



Full wwPDB EM Validation Report ⓘ

Mar 8, 2026 – 06:44 AM UTC

PDB ID : 7UG6 / pdb_00007ug6
EMDB ID : EMD-26485
Title : Cryo-EM structure of pre-60S ribosomal subunit, unmethylated G2922
Authors : Yelland, J.N.; Bravo, J.P.K.; Black, J.J.B.; Taylor, D.W.; Johnson, A.W.
Deposited on : 2022-03-24
Resolution : 2.90 Å(reported)

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

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

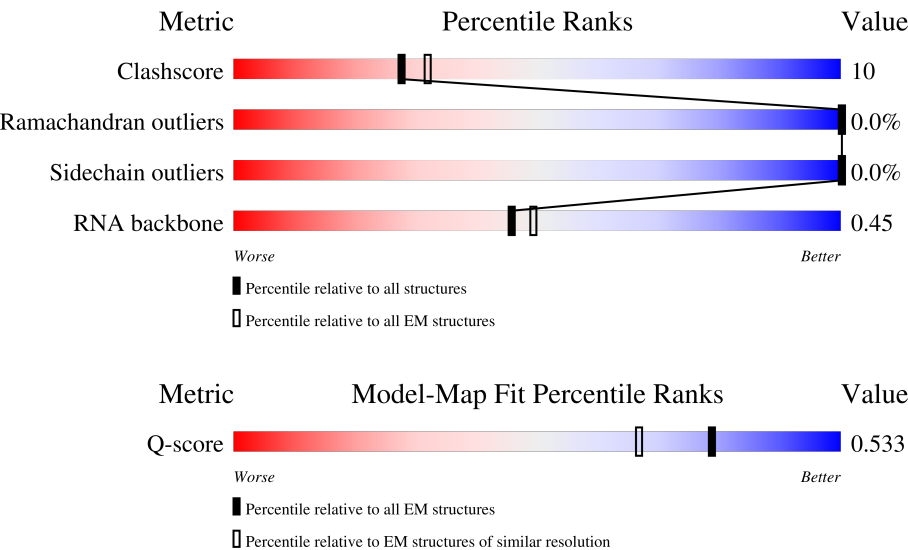
EMDB validation analysis : 0.0.1.dev132
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMD archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

1 Overall quality at a glance i

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

The reported resolution of this entry is 2.90 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



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

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

Mol	Chain	Length	Quality of chain
1	1	3396	18% 45% 34% 11% 10%
2	2	158	7% 49% 42% 8%
3	3	121	15% 52% 40% 8%

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Mol	Chain	Length	Quality of chain
4	7	105	
5	A	254	
6	B	387	
7	C	362	
8	D	297	
9	E	176	
10	F	244	
11	G	256	
12	H	191	
13	I	166	
14	J	174	
15	L	199	
16	M	138	
17	N	204	
18	O	199	
19	P	184	
20	Q	186	
21	R	189	
22	S	172	
23	T	160	
24	U	121	
25	V	137	
26	W	236	
27	X	142	
28	Y	127	

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Mol	Chain	Length	Quality of chain
29	Z	136	
30	a	149	
31	b	647	
32	c	175	
33	d	113	
34	e	130	
35	f	107	
36	g	121	
37	h	120	
38	i	100	
39	j	88	
40	k	78	
41	l	51	
42	m	519	
43	p	92	
44	q	165	
45	r	261	
46	s	520	
47	u	199	
48	v	344	
49	w	203	
50	x	514	
51	y	245	
52	z	106	

2 Entry composition

There are 54 unique types of molecules in this entry. The entry contains 140950 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 25S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	1	3058	Total	C	N	O	P	0	0
			65424	29223	11807	21337	3057		

- Molecule 2 is a RNA chain called 5.8S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	2	158	Total	C	N	O	P	0	0
			3350	1500	586	1107	157		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
3	3	121	Total	C	N	O	P	0	0
			2576	1152	461	843	120		

- Molecule 4 is a protein called 60S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	7	97	Total	C	N	O	S	0	0
			743	479	124	139	1		

- Molecule 5 is a protein called 60S ribosomal protein L2-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	A	213	Total	C	N	O	S	0	0
			1634	1023	326	284	1		

- Molecule 6 is a protein called 60S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	B	386	Total	C	N	O	S	0	0
			3082	1956	584	534	8		

- Molecule 7 is a protein called 60S ribosomal protein L4-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	C	361	Total	C	N	O	S	0	0
			2750	1730	522	495	3		

- Molecule 8 is a protein called 60S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	D	257	Total	C	N	O	S	0	0
			2073	1313	362	396	2		

- Molecule 9 is a protein called 60S ribosomal protein L6-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	E	156	Total	C	N	O	S	0	0
			1240	800	222	217	1		

- Molecule 10 is a protein called 60S ribosomal protein L7-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	F	222	Total	C	N	O	S	0	0
			1785	1151	324	309	1		

- Molecule 11 is a protein called 60S ribosomal protein L8-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	G	233	Total	C	N	O	S	0	0
			1818	1159	326	330	3		

- Molecule 12 is a protein called 60S ribosomal protein L9-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	H	191	Total	C	N	O	S	0	0
			1519	963	274	278	4		

- Molecule 13 is a protein called Bud site selection protein 20.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	I	111	Total	C	N	O	S	0	0
			905	567	170	164	4		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
I	112	LEU	VAL	conflict	UNP Q08004

- Molecule 14 is a protein called 60S ribosomal protein L11-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	J	169	Total	C	N	O	S	0	0
			1354	847	253	250	4		

- Molecule 15 is a protein called 60S ribosomal protein L13-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	L	187	Total	C	N	O		0	0
			1499	934	307	258			

- Molecule 16 is a protein called 60S ribosomal protein L14-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	M	137	Total	C	N	O	S	0	0
			1060	678	200	180	2		

- Molecule 17 is a protein called 60S ribosomal protein L15-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	N	203	Total	C	N	O	S	0	0
			1721	1077	361	282	1		

- Molecule 18 is a protein called 60S ribosomal protein L16-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	O	197	Total	C	N	O	S	0	0
			1556	1003	289	263	1		

- Molecule 19 is a protein called 60S ribosomal protein L17-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	P	183	Total	C	N	O		0	0
			1443	896	287	260			

- Molecule 20 is a protein called 60S ribosomal protein L18-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	Q	134	Total	C	N	O	S	0	0
			1035	659	196	179	1		

- Molecule 21 is a protein called 60S ribosomal protein L19-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	R	156	Total	C	N	O	S	0	0
			1258	781	265	212			

- Molecule 22 is a protein called 60S ribosomal protein L20-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	S	171	Total	C	N	O	S	0	0
			1438	925	266	244	3		

- Molecule 23 is a protein called 60S ribosomal protein L21-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	T	119	Total	C	N	O	S	0	0
			943	595	180	165	3		

- Molecule 24 is a protein called 60S ribosomal protein L22-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	U	106	Total	C	N	O	S	0	0
			844	545	138	161			

- Molecule 25 is a protein called 60S ribosomal protein L23-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	V	136	Total	C	N	O	S	0	0
			1004	628	189	180	7		

- Molecule 26 is a protein called Ribosome assembly factor MRT4.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	W	234	Total	C	N	O	S	0	0
			1885	1194	323	362	6		

- Molecule 27 is a protein called 60S ribosomal protein L25.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	X	141	Total	C	N	O	S	0	0
			1101	705	196	198	2		

- Molecule 28 is a protein called 60S ribosomal protein L26-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	Y	126	Total	C	N	O		0	0
			994	625	192	177			

- Molecule 29 is a protein called 60S ribosomal protein L27-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	Z	135	Total	C	N	O		0	0
			1093	710	202	181			

- Molecule 30 is a protein called 60S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	a	93	Total	C	N	O	S	0	0
			736	479	130	126	1		

- Molecule 31 is a protein called Nucleolar GTP-binding protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	b	514	Total	C	N	O	S	0	0
			4169	2630	745	773	21		

- Molecule 32 is a protein called Ribosome biogenesis protein ALB1.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	c	92	Total	C	N	O		0	0
			743	460	152	131			

- Molecule 33 is a protein called 60S ribosomal protein L31-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	d	107	Total	C	N	O	S	0	0
			873	553	165	154	1		

- Molecule 34 is a protein called 60S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	e	127	Total	C	N	O	S	0	0
			1020	647	205	167	1		

- Molecule 35 is a protein called 60S ribosomal protein L33-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	f	106	Total	C	N	O	S	0	0
			851	540	165	145	1		

- Molecule 36 is a protein called 60S ribosomal protein L34-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	g	112	Total	C	N	O	S	0	0
			881	546	179	152	4		

- Molecule 37 is a protein called 60S ribosomal protein L35-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	h	119	Total	C	N	O	S	0	0
			970	615	186	168	1		

- Molecule 38 is a protein called 60S ribosomal protein L36-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	i	99	Total	C	N	O	S	0	0
			772	481	156	133	2		

- Molecule 39 is a protein called 60S ribosomal protein L37-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	j	87	Total	C	N	O	S	0	0
			682	414	148	115	5		

- Molecule 40 is a protein called 60S ribosomal protein L38.

Mol	Chain	Residues	Atoms				AltConf	Trace
40	k	77	Total	C	N	O	0	0
			613	391	115	107		

- Molecule 41 is a protein called 60S ribosomal protein L39.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	l	50	Total	C	N	O	S	0	0
			437	272	97	66	2		

- Molecule 42 is a protein called Nucleolar GTP-binding protein 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	m	469	Total	C	N	O	S	0	0
			3774	2381	685	699	9		

There are 33 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
m	487	GLY	-	expression tag	UNP P53742
m	488	SER	-	expression tag	UNP P53742
m	489	ASP	-	expression tag	UNP P53742
m	490	TYR	-	expression tag	UNP P53742
m	491	LYS	-	expression tag	UNP P53742
m	492	ASP	-	expression tag	UNP P53742
m	493	ASP	-	expression tag	UNP P53742
m	494	ASP	-	expression tag	UNP P53742
m	495	ASP	-	expression tag	UNP P53742
m	496	LYS	-	expression tag	UNP P53742
m	497	ASP	-	expression tag	UNP P53742
m	498	TYR	-	expression tag	UNP P53742
m	499	LYS	-	expression tag	UNP P53742
m	500	ASP	-	expression tag	UNP P53742
m	501	ASP	-	expression tag	UNP P53742
m	502	ASP	-	expression tag	UNP P53742
m	503	ASP	-	expression tag	UNP P53742
m	504	LYS	-	expression tag	UNP P53742
m	505	ASP	-	expression tag	UNP P53742
m	506	TYR	-	expression tag	UNP P53742
m	507	LYS	-	expression tag	UNP P53742
m	508	ASP	-	expression tag	UNP P53742
m	509	ASP	-	expression tag	UNP P53742
m	510	ASP	-	expression tag	UNP P53742
m	511	ASP	-	expression tag	UNP P53742
m	512	LYS	-	expression tag	UNP P53742
m	513	GLY	-	expression tag	UNP P53742
m	514	HIS	-	expression tag	UNP P53742
m	515	HIS	-	expression tag	UNP P53742
m	516	HIS	-	expression tag	UNP P53742
m	517	HIS	-	expression tag	UNP P53742

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Chain	Residue	Modelled	Actual	Comment	Reference
m	518	HIS	-	expression tag	UNP P53742
m	519	HIS	-	expression tag	UNP P53742

- Molecule 43 is a protein called 60S ribosomal protein L43-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	p	91	Total	C	N	O	S	0	0
			695	429	138	122	6		

- Molecule 44 is a protein called 60S ribosomal protein L12-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	q	126	Total	C	N	O	S	0	0
			961	606	171	182	2		

- Molecule 45 is a protein called Ribosome biogenesis protein NSA2.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	r	230	Total	C	N	O	S	0	0
			1861	1177	352	325	7		

- Molecule 46 is a protein called Nuclear GTP-binding protein NUG1.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	s	69	Total	C	N	O	S	0	0
			573	359	113	98	3		

- Molecule 47 is a protein called Ribosome biogenesis protein RLP24.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	u	150	Total	C	N	O	S	0	0
			1265	793	253	210	9		

- Molecule 48 is a protein called Ribosome biogenesis protein RPF2.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	v	287	Total	C	N	O	S	0	0
			2318	1482	408	412	16		

- Molecule 49 is a protein called Regulator of ribosome biosynthesis.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	w	179	Total	C	N	O	S	0	0
			1425	896	258	266	5		

- Molecule 50 is a protein called Ribosome assembly protein 4.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	x	488	Total	C	N	O	S	0	0
			3808	2398	677	712	21		

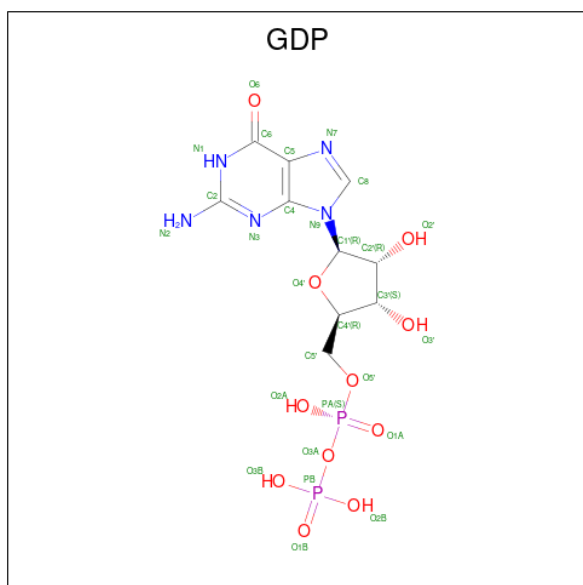
- Molecule 51 is a protein called Eukaryotic translation initiation factor 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	y	228	Total	C	N	O	S	0	0
			1723	1068	299	349	7		

- Molecule 52 is a protein called UPF0642 protein YBL028C.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	z	77	Total	C	N	O	S	0	0
			644	403	130	110	1		

- Molecule 53 is GUANOSINE-5'-DIPHOSPHATE (CCD ID: GDP) (formula: $C_{10}H_{15}N_5O_{11}P_2$) (labeled as "Ligand of Interest" by depositor).



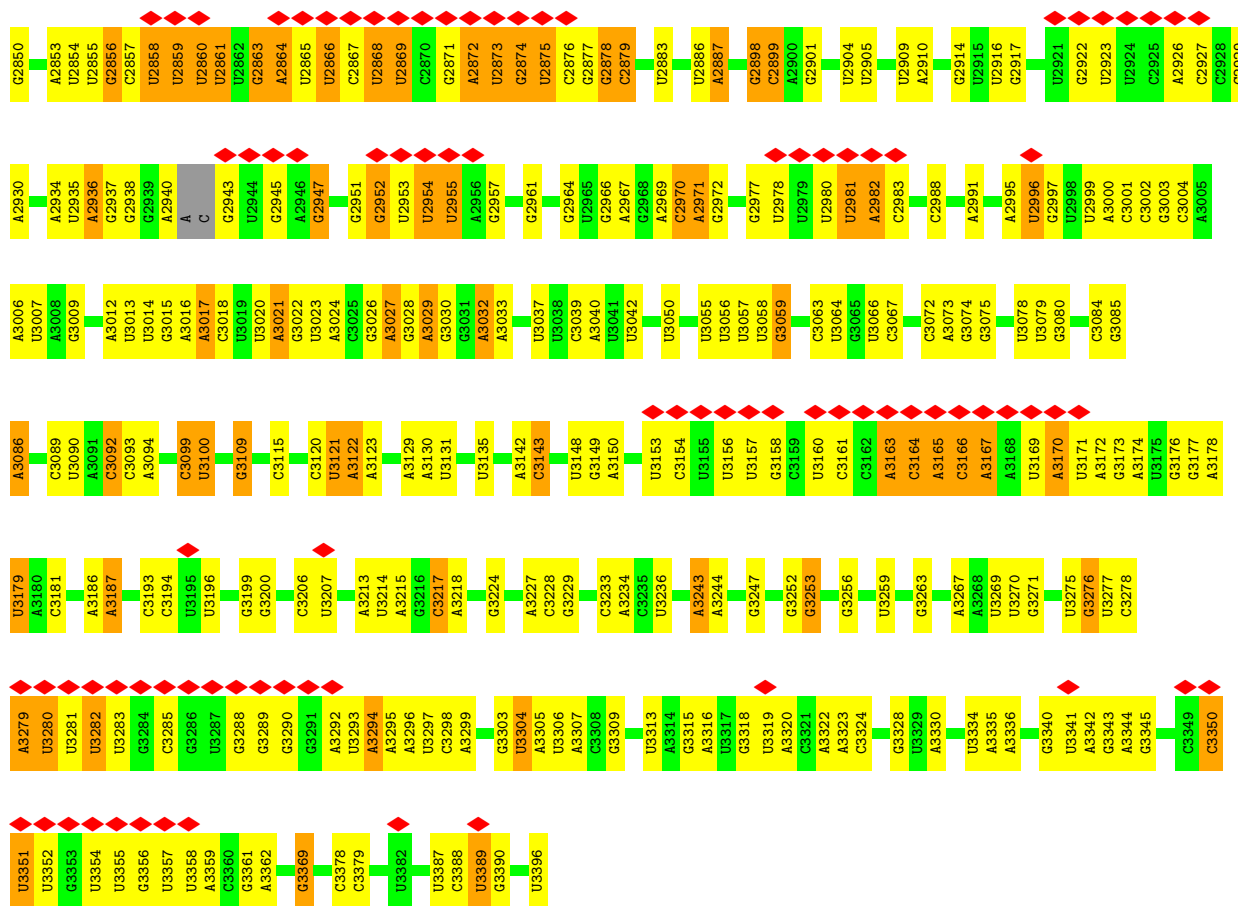
Mol	Chain	Residues	Atoms					AltConf
53	m	1	Total	C	N	O	P	0
			28	10	5	11	2	

- Molecule 54 is MAGNESIUM ION (CCD ID: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

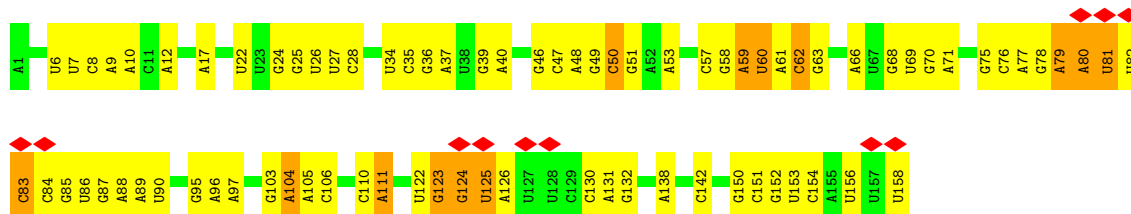
Mol	Chain	Residues	Atoms		AltConf
54	m	1	Total 1	Mg 1	0



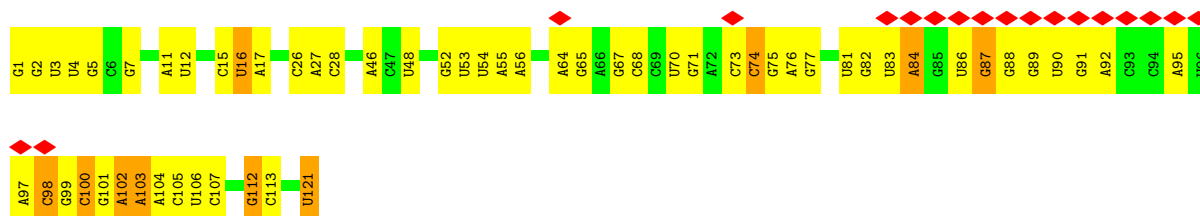




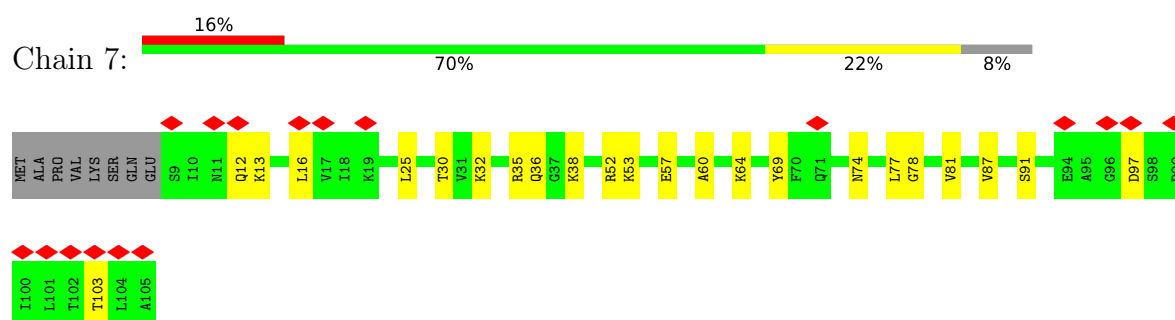
• Molecule 2: 5.8S rRNA



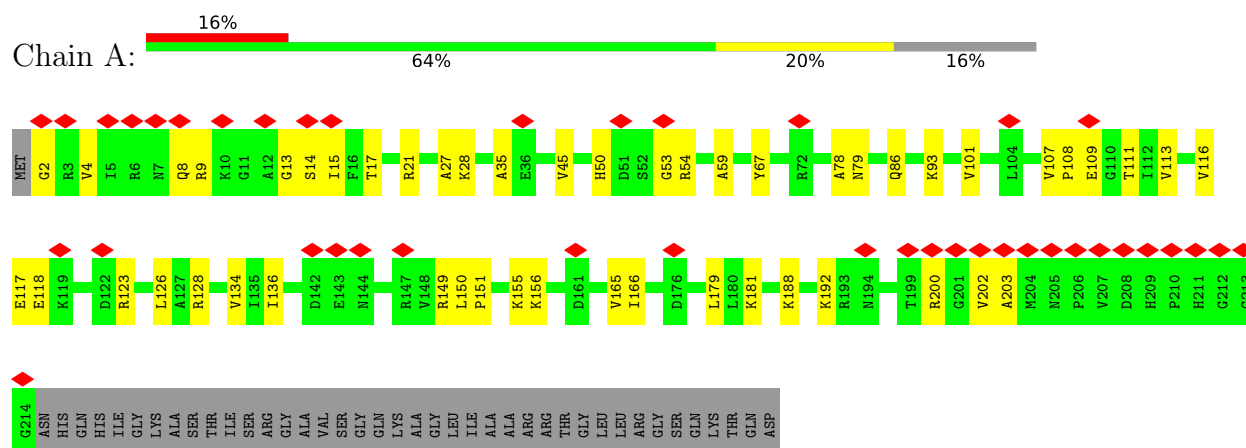
• Molecule 3: 5S rRNA



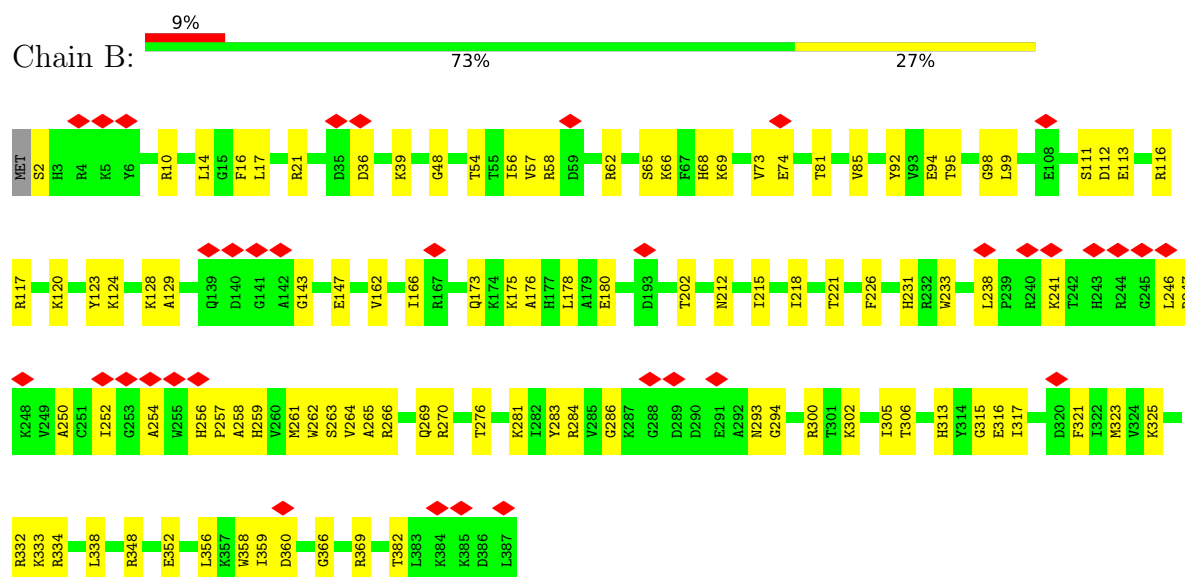
• Molecule 4: 60S ribosomal protein L30



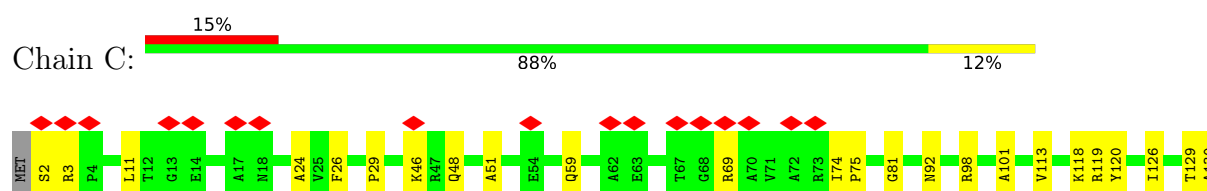
• Molecule 5: 60S ribosomal protein L2-A

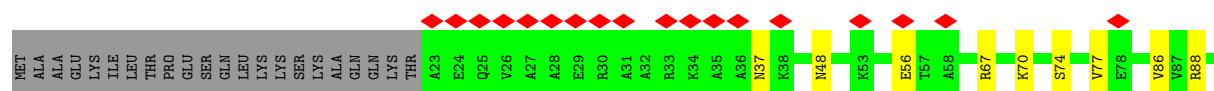


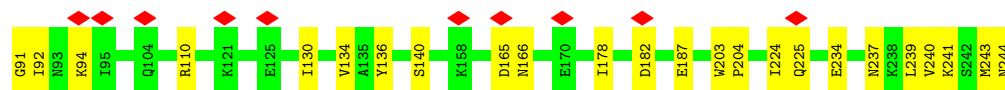
• Molecule 6: 60S ribosomal protein L3



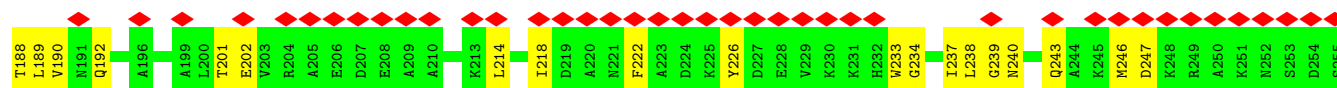
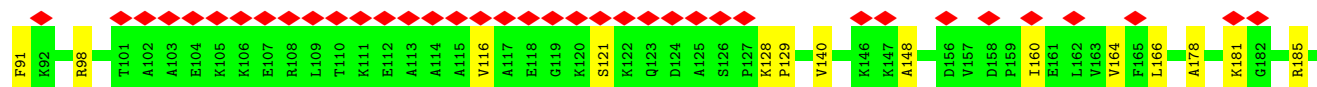
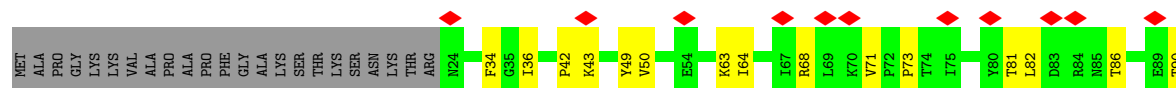
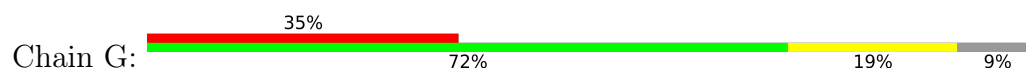
• Molecule 7: 60S ribosomal protein L4-A



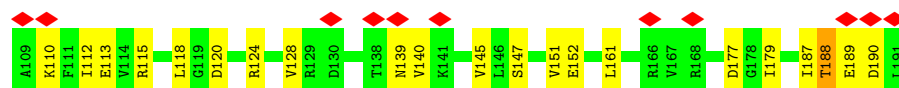
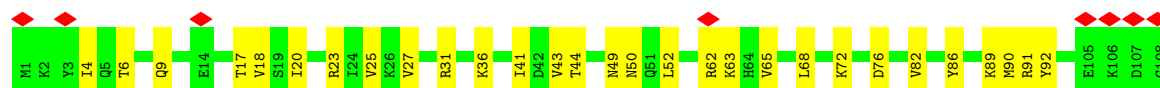
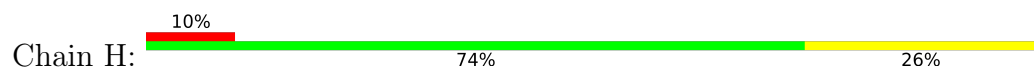




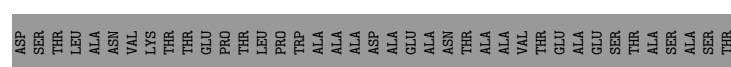
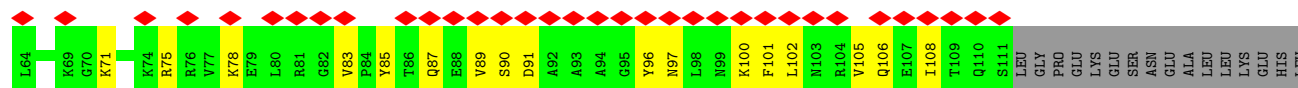
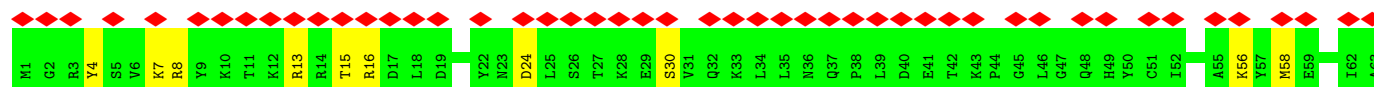
• Molecule 11: 60S ribosomal protein L8-A



• Molecule 12: 60S ribosomal protein L9-A

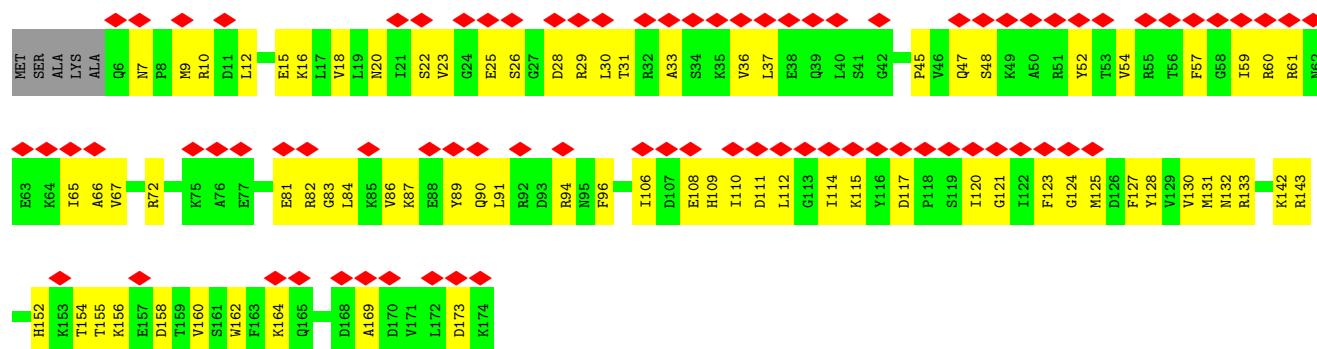


• Molecule 13: Bud site selection protein 20

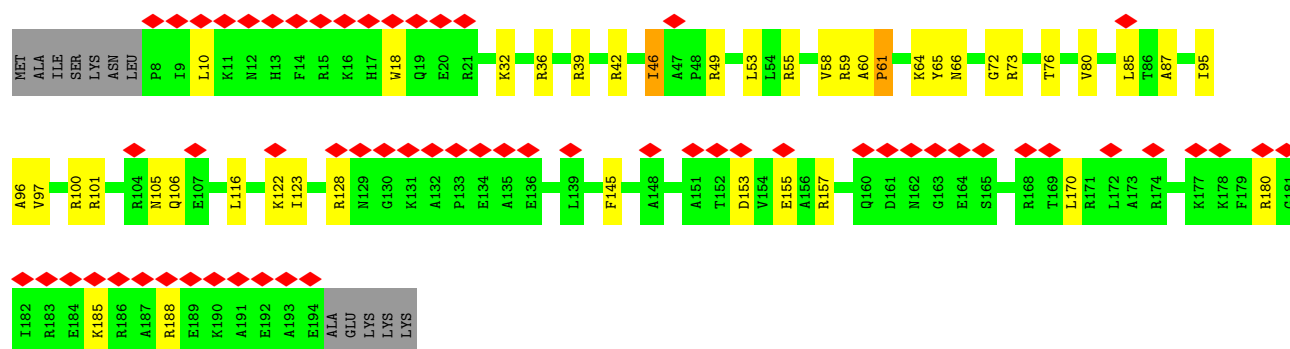


• Molecule 14: 60S ribosomal protein L11-A

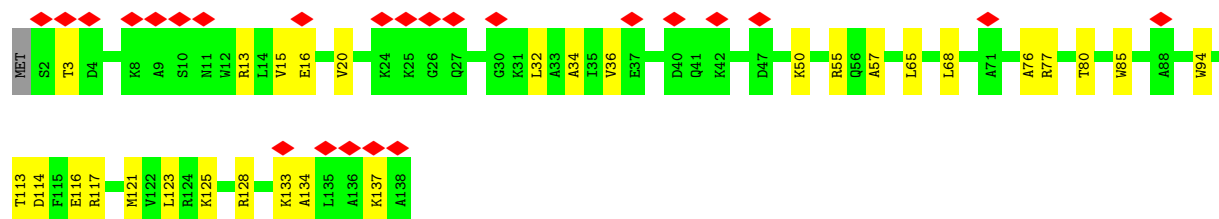




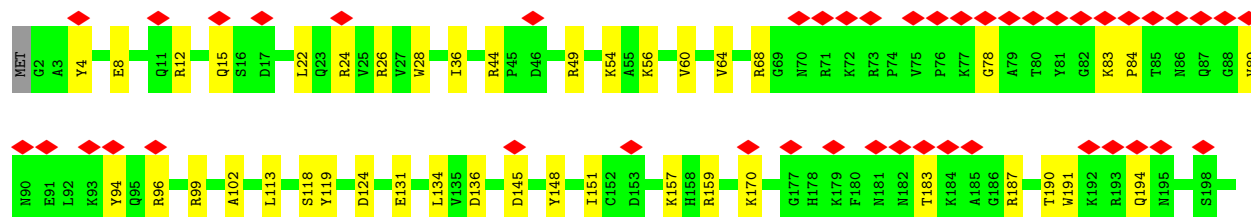
Chain L: 31% 73% 20% 6%



Chain M: 17% 78% 21%

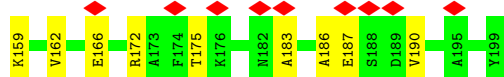
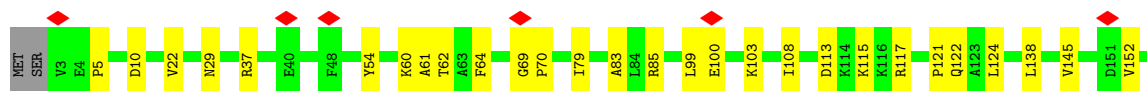
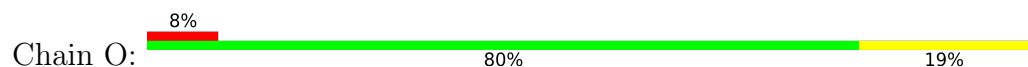


Chain N: 23% 78% 21%

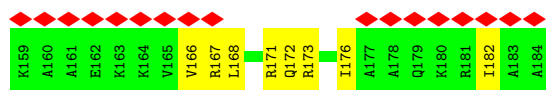
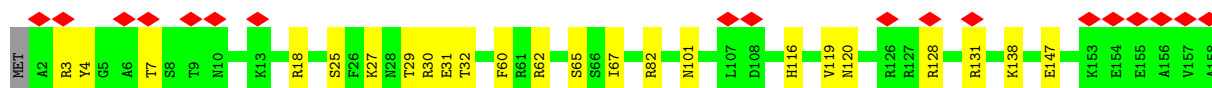
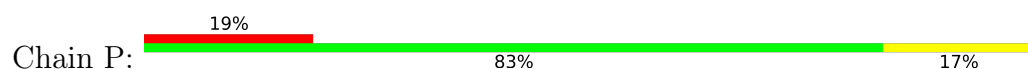




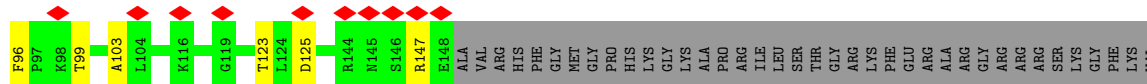
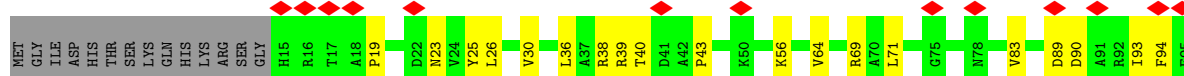
- Molecule 18: 60S ribosomal protein L16-A



- Molecule 19: 60S ribosomal protein L17-A



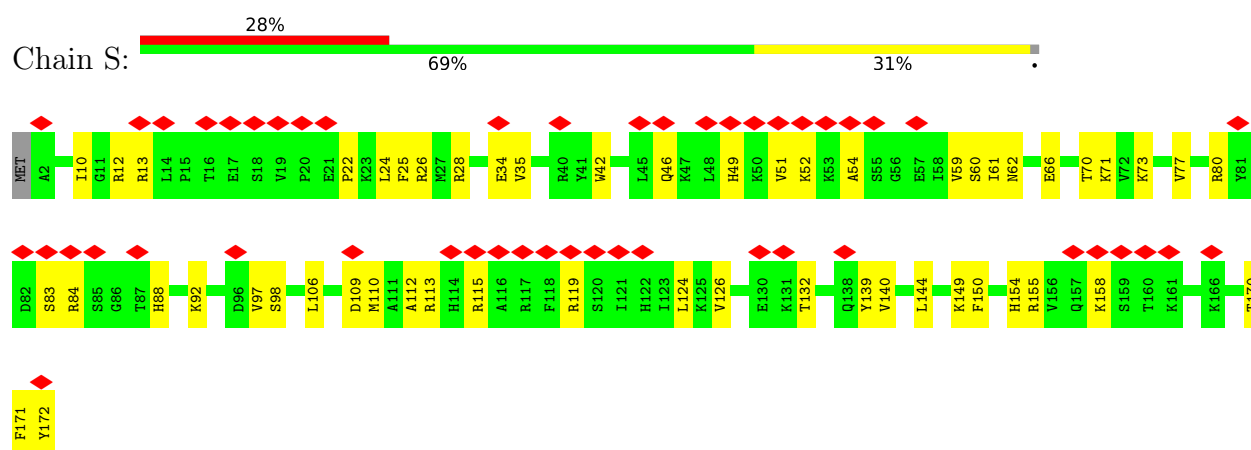
- Molecule 20: 60S ribosomal protein L18-A



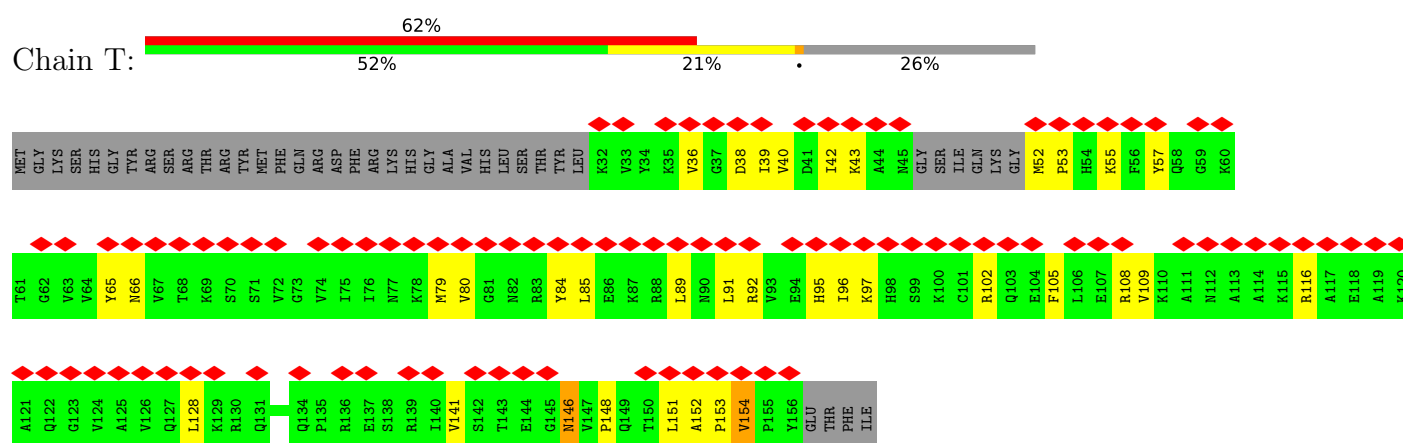
- Molecule 21: 60S ribosomal protein L19-A



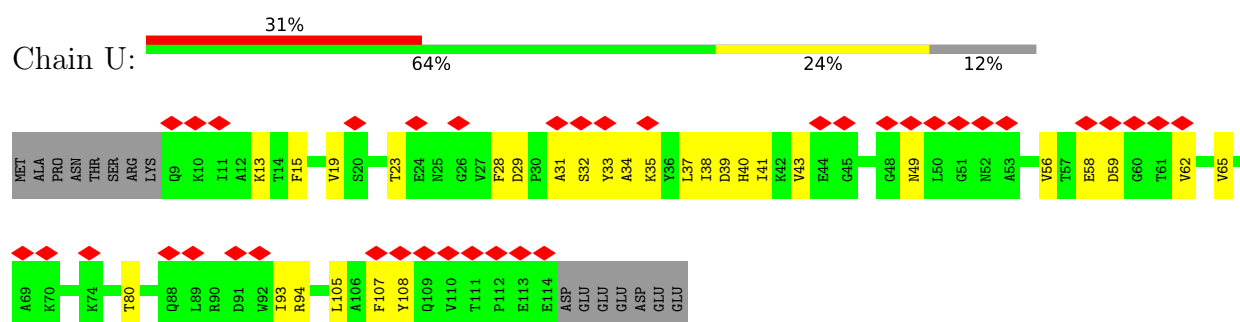
- Molecule 22: 60S ribosomal protein L20-A



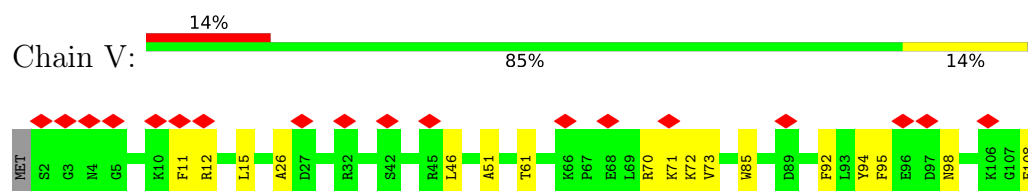
• Molecule 23: 60S ribosomal protein L21-A



