



## Full wwPDB EM Validation Report ⓘ

Apr 8, 2026 – 07:32 PM UTC

PDB ID : 9QOH / pdb\_00009qoh  
EMDB ID : EMD-53262  
Title : Mouse Ribosome POST translocation state  
Authors : Santo, P.E.; Astier, A.; Plisson-Chastang, C.  
Deposited on : 2025-03-26  
Resolution : 2.78 Å(reported)  
Based on initial model : 7LS1

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

We welcome your comments at [validation@mail.wwpdb.org](mailto: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>.

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

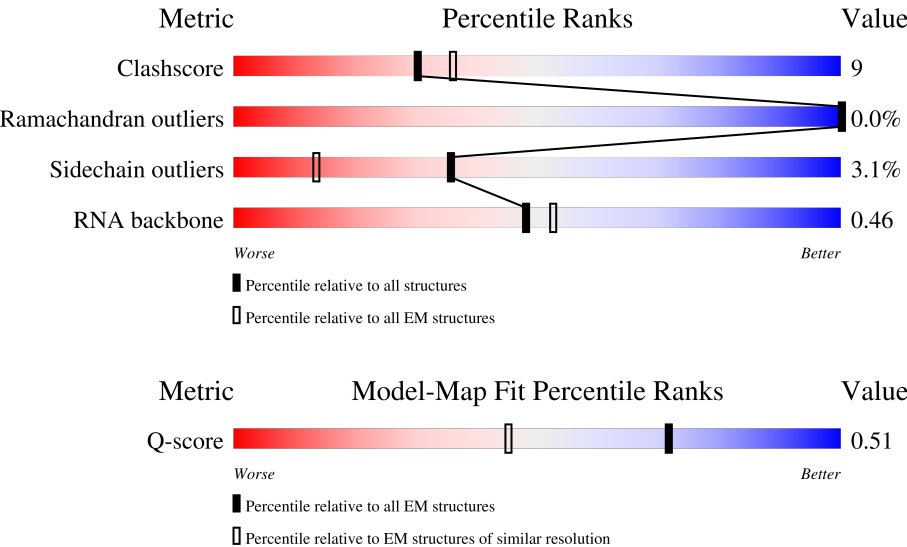
EMDB validation analysis : 0.0.1.dev132  
Mogul : 2022.3.0, CSD as543be (2022)  
MolProbity : 4-5-2 with Phenix2.0  
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)  
EM percentile statistics : 202505.v01 (Using data in the EMDb archive up until May 2025)  
MapQ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

# 1 Overall quality at a glance i

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

The reported resolution of this entry is 2.78 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.






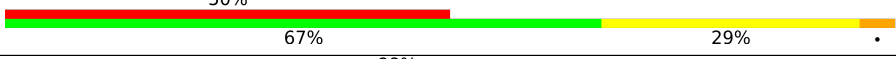

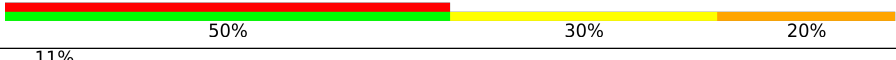



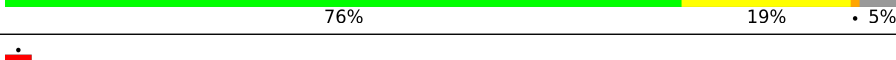


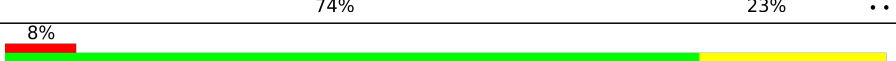
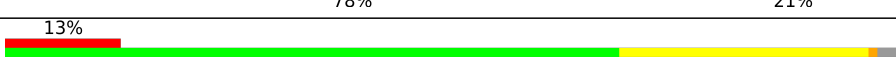
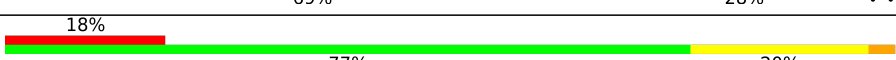
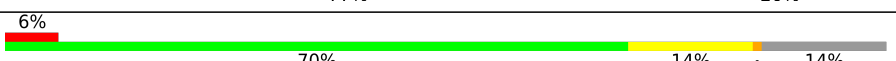
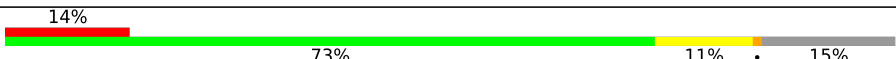
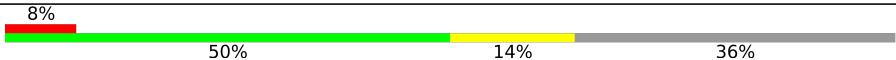

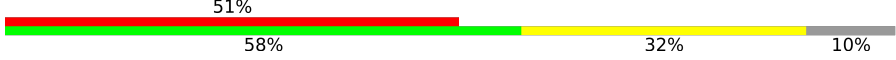





Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	10754 ( 2.28 - 3.28 )

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  $\geq 3$ , 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	A1	270	<div> <div>5%</div> <div>59%</div> <div>23%</div> <div>18%</div> </div>
2	A2	3615	<div> <div>19%</div> <div>53%</div> <div>39%</div> <div>7%</div> </div>
3	A3	152	<div> <div>69%</div> <div>56%</div> <div>34%</div> <div>8%</div> </div>

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Mol	Chain	Length	Quality of chain
4	B1	266	
5	B2	121	
6	B3	145	
7	Bv	76	
7	n2	76	
8	Bx	10	
9	C1	192	
10	C2	156	
11	C3	119	
12	D1	214	
13	D2	257	
14	D3	83	
15	E1	178	
16	E2	403	
17	E3	143	
18	F1	203	
19	F2	419	
20	F3	115	
21	G1	217	
22	G2	297	
23	G3	69	
24	H1	204	
25	H2	296	
26	H3	56	
27	I2	203	

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Mol	Chain	Length	Quality of chain
28	I3	317	
29	J2	184	
30	J3	293	
31	K2	188	
32	K3	249	
33	L1	217	
34	L2	196	
35	L3	194	
36	M2	176	
37	M3	132	
38	N2	160	
39	N3	151	
40	O2	128	
41	O3	151	
42	P2	140	
43	P3	130	
44	Q2	157	
45	Q3	133	
46	R2	156	
47	R3	125	
48	S2	145	
49	S3	84	
50	T2	136	
51	T3	133	
52	U2	148	

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Mol	Chain	Length	Quality of chain
53	U3	156	
54	V2	160	
55	W2	115	
56	X2	125	
57	Y2	135	
58	Z2	110	
59	a2	117	
60	b2	123	
61	c2	105	
62	d2	97	
63	e2	70	
64	f2	51	
65	g2	128	
66	h2	25	
67	i2	106	
68	j2	92	
69	k2	137	
70	m2	1635	
71	o2	295	
72	p2	264	
73	q2	243	
74	r2	263	
75	s2	204	
76	t2	194	
77	u2	208	

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Mol	Chain	Length	Quality of chain
78	v2	165	
79	w2	158	
80	x2	145	
81	y2	146	
82	z2	135	
83	A	22	

## 2 Entry composition

There are 86 unique types of molecules in this entry. The entry contains 213902 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called Large ribosomal subunit protein uL30.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A1	222	Total	C	N	O	S	1	0
			1851	1190	356	297	8		

- Molecule 2 is a RNA chain called 28S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	A2	3615	Total	C	N	O	P	0	0
			77547	34568	14148	25217	3614		

- Molecule 3 is a protein called Small ribosomal subunit protein uS13.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	A3	140	Total	C	N	O	S	0	0
			1157	728	231	197	1		

- Molecule 4 is a protein called Large ribosomal subunit protein eL8.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	B1	223	Total	C	N	O	S	1	0
			1812	1156	351	301	4		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
5	B2	119	Total	C	N	O	P	0	0
			2538	1132	454	834	118		

- Molecule 6 is a protein called Small ribosomal subunit protein eS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	B3	141	Total	C	N	O	S	0	0
			1104	691	215	196	2		

- Molecule 7 is a RNA chain called transfer RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	Bv	76	Total	C	N	O	P	0	0
			1623	723	290	534	76		
7	n2	76	Total	C	N	O	P	0	0
			1623	723	290	534	76		

- Molecule 8 is a RNA chain called messenger RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	Bx	10	Total	C	N	O	P	0	0
			200	90	20	80	10		

- Molecule 9 is a protein called Large ribosomal subunit protein uL6.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	C1	190	Total	C	N	O	S	0	0
			1519	956	284	273	6		

- Molecule 10 is a RNA chain called 5.8S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	C2	156	Total	C	N	O	P	0	0
			3315	1481	585	1094	155		

- Molecule 11 is a protein called Small ribosomal subunit protein uS10.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	C3	102	Total	C	N	O	S	0	0
			808	507	154	143	4		

- Molecule 12 is a protein called Large ribosomal subunit protein uL16.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	D1	204	Total	C	N	O	S	0	0
			1656	1052	319	272	13		

- Molecule 13 is a protein called Large ribosomal subunit protein uL2.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	D2	251	Total	C	N	O	S	0	0
			1921	1204	393	318	6		



- Molecule 14 is a protein called Small ribosomal subunit protein eS21.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	D3	83	Total	C	N	O	S	0	0
			638	392	119	122	5		

- Molecule 15 is a protein called Large ribosomal subunit protein uL5.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	E1	174	Total	C	N	O	S	0	0
			1397	880	260	251	6		

- Molecule 16 is a protein called Large ribosomal subunit protein uL3.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	E2	402	Total	C	N	O	S	0	0
			3238	2060	609	555	14		

- Molecule 17 is a protein called Small ribosomal subunit protein uS12.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	E3	139	Total	C	N	O	S	0	0
			1080	682	214	181	3		

- Molecule 18 is a protein called Large ribosomal subunit protein eL13.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	F1	203	Total	C	N	O	S	0	0
			1643	1029	339	271	4		

- Molecule 19 is a protein called Large ribosomal subunit protein uL4.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	F2	359	Total	C	N	O	S	0	0
			2867	1803	573	476	15		

- Molecule 20 is a protein called Small ribosomal subunit protein eS26.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	F3	98	Total	C	N	O	S	1	0
			789	491	164	129	5		

- Molecule 21 is a protein called Large ribosomal subunit protein eL14.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	G1	139	Total	C	N	O	S	0	0
			1143	732	221	183	7		

- Molecule 22 is a protein called Large ribosomal subunit protein uL18.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	G2	293	Total	C	N	O	S	0	0
			2389	1509	441	425	14		

- Molecule 23 is a protein called Small ribosomal subunit protein eS28.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	G3	62	Total	C	N	O	S	0	0
			488	297	97	92	2		

- Molecule 24 is a protein called Large ribosomal subunit protein eL15.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	H1	203	Total	C	N	O	S	0	0
			1701	1072	359	266	4		

- Molecule 25 is a protein called Large ribosomal subunit protein eL6.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	H2	221	Total	C	N	O	S	0	0
			1789	1145	342	298	4		

- Molecule 26 is a protein called Small ribosomal subunit protein uS14.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	H3	54	Total	C	N	O	S	0	0
			454	284	93	72	5		

- Molecule 27 is a protein called Large ribosomal subunit protein uL13.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	I2	201	Total	C	N	O	S	0	0
			1640	1055	320	259	6		

- Molecule 28 is a protein called Small ribosomal subunit protein RACK1.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	I3	313	Total	C	N	O	S	0	0
			2436	1535	424	465	12		

- Molecule 29 is a protein called Large ribosomal subunit protein uL22.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	J2	153	Total	C	N	O	S	0	0
			1242	777	241	215	9		

- Molecule 30 is a protein called Small ribosomal subunit protein uS5.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	J3	219	Total	C	N	O	S	0	0
			1700	1101	292	298	9		

- Molecule 31 is a protein called Large ribosomal subunit protein eL18.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	K2	186	Total	C	N	O	S	0	0
			1511	946	313	248	4		

- Molecule 32 is a protein called Small ribosomal subunit protein eS6.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	K3	227	Total	C	N	O	S	0	0
			1840	1149	367	317	7		

- Molecule 33 is a protein called Large ribosomal subunit protein uL1.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	L1	161	Total	C	N	O	S	0	0
			1300	833	230	231	6		

- Molecule 34 is a protein called Large ribosomal subunit protein eL19.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	L2	179	Total	C	N	O	S	0	0
			1499	927	326	237	9		

- Molecule 35 is a protein called Small ribosomal subunit protein uS4.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	L3	184	Total	C	N	O	S	0	0
			1518	964	305	247	2		

- Molecule 36 is a protein called Large ribosomal subunit protein eL20.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	M2	175	Total	C	N	O	S	0	0
			1450	924	283	233	10		

- Molecule 37 is a protein called Small ribosomal subunit protein eS12.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	M3	122	Total	C	N	O	S	0	0
			952	599	168	177	8		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
M3	69	LEU	CYS	variant	UNP P63323

- Molecule 38 is a protein called Large ribosomal subunit protein eL21.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	N2	159	Total	C	N	O	S	0	0
			1299	824	252	217	6		

- Molecule 39 is a protein called Small ribosomal subunit protein uS15.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	N3	150	Total	C	N	O	S	0	0
			1208	773	229	205	1		

- Molecule 40 is a protein called Large ribosomal subunit protein eL22.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	O2	101	Total	C	N	O	S	0	0
			825	529	144	150	2		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
41	O3	134	Total	C	N	O	S	0	0
			1002	612	197	187	6		

- Molecule 42 is a protein called Large ribosomal subunit protein uL14.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	P2	129	Total	C	N	O	S	0	0
			969	613	182	169	5		

- Molecule 43 is a protein called Small ribosomal subunit protein uS8.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	P3	129	Total	C	N	O	S	0	0
			1034	659	193	176	6		

- Molecule 44 is a protein called Large ribosomal subunit protein eL24.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	Q2	62	Total	C	N	O	S	0	0
			519	332	101	83	3		

- Molecule 45 is a protein called Small ribosomal subunit protein eS24.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	Q3	122	Total	C	N	O	S	0	0
			1002	635	196	166	5		

- Molecule 46 is a protein called Large ribosomal subunit protein uL23.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	R2	118	Total	C	N	O	S	0	0
			967	618	181	167	1		

- Molecule 47 is a protein called Small ribosomal subunit protein eS25.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	R3	85	Total	C	N	O	S	0	0
			683	439	128	115	1		

- Molecule 48 is a protein called Large ribosomal subunit protein uL24.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	S2	134	Total	C	N	O	S	0	0
			1115	700	226	186	3		

- Molecule 49 is a protein called Small ribosomal subunit protein eS27.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	S3	83	Total	C	N	O	S	0	0
			651	408	121	115	7		

- Molecule 50 is a protein called Large ribosomal subunit protein eL27.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	T2	135	Total	C	N	O	S	0	0
			1107	714	208	182	3		

- Molecule 51 is a protein called Ubiquitin-like FUBI-ribosomal protein eS30 fusion protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	T3	55	Total	C	N	O	S	0	0
			438	271	95	71	1		

- Molecule 52 is a protein called Large ribosomal subunit protein uL15.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	U2	147	Total	C	N	O	S	0	0
			1164	736	239	185	4		

- Molecule 53 is a protein called Ubiquitin-ribosomal protein eS31 fusion protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	U3	52	Total	C	N	O	S	0	0
			415	260	74	74	7		

- Molecule 54 is a protein called Large ribosomal subunit protein eL29.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	V2	117	Total	C	N	O	S	0	0
			945	596	198	146	5		

- Molecule 55 is a protein called Large ribosomal subunit protein eL30.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	W2	94	Total	C	N	O	S	0	0
			732	465	130	131	6		

- Molecule 56 is a protein called Large ribosomal subunit protein eL31.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	X2	107	Total	C	N	O	S	0	0
			888	560	171	155	2		

- Molecule 57 is a protein called Large ribosomal subunit protein eL32.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	Y2	128	Total	C	N	O	S	0	0
			1053	667	216	165	5		

- Molecule 58 is a protein called Large ribosomal subunit protein eL33.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	Z2	109	Total	C	N	O	S	0	0
			876	555	174	143	4		

- Molecule 59 is a protein called Large ribosomal subunit protein eL34.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	a2	114	Total	C	N	O	S	0	0
			906	565	187	148	6		

- Molecule 60 is a protein called Large ribosomal subunit protein uL29.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	b2	120	Total	C	N	O	S	0	0
			1001	634	201	165	1		

- Molecule 61 is a protein called Large ribosomal subunit protein eL36.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	c2	102	Total	C	N	O	S	0	0
			832	521	177	129	5		

- Molecule 62 is a protein called Large ribosomal subunit protein eL37.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	d2	86	Total	C	N	O	S	0	0
			705	434	155	111	5		

- Molecule 63 is a protein called Large ribosomal subunit protein eL38.

Mol	Chain	Residues	Atoms					AltConf	Trace
63	e2	69	Total	C	N	O	S	0	0
			568	365	103	99	1		

- Molecule 64 is a protein called Large ribosomal subunit protein eL39.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	f2	50	Total	C	N	O	S	0	0
			444	281	98	64	1		

- Molecule 65 is a protein called Ubiquitin-ribosomal protein eL40 fusion protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
65	g2	52	Total	C	N	O	S	0	0
			428	266	90	66	6		

- Molecule 66 is a protein called 60S ribosomal protein L41.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	h2	24	Total	C	N	O	S	0	0
			230	139	62	26	3		

- Molecule 67 is a protein called Large ribosomal subunit protein eL42.

Mol	Chain	Residues	Atoms					AltConf	Trace
67	i2	103	Total	C	N	O	S	0	0
			842	528	172	136	6		

- Molecule 68 is a protein called Large ribosomal subunit protein eL43.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	j2	89	Total	C	N	O	S	0	0
			693	436	133	117	7		

- Molecule 69 is a protein called Large ribosomal subunit protein eL28.



Mol	Chain	Residues	Atoms					AltConf	Trace
69	k2	125	Total	C	N	O	S	0	0
			1001	621	207	168	5		

- Molecule 70 is a RNA chain called 18S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	m2	1635	Total	C	N	O	P	0	0
			34939	15614	6270	11420	1635		

- Molecule 71 is a protein called Small ribosomal subunit protein uS2.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	o2	214	Total	C	N	O	S	0	0
			1694	1077	297	312	8		

- Molecule 72 is a protein called 40S ribosomal protein S3a.

Mol	Chain	Residues	Atoms					AltConf	Trace
72	p2	212	Total	C	N	O	S	0	0
			1722	1093	308	307	14		

- Molecule 73 is a protein called Small ribosomal subunit protein uS3.

Mol	Chain	Residues	Atoms					AltConf	Trace
73	q2	220	Total	C	N	O	S	0	0
			1711	1092	308	304	7		

- Molecule 74 is a protein called Small ribosomal subunit protein eS4.

Mol	Chain	Residues	Atoms					AltConf	Trace
74	r2	262	Total	C	N	O	S	0	0
			2076	1324	386	358	8		

- Molecule 75 is a protein called Small ribosomal subunit protein uS7.

Mol	Chain	Residues	Atoms					AltConf	Trace
75	s2	183	Total	C	N	O	S	0	0
			1457	912	275	263	7		

- Molecule 76 is a protein called Small ribosomal subunit protein eS7.

Mol	Chain	Residues	Atoms				AltConf	Trace
76	t2	183	Total	C	N	O	0	0
			1278	822	243	213		

- Molecule 77 is a protein called Small ribosomal subunit protein eS8.

Mol	Chain	Residues	Atoms					AltConf	Trace
77	u2	206	Total	C	N	O	S	0	0
			1633	1025	322	281	5		

- Molecule 78 is a protein called Small ribosomal subunit protein eS10.

Mol	Chain	Residues	Atoms					AltConf	Trace
78	v2	95	Total	C	N	O	S	0	0
			800	522	142	131	5		

- Molecule 79 is a protein called Small ribosomal subunit protein uS17.

Mol	Chain	Residues	Atoms					AltConf	Trace
79	w2	150	Total	C	N	O	S	0	0
			1220	776	228	210	6		

- Molecule 80 is a protein called Small ribosomal subunit protein uS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
80	x2	123	Total	C	N	O	S	0	0
			1005	638	188	172	7		

- Molecule 81 is a protein called Small ribosomal subunit protein uS9.

Mol	Chain	Residues	Atoms					AltConf	Trace
81	y2	142	Total	C	N	O	S	0	0
			1128	717	213	195	3		

- Molecule 82 is a protein called Small ribosomal subunit protein eS17.

Mol	Chain	Residues	Atoms					AltConf	Trace
82	z2	134	Total	C	N	O	S	0	0
			1080	678	201	197	4		

- Molecule 83 is a protein called Nascent protein chain.

Mol	Chain	Residues	Atoms				AltConf	Trace
83	A	22	Total	C	N	O	0	0
			110	66	22	22		

- Molecule 84 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
84	A2	82	Total	Mg	0
			82	82	
84	Bv	2	Total	Mg	0
			2	2	
84	H1	1	Total	Mg	0
			1	1	
84	J2	1	Total	Mg	0
			1	1	
84	P2	1	Total	Mg	0
			1	1	
84	d2	1	Total	Mg	0
			1	1	
84	m2	34	Total	Mg	0
			34	34	

- Molecule 85 is ZINC ION (CCD ID: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

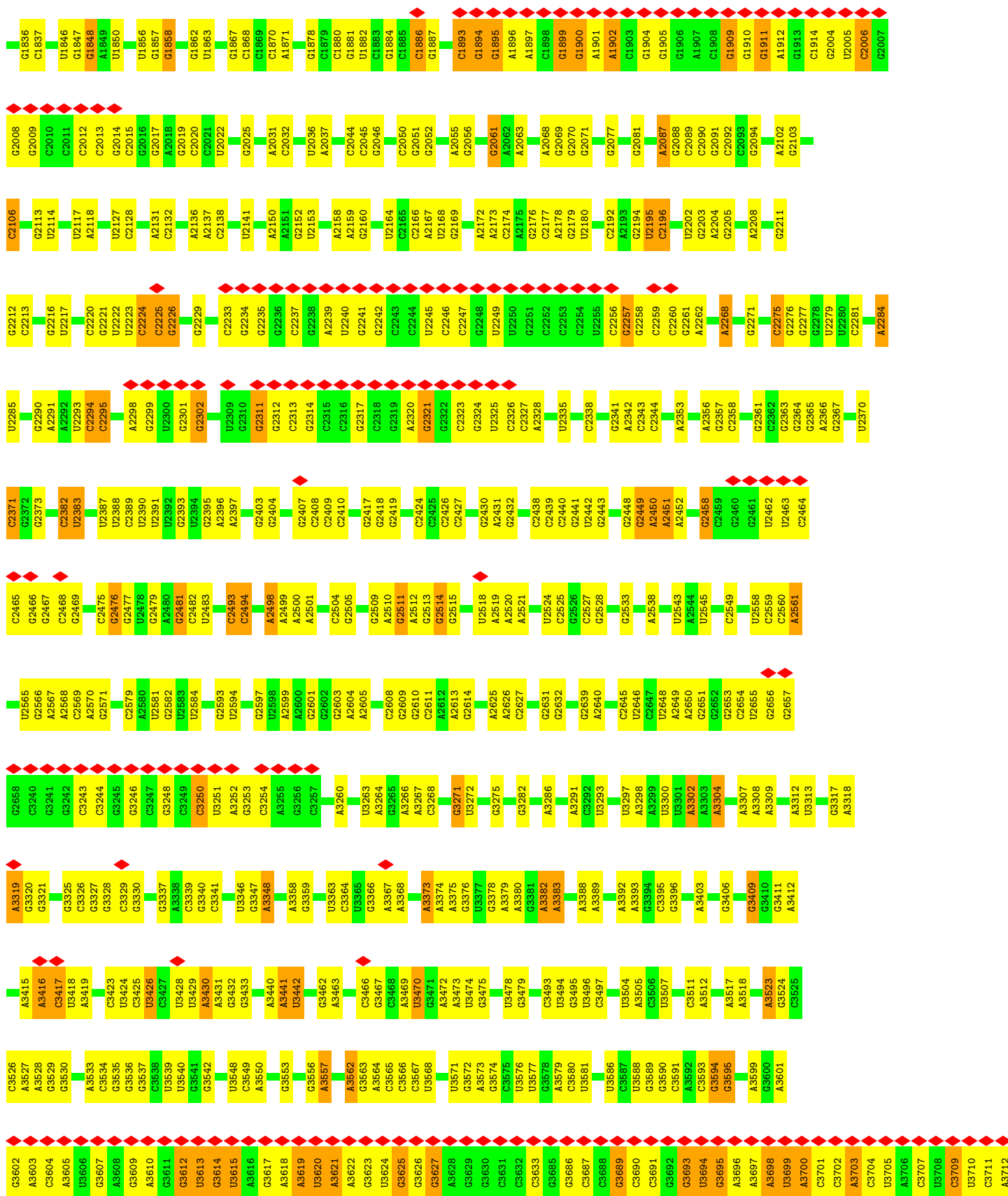
Mol	Chain	Residues	Atoms		AltConf
85	F3	1	Total	Zn	0
			1	1	
85	H3	1	Total	Zn	0
			1	1	
85	d2	1	Total	Zn	0
			1	1	
85	g2	1	Total	Zn	0
			1	1	
85	i2	1	Total	Zn	0
			1	1	
85	j2	1	Total	Zn	0
			1	1	

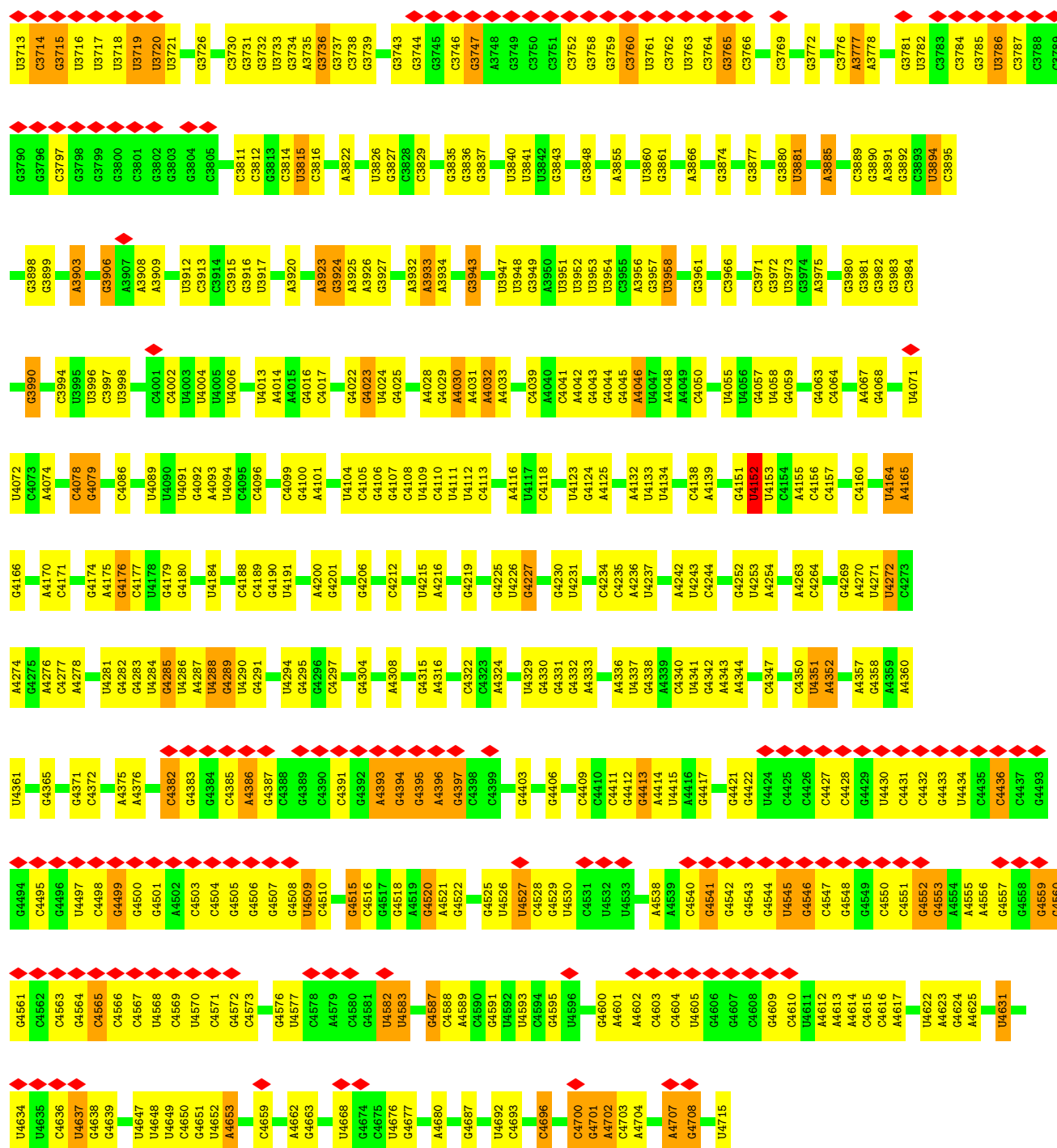
- Molecule 86 is water.

Mol	Chain	Residues	Atoms		AltConf
86	B1	1	Total	O	0
			1	1	

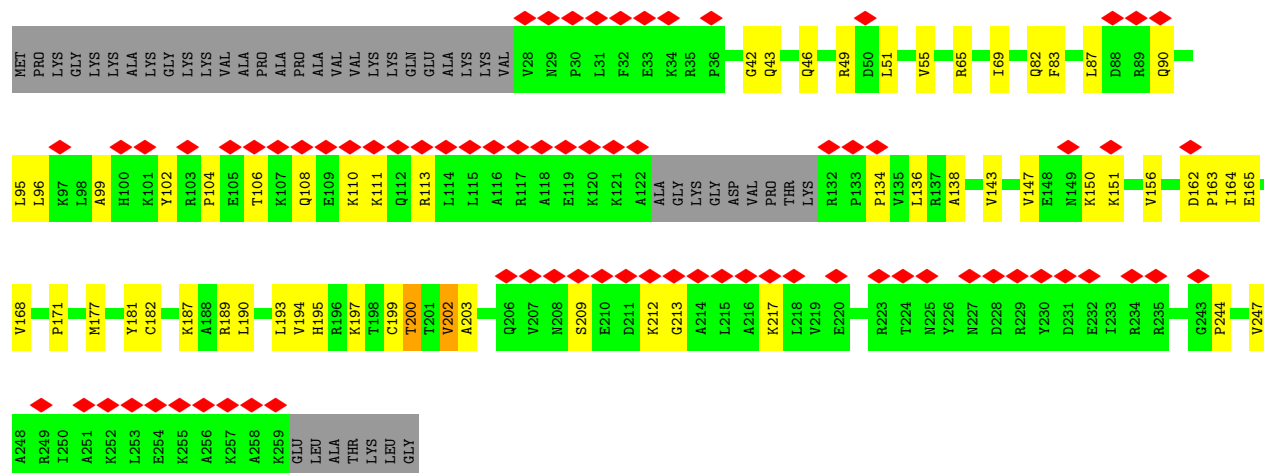




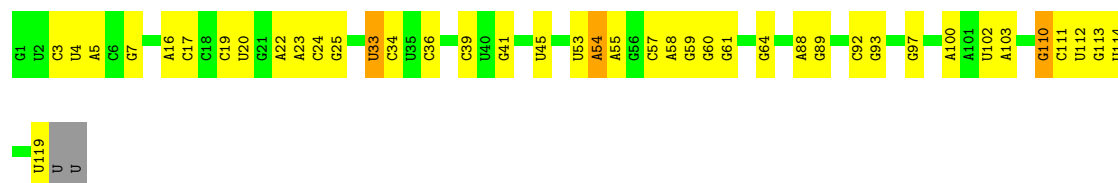




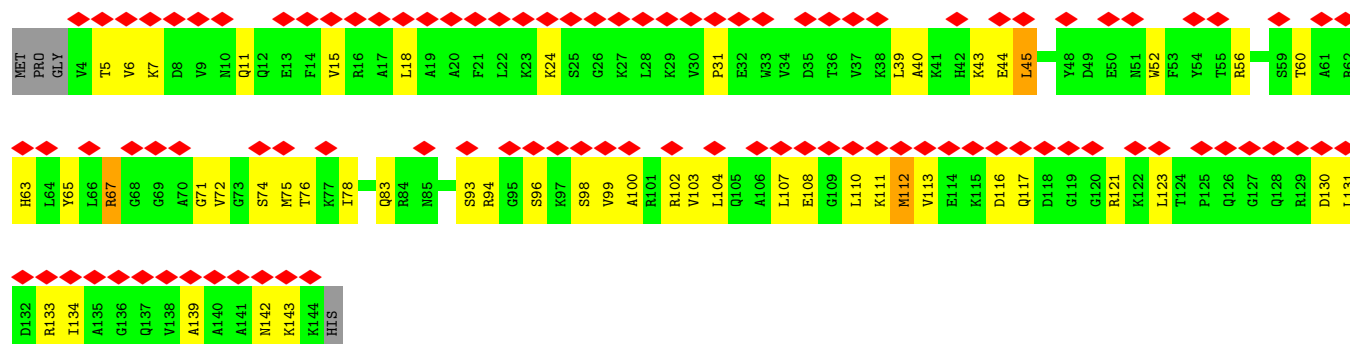
- Molecule 4: Large ribosomal subunit protein eL8



- Molecule 5: 5S ribosomal RNA

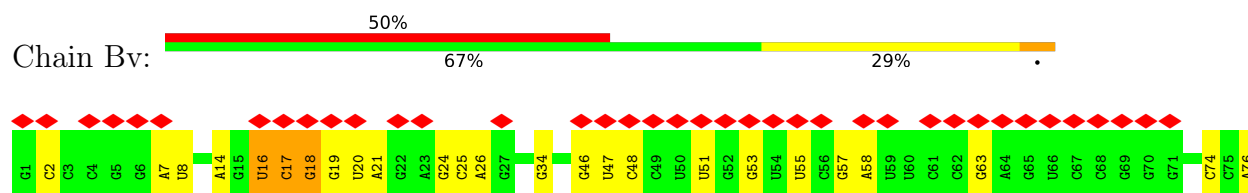


- Molecule 6: Small ribosomal subunit protein eS19

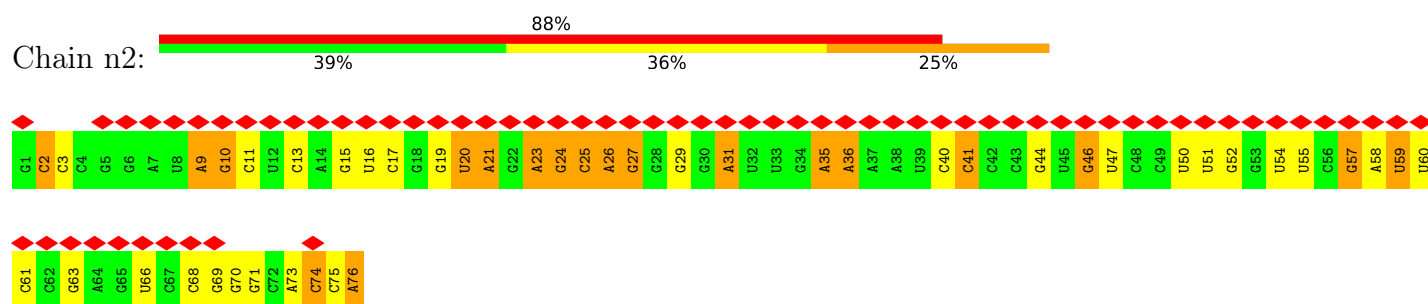




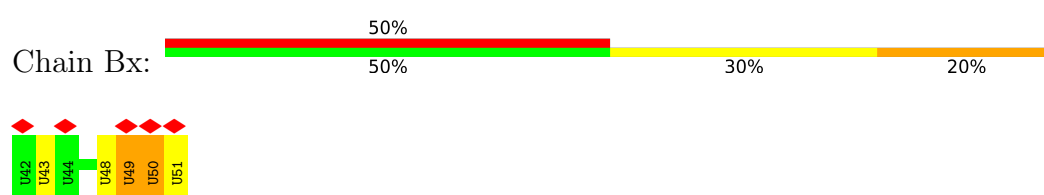
- Molecule 7: transfer RNA



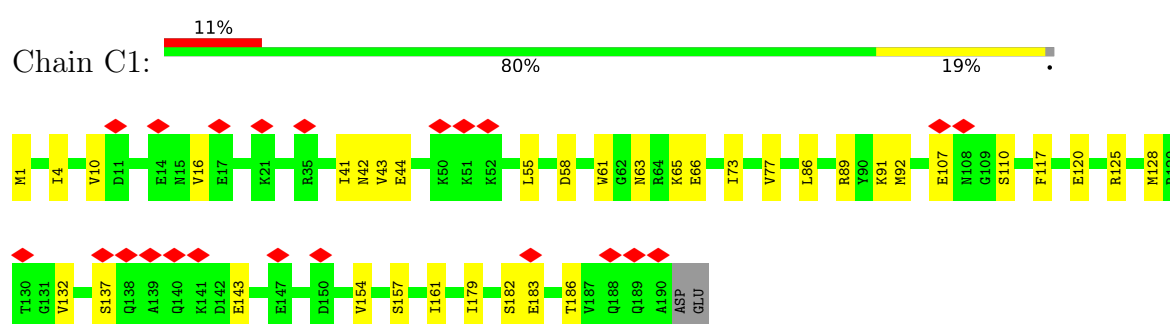
- Molecule 7: transfer RNA



- Molecule 8: messenger RNA



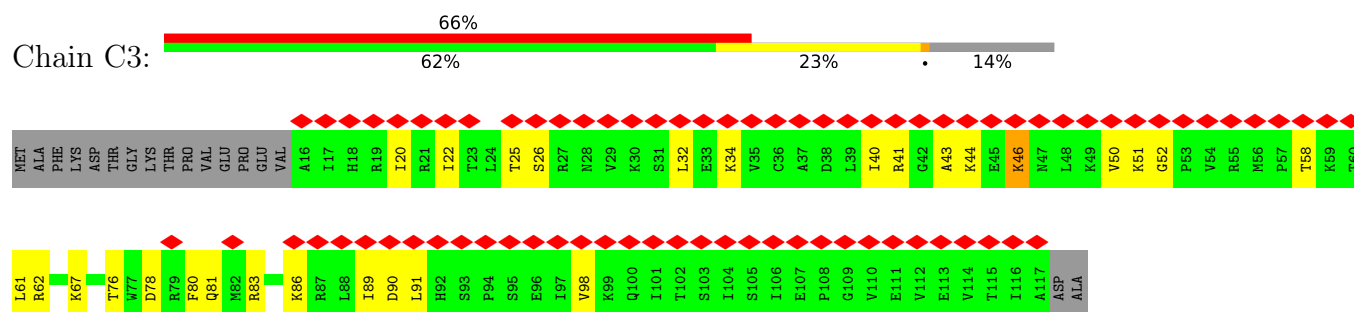
- Molecule 9: Large ribosomal subunit protein uL6



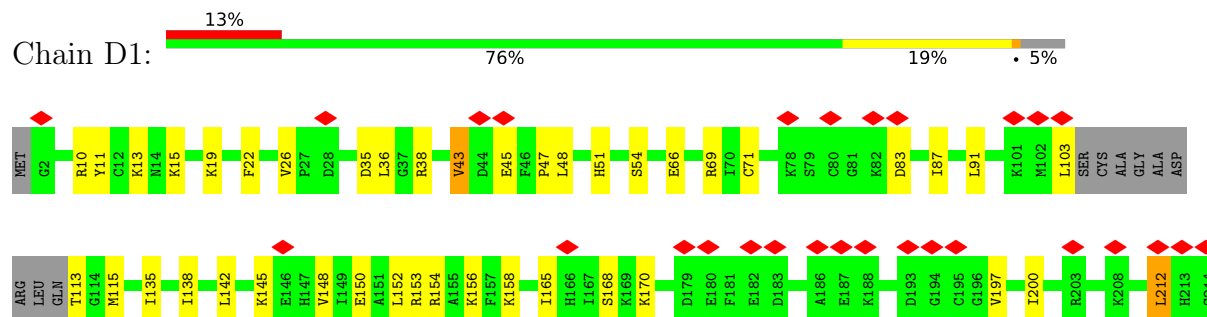
- Molecule 10: 5.8S ribosomal RNA



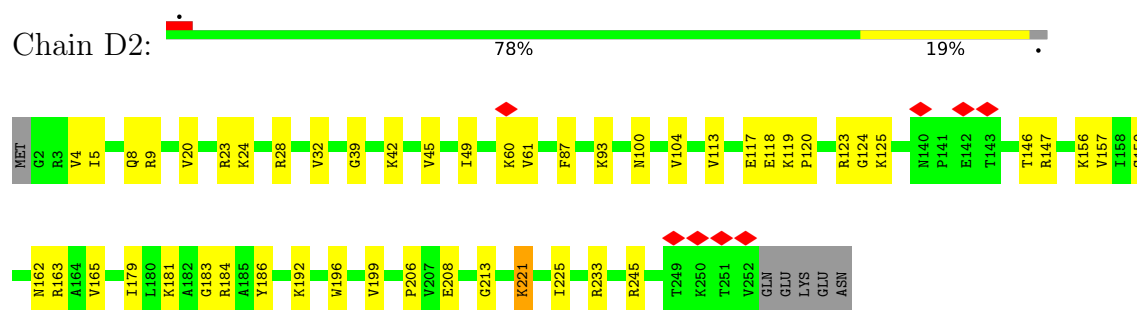
- Molecule 11: Small ribosomal subunit protein uS10



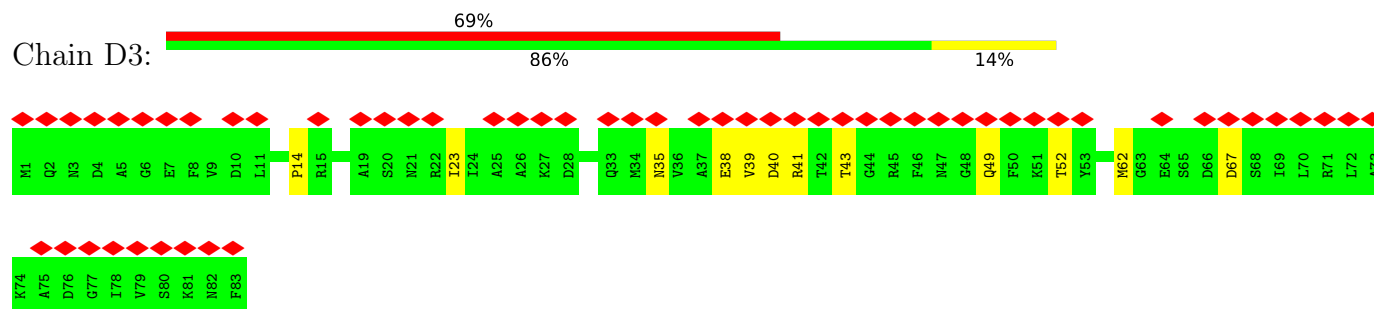
- Molecule 12: Large ribosomal subunit protein uL16



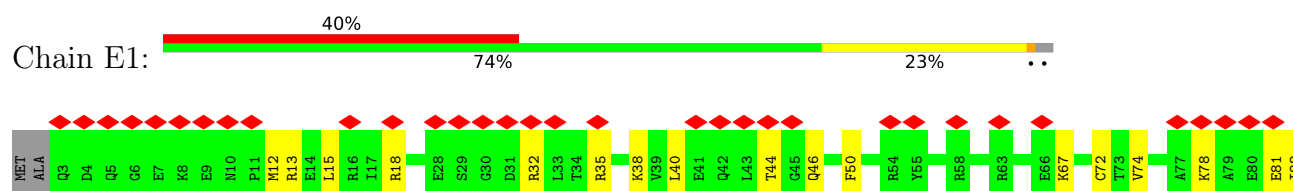
- Molecule 13: Large ribosomal subunit protein uL2

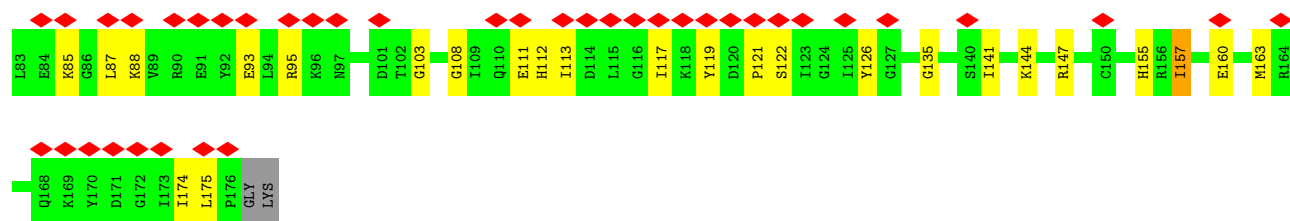


- Molecule 14: Small ribosomal subunit protein eS21

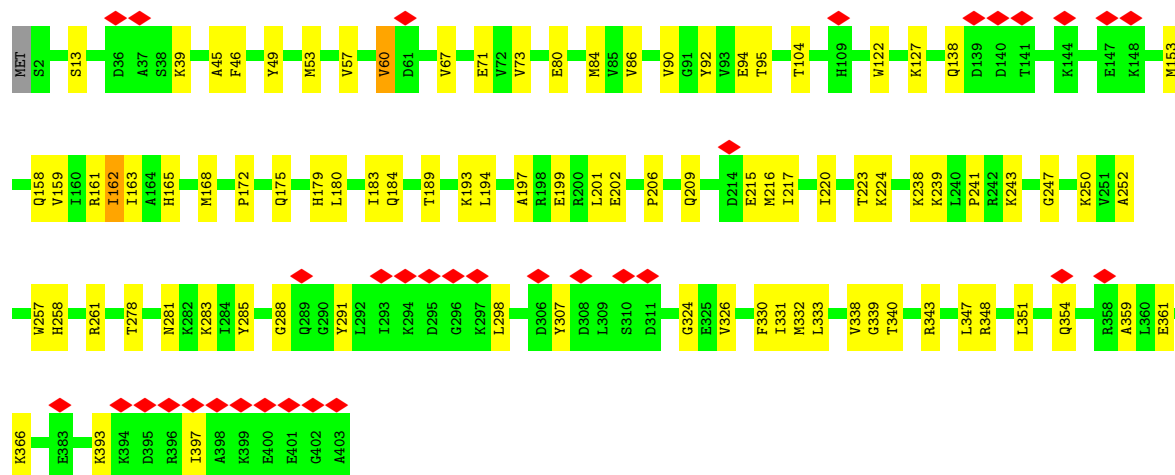
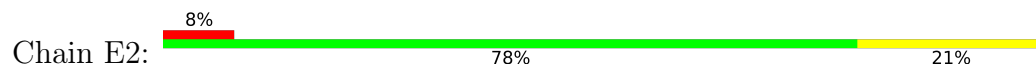


- Molecule 15: Large ribosomal subunit protein uL5

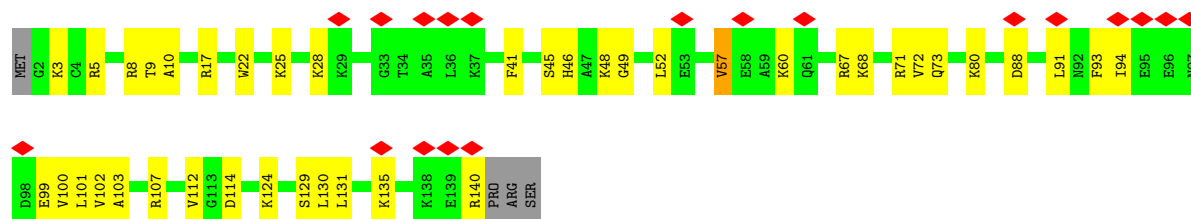




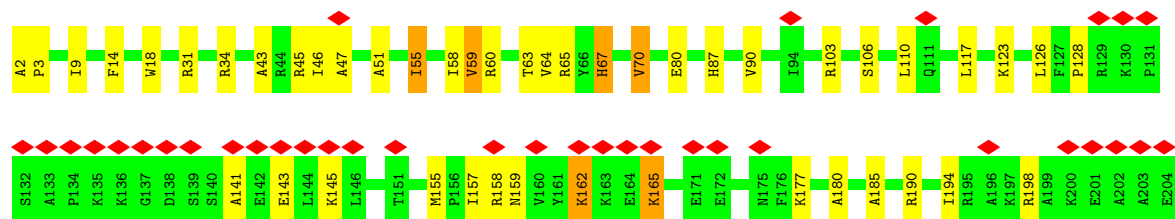
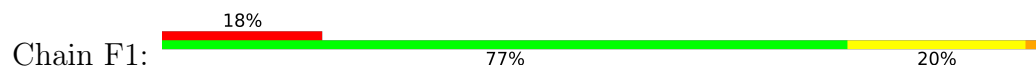
- Molecule 16: Large ribosomal subunit protein uL3



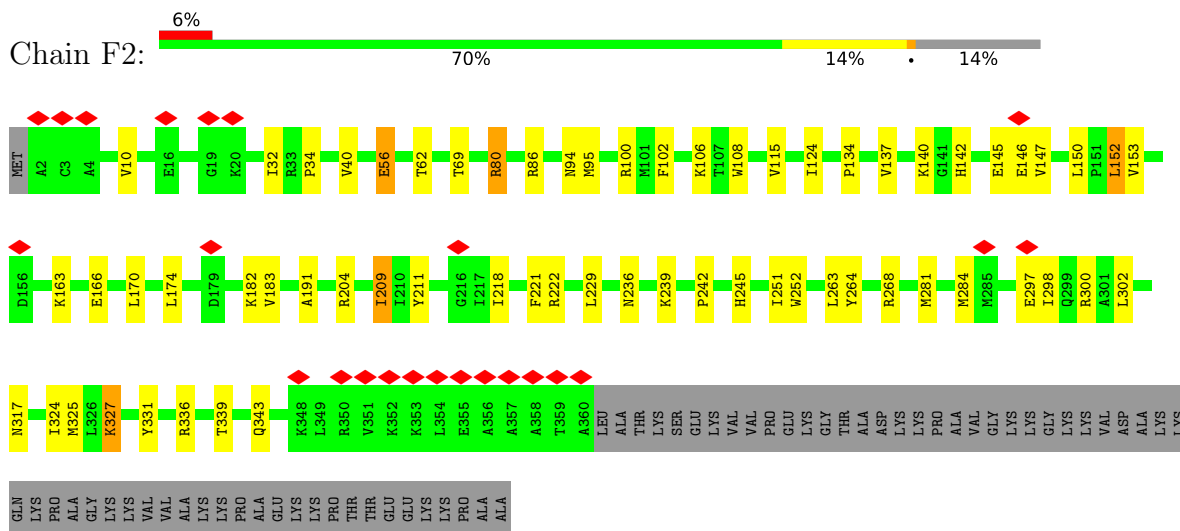
- Molecule 17: Small ribosomal subunit protein uS12



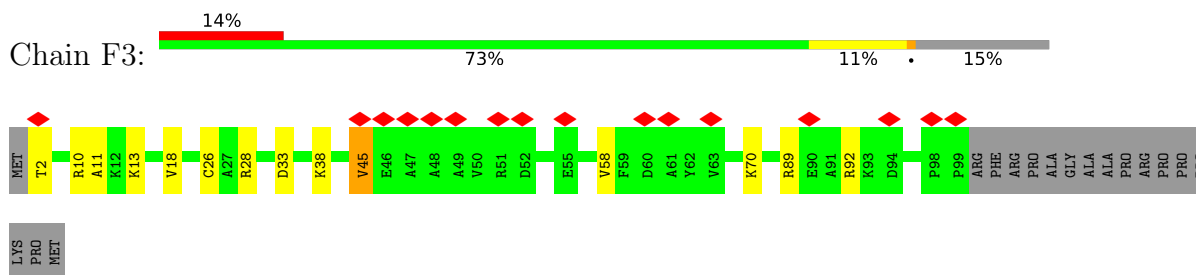
- Molecule 18: Large ribosomal subunit protein eL13



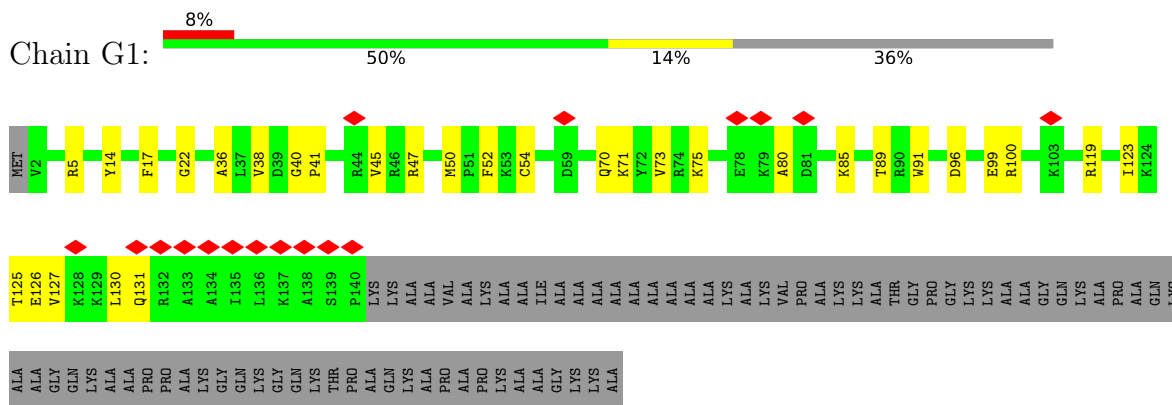
- Molecule 19: Large ribosomal subunit protein uL4



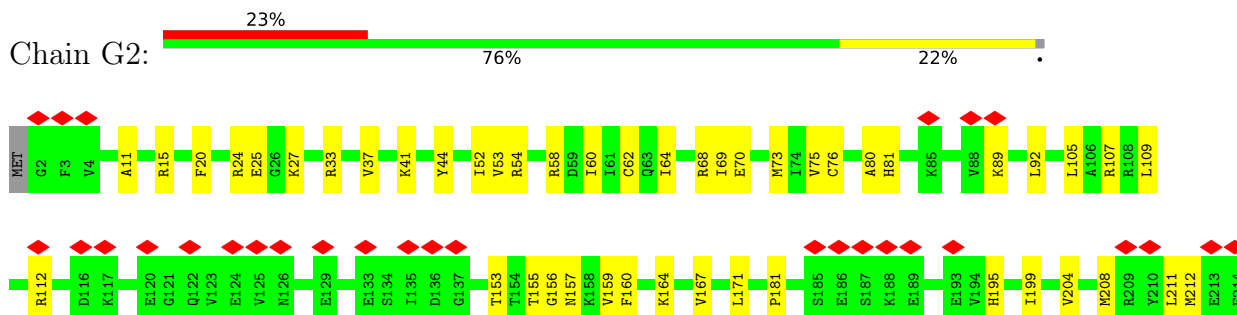
- Molecule 20: Small ribosomal subunit protein eS26

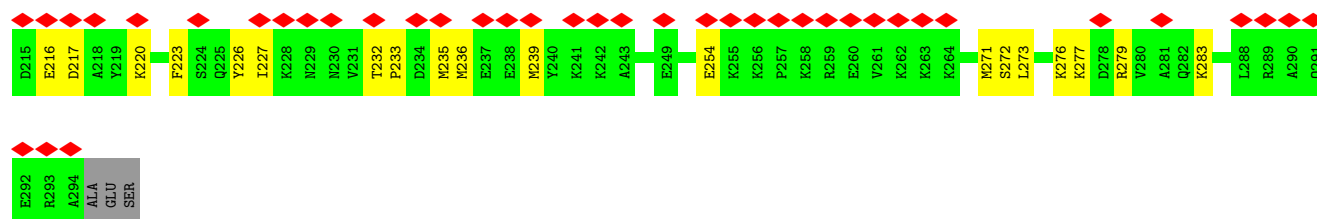


- Molecule 21: Large ribosomal subunit protein eL14

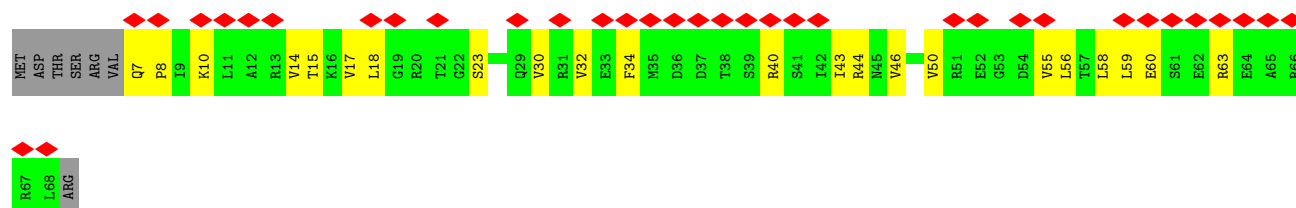


- Molecule 22: Large ribosomal subunit protein uL18

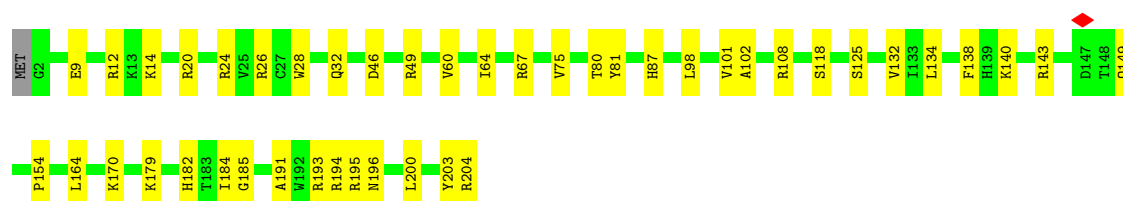
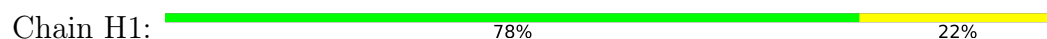




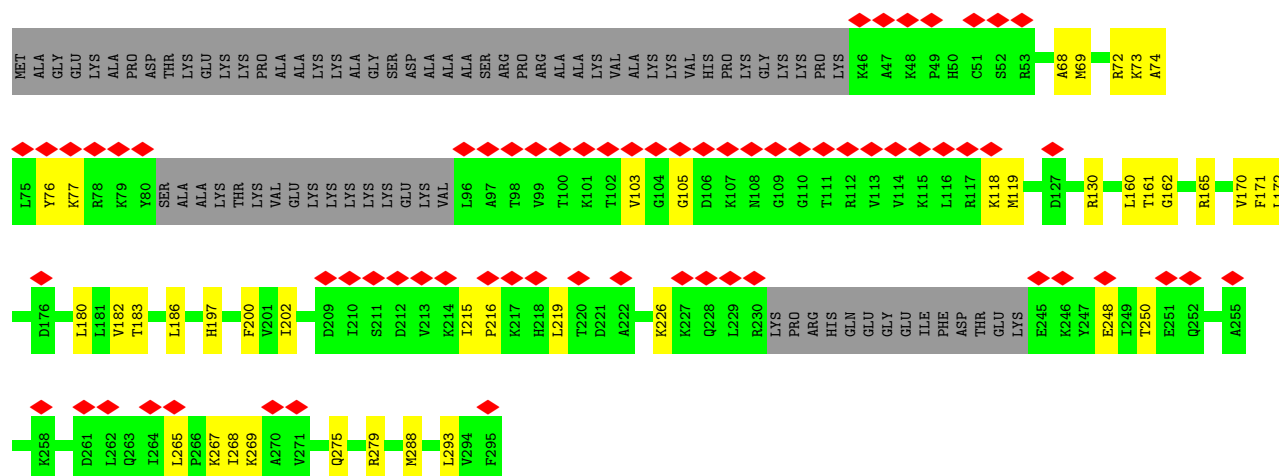
- Molecule 23: Small ribosomal subunit protein eS28



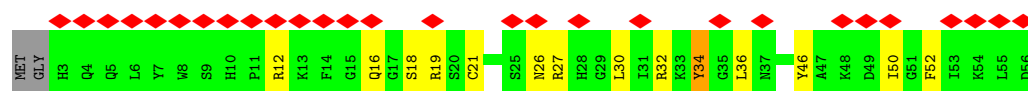
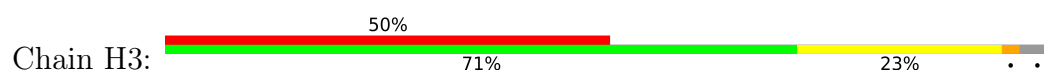
- Molecule 24: Large ribosomal subunit protein eL15



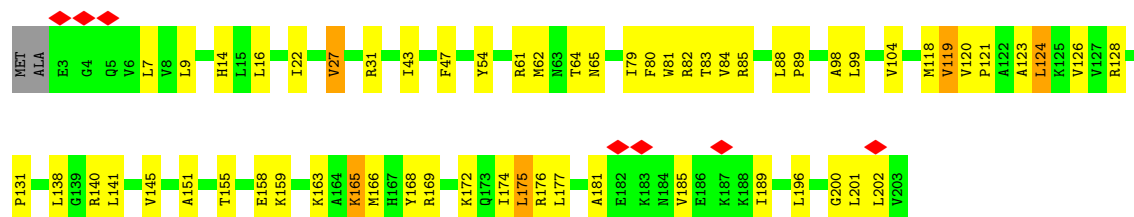
- Molecule 25: Large ribosomal subunit protein eL6



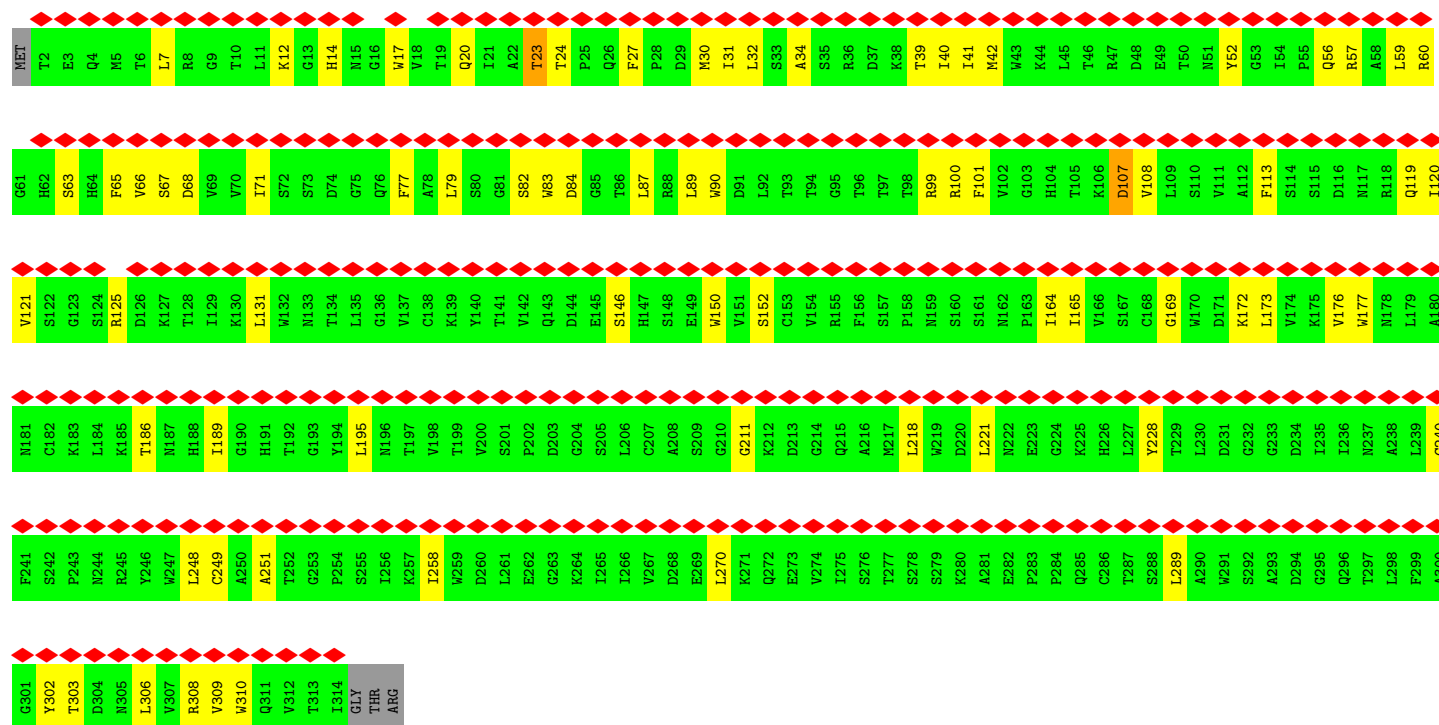
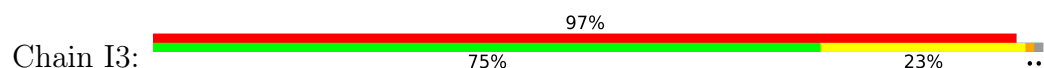
- Molecule 26: Small ribosomal subunit protein uS14



• Molecule 27: Large ribosomal subunit protein uL13



• Molecule 28: Small ribosomal subunit protein RACK1



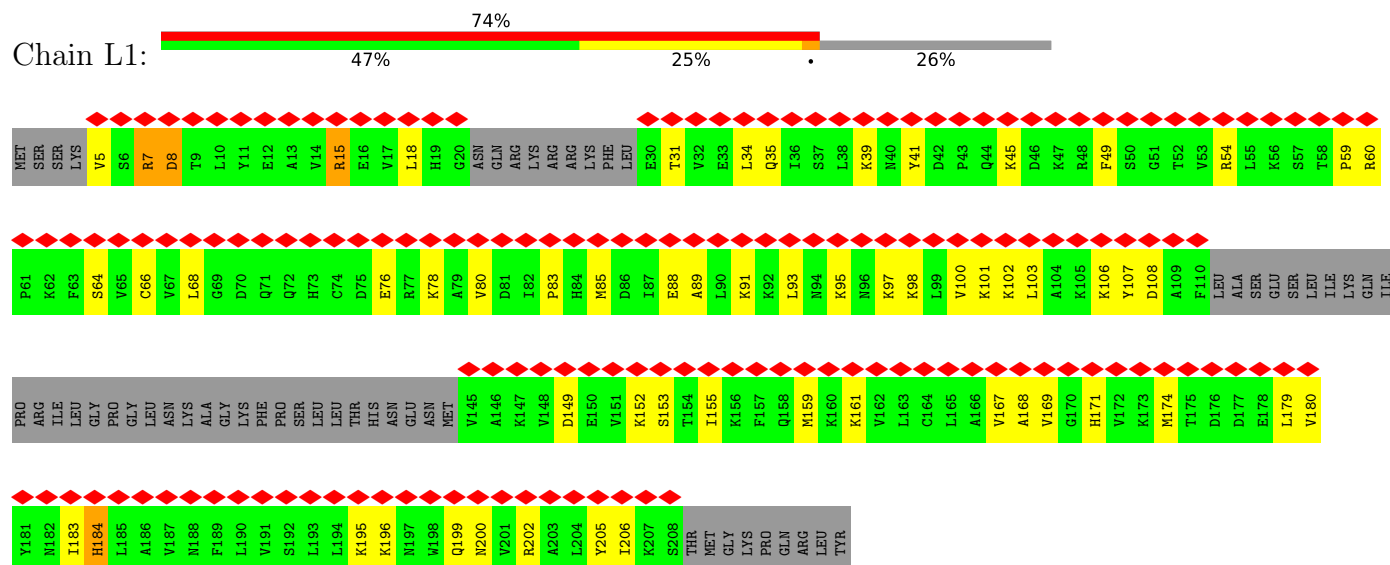
• Molecule 29: Large ribosomal subunit protein uL22





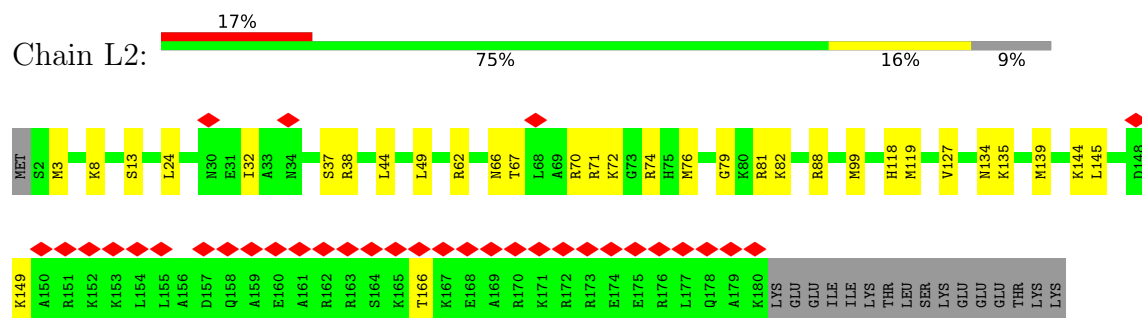
- Molecule 33: Large ribosomal subunit protein uL1

