84	0.59
2:2:1184:C:H2'	2:2:1185:C:O4'	2.02	0.59
8:8:116:U:H2'	8:8:117:A:C8	2.37	0.59
1:1:73:U:H5"	17:I:63:VAL:HB	1.84	0.59
1:1:695:OMC:HM22	1:1:696:A:H5'	1.84	0.59
1:1:895:G:O6	1:1:901:C:N4	2.34	0.59
1:1:1145:G:C2	1:1:1146:A:H1'	2.37	0.59
1:1:1651:G:H21	2:2:414:G:N2	2.00	0.59
2:2:34:G:N2	44:j:5:THR:O	2.33	0.59
6:6:17:U:N3	6:6:30:C:O2'	2.35	0.59
8:8:34:A:H4'	8:8:35:U:H5'	1.84	0.59
24:P:36:LEU:O	24:P:40:THR:OG1	2.12	0.59
28:T:109:PRO:HA	28:T:112:MET:HG2	1.83	0.59
28:T:124:ARG:NH1	28:T:142:SER:OG	2.35	0.59
37:c:130:ASN:HB3	37:c:132:PRO:HD2	1.84	0.59
1:1:255:G:H1	31:W:59:THR:HG23	1.67	0.59
1:1:502:U:O2'	1:1:503:A:O4'	2.21	0.59
1:1:895:G:H1	1:1:900:C:N4	1.97	0.59
1:1:1122:U:O2	1:1:1144:G:N1	2.35	0.59
1:1:1129:G:H1	1:1:1137:C:H42	1.51	0.59
2:2:553:G:H4'	2:2:554:OMC:OP2	2.02	0.59
5:5:12:C:O2'	5:5:14:A:N6	2.34	0.59
13:E:20:VAL:HG21	13:E:46:ARG:HA	1.84	0.59
21:M:119:TYR:OH	21:M:131:GLU:OE1	2.15	0.59
22:N:121:LYS:CE	22:N:122:PRO:CD	2.70	0.59
22:N:152:LEU:HD13	22:N:165:ILE:HG12	1.83	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:R:13:GLY:HA2	26:R:61:LEU:HG	1.83	0.59
28:T:36:ILE:HD12	28:T:36:ILE:O	2.02	0.59
42:h:21:MET:CE	42:h:33:MET:SD	2.91	0.59
42:h:21:MET:HE2	42:h:33:MET:HE3	1.79	0.59
2:2:527:A2M:HM'3	2:2:1398:OMC:CM2	2.33	0.59
3:3:163:C:H41	25:Q:46:LYS:CB	2.16	0.59
19:K:74:LEU:HD23	19:K:113:ASN:O	2.02	0.59
19:K:94:VAL:HG22	19:K:109:GLN:O	2.03	0.59
42:h:108:LEU:HD12	42:h:108:LEU:O	2.01	0.59
1:1:930:U:O2	2:2:603:A:O2'	2.16	0.59
1:1:1271:G:N2	1:1:1359:C:O2	2.33	0.59
2:2:603:A:H2'	2:2:604:A:C8	2.38	0.59
2:2:743:C:H2'	2:2:744:G:H8	1.68	0.59
6:6:27:G:H2'	6:6:28:A:H5'	1.83	0.59
10:B:19:ARG:HB2	10:B:237:ARG:NH2	2.12	0.59
10:B:56:ILE:HD11	10:B:288:TYR:HD2	1.67	0.59
18:J:47:ARG:HE	18:J:50:ARG:HB2	1.68	0.59
24:P:144:TYR:CE2	24:P:146:LEU:HD21	2.36	0.59
37:c:109:GLN:NE2	37:c:139:ALA:O	2.31	0.59
1:1:51:G:OP1	44:j:48:ASN:N	2.30	0.59
1:1:65:A:N1	1:1:338:G:O2'	2.32	0.59
1:1:657:G:H5"	40:f:15:THR:HG21	1.83	0.59
1:1:1389:A:H3'	19:K:77:PRO:CG	2.32	0.59
1:1:1727:U:C5	1:1:1728:G:C5	2.90	0.59
3:3:45:C:H2'	3:3:46:A:C8	2.37	0.59
4:4:45:G:H2'	4:4:46:G:C8	2.38	0.59
8:8:14:U:O4'	8:8:110:G:N2	2.35	0.59
9:A:45:VAL:O	9:A:85:GLY:N	2.36	0.59
10:B:192:ASN:O	10:B:195:ALA:N	2.35	0.59
1:1:779:A:P	24:P:142:ASN:H	2.26	0.59
1:1:1763:A:H2'	30:V:128:ARG:HH22	1.65	0.59
3:3:31:C:H4'	3:3:32:A:OP2	2.02	0.59
8:8:44:A:N7	8:8:45:U:C5	2.71	0.59
11:C:299:VAL:HG21	24:P:138:PRO:HG2	1.84	0.59
20:L:54:GLY:C	24:P:181:LYS:HD2	2.27	0.59
20:L:112:ASN:HD22	20:L:113:GLY:N	2.00	0.59
22:N:14:ASN:OD1	22:N:15:LYS:N	2.35	0.59
1:1:429:G:H1'	28:T:97:ASN:HD21	1.68	0.59
2:2:1019:G:H4'	2:2:1021:C:C2	2.37	0.59
7:7:52:A:H4'	46:l:19:GLN:HA	1.84	0.59
39:e:122:ILE:HD12	39:e:126:LEU:HD23	1.85	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:g:74:ARG:HG3	41:g:141:PRO:HD3	1.84	0.59
1:1:1189:C:H2'	1:1:1190:G:C8	2.38	0.59
4:4:136:G:H22	4:4:155:A:H1'	1.67	0.59
4:4:181:C:H2'	4:4:182:A:H8	1.68	0.59
6:6:22:G:N7	6:6:26:G:N2	2.50	0.59
13:E:42:GLN:HG3	13:E:60:PHE:HB2	1.85	0.59
28:T:6:ARG:HH21	28:T:116:HIS:CB	2.11	0.59
40:f:48:LYS:NZ	41:g:47:HIS:O	2.33	0.59
48:n:55:LYS:HD3	48:n:56:PRO:HD2	1.85	0.59
1:1:167:U:O2'	1:1:168:G:N7	2.30	0.58
1:1:237:U:OP2	50:1:1928:HOH:O	2.17	0.58
1:1:301:A:H2'	1:1:302:G:C8	2.38	0.58
1:1:756:U:H5"	36:b:56:LEU:HD13	1.85	0.58
1:1:1393:A:H3'	1:1:1393:A:OP1	2.02	0.58
2:2:655:OMG:O2'	2:2:657:U:H5"	2.03	0.58
2:2:1078:OMU:CM2	2:2:1079:OMG:H5'	2.33	0.58
3:3:116:C:H5"	25:Q:99:LEU:HD12	1.85	0.58
7:7:105:C:OP2	50:7:316:HOH:O	2.17	0.58
1:1:300:A:N3	1:1:301:A:H1'	2.18	0.58
1:1:1041:U:H4'	27:S:100[A]:ARG:HB2	1.85	0.58
2:2:387:U:O2	2:2:1415:G:N2	2.35	0.58
2:2:387:U:OP2	50:2:1715:HOH:O	2.16	0.58
2:2:1095:A:O2'	2:2:1119:A:OP1	2.21	0.58
9:A:45:VAL:HG22	9:A:61:VAL:HG22	1.85	0.58
19:K:72:ARG:HD2	19:K:72:ARG:O	2.03	0.58
23:O:19:LYS:HB2	23:O:19:LYS:NZ	2.18	0.58
23:O:189:TYR:HA	23:O:194:SER:HA	1.85	0.58
1:1:473:A:HO2'	41:g:82:LYS:HZ3	1.49	0.58
1:1:1655:U:OP1	21:M:105:ARG:NE	2.32	0.58
2:2:68:A:O2'	2:2:69:A:O5'	2.13	0.58
2:2:1189:G:N2	2:2:1239:G:O4'	2.37	0.58
6:6:13:C:N4	6:6:14:A:N6	2.50	0.58
15:G:158:PRO:HB3	15:G:317:GLN:H	1.68	0.58
22:N:130:ARG:NH2	22:N:131:ILE:O	2.31	0.58
36:b:39:PRO:O	36:b:43:ASN:ND2	2.37	0.58
43:i:59:ARG:HD2	43:i:75:TYR:CZ	2.38	0.58
1:1:777:G:H21	24:P:144:TYR:HA	1.68	0.58
2:2:1051:G:N2	2:2:1072:C:O2	2.36	0.58
2:2:1153:OMU:OP2	2:2:1155:C:N4	2.36	0.58
2:2:1317:G:O6	2:2:1387:C:C4	2.55	0.58
3:3:106:U:C5	3:3:128:C:N4	2.71	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:48:ILE:HD13	47:m:65:ALA:HB2	1.86	0.58
11:C:257:GLN:O	11:C:261:ILE:N	2.31	0.58
25:Q:19:ARG:HD2	25:Q:20:ALA:N	2.17	0.58
1:1:237:U:H3'	1:1:238:A:C8	2.38	0.58
1:1:705:C:H4'	11:C:34:ASP:OD2	2.03	0.58
2:2:1332:G:H4'	4:4:157:A:H1'	1.85	0.58
8:8:73:G:H2'	8:8:74:U:O4'	2.03	0.58
23:O:44:PHE:CE1	27:S:33:ASN:HB3	2.38	0.58
31:W:29:SER:HA	31:W:46:PRO:HA	1.84	0.58
40:f:20:ARG:NH2	40:f:34:ARG:HD3	2.18	0.58
1:1:157:U:H3	1:1:297:A:H61	1.51	0.58
1:1:179:G:O2'	1:1:180:A:O4'	2.22	0.58
1:1:1491:U:H2'	1:1:1492:G:C8	2.37	0.58
1:1:1493:G:O2'	1:1:1494:C:OP2	2.14	0.58
2:2:1056:A:N6	2:2:1078:OMU:HN3	2.00	0.58
2:2:1316:G:H2'	2:2:1317:G:O4'	2.03	0.58
8:8:54:U:H1'	8:8:56:A:H62	1.68	0.58
20:L:70:LYS:HD3	20:L:108:LYS:HD2	1.84	0.58
42:h:21:MET:HE1	42:h:33:MET:CE	2.17	0.58
47:m:39:CYS:CB	47:m:47:PHE:HE2	2.12	0.58
1:1:204:A:H2'	1:1:205:A:H5'	1.86	0.58
1:1:547:U:C4	1:1:1393:A:N6	2.71	0.58
2:2:527:A2M:H4'	2:2:528:U:OP1	2.04	0.58
2:2:802:U:O3'	15:G:310:ARG:NH2	2.37	0.58
2:2:1386:G:C2	10:B:255:ALA:HB1	2.39	0.58
3:3:8:A:P	33:Y:73:ARG:HH21	2.25	0.58
9:A:65:HIS:HB2	9:A:72:VAL:CG1	2.31	0.58
13:E:16:VAL:HG11	13:E:80:ILE:HG23	1.86	0.58
1:1:422:U:O2'	1:1:423:U:H5"	2.03	0.58
1:1:836:G:OP2	24:P:63:SER:OG	2.21	0.58
1:1:1214:G:OP1	37:c:100:ARG:NH2	2.37	0.58
2:2:1443:G:O6	41:g:133:ARG:NH1	2.36	0.58
4:4:95:U:C5	25:Q:62:ARG:NE	2.71	0.58
5:5:46:G:N1	5:5:101:C:N3	2.39	0.58
6:6:16:C:C4	6:6:17:U:C5	2.91	0.58
10:B:315:MET:O	10:B:370:SER:HB2	2.04	0.58
18:J:98:GLU:HG3	32:X:24:PHE:H	1.69	0.58
22:N:170:TYR:O	22:N:178:ARG:NE	2.33	0.58
23:O:61:ILE:HG23	23:O:79:TYR:CE1	2.39	0.58
25:Q:102:LEU:HD22	25:Q:138:LEU:HD22	1.85	0.58
1:1:242:A:N6	1:1:260:C:H42	2.01	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1070:A:H4'	36:b:7:HIS:CD2	2.38	0.58
10:B:379:THR:O	10:B:381:LYS:N	2.37	0.58
13:E:16:VAL:HG11	13:E:80:ILE:HG12	1.86	0.58
15:G:141:VAL:HG12	15:G:145:ARG:HH12	1.69	0.58
15:G:141:VAL:HG12	15:G:145:ARG:NH1	2.19	0.58
27:S:116:LEU:O	27:S:120:LYS:N	2.32	0.58
30:V:68:TYR:CE1	30:V:88:ILE:HD12	2.39	0.58
1:1:488:G:N2	1:1:648:A:N3	2.51	0.58
1:1:676:G:H2'	2:2:618:A:N7	2.19	0.58
1:1:872:U:H4'	1:1:963:G:H5'	1.85	0.58
2:2:654:U:H2'	2:2:655:OMG:H5'	1.86	0.58
21:M:23:GLN:HA	21:M:26:ARG:HG2	1.84	0.58
26:R:8:HIS:HD2	26:R:66:VAL:HG21	1.68	0.58
27:S:103:GLU:HA	27:S:106:LYS:HB2	1.84	0.58
1:1:138:C:O2'	1:1:139:C:O5'	2.22	0.57
1:1:933:A:OP1	2:2:30:A:N6	2.32	0.57
1:1:1189:C:H2'	1:1:1190:G:H8	1.68	0.57
1:1:1445:U:O2	34:Z:26:ARG:CZ	2.52	0.57
1:1:1523:G:OP2	20:L:9:ARG:NH1	2.31	0.57
2:2:47:A:H5'	25:Q:88:ARG:HG2	1.86	0.57
2:2:716:C:H2'	2:2:717:G:O4'	2.04	0.57
9:A:76:MET:HB3	9:A:165:MET:HE1	1.86	0.57
15:G:215:LEU:HD21	15:G:288:VAL:HA	1.86	0.57
22:N:53:VAL:HG22	22:N:134:ILE:HG12	1.85	0.57
27:S:56:TYR:OH	27:S:79:PRO:HD2	2.04	0.57
28:T:31:GLU:HG2	28:T:60:PHE:HA	1.83	0.57
1:1:61:A:N3	1:1:76:U:O2'	2.29	0.57
1:1:270:C:H2'	1:1:271:A:H4'	1.86	0.57
2:2:12:G:H5"	2:2:13:A:H5'	1.85	0.57
8:8:37:C:H42	8:8:48:G:C1'	2.17	0.57
12:D:105:GLY:HA3	12:D:130:TYR:HA	1.85	0.57
30:V:106:TYR:O	30:V:108:VAL:N	2.35	0.57
1:1:135:A:C4	35:a:112:MET:HE3	2.38	0.57
1:1:673:C:H42	1:1:677:A:H8	1.50	0.57
1:1:893:G:P	25:Q:126:ARG:HH12	2.27	0.57
2:2:442:C:H2'	2:2:488:A:H61	1.70	0.57
2:2:1012:G:N2	15:G:153:ARG:HH12	2.02	0.57
4:4:123:C:H2'	4:4:124:A:C8	2.40	0.57
14:F:57:LEU:HB2	14:F:61:GLY:HA3	1.86	0.57
19:K:68:GLY:CA	19:K:85:ILE:O	2.49	0.57
21:M:184:LEU:HD13	21:M:188:TYR:CE1	2.39	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:512:U:H2'	2:2:513:C:C6	2.39	0.57
2:2:1189:G:N7	48:n:63:LYS:NZ	2.44	0.57
9:A:117:GLU:HB2	9:A:122:ASP:OD1	2.05	0.57
9:A:198:LYS:O	50:A:302:HOH:O	2.17	0.57
11:C:105:LYS:HE2	17:I:18:ASN:HD21	1.68	0.57
14:F:50:ARG:NH1	14:F:180:SER:OG	2.37	0.57
15:G:173:ASN:OD1	15:G:174:GLU:N	2.37	0.57
15:G:271:LEU:HD23	15:G:283:VAL:HG23	1.87	0.57
21:M:40:ARG:HH12	21:M:41:ARG:CZ	2.18	0.57
26:R:40:LYS:HE3	26:R:60:VAL:HG11	1.85	0.57
1:1:209:C:N4	1:1:223:A:H61	2.02	0.57
1:1:547:U:H5	1:1:1393:A:C6	2.20	0.57
1:1:966:A:OP2	50:1:1972:HOH:O	2.17	0.57
8:8:17:U:O2'	8:8:18:U:O5'	2.15	0.57
10:B:49:PHE:CE1	10:B:342:VAL:HG22	2.38	0.57
25:Q:142:ILE:HA	25:Q:145:ILE:HG12	1.87	0.57
2:2:557:G:OP1	50:2:1723:HOH:O	2.17	0.57
3:3:115:G:OP2	25:Q:124:TYR:OH	2.21	0.57
22:N:88:ARG:NH2	22:N:89:THR:O	2.37	0.57
22:N:112:GLN:OE1	22:N:113:THR:OG1	2.17	0.57
1:1:243:G:N2	1:1:260:C:O2	2.37	0.57
1:1:659:G:O2'	7:7:7:OMU:CM2	2.51	0.57
1:1:817:C:H2'	1:1:818:C:O4'	2.05	0.57
7:7:7:OMU:CM2	7:7:7:OMU:H4'	2.35	0.57
7:7:55:U:N3	7:7:62:A:H2	1.91	0.57
10:B:226:THR:O	10:B:341:ARG:NH2	2.37	0.57
19:K:179:ALA:O	19:K:182:ALA:HB3	2.05	0.57
20:L:16:PHE:CZ	20:L:21:ARG:HG2	2.40	0.57
31:W:45:MET:HE3	31:W:116:LEU:HD13	1.87	0.57
1:1:56:G:OP1	21:M:154:SER:OG	2.20	0.57
1:1:490:C:O2'	6:6:54:A:C2	2.54	0.57
2:2:1317:G:O6	2:2:1387:C:N3	2.38	0.57
3:3:30:A:O4'	3:3:31:C:C5	2.58	0.57
3:3:106:U:N3	3:3:129:G:O6	2.37	0.57
4:4:52:A:N9	13:E:174:PHE:HB2	2.20	0.57
7:7:152:C:O2	21:M:112:ASN:ND2	2.38	0.57
8:8:43:G:OP2	8:8:43:G:H8	1.88	0.57
19:K:164:THR:HG22	19:K:167:GLU:OE1	2.04	0.57
26:R:46:MET:O	26:R:50:LYS:N	2.38	0.57
31:W:71:TYR:CE1	31:W:74:LYS:HG2	2.39	0.57
32:X:4:ILE:HD11	32:X:20:ARG:HH21	1.68	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:498:G:H2'	1:1:499:C:C6	2.39	0.57
1:1:543:G:OP2	1:1:544:A:N1	2.38	0.57
1:1:1183:G:N2	1:1:1189:C:O2	2.34	0.57
2:2:111:G:OP2	47:m:6:VAL:N	2.38	0.57
2:2:1312:U:H3'	2:2:1313:G:H5"	1.86	0.57
3:3:58:C:HO2'	3:3:60:U:C5'	2.10	0.57
4:4:140:G:N1	4:4:149:U:OP1	2.35	0.57
9:A:79:PRO:HD2	9:A:82:MET:HE2	1.87	0.57
16:H:74:GLN:O	16:H:78:LYS:NZ	2.38	0.57
23:O:187:PRO:HD2	23:O:199:LYS:NZ	2.20	0.57
34:Z:22:ARG:HB3	40:f:76:PRO:HG2	1.87	0.57
40:f:20:ARG:HH22	40:f:34:ARG:HD3	1.70	0.57
1:1:205:A:H62	1:1:224:C:P	2.28	0.57
1:1:399:U:O2'	44:j:16:HIS:HD2	1.88	0.57
1:1:836:G:O4'	24:P:98:ARG:NH2	2.37	0.57
2:2:535:U:C2'	2:2:536:C:H5'	2.34	0.57
2:2:991:C:N4	2:2:996:G:O2'	2.37	0.57
3:3:47:C:N3	3:3:173:U:H5	2.03	0.57
37:c:103:ALA:O	37:c:105:VAL:HG23	2.05	0.57
1:1:945:U:H4'	1:1:946:G:O4'	2.05	0.56
2:2:379:U:O2'	50:2:1705:HOH:O	2.17	0.56
2:2:1151:U:O2'	2:2:1152:U:C5'	2.53	0.56
2:2:1152:U:H2'	2:2:1153:OMU:C6	2.35	0.56
6:6:48:C:H3'	6:6:49:C:H6	1.70	0.56
8:8:3:G:H2'	8:8:4:A:O4'	2.05	0.56
11:C:191:GLY:H	11:C:194:LYS:NZ	2.03	0.56
24:P:17:HIS:NE2	24:P:18:HIS:HE1	1.95	0.56
26:R:17:PRO:HB3	26:R:24:PRO:HD2	1.87	0.56
29:U:94:THR:O	29:U:98:LEU:N	2.24	0.56
1:1:694:U:H2'	1:1:695:OMC:C6	2.40	0.56
1:1:975:G:N3	2:2:660:G:O2'	2.38	0.56
1:1:1529:OMC:H5'	1:1:1529:OMC:H6	1.70	0.56
6:6:59:C:H6	6:6:59:C:H5"	1.70	0.56
10:B:371:LYS:HD2	10:B:371:LYS:N	2.19	0.56
11:C:206:PRO:HB3	11:C:247:PHE:CD2	2.40	0.56
17:I:27:VAL:HG12	21:M:198:ILE:HB	1.87	0.56
23:O:94:ASN:HD22	23:O:95:TYR:N	2.02	0.56
27:S:52:MET:HG2	27:S:95:HIS:CE1	2.40	0.56
38:d:33:LEU:HD21	38:d:58:VAL:HG12	1.87	0.56
1:1:159:U:C5	1:1:160:C:N3	2.73	0.56
1:1:265:U:H2'	1:1:266:G:H8	1.70	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:278:U:N3	1:1:279:G:N7	2.53	0.56
1:1:873:G:H1'	9:A:15:VAL:HG13	1.88	0.56
1:1:893:G:OP1	25:Q:126:ARG:NH1	2.38	0.56
2:2:723:G:O2'	2:2:734:A:N6	2.38	0.56
2:2:1078:OMU:HM22	2:2:1079:OMG:H5'	1.85	0.56
7:7:79:A:H2'	7:7:80:A:H5"	1.86	0.56
7:7:142:C:H4'	30:V:96:THR:HG21	1.88	0.56
9:A:15:VAL:HG12	9:A:194:ASN:HD22	1.71	0.56
10:B:376:ARG:NH2	32:X:11:PHE:CD1	2.73	0.56
15:G:273:ASP:OD1	15:G:274:ALA:N	2.38	0.56
19:K:75:ARG:NH1	19:K:112:LYS:O	2.37	0.56
23:O:19:LYS:CB	23:O:19:LYS:HZ3	2.18	0.56
28:T:122:ALA:HB3	28:T:143:PRO:HG2	1.86	0.56
32:X:8:PHE:HB3	32:X:40:CYS:SG	2.45	0.56
38:d:29:THR:HG21	38:d:54:ARG:HG3	1.87	0.56
1:1:763:U:H2'	1:1:764:G:C8	2.41	0.56
1:1:874:C:H5'	9:A:19:HIS:CE1	2.40	0.56
1:1:1477:U:H2'	1:1:1478:A:O4'	2.05	0.56
1:1:1656:A:H2'	1:1:1657:U:H5"	1.88	0.56
1:1:1677:A:H61	1:1:1725:A:N6	2.03	0.56
2:2:100:U:H2'	2:2:101:G:H8	1.70	0.56
2:2:690:C:H2'	2:2:691:A:C4	2.40	0.56
2:2:811:U:O2'	2:2:812:C:O5'	2.23	0.56
3:3:139:G:H2'	3:3:140:A:C8	2.39	0.56
3:3:173:U:H2'	3:3:174:U:O4'	2.06	0.56
5:5:104:G:H8	5:5:104:G:OP1	1.88	0.56
7:7:88:A:O2'	7:7:89:U:OP1	2.18	0.56
16:H:61:ILE:HD11	16:H:157:LEU:HD13	1.86	0.56
16:H:124:GLU:HG3	16:H:172:VAL:HG21	1.86	0.56
16:H:201:ARG:HG3	19:K:178:ARG:HD3	1.86	0.56
19:K:92:ASN:O	19:K:111:LEU:HG	2.05	0.56
23:O:40:ASP:OD1	23:O:43:LYS:NZ	2.36	0.56
25:Q:105:LEU:HD12	25:Q:138:LEU:HD23	1.88	0.56
39:e:85:ILE:HG12	39:e:110:PHE:CE2	2.40	0.56
1:1:786:A:H61	1:1:791:C:H42	1.52	0.56
1:1:1540:U:H4'	28:T:66[A]:LYS:HE2	1.88	0.56
2:2:3:C:H2'	2:2:4:C:C6	2.40	0.56
8:8:27:A:H2'	8:8:28:C:C6	2.41	0.56
13:E:23:ARG:HH21	13:E:24:LYS:HZ1	1.54	0.56
15:G:137:TRP:HB2	15:G:142:THR:HG23	1.88	0.56
18:J:42:LYS:HD3	18:J:61:MET:HE3	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:K:89:VAL:HG12	26:R:73:ALA:HB3	1.67	0.56
22:N:150:GLU:OE1	22:N:153:ARG:NH1	2.39	0.56
40:f:21:HIS:ND1	40:f:22:ARG:HG2	2.21	0.56
1:1:135:A:C2	35:a:112:MET:HE2	2.41	0.56
1:1:556:U:H2'	1:1:557:U:O4'	2.04	0.56
1:1:763:U:H2'	1:1:764:G:H8	1.69	0.56
1:1:927:A2M:H5"	2:2:73:U:H5"	1.87	0.56
1:1:930:U:H3'	1:1:931:G:H5"	1.88	0.56
1:1:1727:U:H3'	1:1:1728:G:H8	1.70	0.56
11:C:109:ARG:HA	21:M:204:ARG:HH12	1.70	0.56
14:F:39:ALA:HB1	14:F:84:VAL:CG2	2.34	0.56
16:H:144:ARG:CZ	16:H:154:TYR:HB3	2.36	0.56
20:L:101:LEU:HB3	20:L:106:TYR:O	2.05	0.56
47:m:39:CYS:C	47:m:41:PHE:N	2.62	0.56
1:1:9:G:H21	1:1:1669:G:H1	1.52	0.56
1:1:36:OMU:HM21	1:1:94:A:O2'	2.02	0.56
1:1:453:G:O2'	28:T:119:VAL:O	2.22	0.56
1:1:1149:G:N1	1:1:1155:A:OP2	2.39	0.56
1:1:1410:U:H2'	1:1:1411:G:C8	2.40	0.56
1:1:1590:G:O6	42:h:5:ARG:NH1	2.39	0.56
2:2:18:A:OP1	50:2:1712:HOH:O	2.17	0.56
2:2:718:C:H2'	2:2:719:A:O4'	2.06	0.56
6:6:40:C:O5'	41:g:26:ARG:NH2	2.32	0.56
6:6:40:C:N4	41:g:24:VAL:H	2.04	0.56
23:O:17:GLN:HE22	27:S:22:HIS:H	1.54	0.56
23:O:39:GLN:HE21	23:O:43:LYS:HZ2	1.54	0.56
48:n:4:TYR:CE2	48:n:70:LEU:HD21	2.41	0.56
2:2:67:G:OP1	39:e:106:ARG:NH2	2.29	0.56
2:2:653:C:H2'	2:2:654:U:C6	2.40	0.56
2:2:667:OMU:H3'	2:2:668:C:H5"	1.87	0.56
2:2:979:C:H5"	9:A:69:PHE:CE1	2.40	0.56
3:3:58:C:C2'	3:3:60:U:H5"	2.36	0.56
3:3:168:U:O2	3:3:168:U:H3'	2.06	0.56
11:C:157:ILE:HG12	11:C:160:TYR:HE2	1.70	0.56
11:C:194:LYS:HB2	11:C:199:ARG:HD2	1.87	0.56
19:K:74:LEU:HD21	19:K:113:ASN:HA	1.87	0.56
22:N:31:ILE:HG13	22:N:69:ARG:HD3	1.87	0.56
33:Y:42:LEU:HA	33:Y:74:VAL:HA	1.86	0.56
42:h:105:LYS:HA	42:h:108:LEU:HD23	1.88	0.56
1:1:456:A:H2'	1:1:457:C:O4'	2.05	0.56
1:1:776:U:O2	24:P:51:ARG:NH2	2.37	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1077:G:C2’	2:2:1078:OMU:H5”	2.36	0.56
9:A:126:LEU:HD13	9:A:150:LEU:HD21	1.88	0.56
20:L:136:LYS:O	20:L:136:LYS:HD3	2.06	0.56
39:e:149:LYS:HE3	39:e:164:VAL:HG21	1.87	0.56
1:1:299:U:H4’	1:1:300:A:N7	2.21	0.56
1:1:370:G:O2’	1:1:372:A:N7	2.39	0.56
1:1:533:G:O2’	1:1:534:G:H5’	2.06	0.56
1:1:827:G:P	36:b:45:ARG:HH12	2.28	0.56
1:1:1044:G:N3	2:2:1065:A:H2’	2.21	0.56
1:1:1631:G:O2’	1:1:1633:U:OP1	2.23	0.56
2:2:827:A:O2’	2:2:828:U:O5’	2.23	0.56
2:2:1177:A:H4’	23:O:151:ILE:HG21	1.88	0.56
6:6:41:G:N1	19:K:176:ARG:NH1	2.52	0.56
7:7:37:U:OP1	7:7:38:U:O2’	2.18	0.56
8:8:50:G:C4	8:8:51:A:H2	2.24	0.56
23:O:187:PRO:HD2	23:O:199:LYS:HZ3	1.70	0.56
26:R:14:ARG:CZ	26:R:17:PRO:HG3	2.36	0.56
41:g:111:HIS:O	41:g:116:MET:HB2	2.06	0.56
42:h:22:LYS:HE3	42:h:36:ARG:HE	1.71	0.56
2:2:957:C:C1’	2:2:958:C:P	2.94	0.55
2:2:1035:G:H5’	9:A:233:GLN:HB2	1.88	0.55
3:3:207:G:H2’	3:3:208:G:C8	2.41	0.55
4:4:115:A:OP1	50:4:303:HOH:O	2.18	0.55
6:6:28:A:C4	6:6:29:G:N7	2.75	0.55
7:7:163:G:O2’	7:7:165:G:OP2	2.22	0.55
19:K:180:HIS:ND1	19:K:181:TRP:N	2.54	0.55
22:N:150:GLU:O	22:N:154:ARG:N	2.37	0.55
30:V:95:LYS:HE3	30:V:113:VAL:O	2.05	0.55
4:4:77:U:O2’	10:B:55:HIS:HD2	1.89	0.55
15:G:304:ASN:HB2	15:G:308:LEU:HB2	1.87	0.55
22:N:38:ARG:HG2	22:N:41:ALA:HB2	1.87	0.55
37:c:175:ASP:OD1	37:c:176:ASN:N	2.39	0.55
1:1:30:C:H5”	21:M:71:ARG:HH22	1.71	0.55
1:1:458:A:H2	1:1:459:A:H1’	1.70	0.55
1:1:543:G:N7	19:K:105:TRP:CD1	2.74	0.55
1:1:1004:G:OP1	36:b:12:GLN:NE2	2.38	0.55
2:2:635:A:H5’	28:T:80:LYS:HE2	1.89	0.55
4:4:179:C:O2’	5:5:3:C:O2’	2.21	0.55
20:L:134:ILE:HD12	20:L:141:VAL:HG22	1.87	0.55
21:M:31:ARG:HD3	21:M:124:ASP:OD2	2.06	0.55
28:T:3:HIS:HB2	28:T:4:TYR:HD2	1.71	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:V:90:ASP:OD1	30:V:93:ALA:HB2	2.06	0.55
47:m:57:CYS:O	47:m:61:SER:N	2.34	0.55
1:1:240:U:H2'	1:1:241:G:C8	2.40	0.55
2:2:395:A:N6	2:2:433:G:O2'	2.35	0.55
6:6:33:G:H2'	6:6:34:C:O4'	2.06	0.55
7:7:71:A:OP2	31:W:48:ARG:NH1	2.39	0.55
7:7:76:C:O2'	7:7:77:A:O4'	2.23	0.55
8:8:34:A:C2	8:8:43:G:N2	2.74	0.55
9:A:140:ASN:O	9:A:144:GLY:N	2.34	0.55
23:O:55:ILE:HG23	23:O:60:ILE:HG22	1.88	0.55
26:R:14:ARG:NH2	26:R:17:PRO:HG3	2.21	0.55
39:e:129:TYR:O	39:e:132[A]:HIS:ND1	2.17	0.55
1:1:729:A:N1	7:7:27:U:O2'	2.36	0.55
2:2:1132:A:H4'	23:O:31:HIS:CE1	2.42	0.55
4:4:162:A:OP1	16:H:92:ARG:NH2	2.38	0.55
6:6:3:A:O2'	41:g:98:SER:OG	2.13	0.55
8:8:7:A:N6	8:8:117:A:N1	2.55	0.55
11:C:235:LEU:O	11:C:236:LEU:HB2	2.05	0.55
14:F:176:GLY:HA2	14:F:179:ARG:HH11	1.72	0.55
15:G:238:ILE:N	15:G:263:ALA:O	2.33	0.55
27:S:115:TYR:O	27:S:119:LYS:N	2.39	0.55
1:1:893:G:H2'	1:1:894:G:H5'	1.88	0.55
1:1:987:A:OP1	20:L:32:ARG:NH2	2.40	0.55
1:1:1355:C:H2'	1:1:1356:G:H8	1.71	0.55
2:2:467:G:N2	2:2:470:A:OP2	2.24	0.55
3:3:104:U:H4'	33:Y:37:PRO:HB2	1.88	0.55
8:8:48:G:C2	8:8:49:U:C6	2.94	0.55
9:A:43:GLY:O	9:A:88:VAL:N	2.40	0.55
15:G:255:CYS:O	15:G:259:LYS:N	2.40	0.55
24:P:17:HIS:CG	24:P:18:HIS:HD1	2.23	0.55
44:j:73:ARG:HD2	44:j:78:PHE:CB	2.37	0.55
47:m:58:ASP:OD1	47:m:58:ASP:N	2.40	0.55
1:1:35:U:H2'	1:1:36:OMU:C5'	2.33	0.55
1:1:326:A:H2'	1:1:327:G:C8	2.41	0.55
9:A:90:CYS:HB2	9:A:101:VAL:HB	1.89	0.55
47:m:11:MET:SD	47:m:14:TYR:HE2	2.30	0.55
1:1:712:G:H2'	1:1:713:A:O4'	2.06	0.55
2:2:668:C:C5'	2:2:668:C:H6	2.20	0.55
2:2:1340:G:H5'	13:E:169:LYS:CE	2.32	0.55
2:2:1403:G:N2	2:2:1406:A:OP2	2.35	0.55
3:3:36:C:N3	3:3:185:C:N4	2.55	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:4:115:A:O2'	5:5:111:G:N2	2.31	0.55
5:5:45:C:H2'	5:5:46:G:C8	2.42	0.55
6:6:31:U:H3'	6:6:31:U:H6	1.72	0.55
8:8:40:U:C2'	8:8:44:A:N6	2.68	0.55
9:A:135:ILE:HD13	9:A:149:LYS:NZ	2.22	0.55
10:B:365:PHE:C	10:B:366:ILE:HD12	2.31	0.55
11:C:207:MET:HB3	11:C:226:ASP:HB3	1.89	0.55
13:E:126:PRO:HD3	13:E:156:GLU:CD	2.32	0.55
16:H:186:HIS:NE2	16:H:190:GLN:OE1	2.40	0.55
18:J:56:LEU:O	18:J:124:SER:OG	2.24	0.55
23:O:244:SER:O	23:O:248:MET:N	2.38	0.55
40:f:44:ARG:O	40:f:46:ARG:HG3	2.07	0.55
1:1:353:C:OP2	17:I:107:LYS:CE	2.54	0.55
1:1:505:U:H2'	1:1:506:G:C8	2.42	0.55
1:1:678:A2M:C6	2:2:617:G:H21	2.14	0.55
1:1:814:C:H2'	1:1:815:G:C8	2.42	0.55
1:1:857:A:N3	2:2:1251:C:O2'	2.39	0.55
1:1:893:G:O6	1:1:902:C:N4	2.27	0.55
2:2:403:G:N1	2:2:424:U:OP2	2.31	0.55
2:2:1254:OMG:HM23	2:2:1254:OMG:C4'	2.36	0.55
5:5:42:G:N7	5:5:106:G:O2'	2.37	0.55
10:B:321:TYR:CD1	10:B:340:ARG:CG	2.87	0.55
27:S:117:ALA:O	27:S:122:GLY:N	2.39	0.55
28:T:16:LYS:O	28:T:101:ASN:ND2	2.40	0.55
1:1:1656:A:N6	2:2:412:A:N1	2.54	0.55
6:6:16:C:C4	6:6:17:U:C4	2.95	0.55
9:A:111:CYS:SG	9:A:112:ILE:N	2.70	0.55
11:C:207:MET:HB3	11:C:246:ARG:HH21	1.72	0.55
16:H:40:VAL:O	16:H:44:GLN:HG2	2.06	0.55
17:I:128:LEU:HD21	17:I:130:LEU:HB2	1.88	0.55
29:U:92:TYR:O	29:U:96:LYS:N	2.38	0.55
32:X:4:ILE:HD11	32:X:20:ARG:HE	1.71	0.55
33:Y:77:HIS:HA	33:Y:80:PHE:CD2	2.41	0.55
1:1:887:A:OP1	47:m:4:ARG:HD2	2.07	0.54
2:2:393:A:O3'	9:A:197:PRO:HB3	2.07	0.54
2:2:423:A:O2'	9:A:125:THR:O	2.15	0.54
2:2:534:OMG:H3'	2:2:535:U:H5	1.72	0.54
6:6:16:C:H3'	6:6:16:C:C6	2.42	0.54
22:N:75:TYR:OH	22:N:154:ARG:NE	2.40	0.54
27:S:48:VAL:HG11	27:S:94:GLU:OE2	2.07	0.54
31:W:79:ILE:HD12	31:W:96:ILE:HD13	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:Z:35:ASN:HA	40:f:88:MET:HG2	1.89	0.54
42:h:48:VAL:HG23	42:h:49:LEU:HG	1.89	0.54
1:1:312:C:N4	1:1:313:U:O4	2.40	0.54
1:1:956:U:C2'	1:1:957:C:H5"	2.37	0.54
1:1:1114:A:H2	1:1:1148:A:C4	2.26	0.54
2:2:776:C:O2'	2:2:777:A:O5'	2.24	0.54
13:E:88:ARG:NH1	13:E:186:ILE:HG22	2.22	0.54
28:T:112:MET:HA	28:T:151:SER:O	2.07	0.54
34:Z:21:LYS:NZ	34:Z:23:GLY:O	2.28	0.54
1:1:120:G:N7	15:G:226:ARG:NH1	2.55	0.54
1:1:147:G:O6	15:G:220:GLY:HA3	2.07	0.54
1:1:442:A:H1'	1:1:444:C:C4	2.42	0.54
1:1:561:G:O2'	1:1:1424:A:O3'	2.17	0.54
1:1:848:U:H6	1:1:848:U:H5"	1.71	0.54
1:1:1595:G:N2	2:2:37:C:O2	2.19	0.54
2:2:1128:G:H21	27:S:49:ARG:HH22	1.55	0.54
2:2:1254:OMG:C4'	2:2:1254:OMG:CM2	2.86	0.54
3:3:28:U:H3	3:3:203:A:N6	2.00	0.54
18:J:106:ASN:CG	18:J:107:PRO:CD	2.64	0.54
19:K:78:ARG:HB2	19:K:81:ARG:HE	1.72	0.54
24:P:45:ASN:HA	24:P:48:VAL:HG12	1.90	0.54
37:c:90:LYS:HD3	37:c:91:PRO:HD2	1.89	0.54
38:d:38:GLN:O	38:d:40:ARG:HG3	2.08	0.54
40:f:72:PHE:HB3	40:f:94:ALA:HB2	1.88	0.54
1:1:147:G:H4'	21:M:55:THR:HG21	1.90	0.54
1:1:178:G:O6	1:1:274:A:O2'	2.24	0.54
1:1:769:U:O2	24:P:66:ARG:NH1	2.36	0.54
1:1:1525:A:O2'	1:1:1526:OMG:OP2	2.22	0.54
10:B:240:VAL:HG23	10:B:241:ALA:N	2.22	0.54
22:N:55:ARG:NH1	22:N:162:ARG:HH11	2.06	0.54
24:P:17:HIS:HE1	24:P:18:HIS:CE1	2.16	0.54
42:h:42:GLY:HA3	42:h:53:ARG:CZ	2.37	0.54
44:j:27:TYR:HA	44:j:34:CYS:HA	1.89	0.54
44:j:70:VAL:O	44:j:74:ILE:HG12	2.07	0.54
48:n:8:LYS:O	48:n:23:PHE:CE1	2.57	0.54
1:1:517:U:H3	1:1:534:G:H1	1.55	0.54
2:2:390:A:N9	2:2:527:A2M:N6	2.56	0.54
2:2:699:U:N3	2:2:707:A:O5'	2.39	0.54
6:6:33:G:C5'	19:K:42:VAL:CG2	2.80	0.54
7:7:154:A:O2'	21:M:57:GLN:NE2	2.40	0.54
27:S:115:TYR:HA	27:S:118:ALA:HB3	1.88	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:V:70:LEU:HD13	30:V:88:ILE:HD11	1.90	0.54
35:a:7:ILE:HA	35:a:10:LEU:HB3	1.89	0.54
1:1:771:U:H2'	1:1:772:G:C8	2.43	0.54
1:1:866:G:P	44:j:33:ARG:HH22	2.30	0.54
1:1:1751:G:N2	1:1:1752:G:N7	2.55	0.54
2:2:473:C:H2'	2:2:474:A:O4'	2.07	0.54
2:2:729:G:N3	2:2:731:A:H8	2.05	0.54
2:2:1437:A:O2'	2:2:1438:A:OP1	2.18	0.54
5:5:18:G:H1'	28:T:69:ARG:HE	1.73	0.54
6:6:21:A:C1'	6:6:22:G:P	2.95	0.54
6:6:57:U:OP1	41:g:138:TYR:OH	2.23	0.54
9:A:73:LYS:HB2	9:A:73:LYS:NZ	2.23	0.54
27:S:75:ILE:HG22	27:S:88:ARG:HD3	1.88	0.54
45:k:26:LYS:HE3	45:k:28:ASN:HB3	1.88	0.54
47:m:42:CYS:SG	47:m:60:CYS:SG	3.06	0.54
1:1:180:A:N6	1:1:271:A:H62	2.06	0.54
2:2:1318:OMC:HM21	10:B:244:PRO:CG	2.37	0.54
19:K:89:VAL:HG23	19:K:89:VAL:O	2.07	0.54
25:Q:10:LEU:HD11	25:Q:41:VAL:HG21	1.90	0.54
31:W:50:ASP:C	31:W:66:LYS:HE2	2.33	0.54
43:i:68:LYS:HD2	43:i:71:ARG:HH11	1.72	0.54
1:1:195:G:N2	1:1:237:U:O4	2.41	0.54
1:1:373:G:H2'	1:1:374:G:O4'	2.07	0.54
1:1:1158:U:H2'	1:1:1159:A:H4'	1.90	0.54
1:1:1657:U:C2	44:j:41:ARG:HD2	2.43	0.54
3:3:107:U:O4	3:3:128:C:C6	2.61	0.54
6:6:43:A:H2'	6:6:44:G:O4'	2.07	0.54
7:7:168:G:H2'	7:7:169:A:H8	1.70	0.54
8:8:19:G:O6	8:8:64:A:N6	2.40	0.54
14:F:38:ILE:HG21	14:F:177:TYR:HE2	1.72	0.54
14:F:55:LYS:NZ	14:F:99:ALA:O	2.29	0.54
19:K:73:ILE:HD12	19:K:73:ILE:H	1.70	0.54
1:1:172:G:H2'	1:1:173:G:C8	2.39	0.54
2:2:471:U:H4'	48:n:36:PHE:HE2	1.73	0.54
2:2:768:G:H1'	30:V:34:GLN:HE22	1.73	0.54
2:2:1110:C:H3'	2:2:1111:U:H5"	1.90	0.54
4:4:45:G:H2'	4:4:46:G:H8	1.73	0.54
4:4:64:C:O2'	4:4:65:C:OP1	2.22	0.54
5:5:111:G:N2	5:5:115:U:OP1	2.40	0.54
11:C:59:MET:SD	11:C:99:ARG:HD3	2.48	0.54
11:C:94:MET:N	11:C:94:MET:SD	2.81	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:C:127:LEU:HD23	11:C:238:LEU:HD11	1.90	0.54
22:N:121:LYS:HG3	22:N:122:PRO:CD	2.34	0.54
29:U:111:ALA:HA	29:U:117:TYR:HA	1.90	0.54
30:V:69:PRO:HA	30:V:87:PHE:HA	1.88	0.54
2:2:551:G:N2	2:2:551:G:OP2	2.39	0.54
2:2:715:G:H2'	2:2:716:C:C6	2.43	0.54
6:6:37:C:C2	19:K:172:ARG:HD2	2.43	0.54
7:7:7:OMU:CM2	7:7:7:OMU:C4'	2.86	0.54
7:7:76:C:O2'	7:7:77:A:N3	2.41	0.54
10:B:50:LYS:HA	10:B:79:LEU:HD23	1.90	0.54
21:M:121:VAL:HG21	21:M:131:GLU:CG	2.38	0.54
37:c:62:SER:OG	37:c:66:ARG:NH2	2.40	0.54
37:c:109:GLN:NE2	37:c:140:VAL:HA	2.23	0.54
1:1:218:A:H2'	1:1:219:U:C6	2.43	0.53
1:1:237:U:H3'	1:1:238:A:H8	1.72	0.53
1:1:422:U:HO2'	1:1:423:U:H6	1.56	0.53
1:1:777:G:H22	24:P:144:TYR:HD1	1.56	0.53
1:1:1257:U:O2'	1:1:1258:A:O5'	2.24	0.53
1:1:1628:OMG:H5"	30:V:74:LYS:HD3	1.89	0.53
2:2:396:G:O2'	2:2:435:U:OP1	2.18	0.53
2:2:451:U:H3	2:2:483:C:N4	2.06	0.53
2:2:981:A:O2'	2:2:982:C:OP1	2.22	0.53
10:B:302:THR:CG2	10:B:310:LYS:HG2	2.39	0.53
15:G:166:VAL:HG12	15:G:264:ILE:HG22	1.90	0.53
16:H:92:ARG:HB3	16:H:166:TRP:HB2	1.89	0.53
19:K:78:ARG:H	19:K:78:ARG:HD2	1.73	0.53
20:L:111:GLY:N	20:L:130:ALA:HB2	2.23	0.53
24:P:101:ARG:HH21	24:P:101:ARG:CG	2.11	0.53
30:V:78:LYS:HB3	30:V:84:THR:OG1	2.09	0.53
1:1:439:U:H5	28:T:3:HIS:HD1	1.54	0.53
1:1:461:G:O2'	1:1:462:A:O4'	2.15	0.53
1:1:464:A:N1	2:2:608:C:O2'	2.34	0.53
1:1:1669:G:H21	30:V:38:PRO:HD2	1.74	0.53
4:4:95:U:H5	25:Q:62:ARG:NH1	2.07	0.53
10:B:108:HIS:CE1	10:B:109:HIS:HD2	2.25	0.53
32:X:6:CYS:SG	32:X:7:GLU:N	2.81	0.53
35:a:85:LYS:HA	35:a:88:ARG:CG	2.37	0.53
1:1:219:U:H2'	1:1:220:A:C8	2.44	0.53
1:1:807:C:H2'	1:1:808:A:O4'	2.08	0.53
1:1:855:C:O2'	1:1:856:OMG:H5'	2.08	0.53
1:1:951:G:H1'	1:1:1741:A:N6	2.24	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:973:C:H3'	9:A:89:PHE:CZ	2.43	0.53
11:C:269:SER:OG	11:C:272:LYS:O	2.27	0.53
13:E:22:GLY:O	13:E:23:ARG:HG3	2.08	0.53
19:K:180:HIS:HB2	19:K:183:ARG:HD2	1.90	0.53
25:Q:118:HIS:CD2	25:Q:122:ASP:HB3	2.43	0.53
33:Y:9:LYS:HB2	33:Y:9:LYS:HZ2	1.73	0.53
37:c:79:ALA:HA	37:c:84:ASN:HB2	1.90	0.53
1:1:23:U:H1'	1:1:25:C:H41	1.74	0.53
1:1:53:G:C2'	1:1:54:G:H5'	2.38	0.53
1:1:155:A:H4'	1:1:156:A:O5'	2.08	0.53
1:1:279:G:H2'	1:1:280:A:H4'	1.90	0.53
1:1:1020:C:O2'	36:b:18:ARG:NH2	2.41	0.53
1:1:1263:A:H1'	1:1:1264:A:OP2	2.08	0.53
4:4:95:U:P	25:Q:62:ARG:HH21	2.29	0.53
4:4:128:U:H3	4:4:162:A:N6	2.02	0.53
4:4:140:G:H21	4:4:150:A:N6	2.05	0.53
1:1:1126:U:O2	1:1:1127:U:O2'	2.26	0.53
2:2:1224:A:H5"	48:n:34:ARG:HH12	1.73	0.53
2:2:1275:C:H5	2:2:1292:G:H1	1.55	0.53
8:8:72:A:O2'	8:8:73:G:H8	1.92	0.53
14:F:40:ILE:HD13	14:F:50:ARG:HG2	1.90	0.53
20:L:112:ASN:HD22	20:L:113:GLY:H	1.56	0.53
22:N:133:GLN:NE2	22:N:134:ILE:O	2.41	0.53
22:N:191:GLU:O	22:N:197:CYS:HB2	2.09	0.53
37:c:229:ARG:NH1	37:c:229:ARG:HG2	2.23	0.53
40:f:80:VAL:HG12	40:f:109:ILE:HA	1.89	0.53
1:1:133:C:OP1	1:1:134:A:N6	2.41	0.53
1:1:209:C:H42	1:1:223:A:H61	1.57	0.53
1:1:454:U:OP1	28:T:62:ARG:NH2	2.42	0.53
1:1:754:G:C5	20:L:114:HIS:HB3	2.44	0.53
4:4:168:A:HO2'	4:4:169:A:P	2.30	0.53
8:8:85:G:H5"	8:8:85:G:H8	1.72	0.53
17:I:81:SER:HB3	17:I:84:GLU:OE1	2.09	0.53
22:N:36:ILE:HB	22:N:87:MET:HB3	1.90	0.53
1:1:36:OMU:HM22	1:1:37:A:C4'	2.39	0.53
1:1:252:G:H5"	31:W:9:ARG:HD2	1.91	0.53
1:1:465:A:H2'	1:1:466:U:O4'	2.09	0.53
1:1:558:U:O2'	1:1:559:G:OP2	2.26	0.53
8:8:66:A:O2'	8:8:67:G:OP1	2.25	0.53
10:B:95:THR:OG1	10:B:96:PRO:HD2	2.08	0.53
14:F:30:ARG:NH2	14:F:33:CYS:SG	2.82	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:Y:134:PHE:O	42:h:79:TYR:OH	2.24	0.53
35:a:41:ALA:HB1	35:a:44:ARG:HB3	1.90	0.53
35:a:45:LEU:HG	35:a:46:GLY:H	1.73	0.53
1:1:1091:A:H3'	1:1:1092:U:H5"	1.90	0.53
2:2:541:A:N3	2:2:1368:C:O2'	2.36	0.53
2:2:598:A:OP1	28:T:82:ARG:HB3	2.09	0.53
2:2:729:G:C2	2:2:731:A:H3'	2.43	0.53
2:2:1131:A:N6	23:O:28:THR:O	2.42	0.53
2:2:1369:A:HO2'	18:J:40:SER:HG	1.44	0.53
6:6:33:G:C8	19:K:42:VAL:HG11	2.43	0.53
8:8:9:G:OP2	23:O:28:THR:OG1	2.21	0.53
8:8:101:G:O6	26:R:54:LYS:NZ	2.37	0.53
11:C:226:ASP:OD1	11:C:227:LEU:N	2.41	0.53
18:J:20:PRO:HA	18:J:53:SER:HA	1.91	0.53
22:N:190:LEU:HD22	22:N:199:LEU:HG	1.91	0.53
23:O:94:ASN:HD22	23:O:95:TYR:H	1.57	0.53
35:a:99:LEU:HD22	35:a:103:GLU:HG3	1.91	0.53
1:1:1442:G:O2'	1:1:1443:U:OP1	2.24	0.53
2:2:452:G:O2'	2:2:454:A:OP2	2.18	0.53
2:2:728:U:H1'	2:2:729:G:C2	2.44	0.53
2:2:768:G:H1'	30:V:34:GLN:NE2	2.23	0.53
10:B:294:VAL:HG13	10:B:300:GLN:NE2	2.23	0.53
11:C:246:ARG:O	11:C:248:VAL:HG13	2.08	0.53
14:F:34:ALA:HB1	14:F:35:PRO:HD2	1.91	0.53
26:R:16:SER:OG	26:R:57:HIS:O	2.23	0.53
33:Y:76:ASN:OD1	33:Y:77:HIS:N	2.42	0.53
39:e:115:MET:HB3	39:e:148:ARG:HH21	1.74	0.53
1:1:650:G:O2'	1:1:651:G:N2	2.41	0.53
1:1:1493:G:O3'	40:f:69:PRO:HD3	2.08	0.53
2:2:1285:U:H1'	2:2:1288:C:H5	1.73	0.53
2:2:1386:G:N3	10:B:255:ALA:HB1	2.24	0.53
2:2:1394:U:H5"	2:2:1416:G:H22	1.73	0.53
8:8:59:C:H2'	8:8:60:A:C8	2.44	0.53
28:T:60:PHE:HE2	28:T:82:ARG:HD2	1.73	0.53
33:Y:22:LYS:NZ	33:Y:127:TRP:O	2.40	0.53
37:c:74:THR:HA	37:c:77:ARG:CG	2.37	0.53
42:h:22:LYS:N	42:h:34:GLN:O	2.42	0.53
47:m:9:GLY:H	47:m:27:LYS:HZ2	1.55	0.53
1:1:160:C:H2'	1:1:161:A:C8	2.45	0.52
1:1:564:U:O5'	1:1:564:U:H6	1.91	0.52
1:1:708:A:N6	24:P:92:ASP:OD2	2.42	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1587:G:N7	50:2:1710:HOH:O	2.34	0.52
2:2:387:U:H1'	2:2:1415:G:H21	1.73	0.52
3:3:57:U:H2'	3:3:58:C:H5	0.77	0.52
13:E:7:LEU:HD21	13:E:55:THR:HG23	1.91	0.52
28:T:64:ASN:OD1	28:T:65:GLY:N	2.35	0.52
33:Y:14:THR:HG21	42:h:89:ARG:CD	2.38	0.52
34:Z:25:ILE:HD12	40:f:93:TYR:HE1	1.73	0.52
37:c:120:GLN:H	37:c:123:ASN:ND2	2.05	0.52
1:1:158:A:H2'	1:1:159:U:C2	2.45	0.52
1:1:770:G:O2'	1:1:771:U:OP2	2.21	0.52
1:1:959:OMG:HN1	21:M:76:HIS:CD2	2.25	0.52
1:1:1273:U:H3	1:1:1356:G:H22	1.57	0.52
1:1:1754:U:N3	1:1:1757:U:OP2	2.29	0.52
2:2:1229:A:H2'	2:2:1230:OMG:O4'	2.08	0.52
7:7:167:C:H2'	7:7:168:G:C8	2.44	0.52
8:8:17:U:O2'	8:8:18:U:O4'	2.26	0.52
9:A:92:GLN:NE2	9:A:106:GLN:OE1	2.42	0.52
13:E:123:GLN:HE22	13:E:159:VAL:HB	1.74	0.52
21:M:73:ARG:CZ	21:M:92:MET:HE2	2.39	0.52
28:T:22:LEU:O	28:T:22:LEU:HD13	2.09	0.52
28:T:119:VAL:HG22	28:T:146:VAL:HG22	1.90	0.52
37:c:165:LYS:HG2	37:c:213:TRP:CD1	2.45	0.52
41:g:64:ARG:NH1	41:g:112:GLY:O	2.39	0.52
1:1:47:C:N4	21:M:188:TYR:CD1	2.77	0.52
3:3:58:C:O2'	3:3:60:U:C4'	2.57	0.52
3:3:58:C:O5'	3:3:58:C:H6	1.92	0.52
8:8:39:G:O2'	8:8:40:U:H5"	2.09	0.52
8:8:117:A:N6	8:8:118:C:H42	2.07	0.52
10:B:386:TRP:HD1	10:B:387:PHE:CD1	2.28	0.52
21:M:71:ARG:HD3	21:M:71:ARG:C	2.34	0.52
1:1:150:G:OP2	21:M:147:ARG:NH2	2.42	0.52
1:1:439:U:C4	28:T:3:HIS:CE1	2.93	0.52
1:1:648:A:OP1	41:g:92:LYS:HG2	2.09	0.52
1:1:657:G:C2'	1:1:658:G:H5'	2.39	0.52
1:1:669:C:H2'	1:1:670:C:C6	2.44	0.52
1:1:784:U:H3	1:1:786:A:H62	1.56	0.52
1:1:889:G:O2'	3:3:118:U:O2'	2.24	0.52
1:1:1041:U:H5"	27:S:100[B]:ARG:NH2	2.24	0.52
1:1:1626:G:H2'	1:1:1627:A:O4'	2.09	0.52
1:1:1748:C:O2'	3:3:69:A:N3	2.36	0.52
2:2:499:G:H1	2:2:510:U:H3	1.58	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:3:55:U:O2'	3:3:57:U:OP2	2.18	0.52
4:4:51:U:H2'	13:E:98:PHE:CZ	2.44	0.52
4:4:101:G:H2'	4:4:102:G:O4'	2.09	0.52
5:5:23:A:H2'	5:5:24:A:O4'	2.10	0.52
7:7:146:U:H5"	30:V:51:ASN:HB2	1.91	0.52
7:7:168:G:H5"	15:G:172:ARG:NH2	2.23	0.52
8:8:19:G:N1	8:8:64:A:N1	2.57	0.52
8:8:47:U:OP1	23:O:158:ARG:N	2.40	0.52
10:B:379:THR:HG23	10:B:382:GLU:HG2	1.92	0.52
20:L:98:VAL:HG22	20:L:120:ILE:HD11	1.91	0.52
23:O:19:LYS:NZ	23:O:19:LYS:CB	2.73	0.52
23:O:53:VAL:HG23	23:O:62:ALA:HB2	1.91	0.52
42:h:50:GLY:O	42:h:52:LYS:HG2	2.09	0.52
1:1:198:C:C4	1:1:199:A:H1'	2.44	0.52
1:1:931:G:O2'	1:1:932:C:H3'	2.09	0.52
1:1:1479:G:OP1	40:f:79:ASN:ND2	2.36	0.52
2:2:701:U:H3'	2:2:702:A:C8	2.43	0.52
2:2:749:G:C2'	2:2:750:U:O5'	2.58	0.52
2:2:1036:G:H2'	2:2:1037:A:C8	2.45	0.52
2:2:1318:OMC:C6	2:2:1318:OMC:C5'	2.85	0.52
4:4:39:A:N1	4:4:71:C:O2'	2.35	0.52
4:4:139:U:H2'	4:4:140:G:O4'	2.09	0.52
6:6:10:C:N3	6:6:33:G:N2	2.53	0.52
8:8:117:A:C6	8:8:118:C:C4	2.97	0.52
10:B:58:ARG:NH2	10:B:74:GLU:OE2	2.42	0.52
11:C:30:PRO:HG2	11:C:121:PHE:HE1	1.74	0.52
13:E:8:CYS:HB3	13:E:73:LYS:HE3	1.92	0.52
19:K:71:VAL:HG23	19:K:116:PRO:HA	1.91	0.52
22:N:169:LYS:HE3	22:N:177:LEU:HD13	1.91	0.52
30:V:138:THR:O	30:V:142:ILE:N	2.36	0.52
1:1:816:G:H22	1:1:823:G:N2	2.06	0.52
1:1:1528:U:N3	2:2:648:A:OP1	2.40	0.52
1:1:1539:G:N7	28:T:27:LYS:HB2	2.25	0.52
2:2:5:A:H2'	2:2:6:A:C8	2.45	0.52
2:2:677:C:H2'	2:2:678:U:O4'	2.10	0.52
6:6:56:A:H5"	41:g:104:TRP:CZ2	2.45	0.52
7:7:75:G:O6	7:7:76:C:N4	2.42	0.52
9:A:73:LYS:NZ	9:A:73:LYS:CB	2.73	0.52
14:F:49:ARG:HH11	14:F:181:VAL:CG1	2.21	0.52
15:G:163:PHE:O	15:G:240:ASN:ND2	2.43	0.52
36:b:13:SER:O	36:b:17:HIS:ND1	2.27	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:f:67:ILE:HD13	40:f:73:ARG:CD	2.40	0.52
1:1:273:A:O2'	1:1:275:A:N7	2.43	0.52
1:1:910:G:O2'	1:1:912:C:O2	2.26	0.52
1:1:1397:C:H5"	41:g:64:ARG:NH1	2.25	0.52
1:1:1683:G:O3'	1:1:1718:G:N2	2.40	0.52
1:1:1729:A:N3	1:1:1729:A:C3'	2.73	0.52
2:2:706:U:OP1	2:2:706:U:H4'	2.08	0.52
2:2:1252:A:H2'	2:2:1253:G:O4'	2.10	0.52
2:2:1433:U:H2'	2:2:1434:G:C8	2.44	0.52
3:3:108:A:H1'	3:3:109:C:OP2	2.09	0.52
8:8:44:A:N7	8:8:45:U:C4	2.78	0.52
10:B:168:LEU:HD12	10:B:180:LYS:O	2.10	0.52
17:I:84:GLU:HA	17:I:118:VAL:HG22	1.92	0.52
18:J:66:LYS:HA	18:J:72:ARG:HH12	1.74	0.52
21:M:173:GLY:HA3	21:M:184:LEU:CD1	2.40	0.52
24:P:195:PHE:CE2	36:b:34:ARG:HD2	2.44	0.52
26:R:92:MET:SD	26:R:112:LEU:HD21	2.49	0.52
27:S:63:ILE:HB	27:S:75:ILE:HG12	1.91	0.52
37:c:129:MET:SD	37:c:148:TYR:HE1	2.33	0.52
39:e:82:GLU:OE1	39:e:143:ARG:NH2	2.43	0.52
40:f:83:LEU:HD11	40:f:109:ILE:HG23	1.92	0.52
1:1:454:U:P	28:T:62:ARG:HH22	2.32	0.52
1:1:1475:G:OP2	11:C:204:ARG:NH2	2.43	0.52
2:2:29:C:O2'	2:2:30:A:H8	1.92	0.52
2:2:1334:G:H1	2:2:1345:C:H42	1.56	0.52
6:6:20:A:H3'	6:6:20:A:OP2	2.09	0.52
6:6:24:C:O2'	6:6:25:U:O5'	2.24	0.52
13:E:59:TRP:CZ2	19:K:64:TYR:CB	2.93	0.52
20:L:70:LYS:HE2	20:L:125:TYR:CD2	2.44	0.52
23:O:42:THR:HG21	36:b:37:TRP:CZ3	2.45	0.52
46:l:42:ARG:HG3	46:l:47:THR:HG23	1.92	0.52
1:1:499:C:H42	1:1:554:A:H61	1.56	0.52
1:1:786:A:O2'	1:1:787:A:OP1	2.28	0.52
1:1:843:C:H2'	1:1:844:C:C6	2.44	0.52
2:2:685:G:H1	2:2:754:U:H3	1.57	0.52
2:2:1290:A:H5'	2:2:1291:C:H5	1.75	0.52
3:3:179:U:H2'	3:3:180:G:O4'	2.10	0.52
6:6:35:U:O2	6:6:35:U:H2'	2.08	0.52
7:7:41:A:H2	44:j:44:ARG:HE	1.57	0.52
10:B:368:THR:N	10:B:378:GLN:HE22	2.06	0.52
11:C:39:VAL:HG13	11:C:114:ILE:HD13	1.90	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:N:123:ASN:OD1	22:N:124:GLY:N	2.43	0.52
24:P:5:LEU:H	37:c:102:ILE:HG21	1.75	0.52
1:1:652:A:H1'	1:1:653:A:C8	2.45	0.52
1:1:935:A:OP2	44:j:4:GLY:HA3	2.09	0.52
1:1:1602:U:C5	2:2:18:A:N1	2.74	0.52
2:2:1153:OMU:O2	2:2:1153:OMU:HM23	2.10	0.52
2:2:1254:OMG:HM21	2:2:1256:A:H2'	1.91	0.52
5:5:42:G:OP2	5:5:104:G:N2	2.43	0.52
9:A:60[B]:ARG:NH1	9:A:73:LYS:HD2	2.25	0.52
10:B:122:TRP:O	10:B:127:GLN:NE2	2.41	0.52
10:B:173:ASN:HD22	10:B:174[A]:HIS:N	2.07	0.52
18:J:27:CYS:SG	18:J:36:LEU:HG	2.50	0.52
22:N:98:ARG:NH1	22:N:122:PRO:HG3	2.25	0.52
23:O:83:LEU:N	23:O:84:PRO:HD2	2.25	0.52
29:U:40:SER:O	29:U:44:LEU:N	2.39	0.52
35:a:26:LYS:HD2	35:a:55:ILE:HD13	1.92	0.52
47:m:44:LYS:HZ3	47:m:59:GLY:C	2.17	0.52
1:1:864:G:O2'	44:j:45:ARG:NH1	2.43	0.51
2:2:996:G:O2'	2:2:997:C:OP1	2.26	0.51