• Molecule 24: 60S ribosomal protein L22-A

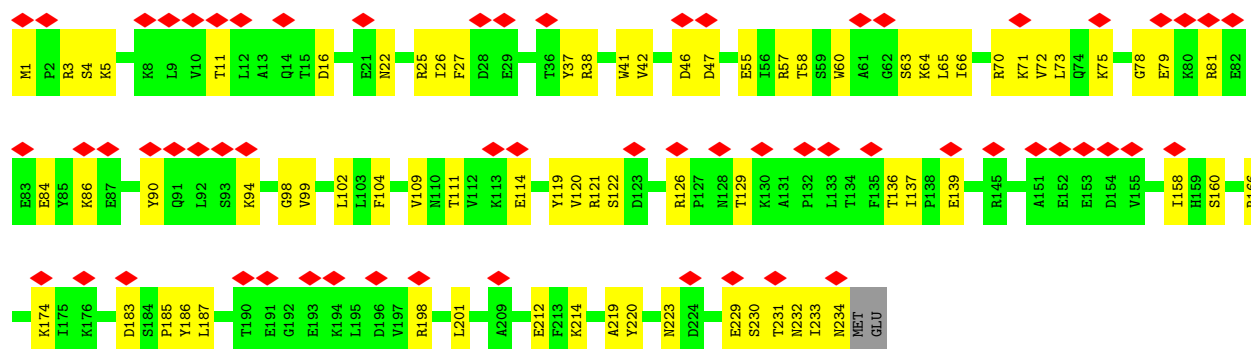


• Molecule 25: 60S ribosomal protein L23-A

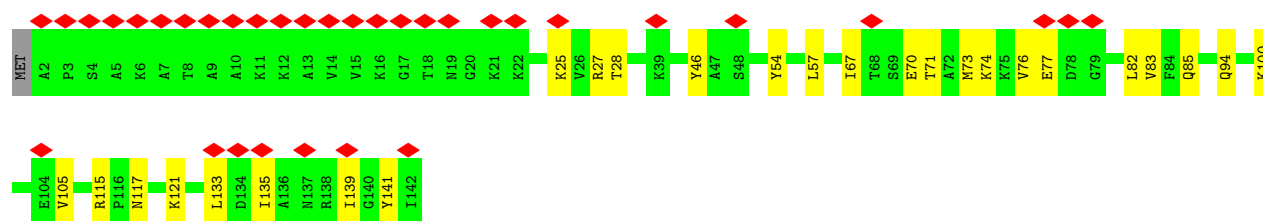
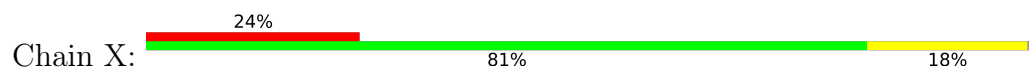


• Molecule 26: Ribosome assembly factor MRT4

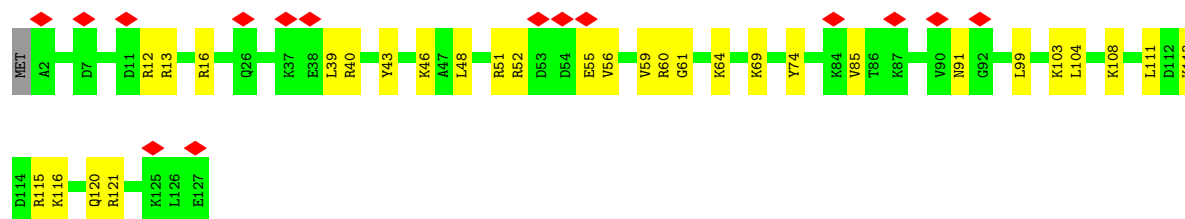
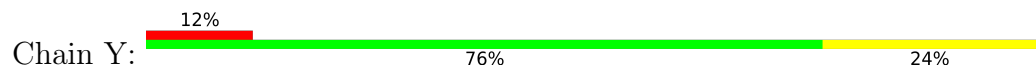




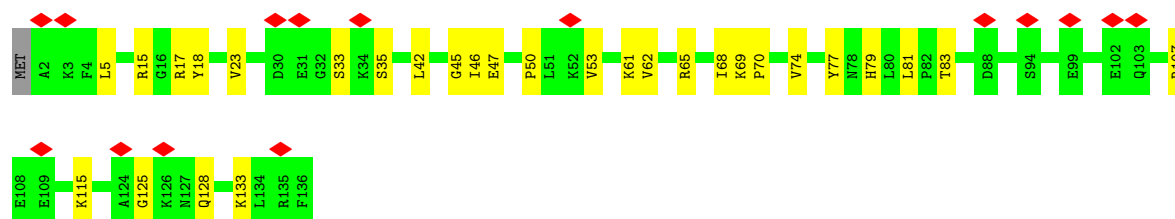
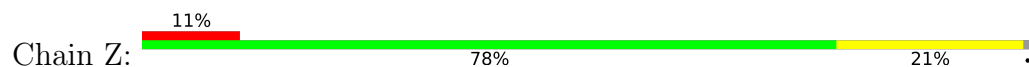
• Molecule 27: 60S ribosomal protein L25



• Molecule 28: 60S ribosomal protein L26-A

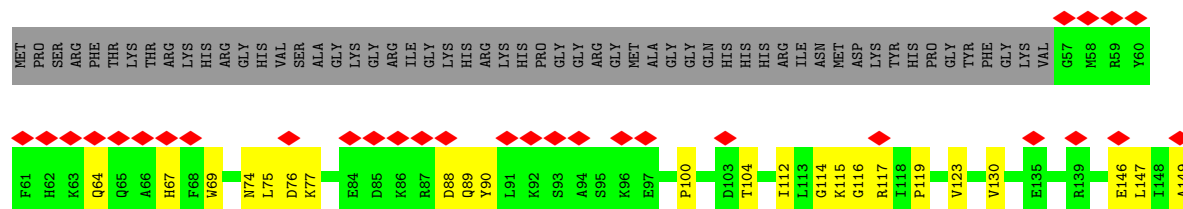


• Molecule 29: 60S ribosomal protein L27-A

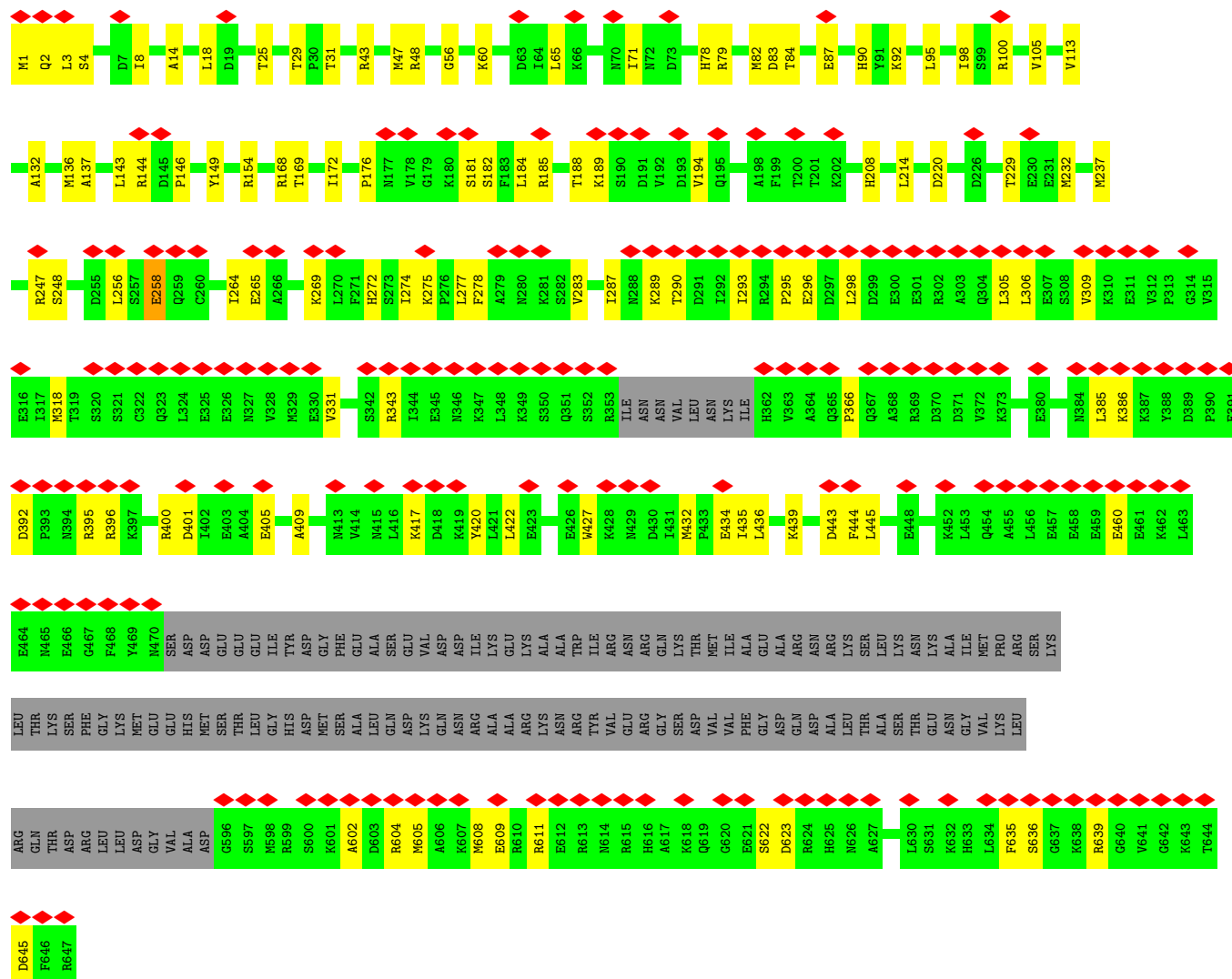


• Molecule 30: 60S ribosomal protein L28





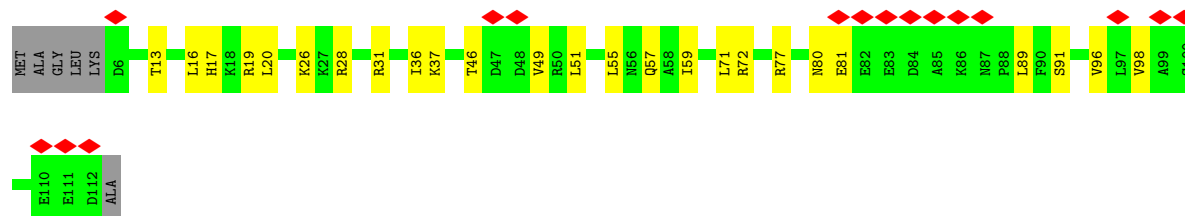
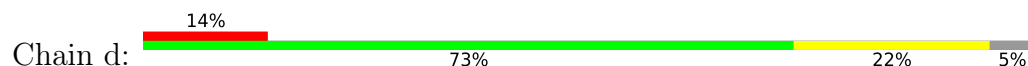
• Molecule 31: Nucleolar GTP-binding protein 1



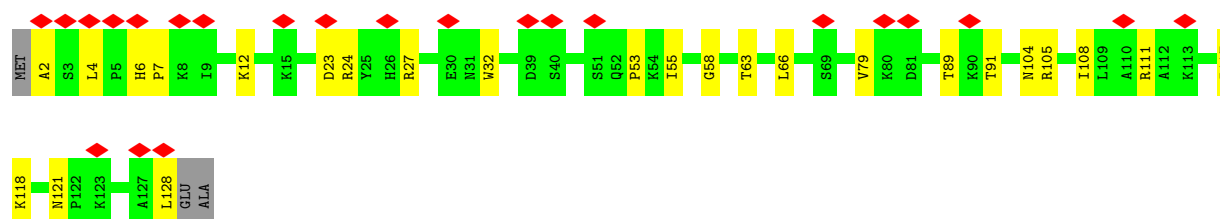
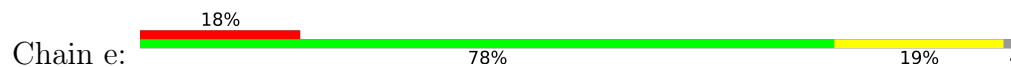
• Molecule 32: Ribosome biogenesis protein ALB1



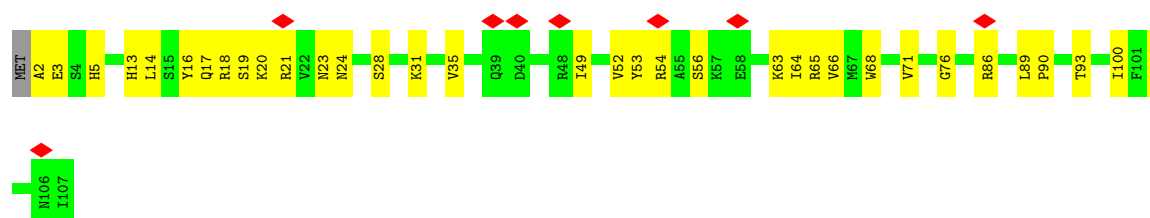
- Molecule 33: 60S ribosomal protein L31-A



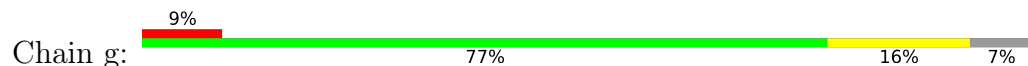
- Molecule 34: 60S ribosomal protein L32



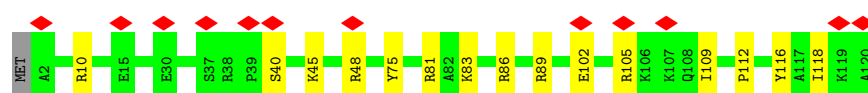
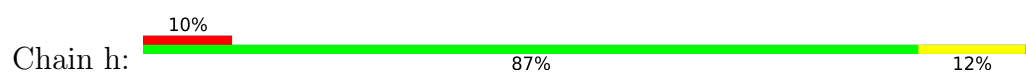
- Molecule 35: 60S ribosomal protein L33-A



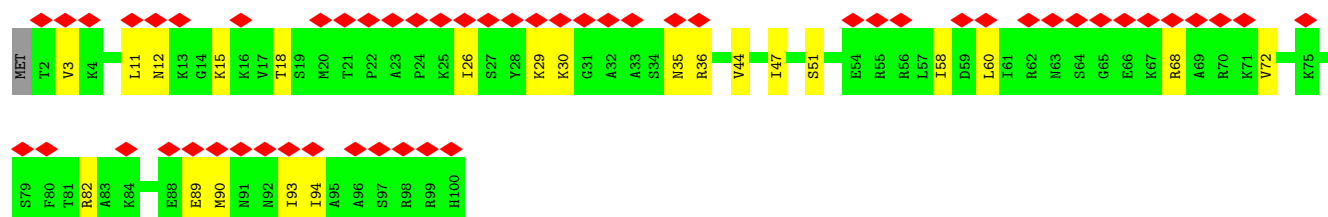
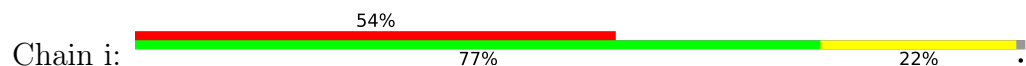
- Molecule 36: 60S ribosomal protein L34-A



- Molecule 37: 60S ribosomal protein L35-A



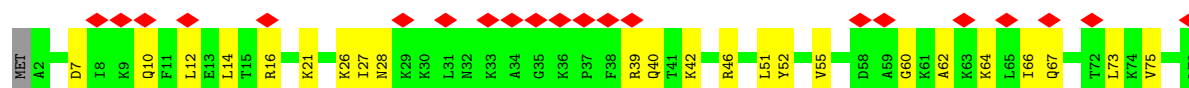
• Molecule 38: 60S ribosomal protein L36-A



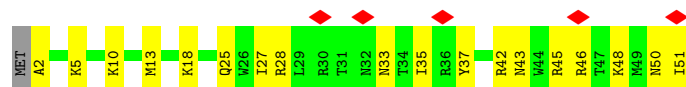
• Molecule 39: 60S ribosomal protein L37-A



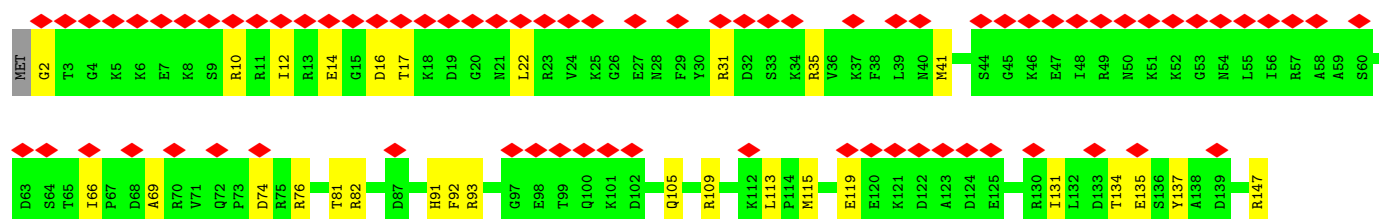
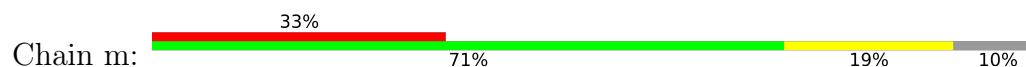
• Molecule 40: 60S ribosomal protein L38

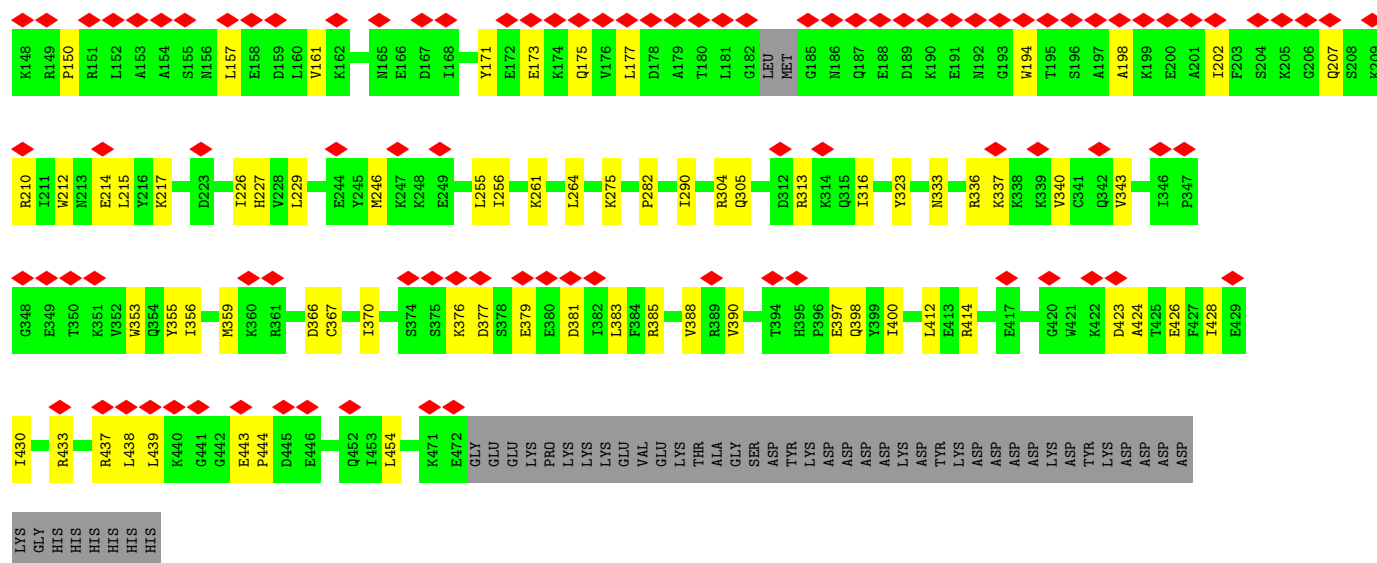


• Molecule 41: 60S ribosomal protein L39

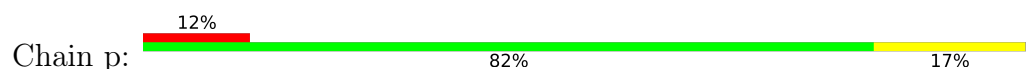


• Molecule 42: Nucleolar GTP-binding protein 2





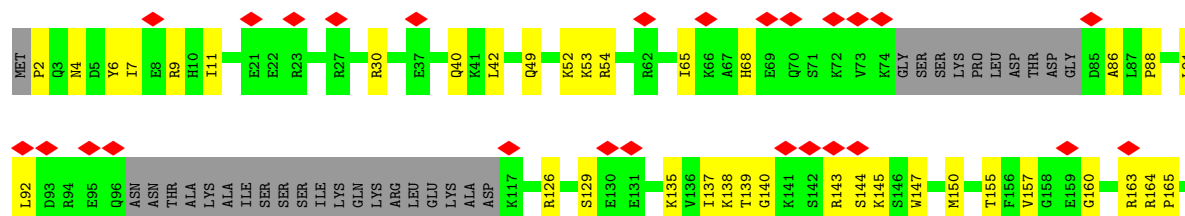
• Molecule 43: 60S ribosomal protein L43-A

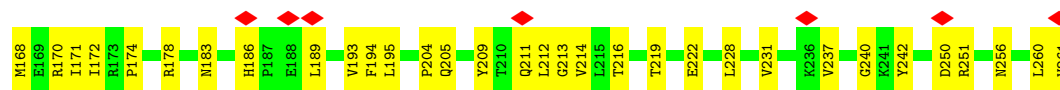


• Molecule 44: 60S ribosomal protein L12-A

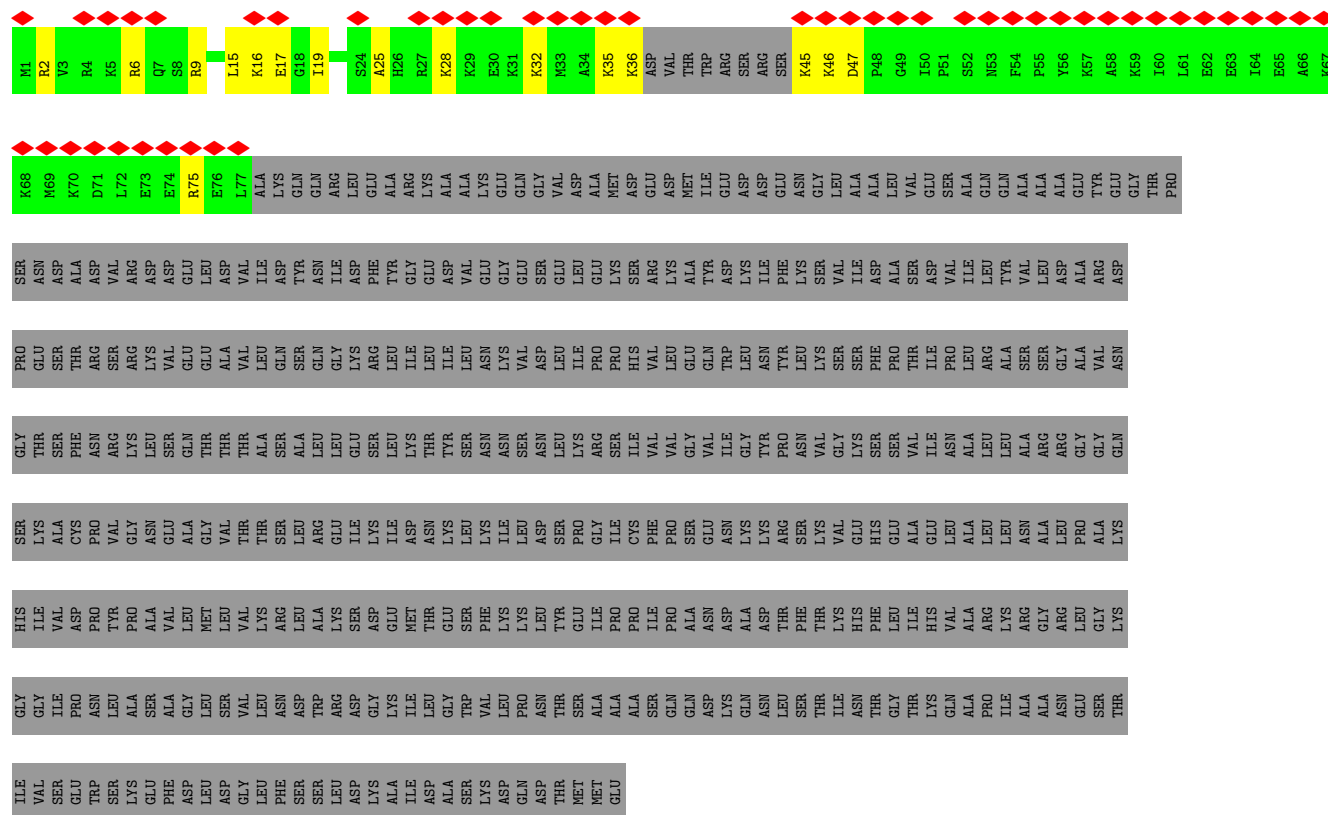


• Molecule 45: Ribosome biogenesis protein NSA2

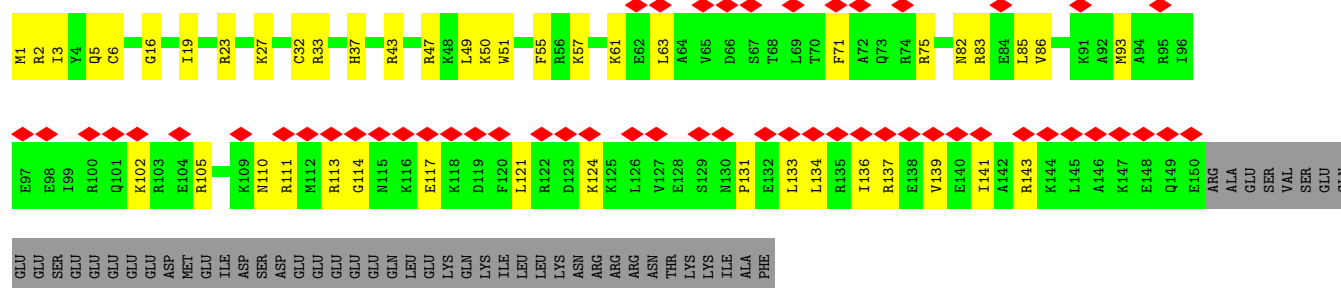




• Molecule 46: Nuclear GTP-binding protein NUG1

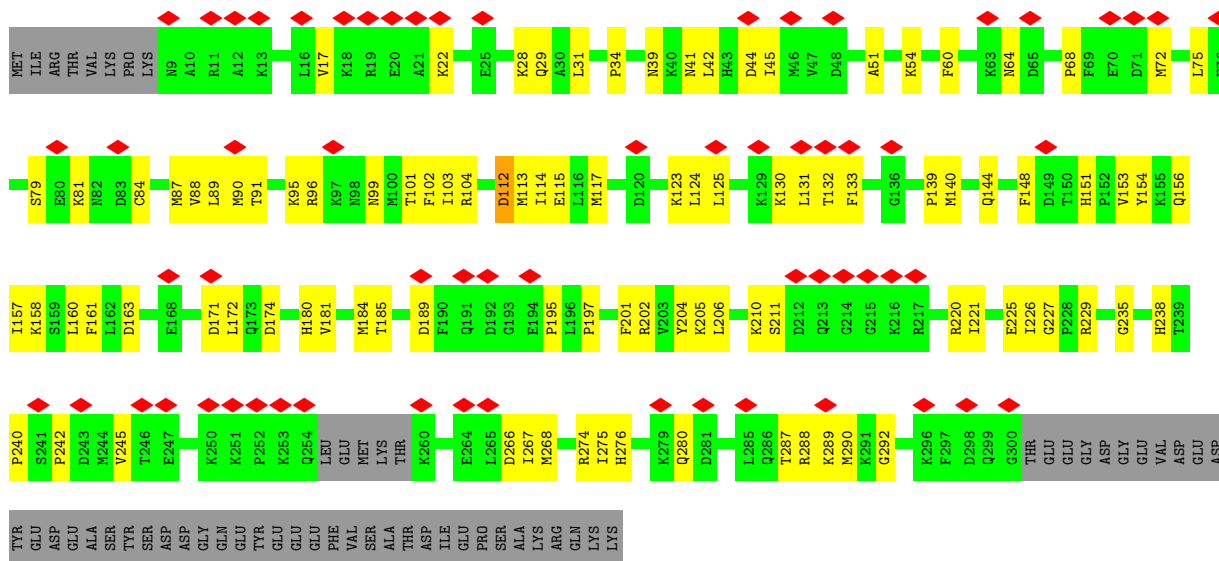


• Molecule 47: Ribosome biogenesis protein RLP24

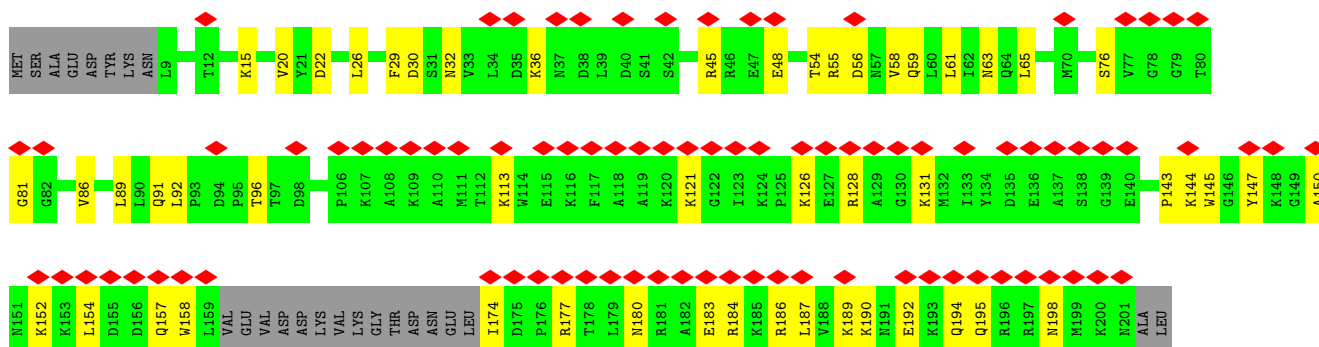


• Molecule 48: Ribosome biogenesis protein RPF2

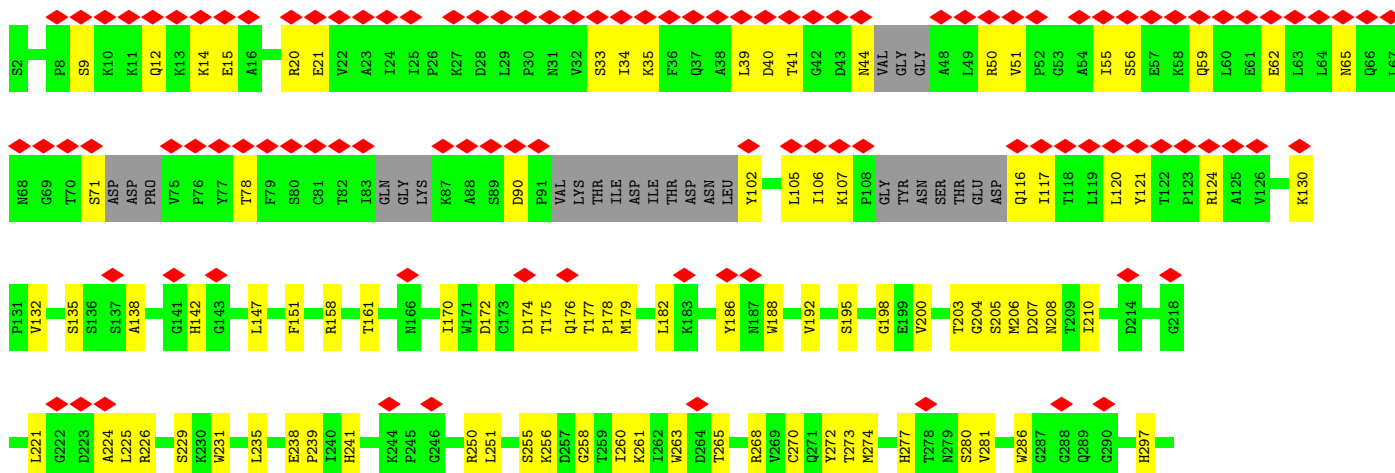


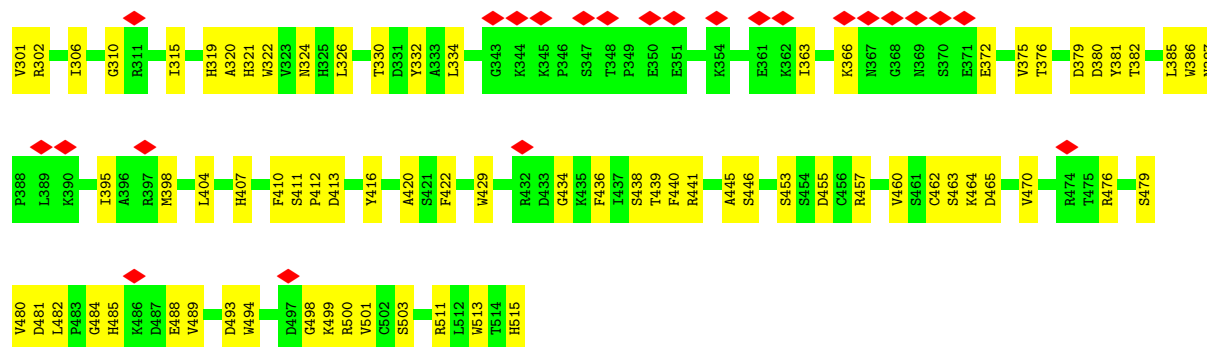


• Molecule 49: Regulator of ribosome biosynthesis

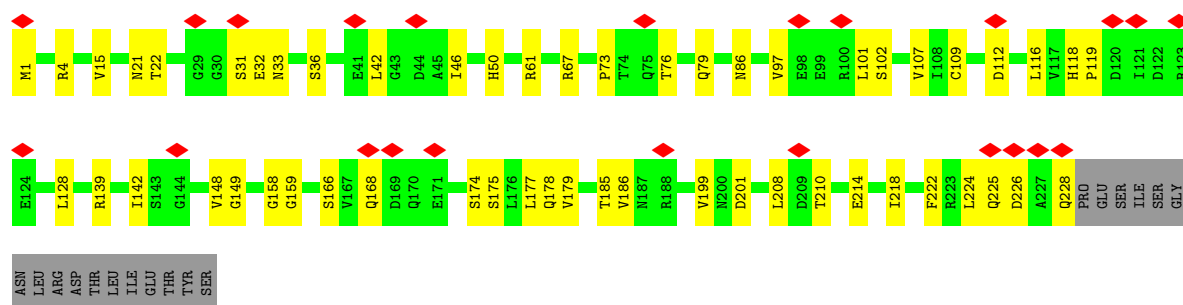


• Molecule 50: Ribosome assembly protein 4

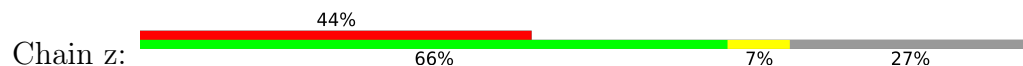




• Molecule 51: Eukaryotic translation initiation factor 6



• Molecule 52: UPF0642 protein YBL028C



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	15954	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	70	Depositor
Minimum defocus (nm)	-1500	Depositor
Maximum defocus (nm)	-2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.756	Depositor
Minimum map value	-0.093	Depositor
Average map value	0.016	Depositor
Map value standard deviation	0.032	Depositor
Recommended contour level	0.18	Depositor
Map size (Å)	414.72, 414.72, 414.72	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.81, 0.81, 0.81	Depositor

5 Model quality

5.1 Standard geometry

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

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	0.50	0/73231	0.43	2/114163 (0.0%)
2	2	0.57	0/3743	0.42	0/5828
3	3	0.44	0/2880	0.38	0/4487
4	7	0.45	0/751	0.49	0/1008
5	A	0.51	0/1666	0.54	0/2241
6	B	0.53	1/3153 (0.0%)	0.55	0/4239
7	C	0.44	0/2802	0.49	0/3792
8	D	0.43	0/2119	0.58	1/2859 (0.0%)
9	E	0.41	0/1261	0.55	0/1694
10	F	0.46	0/1822	0.53	0/2451
11	G	0.38	0/1850	0.54	0/2495
12	H	0.50	0/1540	0.54	2/2073 (0.1%)
13	I	0.30	0/919	0.44	0/1232
14	J	0.37	0/1375	0.63	0/1842
15	L	0.42	0/1524	0.52	0/2046
16	M	0.44	0/1075	0.45	0/1446
17	N	0.46	0/1758	0.53	0/2354
18	O	0.50	0/1586	0.49	0/2128
19	P	0.46	0/1466	0.51	0/1968
20	Q	0.40	0/1050	0.47	0/1419
21	R	0.50	0/1275	0.47	0/1702
22	S	0.44	0/1474	0.57	0/1980
23	T	0.30	0/957	0.57	2/1285 (0.2%)
24	U	0.38	0/861	0.58	0/1167
25	V	0.51	0/1019	0.66	2/1369 (0.1%)
26	W	0.35	0/1918	0.52	0/2586
27	X	0.48	0/1117	0.51	0/1503
28	Y	0.45	0/1005	0.53	0/1341
29	Z	0.49	0/1119	0.54	0/1497
30	a	0.37	0/752	0.50	0/1013
31	b	0.41	0/4243	0.53	0/5704
32	c	0.30	0/749	0.46	0/994

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	d	0.48	0/887	0.49	0/1191
34	e	0.45	0/1041	0.49	0/1394
35	f	0.54	0/869	0.53	0/1168
36	g	0.53	0/891	0.56	0/1191
37	h	0.47	0/979	0.50	0/1301
38	i	0.32	0/779	0.52	0/1034
39	j	0.54	0/697	0.52	0/923
40	k	0.45	0/619	0.57	0/826
41	l	0.59	0/444	0.67	0/588
42	m	0.40	0/3848	0.50	0/5181
43	p	0.50	0/702	0.55	0/934
44	q	0.32	0/969	0.60	0/1301
45	r	0.48	0/1893	0.52	0/2528
46	s	0.32	0/577	0.52	0/752
47	u	0.43	0/1287	0.50	0/1711
48	v	0.47	0/2361	0.61	0/3153
49	w	0.39	0/1448	0.56	0/1948
50	x	0.44	0/3898	0.59	0/5282
51	y	0.46	0/1744	0.53	0/2373
52	z	0.31	0/651	0.48	0/854
All	All	0.47	1/150644 (0.0%)	0.48	9/219539 (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
15	L	0	1
31	b	0	1
37	h	0	1
44	q	0	1
48	v	0	2
All	All	0	6

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	B	16	PHE	C-N	-8.29	1.20	1.33

All (9) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
25	V	46	LEU	CA-C-N	-9.49	107.46	122.65
25	V	46	LEU	C-N-CA	-9.49	107.46	122.65
1	1	2376	G	N9-C1'-C2'	7.80	123.70	112.00
12	H	188	THR	CA-C-N	5.32	131.28	121.70
12	H	188	THR	C-N-CA	5.32	131.28	121.70
1	1	2376	G	O4'-C1'-N9	5.29	116.44	108.50
8	D	23	ARG	CB-CG-CD	5.28	123.45	111.30
23	T	154	VAL	CA-C-N	5.22	139.54	127.00
23	T	154	VAL	C-N-CA	5.22	139.54	127.00

There are no chirality outliers.

All (6) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
15	L	46	ILE	Peptide
31	b	258	GLU	Peptide
37	h	83	LYS	Peptide
44	q	51	LYS	Peptide
48	v	112	ASP	Peptide
48	v	195	PRO	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	65424	0	32880	1068	0
2	2	3350	0	1696	58	0
3	3	2576	0	1305	50	0
4	7	743	0	797	16	0
5	A	1634	0	1685	41	0
6	B	3082	0	3165	80	0
7	C	2750	0	2863	33	0
8	D	2073	0	2026	71	0
9	E	1240	0	1326	29	0
10	F	1785	0	1862	24	0
11	G	1818	0	1908	34	0
12	H	1519	0	1587	33	0
13	I	905	0	939	21	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
14	J	1354	0	1383	60	0
15	L	1499	0	1558	38	0
16	M	1060	0	1154	27	0
17	N	1721	0	1779	38	0
18	O	1556	0	1659	27	0
19	P	1443	0	1485	28	0
20	Q	1035	0	1115	21	0
21	R	1258	0	1342	21	0
22	S	1438	0	1475	47	0
23	T	943	0	994	30	0
24	U	844	0	855	17	0
25	V	1004	0	1048	14	0
26	W	1885	0	1921	47	0
27	X	1101	0	1187	21	0
28	Y	994	0	1081	22	0
29	Z	1093	0	1155	21	0
30	a	736	0	776	22	0
31	b	4169	0	4223	101	0
32	c	743	0	810	25	0
33	d	873	0	914	16	0
34	e	1020	0	1090	20	0
35	f	851	0	880	28	0
36	g	881	0	949	16	0
37	h	970	0	1078	13	0
38	i	772	0	849	16	0
39	j	682	0	687	16	0
40	k	613	0	682	15	0
41	l	437	0	475	23	0
42	m	3774	0	3835	89	0
43	p	695	0	738	13	0
44	q	961	0	1010	22	0
45	r	1861	0	1965	65	0
46	s	573	0	644	13	0
47	u	1265	0	1318	38	0
48	v	2318	0	2398	86	0
49	w	1425	0	1486	41	0
50	x	3808	0	3790	125	0
51	y	1723	0	1714	37	0
52	z	644	0	693	5	0
53	m	28	0	12	2	0
54	m	1	0	0	0	0
All	All	140950	0	108246	2349	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 10.