Chain L1:



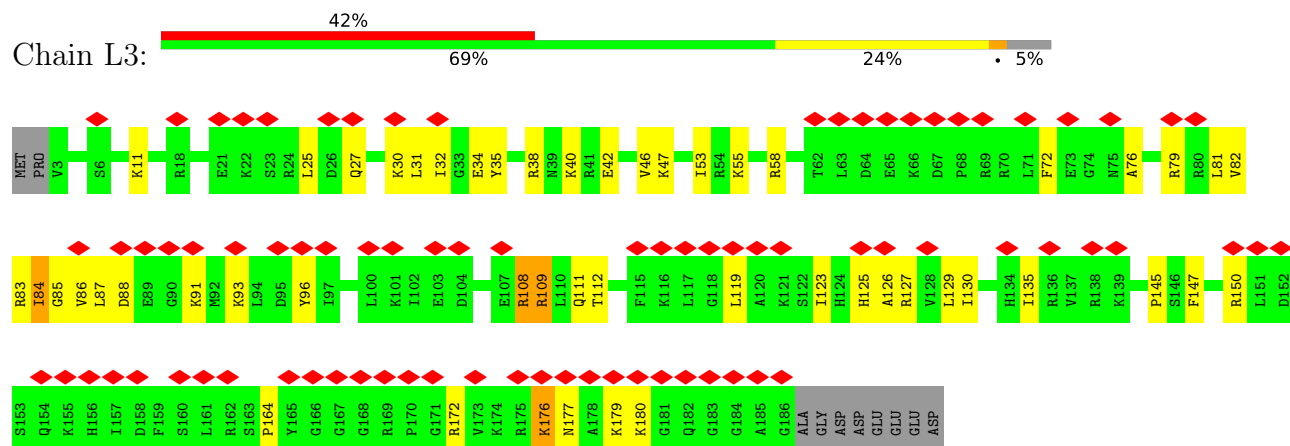
- Molecule 34: Large ribosomal subunit protein eL19

Chain L2:



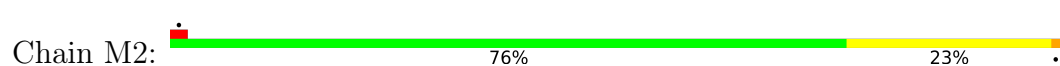
- Molecule 35: Small ribosomal subunit protein uS4

Chain L3:

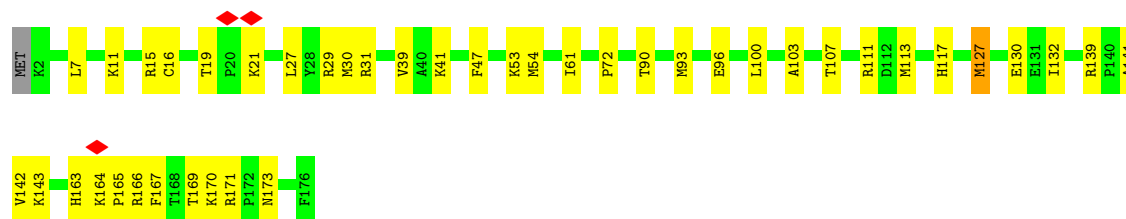


- Molecule 36: Large ribosomal subunit protein eL20

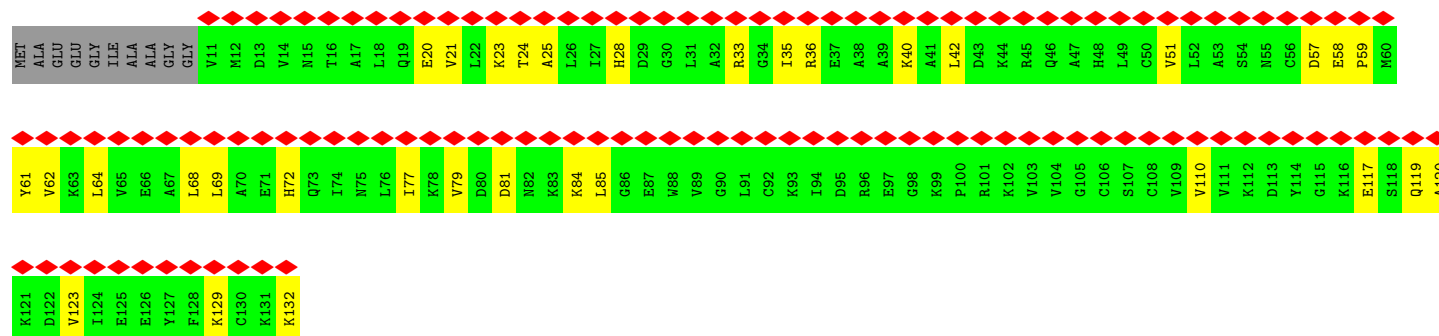
Chain M2:



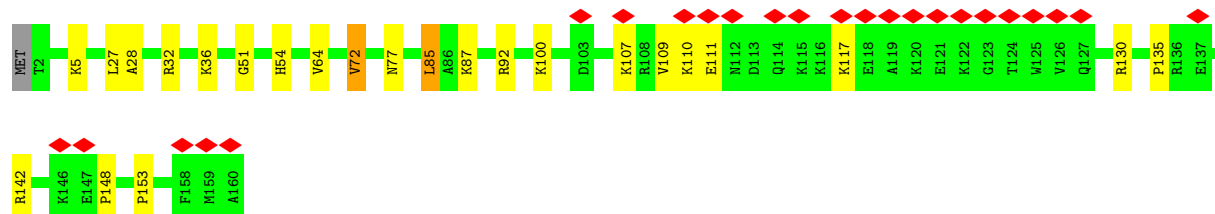
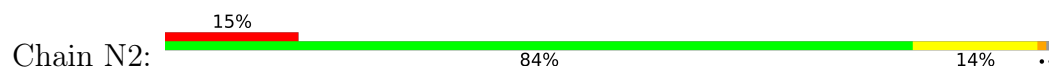




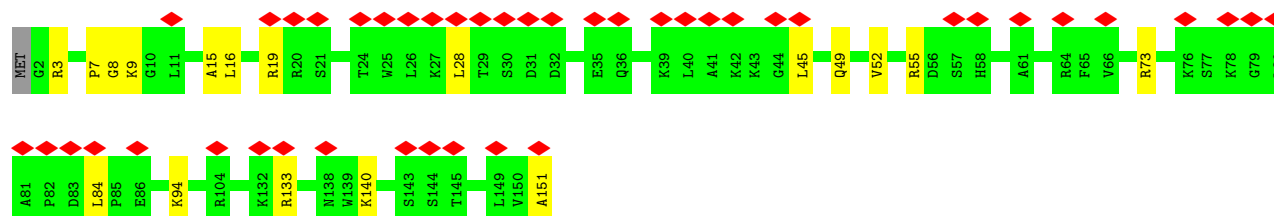
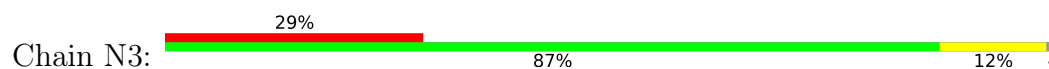
- Molecule 37: Small ribosomal subunit protein eS12



- Molecule 38: Large ribosomal subunit protein eL21



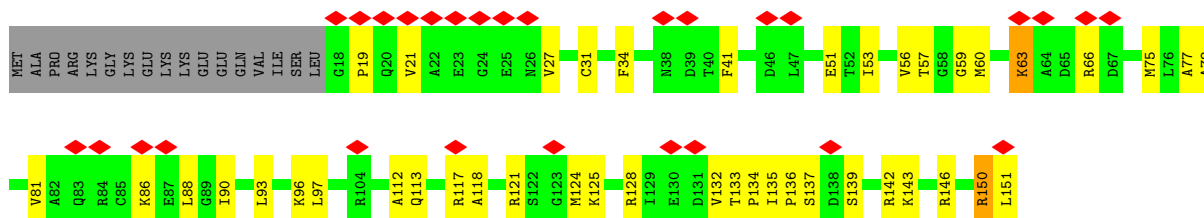
- Molecule 39: Small ribosomal subunit protein uS15



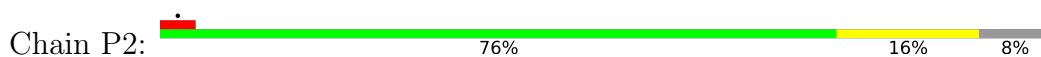
- Molecule 40: Large ribosomal subunit protein eL22



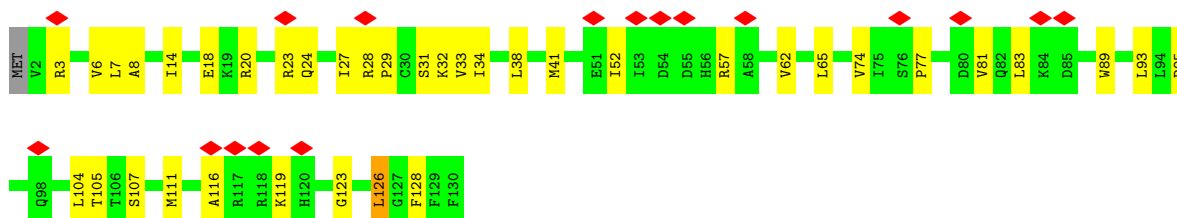
- Molecule 41: Small ribosomal subunit protein uS11



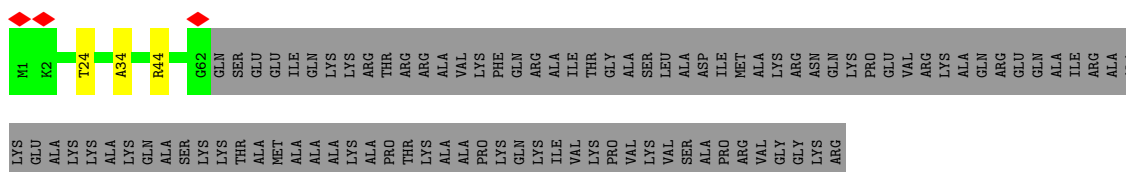
- Molecule 42: Large ribosomal subunit protein uL14



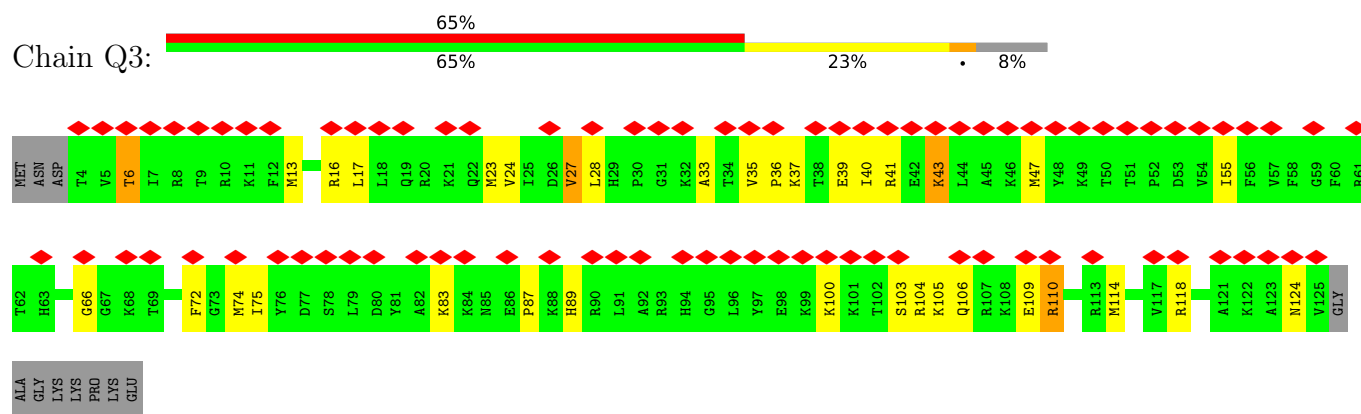
- Molecule 43: Small ribosomal subunit protein uS8



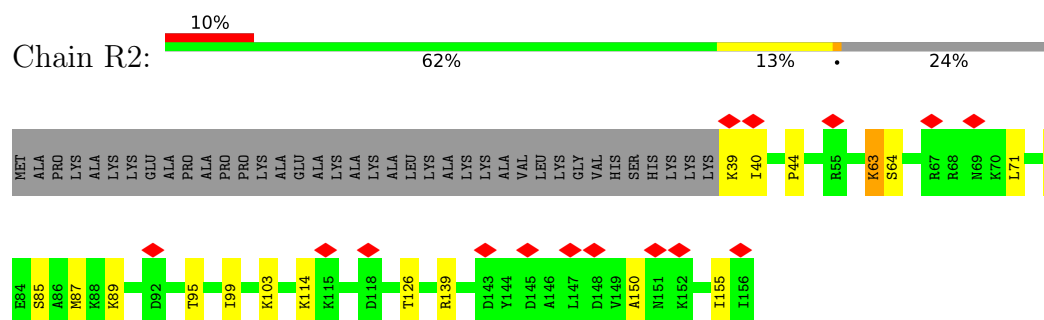
- Molecule 44: Large ribosomal subunit protein eL24



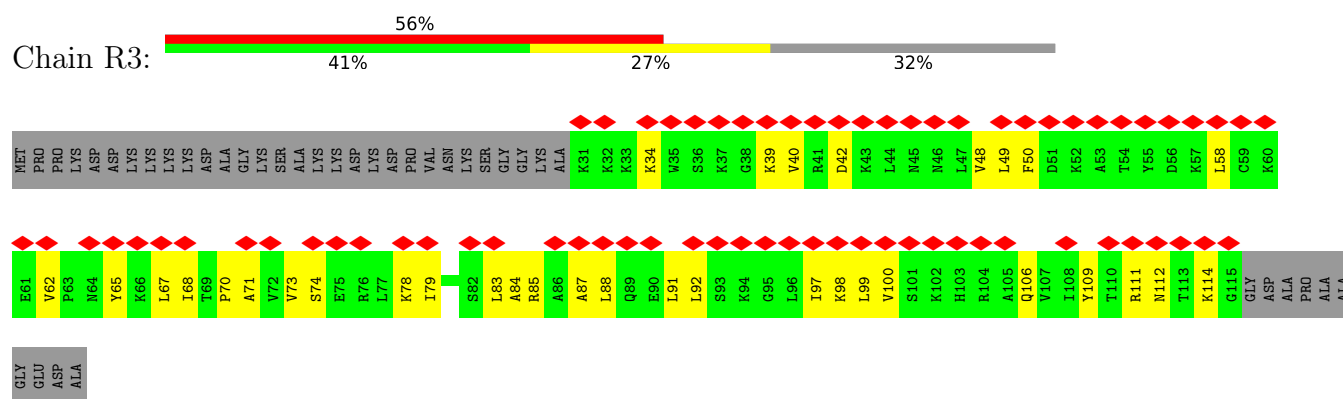
- Molecule 45: Small ribosomal subunit protein eS24



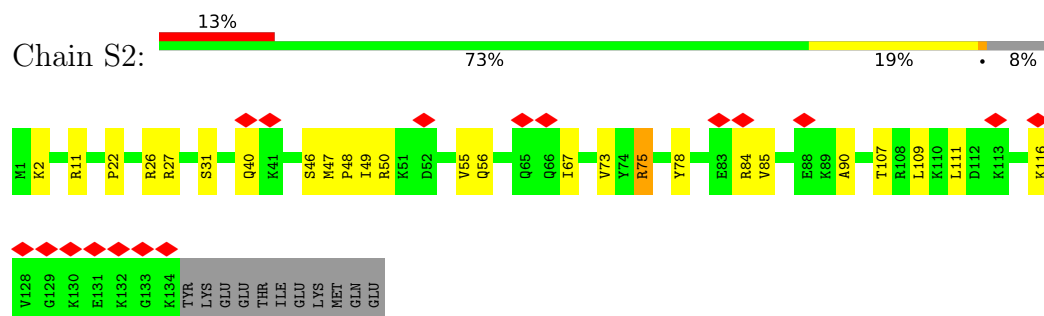
- Molecule 46: Large ribosomal subunit protein uL23



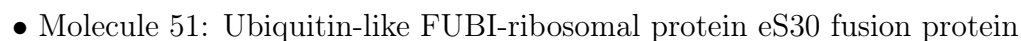
- Molecule 47: Small ribosomal subunit protein eS25

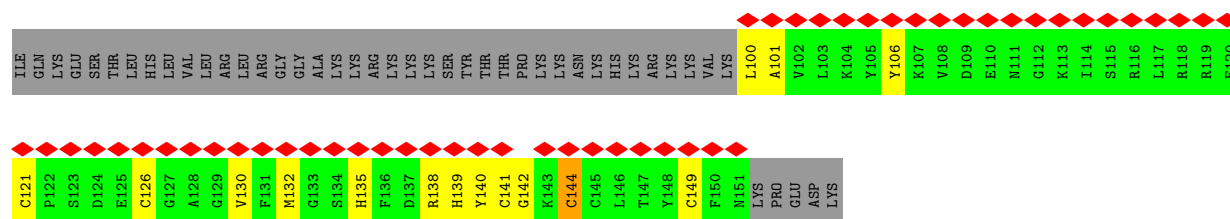


- Molecule 48: Large ribosomal subunit protein uL24

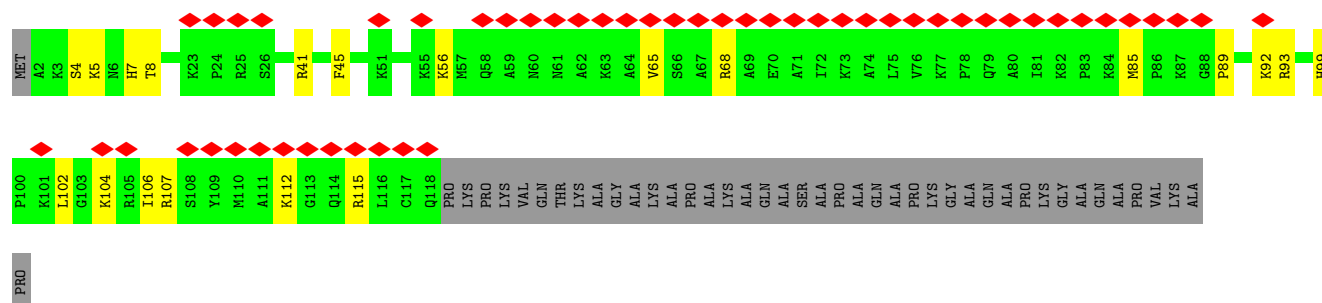


- Molecule 49: Small ribosomal subunit protein eS27

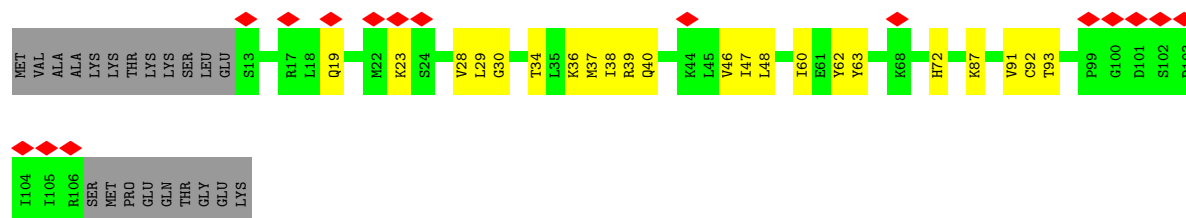




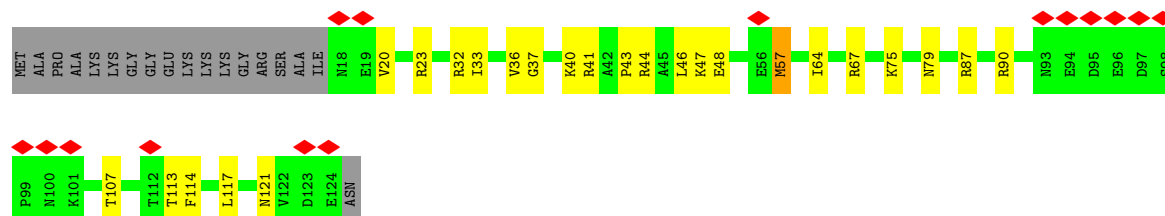
- Molecule 54: Large ribosomal subunit protein eL29



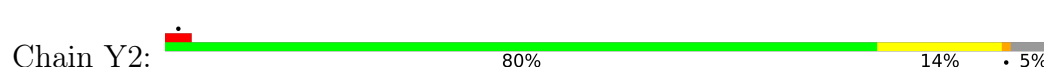
- Molecule 55: Large ribosomal subunit protein eL30




- Molecule 56: Large ribosomal subunit protein eL31

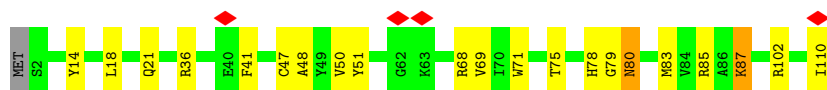


- Molecule 57: Large ribosomal subunit protein eL32




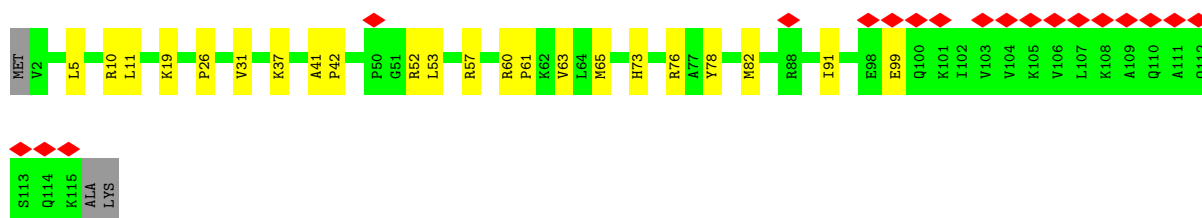
- Molecule 58: Large ribosomal subunit protein eL33

Chain Z2:  80% 17% ..




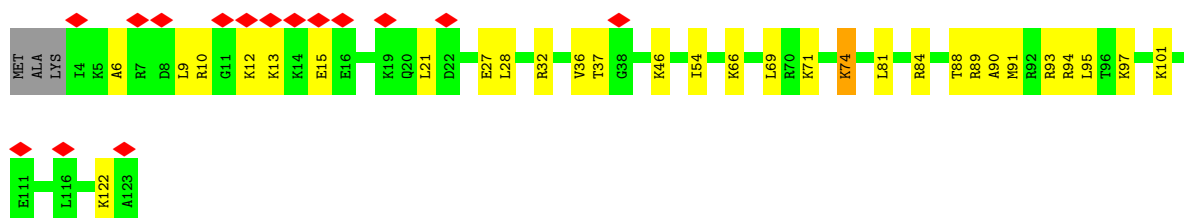
- Molecule 59: Large ribosomal subunit protein eL34

Chain a2:  16% 79% 19% .




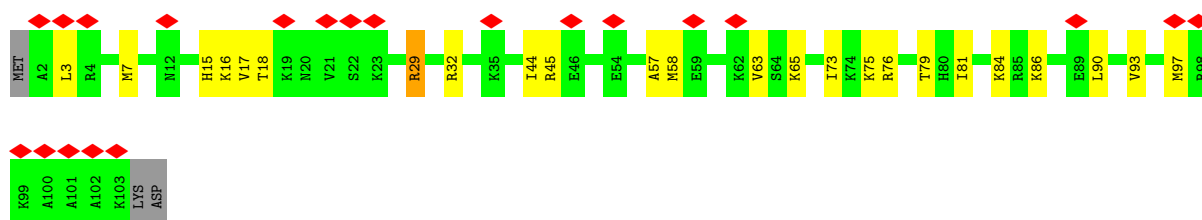
- Molecule 60: Large ribosomal subunit protein uL29

Chain b2:  12% 73% 24% ..




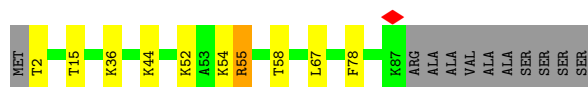
- Molecule 61: Large ribosomal subunit protein eL36

Chain c2:  20% 74% 22% ..



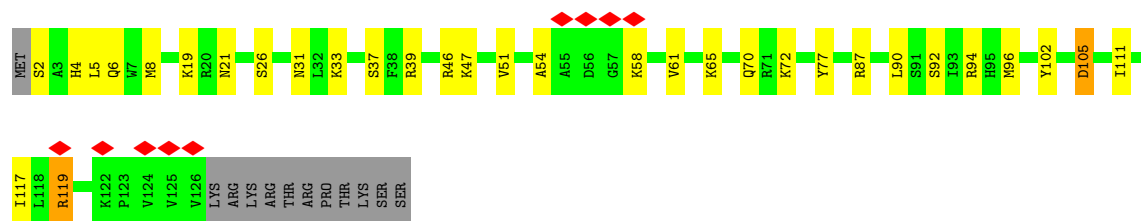
- Molecule 62: Large ribosomal subunit protein eL37

Chain d2:  78% 9% 11%

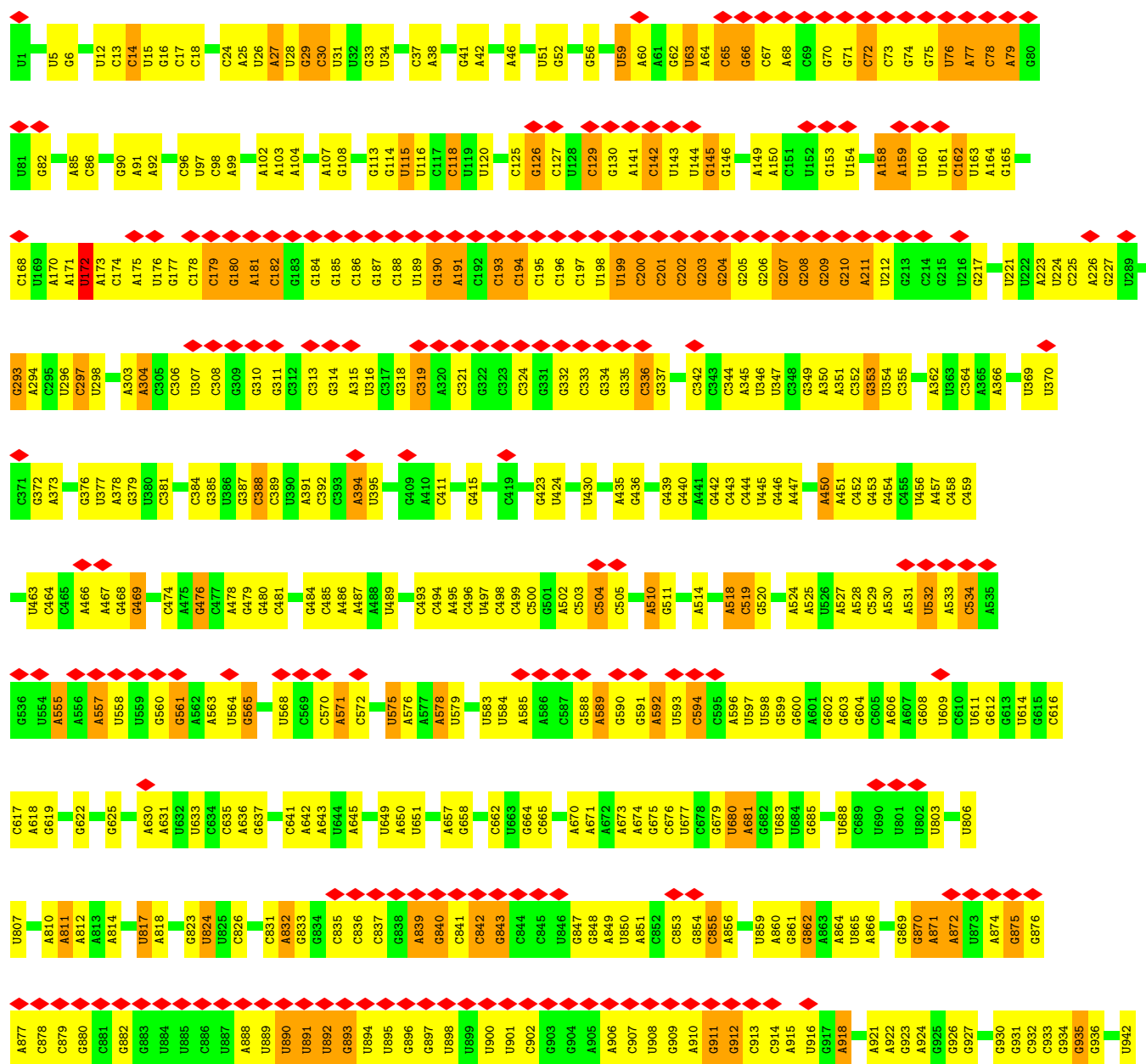


- Molecule 63: Large ribosomal subunit protein eL38

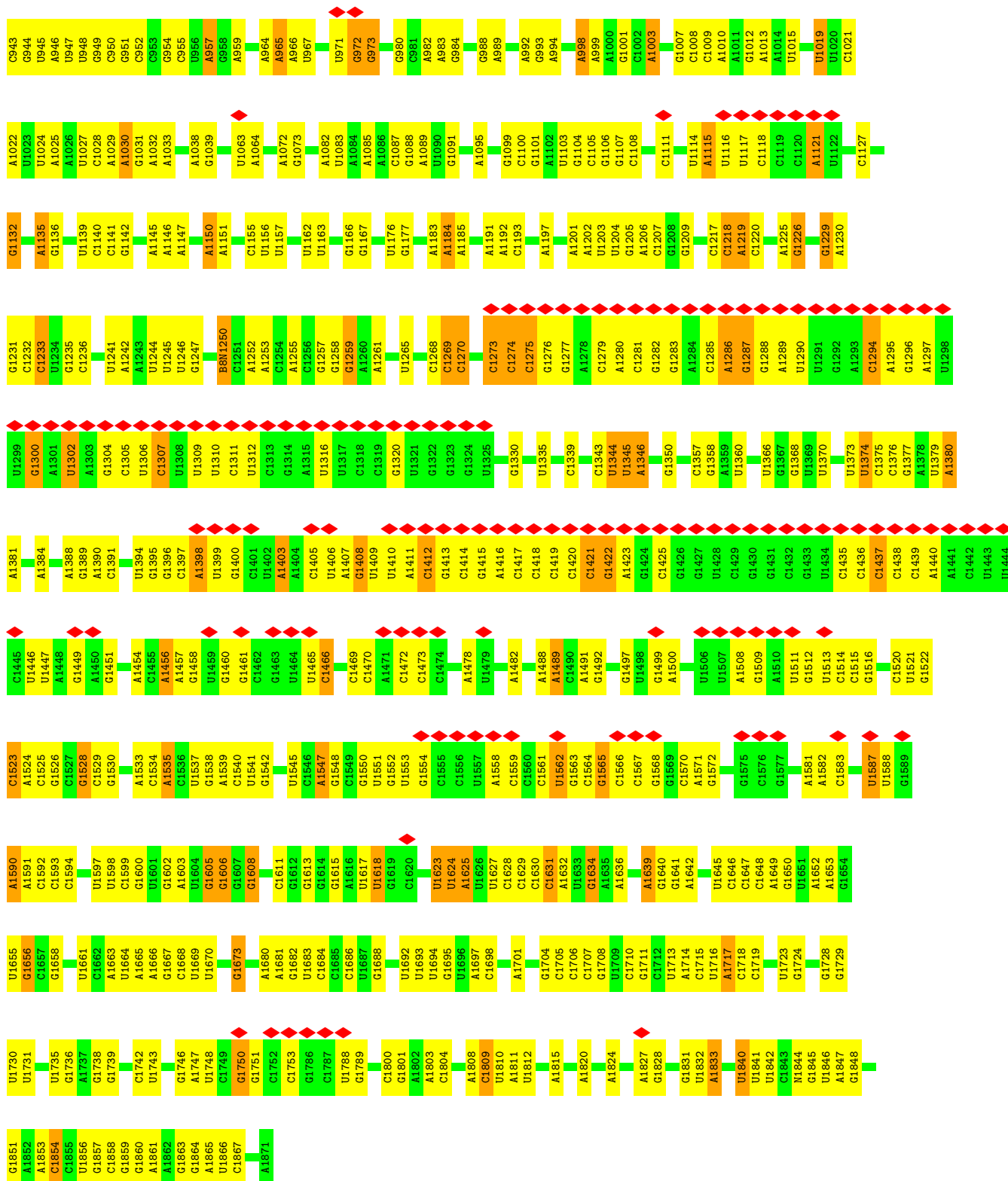




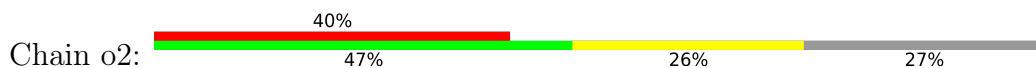
• Molecule 70: 18S ribosomal RNA

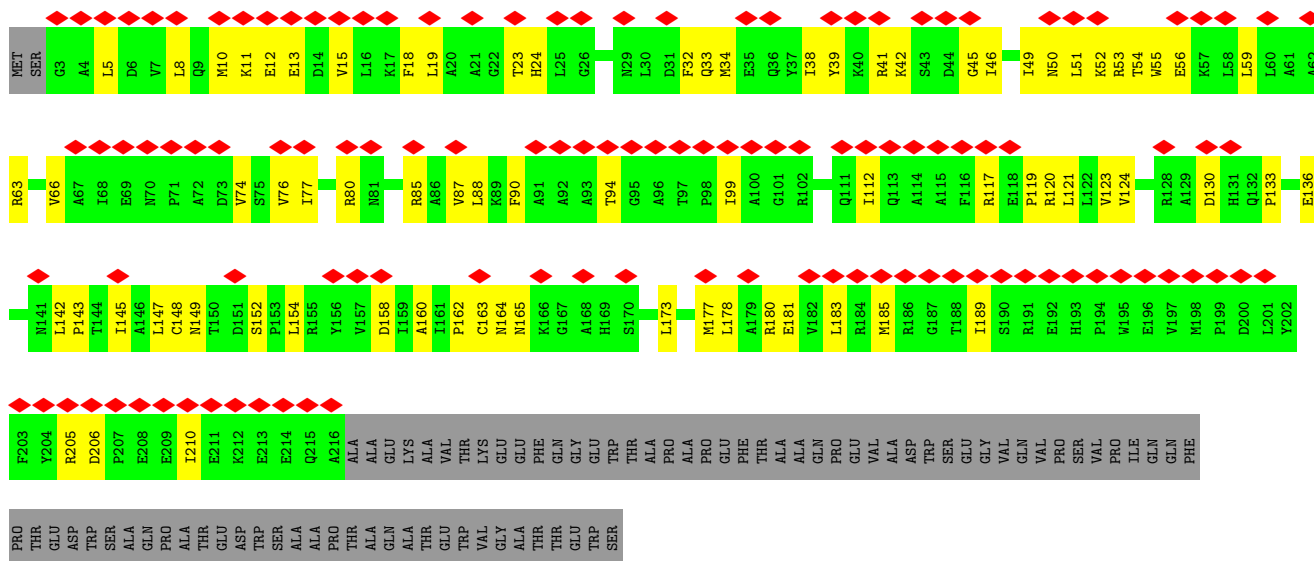




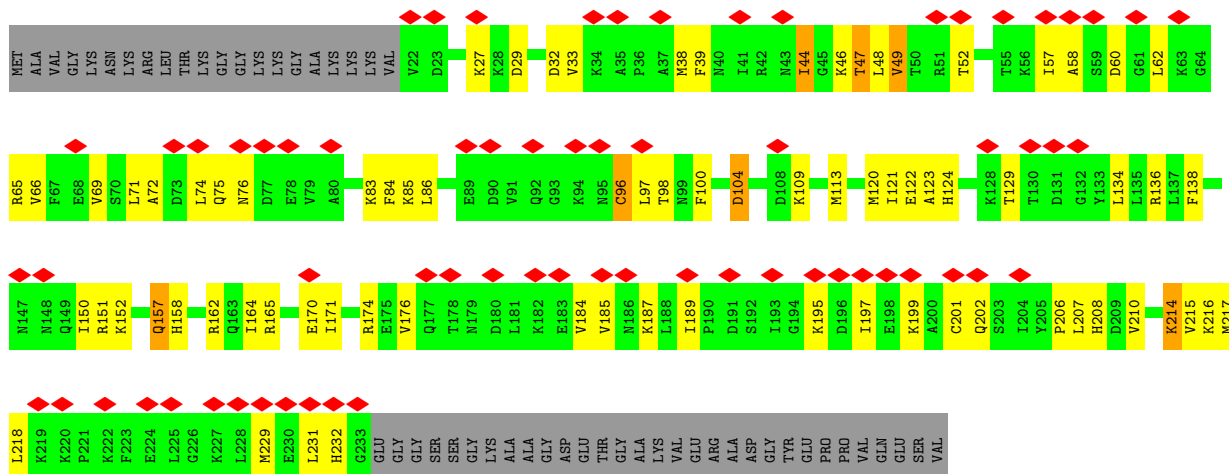


● Molecule 71: Small ribosomal subunit uS2

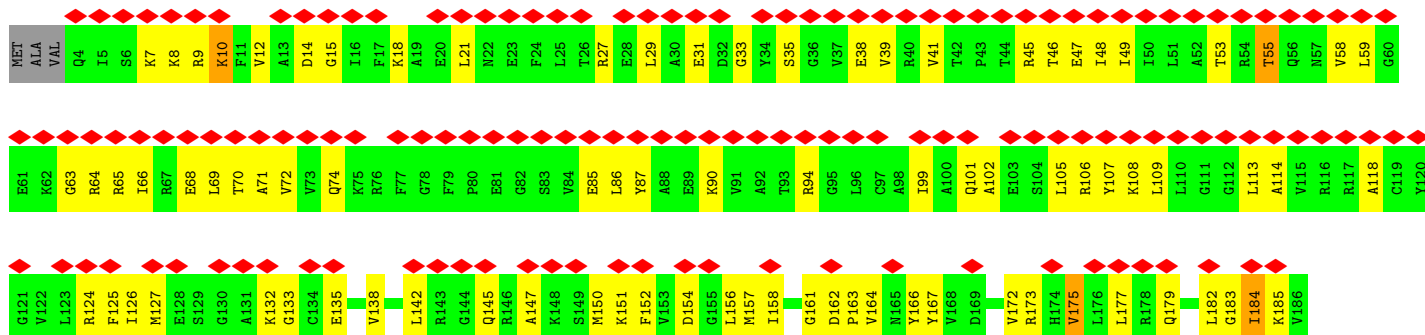
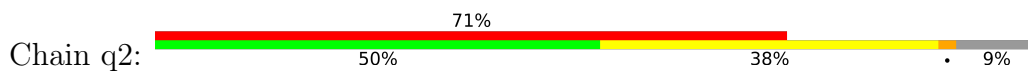




• Molecule 72: 40S ribosomal protein S3a

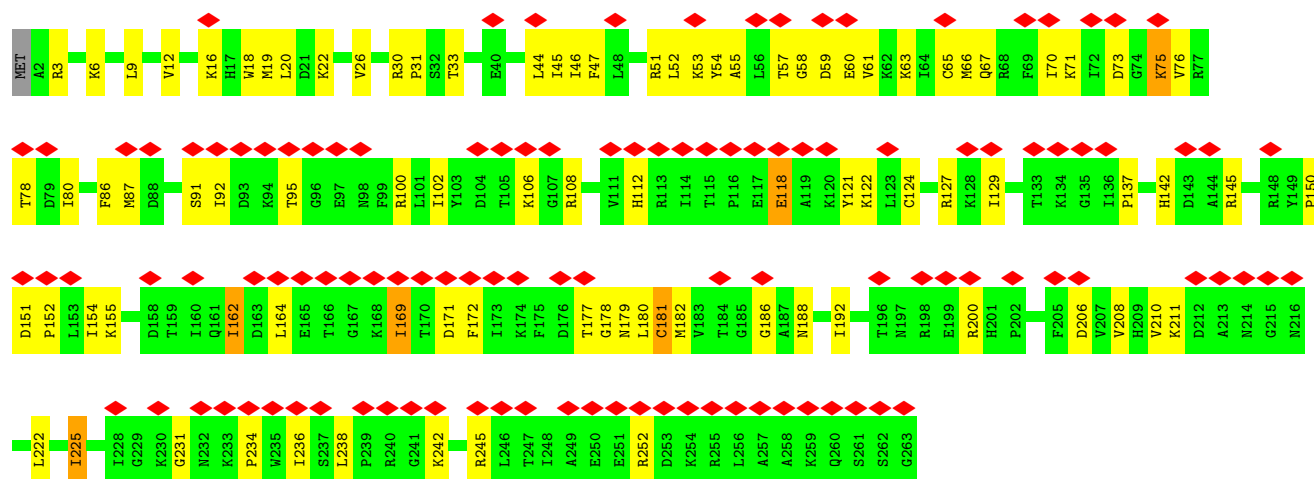


• Molecule 73: Small ribosomal subunit protein uS3

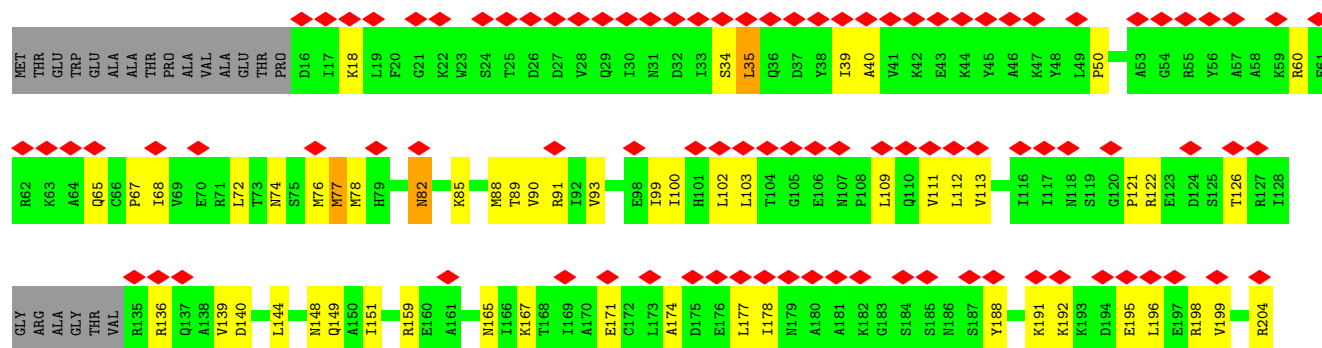




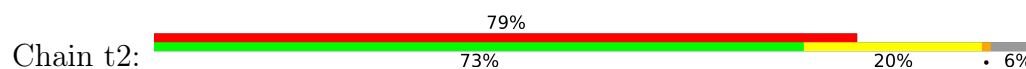
• Molecule 74: Small ribosomal subunit protein eS4

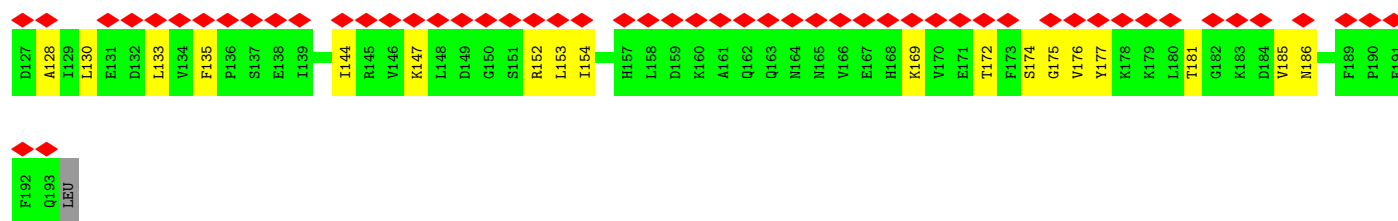


• Molecule 75: Small ribosomal subunit protein uS7

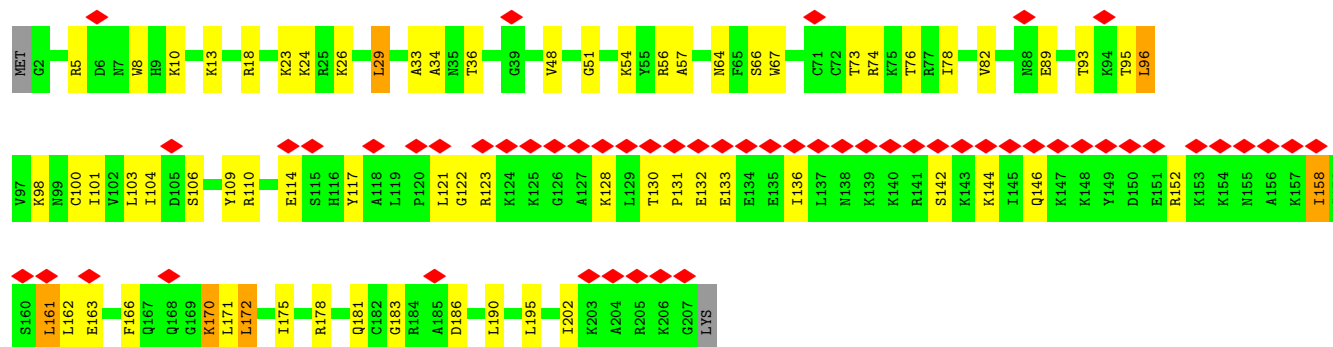


• Molecule 76: Small ribosomal subunit protein eS7

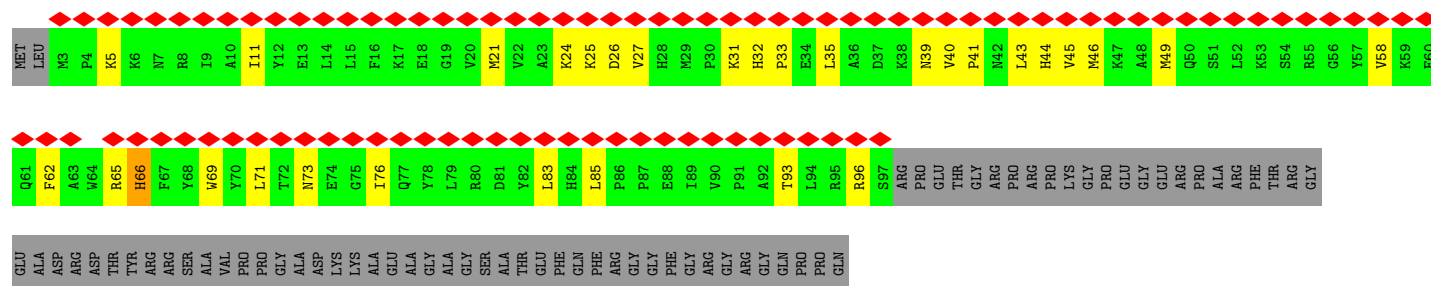




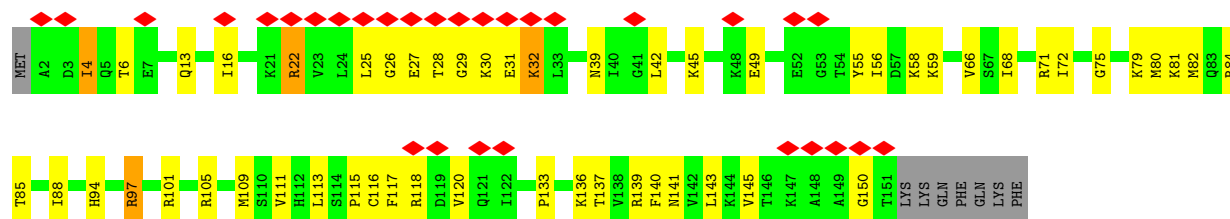
- Molecule 77: Small ribosomal subunit protein eS8



- Molecule 78: Small ribosomal subunit protein eS10

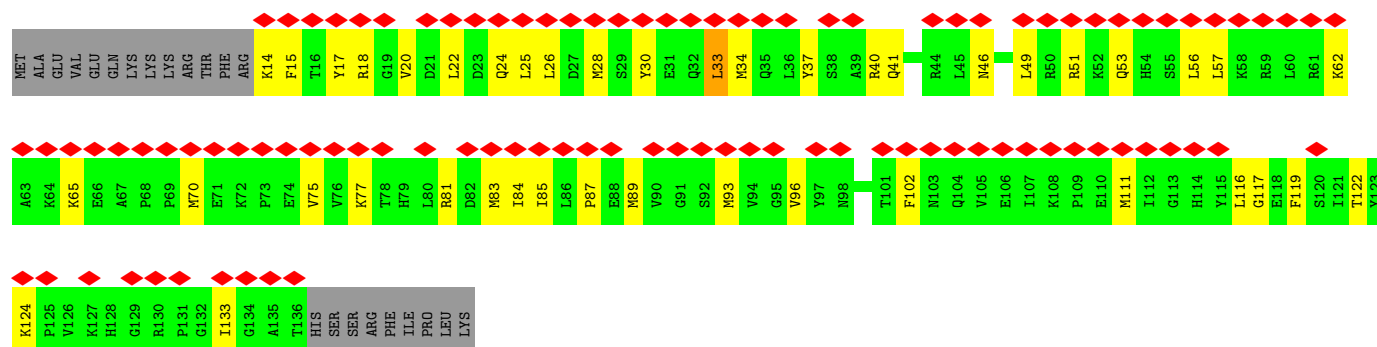


- Molecule 79: Small ribosomal subunit protein uS17

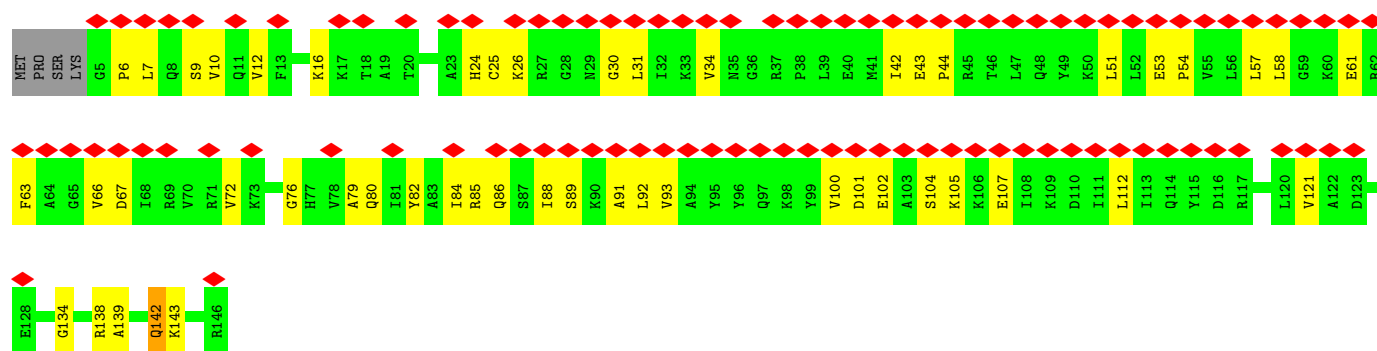


- Molecule 80: Small ribosomal subunit protein uS19

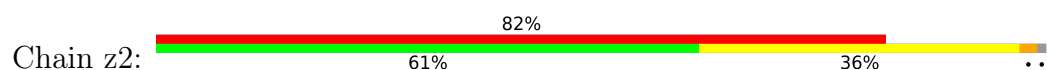




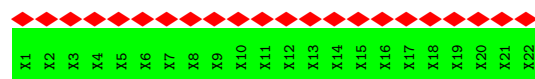
• Molecule 81: Small ribosomal subunit protein uS9



• Molecule 82: Small ribosomal subunit protein eS17



• Molecule 83: Nascent protein chain



## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	221320	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TALOS ARCTICA	Depositor
Voltage (kV)	200	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	45	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	2900	Depositor
Magnification	100000	Depositor
Image detector	GATAN K2 QUANTUM (4k x 4k)	Depositor
Maximum map value	0.403	Depositor
Minimum map value	-0.217	Depositor
Average map value	0.003	Depositor
Map value standard deviation	0.017	Depositor
Recommended contour level	0.0422	Depositor
Map size (Å)	315.12, 315.12, 315.12	wwPDB
Map dimensions	312, 312, 312	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.01, 1.01, 1.01	Depositor

## 5 Model quality ⓘ

### 5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: ZN, 2MG, OMG, 1MA, OMC, MG, A2M, 4AC, 5MC, B8T, UR3, PSU, OMU, B8N

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	A1	0.21	0/1888	0.38	0/2516
2	A2	0.20	0/84889	0.30	0/132400
3	A3	0.18	0/1175	0.46	0/1575
4	B1	0.18	0/1847	0.39	0/2486
5	B2	0.18	0/2836	0.27	0/4421
6	B3	0.26	0/1122	0.49	0/1503
7	Bv	0.13	0/1813	0.29	0/2823
7	n2	0.12	0/1813	0.29	0/2823
8	Bx	0.13	0/219	0.31	0/336
9	C1	0.18	0/1537	0.38	0/2065
10	C2	0.19	0/3675	0.29	0/5725
11	C3	0.17	0/818	0.41	0/1099
12	D1	0.17	0/1694	0.33	0/2261
13	D2	0.22	0/1959	0.38	0/2627
14	D3	0.18	0/645	0.36	0/863
15	E1	0.18	0/1420	0.45	0/1899
16	E2	0.21	0/3305	0.42	0/4422
17	E3	0.18	0/1097	0.40	0/1464
18	F1	0.18	0/1674	0.38	0/2241
19	F2	0.20	0/2921	0.37	0/3921
20	F3	0.19	0/805	0.42	0/1079
21	G1	0.19	0/1165	0.37	0/1558
22	G2	0.17	0/2435	0.32	0/3260
23	G3	0.17	0/490	0.44	0/656
24	H1	0.22	0/1746	0.37	0/2338
25	H2	0.16	0/1822	0.35	0/2443
26	H3	0.18	0/465	0.44	0/618
27	I2	0.21	0/1670	0.39	0/2232
28	I3	0.15	0/2493	0.42	0/3394
29	J2	0.19	0/1268	0.37	0/1700
30	J3	0.21	0/1737	0.48	0/2348
31	K2	0.20	0/1535	0.36	0/2048

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
32	K3	0.17	0/1863	0.42	0/2481
33	L1	0.15	0/1318	0.46	1/1767 (0.1%)
34	L2	0.18	0/1515	0.29	0/2002
35	L3	0.19	0/1542	0.41	0/2058
36	M2	0.22	0/1490	0.39	0/2000
37	M3	0.13	0/962	0.34	0/1289
38	N2	0.19	0/1327	0.32	0/1771
39	N3	0.17	0/1232	0.37	0/1656
40	O2	0.15	0/839	0.36	0/1126
41	O3	0.21	0/1015	0.41	0/1361
42	P2	0.20	0/983	0.44	1/1319 (0.1%)
43	P3	0.21	0/1051	0.43	0/1406
44	Q2	0.18	0/532	0.33	0/708
45	Q3	0.20	0/1019	0.49	0/1354
46	R2	0.18	0/984	0.36	0/1323
47	R3	0.17	0/691	0.44	0/922
48	S2	0.17	0/1132	0.31	0/1504
49	S3	0.17	0/665	0.44	0/891
50	T2	0.21	0/1130	0.49	0/1507
51	T3	0.15	0/443	0.34	0/582
52	U2	0.21	0/1193	0.39	0/1593
53	U3	0.22	0/424	0.47	0/566
54	V2	0.15	0/963	0.32	0/1275
55	W2	0.20	0/742	0.41	0/996
56	X2	0.19	0/903	0.37	0/1216
57	Y2	0.19	0/1071	0.36	0/1429
58	Z2	0.27	0/895	0.49	2/1198 (0.2%)
59	a2	0.22	0/916	0.38	0/1221
60	b2	0.16	0/1009	0.36	0/1332
61	c2	0.16	0/843	0.32	0/1115
62	d2	0.21	0/720	0.44	0/952
63	e2	0.18	0/574	0.41	0/760
64	f2	0.23	0/454	0.32	0/599
65	g2	0.16	0/434	0.44	1/575 (0.2%)
66	h2	0.18	0/231	0.31	0/294
67	i2	0.19	0/855	0.42	0/1128
68	j2	0.23	0/703	0.45	0/935
69	k2	0.20	0/1016	0.39	0/1363
70	m2	0.20	0/38274	0.31	0/59646
71	o2	0.19	0/1731	0.44	1/2352 (0.0%)
72	p2	0.24	0/1749	0.55	0/2340
73	q2	0.20	0/1739	0.51	0/2342
74	r2	0.21	0/2118	0.49	0/2849



Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
75	s2	0.21	0/1477	0.41	0/1983
76	t2	0.18	0/1299	0.47	1/1767 (0.1%)
77	u2	0.20	0/1662	0.46	0/2228
78	v2	0.16	0/824	0.36	0/1112
79	w2	0.23	0/1241	0.46	0/1662
80	x2	0.16	0/1024	0.41	0/1369
81	y2	0.20	0/1146	0.44	0/1534
82	z2	0.16	0/1094	0.48	0/1469
All	All	0.20	0/227035	0.35	7/333371 (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
82	z2	0	1

There are no bond length outliers.

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
42	P2	92	ASP	N-CA-C	-5.68	104.56	113.02
71	o2	112	ILE	N-CA-C	-5.46	107.06	111.91
33	L1	108	ASP	CB-CA-C	-5.44	109.83	117.23
65	g2	108	VAL	N-CA-C	-5.40	107.59	112.12
76	t2	75	ILE	CA-CB-CG1	5.29	119.40	110.40
58	Z2	78	HIS	CA-C-N	-5.05	114.12	121.44
58	Z2	78	HIS	C-N-CA	-5.05	114.12	121.44

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
82	z2	115	SER	Peptide

## 5.2 Too-close contacts

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen

atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A1	1851	0	1988	53	0
2	A2	77547	0	39263	1013	0
3	A3	1157	0	1213	42	0
4	B1	1812	0	1947	46	0
5	B2	2538	0	1286	26	0
6	B3	1104	0	1139	39	0
7	Bv	1623	0	821	10	0
7	n2	1623	0	821	23	0
8	Bx	200	0	101	3	0
9	C1	1519	0	1603	27	0
10	C2	3315	0	1685	46	0
11	C3	808	0	878	21	0
12	D1	1656	0	1706	30	0
13	D2	1921	0	2022	33	0
14	D3	638	0	635	8	0
15	E1	1397	0	1425	33	0
16	E2	3238	0	3380	55	0
17	E3	1080	0	1147	31	0
18	F1	1643	0	1750	32	0
19	F2	2867	0	3040	43	0
20	F3	789	0	841	10	0
21	G1	1143	0	1219	24	0
22	G2	2389	0	2420	47	0
23	G3	488	0	514	14	0
24	H1	1701	0	1749	34	0
25	H2	1789	0	1932	25	0
26	H3	454	0	445	15	0
27	I2	1640	0	1792	40	0
28	I3	2436	0	2393	49	0
29	J2	1242	0	1274	16	0
30	J3	1700	0	1786	31	0
31	K2	1511	0	1636	25	0
32	K3	1840	0	1989	45	0
33	L1	1300	0	1375	43	0
34	L2	1499	0	1651	24	0
35	L3	1518	0	1632	37	0
36	M2	1450	0	1488	26	0
37	M3	952	0	993	19	0
38	N2	1299	0	1368	20	0
39	N3	1208	0	1294	18	0
40	O2	825	0	850	15	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
41	O3	1002	0	1023	34	0
42	P2	969	0	1031	16	0
43	P3	1034	0	1080	29	0
44	Q2	519	0	533	3	0
45	Q3	1002	0	1075	24	0
46	R2	967	0	1040	14	0
47	R3	683	0	761	28	0
48	S2	1115	0	1205	21	0
49	S3	651	0	672	15	0
50	T2	1107	0	1182	27	0
51	T3	438	0	484	11	0
52	U2	1164	0	1213	18	0
53	U3	415	0	393	12	0
54	V2	945	0	1037	16	0
55	W2	732	0	769	14	0
56	X2	888	0	930	15	0
57	Y2	1053	0	1147	18	0
58	Z2	876	0	912	15	0
59	a2	906	0	997	17	0
60	b2	1001	0	1138	27	0
61	c2	832	0	917	18	0
62	d2	705	0	737	9	0
63	e2	568	0	635	17	0
64	f2	444	0	483	6	0
65	g2	428	0	465	6	0
66	h2	230	0	276	8	0
67	i2	842	0	912	15	0
68	j2	693	0	738	10	0
69	k2	1001	0	1066	24	0
70	m2	34939	0	17651	562	0
71	o2	1694	0	1696	57	0
72	p2	1722	0	1794	51	0
73	q2	1711	0	1805	69	0
74	r2	2076	0	2177	65	0
75	s2	1457	0	1508	46	0
76	t2	1278	0	1207	33	0
77	u2	1633	0	1666	45	0
78	v2	800	0	818	21	0
79	w2	1220	0	1289	38	0
80	x2	1005	0	1053	28	0
81	y2	1128	0	1195	38	0
82	z2	1080	0	1135	38	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
83	A	110	0	32	0	0
84	A2	82	0	0	0	0
84	Bv	2	0	0	0	0
84	H1	1	0	0	0	0
84	J2	1	0	0	0	0
84	P2	1	0	0	0	0
84	d2	1	0	0	0	0
84	m2	34	0	0	0	0
85	F3	1	0	0	0	0
85	H3	1	0	0	0	0
85	d2	1	0	0	0	0
85	g2	1	0	0	0	0
85	i2	1	0	0	0	0
85	j2	1	0	0	0	0
86	B1	1	0	0	0	0
All	All	213902	0	158368	3337	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 9.