10:B:47:MET:HE1	10:B:182:HIS:O	2.10	0.51
16:H:219:PHE:HE1	19:K:163:SER:HB3	1.76	0.51
19:K:164:THR:HG23	19:K:166:PHE:H	1.75	0.51
21:M:62:PHE:O	21:M:131:GLU:HA	2.09	0.51
44:j:27:TYR:OH	44:j:32:GLU:HB3	2.10	0.51
1:1:497:A:O2'	1:1:498:G:H8	1.93	0.51
1:1:1274:G:OP1	13:E:1:MET:N	2.31	0.51
1:1:1276:U:H2'	1:1:1277:G:C8	2.45	0.51
2:2:973:C:N4	42:h:98:VAL:HG11	2.25	0.51
2:2:1151:U:O2'	2:2:1152:U:H5"	2.10	0.51
6:6:34:C:H2'	6:6:34:C:O2	2.10	0.51
7:7:161:C:O2	7:7:161:C:H2'	2.11	0.51
11:C:59:MET:SD	11:C:91:PHE:HB2	2.50	0.51
16:H:103:ARG:NH1	16:H:103:ARG:CG	2.72	0.51
21:M:26:ARG:HA	21:M:29:GLU:OE1	2.10	0.51
28:T:3:HIS:CD2	28:T:4:TYR:HB2	2.46	0.51
1:1:244:C:H42	1:1:248:A:N6	2.04	0.51
1:1:994:U:H5	1:1:1523:G:OP1	1.93	0.51
1:1:1015:G:H4'	20:L:30:SER:HB3	1.91	0.51
1:1:1275:G:H5'	26:R:92:MET:HE3	1.92	0.51
2:2:424:U:H2'	9:A:152:SER:HB3	1.92	0.51
2:2:830:U:H5"	2:2:955:A:N6	2.24	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1037:A:H2'	2:2:1038:G:C8	2.45	0.51
6:6:56:A:O2'	41:g:136:ARG:NH1	2.37	0.51
10:B:346:ARG:NH1	10:B:349:MET:HE2	2.25	0.51
13:E:169:LYS:HZ1	13:E:174:PHE:HE1	1.56	0.51
22:N:79:ARG:HH12	22:N:150:GLU:HB3	1.74	0.51
23:O:172:ALA:HB1	23:O:177:MET:HG3	1.92	0.51
25:Q:32:ILE:HD11	25:Q:49:PHE:HB3	1.92	0.51
33:Y:10:VAL:HA	33:Y:24:VAL:HA	1.91	0.51
33:Y:77:HIS:HB3	38:d:37:ARG:HG2	1.92	0.51
1:1:108:G:N2	35:a:121:ARG:O	2.43	0.51
1:1:491:A:HO2'	14:F:83:TYR:HH	1.57	0.51
1:1:687:C:H2'	1:1:688:A:C8	2.46	0.51
1:1:1221:G:H5"	41:g:52:GLN:HE22	1.75	0.51
1:1:1263:A:H4'	1:1:1264:A:O5'	2.11	0.51
2:2:363:C:O2'	4:4:108:G:H1'	2.09	0.51
2:2:534:OMG:H3'	2:2:535:U:C5	2.45	0.51
2:2:760:U:OP2	2:2:1013:U:N3	2.41	0.51
2:2:1120:A:N6	2:2:1128:G:O6	2.43	0.51
10:B:371:LYS:N	10:B:371:LYS:CD	2.74	0.51
15:G:185:GLU:HG3	15:G:190:ARG:HB2	1.91	0.51
15:G:250:TRP:CD1	15:G:250:TRP:H	2.27	0.51
17:I:29:VAL:HG12	17:I:31:LEU:HG	1.93	0.51
19:K:51:ALA:H	41:g:62:ASN:HD21	1.57	0.51
24:P:65:SER:HA	24:P:99:MET:HG3	1.92	0.51
33:Y:83:THR:OG1	33:Y:84:ARG:N	2.32	0.51
35:a:95:ARG:HD3	44:j:79:LYS:CB	2.41	0.51
1:1:222:A:H2'	1:1:223:A:C8	2.43	0.51
1:1:240:U:H2'	1:1:241:G:H8	1.74	0.51
1:1:304:G:N2	21:M:50:MET:O	2.43	0.51
1:1:390:C:H4'	46:l:34:ARG:HE	1.74	0.51
1:1:801:G:H1	1:1:1028:A:H2	1.58	0.51
1:1:1158:U:C4	1:1:1159:A:H1'	2.45	0.51
2:2:1131:A:N3	23:O:23:ARG:NH1	2.57	0.51
2:2:1224:A:OP1	48:n:34:ARG:NH1	2.44	0.51
6:6:8:A:H2'	6:6:9:U:C6	2.45	0.51
6:6:14:A:C4'	6:6:15:C:OP1	2.58	0.51
6:6:22:G:C5	6:6:26:G:N2	2.78	0.51
6:6:46:C:H42	14:F:179:ARG:HE	1.56	0.51
15:G:185:GLU:OE2	15:G:193:ARG:NH2	2.44	0.51
16:H:79:ARG:HH21	16:H:84:PRO:HG3	1.75	0.51
18:J:25:VAL:O	18:J:36:LEU:N	2.44	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:P:4:ASP:HA	37:c:120:GLN:HB3	1.91	0.51
26:R:14:ARG:HH11	37:c:87:LEU:HD13	1.75	0.51
1:1:696:A:H2'	1:1:697:A:C8	2.45	0.51
1:1:708:A:OP2	24:P:111:ARG:NH1	2.43	0.51
1:1:1116:A:N3	1:1:1118:A:N6	2.58	0.51
1:1:1221:G:H1	1:1:1405:U:H3	1.58	0.51
1:1:1259:C:H2'	1:1:1260:G:H4'	1.93	0.51
1:1:1674:U:H3	1:1:1728:G:N2	2.08	0.51
2:2:449:U:H2'	2:2:450:C:C6	2.46	0.51
2:2:667:OMU:O2'	48:n:52:GLY:CA	2.56	0.51
2:2:701:U:H3'	2:2:702:A:H8	1.75	0.51
2:2:1090:A:H2'	2:2:1091:G:H8	1.75	0.51
2:2:1441:G:O2'	2:2:1443:G:N2	2.44	0.51
6:6:27:G:C5'	6:6:27:G:N3	2.73	0.51
8:8:42:C:O2'	8:8:43:G:H5"	2.11	0.51
10:B:204:LEU:O	10:B:205:GLU:HG2	2.10	0.51
19:K:155:GLU:HG2	19:K:158:LYS:HE2	1.92	0.51
21:M:120:TRP:HZ2	21:M:123:MET:HG2	1.75	0.51
22:N:30:LYS:HB3	22:N:66:GLU:OE1	2.10	0.51
23:O:22:ARG:NE	23:O:28:THR:OG1	2.44	0.51
23:O:101:THR:HA	23:O:104:LEU:HB3	1.91	0.51
26:R:5:HIS:ND1	26:R:6:LEU:HB2	2.26	0.51
1:1:157:U:H2'	1:1:158:A:H4'	1.92	0.51
1:1:238:A:OP2	50:1:1929:HOH:O	2.18	0.51
1:1:296:U:O2'	1:1:297:A:O4'	2.25	0.51
1:1:670:C:H2'	1:1:671:G:C8	2.46	0.51
1:1:739:U:H2'	1:1:740:C:C6	2.46	0.51
2:2:361:U:O2	4:4:110:C:O2'	2.24	0.51
2:2:1151:U:O2'	2:2:1152:U:H5'	2.10	0.51
6:6:42:A:H1'	6:6:43:A:N7	2.25	0.51
7:7:135:U:H2'	7:7:136:G:O4'	2.10	0.51
10:B:338:PRO:HD2	10:B:341:ARG:HD2	1.93	0.51
14:F:188:ASP:HB2	14:F:193:TRP:CZ2	2.46	0.51
15:G:247:LEU:HD12	21:M:45:PRO:HG2	1.92	0.51
17:I:79:GLY:HA2	17:I:101:ARG:C	2.36	0.51
24:P:112:PHE:CZ	24:P:127:CYS:HB2	2.46	0.51
30:V:65:VAL:HG23	30:V:66:ILE:H	1.74	0.51
1:1:452:C:H2'	1:1:453:G:C8	2.45	0.51
1:1:913:C:OP2	50:1:1952:HOH:O	2.19	0.51
1:1:1613:G:OP2	28:T:127:ARG:NH2	2.44	0.51
1:1:1659:G:H1'	2:2:414:G:N2	2.20	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:83:G:O2'	2:2:580:U:O4	2.21	0.51
2:2:745:G:H2'	2:2:746:A:C8	2.46	0.51
2:2:1254:OMG:C5	2:2:1309:C:O2'	2.62	0.51
7:7:41:A:O2'	44:j:59:THR:HG22	2.11	0.51
11:C:139:ARG:HH11	11:C:240:PRO:HD2	1.76	0.51
13:E:19:ASP:OD1	13:E:26:THR:N	2.44	0.51
13:E:24:LYS:HZ3	13:E:38:LEU:H	1.59	0.51
14:F:173:GLU:O	14:F:177:TYR:N	2.39	0.51
21:M:108:LYS:HE3	21:M:161:GLN:NE2	2.26	0.51
30:V:83:ASN:H	30:V:128:ARG:NH1	2.09	0.51
40:f:96:VAL:HG22	40:f:121:ALA:HB3	1.93	0.51
41:g:42:TYR:HD2	41:g:49:GLN:NE2	2.08	0.51
43:i:73:LEU:HA	43:i:76:CYS:SG	2.51	0.51
48:n:47:GLN:NE2	48:n:53:GLN:HG2	2.24	0.51
1:1:84:G:H4'	1:1:85:U:H5'	1.93	0.51
1:1:669:C:O2	1:1:684:G:N2	2.31	0.51
2:2:780:G:O6	2:2:812:C:N4	2.44	0.51
2:2:1445:G:N2	16:H:119:SER:O	2.39	0.51
10:B:365:PHE:HE2	10:B:367:ASP:OD1	1.91	0.51
14:F:23:SER:O	14:F:25:GLU:N	2.35	0.51
14:F:76:ILE:HD12	14:F:76:ILE:H	1.75	0.51
16:H:208:MET:SD	19:K:181:TRP:CD2	3.04	0.51
20:L:75:LEU:HD21	20:L:109:LEU:HD11	1.93	0.51
22:N:191:GLU:HG2	22:N:192:GLN:H	1.75	0.51
23:O:41:LYS:N	27:S:69:PRO:O	2.40	0.51
44:j:54:ILE:O	44:j:58:ARG:HG3	2.11	0.51
48:n:46:LYS:HE2	48:n:54:THR:O	2.11	0.51
1:1:178:G:N7	1:1:274:A:O2'	2.42	0.51
1:1:434:U:O2'	31:W:84[A]:ARG:NH1	2.44	0.51
1:1:547:U:C4	1:1:1393:A:C6	2.99	0.51
1:1:1216:U:OP2	37:c:101:GLY:HA3	2.11	0.51
2:2:833:U:H3	2:2:952:G:N2	2.09	0.51
5:5:24:A:H5"	10:B:123:LYS:HG3	1.91	0.51
5:5:101:C:H1'	5:5:102:U:H5'	1.92	0.51
6:6:22:G:N3	6:6:22:G:C2'	2.73	0.51
22:N:44:ASP:HA	22:N:171:TRP:HZ2	1.76	0.51
22:N:47:PRO:HD2	22:N:141:LYS:HA	1.92	0.51
27:S:137:ILE:HA	37:c:86:TYR:HA	1.93	0.51
38:d:46:ILE:HB	38:d:71:HIS:CD2	2.46	0.51
40:f:98:SER:O	40:f:100:THR:N	2.44	0.51
46:l:16:LYS:HD2	46:l:51:TYR:OH	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:159:U:C5	1:1:160:C:C4	2.99	0.50
1:1:567:G:H2'	1:1:568:U:C6	2.45	0.50
1:1:752:G:C4	20:L:110:LEU:HD11	2.46	0.50
1:1:781:A:HO2'	1:1:782:C:C5'	2.24	0.50
1:1:1191:G:O2'	2:2:1070:A:N3	2.32	0.50
1:1:1375:G:H5'	16:H:101:THR:HG23	1.93	0.50
1:1:1452:U:H2'	1:1:1453:C:C6	2.46	0.50
2:2:533:C:C5	2:2:544:U:C6	2.99	0.50
2:2:1024:C:O2	2:2:1025:U:H5	1.94	0.50
5:5:6:C:O3'	28:T:74:LYS:NZ	2.39	0.50
6:6:10:C:O2'	6:6:12:C:OP2	2.28	0.50
8:8:27:A:N6	8:8:55:U:O4	2.44	0.50
18:J:67:GLY:O	18:J:72:ARG:NH2	2.44	0.50
21:M:168:GLY:HA2	21:M:171:HIS:CD2	2.46	0.50
22:N:150:GLU:O	22:N:154:ARG:HG2	2.11	0.50
26:R:8:HIS:CD2	26:R:66:VAL:HG21	2.46	0.50
1:1:478:C:H2'	1:1:479:A:C8	2.45	0.50
1:1:788:A:H2'	1:1:789:U:O4'	2.11	0.50
1:1:1496:U:H1'	40:f:55:ASN:O	2.11	0.50
1:1:1729:A:N3	1:1:1729:A:C2'	2.74	0.50
2:2:622:G:H2'	2:2:623:A:C8	2.46	0.50
2:2:777:A:H62	2:2:812:C:H6	1.59	0.50
2:2:1239:G:O6	20:L:42:ARG:NH2	2.40	0.50
2:2:1383:U:H1'	10:B:256:CYS:SG	2.50	0.50
6:6:22:G:C6	6:6:26:G:N2	2.80	0.50
16:H:58:GLN:HA	16:H:156:VAL:HG13	1.93	0.50
19:K:88:ILE:HD12	19:K:88:ILE:N	2.26	0.50
20:L:4:ARG:H	20:L:4:ARG:HD3	1.77	0.50
25:Q:147:ASN:OD1	25:Q:148:GLU:N	2.40	0.50
44:j:73:ARG:CD	44:j:78:PHE:CB	2.88	0.50
1:1:409:U:HO2'	1:1:410:U:P	2.32	0.50
1:1:700:A:H4'	24:P:172:TYR:CE1	2.46	0.50
1:1:847:OMU:H2'	1:1:848:U:H5"	1.92	0.50
1:1:1236:A:OP2	50:1:1960:HOH:O	2.19	0.50
2:2:971:A:N7	15:G:118:ASN:HB2	2.27	0.50
3:3:203:A:H2	42:h:62:HIS:CD2	2.29	0.50
4:4:33:G:H21	4:4:171:A:H2	1.58	0.50
6:6:26:G:N3	6:6:26:G:C3'	2.73	0.50
6:6:56:A:C2	6:6:58:U:OP2	2.64	0.50
9:A:133:TYR:HE1	9:A:135:ILE:HD11	1.74	0.50
13:E:91:VAL:HG22	13:E:180:VAL:HA	1.91	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:a:114:GLN:OE1	35:a:114:GLN:N	2.44	0.50
46:l:43:HIS:CB	46:l:46:ARG:HD2	2.35	0.50
1:1:780:C:H2'	1:1:781:A:C8	2.46	0.50
1:1:1512:C:OP2	11:C:194:LYS:NZ	2.32	0.50
1:1:1590:G:N2	2:2:56:U:O4	2.37	0.50
1:1:1773:U:H2'	1:1:1774:G:C8	2.46	0.50
2:2:14:C:OP2	30:V:95:LYS:HD3	2.11	0.50
2:2:1255:G:H1	2:2:1259:A:N6	2.04	0.50
8:8:110:G:H1'	8:8:111:U:H5'	1.93	0.50
9:A:108:THR:HG23	47:m:86:LEU:HD23	1.93	0.50
13:E:111:VAL:HB	13:E:121:ARG:HB2	1.93	0.50
15:G:128:ALA:HB1	30:V:31:THR:HG21	1.93	0.50
16:H:107:PRO:O	16:H:113:GLY:HA3	2.11	0.50
21:M:193:ARG:O	21:M:197:ARG:HG3	2.12	0.50
25:Q:99:LEU:HD11	25:Q:103:ARG:CZ	2.42	0.50
31:W:28:MET:HB3	31:W:98:PRO:HG2	1.93	0.50
34:Z:113:ARG:O	34:Z:117:ILE:HG13	2.11	0.50
41:g:42:TYR:OH	41:g:126:VAL:O	2.24	0.50
1:1:135:A:C4	35:a:112:MET:HE2	2.46	0.50
1:1:930:U:H3'	1:1:931:G:C5'	2.40	0.50
1:1:1158:U:H5"	37:c:117:ARG:HE	1.77	0.50
1:1:1483:G:O2'	1:1:1508:G:O6	2.30	0.50
1:1:1547:G:H4'	4:4:106:G:H22	1.76	0.50
2:2:377:A:H61	47:m:18:TYR:HD1	1.57	0.50
2:2:603:A:H5'	28:T:137:THR:OG1	2.11	0.50
2:2:800:G:O5'	15:G:301[A]:ARG:NH1	2.44	0.50
2:2:1012:G:O2'	2:2:1013:U:OP2	2.25	0.50
4:4:33:G:H5"	10:B:98:GLY:HA3	1.94	0.50
4:4:77:U:C2	10:B:75:PRO:HB3	2.46	0.50
10:B:173:ASN:HD22	10:B:174[B]:HIS:N	2.07	0.50
11:C:127:LEU:HD22	11:C:250:TRP:HZ2	1.76	0.50
15:G:227:ALA:HB1	15:G:233:ALA:HB2	1.93	0.50
16:H:79:ARG:HA	16:H:88:PRO:HD2	1.94	0.50
37:c:236:ASP:N	37:c:236:ASP:OD1	2.42	0.50
1:1:282:C:H2'	1:1:283:G:C8	2.47	0.50
1:1:491:A:O4'	6:6:54:A:C2	2.65	0.50
1:1:520:G:N2	1:1:531:C:N3	2.44	0.50
1:1:1729:A:C6	1:1:1730:A:N6	2.80	0.50
2:2:509:C:H2'	2:2:510:U:C6	2.46	0.50
2:2:638:C:O2'	10:B:271:ARG:NH1	2.43	0.50
2:2:958:C:O2	2:2:958:C:H2'	2.10	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1446:A:H3'	16:H:129:ASN:ND2	2.26	0.50
6:6:14:A:OP2	19:K:42:VAL:HB	2.11	0.50
9:A:62:GLU:OE1	9:A:71:ARG:NH2	2.45	0.50
9:A:192:LYS:HB3	9:A:193:ARG:NH2	2.27	0.50
10:B:28:ARG:H	10:B:279:HIS:CE1	2.30	0.50
10:B:96:PRO:HD3	16:H:175:LEU:CD1	2.41	0.50
15:G:306:ARG:O	15:G:310:ARG:HD3	2.12	0.50
16:H:30:LYS:HB2	16:H:55:ARG:NH2	2.26	0.50
16:H:126:ILE:H	16:H:176:GLU:CD	2.19	0.50
19:K:110:ASN:OD1	19:K:111:LEU:N	2.44	0.50
35:a:13:LYS:HZ2	35:a:18:LEU:HD23	1.77	0.50
37:c:229:ARG:CG	37:c:229:ARG:NH1	2.73	0.50
1:1:173:G:C4	1:1:174:U:H1'	2.47	0.50
1:1:229:C:O2'	1:1:230:A:H8	1.95	0.50
1:1:452:C:H2'	1:1:453:G:H8	1.76	0.50
1:1:664:C:C2'	1:1:665:C:H5'	2.42	0.50
1:1:681:A2M:H2'	1:1:682:C:C6	2.47	0.50
1:1:1135:U:H3'	1:1:1136:G:C8	2.47	0.50
1:1:1166:C:H2'	1:1:1167:C:C6	2.46	0.50
1:1:1539:G:O6	28:T:25:HIS:ND1	2.45	0.50
2:2:628:A2M:OP1	16:H:103:ARG:CZ	2.58	0.50
2:2:830:U:O2'	2:2:831:U:O4'	2.29	0.50
2:2:1005:G:O2'	15:G:119:PHE:CE2	2.57	0.50
2:2:1005:G:O3'	15:G:117:LYS:O	2.16	0.50
2:2:1089:G:H1	2:2:1137:U:H3	1.60	0.50
2:2:1443:G:H4'	2:2:1444:A:O5'	2.10	0.50
3:3:93:G:H2'	3:3:94:G:O4'	2.11	0.50
6:6:56:A:H5"	41:g:104:TRP:HZ2	1.77	0.50
7:7:41:A:HO2'	44:j:59:THR:HG22	1.77	0.50
8:8:11:C:H5"	8:8:12:C:OP2	2.10	0.50
9:A:116:VAL:HG21	9:A:148:LEU:HD11	1.94	0.50
20:L:21:ARG:HH12	40:f:39:GLU:HB3	1.75	0.50
31:W:52:GLU:HA	31:W:66:LYS:HA	1.94	0.50
42:h:8:TYR:CD2	42:h:13:HIS:HA	2.47	0.50
47:m:57:CYS:SG	47:m:60:CYS:CB	2.96	0.50
1:1:129:C:H2'	1:1:130:U:O4'	2.12	0.50
1:1:232:G:O2'	1:1:233:U:OP1	2.26	0.50
1:1:765:C:OP2	20:L:136:LYS:HE2	2.12	0.50
1:1:1489:U:H1'	1:1:1491:U:OP1	2.12	0.50
1:1:1631:G:N2	1:1:1759:U:O2'	2.45	0.50
2:2:776:C:O2	2:2:776:C:H2'	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:3:108:A:H5”	3:3:109:C:H5	1.77	0.50
7:7:20:C:OP1	11:C:194:LYS:HD2	2.11	0.50
10:B:153:PHE:O	10:B:157:ALA:HB3	2.12	0.50
13:E:23:ARG:HB3	13:E:46:ARG:HH22	1.77	0.50
19:K:74:LEU:HD12	19:K:75:ARG:HG3	1.93	0.50
19:K:93:ARG:CG	19:K:108:VAL:HG12	2.42	0.50
21:M:122:ASN:HD22	21:M:123:MET:N	2.09	0.50
28:T:60:PHE:O	28:T:64:ASN:HB3	2.11	0.50
36:b:61:GLU:HG2	36:b:62:ARG:N	2.26	0.50
37:c:230:HIS:ND1	37:c:232:VAL:HG22	2.26	0.50
39:e:150:SER:OG	39:e:160:HIS:O	2.16	0.50
47:m:42:CYS:SG	47:m:60:CYS:HB2	2.52	0.50
1:1:242:A:H61	1:1:260:C:N4	2.10	0.50
1:1:568:U:O4	1:1:634:G:O6	2.30	0.50
1:1:672:U:OP1	20:L:21:ARG:NH2	2.45	0.50
1:1:855:C:H5”	11:C:94:MET:HE1	1.94	0.50
1:1:1161:A:N6	24:P:13:ARG:HD2	2.27	0.50
1:1:1278:G:H1	1:1:1351:C:N4	2.01	0.50
2:2:772:A:C8	15:G:134:PHE:HZ	2.29	0.50
5:5:36:U:H5”	10:B:315:MET:HE2	1.93	0.50
6:6:34:C:C3’	6:6:35:U:C6	2.85	0.50
6:6:40:C:H5”	6:6:41:G:C8	2.46	0.50
7:7:124:A:H2’	7:7:125:A:C8	2.46	0.50
13:E:149:ASP:O	13:E:153:VAL:HG22	2.12	0.50
16:H:94:PRO:HA	16:H:97:VAL:HB	1.93	0.50
23:O:76:MET:HE1	23:O:108:ARG:HD2	1.93	0.50
48:n:6:LYS:HG2	48:n:93:LEU:O	2.11	0.50
1:1:368:G:H22	7:7:34:U:H3	1.59	0.49
1:1:872:U:C4’	1:1:963:G:H5’	2.42	0.49
1:1:1032:G:N2	1:1:1164:C:OP1	2.44	0.49
2:2:8:U:H5’	45:k:39:SER:HB2	1.93	0.49
2:2:69:A:C2’	2:2:70:A:H5’	2.42	0.49
2:2:700:G:H2’	2:2:701:U:H5”	1.94	0.49
5:5:28:G:O6	5:5:122:C:N4	2.43	0.49
7:7:145:G:H2’	7:7:146:U:C6	2.47	0.49
17:I:59:LEU:HD22	17:I:80:PHE:CZ	2.46	0.49
28:T:60:PHE:CE2	28:T:82:ARG:HD2	2.46	0.49
37:c:185:ASN:O	37:c:187:ASP:N	2.45	0.49
40:f:67:ILE:CD1	40:f:73:ARG:CD	2.89	0.49
48:n:73:GLN:HG2	48:n:80:ILE:HG12	1.93	0.49
1:1:215:U:H3’	1:1:217:A:H2	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:306:G:OP2	21:M:44:ARG:NH1	2.41	0.49
1:1:453:G:OP1	28:T:62:ARG:HD3	2.12	0.49
2:2:71:OMG:H8	2:2:71:OMG:O5'	1.96	0.49
2:2:459:A:N6	2:2:479:C:N3	2.60	0.49
2:2:1277:A:C5	2:2:1278:G:H1'	2.47	0.49
2:2:1387:C:P	10:B:249:ARG:HH21	2.36	0.49
6:6:42:A:H1'	6:6:43:A:C5	2.47	0.49
17:I:52:PHE:CD1	17:I:53:PRO:HA	2.47	0.49
23:O:103:LEU:HA	23:O:106:ALA:HB3	1.94	0.49
24:P:93:VAL:HB	24:P:112:PHE:CD1	2.48	0.49
37:c:52:LYS:HD3	37:c:56:LEU:HD23	1.93	0.49
1:1:53:G:O2'	21:M:161:GLN:NE2	2.44	0.49
1:1:88:G:OP2	50:1:1926:HOH:O	2.20	0.49
1:1:235:A:H2'	1:1:235:A:N3	2.27	0.49
1:1:291:A:H2'	1:1:292:A:C8	2.43	0.49
1:1:740:C:C2'	1:1:741:G:H5'	2.40	0.49
1:1:751:G:O2'	1:1:811:G:H5"	2.11	0.49
1:1:776:U:H3'	1:1:777:G:C8	2.42	0.49
2:2:620:C:OP1	2:2:1262:G:O2'	2.30	0.49
2:2:1231:A:H5"	48:n:67:LYS:HD2	1.94	0.49
3:3:39:U:O2'	3:3:139:G:O3'	2.22	0.49
3:3:51:G:H5'	3:3:153:G:O2'	2.13	0.49
3:3:128:C:O2	3:3:128:C:H3'	2.12	0.49
4:4:35:G:H5"	16:H:90:HIS:O	2.12	0.49
7:7:76:C:O2'	7:7:77:A:O5'	2.29	0.49
8:8:48:G:N1	8:8:49:U:C2	2.79	0.49
10:B:92:TYR:HD2	10:B:99:LEU:HD13	1.76	0.49
11:C:192:ARG:O	11:C:196:ARG:HD3	2.11	0.49
13:E:40:HIS:CE1	13:E:41:LEU:HB3	2.46	0.49
13:E:104:VAL:HG22	13:E:109:ILE:HG13	1.93	0.49
13:E:108:ASN:HD21	13:E:122:ARG:HB3	1.77	0.49
13:E:161:HIS:CD2	13:E:180:VAL:HG12	2.48	0.49
13:E:182:THR:HG22	13:E:184:THR:OG1	2.12	0.49
17:I:33:GLN:HE21	21:M:202:ARG:HE	1.59	0.49
22:N:193:ARG:HH11	22:N:198:LYS:HE3	1.77	0.49
23:O:18:VAL:HG22	23:O:24:ARG:NH2	2.15	0.49
28:T:36:ILE:HG22	28:T:39:MET:SD	2.52	0.49
1:1:273:A:H2'	1:1:274:A:H4'	1.94	0.49
1:1:308:A:H2'	1:1:309:G:O4'	2.13	0.49
1:1:543:G:N3	1:1:543:G:C5'	2.73	0.49
1:1:1102:U:O2'	1:1:1103:U:O5'	2.29	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1554:C:H2'	1:1:1555:G:C8	2.46	0.49
2:2:1398:OMC:HM22	2:2:1399:C:C4'	2.41	0.49
7:7:12:A:O2'	28:T:121:GLN:O	2.30	0.49
7:7:64:U:H5'	35:a:53:LYS:HD2	1.94	0.49
9:A:30:ARG:O	9:A:163:ARG:NH2	2.40	0.49
10:B:217:SER:O	10:B:286:LYS:NZ	2.33	0.49
10:B:248:HIS:CE1	10:B:249:ARG:HD3	2.46	0.49
11:C:10:TYR:CE2	11:C:147:PRO:HB2	2.47	0.49
11:C:207:MET:HB3	11:C:246:ARG:NH2	2.27	0.49
16:H:30:LYS:HE3	16:H:55:ARG:NH2	2.27	0.49
19:K:72:ARG:C	19:K:72:ARG:CD	2.85	0.49
19:K:134:ASP:O	19:K:138:SER:N	2.45	0.49
23:O:21:ARG:C	23:O:21:ARG:CD	2.86	0.49
24:P:89:VAL:HG22	24:P:91:GLY:H	1.78	0.49
40:f:5:THR:HG22	40:f:72:PHE:CD2	2.48	0.49
1:1:212:U:H3	1:1:221:C:H42	1.59	0.49
1:1:300:A:C2	1:1:301:A:H1'	2.47	0.49
1:1:519:G:H21	1:1:531:C:N4	2.10	0.49
1:1:779:A:OP1	24:P:142:ASN:N	2.46	0.49
1:1:819:C:H2'	1:1:820:U:H4'	1.95	0.49
1:1:1144:G:H2'	1:1:1145:G:C8	2.46	0.49
1:1:1662:U:H4'	1:1:1663:U:O5'	2.11	0.49
2:2:373:U:H3	2:2:572:A2M:C2	2.26	0.49
2:2:410:C:O2'	9:A:12:ASN:OD1	2.19	0.49
2:2:527:A2M:HM'3	2:2:1398:OMC:HM23	1.95	0.49
2:2:782:G:C4	2:2:783:U:C5	3.00	0.49
2:2:988:U:H2'	2:2:989:G:C8	2.48	0.49
2:2:1440:U:O2'	2:2:1441:G:H5"	2.12	0.49
5:5:31:U:OP1	39:e:86:HIS:HB3	2.11	0.49
6:6:7:A:C2	6:6:60:A:N1	2.81	0.49
7:7:41:A:H61	7:7:102:G:C2'	2.25	0.49
19:K:78:ARG:HH12	19:K:107:HIS:HE1	0.65	0.49
22:N:96:VAL:HA	22:N:125:VAL:HG22	1.94	0.49
25:Q:21:ARG:NH2	25:Q:52:ARG:HH11	2.09	0.49
25:Q:32:ILE:HD12	25:Q:50:ILE:HD11	1.93	0.49
37:c:120:GLN:H	37:c:123:ASN:HD22	1.60	0.49
46:l:16:LYS:HG3	46:l:49:LEU:HD13	1.94	0.49
1:1:777:G:N2	24:P:144:TYR:HA	2.28	0.49
1:1:1045:G:O6	1:1:1103:U:O2'	2.25	0.49
1:1:1530:U:H5"	11:C:75:ILE:CD1	2.43	0.49
3:3:24:C:H5"	9:A:70:ARG:HG2	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:6:8:A:N6	6:6:34:C:N4	2.60	0.49
6:6:16:C:H2'	6:6:17:U:O4'	2.13	0.49
6:6:38:C:H5'	41:g:28:ARG:NE	2.28	0.49
16:H:93:ALA:H	16:H:166:TRP:HB2	1.78	0.49
17:I:18:ASN:C	17:I:18:ASN:HD22	2.20	0.49
31:W:77:ILE:HD11	31:W:101:VAL:HG21	1.93	0.49
31:W:80:ASP:O	31:W:80:ASP:OD1	2.30	0.49
42:h:9:ARG:HD2	42:h:32:VAL:HG22	1.95	0.49
1:1:1165:A:H2'	1:1:1166:C:C6	2.46	0.49
1:1:1576:C:H2'	1:1:1577:G:C8	2.47	0.49
2:2:768:G:H8	30:V:34:GLN:HE22	1.59	0.49
2:2:969:U:O2'	2:2:970:A:O4'	2.30	0.49
2:2:1021:C:H2'	2:2:1022:A:O4'	2.13	0.49
3:3:36:C:H2'	3:3:37:A:C8	2.47	0.49
5:5:32:G:H2'	5:5:33:G:H8	1.77	0.49
5:5:113:A:H1'	5:5:114:A:OP2	2.12	0.49
8:8:109:A:N6	8:8:110:G:O6	2.46	0.49
9:A:113:VAL:HG12	9:A:166:ILE:HD13	1.93	0.49
9:A:192:LYS:HD3	9:A:193:ARG:HH22	1.77	0.49
13:E:108:ASN:OD1	13:E:109:ILE:N	2.44	0.49
14:F:25:GLU:O	14:F:26:TYR:HB3	2.13	0.49
15:G:131:LEU:C	15:G:133:ARG:H	2.20	0.49
28:T:107:LEU:HD23	28:T:112:MET:HE1	1.94	0.49
48:n:45:ARG:HE	48:n:45:ARG:CA	2.24	0.49
1:1:649:U:O2'	1:1:650:G:O4'	2.30	0.49
1:1:1368:G:O6	2:2:612:C:O2'	2.29	0.49
2:2:455:U:H3'	2:2:456:G:C8	2.46	0.49
2:2:468:A:O2'	2:2:469:G:OP1	2.30	0.49
2:2:522:G:N2	2:2:562:G:O2'	2.44	0.49
4:4:140:G:N2	4:4:150:A:H62	2.06	0.49
6:6:37:C:C6	14:F:185:LYS:HD3	2.48	0.49
6:6:41:G:H1	19:K:176:ARG:HH11	1.56	0.49
8:8:27:A:H8	8:8:27:A:OP2	1.96	0.49
8:8:76:A:N1	8:8:102:A:H5'	2.27	0.49
10:B:300:GLN:HB3	10:B:312:ILE:HG12	1.93	0.49
20:L:113:GLY:O	20:L:133:LYS:NZ	2.34	0.49
1:1:70:C:H1'	17:I:66:PRO:O	2.13	0.49
1:1:208:C:O2'	1:1:226:C:N3	2.38	0.49
1:1:1357:G:H2'	1:1:1358:C:C6	2.48	0.49
1:1:1752:G:H2'	1:1:1754:U:OP2	2.13	0.49
2:2:41:A:N3	42:h:5:ARG:NH2	2.61	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:601:G:H4'	28:T:139:TYR:CE1	2.48	0.49
2:2:1044:C:H2'	2:2:1045:U:C2	2.48	0.49
2:2:1140:U:H2'	2:2:1141:U:C6	2.48	0.49
6:6:18:A:H1'	6:6:29:G:H22	1.78	0.49
9:A:79:PRO:HD2	9:A:82:MET:CE	2.42	0.49
10:B:301:ALA:HB2	10:B:312:ILE:HD13	1.94	0.49
11:C:178:ASP:CG	11:C:206:PRO:HD3	2.38	0.49
16:H:123:TYR:CG	16:H:127:PRO:HG2	2.48	0.49
16:H:200:ALA:HA	19:K:185:VAL:HG11	1.93	0.49
18:J:81:ILE:HG23	18:J:120:VAL:HG22	1.94	0.49
34:Z:25:ILE:HD12	40:f:93:TYR:CE1	2.48	0.49
35:a:85:LYS:HG2	35:a:88:ARG:HD3	1.95	0.49
40:f:41:SER:O	40:f:45:ARG:HG2	2.11	0.49
42:h:22:LYS:HG2	42:h:36:ARG:HG2	1.95	0.49
1:1:300:A:C2'	1:1:301:A:H4'	2.43	0.49
1:1:353:C:P	17:I:107:LYS:HE3	2.53	0.49
1:1:1629:U:O4	30:V:119:PRO:HG3	2.13	0.49
1:1:1677:A:H8	1:1:1677:A:O5'	1.95	0.49
2:2:94:A:H2'	2:2:95:A:O4'	2.13	0.49
2:2:1012:G:N2	15:G:153:ARG:NH1	2.61	0.49
5:5:132:C:H4'	5:5:133:A:O5'	2.13	0.49
8:8:29:A:OP2	23:O:56:THR:OG1	2.31	0.49
9:A:237:LEU:HB3	9:A:240:ALA:HB2	1.95	0.49
13:E:23:ARG:NH2	13:E:24:LYS:HZ1	2.10	0.49
13:E:137:SER:HA	13:E:140:LYS:HD3	1.95	0.49
15:G:166:VAL:HG21	15:G:266:LYS:CD	2.40	0.49
16:H:188:GLU:HA	16:H:191:ALA:HB2	1.94	0.49
17:I:16:HIS:HD2	17:I:23:GLN:HG3	1.78	0.49
26:R:14:ARG:HG2	26:R:26:VAL:HG22	1.94	0.49
34:Z:18:PHE:O	34:Z:28:SER:HA	2.13	0.49
1:1:1505:G:H2'	1:1:1507:U:C6	2.48	0.48
2:2:35:G:H1'	44:j:9:GLY:HA3	1.94	0.48
2:2:393:A:H2'	2:2:394:U:O4'	2.14	0.48
2:2:483:C:O2'	2:2:484:G:O4'	2.25	0.48
2:2:749:G:H2'	2:2:750:U:H6	1.74	0.48
2:2:1164:U:O2'	27:S:90:CYS:O	2.30	0.48
2:2:1277:A:OP1	22:N:154:ARG:NH1	2.46	0.48
5:5:36:U:H2'	5:5:37:G:O4'	2.12	0.48
5:5:102:U:H2'	5:5:103:U:C6	2.47	0.48
6:6:5:C:N4	6:6:6:G:C6	2.81	0.48
9:A:60[B]:ARG:HD2	9:A:73:LYS:HD2	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:B:376:ARG:HD3	32:X:37:ARG:HH12	1.78	0.48
25:Q:98:ARG:NH2	25:Q:132:PHE:O	2.46	0.48
26:R:29:PHE:CZ	26:R:43:PHE:HA	2.47	0.48
34:Z:53:VAL:HG12	34:Z:54:LYS:H	1.77	0.48
1:1:113:C:P	21:M:147:ARG:HE	2.36	0.48
1:1:215:U:H3'	1:1:217:A:C2	2.47	0.48
1:1:494:A:H2'	1:1:495:C:C6	2.48	0.48
1:1:956:U:C4'	9:A:14:SER:HB2	2.44	0.48
1:1:959:OMG:H2'	1:1:959:OMG:N3	2.28	0.48
1:1:1169:A:N3	1:1:1461:G:O2'	2.46	0.48
1:1:1472:G:N2	1:1:1518:C:O2	2.31	0.48
1:1:1651:G:O2'	2:2:414:G:O2'	2.30	0.48
1:1:1674:U:H3	1:1:1728:G:H21	1.62	0.48
2:2:427:C:H5"	9:A:193:ARG:NH1	2.28	0.48
2:2:1446:A:H1'	4:4:174:A:O2'	2.12	0.48
3:3:57:U:O2'	3:3:58:C:P	2.71	0.48
6:6:10:C:C2'	6:6:13:C:H41	2.07	0.48
7:7:12:A:H2'	7:7:13:U:C6	2.48	0.48
10:B:248:HIS:ND1	10:B:249:ARG:HD3	2.28	0.48
15:G:253:ASN:O	15:G:253:ASN:ND2	2.41	0.48
17:I:61:PRO:HD2	17:I:77:GLY:O	2.12	0.48
21:M:7:LEU:HB3	21:M:46:GLU:HG2	1.94	0.48
22:N:60:ILE:HG23	22:N:160:PRO:HD2	1.94	0.48
23:O:31:HIS:HD2	23:O:34:ARG:HH21	1.57	0.48
26:R:32:PHE:HE2	26:R:128:VAL:HG21	1.77	0.48
35:a:76:ASP:OD1	35:a:77:ARG:N	2.45	0.48
36:b:11:ASN:ND2	36:b:14:SER:OG	2.46	0.48
1:1:35:U:O3'	1:1:986:U:H4'	2.13	0.48
1:1:708:A:O2'	1:1:710:G:O2'	2.31	0.48
1:1:848:U:O2	17:I:11:VAL:HG11	2.12	0.48
1:1:1414:A:OP2	1:1:1414:A:H8	1.96	0.48
2:2:100:U:H2'	2:2:101:G:C8	2.47	0.48
2:2:572:A2M:O2'	2:2:573:U:H5'	2.12	0.48
5:5:125:A:C6	5:5:126:G:N1	2.82	0.48
6:6:5:C:H2'	6:6:6:G:H5'	1.94	0.48
10:B:288:TYR:OH	10:B:332:LYS:HG3	2.13	0.48
13:E:126:PRO:HD3	13:E:156:GLU:OE2	2.13	0.48
19:K:73:ILE:HA	19:K:113:ASN:O	2.13	0.48
23:O:105:LEU:O	23:O:109:THR:HG23	2.13	0.48
26:R:12:VAL:HG23	26:R:28:LYS:HB3	1.94	0.48
37:c:98:ARG:NH2	37:c:101:GLY:O	2.46	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:f:9:ALA:H	40:f:64:THR:HG21	1.78	0.48
1:1:765:C:H2'	1:1:766:A:H8	1.79	0.48
1:1:1742:G:H5"	42:h:16:THR:HG21	1.94	0.48
2:2:17:U:H4'	46:l:3[B]:ARG:HG3	1.95	0.48
2:2:1113:A:O2'	2:2:1114:C:O4'	2.21	0.48
8:8:12:C:O2	8:8:15:A:H2	1.96	0.48
14:F:38:ILE:HG21	14:F:177:TYR:CE2	2.49	0.48
16:H:27:ILE:HD11	16:H:139:ILE:HG13	1.94	0.48
22:N:34:PHE:HD1	22:N:89:THR:HB	1.77	0.48
33:Y:14:THR:CG2	42:h:89:ARG:CD	2.85	0.48
38:d:46:ILE:HD13	38:d:91:VAL:HG23	1.96	0.48
40:f:98:SER:C	40:f:100:THR:H	2.21	0.48
48:n:6:LYS:HE3	48:n:93:LEU:O	2.12	0.48
1:1:22:C:H2'	1:1:23:U:H5'	1.94	0.48
1:1:787:A:N7	1:1:788:A:H8	2.11	0.48
1:1:892:C:H2'	1:1:893:G:C8	2.49	0.48
1:1:1548:A:N6	1:1:1584:A:H4'	2.27	0.48
2:2:541:A:C8	18:J:39:ILE:HD12	2.49	0.48
2:2:776:C:O2'	2:2:777:A:O4'	2.27	0.48
2:2:962:C:N4	2:2:963:G:O6	2.46	0.48
2:2:1317:G:C6	2:2:1387:C:N3	2.81	0.48
3:3:97:U:O2'	3:3:98:G:H8	1.97	0.48
3:3:182:G:H8	3:3:182:G:OP2	1.97	0.48
3:3:201:A:H2'	3:3:202:A:C8	2.48	0.48
4:4:43:U:H2'	4:4:44:G:C8	2.49	0.48
6:6:3:A:H2'	6:6:4:U:H5"	1.95	0.48
6:6:8:A:H61	6:6:34:C:N4	2.12	0.48
7:7:164:U:H5"	7:7:165:G:OP1	2.13	0.48
9:A:19:HIS:CD2	9:A:192:LYS:O	2.66	0.48
13:E:145:PHE:HD2	13:E:157:ALA:HB2	1.78	0.48
19:K:149:ARG:C	19:K:151:ALA:H	2.21	0.48
23:O:23:ARG:C	23:O:23:ARG:CD	2.85	0.48
42:h:103:ILE:HA	42:h:106:GLN:HG3	1.95	0.48
47:m:56:ARG:HH21	47:m:56:ARG:CG	2.27	0.48
1:1:114:G:H2'	1:1:115:U:O4'	2.13	0.48
1:1:1092:U:OP1	1:1:1092:U:H4'	2.13	0.48
2:2:342:U:O2	2:2:343:U:N3	2.46	0.48
2:2:966:C:H5"	2:2:967:U:OP2	2.12	0.48
2:2:971:A:C5	15:G:118:ASN:HB2	2.48	0.48
3:3:155:U:H2'	3:3:156:C:O4'	2.13	0.48
5:5:46:G:H2'	5:5:47:G:C8	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:7:119:G:C2'	7:7:120:G:H5'	2.43	0.48
9:A:60[B]:ARG:HD2	9:A:73:LYS:CD	2.44	0.48
13:E:93:CYS:SG	13:E:94:ALA:N	2.86	0.48
19:K:180:HIS:HA	19:K:183:ARG:CD	2.42	0.48
21:M:146:PRO:HG2	35:a:108:THR:CG2	2.44	0.48
22:N:57:LEU:HA	22:N:130:ARG:HA	1.96	0.48
22:N:98:ARG:HB3	22:N:120:GLY:HA3	1.95	0.48
27:S:80:VAL:HG21	27:S:85:LEU:HD23	1.96	0.48
1:1:447:G:H1'	7:7:15:G:N2	2.29	0.48
1:1:454:U:H3	7:7:9:G:H1	1.61	0.48
1:1:807:C:OP1	36:b:45:ARG:HG3	2.13	0.48
1:1:1224:A:OP2	41:g:109:ARG:NH1	2.46	0.48
2:2:822:G:C6	2:2:823:A:C6	3.02	0.48
2:2:1159:A:H3'	2:2:1160:OMC:H6	1.78	0.48
3:3:182:G:C4'	42:h:36:ARG:HH12	2.27	0.48
9:A:173:GLY:O	9:A:176:GLU:HG2	2.13	0.48
10:B:25:ILE:HG22	10:B:277:TYR:CE1	2.46	0.48
17:I:97:THR:OG1	35:a:120:LYS:HA	2.13	0.48
17:I:123:THR:O	17:I:126:SER:OG	2.23	0.48
18:J:78:ALA:N	18:J:105:VAL:HG22	2.29	0.48
26:R:115:ARG:HG3	26:R:116:HIS:ND1	2.29	0.48
27:S:65:TRP:CZ3	36:b:36:SER:HB3	2.49	0.48
31:W:40:TYR:CG	31:W:116:LEU:HD21	2.48	0.48
37:c:106:ASN:HB3	37:c:109:GLN:CG	2.43	0.48
41:g:55:LEU:HB3	41:g:116:MET:CE	2.43	0.48
1:1:766:A:N6	1:1:767:U:O2	2.47	0.48
1:1:1042:G:N1	1:1:1109:U:H5	2.12	0.48
1:1:1150:A:OP1	27:S:116:LEU:HD21	2.14	0.48
1:1:1185:U:H4'	22:N:8:CYS:HB3	1.95	0.48
1:1:1446:A:C8	34:Z:24:GLY:HA3	2.49	0.48
2:2:1029:A:H2'	2:2:1030:G:C8	2.49	0.48
3:3:82:G:H2'	3:3:83:G:N7	2.29	0.48
5:5:13:C:C4	10:B:340:ARG:O	2.67	0.48
7:7:49:G:OP1	35:a:49:ARG:HB2	2.13	0.48
9:A:65:HIS:HD2	9:A:68:LYS:N	2.08	0.48
19:K:73:ILE:HG21	19:K:109:GLN:NE2	2.29	0.48
32:X:54:PRO:HA	32:X:59:TYR:CD2	2.48	0.48
1:1:33:A:C8	1:1:46:A:N6	2.81	0.48
1:1:244:C:N4	1:1:248:A:H61	2.05	0.48
1:1:248:A:H2'	11:C:221:ASN:OD1	2.14	0.48
1:1:287:C:H2'	1:1:288:A:O4'	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:947:A:N1	2:2:393:A:O2'	2.39	0.48
1:1:967:G:O4'	9:A:205:ASN:ND2	2.47	0.48
1:1:1446:A:H5"	40:f:62:ARG:NH1	2.29	0.48
2:2:512:U:H2'	2:2:513:C:H6	1.79	0.48
2:2:724:C:OP2	2:2:725:A:O2'	2.32	0.48
2:2:967:U:H4'	2:2:968:G:C8	2.49	0.48
2:2:1012:G:C6	15:G:324:SER:HA	2.49	0.48
3:3:78:C:HO2'	3:3:79:U:P	2.33	0.48
6:6:26:G:H3'	6:6:27:G:H4'	1.96	0.48
6:6:52:G:H8	6:6:52:G:OP2	1.96	0.48
11:C:297:ARG:HA	11:C:300:LEU:HG	1.95	0.48
16:H:28:ASP:OD1	16:H:29:LEU:N	2.47	0.48
21:M:71:ARG:HG2	21:M:94:LEU:CB	2.33	0.48
44:j:4:GLY:O	44:j:8:MET:HG2	2.14	0.48
1:1:1050:G:H4'	8:8:104:C:O2'	2.13	0.48
1:1:1262:G:C2	1:1:1263:A:H2'	2.48	0.48
2:2:528:U:O2	2:2:556:U:H4'	2.13	0.48
2:2:531:C:OP2	2:2:532:U:O2'	2.30	0.48
2:2:667:OMU:H6	2:2:667:OMU:C4'	2.44	0.48
2:2:984:G:H2'	2:2:985:G:C8	2.49	0.48
2:2:1442:C:H42	6:6:3:A:H61	1.61	0.48
3:3:45:C:H2'	3:3:46:A:H8	1.78	0.48
4:4:52:A:H1'	13:E:174:PHE:HD2	1.79	0.48
6:6:5:C:C2'	6:6:6:G:H5'	2.43	0.48
6:6:21:A:H1'	6:6:22:G:OP1	2.14	0.48
6:6:49:C:H5'	14:F:45:ARG:HH12	1.79	0.48
7:7:164:U:O4	15:G:133:ARG:HA	2.13	0.48
11:C:100:MET:HE1	11:C:104:THR:HG23	1.96	0.48
11:C:257:GLN:HB3	11:C:261:ILE:HG23	1.96	0.48
15:G:193:ARG:NH1	15:G:214:PRO:HD3	2.28	0.48
15:G:199:GLU:O	15:G:203:LYS:HD3	2.14	0.48
16:H:192:LYS:HA	16:H:195:GLU:OE1	2.14	0.48
17:I:108:ASN:ND2	17:I:114:MET:HE2	2.29	0.48
19:K:81:ARG:CZ	19:K:102:ALA:O	2.62	0.48
22:N:49:CYS:SG	22:N:172:GLY:HA2	2.53	0.48
24:P:136:ILE:O	24:P:136:ILE:HG13	2.14	0.48
27:S:75:ILE:HA	27:S:87:LYS:O	2.14	0.48
35:a:91:LEU:O	35:a:96:ARG:NH2	2.47	0.48
39:e:86:HIS:HA	39:e:141:ARG:HG2	1.96	0.48
39:e:163:THR:HG22	39:e:165:ILE:HG13	1.96	0.48
47:m:9:GLY:H	47:m:27:LYS:NZ	2.12	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:35:U:C2'	1:1:36:OMU:C5'	2.86	0.47
1:1:454:U:O2'	1:1:455:G:O5'	2.32	0.47
1:1:1751:G:H5'	3:3:150:G:H5"	1.96	0.47
2:2:29:C:HO2'	2:2:30:A:P	2.37	0.47
2:2:540:C:O2'	2:2:541:A:O5'	2.32	0.47
2:2:544:U:O2'	2:2:545:A:H5'	2.14	0.47
2:2:739:C:H2'	2:2:740:A:H5'	1.96	0.47
2:2:1090:A:H2'	2:2:1091:G:C8	2.48	0.47
3:3:195:A:H5"	3:3:195:A:C8	2.47	0.47
5:5:32:G:H2'	5:5:33:G:C8	2.48	0.47
6:6:13:C:C4	6:6:14:A:N6	2.81	0.47
9:A:246:ILE:C	9:A:246:ILE:CD1	2.85	0.47
10:B:310:LYS:NZ	10:B:368:THR:OG1	2.47	0.47
13:E:16:VAL:HG21	13:E:80:ILE:HG23	1.96	0.47
20:L:21:ARG:NH1	40:f:39:GLU:HB3	2.29	0.47
20:L:50:PRO:HG3	24:P:162:SER:O	2.14	0.47
21:M:173:GLY:HA3	21:M:184:LEU:HD12	1.97	0.47
35:a:88:ARG:O	35:a:89:ALA:C	2.57	0.47
40:f:89:GLN:HB3	40:f:93:TYR:HD2	1.79	0.47
1:1:1123:G:O2'	1:1:1124:C:H5"	2.14	0.47
2:2:789:G:H2'	2:2:790:U:H5'	1.96	0.47
6:6:38:C:H5'	41:g:28:ARG:HH11	1.77	0.47
10:B:310:LYS:HE2	10:B:368:THR:CG2	2.43	0.47
11:C:207:MET:CB	11:C:226:ASP:HB3	2.45	0.47
15:G:146:LYS:HB3	21:M:28:TRP:CH2	2.42	0.47
15:G:262:TYR:CZ	15:G:307:PHE:HB3	2.49	0.47
19:K:94:VAL:HG23	19:K:109:GLN:O	2.14	0.47
28:T:124:ARG:HA	28:T:143:PRO:HD2	1.97	0.47
38:d:54:ARG:HA	38:d:57:GLU:HB3	1.95	0.47
42:h:43:ILE:HG22	42:h:54:LEU:HD12	1.96	0.47
44:j:26:SER:HB2	44:j:35:ALA:HB3	1.96	0.47
1:1:171:U:H3	1:1:287:C:H1'	1.79	0.47
1:1:429:G:H5"	28:T:18:LYS:HD3	1.96	0.47
1:1:555:U:H2'	1:1:556:U:C6	2.49	0.47
3:3:25:A:H4'	9:A:71:ARG:HH11	1.77	0.47
7:7:75:G:C6	7:7:76:C:C4	3.02	0.47
7:7:119:G:H2'	7:7:120:G:H5'	1.95	0.47
9:A:116:VAL:HG12	9:A:164:ALA:HB1	1.96	0.47
9:A:242:ARG:NH2	9:A:246:ILE:HA	2.29	0.47
10:B:165:HIS:HB2	10:B:181:ALA:HB1	1.97	0.47
11:C:290:ILE:HA	11:C:293:SER:HB2	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:N:59:GLN:NE2	22:N:128:ARG:HG3	2.28	0.47
24:P:101:ARG:NH2	24:P:101:ARG:CG	2.72	0.47
26:R:76:TYR:O	26:R:96:PHE:N	2.47	0.47
30:V:68:TYR:HE1	30:V:88:ILE:HD12	1.79	0.47
43:i:93:MET:O	43:i:97:LEU:HG	2.14	0.47
1:1:245:C:H4'	1:1:247:A:N7	2.30	0.47
1:1:489:C:H2'	1:1:490:C:O4'	2.15	0.47
1:1:636:U:H2'	1:1:637:C:C2	2.49	0.47
1:1:801:G:N2	1:1:1027:U:O3'	2.48	0.47
1:1:1204:G:OP1	41:g:47:HIS:HB2	2.14	0.47
1:1:1268:G:H2'	1:1:1269:G:C8	2.48	0.47
2:2:646:G:O2'	2:2:647:A:OP1	2.23	0.47
2:2:1077:G:O2'	2:2:1186:A2M:H2	2.13	0.47
2:2:1158:U:OP2	24:P:165:PRO:HD2	2.14	0.47
5:5:17:C:N3	28:T:69:ARG:NH2	2.61	0.47
6:6:20:A:H4'	6:6:21:A:OP1	2.13	0.47
7:7:43:A:O2'	7:7:44:A:H8	1.97	0.47
10:B:43:LEU:O	10:B:213:VAL:HG13	2.14	0.47
10:B:319:VAL:O	10:B:339:ARG:HD2	2.14	0.47
14:F:87:THR:HG22	14:F:89:THR:H	1.79	0.47
14:F:189:ALA:O	14:F:192:ARG:HB2	2.15	0.47
16:H:79:ARG:NH2	16:H:84:PRO:HG3	2.30	0.47
24:P:182:ARG:HA	24:P:188:ARG:CB	2.44	0.47
28:T:93:SER:HA	28:T:96:LYS:HG2	1.96	0.47
42:h:10:ARG:HD2	42:h:35:LYS:HD2	1.95	0.47
1:1:169:G:H4'	1:1:170:U:H5'	1.96	0.47
1:1:748:A:H2'	1:1:749:A:C8	2.49	0.47
1:1:814:C:H2'	1:1:815:G:H8	1.79	0.47
1:1:832:G:OP1	24:P:170[B]:LYS:HE3	2.14	0.47
2:2:31:U:H5'	46:l:45:ARG:HH11	1.80	0.47
2:2:1233:G:H1'	2:2:1234:U:C6	2.50	0.47
3:3:129:G:H2'	3:3:129:G:N3	2.28	0.47
6:6:20:A:C2	6:6:27:G:N7	2.82	0.47
7:7:41:A:OP1	44:j:66:TYR:N	2.47	0.47
7:7:121:G:O2'	7:7:122:A:O5'	2.30	0.47
14:F:191:HIS:CD2	41:g:66:ASP:HB2	2.50	0.47
16:H:219:PHE:CE1	19:K:163:SER:HB3	2.50	0.47
18:J:28:ALA:HB3	18:J:81:ILE:HD12	1.97	0.47
19:K:78:ARG:HD2	19:K:78:ARG:N	2.30	0.47
20:L:102:GLN:NE2	20:L:144:GLN:OE1	2.23	0.47
23:O:147:PRO:HG2	23:O:178:ALA:HB2	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:Y:16:GLY:O	42:h:77:ARG:HG2	2.15	0.47
33:Y:113:ARG:O	33:Y:117:GLN:HG3	2.14	0.47
36:b:38:LEU:HD23	36:b:41:LEU:HD11	1.95	0.47
1:1:321:A:O4'	48:n:41:ARG:HD2	2.15	0.47
1:1:346:U:O2'	2:2:468:A:H8	1.97	0.47
1:1:1726:C:H2'	1:1:1727:U:O4'	2.14	0.47
2:2:443:OMC:C5'	2:2:488:A:N6	2.54	0.47
8:8:77:G:C8	26:R:52:LYS:HG3	2.49	0.47
10:B:167:GLN:HB3	10:B:170:LYS:HB2	1.96	0.47
13:E:62:SER:HB3	13:E:65:PRO:HD2	1.95	0.47
18:J:104:ILE:N	18:J:104:ILE:CD1	2.73	0.47
19:K:73:ILE:N	19:K:73:ILE:CD1	2.73	0.47
22:N:48:VAL:HA	22:N:178:ARG:NH1	2.29	0.47
27:S:109:GLU:HA	27:S:112:PHE:HB3	1.95	0.47
37:c:98:ARG:HB2	37:c:118:LEU:HB3	1.95	0.47
44:j:18:LEU:HD21	46:l:51:TYR:HB3	1.97	0.47
1:1:50:A:H5"	44:j:48:ASN:HB2	1.95	0.47
1:1:113:C:OP1	21:M:147:ARG:NE	2.47	0.47
1:1:250:A:H4'	1:1:251:A:C2	2.50	0.47
1:1:543:G:N3	1:1:543:G:C3'	2.78	0.47
1:1:788:A:H3'	1:1:788:A:N3	2.29	0.47
1:1:872:U:H2'	1:1:873:G:C8	2.50	0.47
1:1:911:G:N2	47:m:17:ARG:HD2	2.30	0.47
1:1:959:OMG:N2	21:M:76:HIS:CG	2.75	0.47
1:1:1061:G:H2'	1:1:1062:A:H8	1.77	0.47
1:1:1388:U:H4'	1:1:1389:A:O5'	2.15	0.47
1:1:1395:U:H5"	37:c:250:ARG:HD3	1.96	0.47
1:1:1595:G:N1	2:2:37:C:N3	2.40	0.47
2:2:1088:C:O2'	2:2:1173:C:O2	2.31	0.47
2:2:1336:C:OP2	2:2:1338:C:N4	2.48	0.47
2:2:1430:A:O2'	5:5:18:G:N7	2.43	0.47
2:2:1441:G:O2'	2:2:1442:C:H2'	2.14	0.47
2:2:1442:C:H42	6:6:3:A:N6	2.13	0.47
3:3:195:A:N1	9:A:175:ILE:HD12	2.29	0.47
8:8:50:G:O2'	8:8:51:A:H5'	2.14	0.47
10:B:209:ARG:HG3	10:B:211:ASP:OD1	2.14	0.47
10:B:386:TRP:HD1	10:B:387:PHE:CE1	2.33	0.47
11:C:78:ILE:HB	11:C:85:THR:O	2.15	0.47
11:C:151:LEU:HD21	11:C:173:ILE:HD13	1.96	0.47
11:C:170:LEU:HD13	11:C:179:VAL:HG21	1.96	0.47
13:E:58:ARG:HD3	13:E:58:ARG:H	1.78	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:F:71:TYR:HD2	14:F:178:LEU:HD12	1.80	0.47
14:F:77:ARG:HH11	14:F:77:ARG:CG	2.21	0.47
15:G:253:ASN:OD1	43:i:50:LEU:HB3	2.14	0.47
16:H:72:TYR:OH	16:H:91:HIS:O	2.32	0.47
19:K:94:VAL:HG23	19:K:96:VAL:HG23	1.97	0.47
20:L:62:HIS:CD2	20:L:64:LYS:HE3	2.50	0.47
22:N:50:ILE:HG13	22:N:138:MET:HB2	1.96	0.47
22:N:81:ASN:OD1	22:N:82:LYS:N	2.47	0.47
24:P:66:ARG:O	24:P:70:VAL:HG22	2.15	0.47
26:R:32:PHE:CE2	26:R:105:VAL:HG21	2.50	0.47
28:T:31:GLU:OE2	28:T:63:TYR:HB2	2.14	0.47
28:T:42:ARG:HG3	28:T:110:ASN:HD22	1.80	0.47
37:c:120:GLN:HE22	37:c:216:LYS:NZ	2.13	0.47
39:e:126:LEU:HA	39:e:167:ASN:HB2	1.97	0.47
39:e:129:TYR:CE2	39:e:142:VAL:HG22	2.48	0.47
40:f:33:TRP:CE2	40:f:54:PRO:HD2	2.50	0.47
40:f:67:ILE:HD11	40:f:73:ARG:HD3	1.96	0.47
43:i:54:SER:HB2	43:i:55:PRO:HD2	1.97	0.47
43:i:64:LEU:HD21	43:i:94:GLU:HB3	1.97	0.47
1:1:569:G:P	1:1:569:G:H8	2.37	0.47
1:1:1145:G:N3	1:1:1146:A:H1'	2.30	0.47
1:1:1176:C:H2'	1:1:1177:U:O4'	2.14	0.47
1:1:1729:A:C2	1:1:1730:A:C5	3.01	0.47
2:2:992:U:N3	2:2:995:U:O4	2.48	0.47
3:3:66:C:H2'	3:3:173:U:H3	1.78	0.47
9:A:178:PRO:HG2	47:m:26:ALA:HB2	1.96	0.47
13:E:17:THR:HA	13:E:51:ASN:ND2	2.30	0.47
18:J:78:ALA:CA	18:J:105:VAL:HG22	2.45	0.47
22:N:46:PHE:HB3	22:N:140:THR:O	2.15	0.47
25:Q:19:ARG:O	25:Q:20:ALA:HB3	2.15	0.47
27:S:99:SER:HG	27:S:101:CYS:HG	1.62	0.47
33:Y:45:GLY:O	33:Y:70:VAL:HA	2.15	0.47
37:c:153:THR:O	37:c:157:MET:HG2	2.15	0.47
44:j:51:VAL:O	44:j:55:LYS:HG2	2.15	0.47
1:1:33:A:O2'	1:1:860:G:N3	2.48	0.47
1:1:334:G:OP2	50:1:1937:HOH:O	2.20	0.47
1:1:344:A:C2	2:2:1223:C:H1'	2.49	0.47
1:1:453:G:H21	28:T:118:GLN:NE2	2.12	0.47
1:1:453:G:H21	28:T:118:GLN:HE22	1.62	0.47
1:1:731:U:H5"	11:C:43:MET:HE3	1.97	0.47
1:1:781:A:N6	1:1:794:U:H3	2.09	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1111:C:H2'	1:1:1112:A:C8	2.50	0.47
1:1:1228:G:OP1	8:8:86:U:O2'	2.24	0.47
2:2:1036:G:H2'	2:2:1037:A:H8	1.79	0.47
2:2:1267:G:N2	2:2:1301:U:O2	2.26	0.47
2:2:1387:C:OP1	10:B:249:ARG:NH2	2.47	0.47
2:2:1423:C:OP1	28:T:66[B]:LYS:HE2	2.15	0.47
3:3:38:A:N6	3:3:182:G:H1	2.12	0.47
4:4:62:C:H2'	13:E:119:ARG:NH1	2.29	0.47
10:B:261:HIS:HA	10:B:262:PRO:C	2.40	0.47
16:H:25:ILE:HG12	19:K:47:LEU:HD21	1.97	0.47
23:O:106:ALA:HB2	23:O:172:ALA:HA	1.97	0.47
23:O:159:THR:HG22	23:O:166:PHE:HZ	1.80	0.47
33:Y:84:ARG:NH1	33:Y:85:TYR:HE1	2.13	0.47
37:c:150:SER:H	37:c:245:ASN:ND2	2.09	0.47
47:m:30:GLU:OE1	47:m:33:GLN:NE2	2.47	0.47
1:1:42:U:H2'	1:1:43:A:O4'	2.15	0.47
1:1:245:C:O2	11:C:221:ASN:ND2	2.48	0.47
1:1:557:U:H6	1:1:557:U:O5'	1.98	0.47
1:1:922:U:H5'	2:2:388:A:H3'	1.97	0.47
1:1:1669:G:H21	30:V:38:PRO:CD	2.27	0.47
2:2:125:C:H2'	2:2:126:U:C6	2.50	0.47
2:2:419:G:OP1	9:A:18:VAL:HG12	2.15	0.47
