Full wwPDB EM Validation Report ⓘ

Jun 25, 2026 – 05:53 pm BST

PDB ID	:	9QZP / pdb_00009qzp
EMDB ID	:	EMD-53473
Title	:	Mouse Ribosome Classical Pre translocation state
Authors	:	Santo, P.E.; Astier, A.; Plisson-Chastang, C.
Deposited on	:	2025-04-23
Resolution	:	3.43 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*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

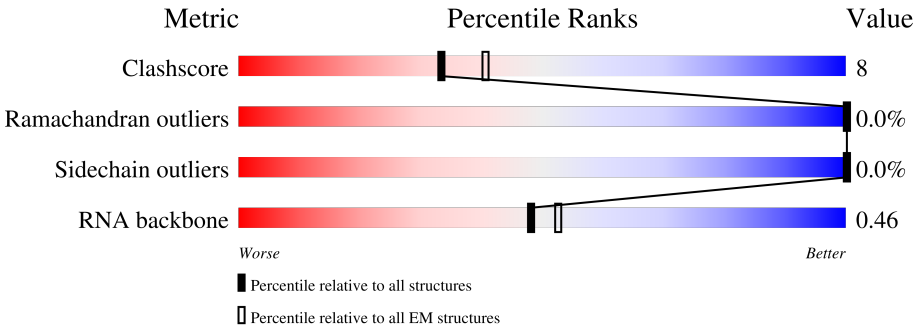
EMDB validation analysis	:	0.0.1.dev132
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

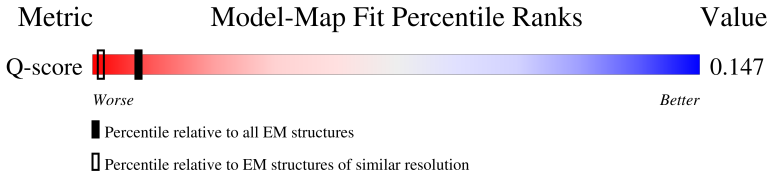
1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.43 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	13927 (2.93 - 3.93)

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

Mol	Chain	Length	Quality of chain
1	A1	270	55% 63% 19% 18%
2	A2	3615	65% 56% 37% 7%
3	A3	152	91% 60% 32% 8%

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Mol	Chain	Length	Quality of chain
4	B1	266	73% 64% 20% 16%
5	B2	121	40% 75% 21%
6	B3	145	95% 72% 25%
7	Bv	76	99% 49% 43% 8%
7	Bz	76	100% 33% 55% 12%
7	n2	76	100% 32% 45% 24%
8	Bx	10	100% 30% 70%
9	By	22	100% 95% 5%
10	C1	192	84% 80% 19%
11	C2	156	64% 56% 40%
12	C3	119	86% 56% 29% 14%
13	D1	214	75% 82% 13% 5%
14	D2	257	72% 79% 18%
15	D3	83	99% 81% 19%
16	E1	178	93% 76% 21%
17	E2	403	82% 79% 20%
18	E3	143	83% 83% 15%
19	F1	211	77% 81% 16%
20	F2	419	68% 72% 14% 14%
21	F3	115	80% 70% 16% 15%
22	G1	217	55% 52% 12% 36%
23	G2	297	84% 83% 16%
24	G3	69	88% 70% 20% 10%
25	H1	204	61% 80% 19%
26	H2	296	68% 61% 14% 25%

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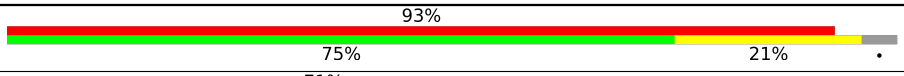
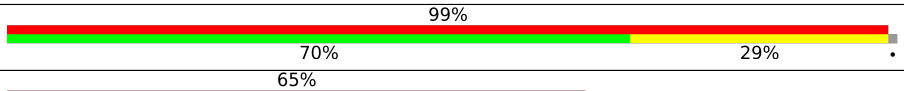
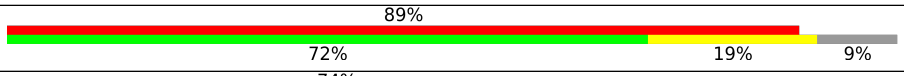
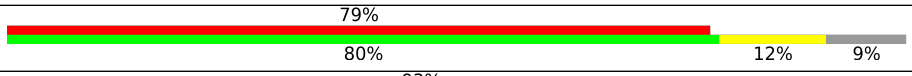
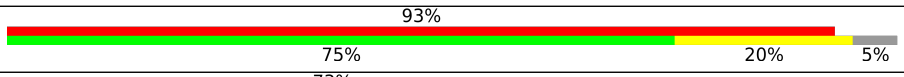
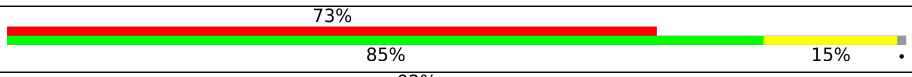
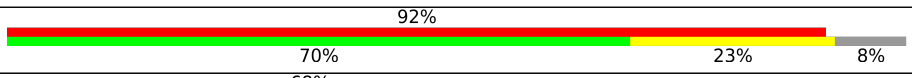
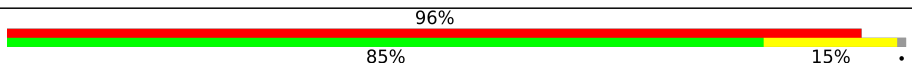
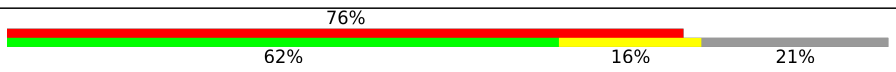
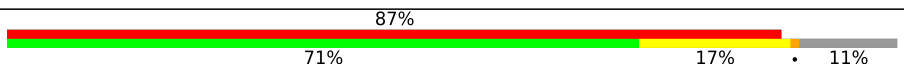
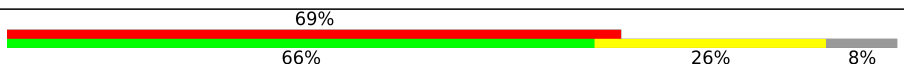
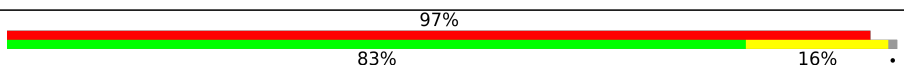
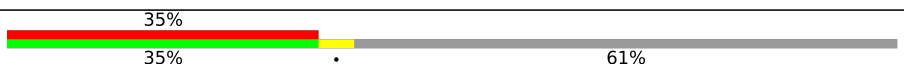
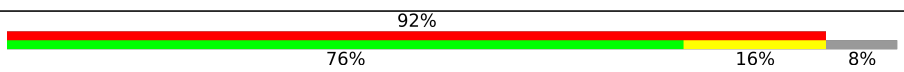
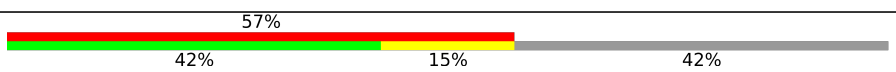
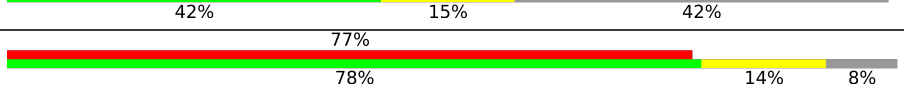
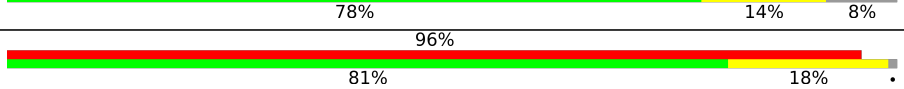
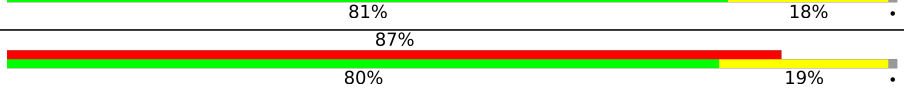
Mol	Chain	Length	Quality of chain
27	H3	56	
28	I2	203	
29	I3	317	
30	J2	184	
31	J3	293	
32	K2	188	
33	K3	249	
34	L1	217	
35	L2	196	
36	L3	194	
37	M2	176	
38	M3	132	
39	N2	160	
40	N3	151	
41	O2	128	
42	O3	151	
43	P2	140	
44	P3	130	
45	Q2	157	
46	Q3	133	
47	R2	156	
48	R3	125	
49	S2	145	
50	S3	84	
51	T2	136	

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Mol	Chain	Length	Quality of chain
52	T3	133	40% 33% 8% 59%
53	U2	148	68% 83% 16%
54	U3	156	33% 26% 8% 67%
55	V2	160	62% 64% 9% 27%
56	W2	115	68% 67% 15% 18%
57	X2	125	68% 68% 18% 14%
58	Y2	135	67% 80% 15% 5%
59	Z2	110	69% 79% 20%
60	a2	117	79% 77% 21%
61	b2	123	83% 80% 17%
62	c2	105	90% 84% 13%
63	d2	97	64% 72% 16% 11%
64	e2	70	94% 63% 36%
65	f2	51	73% 82% 16%
66	g2	128	32% 36% 5% 59%
67	h2	25	80% 48% 48%
68	i2	106	75% 84% 13%
69	j2	92	73% 84% 13%
70	k2	137	78% 63% 28% 9%
71	o2	295	72% 57% 15% 27%
72	p2	264	78% 55% 26% 20%
73	q2	243	91% 67% 24% 9%
74	r2	263	98% 75% 24%
75	s2	204	88% 61% 28% 10%
76	t2	194	94% 77% 18% 6%

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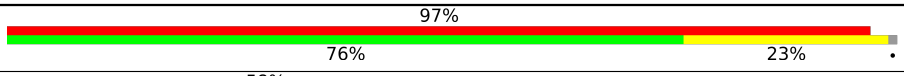
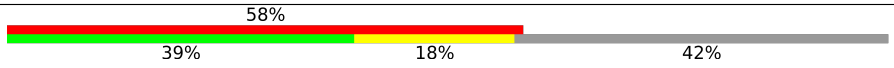
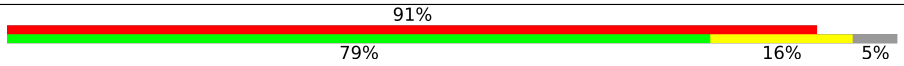
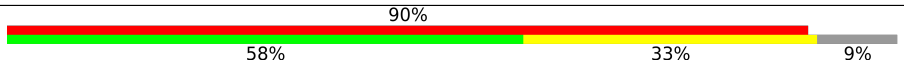
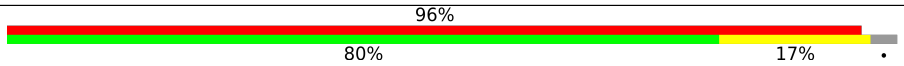
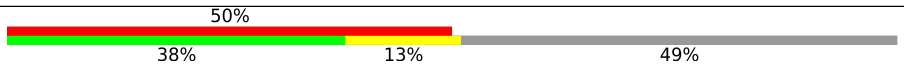
Mol	Chain	Length	Quality of chain
77	u2	208	
78	v2	165	
79	w2	158	
80	x2	145	
81	y2	146	
82	z2	135	
83	m2	1635	

2 Entry composition

There are 86 unique types of molecules in this entry. The entry contains 214961 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
			Total	C	N	O	S		
1	A1	222	1851	1190	356	297	8	1	0

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	A3	140	1151	725	228	197	1	0	0

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

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

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

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

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

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

- 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	Bz	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 Nascent protein chain.

Mol	Chain	Residues	Atoms				AltConf	Trace
9	By	22	Total	C	N	O	0	0
			110	66	22	22		

- Molecule 10 is a protein called Large ribosomal subunit protein uL6.

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

- Molecule 11 is a RNA chain called 5.8S ribosomal RNA.

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

- Molecule 12 is a protein called Small ribosomal subunit protein uS10.

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

- Molecule 13 is a protein called Large ribosomal subunit protein uL16.

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

- Molecule 14 is a protein called Large ribosomal subunit protein uL2.

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

- Molecule 15 is a protein called Small ribosomal subunit protein eS21.

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

- Molecule 16 is a protein called Large ribosomal subunit protein uL5.

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

- Molecule 17 is a protein called Large ribosomal subunit protein uL3.

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

- Molecule 18 is a protein called Small ribosomal subunit protein uS12.

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

- Molecule 19 is a protein called Large ribosomal subunit protein eL13.

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

- Molecule 20 is a protein called Large ribosomal subunit protein uL4.

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

- Molecule 21 is a protein called Small ribosomal subunit protein eS26.

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

- Molecule 22 is a protein called Large ribosomal subunit protein eL14.

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

- Molecule 23 is a protein called Large ribosomal subunit protein uL18.

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

- Molecule 24 is a protein called Small ribosomal subunit protein eS28.

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

- Molecule 25 is a protein called Large ribosomal subunit protein eL15.

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

- Molecule 26 is a protein called Large ribosomal subunit protein eL6.

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

- Molecule 27 is a protein called Small ribosomal subunit protein uS14.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	H3	54	Total	C	N	O	S	0	0
			455	284	93	73	5		

- Molecule 28 is a protein called Large ribosomal subunit protein uL13.

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

- Molecule 29 is a protein called Small ribosomal subunit protein RACK1.

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

- Molecule 30 is a protein called Large ribosomal subunit protein uL22.

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

- Molecule 31 is a protein called Small ribosomal subunit protein uS5.

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

- Molecule 32 is a protein called Large ribosomal subunit protein eL18.

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

- Molecule 33 is a protein called Small ribosomal subunit protein eS6.

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

- Molecule 34 is a protein called Large ribosomal subunit protein uL1.

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

- Molecule 35 is a protein called Large ribosomal subunit protein eL19.

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

- Molecule 36 is a protein called Small ribosomal subunit protein uS4.

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

- Molecule 37 is a protein called Large ribosomal subunit protein eL20.

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

- Molecule 38 is a protein called Small ribosomal subunit protein eS12.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	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 39 is a protein called Large ribosomal subunit protein eL21.

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

- Molecule 40 is a protein called Small ribosomal subunit protein uS15.

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

- Molecule 41 is a protein called Large ribosomal subunit protein eL22.

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

- Molecule 42 is a protein called Small ribosomal subunit protein uS11.

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

- Molecule 43 is a protein called Large ribosomal subunit protein uL14.

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

- Molecule 44 is a protein called Small ribosomal subunit protein uS8.

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

- Molecule 45 is a protein called Large ribosomal subunit protein eL24.

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

- Molecule 46 is a protein called Small ribosomal subunit protein eS24.

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

- Molecule 47 is a protein called Large ribosomal subunit protein uL23.

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

- Molecule 48 is a protein called Small ribosomal subunit protein eS25.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	R3	72	Total	C	N	O	S	0	0
			570	366	104	99	1		

- Molecule 49 is a protein called Large ribosomal subunit protein uL24.

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

- Molecule 50 is a protein called Small ribosomal subunit protein eS27.

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

- Molecule 51 is a protein called Large ribosomal subunit protein eL27.

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

- Molecule 52 is a protein called Ubiquitin-like FUBI-ribosomal protein eS30 fusion protein.

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

- Molecule 53 is a protein called Large ribosomal subunit protein uL15.

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

- Molecule 54 is a protein called Ubiquitin-ribosomal protein eS31 fusion protein.

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

- Molecule 55 is a protein called Large ribosomal subunit protein eL29.

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

- Molecule 56 is a protein called Large ribosomal subunit protein eL30.

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

- Molecule 57 is a protein called Large ribosomal subunit protein eL31.

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

- Molecule 58 is a protein called Large ribosomal subunit protein eL32.

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

- Molecule 59 is a protein called Large ribosomal subunit protein eL33.

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

- Molecule 60 is a protein called Large ribosomal subunit protein eL34.

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

- Molecule 61 is a protein called Large ribosomal subunit protein uL29.

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

- Molecule 62 is a protein called Large ribosomal subunit protein eL36.

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

- Molecule 63 is a protein called Large ribosomal subunit protein eL37.

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

- Molecule 64 is a protein called Large ribosomal subunit protein eL38.

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

- Molecule 65 is a protein called Large ribosomal subunit protein eL39.

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

- Molecule 66 is a protein called Ubiquitin-ribosomal protein eL40 fusion protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	g2	52	Total	C	N	O	S	0	0
			429	266	90	67	6		

- Molecule 67 is a protein called 60S ribosomal protein L41.

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

- Molecule 68 is a protein called Large ribosomal subunit protein eL42.

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

- Molecule 69 is a protein called Large ribosomal subunit protein eL43.

Mol	Chain	Residues	Atoms					AltConf	Trace
69	j2	89	Total	C	N	O	S	0	0
			694	436	133	118	7		

- Molecule 70 is a protein called Large ribosomal subunit protein eL28.

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

- 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	132	Total	C	N	O	S	0	0
			1081	688	203	183	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	69	Total	C	N	O	S	0	0
			560	354	113	91	2		

- Molecule 83 is a RNA chain called 18S ribosomal RNA.

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

- Molecule 84 is MAGNESIUM ION (CCD ID: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

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	30	Total	Mg	0
			30	30	

- 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	

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Mol	Chain	Residues	Atoms	AltConf
85	j2	1	Total Zn 1 1	0

- Molecule 86 is water.

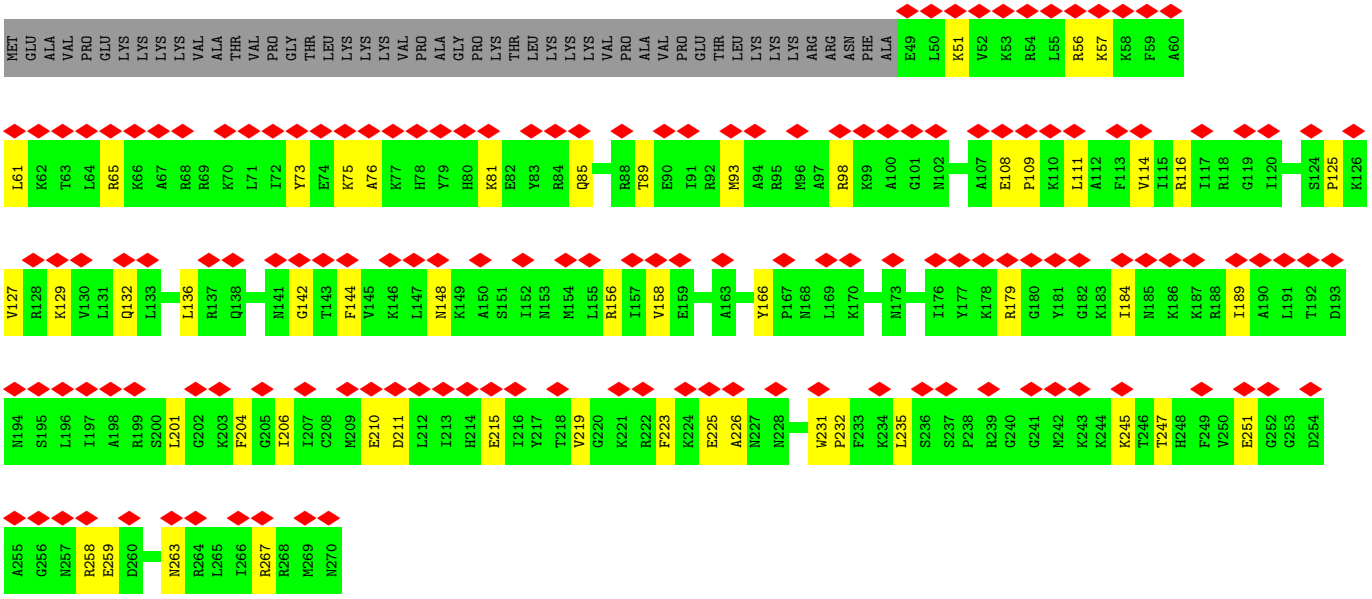
Mol	Chain	Residues	Atoms	AltConf
86	B1	1	Total O 1 1	0

3 Residue-property plots (i)

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

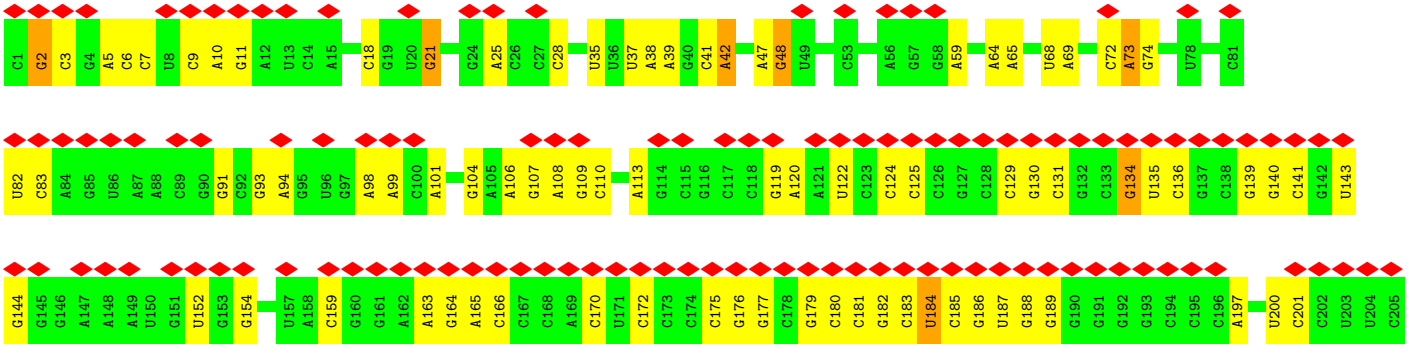
• Molecule 1: Large ribosomal subunit protein uL30

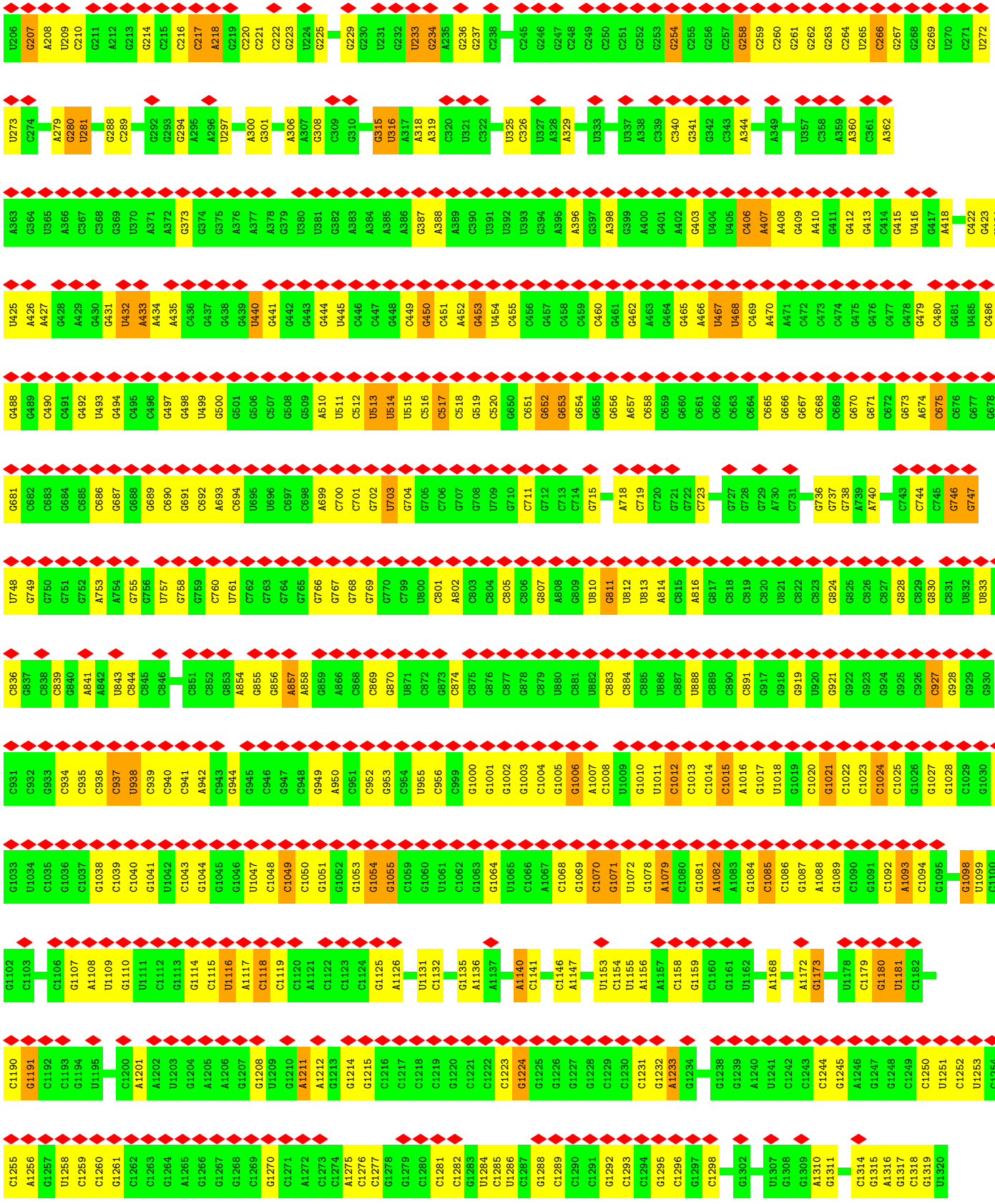
Chain A1:

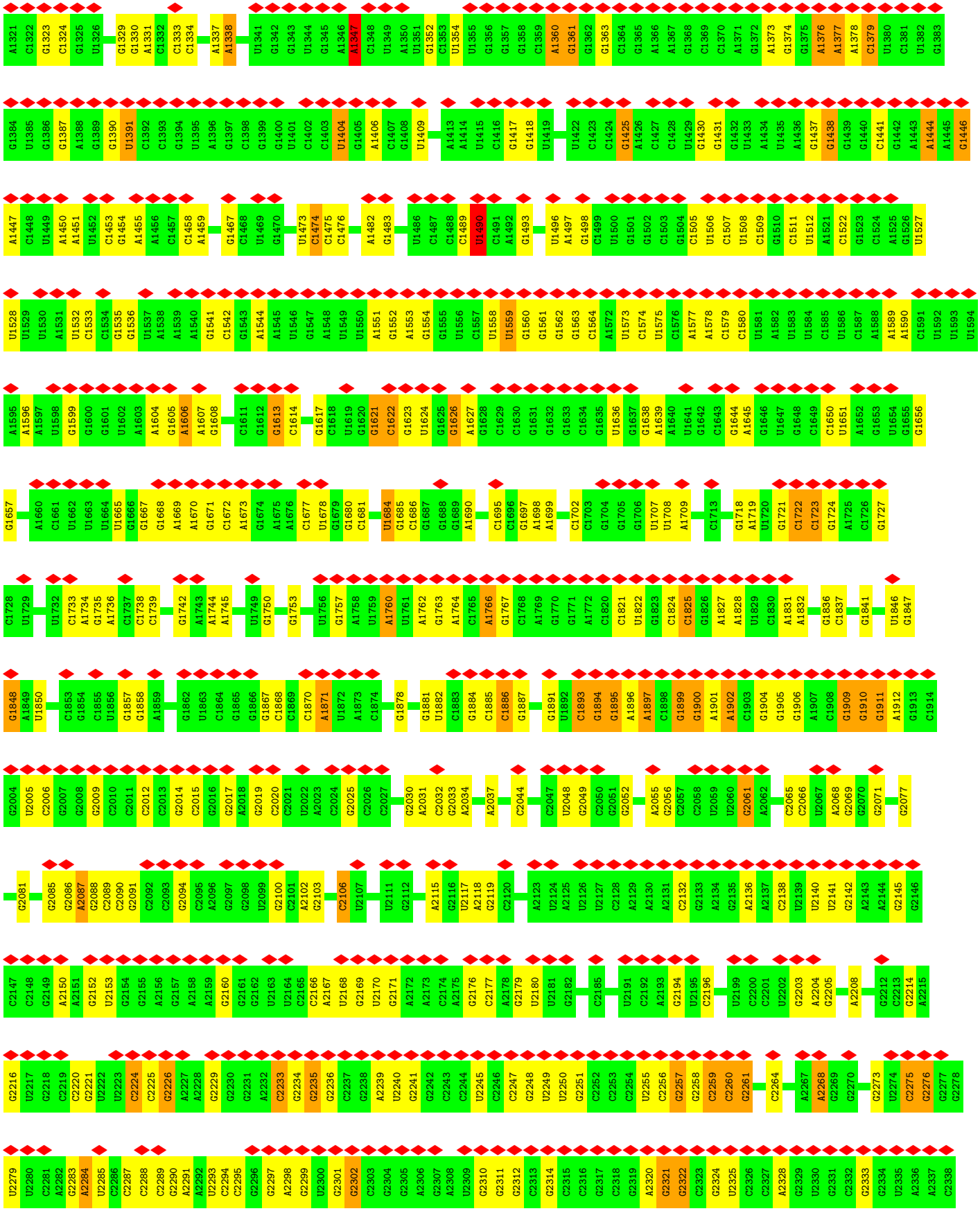


• Molecule 2: 28S ribosomal RNA

Chain A2:




U206 G207 A208 U209 C210 G211 A212 G213 G214 C215 C216 C217 A218 G219 C220 C221 C222 G223 U224 G225
G229 G230 U231 G232 U233 G234 A235 G236 G237 C238 C245 G246 G247 C248 C249 C250 C251 C252 G253 G254 C255 G256 C257 G258 C259 C260 G261 G262 G263 C264 U265 C266 G267 G268 G269 U270 C271 U272
U273 C274 A279 G280 U281 G288 C289 G292 G293 G294 A295 A296 U297 A300 G301 A306 A307 G308 C309 G310 G315 U316 A317 A318 A319 C320 U321 C322 U325 C326 U327 A328 A329 U333 U337 A338 C339 C340 G341 G342 C343 A344 A349 U357 C358 A359 A360 C361 A362
A363 G364 U365 A366 C367 C368 G369 U370 A371 A372 G373 G374 G375 A376 A377 A378 G379 U380 U381 G382 A383 A384 A385 A386 G387 A388 A389 C390 U391 U392 U393 G394 A395 A396 G397 A398 G399 A400 G401 A402 G403 U404 U405 C406 A407 A408 G409 A410 G411 G412 G413 C414 G415 U416 G417 A418 C422 G423 U424
U425 A426 A427 G428 A429 G430 G431 U432 A433 A434 A435 C436 G437 G438 G439 U440 G441 G442 G443 G444 U445 C446 C447 G448 C449 G450 C451 A452 G453 U454 C455 C456 G457 C458 C459 C460 G461 G462 A463 G464 G465 A466 U467 U468 C469 A470 A471 C472 C473 C474 G475 G476 C477 G478 G479 C480 G481 U485 C486 C487
G488 G489 C490 C491 G492 U493 G494 C495 C496 G497 G498 U499 G500 G501 G506 C507 G508 G509 A510 U511 C512 U513 U514 U515 C516 C517 C518 G519 C520 G650 C651 G652 G653 G654 G655 G656 A657 C658 C659 G660 C661 C662 C663 C664 C665 G666 G667 C668 C669 G670 G671 C672 G673 A674 C675 C676 G677 G678 C679 C680
G681 C682 C683 G684 C685 C686 G687 G688 G689 C690 G691 C692 A693 C694 U695 U696 C697 C698 A699 C700 C701 G702 U703 G704 G705 C706 G707 G708 U709 G710 C711 G712 C713 C714 G715 A718 C719 G720 G721 G722 C723 G727 G728 G729 A730 C731 G736 G737 G738 A739 A740 C743 C744 C745 G746 G747
U748 G749 G750 G751 G752 A753 A754 G755 G756 U757 G758 G759 C760 U761 C762 G763 G764 G765 G766 G767 G768 G769 G770 C799 U800 C801 A802 C803 C804 C805 C806 G807 A808 C809 U810 G811 U812 U813 A814 C815 A816 G817 C818 C819 C820 U821 C822 C823 G824 G825 C826 C827 G828 C829 G830 C831 U832 U833 U834 U835
C836 G837 C838 C839 G840 A841 A842 U843 C844 G845 C846 C851 C852 C853 A854 G855 G856 A857 A858 G859 A866 C868 C869 G870 U871 C872 G873 C874 G875 G876 C877 G878 C879 U880 C881 U882 C883 C884 C885 U886 C887 U888 C889 C890 C891 G917 G918 G919 U920 G921 G922 G923 G924 G925 G926 C927 G928 G929 G930
C931 C932 G933 C934 C935 C936 C937 U938 C939 C940 C941 A942 C943 G944 G945 C946 G947 C948 G949 A950 C951 C952 G953 C954 U955 C956 C999 G1000 G1001 G1002 G1003 C1004 G1005 G1006 A1007 C1008 U1009 G1010 U1011 C1012 C1013 C1014 C1015 A1016 G1017 U1018 G1019 C1020 G1021 C1022 C1023 C1024 C1025 G1026 G1027 G1028 C1029 G1030 U1031 C1032
G1033 U1034 C1035 G1036 C1037 G1038 C1039 C1040 G1041 U1042 C1043 G1044 G1045 G1046 U1047 C1048 C1049 C1050 G1051 G1052 G1053 G1054 G1055 C1059 G1060 U1061 C1062 G1063 G1064 U1065 C1066 A1067 C1068 G1069 C1070 G1071 U1072 G1078 A1079 C1080 G1081 A1082 A1083 G1084 C1085 C1086 G1087 A1088 G1089 C1090 G1091 C1092 A1093 C1094 G1095 G1098 U1099 C1100 G1101
G1102 C1103 C1106 G1107 A1108 U1109 G1110 U1111 C1112 G1113 G1114 C1115 U1116 A1117 C1118 C1119 C1120 A1121 C1122 C1123 C1124 G1125 A1126 U1131 C1132 G1135 A1136 A1137 A1140 C1141 C1146 A1147 U1153 C1154 U1155 A1156 A1157 C1158 G1159 C1160 G1161 U1162 A1168 A1172 G1173 U1178 C1179 G1180 U1181 C1182
C1190 G1191 C1192 C1193 G1194 U1195 C1200 A1201 A1202 U1203 G1204 A1205 A1206 G1207 G1208 U1209 G1210 A1211 A1212 G1213 G1214 G1215 C1216 C1217 C1218 C1219 G1220 C1221 C1222 C1223 G1224 G1225 G1226 G1227 G1228 C1229 C1230 C1231 G1232 A1233 G1234 G1238 G1239 A1240 U1241 C1242 C1243 C1244 G1245 A1246 G1247 G1248 C1249 C1250 U1251 C1252 U1253 C1254
C1255 A1256 G1257 U1258 C1259 C1260 G1261 C1262 C1263 G1264 A1265 G1266 G1267 G1268 C1269 G1270 C1271 A1272 C1273 C1274 A1275 C1276 C1277 G1278 G1279 C1280 C1281 C1282 G1283 U1284 C1285 U1286 C1287 G1288 C1289 C1290 C1291 G1292 C1293 C1294 G1295 C1296 G1297 C1298 G1302 U1307 G1308 G1309 A1310 G1311 C1314 G1315 A1316 G1317 C1318 G1319 U1320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G1384 U1385 G1386 G1387 A1388 G1389 G1390 U1391 C1392 C1393 G1394 U1395 A1396 G1397 C1398 G1399 G1400 U1401 C1402 C1403 U1404 G1405 A1406 C1407 G1408 U1409 A1413 A1414 U1415 C1416 G1417 G1418 U1419 U1422 C1423 C1424 G1425 U1426 C1427 C1428 U1429 G1430 G1431 G1432 U1433 A1434 U1435 A1436 G1437 G1438 G1439 G1440 C1441 G1442 A1443 A1444 A1445 G1446
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A1595 A1596 A1597 U1598 G1599 G1600 G1601 U1602 A1603 A1604 G1605 A1606 A1607 G1608 C1611 G1612 G1613 C1614 G1617 C1618 U1619 G1620 G1621 C1622 G1623 U1624 G1625 G1626 A1627 G1628 C1629 C1630 G1631 G1632 G1633 C1634 G1635 U1636 G1637 G1638 A1639 A1640 U1641 G1642 C1643 G1644 A1645 G1646 U1647 G1648 C1649 C1650 U1651 A1652 G1653 U1654 G1655 G1656
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C1728 U1729 U1732 C1733 A1734 G1735 A1736 C1737 C1738 C1739 G1742 A1743 A1744 A1745 U1749 G1750 G1753 U1756 G1757 A1758 U1759 A1760 U1761 A1762 G1763 A1764 C1765 A1766 G1767 C1768 A1769 G1770 G1771 A1772 C1820 C1821 U1822 G1823 C1824 C1825 G1826 A1827 A1828 U1829 C1830 A1831 A1832 G1836 C1837 G1841 U1846 G1847
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G2004 U2005 C2006 G2007 G2008 G2009 C2010 C2011 C2012 C2013 G2014 C2015 G2016 G2017 A2018 G2019 C2020 C2021 U2022 A2023 G2024 G2025 C2026 C2027 G2030 A2031 C2032 G2033 A2034 A2037 C2044 C2047 U2048 G2049 C2050 G2051 G2052 A2055 G2056 C2057 C2058 U2059 U2060 G2061 A2062 C2065 C2066 U2067 A2068 G2069 G2070 G2071 G2077
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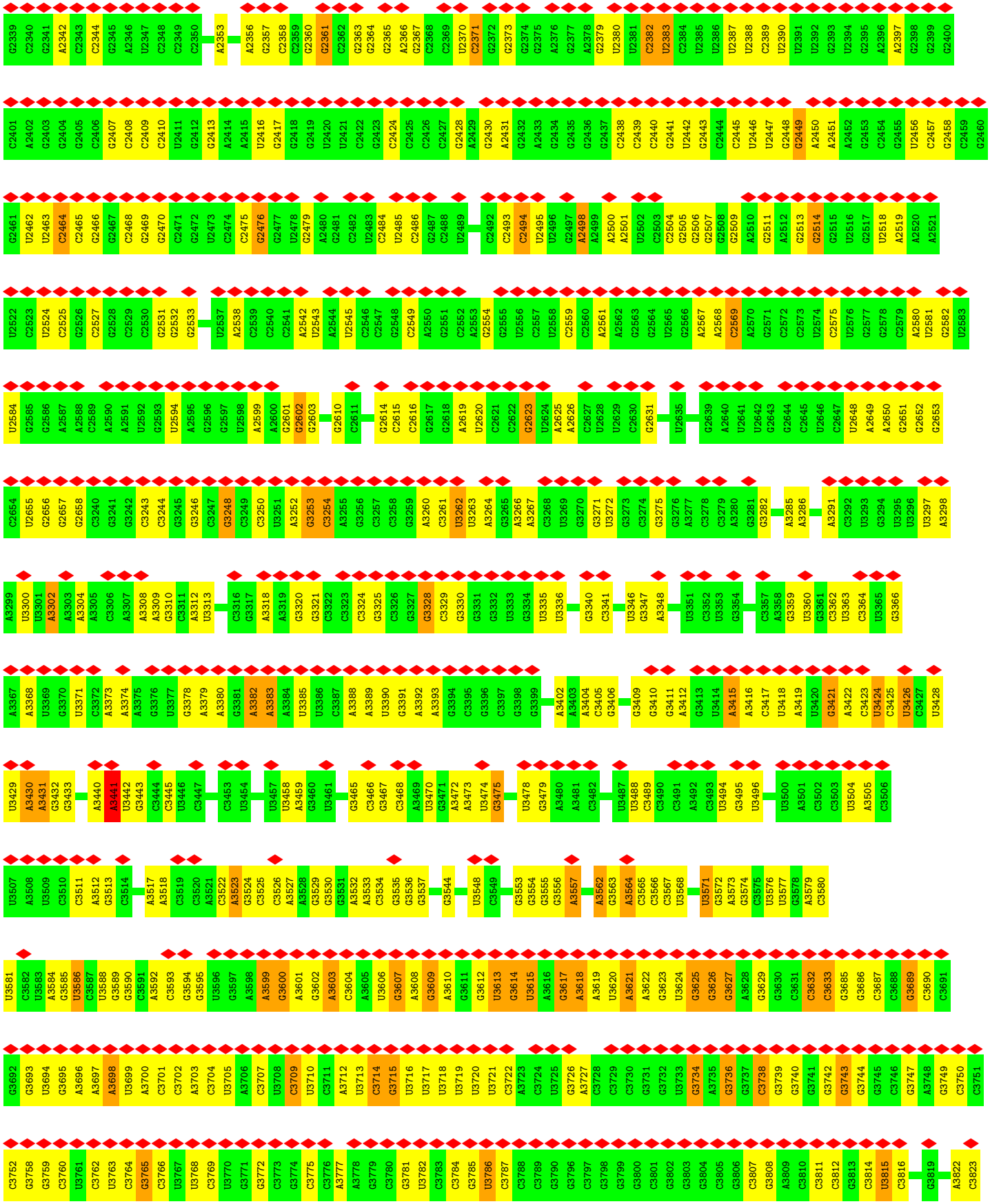
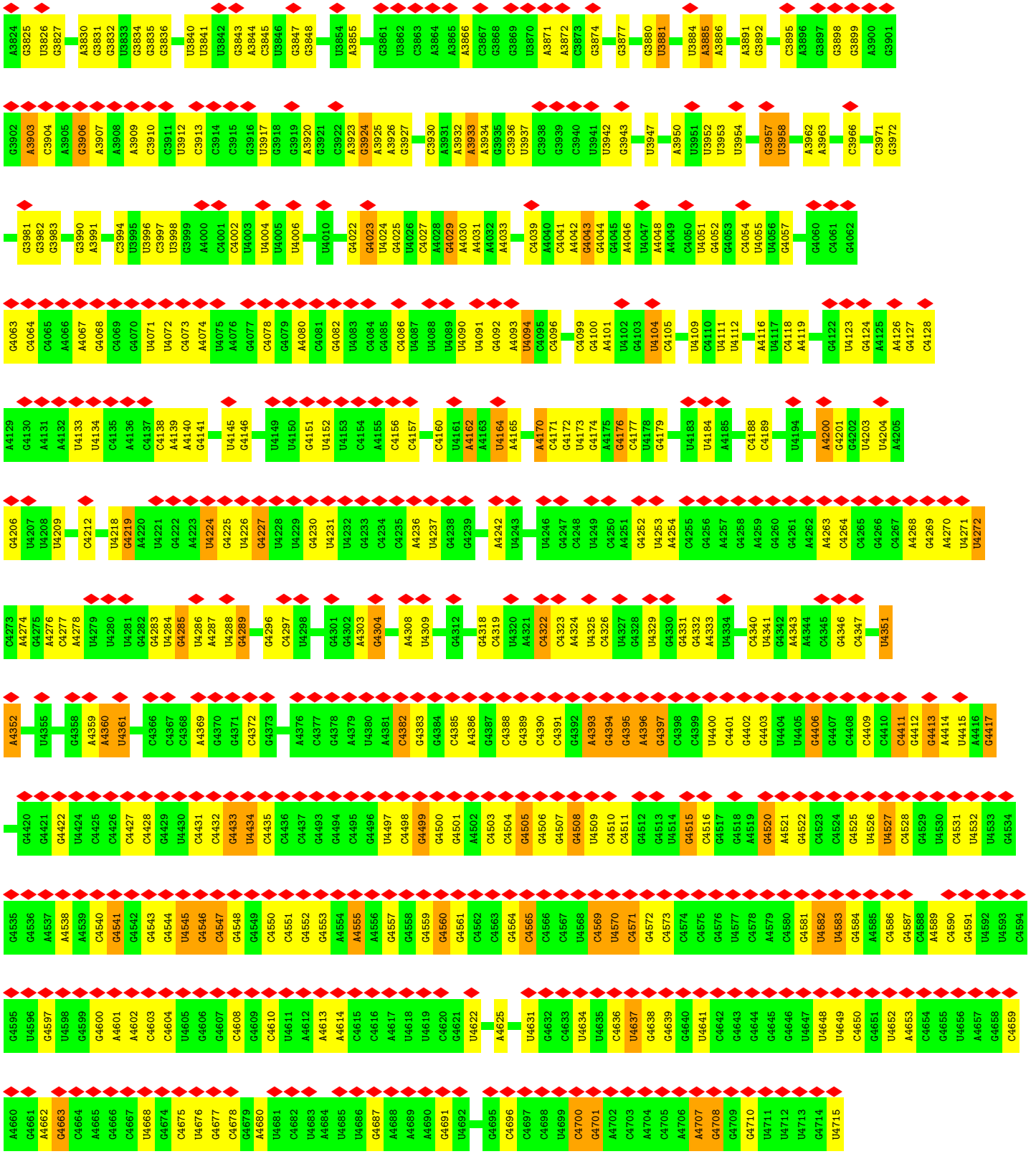
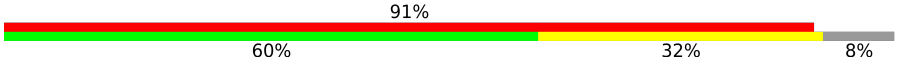
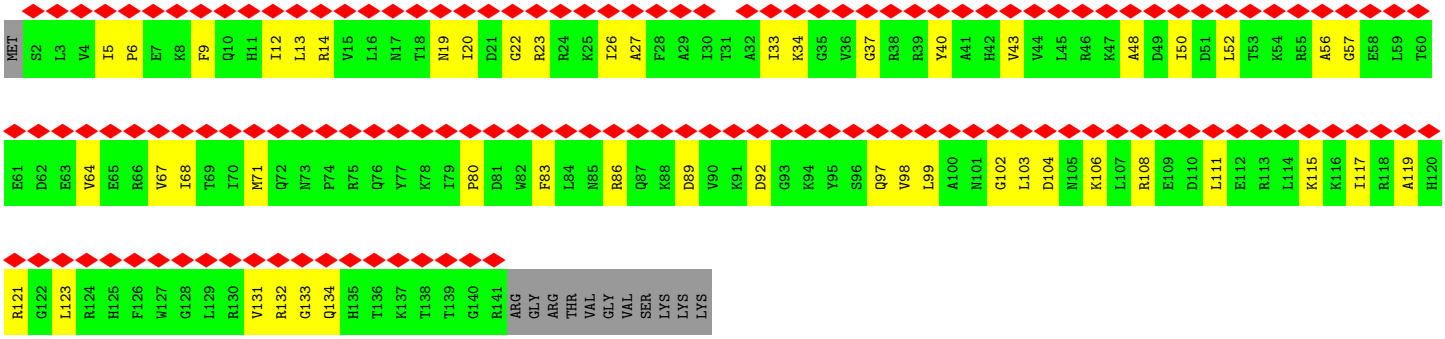




• Molecule 3: Small ribosomal subunit protein uS13

Chain A3:



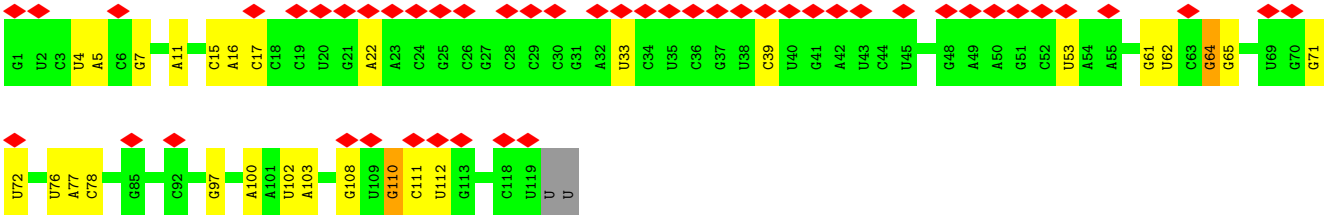


• Molecule 4: Large ribosomal subunit protein eL8

Chain B1:

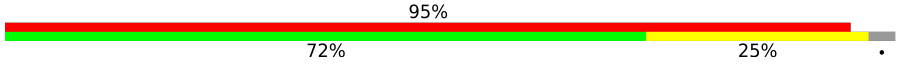
• Molecule 5: 5S ribosomal RNA

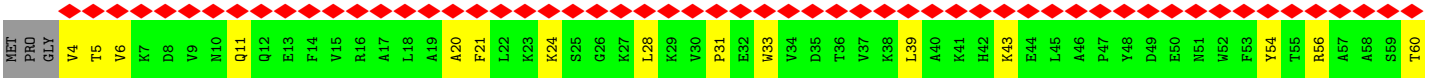
Chain B2:

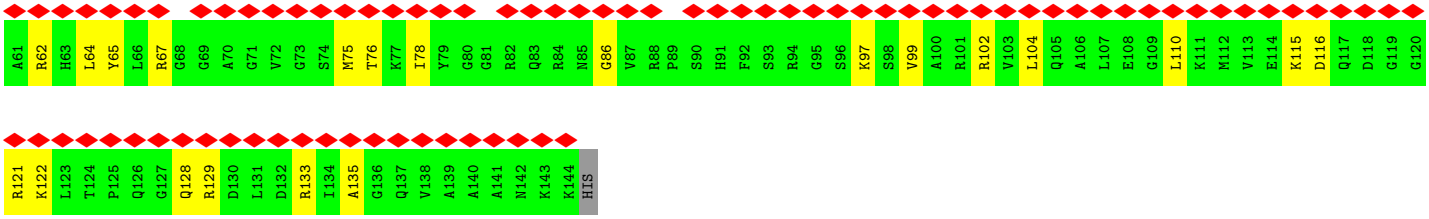


• Molecule 6: Small ribosomal subunit protein eS19

Chain B3:

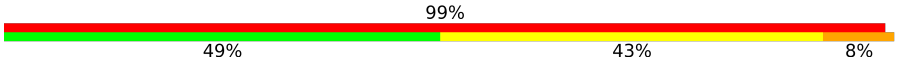


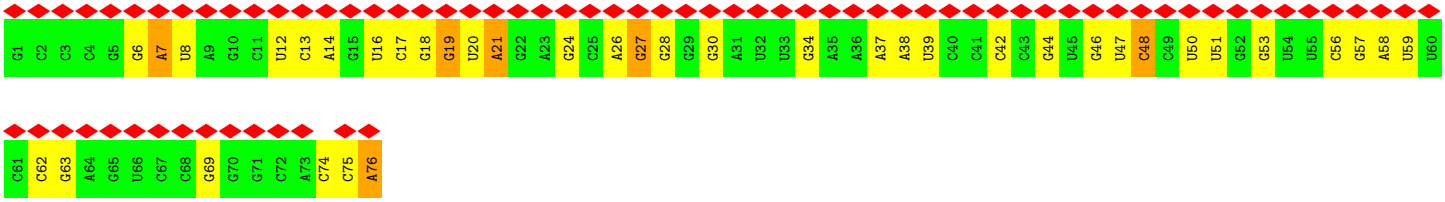




• Molecule 7: transfer RNA

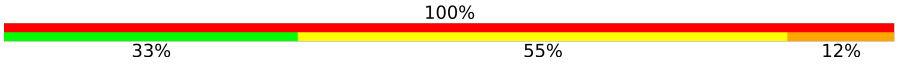
Chain Bv:

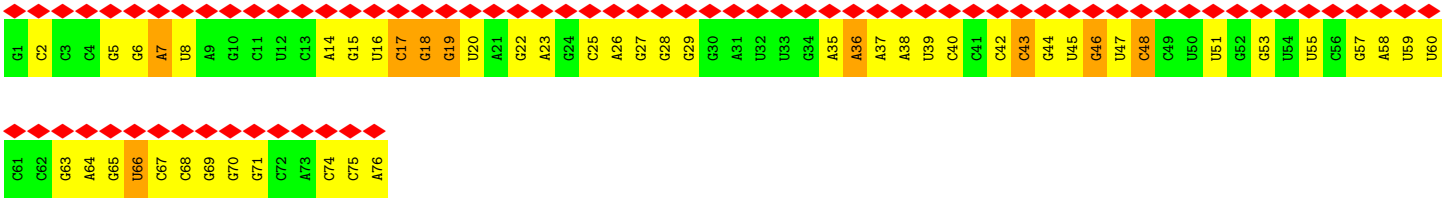




• Molecule 7: transfer RNA

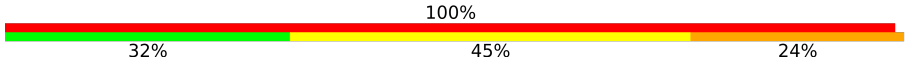
Chain Bz:





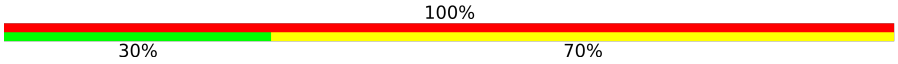
• Molecule 7: transfer RNA

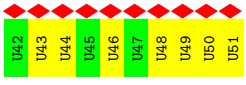
Chain n2:



• Molecule 8: messenger RNA

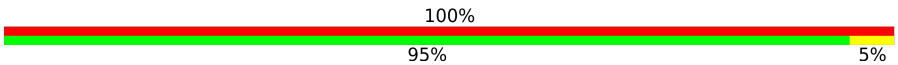
Chain Bx:

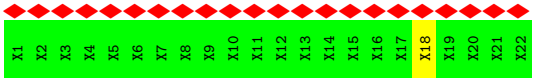




• Molecule 9: Nascent protein chain

Chain By:



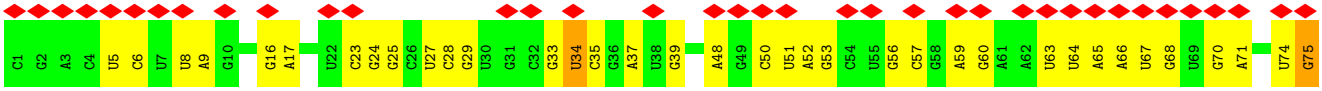


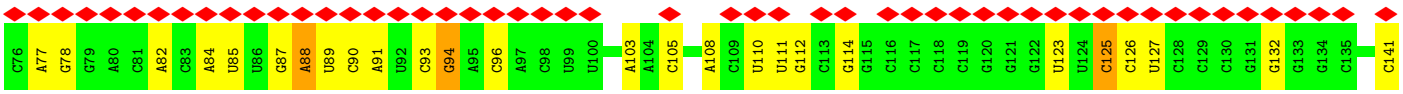
• Molecule 10: Large ribosomal subunit protein uL6

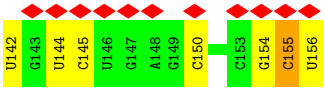
Chain C1:

• Molecule 11: 5.8S ribosomal RNA

Chain C2:

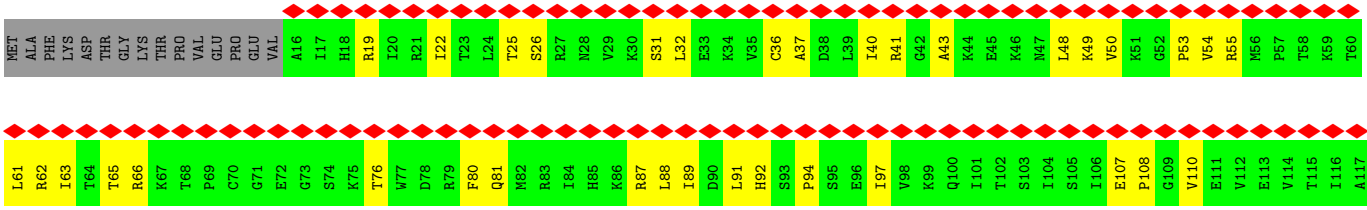






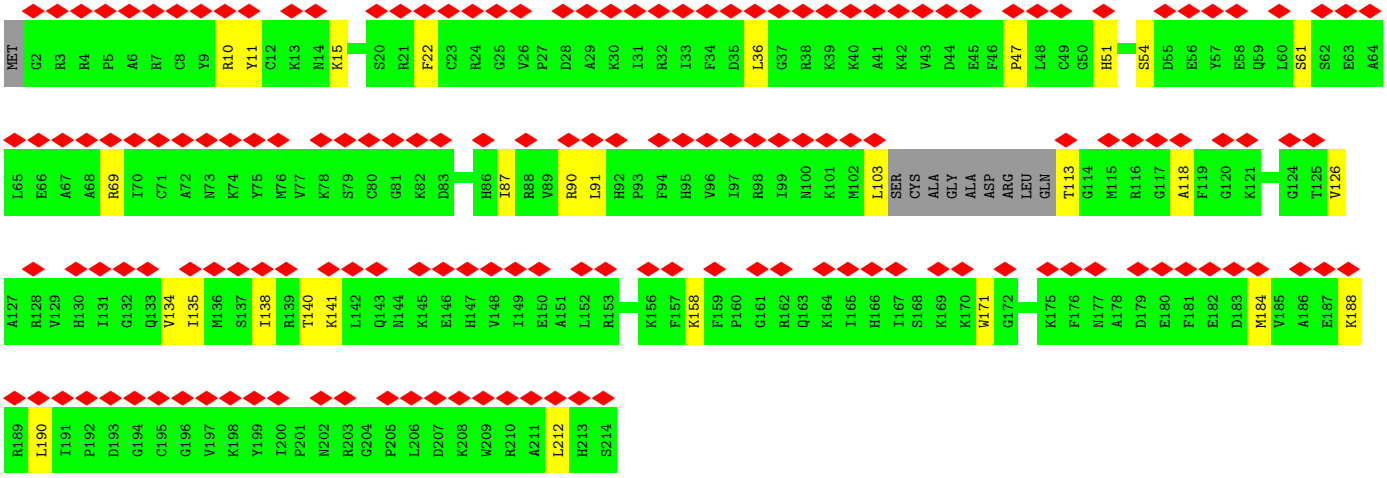
• Molecule 12: Small ribosomal subunit protein uS10

Chain C3:



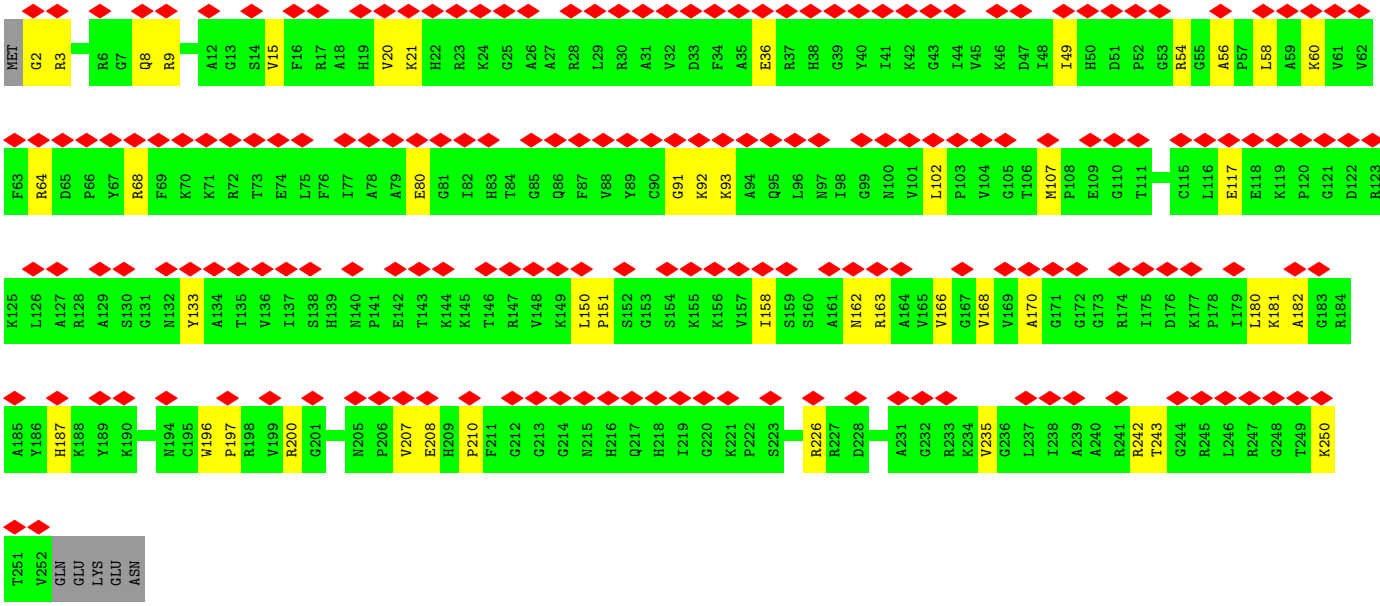
• Molecule 13: Large ribosomal subunit protein uL16

Chain D1:



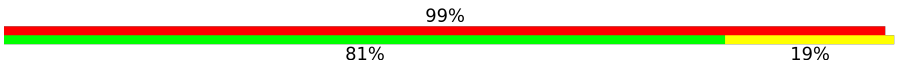
• Molecule 14: Large ribosomal subunit protein uL2

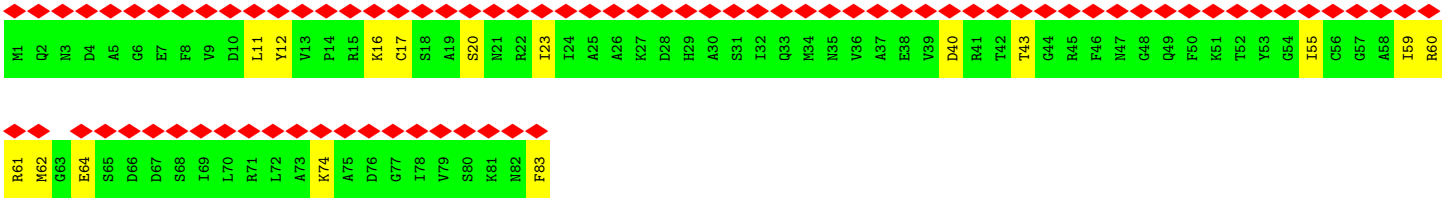
Chain D2:



• Molecule 15: Small ribosomal subunit protein eS21

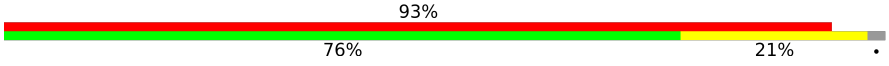
Chain D3:

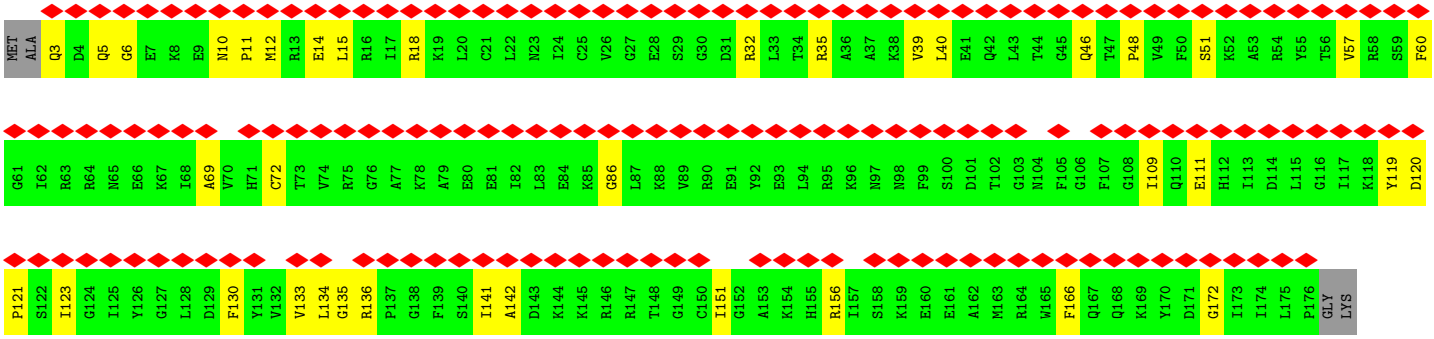




• Molecule 16: Large ribosomal subunit protein uL5

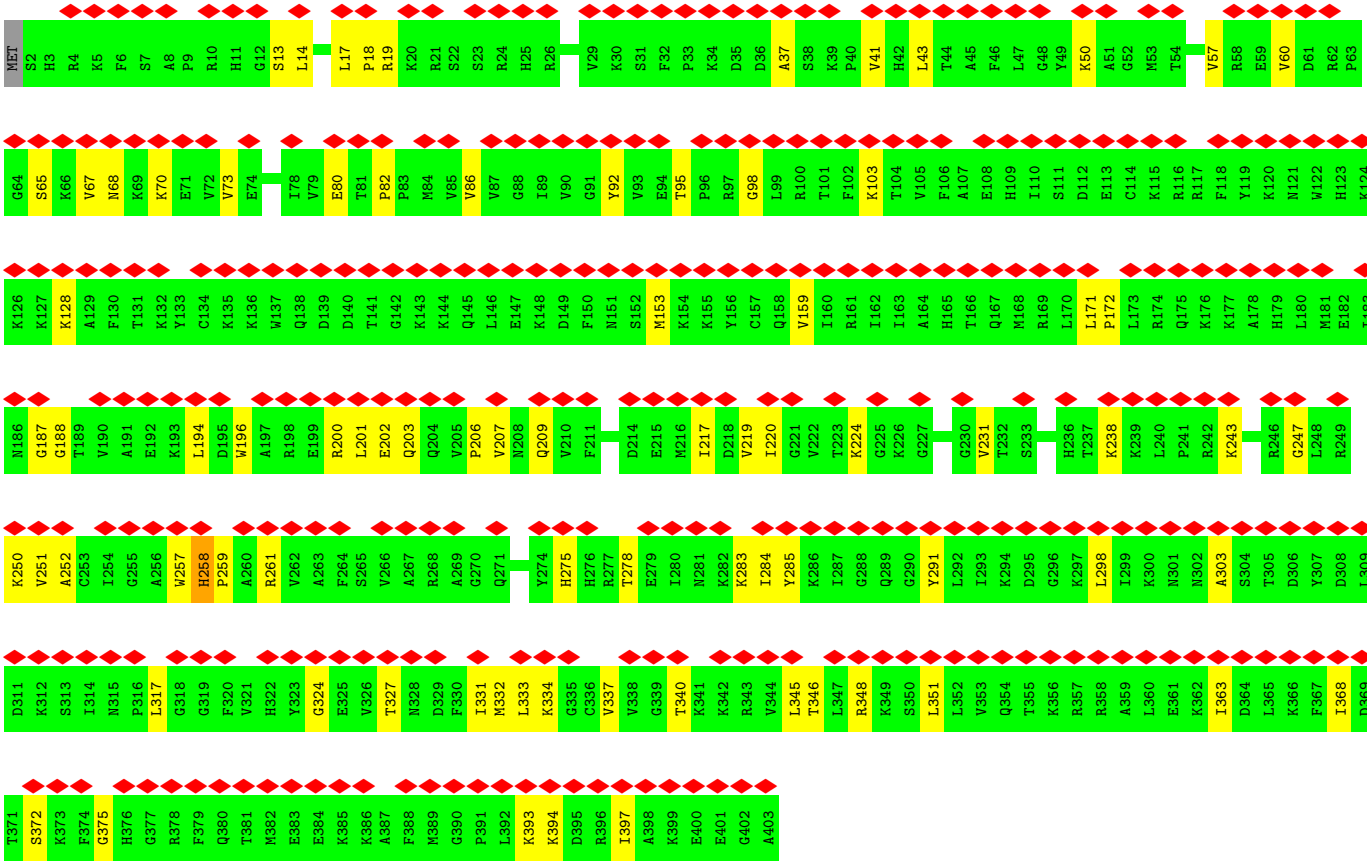
Chain E1:





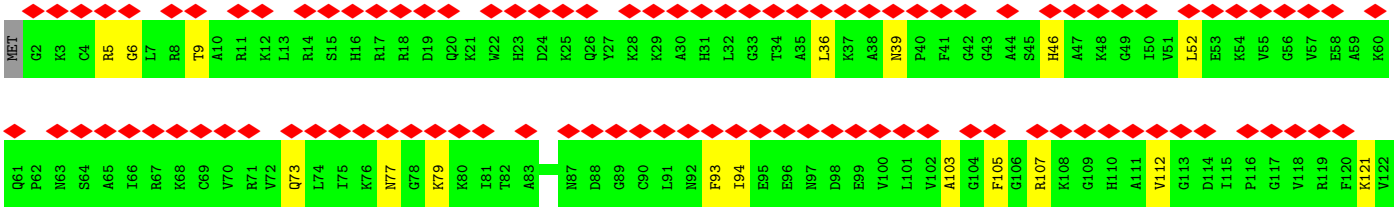
• Molecule 17: Large ribosomal subunit protein uL3