All (3337) 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)
22:G2:76:CYS:HB2	22:G2:112:ARG:HH22	1.26	1.01
2:A2:740:A:H62	2:A2:828:G:H21	1.01	0.96
22:G2:68:ARG:HG3	22:G2:73:MET:HE1	1.44	0.95
2:A2:1374:G:N2	2:A2:1379:C:O2	2.00	0.94
70:m2:70:G:H21	70:m2:79:A:H62	0.99	0.93
7:Bv:34:G:H1	8:Bx:48:U:H3	1.17	0.93
2:A2:928:G:H1	2:A2:1064:G:H22	1.11	0.93
7:n2:51:U:H3	7:n2:63:G:H1	1.13	0.90
13:D2:5:ILE:HG12	13:D2:8:GLN:HG3	1.55	0.88
11:C3:43:ALA:HB1	11:C3:50:VAL:HG21	1.54	0.88
28:I3:42:MET:HE3	28:I3:57:ARG:HD3	1.56	0.88
70:m2:70:G:N2	70:m2:79:A:H62	1.72	0.87
2:A2:740:A:H62	2:A2:828:G:N2	1.73	0.86
4:B1:87:LEU:HD21	4:B1:182:CYS:HB2	1.57	0.86
30:J3:142:LYS:HD2	30:J3:153:GLY:HA3	1.57	0.86
11:C3:26:SER:HB3	11:C3:32:LEU:HD13	1.58	0.85
70:m2:85:A:HO2'	70:m2:149:A:H8	1.24	0.85
2:A2:1259:C:H42	2:A2:1901:A:H61	1.24	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:3626:G:H4'	33:L1:168:ALA:HB2	1.59	0.85
17:E3:48:LYS:HE2	70:m2:485:C:H5''	1.56	0.85
70:m2:534:C:H42	70:m2:555:A:H61	1.25	0.84
28:I3:56:GLN:HG2	28:I3:57:ARG:HD2	1.57	0.84
2:A2:1742:G:H22	2:A2:4086:C:H5''	1.44	0.83
70:m2:153:G:H22	70:m2:165:G:H1	1.23	0.82
1:A1:173:ASN:HD21	2:A2:841:A:H62	1.27	0.82
2:A2:740:A:N6	2:A2:828:G:H21	1.77	0.82
70:m2:70:G:H21	70:m2:79:A:N6	1.77	0.82
10:C2:121:G:N2	10:C2:129:C:O2	2.12	0.80
70:m2:1652:A:H5''	81:y2:139:ALA:HB2	1.62	0.80
80:x2:41:GLN:HG3	80:x2:84:ILE:HD13	1.61	0.80
2:A2:1007:A:H2	2:A2:1017:G:H1	1.28	0.80
43:P3:105:THR:HG1	70:m2:864:A:H8	1.27	0.80
74:r2:137:PRO:HB2	74:r2:150:PRO:HD2	1.62	0.80
2:A2:4707:A:H4'	2:A2:4708:G:H5''	1.63	0.80
2:A2:4631:U:H4'	16:E2:175:GLN:HG3	1.64	0.80
33:L1:31:THR:HG21	33:L1:60:ARG:HD2	1.63	0.79
47:R3:74:SER:HA	47:R3:79:ILE:HG22	1.63	0.79
28:I3:39:THR:HG22	28:I3:60:ARG:HG2	1.65	0.79
2:A2:3580:C:H5''	67:i2:57:ARG:HH12	1.48	0.79
2:A2:938:U:H3	2:A2:1049:C:H42	1.30	0.78
2:A2:3348:A:H62	2:A2:3479:G:H21	1.26	0.78
70:m2:1571:A:H8	70:m2:1615:G:H21	1.31	0.78
70:m2:1230:A:H2'	70:m2:1231:G:C8	2.19	0.78
50:T2:89:ILE:HD11	50:T2:117:LYS:HB3	1.66	0.78
73:q2:94:ARG:HD3	73:q2:125:PHE:HZ	1.49	0.78
2:A2:927:C:H2'	2:A2:928:G:H8	1.50	0.77
15:E1:103:GLY:HA3	15:E1:157:ILE:HG13	1.67	0.77
70:m2:1681:A:H2'	75:s2:60:ARG:HD3	1.66	0.77
7:n2:35:A:H2'	7:n2:36:A:H8	1.50	0.77
46:R2:64:SER:HB2	60:b2:69:LEU:HD13	1.66	0.77
23:G3:18:LEU:HD11	23:G3:43:ILE:HD12	1.67	0.76
55:W2:38:ILE:HG21	55:W2:63:TYR:HB3	1.66	0.76
2:A2:3621:A:H2'	2:A2:3698:A:H2'	1.67	0.76
70:m2:971:U:H4'	70:m2:972:G:C8	2.21	0.76
70:m2:1219:A:H2'	70:m2:1220:C:H6	1.50	0.76
6:B3:31:PRO:HG3	6:B3:102:ARG:HG2	1.67	0.76
73:q2:213:PRO:HD3	82:z2:19:LYS:HZ2	1.49	0.76
71:o2:10:MET:HE1	71:o2:51:LEU:HB3	1.67	0.75
70:m2:511:OMG:H4'	74:r2:26:VAL:HG11	1.67	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
73:q2:49:ILE:HG22	73:q2:87:TYR:HB2	1.67	0.75
18:F1:87:HIS:HB3	18:F1:90:VAL:HG12	1.67	0.75
32:K3:49:VAL:HG13	32:K3:114:VAL:HG23	1.69	0.75
70:m2:1230:A:H2'	70:m2:1231:G:H8	1.48	0.75
77:u2:64:ASN:HB3	77:u2:186:ASP:HB3	1.69	0.75
2:A2:1011:U:H3'	2:A2:1012:C:H5''	1.69	0.75
16:E2:354:GLN:HG3	16:E2:359:ALA:HB1	1.67	0.75
70:m2:930:G:H1	70:m2:1015:U:H3	1.34	0.75
70:m2:680:U:H2'	70:m2:681:A:H8	1.52	0.75
2:A2:3593:C:H1'	24:H1:125:SER:HB3	1.68	0.74
77:u2:13:LYS:HE3	79:w2:137:THR:HG21	1.68	0.74
1:A1:127:VAL:HG13	1:A1:158:VAL:HG12	1.70	0.74
1:A1:102:ASN:HD22	38:N2:142:ARG:HA	1.53	0.74
2:A2:2213:C:H5''	24:H1:67:ARG:HD2	1.70	0.74
48:S2:111:LEU:HD13	48:S2:116:LYS:HE3	1.69	0.74
74:r2:87:MET:HE1	74:r2:236:ILE:HD13	1.69	0.74
76:t2:75:ILE:HD12	76:t2:75:ILE:O	1.88	0.73
17:E3:91:LEU:HD21	51:T3:9:ALA:HB1	1.70	0.73
70:m2:1116:U:H3	70:m2:1121:A:H61	1.36	0.73
2:A2:262:G:H2'	2:A2:263:G:C8	2.22	0.73
70:m2:385:G:H21	79:w2:133:PRO:HG2	1.53	0.73
31:K2:35:LEU:O	31:K2:39:THR:HB	1.88	0.73
54:V2:89:PRO:HB2	54:V2:92:LYS:HD3	1.70	0.73
2:A2:927:C:H2'	2:A2:928:G:C8	2.24	0.73
46:R2:82:THR:HG21	60:b2:37:THR:HG22	1.71	0.73
6:B3:76:THR:HB	6:B3:94:ARG:HG2	1.71	0.73
2:A2:3379:A:H2'	2:A2:3380:A2M:H8	1.71	0.73
82:z2:36:GLU:HB3	82:z2:47:ARG:HD2	1.71	0.73
2:A2:2224:C:H5	2:A2:2226:G:H1	1.34	0.72
32:K3:65:GLN:HE21	70:m2:1748:U:H4'	1.54	0.72
70:m2:859:U:H2'	70:m2:860:A:C8	2.24	0.72
2:A2:1354:U:H3	2:A2:1431:G:H1	1.36	0.72
2:A2:1899:G:H5'	2:A2:1900:G:H4'	1.70	0.72
56:X2:57:MET:HE3	56:X2:90:ARG:HB2	1.71	0.72
82:z2:80:ARG:HG2	82:z2:81:ARG:HH21	1.54	0.72
2:A2:2090:C:H2'	2:A2:2091:G:H8	1.54	0.72
2:A2:1672:C:H2'	2:A2:1673:A2M:H8	1.72	0.72
19:F2:324:ILE:HD13	19:F2:327:LYS:HE3	1.70	0.72
70:m2:1538:G:H2'	70:m2:1539:A:C8	2.24	0.72
2:A2:1146:C:H2'	2:A2:1147:A:H8	1.54	0.72
72:p2:120:MET:HE3	72:p2:122:GLU:HG3	1.72	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
73:q2:21:LEU:HD21	73:q2:48:ILE:HD13	1.71	0.72
36:M2:19:THR:HG22	36:M2:21:LYS:H	1.53	0.72
52:U2:110:LYS:HG3	52:U2:128:PHE:HB2	1.72	0.71
61:c2:58:MET:HE2	61:c2:90:LEU:HD22	1.71	0.71
64:f2:9:ILE:HD12	64:f2:51:LEU:HD22	1.70	0.71
2:A2:4421:G:H5'	27:I2:176:ARG:HD3	1.71	0.71
32:K3:53:SER:HB3	70:m2:165:G:H4'	1.72	0.71
2:A2:928:G:H1	2:A2:1064:G:N2	1.87	0.71
2:A2:3694:U:H5''	33:L1:101:LYS:HZ3	1.55	0.71
39:N3:45:LEU:HB3	39:N3:49:GLN:HG3	1.73	0.71
72:p2:176:VAL:HG13	72:p2:184:VAL:HG21	1.70	0.71
2:A2:2500:A:H2'	2:A2:2501:A:H8	1.55	0.70
73:q2:68:GLU:O	73:q2:72:VAL:HG23	1.90	0.70
18:F1:123:LYS:HG3	60:b2:122:LYS:HG2	1.72	0.70
72:p2:69:VAL:HG13	72:p2:74:LEU:HD11	1.72	0.70
70:m2:1012:G:H2'	70:m2:1013:A:H8	1.57	0.70
47:R3:58:LEU:HD12	47:R3:62:VAL:HG21	1.73	0.70
47:R3:58:LEU:HD21	47:R3:87:ALA:HB1	1.73	0.70
71:o2:50:ASN:HB3	71:o2:53:ARG:HG3	1.74	0.69
75:s2:126:THR:O	75:s2:136:ARG:HA	1.91	0.69
75:s2:35:LEU:HB3	75:s2:39:ILE:HD13	1.73	0.69
75:s2:78:MET:O	75:s2:82:ASN:ND2	2.24	0.69
26:H3:12:ARG:HG2	26:H3:18:SER:HB2	1.73	0.69
70:m2:1219:A:H2'	70:m2:1220:C:C6	2.27	0.69
2:A2:3903:A:H5''	15:E1:108:GLY:HA3	1.74	0.69
2:A2:4600:G:H2'	2:A2:4601:A:H8	1.57	0.69
2:A2:1670:A:H61	12:D1:115:MET:HE2	1.56	0.69
2:A2:2279:U:H3	2:A2:2284:A:H2	1.39	0.69
1:A1:102:ASN:ND2	38:N2:142:ARG:HA	2.07	0.69
6:B3:74:SER:O	6:B3:78:ILE:HG13	1.93	0.69
74:r2:73:ASP:HB3	74:r2:145:ARG:HH22	1.58	0.69
2:A2:2166:C:H2'	2:A2:2167:A:H8	1.58	0.69
2:A2:4563:C:H2'	2:A2:4564:G:H8	1.58	0.69
70:m2:1538:G:H2'	70:m2:1539:A:H8	1.56	0.68
73:q2:70:THR:HG22	73:q2:86:LEU:HD13	1.75	0.68
4:B1:138:ALA:HB2	4:B1:194:VAL:HG11	1.76	0.68
17:E3:9:THR:HG22	70:m2:683:U:H4'	1.74	0.68
42:P2:57:VAL:HG13	42:P2:84:GLN:HE21	1.59	0.68
3:A3:22:GLY:HA2	3:A3:56:ALA:HB3	1.74	0.68
17:E3:17:ARG:HA	17:E3:17:ARG:HH11	1.57	0.68
2:A2:3627:G:H1	2:A2:3700:A:H61	1.40	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:K3:49:VAL:HG12	32:K3:115:LYS:HB2	1.75	0.68
81:y2:42:ILE:HG22	81:y2:44:PRO:HD2	1.75	0.68
11:C3:62:ARG:HH21	70:m2:1550:G:H5'	1.57	0.68
72:p2:136:ARG:HB2	72:p2:218:LEU:HD11	1.75	0.68
14:D3:14:PRO:HG2	14:D3:23:ILE:HD12	1.76	0.67
30:J3:66:LEU:HD11	30:J3:81:ILE:HD13	1.76	0.67
2:A2:3602:G:H1	2:A2:3717:U:H3	1.42	0.67
71:o2:15:VAL:O	71:o2:19:LEU:HD22	1.94	0.67
71:o2:59:LEU:O	71:o2:63:ARG:HG3	1.94	0.67
73:q2:142:LEU:HD13	73:q2:150:MET:HG3	1.76	0.67
2:A2:2500:A:H2'	2:A2:2501:A:C8	2.29	0.67
70:m2:1658:G:H1	70:m2:1670:U:H3	1.43	0.67
77:u2:48:VAL:HG11	77:u2:54:LYS:HE2	1.76	0.67
2:A2:1744:A:H2'	2:A2:1745:A:C8	2.28	0.67
23:G3:14:VAL:HG12	23:G3:32:VAL:HG12	1.76	0.67
43:P3:18:GLU:HG3	43:P3:65:LEU:HD13	1.76	0.67
74:r2:44:LEU:HD11	74:r2:70:ILE:HG21	1.76	0.67
80:x2:56:LEU:HD23	80:x2:83:MET:HG2	1.75	0.67
47:R3:92:LEU:HD11	47:R3:99:LEU:HD12	1.75	0.67
25:H2:68:ALA:O	25:H2:72:ARG:HG3	1.95	0.67
71:o2:33:GLN:HB2	71:o2:154:LEU:HD13	1.77	0.67
36:M2:127:MET:HE2	38:N2:153:PRO:HB2	1.77	0.66
70:m2:853:C:H5''	70:m2:854:G:H5'	1.77	0.66
16:E2:80:GLU:HG3	16:E2:326:VAL:HG13	1.76	0.66
27:I2:141:LEU:O	27:I2:145:VAL:HG22	1.95	0.66
70:m2:1456:A:H5''	82:z2:3:ARG:HH11	1.61	0.66
30:J3:194:ARG:HD3	30:J3:196:ILE:HD11	1.76	0.66
81:y2:89:SER:O	81:y2:93:VAL:HG23	1.96	0.66
19:F2:10:VAL:HA	19:F2:153:VAL:HG23	1.75	0.66
19:F2:140:LYS:HE3	19:F2:245:HIS:HB2	1.78	0.66
60:b2:91:MET:HE1	62:d2:78:PHE:CD2	2.30	0.66
70:m2:930:G:H2'	70:m2:931:G:C8	2.30	0.66
2:A2:665:C:H2'	2:A2:666:G:H8	1.61	0.66
2:A2:2302:G:H1	2:A2:2527:C:H5	1.42	0.66
2:A2:3923:A:H62	2:A2:3983:G:N2	1.94	0.66
57:Y2:8:VAL:HG23	57:Y2:10:PRO:HD3	1.77	0.66
70:m2:153:G:N2	70:m2:165:G:H22	1.94	0.66
70:m2:589:A:H5'	70:m2:594:C:H41	1.61	0.66
2:A2:1377:A:H2'	2:A2:1378:A:O4'	1.95	0.66
55:W2:29:LEU:HD22	55:W2:91:VAL:HG21	1.77	0.66
10:C2:8:U:H2'	10:C2:9:A:H8	1.60	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:I2:81:TRP:HB2	27:I2:104:VAL:HG21	1.78	0.66
33:L1:196:LYS:HB2	33:L1:200:ASN:HB2	1.76	0.66
70:m2:680:U:H2'	70:m2:681:A:C8	2.31	0.66
75:s2:174:ALA:O	75:s2:178:ILE:HG13	1.96	0.66
2:A2:3373:A:H2'	2:A2:3374:A2M:H8	1.78	0.65
70:m2:529:C:H2'	70:m2:530:A:H8	1.61	0.65
70:m2:564:U:H2'	70:m2:565:G:C8	2.31	0.65
81:y2:31:LEU:HG	81:y2:67:ASP:HB2	1.78	0.65
70:m2:1858:C:H2'	70:m2:1859:G:C8	2.31	0.65
37:M3:59:PRO:HA	37:M3:62:VAL:HG22	1.78	0.65
2:A2:4413:G:H2'	2:A2:4414:A:H8	1.62	0.65
2:A2:4638:G:H2'	2:A2:4639:G:C8	2.32	0.65
41:O3:56:VAL:HG22	41:O3:81:VAL:HG23	1.77	0.65
73:q2:71:ALA:HB2	78:v2:96:ARG:HH22	1.60	0.65
77:u2:178:ARG:HG3	77:u2:181:GLN:HB2	1.78	0.65
2:A2:1214:G:H2'	2:A2:1215:G:H8	1.62	0.64
57:Y2:90:MET:HE2	57:Y2:90:MET:HA	1.76	0.64
70:m2:118:C:H1'	70:m2:447:A:C5	2.32	0.64
70:m2:876:G:H2'	70:m2:877:A:H8	1.63	0.64
82:z2:96:ILE:HD11	82:z2:117:LEU:HD12	1.78	0.64
2:A2:3625:G:H2'	2:A2:3626:G:C8	2.32	0.64
2:A2:4600:G:H2'	2:A2:4601:A:C8	2.32	0.64
10:C2:8:U:H2'	10:C2:9:A:C8	2.32	0.64
70:m2:318:G:H2'	70:m2:319:C:C6	2.32	0.64
21:G1:71:LYS:O	21:G1:75:LYS:HG3	1.98	0.64
70:m2:1738:G:H2'	70:m2:1739:G:H8	1.61	0.64
2:A2:1430:G:H1'	2:A2:2268:A:N6	2.13	0.64
2:A2:3912:U:H2'	2:A2:3913:C:C6	2.32	0.64
2:A2:3926:A:H2'	2:A2:3927:G:C8	2.31	0.64
2:A2:229:G:H5''	48:S2:11:ARG:HG3	1.78	0.64
18:F1:55:ILE:HD11	18:F1:155:MET:HE2	1.78	0.64
28:I3:176:VAL:HB	28:I3:186:THR:HG22	1.80	0.64
70:m2:604:G:H1	70:m2:622:G:H22	1.44	0.64
2:A2:1438:OMG:HM23	24:H1:81:TYR:HE2	1.62	0.64
35:L3:88:ASP:HB3	35:L3:91:LYS:HG3	1.80	0.64
2:A2:181:C:H2'	2:A2:182:G:C8	2.33	0.64
47:R3:106:GLN:HE22	75:s2:171:GLU:HG3	1.62	0.64
70:m2:859:U:H2'	70:m2:860:A:H8	1.61	0.64
75:s2:74:ASN:HA	75:s2:77:MET:HE3	1.79	0.64
70:m2:154:U:H3	70:m2:164:A:H61	1.46	0.64
70:m2:1590:A:H2'	70:m2:1591:A:C8	2.33	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A1:120:ILE:HD13	31:K2:3:VAL:HG13	1.78	0.64
43:P3:3:ARG:HH12	43:P3:28:ARG:HE	1.46	0.64
63:e2:23:VAL:HG22	63:e2:36:VAL:HG22	1.79	0.64
72:p2:104:ASP:HB3	72:p2:214:LYS:HZ2	1.63	0.64
2:A2:1894:G:H4'	2:A2:1895:G:H4'	1.79	0.64
2:A2:2366:A:H5'	2:A2:2443:G:H4'	1.79	0.64
6:B3:99:VAL:O	6:B3:103:VAL:HG23	1.98	0.64
38:N2:85:LEU:HD13	38:N2:87:LYS:HD3	1.78	0.64
40:O2:22:THR:HG22	40:O2:71:THR:HG22	1.80	0.64
22:G2:212:MET:HE1	22:G2:233:PRO:HG2	1.80	0.63
33:L1:149:ASP:HA	33:L1:152:LYS:HE2	1.81	0.63
70:m2:1279:C:H2'	70:m2:1280:A:H8	1.63	0.63
23:G3:59:LEU:HD11	75:s2:122:ARG:HB3	1.80	0.63
50:T2:33:THR:HG22	50:T2:35:ASP:H	1.62	0.63
2:A2:1894:G:H2'	2:A2:2017:G:C6	2.34	0.63
41:O3:134:PRO:HB3	70:m2:946:A:H5''	1.80	0.63
2:A2:3926:A:H2'	2:A2:3927:G:H8	1.62	0.63
3:A3:6:PRO:HD2	47:R3:49:LEU:HD13	1.80	0.63
2:A2:4351:U:H1'	2:A2:4352:A:H5''	1.80	0.63
59:a2:5:LEU:HD21	59:a2:31:VAL:HA	1.80	0.63
74:r2:180:LEU:HD21	74:r2:192:ILE:HG23	1.80	0.63
81:y2:100:VAL:HG12	81:y2:101:ASP:H	1.64	0.63
2:A2:1241:U:H5''	31:K2:42:THR:HB	1.81	0.63
2:A2:3743:G:H2'	2:A2:3744:G:C8	2.33	0.63
35:L3:111:GLN:HE21	35:L3:123:ILE:HG13	1.62	0.63
41:O3:136:PRO:HG3	41:O3:139:SER:HB2	1.80	0.63
72:p2:38:MET:SD	72:p2:231:LEU:HD11	2.39	0.63
2:A2:746:G:HO2'	2:A2:747:G:H8	1.46	0.63
25:H2:288:MET:HE3	25:H2:293:LEU:HD11	1.79	0.63
31:K2:90:VAL:HB	52:U2:80:THR:HG21	1.80	0.63
70:m2:850:U:H2'	70:m2:851:A:H8	1.62	0.63
70:m2:1713:U:H2'	70:m2:1714:A:H8	1.63	0.63
75:s2:77:MET:HG2	75:s2:89:THR:HG21	1.78	0.63
2:A2:248:C:H1'	48:S2:121:ARG:HH22	1.64	0.63
2:A2:3517:A:H2'	2:A2:3518:A:H8	1.64	0.63
2:A2:4263:A:H2	9:C1:120:GLU:HB3	1.62	0.63
10:C2:83:C:H42	48:S2:50:ARG:HH22	1.46	0.63
13:D2:24:LYS:HG3	13:D2:49:ILE:HD12	1.81	0.63
41:O3:66:ARG:HH21	70:m2:964:A:H4'	1.63	0.63
32:K3:20:ASP:HB2	32:K3:23:LYS:HD2	1.81	0.62
34:L2:70:ARG:HB3	34:L2:76:MET:HE2	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:m2:641:C:H2'	70:m2:642:A:H8	1.63	0.62
75:s2:144:LEU:HD13	75:s2:148:ASN:HD21	1.62	0.62
1:A1:71:LEU:O	1:A1:75:LYS:HG3	1.99	0.62
70:m2:933:C:H2'	70:m2:934:G:C8	2.35	0.62
70:m2:435:A:H2'	70:m2:436:G:C8	2.35	0.62
1:A1:115:ILE:HG21	1:A1:269:MET:HE1	1.81	0.62
2:A2:181:C:H2'	2:A2:182:G:H8	1.63	0.62
2:A2:1720:U:OP1	58:Z2:80:ASN:ND2	2.32	0.62
9:C1:10:VAL:HG22	9:C1:55:LEU:HB3	1.80	0.62
19:F2:163:LYS:HB2	19:F2:166:GLU:HG3	1.82	0.62
19:F2:209:ILE:HB	19:F2:229:LEU:HD13	1.80	0.62
73:q2:29:LEU:HD21	73:q2:69:LEU:HD21	1.80	0.62
2:A2:4391:C:H3'	2:A2:4393:A:H5''	1.80	0.62
2:A2:4413:G:H2'	2:A2:4414:A:C8	2.35	0.62
9:C1:125:ARG:HH11	9:C1:125:ARG:HG3	1.64	0.62
2:A2:268:G:H2'	2:A2:269:G:H8	1.65	0.62
2:A2:300:A:H2'	2:A2:301:G:H8	1.64	0.62
2:A2:1659:C:H2'	2:A2:1660:A:H8	1.63	0.62
24:H1:75:VAL:HG11	24:H1:80:THR:HG22	1.81	0.62
61:c2:63:VAL:HG23	61:c2:65:LYS:HG3	1.81	0.62
50:T2:99:ASP:HB3	50:T2:102:ARG:HH21	1.64	0.62
70:m2:369:U:H4'	70:m2:373:A:C8	2.34	0.62
70:m2:1012:G:H2'	70:m2:1013:A:C8	2.34	0.62
2:A2:768:G:H2'	2:A2:769:G:C8	2.35	0.62
2:A2:2106:OMC:HM22	19:F2:95:MET:HG3	1.82	0.62
10:C2:67:U:H2'	10:C2:68:G:H8	1.65	0.62
24:H1:185:GLY:HA3	24:H1:194:ARG:HH12	1.65	0.62
37:M3:58:GLU:HG3	37:M3:61:TYR:HD2	1.65	0.62
43:P3:7:LEU:HD13	43:P3:33:VAL:HG12	1.82	0.62
70:m2:1599:C:H4'	70:m2:1605:G:C6	2.34	0.62
2:A2:1766:A:H3'	2:A2:1767:G:H8	1.64	0.62
73:q2:64:ARG:HD2	78:v2:93:THR:HG22	1.80	0.62
77:u2:130:THR:HG23	77:u2:132:GLU:H	1.64	0.62
32:K3:51:ARG:HG2	32:K3:51:ARG:HH11	1.65	0.61
39:N3:133:ARG:HH12	79:w2:150:GLY:HA2	1.65	0.61
70:m2:1390:A:H61	73:q2:161:GLY:HA3	1.65	0.61
82:z2:11:LYS:O	82:z2:15:VAL:HG22	1.99	0.61
30:J3:66:LEU:O	30:J3:70:VAL:HG23	2.00	0.61
70:m2:622:G:H2'	70:m2:622:G:N3	2.15	0.61
71:o2:42:LYS:HD2	71:o2:46:ILE:HB	1.82	0.61
2:A2:280:G:H5''	24:H1:14:LYS:HE2	1.81	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:2499:A:H2'	2:A2:2500:A:C8	2.36	0.61
2:A2:3565:C:H5	2:A2:4048:A:H61	1.48	0.61
2:A2:4506:G:H2'	2:A2:4507:G:H8	1.65	0.61
4:B1:110:LYS:HD2	4:B1:113:ARG:HH12	1.65	0.61
32:K3:121:ILE:HD12	32:K3:122:PRO:HD2	1.83	0.61
54:V2:85:MET:HE3	54:V2:93:ARG:HG3	1.82	0.61
60:b2:97:LYS:O	60:b2:101:LYS:HG3	2.00	0.61
70:m2:447:A:H5''	77:u2:51:GLY:HA3	1.82	0.61
72:p2:171:ILE:HG12	72:p2:174:ARG:HH12	1.64	0.61
73:q2:132:LYS:HD3	73:q2:192:TRP:HD1	1.65	0.61
11:C3:58:THR:HG21	11:C3:83:ARG:HD2	1.81	0.61
45:Q3:47:MET:HG3	70:m2:839:A:N6	2.16	0.61
7:n2:68:C:H2'	7:n2:69:G:H8	1.64	0.61
6:B3:11:GLN:O	6:B3:15:VAL:HG23	2.00	0.61
12:D1:36:LEU:HD11	12:D1:69:ARG:HH11	1.64	0.61
45:Q3:104:ARG:HD2	70:m2:493:C:H3'	1.83	0.61
70:m2:983:A:H2'	70:m2:984:G:C8	2.35	0.61
4:B1:209:SER:HA	4:B1:212:LYS:HG3	1.82	0.61
30:J3:199:PRO:HG3	35:L3:58:ARG:HD2	1.83	0.61
32:K3:181:THR:HG22	32:K3:183:ARG:H	1.64	0.61
45:Q3:37:LYS:HA	45:Q3:40:ILE:HD12	1.82	0.61
67:i2:33:LEU:HA	67:i2:38:LYS:HG2	1.81	0.61
74:r2:45:ILE:HG12	74:r2:80:ILE:HG13	1.81	0.61
80:x2:53:GLN:O	80:x2:57:LEU:HD22	2.01	0.61
2:A2:3912:U:H2'	2:A2:3913:C:H6	1.65	0.61
70:m2:85:A:O2'	70:m2:149:A:H8	1.84	0.61
2:A2:1079:A:H2'	2:A2:1080:C:C6	2.36	0.61
2:A2:1146:C:H2'	2:A2:1147:A:C8	2.36	0.61
2:A2:3890:G:H2'	2:A2:3891:A:H8	1.66	0.61
2:A2:4603:C:H2'	2:A2:4604:C:C6	2.35	0.61
47:R3:100:VAL:HG21	75:s2:102:LEU:HD11	1.83	0.61
68:j2:47:MET:HE2	68:j2:57:CYS:HB2	1.83	0.61
70:m2:436:G:H5''	77:u2:23:LYS:HD2	1.83	0.61
7:n2:35:A:H2'	7:n2:36:A:C8	2.33	0.61
81:y2:82:TYR:HA	81:y2:85:ARG:HG2	1.82	0.61
2:A2:2166:C:H2'	2:A2:2167:A:C8	2.35	0.60
2:A2:3894:U:H3	2:A2:3933:A:H2	1.47	0.60
9:C1:182:SER:HA	65:g2:85:LEU:HD11	1.83	0.60
71:o2:24:HIS:HB3	71:o2:51:LEU:HD21	1.82	0.60
2:A2:3392:A:H2'	2:A2:3393:A:C8	2.36	0.60
11:C3:80:PHE:HB3	26:H3:52:PHE:HB3	1.84	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:m2:641:C:H2'	70:m2:642:A:C8	2.36	0.60
2:A2:1482:A:H4'	2:A2:1498:G:N2	2.16	0.60
70:m2:950:C:H2'	70:m2:951:G:H8	1.67	0.60
82:z2:28:PHE:HA	82:z2:55:THR:HG21	1.83	0.60
2:A2:492:G:H22	2:A2:670:G:H1	1.48	0.60
2:A2:318:A:H2'	2:A2:319:A:H8	1.67	0.60
16:E2:90:VAL:HG22	16:E2:104:THR:HG23	1.84	0.60
35:L3:53:ILE:HG21	35:L3:81:LEU:HD11	1.84	0.60
72:p2:123:ALA:HB2	72:p2:165:ARG:HG3	1.84	0.60
2:A2:444:G:H2'	2:A2:445:U:C6	2.36	0.60
2:A2:518:C:H2'	2:A2:519:G:H8	1.66	0.60
9:C1:132:VAL:HG23	9:C1:154:VAL:HG22	1.83	0.60
43:P3:28:ARG:HB3	43:P3:29:PRO:HD3	1.84	0.60
70:m2:107:A:H2'	70:m2:108:G:C8	2.36	0.60
70:m2:208:G:H2'	70:m2:209:G:C8	2.36	0.60
2:A2:1670:A:N6	12:D1:115:MET:HE2	2.17	0.60
22:G2:204:VAL:O	22:G2:208:MET:HG3	2.02	0.60
2:A2:3411:G:H1	2:A2:3424:U:H3	1.48	0.60
17:E3:17:ARG:HA	17:E3:17:ARG:NH1	2.16	0.60
30:J3:187:ARG:HD3	30:J3:192:LEU:HD12	1.83	0.60
70:m2:163:U:H2'	70:m2:164:A:H8	1.66	0.60
75:s2:195:GLU:O	75:s2:199:VAL:HG23	2.01	0.60
76:t2:133:LEU:HD21	76:t2:176:VAL:HG11	1.84	0.60
82:z2:57:LEU:O	82:z2:61:ILE:HG23	2.02	0.60
2:A2:4023:G:H5'	7:n2:76:A:H62	1.67	0.60
16:E2:206:PRO:HG2	16:E2:209:GLN:HG3	1.83	0.60
62:d2:54:LYS:O	62:d2:58:THR:HB	2.02	0.60
70:m2:31:U:H3	70:m2:518:A:H2	1.49	0.60
70:m2:1856:U:H2'	70:m2:1857:G:H8	1.67	0.60
2:A2:433:A:C2	2:A2:3523:A:H4'	2.37	0.59
2:A2:3388:A:H2'	2:A2:3389:A:C8	2.37	0.59
2:A2:4700:C:H4'	2:A2:4701:G:H8	1.68	0.59
16:E2:57:VAL:HG22	16:E2:73:VAL:HG22	1.83	0.59
28:I3:67:SER:H	28:I3:82:SER:HA	1.67	0.59
63:e2:11:PHE:CE1	63:e2:45:LEU:HD22	2.37	0.59
77:u2:76:THR:HG21	77:u2:104:ILE:HD12	1.82	0.59
80:x2:93:MET:HA	80:x2:93:MET:HE3	1.83	0.59
81:y2:24:HIS:HE1	81:y2:26:LYS:HD3	1.67	0.59
2:A2:444:G:H2'	2:A2:445:U:H6	1.67	0.59
2:A2:2081:G:H5''	57:Y2:127:ALA:HB2	1.84	0.59
2:A2:2395:G:H2'	2:A2:2396:A:C8	2.36	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:G2:195:HIS:O	22:G2:199:ILE:HG13	2.01	0.59
30:J3:208:PRO:O	30:J3:212:LYS:HG2	2.02	0.59
2:A2:1120:C:H2'	2:A2:1121:A:H8	1.66	0.59
2:A2:1374:G:C2'	2:A2:1375:G:H5'	2.32	0.59
30:J3:88:ILE:HG21	30:J3:94:ILE:HD11	1.85	0.59
70:m2:842:C:H4'	70:m2:843:G:O5'	2.02	0.59
77:u2:161:LEU:H	77:u2:161:LEU:HD23	1.67	0.59
2:A2:2366:A:H2'	2:A2:2367:G:C8	2.37	0.59
15:E1:81:GLU:O	15:E1:85:LYS:HG3	2.02	0.59
70:m2:533:A:H2'	70:m2:534:C:O4'	2.02	0.59
2:A2:4189:C:H2'	2:A2:4190:G:H8	1.67	0.59
2:A2:4253:U:H2'	2:A2:4254:A:H8	1.66	0.59
72:p2:109:LYS:O	72:p2:113:MET:HG3	2.03	0.59
80:x2:85:ILE:HA	80:x2:89:MET:HE2	1.85	0.59
2:A2:2276:G:H2'	2:A2:2277:G:C8	2.37	0.59
2:A2:3348:A:H62	2:A2:3479:G:N2	1.99	0.59
18:F1:177:LYS:HB3	18:F1:180:ALA:HB3	1.84	0.59
28:I3:17:TRP:CE2	28:I3:303:THR:HG23	2.36	0.59
36:M2:30:MET:HE1	36:M2:47:PHE:HB2	1.85	0.59
39:N3:151:ALA:HB1	55:W2:19:GLN:HB2	1.84	0.59
60:b2:89:ARG:O	60:b2:93:ARG:HG2	2.03	0.59
69:k2:46:ARG:HG2	69:k2:46:ARG:HH11	1.65	0.59
70:m2:145:G:H1	70:m2:174:OMC:H5	1.51	0.59
70:m2:989:A:N6	72:p2:120:MET:HE1	2.17	0.59
76:t2:83:LEU:HD22	76:t2:92:VAL:HG11	1.85	0.59
2:A2:3388:A:H2'	2:A2:3389:A:H8	1.68	0.59
2:A2:3517:A:H2'	2:A2:3518:A:C8	2.38	0.59
2:A2:3713:U:H2'	2:A2:3715:G:C8	2.38	0.59
6:B3:110:LEU:HD12	6:B3:112:MET:HB2	1.84	0.59
45:Q3:41:ARG:HG2	45:Q3:55:ILE:HG22	1.85	0.59
2:A2:702:G:H3'	2:A2:703:U:H4'	1.84	0.59
4:B1:96:LEU:HD11	4:B1:189:ARG:HD2	1.85	0.59
43:P3:24:GLN:HB2	49:S3:7:LEU:HD12	1.84	0.59
72:p2:201:CYS:SG	72:p2:207:LEU:HG	2.43	0.59
2:A2:458:C:H2'	2:A2:459:C:H6	1.68	0.59
2:A2:1116:U:H4'	57:Y2:18:LYS:HA	1.84	0.59
3:A3:15:VAL:HG13	3:A3:68:ILE:HD11	1.83	0.59
6:B3:104:LEU:HD22	6:B3:121:ARG:HD2	1.85	0.59
41:O3:31:CYS:HB2	41:O3:93:LEU:HD13	1.84	0.59
70:m2:1116:U:H3	70:m2:1121:A:N6	2.00	0.59
71:o2:54:THR:HG22	71:o2:162:PRO:HG2	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
73:q2:113:LEU:HD12	73:q2:114:ALA:N	2.18	0.59
2:A2:1153:U:H2'	2:A2:1154:OMC:C6	2.37	0.59
2:A2:1390:G:O2'	2:A2:1425:G:H4'	2.02	0.59
2:A2:4563:C:H2'	2:A2:4564:G:C8	2.38	0.59
6:B3:39:LEU:H	6:B3:43:LYS:HZ1	1.49	0.59
10:C2:19:C:H2'	10:C2:20:A:C8	2.38	0.59
12:D1:43:VAL:HG11	12:D1:197:VAL:HG13	1.85	0.59
70:m2:642:A:H2'	70:m2:643:A:C8	2.38	0.59
81:y2:43:GLU:HB3	81:y2:44:PRO:HD3	1.85	0.59
2:A2:129:C:H2'	2:A2:130:G:H8	1.68	0.58
2:A2:1375:G:H1'	2:A2:1378:A:H62	1.68	0.58
2:A2:3320:G:H2'	2:A2:3321:G:H8	1.68	0.58
23:G3:55:VAL:HB	75:s2:34:SER:HA	1.84	0.58
24:H1:60:VAL:HG22	24:H1:134:LEU:HB2	1.84	0.58
57:Y2:119:ALA:HB2	69:k2:119:ARG:HH22	1.67	0.58
2:A2:1744:A:H2'	2:A2:1745:A:H8	1.69	0.58
2:A2:3758:G:H2'	2:A2:3759:G:H8	1.67	0.58
2:A2:3776:C:H5''	2:A2:3777:A:H5''	1.85	0.58
3:A3:16:LEU:HD21	3:A3:72:GLN:NE2	2.17	0.58
17:E3:52:LEU:HD11	17:E3:73:GLN:HB2	1.84	0.58
35:L3:38:ARG:HA	51:T3:31:ARG:HB2	1.85	0.58
37:M3:129:LYS:HD3	37:M3:132:LYS:HE2	1.84	0.58
70:m2:811:A:H2'	70:m2:812:A:O4'	2.04	0.58
73:q2:106:ARG:HG2	73:q2:175:VAL:HG22	1.84	0.58
16:E2:307:TYR:CD2	16:E2:366:LYS:HG2	2.38	0.58
47:R3:50:PHE:CZ	47:R3:58:LEU:HD22	2.38	0.58
70:m2:1141:C:H2'	70:m2:1142:G:O4'	2.04	0.58
77:u2:101:ILE:HD12	77:u2:190:LEU:HD21	1.83	0.58
2:A2:518:C:H2'	2:A2:519:G:C8	2.37	0.58
3:A3:34:LYS:HB2	3:A3:100:ALA:HA	1.84	0.58
12:D1:150:GLU:O	12:D1:154:ARG:HG3	2.02	0.58
25:H2:197:HIS:HB3	25:H2:200:PHE:HD2	1.66	0.58
39:N3:73:ARG:HD2	70:m2:918:A:C6	2.39	0.58
70:m2:1522:G:H5''	70:m2:1523:C:OP2	2.04	0.58
2:A2:1084:G:H1'	2:A2:1909:G:H21	1.69	0.58
2:A2:3409:G:H1	2:A2:3426:U:H3	1.52	0.58
2:A2:3891:A:H2'	2:A2:3892:G:C8	2.38	0.58
25:H2:265:LEU:HD12	25:H2:269:LYS:HE3	1.86	0.58
35:L3:85:GLY:HA3	35:L3:108:ARG:HD3	1.85	0.58
43:P3:105:THR:OG1	70:m2:864:A:H8	1.83	0.58
2:A2:3263:U:H2'	2:A2:3264:A:C8	2.38	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:E3:94:ILE:HD11	17:E3:100:VAL:HG11	1.86	0.58
70:m2:1146:A:H5'	70:m2:1357:C:H41	1.69	0.58
2:A2:1667:G:H1'	12:D1:115:MET:HE1	1.86	0.58
26:H3:32:ARG:HG2	70:m2:1661:U:OP1	2.02	0.58
28:I3:195:LEU:HA	28:I3:211:GLY:HA3	1.84	0.58
36:M2:41:LYS:HG2	36:M2:61:ILE:HG13	1.86	0.58
73:q2:105:LEU:HD23	73:q2:184:ILE:HG21	1.86	0.58
75:s2:100:ILE:HG21	75:s2:111:VAL:HG11	1.86	0.58
79:w2:27:GLU:HG2	79:w2:29:GLY:H	1.69	0.58
2:A2:3815:U:H5'	2:A2:3816:C:H5''	1.85	0.58
28:I3:32:LEU:HG	28:I3:42:MET:HB2	1.86	0.58
56:X2:32:ARG:HB3	56:X2:48:GLU:HG3	1.85	0.58
60:b2:91:MET:HG2	60:b2:94:ARG:NH1	2.19	0.58
70:m2:636:A:H2'	70:m2:637:G:H8	1.69	0.58
2:A2:718:A:H2'	2:A2:719:C:C6	2.38	0.58
15:E1:35:ARG:HD3	15:E1:122:SER:O	2.04	0.58
69:k2:46:ARG:HH12	69:k2:70:GLN:HG3	1.68	0.58
70:m2:1738:G:H2'	70:m2:1739:G:C8	2.38	0.58
76:t2:60:ILE:HD11	76:t2:92:VAL:HG12	1.84	0.58
27:I2:27:VAL:HG13	27:I2:98:ALA:HB1	1.86	0.57
70:m2:17:C:H2'	70:m2:18:C:C6	2.39	0.57
1:A1:177:TYR:CZ	19:F2:325:MET:HE1	2.40	0.57
2:A2:1475:C:H2'	2:A2:1476:C:C6	2.39	0.57
15:E1:93:GLU:OE2	15:E1:175:LEU:HD23	2.03	0.57
22:G2:272:SER:O	22:G2:276:LYS:HG2	2.05	0.57
32:K3:200:LYS:O	32:K3:204:GLU:HG2	2.04	0.57
36:M2:29:ARG:HB2	38:N2:148:PRO:HB2	1.85	0.57
70:m2:927:G:H1	70:m2:1019:U:H3	1.52	0.57
70:m2:944:G:H2'	70:m2:945:U:C6	2.39	0.57
71:o2:173:LEU:O	71:o2:177:MET:HG2	2.04	0.57
80:x2:30:TYR:O	80:x2:34:MET:HG3	2.04	0.57
17:E3:129:SER:HB2	70:m2:29:G:H4'	1.85	0.57
40:O2:100:LEU:HD23	40:O2:112:LEU:HD23	1.85	0.57
70:m2:948:U:H2'	70:m2:949:G:H8	1.69	0.57
73:q2:163:PRO:O	73:q2:167:TYR:HB2	2.04	0.57
74:r2:20:LEU:HD21	74:r2:46:ILE:HD12	1.85	0.57
1:A1:173:ASN:ND2	2:A2:841:A:H62	2.01	0.57
2:A2:2203:G:H2'	2:A2:2204:A:C8	2.39	0.57
5:B2:58:A:H2'	5:B2:59:G:H8	1.70	0.57
45:Q3:23:MET:HE1	45:Q3:75:ILE:HD11	1.86	0.57
49:S3:13:GLU:HA	49:S3:16:LYS:HD2	1.84	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:m2:29:G:H2'	70:m2:30:C:C6	2.40	0.57
70:m2:1460:G:H2'	70:m2:1461:G:C8	2.40	0.57
78:v2:24:LYS:HG3	78:v2:26:ASP:H	1.68	0.57
2:A2:10:A:H2'	2:A2:11:G:C8	2.39	0.57
70:m2:457:A:H2'	70:m2:458:C:H6	1.69	0.57
79:w2:32:LYS:HE3	79:w2:32:LYS:H	1.69	0.57
2:A2:153:G:H2'	2:A2:154:G:H8	1.70	0.57
2:A2:467:U:H2'	2:A2:468:U:C6	2.39	0.57
55:W2:38:ILE:HD11	55:W2:46:VAL:HG21	1.85	0.57
70:m2:457:A:H2'	70:m2:458:C:C6	2.40	0.57
70:m2:1847:A:H2'	70:m2:1848:G:C8	2.39	0.57
2:A2:744:C:H3'	2:A2:746:G:H5''	1.85	0.57
2:A2:1327:U:H2'	2:A2:1328:A:C8	2.40	0.57
30:J3:179:THR:HG22	30:J3:221:ASP:HB2	1.86	0.57
70:m2:1460:G:H2'	70:m2:1461:G:H8	1.70	0.57
2:A2:2281:C:OP2	34:L2:38:ARG:HG3	2.05	0.57
33:L1:196:LYS:HB3	33:L1:199:GLN:HB2	1.86	0.57
58:Z2:50:VAL:HG22	58:Z2:69:VAL:HG22	1.85	0.57
67:i2:67:VAL:HG11	67:i2:82:MET:HE3	1.87	0.57
70:m2:597:U:H2'	70:m2:598:U:C6	2.39	0.57
2:A2:724:U:H2'	2:A2:725:C:C6	2.40	0.57
2:A2:1253:U:H2'	2:A2:1254:C:H6	1.70	0.57
27:I2:181:ALA:O	27:I2:185:VAL:HG22	2.05	0.57
70:m2:186:C:H2'	70:m2:187:G:H8	1.70	0.57
70:m2:872:A:H62	70:m2:918:A:H5'	1.70	0.57
1:A1:178:LYS:HE2	1:A1:179:ARG:HH21	1.68	0.57
2:A2:163:A:H2'	2:A2:164:G:H8	1.68	0.57
2:A2:928:G:H22	2:A2:1064:G:N2	2.02	0.57
2:A2:2275:C:H2'	2:A2:2276:G:H8	1.70	0.57
2:A2:2451:A:H62	63:e2:35:LYS:NZ	2.03	0.57
2:A2:2558:U:H2'	2:A2:2559:OMC:H6	1.69	0.57
2:A2:4395:G:H2'	2:A2:4396:A:C8	2.39	0.57
3:A3:24:ARG:HB2	3:A3:29:ALA:HB2	1.85	0.57
14:D3:39:VAL:HG21	71:o2:8:LEU:HD11	1.87	0.57
32:K3:175:LYS:HG3	70:m2:78:C:H5''	1.87	0.57
2:A2:3566:C:H2'	2:A2:3567:C:C6	2.39	0.56
2:A2:4588:C:H4'	25:H2:161:THR:HG23	1.87	0.56
19:F2:339:THR:O	19:F2:343:GLN:HG3	2.04	0.56
21:G1:41:PRO:HB3	21:G1:70:GLN:HG2	1.87	0.56
66:h2:16:LYS:HZ3	70:m2:1820:A:H4'	1.68	0.56
70:m2:1409:U:H2'	70:m2:1410:U:C6	2.39	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:E2:162:ILE:HD11	16:E2:197:ALA:HB1	1.87	0.56
28:I3:152:SER:H	28:I3:169:GLY:HA2	1.71	0.56
34:L2:67:THR:O	34:L2:71:ARG:HG3	2.04	0.56
36:M2:93:MET:HE1	36:M2:117:HIS:CD2	2.40	0.56
70:m2:806:U:H2'	70:m2:807:U:C6	2.40	0.56
70:m2:998:A:H2'	70:m2:999:A:C8	2.41	0.56
2:A2:418:A:C2	10:C2:17:A:H1'	2.39	0.56
19:F2:209:ILE:HD13	19:F2:251:ILE:HB	1.88	0.56
25:H2:275:GLN:O	25:H2:279:ARG:HG3	2.04	0.56
26:H3:21:CYS:HB3	26:H3:26:ASN:H	1.70	0.56
29:J2:54:LYS:HA	29:J2:83:TRP:CD1	2.41	0.56
32:K3:44:GLU:CD	32:K3:44:GLU:H	2.13	0.56
35:L3:35:TYR:HD1	35:L3:112:THR:HG21	1.69	0.56
70:m2:1608:G:H22	70:m2:1634:G:H2'	1.70	0.56
70:m2:1808:A:H2'	70:m2:1809:C:C6	2.41	0.56
72:p2:164:ILE:HG13	72:p2:201:CYS:SG	2.45	0.56
73:q2:213:PRO:HD3	82:z2:19:LYS:NZ	2.19	0.56
2:A2:223:G:H4'	2:A2:225:G:N7	2.20	0.56
2:A2:3580:C:H5''	67:i2:57:ARG:NH1	2.19	0.56
20:F3:2:THR:HG23	70:m2:1201:A:H5''	1.86	0.56
26:H3:16:GLN:HA	26:H3:19:ARG:HH12	1.70	0.56
29:J2:41:ILE:HG13	29:J2:95:LEU:HD22	1.86	0.56
45:Q3:17:LEU:HD21	74:r2:92:ILE:HD12	1.87	0.56
72:p2:150:ILE:HG21	82:z2:129:LYS:HB3	1.86	0.56
74:r2:59:ASP:O	74:r2:63:LYS:HG2	2.05	0.56
74:r2:200:ARG:HA	74:r2:206:ASP:OD1	2.05	0.56
2:A2:114:G:H21	2:A2:276:C:H4'	1.71	0.56
2:A2:4244:C:H42	2:A2:4270:A2M:H62	1.53	0.56
30:J3:183:LYS:HD3	43:P3:95:PRO:HA	1.87	0.56
35:L3:125:HIS:O	35:L3:129:LEU:HG	2.06	0.56
70:m2:563:A:H2'	70:m2:564:U:C6	2.41	0.56
16:E2:285:TYR:HB2	16:E2:332:MET:HG2	1.88	0.56
79:w2:120:VAL:HG22	79:w2:145:VAL:HG11	1.85	0.56
2:A2:270:U:H2'	2:A2:271:C:H6	1.70	0.56
2:A2:456:C:H2'	2:A2:457:G:H8	1.71	0.56
2:A2:3933:A:O2'	2:A2:3934:A:H8	1.88	0.56
2:A2:4538:A:H5''	21:G1:125:THR:HG21	1.88	0.56
25:H2:202:ILE:HD13	58:Z2:110:ILE:HD11	1.87	0.56
29:J2:95:LEU:HD21	29:J2:114:ILE:HD11	1.88	0.56
40:O2:36:ALA:HB1	40:O2:65:ARG:HD2	1.88	0.56
2:A2:1023:C:H2'	2:A2:1024:C:C6	2.41	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:B1:104:PRO:HG3	4:B1:194:VAL:HG12	1.86	0.56
19:F2:182:LYS:HG2	19:F2:204:ARG:HD3	1.88	0.56
40:O2:63:ILE:HG12	40:O2:72:VAL:HG22	1.86	0.56
64:f2:16:LYS:HG3	64:f2:49:LEU:HD22	1.87	0.56
70:m2:486:A2M:H8	70:m2:486:A2M:O5'	2.06	0.56
70:m2:1191:A:H2'	70:m2:1192:A:C8	2.39	0.56
81:y2:82:TYR:O	81:y2:86:GLN:HG2	2.06	0.56
1:A1:110:LYS:HB2	1:A1:110:LYS:NZ	2.20	0.56
2:A2:262:G:H2'	2:A2:263:G:H8	1.69	0.56
2:A2:1122:C:H2'	2:A2:1123:C:C6	2.41	0.56
11:C3:40:ILE:HG22	11:C3:44:LYS:HE2	1.88	0.56
17:E3:68:LYS:HG3	17:E3:91:LEU:HD22	1.87	0.56
39:N3:94:LYS:HB2	39:N3:94:LYS:HZ3	1.71	0.56
70:m2:27:A2M:HM'1	70:m2:485:C:H1'	1.88	0.56
70:m2:993:G:C6	70:m2:1136:G:H4'	2.40	0.56
70:m2:1032:A:H2'	70:m2:1033:A2M:H8	1.87	0.56
71:o2:49:ILE:HG21	71:o2:162:PRO:HB2	1.87	0.56
72:p2:71:LEU:O	72:p2:75:GLN:HB2	2.06	0.56
75:s2:109:LEU:O	75:s2:113:VAL:HG13	2.05	0.56
16:E2:153:MET:HE2	16:E2:194:LEU:HD21	1.88	0.56
28:I3:27:PHE:HB2	28:I3:30:MET:HE2	1.88	0.56
49:S3:41:TYR:HD1	49:S3:42:LYS:HZ2	1.54	0.56
70:m2:118:C:H1'	70:m2:447:A:C4	2.40	0.56
70:m2:948:U:H2'	70:m2:949:G:C8	2.40	0.56
70:m2:1103:U:H2'	70:m2:1104:G:C8	2.41	0.56
70:m2:1858:C:H2'	70:m2:1859:G:H8	1.70	0.56
2:A2:1426:A:H5'	13:D2:183:GLY:HA2	1.88	0.55
2:A2:3373:A:H2'	2:A2:3374:A2M:C8	2.36	0.55
2:A2:3566:C:H2'	2:A2:3567:C:H6	1.71	0.55
15:E1:50:PHE:HB3	15:E1:67:LYS:HG2	1.88	0.55
32:K3:183:ARG:HD3	70:m2:318:G:OP2	2.06	0.55
35:L3:27:GLN:O	35:L3:30:LYS:HB2	2.07	0.55
67:i2:23:VAL:HG22	67:i2:70:LEU:HD22	1.86	0.55
71:o2:148:CYS:SG	71:o2:160:ALA:HB1	2.46	0.55
72:p2:57:ILE:HG23	72:p2:60:ASP:H	1.70	0.55
75:s2:68:ILE:HD11	75:s2:151:ILE:HD11	1.88	0.55
75:s2:82:ASN:HA	75:s2:85:LYS:HE2	1.86	0.55
2:A2:288:G:H2'	2:A2:289:C:C6	2.41	0.55
2:A2:1735:G:H2'	2:A2:1736:A:C8	2.41	0.55
2:A2:3271:G:H21	44:Q2:44:ARG:HH11	1.53	0.55
2:A2:4394:G:H2'	2:A2:4395:G:O4'	2.06	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:F3:70:LYS:HD3	70:m2:989:A:H4'	1.88	0.55
70:m2:636:A:H2'	70:m2:637:G:C8	2.40	0.55
70:m2:1282:G:H2'	70:m2:1283:G:H8	1.72	0.55
7:Bv:34:G:O6	8:Bx:48:U:O4	2.24	0.55
70:m2:909:G:H2'	70:m2:910:A:C8	2.41	0.55
70:m2:1139:U:H3	70:m2:1150:A:H2	1.54	0.55
71:o2:52:LYS:O	71:o2:56:GLU:HG2	2.07	0.55
80:x2:25:LEU:HB3	80:x2:87:PRO:HB3	1.89	0.55
2:A2:1115:C:H2'	2:A2:1117:A:C5	2.41	0.55
2:A2:1553:A:H2'	2:A2:1554:G:C8	2.41	0.55
2:A2:2599:A:O2'	2:A2:4283:G:H4'	2.07	0.55
22:G2:53:VAL:HG11	22:G2:159:VAL:HA	1.88	0.55
70:m2:158:A:H1'	70:m2:159:A:H5'	1.87	0.55
70:m2:1623:U:OP1	80:x2:40:ARG:HG2	2.07	0.55
70:m2:1705:OMC:H2'	70:m2:1706:C:O4'	2.07	0.55
73:q2:59:LEU:HB2	73:q2:63:GLY:HA2	1.88	0.55
1:A1:136:LEU:HD21	1:A1:143:THR:HG22	1.87	0.55
2:A2:247:G:N2	48:S2:121:ARG:HH21	2.03	0.55
2:A2:1417:G:H2'	2:A2:1418:G:C8	2.42	0.55
4:B1:162:ASP:HB2	4:B1:163:PRO:HD3	1.89	0.55
6:B3:71:GLY:HA3	70:m2:1564:C:H5'	1.88	0.55
10:C2:141:C:H2'	10:C2:142:U:C6	2.41	0.55
12:D1:153:ARG:HA	12:D1:156:LYS:HD3	1.87	0.55
64:f2:18:LYS:HG2	64:f2:21:ARG:NH2	2.21	0.55
70:m2:107:A:H2'	70:m2:108:G:H8	1.72	0.55
1:A1:77:LYS:HG3	19:F2:331:TYR:CZ	2.42	0.55
2:A2:247:G:H21	48:S2:121:ARG:HH21	1.55	0.55
2:A2:3738:C:H2'	2:A2:3739:G:H8	1.72	0.55
3:A3:111:LEU:O	3:A3:115:LYS:HG3	2.06	0.55
16:E2:92:TYR:HB2	16:E2:159:VAL:HB	1.89	0.55
19:F2:40:VAL:HG22	19:F2:115:VAL:HG11	1.88	0.55
70:m2:658:G:N2	70:m2:665:C:H5''	2.21	0.55
70:m2:679:G:H2'	70:m2:680:U:C6	2.42	0.55
2:A2:279:A:N1	2:A2:306:A:H5''	2.21	0.55
2:A2:1881:G:H2'	2:A2:1882:U:C6	2.42	0.55
2:A2:2167:A:H2'	2:A2:2168:U:C6	2.42	0.55
6:B3:18:LEU:HB2	6:B3:134:ILE:HD12	1.89	0.55
41:O3:63:LYS:H	41:O3:63:LYS:HD2	1.72	0.55
63:e2:34:PHE:HE1	63:e2:47:ILE:HD11	1.71	0.55
2:A2:175:C:H2'	2:A2:176:G:H8	1.72	0.55
2:A2:1648:G:H2'	2:A2:1649:C:C6	2.42	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:3720:U:H2'	2:A2:3721:U:C6	2.41	0.55
30:J3:178:HIS:CD2	30:J3:179:THR:HG23	2.42	0.55
52:U2:26:ARG:HG3	52:U2:26:ARG:HH11	1.72	0.55
52:U2:103:VAL:HG13	52:U2:108:TYR:HB2	1.89	0.55
56:X2:67:ARG:HH11	56:X2:67:ARG:HG3	1.72	0.55
70:m2:972:G:H1'	70:m2:973:G:O4'	2.07	0.55
70:m2:1713:U:H2'	70:m2:1714:A:C8	2.41	0.55
76:t2:144:ILE:HG12	76:t2:154:ILE:HG22	1.89	0.55
2:A2:1121:A:H2'	2:A2:1122:C:C6	2.42	0.55
2:A2:1347:A2M:HM'2	2:A2:1348:C:H6	1.71	0.55
19:F2:211:TYR:HE1	19:F2:229:LEU:HB3	1.72	0.55
27:I2:62:MET:HG2	27:I2:65:ASN:H	1.72	0.55
35:L3:93:LYS:HB3	35:L3:96:TYR:HD2	1.72	0.55
49:S3:70:LYS:HG3	70:m2:1108:C:H5''	1.89	0.55
53:U3:121:CYS:HB3	53:U3:132:MET:HE1	1.88	0.55
53:U3:140:TYR:CZ	53:U3:142:GLY:HA2	2.42	0.55
70:m2:1201:A:H2'	70:m2:1202:A:C8	2.41	0.55
70:m2:1205:G:H2'	70:m2:1206:A:C8	2.42	0.55
71:o2:117:ARG:HG3	71:o2:117:ARG:HH11	1.71	0.55
75:s2:50:PRO:HG2	75:s2:90:VAL:HG22	1.88	0.55
76:t2:61:ILE:HG22	76:t2:93:VAL:HG23	1.89	0.55
2:A2:1756:U:H2'	2:A2:1757:G:H8	1.72	0.55
2:A2:4189:C:H2'	2:A2:4190:G:C8	2.41	0.55
6:B3:133:ARG:HH21	6:B3:134:ILE:HG23	1.71	0.55
46:R2:83:THR:O	46:R2:87:MET:HG2	2.07	0.55
69:k2:46:ARG:HG2	69:k2:46:ARG:NH1	2.22	0.55
70:m2:65:C:H5'	70:m2:78:C:N4	2.22	0.55
79:w2:82:MET:HB2	79:w2:85:THR:HB	1.89	0.55
81:y2:53:GLU:O	81:y2:57:LEU:HG	2.07	0.55
2:A2:2370:U:H3	2:A2:2477:G:H1	1.54	0.54
2:A2:3736:G:C4	4:B1:51:LEU:HD21	2.42	0.54
13:D2:117:GLU:HG3	13:D2:163:ARG:O	2.08	0.54
21:G1:123:ILE:O	21:G1:127:VAL:HG23	2.07	0.54
33:L1:7:ARG:HB3	33:L1:180:VAL:HG11	1.88	0.54
46:R2:95:THR:HG22	46:R2:139:ARG:HB2	1.89	0.54
70:m2:178:C:H2'	70:m2:179:C:H6	1.72	0.54
70:m2:1246:U:H2'	70:m2:1247:G:C8	2.42	0.54
74:r2:188:ASN:HA	74:r2:245:ARG:NH2	2.22	0.54
81:y2:24:HIS:CE1	81:y2:26:LYS:HD3	2.42	0.54
2:A2:2276:G:H2'	2:A2:2277:G:H8	1.71	0.54
2:A2:3713:U:H2'	2:A2:3715:G:H8	1.72	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A3:80:PRO:HB2	3:A3:82:TRP:CD1	2.42	0.54
32:K3:188:LYS:HB2	32:K3:188:LYS:HZ3	1.72	0.54
43:P3:14:ILE:HG13	43:P3:27:ILE:HD11	1.89	0.54
70:m2:65:C:H5'	70:m2:78:C:H41	1.71	0.54
70:m2:1617:U:H2'	70:m2:1618:U:C6	2.42	0.54
75:s2:192:LYS:O	75:s2:196:LEU:HD23	2.07	0.54
17:E3:57:VAL:HG22	17:E3:67:ARG:HB2	1.89	0.54
56:X2:114:PHE:HA	56:X2:117:LEU:HD12	1.89	0.54
71:o2:119:PRO:HG2	71:o2:142:LEU:HD21	1.89	0.54
2:A2:1561:G:H2'	2:A2:1562:G:C8	2.43	0.54
3:A3:37:GLY:N	70:m2:1632:A:H5''	2.22	0.54
21:G1:130:LEU:HB3	27:I2:177:LEU:HD22	1.89	0.54
28:I3:125:ARG:NH1	82:z2:33:ARG:HG2	2.23	0.54
45:Q3:6:THR:HG23	45:Q3:28:LEU:HB3	1.89	0.54
65:g2:96:CYS:HA	65:g2:121:LEU:HD23	1.89	0.54
70:m2:16:G:H2'	70:m2:17:C:C6	2.42	0.54
70:m2:911:G:H2'	70:m2:912:G:C8	2.42	0.54
71:o2:210:ILE:HG21	82:z2:80:ARG:NH1	2.22	0.54
73:q2:177:LEU:HD23	73:q2:182:LEU:HD23	1.90	0.54
2:A2:318:A:H2'	2:A2:319:A:C8	2.43	0.54
2:A2:2631:G:C8	68:j2:16:THR:HG22	2.43	0.54
2:A2:4045:G:O4'	2:A2:4099:5MC:HM52	2.08	0.54
2:A2:4582:U:H4'	2:A2:4583:U:OP1	2.07	0.54
2:A2:4601:A:H2'	2:A2:4602:A:C8	2.43	0.54
72:p2:152:LYS:HB3	82:z2:132:ARG:HB3	1.88	0.54
73:q2:158:ILE:HG12	73:q2:164:VAL:HG22	1.88	0.54
74:r2:18:TRP:HH2	74:r2:31:PRO:HD3	1.72	0.54
76:t2:98:ARG:HH21	76:t2:128:ALA:HB1	1.73	0.54
2:A2:3890:G:H2'	2:A2:3891:A:C8	2.42	0.54
3:A3:37:GLY:H	70:m2:1632:A:H5''	1.72	0.54
11:C3:51:LYS:HB3	11:C3:90:ASP:HB3	1.89	0.54
47:R3:67:LEU:HB2	75:s2:103:LEU:HD21	1.89	0.54
70:m2:28:U:H2'	70:m2:29:G:H8	1.71	0.54
70:m2:680:U:O4	70:m2:1028:C:H2'	2.08	0.54
73:q2:55:THR:HG22	73:q2:59:LEU:HD21	1.89	0.54
2:A2:128:C:H2'	2:A2:129:C:C6	2.43	0.54
2:A2:1374:G:H2'	2:A2:1375:G:H5'	1.90	0.54
2:A2:1626:G:H4'	22:G2:44:TYR:CD1	2.42	0.54
2:A2:3268:C:H1'	2:A2:4662:A:C8	2.43	0.54
9:C1:107:GLU:HB2	9:C1:110:SER:HB2	1.89	0.54
17:E3:60:LYS:H	17:E3:114:ASP:HB2	1.73	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:F3:26:CYS:SG	20:F3:28:ARG:HB2	2.48	0.54
25:H2:172:LEU:HB3	25:H2:215:ILE:HD11	1.89	0.54
56:X2:20:VAL:HA	56:X2:90:ARG:O	2.08	0.54
70:m2:443:C:H2'	70:m2:444:C:C6	2.43	0.54
70:m2:1191:A:H2'	70:m2:1192:A:H8	1.73	0.54
70:m2:1409:U:H2'	70:m2:1410:U:H6	1.73	0.54
2:A2:665:C:H2'	2:A2:666:G:C8	2.43	0.54
2:A2:2320:A:H3'	2:A2:2321:G:H8	1.72	0.54
2:A2:3392:A:H2'	2:A2:3393:A:H8	1.72	0.54
2:A2:3415:A:H62	2:A2:3419:A:H2	1.54	0.54
2:A2:3624:U:H2'	2:A2:3625:G:C8	2.43	0.54
2:A2:4703:C:H2'	2:A2:4704:A:C8	2.43	0.54
5:B2:110:G:H2'	5:B2:111:C:C6	2.42	0.54
9:C1:137:SER:HB3	9:C1:143:GLU:HG2	1.90	0.54
21:G1:85:LYS:O	21:G1:89:THR:HG23	2.08	0.54
26:H3:16:GLN:HE22	70:m2:1265:U:H1'	1.72	0.54
31:K2:61:LEU:HD22	31:K2:82:VAL:HG21	1.90	0.54
36:M2:11:LYS:HD2	36:M2:29:ARG:HD3	1.89	0.54
49:S3:8:LEU:HD23	49:S3:8:LEU:H	1.73	0.54
70:m2:351:A:H2'	70:m2:352:C:C6	2.43	0.54
70:m2:1535:A:H2	70:m2:1538:G:N3	2.05	0.54
82:z2:60:ARG:HG2	82:z2:60:ARG:HH11	1.73	0.54
2:A2:424:U:H2'	2:A2:425:U:H6	1.73	0.54
2:A2:3738:C:H2'	2:A2:3739:G:C8	2.43	0.54
55:W2:36:LYS:O	55:W2:40:GLN:HG3	2.08	0.54
79:w2:111:VAL:HG12	79:w2:140:PHE:HB2	1.89	0.54
2:A2:10:A:H2'	2:A2:11:G:H8	1.73	0.54
2:A2:2498:A:H2'	2:A2:2499:A:C8	2.43	0.54
2:A2:3312:A:H2'	2:A2:3313:U:H6	1.73	0.54
4:B1:164:ILE:HG13	4:B1:168:VAL:HG13	1.89	0.54
37:M3:79:VAL:HG21	37:M3:85:LEU:HB2	1.90	0.54
50:T2:77:TYR:HD2	55:W2:39:ARG:HD3	1.72	0.54
70:m2:180:G:H3'	70:m2:181:A:C8	2.43	0.54
2:A2:1475:C:H2'	2:A2:1476:C:H6	1.72	0.53
2:A2:2317:G:H21	2:A2:2320:A:H8	1.55	0.53
2:A2:2320:A:H3'	2:A2:2321:G:C8	2.44	0.53
5:B2:58:A:H2'	5:B2:59:G:C8	2.42	0.53
11:C3:22:ILE:HD11	11:C3:91:LEU:HD12	1.90	0.53
28:I3:270:LEU:HD21	28:I3:310:TRP:CD2	2.43	0.53
70:m2:1007:G:H2'	70:m2:1008:C:H6	1.73	0.53
7:n2:69:G:H2'	7:n2:70:G:H8	1.74	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
79:w2:42:LEU:HD13	79:w2:72:ILE:HD11	1.91	0.53
82:z2:46:LEU:O	82:z2:50:ILE:HG13	2.08	0.53
2:A2:7:C:H2'	2:A2:8:U:C6	2.43	0.53
2:A2:1695:C:H1'	2:A2:1739:C:O2	2.08	0.53
2:A2:1831:A:H2'	2:A2:1832:A:C8	2.43	0.53
2:A2:4030:A:O2'	2:A2:4031:A:H2'	2.08	0.53
2:A2:4156:C:H2'	2:A2:4157:C:C6	2.43	0.53
2:A2:4294:U:H2'	2:A2:4295:G:H8	1.72	0.53
2:A2:4375:A:H2'	2:A2:4376:A:C8	2.43	0.53
29:J2:131:ARG:HG3	29:J2:137:ASN:HB2	1.90	0.53
31:K2:39:THR:HG22	31:K2:41:SER:H	1.72	0.53
33:L1:5:VAL:HG23	33:L1:8:ASP:H	1.73	0.53
60:b2:6:ALA:HB1	60:b2:10:ARG:NH1	2.24	0.53
70:m2:1547:A:H2'	70:m2:1548:G:C8	2.44	0.53
72:p2:85:LYS:NZ	72:p2:85:LYS:HB3	2.22	0.53
76:t2:53:VAL:HG21	76:t2:172:THR:HA	1.91	0.53
2:A2:270:U:H2'	2:A2:271:C:C6	2.44	0.53
2:A2:517:C:H2'	2:A2:518:C:C6	2.44	0.53
2:A2:1173:G:H4'	24:H1:203:TYR:HB2	1.90	0.53
2:A2:1527:U:H2'	2:A2:1528:U:H6	1.73	0.53
5:B2:4:U:H2'	5:B2:5:A:H8	1.73	0.53
11:C3:25:THR:HG22	11:C3:86:LYS:HG2	1.90	0.53
28:I3:14:HIS:CE1	28:I3:41:ILE:HB	2.43	0.53
70:m2:303:A:H2'	70:m2:304:A:O4'	2.08	0.53
70:m2:602:G:H2'	70:m2:603:OMG:H8	1.73	0.53
82:z2:17:ILE:HD11	82:z2:54:VAL:HG13	1.90	0.53
1:A1:128:ARG:O	1:A1:132:GLN:HG2	2.08	0.53
2:A2:4044:OMG:H2'	2:A2:4099:5MC:HM51	1.91	0.53
16:E2:291:TYR:HB3	16:E2:298:LEU:HD11	1.89	0.53
61:c2:79:THR:HG22	61:c2:81:ILE:H	1.74	0.53
70:m2:865:U:H2'	70:m2:866:A:H8	1.74	0.53
2:A2:1214:G:H2'	2:A2:1215:G:C8	2.42	0.53