2:2:460:A:H2	2:2:676:G:H1'	1.80	0.47
2:2:787:G:H22	2:2:807:A:N6	2.12	0.47
2:2:1151:U:H4'	27:S:88:ARG:HB2	1.96	0.47
2:2:1437:A:N6	2:2:1440:U:O2'	2.39	0.47
4:4:105:A:H5"	4:4:106:G:H5"	1.96	0.47
6:6:41:G:N1	19:K:176:ARG:HD2	2.30	0.47
7:7:21:U:OP2	11:C:195:MET:HG2	2.15	0.47
8:8:44:A:C5	8:8:45:U:C4	3.03	0.47
8:8:48:G:H4'	8:8:48:G:OP1	2.15	0.47
16:H:96:ASP:O	16:H:100:ARG:N	2.47	0.47
17:I:18:ASN:HD22	17:I:19:PRO:N	2.13	0.47
20:L:61:TYR:HH	48:n:38:ARG:HH12	1.61	0.47
24:P:69:VAL:O	24:P:73:ARG:HG2	2.15	0.47
25:Q:120:TYR:O	25:Q:124:TYR:N	2.48	0.47
1:1:474:C:OP1	41:g:83:LYS:N	2.37	0.46
1:1:500:C:H2'	1:1:501:C:H5'	1.96	0.46
1:1:1472:G:H5"	11:C:191:GLY:O	2.14	0.46
2:2:755:U:O2'	2:2:756:C:H6	1.97	0.46
2:2:865:G:H2'	2:2:866:U:O4'	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1109:U:H2'	2:2:1110:C:C6	2.50	0.46
3:3:8:A:H5"	33:Y:15:ALA:O	2.15	0.46
4:4:52:A:H1'	13:E:174:PHE:CD2	2.50	0.46
8:8:26:A:C2'	8:8:27:A:H5'	2.44	0.46
8:8:103:A:H2'	8:8:104:C:C6	2.50	0.46
9:A:101:VAL:O	9:A:101:VAL:HG12	2.16	0.46
10:B:159:VAL:HG13	10:B:187:GLN:HE22	1.78	0.46
14:F:162:ILE:H	14:F:162:ILE:HD12	1.80	0.46
19:K:180:HIS:CE1	19:K:184:LYS:HE2	2.46	0.46
21:M:96:LYS:HE3	21:M:101:VAL:HG22	1.96	0.46
36:b:11:ASN:ND2	36:b:11:ASN:O	2.48	0.46
41:g:72:GLY:N	41:g:107:VAL:O	2.37	0.46
47:m:44:LYS:HZ3	47:m:59:GLY:CA	2.27	0.46
1:1:519:G:H21	1:1:531:C:H41	1.63	0.46
1:1:660:U:H2'	1:1:661:G:C8	2.50	0.46
1:1:906:U:H2'	1:1:907:G:O4'	2.15	0.46
1:1:1744:G:OP2	42:h:38:LYS:NZ	2.42	0.46
2:2:431:C:C5'	9:A:219:ILE:HD11	2.45	0.46
4:4:181:C:H2'	4:4:182:A:C8	2.50	0.46
5:5:18:G:H3'	5:5:19:A:H8	1.80	0.46
11:C:151:LEU:HD21	11:C:173:ILE:HG21	1.97	0.46
13:E:125:VAL:HA	13:E:156:GLU:OE1	2.15	0.46
15:G:155:LYS:HE3	15:G:318:TRP:HB3	1.97	0.46
15:G:316:ARG:O	15:G:316:ARG:HG3	2.16	0.46
23:O:60:ILE:CD1	23:O:101:THR:HG21	2.43	0.46
23:O:69:ILE:HD12	23:O:69:ILE:H	1.80	0.46
28:T:72:GLN:OE1	28:T:83:TRP:NE1	2.44	0.46
46:l:31:THR:HG23	46:l:32:GLY:N	2.30	0.46
48:n:42:ARG:O	48:n:46:LYS:N	2.45	0.46
1:1:157:U:H2'	1:1:158:A:C4'	2.46	0.46
1:1:243:G:N2	1:1:259:G:H22	2.13	0.46
1:1:392:A:N1	1:1:405:A:H5"	2.29	0.46
1:1:480:U:H4'	40:f:70:SER:HB3	1.98	0.46
1:1:815:G:H1	1:1:825:G:H1	1.62	0.46
1:1:1732:A:H2'	1:1:1733:G:O4'	2.15	0.46
2:2:428:A:C2'	2:2:429:A:H5'	2.44	0.46
2:2:619:A:N6	2:2:1306:C:H1'	2.28	0.46
2:2:1345:C:H5"	2:2:1346:G:OP2	2.15	0.46
4:4:114:A:O3'	10:B:372:ILE:O	2.34	0.46
13:E:41:LEU:HD13	16:H:150:SER:HB3	1.97	0.46
15:G:218:VAL:N	15:G:284:ALA:O	2.49	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:G:231:LYS:HG2	15:G:258:ASN:HB3	1.98	0.46
21:M:146:PRO:HG2	35:a:108:THR:HG23	1.97	0.46
32:X:13:VAL:HG22	32:X:36:SER:OG	2.15	0.46
35:a:11:ARG:HH22	35:a:64:GLN:HG3	1.80	0.46
40:f:23:TYR:CD1	40:f:23:TYR:C	2.94	0.46
47:m:56:ARG:HH21	47:m:56:ARG:HG3	1.79	0.46
1:1:66:A:N6	1:1:352:G:O2'	2.48	0.46
1:1:162:U:H2'	1:1:163:U:O4'	2.15	0.46
1:1:312:C:C2'	1:1:313:U:H5'	2.45	0.46
1:1:692:A:H5"	11:C:101:PHE:CG	2.50	0.46
1:1:1242:U:O2'	1:1:1243:G:O5'	2.28	0.46
1:1:1599:G:O3'	46:l:48:LYS:HD2	2.14	0.46
2:2:17:U:H4'	46:l:3[A]:ARG:HG2	1.97	0.46
2:2:479:C:O2'	2:2:674:U:O3'	2.33	0.46
2:2:534:OMG:N3	2:2:534:OMG:H2'	2.30	0.46
2:2:591:A2M:H8	2:2:591:A2M:H5"	1.98	0.46
2:2:956:C:O2'	2:2:957:C:O4'	2.30	0.46
4:4:43:U:H3	4:4:67:A:N6	2.05	0.46
4:4:94:G:N2	4:4:103:C:O2	2.46	0.46
7:7:108:A:H2'	7:7:109:A:O4'	2.16	0.46
10:B:367:ASP:HA	10:B:378:GLN:HE22	1.80	0.46
11:C:24:PRO:HB2	11:C:26:VAL:HG12	1.97	0.46
11:C:211:PRO:HG3	11:C:253:SER:HB2	1.97	0.46
16:H:121:VAL:HG11	16:H:123:TYR:CZ	2.51	0.46
17:I:33:GLN:HE21	21:M:202:ARG:NE	2.13	0.46
19:K:108:VAL:HG23	26:R:71:LEU:HD21	1.96	0.46
37:c:121:ILE:HG12	37:c:122:PHE:CD2	2.51	0.46
41:g:57:ARG:NH1	41:g:114:ALA:O	2.48	0.46
1:1:13:G:H5"	30:V:43:LYS:O	2.15	0.46
1:1:52:C:H2'	1:1:53:G:O4'	2.16	0.46
1:1:223:A:H2	1:1:224:C:C2	2.32	0.46
1:1:734:U:OP2	11:C:120:ARG:NH2	2.47	0.46
1:1:834:U:H5"	1:1:835:G:H5"	1.97	0.46
1:1:1118:A:H2'	1:1:1119:C:O4'	2.16	0.46
1:1:1198:C:O2'	1:1:1210:A:N3	2.44	0.46
1:1:1390:G:H5"	1:1:1391:U:H3'	1.97	0.46
2:2:495:G:H22	2:2:514:U:H1'	1.79	0.46
2:2:526:A:O2'	2:2:527:A2M:P	2.74	0.46
2:2:635:A:H5"	28:T:66[B]:LYS:HA	1.98	0.46
2:2:1070:A:H2'	2:2:1071:A:C8	2.51	0.46
2:2:1080:U:O2	2:2:1080:U:H2'	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:3:56:U:H3'	3:3:57:U:H6	1.80	0.46
3:3:95:C:H42	3:3:139:G:H1	1.62	0.46
6:6:38:C:O4'	41:g:28:ARG:NE	2.48	0.46
8:8:61:C:H2'	8:8:62:U:C6	2.50	0.46
9:A:150:LEU:HD11	9:A:156:LYS:HD2	1.97	0.46
10:B:352:GLN:HA	10:B:357:LEU:HD23	1.95	0.46
11:C:208:LEU:HG	11:C:210:MET:HE2	1.97	0.46
14:F:54:LEU:HD11	14:F:66:SER:HB3	1.97	0.46
15:G:186:THR:C	15:G:188:LYS:H	2.23	0.46
19:K:74:LEU:H	19:K:74:LEU:CD2	2.21	0.46
24:P:128:LEU:HD12	24:P:132:GLN:HG2	1.98	0.46
26:R:6:LEU:HG	26:R:32:PHE:HB3	1.96	0.46
27:S:68:THR:OG1	27:S:71:GLY:O	2.32	0.46
37:c:109:GLN:HE22	37:c:140:VAL:HA	1.79	0.46
39:e:120:ASN:HD22	39:e:163:THR:HB	1.81	0.46
41:g:76:CYS:SG	41:g:102:ALA:HB1	2.56	0.46
1:1:181:G:H2'	1:1:182:U:O4'	2.15	0.46
1:1:685:A:H5"	2:2:607:A:C5'	2.45	0.46
1:1:836:G:O6	24:P:97:VAL:HG22	2.15	0.46
1:1:1253:U:H5'	16:H:74:GLN:NE2	2.23	0.46
1:1:1549:U:O2'	1:1:1550:C:O5'	2.33	0.46
1:1:1556:G:N3	1:1:1618:U:H5	2.14	0.46
2:2:68:A:H2'	5:5:113:A:N6	2.30	0.46
2:2:540:C:O2'	2:2:542:A:OP2	2.30	0.46
2:2:705:A:H2'	2:2:706:U:H5"	1.97	0.46
4:4:94:G:H2'	4:4:95:U:O4'	2.15	0.46
7:7:155:U:H2'	7:7:156:A:C8	2.50	0.46
9:A:127:ALA:HB2	9:A:134:CYS:SG	2.56	0.46
10:B:77:THR:OG1	10:B:333:GLY:O	2.32	0.46
10:B:310:LYS:HE3	10:B:368:THR:HG1	1.79	0.46
11:C:194:LYS:HA	11:C:199:ARG:HA	1.97	0.46
15:G:124:ASP:OD1	15:G:125:VAL:N	2.47	0.46
17:I:90:LEU:HD21	17:I:125:MET:SD	2.55	0.46
19:K:150:THR:H	19:K:153:ARG:CZ	2.28	0.46
29:U:29:ASP:CG	29:U:30:CYS:H	2.23	0.46
35:a:74:TYR:HB3	35:a:83:THR:HG22	1.98	0.46
37:c:183:TYR:CE1	37:c:208:VAL:HA	2.51	0.46
40:f:67:ILE:HD13	40:f:73:ARG:HD2	1.97	0.46
42:h:102:ARG:HG2	42:h:106:GLN:HG2	1.97	0.46
1:1:133:C:H1'	1:1:172:G:H1'	1.97	0.46
1:1:180:A:H2'	1:1:181:G:H8	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:463:C:H2'	2:2:630:G:N2	2.31	0.46
2:2:1005:G:C2'	15:G:119:PHE:CD2	2.98	0.46
2:2:1044:C:N3	2:2:1052:G:N1	2.46	0.46
2:2:1254:OMG:H4'	2:2:1254:OMG:CM2	2.45	0.46
2:2:1433:U:H2'	2:2:1434:G:H8	1.80	0.46
3:3:147:A:O5'	45:k:26:LYS:HE2	2.16	0.46
5:5:125:A:H8	5:5:125:A:C5'	2.26	0.46
6:6:13:C:O2'	6:6:14:A:C5'	2.63	0.46
10:B:386:TRP:CZ2	32:X:57:ARG:HD3	2.51	0.46
11:C:206:PRO:O	11:C:225:LEU:HA	2.16	0.46
17:I:65:CYS:O	17:I:71:ASN:HA	2.16	0.46
22:N:95:HIS:O	22:N:125:VAL:HG13	2.15	0.46
23:O:56:THR:HG23	23:O:59:ASP:H	1.80	0.46
27:S:75:ILE:HG22	27:S:88:ARG:CD	2.46	0.46
45:k:33:LYS:HD2	45:k:35:LYS:HZ2	1.81	0.46
1:1:159:U:H2'	1:1:160:C:O4'	2.15	0.46
1:1:208:C:H1'	1:1:226:C:H42	1.81	0.46
1:1:492:G:H4'	14:F:80:ASP:OD2	2.15	0.46
1:1:901:C:O2'	1:1:902:C:O5'	2.34	0.46
1:1:1004:G:H1'	1:1:1172:G:H5'	1.97	0.46
1:1:1228:G:H2'	1:1:1229:G:O4'	2.16	0.46
1:1:1599:G:OP1	46:l:50:ASN:HA	2.15	0.46
2:2:424:U:OP1	9:A:128:ARG:N	2.35	0.46
6:6:16:C:C6	6:6:16:C:C3'	2.97	0.46
8:8:57:A:O2'	12:D:151:GLY:HA3	2.16	0.46
11:C:157:ILE:HA	11:C:160:TYR:CD2	2.51	0.46
11:C:197:ASN:HD21	31:W:8:SER:HB2	1.79	0.46
14:F:39:ALA:HB1	14:F:84:VAL:HG21	1.97	0.46
14:F:46:PHE:HB3	14:F:49:ARG:HG3	1.98	0.46
15:G:163:PHE:HE2	15:G:249:LEU:HD12	1.80	0.46
19:K:180:HIS:CA	19:K:183:ARG:NH1	2.79	0.46
20:L:60:HIS:CE1	20:L:63:ARG:HA	2.50	0.46
23:O:149:LYS:HA	23:O:178:ALA:HB3	1.96	0.46
23:O:184:ASN:HA	23:O:189:TYR:CE1	2.50	0.46
27:S:63:ILE:HG13	36:b:27:LEU:HD11	1.98	0.46
39:e:81:MET:HA	39:e:180:THR:HA	1.97	0.46
40:f:96:VAL:HG13	40:f:122:ASN:HD21	1.80	0.46
44:j:65:ARG:O	44:j:68:LYS:HG2	2.16	0.46
1:1:177:A:N1	1:1:280:A:H2	2.14	0.46
1:1:1375:G:O2'	1:1:1380:A:N1	2.38	0.46
1:1:1443:U:H2'	1:1:1444:G:O4'	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1445:U:O2	34:Z:26:ARG:NH2	2.49	0.46
2:2:1097:U:H2'	2:2:1098:G:C8	2.51	0.46
2:2:1165:C:H2'	2:2:1166:G:O4'	2.15	0.46
2:2:1238:A:HO2'	20:L:42:ARG:NH1	2.14	0.46
5:5:36:U:O2'	10:B:372:ILE:HG21	2.15	0.46
6:6:19:C:O2	6:6:19:C:H2'	2.15	0.46
7:7:62:A:H5"	7:7:63:G:O4'	2.16	0.46
8:8:106:C:H2'	8:8:107:U:C6	2.51	0.46
9:A:43:GLY:N	9:A:88:VAL:O	2.48	0.46
15:G:157:PRO:HA	15:G:318:TRP:CZ3	2.51	0.46
17:I:125:MET:HE2	17:I:125:MET:HA	1.97	0.46
20:L:109:LEU:HD12	20:L:126:VAL:HG23	1.98	0.46
22:N:9:TYR:CE2	22:N:97:LEU:HD11	2.51	0.46
22:N:85:PHE:HE2	22:N:87:MET:HE2	1.81	0.46
26:R:32:PHE:CE2	26:R:128:VAL:HG21	2.50	0.46
27:S:18:LYS:HG3	27:S:19:PHE:H	1.80	0.46
30:V:130:SER:C	30:V:132:ALA:H	2.22	0.46
34:Z:21:LYS:NZ	34:Z:24:GLY:HA2	2.31	0.46
35:a:33:ARG:HH21	35:a:52:ARG:HD3	1.81	0.46
1:1:191:U:H4'	1:1:192:C:O5'	2.16	0.46
1:1:907:G:OP1	25:Q:92:LYS:HG2	2.16	0.46
1:1:960:A:H2'	1:1:961:G:H8	1.81	0.46
1:1:1388:U:H1'	1:1:1389:A:OP2	2.15	0.46
1:1:1494:C:O2'	1:1:1495:G:OP2	2.26	0.46
1:1:1529:OMC:H5'	1:1:1529:OMC:C6	2.51	0.46
1:1:1673:G:H2'	1:1:1673:G:N3	2.31	0.46
1:1:1755:U:OP2	25:Q:38:ARG:HG2	2.16	0.46
2:2:464:G:OP2	43:i:71:ARG:NH2	2.34	0.46
2:2:591:A2M:C2'	2:2:592:C:H5'	2.46	0.46
2:2:782:G:H4'	2:2:783:U:OP1	2.16	0.46
2:2:1196:U:H2'	2:2:1197:G:C8	2.51	0.46
2:2:1340:G:H3'	2:2:1341:A:C8	2.51	0.46
3:3:102:C:H2'	3:3:103:U:C6	2.51	0.46
3:3:113:U:OP2	25:Q:121:ARG:NE	2.38	0.46
6:6:49:C:O2	6:6:49:C:O2'	2.29	0.46
6:6:55:U:OP1	14:F:47:ARG:NH2	2.49	0.46
8:8:39:G:H21	8:8:46:U:H3	1.64	0.46
14:F:24:PRO:HG3	14:F:59:HIS:NE2	2.31	0.46
14:F:49:ARG:NH1	14:F:179:ARG:O	2.49	0.46
22:N:76:MET:HE3	22:N:80:ALA:HB3	1.98	0.46
25:Q:4:LEU:HD23	25:Q:24:LEU:HD23	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:W:77:ILE:HG23	31:W:98:PRO:HG3	1.96	0.46
33:Y:70:VAL:HG11	33:Y:112:VAL:HG23	1.98	0.46
40:f:84:TYR:OH	40:f:112:LYS:NZ	2.36	0.46
44:j:58:ARG:O	44:j:61:THR:OG1	2.26	0.46
48:n:8:LYS:C	48:n:23:PHE:CE1	2.93	0.46
1:1:32:A:H4'	1:1:32:A:OP1	2.14	0.45
1:1:816:G:H22	1:1:823:G:H21	1.64	0.45
1:1:925:U:OP1	10:B:246:LYS:HG3	2.16	0.45
1:1:934:A:O4'	28:T:133[A]:HIS:HA	2.16	0.45
1:1:1241:A:O2'	19:K:75:ARG:NH1	2.49	0.45
1:1:1448:C:H2'	1:1:1449:C:C6	2.51	0.45
1:1:1630:U:H1'	30:V:114:ASN:HB3	1.98	0.45
2:2:526:A:HO2'	2:2:527:A2M:P	2.35	0.45
2:2:768:G:O2'	2:2:769:A:O5'	2.20	0.45
6:6:3:A:N3	6:6:4:U:H5"	2.31	0.45
6:6:15:C:C5	16:H:187:HIS:CE1	3.05	0.45
6:6:17:U:H1'	6:6:18:A:N3	2.31	0.45
6:6:41:G:C3'	19:K:180:HIS:CE1	2.82	0.45
7:7:37:U:H5	7:7:105:C:N3	2.14	0.45
7:7:106:G:H4'	7:7:149:A:H5'	1.98	0.45
11:C:191:GLY:H	11:C:194:LYS:HZ2	1.63	0.45
13:E:135:ASP:N	13:E:136:PRO:CD	2.78	0.45
16:H:140:PRO:CD	19:K:46:PRO:HB3	2.45	0.45
20:L:70:LYS:HE2	20:L:125:TYR:CE2	2.51	0.45
21:M:30:PHE:HB3	21:M:129:TRP:CE2	2.51	0.45
23:O:17:GLN:HE22	27:S:21:LYS:HA	1.80	0.45
23:O:109:THR:O	23:O:113:LEU:N	2.46	0.45
24:P:79:ALA:C	24:P:81:SER:H	2.24	0.45
35:a:60:THR:O	35:a:64:GLN:HG2	2.15	0.45
1:1:23:U:H4'	1:1:24:A:N7	2.31	0.45
1:1:245:C:H2'	11:C:163:THR:HG21	1.98	0.45
1:1:816:G:H1'	1:1:825:G:H22	1.81	0.45
2:2:607:A:H61	2:2:623:A:H61	1.63	0.45
2:2:867:G:N2	2:2:943:U:O2	2.49	0.45
2:2:1147:A:OP2	2:2:1168:G:N2	2.49	0.45
3:3:95:C:H5"	3:3:96:U:OP2	2.15	0.45
3:3:209:G:C3'	3:3:210:G:H5'	2.46	0.45
6:6:7:A:N1	6:6:60:A:C6	2.85	0.45
7:7:90:U:O2'	31:W:22:HIS:ND1	2.34	0.45
8:8:32:A:C6	8:8:50:G:C6	3.04	0.45
8:8:112:G:C5	8:8:113:C:C4	3.04	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:B:102:ILE:HG13	10:B:153:PHE:CE1	2.50	0.45
11:C:121:PHE:CE1	11:C:278[A]:PRO:HG3	2.50	0.45
11:C:136:VAL:HG11	11:C:247:PHE:HB2	1.98	0.45
13:E:89:PHE:CE2	13:E:153:VAL:HG23	2.51	0.45
23:O:38:LEU:CD2	27:S:70:ARG:HE	2.20	0.45
1:1:869:C:C2	1:1:971:C:H5'	2.51	0.45
1:1:912:C:OP1	2:2:379:U:O2'	2.20	0.45
1:1:1535:U:H2'	1:1:1536:G:C8	2.52	0.45
1:1:1604:C:H2'	1:1:1605:G:C8	2.51	0.45
1:1:1653:U:N3	1:1:1656:A:OP2	2.45	0.45
2:2:578:U:H2'	2:2:579:C:O4'	2.16	0.45
2:2:776:C:H1'	2:2:777:A:C5	2.52	0.45
2:2:1276:A:H2	2:2:1291:C:H41	1.64	0.45
4:4:74:G:N2	10:B:334:SER:OG	2.40	0.45
5:5:42:G:N7	5:5:104:G:N1	2.64	0.45
10:B:28:ARG:H	10:B:279:HIS:HE1	1.64	0.45
11:C:153:VAL:O	11:C:252:LYS:N	2.45	0.45
12:D:24:CYS:HA	12:D:68:ALA:HA	1.98	0.45
1:1:37:A:H2'	1:1:40:C:N4	2.31	0.45
1:1:53:G:H2'	1:1:54:G:H5'	1.99	0.45
1:1:551:A:H2'	1:1:552:G:C8	2.51	0.45
1:1:647:G:C2'	1:1:648:A:H5'	2.46	0.45
1:1:657:G:O2'	1:1:1493:G:OP2	2.27	0.45
1:1:838:G:H5'	24:P:154:GLU:CD	2.42	0.45
1:1:876:U:H5"	3:3:199:A:C6	2.50	0.45
1:1:1115:C:H1'	1:1:1147:A:N6	2.32	0.45
1:1:1391:U:H4'	1:1:1392:G:H5'	1.98	0.45
1:1:1446:A:O2'	34:Z:24:GLY:O	2.26	0.45
2:2:464:G:P	43:i:71:ARG:HH12	2.39	0.45
2:2:583:OMC:HM23	2:2:583:OMC:O2	2.16	0.45
2:2:1114:C:H2'	2:2:1115:G:O4'	2.17	0.45
2:2:1337:G:H5"	2:2:1339:A:OP2	2.16	0.45
3:3:141:U:O2'	3:3:142:U:OP1	2.31	0.45
6:6:15:C:H1'	16:H:184:SER:HB2	1.99	0.45
6:6:28:A:N3	6:6:29:G:C4	2.82	0.45
8:8:27:A:H2'	8:8:28:C:H6	1.78	0.45
10:B:251:LEU:HD23	10:B:251:LEU:H	1.81	0.45
16:H:25:ILE:HD11	16:H:137:VAL:HG21	1.98	0.45
16:H:221:TYR:CD2	19:K:175:ARG:HD2	2.52	0.45
18:J:125:ALA:HB1	18:J:132:SER:HB3	1.98	0.45
21:M:174:LEU:HD22	21:M:185:ARG:NH1	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:R:77:LEU:HA	26:R:95:GLU:HA	1.98	0.45
26:R:81:ALA:HA	26:R:91:ARG:HA	1.97	0.45
45:k:36:VAL:HG22	45:k:43:TYR:O	2.17	0.45
1:1:50:A:H2'	1:1:51:G:H5'	1.97	0.45
1:1:171:U:C3'	1:1:172:G:H8	2.29	0.45
1:1:307:U:H2'	1:1:308:A:H8	1.80	0.45
1:1:490:C:N4	1:1:645:G:H1	2.13	0.45
1:1:779:A:OP2	24:P:141:LYS:CE	2.65	0.45
1:1:893:G:P	25:Q:126:ARG:NH1	2.89	0.45
1:1:1266:A:H4'	22:N:162:ARG:HH21	1.82	0.45
1:1:1467:G:O2'	1:1:1468:C:OP2	2.28	0.45
2:2:763:C:H2'	2:2:764:G:C8	2.52	0.45
2:2:768:G:O6	2:2:770:A:N6	2.47	0.45
2:2:1279:C:H42	2:2:1288:C:N4	2.14	0.45
2:2:1340:G:OP2	2:2:1341:A:N6	2.48	0.45
3:3:141:U:H2'	3:3:142:U:C6	2.51	0.45
8:8:11:C:H5'	8:8:12:C:OP2	2.14	0.45
9:A:148:LEU:HD23	9:A:148:LEU:H	1.81	0.45
9:A:219:ILE:H	9:A:219:ILE:HD12	1.82	0.45
10:B:81:ALA:HB3	10:B:327:ASP:O	2.16	0.45
10:B:282:GLN:HB3	10:B:285:LYS:CE	2.46	0.45
13:E:33:THR:O	13:E:148:ASN:ND2	2.50	0.45
22:N:57:LEU:HD23	22:N:57:LEU:O	2.16	0.45
22:N:73:ASN:O	22:N:76:MET:HG2	2.16	0.45
22:N:129:VAL:HG13	22:N:133:GLN:HB3	1.98	0.45
28:T:61:LYS:HG2	28:T:78:GLN:NE2	2.32	0.45
30:V:55:VAL:HG22	35:a:66:GLU:OE1	2.16	0.45
42:h:82:VAL:HG23	42:h:83:LEU:HG	1.98	0.45
1:1:75:A:OP2	17:I:78:ARG:NH2	2.48	0.45
1:1:150:G:P	21:M:147:ARG:HH22	2.40	0.45
1:1:161:A:H2'	1:1:162:U:C6	2.52	0.45
1:1:171:U:H3'	1:1:172:G:C8	2.44	0.45
1:1:205:A:H3'	1:1:205:A:N3	2.32	0.45
1:1:422:U:O2'	1:1:423:U:H6	1.99	0.45
1:1:472:U:H2'	1:1:473:A:C8	2.51	0.45
1:1:766:A:H5"	1:1:767:U:H5	1.82	0.45
2:2:414:G:OP2	2:2:414:G:H8	1.99	0.45
2:2:778:A:H2'	2:2:779:U:H5"	1.99	0.45
2:2:1333:C:H2'	2:2:1334:G:H8	1.82	0.45
4:4:166:C:H5"	10:B:279:HIS:O	2.16	0.45
6:6:48:C:H3'	6:6:49:C:C6	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:7:141:C:C2'	7:7:142:C:H5'	2.46	0.45
10:B:310:LYS:HZ1	10:B:378:GLN:HE21	1.64	0.45
11:C:121:PHE:CD1	11:C:278[B]:PRO:HG2	2.51	0.45
13:E:114:PHE:O	13:E:115:LEU:HG	2.16	0.45
13:E:132:SER:OG	13:E:133:GLN:N	2.49	0.45
14:F:77:ARG:CG	14:F:77:ARG:NH1	2.78	0.45
15:G:146:LYS:HA	15:G:149:VAL:HG12	1.97	0.45
16:H:31:ASP:HA	16:H:60:ASN:ND2	2.31	0.45
16:H:41:VAL:HG11	16:H:120:LEU:HD21	1.99	0.45
18:J:138:ILE:O	18:J:138:ILE:HG23	2.15	0.45
25:Q:126:ARG:HD3	25:Q:126:ARG:HA	1.62	0.45
27:S:9:SER:O	27:S:55:LYS:HD3	2.16	0.45
38:d:42:LYS:N	38:d:94:VAL:O	2.47	0.45
1:1:477:C:H4'	1:1:478:C:OP1	2.16	0.45
1:1:758:C:N4	1:1:759:A:N1	2.63	0.45
1:1:1158:U:C5	1:1:1159:A:H1'	2.52	0.45
1:1:1727:U:C5	1:1:1728:G:C6	3.05	0.45
4:4:140:G:H2'	4:4:141:A:H8	1.78	0.45
6:6:41:G:N2	19:K:176:ARG:HH11	2.14	0.45
6:6:49:C:C6	6:6:49:C:OP2	2.70	0.45
9:A:54:ARG:HD2	9:A:58:LEU:HD11	1.98	0.45
9:A:189:PHE:HA	9:A:192:LYS:HB2	1.99	0.45
10:B:376:ARG:HD2	32:X:11:PHE:CD1	2.52	0.45
11:C:113:LYS:CG	21:M:203:LYS:HB3	2.47	0.45
13:E:17:THR:HG21	13:E:50:LYS:HE3	1.99	0.45
13:E:34:LEU:HD11	13:E:79:MET:HA	1.98	0.45
13:E:59:TRP:HB3	19:K:61:LYS:CA	2.35	0.45
13:E:146:ASP:OD1	13:E:147:GLY:N	2.45	0.45
22:N:36:ILE:HG21	22:N:73:ASN:OD1	2.17	0.45
25:Q:133:ARG:H	25:Q:137:ASN:ND2	2.15	0.45
27:S:135:GLY:HA2	37:c:89:ALA:HA	1.99	0.45
28:T:116:HIS:HB3	28:T:149:PHE:CE2	2.51	0.45
30:V:118:ARG:C	30:V:120:ASP:H	2.25	0.45
34:Z:53:VAL:HG12	34:Z:54:LYS:N	2.32	0.45
39:e:180:THR:HG22	39:e:181:VAL:HG23	1.98	0.45
1:1:25:C:O2'	1:1:365:A:N3	2.47	0.45
1:1:439:U:C5	28:T:2:THR:HA	2.51	0.45
1:1:558:U:O2'	1:1:559:G:H8	2.00	0.45
1:1:740:C:O2'	1:1:839:U:H5"	2.17	0.45
1:1:756:U:H2'	1:1:757:G:C8	2.52	0.45
1:1:889:G:HO2'	3:3:118:U:HO2'	1.62	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1601:U:H2'	46:l:17:MET:HE3	1.99	0.45
2:2:71:OMG:O2'	2:2:72:G:H5'	2.17	0.45
2:2:1295:G:OP2	22:N:7:ARG:NH1	2.50	0.45
4:4:123:C:H2'	4:4:124:A:H8	1.82	0.45
4:4:169:A:H2'	4:4:169:A:N3	2.32	0.45
6:6:1:U:H6	6:6:1:U:H5"	1.82	0.45
6:6:22:G:O6	6:6:26:G:N2	2.50	0.45
9:A:116:VAL:HG12	9:A:164:ALA:CB	2.47	0.45
10:B:48:VAL:HG12	10:B:81:ALA:HB2	1.99	0.45
11:C:139:ARG:NH1	11:C:240:PRO:HG2	2.32	0.45
13:E:156:GLU:C	13:E:158:ALA:H	2.25	0.45
14:F:36:GLY:HA2	14:F:53:ILE:O	2.16	0.45
15:G:172:ARG:HG2	15:G:265:VAL:HG13	1.98	0.45
21:M:146:PRO:HA	21:M:149:ASN:ND2	2.31	0.45
22:N:152:LEU:HD23	22:N:156:LYS:HB2	1.99	0.45
23:O:98:ALA:HB1	23:O:168:VAL:HG13	1.99	0.45
32:X:50:PRO:HB2	32:X:58:THR:OG1	2.17	0.45
32:X:54:PRO:HA	32:X:59:TYR:CE2	2.51	0.45
33:Y:43:LEU:HD23	33:Y:73:ARG:O	2.17	0.45
34:Z:6:ASP:O	34:Z:10:ILE:HG12	2.17	0.45
37:c:196:ASN:C	37:c:196:ASN:HD22	2.21	0.45
47:m:13:ARG:NH2	47:m:14:TYR:OH	2.49	0.45
1:1:18:A:OP1	35:a:93:HIS:NE2	2.42	0.45
1:1:779:A:OP1	24:P:141:LYS:CB	2.62	0.45
1:1:782:C:H2'	1:1:783:G:C8	2.52	0.45
1:1:1090:U:H2'	1:1:1091:A:C8	2.51	0.45
1:1:1235:A:H1'	41:g:44:ARG:O	2.17	0.45
1:1:1369:G:OP2	16:H:77:ARG:NH2	2.49	0.45
1:1:1746:A:H5'	42:h:63:ILE:HG21	1.99	0.45
2:2:402:U:H3	2:2:426:G:H1	1.63	0.45
4:4:77:U:H5"	10:B:371:LYS:HG3	1.99	0.45
4:4:136:G:N2	4:4:155:A:H1'	2.32	0.45
13:E:23:ARG:O	13:E:24:LYS:HE2	2.17	0.45
13:E:95:TYR:CE1	13:E:100:ILE:HG12	2.52	0.45
15:G:153:ARG:NH2	15:G:324:SER:OG	2.48	0.45
15:G:163:PHE:HA	15:G:264:ILE:HG21	1.98	0.45
18:J:81:ILE:HD13	18:J:116:ILE:HG21	1.98	0.45
31:W:37:ARG:HG3	31:W:38:ALA:N	2.32	0.45
31:W:68:THR:N	31:W:78:LEU:O	2.44	0.45
40:f:23:TYR:CD1	40:f:23:TYR:O	2.70	0.45
45:k:34:PHE:O	45:k:44:THR:HA	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:381:G:O2'	7:7:21:U:O4	2.27	0.45
1:1:471:G:OP1	41:g:124:ALA:HA	2.17	0.45
1:1:694:U:C5	1:1:694:U:OP2	2.70	0.45
1:1:721:U:H2'	1:1:728:C:N3	2.31	0.45
1:1:998:A:H5"	40:f:56:LYS:HB3	1.99	0.45
1:1:1238:C:H5'	1:1:1239:U:C5'	2.47	0.45
2:2:1100:G:H22	2:2:1110:C:N4	2.15	0.45
6:6:32:U:O2	6:6:32:U:H2'	2.17	0.45
13:E:112:ARG:HD3	13:E:113:ASN:N	2.32	0.45
17:I:69:ARG:HG3	20:L:69:TRP:CE2	2.52	0.45
37:c:100:ARG:HG2	37:c:227:LYS:HE2	1.98	0.45
39:e:132[A]:HIS:NE2	39:e:133:LYS:HG3	2.32	0.45
48:n:8:LYS:HE3	48:n:72:LEU:HD21	1.98	0.45
1:1:398:G:N2	1:1:401:A:OP2	2.50	0.44
1:1:473:A:OP1	41:g:101:ARG:NH1	2.50	0.44
1:1:752:G:N1	20:L:72:THR:HG21	2.32	0.44
2:2:395:A:H61	2:2:433:G:HO2'	1.61	0.44
2:2:535:U:H2'	2:2:536:C:C5'	2.47	0.44
2:2:540:C:N4	2:2:543:U:OP1	2.34	0.44
2:2:588:G:H5"	4:4:117:C:O2'	2.17	0.44
2:2:649:G:OP1	50:2:1734:HOH:O	2.21	0.44
2:2:684:C:H2'	2:2:685:G:O4'	2.17	0.44
4:4:113:G:H5"	4:4:114:A:OP1	2.17	0.44
6:6:22:G:C6	6:6:27:G:OP2	2.63	0.44
10:B:301:ALA:HB3	10:B:310:LYS:HG3	1.98	0.44
11:C:32:ARG:HG3	11:C:121:PHE:CZ	2.53	0.44
14:F:53:ILE:HG12	14:F:63:LEU:HD13	1.98	0.44
16:H:148:TYR:HB3	19:K:59:MET:CB	2.48	0.44
17:I:59:LEU:HD12	17:I:124:TYR:CD1	2.51	0.44
19:K:95:LEU:CG	19:K:106:ARG:HE	2.29	0.44
19:K:107:HIS:C	19:K:107:HIS:CD2	2.95	0.44
25:Q:55:VAL:HG13	25:Q:56:LYS:N	2.32	0.44
26:R:39:ALA:O	26:R:43:PHE:N	2.50	0.44
28:T:67:ILE:HD11	28:T:80:LYS:HB3	1.98	0.44
34:Z:21:LYS:HZ3	34:Z:24:GLY:HA2	1.82	0.44
37:c:164:LEU:HD23	37:c:212:MET:HG2	1.99	0.44
45:k:5:ILE:N	45:k:44:THR:O	2.48	0.44
1:1:508:A:H8	1:1:508:A:OP2	2.00	0.44
1:1:552:G:O5'	1:1:552:G:H8	2.00	0.44
1:1:657:G:H2'	1:1:658:G:H5'	1.99	0.44
1:1:868:A:OP1	44:j:30:GLN:NE2	2.49	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1442:G:O2'	1:1:1443:U:H5"	2.17	0.44
1:1:1477:U:C5'	34:Z:17:ARG:HG3	2.47	0.44
2:2:120:A:H2'	2:2:121:U:C6	2.52	0.44
2:2:352:A:H2'	2:2:353:G:C8	2.52	0.44
2:2:357:U:C2'	2:2:358:G:H5'	2.47	0.44
2:2:755:U:O2'	2:2:756:C:H5"	2.17	0.44
2:2:787:G:H22	2:2:807:A:H61	1.66	0.44
2:2:941:C:H2'	2:2:942:G:O4'	2.18	0.44
4:4:98:A:H2'	4:4:99:A:O4'	2.17	0.44
7:7:54:G:H2'	7:7:55:U:C6	2.53	0.44
15:G:332:ARG:NH1	15:G:333:LYS:HE2	2.32	0.44
22:N:156:LYS:HA	22:N:159:PHE:CD2	2.52	0.44
35:a:95:ARG:HB3	35:a:95:ARG:CZ	2.47	0.44
44:j:19:CYS:SG	44:j:22:CYS:HB2	2.57	0.44
1:1:115:U:H4'	21:M:4:PHE:CD2	2.52	0.44
1:1:715:G:H2'	1:1:716:A:O4'	2.17	0.44
1:1:755:A:H4'	1:1:770:G:H5'	2.00	0.44
1:1:783:G:H2'	1:1:784:U:O4'	2.18	0.44
1:1:1279:A:H2'	1:1:1280:U:O4'	2.16	0.44
2:2:705:A:H2'	2:2:705:A:N3	2.32	0.44
2:2:747:A:H2'	2:2:749:G:H5'	1.98	0.44
3:3:7:U:H1'	33:Y:76:ASN:HB2	1.99	0.44
3:3:58:C:H2'	3:3:60:U:O4'	2.17	0.44
4:4:137:G:N2	13:E:155:ARG:HH22	2.16	0.44
5:5:37:G:H5'	10:B:370:SER:OG	2.17	0.44
8:8:29:A:O2'	8:8:57:A:N1	2.36	0.44
10:B:46:PHE:HE2	10:B:81:ALA:HB1	1.82	0.44
13:E:111:VAL:HG12	13:E:114:PHE:HB2	1.97	0.44
19:K:95:LEU:HG	19:K:106:ARG:HE	1.82	0.44
23:O:103:LEU:HD23	23:O:103:LEU:H	1.82	0.44
24:P:35:PHE:HD2	24:P:36:LEU:HD12	1.82	0.44
30:V:84:THR:HA	30:V:127:ILE:O	2.17	0.44
1:1:129:C:H1'	1:1:137:G:N2	2.33	0.44
1:1:140:U:H5'	1:1:141:U:P	2.58	0.44
1:1:275:A:P	1:1:275:A:H8	2.41	0.44
1:1:427:A:H3'	1:1:428:A:C8	2.53	0.44
1:1:547:U:H1'	1:1:548:G:C2	2.52	0.44
1:1:681:A2M:HM'3	1:1:681:A2M:H1'	1.82	0.44
1:1:786:A:N6	1:1:791:C:H42	2.16	0.44
1:1:1183:G:OP1	22:N:17:TYR:OH	2.35	0.44
1:1:1529:OMC:HM22	11:C:94:MET:CG	2.45	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1535:U:H2'	1:1:1536:G:H8	1.82	0.44
1:1:1771:A:H2'	1:1:1772:U:O4'	2.17	0.44
2:2:477:G:C2	2:2:478:A:C6	3.05	0.44
2:2:650:A:N6	2:2:1311:A:H62	2.16	0.44
5:5:42:G:H2'	5:5:42:G:N3	2.33	0.44
6:6:7:A:N1	6:6:60:A:N1	2.66	0.44
6:6:26:G:N3	6:6:26:G:C5'	2.73	0.44
6:6:42:A:O2'	6:6:43:A:O5'	2.35	0.44
8:8:22:U:H2'	8:8:23:G:C8	2.53	0.44
8:8:104:C:H2'	8:8:105:C:O4'	2.18	0.44
13:E:112:ARG:HA	13:E:119:ARG:O	2.17	0.44
17:I:13:GLN:HB3	17:I:17:TRP:HE1	1.82	0.44
22:N:98:ARG:HH12	22:N:122:PRO:HG3	1.82	0.44
23:O:30:TYR:HA	23:O:33:ARG:HB3	2.00	0.44
27:S:67:VAL:O	27:S:67:VAL:HG13	2.17	0.44
28:T:133[B]:HIS:CD2	28:T:133[B]:HIS:O	2.71	0.44
33:Y:11:VAL:HG21	33:Y:80:PHE:CD1	2.52	0.44
33:Y:89:MET:HA	33:Y:119:ARG:HH22	1.83	0.44
33:Y:90:SER:O	33:Y:95:GLY:N	2.45	0.44
41:g:39:LEU:HG	41:g:135:ILE:HD11	2.00	0.44
47:m:41:PHE:CB	47:m:60:CYS:SG	3.04	0.44
1:1:50:A:C2'	1:1:51:G:H5'	2.47	0.44
1:1:245:C:O2'	1:1:247:A:OP2	2.29	0.44
1:1:263:A:H2'	1:1:264:U:O4'	2.17	0.44
1:1:559:G:HO2'	1:1:560:G:H8	1.61	0.44
1:1:658:G:HO2'	1:1:659:G:P	2.40	0.44
1:1:707:C:H5'	11:C:117:HIS:CE1	2.53	0.44
1:1:786:A:H61	1:1:791:C:N4	2.15	0.44
1:1:798:U:H5'	24:P:77:PHE:HD2	1.82	0.44
1:1:869:C:H5"	44:j:10:GLN:HB3	2.00	0.44
1:1:1045:G:O2'	1:1:1104:A:N6	2.50	0.44
1:1:1248:C:H4'	1:1:1249:A:H5'	1.99	0.44
1:1:1629:U:OP1	30:V:126:TYR:OH	2.35	0.44
2:2:661:U:OP1	9:A:2:GLY:HA2	2.18	0.44
2:2:812:C:H4'	2:2:813:U:C5	2.53	0.44
2:2:1133:A:N6	27:S:47:ALA:O	2.50	0.44
2:2:1184:C:H3'	2:2:1185:C:C6	2.52	0.44
2:2:1332:G:H2'	2:2:1333:C:C6	2.52	0.44
2:2:1404:H2U:H51	2:2:1405:G:C4	2.52	0.44
3:3:58:C:O2'	3:3:60:U:H5"	2.10	0.44
4:4:138:C:H41	4:4:148:C:H1'	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:6:40:C:P	6:6:40:C:C3'	2.94	0.44
7:7:20:C:N4	7:7:21:U:C4	2.86	0.44
13:E:92:ARG:HG2	13:E:93:CYS:H	1.82	0.44
15:G:154:LEU:HD22	21:M:24:ARG:HH22	1.83	0.44
22:N:46:PHE:CE1	22:N:141:LYS:HE2	2.53	0.44
22:N:138:MET:HE1	22:N:148:ALA:HB3	2.00	0.44
31:W:71:TYR:CD1	31:W:74:LYS:HG2	2.53	0.44
35:a:4:HIS:H	35:a:6:LYS:HZ2	1.65	0.44
1:1:18:A:C6	1:1:19:G:C6	3.05	0.44
1:1:333:A:O2'	1:1:334:G:O5'	2.29	0.44
1:1:346:U:H5"	43:i:83:PHE:HD2	1.82	0.44
1:1:370:G:O5'	1:1:371:U:H5'	2.17	0.44
1:1:1442:G:N2	1:1:1448:C:O4'	2.51	0.44
1:1:1485:A:N3	7:7:18:G:O2'	2.46	0.44
1:1:1648:A:H2'	1:1:1649:A:O4'	2.17	0.44
2:2:773:G:H2'	2:2:774:A:O4'	2.17	0.44
2:2:834:G:H22	2:2:951:G:H1'	1.83	0.44
2:2:1103:C:H3'	2:2:1104:A:H2'	2.00	0.44
2:2:1128:G:N2	27:S:49:ARG:HH22	2.15	0.44
2:2:1159:A:OP1	24:P:196:ARG:NH2	2.50	0.44
2:2:1381:C:OP1	2:2:1382:G:H5"	2.18	0.44
3:3:32:A:C6	3:3:33:A:C6	3.05	0.44
3:3:38:A:N6	3:3:182:G:N1	2.66	0.44
4:4:180:C:OP2	10:B:132:ARG:NH2	2.51	0.44
8:8:36:C:C2	8:8:48:G:O2'	2.65	0.44
9:A:181:LYS:HG3	9:A:184:ASN:H	1.82	0.44
37:c:224:MET:HB3	37:c:236:ASP:OD2	2.17	0.44
1:1:89:C:O2'	1:1:319:G:OP1	2.34	0.44
1:1:347:U:H2'	1:1:348:G:O4'	2.18	0.44
1:1:670:C:H2'	1:1:671:G:H8	1.83	0.44
1:1:1159:A:OP2	37:c:117:ARG:HD3	2.18	0.44
2:2:666:C:C6	2:2:666:C:OP2	2.70	0.44
2:2:1451:G:H2'	2:2:1452:A:O4'	2.17	0.44
3:3:108:A:H4'	3:3:109:C:O5'	2.17	0.44
3:3:194:A:O2'	3:3:196:A:H5'	2.17	0.44
4:4:158:A:H3'	4:4:159:G:H8	1.83	0.44
9:A:116:VAL:CG2	9:A:126:LEU:HB2	2.42	0.44
10:B:8:HIS:HB3	18:J:48:LEU:HG	2.00	0.44
16:H:33:VAL:HG13	16:H:36:ARG:HB2	2.00	0.44
17:I:61:PRO:O	17:I:76:LEU:HA	2.17	0.44
17:I:94:TYR:OH	17:I:130:LEU:HD11	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:J:77:ASN:OD1	18:J:107:PRO:HA	2.18	0.44
42:h:6:VAL:HG21	42:h:23:MET:HE2	2.00	0.44
48:n:44:ASP:O	48:n:48:SER:HB2	2.17	0.44
1:1:854:C:C2'	1:1:855:C:H5'	2.48	0.44
1:1:1043:C:C2'	1:1:1044:G:H5'	2.48	0.44
1:1:1049:A:H4'	8:8:103:A:C2	2.53	0.44
1:1:1186:A:H2'	1:1:1187:A:C8	2.53	0.44
1:1:1434:U:H1'	1:1:1435:G:N7	2.33	0.44
2:2:808:C:H3'	2:2:809:C:C5	2.53	0.44
2:2:809:C:C4	2:2:810:G:O6	2.71	0.44
2:2:1254:OMG:C3'	2:2:1255:G:H5"	2.48	0.44
4:4:141:A:H3'	4:4:142:A:C8	2.53	0.44
7:7:74:U:OP2	31:W:73:LEU:HD23	2.17	0.44
8:8:107:U:H5"	22:N:202:PRO:HG2	1.99	0.44
9:A:79:PRO:HD3	9:A:165:MET:SD	2.58	0.44
17:I:60:ARG:NH1	17:I:76:LEU:O	2.50	0.44
18:J:81:ILE:HD11	18:J:103:VAL:CG1	2.48	0.44
18:J:83:GLN:HG2	18:J:85:LYS:H	1.81	0.44
19:K:183:ARG:NH2	41:g:24:VAL:HG21	2.33	0.44
21:M:7:LEU:O	21:M:11:TRP:HD1	2.01	0.44
24:P:61:PRO:HB3	24:P:92:ASP:OD1	2.18	0.44
26:R:111:ASP:OD1	26:R:115:ARG:NE	2.42	0.44
41:g:64:ARG:HD3	41:g:112:GLY:O	2.18	0.44
47:m:76:ASN:HA	47:m:79:VAL:HB	1.99	0.44
1:1:56:G:H4'	21:M:155:VAL:HG12	1.99	0.44
1:1:462:A:H62	7:7:3:C:H42	1.64	0.44
1:1:656:G:H2'	1:1:657:G:O4'	2.18	0.44
1:1:659:G:H2'	1:1:660:U:C6	2.53	0.44
1:1:1392:G:N1	19:K:105:TRP:CH2	2.82	0.44
1:1:1394:U:O5'	1:1:1394:U:C6	2.71	0.44
1:1:1537:G:N2	2:2:604:A:H62	2.12	0.44
2:2:426:G:H2'	2:2:427:C:C6	2.52	0.44
2:2:827:A:O2'	2:2:828:U:O4'	2.33	0.44
6:6:13:C:O2'	6:6:14:A:P	2.75	0.44
6:6:32:U:O4	16:H:221:TYR:CE1	2.71	0.44
6:6:39:U:C6	6:6:39:U:OP2	2.71	0.44
8:8:20:A:H2'	8:8:21:G:H8	1.83	0.44
10:B:312:ILE:HG13	10:B:328:TYR:CZ	2.52	0.44
16:H:146:VAL:HG11	19:K:55:ALA:CB	2.47	0.44
17:I:59:LEU:HD23	17:I:60:ARG:N	2.33	0.44
21:M:155:VAL:O	21:M:162:ARG:NH2	2.41	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:M:189:ARG:HA	21:M:192:TRP:HB3	1.99	0.44
23:O:39:GLN:HE21	23:O:43:LYS:NZ	2.16	0.44
24:P:64:LEU:HD22	24:P:120:ILE:HD11	2.00	0.44
24:P:65:SER:HB3	24:P:96:ASP:CG	2.42	0.44
37:c:60:LYS:O	37:c:64:GLU:HG3	2.18	0.44
40:f:116:LEU:HB3	40:f:118:VAL:HG23	1.99	0.44
1:1:213:G:H22	1:1:220:A:H2	1.66	0.43
1:1:319:G:H5"	1:1:320:G:OP1	2.18	0.43
1:1:346:U:H5"	43:i:83:PHE:CD2	2.54	0.43
1:1:460:A:H2'	1:1:461:G:O4'	2.18	0.43
1:1:492:G:C2	1:1:644:G:N2	2.86	0.43
1:1:1208:U:H3'	1:1:1209:G:N2	2.33	0.43
1:1:1257:U:HO2'	1:1:1258:A:P	2.40	0.43
1:1:1443:U:H1'	24:P:17:HIS:ND1	2.30	0.43
2:2:631:G:H1	2:2:1433:U:H3	1.66	0.43
2:2:1193:C:O3'	48:n:39:GLY:HA3	2.18	0.43
6:6:16:C:H3'	6:6:17:U:H5"	2.00	0.43
13:E:15:GLY:HA2	13:E:30:LYS:NZ	2.32	0.43
13:E:109:ILE:O	13:E:122:ARG:HA	2.18	0.43
13:E:112:ARG:CZ	13:E:118:LYS:HD2	2.48	0.43
23:O:41:LYS:HE2	23:O:41:LYS:HA	2.00	0.43
26:R:9:TYR:CE1	26:R:65:VAL:HG12	2.53	0.43
47:m:49:ARG:HD2	47:m:51:ALA:O	2.18	0.43
1:1:42:U:O2'	48:n:46:LYS:HE3	2.18	0.43
1:1:135:A:C5	35:a:112:MET:HE3	2.53	0.43
1:1:180:A:H2'	1:1:181:G:C8	2.54	0.43
1:1:300:A:O3'	1:1:301:A:H4'	2.18	0.43
1:1:1371:U:O2'	1:1:1372:G:P	2.76	0.43
1:1:1667:A:N3	15:G:139:THR:HG22	2.33	0.43
1:1:1754:U:H5"	25:Q:38:ARG:HD2	2.00	0.43
2:2:404:A:H4'	2:2:405:U:H5"	2.00	0.43
2:2:483:C:H2'	2:2:484:G:C8	2.53	0.43
2:2:525:A:H1'	2:2:529:G:C8	2.53	0.43
2:2:554:OMC:HM22	2:2:555:A:OP1	2.18	0.43
2:2:977:A:H5'	42:h:94:ARG:HE	1.82	0.43
4:4:137:G:O2'	13:E:158:ALA:HB1	2.18	0.43
5:5:17:C:O2'	28:T:69:ARG:O	2.23	0.43
7:7:7:OMU:H4'	7:7:7:OMU:HM23	2.00	0.43
16:H:96:ASP:HA	16:H:99:VAL:HB	2.00	0.43
16:H:111:LYS:O	16:H:115:LYS:HG3	2.19	0.43
21:M:75:VAL:O	21:M:76:HIS:C	2.61	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:e:129:TYR:CE2	39:e:139:PRO:HG3	2.53	0.43
1:1:67:C:H2'	1:1:68:A:O4'	2.18	0.43
1:1:102:G:O2'	1:1:737:U:O2'	2.24	0.43
1:1:829:U:O2'	1:1:830:G:OP2	2.29	0.43
1:1:984:A:C6	11:C:99:ARG:HD2	2.53	0.43
1:1:1029:G:H8	1:1:1029:G:OP2	2.01	0.43
1:1:1054:A:H2'	1:1:1055:U:H5'	2.00	0.43
1:1:1435:G:C2	1:1:1436:G:C6	3.06	0.43
1:1:1640:C:H4'	3:3:202:A:H1'	2.00	0.43
1:1:1735:G:C2	1:1:1736:G:H1'	2.52	0.43
2:2:44:C:H2'	2:2:45:A:C8	2.54	0.43
2:2:533:C:C5	2:2:544:U:C5	3.06	0.43
2:2:812:C:H6	2:2:812:C:H2'	1.62	0.43
2:2:812:C:H4'	2:2:813:U:C6	2.54	0.43
2:2:1088:C:H2'	2:2:1089:G:C8	2.54	0.43
2:2:1248:C:H5"	2:2:1395:A:H4'	2.00	0.43
2:2:1290:A:H5'	2:2:1291:C:C5	2.53	0.43
2:2:1443:G:H1	41:g:80:HIS:CE1	2.26	0.43
5:5:102:U:H2'	5:5:103:U:O4'	2.19	0.43
7:7:60:U:H3	35:a:63:ASN:HD22	1.65	0.43
8:8:85:G:OP2	50:8:201:HOH:O	2.21	0.43
8:8:108:G:C6	8:8:109:A:C6	3.06	0.43
10:B:371:LYS:HD2	10:B:371:LYS:HA	1.80	0.43
16:H:53:VAL:HG21	16:H:98:PHE:HE2	1.83	0.43
18:J:94:VAL:O	32:X:20:ARG:N	2.51	0.43
19:K:45:SER:HA	19:K:46:PRO:HD3	1.10	0.43
26:R:29:PHE:CE1	26:R:43:PHE:HA	2.53	0.43
30:V:99:LYS:HE3	30:V:110:ALA:O	2.19	0.43
30:V:109:LYS:H	30:V:133:HIS:CD2	2.35	0.43
32:X:8:PHE:CD1	32:X:44:TYR:HD1	2.36	0.43
33:Y:68:VAL:H	33:Y:113:ARG:HH12	1.66	0.43
40:f:22:ARG:HE	40:f:25:LEU:HD23	1.79	0.43
48:n:4:TYR:CD1	48:n:5:PRO:HD2	2.54	0.43
1:1:145:U:H5"	1:1:147:G:H5'	1.99	0.43
1:1:270:C:C4	1:1:271:A:H1'	2.53	0.43
1:1:487:G:H1	1:1:648:A:H2	1.62	0.43
1:1:1413:U:H4'	1:1:1414:A:H5'	2.00	0.43
1:1:1470:U:C2	1:1:1522:U:H1'	2.53	0.43
1:1:1631:G:O6	42:h:11:ARG:NH2	2.51	0.43
1:1:1744:G:OP1	42:h:61:ARG:NH1	2.41	0.43
2:2:581:G:N2	2:2:585:C:O2'	2.51	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:1088:C:H5”	2:2:1179:C:O2’	2.18	0.43
2:2:1161:G:H2’	2:2:1162:A:O4’	2.18	0.43
2:2:1275:C:H5	2:2:1292:G:N1	2.14	0.43
2:2:1310:G:H5’	2:2:1311:A:C5’	2.45	0.43
2:2:1347:C:C2’	2:2:1348:U:H5’	2.48	0.43
5:5:122:C:H5’	5:5:123:U:OP2	2.18	0.43
6:6:12:C:OP1	6:6:12:C:H3’	2.17	0.43
7:7:39:G:H1’	7:7:104:A:N1	2.34	0.43
7:7:95:A:H2’	7:7:96:A:O4’	2.19	0.43
9:A:150:LEU:C	9:A:152:SER:H	2.26	0.43
15:G:253:ASN:ND2	15:G:256:ARG:HE	2.16	0.43
16:H:93:ALA:HA	16:H:166:TRP:CD1	2.54	0.43
16:H:208:MET:SD	19:K:181:TRP:CE3	3.11	0.43
22:N:60:ILE:HG12	22:N:160:PRO:HG2	2.00	0.43
23:O:33:ARG:O	23:O:37:VAL:HG22	2.17	0.43
25:Q:136:ARG:O	25:Q:139:VAL:HG22	2.18	0.43
1:1:171:U:O2’	1:1:172:G:H5’	2.18	0.43
1:1:1136:G:H2’	1:1:1137:C:H6	1.83	0.43
1:1:1166:C:H5”	24:P:159:PHE:CG	2.54	0.43
1:1:1285:A:N3	1:1:1285:A:H2’	2.34	0.43
1:1:1674:U:H2’	1:1:1675:G:C8	2.54	0.43
1:1:1772:U:H2’	1:1:1773:U:C6	2.53	0.43
2:2:634:U:H1’	2:2:1431:G:N2	2.33	0.43
2:2:663:U:OP2	2:2:1034:G:O2’	2.33	0.43
2:2:946:C:H2’	2:2:947:U:C6	2.52	0.43
2:2:1190:A:O3’	24:P:189:SER:HB3	2.19	0.43
2:2:1393:U:H1’	2:2:1394:U:OP2	2.18	0.43
3:3:119:U:HO2’	3:3:120:G:H8	1.62	0.43
8:8:11:C:C5	8:8:12:C:N3	2.87	0.43
9:A:108:THR:CG2	47:m:86:LEU:HD23	2.48	0.43
11:C:235:LEU:C	11:C:237:HIS:H	2.24	0.43
13:E:24:LYS:NZ	13:E:38:LEU:H	2.17	0.43
23:O:163:ALA:HB3	23:O:166:PHE:CD2	2.53	0.43
30:V:57:SER:OG	35:a:19:LEU:HD22	2.19	0.43
37:c:153:THR:HG21	37:c:245:ASN:ND2	2.34	0.43
41:g:94:PRO:O	41:g:97:ARG:HG2	2.19	0.43
42:h:45:THR:HB	42:h:46:PRO:HD2	2.01	0.43
1:1:36:OMU:O5’	1:1:36:OMU:H6	2.19	0.43
1:1:100:G:H2’	1:1:101:A:O4’	2.19	0.43
1:1:240:U:O2’	1:1:241:G:O4’	2.34	0.43
1:1:448:A:C2	7:7:16:A:H1’	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:487:G:N2	1:1:648:A:H2	2.13	0.43
1:1:752:G:H1	20:L:72:THR:HG21	1.83	0.43
1:1:934:A:O4'	28:T:133[B]:HIS:HA	2.18	0.43
1:1:1659:G:H2'	1:1:1660:U:C6	2.53	0.43
2:2:71:OMG:H2'	2:2:72:G:O5'	2.19	0.43
2:2:650:A:N6	2:2:1311:A:N7	2.66	0.43
2:2:668:C:N3	2:2:1036:G:N2	2.52	0.43
2:2:1167:A:H2'	2:2:1168:G:H8	1.84	0.43
3:3:129:G:C2	3:3:130:G:C8	3.06	0.43
3:3:197:G:H4'	3:3:198:C:O4'	2.17	0.43
4:4:78:C:O2'	32:X:16:GLY:O	2.31	0.43
6:6:3:A:H2'	6:6:3:A:N3	2.33	0.43
6:6:33:G:N7	19:K:42:VAL:HG11	2.33	0.43
8:8:42:C:O2'	8:8:43:G:C5'	2.66	0.43
8:8:61:C:H2'	8:8:62:U:H6	1.83	0.43
9:A:21:HIS:HD2	9:A:22:LYS:NZ	2.16	0.43
10:B:226:THR:HB	10:B:278:HIS:H	1.82	0.43
13:E:170:ASP:OD2	13:E:173:LYS:NZ	2.50	0.43
16:H:27:ILE:HG22	16:H:53:VAL:HA	2.00	0.43
18:J:47:ARG:HH11	18:J:50:ARG:HD3	1.83	0.43
21:M:11:TRP:O	21:M:14:LYS:NZ	2.47	0.43
25:Q:14:ILE:HG21	25:Q:42:ARG:HG2	2.01	0.43
26:R:93:VAL:HG13	26:R:94:LYS:H	1.84	0.43
30:V:102:MET:O	30:V:106:TYR:N	2.51	0.43
30:V:129:LEU:HD12	30:V:135:ALA:HA	2.01	0.43
33:Y:67:GLN:HB3	33:Y:113:ARG:HH22	1.83	0.43
33:Y:68:VAL:O	33:Y:113:ARG:NH1	2.51	0.43
38:d:29:THR:HA	38:d:91:VAL:HG11	1.99	0.43
40:f:84:TYR:O	40:f:87:VAL:HG12	2.18	0.43
42:h:30:LYS:HB3	42:h:30:LYS:HE3	1.70	0.43
42:h:102:ARG:O	42:h:106:GLN:N	2.38	0.43
1:1:36:OMU:CM2	1:1:37:A:H5'	2.46	0.43
1:1:504:C:C2	1:1:505:U:H1'	2.54	0.43
1:1:849:U:O2'	1:1:850:G:O4'	2.33	0.43
1:1:911:G:C5	9:A:181:LYS:HB2	2.54	0.43
1:1:1149:G:H2'	1:1:1149:G:N3	2.33	0.43
1:1:1445:U:O2'	1:1:1446:A:H3'	2.18	0.43
1:1:1539:G:O2'	2:2:601:G:O6	2.33	0.43
1:1:1681:G:H8	1:1:1681:G:O5'	2.02	0.43
2:2:526:A:H2'	2:2:527:A2M:O3'	2.19	0.43
2:2:592:C:H2'	2:2:593:U:O4'	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:801:C:H2'	2:2:802:U:O4'	2.19	0.43
2:2:1088:C:OP1	2:2:1179:C:O2'	2.35	0.43
2:2:1171:U:H2'	2:2:1172:G:C8	2.54	0.43
2:2:1277:A:OP1	22:N:75:TYR:OH	2.15	0.43
2:2:1442:C:N4	6:6:3:A:H61	2.16	0.43
3:3:58:C:C6	3:3:58:C:O5'	2.71	0.43
5:5:41:U:H4'	5:5:42:G:O5'	2.19	0.43
6:6:33:G:C5'	19:K:42:VAL:HG22	2.48	0.43
7:7:37:U:C5	7:7:105:C:N3	2.87	0.43
10:B:226:THR:O	10:B:277:TYR:HA	2.19	0.43
19:K:180:HIS:HE1	19:K:181:TRP:NE1	2.15	0.43
22:N:92:HIS:HB3	22:N:94:PHE:CZ	2.53	0.43
33:Y:77:HIS:HA	33:Y:80:PHE:HD2	1.84	0.43
33:Y:125:SER:C	33:Y:127:TRP:H	2.26	0.43
37:c:99:ILE:HG12	37:c:145:ALA:HB2	2.00	0.43
37:c:141:GLU:HA	37:c:144:ILE:HG12	2.00	0.43
38:d:26:VAL:O	38:d:92:LEU:HD12	2.18	0.43
42:h:8:TYR:CD1	42:h:33:MET:HE3	2.53	0.43
42:h:42:GLY:HA2	42:h:59:ALA:HA	1.99	0.43
45:k:11:PHE:O	45:k:15:CYS:N	2.40	0.43
1:1:80:C:OP1	21:M:199:VAL:HG11	2.18	0.43
1:1:121:A:O2'	1:1:144:G:N2	2.51	0.43
1:1:307:U:H2'	1:1:308:A:C8	2.53	0.43
1:1:330:U:H2'	1:1:331:C:O4'	2.18	0.43
1:1:469:A:OP1	40:f:16:LYS:HD2	2.19	0.43
1:1:838:G:OP1	24:P:154:GLU:N	2.38	0.43
1:1:927:A2M:H4'	2:2:73:U:O3'	2.19	0.43
1:1:1521:G:C4	11:C:100:MET:SD	3.11	0.43