All (2349) 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)
1:1:1200:A:H2	1:1:2824:G:N1	1.36	1.21
1:1:1200:A:C2	1:1:2824:G:N1	2.08	1.18
1:1:2692:A:N6	1:1:2700:G:H1	1.48	1.11
1:1:3344:A:C2	1:1:3361:G:N2	2.21	1.07
1:1:160:G:H1	1:1:261:U:H3	1.04	1.02
1:1:3344:A:H2	1:1:3361:G:N2	1.57	0.99
1:1:2251:G:H1	1:1:2266:U:H3	1.06	0.94
1:1:3344:A:H2	1:1:3361:G:H21	1.00	0.93
1:1:2692:A:H61	1:1:2700:G:H1	0.95	0.92
1:1:2249:G:H1	1:1:2268:U:H3	1.10	0.91
1:1:2426:U:H3	1:1:2603:G:H1	0.90	0.90
1:1:3160:U:H3	1:1:3290:G:H1	1.20	0.87
2:2:80:A:H3'	2:2:81:U:H2'	1.56	0.87
22:S:171:PHE:HD2	22:S:172:TYR:HD2	1.22	0.86
1:1:3343:G:N2	1:1:3362:A:C2	2.46	0.83
1:1:2363:A:N6	1:1:2398:A:OP2	2.09	0.83
1:1:799:G:O2'	15:L:18:TRP:NE1	2.10	0.83
8:D:30:TYR:HA	8:D:33:ARG:HB3	1.60	0.83
42:m:305:GLN:NE2	48:v:275:ILE:O	2.13	0.81
1:1:2254:U:H3	1:1:2263:C:H42	1.27	0.81
1:1:1200:A:N1	1:1:2824:G:O6	2.14	0.81
1:1:2393:G:O2'	1:1:2982:A:N6	2.15	0.80
1:1:2628:A:N7	1:1:2651:G:N2	2.29	0.79
50:x:221:LEU:O	50:x:268:ARG:NH1	2.16	0.79
1:1:41:G:H21	1:1:2803:A:H62	1.31	0.79
1:1:3158:G:H1	1:1:3292:A:H2	1.30	0.78
22:S:80:ARG:NH2	23:T:153:PRO:O	2.17	0.78
1:1:2812:C:H2'	1:1:2813:A:H8	1.48	0.78
1:1:3343:G:H21	1:1:3362:A:H2	1.27	0.77
3:3:55:A:O2'	14:J:10:ARG:NH1	2.18	0.77
48:v:104:ARG:HH22	48:v:160:LEU:HA	1.50	0.77
5:A:108:PRO:HB2	43:p:86:LEU:HD22	1.67	0.77
1:1:2865:U:H2'	1:1:2866:U:H2'	1.65	0.77
1:1:1639:C:OP2	36:g:74:ARG:NH2	2.16	0.77
1:1:2841:G:H1	1:1:2845:A:H1'	1.49	0.77
1:1:2692:A:N1	1:1:2700:G:N2	2.32	0.77
1:1:3158:G:O6	1:1:3292:A:N1	2.18	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:v:104:ARG:NH2	48:v:160:LEU:HA	1.99	0.76
2:2:154:C:H5''	11:G:181:LYS:HE2	1.68	0.76
1:1:2875:U:O2'	1:1:2951:G:N2	2.17	0.76
1:1:2873:U:O2	45:r:143:ARG:NH1	2.18	0.76
26:W:46:ASP:HA	26:W:99:VAL:HB	1.68	0.76
1:1:1766:G:N7	21:R:46:LYS:NZ	2.34	0.76
1:1:687:U:OP2	15:L:36:ARG:NH2	2.19	0.75
32:c:104:ALA:HB1	34:e:128:LEU:HD13	1.68	0.75
45:r:92:LEU:HD21	50:x:206:MET:HE1	1.69	0.75
5:A:79:ASN:HD21	5:A:165:VAL:HG12	1.51	0.75
22:S:13:ARG:HE	22:S:51:VAL:HG22	1.51	0.75
31:b:181:SER:HA	31:b:185:ARG:HH21	1.51	0.74
26:W:120:VAL:O	26:W:121:ARG:NH1	2.20	0.74
8:D:52:VAL:HG12	8:D:147:ASP:HB3	1.70	0.74
40:k:7:ASP:HB3	40:k:10:GLN:HE22	1.53	0.74
50:x:321:HIS:HD2	50:x:379:ASP:HB2	1.53	0.74
1:1:1200:A:N1	1:1:2824:G:C6	2.56	0.74
1:1:2542:U:O2'	1:1:2543:U:O5'	2.06	0.74
1:1:958:C:H5'	1:1:959:C:H5''	1.70	0.74
4:7:57:GLU:OE1	4:7:69:TYR:OH	2.04	0.73
1:1:160:G:H2'	1:1:161:G:H8	1.52	0.73
1:1:1761:C:H1'	1:1:1763:U:H5''	1.70	0.73
1:1:2681:U:O2	14:J:20:ASN:ND2	2.21	0.73
6:B:382:THR:HG21	47:u:105:ARG:HD3	1.71	0.73
8:D:107:ARG:HG3	8:D:251:PRO:HG3	1.70	0.73
1:1:3343:G:N2	1:1:3362:A:H2	1.85	0.73
1:1:977:C:N4	1:1:1105:A:OP2	2.17	0.73
1:1:2700:G:N2	1:1:2701:U:O4	2.19	0.73
1:1:976:U:O2'	1:1:977:C:O2	2.07	0.73
42:m:400:ILE:HG13	42:m:428:ILE:HD11	1.70	0.73
1:1:2715:A:H62	49:w:145:TRP:HE1	1.35	0.72
1:1:2830:G:H2'	1:1:2831:G:C8	2.23	0.72
50:x:387:ASN:HB2	50:x:395:ILE:HD11	1.70	0.72
1:1:2819:A:N6	1:1:2943:G:OP1	2.21	0.72
1:1:160:G:H2'	1:1:161:G:C8	2.25	0.72
1:1:2731:U:H5''	1:1:2732:G:H5'	1.70	0.72
1:1:2701:U:H5''	1:1:2702:A:H5'	1.72	0.72
1:1:728:G:H5'	20:Q:43:PRO:HB2	1.70	0.72
1:1:541:U:H2'	1:1:542:G:H8	1.54	0.72
39:j:14:LYS:HD2	41:l:51:ILE:HD11	1.72	0.72
1:1:255:A:H2'	1:1:256:G:H8	1.55	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2253:G:H1	1:1:2264:U:H3	1.37	0.72
1:1:1210:U:OP1	12:H:62:ARG:NH1	2.22	0.71
2:2:75:G:OP2	28:Y:74:TYR:OH	2.06	0.71
1:1:3369:G:OP1	47:u:111:ARG:NH2	2.22	0.71
3:3:2:G:O5'	8:D:273:ARG:NH2	2.21	0.71
51:y:21:ASN:ND2	51:y:201:ASP:OD1	2.21	0.71
1:1:1196:C:N4	46:s:9:ARG:O	2.23	0.71
1:1:2831:G:H21	45:r:256:ASN:HD21	1.39	0.71
30:a:100:PRO:HG2	30:a:123:VAL:HG23	1.73	0.71
16:M:113:THR:OG1	16:M:116:GLU:OE1	2.07	0.71
30:a:149:ALA:HB1	38:i:15:LYS:HA	1.72	0.71
22:S:77:VAL:HG13	22:S:126:VAL:HG22	1.71	0.71
22:S:92:LYS:NZ	22:S:109:ASP:OD2	2.23	0.71
1:1:432:G:OP1	35:f:65:ARG:NH2	2.24	0.70
5:A:27:ALA:O	5:A:128:ARG:NH2	2.24	0.70
1:1:149:U:OP1	17:N:49:ARG:NH2	2.20	0.70
1:1:576:C:OP1	10:F:241:LYS:NZ	2.20	0.70
3:3:1:G:O2'	8:D:273:ARG:NH2	2.24	0.70
25:V:92:PHE:HB2	47:u:19:ILE:HG22	1.73	0.70
1:1:2268:U:C5	48:v:276:HIS:CE1	2.79	0.70
1:1:3324:C:OP1	33:d:19:ARG:NH1	2.24	0.70
7:C:320:ASN:HB3	7:C:323:VAL:HG12	1.71	0.70
1:1:2812:C:H2'	1:1:2813:A:C8	2.26	0.70
12:H:9:GLN:HB3	12:H:52:LEU:HD11	1.72	0.69
50:x:186:TYR:N	50:x:207:ASP:OD2	2.25	0.69
1:1:2675:C:O2'	1:1:2680:A:N6	2.25	0.69
1:1:2969:A:O2'	1:1:2970:C:O5'	2.10	0.69
19:P:7:THR:HB	32:c:85:THR:HB	1.73	0.69
1:1:628:A:H5'	1:1:1399:A:N1	2.06	0.69
30:a:76:ASP:HB3	30:a:116:GLY:HA3	1.75	0.69
50:x:319:HIS:HE2	50:x:376:THR:HG23	1.58	0.69
2:2:48:A:H5''	37:h:48:ARG:HH12	1.57	0.69
47:u:57:LYS:NZ	47:u:63:LEU:O	2.25	0.69
14:J:12:LEU:HD11	14:J:158:ASP:HB3	1.75	0.69
1:1:2392:C:O2'	6:B:266:ARG:NH2	2.27	0.68
31:b:256:LEU:HA	31:b:264:ILE:HD11	1.74	0.68
48:v:34:PRO:HA	48:v:90:MET:HB2	1.73	0.68
1:1:91:G:OP2	1:1:93:C:N4	2.27	0.68
1:1:1200:A:H2	1:1:2824:G:C2	2.10	0.68
1:1:2137:U:OP2	1:1:2142:A:N6	2.24	0.68
6:B:231:HIS:CE1	6:B:270:ARG:CZ	2.76	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:J:23:VAL:HG12	14:J:25:GLU:H	1.58	0.68
22:S:12:ARG:HD2	22:S:22:PRO:HD2	1.75	0.68
1:1:2254:U:H3	1:1:2263:C:N4	1.92	0.68
28:Y:40:ARG:HE	28:Y:46:LYS:HG2	1.58	0.68
1:1:1719:G:OP1	21:R:110:ARG:NH1	2.27	0.68
4:7:30:THR:HG23	4:7:91:SER:HB2	1.76	0.68
12:H:92:TYR:HB3	12:H:179:ILE:HG12	1.75	0.68
13:I:15:THR:OG1	47:u:43:ARG:NH1	2.27	0.68
1:1:155:G:N1	1:1:265:A:OP2	2.23	0.68
1:1:785:G:O6	30:a:77:LYS:NZ	2.27	0.68
1:1:2176:U:OP1	5:A:54:ARG:NH2	2.23	0.68
1:1:3021:A:H2	1:1:3033:A:H62	1.41	0.68
31:b:43:ARG:O	31:b:47:MET:HG3	1.93	0.68
14:J:83:GLY:HA3	14:J:127:PHE:HE2	1.59	0.68
48:v:189:ASP:O	49:w:36:LYS:NZ	2.27	0.68
50:x:50:ARG:HE	50:x:51:VAL:H	1.42	0.68
50:x:256:LYS:HG3	50:x:280:SER:HB2	1.74	0.68
1:1:370:U:H4'	1:1:404:G:H5'	1.75	0.67
50:x:324:ASN:ND2	50:x:379:ASP:OD1	2.21	0.67
1:1:76:G:O2'	15:L:100:ARG:NH1	2.26	0.67
1:1:3170:A:H5''	32:c:24:ASN:HD21	1.59	0.67
7:C:299:ILE:HD12	20:Q:39:ARG:HH21	1.58	0.67
32:c:85:THR:O	32:c:88:THR:OG1	2.13	0.67
1:1:2767:U:H3	1:1:2791:G:H1	1.40	0.67
1:1:1940:G:H21	1:1:3362:A:H8	1.41	0.67
1:1:3233:C:H2'	1:1:3234:A:C8	2.30	0.67
12:H:17:THR:HG21	16:M:3:THR:HB	1.76	0.67
13:I:89:VAL:HG21	47:u:47:ARG:HH21	1.59	0.67
49:w:55:ARG:NH1	49:w:56:ASP:OD2	2.28	0.67
51:y:107:VAL:HG13	51:y:118:HIS:HB2	1.77	0.67
1:1:1207:G:OP1	45:r:54:ARG:NH1	2.27	0.66
1:1:2692:A:N6	1:1:2700:G:N1	2.18	0.66
1:1:46:U:O4	17:N:83:LYS:NZ	2.29	0.66
1:1:68:C:N4	1:1:314:U:O2'	2.28	0.66
24:U:56:VAL:HG22	24:U:65:VAL:HG22	1.78	0.66
1:1:3149:G:O2'	6:B:129:ALA:O	2.10	0.66
8:D:196:ARG:HB2	50:x:177:THR:HG21	1.77	0.66
26:W:60:TRP:CD1	26:W:63:SER:HB2	2.30	0.66
1:1:1233:G:H1	1:1:1255:C:H5	1.43	0.66
1:1:3297:U:O4	6:B:124:LYS:NZ	2.29	0.66
31:b:247:ARG:O	31:b:343:ARG:NH2	2.29	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3166:C:H2'	1:1:3167:A:H8	1.61	0.66
11:G:43:LYS:HD3	27:X:28:THR:HG21	1.78	0.66
50:x:34:ILE:HG12	50:x:117:ILE:HB	1.76	0.66
50:x:59:GLN:HA	50:x:62:GLU:HG2	1.76	0.66
1:1:651:G:O2'	1:1:1435:A:OP1	2.14	0.65
46:s:15:LEU:O	46:s:19:ILE:HG12	1.96	0.65
40:k:42:LYS:HG2	40:k:55:VAL:HG12	1.78	0.65
1:1:2954:U:O2'	1:1:2977:G:O6	2.14	0.65
1:1:3153:U:O4	1:1:3292:A:N6	2.29	0.65
2:2:142:C:O2'	17:N:136:ASP:OD2	2.13	0.65
1:1:976:U:H3	1:1:1106:G:H1	1.40	0.65
2:2:151:C:O2'	2:2:153:U:OP2	2.14	0.65
37:h:102:GLU:OE2	37:h:105:ARG:NH2	2.28	0.65
1:1:2698:G:N2	48:v:81:LYS:O	2.29	0.65
5:A:79:ASN:ND2	5:A:166:ILE:O	2.29	0.65
11:G:98:ARG:NH1	11:G:188:THR:O	2.30	0.65
17:N:99:ARG:NH2	17:N:118:SER:O	2.29	0.65
1:1:592:A:O2'	9:E:20:LYS:NZ	2.30	0.65
1:1:2689:A:OP1	8:D:15:ARG:NH1	2.30	0.65
16:M:50:LYS:HD3	16:M:85:TRP:CD1	2.32	0.65
1:1:551:A:O2'	1:1:552:G:O5'	2.13	0.65
1:1:3153:U:H4'	1:1:3154:C:H5'	1.78	0.65
50:x:102:TYR:HA	50:x:105:LEU:HB2	1.77	0.65
50:x:158:ARG:NH2	50:x:172:ASP:OD2	2.29	0.65
9:E:60:ASP:OD2	9:E:78:ARG:NH1	2.29	0.65
10:F:234:GLU:O	10:F:237:ASN:ND2	2.30	0.65
1:1:806:A:H2'	1:1:807:A:N3	2.12	0.65
2:2:103:G:OP2	2:2:105:A:O2'	2.14	0.65
9:E:62:THR:HG21	9:E:78:ARG:HB3	1.79	0.65
31:b:432:MET:HE1	31:b:445:LEU:HD22	1.79	0.65
48:v:91:THR:OG1	48:v:99:ASN:ND2	2.29	0.65
49:w:126:LYS:HE3	49:w:128:ARG:HH12	1.62	0.65
1:1:780:A:N7	20:Q:147:ARG:NH2	2.44	0.64
1:1:2605:G:N7	42:m:2:GLY:N	2.45	0.64
1:1:269:G:OP2	17:N:44:ARG:NH1	2.31	0.64
1:1:1717:U:H2'	1:1:1718:G:C8	2.32	0.64
26:W:214:LYS:NZ	26:W:233:ILE:O	2.30	0.64
47:u:23:ARG:HH21	47:u:27:LYS:HD2	1.62	0.64
48:v:17:VAL:O	48:v:22:LYS:NZ	2.29	0.64
1:1:1542:G:HO2'	1:1:1556:C:H41	1.45	0.64
1:1:2767:U:O4	1:1:2791:G:O6	2.16	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:H:36:LYS:NZ	12:H:152:GLU:OE1	2.30	0.64
17:N:68:ARG:NH1	17:N:124:ASP:O	2.27	0.64
1:1:1088:U:H2'	1:1:1089:G:C8	2.32	0.64
31:b:87:GLU:HB3	31:b:90:HIS:HB2	1.80	0.64
31:b:622:SER:OG	41:l:46:ARG:NH1	2.31	0.64
1:1:2964:G:O2'	42:m:31:ARG:NH2	2.31	0.64
45:r:49:GLN:O	45:r:53:LYS:HG2	1.98	0.64
1:1:2886:U:OP2	46:s:2:ARG:NH2	2.25	0.64
1:1:292:U:OP2	17:N:68:ARG:NH2	2.29	0.64
1:1:1183:C:OP1	22:S:158:LYS:NZ	2.25	0.64
2:2:8:C:H2'	2:2:9:A:H8	1.63	0.64
5:A:116:VAL:HB	5:A:126:LEU:HB2	1.79	0.64
27:X:25:LYS:HD2	27:X:27:ARG:HH12	1.63	0.64
1:1:341:G:O2'	2:2:22:U:O4	2.16	0.63
45:r:231:VAL:HG22	45:r:237:VAL:HG12	1.80	0.63
1:1:2177:G:OP2	5:A:128:ARG:NH1	2.32	0.63
1:1:2899:C:O2'	1:1:2901:G:OP2	2.15	0.63
1:1:2729:U:O2'	45:r:157:VAL:O	2.16	0.63
1:1:3002:C:O2'	6:B:180:GLU:OE2	2.14	0.63
1:1:1542:G:O2'	1:1:1556:C:N4	2.23	0.63
4:7:16:LEU:HD21	4:7:97:ASP:HB2	1.80	0.63
1:1:363:G:OP2	39:j:56:ARG:NH2	2.32	0.63
1:1:2147:A:OP2	5:A:200:ARG:NH2	2.32	0.63
4:7:25:LEU:HD21	4:7:81:VAL:HG11	1.81	0.63
44:q:76:SER:HG	44:q:79:SER:HG	1.39	0.63
22:S:171:PHE:CD2	22:S:172:TYR:HD2	2.12	0.63
1:1:1000:C:OP1	46:s:75:ARG:NH2	2.32	0.63
1:1:2357:A:H2'	1:1:2358:A:C8	2.34	0.63
6:B:10:ARG:NH2	6:B:263:SER:O	2.28	0.63
11:G:71:VAL:N	11:G:234:GLY:O	2.31	0.63
14:J:16:LYS:HB3	14:J:72:ARG:HG2	1.81	0.63
45:r:140:GLY:O	45:r:143:ARG:NH2	2.29	0.63
47:u:61:LYS:O	47:u:111:ARG:NH1	2.30	0.63
51:y:15:VAL:HA	51:y:61:ARG:HG2	1.81	0.63
1:1:512:U:O2	1:1:579:G:N2	2.29	0.63
1:1:912:G:OP2	5:A:9:ARG:NH2	2.32	0.63
1:1:1793:C:O2	5:A:188:LYS:NZ	2.32	0.63
17:N:22:LEU:HB3	17:N:26:ARG:NH1	2.14	0.63
31:b:84:THR:O	42:m:147:ARG:NH1	2.32	0.63
3:3:48:U:O2'	8:D:222:LEU:O	2.15	0.63
1:1:1348:U:OP2	20:Q:38:ARG:NH2	2.31	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2401:A:OP1	31:b:639:ARG:NH2	2.30	0.62
22:S:112:ALA:O	22:S:115:ARG:NH1	2.32	0.62
1:1:1219:C:O2'	1:1:1286:A:N1	2.29	0.62
16:M:16:GLU:HB3	22:S:149:LYS:HG2	1.79	0.62
45:r:88:PRO:HD2	45:r:91:LEU:HD12	1.80	0.62
48:v:154:TYR:OH	48:v:197:PRO:O	2.17	0.62
16:M:13:ARG:HG3	22:S:172:TYR:HD1	1.64	0.62
48:v:288:ARG:HG2	48:v:290:MET:HB3	1.81	0.62
1:1:216:G:OP1	28:Y:16:ARG:NH1	2.32	0.62
1:1:3160:U:O2	1:1:3290:G:N2	2.32	0.62
1:1:3227:A:O3'	16:M:133:LYS:NZ	2.32	0.62
14:J:47:GLN:HG3	14:J:67:VAL:HG12	1.81	0.62
1:1:1724:U:H1'	1:1:1725:C:C6	2.34	0.62
1:1:2530:G:N2	1:1:2581:U:O2	2.33	0.62
1:1:3092:C:O2	25:V:12:ARG:NH1	2.31	0.62
1:1:437:G:N7	32:c:40:ARG:NH2	2.37	0.62
32:c:24:ASN:ND2	35:f:56:SER:OG	2.33	0.62
50:x:470:VAL:HG23	50:x:479:SER:HB3	1.81	0.62
31:b:392:ASP:HB2	31:b:395:ARG:HB3	1.81	0.62
50:x:221:LEU:HB3	50:x:268:ARG:HH22	1.65	0.62
1:1:412:G:OP1	19:P:62:ARG:NH1	2.32	0.62
6:B:294:GLY:HA2	6:B:359:ILE:HD12	1.80	0.62
17:N:22:LEU:HB3	17:N:26:ARG:HH12	1.65	0.62
1:1:2864:A:H2'	1:1:2865:U:O4'	2.00	0.62
23:T:53:PRO:HB2	49:w:158:TRP:HE1	1.65	0.62
1:1:924:G:H4'	1:1:925:A:H8	1.64	0.62
6:B:113:GLU:HB3	6:B:176:ALA:HB2	1.82	0.62
11:G:189:LEU:HD12	11:G:190:VAL:HG23	1.82	0.62
22:S:83:SER:O	22:S:88:HIS:HE1	1.83	0.62
1:1:2115:G:H22	1:1:2120:A:H1'	1.63	0.61
1:1:2807:U:O2'	1:1:2809:C:OP1	2.17	0.61
48:v:79:SER:HB2	48:v:87:MET:HE2	1.82	0.61
50:x:124:ARG:HE	50:x:457:ARG:HH21	1.47	0.61
1:1:591:G:N2	1:1:612:U:OP1	2.27	0.61
2:2:57:C:OP2	39:j:68:LYS:NZ	2.33	0.61
1:1:964:G:O6	1:1:965:A:N6	2.32	0.61
8:D:141:PRO:HD3	49:w:86:VAL:HG21	1.81	0.61
34:e:79:VAL:HG13	34:e:111:ARG:HG2	1.82	0.61
1:1:667:C:H1'	15:L:10:LEU:HD22	1.82	0.61
42:m:41:MET:HE3	45:r:170:ARG:HB2	1.81	0.61
45:r:2:PRO:HB2	45:r:6:TYR:CG	2.35	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:r:157:VAL:HG11	45:r:178:ARG:HD3	1.82	0.61
2:2:8:C:H2'	2:2:9:A:C8	2.34	0.61
24:U:35:LYS:HA	24:U:38:ILE:HG12	1.81	0.61
48:v:140:MET:HE3	49:w:61:LEU:HD22	1.81	0.61
2:2:58:G:O6	39:j:63:ARG:NH1	2.34	0.61
9:E:131:LYS:HE3	9:E:133:GLU:HB3	1.82	0.61
28:Y:56:VAL:HG21	28:Y:104:LEU:HD13	1.82	0.61
42:m:433:ARG:HA	42:m:438:LEU:HD11	1.81	0.61
31:b:229:THR:HA	31:b:232:MET:HE2	1.81	0.61
1:1:2961:G:H5''	42:m:340:VAL:HG13	1.82	0.61
6:B:369:ARG:HD3	47:u:33:ARG:HD3	1.83	0.61
42:m:336:ARG:HG2	42:m:340:VAL:HG21	1.82	0.61
48:v:171:ASP:O	49:w:92:LEU:N	2.30	0.61
1:1:40:A:O2'	1:1:41:G:N7	2.28	0.61
31:b:427:TRP:HB3	47:u:83:ARG:NH1	2.16	0.61
51:y:158:GLY:HA2	51:y:179:VAL:HB	1.81	0.61
1:1:1202:A:H2'	1:1:1203:A:C2	2.35	0.60
24:U:39:ASP:OD2	24:U:40:HIS:ND1	2.30	0.60
1:1:1278:A:O2'	1:1:1279:C:O5'	2.19	0.60
48:v:184:MET:HE2	48:v:201:PHE:HD2	1.66	0.60
1:1:68:C:OP2	1:1:301:G:N2	2.34	0.60
1:1:1553:U:H4'	1:1:1554:U:H5'	1.83	0.60
1:1:3344:A:N1	1:1:3361:G:N3	2.49	0.60
26:W:136:THR:HA	26:W:187:LEU:HA	1.84	0.60
1:1:2696:A:N7	48:v:81:LYS:NZ	2.50	0.60
7:C:59:GLN:OE1	39:j:55:ARG:NH2	2.34	0.60
8:D:60:ILE:HB	8:D:80:SER:HB2	1.83	0.60
22:S:83:SER:O	22:S:88:HIS:CE1	2.54	0.60
1:1:1202:A:O2'	1:1:1301:A:OP2	2.15	0.60
1:1:2357:A:H2'	1:1:2358:A:H8	1.66	0.60
9:E:142:ASP:O	9:E:146:ILE:HD12	2.02	0.60
48:v:51:ALA:HA	48:v:54:LYS:HD2	1.83	0.60
1:1:665:A:H2'	1:1:666:A:C8	2.36	0.60
1:1:1149:G:OP2	35:f:21:ARG:NH2	2.32	0.60
1:1:2745:G:N2	1:1:2748:A:OP2	2.32	0.60
1:1:2794:G:H4'	1:1:2796:G:H1	1.67	0.60
7:C:282:SER:OG	20:Q:125:ASP:OD2	2.19	0.60
45:r:7:ILE:O	45:r:11:ILE:HG12	2.01	0.60
6:B:74:GLU:OE2	6:B:325:LYS:NZ	2.34	0.60
8:D:84:PRO:HD3	8:D:92:LEU:HD11	1.84	0.60
1:1:394:G:N1	1:1:397:A:OP2	2.33	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:727:G:OP2	1:1:742:G:N2	2.26	0.60
8:D:90:HIS:HE1	8:D:231:ILE:HG13	1.67	0.60
1:1:2249:G:O6	1:1:2268:U:O4	2.19	0.60
1:1:2655:U:H2'	1:1:2657:A:C6	2.36	0.60
1:1:2695:A:O2'	1:1:2697:A:N6	2.35	0.60
1:1:3170:A:O2'	1:1:3171:U:O4'	2.13	0.60
7:C:29:PRO:HD2	7:C:277:PRO:HG2	1.83	0.60
21:R:133:LYS:HG3	21:R:134:HIS:CD2	2.37	0.60
27:X:135:ILE:O	27:X:139:ILE:HG13	2.01	0.60
50:x:172:ASP:O	50:x:176:GLN:N	2.34	0.60
1:1:436:A:OP1	32:c:51:LYS:NZ	2.35	0.59
1:1:3171:U:H5	35:f:54:ARG:HD3	1.65	0.59
13:I:96:TYR:OH	47:u:2:ARG:NH2	2.34	0.59
29:Z:53:VAL:HG21	29:Z:62:VAL:HG22	1.84	0.59
41:l:25:GLN:OE1	41:l:28:ARG:NH1	2.34	0.59
48:v:123:LYS:HD3	48:v:229:ARG:HD2	1.83	0.59
1:1:1661:G:H2'	1:1:1662:G:C8	2.38	0.59
1:1:2409:G:O2'	1:1:2411:U:OP1	2.19	0.59
3:3:75:G:N3	3:3:105:C:N4	2.49	0.59
24:U:37:LEU:O	24:U:41:ILE:HG13	2.01	0.59
50:x:422:PHE:CD1	50:x:446:SER:HB3	2.38	0.59
1:1:984:G:N1	1:1:1139:G:OP1	2.31	0.59
2:2:130:C:H2'	2:2:131:A:C8	2.38	0.59
48:v:114:ILE:HD13	48:v:157:ILE:HD13	1.84	0.59
1:1:1187:C:H5	1:1:1319:G:H1	1.48	0.59
1:1:2359:C:H4'	1:1:2399:A:H4'	1.84	0.59
8:D:226:TYR:HE2	8:D:236:LEU:HD21	1.68	0.59
16:M:13:ARG:HG3	22:S:172:TYR:CD1	2.37	0.59
36:g:107:GLU:HA	36:g:110:GLU:HG2	1.83	0.59
43:p:88:GLU:O	43:p:92:ALA:N	2.34	0.59
50:x:208:ASN:ND2	50:x:229:SER:O	2.35	0.59
1:1:1635:G:N2	1:1:1638:A:OP2	2.26	0.59
1:1:371:G:N1	1:1:374:A:OP2	2.34	0.59
1:1:1203:A:C2	1:1:1300:G:H2'	2.38	0.59
1:1:2697:A:O2'	1:1:2698:G:O4'	2.19	0.59
12:H:18:VAL:HG12	12:H:27:VAL:HG22	1.84	0.59
22:S:171:PHE:HD2	22:S:172:TYR:CD2	2.13	0.59
1:1:3050:U:O2'	47:u:16:GLY:O	2.16	0.59
3:3:77:G:O2'	3:3:101:G:O6	2.18	0.59
31:b:8:ILE:HB	31:b:154:ARG:HG3	1.84	0.59
31:b:422:LEU:HD13	31:b:427:TRP:HD1	1.68	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:716:A:H2	1:1:720:A:H5'	1.68	0.59
5:A:111:THR:HG22	5:A:136:ILE:HG12	1.85	0.59
11:G:68:ARG:NH2	11:G:239:GLY:HA2	2.18	0.59
26:W:79:GLU:O	26:W:94:LYS:NZ	2.30	0.59
1:1:627:U:H2'	1:1:628:A:C8	2.37	0.59
1:1:1107:C:N3	1:1:1108:U:N3	2.51	0.59
1:1:1299:U:O2'	45:r:42:LEU:O	2.21	0.59
1:1:2113:A:OP1	13:I:75:ARG:NH1	2.36	0.59
18:O:115:LYS:O	18:O:117:ARG:NH1	2.36	0.59
7:C:29:PRO:HB3	20:Q:25:TYR:HE2	1.68	0.58
1:1:1061:A:H4'	23:T:102:ARG:HD3	1.84	0.58
1:1:3148:U:OP1	52:z:81:ARG:NH1	2.35	0.58
2:2:49:G:OP1	37:h:45:LYS:HG2	2.03	0.58
2:2:71:A:O2'	28:Y:52:ARG:NH2	2.36	0.58
13:I:16:ARG:O	47:u:43:ARG:NH2	2.36	0.58
35:f:49:ILE:HG12	35:f:100:ILE:HG13	1.85	0.58
1:1:40:A:H1'	1:1:41:G:H8	1.67	0.58
1:1:3388:C:H5''	1:1:3389:U:H5'	1.84	0.58
26:W:22:ASN:OD1	26:W:25:ARG:NH2	2.34	0.58
33:d:36:ILE:HD12	33:d:59:ILE:HD11	1.84	0.58
41:l:43:ASN:HB3	41:l:46:ARG:HB3	1.85	0.58
20:Q:71:LEU:HD13	20:Q:99:THR:HG21	1.85	0.58
50:x:204:GLY:HA2	50:x:210:ILE:HG22	1.84	0.58
1:1:618:C:OP1	19:P:173:ARG:NH2	2.36	0.58
1:1:2991:A:O2'	1:1:3309:G:N7	2.35	0.58
4:7:53:LYS:O	4:7:57:GLU:HG3	2.04	0.58
1:1:1064:A:N6	23:T:116:ARG:HH12	2.02	0.58
1:1:1097:G:O6	23:T:116:ARG:NH1	2.36	0.58
1:1:2620:G:N7	49:w:121:LYS:NZ	2.52	0.58
1:1:3166:C:H2'	1:1:3167:A:C8	2.38	0.58
30:a:112:ILE:HB	30:a:130:VAL:HG12	1.84	0.58
50:x:33:SER:HA	50:x:51:VAL:HA	1.85	0.58
1:1:1613:A:OP1	40:k:51:LEU:N	2.35	0.58
1:1:2622:C:HO2'	1:1:2623:G:H8	1.52	0.58
1:1:3187:A:OP1	12:H:23:ARG:NH1	2.37	0.58
34:e:4:LEU:HD22	34:e:91:THR:HG22	1.85	0.58
41:l:27:ILE:O	41:l:33:ASN:ND2	2.37	0.58
1:1:2218:G:OP2	38:i:68:ARG:NH2	2.37	0.58
3:3:11:A:N6	8:D:13:SER:O	2.35	0.58
4:7:78:GLY:HA2	4:7:87:VAL:HG22	1.86	0.58
49:w:59:GLN:NE2	49:w:63:ASN:OD1	2.36	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2435:G:O2'	17:N:24:ARG:NH2	2.37	0.58
35:f:14:LEU:HD11	35:f:31:LYS:HB2	1.85	0.58
48:v:287:THR:O	48:v:289:LYS:NZ	2.35	0.58
1:1:623:U:H4'	35:f:86:ARG:HH12	1.67	0.58
16:M:50:LYS:HD3	16:M:85:TRP:HD1	1.67	0.58
42:m:377:ASP:OD2	42:m:385:ARG:NH1	2.36	0.58
1:1:561:C:H2'	1:1:562:C:H6	1.68	0.57
1:1:800:G:H22	7:C:101:ALA:HA	1.69	0.57
1:1:2666:C:N4	1:1:2687:G:O2'	2.36	0.57
1:1:2726:C:O2	45:r:168:MET:HE3	2.04	0.57
1:1:187:A:N3	1:1:208:C:O2'	2.31	0.57
1:1:577:C:O2'	1:1:579:G:OP1	2.22	0.57
1:1:2246:G:O2'	1:1:2247:G:H8	1.86	0.57
9:E:43:LEU:HD11	9:E:85:ILE:HG13	1.85	0.57
1:1:289:A:OP2	17:N:170:LYS:NZ	2.37	0.57
1:1:914:A:O2'	5:A:203:ALA:O	2.22	0.57
1:1:1128:U:H4'	45:r:126:ARG:HD3	1.86	0.57
1:1:2249:G:H5''	42:m:304:ARG:HG3	1.85	0.57
1:1:2766:U:O2'	1:1:2767:U:O4'	2.22	0.57
1:1:2878:G:HO2'	1:1:2879:C:H6	1.51	0.57
31:b:172:ILE:HG22	31:b:176:PRO:HG3	1.86	0.57
1:1:1399:A:C2	2:2:8:C:H4'	2.40	0.57
28:Y:116:LYS:O	28:Y:120:GLN:NE2	2.38	0.57
42:m:74:ASP:OD2	42:m:76:ARG:NE	2.31	0.57
1:1:58:G:OP1	17:N:157:LYS:NZ	2.33	0.57
1:1:2586:G:O2'	1:1:2588:U:OP2	2.19	0.57
42:m:207:GLN:HA	42:m:212:TRP:HE1	1.69	0.57
1:1:691:A:N1	2:2:28:C:O2'	2.33	0.57
1:1:1350:A:C4	1:1:1352:A:H4'	2.39	0.57
1:1:2724:U:H5	1:1:2732:G:H1	1.52	0.57
1:1:2887:A:N7	31:b:31:THR:OG1	2.35	0.57
38:i:35:ASN:OD1	38:i:36:ARG:N	2.36	0.57
42:m:304:ARG:HD3	42:m:359:MET:HE1	1.86	0.57
1:1:1194:G:H2'	1:1:1195:A:C8	2.40	0.57
1:1:1412:G:OP1	34:e:105:ARG:NH2	2.37	0.57
1:1:1477:A:OP1	1:1:3075:G:O2'	2.23	0.57
1:1:2202:C:H2'	1:1:2203:U:C6	2.39	0.57
1:1:2901:G:O2'	1:1:3024:A:N1	2.36	0.57
1:1:3020:U:H3'	1:1:3021:A:H5'	1.87	0.57
8:D:164:LYS:HE2	8:D:195:LEU:HD21	1.84	0.57
50:x:363:ILE:HA	50:x:366:LYS:HE3	1.85	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2940:A:OP2	6:B:2:SER:N	2.38	0.57
3:3:84:A:H61	3:3:97:A:N6	2.03	0.57
6:B:358:TRP:HB2	47:u:1:MET:HE1	1.87	0.57
16:M:55:ARG:NH2	16:M:76:ALA:O	2.35	0.57
40:k:46:ARG:HH11	40:k:51:LEU:HB2	1.70	0.57
1:1:2868:U:H4'	1:1:2869:U:OP1	2.05	0.57
1:1:585:A:H2'	1:1:586:C:C6	2.39	0.57
48:v:242:PRO:HA	48:v:245:VAL:HG12	1.87	0.57
1:1:2107:A:H2	1:1:3344:A:H8	1.52	0.56
1:1:2248:C:OP2	42:m:304:ARG:NH2	2.38	0.56
1:1:2981:U:H1'	1:1:2982:A:H5'	1.87	0.56
3:3:16:U:OP1	8:D:8:LYS:NZ	2.35	0.56
4:7:32:LYS:O	4:7:36:GLN:HG2	2.05	0.56
22:S:34:GLU:HG3	22:S:61:ILE:HD13	1.87	0.56
50:x:385:LEU:O	50:x:395:ILE:N	2.27	0.56
1:1:110:G:OP2	15:L:73:ARG:NH2	2.27	0.56
1:1:655:C:H2'	1:1:656:A:H8	1.71	0.56
1:1:1168:U:H2'	1:1:1169:A:H8	1.70	0.56
1:1:1622:U:H2'	1:1:1623:G:H8	1.70	0.56
1:1:2842:U:O2	46:s:46:LYS:NZ	2.38	0.56
9:E:52:VAL:HG21	9:E:65:ILE:HD12	1.87	0.56
20:Q:89:ASP:OD1	20:Q:90:ASP:N	2.38	0.56
31:b:168:ARG:HH21	31:b:214:LEU:HB3	1.70	0.56
1:1:221:A:O2'	1:1:223:U:OP2	2.22	0.56
1:1:907:G:OP1	1:1:909:G:O2'	2.23	0.56
1:1:1724:U:OP2	21:R:128:LYS:NZ	2.31	0.56
1:1:2568:C:O2'	1:1:2569:A:O4'	2.24	0.56
1:1:2625:C:OP2	1:1:2656:A:N6	2.38	0.56
1:1:2674:A:C5	14:J:124:GLY:HA3	2.41	0.56
1:1:3276:G:O6	19:P:171:ARG:NH2	2.35	0.56
31:b:400:ARG:NE	51:y:33:ASN:OD1	2.37	0.56
42:m:105:GLN:OE1	48:v:274:ARG:NE	2.28	0.56
1:1:438:A:OP1	34:e:118:LYS:NZ	2.23	0.56
1:1:2716:U:OP2	1:1:2753:G:O2'	2.23	0.56
7:C:342:LYS:NZ	10:F:56:GLU:OE2	2.31	0.56
8:D:69:ILE:HG22	48:v:130:LYS:HE2	1.87	0.56
13:I:90:SER:OG	47:u:6:CYS:O	2.24	0.56
28:Y:51:ARG:HB2	28:Y:115:ARG:HH12	1.71	0.56
48:v:184:MET:HE2	48:v:201:PHE:CD2	2.41	0.56
1:1:1863:G:N1	1:1:1866:C:OP2	2.36	0.56
6:B:231:HIS:HE1	6:B:270:ARG:CZ	2.18	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:H:113:GLU:OE2	12:H:115:ARG:NH2	2.38	0.56
31:b:25:THR:O	31:b:29:THR:OG1	2.20	0.56
1:1:1567:U:O2'	1:1:1575:A:N3	2.36	0.56
1:1:2211:U:O2	1:1:2234:G:O6	2.22	0.56
3:3:5:G:OP1	14:J:143:ARG:NH2	2.32	0.56
46:s:45:LYS:NZ	46:s:47:ASP:O	2.33	0.56
47:u:71:PHE:O	47:u:75:ARG:NH2	2.39	0.56
48:v:205:LYS:HE3	48:v:226:ILE:HD13	1.88	0.56
1:1:1116:G:H2'	1:1:1117:G:H5''	1.87	0.56
3:3:91:G:H2'	3:3:92:A:H8	1.69	0.56
14:J:81:GLU:OE2	14:J:89:TYR:OH	2.20	0.56
26:W:57:ARG:NH1	26:W:65:LEU:O	2.36	0.56
48:v:75:LEU:O	48:v:87:MET:HE1	2.06	0.56
1:1:148:G:OP2	17:N:4:TYR:OH	2.14	0.56
1:1:417:A:H2'	1:1:418:A:C8	2.41	0.56
1:1:528:U:H2'	1:1:529:A:C8	2.41	0.56
1:1:1201:C:O2'	1:1:1202:A:N3	2.32	0.56
1:1:2405:C:H42	1:1:2816:G:H22	1.52	0.56
1:1:2626:A:O4'	1:1:2656:A:O2'	2.24	0.56
2:2:79:A:C5	2:2:80:A:H1'	2.41	0.56
19:P:128:ARG:HD3	19:P:138:LYS:HA	1.88	0.56
48:v:87:MET:HB2	48:v:103:ILE:HB	1.87	0.56
1:1:911:C:OP1	5:A:14:SER:OG	2.23	0.56
1:1:2768:U:H2'	1:1:2769:A:H8	1.69	0.56
6:B:231:HIS:HE1	6:B:270:ARG:NH2	2.04	0.56
47:u:82:ASN:HB3	47:u:85:LEU:HB3	1.87	0.56
50:x:321:HIS:CD2	50:x:379:ASP:HB2	2.39	0.56
1:1:3163:A:N6	1:1:3288:G:O6	2.39	0.56
23:T:42:ILE:HG12	23:T:91:LEU:HD11	1.88	0.56
1:1:129:U:H2'	1:1:130:A:C8	2.41	0.55
1:1:520:U:OP2	10:F:70:LYS:NZ	2.39	0.55
1:1:1364:C:OP1	10:F:110:ARG:NH2	2.26	0.55
1:1:2938:G:P	31:b:48:ARG:HH12	2.28	0.55
6:B:58:ARG:NH1	6:B:283:TYR:OH	2.39	0.55
35:f:2:ALA:O	35:f:5:HIS:NE2	2.35	0.55
50:x:321:HIS:HD2	50:x:379:ASP:CB	2.18	0.55
1:1:1222:G:N7	26:W:71:LYS:NZ	2.42	0.55
2:2:24:G:OP2	28:Y:13:ARG:NH2	2.39	0.55
2:2:70:G:OP1	28:Y:121:ARG:NH2	2.40	0.55
23:T:146:ASN:HD22	23:T:146:ASN:C	2.14	0.55
31:b:256:LEU:HD13	31:b:287:ILE:HG23	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:q:65:GLN:NE2	44:q:66:ASN:H	2.03	0.55
51:y:186:VAL:HG12	51:y:218:ILE:HD11	1.88	0.55
1:1:2648:G:H2'	1:1:2649:A:H8	1.72	0.55
1:1:664:U:H2'	1:1:665:A:C8	2.41	0.55
1:1:838:G:N7	43:p:4:ARG:NH2	2.50	0.55
1:1:2634:U:H2'	1:1:2635:A:C8	2.41	0.55
1:1:2715:A:H4'	1:1:2754:G:OP2	2.07	0.55
1:1:2794:G:N2	1:1:2795:U:O4	2.35	0.55
1:1:3039:C:OP1	6:B:62:ARG:NH1	2.39	0.55
3:3:121:U:H1'	8:D:268:GLU:HG2	1.87	0.55
17:N:183:THR:HG22	17:N:187:ARG:HB2	1.89	0.55
26:W:64:LYS:HD3	26:W:66:ILE:HD11	1.88	0.55
26:W:232:ASN:OD1	26:W:234:ASN:ND2	2.39	0.55
31:b:18:LEU:HD11	31:b:137:ALA:HA	1.87	0.55
40:k:14:LEU:HD21	40:k:52:TYR:CG	2.42	0.55
42:m:217:LYS:HG2	45:r:163:ARG:HH12	1.71	0.55
51:y:4:ARG:NH1	51:y:210:THR:O	2.25	0.55
1:1:645:A:OP2	1:1:1153:A:N6	2.39	0.55
1:1:2550:U:C4	11:G:36:ILE:HG23	2.42	0.55
1:1:3040:A:H5'	25:V:11:PHE:HA	1.87	0.55
25:V:61:THR:HG22	25:V:73:VAL:HG22	1.88	0.55
26:W:219:ALA:HB2	26:W:230:SER:HA	1.87	0.55
31:b:272:HIS:HA	31:b:275:LYS:HG3	1.89	0.55
33:d:16:LEU:HD12	33:d:71:LEU:HD13	1.88	0.55
47:u:32:CYS:SG	47:u:33:ARG:NH1	2.78	0.55
50:x:90:ASP:HB3	50:x:107:LYS:HB3	1.88	0.55
1:1:692:A:OP1	17:N:201:ARG:NH2	2.32	0.55
1:1:1204:A:H2'	1:1:1205:A:O4'	2.06	0.55
1:1:1622:U:H2'	1:1:1623:G:C8	2.42	0.55
23:T:79:MET:HA	23:T:84:TYR:HA	1.87	0.55
45:r:155:THR:HG22	45:r:214:VAL:HG12	1.88	0.55
1:1:172:G:O6	1:1:247:C:N4	2.40	0.55
1:1:437:G:O6	32:c:40:ARG:NH1	2.32	0.55
1:1:1455:U:O2	33:d:26:LYS:NZ	2.39	0.55
3:3:74:C:O2'	3:3:75:G:O4'	2.19	0.55
5:A:101:VAL:HG22	5:A:165:VAL:HG22	1.87	0.55
14:J:115:LYS:HD3	14:J:117:ASP:H	1.71	0.55
15:L:53:LEU:HB2	15:L:55:ARG:HH12	1.70	0.55
22:S:106:LEU:O	22:S:110:MET:HG2	2.07	0.55
45:r:209:TYR:HB3	45:r:214:VAL:HG22	1.89	0.55
3:3:16:U:H2'	3:3:17:A:H8	1.72	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:E:72:ASN:ND2	9:E:159:LEU:O	2.38	0.55
17:N:56:LYS:NZ	17:N:145:ASP:OD2	2.38	0.55
26:W:158:ILE:H	26:W:158:ILE:HD12	1.72	0.55
26:W:158:ILE:HG22	26:W:160:SER:H	1.71	0.55
31:b:83:ASP:O	42:m:147:ARG:NH2	2.35	0.55
31:b:258:GLU:HA	44:q:40:LYS:HE3	1.88	0.55
1:1:121:A:C2	11:G:129:PRO:HB3	2.42	0.55
1:1:2195:C:O2	1:1:2247:G:N2	2.40	0.55
1:1:2547:A:O2'	1:1:2549:G:OP1	2.18	0.55
1:1:2843:U:H5'	1:1:2844:C:H3'	1.87	0.55
18:O:29:ASN:OD1	35:f:14:LEU:HD22	2.07	0.55
1:1:40:A:H1'	1:1:41:G:C8	2.42	0.55
1:1:784:A:OP2	20:Q:69:ARG:NH1	2.40	0.55
1:1:1492:G:O2'	41:l:48:LYS:NZ	2.38	0.55
1:1:1497:C:O2'	1:1:1602:A:N3	2.35	0.55
1:1:3109:G:OP2	1:1:3120:C:N4	2.39	0.55
49:w:76:SER:OG	50:x:481:ASP:O	2.23	0.55
1:1:1786:G:H2'	1:1:1787:A:C8	2.42	0.54
8:D:207:TYR:O	8:D:211:LEU:HB2	2.06	0.54
19:P:30:ARG:HA	19:P:119:VAL:HG11	1.89	0.54
28:Y:60:ARG:HB2	28:Y:103:LYS:HB3	1.89	0.54
31:b:623:ASP:HB2	41:l:46:ARG:HD3	1.88	0.54
50:x:385:LEU:HB2	50:x:398:MET:HE3	1.89	0.54
1:1:602:A:H2'	1:1:603:A:C8	2.42	0.54
1:1:2158:A:OP2	5:A:156:LYS:NZ	2.32	0.54
1:1:3330:A:H4'	6:B:366:GLY:HA3	1.89	0.54
6:B:54:THR:OG1	6:B:360:ASP:O	2.24	0.54
18:O:113:ASP:OD2	18:O:113:ASP:N	2.39	0.54
32:c:93:ARG:O	32:c:97:ILE:HG13	2.07	0.54
45:r:138:LYS:O	45:r:143:ARG:NH1	2.39	0.54
1:1:2581:U:H2'	1:1:2582:C:C6	2.42	0.54
1:1:1603:A:H61	27:X:71:THR:HG21	1.73	0.54