2:A2:1511:C:H2'	2:A2:1512:U:C4	2.44	0.53
2:A2:4271:U:H2'	2:A2:4272:OMU:H6	1.90	0.53
3:A3:26:ILE:HD13	3:A3:56:ALA:HA	1.90	0.53
70:m2:1810:U:H2'	70:m2:1811:A:H8	1.73	0.53
73:q2:39:VAL:HG13	73:q2:48:ILE:HG22	1.90	0.53
77:u2:78:ILE:HD12	77:u2:96:LEU:HD21	1.90	0.53
77:u2:110:ARG:HD2	77:u2:122:GLY:HA3	1.90	0.53
2:A2:1274:C:H2'	2:A2:1275:A:H8	1.74	0.53
2:A2:1510:G:H2'	2:A2:1511:C:C4	2.44	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:3263:U:H2'	2:A2:3264:A:H8	1.72	0.53
2:A2:4613:A:H2'	2:A2:4614:A:C8	2.44	0.53
21:G1:126:GLU:HB3	27:I2:181:ALA:HB1	1.91	0.53
42:P2:13:LYS:HZ2	42:P2:124:GLU:HB3	1.73	0.53
45:Q3:43:LYS:O	45:Q3:47:MET:HG2	2.07	0.53
70:m2:186:C:H2'	70:m2:187:G:C8	2.43	0.53
70:m2:496:C:N4	70:m2:511:OMG:HN22	2.06	0.53
70:m2:604:G:H1	70:m2:622:G:N2	2.06	0.53
70:m2:931:G:H2'	70:m2:932:C:O4'	2.08	0.53
72:p2:202:GLN:HA	72:p2:206:PRO:HA	1.91	0.53
2:A2:1068:C:H2'	2:A2:1069:G:C8	2.43	0.53
2:A2:2050:C:H2'	2:A2:2051:G:H8	1.72	0.53
2:A2:4125:A:H5''	65:g2:95:ILE:HD12	1.89	0.53
13:D2:104:VAL:HG23	13:D2:146:THR:HG21	1.89	0.53
19:F2:106:LYS:HG2	19:F2:108:TRP:CZ2	2.43	0.53
27:I2:43:ILE:HD11	27:I2:138:LEU:HD13	1.90	0.53
28:I3:119:GLN:HB2	28:I3:131:LEU:HD11	1.90	0.53
35:L3:11:LYS:NZ	35:L3:11:LYS:HB3	2.24	0.53
70:m2:293:G:H1'	79:w2:42:LEU:H	1.74	0.53
70:m2:379:G:H5'	77:u2:98:LYS:HB3	1.90	0.53
71:o2:149:ASN:H	71:o2:152:SER:HB2	1.73	0.53
2:A2:129:C:H2'	2:A2:130:G:C8	2.44	0.53
2:A2:1121:A:H2'	2:A2:1122:C:H6	1.73	0.53
2:A2:2654:C:H2'	2:A2:2655:U:C6	2.44	0.53
2:A2:4613:A:H2'	2:A2:4614:A:H8	1.74	0.53
2:A2:4637:U:H2'	2:A2:4638:G:H8	1.74	0.53
4:B1:106:THR:HG22	4:B1:195:HIS:CE1	2.44	0.53
43:P3:52:ILE:HB	76:t2:144:ILE:HB	1.90	0.53
50:T2:64:LYS:O	50:T2:67:LYS:HG3	2.09	0.53
50:T2:77:TYR:CD2	55:W2:39:ARG:HD3	2.44	0.53
69:k2:47:LYS:HB3	69:k2:102:TYR:CZ	2.43	0.53
73:q2:194:PRO:HD2	73:q2:200:PRO:O	2.09	0.53
2:A2:1147:A:H2'	2:A2:1148:A:C8	2.43	0.53
6:B3:103:VAL:O	6:B3:107:LEU:HD23	2.09	0.53
6:B3:139:ALA:O	6:B3:143:LYS:HD3	2.08	0.53
19:F2:134:PRO:HA	19:F2:150:LEU:HD22	1.91	0.53
28:I3:302:TYR:HE2	28:I3:308:ARG:HB2	1.73	0.53
29:J2:111:SER:HB2	29:J2:154:GLU:HB2	1.91	0.53
70:m2:1282:G:H2'	70:m2:1283:G:C8	2.44	0.53
2:A2:1271:C:H5''	31:K2:69:LYS:HD2	1.90	0.53
4:B1:151:LYS:NZ	4:B1:151:LYS:HB3	2.24	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:C1:92:MET:HE2	9:C1:179:ILE:HG22	1.91	0.53
37:M3:33:ARG:HB3	70:m2:1286:A:C8	2.44	0.53
39:N3:55:ARG:HD3	70:m2:1019:U:H5'	1.91	0.53
70:m2:153:G:N2	70:m2:165:G:H1	2.01	0.53
73:q2:172:VAL:HG22	73:q2:185:LYS:HG2	1.89	0.53
2:A2:261:G:H2'	2:A2:262:G:C8	2.43	0.52
2:A2:453:G:H1	2:A2:1107:G:N2	2.07	0.52
2:A2:3529:G:H2'	2:A2:3530:G:C8	2.44	0.52
19:F2:170:LEU:HD23	19:F2:221:PHE:HZ	1.74	0.52
50:T2:41:ALA:HB2	50:T2:77:TYR:HE1	1.74	0.52
60:b2:28:LEU:HG	60:b2:32:ARG:NH1	2.23	0.52
70:m2:1279:C:H2'	70:m2:1280:A:C8	2.44	0.52
73:q2:113:LEU:HD12	73:q2:114:ALA:H	1.74	0.52
2:A2:406:C:H2'	2:A2:407:A:C8	2.43	0.52
2:A2:1087:G:H2'	2:A2:1088:A:H8	1.73	0.52
2:A2:4111:U:H2'	2:A2:4112:U:C6	2.44	0.52
23:G3:17:VAL:HG13	23:G3:30:VAL:HG12	1.91	0.52
28:I3:56:GLN:HG2	28:I3:57:ARG:CD	2.35	0.52
29:J2:124:LYS:HB3	29:J2:140:MET:HE3	1.91	0.52
39:N3:16:LEU:HB2	43:P3:57:ARG:HH21	1.73	0.52
39:N3:19:ARG:HH22	49:S3:83:GLN:HG2	1.74	0.52
50:T2:124:THR:HG23	50:T2:126:LYS:H	1.73	0.52
70:m2:75:G:H4'	70:m2:76:U:C5	2.44	0.52
70:m2:954:G:H2'	70:m2:955:C:C6	2.44	0.52
70:m2:1553:U:H5''	73:q2:9:ARG:HH22	1.73	0.52
75:s2:121:PRO:HG3	75:s2:149:GLN:HG2	1.91	0.52
78:v2:41:PRO:HG2	78:v2:44:HIS:CG	2.44	0.52
2:A2:850:G:H4'	58:Z2:75:THR:HG22	1.92	0.52
2:A2:1281:C:H2'	2:A2:1282:C:H6	1.75	0.52
2:A2:1523:G:H2'	2:A2:1524:C:C6	2.44	0.52
70:m2:206:G:H2'	70:m2:207:G:C8	2.45	0.52
70:m2:529:C:H2'	70:m2:530:A:C8	2.42	0.52
70:m2:835:C:H2'	70:m2:836:C:C6	2.43	0.52
77:u2:117:TYR:CD1	77:u2:152:ARG:HB3	2.44	0.52
2:A2:1170:U:H2'	2:A2:1171:C:C6	2.45	0.52
2:A2:1361:G:O2'	2:A2:2567:A:H8	1.92	0.52
2:A2:4041:C:H2'	2:A2:4042:A:H8	1.75	0.52
2:A2:4067:1MA:H2'	2:A2:4068:G:O4'	2.09	0.52
4:B1:190:LEU:O	4:B1:194:VAL:HG22	2.10	0.52
10:C2:67:U:H2'	10:C2:68:G:C8	2.44	0.52
32:K3:2:LYS:HB3	32:K3:15:LEU:HD11	1.90	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:L1:66:CYS:SG	33:L1:83:PRO:HB2	2.50	0.52
70:m2:12:U:H2'	70:m2:13:C:C6	2.44	0.52
70:m2:1716:U:H2'	70:m2:1717:A:C8	2.45	0.52
70:m2:1841:U:H2'	70:m2:1842:U:C6	2.45	0.52
72:p2:150:ILE:HD12	82:z2:132:ARG:HH21	1.74	0.52
72:p2:171:ILE:HG12	72:p2:174:ARG:NH1	2.24	0.52
79:w2:4:ILE:HG21	79:w2:56:ILE:HG12	1.92	0.52
2:A2:1523:G:H2'	2:A2:1524:C:H6	1.74	0.52
2:A2:1659:C:H2'	2:A2:1660:A:C8	2.43	0.52
2:A2:2651:G:H5''	34:L2:134:ASN:ND2	2.24	0.52
35:L3:76:ALA:O	35:L3:79:ARG:HG3	2.09	0.52
52:U2:134:GLU:O	52:U2:138:LYS:HG2	2.10	0.52
58:Z2:41:PHE:HE1	58:Z2:110:ILE:HD13	1.73	0.52
59:a2:42:PRO:HB2	59:a2:53:LEU:HD12	1.91	0.52
70:m2:496:C:H5''	74:r2:57:THR:HG21	1.90	0.52
2:A2:1327:U:H2'	2:A2:1328:A:H8	1.73	0.52
2:A2:1371:A:H2'	2:A2:1372:G:H8	1.74	0.52
2:A2:2482:C:H2'	2:A2:2483:U:C6	2.45	0.52
33:L1:31:THR:HG22	33:L1:171:HIS:HB3	1.92	0.52
41:O3:53:ILE:HG13	41:O3:90:ILE:HD12	1.91	0.52
41:O3:78:ALA:HB3	41:O3:118:ALA:HB3	1.91	0.52
43:P3:38:LEU:HD23	43:P3:41:MET:HE3	1.91	0.52
70:m2:589:A:C8	70:m2:592:A:H2'	2.44	0.52
70:m2:1100:C:H2'	70:m2:1101:G:C8	2.44	0.52
7:n2:59:U:H2'	7:n2:60:U:O4'	2.09	0.52
73:q2:132:LYS:HZ3	73:q2:192:TRP:HB3	1.74	0.52
2:A2:325:U:H2'	2:A2:326:C:C6	2.44	0.52
2:A2:1351:U:H2'	2:A2:1352:G:H8	1.74	0.52
2:A2:2276:G:H4'	59:a2:26:PRO:HD2	1.92	0.52
5:B2:92:C:H2'	5:B2:93:G:H8	1.74	0.52
16:E2:224:LYS:HG2	16:E2:340:THR:HG22	1.92	0.52
65:g2:94:MET:HG2	65:g2:105:PRO:HA	1.91	0.52
70:m2:149:A:H3'	70:m2:150:A:H8	1.74	0.52
70:m2:1344:U:H4'	70:m2:1345:U:H5'	1.91	0.52
70:m2:1847:A:H2'	70:m2:1848:G:H8	1.74	0.52
72:p2:97:LEU:HD13	72:p2:232:HIS:CE1	2.45	0.52
72:p2:216:LYS:HG3	72:p2:218:LEU:HD21	1.91	0.52
73:q2:14:ASP:O	73:q2:18:LYS:HG2	2.09	0.52
80:x2:20:VAL:HG12	80:x2:25:LEU:HG	1.90	0.52
2:A2:140:G:H2'	2:A2:141:C:C6	2.45	0.52
2:A2:1553:A:H2'	2:A2:1554:G:H8	1.75	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:3268:C:H1'	2:A2:4662:A:H8	1.74	0.52
2:A2:3297:U:H5	2:A2:3302:A:N7	2.06	0.52
2:A2:4509:U:H2'	2:A2:4510:C:C6	2.45	0.52
2:A2:4529:G:H2'	2:A2:4530:U:C6	2.45	0.52
13:D2:28:ARG:HB2	13:D2:123:ARG:HB2	1.92	0.52
18:F1:58:ILE:HD13	18:F1:157:ILE:HG12	1.92	0.52
39:N3:73:ARG:HG2	39:N3:73:ARG:HH11	1.75	0.52
57:Y2:89:LEU:HD23	57:Y2:90:MET:HE3	1.91	0.52
70:m2:28:U:H2'	70:m2:29:G:C8	2.45	0.52
70:m2:850:U:H2'	70:m2:851:A:C8	2.44	0.52
70:m2:1103:U:H2'	70:m2:1104:G:H8	1.74	0.52
74:r2:19:MET:SD	74:r2:108:ARG:HG2	2.50	0.52
74:r2:210:VAL:HG12	74:r2:211:LYS:H	1.75	0.52
80:x2:17:TYR:HB3	80:x2:25:LEU:HD11	1.92	0.52
1:A1:242:MET:HB3	1:A1:254:ASP:OD2	2.10	0.52
2:A2:870:G:C2	25:H2:130:ARG:HD2	2.45	0.52
2:A2:1508:U:H2'	2:A2:1509:C:C6	2.45	0.52
2:A2:3275:G:H4'	34:L2:79:GLY:O	2.10	0.52
7:Bv:20:U:H2'	7:Bv:21:A:H4'	1.91	0.52
32:K3:116:LYS:H	32:K3:116:LYS:HD3	1.74	0.52
43:P3:107:SER:HB2	70:m2:862:G:H21	1.74	0.52
54:V2:41:ARG:HH21	54:V2:45:PHE:HE2	1.57	0.52
57:Y2:85:LEU:HD11	57:Y2:115:ALA:HB2	1.92	0.52
70:m2:972:G:H4'	70:m2:973:G:OP1	2.09	0.52
74:r2:58:GLY:O	74:r2:61:VAL:HG12	2.10	0.52
2:A2:165:A:H2'	2:A2:166:C:C6	2.45	0.52
2:A2:935:C:H2'	2:A2:936:C:C6	2.44	0.52
2:A2:1458:C:H2'	2:A2:1459:A:C8	2.45	0.52
2:A2:2448:G:H2'	2:A2:2449:G:N2	2.24	0.52
2:A2:2493:C:H5''	13:D2:184:ARG:NH2	2.25	0.52
2:A2:4041:C:H2'	2:A2:4042:A:C8	2.45	0.52
6:B3:5:THR:HG23	6:B3:7:LYS:H	1.74	0.52
28:I3:79:LEU:HD11	28:I3:87:LEU:HD23	1.92	0.52
46:R2:71:LEU:HD21	46:R2:103:LYS:O	2.10	0.52
70:m2:129:C:H42	70:m2:181:A:H61	1.57	0.52
70:m2:878:C:H2'	70:m2:879:C:C6	2.45	0.52
70:m2:1203:U:H2'	70:m2:1204:U:C6	2.45	0.52
2:A2:1316:A:H4'	2:A2:1317:G:H5'	1.92	0.51
2:A2:2520:A:H2'	2:A2:2521:A:C8	2.45	0.51
2:A2:2570:A2M:H2'	2:A2:2571:G:C8	2.44	0.51
13:D2:60:LYS:HB2	13:D2:60:LYS:NZ	2.25	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:E3:71:ARG:HH21	17:E3:80:LYS:HB3	1.75	0.51
21:G1:5:ARG:HH11	21:G1:5:ARG:HG3	1.75	0.51
73:q2:105:LEU:O	73:q2:109:LEU:HD13	2.10	0.51
2:A2:1446:G:H5'	2:A2:1447:A:OP1	2.10	0.51
2:A2:1763:G:H2'	2:A2:1826:G:H22	1.74	0.51
2:A2:3382:A:H2'	2:A2:3383:A:C8	2.45	0.51
34:L2:13:SER:HB3	34:L2:38:ARG:HH21	1.75	0.51
78:v2:24:LYS:HZ3	78:v2:65:ARG:NE	2.07	0.51
2:A2:190:G:H2'	2:A2:191:G:H8	1.75	0.51
2:A2:2117:U:H2'	2:A2:2118:A2M:H8	1.92	0.51
2:A2:2216:G:H4'	24:H1:108:ARG:NH2	2.25	0.51
2:A2:4648:U:H2'	2:A2:4649:U:H6	1.75	0.51
21:G1:75:LYS:HB3	21:G1:75:LYS:NZ	2.25	0.51
30:J3:69:LEU:HD21	30:J3:273:LEU:HD22	1.92	0.51
47:R3:111:ARG:HD2	47:R3:114:LYS:HB2	1.92	0.51
71:o2:123:VAL:HG22	71:o2:145:ILE:HD12	1.93	0.51
72:p2:229:MET:HA	72:p2:229:MET:HE3	1.91	0.51
77:u2:57:ALA:HB2	77:u2:183:GLY:HA2	1.92	0.51
2:A2:174:C:H2'	2:A2:175:C:C6	2.45	0.51
2:A2:424:U:H2'	2:A2:425:U:C6	2.46	0.51
2:A2:1155:U:H2'	2:A2:1156:A:C8	2.46	0.51
2:A2:2614:G:H21	2:A2:3493:C:H1'	1.75	0.51
2:A2:3557:A:H8	2:A2:4170:A:N1	2.08	0.51
2:A2:3840:U:H2'	2:A2:3841:U:C6	2.45	0.51
15:E1:18:ARG:HG3	15:E1:135:GLY:HA3	1.91	0.51
17:E3:41:PHE:HZ	17:E3:102:VAL:HG12	1.74	0.51
19:F2:62:THR:HG21	19:F2:86:ARG:HH12	1.75	0.51
28:I3:87:LEU:HB2	28:I3:101:PHE:HB2	1.90	0.51
33:L1:34:LEU:HD12	33:L1:206:ILE:HD11	1.92	0.51
33:L1:171:HIS:CE1	33:L1:174:MET:HG2	2.45	0.51
40:O2:61:VAL:HG23	40:O2:74:SER:HB3	1.92	0.51
41:O3:57:THR:HG23	41:O3:60:MET:HG3	1.92	0.51
42:P2:106:VAL:HG11	42:P2:132:ILE:HD11	1.92	0.51
70:m2:205:G:H2'	70:m2:206:G:C8	2.44	0.51
2:A2:2365:G:H2'	2:A2:2366:A:H8	1.76	0.51
2:A2:3348:A:N6	2:A2:3479:G:H21	2.04	0.51
2:A2:3933:A:O2'	2:A2:3934:A:C8	2.63	0.51
2:A2:4160:C:N3	2:A2:4164:U:H5	2.09	0.51
2:A2:4500:G:H2'	2:A2:4501:G:C8	2.46	0.51
16:E2:163:ILE:HG22	16:E2:180:LEU:HD22	1.92	0.51
31:K2:57:ASN:HA	31:K2:143:ARG:HD2	1.91	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:L3:147:PHE:HE1	70:m2:826:C:H5'	1.76	0.51
37:M3:25:ALA:HA	37:M3:28:HIS:CD2	2.45	0.51
70:m2:1647:C:H4'	81:y2:138:ARG:O	2.11	0.51
79:w2:49:GLU:HG2	79:w2:118:ARG:HH12	1.75	0.51
82:z2:16:ILE:HD11	82:z2:38:ILE:HG13	1.92	0.51
2:A2:462:G:H2'	2:A2:463:A:C8	2.45	0.51
2:A2:1131:U:H2'	2:A2:1132:C:C6	2.46	0.51
2:A2:1590:A:H2'	12:D1:22:PHE:CZ	2.46	0.51
2:A2:2311:G:H2'	2:A2:2312:G:C8	2.45	0.51
2:A2:3713:U:H4'	2:A2:3714:C:H5	1.75	0.51
2:A2:4616:C:C2	2:A2:4617:A:C8	2.99	0.51
2:A2:4637:U:H2'	2:A2:4638:G:C8	2.45	0.51
16:E2:86:VAL:HG12	16:E2:201:LEU:HD12	1.92	0.51
26:H3:46:TYR:O	26:H3:50:ILE:HG13	2.10	0.51
51:T3:12:VAL:HG22	70:m2:618:A:O2'	2.10	0.51
70:m2:29:G:H2'	70:m2:30:C:H6	1.73	0.51
70:m2:354:U:H2'	70:m2:355:OMC:C6	2.45	0.51
70:m2:1246:U:H2'	70:m2:1247:G:H8	1.74	0.51
70:m2:1310:U:H2'	70:m2:1311:C:C6	2.46	0.51
70:m2:1421:C:H4'	70:m2:1422:G:H5'	1.93	0.51
74:r2:63:LYS:O	74:r2:67:GLN:HG3	2.11	0.51
2:A2:952:C:H2'	2:A2:953:G:H8	1.76	0.51
2:A2:4014:A:H4'	67:i2:39:ARG:HH12	1.75	0.51
2:A2:4044:OMG:HM21	2:A2:4046:A:H2'	1.92	0.51
2:A2:4243:U:H2'	2:A2:4244:C:C6	2.45	0.51
3:A3:113:ARG:HA	3:A3:116:LYS:HZ3	1.75	0.51
32:K3:133:LEU:HD12	70:m2:65:C:C4	2.46	0.51
38:N2:107:LYS:O	38:N2:111:GLU:HG2	2.10	0.51
70:m2:456:U:H2'	70:m2:457:A:H8	1.75	0.51
70:m2:564:U:H3	70:m2:589:A:H2	1.58	0.51
70:m2:575:U:O2	70:m2:578:A2M:H8	2.11	0.51
70:m2:1728:G:H2'	70:m2:1729:G:H8	1.75	0.51
74:r2:162:ILE:HD11	74:r2:169:ILE:HD13	1.92	0.51
2:A2:517:C:H2'	2:A2:518:C:H6	1.76	0.51
2:A2:1253:U:H2'	2:A2:1254:C:C6	2.45	0.51
2:A2:2570:A2M:H2'	2:A2:2571:G:H8	1.76	0.51
2:A2:3891:A:H2'	2:A2:3892:G:H8	1.76	0.51
6:B3:65:TYR:HB2	6:B3:123:LEU:HD12	1.93	0.51
28:I3:65:PHE:HB2	28:I3:83:TRP:HB2	1.92	0.51
58:Z2:36:ARG:HB2	58:Z2:80:ASN:HA	1.93	0.51
64:f2:23:ILE:HD11	64:f2:27:ILE:HG21	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:m2:193:C:H41	77:u2:144:LYS:HD3	1.76	0.51
79:w2:68:ILE:HG13	79:w2:143:LEU:HD21	1.93	0.51
2:A2:444:G:H1	2:A2:1117:A:N6	2.08	0.51
2:A2:1151:A:H5'	19:F2:102:PHE:HB2	1.92	0.51
2:A2:1155:U:H2'	2:A2:1156:A:H8	1.75	0.51
2:A2:3625:G:H2'	2:A2:3626:G:H8	1.76	0.51
2:A2:4226:U:H3'	2:A2:4227:G:H5''	1.92	0.51
22:G2:217:ASP:HA	22:G2:220:LYS:HD3	1.91	0.51
28:I3:218:LEU:HD23	28:I3:228:TYR:HB3	1.93	0.51
30:J3:266:TYR:O	30:J3:270:THR:HG22	2.10	0.51
32:K3:67:VAL:O	32:K3:68:LEU:HD12	2.10	0.51
70:m2:318:G:H2'	70:m2:319:C:H6	1.75	0.51
70:m2:1397:C:H2'	70:m2:1398:A:C8	2.45	0.51
70:m2:1803:A:H2'	70:m2:1804:C:C6	2.46	0.51
74:r2:178:GLY:O	74:r2:231:GLY:HA2	2.11	0.51
78:v2:31:LYS:HG2	78:v2:39:ASN:HA	1.92	0.51
2:A2:106:A:H2'	2:A2:107:G:O4'	2.10	0.51
2:A2:830:G:N2	2:A2:836:C:H2'	2.26	0.51
2:A2:1769:A:H2'	2:A2:1770:G:C8	2.46	0.51
2:A2:4603:C:H2'	2:A2:4604:C:H6	1.75	0.51
9:C1:1:MET:HG2	36:M2:141:ALA:HB2	1.92	0.51
17:E3:107:ARG:HG3	17:E3:112:VAL:HG22	1.93	0.51
28:I3:164:ILE:HD11	28:I3:221:LEU:HG	1.91	0.51
35:L3:93:LYS:HB3	35:L3:96:TYR:CD2	2.46	0.51
49:S3:19:HIS:HB3	49:S3:22:LYS:HB2	1.91	0.51
56:X2:37:GLY:O	56:X2:41:ARG:HG3	2.10	0.51
70:m2:85:A:H2'	70:m2:86:C:H6	1.76	0.51
70:m2:350:A:H2'	70:m2:351:A:C8	2.46	0.51
70:m2:1376:C:H2'	70:m2:1377:G:O4'	2.11	0.51
72:p2:158:HIS:O	72:p2:162:ARG:HG3	2.11	0.51
2:A2:1723:C:C4	21:G1:17:PHE:HB3	2.46	0.50
3:A3:86:ARG:NH1	3:A3:106:LYS:HB3	2.26	0.50
19:F2:297:GLU:CD	19:F2:297:GLU:H	2.18	0.50
27:I2:119:VAL:HG21	36:M2:171:ARG:HG2	1.93	0.50
35:L3:164:PRO:HG3	70:m2:563:A:H5''	1.93	0.50
36:M2:16:CYS:SG	36:M2:54:MET:HE2	2.52	0.50
81:y2:58:LEU:HB2	81:y2:63:PHE:HE1	1.76	0.50
82:z2:111:PHE:HB3	82:z2:114:LEU:HD11	1.92	0.50
2:A2:1162:U:H2'	2:A2:1163:G:H8	1.76	0.50
2:A2:1756:U:H2'	2:A2:1757:G:C8	2.45	0.50
2:A2:4263:A:H2'	2:A2:4264:C:H6	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:4541:G:H2'	2:A2:4542:G:H8	1.76	0.50
15:E1:44:THR:HG21	15:E1:72:CYS:SG	2.51	0.50
22:G2:73:MET:HE2	22:G2:73:MET:N	2.27	0.50
41:O3:136:PRO:HB3	70:m2:946:A:H1'	1.91	0.50
70:m2:1630:C:H2'	70:m2:1631:C:C6	2.47	0.50
70:m2:1692:U:H2'	70:m2:1693:U:C6	2.45	0.50
82:z2:17:ILE:HD13	82:z2:24:LEU:HD13	1.93	0.50
2:A2:3363:U:H2'	2:A2:3364:C:C6	2.46	0.50
2:A2:4022:OMG:H5''	67:i2:64:LYS:HG3	1.92	0.50
2:A2:4176:G:N3	16:E2:252:ALA:HB1	2.26	0.50
11:C3:86:LYS:NZ	11:C3:86:LYS:HB3	2.25	0.50
19:F2:236:ASN:HD22	19:F2:239:LYS:HD2	1.76	0.50
50:T2:11:VAL:CG2	50:T2:80:LEU:HB3	2.41	0.50
60:b2:88:THR:HG22	60:b2:90:ALA:H	1.77	0.50
70:m2:1860:G:H2'	70:m2:1861:A:H8	1.76	0.50
71:o2:18:PHE:CD1	71:o2:23:THR:HG21	2.47	0.50
75:s2:99:ILE:O	75:s2:103:LEU:HG	2.11	0.50
2:A2:147:A:OP1	4:B1:197:LYS:HE2	2.11	0.50
3:A3:23:ARG:HG2	47:R3:48:VAL:HG11	1.94	0.50
5:B2:4:U:H2'	5:B2:5:A:C8	2.46	0.50
16:E2:122:TRP:CZ2	16:E2:127:LYS:HD2	2.46	0.50
26:H3:16:GLN:HA	26:H3:19:ARG:NH1	2.26	0.50
30:J3:66:LEU:HD12	30:J3:93:ILE:HD13	1.92	0.50
31:K2:50:ARG:HA	31:K2:53:MET:SD	2.51	0.50
48:S2:67:ILE:HD12	48:S2:107:THR:HG21	1.92	0.50
70:m2:350:A:H2'	70:m2:351:A:H8	1.76	0.50
70:m2:1410:U:H2'	70:m2:1411:A:H8	1.76	0.50
73:q2:163:PRO:HA	73:q2:166:TYR:CZ	2.47	0.50
77:u2:89:GLU:O	77:u2:93:THR:HG23	2.12	0.50
78:v2:73:ASN:HA	78:v2:76:ILE:HG22	1.93	0.50
2:A2:4133:U:H2'	2:A2:4134:U:C6	2.46	0.50
37:M3:51:VAL:HA	37:M3:77:ILE:O	2.11	0.50
70:m2:71:G:H3'	70:m2:72:C:H5''	1.94	0.50
70:m2:92:A:H1'	74:r2:3:ARG:HB3	1.94	0.50
2:A2:850:G:H2'	2:A2:851:C:C6	2.47	0.50
2:A2:1360:A:C2	2:A2:2568:A:H8	2.30	0.50
2:A2:2639:G:H2'	2:A2:2640:A:H8	1.76	0.50
2:A2:3567:C:H2'	2:A2:3568:U:H6	1.76	0.50
15:E1:163:MET:HG2	15:E1:174:ILE:HD13	1.93	0.50
24:H1:98:LEU:HA	24:H1:101:VAL:HG12	1.93	0.50
27:I2:22:ILE:HD13	27:I2:120:VAL:HG11	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:O3:93:LEU:HG	41:O3:124:MET:HE2	1.94	0.50
52:U2:125:LYS:HE2	52:U2:145:VAL:HG11	1.93	0.50
59:a2:60:ARG:HB2	59:a2:63:VAL:HG12	1.93	0.50
70:m2:184:G:H2'	70:m2:185:G:H8	1.77	0.50
1:A1:245:LYS:HA	1:A1:254:ASP:HB2	1.93	0.50
2:A2:272:U:H2'	2:A2:273:U:C6	2.47	0.50
2:A2:4543:G:H2'	2:A2:4544:G:C8	2.46	0.50
11:C3:61:LEU:HD21	73:q2:8:LYS:HD2	1.92	0.50
27:I2:88:LEU:HD12	27:I2:99:LEU:HD13	1.94	0.50
50:T2:9:LYS:HB3	50:T2:25:ILE:HD12	1.93	0.50
68:j2:8:VAL:HG13	68:j2:11:VAL:HG23	1.93	0.50
2:A2:684:G:H2'	2:A2:685:C:H6	1.77	0.50
2:A2:1068:C:H42	2:A2:1082:A:H61	1.58	0.50
2:A2:1371:A:H2'	2:A2:1372:G:C8	2.46	0.50
2:A2:1581:U:H2'	2:A2:1582:A:C8	2.46	0.50
2:A2:1596:A:H5''	2:A2:3866:A:H61	1.75	0.50
2:A2:3889:C:H2'	2:A2:3890:G:H8	1.77	0.50
2:A2:4601:A:H2'	2:A2:4602:A:H8	1.76	0.50
17:E3:46:HIS:CD2	17:E3:103:ALA:HB2	2.47	0.50
28:I3:40:ILE:HD11	28:I3:66:VAL:HG11	1.94	0.50
29:J2:27:LYS:HG2	29:J2:63:TYR:CG	2.47	0.50
39:N3:52:VAL:HG22	39:N3:55:ARG:HH12	1.76	0.50
42:P2:48:ARG:NH1	42:P2:49:LEU:HB3	2.27	0.50
70:m2:658:G:H5'	70:m2:664:G:N2	2.25	0.50
70:m2:1704:G:H2'	70:m2:1705:OMC:O4'	2.11	0.50
70:m2:1715:C:H2'	70:m2:1716:U:C6	2.47	0.50
2:A2:458:C:H2'	2:A2:459:C:C6	2.46	0.50
2:A2:1360:A:H2	2:A2:2568:A:H8	1.58	0.50
2:A2:2312:G:H1	2:A2:2325:U:H3	1.60	0.50
2:A2:3374:A2M:H2	2:A2:3590:G:O4'	2.12	0.50
2:A2:3576:U:H2'	2:A2:3577:U:C6	2.47	0.50
7:Bv:51:U:H3	7:Bv:63:G:H22	1.60	0.50
17:E3:93:PHE:HD1	17:E3:140:ARG:HH21	1.57	0.50
19:F2:140:LYS:NZ	19:F2:242:PRO:HD2	2.27	0.50
24:H1:191:ALA:O	24:H1:195:ARG:HG2	2.12	0.50
34:L2:44:LEU:HD22	34:L2:49:LEU:HD12	1.94	0.50
37:M3:64:LEU:HD11	53:U3:106:TYR:HB2	1.93	0.50
51:T3:48:THR:HG22	51:T3:51:LYS:HB2	1.94	0.50
54:V2:5:LYS:HE2	54:V2:8:THR:HG21	1.94	0.50
70:m2:1099:G:H4'	71:o2:32:PHE:CD1	2.47	0.50
70:m2:1104:G:H2'	70:m2:1105:C:C6	2.47	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:m2:1410:U:C2	70:m2:1411:A:C8	3.00	0.50
73:q2:190:LEU:HB2	73:q2:200:PRO:HD3	1.93	0.50
74:r2:71:LYS:HB2	74:r2:91:SER:HB2	1.92	0.50
78:v2:21:MET:HE2	78:v2:21:MET:HA	1.94	0.50
81:y2:61:GLU:H	81:y2:61:GLU:CD	2.20	0.50
2:A2:22:G:H5''	62:d2:44:LYS:HD2	1.93	0.49
2:A2:1020:C:H2'	2:A2:1021:G:H8	1.77	0.49
2:A2:1159:G:H2'	2:A2:1160:C:C6	2.46	0.49
2:A2:2465:C:H2'	2:A2:2467:G:H4'	1.94	0.49
2:A2:3346:U:H2'	2:A2:3347:G:O4'	2.11	0.49
2:A2:3412:A:H61	2:A2:3423:C:H42	1.60	0.49
70:m2:498:C:H2'	70:m2:499:C:H6	1.76	0.49
70:m2:1007:G:H2'	70:m2:1008:C:C6	2.47	0.49
70:m2:1146:A:H2'	70:m2:1147:A:C8	2.47	0.49
73:q2:38:GLU:OE1	73:q2:49:ILE:HD11	2.12	0.49
2:A2:364:G:O6	62:d2:52:LYS:HE3	2.11	0.49
2:A2:2195:U:H4'	2:A2:2196:C:OP2	2.11	0.49
2:A2:2326:C:H2'	2:A2:2327:C:O4'	2.11	0.49
2:A2:2655:U:H2'	2:A2:2656:G:C8	2.47	0.49
2:A2:3601:A:H2'	2:A2:3602:G:C8	2.48	0.49
32:K3:135:PRO:HG3	32:K3:144:LEU:HD23	1.95	0.49
32:K3:191:ARG:O	32:K3:195:LYS:HG3	2.12	0.49
33:L1:180:VAL:O	33:L1:183:ILE:HG13	2.13	0.49
57:Y2:39:ARG:HH11	57:Y2:39:ARG:HG3	1.76	0.49
70:m2:77:A:H2'	70:m2:78:C:O4'	2.12	0.49
70:m2:1735:U:H2'	70:m2:1736:G:O4'	2.12	0.49
80:x2:37:TYR:HD2	80:x2:41:GLN:HB3	1.77	0.49
2:A2:347:A:H2'	2:A2:348:G:C8	2.47	0.49
2:A2:3512:A:H5''	29:J2:83:TRP:O	2.12	0.49
10:C2:144:U:H2'	10:C2:145:C:C6	2.47	0.49
13:D2:179:ILE:O	13:D2:184:ARG:HD3	2.12	0.49
14:D3:35:ASN:HD22	14:D3:52:THR:HG22	1.76	0.49
27:I2:47:PHE:CE1	27:I2:140:ARG:HG2	2.47	0.49
30:J3:114:LYS:HE3	30:J3:121:ARG:HD3	1.95	0.49
39:N3:7:PRO:HD3	70:m2:998:A:H5''	1.94	0.49
70:m2:172:OMU:H6	70:m2:172:OMU:H5''	1.94	0.49
70:m2:945:U:H2'	70:m2:946:A:H8	1.76	0.49
70:m2:1391:C:H4'	73:q2:205:PRO:HB3	1.93	0.49
71:o2:63:ARG:HG2	71:o2:185:MET:HE1	1.93	0.49
72:p2:171:ILE:HD12	72:p2:197:ILE:HA	1.94	0.49
2:A2:662:C:H2'	2:A2:663:C:H6	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:1378:A:H2	70:m2:1031:G:HO2'	1.61	0.49
2:A2:3312:A:H2'	2:A2:3313:U:C6	2.46	0.49
13:D2:39:GLY:HA2	13:D2:93:LYS:HG3	1.94	0.49
18:F1:60:ARG:HD2	18:F1:67:HIS:O	2.11	0.49
19:F2:153:VAL:HG12	19:F2:252:TRP:HB2	1.95	0.49
23:G3:60:GLU:HG3	75:s2:204:ARG:NH1	2.27	0.49
33:L1:169:VAL:HG21	33:L1:183:ILE:HG22	1.95	0.49
35:L3:109:ARG:HH22	35:L3:127:ARG:NH1	2.11	0.49
41:O3:117:ARG:HH21	41:O3:121:ARG:HD3	1.78	0.49
55:W2:62:TYR:CE1	59:a2:99:GLU:HG3	2.47	0.49
69:k2:92:SER:O	69:k2:96:MET:HG3	2.13	0.49
70:m2:15:U:H2'	70:m2:16:G:O4'	2.12	0.49
70:m2:225:C:H2'	70:m2:226:A:C8	2.48	0.49
70:m2:1629:C:H2'	70:m2:1630:C:H6	1.77	0.49
7:n2:20:U:H4'	7:n2:21:A:OP1	2.11	0.49
7:n2:69:G:H2'	7:n2:70:G:C8	2.47	0.49
71:o2:55:TRP:CD1	71:o2:59:LEU:HD11	2.48	0.49
82:z2:75:GLU:HA	82:z2:78:ARG:HE	1.75	0.49
2:A2:1541:G:H2'	2:A2:1542:C:C6	2.48	0.49
2:A2:1722:C:H3'	2:A2:1723:C:H5''	1.95	0.49
2:A2:2220:C:H2'	2:A2:2221:G:O4'	2.12	0.49
5:B2:111:C:H2'	5:B2:112:U:O4'	2.12	0.49
6:B3:56:ARG:HG2	6:B3:103:VAL:HG21	1.95	0.49
24:H1:80:THR:OG1	24:H1:87:HIS:HA	2.12	0.49
30:J3:193:VAL:HG11	30:J3:240:THR:HG22	1.95	0.49
31:K2:59:PRO:HG3	31:K2:143:ARG:HA	1.95	0.49
33:L1:15:ARG:HD3	33:L1:18:LEU:HD21	1.94	0.49
70:m2:25:A:O2'	70:m2:26:U:H5''	2.12	0.49
70:m2:1694:U:H2'	70:m2:1695:G:C8	2.47	0.49
7:n2:68:C:H2'	7:n2:69:G:C8	2.44	0.49
81:y2:76:GLY:O	81:y2:80:GLN:HG3	2.13	0.49
2:A2:74:G:H5'	18:F1:59:VAL:HG22	1.94	0.49
20:F3:89:ARG:HG2	20:F3:92:ARG:HH21	1.76	0.49
30:J3:65:LYS:O	30:J3:69:LEU:HG	2.12	0.49
70:m2:1103:U:OP1	72:p2:151:ARG:HG2	2.13	0.49
70:m2:1645:U:H2'	70:m2:1646:C:C6	2.48	0.49
7:n2:2:C:H2'	7:n2:3:C:C6	2.47	0.49
71:o2:50:ASN:O	71:o2:54:THR:HG23	2.11	0.49
77:u2:106:SER:HB3	77:u2:171:LEU:HD13	1.95	0.49
2:A2:1087:G:H2'	2:A2:1088:A:C8	2.47	0.49
2:A2:2653:G:H2'	2:A2:2654:C:C6	2.46	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:3527:A:H2'	2:A2:3528:A:C8	2.48	0.49
2:A2:4648:U:H2'	2:A2:4649:U:C6	2.48	0.49
4:B1:165:GLU:HA	4:B1:168:VAL:HG22	1.95	0.49
12:D1:87:ILE:HG12	12:D1:138:ILE:HG12	1.94	0.49
20:F3:58:VAL:HG13	41:O3:125:LYS:HB3	1.95	0.49
22:G2:156:GLY:HA2	22:G2:181:PRO:HG3	1.94	0.49
70:m2:102:A:H4'	70:m2:104:A:C8	2.47	0.49
70:m2:947:U:H2'	70:m2:948:U:C6	2.47	0.49
70:m2:1537:U:H1'	75:s2:88:MET:HE3	1.93	0.49
70:m2:1683:U:H2'	70:m2:1684:C:C6	2.48	0.49
82:z2:96:ILE:HD12	82:z2:96:ILE:O	2.12	0.49
2:A2:1506:U:H2'	2:A2:1507:C:O4'	2.13	0.49
2:A2:2256:C:H2'	2:A2:2257:G:H5'	1.95	0.49
2:A2:2365:G:H2'	2:A2:2366:A:C8	2.48	0.49
10:C2:6:C:H2'	10:C2:7:U:H6	1.77	0.49
22:G2:20:PHE:O	22:G2:24:ARG:HG2	2.13	0.49
27:I2:14:HIS:HD2	27:I2:123:ALA:HB3	1.76	0.49
28:I3:125:ARG:HG2	28:I3:150:TRP:CG	2.47	0.49
56:X2:75:LYS:HB2	56:X2:79:ASN:O	2.12	0.49
69:k2:51:VAL:HG12	69:k2:117:ILE:HD12	1.94	0.49
70:m2:971:U:H5'	70:m2:972:G:O5'	2.13	0.49
70:m2:1488:A:H2'	70:m2:1489:A:O4'	2.13	0.49
74:r2:188:ASN:HA	74:r2:245:ARG:HH21	1.78	0.49
2:A2:73:A:OP1	18:F1:106:SER:HB3	2.13	0.49
2:A2:460:C:C2	2:A2:461:G:C8	3.00	0.49
2:A2:1847:G:O2'	2:A2:1848:G:H5''	2.13	0.49
2:A2:2167:A:H2'	2:A2:2168:U:H6	1.77	0.49
2:A2:2211:G:H2'	2:A2:2212:G:C8	2.48	0.49
2:A2:3972:G:H2'	2:A2:3973:U:C6	2.47	0.49
2:A2:4138:C:H2'	2:A2:4139:A:O4'	2.13	0.49
2:A2:4544:G:H2'	2:A2:4546:G:H8	1.77	0.49
6:B3:60:THR:HG23	6:B3:75:MET:HE3	1.94	0.49
6:B3:107:LEU:HB3	6:B3:113:VAL:HG13	1.95	0.49
10:C2:19:C:H2'	10:C2:20:A:H8	1.77	0.49
22:G2:33:ARG:HH11	38:N2:27:LEU:HD12	1.77	0.49
32:K3:66:GLY:HA2	70:m2:1747:A:H1'	1.95	0.49
60:b2:15:GLU:CD	60:b2:15:GLU:H	2.21	0.49
63:e2:24:LYS:HD2	63:e2:69:LEU:HD21	1.95	0.49
70:m2:196:C:H2'	70:m2:197:C:C6	2.47	0.49
70:m2:1229:G:C2	70:m2:1230:A:C8	3.00	0.49
70:m2:1294:C:C2	70:m2:1295:A:C8	3.01	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
72:p2:134:LEU:HD23	72:p2:218:LEU:HD12	1.94	0.49
81:y2:34:VAL:HG11	81:y2:42:ILE:HD11	1.95	0.49
2:A2:93:G:H2'	2:A2:94:A:C8	2.48	0.49
2:A2:3363:U:H2'	2:A2:3364:C:H6	1.78	0.49
2:A2:3885:A:H4'	67:i2:98:LYS:HE3	1.93	0.49
10:C2:3:A:O2'	29:J2:61:ARG:HD3	2.13	0.49
19:F2:218:ILE:O	19:F2:222:ARG:HB2	2.12	0.49
22:G2:273:LEU:HG	22:G2:277:LYS:HD2	1.95	0.49
33:L1:102:LYS:HG2	33:L1:106:LYS:HD2	1.94	0.49
70:m2:510:A:H3'	70:m2:511:OMG:H8	1.78	0.49
73:q2:133:GLY:HA3	73:q2:156:LEU:O	2.13	0.49
76:t2:95:ILE:HD11	76:t2:133:LEU:HD23	1.94	0.49
80:x2:30:TYR:HA	80:x2:33:LEU:HB2	1.95	0.49
2:A2:432:U:H4'	2:A2:433:A:H5''	1.94	0.48
2:A2:457:G:H2'	2:A2:458:C:C6	2.48	0.48
2:A2:850:G:H2'	2:A2:851:C:H6	1.78	0.48
2:A2:943:C:H2'	2:A2:944:G:H8	1.78	0.48
3:A3:14:ARG:NE	15:E1:111:GLU:HG2	2.27	0.48
15:E1:32:ARG:HG3	15:E1:32:ARG:HH11	1.78	0.48
16:E2:53:MET:HE2	16:E2:53:MET:HB3	1.71	0.48
40:O2:19:LEU:HD22	40:O2:78:PHE:H	1.78	0.48
53:U3:138:ARG:NH1	70:m2:1295:A:H1'	2.28	0.48
54:V2:89:PRO:CB	54:V2:92:LYS:HD3	2.41	0.48
70:m2:456:U:H2'	70:m2:457:A:C8	2.48	0.48
70:m2:1335:U:H5'	73:q2:147:ALA:HB2	1.94	0.48
70:m2:1810:U:H2'	70:m2:1811:A:C8	2.48	0.48
73:q2:158:ILE:HG22	73:q2:189:MET:SD	2.52	0.48
80:x2:20:VAL:HG13	80:x2:24:GLN:HB2	1.95	0.48
80:x2:49:LEU:HD21	80:x2:83:MET:HE1	1.95	0.48
2:A2:221:C:H2'	2:A2:222:C:C6	2.48	0.48
2:A2:2312:G:H2'	2:A2:2313:C:C6	2.47	0.48
2:A2:3266:A:H2'	2:A2:3267:A:C8	2.47	0.48
2:A2:4560:G:H2'	2:A2:4561:G:H8	1.78	0.48
18:F1:45:ARG:HG2	18:F1:45:ARG:HH11	1.78	0.48
22:G2:64:ILE:HD13	22:G2:109:LEU:HD22	1.94	0.48
26:H3:19:ARG:NH1	26:H3:19:ARG:HB2	2.28	0.48
27:I2:155:THR:O	27:I2:159:LYS:HG3	2.12	0.48
63:e2:27:LYS:HG3	63:e2:70:LYS:NZ	2.27	0.48
70:m2:96:C:H2'	70:m2:97:U:C6	2.48	0.48
70:m2:129:C:N4	70:m2:181:A:H61	2.10	0.48
70:m2:1072:A:H2'	70:m2:1073:G:O4'	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
72:p2:187:LYS:HB2	72:p2:187:LYS:NZ	2.28	0.48
79:w2:75:GLY:HA3	79:w2:88:ILE:HD12	1.95	0.48
81:y2:104:SER:O	81:y2:107:GLU:HG2	2.12	0.48
2:A2:37:U:H2'	2:A2:38:A:O4'	2.14	0.48
2:A2:3715:G:H2'	2:A2:3716:U:C6	2.49	0.48
2:A2:3996:U:H2'	2:A2:3997:C:H6	1.79	0.48
2:A2:4109:U:H1'	16:E2:252:ALA:HB3	1.95	0.48
2:A2:4112:U:H2'	2:A2:4113:C:H6	1.78	0.48
2:A2:4294:U:H2'	2:A2:4295:G:C8	2.48	0.48
2:A2:4544:G:H2'	2:A2:4546:G:C8	2.48	0.48
10:C2:26:C:H2'	10:C2:27:U:C6	2.47	0.48
20:F3:70:LYS:HE3	20:F3:70:LYS:HB3	1.63	0.48
27:I2:165:LYS:O	27:I2:169:ARG:HG3	2.13	0.48
34:L2:8:LYS:HG2	34:L2:24:LEU:HD11	1.94	0.48
37:M3:35:ILE:HG13	37:M3:36:ARG:N	2.27	0.48
50:T2:21:ARG:HA	50:T2:49:TYR:OH	2.13	0.48
53:U3:126:CYS:HB2	53:U3:130:VAL:HG22	1.94	0.48
70:m2:335:G:H2'	70:m2:336:C:O4'	2.12	0.48
70:m2:1302:U:H3	80:x2:51:ARG:HH11	1.61	0.48
70:m2:1590:A:H2'	70:m2:1591:A:H8	1.78	0.48
70:m2:1718:C:H2'	70:m2:1719:C:H6	1.78	0.48
71:o2:77:ILE:HG13	71:o2:99:ILE:HB	1.95	0.48
73:q2:201:LYS:NZ	73:q2:201:LYS:HB3	2.29	0.48
77:u2:123:ARG:HH12	77:u2:136:ILE:HD11	1.78	0.48
2:A2:2159:A:H3'	2:A2:2160:G:H8	1.78	0.48
2:A2:4215:U:H2'	2:A2:4216:A:H8	1.78	0.48
22:G2:60:ILE:HB	22:G2:80:ALA:HB2	1.95	0.48
22:G2:62:CYS:HB3	22:G2:105:LEU:HD22	1.96	0.48
71:o2:119:PRO:HG2	71:o2:142:LEU:HD11	1.95	0.48
73:q2:102:ALA:HB1	73:q2:173:ARG:HG3	1.95	0.48
75:s2:100:ILE:HG13	75:s2:174:ALA:HB1	1.95	0.48
75:s2:159:ARG:HG3	75:s2:159:ARG:NH1	2.28	0.48
2:A2:512:C:H2'	2:A2:513:U:O4'	2.12	0.48
2:A2:2639:G:H2'	2:A2:2640:A:C8	2.48	0.48
10:C2:36:G:C8	60:b2:89:ARG:HD3	2.48	0.48
27:I2:151:ALA:O	27:I2:155:THR:HG23	2.12	0.48
28:I3:107:ASP:OD2	28:I3:125:ARG:HD2	2.13	0.48
30:J3:106:VAL:HG22	30:J3:128:VAL:HG22	1.95	0.48
33:L1:76:GLU:O	33:L1:80:VAL:HG23	2.12	0.48
50:T2:5:MET:HG3	50:T2:25:ILE:HD13	1.93	0.48
69:k2:2:SER:O	69:k2:6:GLN:HG3	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:m2:1114:U:H2'	70:m2:1115:A:C8	2.48	0.48
70:m2:1624:U:O4	80:x2:122:THR:HG23	2.14	0.48
70:m2:1715:C:H2'	70:m2:1716:U:H6	1.77	0.48
2:A2:1561:G:H1	2:A2:1575:U:H3	1.60	0.48
2:A2:2211:G:H2'	2:A2:2212:G:H8	1.78	0.48
2:A2:3325:G:H21	2:A2:3328:G:N2	2.12	0.48
2:A2:3572:G:H2'	2:A2:3573:A:C8	2.48	0.48
2:A2:3732:G:H2'	2:A2:3733:U:C6	2.49	0.48
12:D1:38:ARG:HG3	12:D1:83:ASP:HA	1.96	0.48
16:E2:165:HIS:HB3	16:E2:180:LEU:HD23	1.94	0.48
28:I3:121:VAL:HG21	28:I3:165:ILE:HG21	1.96	0.48
41:O3:56:VAL:HA	41:O3:60:MET:SD	2.54	0.48
45:Q3:13:MET:HE1	74:r2:53:LYS:HB2	1.95	0.48
61:c2:29:ARG:O	61:c2:32:ARG:HG3	2.14	0.48
63:e2:34:PHE:O	63:e2:44:THR:HA	2.13	0.48
73:q2:135:GLU:OE2	73:q2:151:LYS:HD2	2.13	0.48
75:s2:88:MET:HA	75:s2:91:ARG:HG2	1.95	0.48
81:y2:9:SER:HB3	81:y2:26:LYS:HB3	1.96	0.48
1:A1:179:ARG:HD2	1:A1:235:LEU:HD12	1.96	0.48
2:A2:4188:OMC:HM22	2:A2:4189:C:O4'	2.13	0.48
2:A2:4518:G:N3	27:I2:175:LEU:HD23	2.29	0.48
2:A2:4550:C:H2'	2:A2:4551:C:C6	2.49	0.48
10:C2:64:U:C2	10:C2:65:A:C8	3.02	0.48
17:E3:49:GLY:HA3	17:E3:72:VAL:HG13	1.96	0.48
19:F2:145:GLU:C	19:F2:147:VAL:H	2.22	0.48
23:G3:46:VAL:HG11	23:G3:56:LEU:HD13	1.96	0.48
30:J3:66:LEU:HD23	30:J3:86:LEU:HD23	1.96	0.48
35:L3:30:LYS:O	35:L3:34:GLU:HG3	2.14	0.48
37:M3:81:ASP:HB2	37:M3:84:LYS:HB2	1.95	0.48
45:Q3:118:ARG:NE	70:m2:85:A:H5''	2.29	0.48
55:W2:30:GLY:O	55:W2:34:THR:HG23	2.13	0.48
70:m2:210:G:C2'	70:m2:211:A:H5'	2.43	0.48
70:m2:498:C:H2'	70:m2:499:C:C6	2.49	0.48
70:m2:519:OMC:H2'	70:m2:520:G:O4'	2.13	0.48
70:m2:1021:C:H2'	70:m2:1022:A:O4'	2.14	0.48
7:n2:25:C:C2	7:n2:26:A:C8	3.02	0.48
2:A2:143:U:H5'	4:B1:108:GLN:HE21	1.79	0.48
2:A2:854:A:H1'	2:A2:1878:G:H5''	1.94	0.48
2:A2:1128:C:C2	2:A2:1129:C:C5	3.02	0.48
2:A2:1210:G:H5''	52:U2:132:ARG:HH12	1.79	0.48
2:A2:1551:A:H2'	2:A2:1552:G:C8	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:1614:C:H5''	54:V2:56:LYS:HE3	1.95	0.48
2:A2:3337:G:C6	13:D2:125:LYS:HG3	2.49	0.48
5:B2:22:A:H2'	5:B2:23:A:C8	2.49	0.48
16:E2:189:THR:O	16:E2:193:LYS:HG3	2.14	0.48
29:J2:36:ILE:HD11	29:J2:48:LEU:HG	1.96	0.48
53:U3:138:ARG:HB3	53:U3:149:CYS:HA	1.96	0.48
71:o2:147:LEU:HB3	71:o2:163:CYS:SG	2.54	0.48
78:v2:5:LYS:HE3	78:v2:5:LYS:HB2	1.72	0.48
1:A1:77:LYS:HG3	19:F2:331:TYR:CE1	2.49	0.48
2:A2:6:C:H5''	4:B1:197:LYS:HB3	1.95	0.48
2:A2:163:A:H2'	2:A2:164:G:C8	2.48	0.48
2:A2:233:U:H4'	2:A2:234:G:OP1	2.14	0.48
2:A2:659:C:H2'	2:A2:660:G:H8	1.78	0.48
2:A2:684:G:H2'	2:A2:685:C:C6	2.49	0.48
2:A2:1190:C:H3'	2:A2:1191:G:C8	2.48	0.48
2:A2:3539:U:H2'	2:A2:3540:U:C6	2.49	0.48
2:A2:3580:C:H2'	2:A2:3581:OMU:H6	1.96	0.48
2:A2:3709:C:H2'	2:A2:3710:U:H6	1.78	0.48
2:A2:3760:C:H2'	2:A2:3761:U:H6	1.79	0.48
2:A2:4427:C:H2'	2:A2:4428:C:C6	2.49	0.48
2:A2:4700:C:H4'	2:A2:4701:G:C8	2.49	0.48
3:A3:25:LYS:HB3	3:A3:28:PHE:HD2	1.79	0.48
7:Bv:25:C:C2	7:Bv:26:A:C8	3.02	0.48
9:C1:44:GLU:HG2	9:C1:58:ASP:HB2	1.96	0.48
10:C2:66:A:H2'	10:C2:67:U:C6	2.49	0.48
13:D2:20:VAL:HA	13:D2:23:ARG:HG3	1.95	0.48
30:J3:266:TYR:HB3	71:o2:120:ARG:HD3	1.96	0.48
63:e2:35:LYS:HA	63:e2:43:TYR:O	2.14	0.48
70:m2:99:A2M:H8	70:m2:99:A2M:O5'	2.14	0.48
70:m2:446:G:O6	77:u2:26:LYS:HE2	2.14	0.48
70:m2:676:C:H2'	70:m2:677:U:C6	2.49	0.48
2:A2:1068:C:N4	2:A2:1082:A:H61	2.11	0.48
2:A2:1147:A:H2'	2:A2:1148:A:H8	1.79	0.48
2:A2:1347:A2M:N7	62:d2:15:THR:HG22	2.29	0.48
2:A2:2031:A:H2'	2:A2:2032:C:O4'	2.14	0.48
2:A2:2648:U:H2'	2:A2:2649:A:H8	1.79	0.48
2:A2:3627:G:H1	2:A2:3700:A:N6	2.10	0.48
2:A2:4230:G:H2'	2:A2:4231:U:C6	2.48	0.48
2:A2:4529:G:H2'	2:A2:4530:U:H6	1.79	0.48
2:A2:4650:C:H2'	2:A2:4651:G:O4'	2.14	0.48
31:K2:146:ARG:HG3	31:K2:148:VAL:HG22	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:M2:130:GLU:HG3	36:M2:132:ILE:HD11	1.96	0.48
57:Y2:35:TRP:CZ2	57:Y2:56:PRO:HD2	2.49	0.48
70:m2:839:A:H4'	70:m2:840:G:OP1	2.13	0.48
70:m2:1218:C:O2'	81:y2:143:LYS:HE2	2.14	0.48
70:m2:1623:U:H5'	70:m2:1625:A:O2'	2.13	0.48
71:o2:183:LEU:HB3	71:o2:189:ILE:HG12	1.96	0.48
74:r2:57:THR:HG22	74:r2:58:GLY:H	1.79	0.48
76:t2:43:LEU:HD21	76:t2:71:SER:HB2	1.96	0.48
79:w2:133:PRO:HB3	79:w2:139:ARG:NH1	2.28	0.48
1:A1:177:TYR:CD1	1:A1:209:MET:HE2	2.49	0.47
2:A2:1444:A:N7	13:D2:199:VAL:HG21	2.29	0.47
2:A2:1596:A:H5''	2:A2:3866:A:N6	2.29	0.47
2:A2:1716:C:H4'	27:I2:89:PRO:HD3	1.96	0.47
2:A2:2370:U:H2'	2:A2:2371:C:H6	1.78	0.47
2:A2:2403:G:H2'	2:A2:2404:G:H8	1.79	0.47
2:A2:2409:C:H2'	2:A2:2410:C:H6	1.79	0.47
2:A2:3524:G:H22	2:A2:3556:G:H1'	1.79	0.47
2:A2:3526:C:H2'	2:A2:3527:A:H8	1.79	0.47
2:A2:3716:U:H2'	2:A2:3717:U:C6	2.48	0.47
14:D3:38:GLU:HA	71:o2:63:ARG:HH21	1.78	0.47
28:I3:12:LYS:HG2	28:I3:306:LEU:HD22	1.96	0.47
28:I3:251:ALA:HB2	28:I3:289:LEU:HD21	1.96	0.47
32:K3:51:ARG:HG2	32:K3:51:ARG:NH1	2.29	0.47
37:M3:20:GLU:HA	37:M3:23:LYS:HG2	1.95	0.47
37:M3:57:ASP:HB3	70:m2:1287:G:H22	1.79	0.47
70:m2:1162:U:H2'	70:m2:1163:U:H6	1.79	0.47
73:q2:108:LYS:HG2	73:q2:113:LEU:HD23	1.95	0.47
82:z2:32:LYS:HG3	82:z2:33:ARG:N	2.29	0.47
1:A1:201:LEU:HB3	1:A1:206:ILE:HB	1.96	0.47
2:A2:1140:A2M:H2'	2:A2:1141:C:C6	2.49	0.47
2:A2:1274:C:H2'	2:A2:1275:A:C8	2.49	0.47
2:A2:1911:G:H1	2:A2:2006:C:N4	2.12	0.47
2:A2:2293:U:H2'	2:A2:2294:C:C6	2.48	0.47
2:A2:4132:A:H2'	2:A2:4133:U:O4'	2.14	0.47
2:A2:4337:U:H2'	2:A2:4338:G:C8	2.49	0.47
2:A2:4395:G:H2'	2:A2:4396:A:H8	1.79	0.47
2:A2:4520:G:H3'	36:M2:170:LYS:NZ	2.28	0.47
10:C2:141:C:H2'	10:C2:142:U:H6	1.78	0.47
12:D1:91:LEU:HD12	12:D1:135:ILE:HG23	1.96	0.47
21:G1:100:ARG:HH12	27:I2:200:GLY:HA2	1.79	0.47
27:I2:121:PRO:HA	27:I2:124:LEU:HD12	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:I3:57:ARG:HA	81:y2:102:GLU:HG3	1.96	0.47
32:K3:182:PRO:O	32:K3:186:GLN:HG2	2.14	0.47
35:L3:32:ILE:HD11	35:L3:40:LYS:HG2	1.96	0.47
56:X2:44:ARG:HD3	56:X2:48:GLU:HG2	1.96	0.47
62:d2:52:LYS:HG2	62:d2:55:ARG:NH2	2.29	0.47
70:m2:847:G:H2'	70:m2:848:G:C8	2.49	0.47
70:m2:1714:A:H2'	70:m2:1715:C:H6	1.79	0.47
71:o2:55:TRP:O	71:o2:59:LEU:HG	2.13	0.47
76:t2:53:VAL:HG13	76:t2:55:GLY:H	1.79	0.47
81:y2:34:VAL:CG1	81:y2:42:ILE:HD11	2.45	0.47
2:A2:685:C:H2'	2:A2:686:C:H6	1.79	0.47
2:A2:712:G:H2'	2:A2:713:C:C6	2.48	0.47
2:A2:1303:G:H2'	2:A2:1304:A:C8	2.49	0.47
2:A2:1545:A:H5'	22:G2:11:ALA:HB1	1.96	0.47
2:A2:2178:A:H2'	2:A2:2179:OMG:O4'	2.14	0.47
2:A2:2335:U:H1'	50:T2:76:ASN:OD1	2.14	0.47
2:A2:2653:G:H2'	2:A2:2654:C:H6	1.79	0.47
2:A2:3612:G:H21	2:A2:3620:U:H5'	1.78	0.47
2:A2:3761:U:H2'	2:A2:3762:C:H6	1.80	0.47
10:C2:105:C:H5''	10:C2:107:C:OP2	2.14	0.47
23:G3:46:VAL:HG12	75:s2:140:ASP:HB3	1.95	0.47
27:I2:7:LEU:HD13	27:I2:31:ARG:HH12	1.78	0.47
32:K3:192:ILE:HA	32:K3:195:LYS:HD3	1.97	0.47
35:L3:72:PHE:HD1	74:r2:252:ARG:HH21	1.60	0.47
40:O2:60:VAL:HG13	40:O2:75:GLU:HG2	1.96	0.47
45:Q3:36:PRO:HD2	45:Q3:39:GLU:CD	2.39	0.47
48:S2:2:LYS:HE3	48:S2:2:LYS:HB3	1.70	0.47
48:S2:47:MET:HE1	48:S2:118:ILE:HD11	1.96	0.47
70:m2:855:C:C2	70:m2:856:A:C8	3.02	0.47
70:m2:1407:A:H2'	70:m2:1408:G:O4'	2.13	0.47
70:m2:1728:G:H1	70:m2:1810:U:H3	1.62	0.47
73:q2:99:ILE:HG23	73:q2:173:ARG:HH21	1.79	0.47
2:A2:852:C:O2'	2:A2:853:G:H5'	2.14	0.47
2:A2:1114:G:H2'	2:A2:1115:C:C6	2.49	0.47
2:A2:2494:C:H5''	68:j2:69:TRP:CH2	2.49	0.47
2:A2:4016:G:H2'	2:A2:4017:C:H6	1.79	0.47
32:K3:63:MET:SD	32:K3:106:LEU:HD21	2.54	0.47
34:L2:66:ASN:HB3	34:L2:70:ARG:NH1	2.28	0.47
41:O3:128:ARG:NH2	72:p2:72:ALA:HB3	2.29	0.47
45:Q3:24:VAL:HG22	45:Q3:72:PHE:HD1	1.78	0.47
69:k2:54:ALA:HA	69:k2:61:VAL:HG23	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:k2:65:LYS:HG3	69:k2:77:TYR:CE1	2.50	0.47
70:m2:191:A:H62	70:m2:210:G:H21	1.61	0.47
70:m2:870:G:H3'	70:m2:871:A:H5''	1.96	0.47
70:m2:1593:C:H5''	75:s2:85:LYS:HD3	1.96	0.47
72:p2:47:THR:HB	72:p2:65:ARG:HH21	1.79	0.47
74:r2:234:PRO:HG3	74:r2:238:LEU:HD11	1.96	0.47
76:t2:130:LEU:HD13	76:t2:177:TYR:CD1	2.50	0.47
1:A1:89:THR:O	1:A1:93:MET:HG2	2.15	0.47
1:A1:187:LYS:HE2	2:A2:1884:G:N2	2.29	0.47
1:A1:248:HIS:ND1	1:A1:250:VAL:HG22	2.30	0.47
2:A2:700:C:H2'	2:A2:701:C:H6	1.78	0.47
2:A2:2475:C:H2'	2:A2:2476:G:O4'	2.15	0.47
2:A2:2605:A:H1'	42:P2:52:LEU:HD11	1.96	0.47
2:A2:4526:U:H4'	2:A2:4527:U:H5	1.79	0.47
7:Bv:17:C:O2'	7:Bv:18:G:H5'	2.14	0.47
18:F1:31:ARG:HA	18:F1:34:ARG:NH1	2.29	0.47
27:I2:168:TYR:CE1	27:I2:172:LYS:HE2	2.50	0.47
28:I3:23:THR:HB	28:I3:31:ILE:HG22	1.95	0.47
42:P2:71:GLU:HG2	42:P2:72:LEU:N	2.29	0.47
70:m2:51:U:H2'	70:m2:52:G:C8	2.49	0.47
72:p2:71:LEU:HD13	72:p2:84:PHE:CE2	2.50	0.47
72:p2:185:VAL:O	72:p2:189:ILE:HG13	2.15	0.47
73:q2:150:MET:HE2	73:q2:152:PHE:CZ	2.49	0.47
2:A2:100:C:C2	2:A2:101:A:C8	3.02	0.47
2:A2:453:G:N2	2:A2:1107:G:H22	2.13	0.47
2:A2:3536:G:H2'	2:A2:3537:G:C8	2.50	0.47
2:A2:4396:A:H2'	2:A2:4397:G:O4'	2.14	0.47
11:C3:50:VAL:HG22	11:C3:91:LEU:HD23	1.96	0.47
13:D2:221:LYS:HD2	13:D2:233:ARG:NH2	2.30	0.47
15:E1:113:ILE:HD13	15:E1:119:TYR:HB2	1.97	0.47
22:G2:58:ARG:HG3	22:G2:58:ARG:HH11	1.80	0.47
28:I3:302:TYR:CE2	28:I3:308:ARG:HB2	2.49	0.47
34:L2:144:LYS:HE2	34:L2:144:LYS:HB3	1.72	0.47
35:L3:25:LEU:HD23	35:L3:40:LYS:HE3	1.95	0.47
41:O3:53:ILE:HG23	41:O3:88:LEU:HD23	1.96	0.47
43:P3:111:MET:HE1	43:P3:119:LYS:HE2	1.96	0.47
50:T2:99:ASP:HB3	50:T2:102:ARG:HE	1.79	0.47
70:m2:611:U:H2'	70:m2:612:G:H8	1.79	0.47
70:m2:951:G:H2'	70:m2:952:C:C6	2.50	0.47
70:m2:1515:C:H2'	70:m2:1516:G:H8	1.79	0.47
70:m2:1529:C:OP1	81:y2:142:GLN:NE2	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:m2:1728:G:H2'	70:m2:1729:G:C8	2.48	0.47
7:n2:20:U:H1'	7:n2:21:A:H5''	1.96	0.47
71:o2:76:VAL:HG12	71:o2:87:VAL:HG13	1.97	0.47
1:A1:178:LYS:HE2	1:A1:179:ARG:NH2	2.30	0.47
2:A2:1092:C:H2'	2:A2:1093:A:O4'	2.15	0.47
2:A2:1292:G:H2'	2:A2:1293:C:C6	2.49	0.47
2:A2:1376:A:H1'	70:m2:681:A:H5'	1.97	0.47
2:A2:1881:G:H2'	2:A2:1882:U:H6	1.80	0.47
2:A2:3298:A:H1'	62:d2:2:THR:HB	1.95	0.47
2:A2:3562:A:H2'	19:F2:69:THR:HG21	1.96	0.47
2:A2:3698:A:H4'	2:A2:3699:U:H5	1.79	0.47
2:A2:3736:G:C8	46:R2:44:PRO:HG3	2.50	0.47
2:A2:4297:C:H3'	34:L2:62:ARG:HH22	1.80	0.47
4:B1:190:LEU:HB3	4:B1:199:CYS:HB3	1.95	0.47
15:E1:147:ARG:HH11	22:G2:27:LYS:NZ	2.13	0.47
15:E1:160:GLU:OE1	15:E1:160:GLU:HA	2.14	0.47
16:E2:86:VAL:HG13	16:E2:162:ILE:HG23	1.96	0.47
18:F1:63:THR:HG23	18:F1:65:ARG:N	2.30	0.47
27:I2:9:LEU:HD23	27:I2:118:MET:HB2	1.96	0.47
28:I3:7:LEU:HD11	28:I3:308:ARG:HG2	1.95	0.47
36:M2:96:GLU:HB3	36:M2:142:VAL:HG21	1.96	0.47
55:W2:48:LEU:HD21	55:W2:60:ILE:HG21	1.97	0.47
61:c2:76:ARG:HD3	61:c2:76:ARG:HA	1.73	0.47
70:m2:935:G:H1'	70:m2:1003:A:O4'	2.15	0.47
70:m2:1436:C:H4'	70:m2:1437:C:H5''	1.97	0.47
70:m2:1655:U:H2'	70:m2:1656:G:C8	2.49	0.47
70:m2:1714:A:H2'	70:m2:1715:C:C6	2.50	0.47
74:r2:102:ILE:HD11	74:r2:112:HIS:CD2	2.50	0.47
74:r2:151:ASP:HB3	74:r2:154:ILE:HG13	1.96	0.47
2:A2:2:G:H2'	2:A2:3:C:C6	2.50	0.47
2:A2:377:A:H2'	2:A2:378:A:O4'	2.15	0.47
2:A2:1166:C:H2'	2:A2:1167:G:O4'	2.14	0.47
2:A2:1341:U:H2'	2:A2:1342:G:C8	2.50	0.47
2:A2:1527:U:H2'	2:A2:1528:U:C6	2.48	0.47
2:A2:3730:C:H2'	2:A2:3731:G:H8	1.80	0.47
2:A2:4110:C:H2'	2:A2:4111:U:C6	2.50	0.47
2:A2:4340:C:H2'	2:A2:4341:U:C6	2.50	0.47
3:A3:6:PRO:HG3	3:A3:58:GLU:HG3	1.96	0.47
3:A3:11:HIS:ND1	15:E1:121:PRO:HG3	2.30	0.47
6:B3:110:LEU:O	6:B3:110:LEU:HD13	2.15	0.47
10:C2:96:C:OP1	60:b2:66:LYS:HG2	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:G2:25:GLU:HB3	22:G2:27:LYS:HE2	1.97	0.47
22:G2:223:PHE:HB3	22:G2:226:TYR:HB2	1.97	0.47
28:I3:172:LYS:HE3	28:I3:172:LYS:HB2	1.74	0.47
53:U3:121:CYS:HB3	53:U3:141:CYS:HB2	1.38	0.47
70:m2:499:C:H2'	70:m2:500:C:H6	1.79	0.47
70:m2:1218:C:N4	70:m2:1344:U:H5'	2.29	0.47