2:2:413:A:H2'	2:2:414:G:C8	2.54	0.43
2:2:432:U:H2'	2:2:433:G:O4'	2.18	0.43
2:2:729:G:C4	2:2:731:A:H5"	2.54	0.43
2:2:1023:U:C4	2:2:1024:C:H1'	2.54	0.43
2:2:1159:A:H2'	2:2:1160:OMC:O4'	2.19	0.43
2:2:1307:U:OP2	50:2:1736:HOH:O	2.21	0.43
4:4:141:A:O3'	13:E:70:ASN:HB2	2.19	0.43
8:8:48:G:N3	8:8:48:G:C2'	2.80	0.43
9:A:30:ARG:H	9:A:76:MET:HE2	1.84	0.43
9:A:103:PRO:O	9:A:107:ILE:HG13	2.19	0.43
9:A:147:ARG:HG2	9:A:157:SER:HB3	1.99	0.43
16:H:27:ILE:O	16:H:54:VAL:HG22	2.19	0.43
34:Z:19:LEU:CD2	34:Z:21:LYS:HB2	2.48	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:f:22:ARG:NE	40:f:25:LEU:CD2	2.74	0.43
1:1:271:A:H2'	1:1:272:U:C6	2.53	0.43
1:1:695:OMC:OP1	20:L:3:THR:HG22	2.18	0.43
1:1:815:G:N2	1:1:825:G:N2	2.67	0.43
1:1:835:G:O2'	24:P:65:SER:OG	2.27	0.43
1:1:887:A:C2	1:1:909:A:H1'	2.54	0.43
1:1:1205:G:O2'	1:1:1206:A:H5'	2.19	0.43
1:1:1499:G:OP1	40:f:34:ARG:NH2	2.43	0.43
2:2:780:G:O5'	15:G:328:ARG:NH2	2.49	0.43
2:2:1441:G:N2	2:2:1443:G:O2'	2.41	0.43
6:6:37:C:H3'	6:6:37:C:O2	2.18	0.43
10:B:210:VAL:HG21	10:B:329:VAL:HG21	2.00	0.43
13:E:148:ASN:OD1	13:E:149:ASP:N	2.51	0.43
16:H:95:SER:OG	16:H:124:GLU:HB2	2.19	0.43
17:I:64:ASN:OD1	17:I:74:ARG:NH2	2.52	0.43
20:L:74:ASN:HA	20:L:110:LEU:O	2.19	0.43
22:N:99:ILE:HB	22:N:123:ASN:ND2	2.34	0.43
29:U:57:LEU:H	29:U:61:LYS:HA	1.83	0.43
35:a:110:ARG:HH21	35:a:110:ARG:CB	2.25	0.43
1:1:23:U:H4'	1:1:24:A:C8	2.54	0.43
1:1:306:G:O6	21:M:15:SER:HB3	2.19	0.43
1:1:424:G:N2	1:1:427:A:H8	2.06	0.43
1:1:506:G:N2	1:1:549:C:O2	2.52	0.43
1:1:709:A:H5"	1:1:837:A:H61	1.84	0.43
1:1:1136:G:H2'	1:1:1137:C:C6	2.54	0.43
1:1:1389:A:OP1	19:K:77:PRO:HG3	2.18	0.43
2:2:535:U:C2'	2:2:536:C:C5'	2.97	0.43
3:3:14:A:H61	42:h:70:ARG:HE	1.67	0.43
8:8:20:A:H2'	8:8:21:G:O4'	2.19	0.43
8:8:116:U:O2'	23:O:74:VAL:O	2.35	0.43
10:B:282:GLN:HB3	10:B:285:LYS:HE2	2.01	0.43
11:C:30:PRO:HB3	24:P:25:TYR:CE2	2.48	0.43
11:C:167:MET:SD	11:C:222:ILE:HD12	2.59	0.43
13:E:59:TRP:HH2	19:K:64:TYR:CB	2.23	0.43
19:K:73:ILE:CG1	19:K:114:VAL:HG22	2.36	0.43
22:N:72:ALA:HA	22:N:151:ALA:HB1	2.01	0.43
22:N:156:LYS:HG3	22:N:163:GLN:HB3	2.01	0.43
23:O:51:LEU:N	23:O:151:ILE:O	2.52	0.43
25:Q:18:GLY:O	25:Q:21:ARG:HB2	2.19	0.43
28:T:36:ILE:HG23	28:T:47:LEU:HD23	2.01	0.43
28:T:61:LYS:CG	28:T:78:GLN:HE22	2.32	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:m:44:LYS:O	47:m:44:LYS:HG2	2.17	0.43
48:n:55:LYS:CD	48:n:56:PRO:HD2	2.49	0.43
1:1:59:A:H2'	1:1:60:A:O4'	2.18	0.42
1:1:130:U:H3'	1:1:131:U:H5'	2.00	0.42
1:1:403:C:O2'	11:C:79:SER:O	2.37	0.42
1:1:1108:G:H3'	1:1:1109:U:O2	2.19	0.42
1:1:1112:A:O2'	27:S:105:PHE:HE1	2.02	0.42
1:1:1119:C:H2'	1:1:1120:C:C6	2.54	0.42
1:1:1354:C:H2'	1:1:1355:C:C6	2.54	0.42
1:1:1668:G:C2	15:G:136:ARG:HD3	2.53	0.42
2:2:1226:A:H1'	20:L:58:MET:HE2	2.00	0.42
3:3:112:C:N3	3:3:120:G:N1	2.53	0.42
3:3:151:C:H2'	3:3:152:A:O4'	2.18	0.42
3:3:203:A:C2	42:h:62:HIS:CD2	3.07	0.42
4:4:137:G:H21	13:E:155:ARG:HH22	1.67	0.42
7:7:147:G:C5'	30:V:51:ASN:HD21	2.32	0.42
8:8:6:U:O2'	8:8:7:A:H8	2.02	0.42
8:8:37:C:N3	8:8:48:G:O4'	2.52	0.42
8:8:43:G:OP2	8:8:43:G:C8	2.70	0.42
10:B:321:TYR:HD1	10:B:340:ARG:HG3	1.81	0.42
11:C:192:ARG:HG3	11:C:195:MET:HE3	2.01	0.42
13:E:88:ARG:HH11	13:E:186:ILE:HG22	1.82	0.42
17:I:79:GLY:HA2	17:I:101:ARG:O	2.19	0.42
26:R:6:LEU:O	26:R:102:THR:HG23	2.18	0.42
27:S:14:LEU:HD11	27:S:58:HIS:CD2	2.54	0.42
30:V:79:ILE:HG12	30:V:85:LEU:HD23	2.01	0.42
37:c:150:SER:O	37:c:153:THR:HG22	2.18	0.42
40:f:67:ILE:HD13	40:f:73:ARG:HG2	2.01	0.42
1:1:48:OMU:H2'	1:1:48:OMU:O2	2.18	0.42
1:1:752:G:H4'	1:1:810:C:O3'	2.19	0.42
1:1:851:G:H2'	1:1:852:A:C8	2.54	0.42
1:1:939:C:H2'	1:1:940:U:O4'	2.19	0.42
1:1:1048:A:H2'	1:1:1049:A:O4'	2.20	0.42
1:1:1394:U:O5'	1:1:1394:U:H6	2.01	0.42
1:1:1450:C:H2'	1:1:1451:U:H5'	2.01	0.42
1:1:1727:U:C4	1:1:1728:G:C4	3.07	0.42
2:2:498:A:H2'	2:2:499:G:C8	2.54	0.42
2:2:635:A:H5"	28:T:66[A]:LYS:HA	2.01	0.42
2:2:775:C:N4	2:2:814:A:OP2	2.52	0.42
2:2:1276:A:H4'	22:N:154:ARG:HH12	1.83	0.42
3:3:3:G:H2'	3:3:4:U:C6	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:8:34:A:N1	8:8:48:G:C6	2.88	0.42
10:B:165:HIS:HA	10:B:182:HIS:O	2.19	0.42
18:J:13:PHE:CD2	18:J:123:GLU:HG3	2.54	0.42
19:K:51:ALA:O	19:K:52:GLN:HG3	2.19	0.42
21:M:73:ARG:HG2	21:M:75:VAL:HG13	2.01	0.42
22:N:47:PRO:HA	22:N:171:TRP:CZ3	2.54	0.42
22:N:58:GLU:O	22:N:129:VAL:HB	2.19	0.42
37:c:220:PRO:HB3	37:c:251:MET:HG3	2.01	0.42
39:e:83:ALA:HB2	39:e:178:THR:HG23	2.01	0.42
1:1:6:C:H5"	15:G:278:LYS:HB3	2.01	0.42
1:1:827:G:H2'	1:1:828:U:O4'	2.19	0.42
1:1:1195:A:O3'	37:c:107:PRO:HD3	2.19	0.42
1:1:1531:U:H2'	1:1:1532:G:C8	2.53	0.42
1:1:1541:A2M:OP2	50:1:1966:HOH:O	2.21	0.42
2:2:71:OMG:H2'	2:2:72:G:O4'	2.20	0.42
6:6:33:G:H5'	19:K:42:VAL:HG22	1.94	0.42
8:8:46:U:O2'	8:8:47:U:H5'	2.19	0.42
10:B:26:ARG:HD3	10:B:184:GLN:OE1	2.19	0.42
10:B:56:ILE:CG2	10:B:366:ILE:HG23	2.47	0.42
10:B:320:GLY:O	10:B:340:ARG:NE	2.48	0.42
15:G:117:LYS:HE2	15:G:117:LYS:HA	2.00	0.42
16:H:148:TYR:CB	19:K:59:MET:H	2.25	0.42
20:L:120:ILE:O	20:L:120:ILE:HG13	2.19	0.42
26:R:12:VAL:HG12	26:R:62:SER:O	2.20	0.42
34:Z:25:ILE:HG23	40:f:93:TYR:CE1	2.54	0.42
35:a:98:ALA:O	35:a:99:LEU:HG	2.20	0.42
41:g:70:TYR:O	41:g:107:VAL:HB	2.19	0.42
44:j:59:THR:C	44:j:61:THR:H	2.27	0.42
1:1:22:C:C2'	1:1:23:U:H5'	2.50	0.42
1:1:260:C:HO2'	1:1:261:C:P	2.39	0.42
1:1:493:A:C2'	1:1:494:A:H5'	2.49	0.42
1:1:497:A:O2'	1:1:498:G:P	2.78	0.42
1:1:705:C:OP1	24:P:21:SER:OG	2.31	0.42
1:1:874:C:H5'	9:A:19:HIS:ND1	2.34	0.42
1:1:899:A:H3'	1:1:900:C:C6	2.54	0.42
1:1:923:G:N2	1:1:940:U:H1'	2.33	0.42
2:2:805:G:H2'	2:2:806:C:C6	2.55	0.42
2:2:1078:OMU:O4'	2:2:1186:A2M:H2	2.19	0.42
2:2:1230:OMG:HM23	2:2:1230:OMG:H1'	1.84	0.42
3:3:147:A:P	45:k:26:LYS:HE2	2.59	0.42
6:6:26:G:C3'	6:6:27:G:H4'	2.49	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:7:20:C:H2'	7:7:21:U:H5'	2.00	0.42
9:A:101:VAL:HG22	9:A:165:MET:HG2	2.01	0.42
10:B:204:LEU:O	10:B:206:LYS:HD2	2.19	0.42
15:G:324:SER:HB2	15:G:327:SER:H	1.83	0.42
19:K:78:ARG:O	19:K:78:ARG:HG2	2.19	0.42
28:T:127:ARG:O	28:T:127:ARG:HG3	2.20	0.42
31:W:74:LYS:HB2	31:W:76:VAL:HG22	2.00	0.42
32:X:43:LEU:HD23	32:X:43:LEU:O	2.20	0.42
33:Y:20:GLY:HA3	33:Y:134:PHE:CE1	2.54	0.42
33:Y:43:LEU:HD13	33:Y:80:PHE:HE1	1.84	0.42
35:a:103:GLU:C	35:a:105:ASN:H	2.27	0.42
1:1:30:C:H2'	1:1:31:G:O4'	2.19	0.42
1:1:73:U:H5'	17:I:64:ASN:O	2.20	0.42
1:1:205:A:H4'	1:1:206:A:OP1	2.19	0.42
1:1:243:G:H22	1:1:259:G:N2	2.18	0.42
1:1:405:A:O2'	11:C:85:THR:HG23	2.19	0.42
1:1:840:G:H2'	1:1:841:U:O4'	2.20	0.42
1:1:1004:G:O2'	1:1:1172:G:H4'	2.20	0.42
1:1:1093:U:H2'	1:1:1094:C:C6	2.54	0.42
1:1:1450:C:C2'	1:1:1451:U:H5'	2.49	0.42
1:1:1729:A:N1	1:1:1730:A:N6	2.66	0.42
2:2:628:A2M:H1'	2:2:628:A2M:HM'3	1.84	0.42
2:2:639:G:OP1	10:B:253:LYS:HD3	2.20	0.42
2:2:754:U:H2'	2:2:755:U:C6	2.54	0.42
2:2:770:A:H61	9:A:68:LYS:HE3	1.84	0.42
2:2:1060:G:O6	27:S:3:HIS:NE2	2.53	0.42
2:2:1161:G:H4'	2:2:1188:C:H4'	2.01	0.42
2:2:1198:C:H3'	2:2:1199:G:C5'	2.47	0.42
6:6:31:U:H3'	6:6:31:U:C6	2.53	0.42
7:7:44:A:H2'	7:7:45:C:C6	2.54	0.42
9:A:65:HIS:CB	9:A:72:VAL:HG13	2.35	0.42
16:H:161:CYS:HA	16:H:164:VAL:HG22	2.01	0.42
25:Q:140:GLU:O	25:Q:144:LYS:HG2	2.19	0.42
28:T:61:LYS:C	28:T:63:TYR:H	2.28	0.42
35:a:4:HIS:H	35:a:6:LYS:NZ	2.17	0.42
35:a:22:LEU:HD11	35:a:55:ILE:HG23	2.01	0.42
46:l:38:ASN:O	46:l:40:LYS:N	2.51	0.42
47:m:14:TYR:CD1	47:m:18:TYR:HE2	2.37	0.42
1:1:231:U:H4'	1:1:232:G:H5'	2.00	0.42
1:1:673:C:N4	1:1:677:A:H8	2.17	0.42
1:1:1126:U:N3	1:1:1127:U:H1'	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1161:A:H2'	1:1:1162:G:H8	1.84	0.42
1:1:1161:A:H2'	1:1:1162:G:C8	2.55	0.42
1:1:1440:A:C6	1:1:1448:C:H4'	2.54	0.42
1:1:1771:A:OP1	45:k:40:ARG:NH2	2.31	0.42
2:2:9:G:H2'	2:2:10:C:C6	2.54	0.42
2:2:429:A:O2'	9:A:236:GLY:N	2.45	0.42
2:2:747:A:C6	2:2:749:G:C6	3.08	0.42
2:2:996:G:H2'	2:2:997:C:C5	2.55	0.42
2:2:1140:U:O2'	2:2:1172:G:O2'	2.20	0.42
2:2:1413:U:H2'	2:2:1414:U:C6	2.54	0.42
3:3:117:G:HO2'	3:3:118:U:P	2.43	0.42
7:7:136:G:H2'	7:7:137:U:C6	2.54	0.42
8:8:12:C:H1'	8:8:15:A:N1	2.34	0.42
8:8:31:C:O2'	8:8:52:A:N6	2.53	0.42
9:A:54:ARG:HG2	9:A:56:ALA:H	1.84	0.42
13:E:24:LYS:HE2	13:E:24:LYS:HA	2.01	0.42
13:E:36:LYS:HZ3	13:E:38:LEU:HD21	1.84	0.42
13:E:161:HIS:HD2	13:E:179:TYR:HB2	1.84	0.42
16:H:49:LYS:NZ	19:K:37:THR:HG23	2.35	0.42
18:J:78:ALA:HA	18:J:105:VAL:HG22	2.01	0.42
19:K:155:GLU:O	19:K:159:ALA:N	2.53	0.42
21:M:159:ARG:NH1	21:M:165:THR:HG22	2.35	0.42
25:Q:90:PRO:O	25:Q:94:LEU:HD23	2.19	0.42
42:h:8:TYR:HB2	42:h:13:HIS:ND1	2.35	0.42
1:1:94:A:C5	1:1:95:G:H1'	2.55	0.42
1:1:108:G:N1	35:a:120:LYS:HB3	2.35	0.42
1:1:672:U:H2'	1:1:673:C:C6	2.55	0.42
1:1:673:C:H2'	1:1:674:U:O4'	2.19	0.42
1:1:846:G:O2'	1:1:847:OMU:H5"	2.20	0.42
1:1:959:OMG:N2	21:M:76:HIS:CD2	2.78	0.42
1:1:1369:G:C5	16:H:78:LYS:HD3	2.55	0.42
1:1:1536:G:H2'	1:1:1537:G:O4'	2.20	0.42
2:2:102:C:H2'	2:2:103:G:O4'	2.20	0.42
2:2:113:A:H4'	2:2:567:A:H5"	2.01	0.42
2:2:412:A:H2'	2:2:413:A:C8	2.54	0.42
2:2:813:U:O4	2:2:1009:C:O2'	2.26	0.42
2:2:942:G:C6	2:2:943:U:C2	3.08	0.42
2:2:1254:OMG:H3'	2:2:1255:G:H5"	2.00	0.42
3:3:182:G:H4'	42:h:36:ARG:HH12	1.85	0.42
5:5:25:C:OP1	10:B:123:LYS:NZ	2.38	0.42
7:7:141:C:H2'	7:7:142:C:H5'	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:B:257:ILE:HD12	10:B:271:ARG:NH2	2.34	0.42
10:B:265:VAL:HG21	10:B:271:ARG:HH21	1.84	0.42
19:K:94:VAL:O	19:K:108:VAL:C	2.63	0.42
21:M:174:LEU:O	21:M:175:ARG:HB3	2.19	0.42
23:O:19:LYS:HB2	23:O:19:LYS:HZ3	1.79	0.42
24:P:51:ARG:CZ	24:P:147:ARG:HD2	2.50	0.42
27:S:100[A]:ARG:C	27:S:102:GLN:H	2.13	0.42
28:T:8:PRO:HD3	28:T:16:LYS:NZ	2.34	0.42
32:X:47:LYS:HD2	32:X:47:LYS:HA	1.83	0.42
37:c:176:ASN:HA	37:c:179:ILE:HD12	2.02	0.42
46:l:7:LEU:O	46:l:11:LYS:HG2	2.20	0.42
47:m:56:ARG:CG	47:m:56:ARG:NH2	2.83	0.42
1:1:144:G:OP1	21:M:40:ARG:NH2	2.52	0.42
1:1:293:C:H2'	1:1:294:U:C5	2.54	0.42
1:1:516:G:H2'	1:1:517:U:C6	2.55	0.42
1:1:770:G:O2'	1:1:771:U:H5'	2.19	0.42
1:1:819:C:O5'	1:1:819:C:H6	2.02	0.42
1:1:930:U:N3	2:2:603:A:N3	2.67	0.42
1:1:1400:A:H5"	41:g:47:HIS:CE1	2.54	0.42
1:1:1404:U:H5'	37:c:217:LEU:O	2.19	0.42
1:1:1453:C:H1'	37:c:169:GLN:HG2	2.01	0.42
1:1:1581:G:OP2	25:Q:53:LYS:NZ	2.52	0.42
1:1:1729:A:N3	1:1:1729:A:H2'	2.34	0.42
2:2:431:C:H5"	9:A:219:ILE:HD11	2.02	0.42
2:2:554:OMC:HM22	2:2:554:OMC:O3'	2.20	0.42
3:3:116:C:H2'	3:3:117:G:H5'	2.02	0.42
5:5:105:A:H3'	5:5:105:A:N3	2.35	0.42
6:6:46:C:H2'	6:6:47:G:C8	2.54	0.42
7:7:118:U:H2'	7:7:119:G:C8	2.54	0.42
8:8:78:U:H2'	8:8:79:A:H8	1.85	0.42
10:B:266:MET:HE3	16:H:81:LEU:HG	2.01	0.42
10:B:390:LEU:HD12	10:B:392:LYS:H	1.84	0.42
15:G:157:PRO:HA	15:G:318:TRP:CE3	2.55	0.42
15:G:296:LEU:O	15:G:299:LEU:N	2.53	0.42
16:H:93:ALA:O	16:H:95:SER:N	2.53	0.42
17:I:83:ALA:CB	17:I:108:ASN:HD22	2.30	0.42
17:I:129:VAL:HG23	17:I:130:LEU:N	2.35	0.42
21:M:13:LYS:HZ2	43:i:47:ILE:HG22	1.82	0.42
29:U:32:ILE:O	29:U:36:ASP:N	2.53	0.42
37:c:36:PHE:O	37:c:40:VAL:HG23	2.20	0.42
37:c:150:SER:O	37:c:154:VAL:HG23	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:e:80:SER:HA	39:e:146:ILE:O	2.19	0.42
1:1:247:A:OP2	11:C:221:ASN:HB2	2.20	0.42
1:1:333:A:H2'	1:1:334:G:C8	2.55	0.42
1:1:386:C:C2	7:7:24:G:H4'	2.55	0.42
1:1:720:A:H2'	1:1:721:U:O4'	2.19	0.42
1:1:1357:G:C5	1:1:1358:C:C4	3.08	0.42
1:1:1374:C:H2'	1:1:1375:G:O4'	2.19	0.42
1:1:1423:A:H4'	1:1:1424:A:OP1	2.18	0.42
1:1:1588:G:N1	42:h:3:CYS:SG	2.77	0.42
2:2:57:G:OP1	25:Q:21:ARG:HG3	2.19	0.42
2:2:447:G:H1'	9:A:222:PRO:HG2	2.01	0.42
2:2:1195:U:H2'	2:2:1196:U:C6	2.54	0.42
2:2:1369:A:H2'	2:2:1370:C:H6	1.85	0.42
3:3:69:A:H2'	3:3:70:A:C8	2.54	0.42
4:4:137:G:H21	13:E:155:ARG:NH2	2.18	0.42
8:8:23:G:H4'	8:8:24:A:N7	2.35	0.42
15:G:239:ALA:HB1	15:G:268:MET:HB3	2.01	0.42
18:J:114:SER:O	18:J:115:GLY:C	2.63	0.42
22:N:4:ARG:HA	22:N:5:PRO:HD3	1.90	0.42
22:N:49:CYS:SG	22:N:139:ARG:HG2	2.60	0.42
30:V:116:LEU:HD21	30:V:124:LYS:HD2	2.01	0.42
36:b:8:THR:C	36:b:10:HIS:H	2.28	0.42
39:e:96:PHE:HB3	39:e:136:LYS:HG2	2.02	0.42
1:1:249:G:H1'	1:1:251:A:OP1	2.20	0.42
1:1:302:G:HO2'	1:1:303:C:H6	1.65	0.42
1:1:503:A:H8	1:1:504:C:C5	2.38	0.42
1:1:844:C:H2'	1:1:845:OMU:C6	2.50	0.42
1:1:990:U:O2'	2:2:648:A:N1	2.43	0.42
1:1:1271:G:H1	1:1:1358:C:N4	2.18	0.42
1:1:1448:C:H2'	1:1:1449:C:H6	1.84	0.42
1:1:1555:G:H2'	1:1:1556:G:O4'	2.20	0.42
1:1:1677:A:H2'	1:1:1678:G:O4'	2.20	0.42
2:2:109:U:O2	47:m:19:GLY:HA2	2.20	0.42
2:2:721:G:O2'	2:2:722:C:O4'	2.35	0.42
2:2:967:U:H4'	2:2:968:G:H8	1.84	0.42
2:2:1079:OMG:O6	2:2:1237:C:N4	2.24	0.42
4:4:120:U:H6	4:4:120:U:H2'	1.65	0.42
8:8:15:A:H5"	8:8:112:G:O5'	2.20	0.42
8:8:47:U:H1'	8:8:48:G:H8	1.85	0.42
9:A:193:ARG:HD3	9:A:195:CYS:SG	2.60	0.42
11:C:12:ALA:HB1	11:C:160:TYR:OH	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:C:151:LEU:O	11:C:250:TRP:HB2	2.20	0.42
11:C:153:VAL:HG23	11:C:251:THR:HA	2.01	0.42
11:C:168:ALA:HA	11:C:171:LYS:HE2	2.01	0.42
13:E:92:ARG:HG2	13:E:93:CYS:N	2.35	0.42
22:N:100:ASN:ND2	22:N:102:MET:HE3	2.34	0.42
38:d:48:ASN:OD1	38:d:71:HIS:HB3	2.20	0.42
43:i:66:VAL:HG23	43:i:66:VAL:O	2.19	0.42
45:k:42:LEU:O	45:k:42:LEU:HD12	2.20	0.42
1:1:188:A:H1'	1:1:244:C:O2'	2.20	0.41
1:1:207:C:H2'	1:1:208:C:C6	2.55	0.41
1:1:217:A:H2'	1:1:218:A:N9	2.34	0.41
1:1:234:G:H4'	31:W:58:GLY:HA2	2.01	0.41
1:1:370:G:H4'	1:1:371:U:C6	2.55	0.41
1:1:488:G:H1	1:1:647:G:H1	1.67	0.41
1:1:498:G:N2	1:1:556:U:H3	2.18	0.41
1:1:911:G:OP2	9:A:181:LYS:NZ	2.48	0.41
1:1:1001:G:OP2	50:1:1956:HOH:O	2.22	0.41
1:1:1091:A:C2	1:1:1092:U:H1'	2.55	0.41
1:1:1092:U:H2'	1:1:1093:U:O4'	2.20	0.41
1:1:1371:U:O2'	1:1:1372:G:OP1	2.38	0.41
2:2:548:G:H2'	2:2:549:A:O4'	2.20	0.41
2:2:723:G:H1'	2:2:734:A:C5	2.55	0.41
2:2:749:G:O2'	2:2:750:U:C6	2.69	0.41
2:2:1175:A:H2'	2:2:1176:A:O4'	2.20	0.41
2:2:1199:G:H3'	2:2:1199:G:N3	2.35	0.41
2:2:1270:G:H8	2:2:1270:G:OP2	2.02	0.41
3:3:147:A:N3	3:3:147:A:H2'	2.35	0.41
6:6:40:C:H42	41:g:24:VAL:N	2.12	0.41
8:8:3:G:N1	8:8:4:A:N3	2.68	0.41
8:8:44:A:C5	8:8:45:U:C5	3.07	0.41
8:8:109:A:C2'	8:8:110:G:H5'	2.50	0.41
9:A:73:LYS:HB2	9:A:73:LYS:HZ3	1.83	0.41
9:A:90:CYS:CB	9:A:101:VAL:HB	2.49	0.41
10:B:101:THR:HG22	10:B:103:GLY:H	1.85	0.41
11:C:106:ILE:HD12	17:I:29:VAL:HG21	2.02	0.41
11:C:138:SER:HB2	34:Z:16:SER:HB2	2.01	0.41
13:E:18:VAL:HG13	13:E:25:VAL:HG13	2.02	0.41
16:H:138:VAL:CG2	19:K:44:LEU:O	2.57	0.41
17:I:61:PRO:HB3	17:I:80:PHE:CE2	2.55	0.41
18:J:39:ILE:HG12	18:J:62:CYS:HA	2.01	0.41
20:L:75:LEU:HD12	20:L:133:LYS:HD2	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:W:79:ILE:O	31:W:82:VAL:HG12	2.20	0.41
41:g:39:LEU:CD2	41:g:54:ALA:HB1	2.50	0.41
42:h:69:SER:OG	42:h:72:GLU:HG2	2.20	0.41
44:j:64:CYS:SG	44:j:67:LEU:HB2	2.60	0.41
47:m:42:CYS:N	47:m:60:CYS:SG	2.93	0.41
1:1:108:G:C2	35:a:120:LYS:HB3	2.54	0.41
1:1:547:U:C5	1:1:1393:A:N6	2.86	0.41
1:1:664:C:N4	1:1:665:C:N4	2.68	0.41
1:1:955:A2M:HM'3	1:1:955:A2M:H1'	1.83	0.41
1:1:1445:U:O2	34:Z:26:ARG:NH1	2.53	0.41
1:1:1586:U:H2'	1:1:1587:G:H5'	2.01	0.41
1:1:1729:A:N3	1:1:1730:A:N7	2.65	0.41
2:2:533:C:N4	2:2:544:U:C4	2.88	0.41
2:2:657:U:H2'	2:2:658:G:O4'	2.19	0.41
2:2:695:G:N7	2:2:697:G:H5"	2.34	0.41
2:2:1004:G:H2'	2:2:1005:G:O4'	2.19	0.41
2:2:1175:A:H8	2:2:1175:A:OP1	2.03	0.41
3:3:37:A:H2'	3:3:38:A:H8	1.85	0.41
3:3:207:G:H2'	3:3:208:G:H8	1.83	0.41
7:7:167:C:H5"	15:G:266:LYS:HG3	2.01	0.41
10:B:265:VAL:HG11	10:B:271:ARG:HH21	1.85	0.41
13:E:139:VAL:HG11	13:E:142:GLU:HB2	2.03	0.41
21:M:123:MET:SD	21:M:128:LYS:NZ	2.94	0.41
26:R:93:VAL:HG13	26:R:94:LYS:N	2.35	0.41
37:c:118:LEU:HD21	37:c:125:VAL:HG22	2.01	0.41
37:c:244:ILE:HG12	37:c:248:LEU:HG	2.01	0.41
41:g:57:ARG:NE	41:g:116:MET:SD	2.93	0.41
47:m:56:ARG:HB2	47:m:56:ARG:NH2	2.34	0.41
1:1:47:C:OP1	17:I:15:LYS:NZ	2.29	0.41
1:1:491:A:C2	1:1:644:G:N2	2.88	0.41
1:1:497:A:O2'	1:1:498:G:O5'	2.38	0.41
1:1:512:U:OP2	1:1:513:C:N4	2.53	0.41
1:1:658:G:OP2	1:1:658:G:H8	2.04	0.41
1:1:890:C:O2'	3:3:118:U:OP2	2.30	0.41
1:1:1353:A:H2'	1:1:1354:C:O4'	2.20	0.41
1:1:1611:A:H8	1:1:1611:A:OP2	2.03	0.41
1:1:1614:G:N2	28:T:129:THR:OG1	2.52	0.41
1:1:1617:C:H2'	1:1:1619:C:C5	2.55	0.41
1:1:1657:U:H1'	44:j:41:ARG:HD2	2.01	0.41
2:2:4:C:H2'	2:2:5:A:C8	2.55	0.41
2:2:602:A:N1	2:2:1422:C:H5	2.18	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:3:114:C:OP2	25:Q:110:ARG:NH1	2.53	0.41
3:3:208:G:C6	3:3:209:G:C6	3.08	0.41
4:4:90:G:H2'	4:4:91:U:O4'	2.20	0.41
6:6:13:C:C2'	6:6:14:A:H2'	2.46	0.41
8:8:77:G:N2	8:8:101:G:H2'	2.36	0.41
10:B:97:VAL:HG23	10:B:100:LYS:HE2	2.02	0.41
10:B:102:ILE:HG13	10:B:153:PHE:HE1	1.86	0.41
11:C:40:HIS:CD2	11:C:236:LEU:HA	2.55	0.41
11:C:93:ASN:ND2	11:C:101:PHE:HB2	2.35	0.41
11:C:113:LYS:HG3	21:M:203:LYS:HB3	2.01	0.41
11:C:272:LYS:HB3	11:C:275:PHE:HB3	2.01	0.41
13:E:27:VAL:HG11	13:E:80:ILE:HA	2.03	0.41
16:H:75:TYR:CE2	16:H:90:HIS:HD2	2.38	0.41
16:H:108:ARG:HG3	16:H:109:TYR:CD2	2.54	0.41
16:H:148:TYR:CB	19:K:59:MET:CB	2.97	0.41
17:I:33:GLN:N	17:I:34:PRO:HD2	2.35	0.41
18:J:28:ALA:HB2	18:J:82:ARG:HH22	1.84	0.41
21:M:36:VAL:HG22	21:M:64:VAL:HG22	2.02	0.41
23:O:201:HIS:O	23:O:205:ILE:N	2.52	0.41
26:R:87:CYS:O	26:R:90:THR:HG23	2.20	0.41
27:S:102:GLN:O	27:S:106:LYS:HG2	2.20	0.41
28:T:41:LEU:HD21	28:T:99:GLU:CG	2.46	0.41
31:W:53:VAL:HG12	31:W:103:ILE:HA	2.02	0.41
33:Y:10:VAL:CG1	33:Y:85:TYR:HB2	2.51	0.41
33:Y:44:ALA:HA	33:Y:71:PHE:O	2.19	0.41
46:l:38:ASN:HB3	46:l:41:ARG:HG3	2.02	0.41
1:1:7:C:O2'	1:1:8:U:H5'	2.20	0.41
1:1:120:G:H1	15:G:222:GLN:NE2	2.18	0.41
1:1:139:C:H5"	15:G:191:ARG:NH2	2.36	0.41
1:1:490:C:HO2'	6:6:54:A:H2	1.49	0.41
1:1:491:A:N6	1:1:644:G:H1	2.13	0.41
1:1:671:G:OP1	40:f:41:SER:HB3	2.20	0.41
1:1:1146:A:H61	1:1:1147:A:N6	2.18	0.41
1:1:1393:A:H3'	1:1:1393:A:P	2.60	0.41
2:2:68:A:HO2'	2:2:69:A:P	2.39	0.41
2:2:372:A:H61	2:2:573:U:H3	1.68	0.41
2:2:403:G:C4	9:A:150:LEU:HD13	2.55	0.41
2:2:667:OMU:H5'	2:2:667:OMU:C6	2.36	0.41
2:2:1323:C:H2'	2:2:1324:C:C6	2.55	0.41
3:3:194:A:H1'	3:3:196:A:C8	2.55	0.41
6:6:28:A:C1'	6:6:29:G:N7	2.77	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:7:51:A:C5	46:l:26:TRP:HH2	2.39	0.41
9:A:134:CYS:SG	9:A:150:LEU:HA	2.61	0.41
10:B:80:GLU:OE1	10:B:321:TYR:OH	2.29	0.41
10:B:193:VAL:O	10:B:197:ILE:HD12	2.21	0.41
11:C:121:PHE:CE1	11:C:278[B]:PRO:HG2	2.55	0.41
13:E:117:GLU:HG3	13:E:119:ARG:HG2	2.02	0.41
15:G:240:ASN:HD22	15:G:240:ASN:C	2.26	0.41
16:H:25:ILE:HG23	16:H:51:ILE:HG13	2.02	0.41
21:M:6:TYR:HD1	43:i:47:ILE:HD11	1.85	0.41
30:V:72:THR:H	30:V:75:ALA:HB3	1.85	0.41
30:V:91:SER:HA	30:V:123:LYS:HB2	2.01	0.41
31:W:13:ARG:O	31:W:17:PHE:HD2	2.02	0.41
31:W:37:ARG:HG3	31:W:38:ALA:H	1.86	0.41
31:W:37:ARG:HH12	31:W:43:ARG:NH2	2.18	0.41
36:b:18:ARG:C	36:b:20:GLY:H	2.29	0.41
39:e:91:LEU:HD11	39:e:103:ALA:HB2	2.02	0.41
48:n:3:ASN:ND2	48:n:94:ASN:HD22	2.18	0.41
1:1:12:U:H1'	1:1:13:G:H5'	2.01	0.41
1:1:98:A:H1'	1:1:318:G:N7	2.35	0.41
1:1:240:U:O2'	1:1:241:G:O5'	2.33	0.41
1:1:401:A:O3'	44:j:45:ARG:NH2	2.53	0.41
1:1:537:G:H2'	1:1:537:G:N3	2.35	0.41
1:1:679:A:H3'	1:1:680:C:H5"	2.01	0.41
1:1:894:G:O2'	1:1:895:G:H5'	2.21	0.41
1:1:1062:A:H4'	22:N:40:ARG:HA	2.00	0.41
1:1:1224:A:H2'	1:1:1225:U:O4'	2.21	0.41
2:2:519:G:H1'	2:2:520:U:H5	1.85	0.41
2:2:608:C:C2	2:2:609:A:H1'	2.56	0.41
2:2:749:G:O3'	2:2:749:G:P	2.79	0.41
2:2:790:U:H2'	2:2:791:A:O4'	2.19	0.41
4:4:52:A:C8	13:E:174:PHE:HB2	2.55	0.41
6:6:34:C:C5	6:6:35:U:C4	3.08	0.41
8:8:7:A:N6	8:8:117:A:C6	2.89	0.41
9:A:74:GLU:HG3	9:A:76:MET:HG3	2.02	0.41
9:A:104:LEU:HD12	9:A:107:ILE:HD12	2.03	0.41
9:A:114:CYS:HB2	9:A:169:ILE:HG12	2.01	0.41
9:A:209:HIS:NE2	9:A:235:VAL:HG21	2.35	0.41
9:A:234:LYS:HG2	9:A:238:ILE:HG12	2.01	0.41
10:B:50:LYS:HD2	10:B:343:MET:HE3	2.03	0.41
10:B:122:TRP:O	10:B:122:TRP:CG	2.74	0.41
10:B:219:ALA:HA	10:B:286:LYS:HA	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:C:268:ALA:HA	11:C:276:THR:HG22	2.02	0.41
16:H:28:ASP:N	16:H:137:VAL:O	2.53	0.41
22:N:76:MET:HA	22:N:147:GLN:NE2	2.35	0.41
33:Y:9:LYS:NZ	33:Y:86:ASN:HD21	2.19	0.41
37:c:208:VAL:O	37:c:212:MET:HG3	2.21	0.41
38:d:42:LYS:CE	38:d:95:THR:O	2.69	0.41
40:f:99:HIS:O	40:f:99:HIS:CG	2.73	0.41
41:g:107:VAL:HG13	41:g:117:MET:HB2	2.03	0.41
1:1:281:G:H3'	1:1:282:C:H5"	2.02	0.41
1:1:388:A:H4'	1:1:407:A:H61	1.82	0.41
1:1:486:C:H1'	1:1:487:G:N7	2.36	0.41
1:1:566:G:H2'	1:1:567:G:C8	2.56	0.41
1:1:569:G:N2	1:1:570:A:C4	2.88	0.41
1:1:661:G:H2'	1:1:662:C:C6	2.55	0.41
1:1:682:C:H2'	1:1:683:G:C8	2.54	0.41
1:1:728:C:H1'	1:1:730:G:C5	2.56	0.41
1:1:770:G:OP1	1:1:770:G:H2'	2.20	0.41
1:1:922:U:H1'	2:2:570:A:H1'	2.02	0.41
1:1:1043:C:O2'	1:1:1044:G:H5'	2.20	0.41
1:1:1548:A:N6	1:1:1584:A:O2'	2.53	0.41
1:1:1549:U:O2'	1:1:1550:C:H6	2.04	0.41
1:1:1605:G:H2'	1:1:1606:U:C6	2.56	0.41
2:2:424:U:H1'	2:2:426:G:C5	2.56	0.41
2:2:742:U:H2'	2:2:743:C:O4'	2.21	0.41
2:2:972:A:O4'	15:G:123:GLN:NE2	2.53	0.41
2:2:1248:C:H6	2:2:1248:C:O5'	2.04	0.41
2:2:1387:C:H4'	10:B:247:THR:HG23	2.02	0.41
2:2:1426:A:H2'	2:2:1427:C:O4'	2.20	0.41
3:3:112:C:OP1	25:Q:118:HIS:HB2	2.20	0.41
4:4:96:C:OP1	25:Q:58:HIS:HA	2.21	0.41
5:5:26:A:O3'	5:5:27:U:H4'	2.21	0.41
6:6:31:U:C6	6:6:31:U:C3'	3.04	0.41
6:6:40:C:H5"	6:6:41:G:N7	2.35	0.41
6:6:59:C:H6	6:6:59:C:C5'	2.32	0.41
7:7:122:A:H3'	7:7:123:G:C8	2.56	0.41
10:B:224:SER:OG	10:B:336:SER:HB2	2.20	0.41
14:F:29:LEU:HG	14:F:56:GLN:OE1	2.20	0.41
19:K:40:TYR:HD2	19:K:42:VAL:HG13	1.86	0.41
20:L:56:LEU:HD23	24:P:180:THR:HG23	2.02	0.41
20:L:61:TYR:OH	48:n:38:ARG:NH1	2.43	0.41
20:L:109:LEU:HG	20:L:121:VAL:HG21	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:M:19:MET:O	21:M:23:GLN:HG2	2.20	0.41
22:N:184:LEU:O	22:N:188:GLY:N	2.54	0.41
27:S:48:VAL:O	27:S:49:ARG:HG2	2.21	0.41
28:T:3:HIS:HD2	28:T:4:TYR:HB2	1.84	0.41
28:T:24:CYS:HB3	28:T:86:LYS:HE2	2.03	0.41
32:X:41:PHE:CE1	32:X:45:MET:HE3	2.56	0.41
35:a:83:THR:OG1	35:a:88:ARG:HG2	2.21	0.41
37:c:95:VAL:HG13	37:c:95:VAL:O	2.20	0.41
39:e:138:VAL:HG13	39:e:139:PRO:HD2	2.02	0.41
47:m:11:MET:SD	47:m:14:TYR:CE2	3.13	0.41
1:1:685:A:H5'	2:2:606:G:H2'	2.02	0.41
1:1:841:U:H2'	1:1:842:G:H8	1.86	0.41
1:1:882:A:H2'	1:1:883:G:O4'	2.20	0.41
1:1:1369:G:C4	16:H:78:LYS:HD3	2.55	0.41
1:1:1525:A:O2'	1:1:1526:OMG:P	2.79	0.41
2:2:70:A:C2'	2:2:71:OMG:C5'	2.86	0.41
2:2:686:G:H2'	2:2:687:C:C6	2.56	0.41
2:2:756:C:H2'	2:2:757:A:C8	2.55	0.41
2:2:775:C:OP1	15:G:332:ARG:NH1	2.47	0.41
2:2:1001:U:H2'	2:2:1002:C:C6	2.56	0.41
3:3:57:U:C6	3:3:58:C:N4	2.89	0.41
3:3:63:C:H5"	25:Q:58:HIS:O	2.20	0.41
4:4:66:C:H4'	10:B:64:GLY:HA3	2.02	0.41
6:6:4:U:O2	6:6:4:U:C2'	2.68	0.41
6:6:8:A:O2'	6:6:9:U:P	2.78	0.41
6:6:13:C:C4	6:6:14:A:C6	3.09	0.41
7:7:7:OMU:HM22	7:7:7:OMU:H4'	2.02	0.41
8:8:7:A:O2'	8:8:8:C:P	2.79	0.41
8:8:67:G:H3'	8:8:68:G:H8	1.86	0.41
9:A:80:GLU:HG3	47:m:66:GLY:CA	2.44	0.41
10:B:49:PHE:CD1	10:B:342:VAL:CG2	3.04	0.41
10:B:199:LEU:HG	10:B:203:LEU:HD22	2.03	0.41
11:C:32:ARG:NH2	11:C:34:ASP:OD2	2.52	0.41
11:C:178:ASP:HA	11:C:181:ARG:HG2	2.03	0.41
11:C:250:TRP:CH2	11:C:258:LEU:HD11	2.56	0.41
15:G:237:VAL:HG12	15:G:271:LEU:HD21	2.01	0.41
15:G:296:LEU:O	15:G:300:ILE:HD12	2.20	0.41
17:I:32:ASN:O	17:I:36:GLN:HG2	2.20	0.41
17:I:61:PRO:HB3	17:I:80:PHE:CD2	2.55	0.41
19:K:73:ILE:HG23	19:K:113:ASN:O	2.20	0.41
19:K:115:GLU:HA	19:K:116:PRO:HD3	1.93	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:S:29:THR:HA	27:S:32:THR:HG23	2.03	0.41
28:T:6:ARG:HH21	28:T:116:HIS:CG	2.38	0.41
28:T:31:GLU:HG2	28:T:61:LYS:H	1.85	0.41
29:U:49:GLN:O	29:U:53:ASP:N	2.28	0.41
42:h:40:SER:O	42:h:59:ALA:HB1	2.21	0.41
44:j:18:LEU:HD21	46:l:51:TYR:CB	2.50	0.41
44:j:33:ARG:HA	44:j:39:TYR:O	2.21	0.41
1:1:552:G:H3'	1:1:553:A:O4'	2.21	0.41
1:1:688:A:H2'	1:1:689:A:C8	2.56	0.41
1:1:819:C:H2'	1:1:820:U:C4'	2.51	0.41
1:1:1622:A:H5"	46:l:43:HIS:CE1	2.56	0.41
1:1:1746:A:OP1	42:h:63:ILE:HG12	2.20	0.41
2:2:69:A:N1	2:2:636:A:O2'	2.54	0.41
2:2:707:A:O2'	2:2:708:G:H5"	2.21	0.41
2:2:1317:G:H2'	2:2:1317:G:N3	2.36	0.41
2:2:1333:C:H2'	2:2:1334:G:O4'	2.21	0.41
2:2:1409:C:H5"	2:2:1410:A:C6	2.56	0.41
3:3:23:C:H42	3:3:208:G:H1	1.69	0.41
4:4:52:A:H2'	13:E:96:ALA:HB3	2.02	0.41
5:5:3:C:H2'	5:5:4:G:O4'	2.20	0.41
6:6:8:A:O2'	6:6:9:U:OP1	2.35	0.41
6:6:28:A:O3'	6:6:29:G:H2'	2.21	0.41
7:7:27:U:H2'	7:7:28:C:O4'	2.21	0.41
7:7:166:U:OP1	15:G:148:ARG:NE	2.54	0.41
11:C:142:ARG:HG3	11:C:181:ARG:HD2	2.02	0.41
16:H:65:GLU:OE2	16:H:163:HIS:ND1	2.53	0.41
18:J:22:GLY:HA2	18:J:37:TYR:CZ	2.56	0.41
21:M:14:LYS:HD3	21:M:120:TRP:CZ3	2.55	0.41
28:T:61:LYS:HG2	28:T:78:GLN:HE22	1.85	0.41
48:n:4:TYR:CG	48:n:5:PRO:HD2	2.56	0.41
1:1:103:G:O2'	1:1:736:C:O2	2.30	0.41
1:1:159:U:H1'	1:1:297:A:C2	2.56	0.41
1:1:175:G:O6	1:1:176:C:N4	2.54	0.41
1:1:181:G:N1	1:1:273:A:N6	2.69	0.41
1:1:203:C:H2'	1:1:204:A:O4'	2.21	0.41
1:1:226:C:N4	1:1:227:U:C2	2.89	0.41
1:1:248:A:C8	11:C:223:PHE:HB2	2.56	0.41
1:1:310:C:H1'	43:i:81:GLY:HA2	2.02	0.41
1:1:480:U:H2'	1:1:481:U:C6	2.56	0.41
1:1:491:A:H2'	1:1:492:G:H8	1.86	0.41
1:1:685:A:H5"	2:2:607:A:H5'	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:694:U:OP2	1:1:694:U:C6	2.74	0.41
1:1:716:A:H2'	1:1:717:G:O4'	2.20	0.41
1:1:745:U:H5"	1:1:830:G:H1'	2.02	0.41
1:1:905:G:H4'	25:Q:130:ASN:ND2	2.34	0.41
1:1:959:OMG:N2	21:M:76:HIS:CB	2.84	0.41
1:1:1114:A:H4'	1:1:1115:C:H5'	2.02	0.41
1:1:1157:U:H2'	1:1:1158:U:C6	2.56	0.41
1:1:1169:A:H3'	1:1:1170:G:H8	1.86	0.41
1:1:1380:A:H62	16:H:36:ARG:HD3	1.85	0.41
1:1:1417:G:H2'	1:1:1418:G:O4'	2.20	0.41
1:1:1583:U:H2'	1:1:1584:A:O4'	2.21	0.41
2:2:382:A2M:HM'3	2:2:382:A2M:H1'	1.79	0.41
2:2:411:C:H2'	2:2:413:A:OP2	2.21	0.41
2:2:424:U:H5"	9:A:151:PRO:HG2	2.03	0.41
2:2:439:U:H1'	2:2:561:G:N2	2.35	0.41
2:2:663:U:H5"	9:A:221:HIS:CE1	2.56	0.41
2:2:739:C:C2'	2:2:740:A:H5'	2.51	0.41
2:2:870:C:N4	2:2:940:G:O6	2.54	0.41
2:2:982:C:H2'	2:2:983:G:C8	2.56	0.41
2:2:1160:OMC:HM23	2:2:1160:OMC:H1'	1.84	0.41
2:2:1268:U:OP1	22:N:5:PRO:HD3	2.20	0.41
2:2:1339:A:O2'	13:E:169:LYS:NZ	2.52	0.41
2:2:1340:G:H5"	2:2:1341:A:OP2	2.20	0.41
2:2:1436:A:H2	4:4:173:C:OP2	2.03	0.41
2:2:1446:A:H3'	16:H:129:ASN:HD22	1.86	0.41
3:3:55:U:O2'	3:3:58:C:N4	2.53	0.41
4:4:174:A:H2'	4:4:174:A:N3	2.36	0.41
5:5:107:G:H2'	5:5:108:C:O4'	2.21	0.41
6:6:5:C:N4	6:6:6:G:N1	2.69	0.41
6:6:17:U:H1'	6:6:18:A:C4	2.55	0.41
6:6:38:C:H5'	41:g:28:ARG:NH1	2.36	0.41
7:7:91:A:H5"	7:7:92:C:OP2	2.21	0.41
9:A:30:ARG:CZ	9:A:41:MET:HE2	2.51	0.41
9:A:42:ARG:NH1	9:A:87:SER:OG	2.53	0.41
13:E:23:ARG:HH22	13:E:45:LEU:HD13	1.86	0.41
13:E:54:PHE:CD2	13:E:76:VAL:HG21	2.56	0.41
13:E:159:VAL:O	13:E:163:MET:N	2.52	0.41
15:G:251:MET:HE3	15:G:282:CYS:SG	2.61	0.41
16:H:55:ARG:HG2	16:H:125:GLY:HA2	2.03	0.41
16:H:106:LEU:HD12	16:H:107:PRO:HD2	2.03	0.41
16:H:146:VAL:CG1	19:K:55:ALA:HB3	2.34	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:I:132:PRO:HA	35:a:121:ARG:HH21	1.85	0.41
18:J:111:MET:SD	18:J:111:MET:O	2.79	0.41
18:J:118:GLY:O	18:J:136:PRO:HD2	2.21	0.41
21:M:101:VAL:O	21:M:105:ARG:HG2	2.21	0.41
21:M:124:ASP:OD1	21:M:127:PHE:N	2.25	0.41
22:N:76:MET:HE2	22:N:85:PHE:HB2	2.03	0.41
22:N:109:ASP:C	22:N:111:LEU:H	2.29	0.41
23:O:21:ARG:HD3	23:O:21:ARG:O	2.21	0.41
24:P:153:ARG:HG2	24:P:155:SER:H	1.86	0.41
25:Q:50:ILE:O	25:Q:50:ILE:HG22	2.21	0.41
27:S:28:SER:O	27:S:32:THR:HG23	2.20	0.41
31:W:37:ARG:HB2	31:W:42:VAL:O	2.21	0.41
35:a:20:LYS:HA	35:a:20:LYS:HD2	1.89	0.41
37:c:48:ALA:HA	37:c:51:LYS:HG2	2.03	0.41
37:c:123:ASN:O	37:c:125:VAL:HG13	2.19	0.41
38:d:44:ILE:HG23	38:d:69:ILE:HD12	2.02	0.41
39:e:164:VAL:HG12	39:e:164:VAL:O	2.21	0.41
41:g:32:ARG:NH2	41:g:36:LYS:HG3	2.36	0.41
41:g:129:SER:O	41:g:133:ARG:HD3	2.20	0.41
42:h:25:ARG:HE	42:h:31:LEU:HD12	1.86	0.41
1:1:12:U:H4'	30:V:42:ARG:CD	2.50	0.41
1:1:172:G:O2'	1:1:173:G:O4'	2.35	0.41
1:1:187:A:N6	1:1:266:G:H2'	2.36	0.41
1:1:458:A:H3'	1:1:459:A:H4'	2.02	0.41
1:1:898:A:H2'	1:1:899:A:N7	2.35	0.41
1:1:967:G:O6	2:2:660:G:O2'	2.39	0.41
1:1:1193:G:OP1	36:b:9:ASN:HB2	2.21	0.41
1:1:1392:G:O2'	1:1:1393:A:P	2.79	0.41
1:1:1773:U:H2'	1:1:1774:G:H8	1.84	0.41
2:2:443:OMC:HN42	2:2:488:A:P	2.43	0.41
2:2:496:G:N2	2:2:514:U:O4'	2.55	0.41
2:2:534:OMG:H2'	2:2:535:U:C5	2.57	0.41
2:2:1078:OMU:HM22	2:2:1079:OMG:O4'	2.20	0.41
2:2:1228:C:C2'	2:2:1229:A:H5'	2.51	0.41
3:3:93:G:H8	3:3:93:G:O5'	2.04	0.41
4:4:60:A:H2'	4:4:60:A:N3	2.36	0.41
5:5:112:A:H3'	5:5:114:A:O4'	2.21	0.41
6:6:42:A:H1'	6:6:43:A:C8	2.56	0.41
7:7:67:U:O2'	7:7:68:A:H8	2.04	0.41
8:8:12:C:O2	8:8:15:A:N1	2.54	0.41
8:8:20:A:H2'	8:8:21:G:C8	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:A:146:THR:N	9:A:158:VAL:O	2.54	0.41
10:B:171:LEU:HA	10:B:326:ASN:HD21	1.86	0.41
10:B:199:LEU:O	10:B:202:SER:OG	2.23	0.41
11:C:43:MET:CB	11:C:236:LEU:HD11	2.50	0.41
14:F:182:PHE:CZ	14:F:195:TRP:HH2	2.38	0.41
15:G:228:ILE:HG23	15:G:260:ILE:HD13	2.03	0.41
16:H:25:ILE:HG23	16:H:25:ILE:O	2.21	0.41
20:L:19:TYR:CB	20:L:25:HIS:HB2	2.51	0.41
27:S:92:ARG:HB2	27:S:94:GLU:OE2	2.21	0.41
34:Z:108:PHE:O	34:Z:112:ARG:HG3	2.21	0.41
1:1:17:C:H2'	1:1:18:A:C8	2.56	0.40
1:1:36:OMU:HM23	1:1:94:A:O2'	2.15	0.40
1:1:292:A:C6	1:1:293:C:H1'	2.56	0.40
1:1:487:G:H5"	1:1:488:G:OP2	2.21	0.40
1:1:911:G:O2'	1:1:946:G:H4'	2.21	0.40
1:1:1039:U:H2'	1:1:1040:G:O4'	2.20	0.40
2:2:382:A2M:H8	2:2:382:A2M:O5'	2.21	0.40
2:2:419:G:H5"	9:A:18:VAL:H	1.86	0.40
2:2:536:C:O2	2:2:548:G:N2	2.41	0.40
2:2:747:A:C6	2:2:749:G:C5	3.09	0.40
2:2:779:U:H1'	15:G:332:ARG:HD3	2.02	0.40
2:2:867:G:N2	2:2:942:G:O6	2.48	0.40
2:2:1078:OMU:O2'	2:2:1079:OMG:H5'	2.21	0.40
2:2:1158:U:P	24:P:164:VAL:HG13	2.61	0.40
2:2:1271:C:H2'	2:2:1272:G:H8	1.87	0.40
3:3:3:G:H2'	3:3:4:U:H6	1.87	0.40
6:6:37:C:OP1	41:g:26:ARG:HB2	2.21	0.40
8:8:113:C:H2'	8:8:114:C:C6	2.56	0.40
10:B:378:GLN:O	10:B:379:THR:C	2.64	0.40
13:E:114:PHE:CE2	13:E:115:LEU:HD23	2.56	0.40
17:I:71:ASN:OD1	20:L:124:ARG:NH2	2.54	0.40
17:I:94:TYR:O	17:I:97:THR:HG22	2.20	0.40
20:L:98:VAL:CG1	20:L:122:LYS:HZ2	2.34	0.40
21:M:177:LYS:HG2	21:M:185:ARG:NH2	2.36	0.40
26:R:29:PHE:CE1	26:R:43:PHE:HD1	2.39	0.40
30:V:75:ALA:HB1	30:V:86:THR:OG1	2.21	0.40
37:c:127:VAL:HG12	37:c:128:LYS:O	2.21	0.40
44:j:47:TYR:HB3	44:j:49:TRP:NE1	2.36	0.40
1:1:147:G:N7	15:G:222:GLN:HG2	2.37	0.40
1:1:278:U:C2	1:1:279:G:N7	2.89	0.40
1:1:300:A:O2'	1:1:301:A:O3'	2.35	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:450:G:N2	1:1:1534:U:H4'	2.36	0.40
1:1:508:A:H2'	1:1:509:U:C6	2.56	0.40
1:1:1445:U:C2	34:Z:26:ARG:NH1	2.89	0.40
1:1:1542:OMG:H1'	1:1:1542:OMG:HM23	1.87	0.40
1:1:1682:U:O2'	1:1:1683:G:N7	2.42	0.40
2:2:114:A:C8	2:2:116:A:H1'	2.57	0.40
2:2:364:G:H2'	2:2:365:G:O4'	2.22	0.40
2:2:1078:OMU:H4'	2:2:1186:A2M:C2	2.51	0.40
2:2:1156:A:C2	20:L:43:ILE:HG23	2.56	0.40
2:2:1167:A:H2'	2:2:1168:G:C8	2.57	0.40
2:2:1369:A:H2'	2:2:1370:C:C6	2.56	0.40
3:3:9:A:N1	3:3:133:G:O2'	2.52	0.40
3:3:104:U:OP1	33:Y:76:ASN:ND2	2.46	0.40
3:3:208:G:O6	3:3:209:G:C6	2.75	0.40
4:4:113:G:OP1	32:X:38:PRO:HG2	2.21	0.40
6:6:40:C:C5'	41:g:26:ARG:NH1	2.51	0.40
8:8:3:G:C6	8:8:4:A:C4	3.09	0.40
8:8:93:U:O2'	8:8:94:G:H8	2.05	0.40
9:A:14:SER:OG	9:A:15:VAL:N	2.55	0.40
10:B:93:ARG:O	10:B:99:LEU:HA	2.22	0.40
10:B:310:LYS:HE2	10:B:368:THR:HG23	2.03	0.40
11:C:58:GLY:O	11:C:91:PHE:HB3	2.21	0.40
14:F:53:ILE:HG13	14:F:65:VAL:HG12	2.03	0.40
15:G:129:ARG:O	15:G:131:LEU:HD12	2.22	0.40
15:G:235:MET:HG2	15:G:300:ILE:HG13	2.03	0.40
15:G:312:ASP:O	15:G:316:ARG:HG2	2.22	0.40
17:I:65:CYS:HA	17:I:66:PRO:HD3	1.90	0.40
17:I:128:LEU:CD2	17:I:130:LEU:HB2	2.50	0.40
27:S:82:THR:HG22	36:b:16:ASN:HA	2.03	0.40
41:g:26:ARG:CZ	41:g:28:ARG:HH22	2.34	0.40
1:1:53:G:H4'	21:M:108:LYS:NZ	2.36	0.40
1:1:435:G:H2'	1:1:437:A:H2	1.87	0.40
1:1:478:C:H2'	1:1:479:A:H8	1.85	0.40
1:1:856:OMG:OP1	11:C:76:PRO:HD3	2.21	0.40
1:1:927:A2M:H1'	1:1:927:A2M:HM'3	1.84	0.40
1:1:1102:U:HO2'	1:1:1103:U:P	2.43	0.40
1:1:1422:A:N3	1:1:1422:A:H2'	2.35	0.40
1:1:1466:G:N3	1:1:1466:G:H2'	2.36	0.40
1:1:1677:A:H8	1:1:1677:A:P	2.44	0.40
2:2:740:A:H8	2:2:740:A:OP2	2.03	0.40
3:3:134:C:H2'	3:3:135:U:O4'	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:15:A:O2'	5:5:17:C:OP2	2.39	0.40
7:7:146:U:H4'	30:V:51:ASN:HB2	2.03	0.40
8:8:37:C:N3	8:8:48:G:C1'	2.84	0.40
10:B:203:LEU:HD12	10:B:208:VAL:HG22	2.04	0.40
13:E:42:GLN:HB3	13:E:58:ARG:HB2	2.03	0.40
14:F:75:PRO:HA	14:F:154:GLN:HE22	1.86	0.40
15:G:158:PRO:HD3	15:G:318:TRP:CE2	2.56	0.40
16:H:53:VAL:HG21	16:H:98:PHE:CE2	2.56	0.40
17:I:16:HIS:CD2	17:I:23:GLN:HG3	2.57	0.40
17:I:52:PHE:CG	17:I:53:PRO:HA	2.57	0.40
20:L:53:PHE:O	24:P:182:ARG:HB3	2.21	0.40
21:M:135:VAL:HG21	21:M:148:ILE:HD11	2.03	0.40
23:O:76:MET:HE2	23:O:108:ARG:HB2	2.01	0.40
33:Y:82:PRO:O	38:d:60:TYR:HE2	2.05	0.40
37:c:110:ARG:O	37:c:114:GLN:HG3	2.22	0.40
1:1:11:G:C6	1:1:12:U:O4	2.74	0.40
1:1:140:U:OP2	15:G:188:LYS:HD3	2.22	0.40
1:1:184:G:C6	1:1:185:C:C4	3.09	0.40
1:1:708:A:C5	24:P:94:LEU:HD21	2.57	0.40
1:1:801:G:H21	1:1:1027:U:H4'	1.86	0.40
1:1:841:U:H2'	1:1:842:G:C8	2.57	0.40
1:1:1599:G:O6	46:l:2:GLY:HA2	2.22	0.40
2:2:449:U:H4'	9:A:241:ARG:CB	2.50	0.40
2:2:476:C:N4	2:2:477:G:C2	2.90	0.40
2:2:490:A:O4'	9:A:243:THR:CG2	2.67	0.40
2:2:556:U:O5'	2:2:556:U:H6	2.04	0.40
2:2:662:U:O2'	2:2:1405:G:N3	2.53	0.40
2:2:666:C:OP2	2:2:666:C:H6	2.05	0.40
2:2:677:C:O2	2:2:1026:G:N2	2.46	0.40
2:2:1276:A:H4'	22:N:154:ARG:NH1	2.36	0.40
2:2:1286:A:O2'	2:2:1345:C:H4'	2.22	0.40
2:2:1329:C:O2'	2:2:1372:G:N3	2.54	0.40
7:7:67:U:O2'	7:7:68:A:H5'	2.21	0.40
8:8:45:U:C4	8:8:46:U:C4	3.09	0.40
11:C:113:LYS:HE2	21:M:204:ARG:C	2.47	0.40
11:C:153:VAL:HG11	11:C:169:PHE:HZ	1.87	0.40
13:E:18:VAL:HG12	13:E:47:VAL:HG21	2.03	0.40
16:H:65:GLU:HA	16:H:155:THR:HG21	2.03	0.40
17:I:114:MET:O	17:I:118:VAL:HG23	2.21	0.40
18:J:98:GLU:HG2	32:X:23:PRO:HA	2.02	0.40
22:N:50:ILE:HG22	22:N:167:MET:HA	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:W:73:LEU:HD13	46:l:31:THR:HG21	2.04	0.40
32:X:46:ARG:HD2	32:X:48:LYS:HE2	2.03	0.40
41:g:90:TRP:CZ3	41:g:97:ARG:HB2	2.56	0.40
42:h:19:ASN:O	42:h:20:ARG:C	2.65	0.40
47:m:73:THR:C	47:m:75:ASN:H	2.29	0.40
1:1:87:A:H2'	1:1:88:G:O4'	2.21	0.40
1:1:130:U:H3'	1:1:131:U:C5'	2.50	0.40
1:1:136:G:H3'	1:1:136:G:P	2.61	0.40
1:1:183:G:N3	1:1:272:U:H1'	2.36	0.40
1:1:262:C:O3'	31:W:29:SER:OG	2.39	0.40
1:1:657:G:H5"	40:f:15:THR:CG2	2.51	0.40
1:1:693:G:H2'	20:L:8:CYS:SG	2.61	0.40
1:1:1149:G:H5'	1:1:1150:A:OP2	2.22	0.40
1:1:1394:U:C2'	1:1:1395:U:H5'	2.47	0.40
1:1:1529:OMC:HM23	1:1:1529:OMC:H1'	1.83	0.40
2:2:611:U:O2	2:2:628:A2M:H2	2.22	0.40
2:2:1152:U:H2'	2:2:1153:OMU:O4'	2.21	0.40
3:3:202:A:H2'	3:3:203:A:O4'	2.22	0.40
4:4:116:G:H2'	4:4:117:C:O4'	2.21	0.40
4:4:135:C:H2'	4:4:136:G:C8	2.56	0.40
7:7:164:U:H6	7:7:164:U:H2'	1.65	0.40
12:D:21:ILE:HA	12:D:128:ASP:O	2.21	0.40
16:H:201:ARG:HG3	19:K:178:ARG:CD	2.50	0.40
19:K:106:ARG:NH1	26:R:71:LEU:O	2.54	0.40
22:N:59:GLN:HG2	22:N:128:ARG:HA	2.04	0.40
26:R:11:VAL:HG21	26:R:39:ALA:HB1	2.04	0.40
28:T:21:ASP:O	28:T:23:ARG:N	2.54	0.40
37:c:97:THR:HG21	37:c:251:MET:HE1	2.02	0.40
37:c:163:TYR:CZ	37:c:172:LYS:HD3	2.56	0.40
41:g:37:GLY:O	41:g:134:ARG:HD3	2.22	0.40
42:h:8:TYR:HA	42:h:21:MET:HE1	2.04	0.40
42:h:38:LYS:O	42:h:61:ARG:HD3	2.21	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