1:1:3344:A:N6	1:1:3361:G:O2'	2.41	0.54
13:I:7:LYS:O	13:I:13:ARG:NH1	2.39	0.54
25:V:94:TYR:OH	47:u:37:HIS:NE2	2.25	0.54
1:1:266:A:H2'	38:i:30:LYS:HE3	1.89	0.54
1:1:1126:G:O6	46:s:32:LYS:NZ	2.40	0.54
6:B:36:ASP:OD1	6:B:39:LYS:NZ	2.35	0.54
35:f:19:SER:OG	35:f:20:LYS:N	2.39	0.54
1:1:209:A:H4'	1:1:211:A:N7	2.23	0.54
1:1:655:C:H2'	1:1:656:A:C8	2.43	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1278:A:HO2'	1:1:1279:C:H6	1.54	0.54
10:F:48:ASN:ND2	10:F:182:ASP:OD2	2.41	0.54
12:H:120:ASP:OD2	12:H:124:ARG:NH2	2.31	0.54
15:L:64:LYS:HD3	15:L:65:TYR:CE1	2.41	0.54
35:f:54:ARG:HG2	35:f:64:ILE:HG12	1.90	0.54
42:m:10:ARG:HH12	42:m:14:GLU:HG3	1.72	0.54
50:x:40:ASP:OD1	50:x:41:THR:N	2.40	0.54
8:D:68:THR:HG23	48:v:133:PHE:HB3	1.89	0.54
15:L:106:GLN:HB2	38:i:18:THR:HB	1.89	0.54
48:v:115:GLU:O	48:v:235:GLY:N	2.38	0.54
1:1:215:G:OP1	28:Y:12:ARG:NH1	2.33	0.54
1:1:601:U:H2'	1:1:602:A:C8	2.42	0.54
1:1:689:U:O4	7:C:209:TYR:OH	2.25	0.54
1:1:696:C:OP2	7:C:119:ARG:NH2	2.41	0.54
1:1:837:A:OP2	43:p:4:ARG:NE	2.31	0.54
26:W:122:SER:HA	26:W:212:GLU:HA	1.90	0.54
43:p:46:THR:HG22	43:p:58:SER:H	1.72	0.54
44:q:128:VAL:HA	44:q:131:GLU:OE1	2.08	0.54
49:w:45:ARG:NH1	49:w:48:GLU:OE2	2.41	0.54
49:w:113:LYS:HG2	49:w:198:ASN:HD21	1.71	0.54
1:1:2:U:H5''	1:1:3:U:H5	1.72	0.54
1:1:2530:G:H2'	1:1:2531:C:O4'	2.08	0.54
1:1:2700:G:O2'	1:1:2701:U:O4'	2.26	0.54
1:1:2764:C:H3'	1:1:2765:C:H6	1.73	0.54
26:W:55:GLU:OE1	26:W:119:TYR:OH	2.26	0.54
45:r:183:ASN:OD1	45:r:256:ASN:ND2	2.41	0.54
1:1:63:A:N3	1:1:78:U:O2'	2.32	0.54
1:1:1626:U:H3	1:1:1817:G:H1	1.54	0.54
1:1:2198:A:H2'	1:1:2199:G:C8	2.43	0.54
1:1:2546:C:O2'	1:1:2548:C:O2	2.25	0.54
1:1:2810:C:H2'	1:1:2811:A:H8	1.72	0.54
30:a:74:ASN:HB3	30:a:115:LYS:HB3	1.89	0.54
34:e:104:ASN:O	34:e:108:ILE:HG13	2.08	0.54
48:v:41:ASN:O	48:v:45:ILE:HD12	2.07	0.54
1:1:1580:A:OP2	1:1:2522:G:N2	2.40	0.53
1:1:2733:A:H2'	1:1:2734:A:C8	2.43	0.53
1:1:3315:G:OP1	6:B:116:ARG:NH2	2.38	0.53
5:A:134:VAL:HG12	5:A:151:PRO:HD3	1.90	0.53
47:u:19:ILE:HD11	47:u:37:HIS:CE1	2.43	0.53
1:1:157:A:C8	38:i:26:ILE:HG12	2.43	0.53
1:1:2213:A:H2'	1:1:2214:A:C8	2.42	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:B:231:HIS:CE1	6:B:270:ARG:NH1	2.76	0.53
25:V:15:LEU:HD13	25:V:51:ALA:HB3	1.91	0.53
31:b:422:LEU:HD13	31:b:427:TRP:CD1	2.43	0.53
1:1:1494:U:OP1	41:l:42:ARG:NH2	2.40	0.53
1:1:2898:G:H22	45:r:6:TYR:N	2.07	0.53
10:F:225:GLN:HG3	22:S:119:ARG:HD2	1.89	0.53
29:Z:70:PRO:HG3	29:Z:115:LYS:HB2	1.91	0.53
42:m:290:ILE:HD11	42:m:333:ASN:HB3	1.91	0.53
48:v:113:MET:H	48:v:238:HIS:HB3	1.74	0.53
7:C:126:ILE:O	7:C:129:THR:OG1	2.26	0.53
8:D:80:SER:OG	8:D:92:LEU:O	2.22	0.53
42:m:41:MET:CE	45:r:170:ARG:HB2	2.38	0.53
48:v:31:LEU:HB2	48:v:84:CYS:SG	2.49	0.53
1:1:691:A:OP1	7:C:46:LYS:NZ	2.27	0.53
1:1:1278:A:O2'	1:1:1279:C:H6	1.90	0.53
1:1:2581:U:H2'	1:1:2582:C:H6	1.74	0.53
1:1:3016:A:HO2'	1:1:3017:A:H8	1.57	0.53
1:1:3067:C:H3'	21:R:62:ARG:HH22	1.73	0.53
13:I:87:GLN:NE2	13:I:91:ASP:OD1	2.31	0.53
18:O:172:ARG:HA	18:O:175:THR:HG22	1.91	0.53
31:b:409:ALA:HB1	51:y:31:SER:HB3	1.90	0.53
50:x:130:LYS:HD3	50:x:515:HIS:CD2	2.44	0.53
50:x:411:SER:HB3	50:x:416:TYR:HB2	1.90	0.53
1:1:2228:A:H2'	1:1:2229:A:C8	2.43	0.53
1:1:2609:A:H2'	1:1:2610:G:C8	2.44	0.53
2:2:122:U:H2'	2:2:123:G:C8	2.44	0.53
7:C:69:ARG:NH1	31:b:635:PHE:O	2.36	0.53
27:X:76:VAL:HG22	27:X:82:LEU:HD23	1.90	0.53
32:c:3:SER:OG	32:c:4:LYS:N	2.41	0.53
50:x:404:LEU:HD23	50:x:404:LEU:H	1.73	0.53
1:1:361:A:O3'	39:j:45:ARG:NH2	2.41	0.53
1:1:2829:U:O4	45:r:52:LYS:NZ	2.40	0.53
12:H:49:ASN:OD1	12:H:50:ASN:N	2.42	0.53
31:b:290:THR:HA	31:b:293:ILE:HG22	1.91	0.53
1:1:1392:G:O2'	1:1:1417:G:N2	2.34	0.53
1:1:1613:A:P	40:k:46:ARG:HH12	2.30	0.53
4:7:13:LYS:NZ	4:7:103:THR:OG1	2.40	0.53
8:D:187:THR:HG22	8:D:188:GLU:H	1.72	0.53
16:M:55:ARG:NH1	22:S:70:THR:O	2.41	0.53
21:R:13:SER:OG	21:R:38:ARG:NH2	2.40	0.53
26:W:137:ILE:N	26:W:186:TYR:O	2.40	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:b:417:LYS:HA	31:b:420:TYR:CE1	2.44	0.53
1:1:178:U:H2'	1:1:179:C:C6	2.43	0.53
1:1:806:A:O2'	1:1:2812:C:O2'	2.26	0.53
1:1:2095:G:H2'	1:1:2096:A:H8	1.73	0.53
1:1:2666:C:H1'	1:1:2691:A:C4	2.43	0.53
5:A:53:GLY:O	5:A:192:LYS:NZ	2.41	0.53
14:J:131:MET:HE1	14:J:162:TRP:CD2	2.44	0.53
22:S:60:SER:OG	22:S:62:ASN:OD1	2.26	0.53
50:x:330:THR:HG22	50:x:363:ILE:HG13	1.90	0.53
1:1:715:A:HO2'	1:1:752:C:HO2'	1.56	0.53
1:1:1200:A:H2	1:1:2824:G:H1	0.60	0.53
1:1:1909:A:H2'	1:1:1910:A:C8	2.44	0.53
1:1:2966:G:H2'	1:1:2967:A:C8	2.43	0.53
1:1:3089:C:H2'	1:1:3090:U:O4'	2.09	0.53
1:1:3115:C:OP1	12:H:62:ARG:NH2	2.42	0.53
3:3:16:U:H2'	3:3:17:A:C8	2.43	0.53
6:B:284:ARG:NH1	6:B:293:ASN:O	2.40	0.53
13:I:4:TYR:OH	13:I:8:ARG:NH1	2.37	0.53
13:I:97:ASN:HB3	13:I:100:LYS:HG2	1.90	0.53
21:R:134:HIS:CE1	21:R:136:ARG:HB3	2.44	0.53
31:b:420:TYR:CD2	51:y:86:ASN:HB3	2.44	0.53
49:w:154:LEU:HD12	49:w:180:ASN:ND2	2.24	0.53
51:y:67:ARG:NH1	51:y:112:ASP:OD1	2.40	0.53
51:y:185:THR:OG1	51:y:214:GLU:OE2	2.24	0.53
1:1:2213:A:N3	1:1:2601:A:O2'	2.36	0.52
15:L:153:ASP:OD2	15:L:157:ARG:NE	2.36	0.52
21:R:133:LYS:HG3	21:R:134:HIS:HD2	1.73	0.52
23:T:43:LYS:HE2	23:T:97:LYS:HZ2	1.74	0.52
31:b:306:LEU:O	31:b:309:VAL:HG12	2.08	0.52
1:1:710:A:H2'	1:1:711:A:C8	2.45	0.52
1:1:2271:A:O2'	1:1:2272:G:OP1	2.25	0.52
1:1:2397:A:H5'	1:1:2398:A:OP1	2.10	0.52
1:1:3153:U:H3	1:1:3293:U:H3	1.55	0.52
1:1:3309:G:O6	6:B:21:ARG:NH2	2.42	0.52
14:J:132:ASN:HA	14:J:154:THR:HG21	1.90	0.52
35:f:16:TYR:OH	35:f:89:LEU:O	2.17	0.52
50:x:124:ARG:HE	50:x:457:ARG:NH2	2.06	0.52
50:x:372:GLU:O	50:x:387:ASN:ND2	2.41	0.52
1:1:996:A:H1'	1:1:997:A:C8	2.44	0.52
1:1:2512:C:H2'	1:1:2513:U:C6	2.45	0.52
1:1:2675:C:H2'	1:1:2676:A:C8	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:E:175:LYS:O	16:M:117:ARG:NH2	2.42	0.52
29:Z:50:PRO:HD3	29:Z:68:ILE:HG12	1.92	0.52
49:w:190:LYS:O	49:w:194:GLN:HG3	2.09	0.52
1:1:439:C:OP1	34:e:2:ALA:N	2.42	0.52
1:1:531:G:H2'	1:1:532:A:C8	2.45	0.52
1:1:644:G:C6	1:1:1117:G:H4'	2.45	0.52
1:1:1596:C:H2'	1:1:1597:C:C6	2.43	0.52
1:1:1845:G:H5'	1:1:1846:C:H5''	1.92	0.52
1:1:2197:C:OP2	1:1:2242:A:N6	2.42	0.52
1:1:2251:G:H2'	1:1:2252:A:H8	1.74	0.52
1:1:3120:C:OP1	45:r:30:ARG:NH1	2.42	0.52
2:2:26:U:H2'	2:2:27:U:C6	2.44	0.52
3:3:103:A:H2'	3:3:104:A:C8	2.43	0.52
8:D:50:ARG:HG2	8:D:147:ASP:HB2	1.91	0.52
9:E:51:ARG:HB3	9:E:159:LEU:HD23	1.92	0.52
10:F:224:ILE:HD11	22:S:35:VAL:HG12	1.92	0.52
48:v:151:HIS:ND1	48:v:153:VAL:HG12	2.24	0.52
1:1:671:U:H2'	1:1:672:A:H8	1.75	0.52
1:1:2758:A:OP1	49:w:194:GLN:NE2	2.42	0.52
2:2:47:C:O2'	2:2:62:C:OP2	2.24	0.52
3:3:103:A:H2'	3:3:104:A:H8	1.75	0.52
26:W:220:TYR:OH	26:W:229:GLU:OE1	2.22	0.52
50:x:411:SER:OG	50:x:413:ASP:OD1	2.25	0.52
1:1:517:G:OP1	10:F:67:ARG:NH2	2.40	0.52
1:1:829:U:H3	1:1:895:A:H62	1.58	0.52
1:1:900:G:H1'	1:1:1589:A:N6	2.25	0.52
1:1:2938:G:OP1	31:b:48:ARG:NH1	2.43	0.52
15:L:64:LYS:HG3	30:a:69:TRP:CG	2.45	0.52
17:N:113:LEU:HB2	17:N:134:LEU:HD12	1.92	0.52
19:P:29:THR:HA	19:P:32:THR:HG22	1.91	0.52
25:V:108:GLU:HA	25:V:128:ARG:HG2	1.90	0.52
26:W:3:ARG:HG2	26:W:4:SER:H	1.74	0.52
1:1:546:C:H5'	1:1:547:G:N2	2.24	0.52
1:1:767:U:HO2'	1:1:768:C:H6	1.58	0.52
1:1:975:C:H1'	1:1:976:U:H6	1.74	0.52
1:1:2683:U:H2'	1:1:2684:C:C6	2.44	0.52
1:1:3170:A:H5''	32:c:24:ASN:ND2	2.24	0.52
8:D:79:TYR:N	8:D:82:GLU:OE2	2.35	0.52
8:D:195:LEU:O	8:D:199:ILE:HD12	2.09	0.52
25:V:71:LYS:HE2	42:m:398:GLN:HB3	1.90	0.52
1:1:879:U:O2'	19:P:131:ARG:NH2	2.43	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1128:U:O2'	1:1:1129:A:O5'	2.25	0.52
1:1:2762:A:O4'	1:1:2794:G:N1	2.43	0.52
6:B:21:ARG:NH1	6:B:269:GLN:OE1	2.41	0.52
50:x:195:SER:O	50:x:198:GLY:N	2.33	0.52
1:1:424:G:O2'	34:e:23:ASP:OD2	2.20	0.52
1:1:627:U:H4'	1:1:1399:A:H1'	1.92	0.52
1:1:1300:G:H5''	1:1:1301:A:H5'	1.92	0.52
1:1:1306:G:O6	1:1:2366:C:O2'	2.24	0.52
1:1:3178:A:C8	18:O:5:PRO:HG2	2.45	0.52
1:1:3252:G:H2'	1:1:3253:G:C8	2.45	0.52
4:7:60:ALA:O	4:7:64:LYS:N	2.43	0.52
19:P:67:ILE:HD12	19:P:82:ARG:CZ	2.40	0.52
31:b:232:MET:HB2	31:b:237:MET:HE3	1.92	0.52
36:g:83:ASN:O	36:g:87:GLU:HG2	2.10	0.52
1:1:160:G:N2	1:1:261:U:O2	2.34	0.52
1:1:808:A:H2'	1:1:809:G:C8	2.45	0.52
1:1:1067:U:H2'	1:1:1068:C:H6	1.75	0.52
1:1:3186:A:N3	12:H:44:THR:OG1	2.37	0.52
2:2:130:C:H2'	2:2:131:A:H8	1.75	0.52
3:3:91:G:H2'	3:3:92:A:C8	2.44	0.52
50:x:332:TYR:CD1	50:x:412:PRO:HB3	2.45	0.52
1:1:959:C:N3	1:1:2615:G:O2'	2.44	0.51
1:1:2525:G:N7	5:A:67:TYR:OH	2.39	0.51
31:b:87:GLU:HG2	31:b:90:HIS:HD2	1.75	0.51
31:b:98:ILE:HD13	31:b:143:LEU:HD21	1.92	0.51
42:m:210:ARG:O	42:m:214:GLU:HG2	2.09	0.51
45:r:86:ALA:HB1	50:x:147:LEU:HD11	1.92	0.51
1:1:3:U:H3	2:2:156:U:H5	1.58	0.51
1:1:2668:U:H2'	1:1:2669:G:H8	1.75	0.51
3:3:26:C:H2'	3:3:27:A:O4'	2.11	0.51
6:B:56:ILE:HG21	6:B:356:LEU:HD22	1.92	0.51
11:G:82:LEU:HG	11:G:86:THR:HB	1.92	0.51
28:Y:85:VAL:HG11	28:Y:99:LEU:HD11	1.91	0.51
48:v:144:GLN:HA	49:w:30:ASP:HB3	1.91	0.51
50:x:273:THR:OG1	50:x:274:MET:N	2.44	0.51
1:1:3277:U:OP2	1:1:3278:C:N4	2.43	0.51
8:D:34:LYS:O	8:D:38:THR:OG1	2.26	0.51
11:G:91:PHE:CE2	11:G:189:LEU:HD23	2.46	0.51
15:L:53:LEU:HB2	15:L:55:ARG:NH1	2.24	0.51
44:q:61:GLN:HG3	44:q:72:SER:HB2	1.92	0.51
1:1:160:G:O6	1:1:261:U:O4	2.29	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2532:U:H5'	1:1:2533:G:H5''	1.93	0.51
8:D:208:MET:HB2	8:D:219:PHE:HE2	1.75	0.51
12:H:90:MET:HE2	12:H:179:ILE:HG22	1.92	0.51
20:Q:19:PRO:HG3	20:Q:30:VAL:HG21	1.92	0.51
48:v:154:TYR:HA	48:v:157:ILE:HG22	1.91	0.51
1:1:1329:U:O2'	1:1:1330:A:OP1	2.26	0.51
1:1:3017:A:H2'	1:1:3018:C:H6	1.76	0.51
5:A:14:SER:OG	5:A:15:ILE:N	2.44	0.51
6:B:57:VAL:HG22	6:B:73:VAL:HG22	1.93	0.51
11:G:178:ALA:HB2	11:G:218:ILE:HD12	1.93	0.51
1:1:733:G:N2	1:1:736:A:OP2	2.43	0.51
1:1:1497:C:H2'	1:1:1498:A:C8	2.46	0.51
1:1:2547:A:H1'	1:1:2548:C:H3'	1.93	0.51
1:1:3389:U:HO2'	1:1:3390:G:H8	1.58	0.51
5:A:13:GLY:O	5:A:17:THR:HG23	2.11	0.51
22:S:25:PHE:HB3	23:T:151:LEU:HD22	1.93	0.51
22:S:132:THR:HB	22:S:144:LEU:HD23	1.92	0.51
23:T:36:VAL:HG13	23:T:65:TYR:HA	1.93	0.51
48:v:225:GLU:OE1	48:v:229:ARG:NH2	2.39	0.51
1:1:411:U:H2'	1:1:412:G:C8	2.46	0.51
1:1:411:U:H2'	1:1:412:G:H8	1.76	0.51
1:1:709:A:C5	1:1:2788:C:H5'	2.46	0.51
1:1:1721:U:OP2	21:R:124:TYR:OH	2.24	0.51
1:1:2227:C:H2'	1:1:2228:A:H8	1.76	0.51
1:1:2655:U:H2'	1:1:2657:A:N6	2.26	0.51
1:1:2666:C:H2'	1:1:2667:A:C8	2.45	0.51
1:1:3000:A:H5''	6:B:120:LYS:HZ2	1.76	0.51
14:J:7:ASN:OD1	14:J:10:ARG:NE	2.39	0.51
17:N:94:TYR:CE2	17:N:96:ARG:HB2	2.45	0.51
38:i:44:VAL:HA	38:i:47:ILE:HG12	1.92	0.51
1:1:1277:C:O2'	1:1:1278:A:H8	1.94	0.51
2:2:153:U:OP1	11:G:63:LYS:HE3	2.11	0.51
29:Z:15:ARG:NH2	36:g:83:ASN:OD1	2.44	0.51
45:r:183:ASN:HB3	45:r:194:PHE:HD1	1.76	0.51
1:1:1234:G:H2'	1:1:1235:U:C5	2.46	0.51
1:1:2261:G:H4'	1:1:2262:A:H8	1.75	0.51
1:1:3295:A:H2'	1:1:3296:A:C8	2.46	0.51
2:2:39:G:O2'	2:2:105:A:N1	2.42	0.51
6:B:306:THR:HG21	6:B:316:GLU:HG3	1.91	0.51
18:O:121:PRO:HA	18:O:124:LEU:HD12	1.92	0.51
50:x:20:ARG:HG3	50:x:21:GLU:HG2	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:x:320:ALA:HB3	50:x:380:ASP:OD1	2.10	0.51
51:y:142:ILE:HG12	51:y:148:VAL:HG12	1.91	0.51
1:1:860:G:C5	5:A:181:LYS:HB2	2.46	0.51
1:1:2657:A:H1'	1:1:2658:G:H5'	1.92	0.51
1:1:3023:U:H5	1:1:3032:A:N7	2.08	0.51
1:1:3199:G:H2'	1:1:3200:G:H8	1.76	0.51
12:H:112:ILE:HG21	12:H:161:LEU:HD21	1.93	0.51
29:Z:81:LEU:HD22	36:g:90:ILE:HG12	1.92	0.51
44:q:53:PHE:HE2	44:q:73:VAL:HG11	1.76	0.51
50:x:385:LEU:HB3	50:x:395:ILE:HB	1.92	0.51
1:1:398:A:H62	32:c:88:THR:HB	1.75	0.50
1:1:437:G:O2'	1:1:438:A:H5'	2.11	0.50
1:1:705:A:N6	30:a:74:ASN:OD1	2.33	0.50
1:1:2585:G:H1'	11:G:64:ILE:HD11	1.92	0.50
9:E:40:LEU:HB3	9:E:84:VAL:CG2	2.41	0.50
9:E:40:LEU:HD11	9:E:54:TYR:HB2	1.93	0.50
18:O:61:ALA:HA	18:O:70:PRO:HD2	1.92	0.50
28:Y:59:VAL:O	28:Y:64:LYS:NZ	2.43	0.50
44:q:66:ASN:O	44:q:67:ARG:HD2	2.11	0.50
1:1:1563:C:H2'	1:1:1564:U:H6	1.76	0.50
1:1:1932:A:N1	42:m:437:ARG:NH2	2.57	0.50
1:1:2209:U:H4'	1:1:2210:G:C8	2.47	0.50
1:1:2268:U:C6	48:v:276:HIS:CE1	2.99	0.50
1:1:2605:G:O2'	1:1:2607:G:N7	2.37	0.50
12:H:147:SER:HB2	12:H:187:ILE:HD11	1.93	0.50
21:R:66:HIS:NE2	21:R:70:LYS:HE3	2.26	0.50
21:R:95:TRP:CZ2	21:R:99:LEU:HD22	2.46	0.50
34:e:63:THR:HG23	34:e:66:LEU:HD12	1.91	0.50
45:r:193:VAL:HG11	45:r:228:LEU:HD11	1.93	0.50
50:x:499:LYS:HG3	50:x:500:ARG:HG3	1.93	0.50
1:1:1565:G:O2'	1:1:1567:U:OP2	2.19	0.50
1:1:2095:G:H2'	1:1:2096:A:C8	2.46	0.50
1:1:2651:G:H4'	1:1:2652:U:OP1	2.11	0.50
1:1:3027:A:H8	31:b:208:HIS:CD2	2.30	0.50
3:3:101:G:OP2	48:v:96:ARG:NH1	2.45	0.50
6:B:300:ARG:HB2	31:b:436:LEU:HD13	1.94	0.50
17:N:190:THR:O	17:N:194:GLN:HG2	2.11	0.50
31:b:65:LEU:HD23	31:b:95:LEU:HD12	1.93	0.50
35:f:56:SER:O	35:f:63:LYS:NZ	2.44	0.50
1:1:1621:A:H2'	1:1:1622:U:C6	2.47	0.50
1:1:2216:G:N2	1:1:2230:C:O2	2.45	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:53:A:C2	41:l:35:ILE:HD11	2.47	0.50
6:B:231:HIS:CE1	6:B:270:ARG:NH2	2.80	0.50
8:D:77:ALA:O	8:D:108:ARG:NH1	2.45	0.50
10:F:74:SER:HG	23:T:141:VAL:C	2.18	0.50
17:N:8:GLU:O	17:N:12:ARG:HG2	2.10	0.50
20:Q:94:PHE:CZ	30:a:119:PRO:HD3	2.46	0.50
1:1:408:A:N3	1:1:655:C:O2'	2.39	0.50
1:1:775:A:H2'	1:1:776:U:C6	2.47	0.50
1:1:2623:G:H2'	1:1:2624:G:C8	2.46	0.50
1:1:2936:A:H2'	1:1:2937:G:C8	2.47	0.50
50:x:445:ALA:HB3	50:x:465:ASP:N	2.27	0.50
1:1:806:A:H2'	1:1:807:A:C2	2.47	0.50
1:1:2831:G:H2'	1:1:2832:C:C6	2.47	0.50
1:1:3157:U:O2'	1:1:3158:G:OP2	2.29	0.50
1:1:3214:U:C4	16:M:121:MET:HG3	2.47	0.50
5:A:4:VAL:HG13	5:A:8:GLN:HB2	1.93	0.50
5:A:35:ALA:HA	11:G:36:ILE:HD11	1.93	0.50
5:A:107:VAL:HG23	5:A:136:ILE:HD13	1.93	0.50
5:A:118:GLU:HG2	5:A:126:LEU:HD11	1.93	0.50
6:B:85:VAL:HB	6:B:202:THR:HG22	1.91	0.50
31:b:184:LEU:HD22	31:b:220:ASP:HB2	1.94	0.50
38:i:58:ILE:HB	38:i:94:ILE:HD11	1.93	0.50
40:k:62:ALA:O	40:k:66:ILE:HG12	2.11	0.50
47:u:49:LEU:HD22	47:u:51:TRP:HE1	1.75	0.50
1:1:201:A:H2'	1:1:202:G:H8	1.76	0.50
1:1:1305:U:C2	6:B:257:PRO:HB3	2.46	0.50
1:1:2227:C:H2'	1:1:2228:A:C8	2.47	0.50
1:1:2542:U:O2'	1:1:2543:U:O4'	2.29	0.50
1:1:2681:U:H2'	1:1:2682:C:H6	1.76	0.50
1:1:2846:U:H4'	1:1:2847:A:H5'	1.94	0.50
1:1:2871:G:N7	45:r:174:PRO:HA	2.25	0.50
1:1:2969:A:O2'	1:1:2970:C:O4'	2.30	0.50
14:J:155:THR:HG23	14:J:158:ASP:H	1.76	0.50
39:j:72:ARG:O	39:j:75:LYS:HG2	2.11	0.50
42:m:82:ARG:HB2	45:r:240:GLY:HA3	1.93	0.50
42:m:226:ILE:HD13	42:m:256:ILE:HB	1.94	0.50
51:y:175:SER:O	51:y:178:GLN:NE2	2.43	0.50
1:1:385:A:H2'	1:1:386:A:C8	2.46	0.50
1:1:1241:U:O2'	1:1:1242:G:O5'	2.26	0.50
1:1:1699:A:H2'	1:1:1700:G:C8	2.46	0.50
1:1:2399:A:H2'	1:1:2400:G:O4'	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2855:U:H2'	1:1:2856:G:H8	1.76	0.50
1:1:3163:A:H2'	1:1:3164:C:H5''	1.94	0.50
3:3:77:G:N2	3:3:102:A:OP2	2.28	0.50
3:3:104:A:H2'	3:3:105:C:O4'	2.11	0.50
21:R:105:LEU:HD12	21:R:135:LYS:HE3	1.94	0.50
50:x:321:HIS:CG	50:x:322:TRP:H	2.30	0.50
1:1:662:U:H2'	1:1:663:C:C6	2.46	0.50
1:1:2515:A:H5''	17:N:28:TRP:CD1	2.46	0.50
2:2:123:G:H2'	2:2:124:G:C8	2.47	0.50
8:D:183:TRP:HA	8:D:190:ILE:HA	1.94	0.50
9:E:132:ALA:O	9:E:135:VAL:N	2.43	0.50
12:H:72:LYS:NZ	12:H:76:ASP:OD2	2.45	0.50
12:H:118:LEU:HD11	12:H:177:ASP:HB2	1.92	0.50
50:x:205:SER:OG	50:x:206:MET:N	2.45	0.50
1:1:86:G:O2'	1:1:98:G:O6	2.29	0.49
1:1:977:C:N4	1:1:978:G:H1'	2.27	0.49
1:1:1214:U:H2'	1:1:1215:U:C6	2.47	0.49
1:1:1231:A:H5''	1:1:1232:C:H5'	1.92	0.49
1:1:2415:C:OP1	5:A:2:GLY:N	2.46	0.49
1:1:2683:U:H1'	14:J:128:TYR:CE2	2.47	0.49
1:1:3269:U:H3	9:E:134:ARG:NE	2.10	0.49
3:3:112:G:H2'	3:3:113:C:C6	2.46	0.49
8:D:184:ASP:HB3	8:D:187:THR:HB	1.93	0.49
13:I:97:ASN:OD1	13:I:100:LYS:NZ	2.42	0.49
14:J:160:VAL:O	14:J:164:LYS:HG2	2.12	0.49
48:v:72:MET:HE3	48:v:113:MET:HE3	1.93	0.49
1:1:507:U:H2'	1:1:508:U:C6	2.46	0.49
1:1:720:A:O2'	1:1:784:A:OP2	2.31	0.49
1:1:1159:A:H5'	10:F:92:ILE:HG12	1.94	0.49
1:1:1295:G:H2'	1:1:1296:C:C6	2.46	0.49
1:1:1568:U:H1'	1:1:1569:U:H4'	1.94	0.49
1:1:2264:U:H2'	1:1:2265:C:C6	2.47	0.49
1:1:2271:A:N6	48:v:280:GLN:O	2.39	0.49
10:F:239:LEU:O	10:F:243:MET:HG3	2.11	0.49
14:J:15:GLU:OE1	14:J:132:ASN:N	2.45	0.49
14:J:52:TYR:HA	14:J:61:ARG:HG2	1.93	0.49
22:S:12:ARG:HG3	22:S:13:ARG:O	2.11	0.49
22:S:52:LYS:HG2	22:S:54:ALA:H	1.76	0.49
45:r:137:ILE:HD11	45:r:150:MET:HB2	1.94	0.49
1:1:1447:G:N7	19:P:25:SER:OG	2.42	0.49
1:1:1563:C:H2'	1:1:1564:U:C6	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2548:C:H4'	1:1:2549:G:H5''	1.93	0.49
1:1:2730:G:O2'	42:m:109:ARG:NH1	2.42	0.49
26:W:183:ASP:OD1	26:W:183:ASP:N	2.45	0.49
27:X:77:GLU:HA	27:X:133:LEU:HD21	1.94	0.49
50:x:463:SER:OG	50:x:464:LYS:N	2.45	0.49
1:1:655:C:OP2	34:e:27:ARG:NH1	2.45	0.49
1:1:754:G:H2'	1:1:755:A:H8	1.77	0.49
1:1:824:C:H5''	5:A:21:ARG:HD3	1.94	0.49
1:1:1001:G:N1	1:1:1050:U:C2	2.79	0.49
1:1:2717:U:H2'	1:1:2718:U:C6	2.46	0.49
1:1:2872:A:H3'	1:1:2873:U:H5''	1.95	0.49
1:1:3304:U:P	6:B:332:ARG:HH22	2.35	0.49
1:1:3344:A:N1	1:1:3361:G:C2	2.79	0.49
8:D:232:ASP:O	8:D:235:SER:OG	2.29	0.49
1:1:266:A:N6	38:i:29:LYS:O	2.45	0.49
1:1:671:U:H2'	1:1:672:A:C8	2.48	0.49
1:1:2703:A:C8	14:J:142:LYS:HE3	2.48	0.49
1:1:2753:G:O2'	1:1:2754:G:OP2	2.27	0.49
10:F:178:ILE:HD11	10:F:187:GLU:HG3	1.94	0.49
11:G:90:THR:HA	11:G:214:LEU:HD21	1.94	0.49
14:J:54:VAL:O	14:J:59:ILE:N	2.38	0.49
28:Y:55:GLU:HG3	28:Y:108:LYS:HB3	1.94	0.49
31:b:132:ALA:O	31:b:136:MET:HG3	2.12	0.49
31:b:436:LEU:HD23	47:u:93:MET:HE2	1.93	0.49
1:1:41:G:N2	1:1:2803:A:H62	2.03	0.49
1:1:2971:A:OP2	45:r:139:THR:OG1	2.27	0.49
1:1:3027:A:H2	45:r:2:PRO:N	2.11	0.49
4:7:25:LEU:HD13	4:7:87:VAL:HG11	1.95	0.49
10:F:86:VAL:HG23	10:F:136:TYR:HB3	1.94	0.49
27:X:46:TYR:HD1	37:h:75:TYR:HB3	1.78	0.49
31:b:71:ILE:HG13	31:b:82:MET:HE3	1.94	0.49
31:b:609:GLU:OE2	41:l:37:TYR:HB3	2.12	0.49
51:y:199:VAL:HG21	51:y:222:PHE:CD1	2.47	0.49
1:1:3193:C:H2'	1:1:3194:C:C6	2.48	0.49
1:1:3215:A:OP2	16:M:125:LYS:NZ	2.45	0.49
1:1:3306:U:H2'	1:1:3307:A:H5''	1.95	0.49
8:D:236:LEU:HA	8:D:239:ILE:HG12	1.94	0.49
1:1:40:A:H4'	1:1:41:G:OP1	2.11	0.49
1:1:153:U:HO2'	1:1:158:G:HO2'	1.60	0.49
2:2:46:G:O2'	2:2:61:A:N1	2.39	0.49
9:E:68:PRO:HG3	9:E:145:LEU:HD23	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:v:266:ASP:OD1	48:v:267:ILE:N	2.45	0.49
1:1:177:U:O2	1:1:241:G:O6	2.30	0.49
1:1:2248:C:H3'	42:m:304:ARG:HH21	1.78	0.49
1:1:2929:C:H4'	42:m:198:ALA:HB2	1.95	0.49
31:b:385:LEU:HD21	31:b:396:ARG:HH12	1.78	0.49
35:f:31:LYS:NZ	35:f:35:VAL:O	2.38	0.49
44:q:85:LEU:HG	44:q:102:GLY:HA2	1.94	0.49
48:v:139:PRO:HB3	48:v:180:HIS:NE2	2.28	0.49
50:x:239:PRO:HB2	50:x:241:HIS:CD2	2.48	0.49
50:x:280:SER:HB3	50:x:297:HIS:HD2	1.76	0.49
1:1:178:U:H2'	1:1:179:C:H6	1.76	0.49
1:1:546:C:H5'	1:1:547:G:H21	1.78	0.49
1:1:772:U:H2'	1:1:773:G:C8	2.48	0.49
3:3:121:U:OP2	8:D:265:TYR:OH	2.25	0.49
14:J:33:ALA:HA	14:J:36:VAL:HG22	1.95	0.49
42:m:82:ARG:NH1	45:r:222:GLU:OE1	2.46	0.49
45:r:209:TYR:O	45:r:213:GLY:N	2.46	0.49
50:x:151:PHE:N	50:x:493:ASP:OD1	2.45	0.49
1:1:1523:U:OP1	1:1:1607:U:N3	2.45	0.48
1:1:2593:A:H4'	1:1:2594:C:O5'	2.13	0.48
1:1:3298:C:C2	1:1:3299:A:C8	3.01	0.48
4:7:35:ARG:HD2	29:Z:5:LEU:HD11	1.94	0.48
11:G:185:ARG:O	11:G:188:THR:HG22	2.13	0.48
17:N:119:TYR:OH	17:N:131:GLU:OE1	2.19	0.48
21:R:32:ILE:HA	21:R:44:LEU:HD21	1.95	0.48
27:X:77:GLU:HG2	27:X:133:LEU:HD11	1.95	0.48
28:Y:61:GLY:O	28:Y:64:LYS:HG3	2.13	0.48
47:u:131:PRO:HA	47:u:134:LEU:HD12	1.96	0.48
49:w:192:GLU:HA	49:w:195:GLN:HG2	1.94	0.48
50:x:484:GLY:O	50:x:511:ARG:NH2	2.46	0.48
1:1:924:G:H4'	1:1:925:A:C8	2.47	0.48
1:1:1447:G:H3'	19:P:67:ILE:HD11	1.95	0.48
1:1:1813:A:O2'	1:1:1816:A:N3	2.45	0.48
5:A:117:GLU:OE2	5:A:123:ARG:N	2.45	0.48
18:O:54:TYR:CD1	18:O:145:VAL:HG21	2.48	0.48
23:T:52:MET:SD	23:T:53:PRO:HD3	2.54	0.48
24:U:23:THR:HG22	24:U:28:PHE:HB3	1.95	0.48
42:m:92:PHE:HE1	48:v:268:MET:HA	1.78	0.48
44:q:65:GLN:CD	44:q:66:ASN:H	2.20	0.48
1:1:1389:G:O2'	1:1:1418:A:N1	2.40	0.48
1:1:1761:C:O2'	1:1:1762:C:O5'	2.28	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2683:U:H5'	14:J:18:VAL:HG21	1.94	0.48
1:1:2849:C:H3'	1:1:2850:G:H8	1.77	0.48
1:1:3009:G:O2'	6:B:14:LEU:O	2.31	0.48
2:2:37:A:OP1	37:h:89:ARG:NH2	2.46	0.48
31:b:636:SER:OG	31:b:645:ASP:OD2	2.30	0.48
42:m:261:LYS:HB3	42:m:264:LEU:HD12	1.94	0.48
1:1:35:A:H2'	1:1:36:C:H6	1.78	0.48
1:1:953:G:H5'	1:1:954:U:O4'	2.14	0.48
1:1:1260:A:H1'	1:1:1280:C:H1'	1.95	0.48
1:1:2438:A:H2'	1:1:2439:A:C8	2.48	0.48
1:1:2535:A:H2'	1:1:2536:A:C8	2.48	0.48
1:1:2679:A:H5'	1:1:2680:A:OP2	2.13	0.48
3:3:88:G:H2'	3:3:89:G:C8	2.47	0.48
3:3:97:A:O2'	3:3:98:C:O5'	2.29	0.48
11:G:81:THR:HG21	11:G:181:LYS:HD2	1.95	0.48
15:L:123:ILE:HG22	37:h:118:ILE:HG12	1.96	0.48
50:x:158:ARG:NE	50:x:179:MET:SD	2.87	0.48
50:x:177:THR:HG22	50:x:178:PRO:HD2	1.94	0.48
51:y:174:SER:OG	51:y:179:VAL:O	2.29	0.48
1:1:245:U:H2'	1:1:246:U:C6	2.48	0.48
1:1:275:U:H2'	1:1:276:U:C6	2.48	0.48
1:1:431:U:OP1	35:f:53:TYR:OH	2.26	0.48
1:1:1093:A:H4'	1:1:1094:U:H5'	1.95	0.48
1:1:1709:C:H2'	1:1:1710:C:H6	1.79	0.48
5:A:59:ALA:HB2	5:A:78:ALA:HB2	1.96	0.48
8:D:44:TYR:CE1	48:v:172:LEU:HB2	2.48	0.48
20:Q:90:ASP:O	20:Q:93:ILE:HG22	2.14	0.48
47:u:110:ASN:O	47:u:113:ARG:HG3	2.14	0.48
1:1:2831:G:H21	45:r:256:ASN:ND2	2.10	0.48
1:1:3017:A:H2'	1:1:3018:C:C6	2.49	0.48
6:B:233:TRP:CD1	6:B:265:ALA:HB1	2.48	0.48
6:B:286:GLY:HA3	6:B:321:PHE:CE2	2.48	0.48
15:L:76:THR:HG22	15:L:101:ARG:HB3	1.95	0.48
23:T:66:ASN:HD21	49:w:174:ILE:N	2.12	0.48
31:b:90:HIS:NE2	42:m:135:GLU:HG3	2.28	0.48
32:c:30:ARG:HG3	32:c:35:LEU:HD12	1.95	0.48
48:v:206:LEU:HD23	48:v:221:ILE:HD11	1.96	0.48
1:1:619:A:H5''	19:P:167:ARG:NH2	2.29	0.48
1:1:1097:G:O2'	23:T:108:ARG:NH1	2.47	0.48
1:1:1480:G:O2'	1:1:1871:U:O4	2.27	0.48
1:1:1497:C:H2'	1:1:1498:A:H8	1.78	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2344:U:H2'	1:1:2345:A:C8	2.48	0.48
1:1:2656:A:H5''	49:w:147:TYR:HB2	1.95	0.48
1:1:2969:A:O2'	1:1:2970:C:H6	1.97	0.48
1:1:3158:G:C6	1:1:3292:A:N1	2.82	0.48
1:1:3282:U:H2'	1:1:3283:U:C6	2.48	0.48
2:2:111:A:OP1	39:j:32:LYS:NZ	2.43	0.48
4:7:74:ASN:ND2	43:p:42:CYS:O	2.44	0.48
9:E:35:VAL:O	9:E:38:THR:OG1	2.26	0.48
26:W:139:GLU:HB3	26:W:185:PRO:HD3	1.96	0.48
31:b:366:PRO:HG3	51:y:179:VAL:C	2.39	0.48
48:v:211:SER:HB3	48:v:220:ARG:HB2	1.94	0.48
50:x:14:LYS:NZ	50:x:15:GLU:OE2	2.38	0.48
50:x:319:HIS:NE2	50:x:376:THR:HG23	2.27	0.48
1:1:532:A:H2'	1:1:533:A:C8	2.49	0.48
1:1:698:U:H2'	1:1:699:A:O4'	2.13	0.48
1:1:772:U:H2'	1:1:773:G:H8	1.78	0.48
1:1:2847:A:H2'	1:1:2848:G:O4'	2.14	0.48
1:1:2988:C:O2	6:B:266:ARG:NH1	2.46	0.48
1:1:3013:U:H2'	1:1:3014:U:C6	2.48	0.48
3:3:106:U:H2'	3:3:107:C:C6	2.49	0.48
23:T:152:ALA:HB3	23:T:154:VAL:HG13	1.95	0.48
29:Z:42:LEU:HD22	29:Z:74:VAL:HG22	1.96	0.48
30:a:75:LEU:HD12	30:a:114:GLY:HA2	1.96	0.48
49:w:22:ASP:OD1	49:w:96:THR:N	2.47	0.48
51:y:109:CYS:HB2	51:y:149:GLY:HA2	1.94	0.48
1:1:283:G:H5'	1:1:284:A:C8	2.48	0.48
1:1:1200:A:C2	46:s:19:ILE:HD12	2.49	0.48
1:1:3322:A:H2'	1:1:3323:A:C8	2.49	0.48
9:E:170:LYS:HD2	9:E:173:MET:HE2	1.95	0.48
36:g:85:VAL:HA	36:g:88:ARG:HG2	1.94	0.48
42:m:92:PHE:CE1	48:v:268:MET:HA	2.49	0.48
51:y:225:GLN:NE2	51:y:226:ASP:O	2.47	0.48
1:1:107:A:O2'	1:1:324:A:N3	2.45	0.48
1:1:129:U:H2'	1:1:130:A:H8	1.79	0.48
1:1:255:A:H2'	1:1:256:G:C8	2.42	0.48
1:1:506:U:H2'	1:1:507:U:O4'	2.14	0.48
1:1:636:C:H2'	1:1:637:C:H2'	1.96	0.48
1:1:1729:A:O4'	4:7:52:ARG:NH1	2.46	0.48
1:1:2629:U:O2'	14:J:60:ARG:NH1	2.43	0.48
7:C:295:ILE:HD12	20:Q:36:LEU:HD21	1.96	0.48
11:G:243:GLN:NE2	11:G:247:ASP:OD2	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:J:87:LYS:O	14:J:90:GLN:NE2	2.47	0.48
31:b:274:ILE:HB	31:b:277:LEU:HD12	1.95	0.48
45:r:138:LYS:HB2	45:r:143:ARG:HD3	1.95	0.48
48:v:68:PRO:HB2	48:v:113:MET:SD	2.54	0.48
50:x:376:THR:HG22	50:x:386:TRP:HE1	1.78	0.48
1:1:561:C:H2'	1:1:562:C:C6	2.47	0.47
1:1:1390:A:N6	1:1:1418:A:O2'	2.47	0.47
1:1:1514:G:H8	41:l:45:ARG:HH21	1.62	0.47
1:1:3171:U:H5'	32:c:20:VAL:HG11	1.96	0.47
1:1:3177:G:O2'	1:1:3179:U:OP1	2.26	0.47
1:1:3318:G:O2'	1:1:3319:U:H5''	2.13	0.47
7:C:3:ARG:HH22	7:C:24:ALA:HA	1.79	0.47
7:C:113:VAL:HB	7:C:118:LYS:HE2	1.95	0.47
33:d:96:VAL:HG12	33:d:98:VAL:HG13	1.96	0.47
34:e:23:ASP:OD1	34:e:23:ASP:N	2.44	0.47
44:q:153:GLU:HA	44:q:156:ASN:HB2	1.96	0.47
48:v:104:ARG:NH2	48:v:163:ASP:HB3	2.29	0.47
50:x:174:ASP:OD1	50:x:175:THR:N	2.47	0.47
50:x:494:TRP:HE1	50:x:498:GLY:HA2	1.77	0.47
1:1:1067:U:H2'	1:1:1068:C:C6	2.49	0.47
1:1:2717:U:O2'	42:m:81:THR:O	2.33	0.47
3:3:81:U:H2'	3:3:82:G:H8	1.78	0.47
6:B:123:TYR:CE1	6:B:124:LYS:HG3	2.50	0.47
6:B:257:PRO:O	6:B:259:HIS:ND1	2.46	0.47
18:O:37:ARG:HD2	18:O:108:ILE:HD11	1.96	0.47
34:e:12:LYS:NZ	34:e:58:GLY:O	2.44	0.47
1:1:1886:A:O2'	6:B:226:PHE:O	2.28	0.47
1:1:3170:A:N3	1:1:3171:U:N3	2.60	0.47
3:3:12:U:OP2	3:3:68:C:O2'	2.29	0.47
3:3:27:A:H2'	3:3:28:C:C6	2.50	0.47
4:7:36:GLN:HG3	4:7:38:LYS:HD3	1.96	0.47
5:A:109:GLU:HA	5:A:136:ILE:HG13	1.95	0.47
7:C:362:ASP:HA	22:S:28:ARG:HH11	1.79	0.47
41:l:10:LYS:HA	41:l:13:MET:HE3	1.96	0.47
45:r:2:PRO:HB2	45:r:6:TYR:CD1	2.49	0.47
50:x:485:HIS:NE2	50:x:503:SER:OG	2.27	0.47
1:1:547:G:H1'	1:1:548:G:C8	2.50	0.47
1:1:1541:G:H2'	1:1:1542:G:O4'	2.14	0.47
1:1:1591:G:OP1	36:g:37:LYS:NZ	2.39	0.47
1:1:2249:G:OP2	42:m:304:ARG:NE	2.48	0.47
1:1:2445:A:O2'	1:1:2502:A:N1	2.40	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2661:G:OP1	8:D:35:ARG:NH2	2.39	0.47
3:3:15:C:O2'	3:3:16:U:H6	1.98	0.47
6:B:212:ASN:HA	6:B:281:LYS:HE2	1.95	0.47
16:M:34:ALA:HB2	16:M:85:TRP:HZ3	1.78	0.47
50:x:102:TYR:HD1	50:x:105:LEU:HD13	1.80	0.47
1:1:722:G:H2'	1:1:723:U:H6	1.80	0.47
1:1:1003:A:N1	1:1:1048:A:O2'	2.47	0.47
1:1:1253:U:H5'	1:1:1254:C:H5'	1.95	0.47
1:1:2143:A:O2'	1:1:2144:A:H8	1.97	0.47
1:1:2728:G:H3'	42:m:313:ARG:NH2	2.29	0.47
1:1:3294:A:H2'	1:1:3295:A:O4'	2.15	0.47
8:D:133:GLU:OE1	48:v:210:LYS:HE3	2.15	0.47
14:J:48:SER:N	14:J:66:ALA:O	2.40	0.47
31:b:149:TYR:HB2	42:m:137:TYR:HB3	1.96	0.47
34:e:32:TRP:CZ2	34:e:53:PRO:HD2	2.50	0.47
50:x:35:LYS:HD2	50:x:116:GLN:HE22	1.79	0.47
51:y:225:GLN:HB3	51:y:228:GLN:NE2	2.29	0.47
1:1:674:G:O6	20:Q:56:LYS:NZ	2.47	0.47
1:1:1688:U:H2'	1:1:1689:U:C6	2.48	0.47
1:1:2691:A:C6	1:1:2702:A:H2	2.32	0.47
1:1:3027:A:H4'	31:b:189:LYS:O	2.14	0.47