73:q2:132:LYS:HD3	73:q2:192:TRP:CD1	2.47	0.47
74:r2:245:ARG:HG3	74:r2:245:ARG:NH1	2.30	0.47
77:u2:130:THR:OG1	77:u2:131:PRO:HD2	2.14	0.47
2:A2:1281:C:H2'	2:A2:1282:C:C6	2.50	0.47
2:A2:2172:A:C4	2:A2:2173:A:C8	3.03	0.47
2:A2:2387:U:H2'	2:A2:2388:U:C6	2.49	0.47
2:A2:2513:G:H2'	2:A2:2514:G:N7	2.30	0.47
2:A2:3763:U:H2'	2:A2:3764:C:C6	2.50	0.47
2:A2:3954:U:H4'	38:N2:5:LYS:HD3	1.97	0.47
2:A2:4614:A:H2'	2:A2:4615:C:H6	1.79	0.47
18:F1:194:ILE:HG12	18:F1:198:ARG:NH2	2.30	0.47
19:F2:152:LEU:HD13	19:F2:174:LEU:HD13	1.97	0.47
27:I2:79:ILE:O	27:I2:83:THR:HG23	2.15	0.47
28:I3:249:CYS:SG	28:I3:258:ILE:HG23	2.54	0.47
39:N3:16:LEU:HB2	43:P3:57:ARG:NH2	2.30	0.47
50:T2:16:GLY:O	59:a2:76:ARG:HG2	2.15	0.47
52:U2:62:HIS:NE2	52:U2:64:LYS:HD3	2.29	0.47
60:b2:88:THR:HB	60:b2:91:MET:HE3	1.96	0.47
64:f2:44:TRP:CH2	64:f2:45:ARG:HD2	2.50	0.47
69:k2:4:HIS:O	69:k2:8:MET:HG2	2.15	0.47
69:k2:26:SER:HB3	69:k2:31:ASN:ND2	2.30	0.47
70:m2:1520:C:H5''	70:m2:1521:U:H5''	1.97	0.47
7:n2:70:G:H2'	7:n2:71:G:C8	2.50	0.47
2:A2:35:U:H4'	2:A2:1338:A:C2	2.50	0.47
2:A2:73:A:N6	18:F1:103:ARG:HH22	2.12	0.47
2:A2:3589:G:H2'	2:A2:3590:G:H8	1.80	0.47
2:A2:3691:C:H5''	2:A2:3695:G:OP2	2.15	0.47
2:A2:3711:C:H2'	2:A2:3712:A:C8	2.50	0.47
2:A2:3777:A:O2'	2:A2:3778:A:H8	1.98	0.47
2:A2:3826:U:H2'	2:A2:3827:G:C8	2.50	0.47
2:A2:4155:A:H2'	2:A2:4156:C:C6	2.50	0.47
7:Bv:18:G:H1	7:Bv:55:U:H1'	1.80	0.47
21:G1:119:ARG:O	21:G1:123:ILE:HG13	2.16	0.47
22:G2:81:HIS:HA	22:G2:92:LEU:HD13	1.97	0.47
27:I2:16:LEU:HD21	27:I2:83:THR:HG21	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:I3:34:ALA:HA	28:I3:40:ILE:HG12	1.97	0.47
35:L3:84:ILE:HG23	35:L3:86:VAL:HG13	1.96	0.47
46:R2:79:PHE:CD1	60:b2:36:VAL:HG11	2.49	0.47
57:Y2:77:PHE:HA	69:k2:21:ASN:HD21	1.79	0.47
59:a2:73:HIS:C	59:a2:73:HIS:CD2	2.92	0.47
70:m2:497:U:H2'	70:m2:498:C:O4'	2.15	0.47
72:p2:100:PHE:CD1	72:p2:217:MET:HE1	2.49	0.47
76:t2:144:ILE:HD13	76:t2:152:ARG:HH21	1.80	0.47
76:t2:174:SER:HA	76:t2:185:VAL:CG2	2.45	0.47
81:y2:134:GLY:HA3	81:y2:139:ALA:O	2.15	0.47
2:A2:132:G:H2'	2:A2:133:C:O4'	2.14	0.46
2:A2:1404:U:H5''	2:A2:4179:G:OP1	2.16	0.46
2:A2:4701:G:H2'	2:A2:4702:A:C8	2.50	0.46
4:B1:143:VAL:O	4:B1:147:VAL:HG23	2.15	0.46
5:B2:16:A:H2'	5:B2:17:C:C6	2.50	0.46
5:B2:92:C:H2'	5:B2:93:G:C8	2.50	0.46
13:D2:120:PRO:HG3	13:D2:159:SER:OG	2.15	0.46
13:D2:147:ARG:HG3	13:D2:157:VAL:HG22	1.97	0.46
22:G2:11:ALA:O	22:G2:15:ARG:HG2	2.15	0.46
26:H3:27:ARG:HG2	26:H3:27:ARG:HH11	1.80	0.46
30:J3:229:CYS:HB2	70:m2:14:C:H5'	1.97	0.46
33:L1:155:ILE:HG21	33:L1:167:VAL:HG13	1.97	0.46
34:L2:71:ARG:HB3	34:L2:71:ARG:NH1	2.30	0.46
42:P2:22:VAL:HB	42:P2:52:LEU:HD12	1.98	0.46
45:Q3:17:LEU:HD22	74:r2:54:TYR:CD1	2.50	0.46
49:S3:68:GLY:O	70:m2:1107:G:H5''	2.15	0.46
60:b2:13:LYS:HD3	60:b2:13:LYS:N	2.29	0.46
70:m2:25:A:HO2'	70:m2:26:U:H6	1.59	0.46
70:m2:463:U:H2'	70:m2:464:C:H6	1.80	0.46
76:t2:133:LEU:HD23	76:t2:133:LEU:HA	1.73	0.46
2:A2:158:A:H5''	2:A2:159:C:H2'	1.96	0.46
2:A2:1294:C:H5''	2:A2:1295:G:OP2	2.15	0.46
2:A2:1358:G:H2'	2:A2:1359:C:C6	2.50	0.46
2:A2:2311:G:H2'	2:A2:2312:G:H8	1.79	0.46
2:A2:2451:A:H62	63:e2:35:LYS:HZ1	1.63	0.46
2:A2:2654:C:H2'	2:A2:2655:U:H6	1.80	0.46
2:A2:3588:U:H2'	2:A2:3589:G:H8	1.80	0.46
2:A2:4133:U:H2'	2:A2:4134:U:H6	1.79	0.46
2:A2:4506:G:H2'	2:A2:4507:G:C8	2.48	0.46
6:B3:18:LEU:HD13	6:B3:134:ILE:CD1	2.45	0.46
6:B3:43:LYS:HB2	6:B3:43:LYS:HE3	1.64	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:B3:43:LYS:HB3	70:m2:1541:U:OP1	2.15	0.46
28:I3:146:SER:HA	28:I3:177:TRP:HH2	1.80	0.46
47:R3:70:PRO:HA	47:R3:73:VAL:HG22	1.97	0.46
70:m2:72:C:OP1	70:m2:72:C:H4'	2.15	0.46
70:m2:1591:A:H2'	70:m2:1592:C:H6	1.79	0.46
70:m2:1630:C:H2'	70:m2:1631:C:H6	1.79	0.46
71:o2:77:ILE:HG21	71:o2:133:PRO:HG3	1.97	0.46
79:w2:55:TYR:OH	79:w2:116:CYS:HB3	2.15	0.46
2:A2:286:U:H2'	2:A2:287:U:C6	2.50	0.46
2:A2:1441:C:OP2	13:D2:9:ARG:HD2	2.15	0.46
2:A2:4701:G:H2'	2:A2:4702:A:H8	1.80	0.46
13:D2:118:GLU:HG3	13:D2:156:LYS:NZ	2.30	0.46
25:H2:103:VAL:HG23	25:H2:105:GLY:H	1.80	0.46
30:J3:209:VAL:HB	30:J3:210:PRO:HD3	1.97	0.46
35:L3:145:PRO:HD2	70:m2:524:A:H5'	1.97	0.46
47:R3:62:VAL:O	47:R3:68:ILE:HD11	2.16	0.46
61:c2:16:LYS:HD3	61:c2:16:LYS:HA	1.65	0.46
66:h2:16:LYS:HB3	66:h2:16:LYS:HE3	1.57	0.46
68:j2:38:THR:HA	68:j2:45:THR:HA	1.98	0.46
70:m2:1115:A:H2'	70:m2:1116:U:C6	2.50	0.46
70:m2:1281:C:H2'	70:m2:1282:G:C8	2.51	0.46
70:m2:1750:G:H2'	70:m2:1751:G:C8	2.50	0.46
74:r2:55:ALA:HB1	74:r2:60:GLU:HB2	1.97	0.46
75:s2:165:ASN:ND2	75:s2:167:LYS:HB2	2.31	0.46
77:u2:106:SER:HA	77:u2:109:TYR:HD2	1.81	0.46
2:A2:1380:U:H2'	2:A2:1381:C:C6	2.50	0.46
2:A2:2240:U:H2'	2:A2:2241:G:C8	2.49	0.46
2:A2:3511:C:H2'	2:A2:3512:A:H8	1.80	0.46
2:A2:4106:G:H2'	2:A2:4107:G:H8	1.80	0.46
4:B1:95:LEU:HD21	4:B1:156:VAL:HG21	1.96	0.46
9:C1:125:ARG:HG3	9:C1:125:ARG:NH1	2.29	0.46
16:E2:60:VAL:HG21	16:E2:67:VAL:HG23	1.97	0.46
28:I3:63:SER:HB3	28:I3:84:ASP:HB2	1.96	0.46
42:P2:26:ILE:HG22	42:P2:101:ASN:HB2	1.97	0.46
49:S3:75:GLU:HB3	49:S3:76:GLY:H	1.54	0.46
50:T2:42:LEU:HD21	50:T2:96:VAL:HG12	1.98	0.46
60:b2:91:MET:HG2	60:b2:94:ARG:HH12	1.80	0.46
70:m2:1166:G:O2'	70:m2:1167:G:H5'	2.16	0.46
70:m2:1456:A:H2	70:m2:1478:A:H1'	1.81	0.46
72:p2:86:LEU:HB3	72:p2:98:THR:HB	1.97	0.46
78:v2:32:HIS:CD2	78:v2:33:PRO:HD2	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:61:A:H5''	24:H1:164:LEU:HD21	1.98	0.46
2:A2:184:U:H5''	2:A2:254:G:C2	2.51	0.46
2:A2:698:C:H2'	2:A2:699:A:C8	2.51	0.46
2:A2:1880:C:H2'	2:A2:1881:G:C8	2.51	0.46
5:B2:36:C:H5'	22:G2:155:THR:HB	1.97	0.46
11:C3:20:ILE:HD11	11:C3:98:VAL:HG21	1.97	0.46
28:I3:113:PHE:CD2	28:I3:120:ILE:HD11	2.50	0.46
32:K3:195:LYS:O	32:K3:199:THR:HG22	2.15	0.46
33:L1:103:LEU:HG	33:L1:107:TYR:CE1	2.49	0.46
47:R3:78:LYS:N	47:R3:78:LYS:HD2	2.31	0.46
70:m2:947:U:H2'	70:m2:948:U:H6	1.81	0.46
70:m2:950:C:H2'	70:m2:951:G:C8	2.50	0.46
73:q2:41:VAL:HG13	73:q2:46:THR:HG22	1.98	0.46
77:u2:133:GLU:HA	77:u2:136:ILE:HB	1.97	0.46
80:x2:81:ARG:HA	80:x2:116:LEU:HB2	1.97	0.46
2:A2:689:G:H2'	2:A2:690:C:C6	2.51	0.46
2:A2:1561:G:H2'	2:A2:1562:G:H8	1.80	0.46
2:A2:2450:A:H1'	2:A2:2452:A:N7	2.30	0.46
2:A2:2648:U:H2'	2:A2:2649:A:C8	2.51	0.46
4:B1:244:PRO:HA	4:B1:247:VAL:HG22	1.97	0.46
12:D1:152:LEU:HB3	12:D1:165:ILE:HD12	1.97	0.46
18:F1:9:ILE:HD13	18:F1:9:ILE:HA	1.87	0.46
20:F3:10:ARG:HB2	20:F3:33:ASP:OD2	2.14	0.46
32:K3:27:PHE:CD2	32:K3:27:PHE:N	2.83	0.46
35:L3:79:ARG:HA	35:L3:82:VAL:HG12	1.97	0.46
38:N2:64:VAL:HG13	38:N2:72:VAL:HG13	1.97	0.46
41:O3:19:PRO:HG2	41:O3:27:VAL:HG21	1.98	0.46
69:k2:94:ARG:HB2	69:k2:111:ILE:HD11	1.98	0.46
71:o2:85:ARG:HD2	82:z2:81:ARG:HD3	1.98	0.46
73:q2:7:LYS:HA	73:q2:10:LYS:HG2	1.98	0.46
76:t2:43:LEU:HD13	76:t2:72:PHE:CD1	2.51	0.46
2:A2:261:G:H2'	2:A2:262:G:H8	1.80	0.46
2:A2:1288:G:H2'	2:A2:1289:C:C6	2.51	0.46
2:A2:1705:G:OP1	58:Z2:87:LYS:HE3	2.16	0.46
2:A2:2625:A:H2'	2:A2:2626:A:C8	2.50	0.46
9:C1:43:VAL:HG21	9:C1:73:ILE:HD13	1.97	0.46
15:E1:141:ILE:HA	15:E1:144:LYS:HE3	1.98	0.46
16:E2:288:GLY:HA3	16:E2:330:PHE:CE1	2.51	0.46
17:E3:71:ARG:HE	17:E3:71:ARG:HB3	1.61	0.46
42:P2:13:LYS:HE3	42:P2:16:ILE:HD12	1.97	0.46
46:R2:63:LYS:HB3	46:R2:63:LYS:HE3	1.64	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:T2:74:VAL:HG13	50:T2:101:PHE:CE2	2.50	0.46
70:m2:294:A:H4'	79:w2:39:ASN:O	2.16	0.46
70:m2:394:A:H3'	70:m2:394:A:N3	2.30	0.46
70:m2:865:U:H2'	70:m2:866:A:C8	2.51	0.46
70:m2:1540:C:H2'	70:m2:1541:U:C6	2.50	0.46
79:w2:113:LEU:HD11	79:w2:117:PHE:HB2	1.97	0.46
2:A2:2275:C:H2'	2:A2:2276:G:C8	2.51	0.46
2:A2:2419:G:H4'	2:A2:2432:G:H4'	1.97	0.46
2:A2:2438:C:H2'	2:A2:2439:C:C6	2.51	0.46
2:A2:4272:OMU:HM23	2:A2:4272:OMU:H1'	1.77	0.46
4:B1:165:GLU:CD	24:H1:26:ARG:HH22	2.23	0.46
13:D2:186:TYR:HB2	13:D2:196:TRP:CZ3	2.50	0.46
16:E2:283:LYS:HE2	16:E2:361:GLU:HG3	1.98	0.46
27:I2:196:LEU:HD12	27:I2:202:LEU:HD22	1.97	0.46
40:O2:87:THR:HG23	40:O2:102:VAL:HG21	1.97	0.46
42:P2:71:GLU:HG2	42:P2:72:LEU:HD23	1.97	0.46
43:P3:33:VAL:HG13	43:P3:126:LEU:HD21	1.98	0.46
70:m2:1176:U:H2'	70:m2:1177:G:H8	1.81	0.46
70:m2:1395:G:H2'	70:m2:1396:G:C8	2.50	0.46
70:m2:1597:U:H2'	70:m2:1598:U:C6	2.51	0.46
7:n2:31:A:H2'	7:n2:31:A:N3	2.31	0.46
1:A1:206:ILE:HD11	1:A1:215:GLU:HG3	1.98	0.46
2:A2:943:C:H2'	2:A2:944:G:C8	2.51	0.46
2:A2:1120:C:H2'	2:A2:1121:A:C8	2.48	0.46
2:A2:3694:U:C6	33:L1:98:LYS:HE3	2.51	0.46
3:A3:130:ARG:HD2	3:A3:134:GLN:HE21	1.81	0.46
4:B1:164:ILE:HG13	4:B1:168:VAL:CG1	2.46	0.46
12:D1:47:PRO:HG2	12:D1:142:LEU:HG	1.96	0.46
13:D2:104:VAL:HG13	13:D2:162:ASN:O	2.16	0.46
21:G1:96:ASP:O	21:G1:99:GLU:HG3	2.16	0.46
31:K2:178:ARG:N	52:U2:51:GLY:HA2	2.31	0.46
35:L3:109:ARG:HH22	35:L3:127:ARG:HH12	1.63	0.46
70:m2:210:G:H8	70:m2:210:G:OP2	1.99	0.46
70:m2:532:U:H2'	70:m2:533:A:C5	2.51	0.46
70:m2:1457:A:C2	70:m2:1458:G:C8	3.04	0.46
71:o2:180:ARG:HG2	71:o2:180:ARG:HH11	1.80	0.46
78:v2:25:LYS:HD2	78:v2:62:PHE:CZ	2.51	0.46
81:y2:30:GLY:HA2	81:y2:66:VAL:O	2.16	0.46
1:A1:210:GLU:OE1	1:A1:210:GLU:HA	2.16	0.46
1:A1:250:VAL:HA	36:M2:39:VAL:HG22	1.98	0.46
2:A2:317:A:C2	2:A2:4013:U:H1'	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:1376:A:OP1	2:A2:1376:A:C8	2.68	0.46
2:A2:2045:C:C2	2:A2:2046:G:C8	3.04	0.46
2:A2:2136:A:H1'	2:A2:2138:C:OP2	2.16	0.46
2:A2:4165:A:H2'	2:A2:4166:G:C8	2.50	0.46
5:B2:33:U:H2'	5:B2:34:C:C6	2.49	0.46
10:C2:83:C:N4	48:S2:50:ARG:HH22	2.11	0.46
22:G2:52:ILE:HG23	22:G2:54:ARG:NH1	2.31	0.46
22:G2:232:THR:H	22:G2:235:MET:HE3	1.81	0.46
25:H2:216:PRO:HD2	25:H2:219:LEU:HD11	1.98	0.46
34:L2:166:THR:HG21	70:m2:875:G:H5'	1.98	0.46
41:O3:41:PHE:HD1	41:O3:57:THR:HB	1.80	0.46
70:m2:504:C:O4'	74:r2:66:MET:HG3	2.15	0.46
70:m2:890:U:H2'	70:m2:891:U:C6	2.51	0.46
70:m2:911:G:H2'	70:m2:912:G:H8	1.81	0.46
73:q2:39:VAL:HG22	73:q2:48:ILE:HG22	1.97	0.46
74:r2:179:ASN:HA	74:r2:231:GLY:HA2	1.98	0.46
74:r2:245:ARG:HG3	74:r2:245:ARG:HH11	1.81	0.46
76:t2:144:ILE:HD13	76:t2:152:ARG:NH2	2.30	0.46
82:z2:21:TYR:HE1	82:z2:58:MET:HE1	1.81	0.46
2:A2:942:A:H2'	2:A2:943:C:C6	2.51	0.45
2:A2:2395:G:H2'	2:A2:2396:A:H8	1.77	0.45
2:A2:3376:G:H22	2:A2:3389:A:H2	1.63	0.45
2:A2:4108:OMC:HM21	16:E2:241:PRO:HD3	1.98	0.45
2:A2:4499:G:H2'	2:A2:4500:G:C8	2.51	0.45
10:C2:5:U:H2'	10:C2:6:C:H6	1.81	0.45
17:E3:88:ASP:OD1	51:T3:10:GLY:HA2	2.16	0.45
32:K3:20:ASP:CB	32:K3:23:LYS:HD2	2.44	0.45
32:K3:58:LYS:HG2	32:K3:105:ASN:O	2.16	0.45
32:K3:188:LYS:NZ	70:m2:142:C:H42	2.14	0.45
32:K3:198:ARG:HD2	70:m2:125:C:H5''	1.98	0.45
35:L3:147:PHE:CE1	70:m2:826:C:H5'	2.51	0.45
40:O2:93:LYS:HE2	40:O2:93:LYS:HB2	1.50	0.45
42:P2:57:VAL:H	42:P2:84:GLN:NE2	2.14	0.45
43:P3:32:LYS:HG3	70:m2:688:U:OP1	2.16	0.45
48:S2:31:SER:HA	48:S2:48:PRO:HA	1.99	0.45
51:T3:25:LYS:HA	51:T3:25:LYS:HD2	1.77	0.45
60:b2:71:LYS:HB2	60:b2:71:LYS:HE2	1.64	0.45
70:m2:223:A:H2'	70:m2:224:U:H6	1.80	0.45
70:m2:578:A2M:HM'2	70:m2:579:U:H5'	1.97	0.45
70:m2:1594:C:OP1	75:s2:88:MET:HB2	2.16	0.45
70:m2:1808:A:H2'	70:m2:1809:C:H6	1.80	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
81:y2:51:LEU:O	81:y2:54:PRO:HD2	2.17	0.45
1:A1:263:ASN:O	1:A1:267:ARG:HG2	2.16	0.45
2:A2:108:A:H4'	2:A2:109:G:OP1	2.16	0.45
2:A2:268:G:H2'	2:A2:269:G:C8	2.49	0.45
2:A2:389:A:H1'	48:S2:90:ALA:O	2.16	0.45
2:A2:1160:C:H2'	2:A2:1161:G:H8	1.81	0.45
2:A2:1893:C:C4	2:A2:1896:A:H4'	2.51	0.45
2:A2:3304:A:H1'	2:A2:3441:A2M:N6	2.31	0.45
2:A2:3416:A:H5'	2:A2:3417:C:H5	1.81	0.45
2:A2:4433:G:H22	2:A2:4499:G:H1	1.63	0.45
3:A3:14:ARG:HG2	3:A3:14:ARG:HH11	1.80	0.45
6:B3:63:HIS:CE1	6:B3:78:ILE:HG21	2.51	0.45
10:C2:66:A:H2'	10:C2:67:U:H6	1.80	0.45
17:E3:131:LEU:HG	17:E3:135:LYS:HZ3	1.80	0.45
22:G2:283:LYS:HE2	22:G2:283:LYS:HB2	1.59	0.45
34:L2:99:MET:HE2	34:L2:99:MET:HA	1.99	0.45
36:M2:15:ARG:HB3	36:M2:27:LEU:HD23	1.99	0.45
37:M3:117:GLU:HA	37:M3:120:ALA:HB3	1.97	0.45
38:N2:28:ALA:O	38:N2:32:ARG:HG2	2.16	0.45
43:P3:62:VAL:HG11	49:S3:8:LEU:HD22	1.98	0.45
45:Q3:36:PRO:O	45:Q3:40:ILE:HD12	2.16	0.45
48:S2:47:MET:HE3	48:S2:48:PRO:HD2	1.98	0.45
66:h2:2:ARG:HB3	66:h2:5:TRP:CD1	2.51	0.45
69:k2:119:ARG:HB3	69:k2:119:ARG:CZ	2.46	0.45
70:m2:869:OMG:HM23	70:m2:869:OMG:H1'	1.63	0.45
76:t2:77:VAL:HA	76:t2:80:VAL:HG12	1.98	0.45
79:w2:30:LYS:HE3	79:w2:30:LYS:HB2	1.67	0.45
2:A2:423:G:H2'	2:A2:424:U:C6	2.51	0.45
2:A2:1524:C:H2'	2:A2:1525:A:C8	2.51	0.45
2:A2:2625:A:H2'	2:A2:2626:A:H8	1.81	0.45
2:A2:3579:A:H2'	2:A2:3580:C:C6	2.51	0.45
5:B2:3:C:H2'	5:B2:4:U:C6	2.51	0.45
22:G2:109:LEU:HD23	22:G2:171:LEU:HD21	1.99	0.45
33:L1:78:LYS:HD3	33:L1:78:LYS:HA	1.81	0.45
33:L1:91:LYS:O	33:L1:95:LYS:HG2	2.16	0.45
70:m2:199:U:H3'	70:m2:200:C:C5'	2.46	0.45
70:m2:1039:G:H4'	70:m2:1847:A:H4'	1.97	0.45
70:m2:1456:A:C2	70:m2:1478:A:H1'	2.52	0.45
70:m2:1545:U:H1'	81:y2:43:GLU:HG2	1.98	0.45
70:m2:1629:C:H2'	70:m2:1630:C:C6	2.51	0.45
74:r2:65:CYS:SG	74:r2:80:ILE:HD13	2.56	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
74:r2:106:LYS:O	74:r2:108:ARG:HD3	2.16	0.45
75:s2:85:LYS:O	75:s2:89:THR:HG23	2.17	0.45
75:s2:144:LEU:CD1	75:s2:148:ASN:HD21	2.29	0.45
76:t2:43:LEU:HB3	76:t2:72:PHE:CE1	2.51	0.45
81:y2:12:VAL:HG21	81:y2:91:ALA:N	2.32	0.45
81:y2:58:LEU:HD13	81:y2:92:LEU:HD23	1.98	0.45
1:A1:115:ILE:HD13	1:A1:269:MET:HE3	1.98	0.45
2:A2:114:G:N2	2:A2:276:C:H4'	2.30	0.45
2:A2:3567:C:H2'	2:A2:3568:U:C6	2.52	0.45
2:A2:3718:U:H2'	2:A2:3719:U:O4'	2.17	0.45
2:A2:3994:C:O3'	67:i2:37:GLY:HA3	2.17	0.45
3:A3:98:VAL:HG21	3:A3:103:LEU:HD13	1.98	0.45
5:B2:39:C:O2'	15:E1:46:GLN:HB3	2.17	0.45
10:C2:40:A:H2'	10:C2:41:A:C8	2.52	0.45
18:F1:185:ALA:HB2	61:c2:7:MET:HE1	1.99	0.45
28:I3:100:ARG:NH1	28:I3:100:ARG:HB2	2.31	0.45
31:K2:177:ALA:O	31:K2:184:ARG:HB2	2.16	0.45
41:O3:51:GLU:HG3	72:p2:48:LEU:O	2.16	0.45
70:m2:24:C:N4	70:m2:25:A:H62	2.15	0.45
70:m2:176:U:H2'	70:m2:177:G:O4'	2.16	0.45
70:m2:908:U:H2'	70:m2:909:G:C8	2.52	0.45
70:m2:1680:A2M:HM'3	70:m2:1680:A2M:H1'	1.68	0.45
72:p2:124:HIS:HB3	72:p2:138:PHE:CD2	2.52	0.45
74:r2:9:LEU:HB2	74:r2:30:ARG:HB2	1.98	0.45
74:r2:127:ARG:HG2	74:r2:127:ARG:HH11	1.81	0.45
79:w2:55:TYR:O	79:w2:56:ILE:HD13	2.17	0.45
1:A1:178:LYS:HA	19:F2:317:ASN:ND2	2.31	0.45
2:A2:324:A:H2'	2:A2:325:U:C6	2.52	0.45
2:A2:878:G:H2'	2:A2:879:C:C6	2.51	0.45
2:A2:1430:G:H1'	2:A2:2268:A:H61	1.81	0.45
2:A2:1496:PSU:H2'	2:A2:1497:A:C8	2.51	0.45
2:A2:1562:G:H2'	2:A2:1563:G:C8	2.52	0.45
2:A2:1648:G:H2'	2:A2:1649:C:H6	1.80	0.45
2:A2:2022:U:C6	2:A2:2025:G:H4'	2.51	0.45
2:A2:2092:C:H4'	69:k2:19:LYS:HB2	1.99	0.45
2:A2:4386:A:H2'	2:A2:4387:G:C8	2.52	0.45
4:B1:49:ARG:HB3	4:B1:49:ARG:NH1	2.31	0.45
12:D1:10:ARG:HD3	12:D1:11:TYR:CE1	2.51	0.45
13:D2:225:ILE:HD13	13:D2:233:ARG:NH1	2.31	0.45
30:J3:184:VAL:HG12	30:J3:195:LEU:HB2	1.98	0.45
31:K2:110:ARG:HG3	31:K2:120:ILE:HD12	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:Q3:103:SER:HB3	45:Q3:106:GLN:HB2	1.99	0.45
47:R3:97:ILE:CG2	47:R3:109:TYR:HB3	2.46	0.45
51:T3:53:LYS:HB3	51:T3:57:ALA:HB2	1.99	0.45
54:V2:104:LYS:HE2	54:V2:104:LYS:HB2	1.70	0.45
70:m2:51:U:H2'	70:m2:52:G:H8	1.81	0.45
70:m2:346:U:H2'	70:m2:347:U:C6	2.51	0.45
70:m2:530:A:H2'	70:m2:531:A:C8	2.51	0.45
74:r2:208:VAL:HB	74:r2:225:ILE:HD12	1.99	0.45
78:v2:11:ILE:HD13	78:v2:45:VAL:HA	1.99	0.45
2:A2:72:C:H4'	61:c2:17:VAL:HG21	1.97	0.45
2:A2:162:A:H2'	2:A2:163:A:C8	2.52	0.45
2:A2:757:U:C2	2:A2:758:G:C8	3.05	0.45
2:A2:942:A:H2'	2:A2:943:C:H6	1.80	0.45
2:A2:1024:C:H2'	2:A2:1025:C:C6	2.51	0.45
2:A2:1118:C:H2'	2:A2:1119:C:C6	2.52	0.45
2:A2:1390:G:C8	13:D2:181:LYS:HD2	2.52	0.45
2:A2:1657:G:OP1	54:V2:4:SER:HB2	2.16	0.45
2:A2:1709:A:H2'	2:A2:1710:A:C8	2.52	0.45
2:A2:2271:G:OP2	59:a2:37:LYS:HE3	2.17	0.45
2:A2:3340:G:H2'	2:A2:3341:C:C6	2.51	0.45
3:A3:84:LEU:HA	3:A3:97:GLN:OE1	2.16	0.45
9:C1:128:MET:SD	9:C1:157:SER:HB3	2.57	0.45
12:D1:66:GLU:CD	12:D1:69:ARG:HH21	2.24	0.45
24:H1:118:SER:HB3	24:H1:132:VAL:HG22	1.98	0.45
24:H1:200:LEU:HD22	24:H1:204:ARG:HD3	1.98	0.45
28:I3:173:LEU:HG	28:I3:189:ILE:HG12	1.99	0.45
46:R2:81:LEU:HD23	46:R2:81:LEU:HA	1.81	0.45
59:a2:78:TYR:HB3	59:a2:82:MET:HG3	1.98	0.45
61:c2:86:LYS:O	61:c2:90:LEU:HG	2.16	0.45
70:m2:685:OMG:H1'	70:m2:685:OMG:HM23	1.72	0.45
70:m2:1176:U:H2'	70:m2:1177:G:C8	2.52	0.45
75:s2:159:ARG:HG3	75:s2:159:ARG:HH11	1.81	0.45
2:A2:2294:C:H2'	2:A2:2295:C:C6	2.52	0.45
2:A2:3250:C:H5'	2:A2:3251:U:H5	1.81	0.45
3:A3:89:ASP:O	80:x2:18:ARG:HG3	2.17	0.45
16:E2:45:ALA:HB3	16:E2:183:ILE:HG23	1.98	0.45
19:F2:56:GLU:H	19:F2:56:GLU:HG2	1.62	0.45
24:H1:28:TRP:O	24:H1:32:GLN:HG2	2.17	0.45
45:Q3:118:ARG:HE	70:m2:85:A:H5''	1.82	0.45
70:m2:1535:A:H2'	70:m2:1535:A:N3	2.32	0.45
74:r2:155:LYS:N	74:r2:155:LYS:HD2	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
76:t2:53:VAL:HG23	76:t2:175:GLY:HA3	1.98	0.45
81:y2:58:LEU:HD11	81:y2:112:LEU:HD21	1.99	0.45
2:A2:176:G:H2'	2:A2:177:G:H8	1.82	0.45
2:A2:221:C:H2'	2:A2:222:C:H6	1.81	0.45
2:A2:1146:C:OP1	57:Y2:30:LYS:HG2	2.17	0.45
2:A2:2407:G:H22	68:j2:61:MET:HG2	1.82	0.45
3:A3:48:ALA:HB2	3:A3:70:ILE:HD12	1.99	0.45
7:Bv:16:U:O3'	7:Bv:17:C:H2'	2.17	0.45
10:C2:24:G:H2'	10:C2:25:G:O4'	2.17	0.45
16:E2:57:VAL:HG12	16:E2:71:GLU:OE1	2.17	0.45
18:F1:18:TRP:CD1	18:F1:18:TRP:H	2.35	0.45
41:O3:150:ARG:H	41:O3:150:ARG:HG2	1.55	0.45
43:P3:23:ARG:HD3	43:P3:23:ARG:HA	1.80	0.45
67:i2:82:MET:HE3	67:i2:82:MET:HB3	1.84	0.45
70:m2:534:C:N4	70:m2:555:A:H61	2.05	0.45
70:m2:1225:A:H2'	70:m2:1226:G:O4'	2.17	0.45
71:o2:149:ASN:HB2	71:o2:165:ASN:OD1	2.17	0.45
73:q2:197:LYS:HA	73:q2:197:LYS:HD2	1.72	0.45
76:t2:60:ILE:CD1	76:t2:92:VAL:HG12	2.46	0.45
81:y2:6:PRO:HB2	81:y2:7:LEU:HD23	1.98	0.45
1:A1:49:GLU:O	1:A1:53:LYS:HG2	2.17	0.45
1:A1:117:ILE:O	1:A1:245:LYS:HE2	2.17	0.45
2:A2:1053:G:H2'	2:A2:1054:G:C8	2.52	0.45
2:A2:1496:PSU:H2'	2:A2:1497:A:H8	1.81	0.45
2:A2:1734:A:H2'	2:A2:1735:G:C8	2.52	0.45
2:A2:3266:A:H2'	2:A2:3267:A:H8	1.82	0.45
2:A2:3418:U:H3'	2:A2:3419:A:C8	2.51	0.45
2:A2:3996:U:H2'	2:A2:3997:C:C6	2.51	0.45
2:A2:4112:U:H2'	2:A2:4113:C:C6	2.52	0.45
2:A2:4165:A:H2'	2:A2:4166:G:H8	1.81	0.45
2:A2:4564:G:O2'	2:A2:4565:C:H5'	2.17	0.45
2:A2:4571:C:O2'	2:A2:4572:G:H5'	2.17	0.45
9:C1:63:ASN:OD1	9:C1:66:GLU:HG2	2.16	0.45
16:E2:257:TRP:C	16:E2:257:TRP:CD1	2.95	0.45
19:F2:94:ASN:HA	19:F2:100:ARG:O	2.16	0.45
24:H1:195:ARG:HG3	24:H1:196:ASN:ND2	2.32	0.45
25:H2:170:VAL:HG21	25:H2:268:ILE:HD11	1.99	0.45
30:J3:215:MET:HE3	30:J3:215:MET:HB2	1.79	0.45
33:L1:179:LEU:O	33:L1:183:ILE:HG23	2.17	0.45
43:P3:8:ALA:HA	43:P3:74:VAL:HG11	1.99	0.45
47:R3:84:ALA:O	47:R3:88:LEU:HG	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:T3:21:LYS:HE3	51:T3:21:LYS:HB2	1.84	0.45
63:e2:61:PRO:HA	63:e2:62:PRO:HD3	1.89	0.45
70:m2:1742:C:H2'	70:m2:1743:U:C6	2.51	0.45
80:x2:28:MET:HE2	80:x2:28:MET:HB2	1.89	0.45
1:A1:244:LYS:NZ	1:A1:244:LYS:HB3	2.32	0.45
2:A2:1036:G:H2'	2:A2:1037:C:C6	2.52	0.45
2:A2:2061:G:H1'	2:A2:2087:A:N6	2.32	0.45
2:A2:2168:U:C2	2:A2:2169:G:C8	3.05	0.45
2:A2:2363:G:H2'	2:A2:2364:G:H8	1.82	0.45
2:A2:2382:C:H2'	2:A2:2383:U:C6	2.52	0.45
2:A2:4560:G:H2'	2:A2:4561:G:C8	2.52	0.45
2:A2:4604:C:H2'	2:A2:4605:U:C6	2.52	0.45
13:D2:181:LYS:HE3	13:D2:184:ARG:HD2	1.99	0.45
16:E2:216:MET:HE3	16:E2:281:ASN:OD1	2.17	0.45
27:I2:185:VAL:O	27:I2:189:ILE:HG12	2.17	0.45
30:J3:184:VAL:HG13	30:J3:243:ALA:HB1	1.99	0.45
32:K3:174:PRO:HB3	70:m2:65:C:C4	2.52	0.45
41:O3:34:PHE:HB3	41:O3:41:PHE:HB2	1.98	0.45
41:O3:96:LYS:HD3	41:O3:132:VAL:HG11	1.99	0.45
47:R3:67:LEU:HB2	75:s2:103:LEU:CD2	2.46	0.45
47:R3:98:LYS:HE2	47:R3:112:ASN:HB3	1.97	0.45
70:m2:223:A:H2'	70:m2:224:U:C6	2.52	0.45
70:m2:381:C:H5'	77:u2:33:ALA:HA	1.97	0.45
73:q2:138:VAL:HA	73:q2:183:GLY:O	2.17	0.45
73:q2:193:ASP:N	73:q2:194:PRO:HD3	2.32	0.45
82:z2:29:HIS:HA	82:z2:32:LYS:HG2	1.99	0.45
1:A1:114:VAL:O	1:A1:142:GLY:HA2	2.18	0.44
2:A2:300:A:H2'	2:A2:301:G:C8	2.49	0.44
2:A2:457:G:H2'	2:A2:458:C:H6	1.82	0.44
2:A2:1542:C:C2	2:A2:1587:C:N4	2.85	0.44
2:A2:1649:C:H2'	2:A2:1650:C:C6	2.52	0.44
3:A3:44:VAL:HG11	3:A3:71:MET:HG3	1.99	0.44
9:C1:42:ASN:HD21	27:I2:131:PRO:HB2	1.81	0.44
10:C2:70:G:H5''	48:S2:27:ARG:CZ	2.47	0.44
10:C2:152:U:H2'	10:C2:153:C:O4'	2.17	0.44
12:D1:35:ASP:O	12:D1:36:LEU:HD12	2.17	0.44
16:E2:331:ILE:HG22	16:E2:333:LEU:HG	1.98	0.44
18:F1:43:ALA:O	18:F1:47:ALA:HA	2.17	0.44
18:F1:80:GLU:HB3	18:F1:110:LEU:HD12	1.97	0.44
33:L1:7:ARG:H	33:L1:7:ARG:HG2	1.47	0.44
33:L1:68:LEU:HD13	33:L1:85:MET:HB2	1.97	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:m2:1389:G:H2'	70:m2:1390:A:O4'	2.16	0.44
70:m2:1535:A:C8	70:m2:1606:G:H1'	2.51	0.44
2:A2:25:A:C8	2:A2:341:G:C8	3.05	0.44
2:A2:2117:U:H5'	29:J2:65:GLY:O	2.17	0.44
2:A2:2323:C:H2'	2:A2:2324:G:H8	1.82	0.44
2:A2:2655:U:H2'	2:A2:2656:G:H8	1.82	0.44
2:A2:3341:C:OP1	13:D2:192:LYS:HE3	2.17	0.44
2:A2:3943:G:H8	2:A2:3980:G:H2'	1.83	0.44
2:A2:4357:A:H2'	2:A2:4358:G:O4'	2.17	0.44
9:C1:44:GLU:CG	9:C1:58:ASP:HB2	2.47	0.44
16:E2:250:LYS:HE2	16:E2:250:LYS:HB3	1.58	0.44
30:J3:179:THR:HG21	30:J3:198:ALA:O	2.18	0.44
39:N3:9:LYS:O	70:m2:1132:G:H4'	2.17	0.44
63:e2:34:PHE:HB2	63:e2:45:LEU:CD2	2.47	0.44
70:m2:1009:C:H2'	70:m2:1010:A:C8	2.52	0.44
70:m2:1513:U:H2'	70:m2:1514:C:C6	2.52	0.44
70:m2:1730:U:H2'	70:m2:1731:U:O4'	2.18	0.44
71:o2:181:GLU:O	71:o2:185:MET:HG3	2.17	0.44
82:z2:66:VAL:HG23	82:z2:68:GLY:H	1.82	0.44
2:A2:259:C:H2'	2:A2:260:C:C6	2.52	0.44
2:A2:878:G:H2'	2:A2:879:C:H6	1.83	0.44
2:A2:1165:G:H2'	2:A2:1166:C:C6	2.52	0.44
2:A2:1228:G:H2'	2:A2:1229:C:C6	2.52	0.44
2:A2:1665:U:OP1	12:D1:15:LYS:HG3	2.18	0.44
2:A2:3317:G:O2'	13:D2:156:LYS:HD2	2.18	0.44
2:A2:3395:C:C2	2:A2:3396:G:C8	3.05	0.44
3:A3:84:LEU:H	3:A3:84:LEU:HD12	1.81	0.44
4:B1:90:GLN:CD	4:B1:90:GLN:H	2.24	0.44
6:B3:72:VAL:HG13	6:B3:100:ALA:HB3	1.98	0.44
9:C1:157:SER:O	9:C1:161:ILE:HG13	2.16	0.44
12:D1:170:LYS:HE3	12:D1:170:LYS:HB3	1.76	0.44
22:G2:181:PRO:HD2	22:G2:195:HIS:CD2	2.53	0.44
23:G3:40:ARG:HA	23:G3:40:ARG:HD2	1.78	0.44
24:H1:9:GLU:HB2	61:c2:44:ILE:HG13	1.99	0.44
26:H3:50:ILE:HG23	73:q2:15:GLY:HA3	1.99	0.44
28:I3:24:THR:HG23	28:I3:71:ILE:HD12	1.99	0.44
33:L1:39:LYS:HA	33:L1:202:ARG:HB2	1.99	0.44
43:P3:81:VAL:HG12	43:P3:123:GLY:O	2.17	0.44
59:a2:60:ARG:HA	59:a2:60:ARG:HD2	1.86	0.44
60:b2:21:LEU:HD11	60:b2:54:ILE:HG23	2.00	0.44
70:m2:28:U:O2'	70:m2:29:G:H5'	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:m2:184:G:H2'	70:m2:185:G:C8	2.52	0.44
72:p2:83:LYS:HE2	72:p2:83:LYS:HB2	1.69	0.44
74:r2:45:ILE:CG1	74:r2:80:ILE:HG13	2.48	0.44
74:r2:151:ASP:OD1	74:r2:152:PRO:HD2	2.16	0.44
75:s2:126:THR:OG1	75:s2:139:VAL:HG21	2.18	0.44
77:u2:10:LYS:HE2	79:w2:136:LYS:HE3	1.98	0.44
78:v2:49:MET:HG2	78:v2:69:TRP:CE3	2.53	0.44
79:w2:26:GLY:H	79:w2:30:LYS:HD2	1.83	0.44
80:x2:111:MET:HB2	80:x2:119:PHE:CZ	2.52	0.44
2:A2:746:G:O2'	2:A2:747:G:H8	2.00	0.44
2:A2:1152:G:H4'	2:A2:1153:U:C6	2.52	0.44
2:A2:1233:A:H2'	2:A2:1233:A:N3	2.32	0.44
2:A2:1509:C:H2'	2:A2:1510:G:C4	2.52	0.44
2:A2:1675:A:H5'	54:V2:7:HIS:O	2.18	0.44
2:A2:3860:U:H2'	2:A2:3861:G:H8	1.82	0.44
2:A2:4215:U:C2	2:A2:4216:A:C8	3.06	0.44
4:B1:111:LYS:HD2	4:B1:111:LYS:C	2.43	0.44
5:B2:3:C:H2'	5:B2:4:U:H6	1.82	0.44
5:B2:19:C:H2'	5:B2:20:U:C6	2.52	0.44
6:B3:131:LEU:HA	6:B3:134:ILE:HD11	1.99	0.44
11:C3:67:LYS:HB2	11:C3:76:THR:HG23	1.99	0.44
28:I3:59:LEU:HD23	28:I3:90:TRP:CG	2.52	0.44
70:m2:444:C:H2'	70:m2:445:U:C6	2.52	0.44
70:m2:1309:U:H2'	70:m2:1310:U:O4'	2.17	0.44
70:m2:1551:U:H2'	70:m2:1552:G:O4'	2.17	0.44
70:m2:1591:A:H2'	70:m2:1592:C:C6	2.52	0.44
70:m2:1608:G:N2	70:m2:1634:G:H2'	2.31	0.44
72:p2:157:GLN:H	72:p2:157:GLN:HG2	1.53	0.44
75:s2:191:LYS:HE2	75:s2:191:LYS:HB3	1.58	0.44
77:u2:18:ARG:HE	77:u2:18:ARG:HB2	1.61	0.44
78:v2:49:MET:HG2	78:v2:69:TRP:CD2	2.52	0.44
2:A2:57:G:H5''	24:H1:154:PRO:HB2	1.99	0.44
2:A2:65:A:N6	2:A2:75:G:H1'	2.33	0.44
2:A2:3497:OMC:HM23	2:A2:3497:OMC:H1'	1.85	0.44
2:A2:3951:U:H2'	2:A2:3952:U:H6	1.82	0.44
2:A2:4058:U:C2	2:A2:4059:G:C8	3.04	0.44
2:A2:4236:A:H2'	2:A2:4237:U:O4'	2.17	0.44
2:A2:4552:G:H1	2:A2:4559:G:H2'	1.83	0.44
2:A2:4614:A:H2'	2:A2:4615:C:C6	2.52	0.44
2:A2:4649:U:H2'	2:A2:4650:C:C6	2.53	0.44
9:C1:41:ILE:HG22	9:C1:43:VAL:HG13	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:C2:7:U:H2'	10:C2:8:U:C6	2.53	0.44
12:D1:51:HIS:CD2	12:D1:168:SER:HB2	2.52	0.44
15:E1:40:LEU:HD23	15:E1:40:LEU:HA	1.83	0.44
16:E2:172:PRO:HB2	16:E2:324:GLY:HA3	1.98	0.44
18:F1:63:THR:HG23	18:F1:65:ARG:H	1.82	0.44
25:H2:119:MET:HE3	25:H2:119:MET:HB3	1.88	0.44
35:L3:87:LEU:HD12	35:L3:88:ASP:H	1.82	0.44
50:T2:19:SER:HB3	59:a2:91:ILE:HD11	1.99	0.44
70:m2:62:G:C2'	70:m2:63:U:H5'	2.47	0.44
70:m2:942:U:H2'	70:m2:943:C:C6	2.53	0.44
70:m2:1846:U:H2'	70:m2:1847:A:C8	2.53	0.44
74:r2:75:LYS:HB3	74:r2:75:LYS:HE2	1.71	0.44
78:v2:27:VAL:HG12	78:v2:46:MET:SD	2.58	0.44
81:y2:85:ARG:O	81:y2:88:ILE:HG12	2.16	0.44
1:A1:53:LYS:HA	1:A1:56:ARG:HD2	1.98	0.44
1:A1:158:VAL:O	1:A1:162:ILE:HG12	2.17	0.44
2:A2:1140:A2M:HM'3	2:A2:1140:A2M:H1'	1.73	0.44
2:A2:1323:G:H2'	2:A2:1324:C:C6	2.52	0.44
2:A2:2158:A:OP1	59:a2:10:ARG:HD3	2.18	0.44
2:A2:3472:A:OP1	2:A2:3474:OMU:H5	2.17	0.44
2:A2:4152:PSU:H2'	2:A2:4153:U:C6	2.53	0.44
25:H2:76:TYR:CD1	25:H2:77:LYS:HG3	2.52	0.44
35:L3:38:ARG:HB3	35:L3:42:GLU:OE2	2.16	0.44
36:M2:93:MET:HE1	36:M2:117:HIS:NE2	2.33	0.44
36:M2:127:MET:HE2	36:M2:127:MET:HB3	1.88	0.44
43:P3:20:ARG:HA	43:P3:20:ARG:HD2	1.81	0.44
50:T2:11:VAL:HG21	50:T2:80:LEU:HB3	1.98	0.44
52:U2:26:ARG:HA	52:U2:26:ARG:HD3	1.68	0.44
53:U3:126:CYS:SG	53:U3:144:CYS:N	2.91	0.44
56:X2:23:ARG:HG2	56:X2:121:ASN:HA	2.00	0.44
56:X2:33:ILE:CD1	56:X2:44:ARG:HG3	2.48	0.44
59:a2:19:LYS:HD3	59:a2:19:LYS:HA	1.64	0.44
70:m2:115:U:H2'	70:m2:116:OMU:C6	2.47	0.44
70:m2:201:C:H4'	70:m2:202:C:OP1	2.18	0.44
70:m2:1631:C:H2'	70:m2:1632:A:O4'	2.18	0.44
71:o2:177:MET:HE3	71:o2:177:MET:HB3	1.77	0.44
72:p2:39:PHE:HB3	72:p2:74:LEU:O	2.18	0.44
73:q2:33:GLY:HA3	73:q2:53:THR:OG1	2.17	0.44
73:q2:106:ARG:HH21	73:q2:107:TYR:HE2	1.63	0.44
76:t2:83:LEU:O	76:t2:83:LEU:HD23	2.17	0.44
76:t2:100:ILE:HG12	76:t2:125:VAL:HG21	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A1:111:LEU:HD11	1:A1:144:PHE:HB3	1.99	0.44
2:A2:662:C:H2'	2:A2:663:C:C6	2.53	0.44
2:A2:1820:C:H2'	2:A2:1821:C:C6	2.53	0.44
2:A2:3860:U:H2'	2:A2:3861:G:C8	2.53	0.44
2:A2:3915:C:H2'	2:A2:3916:G:O4'	2.18	0.44
2:A2:4253:U:H2'	2:A2:4254:A:C8	2.50	0.44
4:B1:99:ALA:HB1	4:B1:193:LEU:HD21	2.00	0.44
5:B2:113:G:H2'	5:B2:114:U:C6	2.52	0.44
8:Bx:49:U:H2'	8:Bx:50:U:C4	2.53	0.44
15:E1:15:LEU:HA	15:E1:15:LEU:HD23	1.77	0.44
15:E1:74:VAL:HG11	15:E1:78:LYS:HG2	1.99	0.44
20:F3:13:LYS:HD2	70:m2:1135:A:H4'	2.00	0.44
33:L1:15:ARG:HD3	33:L1:15:ARG:HA	1.77	0.44
48:S2:26:ARG:HG2	48:S2:78:TYR:OH	2.18	0.44
70:m2:1564:C:H2'	70:m2:1565:G:C8	2.52	0.44
77:u2:8:TRP:HA	77:u2:18:ARG:NH1	2.32	0.44
81:y2:10:VAL:HG23	81:y2:25:CYS:HB3	2.00	0.44
1:A1:93:MET:HE2	1:A1:96:MET:SD	2.58	0.44
2:A2:1154:OMC:C2	2:A2:1155:U:C5	3.06	0.44
2:A2:1404:U:OP2	16:E2:243:LYS:HE2	2.17	0.44
2:A2:1710:A:H2'	2:A2:1711:G:O4'	2.17	0.44
2:A2:1893:C:N3	2:A2:1896:A:H4'	2.33	0.44
2:A2:2063:A:H4'	2:A2:2089:C:H4'	1.99	0.44
2:A2:2131:A:H2'	2:A2:2132:C:C6	2.52	0.44
2:A2:2448:G:H2'	2:A2:2449:G:C2	2.52	0.44
2:A2:2559:OMC:C2	2:A2:2560:C:C5	3.06	0.44
2:A2:3956:A:C2	52:U2:43:ILE:HG23	2.52	0.44
2:A2:4092:G:C4	2:A2:4093:A:C8	3.06	0.44
5:B2:57:C:H2'	5:B2:58:A:H8	1.83	0.44
6:B3:71:GLY:H	6:B3:74:SER:HB2	1.83	0.44
11:C3:67:LYS:HG3	11:C3:78:ASP:HB2	2.00	0.44
13:D2:45:VAL:HG22	13:D2:61:VAL:HG22	1.99	0.44
16:E2:261:ARG:HB3	27:I2:64:THR:HG21	1.99	0.44
17:E3:22:TRP:HE3	17:E3:28:LYS:HG3	1.82	0.44
19:F2:137:VAL:HG12	19:F2:142:HIS:HB2	1.99	0.44
21:G1:38:VAL:O	21:G1:47:ARG:HA	2.18	0.44
22:G2:76:CYS:HB2	22:G2:112:ARG:NH2	2.10	0.44
39:N3:73:ARG:HG2	39:N3:73:ARG:NH1	2.33	0.44
47:R3:39:LYS:HG3	47:R3:40:VAL:HG23	2.00	0.44
49:S3:14:GLU:O	49:S3:18:LYS:HG2	2.17	0.44
50:T2:12:LEU:HB2	50:T2:81:MET:HB2	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:U3:100:LEU:HD12	53:U3:101:ALA:O	2.18	0.44
60:b2:81:LEU:HA	60:b2:84:ARG:HG2	2.00	0.44
62:d2:67:LEU:HD23	62:d2:67:LEU:HA	1.87	0.44
70:m2:388:C:H2'	70:m2:389:C:C6	2.53	0.44
70:m2:832:A:H2'	70:m2:833:G:O4'	2.17	0.44
70:m2:1145:A:H2'	70:m2:1146:A:C8	2.53	0.44
70:m2:1472:C:H2'	70:m2:1473:C:H6	1.83	0.44
70:m2:1811:A:H2'	70:m2:1812:U:C6	2.52	0.44
71:o2:124:VAL:HG13	71:o2:130:ASP:HB2	2.00	0.44
78:v2:27:VAL:HB	78:v2:43:LEU:HD13	1.99	0.44
2:A2:372:A:OP1	62:d2:36:LYS:HD3	2.18	0.44
2:A2:1494:G:O5'	52:U2:29:PRO:HB2	2.16	0.44
2:A2:1856:U:H4'	2:A2:1858:G:C4	2.53	0.44
2:A2:1901:A:C2'	2:A2:1902:A:H5'	2.48	0.44
2:A2:4269:G:H2'	2:A2:4270:A2M:H8	1.99	0.44
5:B2:23:A:H2'	5:B2:24:C:C6	2.52	0.44
17:E3:101:LEU:HB3	17:E3:124:LYS:HB2	2.00	0.44
18:F1:190:ARG:HH11	18:F1:190:ARG:HG3	1.83	0.44
41:O3:56:VAL:HG23	41:O3:77:ALA:HB1	1.99	0.44
45:Q3:74:MET:HE3	45:Q3:74:MET:HB2	1.79	0.44
70:m2:85:A:H2'	70:m2:86:C:C6	2.52	0.44
70:m2:199:U:H3'	70:m2:200:C:H5'	2.00	0.44
70:m2:1374:U:H2'	70:m2:1375:C:O4'	2.17	0.44
71:o2:66:VAL:HG21	71:o2:185:MET:HB2	2.00	0.44
74:r2:47:PHE:O	74:r2:51:ARG:HB2	2.18	0.44
74:r2:122:LYS:HD2	74:r2:164:LEU:HD21	1.99	0.44
75:s2:136:ARG:NH1	75:s2:136:ARG:HB3	2.32	0.44
76:t2:154:ILE:HG13	76:t2:185:VAL:HG12	1.99	0.44
82:z2:86:PRO:HB2	82:z2:88:VAL:O	2.18	0.44
2:A2:150:U:OP2	4:B1:200:THR:HB	2.18	0.43
2:A2:2241:G:H2'	2:A2:2242:G:C8	2.53	0.43
2:A2:3573:A:H2'	2:A2:3574:G:H8	1.82	0.43
2:A2:3906:G:H2'	2:A2:3906:G:N3	2.33	0.43
2:A2:4078:C:C2'	2:A2:4079:G:H5'	2.48	0.43
4:B1:96:LEU:HD23	4:B1:96:LEU:HA	1.83	0.43
6:B3:130:ASP:O	6:B3:134:ILE:HG12	2.18	0.43
18:F1:128:PRO:HD3	18:F1:143:GLU:OE2	2.18	0.43
21:G1:80:ALA:O	21:G1:85:LYS:HE2	2.18	0.43
22:G2:271:MET:HE3	22:G2:276:LYS:HD3	2.00	0.43
40:O2:42:PHE:CE1	40:O2:46:ARG:HD3	2.53	0.43
53:U3:130:VAL:HB	70:m2:1312:U:H5''	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:Z2:51:TYR:CZ	58:Z2:68:ARG:HB2	2.52	0.43
70:m2:96:C:H1'	70:m2:476:G:H5'	2.00	0.43
70:m2:376:G:H2'	70:m2:377:U:C6	2.53	0.43
70:m2:1281:C:H2'	70:m2:1282:G:H8	1.82	0.43
70:m2:1380:A:H4'	70:m2:1381:A:O5'	2.17	0.43
79:w2:94:HIS:HB2	79:w2:105:ARG:HD2	2.00	0.43
80:x2:75:VAL:HG12	80:x2:93:MET:HB3	2.00	0.43
2:A2:50:C:C2	2:A2:51:A:C8	3.06	0.43
2:A2:165:A:H2'	2:A2:166:C:H6	1.83	0.43
2:A2:441:G:H2'	2:A2:442:G:H8	1.84	0.43
2:A2:937:C:H2'	2:A2:938:U:H5'	1.99	0.43
2:A2:1021:G:N3	2:A2:1021:G:H2'	2.33	0.43
2:A2:2290:G:H2'	2:A2:2291:A:C8	2.54	0.43
2:A2:2403:G:H2'	2:A2:2404:G:C8	2.53	0.43
2:A2:2440:C:H2'	2:A2:2441:G:O4'	2.18	0.43
2:A2:3614:G:H3'	2:A2:3615:U:C5'	2.48	0.43
2:A2:3694:U:C2	33:L1:102:LYS:HE3	2.52	0.43
2:A2:4431:C:H2'	2:A2:4432:C:C6	2.53	0.43
15:E1:35:ARG:HG3	15:E1:35:ARG:NH1	2.31	0.43
24:H1:140:LYS:HD2	24:H1:140:LYS:HA	1.78	0.43
35:L3:87:LEU:HD12	35:L3:88:ASP:N	2.33	0.43
35:L3:119:LEU:HD23	35:L3:135:ILE:HD12	1.99	0.43
41:O3:150:ARG:HD2	70:m2:1840:U:O2	2.18	0.43
42:P2:82:ILE:HG22	42:P2:125:CYS:SG	2.57	0.43
43:P3:107:SER:HA	70:m2:864:A:C4	2.53	0.43
63:e2:27:LYS:HG3	63:e2:70:LYS:HZ3	1.83	0.43
63:e2:27:LYS:HD3	63:e2:32:VAL:HG22	2.00	0.43
69:k2:26:SER:HB3	69:k2:31:ASN:HD22	1.84	0.43
70:m2:12:U:H2'	70:m2:13:C:H6	1.82	0.43
70:m2:1446:U:H2'	70:m2:1447:U:H6	1.82	0.43
7:n2:23:A:H2'	7:n2:24:G:C8	2.54	0.43
77:u2:121:LEU:HD13	77:u2:158:ILE:HD11	2.00	0.43
77:u2:172:LEU:HD11	77:u2:195:LEU:CD1	2.48	0.43
79:w2:55:TYR:CD1	79:w2:115:PRO:HG2	2.53	0.43
1:A1:98:ARG:HD2	2:A2:736:G:H5''	2.00	0.43
2:A2:23:C:H2'	2:A2:24:G:O4'	2.18	0.43
2:A2:3504:U:H2'	2:A2:3505:A:C8	2.53	0.43
2:A2:4332:G:H2'	2:A2:4333:A:C8	2.54	0.43
3:A3:61:GLU:H	3:A3:61:GLU:HG3	1.56	0.43
3:A3:105:ASN:O	3:A3:109:GLU:HG2	2.18	0.43
4:B1:136:LEU:HD13	4:B1:202:VAL:HG13	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:B1:150:LYS:HE3	4:B1:150:LYS:HB3	1.52	0.43
5:B2:54:A:C5	15:E1:12:MET:HG3	2.53	0.43
21:G1:36:ALA:HB2	21:G1:52:PHE:CZ	2.53	0.43
24:H1:149:GLN:HG2	60:b2:95:LEU:HD11	2.00	0.43
29:J2:15:CYS:SG	29:J2:150:LEU:HB2	2.59	0.43
29:J2:36:ILE:HD12	29:J2:44:ALA:HB1	1.99	0.43
70:m2:37:C:H2'	70:m2:38:A:O4'	2.19	0.43
70:m2:1232:C:H2'	70:m2:1233:C:H6	1.83	0.43
71:o2:33:GLN:HB2	71:o2:154:LEU:CD1	2.45	0.43
2:A2:40:G:N2	2:A2:4032:A:H62	2.16	0.43
2:A2:175:C:H2'	2:A2:176:G:C8	2.53	0.43
2:A2:287:U:H2'	2:A2:288:G:C8	2.53	0.43
2:A2:1006:G:H1	2:A2:1018:U:H3	1.67	0.43
2:A2:1069:G:C5	2:A2:1070:C:H1'	2.54	0.43
2:A2:1071:G:H21	2:A2:1078:G:H1	1.67	0.43
2:A2:1330:2MG:H2'	2:A2:1331:A:N7	2.34	0.43
2:A2:1626:G:H2'	2:A2:1627:A:C8	2.54	0.43
2:A2:1911:G:H2'	2:A2:1912:A:C8	2.54	0.43
2:A2:2613:A:H2'	2:A2:2614:G:O4'	2.17	0.43
2:A2:3997:C:H2'	2:A2:3998:U:H6	1.82	0.43
2:A2:4647:U:H2'	2:A2:4648:U:O4'	2.18	0.43
3:A3:27:ALA:HB2	3:A3:52:LEU:HD23	2.00	0.43
3:A3:54:LYS:HD2	3:A3:58:GLU:HG2	2.01	0.43
10:C2:39:G:H1'	10:C2:103:A:H61	1.83	0.43
22:G2:107:ARG:HA	22:G2:107:ARG:HD2	1.72	0.43
39:N3:3:ARG:HG2	39:N3:8:GLY:O	2.18	0.43
47:R3:68:ILE:HB	47:R3:109:TYR:HB2	2.00	0.43
48:S2:56:GLN:HB3	48:S2:67:ILE:HD13	2.01	0.43
70:m2:1414:C:C2	70:m2:1415:G:C8	3.06	0.43
70:m2:1446:U:H2'	70:m2:1447:U:C6	2.54	0.43
80:x2:62:LYS:HE3	80:x2:62:LYS:HB2	1.70	0.43
2:A2:37:U:H5''	52:U2:32:ARG:HD3	2.00	0.43
2:A2:425:U:H2'	2:A2:426:A:H8	1.83	0.43
2:A2:2626:A:H2'	2:A2:2627:C:O4'	2.18	0.43
2:A2:3811:C:H2'	2:A2:3812:C:C6	2.54	0.43
2:A2:4330:G:N2	2:A2:4365:G:H1'	2.33	0.43
2:A2:4382:C:H2'	2:A2:4383:G:O4'	2.19	0.43
2:A2:4565:C:H2'	2:A2:4566:C:C6	2.52	0.43
10:C2:17:A:H2'	10:C2:18:U:H6	1.84	0.43
13:D2:100:ASN:O	13:D2:165:VAL:HA	2.19	0.43
19:F2:145:GLU:C	19:F2:146:GLU:HG3	2.43	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:I2:201:LEU:H	27:I2:201:LEU:HD12	1.82	0.43
29:J2:5:SER:CB	29:J2:118:GLN:HE22	2.31	0.43
32:K3:154:ARG:HB3	70:m2:77:A:O5'	2.18	0.43
35:L3:55:LYS:HE2	35:L3:55:LYS:HB2	1.72	0.43
35:L3:125:HIS:NE2	35:L3:129:LEU:HD21	2.34	0.43
45:Q3:66:GLY:HA2	70:m2:583:U:H4'	1.99	0.43
48:S2:85:VAL:O	48:S2:85:VAL:HG12	2.19	0.43
52:U2:136:LYS:O	52:U2:140:VAL:HG22	2.17	0.43
56:X2:43:PRO:O	56:X2:47:LYS:HG3	2.18	0.43
63:e2:11:PHE:CD1	63:e2:45:LEU:HD22	2.53	0.43
70:m2:352:C:C2	70:m2:353:G:C8	3.05	0.43
70:m2:391:A:H2'	70:m2:392:C:C6	2.54	0.43
70:m2:496:C:H5''	74:r2:57:THR:CG2	2.48	0.43
70:m2:1564:C:H2'	70:m2:1565:G:H8	1.83	0.43
71:o2:206:ASP:O	71:o2:210:ILE:HG13	2.19	0.43
75:s2:18:LYS:HE3	75:s2:18:LYS:HB2	1.68	0.43
77:u2:142:SER:HA	77:u2:146:GLN:HB3	1.99	0.43
79:w2:22:ARG:HE	79:w2:22:ARG:HB3	1.31	0.43
1:A1:109:PRO:HG3	1:A1:166:TYR:CD2	2.53	0.43
2:A2:453:G:H22	2:A2:1107:G:H22	1.64	0.43
2:A2:952:C:H2'	2:A2:953:G:C8	2.54	0.43
2:A2:1123:C:H2'	2:A2:1124:C:C6	2.53	0.43
2:A2:1148:A:H2'	2:A2:1149:G:H8	1.83	0.43
2:A2:2036:U:C2	2:A2:2037:A:C8	3.07	0.43
2:A2:3374:A2M:HM'3	2:A2:3374:A2M:H1'	1.82	0.43
2:A2:3549:C:H2'	2:A2:3550:A:C8	2.54	0.43
2:A2:3889:C:H2'	2:A2:3890:G:C8	2.54	0.43
2:A2:3953:U:H4'	38:N2:54:HIS:CD2	2.53	0.43
2:A2:4274:A:H4'	16:E2:13:SER:HB2	2.00	0.43
4:B1:143:VAL:HG22	4:B1:203:ALA:HB2	2.01	0.43
4:B1:177:MET:HE3	4:B1:177:MET:HB3	1.73	0.43
5:B2:54:A:H1'	15:E1:13:ARG:HG3	2.01	0.43
16:E2:307:TYR:CD1	16:E2:366:LYS:HD3	2.53	0.43
24:H1:64:ILE:HG21	24:H1:102:ALA:HA	2.00	0.43
39:N3:15:ALA:HB2	49:S3:21:LYS:HD3	1.99	0.43
39:N3:16:LEU:HD12	70:m2:921:A:H5''	2.01	0.43
45:Q3:87:PRO:HB2	45:Q3:89:HIS:CE1	2.53	0.43
54:V2:106:ILE:HD12	54:V2:106:ILE:H	1.84	0.43
55:W2:28:VAL:HG21	55:W2:37:MET:HG2	2.00	0.43
57:Y2:64:LYS:HE2	57:Y2:64:LYS:HB2	1.78	0.43
58:Z2:41:PHE:CE1	58:Z2:110:ILE:HD13	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:b2:74:LYS:HB3	60:b2:74:LYS:HE3	1.59	0.43
61:c2:32:ARG:HG2	61:c2:32:ARG:NH1	2.34	0.43
65:g2:108:VAL:HG12	65:g2:109:ASN:OD1	2.18	0.43
70:m2:90:G:H2'	70:m2:91:A:O4'	2.18	0.43
70:m2:1692:U:H2'	70:m2:1693:U:H6	1.83	0.43
72:p2:62:LEU:HD13	72:p2:96:CYS:HB3	2.01	0.43
75:s2:188:TYR:HA	75:s2:191:LYS:HD2	2.00	0.43
2:A2:298:G:H5'	24:H1:179:LYS:O	2.19	0.43
2:A2:835:U:H2'	2:A2:836:C:C6	2.53	0.43
2:A2:2019:G:H2'	2:A2:2020:C:O4'	2.18	0.43
2:A2:2127:U:H2'	2:A2:2128:C:H6	1.83	0.43
2:A2:3430:A:H8	2:A2:3430:A:OP1	2.02	0.43
2:A2:3746:C:H2'	2:A2:3747:G:O4'	2.19	0.43
2:A2:3848:OMG:HM23	2:A2:3848:OMG:H1'	1.69	0.43
2:A2:4515:G:H2'	21:G1:91:TRP:CZ2	2.54	0.43
2:A2:4623:A:H2'	2:A2:4624:G:O4'	2.18	0.43
4:B1:42:GLY:O	4:B1:43:GLN:HG2	2.18	0.43
12:D1:158:LYS:HD3	12:D1:158:LYS:HA	1.79	0.43
13:D2:42:LYS:HE2	13:D2:87:PHE:CD1	2.53	0.43
15:E1:32:ARG:HD2	15:E1:32:ARG:HA	1.71	0.43
26:H3:19:ARG:HB2	26:H3:19:ARG:HH11	1.84	0.43
29:J2:115:GLU:HG2	29:J2:149:ILE:HG22	2.01	0.43
46:R2:114:LYS:HE3	46:R2:114:LYS:HB2	1.71	0.43
57:Y2:52:GLN:HA	57:Y2:52:GLN:NE2	2.33	0.43
70:m2:72:C:H2'	70:m2:73:C:C6	2.53	0.43
70:m2:499:C:H2'	70:m2:500:C:C6	2.53	0.43
70:m2:811:A:OP1	74:r2:186:GLY:HA3	2.19	0.43
74:r2:124:CYS:HA	74:r2:142:HIS:CE1	2.54	0.43
75:s2:188:TYR:O	75:s2:191:LYS:HG2	2.18	0.43
76:t2:153:LEU:HD11	76:t2:186:ASN:OD1	2.18	0.43
77:u2:117:TYR:HD1	77:u2:152:ARG:HB3	1.81	0.43
79:w2:66:VAL:HG11	79:w2:141:ASN:HD22	1.83	0.43
80:x2:96:VAL:HG11	80:x2:116:LEU:HB3	2.01	0.43
2:A2:222:C:H2'	2:A2:223:G:O4'	2.19	0.43
2:A2:930:G:H2'	2:A2:931:C:H6	1.82	0.43
2:A2:1001:G:H5''	2:A2:1002:G:OP2	2.19	0.43
2:A2:1574:C:H2'	2:A2:1575:U:C6	2.54	0.43
2:A2:2141:U:H5''	34:L2:24:LEU:HD12	2.01	0.43
2:A2:2194:G:H5'	2:A2:2533:G:OP2	2.19	0.43
2:A2:2387:U:C2	2:A2:2388:U:C5	3.07	0.43
2:A2:2565:U:H2'	2:A2:2566:G:O4'	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:3693:G:H5''	2:A2:3694:U:H4'	2.00	0.43
2:A2:3785:G:H4'	2:A2:3786:U:C5	2.54	0.43
2:A2:4343:A:H2'	2:A2:4344:A:O4'	2.19	0.43
19:F2:327:LYS:HE2	19:F2:327:LYS:HB2	1.83	0.43
28:I3:7:LEU:HD21	28:I3:308:ARG:HD3	2.00	0.43
32:K3:173:ALA:HB3	70:m2:77:A:N7	2.34	0.43
41:O3:133:THR:O	41:O3:135:ILE:HD12	2.19	0.43
43:P3:6:VAL:HG22	43:P3:34:ILE:HD11	2.01	0.43
50:T2:87:VAL:HG22	50:T2:127:ASN:ND2	2.33	0.43
61:c2:45:ARG:HA	61:c2:45:ARG:HD3	1.83	0.43
63:e2:25:ILE:HG23	63:e2:34:PHE:CE2	2.54	0.43
71:o2:11:LYS:HB2	71:o2:13:GLU:OE2	2.19	0.43
2:A2:1115:C:H1'	2:A2:2070:G:OP1	2.19	0.43
2:A2:1341:U:H2'	2:A2:1342:G:H8	1.83	0.43
2:A2:1373:A:C4	2:A2:1374:G:C8	3.06	0.43
2:A2:1676:A:OP2	54:V2:8:THR:HG22	2.18	0.43
2:A2:1718:G:O6	58:Z2:18:LEU:HB2	2.18	0.43
2:A2:1867:G:H2'	2:A2:1868:C:O4'	2.19	0.43
2:A2:2089:C:C5	19:F2:191:ALA:HB2	2.54	0.43
2:A2:3293:U:O4	2:A2:3307:A:H2	2.02	0.43
18:F1:14:PHE:HD1	18:F1:18:TRP:CD1	2.36	0.43
18:F1:70:VAL:H	18:F1:159:ASN:HD21	1.67	0.43