entries.

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
9	A	245/260 (94%)	220 (90%)	25 (10%)	0	100	100
10	B	396/419 (94%)	352 (89%)	43 (11%)	1 (0%)	37	67
11	C	300/373 (80%)	269 (90%)	31 (10%)	0	100	100
12	D	159/188 (85%)	136 (86%)	23 (14%)	0	100	100
13	E	188/190 (99%)	160 (85%)	28 (15%)	0	100	100
14	F	134/195 (69%)	112 (84%)	22 (16%)	0	100	100
15	G	225/348 (65%)	205 (91%)	18 (8%)	2 (1%)	14	42
16	H	200/222 (90%)	175 (88%)	24 (12%)	1 (0%)	25	56
17	I	130/220 (59%)	120 (92%)	10 (8%)	0	100	100
18	J	126/139 (91%)	115 (91%)	11 (9%)	0	100	100
19	K	154/233 (66%)	136 (88%)	17 (11%)	1 (1%)	22	51
20	L	142/145 (98%)	127 (89%)	15 (11%)	0	100	100
21	M	201/204 (98%)	187 (93%)	14 (7%)	0	100	100
22	N	211/213 (99%)	186 (88%)	25 (12%)	0	100	100
23	O	229/305 (75%)	205 (90%)	24 (10%)	0	100	100
24	P	194/198 (98%)	179 (92%)	15 (8%)	0	100	100
25	Q	154/245 (63%)	141 (92%)	13 (8%)	0	100	100
26	R	130/179 (73%)	104 (80%)	25 (19%)	1 (1%)	16	44
27	S	149/159 (94%)	125 (84%)	22 (15%)	2 (1%)	10	32
28	T	154/166 (93%)	127 (82%)	27 (18%)	0	100	100
29	U	98/129 (76%)	81 (83%)	17 (17%)	0	100	100
30	V	116/145 (80%)	99 (85%)	17 (15%)	0	100	100
31	W	116/143 (81%)	106 (91%)	10 (9%)	0	100	100
32	X	62/124 (50%)	59 (95%)	3 (5%)	0	100	100
33	Y	130/134 (97%)	111 (85%)	19 (15%)	0	100	100
34	Z	75/147 (51%)	65 (87%)	10 (13%)	0	100	100
35	a	122/127 (96%)	105 (86%)	17 (14%)	0	100	100
36	b	63/70 (90%)	53 (84%)	10 (16%)	0	100	100
37	c	220/252 (87%)	190 (86%)	30 (14%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
38	d	71/104 (68%)	63 (89%)	8 (11%)	0	100 100
39	e	111/183 (61%)	92 (83%)	19 (17%)	0	100 100
40	f	124/133 (93%)	110 (89%)	14 (11%)	0	100 100
41	g	123/144 (85%)	112 (91%)	11 (9%)	0	100 100
42	h	106/168 (63%)	91 (86%)	15 (14%)	0	100 100
43	i	62/105 (59%)	57 (92%)	5 (8%)	0	100 100
44	j	76/83 (92%)	68 (90%)	8 (10%)	0	100 100
45	k	56/83 (68%)	52 (93%)	4 (7%)	0	100 100
46	l	49/51 (96%)	46 (94%)	2 (4%)	1 (2%)	6 21
47	m	88/92 (96%)	71 (81%)	16 (18%)	1 (1%)	12 37
48	n	82/106 (77%)	66 (80%)	16 (20%)	0	100 100
All	All	5771/7124 (81%)	5078 (88%)	683 (12%)	10 (0%)	45 73