1:1:3072:C:H2'	1:1:3073:A:O4'	2.15	0.47
8:D:44:TYR:O	8:D:46:THR:N	2.46	0.47
12:H:6:THR:HG21	12:H:65:VAL:HG12	1.96	0.47
22:S:10:ILE:O	22:S:59:VAL:N	2.45	0.47
34:e:32:TRP:CE2	34:e:53:PRO:HD2	2.48	0.47
43:p:3:LYS:NZ	43:p:6:LYS:HA	2.28	0.47
44:q:53:PHE:CE2	44:q:73:VAL:HG11	2.49	0.47
48:v:112:ASP:OD1	48:v:240:PRO:HD3	2.14	0.47
48:v:202:ARG:NE	48:v:229:ARG:HG3	2.30	0.47
49:w:152:LYS:HD3	49:w:184:ARG:HH12	1.79	0.47
1:1:675:C:O2'	1:1:679:U:OP1	2.29	0.47
1:1:1279:C:H5''	26:W:16:ASP:C	2.39	0.47
1:1:1446:A:H5''	19:P:65:SER:HB2	1.96	0.47
1:1:1493:G:OP2	1:1:1493:G:N2	2.46	0.47
1:1:1550:C:H2'	1:1:1551:C:H6	1.80	0.47
1:1:1814:A:H1'	1:1:1815:U:C2	2.50	0.47
1:1:3178:A:H8	18:O:5:PRO:HG2	1.80	0.47
3:3:56:A:H4'	14:J:152:HIS:HB2	1.95	0.47
6:B:166:ILE:HD13	6:B:173:GLN:HG2	1.96	0.47
7:C:166:VAL:O	7:C:170:LYS:HG2	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:D:55:PHE:CD2	8:D:60:ILE:HG12	2.50	0.47
14:J:36:VAL:HG12	14:J:120:ILE:HD13	1.97	0.47
31:b:2:GLN:HG3	31:b:3:LEU:HD12	1.96	0.47
31:b:602:ALA:HA	31:b:605:MET:HE2	1.96	0.47
42:m:390:VAL:HG21	42:m:454:LEU:HB2	1.97	0.47
44:q:68:GLN:NE2	44:q:69:ALA:O	2.44	0.47
50:x:280:SER:HB3	50:x:297:HIS:CD2	2.50	0.47
1:1:75:G:H5'	15:L:58:VAL:HG13	1.96	0.47
1:1:268:A:C5	17:N:12:ARG:HD2	2.50	0.47
1:1:279:U:H2'	1:1:280:U:C6	2.49	0.47
1:1:544:C:O2	1:1:548:G:N2	2.47	0.47
1:1:1737:U:O2	36:g:52:GLN:NE2	2.48	0.47
1:1:1795:U:H2'	5:A:50:HIS:CD2	2.50	0.47
1:1:2645:G:H2'	1:1:2646:C:C6	2.50	0.47
1:1:2676:A:H4'	1:1:2677:G:C2	2.50	0.47
8:D:218:ARG:HG2	8:D:218:ARG:HH11	1.80	0.47
11:G:34:PHE:CZ	11:G:42:PRO:HG3	2.50	0.47
29:Z:61:LYS:HE3	29:Z:65:ARG:HH11	1.79	0.47
48:v:99:ASN:HA	48:v:117:MET:HA	1.96	0.47
49:w:157:GLN:O	49:w:177:ARG:NH2	2.43	0.47
50:x:105:LEU:HD23	50:x:106:ILE:HB	1.97	0.47
1:1:976:U:O4	1:1:1106:G:O6	2.32	0.47
1:1:1498:A:H2'	1:1:1499:C:C6	2.50	0.47
1:1:1624:G:O2'	1:1:1643:A:N1	2.44	0.47
1:1:2691:A:C5	1:1:2702:A:H2	2.33	0.47
1:1:3158:G:N1	1:1:3292:A:C2	2.75	0.47
2:2:26:U:O2'	7:C:51:ALA:O	2.32	0.47
2:2:60:U:OP1	27:X:54:TYR:OH	2.29	0.47
9:E:43:LEU:HD13	35:f:102:LEU:HB2	1.96	0.47
15:L:87:ALA:HB1	15:L:97:VAL:HG11	1.97	0.47
1:1:169:U:H5''	15:L:128:ARG:HH11	1.79	0.47
1:1:626:U:H2'	1:1:627:U:O4'	2.15	0.47
1:1:994:G:H22	1:1:1055:A:H2	1.63	0.47
1:1:1290:A:H2'	1:1:1291:A:C8	2.50	0.47
1:1:1336:U:H2'	1:1:1337:A:H8	1.78	0.47
1:1:1348:U:O2'	1:1:1349:G:N2	2.48	0.47
1:1:1696:A:H2'	1:1:1697:A:C8	2.50	0.47
1:1:2251:G:H2'	1:1:2252:A:C8	2.50	0.47
1:1:3055:U:O2'	1:1:3057:U:OP1	2.30	0.47
6:B:68:HIS:CD2	6:B:69:LYS:HG2	2.50	0.47
7:C:2:SER:OG	7:C:3:ARG:N	2.45	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:C:11:LEU:HD21	7:C:155:ASP:HB2	1.97	0.47
8:D:190:ILE:HG23	8:D:192:PRO:HD3	1.96	0.47
9:E:51:ARG:NH2	16:M:114:ASP:OD1	2.48	0.47
10:F:130:ILE:HD12	10:F:134:VAL:HG11	1.97	0.47
12:H:139:ASN:OD1	12:H:140:VAL:N	2.48	0.47
48:v:144:GLN:HE21	48:v:185:THR:HB	1.80	0.47
50:x:65:ASN:HB3	50:x:71:SER:HB3	1.96	0.47
50:x:135:SER:HB2	50:x:513:TRP:CZ3	2.50	0.47
1:1:1112:A:H2'	1:1:1113:G:C8	2.50	0.46
1:1:2620:G:N3	1:1:2621:G:H1'	2.31	0.46
1:1:2624:G:N2	1:1:2754:G:H22	2.13	0.46
1:1:2883:U:H4'	6:B:261:MET:HE1	1.96	0.46
1:1:2916:U:H2'	1:1:2917:G:H8	1.80	0.46
6:B:143:GLY:O	6:B:147:GLU:HG2	2.15	0.46
8:D:229:ASP:HB3	8:D:231:ILE:HG12	1.97	0.46
12:H:188:THR:HA	12:H:189:GLU:HB2	1.97	0.46
15:L:32:LYS:O	15:L:36:ARG:HG3	2.15	0.46
44:q:78:SER:O	44:q:82:ILE:HG12	2.16	0.46
45:r:186:HIS:CE1	45:r:261:VAL:HG21	2.50	0.46
48:v:125:LEU:HA	48:v:227:GLY:HA2	1.96	0.46
49:w:143:PRO:O	49:w:150:ALA:N	2.40	0.46
1:1:594:U:OP2	1:1:609:G:N1	2.40	0.46
1:1:985:U:H2'	1:1:986:U:H6	1.80	0.46
1:1:2185:G:OP1	5:A:202:VAL:HG13	2.15	0.46
1:1:2341:A:OP2	6:B:247:ARG:NH1	2.38	0.46
1:1:2961:G:C5'	42:m:340:VAL:HG13	2.45	0.46
5:A:28:LYS:HB3	5:A:123:ARG:HB3	1.96	0.46
6:B:323:MET:HE1	6:B:359:ILE:HD13	1.97	0.46
31:b:602:ALA:HB1	41:l:25:GLN:HB3	1.97	0.46
33:d:13:THR:HB	33:d:72:ARG:HH11	1.81	0.46
47:u:121:LEU:HD23	47:u:124:LYS:HD3	1.96	0.46
50:x:142:HIS:NE2	50:x:161:THR:OG1	2.41	0.46
1:1:1347:U:P	7:C:300:ARG:HH22	2.38	0.46
1:1:1762:C:H2'	1:1:1764:U:OP1	2.15	0.46
1:1:1938:U:OP1	13:I:71:LYS:HB2	2.14	0.46
1:1:2402:A:H1'	1:1:2403:G:H8	1.80	0.46
1:1:2426:U:O4	1:1:2603:G:O6	2.33	0.46
1:1:2632:G:O6	1:1:2647:A:N6	2.49	0.46
1:1:2674:A:C6	14:J:124:GLY:HA3	2.50	0.46
1:1:2791:G:H2'	1:1:2792:A:C8	2.51	0.46
1:1:3057:U:O2'	1:1:3059:G:OP1	2.33	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3165:A:N1	1:1:3285:C:N4	2.58	0.46
1:1:3213:A:OP1	16:M:128:ARG:HD2	2.14	0.46
1:1:3387:U:H2'	1:1:3388:C:C6	2.51	0.46
2:2:83:C:H5'	2:2:85:G:C2	2.50	0.46
3:3:3:U:H2'	3:3:4:U:C6	2.50	0.46
11:G:190:VAL:HG12	11:G:192:GLN:HG2	1.97	0.46
13:I:102:LEU:O	13:I:106:GLN:HG2	2.16	0.46
51:y:101:LEU:HB3	51:y:107:VAL:HG21	1.97	0.46
1:1:417:A:H2'	1:1:418:A:H8	1.79	0.46
1:1:665:A:H2'	1:1:666:A:H8	1.79	0.46
1:1:1298:C:O2'	45:r:40:GLN:O	2.33	0.46
1:1:3164:C:O2'	1:1:3165:A:H8	1.99	0.46
11:G:128:LYS:NZ	11:G:202:GLU:OE1	2.45	0.46
14:J:121:GLY:H	14:J:123:PHE:HE2	1.62	0.46
33:d:20:LEU:O	33:d:28:ARG:NH1	2.49	0.46
44:q:133:LEU:HB2	44:q:152:ILE:HD11	1.96	0.46
45:r:150:MET:HA	45:r:172:ILE:HB	1.98	0.46
1:1:54:C:O2'	1:1:1547:G:O2'	2.33	0.46
1:1:999:G:O3'	1:1:1000:C:H2'	2.16	0.46
1:1:1336:U:H2'	1:1:1337:A:C8	2.51	0.46
1:1:1495:U:H5	1:1:1835:A:N1	2.13	0.46
1:1:1785:U:H2'	1:1:1786:G:C8	2.50	0.46
1:1:2644:C:O2'	49:w:189:LYS:NZ	2.48	0.46
1:1:3037:U:H5'	6:B:348:ARG:HG3	1.97	0.46
12:H:189:GLU:HA	12:H:190:ASP:HA	1.67	0.46
22:S:155:ARG:NH2	22:S:171:PHE:O	2.39	0.46
25:V:108:GLU:OE1	25:V:108:GLU:N	2.46	0.46
42:m:343:VAL:HG13	53:m:601:GDP:H5''	1.98	0.46
45:r:205:GLN:HB2	45:r:209:TYR:CD2	2.50	0.46
48:v:44:ASP:HB3	48:v:124:LEU:HD11	1.98	0.46
50:x:261:LYS:HD2	50:x:270:CYS:SG	2.55	0.46
1:1:288:C:H2'	1:1:289:A:C8	2.50	0.46
1:1:425:G:H5'	34:e:23:ASP:OD2	2.16	0.46
1:1:726:G:N2	1:1:743:C:OP2	2.42	0.46
1:1:1066:G:H2'	1:1:1067:U:H6	1.80	0.46
1:1:1205:A:N1	1:1:1299:U:H5	2.13	0.46
1:1:1306:G:N2	1:1:1307:G:N7	2.58	0.46
1:1:1596:C:O2'	1:1:1696:A:N3	2.45	0.46
1:1:2995:A:O2'	1:1:2996:U:O4'	2.33	0.46
18:O:100:GLU:CD	32:c:11:LYS:H	2.24	0.46
23:T:116:ARG:HG3	23:T:128:LEU:HD11	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:b:168:ARG:NH2	31:b:214:LEU:HB3	2.30	0.46
31:b:278:PHE:HB3	31:b:283:VAL:HG21	1.97	0.46
50:x:39:LEU:HB2	50:x:120:LEU:HG	1.96	0.46
50:x:195:SER:HB3	50:x:200:VAL:H	1.80	0.46
1:1:551:A:O2'	1:1:552:G:H8	1.98	0.46
1:1:1603:A:OP1	21:R:38:ARG:NH1	2.49	0.46
1:1:2367:A:H2'	1:1:2368:A:C8	2.51	0.46
1:1:2407:C:H2'	1:1:2408:U:C6	2.51	0.46
1:1:2655:U:H5'	1:1:2657:A:C8	2.51	0.46
1:1:2810:C:H2'	1:1:2811:A:C8	2.51	0.46
1:1:3214:U:H4'	35:f:3:GLU:OE1	2.14	0.46
4:7:12:GLN:OE1	4:7:12:GLN:N	2.47	0.46
6:B:68:HIS:CE1	6:B:69:LYS:HE3	2.50	0.46
6:B:221:THR:O	6:B:334:ARG:NH1	2.48	0.46
20:Q:64:VAL:HG22	20:Q:96:PHE:CE1	2.51	0.46
20:Q:123:THR:OG1	20:Q:125:ASP:OD1	2.24	0.46
35:f:17:GLN:O	35:f:24:ASN:N	2.47	0.46
48:v:131:LEU:HG	48:v:132:THR:H	1.80	0.46
1:1:2261:G:H1'	1:1:2263:C:N4	2.31	0.46
1:1:2610:G:H1'	17:N:84:PRO:HD3	1.98	0.46
6:B:123:TYR:CZ	6:B:124:LYS:HG3	2.51	0.46
14:J:96:PHE:HE2	14:J:160:VAL:HA	1.81	0.46
26:W:84:GLU:OE1	26:W:86:LYS:N	2.49	0.46
40:k:73:LEU:HD23	40:k:75:VAL:HG22	1.98	0.46
48:v:60:PHE:HE2	48:v:64:ASN:HD21	1.62	0.46
48:v:204:TYR:CE2	49:w:54:THR:HG21	2.51	0.46
1:1:563:U:H2'	1:1:564:G:H8	1.81	0.46
1:1:1888:U:OP1	6:B:247:ARG:NE	2.38	0.46
1:1:2858:U:H5'	1:1:2859:U:H5''	1.97	0.46
1:1:2970:C:OP1	45:r:144:SER:OG	2.27	0.46
8:D:42:ALA:C	8:D:44:TYR:H	2.24	0.46
14:J:132:ASN:OD1	14:J:133:ARG:N	2.48	0.46
16:M:123:LEU:HD22	18:O:190:VAL:HG23	1.97	0.46
1:1:1591:G:H5''	36:g:37:LYS:HZ1	1.81	0.46
1:1:1834:U:OP2	41:l:10:LYS:NZ	2.46	0.46
1:1:1921:A:H2'	1:1:1922:A:C8	2.51	0.46
1:1:2597:U:H2'	1:1:2598:G:C8	2.50	0.46
1:1:2819:A:H5'	1:1:2820:A:C5	2.51	0.46
1:1:2964:G:H5''	42:m:35:ARG:HH22	1.81	0.46
1:1:3085:G:H5''	1:1:3086:A:OP1	2.16	0.46
2:2:6:U:H2'	2:2:7:U:C6	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:3:15:C:HO2'	3:3:16:U:P	2.39	0.46
19:P:7:THR:O	32:c:86:THR:N	2.46	0.46
42:m:400:ILE:HG22	42:m:424:ALA:HB1	1.97	0.46
45:r:193:VAL:HG13	45:r:195:LEU:HG	1.97	0.46
1:1:637:C:H5''	1:1:2377:G:N2	2.30	0.45
1:1:650:C:N4	1:1:2397:A:H61	2.13	0.45
1:1:850:U:H2'	1:1:851:C:H6	1.81	0.45
1:1:963:G:C2	1:1:964:G:H1'	2.51	0.45
1:1:1460:A:H5'	33:d:51:LEU:O	2.16	0.45
1:1:1699:A:H2'	1:1:1700:G:H8	1.79	0.45
1:1:3275:U:H5'	35:f:68:TRP:HZ2	1.81	0.45
3:3:100:C:H5'	48:v:96:ARG:HH22	1.80	0.45
8:D:76:ALA:HB2	8:D:112:LYS:HE3	1.98	0.45
13:I:24:ASP:O	13:I:30:SER:OG	2.32	0.45
14:J:110:ILE:HA	14:J:114:ILE:HG22	1.98	0.45
26:W:174:LYS:HZ1	26:W:183:ASP:CG	2.24	0.45
28:Y:48:LEU:HD13	28:Y:115:ARG:HE	1.81	0.45
29:Z:23:VAL:HG12	29:Z:45:GLY:HA3	1.97	0.45
49:w:183:GLU:OE1	49:w:186:ARG:NH2	2.49	0.45
1:1:197:G:N2	1:1:372:A:C8	2.85	0.45
1:1:501:A:H2'	1:1:502:U:C6	2.50	0.45
1:1:1213:G:OP1	22:S:139:TYR:OH	2.13	0.45
1:1:2246:G:HO2'	1:1:2247:G:C5'	2.29	0.45
1:1:2344:U:H2'	1:1:2345:A:H8	1.82	0.45
1:1:3003:G:O2'	6:B:92:TYR:OH	2.31	0.45
1:1:3006:A:H2'	1:1:3007:U:O4'	2.16	0.45
1:1:3055:U:H1'	1:1:3057:U:OP2	2.17	0.45
1:1:3084:C:H2'	1:1:3085:G:O4'	2.16	0.45
7:C:11:LEU:HD22	7:C:153:SER:HB3	1.98	0.45
8:D:171:LEU:HD12	8:D:171:LEU:HA	1.85	0.45
12:H:91:ARG:HH21	26:W:166:ARG:HD2	1.81	0.45
14:J:26:SER:O	14:J:26:SER:OG	2.35	0.45
28:Y:39:LEU:HD22	28:Y:43:TYR:HE2	1.82	0.45
50:x:255:SER:OG	50:x:256:LYS:N	2.50	0.45
1:1:850:U:H2'	1:1:851:C:C6	2.52	0.45
1:1:1908:A:H2'	1:1:1909:A:C8	2.51	0.45
1:1:2315:G:H4'	1:1:2316:G:C4	2.51	0.45
1:1:2648:G:H2'	1:1:2649:A:C8	2.50	0.45
1:1:3334:U:H4'	1:1:3335:A:H5'	1.98	0.45
1:1:3350:C:O2'	1:1:3351:U:OP1	2.31	0.45
7:C:26:PHE:CD1	7:C:130:ALA:HB2	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:N:78:GLY:HA2	17:N:89:VAL:HG11	1.98	0.45
26:W:81:ARG:HB2	26:W:90:TYR:CE1	2.52	0.45
45:r:4:ASN:H	45:r:9:ARG:HH12	1.63	0.45
50:x:301:VAL:HG21	50:x:326:LEU:HD21	1.99	0.45
1:1:72:C:H1'	15:L:61:PRO:O	2.16	0.45
1:1:947:G:H5''	34:e:55:ILE:HB	1.98	0.45
1:1:1634:G:OP1	29:Z:107:ARG:NH1	2.48	0.45
1:1:2157:G:C6	5:A:150:LEU:HD12	2.51	0.45
1:1:3171:U:C5	35:f:54:ARG:HD3	2.49	0.45
10:F:165:ASP:OD1	10:F:166:ASN:N	2.49	0.45
11:G:222:PHE:O	11:G:226:TYR:HB2	2.17	0.45
14:J:94:ARG:NH1	14:J:173:ASP:OD1	2.50	0.45
31:b:47:MET:HE3	31:b:113:VAL:HG13	1.99	0.45
33:d:51:LEU:HB3	33:d:55:LEU:HD23	1.98	0.45
41:l:2:ALA:O	41:l:5:LYS:HG3	2.17	0.45
48:v:125:LEU:HD23	48:v:227:GLY:HA2	1.98	0.45
50:x:445:ALA:HB1	50:x:464:LYS:HB3	1.98	0.45
50:x:460:VAL:HB	50:x:494:TRP:HZ3	1.81	0.45
1:1:167:U:H2'	1:1:168:U:H6	1.82	0.45
1:1:268:A:C4	17:N:12:ARG:HD2	2.51	0.45
1:1:271:C:O2	38:i:82:ARG:NH2	2.37	0.45
1:1:1353:U:O2'	1:1:1354:G:H5'	2.17	0.45
1:1:1381:A:H2'	1:1:1382:G:H8	1.81	0.45
1:1:1751:G:H5'	40:k:26:LYS:HE2	1.98	0.45
1:1:2218:G:H2'	1:1:2219:A:H8	1.82	0.45
1:1:2592:G:H4'	1:1:2594:C:C2	2.52	0.45
1:1:2909:U:H2'	1:1:2910:A:O4'	2.17	0.45
1:1:3027:A:H2'	1:1:3028:G:O4'	2.16	0.45
1:1:3092:C:O2'	1:1:3094:A:OP2	2.25	0.45
8:D:48:LYS:HB2	8:D:145:PHE:HE2	1.82	0.45
15:L:155:GLU:OE2	30:a:90:TYR:OH	2.28	0.45
36:g:38:LEU:O	36:g:58:ARG:NH1	2.50	0.45
42:m:376:LYS:H	42:m:376:LYS:HD2	1.80	0.45
44:q:46:ILE:HG22	44:q:71:ALA:HB2	1.98	0.45
48:v:99:ASN:HB2	48:v:117:MET:HG3	1.97	0.45
50:x:429:TRP:CD1	50:x:436:PHE:HA	2.51	0.45
1:1:759:U:H2'	1:1:760:G:O4'	2.17	0.45
1:1:916:G:H5'	1:1:917:A:OP1	2.16	0.45
1:1:961:C:H2'	1:1:962:A:O4'	2.17	0.45
1:1:1709:C:H2'	1:1:1710:C:C6	2.51	0.45
1:1:1899:G:O2'	1:1:2334:U:O4	2.29	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2206:G:C6	1:1:2207:A:C6	3.05	0.45
1:1:2217:U:H2'	1:1:2218:G:C8	2.51	0.45
1:1:2698:G:N3	48:v:81:LYS:HB3	2.31	0.45
1:1:3217:C:N3	19:P:182:ILE:HG23	2.31	0.45
2:2:37:A:OP2	37:h:86:ARG:HD2	2.16	0.45
6:B:94:GLU:OE1	18:O:152:VAL:HG22	2.17	0.45
16:M:134:ALA:HA	16:M:137:LYS:HE2	1.98	0.45
27:X:67:ILE:HB	27:X:83:VAL:HG12	1.97	0.45
1:1:283:G:N2	1:1:285:A:H4'	2.31	0.45
1:1:524:U:OP1	16:M:77:ARG:NH2	2.48	0.45
1:1:637:C:H5''	1:1:2377:G:C2	2.52	0.45
1:1:962:A:H2'	1:1:963:G:O4'	2.16	0.45
1:1:1492:G:O6	41:l:2:ALA:HB1	2.17	0.45
1:1:2347:U:H2'	1:1:2348:A:O4'	2.17	0.45
1:1:2523:A:H2'	11:G:49:TYR:O	2.17	0.45
11:G:73:PRO:HD3	11:G:233:TRP:CD1	2.52	0.45
13:I:16:ARG:HH21	13:I:24:ASP:CG	2.25	0.45
14:J:16:LYS:O	14:J:130:VAL:HG22	2.16	0.45
17:N:148:TYR:O	17:N:151:ILE:HG22	2.17	0.45
18:O:183:ALA:HA	18:O:186:ALA:HB2	1.97	0.45
23:T:80:VAL:HB	23:T:85:LEU:HD12	1.99	0.45
29:Z:61:LYS:HE3	29:Z:65:ARG:HD2	1.99	0.45
29:Z:83:THR:HG22	36:g:93:PHE:CZ	2.52	0.45
31:b:237:MET:HG3	42:m:150:PRO:HG3	1.97	0.45
31:b:608:MET:HG3	31:b:611:ARG:CZ	2.46	0.45
42:m:379:GLU:OE1	42:m:379:GLU:N	2.49	0.45
50:x:493:ASP:OD2	50:x:494:TRP:N	2.50	0.45
1:1:381:U:H2'	1:1:382:U:C6	2.52	0.45
1:1:715:A:C8	30:a:115:LYS:HD3	2.51	0.45
1:1:856:G:OP1	21:R:92:GLN:NE2	2.49	0.45
1:1:1062:A:H4'	23:T:105:PHE:CD1	2.51	0.45
1:1:2385:G:O6	32:c:11:LYS:HE2	2.17	0.45
8:D:142:PHE:HD2	8:D:171:LEU:HD11	1.81	0.45
14:J:28:ASP:OD1	14:J:31:THR:OG1	2.35	0.45
17:N:15:GLN:HB2	38:i:51:SER:HB2	1.98	0.45
17:N:49:ARG:NH1	17:N:49:ARG:HB2	2.32	0.45
22:S:71:LYS:HD3	22:S:73:LYS:HG3	1.99	0.45
22:S:80:ARG:NH1	22:S:124:LEU:HD21	2.31	0.45
33:d:37:LYS:NZ	33:d:49:VAL:O	2.49	0.45
38:i:60:LEU:HD12	38:i:72:VAL:HG21	1.99	0.45
38:i:90:MET:O	38:i:94:ILE:HG12	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:y:1:MET:N	51:y:224:LEU:HB3	2.31	0.45
51:y:159:GLY:HA2	51:y:222:PHE:HE2	1.82	0.45
1:1:656:A:H2'	1:1:657:A:C8	2.52	0.45
1:1:737:G:H2'	1:1:738:A:H8	1.81	0.45
1:1:836:A:P	43:p:4:ARG:HD2	2.57	0.45
1:1:1064:A:H61	23:T:116:ARG:HH12	1.64	0.45
1:1:1472:U:OP1	21:R:8:LYS:HD3	2.17	0.45
1:1:2193:U:H1'	42:m:337:LYS:HE2	1.98	0.45
2:2:12:A:OP1	19:P:3:ARG:NH1	2.50	0.45
6:B:305:ILE:HD11	6:B:317:ILE:HG21	1.99	0.45
7:C:181:VAL:HG11	7:C:224:GLY:HA3	1.99	0.45
13:I:85:TYR:HD1	47:u:47:ARG:HE	1.64	0.45
14:J:84:LEU:HB3	14:J:89:TYR:HD1	1.82	0.45
15:L:185:LYS:HZ3	15:L:188:ARG:NH1	2.14	0.45
31:b:400:ARG:HG3	51:y:36:SER:OG	2.17	0.45
39:j:25:ARG:HD2	41:l:51:ILE:HD12	1.99	0.45
42:m:256:ILE:HD13	42:m:282:PRO:HG2	1.98	0.45
42:m:366:ASP:OD1	42:m:367:CYS:N	2.50	0.45
49:w:15:LYS:HB2	49:w:32:ASN:ND2	2.32	0.45
1:1:313:A:H2'	1:1:314:U:C6	2.52	0.45
1:1:976:U:O2	1:1:1106:G:N2	2.48	0.45
1:1:1200:A:O2'	1:1:1201:C:O2	2.29	0.45
1:1:1223:A:C8	1:1:1286:A:C6	3.05	0.45
1:1:2220:A:H2'	1:1:2221:G:C8	2.52	0.45
1:1:3020:U:H3'	1:1:3021:A:C5'	2.47	0.45
1:1:3294:A:OP1	6:B:128:LYS:NZ	2.49	0.45
12:H:86:TYR:CE2	12:H:151:VAL:HB	2.52	0.45
23:T:40:VAL:HG21	23:T:96:ILE:HD11	1.99	0.45
27:X:67:ILE:HD11	27:X:85:GLN:HB2	1.99	0.45
30:a:104:THR:HG21	30:a:112:ILE:HD11	1.97	0.45
31:b:188:THR:OG1	31:b:208:HIS:O	2.26	0.45
34:e:6:HIS:ND1	34:e:7:PRO:O	2.36	0.45
35:f:52:VAL:HG13	35:f:66:VAL:HG22	1.99	0.45
39:j:25:ARG:HH11	41:l:50:ASN:HB3	1.82	0.45
1:1:107:A:OP1	15:L:39:ARG:NH1	2.51	0.44
1:1:431:U:H2'	1:1:432:G:H8	1.82	0.44
1:1:640:U:O2'	1:1:941:G:OP2	2.24	0.44
1:1:996:A:N1	1:1:998:A:N6	2.64	0.44
1:1:1140:G:H4'	10:F:94:LYS:NZ	2.32	0.44
1:1:2278:C:H5'	1:1:2279:A:OP2	2.16	0.44
1:1:2680:A:C6	14:J:57:PHE:HE2	2.34	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:40:A:OP2	2:2:103:G:N1	2.35	0.44
14:J:91:LEU:HD11	14:J:96:PHE:CE1	2.53	0.44
33:d:46:THR:OG1	33:d:91:SER:OG	2.21	0.44
42:m:69:ALA:HB1	45:r:204:PRO:HB2	1.99	0.44
48:v:172:LEU:HD23	49:w:91:GLN:HA	1.99	0.44
50:x:170:ILE:HD13	50:x:170:ILE:HA	1.87	0.44
50:x:192:VAL:HG12	50:x:203:THR:HG22	1.98	0.44
51:y:31:SER:OG	51:y:33:ASN:ND2	2.49	0.44
1:1:49:A:OP1	17:N:191:TRP:NE1	2.51	0.44
1:1:291:C:H2'	1:1:292:U:O2	2.17	0.44
1:1:1810:A:H2'	1:1:1811:G:C8	2.52	0.44
1:1:2597:U:H2'	1:1:2598:G:H8	1.82	0.44
3:3:87:G:C2	3:3:95:A:C8	3.05	0.44
6:B:48:GLY:HA3	6:B:81:THR:HG22	1.98	0.44
9:E:96:VAL:HG12	9:E:98:VAL:HG13	1.99	0.44
31:b:14:ALA:HB2	31:b:144:ARG:HA	1.99	0.44
39:j:21:ARG:HB2	39:j:39:TYR:CD1	2.51	0.44
42:m:227:HIS:HD1	42:m:229:LEU:HD12	1.82	0.44
48:v:28:LYS:HD3	48:v:163:ASP:OD2	2.17	0.44
48:v:221:ILE:HG22	49:w:59:GLN:OE1	2.17	0.44
50:x:302:ARG:HB3	50:x:315:ILE:HD12	1.99	0.44
1:1:806:A:N6	1:1:936:A:O4'	2.51	0.44
1:1:999:G:H1	1:1:1050:U:H3	1.65	0.44
1:1:1424:C:H2'	1:1:1425:U:O4'	2.17	0.44
1:1:1659:U:H2'	1:1:1660:C:C6	2.52	0.44
1:1:1805:C:H2'	1:1:1806:A:H8	1.82	0.44
1:1:2264:U:H2'	1:1:2265:C:H6	1.81	0.44
1:1:2861:U:O4	42:m:131:ILE:N	2.50	0.44
1:1:3026:G:H4'	45:r:2:PRO:HD3	1.99	0.44
3:3:70:U:H2'	3:3:71:G:C8	2.53	0.44
15:L:18:TRP:CD1	15:L:18:TRP:H	2.35	0.44
16:M:55:ARG:HD3	22:S:70:THR:HB	2.00	0.44
17:N:60:VAL:HB	17:N:134:LEU:HB2	2.00	0.44
22:S:77:VAL:HG11	22:S:106:LEU:HD13	1.99	0.44
36:g:106:LYS:HE2	36:g:106:LYS:HB2	1.76	0.44
42:m:173:GLU:O	42:m:177:LEU:HG	2.16	0.44
44:q:150:ASP:HA	44:q:153:GLU:CD	2.41	0.44
45:r:250:ASP:OD1	45:r:251:ARG:N	2.51	0.44
49:w:183:GLU:O	49:w:187:LEU:HD23	2.18	0.44
1:1:240:U:H4'	1:1:241:G:H5'	1.98	0.44
1:1:536:U:H2'	1:1:537:A:H8	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1627:U:O2'	1:1:1813:A:N7	2.42	0.44
1:1:1807:G:OP1	29:Z:133:LYS:NZ	2.31	0.44
1:1:2734:A:H5'	49:w:128:ARG:HG2	1.98	0.44
8:D:163:LEU:HD21	8:D:175:HIS:HB2	1.99	0.44
8:D:195:LEU:O	8:D:198:TYR:N	2.50	0.44
14:J:23:VAL:O	14:J:65:ILE:HG23	2.18	0.44
23:T:38:ASP:OD2	23:T:39:ILE:N	2.50	0.44
31:b:439:LYS:HD2	31:b:444:PHE:HE1	1.82	0.44
40:k:27:ILE:HD12	40:k:39:ARG:HH11	1.81	0.44
47:u:133:LEU:HA	47:u:136:ILE:HD12	2.00	0.44
48:v:29:GLN:HB2	48:v:84:CYS:HA	2.00	0.44
51:y:116:LEU:HD11	51:y:177:LEU:HD21	1.99	0.44
1:1:718:G:OP1	30:a:117:ARG:NH2	2.50	0.44
1:1:849:C:H2'	1:1:850:U:C6	2.52	0.44
1:1:1192:C:C2	46:s:6:ARG:HD2	2.52	0.44
1:1:1342:C:H2'	1:1:1343:A:H8	1.82	0.44
1:1:2222:A:H2'	1:1:2223:A:C8	2.53	0.44
1:1:2655:U:H5'	1:1:2657:A:N7	2.31	0.44
1:1:2761:G:H22	1:1:2799:A:H2	1.64	0.44
1:1:3215:A:C8	16:M:121:MET:HE3	2.52	0.44
3:3:46:A:OP1	8:D:158:ARG:HG3	2.16	0.44
9:E:138:GLN:O	9:E:142:ASP:HB2	2.18	0.44
12:H:112:ILE:HD12	12:H:128:VAL:HG22	1.99	0.44
16:M:36:VAL:HG11	16:M:55:ARG:NH2	2.32	0.44
20:Q:23:ASN:HB3	20:Q:26:LEU:HB3	1.98	0.44
22:S:154:HIS:HA	22:S:170:THR:HB	2.00	0.44
24:U:94:ARG:HB3	24:U:108:TYR:CE1	2.52	0.44
27:X:115:ARG:HD3	27:X:121:LYS:HE3	1.99	0.44
29:Z:18:TYR:OH	29:Z:47:GLU:OE2	2.34	0.44
31:b:277:LEU:HD23	42:m:161:VAL:HG22	2.00	0.44
39:j:34:CYS:HB3	39:j:39:TYR:H	1.81	0.44
1:1:1404:G:N1	1:1:1407:A:OP2	2.45	0.44
1:1:2110:G:OP2	13:I:78:LYS:NZ	2.51	0.44
1:1:2429:G:H2'	1:1:2430:A:H8	1.83	0.44
1:1:2898:G:H22	45:r:7:ILE:H	1.65	0.44
1:1:3275:U:H5'	35:f:68:TRP:CZ2	2.52	0.44
8:D:257:GLU:OE2	8:D:259:LYS:HG3	2.16	0.44
11:G:238:LEU:HD11	11:G:246:MET:HE3	1.99	0.44
14:J:29:ARG:HH22	14:J:123:PHE:HB3	1.82	0.44
17:N:36:ILE:HG12	17:N:64:VAL:HG23	1.99	0.44
25:V:85:TRP:HH2	25:V:95:PHE:CE2	2.36	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:b:182:SER:O	31:b:185:ARG:HG3	2.18	0.44
31:b:318:MET:SD	31:b:331:VAL:HG22	2.57	0.44
1:1:167:U:H2'	1:1:168:U:C6	2.52	0.44
1:1:924:G:O2'	1:1:2809:C:N3	2.41	0.44
1:1:1204:A:H62	1:1:1300:G:H21	1.65	0.44
1:1:1306:G:O2'	1:1:1307:G:H5''	2.18	0.44
1:1:1342:C:H2'	1:1:1343:A:C8	2.52	0.44
1:1:1784:G:H2'	1:1:1785:U:O4'	2.17	0.44
1:1:2674:A:N7	14:J:125:MET:N	2.65	0.44
1:1:3357:U:H2'	1:1:3358:U:C6	2.52	0.44
3:3:81:U:H2'	3:3:82:G:C8	2.52	0.44
6:B:111:SER:OG	6:B:112:ASP:N	2.51	0.44
6:B:117:ARG:HA	6:B:175:LYS:HG3	1.99	0.44
28:Y:55:GLU:HG3	28:Y:108:LYS:HE2	2.00	0.44
29:Z:5:LEU:HD13	29:Z:77:TYR:CD1	2.52	0.44
40:k:12:LEU:HB3	40:k:16:ARG:HH22	1.82	0.44
42:m:414:ARG:NE	48:v:292:GLY:O	2.50	0.44
52:z:14:LYS:HB3	52:z:18:ARG:HH12	1.82	0.44
1:1:722:G:H2'	1:1:723:U:C6	2.53	0.44
1:1:1675:G:H2'	1:1:1676:A:C8	2.53	0.44
1:1:3066:U:H2'	1:1:3067:C:C6	2.52	0.44
1:1:3271:G:C2	9:E:108:LYS:HB2	2.53	0.44
2:2:104:A:C8	2:2:105:A:C8	3.06	0.44
10:F:88:ARG:NH2	10:F:91:GLY:O	2.36	0.44
10:F:240:VAL:O	10:F:244:ASN:N	2.42	0.44
11:G:50:VAL:HG21	27:X:27:ARG:HG3	1.99	0.44
18:O:62:THR:H	18:O:69:GLY:HA3	1.83	0.44
24:U:29:ASP:CG	24:U:32:SER:HB3	2.42	0.44
24:U:43:VAL:HB	24:U:49:ASN:HB2	2.00	0.44
42:m:157:LEU:O	42:m:161:VAL:HG23	2.17	0.44
50:x:462:CYS:HB2	50:x:489:VAL:HG23	1.99	0.44
1:1:170:G:H2'	1:1:171:G:O4'	2.17	0.44
1:1:388:G:N2	19:P:101:ASN:OD1	2.45	0.44
1:1:1941:C:H2'	1:1:1942:U:C6	2.53	0.44
1:1:2667:A:H2	1:1:2690:G:C4	2.36	0.44
1:1:2855:U:H2'	1:1:2856:G:C8	2.53	0.44
14:J:164:LYS:HD3	14:J:169:ALA:HA	2.00	0.44
20:Q:125:ASP:OD1	20:Q:125:ASP:N	2.50	0.44
25:V:72:LYS:HD2	42:m:194:TRP:NE1	2.33	0.44
31:b:434:GLU:OE2	51:y:79:GLN:NE2	2.51	0.44
41:l:10:LYS:HA	41:l:13:MET:CE	2.48	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:s:25:ALA:O	46:s:28:LYS:HG2	2.18	0.44
51:y:4:ARG:HB3	51:y:208:LEU:HA	1.99	0.44
1:1:982:C:H2'	1:1:983:A:C8	2.52	0.43
1:1:1127:G:N1	1:1:1128:U:O4	2.51	0.43
1:1:1604:G:H4'	1:1:1835:A:H4'	2.01	0.43
6:B:17:LEU:HD11	6:B:233:TRP:HH2	1.82	0.43
11:G:148:ALA:HA	11:G:201:THR:HG22	1.99	0.43
14:J:22:SER:HA	14:J:66:ALA:HB2	2.00	0.43
16:M:20:VAL:HG22	16:M:68:LEU:O	2.17	0.43
16:M:57:ALA:HB2	22:S:97:VAL:HG21	1.99	0.43
22:S:42:TRP:O	22:S:46:GLN:HG2	2.18	0.43
28:Y:55:GLU:OE1	28:Y:69:LYS:HG3	2.18	0.43
31:b:105:VAL:HG13	31:b:136:MET:HE2	2.00	0.43
34:e:121:ASN:OD1	34:e:121:ASN:N	2.52	0.43
42:m:383:LEU:HD21	42:m:454:LEU:HD13	2.00	0.43
45:r:171:ILE:HG21	45:r:212:LEU:HD22	1.99	0.43
1:1:874:U:H5'	6:B:241:LYS:HG2	2.00	0.43
1:1:1221:A:H1'	26:W:72:VAL:HG12	2.00	0.43
1:1:1419:A:H5''	7:C:193:LYS:HE2	2.00	0.43
1:1:1460:A:H2'	1:1:1461:A:C8	2.53	0.43
1:1:1460:A:H2'	1:1:1461:A:H8	1.83	0.43
1:1:3016:A:O2'	1:1:3017:A:H8	2.01	0.43
1:1:3099:C:H42	1:1:3135:U:H3	1.66	0.43
1:1:3150:A:H5'	6:B:129:ALA:O	2.18	0.43
5:A:113:VAL:HG12	5:A:166:ILE:HD13	2.00	0.43
10:F:225:GLN:OE1	10:F:225:GLN:N	2.51	0.43
27:X:57:LEU:HD23	27:X:94:GLN:NE2	2.33	0.43
48:v:148:PHE:CD1	48:v:158:LYS:HB2	2.53	0.43
50:x:44:ASN:OD1	50:x:121:TYR:OH	2.26	0.43
1:1:374:A:N3	1:1:376:G:H5''	2.33	0.43
1:1:673:U:H2'	1:1:674:G:C8	2.52	0.43
1:1:1124:U:H2'	1:1:1125:U:C6	2.53	0.43
1:1:1304:A:N1	1:1:2938:G:O2'	2.50	0.43
1:1:2955:U:OP1	1:1:2977:G:N2	2.34	0.43
3:3:74:C:H2'	3:3:75:G:C8	2.54	0.43
7:C:120:TYR:CE1	7:C:277:PRO:HB3	2.54	0.43
7:C:265:GLU:OE1	7:C:265:GLU:N	2.48	0.43
19:P:7:THR:N	32:c:86:THR:OG1	2.50	0.43
24:U:33:TYR:HE1	24:U:80:THR:HG23	1.82	0.43
31:b:1:MET:HG3	31:b:4:SER:O	2.18	0.43
44:q:102:GLY:HA3	44:q:141:CYS:HB2	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:v:131:LEU:H	48:v:205:LYS:HZ2	1.66	0.43
50:x:272:TYR:OH	50:x:306:ILE:HD12	2.18	0.43
50:x:470:VAL:HG22	50:x:480:VAL:HG12	2.00	0.43
50:x:494:TRP:NE1	50:x:498:GLY:HA2	2.33	0.43
1:1:43:A:H4'	17:N:84:PRO:HD2	1.99	0.43
1:1:366:A:H2'	1:1:367:A:O4'	2.18	0.43
1:1:701:G:H2'	1:1:702:C:C6	2.54	0.43
1:1:715:A:H8	30:a:115:LYS:HD3	1.83	0.43
1:1:786:A:H4'	1:1:787:G:H5'	1.99	0.43
1:1:3279:A:H3'	1:1:3280:U:C6	2.53	0.43
3:3:100:C:OP2	48:v:95:LYS:NZ	2.31	0.43
19:P:116:HIS:NE2	19:P:147:GLU:OE2	2.36	0.43
25:V:26:ALA:O	25:V:115:THR:HG22	2.18	0.43
26:W:55:GLU:HA	26:W:58:THR:HG22	2.00	0.43
42:m:66:ILE:HD13	45:r:129:SER:HB3	2.00	0.43
48:v:275:ILE:HD12	48:v:275:ILE:HA	1.88	0.43
50:x:138:ALA:HB2	50:x:511:ARG:NE	2.32	0.43
1:1:591:G:C2	9:E:18:LEU:HD12	2.53	0.43
1:1:664:U:H2'	1:1:665:A:H8	1.82	0.43
1:1:849:C:O2'	1:1:850:U:OP1	2.35	0.43
1:1:1097:G:HO2'	23:T:108:ARG:NH1	2.17	0.43
1:1:1261:G:H4'	1:1:1278:A:C2	2.53	0.43
1:1:2611:U:H2'	1:1:2612:U:C6	2.53	0.43
1:1:2670:G:H2'	1:1:2671:A:C8	2.53	0.43
3:3:4:U:H2'	3:3:5:G:C8	2.54	0.43
8:D:196:ARG:HB2	50:x:177:THR:CG2	2.46	0.43
14:J:16:LYS:HE3	14:J:130:VAL:HG21	2.00	0.43
17:N:54:LYS:O	17:N:56:LYS:N	2.52	0.43
26:W:201:LEU:HD23	26:W:201:LEU:HA	1.91	0.43
32:c:99:ARG:HG2	32:c:103:TYR:CE2	2.53	0.43
42:m:202:ILE:HG13	42:m:388:VAL:HG13	2.00	0.43
44:q:113:ALA:HB1	44:q:128:VAL:HG12	2.01	0.43
49:w:131:LYS:O	49:w:144:LYS:HG3	2.17	0.43
50:x:376:THR:CG2	50:x:386:TRP:HE1	2.31	0.43
52:z:98:LYS:HB3	52:z:98:LYS:HE3	1.76	0.43
1:1:378:A:O2'	28:Y:91:ASN:HB3	2.18	0.43
1:1:407:A:C2	2:2:17:A:H1'	2.53	0.43
1:1:677:A:N1	1:1:703:G:O2'	2.44	0.43
1:1:1279:C:H2'	1:1:1280:C:C6	2.53	0.43
1:1:2546:C:C4	1:1:2547:A:H2	2.36	0.43
1:1:2815:G:C2	1:1:2816:G:H1'	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:69:U:H2'	2:2:70:G:O4'	2.19	0.43
11:G:91:PHE:CZ	11:G:185:ARG:HG2	2.53	0.43
19:P:168:LEU:HD22	19:P:172:GLN:HB3	2.01	0.43
24:U:37:LEU:HD12	24:U:41:ILE:HD11	2.00	0.43
34:e:89:THR:HG23	34:e:117:ILE:HA	2.01	0.43
42:m:323:TYR:HE2	42:m:385:ARG:HD2	1.84	0.43
47:u:137:ARG:O	47:u:141:ILE:HD12	2.18	0.43
1:1:39:A:H2'	1:1:42:C:N4	2.34	0.43
1:1:261:U:H2'	1:1:262:U:C6	2.54	0.43
1:1:303:G:O2'	1:1:2778:G:OP2	2.34	0.43
1:1:307:A:H2'	1:1:308:A:C8	2.54	0.43
1:1:374:A:HO2'	1:1:376:G:H8	1.66	0.43
1:1:616:G:H2'	1:1:617:G:C8	2.53	0.43
1:1:979:U:OP2	1:1:980:A:H4'	2.18	0.43
1:1:2213:A:H2'	1:1:2214:A:H8	1.83	0.43
1:1:2613:U:O2'	1:1:2805:G:OP2	2.32	0.43
1:1:2657:A:C4	1:1:2658:G:C8	3.07	0.43
1:1:2914:G:N3	1:1:2934:A:H2	2.16	0.43
1:1:3042:U:OP2	1:1:3092:C:N4	2.52	0.43
2:2:66:A:OP1	37:h:10:ARG:NH2	2.52	0.43
3:3:15:C:O2'	3:3:16:U:O5'	2.34	0.43
15:L:59:ARG:HD2	15:L:66:ASN:O	2.19	0.43
16:M:76:ALA:HB1	16:M:80:THR:OG1	2.19	0.43
18:O:79:ILE:HG21	18:O:138:LEU:HD11	2.00	0.43
25:V:98:ASN:OD1	25:V:98:ASN:N	2.52	0.43
27:X:73:MET:HE1	27:X:141:TYR:HD2	1.84	0.43
31:b:78:HIS:O	31:b:82:MET:HG3	2.19	0.43
42:m:113:LEU:HD23	42:m:113:LEU:HA	1.82	0.43
49:w:26:LEU:HD22	49:w:65:LEU:HD21	2.01	0.43
50:x:272:TYR:HE2	50:x:310:GLY:HA3	1.84	0.43
51:y:42:LEU:HD13	51:y:46:ILE:HD11	2.00	0.43
1:1:158:G:H2'	1:1:159:A:C8	2.53	0.43
1:1:735:A:H2'	1:1:736:A:C8	2.54	0.43
1:1:928:C:H2'	1:1:929:A:C8	2.54	0.43
1:1:1475:A:H4'	33:d:57:GLN:HG3	2.01	0.43
1:1:2152:A:H2'	1:1:2153:U:H6	1.84	0.43
1:1:2654:C:H1'	1:1:2657:A:C8	2.54	0.43
1:1:2661:G:H2'	1:1:2662:G:H8	1.83	0.43
1:1:2720:G:O6	1:1:2736:A:N6	2.51	0.43
1:1:2970:C:OP1	45:r:145:LYS:HG2	2.18	0.43
1:1:3121:U:H1'	1:1:3122:A:H5''	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:2:122:U:H2'	2:2:123:G:H8	1.84	0.43
14:J:7:ASN:O	14:J:9:MET:N	2.52	0.43
14:J:30:LEU:HD12	14:J:30:LEU:HA	1.67	0.43
14:J:37:LEU:HD23	14:J:45:PRO:HB3	2.01	0.43
14:J:112:LEU:HD23	14:J:112:LEU:H	1.84	0.43
26:W:41:TRP:HZ3	26:W:231:THR:HG21	1.83	0.43
50:x:224:ALA:HB3	50:x:226:ARG:NH1	2.34	0.43