25:H2:118:LYS:HB2	69:k2:87:ARG:NH1	2.33	0.43
27:I2:172:LYS:O	27:I2:176:ARG:HG3	2.19	0.43
28:I3:20:GLN:OE1	28:I3:68:ASP:HB2	2.18	0.43
30:J3:123:ARG:HB2	30:J3:143:CYS:SG	2.59	0.43
32:K3:32:MET:HE1	32:K3:63:MET:HB3	2.00	0.43
32:K3:61:PHE:CD2	32:K3:72:ARG:HD3	2.53	0.43
33:L1:196:LYS:HA	33:L1:196:LYS:HD3	1.90	0.43
37:M3:21:VAL:HG22	37:M3:119:GLN:HG3	2.01	0.43
42:P2:80:VAL:HG23	42:P2:106:VAL:HG21	2.00	0.43
43:P3:89:TRP:HE3	43:P3:93:LEU:HD12	1.84	0.43
45:Q3:27:VAL:HG11	45:Q3:35:VAL:HG21	2.01	0.43
58:Z2:48:ALA:HB2	58:Z2:71:TRP:CZ3	2.54	0.43
60:b2:27:GLU:OE2	60:b2:46:LYS:HE3	2.19	0.43
66:h2:19:LYS:HE3	66:h2:23:ARG:HH12	1.84	0.43
70:m2:560:G:H2'	70:m2:561:G:C8	2.53	0.43
70:m2:1466:C:H5'	82:z2:60:ARG:NH1	2.34	0.43
70:m2:1628:C:H2'	70:m2:1629:C:H6	1.83	0.43
74:r2:18:TRP:N	74:r2:18:TRP:CD1	2.87	0.43
74:r2:242:LYS:HA	74:r2:242:LYS:HD3	1.72	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
78:v2:35:LEU:HD13	78:v2:40:VAL:HG21	2.01	0.43
80:x2:62:LYS:HA	80:x2:65:LYS:HG2	2.01	0.43
82:z2:20:TYR:CD2	82:z2:38:ILE:HD12	2.54	0.43
1:A1:108:GLU:HG3	38:N2:135:PRO:HB3	2.01	0.43
2:A2:857:A:H8	2:A2:857:A:OP2	2.01	0.43
2:A2:931:C:H2'	2:A2:932:C:C6	2.54	0.43
2:A2:1474:C:H2'	2:A2:1475:C:H6	1.84	0.43
2:A2:1509:C:H2'	2:A2:1510:G:N9	2.34	0.43
2:A2:1511:C:H41	2:A2:1886:C:H41	1.65	0.43
2:A2:2645:C:H2'	2:A2:2646:U:C6	2.54	0.43
2:A2:3403:A:C8	13:D2:245:ARG:HG2	2.53	0.43
2:A2:3601:A:H2'	2:A2:3602:G:H8	1.84	0.43
4:B1:138:ALA:HB1	4:B1:199:CYS:SG	2.59	0.43
6:B3:44:GLU:OE2	70:m2:1540:C:H5''	2.18	0.43
19:F2:298:ILE:O	19:F2:302:LEU:HG	2.19	0.43
25:H2:74:ALA:HA	25:H2:76:TYR:CE2	2.53	0.43
25:H2:171:PHE:CE1	25:H2:180:LEU:HB3	2.54	0.43
28:I3:240:CYS:O	28:I3:248:LEU:HD12	2.19	0.43
34:L2:24:LEU:HB3	34:L2:32:ILE:HD13	2.01	0.43
36:M2:53:LYS:HB2	36:M2:53:LYS:HE3	1.81	0.43
37:M3:42:LEU:HD22	37:M3:72:HIS:ND1	2.33	0.43
38:N2:51:GLY:HA3	38:N2:92:ARG:HG3	2.01	0.43
41:O3:21:VAL:HG12	72:p2:46:LYS:NZ	2.34	0.43
41:O3:142:ARG:HG3	41:O3:143:LYS:N	2.34	0.43
70:m2:557:A:H8	70:m2:557:A:OP2	2.02	0.43
70:m2:895:U:H2'	70:m2:896:G:O4'	2.18	0.43
70:m2:1027:U:H2'	70:m2:1028:C:O4'	2.19	0.43
70:m2:1568:G:H21	70:m2:1571:A:H2	1.66	0.43
70:m2:1707:C:H2'	70:m2:1708:G:C8	2.54	0.43
7:n2:73:A:H2'	7:n2:74:C:O4'	2.19	0.43
72:p2:52:THR:OG1	72:p2:57:ILE:HA	2.19	0.43
82:z2:80:ARG:HG2	82:z2:81:ARG:NH2	2.30	0.43
2:A2:113:A:C5	2:A2:114:G:C8	3.07	0.42
2:A2:184:U:H5''	2:A2:254:G:N1	2.34	0.42
2:A2:195:C:H2'	2:A2:196:C:H6	1.84	0.42
2:A2:700:C:H2'	2:A2:701:C:C6	2.54	0.42
2:A2:1156:A:OP1	24:H1:204:ARG:HD2	2.18	0.42
2:A2:1438:OMG:HM21	2:A2:3837:G:O3'	2.18	0.42
2:A2:1676:A:H2'	2:A2:1677:C:C6	2.54	0.42
2:A2:1699:A:O2'	2:A2:1700:C:H5'	2.19	0.42
2:A2:2222:U:H4'	2:A2:2223:U:H5'	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:2357:G:H2'	2:A2:2358:C:C6	2.54	0.42
2:A2:3425:C:H2'	2:A2:3426:U:H6	1.84	0.42
2:A2:3760:C:H2'	2:A2:3761:U:C6	2.54	0.42
2:A2:3760:C:C2	2:A2:3761:U:C5	3.07	0.42
3:A3:16:LEU:HD13	3:A3:99:LEU:HD13	2.00	0.42
3:A3:25:LYS:HD2	3:A3:25:LYS:HA	1.83	0.42
16:E2:217:ILE:HD12	16:E2:347:LEU:HB3	2.01	0.42
16:E2:220:ILE:HG13	16:E2:278:THR:HG23	2.00	0.42
32:K3:209:TYR:CE2	32:K3:213:LEU:HD12	2.54	0.42
36:M2:163:HIS:HA	36:M2:166:ARG:HB2	2.01	0.42
37:M3:68:LEU:HD23	37:M3:68:LEU:HA	1.89	0.42
53:U3:132:MET:CG	53:U3:139:HIS:HB3	2.49	0.42
54:V2:99:HIS:CG	54:V2:102:LEU:HD12	2.54	0.42
60:b2:9:LEU:HA	60:b2:12:LYS:HD2	2.00	0.42
68:j2:61:MET:HE3	68:j2:61:MET:HB3	1.80	0.42
70:m2:1162:U:H2'	70:m2:1163:U:C6	2.54	0.42
70:m2:1225:A:O2'	70:m2:1653:A:H4'	2.19	0.42
70:m2:1300:G:H5''	80:x2:77:LYS:HB2	2.01	0.42
70:m2:1410:U:H2'	70:m2:1411:A:C8	2.53	0.42
7:n2:21:A:H61	7:n2:46:G:H2'	1.83	0.42
71:o2:23:THR:HA	71:o2:164:ASN:HB3	2.01	0.42
77:u2:67:TRP:HE1	77:u2:162:LEU:HD21	1.85	0.42
79:w2:109:MET:HG3	79:w2:111:VAL:HG13	2.01	0.42
81:y2:105:LYS:HZ3	81:y2:105:LYS:HG2	1.66	0.42
1:A1:259:GLU:H	1:A1:259:GLU:HG2	1.56	0.42
2:A2:931:C:H4'	2:A2:1048:C:H5'	2.01	0.42
2:A2:1407:C:O2'	2:A2:1410:G:H1'	2.19	0.42
2:A2:1763:G:H2'	2:A2:1826:G:N2	2.33	0.42
2:A2:3378:G:H2'	2:A2:3379:A:H8	1.84	0.42
2:A2:3613:U:H5''	2:A2:3620:U:H1'	2.01	0.42
2:A2:3840:U:H2'	2:A2:3841:U:H6	1.83	0.42
2:A2:3948:U:H2'	2:A2:3949:G:O4'	2.20	0.42
2:A2:4190:G:H2'	2:A2:4191:U:C6	2.53	0.42
2:A2:4552:G:N1	2:A2:4559:G:H2'	2.34	0.42
2:A2:4692:U:H2'	2:A2:4696:C:H41	1.84	0.42
3:A3:23:ARG:HG2	47:R3:48:VAL:CG1	2.48	0.42
18:F1:162:LYS:HE2	18:F1:162:LYS:HB2	1.82	0.42
27:I2:54:TYR:CD1	27:I2:145:VAL:HG11	2.54	0.42
28:I3:77:PHE:CD1	28:I3:89:LEU:HD11	2.53	0.42
32:K3:50:VAL:HG12	32:K3:113:ILE:HD13	2.00	0.42
32:K3:132:ARG:HH22	70:m2:66:G:H4'	1.83	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:O3:97:LEU:HD11	41:O3:112:ALA:HB1	2.02	0.42
43:P3:93:LEU:HD22	43:P3:128:PHE:CD1	2.55	0.42
50:T2:87:VAL:HG12	50:T2:89:ILE:HG22	2.01	0.42
54:V2:41:ARG:HE	54:V2:41:ARG:HB3	1.52	0.42
70:m2:478:A:H2'	70:m2:479:G:O4'	2.18	0.42
70:m2:604:G:H22	70:m2:622:G:N2	2.17	0.42
70:m2:879:C:H2'	70:m2:880:G:O4'	2.18	0.42
70:m2:1655:U:H3	70:m2:1673:G:H1	1.67	0.42
71:o2:49:ILE:CG2	71:o2:162:PRO:HB2	2.50	0.42
73:q2:162:ASP:N	73:q2:163:PRO:HD2	2.34	0.42
82:z2:103:LYS:HA	82:z2:103:LYS:HD2	1.91	0.42
2:A2:2113:G:H2'	2:A2:2114:U:O4'	2.18	0.42
2:A2:2370:U:H2'	2:A2:2371:C:C6	2.54	0.42
2:A2:2511:G:H2'	2:A2:2512:A:C8	2.53	0.42
2:A2:2579:OMC:HM23	2:A2:2579:OMC:H1'	1.59	0.42
2:A2:3375:A:C4	2:A2:3376:G:C8	3.07	0.42
2:A2:3737:G:H1	4:B1:46:GLN:NE2	2.17	0.42
2:A2:4024:U:OP2	67:i2:61:LYS:HG2	2.19	0.42
2:A2:4176:G:C2	16:E2:252:ALA:HB1	2.54	0.42
2:A2:4552:G:C6	2:A2:4560:G:C5	3.07	0.42
6:B3:111:LYS:HA	6:B3:111:LYS:HD3	1.71	0.42
9:C1:89:ARG:HD3	9:C1:91:LYS:HE2	2.00	0.42
15:E1:35:ARG:HG3	15:E1:35:ARG:HH11	1.85	0.42
16:E2:49:TYR:OH	16:E2:168:MET:HE2	2.19	0.42
32:K3:195:LYS:HG2	70:m2:126:G:OP2	2.19	0.42
33:L1:41:TYR:CE1	33:L1:195:LYS:HG2	2.54	0.42
34:L2:99:MET:HE1	34:L2:127:VAL:O	2.19	0.42
41:O3:137:SER:O	70:m2:988:G:C8	2.72	0.42
57:Y2:19:LYS:HB3	57:Y2:19:LYS:HE2	1.78	0.42
60:b2:88:THR:HG22	60:b2:90:ALA:N	2.34	0.42
70:m2:42:A:H4'	70:m2:98:C:OP1	2.19	0.42
70:m2:190:G:N3	70:m2:190:G:H2'	2.32	0.42
70:m2:226:A:H2'	70:m2:227:G:C8	2.54	0.42
70:m2:458:C:H2'	70:m2:459:C:H6	1.84	0.42
70:m2:931:G:N2	70:m2:1106:G:H4'	2.34	0.42
70:m2:932:C:H42	70:m2:1013:A:N6	2.16	0.42
70:m2:1038:A:H4'	70:m2:1857:G:H21	1.84	0.42
71:o2:41:ARG:HH21	71:o2:45:GLY:HA2	1.83	0.42
71:o2:180:ARG:HG2	71:o2:180:ARG:NH1	2.34	0.42
73:q2:47:GLU:HA	73:q2:85:GLU:HG3	2.01	0.42
78:v2:83:LEU:HB2	78:v2:85:LEU:HG	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:1320:U:H2'	2:A2:1321:A:C8	2.54	0.42
2:A2:1914:C:H1'	2:A2:2004:G:H1	1.83	0.42
2:A2:3346:U:H5'	2:A2:3474:OMU:OP2	2.19	0.42
2:A2:3542:G:H5''	27:I2:82:ARG:NH2	2.35	0.42
4:B1:51:LEU:O	4:B1:55:VAL:HG23	2.18	0.42
5:B2:102:U:H3'	5:B2:103:A:H8	1.84	0.42
6:B3:96:SER:OG	6:B3:99:VAL:HG12	2.20	0.42
12:D1:168:SER:OG	12:D1:170:LYS:HG3	2.20	0.42
21:G1:41:PRO:HG3	21:G1:73:VAL:HG12	2.01	0.42
25:H2:69:MET:O	25:H2:73:LYS:HG3	2.20	0.42
25:H2:162:GLY:O	25:H2:165:ARG:HG3	2.20	0.42
34:L2:134:ASN:ND2	34:L2:135:LYS:N	2.68	0.42
35:L3:126:ALA:O	35:L3:130:ILE:HG13	2.19	0.42
39:N3:140:LYS:HB2	39:N3:140:LYS:HE3	1.76	0.42
53:U3:135:HIS:HB2	53:U3:138:ARG:O	2.19	0.42
59:a2:57:ARG:HE	59:a2:57:ARG:HB3	1.67	0.42
67:i2:23:VAL:O	67:i2:93:LEU:HD21	2.19	0.42
69:k2:47:LYS:HB3	69:k2:102:TYR:CE2	2.55	0.42
70:m2:120:U:H1'	74:r2:33:THR:O	2.19	0.42
70:m2:159:A:H2	70:m2:469:G:H21	1.67	0.42
70:m2:876:G:H2'	70:m2:877:A:C8	2.48	0.42
71:o2:90:PHE:O	71:o2:94:THR:HG23	2.19	0.42
72:p2:29:ASP:O	72:p2:48:LEU:HA	2.19	0.42
73:q2:58:VAL:O	73:q2:65:ARG:HB3	2.20	0.42
73:q2:210:ILE:HD12	82:z2:15:VAL:HG23	2.00	0.42
74:r2:70:ILE:O	74:r2:76:VAL:HA	2.20	0.42
79:w2:27:GLU:O	79:w2:31:GLU:HG3	2.19	0.42
79:w2:45:LYS:HD3	79:w2:45:LYS:HA	1.70	0.42
1:A1:52:VAL:HG22	1:A1:56:ARG:HE	1.83	0.42
2:A2:247:G:H2'	2:A2:248:C:H6	1.85	0.42
2:A2:429:A:H2'	2:A2:430:G:C8	2.55	0.42
2:A2:1008:C:O3'	22:G2:279:ARG:HD2	2.20	0.42
2:A2:1831:A:H2'	2:A2:1832:A:H8	1.85	0.42
2:A2:2106:OMC:H1'	2:A2:2106:OMC:HM23	1.61	0.42
2:A2:2298:A:H2	2:A2:2528:G:H1	1.66	0.42
2:A2:2407:G:H22	68:j2:61:MET:CG	2.33	0.42
2:A2:3971:C:H2'	2:A2:3972:G:H8	1.84	0.42
2:A2:4500:G:H2'	2:A2:4501:G:H8	1.83	0.42
10:C2:140:C:H2'	10:C2:141:C:C6	2.55	0.42
12:D1:48:LEU:HD11	12:D1:145:LYS:HE3	2.00	0.42
17:E3:68:LYS:HD2	51:T3:6:LEU:HD22	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:F1:165:LYS:H	18:F1:165:LYS:HG2	1.58	0.42
19:F2:281:MET:HE3	31:K2:110:ARG:NH1	2.34	0.42
24:H1:46:ASP:HA	24:H1:49:ARG:HG2	2.01	0.42
54:V2:65:VAL:O	54:V2:68:ARG:HG3	2.18	0.42
55:W2:19:GLN:O	55:W2:23:LYS:HG3	2.19	0.42
56:X2:40:LYS:O	56:X2:44:ARG:HB3	2.19	0.42
59:a2:78:TYR:HB3	59:a2:82:MET:HB2	2.00	0.42
61:c2:57:ALA:HB1	61:c2:73:ILE:HD11	2.01	0.42
69:k2:39:ARG:HD3	69:k2:105:ASP:OD1	2.19	0.42
70:m2:75:G:H4'	70:m2:76:U:C4	2.54	0.42
70:m2:806:U:H2'	70:m2:807:U:H6	1.82	0.42
70:m2:1257:G:H2'	70:m2:1259:G:N7	2.34	0.42
76:t2:21:SER:O	76:t2:25:GLN:HG3	2.19	0.42
79:w2:71:ARG:C	79:w2:72:ILE:HD12	2.44	0.42
82:z2:59:LYS:NZ	82:z2:59:LYS:HB2	2.34	0.42
2:A2:464:G:H2'	2:A2:465:G:C8	2.54	0.42
2:A2:513:U:O2'	2:A2:514:U:H5'	2.20	0.42
2:A2:818:C:H2'	2:A2:819:C:C6	2.55	0.42
2:A2:928:G:H22	2:A2:1064:G:H22	1.64	0.42
2:A2:1401:U:H2'	2:A2:1402:C:C6	2.55	0.42
2:A2:1684:U:H1'	2:A2:1685:G:C8	2.54	0.42
2:A2:3326:C:H2'	2:A2:3327:G:O4'	2.19	0.42
2:A2:3880:OMG:H4'	2:A2:3881:U:OP2	2.20	0.42
2:A2:4544:G:H5''	2:A2:4545:U:OP2	2.19	0.42
3:A3:132:ARG:HD2	70:m2:1611:C:OP2	2.20	0.42
6:B3:39:LEU:HD11	6:B3:52:TRP:CZ3	2.55	0.42
10:C2:65:A:C4	10:C2:66:A:C8	3.07	0.42
10:C2:110:U:C2	10:C2:112:G:H1'	2.55	0.42
12:D1:54:SER:HB3	12:D1:135:ILE:HD11	2.00	0.42
16:E2:348:ARG:NH1	16:E2:351:LEU:HG	2.34	0.42
25:H2:76:TYR:CE1	25:H2:77:LYS:HG3	2.55	0.42
25:H2:183:THR:HG23	25:H2:183:THR:O	2.19	0.42
28:I3:99:ARG:HG3	28:I3:100:ARG:N	2.35	0.42
33:L1:59:PRO:HD2	33:L1:153:SER:HB2	2.01	0.42
35:L3:42:GLU:O	35:L3:46:VAL:HG23	2.20	0.42
35:L3:172:ARG:NH2	70:m2:588:G:C2	2.88	0.42
35:L3:176:LYS:HG3	35:L3:177:ASN:N	2.32	0.42
42:P2:112:MET:HE2	42:P2:112:MET:HB3	1.92	0.42
48:S2:73:VAL:HG12	48:S2:75:ARG:HG2	2.02	0.42
58:Z2:14:TYR:HD2	58:Z2:21:GLN:NE2	2.18	0.42
70:m2:191:A:N6	70:m2:210:G:H21	2.17	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:m2:297:C:H2'	70:m2:298:U:H6	1.85	0.42
70:m2:377:U:H2'	70:m2:378:A:C8	2.54	0.42
70:m2:450:A:H61	77:u2:29:LEU:HD12	1.85	0.42
70:m2:528:A:H61	70:m2:590:G:H1	1.67	0.42
70:m2:814:A:H4'	74:r2:16:LYS:HD3	2.00	0.42
70:m2:1469:C:H2'	70:m2:1470:C:C6	2.55	0.42
73:q2:45:ARG:HG2	73:q2:85:GLU:HG2	2.01	0.42
74:r2:222:LEU:HA	74:r2:222:LEU:HD23	1.74	0.42
2:A2:848:G:H2'	2:A2:849:G:H8	1.85	0.42
2:A2:1123:C:H2'	2:A2:1124:C:H6	1.84	0.42
2:A2:3719:U:H2'	2:A2:3720:U:C6	2.54	0.42
5:B2:60:G:C2	5:B2:61:G:C8	3.08	0.42
6:B3:24:LYS:HE2	6:B3:24:LYS:HB2	1.75	0.42
10:C2:59:A:H5'	10:C2:61:A:C8	2.54	0.42
24:H1:20:ARG:O	24:H1:24:ARG:HG3	2.20	0.42
31:K2:15:ARG:NH2	31:K2:19:LYS:HE3	2.34	0.42
48:S2:46:SER:O	48:S2:122:LYS:HE2	2.20	0.42
52:U2:103:VAL:HG12	52:U2:108:TYR:O	2.20	0.42
58:Z2:47:CYS:HA	58:Z2:102:ARG:O	2.19	0.42
70:m2:59:U:H5'	70:m2:505:C:N4	2.35	0.42
70:m2:865:U:C2	70:m2:866:A:C8	3.08	0.42
70:m2:1235:G:C6	70:m2:1528:G:C6	3.07	0.42
70:m2:1273:C:N4	70:m2:1513:U:H3	2.18	0.42
7:n2:57:G:H8	7:n2:57:G:OP2	2.03	0.42
74:r2:71:LYS:HE3	74:r2:71:LYS:HB3	1.64	0.42
75:s2:72:LEU:O	75:s2:76:MET:HG2	2.20	0.42
77:u2:82:VAL:HG23	77:u2:202:ILE:HD11	2.02	0.42
77:u2:123:ARG:NH1	77:u2:128:LYS:HE2	2.35	0.42
78:v2:32:HIS:CG	78:v2:33:PRO:HD2	2.55	0.42
80:x2:81:ARG:HB2	80:x2:117:GLY:HA3	2.02	0.42
2:A2:19:G:H2'	2:A2:20:U:C6	2.55	0.42
2:A2:176:G:H2'	2:A2:177:G:C8	2.55	0.42
2:A2:930:G:H2'	2:A2:931:C:C6	2.54	0.42
2:A2:1372:G:H2'	2:A2:1373:A:O4'	2.20	0.42
2:A2:1376:A:OP1	2:A2:1376:A:N9	2.53	0.42
2:A2:1406:A:H5''	2:A2:2594:U:H5''	2.00	0.42
2:A2:1486:U:H2'	2:A2:1487:C:C6	2.55	0.42
2:A2:1524:C:H2'	2:A2:1525:A:H8	1.84	0.42
2:A2:1535:G:N3	2:A2:3866:A:H2'	2.35	0.42
2:A2:1901:A:H2'	2:A2:1902:A:H5'	2.02	0.42
2:A2:2102:A:O4'	57:Y2:30:LYS:HD2	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:2256:C:C2'	2:A2:2257:G:H5'	2.50	0.42
2:A2:3961:G:H5'	2:A2:3990:G:H5''	2.00	0.42
2:A2:4285:G:O3'	2:A2:4286:U:H3'	2.19	0.42
2:A2:4567:C:H2'	2:A2:4568:U:H6	1.84	0.42
3:A3:14:ARG:CD	15:E1:111:GLU:HG2	2.50	0.42
4:B1:110:LYS:HD2	4:B1:113:ARG:HH22	1.84	0.42
5:B2:45:U:H5''	22:G2:157:ASN:HD21	1.85	0.42
20:F3:45:VAL:HA	41:O3:113:GLN:OE1	2.19	0.42
26:H3:36:LEU:HD23	26:H3:36:LEU:HA	1.87	0.42
32:K3:198:ARG:HD2	70:m2:126:G:OP1	2.20	0.42
34:L2:139:MET:HE3	34:L2:139:MET:HB3	1.85	0.42
47:R3:48:VAL:O	47:R3:83:LEU:HD22	2.20	0.42
50:T2:30:ASP:O	50:T2:39:SER:HB3	2.19	0.42
56:X2:36:VAL:HG11	56:X2:44:ARG:HG2	2.01	0.42
58:Z2:83:MET:HE3	58:Z2:83:MET:HB3	1.80	0.42
61:c2:93:VAL:O	61:c2:97:MET:HG2	2.20	0.42
70:m2:443:C:H2'	70:m2:444:C:H6	1.84	0.42
70:m2:463:U:H2'	70:m2:464:C:C6	2.54	0.42
70:m2:658:G:H21	70:m2:665:C:H5''	1.84	0.42
70:m2:966:A:H2'	70:m2:967:U:C6	2.54	0.42
70:m2:1241:U:H5''	80:x2:124:LYS:HD2	2.02	0.42
70:m2:1718:C:H2'	70:m2:1719:C:C6	2.54	0.42
71:o2:74:VAL:HG13	71:o2:121:LEU:HB3	2.01	0.42
73:q2:202:LYS:H	73:q2:202:LYS:HG2	1.73	0.42
81:y2:92:LEU:HD12	81:y2:92:LEU:HA	1.92	0.42
2:A2:99:A:H5''	24:H1:184:ILE:HD13	2.01	0.42
2:A2:1012:C:OP1	2:A2:1012:C:H4'	2.20	0.42
2:A2:1505:C:H5''	31:K2:53:MET:HG2	2.01	0.42
2:A2:1911:G:H2'	2:A2:1912:A:H8	1.84	0.42
2:A2:2127:U:H2'	2:A2:2128:C:C6	2.54	0.42
2:A2:2366:A:H2'	2:A2:2367:G:H8	1.82	0.42
2:A2:2409:C:H2'	2:A2:2410:C:C6	2.55	0.42
2:A2:3442:U:O2	2:A2:3470:U:H4'	2.20	0.42
2:A2:3717:U:H2'	2:A2:3718:U:C6	2.55	0.42
2:A2:4123:U:H2'	2:A2:4124:G:H8	1.85	0.42
2:A2:4415:U:C5	27:I2:126:VAL:HG21	2.55	0.42
3:A3:137:LYS:HE3	70:m2:1236:C:N4	2.35	0.42
5:B2:88:A:H2'	5:B2:89:G:O4'	2.20	0.42
6:B3:83:GLN:HB2	6:B3:93:SER:HB3	2.00	0.42
9:C1:128:MET:HB3	9:C1:132:VAL:CG1	2.50	0.42
10:C2:75:OMG:HM23	10:C2:75:OMG:H1'	1.92	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:C2:90:C:O2'	48:S2:22:PRO:HB2	2.19	0.42
19:F2:137:VAL:HG21	19:F2:150:LEU:HD21	2.02	0.42
21:G1:40:GLY:HA3	21:G1:45:VAL:HB	2.01	0.42
38:N2:100:LYS:HE2	38:N2:100:LYS:HB3	1.81	0.42
40:O2:38:ASN:HD22	40:O2:90:TYR:HE1	1.67	0.42
67:i2:45:GLN:NE2	67:i2:51:GLN:HA	2.34	0.42
70:m2:73:C:H2'	70:m2:76:U:O4	2.19	0.42
70:m2:430:OMU:H2'	70:m2:430:OMU:H6	1.87	0.42
70:m2:1538:G:C2	70:m2:1539:A:C5	3.08	0.42
7:n2:41:C:H4'	75:s2:198:ARG:HH21	1.84	0.42
76:t2:154:ILE:CD1	76:t2:185:VAL:HG12	2.50	0.42
77:u2:100:CYS:SG	77:u2:175:ILE:HD12	2.59	0.42
2:A2:3737:G:N1	4:B1:46:GLN:NE2	2.66	0.42
2:A2:3923:A:O2'	2:A2:3924:G:H5'	2.20	0.42
2:A2:4091:U:H2'	2:A2:4092:G:O4'	2.20	0.42
2:A2:4555:A:H4'	16:E2:95:THR:HG23	2.02	0.42
2:A2:4555:A:O2'	2:A2:4556:A:H8	2.03	0.42
10:C2:45:C:H4'	64:f2:11:ARG:HD2	2.02	0.42
10:C2:59:A:H5''	10:C2:60:G:H3'	2.02	0.42
10:C2:129:C:H2'	10:C2:130:C:C6	2.55	0.42
16:E2:393:LYS:HE2	16:E2:397:ILE:HD11	2.02	0.42
17:E3:10:ALA:HB2	79:w2:101:ARG:HB3	2.00	0.42
17:E3:25:LYS:NZ	17:E3:25:LYS:HB3	2.35	0.42
23:G3:46:VAL:CG2	23:G3:50:VAL:HG21	2.50	0.42
33:L1:7:ARG:NH1	33:L1:184:HIS:HB2	2.35	0.42
37:M3:42:LEU:HB3	37:M3:72:HIS:HE1	1.85	0.42
40:O2:25:CYS:C	40:O2:28:PRO:HD2	2.45	0.42
50:T2:128:LYS:O	50:T2:132:GLN:HG2	2.20	0.42
54:V2:112:LYS:HA	54:V2:115:ARG:HG3	2.01	0.42
61:c2:75:LYS:HD2	61:c2:75:LYS:HA	1.80	0.42
63:e2:5:ILE:HD11	63:e2:11:PHE:CD1	2.55	0.42
66:h2:4:LYS:HB2	70:m2:1844:4AC:OP2	2.19	0.42
70:m2:1274:C:H2'	70:m2:1275:C:C6	2.55	0.42
70:m2:1710:C:C2	70:m2:1711:G:C8	3.08	0.42
71:o2:34:MET:SD	71:o2:154:LEU:HD11	2.60	0.42
73:q2:101:GLN:HG3	73:q2:126:ILE:HD11	2.02	0.42
73:q2:157:MET:HE3	73:q2:158:ILE:H	1.84	0.42
77:u2:166:PHE:CZ	77:u2:171:LEU:HD21	2.55	0.42
1:A1:63:THR:CG2	54:V2:107:ARG:HB3	2.50	0.41
2:A2:24:G:H4'	2:A2:25:A:N7	2.35	0.41
2:A2:279:A:C4	24:H1:12:ARG:HG2	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:928:G:N2	2:A2:1064:G:H22	2.18	0.41
2:A2:1509:C:H2'	2:A2:1510:G:C8	2.55	0.41
2:A2:2246:C:H2'	2:A2:2247:C:C6	2.55	0.41
2:A2:2513:G:H2'	2:A2:2514:G:C8	2.55	0.41
2:A2:3730:C:H2'	2:A2:3731:G:C8	2.55	0.41
2:A2:4063:G:H2'	2:A2:4064:C:H6	1.85	0.41
5:B2:55:A:H4'	15:E1:155:HIS:HB2	2.02	0.41
9:C1:4:ILE:HG12	9:C1:61:TRP:CH2	2.55	0.41
12:D1:19:LYS:HG3	12:D1:26:VAL:HG21	2.01	0.41
19:F2:183:VAL:HG22	19:F2:204:ARG:HG3	2.02	0.41
28:I3:42:MET:CE	28:I3:57:ARG:HD3	2.37	0.41
33:L1:103:LEU:HA	33:L1:107:TYR:CD1	2.54	0.41
46:R2:78:LYS:HB2	46:R2:99:ILE:O	2.20	0.41
46:R2:150:ALA:HB1	46:R2:155:ILE:HG12	2.02	0.41
58:Z2:36:ARG:HD2	58:Z2:79:GLY:O	2.20	0.41
70:m2:202:C:H5''	70:m2:203:G:H21	1.85	0.41
70:m2:1412:C:C2	70:m2:1413:G:C8	3.08	0.41
70:m2:1565:G:H2'	70:m2:1566:C:H6	1.84	0.41
70:m2:1668:C:H2'	70:m2:1669:U:C6	2.55	0.41
70:m2:1800:C:H2'	70:m2:1801:G:O4'	2.20	0.41
74:r2:44:LEU:HD23	74:r2:44:LEU:HA	1.83	0.41
77:u2:103:LEU:HG	77:u2:170:LYS:HB3	2.02	0.41
2:A2:453:G:H22	2:A2:1107:G:N2	2.18	0.41
2:A2:1129:C:C2	2:A2:1130:OMG:C8	3.08	0.41
2:A2:1159:G:H5''	31:K2:166:TYR:CD1	2.55	0.41
2:A2:1377:A:N6	70:m2:1030:A:N1	2.67	0.41
2:A2:2224:C:H5'	2:A2:2225:C:OP2	2.19	0.41
2:A2:2390:U:H2'	2:A2:2391:U:C6	2.55	0.41
2:A2:2458:G:C6	2:A2:2469:G:C6	3.08	0.41
2:A2:3593:C:H2'	2:A2:3594:G:C8	2.55	0.41
2:A2:3898:G:H2'	2:A2:3899:G:H8	1.85	0.41
2:A2:4123:U:H2'	2:A2:4124:G:C8	2.55	0.41
2:A2:4263:A:H2'	2:A2:4264:C:C6	2.54	0.41
4:B1:65:ARG:O	4:B1:69:ILE:HG12	2.20	0.41
4:B1:102:TYR:HE2	4:B1:134:PRO:HG2	1.86	0.41
9:C1:86:LEU:HB3	9:C1:186:THR:HB	2.02	0.41
11:C3:22:ILE:CD1	11:C3:91:LEU:HD12	2.49	0.41
12:D1:13:LYS:HB3	12:D1:13:LYS:HE2	1.70	0.41
14:D3:62:MET:HE2	49:S3:3:LEU:HD21	2.01	0.41
16:E2:161:ARG:HG2	16:E2:184:GLN:HA	2.02	0.41
17:E3:3:LYS:HG2	17:E3:5:ARG:HH21	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:F1:58:ILE:CD1	18:F1:157:ILE:HG12	2.50	0.41
19:F2:124:ILE:HG21	19:F2:264:TYR:OH	2.21	0.41
21:G1:17:PHE:CE2	21:G1:54:CYS:HA	2.54	0.41
22:G2:211:LEU:HD23	22:G2:211:LEU:HA	1.86	0.41
28:I3:52:TYR:CZ	28:I3:309:VAL:HG11	2.55	0.41
32:K3:181:THR:O	32:K3:185:LEU:HD23	2.19	0.41
38:N2:36:LYS:HB2	38:N2:36:LYS:HE3	1.69	0.41
38:N2:110:LYS:HD2	38:N2:110:LYS:HA	1.76	0.41
67:i2:26:TYR:CG	67:i2:82:MET:HE1	2.55	0.41
70:m2:564:U:H2'	70:m2:565:G:H8	1.81	0.41
70:m2:817:U:C2	70:m2:818:A:C8	3.08	0.41
70:m2:854:G:H1'	79:w2:97:ARG:HH21	1.84	0.41
70:m2:913:C:O2'	70:m2:914:C:H5'	2.19	0.41
70:m2:1183:A:H2'	70:m2:1184:A:C8	2.55	0.41
70:m2:1346:A:N6	70:m2:1388:A:H5'	2.35	0.41
70:m2:1558:A:N3	70:m2:1558:A:H2'	2.35	0.41
71:o2:34:MET:HE2	71:o2:149:ASN:O	2.20	0.41
74:r2:180:LEU:HD23	74:r2:181:CYS:H	1.85	0.41
1:A1:136:LEU:HD22	1:A1:141:ASN:O	2.21	0.41
2:A2:190:G:H2'	2:A2:191:G:C8	2.54	0.41
2:A2:818:C:H2'	2:A2:819:C:H6	1.85	0.41
2:A2:1373:A:H2'	2:A2:1374:G:H8	1.86	0.41
2:A2:1477:U:H2'	2:A2:1478:C:C6	2.56	0.41
2:A2:1544:A:C2	2:A2:1545:A:N7	2.88	0.41
2:A2:2090:C:H2'	2:A2:2091:G:C8	2.45	0.41
2:A2:2504:C:H2'	2:A2:2505:G:C8	2.56	0.41
2:A2:3709:C:H2'	2:A2:3710:U:C6	2.54	0.41
2:A2:3744:G:H22	2:A2:3765:G:N2	2.17	0.41
2:A2:4175:A2M:HM'3	2:A2:4175:A2M:H1'	1.76	0.41
2:A2:4652:U:H4'	2:A2:4653:A:H5'	2.01	0.41
7:Bv:18:G:H2'	7:Bv:18:G:N3	2.35	0.41
9:C1:66:GLU:HG2	9:C1:66:GLU:H	1.67	0.41
14:D3:40:ASP:HB2	14:D3:43:THR:HB	2.01	0.41
14:D3:49:GLN:OE1	14:D3:49:GLN:HA	2.20	0.41
16:E2:46:PHE:HA	16:E2:84:MET:HE1	2.02	0.41
16:E2:339:GLY:HA3	16:E2:343:ARG:HG2	2.01	0.41
17:E3:5:ARG:O	43:P3:77:PRO:HG3	2.20	0.41
20:F3:11:ALA:HB3	20:F3:33:ASP:HB2	2.02	0.41
22:G2:73:MET:HE2	22:G2:73:MET:H	1.84	0.41
22:G2:223:PHE:O	22:G2:227:ILE:HG13	2.20	0.41
24:H1:60:VAL:CG2	24:H1:134:LEU:HB2	2.49	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:H2:160:LEU:HD11	25:H2:202:ILE:HG13	2.01	0.41
32:K3:12:CYS:SG	32:K3:124:LEU:HA	2.60	0.41
33:L1:7:ARG:HH12	33:L1:184:HIS:HB2	1.84	0.41
34:L2:119:MET:HE3	34:L2:145:LEU:HD12	2.01	0.41
37:M3:24:THR:OG1	37:M3:119:GLN:HG2	2.20	0.41
40:O2:105:ASN:ND2	40:O2:111:GLU:HB2	2.35	0.41
47:R3:40:VAL:C	47:R3:42:ASP:H	2.27	0.41
57:Y2:107:ASN:O	57:Y2:111:ILE:HG13	2.20	0.41
65:g2:99:CYS:HB3	65:g2:115:CYS:HB3	2.03	0.41
68:j2:46:LYS:HE3	68:j2:46:LYS:HB3	1.77	0.41
70:m2:203:G:H3'	70:m2:204:G:H8	1.85	0.41
70:m2:1242:A:H1'	70:m2:1269:C:O2'	2.21	0.41
70:m2:1379:U:O2	70:m2:1381:A:H5'	2.20	0.41
70:m2:1562:U:H2'	70:m2:1563:G:H8	1.85	0.41
73:q2:55:THR:HG22	73:q2:59:LEU:CD2	2.49	0.41
73:q2:113:LEU:HG	73:q2:118:ALA:HB2	2.01	0.41
74:r2:124:CYS:HA	74:r2:142:HIS:HE1	1.85	0.41
78:v2:71:LEU:HD23	78:v2:71:LEU:HA	1.87	0.41
79:w2:58:LYS:HG2	79:w2:59:LYS:HG3	2.03	0.41
80:x2:15:PHE:HD2	80:x2:22:LEU:HD21	1.85	0.41
81:y2:89:SER:HB3	81:y2:112:LEU:CD1	2.51	0.41
1:A1:56:ARG:HH12	2:A2:1252:C:H4'	1.85	0.41
1:A1:201:LEU:HD21	1:A1:226:ALA:HA	2.02	0.41
2:A2:33:A:H5''	2:A2:47:A:H61	1.85	0.41
2:A2:686:C:H2'	2:A2:687:G:H8	1.86	0.41
2:A2:1322:C:H5''	52:U2:2:PRO:CD	2.50	0.41
2:A2:2388:U:H2'	2:A2:2389:C:H6	1.86	0.41
2:A2:2593:G:H5'	16:E2:247:GLY:HA2	2.02	0.41
2:A2:2608:C:H2'	2:A2:2609:G:O4'	2.20	0.41
2:A2:3602:G:H2'	2:A2:3603:A:C8	2.56	0.41
6:B3:110:LEU:O	6:B3:111:LYS:HB2	2.19	0.41
10:C2:5:U:H2'	10:C2:6:C:C6	2.56	0.41
10:C2:89:U:H2'	10:C2:90:C:C6	2.55	0.41
11:C3:51:LYS:CB	11:C3:90:ASP:HB3	2.50	0.41
16:E2:165:HIS:HA	16:E2:179:HIS:O	2.21	0.41
19:F2:80:ARG:H	19:F2:80:ARG:HG2	1.69	0.41
26:H3:27:ARG:HG2	26:H3:27:ARG:NH1	2.34	0.41
33:L1:64:SER:HB2	33:L1:107:TYR:HA	2.02	0.41
33:L1:161:LYS:HE2	33:L1:161:LYS:HB2	1.94	0.41
36:M2:72:PRO:O	36:M2:100:LEU:HB3	2.21	0.41
36:M2:113:MET:HE3	36:M2:113:MET:HB3	1.82	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:Q3:16:ARG:HG3	74:r2:95:THR:HG22	2.02	0.41
49:S3:72:ARG:HE	49:S3:72:ARG:HB3	1.72	0.41
66:h2:3:ALA:HB3	70:m2:1844:4AC:OP1	2.19	0.41
70:m2:164:A:H2'	70:m2:165:G:C8	2.55	0.41
70:m2:181:A:OP2	70:m2:182:C:H5''	2.20	0.41
70:m2:486:A2M:HM'3	70:m2:486:A2M:H1'	1.87	0.41
70:m2:831:C:H4'	70:m2:832:A:H5'	2.02	0.41
70:m2:892:U:H2'	70:m2:893:G:H3'	2.02	0.41
70:m2:1192:A:H2'	70:m2:1193:C:O4'	2.20	0.41
70:m2:1375:C:OP1	82:z2:7:LYS:HB2	2.21	0.41
71:o2:165:ASN:OD1	71:o2:165:ASN:N	2.53	0.41
73:q2:132:LYS:HE2	73:q2:192:TRP:N	2.35	0.41
73:q2:150:MET:HE2	73:q2:152:PHE:HZ	1.85	0.41
74:r2:171:ASP:OD1	74:r2:172:PHE:N	2.50	0.41
76:t2:116:ARG:NH1	76:t2:121:THR:HG22	2.35	0.41
76:t2:154:ILE:HD11	76:t2:185:VAL:HG12	2.02	0.41
1:A1:137:ARG:O	31:K2:3:VAL:HG12	2.21	0.41
2:A2:123:C:H2'	2:A2:124:C:H6	1.85	0.41
2:A2:1069:G:H2'	2:A2:1070:C:H4'	2.02	0.41
2:A2:1116:U:O2'	57:Y2:19:LYS:HG3	2.20	0.41
2:A2:1130:OMG:H1'	2:A2:1130:OMG:HM23	1.79	0.41
2:A2:1426:A:H5'	13:D2:183:GLY:CA	2.48	0.41
2:A2:1668:G:C2	2:A2:4057:G:C8	3.08	0.41
2:A2:4190:G:H2'	2:A2:4191:U:H6	1.85	0.41
2:A2:4289:OMG:H1'	2:A2:4289:OMG:HM23	1.60	0.41
2:A2:4412:G:H2'	2:A2:4413:G:O4'	2.20	0.41
4:B1:213:GLY:O	4:B1:217:LYS:HG2	2.21	0.41
6:B3:104:LEU:HD13	6:B3:121:ARG:NH1	2.35	0.41
7:Bv:18:G:H3'	7:Bv:57:G:H22	1.86	0.41
9:C1:55:LEU:HD22	9:C1:77:VAL:HG11	2.02	0.41
9:C1:117:PHE:O	9:C1:120:GLU:HG2	2.20	0.41
11:C3:34:LYS:HE2	11:C3:34:LYS:HB2	1.73	0.41
12:D1:200:ILE:HG12	12:D1:212:LEU:HD21	2.02	0.41
13:D2:124:GLY:O	13:D2:125:LYS:HD2	2.20	0.41
18:F1:117:LEU:HD23	18:F1:117:LEU:HA	1.87	0.41
19:F2:32:ILE:HG22	19:F2:34:PRO:HD3	2.03	0.41
22:G2:164:LYS:HA	22:G2:167:VAL:HG22	2.02	0.41
22:G2:236:MET:O	22:G2:239:MET:HG3	2.21	0.41
27:I2:163:LYS:HA	27:I2:166:MET:HE3	2.02	0.41
31:K2:172:ARG:HA	31:K2:176:ARG:HD2	2.03	0.41
48:S2:49:ILE:HD12	48:S2:49:ILE:HA	1.93	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:T2:53:VAL:HB	50:T2:62:ILE:HG12	2.03	0.41
70:m2:450:A:H5''	77:u2:24:LYS:O	2.20	0.41
70:m2:1038:A:H4'	70:m2:1857:G:N2	2.35	0.41
70:m2:1394:U:H2'	70:m2:1395:G:C8	2.55	0.41
72:p2:49:VAL:HG21	72:p2:62:LEU:HG	2.01	0.41
72:p2:121:ILE:HG21	72:p2:164:ILE:HG22	2.01	0.41
1:A1:93:MET:O	1:A1:96:MET:HG2	2.20	0.41
2:A2:129:C:C2	2:A2:130:G:N7	2.89	0.41
2:A2:299:C:H5''	24:H1:170:LYS:O	2.19	0.41
2:A2:1605:G:C6	38:N2:109:VAL:HG22	2.55	0.41
2:A2:1836:G:H2'	2:A2:1837:C:C6	2.55	0.41
2:A2:3590:G:H2'	2:A2:3591:C:C6	2.56	0.41
3:A3:40:TYR:O	3:A3:43:VAL:HG12	2.21	0.41
10:C2:7:U:H2'	10:C2:8:U:H6	1.85	0.41
23:G3:44:ARG:HE	23:G3:44:ARG:HB3	1.61	0.41
23:G3:44:ARG:HH22	23:G3:63:ARG:NH2	2.17	0.41
32:K3:170:ARG:HA	70:m2:75:G:N1	2.36	0.41
37:M3:120:ALA:HA	37:M3:123:VAL:HG12	2.03	0.41
40:O2:33:ILE:H	40:O2:33:ILE:HG12	1.75	0.41
45:Q3:118:ARG:HG3	45:Q3:118:ARG:HH11	1.85	0.41
70:m2:649:U:H2'	70:m2:650:A:H8	1.85	0.41
70:m2:1832:UR3:H6	70:m2:1833:A:H62	1.86	0.41
72:p2:44:ILE:H	72:p2:44:ILE:HG13	1.61	0.41
76:t2:53:VAL:HG13	76:t2:55:GLY:N	2.36	0.41
79:w2:13:GLN:HB2	79:w2:16:ILE:HG12	2.03	0.41
2:A2:142:G:H2'	2:A2:144:G:H8	1.84	0.41
2:A2:436:C:H2'	2:A2:437:G:H8	1.86	0.41
2:A2:1010:G:N3	2:A2:1010:G:H2'	2.35	0.41
2:A2:1862:G:H2'	2:A2:1863:U:C6	2.55	0.41
2:A2:2022:U:OP1	69:k2:37:SER:HB2	2.20	0.41
2:A2:2418:G:OP1	34:L2:118:HIS:HA	2.20	0.41
2:A2:2567:A:H2	34:L2:82:LYS:HB3	1.84	0.41
2:A2:3703:A:H1'	33:L1:35:GLN:HE22	1.86	0.41
2:A2:3761:U:H2'	2:A2:3762:C:C6	2.56	0.41
2:A2:3975:A:C8	22:G2:153:THR:HG21	2.55	0.41
2:A2:4104:U:H2'	2:A2:4174:G:O6	2.20	0.41
2:A2:4230:G:H2'	2:A2:4231:U:H6	1.85	0.41
2:A2:4587:G:OP1	25:H2:226:LYS:HE3	2.21	0.41
6:B3:67:ARG:HD3	70:m2:1587:U:C4	2.56	0.41
16:E2:138:GLN:HA	16:E2:138:GLN:OE1	2.20	0.41
22:G2:153:THR:HG23	22:G2:160:PHE:CZ	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:G3:10:LYS:HG2	23:G3:34:PHE:CE2	2.56	0.41
24:H1:143:ARG:HB2	60:b2:95:LEU:HD21	2.01	0.41
28:I3:82:SER:O	28:I3:108:VAL:HG12	2.20	0.41
41:O3:59:GLY:HA3	70:m2:959:A:P	2.61	0.41
55:W2:47:ILE:HA	55:W2:72:HIS:O	2.20	0.41
56:X2:87:ARG:HB3	56:X2:107:THR:OG1	2.21	0.41
61:c2:32:ARG:HG2	61:c2:32:ARG:HH11	1.85	0.41
70:m2:381:C:O2	77:u2:5:ARG:HD2	2.21	0.41
70:m2:1088:G:O2'	70:m2:1089:A:H5'	2.21	0.41
70:m2:1306:U:C2	70:m2:1307:C:C5	3.09	0.41
70:m2:1541:U:H2'	70:m2:1542:G:C8	2.56	0.41
70:m2:1568:G:N2	70:m2:1571:A:H2	2.19	0.41
74:r2:118:GLU:HG3	74:r2:121:TYR:CE1	2.56	0.41
79:w2:80:MET:HE1	79:w2:120:VAL:O	2.20	0.41
82:z2:89:SER:HB3	82:z2:92:ASP:HB2	2.01	0.41
1:A1:120:ILE:HG21	31:K2:3:VAL:HG13	2.03	0.41
2:A2:335:A:H2'	2:A2:336:A:C8	2.55	0.41
2:A2:1317:G:H2'	2:A2:1318:C:C6	2.56	0.41
2:A2:1473:U:OP1	52:U2:15:VAL:HA	2.20	0.41
2:A2:1613:G:H2'	2:A2:1614:C:C6	2.56	0.41
2:A2:1832:A:H2'	2:A2:1833:C:O4'	2.21	0.41
2:A2:3250:C:H3'	2:A2:3251:U:H6	1.85	0.41
2:A2:3319:A:C2	13:D2:119:LYS:HE2	2.56	0.41
2:A2:3689:G:H4'	2:A2:3700:A:C8	2.56	0.41
2:A2:4284:U:H2'	2:A2:4285:G:O4'	2.20	0.41
2:A2:4436:C:H42	2:A2:4495:C:H42	1.67	0.41
2:A2:4505:G:H2'	2:A2:4506:G:C8	2.55	0.41
2:A2:4587:G:O2'	2:A2:4588:C:H5'	2.20	0.41
15:E1:32:ARG:HG3	15:E1:32:ARG:NH1	2.35	0.41
22:G2:69:ILE:HD13	22:G2:69:ILE:HA	1.86	0.41
24:H1:138:PHE:HA	24:H1:143:ARG:HH11	1.85	0.41
25:H2:171:PHE:HA	25:H2:182:VAL:HG12	2.03	0.41
30:J3:74:LYS:HA	30:J3:74:LYS:HD2	1.71	0.41
31:K2:71:LYS:HE2	31:K2:71:LYS:HB2	1.77	0.41
41:O3:60:MET:CE	70:m2:957:A:H5'	2.51	0.41
41:O3:151:LEU:HD23	41:O3:151:LEU:H	1.85	0.41
70:m2:177:G:O2'	70:m2:178:C:H5'	2.21	0.41
70:m2:1803:A:H2'	70:m2:1804:C:H6	1.84	0.41
81:y2:72:VAL:HG21	81:y2:84:ILE:CG1	2.50	0.41
2:A2:91:G:O5'	2:A2:92:C:H5''	2.20	0.41
2:A2:1152:G:H4'	2:A2:1153:U:H6	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:1281:C:C2	2:A2:1282:C:C5	3.09	0.41
2:A2:1708:U:H2'	2:A2:1709:A:H8	1.86	0.41
2:A2:2173:A:C5	2:A2:2174:C:C5	3.09	0.41
2:A2:2257:G:OP2	2:A2:2257:G:H2'	2.21	0.41
2:A2:2284:A:H2'	2:A2:2284:A:N3	2.36	0.41
2:A2:2323:C:H2'	2:A2:2324:G:C8	2.55	0.41
2:A2:2353:A:N3	59:a2:61:PRO:HB3	2.36	0.41
2:A2:3308:A:H2'	2:A2:3309:A:C5	2.55	0.41
2:A2:3423:C:H2'	2:A2:3424:U:H6	1.85	0.41
2:A2:3694:U:C5	33:L1:98:LYS:HE3	2.56	0.41
2:A2:3958:OMU:P	31:K2:158:THR:HG23	2.61	0.41
2:A2:4272:OMU:H5'	42:P2:51:ARG:NH1	2.36	0.41
2:A2:4336:A:H2'	2:A2:4337:U:O4'	2.20	0.41
2:A2:4351:U:H4'	2:A2:4352:A:OP1	2.20	0.41
2:A2:4413:G:C2	2:A2:4414:A:C5	3.09	0.41
3:A3:28:PHE:HE1	3:A3:38:ARG:HD2	1.85	0.41
4:B1:99:ALA:CB	4:B1:193:LEU:HD21	2.51	0.41
10:C2:14:U:C4	10:C2:15:G:C6	3.09	0.41
10:C2:141:C:C2	10:C2:142:U:C5	3.09	0.41
11:C3:52:GLY:HA3	70:m2:1403:A:H4'	2.02	0.41
12:D1:45:GLU:H	12:D1:45:GLU:HG2	1.73	0.41
12:D1:103:LEU:HD13	12:D1:113:THR:HG22	2.02	0.41
14:D3:41:ARG:HA	71:o2:5:LEU:HD13	2.01	0.41
16:E2:94:GLU:HB2	16:E2:158:GLN:OE1	2.20	0.41
17:E3:3:LYS:HE2	17:E3:3:LYS:HB3	1.85	0.41
17:E3:45:SER:HB3	70:m2:651:U:H1'	2.03	0.41
18:F1:2:ALA:HB3	18:F1:3:PRO:HD3	2.03	0.41
18:F1:141:ALA:O	18:F1:145:LYS:HB3	2.21	0.41
19:F2:284:MET:HE3	31:K2:28:LEU:HD23	2.02	0.41
21:G1:100:ARG:NH1	27:I2:200:GLY:HA2	2.35	0.41
23:G3:7:GLN:HA	23:G3:8:PRO:HD3	1.95	0.41
29:J2:122:ALA:HB3	29:J2:143:PRO:HG2	2.01	0.41
30:J3:266:TYR:CB	71:o2:120:ARG:HD3	2.51	0.41
31:K2:29:VAL:O	31:K2:33:ARG:HB2	2.21	0.41
38:N2:64:VAL:HG22	38:N2:72:VAL:HG11	2.03	0.41
40:O2:42:PHE:CE2	40:O2:90:TYR:HB2	2.56	0.41
42:P2:99:GLU:HB3	44:Q2:24:THR:HG23	2.03	0.41
45:Q3:110:ARG:O	45:Q3:114:MET:HG3	2.21	0.41
50:T2:103:ASP:HB3	50:T2:106:LEU:HD13	2.03	0.41
57:Y2:90:MET:HG3	69:k2:33:LYS:HA	2.01	0.41
61:c2:15:HIS:O	61:c2:17:VAL:HG23	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:k2:46:ARG:NH1	69:k2:70:GLN:HG3	2.36	0.41
70:m2:1146:A:H5'	70:m2:1357:C:C5	2.56	0.41
7:n2:2:C:H2'	7:n2:3:C:H6	1.85	0.41
7:n2:9:A:H5'	7:n2:10:G:OP2	2.21	0.41
71:o2:143:PRO:HA	71:o2:158:ASP:OD2	2.20	0.41
72:p2:150:ILE:HD12	82:z2:132:ARG:NH2	2.35	0.41
72:p2:195:LYS:HA	72:p2:195:LYS:HD3	1.85	0.41
73:q2:55:THR:O	73:q2:59:LEU:HD23	2.21	0.41
73:q2:127:MET:HG3	73:q2:154:ASP:OD2	2.21	0.41
76:t2:169:LYS:O	76:t2:172:THR:HG22	2.21	0.41
77:u2:36:THR:O	77:u2:95:THR:HA	2.21	0.41
77:u2:74:ARG:HD3	77:u2:74:ARG:HA	1.79	0.41
78:v2:24:LYS:HD3	78:v2:66:HIS:CE1	2.56	0.41
79:w2:22:ARG:HD3	79:w2:28:THR:H	1.86	0.41
81:y2:16:LYS:O	81:y2:79:ALA:HB1	2.21	0.41
2:A2:1667:G:C1'	12:D1:115:MET:HE1	2.51	0.41
2:A2:2426:C:H2'	2:A2:2427:C:C6	2.56	0.41
2:A2:4281:U:C2	2:A2:4282:G:C8	3.09	0.41
2:A2:4290:U:H2'	2:A2:4291:G:N3	2.36	0.41
4:B1:164:ILE:O	4:B1:168:VAL:HG13	2.21	0.41
4:B1:171:PRO:HB3	4:B1:181:TYR:CE2	2.56	0.41
15:E1:112:HIS:HD2	15:E1:117:ILE:HD11	1.86	0.41
17:E3:8:ARG:O	70:m2:683:U:H5''	2.21	0.41
18:F1:126:LEU:HD12	18:F1:126:LEU:HA	1.90	0.41
25:H2:215:ILE:HG23	25:H2:219:LEU:HD12	2.03	0.41
32:K3:147:LEU:HB3	32:K3:151:ASP:HB3	2.03	0.41
35:L3:84:ILE:HD12	35:L3:150:ARG:HG2	2.02	0.41
36:M2:139:ARG:O	36:M2:143:LYS:HG3	2.21	0.41
36:M2:164:LYS:HB3	36:M2:165:PRO:CD	2.51	0.41
43:P3:3:ARG:NH1	43:P3:29:PRO:HG3	2.36	0.41
45:Q3:33:ALA:HB2	70:m2:584:U:H1'	2.01	0.41
46:R2:85:SER:O	46:R2:89:LYS:HG2	2.20	0.41
47:R3:62:VAL:HA	47:R3:65:TYR:CE2	2.56	0.41
47:R3:87:ALA:O	47:R3:91:LEU:HD12	2.21	0.41
56:X2:46:LEU:HD12	56:X2:64:ILE:HD13	2.03	0.41
68:j2:29:ILE:HG23	68:j2:69:TRP:CG	2.56	0.41
70:m2:860:A:H2'	70:m2:861:G:H8	1.86	0.41
70:m2:1515:C:H2'	70:m2:1516:G:C8	2.56	0.41
73:q2:41:VAL:HG22	73:q2:46:THR:HB	2.02	0.41
77:u2:34:ALA:HB2	77:u2:56:ARG:HD3	2.03	0.41
77:u2:110:ARG:HG3	77:u2:166:PHE:CD1	2.57	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
81:y2:42:ILE:HD12	81:y2:51:LEU:CD2	2.51	0.41
1:A1:204:PHE:CZ	1:A1:225:GLU:HG2	2.57	0.40
1:A1:239:ARG:HD3	2:A2:725:C:OP1	2.21	0.40
2:A2:423:G:H2'	2:A2:424:U:H6	1.86	0.40
2:A2:939:C:H2'	2:A2:940:C:H6	1.86	0.40
2:A2:1639:A:H4'	38:N2:130:ARG:O	2.20	0.40
2:A2:1666:G:H21	12:D1:115:MET:HE3	1.87	0.40
2:A2:1760:A:H1'	2:A2:1764:A:H1'	2.03	0.40
2:A2:1858:G:H5''	27:I2:128:ARG:HH21	1.86	0.40
2:A2:2216:G:H2'	2:A2:2217:U:C6	2.56	0.40
2:A2:2293:U:H2'	2:A2:2294:C:H6	1.86	0.40
2:A2:2558:U:H2'	2:A2:2559:OMC:C6	2.55	0.40
2:A2:3358:A:C5	2:A2:3359:G:C8	3.09	0.40
2:A2:3462:G:C4	2:A2:3463:A:C8	3.09	0.40
2:A2:3594:G:H4'	2:A2:3595:G:O5'	2.22	0.40
2:A2:3698:A:H4'	2:A2:3699:U:C5	2.56	0.40
2:A2:3997:C:H2'	2:A2:3998:U:C6	2.56	0.40
2:A2:4264:C:C2	9:C1:120:GLU:HB2	2.56	0.40
2:A2:4430:U:H2'	2:A2:4431:C:C6	2.56	0.40
2:A2:4612:A:H2'	2:A2:4613:A:O4'	2.22	0.40
2:A2:4676:U:H2'	2:A2:4677:G:H8	1.86	0.40
3:A3:60:THR:OG1	3:A3:63:GLU:HG2	2.21	0.40
10:C2:90:C:H2'	10:C2:91:A:C8	2.56	0.40
11:C3:61:LEU:O	11:C3:81:GLN:HA	2.21	0.40
16:E2:165:HIS:HB3	16:E2:180:LEU:CD2	2.51	0.40
22:G2:58:ARG:HG3	22:G2:58:ARG:NH1	2.35	0.40
26:H3:34:TYR:O	73:q2:12:VAL:HG11	2.21	0.40
30:J3:212:LYS:O	30:J3:216:MET:HG3	2.21	0.40
33:L1:89:ALA:O	33:L1:93:LEU:HG	2.21	0.40
35:L3:176:LYS:HA	35:L3:179:LYS:HD2	2.03	0.40
46:R2:39:LYS:HB3	46:R2:40:ILE:H	1.60	0.40
55:W2:87:LYS:HA	55:W2:87:LYS:HD2	1.94	0.40
70:m2:5:U:H2'	70:m2:6:G:H8	1.85	0.40
70:m2:196:C:H2'	70:m2:197:C:H6	1.86	0.40
70:m2:909:G:H2'	70:m2:910:A:H8	1.83	0.40
70:m2:1311:C:H2'	70:m2:1312:U:H6	1.86	0.40
70:m2:1411:A:H2'	70:m2:1412:C:C6	2.56	0.40
70:m2:1566:C:C2	70:m2:1567:C:C5	3.09	0.40
7:n2:26:A:C2	7:n2:27:G:C8	3.10	0.40
71:o2:39:TYR:CE2	82:z2:105:MET:HB2	2.56	0.40
74:r2:57:THR:HG22	74:r2:58:GLY:N	2.36	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:271:C:H2'	2:A2:272:U:C6	2.57	0.40
2:A2:685:C:H2'	2:A2:686:C:C6	2.55	0.40
2:A2:1529:U:H2'	2:A2:1530:U:C6	2.57	0.40
2:A2:2649:A:H2'	2:A2:2650:A:C8	2.56	0.40
2:A2:3309:A:C2	2:A2:3348:A:O4'	2.74	0.40
2:A2:3536:G:O2'	2:A2:3537:G:H5'	2.21	0.40
2:A2:4106:G:H2'	2:A2:4107:G:C8	2.56	0.40
2:A2:4430:U:H2'	2:A2:4431:C:H6	1.87	0.40
2:A2:4552:G:H5'	2:A2:4553:G:OP2	2.21	0.40
3:A3:113:ARG:HA	3:A3:116:LYS:NZ	2.36	0.40
4:B1:187:LYS:HE2	4:B1:187:LYS:HB3	1.80	0.40
15:E1:81:GLU:HG3	15:E1:82:ILE:N	2.36	0.40
15:E1:87:LEU:HD23	15:E1:87:LEU:HA	1.83	0.40
18:F1:46:ILE:HD11	18:F1:51:ALA:HA	2.03	0.40
22:G2:64:ILE:HG22	22:G2:75:VAL:HG22	2.04	0.40
30:J3:103:LYS:HG3	30:J3:133:TYR:CE2	2.56	0.40
34:L2:72:LYS:HB3	34:L2:74:ARG:NH1	2.36	0.40
34:L2:81:ARG:HG2	34:L2:88:ARG:CZ	2.51	0.40
41:O3:75:MET:HE2	41:O3:75:MET:HB3	1.86	0.40
47:R3:71:ALA:HB1	75:s2:167:LYS:HA	2.04	0.40
47:R3:88:LEU:HA	47:R3:91:LEU:HD12	2.03	0.40
67:i2:6:LYS:HZ2	67:i2:6:LYS:HG2	1.80	0.40
70:m2:571:A:H2'	70:m2:572:C:O4'	2.21	0.40
70:m2:1206:A:H2'	70:m2:1207:C:C6	2.56	0.40
70:m2:1269:C:O2'	70:m2:1270:C:H5'	2.20	0.40
75:s2:112:LEU:HD13	75:s2:177:LEU:HD21	2.02	0.40
1:A1:134:LEU:HD21	1:A1:155:LEU:HD23	2.04	0.40
2:A2:121:A:H62	2:A2:152:U:H3	1.70	0.40
2:A2:458:C:C2	2:A2:459:C:C5	3.10	0.40
2:A2:733:G:H2'	2:A2:734:C:C6	2.56	0.40
2:A2:1573:U:H2'	2:A2:1574:C:C6	2.57	0.40
2:A2:2481:G:H2'	2:A2:2482:C:C6	2.56	0.40
2:A2:2560:C:O2'	2:A2:2561:A:H5'	2.22	0.40
2:A2:2604:A:H2	2:A2:2611:C:H41	1.70	0.40
2:A2:3619:A:H2'	2:A2:3621:A:O5'	2.20	0.40
2:A2:3710:U:H2'	2:A2:3711:C:H6	1.87	0.40
2:A2:4071:U:O2	2:A2:4071:U:H2'	2.21	0.40
2:A2:4234:C:H2'	2:A2:4235:C:O4'	2.20	0.40
2:A2:4271:U:H2'	2:A2:4272:OMU:C6	2.50	0.40
2:A2:4576:G:C6	2:A2:4577:U:C4	3.10	0.40
3:A3:38:ARG:HG2	6:B3:45:LEU:HD11	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:B3:40:ALA:H	6:B3:43:LYS:HE2	1.86	0.40
11:C3:46:LYS:HA	11:C3:46:LYS:HD2	1.80	0.40
13:D2:206:PRO:HD3	13:D2:213:GLY:CA	2.51	0.40
15:E1:88:LYS:HE3	15:E1:88:LYS:HB2	1.90	0.40
19:F2:268:ARG:HE	19:F2:268:ARG:HB3	1.67	0.40
22:G2:70:GLU:CD	22:G2:70:GLU:H	2.29	0.40
24:H1:138:PHE:CZ	60:b2:93:ARG:HD2	2.57	0.40
27:I2:80:PHE:O	27:I2:84:VAL:HG23	2.21	0.40
33:L1:49:PHE:CE1	33:L1:159:MET:HB2	2.57	0.40
36:M2:7:LEU:O	36:M2:103:ALA:HB1	2.21	0.40
36:M2:165:PRO:C	36:M2:167:PHE:H	2.30	0.40
47:R3:83:LEU:HD12	47:R3:83:LEU:HA	1.85	0.40
63:e2:51:GLU:O	63:e2:55:LYS:HG2	2.20	0.40
66:h2:4:LYS:HG3	70:m2:1845:G:OP2	2.21	0.40
70:m2:141:A:H62	70:m2:179:C:H1'	1.86	0.40
70:m2:965:A:H2'	70:m2:966:A:C8	2.56	0.40
70:m2:982:A:H2'	70:m2:983:A:C8	2.57	0.40
70:m2:1127:C:OP2	72:p2:150:ILE:HD11	2.22	0.40
70:m2:1295:A:H2'	70:m2:1296:G:C8	2.56	0.40
70:m2:1525:C:H2'	70:m2:1526:G:H8	1.86	0.40
76:t2:76:GLN:HB3	76:t2:135:PHE:CE2	2.56	0.40
2:A2:651:C:H2'	2:A2:652:G:C8	2.56	0.40
2:A2:1497:A:C4	2:A2:1498:G:C8	3.10	0.40
2:A2:2164:U:H5	2:A2:2538:A:N1	2.20	0.40
2:A2:2234:G:H2'	2:A2:2235:G:C8	2.57	0.40
2:A2:3826:U:H2'	2:A2:3827:G:H8	1.85	0.40
2:A2:4277:C:P	16:E2:223:THR:HG23	2.61	0.40
2:A2:4342:G:O6	2:A2:4350:C:H5''	2.21	0.40
3:A3:89:ASP:HB3	3:A3:92:ASP:O	2.21	0.40
4:B1:82:GLN:HE21	4:B1:83:PHE:HE2	1.69	0.40
9:C1:91:LYS:HD2	9:C1:183:GLU:OE2	2.21	0.40
15:E1:35:ARG:HB3	15:E1:126:TYR:CE2	2.56	0.40
16:E2:39:LYS:HE3	16:E2:39:LYS:HB3	1.84	0.40
16:E2:238:LYS:HG3	16:E2:239:LYS:N	2.37	0.40
17:E3:130:LEU:HA	17:E3:130:LEU:HD12	1.81	0.40
18:F1:9:ILE:HG21	52:U2:52:TYR:CE2	2.57	0.40
21:G1:14:TYR:CZ	21:G1:22:GLY:HA2	2.56	0.40
21:G1:50:MET:HG2	21:G1:54:CYS:SG	2.61	0.40
21:G1:131:GLN:HE21	27:I2:174:ILE:CD1	2.34	0.40
33:L1:54:ARG:HB2	33:L1:54:ARG:NH1	2.36	0.40
36:M2:107:THR:O	36:M2:111:ARG:HG2	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:N2:77:ASN:HD22	38:N2:77:ASN:HA	1.72	0.40
43:P3:104:LEU:HD21	43:P3:116:ALA:HB2	2.02	0.40
49:S3:80:ARG:NH1	49:S3:81:ARG:H	2.20	0.40
50:T2:64:LYS:HE3	50:T2:64:LYS:HB2	1.84	0.40
51:T3:37:GLN:HE21	51:T3:41:ARG:NH1	2.20	0.40
51:T3:48:THR:HG22	51:T3:48:THR:O	2.21	0.40
59:a2:41:ALA:HB3	59:a2:52:ARG:HB3	2.04	0.40
70:m2:145:G:N1	70:m2:174:OMC:H5	2.18	0.40
70:m2:187:G:C6	70:m2:188:C:C4	3.10	0.40
70:m2:193:C:H2'	70:m2:194:C:H6	1.86	0.40
70:m2:293:G:C8	79:w2:42:LEU:HG	2.57	0.40
71:o2:10:MET:HE3	71:o2:55:TRP:HB2	2.02	0.40
71:o2:12:GLU:O	71:o2:15:VAL:HG12	2.22	0.40
72:p2:52:THR:HB	72:p2:58:ALA:H	1.86	0.40
72:p2:197:ILE:HG22	72:p2:210:VAL:HG11	2.02	0.40
75:s2:40:ALA:HB3	75:s2:67:PRO:HA	2.04	0.40
77:u2:66:SER:HA	77:u2:73:THR:HA	2.02	0.40
79:w2:84:ARG:HG3	79:w2:84:ARG:HH11	1.87	0.40
2:A2:162:A:H2'	2:A2:163:A:H8	1.86	0.40
2:A2:724:U:H2'	2:A2:725:C:H6	1.85	0.40
2:A2:1418:G:H2'	2:A2:1419:U:O4'	2.22	0.40
2:A2:1652:A:H2'	2:A2:1653:G:C8	2.57	0.40
2:A2:4315:G:OP1	44:Q2:34:ALA:HB3	2.20	0.40
6:B3:39:LEU:H	6:B3:43:LYS:NZ	2.17	0.40
10:C2:140:C:H2'	10:C2:141:C:H6	1.86	0.40
22:G2:216:GLU:HG3	22:G2:220:LYS:HD2	2.04	0.40
32:K3:87:ARG:HH22	70:m2:162:C:H5''	1.87	0.40
33:L1:45:LYS:HE2	33:L1:45:LYS:HB3	1.97	0.40
33:L1:93:LEU:HB3	33:L1:100:VAL:CG2	2.51	0.40
61:c2:81:ILE:HA	61:c2:84:LYS:NZ	2.37	0.40
66:h2:1:MET:HG2	70:m2:1854:C:OP2	2.21	0.40
69:k2:90:LEU:HD13	69:k2:111:ILE:HG23	2.04	0.40
70:m2:480:G:H2'	70:m2:481:C:H6	1.86	0.40
70:m2:872:A:H5'	70:m2:874:A:O4'	2.22	0.40
70:m2:1345:U:O2'	70:m2:1346:A:C8	2.74	0.40
70:m2:1534:C:H3'	70:m2:1639:A:H62	1.86	0.40
70:m2:1571:A:H8	70:m2:1615:G:N2	2.08	0.40
74:r2:86:PHE:CZ	74:r2:182:MET:HE3	2.57	0.40
74:r2:100:ARG:HG2	74:r2:102:ILE:HG23	2.03	0.40