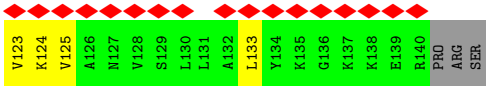
Chain E2:



• Molecule 18: Small ribosomal subunit protein uS12

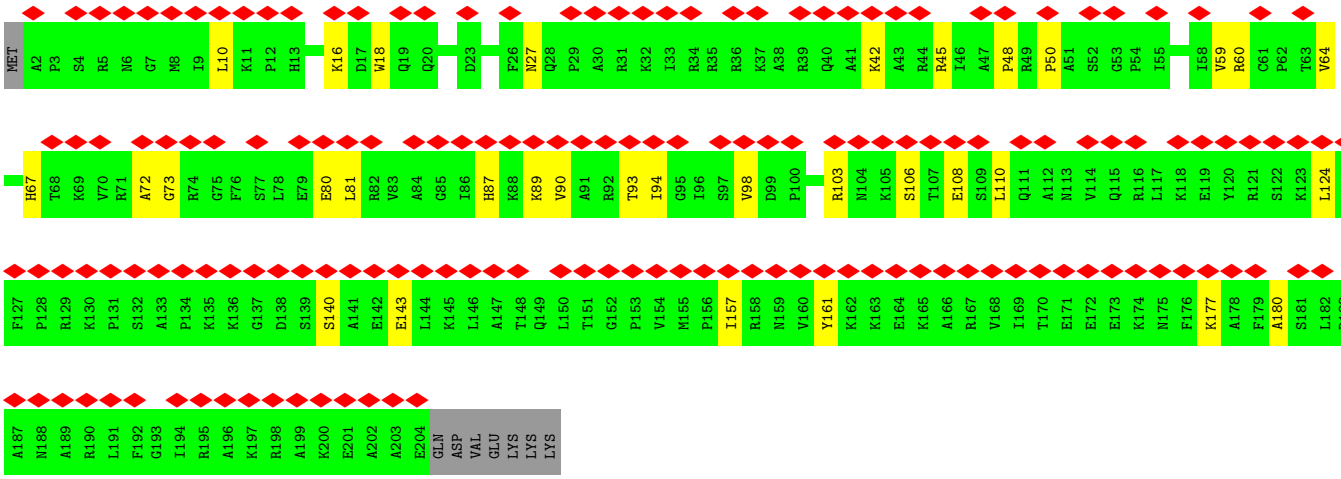
Chain E3:





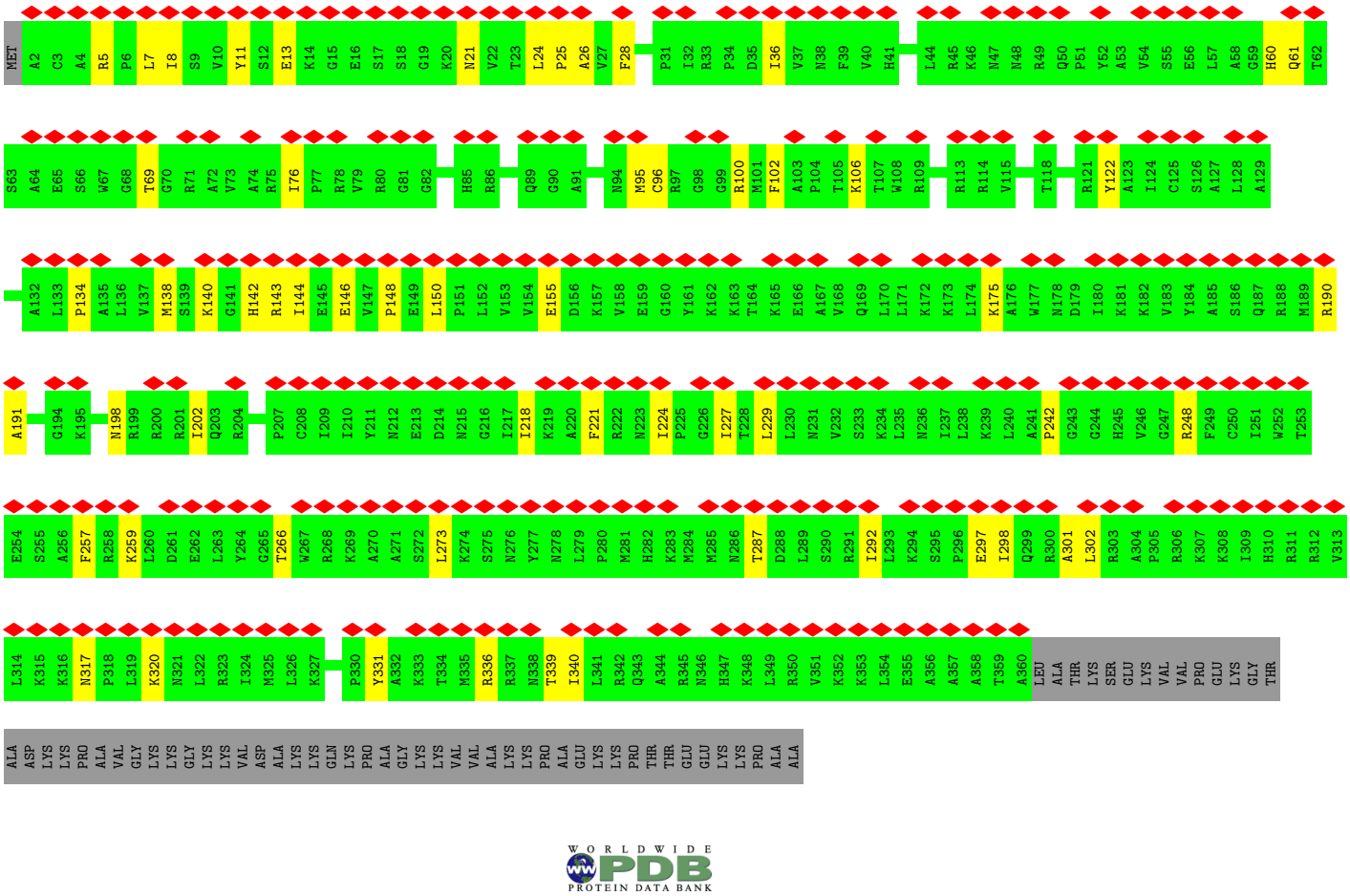
• Molecule 19: Large ribosomal subunit protein eL13

Chain F1:



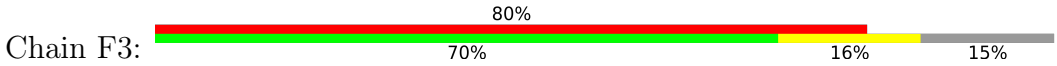
• Molecule 20: Large ribosomal subunit protein uL4

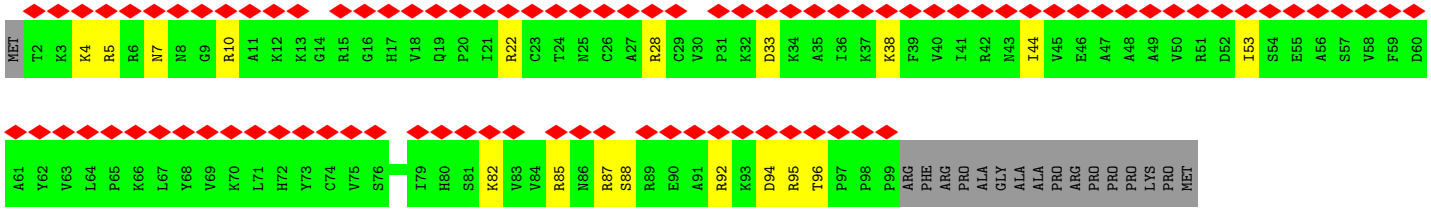
Chain F2:



• Molecule 21: Small ribosomal subunit protein eS26

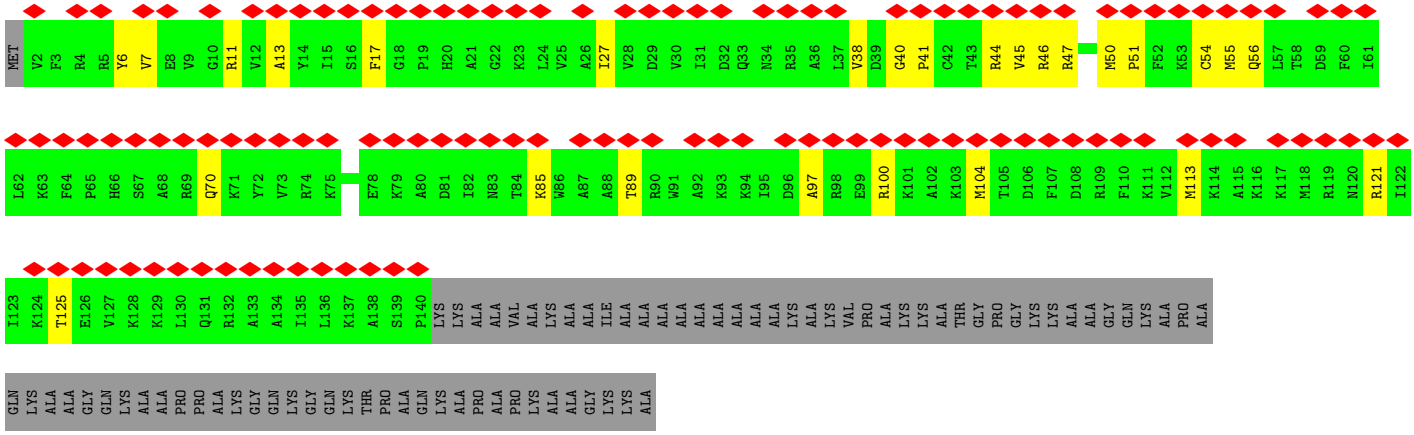
Chain F3:





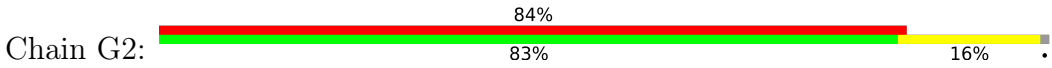
• Molecule 22: Large ribosomal subunit protein eL14

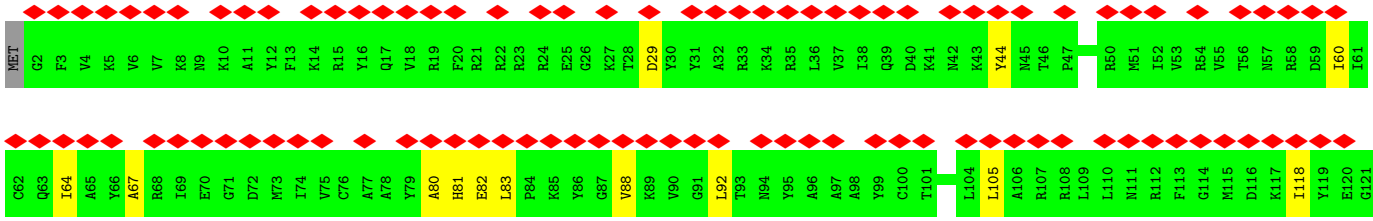
Chain G1:



• Molecule 23: Large ribosomal subunit protein uL18

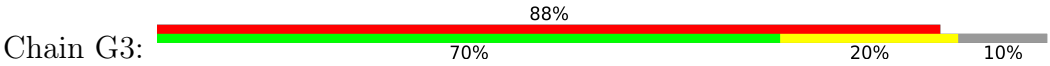
Chain G2:

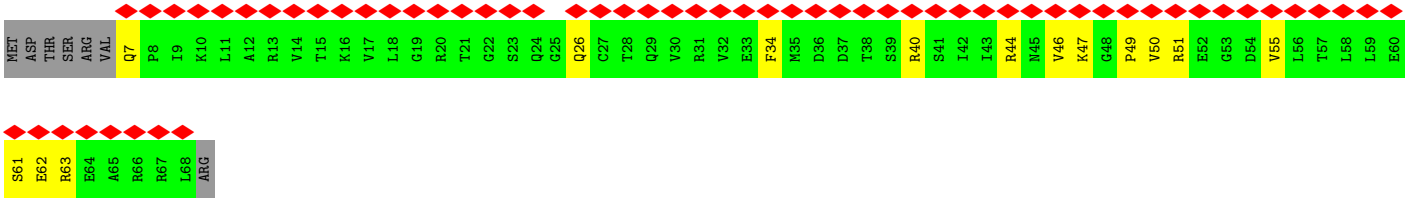




• Molecule 24: Small ribosomal subunit protein eS28

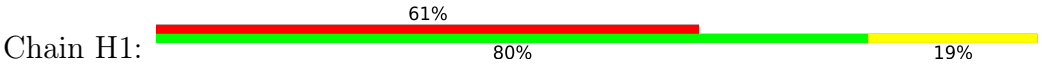
Chain G3:

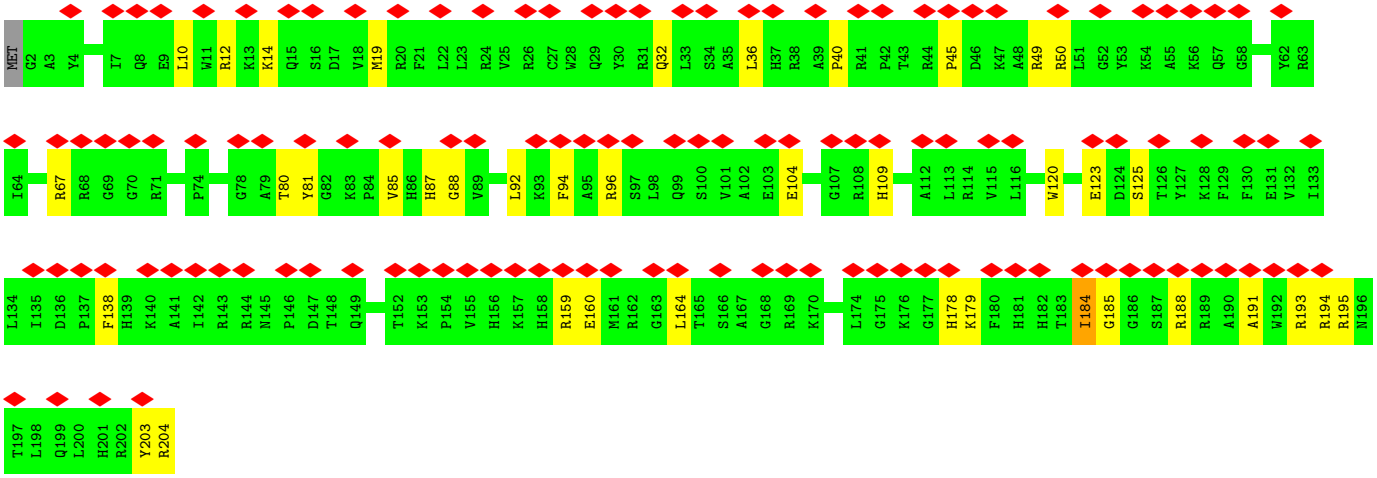




• Molecule 25: Large ribosomal subunit protein eL15

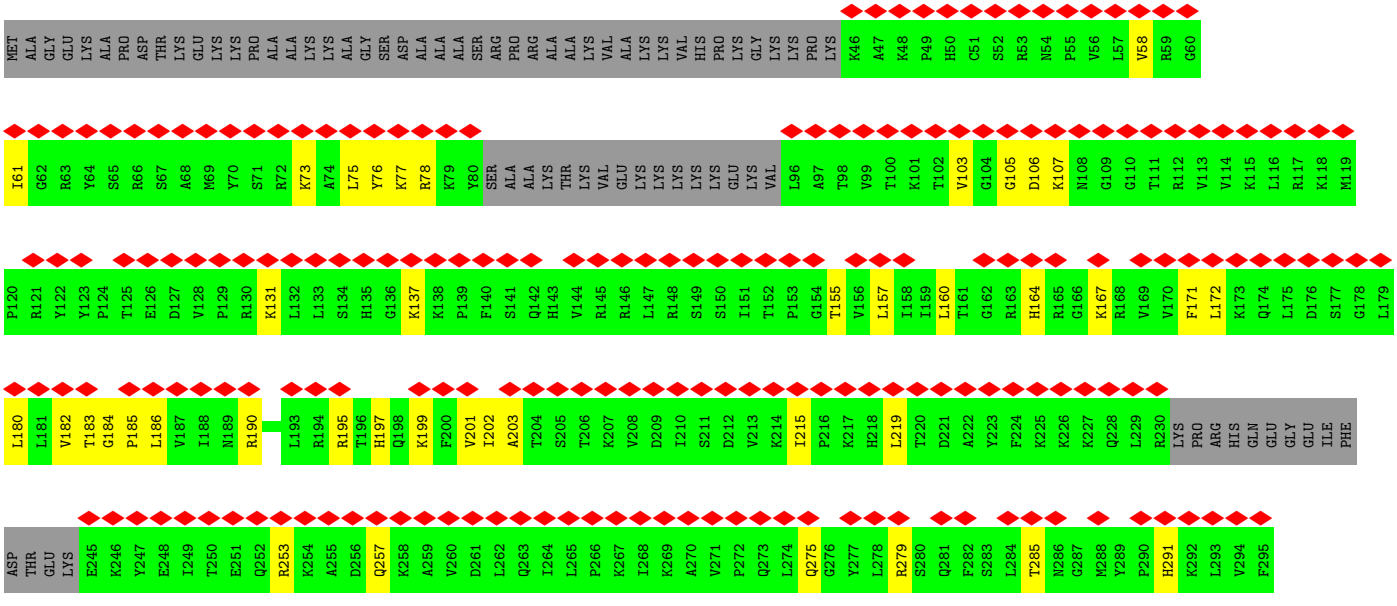
Chain H1:





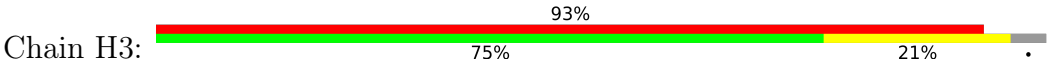
• Molecule 26: Large ribosomal subunit protein eL6

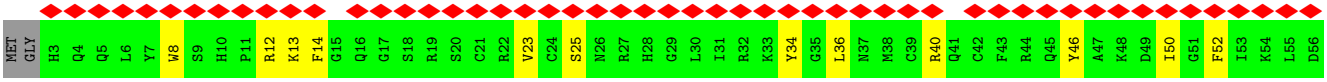
Chain H2:



• Molecule 27: Small ribosomal subunit protein uS14

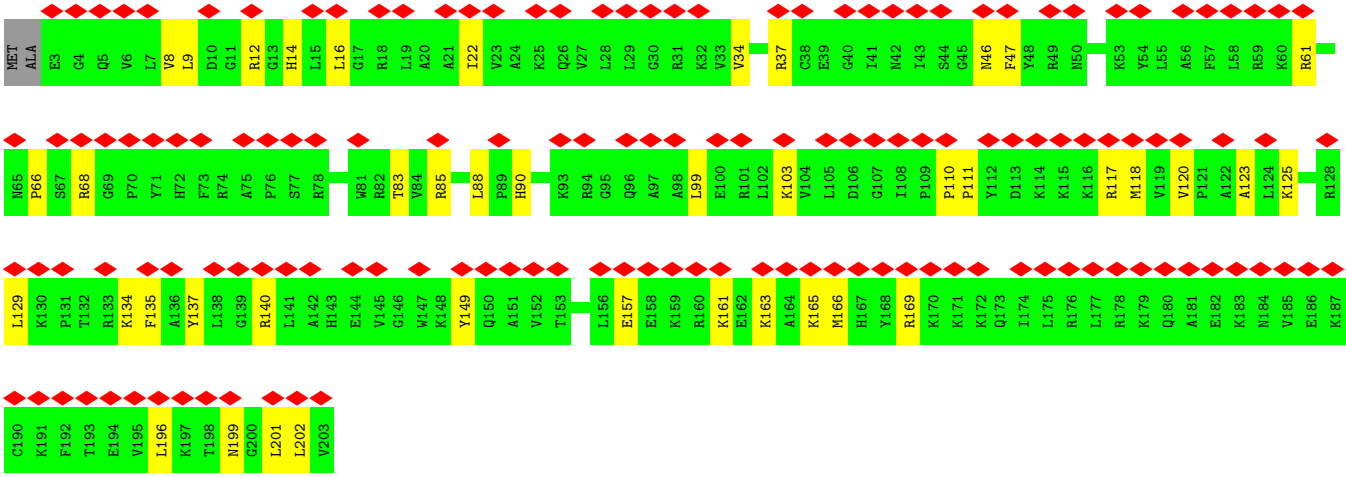
Chain H3:





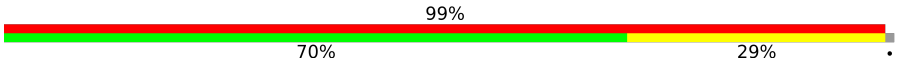
• Molecule 28: Large ribosomal subunit protein uL13

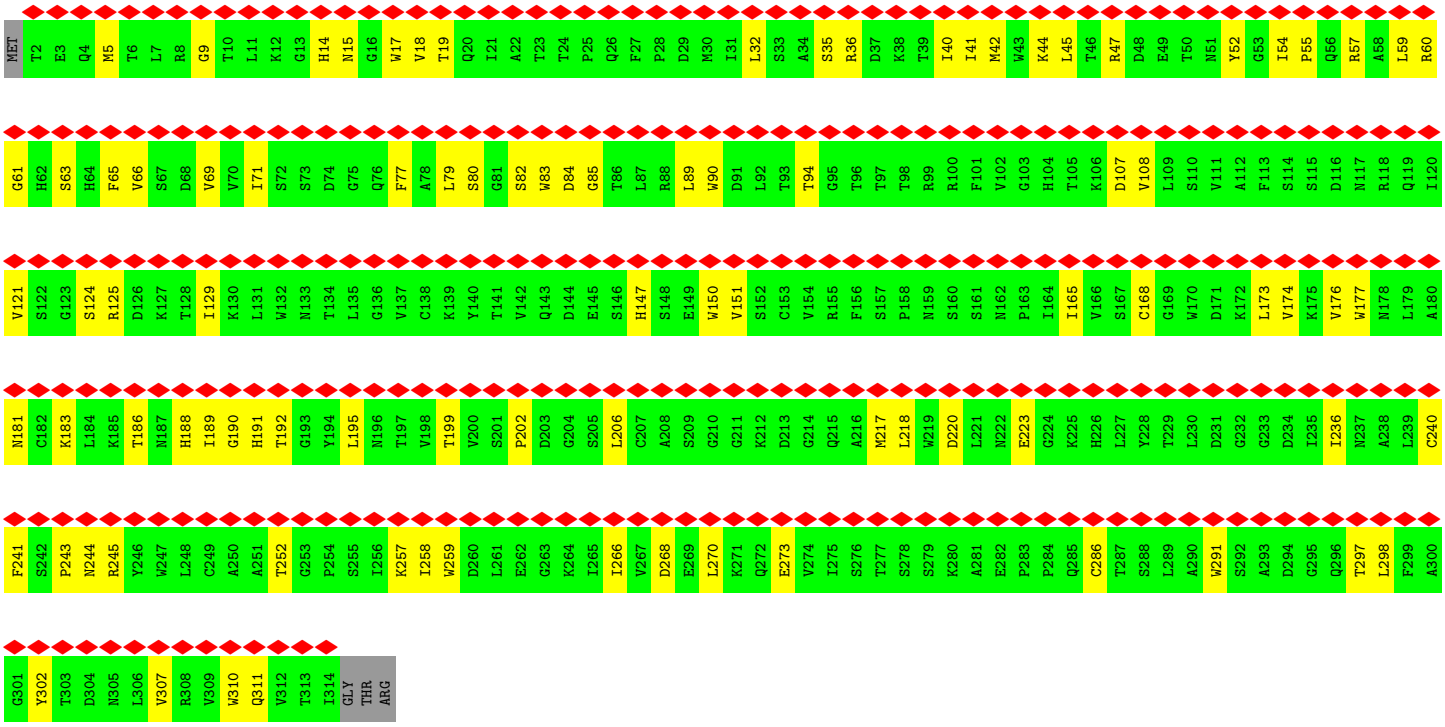
Chain I2:



• Molecule 29: Small ribosomal subunit protein RACK1

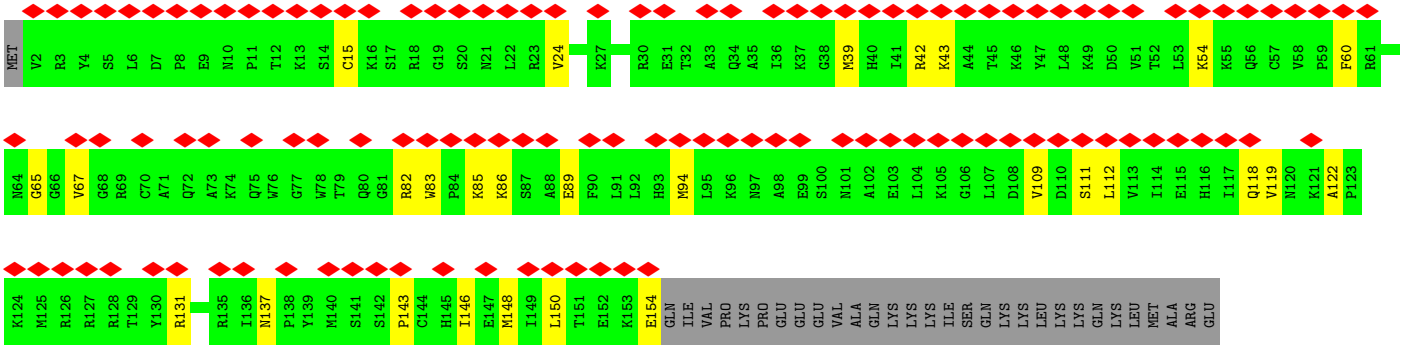
Chain I3:





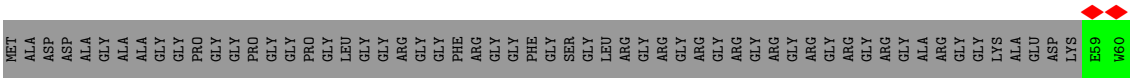
• Molecule 30: Large ribosomal subunit protein uL22

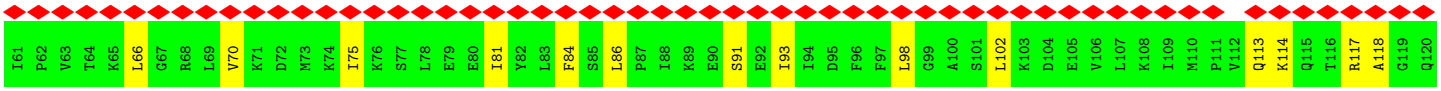
Chain J2:

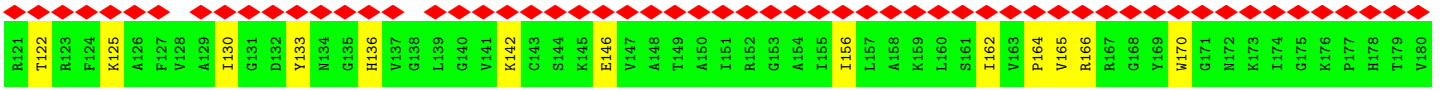


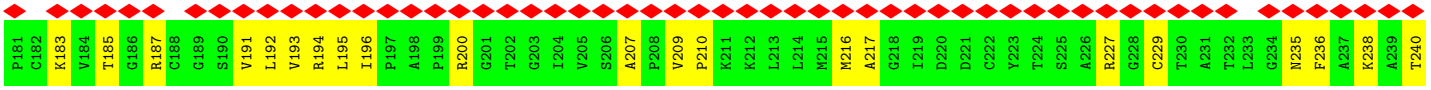
• Molecule 31: Small ribosomal subunit protein uS5

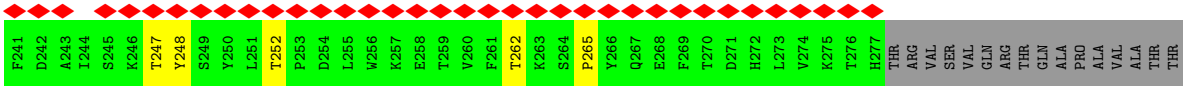
Chain J3:





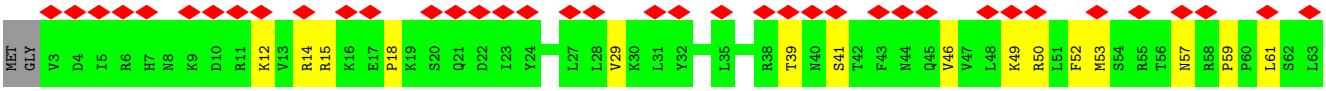


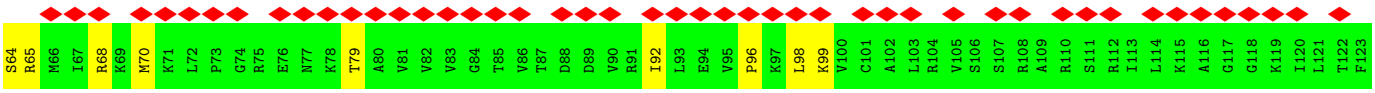


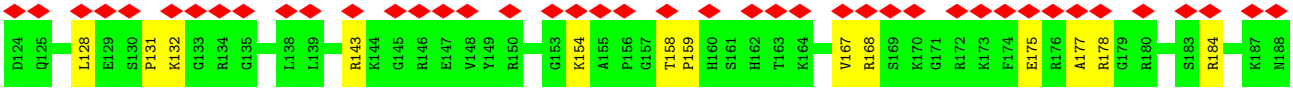


• Molecule 32: Large ribosomal subunit protein eL18

Chain K2:

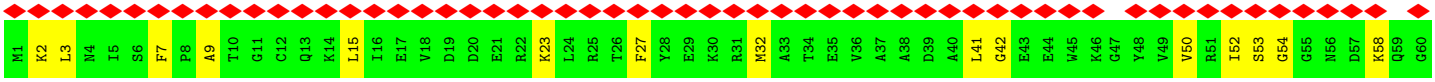


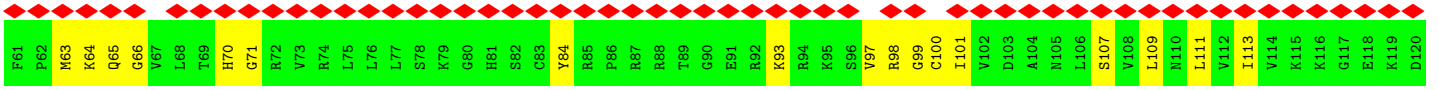


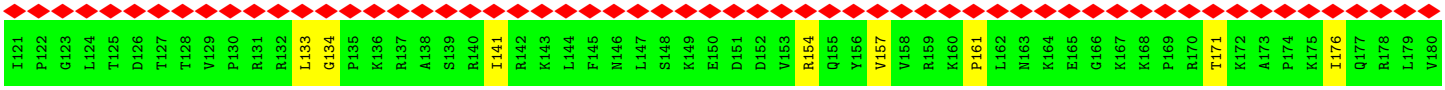


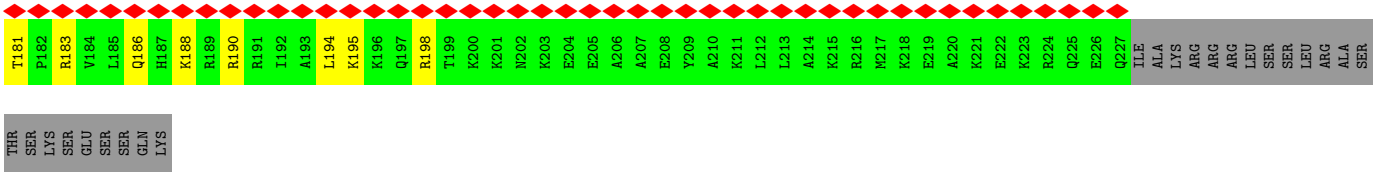
• Molecule 33: Small ribosomal subunit protein eS6

Chain K3:



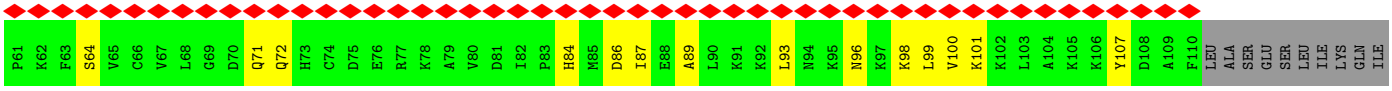


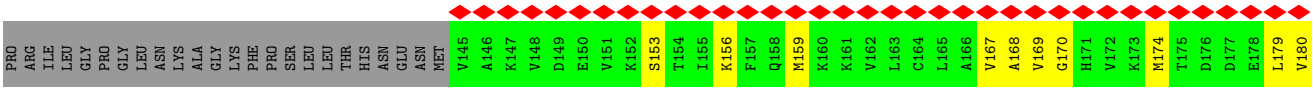


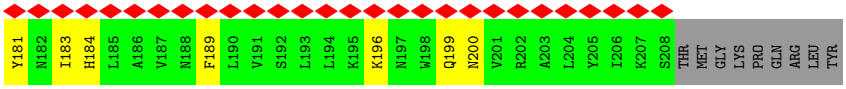


• Molecule 34: Large ribosomal subunit protein uL1

Chain L1:

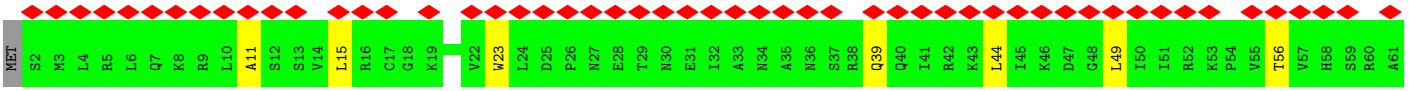


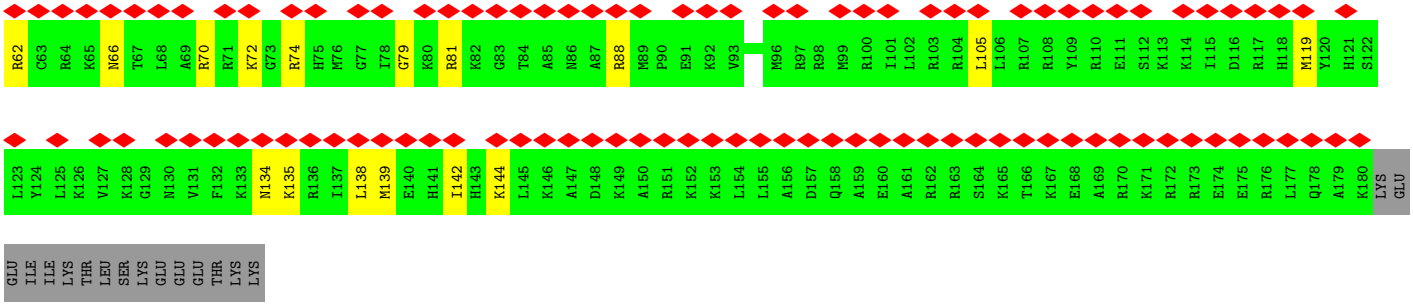




• Molecule 35: Large ribosomal subunit protein eL19

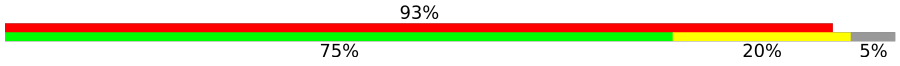
Chain L2:

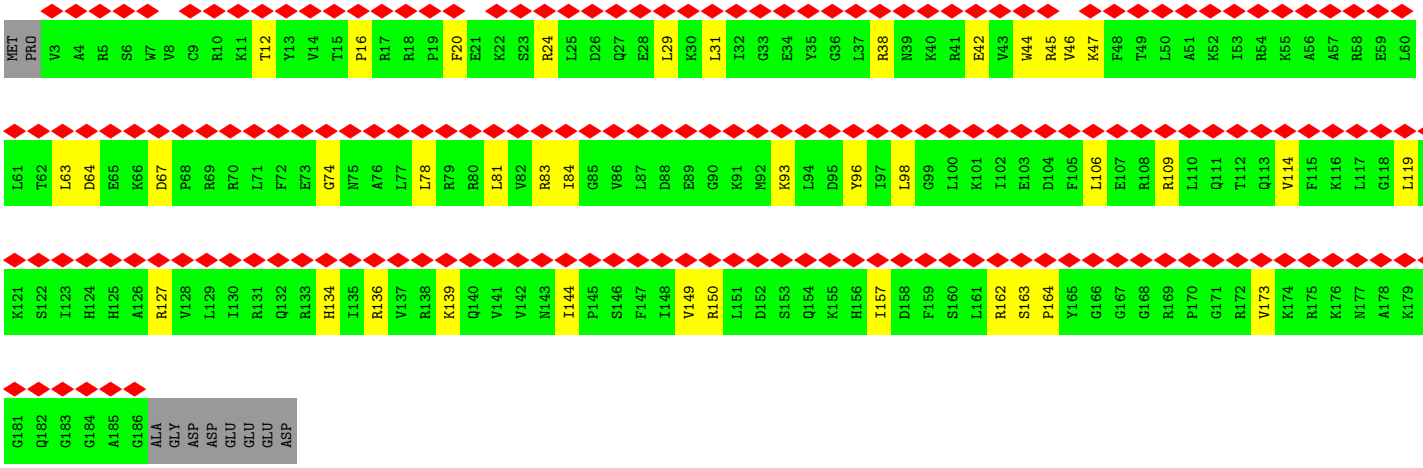




• Molecule 36: Small ribosomal subunit protein uS4

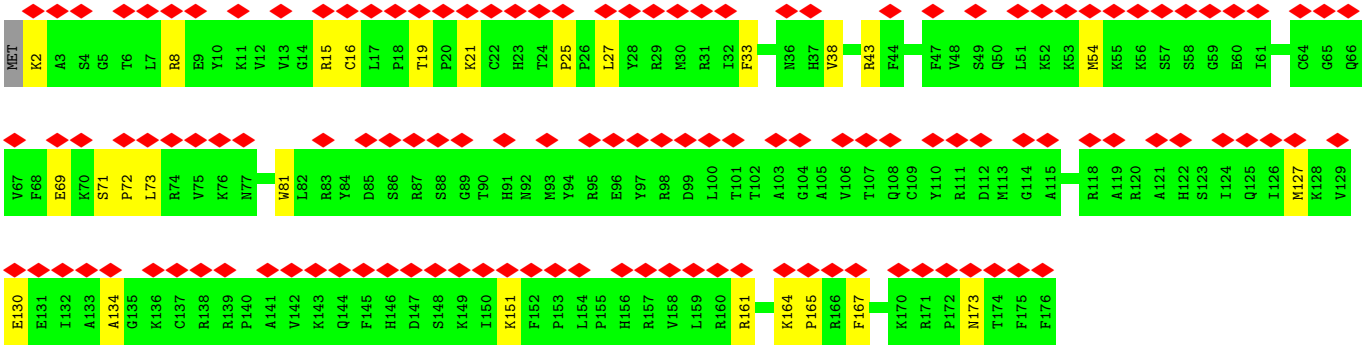
Chain L3:





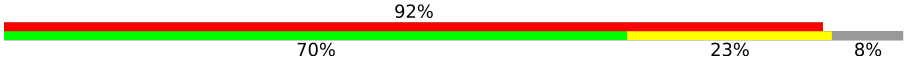
• Molecule 37: Large ribosomal subunit protein eL20

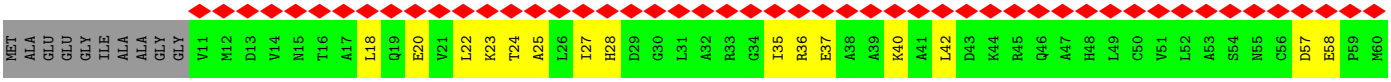
Chain M2:

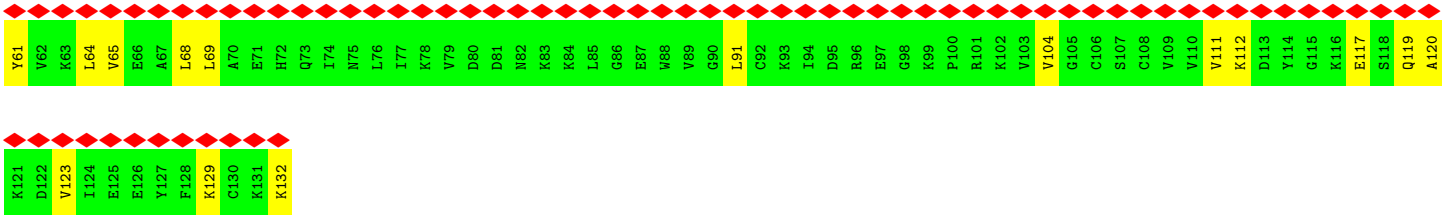


• Molecule 38: Small ribosomal subunit protein eS12

Chain M3:

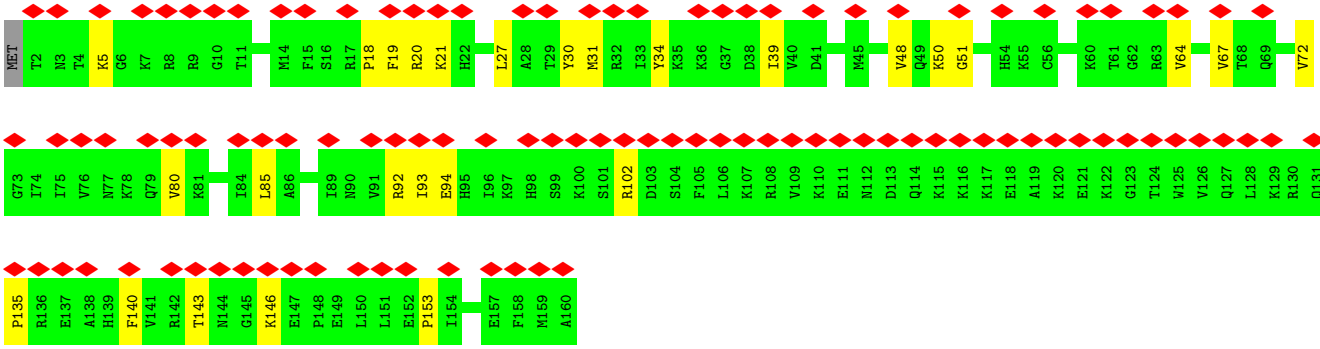






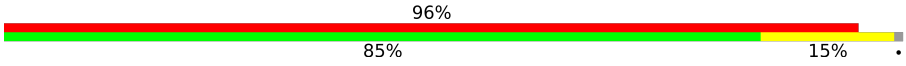
• Molecule 39: Large ribosomal subunit protein eL21

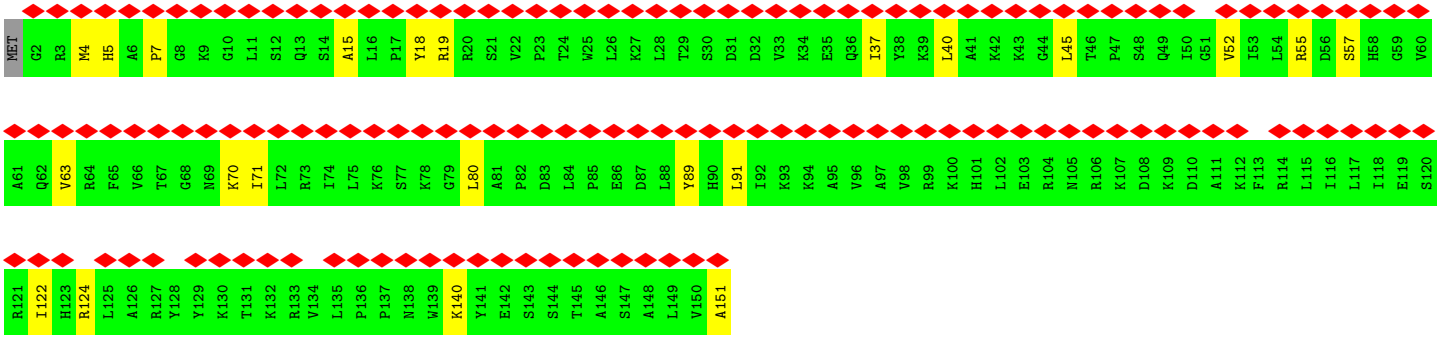
Chain N2:



• Molecule 40: Small ribosomal subunit protein uS15

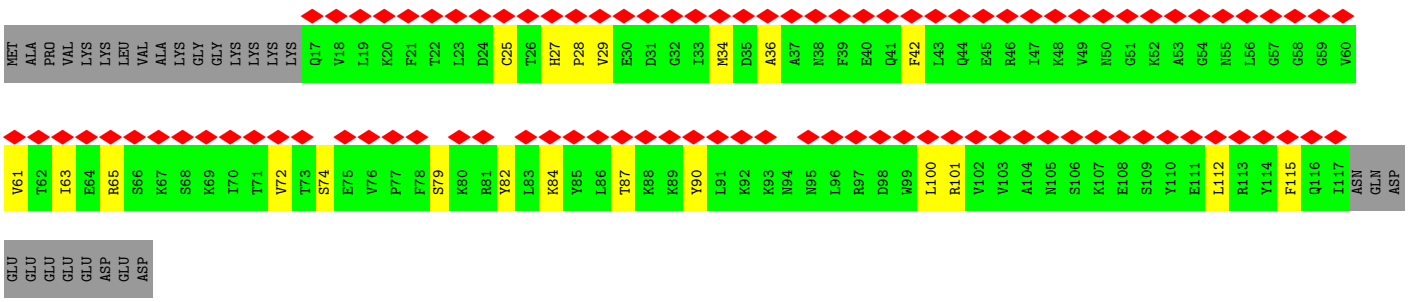
Chain N3:





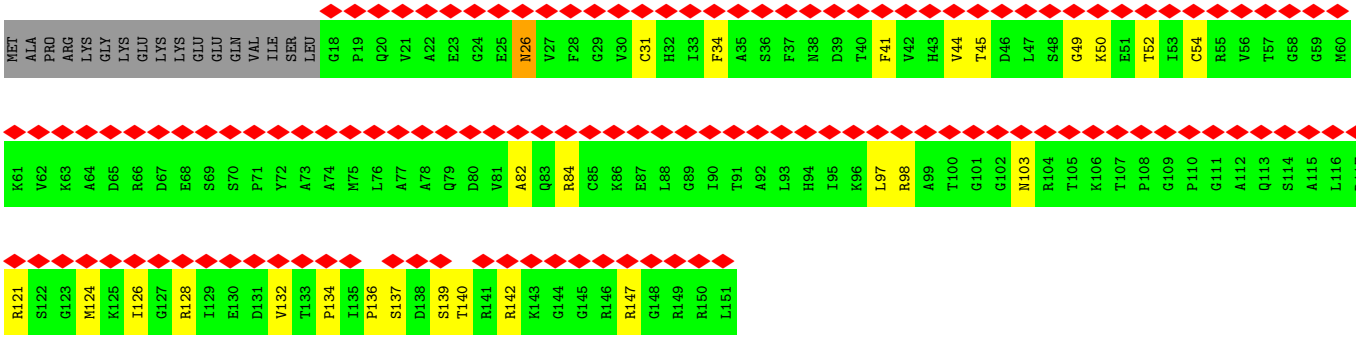
• Molecule 41: Large ribosomal subunit protein eL22

Chain O2:



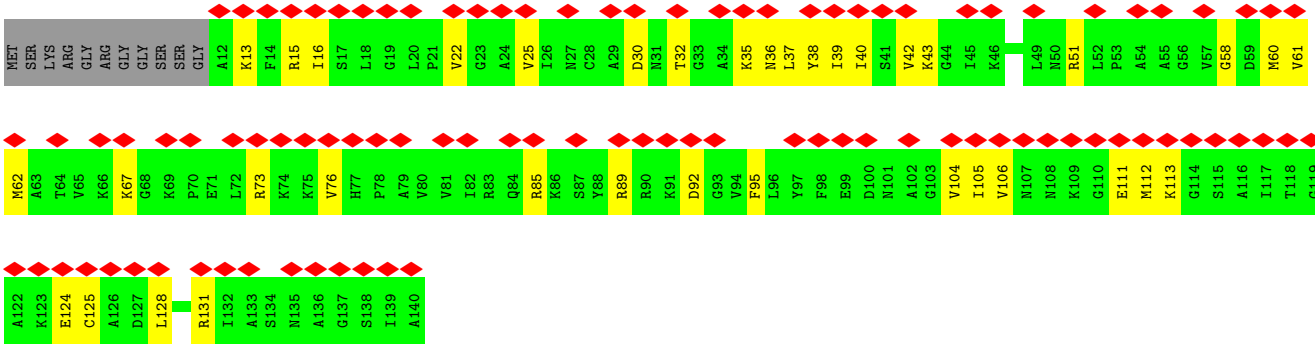
• Molecule 42: Small ribosomal subunit protein uS11

Chain O3:



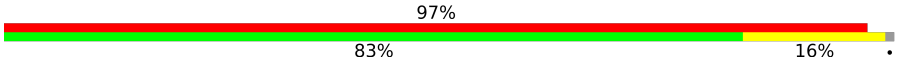
• Molecule 43: Large ribosomal subunit protein uL14

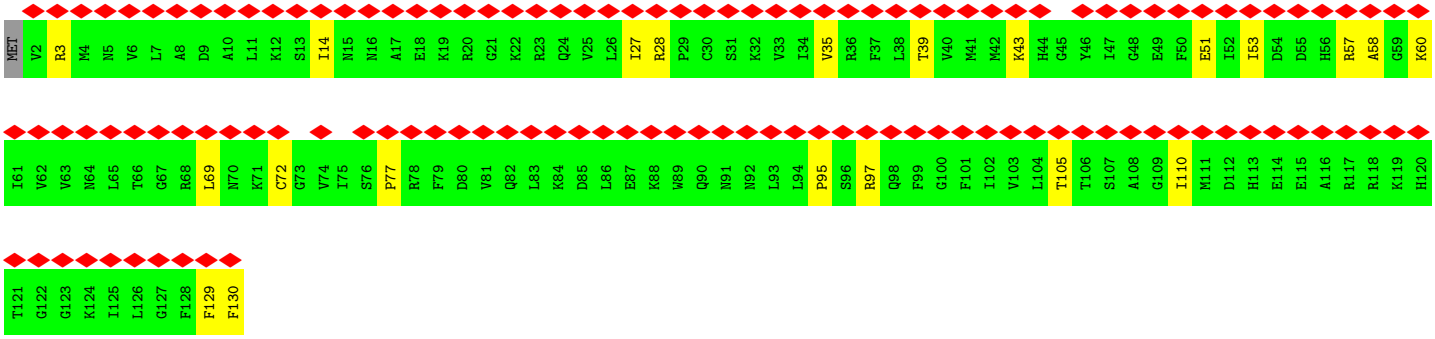
Chain P2:



• Molecule 44: Small ribosomal subunit protein uS8

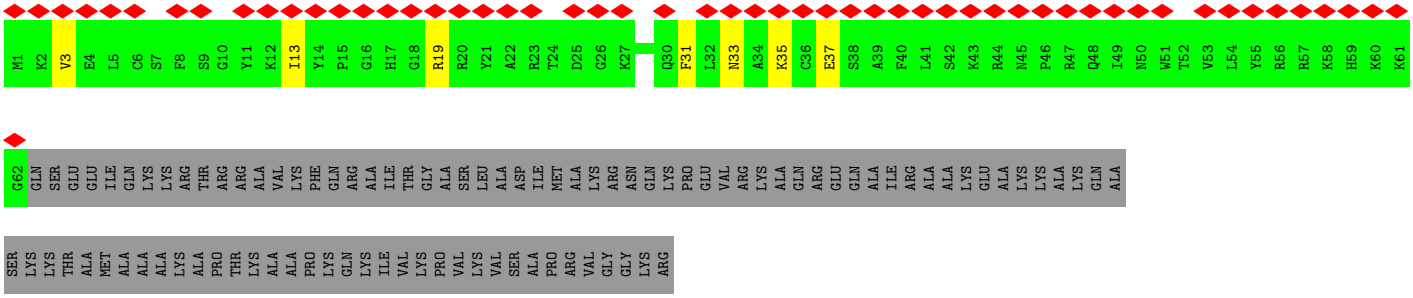
Chain P3:





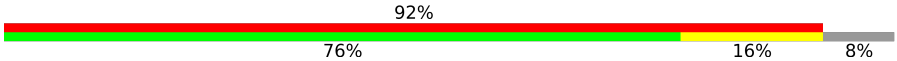
• Molecule 45: Large ribosomal subunit protein eL24

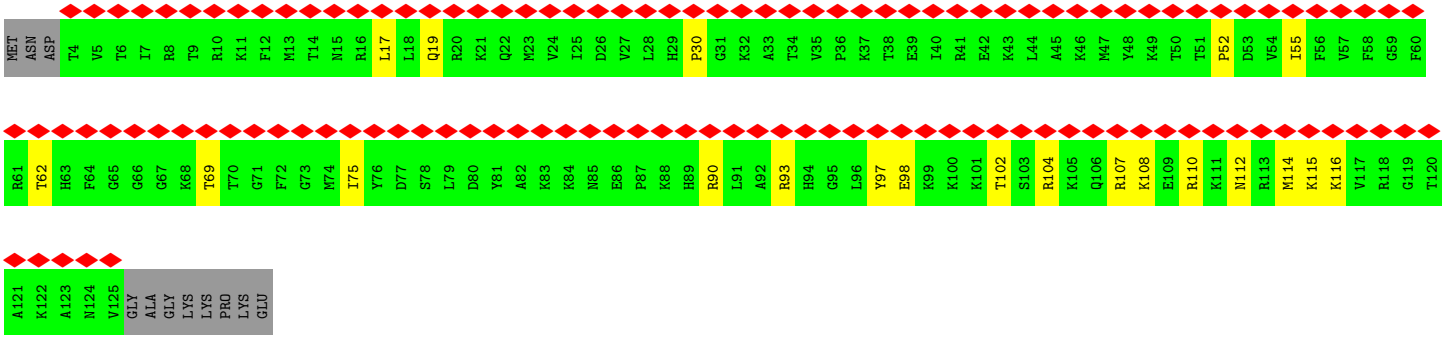
Chain Q2:



• Molecule 46: Small ribosomal subunit protein eS24

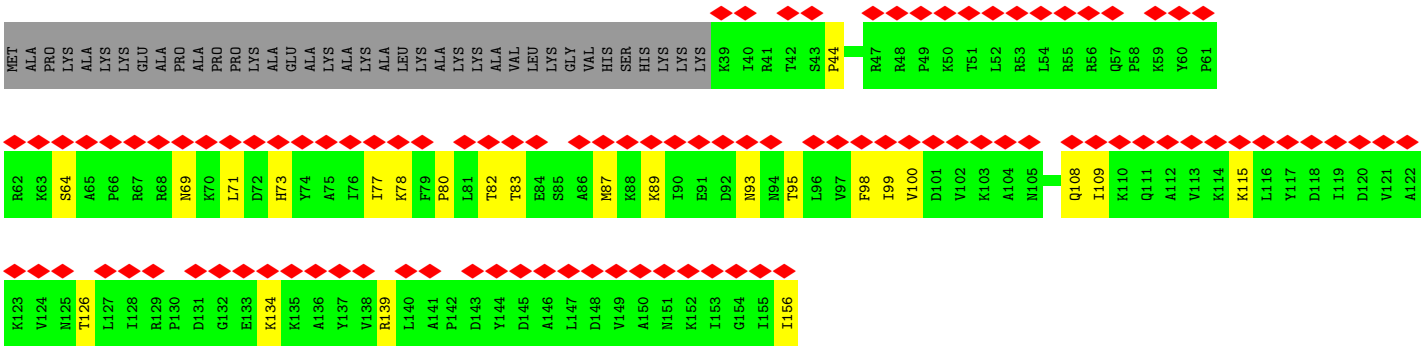
Chain Q3:





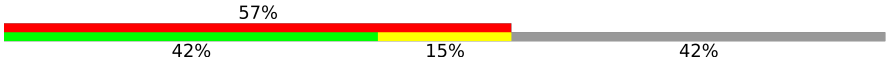
• Molecule 47: Large ribosomal subunit protein uL23

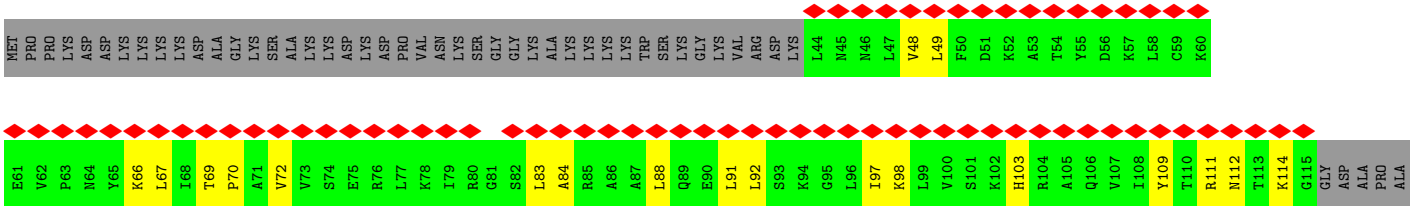
Chain R2:



• Molecule 48: Small ribosomal subunit protein eS25

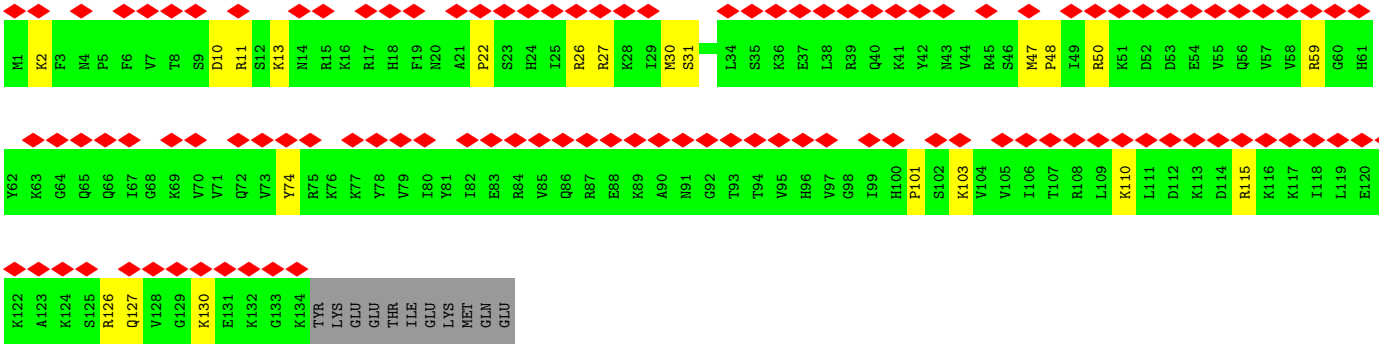
Chain R3:





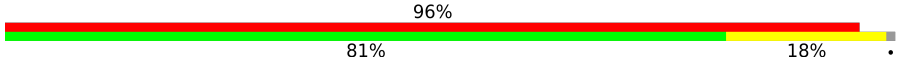
• Molecule 49: Large ribosomal subunit protein uL24

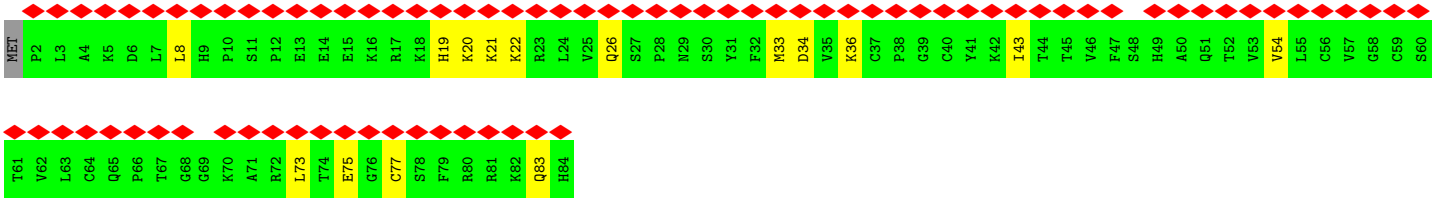
Chain S2:



• Molecule 50: Small ribosomal subunit protein eS27

Chain S3:





• Molecule 51: Large ribosomal subunit protein eL27

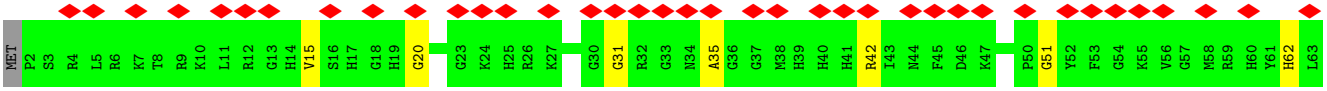
Chain T2:

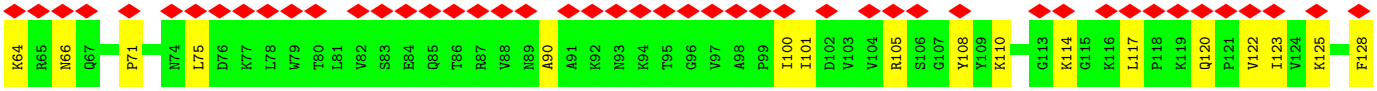
• Molecule 52: Ubiquitin-like FUBI-ribosomal protein eS30 fusion protein

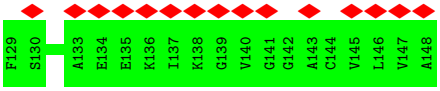
Chain T3:

• Molecule 53: Large ribosomal subunit protein uL15

Chain U2:

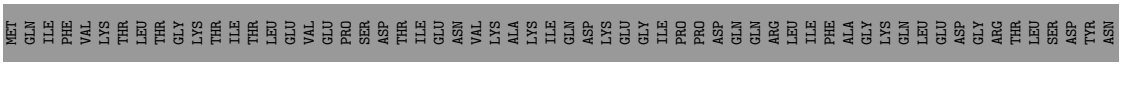


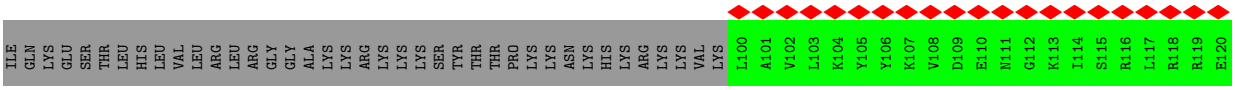


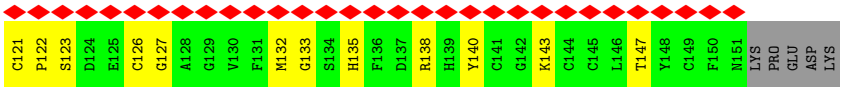


• Molecule 54: Ubiquitin-ribosomal protein eS31 fusion protein

Chain U3:

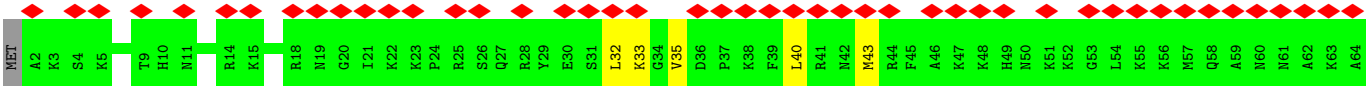


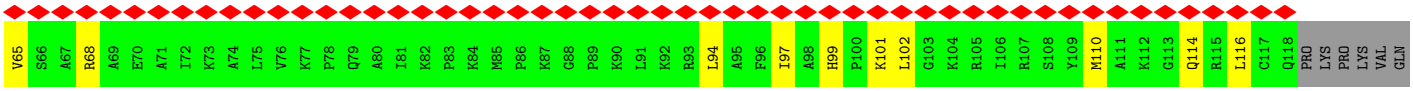


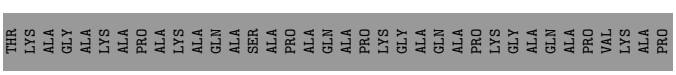


• Molecule 55: Large ribosomal subunit protein eL29

Chain V2:

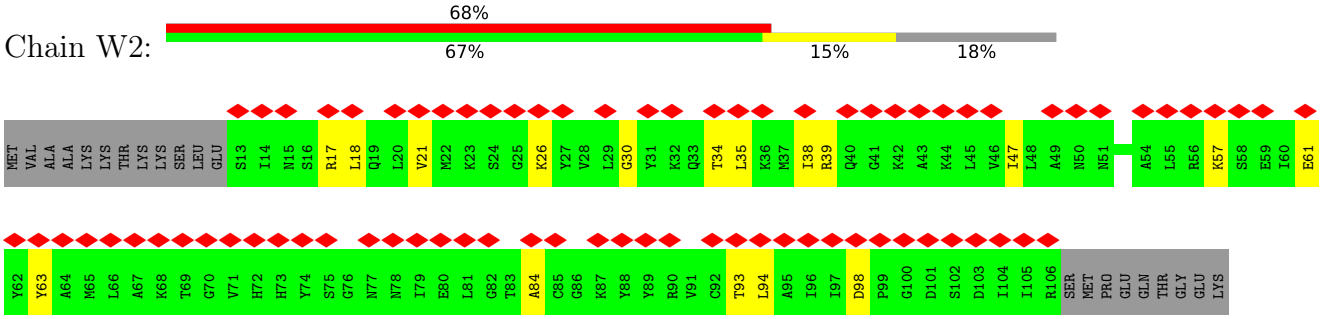






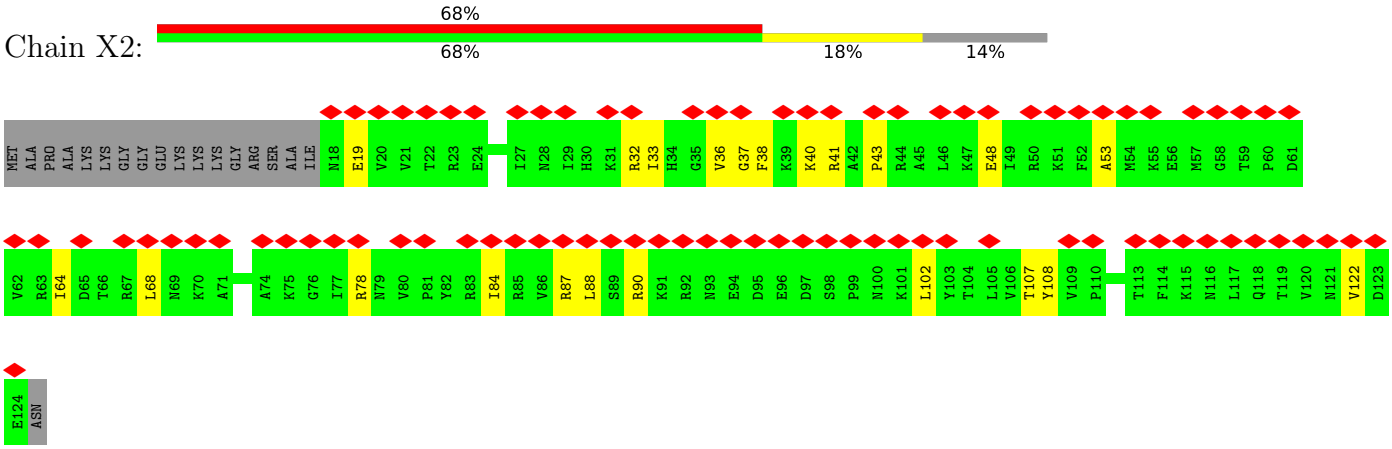
• Molecule 56: Large ribosomal subunit protein eL30

Chain W2:



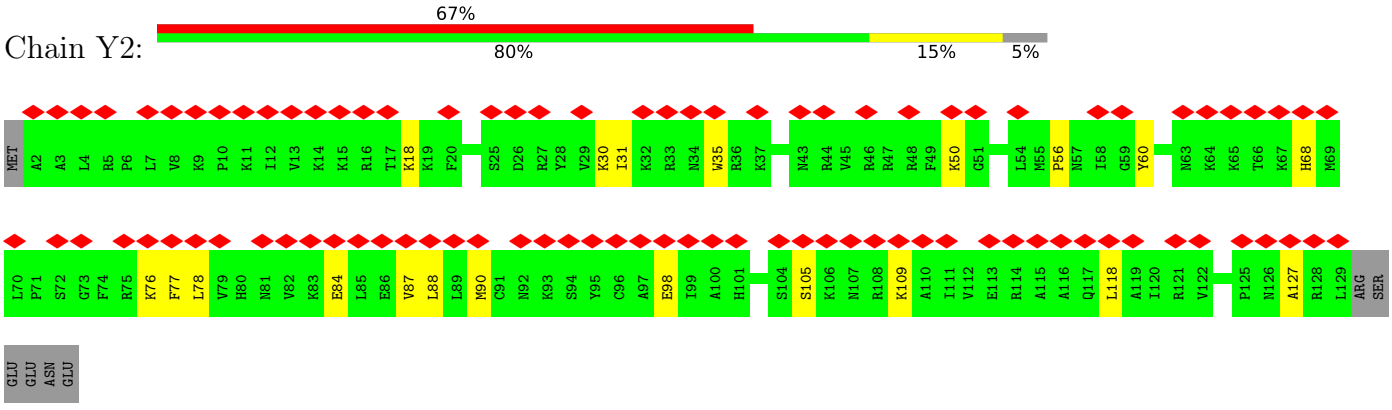
• Molecule 57: Large ribosomal subunit protein eL31

Chain X2:



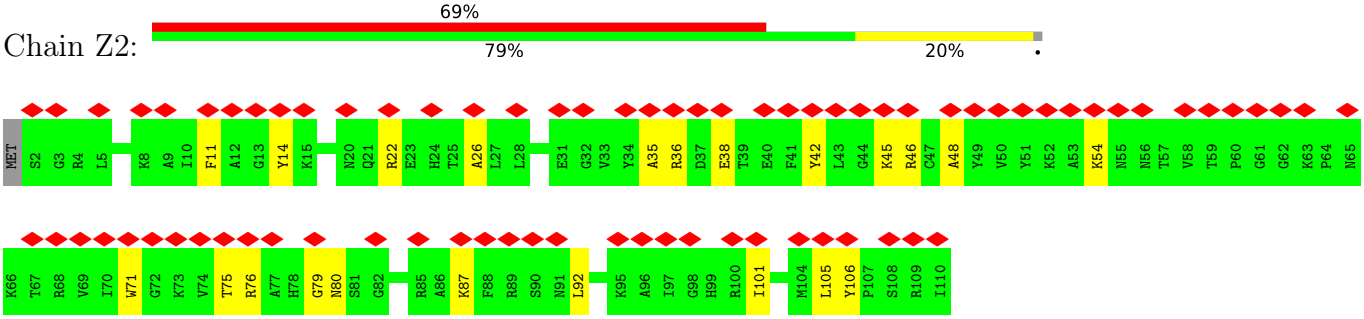
• Molecule 58: Large ribosomal subunit protein eL32

Chain Y2:



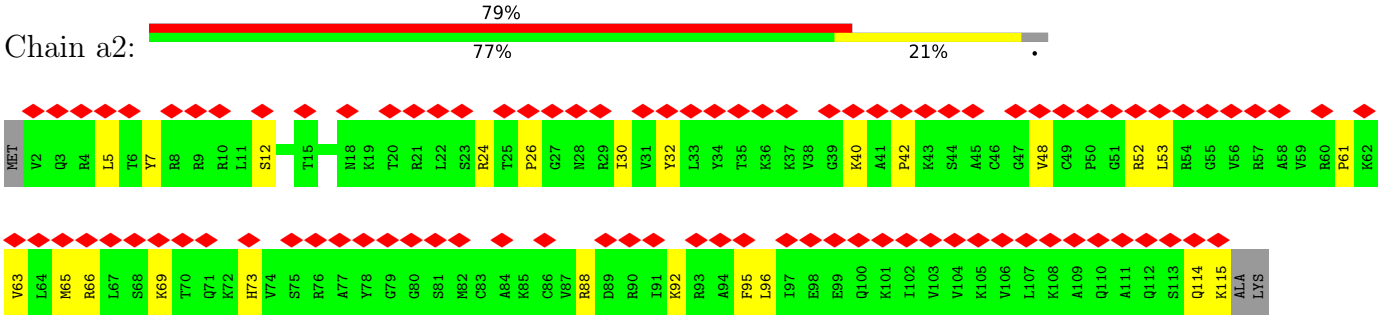
• Molecule 59: Large ribosomal subunit protein eL33

Chain Z2:



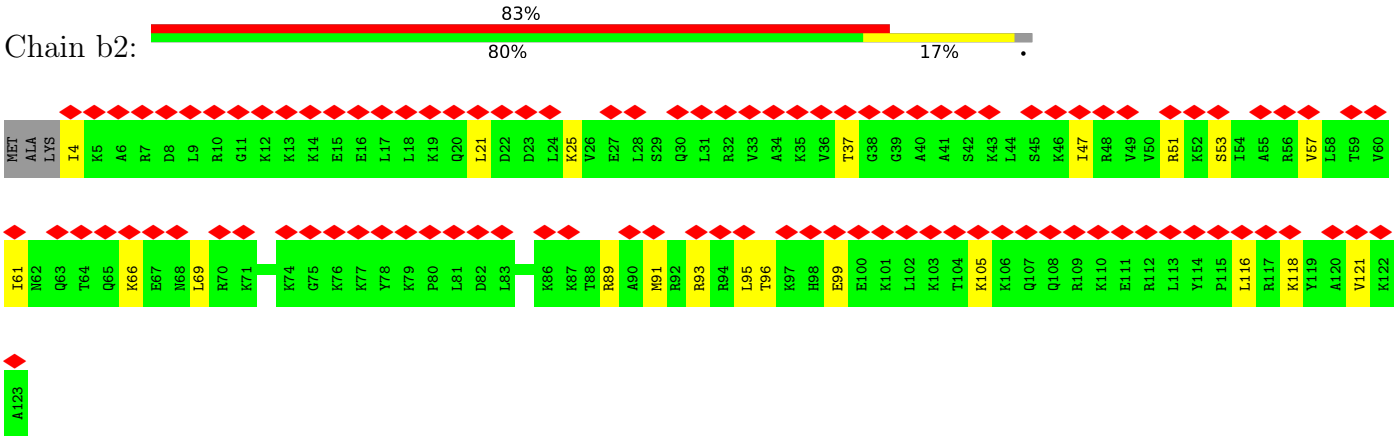
• Molecule 60: Large ribosomal subunit protein eL34

Chain a2:



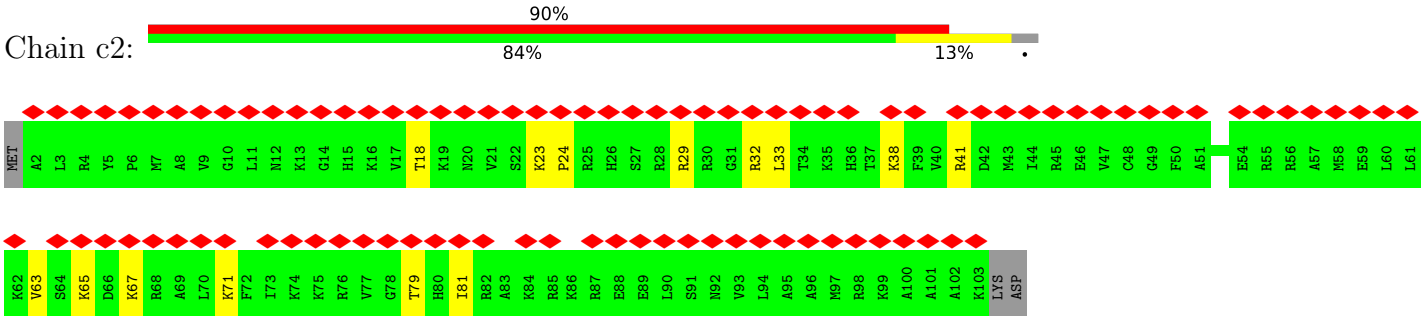
• Molecule 61: Large ribosomal subunit protein uL29

Chain b2:



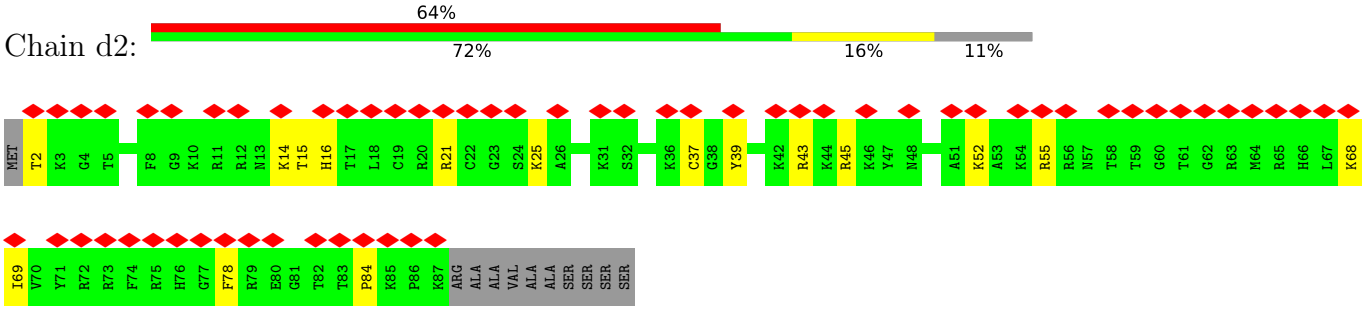
• Molecule 62: Large ribosomal subunit protein eL36

Chain c2:



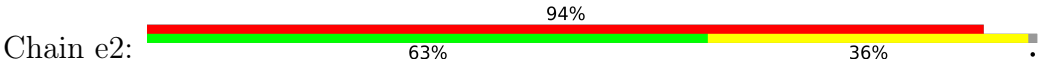
• Molecule 63: Large ribosomal subunit protein eL37

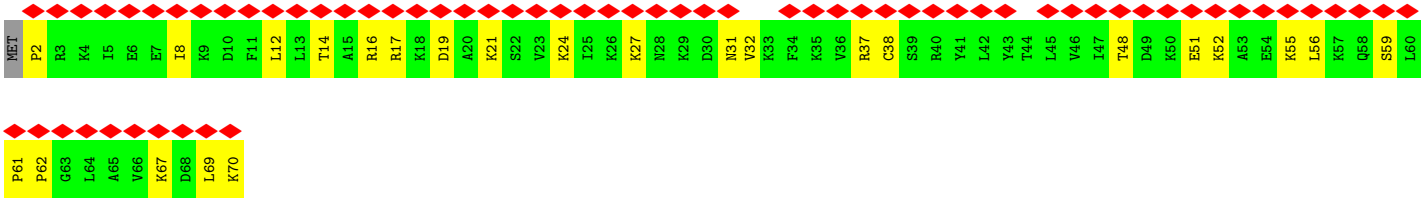
Chain d2:



• Molecule 64: Large ribosomal subunit protein eL38

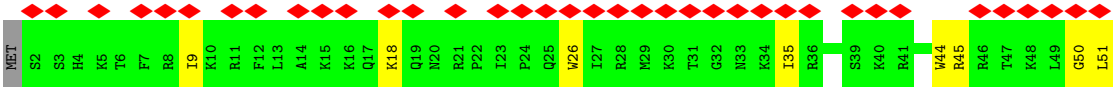
Chain e2:





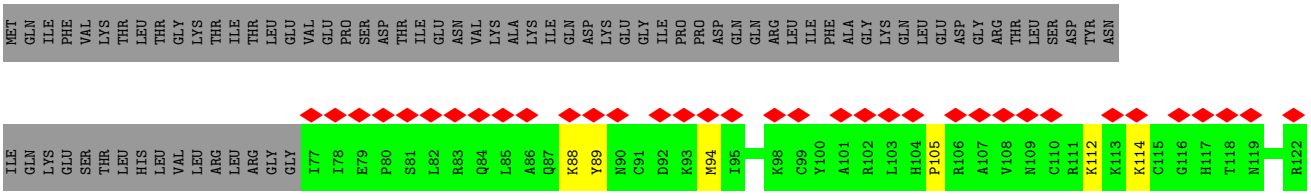
• Molecule 65: Large ribosomal subunit protein eL39

Chain f2:



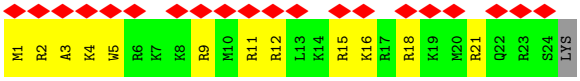
• Molecule 66: Ubiquitin-ribosomal protein eL40 fusion protein

Chain g2:



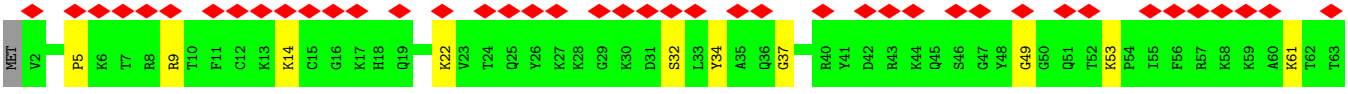
• Molecule 67: 60S ribosomal protein L41

Chain h2:



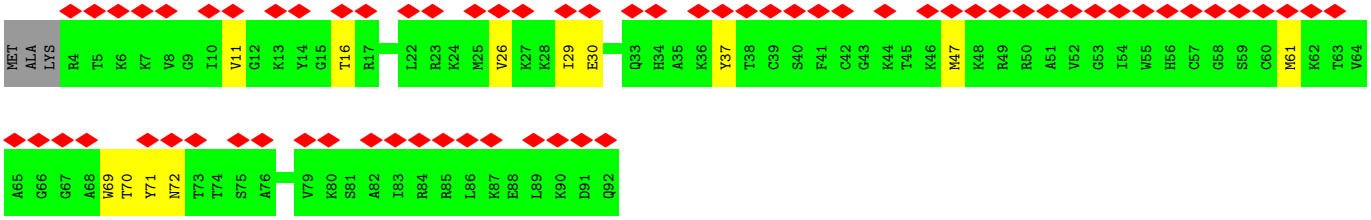
• Molecule 68: Large ribosomal subunit protein eL42

Chain i2:



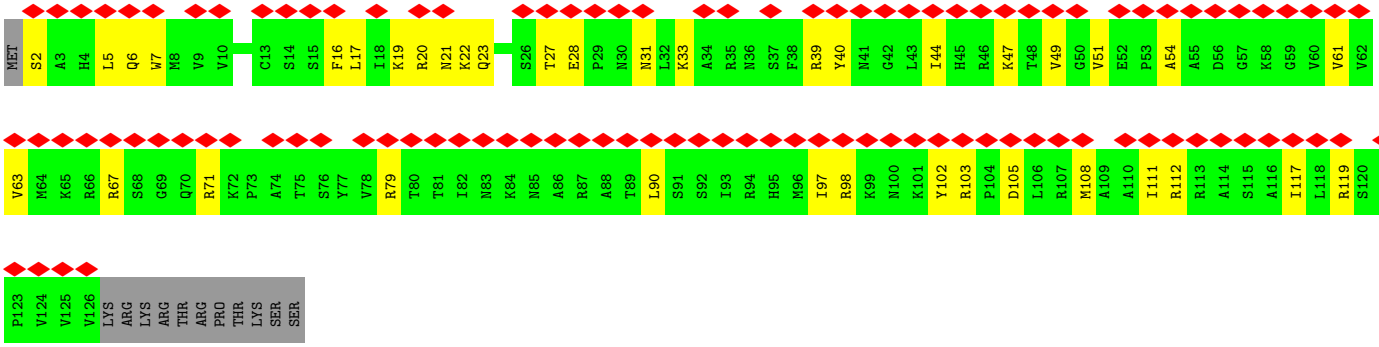
• Molecule 69: Large ribosomal subunit protein eL43

Chain j2:



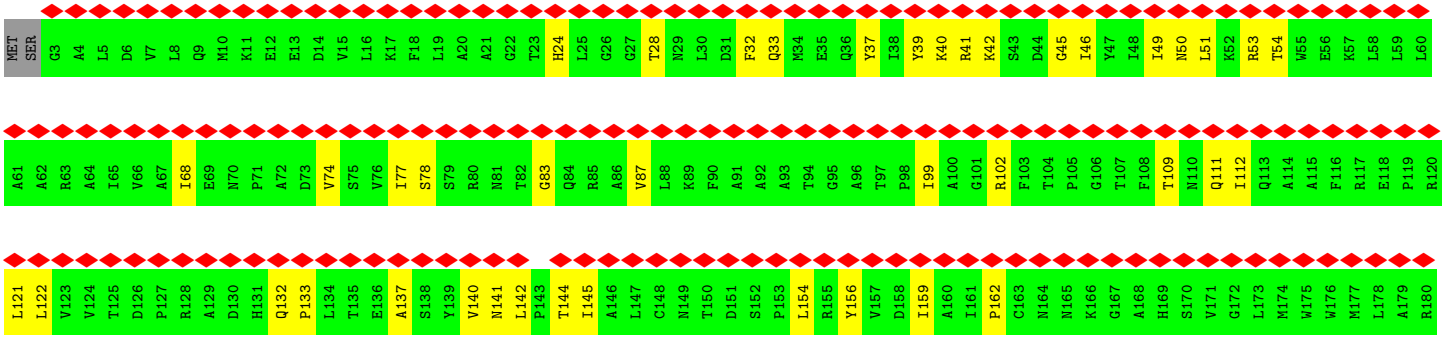
• Molecule 70: Large ribosomal subunit protein eL28

Chain k2:



• Molecule 71: Small ribosomal subunit protein uS2

Chain o2:

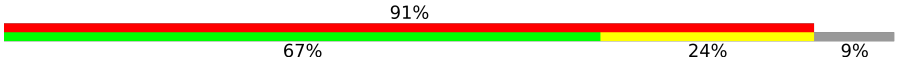


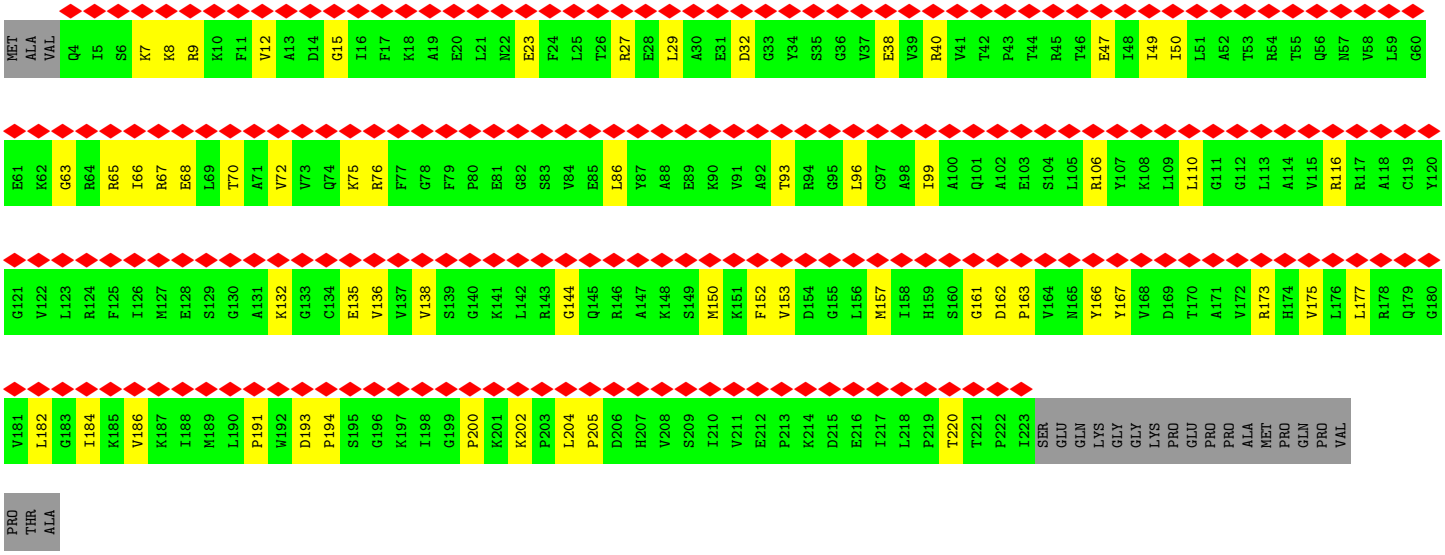
• Molecule 72: 40S ribosomal protein S3a

Chain p2:

• Molecule 73: Small ribosomal subunit protein uS3

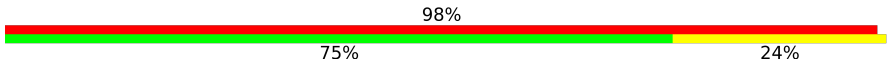
Chain q2:

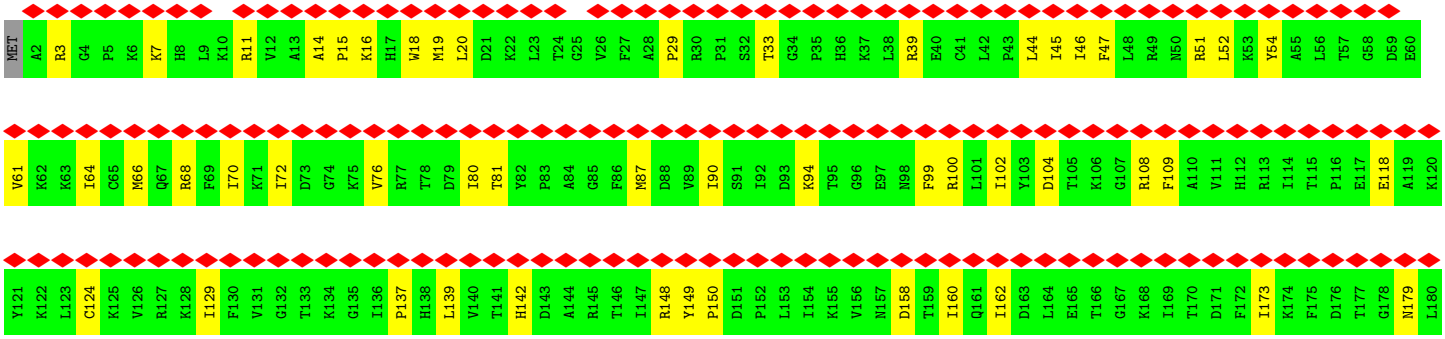


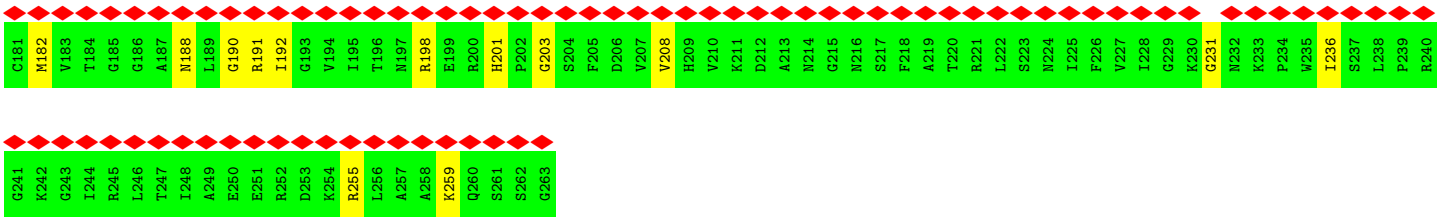


• Molecule 74: Small ribosomal subunit protein eS4

Chain r2:

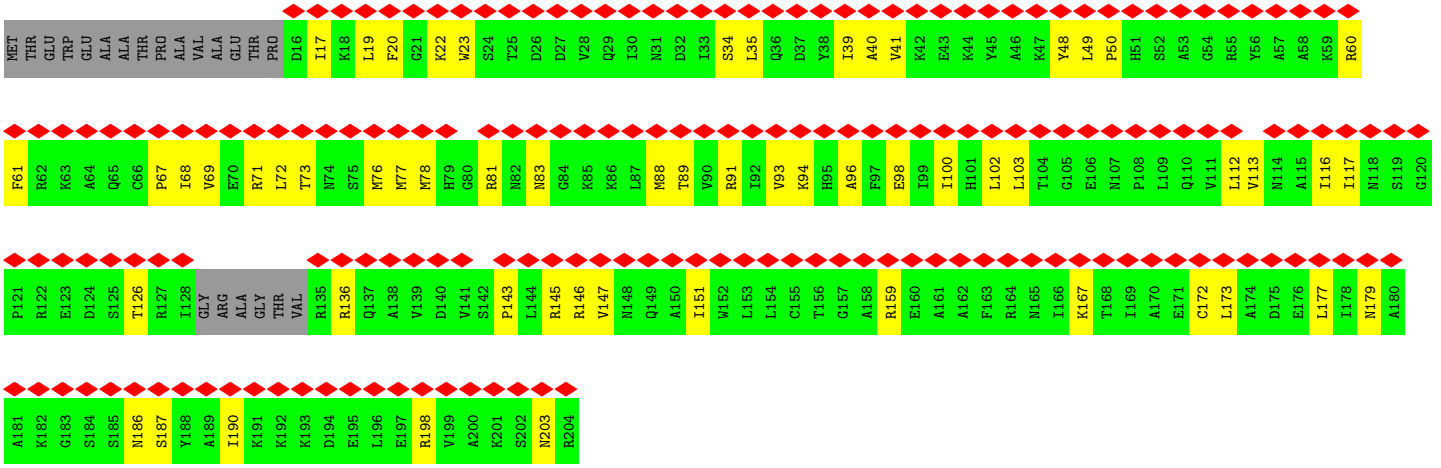






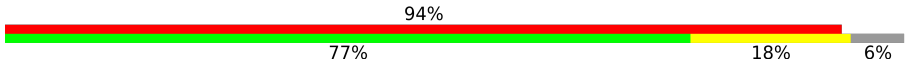
• Molecule 75: Small ribosomal subunit protein uS7

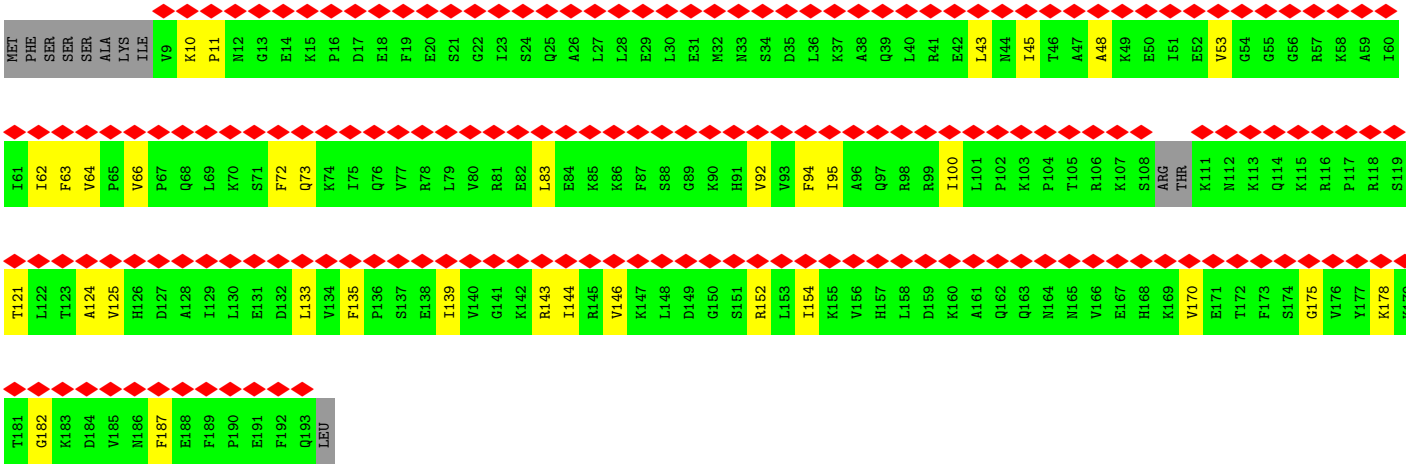
Chain s2:



• Molecule 76: Small ribosomal subunit protein eS7

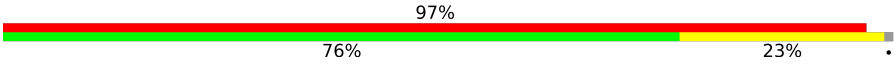
Chain t2:

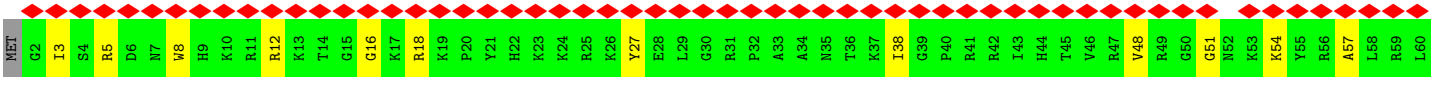


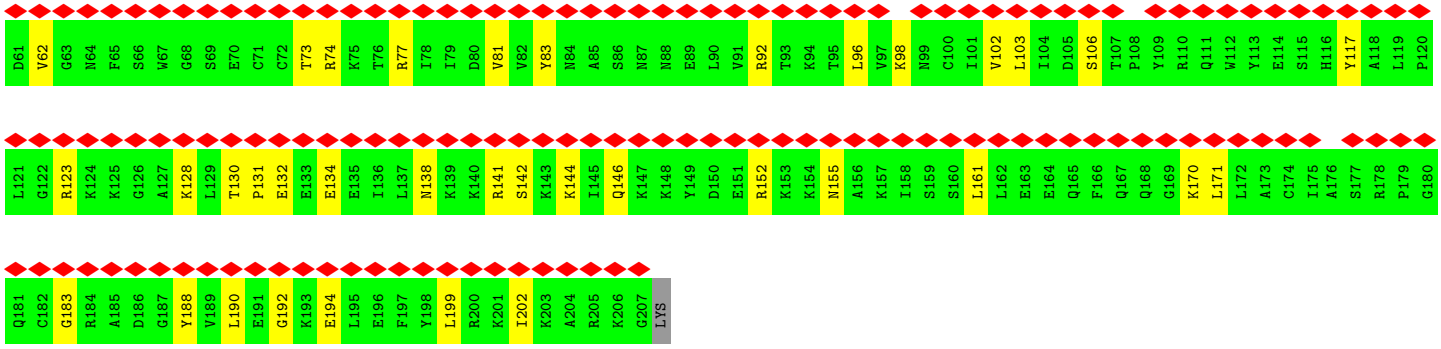


• Molecule 77: Small ribosomal subunit protein eS8

Chain u2:

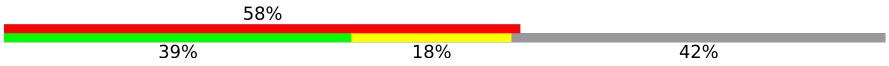


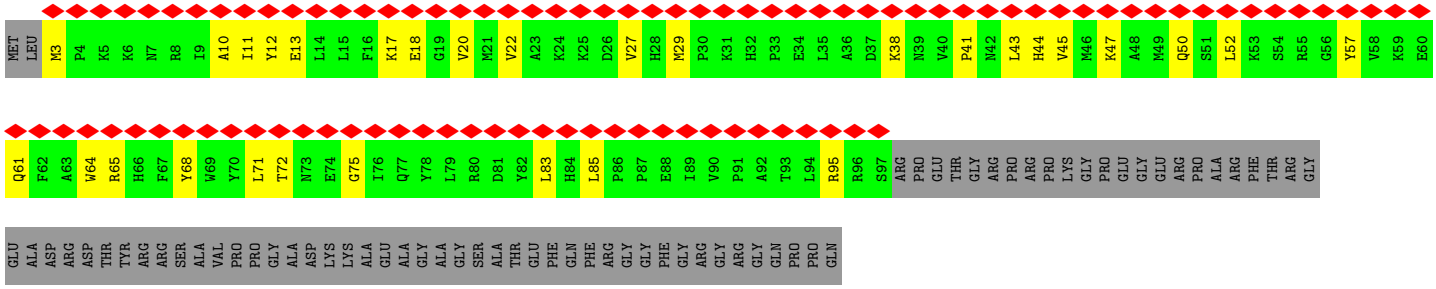




• Molecule 78: Small ribosomal subunit protein eS10

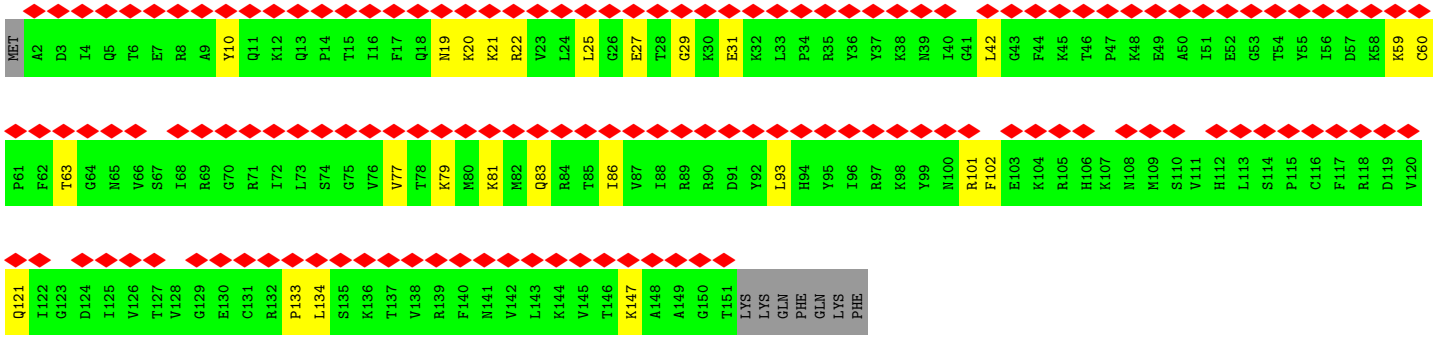
Chain v2:





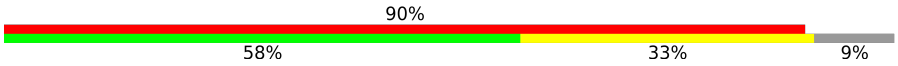
• Molecule 79: Small ribosomal subunit protein uS17

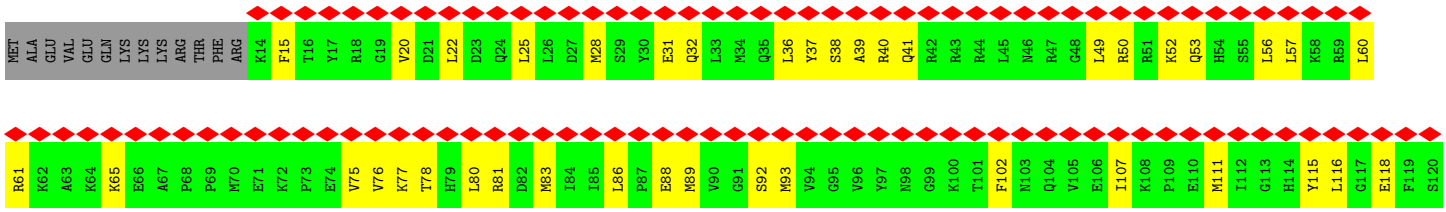
Chain w2:

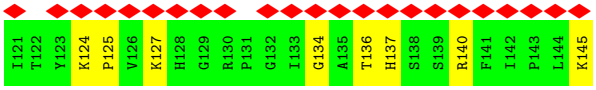


• Molecule 80: Small ribosomal subunit protein uS19

Chain x2:

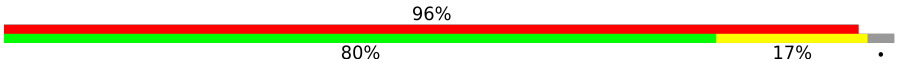


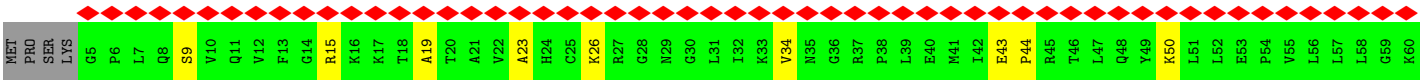


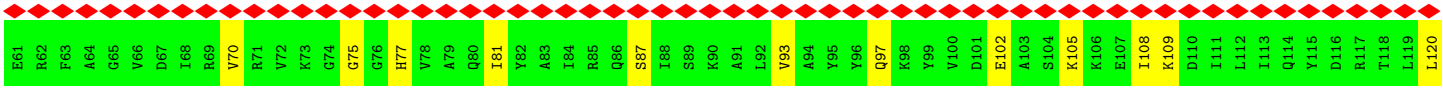


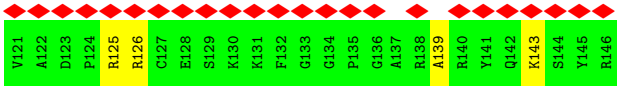
• Molecule 81: Small ribosomal subunit protein uS9

Chain y2:



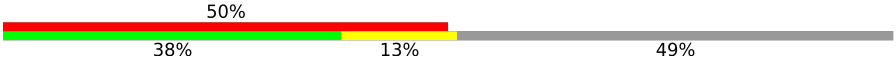


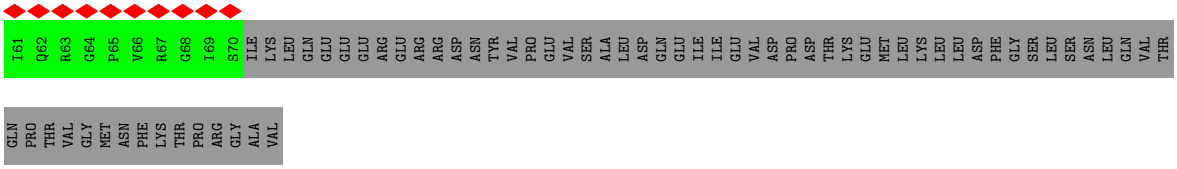




• Molecule 82: Small ribosomal subunit protein eS17

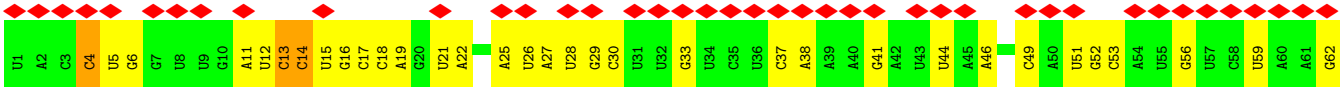
Chain z2:

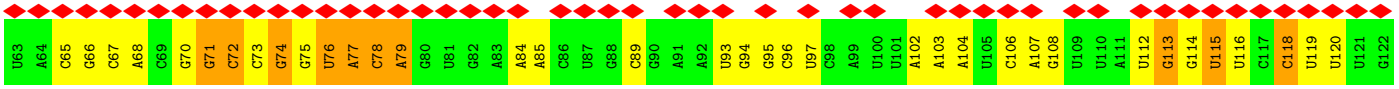


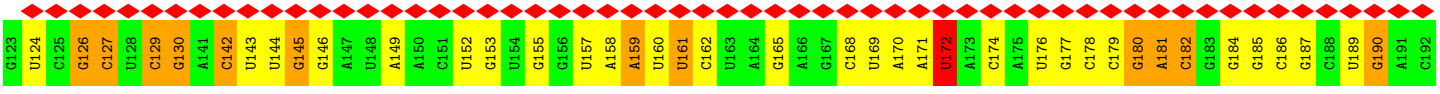


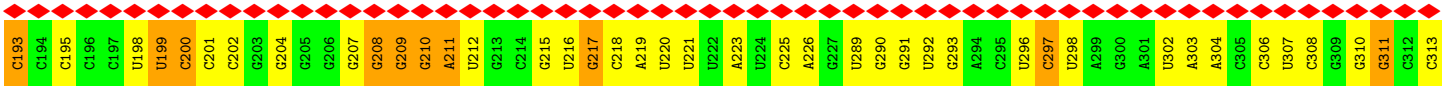
• Molecule 83: 18S ribosomal RNA

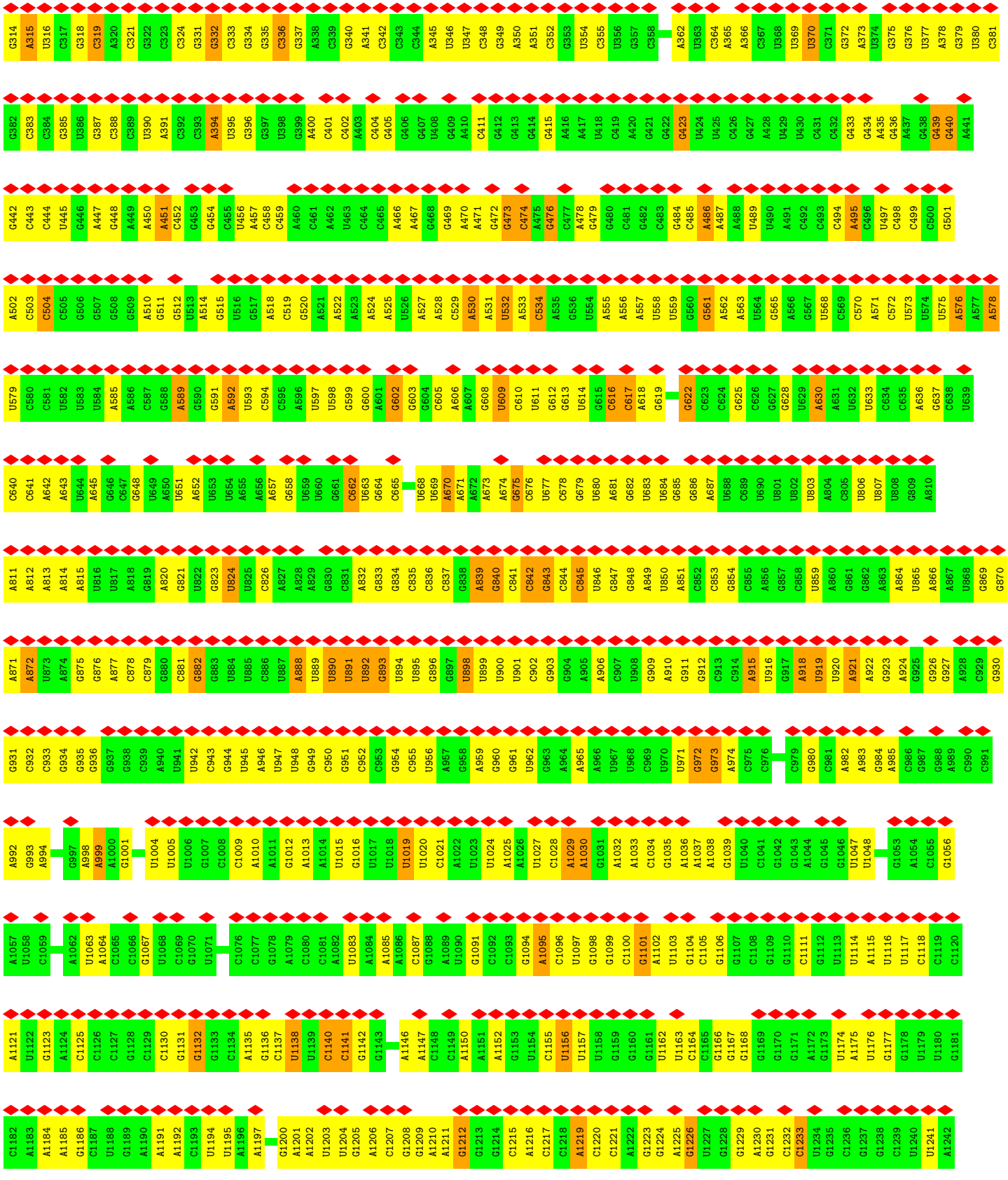
Chain m2:







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G382 C383 C384 G385 U386 G387 C388 C389 U390 A391 C392 G393 A394 U395 G396 G397 U398 G399 A400 C401 C402 A403 C404 G405 G406 G407 U408 G409 A410 C411 G412 G413 G414 G415 A416 A417 U418 C419 A420 G421 G422 G423 U424 U425 C426 G427 A428 U429 U430 C431 C432 G433 C434 A435 G436 A437 G438 G439 G440 A441
G442 C443 C444 U445 G446 A447 G448 A449 A450 A451 C452 G453 G454 C455 U456 A457 C458 C459 A460 C461 A462 U463 C464 C465 A466 A467 G468 G469 A470 A471 G472 G473 C474 A475 G476 C477 A478 G479 G480 C481 G482 C483 G484 C485 A486 A487 A488 U489 U490 A491 C492 C493 C494 A495 C496 U497 C498 C499 C500 G501
A502 C503 C504 C505 G506 G507 G508 G509 A510 G511 G512 U513 A514 G515 U516 G517 A518 C519 G520 A521 A522 A523 A524 A525 U526 A527 A528 C529 A530 A531 U532 A533 C534 A535 G536 U554 A555 A556 A557 U558 U559 G560 G561 A562 A563 U564 G565 A566 G567 U568 C569 C570 A571 C572 U573 U574 U575 A576 A577 A578
U579 C580 C581 U582 U583 U584 A585 A586 C587 G588 A589 G590 G591 A592 U593 C594 C595 A596 U597 U598 G599 G600 A601 G602 G603 G604 C605 A606 A607 G608 U609 C610 U611 G612 G613 U614 G615 C616 C617 A618 G619 G622 C623 C624 G625 C626 G627 G628 U629 A630 A631 U632 U633 C634 C635 A636 G637 C638 U639
C640 C641 A642 A643 U644 A645 G646 C647 G648 U649 A650 U651 A652 U653 U654 A655 A656 A657 G658 U659 U660 G661 C662 U663 G664 C665 U668 U669 A670 A671 A672 A673 A674 G675 C676 U677 C678 G679 U680 A681 G682 U683 U684 G685 G686 A687 U688 C689 U690 U801 U802 U803 A804 C805 U806 U807 U808 G809 A810
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A871 A872 U873 A874 G875 G876 A877 C878 C879 G880 C881 G882 G883 U884 U885 C886 U887 A888 U889 U890 U891 U892 G893 U894 U895 G896 G897 U898 U899 U900 U901 C902 G903 G904 A905 A906 C907 U908 G909 A910 G911 G912 C913 C914 A915 U916 G917 A918 U919 U920 A921 A922 G923 A924 G925 G926 G927 A928 C929 G930
G931 C932 C933 G934 G935 G936 G937 G938 C939 A940 U941 U942 C943 G944 U945 A946 U947 U948 G949 C950 G951 C952 C953 G954 C955 U956 A957 G958 A959 G960 G961 U962 G963 A964 A965 A966 U967 U968 C969 U970 U971 G972 G973 A974 C975 C976 C979 G980 C981 A982 A983 G984 A985 C986 G987 G988 A989 C990 C991
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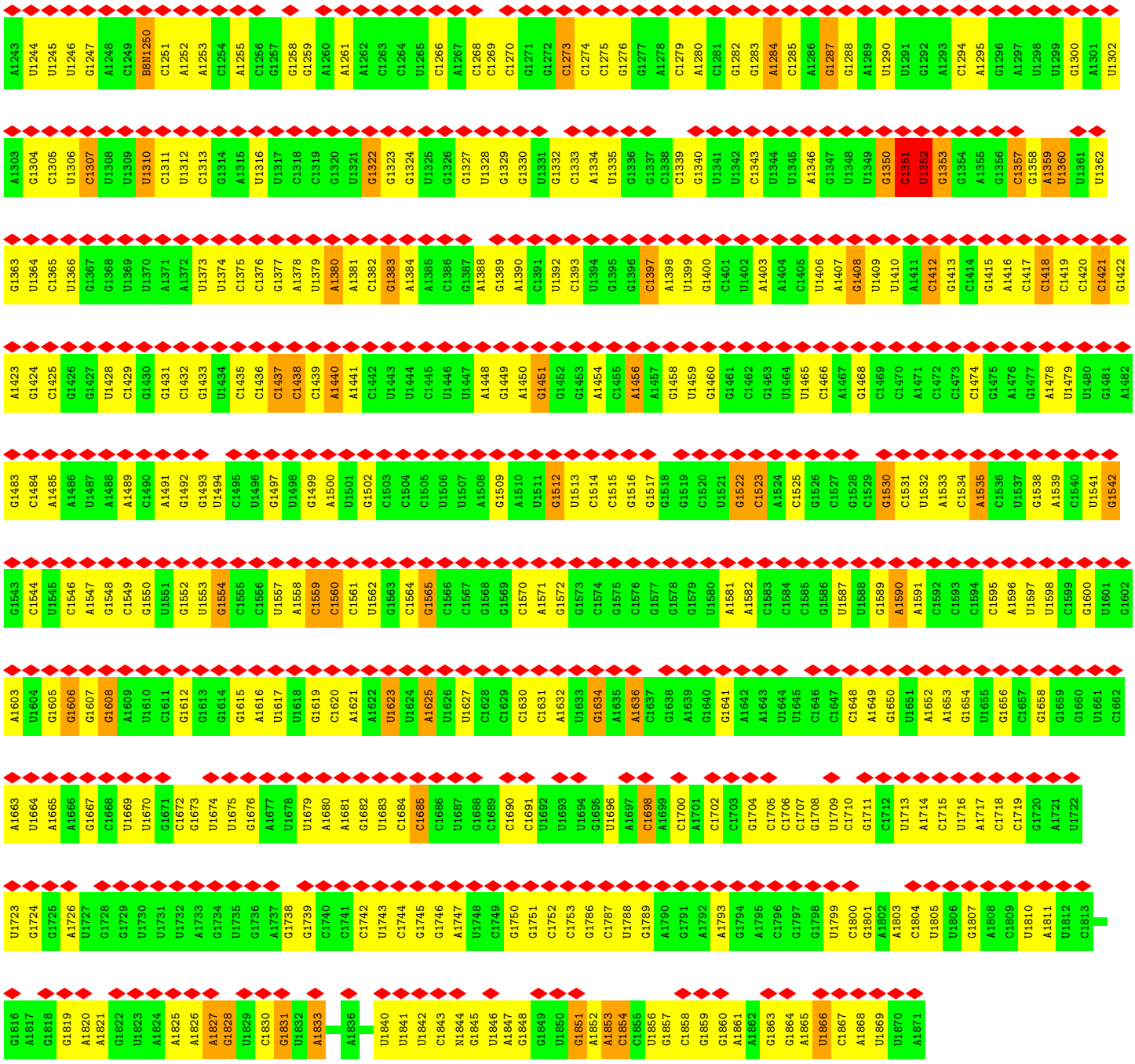
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G1543 C1544 U1545 C1546 A1547 G1548 C1549 G1550 U1551 G1552 U1553 G1554 C1555 C1556 U1557 A1558 C1559 C1560 C1561 U1562 G1563 C1564 G1565 C1566 C1567 G1568 G1569 C1570 A1571 G1572 G1573 C1574 G1575 C1576 G1577 G1578 G1579 U1580 A1581 A1582 C1583 C1584 C1585 G1586 U1587 U1588 G1589 A1590 A1591 C1592 C1593 C1594 C1595 A1596 U1597 U1598 C1599 G1600 U1601 G1602
A1603 U1604 G1605 G1606 G1607 G1608 A1609 U1610 C1611 G1612 G1613 G1614 G1615 A1616 U1617 U1618 G1619 C1620 A1621 A1622 U1623 U1624 A1625 U1626 U1627 C1628 C1629 C1630 C1631 A1632 U1633 G1634 A1635 A1636 C1637 G1638 A1639 A1640 G1641 A1642 A1643 U1644 U1645 C1646 C1647 C1648 A1649 G1650 U1651 A1652 A1653 G1654 U1655 G1656 C1657 G1658 G1659 G1660 U1661 C1662
A1663 U1664 A1665 A1666 G1667 C1668 U1669 U1670 G1671 C1672 G1673 U1674 U1675 G1676 A1677 U1678 U1679 A1680 A1681 G1682 U1683 C1684 C1685 C1686 U1687 G1688 C1689 C1690 C1691 U1692 U1693 U1694 G1695 U1696 A1697 C1698 A1699 C1700 A1701 C1702 C1703 G1704 C1705 C1706 C1707 G1708 U1709 C1710 G1711 C1712 U1713 A1714 C1715 U1716 A1717 C1718 C1719 G1720 A1721 U1722
U1723 G1724 G1725 A1726 U1727 G1728 G1729 U1730 U1731 U1732 A1733 G1734 U1735 G1736 A1737 G1738 G1739 C1740 C1741 C1742 U1743 C1744 G1745 G1746 A1747 U1748 C1749 G1750 G1751 C1752 C1753 G1786 C1787 U1788 G1789 A1790 G1791 A1792 A1793 G1794 A1795 C1796 G1797 G1798 U1799 C1800 G1801 A1802 A1803 C1804 U1805 U1806 G1807 A1808 C1809 U1810 A1811 U1812 C1813
G1816 A1817 G1818 G1819 A1820 A1821 G1822 U1823 A1824 A1825 A1826 A1827 G1828 U1829 C1830 G1831 U1832 A1833 A1836 U1840 U1841 U1842 C1843 N1844 G1845 U1846 A1847 G1848 G1849 U1850 G1851 A1852 A1853 C1854 C1855 U1856 G1857 C1858 G1859 G1860 A1861 A1862 G1863 G1864 A1865 U1866 C1867 A1868 U1869 U1870 A1871

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	9545	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 ($e^-/Å^2$)	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	0.172	Depositor
Minimum map value	-0.084	Depositor
Average map value	0.002	Depositor
Map value standard deviation	0.010	Depositor
Recommended contour level	0.037	Depositor
Map size (Å)	333.3, 333.3, 333.3	wwPDB
Map dimensions	330, 330, 330	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: OMU, 5MC, UR3, 4AC, OMC, OMG, B8T, MG, PSU, 2MG, ZN, A2M, 1MA, 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	0.25	0/1888	0.40	0/2516
2	A2	0.23	1/84889 (0.0%)	0.32	0/132400
3	A3	0.15	0/1169	0.41	0/1568
4	B1	0.19	0/1847	0.37	0/2486
5	B2	0.20	0/2836	0.28	0/4421
6	B3	0.13	0/1122	0.33	0/1503
7	Bv	0.23	0/1813	0.39	0/2823
7	Bz	0.23	0/1813	0.41	0/2823
7	n2	0.14	0/1813	0.34	0/2823
8	Bx	0.41	0/219	0.53	0/336
10	C1	0.21	0/1537	0.39	0/2065
11	C2	0.22	0/3675	0.31	0/5725
12	C3	0.13	0/818	0.32	0/1099
13	D1	0.22	0/1694	0.38	0/2261
14	D2	0.25	0/1959	0.44	0/2627
15	D3	0.11	0/645	0.32	0/863
16	E1	0.20	0/1420	0.42	0/1899
17	E2	0.24	0/3305	0.45	0/4422
18	E3	0.13	0/1097	0.39	0/1464
19	F1	0.22	0/1674	0.41	0/2241
20	F2	0.24	0/2921	0.41	0/3921
21	F3	0.14	0/805	0.37	0/1079
22	G1	0.19	0/1165	0.37	0/1558
23	G2	0.20	0/2435	0.38	0/3260
24	G3	0.13	0/490	0.37	0/656
25	H1	0.27	0/1746	0.42	1/2338 (0.0%)
26	H2	0.19	0/1822	0.37	0/2443
27	H3	0.18	0/466	0.43	0/618
28	I2	0.25	0/1670	0.43	0/2232
29	I3	0.12	0/2493	0.36	0/3394
30	J2	0.24	0/1268	0.43	0/1700
31	J3	0.13	0/1737	0.35	0/2348

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\#\|Z\| > 5$	RMSZ	$\#\|Z\| > 5$
32	K2	0.23	0/1535	0.40	0/2048
33	K3	0.11	0/1863	0.32	0/2481
34	L1	0.13	0/1318	0.39	0/1767
35	L2	0.22	0/1515	0.36	0/2002
36	L3	0.10	0/1542	0.29	0/2058
37	M2	0.24	0/1490	0.41	0/2000
38	M3	0.10	0/962	0.27	0/1289
39	N2	0.22	0/1327	0.37	0/1771
40	N3	0.11	0/1232	0.31	0/1656
41	O2	0.17	0/839	0.38	0/1126
42	O3	0.12	0/1015	0.32	0/1361
43	P2	0.23	0/983	0.43	0/1319
44	P3	0.12	0/1051	0.31	0/1406
45	Q2	0.22	0/532	0.40	0/708
46	Q3	0.13	0/1019	0.36	0/1354
47	R2	0.21	0/984	0.39	0/1323
48	R3	0.13	0/576	0.35	0/774
49	S2	0.21	0/1132	0.41	0/1504
50	S3	0.14	0/665	0.40	0/891
51	T2	0.20	0/1130	0.39	0/1507
52	T3	0.12	0/443	0.35	0/582
53	U2	0.26	0/1193	0.39	0/1593
54	U3	0.12	0/424	0.32	0/566
55	V2	0.21	0/963	0.38	0/1275
56	W2	0.17	0/742	0.38	0/996
57	X2	0.21	0/903	0.38	0/1216
58	Y2	0.27	0/1071	0.40	0/1429
59	Z2	0.24	0/895	0.39	0/1198
60	a2	0.23	0/916	0.42	0/1221
61	b2	0.20	0/1009	0.39	0/1332
62	c2	0.19	0/843	0.37	0/1115
63	d2	0.26	0/720	0.46	0/952
64	e2	0.19	0/574	0.38	0/760
65	f2	0.24	0/454	0.36	0/599
66	g2	0.24	0/435	0.43	0/575
67	h2	0.15	0/231	0.37	0/294
68	i2	0.23	0/855	0.46	0/1128
69	j2	0.23	0/704	0.42	0/935
70	k2	0.23	0/1016	0.41	0/1363
71	o2	0.11	0/1731	0.28	0/2352
72	p2	0.15	0/1749	0.41	0/2340
73	q2	0.13	0/1739	0.34	0/2342
74	r2	0.14	0/2118	0.37	0/2849

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
75	s2	0.13	0/1477	0.33	0/1983
76	t2	0.13	0/1299	0.36	0/1767
77	u2	0.12	0/1662	0.36	0/2228
78	v2	0.14	0/824	0.33	0/1112
79	w2	0.13	0/1241	0.38	0/1662
80	x2	0.13	0/1103	0.35	0/1475
81	y2	0.15	0/1146	0.35	0/1534
82	z2	0.12	0/567	0.34	0/756
83	m2	0.42	3/38273 (0.0%)	0.34	12/59642 (0.0%)
All	All	0.26	4/228281 (0.0%)	0.35	13/335428 (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
17	E2	0	1

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
83	m2	1350	G	O3'-P	-75.31	0.48	1.61
2	A2	3441	A2M	O3'-P	5.15	1.61	1.56
83	m2	486	A2M	O3'-P	5.05	1.61	1.56
83	m2	670	A2M	O3'-P	5.03	1.61	1.56

All (13) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
83	m2	1350	G	P-O3'-C3'	21.54	152.50	120.20
83	m2	1350	G	OP2-P-O3'	-17.10	56.70	108.00
83	m2	1350	G	O3'-P-O5'	9.97	118.95	104.00
83	m2	1358	G	O3'-P-O5'	-8.61	91.09	104.00
83	m2	1357	C	C1'-C2'-O2'	-7.40	97.31	108.40
83	m2	1350	G	OP1-P-O3'	7.16	129.47	108.00
83	m2	1357	C	C4'-C3'-O3'	-6.74	102.89	113.00
83	m2	1357	C	O3'-P-O5'	-6.51	94.24	104.00
83	m2	1352	U	C4'-C3'-C2'	-5.89	96.71	102.60
83	m2	1351	G	C2'-C3'-O3'	-5.53	105.40	113.70
25	H1	184	ILE	N-CA-C	-5.29	107.20	111.91
83	m2	1359	A	P-O5'-C5'	-5.21	113.09	120.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
83	m2	1351	G	O4'-C1'-C2'	-5.04	102.56	107.60

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
17	E2	258	HIS	Peptide

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A1	1851	0	1988	38	0
2	A2	77547	0	39261	880	0
3	A3	1151	0	1202	48	0
4	B1	1812	0	1947	33	0
5	B2	2538	0	1286	13	0
6	B3	1104	0	1139	29	0
7	Bv	1623	0	820	23	0
7	Bz	1623	0	821	31	0
7	n2	1623	0	821	34	0
8	Bx	200	0	101	5	0
9	By	110	0	31	1	0
10	C1	1519	0	1603	24	0
11	C2	3315	0	1685	34	0
12	C3	808	0	878	26	0
13	D1	1656	0	1706	18	0
14	D2	1921	0	2022	38	0
15	D3	638	0	635	13	0
16	E1	1397	0	1425	36	0
17	E2	3238	0	3380	58	0
18	E3	1080	0	1147	16	0
19	F1	1643	0	1750	29	0
20	F2	2867	0	3040	49	0
21	F3	789	0	841	21	0
22	G1	1143	0	1219	22	0
23	G2	2389	0	2420	32	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
24	G3	488	0	514	18	0
25	H1	1701	0	1749	29	0
26	H2	1789	0	1932	27	0
27	H3	455	0	445	17	0
28	I2	1640	0	1792	24	0
29	I3	2436	0	2393	62	0
30	J2	1242	0	1274	22	0
31	J3	1700	0	1786	44	0
32	K2	1511	0	1636	33	0
33	K3	1840	0	1989	38	0
34	L1	1300	0	1375	26	0
35	L2	1499	0	1651	19	0
36	L3	1518	0	1632	26	0
37	M2	1450	0	1488	19	0
38	M3	952	0	993	19	0
39	N2	1299	0	1368	20	0
40	N3	1208	0	1294	17	0
41	O2	825	0	850	11	0
42	O3	1002	0	1023	30	0
43	P2	969	0	1031	23	0
44	P3	1034	0	1080	20	0
45	Q2	519	0	533	4	0
46	Q3	1002	0	1075	16	0
47	R2	967	0	1040	17	0
48	R3	570	0	626	16	0
49	S2	1115	0	1205	18	0
50	S3	651	0	672	13	0
51	T2	1107	0	1182	22	0
52	T3	438	0	484	10	0
53	U2	1164	0	1213	17	0
54	U3	415	0	393	9	0
55	V2	945	0	1037	11	0
56	W2	732	0	769	10	0
57	X2	888	0	930	12	0
58	Y2	1053	0	1147	15	0
59	Z2	876	0	912	15	0
60	a2	906	0	997	20	0
61	b2	1001	0	1138	17	0
62	c2	832	0	917	9	0
63	d2	705	0	737	14	0
64	e2	568	0	635	17	0
65	f2	444	0	483	8	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
66	g2	429	0	465	3	0
67	h2	230	0	276	25	0
68	i2	842	0	912	13	0
69	j2	694	0	738	10	0
70	k2	1001	0	1066	28	0
71	o2	1694	0	1696	45	0
72	p2	1722	0	1794	47	0
73	q2	1711	0	1804	48	0
74	r2	2076	0	2177	52	0
75	s2	1457	0	1508	45	0
76	t2	1278	0	1207	26	0
77	u2	1633	0	1664	40	0
78	v2	800	0	818	25	0
79	w2	1220	0	1289	18	0
80	x2	1081	0	1134	42	0
81	y2	1128	0	1195	19	0
82	z2	560	0	614	13	0
83	m2	34939	0	17651	711	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	30	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	214961	0	158596	3072	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 8.