51:y:177:LEU:HB3	51:y:179:VAL:HG22	2.00	0.43
1:1:117:U:O2'	1:1:118:U:O5'	2.37	0.43
1:1:388:G:H4'	19:P:18:ARG:HB3	2.01	0.43
1:1:3275:U:OP2	35:f:68:TRP:NE1	2.40	0.43
2:2:59:A:H5''	2:2:61:A:C8	2.53	0.43
3:3:3:U:H2'	3:3:4:U:H6	1.84	0.43
12:H:4:ILE:HD11	22:S:150:PHE:CD1	2.53	0.43
14:J:15:GLU:OE2	14:J:132:ASN:HB3	2.19	0.43
30:a:88:ASP:OD1	30:a:89:GLN:N	2.52	0.43
42:m:215:LEU:HD13	42:m:370:ILE:HD13	2.01	0.43
45:r:216:THR:O	45:r:219:THR:HG22	2.18	0.43
50:x:132:VAL:HG11	50:x:501:VAL:HG22	2.01	0.43
50:x:379:ASP:C	50:x:381:TYR:H	2.25	0.43
51:y:73:PRO:HB3	51:y:102:SER:O	2.19	0.43
1:1:283:G:H5'	1:1:284:A:N7	2.33	0.43
1:1:398:A:C8	32:c:90:SER:HB3	2.54	0.43
1:1:616:G:H2'	1:1:617:G:H8	1.84	0.43
1:1:1884:A:OP1	33:d:31:ARG:NH2	2.52	0.43
1:1:2217:U:H2'	1:1:2218:G:H8	1.83	0.43
1:1:2396:G:O2'	1:1:2398:A:OP1	2.30	0.43
1:1:2529:A:H2'	1:1:2530:G:O4'	2.19	0.43
1:1:2873:U:P	31:b:43:ARG:HH12	2.42	0.43
1:1:2999:U:H2'	1:1:3000:A:C8	2.54	0.43
8:D:194:LEU:O	8:D:197:SER:OG	2.24	0.43
8:D:220:SER:O	8:D:224:LYS:HB3	2.19	0.43
14:J:106:ILE:HG13	14:J:108:GLU:HG3	2.00	0.43
24:U:59:ASP:OD1	24:U:62:VAL:N	2.36	0.43
26:W:73:LEU:HD13	26:W:102:LEU:HG	2.01	0.43
27:X:135:ILE:H	27:X:135:ILE:HD12	1.84	0.43
31:b:296:GLU:OE1	31:b:296:GLU:N	2.52	0.43
42:m:316:ILE:HA	42:m:316:ILE:HD13	1.78	0.43
42:m:355:TYR:O	42:m:356:ILE:HD13	2.18	0.43
50:x:56:SER:H	50:x:59:GLN:NE2	2.17	0.43
50:x:78:THR:HG23	50:x:124:ARG:HB2	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:x:375:VAL:HG12	50:x:410:PHE:HE2	1.84	0.43
1:1:238:A:H2'	1:1:239:G:O4'	2.18	0.42
1:1:346:C:C2	2:2:25:G:H4'	2.54	0.42
1:1:1278:A:H5''	26:W:11:THR:HG22	2.01	0.42
1:1:2520:A:H2'	1:1:2521:U:C6	2.54	0.42
1:1:2531:C:H2'	1:1:2532:U:H5''	2.01	0.42
1:1:2822:U:H5'	1:1:2825:C:C6	2.54	0.42
2:2:39:G:H1'	2:2:104:A:N6	2.34	0.42
22:S:26:ARG:O	23:T:151:LEU:HD23	2.19	0.42
23:T:53:PRO:HB2	49:w:158:TRP:NE1	2.33	0.42
29:Z:125:GLY:O	29:Z:128:GLN:NE2	2.52	0.42
47:u:50:LYS:HA	47:u:55:PHE:CD2	2.54	0.42
48:v:181:VAL:HG11	49:w:58:VAL:HG21	2.01	0.42
50:x:55:ILE:HD12	50:x:59:GLN:HG2	2.01	0.42
1:1:620:U:P	19:P:167:ARG:HH22	2.40	0.42
1:1:1063:G:C5	23:T:109:VAL:HG22	2.53	0.42
1:1:1140:G:H2'	1:1:1141:C:C6	2.54	0.42
1:1:1550:C:H2'	1:1:1551:C:C6	2.54	0.42
1:1:1646:G:O2'	1:1:1808:G:N2	2.38	0.42
1:1:2268:U:C2	48:v:276:HIS:ND1	2.87	0.42
1:1:2765:C:HO2'	1:1:2766:U:C5'	2.32	0.42
1:1:2787:G:C8	1:1:2788:C:H5	2.37	0.42
1:1:3143:C:HO2'	32:c:11:LYS:HZ1	1.56	0.42
1:1:3305:A:H2'	1:1:3306:U:O4'	2.19	0.42
2:2:49:G:O2'	37:h:40:SER:HA	2.19	0.42
6:B:254:ALA:HB3	6:B:256:HIS:O	2.19	0.42
8:D:111:GLN:HA	8:D:116:ASP:HB3	2.02	0.42
8:D:219:PHE:HE1	8:D:227:LEU:HD21	1.83	0.42
12:H:63:LYS:HD3	12:H:63:LYS:HA	1.71	0.42
14:J:117:ASP:O	14:J:120:ILE:N	2.50	0.42
19:P:176:ILE:HD13	19:P:176:ILE:HA	1.90	0.42
22:S:24:LEU:HD23	23:T:148:PRO:HG3	2.00	0.42
26:W:47:ASP:HB2	26:W:126:ARG:NH1	2.34	0.42
42:m:246:MET:SD	42:m:255:LEU:HD21	2.58	0.42
48:v:114:ILE:HD12	48:v:156:GLN:OE1	2.19	0.42
48:v:139:PRO:HB3	48:v:180:HIS:CE1	2.54	0.42
50:x:258:GLY:HA2	50:x:281:VAL:HG23	2.01	0.42
1:1:169:U:H5''	15:L:128:ARG:NH1	2.34	0.42
1:1:345:G:O2'	2:2:25:G:N3	2.51	0.42
1:1:945:C:H2'	1:1:946:U:C6	2.54	0.42
1:1:1269:U:H5	1:1:1272:C:OP2	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1349:G:H2'	1:1:1350:A:C4	2.55	0.42
1:1:2160:G:H2'	1:1:2161:G:H8	1.84	0.42
1:1:2398:A:H2'	1:1:2399:A:C8	2.54	0.42
1:1:3161:C:C2	1:1:3290:G:C2	3.06	0.42
2:2:76:C:H2'	2:2:77:A:O4'	2.19	0.42
4:7:77:LEU:HG	4:7:87:VAL:HG23	2.01	0.42
6:B:313:HIS:O	6:B:333:LYS:HE3	2.19	0.42
15:L:55:ARG:NH1	15:L:96:ALA:HB2	2.34	0.42
17:N:64:VAL:CG1	17:N:102:ALA:HB1	2.48	0.42
26:W:38:ARG:O	26:W:223:ASN:HB2	2.20	0.42
31:b:169:THR:HG23	31:b:248:SER:HB3	2.01	0.42
31:b:420:TYR:HB2	51:y:86:ASN:C	2.44	0.42
39:j:25:ARG:CD	41:l:51:ILE:HD12	2.49	0.42
42:m:81:THR:OG1	45:r:222:GLU:OE2	2.23	0.42
42:m:438:LEU:HA	42:m:444:PRO:HA	2.01	0.42
45:r:165:PRO:HD2	45:r:168:MET:SD	2.60	0.42
48:v:39:ASN:OD1	48:v:42:LEU:HB2	2.19	0.42
50:x:225:LEU:HD23	50:x:263:TRP:CD2	2.54	0.42
50:x:398:MET:HE2	50:x:434:GLY:HA2	2.00	0.42
1:1:85:A:N1	1:1:99:A:H5''	2.35	0.42
1:1:1805:C:H2'	1:1:1806:A:C8	2.54	0.42
1:1:1927:G:C8	43:p:16:VAL:HG12	2.54	0.42
1:1:2377:G:OP2	1:1:2378:C:N4	2.36	0.42
1:1:2393:G:HO2'	1:1:2982:A:N6	2.16	0.42
1:1:2695:A:H8	1:1:2697:A:N6	2.17	0.42
1:1:2731:U:H5'	1:1:2732:G:C8	2.54	0.42
1:1:2765:C:O2'	1:1:2766:U:O5'	2.34	0.42
1:1:3037:U:OP2	52:z:17:LYS:NZ	2.47	0.42
6:B:262:TRP:N	18:O:64:PHE:O	2.49	0.42
6:B:348:ARG:O	6:B:352:GLU:HG3	2.20	0.42
15:L:64:LYS:HE3	30:a:69:TRP:CD1	2.55	0.42
15:L:80:VAL:HG12	15:L:85:LEU:O	2.18	0.42
18:O:85:ARG:HG3	18:O:99:LEU:HD11	2.00	0.42
19:P:31:GLU:HG3	19:P:60:PHE:CD2	2.54	0.42
31:b:386:LYS:HB3	31:b:386:LYS:HE2	1.74	0.42
42:m:134:THR:OG1	50:x:321:HIS:ND1	2.49	0.42
42:m:412:LEU:HD12	42:m:412:LEU:HA	1.83	0.42
49:w:20:VAL:HG23	49:w:29:PHE:HD2	1.84	0.42
50:x:438:SER:OG	50:x:439:THR:N	2.50	0.42
1:1:406:G:OP1	1:1:1415:U:O2'	2.34	0.42
1:1:563:U:H2'	1:1:564:G:C8	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:977:C:C4	1:1:978:G:H1'	2.55	0.42
1:1:1255:C:O2'	44:q:130:LYS:HB3	2.19	0.42
1:1:1257:C:H2'	1:1:1258:U:O4'	2.19	0.42
1:1:1671:C:OP1	21:R:60:LYS:NZ	2.35	0.42
1:1:2361:A:H2'	1:1:2362:C:C6	2.55	0.42
1:1:2371:G:N1	46:s:17:GLU:HG3	2.35	0.42
1:1:2681:U:H2'	1:1:2682:C:C6	2.54	0.42
1:1:2686:A:H2'	1:1:2687:G:O4'	2.20	0.42
1:1:2835:U:H2'	1:1:2836:C:C6	2.54	0.42
6:B:14:LEU:HD13	6:B:262:TRP:CH2	2.55	0.42
8:D:69:ILE:HD11	48:v:51:ALA:O	2.20	0.42
8:D:109:THR:HA	8:D:112:LYS:HG2	2.02	0.42
8:D:160:PHE:HA	8:D:163:LEU:HB3	2.02	0.42
8:D:257:GLU:OE2	8:D:259:LYS:NZ	2.38	0.42
11:G:240:ASN:C	11:G:240:ASN:HD22	2.27	0.42
14:J:86:VAL:HG11	14:J:106:ILE:HG12	2.00	0.42
29:Z:33:SER:HB2	29:Z:35:SER:O	2.19	0.42
32:c:53:VAL:HG22	32:c:87:ARG:NH2	2.33	0.42
48:v:161:PHE:HB3	48:v:184:MET:HE1	2.02	0.42
50:x:268:ARG:HA	50:x:268:ARG:HD3	1.81	0.42
50:x:482:LEU:HB3	50:x:513:TRP:CZ3	2.54	0.42
1:1:321:C:OP1	17:N:159:ARG:NH2	2.53	0.42
1:1:645:A:C8	1:1:647:A:H1'	2.55	0.42
1:1:754:G:H2'	1:1:755:A:C8	2.55	0.42
1:1:1066:G:H2'	1:1:1067:U:C6	2.53	0.42
1:1:1914:G:O2'	21:R:82:LYS:O	2.33	0.42
1:1:2277:C:H2'	1:1:2278:C:H4'	2.01	0.42
1:1:2407:C:C2	1:1:2815:G:C2	3.08	0.42
1:1:2725:U:H3'	1:1:2726:C:C6	2.55	0.42
1:1:2730:G:H5'	1:1:2732:G:H5''	2.02	0.42
5:A:149:ARG:CZ	5:A:155:LYS:HD2	2.50	0.42
11:G:140:VAL:HG22	11:G:166:LEU:HD21	2.02	0.42
12:H:41:ILE:HG22	12:H:43:VAL:HB	2.02	0.42
18:O:187:GLU:OE1	18:O:187:GLU:N	2.53	0.42
19:P:166:VAL:HG12	19:P:168:LEU:HG	2.00	0.42
21:R:10:LEU:HD12	21:R:10:LEU:HA	1.90	0.42
22:S:13:ARG:O	22:S:22:PRO:HG2	2.19	0.42
26:W:78:GLY:HA3	26:W:84:GLU:HA	2.02	0.42
31:b:87:GLU:HG2	31:b:90:HIS:CD2	2.53	0.42
42:m:115:MET:O	42:m:119:GLU:HG2	2.20	0.42
43:p:22:LEU:O	43:p:26:VAL:HG23	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:u:139:VAL:O	47:u:143:ARG:HG2	2.19	0.42
50:x:501:VAL:HG22	50:x:513:TRP:HB2	2.02	0.42
1:1:148:G:H3'	17:N:49:ARG:NH2	2.35	0.42
1:1:741:U:H2'	1:1:742:G:O4'	2.19	0.42
1:1:2418:G:H5'	1:1:2418:G:N3	2.35	0.42
1:1:2646:C:H2'	1:1:2647:A:H8	1.84	0.42
1:1:2727:A:H5''	45:r:164:ARG:HD2	2.01	0.42
1:1:2863:G:C8	31:b:65:LEU:HD22	2.55	0.42
1:1:2926:A:H2'	1:1:2927:C:O4'	2.20	0.42
3:3:112:G:H2'	3:3:113:C:H6	1.83	0.42
5:A:93:LYS:HA	5:A:93:LYS:HD3	1.83	0.42
8:D:41:LYS:HE2	49:w:81:GLY:HA2	2.01	0.42
8:D:54:ARG:HD3	8:D:54:ARG:HA	1.83	0.42
10:F:77:VAL:HG22	22:S:59:VAL:HA	2.01	0.42
12:H:89:LYS:HG2	12:H:145:VAL:HG22	2.00	0.42
29:Z:17:ARG:HH11	29:Z:17:ARG:HD3	1.73	0.42
31:b:1:MET:HE3	31:b:4:SER:HB3	2.02	0.42
33:d:80:ASN:OD1	33:d:81:GLU:N	2.52	0.42
48:v:89:LEU:HB3	48:v:101:THR:HB	2.00	0.42
50:x:231:TRP:CZ2	50:x:256:LYS:HD2	2.54	0.42
50:x:238:GLU:OE1	50:x:250:ARG:N	2.39	0.42
50:x:404:LEU:HD21	50:x:422:PHE:CD2	2.55	0.42
1:1:358:G:N2	1:1:361:A:OP2	2.51	0.42
1:1:385:A:H2'	1:1:386:A:H8	1.81	0.42
1:1:595:G:H2'	1:1:596:C:C6	2.55	0.42
1:1:599:C:OP1	7:C:332:LYS:HE3	2.19	0.42
1:1:785:G:N2	1:1:786:A:H62	2.18	0.42
1:1:1064:A:H4'	1:1:1065:A:C5'	2.50	0.42
1:1:1171:G:H2'	1:1:1172:G:O4'	2.19	0.42
1:1:1641:U:O2'	1:1:1642:A:H3'	2.20	0.42
1:1:1922:A:H2'	1:1:1923:C:O4'	2.19	0.42
1:1:2730:G:C6	45:r:160:GLY:HA3	2.55	0.42
1:1:2860:U:H3'	31:b:100:ARG:HH22	1.84	0.42
1:1:2863:G:H22	31:b:92:LYS:HG2	1.84	0.42
1:1:3099:C:H1'	1:1:3100:U:H5'	2.01	0.42
2:2:48:A:O2'	2:2:50:C:OP2	2.25	0.42
2:2:85:G:OP2	28:Y:113:LYS:NZ	2.38	0.42
15:L:95:ILE:HD13	15:L:116:LEU:HD22	2.01	0.42
19:P:27:LYS:O	19:P:31:GLU:HG2	2.20	0.42
22:S:83:SER:HA	22:S:84:ARG:HA	1.76	0.42
31:b:401:ASP:O	31:b:405:GLU:HG2	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:b:623:ASP:CB	41:l:46:ARG:HD3	2.50	0.42
32:c:55:LEU:HD23	32:c:97:ILE:HD13	2.02	0.42
42:m:171:TYR:O	42:m:175:GLN:HG2	2.19	0.42
50:x:407:HIS:HB3	50:x:420:ALA:HB3	2.01	0.42
1:1:18:G:OP1	37:h:81:ARG:NH2	2.43	0.42
1:1:760:G:H1'	1:1:771:A:N6	2.35	0.42
1:1:970:A:H2'	1:1:971:G:O4'	2.19	0.42
1:1:1246:G:H1'	1:1:1264:G:H2'	2.00	0.42
1:1:1340:G:H2'	1:1:1341:U:H6	1.84	0.42
1:1:1615:C:H2'	1:1:1616:U:C6	2.55	0.42
1:1:1675:G:H2'	1:1:1676:A:H8	1.84	0.42
1:1:1821:U:N3	36:g:67:LYS:HE3	2.35	0.42
1:1:2898:G:N2	45:r:7:ILE:H	2.18	0.42
1:1:3014:U:H2'	1:1:3015:G:C8	2.55	0.42
1:1:3063:C:H2'	1:1:3064:U:C6	2.54	0.42
1:1:3163:A:C6	1:1:3288:G:C6	3.08	0.42
6:B:162:VAL:O	6:B:178:LEU:HD12	2.20	0.42
7:C:48:GLN:HE21	7:C:48:GLN:HB3	1.64	0.42
9:E:72:ASN:HB3	9:E:160:SER:HA	2.02	0.42
10:F:140:SER:N	10:F:237:ASN:OD1	2.46	0.42
11:G:68:ARG:HG3	11:G:237:ILE:O	2.20	0.42
15:L:60:ALA:HB3	15:L:65:TYR:O	2.20	0.42
20:Q:36:LEU:O	20:Q:40:THR:OG1	2.18	0.42
24:U:94:ARG:HB3	24:U:108:TYR:CZ	2.55	0.42
27:X:57:LEU:HD23	27:X:94:GLN:HE22	1.85	0.42
31:b:460:GLU:OE2	47:u:102:LYS:NZ	2.39	0.42
37:h:105:ARG:O	37:h:109:ILE:HG12	2.20	0.42
52:z:43:LYS:O	52:z:47:GLU:HG2	2.20	0.42
1:1:1669:C:OP1	36:g:24:LYS:NZ	2.38	0.42
1:1:2203:U:H3	1:1:2239:G:H1	1.66	0.42
1:1:2666:C:H1'	1:1:2691:A:N3	2.35	0.42
6:B:218:ILE:HG12	6:B:276:THR:HG23	2.01	0.42
7:C:92:ASN:HA	7:C:98:ARG:O	2.20	0.42
11:G:116:VAL:HA	11:G:121:SER:HB2	2.01	0.42
12:H:31:ARG:HB2	12:H:82:VAL:O	2.19	0.42
18:O:10:ASP:OD1	18:O:37:ARG:HD3	2.19	0.42
24:U:31:ALA:HA	24:U:58:GLU:OE2	2.19	0.42
33:d:77:ARG:HG2	33:d:89:LEU:HD12	2.02	0.42
42:m:22:LEU:HD23	49:w:121:LYS:HB2	2.02	0.42
42:m:261:LYS:HA	53:m:601:GDP:C6	2.55	0.42
42:m:439:LEU:N	42:m:443:GLU:O	2.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:r:65:ILE:O	45:r:68:HIS:N	2.53	0.42
45:r:242:TYR:HB3	45:r:260:LEU:HD12	2.02	0.42
50:x:330:THR:O	50:x:334:LEU:HG	2.20	0.42
1:1:19:U:H2'	1:1:20:A:C8	2.55	0.41
1:1:201:A:H2'	1:1:202:G:C8	2.55	0.41
1:1:954:U:H2'	1:1:955:U:H6	1.85	0.41
1:1:1116:G:H21	1:1:1117:G:H3'	1.85	0.41
1:1:1273:A:C2	26:W:158:ILE:HD13	2.55	0.41
1:1:3016:A:N3	1:1:3017:A:C8	2.88	0.41
1:1:3067:C:O5'	21:R:62:ARG:NH2	2.53	0.41
1:1:3123:A:H1'	12:H:41:ILE:HD11	2.02	0.41
3:3:97:A:C2	3:3:98:C:H6	2.38	0.41
5:A:149:ARG:NH1	5:A:155:LYS:HD2	2.35	0.41
6:B:215:ILE:HD12	6:B:338:LEU:HB3	2.02	0.41
26:W:111:THR:O	26:W:114:GLU:HG3	2.20	0.41
31:b:229:THR:HA	31:b:232:MET:CE	2.50	0.41
31:b:420:TYR:HE2	31:b:422:LEU:HD11	1.85	0.41
44:q:64:ILE:HG13	44:q:69:ALA:HB2	2.02	0.41
48:v:174:ASP:HA	49:w:89:LEU:HD22	2.01	0.41
1:1:158:G:H2'	1:1:159:A:H8	1.85	0.41
1:1:312:C:H2'	1:1:313:A:C8	2.55	0.41
1:1:1258:U:OP1	44:q:123:ARG:NH2	2.52	0.41
1:1:2265:C:H2'	1:1:2266:U:C6	2.55	0.41
1:1:2721:A:H61	1:1:2735:U:H3	1.68	0.41
1:1:2729:U:N3	45:r:211:GLN:O	2.53	0.41
2:2:9:A:H2'	2:2:10:A:C8	2.55	0.41
8:D:21:ARG:O	8:D:25:GLU:HG2	2.20	0.41
9:E:39:VAL:O	9:E:87:THR:OG1	2.29	0.41
14:J:109:HIS:CE1	14:J:123:PHE:HB2	2.55	0.41
15:L:58:VAL:HG21	15:L:72:GLY:HA3	2.01	0.41
22:S:49:HIS:O	22:S:51:VAL:N	2.52	0.41
26:W:70:ARG:HD2	26:W:98:GLY:H	1.85	0.41
31:b:143:LEU:HD12	31:b:146:PRO:HG2	2.02	0.41
31:b:295:PRO:HA	31:b:298:LEU:HB2	2.02	0.41
40:k:21:LYS:HA	40:k:21:LYS:HD3	1.87	0.41
43:p:39:CYS:HB3	43:p:42:CYS:HB2	2.02	0.41
50:x:453:SER:OG	50:x:455:ASP:OD1	2.31	0.41
51:y:97:VAL:HG12	51:y:128:LEU:HD23	2.01	0.41
1:1:115:A:H2'	1:1:265:A:N3	2.35	0.41
1:1:431:U:H2'	1:1:432:G:C8	2.54	0.41
1:1:597:G:OP1	10:F:37:ASN:HB3	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1312:C:O2'	18:O:83:ALA:O	2.36	0.41
1:1:1339:C:H2'	1:1:1340:G:C8	2.55	0.41
1:1:1633:C:OP2	29:Z:69:LYS:NZ	2.35	0.41
1:1:2873:U:H4'	1:1:2874:G:H5'	2.02	0.41
1:1:2952:G:N7	1:1:2954:U:H5	2.18	0.41
31:b:443:ASP:OD1	47:u:2:ARG:NH2	2.50	0.41
35:f:49:ILE:HD11	35:f:71:VAL:HG22	2.01	0.41
46:s:35:LYS:C	46:s:36:LYS:HD2	2.45	0.41
1:1:176:G:C2	1:1:243:G:C5	3.07	0.41
1:1:383:G:N2	1:1:386:A:OP2	2.35	0.41
1:1:428:A:H2'	1:1:429:U:C6	2.56	0.41
1:1:809:G:H2'	1:1:810:A:O4'	2.21	0.41
1:1:1799:A:H2'	1:1:1800:A:C8	2.56	0.41
1:1:2263:C:H2'	1:1:2264:U:C6	2.55	0.41
1:1:3000:A:H2'	1:1:3001:C:C6	2.56	0.41
1:1:3004:C:O2'	6:B:99:LEU:O	2.36	0.41
2:2:150:G:OP1	27:X:27:ARG:NH2	2.53	0.41
6:B:252:ILE:HG23	6:B:264:VAL:HG11	2.02	0.41
8:D:211:LEU:HD12	8:D:211:LEU:HA	1.92	0.41
50:x:35:LYS:HB2	50:x:116:GLN:OE1	2.21	0.41
1:1:497:C:H2'	1:1:498:A:O4'	2.20	0.41
1:1:1340:G:H2'	1:1:1341:U:C6	2.54	0.41
1:1:2332:A:H2'	1:1:2333:C:O4'	2.20	0.41
1:1:2407:C:H2'	1:1:2408:U:H6	1.84	0.41
1:1:2730:G:O2'	1:1:2731:U:OP1	2.35	0.41
1:1:2916:U:H2'	1:1:2917:G:C8	2.55	0.41
1:1:3014:U:H2'	1:1:3015:G:H8	1.85	0.41
2:2:125:U:H2'	2:2:126:A:C5	2.55	0.41
8:D:23:ARG:O	8:D:23:ARG:NE	2.48	0.41
8:D:204:VAL:HG23	8:D:236:LEU:HD13	2.03	0.41
12:H:110:LYS:HE3	12:H:110:LYS:HB2	1.87	0.41
15:L:170:LEU:HD11	30:a:147:LEU:HD11	2.02	0.41
18:O:103:LYS:NZ	32:c:8:ASN:O	2.45	0.41
22:S:77:VAL:HG22	22:S:126:VAL:HG13	2.02	0.41
24:U:13:LYS:HD2	24:U:15:PHE:CZ	2.56	0.41
26:W:1:MET:HB2	26:W:5:LYS:HE2	2.03	0.41
40:k:64:LYS:O	40:k:67:GLN:HG2	2.19	0.41
45:r:183:ASN:HA	45:r:194:PHE:HA	2.02	0.41
47:u:114:GLY:HA2	47:u:117:GLU:OE2	2.21	0.41
50:x:9:SER:H	50:x:12:GLN:HG3	1.86	0.41
50:x:380:ASP:HB3	50:x:382:THR:HG22	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2753:G:H3'	1:1:2753:G:C8	2.56	0.41
1:1:2794:G:H4'	1:1:2796:G:N1	2.35	0.41
1:1:2797:C:OP2	1:1:2799:A:N6	2.53	0.41
2:2:68:G:H2'	2:2:69:U:O4'	2.20	0.41
3:3:106:U:H2'	3:3:107:C:H6	1.85	0.41
11:G:166:LEU:HD23	11:G:166:LEU:HA	1.90	0.41
12:H:20:ILE:HG12	12:H:25:VAL:HG22	2.02	0.41
22:S:109:ASP:OD1	22:S:113:ARG:NH1	2.53	0.41
23:T:57:TYR:CE1	23:T:89:LEU:HD11	2.56	0.41
31:b:420:TYR:CE2	31:b:422:LEU:HD11	2.55	0.41
51:y:22:THR:HG22	51:y:67:ARG:HA	2.02	0.41
1:1:377:A:H1'	1:1:392:G:N2	2.35	0.41
1:1:760:G:O2'	1:1:761:A:OP2	2.39	0.41
1:1:834:U:H2'	1:1:835:G:O4'	2.20	0.41
1:1:1054:A:H2'	1:1:1055:A:O4'	2.21	0.41
1:1:2530:G:N2	1:1:2581:U:C2	2.88	0.41
1:1:2568:C:O2'	1:1:2569:A:O5'	2.38	0.41
1:1:2727:A:O2'	1:1:2728:G:H5'	2.21	0.41
1:1:3028:G:H2'	1:1:3029:A:C8	2.55	0.41
1:1:3236:U:H1'	1:1:3252:G:N2	2.35	0.41
7:C:74:ILE:HG13	7:C:75:PRO:HD2	2.03	0.41
8:D:116:ASP:OD1	8:D:117:GLU:N	2.54	0.41
8:D:179:ARG:HA	8:D:179:ARG:HD3	1.93	0.41
8:D:188:GLU:OE1	8:D:188:GLU:N	2.53	0.41
10:F:203:TRP:CD1	10:F:204:PRO:HD2	2.56	0.41
11:G:160:ILE:O	11:G:164:VAL:HG13	2.21	0.41
17:N:64:VAL:HG13	17:N:102:ALA:HB1	2.03	0.41
18:O:22:VAL:HG22	18:O:122:GLN:HE21	1.85	0.41
18:O:60:LYS:HB3	18:O:70:PRO:HG2	2.03	0.41
22:S:139:TYR:CD1	22:S:140:VAL:HG23	2.56	0.41
24:U:93:ILE:HD13	24:U:107:PHE:HA	2.03	0.41
26:W:41:TRP:CZ3	26:W:231:THR:HG21	2.55	0.41
26:W:109:VAL:HG21	26:W:220:TYR:CZ	2.56	0.41
31:b:435:ILE:HD12	47:u:3:ILE:HD12	2.02	0.41
42:m:12:ILE:HD13	42:m:17:THR:HG21	2.03	0.41
42:m:381:ASP:O	42:m:385:ARG:HG3	2.21	0.41
43:p:49:ARG:HB2	43:p:55:TRP:CZ3	2.55	0.41
50:x:170:ILE:HG12	50:x:182:LEU:HD11	2.03	0.41
1:1:377:A:OP2	31:b:604:ARG:NE	2.54	0.41
1:1:816:A:OP1	39:j:15:SER:OG	2.32	0.41
1:1:2361:A:H2'	1:1:2362:C:H6	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2609:A:H2'	1:1:2610:G:H8	1.86	0.41
1:1:2695:A:H8	1:1:2697:A:H61	1.69	0.41
1:1:3379:C:H4'	6:B:315:GLY:HA2	2.03	0.41
3:3:55:A:H1'	14:J:10:ARG:HD3	2.03	0.41
8:D:137:ASP:OD1	8:D:137:ASP:N	2.54	0.41
9:E:62:THR:CG2	9:E:78:ARG:HB3	2.49	0.41
13:I:83:VAL:HG22	13:I:108:ILE:HG21	2.03	0.41
18:O:138:LEU:HD12	18:O:138:LEU:HA	1.90	0.41
18:O:162:VAL:O	18:O:166:GLU:HG3	2.20	0.41
26:W:126:ARG:O	26:W:129:THR:HG22	2.20	0.41
28:Y:111:LEU:HD23	28:Y:111:LEU:HA	1.88	0.41
35:f:13:HIS:CD2	35:f:28:SER:HG	2.38	0.41
35:f:18:ARG:HA	35:f:23:ASN:HA	2.02	0.41
42:m:10:ARG:NH1	42:m:14:GLU:HG3	2.34	0.41
43:p:7:LYS:HB3	43:p:7:LYS:HE2	1.85	0.41
50:x:286:TRP:HZ2	50:x:306:ILE:HG12	1.86	0.41
50:x:503:SER:OG	50:x:511:ARG:HB2	2.21	0.41
51:y:119:PRO:HA	51:y:139:ARG:HB3	2.02	0.41
1:1:35:A:H2'	1:1:36:C:C6	2.54	0.41
1:1:41:G:O2'	1:1:2612:U:OP1	2.31	0.41
1:1:289:A:H2'	1:1:290:G:H8	1.84	0.41
1:1:389:A:OP1	19:P:4:TYR:OH	2.24	0.41
1:1:579:G:H2'	1:1:580:C:C6	2.56	0.41
1:1:679:U:H2'	1:1:680:G:C8	2.56	0.41
1:1:757:C:H2'	1:1:758:C:O4'	2.21	0.41
1:1:849:C:H2'	1:1:850:U:H6	1.86	0.41
1:1:1091:A:H2'	1:1:1092:C:O4'	2.20	0.41
1:1:1187:C:H5	1:1:1319:G:H22	1.69	0.41
1:1:1301:A:O2'	1:1:1302:A:H5'	2.21	0.41
1:1:1394:A:H4'	1:1:1420:C:H4'	2.03	0.41
1:1:1627:U:O2	1:1:1813:A:H8	2.04	0.41
1:1:2218:G:H2'	1:1:2219:A:C8	2.55	0.41
1:1:2429:G:H2'	1:1:2430:A:C8	2.56	0.41
1:1:2660:G:H2'	1:1:2661:G:C8	2.55	0.41
1:1:2667:A:H1'	1:1:2691:A:OP2	2.21	0.41
1:1:2853:A:H2'	1:1:2854:U:O4'	2.21	0.41
1:1:3267:A:H2'	9:E:69:PHE:CE2	2.56	0.41
3:3:67:G:O5'	8:D:10:SER:OG	2.37	0.41
6:B:238:LEU:HB2	6:B:246:LEU:HA	2.02	0.41
9:E:64:LEU:HD11	9:E:76:LEU:HD12	2.03	0.41
13:I:56:LYS:HG3	13:I:58:MET:HE3	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:J:10:ARG:HE	14:J:10:ARG:HB2	1.57	0.41
20:Q:38:ARG:HG2	20:Q:39:ARG:HG3	2.02	0.41
20:Q:83:VAL:O	20:Q:103:ALA:HA	2.21	0.41
23:T:92:ARG:HB2	23:T:95:HIS:CD2	2.56	0.41
24:U:19:VAL:HG12	24:U:105:LEU:HD13	2.02	0.41
26:W:27:PHE:HE2	26:W:75:LYS:HG3	1.86	0.41
26:W:37:TYR:HB2	26:W:104:PHE:HB3	2.02	0.41
29:Z:15:ARG:HB2	29:Z:79:HIS:HB3	2.02	0.41
30:a:64:GLN:HB2	30:a:67:HIS:NE2	2.35	0.41
31:b:182:SER:HB2	31:b:194:VAL:HG21	2.03	0.41
31:b:298:LEU:HD21	31:b:306:LEU:HD12	2.02	0.41
31:b:305:LEU:HD23	31:b:305:LEU:HA	1.86	0.41
40:k:28:ASN:HB2	40:k:40:GLN:HB3	2.02	0.41
42:m:41:MET:HE2	45:r:147:TRP:CZ3	2.56	0.41
42:m:93:ARG:HD3	50:x:441:ARG:HD2	2.03	0.41
42:m:336:ARG:CG	42:m:340:VAL:HG21	2.47	0.41
48:v:88:VAL:HG22	48:v:102:PHE:CD1	2.56	0.41
50:x:235:LEU:HD22	50:x:251:LEU:HD11	2.03	0.41
51:y:32:GLU:OE1	51:y:50:HIS:NE2	2.37	0.41
1:1:356:C:O2'	7:C:81:GLY:O	2.29	0.41
1:1:518:G:H2'	1:1:520:U:H5'	2.03	0.41
1:1:642:U:C2	1:1:646:A:H2	2.38	0.41
1:1:1667:A:H2'	1:1:1668:G:C8	2.56	0.41
1:1:1759:C:H2'	1:1:1760:A:O4'	2.21	0.41
1:1:2146:C:H5''	5:A:203:ALA:HB1	2.02	0.41
1:1:2268:U:C4	48:v:276:HIS:CE1	3.08	0.41
1:1:2313:A:H2'	1:1:2314:U:C6	2.56	0.41
1:1:3170:A:H5'	32:c:21:HIS:HA	2.03	0.41
1:1:3334:U:H2'	47:u:50:LYS:HD2	2.02	0.41
5:A:45:VAL:HG12	5:A:86:GLN:O	2.20	0.41
14:J:108:GLU:OE2	14:J:111:ASP:HB3	2.21	0.41
15:L:49:ARG:HD2	37:h:116:TYR:CE2	2.56	0.41
15:L:180:ARG:HD3	38:i:11:LEU:HD11	2.03	0.41
26:W:42:VAL:HG22	26:W:219:ALA:O	2.21	0.41
31:b:289:LYS:HD3	31:b:289:LYS:HA	1.81	0.41
36:g:66:SER:O	36:g:70:LYS:HE2	2.21	0.41
39:j:64:MET:O	39:j:68:LYS:HB2	2.21	0.41
42:m:16:ASP:N	42:m:16:ASP:OD1	2.53	0.41
48:v:102:PHE:HB2	48:v:114:ILE:HG22	2.03	0.41
51:y:73:PRO:O	51:y:76:THR:HG22	2.20	0.41
1:1:66:A:N1	1:1:77:A:H5''	2.36	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:74:G:OP1	15:L:105:ASN:HB2	2.21	0.40
1:1:117:U:O2'	1:1:119:U:OP2	2.23	0.40
1:1:1606:U:O4'	36:g:8:ARG:NH2	2.54	0.40
2:2:131:A:H2'	2:2:132:G:H8	1.86	0.40
6:B:95:THR:OG1	6:B:98:GLY:O	2.28	0.40
9:E:56:LYS:HB2	9:E:98:VAL:HG21	2.03	0.40
15:L:157:ARG:NH2	30:a:146:GLU:OE2	2.51	0.40
26:W:186:TYR:OH	26:W:198:ARG:NH2	2.54	0.40
27:X:100:LYS:HG2	27:X:105:VAL:O	2.21	0.40
50:x:260:ILE:HD13	50:x:260:ILE:HG21	1.89	0.40
1:1:21:G:OP2	2:2:36:G:N1	2.50	0.40
1:1:782:U:O2'	30:a:115:LYS:HE3	2.21	0.40
1:1:916:G:N2	1:1:924:G:H5'	2.35	0.40
1:1:1068:C:H2'	1:1:1069:C:C6	2.56	0.40
1:1:1327:C:O2'	35:f:76:GLY:HA2	2.20	0.40
1:1:1493:G:O6	41:l:2:ALA:HA	2.20	0.40
1:1:2149:A:O2'	5:A:179:LEU:O	2.39	0.40
1:1:2270:A:C8	42:m:275:LYS:HG3	2.57	0.40
3:3:90:U:H2'	3:3:91:G:C8	2.56	0.40
13:I:91:ASP:HA	47:u:5:GLN:NE2	2.36	0.40
23:T:55:LYS:O	49:w:158:TRP:HZ2	2.05	0.40
27:X:70:GLU:O	27:X:74:LYS:HG2	2.21	0.40
27:X:117:ASN:O	41:l:18:LYS:HD2	2.20	0.40
35:f:90:PRO:HG2	35:f:93:THR:HG23	2.02	0.40
51:y:166:SER:OG	51:y:168:GLN:OE1	2.31	0.40
1:1:346:C:O2	1:1:348:A:N6	2.54	0.40
1:1:380:U:H2'	1:1:381:U:C6	2.56	0.40
1:1:412:G:H1'	19:P:120:ASN:HB3	2.02	0.40
1:1:541:U:H2'	1:1:542:G:C8	2.44	0.40
1:1:716:A:C2	1:1:720:A:H5'	2.51	0.40
1:1:1551:C:H2'	1:1:1552:G:O4'	2.22	0.40
1:1:1764:U:OP1	21:R:43:LYS:NZ	2.54	0.40
1:1:2688:U:H2'	8:D:16:PHE:CD1	2.56	0.40
1:1:2873:U:H3'	45:r:135:LYS:NZ	2.36	0.40
1:1:2947:G:C2	6:B:250:ALA:HB1	2.56	0.40
6:B:256:HIS:HA	6:B:258:ALA:H	1.87	0.40
6:B:302:LYS:HD3	6:B:302:LYS:O	2.22	0.40
13:I:101:PHE:O	13:I:105:VAL:HG23	2.21	0.40
15:L:42:ARG:O	15:L:46:ILE:HG12	2.21	0.40
24:U:34:ALA:O	24:U:38:ILE:HG23	2.22	0.40
29:Z:46:ILE:HG21	29:Z:46:ILE:HD13	1.82	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:b:56:GLY:O	31:b:60:LYS:HG2	2.22	0.40
31:b:71:ILE:O	31:b:79:ARG:HG3	2.21	0.40
31:b:265:GLU:O	31:b:269:LYS:HG2	2.21	0.40
38:i:3:VAL:O	38:i:12:ASN:ND2	2.55	0.40
42:m:423:ASP:OD1	42:m:424:ALA:N	2.53	0.40
42:m:426:GLU:O	42:m:430:ILE:HG22	2.20	0.40
44:q:61:GLN:HE21	44:q:72:SER:HB2	1.85	0.40
45:r:186:HIS:CD2	45:r:189:LEU:HD12	2.57	0.40
50:x:265:THR:O	50:x:268:ARG:NE	2.42	0.40
50:x:440:PHE:HE1	50:x:476:ARG:HA	1.86	0.40
1:1:7:C:H2'	1:1:8:C:C6	2.56	0.40
1:1:7:C:H2'	1:1:8:C:H6	1.85	0.40
1:1:58:G:N2	1:1:60:A:N3	2.64	0.40
1:1:144:A:H2'	1:1:145:G:O4'	2.22	0.40
1:1:1259:A:H4'	26:W:26:ILE:HD11	2.04	0.40
1:1:1643:A:H2'	1:1:1644:C:C2	2.56	0.40
1:1:2662:G:H2'	1:1:2663:G:H8	1.86	0.40
1:1:2808:A:H4'	1:1:2809:C:O5'	2.21	0.40
1:1:2904:U:H2'	1:1:2905:U:H6	1.87	0.40
1:1:2953:U:H3'	1:1:2954:U:C5'	2.50	0.40
1:1:3335:A:H2'	1:1:3336:A:C8	2.56	0.40
6:B:65:SER:OG	6:B:66:LYS:N	2.55	0.40
12:H:6:THR:HG23	12:H:68:LEU:CD1	2.51	0.40
15:L:128:ARG:HE	37:h:112:PRO:HG3	1.87	0.40
22:S:66:GLU:HG3	22:S:98:SER:HA	2.02	0.40
25:V:70:ARG:NH2	42:m:397:GLU:OE2	2.54	0.40
42:m:91:HIS:CE1	48:v:267:ILE:HD11	2.56	0.40
42:m:92:PHE:HD1	48:v:268:MET:HG2	1.87	0.40
42:m:353:TRP:HZ3	42:m:355:TYR:HD2	1.69	0.40
47:u:83:ARG:HA	47:u:86:VAL:HG22	2.04	0.40
50:x:277:HIS:CE1	50:x:302:ARG:HG2	2.56	0.40
1:1:65:A:N1	1:1:109:A:O2'	2.50	0.40
1:1:810:A:H2'	1:1:811:U:C6	2.56	0.40
1:1:1184:A:H2'	1:1:1185:C:C6	2.56	0.40
1:1:1197:A:C8	46:s:16:LYS:HG3	2.56	0.40
1:1:1312:C:H2'	1:1:1313:G:O4'	2.22	0.40
1:1:1624:G:C4	1:1:1625:A:C8	3.09	0.40
1:1:2211:U:O2	1:1:2234:G:C6	2.75	0.40
1:1:2361:A:N3	34:e:24:ARG:NH2	2.67	0.40
1:1:2767:U:C4	1:1:2791:G:O6	2.74	0.40
1:1:2768:U:H2'	1:1:2769:A:C8	2.54	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3059:G:H5''	33:d:17:HIS:CE1	2.56	0.40
1:1:3243:A:OP1	18:O:159:LYS:NZ	2.54	0.40
14:J:82:ARG:NH2	14:J:112:LEU:O	2.51	0.40
14:J:156:LYS:O	14:J:160:VAL:HG23	2.21	0.40
15:L:122:LYS:HG3	15:L:145:PHE:HE1	1.86	0.40
16:M:15:VAL:HG22	16:M:65:LEU:HD11	2.04	0.40
16:M:32:LEU:HD11	16:M:94:TRP:CD1	2.56	0.40
30:a:76:ASP:OD1	30:a:77:LYS:N	2.54	0.40
31:b:182:SER:HB3	31:b:185:ARG:HG3	2.02	0.40
31:b:427:TRP:HB3	47:u:83:ARG:HH11	1.86	0.40
38:i:89:GLU:O	38:i:93:ILE:HG12	2.21	0.40
39:j:69:HIS:O	39:j:73:ARG:HG3	2.21	0.40
40:k:60:GLY:O	40:k:64:LYS:HG2	2.22	0.40
50:x:188:TRP:O	50:x:205:SER:OG	2.29	0.40
50:x:277:HIS:NE2	50:x:302:ARG:HG2	2.37	0.40
50:x:464:LYS:HG3	50:x:488:GLU:OE1	2.22	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	
4	7	95/105 (90%)	93 (98%)	2 (2%)	0	100	100
5	A	211/254 (83%)	198 (94%)	13 (6%)	0	100	100
6	B	384/387 (99%)	368 (96%)	16 (4%)	0	100	100
7	C	359/362 (99%)	348 (97%)	11 (3%)	0	100	100
8	D	253/297 (85%)	241 (95%)	12 (5%)	0	100	100
9	E	152/176 (86%)	145 (95%)	7 (5%)	0	100	100
10	F	220/244 (90%)	216 (98%)	4 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
11	G	231/256 (90%)	217 (94%)	14 (6%)	0	100	100
12	H	189/191 (99%)	180 (95%)	9 (5%)	0	100	100
13	I	109/166 (66%)	103 (94%)	6 (6%)	0	100	100
14	J	167/174 (96%)	153 (92%)	14 (8%)	0	100	100
15	L	185/199 (93%)	175 (95%)	9 (5%)	1 (0%)	24	54
16	M	135/138 (98%)	132 (98%)	3 (2%)	0	100	100
17	N	201/204 (98%)	190 (94%)	11 (6%)	0	100	100
18	O	195/199 (98%)	192 (98%)	3 (2%)	0	100	100
19	P	181/184 (98%)	173 (96%)	8 (4%)	0	100	100
20	Q	132/186 (71%)	128 (97%)	4 (3%)	0	100	100
21	R	154/189 (82%)	154 (100%)	0	0	100	100
22	S	169/172 (98%)	161 (95%)	8 (5%)	0	100	100
23	T	115/160 (72%)	106 (92%)	9 (8%)	0	100	100
24	U	104/121 (86%)	95 (91%)	9 (9%)	0	100	100
25	V	134/137 (98%)	130 (97%)	4 (3%)	0	100	100
26	W	232/236 (98%)	217 (94%)	15 (6%)	0	100	100
27	X	139/142 (98%)	130 (94%)	9 (6%)	0	100	100
28	Y	124/127 (98%)	121 (98%)	3 (2%)	0	100	100
29	Z	133/136 (98%)	129 (97%)	4 (3%)	0	100	100
30	a	91/149 (61%)	84 (92%)	7 (8%)	0	100	100
31	b	508/647 (78%)	490 (96%)	18 (4%)	0	100	100
32	c	88/175 (50%)	87 (99%)	1 (1%)	0	100	100
33	d	105/113 (93%)	101 (96%)	4 (4%)	0	100	100
34	e	125/130 (96%)	119 (95%)	6 (5%)	0	100	100
35	f	104/107 (97%)	101 (97%)	3 (3%)	0	100	100
36	g	110/121 (91%)	107 (97%)	3 (3%)	0	100	100
37	h	117/120 (98%)	113 (97%)	4 (3%)	0	100	100
38	i	97/100 (97%)	91 (94%)	6 (6%)	0	100	100
39	j	85/88 (97%)	81 (95%)	4 (5%)	0	100	100
40	k	75/78 (96%)	72 (96%)	3 (4%)	0	100	100
41	l	48/51 (94%)	47 (98%)	1 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
42	m	465/519 (90%)	442 (95%)	23 (5%)	0	100	100
43	p	89/92 (97%)	82 (92%)	7 (8%)	0	100	100
44	q	120/165 (73%)	109 (91%)	11 (9%)	0	100	100
45	r	224/261 (86%)	217 (97%)	7 (3%)	0	100	100
46	s	65/520 (12%)	63 (97%)	2 (3%)	0	100	100
47	u	148/199 (74%)	144 (97%)	4 (3%)	0	100	100
48	v	283/344 (82%)	271 (96%)	12 (4%)	0	100	100
49	w	175/203 (86%)	166 (95%)	9 (5%)	0	100	100
50	x	476/514 (93%)	439 (92%)	37 (8%)	0	100	100
51	y	226/245 (92%)	210 (93%)	16 (7%)	0	100	100
52	z	73/106 (69%)	71 (97%)	2 (3%)	0	100	100
All	All	8600/10189 (84%)	8202 (95%)	397 (5%)	1 (0%)	100	100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
15	L	61	PRO