There are no symmetry-related clashes.

## 5.3 Torsion angles

### 5.3.1 Protein backbone

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A1	221/270 (82%)	216 (98%)	5 (2%)	0	100	100
3	A3	138/152 (91%)	132 (96%)	6 (4%)	0	100	100
4	B1	220/266 (83%)	217 (99%)	3 (1%)	0	100	100
6	B3	139/145 (96%)	135 (97%)	4 (3%)	0	100	100
9	C1	188/192 (98%)	185 (98%)	3 (2%)	0	100	100
11	C3	100/119 (84%)	97 (97%)	3 (3%)	0	100	100
12	D1	200/214 (94%)	197 (98%)	3 (2%)	0	100	100
13	D2	249/257 (97%)	238 (96%)	11 (4%)	0	100	100
14	D3	81/83 (98%)	80 (99%)	1 (1%)	0	100	100
15	E1	172/178 (97%)	165 (96%)	7 (4%)	0	100	100
16	E2	400/403 (99%)	388 (97%)	12 (3%)	0	100	100
17	E3	137/143 (96%)	132 (96%)	5 (4%)	0	100	100
18	F1	201/203 (99%)	190 (94%)	11 (6%)	0	100	100
19	F2	357/419 (85%)	346 (97%)	11 (3%)	0	100	100
20	F3	97/115 (84%)	94 (97%)	3 (3%)	0	100	100
21	G1	137/217 (63%)	135 (98%)	2 (2%)	0	100	100
22	G2	291/297 (98%)	287 (99%)	4 (1%)	0	100	100
23	G3	60/69 (87%)	58 (97%)	2 (3%)	0	100	100
24	H1	201/204 (98%)	196 (98%)	5 (2%)	0	100	100
25	H2	215/296 (73%)	212 (99%)	3 (1%)	0	100	100
26	H3	52/56 (93%)	49 (94%)	3 (6%)	0	100	100
27	I2	199/203 (98%)	195 (98%)	4 (2%)	0	100	100
28	I3	311/317 (98%)	299 (96%)	12 (4%)	0	100	100
29	J2	151/184 (82%)	148 (98%)	3 (2%)	0	100	100
30	J3	217/293 (74%)	211 (97%)	6 (3%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
31	K2	184/188 (98%)	180 (98%)	4 (2%)	0	100	100
32	K3	225/249 (90%)	221 (98%)	4 (2%)	0	100	100
33	L1	155/217 (71%)	149 (96%)	6 (4%)	0	100	100
34	L2	177/196 (90%)	176 (99%)	1 (1%)	0	100	100
35	L3	182/194 (94%)	176 (97%)	6 (3%)	0	100	100
36	M2	173/176 (98%)	164 (95%)	9 (5%)	0	100	100
37	M3	120/132 (91%)	120 (100%)	0	0	100	100
38	N2	157/160 (98%)	155 (99%)	2 (1%)	0	100	100
39	N3	148/151 (98%)	144 (97%)	4 (3%)	0	100	100
40	O2	99/128 (77%)	98 (99%)	1 (1%)	0	100	100
41	O3	132/151 (87%)	126 (96%)	6 (4%)	0	100	100
42	P2	127/140 (91%)	119 (94%)	8 (6%)	0	100	100
43	P3	127/130 (98%)	121 (95%)	6 (5%)	0	100	100
44	Q2	60/157 (38%)	57 (95%)	3 (5%)	0	100	100
45	Q3	120/133 (90%)	119 (99%)	1 (1%)	0	100	100
46	R2	116/156 (74%)	113 (97%)	3 (3%)	0	100	100
47	R3	83/125 (66%)	77 (93%)	6 (7%)	0	100	100
48	S2	132/145 (91%)	130 (98%)	2 (2%)	0	100	100
49	S3	81/84 (96%)	75 (93%)	6 (7%)	0	100	100
50	T2	133/136 (98%)	129 (97%)	4 (3%)	0	100	100
51	T3	53/133 (40%)	52 (98%)	1 (2%)	0	100	100
52	U2	145/148 (98%)	140 (97%)	5 (3%)	0	100	100
53	U3	50/156 (32%)	49 (98%)	1 (2%)	0	100	100
54	V2	115/160 (72%)	111 (96%)	4 (4%)	0	100	100
55	W2	92/115 (80%)	90 (98%)	2 (2%)	0	100	100
56	X2	105/125 (84%)	105 (100%)	0	0	100	100
57	Y2	126/135 (93%)	125 (99%)	1 (1%)	0	100	100
58	Z2	107/110 (97%)	104 (97%)	3 (3%)	0	100	100
59	a2	112/117 (96%)	111 (99%)	1 (1%)	0	100	100
60	b2	118/123 (96%)	117 (99%)	1 (1%)	0	100	100
61	c2	100/105 (95%)	98 (98%)	2 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
62	d2	84/97 (87%)	83 (99%)	1 (1%)	0	100	100
63	e2	67/70 (96%)	67 (100%)	0	0	100	100
64	f2	48/51 (94%)	46 (96%)	2 (4%)	0	100	100
65	g2	50/128 (39%)	50 (100%)	0	0	100	100
66	h2	22/25 (88%)	22 (100%)	0	0	100	100
67	i2	101/106 (95%)	96 (95%)	5 (5%)	0	100	100
68	j2	87/92 (95%)	82 (94%)	5 (6%)	0	100	100
69	k2	123/137 (90%)	121 (98%)	2 (2%)	0	100	100
71	o2	212/295 (72%)	206 (97%)	6 (3%)	0	100	100
72	p2	210/264 (80%)	192 (91%)	18 (9%)	0	100	100
73	q2	218/243 (90%)	212 (97%)	6 (3%)	0	100	100
74	r2	260/263 (99%)	249 (96%)	11 (4%)	0	100	100
75	s2	179/204 (88%)	174 (97%)	5 (3%)	0	100	100
76	t2	179/194 (92%)	166 (93%)	13 (7%)	0	100	100
77	u2	204/208 (98%)	192 (94%)	12 (6%)	0	100	100
78	v2	93/165 (56%)	92 (99%)	1 (1%)	0	100	100
79	w2	148/158 (94%)	138 (93%)	9 (6%)	1 (1%)	18	44
80	x2	121/145 (83%)	115 (95%)	6 (5%)	0	100	100
81	y2	140/146 (96%)	133 (95%)	7 (5%)	0	100	100
82	z2	132/135 (98%)	119 (90%)	13 (10%)	0	100	100
All	All	11266/12996 (87%)	10908 (97%)	357 (3%)	1 (0%)	100	100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
79	w2	25	LEU

### 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	
1	A1	194/234 (83%)	192 (99%)	2 (1%)	68	86
3	A3	122/132 (92%)	117 (96%)	5 (4%)	27	59
4	B1	193/223 (86%)	191 (99%)	2 (1%)	68	86
6	B3	112/115 (97%)	103 (92%)	9 (8%)	11	31
9	C1	169/171 (99%)	167 (99%)	2 (1%)	63	84
11	C3	93/107 (87%)	90 (97%)	3 (3%)	34	67
12	D1	174/181 (96%)	170 (98%)	4 (2%)	44	75
13	D2	193/199 (97%)	188 (97%)	5 (3%)	40	72
14	D3	67/67 (100%)	66 (98%)	1 (2%)	57	81
15	E1	147/149 (99%)	144 (98%)	3 (2%)	48	77
16	E2	347/348 (100%)	340 (98%)	7 (2%)	48	77
17	E3	111/115 (96%)	109 (98%)	2 (2%)	51	79
18	F1	170/170 (100%)	162 (95%)	8 (5%)	23	54
19	F2	301/348 (86%)	293 (97%)	8 (3%)	39	71
20	F3	86/98 (88%)	83 (96%)	3 (4%)	32	64
21	G1	118/157 (75%)	118 (100%)	0	100	100
22	G2	246/249 (99%)	242 (98%)	4 (2%)	55	81
23	G3	55/62 (89%)	52 (94%)	3 (6%)	19	47
24	H1	171/172 (99%)	169 (99%)	2 (1%)	63	84
25	H2	198/256 (77%)	194 (98%)	4 (2%)	48	77
26	H3	48/49 (98%)	46 (96%)	2 (4%)	26	58
27	I2	172/173 (99%)	164 (95%)	8 (5%)	23	54
28	I3	272/275 (99%)	270 (99%)	2 (1%)	76	90
29	J2	134/163 (82%)	130 (97%)	4 (3%)	36	69
30	J3	185/224 (83%)	180 (97%)	5 (3%)	39	71
31	K2	164/165 (99%)	160 (98%)	4 (2%)	43	74
32	K3	198/218 (91%)	191 (96%)	7 (4%)	32	64
33	L1	147/197 (75%)	140 (95%)	7 (5%)	23	53
34	L2	158/175 (90%)	155 (98%)	3 (2%)	50	78
35	L3	160/168 (95%)	152 (95%)	8 (5%)	22	51
36	M2	155/156 (99%)	150 (97%)	5 (3%)	34	67
37	M3	104/108 (96%)	101 (97%)	3 (3%)	37	70

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
38	N2	139/140 (99%)	136 (98%)	3 (2%)	45	75
39	N3	130/131 (99%)	128 (98%)	2 (2%)	57	81
40	O2	91/114 (80%)	89 (98%)	2 (2%)	45	75
41	O3	104/119 (87%)	100 (96%)	4 (4%)	29	61
42	P2	100/107 (94%)	100 (100%)	0	100	100
43	P3	112/113 (99%)	109 (97%)	3 (3%)	39	71
44	Q2	54/126 (43%)	54 (100%)	0	100	100
45	Q3	107/115 (93%)	98 (92%)	9 (8%)	10	29
46	R2	106/133 (80%)	104 (98%)	2 (2%)	50	78
47	R3	75/103 (73%)	73 (97%)	2 (3%)	39	71
48	S2	124/135 (92%)	119 (96%)	5 (4%)	28	60
49	S3	75/76 (99%)	71 (95%)	4 (5%)	20	49
50	T2	117/118 (99%)	115 (98%)	2 (2%)	53	80
51	T3	45/106 (42%)	42 (93%)	3 (7%)	15	39
52	U2	120/121 (99%)	120 (100%)	0	100	100
53	U3	45/140 (32%)	44 (98%)	1 (2%)	45	75
54	V2	98/124 (79%)	98 (100%)	0	100	100
55	W2	79/97 (81%)	77 (98%)	2 (2%)	42	73
56	X2	98/110 (89%)	96 (98%)	2 (2%)	48	77
57	Y2	114/121 (94%)	112 (98%)	2 (2%)	51	79
58	Z2	88/89 (99%)	85 (97%)	3 (3%)	32	65
59	a2	98/100 (98%)	96 (98%)	2 (2%)	48	77
60	b2	108/110 (98%)	107 (99%)	1 (1%)	70	87
61	c2	86/89 (97%)	83 (96%)	3 (4%)	32	64
62	d2	73/80 (91%)	72 (99%)	1 (1%)	59	82
63	e2	64/65 (98%)	63 (98%)	1 (2%)	55	81
64	f2	47/48 (98%)	46 (98%)	1 (2%)	47	76
65	g2	48/116 (41%)	48 (100%)	0	100	100
66	h2	23/24 (96%)	22 (96%)	1 (4%)	26	57
67	i2	91/94 (97%)	88 (97%)	3 (3%)	33	66
68	j2	73/75 (97%)	70 (96%)	3 (4%)	27	59

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
69	k2	109/121 (90%)	104 (95%)	5 (5%)	24	55
71	o2	179/242 (74%)	173 (97%)	6 (3%)	32	65
72	p2	193/229 (84%)	176 (91%)	17 (9%)	9	27
73	q2	184/202 (91%)	168 (91%)	16 (9%)	9	27
74	r2	224/225 (100%)	211 (94%)	13 (6%)	18	45
75	s2	156/170 (92%)	151 (97%)	5 (3%)	34	67
76	t2	110/174 (63%)	106 (96%)	4 (4%)	31	63
77	u2	165/180 (92%)	157 (95%)	8 (5%)	23	53
78	v2	86/136 (63%)	84 (98%)	2 (2%)	44	75
79	w2	134/142 (94%)	127 (95%)	7 (5%)	21	50
80	x2	109/130 (84%)	102 (94%)	7 (6%)	16	41
81	y2	117/121 (97%)	115 (98%)	2 (2%)	53	80
82	z2	120/121 (99%)	111 (92%)	9 (8%)	12	34
All	All	9782/11056 (88%)	9479 (97%)	303 (3%)	36	68

All (303) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A1	219	VAL
1	A1	264	ARG
3	A3	61	GLU
3	A3	81	ASP
3	A3	103	LEU
3	A3	106	LYS
3	A3	112	GLU
4	B1	200	THR
4	B1	202	VAL
6	B3	6	VAL
6	B3	45	LEU
6	B3	67	ARG
6	B3	98	SER
6	B3	108	GLU
6	B3	112	MET
6	B3	116	ASP
6	B3	117	GLN
6	B3	142	ASN
9	C1	16	VAL

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Mol	Chain	Res	Type
9	C1	65	LYS
11	C3	41	ARG
11	C3	46	LYS
11	C3	89	ILE
12	D1	43	VAL
12	D1	71	CYS
12	D1	148	VAL
12	D1	212	LEU
13	D2	4	VAL
13	D2	32	VAL
13	D2	113	VAL
13	D2	208	GLU
13	D2	221	LYS
14	D3	67	ASP
15	E1	38	LYS
15	E1	95	ARG
15	E1	157	ILE
16	E2	60	VAL
16	E2	162	ILE
16	E2	199	GLU
16	E2	202	GLU
16	E2	215	GLU
16	E2	258	HIS
16	E2	338	VAL
17	E3	57	VAL
17	E3	99	GLU
18	F1	55	ILE
18	F1	59	VAL
18	F1	64	VAL
18	F1	67	HIS
18	F1	70	VAL
18	F1	158	ARG
18	F1	162	LYS
18	F1	165	LYS
19	F2	56	GLU
19	F2	80	ARG
19	F2	152	LEU
19	F2	209	ILE
19	F2	263	LEU
19	F2	300	ARG
19	F2	327	LYS
19	F2	336	ARG

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Mol	Chain	Res	Type
20	F3	18	VAL
20	F3	38	LYS
20	F3	45	VAL
22	G2	37	VAL
22	G2	41	LYS
22	G2	89	LYS
22	G2	254	GLU
23	G3	15	THR
23	G3	23	SER
23	G3	58	LEU
24	H1	182	HIS
24	H1	193	ARG
25	H2	186	LEU
25	H2	248	GLU
25	H2	250	THR
25	H2	267	LYS
26	H3	30	LEU
26	H3	34	TYR
27	I2	27	VAL
27	I2	61	ARG
27	I2	85	ARG
27	I2	119	VAL
27	I2	124	LEU
27	I2	158	GLU
27	I2	165	LYS
27	I2	175	LEU
28	I3	23	THR
28	I3	107	ASP
29	J2	86	LYS
29	J2	96	LYS
29	J2	118	GLN
29	J2	151	THR
30	J3	117	ARG
30	J3	157	LEU
30	J3	174	ILE
30	J3	248	TYR
30	J3	273	LEU
31	K2	16	LYS
31	K2	71	LYS
31	K2	167	VAL
31	K2	183	SER
32	K3	2	LYS

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Mol	Chain	Res	Type
32	K3	98	ARG
32	K3	106	LEU
32	K3	116	LYS
32	K3	137	ARG
32	K3	200	LYS
32	K3	213	LEU
33	L1	7	ARG
33	L1	8	ASP
33	L1	15	ARG
33	L1	88	GLU
33	L1	97	LYS
33	L1	184	HIS
33	L1	205	TYR
34	L2	3	MET
34	L2	37	SER
34	L2	149	LYS
35	L3	31	LEU
35	L3	47	LYS
35	L3	83	ARG
35	L3	84	ILE
35	L3	108	ARG
35	L3	109	ARG
35	L3	176	LYS
35	L3	180	LYS
36	M2	31	ARG
36	M2	90	THR
36	M2	127	MET
36	M2	169	THR
36	M2	173	ASN
37	M3	40	LYS
37	M3	69	LEU
37	M3	110	VAL
38	N2	72	VAL
38	N2	85	LEU
38	N2	117	LYS
39	N3	28	LEU
39	N3	84	LEU
40	O2	23	LEU
40	O2	88	LYS
41	O3	63	LYS
41	O3	86	LYS
41	O3	146	ARG

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Mol	Chain	Res	Type
41	O3	150	ARG
43	P3	31	SER
43	P3	83	LEU
43	P3	126	LEU
45	Q3	6	THR
45	Q3	27	VAL
45	Q3	43	LYS
45	Q3	83	LYS
45	Q3	100	LYS
45	Q3	105	LYS
45	Q3	109	GLU
45	Q3	110	ARG
45	Q3	124	ASN
46	R2	63	LYS
46	R2	126	THR
47	R3	34	LYS
47	R3	85	ARG
48	S2	40	GLN
48	S2	55	VAL
48	S2	75	ARG
48	S2	84	ARG
48	S2	109	LEU
49	S3	20	LYS
49	S3	24	LEU
49	S3	40	CYS
49	S3	41	TYR
50	T2	19	SER
50	T2	119	GLU
51	T3	8	ARG
51	T3	24	LYS
51	T3	33	LYS
53	U3	144	CYS
55	W2	92	CYS
55	W2	93	THR
56	X2	57	MET
56	X2	113	THR
57	Y2	89	LEU
57	Y2	106	LYS
58	Z2	80	ASN
58	Z2	85	ARG
58	Z2	87	LYS
59	a2	11	LEU

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Mol	Chain	Res	Type
59	a2	65	MET
60	b2	74	LYS
61	c2	3	LEU
61	c2	18	THR
61	c2	29	ARG
62	d2	55	ARG
63	e2	45	LEU
64	f2	2	SER
66	h2	10	MET
67	i2	10	THR
67	i2	62	THR
67	i2	99	ARG
68	j2	8	VAL
68	j2	28	LYS
68	j2	36	LYS
69	k2	5	LEU
69	k2	58	LYS
69	k2	72	LYS
69	k2	105	ASP
69	k2	119	ARG
71	o2	38	ILE
71	o2	80	ARG
71	o2	88	LEU
71	o2	136	GLU
71	o2	178	LEU
71	o2	205	ARG
72	p2	27	LYS
72	p2	32	ASP
72	p2	33	VAL
72	p2	44	ILE
72	p2	47	THR
72	p2	49	VAL
72	p2	66	VAL
72	p2	76	ASN
72	p2	96	CYS
72	p2	104	ASP
72	p2	129	THR
72	p2	157	GLN
72	p2	170	GLU
72	p2	199	LYS
72	p2	208	HIS
72	p2	214	LYS

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Mol	Chain	Res	Type
72	p2	215	VAL
73	q2	10	LYS
73	q2	27	ARG
73	q2	31	GLU
73	q2	35	SER
73	q2	55	THR
73	q2	66	ILE
73	q2	74	GLN
73	q2	90	LYS
73	q2	124	ARG
73	q2	145	GLN
73	q2	175	VAL
73	q2	179	GLN
73	q2	184	ILE
73	q2	189	MET
73	q2	195	SER
73	q2	202	LYS
74	r2	6	LYS
74	r2	12	VAL
74	r2	22	LYS
74	r2	52	LEU
74	r2	75	LYS
74	r2	78	THR
74	r2	118	GLU
74	r2	129	ILE
74	r2	162	ILE
74	r2	169	ILE
74	r2	177	THR
74	r2	181	CYS
74	r2	225	ILE
75	s2	35	LEU
75	s2	65	GLN
75	s2	77	MET
75	s2	82	ASN
75	s2	93	VAL
76	t2	60	ILE
76	t2	78	ARG
76	t2	147	LYS
76	t2	181	THR
77	u2	29	LEU
77	u2	96	LEU
77	u2	114	GLU

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Mol	Chain	Res	Type
77	u2	158	ILE
77	u2	161	LEU
77	u2	163	GLU
77	u2	170	LYS
77	u2	172	LEU
78	v2	58	VAL
78	v2	66	HIS
79	w2	4	ILE
79	w2	6	THR
79	w2	22	ARG
79	w2	32	LYS
79	w2	79	LYS
79	w2	81	LYS
79	w2	97	ARG
80	x2	14	LYS
80	x2	26	LEU
80	x2	33	LEU
80	x2	46	ASN
80	x2	70	MET
80	x2	102	PHE
80	x2	133	ILE
81	y2	121	VAL
81	y2	142	GLN
82	z2	5	ARG
82	z2	16	ILE
82	z2	32	LYS
82	z2	75	GLU
82	z2	77	GLU
82	z2	85	VAL
82	z2	94	GLU
82	z2	102	THR
82	z2	108	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (114) such sidechains are listed below:

Mol	Chain	Res	Type
1	A1	141	ASN
1	A1	148	ASN
1	A1	173	ASN
1	A1	227	ASN
3	A3	17	ASN
3	A3	101	ASN

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Mol	Chain	Res	Type
4	B1	66	GLN
4	B1	108	GLN
4	B1	112	GLN
4	B1	153	GLN
6	B3	51	ASN
6	B3	63	HIS
6	B3	105	GLN
9	C1	39	ASN
9	C1	98	HIS
9	C1	102	ASN
11	C3	47	ASN
12	D1	123	GLN
13	D2	38	HIS
13	D2	139	HIS
13	D2	205	ASN
14	D3	21	ASN
16	E2	167	GLN
16	E2	184	GLN
16	E2	204	GLN
16	E2	328	ASN
17	E3	73	GLN
18	F1	149	GLN
18	F1	175	ASN
19	F2	50	GLN
19	F2	329	ASN
20	F3	25	ASN
20	F3	86	ASN
21	G1	34	ASN
22	G2	138	GLN
22	G2	275	GLN
22	G2	282	GLN
25	H2	257	GLN
27	I2	72	HIS
28	I3	14	HIS
28	I3	64	HIS
28	I3	181	ASN
28	I3	187	ASN
29	J2	10	ASN
29	J2	25	HIS
29	J2	97	ASN
29	J2	133	HIS
29	J2	137	ASN

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Mol	Chain	Res	Type
30	J3	178	HIS
31	K2	44	ASN
32	K3	186	GLN
33	L1	84	HIS
33	L1	197	ASN
34	L2	134	ASN
34	L2	158	GLN
35	L3	111	GLN
36	M2	23	HIS
36	M2	77	ASN
36	M2	125	GLN
36	M2	173	ASN
40	O2	50	ASN
40	O2	94	ASN
45	Q3	15	ASN
45	Q3	112	ASN
46	R2	69	ASN
48	S2	14	ASN
48	S2	43	ASN
48	S2	96	HIS
49	S3	51	GLN
49	S3	65	GLN
49	S3	83	GLN
51	T3	44	ASN
51	T3	58	ASN
54	V2	6	ASN
54	V2	60	ASN
55	W2	15	ASN
56	X2	18	ASN
57	Y2	23	HIS
57	Y2	24	GLN
57	Y2	80	HIS
57	Y2	81	ASN
58	Z2	20	ASN
58	Z2	21	GLN
59	a2	112	GLN
60	b2	108	GLN
61	c2	80	HIS
63	e2	28	ASN
64	f2	19	GLN
65	g2	84	GLN
68	j2	56	HIS

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Mol	Chain	Res	Type
69	k2	21	ASN
69	k2	36	ASN
69	k2	85	ASN
72	p2	157	GLN
72	p2	159	GLN
72	p2	232	HIS
73	q2	22	ASN
73	q2	101	GLN
73	q2	145	GLN
73	q2	165	ASN
74	r2	112	HIS
74	r2	157	ASN
74	r2	197	ASN
74	r2	201	HIS
76	t2	76	GLN
77	u2	146	GLN
79	w2	106	HIS
79	w2	141	ASN
81	y2	24	HIS
81	y2	80	GLN
81	y2	86	GLN
82	z2	48	ASN
82	z2	56	HIS
82	z2	118	GLN

### 5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
10	C2	155/156 (99%)	31 (20%)	1 (0%)
2	A2	3593/3615 (99%)	751 (20%)	12 (0%)
5	B2	118/121 (97%)	11 (9%)	0
7	Bv	75/76 (98%)	16 (21%)	0
7	n2	75/76 (98%)	37 (49%)	0
70	m2	1628/1635 (99%)	441 (27%)	0
8	Bx	9/10 (90%)	4 (44%)	0
All	All	5653/5689 (99%)	1291 (22%)	13 (0%)

All (1291) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
2	A2	2	G

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Mol	Chain	Res	Type
2	A2	13	U
2	A2	21	G
2	A2	25	A
2	A2	39	A
2	A2	42	A
2	A2	48	G
2	A2	59	A
2	A2	64	A
2	A2	65	A
2	A2	69	A
2	A2	72	C
2	A2	73	A
2	A2	87	A
2	A2	91	G
2	A2	104	G
2	A2	108	A
2	A2	109	G
2	A2	110	C
2	A2	119	G
2	A2	120	A
2	A2	127	G
2	A2	131	C
2	A2	134	G
2	A2	136	C
2	A2	143	U
2	A2	144	G
2	A2	151	G
2	A2	159	C
2	A2	172	C
2	A2	174	C
2	A2	183	C
2	A2	184	U
2	A2	185	C
2	A2	186	G
2	A2	187	U
2	A2	188	G
2	A2	189	G
2	A2	197	A
2	A2	200	U
2	A2	201	C
2	A2	209	U
2	A2	216	C

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Mol	Chain	Res	Type
2	A2	217	C
2	A2	218	A
2	A2	220	C
2	A2	233	U
2	A2	234	G
2	A2	237	G
2	A2	254	G
2	A2	266	C
2	A2	267	G
2	A2	268	G
2	A2	280	G
2	A2	297	U
2	A2	315	G
2	A2	316	U
2	A2	340	C
2	A2	341	G
2	A2	344	A
2	A2	373	G
2	A2	379	G
2	A2	387	G
2	A2	396	A
2	A2	407	A
2	A2	408	A
2	A2	410	A
2	A2	412	G
2	A2	413	G
2	A2	433	A
2	A2	450	G
2	A2	452	A
2	A2	453	G
2	A2	454	U
2	A2	467	U
2	A2	468	U
2	A2	469	C
2	A2	470	A
2	A2	479	G
2	A2	486	C
2	A2	490	C
2	A2	492	G
2	A2	497	G
2	A2	498	G
2	A2	499	U

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Mol	Chain	Res	Type
2	A2	500	G
2	A2	508	G
2	A2	510	A
2	A2	511	U
2	A2	513	U
2	A2	514	U
2	A2	516	C
2	A2	651	C
2	A2	652	G
2	A2	653	G
2	A2	654	G
2	A2	671	G
2	A2	674	A
2	A2	678	G
2	A2	681	G
2	A2	692	C
2	A2	693	A
2	A2	694	C
2	A2	699	A
2	A2	703	U
2	A2	704	G
2	A2	711	C
2	A2	715	G
2	A2	737	G
2	A2	738	G
2	A2	745	C
2	A2	746	G
2	A2	747	G
2	A2	748	U
2	A2	749	G
2	A2	753	A
2	A2	757	U
2	A2	767	G
2	A2	770	G
2	A2	802	A
2	A2	811	G
2	A2	812	U
2	A2	813	U
2	A2	814	A
2	A2	816	A
2	A2	824	G
2	A2	835	U

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Mol	Chain	Res	Type
2	A2	839	C
2	A2	840	G
2	A2	842	A
2	A2	843	U
2	A2	844	C
2	A2	856	G
2	A2	857	A
2	A2	858	A
2	A2	869	C
2	A2	870	G
2	A2	871	U
2	A2	888	U
2	A2	889	C
2	A2	891	C
2	A2	919	G
2	A2	921	G
2	A2	927	C
2	A2	929	G
2	A2	934	C
2	A2	935	C
2	A2	936	C
2	A2	937	C
2	A2	938	U
2	A2	947	G
2	A2	1000	G
2	A2	1001	G
2	A2	1002	G
2	A2	1003	G
2	A2	1004	C
2	A2	1005	G
2	A2	1006	G
2	A2	1010	G
2	A2	1011	U
2	A2	1012	C
2	A2	1013	C
2	A2	1014	C
2	A2	1015	C
2	A2	1019	G
2	A2	1021	G
2	A2	1022	C
2	A2	1024	C
2	A2	1025	C

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Mol	Chain	Res	Type
2	A2	1031	U
2	A2	1032	C
2	A2	1036	G
2	A2	1038	G
2	A2	1043	C
2	A2	1044	G
2	A2	1048	C
2	A2	1049	C
2	A2	1053	G
2	A2	1054	G
2	A2	1067	A
2	A2	1070	C
2	A2	1071	G
2	A2	1072	U
2	A2	1079	A
2	A2	1081	G
2	A2	1082	A
2	A2	1085	C
2	A2	1086	C
2	A2	1087	G
2	A2	1094	C
2	A2	1098	G
2	A2	1099	U
2	A2	1101	G
2	A2	1108	A
2	A2	1109	U
2	A2	1110	G
2	A2	1116	U
2	A2	1118	C
2	A2	1136	A
2	A2	1140	A2M
2	A2	1151	A
2	A2	1159	G
2	A2	1168	A
2	A2	1172	A
2	A2	1173	G
2	A2	1179	C
2	A2	1180	G
2	A2	1181	U
2	A2	1190	C
2	A2	1191	G
2	A2	1201	A

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Mol	Chain	Res	Type
2	A2	1208	G
2	A2	1211	A
2	A2	1212	A
2	A2	1224	G
2	A2	1229	C
2	A2	1230	C
2	A2	1231	C
2	A2	1233	A
2	A2	1253	U
2	A2	1270	G
2	A2	1295	G
2	A2	1296	C
2	A2	1298	C
2	A2	1310	A
2	A2	1311	G
2	A2	1315	G
2	A2	1331	A
2	A2	1338	A
2	A2	1347	A2M
2	A2	1360	A
2	A2	1375	G
2	A2	1376	A
2	A2	1377	A
2	A2	1378	A
2	A2	1379	C
2	A2	1387	G
2	A2	1391	U
2	A2	1404	U
2	A2	1409	U
2	A2	1425	G
2	A2	1437	G
2	A2	1438	OMG
2	A2	1444	A
2	A2	1446	G
2	A2	1447	A
2	A2	1453	C
2	A2	1454	G
2	A2	1467	G
2	A2	1474	C
2	A2	1489	C
2	A2	1490	PSU
2	A2	1504	G

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Mol	Chain	Res	Type
2	A2	1507	C
2	A2	1512	U
2	A2	1522	C
2	A2	1523	G
2	A2	1533	C
2	A2	1534	C
2	A2	1542	C
2	A2	1544	A
2	A2	1552	G
2	A2	1558	U
2	A2	1559	U
2	A2	1560	G
2	A2	1573	U
2	A2	1589	A
2	A2	1599	G
2	A2	1606	A
2	A2	1608	G
2	A2	1613	G
2	A2	1617	G
2	A2	1622	C
2	A2	1623	G
2	A2	1624	U
2	A2	1638	G
2	A2	1639	A
2	A2	1644	G
2	A2	1645	A
2	A2	1657	G
2	A2	1671	G
2	A2	1684	U
2	A2	1693	A
2	A2	1694	A
2	A2	1699	A
2	A2	1700	C
2	A2	1719	A
2	A2	1721	G
2	A2	1722	C
2	A2	1723	C
2	A2	1724	G
2	A2	1727	G
2	A2	1732	U
2	A2	1733	C
2	A2	1734	A

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Mol	Chain	Res	Type
2	A2	1738	C
2	A2	1745	A
2	A2	1747	G
2	A2	1750	G
2	A2	1753	G
2	A2	1760	A
2	A2	1761	U
2	A2	1762	A
2	A2	1764	A
2	A2	1821	C
2	A2	1822	U
2	A2	1825	C
2	A2	1827	A
2	A2	1828	A
2	A2	1846	U
2	A2	1848	G
2	A2	1850	U
2	A2	1857	G
2	A2	1858	G
2	A2	1870	C
2	A2	1871	A
2	A2	1886	C
2	A2	1887	G
2	A2	1893	C
2	A2	1894	G
2	A2	1895	G
2	A2	1897	A
2	A2	1899	G
2	A2	1900	G
2	A2	1902	A
2	A2	1904	G
2	A2	1905	G
2	A2	1909	G
2	A2	1910	G
2	A2	1911	G
2	A2	2005	U
2	A2	2006	C
2	A2	2008	G
2	A2	2009	G
2	A2	2012	C
2	A2	2013	C
2	A2	2014	G

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Mol	Chain	Res	Type
2	A2	2015	C
2	A2	2044	C
2	A2	2052	G
2	A2	2055	A
2	A2	2056	G
2	A2	2061	G
2	A2	2068	A
2	A2	2069	G
2	A2	2071	G
2	A2	2077	G
2	A2	2087	A
2	A2	2088	G
2	A2	2094	G
2	A2	2103	G
2	A2	2106	OMC
2	A2	2137	A
2	A2	2150	A
2	A2	2152	G
2	A2	2153	U
2	A2	2176	G
2	A2	2177	OMC
2	A2	2180	U
2	A2	2192	C
2	A2	2196	C
2	A2	2202	U
2	A2	2205	G
2	A2	2208	A
2	A2	2224	C
2	A2	2225	C
2	A2	2226	G
2	A2	2229	G
2	A2	2233	C
2	A2	2237	C
2	A2	2239	A
2	A2	2245	U
2	A2	2249	U
2	A2	2257	G
2	A2	2258	G
2	A2	2259	C
2	A2	2260	C
2	A2	2261	G
2	A2	2262	A

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Mol	Chain	Res	Type
2	A2	2268	A
2	A2	2275	C
2	A2	2284	A
2	A2	2285	U
2	A2	2294	C
2	A2	2295	C
2	A2	2299	G
2	A2	2301	G
2	A2	2302	G
2	A2	2311	G
2	A2	2314	G
2	A2	2321	G
2	A2	2328	A
2	A2	2338	C
2	A2	2341	G
2	A2	2342	A
2	A2	2343	C
2	A2	2344	C
2	A2	2356	A
2	A2	2361	G
2	A2	2371	C
2	A2	2373	G
2	A2	2382	C
2	A2	2383	U
2	A2	2393	G
2	A2	2397	A
2	A2	2408	C
2	A2	2417	G
2	A2	2424	C
2	A2	2430	G
2	A2	2431	A
2	A2	2442	U
2	A2	2449	G
2	A2	2450	A
2	A2	2451	A
2	A2	2458	G
2	A2	2462	U
2	A2	2463	U
2	A2	2464	C
2	A2	2466	G
2	A2	2468	C
2	A2	2476	G

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Mol	Chain	Res	Type
2	A2	2479	G
2	A2	2481	G
2	A2	2493	C
2	A2	2494	C
2	A2	2498	A
2	A2	2509	G
2	A2	2510	A
2	A2	2511	G
2	A2	2514	G
2	A2	2515	G
2	A2	2518	U
2	A2	2519	A
2	A2	2524	U
2	A2	2525	C
2	A2	2543	U
2	A2	2545	U
2	A2	2549	C
2	A2	2561	A
2	A2	2569	C
2	A2	2581	U
2	A2	2582	G
2	A2	2584	U
2	A2	2597	G
2	A2	2601	G
2	A2	2603	G
2	A2	2610	G
2	A2	2632	G
2	A2	2657	G
2	A2	3243	C
2	A2	3244	C
2	A2	3246	G
2	A2	3248	G
2	A2	3250	C
2	A2	3252	A
2	A2	3253	G
2	A2	3254	C
2	A2	3260	A
2	A2	3271	G
2	A2	3272	U
2	A2	3282	G
2	A2	3286	A
2	A2	3291	A

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Mol	Chain	Res	Type
2	A2	3300	U
2	A2	3302	A
2	A2	3304	A
2	A2	3318	A
2	A2	3319	A
2	A2	3329	C
2	A2	3330	G
2	A2	3339	C
2	A2	3348	A
2	A2	3366	G
2	A2	3367	A
2	A2	3368	A
2	A2	3373	A
2	A2	3382	A
2	A2	3383	A
2	A2	3406	G
2	A2	3409	G
2	A2	3416	A
2	A2	3417	C
2	A2	3426	U
2	A2	3428	U
2	A2	3429	U
2	A2	3430	A
2	A2	3431	A
2	A2	3432	G
2	A2	3433	G
2	A2	3440	A
2	A2	3441	A2M
2	A2	3442	U
2	A2	3466	C
2	A2	3467	G
2	A2	3469	A
2	A2	3470	U
2	A2	3473	A
2	A2	3475	G
2	A2	3478	U
2	A2	3494	U
2	A2	3495	G
2	A2	3496	U
2	A2	3507	U
2	A2	3523	A
2	A2	3533	A

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Mol	Chain	Res	Type
2	A2	3534	C
2	A2	3535	G
2	A2	3548	U
2	A2	3553	G
2	A2	3557	A
2	A2	3562	A
2	A2	3563	G
2	A2	3564	A
2	A2	3571	U
2	A2	3586	U
2	A2	3594	G
2	A2	3595	G
2	A2	3599	A
2	A2	3604	C
2	A2	3605	A
2	A2	3607	G
2	A2	3609	G
2	A2	3610	A
2	A2	3612	G
2	A2	3613	U
2	A2	3614	G
2	A2	3615	U
2	A2	3617	G
2	A2	3618	A
2	A2	3619	A
2	A2	3620	U
2	A2	3621	A
2	A2	3622	A
2	A2	3623	G
2	A2	3625	G
2	A2	3627	G
2	A2	3633	C
2	A2	3686	G
2	A2	3687	C
2	A2	3689	G
2	A2	3690	C
2	A2	3693	G
2	A2	3694	U
2	A2	3695	G
2	A2	3696	A
2	A2	3697	A
2	A2	3698	A

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Mol	Chain	Res	Type
2	A2	3699	U
2	A2	3700	A
2	A2	3701	C
2	A2	3702	C
2	A2	3703	A
2	A2	3704	C
2	A2	3705	U
2	A2	3707	C
2	A2	3709	C
2	A2	3714	C
2	A2	3715	G
2	A2	3719	U
2	A2	3720	U
2	A2	3726	G
2	A2	3734	G
2	A2	3735	A
2	A2	3736	G
2	A2	3747	G
2	A2	3752	C
2	A2	3760	C
2	A2	3765	G
2	A2	3766	C
2	A2	3769	C
2	A2	3772	G
2	A2	3777	A
2	A2	3781	G
2	A2	3782	U
2	A2	3784	C
2	A2	3786	U
2	A2	3787	C
2	A2	3797	C
2	A2	3814	C
2	A2	3815	U
2	A2	3822	A
2	A2	3829	C
2	A2	3835	G
2	A2	3836	G
2	A2	3843	G
2	A2	3855	A
2	A2	3874	G
2	A2	3877	G
2	A2	3881	U

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Mol	Chain	Res	Type
2	A2	3885	A
2	A2	3894	U
2	A2	3895	C
2	A2	3903	A
2	A2	3906	G
2	A2	3908	A
2	A2	3909	A
2	A2	3917	U
2	A2	3920	A
2	A2	3923	A
2	A2	3924	G
2	A2	3925	A
2	A2	3932	A
2	A2	3933	A
2	A2	3943	G
2	A2	3947	U
2	A2	3957	G
2	A2	3958	OMU
2	A2	3966	C
2	A2	3981	G
2	A2	3982	G
2	A2	3984	C
2	A2	3990	G
2	A2	4002	C
2	A2	4004	U
2	A2	4006	U
2	A2	4023	G
2	A2	4025	G
2	A2	4028	A
2	A2	4029	G
2	A2	4030	A
2	A2	4032	A
2	A2	4033	A
2	A2	4039	C
2	A2	4043	G
2	A2	4046	A
2	A2	4050	C
2	A2	4072	U
2	A2	4074	A
2	A2	4078	C
2	A2	4079	G
2	A2	4089	U

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Mol	Chain	Res	Type
2	A2	4096	C
2	A2	4100	G
2	A2	4101	A
2	A2	4105	C
2	A2	4116	A
2	A2	4118	C
2	A2	4151	OMG
2	A2	4152	PSU
2	A2	4164	U
2	A2	4165	A
2	A2	4171	C
2	A2	4176	G
2	A2	4177	C
2	A2	4180	G
2	A2	4184	U
2	A2	4200	A
2	A2	4201	G
2	A2	4206	G
2	A2	4212	C
2	A2	4219	G
2	A2	4225	G
2	A2	4227	G
2	A2	4242	A
2	A2	4252	G
2	A2	4272	OMU
2	A2	4276	A
2	A2	4278	A
2	A2	4285	G
2	A2	4287	A
2	A2	4288	PSU
2	A2	4289	OMG
2	A2	4304	G
2	A2	4308	A
2	A2	4316	A
2	A2	4322	C
2	A2	4324	A
2	A2	4329	U
2	A2	4331	G
2	A2	4347	C
2	A2	4352	A
2	A2	4360	A
2	A2	4361	U

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Mol	Chain	Res	Type
2	A2	4371	G
2	A2	4372	C
2	A2	4382	C
2	A2	4385	C
2	A2	4386	A
2	A2	4393	A
2	A2	4394	G
2	A2	4395	G
2	A2	4396	A
2	A2	4397	G
2	A2	4403	G
2	A2	4406	G
2	A2	4409	C
2	A2	4411	C
2	A2	4413	G
2	A2	4417	G
2	A2	4422	G
2	A2	4434	U
2	A2	4436	C
2	A2	4497	U
2	A2	4498	C
2	A2	4499	G
2	A2	4503	C
2	A2	4504	C
2	A2	4508	G
2	A2	4509	U
2	A2	4515	G
2	A2	4516	C
2	A2	4520	G
2	A2	4521	A
2	A2	4522	G
2	A2	4525	G
2	A2	4527	U
2	A2	4528	C
2	A2	4540	C
2	A2	4541	G
2	A2	4545	U
2	A2	4546	G
2	A2	4547	C
2	A2	4548	G
2	A2	4552	G
2	A2	4553	G

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Mol	Chain	Res	Type
2	A2	4557	G
2	A2	4559	G
2	A2	4560	G
2	A2	4565	C
2	A2	4569	C
2	A2	4570	U
2	A2	4573	C
2	A2	4582	U
2	A2	4583	U
2	A2	4587	G
2	A2	4589	A
2	A2	4591	G
2	A2	4593	U
2	A2	4595	G
2	A2	4609	G
2	A2	4610	C
2	A2	4622	U
2	A2	4625	A
2	A2	4631	U
2	A2	4634	U
2	A2	4636	C
2	A2	4637	U
2	A2	4653	A
2	A2	4659	C
2	A2	4663	G
2	A2	4668	U
2	A2	4680	A
2	A2	4687	G
2	A2	4693	C
2	A2	4696	C
2	A2	4700	C
2	A2	4701	G
2	A2	4702	A
2	A2	4707	A
2	A2	4708	G
2	A2	4715	U
5	B2	7	G
5	B2	25	G
5	B2	33	U
5	B2	41	G
5	B2	53	U
5	B2	54	A

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Mol	Chain	Res	Type
5	B2	64	G
5	B2	97	G
5	B2	100	A
5	B2	110	G
5	B2	119	U
7	Bv	2	C
7	Bv	7	A
7	Bv	8	U
7	Bv	14	A
7	Bv	16	U
7	Bv	17	C
7	Bv	18	G
7	Bv	19	G
7	Bv	24	G
7	Bv	46	G
7	Bv	47	U
7	Bv	48	C
7	Bv	53	G
7	Bv	58	A
7	Bv	74	C
7	Bv	76	A
8	Bx	43	U
8	Bx	49	U
8	Bx	50	U
8	Bx	51	U
10	C2	23	C
10	C2	25	G
10	C2	34	U
10	C2	35	C
10	C2	51	U
10	C2	52	A
10	C2	59	A
10	C2	60	G
10	C2	63	U
10	C2	68	G
10	C2	70	G
10	C2	75	OMG
10	C2	82	A
10	C2	84	A
10	C2	85	U
10	C2	87	G
10	C2	88	A

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Mol	Chain	Res	Type
10	C2	94	G
10	C2	103	A
10	C2	105	C
10	C2	110	U
10	C2	111	U
10	C2	112	G
10	C2	114	G
10	C2	123	U
10	C2	125	C
10	C2	126	C
10	C2	127	U
10	C2	153	C
10	C2	155	C
10	C2	156	U
70	m2	14	C
70	m2	27	A2M
70	m2	29	G
70	m2	30	C
70	m2	33	G
70	m2	34	U
70	m2	41	G
70	m2	46	A
70	m2	56	G
70	m2	59	U
70	m2	60	A
70	m2	63	U
70	m2	64	A
70	m2	65	C
70	m2	66	G
70	m2	67	C
70	m2	68	A
70	m2	72	C
70	m2	74	G
70	m2	76	U
70	m2	77	A
70	m2	78	C
70	m2	79	A
70	m2	82	G
70	m2	103	A
70	m2	113	G
70	m2	114	G
70	m2	115	U

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Mol	Chain	Res	Type
70	m2	118	C
70	m2	126	G
70	m2	127	C
70	m2	129	C
70	m2	130	G
70	m2	142	C
70	m2	143	U
70	m2	144	U
70	m2	145	G
70	m2	146	G
70	m2	158	A
70	m2	159	A
70	m2	160	U
70	m2	161	U
70	m2	162	C
70	m2	168	C
70	m2	170	A
70	m2	171	A
70	m2	172	OMU
70	m2	173	A
70	m2	175	A
70	m2	179	C
70	m2	180	G
70	m2	181	A
70	m2	182	C
70	m2	189	U
70	m2	190	G
70	m2	191	A
70	m2	193	C
70	m2	194	C
70	m2	195	C
70	m2	198	U
70	m2	199	U
70	m2	200	C
70	m2	201	C
70	m2	202	C
70	m2	203	G
70	m2	204	G
70	m2	207	G
70	m2	208	G
70	m2	209	G
70	m2	210	G

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Mol	Chain	Res	Type
70	m2	211	A
70	m2	212	U
70	m2	217	G
70	m2	221	U
70	m2	293	G
70	m2	296	U
70	m2	297	C
70	m2	304	A
70	m2	306	C
70	m2	307	U
70	m2	308	C
70	m2	310	G
70	m2	311	G
70	m2	313	C
70	m2	314	G
70	m2	315	A
70	m2	316	U
70	m2	319	C
70	m2	321	C
70	m2	324	C
70	m2	332	G
70	m2	333	C
70	m2	334	G
70	m2	336	C
70	m2	337	G
70	m2	342	C
70	m2	344	C
70	m2	345	A
70	m2	349	G
70	m2	353	G
70	m2	362	A
70	m2	364	C
70	m2	366	A
70	m2	370	U
70	m2	372	G
70	m2	384	C
70	m2	387	G
70	m2	388	C
70	m2	394	A
70	m2	395	U
70	m2	411	C
70	m2	415	G

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Mol	Chain	Res	Type
70	m2	423	G
70	m2	424	U
70	m2	439	G
70	m2	440	G
70	m2	442	G
70	m2	450	A
70	m2	451	A
70	m2	452	C
70	m2	453	G
70	m2	454	G
70	m2	466	A
70	m2	467	A
70	m2	468	G
70	m2	469	G
70	m2	474	C
70	m2	476	G
70	m2	484	G
70	m2	487	A
70	m2	489	U
70	m2	494	C
70	m2	495	A
70	m2	502	A
70	m2	503	C
70	m2	504	C
70	m2	510	A
70	m2	518	A
70	m2	519	OMC
70	m2	525	A
70	m2	527	A
70	m2	532	U
70	m2	534	C
70	m2	555	A
70	m2	557	A
70	m2	558	U
70	m2	561	G
70	m2	565	G
70	m2	568	U
70	m2	570	C
70	m2	571	A
70	m2	575	U
70	m2	576	A
70	m2	578	A2M

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Mol	Chain	Res	Type
70	m2	585	A
70	m2	589	A
70	m2	591	G
70	m2	592	A
70	m2	593	U
70	m2	594	C
70	m2	596	A
70	m2	599	G
70	m2	600	G
70	m2	606	A
70	m2	608	G
70	m2	609	U
70	m2	616	C
70	m2	617	C
70	m2	619	G
70	m2	625	G
70	m2	630	A
70	m2	631	A
70	m2	633	U
70	m2	635	C
70	m2	645	A
70	m2	657	A
70	m2	662	C
70	m2	670	A2M
70	m2	671	A
70	m2	673	A
70	m2	674	A
70	m2	675	G
70	m2	680	U
70	m2	681	A
70	m2	803	U
70	m2	810	A
70	m2	811	A
70	m2	817	U
70	m2	823	G
70	m2	824	PSU
70	m2	832	A
70	m2	837	C
70	m2	839	A
70	m2	840	G
70	m2	841	C
70	m2	842	C

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Mol	Chain	Res	Type
70	m2	843	G
70	m2	849	A
70	m2	855	C
70	m2	862	G
70	m2	870	G
70	m2	871	A
70	m2	872	A
70	m2	875	G
70	m2	882	G
70	m2	888	A
70	m2	889	U
70	m2	890	U
70	m2	891	U
70	m2	892	U
70	m2	893	G
70	m2	894	U
70	m2	897	G
70	m2	898	U
70	m2	900	U
70	m2	901	U
70	m2	902	C
70	m2	906	A
70	m2	907	C
70	m2	911	G
70	m2	912	G
70	m2	915	A
70	m2	916	U
70	m2	918	A
70	m2	922	A
70	m2	923	G
70	m2	924	A
70	m2	926	G
70	m2	935	G
70	m2	936	G
70	m2	957	A
70	m2	965	A
70	m2	972	G
70	m2	973	G
70	m2	980	G
70	m2	992	A
70	m2	994	A
70	m2	998	A

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Mol	Chain	Res	Type
70	m2	1001	G
70	m2	1003	A
70	m2	1019	U
70	m2	1024	U
70	m2	1025	A
70	m2	1029	A
70	m2	1030	A
70	m2	1063	U
70	m2	1064	A
70	m2	1082	A
70	m2	1085	A
70	m2	1087	C
70	m2	1091	G
70	m2	1095	A
70	m2	1111	C
70	m2	1115	A
70	m2	1117	U
70	m2	1118	C
70	m2	1121	A
70	m2	1132	G
70	m2	1135	A
70	m2	1140	C
70	m2	1150	A
70	m2	1151	A
70	m2	1155	C
70	m2	1156	U
70	m2	1157	U
70	m2	1184	A
70	m2	1185	A
70	m2	1197	A
70	m2	1209	G
70	m2	1217	C
70	m2	1218	C
70	m2	1219	A
70	m2	1226	G
70	m2	1229	G
70	m2	1233	C
70	m2	1244	U
70	m2	1245	PSU
70	m2	1250	B8N
70	m2	1252	A
70	m2	1253	A

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Mol	Chain	Res	Type
70	m2	1255	A
70	m2	1258	G
70	m2	1259	G
70	m2	1261	A
70	m2	1268	C
70	m2	1269	C
70	m2	1270	C
70	m2	1273	C
70	m2	1274	C
70	m2	1275	C
70	m2	1276	G
70	m2	1277	G
70	m2	1285	C
70	m2	1286	A
70	m2	1287	G
70	m2	1288	G
70	m2	1289	A
70	m2	1290	U
70	m2	1294	C
70	m2	1297	A
70	m2	1300	G
70	m2	1302	U
70	m2	1304	G
70	m2	1305	C
70	m2	1307	C
70	m2	1316	U
70	m2	1320	G
70	m2	1330	OMG
70	m2	1339	B8T
70	m2	1343	C
70	m2	1344	U
70	m2	1345	U
70	m2	1346	A
70	m2	1350	G
70	m2	1358	G
70	m2	1360	U
70	m2	1366	U
70	m2	1368	G
70	m2	1370	U
70	m2	1373	U
70	m2	1374	U
70	m2	1380	A

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Mol	Chain	Res	Type
70	m2	1384	A
70	m2	1398	A
70	m2	1399	U
70	m2	1400	G
70	m2	1403	A
70	m2	1405	C
70	m2	1406	U
70	m2	1408	G
70	m2	1412	C
70	m2	1416	A
70	m2	1417	C
70	m2	1418	C
70	m2	1419	C
70	m2	1420	C
70	m2	1421	C
70	m2	1422	G
70	m2	1423	A
70	m2	1425	C
70	m2	1435	C
70	m2	1437	C
70	m2	1438	C
70	m2	1439	C
70	m2	1440	A
70	m2	1449	G
70	m2	1451	G
70	m2	1454	A
70	m2	1456	A
70	m2	1465	U
70	m2	1466	C
70	m2	1482	A
70	m2	1489	A
70	m2	1491	A
70	m2	1492	G
70	m2	1497	G
70	m2	1499	G
70	m2	1500	A
70	m2	1508	A
70	m2	1509	G
70	m2	1511	U
70	m2	1512	G
70	m2	1523	C
70	m2	1524	A

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Mol	Chain	Res	Type
70	m2	1528	G
70	m2	1530	G
70	m2	1533	A
70	m2	1535	A
70	m2	1547	A
70	m2	1554	G
70	m2	1559	C
70	m2	1561	C
70	m2	1562	U
70	m2	1565	G
70	m2	1570	C
70	m2	1572	G
70	m2	1581	A
70	m2	1582	A
70	m2	1583	C
70	m2	1587	U
70	m2	1588	U
70	m2	1590	A
70	m2	1600	G
70	m2	1602	G
70	m2	1603	A
70	m2	1605	G
70	m2	1606	G
70	m2	1608	G
70	m2	1613	G
70	m2	1618	U
70	m2	1623	U
70	m2	1624	U
70	m2	1625	A
70	m2	1627	U
70	m2	1631	C
70	m2	1634	G
70	m2	1636	A
70	m2	1639	A
70	m2	1640	G
70	m2	1641	G
70	m2	1642	A
70	m2	1648	C
70	m2	1649	A
70	m2	1650	G
70	m2	1656	G
70	m2	1663	A

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Mol	Chain	Res	Type
70	m2	1664	U
70	m2	1665	A
70	m2	1666	A
70	m2	1667	G
70	m2	1673	G
70	m2	1682	G
70	m2	1686	C
70	m2	1688	G
70	m2	1697	A
70	m2	1698	C
70	m2	1701	A
70	m2	1717	A
70	m2	1723	U
70	m2	1724	G
70	m2	1746	G
70	m2	1750	G
70	m2	1753	C
70	m2	1788	U
70	m2	1789	G
70	m2	1809	C
70	m2	1815	A
70	m2	1824	A
70	m2	1827	A
70	m2	1828	G
70	m2	1831	G
70	m2	1833	A
70	m2	1840	U
70	m2	1851	G
70	m2	1853	A
70	m2	1854	C
70	m2	1863	G
70	m2	1864	G
70	m2	1865	A
70	m2	1866	U
70	m2	1867	C
7	n2	2	C
7	n2	9	A
7	n2	10	G
7	n2	11	C
7	n2	13	C
7	n2	15	G
7	n2	16	U

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Mol	Chain	Res	Type
7	n2	17	C
7	n2	19	G
7	n2	20	U
7	n2	21	A
7	n2	23	A
7	n2	24	G
7	n2	25	C
7	n2	26	A
7	n2	27	G
7	n2	29	G
7	n2	31	A
7	n2	35	A
7	n2	36	A
7	n2	40	C
7	n2	41	C
7	n2	44	G
7	n2	46	G
7	n2	47	U
7	n2	50	U
7	n2	52	G
7	n2	54	U
7	n2	55	U
7	n2	57	G
7	n2	58	A
7	n2	59	U
7	n2	61	C
7	n2	66	U
7	n2	74	C
7	n2	75	C
7	n2	76	A

All (13) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
2	A2	236	G
2	A2	406	C
2	A2	1446	G
2	A2	1490	PSU
2	A2	2195	U
2	A2	2259	C
2	A2	2382	C
2	A2	2430	G

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Mol	Chain	Res	Type
2	A2	2463	U
2	A2	3253	G
2	A2	4351	U
2	A2	4582	U
10	C2	59	A