All (3072) 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)
83:m2:1350:G:H2'	83:m2:1351:G:C5'	1.31	1.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:m2:1351:G:C2	83:m2:1383:G:N2	1.76	1.51
83:m2:1350:G:C2'	83:m2:1351:G:H5"	1.29	1.38
2:A2:1376:A:N6	83:m2:1030:A:N1	1.70	1.35
83:m2:1351:G:N1	83:m2:1383:G:C2	1.97	1.32
2:A2:4663:G:OP1	77:u2:92:ARG:HG3	1.28	1.25
83:m2:1350:G:O2'	83:m2:1351:G:H5"	1.36	1.25
83:m2:1351:G:C2	83:m2:1383:G:C2	2.25	1.24
83:m2:1351:G:N1	83:m2:1383:G:N2	1.84	1.24
83:m2:1350:G:C2'	83:m2:1351:G:C5'	1.89	1.22
3:A3:12:ILE:HD13	16:E1:121:PRO:CG	1.71	1.19
2:A2:3415:A:C2	83:m2:1828:G:N2	2.12	1.18
67:h2:16:LYS:NZ	83:m2:1820:A:H4'	1.57	1.18
83:m2:630:A:N6	83:m2:1502:G:N3	1.93	1.16
83:m2:1350:G:C8	83:m2:1351:G:C8	2.36	1.12
83:m2:1350:G:H2'	83:m2:1351:G:H5'	1.18	1.10
3:A3:12:ILE:HD13	16:E1:121:PRO:HG3	1.32	1.09
83:m2:1353:G:C2	83:m2:1381:A:C6	2.42	1.07
24:G3:62:GLU:HG2	42:O3:121:ARG:NE	1.75	1.01
24:G3:62:GLU:HG2	42:O3:121:ARG:CZ	1.90	0.99
2:A2:2623:G:OP1	83:m2:370:U:O4	1.79	0.99
83:m2:1351:G:C6	83:m2:1383:G:N2	2.31	0.99
83:m2:1351:G:H5'	83:m2:1351:G:H8	1.30	0.96
83:m2:1353:G:N1	83:m2:1381:A:N6	2.14	0.96
83:m2:1353:G:C6	83:m2:1381:A:N6	2.35	0.95
67:h2:3:ALA:HB3	83:m2:1844:4AC:OP1	1.67	0.94
83:m2:1290:U:H3	83:m2:1313:C:H42	1.15	0.94
2:A2:3415:A:N3	83:m2:1828:G:N2	2.14	0.94
3:A3:12:ILE:HD13	16:E1:121:PRO:CB	1.96	0.93
67:h2:11:ARG:HH22	83:m2:1846:U:P	1.90	0.93
83:m2:1351:G:N3	83:m2:1383:G:N2	2.16	0.93
2:A2:1376:A:N6	83:m2:1030:A:C2	2.35	0.93
2:A2:3348:A:H62	2:A2:3479:G:H21	1.14	0.93
67:h2:16:LYS:HZ3	83:m2:1820:A:H4'	1.26	0.92
71:o2:109:THR:HG22	83:m2:1353:G:H4'	1.52	0.91
67:h2:16:LYS:HZ1	83:m2:1820:A:H4'	1.35	0.91
2:A2:1259:C:H42	2:A2:1901:A:H61	1.15	0.90
2:A2:1374:G:N2	2:A2:1379:C:O2	2.04	0.90
83:m2:70:G:H21	83:m2:79:A:H62	1.10	0.89
50:S3:36:LYS:HD3	50:S3:43:ILE:HG13	1.54	0.89
7:Bv:30:G:OP1	80:x2:136:THR:O	1.91	0.89
74:r2:137:PRO:HB2	74:r2:150:PRO:HD2	1.54	0.88