5.3.2 Protein sidechains ⓘ

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	
4	7	81/88 (92%)	81 (100%)	0	100	100
5	A	166/196 (85%)	166 (100%)	0	100	100
6	B	322/323 (100%)	322 (100%)	0	100	100
7	C	288/289 (100%)	288 (100%)	0	100	100
8	D	216/245 (88%)	216 (100%)	0	100	100
9	E	134/153 (88%)	134 (100%)	0	100	100
10	F	186/205 (91%)	186 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
11	G	191/208 (92%)	191 (100%)	0	100	100
12	H	171/171 (100%)	171 (100%)	0	100	100
13	I	99/141 (70%)	99 (100%)	0	100	100
14	J	147/150 (98%)	147 (100%)	0	100	100
15	L	149/159 (94%)	149 (100%)	0	100	100
16	M	108/109 (99%)	108 (100%)	0	100	100
17	N	175/176 (99%)	175 (100%)	0	100	100
18	O	160/162 (99%)	160 (100%)	0	100	100
19	P	145/146 (99%)	145 (100%)	0	100	100
20	Q	110/151 (73%)	110 (100%)	0	100	100
21	R	129/154 (84%)	129 (100%)	0	100	100
22	S	155/156 (99%)	155 (100%)	0	100	100
23	T	102/137 (74%)	101 (99%)	1 (1%)	68	89
24	U	93/107 (87%)	93 (100%)	0	100	100
25	V	104/105 (99%)	104 (100%)	0	100	100
26	W	211/213 (99%)	211 (100%)	0	100	100
27	X	117/118 (99%)	117 (100%)	0	100	100
28	Y	109/110 (99%)	109 (100%)	0	100	100
29	Z	115/116 (99%)	115 (100%)	0	100	100
30	a	76/119 (64%)	76 (100%)	0	100	100
31	b	459/573 (80%)	459 (100%)	0	100	100
32	c	84/153 (55%)	84 (100%)	0	100	100
33	d	94/97 (97%)	94 (100%)	0	100	100
34	e	109/111 (98%)	109 (100%)	0	100	100
35	f	90/91 (99%)	90 (100%)	0	100	100
36	g	95/103 (92%)	95 (100%)	0	100	100
37	h	104/105 (99%)	104 (100%)	0	100	100
38	i	81/82 (99%)	81 (100%)	0	100	100
39	j	70/71 (99%)	70 (100%)	0	100	100
40	k	68/69 (99%)	68 (100%)	0	100	100
41	l	45/46 (98%)	45 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
42	m	413/459 (90%)	413 (100%)	0	100	100
43	p	71/72 (99%)	71 (100%)	0	100	100
44	q	105/136 (77%)	105 (100%)	0	100	100
45	r	203/229 (89%)	203 (100%)	0	100	100
46	s	62/445 (14%)	62 (100%)	0	100	100
47	u	133/180 (74%)	133 (100%)	0	100	100
48	v	258/309 (84%)	258 (100%)	0	100	100
49	w	158/179 (88%)	158 (100%)	0	100	100
50	x	428/450 (95%)	428 (100%)	0	100	100
51	y	195/211 (92%)	195 (100%)	0	100	100
52	z	69/95 (73%)	69 (100%)	0	100	100
All	All	7453/8673 (86%)	7452 (100%)	1 (0%)	100	100

All (1) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
23	T	146	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (92) such sidechains are listed below:

Mol	Chain	Res	Type
4	7	71	GLN
5	A	8	GLN
5	A	47	GLN
5	A	79	ASN
6	B	109	HIS
6	B	231	HIS
6	B	256	HIS
7	C	320	ASN
7	C	328	ASN
8	D	32	GLN
8	D	63	GLN
8	D	244	HIS
10	F	48	ASN
10	F	80	GLN
10	F	197	GLN
10	F	244	ASN

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Mol	Chain	Res	Type
11	G	145	ASN
11	G	155	ASN
11	G	192	GLN
12	H	59	ASN
12	H	96	HIS
12	H	102	ASN
12	H	125	ASN
13	I	49	HIS
14	J	47	GLN
14	J	109	HIS
15	L	114	GLN
16	M	56	GLN
16	M	62	GLN
17	N	11	GLN
17	N	15	GLN
18	O	182	ASN
18	O	193	GLN
19	P	55	GLN
21	R	68	GLN
21	R	134	HIS
22	S	49	HIS
22	S	68	HIS
22	S	88	HIS
22	S	138	GLN
23	T	82	ASN
23	T	95	HIS
23	T	131	GLN
24	U	101	ASN
25	V	47	ASN
28	Y	81	GLN
28	Y	98	ASN
29	Z	122	HIS
30	a	64	GLN
31	b	327	ASN
31	b	454	GLN
31	b	465	ASN
32	c	24	ASN
33	d	21	HIS
33	d	43	HIS
34	e	52	GLN
36	g	52	GLN
36	g	69	HIS

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Mol	Chain	Res	Type
37	h	68	GLN
37	h	99	GLN
37	h	104	GLN
40	k	10	GLN
40	k	57	ASN
42	m	80	ASN
42	m	91	HIS
42	m	276	HIS
42	m	308	GLN
42	m	354	GLN
44	q	65	GLN
45	r	154	HIS
45	r	186	HIS
45	r	256	ASN
46	s	53	ASN
47	u	101	GLN
48	v	64	ASN
48	v	99	ASN
48	v	144	GLN
48	v	213	GLN
48	v	280	GLN
48	v	286	GLN
49	w	43	ASN
49	w	57	ASN
49	w	180	ASN
49	w	198	ASN
50	x	241	HIS
50	x	289	GLN
50	x	387	ASN
50	x	449	GLN
51	y	82	GLN
51	y	228	GLN
52	z	31	GLN
52	z	85	HIS

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	1	3050/3396 (89%)	699 (22%)	50 (1%)
2	2	157/158 (99%)	33 (21%)	1 (0%)
3	3	120/121 (99%)	21 (17%)	1 (0%)

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Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
All	All	3327/3675 (90%)	753 (22%)	52 (1%)

All (753) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	1	2	U
1	1	14	U
1	1	26	A
1	1	40	A
1	1	41	G
1	1	49	A
1	1	58	G
1	1	60	A
1	1	65	A
1	1	66	A
1	1	75	G
1	1	92	G
1	1	95	A
1	1	96	G
1	1	110	G
1	1	116	A
1	1	118	U
1	1	122	A
1	1	133	U
1	1	135	C
1	1	136	G
1	1	146	U
1	1	150	A
1	1	156	G
1	1	157	A
1	1	159	A
1	1	161	G
1	1	172	G
1	1	181	U
1	1	187	A
1	1	190	U
1	1	197	G
1	1	200	C
1	1	206	G
1	1	210	U
1	1	213	A
1	1	218	G

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Mol	Chain	Res	Type
1	1	219	A
1	1	220	G
1	1	240	U
1	1	241	G
1	1	243	G
1	1	245	U
1	1	247	C
1	1	249	U
1	1	250	U
1	1	251	G
1	1	252	U
1	1	257	U
1	1	265	A
1	1	266	A
1	1	269	G
1	1	284	A
1	1	285	A
1	1	286	U
1	1	295	A
1	1	305	U
1	1	307	A
1	1	308	A
1	1	323	A
1	1	329	U
1	1	337	G
1	1	368	G
1	1	370	U
1	1	376	G
1	1	395	A
1	1	398	A
1	1	399	A
1	1	401	U
1	1	402	A
1	1	403	C
1	1	421	G
1	1	422	A
1	1	438	A
1	1	439	C
1	1	440	A
1	1	503	C
1	1	518	G
1	1	521	A

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Mol	Chain	Res	Type
1	1	523	A
1	1	535	G
1	1	544	C
1	1	546	C
1	1	547	G
1	1	548	G
1	1	550	A
1	1	552	G
1	1	556	U
1	1	557	A
1	1	558	U
1	1	559	A
1	1	564	G
1	1	569	A
1	1	578	A
1	1	579	G
1	1	582	G
1	1	592	A
1	1	597	G
1	1	600	G
1	1	604	G
1	1	611	A
1	1	620	U
1	1	621	A
1	1	629	U
1	1	634	C
1	1	635	G
1	1	636	C
1	1	637	C
1	1	643	U
1	1	646	A
1	1	647	A
1	1	668	G
1	1	677	A
1	1	681	U
1	1	690	A
1	1	691	A
1	1	699	A
1	1	712	G
1	1	715	A
1	1	716	A
1	1	719	U

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Mol	Chain	Res	Type
1	1	720	A
1	1	721	G
1	1	722	G
1	1	728	G
1	1	742	G
1	1	743	C
1	1	758	C
1	1	762	U
1	1	765	C
1	1	767	U
1	1	768	C
1	1	771	A
1	1	776	U
1	1	777	U
1	1	779	G
1	1	780	A
1	1	785	G
1	1	808	A
1	1	816	A
1	1	817	A
1	1	830	A
1	1	835	G
1	1	837	A
1	1	845	G
1	1	849	C
1	1	850	U
1	1	861	C
1	1	874	U
1	1	875	G
1	1	879	U
1	1	880	G
1	1	895	A
1	1	896	A
1	1	907	G
1	1	908	G
1	1	909	G
1	1	914	A
1	1	916	G
1	1	917	A
1	1	921	A
1	1	923	C
1	1	924	G

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Mol	Chain	Res	Type
1	1	925	A
1	1	936	A
1	1	944	C
1	1	958	C
1	1	971	G
1	1	974	G
1	1	976	U
1	1	977	C
1	1	978	G
1	1	979	U
1	1	980	A
1	1	981	U
1	1	991	G
1	1	992	A
1	1	994	G
1	1	995	U
1	1	996	A
1	1	997	A
1	1	998	A
1	1	1000	C
1	1	1003	A
1	1	1048	A
1	1	1049	C
1	1	1050	U
1	1	1051	U
1	1	1055	A
1	1	1057	A
1	1	1058	U
1	1	1059	G
1	1	1063	G
1	1	1064	A
1	1	1065	A
1	1	1071	U
1	1	1072	G
1	1	1084	A
1	1	1085	A
1	1	1095	U
1	1	1097	G
1	1	1098	A
1	1	1103	A
1	1	1104	G
1	1	1105	A

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Mol	Chain	Res	Type
1	1	1107	C
1	1	1108	U
1	1	1111	U
1	1	1112	A
1	1	1115	G
1	1	1117	G
1	1	1118	C
1	1	1127	G
1	1	1128	U
1	1	1129	A
1	1	1130	A
1	1	1132	C
1	1	1143	A
1	1	1144	U
1	1	1152	G
1	1	1153	A
1	1	1154	A
1	1	1159	A
1	1	1160	C
1	1	1179	A
1	1	1180	A
1	1	1181	U
1	1	1182	A
1	1	1192	C
1	1	1193	A
1	1	1196	C
1	1	1197	A
1	1	1198	C
1	1	1199	C
1	1	1200	A
1	1	1201	C
1	1	1202	A
1	1	1204	A
1	1	1208	U
1	1	1209	G
1	1	1221	A
1	1	1222	G
1	1	1223	A
1	1	1227	C
1	1	1235	U
1	1	1241	U
1	1	1242	G

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Mol	Chain	Res	Type
1	1	1245	A
1	1	1250	G
1	1	1252	A
1	1	1258	U
1	1	1263	A
1	1	1271	A
1	1	1272	C
1	1	1278	A
1	1	1279	C
1	1	1286	A
1	1	1287	A
1	1	1302	A
1	1	1303	A
1	1	1304	A
1	1	1305	U
1	1	1307	G
1	1	1313	G
1	1	1325	U
1	1	1330	A
1	1	1348	U
1	1	1349	G
1	1	1352	A
1	1	1354	G
1	1	1355	A
1	1	1356	U
1	1	1357	G
1	1	1386	A
1	1	1399	A
1	1	1400	G
1	1	1408	G
1	1	1417	G
1	1	1419	A
1	1	1431	G
1	1	1434	G
1	1	1437	C
1	1	1446	A
1	1	1469	C
1	1	1483	G
1	1	1484	U
1	1	1487	G
1	1	1503	A
1	1	1508	C

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Mol	Chain	Res	Type
1	1	1527	C
1	1	1533	U
1	1	1555	U
1	1	1556	C
1	1	1561	G
1	1	1562	C
1	1	1566	A
1	1	1567	U
1	1	1568	U
1	1	1569	U
1	1	1573	G
1	1	1580	A
1	1	1581	C
1	1	1582	C
1	1	1583	A
1	1	1587	A
1	1	1589	A
1	1	1590	G
1	1	1593	A
1	1	1613	A
1	1	1620	U
1	1	1629	U
1	1	1631	C
1	1	1639	C
1	1	1643	A
1	1	1657	C
1	1	1677	G
1	1	1717	U
1	1	1724	U
1	1	1725	C
1	1	1741	A
1	1	1742	U
1	1	1750	A
1	1	1751	G
1	1	1761	C
1	1	1762	C
1	1	1763	U
1	1	1764	U
1	1	1765	U
1	1	1770	G
1	1	1775	G
1	1	1780	G

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Mol	Chain	Res	Type
1	1	1796	G
1	1	1797	A
1	1	1810	A
1	1	1813	A
1	1	1814	A
1	1	1815	U
1	1	1816	A
1	1	1817	G
1	1	1820	U
1	1	1821	U
1	1	1839	A
1	1	1842	A
1	1	1846	C
1	1	1847	A
1	1	1849	C
1	1	1850	A
1	1	1878	G
1	1	1880	U
1	1	1906	G
1	1	1909	A
1	1	1935	G
1	1	1951	C
1	1	1952	G
1	1	1953	G
1	1	2094	C
1	1	2112	U
1	1	2113	A
1	1	2121	G
1	1	2122	G
1	1	2126	A
1	1	2131	A
1	1	2140	U
1	1	2149	A
1	1	2158	A
1	1	2169	G
1	1	2176	U
1	1	2193	U
1	1	2194	G
1	1	2195	C
1	1	2196	C
1	1	2198	A
1	1	2201	G

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Mol	Chain	Res	Type
1	1	2205	U
1	1	2207	A
1	1	2209	U
1	1	2210	G
1	1	2212	C
1	1	2220	A
1	1	2222	A
1	1	2225	U
1	1	2239	G
1	1	2242	A
1	1	2243	A
1	1	2244	A
1	1	2246	G
1	1	2247	G
1	1	2248	C
1	1	2249	G
1	1	2250	G
1	1	2255	A
1	1	2256	A
1	1	2262	A
1	1	2264	U
1	1	2267	C
1	1	2268	U
1	1	2269	U
1	1	2270	A
1	1	2271	A
1	1	2272	G
1	1	2278	C
1	1	2279	A
1	1	2280	A
1	1	2316	G
1	1	2317	A
1	1	2318	U
1	1	2334	U
1	1	2335	G
1	1	2336	U
1	1	2371	G
1	1	2388	U
1	1	2393	G
1	1	2397	A
1	1	2398	A
1	1	2401	A

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Mol	Chain	Res	Type
1	1	2402	A
1	1	2404	A
1	1	2409	G
1	1	2410	U
1	1	2411	U
1	1	2412	G
1	1	2413	A
1	1	2414	G
1	1	2418	G
1	1	2442	G
1	1	2445	A
1	1	2502	A
1	1	2503	G
1	1	2504	U
1	1	2507	C
1	1	2509	U
1	1	2511	A
1	1	2512	C
1	1	2513	U
1	1	2514	U
1	1	2522	G
1	1	2528	G
1	1	2529	A
1	1	2530	G
1	1	2531	C
1	1	2532	U
1	1	2533	G
1	1	2537	U
1	1	2538	U
1	1	2540	A
1	1	2541	U
1	1	2542	U
1	1	2543	U
1	1	2544	U
1	1	2545	C
1	1	2546	C
1	1	2547	A
1	1	2548	C
1	1	2551	U
1	1	2552	C
1	1	2559	U
1	1	2561	A

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Mol	Chain	Res	Type
1	1	2569	A
1	1	2570	U
1	1	2571	U
1	1	2572	C
1	1	2573	G
1	1	2576	G
1	1	2586	G
1	1	2593	A
1	1	2594	C
1	1	2606	G
1	1	2607	G
1	1	2613	U
1	1	2614	G
1	1	2615	G
1	1	2620	G
1	1	2621	G
1	1	2623	G
1	1	2624	G
1	1	2625	C
1	1	2627	C
1	1	2628	A
1	1	2632	G
1	1	2634	U
1	1	2638	C
1	1	2640	A
1	1	2642	A
1	1	2643	A
1	1	2644	C
1	1	2645	G
1	1	2648	G
1	1	2650	U
1	1	2651	G
1	1	2652	U
1	1	2653	C
1	1	2654	C
1	1	2655	U
1	1	2656	A
1	1	2657	A
1	1	2658	G
1	1	2659	G
1	1	2674	A
1	1	2676	A

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Mol	Chain	Res	Type
1	1	2677	G
1	1	2687	G
1	1	2688	U
1	1	2689	A
1	1	2690	G
1	1	2691	A
1	1	2692	A
1	1	2693	C
1	1	2695	A
1	1	2701	U
1	1	2702	A
1	1	2704	A
1	1	2705	A
1	1	2714	G
1	1	2715	A
1	1	2720	G
1	1	2721	A
1	1	2722	U
1	1	2725	U
1	1	2726	C
1	1	2728	G
1	1	2730	G
1	1	2731	U
1	1	2732	G
1	1	2734	A
1	1	2740	A
1	1	2741	C
1	1	2752	U
1	1	2754	G
1	1	2756	C
1	1	2757	U
1	1	2761	G
1	1	2762	A
1	1	2763	U
1	1	2766	U
1	1	2767	U
1	1	2768	U
1	1	2770	G
1	1	2771	U
1	1	2772	C
1	1	2773	C
1	1	2777	G

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Mol	Chain	Res	Type
1	1	2780	A
1	1	2788	C
1	1	2789	U
1	1	2790	A
1	1	2797	C
1	1	2798	C
1	1	2799	A
1	1	2801	A
1	1	2802	A
1	1	2803	A
1	1	2809	C
1	1	2810	C
1	1	2814	G
1	1	2815	G
1	1	2817	A
1	1	2819	A
1	1	2820	A
1	1	2821	C
1	1	2822	U
1	1	2823	G
1	1	2824	G
1	1	2825	C
1	1	2826	U
1	1	2834	G
1	1	2839	G
1	1	2842	U
1	1	2843	U
1	1	2844	C
1	1	2845	A
1	1	2847	A
1	1	2856	G
1	1	2857	C
1	1	2858	U
1	1	2859	U
1	1	2860	U
1	1	2861	U
1	1	2863	G
1	1	2864	A
1	1	2866	U
1	1	2867	C
1	1	2868	U
1	1	2869	U

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Mol	Chain	Res	Type
1	1	2872	A
1	1	2873	U
1	1	2874	G
1	1	2875	U
1	1	2876	C
1	1	2877	G
1	1	2878	G
1	1	2879	C
1	1	2887	A
1	1	2898	G
1	1	2899	C
1	1	2922	G
1	1	2923	U
1	1	2930	A
1	1	2935	U
1	1	2936	A
1	1	2945	G
1	1	2947	G
1	1	2952	G
1	1	2954	U
1	1	2955	U
1	1	2957	G
1	1	2970	C
1	1	2971	A
1	1	2972	G
1	1	2978	U
1	1	2980	U
1	1	2981	U
1	1	2982	A
1	1	2983	C
1	1	2996	U
1	1	2997	G
1	1	3012	A
1	1	3017	A
1	1	3021	A
1	1	3022	G
1	1	3027	A
1	1	3029	A
1	1	3030	G
1	1	3032	A
1	1	3056	U
1	1	3058	U

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Mol	Chain	Res	Type
1	1	3059	G
1	1	3074	G
1	1	3078	U
1	1	3079	U
1	1	3080	G
1	1	3086	A
1	1	3092	C
1	1	3093	C
1	1	3099	C
1	1	3100	U
1	1	3109	G
1	1	3122	A
1	1	3129	A
1	1	3130	A
1	1	3131	U
1	1	3142	A
1	1	3143	C
1	1	3156	U
1	1	3163	A
1	1	3164	C
1	1	3165	A
1	1	3166	C
1	1	3167	A
1	1	3169	U
1	1	3170	A
1	1	3172	A
1	1	3173	G
1	1	3174	A
1	1	3176	G
1	1	3179	U
1	1	3181	C
1	1	3187	A
1	1	3196	U
1	1	3206	C
1	1	3207	U
1	1	3217	C
1	1	3218	A
1	1	3224	G
1	1	3229	G
1	1	3243	A
1	1	3244	A
1	1	3247	G

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Mol	Chain	Res	Type
1	1	3253	G
1	1	3256	G
1	1	3259	U
1	1	3263	G
1	1	3270	U
1	1	3276	G
1	1	3279	A
1	1	3280	U
1	1	3281	U
1	1	3282	U
1	1	3289	G
1	1	3294	A
1	1	3303	G
1	1	3304	U
1	1	3313	U
1	1	3316	A
1	1	3320	A
1	1	3328	G
1	1	3341	U
1	1	3342	A
1	1	3345	G
1	1	3350	C
1	1	3351	U
1	1	3352	U
1	1	3354	U
1	1	3355	U
1	1	3356	G
1	1	3359	A
1	1	3369	G
1	1	3378	C
1	1	3389	U
1	1	3396	U
2	2	34	U
2	2	35	C
2	2	50	C
2	2	51	G
2	2	59	A
2	2	60	U
2	2	62	C
2	2	63	G
2	2	78	G
2	2	79	A

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Mol	Chain	Res	Type
2	2	80	A
2	2	81	U
2	2	82	U
2	2	83	C
2	2	84	C
2	2	86	U
2	2	87	G
2	2	88	A
2	2	89	A
2	2	90	U
2	2	95	G
2	2	96	A
2	2	97	A
2	2	104	A
2	2	106	C
2	2	110	C
2	2	111	A
2	2	123	G
2	2	124	G
2	2	125	U
2	2	138	A
2	2	152	G
2	2	158	U
3	3	7	G
3	3	16	U
3	3	52	G
3	3	53	U
3	3	54	U
3	3	64	A
3	3	65	G
3	3	73	C
3	3	74	C
3	3	76	A
3	3	83	U
3	3	84	A
3	3	86	U
3	3	87	G
3	3	98	C
3	3	99	G
3	3	100	C
3	3	102	A
3	3	103	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
3	3	112	G
3	3	121	U

All (52) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	1	40	A
1	1	160	G
1	1	284	A
1	1	646	A
1	1	720	A
1	1	761	A
1	1	849	C
1	1	916	G
1	1	1047	A
1	1	1064	A
1	1	1097	G
1	1	1102	A
1	1	1103	A
1	1	1128	U
1	1	1129	A
1	1	1159	A
1	1	1192	C
1	1	1241	U
1	1	1302	A
1	1	1329	U
1	1	1355	A
1	1	1567	U
1	1	1568	U
1	1	1816	A
1	1	1820	U
1	1	1842	A
1	1	2209	U
1	1	2263	C
1	1	2269	U
1	1	2317	A
1	1	2397	A
1	1	2410	U
1	1	2501	U
1	1	2511	A
1	1	2513	U
1	1	2537	U

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Mol	Chain	Res	Type
1	1	2541	U
1	1	2593	A
1	1	2651	G
1	1	2753	G
1	1	2808	A
1	1	2824	G
1	1	2868	U
1	1	2954	U
1	1	3021	A
1	1	3078	U
1	1	3121	U
1	1	3228	C
1	1	3340	G
1	1	3350	C
2	2	123	G
3	3	52	G

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 2 ligands modelled in this entry, 1 is monoatomic - leaving 1 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# $ Z > 2$	Counts	RMSZ	# $ Z > 2$
53	GDP	m	601	54	29,30,30	1.21	4 (13%)	45,47,47	1.89	10 (22%)

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
53	GDP	m	601	54	-	2/16/32/32	0/3/3/3

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
53	m	601	GDP	C6-N1	-3.07	1.33	1.38
53	m	601	GDP	C5-C4	2.53	1.45	1.38
53	m	601	GDP	C5-N7	-2.42	1.34	1.39
53	m	601	GDP	C4-N9	-2.02	1.32	1.38

All (10) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
53	m	601	GDP	C5-C4-N3	-6.21	118.51	128.39
53	m	601	GDP	C2-N3-C4	5.03	120.97	112.30
53	m	601	GDP	N9-C4-N3	4.78	135.51	125.95
53	m	601	GDP	C6-C5-N7	3.15	136.03	130.29
53	m	601	GDP	C2'-C1'-N9	-2.61	106.00	113.25
53	m	601	GDP	C4-C5-N7	-2.39	106.89	110.67
53	m	601	GDP	O6-C6-C5	-2.38	120.25	126.53
53	m	601	GDP	C5-C6-N1	2.19	118.82	113.25
53	m	601	GDP	O2A-PA-O3A	2.16	113.10	107.27
53	m	601	GDP	C5'-C4'-C3'	-2.01	107.97	115.21

There are no chirality outliers.

All (2) torsion outliers are listed below:

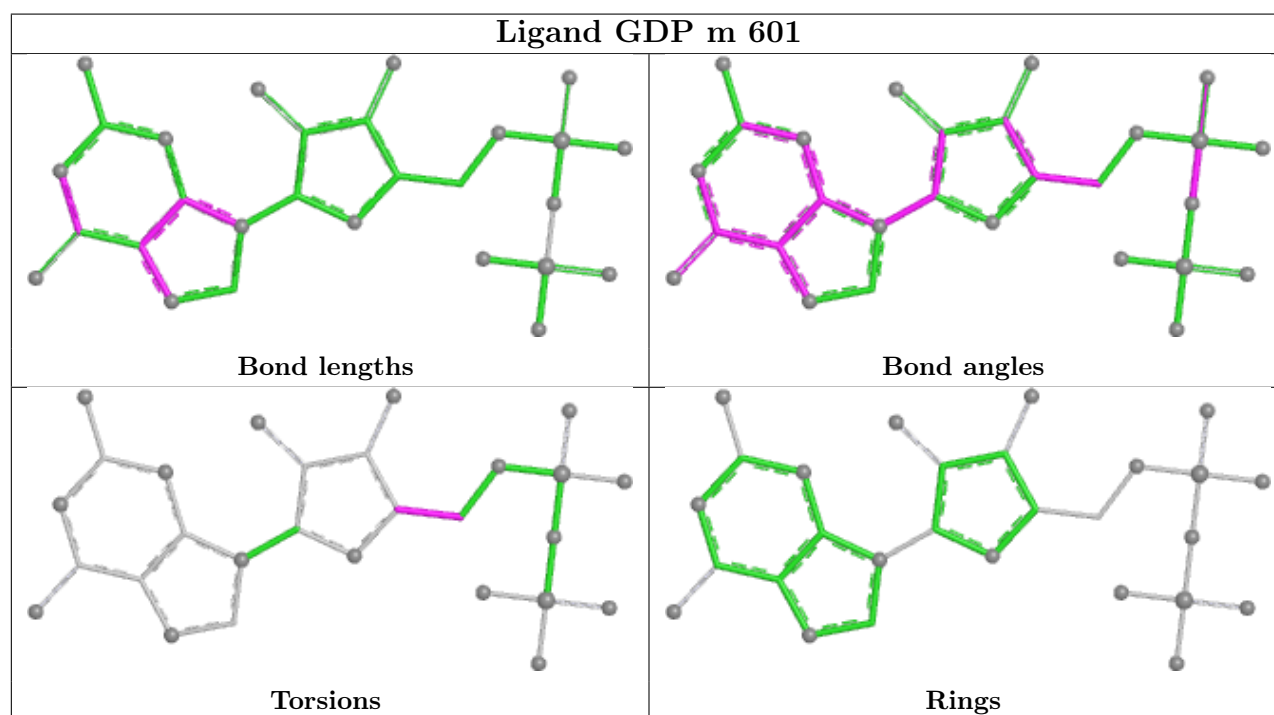
Mol	Chain	Res	Type	Atoms
53	m	601	GDP	O4'-C4'-C5'-O5'
53	m	601	GDP	C3'-C4'-C5'-O5'

There are no ring outliers.