All (10) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
15	G	132	SER
26	R	22	PRO
27	S	101	CYS
47	m	40	SER
10	B	380	LYS
46	l	46	ARG
19	K	46	PRO
15	G	116	PRO
27	S	80	VAL
16	H	94	PRO

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
9	A	188/204 (92%)	187 (100%)	1 (0%)	86 95

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
10	B	296/352 (84%)	292 (99%)	4 (1%)	62 87
11	C	222/302 (74%)	222 (100%)	0	100 100
12	D	4/163 (2%)	4 (100%)	0	100 100
13	E	172/172 (100%)	172 (100%)	0	100 100
14	F	92/154 (60%)	92 (100%)	0	100 100
15	G	179/292 (61%)	179 (100%)	0	100 100
16	H	166/188 (88%)	164 (99%)	2 (1%)	67 89
17	I	114/181 (63%)	114 (100%)	0	100 100
18	J	91/111 (82%)	89 (98%)	2 (2%)	47 79
19	K	79/195 (40%)	70 (89%)	9 (11%)	4 15
20	L	105/115 (91%)	105 (100%)	0	100 100
21	M	179/180 (99%)	177 (99%)	2 (1%)	70 90
22	N	178/179 (99%)	178 (100%)	0	100 100
23	O	103/242 (43%)	101 (98%)	2 (2%)	52 82
24	P	149/164 (91%)	147 (99%)	2 (1%)	65 88
25	Q	100/196 (51%)	99 (99%)	1 (1%)	73 91
26	R	98/158 (62%)	98 (100%)	0	100 100
27	S	100/133 (75%)	100 (100%)	0	100 100
28	T	125/144 (87%)	125 (100%)	0	100 100
29	U	13/114 (11%)	13 (100%)	0	100 100
30	V	86/124 (69%)	84 (98%)	2 (2%)	45 78
31	W	87/122 (71%)	86 (99%)	1 (1%)	70 90
32	X	48/104 (46%)	46 (96%)	2 (4%)	25 58
33	Y	70/115 (61%)	70 (100%)	0	100 100
34	Z	44/119 (37%)	43 (98%)	1 (2%)	45 78
35	a	99/117 (85%)	93 (94%)	6 (6%)	15 43
36	b	48/58 (83%)	46 (96%)	2 (4%)	25 58
37	c	168/209 (80%)	166 (99%)	2 (1%)	67 89
38	d	47/90 (52%)	45 (96%)	2 (4%)	25 57
39	e	79/156 (51%)	79 (100%)	0	100 100
40	f	97/114 (85%)	94 (97%)	3 (3%)	35 69

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
41	g	98/121 (81%)	97 (99%)	1 (1%)	73 91
42	h	85/145 (59%)	83 (98%)	2 (2%)	44 77
43	i	47/89 (53%)	47 (100%)	0	100 100
44	j	63/70 (90%)	61 (97%)	2 (3%)	34 68
45	k	26/74 (35%)	26 (100%)	0	100 100
46	l	46/47 (98%)	45 (98%)	1 (2%)	47 79
47	m	63/74 (85%)	58 (92%)	5 (8%)	10 30
48	n	64/92 (70%)	63 (98%)	1 (2%)	58 85
All	All	4118/5979 (69%)	4060 (99%)	58 (1%)	62 87

All (58) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
9	A	73	LYS
10	B	174[A]	HIS
10	B	174[B]	HIS
10	B	339	ARG
10	B	366	ILE
16	H	103	ARG
16	H	108	ARG
18	J	104	ILE
18	J	116	ILE
19	K	44	LEU
19	K	45	SER
19	K	50	CYS
19	K	72	ARG
19	K	73	ILE
19	K	74	LEU
19	K	95	LEU
19	K	180	HIS
19	K	185	VAL
21	M	60	CYS
21	M	61	VAL
23	O	19	LYS
23	O	51	LEU
24	P	101	ARG
24	P	142	ASN
25	Q	51	ILE
30	V	57	SER

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Mol	Chain	Res	Type
30	V	92	ARG
31	W	18	GLN
32	X	37	ARG
32	X	60	ARG
34	Z	26	ARG
35	a	88	ARG
35	a	107	LYS
35	a	110	ARG
35	a	111	GLN
35	a	112	MET
35	a	117	LYS
36	b	18	ARG
36	b	62	ARG
37	c	138	ARG
37	c	229	ARG
38	d	40	ARG
38	d	42	LYS
40	f	23	TYR
40	f	25	LEU
40	f	46	ARG
41	g	65	GLU
42	h	30	LYS
42	h	108	LEU
44	j	22	CYS
44	j	73	ARG
46	l	34	ARG
47	m	28	LYS
47	m	44	LYS
47	m	56	ARG
47	m	58	ASP
47	m	60	CYS
48	n	45	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (130) such sidechains are listed below:

Mol	Chain	Res	Type
9	A	19	HIS
9	A	21	HIS
9	A	38	HIS
9	A	65	HIS
9	A	92	GLN
9	A	115	ASN

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Mol	Chain	Res	Type
9	A	141	HIS
9	A	194	ASN
9	A	228	HIS
10	B	55	HIS
10	B	108	HIS
10	B	109	HIS
10	B	138	ASN
10	B	165	HIS
10	B	173	ASN
10	B	229	HIS
10	B	279	HIS
10	B	282	GLN
10	B	326	ASN
10	B	378	GLN
11	C	49	GLN
11	C	61	HIS
11	C	197	ASN
11	C	237	HIS
11	C	243	HIS
13	E	51	ASN
13	E	70	ASN
13	E	97	HIS
13	E	123	GLN
13	E	161	HIS
13	E	162	GLN
14	F	154	GLN
14	F	194	ASN
15	G	151	GLN
15	G	161	ASN
15	G	222	GLN
15	G	258	ASN
16	H	44	GLN
16	H	74	GLN
16	H	90	HIS
16	H	190	GLN
17	I	13	GLN
17	I	16	HIS
17	I	18	ASN
17	I	33	GLN
17	I	70	HIS
17	I	108	ASN
18	J	77	ASN