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:m2:1290:U:H3	83:m2:1313:C:N4	1.72	0.88
83:m2:1351:G:C4	83:m2:1383:G:N2	2.41	0.88
31:J3:114:LYS:HG3	83:m2:1360:U:OP1	1.74	0.88
71:o2:109:THR:HG21	83:m2:1353:G:O3'	1.73	0.87
83:m2:1351:G:N2	83:m2:1383:G:N3	2.23	0.86
3:A3:12:ILE:CD1	16:E1:121:PRO:HG3	2.04	0.86
83:m2:1350:G:H2'	83:m2:1351:G:H8	1.41	0.86
2:A2:740:A:H62	2:A2:828:G:H21	1.25	0.85
2:A2:4663:G:OP1	77:u2:92:ARG:CG	2.22	0.84
46:Q3:90:ARG:HG2	46:Q3:93:ARG:HH21	1.40	0.84
83:m2:1351:G:C8	83:m2:1351:G:H5'	2.12	0.84
51:T2:99:ASP:HB3	51:T2:102:ARG:HH21	1.42	0.83
3:A3:12:ILE:HD13	16:E1:121:PRO:HB3	1.59	0.83
2:A2:3885:A:H4'	68:i2:98:LYS:HE3	1.59	0.82
2:A2:3593:C:H1'	25:H1:125:SER:HB3	1.61	0.82
3:A3:19:ASN:OD1	16:E1:119:TYR:CD2	2.33	0.81
32:K2:39:THR:HG22	32:K2:41:SER:H	1.44	0.81
67:h2:15:ARG:HG2	67:h2:18:ARG:HH21	1.43	0.81
71:o2:112:ILE:HD13	83:m2:1352:U:O2'	1.81	0.81
8:Bx:44:U:N3	7:n2:34:G:O6	2.13	0.81
55:V2:35:VAL:HG23	55:V2:40:LEU:HD21	1.63	0.80
78:v2:27:VAL:HB	78:v2:43:LEU:HD13	1.64	0.80
2:A2:181:C:H2'	2:A2:182:G:H8	1.47	0.80
36:L3:31:LEU:HD12	36:L3:106:LEU:HD12	1.64	0.80
43:P2:13:LYS:HD2	43:P2:128:LEU:HD11	1.61	0.80
83:m2:1398:A:H2	83:m2:1451:G:H1	1.27	0.79
29:I3:244:ASN:HD21	29:I3:245:ARG:HH21	1.29	0.79
67:h2:2:ARG:NE	83:m2:1844:4AC:OP2	2.15	0.79
2:A2:3415:A:H2	83:m2:1828:G:N2	1.78	0.79
83:m2:1353:G:N2	83:m2:1381:A:C5	2.51	0.78
71:o2:109:THR:CG2	83:m2:1353:G:O3'	2.30	0.78
2:A2:3422:A:O2'	83:m2:1830:C:H4'	1.83	0.78
28:I2:61:ARG:HD3	28:I2:66:PRO:HB3	1.64	0.78
50:S3:20:LYS:HG3	50:S3:21:LYS:HG2	1.66	0.78
83:m2:1273:C:H42	83:m2:1513:U:H3	1.31	0.78
2:A2:1505:C:H5"	32:K2:53:MET:HE3	1.65	0.78
2:A2:2279:U:H3	2:A2:2284:A:H2	1.31	0.77
42:O3:34:PHE:HB3	42:O3:41:PHE:HB2	1.67	0.77
57:X2:90:ARG:HD3	57:X2:102:LEU:HD23	1.65	0.77
80:x2:134:GLY:HA2	80:x2:140:ARG:HB3	1.67	0.76
23:G2:83:LEU:HB3	23:G2:88:VAL:HB	1.65	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:2276:G:H4'	60:a2:26:PRO:HD2	1.68	0.76
83:m2:1351:G:N1	83:m2:1383:G:N1	2.33	0.76
83:m2:145:G:H1	83:m2:174:OMC:H5	1.30	0.76
83:m2:1351:G:N2	83:m2:1383:G:C2	2.53	0.75
2:A2:4573:C:H4'	22:G1:121:ARG:HH12	1.49	0.75
49:S2:50:ARG:HH12	49:S2:110:LYS:HD3	1.51	0.75
12:C3:62:ARG:HG2	12:C3:81:GLN:HG2	1.68	0.75
43:P2:73:ARG:NH2	83:m2:1726:A:OP1	2.19	0.75
75:s2:179:ASN:HD21	75:s2:186:ASN:HB2	1.50	0.75
83:m2:1571:A:H8	83:m2:1615:G:H21	1.34	0.75
83:m2:153:G:H22	83:m2:165:G:H1	1.34	0.75
2:A2:1011:U:H3'	2:A2:1012:C:H5"	1.69	0.75
73:q2:106:ARG:HG3	73:q2:175:VAL:HG22	1.68	0.75
2:A2:2106:OMC:HM22	20:F2:95:MET:HG3	1.68	0.75
31:J3:136:HIS:HB3	31:J3:162:ILE:HD11	1.69	0.74
6:B3:129:ARG:HH12	6:B3:133:ARG:HB2	1.51	0.74
83:m2:70:G:N2	83:m2:79:A:H62	1.83	0.74
83:m2:1350:G:O2'	83:m2:1351:G:C5'	2.17	0.74
83:m2:1353:G:C2	83:m2:1381:A:C5	2.75	0.74
76:t2:43:LEU:HB3	76:t2:72:PHE:HE1	1.50	0.74
83:m2:1131:G:H3'	83:m2:1132:G:H21	1.53	0.74
51:T2:50:PRO:HD3	51:T2:68:ILE:HG12	1.69	0.74
17:E2:57:VAL:HG22	17:E2:73:VAL:HG22	1.70	0.74
82:z2:3:ARG:HH22	83:m2:1479:U:H5'	1.51	0.74
2:A2:3336:U:H5"	14:D2:54:ARG:HH21	1.51	0.74
7:Bz:69:G:H2'	7:Bz:70:G:H8	1.52	0.74
2:A2:3626:G:H4'	34:L1:168:ALA:HB2	1.70	0.73
2:A2:4555:A:H4'	17:E2:95:THR:HG22	1.69	0.73
27:H3:25:SER:HB2	78:v2:65:ARG:HD3	1.70	0.73
12:C3:61:LEU:HD22	27:H3:34:TYR:HE2	1.52	0.73
73:q2:135:GLU:HG2	73:q2:153:VAL:HG23	1.68	0.73
83:m2:602:G:H2'	83:m2:603:OMG:H8	1.53	0.73
83:m2:853:C:H5"	83:m2:854:G:H5'	1.71	0.73
7:n2:51:U:H3	7:n2:63:G:H1	1.35	0.73
83:m2:983:A:H2'	83:m2:984:G:C8	2.24	0.73
28:I2:125:LYS:HG3	28:I2:129:LEU:HD12	1.70	0.72
83:m2:1351:G:C5	83:m2:1383:G:N2	2.52	0.72
74:r2:20:LEU:HD21	74:r2:46:ILE:HD12	1.71	0.72
83:m2:930:G:H2'	83:m2:931:G:C8	2.25	0.72
12:C3:80:PHE:HB3	27:H3:52:PHE:HB3	1.69	0.72
29:I3:286:CYS:HA	29:I3:302:TYR:HA	1.69	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:m2:1398:A:N1	83:m2:1451:G:O6	2.23	0.72
2:A2:2366:A:H5'	2:A2:2443:G:H4'	1.70	0.71
2:A2:2302:G:H1	2:A2:2527:C:H5	1.38	0.71
2:A2:3625:G:H2'	2:A2:3626:G:C8	2.26	0.71
2:A2:1742:G:H22	2:A2:4086:C:H5"	1.55	0.71
24:G3:7:GLN:HG2	24:G3:61:SER:H	1.54	0.71
80:x2:37:TYR:HB3	80:x2:41:GLN:HB2	1.72	0.71
2:A2:2117:U:H2'	2:A2:2118:A2M:H8	1.73	0.71
83:m2:1351:G:C6	83:m2:1383:G:C2	2.78	0.71
75:s2:76:MET:HE2	75:s2:173:LEU:HD22	1.72	0.71
2:A2:4707:A:H4'	2:A2:4708:G:H5"	1.72	0.71
39:N2:48:VAL:HG21	39:N2:94:GLU:HG2	1.73	0.71
2:A2:1020:C:H2'	2:A2:1021:G:H8	1.55	0.71
2:A2:4391:C:H3'	2:A2:4393:A:H5"	1.73	0.71
3:A3:12:ILE:CD1	16:E1:121:PRO:CG	2.60	0.71
7:Bv:34:G:H1	8:Bx:48:U:H3	1.39	0.71
83:m2:1658:G:H1	83:m2:1670:U:H3	1.37	0.70
40:N3:19:ARG:HH22	50:S3:83:GLN:HG2	1.56	0.70
67:h2:16:LYS:HZ3	83:m2:1820:A:C4'	2.02	0.70
27:H3:8:TRP:HD1	27:H3:12:ARG:HH21	1.39	0.70
2:A2:1354:U:H3	2:A2:1431:G:H1	1.37	0.70
22:G1:104:MET:HE2	28:I2:199:ASN:HB3	1.72	0.70
7:n2:20:U:H1'	7:n2:21:A:H5"	1.74	0.70
2:A2:1314:C:H6	32:K2:68:ARG:HH21	1.39	0.70
31:J3:194:ARG:HD3	31:J3:196:ILE:HD11	1.72	0.70
2:A2:154:G:H4'	61:b2:105:LYS:HD2	1.73	0.70
2:A2:1158:C:H1'	19:F1:10:LEU:HD11	1.73	0.70
21:F3:22:ARG:HH21	42:O3:142:ARG:HB3	1.57	0.69
36:L3:162:ARG:HH21	46:Q3:30:PRO:HB3	1.57	0.69
77:u2:130:THR:HG23	77:u2:132:GLU:H	1.57	0.69
83:m2:510:A:H3'	83:m2:511:OMG:H8	1.55	0.69
2:A2:1068:C:H42	2:A2:1082:A:H61	1.40	0.69
4:B1:105:GLU:HB2	4:B1:109:GLU:HB2	1.74	0.69
31:J3:70:VAL:HG21	31:J3:93:ILE:HG23	1.72	0.69
83:m2:225:C:H2'	83:m2:226:A:H8	1.57	0.69
14:D2:102:LEU:HB2	14:D2:107:MET:HE3	1.75	0.69
29:I3:5:MET:HB3	29:I3:270:LEU:HD21	1.75	0.69
7:Bv:30:G:OP1	80:x2:136:THR:C	2.36	0.69
46:Q3:112:ASN:HA	46:Q3:115:LYS:HD3	1.73	0.69
56:W2:38:ILE:HG21	56:W2:63:TYR:HB3	1.74	0.69
72:p2:38:MET:HE2	72:p2:182:LYS:HA	1.75	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
79:w2:22:ARG:HG2	79:w2:27:GLU:HA	1.74	0.69
14:D2:54:ARG:HH11	14:D2:58:LEU:HD21	1.57	0.69
83:m2:529:C:H2'	83:m2:530:A:H8	1.57	0.69
12:C3:43:ALA:HB1	12:C3:50:VAL:HG21	1.75	0.69
81:y2:93:VAL:HG13	81:y2:105:LYS:HE3	1.75	0.68
31:J3:191:VAL:HG11	31:J3:236:PHE:HA	1.76	0.68
2:A2:3734:G:H1	14:D2:68:ARG:NH2	1.90	0.68
2:A2:3411:G:H1	2:A2:3424:U:H3	1.41	0.68
55:V2:32:LEU:HD13	55:V2:43:MET:HE1	1.75	0.68
2:A2:4543:G:H2'	2:A2:4544:G:C8	2.28	0.68
80:x2:83:MET:HB3	80:x2:116:LEU:HD13	1.76	0.68
83:m2:1350:G:C8	83:m2:1351:G:N7	2.61	0.68
83:m2:1351:G:C5'	83:m2:1351:G:H8	2.06	0.68
71:o2:41:ARG:HH21	71:o2:45:GLY:HA2	1.59	0.68
77:u2:98:LYS:HB3	83:m2:379:G:H5'	1.75	0.68
2:A2:1894:G:H4'	2:A2:1895:G:H4'	1.76	0.68
83:m2:65:C:H5'	83:m2:78:C:H41	1.58	0.68
3:A3:86:ARG:HD2	3:A3:106:LYS:HD3	1.75	0.68
29:I3:236:ILE:HG12	29:I3:252:THR:HG22	1.75	0.68
58:Y2:78:LEU:HB3	70:k2:20:ARG:HD3	1.76	0.68
72:p2:189:ILE:HG13	72:p2:190:PRO:HD3	1.75	0.68
83:m2:5:U:H2'	83:m2:6:G:H8	1.59	0.68
40:N3:89:TYR:HE1	40:N3:151:ALA:H	1.40	0.67
83:m2:973:G:HO2'	83:m2:974:A:H8	1.43	0.67
29:I3:40:ILE:HD11	29:I3:66:VAL:HG21	1.76	0.67
81:y2:93:VAL:HG21	81:y2:120:LEU:HD11	1.76	0.67
82:z2:26:ASN:HA	82:z2:58:MET:HE2	1.75	0.67
67:h2:16:LYS:NZ	83:m2:1820:A:C4'	2.48	0.67
83:m2:1230:A:H2'	83:m2:1231:G:C8	2.29	0.67
2:A2:746:G:HO2'	2:A2:747:G:H8	1.43	0.67
62:c2:67:LYS:HG3	62:c2:71:LYS:NZ	2.10	0.67
83:m2:1116:U:H3	83:m2:1121:A:H61	1.43	0.67
60:a2:5:LEU:HD21	60:a2:30:ILE:HG22	1.77	0.67
2:A2:928:G:H1	2:A2:1064:G:H22	1.41	0.67
73:q2:70:THR:HG22	73:q2:86:LEU:HD13	1.77	0.67
71:o2:77:ILE:HG21	71:o2:133:PRO:HG3	1.78	0.66
2:A2:1744:A:H2'	2:A2:1745:A:C8	2.30	0.66
31:J3:114:LYS:CG	83:m2:1360:U:H5'	2.25	0.66
33:K3:70:HIS:HB3	33:K3:101:ILE:HB	1.77	0.66
31:J3:113:GLN:HG2	31:J3:122:THR:HG22	1.78	0.66
2:A2:1604:A:H5"	2:A2:1605:G:H5'	1.78	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A3:117:ILE:HD11	80:x2:111:MET:HE2	1.78	0.66
72:p2:144:LYS:HD2	72:p2:146:ARG:HH12	1.61	0.66
83:m2:1679:U:H2'	83:m2:1680:A2M:H8	1.76	0.66
62:c2:33:LEU:HD21	62:c2:38:LYS:HD2	1.78	0.66
22:G1:40:GLY:HA3	22:G1:45:VAL:HB	1.76	0.66
2:A2:181:C:H2'	2:A2:182:G:C8	2.29	0.66
74:r2:72:ILE:HG12	74:r2:90:ILE:HG12	1.76	0.66
79:w2:27:GLU:HG2	79:w2:29:GLY:H	1.60	0.66
80:x2:61:ARG:HG3	80:x2:89:MET:HE1	1.76	0.66
32:K2:53:MET:HE2	32:K2:57:ASN:HB3	1.77	0.66
71:o2:122:LEU:HD23	71:o2:144:THR:HG22	1.77	0.66
83:m2:876:G:H2'	83:m2:877:A:H8	1.59	0.66
19:F1:64:VAL:HA	19:F1:67:HIS:HD2	1.59	0.66
29:I3:61:GLY:HA3	29:I3:90:TRP:HH2	1.60	0.66
83:m2:641:C:H2'	83:m2:642:A:H8	1.60	0.66
83:m2:865:U:H2'	83:m2:866:A:H8	1.60	0.66
83:m2:950:C:H2'	83:m2:951:G:H8	1.59	0.66
3:A3:67:VAL:O	3:A3:71:MET:HG3	1.97	0.65
30:J2:131:ARG:HG3	30:J2:137:ASN:HD22	1.61	0.65
83:m2:1353:G:N1	83:m2:1381:A:C6	2.60	0.65
32:K2:178:ARG:HH21	53:U2:42:ARG:HH21	1.43	0.65
71:o2:102:ARG:CZ	83:m2:1379:U:C5	2.79	0.65
15:D3:60:ARG:HG2	71:o2:156:TYR:HD1	1.61	0.65
27:H3:8:TRP:CD1	27:H3:12:ARG:HH21	2.14	0.65
29:I3:63:SER:HB3	29:I3:84:ASP:HB3	1.77	0.65
83:m2:225:C:H2'	83:m2:226:A:C8	2.32	0.65
83:m2:1350:G:H2'	83:m2:1351:G:C8	2.30	0.65
83:m2:835:C:C4	83:m2:836:C:N4	2.64	0.65
2:A2:265:U:H5"	2:A2:266:C:H5'	1.77	0.65
2:A2:3621:A:H2'	2:A2:3698:A:H2'	1.78	0.65
31:J3:166:ARG:HB3	31:J3:247:THR:HB	1.77	0.65
25:H1:36:LEU:HD21	25:H1:109:HIS:CG	2.32	0.65
77:u2:48:VAL:HG11	77:u2:54:LYS:HE2	1.78	0.65
83:m2:1350:G:H2'	83:m2:1351:G:H5"	0.96	0.65
2:A2:74:G:H5'	19:F1:59:VAL:HG13	1.77	0.65
17:E2:257:TRP:HD1	17:E2:258:HIS:CD2	2.14	0.65
72:p2:49:VAL:HG22	72:p2:50:THR:H	1.62	0.65
74:r2:45:ILE:HA	74:r2:61:VAL:HG11	1.79	0.65
67:h2:1:MET:HG3	83:m2:1854:C:OP2	1.97	0.65
83:m2:118:C:H1'	83:m2:447:A:C5	2.31	0.65
2:A2:3775:C:H5'	4:B1:45:ILE:HD12	1.78	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:U3:121:CYS:HA	54:U3:132:MET:HE3	1.79	0.65
7:Bv:39:U:O2'	7:n2:35:A:O2'	2.14	0.65
2:A2:4663:G:P	77:u2:92:ARG:HG3	2.34	0.64
32:K2:18:PRO:HG3	32:K2:29:VAL:HG21	1.77	0.64
83:m2:1220:C:H1'	83:m2:1685:C:H42	1.59	0.64
2:A2:1672:C:H2'	2:A2:1673:A2M:H8	1.79	0.64
44:P3:69:LEU:HD21	44:P3:72:CYS:HB3	1.78	0.64
18:E3:52:LEU:HD11	18:E3:73:GLN:HB2	1.78	0.64
24:G3:55:VAL:HG13	75:s2:34:SER:HA	1.80	0.64
36:L3:109:ARG:HH22	36:L3:127:ARG:HH12	1.45	0.64
73:q2:63:GLY:O	73:q2:67:ARG:HG2	1.97	0.64
2:A2:229:G:H5"	49:S2:11:ARG:HG3	1.80	0.64
62:c2:23:LYS:HD2	62:c2:24:PRO:HD2	1.78	0.64
2:A2:453:G:H1	2:A2:1107:G:N2	1.96	0.64
17:E2:92:TYR:HB2	17:E2:159:VAL:HB	1.79	0.64
83:m2:1100:C:H2'	83:m2:1101:G:C8	2.33	0.64
2:A2:927:C:H2'	2:A2:928:G:C8	2.33	0.64
2:A2:938:U:H3	2:A2:1049:C:H42	1.46	0.64
42:O3:134:PRO:HB3	83:m2:946:A:H5"	1.80	0.64
73:q2:163:PRO:O	73:q2:167:TYR:HB2	1.98	0.64
2:A2:1894:G:H2'	2:A2:2017:G:C6	2.33	0.64
2:A2:3415:A:H2	83:m2:1828:G:H22	1.41	0.64
29:I3:258:ILE:HB	29:I3:268:ASP:HB3	1.78	0.64
2:A2:262:G:H2'	2:A2:263:G:H8	1.63	0.63
2:A2:2312:G:H1	2:A2:2325:U:H3	1.44	0.63
29:I3:176:VAL:HB	29:I3:186:THR:HG22	1.79	0.63
83:m2:102:A:H4'	83:m2:104:A:C8	2.33	0.63
83:m2:1223:G:H2'	83:m2:1224:G:H8	1.63	0.63
13:D1:188:LYS:HB3	13:D1:212:LEU:HD21	1.80	0.63
29:I3:32:LEU:HD22	29:I3:42:MET:HE2	1.80	0.63
43:P2:39:ILE:HG12	43:P2:61:VAL:HG11	1.79	0.63
2:A2:768:G:H2'	2:A2:769:G:C8	2.33	0.63
83:m2:1205:G:H2'	83:m2:1206:A:C8	2.34	0.63
12:C3:54:VAL:HB	12:C3:88:LEU:HB2	1.80	0.63
83:m2:5:U:H2'	83:m2:6:G:C8	2.33	0.63
29:I3:57:ARG:HD3	29:I3:94:THR:HA	1.80	0.63
29:I3:85:GLY:HA2	29:I3:107:ASP:HA	1.80	0.63
34:L1:52:THR:HG22	34:L1:156:LYS:HG3	1.80	0.63
2:A2:262:G:H2'	2:A2:263:G:C8	2.34	0.63
83:m2:1535:A:C8	83:m2:1606:G:H1'	2.34	0.63
7:n2:70:G:H2'	7:n2:71:G:C8	2.34	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:3312:A:H2'	2:A2:3313:U:H6	1.64	0.63
20:F2:134:PRO:HA	20:F2:150:LEU:HD22	1.80	0.63
83:m2:1130:C:H2'	83:m2:1131:G:H8	1.62	0.63
49:S2:30:MET:HB3	49:S2:101:PRO:HG3	1.81	0.62
74:r2:179:ASN:HA	74:r2:231:GLY:HA2	1.79	0.62
83:m2:971:U:H4'	83:m2:972:G:C8	2.34	0.62
83:m2:1191:A:H2'	83:m2:1192:A:H8	1.64	0.62
2:A2:1116:U:H4'	58:Y2:18:LYS:HA	1.81	0.62
17:E2:206:PRO:HG2	17:E2:209:GLN:HG3	1.79	0.62
19:F1:59:VAL:HG21	19:F1:73:GLY:HA3	1.81	0.62
81:y2:139:ALA:HB2	83:m2:1652:A:H5"	1.80	0.62
2:A2:467:U:H2'	2:A2:468:U:C6	2.35	0.62
2:A2:3566:C:H2'	2:A2:3567:C:C6	2.34	0.62
24:G3:62:GLU:HG2	42:O3:121:ARG:NH2	2.15	0.62
51:T2:124:THR:HG23	51:T2:126:LYS:H	1.64	0.62
1:A1:127:VAL:HG13	1:A1:158:VAL:HG12	1.81	0.62
2:A2:833:U:H5'	22:G1:44:ARG:HH21	1.64	0.62
2:A2:3348:A:H62	2:A2:3479:G:N2	1.94	0.62
30:J2:94:MET:HE2	30:J2:148:MET:HE3	1.81	0.62
33:K3:32:MET:HB2	33:K3:100:CYS:HB2	1.82	0.62
43:P2:16:ILE:HD11	43:P2:124:GLU:HG2	1.81	0.62
83:m2:302:U:H2'	83:m2:303:A:C8	2.35	0.62
83:m2:642:A:H2'	83:m2:643:A:C8	2.34	0.62
83:m2:1459:U:H2'	83:m2:1460:G:H8	1.63	0.62
2:A2:4506:G:H2'	2:A2:4507:G:H8	1.65	0.62
2:A2:4648:U:H4'	17:E2:375:GLY:HA3	1.81	0.62
6:B3:116:ASP:HB3	6:B3:122:LYS:HG2	1.82	0.62
6:B3:6:VAL:HG12	6:B3:135:ALA:HB2	1.82	0.62
13:D1:36:LEU:HD22	13:D1:69:ARG:HH11	1.65	0.62
16:E1:48:PRO:HB3	16:E1:72:CYS:HB2	1.82	0.62
25:H1:10:LEU:HG	25:H1:19:MET:HE3	1.82	0.62
29:I3:202:PRO:HG3	29:I3:243:PRO:HA	1.82	0.62
54:U3:140:TYR:HA	54:U3:147:THR:HG22	1.82	0.62
75:s2:23:TRP:HH2	75:s2:98:GLU:HG2	1.62	0.62
83:m2:302:U:H2'	83:m2:303:A:H8	1.64	0.62
2:A2:3713:U:H2'	2:A2:3715:G:H8	1.62	0.62
29:I3:15:ASN:HD21	83:m2:1474:C:H4'	1.65	0.62
1:A1:57:LYS:HZ2	1:A1:61:LEU:HD11	1.64	0.62
74:r2:198:ARG:HG3	74:r2:208:VAL:HG22	1.80	0.62
2:A2:1626:G:H4'	23:G2:44:TYR:CD2	2.34	0.62
81:y2:34:VAL:HG22	81:y2:70:VAL:HB	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:4394:G:H2'	2:A2:4395:G:O4'	1.99	0.61
7:Bv:37:A:H3'	7:Bv:38:A:H8	1.65	0.61
83:m2:1351:G:C6	83:m2:1383:G:N1	2.68	0.61
6:B3:76:THR:HG21	6:B3:97:LYS:HG2	1.81	0.61
7:n2:69:G:H2'	7:n2:70:G:H8	1.64	0.61
80:x2:15:PHE:HB3	80:x2:22:LEU:HD21	1.81	0.61
33:K3:181:THR:HG22	33:K3:183:ARG:H	1.65	0.61
2:A2:3336:U:H5"	14:D2:54:ARG:NH2	2.14	0.61
16:E1:151:ILE:HD11	16:E1:156:ARG:HG2	1.82	0.61
17:E2:217:ILE:HD11	17:E2:333:LEU:HD21	1.81	0.61
29:I3:173:LEU:HA	29:I3:188:HIS:O	2.00	0.61
48:R3:66:LYS:HD3	75:s2:102:LEU:HB3	1.81	0.61
77:u2:141:ARG:HB3	77:u2:144:LYS:HB2	1.82	0.61
83:m2:70:G:H21	83:m2:79:A:N6	1.91	0.61
55:V2:94:LEU:HD23	55:V2:97:ILE:HD12	1.82	0.61
2:A2:2132:C:O2	2:A2:2136:A:N6	2.33	0.61
46:Q3:52:PRO:HA	46:Q3:55:ILE:HD12	1.82	0.61
12:C3:50:VAL:HG22	12:C3:91:LEU:HG	1.82	0.61
21:F3:5:ARG:HH21	83:m2:1866:U:H3'	1.63	0.61
28:I2:163:LYS:HA	28:I2:166:MET:HE3	1.81	0.61
47:R2:89:LYS:HB3	47:R2:95:THR:OG1	2.00	0.61
67:h2:9:ARG:NH2	83:m2:1853:A:OP1	2.32	0.61
83:m2:1032:A:H2'	83:m2:1033:A2M:H8	1.82	0.61
83:m2:1538:G:H2'	83:m2:1539:A:C8	2.36	0.61
2:A2:2166:C:H2'	2:A2:2167:A:C8	2.36	0.61
33:K3:53:SER:HB3	83:m2:165:G:H4'	1.81	0.61
34:L1:170:GLY:HA2	34:L1:179:LEU:HD13	1.83	0.61
83:m2:959:A:H2'	83:m2:960:G:H8	1.65	0.61
83:m2:1350:G:N7	83:m2:1351:G:C5	2.69	0.61
2:A2:740:A:H62	2:A2:828:G:N2	1.95	0.61
2:A2:3586:U:H3	2:A2:3832:G:H1	1.48	0.61
2:A2:4395:G:H2'	2:A2:4396:A:C8	2.36	0.61
83:m2:1515:C:H2'	83:m2:1516:G:H8	1.66	0.61
2:A2:3415:A:N7	2:A2:3419:A:N1	2.49	0.61
2:A2:3513:G:H5"	30:J2:86:LYS:HB2	1.81	0.61
2:A2:4603:C:H2'	2:A2:4604:C:C6	2.36	0.61
29:I3:190:GLY:HA3	29:I3:217:MET:HE1	1.83	0.61
63:d2:21:ARG:HB2	63:d2:39:TYR:HD1	1.66	0.61
2:A2:3379:A:H2'	2:A2:3380:A2M:H8	1.83	0.60
13:D1:184:MET:HE2	13:D1:190:LEU:HG	1.82	0.60
72:p2:37:ALA:H	72:p2:232:HIS:HA	1.66	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A1:51:LYS:HE3	2:A2:1895:G:H1	1.66	0.60
3:A3:19:ASN:ND2	16:E1:119:TYR:CZ	2.69	0.60
7:Bv:51:U:H3	7:Bv:63:G:H22	1.47	0.60
18:E3:9:THR:HG22	83:m2:683:U:H4'	1.82	0.60
32:K2:59:PRO:HG3	32:K2:143:ARG:HA	1.82	0.60
34:L1:98:LYS:HA	34:L1:101:LYS:HE3	1.82	0.60
43:P2:35:LYS:HD2	43:P2:67:LYS:HG2	1.82	0.60
6:B3:129:ARG:NH1	6:B3:133:ARG:HB2	2.15	0.60
14:D2:54:ARG:HG2	14:D2:56:ALA:H	1.66	0.60
33:K3:195:LYS:HA	33:K3:198:ARG:HE	1.65	0.60
2:A2:492:G:H22	2:A2:670:G:H22	1.50	0.60
2:A2:1417:G:H2'	2:A2:1418:G:C8	2.36	0.60
14:D2:36:GLU:HG3	14:D2:91:GLY:HA2	1.83	0.60
57:X2:64:ILE:HG23	57:X2:68:LEU:HD23	1.82	0.60
83:m2:1607:G:H1'	83:m2:1636:A:H61	1.67	0.60
2:A2:1146:C:H2'	2:A2:1147:A:H8	1.63	0.60
31:J3:166:ARG:HH22	31:J3:252:THR:HG21	1.65	0.60
2:A2:3267:A:O2'	77:u2:92:ARG:CZ	2.49	0.60
6:B3:39:LEU:HD21	6:B3:56:ARG:HH21	1.66	0.60
20:F2:8:ILE:HD11	20:F2:257:PHE:CZ	2.35	0.60
34:L1:31:THR:HG21	34:L1:60:ARG:HD2	1.84	0.60
70:k2:47:LYS:HB2	70:k2:102:TYR:CZ	2.37	0.60
71:o2:198:MET:HG2	71:o2:200:ASP:H	1.66	0.60
83:m2:1009:C:H2'	83:m2:1010:A:C8	2.36	0.60
83:m2:1538:G:H2'	83:m2:1539:A:H8	1.66	0.60
2:A2:300:A:H2'	2:A2:301:G:H8	1.65	0.60
17:E2:50:LYS:HB2	17:E2:345:LEU:HD11	1.83	0.60
52:T3:48:THR:HG22	52:T3:51:LYS:HB2	1.84	0.60
83:m2:1856:U:H2'	83:m2:1857:G:H8	1.64	0.60
2:A2:1007:A:H2	2:A2:1017:G:H1	1.50	0.60
2:A2:1214:G:H2'	2:A2:1215:G:H8	1.66	0.60
14:D2:80:GLU:HB2	14:D2:170:ALA:HA	1.84	0.60
77:u2:141:ARG:HD2	77:u2:144:LYS:HD2	1.83	0.60
83:m2:1847:A:H2'	83:m2:1848:G:H8	1.66	0.60
2:A2:1668:G:H1	2:A2:4092:G:H21	1.49	0.60
2:A2:3517:A:H2'	2:A2:3518:A:H8	1.67	0.60
18:E3:46:HIS:CD2	18:E3:103:ALA:HB2	2.37	0.60
26:H2:186:LEU:HD12	26:H2:190:ARG:HA	1.83	0.60
2:A2:1377:A:OP1	40:N3:140:LYS:HD3	2.02	0.60
75:s2:17:ILE:HA	75:s2:48:TYR:HE1	1.67	0.60
2:A2:260:C:H2'	2:A2:261:G:H8	1.66	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:3325:G:H21	2:A2:3328:G:N2	2.00	0.59
2:A2:3602:G:H1	2:A2:3717:U:H3	1.50	0.59
3:A3:104:ASP:O	3:A3:108:ARG:HG3	2.03	0.59
60:a2:42:PRO:HB2	60:a2:53:LEU:HD12	1.83	0.59
1:A1:51:LYS:HE3	2:A2:1895:G:N1	2.18	0.59
38:M3:35:ILE:HD11	83:m2:1287:G:H5"	1.83	0.59
73:q2:50:ILE:HD11	73:q2:86:LEU:HD23	1.84	0.59
2:A2:1390:G:O2'	2:A2:1425:G:H4'	2.02	0.59
51:T2:79:HIS:HD2	60:a2:88:ARG:HH22	1.51	0.59
83:m2:181:A:C8	83:m2:182:C:H2'	2.37	0.59
2:A2:492:G:H22	2:A2:670:G:H1	1.50	0.59
19:F1:48:PRO:HG2	61:b2:118:LYS:HD2	1.83	0.59
37:M2:69:GLU:HG3	37:M2:71:SER:H	1.67	0.59
39:N2:64:VAL:HG22	39:N2:72:VAL:HG11	1.84	0.59
2:A2:4515:G:C6	22:G1:56:GLN:HG2	2.38	0.59
25:H1:185:GLY:HA3	25:H1:194:ARG:HH12	1.67	0.59
48:R3:98:LYS:HB3	48:R3:112:ASN:HB3	1.84	0.59
83:m2:1704:G:H2'	83:m2:1705:OMC:O4'	2.03	0.59
83:m2:1707:C:H2'	83:m2:1708:G:C8	2.38	0.59
2:A2:93:G:H2'	2:A2:94:A:C8	2.38	0.59
2:A2:2407:G:H22	69:j2:61:MET:HG2	1.68	0.59
2:A2:718:A:H2'	2:A2:719:C:C6	2.36	0.59
72:p2:163:GLN:HB3	72:p2:204:ILE:HD13	1.84	0.59
76:t2:146:VAL:HG22	76:t2:152:ARG:HG2	1.85	0.59
82:z2:29:HIS:HA	82:z2:32:LYS:HE2	1.85	0.59
1:A1:57:LYS:NZ	1:A1:61:LEU:HD11	2.18	0.59
32:K2:53:MET:HE1	32:K2:143:ARG:HH12	1.66	0.59
74:r2:182:MET:HE3	74:r2:192:ILE:HD11	1.84	0.59
80:x2:92:SER:HB2	80:x2:107:ILE:HD12	1.85	0.59
83:m2:180:G:H3'	83:m2:181:A:C8	2.37	0.59
2:A2:4526:U:H4'	2:A2:4527:U:H5	1.67	0.59
81:y2:15:ARG:HG2	81:y2:126:ARG:HH22	1.68	0.59
83:m2:1672:C:H2'	83:m2:1673:G:C8	2.38	0.59
2:A2:1088:A:H2'	2:A2:1089:G:H8	1.67	0.59
2:A2:2469:G:H2'	2:A2:2470:G:H8	1.68	0.59
11:C2:37:A:OP2	61:b2:89:ARG:HD2	2.03	0.59
77:u2:8:TRP:HA	77:u2:18:ARG:HD2	1.84	0.59
83:m2:1590:A:H2'	83:m2:1591:A:C8	2.38	0.59
2:A2:4400:U:H5"	59:Z2:54:LYS:HE3	1.85	0.58
30:J2:112:LEU:HD13	30:J2:150:LEU:HD23	1.84	0.58
83:m2:998:A:H2'	83:m2:999:A:C8	2.38	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:m2:1350:G:C2’	83:m2:1351:G:H5’	1.87	0.58
1:A1:259:GLU:HG2	37:M2:38:VAL:HG22	1.85	0.58
8:Bx:50:U:H1’	83:m2:1827:A:C8	2.38	0.58
7:Bz:18:G:H1	7:Bz:55:U:H1’	1.68	0.58
15:D3:11:LEU:HD23	15:D3:12:TYR:HD1	1.68	0.58
26:H2:157:LEU:HD13	26:H2:201:VAL:HG21	1.85	0.58
26:H2:160:LEU:HD11	26:H2:202:ILE:HG13	1.84	0.58
29:I3:44:LYS:HE2	29:I3:54:ILE:HD11	1.85	0.58
74:r2:51:ARG:HH21	74:r2:109:PHE:HB2	1.67	0.58
2:A2:2081:G:H5”	58:Y2:127:ALA:HB2	1.84	0.58
2:A2:3312:A:H2’	2:A2:3313:U:C6	2.37	0.58
5:B2:110:G:H2’	5:B2:111:C:C6	2.38	0.58
46:Q3:19:GLN:HE21	74:r2:94:LYS:NZ	2.02	0.58
56:W2:34:THR:HG21	56:W2:93:THR:HG22	1.86	0.58
62:c2:63:VAL:HG23	62:c2:65:LYS:HG3	1.84	0.58
3:A3:12:ILE:HB	16:E1:121:PRO:HG3	1.84	0.58
10:C1:113:GLU:HG2	10:C1:125:ARG:HG2	1.84	0.58
17:E2:332:MET:HE1	17:E2:368:ILE:HD13	1.84	0.58
21:F3:85[A]:ARG:HD2	83:m2:1211:A:O2’	2.04	0.58
21:F3:85[B]:ARG:HD2	83:m2:1211:A:O2’	2.04	0.58
83:m2:1350:G:N7	83:m2:1351:G:N7	2.52	0.58
83:m2:1847:A:H2’	83:m2:1848:G:C8	2.38	0.58
2:A2:1334:C:H5’	20:F2:95:MET:HE1	1.86	0.58
2:A2:2166:C:H2’	2:A2:2167:A:H8	1.68	0.58
2:A2:3923:A:H62	2:A2:3983:G:N2	2.02	0.58
72:p2:103:MET:HB3	72:p2:215:VAL:HG12	1.85	0.58
76:t2:43:LEU:HB3	76:t2:72:PHE:CE1	2.36	0.58
2:A2:3579:A:H2’	2:A2:3580:C:C6	2.38	0.58
7:Bz:63:G:H2’	7:Bz:64:A:C8	2.38	0.58
18:E3:36:LEU:HA	18:E3:39:ASN:HD21	1.67	0.58
31:J3:114:LYS:HG2	83:m2:1360:U:H5’	1.85	0.58
17:E2:348:ARG:HH12	17:E2:351:LEU:HG	1.67	0.58
28:I2:34:VAL:HG22	28:I2:103:LYS:HB3	1.86	0.58
71:o2:111:GLN:HG2	71:o2:112:ILE:HD12	1.85	0.58
83:m2:529:C:H2’	83:m2:530:A:C8	2.36	0.58
83:m2:984:G:H2’	83:m2:985:A:H8	1.69	0.58
8:Bx:50:U:H1’	83:m2:1827:A:H8	1.68	0.58
20:F2:7:LEU:HG	20:F2:21:ASN:HB3	1.85	0.58
29:I3:174:VAL:HB	29:I3:188:HIS:HB2	1.85	0.58
33:K3:2:LYS:HD3	33:K3:15:LEU:HD21	1.85	0.58
68:i2:22:LYS:HG3	68:i2:73:VAL:HG12	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
75:s2:68:ILE:HD12	75:s2:71:ARG:HD3	1.86	0.58
1:A1:108:GLU:HG3	39:N2:135:PRO:HB3	1.86	0.58
2:A2:1360:A:C2	2:A2:2568:A:H8	2.22	0.58
35:L2:72:LYS:HB3	35:L2:74:ARG:NH1	2.19	0.58
83:m2:27:A2M:HM'1	83:m2:485:C:H1'	1.86	0.58
83:m2:982:A:H2'	83:m2:983:A:C8	2.38	0.58
2:A2:433:A:C2	2:A2:3523:A:H4'	2.38	0.57
2:A2:3713:U:H2'	2:A2:3715:G:C8	2.39	0.57
3:A3:14:ARG:CB	16:E1:119:TYR:HB3	2.34	0.57
20:F2:144:ILE:O	20:F2:144:ILE:HG13	2.03	0.57
29:I3:83:TRP:HA	29:I3:107:ASP:HB2	1.86	0.57
36:L3:149:VAL:HG11	36:L3:157:ILE:HD11	1.86	0.57
8:Bx:44:U:C2	7:n2:34:G:O6	2.56	0.57
70:k2:63:VAL:HG22	70:k2:79:ARG:HG2	1.84	0.57
77:u2:3:ILE:H	77:u2:3:ILE:HD12	1.69	0.57
83:m2:909:G:H2'	83:m2:910:A:C8	2.39	0.57
83:m2:1846:U:H2'	83:m2:1847:A:C8	2.39	0.57
3:A3:97:GLN:HG3	3:A3:98:VAL:H	1.69	0.57
4:B1:207:VAL:HG21	4:B1:215:LEU:HD22	1.87	0.57
7:Bv:30:G:P	80:x2:136:THR:O	2.62	0.57
17:E2:317:LEU:HB2	17:E2:372:SER:HB2	1.86	0.57
40:N3:55:ARG:HD3	83:m2:1019:U:H5'	1.87	0.57
47:R2:87:MET:HE2	47:R2:156:ILE:HD12	1.84	0.57
71:o2:24:HIS:HB3	71:o2:51:LEU:HD11	1.86	0.57
42:O3:103:ASN:HD21	42:O3:142:ARG:HA	1.69	0.57
2:A2:4263:A:H2'	2:A2:4264:C:H6	1.70	0.57
71:o2:112:ILE:CD1	83:m2:1352:U:O2'	2.52	0.57
2:A2:424:U:H2'	2:A2:425:U:C6	2.39	0.57
2:A2:4500:G:H2'	2:A2:4501:G:H8	1.70	0.57
3:A3:5:ILE:HD12	3:A3:6:PRO:HD2	1.85	0.57
13:D1:54:SER:HB2	13:D1:135:ILE:HD11	1.86	0.57
24:G3:62:GLU:OE1	42:O3:121:ARG:HD3	2.05	0.57
24:G3:62:GLU:CG	42:O3:121:ARG:NE	2.62	0.57
71:o2:42:LYS:HD2	71:o2:46:ILE:HB	1.85	0.57
83:m2:589:A:H5'	83:m2:594:C:H41	1.70	0.57
2:A2:176:G:H2'	2:A2:177:G:H8	1.69	0.57
2:A2:2275:C:H2'	2:A2:2276:G:H8	1.70	0.57
2:A2:3566:C:H2'	2:A2:3567:C:H6	1.69	0.57
2:A2:4613:A:H2'	2:A2:4614:A:H8	1.69	0.57
4:B1:137[A]:ARG:HG2	4:B1:142:THR:HG21	1.86	0.57
23:G2:211:LEU:HD12	23:G2:223:PHE:HE2	1.70	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:m2:1800:C:H2'	83:m2:1801:G:O4'	2.05	0.57
33:K3:188:LYS:HD3	83:m2:142:C:H42	1.69	0.57
44:P3:105:THR:HG22	44:P3:110:ILE:HG12	1.86	0.57
2:A2:444:G:H2'	2:A2:445:U:H6	1.69	0.57
2:A2:2389:C:H2'	2:A2:2390:U:H6	1.70	0.57
2:A2:3815:U:H5'	2:A2:3816:C:H5"	1.87	0.57
19:F1:87:HIS:HE1	19:F1:89:LYS:HD2	1.70	0.57
29:I3:45:LEU:HD23	29:I3:47:ARG:HE	1.68	0.57
42:O3:26:ASN:C	42:O3:26:ASN:HD22	2.10	0.57
72:p2:144:LYS:HE2	72:p2:208:HIS:HB3	1.86	0.57
79:w2:59:LYS:HD3	79:w2:134:LEU:HD23	1.87	0.57
83:m2:971:U:H4'	83:m2:972:G:H8	1.70	0.57
83:m2:1103:U:H2'	83:m2:1104:G:H8	1.70	0.57
28:I2:165:LYS:HG3	28:I2:169:ARG:HH21	1.70	0.57
29:I3:17:TRP:HB2	29:I3:36:ARG:HG2	1.87	0.57
75:s2:81:ARG:HH21	83:m2:1538:G:H4'	1.69	0.57
83:m2:96:C:H2'	83:m2:97:U:C6	2.40	0.57
83:m2:1130:C:H2'	83:m2:1131:G:C8	2.40	0.57
83:m2:1201:A:H2'	83:m2:1202:A:C8	2.40	0.57
2:A2:139:G:H2'	2:A2:140:G:C8	2.40	0.56
51:T2:47:ASP:HB3	51:T2:69:LYS:HG2	1.85	0.56
70:k2:28:GLU:HG2	70:k2:31:ASN:HB2	1.87	0.56
2:A2:4505:G:H2'	2:A2:4506:G:C8	2.40	0.56
11:C2:29:G:H5"	19:F1:27:ASN:HB3	1.86	0.56
14:D2:117:GLU:HG2	14:D2:124:GLY:H	1.70	0.56
17:E2:224:LYS:HG2	17:E2:340:THR:HG22	1.85	0.56
50:S3:21:LYS:HE3	83:m2:923:G:H5'	1.85	0.56
7:n2:69:G:H2'	7:n2:70:G:C8	2.40	0.56
78:v2:12:TYR:HE1	78:v2:52:LEU:HD11	1.69	0.56
80:x2:77:LYS:HG2	80:x2:102:PHE:CZ	2.40	0.56
83:m2:15:U:H2'	83:m2:16:G:O4'	2.05	0.56
2:A2:223:G:H4'	2:A2:225:G:N7	2.20	0.56
2:A2:4613:A:H2'	2:A2:4614:A:C8	2.40	0.56
25:H1:120:TRP:HZ2	25:H1:123:GLU:HB2	1.70	0.56
29:I3:206:LEU:HD13	29:I3:218:LEU:HD12	1.87	0.56
31:J3:86:LEU:HD23	71:o2:141:ASN:HD22	1.68	0.56
31:J3:165:VAL:HG11	31:J3:217:ALA:HB1	1.88	0.56
41:O2:100:LEU:HD23	41:O2:112:LEU:HD23	1.87	0.56
50:S3:34:ASP:OD1	50:S3:43:ILE:HG22	2.06	0.56
76:t2:83:LEU:HD22	76:t2:92:VAL:HG11	1.87	0.56
76:t2:100:ILE:HG13	76:t2:125:VAL:HG21	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
77:u2:27:TYR:HB2	83:m2:383:C:N4	2.21	0.56
83:m2:375:G:N2	83:m2:394:A:H61	2.04	0.56
83:m2:390:U:H2'	83:m2:391:A:C8	2.40	0.56
12:C3:49:LYS:HB3	12:C3:92:HIS:HB3	1.86	0.56
20:F2:221:PHE:HB2	20:F2:229:LEU:HD21	1.86	0.56
83:m2:927:G:H1	83:m2:1019:U:H3	1.53	0.56
2:A2:4600:G:H2'	2:A2:4601:A:C8	2.41	0.56
35:L2:44:LEU:HD22	35:L2:49:LEU:HD12	1.88	0.56
51:T2:77:TYR:HB3	56:W2:39:ARG:HH11	1.71	0.56
67:h2:4:LYS:HD2	83:m2:1846:U:O4	2.06	0.56
71:o2:109:THR:HG22	83:m2:1353:G:C4'	2.31	0.56
73:q2:138:VAL:HG22	73:q2:184:ILE:HD12	1.86	0.56
2:A2:140:G:H2'	2:A2:141:C:C6	2.41	0.56
16:E1:51:SER:HB2	16:E1:69:ALA:HB3	1.86	0.56
28:I2:8:VAL:HG12	28:I2:117:ARG:HG3	1.87	0.56
76:t2:170:VAL:HG23	76:t2:187:PHE:HB2	1.88	0.56
83:m2:12:U:H2'	83:m2:13:C:C6	2.41	0.56
83:m2:435:A:H2'	83:m2:436:G:C8	2.40	0.56
83:m2:528:A:H2'	83:m2:529:C:C6	2.41	0.56
1:A1:201:LEU:HD21	1:A1:226:ALA:HA	1.88	0.56
2:A2:1054:G:H2'	2:A2:1055:G:C8	2.41	0.56
33:K3:154:ARG:HB3	83:m2:77:A:O5'	2.05	0.56
67:h2:11:ARG:NH2	83:m2:1846:U:OP2	2.37	0.56
71:o2:184:ARG:HD3	71:o2:191:ARG:HG3	1.88	0.56
83:m2:51:U:H2'	83:m2:52:G:H8	1.69	0.56
83:m2:107:A:H2'	83:m2:108:G:C8	2.41	0.56
83:m2:982:A:H2'	83:m2:983:A:H8	1.71	0.56
2:A2:1430:G:H1'	2:A2:2268:A:N6	2.20	0.56
2:A2:1541:G:H2'	2:A2:1542:C:C6	2.41	0.56
2:A2:3613:U:H1'	2:A2:3615:U:H5'	1.87	0.56
2:A2:4500:G:H2'	2:A2:4501:G:C8	2.39	0.56
28:I2:46:ASN:HB3	28:I2:134:LYS:HD3	1.86	0.56
83:m2:14:C:H2'	83:m2:15:U:C6	2.40	0.56
12:C3:40:ILE:HD11	12:C3:89:ILE:HD12	1.88	0.56
16:E1:120:ASP:HB3	16:E1:123:ILE:HG12	1.87	0.56
67:h2:5:TRP:HD1	83:m2:1854:C:OP2	1.89	0.56
72:p2:168:MET:HG2	72:p2:197:ILE:HG21	1.87	0.56
74:r2:148:ARG:NH1	83:m2:124:U:H5"	2.21	0.56
76:t2:64:VAL:HB	76:t2:72:PHE:CE2	2.41	0.56
2:A2:101:A:H1'	53:U2:66:ASN:ND2	2.20	0.56
2:A2:3298:A:H1'	63:d2:2:THR:HB	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:3565:C:H5	2:A2:4048:A:H61	1.54	0.56
2:A2:4582:U:H4'	2:A2:4583:U:OP1	2.05	0.56
29:I3:66:VAL:HA	29:I3:82:SER:HA	1.88	0.56
32:K2:61:LEU:HD11	32:K2:65:ARG:HG2	1.87	0.56
73:q2:9:ARG:HA	73:q2:12:VAL:HG22	1.87	0.56
83:m2:186:C:H2'	83:m2:187:G:C8	2.40	0.56
2:A2:6:C:H5"	4:B1:197:LYS:HB3	1.89	0.55
2:A2:72:C:H5	19:F1:67:HIS:HD1	1.54	0.55
2:A2:746:G:O2'	2:A2:747:G:H8	1.88	0.55
4:B1:110:LYS:HD2	4:B1:113:ARG:HH12	1.70	0.55
31:J3:114:LYS:CG	83:m2:1360:U:OP1	2.51	0.55
32:K2:96:PRO:HG2	32:K2:98:LEU:HD21	1.88	0.55
53:U2:75:LEU:HD22	53:U2:117:LEU:HD11	1.88	0.55
67:h2:9:ARG:NH2	83:m2:1853:A:P	2.79	0.55
75:s2:19:LEU:HG	75:s2:20:PHE:CD1	2.41	0.55
81:y2:97:GLN:HB2	81:y2:105:LYS:NZ	2.21	0.55
83:m2:1799:U:H2'	83:m2:1800:C:C6	2.39	0.55
2:A2:163:A:H2'	2:A2:164:G:C8	2.42	0.55
2:A2:3524:G:H22	2:A2:3556:G:H1'	1.71	0.55
2:A2:3624:U:H2'	2:A2:3625:G:C8	2.41	0.55
47:R2:64:SER:HB2	61:b2:69:LEU:HD13	1.88	0.55
82:z2:46:LEU:O	82:z2:50:ILE:HG12	2.05	0.55
83:m2:1191:A:H2'	83:m2:1192:A:C8	2.41	0.55
2:A2:939:C:H2'	2:A2:940:C:H6	1.70	0.55
29:I3:108:VAL:HG12	29:I3:124:SER:HB3	1.88	0.55
72:p2:87:ILE:HB	72:p2:101:HIS:HB2	1.88	0.55
73:q2:75:LYS:NZ	78:v2:18:GLU:HG2	2.21	0.55
74:r2:45:ILE:HD11	74:r2:80:ILE:HD12	1.87	0.55
83:m2:26:U:H2'	83:m2:27:A2M:H8	1.88	0.55
83:m2:1219:A:H2'	83:m2:1220:C:C6	2.42	0.55
1:A1:56:ARG:HH12	2:A2:1252:C:H4'	1.72	0.55
2:A2:1870:C:O2'	2:A2:1871:A:H5'	2.07	0.55
13:D1:51:HIS:HB3	13:D1:134:VAL:HG13	1.89	0.55
13:D1:90:ARG:O	13:D1:91:LEU:HD12	2.07	0.55
27:H3:13:LYS:HD2	83:m2:1558:A:H8	1.71	0.55
79:w2:133:PRO:HG2	83:m2:385:G:H21	1.70	0.55
2:A2:4253:U:H2'	2:A2:4254:A:H8	1.71	0.55
20:F2:301:ALA:HB1	32:K2:132:LYS:HE3	1.89	0.55
23:G2:216:GLU:HG3	23:G2:220:LYS:HE2	1.89	0.55
41:O2:84:LYS:HA	41:O2:87:THR:HG22	1.88	0.55
74:r2:45:ILE:HG23	74:r2:61:VAL:HG21	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
80:x2:49:LEU:HD22	80:x2:53:GLN:HG2	1.89	0.55
83:m2:444:C:H2'	83:m2:445:U:C6	2.41	0.55
83:m2:1397:C:H2'	83:m2:1398:A:C8	2.41	0.55
1:A1:129:LYS:HD2	1:A1:132:GLN:HE21	1.71	0.55
2:A2:3320:G:H2'	2:A2:3321:G:H8	1.71	0.55
2:A2:4023:G:H5'	7:n2:76:A:H62	1.71	0.55
4:B1:187:LYS:HD2	4:B1:198:THR:HG23	1.88	0.55
7:n2:21:A:H61	7:n2:46:G:H2'	1.71	0.55
83:m2:85:A:O2'	83:m2:149:A:H8	1.90	0.55
83:m2:842:C:H4'	83:m2:843:G:O5'	2.07	0.55
2:A2:444:G:H2'	2:A2:445:U:C6	2.42	0.55
2:A2:1153:U:H2'	2:A2:1154:OMC:C6	2.42	0.55
2:A2:3923:A:O2'	2:A2:3924:G:H5'	2.05	0.55
12:C3:22:ILE:HB	12:C3:89:ILE:HB	1.88	0.55
34:L1:181:TYR:HA	34:L1:184:HIS:CE1	2.41	0.55
74:r2:11:ARG:HH21	83:m2:497:U:H4'	1.71	0.55
83:m2:641:C:H2'	83:m2:642:A:C8	2.40	0.55
83:m2:944:G:H2'	83:m2:945:U:C6	2.42	0.55
83:m2:1146:A:H2'	83:m2:1147:A:C8	2.42	0.55
83:m2:1623:U:H5'	83:m2:1625:A:O2'	2.07	0.55
2:A2:955:U:H2'	2:A2:956:C:C6	2.41	0.55
30:J2:122:ALA:HB3	30:J2:143:PRO:HG2	1.88	0.55
71:o2:37:TYR:HA	71:o2:53:ARG:HG3	1.87	0.55
83:m2:472:G:H2'	83:m2:473:G:C8	2.41	0.55
83:m2:658:G:H21	83:m2:665:C:H5"	1.72	0.55
27:H3:50:ILE:HG23	73:q2:15:GLY:HA3	1.87	0.55
67:h2:9:ARG:HH21	83:m2:1853:A:P	2.29	0.55
72:p2:66:VAL:HB	72:p2:87:ILE:HD12	1.89	0.55
83:m2:369:U:H4'	83:m2:373:A:C8	2.41	0.55
83:m2:1162:U:H2'	83:m2:1163:U:H6	1.72	0.55
2:A2:744:C:H3'	2:A2:746:G:H5"	1.89	0.54
2:A2:1050:C:H2'	2:A2:1051:G:C8	2.41	0.54
2:A2:1068:C:N4	2:A2:1082:A:H61	2.05	0.54
17:E2:231:VAL:HG21	17:E2:251:VAL:HG23	1.88	0.54
36:L3:136:ARG:HD2	36:L3:139:LYS:HA	1.89	0.54
66:g2:94:MET:HG2	66:g2:105:PRO:HA	1.88	0.54
71:o2:132:GLN:NE2	83:m2:1380:A:C8	2.73	0.54
72:p2:146:ARG:NH1	72:p2:206:PRO:HB2	2.22	0.54
76:t2:64:VAL:HB	76:t2:72:PHE:HE2	1.72	0.54
1:A1:231:TRP:CD1	1:A1:232:PRO:HD2	2.42	0.54
4:B1:138:ALA:HB2	4:B1:194:VAL:HG11	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:Bz:69:G:H2'	7:Bz:70:G:C8	2.39	0.54
22:G1:13:ALA:HB1	22:G1:55:MET:HB2	1.89	0.54
24:G3:49:PRO:HB2	75:s2:61:PHE:CE1	2.42	0.54
32:K2:177:ALA:O	32:K2:184:ARG:HB2	2.07	0.54
33:K3:66:GLY:HA2	83:m2:1747:A:H1'	1.89	0.54
77:u2:106:SER:HB3	77:u2:171:LEU:HG	1.89	0.54
2:A2:1891:G:H1	2:A2:1897:A:H4'	1.73	0.54
2:A2:2651:G:H5"	35:L2:134:ASN:OD1	2.07	0.54
2:A2:4526:U:C4	22:G1:113:MET:HG2	2.42	0.54
83:m2:630:A:N6	83:m2:1502:G:C2	2.70	0.54
83:m2:931:G:H2'	83:m2:932:C:O4'	2.07	0.54
2:A2:3517:A:H2'	2:A2:3518:A:C8	2.43	0.54
4:B1:242:LEU:HB3	4:B1:246:SER:HB2	1.90	0.54
18:E3:93:PHE:HB3	18:E3:133:LEU:HD13	1.88	0.54
70:k2:47:LYS:HG3	70:k2:103:ARG:HD3	1.88	0.54
73:q2:65:ARG:O	73:q2:68:GLU:HG2	2.07	0.54
83:m2:126:G:C8	83:m2:181:A:H1'	2.42	0.54
83:m2:1860:G:H2'	83:m2:1861:A:H8	1.72	0.54
2:A2:1214:G:H2'	2:A2:1215:G:C8	2.43	0.54
2:A2:2167:A:H2'	2:A2:2168:U:C6	2.43	0.54
4:B1:37:LYS:HB2	4:B1:44:ASP:OD2	2.08	0.54
4:B1:171:PRO:HB3	4:B1:181:TYR:CE2	2.42	0.54
14:D2:133:TYR:HB3	14:D2:168:VAL:HG12	1.90	0.54
83:m2:456:U:H2'	83:m2:457:A:H8	1.71	0.54
83:m2:622:G:H2'	83:m2:622:G:N3	2.22	0.54
83:m2:1714:A:H2'	83:m2:1715:C:C6	2.43	0.54
83:m2:1841:U:H2'	83:m2:1842:U:C6	2.43	0.54
1:A1:111:LEU:HD11	1:A1:144:PHE:HB3	1.90	0.54
2:A2:3932:A:H5"	2:A2:3933:A:H5'	1.90	0.54
2:A2:4520:G:C2	28:I2:118:MET:HE1	2.42	0.54
15:D3:60:ARG:HH22	71:o2:144:THR:HG23	1.72	0.54
22:G1:11:ARG:HB3	22:G1:27:ILE:HD12	1.88	0.54
24:G3:40:ARG:CZ	24:G3:40:ARG:HA	2.37	0.54
34:L1:51:GLY:HA3	34:L1:189:PHE:HZ	1.73	0.54
52:T3:34:ARG:HA	52:T3:37:GLN:HE21	1.73	0.54
75:s2:187:SER:HB3	75:s2:190:ILE:HG22	1.89	0.54
83:m2:892:U:H2'	83:m2:893:G:H3'	1.90	0.54
83:m2:959:A:H2'	83:m2:960:G:C8	2.42	0.54
2:A2:175:C:H2'	2:A2:176:G:H8	1.73	0.54
2:A2:2320:A:H3'	2:A2:2321:G:C8	2.43	0.54
2:A2:3363:U:H2'	2:A2:3364:C:C6	2.43	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:H2:164:HIS:HB3	26:H2:167:LYS:HG3	1.88	0.54
31:J3:210:PRO:HD3	31:J3:236:PHE:HE2	1.72	0.54
36:L3:144:ILE:HG21	83:m2:826:C:C2	2.43	0.54
83:m2:12:U:H2'	83:m2:13:C:H6	1.73	0.54
2:A2:3263:U:H2'	2:A2:3264:A:H8	1.72	0.54
2:A2:4274:A:H4'	17:E2:13:SER:HB2	1.90	0.54
19:F1:60:ARG:HD2	19:F1:67:HIS:O	2.08	0.54
38:M3:20:GLU:HA	38:M3:23:LYS:HG2	1.89	0.54
64:e2:24:LYS:HD2	64:e2:69:LEU:HD21	1.89	0.54
72:p2:165:ARG:NH1	83:m2:1005:U:H5"	2.23	0.54
74:r2:66:MET:HG3	83:m2:504:C:O4'	2.07	0.54
77:u2:161:LEU:HD12	77:u2:199:LEU:HD12	1.89	0.54
2:A2:4433:G:HO2'	2:A2:4434:U:H6	1.56	0.54
29:I3:18:VAL:HG21	29:I3:307:VAL:HG22	1.90	0.54
48:R3:49:LEU:HD23	48:R3:83:LEU:HD21	1.89	0.54
69:j2:47:MET:HE2	69:j2:71:TYR:HE1	1.72	0.54
2:A2:1333:C:H5'	20:F2:102:PHE:HE1	1.73	0.54
2:A2:2456:U:H2'	2:A2:2457:C:C6	2.43	0.54
2:A2:2651:G:H5"	35:L2:134:ASN:ND2	2.23	0.54
18:E3:105:PHE:HD1	18:E3:121:LYS:HB3	1.72	0.54
36:L3:42:GLU:HG2	36:L3:45:ARG:HH21	1.73	0.54
53:U2:101:ILE:HD12	53:U2:122:VAL:HG21	1.89	0.54
60:a2:48:VAL:O	69:j2:61:MET:HG3	2.08	0.54
7:n2:15:G:N2	7:n2:21:A:H1'	2.23	0.54
80:x2:81:ARG:HD3	83:m2:1517:G:O3'	2.08	0.54
83:m2:1407:A:H2'	83:m2:1408:G:O4'	2.08	0.54
83:m2:1493:G:H2'	83:m2:1494:U:C6	2.43	0.54
83:m2:1738:G:H2'	83:m2:1739:G:H8	1.72	0.54
2:A2:2649:A:H2'	2:A2:2650:A:H8	1.73	0.53
22:G1:6:TYR:CG	37:M2:151:LYS:HE3	2.43	0.53
33:K3:183:ARG:HD3	33:K3:186:GLN:HE21	1.73	0.53
38:M3:57:ASP:HB2	83:m2:1287:G:H22	1.72	0.53
73:q2:136:VAL:HG22	73:q2:186:VAL:HG22	1.88	0.53
76:t2:66:VAL:HG11	83:m2:915:A:N3	2.24	0.53
81:y2:108:ILE:HG13	81:y2:109:LYS:N	2.23	0.53
83:m2:1094:G:H2'	83:m2:1095:A:H8	1.73	0.53
83:m2:1136:G:H2'	83:m2:1137:C:C6	2.43	0.53
83:m2:1742:C:H2'	83:m2:1743:U:C6	2.43	0.53
2:A2:3744:G:H22	2:A2:3765:G:N2	2.05	0.53
6:B3:65:TYR:HE2	6:B3:128:GLN:HG3	1.72	0.53
18:E3:105:PHE:CD2	18:E3:112:VAL:HB	2.43	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
71:o2:28:THR:HG22	71:o2:46:ILE:HG13	1.90	0.53
83:m2:75:G:H4'	83:m2:76:U:C5	2.43	0.53
2:A2:2320:A:H3'	2:A2:2321:G:H8	1.74	0.53
31:J3:193:VAL:HG11	31:J3:240:THR:HG22	1.91	0.53
51:T2:46:ILE:HG23	51:T2:68:ILE:HG23	1.90	0.53
55:V2:110:MET:O	55:V2:114:GLN:HG2	2.08	0.53
65:f2:44:TRP:CH2	65:f2:45:ARG:HD2	2.42	0.53
70:k2:51:VAL:HG12	70:k2:117:ILE:HD12	1.90	0.53
2:A2:4638:G:H2'	2:A2:4639:G:C8	2.43	0.53
6:B3:60:THR:HG23	6:B3:75:MET:HE2	1.89	0.53
22:G1:51:PRO:O	22:G1:55:MET:HE3	2.08	0.53
27:H3:34:TYR:O	27:H3:36:LEU:HG	2.09	0.53
53:U2:110:LYS:HG3	53:U2:128:PHE:HB2	1.90	0.53
56:W2:26:LYS:H	56:W2:98:ASP:HB3	1.73	0.53
77:u2:57:ALA:HB2	77:u2:183:GLY:HA2	1.90	0.53
78:v2:11:ILE:HG12	78:v2:45:VAL:HG22	1.90	0.53
83:m2:351:A:H2'	83:m2:352:C:C6	2.43	0.53
83:m2:636:A:H2'	83:m2:637:G:H8	1.73	0.53
83:m2:993:G:C6	83:m2:1136:G:H4'	2.43	0.53
2:A2:835:U:H5	22:G1:46:ARG:HH11	1.55	0.53
2:A2:2387:U:H2'	2:A2:2388:U:C6	2.44	0.53
2:A2:2475:C:H2'	2:A2:2476:G:O4'	2.08	0.53
16:E1:18:ARG:HG3	16:E1:135:GLY:HA3	1.91	0.53
74:r2:68:ARG:NH2	74:r2:76:VAL:HG11	2.24	0.53
77:u2:103:LEU:HG	77:u2:170:LYS:HB3	1.91	0.53
83:m2:1141:C:H2'	83:m2:1142:G:O4'	2.09	0.53
2:A2:418:A:C2	11:C2:17:A:H1'	2.43	0.53
2:A2:1027:G:H2'	2:A2:1028:G:H8	1.73	0.53
2:A2:1088:A:H2'	2:A2:1089:G:C8	2.43	0.53
2:A2:1146:C:H2'	2:A2:1147:A:C8	2.43	0.53
2:A2:4109:U:H1'	17:E2:252:ALA:HB3	1.89	0.53
22:G1:7:VAL:HG13	22:G1:27:ILE:HD13	1.89	0.53
31:J3:183:LYS:HA	31:J3:195:LEU:O	2.07	0.53
78:v2:41:PRO:HG2	78:v2:44:HIS:HD2	1.74	0.53
83:m2:172:OMU:HM22	83:m2:172:OMU:O2	2.09	0.53
83:m2:347:U:H2'	83:m2:348:C:C6	2.43	0.53
1:A1:98:ARG:HD2	2:A2:736:G:H5"	1.90	0.53
2:A2:3950:A:H4'	55:V2:33:LYS:HD3	1.91	0.53
64:e2:12:LEU:HD13	64:e2:16:ARG:HH12	1.73	0.53
76:t2:144:ILE:HG13	76:t2:154:ILE:HG13	1.90	0.53
83:m2:354:U:H2'	83:m2:355:OMC:C6	2.43	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:1527:U:H2'	2:A2:1528:U:H6	1.74	0.53
27:H3:14:PHE:HD1	83:m2:1663:A:C8	2.27	0.53
43:P2:32:THR:HG21	43:P2:105:ILE:HD12	1.89	0.53
57:X2:37:GLY:O	57:X2:41:ARG:HG3	2.08	0.53
67:h2:11:ARG:NH2	83:m2:1846:U:OP1	2.40	0.53
71:o2:54:THR:HG22	71:o2:162:PRO:HG2	1.91	0.53
83:m2:72:C:H3'	83:m2:74:G:H21	1.73	0.53
83:m2:390:U:H2'	83:m2:391:A:H8	1.74	0.53
1:A1:81:LYS:O	1:A1:85:GLN:HG3	2.09	0.53
2:A2:4067:1MA:H2'	2:A2:4068:G:O4'	2.09	0.53
2:A2:4351:U:H1'	2:A2:4352:A:H5"	1.90	0.53
17:E2:220:ILE:HB	17:E2:346:THR:HB	1.91	0.53
72:p2:59:SER:O	72:p2:63:LYS:HG2	2.09	0.53
72:p2:105:LEU:HD13	72:p2:213:ARG:HA	1.90	0.53
83:m2:25:A:O2'	83:m2:26:U:H5"	2.09	0.53
83:m2:96:C:H1'	83:m2:476:G:H5'	1.90	0.53
83:m2:578:A2M:HM'2	83:m2:579:U:H5'	1.91	0.53
83:m2:954:G:H2'	83:m2:955:C:C6	2.44	0.53
3:A3:12:ILE:CD1	16:E1:121:PRO:HB3	2.36	0.53
19:F1:87:HIS:HB3	19:F1:90:VAL:HG22	1.91	0.53
21:F3:88:SER:O	21:F3:92:ARG:HG3	2.09	0.53
29:I3:199:THR:HG21	29:I3:240:CYS:HA	1.89	0.53
83:m2:220:U:H2'	83:m2:221:U:C6	2.44	0.53
83:m2:434:G:H2'	83:m2:435:A:C8	2.44	0.53
2:A2:1760:A:H8	2:A2:1760:A:OP2	1.92	0.52
2:A2:3536:G:H2'	2:A2:3537:G:C8	2.43	0.52
19:F1:64:VAL:HA	19:F1:67:HIS:CD2	2.44	0.52
29:I3:52:TYR:HE2	29:I3:311:GLN:HE21	1.57	0.52
31:J3:102:LEU:HB3	31:J3:130:ILE:HD11	1.91	0.52
38:M3:24:THR:HA	38:M3:27:ILE:HG22	1.91	0.52
73:q2:162:ASP:N	73:q2:163:PRO:HD2	2.23	0.52
83:m2:208:G:H2'	83:m2:209:G:C8	2.43	0.52
83:m2:346:U:H2'	83:m2:347:U:H6	1.74	0.52
83:m2:1547:A:H2'	83:m2:1548:G:C8	2.43	0.52
2:A2:432:U:H4'	2:A2:433:A:H5"	1.91	0.52
2:A2:673:G:C8	2:A2:675:C:H2'	2.44	0.52
2:A2:2464:C:H5"	35:L2:39:GLN:HG3	1.91	0.52
2:A2:4200:A:C8	7:Bz:75:C:H5'	2.44	0.52
56:W2:35:LEU:HB3	56:W2:39:ARG:HH21	1.74	0.52
7:n2:20:U:H4'	7:n2:21:A:OP1	2.09	0.52
82:z2:20:TYR:O	82:z2:24:LEU:HD23	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:m2:457:A:H2'	83:m2:458:C:H6	1.74	0.52
83:m2:1096:C:H2'	83:m2:1097:U:C6	2.45	0.52
83:m2:1716:U:H2'	83:m2:1717:A:C8	2.43	0.52
2:A2:4264:C:C2	10:C1:120:GLU:HB2	2.44	0.52
3:A3:19:ASN:CG	16:E1:119:TYR:CE2	2.88	0.52
51:T2:41:ALA:HB2	51:T2:77:TYR:HE1	1.74	0.52
74:r2:19:MET:HE3	74:r2:51:ARG:CZ	2.39	0.52
83:m2:1595:C:H2'	83:m2:1596:A:C8	2.45	0.52
83:m2:1714:A:H2'	83:m2:1715:C:H6	1.74	0.52
2:A2:517:C:H2'	2:A2:518:C:C6	2.45	0.52
2:A2:1708:U:H2'	2:A2:1709:A:H8	1.75	0.52
2:A2:2500:A:H2'	2:A2:2501:A:C8	2.45	0.52
2:A2:2532:G:H5"	2:A2:2533:G:H5'	1.91	0.52
69:j2:37:TYR:HB2	69:j2:47:MET:HB3	1.92	0.52
83:m2:1200:G:H2'	83:m2:1201:A:H8	1.74	0.52
83:m2:1350:G:C5	83:m2:1351:G:N7	2.78	0.52
83:m2:1597:U:H2'	83:m2:1598:U:H6	1.74	0.52
2:A2:937:C:H2'	2:A2:938:U:H5'	1.90	0.52
2:A2:4506:G:H2'	2:A2:4507:G:C8	2.45	0.52
23:G2:166:ALA:HB1	23:G2:171:LEU:HD12	1.90	0.52
29:I3:32:LEU:HB3	29:I3:42:MET:HG2	1.91	0.52
40:N3:40:LEU:HB3	40:N3:45:LEU:HD12	1.92	0.52
47:R2:95:THR:HG22	47:R2:139:ARG:HA	1.91	0.52
52:T3:37:GLN:HB2	52:T3:41:ARG:HH12	1.75	0.52
64:e2:14:THR:HA	64:e2:17:ARG:HD3	1.92	0.52
74:r2:148:ARG:HH11	83:m2:124:U:H5"	1.74	0.52
75:s2:60:ARG:HD2	83:m2:1681:A:H2'	1.91	0.52
83:m2:1378:A:H2'	83:m2:1379:U:O4'	2.09	0.52
83:m2:1515:C:H2'	83:m2:1516:G:C8	2.44	0.52
2:A2:21:G:H5'	63:d2:43:ARG:HG2	1.90	0.52
52:T3:37:GLN:HB2	52:T3:41:ARG:NH1	2.24	0.52
67:h2:21:ARG:HD3	83:m2:1719:C:H4'	1.91	0.52
83:m2:346:U:H2'	83:m2:347:U:C6	2.45	0.52
83:m2:1162:U:H2'	83:m2:1163:U:C6	2.45	0.52
83:m2:1564:C:H2'	83:m2:1565:G:C8	2.45	0.52
2:A2:453:G:H1	2:A2:1107:G:H22	1.56	0.52
2:A2:3297:U:H5	2:A2:3302:A:N7	2.08	0.52
10:C1:103:VAL:HG11	10:C1:144:LEU:HD11	1.92	0.52
10:C1:118:LEU:HD11	10:C1:167:VAL:HG22	1.92	0.52
32:K2:79:THR:HG23	32:K2:99:LYS:HG2	1.91	0.52
42:O3:50:LYS:HD3	72:p2:65:ARG:HE	1.74	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
71:o2:32:PHE:CD1	83:m2:1099:G:H4'	2.44	0.52
71:o2:145:ILE:HG12	71:o2:159:ILE:HB	1.92	0.52
83:m2:528:A:H2'	83:m2:529:C:H6	1.75	0.52
83:m2:835:C:N4	83:m2:836:C:N4	2.58	0.52
83:m2:1339:B8T:O3'	83:m2:1340:G:H5'	2.09	0.52
83:m2:1669:U:H2'	83:m2:1670:U:C6	2.44	0.52
2:A2:261:G:H2'	2:A2:262:G:H8	1.74	0.52
2:A2:3825:G:H2'	2:A2:3826:U:C6	2.44	0.52
41:O2:27:HIS:HB2	41:O2:28:PRO:HD3	1.91	0.52
51:T2:74:VAL:HG23	51:T2:101:PHE:CE2	2.45	0.52
58:Y2:84:GLU:O	58:Y2:87:VAL:HG12	2.10	0.52
76:t2:95:ILE:HD11	76:t2:133:LEU:HD23	1.91	0.52
83:m2:434:G:H2'	83:m2:435:A:H8	1.74	0.52
83:m2:636:A:H2'	83:m2:637:G:C8	2.45	0.52
2:A2:233:U:H4'	2:A2:234:G:OP1	2.09	0.52
2:A2:325:U:H2'	2:A2:326:C:C6	2.44	0.52
2:A2:388:A:H1'	2:A2:403:G:N2	2.25	0.52
2:A2:440:U:H2'	2:A2:441:G:C8	2.45	0.52
2:A2:3415:A:C2	83:m2:1710:C:O2	2.63	0.52
2:A2:3912:U:H2'	2:A2:3913:C:C6	2.45	0.52
10:C1:93:ARG:HD2	10:C1:143:GLU:HB3	1.92	0.52
31:J3:75:ILE:HD11	31:J3:265:PRO:HB3	1.92	0.52
32:K2:167:VAL:HG22	32:K2:175:GLU:OE1	2.09	0.52
37:M2:15:ARG:HB3	37:M2:27:LEU:HD23	1.90	0.52
71:o2:68:ILE:HG21	71:o2:74:VAL:HG13	1.91	0.52
83:m2:470:A:H2'	83:m2:471:A:C8	2.45	0.52
83:m2:1707:C:H2'	83:m2:1708:G:H8	1.74	0.52
2:A2:325:U:H5"	19:F1:103:ARG:NH2	2.25	0.52
2:A2:1259:C:N4	2:A2:1901:A:H61	1.97	0.52
2:A2:1444:A:H2	14:D2:208:GLU:HG3	1.75	0.52
2:A2:1735:G:H2'	2:A2:1736:A:C8	2.44	0.52
51:T2:12:LEU:HD23	51:T2:22:LYS:HG2	1.91	0.52
63:d2:21:ARG:HB2	63:d2:39:TYR:CD1	2.44	0.52
83:m2:658:G:H5'	83:m2:664:G:N2	2.25	0.52
83:m2:806:U:H2'	83:m2:807:U:C6	2.45	0.52
83:m2:846:U:H2'	83:m2:847:G:C8	2.45	0.52
83:m2:1099:G:H2'	83:m2:1100:C:C6	2.45	0.52
2:A2:176:G:H2'	2:A2:177:G:C8	2.45	0.51
2:A2:3267:A:C2'	77:u2:92:ARG:CZ	2.84	0.51
6:B3:4:VAL:N	83:m2:1418:C:HO2'	2.08	0.51
83:m2:107:A:H2'	83:m2:108:G:H8	1.73	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:m2:534:C:H42	83:m2:555:A:H61	1.58	0.51
83:m2:1412:C:H2'	83:m2:1413:G:C8	2.44	0.51
83:m2:1738:G:H2'	83:m2:1739:G:C8	2.46	0.51
2:A2:1006:G:H2'	2:A2:1007:A:O4'	2.09	0.51
2:A2:1361:G:O2'	2:A2:2567:A:H8	1.92	0.51
2:A2:1626:G:H4'	23:G2:44:TYR:HD2	1.75	0.51
2:A2:3576:U:H2'	2:A2:3577:U:C6	2.46	0.51
2:A2:3762:C:H2'	2:A2:3763:U:H6	1.74	0.51
3:A3:111:LEU:O	3:A3:115:LYS:HG2	2.10	0.51
4:B1:200:THR:HG22	4:B1:201:THR:HG23	1.93	0.51
20:F2:138:MET:SD	20:F2:144:ILE:HG12	2.50	0.51
23:G2:196:ARG:HH12	23:G2:200:MET:HG3	1.74	0.51
41:O2:63:ILE:HG12	41:O2:72:VAL:HG22	1.92	0.51
74:r2:129:ILE:HD11	83:m2:291:G:H5'	1.92	0.51
83:m2:51:U:H2'	83:m2:52:G:C8	2.45	0.51
83:m2:630:A:C6	83:m2:1502:G:N3	2.75	0.51
2:A2:165:A:H2'	2:A2:166:C:C6	2.45	0.51
2:A2:487:C:H2'	2:A2:488:G:C8	2.46	0.51
2:A2:1154:OMC:HM21	20:F2:106:LYS:HB2	1.91	0.51
2:A2:2651:G:H5"	35:L2:134:ASN:HD21	1.75	0.51
23:G2:223:PHE:HB3	23:G2:226:TYR:HB2	1.93	0.51
30:J2:94:MET:HE1	30:J2:146:ILE:HG22	1.92	0.51
73:q2:132:LYS:HG3	73:q2:191:PRO:HA	1.92	0.51
2:A2:163:A:H2'	2:A2:164:G:H8	1.75	0.51
4:B1:44:ASP:N	14:D2:64:ARG:HH22	2.09	0.51
4:B1:209:SER:HA	4:B1:212:LYS:HG3	1.93	0.51
10:C1:103:VAL:HG11	10:C1:144:LEU:HD21	1.93	0.51
31:J3:229:CYS:HB2	83:m2:14:C:H5'	1.93	0.51
33:K3:70:HIS:HA	33:K3:98:ARG:HH12	1.75	0.51
38:M3:37:GLU:HA	38:M3:40:LYS:HG2	1.93	0.51
56:W2:17:ARG:O	56:W2:21:VAL:HG23	2.09	0.51
74:r2:52:LEU:HD22	74:r2:54:TYR:CZ	2.45	0.51
83:m2:1200:G:H2'	83:m2:1201:A:C8	2.45	0.51
83:m2:1541:U:H2'	83:m2:1542:G:C8	2.44	0.51
2:A2:1360:A:H2	2:A2:2568:A:H8	1.59	0.51
2:A2:3388:A:H2'	2:A2:3389:A:C8	2.44	0.51
2:A2:3617:G:N2	2:A2:3621:A:H62	2.08	0.51
2:A2:4543:G:H2'	2:A2:4544:G:H8	1.76	0.51
46:Q3:104:ARG:HD3	46:Q3:108:LYS:HE2	1.93	0.51
61:b2:89:ARG:O	61:b2:93:ARG:HG2	2.11	0.51
71:o2:74:VAL:HG12	71:o2:121:LEU:HB3	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
72:p2:160:GLN:O	72:p2:164:ILE:HD12	2.10	0.51
73:q2:150:MET:HG2	73:q2:152:PHE:CE1	2.45	0.51
75:s2:96:ALA:O	75:s2:100:ILE:HG12	2.11	0.51
83:m2:28:U:H2'	83:m2:29:G:H8	1.75	0.51
2:A2:1255:C:H2'	2:A2:1256:A:C8	2.46	0.51
2:A2:3390:U:H2'	2:A2:3391:G:O4'	2.11	0.51
3:A3:40:TYR:HD1	3:A3:83:PHE:HE2	1.59	0.51
29:I3:192:THR:HG21	73:q2:220:THR:HG22	1.92	0.51
33:K3:84:TYR:CE1	33:K3:93:LYS:HB3	2.46	0.51
70:k2:90:LEU:HD22	70:k2:111:ILE:HG23	1.92	0.51
30:J2:54:LYS:HA	30:J2:83:TRP:CD1	2.46	0.51
33:K3:133:LEU:HD22	83:m2:65:C:C2	2.46	0.51
74:r2:148:ARG:HH21	74:r2:149:TYR:HE2	1.58	0.51
83:m2:1350:G:C2'	83:m2:1351:G:H8	2.18	0.51
83:m2:1535:A:H2'	83:m2:1535:A:N3	2.26	0.51
83:m2:1608:G:H22	83:m2:1634:G:H2'	1.76	0.51
83:m2:1804:C:H2'	83:m2:1805:U:C6	2.46	0.51
2:A2:1244:C:H2'	2:A2:1245:G:O4'	2.11	0.51
2:A2:3942:U:OP1	68:i2:9:ARG:HD3	2.11	0.51
3:A3:99:LEU:HD12	3:A3:102:GLY:H	1.74	0.51
16:E1:3:GLN:HG3	16:E1:6:GLY:H	1.75	0.51
21:F3:95:ARG:HG2	83:m2:1868:A:H5'	1.92	0.51
24:G3:46:VAL:HG13	24:G3:50:VAL:HG21	1.91	0.51
26:H2:171:PHE:HA	26:H2:182:VAL:HG12	1.92	0.51
29:I3:19:THR:HG23	29:I3:35:SER:HA	1.93	0.51
83:m2:511:OMG:H2'	83:m2:512:G:H8	1.74	0.51
83:m2:611:U:H2'	83:m2:612:G:H8	1.75	0.51
83:m2:1203:U:H2'	83:m2:1204:U:C6	2.46	0.51
2:A2:1006:G:H1	2:A2:1018:U:H3	1.58	0.51
2:A2:1333:C:H5'	20:F2:102:PHE:CE1	2.46	0.51
2:A2:1441:C:H42	14:D2:3:ARG:HH11	1.56	0.51
2:A2:1626:G:H5'	23:G2:44:TYR:HD2	1.76	0.51
2:A2:2485:U:H2'	2:A2:2486:C:C6	2.46	0.51
2:A2:3926:A:H2'	2:A2:3927:G:C8	2.45	0.51
2:A2:4637:U:H2'	2:A2:4638:G:H8	1.75	0.51
3:A3:13:LEU:HD23	3:A3:20:ILE:HD11	1.91	0.51
11:C2:132:G:H4'	47:R2:69:ASN:ND2	2.26	0.51
17:E2:291:TYR:HB3	17:E2:298:LEU:HD11	1.93	0.51
20:F2:26:ALA:HB3	20:F2:266:THR:HA	1.93	0.51
29:I3:191:HIS:CD2	29:I3:195:LEU:HD21	2.46	0.51
73:q2:194:PRO:HD2	73:q2:200:PRO:O	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
79:w2:42:LEU:H	83:m2:293:G:H1'	1.75	0.51
81:y2:43:GLU:HB3	81:y2:44:PRO:HD3	1.92	0.51
83:m2:602:G:H2'	83:m2:603:OMG:C8	2.42	0.51
83:m2:933:C:H2'	83:m2:934:G:C8	2.45	0.51
83:m2:1114:U:H2'	83:m2:1115:A:C8	2.46	0.51
2:A2:492:G:H1	2:A2:670:G:H1	1.59	0.51
2:A2:1406:A:H5"	2:A2:2594:U:H5"	1.93	0.51
2:A2:1532:U:H2'	2:A2:1533:C:C6	2.47	0.51
2:A2:2409:C:H2'	2:A2:2410:C:H6	1.76	0.51
2:A2:3374:A2M:H2	2:A2:3590:G:O4'	2.10	0.51
2:A2:3423:C:O2'	2:A2:3424:U:H5'	2.10	0.51
2:A2:3717:U:H2'	2:A2:3718:U:C6	2.46	0.51
2:A2:4573:C:H4'	22:G1:121:ARG:NH1	2.24	0.51
3:A3:43:VAL:HG11	3:A3:83:PHE:CE2	2.46	0.51
6:B3:62:ARG:NH2	83:m2:1544:C:H5"	2.26	0.51
20:F2:61:GLN:O	63:d2:52:LYS:HE3	2.11	0.51
25:H1:159:ARG:HB3	25:H1:164:LEU:HB2	1.91	0.51
31:J3:235:ASN:ND2	83:m2:1357:C:O2	2.24	0.51
35:L2:105:LEU:HD23	35:L2:138:LEU:HD23	1.92	0.51
37:M2:19:THR:HG22	37:M2:21:LYS:H	1.76	0.51
58:Y2:76:LYS:HD2	58:Y2:98:GLU:OE1	2.11	0.51
65:f2:9:ILE:HD12	65:f2:51:LEU:HD21	1.92	0.51
72:p2:66:VAL:HG22	72:p2:85:LYS:HE2	1.93	0.51
72:p2:83:LYS:NZ	72:p2:106:THR:HA	2.26	0.51
73:q2:175:VAL:HB	73:q2:182:LEU:HB2	1.92	0.51
75:s2:35:LEU:HD22	75:s2:117:ILE:HD13	1.92	0.51
83:m2:118:C:H1'	83:m2:447:A:C4	2.46	0.51
83:m2:457:A:H2'	83:m2:458:C:C6	2.46	0.51
83:m2:519:OMC:H2'	83:m2:520:G:O4'	2.11	0.51
1:A1:166:TYR:CE2	1:A1:259:GLU:HB2	2.46	0.50
2:A2:718:A:OP1	26:H2:199:LYS:HD2	2.11	0.50
2:A2:2648:U:H2'	2:A2:2649:A:C8	2.46	0.50
6:B3:67:ARG:HD3	83:m2:1589:G:N7	2.26	0.50
11:C2:48:A:H5"	61:b2:51:ARG:HH12	1.76	0.50
22:G1:85:LYS:O	22:G1:89:THR:HG23	2.11	0.50
71:o2:137:ALA:HB1	71:o2:142:LEU:HB3	1.93	0.50
79:w2:121:GLN:HB2	79:w2:147:LYS:HE3	1.93	0.50
83:m2:1412:C:H2'	83:m2:1413:G:H8	1.76	0.50
83:m2:1535:A:H2	83:m2:1538:G:N3	2.09	0.50
2:A2:1317:G:H2'	2:A2:1318:C:C6	2.45	0.50
2:A2:1446:G:N2	14:D2:3:ARG:HH21	2.08	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:3720:U:H2'	2:A2:3721:U:C6	2.46	0.50
29:I3:14:HIS:NE2	29:I3:35:SER:HB3	2.26	0.50
39:N2:34:TYR:HE2	39:N2:93:ILE:HG23	1.76	0.50
83:m2:177:G:H1'	83:m2:315:A:H62	1.76	0.50
83:m2:947:U:H2'	83:m2:948:U:C6	2.47	0.50
1:A1:156:ARG:NH1	5:B2:97:G:H4'	2.27	0.50
2:A2:2220:C:H2'	2:A2:2221:G:O4'	2.12	0.50
2:A2:2275:C:H2'	2:A2:2276:G:C8	2.46	0.50
2:A2:3404:A:H2'	2:A2:3405:C:C6	2.47	0.50
2:A2:4564:G:O2'	2:A2:4565:C:H5'	2.11	0.50
3:A3:37:GLY:N	83:m2:1632:A:H5"	2.26	0.50
7:Bz:66:U:H2'	7:Bz:67:C:C6	2.46	0.50
34:L1:180:VAL:HA	34:L1:183:ILE:HG12	1.94	0.50
74:r2:14:ALA:HB1	74:r2:18:TRP:CE3	2.46	0.50
75:s2:72:LEU:HD23	75:s2:151:ILE:HG23	1.92	0.50
83:m2:839:A:H4'	83:m2:840:G:OP1	2.11	0.50
83:m2:1440:A:H2'	83:m2:1441:A:C8	2.45	0.50
1:A1:148:ASN:ND2	39:N2:132:PRO:HG2	2.26	0.50
2:A2:260:C:H2'	2:A2:261:G:C8	2.45	0.50
2:A2:280:G:H5"	25:H1:14:LYS:HE2	1.94	0.50
2:A2:702:G:H3'	2:A2:703:U:H4'	1.91	0.50
2:A2:3564:A:N1	9:By:18:UNK:HA	2.26	0.50
23:G2:44:TYR:OH	39:N2:67:VAL:HG21	2.11	0.50
25:H1:80:THR:OG1	25:H1:87:HIS:HA	2.11	0.50
33:K3:84:TYR:HE1	33:K3:93:LYS:HB3	1.75	0.50
46:Q3:110:ARG:HG2	46:Q3:114:MET:HE2	1.92	0.50
74:r2:87:MET:HE1	74:r2:236:ILE:HD13	1.94	0.50
77:u2:5:ARG:HD2	83:m2:381:C:O2	2.12	0.50
83:m2:106:C:H2'	83:m2:107:A:H8	1.76	0.50
83:m2:844:C:H2'	83:m2:845:C:C6	2.46	0.50
83:m2:1421:C:H4'	83:m2:1422:G:H5'	1.94	0.50
83:m2:1745:G:H21	83:m2:1793:A:H62	1.56	0.50
2:A2:1173:G:H4'	25:H1:203:TYR:HB2	1.94	0.50
2:A2:1438:OMG:HM23	25:H1:81:TYR:HE2	1.76	0.50
2:A2:2019:G:H2'	2:A2:2020:C:O4'	2.12	0.50
2:A2:2559:OMC:HM21	60:a2:32:TYR:HE2	1.77	0.50
2:A2:4044:OMG:N3	2:A2:4099:5MC:HM52	2.27	0.50
41:O2:61:VAL:HG23	41:O2:74:SER:HB3	1.92	0.50
83:m2:949:G:H2'	83:m2:950:C:C6	2.45	0.50
83:m2:1560:C:H2'	83:m2:1561:C:C6	2.47	0.50
83:m2:1564:C:H2'	83:m2:1565:G:H8	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:m2:1705:OMC:H2'	83:m2:1706:C:O4'	2.11	0.50
2:A2:4396:A:H2'	2:A2:4397:G:O4'	2.10	0.50
2:A2:4499:G:H2'	2:A2:4500:G:C8	2.47	0.50
10:C1:44:GLU:HG2	10:C1:58:ASP:HB2	1.93	0.50
41:O2:79:SER:HB3	41:O2:82:TYR:CE1	2.47	0.50
74:r2:100:ARG:HG2	74:r2:102:ILE:HG23	1.93	0.50
80:x2:75:VAL:HG12	80:x2:93:MET:HE2	1.94	0.50
83:m2:1012:G:H2'	83:m2:1013:A:H8	1.76	0.50
2:A2:129:C:H2'	2:A2:130:G:H8	1.77	0.50
2:A2:4343:A:H5'	10:C1:71:ARG:HE	1.76	0.50
2:A2:4413:G:H2'	2:A2:4414:A:C8	2.47	0.50
23:G2:64:ILE:HG13	23:G2:105:LEU:HD21	1.94	0.50
23:G2:181:PRO:HD2	23:G2:195:HIS:HD1	1.76	0.50
28:I2:12:ARG:HD3	28:I2:37:ARG:NH2	2.26	0.50
33:K3:157:VAL:HG21	33:K3:176:ILE:HD11	1.94	0.50
63:d2:25:LYS:HD3	65:f2:50:GLY:O	2.11	0.50
67:h2:12:ARG:HG3	67:h2:15:ARG:HH21	1.77	0.50
83:m2:17:C:H2'	83:m2:18:C:H6	1.76	0.50
2:A2:830:G:N2	2:A2:836:C:H2'	2.26	0.50
2:A2:928:G:H1	2:A2:1064:G:N2	2.07	0.50
2:A2:2250:U:H2'	2:A2:2251:G:H8	1.77	0.50
2:A2:3618:A:H3'	2:A2:3621:A:C2	2.47	0.50
2:A2:3720:U:H2'	2:A2:3721:U:H6	1.77	0.50
31:J3:66:LEU:HD21	31:J3:81:ILE:HD13	1.94	0.50
51:T2:102:ARG:HB2	51:T2:102:ARG:CZ	2.41	0.50
60:a2:63:VAL:HG12	60:a2:66:ARG:NH1	2.26	0.50
74:r2:124:CYS:HA	74:r2:142:HIS:CE1	2.47	0.50
83:m2:377:U:H2'	83:m2:378:A:C8	2.47	0.50
83:m2:1223:G:H2'	83:m2:1224:G:C8	2.45	0.50
2:A2:319:A:H1'	2:A2:3382:A:N3	2.27	0.50
2:A2:1040:C:H2'	2:A2:1041:G:H8	1.77	0.50
2:A2:1831:A:H2'	2:A2:1832:A:C8	2.46	0.50
2:A2:2102:A:C4	58:Y2:31:ILE:HD11	2.47	0.50
2:A2:3328:G:H4'	25:H1:67:ARG:HH12	1.75	0.50
70:k2:119:ARG:HA	70:k2:122:LYS:HE3	1.93	0.50
83:m2:335:G:H2'	83:m2:336:C:O4'	2.11	0.50
83:m2:865:U:H2'	83:m2:866:A:C8	2.45	0.50
1:A1:89:THR:O	1:A1:93:MET:HG2	2.12	0.49
2:A2:1836:G:H2'	2:A2:1837:C:C6	2.48	0.49
11:C2:67:U:H2'	11:C2:68:G:H8	1.77	0.49
17:E2:80:GLU:HG2	17:E2:82:PRO:HD3	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:U3:122:PRO:HA	54:U3:127:GLY:HA2	1.94	0.49
83:m2:118:C:H3'	83:m2:119:U:H6	1.77	0.49
83:m2:1459:U:H2'	83:m2:1460:G:C8	2.45	0.49
2:A2:217:C:H3'	2:A2:218:A:H4'	1.94	0.49
2:A2:854:A:H1'	2:A2:1878:G:H5"	1.94	0.49
2:A2:1574:C:H2'	2:A2:1575:U:C6	2.46	0.49
2:A2:1896:A:H2'	2:A2:1897:A:C4	2.47	0.49
2:A2:3472:A:OP1	2:A2:3474:OMU:H5	2.12	0.49
2:A2:4325:U:H2'	2:A2:4326:C:H6	1.76	0.49
2:A2:4431:C:H2'	2:A2:4432:C:C6	2.47	0.49
13:D1:47:PRO:HB3	13:D1:171:TRP:CZ2	2.47	0.49
15:D3:20:SER:HB3	15:D3:59:ILE:HD11	1.93	0.49
36:L3:134:HIS:CE1	36:L3:164:PRO:HD2	2.47	0.49
51:T2:12:LEU:HB2	51:T2:81:MET:HB3	1.92	0.49
51:T2:42:LEU:HA	51:T2:74:VAL:HG22	1.94	0.49
53:U2:100:ILE:HG12	53:U2:123:ILE:HB	1.94	0.49
59:Z2:11:PHE:HB2	59:Z2:101:ILE:HD12	1.94	0.49
83:m2:926:G:H1	83:m2:1020:U:H3	1.60	0.49
83:m2:955:C:H2'	83:m2:956:U:C6	2.47	0.49
83:m2:1038:A:H4'	83:m2:1857:G:N2	2.27	0.49
83:m2:1690:C:H2'	83:m2:1691:C:C6	2.47	0.49
83:m2:1846:U:H2'	83:m2:1847:A:H8	1.75	0.49
2:A2:2030:G:H2'	2:A2:2031:A:C8	2.47	0.49
2:A2:3762:C:H2'	2:A2:3763:U:C6	2.48	0.49
2:A2:4340:C:H2'	2:A2:4341:U:C6	2.48	0.49
3:A3:27:ALA:HB2	3:A3:52:LEU:HD23	1.94	0.49
7:Bv:27:G:H2'	7:Bv:28:G:H8	1.77	0.49
11:C2:91:A:H5'	49:S2:22:PRO:HB3	1.94	0.49
25:H1:191:ALA:O	25:H1:195:ARG:HG2	2.11	0.49
26:H2:106:ASP:OD2	26:H2:107:LYS:HG3	2.12	0.49
49:S2:31:SER:HA	49:S2:48:PRO:HA	1.93	0.49
7:n2:28:G:H2'	7:n2:29:G:C8	2.47	0.49
73:q2:177:LEU:HD12	73:q2:182:LEU:HD23	1.95	0.49
83:m2:16:G:H2'	83:m2:17:C:C6	2.47	0.49
83:m2:1351:G:C5'	83:m2:1351:G:C8	2.88	0.49
2:A2:318:A:H2'	2:A2:319:A:C8	2.47	0.49
2:A2:2649:A:H2'	2:A2:2650:A:C8	2.47	0.49
2:A2:3340:G:H2'	2:A2:3341:C:C6	2.47	0.49
2:A2:3880:OMG:H5"	2:A2:3881:U:O4'	2.12	0.49
2:A2:4637:U:H2'	2:A2:4638:G:C8	2.48	0.49
4:B1:162:ASP:HB2	4:B1:163:PRO:HD3	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:B3:21:PHE:HA	6:B3:24:LYS:NZ	2.28	0.49
17:E2:393:LYS:HE2	17:E2:397:ILE:HD11	1.93	0.49
21:F3:4:LYS:HE2	21:F3:92:ARG:NH1	2.28	0.49
35:L2:135:LYS:O	35:L2:139:MET:HG3	2.12	0.49
47:R2:100:VAL:HG21	47:R2:109:ILE:HD11	1.94	0.49
82:z2:7:LYS:HB2	83:m2:1375:C:OP1	2.12	0.49
2:A2:440:U:H2'	2:A2:441:G:H8	1.77	0.49
2:A2:811:G:H8	2:A2:811:G:OP2	1.95	0.49
2:A2:1482:A:H4'	2:A2:1498:G:N2	2.27	0.49
2:A2:3592:A:H2'	2:A2:3593:C:C6	2.47	0.49
2:A2:4550:C:H2'	2:A2:4551:C:C6	2.47	0.49
3:A3:132:ARG:HB2	3:A3:134:GLN:HE22	1.76	0.49
7:Bz:16:U:O3'	7:Bz:17:C:H2'	2.12	0.49
17:E2:19:ARG:HD3	17:E2:275:HIS:NE2	2.27	0.49
19:F1:81:LEU:HD11	19:F1:98:VAL:HG22	1.94	0.49
20:F2:36:ILE:HG21	20:F2:122:TYR:HD2	1.77	0.49
26:H2:215:ILE:HG23	26:H2:219:LEU:HD12	1.94	0.49
27:H3:34:TYR:HE1	83:m2:1552:G:P	2.35	0.49
31:J3:187:ARG:CZ	31:J3:192:LEU:HD12	2.43	0.49
33:K3:50:VAL:HG12	33:K3:113:ILE:HG12	1.95	0.49
34:L1:169:VAL:HG21	34:L1:183:ILE:HG22	1.94	0.49
48:R3:92:LEU:HD23	48:R3:97:ILE:HG13	1.94	0.49
51:T2:79:HIS:CD2	60:a2:88:ARG:HH22	2.29	0.49
70:k2:33:LYS:HD2	70:k2:40:TYR:CZ	2.47	0.49
7:n2:41:C:H5'	75:s2:198:ARG:NH1	2.27	0.49
73:q2:29:LEU:HB3	73:q2:32:ASP:HB2	1.92	0.49
76:t2:53:VAL:HG23	76:t2:175:GLY:HA3	1.93	0.49
83:m2:1713:U:H2'	83:m2:1714:A:H8	1.76	0.49
2:A2:1084:G:H1'	2:A2:1909:G:H21	1.77	0.49
2:A2:1532:U:H2'	2:A2:1533:C:H6	1.78	0.49
2:A2:2648:U:H2'	2:A2:2649:A:H8	1.77	0.49
2:A2:3266:A:H2'	2:A2:3267:A:H8	1.78	0.49
2:A2:4270:A2M:H5"	43:P2:15:ARG:HB2	1.94	0.49
2:A2:4382:C:H2'	2:A2:4383:G:O4'	2.13	0.49
17:E2:37:ALA:HA	17:E2:188:GLY:H	1.78	0.49
20:F2:146:GLU:HG3	20:F2:175:LYS:HB3	1.94	0.49
34:L1:71:GLN:HG3	34:L1:72:GLN:OE1	2.13	0.49
43:P2:62:MET:HE3	43:P2:76:VAL:HG12	1.93	0.49
71:o2:102:ARG:NE	83:m2:1379:U:C5	2.80	0.49
73:q2:38:GLU:HB3	73:q2:49:ILE:HG13	1.93	0.49
83:m2:29:G:H2'	83:m2:30:C:C6	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:m2:29:G:H2'	83:m2:30:C:H6	1.77	0.49
83:m2:96:C:H2'	83:m2:97:U:H6	1.76	0.49
2:A2:1277:C:H5"	55:V2:32:LEU:HD12	1.94	0.49
2:A2:1824:C:H2'	2:A2:1825:C:H6	1.77	0.49
2:A2:2599:A:O2'	2:A2:4283:G:H4'	2.13	0.49
2:A2:3263:U:H2'	2:A2:3264:A:C8	2.46	0.49
2:A2:3504:U:H2'	2:A2:3505:A:C8	2.47	0.49
7:Bz:28:G:H2'	7:Bz:29:G:H8	1.77	0.49
11:C2:70:G:H5"	49:S2:27:ARG:CZ	2.42	0.49
36:L3:93:LYS:HB3	36:L3:96:TYR:HD2	1.77	0.49
53:U2:100:ILE:HG21	53:U2:125:LYS:HE3	1.94	0.49
70:k2:119:ARG:O	70:k2:122:LYS:HG2	2.13	0.49
7:n2:59:U:H2'	7:n2:60:U:O4'	2.13	0.49
83:m2:945:U:C2	83:m2:946:A:C8	3.00	0.49
83:m2:1375:C:H2'	83:m2:1376:C:C6	2.48	0.49
2:A2:952:C:H2'	2:A2:953:G:H8	1.77	0.49
2:A2:1669:A:H2'	2:A2:1670:A:C8	2.48	0.49
2:A2:2203:G:H2'	2:A2:2204:A:C8	2.47	0.49
2:A2:2658:G:H5'	2:A2:3248:G:H21	1.77	0.49
19:F1:18:TRP:CD1	19:F1:18:TRP:H	2.30	0.49
20:F2:218:ILE:HA	20:F2:229:LEU:HG	1.95	0.49
21:F3:44:ILE:HD11	42:O3:97:LEU:HD23	1.93	0.49
22:G1:97:ALA:HA	22:G1:100:ARG:HG2	1.94	0.49
42:O3:26:ASN:O	42:O3:26:ASN:ND2	2.41	0.49
43:P2:25:VAL:HG22	43:P2:38:TYR:HD1	1.78	0.49
73:q2:27:ARG:HB3	78:v2:61:GLN:HE21	1.78	0.49
77:u2:38:ILE:HG12	77:u2:96:LEU:HD23	1.95	0.49
80:x2:107:ILE:HA	80:x2:111:MET:HE3	1.95	0.49
2:A2:259:C:H2'	2:A2:260:C:C6	2.48	0.49
2:A2:263:G:H2'	2:A2:264:C:C6	2.47	0.49
2:A2:2651:G:H5"	35:L2:134:ASN:CG	2.38	0.49
2:A2:3512:A:H5"	30:J2:83:TRP:O	2.13	0.49
16:E1:86:GLY:HA3	16:E1:130:PHE:HE2	1.77	0.49
61:b2:21:LEU:HG	61:b2:25:LYS:HE2	1.95	0.49
83:m2:1131:G:H2'	83:m2:1132:G:N3	2.28	0.49
2:A2:3253:G:H4'	2:A2:3254:C:OP1	2.13	0.49
14:D2:117:GLU:HG2	14:D2:124:GLY:N	2.28	0.49
83:m2:1229:G:C2	83:m2:1230:A:C8	3.01	0.49
83:m2:1327:G:H1'	83:m2:1512:G:H5"	1.95	0.49
83:m2:1595:C:H2'	83:m2:1596:A:H8	1.78	0.49
2:A2:129:C:H2'	2:A2:130:G:C8	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:1686:C:OP1	58:Y2:50:LYS:HG3	2.13	0.48
2:A2:2504:C:H2'	2:A2:2505:G:C8	2.48	0.48
2:A2:3588:U:H2'	2:A2:3589:G:C8	2.48	0.48
2:A2:3898:G:H2'	2:A2:3899:G:H8	1.78	0.48
16:E1:57:VAL:HG12	16:E1:60:PHE:H	1.78	0.48
29:I3:55:PRO:HB2	81:y2:102:GLU:OE2	2.13	0.48
33:K3:195:LYS:HE3	83:m2:126:G:C4	2.48	0.48
39:N2:64:VAL:HG13	39:N2:72:VAL:HG13	1.95	0.48
7:n2:15:G:H22	7:n2:21:A:H1'	1.78	0.48
72:p2:34:LYS:HB2	72:p2:97:LEU:HD13	1.95	0.48
72:p2:127:VAL:HG21	72:p2:176:VAL:HB	1.95	0.48
83:m2:1176:U:C2	83:m2:1177:G:C8	3.01	0.48
83:m2:1215:C:H2'	83:m2:1216:A:C8	2.48	0.48
83:m2:1607:G:H1'	83:m2:1636:A:N6	2.28	0.48
2:A2:152:U:P	25:H1:49:ARG:HH12	2.36	0.48
2:A2:406:C:H2'	2:A2:407:A:C8	2.48	0.48
2:A2:453:G:H22	2:A2:1107:G:H22	1.62	0.48
2:A2:2409:C:H2'	2:A2:2410:C:C6	2.48	0.48
2:A2:3425:C:H2'	2:A2:3426:U:C6	2.48	0.48
2:A2:4297:C:H3'	35:L2:62:ARG:HH22	1.78	0.48
4:B1:190:LEU:HB3	4:B1:199:CYS:HB3	1.94	0.48
12:C3:31:SER:HB3	12:C3:107:GLU:OE1	2.13	0.48
18:E3:36:LEU:HA	18:E3:39:ASN:ND2	2.28	0.48
29:I3:79:LEU:HD13	29:I3:89:LEU:HD12	1.95	0.48
69:j2:26:VAL:HG22	69:j2:30:GLU:HG3	1.93	0.48
80:x2:137:HIS:O	80:x2:140:ARG:HG2	2.14	0.48
2:A2:18:C:H4'	25:H1:138:PHE:CD1	2.48	0.48
2:A2:1250:C:H2'	2:A2:1251:U:C6	2.48	0.48
2:A2:2484:C:H2'	2:A2:2485:U:O4'	2.13	0.48
2:A2:3617:G:H21	2:A2:3621:A:H62	1.61	0.48
2:A2:3716:U:H2'	2:A2:3717:U:C6	2.48	0.48
2:A2:3721:U:H2'	2:A2:3722:C:H6	1.77	0.48
2:A2:4272:OMU:H5'	43:P2:51:ARG:NH1	2.28	0.48
5:B2:111:C:H2'	5:B2:112:U:O4'	2.14	0.48
7:Bz:17:C:O2'	7:Bz:18:G:H5'	2.13	0.48
15:D3:61:ARG:HH21	83:m2:1140:C:N4	2.11	0.48
17:E2:43:LEU:HG	17:E2:196:TRP:HH2	1.77	0.48
30:J2:85:LYS:HE2	30:J2:89:GLU:OE2	2.13	0.48
78:v2:13:GLU:O	78:v2:17:LYS:HG3	2.14	0.48
80:x2:115:TYR:HB2	80:x2:118:GLU:HG3	1.95	0.48
83:m2:178:C:H2'	83:m2:179:C:H6	1.78	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:m2:1205:G:H2'	83:m2:1206:A:H8	1.74	0.48
2:A2:1092:C:H2'	2:A2:1093:A:O4'	2.12	0.48
2:A2:1527:U:H2'	2:A2:1528:U:C6	2.49	0.48
2:A2:1680:G:H2'	2:A2:1681:C:C6	2.49	0.48
2:A2:4271:U:H2'	2:A2:4272:OMU:H6	1.94	0.48
31:J3:118:ALA:HB1	83:m2:1489:A:O4'	2.14	0.48
54:U3:135:HIS:CE1	54:U3:140:TYR:HB3	2.47	0.48
7:n2:35:A:H2'	7:n2:36:A:H8	1.78	0.48
81:y2:97:GLN:HB2	81:y2:105:LYS:HZ2	1.78	0.48
83:m2:1428:U:H2'	83:m2:1429:C:C6	2.48	0.48
83:m2:1530:G:H2'	83:m2:1531:C:C6	2.49	0.48
83:m2:1810:U:H2'	83:m2:1811:A:C8	2.48	0.48
2:A2:1223:C:H2'	2:A2:1224:G:O4'	2.14	0.48
2:A2:2299:G:H22	11:C2:125:C:H5'	1.79	0.48
2:A2:3346:U:H2'	2:A2:3347:G:O4'	2.14	0.48
3:A3:19:ASN:OD1	16:E1:119:TYR:CG	2.66	0.48
10:C1:93:ARG:HG2	10:C1:182:SER:HB3	1.96	0.48
10:C1:134:CYS:SG	10:C1:144:LEU:HD22	2.53	0.48
16:E1:18:ARG:HB2	16:E1:133:VAL:O	2.13	0.48
41:O2:101:ARG:HD2	41:O2:115:PHE:CE1	2.49	0.48
45:Q2:31:PHE:CD2	45:Q2:37:GLU:HG2	2.48	0.48
61:b2:91:MET:HE1	63:d2:78:PHE:CD2	2.49	0.48
71:o2:140:VAL:HG23	71:o2:142:LEU:HB2	1.96	0.48
76:t2:100:ILE:H	76:t2:100:ILE:HD12	1.79	0.48
77:u2:194:GLU:HG3	79:w2:10:TYR:CD2	2.48	0.48
78:v2:10:ALA:HB1	78:v2:38:LYS:HD3	1.94	0.48
79:w2:81:LYS:HB3	83:m2:396:G:H5'	1.96	0.48
80:x2:40:ARG:HG2	83:m2:1623:U:OP1	2.14	0.48
83:m2:1203:U:O2'	83:m2:1360:U:O2'	2.13	0.48
83:m2:1597:U:H2'	83:m2:1598:U:C6	2.48	0.48
1:A1:98:ARG:CD	2:A2:736:G:H5"	2.43	0.48
2:A2:1893:C:C4	2:A2:1896:A:H4'	2.49	0.48
2:A2:3709:C:H2'	2:A2:3710:U:C6	2.48	0.48
7:Bv:34:G:O4'	83:m2:1250:B8N:C32	2.62	0.48
17:E2:60:VAL:HG21	17:E2:67:VAL:HG23	1.95	0.48
24:G3:62:GLU:HG2	42:O3:121:ARG:HE	1.69	0.48
30:J2:131:ARG:HG3	30:J2:137:ASN:ND2	2.26	0.48
56:W2:30:GLY:O	56:W2:34:THR:HG23	2.12	0.48
74:r2:124:CYS:HA	74:r2:142:HIS:HE1	1.79	0.48
74:r2:203:GLY:HA2	83:m2:293:G:C2	2.48	0.48
83:m2:676:C:H2'	83:m2:677:U:C6	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:281:U:O2'	2:A2:329:A:H1'	2.14	0.48
2:A2:1023:C:H2'	2:A2:1024:C:C6	2.49	0.48
2:A2:1899:G:H5'	2:A2:1900:G:H4'	1.95	0.48
2:A2:2255:U:H2'	2:A2:2256:C:C6	2.48	0.48
2:A2:2389:C:H2'	2:A2:2390:U:C6	2.48	0.48
20:F2:224:ILE:HB	20:F2:227:ILE:HD12	1.96	0.48
23:G2:278:ASP:O	23:G2:282:GLN:HG3	2.14	0.48
33:K3:141:ILE:HD11	33:K3:157:VAL:HA	1.95	0.48
44:P3:57:ARG:HH21	83:m2:921:A:H5'	1.78	0.48
55:V2:65:VAL:HA	55:V2:68:ARG:HG2	1.95	0.48
70:k2:108:MET:O	70:k2:112:ARG:HG3	2.14	0.48
83:m2:71:G:H3'	83:m2:72:C:H5"	1.95	0.48
83:m2:439:G:H2'	83:m2:440:G:O4'	2.14	0.48
83:m2:486:A2M:H8	83:m2:486:A2M:O5'	2.14	0.48
2:A2:1910:G:H2'	2:A2:1911:G:O4'	2.12	0.48
2:A2:2602:G:OP1	43:P2:85:ARG:HD3	2.13	0.48
2:A2:3267:A:H2	2:A2:4662:A:H8	1.61	0.48
2:A2:3275:G:H4'	35:L2:79:GLY:O	2.13	0.48
2:A2:3419:A:C2	83:m2:1711:G:H4'	2.48	0.48
2:A2:3504:U:H2'	2:A2:3505:A:H8	1.79	0.48
2:A2:4649:U:H2'	2:A2:4650:C:C6	2.49	0.48
11:C2:144:U:H2'	11:C2:145:C:C6	2.49	0.48
31:J3:91:SER:HB3	31:J3:156:ILE:HG23	1.95	0.48
31:J3:117:ARG:NH1	83:m2:1690:C:OP1	2.46	0.48
74:r2:16:LYS:HD3	83:m2:814:A:H5"	1.96	0.48
83:m2:159:A:H2	83:m2:469:G:H21	1.62	0.48
1:A1:125:PRO:HD3	2:A2:1678:U:O3'	2.14	0.48
2:A2:3573:A:H2'	2:A2:3574:G:H8	1.79	0.48
2:A2:4104:U:H2'	2:A2:4174:G:O6	2.14	0.48
11:C2:74:U:C4	49:S2:74:TYR:HD1	2.32	0.48
12:C3:76:THR:HG21	83:m2:1340:G:H5"	1.95	0.48
29:I3:36:ARG:HD2	29:I3:65:PHE:CD2	2.49	0.48
30:J2:15:CYS:SG	30:J2:150:LEU:HB2	2.54	0.48
60:a2:88:ARG:HG2	60:a2:92:LYS:HE2	1.95	0.48
64:e2:12:LEU:HB3	64:e2:16:ARG:NH1	2.29	0.48
83:m2:14:C:H2'	83:m2:15:U:H6	1.78	0.48
83:m2:106:C:H5"	83:m2:433:G:O2'	2.13	0.48
83:m2:1225:A:H2'	83:m2:1226:G:O4'	2.13	0.48
2:A2:1668:G:H1	2:A2:4092:G:N2	2.11	0.48
2:A2:2464:C:H2'	2:A2:2465:C:C6	2.49	0.48
2:A2:3891:A:H2'	2:A2:3892:G:C8	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:4263:A:H2'	2:A2:4264:C:C6	2.49	0.48
17:E2:68:ASN:O	17:E2:70:LYS:HG3	2.14	0.48
23:G2:155:THR:HA	23:G2:179:ARG:HA	1.96	0.48
27:H3:46:TYR:O	27:H3:50:ILE:HD12	2.14	0.48
31:J3:210:PRO:HD3	31:J3:236:PHE:CE2	2.49	0.48
47:R2:126:THR:CG2	47:R2:134:LYS:HE2	2.43	0.48
77:u2:130:THR:OG1	77:u2:131:PRO:HD2	2.12	0.48
83:m2:1246:U:H2'	83:m2:1247:G:H8	1.78	0.48
2:A2:856:G:C2	26:H2:131:LYS:HD2	2.49	0.47
2:A2:1596:A:H5"	2:A2:3866:A:H61	1.79	0.47
2:A2:3618:A:C2	2:A2:3689:G:H5"	2.49	0.47
2:A2:3811:C:H2'	2:A2:3812:C:C6	2.49	0.47
2:A2:4581:G:C6	26:H2:190:ARG:HD3	2.49	0.47
7:Bz:36:A:H1'	83:m2:628:G:H21	1.78	0.47
7:Bz:43:C:H2'	7:Bz:44:G:H8	1.78	0.47
29:I3:18:VAL:HA	29:I3:35:SER:HB2	1.95	0.47
46:Q3:55:ILE:HG12	46:Q3:75:ILE:HD12	1.96	0.47
73:q2:175:VAL:HG12	73:q2:177:LEU:HG	1.94	0.47
83:m2:340:G:H2'	83:m2:341:A:C8	2.49	0.47
83:m2:680:U:H2'	83:m2:681:A:H8	1.79	0.47
83:m2:949:G:H2'	83:m2:950:C:H6	1.78	0.47
2:A2:2494:C:H5"	69:j2:69:TRP:CH2	2.49	0.47
2:A2:3926:A:H2'	2:A2:3927:G:H8	1.79	0.47
2:A2:4388:C:H2'	2:A2:4389:G:H8	1.79	0.47
3:A3:22:GLY:HA2	3:A3:56:ALA:HB3	1.95	0.47
11:C2:70:G:H5"	49:S2:27:ARG:NH2	2.28	0.47
11:C2:89:U:H2'	11:C2:90:C:C6	2.49	0.47
15:D3:16:LYS:HG2	15:D3:23:ILE:HD13	1.96	0.47
24:G3:34:PHE:CZ	24:G3:61:SER:HB3	2.48	0.47
29:I3:5:MET:HG2	29:I3:270:LEU:HD11	1.96	0.47
33:K3:195:LYS:C	33:K3:195:LYS:HD3	2.39	0.47
37:M2:165:PRO:C	37:M2:167:PHE:H	2.22	0.47
40:N3:15:ALA:HB2	50:S3:21:LYS:HD3	1.96	0.47
47:R2:78:LYS:HB2	47:R2:99:ILE:O	2.13	0.47
7:n2:21:A:N6	7:n2:46:G:H2'	2.29	0.47
72:p2:81:PHE:CE1	72:p2:82:ARG:HG3	2.50	0.47
75:s2:83:ASN:HD21	83:m2:1652:A:H2	1.62	0.47
83:m2:153:G:N2	83:m2:165:G:H22	2.12	0.47
83:m2:498:C:H2'	83:m2:499:C:H6	1.79	0.47
83:m2:1037:A:C4	83:m2:1038:A:C8	3.02	0.47
2:A2:2324:G:H2'	2:A2:2325:U:C6	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:Bz:63:G:H2'	7:Bz:64:A:H8	1.78	0.47
75:s2:77:MET:HB3	75:s2:83:ASN:HA	1.97	0.47
78:v2:83:LEU:HB2	78:v2:85:LEU:HG	1.95	0.47
83:m2:443:C:H2'	83:m2:444:C:C6	2.49	0.47
83:m2:1232:C:H2'	83:m2:1233:C:H6	1.79	0.47
2:A2:1155:U:H2'	2:A2:1156:A:C8	2.49	0.47
2:A2:1665:U:OP1	13:D1:15:LYS:HG3	2.14	0.47
10:C1:12:ILE:HG12	10:C1:18:ILE:HD12	1.96	0.47
15:D3:62:MET:HE3	15:D3:64:GLU:HG3	1.96	0.47
28:I2:16:LEU:HD21	28:I2:83:THR:HG21	1.95	0.47
29:I3:199:THR:HG22	29:I3:241:PHE:HD2	1.79	0.47
33:K3:161:PRO:HA	33:K3:171:THR:HG22	1.96	0.47
43:P2:106:VAL:HG12	43:P2:112:MET:HA	1.97	0.47
70:k2:2:SER:O	70:k2:6:GLN:HG3	2.14	0.47
80:x2:39:ALA:HB2	83:m2:1615:G:H3'	1.96	0.47
81:y2:23:ALA:HB2	81:y2:87:SER:OG	2.14	0.47
83:m2:534:C:N4	83:m2:555:A:H61	2.12	0.47
2:A2:1292:G:H2'	2:A2:1293:C:C6	2.49	0.47
2:A2:2297:G:H2'	2:A2:2298:A:C8	2.49	0.47
2:A2:3871:A:H2'	2:A2:3872:A:C8	2.48	0.47
11:C2:77:A:H2'	11:C2:78:G:C8	2.50	0.47
29:I3:77:PHE:CE2	29:I3:89:LEU:HD11	2.50	0.47
36:L3:74:GLY:O	36:L3:78:LEU:HD13	2.15	0.47
51:T2:83:THR:HG22	60:a2:95:PHE:CZ	2.50	0.47
55:V2:99:HIS:CE1	55:V2:101:LYS:HB3	2.49	0.47
56:W2:47:ILE:HD12	56:W2:94:LEU:HD11	1.95	0.47
81:y2:19:ALA:HB2	81:y2:75:GLY:HA3	1.96	0.47
83:m2:1137:C:H2'	83:m2:1138:U:C6	2.49	0.47
83:m2:1608:G:N2	83:m2:1634:G:H2'	2.30	0.47
1:A1:245:LYS:HD3	2:A2:1709:A:O2'	2.14	0.47
2:A2:1347:A2M:HM'3	2:A2:1450:A:N3	2.29	0.47
2:A2:3632:C:H3'	2:A2:3633:C:C6	2.50	0.47
2:A2:3826:U:H2'	2:A2:3827:G:H8	1.79	0.47
2:A2:3847:G:C8	2:A2:4094:PSU:H5'	2.49	0.47
2:A2:4024:U:OP2	68:i2:61:LYS:HG2	2.15	0.47
2:A2:4601:A:H2'	2:A2:4602:A:C8	2.50	0.47
2:A2:4675:C:H2'	2:A2:4676:U:H6	1.80	0.47
23:G2:156:GLY:HA2	23:G2:181:PRO:HG3	1.97	0.47
29:I3:291:TRP:CD1	29:I3:298:LEU:HD13	2.50	0.47
32:K2:12:LYS:HB2	32:K2:14:ARG:HE	1.80	0.47
33:K3:98:ARG:HD3	33:K3:99:GLY:O	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:N2:143:THR:O	39:N2:146:LYS:HG2	2.15	0.47
60:a2:114:GLN:HE22	60:a2:115:LYS:HE3	1.79	0.47
70:k2:49:VAL:HG11	70:k2:97:ILE:HD11	1.96	0.47
74:r2:29:PRO:HG2	74:r2:46:ILE:HD11	1.97	0.47
74:r2:68:ARG:HH21	74:r2:76:VAL:HG11	1.78	0.47
76:t2:62:ILE:HD11	76:t2:94:PHE:CE1	2.49	0.47
83:m2:177:G:H1'	83:m2:315:A:N6	2.30	0.47
83:m2:1131:G:H3'	83:m2:1132:G:N2	2.27	0.47
83:m2:1215:C:H2'	83:m2:1216:A:H8	1.79	0.47
2:A2:1155:U:H2'	2:A2:1156:A:H8	1.79	0.47
2:A2:1577:A:H2'	2:A2:1578:A:H8	1.79	0.47
2:A2:2353:A:N3	60:a2:61:PRO:HB3	2.30	0.47
2:A2:2360:G:O2'	2:A2:2361:G:H5'	2.15	0.47
2:A2:3511:C:H2'	2:A2:3512:A:H8	1.80	0.47
2:A2:3529:G:H2'	2:A2:3530:G:C8	2.49	0.47
2:A2:3607:G:H2'	2:A2:3608:A:H8	1.79	0.47
2:A2:4571:C:H2'	2:A2:4572:G:C8	2.49	0.47
6:B3:31:PRO:HG2	6:B3:33:TRP:O	2.14	0.47
6:B3:39:LEU:HD21	6:B3:56:ARG:NH2	2.29	0.47
11:C2:154:G:H2'	11:C2:155:C:C6	2.49	0.47
20:F2:25:PRO:HG2	20:F2:28:PHE:CE2	2.49	0.47
21:F3:28:ARG:HH12	42:O3:147:ARG:HG2	1.80	0.47
23:G2:279:ARG:O	23:G2:283:LYS:HG3	2.14	0.47
24:G3:26:GLN:HG2	83:m2:1221:C:O2'	2.15	0.47
28:I2:9:LEU:HD23	28:I2:118:MET:HB2	1.96	0.47
29:I3:14:HIS:HD1	29:I3:41:ILE:HB	1.79	0.47
34:L1:86:ASP:CG	34:L1:87:ILE:H	2.23	0.47
34:L1:181:TYR:HA	34:L1:184:HIS:HE1	1.78	0.47
36:L3:173:VAL:HG21	83:m2:563:A:N7	2.29	0.47
38:M3:42:LEU:HD11	38:M3:68:LEU:HB3	1.95	0.47
38:M3:58:GLU:O	38:M3:58:GLU:HG2	2.13	0.47
44:P3:35:VAL:O	44:P3:39:THR:HG23	2.14	0.47
59:Z2:48:ALA:HB2	59:Z2:71:TRP:CZ3	2.49	0.47
70:k2:16:PHE:HB3	70:k2:27:THR:H	1.79	0.47
80:x2:56:LEU:HD22	80:x2:80:LEU:HD12	1.97	0.47
83:m2:73:C:H2'	83:m2:76:U:O4	2.14	0.47
83:m2:129:C:H1'	83:m2:130:G:H5"	1.96	0.47
83:m2:199:U:H3'	83:m2:200:C:C5'	2.45	0.47
83:m2:498:C:H2'	83:m2:499:C:C6	2.49	0.47
83:m2:876:G:H2'	83:m2:877:A:C8	2.43	0.47
83:m2:1851:G:H2'	83:m2:1852:A:C8	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:281:U:HO2'	2:A2:329:A:H1'	1.80	0.47
2:A2:512:C:H2'	2:A2:513:U:O4'	2.15	0.47
2:A2:835:U:H2'	2:A2:836:C:C6	2.49	0.47
2:A2:1337:A2M:H8	2:A2:3571:U:O2	2.15	0.47
2:A2:2445:C:H2'	2:A2:2446:U:C6	2.50	0.47
6:B3:28:LEU:HD11	6:B3:54:TYR:CE1	2.50	0.47
11:C2:50:C:H2'	65:f2:26:TRP:CZ3	2.49	0.47
13:D1:103:LEU:HD13	13:D1:113:THR:HG22	1.96	0.47
17:E2:86:VAL:HG12	17:E2:201:LEU:HD12	1.97	0.47
39:N2:39:ILE:HD13	39:N2:102:ARG:HD3	1.95	0.47
39:N2:51:GLY:HA3	39:N2:92:ARG:HG3	1.97	0.47
47:R2:73:HIS:CD2	47:R2:115:LYS:HG2	2.50	0.47
51:T2:25:ILE:HG23	51:T2:41:ALA:HB1	1.96	0.47
58:Y2:90:MET:HG3	70:k2:33:LYS:HA	1.97	0.47
64:e2:27:LYS:HG2	64:e2:32:VAL:HG22	1.97	0.47
68:i2:14:LYS:NZ	68:i2:77:CYS:HA	2.30	0.47
75:s2:73:THR:HG22	75:s2:93:VAL:HG21	1.96	0.47
83:m2:89:C:O2'	83:m2:501:G:H5"	2.14	0.47
83:m2:106:C:H2'	83:m2:107:A:C8	2.49	0.47
83:m2:190:G:N3	83:m2:190:G:H2'	2.30	0.47
2:A2:1508:U:H2'	2:A2:1509:C:C6	2.50	0.47
2:A2:2168:U:H2'	2:A2:2169:G:H8	1.80	0.47
2:A2:3285:A:O4'	83:m2:1723:U:C2	2.68	0.47
11:C2:88:A:H2'	11:C2:89:U:O4'	2.15	0.47
24:G3:62:GLU:OE1	42:O3:121:ARG:CD	2.63	0.47
31:J3:146:GLU:HG3	73:q2:116:ARG:CZ	2.44	0.47
38:M3:129:LYS:HD3	38:M3:132:LYS:HE2	1.96	0.47
83:m2:1206:A:H2'	83:m2:1207:C:C6	2.50	0.47
83:m2:1616:A:H2'	83:m2:1617:U:C6	2.49	0.47
2:A2:1085:C:H5	2:A2:1910:G:H21	1.63	0.47
2:A2:1697:G:H2'	2:A2:1698:A:O4'	2.14	0.47
2:A2:4176:G:N3	17:E2:252:ALA:HB1	2.29	0.47
2:A2:4351:U:H4'	2:A2:4352:A:OP1	2.15	0.47
2:A2:4663:G:P	77:u2:92:ARG:CG	3.00	0.47
19:F1:16:LYS:O	19:F1:16:LYS:HG2	2.14	0.47
19:F1:94:ILE:HG23	19:F1:124:LEU:HD22	1.97	0.47
19:F1:177:LYS:HB3	19:F1:180:ALA:HB3	1.97	0.47
33:K3:190:ARG:NH1	33:K3:194:LEU:HD22	2.29	0.47
47:R2:83:THR:O	47:R2:87:MET:HG2	2.15	0.47
53:U2:71:PRO:HG2	53:U2:108:TYR:HA	1.97	0.47
72:p2:44:ILE:HD11	72:p2:69:VAL:HB	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:m2:1015:U:H2'	83:m2:1016:G:H8	1.80	0.47
83:m2:1099:G:H2'	83:m2:1100:C:H6	1.79	0.47
83:m2:1103:U:H2'	83:m2:1104:G:C8	2.49	0.47
83:m2:1751:G:H2'	83:m2:1752:C:C6	2.50	0.47
2:A2:113:A:H1'	25:H1:50:ARG:HA	1.97	0.46
2:A2:689:G:H2'	2:A2:690:C:C6	2.50	0.46
2:A2:740:A:N6	2:A2:828:G:H21	2.04	0.46
2:A2:755:G:OP1	37:M2:134:ALA:HB3	2.14	0.46
2:A2:1233:A:H2'	2:A2:1233:A:N3	2.30	0.46
2:A2:1695:C:H1'	2:A2:1739:C:O2	2.14	0.46
2:A2:4133:U:H2'	2:A2:4134:U:C6	2.50	0.46
2:A2:4700:C:H4'	2:A2:4701:G:C8	2.50	0.46
3:A3:121:ARG:HD2	83:m2:1612:G:OP1	2.15	0.46
17:E2:238:LYS:HE2	17:E2:238:LYS:HB2	1.66	0.46
19:F1:140:SER:HA	19:F1:143:GLU:HB2	1.97	0.46
22:G1:41:PRO:HB3	22:G1:70:GLN:HG3	1.97	0.46
25:H1:178:HIS:NE2	25:H1:179:LYS:HE3	2.30	0.46
30:J2:24:VAL:HG12	30:J2:86:LYS:HG2	1.97	0.46
40:N3:18:TYR:HE2	76:t2:139:ILE:HG22	1.80	0.46
48:R3:66:LYS:HD2	48:R3:67:LEU:N	2.30	0.46
64:e2:31:ASN:HB3	64:e2:48:THR:HG22	1.97	0.46
7:n2:2:C:H2'	7:n2:3:C:C6	2.50	0.46
83:m2:13:C:H4'	83:m2:1357:C:O2	2.14	0.46
83:m2:617:C:H2'	83:m2:618:A:O4'	2.15	0.46
83:m2:942:U:H2'	83:m2:943:C:C6	2.50	0.46
1:A1:76:ALA:HB2	1:A1:210:GLU:HG3	1.97	0.46
2:A2:666:G:H2'	2:A2:667:G:H8	1.80	0.46
2:A2:1347:A2M:HM'3	2:A2:1450:A:C2	2.50	0.46
2:A2:1404:U:OP2	17:E2:243:LYS:HE2	2.15	0.46
2:A2:1707:U:P	59:Z2:76:ARG:HH12	2.38	0.46
2:A2:2498:A:H1'	14:D2:21:LYS:NZ	2.30	0.46
2:A2:4417:G:N2	37:M2:173:ASN:HD21	2.12	0.46
2:A2:4676:U:H2'	2:A2:4677:G:H8	1.79	0.46
15:D3:11:LEU:HD11	31:J3:136:HIS:CE1	2.50	0.46