1 monomer is involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
53	m	601	GDP	2	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.



5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
6	B	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	B	16:PHE	C	17:LEU	N	1.20

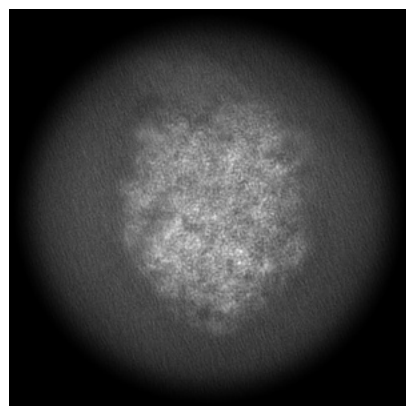
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-26485. These allow visual inspection of the internal detail of the map and identification of artifacts.

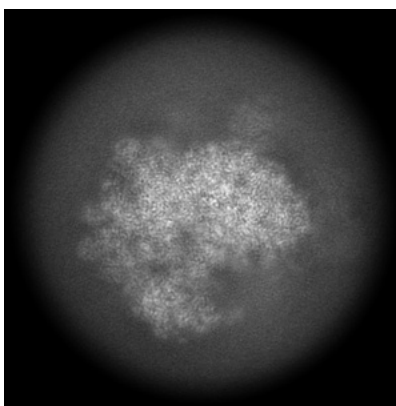
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

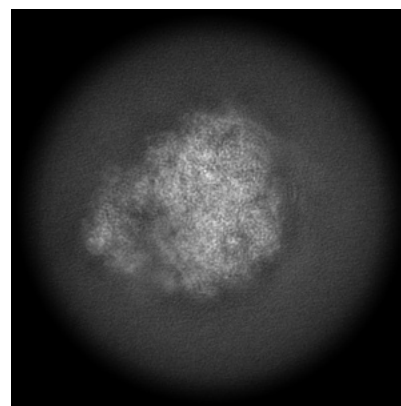
6.1.1 Primary map



X

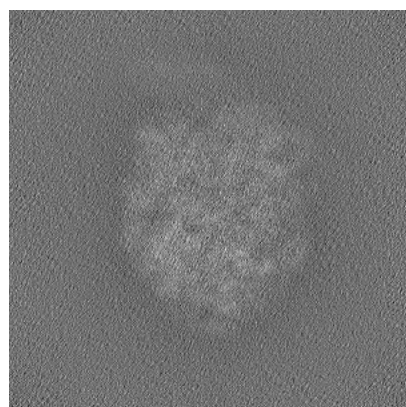


Y

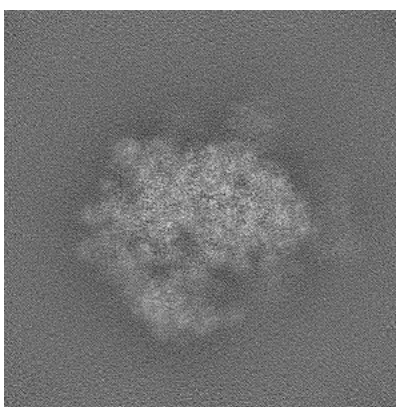


Z

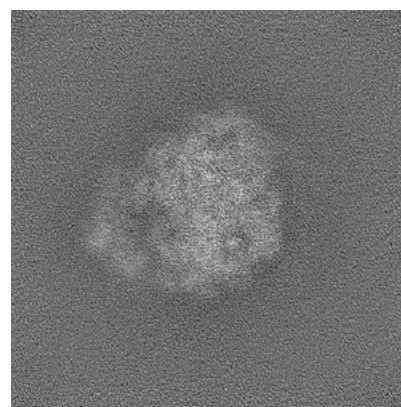
6.1.2 Raw map



X



Y

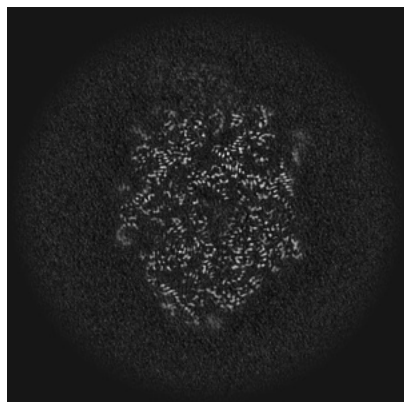


Z

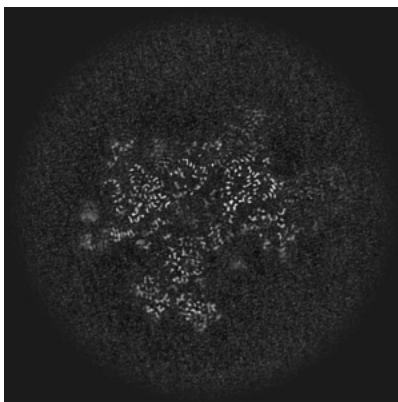
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

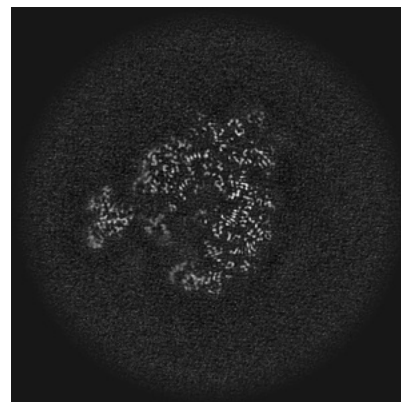
6.2.1 Primary map



X Index: 256

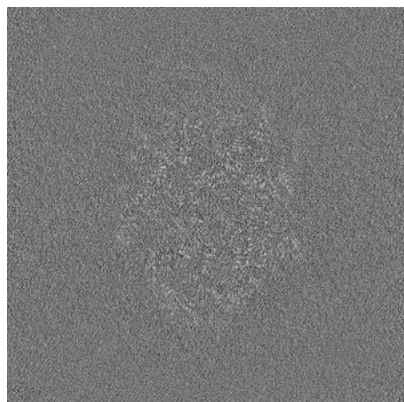


Y Index: 256

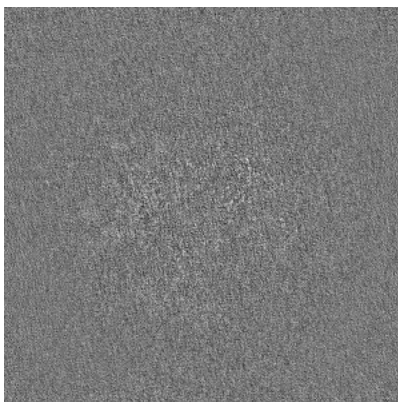


Z Index: 256

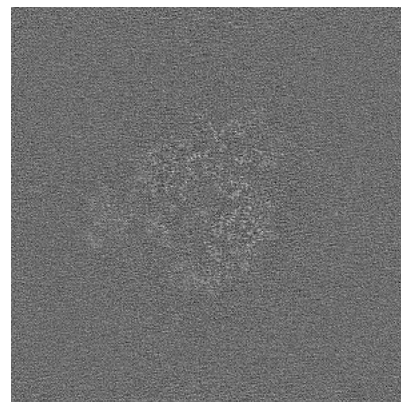
6.2.2 Raw map



X Index: 256



Y Index: 256

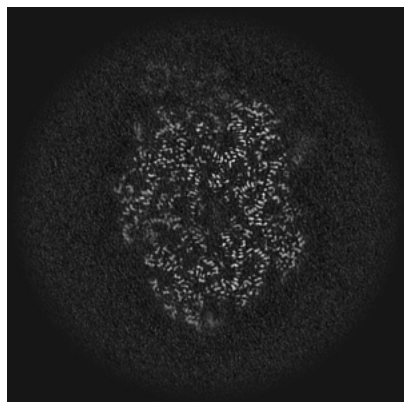


Z Index: 256

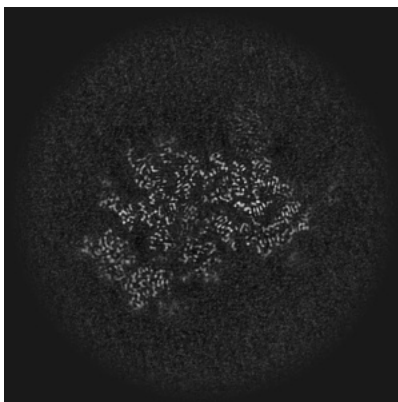
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

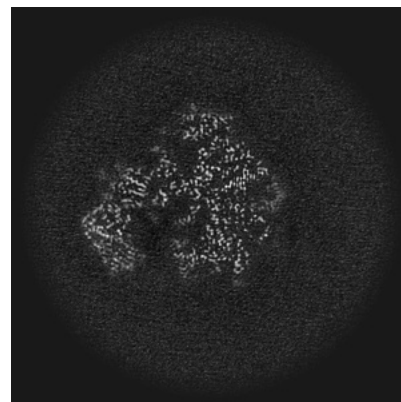
6.3.1 Primary map



X Index: 249

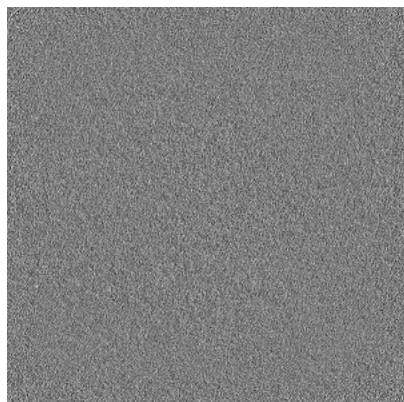


Y Index: 289

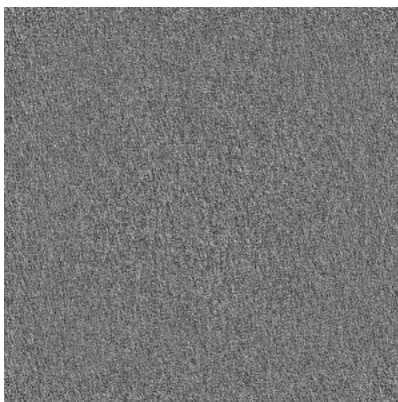


Z Index: 197

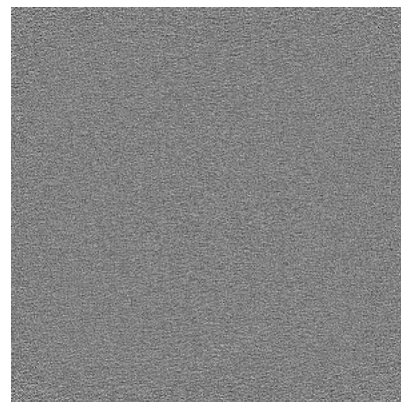
6.3.2 Raw map



X Index: 0



Y Index: 0

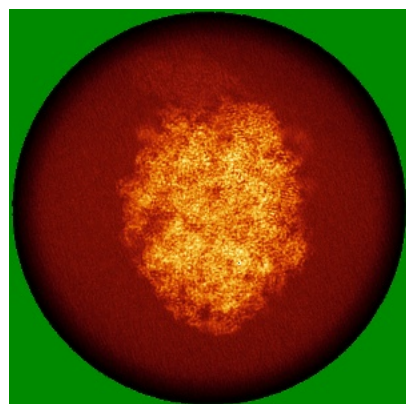


Z Index: 0

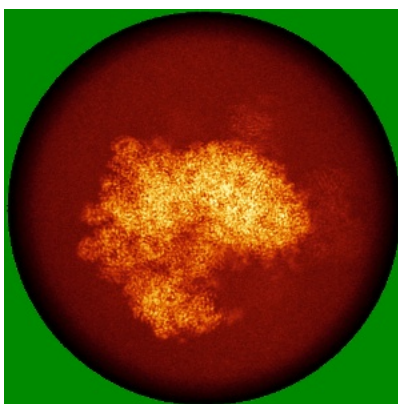
The images above show the largest variance slices of the map in three orthogonal directions.

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

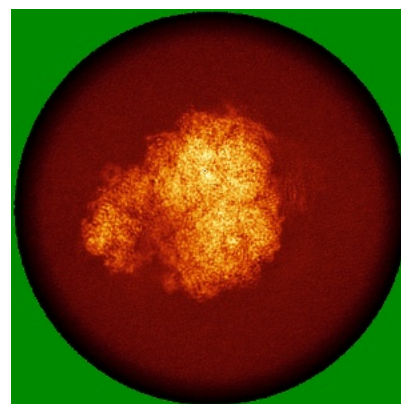
6.4.1 Primary map



X

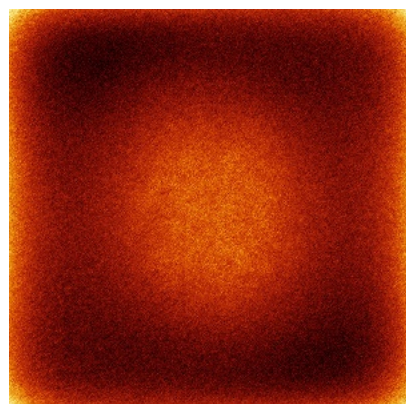


Y

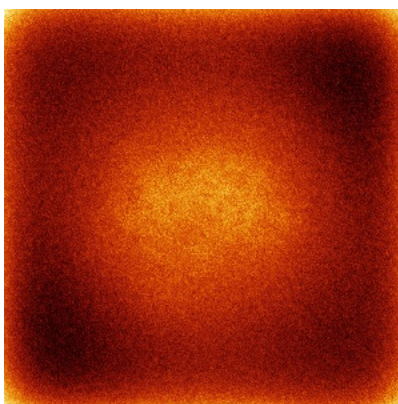


Z

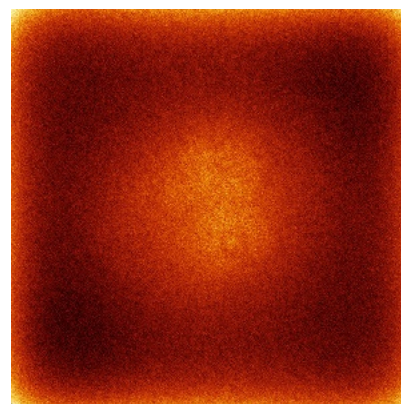
6.4.2 Raw map



X



Y



Z

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

6.5 Orthogonal surface views [i](#)

This section was not generated.

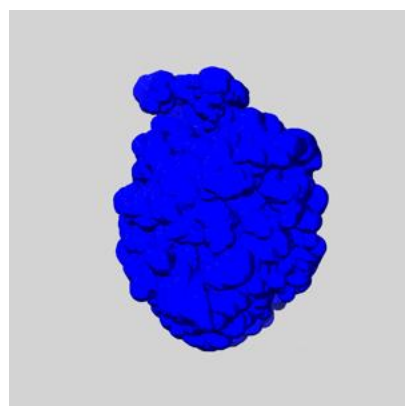
6.6 Mask visualisation [i](#)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

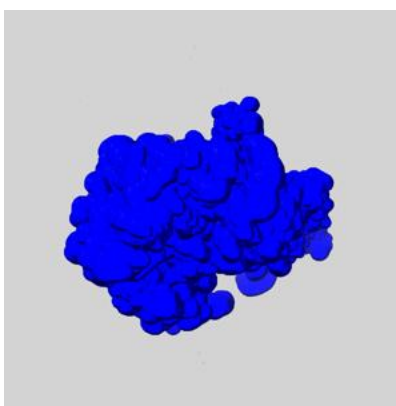
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

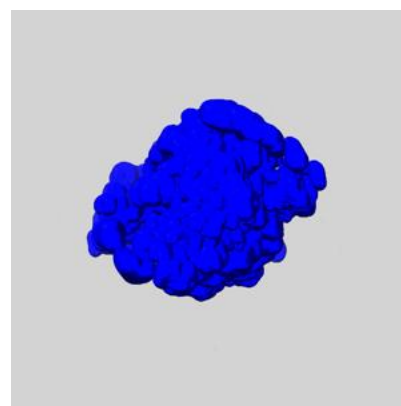
6.6.1 emd_26485_msk_1.map [i](#)



X



Y

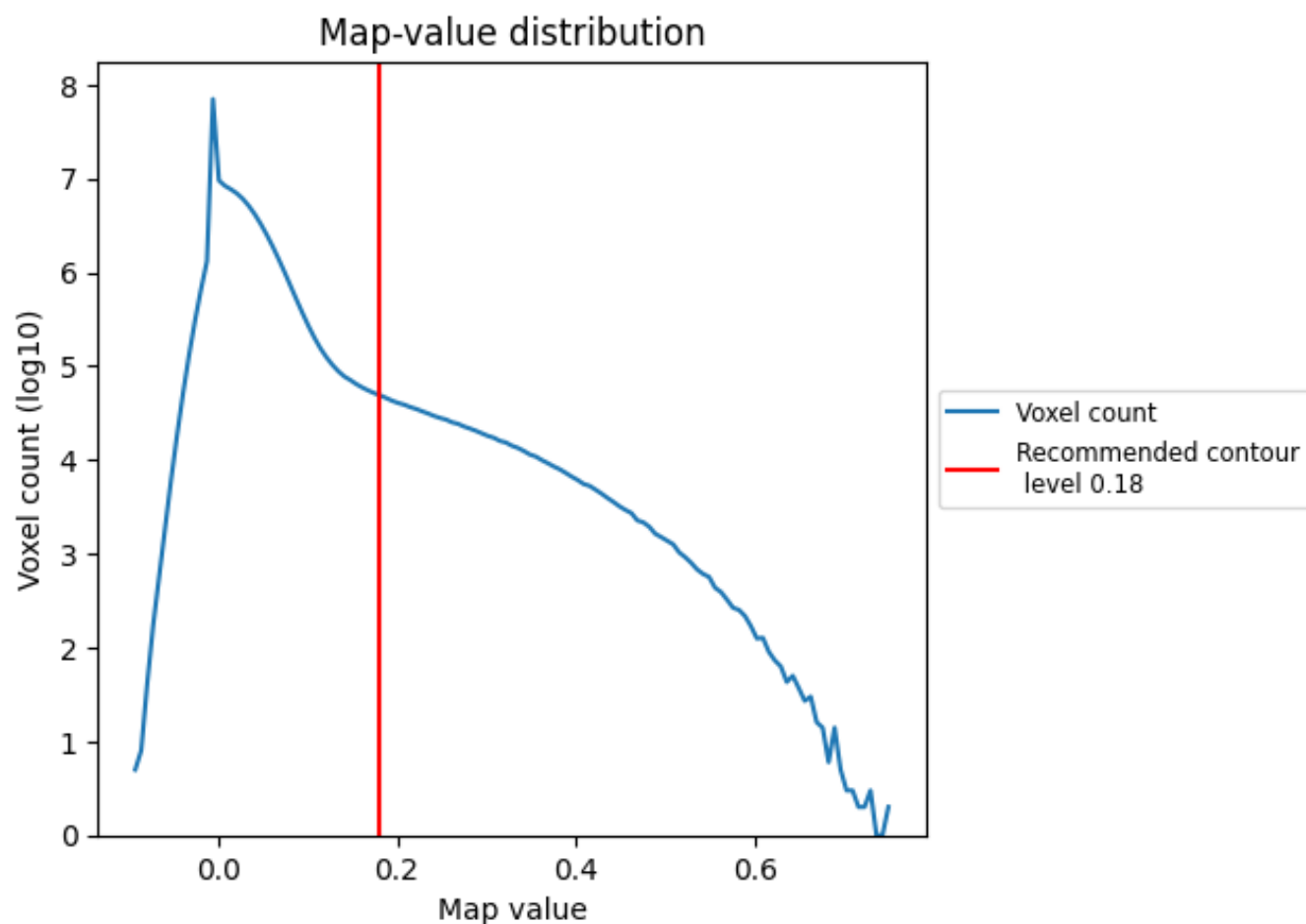


Z

7 Map analysis [i](#)

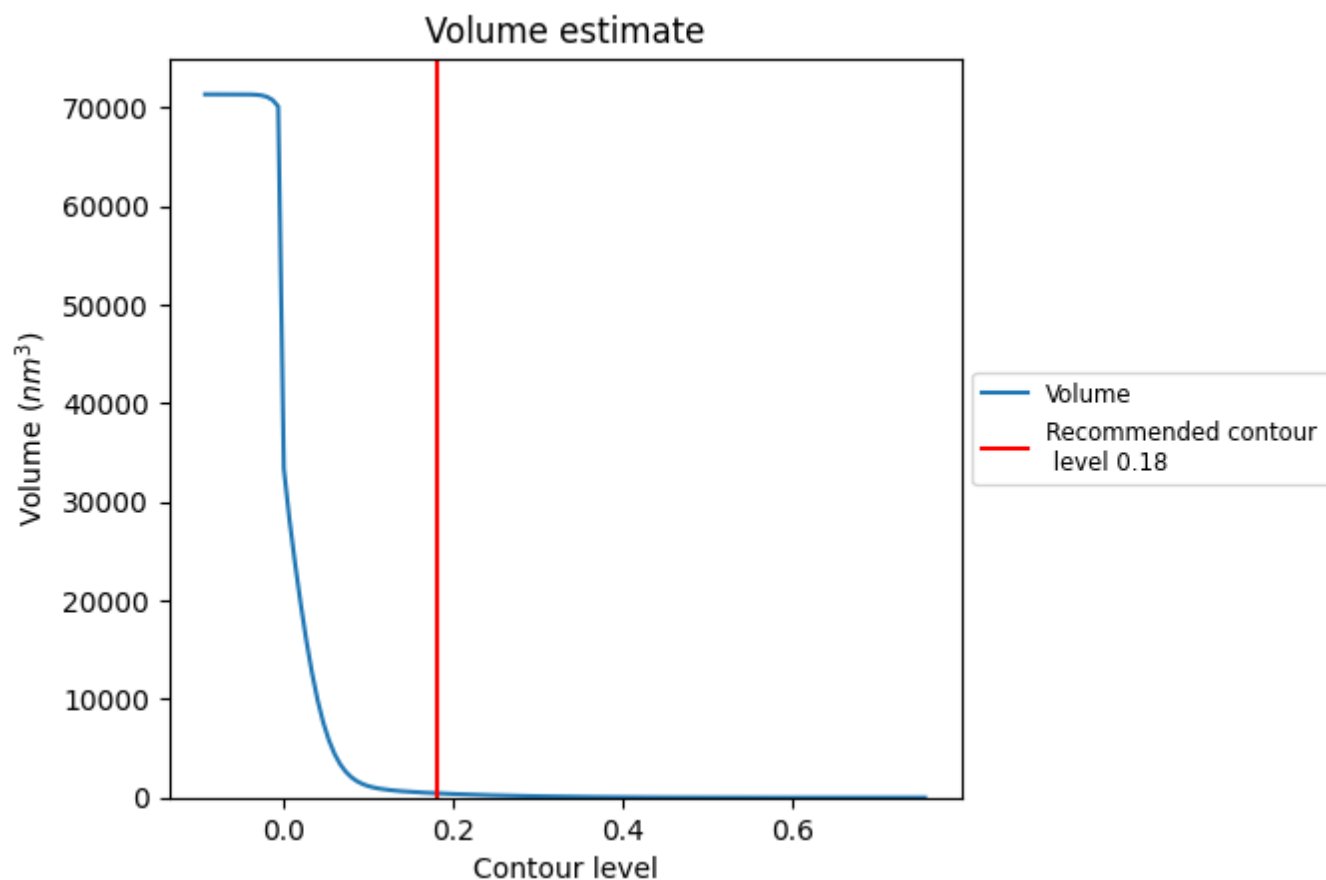
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

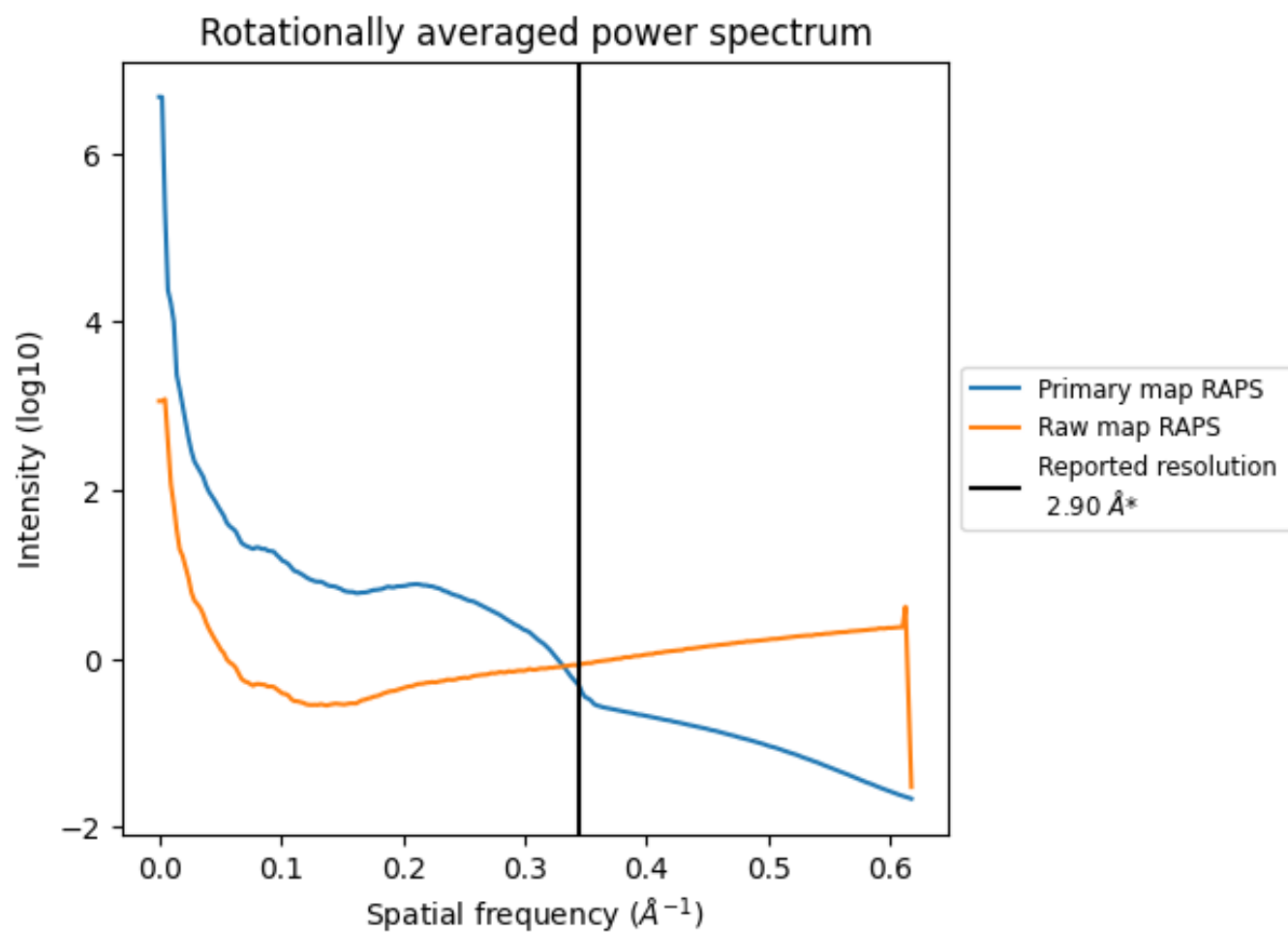
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 436 nm³; this corresponds to an approximate mass of 394 kDa.

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

7.3 Rotationally averaged power spectrum ⓘ

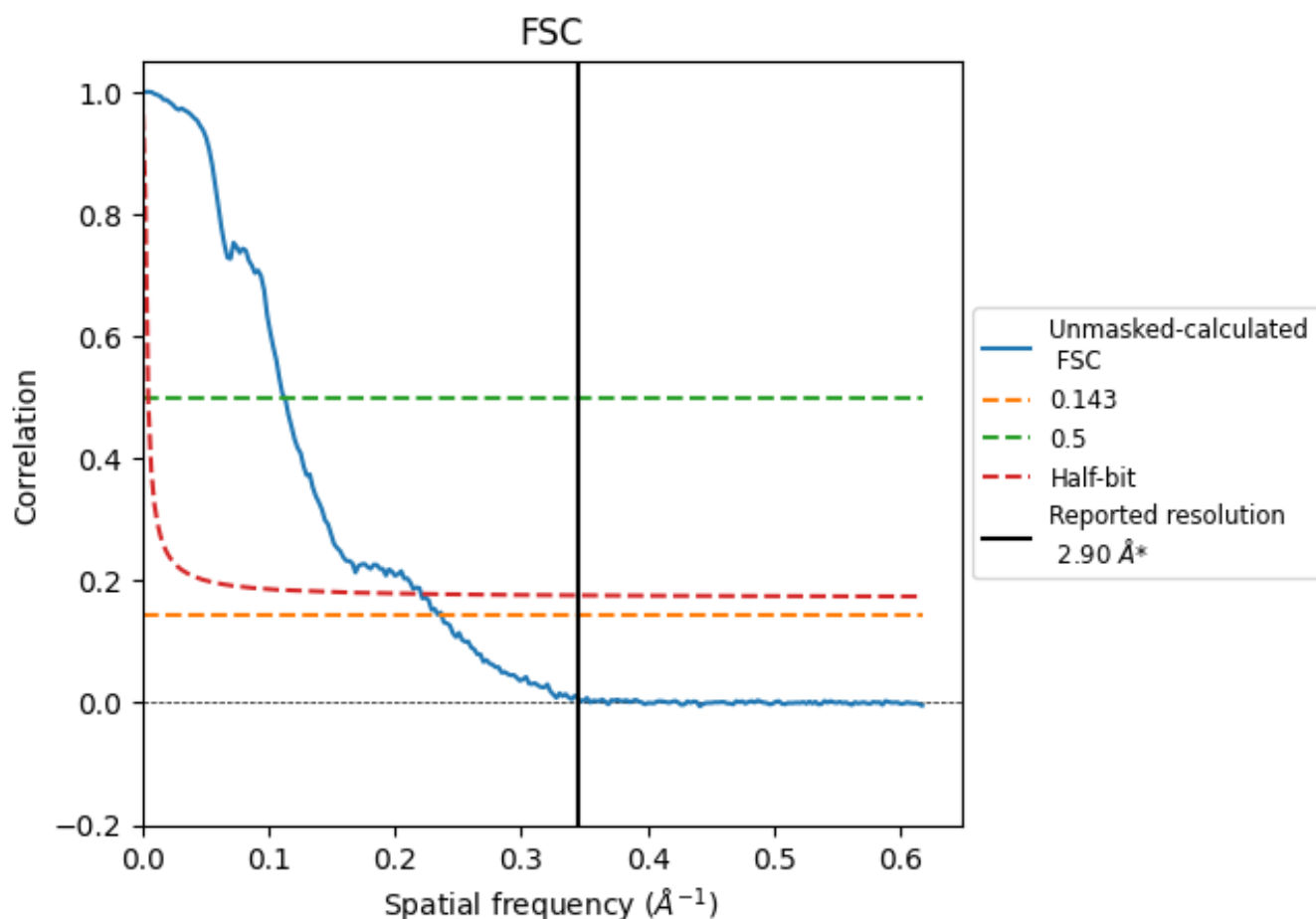


*Reported resolution corresponds to spatial frequency of 0.345 $\text{\AA}^{-1}$

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.345 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

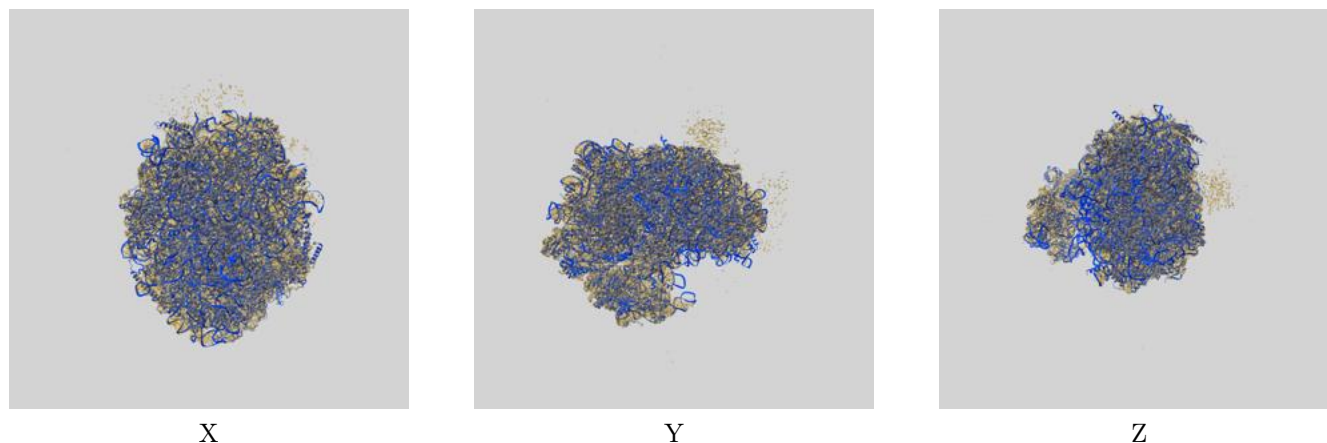
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.90	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	4.22	8.89	4.53

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.22 differs from the reported value 2.9 by more than 10 %

9 Map-model fit [i](#)

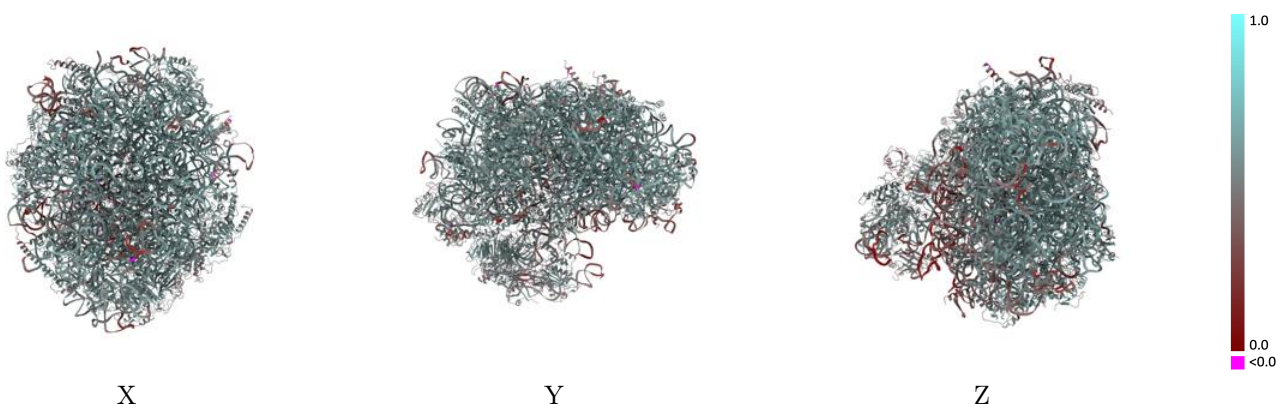
This section contains information regarding the fit between EMDB map EMD-26485 and PDB model 7UG6. Per-residue inclusion information can be found in section 3 on page 15.

9.1 Map-model overlay [i](#)



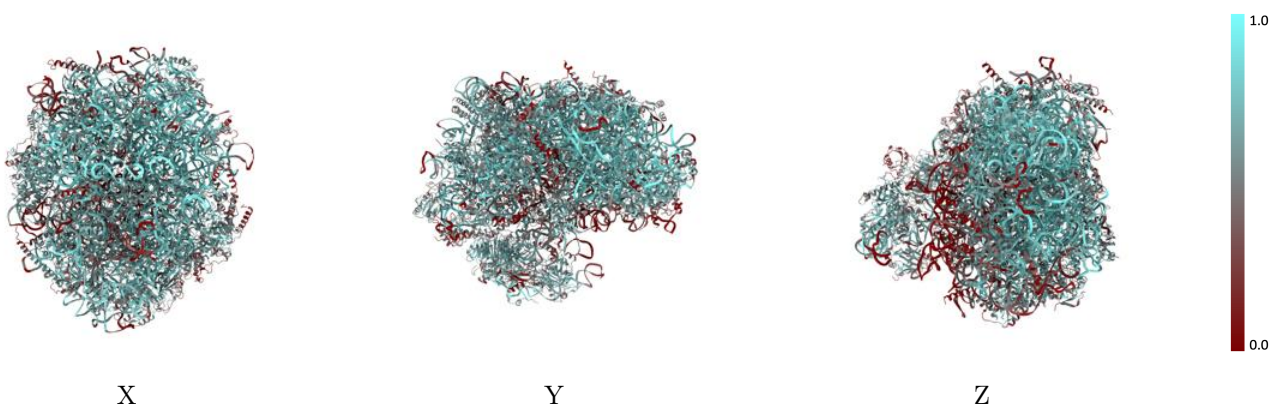
The images above show the 3D surface view of the map at the recommended contour level 0.18 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



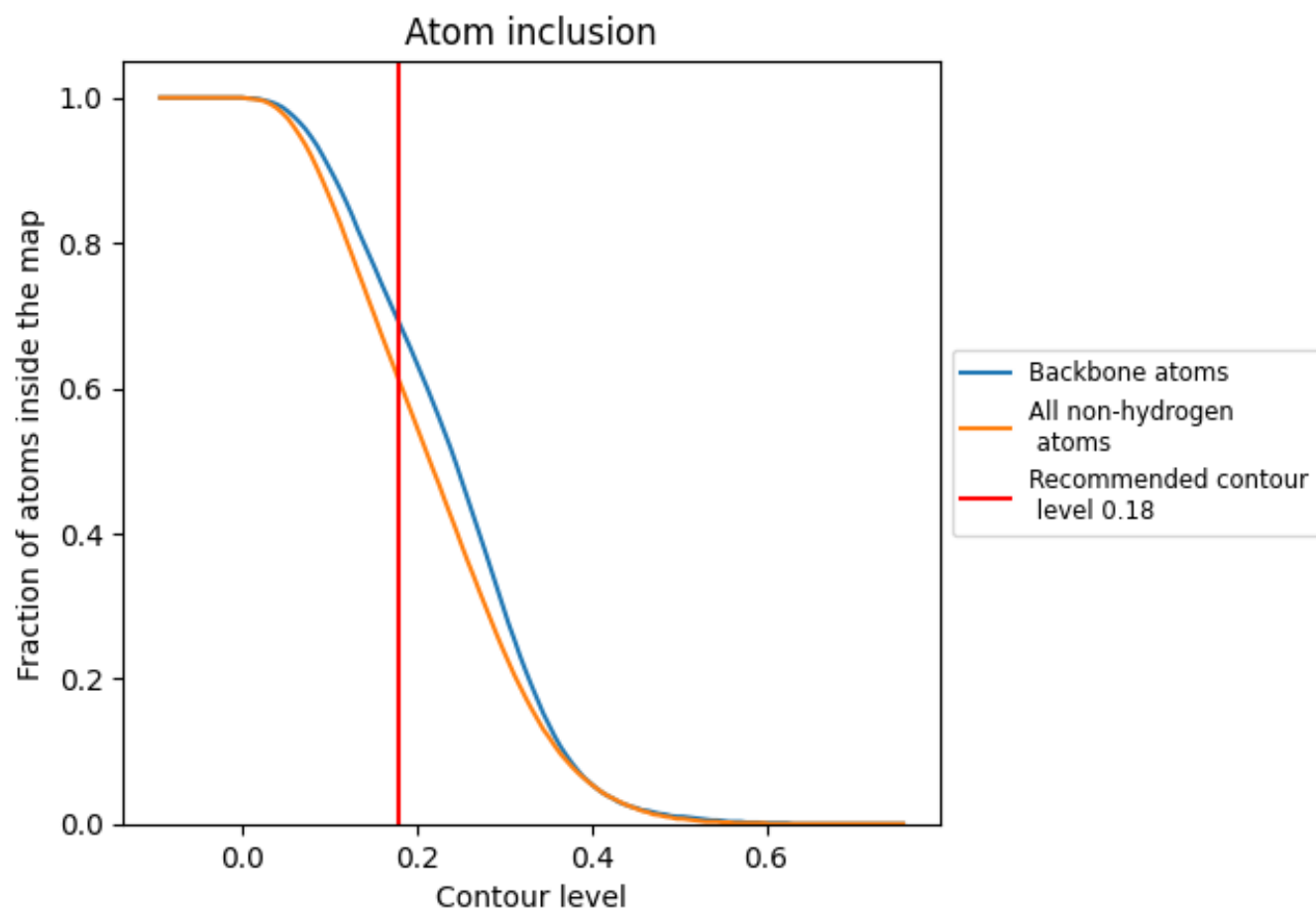
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.18).

9.4 Atom inclusion [i](#)



At the recommended contour level, 69% of all backbone atoms, 61% 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 (0.18) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.6110	 0.5330
1	 0.6630	 0.5230
2	 0.8020	 0.5820
3	 0.6840	 0.4580
7	 0.6130	 0.5520
A	 0.6140	 0.5680
B	 0.6650	 0.5890
C	 0.6190	 0.5810
D	 0.5880	 0.5080
E	 0.5210	 0.5500
F	 0.6200	 0.5690
G	 0.4570	 0.5060
H	 0.6530	 0.5770
I	 0.2860	 0.5280
J	 0.4050	 0.4190
L	 0.4790	 0.5290
M	 0.5910	 0.5670
N	 0.5800	 0.5690
O	 0.6730	 0.5930
P	 0.5880	 0.5650
Q	 0.5580	 0.5530
R	 0.6860	 0.5760
S	 0.5180	 0.5420
T	 0.2280	 0.4550
U	 0.4720	 0.4930
V	 0.6340	 0.5780
W	 0.5240	 0.5130
X	 0.6040	 0.5810
Y	 0.6410	 0.5730
Z	 0.6720	 0.5750
a	 0.4800	 0.4970
b	 0.4720	 0.5200
c	 0.2780	 0.5130
d	 0.6370	 0.5630
e	 0.5740	 0.5850



Continued on next page...

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Chain	Atom inclusion	Q-score
f	 0.6560	 0.6010
g	 0.6600	 0.5850
h	 0.6440	 0.5750
i	 0.3580	 0.4940
j	 0.7450	 0.6050
k	 0.5280	 0.5550
l	 0.6680	 0.5980
m	 0.4820	 0.5270
p	 0.6580	 0.5760
q	 0.3150	 0.4630
r	 0.6100	 0.5720
s	 0.2510	 0.4440
u	 0.5210	 0.5280
v	 0.5840	 0.5230
w	 0.4230	 0.4910
x	 0.5390	 0.5060
y	 0.6420	 0.5610
z	 0.3440	 0.5190