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Mol	Chain	Res	Type
18	J	134	HIS
19	K	52	GLN
19	K	92	ASN
19	K	107	HIS
20	L	28	HIS
20	L	49	HIS
20	L	60	HIS
20	L	112	ASN
21	M	57	GLN
21	M	76	HIS
21	M	95	ASN
21	M	122	ASN
21	M	156	HIS
21	M	158	HIS
21	M	161	GLN
22	N	33	ASN
22	N	59	GLN
22	N	71	GLN
22	N	92	HIS
22	N	100	ASN
22	N	196	HIS
23	O	17	GLN
23	O	31	HIS
23	O	39	GLN
23	O	94	ASN
24	P	142	ASN
24	P	197	HIS
25	Q	33	GLN
25	Q	58	HIS
25	Q	118	HIS
25	Q	130	ASN
25	Q	137	ASN
26	R	8	HIS
26	R	85	GLN
26	R	107	GLN
26	R	122	ASN
27	S	95	HIS
28	T	3	HIS
28	T	46	GLN
28	T	78	GLN
28	T	97	ASN
28	T	110	ASN

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Mol	Chain	Res	Type
30	V	114	ASN
30	V	133	HIS
31	W	18	GLN
31	W	110	HIS
32	X	10	HIS
33	Y	79	HIS
33	Y	86	ASN
33	Y	121	ASN
34	Z	3	HIS
34	Z	14	GLN
34	Z	20	GLN
35	a	116	HIS
36	b	7	HIS
36	b	11	ASN
36	b	16	ASN
36	b	30	HIS
36	b	43	ASN
37	c	120	GLN
37	c	123	ASN
37	c	167	ASN
37	c	196	ASN
37	c	245	ASN
38	d	70	HIS
38	d	71	HIS
39	e	120	ASN
40	f	28	GLN
40	f	122	ASN
41	g	49	GLN
41	g	52	GLN
41	g	80	HIS
42	h	13	HIS
42	h	51	HIS
44	j	16	HIS
44	j	25	ASN
46	l	33	ASN
46	l	43	HIS
47	m	33	GLN
47	m	76	ASN
48	n	3	ASN
48	n	82	GLN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	1	1535/1782 (86%)	588 (38%)	57 (3%)
2	2	1106/1527 (72%)	446 (40%)	28 (2%)
3	3	178/213 (83%)	85 (47%)	10 (5%)
4	4	146/183 (79%)	48 (32%)	5 (3%)
5	5	78/133 (58%)	30 (38%)	4 (5%)
6	6	60/76 (78%)	48 (80%)	15 (25%)
7	7	151/171 (88%)	51 (33%)	2 (1%)
8	8	118/121 (97%)	55 (46%)	5 (4%)
All	All	3372/4206 (80%)	1351 (40%)	126 (3%)

All (1351) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	1	4	G
1	1	10	A
1	1	13	G
1	1	23	U
1	1	24	A
1	1	32	A
1	1	36	OMU
1	1	38	A
1	1	41	A
1	1	47	C
1	1	48	OMU
1	1	49	C
1	1	51	G
1	1	54	G
1	1	57	G
1	1	58	A
1	1	64	A
1	1	66	A
1	1	83	A
1	1	85	U
1	1	86	G
1	1	87	A
1	1	91	G
1	1	92	C
1	1	104	G
1	1	109	A
1	1	110	A
1	1	119	C
1	1	121	A
1	1	126	G

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Mol	Chain	Res	Type
1	1	127	G
1	1	130	U
1	1	131	U
1	1	132	A
1	1	133	C
1	1	134	A
1	1	135	A
1	1	136	G
1	1	137	G
1	1	139	C
1	1	141	U
1	1	142	G
1	1	145	U
1	1	153	C
1	1	154	A
1	1	155	A
1	1	156	A
1	1	158	A
1	1	159	U
1	1	160	C
1	1	165	C
1	1	168	G
1	1	169	G
1	1	170	U
1	1	171	U
1	1	172	G
1	1	174	U
1	1	175	G
1	1	177	A
1	1	178	G
1	1	180	A
1	1	184	G
1	1	187	A
1	1	188	A
1	1	189	A
1	1	191	U
1	1	192	C
1	1	193	A
1	1	195	G
1	1	196	C
1	1	197	G
1	1	198	C

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Mol	Chain	Res	Type
1	1	199	A
1	1	202	G
1	1	204	A
1	1	206	A
1	1	207	C
1	1	209	C
1	1	210	G
1	1	211	U
1	1	214	C
1	1	216	G
1	1	217	A
1	1	218	A
1	1	221	C
1	1	222	A
1	1	227	U
1	1	228	U
1	1	230	A
1	1	231	U
1	1	232	G
1	1	233	U
1	1	236	G
1	1	237	U
1	1	239	U
1	1	240	U
1	1	242	A
1	1	243	G
1	1	248	A
1	1	249	G
1	1	250	A
1	1	251	A
1	1	252	G
1	1	255	G
1	1	256	U
1	1	260	C
1	1	261	C
1	1	264	U
1	1	267	A
1	1	268	G
1	1	270	C
1	1	271	A
1	1	273	A
1	1	275	A

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Mol	Chain	Res	Type
1	1	278	U
1	1	279	G
1	1	280	A
1	1	282	C
1	1	283	G
1	1	284	C
1	1	286	U
1	1	288	A
1	1	291	A
1	1	293	C
1	1	294	U
1	1	299	U
1	1	301	A
1	1	303	C
1	1	305	A
1	1	306	G
1	1	313	U
1	1	314	G
1	1	320	G
1	1	323	U
1	1	332	A
1	1	333	A
1	1	334	G
1	1	335	U
1	1	336	U
1	1	337	G
1	1	341	G
1	1	343	U
1	1	344	A
1	1	348	G
1	1	361	A
1	1	367	A
1	1	368	G
1	1	370	G
1	1	371	U
1	1	374	G
1	1	377	G
1	1	378	A
1	1	380	C
1	1	383	U
1	1	409	U
1	1	410	U

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Mol	Chain	Res	Type
1	1	411	U
1	1	416	A
1	1	417	G
1	1	428	A
1	1	431	G
1	1	438	A
1	1	440	A
1	1	442	A
1	1	443	A
1	1	444	C
1	1	448	A
1	1	454	U
1	1	455	G
1	1	458	A
1	1	459	A
1	1	460	A
1	1	462	A
1	1	463	C
1	1	464	A
1	1	475	C
1	1	476	U
1	1	477	C
1	1	478	C
1	1	483	C
1	1	484	A
1	1	486	C
1	1	487	G
1	1	490	C
1	1	494	A
1	1	495	C
1	1	498	G
1	1	500	C
1	1	501	C
1	1	502	U
1	1	505	U
1	1	508	A
1	1	510	U
1	1	512	U
1	1	513	C
1	1	515	U
1	1	516	G
1	1	519	G

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Mol	Chain	Res	Type
1	1	520	G
1	1	532	C
1	1	533	G
1	1	534	G
1	1	537	G
1	1	539	C
1	1	540	A
1	1	541	A
1	1	543	G
1	1	544	A
1	1	545	A
1	1	547	U
1	1	548	G
1	1	549	C
1	1	551	A
1	1	553	A
1	1	554	A
1	1	558	U
1	1	559	G
1	1	560	G
1	1	561	G
1	1	563	C
1	1	566	G
1	1	567	G
1	1	569	G
1	1	570	A
1	1	634	G
1	1	636	U
1	1	638	C
1	1	648	A
1	1	650	G
1	1	651	G
1	1	652	A
1	1	653	A
1	1	654	A
1	1	658	G
1	1	659	G
1	1	665	C
1	1	666	C
1	1	669	C
1	1	670	C
1	1	677	A

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Mol	Chain	Res	Type
1	1	679	A
1	1	680	C
1	1	681	A2M
1	1	693	G
1	1	694	U
1	1	695	OMC
1	1	696	A
1	1	698	A
1	1	709	A
1	1	713	A
1	1	728	C
1	1	729	A
1	1	730	G
1	1	735	U
1	1	737	U
1	1	741	G
1	1	742	U
1	1	750	G
1	1	753	A
1	1	767	U
1	1	768	C
1	1	769	U
1	1	770	G
1	1	771	U
1	1	779	A
1	1	780	C
1	1	782	C
1	1	783	G
1	1	785	C
1	1	787	A
1	1	788	A
1	1	789	U
1	1	790	C
1	1	793	U
1	1	795	U
1	1	799	U
1	1	801	G
1	1	802	C
1	1	807	C
1	1	817	C
1	1	818	C
1	1	820	U

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Mol	Chain	Res	Type
1	1	821	C
1	1	823	G
1	1	824	U
1	1	826	G
1	1	829	U
1	1	830	G
1	1	831	C
1	1	832	G
1	1	836	G
1	1	837	A
1	1	838	G
1	1	846	G
1	1	847	OMU
1	1	848	U
1	1	849	U
1	1	850	G
1	1	855	C
1	1	857	A
1	1	860	G
1	1	867	A
1	1	868	A
1	1	878	A
1	1	883	G
1	1	887	A
1	1	892	C
1	1	894	G
1	1	895	G
1	1	900	C
1	1	901	C
1	1	902	C
1	1	903	A
1	1	907	G
1	1	908	G
1	1	912	C
1	1	922	U
1	1	925	U
1	1	926	G
1	1	927	A2M
1	1	931	G
1	1	932	C
1	1	945	U
1	1	947	A

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Mol	Chain	Res	Type
1	1	956	U
1	1	957	C
1	1	959	OMG
1	1	960	A
1	1	963	G
1	1	965	A
1	1	967	G
1	1	972	A
1	1	974	C
1	1	975	G
1	1	977	A
1	1	985	G
1	1	988	G
1	1	995	C
1	1	1000	C
1	1	1010	C
1	1	1011	U
1	1	1013	A
1	1	1021	U
1	1	1025	G
1	1	1028	A
1	1	1029	G
1	1	1030	U
1	1	1031	A
1	1	1032	G
1	1	1036	U
1	1	1042	G
1	1	1044	G
1	1	1046	U
1	1	1051	C
1	1	1055	U
1	1	1056	G
1	1	1057	A
1	1	1058	U
1	1	1059	U
1	1	1063	G
1	1	1073	U
1	1	1081	A
1	1	1083	A
1	1	1085	C
1	1	1086	G
1	1	1088	C

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Mol	Chain	Res	Type
1	1	1092	U
1	1	1097	A
1	1	1102	U
1	1	1103	U
1	1	1104	A
1	1	1105	A
1	1	1108	G
1	1	1110	G
1	1	1114	A
1	1	1117	A
1	1	1118	A
1	1	1120	C
1	1	1123	G
1	1	1124	C
1	1	1127	U
1	1	1128	A
1	1	1131	C
1	1	1142	C
1	1	1146	A
1	1	1147	A
1	1	1149	G
1	1	1150	A
1	1	1156	A
1	1	1159	A
1	1	1160	G
1	1	1161	A
1	1	1162	G
1	1	1164	C
1	1	1169	A
1	1	1174	G
1	1	1181	U
1	1	1182	C
1	1	1188	G
1	1	1200	A
1	1	1201	U
1	1	1206	A
1	1	1210	A
1	1	1211	A
1	1	1212	C
1	1	1213	C
1	1	1216	U
1	1	1218	A

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Mol	Chain	Res	Type
1	1	1231	G
1	1	1234	A
1	1	1235	A
1	1	1239	U
1	1	1240	U
1	1	1242	U
1	1	1243	G
1	1	1249	A
1	1	1254	C
1	1	1255	G
1	1	1257	U
1	1	1258	A
1	1	1259	C
1	1	1260	G
1	1	1261	U
1	1	1263	A
1	1	1264	A
1	1	1265	A
1	1	1266	A
1	1	1268	G
1	1	1270	U
1	1	1271	G
1	1	1273	U
1	1	1276	U
1	1	1281	A
1	1	1349	A
1	1	1357	G
1	1	1364	A
1	1	1365	A
1	1	1366	A
1	1	1367	U
1	1	1369	G
1	1	1370	A
1	1	1371	U
1	1	1372	G
1	1	1375	G
1	1	1379	A
1	1	1383	C
1	1	1385	A
1	1	1386	A
1	1	1389	A
1	1	1390	G

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Mol	Chain	Res	Type
1	1	1392	G
1	1	1393	A
1	1	1394	U
1	1	1395	U
1	1	1396	G
1	1	1399	C
1	1	1400	A
1	1	1402	U
1	1	1407	C
1	1	1413	U
1	1	1414	A
1	1	1415	A
1	1	1416	G
1	1	1418	G
1	1	1420	G
1	1	1421	G
1	1	1423	A
1	1	1424	A
1	1	1433	U
1	1	1434	U
1	1	1435	G
1	1	1436	G
1	1	1437	A
1	1	1438	G
1	1	1439	A
1	1	1440	A
1	1	1443	U
1	1	1445	U
1	1	1446	A
1	1	1447	G
1	1	1448	C
1	1	1449	C
1	1	1450	C
1	1	1451	U
1	1	1452	U
1	1	1453	C
1	1	1466	G
1	1	1467	G
1	1	1468	C
1	1	1478	A
1	1	1479	G
1	1	1489	U

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Mol	Chain	Res	Type
1	1	1490	A
1	1	1491	U
1	1	1492	G
1	1	1494	C
1	1	1495	G
1	1	1504	A
1	1	1505	G
1	1	1506	A
1	1	1507	U
1	1	1509	G
1	1	1510	A
1	1	1511	C
1	1	1521	G
1	1	1522	U
1	1	1523	G
1	1	1524	C
1	1	1526	OMG
1	1	1527	A
1	1	1529	OMC
1	1	1530	U
1	1	1540	U
1	1	1541	A2M
1	1	1542	OMG
1	1	1544	A
1	1	1547	G
1	1	1548	A
1	1	1549	U
1	1	1550	C
1	1	1553	A
1	1	1554	C
1	1	1576	C
1	1	1577	G
1	1	1584	A
1	1	1588	G
1	1	1589	A
1	1	1590	G
1	1	1591	C
1	1	1592	G
1	1	1593	G
1	1	1595	G
1	1	1601	U
1	1	1602	U

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Mol	Chain	Res	Type
1	1	1607	G
1	1	1609	C
1	1	1611	A
1	1	1612	C
1	1	1614	G
1	1	1615	C
1	1	1621	U
1	1	1627	A
1	1	1629	U
1	1	1633	U
1	1	1639	A
1	1	1644	G
1	1	1648	A
1	1	1656	A
1	1	1657	U
1	1	1658	C
1	1	1662	U
1	1	1663	U
1	1	1664	G
1	1	1665	U
1	1	1667	A
1	1	1668	G
1	1	1669	G
1	1	1670	A
1	1	1671	A
1	1	1679	G
1	1	1683	G
1	1	1719	G
1	1	1720	C
1	1	1721	C
1	1	1723	U
1	1	1725	A
1	1	1728	G
1	1	1729	A
1	1	1732	A
1	1	1735	G
1	1	1737	C
1	1	1739	A
1	1	1740	C
1	1	1741	A
1	1	1746	A
1	1	1749	U

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Mol	Chain	Res	Type
1	1	1752	G
1	1	1755	U
1	1	1761	C
1	1	1763	A
1	1	1764	A
1	1	1765	A
1	1	1766	A
1	1	1767	A
1	1	1768	G
1	1	1771	A
1	1	1777	U
1	1	1778	G
2	2	9	G
2	2	13	A
2	2	22	A
2	2	26	C
2	2	29	C
2	2	30	A
2	2	33	A
2	2	34	G
2	2	36	U
2	2	41	A
2	2	44	C
2	2	49	A
2	2	54	U
2	2	61	C
2	2	63	U
2	2	67	G
2	2	68	A
2	2	69	A
2	2	70	A
2	2	75	C
2	2	78	U
2	2	89	G
2	2	90	G
2	2	92	A
2	2	98	G
2	2	99	A
2	2	103	G
2	2	109	U
2	2	110	C
2	2	111	G

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Mol	Chain	Res	Type
2	2	116	A
2	2	119	C
2	2	122	U
2	2	123	G
2	2	127	C
2	2	130	A
2	2	131	G
2	2	133	G
2	2	134	C
2	2	135	A
2	2	343	U
2	2	344	G
2	2	345	C
2	2	346	C
2	2	349	C
2	2	350	U
2	2	355	A
2	2	358	G
2	2	359	C
2	2	360	U
2	2	361	U
2	2	362	A
2	2	363	C
2	2	368	G
2	2	372	A
2	2	377	A
2	2	380	G
2	2	385	A
2	2	388	A
2	2	390	A
2	2	394	U
2	2	401	G
2	2	404	A
2	2	405	U
2	2	413	A
2	2	414	G
2	2	415	U
2	2	416	G
2	2	424	U
2	2	425	C
2	2	429	A
2	2	434	A

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Mol	Chain	Res	Type
2	2	435	U
2	2	438	C
2	2	444	A
2	2	446	U
2	2	447	G
2	2	448	C
2	2	451	U
2	2	452	G
2	2	453	A
2	2	454	A
2	2	455	U
2	2	456	G
2	2	458	C
2	2	459	A
2	2	464	G
2	2	469	G
2	2	470	A
2	2	471	U
2	2	473	C
2	2	477	G
2	2	478	A
2	2	482	G
2	2	483	C
2	2	484	G
2	2	489	A
2	2	490	A
2	2	495	G
2	2	497	G
2	2	498	A
2	2	509	C
2	2	511	C
2	2	512	U
2	2	513	C
2	2	515	U
2	2	518	G
2	2	519	G
2	2	522	G
2	2	525	A
2	2	526	A
2	2	527	A2M
2	2	528	U
2	2	529	G

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Mol	Chain	Res	Type
2	2	530	C
2	2	534	OMG
2	2	535	U
2	2	541	A
2	2	543	U
2	2	544	U
2	2	547	A
2	2	549	A
2	2	553	G
2	2	554	OMC
2	2	555	A
2	2	556	U
2	2	559	A
2	2	560	U
2	2	561	G
2	2	570	A
2	2	571	OMG
2	2	572	A2M
2	2	580	U
2	2	582	U
2	2	583	OMC
2	2	584	C
2	2	591	A2M
2	2	592	C
2	2	609	A
2	2	611	U
2	2	620	C
2	2	621	G
2	2	623	A
2	2	624	C
2	2	629	A
2	2	633	C
2	2	635	A
2	2	640	G
2	2	643	A
2	2	647	A
2	2	648	A
2	2	649	G
2	2	650	A
2	2	656	OMU
2	2	657	U
2	2	658	G

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Mol	Chain	Res	Type
2	2	664	G
2	2	666	C
2	2	668	C
2	2	675	G
2	2	681	G
2	2	683	G
2	2	694	U
2	2	696	A
2	2	697	G
2	2	699	U
2	2	700	G
2	2	701	U
2	2	702	A
2	2	704	U
2	2	705	A
2	2	706	U
2	2	707	A
2	2	709	G
2	2	711	G
2	2	713	A
2	2	714	A
2	2	715	G
2	2	718	C
2	2	720	A
2	2	721	G
2	2	725	A
2	2	726	A
2	2	727	A
2	2	728	U
2	2	729	G
2	2	730	A
2	2	731	A
2	2	732	A
2	2	733	U
2	2	734	A
2	2	735	C
2	2	736	C
2	2	737	A
2	2	739	C
2	2	741	C
2	2	742	U
2	2	750	U

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Mol	Chain	Res	Type
2	2	756	C
2	2	758	C
2	2	759	U
2	2	760	U
2	2	761	A
2	2	768	G
2	2	769	A
2	2	774	A
2	2	775	C
2	2	776	C
2	2	777	A
2	2	778	A
2	2	779	U
2	2	780	G
2	2	782	G
2	2	783	U
2	2	784	U
2	2	785	U
2	2	786	A
2	2	789	G
2	2	790	U
2	2	791	A
2	2	794	C
2	2	795	U
2	2	800	G
2	2	801	C
2	2	802	U
2	2	803	A
2	2	807	A
2	2	808	C
2	2	809	C
2	2	810	G
2	2	811	U
2	2	812	C
2	2	813	U
2	2	814	A
2	2	816	G
2	2	817	U
2	2	818	U
2	2	824	G
2	2	825	U
2	2	827	A

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Mol	Chain	Res	Type
2	2	828	U
2	2	829	U
2	2	830	U
2	2	831	U
2	2	833	U
2	2	834	G
2	2	835	G
2	2	836	C
2	2	837	G
2	2	868	U
2	2	869	G
2	2	870	C
2	2	872	U
2	2	940	G
2	2	941	C
2	2	948	C
2	2	949	G
2	2	950	U
2	2	951	G
2	2	952	G
2	2	954	U
2	2	956	C
2	2	957	C
2	2	958	C
2	2	959	A
2	2	960	A
2	2	961	C
2	2	962	C
2	2	967	U
2	2	968	G
2	2	969	U
2	2	970	A
2	2	971	A
2	2	972	A
2	2	973	C
2	2	974	U
2	2	975	G
2	2	976	A
2	2	977	A
2	2	979	C
2	2	981	A
2	2	982	C

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Mol	Chain	Res	Type
2	2	983	G
2	2	989	G
2	2	991	C
2	2	992	U
2	2	993	C
2	2	996	G
2	2	997	C
2	2	1010	U
2	2	1011	U
2	2	1012	G
2	2	1013	U
2	2	1014	U
2	2	1016	C
2	2	1020	A
2	2	1024	C
2	2	1025	U
2	2	1028	C
2	2	1034	G
2	2	1035	G
2	2	1037	A
2	2	1042	G
2	2	1045	U
2	2	1050	C
2	2	1057	U
2	2	1063	A
2	2	1066	C
2	2	1067	G
2	2	1072	C
2	2	1073	G
2	2	1076	G
2	2	1077	G
2	2	1079	OMG
2	2	1080	U
2	2	1084	A
2	2	1086	G
2	2	1093	U
2	2	1096	G
2	2	1097	U
2	2	1101	A
2	2	1102	A
2	2	1104	A
2	2	1109	U

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Mol	Chain	Res	Type
2	2	1111	U
2	2	1112	C
2	2	1114	C
2	2	1116	U
2	2	1117	A
2	2	1118	G
2	2	1119	A
2	2	1122	A
2	2	1124	A
2	2	1131	A
2	2	1132	A
2	2	1133	A
2	2	1134	G
2	2	1142	G
2	2	1144	U
2	2	1147	A
2	2	1148	C
2	2	1149	G
2	2	1152	U
2	2	1154	C
2	2	1156	A
2	2	1157	G
2	2	1158	U
2	2	1161	G
2	2	1166	G
2	2	1169	A
2	2	1171	U
2	2	1182	G
2	2	1184	C
2	2	1185	C
2	2	1186	A2M
2	2	1187	G
2	2	1189	G
2	2	1190	A
2	2	1199	G
2	2	1216	A
2	2	1217	A
2	2	1218	C
2	2	1229	A
2	2	1230	OMG
2	2	1231	A
2	2	1238	A

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Mol	Chain	Res	Type
2	2	1239	G
2	2	1240	A
2	2	1242	U
2	2	1243	A
2	2	1248	C
2	2	1249	OMC
2	2	1253	G
2	2	1254	OMG
2	2	1255	G
2	2	1256	A
2	2	1257	U
2	2	1266	U
2	2	1267	G
2	2	1275	C
2	2	1276	A
2	2	1277	A
2	2	1278	G
2	2	1288	C
2	2	1290	A
2	2	1292	G
2	2	1295	G
2	2	1296	C
2	2	1298	U
2	2	1299	U
2	2	1302	G
2	2	1303	A
2	2	1305	C
2	2	1306	C
2	2	1310	G
2	2	1312	U
2	2	1317	G
2	2	1318	OMC
2	2	1319	U
2	2	1325	U
2	2	1326	A
2	2	1329	C
2	2	1333	C
2	2	1338	C
2	2	1339	A
2	2	1341	A
2	2	1343	G
2	2	1346	G

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Mol	Chain	Res	Type
2	2	1347	C
2	2	1348	U
2	2	1349	A
2	2	1350	A
2	2	1351	G
2	2	1361	G
2	2	1362	U
2	2	1367	C
2	2	1372	G
2	2	1374	C
2	2	1375	A
2	2	1380	A
2	2	1381	C
2	2	1384	G
2	2	1385	A
2	2	1386	G
2	2	1389	G
2	2	1390	G
2	2	1393	U
2	2	1394	U
2	2	1410	A
2	2	1415	G
2	2	1417	U
2	2	1418	U
2	2	1422	C
2	2	1423	C
2	2	1429	U
2	2	1435	G
2	2	1437	A
2	2	1438	A
2	2	1440	U
2	2	1441	G
2	2	1442	C
2	2	1443	G
2	2	1444	A
2	2	1446	A
2	2	1448	A
2	2	1449	A
3	3	10	U
3	3	14	A
3	3	21	U
3	3	22	G

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Mol	Chain	Res	Type
3	3	23	C
3	3	29	A
3	3	30	A
3	3	32	A
3	3	33	A
3	3	37	A
3	3	38	A
3	3	47	C
3	3	48	G
3	3	50	U
3	3	54	C
3	3	55	U
3	3	56	U
3	3	58	C
3	3	60	U
3	3	61	U
3	3	62	U
3	3	63	C
3	3	69	A
3	3	70	A
3	3	77	U
3	3	78	C
3	3	79	U
3	3	81	C
3	3	82	G
3	3	83	G
3	3	84	C
3	3	86	U
3	3	87	U
3	3	88	G
3	3	90	U
3	3	92	G
3	3	95	C
3	3	96	U
3	3	97	U
3	3	98	G
3	3	99	G
3	3	101	C
3	3	105	U
3	3	107	U
3	3	108	A
3	3	109	C

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Mol	Chain	Res	Type
3	3	110	U
3	3	111	U
3	3	112	C
3	3	114	C
3	3	118	U
3	3	119	U
3	3	120	G
3	3	122	U
3	3	133	G
3	3	135	U
3	3	138	A
3	3	142	U
3	3	146	A
3	3	147	A
3	3	148	A
3	3	149	U
3	3	150	G
3	3	152	A
3	3	153	G
3	3	156	C
3	3	157	U
3	3	164	G
3	3	165	U
3	3	166	A
3	3	167	C
3	3	168	U
3	3	169	G
3	3	170	U
3	3	176	U
3	3	181	A
3	3	182	G
3	3	185	C
3	3	186	U
3	3	194	A
3	3	195	A
3	3	196	A
3	3	198	C
3	3	199	A
3	3	210	G
4	4	31	G
4	4	40	G
4	4	46	G

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Mol	Chain	Res	Type
4	4	50	G
4	4	51	U
4	4	52	A
4	4	62	C
4	4	63	U
4	4	64	C
4	4	65	C
4	4	67	A
4	4	73	U
4	4	86	U
4	4	93	U
4	4	96	C
4	4	97	G
4	4	100	C
4	4	102	G
4	4	106	G
4	4	107	U
4	4	114	A
4	4	119	A
4	4	120	U
4	4	121	C
4	4	127	G
4	4	128	U
4	4	129	G
4	4	131	U
4	4	132	U
4	4	139	U
4	4	140	G
4	4	141	A
4	4	147	U
4	4	148	C
4	4	150	A
4	4	151	A
4	4	153	C
4	4	154	C
4	4	157	A
4	4	158	A
4	4	162	A
4	4	169	A
4	4	171	A
4	4	172	C
4	4	174	A

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Mol	Chain	Res	Type
4	4	175	G
4	4	180	C
4	4	182	A
5	5	4	G
5	5	12	C
5	5	13	C
5	5	14	A
5	5	15	A
5	5	22	G
5	5	25	C
5	5	26	A
5	5	27	U
5	5	28	G
5	5	38	G
5	5	40	A
5	5	42	G
5	5	43	A
5	5	101	C
5	5	102	U
5	5	105	A
5	5	112	A
5	5	113	A
5	5	114	A
5	5	115	U
5	5	119	A
5	5	120	U
5	5	122	C
5	5	123	U
5	5	126	G
5	5	127	G
5	5	131	A
5	5	132	C
5	5	133	A
6	6	2	C
6	6	3	A
6	6	4	U
6	6	5	C
6	6	7	A
6	6	8	A
6	6	9	U
6	6	12	C
6	6	13	C

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Mol	Chain	Res	Type
6	6	14	A
6	6	15	C
6	6	16	C
6	6	17	U
6	6	18	A
6	6	19	C
6	6	20	A
6	6	21	A
6	6	22	G
6	6	23	A
6	6	24	C
6	6	25	U
6	6	26	G
6	6	27	G
6	6	28	A
6	6	29	G
6	6	30	C
6	6	31	U
6	6	32	U
6	6	33	G
6	6	35	U
6	6	37	C
6	6	39	U
6	6	40	C
6	6	41	G
6	6	42	A
6	6	44	G
6	6	49	C
6	6	50	A
6	6	51	A
6	6	52	G
6	6	53	U
6	6	54	A
6	6	55	U
6	6	56	A
6	6	57	U
6	6	58	U
6	6	59	C
6	6	61	U
7	7	2	A
7	7	5	U
7	7	6	G

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Mol	Chain	Res	Type
7	7	7	OMU
7	7	8	C
7	7	22	U
7	7	33	U
7	7	34	U
7	7	35	C
7	7	38	U
7	7	40	A
7	7	44	A
7	7	48	A
7	7	49	G
7	7	52	A
7	7	59	A
7	7	60	U
7	7	62	A
7	7	63	G
7	7	68	A
7	7	69	U
7	7	71	A
7	7	77	A
7	7	78	G
7	7	89	U
7	7	92	C
7	7	103	A
7	7	104	A
7	7	105	C
7	7	107	C
7	7	109	A
7	7	110	A
7	7	111	C
7	7	115	G
7	7	119	G
7	7	120	G
7	7	121	G
7	7	122	A
7	7	124	A
7	7	125	A
7	7	126	G
7	7	127	C
7	7	137	U
7	7	138	C
7	7	139	A

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Mol	Chain	Res	Type
7	7	140	U
7	7	142	C
7	7	157	U
7	7	158	U
7	7	159	C
7	7	161	C
8	8	2	C
8	8	3	G
8	8	4	A
8	8	5	G
8	8	7	A
8	8	8	C
8	8	9	G
8	8	12	C
8	8	13	A
8	8	15	A
8	8	17	U
8	8	18	U
8	8	24	A
8	8	27	A
8	8	36	C
8	8	39	G
8	8	40	U
8	8	41	C
8	8	43	G
8	8	44	A
8	8	45	U
8	8	47	U
8	8	48	G
8	8	49	U
8	8	51	A
8	8	52	A
8	8	53	G
8	8	55	U
8	8	56	A
8	8	57	A
8	8	61	C
8	8	63	C
8	8	64	A
8	8	67	G
8	8	73	G
8	8	74	U

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Mol	Chain	Res	Type
8	8	78	U
8	8	82	G
8	8	85	G
8	8	86	U
8	8	87	C
8	8	88	A
8	8	89	G
8	8	91	G
8	8	92	A
8	8	94	G
8	8	102	A
8	8	108	G
8	8	110	G
8	8	111	U
8	8	112	G
8	8	115	G
8	8	116	U
8	8	119	U
8	8	120	C

All (126) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	1	23	U
1	1	132	A
1	1	136	G
1	1	141	U
1	1	153	C
1	1	154	A
1	1	155	A
1	1	167	U
1	1	170	U
1	1	171	U
1	1	191	U
1	1	195	G
1	1	203	C
1	1	205	A
1	1	229	C
1	1	232	G
1	1	333	A
1	1	334	G
1	1	367	A

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Mol	Chain	Res	Type
1	1	409	U
1	1	415	A
1	1	477	C
1	1	559	G
1	1	560	G
1	1	669	C
1	1	693	G
1	1	786	A
1	1	822	C
1	1	959	OMG
1	1	1029	G
1	1	1109	U
1	1	1239	U
1	1	1253	U
1	1	1257	U
1	1	1263	A
1	1	1270	U
1	1	1369	G
1	1	1388	U
1	1	1389	A
1	1	1392	G
1	1	1413	U
1	1	1420	G
1	1	1423	A
1	1	1432	C
1	1	1436	G
1	1	1439	A
1	1	1442	G
1	1	1452	U
1	1	1466	G
1	1	1506	A
1	1	1526	OMG
1	1	1529	OMC
1	1	1542	OMG
1	1	1591	C
1	1	1662	U
1	1	1751	G
1	1	1763	A
2	2	29	C
2	2	68	A
2	2	349	C
2	2	360	U

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Mol	Chain	Res	Type
2	2	443	OMC
2	2	468	A
2	2	512	U
2	2	552	C
2	2	646	G
2	2	749	G
2	2	755	U
2	2	775	C
2	2	776	C
2	2	782	G
2	2	815	G
2	2	827	A
2	2	832	A
2	2	835	G
2	2	948	C
2	2	957	C
2	2	973	C
2	2	981	A
2	2	996	G
2	2	1184	C
2	2	1318	OMC
2	2	1393	U
2	2	1437	A
2	2	1443	G
3	3	22	G
3	3	31	C
3	3	32	A
3	3	77	U
3	3	78	C
3	3	108	A
3	3	117	G
3	3	132	G
3	3	141	U
3	3	195	A
4	4	50	G
4	4	64	C
4	4	149	U
4	4	157	A
4	4	174	A
5	5	113	A
5	5	125	A
5	5	126	G

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Mol	Chain	Res	Type
5	5	130	C
6	6	2	C
6	6	4	U
6	6	8	A
6	6	14	A
6	6	21	A
6	6	24	C
6	6	29	G
6	6	30	C
6	6	31	U
6	6	32	U
6	6	38	C
6	6	40	C
6	6	41	G
6	6	50	A
6	6	58	U
7	7	88	A
7	7	139	A
8	8	43	G
8	8	48	G
8	8	66	A
8	8	85	G
8	8	91	G

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

44 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	$\#\|Z\| > 2$
2	H2U	2	1404	2	18,21,22	1.11	2 (11%)	19,30,33	1.03	1 (5%)
1	A2M	1	1541	2,1	18,25,26	0.84	0	20,36,39	1.18	2 (10%)
1	OMU	1	48	1	19,22,23	1.38	3 (15%)	25,31,34	1.95	6 (24%)
1	OMG	1	856	1	19,26,27	0.99	1 (5%)	21,38,41	1.50	4 (19%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
1	OMG	1	1526	1	19,26,27	0.96	1 (5%)	21,38,41	1.32	3 (14%)
1	A2M	1	927	1	18,25,26	0.90	1 (5%)	20,36,39	1.39	3 (15%)
2	OMC	2	583	2	19,22,23	0.86	0	25,31,34	1.06	1 (4%)
1	OMG	1	959	1	19,26,27	1.03	1 (5%)	21,38,41	1.40	4 (19%)
2	A2M	2	591	2	18,25,26	0.83	0	20,36,39	1.32	2 (10%)
1	OMG	1	1628	1	19,26,27	0.99	1 (5%)	21,38,41	1.37	3 (14%)
2	OMU	2	656	2	19,22,23	1.25	3 (15%)	25,31,34	2.09	6 (24%)
1	OMU	1	847	1	19,22,23	1.28	3 (15%)	25,31,34	1.92	6 (24%)
7	OMU	7	7	7,1	19,22,23	1.27	3 (15%)	25,31,34	2.25	6 (24%)
2	OMG	2	641	2	19,26,27	1.02	1 (5%)	21,38,41	1.20	3 (14%)
1	OMU	1	845	1	19,22,23	1.35	4 (21%)	25,31,34	2.09	6 (24%)
1	OMC	1	1529	1	19,22,23	0.86	0	25,31,34	1.02	1 (4%)
1	OMC	1	695	1	19,22,23	0.90	1 (5%)	25,31,34	1.23	2 (8%)
2	A2M	2	572	2	18,25,26	0.83	0	20,36,39	1.23	3 (15%)
2	OMC	2	443	2	19,22,23	0.84	0	25,31,34	0.90	0
2	OMG	2	1254	2	19,26,27	1.02	1 (5%)	21,38,41	1.14	2 (9%)
2	OMG	2	71	2	19,26,27	1.00	1 (5%)	21,38,41	1.26	3 (14%)
2	OMU	2	667	2	19,22,23	1.28	3 (15%)	25,31,34	1.94	6 (24%)
2	OMC	2	1160	2	19,22,23	0.84	0	25,31,34	1.01	1 (4%)
2	A2M	2	628	2	18,25,26	0.82	0	20,36,39	1.32	3 (15%)
2	OMG	2	534	2	19,26,27	0.99	1 (5%)	21,38,41	1.29	2 (9%)
2	OMC	2	554	2	19,22,23	0.83	0	25,31,34	1.04	1 (4%)
1	A2M	1	678	2,1	18,25,26	0.83	0	20,36,39	1.27	2 (10%)
1	OMU	1	36	1	19,22,23	1.34	3 (15%)	25,31,34	1.96	6 (24%)
2	OMC	2	1249	2	19,22,23	0.84	0	25,31,34	1.04	1 (4%)
2	OMU	2	1153	2	19,22,23	1.32	3 (15%)	25,31,34	2.11	6 (24%)
2	OMG	2	655	2	19,26,27	1.00	1 (5%)	21,38,41	1.18	2 (9%)
2	A2M	2	382	2	18,25,26	0.80	0	20,36,39	1.18	2 (10%)
2	A2M	2	527	2	18,25,26	0.82	0	20,36,39	1.58	3 (15%)
1	A2M	1	681	1	18,25,26	0.82	0	20,36,39	1.27	2 (10%)
2	A2M	2	1186	2	18,25,26	0.81	0	20,36,39	1.34	3 (15%)
7	A2M	7	162	7,1	18,25,26	0.86	0	20,36,39	1.76	3 (15%)
2	OMG	2	571	2	19,26,27	0.96	1 (5%)	21,38,41	1.39	3 (14%)
2	OMU	2	1078	2	19,22,23	1.30	2 (10%)	25,31,34	1.93	6 (24%)
2	OMC	2	1398	2	19,22,23	0.85	0	25,31,34	1.08	1 (4%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
2	OMG	2	1230	2	19,26,27	1.01	1 (5%)	21,38,41	1.23	3 (14%)
2	OMG	2	1079	2	19,26,27	0.96	1 (5%)	21,38,41	1.22	3 (14%)
1	OMG	1	1542	2,1	19,26,27	0.97	1 (5%)	21,38,41	1.28	2 (9%)
2	OMC	2	1318	2	19,22,23	0.84	0	25,31,34	1.03	2 (8%)
1	A2M	1	955	1	18,25,26	0.84	0	20,36,39	1.38	2 (10%)

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
2	H2U	2	1404	2	-	3/7/38/39	0/2/2/2
1	A2M	1	1541	2,1	-	3/5/27/28	0/3/3/3
1	OMU	1	48	1	-	3/9/27/28	0/2/2/2
1	OMG	1	856	1	-	0/5/27/28	0/3/3/3
1	OMG	1	1526	1	-	1/5/27/28	0/3/3/3
1	A2M	1	927	1	-	1/5/27/28	0/3/3/3
2	OMC	2	583	2	-	2/9/27/28	0/2/2/2
1	OMG	1	959	1	-	0/5/27/28	0/3/3/3
2	A2M	2	591	2	-	3/5/27/28	0/3/3/3
1	OMG	1	1628	1	-	0/5/27/28	0/3/3/3
2	OMU	2	656	2	-	4/9/27/28	0/2/2/2
1	OMU	1	847	1	-	3/9/27/28	0/2/2/2
7	OMU	7	7	7,1	-	4/9/27/28	0/2/2/2
2	OMG	2	641	2	-	2/5/27/28	0/3/3/3
1	OMU	1	845	1	-	0/9/27/28	0/2/2/2
1	OMC	1	1529	1	-	2/9/27/28	0/2/2/2
1	OMC	1	695	1	-	0/9/27/28	0/2/2/2
2	A2M	2	572	2	-	2/5/27/28	0/3/3/3
2	OMC	2	443	2	-	5/9/27/28	0/2/2/2
2	OMG	2	1254	2	-	4/5/27/28	0/3/3/3
2	OMG	2	71	2	-	2/5/27/28	0/3/3/3
2	OMU	2	667	2	-	3/9/27/28	0/2/2/2
2	OMC	2	1160	2	-	0/9/27/28	0/2/2/2
2	A2M	2	628	2	-	0/5/27/28	0/3/3/3
2	OMG	2	534	2	-	0/5/27/28	0/3/3/3
2	OMC	2	554	2	-	2/9/27/28	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	A2M	1	678	2,1	-	2/5/27/28	0/3/3/3
1	OMU	1	36	1	-	2/9/27/28	0/2/2/2
2	OMC	2	1249	2	-	3/9/27/28	0/2/2/2
2	OMU	2	1153	2	-	2/9/27/28	0/2/2/2
2	OMG	2	655	2	-	0/5/27/28	0/3/3/3
2	A2M	2	382	2	-	1/5/27/28	0/3/3/3
2	A2M	2	527	2	-	1/5/27/28	0/3/3/3
1	A2M	1	681	1	-	3/5/27/28	0/3/3/3
2	A2M	2	1186	2	-	3/5/27/28	0/3/3/3
7	A2M	7	162	7,1	-	1/5/27/28	0/3/3/3
2	OMG	2	571	2	-	2/5/27/28	0/3/3/3
2	OMU	2	1078	2	-	0/9/27/28	0/2/2/2
2	OMC	2	1398	2	-	0/9/27/28	0/2/2/2
2	OMG	2	1230	2	-	3/5/27/28	0/3/3/3
2	OMG	2	1079	2	-	2/5/27/28	0/3/3/3
1	OMG	1	1542	2,1	-	2/5/27/28	0/3/3/3
2	OMC	2	1318	2	-	2/9/27/28	0/2/2/2
1	A2M	1	955	1	-	3/5/27/28	0/3/3/3

All (44) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1	36	OMU	C4-N3	-3.13	1.33	1.38
1	1	48	OMU	C4-N3	-3.12	1.33	1.38
1	1	845	OMU	C4-N3	-3.11	1.33	1.38
2	2	1153	OMU	C4-N3	-2.99	1.33	1.38
2	2	1078	OMU	C4-N3	-2.94	1.33	1.38
2	2	667	OMU	C4-N3	-2.89	1.33	1.38
1	1	847	OMU	C4-N3	-2.83	1.33	1.38
7	7	7	OMU	C4-N3	-2.77	1.33	1.38
1	1	856	OMG	C6-N1	-2.76	1.33	1.37
2	2	1404	H2U	C2-N3	-2.74	1.33	1.38
2	2	656	OMU	C4-N3	-2.73	1.33	1.38
1	1	845	OMU	C2-N3	-2.71	1.33	1.38
2	2	71	OMG	C6-N1	-2.70	1.33	1.37
2	2	1254	OMG	C6-N1	-2.69	1.33	1.37
1	1	48	OMU	C2-N3	-2.66	1.33	1.38
1	1	1542	OMG	C6-N1	-2.64	1.33	1.37
2	2	1230	OMG	C6-N1	-2.63	1.33	1.37
2	2	641	OMG	C6-N1	-2.60	1.33	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	2	571	OMG	C6-N1	-2.59	1.33	1.37
2	2	1404	H2U	C4-N3	-2.58	1.33	1.37
2	2	655	OMG	C6-N1	-2.57	1.33	1.37
1	1	959	OMG	C6-N1	-2.57	1.33	1.37
1	1	36	OMU	C2-N3	-2.52	1.33	1.38
1	1	1526	OMG	C6-N1	-2.52	1.33	1.37
1	1	847	OMU	C2-N3	-2.52	1.33	1.38
2	2	1153	OMU	C2-N3	-2.47	1.33	1.38
1	1	1628	OMG	C6-N1	-2.45	1.34	1.37
1	1	48	OMU	C5-C4	-2.42	1.38	1.43
2	2	534	OMG	C6-N1	-2.41	1.34	1.37
2	2	667	OMU	C2-N3	-2.41	1.33	1.38
2	2	1078	OMU	C2-N3	-2.38	1.33	1.38
2	2	1079	OMG	C6-N1	-2.33	1.34	1.37
2	2	656	OMU	C2-N3	-2.29	1.34	1.38
1	1	847	OMU	C5-C4	-2.29	1.38	1.43
1	1	36	OMU	C5-C4	-2.29	1.38	1.43
7	7	7	OMU	C2-N3	-2.28	1.34	1.38
1	1	845	OMU	C5-C4	-2.28	1.38	1.43
2	2	1153	OMU	C5-C4	-2.27	1.38	1.43
2	2	667	OMU	C5-C4	-2.21	1.38	1.43
2	2	656	OMU	C5-C4	-2.18	1.39	1.43
1	1	927	A2M	O4'-C1'	2.11	1.43	1.40
1	1	845	OMU	C6-N1	-2.07	1.33	1.38
1	1	695	OMC	C5-C4	-2.07	1.38	1.42
7	7	7	OMU	C5-C4	-2.02	1.39	1.43