15:D3:40:ASP:HB2	15:D3:43:THR:HB	1.96	0.46
17:E2:65:SER:OG	17:E2:67:VAL:HG22	2.15	0.46
17:E2:207:VAL:HG21	17:E2:331:ILE:HD11	1.97	0.46
25:H1:45:PRO:O	25:H1:49:ARG:HG3	2.14	0.46
31:J3:133:TYR:HD1	31:J3:216:MET:HA	1.80	0.46
36:L3:46:VAL:HG11	36:L3:106:LEU:HD21	1.96	0.46
42:O3:45:THR:HG22	42:O3:52:THR:HA	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:a2:65:MET:HB2	60:a2:65:MET:HE3	1.78	0.46
72:p2:38:MET:HE3	72:p2:231:LEU:HD21	1.97	0.46
72:p2:109:LYS:O	72:p2:113:MET:HE2	2.15	0.46
77:u2:81:VAL:HG22	77:u2:102:VAL:HG12	1.96	0.46
83:m2:377:U:H2'	83:m2:378:A:H8	1.80	0.46
83:m2:869:OMG:HM23	83:m2:869:OMG:H1'	1.70	0.46
83:m2:1449:G:H2'	83:m2:1450:A:C8	2.50	0.46
2:A2:416:U:H4'	2:A2:2085:G:H4'	1.97	0.46
2:A2:4406:G:N7	26:H2:285:THR:HB	2.30	0.46
4:B1:157:ILE:HB	4:B1:183:ILE:HD13	1.97	0.46
12:C3:32:LEU:HD21	12:C3:87:ARG:HG2	1.97	0.46
14:D2:49:ILE:HD13	14:D2:60:LYS:HE3	1.96	0.46
17:E2:200:ARG:HB2	17:E2:203:GLN:HB2	1.97	0.46
19:F1:42:LYS:HG3	19:F1:45:ARG:NH2	2.29	0.46
31:J3:238:LYS:NZ	83:m2:1357:C:O2'	2.35	0.46
46:Q3:108:LYS:HD3	83:m2:53:C:O3'	2.15	0.46
48:R3:111:ARG:HD2	48:R3:114:LYS:HB2	1.97	0.46
74:r2:7:LYS:HB2	83:m2:93:U:O2'	2.14	0.46
83:m2:186:C:H2'	83:m2:187:G:H8	1.79	0.46
83:m2:495:A:H1'	83:m2:576:A:O5'	2.15	0.46
83:m2:1012:G:H2'	83:m2:1013:A:C8	2.50	0.46
83:m2:1409:U:H2'	83:m2:1410:U:C6	2.51	0.46
2:A2:175:C:H2'	2:A2:176:G:C8	2.50	0.46
2:A2:3903:A:H2'	2:A2:3904:C:C6	2.51	0.46
3:A3:86:ARG:HE	3:A3:89:ASP:CG	2.24	0.46
21:F3:38:LYS:HG2	83:m2:1869:U:O2'	2.15	0.46
23:G2:232:THR:HB	23:G2:235:MET:HG2	1.98	0.46
33:K3:7:PHE:CE2	33:K3:9:ALA:HB3	2.50	0.46
44:P3:39:THR:O	44:P3:43:LYS:HG2	2.15	0.46
48:R3:91:LEU:HB3	48:R3:97:ILE:HG12	1.96	0.46
51:T2:33:THR:HG22	51:T2:35:ASP:H	1.80	0.46
57:X2:32:ARG:HB3	57:X2:48:GLU:HG3	1.98	0.46
62:c2:29:ARG:HG2	62:c2:32:ARG:HD3	1.97	0.46
72:p2:59:SER:HB3	72:p2:63:LYS:HE2	1.98	0.46
74:r2:47:PHE:O	74:r2:51:ARG:HB2	2.14	0.46
75:s2:39:ILE:HG22	75:s2:41:VAL:HG22	1.98	0.46
75:s2:143:PRO:O	75:s2:146:ARG:HG2	2.15	0.46
83:m2:890:U:H2'	83:m2:891:U:C6	2.50	0.46
83:m2:1590:A:H2'	83:m2:1591:A:H8	1.79	0.46
1:A1:109:PRO:HG3	1:A1:166:TYR:CD2	2.50	0.46
2:A2:740:A:O2'	37:M2:72:PRO:HD2	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:1118:C:H2'	2:A2:1119:C:C6	2.51	0.46
2:A2:2037:A:O3'	53:U2:20:GLY:HA2	2.16	0.46
2:A2:2256:C:C2'	2:A2:2257:G:H5'	2.45	0.46
2:A2:2365:G:H2'	2:A2:2366:A:H8	1.81	0.46
2:A2:2438:C:H2'	2:A2:2439:C:C6	2.51	0.46
2:A2:3363:U:H2'	2:A2:3364:C:H6	1.80	0.46
2:A2:4051:U:H2'	2:A2:4052:G:O4'	2.15	0.46
2:A2:4289:OMG:H1'	2:A2:4289:OMG:HM23	1.63	0.46
4:B1:171:PRO:HB3	4:B1:181:TYR:CZ	2.50	0.46
37:M2:127:MET:HA	39:N2:153:PRO:HD2	1.98	0.46
44:P3:3:ARG:HH12	44:P3:28:ARG:HE	1.64	0.46
56:W2:57:LYS:O	56:W2:61:GLU:HG3	2.15	0.46
59:Z2:36:ARG:HD2	59:Z2:79:GLY:O	2.16	0.46
59:Z2:46:ARG:HD3	59:Z2:106:TYR:HD2	1.80	0.46
64:e2:56:LEU:HD12	64:e2:59:SER:OG	2.16	0.46
73:q2:202:LYS:HB2	73:q2:202:LYS:HE2	1.75	0.46
74:r2:52:LEU:HD11	74:r2:99:PHE:HE2	1.80	0.46
83:m2:532:U:H2'	83:m2:533:A:C5	2.51	0.46
83:m2:1201:A:H2'	83:m2:1202:A:H8	1.81	0.46
83:m2:1246:U:H2'	83:m2:1247:G:C8	2.50	0.46
83:m2:1392:U:H2'	83:m2:1393:C:H6	1.80	0.46
83:m2:1752:C:H2'	83:m2:1753:C:O4'	2.16	0.46
2:A2:723:C:OP1	20:F2:317:ASN:HB2	2.16	0.46
2:A2:1475:C:H2'	2:A2:1476:C:C6	2.50	0.46
2:A2:1496:PSU:H2'	2:A2:1497:A:C8	2.51	0.46
2:A2:2247:C:H2'	2:A2:2248:G:H8	1.81	0.46
2:A2:3412:A:H61	2:A2:3423:C:H42	1.62	0.46
2:A2:3721:U:H2'	2:A2:3722:C:C6	2.50	0.46
2:A2:3844:A:H2'	2:A2:3845:C:H6	1.81	0.46
2:A2:3884:U:O2'	68:i2:5:PRO:HD3	2.15	0.46
3:A3:40:TYR:HD1	3:A3:83:PHE:CE2	2.32	0.46
4:B1:134:PRO:HB3	4:B1:206:GLN:HB2	1.96	0.46
18:E3:94:ILE:HG13	18:E3:125:VAL:HG11	1.97	0.46
42:O3:82:ALA:HA	42:O3:124:MET:HE3	1.98	0.46
59:Z2:14:TYR:HB3	59:Z2:22:ARG:O	2.15	0.46
7:n2:30:G:H2'	7:n2:31:A:O4'	2.15	0.46
79:w2:79:LYS:HB3	79:w2:81:LYS:HD3	1.98	0.46
80:x2:25:LEU:HD21	80:x2:36:LEU:HD22	1.98	0.46
83:m2:158:A:H1'	83:m2:159:A:H5'	1.97	0.46
83:m2:423:G:H4'	83:m2:662:C:N4	2.31	0.46
83:m2:1219:A:H2'	83:m2:1220:C:H6	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:m2:1715:C:H2'	83:m2:1716:U:C6	2.50	0.46
2:A2:518:C:H2'	2:A2:519:G:H8	1.81	0.46
2:A2:1180:G:H4'	2:A2:1181:U:H5	1.80	0.46
2:A2:1667:G:H5'	13:D1:118:ALA:O	2.16	0.46
2:A2:4544:G:H5"	2:A2:4545:U:OP2	2.16	0.46
3:A3:26:ILE:HD13	3:A3:56:ALA:HA	1.97	0.46
14:D2:180:LEU:HD23	14:D2:181:LYS:HG3	1.97	0.46
19:F1:161:TYR:CE2	53:U2:105:ARG:HG3	2.51	0.46
25:H1:94:PHE:CE2	25:H1:96:ARG:HB2	2.50	0.46
28:I2:110:PRO:N	28:I2:111:PRO:HD2	2.31	0.46
29:I3:121:VAL:HG11	29:I3:165:ILE:HD11	1.98	0.46
45:Q2:3:VAL:HG13	45:Q2:13:ILE:O	2.16	0.46
74:r2:158:ASP:HB3	74:r2:173:ILE:O	2.15	0.46
74:r2:188:ASN:HB3	74:r2:191:ARG:HD3	1.97	0.46
75:s2:94:LYS:O	75:s2:98:GLU:HG3	2.16	0.46
83:m2:1753:C:H1'	83:m2:1786:G:N1	2.30	0.46
2:A2:939:C:H2'	2:A2:940:C:C6	2.49	0.46
2:A2:1258:U:H2'	2:A2:1259:C:O4'	2.15	0.46
2:A2:3834:G:H5'	14:D2:226:ARG:HH12	1.81	0.46
3:A3:9:PHE:CE1	3:A3:57:GLY:HA3	2.50	0.46
7:Bz:36:A:H1'	83:m2:628:G:N2	2.30	0.46
16:E1:40:LEU:HD23	16:E1:40:LEU:HA	1.79	0.46
21:F3:10:ARG:HB2	21:F3:33:ASP:OD2	2.16	0.46
35:L2:119:MET:HE1	35:L2:142:ILE:HG23	1.98	0.46
53:U2:31:GLY:HA3	53:U2:35:ALA:HB3	1.97	0.46
71:o2:78:SER:HB3	71:o2:87:VAL:HG21	1.98	0.46
73:q2:93:THR:OG1	73:q2:96:LEU:HB2	2.16	0.46
80:x2:93:MET:HG3	80:x2:93:MET:O	2.16	0.46
82:z2:34:VAL:O	82:z2:38:ILE:HG12	2.16	0.46
83:m2:37:C:H2'	83:m2:38:A:O4'	2.16	0.46
83:m2:447:A:H2'	83:m2:448:G:C8	2.51	0.46
83:m2:895:U:H2'	83:m2:896:G:O4'	2.16	0.46
1:A1:204:PHE:CZ	1:A1:225:GLU:HG2	2.50	0.46
2:A2:3763:U:H2'	2:A2:3764:C:C6	2.50	0.46
7:Bz:8:U:H2'	7:Bz:46:G:H21	1.80	0.46
10:C1:90:TYR:CE2	10:C1:155:SER:HB3	2.51	0.46
10:C1:107:GLU:HB2	10:C1:110:SER:HB2	1.98	0.46
17:E2:291:TYR:CE2	17:E2:327:THR:HG22	2.51	0.46
21:F3:87:ARG:HD2	21:F3:92:ARG:HA	1.97	0.46
34:L1:196:LYS:HB3	34:L1:199:GLN:HB2	1.98	0.46
41:O2:42:PHE:CE2	41:O2:90:TYR:HB2	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:P2:43:LYS:HD3	43:P2:60:MET:SD	2.56	0.46
62:c2:33:LEU:HD11	62:c2:38:LYS:HB2	1.98	0.46
72:p2:146:ARG:HH11	72:p2:206:PRO:HB2	1.80	0.46
74:r2:15:PRO:HD2	74:r2:18:TRP:CZ3	2.50	0.46
75:s2:68:ILE:HD11	75:s2:151:ILE:HD11	1.97	0.46
76:t2:48:ALA:HA	76:t2:62:ILE:HA	1.97	0.46
77:u2:144:LYS:HD3	83:m2:193:C:H41	1.80	0.46
2:A2:3749:G:H2'	2:A2:3750:C:C6	2.51	0.46
15:D3:83:PHE:CZ	71:o2:53:ARG:HD2	2.51	0.46
20:F2:13:GLU:HB3	20:F2:155:GLU:OE2	2.16	0.46
23:G2:211:LEU:HD23	23:G2:211:LEU:HA	1.79	0.46
27:H3:34:TYR:CE2	73:q2:8:LYS:HD2	2.51	0.46
46:Q3:17:LEU:HD23	74:r2:64:ILE:HG21	1.98	0.46
52:T3:28:LYS:O	52:T3:33:LYS:HG3	2.16	0.46
57:X2:53:ALA:HA	57:X2:88:LEU:HD21	1.98	0.46
71:o2:112:ILE:CD1	83:m2:1352:U:H4'	2.46	0.46
75:s2:113:VAL:HA	75:s2:116:ILE:HG22	1.97	0.46
82:z2:9:VAL:HG13	82:z2:50:ILE:HD13	1.97	0.46
83:m2:115:U:H2'	83:m2:116:OMU:C6	2.46	0.46
83:m2:1283:G:H3'	83:m2:1284:A:H8	1.81	0.46
2:A2:10:A:H2'	2:A2:11:G:C8	2.52	0.45
2:A2:3912:U:H2'	2:A2:3913:C:H6	1.81	0.45
7:Bv:37:A:C4	7:Bv:38:A:C8	3.04	0.45
7:Bz:35:A:H2'	7:Bz:36:A:C8	2.51	0.45
10:C1:18:ILE:HD11	10:C1:81:ILE:HD11	1.97	0.45
21:F3:7:ASN:HB3	21:F3:10:ARG:O	2.16	0.45
22:G1:17:PHE:CE2	22:G1:54:CYS:HA	2.51	0.45
32:K2:178:ARG:N	53:U2:51:GLY:HA2	2.31	0.45
49:S2:126:ARG:HG2	49:S2:130:LYS:HE3	1.98	0.45
52:T3:8:ARG:HG2	83:m2:618:A:H5'	1.98	0.45
58:Y2:68:HIS:CE1	70:k2:22:LYS:HG3	2.51	0.45
72:p2:169:MET:O	72:p2:173:THR:HG23	2.17	0.45
72:p2:173:THR:O	72:p2:177:GLN:HG2	2.16	0.45
83:m2:200:C:O2	83:m2:200:C:H2'	2.16	0.45
83:m2:1716:U:H2'	83:m2:1717:A:H8	1.80	0.45
83:m2:1804:C:H2'	83:m2:1805:U:H6	1.80	0.45
2:A2:35:U:H4'	2:A2:1338:A:C2	2.51	0.45
2:A2:398:A2M:HM'3	2:A2:398:A2M:H1'	1.84	0.45
2:A2:1650:C:H2'	2:A2:1651:U:O4'	2.16	0.45
2:A2:3840:U:H2'	2:A2:3841:U:C6	2.52	0.45
2:A2:4230:G:H2'	2:A2:4231:U:C6	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:4395:G:H2'	2:A2:4396:A:H8	1.77	0.45
3:A3:12:ILE:HG21	16:E1:119:TYR:HE2	1.81	0.45
3:A3:89:ASP:HB3	3:A3:92:ASP:O	2.16	0.45
5:B2:39:C:O2'	16:E1:46:GLN:HB3	2.16	0.45
12:C3:55:ARG:HG2	12:C3:87:ARG:CZ	2.46	0.45
26:H2:73:LYS:HE2	26:H2:75:LEU:HD21	1.97	0.45
33:K3:63:MET:HE3	33:K3:100:CYS:HA	1.99	0.45
40:N3:7:PRO:HG3	83:m2:998:A:H5"	1.98	0.45
60:a2:24:ARG:HH11	60:a2:24:ARG:HG3	1.80	0.45
67:h2:16:LYS:HZ1	83:m2:1820:A:C4'	2.17	0.45
73:q2:76:ARG:HB2	78:v2:22:VAL:HG11	1.98	0.45
2:A2:294:G:O6	2:A2:315:G:H1'	2.16	0.45
2:A2:1285:C:H2'	2:A2:1286:U:H6	1.81	0.45
2:A2:1535:G:N3	2:A2:3866:A:H2'	2.32	0.45
6:B3:115:LYS:HE2	6:B3:121:ARG:NH1	2.30	0.45
17:E2:285:TYR:HA	17:E2:363:ILE:HD11	1.98	0.45
26:H2:76:TYR:CE1	26:H2:77:LYS:HG3	2.51	0.45
29:I3:32:LEU:HD21	29:I3:71:ILE:HG12	1.99	0.45
39:N2:18:PRO:HB2	39:N2:21:LYS:HD2	1.97	0.45
49:S2:47:MET:HE3	49:S2:47:MET:HB3	1.85	0.45
57:X2:87:ARG:NH1	57:X2:122:VAL:HG11	2.31	0.45
58:Y2:105:SER:O	58:Y2:109:LYS:HG3	2.16	0.45
7:n2:73:A:H2'	7:n2:74:C:H4'	1.99	0.45
83:m2:1353:G:C4	83:m2:1381:A:N1	2.84	0.45
83:m2:1381:A:H2'	83:m2:1382:C:C6	2.51	0.45
83:m2:1449:G:H2'	83:m2:1450:A:H8	1.81	0.45
83:m2:1856:U:H2'	83:m2:1857:G:C8	2.50	0.45
1:A1:75:LYS:HE2	1:A1:211:ASP:OD1	2.16	0.45
2:A2:1626:G:H2'	2:A2:1627:A:C8	2.50	0.45
2:A2:1702:C:H4'	58:Y2:60:TYR:CZ	2.51	0.45
2:A2:3443:G:H1'	2:A2:3445:C:N4	2.31	0.45
2:A2:4289:OMG:H4'	2:A2:4691:G:O2'	2.16	0.45
2:A2:4431:C:H2'	2:A2:4432:C:H6	1.81	0.45
7:Bv:34:G:C8	83:m2:1250:B8N:N34	2.84	0.45
14:D2:158:ILE:HB	14:D2:162:ASN:ND2	2.32	0.45
20:F2:76:ILE:HG12	20:F2:96:CYS:SG	2.57	0.45
23:G2:191:ASN:OD1	23:G2:194:VAL:HG23	2.16	0.45
32:K2:154:LYS:HD2	32:K2:158:THR:HG21	1.97	0.45
36:L3:63:LEU:HD13	36:L3:67:ASP:OD2	2.16	0.45
36:L3:114:VAL:HG13	36:L3:119:LEU:HB2	1.97	0.45
42:O3:26:ASN:C	42:O3:26:ASN:ND2	2.73	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:O3:103:ASN:ND2	42:O3:142:ARG:HA	2.30	0.45
58:Y2:118:LEU:C	70:k2:119:ARG:HH12	2.24	0.45
74:r2:100:ARG:HH21	74:r2:118:GLU:HG2	1.82	0.45
81:y2:77:HIS:O	81:y2:81:ILE:HG12	2.15	0.45
83:m2:210:G:C2'	83:m2:211:A:H5'	2.46	0.45
83:m2:380:U:H2'	83:m2:381:C:C6	2.52	0.45
83:m2:651:U:H2'	83:m2:652:A:C8	2.52	0.45
83:m2:806:U:H2'	83:m2:807:U:H6	1.82	0.45
2:A2:757:U:C2	2:A2:758:G:C8	3.04	0.45
2:A2:1473:U:OP1	53:U2:15:VAL:HA	2.16	0.45
2:A2:2048:U:H2'	2:A2:2049:G:C8	2.51	0.45
2:A2:2142:G:H5"	35:L2:23:TRP:CD1	2.51	0.45
2:A2:4027:C:H5'	2:A2:4029:G:H5'	1.98	0.45
2:A2:4352:A:O2'	10:C1:65:LYS:HD2	2.16	0.45
3:A3:48:ALA:O	3:A3:50:ILE:HG13	2.17	0.45
4:B1:100:HIS:CE1	4:B1:103:ARG:HH11	2.34	0.45
7:Bz:6:G:O2'	7:Bz:7:A:H5'	2.17	0.45
7:Bz:18:G:H5"	7:Bz:19:G:OP2	2.17	0.45
17:E2:103:LYS:O	17:E2:153:MET:HE2	2.17	0.45
17:E2:194:LEU:HD23	17:E2:194:LEU:HA	1.76	0.45
17:E2:196:TRP:CE2	17:E2:200:ARG:NH1	2.84	0.45
17:E2:284:ILE:HG23	17:E2:331:ILE:HG23	1.98	0.45
30:J2:111:SER:HB2	30:J2:154:GLU:HB2	1.98	0.45
36:L3:81:LEU:HA	36:L3:84:ILE:HG22	1.98	0.45
38:M3:111:VAL:C	38:M3:112:LYS:HZ2	2.24	0.45
44:P3:60:LYS:HB2	44:P3:60:LYS:HE3	1.73	0.45
79:w2:93:LEU:HD22	79:w2:102:PHE:HB3	1.97	0.45
83:m2:1310:U:H2'	83:m2:1311:C:C6	2.52	0.45
83:m2:1713:U:H2'	83:m2:1714:A:C8	2.50	0.45
83:m2:1753:C:H1'	83:m2:1786:G:H1	1.80	0.45
83:m2:1843:C:H2'	83:m2:1844:4AC:H6	1.99	0.45
2:A2:2357:G:H2'	2:A2:2358:C:C6	2.52	0.45
2:A2:2440:C:H2'	2:A2:2441:G:O4'	2.17	0.45
6:B3:104:LEU:HD13	6:B3:121:ARG:HH21	1.82	0.45
12:C3:55:ARG:HD2	83:m2:1448:A:N3	2.30	0.45
14:D2:107:MET:HE2	14:D2:166:VAL:HG22	1.99	0.45
20:F2:140:LYS:NZ	20:F2:242:PRO:HD2	2.32	0.45
20:F2:336:ARG:HD2	26:H2:61:ILE:HD11	1.98	0.45
21:F3:10:ARG:HH12	83:m2:1861:A:P	2.40	0.45
28:I2:47:PHE:CE1	28:I2:140:ARG:HG2	2.51	0.45
57:X2:38:PHE:HB3	57:X2:78:ARG:HG2	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
74:r2:45:ILE:HG13	74:r2:80:ILE:O	2.17	0.45
83:m2:72:C:H2'	83:m2:73:C:C6	2.51	0.45
83:m2:872:A:H62	83:m2:918:A:H5'	1.82	0.45
83:m2:1448:A:O2'	83:m2:1449:G:H5"	2.16	0.45
83:m2:1682:G:H2'	83:m2:1683:U:C6	2.51	0.45
83:m2:1819:G:H2'	83:m2:1820:A:C8	2.52	0.45
2:A2:1021:G:N3	2:A2:1021:G:H2'	2.31	0.45
2:A2:1190:C:H3'	2:A2:1191:G:C8	2.52	0.45
2:A2:2145:G:H22	2:A2:2580:A:H2	1.65	0.45
2:A2:3267:A:H2	2:A2:4662:A:C8	2.34	0.45
2:A2:4268:A:H2'	2:A2:4269:G:O4'	2.17	0.45
5:B2:4:U:H2'	5:B2:5:A:H8	1.80	0.45
12:C3:108:PRO:HB3	73:q2:40:ARG:HG2	1.98	0.45
29:I3:165:ILE:HG22	29:I3:177:TRP:HB2	1.98	0.45
46:Q3:62:THR:HA	46:Q3:69:THR:HG22	1.99	0.45
59:Z2:45:LYS:HD2	59:Z2:105:LEU:HA	1.99	0.45
66:g2:112:LYS:HB3	66:g2:114:LYS:HG2	1.99	0.45
72:p2:142:PHE:C	72:p2:207:LEU:HG	2.41	0.45
75:s2:167:LYS:HE3	75:s2:172:CYS:SG	2.57	0.45
83:m2:18:C:C2	83:m2:19:A:C8	3.04	0.45
83:m2:318:G:H2'	83:m2:319:C:C6	2.52	0.45
83:m2:1432:C:H2'	83:m2:1433:G:H8	1.80	0.45
83:m2:1696:U:H2'	83:m2:1698:C:H5	1.81	0.45
2:A2:37:U:H2'	2:A2:38:A:O4'	2.16	0.45
2:A2:308:G:H2'	62:c2:41:ARG:HH12	1.82	0.45
2:A2:883:C:H2'	2:A2:884:C:O4'	2.15	0.45
2:A2:1078:G:H3'	2:A2:1079:A:C8	2.52	0.45
2:A2:2333:G:O6	51:T2:17:ARG:HD2	2.16	0.45
2:A2:2447:U:O2	64:e2:2:PRO:HB2	2.17	0.45
2:A2:2625:A:H2'	2:A2:2626:A:C8	2.52	0.45
2:A2:4412:G:H2'	2:A2:4413:G:O4'	2.17	0.45
2:A2:4508:G:H2'	2:A2:4509:U:C6	2.52	0.45
3:A3:23:ARG:HA	48:R3:48:VAL:HG21	1.97	0.45
7:Bz:37:A:H3'	7:Bz:38:A:H8	1.82	0.45
11:C2:94:G:C5	63:d2:84:PRO:HG3	2.52	0.45
12:C3:37:ALA:O	12:C3:41:ARG:HG2	2.17	0.45
20:F2:11:TYR:OH	20:F2:148:PRO:HB2	2.16	0.45
22:G1:38:VAL:HG21	22:G1:50:MET:SD	2.57	0.45
25:H1:88:GLY:O	25:H1:92:LEU:HD11	2.16	0.45
33:K3:32:MET:HB3	33:K3:65:GLN:NE2	2.32	0.45
33:K3:195:LYS:HE3	83:m2:126:G:N9	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
63:d2:52:LYS:HG2	63:d2:55:ARG:HH22	1.80	0.45
71:o2:33:GLN:HB3	71:o2:154:LEU:HD12	1.99	0.45
71:o2:50:ASN:O	71:o2:54:THR:HG23	2.17	0.45
75:s2:20:PHE:CE2	75:s2:94:LYS:HB2	2.52	0.45
83:m2:94:G:C4	83:m2:95:G:C8	3.05	0.45
83:m2:961:G:H2'	83:m2:962:U:C6	2.52	0.45
83:m2:1675:U:H2'	83:m2:1676:G:O4'	2.17	0.45
83:m2:1799:U:H2'	83:m2:1800:C:H6	1.82	0.45
2:A2:362:A:C6	65:f2:35:ILE:HG23	2.52	0.45
2:A2:2170:U:H2'	2:A2:2171:G:O4'	2.17	0.45
2:A2:2382:C:H2'	2:A2:2383:U:C6	2.52	0.45
2:A2:3340:G:H2'	2:A2:3341:C:H6	1.82	0.45
2:A2:3996:U:H2'	2:A2:3997:C:C6	2.52	0.45
2:A2:4156:C:H2'	2:A2:4157:C:C6	2.51	0.45
2:A2:4700:C:H4'	2:A2:4701:G:H8	1.82	0.45
3:A3:64:VAL:O	3:A3:68:ILE:HG12	2.17	0.45
12:C3:48:LEU:HD13	12:C3:91:LEU:HD21	1.99	0.45
14:D2:150:LEU:HB3	14:D2:151:PRO:HD2	1.98	0.45
32:K2:15:ARG:HB3	32:K2:52:PHE:HB3	1.98	0.45
40:N3:124:ARG:HD2	83:m2:679:G:OP1	2.17	0.45
44:P3:14:ILE:HG13	44:P3:27:ILE:HD11	1.98	0.45
51:T2:74:VAL:HG23	51:T2:101:PHE:HE2	1.81	0.45
72:p2:52:THR:OG1	72:p2:57:ILE:HA	2.16	0.45
83:m2:350:A:H2'	83:m2:351:A:C8	2.52	0.45
83:m2:1036:A:C2	83:m2:1037:A:H1'	2.52	0.45
83:m2:1185:A:H2'	83:m2:1186:G:H8	1.81	0.45
2:A2:360:A:C4	11:C2:24:G:H1'	2.52	0.45
2:A2:426:A:H2'	2:A2:427:A:C8	2.52	0.45
2:A2:1068:C:H2'	2:A2:1069:G:C8	2.51	0.45
2:A2:1154:OMC:H1'	2:A2:1154:OMC:HM23	1.68	0.45
2:A2:1474:C:H2'	2:A2:1475:C:C6	2.53	0.45
2:A2:1668:G:C2	2:A2:4057:G:C8	3.05	0.45
2:A2:3898:G:H2'	2:A2:3899:G:C8	2.52	0.45
2:A2:4284:U:H2'	2:A2:4285:G:O4'	2.17	0.45
2:A2:4546:G:H2'	2:A2:4547:C:C6	2.52	0.45
4:B1:58:PRO:HG2	4:B1:61:ILE:HD12	1.99	0.45
5:B2:64:G:H2'	5:B2:65:G:H8	1.81	0.45
12:C3:63:ILE:HG22	12:C3:65:THR:HG23	1.99	0.45
14:D2:210:PRO:HG2	14:D2:235:VAL:HG21	1.99	0.45
16:E1:134:LEU:HD23	16:E1:134:LEU:HA	1.80	0.45
34:L1:84:HIS:NE2	34:L1:86:ASP:HB2	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:O3:137:SER:HB2	83:m2:944:G:H21	1.82	0.45
63:d2:37:CYS:HA	63:d2:45:ARG:HB3	1.99	0.45
68:i2:22:LYS:NZ	68:i2:73:VAL:HG12	2.31	0.45
76:t2:73:GLN:HB3	76:t2:135:PHE:CE1	2.52	0.45
77:u2:190:LEU:HD23	77:u2:190:LEU:HA	1.84	0.45
83:m2:129:C:H42	83:m2:181:A:H61	1.65	0.45
83:m2:530:A:H2'	83:m2:531:A:C8	2.51	0.45
83:m2:1558:A:H2	83:m2:1559:C:C4	2.35	0.45
1:A1:73:TYR:CZ	20:F2:331:TYR:HD1	2.35	0.44
1:A1:206:ILE:HD11	1:A1:215:GLU:HG2	1.99	0.44
2:A2:179:G:C6	2:A2:258:G:C6	3.05	0.44
2:A2:2233:C:H3'	2:A2:2234:G:H8	1.82	0.44
2:A2:3430:A:H2'	2:A2:3431:A:C8	2.52	0.44
2:A2:3567:C:H2'	2:A2:3568:U:H6	1.82	0.44
2:A2:3607:G:H2'	2:A2:3608:A:C8	2.52	0.44
2:A2:3627:G:H1	2:A2:3700:A:H61	1.64	0.44
2:A2:3738:C:H2'	2:A2:3739:G:C8	2.53	0.44
2:A2:3758:G:H2'	2:A2:3759:G:H8	1.82	0.44
4:B1:165:GLU:HA	4:B1:168:VAL:HG12	1.99	0.44
7:Bv:50:U:H2'	7:Bv:51:U:C6	2.52	0.44
11:C2:93:C:O2'	11:C2:94:G:H8	2.00	0.44
11:C2:96:C:H5"	61:b2:66:LYS:HG2	1.99	0.44
12:C3:94:PRO:HG2	12:C3:97:ILE:HD12	1.98	0.44
17:E2:247:GLY:HA3	17:E2:250:LYS:HE3	1.98	0.44
27:H3:23:VAL:HG22	78:v2:64:TRP:CD2	2.52	0.44
30:J2:39:MET:HE3	30:J2:43:LYS:HE3	1.99	0.44
54:U3:123:SER:HB3	54:U3:126:CYS:SG	2.57	0.44
61:b2:47:ILE:O	61:b2:51:ARG:HG2	2.17	0.44
71:o2:102:ARG:NH1	83:m2:1379:U:C6	2.85	0.44
73:q2:75:LYS:HZ1	78:v2:18:GLU:HG2	1.82	0.44
83:m2:1294:C:H2'	83:m2:1295:A:H8	1.82	0.44
2:A2:1098:G:H21	26:H2:137:LYS:HG3	1.82	0.44
6:B3:20:ALA:O	6:B3:24:LYS:HG3	2.18	0.44
6:B3:60:THR:O	6:B3:64:LEU:HG	2.17	0.44
7:Bz:39:U:H2'	7:Bz:40:C:C6	2.52	0.44
17:E2:172:PRO:HB2	17:E2:324:GLY:HA3	1.99	0.44
32:K2:168:ARG:HE	32:K2:168:ARG:HB3	1.65	0.44
35:L2:144:LYS:HE2	35:L2:144:LYS:HB3	1.83	0.44
48:R3:69:THR:H	48:R3:72:VAL:HG12	1.82	0.44
58:Y2:35:TRP:CZ2	58:Y2:56:PRO:HD2	2.52	0.44
69:j2:11:VAL:HG11	69:j2:26:VAL:HG13	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:k2:98:ARG:HG3	70:k2:98:ARG:NH1	2.31	0.44
71:o2:102:ARG:CZ	83:m2:1379:U:C6	3.00	0.44
80:x2:60:LEU:HD23	80:x2:76:VAL:HG21	2.00	0.44
80:x2:77:LYS:HG2	80:x2:102:PHE:HZ	1.83	0.44
83:m2:1680:A2M:O2'	83:m2:1681:A:H5'	2.17	0.44
2:A2:1684:U:C4	2:A2:2034:A:C2	3.04	0.44
2:A2:1847:G:O2'	2:A2:1848:G:H5"	2.17	0.44
2:A2:2259:C:H4'	2:A2:2260:C:OP2	2.16	0.44
2:A2:2365:G:H2'	2:A2:2366:A:C8	2.51	0.44
2:A2:2505:G:H2'	2:A2:2506:G:O4'	2.18	0.44
2:A2:3579:A:H2'	2:A2:3580:C:H6	1.79	0.44
2:A2:3584:A:H2'	2:A2:3585:G:O4'	2.17	0.44
2:A2:3954:U:H4'	39:N2:5:LYS:HD3	2.00	0.44
2:A2:4041:C:H2'	2:A2:4042:A:C8	2.53	0.44
2:A2:4224:U:H1'	2:A2:4372:C:C4	2.52	0.44
4:B1:87:LEU:HD13	4:B1:91:THR:HG22	1.99	0.44
11:C2:33:G:H4'	11:C2:34:U:C6	2.53	0.44
17:E2:14:LEU:O	17:E2:17:LEU:HB2	2.16	0.44
20:F2:5:ARG:HD2	20:F2:24:LEU:O	2.17	0.44
26:H2:275:GLN:O	26:H2:279:ARG:HG3	2.18	0.44
28:I2:22:ILE:HD13	28:I2:120:VAL:HG11	1.99	0.44
33:K3:64:LYS:HB2	33:K3:97:VAL:HG21	1.99	0.44
71:o2:49:ILE:HG21	71:o2:162:PRO:HB2	1.98	0.44
73:q2:23:GLU:HG2	78:v2:64:TRP:NE1	2.33	0.44
73:q2:40:ARG:HH22	73:q2:49:ILE:HG12	1.83	0.44
73:q2:135:GLU:CD	73:q2:157:MET:HG2	2.42	0.44
74:r2:139:LEU:HG	74:r2:150:PRO:HG3	2.00	0.44
83:m2:289:U:H2'	83:m2:290:G:C8	2.52	0.44
83:m2:833:G:H2'	83:m2:834:G:C8	2.52	0.44
83:m2:951:G:H2'	83:m2:952:C:C6	2.51	0.44
1:A1:263:ASN:O	1:A1:267:ARG:HG2	2.18	0.44
2:A2:279:A:N1	2:A2:306:A:H5"	2.33	0.44
2:A2:465:G:H2'	2:A2:466:A:C8	2.53	0.44
2:A2:518:C:H2'	2:A2:519:G:C8	2.52	0.44
2:A2:2140:U:H2'	2:A2:2141:U:H6	1.82	0.44
2:A2:4022:OMG:H5"	68:i2:64:LYS:HG3	2.00	0.44
23:G2:60:ILE:HB	23:G2:80:ALA:HB2	1.99	0.44
28:I2:85:ARG:HD3	28:I2:90:HIS:CE1	2.53	0.44
29:I3:259:TRP:CD1	29:I3:266:ILE:HG23	2.52	0.44
37:M2:161:ARG:NH2	37:M2:164:LYS:HE3	2.32	0.44
41:O2:36:ALA:HB1	41:O2:65:ARG:HD2	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:R2:126:THR:HG21	47:R2:134:LYS:HE2	2.00	0.44
54:U3:135:HIS:NE2	83:m2:1310:U:H1'	2.33	0.44
64:e2:51:GLU:O	64:e2:55:LYS:HG2	2.17	0.44
80:x2:53:GLN:O	80:x2:57:LEU:HD23	2.17	0.44
83:m2:603:OMG:H1'	83:m2:603:OMG:HM23	1.72	0.44
2:A2:1156:A:OP1	25:H1:204:ARG:HD2	2.17	0.44
2:A2:1288:G:H2'	2:A2:1289:C:C6	2.51	0.44
2:A2:3886:A:N7	2:A2:3923:A:N1	2.65	0.44
2:A2:3958:OMU:OP2	32:K2:159:PRO:HD2	2.17	0.44
2:A2:4138:C:H2'	2:A2:4139:A:O4'	2.16	0.44
2:A2:4325:U:H2'	2:A2:4326:C:C6	2.51	0.44
3:A3:102:GLY:O	3:A3:106:LYS:HG2	2.18	0.44
3:A3:121:ARG:HG3	3:A3:131:VAL:HG13	1.99	0.44
7:Bz:15:G:N2	7:Bz:48:C:H42	2.16	0.44
20:F2:190:ARG:HB2	20:F2:202:ILE:HG23	1.99	0.44
28:I2:135:PHE:HE2	28:I2:137:TYR:CZ	2.35	0.44
34:L1:96:ASN:HD21	34:L1:99:LEU:HD12	1.83	0.44
42:O3:136:PRO:HG3	42:O3:139:SER:HB2	1.99	0.44
49:S2:10:ASP:HB3	49:S2:13:LYS:HB2	2.00	0.44
60:a2:114:GLN:NE2	60:a2:115:LYS:HG3	2.33	0.44
64:e2:27:LYS:HD2	64:e2:70:LYS:NZ	2.33	0.44
74:r2:80:ILE:HG13	74:r2:81:THR:HG23	1.98	0.44
75:s2:72:LEU:HD12	75:s2:112:LEU:HD11	1.99	0.44
80:x2:77:LYS:HB3	83:m2:1300:G:H5'	1.98	0.44
83:m2:116:OMU:O5'	83:m2:116:OMU:H6	2.18	0.44
83:m2:331:G:H3'	83:m2:332:G:H8	1.81	0.44
83:m2:555:A:H2'	83:m2:556:A:C8	2.53	0.44
83:m2:651:U:H2'	83:m2:652:A:H8	1.82	0.44
83:m2:1398:A:N1	83:m2:1451:G:C6	2.85	0.44
83:m2:1408:G:H2'	83:m2:1409:U:C6	2.53	0.44
83:m2:1630:C:H2'	83:m2:1631:C:C6	2.53	0.44
1:A1:116:ARG:HB2	1:A1:136:LEU:HB3	2.00	0.44
1:A1:247:THR:HG21	1:A1:251:GLU:OE1	2.18	0.44
2:A2:106:A:H2'	2:A2:107:G:O4'	2.18	0.44
2:A2:2061:G:H1'	2:A2:2087:A:N6	2.32	0.44
2:A2:3588:U:H2'	2:A2:3589:G:H8	1.82	0.44
10:C1:147:GLU:HG2	10:C1:187:VAL:HG22	2.00	0.44
11:C2:5:U:H2'	11:C2:6:C:C6	2.52	0.44
12:C3:88:LEU:O	12:C3:89:ILE:HD13	2.18	0.44
13:D1:91:LEU:HD13	13:D1:135:ILE:HA	1.99	0.44
17:E2:220:ILE:HG13	17:E2:278:THR:HG23	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:F1:93:THR:HG22	61:b2:116:LEU:HD13	2.00	0.44
23:G2:233:PRO:HA	23:G2:236:MET:HG3	1.99	0.44
34:L1:89:ALA:O	34:L1:93:LEU:HG	2.17	0.44
40:N3:4:MET:HG2	40:N3:5:HIS:CE1	2.52	0.44
43:P2:89:ARG:HB2	43:P2:95:PHE:CE2	2.53	0.44
59:Z2:36:ARG:HB2	59:Z2:80:ASN:HA	1.99	0.44
7:n2:32:U:H2'	7:n2:33:U:C6	2.53	0.44
74:r2:15:PRO:HA	74:r2:39:ARG:NH2	2.32	0.44
78:v2:71:LEU:HD23	78:v2:71:LEU:HA	1.89	0.44
83:m2:25:A:HO2'	83:m2:26:U:H6	1.64	0.44
83:m2:404:C:C2	83:m2:405:G:C8	3.05	0.44
83:m2:850:U:H2'	83:m2:851:A:H8	1.82	0.44
83:m2:1328:U:H4'	83:m2:1329:G:H5"	1.99	0.44
83:m2:1364:U:H5"	83:m2:1365:C:H5	1.83	0.44
83:m2:1483:G:H2'	83:m2:1484:C:C6	2.53	0.44
83:m2:1484:C:H2'	83:m2:1485:A:O4'	2.18	0.44
83:m2:1653:A:H2'	83:m2:1654:G:H8	1.83	0.44
83:m2:1744:C:H2'	83:m2:1745:G:O4'	2.17	0.44
2:A2:700:C:H2'	2:A2:701:C:C6	2.52	0.44
2:A2:760:C:H2'	2:A2:761:U:C6	2.53	0.44
2:A2:1275:A:H2'	2:A2:1276:C:O4'	2.18	0.44
2:A2:1685:G:O6	2:A2:1698:A:H2	2.01	0.44
2:A2:2360:G:H2'	2:A2:2361:G:C8	2.53	0.44
2:A2:3958:OMU:OP2	32:K2:158:THR:HG23	2.18	0.44
2:A2:4042:A:H2'	2:A2:4043:G:O4'	2.17	0.44
2:A2:4236:A:H2'	2:A2:4237:U:O4'	2.17	0.44
16:E1:10:ASN:O	16:E1:14:GLU:HB2	2.18	0.44
23:G2:81:HIS:HA	23:G2:92:LEU:HD13	1.99	0.44
29:I3:259:TRP:CD1	29:I3:266:ILE:HG12	2.53	0.44
29:I3:297:THR:HA	29:I3:310:TRP:O	2.17	0.44
40:N3:91:LEU:HB3	40:N3:122:ILE:HG12	2.00	0.44
42:O3:128:ARG:HH21	72:p2:72:ALA:HB3	1.83	0.44
45:Q2:33:ASN:OD1	45:Q2:35:LYS:HB3	2.17	0.44
70:k2:17:LEU:HD21	70:k2:19:LYS:HE3	2.00	0.44
71:o2:50:ASN:HB3	71:o2:53:ARG:HG2	1.99	0.44
77:u2:12:ARG:HG2	77:u2:16:GLY:O	2.17	0.44
83:m2:456:U:H2'	83:m2:457:A:C8	2.52	0.44
83:m2:847:G:H2'	83:m2:848:G:C8	2.52	0.44
83:m2:1207:C:H2'	83:m2:1208:G:H8	1.82	0.44
83:m2:1220:C:H2'	83:m2:1221:C:H6	1.83	0.44
83:m2:1350:G:N7	83:m2:1351:G:C8	2.81	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A1:251:GLU:HA	37:M2:2:LYS:HA	2.00	0.44
2:A2:184:U:H5"	2:A2:254:G:C2	2.53	0.44
2:A2:927:C:H2'	2:A2:928:G:H8	1.78	0.44
2:A2:1360:A:HO2'	2:A2:2569:C:H6	1.66	0.44
2:A2:1363:G:H1	2:A2:1391:U:H3	1.65	0.44
2:A2:1551:A:H2'	2:A2:1552:G:C8	2.52	0.44
2:A2:3601:A:H2'	2:A2:3602:G:C8	2.53	0.44
2:A2:3625:G:H2'	2:A2:3626:G:H8	1.78	0.44
2:A2:3932:A:N1	23:G2:29:ASP:HA	2.32	0.44
2:A2:4414:A:H2'	2:A2:4415:U:O4'	2.18	0.44
6:B3:86:GLY:C	83:m2:1608:G:H5"	2.43	0.44
28:I2:14:HIS:HD2	28:I2:123:ALA:HB3	1.82	0.44
29:I3:9:GLY:HA3	29:I3:52:TYR:HB2	1.98	0.44
29:I3:52:TYR:OH	29:I3:297:THR:HG21	2.18	0.44
37:M2:43:ARG:HD2	37:M2:43:ARG:HA	1.66	0.44
39:N2:27:LEU:HA	39:N2:30:TYR:HD2	1.83	0.44
51:T2:135:ARG:HA	51:T2:135:ARG:HD2	1.84	0.44
71:o2:77:ILE:HD13	71:o2:99:ILE:HB	1.99	0.44
71:o2:112:ILE:HD13	83:m2:1352:U:H4'	1.99	0.44
72:p2:144:LYS:HD2	72:p2:146:ARG:NH1	2.30	0.44
73:q2:99:ILE:HG23	73:q2:173:ARG:HH21	1.83	0.44
74:r2:33:THR:O	83:m2:120:U:H1'	2.18	0.44
77:u2:51:GLY:HA3	83:m2:447:A:H5"	1.99	0.44
77:u2:155:ASN:HB3	79:w2:21:LYS:HE3	1.99	0.44
77:u2:188:TYR:HB3	83:m2:223:A:H4'	1.98	0.44
77:u2:192:GLY:HA3	79:w2:19:ASN:OD1	2.18	0.44
80:x2:57:LEU:HD13	80:x2:89:MET:HE3	1.99	0.44
83:m2:571:A:H2'	83:m2:572:C:O4'	2.17	0.44
83:m2:658:G:N2	83:m2:665:C:H5"	2.32	0.44
83:m2:1279:C:H2'	83:m2:1280:A:C8	2.53	0.44
83:m2:1322:G:H3'	83:m2:1323:G:C8	2.53	0.44
2:A2:952:C:H2'	2:A2:953:G:C8	2.52	0.44
2:A2:1330:2MG:H2'	2:A2:1331:A:N7	2.33	0.44
2:A2:2363:G:H2'	2:A2:2364:G:H8	1.82	0.44
2:A2:3423:C:C2'	2:A2:3424:U:H5'	2.47	0.44
2:A2:4515:G:C5	22:G1:56:GLN:HG2	2.51	0.44
6:B3:43:LYS:HB3	83:m2:1541:U:OP1	2.18	0.44
7:Bz:37:A:C4	7:Bz:38:A:C8	3.05	0.44
10:C1:128:MET:SD	10:C1:157:SER:HB3	2.58	0.44
17:E2:43:LEU:HG	17:E2:196:TRP:CH2	2.52	0.44
17:E2:283:LYS:HD3	17:E2:285:TYR:HE1	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:F2:242:PRO:HG3	20:F2:248:ARG:HD2	1.99	0.44
32:K2:64:SER:HB3	32:K2:92:ILE:HD11	1.99	0.44
42:O3:140:THR:HB	83:m2:1048:U:H1'	2.00	0.44
58:Y2:77:PHE:HD2	58:Y2:88:LEU:HD11	1.83	0.44
73:q2:163:PRO:HA	73:q2:166:TYR:CZ	2.52	0.44
75:s2:22:LYS:HB3	75:s2:22:LYS:HE2	1.69	0.44
78:v2:29:MET:HE3	78:v2:29:MET:HB3	1.82	0.44
83:m2:126:G:H4'	83:m2:127:C:OP2	2.15	0.44
83:m2:474:C:H4'	83:m2:476:G:OP1	2.18	0.44
83:m2:1432:C:H2'	83:m2:1433:G:C8	2.52	0.44
2:A2:221:C:H2'	2:A2:222:C:C6	2.52	0.43
2:A2:453:G:N2	2:A2:1107:G:H22	2.16	0.43
2:A2:656:G:H2'	2:A2:657:A:H8	1.82	0.43
2:A2:1146:C:OP2	58:Y2:30:LYS:HD3	2.18	0.43
2:A2:1590:A:H2'	13:D1:22:PHE:CZ	2.53	0.43
2:A2:1867:G:H2'	2:A2:1868:C:O4'	2.18	0.43
2:A2:2119:OMG:HM23	2:A2:2119:OMG:H1'	1.69	0.43
2:A2:2513:G:H2'	2:A2:2514:G:C5	2.53	0.43
2:A2:3830:A:H2'	2:A2:3831:G:C8	2.52	0.43
23:G2:67:ALA:HB1	39:N2:31:MET:HE2	2.00	0.43
28:I2:157:GLU:HG3	28:I2:161:LYS:NZ	2.33	0.43
31:J3:200:ARG:O	36:L3:98:LEU:HB3	2.18	0.43
31:J3:227:ARG:HD2	83:m2:1156:U:O4	2.18	0.43
44:P3:95:PRO:HG3	44:P3:130:PHE:CD1	2.53	0.43
50:S3:33:MET:HE1	50:S3:73:LEU:HD11	1.99	0.43
61:b2:4:ILE:HD11	61:b2:53:SER:HB3	2.00	0.43
65:f2:44:TRP:CZ3	65:f2:45:ARG:HD2	2.53	0.43
67:h2:11:ARG:NH2	83:m2:1846:U:P	2.73	0.43
73:q2:40:ARG:HB2	73:q2:47:GLU:HG3	1.99	0.43
80:x2:20:VAL:HG21	80:x2:36:LEU:HD21	1.99	0.43
83:m2:126:G:N7	83:m2:181:A:H1'	2.33	0.43
83:m2:129:C:H5'	83:m2:216:U:C4	2.53	0.43
2:A2:2259:C:H3'	2:A2:2261:G:C8	2.51	0.43
2:A2:2614:G:H2'	2:A2:2615:C:H6	1.82	0.43
2:A2:3426:U:H4'	7:Bv:13:C:H4'	2.00	0.43
2:A2:3685:G:P	2:A2:3685:G:H8	2.41	0.43
2:A2:4145:U:H2'	2:A2:4146:OMG:H8	1.83	0.43
2:A2:4560:G:H2'	2:A2:4561:G:C8	2.53	0.43
3:A3:34:LYS:O	3:A3:103:LEU:HD13	2.17	0.43
7:Bz:22:G:H2'	7:Bz:23:A:H8	1.82	0.43
12:C3:19:ARG:HG3	12:C3:92:HIS:ND1	2.32	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:F2:292:ILE:O	20:F2:298:ILE:HD12	2.17	0.43
30:J2:131:ARG:HG3	30:J2:137:ASN:HB2	1.99	0.43
32:K2:50:ARG:HA	32:K2:53:MET:SD	2.58	0.43
33:K3:3:LEU:HD22	33:K3:111:LEU:HD11	2.00	0.43
35:L2:11:ALA:O	35:L2:15:LEU:HB2	2.18	0.43
48:R3:92:LEU:HD11	48:R3:109:TYR:CZ	2.54	0.43
59:Z2:92:LEU:HD23	59:Z2:92:LEU:HA	1.86	0.43
63:d2:52:LYS:HG2	63:d2:55:ARG:NH2	2.33	0.43
67:h2:4:LYS:HE3	67:h2:5:TRP:CZ3	2.53	0.43
67:h2:15:ARG:HD3	83:m2:1185:A:P	2.58	0.43
7:n2:74:C:H5'	7:n2:75:C:OP2	2.18	0.43
80:x2:124:LYS:HD3	83:m2:1241:U:H4'	1.99	0.43
83:m2:503:C:H2'	83:m2:504:C:H5"	2.00	0.43
83:m2:561:G:O2'	83:m2:562:A:H8	2.01	0.43
83:m2:630:A:N6	83:m2:1334:A:C2	2.86	0.43
83:m2:1382:C:H2'	83:m2:1383:G:C8	2.52	0.43
83:m2:1392:U:H2'	83:m2:1393:C:C6	2.53	0.43
1:A1:184:ILE:HD12	1:A1:189:ILE:HB	2.00	0.43
2:A2:28:C:P	25:H1:193:ARG:HH22	2.41	0.43
2:A2:941:C:H2'	2:A2:942:A:H8	1.83	0.43
2:A2:1441:C:OP2	14:D2:9:ARG:HD2	2.17	0.43
2:A2:1744:A:N6	2:A2:1841:G:H2'	2.34	0.43
2:A2:1911:G:H2'	2:A2:1912:A:C8	2.53	0.43
2:A2:2321:G:H2'	2:A2:2322:G:H8	1.84	0.43
2:A2:3971:C:H2'	2:A2:3972:G:H8	1.83	0.43
7:Bv:20:U:H2'	7:Bv:21:A:H4'	2.00	0.43
19:F1:80:GLU:HB3	19:F1:110:LEU:HD12	1.99	0.43
36:L3:12:THR:HG23	83:m2:522:A:H5"	1.99	0.43
38:M3:117:GLU:HA	38:M3:120:ALA:HB3	2.00	0.43
40:N3:52:VAL:HG22	40:N3:55:ARG:NH2	2.33	0.43
70:k2:47:LYS:HB2	70:k2:102:TYR:CE2	2.53	0.43
7:n2:28:G:H2'	7:n2:29:G:H8	1.82	0.43
72:p2:149:GLN:HG3	83:m2:1125:C:O3'	2.17	0.43
74:r2:160:ILE:HD12	74:r2:162:ILE:HD11	1.99	0.43
83:m2:814:A:C4	83:m2:815:A:C8	3.06	0.43
83:m2:1330:OMG:HM23	83:m2:1330:OMG:H1'	1.88	0.43
1:A1:179:ARG:HD2	1:A1:235:LEU:HD12	2.00	0.43
2:A2:1474:C:H2'	2:A2:1475:C:H6	1.83	0.43
2:A2:1677:C:H2'	2:A2:1678:U:C6	2.53	0.43
2:A2:2448:G:H2'	2:A2:2449:G:N2	2.33	0.43
2:A2:3359:G:H2'	2:A2:3360:U:C6	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:3430:A:H8	2:A2:3430:A:OP1	2.01	0.43
2:A2:3602:G:H2'	2:A2:3603:A:H8	1.83	0.43
2:A2:3717:U:H2'	2:A2:3718:U:H6	1.81	0.43
2:A2:3744:G:H1	2:A2:3765:G:N2	2.17	0.43
2:A2:4652:U:H4'	2:A2:4653:A:H5'	1.99	0.43
6:B3:21:PHE:HA	6:B3:24:LYS:HZ3	1.83	0.43
7:Bz:19:G:H4'	7:Bz:20:U:OP2	2.19	0.43
10:C1:62:GLY:HA2	10:C1:66:GLU:OE2	2.19	0.43
20:F2:292:ILE:HG23	32:K2:128:LEU:HD21	2.01	0.43
22:G1:47:ARG:HG2	37:M2:73:LEU:HD22	2.00	0.43
33:K3:58:LYS:HA	33:K3:107:SER:HB2	1.99	0.43
47:R2:80:PRO:HA	47:R2:98:PHE:HA	2.00	0.43
49:S2:59:ARG:HB2	49:S2:103:LYS:HD2	2.00	0.43
52:T3:48:THR:HG22	52:T3:48:THR:O	2.18	0.43
75:s2:88:MET:O	75:s2:91:ARG:HG2	2.19	0.43
80:x2:53:GLN:HG3	80:x2:83:MET:SD	2.59	0.43
83:m2:572:C:H3'	83:m2:573:U:H6	1.84	0.43
83:m2:919:U:H2'	83:m2:920:U:C6	2.53	0.43
83:m2:1332:G:H4'	83:m2:1333:C:H3'	2.00	0.43
2:A2:99:A:H5"	25:H1:184:ILE:HD13	1.99	0.43
2:A2:949:G:H2'	2:A2:950:A:C8	2.54	0.43
2:A2:2264:C:H5'	11:C2:108:A:H4'	1.99	0.43
2:A2:3382:A:H2'	2:A2:3383:A:C8	2.53	0.43
2:A2:4369:A:O4'	17:E2:18:PRO:HG2	2.18	0.43
40:N3:57:SER:HB3	50:S3:54:VAL:HG13	2.01	0.43
40:N3:71:ILE:HD12	83:m2:1020:U:H5"	2.01	0.43
44:P3:69:LEU:HD11	44:P3:129:PHE:HB2	2.00	0.43
75:s2:143:PRO:O	75:s2:147:VAL:HG22	2.18	0.43
75:s2:173:LEU:O	75:s2:177:LEU:HG	2.18	0.43
77:u2:38:ILE:HD11	77:u2:81:VAL:HG23	1.99	0.43
83:m2:17:C:H2'	83:m2:18:C:C6	2.53	0.43
83:m2:931:G:N2	83:m2:1106:G:H4'	2.33	0.43
83:m2:1375:C:H2'	83:m2:1376:C:H6	1.82	0.43
2:A2:434:A:H2'	2:A2:435:A:O4'	2.19	0.43
2:A2:844:C:H5'	20:F2:336:ARG:NH1	2.33	0.43
2:A2:1884:G:H5"	32:K2:12:LYS:HG3	2.01	0.43
2:A2:2294:C:H2'	2:A2:2295:C:H6	1.83	0.43
2:A2:3402:A:H5'	14:D2:243:THR:HG23	2.00	0.43
3:A3:132:ARG:HD3	83:m2:1625:A:N7	2.34	0.43
7:Bz:22:G:N7	7:Bz:46:G:O6	2.51	0.43
14:D2:2:GLY:HA2	14:D2:207:VAL:HG23	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:I3:147:HIS:HE1	29:I3:168:CYS:HA	1.83	0.43
48:R3:70:PRO:HA	48:R3:84:ALA:HB1	2.00	0.43
60:a2:96:LEU:HD23	60:a2:96:LEU:HA	1.88	0.43
71:o2:122:LEU:HB2	71:o2:142:LEU:HD21	2.00	0.43
75:s2:19:LEU:HG	75:s2:20:PHE:HD1	1.80	0.43
79:w2:20:LYS:O	79:w2:22:ARG:HD2	2.18	0.43
79:w2:27:GLU:O	79:w2:31:GLU:HG3	2.19	0.43
83:m2:1104:G:H2'	83:m2:1105:C:C6	2.53	0.43
83:m2:1105:C:H2'	83:m2:1106:G:H8	1.82	0.43
83:m2:1362:U:H3'	83:m2:1363:G:C8	2.53	0.43
83:m2:1437:C:H2'	83:m2:1438:C:O4'	2.19	0.43
1:A1:219:VAL:HG23	1:A1:223:PHE:CG	2.54	0.43
2:A2:656:G:H2'	2:A2:657:A:C8	2.54	0.43
2:A2:1085:C:H5	2:A2:1910:G:N2	2.16	0.43
2:A2:1316:A:H4'	2:A2:1317:G:H5'	2.01	0.43
2:A2:1404:U:H5"	2:A2:4179:G:OP1	2.19	0.43
2:A2:1766:A:H1'	2:A2:4346:G:N2	2.34	0.43
2:A2:1766:A:H3'	2:A2:1767:G:H8	1.84	0.43
2:A2:2531:G:H2'	2:A2:2532:G:C8	2.54	0.43
2:A2:3324:C:H5'	14:D2:8:GLN:O	2.19	0.43
2:A2:3389:A:H2'	2:A2:3390:U:O4'	2.19	0.43
2:A2:3488:U:H2'	2:A2:3489:C:H6	1.84	0.43
2:A2:3933:A:O2'	2:A2:3934:A:H2'	2.18	0.43
2:A2:4531:C:H2'	2:A2:4532:U:C6	2.53	0.43
10:C1:44:GLU:CG	10:C1:58:ASP:HB2	2.48	0.43
11:C2:71:A:H3'	49:S2:50:ARG:HG3	2.01	0.43
20:F2:60:HIS:NE2	20:F2:100:ARG:HD3	2.34	0.43
31:J3:164:PRO:HG2	31:J3:248:TYR:HD2	1.84	0.43
31:J3:185:THR:HG22	31:J3:194:ARG:HG3	2.01	0.43
32:K2:70:MET:HE3	32:K2:70:MET:HB3	1.82	0.43
42:O3:31:CYS:HB2	42:O3:44:VAL:HG22	2.00	0.43
57:X2:87:ARG:HB3	57:X2:107:THR:OG1	2.19	0.43
60:a2:7:TYR:HD2	60:a2:12:SER:HA	1.83	0.43
63:d2:15:THR:HG23	63:d2:16:HIS:ND1	2.34	0.43
68:i2:32:SER:C	68:i2:34:TYR:H	2.27	0.43
72:p2:28:LYS:HD2	72:p2:50:THR:HA	2.00	0.43
83:m2:677:U:H2'	83:m2:678:C:H6	1.83	0.43
83:m2:951:G:H2'	83:m2:952:C:H6	1.84	0.43
83:m2:1136:G:H2'	83:m2:1137:C:H6	1.81	0.43
83:m2:1232:C:H2'	83:m2:1233:C:C6	2.54	0.43
83:m2:1388:A:H2'	83:m2:1389:G:O4'	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:m2:1522:G:H5”	83:m2:1523:C:OP2	2.19	0.43
83:m2:1803:A:H2’	83:m2:1804:C:C6	2.54	0.43
2:A2:318:A:H2’	2:A2:319:A:H8	1.82	0.43
2:A2:425:U:H2’	2:A2:426:A:H8	1.84	0.43
2:A2:1563:G:H2’	2:A2:1564:C:O4’	2.19	0.43
2:A2:1881:G:H2’	2:A2:1882:U:C6	2.54	0.43
2:A2:3266:A:H2’	2:A2:3267:A:C8	2.53	0.43
2:A2:4188:OMC:H2’	2:A2:4189:C:C6	2.53	0.43
10:C1:114:ILE:HB	10:C1:124:ARG:HB2	2.00	0.43
17:E2:41:VAL:HG22	17:E2:187:GLY:O	2.18	0.43
18:E3:105:PHE:CD1	18:E3:121:LYS:HB3	2.53	0.43
20:F2:140:LYS:HD2	20:F2:140:LYS:HA	1.89	0.43
20:F2:242:PRO:CG	20:F2:248:ARG:HD2	2.49	0.43
36:L3:134:HIS:ND1	36:L3:163:SER:HB2	2.33	0.43
60:a2:40:LYS:HD3	60:a2:52:ARG:NH2	2.34	0.43
72:p2:33:VAL:HG22	72:p2:96:CYS:SG	2.58	0.43
75:s2:40:ALA:HB3	75:s2:67:PRO:HA	2.00	0.43
77:u2:117:TYR:CD1	77:u2:152:ARG:HB3	2.53	0.43
80:x2:56:LEU:HD11	80:x2:78:THR:HB	2.01	0.43
83:m2:72:C:OP1	83:m2:72:C:H4’	2.18	0.43
83:m2:1027:U:H2’	83:m2:1028:C:O4’	2.19	0.43
83:m2:1094:G:H2’	83:m2:1095:A:C8	2.53	0.43
2:A2:207:G:H2’	2:A2:208:A:C8	2.54	0.43
2:A2:487:C:H2’	2:A2:488:G:H8	1.84	0.43
2:A2:690:C:H2’	2:A2:691:G:O4’	2.19	0.43
2:A2:1078:G:H3’	2:A2:1079:A:H8	1.83	0.43
2:A2:1285:C:H2’	2:A2:1286:U:C6	2.54	0.43
2:A2:1561:G:H2’	2:A2:1562:G:C8	2.54	0.43
2:A2:2652:G:H2’	2:A2:2653:G:H8	1.83	0.43
2:A2:3522:C:H2’	2:A2:3523:A:O4’	2.18	0.43
2:A2:3942:U:H3’	68:i2:9:ARG:O	2.18	0.43
2:A2:3952:U:H2’	2:A2:3953:U:C6	2.53	0.43
2:A2:4203:U:H2’	2:A2:4204:U:C6	2.54	0.43
2:A2:4218:U:H2’	2:A2:4219:G:O4’	2.19	0.43
2:A2:4584:G:H22	26:H2:257:GLN:HB2	1.83	0.43
11:C2:53:G:C2	65:f2:35:ILE:HD11	2.53	0.43
13:D1:140:THR:HG23	13:D1:141:LYS:O	2.19	0.43
17:E2:224:LYS:HG2	17:E2:340:THR:CG2	2.49	0.43
26:H2:155:THR:HG21	26:H2:203:ALA:HB1	2.00	0.43
29:I3:257:LYS:HB3	29:I3:259:TRP:NE1	2.33	0.43
33:K3:23:LYS:HD3	33:K3:42:GLY:H	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:V2:99:HIS:CE1	55:V2:102:LEU:HD13	2.54	0.43
73:q2:9:ARG:HH22	83:m2:1554:G:H4'	1.84	0.43
75:s2:78:MET:HB3	75:s2:159:ARG:HH11	1.83	0.43
76:t2:121:THR:HG23	76:t2:124:ALA:H	1.83	0.43
83:m2:21:U:H2'	83:m2:22:A:C8	2.54	0.43
83:m2:375:G:H2'	83:m2:376:G:H8	1.84	0.43
83:m2:1353:G:N3	83:m2:1381:A:N1	2.67	0.43
83:m2:1858:C:H2'	83:m2:1859:G:C8	2.53	0.43
2:A2:2:G:H2'	2:A2:3:C:C6	2.54	0.43
2:A2:9:C:OP1	25:H1:40:PRO:HD3	2.19	0.43
2:A2:1125:G:H2'	2:A2:1126:A:O4'	2.18	0.43
2:A2:3608:A:H2'	2:A2:3609:G:C8	2.54	0.43
2:A2:3933:A:O2'	2:A2:3934:A:C8	2.72	0.43
3:A3:13:LEU:HB3	3:A3:20:ILE:HG12	2.00	0.43
11:C2:75:OMG:HM23	11:C2:75:OMG:H1'	1.60	0.43
13:D1:61:SER:HA	13:D1:126:VAL:HG12	2.01	0.43
14:D2:196:TRP:HB3	14:D2:197:PRO:HD3	2.00	0.43
29:I3:60:ARG:HD2	81:y2:97:GLN:HE21	1.83	0.43
30:J2:60:PHE:CE1	30:J2:82:ARG:HB2	2.54	0.43
64:e2:21:LYS:HB2	64:e2:37:ARG:O	2.19	0.43
66:g2:88:LYS:HE3	66:g2:89:TYR:CZ	2.54	0.43
68:i2:53:LYS:HD3	7:n2:75:C:O2	2.19	0.43
70:k2:39:ARG:HH11	70:k2:105:ASP:CG	2.26	0.43
76:t2:63:PHE:HA	76:t2:95:ILE:O	2.18	0.43
79:w2:83:GLN:HE22	83:m2:394:A:N6	2.17	0.43
83:m2:682:G:H2'	83:m2:683:U:C6	2.54	0.43
83:m2:1034:C:H2'	83:m2:1035:G:O4'	2.19	0.43
2:A2:82:U:H2'	2:A2:83:C:O4'	2.19	0.42
2:A2:2379:G:H2'	2:A2:2380:U:H6	1.83	0.42
2:A2:3807:C:H2'	2:A2:3808:G:O4'	2.19	0.42
4:B1:58:PRO:HD2	4:B1:61:ILE:HD12	2.01	0.42
5:B2:108:G:P	23:G2:273:LEU:HD22	2.59	0.42
12:C3:55:ARG:HG2	12:C3:87:ARG:NE	2.34	0.42
14:D2:36:GLU:OE2	14:D2:163:ARG:HD2	2.19	0.42
25:H1:120:TRP:CZ2	25:H1:123:GLU:HB2	2.52	0.42
27:H3:14:PHE:O	83:m2:1663:A:H8	2.02	0.42
29:I3:129:ILE:HD11	29:I3:151:VAL:HG21	2.00	0.42
32:K2:46:VAL:O	32:K2:50:ARG:HG3	2.19	0.42
33:K3:32:MET:HB3	33:K3:65:GLN:HE22	1.84	0.42
34:L1:64:SER:HB3	34:L1:107:TYR:CD2	2.54	0.42
35:L2:66:ASN:HB3	35:L2:70:ARG:NH1	2.34	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:M3:120:ALA:HA	38:M3:123:VAL:HG12	2.00	0.42
46:Q3:116:LYS:HG2	83:m2:161:U:H5'	2.00	0.42
7:n2:14:A:H2'	7:n2:15:G:C8	2.54	0.42
74:r2:11:ARG:NH2	83:m2:497:U:H4'	2.33	0.42
75:s2:50:PRO:HB3	75:s2:69:VAL:HG12	2.00	0.42
77:u2:134:GLU:O	77:u2:138:ASN:HB2	2.20	0.42
78:v2:3:MET:HB3	78:v2:44:HIS:CE1	2.53	0.42
83:m2:11:A:N1	83:m2:1202:A:H2	2.17	0.42
83:m2:616:C:H5"	83:m2:617:C:C5	2.54	0.42
83:m2:898:U:H2'	83:m2:899:U:C6	2.54	0.42
83:m2:973:G:O2'	83:m2:974:A:H8	2.00	0.42
83:m2:1166:G:O2'	83:m2:1167:G:H5'	2.19	0.42
2:A2:184:U:H5"	2:A2:254:G:N1	2.34	0.42
2:A2:1115:C:H2'	2:A2:1117:A:C5	2.53	0.42
2:A2:1140:A2M:H2'	2:A2:1141:C:C6	2.54	0.42
2:A2:1318:C:H2'	2:A2:1319:G:C8	2.54	0.42
2:A2:2224:C:H5	2:A2:2226:G:H1	1.67	0.42
2:A2:2655:U:H2'	2:A2:2656:G:C8	2.54	0.42
2:A2:3906:G:H2'	2:A2:3906:G:N3	2.34	0.42
2:A2:4160:C:N3	2:A2:4164:U:H5	2.17	0.42
2:A2:4564:G:H2'	2:A2:4565:C:C6	2.54	0.42
4:B1:99:ALA:HB1	4:B1:136:LEU:HD11	2.00	0.42
11:C2:66:A:H2'	11:C2:67:U:C6	2.54	0.42
11:C2:67:U:H2'	11:C2:68:G:C8	2.54	0.42
20:F2:8:ILE:HG22	70:k2:71:ARG:HE	1.84	0.42
24:G3:47:LYS:HE2	75:s2:145:ARG:NH1	2.34	0.42
29:I3:181:ASN:HB3	29:I3:183:LYS:HG2	2.01	0.42
33:K3:54:GLY:HA2	33:K3:63:MET:HE2	2.02	0.42
39:N2:19:PHE:CD2	39:N2:20:ARG:HG3	2.54	0.42
43:P2:36:ASN:O	43:P2:37:LEU:HD23	2.20	0.42
71:o2:112:ILE:HD12	71:o2:112:ILE:H	1.84	0.42
72:p2:189:ILE:HG13	72:p2:190:PRO:CD	2.46	0.42
73:q2:110:LEU:HA	73:q2:177:LEU:HD21	2.00	0.42
83:m2:1175:A:H2'	83:m2:1176:U:C6	2.54	0.42
83:m2:1436:C:H4'	83:m2:1437:C:C6	2.54	0.42
83:m2:1440:A:H2'	83:m2:1441:A:H8	1.84	0.42
2:A2:1475:C:H2'	2:A2:1476:C:H6	1.85	0.42
2:A2:2287:C:H2'	2:A2:2288:C:C6	2.55	0.42
2:A2:2619:A:H2'	2:A2:2620:U:C6	2.54	0.42
2:A2:4082:G:H1'	13:D1:158:LYS:HD2	2.01	0.42
2:A2:4188:OMC:HM23	2:A2:4188:OMC:H1'	1.91	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:4285:G:O3'	2:A2:4286:U:H3'	2.18	0.42
29:I3:69:VAL:HG23	29:I3:80:SER:HB3	2.00	0.42
29:I3:273:GLU:H	29:I3:273:GLU:CD	2.28	0.42
33:K3:71:GLY:H	33:K3:98:ARG:NH1	2.18	0.42
36:L3:44:TRP:HA	36:L3:47:LYS:HG2	2.00	0.42
61:b2:95:LEU:HB3	61:b2:99:GLU:HG3	2.01	0.42
75:s2:41:VAL:HG23	75:s2:41:VAL:O	2.19	0.42
75:s2:136:ARG:O	75:s2:203:ASN:HB3	2.20	0.42
82:z2:26:ASN:CA	82:z2:58:MET:HE2	2.48	0.42
83:m2:184:G:H2'	83:m2:185:G:H8	1.84	0.42
83:m2:1458:G:H2'	83:m2:1459:U:C6	2.54	0.42
83:m2:1718:C:H2'	83:m2:1719:C:H6	1.84	0.42
2:A2:1070:C:H2'	2:A2:1071:G:O4'	2.20	0.42
2:A2:1559:U:C5	2:A2:3907:A:H5'	2.53	0.42
2:A2:2214:G:H2'	2:A2:2216:G:OP2	2.19	0.42
2:A2:3525:OMC:H1'	28:I2:68:ARG:NH2	2.34	0.42
3:A3:12:ILE:HG21	16:E1:119:TYR:CE2	2.54	0.42
12:C3:66:ARG:HB3	27:H3:40:ARG:NH1	2.35	0.42
17:E2:394:LYS:HE2	17:E2:394:LYS:HB3	1.76	0.42
35:L2:105:LEU:HD22	35:L2:135:LYS:HG3	2.01	0.42
36:L3:16:PRO:HG3	36:L3:24:ARG:NH1	2.34	0.42
37:M2:15:ARG:HD2	37:M2:25:PRO:HG2	2.00	0.42
64:e2:24:LYS:HA	64:e2:67:LYS:O	2.19	0.42
7:n2:8:U:H5'	7:n2:49:C:OP2	2.19	0.42
73:q2:66:ILE:O	73:q2:70:THR:HG23	2.20	0.42
78:v2:47:LYS:O	78:v2:50:GLN:HG2	2.20	0.42
82:z2:44:LYS:HB3	82:z2:44:LYS:HE3	1.79	0.42
83:m2:947:U:H2'	83:m2:948:U:H6	1.85	0.42
83:m2:1833:A:H1'	83:m2:1854:C:H5'	2.00	0.42
2:A2:1054:G:H2'	2:A2:1055:G:H8	1.84	0.42
2:A2:1281:C:H2'	2:A2:1282:C:H6	1.84	0.42
2:A2:2294:C:H2'	2:A2:2295:C:C6	2.55	0.42
2:A2:3383:A:H8	2:A2:3383:A:OP2	2.02	0.42
2:A2:3930:C:O2'	2:A2:3933:A:H1'	2.19	0.42
2:A2:4044:OMG:C4	2:A2:4099:5MC:HM52	2.54	0.42
2:A2:4160:C:H5'	43:P2:43:LYS:HG2	2.01	0.42
2:A2:4411:C:H2'	2:A2:4412:G:C8	2.54	0.42
6:B3:75:MET:HA	6:B3:78:ILE:HD12	2.01	0.42
12:C3:36:CYS:SG	12:C3:53:PRO:HB3	2.60	0.42
16:E1:166:PHE:CE2	16:E1:172:GLY:HA3	2.55	0.42
17:E2:128:LYS:HB3	17:E2:128:LYS:HE3	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:E3:123:VAL:HG12	18:E3:124:LYS:HG3	2.02	0.42
30:J2:112:LEU:HD23	30:J2:112:LEU:HA	1.88	0.42
34:L1:196:LYS:HA	34:L1:196:LYS:HD3	1.82	0.42
40:N3:80:LEU:HD23	40:N3:80:LEU:H	1.85	0.42
43:P2:111:GLU:HA	43:P2:131:ARG:HD2	2.01	0.42
44:P3:57:ARG:HD2	50:S3:26:GLN:NE2	2.35	0.42
60:a2:63:VAL:HG12	60:a2:66:ARG:HH12	1.84	0.42
64:e2:61:PRO:HA	64:e2:62:PRO:HD3	1.93	0.42
69:j2:29:ILE:HG23	69:j2:69:TRP:HB3	2.00	0.42
76:t2:100:ILE:HD11	76:t2:125:VAL:HG11	2.01	0.42
78:v2:72:THR:HG23	78:v2:75:GLY:H	1.84	0.42
81:y2:125:ARG:HE	81:y2:125:ARG:HB2	1.61	0.42
83:m2:29:G:C6	83:m2:648:G:C6	3.07	0.42
83:m2:961:G:O2'	83:m2:1067:G:H4'	2.19	0.42
83:m2:1056:G:C6	83:m2:1067:G:C6	3.08	0.42
83:m2:1456:A:C2	83:m2:1478:A:H1'	2.55	0.42
2:A2:261:G:H2'	2:A2:262:G:C8	2.53	0.42
2:A2:272:U:H2'	2:A2:273:U:C6	2.55	0.42
2:A2:1482:A:H4'	2:A2:1498:G:H22	1.85	0.42
2:A2:2240:U:H2'	2:A2:2241:G:C8	2.54	0.42
2:A2:2631:G:C8	69:j2:16:THR:HG22	2.55	0.42
20:F2:297:GLU:O	32:K2:131:PRO:HG3	2.20	0.42
23:G2:118:ILE:HG23	23:G2:135:ILE:HD12	2.00	0.42
26:H2:103:VAL:HG23	26:H2:105:GLY:H	1.84	0.42
27:H3:34:TYR:CZ	73:q2:8:LYS:HD2	2.54	0.42
35:L2:81:ARG:HG2	35:L2:88:ARG:CZ	2.49	0.42
42:O3:45:THR:OG1	42:O3:49:GLY:HA2	2.20	0.42
46:Q3:90:ARG:HG2	46:Q3:93:ARG:NH2	2.21	0.42
47:R2:82:THR:HG21	61:b2:37:THR:HG22	2.02	0.42
63:d2:68:LYS:HG3	63:d2:69:ILE:HD12	2.01	0.42
7:n2:35:A:H2'	7:n2:36:A:C8	2.54	0.42
77:u2:83:TYR:HB2	77:u2:202:ILE:HG22	2.01	0.42
78:v2:22:VAL:HG13	78:v2:68:TYR:HE1	1.84	0.42
79:w2:77:VAL:HG22	79:w2:86:ILE:HD12	2.02	0.42
83:m2:1549:C:H2'	83:m2:1550:G:O4'	2.19	0.42
1:A1:245:LYS:HD2	2:A2:1709:A:H4'	2.01	0.42
2:A2:41:C:O2'	2:A2:42:A:H5'	2.19	0.42
2:A2:492:G:N2	2:A2:670:G:H22	2.14	0.42
2:A2:1621:G:H2'	2:A2:1622:C:O4'	2.19	0.42
2:A2:2235:G:H2'	2:A2:2236:G:C8	2.55	0.42
2:A2:2495:U:O4'	14:D2:187:HIS:HB3	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:4322:C:O3'	2:A2:4323:C:H3'	2.20	0.42
2:A2:4499:G:H2'	2:A2:4500:G:H8	1.84	0.42
6:B3:33:TRP:CZ2	6:B3:102:ARG:HG3	2.55	0.42
7:Bv:7:A:H8	7:Bv:7:A:OP2	2.03	0.42
7:Bv:19:G:H4'	7:Bv:20:U:OP2	2.19	0.42
7:Bv:75:C:H2'	7:Bv:76:A:O4'	2.19	0.42
17:E2:82:PRO:HG3	17:E2:171:LEU:HD21	2.01	0.42
18:E3:77:ASN:ND2	18:E3:79:LYS:HE3	2.34	0.42
26:H2:184:GLY:O	26:H2:185:PRO:C	2.63	0.42
29:I3:42:MET:HB2	29:I3:57:ARG:HG2	2.02	0.42
29:I3:173:LEU:HD11	29:I3:189:ILE:HD12	2.01	0.42
38:M3:61:TYR:O	38:M3:64:LEU:HG	2.19	0.42
49:S2:47:MET:HE2	49:S2:115:ARG:HH21	1.84	0.42
70:k2:7:TRP:HB2	70:k2:44:ILE:HD12	2.01	0.42
70:k2:98:ARG:HG3	70:k2:98:ARG:HH11	1.83	0.42
77:u2:142:SER:HA	77:u2:146:GLN:HB3	2.02	0.42
83:m2:675:G:H2'	83:m2:676:C:C6	2.54	0.42
83:m2:845:C:H2'	83:m2:846:U:O4'	2.20	0.42
83:m2:878:C:H2'	83:m2:879:C:C6	2.55	0.42
2:A2:124:C:H2'	2:A2:125:C:H6	1.85	0.42
2:A2:700:C:H2'	2:A2:701:C:H6	1.85	0.42
2:A2:2061:G:H1'	2:A2:2087:A:H61	1.84	0.42
2:A2:2504:C:H2'	2:A2:2505:G:H8	1.81	0.42
2:A2:3261:C:H2'	2:A2:3262:U:O4'	2.19	0.42
2:A2:3602:G:H2'	2:A2:3603:A:C8	2.55	0.42
2:A2:3962:A:H2'	2:A2:3963:A:O4'	2.20	0.42
2:A2:4303:A:H2'	2:A2:4304:G:O4'	2.19	0.42
2:A2:4413:G:H2'	2:A2:4414:A:H8	1.84	0.42
2:A2:4427:C:H2'	2:A2:4428:C:C6	2.53	0.42
4:B1:70:LEU:HA	4:B1:70:LEU:HD23	1.80	0.42
5:B2:61:G:O2'	5:B2:62:U:H5'	2.19	0.42
7:Bv:48:C:C2	7:Bv:59:U:H1'	2.54	0.42
20:F2:143:ARG:O	20:F2:143:ARG:HG3	2.19	0.42
21:F3:82:LYS:HE3	83:m2:1211:A:H5"	2.02	0.42
23:G2:183:TYR:HA	23:G2:190:PHE:HA	2.02	0.42
34:L1:59:PRO:HD2	34:L1:153:SER:HB2	2.01	0.42
37:M2:81:TRP:HZ3	37:M2:130:GLU:HG2	1.85	0.42
43:P2:113:LYS:HE3	43:P2:113:LYS:HB2	1.89	0.42
44:P3:43:LYS:HG2	44:P3:43:LYS:H	1.71	0.42
50:S3:19:HIS:HB3	50:S3:22:LYS:HB2	2.02	0.42
60:a2:69:LYS:HG2	60:a2:73:HIS:CE1	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
64:e2:51:GLU:HG2	64:e2:52:LYS:N	2.35	0.42
69:j2:70:THR:HG23	69:j2:72:ASN:O	2.20	0.42
7:n2:16:U:H3	7:n2:61:C:H5'	1.84	0.42
72:p2:31:TYR:CD2	72:p2:94:LYS:HA	2.55	0.42
73:q2:72:VAL:HG13	78:v2:20:VAL:HG11	2.02	0.42
73:q2:193:ASP:N	73:q2:194:PRO:HD3	2.35	0.42
80:x2:125:PRO:HB2	80:x2:127:LYS:NZ	2.34	0.42
80:x2:145:LYS:NZ	83:m2:1828:G:H4'	2.35	0.42
83:m2:149:A:H2	83:m2:169:U:H3	1.66	0.42
83:m2:347:U:H2'	83:m2:348:C:H6	1.84	0.42
83:m2:1038:A:C4	83:m2:1039:G:C8	3.08	0.42
83:m2:1100:C:H2'	83:m2:1101:G:H8	1.83	0.42
83:m2:1279:C:H2'	83:m2:1280:A:H8	1.85	0.42
83:m2:1283:G:C6	83:m2:1284:A:C6	3.07	0.42
83:m2:1619:G:N2	83:m2:1621:A:H3'	2.34	0.42
2:A2:279:A:C4	25:H1:12:ARG:HG2	2.55	0.42
2:A2:1027:G:H2'	2:A2:1028:G:C8	2.52	0.42
2:A2:2283:G:H4'	2:A2:2538:A:H4'	2.02	0.42
2:A2:2500:A:H2'	2:A2:2501:A:H8	1.82	0.42
2:A2:3562:A:H2'	20:F2:69:THR:HG21	2.00	0.42
2:A2:4023:G:C5	7:n2:76:A:C2	3.08	0.42
4:B1:180:PRO:HG3	4:B1:219:VAL:HG13	2.02	0.42
20:F2:287:THR:HG21	70:k2:5:LEU:HD12	2.02	0.42
23:G2:211:LEU:HD12	23:G2:223:PHE:CE2	2.50	0.42
25:H1:85:VAL:HA	68:i2:49:GLY:HA2	2.02	0.42
31:J3:142:LYS:HB3	31:J3:142:LYS:HE3	1.77	0.42
31:J3:166:ARG:HB2	31:J3:248:TYR:CE1	2.54	0.42
34:L1:5:VAL:HG23	34:L1:7:ARG:H	1.85	0.42
48:R3:66:LYS:HZ3	75:s2:103:LEU:N	2.18	0.42
64:e2:14:THR:O	64:e2:17:ARG:HB2	2.20	0.42
67:h2:9:ARG:NH2	83:m2:1853:A:O5'	2.53	0.42
72:p2:66:VAL:HG13	72:p2:85:LYS:HE2	2.01	0.42
79:w2:60:CYS:SG	79:w2:63:THR:HG22	2.60	0.42
80:x2:50:ARG:CZ	83:m2:1620:C:H4'	2.50	0.42
83:m2:116:OMU:HM23	83:m2:116:OMU:H1'	1.77	0.42
83:m2:176:U:H2'	83:m2:177:G:O4'	2.19	0.42
83:m2:355:OMC:H1'	83:m2:355:OMC:HM23	1.80	0.42
83:m2:682:G:H2'	83:m2:683:U:H6	1.85	0.42
83:m2:1039:G:H4'	83:m2:1847:A:H4'	2.01	0.42
83:m2:1306:U:H2'	83:m2:1307:C:C6	2.55	0.42
2:A2:493:U:H2'	2:A2:494:G:C8	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:1490:PSU:H4’	2:A2:1493:G:C2	2.55	0.42
2:A2:1606:A:H4’	2:A2:1607:A:O5’	2.19	0.42
2:A2:1911:G:H2’	2:A2:1912:A:H8	1.85	0.42
2:A2:2141:U:C2	2:A2:2142:G:C8	3.08	0.42
2:A2:2194:G:H5’	2:A2:2533:G:OP2	2.20	0.42
2:A2:2284:A:N3	2:A2:2284:A:H2’	2.35	0.42
2:A2:2370:U:H2’	2:A2:2371:C:H6	1.85	0.42
2:A2:3253:G:H1’	2:A2:3254:C:O5’	2.19	0.42
2:A2:3335:U:C4	14:D2:20:VAL:HB	2.55	0.42
2:A2:3392:A:H2’	2:A2:3393:A:C8	2.55	0.42
2:A2:3526:C:H2’	2:A2:3527:A:H8	1.85	0.42
2:A2:3567:C:H2’	2:A2:3568:U:C6	2.55	0.42
2:A2:3713:U:H4’	2:A2:3714:C:H5	1.85	0.42
2:A2:3736:G:C8	47:R2:44:PRO:HG3	2.55	0.42
2:A2:3957:G:C6	39:N2:80:VAL:HG21	2.55	0.42
4:B1:51:LEU:O	4:B1:55:VAL:HG23	2.20	0.42
5:B2:102:U:H3’	5:B2:103:A:H8	1.84	0.42
7:Bv:6:G:O2’	7:Bv:7:A:H5’	2.20	0.42
12:C3:26:SER:HB3	12:C3:110:VAL:HA	2.02	0.42
16:E1:109:ILE:HG22	16:E1:111:GLU:H	1.83	0.42
17:E2:202:GLU:O	17:E2:202:GLU:HG2	2.20	0.42
19:F1:72:ALA:HB2	19:F1:157:ILE:HD12	2.01	0.42
24:G3:44:ARG:HH11	24:G3:63:ARG:HB3	1.85	0.42
25:H1:104:GLU:HA	25:H1:160:GLU:HG3	2.02	0.42
31:J3:84:PHE:HZ	31:J3:262:THR:HG23	1.84	0.42
31:J3:170:TRP:NE1	44:P3:97:ARG:HD2	2.35	0.42
43:P2:58:GLY:HA2	43:P2:125:CYS:HB3	2.02	0.42
48:R3:69:THR:HG23	48:R3:72:VAL:H	1.85	0.42
61:b2:57:VAL:O	61:b2:61:ILE:HG13	2.20	0.42
61:b2:96:THR:OG1	61:b2:99:GLU:HG2	2.19	0.42
64:e2:19:ASP:OD2	64:e2:38:CYS:HB3	2.20	0.42
7:n2:16:U:C2	7:n2:60:U:H2’	2.55	0.42
73:q2:161:GLY:HA3	83:m2:1390:A:H61	1.85	0.42
73:q2:163:PRO:HA	73:q2:166:TYR:CE1	2.55	0.42
1:A1:65:ARG:NH1	2:A2:874:C:H5”	2.35	0.41
2:A2:68:U:H2’	2:A2:69:A:O4’	2.19	0.41
2:A2:134:G:H1’	2:A2:135:U:C5	2.55	0.41
2:A2:686:C:H2’	2:A2:687:G:C8	2.55	0.41
2:A2:1078:G:H21	2:A2:1078:G:P	2.43	0.41
2:A2:1281:C:H2’	2:A2:1282:C:C6	2.55	0.41
2:A2:2235:G:H2’	2:A2:2236:G:H8	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:2388:U:H2'	2:A2:2389:C:C6	2.55	0.41
2:A2:2575:C:H5"	35:L2:56:THR:OG1	2.20	0.41
2:A2:3441:A2M:H2	2:A2:4203:U:O2	2.19	0.41
2:A2:3997:C:H2'	2:A2:3998:U:C6	2.55	0.41
2:A2:4119:A:O2'	2:A2:4162:A:H1'	2.20	0.41
2:A2:4417:G:H21	37:M2:173:ASN:HD21	1.68	0.41
2:A2:4648:U:H2'	2:A2:4649:U:H6	1.85	0.41
6:B3:110:LEU:HD23	6:B3:110:LEU:O	2.20	0.41
7:Bz:59:U:H2'	7:Bz:60:U:C6	2.55	0.41
15:D3:17:CYS:SG	15:D3:55:ILE:HA	2.60	0.41
32:K2:18:PRO:HD3	32:K2:52:PHE:CD1	2.55	0.41
34:L1:179:LEU:O	34:L1:183:ILE:HG23	2.20	0.41
36:L3:38:ARG:HG2	52:T3:31:ARG:HB2	2.02	0.41
39:N2:50:LYS:O	39:N2:92:ARG:HD3	2.20	0.41
43:P2:30:ASP:OD2	43:P2:104:VAL:HA	2.20	0.41
50:S3:73:LEU:HB3	50:S3:77:CYS:HB2	2.01	0.41
59:Z2:11:PHE:HB2	59:Z2:101:ILE:CD1	2.49	0.41
72:p2:83:LYS:O	72:p2:103:MET:HG2	2.19	0.41
74:r2:108:ARG:NH2	83:m2:848:G:H3'	2.35	0.41
77:u2:62:VAL:HA	77:u2:77:ARG:HA	2.02	0.41
80:x2:38:SER:OG	80:x2:41:GLN:HG2	2.20	0.41
81:y2:109:LYS:HE3	81:y2:109:LYS:HB2	1.90	0.41
83:m2:291:G:H2'	83:m2:292:U:C6	2.55	0.41
83:m2:612:G:H2'	83:m2:613:G:H8	1.85	0.41
83:m2:1033:A2M:HM'3	83:m2:1033:A2M:H1'	1.81	0.41
83:m2:1194:U:H2'	83:m2:1195:U:C6	2.54	0.41
2:A2:6:C:H2'	2:A2:7:C:H6	1.84	0.41
2:A2:686:C:H2'	2:A2:687:G:H8	1.85	0.41
2:A2:1114:G:H2'	2:A2:1115:C:C6	2.55	0.41
2:A2:3267:A:O2'	77:u2:92:ARG:NH1	2.53	0.41
2:A2:3348:A:N6	2:A2:3479:G:H21	1.97	0.41
2:A2:3421:G:H3'	2:A2:3422:A:C2	2.55	0.41
2:A2:3581:OMU:H1'	2:A2:3581:OMU:HM23	1.82	0.41
2:A2:4401:C:H2'	2:A2:4402:G:O4'	2.20	0.41
3:A3:80:PRO:HG2	3:A3:83:PHE:HB2	2.01	0.41
3:A3:119:ALA:O	3:A3:123:LEU:HG	2.20	0.41
10:C1:92:MET:SD	10:C1:161:ILE:HD11	2.60	0.41
11:C2:27:U:H2'	11:C2:28:C:C6	2.55	0.41
11:C2:141:C:H2'	11:C2:142:U:C6	2.54	0.41
13:D1:91:LEU:CD1	13:D1:135:ILE:HA	2.49	0.41
29:I3:220:ASP:OD2	29:I3:223:GLU:HB2	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:K2:53:MET:HE1	32:K2:143:ARG:NH1	2.33	0.41
54:U3:143:LYS:HG3	83:m2:1312:U:H4'	2.01	0.41
72:p2:113:MET:HE3	72:p2:113:MET:HB2	1.90	0.41
74:r2:3:ARG:HD3	83:m2:451:A:H4'	2.02	0.41
76:t2:178:LYS:HD3	76:t2:182:GLY:HA2	2.02	0.41
81:y2:9:SER:HB3	81:y2:26:LYS:HB3	2.02	0.41
83:m2:478:A:H2'	83:m2:479:G:O4'	2.19	0.41
83:m2:597:U:H2'	83:m2:598:U:C6	2.55	0.41
83:m2:662:C:H2'	83:m2:663:U:C6	2.55	0.41
83:m2:820:A:H2'	83:m2:821:G:C8	2.55	0.41
83:m2:888:A:H1'	83:m2:903:G:N2	2.36	0.41
83:m2:1206:A:H2'	83:m2:1207:C:H6	1.85	0.41
2:A2:1007:A:H2'	2:A2:1008:C:C6	2.56	0.41
2:A2:1135:G:H2'	2:A2:3532:A:N7	2.35	0.41
2:A2:2090:C:H2'	2:A2:2091:G:H8	1.85	0.41
2:A2:2241:G:C6	2:A2:2248:G:C6	3.08	0.41
2:A2:2290:G:H2'	2:A2:2291:A:C8	2.55	0.41
2:A2:3556:G:OP1	2:A2:3557:A:H4'	2.20	0.41
2:A2:4586:C:H1'	26:H2:253:ARG:HH22	1.85	0.41
11:C2:64:U:C2	11:C2:65:A:C8	3.08	0.41
15:D3:74:LYS:HE3	15:D3:74:LYS:HB3	1.91	0.41
17:E2:153:MET:HB2	17:E2:194:LEU:HD11	2.02	0.41
19:F1:108:GLU:OE2	62:c2:18:THR:HG22	2.20	0.41
30:J2:42:ARG:HH22	30:J2:109:VAL:HG23	1.85	0.41
32:K2:53:MET:CE	32:K2:143:ARG:HH12	2.30	0.41
59:Z2:75:THR:HG21	59:Z2:87:LYS:HG2	2.01	0.41
72:p2:32:ASP:HA	72:p2:46:LYS:HA	2.01	0.41
74:r2:201:HIS:NE2	83:m2:859:U:H4'	2.35	0.41
76:t2:10:LYS:HA	76:t2:45:ILE:O	2.20	0.41
1:A1:258:ARG:HG3	1:A1:258:ARG:O	2.21	0.41
2:A2:1553:A:H2'	2:A2:1554:G:C8	2.56	0.41
2:A2:1579:C:H2'	2:A2:1580:C:C6	2.55	0.41
2:A2:2118:A2M:HM'2	2:A2:2119:OMG:H5'	2.03	0.41
2:A2:2160:G:H5"	63:d2:14:LYS:HE2	2.02	0.41
2:A2:2167:A:H2'	2:A2:2168:U:H6	1.84	0.41
2:A2:2293:U:H2'	2:A2:2294:C:C6	2.55	0.41
2:A2:3404:A:H2'	2:A2:3405:C:H6	1.83	0.41
2:A2:3554:G:H2'	2:A2:3555:OMG:O4'	2.19	0.41
2:A2:3714:C:OP2	2:A2:3715:G:H5'	2.21	0.41
4:B1:100:HIS:HA	4:B1:103:ARG:HG3	2.02	0.41
5:B2:71:G:H2'	5:B2:72:U:O4'	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:E1:35:ARG:O	16:E1:39:VAL:HG23	2.20	0.41
29:I3:125:ARG:HG2	29:I3:150:TRP:CG	2.55	0.41
30:J2:119:VAL:HG12	30:J2:146:ILE:HG12	2.01	0.41
31:J3:209:VAL:HB	31:J3:210:PRO:HD3	2.02	0.41
32:K2:49:LYS:O	32:K2:53:MET:HG3	2.20	0.41
36:L3:29:LEU:HD23	52:T3:42:PHE:CE2	2.55	0.41
36:L3:134:HIS:HE1	36:L3:164:PRO:HD2	1.84	0.41
37:M2:8:ARG:O	37:M2:33:PHE:HA	2.20	0.41
40:N3:37:ILE:HD11	40:N3:63:VAL:HG11	2.01	0.41
46:Q3:102:THR:HG22	46:Q3:107:ARG:NH2	2.36	0.41
53:U2:90:ALA:HB3	53:U2:120:GLN:NE2	2.34	0.41
59:Z2:11:PHE:CE1	59:Z2:26:ALA:HB1	2.55	0.41
62:c2:79:THR:HG22	62:c2:81:ILE:HG22	2.03	0.41
83:m2:93:U:H2'	83:m2:94:G:O4'	2.20	0.41
83:m2:514:A2M:C2	83:m2:515:G:C8	3.03	0.41
83:m2:1174:U:H2'	83:m2:1175:A:H8	1.85	0.41
83:m2:1718:C:H2'	83:m2:1719:C:C6	2.55	0.41
2:A2:6:C:H2'	2:A2:7:C:C6	2.56	0.41
2:A2:1255:C:H2'	2:A2:1256:A:H8	1.84	0.41
2:A2:1352:G:O4'	14:D2:15:VAL:HG13	2.20	0.41
2:A2:1506:U:H2'	2:A2:1507:C:O4'	2.21	0.41
2:A2:1613:G:H2'	2:A2:1614:C:C6	2.55	0.41
2:A2:2140:U:H2'	2:A2:2141:U:C6	2.56	0.41
2:A2:2179:OMG:H1'	2:A2:2179:OMG:HM23	1.71	0.41
2:A2:3458:U:O2'	2:A2:3459:A:H5'	2.20	0.41
2:A2:3526:C:H2'	2:A2:3527:A:C8	2.56	0.41
2:A2:3618:A:H3'	2:A2:3621:A:H2	1.84	0.41
2:A2:3785:G:H4'	2:A2:3786:U:C5	2.56	0.41
2:A2:3834:G:C4'	14:D2:226:ARG:HH22	2.33	0.41
2:A2:4054:C:H42	2:A2:4093:A:H61	1.67	0.41
2:A2:4126:A:H2'	2:A2:4128:C:O5'	2.21	0.41
19:F1:80:GLU:HB3	19:F1:110:LEU:CD1	2.51	0.41
24:G3:26:GLN:OE1	75:s2:126:THR:HB	2.21	0.41
29:I3:32:LEU:HG	29:I3:71:ILE:HD11	2.02	0.41
31:J3:207:ALA:HB2	83:m2:4:C:H4'	2.02	0.41
33:K3:27:PHE:CE2	33:K3:41:LEU:HD11	2.56	0.41
33:K3:52:ILE:HG23	33:K3:109:LEU:HD11	2.03	0.41
38:M3:18:LEU:O	38:M3:22:LEU:HD23	2.20	0.41
40:N3:70:LYS:HD3	83:m2:1021:C:OP2	2.20	0.41
42:O3:98:ARG:HG3	42:O3:132:VAL:HG23	2.03	0.41
55:V2:65:VAL:HG13	55:V2:68:ARG:NH2	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:n2:24:G:H2'	7:n2:25:C:O4'	2.21	0.41
71:o2:83:GLY:O	71:o2:87:VAL:HG23	2.20	0.41
72:p2:35:ALA:HB3	72:p2:42:ARG:HA	2.01	0.41
82:z2:40:ILE:HG22	82:z2:40:ILE:O	2.20	0.41
83:m2:423:G:H4'	83:m2:662:C:H42	1.85	0.41
83:m2:1683:U:H2'	83:m2:1684:C:C6	2.56	0.41
2:A2:493:U:H2'	2:A2:494:G:H8	1.85	0.41
2:A2:1323:G:H2'	2:A2:1324:C:C6	2.55	0.41
2:A2:2089:C:C5	20:F2:191:ALA:HB2	2.56	0.41
2:A2:2283:G:H2'	2:A2:2284:A:O4'	2.21	0.41
2:A2:4090:U:H2'	2:A2:4091:U:O4'	2.21	0.41
2:A2:4541:G:H8	2:A2:4541:G:O5'	2.04	0.41
2:A2:4560:G:OP2	2:A2:4560:G:H8	2.04	0.41
2:A2:4676:U:H2'	2:A2:4677:G:C8	2.55	0.41
2:A2:4677:G:H2'	2:A2:4678:C:C6	2.55	0.41
10:C1:114:ILE:HD13	10:C1:165:THR:HG23	2.02	0.41
20:F2:198:ASN:OD1	49:S2:10:ASP:HA	2.21	0.41
20:F2:298:ILE:O	20:F2:302:LEU:HG	2.20	0.41
21:F3:22:ARG:HE	42:O3:142:ARG:HB3	1.86	0.41
23:G2:146:LEU:HD22	23:G2:163:LEU:HD22	2.02	0.41
23:G2:287:PHE:O	23:G2:291:GLN:HG2	2.20	0.41
34:L1:49:PHE:CZ	34:L1:159:MET:HB3	2.56	0.41
38:M3:36:ARG:HH22	83:m2:1312:U:H3'	1.86	0.41
48:R3:66:LYS:HE3	48:R3:66:LYS:HB3	1.94	0.41
56:W2:18:LEU:HD23	56:W2:84:ALA:HB1	2.02	0.41
59:Z2:35:ALA:HB3	59:Z2:38:GLU:HG3	2.02	0.41
78:v2:95:ARG:HH11	78:v2:95:ARG:HA	1.85	0.41
82:z2:50:ILE:O	82:z2:54:VAL:HG23	2.20	0.41
83:m2:1269:C:H2'	83:m2:1270:C:C6	2.55	0.41
83:m2:1553:U:H4'	83:m2:1554:G:C5	2.55	0.41
2:A2:431:G:H21	2:A2:3544:G:H3'	1.86	0.41
2:A2:513:U:O2'	2:A2:514:U:H5'	2.20	0.41
2:A2:1259:C:H42	2:A2:1901:A:N6	1.98	0.41
2:A2:1284:U:H2'	2:A2:1285:C:H6	1.85	0.41
2:A2:1577:A:H2'	2:A2:1578:A:C8	2.55	0.41
2:A2:2289:C:H2'	2:A2:2290:G:O4'	2.21	0.41
2:A2:3418:U:H3'	2:A2:3419:A:H8	1.85	0.41
2:A2:3848:OMG:HM23	2:A2:3848:OMG:H1'	1.66	0.41
2:A2:4063:G:H2'	2:A2:4064:C:H6	1.86	0.41
2:A2:4360:A:N3	2:A2:4361:U:H5'	2.35	0.41
2:A2:4569:C:O2	2:A2:4570:U:H1'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:Bz:43:C:H2'	7:Bz:44:G:C8	2.56	0.41
10:C1:106:GLN:HB2	10:C1:111:LEU:HB3	2.03	0.41
17:E2:303:ALA:HA	17:E2:368:ILE:HD12	2.02	0.41
26:H2:172:LEU:HD11	26:H2:183:THR:HG22	2.03	0.41
33:K3:27:PHE:HE2	33:K3:41:LEU:HD11	1.85	0.41
36:L3:20:PHE:O	83:m2:605:C:H4'	2.21	0.41
38:M3:24:THR:OG1	38:M3:119:GLN:HG2	2.20	0.41
44:P3:57:ARG:HE	83:m2:921:A:H4'	1.85	0.41
48:R3:103:HIS:NE2	75:s2:91:ARG:HD2	2.36	0.41
49:S2:22:PRO:O	49:S2:26:ARG:HG3	2.19	0.41
57:X2:19:GLU:O	57:X2:90:ARG:HD2	2.21	0.41
72:p2:60:ASP:HA	72:p2:63:LYS:HG2	2.01	0.41
83:m2:152:U:H2'	83:m2:153:G:C8	2.55	0.41
83:m2:589:A:C8	83:m2:592:A:H2'	2.55	0.41
83:m2:919:U:H2'	83:m2:920:U:H6	1.85	0.41
2:A2:254:G:N3	2:A2:254:G:H2'	2.35	0.41
2:A2:261:G:C2	2:A2:262:G:C5	3.09	0.41
2:A2:857:A:H8	2:A2:857:A:OP2	2.03	0.41
2:A2:944:G:H5'	39:N2:140:PHE:CE1	2.56	0.41
2:A2:1211:A:C8	53:U2:114:LYS:HD2	2.55	0.41
2:A2:1458:C:H2'	2:A2:1459:A:C8	2.56	0.41
2:A2:2106:OMC:HM23	2:A2:2106:OMC:H1'	1.62	0.41
2:A2:3385:PSU:O5'	2:A2:3385:PSU:H6	2.04	0.41
2:A2:3764:C:H3'	2:A2:3765:G:C8	2.56	0.41
2:A2:3936:C:H2'	2:A2:3937:U:C6	2.56	0.41
2:A2:4226:U:H3'	2:A2:4227:G:H5"	2.01	0.41
5:B2:77:A:H2'	5:B2:78:C:O4'	2.21	0.41
7:Bz:18:G:H3'	7:Bz:57:G:H22	1.85	0.41
14:D2:92:LYS:HG3	14:D2:93:LYS:HG2	2.02	0.41
14:D2:242:ARG:HG2	14:D2:250:LYS:NZ	2.35	0.41
16:E1:3:GLN:NE2	16:E1:5:GLN:HB3	2.36	0.41
28:I2:88:LEU:HD12	28:I2:99:LEU:HD13	2.03	0.41
30:J2:67:VAL:HG13	30:J2:82:ARG:HG3	2.02	0.41
38:M3:36:ARG:NH2	83:m2:1312:U:H3'	2.35	0.41
43:P2:95:PHE:HB2	45:Q2:19:ARG:HG2	2.02	0.41
53:U2:62:HIS:NE2	53:U2:64:LYS:HD3	2.36	0.41
54:U3:135:HIS:HB2	54:U3:138:ARG:O	2.21	0.41
57:X2:40:LYS:C	57:X2:43:PRO:HD2	2.46	0.41
64:e2:8:ILE:HG23	64:e2:56:LEU:HD13	2.02	0.41
72:p2:163:GLN:O	72:p2:167:LYS:HG2	2.21	0.41
80:x2:28:MET:SD	80:x2:32:GLN:HB2	2.61	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
80:x2:145:LYS:HZ3	83:m2:1828:G:H4'	1.86	0.41
83:m2:112:U:H5"	83:m2:113:G:H2'	2.02	0.41
83:m2:220:U:H2'	83:m2:221:U:H6	1.83	0.41
83:m2:555:A:H2'	83:m2:556:A:H8	1.84	0.41
83:m2:630:A:H61	83:m2:1502:G:H1'	1.85	0.41
83:m2:668:U:H2'	83:m2:669:U:C6	2.56	0.41
2:A2:316:U:OP1	2:A2:316:U:H3'	2.20	0.41
2:A2:480:C:OP1	70:k2:67:ARG:HD2	2.20	0.41
2:A2:1015:C:H2'	2:A2:1016:A:C8	2.55	0.41
2:A2:1118:C:H2'	2:A2:1119:C:H6	1.86	0.41
2:A2:1125:G:C2	2:A2:1126:A:H1'	2.56	0.41
2:A2:1131:U:H2'	2:A2:1132:C:C6	2.56	0.41
2:A2:2256:C:H2'	2:A2:2257:G:H5'	2.02	0.41
2:A2:3362:C:H5"	14:D2:226:ARG:HB3	2.02	0.41
2:A2:3599:A:H5'	2:A2:3600:G:OP2	2.21	0.41
2:A2:3743:G:H2'	2:A2:3744:G:C8	2.55	0.41
2:A2:4111:U:H2'	2:A2:4112:U:C6	2.56	0.41
2:A2:4140:A:H4'	2:A2:4141:G:C8	2.56	0.41
2:A2:4170:A:N7	17:E2:257:TRP:CD1	2.89	0.41
2:A2:4538:A:H5"	22:G1:125:THR:HG21	2.03	0.41
4:B1:110:LYS:HD2	4:B1:113:ARG:NH1	2.32	0.41
5:B2:16:A:H2'	5:B2:17:C:C6	2.56	0.41
6:B3:33:TRP:HZ2	6:B3:102:ARG:HG3	1.86	0.41
11:C2:8:U:H2'	11:C2:9:A:C8	2.56	0.41
11:C2:56:G:H2'	11:C2:57:C:O4'	2.20	0.41
13:D1:10:ARG:HD3	13:D1:11:TYR:CE1	2.56	0.41
16:E1:15:LEU:HD23	16:E1:136:ARG:HG2	2.03	0.41
17:E2:219:VAL:HG11	17:E2:337:VAL:HB	2.03	0.41
20:F2:11:TYR:CZ	20:F2:148:PRO:HB2	2.55	0.41
20:F2:142:HIS:O	20:F2:143:ARG:C	2.63	0.41
21:F3:85[A]:ARG:NH1	83:m2:1212:G:H5"	2.36	0.41
21:F3:85[B]:ARG:NH1	83:m2:1212:G:H5"	2.36	0.41
31:J3:98:LEU:O	31:J3:102:LEU:HG	2.19	0.41
31:J3:207:ALA:HB3	31:J3:210:PRO:HD2	2.03	0.41
33:K3:63:MET:HG2	33:K3:99:GLY:O	2.21	0.41
34:L1:33:GLU:HB2	34:L1:167:VAL:O	2.21	0.41
34:L1:41:TYR:HD1	34:L1:200:ASN:ND2	2.19	0.41
41:O2:28:PRO:HB2	41:O2:34:MET:HB2	2.02	0.41
42:O3:54:CYS:SG	42:O3:84:ARG:HD2	2.61	0.41
44:P3:57:ARG:HD2	50:S3:26:GLN:HE21	1.85	0.41
47:R2:71:LEU:HD23	47:R2:108:GLN:HE22	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:T2:60:LYS:HB2	51:T2:60:LYS:HE3	1.87	0.41
57:X2:84:ILE:HD11	57:X2:108:TYR:CE1	2.56	0.41
7:n2:23:A:H2'	7:n2:24:G:C8	2.56	0.41
71:o2:32:PHE:CG	83:m2:1099:G:H4'	2.56	0.41
72:p2:194:GLY:O	72:p2:198:GLU:HG3	2.21	0.41
73:q2:204:LEU:HD12	73:q2:205:PRO:HD2	2.03	0.41
74:r2:52:LEU:HD21	74:r2:99:PHE:CE2	2.55	0.41
74:r2:104:ASP:O	74:r2:190:GLY:HA3	2.21	0.41
75:s2:76:MET:HB3	75:s2:89:THR:CG2	2.51	0.41
76:t2:120:ARG:HA	83:m2:915:A:N6	2.36	0.41
77:u2:123:ARG:NH1	77:u2:128:LYS:HE2	2.36	0.41
78:v2:57:TYR:O	78:v2:72:THR:HG22	2.21	0.41
83:m2:219:A:H1'	83:m2:311:G:N2	2.35	0.41
83:m2:297:C:H2'	83:m2:298:U:C6	2.56	0.41
83:m2:510:A:H5'	83:m2:511:OMG:OP2	2.21	0.41
83:m2:511:OMG:HM23	83:m2:511:OMG:H1'	1.87	0.41
83:m2:684:U:H2'	83:m2:685:OMG:O4'	2.21	0.41
83:m2:811:A:H2'	83:m2:812:A:O4'	2.20	0.41
83:m2:903:G:H8	83:m2:903:G:P	2.44	0.41
83:m2:972:G:H4'	83:m2:973:G:OP1	2.20	0.41
83:m2:1163:U:H2'	83:m2:1164:C:C6	2.56	0.41
83:m2:1830:C:H2'	83:m2:1831:G:C8	2.56	0.41
2:A2:47:A:H5"	19:F1:16:LYS:HG3	2.03	0.41
2:A2:73:A:OP1	19:F1:106:SER:HB3	2.21	0.41
2:A2:517:C:H2'	2:A2:518:C:H6	1.85	0.41
2:A2:810:U:H3'	2:A2:811:G:C8	2.56	0.41
2:A2:1723:C:C4	22:G1:17:PHE:HB3	2.56	0.41
2:A2:3626:G:H2'	2:A2:3627:G:C8	2.56	0.41
3:A3:33:ILE:H	3:A3:33:ILE:HG13	1.72	0.41
6:B3:33:TRP:CH2	6:B3:99:VAL:HG12	2.56	0.41
10:C1:26:ILE:HG13	10:C1:35:ARG:HG2	2.03	0.41
17:E2:217:ILE:HD13	17:E2:284:ILE:HD11	2.01	0.41
18:E3:5:ARG:HB3	44:P3:77:PRO:HG3	2.02	0.41
21:F3:53:ILE:HG23	42:O3:126:ILE:HD12	2.03	0.41
26:H2:78:ARG:HB2	55:V2:116:LEU:HD22	2.02	0.41
26:H2:180:LEU:O	26:H2:195:ARG:HA	2.21	0.41
29:I3:40:ILE:HB	29:I3:59:LEU:HB2	2.03	0.41
33:K3:134:GLY:O	83:m2:169:U:H4'	2.21	0.41
34:L1:58:THR:O	34:L1:174:MET:HE1	2.21	0.41
36:L3:64:ASP:OD1	36:L3:67:ASP:HB2	2.20	0.41
38:M3:91:LEU:HB2	38:M3:104:VAL:HG11	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:P3:53:ILE:HG13	76:t2:143:ARG:HD2	2.03	0.41
44:P3:105:THR:HB	83:m2:864:A:H8	1.86	0.41
47:R2:77:ILE:HD13	47:R2:100:VAL:HG12	2.02	0.41
49:S2:2:LYS:HE3	49:S2:2:LYS:HB3	1.82	0.41
57:X2:33:ILE:O	57:X2:36:VAL:HG22	2.21	0.41
65:f2:18:LYS:HB2	65:f2:18:LYS:HE3	1.83	0.41
67:h2:1:MET:HG3	83:m2:1854:C:P	2.60	0.41
74:r2:255:ARG:O	74:r2:259:LYS:HG3	2.21	0.41
76:t2:11:PRO:HD2	76:t2:45:ILE:O	2.21	0.41
80:x2:31:GLU:H	80:x2:31:GLU:CD	2.29	0.41
81:y2:143:LYS:NZ	83:m2:1251:C:H4'	2.36	0.41
83:m2:400:A:C8	83:m2:1029:A:H2	2.39	0.41
83:m2:486:A2M:HM'3	83:m2:486:A2M:H1'	1.90	0.41
83:m2:1654:G:H1	83:m2:1674:U:H3	1.68	0.41
2:A2:300:A:H2'	2:A2:301:G:C8	2.52	0.40
2:A2:422:C:H2'	2:A2:423:G:H8	1.86	0.40
2:A2:3346:U:O3'	2:A2:3475:G:H5"	2.22	0.40
2:A2:4080:A:H4'	7:Bz:63:G:O2'	2.20	0.40
2:A2:4332:G:H2'	2:A2:4333:A:C8	2.57	0.40
4:B1:148:GLU:HA	4:B1:177:MET:HE2	2.03	0.40
7:Bv:48:C:H2'	7:Bv:59:U:C4'	2.50	0.40
16:E1:141:ILE:HG13	16:E1:142:ALA:N	2.36	0.40
21:F3:4:LYS:HE2	21:F3:92:ARG:HH12	1.86	0.40
26:H2:197:HIS:HD2	26:H2:199:LYS:HB2	1.86	0.40
28:I2:196:LEU:HD23	28:I2:202:LEU:HD13	2.03	0.40
38:M3:25:ALA:HA	38:M3:28:HIS:CD2	2.56	0.40
38:M3:65:VAL:O	38:M3:69:LEU:HG	2.21	0.40
39:N2:85:LEU:HD23	39:N2:85:LEU:H	1.86	0.40
48:R3:88:LEU:HB3	48:R3:109:TYR:CE2	2.56	0.40
70:k2:21:ASN:O	70:k2:23:GLN:HG3	2.22	0.40
70:k2:54:ALA:HA	70:k2:61:VAL:HG23	2.03	0.40
7:n2:12:U:H2'	7:n2:13:C:O4'	2.21	0.40
73:q2:75:LYS:HE3	78:v2:20:VAL:O	2.22	0.40
80:x2:65:LYS:HE2	80:x2:65:LYS:HB2	1.90	0.40
80:x2:77:LYS:CB	83:m2:1300:G:H5'	2.50	0.40
83:m2:948:U:H2'	83:m2:949:G:H8	1.84	0.40
83:m2:1130:C:C2	83:m2:1131:G:C8	3.09	0.40
83:m2:1844:4AC:H2'	83:m2:1845:G:H8	1.86	0.40
2:A2:35:U:H4'	2:A2:1338:A:H2	1.87	0.40
2:A2:48:G:H3'	25:H1:188:ARG:HH12	1.85	0.40
2:A2:288:G:H2'	2:A2:289:C:C6	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:1069:G:H2'	2:A2:1070:C:H4'	2.03	0.40
2:A2:3614:G:H3'	2:A2:3615:U:C5'	2.51	0.40
2:A2:4509:U:H2'	2:A2:4510:C:H6	1.86	0.40
3:A3:133:GLY:HA3	83:m2:1625:A:H5"	2.02	0.40
7:Bz:15:G:H22	7:Bz:48:C:H42	1.68	0.40
16:E1:32:ARG:HD2	16:E1:35:ARG:HH21	1.86	0.40
18:E3:6:GLY:O	79:w2:101:ARG:HD3	2.22	0.40
18:E3:105:PHE:HD2	18:E3:112:VAL:HB	1.83	0.40
20:F2:317:ASN:ND2	20:F2:320:LYS:HG3	2.36	0.40
21:F3:94:ASP:OD1	21:F3:96:THR:HG22	2.20	0.40
23:G2:202:GLN:OE1	23:G2:237:GLU:HB2	2.21	0.40
28:I2:201:LEU:H	28:I2:201:LEU:HD12	1.85	0.40
31:J3:125:LYS:NZ	83:m2:1359:A:OP1	2.34	0.40
36:L3:83:ARG:HE	36:L3:150:ARG:HD3	1.85	0.40
43:P2:22:VAL:HG13	43:P2:40:ILE:HA	2.03	0.40
46:Q3:97:TYR:CG	46:Q3:98:GLU:N	2.90	0.40
51:T2:42:LEU:HD21	51:T2:96:VAL:HG12	2.03	0.40
77:u2:73:THR:O	77:u2:74:ARG:HD3	2.21	0.40
83:m2:458:C:H2'	83:m2:459:C:C6	2.56	0.40
83:m2:1803:A:H2'	83:m2:1804:C:H6	1.86	0.40
1:A1:114:VAL:O	1:A1:142:GLY:HA2	2.20	0.40
2:A2:768:G:H8	2:A2:768:G:O5'	2.05	0.40
2:A2:1284:U:H2'	2:A2:1285:C:C6	2.56	0.40
2:A2:1483:G:O2'	2:A2:1656:G:H5'	2.22	0.40
2:A2:1722:C:H3'	2:A2:1723:C:H5"	2.02	0.40
2:A2:2616:OMC:H1'	2:A2:2616:OMC:HM23	1.87	0.40
2:A2:3378:G:O2'	2:A2:3379:A:H5'	2.21	0.40
7:Bz:5:G:C2	7:Bz:69:G:C2	3.10	0.40
16:E1:11:PRO:C	16:E1:12:MET:HE2	2.47	0.40
17:E2:98:GLY:HA2	28:I2:149:TYR:CZ	2.57	0.40
19:F1:50:PRO:HG3	61:b2:121:VAL:HG23	2.03	0.40
23:G2:82:GLU:H	23:G2:82:GLU:HG2	1.71	0.40
27:H3:8:TRP:HZ3	83:m2:1514:C:H5'	1.86	0.40
54:U3:133:GLY:HA2	83:m2:1311:C:H5'	2.04	0.40
71:o2:39:TYR:CD2	71:o2:40:LYS:HG2	2.57	0.40
73:q2:144:GLY:HA2	83:m2:609:U:H3	1.86	0.40
77:u2:27:TYR:HB2	83:m2:383:C:H41	1.87	0.40
78:v2:41:PRO:HG2	78:v2:44:HIS:CD2	2.56	0.40
83:m2:84:A:H2'	83:m2:85:A:C8	2.56	0.40
83:m2:1163:U:H2'	83:m2:1164:C:H6	1.87	0.40
2:A2:180:C:H2'	2:A2:181:C:N1	2.37	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:221:C:H2'	2:A2:222:C:H6	1.87	0.40
2:A2:325:U:H2'	2:A2:326:C:H6	1.87	0.40
2:A2:450:G:H2'	2:A2:451:C:C6	2.56	0.40
2:A2:652:G:H3'	2:A2:653:G:H8	1.86	0.40
2:A2:665:C:H2'	2:A2:666:G:H8	1.86	0.40
2:A2:1885:C:H5"	2:A2:1886:C:OP2	2.21	0.40
2:A2:2117:U:H5'	30:J2:65:GLY:O	2.22	0.40
2:A2:3308:A:H2'	2:A2:3309:A:C8	2.56	0.40
2:A2:3346:U:OP2	14:D2:200:ARG:HD2	2.21	0.40
2:A2:3738:C:H2'	2:A2:3739:G:H8	1.85	0.40
2:A2:3958:OMU:H1'	2:A2:3958:OMU:HM23	1.87	0.40
2:A2:4230:G:H2'	2:A2:4231:U:H6	1.85	0.40
2:A2:4272:OMU:HM23	2:A2:4272:OMU:H1'	1.80	0.40
4:B1:147:VAL:HG13	4:B1:179:VAL:HG21	2.04	0.40
5:B2:15:C:H2'	5:B2:16:A:C8	2.56	0.40
6:B3:5:THR:HG22	6:B3:6:VAL:N	2.37	0.40
7:Bv:12:U:H2'	7:Bv:13:C:O4'	2.22	0.40
7:Bv:26:A:H2	7:Bv:44:G:H22	1.66	0.40
13:D1:87:ILE:HG12	13:D1:138:ILE:HG12	2.03	0.40
18:E3:107:ARG:HD3	18:E3:112:VAL:HG22	2.04	0.40
19:F1:90:VAL:O	19:F1:94:ILE:HG12	2.22	0.40
20:F2:340:ILE:HD13	26:H2:58:VAL:HG21	2.04	0.40
32:K2:178:ARG:H	53:U2:51:GLY:HA2	1.86	0.40
37:M2:16:CYS:SG	37:M2:54:MET:HE2	2.61	0.40
43:P2:42:VAL:HG22	43:P2:61:VAL:HG22	2.03	0.40
44:P3:51:GLU:CD	50:S3:8:LEU:HD21	2.46	0.40
46:Q3:19:GLN:HE21	74:r2:94:LYS:HZ2	1.70	0.40
49:S2:127:GLN:OE1	49:S2:130:LYS:HD2	2.21	0.40
52:T3:56:ASN:HB2	83:m2:640:C:O2'	2.22	0.40
72:p2:158:HIS:O	72:p2:162:ARG:HG3	2.21	0.40
75:s2:49:LEU:HB2	81:y2:50:LYS:HE2	2.04	0.40
75:s2:76:MET:HB3	75:s2:89:THR:HG23	2.03	0.40
76:t2:43:LEU:HD13	76:t2:72:PHE:CE1	2.56	0.40
83:m2:28:U:O2'	83:m2:29:G:H5'	2.21	0.40
83:m2:610:C:H2'	83:m2:611:U:C6	2.56	0.40
83:m2:1098:G:H2'	83:m2:1099:G:C8	2.56	0.40
83:m2:1708:G:H2'	83:m2:1709:U:H6	1.87	0.40
2:A2:418:A:H4'	2:A2:2066:C:H5'	2.04	0.40
2:A2:423:G:O2'	30:J2:118:GLN:HB2	2.21	0.40
2:A2:1260:C:C2	2:A2:1261:G:C8	3.10	0.40
2:A2:1373:A:H2'	2:A2:1374:G:O4'	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:1455:A:H2	2:A2:3574:G:H4'	1.86	0.40
2:A2:1901:A:C2'	2:A2:1902:A:H5'	2.52	0.40
2:A2:2032:C:H2'	2:A2:2033:G:C8	2.57	0.40
2:A2:2506:G:H2'	2:A2:2507:G:H8	1.86	0.40
2:A2:3308:A:O2'	14:D2:182:ALA:HB2	2.21	0.40
2:A2:3415:A:C2	83:m2:1828:G:H21	1.74	0.40
2:A2:3758:G:C4	2:A2:3759:G:C8	3.10	0.40
2:A2:3994:C:O3'	68:i2:37:GLY:HA3	2.22	0.40
2:A2:4123:U:H2'	2:A2:4124:G:C8	2.56	0.40
2:A2:4172:G:H2'	2:A2:4173:U:O4'	2.22	0.40
2:A2:4318:G:H2'	2:A2:4319:C:C6	2.57	0.40
2:A2:4389:G:H2'	2:A2:4390:C:H6	1.86	0.40
2:A2:4600:G:H2'	2:A2:4601:A:H8	1.84	0.40
4:B1:63:LEU:HD13	25:H1:32:GLN:HB2	2.03	0.40
6:B3:11:GLN:OE1	6:B3:11:GLN:HA	2.21	0.40
7:Bv:56:C:H2'	7:Bv:57:G:H8	1.87	0.40
7:Bz:25:C:H2'	7:Bz:26:A:H8	1.86	0.40
12:C3:25:THR:HG21	73:q2:7:LYS:HD2	2.04	0.40
15:D3:11:LEU:HD11	31:J3:136:HIS:HE1	1.86	0.40
17:E2:259:PRO:O	17:E2:261:ARG:N	2.54	0.40
17:E2:285:TYR:OH	17:E2:334:LYS:HD3	2.22	0.40
20:F2:259:LYS:HE2	20:F2:273:LEU:HD11	2.03	0.40
20:F2:336:ARG:HA	20:F2:339:THR:HG22	2.04	0.40
24:G3:51:ARG:NH2	75:s2:61:PHE:HB3	2.36	0.40
26:H2:291:HIS:HB3	59:Z2:42:TYR:CE1	2.57	0.40
34:L1:93:LEU:HB3	34:L1:100:VAL:HG22	2.03	0.40
41:O2:25:CYS:O	41:O2:29:VAL:HG13	2.21	0.40
44:P3:58:ALA:HA	83:m2:687:A:O2'	2.22	0.40
47:R2:93:ASN:O	47:R2:95:THR:HG23	2.22	0.40
74:r2:44:LEU:HD21	74:r2:70:ILE:HG21	2.03	0.40
80:x2:52:LYS:NZ	83:m2:1300:G:H21	2.20	0.40
80:x2:86:LEU:HB3	80:x2:88:GLU:OE1	2.21	0.40
82:z2:8:THR:HA	82:z2:11:LYS:HG2	2.04	0.40
83:m2:217:G:H2'	83:m2:218:C:C6	2.56	0.40
83:m2:820:A:H2'	83:m2:821:G:H8	1.86	0.40
83:m2:881:C:H2'	83:m2:882:G:H8	1.86	0.40
83:m2:972:G:H1'	83:m2:973:G:C1'	2.50	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A1	221/270 (82%)	215 (97%)	6 (3%)	0	100	100
3	A3	138/152 (91%)	126 (91%)	12 (9%)	0	100	100
4	B1	220/266 (83%)	212 (96%)	8 (4%)	0	100	100
6	B3	139/145 (96%)	135 (97%)	4 (3%)	0	100	100
10	C1	188/192 (98%)	183 (97%)	5 (3%)	0	100	100
12	C3	100/119 (84%)	98 (98%)	2 (2%)	0	100	100
13	D1	200/214 (94%)	193 (96%)	7 (4%)	0	100	100
14	D2	249/257 (97%)	233 (94%)	16 (6%)	0	100	100
15	D3	81/83 (98%)	81 (100%)	0	0	100	100
16	E1	172/178 (97%)	160 (93%)	12 (7%)	0	100	100
17	E2	400/403 (99%)	382 (96%)	18 (4%)	0	100	100
18	E3	137/143 (96%)	133 (97%)	4 (3%)	0	100	100
19	F1	201/211 (95%)	193 (96%)	8 (4%)	0	100	100
20	F2	357/419 (85%)	345 (97%)	12 (3%)	0	100	100
21	F3	97/115 (84%)	95 (98%)	2 (2%)	0	100	100
22	G1	137/217 (63%)	133 (97%)	4 (3%)	0	100	100
23	G2	291/297 (98%)	288 (99%)	3 (1%)	0	100	100
24	G3	60/69 (87%)	57 (95%)	3 (5%)	0	100	100
25	H1	201/204 (98%)	192 (96%)	9 (4%)	0	100	100
26	H2	215/296 (73%)	207 (96%)	8 (4%)	0	100	100
27	H3	52/56 (93%)	45 (86%)	7 (14%)	0	100	100
28	I2	199/203 (98%)	194 (98%)	5 (2%)	0	100	100
29	I3	311/317 (98%)	295 (95%)	16 (5%)	0	100	100
30	J2	151/184 (82%)	146 (97%)	5 (3%)	0	100	100
31	J3	217/293 (74%)	211 (97%)	6 (3%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
32	K2	184/188 (98%)	176 (96%)	8 (4%)	0	100	100
33	K3	225/249 (90%)	222 (99%)	3 (1%)	0	100	100
34	L1	155/217 (71%)	146 (94%)	9 (6%)	0	100	100
35	L2	177/196 (90%)	176 (99%)	1 (1%)	0	100	100
36	L3	182/194 (94%)	177 (97%)	5 (3%)	0	100	100
37	M2	173/176 (98%)	162 (94%)	11 (6%)	0	100	100
38	M3	120/132 (91%)	117 (98%)	3 (2%)	0	100	100
39	N2	157/160 (98%)	154 (98%)	3 (2%)	0	100	100
40	N3	148/151 (98%)	147 (99%)	1 (1%)	0	100	100
41	O2	99/128 (77%)	95 (96%)	4 (4%)	0	100	100
42	O3	132/151 (87%)	128 (97%)	4 (3%)	0	100	100
43	P2	127/140 (91%)	121 (95%)	5 (4%)	1 (1%)	16	47
44	P3	127/130 (98%)	121 (95%)	6 (5%)	0	100	100
45	Q2	60/157 (38%)	57 (95%)	3 (5%)	0	100	100
46	Q3	120/133 (90%)	116 (97%)	4 (3%)	0	100	100
47	R2	116/156 (74%)	114 (98%)	2 (2%)	0	100	100
48	R3	70/125 (56%)	69 (99%)	1 (1%)	0	100	100
49	S2	132/145 (91%)	130 (98%)	2 (2%)	0	100	100
50	S3	81/84 (96%)	76 (94%)	4 (5%)	1 (1%)	10	38
51	T2	133/136 (98%)	127 (96%)	6 (4%)	0	100	100
52	T3	53/133 (40%)	52 (98%)	1 (2%)	0	100	100
53	U2	145/148 (98%)	137 (94%)	8 (6%)	0	100	100
54	U3	50/156 (32%)	45 (90%)	5 (10%)	0	100	100
55	V2	115/160 (72%)	112 (97%)	3 (3%)	0	100	100
56	W2	92/115 (80%)	89 (97%)	3 (3%)	0	100	100
57	X2	105/125 (84%)	101 (96%)	4 (4%)	0	100	100
58	Y2	126/135 (93%)	124 (98%)	2 (2%)	0	100	100
59	Z2	107/110 (97%)	102 (95%)	5 (5%)	0	100	100
60	a2	112/117 (96%)	108 (96%)	4 (4%)	0	100	100
61	b2	118/123 (96%)	117 (99%)	1 (1%)	0	100	100
62	c2	100/105 (95%)	99 (99%)	1 (1%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
63	d2	84/97 (87%)	83 (99%)	1 (1%)	0	100	100
64	e2	67/70 (96%)	67 (100%)	0	0	100	100
65	f2	48/51 (94%)	48 (100%)	0	0	100	100
66	g2	50/128 (39%)	48 (96%)	2 (4%)	0	100	100
67	h2	22/25 (88%)	22 (100%)	0	0	100	100
68	i2	101/106 (95%)	94 (93%)	7 (7%)	0	100	100
69	j2	87/92 (95%)	81 (93%)	6 (7%)	0	100	100
70	k2	123/137 (90%)	118 (96%)	5 (4%)	0	100	100
71	o2	212/295 (72%)	205 (97%)	7 (3%)	0	100	100
72	p2	210/264 (80%)	188 (90%)	22 (10%)	0	100	100
73	q2	218/243 (90%)	209 (96%)	9 (4%)	0	100	100
74	r2	260/263 (99%)	252 (97%)	8 (3%)	0	100	100
75	s2	179/204 (88%)	175 (98%)	4 (2%)	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%)	137 (93%)	10 (7%)	1 (1%)	18	50
80	x2	130/145 (90%)	127 (98%)	3 (2%)	0	100	100
81	y2	140/146 (96%)	132 (94%)	8 (6%)	0	100	100
82	z2	67/135 (50%)	65 (97%)	2 (3%)	0	100	100
All	All	11197/13004 (86%)	10770 (96%)	424 (4%)	3 (0%)	100	100