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

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z  > 2$	Counts	RMSZ	$\# Z  > 2$
2	A2M	A2	3374	2	22,25,26	0.11	0	30,36,39	0.25	0
70	A2M	m2	486	70	22,25,26	0.09	0	30,36,39	0.26	0
2	OMG	A2	4044	2	23,26,27	0.25	0	32,38,41	0.34	0
2	A2M	A2	1347	84,2	22,25,26	0.13	0	30,36,39	0.48	0
2	PSU	A2	4280	2	18,21,22	0.50	0	21,30,33	0.57	0
70	PSU	m2	825	70	18,21,22	0.50	0	21,30,33	0.56	0
2	OMG	A2	4275	2	23,26,27	0.28	0	32,38,41	0.48	0
2	PSU	A2	4055	2	18,21,22	0.51	0	21,30,33	0.63	1 (4%)
70	4AC	m2	1844	70	21,24,25	0.25	0	28,34,37	0.29	0
2	OMC	A2	2579	2	19,22,23	0.24	0	25,31,34	0.39	0
2	A2M	A2	3441	2	22,25,26	0.11	0	30,36,39	0.31	0
2	PSU	A2	3385	2	18,21,22	0.49	0	21,30,33	0.55	0
2	OMU	A2	3581	2	19,22,23	0.25	0	25,31,34	0.53	0
2	OMC	A2	3357	2	19,22,23	0.22	0	25,31,34	0.46	0
10	OMG	C2	75	10	23,26,27	0.25	0	32,38,41	0.35	0
70	OMC	m2	355	70	19,22,23	0.23	0	25,31,34	0.37	0
2	OMG	A2	3283	2	23,26,27	0.26	0	32,38,41	0.52	0
2	A2M	A2	3380	2	22,25,26	0.09	0	30,36,39	0.38	0
2	OMG	A2	4146	2	23,26,27	0.27	0	32,38,41	0.38	0
2	1MA	A2	4067	2	21,25,26	0.24	0	30,37,40	0.43	0
70	A2M	m2	27	70	22,25,26	0.12	0	30,36,39	0.35	0
2	A2M	A2	2156	2	22,25,26	0.10	0	30,36,39	0.21	0
70	UR3	m2	1832	70	19,22,23	0.26	0	26,32,35	0.39	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
70	OMU	m2	116	70	19,22,23	0.24	0	25,31,34	0.47	0
70	OMG	m2	438	70	23,26,27	0.28	0	32,38,41	0.46	0
2	PSU	A2	3420	2	18,21,22	0.56	0	21,30,33	0.34	0
70	PSU	m2	824	70	18,21,22	0.66	1 (5%)	21,30,33	0.67	1 (4%)
2	OMC	A2	3464	2	19,22,23	0.24	0	25,31,34	0.35	0
2	A2M	A2	2542	2	22,25,26	0.10	0	30,36,39	0.30	0
2	A2M	A2	1673	2	22,25,26	0.11	0	30,36,39	0.44	0
2	OMC	A2	1154	2	19,22,23	0.23	0	25,31,34	0.37	0
2	A2M	A2	4270	2	22,25,26	0.10	0	30,36,39	0.37	0
70	OMG	m2	1330	70	23,26,27	0.27	0	32,38,41	0.39	0
70	OMC	m2	1705	70	19,22,23	0.23	0	25,31,34	0.42	0
2	OMG	A2	2179	2	23,26,27	0.25	0	32,38,41	0.33	0
2	PSU	A2	3945	2	18,21,22	0.47	0	21,30,33	0.55	0
70	OMG	m2	511	84,70	23,26,27	0.28	0	32,38,41	0.40	0
2	OMU	A2	2592	2	19,22,23	0.26	0	25,31,34	0.58	0
2	OMC	A2	2616	2	19,22,23	0.22	0	25,31,34	0.35	0
2	A2M	A2	3486	2	22,25,26	0.09	0	30,36,39	0.33	0
2	OMC	A2	2177	84,2	19,22,23	0.24	0	25,31,34	0.38	0
70	OMC	m2	174	70	19,22,23	0.29	0	25,31,34	0.57	0
2	A2M	A2	1337	2	22,25,26	0.14	0	30,36,39	0.39	0
2	PSU	A2	2263	2	18,21,22	0.44	0	21,30,33	0.61	0
2	OMG	A2	4151	2	23,26,27	0.30	0	32,38,41	0.44	0
70	B8N	m2	1250	70	25,29,30	0.56	0	28,42,45	0.58	1 (3%)
2	PSU	A2	4288	2	18,21,22	0.46	0	21,30,33	0.60	1 (4%)
70	OMU	m2	430	70	19,22,23	0.20	0	25,31,34	0.46	0
70	A2M	m2	1033	70	22,25,26	0.11	0	30,36,39	0.26	0
2	PSU	A2	1395	2	18,21,22	0.51	0	21,30,33	0.53	0
2	OMG	A2	1438	2	23,26,27	0.26	0	32,38,41	0.40	0
2	OMC	A2	2559	2	19,22,23	0.25	0	25,31,34	0.35	0
70	OMG	m2	685	70	23,26,27	0.26	0	32,38,41	0.48	0
70	OMG	m2	646	70	23,26,27	0.27	0	32,38,41	0.36	0
2	OMU	A2	4150	2	19,22,23	0.21	0	25,31,34	0.46	0
2	OMC	A2	2120	2	19,22,23	0.24	0	25,31,34	0.46	0
70	OMU	m2	121	70	19,22,23	0.26	0	25,31,34	0.52	0
2	A2M	A2	1140	2	22,25,26	0.10	0	30,36,39	0.19	0
2	OMC	A2	2106	2	19,22,23	0.27	0	25,31,34	0.34	0
2	OMG	A2	3555	84,2	23,26,27	0.29	0	32,38,41	0.49	0
2	PSU	A2	4152	2	18,21,22	0.51	0	21,30,33	0.63	1 (4%)
70	OMG	m2	869	70	23,26,27	0.23	0	32,38,41	0.32	0
2	5MC	A2	4099	2	19,22,23	0.38	0	26,32,35	0.60	0
2	PSU	A2	4102	84,2	18,21,22	0.47	0	21,30,33	0.41	0
70	PSU	m2	1245	70	18,21,22	0.46	0	21,30,33	0.60	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z  > 2$	Counts	RMSZ	$\# Z  > 2$
70	OMU	m2	172	70	19,22,23	0.23	0	25,31,34	0.68	1 (4%)
2	OMU	A2	3474	2	19,22,23	0.28	0	25,31,34	0.44	0
2	OMC	A2	3497	2	19,22,23	0.20	0	25,31,34	0.41	0
70	A2M	m2	578	70	22,25,26	0.10	0	30,36,39	0.20	0
2	2MG	A2	1330	2	23,26,27	0.29	0	33,38,41	0.38	0
70	A2M	m2	514	70	22,25,26	0.11	0	30,36,39	0.49	1 (3%)
2	OMG	A2	2119	84,2	23,26,27	0.25	0	32,38,41	0.36	0
70	B8T	m2	1339	70	19,22,23	0.34	0	25,31,34	0.44	0
2	OMU	A2	3958	2	19,22,23	0.24	0	25,31,34	0.44	0
2	OMG	A2	3400	2	23,26,27	0.24	0	32,38,41	0.36	0
70	OMC	m2	519	70	19,22,23	0.22	0	25,31,34	0.47	0
2	A2M	A2	4223	2	22,25,26	0.10	0	30,36,39	0.18	0
2	OMG	A2	4022	2	23,26,27	0.28	0	32,38,41	0.37	0
2	OMG	A2	3448	2	23,26,27	0.26	0	32,38,41	0.32	0
70	A2M	m2	99	84,70	22,25,26	0.10	0	30,36,39	0.33	0
2	OMU	A2	4272	2	19,22,23	0.33	0	25,31,34	0.62	0
70	OMG	m2	603	70	23,26,27	0.26	0	32,38,41	0.33	0
2	A2M	A2	2118	84,2	22,25,26	0.10	0	30,36,39	0.22	0
70	A2M	m2	670	84,70	22,25,26	0.13	0	30,36,39	0.27	0
2	PSU	A2	4183	2	18,21,22	0.51	0	21,30,33	0.39	0
2	OMC	A2	1683	84,2	19,22,23	0.26	0	25,31,34	0.54	0
2	PSU	A2	4094	2	18,21,22	0.48	0	21,30,33	0.62	1 (4%)
2	OMG	A2	3848	2,7	23,26,27	0.26	0	32,38,41	0.37	0
2	PSU	A2	3371	2	18,21,22	0.51	0	21,30,33	0.57	0
2	OMG	A2	1130	2	23,26,27	0.29	0	32,38,41	0.47	0
2	OMC	A2	3543	2	19,22,23	0.26	0	25,31,34	0.43	0
2	5MC	A2	3438	84,2	19,22,23	0.32	0	26,32,35	0.40	0
2	A2M	A2	2570	2	22,25,26	0.09	0	30,36,39	0.20	0
2	A2M	A2	398	2	22,25,26	0.11	0	30,36,39	0.30	0
2	A2M	A2	1137	2	22,25,26	0.12	0	30,36,39	0.21	0
2	OMG	A2	1335	2	23,26,27	0.29	0	32,38,41	0.43	0
2	PSU	A2	1490	2	18,21,22	0.87	1 (5%)	21,30,33	0.59	0
2	OMC	A2	4108	2	19,22,23	0.26	0	25,31,34	0.35	0
2	A2M	A2	3481	2	22,25,26	0.10	0	30,36,39	0.24	0
2	A2M	A2	4175	84,2	22,25,26	0.12	0	30,36,39	0.39	0
2	OMG	A2	4289	2	23,26,27	0.30	0	32,38,41	0.39	0
70	PSU	m2	1083	70	18,21,22	0.58	1 (5%)	21,30,33	0.64	0
2	PSU	A2	1496	2	18,21,22	0.50	0	21,30,33	0.59	0
2	OMC	A2	4188	2	19,22,23	0.26	0	25,31,34	0.47	0
70	PSU	m2	614	70	18,21,22	0.52	0	21,30,33	0.61	1 (4%)
70	A2M	m2	1680	70	22,25,26	0.11	0	30,36,39	0.20	0
2	OMC	A2	3525	2	19,22,23	0.23	0	25,31,34	0.39	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
2	OMG	A2	3880	2	23,26,27	0.27	0	32,38,41	0.52	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	A2M	A2	3374	2	-	1/9/27/28	0/3/3/3
70	A2M	m2	486	70	-	0/9/27/28	0/3/3/3
2	OMG	A2	4044	2	-	0/9/27/28	0/3/3/3
2	A2M	A2	1347	84,2	-	3/9/27/28	0/3/3/3
2	PSU	A2	4280	2	-	0/7/25/26	0/2/2/2
70	PSU	m2	825	70	-	0/7/25/26	0/2/2/2
2	OMG	A2	4275	2	-	0/9/27/28	0/3/3/3
2	PSU	A2	4055	2	-	0/7/25/26	0/2/2/2
70	4AC	m2	1844	70	-	0/11/29/30	0/2/2/2
2	OMC	A2	2579	2	-	1/9/27/28	0/2/2/2
2	A2M	A2	3441	2	-	4/9/27/28	0/3/3/3
2	PSU	A2	3385	2	-	0/7/25/26	0/2/2/2
2	OMU	A2	3581	2	-	0/9/27/28	0/2/2/2
2	OMC	A2	3357	2	-	4/9/27/28	0/2/2/2
10	OMG	C2	75	10	-	2/9/27/28	0/3/3/3
70	OMC	m2	355	70	-	1/9/27/28	0/2/2/2
2	OMG	A2	3283	2	-	0/9/27/28	0/3/3/3
2	A2M	A2	3380	2	-	0/9/27/28	0/3/3/3
2	OMG	A2	4146	2	-	0/9/27/28	0/3/3/3
2	1MA	A2	4067	2	-	2/7/25/26	0/3/3/3
70	A2M	m2	27	70	-	3/9/27/28	0/3/3/3
2	A2M	A2	2156	2	-	0/9/27/28	0/3/3/3
70	UR3	m2	1832	70	-	2/7/25/26	0/2/2/2
70	OMU	m2	116	70	-	0/9/27/28	0/2/2/2
70	OMG	m2	438	70	-	0/9/27/28	0/3/3/3
2	PSU	A2	3420	2	-	0/7/25/26	0/2/2/2
70	PSU	m2	824	70	-	0/7/25/26	0/2/2/2
2	OMC	A2	3464	2	-	0/9/27/28	0/2/2/2
2	A2M	A2	2542	2	-	3/9/27/28	0/3/3/3
2	A2M	A2	1673	2	-	0/9/27/28	0/3/3/3
2	OMC	A2	1154	2	-	0/9/27/28	0/2/2/2
2	A2M	A2	4270	2	-	0/9/27/28	0/3/3/3
70	OMG	m2	1330	70	-	2/9/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
70	OMC	m2	1705	70	-	0/9/27/28	0/2/2/2
2	OMG	A2	2179	2	-	1/9/27/28	0/3/3/3
2	PSU	A2	3945	2	-	0/7/25/26	0/2/2/2
70	OMG	m2	511	84,70	-	0/9/27/28	0/3/3/3
2	OMU	A2	2592	2	-	0/9/27/28	0/2/2/2
2	OMC	A2	2616	2	-	0/9/27/28	0/2/2/2
2	A2M	A2	3486	2	-	0/9/27/28	0/3/3/3
2	OMC	A2	2177	84,2	-	1/9/27/28	0/2/2/2
70	OMC	m2	174	70	-	2/9/27/28	0/2/2/2
2	A2M	A2	1337	2	-	1/9/27/28	0/3/3/3
2	PSU	A2	2263	2	-	0/7/25/26	0/2/2/2
2	OMG	A2	4151	2	-	0/9/27/28	0/3/3/3
70	B8N	m2	1250	70	-	6/16/34/35	0/2/2/2
2	PSU	A2	4288	2	-	4/7/25/26	0/2/2/2
70	OMU	m2	430	70	-	6/9/27/28	0/2/2/2
70	A2M	m2	1033	70	-	0/9/27/28	0/3/3/3
2	PSU	A2	1395	2	-	1/7/25/26	0/2/2/2
2	OMG	A2	1438	2	-	3/9/27/28	0/3/3/3
2	OMC	A2	2559	2	-	1/9/27/28	0/2/2/2
70	OMG	m2	685	70	-	3/9/27/28	0/3/3/3
70	OMG	m2	646	70	-	3/9/27/28	0/3/3/3
2	OMU	A2	4150	2	-	1/9/27/28	0/2/2/2
2	OMC	A2	2120	2	-	0/9/27/28	0/2/2/2
70	OMU	m2	121	70	-	0/9/27/28	0/2/2/2
2	A2M	A2	1140	2	-	4/9/27/28	0/3/3/3
2	OMC	A2	2106	2	-	4/9/27/28	0/2/2/2
2	OMG	A2	3555	84,2	-	0/9/27/28	0/3/3/3
2	PSU	A2	4152	2	-	1/7/25/26	0/2/2/2
70	OMG	m2	869	70	-	1/9/27/28	0/3/3/3
2	5MC	A2	4099	2	-	3/7/25/26	0/2/2/2
2	PSU	A2	4102	84,2	-	2/7/25/26	0/2/2/2
70	PSU	m2	1245	70	-	2/7/25/26	0/2/2/2
70	OMU	m2	172	70	-	2/9/27/28	0/2/2/2
2	OMU	A2	3474	2	-	1/9/27/28	0/2/2/2
2	OMC	A2	3497	2	-	0/9/27/28	0/2/2/2
70	A2M	m2	578	70	-	1/9/27/28	0/3/3/3
2	2MG	A2	1330	2	-	0/9/27/28	0/3/3/3
70	A2M	m2	514	70	-	3/9/27/28	0/3/3/3
2	OMG	A2	2119	84,2	-	2/9/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
70	B8T	m2	1339	70	-	2/7/27/28	0/2/2/2
2	OMU	A2	3958	2	-	0/9/27/28	0/2/2/2
2	OMG	A2	3400	2	-	0/9/27/28	0/3/3/3
70	OMC	m2	519	70	-	2/9/27/28	0/2/2/2
2	A2M	A2	4223	2	-	0/9/27/28	0/3/3/3
2	OMG	A2	4022	2	-	0/9/27/28	0/3/3/3
2	OMG	A2	3448	2	-	0/9/27/28	0/3/3/3
70	A2M	m2	99	84,70	-	1/9/27/28	0/3/3/3
2	OMU	A2	4272	2	-	3/9/27/28	0/2/2/2
70	OMG	m2	603	70	-	1/9/27/28	0/3/3/3
2	A2M	A2	2118	84,2	-	0/9/27/28	0/3/3/3
70	A2M	m2	670	84,70	-	2/9/27/28	0/3/3/3
2	PSU	A2	4183	2	-	2/7/25/26	0/2/2/2
2	OMC	A2	1683	84,2	-	0/9/27/28	0/2/2/2
2	PSU	A2	4094	2	-	0/7/25/26	0/2/2/2
2	OMG	A2	3848	2,7	-	1/9/27/28	0/3/3/3
2	PSU	A2	3371	2	-	0/7/25/26	0/2/2/2
2	OMG	A2	1130	2	-	1/9/27/28	0/3/3/3
2	OMC	A2	3543	2	-	1/9/27/28	0/2/2/2
2	5MC	A2	3438	84,2	-	0/7/25/26	0/2/2/2
2	A2M	A2	2570	2	-	1/9/27/28	0/3/3/3
2	A2M	A2	398	2	-	0/9/27/28	0/3/3/3
2	A2M	A2	1137	2	-	2/9/27/28	0/3/3/3
2	OMG	A2	1335	2	-	0/9/27/28	0/3/3/3
2	PSU	A2	1490	2	-	1/7/25/26	0/2/2/2
2	OMC	A2	4108	2	-	0/9/27/28	0/2/2/2
2	A2M	A2	3481	2	-	0/9/27/28	0/3/3/3
2	A2M	A2	4175	84,2	-	1/9/27/28	0/3/3/3
2	OMG	A2	4289	2	-	3/9/27/28	0/3/3/3
70	PSU	m2	1083	70	-	1/7/25/26	0/2/2/2
2	PSU	A2	1496	2	-	0/7/25/26	0/2/2/2
2	OMC	A2	4188	2	-	0/9/27/28	0/2/2/2
70	PSU	m2	614	70	-	0/7/25/26	0/2/2/2
70	A2M	m2	1680	70	-	1/9/27/28	0/3/3/3
2	OMC	A2	3525	2	-	0/9/27/28	0/2/2/2
2	OMG	A2	3880	2	-	0/9/27/28	0/3/3/3

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A2	1490	PSU	O4'-C1'	-3.32	1.39	1.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
70	m2	824	PSU	O4'-C1'	-2.54	1.40	1.43
70	m2	1083	PSU	O4'-C1'	-2.19	1.40	1.43

All (9) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
70	m2	172	OMU	O2'-C2'-C1'	2.58	113.89	108.99
70	m2	514	A2M	C2'-C3'-C4'	-2.22	97.23	101.99
2	A2	4055	PSU	O4'-C1'-C2'	2.16	108.14	105.15
70	m2	614	PSU	O4'-C1'-C2'	2.12	108.09	105.15
2	A2	4094	PSU	O4'-C1'-C2'	2.09	108.05	105.15
70	m2	1250	B8N	O4'-C1'-C2'	2.07	108.02	105.15
2	A2	4288	PSU	O4'-C1'-C2'	2.03	107.96	105.15
70	m2	824	PSU	O4'-C1'-C2'	2.03	107.96	105.15
2	A2	4152	PSU	O4'-C1'-C2'	2.00	107.92	105.15

There are no chirality outliers.

All (113) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
10	C2	75	OMG	O4'-C4'-C5'-O5'
2	A2	1140	A2M	O4'-C4'-C5'-O5'
2	A2	1140	A2M	C3'-C4'-C5'-O5'
2	A2	1140	A2M	C1'-C2'-O2'-CM'
2	A2	1347	A2M	C4'-C5'-O5'-P
2	A2	1347	A2M	C3'-C4'-C5'-O5'
2	A2	1395	PSU	C2'-C1'-C5-C4
2	A2	1438	OMG	O4'-C4'-C5'-O5'
2	A2	2106	OMC	C1'-C2'-O2'-CM2
2	A2	2579	OMC	C1'-C2'-O2'-CM2
2	A2	3357	OMC	C2'-C1'-N1-C6
2	A2	3374	A2M	C1'-C2'-O2'-CM'
2	A2	3848	OMG	C1'-C2'-O2'-CM2
2	A2	4102	PSU	C2'-C1'-C5-C4
2	A2	4152	PSU	C4'-C5'-O5'-P
2	A2	4175	A2M	C1'-C2'-O2'-CM'
2	A2	4183	PSU	O4'-C1'-C5-C4
2	A2	4183	PSU	O4'-C1'-C5-C6
2	A2	4272	OMU	C1'-C2'-O2'-CM2
2	A2	4272	OMU	O4'-C4'-C5'-O5'
2	A2	4288	PSU	C2'-C1'-C5-C4
2	A2	4288	PSU	C3'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
2	A2	4289	OMG	C1'-C2'-O2'-CM2
70	m2	27	A2M	C1'-C2'-O2'-CM'
70	m2	99	A2M	C1'-C2'-O2'-CM'
70	m2	172	OMU	C1'-C2'-O2'-CM2
70	m2	174	OMC	O4'-C1'-N1-C2
70	m2	174	OMC	O4'-C1'-N1-C6
70	m2	355	OMC	C1'-C2'-O2'-CM2
70	m2	430	OMU	C2'-C1'-N1-C2
70	m2	430	OMU	C2'-C1'-N1-C6
70	m2	685	OMG	C1'-C2'-O2'-CM2
70	m2	869	OMG	C1'-C2'-O2'-CM2
70	m2	1245	PSU	O4'-C4'-C5'-O5'
70	m2	1250	B8N	O4'-C4'-C5'-O5'
70	m2	1680	A2M	C1'-C2'-O2'-CM'
70	m2	1832	UR3	O4'-C1'-N1-C2
10	C2	75	OMG	C3'-C4'-C5'-O5'
2	A2	1438	OMG	C3'-C4'-C5'-O5'
2	A2	2119	OMG	O4'-C4'-C5'-O5'
2	A2	3441	A2M	O4'-C4'-C5'-O5'
2	A2	3441	A2M	C3'-C4'-C5'-O5'
2	A2	4272	OMU	C3'-C4'-C5'-O5'
2	A2	4289	OMG	O4'-C4'-C5'-O5'
70	m2	27	A2M	O4'-C4'-C5'-O5'
70	m2	27	A2M	C3'-C4'-C5'-O5'
70	m2	1250	B8N	C3'-C4'-C5'-O5'
70	m2	1330	OMG	O4'-C4'-C5'-O5'
70	m2	1330	OMG	C3'-C4'-C5'-O5'
70	m2	1339	B8T	C3'-C4'-C5'-O5'
70	m2	1339	B8T	O4'-C4'-C5'-O5'
2	A2	1347	A2M	O4'-C4'-C5'-O5'
2	A2	4288	PSU	O4'-C4'-C5'-O5'
70	m2	519	OMC	C3'-C4'-C5'-O5'
2	A2	3357	OMC	C2'-C1'-N1-C2
2	A2	1438	OMG	C3'-C2'-O2'-CM2
70	m2	1832	UR3	O4'-C1'-N1-C6
2	A2	2119	OMG	C3'-C4'-C5'-O5'
70	m2	519	OMC	O4'-C4'-C5'-O5'
70	m2	1245	PSU	C3'-C4'-C5'-O5'
2	A2	4289	OMG	C3'-C4'-C5'-O5'
70	m2	646	OMG	C3'-C4'-C5'-O5'
2	A2	1137	A2M	O4'-C4'-C5'-O5'
2	A2	4067	1MA	O4'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
70	m2	430	OMU	O4'-C4'-C5'-O5'
70	m2	514	A2M	O4'-C4'-C5'-O5'
2	A2	4067	1MA	C3'-C4'-C5'-O5'
70	m2	578	A2M	C4'-C5'-O5'-P
70	m2	1250	B8N	C32-C33-C34-O36
2	A2	1130	OMG	C1'-C2'-O2'-CM2
70	m2	514	A2M	C1'-C2'-O2'-CM'
70	m2	430	OMU	C3'-C4'-C5'-O5'
2	A2	2542	A2M	C2'-C1'-N9-C8
2	A2	3441	A2M	C2'-C1'-N9-C8
2	A2	4099	5MC	O4'-C1'-N1-C6
70	m2	670	A2M	O4'-C4'-C5'-O5'
70	m2	1250	B8N	C32-C33-C34-O35
70	m2	685	OMG	O4'-C4'-C5'-O5'
2	A2	4099	5MC	C2'-C1'-N1-C6
2	A2	3357	OMC	O4'-C1'-N1-C2
2	A2	3357	OMC	O4'-C1'-N1-C6
2	A2	4150	OMU	C3'-C2'-O2'-CM2
2	A2	3474	OMU	C4'-C5'-O5'-P
70	m2	646	OMG	C4'-C5'-O5'-P
2	A2	1490	PSU	O4'-C1'-C5-C4
2	A2	4102	PSU	O4'-C1'-C5-C4
2	A2	4288	PSU	O4'-C1'-C5-C4
2	A2	2542	A2M	C2'-C1'-N9-C4
70	m2	1083	PSU	C4'-C5'-O5'-P
70	m2	430	OMU	O4'-C1'-N1-C6
70	m2	646	OMG	O4'-C4'-C5'-O5'
70	m2	172	OMU	C4'-C5'-O5'-P
70	m2	670	A2M	C3'-C4'-C5'-O5'
2	A2	4099	5MC	O4'-C1'-N1-C2
2	A2	3441	A2M	O4'-C1'-N9-C8
2	A2	2179	OMG	C1'-C2'-O2'-CM2
70	m2	603	OMG	C1'-C2'-O2'-CM2
2	A2	1137	A2M	C3'-C4'-C5'-O5'
70	m2	514	A2M	C3'-C4'-C5'-O5'
2	A2	2106	OMC	O4'-C4'-C5'-O5'
70	m2	430	OMU	O4'-C1'-N1-C2
2	A2	2542	A2M	O4'-C1'-N9-C8
2	A2	1140	A2M	C4'-C5'-O5'-P
2	A2	1337	A2M	O4'-C1'-N9-C8
70	m2	1250	B8N	N3-C31-C32-C33
2	A2	2106	OMC	C2'-C1'-N1-C6

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Mol	Chain	Res	Type	Atoms
2	A2	3543	OMC	C4'-C5'-O5'-P
2	A2	2106	OMC	C2'-C1'-N1-C2
2	A2	2559	OMC	C2'-C1'-N1-C2
70	m2	1250	B8N	N34-C33-C34-O36
2	A2	2177	OMC	O4'-C4'-C5'-O5'
2	A2	2570	A2M	O4'-C4'-C5'-O5'
70	m2	685	OMG	C3'-C4'-C5'-O5'

There are no ring outliers.

54 monomers are involved in 80 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A2	3374	A2M	4	0
70	m2	486	A2M	2	0
2	A2	4044	OMG	2	0
2	A2	1347	A2M	2	0
70	m2	1844	4AC	2	0
2	A2	2579	OMC	1	0
2	A2	3441	A2M	1	0
2	A2	3581	OMU	1	0
10	C2	75	OMG	1	0
70	m2	355	OMC	1	0
2	A2	3380	A2M	1	0
2	A2	4067	1MA	1	0
70	m2	27	A2M	1	0
70	m2	1832	UR3	1	0
70	m2	116	OMU	1	0
2	A2	1673	A2M	1	0
2	A2	1154	OMC	2	0
2	A2	4270	A2M	2	0
70	m2	1705	OMC	2	0
2	A2	2179	OMG	1	0
70	m2	511	OMG	3	0
70	m2	174	OMC	2	0
70	m2	430	OMU	1	0
70	m2	1033	A2M	1	0
2	A2	1438	OMG	2	0
2	A2	2559	OMC	3	0
70	m2	685	OMG	1	0
2	A2	1140	A2M	2	0
2	A2	2106	OMC	2	0
2	A2	4152	PSU	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
70	m2	869	OMG	1	0
2	A2	4099	5MC	2	0
70	m2	172	OMU	1	0
2	A2	3474	OMU	2	0
2	A2	3497	OMC	1	0
70	m2	578	A2M	2	0
2	A2	1330	2MG	1	0
2	A2	3958	OMU	1	0
70	m2	519	OMC	1	0
2	A2	4022	OMG	1	0
70	m2	99	A2M	1	0
2	A2	4272	OMU	4	0
70	m2	603	OMG	1	0
2	A2	2118	A2M	1	0
2	A2	3848	OMG	1	0
2	A2	1130	OMG	2	0
2	A2	2570	A2M	2	0
2	A2	4108	OMC	1	0
2	A2	4175	A2M	1	0
2	A2	4289	OMG	1	0
2	A2	1496	PSU	2	0
2	A2	4188	OMC	1	0
70	m2	1680	A2M	1	0
2	A2	3880	OMG	1	0

## 5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

Of 128 ligands modelled in this entry, 128 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

## 5.7 Other polymers [i](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
2	A2	21
70	m2	6

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	m2	130:G	O3'	141:A	P	25.23
1	A2	1512:U	O3'	1521:A	P	24.40
1	A2	2658:G	O3'	3240:C	P	19.11
1	A2	891:C	O3'	917:G	P	17.99
1	m2	690:U	O3'	801:U	P	17.79
1	A2	3790:G	O3'	3796:G	P	17.29
1	A2	4437:C	O3'	4493:G	P	17.03
1	A2	770:G	O3'	799:C	P	16.36
1	A2	3752:C	O3'	3758:G	P	16.25
1	A2	520:C	O3'	650:G	P	15.92
1	A2	859:G	O3'	866:A	P	15.15
1	m2	536:G	O3'	554:U	P	15.07
1	A2	1564:C	O3'	1572:A	P	14.98
1	m2	324:C	O3'	331:G	P	14.47
1	m2	1753:C	O3'	1786:G	P	14.40
1	A2	1772:A	O3'	1820:C	P	13.69
1	A2	1914:C	O3'	2004:G	P	13.18
1	A2	4668:U	O3'	4674:G	P	12.09
1	A2	1055:G	O3'	1059:C	P	11.99
1	A2	481:G	O3'	485:U	P	11.71
1	A2	3633:C	O3'	3685:G	P	9.80
1	A2	866:A	O3'	868:C	P	8.48
1	A2	1072:U	O3'	1078:G	P	8.39
1	m2	227:G	O3'	289:U	P	7.52
1	A2	956:C	O3'	999:C	P	7.10
1	A2	501:G	O3'	506:G	P	5.06
1	A2	4422:G	O3'	4424:U	P	4.95



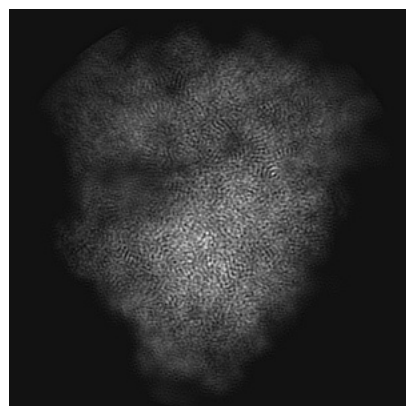
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-53262. These allow visual inspection of the internal detail of the map and identification of artifacts.

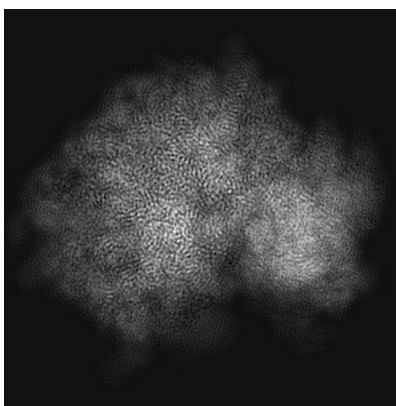
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

### 6.1 Orthogonal projections [i](#)

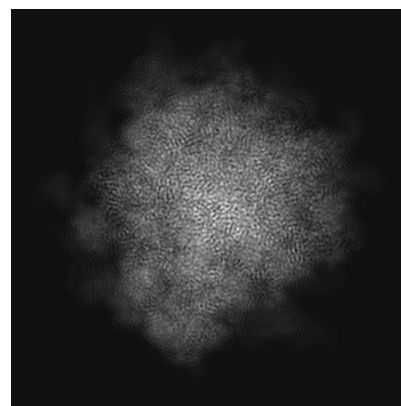
#### 6.1.1 Primary map



X

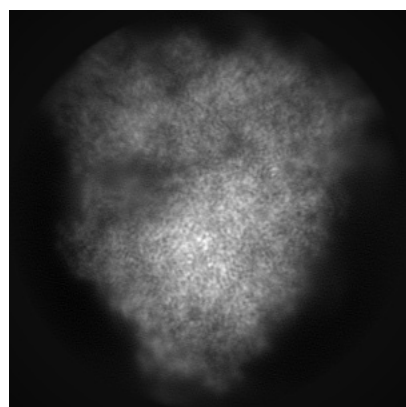


Y

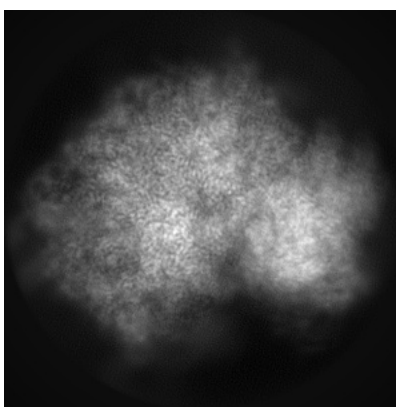


Z

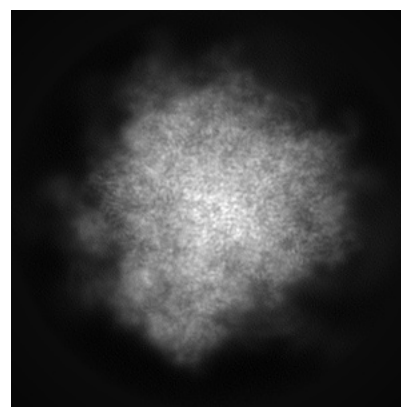
#### 6.1.2 Raw map



X



Y

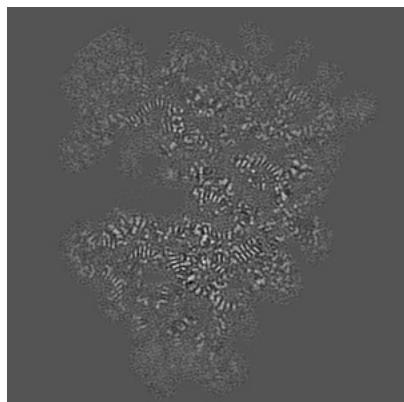


Z

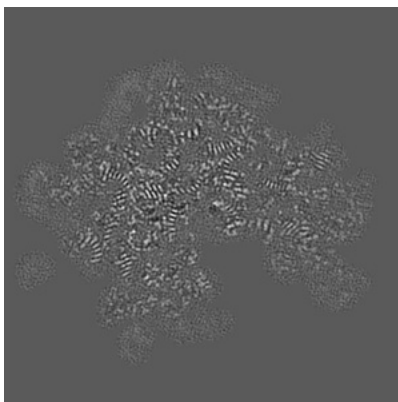
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices [i](#)

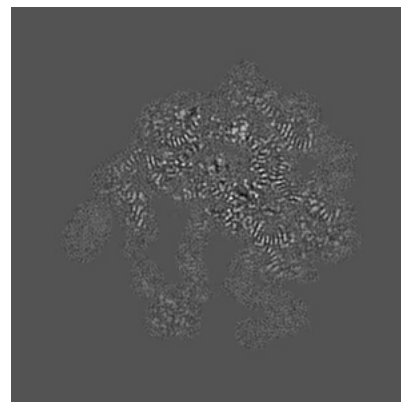
### 6.2.1 Primary map



X Index: 156

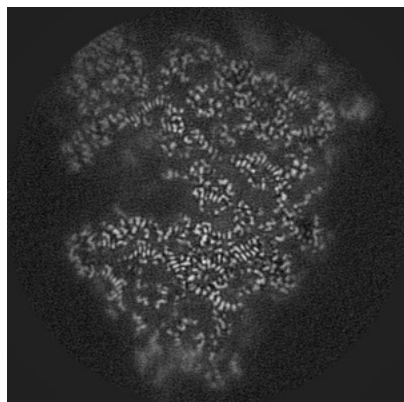


Y Index: 156

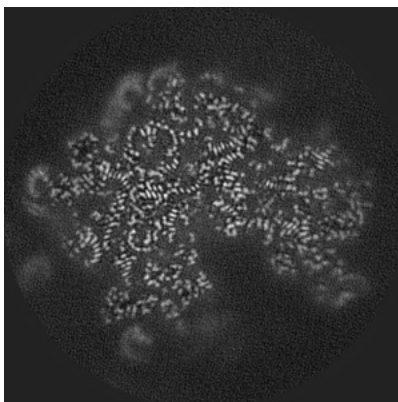


Z Index: 156

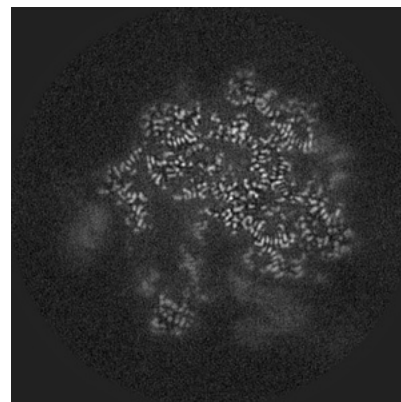
### 6.2.2 Raw map



X Index: 156



Y Index: 156

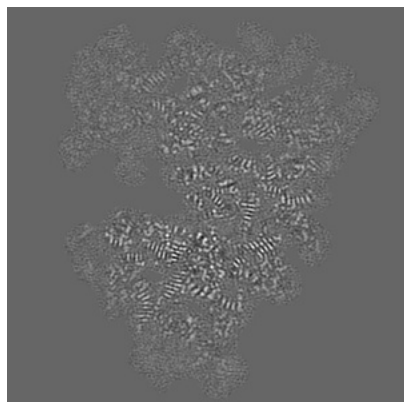


Z Index: 156

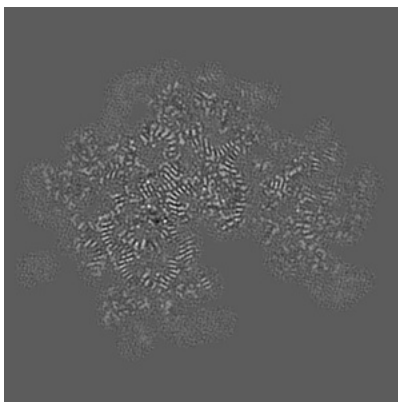
The images above show central slices of the map in three orthogonal directions.

## 6.3 Largest variance slices [i](#)

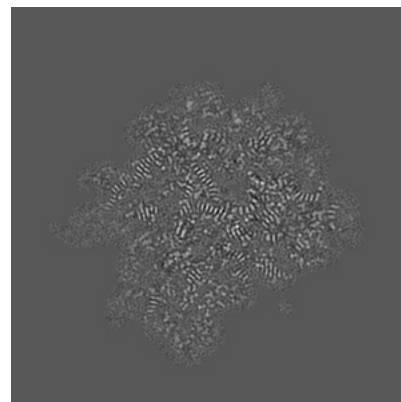
### 6.3.1 Primary map



X Index: 161

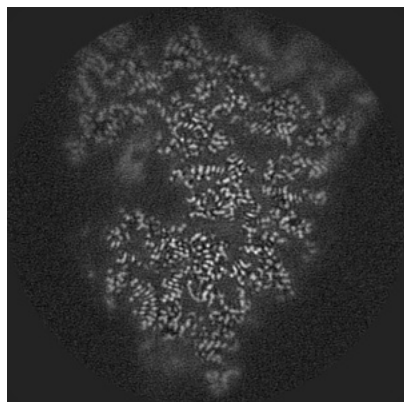


Y Index: 153

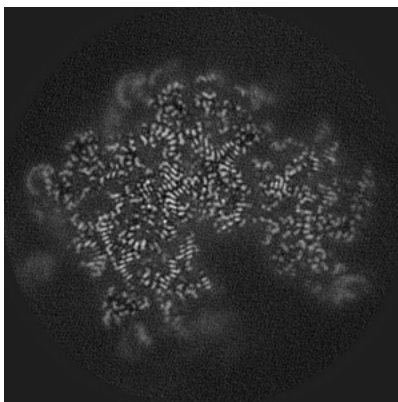


Z Index: 132

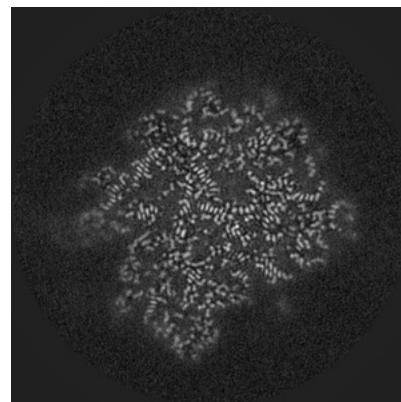
### 6.3.2 Raw map



X Index: 164



Y Index: 153

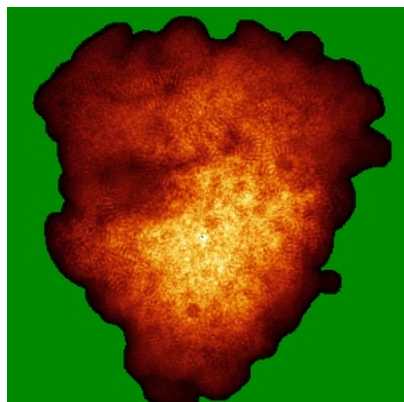


Z Index: 132

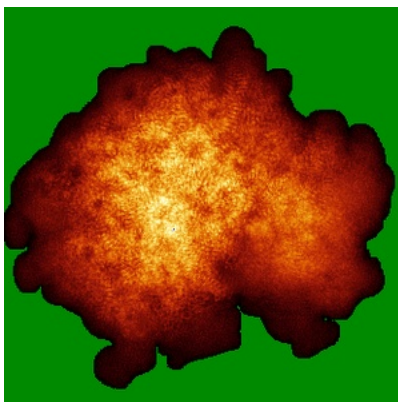
The images above show the largest variance slices of the map in three orthogonal directions.

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

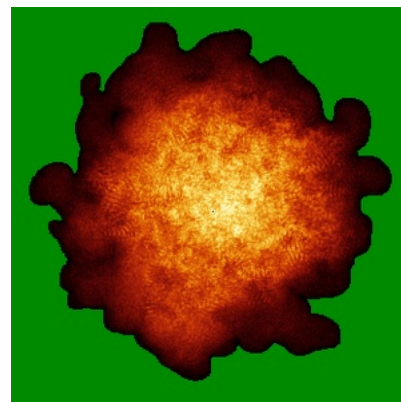
### 6.4.1 Primary map



X

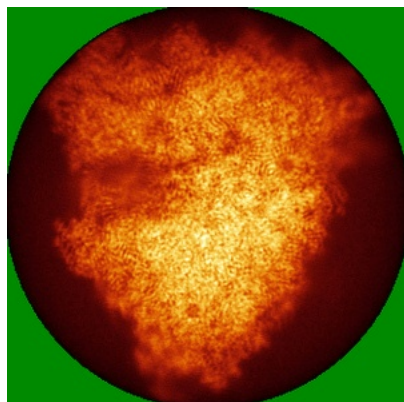


Y

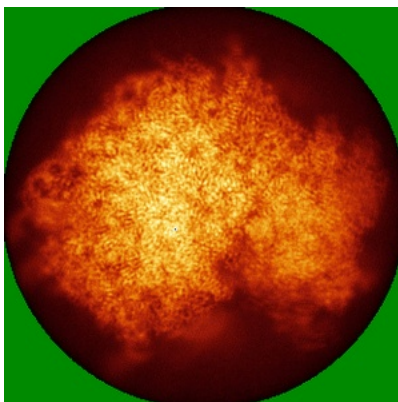


Z

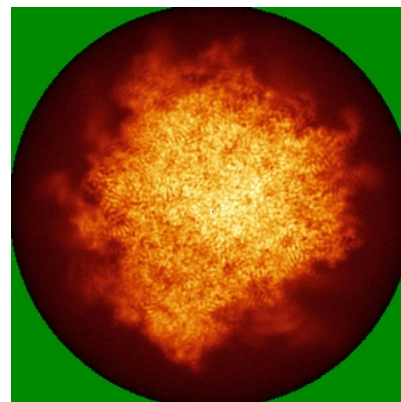
### 6.4.2 Raw map



X



Y



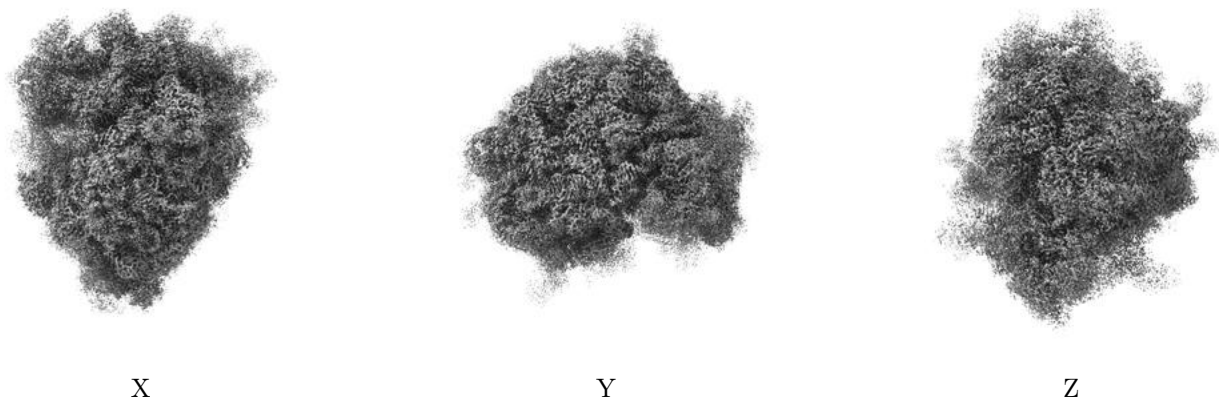
Z

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



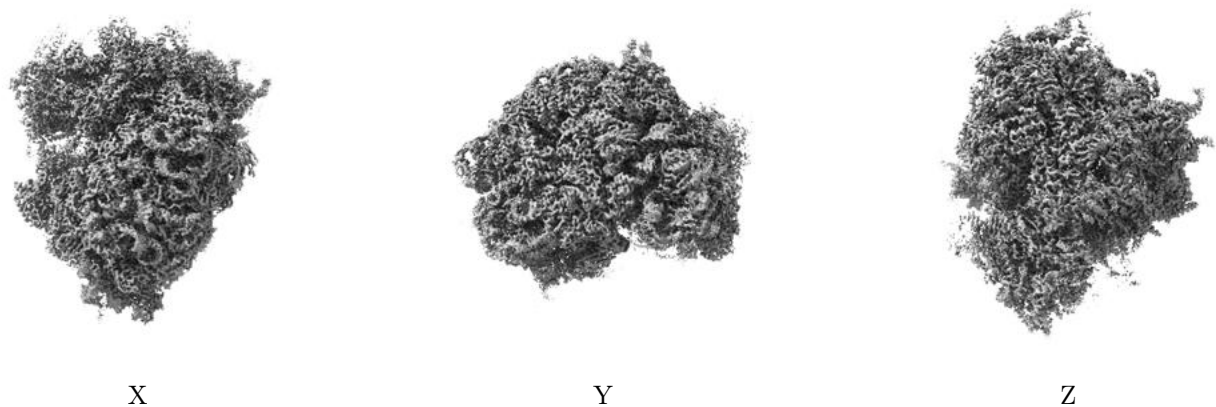
## 6.5 Orthogonal surface views [i](#)

### 6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.0422. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

### 6.5.2 Raw map



These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

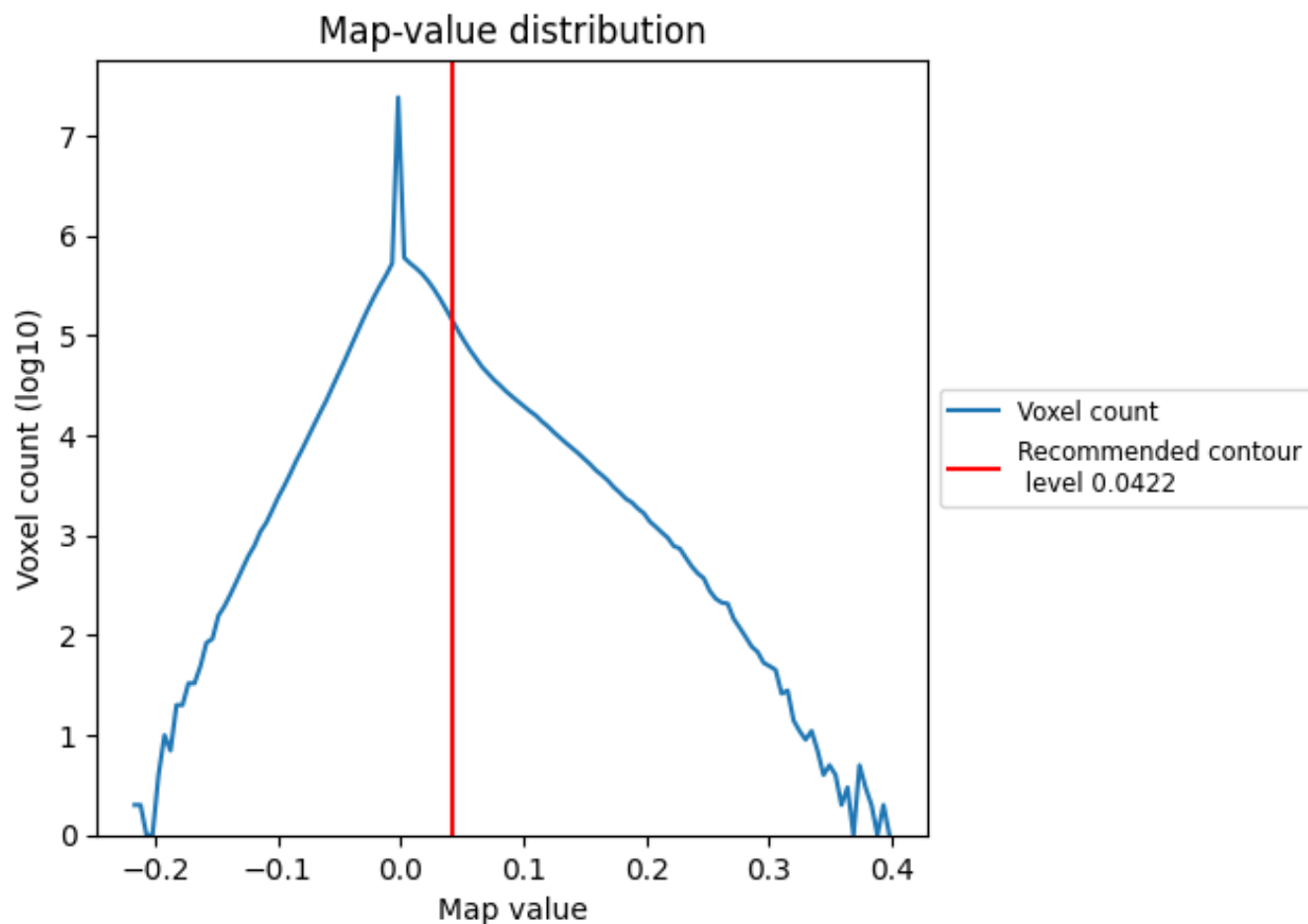
## 6.6 Mask visualisation [i](#)

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

## 7 Map analysis [i](#)

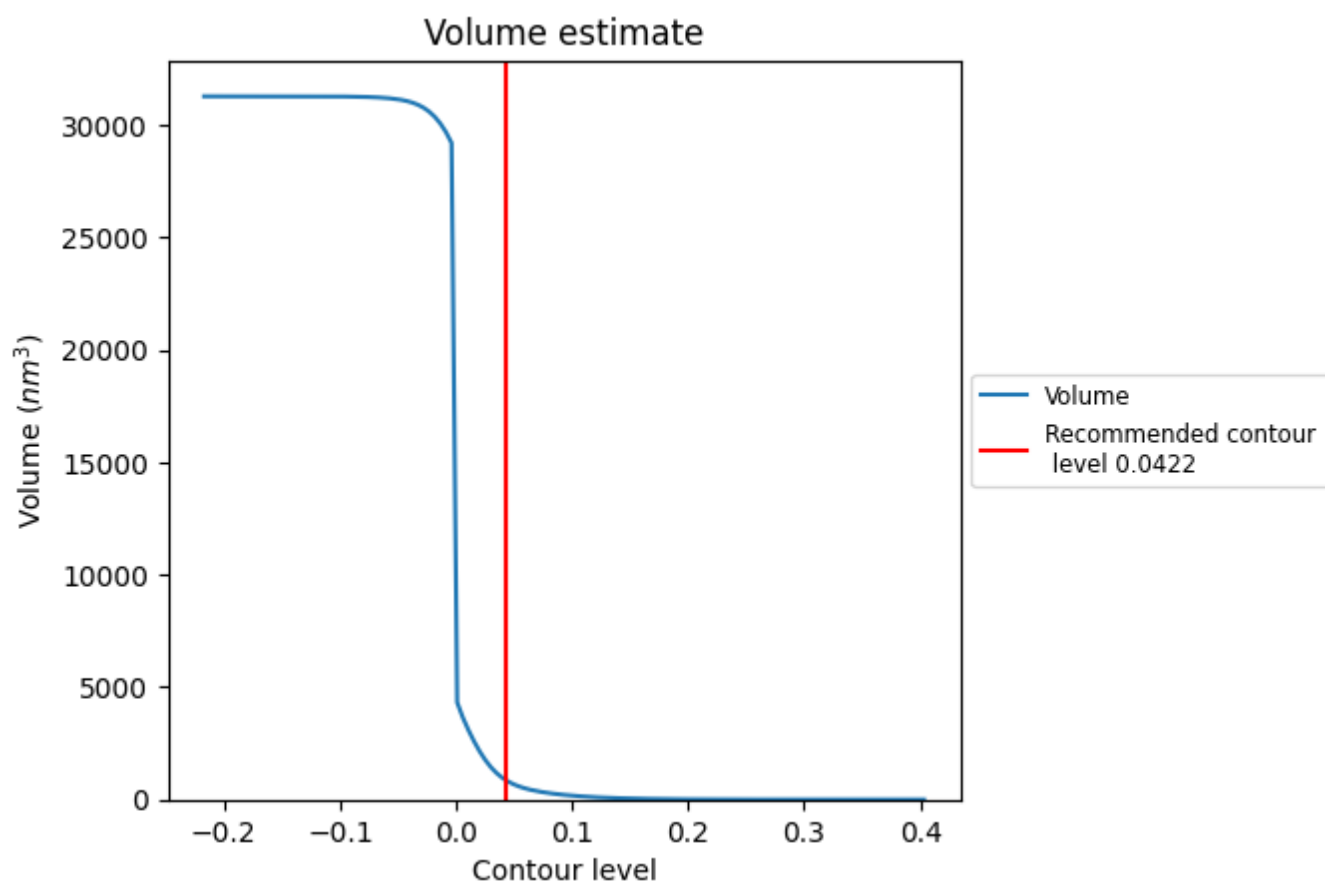
This section contains the results of statistical analysis of the map.

### 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.

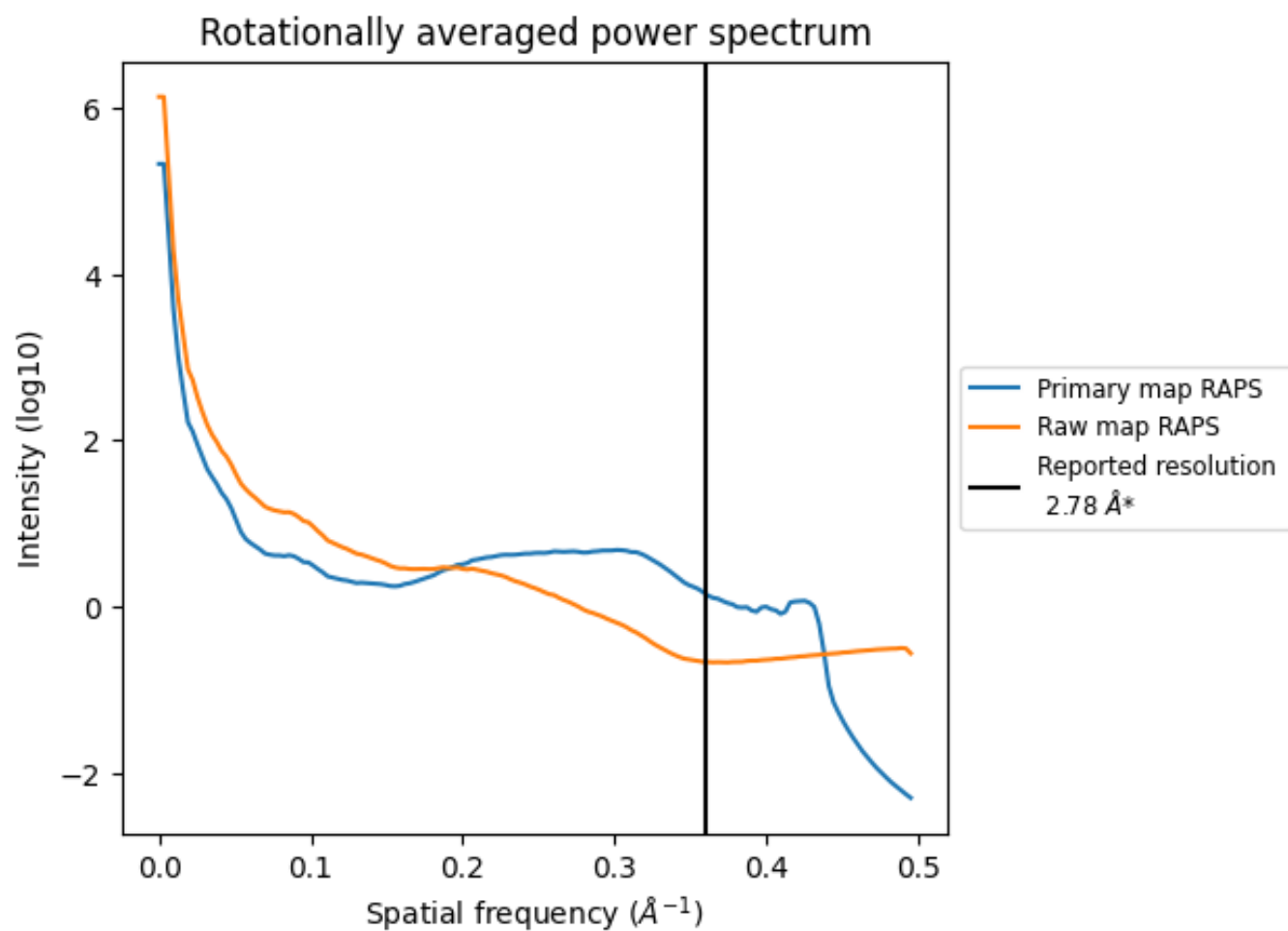
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 893 nm<sup>3</sup>; this corresponds to an approximate mass of 807 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 ⓘ



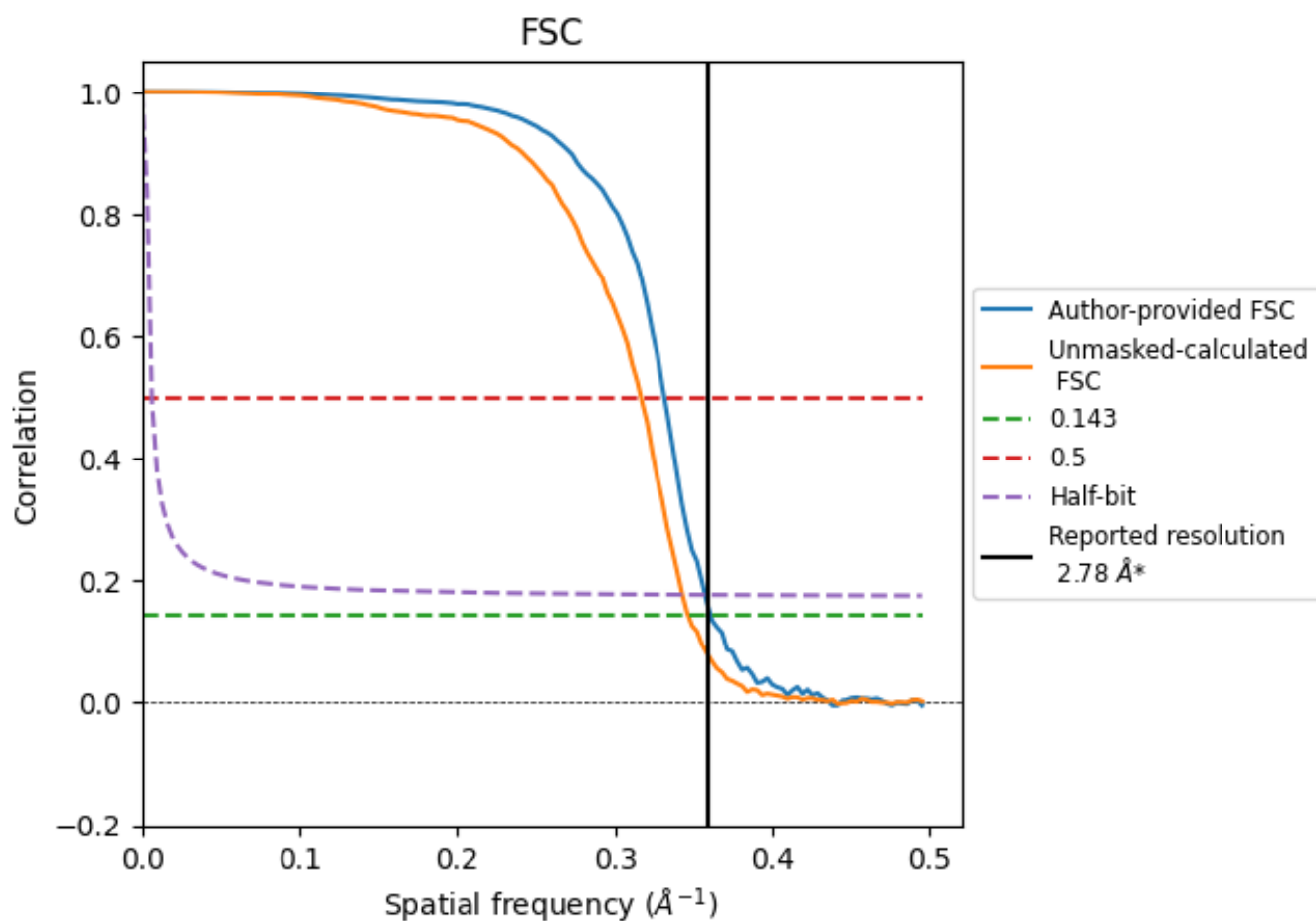
\*Reported resolution corresponds to spatial frequency of 0.360 Å<sup>-1</sup>



## 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 0.360  $\text{\AA}^{-1}$

## 8.2 Resolution estimates [i](#)

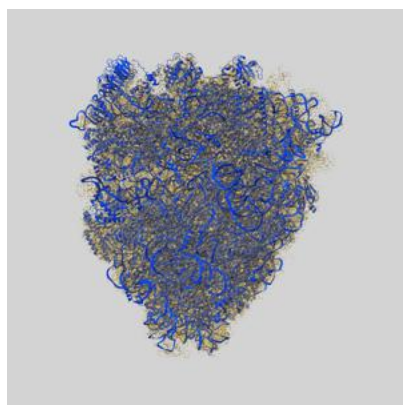
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.78	-	-
Author-provided FSC curve	2.77	3.02	2.80
Unmasked-calculated*	2.89	3.16	2.92

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

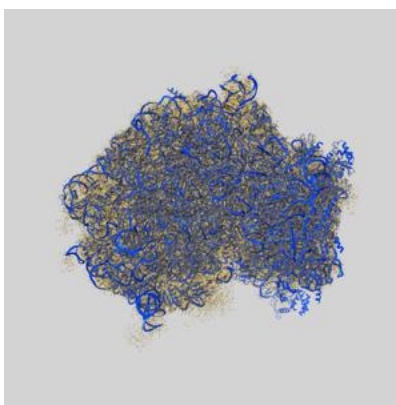
## 9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-53262 and PDB model 9QOH. Per-residue inclusion information can be found in [section 3](#) on [page 20](#).

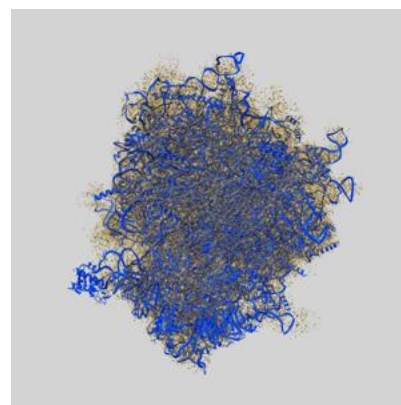
### 9.1 Map-model overlay [i](#)



X



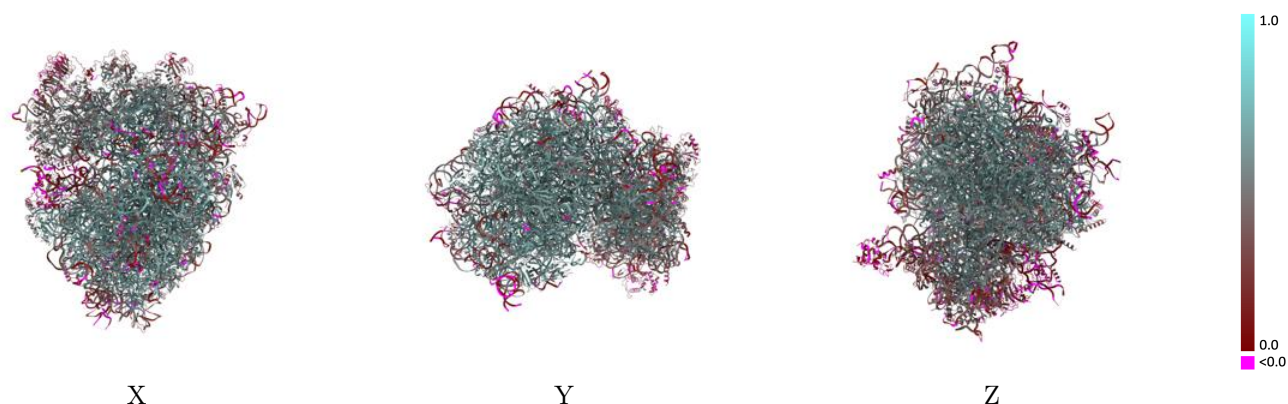
Y



Z

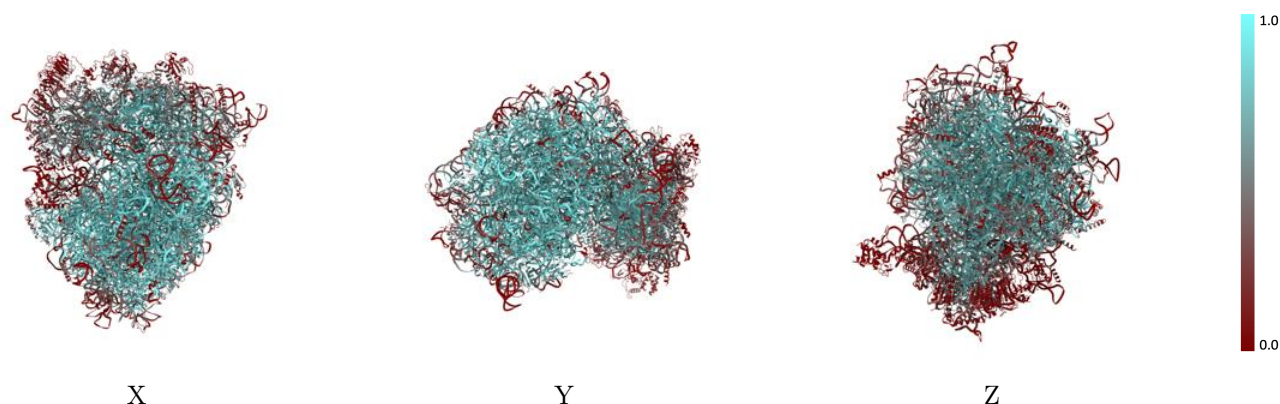
The images above show the 3D surface view of the map at the recommended contour level 0.0422 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



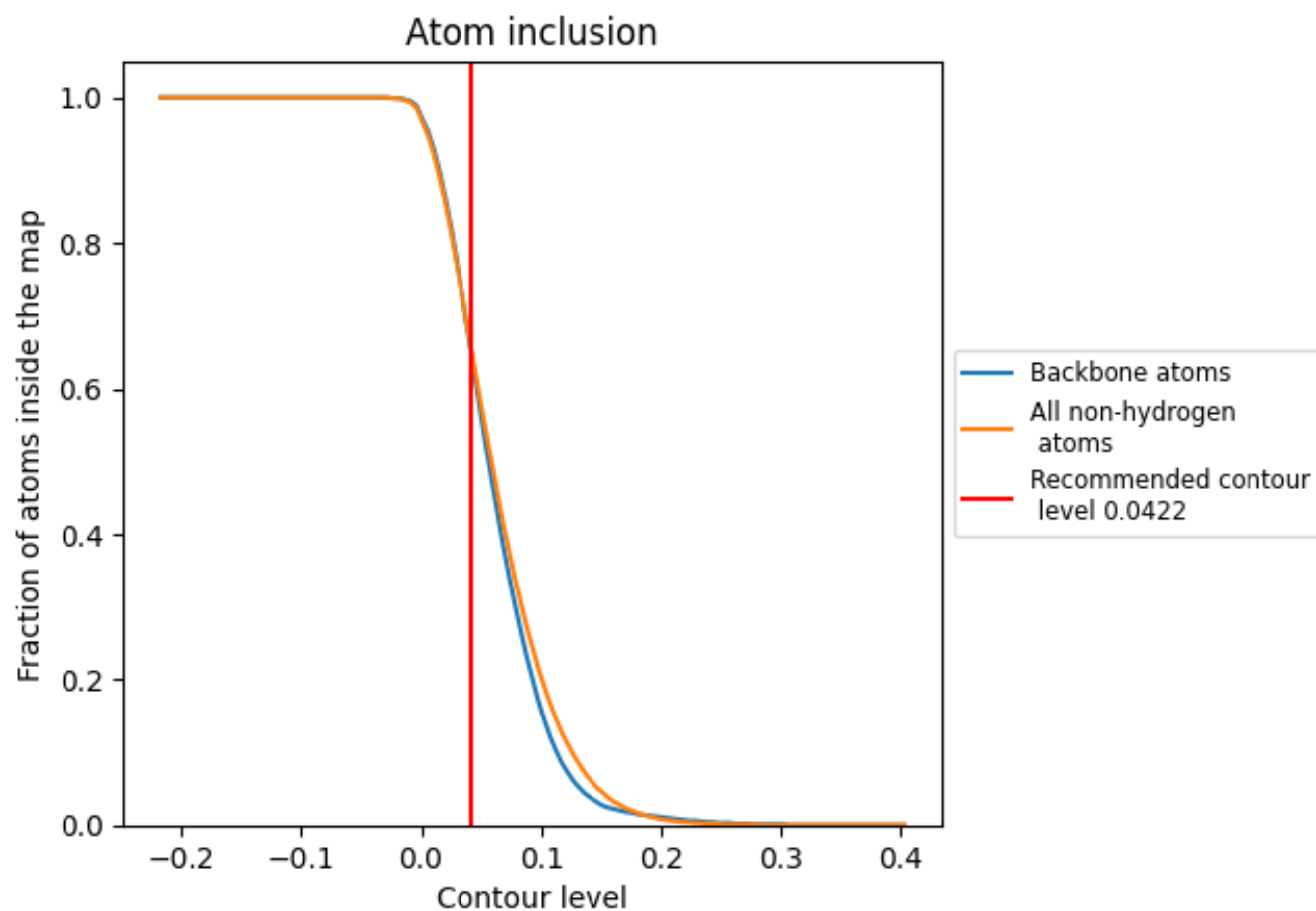
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.0422).







































































## 9.4 Atom inclusion [i](#)



At the recommended contour level, 65% of all backbone atoms, 66% 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 (0.0422) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.6550	 0.5100
A	 0.0450	 0.0970
A1	 0.8240	 0.5970
A2	 0.7510	 0.5360
A3	 0.2880	 0.3720
B1	 0.5570	 0.4380
B2	 0.8690	 0.6190
B3	 0.2950	 0.4020
Bv	 0.4190	 0.4260
Bx	 0.4050	 0.3650
C1	 0.7090	 0.5720
C2	 0.8270	 0.5690
C3	 0.2350	 0.3360
D1	 0.7460	 0.5640
D2	 0.8670	 0.6170
D3	 0.3340	 0.4330
E1	 0.4890	 0.4480
E2	 0.7880	 0.5900
E3	 0.7060	 0.5520
F1	 0.7000	 0.5510
F2	 0.8220	 0.5990
F3	 0.6800	 0.5490
G1	 0.7190	 0.5750
G2	 0.6370	 0.5220
G3	 0.3530	 0.3950
H1	 0.9150	 0.6440
H2	 0.5750	 0.5000
H3	 0.4160	 0.4310
I2	 0.8410	 0.6180
I3	 0.0660	 0.2100
J2	 0.8380	 0.6160
J3	 0.5440	 0.5140
K2	 0.8560	 0.6200
K3	 0.2610	 0.3260
L1	 0.0140	 0.0600



















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Chain	Atom inclusion	Q-score
L2	 0.7080	 0.5320
L3	 0.4640	 0.4630
M2	 0.8480	 0.6190
M3	 0.0030	 0.0670
N2	 0.7630	 0.5720
N3	 0.6010	 0.5260
O2	 0.4290	 0.4240
O3	 0.6210	 0.5000
P2	 0.8170	 0.6000
P3	 0.6430	 0.5290
Q2	 0.7600	 0.5700
Q3	 0.3060	 0.3900
R2	 0.7270	 0.5400
R3	 0.1900	 0.3010
S2	 0.7200	 0.5490
S3	 0.4210	 0.4440
T2	 0.4610	 0.3080
T3	 0.3690	 0.3770
U2	 0.8600	 0.6230
U3	 0.0150	 0.0680
V2	 0.5090	 0.4330
W2	 0.6660	 0.5010
X2	 0.7330	 0.5610
Y2	 0.8590	 0.6230
Z2	 0.8840	 0.6310
a2	 0.7320	 0.5340
b2	 0.6850	 0.5330
c2	 0.6350	 0.5180
d2	 0.8830	 0.6220
e2	 0.3850	 0.3210
f2	 0.8370	 0.6040
g2	 0.7660	 0.5890
h2	 0.8130	 0.5690
i2	 0.7660	 0.5720
j2	 0.7910	 0.5850
k2	 0.7870	 0.5850
m2	 0.6680	 0.5170
n2	 0.1510	 0.1700
o2	 0.3610	 0.4540
p2	 0.5470	 0.5070
q2	 0.2550	 0.3660
r2	 0.4570	 0.4870

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Chain	Atom inclusion	Q-score
s2	 0.4090	 0.4390
t2	 0.2090	 0.3540
u2	 0.5810	 0.4880
v2	 0.1100	 0.2630
w2	 0.6530	 0.5290
x2	 0.2230	 0.3480
y2	 0.3220	 0.4170
z2	 0.2120	 0.3300