All (132) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
7	7	7	OMU	C2'-C1'-N1	-5.61	103.60	114.24
7	7	7	OMU	C4-N3-C2	-5.12	120.26	126.61
2	2	656	OMU	C4-N3-C2	-5.08	120.31	126.61
1	1	845	OMU	C4-N3-C2	-5.07	120.31	126.61
2	2	1078	OMU	C4-N3-C2	-5.03	120.37	126.61
1	1	36	OMU	C4-N3-C2	-5.01	120.39	126.61
2	2	1153	OMU	C4-N3-C2	-5.01	120.40	126.61
1	1	847	OMU	C4-N3-C2	-5.00	120.40	126.61
1	1	48	OMU	C4-N3-C2	-4.86	120.58	126.61
2	2	667	OMU	C4-N3-C2	-4.73	120.74	126.61
1	1	845	OMU	N3-C2-N1	4.57	120.84	114.89
7	7	7	OMU	N3-C2-N1	4.55	120.82	114.89

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	2	1078	OMU	N3-C2-N1	4.52	120.77	114.89
2	2	1153	OMU	N3-C2-N1	4.48	120.72	114.89
2	2	667	OMU	N3-C2-N1	4.46	120.69	114.89
1	1	847	OMU	N3-C2-N1	4.46	120.69	114.89
2	2	656	OMU	N3-C2-N1	4.46	120.69	114.89
1	1	48	OMU	N3-C2-N1	4.41	120.64	114.89
1	1	856	OMG	C2'-C1'-N9	-4.39	102.82	112.56
7	7	162	A2M	O4'-C1'-N9	4.32	114.48	108.75
1	1	36	OMU	N3-C2-N1	4.31	120.50	114.89
1	1	845	OMU	C2'-C1'-N1	-4.22	106.23	114.24
2	2	1398	OMC	C2'-C1'-N1	-4.14	106.38	114.24
2	2	1153	OMU	C2'-C1'-N1	-4.12	106.43	114.24
2	2	656	OMU	C2'-C1'-N1	-4.11	106.43	114.24
1	1	36	OMU	C5-C4-N3	4.01	120.42	114.80
1	1	847	OMU	C5-C4-N3	3.95	120.33	114.80
1	1	927	A2M	N3-C2-N1	-3.91	123.37	128.67
1	1	845	OMU	C5-C4-N3	3.89	120.25	114.80
2	2	656	OMU	C5-C4-N3	3.88	120.24	114.80
1	1	48	OMU	C5-C4-N3	3.88	120.23	114.80
2	2	1078	OMU	C5-C4-N3	3.87	120.22	114.80
1	1	678	A2M	N3-C2-N1	-3.86	123.43	128.67
2	2	1153	OMU	C5-C4-N3	3.85	120.19	114.80
1	1	955	A2M	N3-C2-N1	-3.83	123.47	128.67
7	7	7	OMU	C5-C4-N3	3.81	120.14	114.80
2	2	628	A2M	N3-C2-N1	-3.81	123.50	128.67
2	2	667	OMU	C5-C4-N3	3.79	120.10	114.80
2	2	591	A2M	N3-C2-N1	-3.75	123.59	128.67
1	1	681	A2M	N3-C2-N1	-3.74	123.60	128.67
1	1	1541	A2M	N3-C2-N1	-3.70	123.65	128.67
7	7	162	A2M	C4'-O4'-C1'	-3.69	106.55	109.92
2	2	527	A2M	N3-C2-N1	-3.66	123.70	128.67
1	1	695	OMC	C2'-C1'-N1	-3.64	107.34	114.24
1	1	36	OMU	C2'-C1'-N1	-3.57	107.46	114.24
2	2	1186	A2M	N3-C2-N1	-3.57	123.83	128.67
2	2	571	OMG	C2'-C1'-N9	-3.53	104.71	112.56
7	7	162	A2M	N3-C2-N1	-3.52	123.89	128.67
2	2	382	A2M	N3-C2-N1	-3.52	123.89	128.67
2	2	1249	OMC	C2'-C1'-N1	-3.49	107.61	114.24
2	2	572	A2M	N3-C2-N1	-3.45	123.99	128.67
2	2	583	OMC	C2'-C1'-N1	-3.40	107.80	114.24
2	2	527	A2M	O4'-C1'-N9	3.31	113.14	108.75
2	2	656	OMU	O4-C4-C5	-3.29	119.49	125.16

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	48	OMU	O4-C4-C5	-3.19	119.66	125.16
2	2	71	OMG	C2'-C1'-N9	-3.16	105.55	112.56
1	1	847	OMU	O4-C4-C5	-3.16	119.72	125.16
1	1	36	OMU	O4-C4-C5	-3.10	119.82	125.16
2	2	667	OMU	C2'-C1'-N1	-3.09	108.38	114.24
2	2	1160	OMC	C2'-C1'-N1	-3.07	108.41	114.24
2	2	656	OMU	O2-C2-N1	-3.06	118.82	122.80
2	2	1153	OMU	O4-C4-C5	-3.03	119.94	125.16
7	7	7	OMU	O4-C4-C5	-3.01	119.97	125.16
1	1	48	OMU	C2'-C1'-N1	-3.01	108.53	114.24
1	1	845	OMU	O4-C4-C5	-2.98	120.03	125.16
1	1	1628	OMG	C2'-C1'-N9	-2.98	105.95	112.56
2	2	534	OMG	C8-N7-C5	2.97	107.61	102.55
2	2	667	OMU	O4-C4-C5	-2.96	120.06	125.16
1	1	1526	OMG	C8-N7-C5	2.95	107.58	102.55
7	7	7	OMU	O2-C2-N1	-2.93	118.99	122.80
2	2	655	OMG	C8-N7-C5	2.92	107.52	102.55
2	2	1079	OMG	C8-N7-C5	2.90	107.49	102.55
2	2	1153	OMU	O2-C2-N1	-2.90	119.03	122.80
2	2	1230	OMG	C8-N7-C5	2.88	107.44	102.55
2	2	534	OMG	C2'-C1'-N9	-2.87	106.19	112.56
1	1	845	OMU	O2-C2-N1	-2.87	119.06	122.80
1	1	678	A2M	C4-C5-N7	-2.85	106.32	109.34
1	1	1628	OMG	C8-N7-C5	2.84	107.39	102.55
1	1	856	OMG	C8-N7-C5	2.83	107.37	102.55
1	1	1529	OMC	C2'-C1'-N1	-2.83	108.87	114.24
1	1	955	A2M	C4-C5-N7	-2.81	106.37	109.34
2	2	1230	OMG	C2'-C1'-N9	-2.81	106.33	112.56
2	2	1254	OMG	C8-N7-C5	2.80	107.32	102.55
2	2	641	OMG	C2'-C1'-N9	-2.79	106.37	112.56
1	1	1542	OMG	C8-N7-C5	2.78	107.29	102.55
2	2	571	OMG	C8-N7-C5	2.78	107.28	102.55
2	2	572	A2M	C4-C5-N7	-2.69	106.49	109.34
2	2	1078	OMU	O4-C4-C5	-2.68	120.55	125.16
1	1	681	A2M	C4-C5-N7	-2.67	106.51	109.34
2	2	71	OMG	C8-N7-C5	2.66	107.08	102.55
2	2	641	OMG	C8-N7-C5	2.64	107.04	102.55
2	2	1186	A2M	C4-C5-N7	-2.62	106.57	109.34
1	1	959	OMG	C8-N7-C5	2.55	106.88	102.55
1	1	847	OMU	C2'-C1'-N1	-2.55	109.41	114.24
2	2	554	OMC	C2'-C1'-N1	-2.52	109.46	114.24
2	2	1404	H2U	O4'-C1'-N1	2.52	112.72	109.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	1	1526	OMG	O4'-C1'-N9	2.51	112.07	108.75
1	1	48	OMU	O2-C2-N1	-2.50	119.54	122.80
1	1	847	OMU	O2-C2-N1	-2.49	119.55	122.80
1	1	1541	A2M	C4-C5-N7	-2.47	106.73	109.34
1	1	927	A2M	C4-C5-N7	-2.45	106.75	109.34
2	2	1079	OMG	O4'-C1'-N9	2.44	111.97	108.75
2	2	1078	OMU	C2'-C1'-N1	-2.43	109.64	114.24
2	2	527	A2M	C4-C5-N7	-2.39	106.81	109.34
2	2	382	A2M	C4-C5-N7	-2.39	106.81	109.34
1	1	36	OMU	O2-C2-N1	-2.37	119.72	122.80
2	2	591	A2M	C4-C5-N7	-2.35	106.86	109.34
1	1	959	OMG	O4'-C1'-N9	2.33	111.83	108.75
1	1	927	A2M	O4'-C1'-N9	2.31	111.81	108.75
2	2	628	A2M	C2'-C1'-N9	-2.30	107.45	112.56
2	2	667	OMU	O2-C2-N1	-2.27	119.85	122.80
1	1	959	OMG	C5-C6-N1	2.25	118.36	114.07
2	2	628	A2M	C4-C5-N7	-2.25	106.96	109.34
1	1	856	OMG	O4'-C1'-N9	2.24	111.72	108.75
1	1	1628	OMG	C5-C6-N1	2.24	118.34	114.07
1	1	695	OMC	C5'-C4'-C3'	-2.20	107.28	115.21
1	1	1542	OMG	C5-C6-N1	2.19	118.26	114.07
2	2	1078	OMU	O2-C2-N1	-2.17	119.98	122.80
2	2	655	OMG	C5-C6-N1	2.16	118.19	114.07
2	2	1254	OMG	C5-C6-N1	2.16	118.19	114.07
2	2	1318	OMC	C2'-C1'-N1	-2.14	110.18	114.24
2	2	1230	OMG	C5-C6-N1	2.13	118.14	114.07
2	2	572	A2M	C2'-C1'-N9	-2.13	107.83	112.56
1	1	856	OMG	C5-C6-N1	2.13	118.13	114.07
2	2	1318	OMC	C5'-C4'-C3'	-2.12	107.58	115.21
2	2	1186	A2M	C4'-O4'-C1'	2.11	111.86	109.92
2	2	1079	OMG	C5-C6-N1	2.08	118.04	114.07
2	2	571	OMG	C5-C6-N1	2.07	118.03	114.07
2	2	71	OMG	C5-C6-N1	2.06	118.00	114.07
1	1	959	OMG	C4'-O4'-C1'	2.06	111.81	109.92
2	2	641	OMG	C5-C6-N1	2.05	117.97	114.07
1	1	1526	OMG	C5-C6-N1	2.01	117.91	114.07

There are no chirality outliers.

All (81) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	1	48	OMU	O4'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
1	1	681	A2M	O4'-C4'-C5'-O5'
1	1	681	A2M	C3'-C4'-C5'-O5'
1	1	1541	A2M	C1'-C2'-O2'-CM'
2	2	382	A2M	C1'-C2'-O2'-CM'
2	2	443	OMC	C2'-C1'-N1-C2
2	2	443	OMC	C2'-C1'-N1-C6
2	2	571	OMG	O4'-C4'-C5'-O5'
2	2	583	OMC	O4'-C4'-C5'-O5'
2	2	667	OMU	C1'-C2'-O2'-CM2
2	2	1230	OMG	C1'-C2'-O2'-CM2
2	2	1254	OMG	O4'-C4'-C5'-O5'
2	2	1254	OMG	C1'-C2'-O2'-CM2
2	2	1404	H2U	O4'-C1'-N1-C2
2	2	1404	H2U	O4'-C1'-N1-C6
7	7	7	OMU	C3'-C2'-O2'-CM2
7	7	7	OMU	O4'-C4'-C5'-O5'
1	1	48	OMU	C3'-C4'-C5'-O5'
1	1	1529	OMC	C3'-C4'-C5'-O5'
2	2	554	OMC	C3'-C4'-C5'-O5'
2	2	554	OMC	O4'-C4'-C5'-O5'
2	2	571	OMG	C3'-C4'-C5'-O5'
2	2	583	OMC	C3'-C4'-C5'-O5'
2	2	641	OMG	C3'-C4'-C5'-O5'
2	2	667	OMU	C3'-C4'-C5'-O5'
2	2	1186	A2M	C3'-C4'-C5'-O5'
2	2	1230	OMG	C3'-C4'-C5'-O5'
2	2	1318	OMC	C3'-C4'-C5'-O5'
7	7	7	OMU	C3'-C4'-C5'-O5'
1	1	955	A2M	O4'-C4'-C5'-O5'
1	1	955	A2M	C3'-C4'-C5'-O5'
1	1	1529	OMC	O4'-C4'-C5'-O5'
2	2	572	A2M	O4'-C4'-C5'-O5'
2	2	572	A2M	C3'-C4'-C5'-O5'
2	2	656	OMU	C3'-C4'-C5'-O5'
2	2	656	OMU	O4'-C4'-C5'-O5'
2	2	667	OMU	O4'-C4'-C5'-O5'
2	2	1079	OMG	O4'-C4'-C5'-O5'
2	2	1153	OMU	C3'-C4'-C5'-O5'
2	2	1186	A2M	O4'-C4'-C5'-O5'
2	2	1318	OMC	O4'-C4'-C5'-O5'
2	2	1254	OMG	C3'-C2'-O2'-CM2
2	2	1254	OMG	C3'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
2	2	1186	A2M	C4'-C5'-O5'-P
1	1	36	OMU	C3'-C4'-C5'-O5'
2	2	443	OMC	O4'-C4'-C5'-O5'
2	2	527	A2M	O4'-C4'-C5'-O5'
2	2	591	A2M	C3'-C4'-C5'-O5'
2	2	1079	OMG	C3'-C4'-C5'-O5'
1	1	36	OMU	O4'-C4'-C5'-O5'
1	1	678	A2M	O4'-C4'-C5'-O5'
1	1	847	OMU	C3'-C4'-C5'-O5'
1	1	847	OMU	O4'-C4'-C5'-O5'
1	1	1541	A2M	O4'-C4'-C5'-O5'
2	2	71	OMG	O4'-C4'-C5'-O5'
2	2	641	OMG	O4'-C4'-C5'-O5'
2	2	1153	OMU	O4'-C4'-C5'-O5'
2	2	1230	OMG	O4'-C4'-C5'-O5'
1	1	1542	OMG	C3'-C4'-C5'-O5'
2	2	71	OMG	C3'-C4'-C5'-O5'
1	1	847	OMU	C1'-C2'-O2'-CM2
1	1	1526	OMG	C1'-C2'-O2'-CM2
2	2	656	OMU	C1'-C2'-O2'-CM2
7	7	162	A2M	C1'-C2'-O2'-CM'
2	2	591	A2M	O4'-C4'-C5'-O5'
2	2	443	OMC	O4'-C1'-N1-C6
1	1	678	A2M	C3'-C2'-O2'-CM'
2	2	591	A2M	C3'-C2'-O2'-CM'
2	2	656	OMU	C4'-C5'-O5'-P
2	2	1249	OMC	C4'-C5'-O5'-P
2	2	443	OMC	O4'-C1'-N1-C2
7	7	7	OMU	C4'-C5'-O5'-P
1	1	955	A2M	C1'-C2'-O2'-CM'
1	1	681	A2M	C4'-C5'-O5'-P
1	1	1541	A2M	C3'-C4'-C5'-O5'
2	2	1249	OMC	C3'-C4'-C5'-O5'
1	1	1542	OMG	O4'-C4'-C5'-O5'
1	1	48	OMU	C2'-C1'-N1-C2
1	1	927	A2M	C4'-C5'-O5'-P
2	2	1404	H2U	C4'-C5'-O5'-P
2	2	1249	OMC	C2'-C1'-N1-C2

There are no ring outliers.

41 monomers are involved in 194 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	2	1404	H2U	2	0
1	1	1541	A2M	3	0
1	1	48	OMU	4	0
1	1	856	OMG	2	0
1	1	1526	OMG	2	0
1	1	927	A2M	3	0
2	2	583	OMC	1	0
1	1	959	OMG	9	0
2	2	591	A2M	7	0
1	1	1628	OMG	1	0
1	1	847	OMU	3	0
7	7	7	OMU	10	0
1	1	845	OMU	2	0
1	1	1529	OMC	6	0
1	1	695	OMC	3	0
2	2	572	A2M	2	0
2	2	443	OMC	7	0
2	2	1254	OMG	10	0
2	2	71	OMG	11	0
2	2	667	OMU	13	0
2	2	1160	OMC	3	0
2	2	628	A2M	4	0
2	2	534	OMG	4	0
2	2	554	OMC	3	0
1	1	678	A2M	2	0
1	1	36	OMU	14	0
2	2	1249	OMC	1	0
2	2	1153	OMU	6	0
2	2	655	OMG	7	0
2	2	382	A2M	2	0
2	2	527	A2M	13	0
1	1	681	A2M	2	0
2	2	1186	A2M	3	0
2	2	571	OMG	1	0
2	2	1078	OMU	11	0
2	2	1398	OMC	4	0
2	2	1230	OMG	2	0
2	2	1079	OMG	9	0
1	1	1542	OMG	2	0
2	2	1318	OMC	7	0
1	1	955	A2M	2	0

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 109 ligands modelled in this entry, 109 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

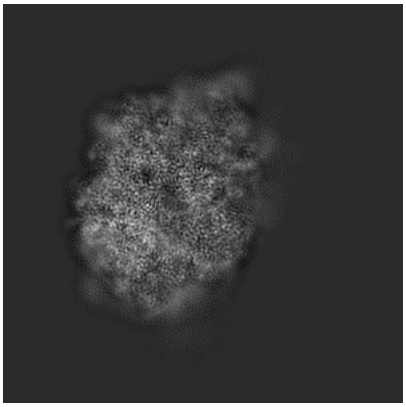
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-6583. These allow visual inspection of the internal detail of the map and identification of artifacts.

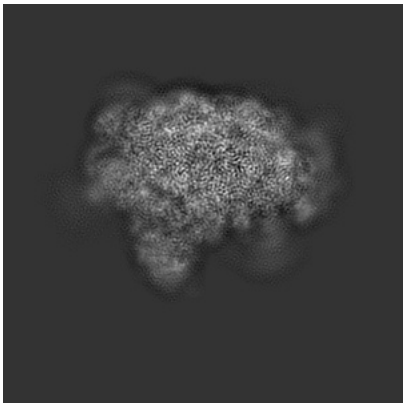
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

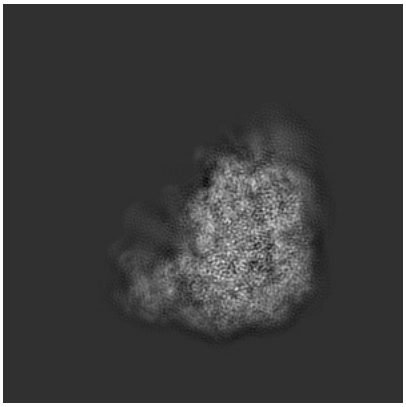
6.1.1 Primary map



X



Y

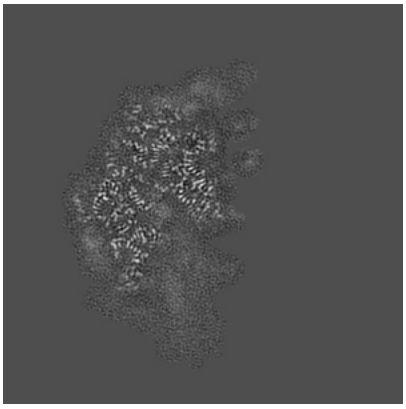


Z

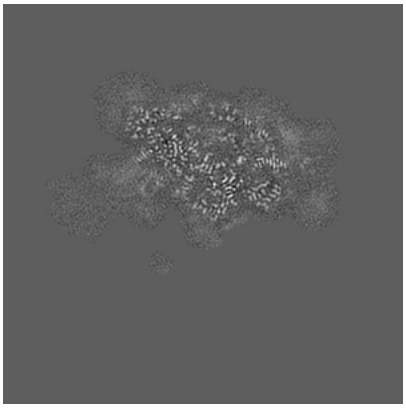
The images above show the map projected in three orthogonal directions.

6.2 Central slices

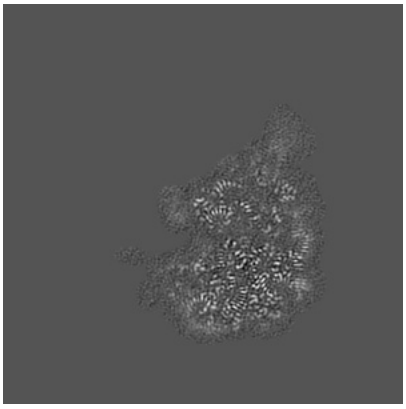
6.2.1 Primary map



X Index: 192



Y Index: 192

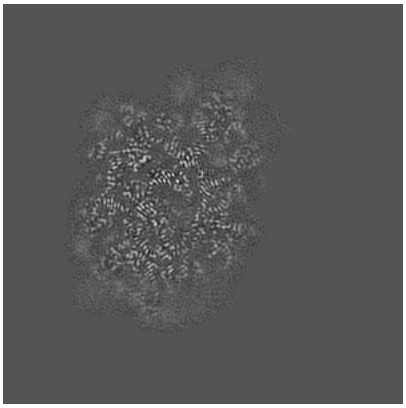


Z Index: 192

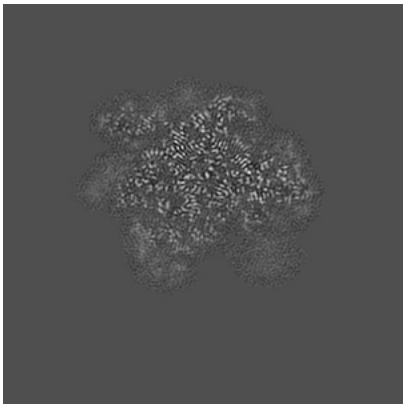
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

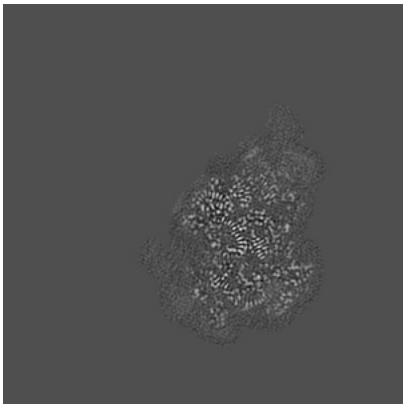
6.3.1 Primary map



X Index: 228



Y Index: 123

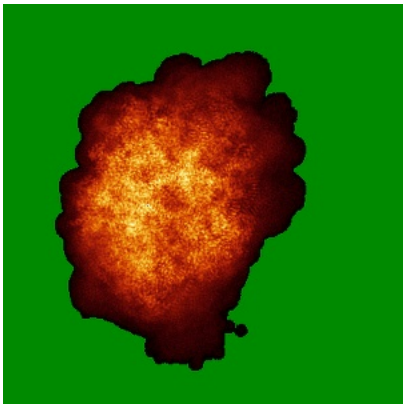


Z Index: 213

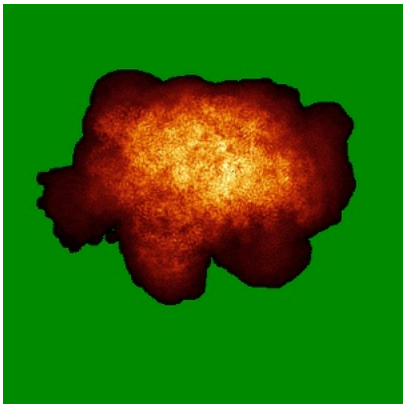
The images above show the largest variance slices of the map in three orthogonal directions.

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

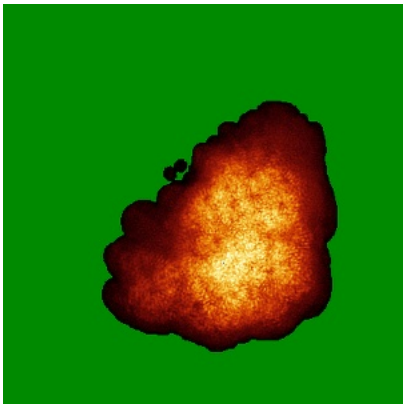
6.4.1 Primary map



X



Y



Z

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 0.02. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

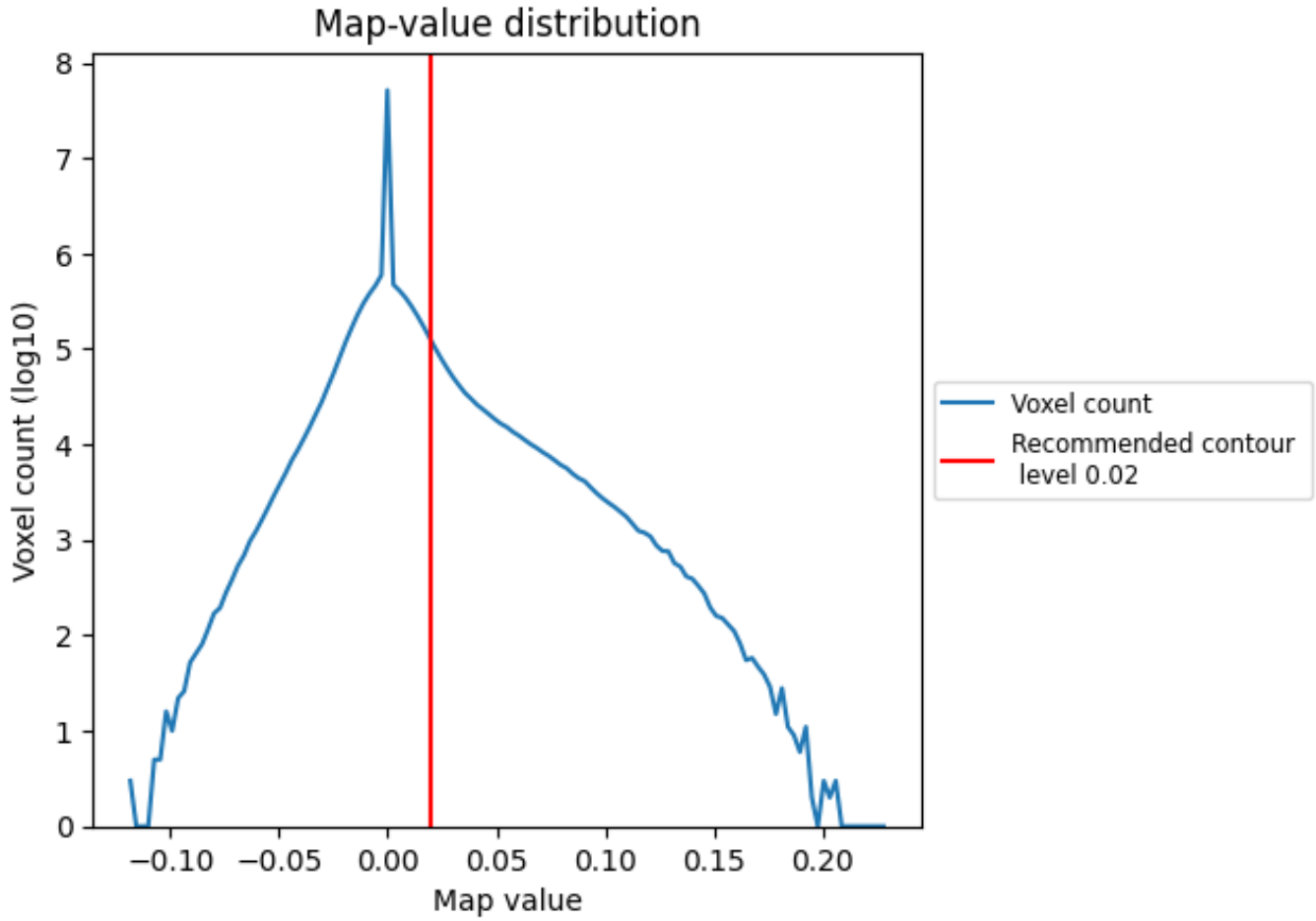
6.6 Mask visualisation (i)

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

7 Map analysis

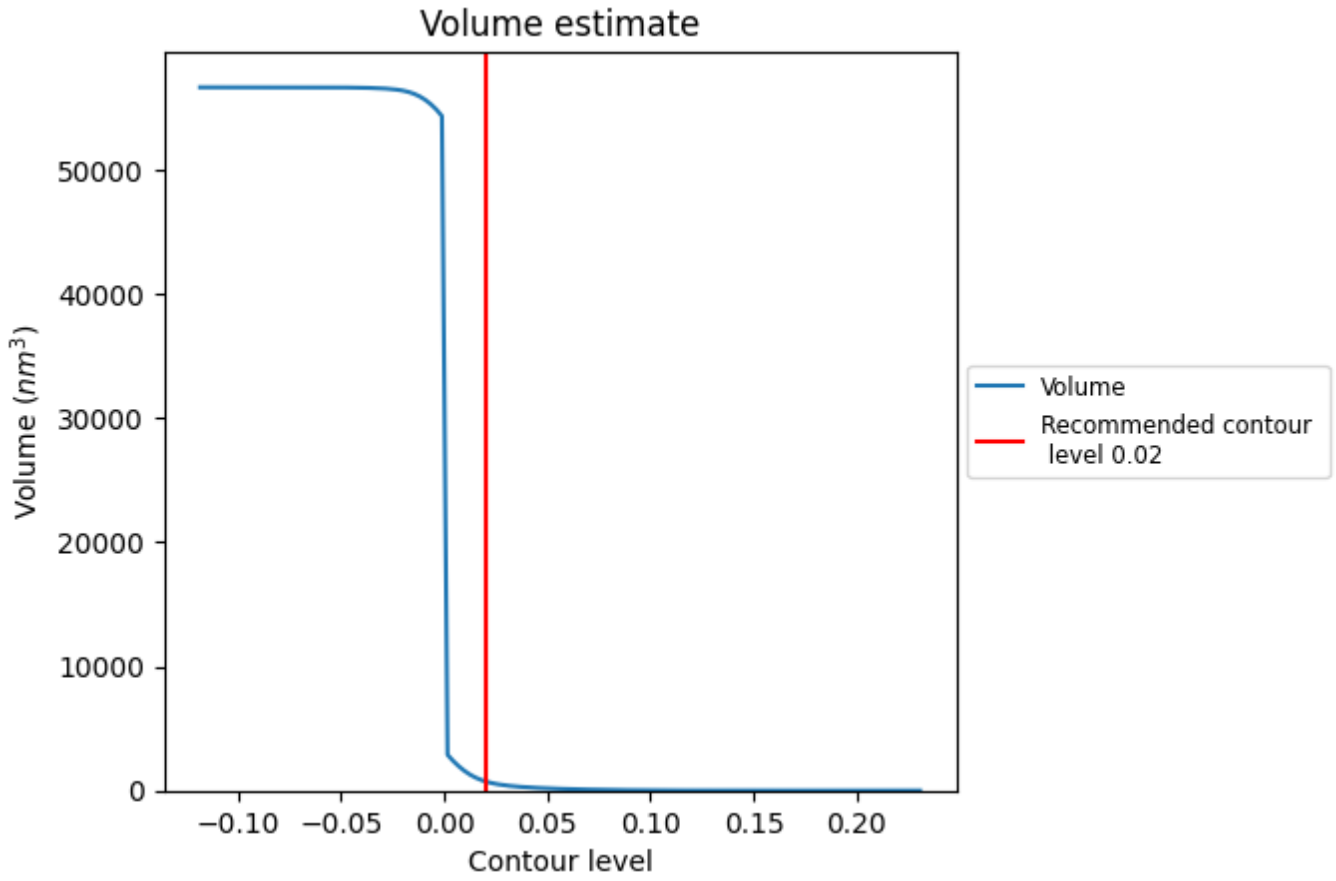
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

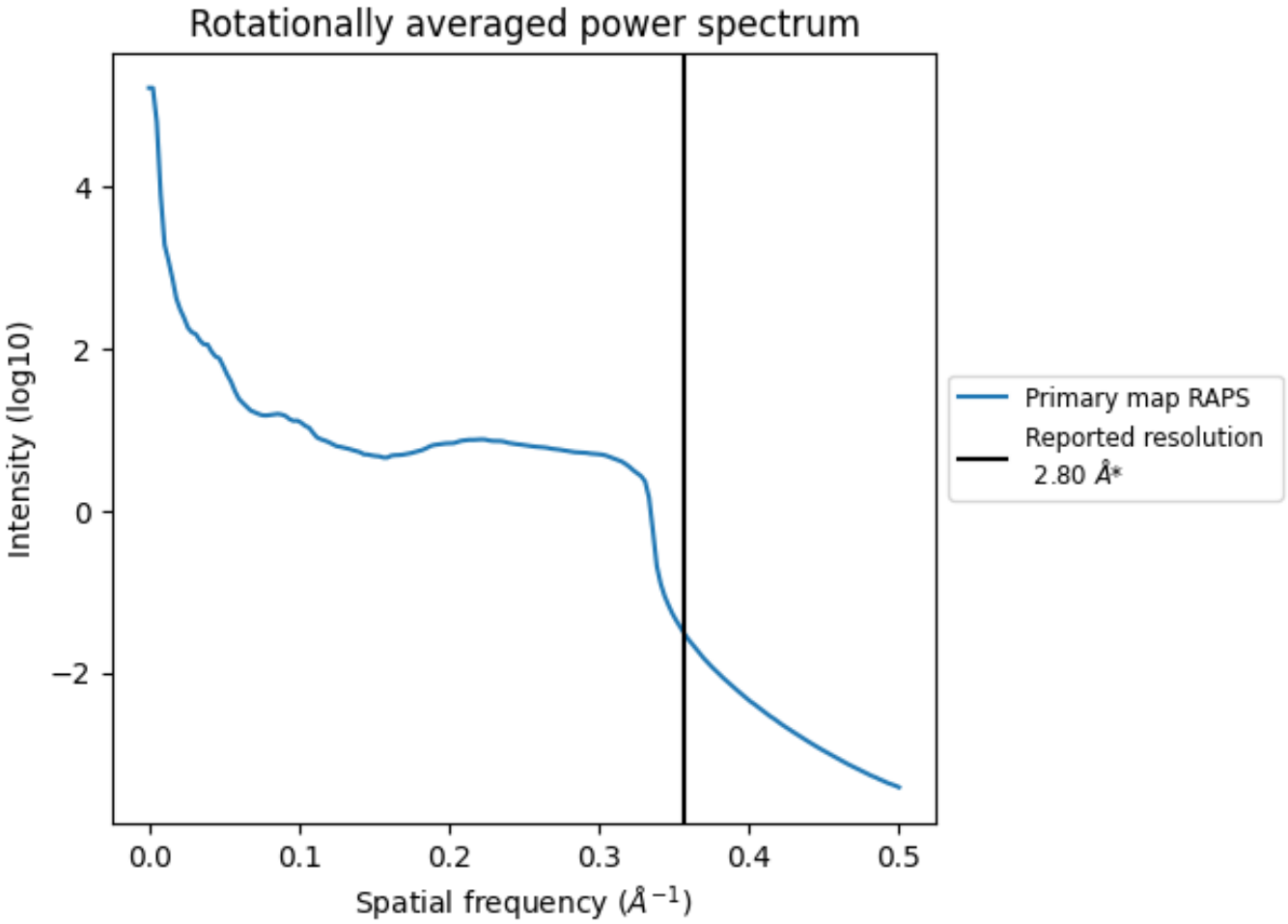
7.2 Volume estimate



The volume at the recommended contour level is 742 nm^3; this corresponds to an approximate mass of 670 kDa.

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

7.3 Rotationally averaged power spectrum (i)



*Reported resolution corresponds to spatial frequency of 0.357 $Å^{-1}$

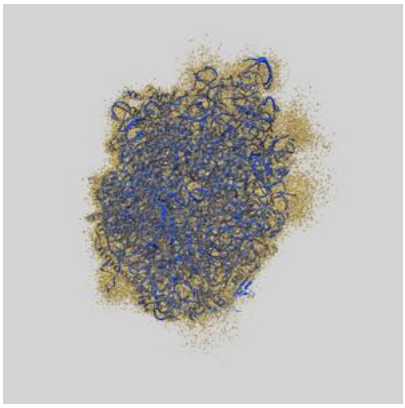
8 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

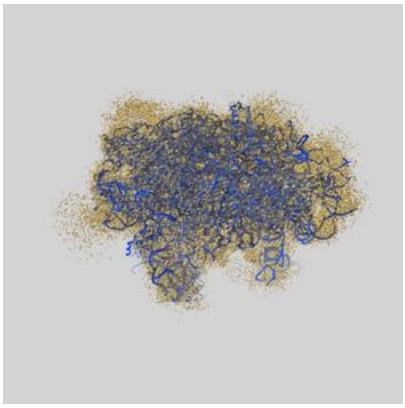
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-6583 and PDB model 3JCS. Per-residue inclusion information can be found in section 3 on page 15.

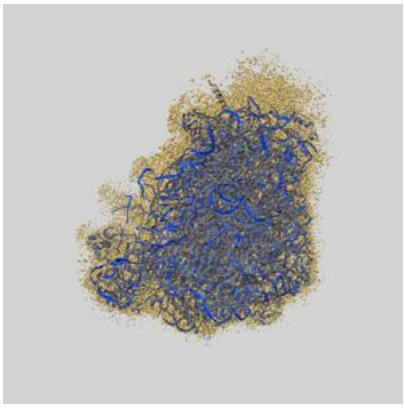
9.1 Map-model overlay



X



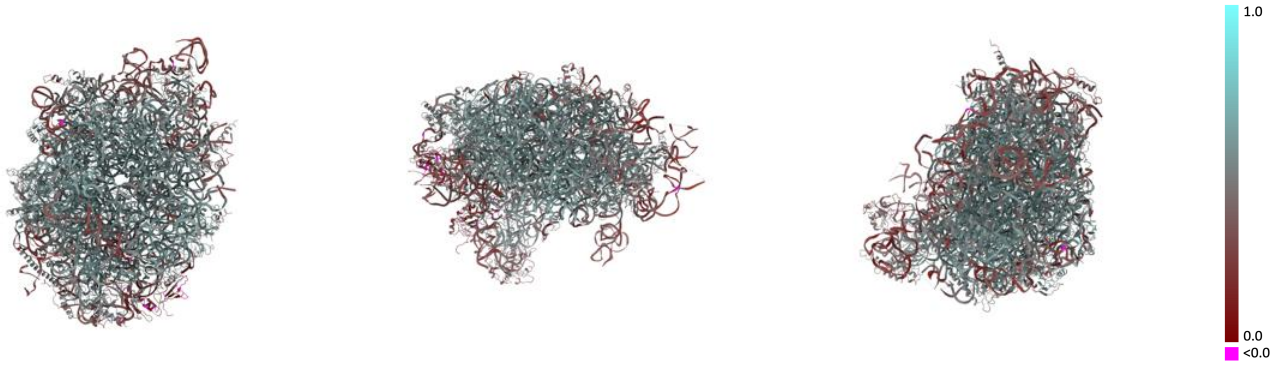
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.02 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

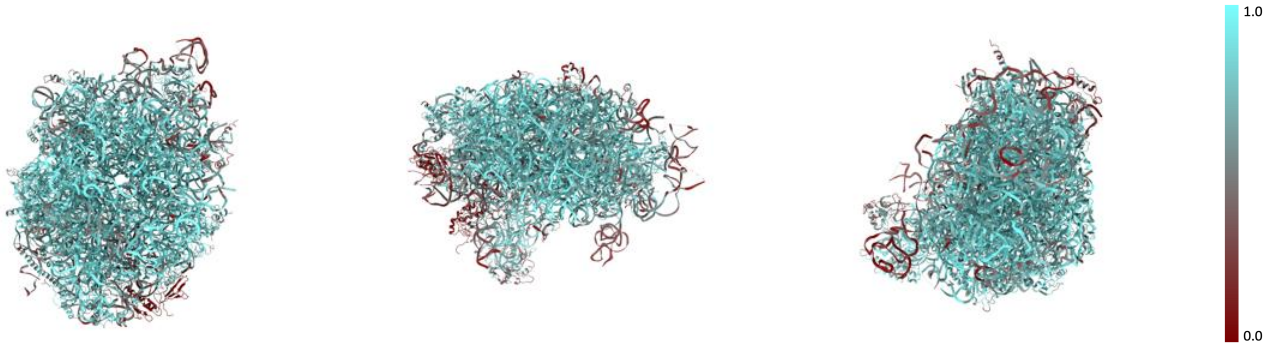
9.2 Q-score mapped to coordinate model



X Y Z

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

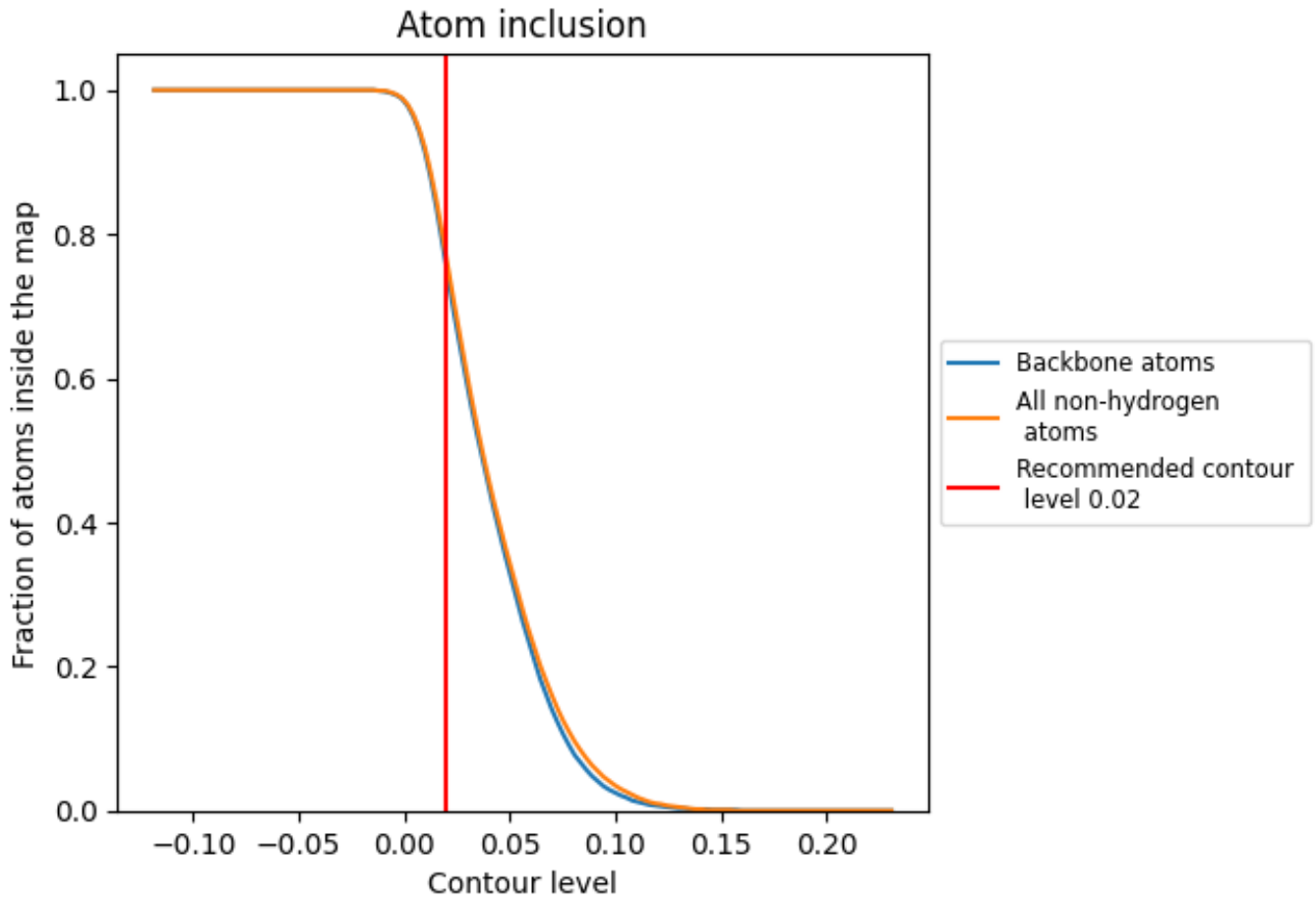
9.3 Atom inclusion mapped to coordinate model



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.02).

9.4 Atom inclusion (i)



At the recommended contour level, 76% of all backbone atoms, 77% 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 (0.02) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7680	0.4990
1	0.8180	0.5060
2	0.7560	0.4850
3	0.6910	0.4460
4	0.7950	0.4970
5	0.8880	0.5440
6	0.6720	0.3910
7	0.8930	0.5550
8	0.8060	0.4420
A	0.8580	0.5770
B	0.8240	0.5530
C	0.8480	0.5580
D	0.4590	0.3530
E	0.1210	0.2290
F	0.8040	0.5200
G	0.7570	0.5140
H	0.7840	0.5300
I	0.8460	0.5620
J	0.8230	0.5510
K	0.7090	0.4450
L	0.8400	0.5570
M	0.8660	0.5820
N	0.0710	0.2100
O	0.7580	0.4740
P	0.8270	0.5570
Q	0.7300	0.5080
R	0.8150	0.5220
S	0.7310	0.5060
T	0.8350	0.5590
U	0.4480	0.3960
V	0.8280	0.5500
W	0.8310	0.5460
X	0.7290	0.5210
Y	0.7680	0.4950
Z	0.6280	0.4930

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Chain	Atom inclusion	Q-score
a	0.8040	0.5310
b	0.8320	0.5530
c	0.8070	0.5410
d	0.6440	0.4540
e	0.7910	0.5220
f	0.8240	0.5580
g	0.8670	0.5780
h	0.7500	0.5290
i	0.7340	0.5140
j	0.8740	0.5930
k	0.5530	0.4250
l	0.8280	0.5680
m	0.7580	0.5320
n	0.6650	0.4980