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
43	P2	92	ASP
50	S3	75	GLU
79	w2	25	LEU

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A1	194/234 (83%)	194 (100%)	0	100	100
3	A3	121/132 (92%)	121 (100%)	0	100	100
4	B1	193/223 (86%)	193 (100%)	0	100	100
6	B3	112/115 (97%)	112 (100%)	0	100	100
10	C1	169/171 (99%)	169 (100%)	0	100	100
12	C3	93/107 (87%)	93 (100%)	0	100	100
13	D1	174/181 (96%)	174 (100%)	0	100	100
14	D2	193/199 (97%)	193 (100%)	0	100	100
15	D3	67/67 (100%)	67 (100%)	0	100	100
16	E1	147/149 (99%)	147 (100%)	0	100	100
17	E2	347/348 (100%)	347 (100%)	0	100	100
18	E3	111/115 (96%)	111 (100%)	0	100	100
19	F1	170/178 (96%)	170 (100%)	0	100	100
20	F2	301/348 (86%)	301 (100%)	0	100	100
21	F3	86/98 (88%)	86 (100%)	0	100	100
22	G1	118/157 (75%)	118 (100%)	0	100	100
23	G2	246/249 (99%)	246 (100%)	0	100	100
24	G3	55/62 (89%)	55 (100%)	0	100	100
25	H1	171/172 (99%)	171 (100%)	0	100	100
26	H2	198/256 (77%)	198 (100%)	0	100	100
27	H3	48/49 (98%)	48 (100%)	0	100	100
28	I2	172/173 (99%)	172 (100%)	0	100	100
29	I3	272/275 (99%)	272 (100%)	0	100	100
30	J2	134/163 (82%)	134 (100%)	0	100	100
31	J3	185/224 (83%)	185 (100%)	0	100	100
32	K2	164/165 (99%)	164 (100%)	0	100	100
33	K3	198/218 (91%)	198 (100%)	0	100	100
34	L1	147/197 (75%)	147 (100%)	0	100	100
35	L2	158/175 (90%)	158 (100%)	0	100	100
36	L3	160/168 (95%)	160 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
37	M2	155/156 (99%)	155 (100%)	0	100	100
38	M3	104/108 (96%)	104 (100%)	0	100	100
39	N2	139/140 (99%)	139 (100%)	0	100	100
40	N3	130/131 (99%)	130 (100%)	0	100	100
41	O2	91/114 (80%)	91 (100%)	0	100	100
42	O3	104/119 (87%)	103 (99%)	1 (1%)	68	75
43	P2	100/107 (94%)	100 (100%)	0	100	100
44	P3	112/113 (99%)	112 (100%)	0	100	100
45	Q2	54/126 (43%)	54 (100%)	0	100	100
46	Q3	107/115 (93%)	107 (100%)	0	100	100
47	R2	106/133 (80%)	106 (100%)	0	100	100
48	R3	63/103 (61%)	63 (100%)	0	100	100
49	S2	124/135 (92%)	124 (100%)	0	100	100
50	S3	75/76 (99%)	75 (100%)	0	100	100
51	T2	117/118 (99%)	117 (100%)	0	100	100
52	T3	45/106 (42%)	45 (100%)	0	100	100
53	U2	120/121 (99%)	120 (100%)	0	100	100
54	U3	45/140 (32%)	45 (100%)	0	100	100
55	V2	98/124 (79%)	98 (100%)	0	100	100
56	W2	79/97 (81%)	79 (100%)	0	100	100
57	X2	98/110 (89%)	98 (100%)	0	100	100
58	Y2	114/121 (94%)	114 (100%)	0	100	100
59	Z2	88/89 (99%)	88 (100%)	0	100	100
60	a2	98/100 (98%)	98 (100%)	0	100	100
61	b2	108/110 (98%)	108 (100%)	0	100	100
62	c2	86/89 (97%)	86 (100%)	0	100	100
63	d2	73/80 (91%)	73 (100%)	0	100	100
64	e2	64/65 (98%)	64 (100%)	0	100	100
65	f2	47/48 (98%)	47 (100%)	0	100	100
66	g2	48/116 (41%)	48 (100%)	0	100	100
67	h2	23/24 (96%)	23 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
68	i2	91/94 (97%)	91 (100%)	0	100	100
69	j2	73/75 (97%)	73 (100%)	0	100	100
70	k2	109/121 (90%)	109 (100%)	0	100	100
71	o2	179/242 (74%)	179 (100%)	0	100	100
72	p2	193/229 (84%)	192 (100%)	1 (0%)	81	81
73	q2	184/202 (91%)	184 (100%)	0	100	100
74	r2	224/225 (100%)	224 (100%)	0	100	100
75	s2	156/170 (92%)	156 (100%)	0	100	100
76	t2	110/174 (63%)	110 (100%)	0	100	100
77	u2	165/180 (92%)	165 (100%)	0	100	100
78	v2	86/136 (63%)	86 (100%)	0	100	100
79	w2	134/142 (94%)	134 (100%)	0	100	100
80	x2	118/130 (91%)	118 (100%)	0	100	100
81	y2	117/121 (97%)	117 (100%)	0	100	100
82	z2	60/121 (50%)	60 (100%)	0	100	100
All	All	9718/11064 (88%)	9716 (100%)	2 (0%)	100	100

All (2) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
42	O3	26	ASN
72	p2	75	GLN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (97) such sidechains are listed below:

Mol	Chain	Res	Type
1	A1	132	GLN
1	A1	214	HIS
1	A1	257	ASN
3	A3	10	GLN
4	B1	66	GLN
4	B1	112	GLN
4	B1	195	HIS
4	B1	227	ASN
6	B3	83	GLN
6	B3	126	GLN

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Mol	Chain	Res	Type
10	C1	98	HIS
13	D1	144	ASN
14	D2	38	HIS
16	E1	104	ASN
17	E2	138	GLN
17	E2	245	HIS
18	E3	23	HIS
18	E3	31	HIS
18	E3	39	ASN
18	E3	73	GLN
19	F1	149	GLN
20	F2	21	ASN
20	F2	50	GLN
20	F2	142	HIS
23	G2	131	ASN
23	G2	138	GLN
23	G2	291	GLN
25	H1	91	GLN
26	H2	50	HIS
26	H2	108	ASN
28	I2	199	ASN
29	I3	15	ASN
29	I3	76	GLN
29	I3	117	ASN
29	I3	178	ASN
29	I3	311	GLN
30	J2	56	GLN
30	J2	118	GLN
30	J2	137	ASN
31	J3	113	GLN
31	J3	277	HIS
33	K3	81	HIS
33	K3	186	GLN
36	L3	113	GLN
36	L3	154	GLN
37	M2	125	GLN
37	M2	173	ASN
39	N2	127	GLN
40	N3	36	GLN
40	N3	105	ASN
40	N3	123	HIS
41	O2	50	ASN

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Mol	Chain	Res	Type
43	P2	77	HIS
44	P3	15	ASN
46	Q3	19	GLN
49	S2	18	HIS
49	S2	72	GLN
52	T3	58	ASN
53	U2	60	HIS
54	U3	135	HIS
55	V2	6	ASN
55	V2	79	GLN
55	V2	118	GLN
57	X2	34	HIS
57	X2	69	ASN
58	Y2	80	HIS
59	Z2	20	ASN
59	Z2	21	GLN
60	a2	71	GLN
60	a2	112	GLN
60	a2	114	GLN
62	c2	15	HIS
63	d2	66	HIS
65	f2	19	GLN
66	g2	84	GLN
68	i2	25	GLN
68	i2	36	GLN
70	k2	21	ASN
70	k2	36	ASN
71	o2	141	ASN
72	p2	75	GLN
72	p2	118	GLN
74	r2	157	ASN
75	s2	36	GLN
75	s2	179	ASN
75	s2	186	ASN
76	t2	44	ASN
77	u2	35	ASN
77	u2	52	ASN
77	u2	146	GLN
77	u2	181	GLN
78	v2	28	HIS
78	v2	39	ASN
78	v2	42	ASN

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Mol	Chain	Res	Type
78	v2	44	HIS
79	w2	83	GLN
81	y2	35	ASN

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
11	C2	155/156 (99%)	31 (20%)	1 (0%)
2	A2	3593/3615 (99%)	764 (21%)	11 (0%)
5	B2	118/121 (97%)	9 (7%)	0
7	Bv	75/76 (98%)	20 (26%)	0
7	Bz	75/76 (98%)	23 (30%)	0
7	n2	75/76 (98%)	33 (44%)	0
8	Bx	9/10 (90%)	4 (44%)	0
83	m2	1627/1635 (99%)	400 (24%)	0
All	All	5727/5765 (99%)	1284 (22%)	12 (0%)

All (1284) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
2	A2	2	G
2	A2	5	A
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	73	A
2	A2	91	G
2	A2	98	A
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	122	U
2	A2	131	C

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Mol	Chain	Res	Type
2	A2	134	G
2	A2	136	C
2	A2	143	U
2	A2	144	G
2	A2	159	C
2	A2	170	C
2	A2	172	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	207	G
2	A2	209	U
2	A2	210	C
2	A2	214	G
2	A2	216	C
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	258	G
2	A2	266	C
2	A2	267	G
2	A2	269	G
2	A2	280	G
2	A2	281	U
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

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Mol	Chain	Res	Type
2	A2	387	G
2	A2	396	A
2	A2	407	A
2	A2	408	A
2	A2	409	G
2	A2	410	A
2	A2	412	G
2	A2	413	G
2	A2	415	G
2	A2	432	U
2	A2	433	A
2	A2	440	U
2	A2	449	C
2	A2	450	G
2	A2	452	A
2	A2	453	G
2	A2	454	U
2	A2	455	C
2	A2	460	C
2	A2	462	G
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	497	G
2	A2	498	G
2	A2	499	U
2	A2	500	G
2	A2	510	A
2	A2	511	U
2	A2	513	U
2	A2	514	U
2	A2	515	U
2	A2	516	C
2	A2	517	C
2	A2	520	C
2	A2	651	C
2	A2	652	G
2	A2	653	G

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Mol	Chain	Res	Type
2	A2	654	G
2	A2	658	C
2	A2	668	C
2	A2	671	G
2	A2	674	A
2	A2	675	C
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	746	G
2	A2	747	G
2	A2	748	U
2	A2	749	G
2	A2	753	A
2	A2	766	G
2	A2	767	G
2	A2	801	C
2	A2	802	A
2	A2	805	C
2	A2	807	G
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	839	C
2	A2	841	A
2	A2	843	U
2	A2	855	G
2	A2	857	A
2	A2	858	A
2	A2	869	C
2	A2	870	G

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Mol	Chain	Res	Type
2	A2	888	U
2	A2	891	C
2	A2	919	G
2	A2	921	G
2	A2	927	C
2	A2	934	C
2	A2	935	C
2	A2	936	C
2	A2	937	C
2	A2	938	U
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	1012	C
2	A2	1013	C
2	A2	1014	C
2	A2	1015	C
2	A2	1021	G
2	A2	1022	C
2	A2	1024	C
2	A2	1025	C
2	A2	1031	U
2	A2	1032	C
2	A2	1038	G
2	A2	1039	C
2	A2	1043	C
2	A2	1044	G
2	A2	1047	U
2	A2	1048	C
2	A2	1049	C
2	A2	1053	G
2	A2	1054	G
2	A2	1055	G
2	A2	1070	C
2	A2	1071	G
2	A2	1072	U
2	A2	1079	A

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Mol	Chain	Res	Type
2	A2	1081	G
2	A2	1082	A
2	A2	1085	C
2	A2	1086	C
2	A2	1087	G
2	A2	1093	A
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	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	1191	G
2	A2	1201	A
2	A2	1208	G
2	A2	1211	A
2	A2	1212	A
2	A2	1224	G
2	A2	1231	C
2	A2	1232	G
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	1329	G

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Mol	Chain	Res	Type
2	A2	1338	A
2	A2	1347	A2M
2	A2	1360	A
2	A2	1361	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	1451	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	1511	C
2	A2	1512	U
2	A2	1522	C
2	A2	1536	G
2	A2	1544	A
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	1621	G
2	A2	1622	C

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Mol	Chain	Res	Type
2	A2	1623	G
2	A2	1624	U
2	A2	1626	G
2	A2	1636	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	1690	A
2	A2	1699	A
2	A2	1718	G
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	1733	C
2	A2	1734	A
2	A2	1738	C
2	A2	1750	G
2	A2	1753	G
2	A2	1757	G
2	A2	1760	A
2	A2	1762	A
2	A2	1763	G
2	A2	1764	A
2	A2	1766	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	1871	A

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Mol	Chain	Res	Type
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	1906	G
2	A2	1909	G
2	A2	1910	G
2	A2	1911	G
2	A2	2005	U
2	A2	2006	C
2	A2	2009	G
2	A2	2012	C
2	A2	2014	G
2	A2	2015	C
2	A2	2025	G
2	A2	2044	C
2	A2	2052	G
2	A2	2055	A
2	A2	2056	G
2	A2	2061	G
2	A2	2065	C
2	A2	2068	A
2	A2	2069	G
2	A2	2071	G
2	A2	2077	G
2	A2	2086	G
2	A2	2087	A
2	A2	2088	G
2	A2	2094	G
2	A2	2100	G
2	A2	2103	G
2	A2	2106	OMC
2	A2	2115	A
2	A2	2138	C
2	A2	2150	A

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Mol	Chain	Res	Type
2	A2	2152	G
2	A2	2153	U
2	A2	2176	G
2	A2	2177	OMC
2	A2	2180	U
2	A2	2196	C
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	2235	G
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	2268	A
2	A2	2273	G
2	A2	2275	C
2	A2	2276	G
2	A2	2284	A
2	A2	2285	U
2	A2	2301	G
2	A2	2302	G
2	A2	2310	G
2	A2	2311	G
2	A2	2314	G
2	A2	2321	G
2	A2	2322	G
2	A2	2328	A
2	A2	2342	A
2	A2	2344	C
2	A2	2356	A
2	A2	2361	G
2	A2	2367	G
2	A2	2371	C

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Mol	Chain	Res	Type
2	A2	2373	G
2	A2	2382	C
2	A2	2383	U
2	A2	2397	A
2	A2	2408	C
2	A2	2413	G
2	A2	2416	U
2	A2	2417	G
2	A2	2424	C
2	A2	2428	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
2	A2	2479	G
2	A2	2493	C
2	A2	2494	C
2	A2	2498	A
2	A2	2509	G
2	A2	2511	G
2	A2	2514	G
2	A2	2518	U
2	A2	2519	A
2	A2	2524	U
2	A2	2525	C
2	A2	2542	A2M
2	A2	2543	U
2	A2	2545	U
2	A2	2549	C
2	A2	2554	G
2	A2	2561	A
2	A2	2569	C
2	A2	2581	U
2	A2	2582	G

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Mol	Chain	Res	Type
2	A2	2584	U
2	A2	2601	G
2	A2	2602	G
2	A2	2603	G
2	A2	2610	G
2	A2	2623	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	3262	U
2	A2	3271	G
2	A2	3272	U
2	A2	3282	G
2	A2	3286	A
2	A2	3291	A
2	A2	3300	U
2	A2	3302	A
2	A2	3304	A
2	A2	3310	G
2	A2	3318	A
2	A2	3328	G
2	A2	3329	C
2	A2	3330	G
2	A2	3366	G
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	3410	G
2	A2	3415	A
2	A2	3416	A
2	A2	3417	C
2	A2	3421	G

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Mol	Chain	Res	Type
2	A2	3424	U
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	3465	G
2	A2	3466	C
2	A2	3467	G
2	A2	3468	C
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	3523	A
2	A2	3533	A
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	3572	G
2	A2	3586	U
2	A2	3594	G
2	A2	3595	G
2	A2	3599	A
2	A2	3600	G
2	A2	3603	A
2	A2	3604	C
2	A2	3606	U

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Mol	Chain	Res	Type
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	3626	G
2	A2	3627	G
2	A2	3629	G
2	A2	3632	C
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
2	A2	3699	U
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	3712	A
2	A2	3714	C
2	A2	3715	G
2	A2	3719	U

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Mol	Chain	Res	Type
2	A2	3726	G
2	A2	3727	A
2	A2	3734	G
2	A2	3736	G
2	A2	3738	C
2	A2	3740	G
2	A2	3742	G
2	A2	3743	G
2	A2	3747	G
2	A2	3752	C
2	A2	3760	C
2	A2	3765	G
2	A2	3766	C
2	A2	3768	U
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	3814	C
2	A2	3815	U
2	A2	3822	A
2	A2	3823	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
2	A2	3885	A
2	A2	3895	C
2	A2	3903	A
2	A2	3906	G
2	A2	3909	A
2	A2	3910	C
2	A2	3917	U
2	A2	3920	A
2	A2	3924	G

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Mol	Chain	Res	Type
2	A2	3925	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	3990	G
2	A2	3991	A
2	A2	4002	C
2	A2	4004	U
2	A2	4006	U
2	A2	4023	G
2	A2	4025	G
2	A2	4029	G
2	A2	4030	A
2	A2	4031	A
2	A2	4033	A
2	A2	4039	C
2	A2	4043	G
2	A2	4046	A
2	A2	4071	U
2	A2	4072	U
2	A2	4073	C
2	A2	4074	A
2	A2	4078	C
2	A2	4096	C
2	A2	4100	G
2	A2	4101	A
2	A2	4104	U
2	A2	4105	C
2	A2	4116	A
2	A2	4118	C
2	A2	4127	G
2	A2	4151	OMG
2	A2	4152	PSU
2	A2	4162	A
2	A2	4164	U
2	A2	4165	A
2	A2	4170	A

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Mol	Chain	Res	Type
2	A2	4171	C
2	A2	4176	G
2	A2	4177	C
2	A2	4184	U
2	A2	4200	A
2	A2	4201	G
2	A2	4206	G
2	A2	4209	U
2	A2	4212	C
2	A2	4219	G
2	A2	4224	U
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	4296	G
2	A2	4304	G
2	A2	4308	A
2	A2	4309	U
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	4359	A
2	A2	4360	A
2	A2	4361	U
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

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Mol	Chain	Res	Type
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	4433	G
2	A2	4434	U
2	A2	4435	C
2	A2	4497	U
2	A2	4498	C
2	A2	4499	G
2	A2	4503	C
2	A2	4504	C
2	A2	4505	G
2	A2	4508	G
2	A2	4511	C
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
2	A2	4555	A
2	A2	4557	G
2	A2	4559	G
2	A2	4560	G
2	A2	4565	C
2	A2	4569	C
2	A2	4570	U

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Mol	Chain	Res	Type
2	A2	4571	C
2	A2	4582	U
2	A2	4583	U
2	A2	4587	G
2	A2	4589	A
2	A2	4590	C
2	A2	4591	G
2	A2	4597	G
2	A2	4608	C
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	4641	U
2	A2	4659	C
2	A2	4663	G
2	A2	4668	U
2	A2	4680	A
2	A2	4687	G
2	A2	4696	C
2	A2	4700	C
2	A2	4701	G
2	A2	4707	A
2	A2	4708	G
2	A2	4710	G
2	A2	4715	U
5	B2	7	G
5	B2	11	A
5	B2	22	A
5	B2	33	U
5	B2	53	U
5	B2	64	G
5	B2	76	U
5	B2	100	A
5	B2	110	G
7	Bv	7	A
7	Bv	8	U
7	Bv	14	A
7	Bv	16	U

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Mol	Chain	Res	Type
7	Bv	17	C
7	Bv	18	G
7	Bv	19	G
7	Bv	21	A
7	Bv	24	G
7	Bv	27	G
7	Bv	42	C
7	Bv	46	G
7	Bv	47	U
7	Bv	48	C
7	Bv	53	G
7	Bv	58	A
7	Bv	62	C
7	Bv	69	G
7	Bv	74	C
7	Bv	76	A
8	Bx	43	U
8	Bx	46	U
8	Bx	49	U
8	Bx	51	U
7	Bz	2	C
7	Bz	7	A
7	Bz	14	A
7	Bz	17	C
7	Bz	18	G
7	Bz	19	G
7	Bz	27	G
7	Bz	36	A
7	Bz	42	C
7	Bz	43	C
7	Bz	45	U
7	Bz	46	G
7	Bz	47	U
7	Bz	48	C
7	Bz	51	U
7	Bz	53	G
7	Bz	58	A
7	Bz	65	G
7	Bz	66	U
7	Bz	68	C
7	Bz	71	G
7	Bz	74	C

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Mol	Chain	Res	Type
7	Bz	76	A
11	C2	16	G
11	C2	23	C
11	C2	25	G
11	C2	34	U
11	C2	35	C
11	C2	39	G
11	C2	51	U
11	C2	52	A
11	C2	59	A
11	C2	60	G
11	C2	63	U
11	C2	75	OMG
11	C2	82	A
11	C2	84	A
11	C2	85	U
11	C2	87	G
11	C2	88	A
11	C2	94	G
11	C2	103	A
11	C2	105	C
11	C2	110	U
11	C2	111	U
11	C2	112	G
11	C2	114	G
11	C2	123	U
11	C2	125	C
11	C2	126	C
11	C2	127	U
11	C2	150	C
11	C2	155	C
11	C2	156	U
7	n2	2	C
7	n2	5	G
7	n2	9	A
7	n2	10	G
7	n2	13	C
7	n2	15	G
7	n2	16	U
7	n2	17	C
7	n2	19	G
7	n2	20	U

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Mol	Chain	Res	Type
7	n2	21	A
7	n2	23	A
7	n2	24	G
7	n2	27	G
7	n2	30	G
7	n2	32	U
7	n2	33	U
7	n2	40	C
7	n2	41	C
7	n2	44	G
7	n2	46	G
7	n2	47	U
7	n2	49	C
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	66	U
7	n2	71	G
7	n2	75	C
7	n2	76	A
83	m2	4	C
83	m2	13	C
83	m2	14	C
83	m2	33	G
83	m2	41	G
83	m2	44	U
83	m2	46	A
83	m2	49	C
83	m2	56	G
83	m2	59	U
83	m2	62	G
83	m2	66	G
83	m2	67	C
83	m2	68	A
83	m2	71	G
83	m2	72	C
83	m2	74	G
83	m2	76	U
83	m2	77	A

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Mol	Chain	Res	Type
83	m2	78	C
83	m2	79	A
83	m2	103	A
83	m2	113	G
83	m2	114	G
83	m2	115	U
83	m2	118	C
83	m2	126	G
83	m2	127	C
83	m2	129	C
83	m2	130	G
83	m2	142	C
83	m2	143	U
83	m2	144	U
83	m2	145	G
83	m2	146	G
83	m2	155	G
83	m2	157	U
83	m2	159	A
83	m2	160	U
83	m2	161	U
83	m2	162	C
83	m2	168	C
83	m2	170	A
83	m2	171	A
83	m2	172	OMU
83	m2	180	G
83	m2	181	A
83	m2	182	C
83	m2	189	U
83	m2	190	G
83	m2	193	C
83	m2	195	C
83	m2	198	U
83	m2	199	U
83	m2	200	C
83	m2	201	C
83	m2	202	C
83	m2	204	G
83	m2	207	G
83	m2	208	G
83	m2	209	G

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Mol	Chain	Res	Type
83	m2	210	G
83	m2	211	A
83	m2	212	U
83	m2	215	G
83	m2	217	G
83	m2	296	U
83	m2	297	C
83	m2	304	A
83	m2	306	C
83	m2	307	U
83	m2	308	C
83	m2	310	G
83	m2	311	G
83	m2	313	C
83	m2	314	G
83	m2	315	A
83	m2	316	U
83	m2	319	C
83	m2	321	C
83	m2	324	C
83	m2	332	G
83	m2	333	C
83	m2	334	G
83	m2	336	C
83	m2	337	G
83	m2	342	C
83	m2	345	A
83	m2	349	G
83	m2	362	A
83	m2	364	C
83	m2	365	A
83	m2	366	A
83	m2	370	U
83	m2	372	G
83	m2	387	G
83	m2	388	C
83	m2	394	A
83	m2	395	U
83	m2	401	C
83	m2	402	C
83	m2	411	C
83	m2	415	G

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Mol	Chain	Res	Type
83	m2	423	G
83	m2	439	G
83	m2	440	G
83	m2	442	G
83	m2	450	A
83	m2	451	A
83	m2	452	C
83	m2	454	G
83	m2	466	A
83	m2	467	A
83	m2	473	G
83	m2	474	C
83	m2	476	G
83	m2	484	G
83	m2	487	A
83	m2	489	U
83	m2	494	C
83	m2	495	A
83	m2	502	A
83	m2	504	C
83	m2	518	A
83	m2	524	A
83	m2	525	A
83	m2	527	A
83	m2	530	A
83	m2	532	U
83	m2	534	C
83	m2	557	A
83	m2	558	U
83	m2	559	U
83	m2	561	G
83	m2	565	G
83	m2	568	U
83	m2	570	C
83	m2	575	U
83	m2	576	A
83	m2	578	A2M
83	m2	585	A
83	m2	589	A
83	m2	591	G
83	m2	592	A
83	m2	593	U

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Mol	Chain	Res	Type
83	m2	599	G
83	m2	600	G
83	m2	602	G
83	m2	606	A
83	m2	608	G
83	m2	609	U
83	m2	616	C
83	m2	617	C
83	m2	619	G
83	m2	622	G
83	m2	625	G
83	m2	630	A
83	m2	633	U
83	m2	645	A
83	m2	657	A
83	m2	662	C
83	m2	670	A2M
83	m2	671	A
83	m2	673	A
83	m2	674	A
83	m2	675	G
83	m2	686	G
83	m2	803	U
83	m2	813	A
83	m2	823	G
83	m2	824	PSU
83	m2	832	A
83	m2	837	C
83	m2	839	A
83	m2	840	G
83	m2	841	C
83	m2	842	C
83	m2	843	G
83	m2	845	C
83	m2	849	A
83	m2	870	G
83	m2	871	A
83	m2	872	A
83	m2	875	G
83	m2	882	G
83	m2	888	A
83	m2	889	U

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Mol	Chain	Res	Type
83	m2	890	U
83	m2	891	U
83	m2	892	U
83	m2	893	G
83	m2	894	U
83	m2	898	U
83	m2	900	U
83	m2	901	U
83	m2	902	C
83	m2	906	A
83	m2	911	G
83	m2	912	G
83	m2	915	A
83	m2	916	U
83	m2	918	A
83	m2	919	U
83	m2	921	A
83	m2	922	A
83	m2	924	A
83	m2	935	G
83	m2	936	G
83	m2	965	A
83	m2	972	G
83	m2	973	G
83	m2	980	G
83	m2	992	A
83	m2	994	A
83	m2	999	A
83	m2	1001	G
83	m2	1004	U
83	m2	1019	U
83	m2	1024	U
83	m2	1025	A
83	m2	1029	A
83	m2	1030	A
83	m2	1047	U
83	m2	1063	U
83	m2	1064	A
83	m2	1085	A
83	m2	1087	C
83	m2	1091	G
83	m2	1095	A

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Mol	Chain	Res	Type
83	m2	1101	G
83	m2	1102	A
83	m2	1111	C
83	m2	1117	U
83	m2	1118	C
83	m2	1123	G
83	m2	1132	G
83	m2	1135	A
83	m2	1138	U
83	m2	1140	C
83	m2	1141	C
83	m2	1150	A
83	m2	1152	A
83	m2	1155	C
83	m2	1156	U
83	m2	1157	U
83	m2	1168	G
83	m2	1184	A
83	m2	1197	A
83	m2	1209	G
83	m2	1210	A
83	m2	1212	G
83	m2	1217	C
83	m2	1219	A
83	m2	1226	G
83	m2	1233	C
83	m2	1244	U
83	m2	1245	PSU
83	m2	1250	B8N
83	m2	1252	A
83	m2	1253	A
83	m2	1255	A
83	m2	1258	G
83	m2	1259	G
83	m2	1261	A
83	m2	1266	C
83	m2	1268	C
83	m2	1273	C
83	m2	1274	C
83	m2	1275	C
83	m2	1276	G
83	m2	1282	G

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Mol	Chain	Res	Type
83	m2	1284	A
83	m2	1285	C
83	m2	1287	G
83	m2	1288	G
83	m2	1302	U
83	m2	1304	G
83	m2	1305	C
83	m2	1307	C
83	m2	1310	U
83	m2	1316	U
83	m2	1322	G
83	m2	1324	G
83	m2	1335	U
83	m2	1343	C
83	m2	1346	A
83	m2	1351	G
83	m2	1352	U
83	m2	1353	G
83	m2	1360	U
83	m2	1366	U
83	m2	1373	U
83	m2	1374	U
83	m2	1377	G
83	m2	1380	A
83	m2	1383	G
83	m2	1384	A
83	m2	1397	C
83	m2	1399	U
83	m2	1400	G
83	m2	1403	A
83	m2	1406	U
83	m2	1408	G
83	m2	1412	C
83	m2	1415	G
83	m2	1416	A
83	m2	1417	C
83	m2	1418	C
83	m2	1419	C
83	m2	1420	C
83	m2	1421	C
83	m2	1423	A
83	m2	1424	G

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Mol	Chain	Res	Type
83	m2	1425	C
83	m2	1431	G
83	m2	1435	C
83	m2	1437	C
83	m2	1438	C
83	m2	1439	C
83	m2	1440	A
83	m2	1451	G
83	m2	1454	A
83	m2	1456	A
83	m2	1465	U
83	m2	1466	C
83	m2	1468	G
83	m2	1491	A
83	m2	1492	G
83	m2	1497	G
83	m2	1499	G
83	m2	1500	A
83	m2	1509	G
83	m2	1512	G
83	m2	1522	G
83	m2	1523	C
83	m2	1525	C
83	m2	1530	G
83	m2	1532	U
83	m2	1533	A
83	m2	1534	C
83	m2	1535	A
83	m2	1542	G
83	m2	1546	C
83	m2	1554	G
83	m2	1557	U
83	m2	1559	C
83	m2	1560	C
83	m2	1562	U
83	m2	1565	G
83	m2	1570	C
83	m2	1572	G
83	m2	1581	A
83	m2	1582	A
83	m2	1587	U
83	m2	1590	A

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Mol	Chain	Res	Type
83	m2	1600	G
83	m2	1603	A
83	m2	1605	G
83	m2	1606	G
83	m2	1608	G
83	m2	1623	U
83	m2	1625	A
83	m2	1627	U
83	m2	1634	G
83	m2	1636	A
83	m2	1641	G
83	m2	1648	C
83	m2	1649	A
83	m2	1650	G
83	m2	1656	G
83	m2	1664	U
83	m2	1665	A
83	m2	1667	G
83	m2	1685	C
83	m2	1698	C
83	m2	1700	C
83	m2	1702	C
83	m2	1724	G
83	m2	1746	G
83	m2	1750	G
83	m2	1787	C
83	m2	1788	U
83	m2	1789	G
83	m2	1807	G
83	m2	1821	A
83	m2	1825	A
83	m2	1826	A
83	m2	1827	A
83	m2	1828	G
83	m2	1831	G
83	m2	1833	A
83	m2	1840	U
83	m2	1851	G
83	m2	1853	A
83	m2	1854	C
83	m2	1863	G
83	m2	1864	G

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Mol	Chain	Res	Type
83	m2	1865	A
83	m2	1866	U
83	m2	1867	C

All (12) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
2	A2	236	G
2	A2	406	C
2	A2	1446	G
2	A2	2259	C
2	A2	2382	C
2	A2	2430	G
2	A2	2463	U
2	A2	3253	G
2	A2	4277	C
2	A2	4351	U
2	A2	4582	U
11	C2	59	A

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

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	$\#\|Z\| > 2$
83	A2M	m2	99	84,83	22,25,26	0.07	0	31,36,39	0.21	0
2	PSU	A2	4183	2	18,21,22	0.52	0	22,30,33	0.43	0
2	OMG	A2	3400	2	23,26,27	0.31	0	33,38,41	0.44	0
83	PSU	m2	1245	83	18,21,22	0.54	0	22,30,33	0.56	0
2	A2M	A2	3486	2	22,25,26	0.09	0	31,36,39	0.42	0
2	OMG	A2	3448	2	23,26,27	0.34	0	33,38,41	0.34	0
2	PSU	A2	4152	2	18,21,22	0.53	0	22,30,33	0.65	0
2	OMC	A2	2579	2	19,22,23	0.29	0	26,31,34	0.39	0
2	PSU	A2	4280	2	18,21,22	0.54	0	22,30,33	0.56	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
2	5MC	A2	3438	2,84	18,22,23	0.30	0	26,32,35	0.40	0
83	OMU	m2	121	83	19,22,23	0.30	0	26,31,34	0.46	0
2	OMC	A2	1683	2,84	19,22,23	0.32	0	26,31,34	0.54	0
2	OMC	A2	3357	2	19,22,23	0.25	0	26,31,34	0.42	0
83	A2M	m2	27	83	22,25,26	0.12	0	31,36,39	0.32	0
83	OMG	m2	511	84,83	23,26,27	0.29	0	33,38,41	0.40	0
2	A2M	A2	4223	2	22,25,26	0.11	0	31,36,39	0.26	0
2	OMG	A2	4044	2,84	23,26,27	0.39	0	33,38,41	0.39	0
2	OMC	A2	3543	2	19,22,23	0.33	0	26,31,34	0.45	0
2	OMU	A2	3581	2	19,22,23	0.33	0	26,31,34	0.46	0
2	A2M	A2	3441	2	22,25,26	0.10	0	31,36,39	0.36	0
83	A2M	m2	1680	83	22,25,26	0.08	0	31,36,39	0.16	0
83	OMC	m2	174	83	19,22,23	0.34	0	26,31,34	0.56	0
2	OMG	A2	1438	2	23,26,27	0.27	0	33,38,41	0.40	0
83	OMC	m2	519	83	19,22,23	0.28	0	26,31,34	0.46	0
2	A2M	A2	1337	2	22,25,26	0.12	0	31,36,39	0.28	0
2	OMG	A2	3880	2	23,26,27	0.33	0	33,38,41	0.51	0
2	OMU	A2	3958	2	19,22,23	0.35	0	26,31,34	0.46	0
2	OMG	A2	4289	2	23,26,27	0.36	0	33,38,41	0.38	0
2	OMC	A2	3525	2	19,22,23	0.33	0	26,31,34	0.39	0
2	5MC	A2	4099	2	18,22,23	0.36	0	26,32,35	0.56	0
83	OMG	m2	438	83	23,26,27	0.28	0	33,38,41	0.44	0
2	PSU	A2	3385	2	18,21,22	0.55	0	22,30,33	0.57	0
83	OMU	m2	430	83	19,22,23	0.25	0	26,31,34	0.44	0
2	A2M	A2	3380	2	22,25,26	0.12	0	31,36,39	0.44	0
2	OMG	A2	4151	2	23,26,27	0.37	0	33,38,41	0.53	0
2	OMC	A2	1154	2	19,22,23	0.33	0	26,31,34	0.46	0
2	OMC	A2	2120	2	19,22,23	0.32	0	26,31,34	0.48	0
2	OMC	A2	2106	2	19,22,23	0.32	0	26,31,34	0.38	0
83	B8N	m2	1250	83	24,29,30	0.58	0	29,42,45	0.63	0
83	OMG	m2	603	83	23,26,27	0.27	0	33,38,41	0.33	0
2	OMG	A2	3848	2,7	23,26,27	0.35	0	33,38,41	0.34	0
2	PSU	A2	3945	2	18,21,22	0.52	0	22,30,33	0.59	0
2	PSU	A2	4288	2	18,21,22	0.51	0	22,30,33	0.62	0
83	OMG	m2	646	83	23,26,27	0.27	0	33,38,41	0.35	0
83	PSU	m2	1083	83	18,21,22	0.59	1 (5%)	22,30,33	0.67	0
2	OMC	A2	2177	2,84	19,22,23	0.32	0	26,31,34	0.44	0
2	2MG	A2	1330	2	23,26,27	0.31	0	32,38,41	0.35	0
2	PSU	A2	2263	2	18,21,22	0.53	0	22,30,33	0.59	0
2	PSU	A2	4102	2,84	18,21,22	0.53	0	22,30,33	0.41	0
83	A2M	m2	1033	83	22,25,26	0.07	0	31,36,39	0.19	0
83	OMU	m2	172	83	19,22,23	0.26	0	26,31,34	0.64	1 (3%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
2	OMG	A2	4022	2	23,26,27	0.31	0	33,38,41	0.39	0
2	A2M	A2	3374	2	22,25,26	0.11	0	31,36,39	0.29	0
83	PSU	m2	614	83	18,21,22	0.50	0	22,30,33	0.62	1 (4%)
2	PSU	A2	3371	2	18,21,22	0.56	0	22,30,33	0.63	1 (4%)
83	A2M	m2	670	84,83	22,25,26	0.09	0	31,36,39	0.34	0
2	OMG	A2	1130	2	23,26,27	0.42	0	33,38,41	0.55	0
2	A2M	A2	398	2	22,25,26	0.10	0	31,36,39	0.29	0
83	PSU	m2	824	83	18,21,22	0.60	1 (5%)	22,30,33	0.67	1 (4%)
2	A2M	A2	2156	2	22,25,26	0.10	0	31,36,39	0.22	0
2	A2M	A2	1673	2	22,25,26	0.11	0	31,36,39	0.50	0
83	OMU	m2	116	83	19,22,23	0.26	0	26,31,34	0.39	0
2	A2M	A2	4175	2,84	22,25,26	0.11	0	31,36,39	0.38	0
2	A2M	A2	1137	2	22,25,26	0.09	0	31,36,39	0.23	0
83	A2M	m2	514	83	22,25,26	0.09	0	31,36,39	0.38	0
2	OMG	A2	2179	2	23,26,27	0.31	0	33,38,41	0.32	0
83	OMG	m2	685	83	23,26,27	0.27	0	33,38,41	0.49	0
2	OMG	A2	3555	2,84	23,26,27	0.39	0	33,38,41	0.54	0
2	A2M	A2	4270	2	22,25,26	0.11	0	31,36,39	0.31	0
2	OMC	A2	3464	2	19,22,23	0.32	0	26,31,34	0.38	0
83	OMG	m2	1330	83	23,26,27	0.31	0	33,38,41	0.34	0
2	OMC	A2	2616	2	19,22,23	0.31	0	26,31,34	0.37	0
2	A2M	A2	2118	2,84	22,25,26	0.10	0	31,36,39	0.28	0
2	OMC	A2	4188	2	19,22,23	0.34	0	26,31,34	0.50	0
83	A2M	m2	486	83	22,25,26	0.08	0	31,36,39	0.21	0
83	OMG	m2	869	83	23,26,27	0.27	0	33,38,41	0.34	0
11	OMG	C2	75	11	23,26,27	0.31	0	33,38,41	0.37	0
2	OMU	A2	2592	2	19,22,23	0.33	0	26,31,34	0.63	0
2	OMU	A2	4150	2	19,22,23	0.31	0	26,31,34	0.47	0
2	OMG	A2	4275	2	23,26,27	0.39	0	33,38,41	0.56	0
2	OMC	A2	2559	2	19,22,23	0.32	0	26,31,34	0.43	0
83	4AC	m2	1844	83	21,24,25	0.31	0	29,34,37	0.30	0
2	OMU	A2	3474	2	19,22,23	0.36	0	26,31,34	0.39	0
83	OMC	m2	1705	83	19,22,23	0.27	0	26,31,34	0.36	0
2	OMC	A2	3497	2	19,22,23	0.33	0	26,31,34	0.42	0
83	UR3	m2	1832	83	19,22,23	0.28	0	26,32,35	0.43	0
2	PSU	A2	4055	2	18,21,22	0.54	0	22,30,33	0.63	1 (4%)
83	B8T	m2	1339	83	19,22,23	0.38	0	26,31,34	0.36	0
2	A2M	A2	3481	2	22,25,26	0.09	0	31,36,39	0.48	0
2	OMC	A2	4108	2	19,22,23	0.33	0	26,31,34	0.34	0
2	PSU	A2	4094	2	18,21,22	0.59	1 (5%)	22,30,33	0.64	1 (4%)
2	1MA	A2	4067	2	21,25,26	0.33	0	31,37,40	0.47	0
2	PSU	A2	1395	2	18,21,22	0.58	0	22,30,33	0.57	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
2	A2M	A2	2542	2	22,25,26	0.09	0	31,36,39	0.35	0
2	PSU	A2	1490	2	18,21,22	0.91	1 (5%)	22,30,33	0.60	0
83	A2M	m2	578	83	22,25,26	0.08	0	31,36,39	0.27	0
2	A2M	A2	1347	2,84	22,25,26	0.11	0	31,36,39	0.56	1 (3%)
2	A2M	A2	1140	2,84	22,25,26	0.09	0	31,36,39	0.19	0
2	PSU	A2	3420	2	18,21,22	0.54	0	22,30,33	0.37	0
2	OMU	A2	4272	2	19,22,23	0.39	0	26,31,34	0.67	0
2	OMG	A2	1335	2	23,26,27	0.35	0	33,38,41	0.45	0
2	OMG	A2	4146	2	23,26,27	0.34	0	33,38,41	0.43	0
2	A2M	A2	2570	2	22,25,26	0.10	0	31,36,39	0.20	0
2	PSU	A2	1496	2	18,21,22	0.53	0	22,30,33	0.57	0
83	OMC	m2	355	83	19,22,23	0.28	0	26,31,34	0.41	0
2	OMG	A2	2119	2,84	23,26,27	0.33	0	33,38,41	0.43	0
83	PSU	m2	825	83	18,21,22	0.49	0	22,30,33	0.54	0
2	OMG	A2	3283	2	23,26,27	0.34	0	33,38,41	0.48	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
83	A2M	m2	99	84,83	-	1/9/27/28	0/3/3/3
2	PSU	A2	4183	2	-	2/7/25/26	0/2/2/2
2	OMG	A2	3400	2	-	0/9/27/28	0/3/3/3
83	PSU	m2	1245	83	-	1/7/25/26	0/2/2/2
2	A2M	A2	3486	2	-	0/9/27/28	0/3/3/3
2	OMG	A2	3448	2	-	0/9/27/28	0/3/3/3
2	PSU	A2	4152	2	-	1/7/25/26	0/2/2/2
2	OMC	A2	2579	2	-	1/9/27/28	0/2/2/2
2	PSU	A2	4280	2	-	0/7/25/26	0/2/2/2
2	5MC	A2	3438	2,84	-	0/7/25/26	0/2/2/2
83	OMU	m2	121	83	-	0/9/27/28	0/2/2/2
2	OMC	A2	1683	2,84	-	0/9/27/28	0/2/2/2
2	OMC	A2	3357	2	-	4/9/27/28	0/2/2/2
83	A2M	m2	27	83	-	2/9/27/28	0/3/3/3
83	OMG	m2	511	84,83	-	0/9/27/28	0/3/3/3
2	A2M	A2	4223	2	-	0/9/27/28	0/3/3/3
2	OMG	A2	4044	2,84	-	0/9/27/28	0/3/3/3
2	OMC	A2	3543	2	-	0/9/27/28	0/2/2/2
2	OMU	A2	3581	2	-	0/9/27/28	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	A2M	A2	3441	2	-	4/9/27/28	0/3/3/3
83	A2M	m2	1680	83	-	1/9/27/28	0/3/3/3
83	OMC	m2	174	83	-	2/9/27/28	0/2/2/2
2	OMG	A2	1438	2	-	2/9/27/28	0/3/3/3
83	OMC	m2	519	83	-	2/9/27/28	0/2/2/2
2	A2M	A2	1337	2	-	1/9/27/28	0/3/3/3
2	OMG	A2	3880	2	-	0/9/27/28	0/3/3/3
2	OMU	A2	3958	2	-	0/9/27/28	0/2/2/2
2	OMG	A2	4289	2	-	3/9/27/28	0/3/3/3
2	OMC	A2	3525	2	-	1/9/27/28	0/2/2/2
2	5MC	A2	4099	2	-	4/7/25/26	0/2/2/2
83	OMG	m2	438	83	-	0/9/27/28	0/3/3/3
2	PSU	A2	3385	2	-	0/7/25/26	0/2/2/2
83	OMU	m2	430	83	-	4/9/27/28	0/2/2/2
2	A2M	A2	3380	2	-	1/9/27/28	0/3/3/3
2	OMG	A2	4151	2	-	0/9/27/28	0/3/3/3
2	OMC	A2	1154	2	-	1/9/27/28	0/2/2/2
2	OMC	A2	2120	2	-	0/9/27/28	0/2/2/2
2	OMC	A2	2106	2	-	2/9/27/28	0/2/2/2
83	B8N	m2	1250	83	-	3/16/34/35	0/2/2/2
83	OMG	m2	603	83	-	1/9/27/28	0/3/3/3
2	OMG	A2	3848	2,7	-	1/9/27/28	0/3/3/3
2	PSU	A2	3945	2	-	0/7/25/26	0/2/2/2
2	PSU	A2	4288	2	-	3/7/25/26	0/2/2/2
83	OMG	m2	646	83	-	1/9/27/28	0/3/3/3
83	PSU	m2	1083	83	-	1/7/25/26	0/2/2/2
2	OMC	A2	2177	2,84	-	1/9/27/28	0/2/2/2
2	2MG	A2	1330	2	-	0/9/27/28	0/3/3/3
2	PSU	A2	2263	2	-	0/7/25/26	0/2/2/2
2	PSU	A2	4102	2,84	-	3/7/25/26	0/2/2/2
83	A2M	m2	1033	83	-	1/9/27/28	0/3/3/3
83	OMU	m2	172	83	-	3/9/27/28	0/2/2/2
2	OMG	A2	4022	2	-	1/9/27/28	0/3/3/3
2	A2M	A2	3374	2	-	0/9/27/28	0/3/3/3
83	PSU	m2	614	83	-	0/7/25/26	0/2/2/2
2	PSU	A2	3371	2	-	0/7/25/26	0/2/2/2
83	A2M	m2	670	84,83	-	2/9/27/28	0/3/3/3
2	OMG	A2	1130	2	-	0/9/27/28	0/3/3/3
2	A2M	A2	398	2	-	0/9/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
83	PSU	m2	824	83	-	0/7/25/26	0/2/2/2
2	A2M	A2	2156	2	-	1/9/27/28	0/3/3/3
2	A2M	A2	1673	2	-	0/9/27/28	0/3/3/3
83	OMU	m2	116	83	-	1/9/27/28	0/2/2/2
2	A2M	A2	4175	2,84	-	1/9/27/28	0/3/3/3
2	A2M	A2	1137	2	-	0/9/27/28	0/3/3/3
83	A2M	m2	514	83	-	0/9/27/28	0/3/3/3
2	OMG	A2	2179	2	-	1/9/27/28	0/3/3/3
83	OMG	m2	685	83	-	0/9/27/28	0/3/3/3
2	OMG	A2	3555	2,84	-	0/9/27/28	0/3/3/3
2	A2M	A2	4270	2	-	0/9/27/28	0/3/3/3
2	OMC	A2	3464	2	-	0/9/27/28	0/2/2/2
83	OMG	m2	1330	83	-	2/9/27/28	0/3/3/3
2	OMC	A2	2616	2	-	0/9/27/28	0/2/2/2
2	A2M	A2	2118	2,84	-	1/9/27/28	0/3/3/3
2	OMC	A2	4188	2	-	0/9/27/28	0/2/2/2
83	A2M	m2	486	83	-	0/9/27/28	0/3/3/3
83	OMG	m2	869	83	-	1/9/27/28	0/3/3/3
11	OMG	C2	75	11	-	3/9/27/28	0/3/3/3
2	OMU	A2	2592	2	-	0/9/27/28	0/2/2/2
2	OMU	A2	4150	2	-	0/9/27/28	0/2/2/2
2	OMG	A2	4275	2	-	0/9/27/28	0/3/3/3
2	OMC	A2	2559	2	-	0/9/27/28	0/2/2/2
83	4AC	m2	1844	83	-	0/11/29/30	0/2/2/2
2	OMU	A2	3474	2	-	2/9/27/28	0/2/2/2
83	OMC	m2	1705	83	-	1/9/27/28	0/2/2/2
2	OMC	A2	3497	2	-	0/9/27/28	0/2/2/2
83	UR3	m2	1832	83	-	2/7/25/26	0/2/2/2
2	PSU	A2	4055	2	-	0/7/25/26	0/2/2/2
83	B8T	m2	1339	83	-	0/7/27/28	0/2/2/2
2	A2M	A2	3481	2	-	0/9/27/28	0/3/3/3
2	OMC	A2	4108	2	-	0/9/27/28	0/2/2/2
2	PSU	A2	4094	2	-	0/7/25/26	0/2/2/2
2	1MA	A2	4067	2	-	2/7/25/26	0/3/3/3
2	PSU	A2	1395	2	-	0/7/25/26	0/2/2/2
2	A2M	A2	2542	2	-	3/9/27/28	0/3/3/3
2	PSU	A2	1490	2	-	0/7/25/26	0/2/2/2
83	A2M	m2	578	83	-	1/9/27/28	0/3/3/3
2	A2M	A2	1347	2,84	-	3/9/27/28	0/3/3/3
2	A2M	A2	1140	2,84	-	3/9/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	PSU	A2	3420	2	-	2/7/25/26	0/2/2/2
2	OMU	A2	4272	2	-	3/9/27/28	0/2/2/2
2	OMG	A2	1335	2	-	0/9/27/28	0/3/3/3
2	OMG	A2	4146	2	-	1/9/27/28	0/3/3/3
2	A2M	A2	2570	2	-	0/9/27/28	0/3/3/3
2	PSU	A2	1496	2	-	0/7/25/26	0/2/2/2
83	OMC	m2	355	83	-	1/9/27/28	0/2/2/2
2	OMG	A2	2119	2,84	-	1/9/27/28	0/3/3/3
83	PSU	m2	825	83	-	0/7/25/26	0/2/2/2
2	OMG	A2	3283	2	-	0/9/27/28	0/3/3/3

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A2	1490	PSU	O4'-C1'	-3.40	1.39	1.43
83	m2	824	PSU	O4'-C1'	-2.17	1.40	1.43
83	m2	1083	PSU	O4'-C1'	-2.15	1.40	1.43
2	A2	4094	PSU	O4'-C1'	-2.03	1.41	1.43

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
83	m2	172	OMU	O2'-C2'-C1'	2.48	113.92	109.08
83	m2	614	PSU	O4'-C1'-C2'	2.21	108.26	105.14
2	A2	1347	A2M	C3'-C2'-C1'	-2.20	98.75	102.89
2	A2	3371	PSU	O4'-C1'-C2'	2.10	108.10	105.14
2	A2	4094	PSU	O4'-C1'-C2'	2.10	108.10	105.14
2	A2	4055	PSU	O4'-C1'-C2'	2.07	108.07	105.14
83	m2	824	PSU	O4'-C1'-C2'	2.05	108.03	105.14

There are no chirality outliers.

All (97) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
11	C2	75	OMG	C1'-C2'-O2'-CM2
2	A2	1140	A2M	O4'-C4'-C5'-O5'
2	A2	1140	A2M	C3'-C4'-C5'-O5'
2	A2	1154	OMC	C1'-C2'-O2'-CM2
2	A2	1347	A2M	C4'-C5'-O5'-P
2	A2	1347	A2M	O4'-C4'-C5'-O5'
2	A2	1347	A2M	C3'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
2	A2	1438	OMG	O4'-C4'-C5'-O5'
2	A2	1438	OMG	C3'-C4'-C5'-O5'
2	A2	2106	OMC	C1'-C2'-O2'-CM2
2	A2	2119	OMG	C1'-C2'-O2'-CM2
2	A2	2179	OMG	C1'-C2'-O2'-CM2
2	A2	2579	OMC	C1'-C2'-O2'-CM2
2	A2	3357	OMC	C2'-C1'-N1-C2
2	A2	3357	OMC	C2'-C1'-N1-C6
2	A2	3420	PSU	C2'-C1'-C5-C4
2	A2	3848	OMG	C1'-C2'-O2'-CM2
2	A2	4102	PSU	C2'-C1'-C5-C4
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	C3'-C4'-C5'-O5'
2	A2	4289	OMG	C1'-C2'-O2'-CM2
83	m2	116	OMU	C1'-C2'-O2'-CM2
83	m2	172	OMU	C1'-C2'-O2'-CM2
83	m2	174	OMC	O4'-C1'-N1-C2
83	m2	174	OMC	O4'-C1'-N1-C6
83	m2	430	OMU	C2'-C1'-N1-C2
83	m2	430	OMU	C2'-C1'-N1-C6
83	m2	603	OMG	C1'-C2'-O2'-CM2
83	m2	869	OMG	C1'-C2'-O2'-CM2
83	m2	1033	A2M	C1'-C2'-O2'-CM'
83	m2	1250	B8N	C3'-C4'-C5'-O5'
83	m2	1250	B8N	N3-C31-C32-C33
83	m2	1832	UR3	O4'-C1'-N1-C2
2	A2	3441	A2M	O4'-C4'-C5'-O5'
2	A2	4272	OMU	C3'-C4'-C5'-O5'
2	A2	4289	OMG	O4'-C4'-C5'-O5'
83	m2	27	A2M	C3'-C4'-C5'-O5'
83	m2	1250	B8N	O4'-C4'-C5'-O5'
83	m2	1832	UR3	O4'-C1'-N1-C6
2	A2	4288	PSU	O4'-C4'-C5'-O5'
2	A2	4289	OMG	C3'-C4'-C5'-O5'
83	m2	27	A2M	O4'-C4'-C5'-O5'
83	m2	1330	OMG	C3'-C4'-C5'-O5'
2	A2	4099	5MC	C2'-C1'-N1-C6
2	A2	4152	PSU	C4'-C5'-O5'-P

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Mol	Chain	Res	Type	Atoms
11	C2	75	OMG	O4'-C4'-C5'-O5'
83	m2	519	OMC	O4'-C4'-C5'-O5'
83	m2	1330	OMG	O4'-C4'-C5'-O5'
83	m2	519	OMC	C3'-C4'-C5'-O5'
2	A2	3441	A2M	C2'-C1'-N9-C8
2	A2	4067	1MA	O4'-C4'-C5'-O5'
83	m2	670	A2M	O4'-C4'-C5'-O5'
2	A2	4099	5MC	O4'-C1'-N1-C6
83	m2	578	A2M	C4'-C5'-O5'-P
2	A2	4067	1MA	C3'-C4'-C5'-O5'
83	m2	99	A2M	C1'-C2'-O2'-CM'
83	m2	1680	A2M	C1'-C2'-O2'-CM'
2	A2	3441	A2M	C3'-C4'-C5'-O5'
2	A2	2542	A2M	C2'-C1'-N9-C8
2	A2	2118	A2M	C3'-C2'-O2'-CM'
2	A2	4022	OMG	C3'-C2'-O2'-CM2
2	A2	4146	OMG	C3'-C2'-O2'-CM2
2	A2	4099	5MC	C2'-C1'-N1-C2
2	A2	3474	OMU	C4'-C5'-O5'-P
2	A2	4099	5MC	O4'-C1'-N1-C2
83	m2	646	OMG	C4'-C5'-O5'-P
83	m2	172	OMU	C4'-C5'-O5'-P
2	A2	3357	OMC	O4'-C1'-N1-C6
83	m2	430	OMU	O4'-C1'-N1-C6
2	A2	3474	OMU	C3'-C2'-O2'-CM2
83	m2	1083	PSU	C4'-C5'-O5'-P
83	m2	1245	PSU	C4'-C5'-O5'-P
2	A2	2542	A2M	C2'-C1'-N9-C4
2	A2	3357	OMC	O4'-C1'-N1-C2
11	C2	75	OMG	C3'-C4'-C5'-O5'
83	m2	670	A2M	C3'-C4'-C5'-O5'
2	A2	3420	PSU	O4'-C1'-C5-C4
2	A2	4102	PSU	O4'-C1'-C5-C4
2	A2	1140	A2M	C4'-C5'-O5'-P
83	m2	430	OMU	O4'-C1'-N1-C2
2	A2	1337	A2M	O4'-C1'-N9-C8
2	A2	2542	A2M	O4'-C1'-N9-C8
2	A2	3441	A2M	O4'-C1'-N9-C8
83	m2	1705	OMC	O4'-C4'-C5'-O5'
83	m2	355	OMC	C1'-C2'-O2'-CM2
2	A2	2106	OMC	O4'-C4'-C5'-O5'
2	A2	4102	PSU	O4'-C1'-C5-C6

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Mol	Chain	Res	Type	Atoms
2	A2	4288	PSU	O4'-C1'-C5-C6
2	A2	2177	OMC	O4'-C4'-C5'-O5'
2	A2	2156	A2M	C3'-C2'-O2'-CM'
2	A2	3380	A2M	C3'-C2'-O2'-CM'
2	A2	3525	OMC	C3'-C2'-O2'-CM2
83	m2	172	OMU	O4'-C4'-C5'-O5'

There are no ring outliers.

58 monomers are involved in 86 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
83	m2	27	A2M	2	0
83	m2	511	OMG	4	0
2	A2	4044	OMG	2	0
2	A2	3581	OMU	1	0
2	A2	3441	A2M	1	0
83	m2	1680	A2M	2	0
83	m2	174	OMC	1	0
2	A2	1438	OMG	1	0
83	m2	519	OMC	1	0
2	A2	1337	A2M	1	0
2	A2	3880	OMG	1	0
2	A2	3958	OMU	3	0
2	A2	4289	OMG	2	0
2	A2	3525	OMC	1	0
2	A2	4099	5MC	2	0
2	A2	3385	PSU	1	0
2	A2	3380	A2M	1	0
2	A2	1154	OMC	3	0
2	A2	2106	OMC	2	0
83	m2	1250	B8N	2	0
83	m2	603	OMG	3	0
2	A2	3848	OMG	1	0
2	A2	1330	2MG	1	0
83	m2	1033	A2M	2	0
83	m2	172	OMU	1	0
2	A2	4022	OMG	1	0
2	A2	3374	A2M	1	0
2	A2	398	A2M	1	0
2	A2	1673	A2M	1	0
83	m2	116	OMU	3	0
83	m2	514	A2M	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A2	2179	OMG	1	0
83	m2	685	OMG	1	0
2	A2	3555	OMG	1	0
2	A2	4270	A2M	1	0
83	m2	1330	OMG	1	0
2	A2	2616	OMC	1	0
2	A2	2118	A2M	2	0
2	A2	4188	OMC	2	0
83	m2	486	A2M	2	0
83	m2	869	OMG	1	0
11	C2	75	OMG	1	0
2	A2	2559	OMC	1	0
83	m2	1844	4AC	4	0
2	A2	3474	OMU	1	0
83	m2	1705	OMC	2	0
83	m2	1339	B8T	1	0
2	A2	4094	PSU	1	0
2	A2	4067	1MA	1	0
2	A2	1490	PSU	1	0
83	m2	578	A2M	1	0
2	A2	1347	A2M	2	0
2	A2	1140	A2M	1	0
2	A2	4272	OMU	3	0
2	A2	4146	OMG	1	0
2	A2	1496	PSU	1	0
83	m2	355	OMC	2	0
2	A2	2119	OMG	2	0

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 124 ligands modelled in this entry, 124 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

There are no such residues in this entry.

5.8 Polymer linkage issues

The following chains have linkage breaks:

Mol	Chain	Number of breaks
2	A2	21
83	m2	9

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	24.99
1	A2	1512:U	O3'	1521:A	P	24.63
1	A2	2658:G	O3'	3240:C	P	19.23
1	m2	690:U	O3'	801:U	P	17.52
1	A2	891:C	O3'	917:G	P	17.46
1	A2	4437:C	O3'	4493:G	P	17.16
1	A2	3790:G	O3'	3796:G	P	16.55
1	A2	770:G	O3'	799:C	P	16.50
1	A2	3752:C	O3'	3758:G	P	16.18
1	A2	520:C	O3'	650:G	P	16.02
1	m2	536:G	O3'	554:U	P	15.88
1	A2	859:G	O3'	866:A	P	15.08
1	m2	324:C	O3'	331:G	P	14.90
1	A2	1564:C	O3'	1572:A	P	14.68
1	A2	1772:A	O3'	1820:C	P	13.84
1	A2	1914:C	O3'	2004:G	P	13.40
1	m2	1753:C	O3'	1786:G	P	12.16
1	A2	481:G	O3'	485:U	P	11.94
1	A2	1055:G	O3'	1059:C	P	11.91
1	A2	4668:U	O3'	4674:G	P	11.84
1	A2	3633:C	O3'	3685:G	P	9.84
1	A2	1072:U	O3'	1078:G	P	8.29
1	A2	866:A	O3'	868:C	P	8.22
1	A2	956:C	O3'	999:C	P	7.38
1	m2	227:G	O3'	289:U	P	7.38

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	A2	501:G	O3'	506:G	P	4.71
1	A2	4422:G	O3'	4424:U	P	4.57
1	m2	1692:U	O3'	1693:U	P	3.87
1	m2	1339:B8T	O3'	1340:G	P	3.35
1	m2	1350:G	O3'	1351:G	P	0.48

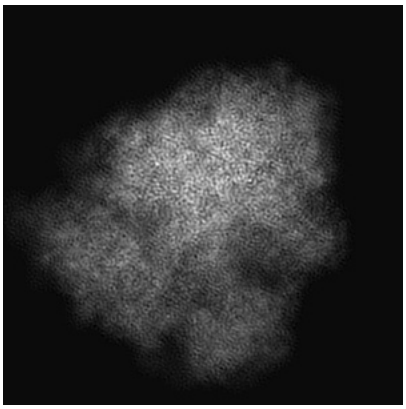
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-53473. These allow visual inspection of the internal detail of the map and identification of artifacts.

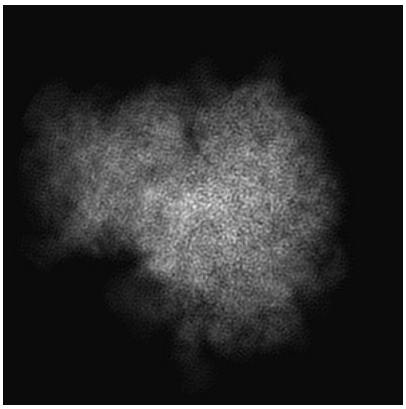
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

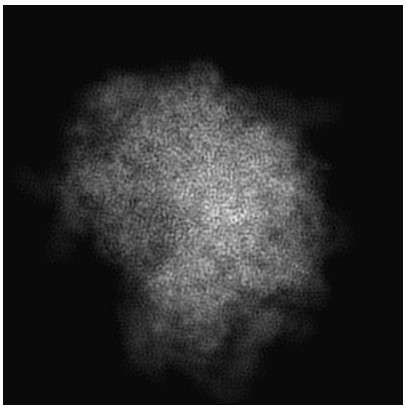
6.1.1 Primary map



X

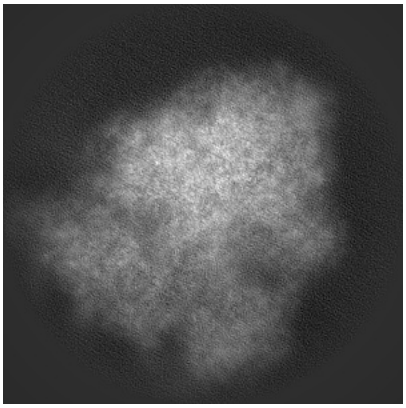


Y

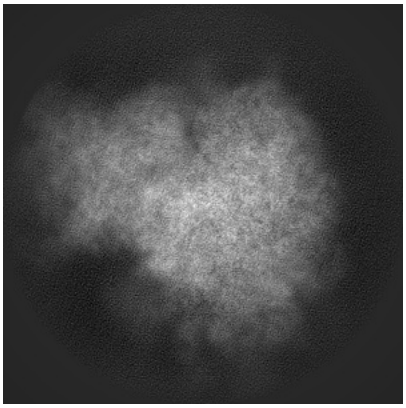


Z

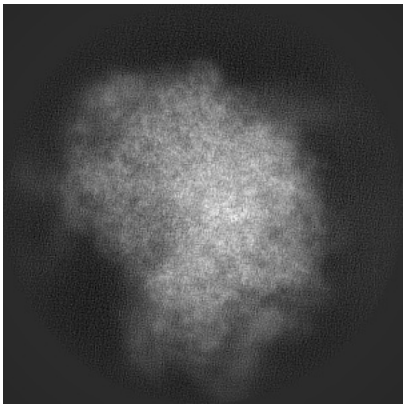
6.1.2 Raw map



X



Y

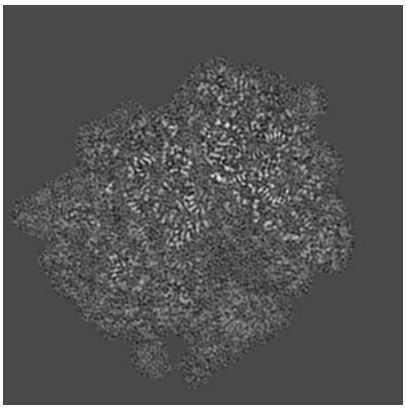


Z

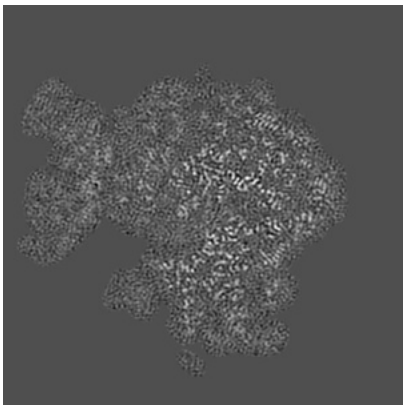
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

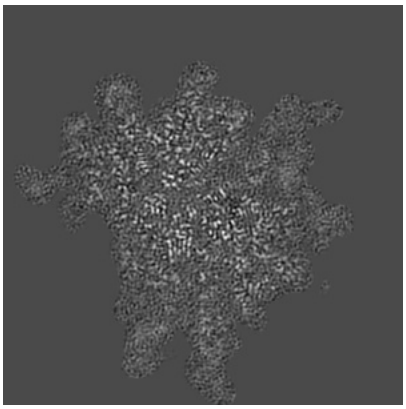
6.2.1 Primary map



X Index: 165

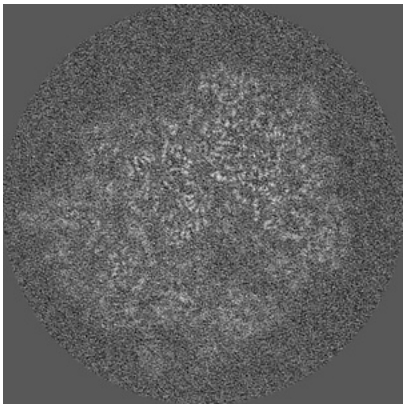


Y Index: 165

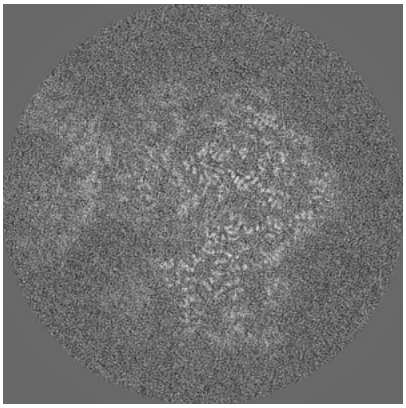


Z Index: 165

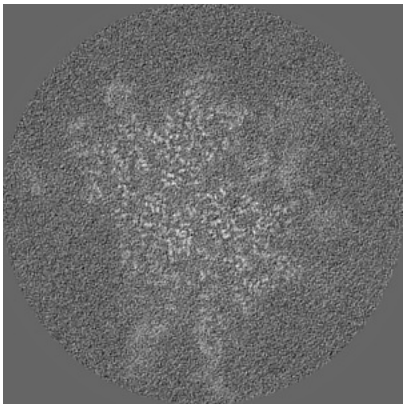
6.2.2 Raw map



X Index: 165



Y Index: 165

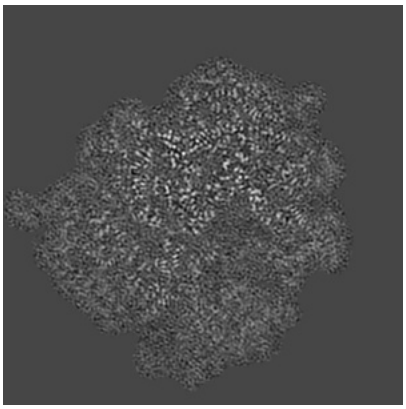


Z Index: 165

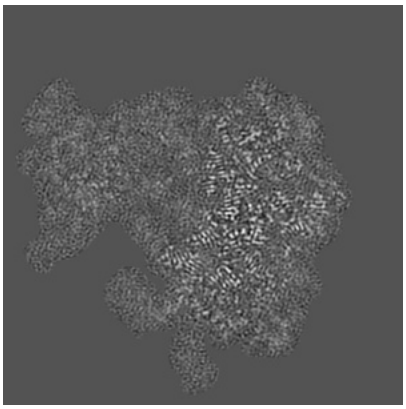
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

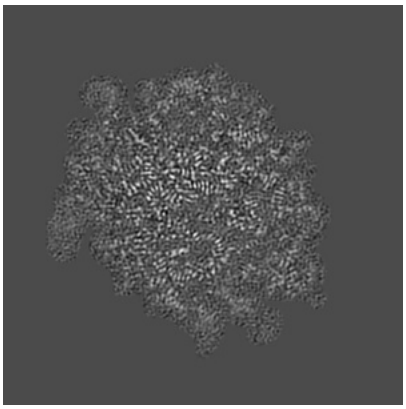
6.3.1 Primary map



X Index: 173

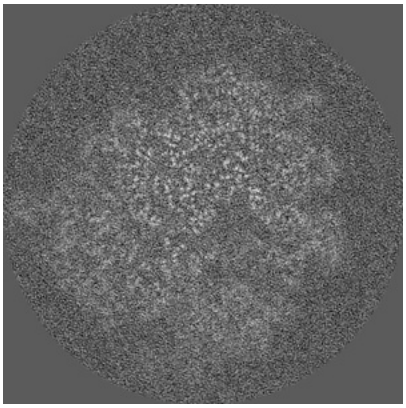


Y Index: 181

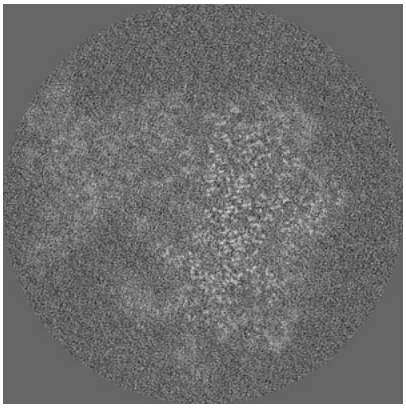


Z Index: 185

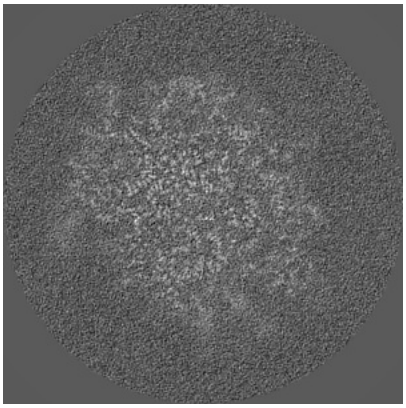
6.3.2 Raw map



X Index: 173



Y Index: 180

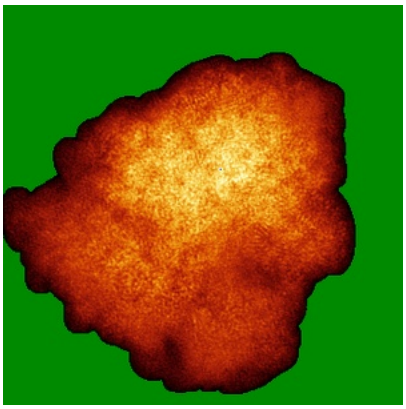


Z Index: 184

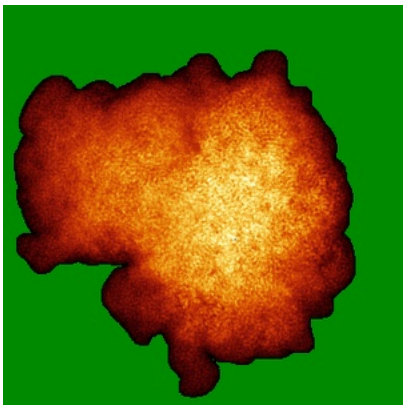
The images above show the largest variance slices of the map in three orthogonal directions.

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

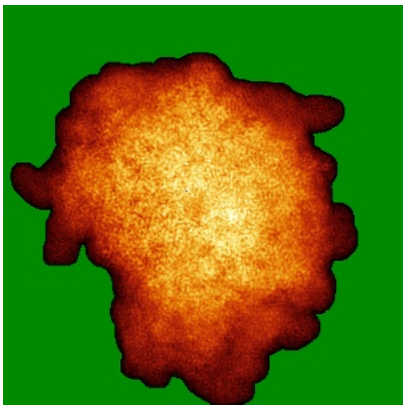
6.4.1 Primary map



X

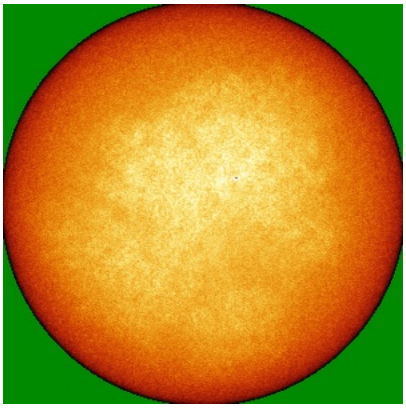


Y

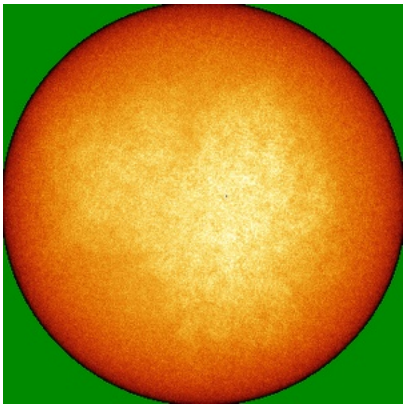


Z

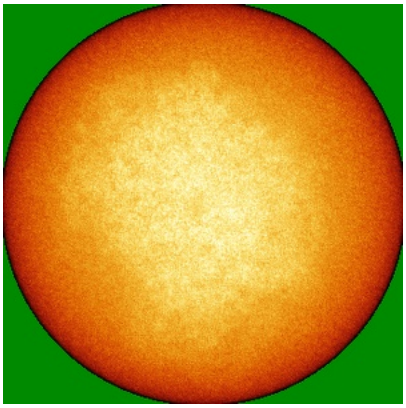
6.4.2 Raw map



X



Y

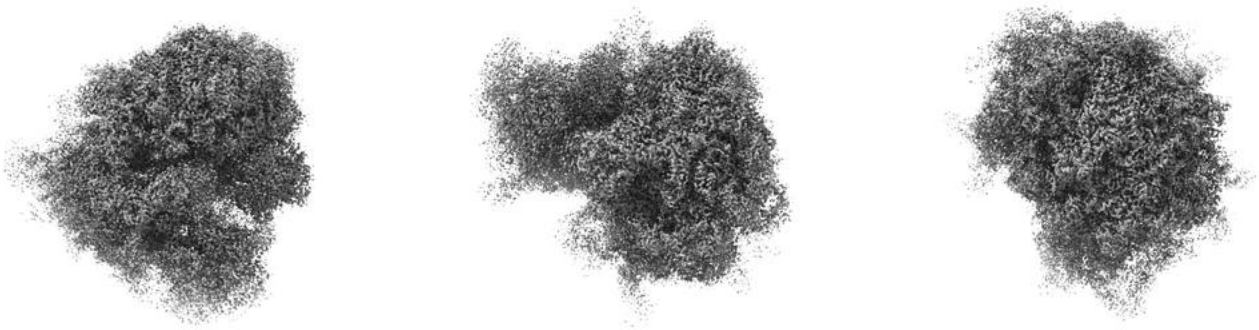


Z

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

6.5 Orthogonal surface views (i)

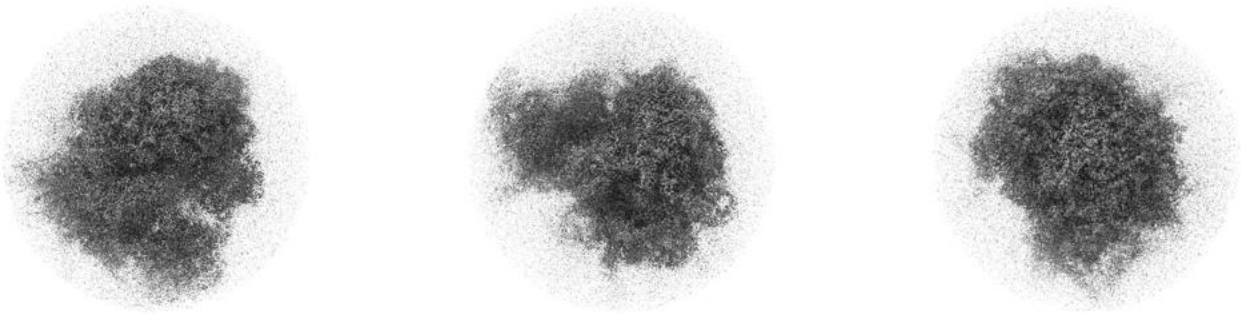
6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.037. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X Y Z

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

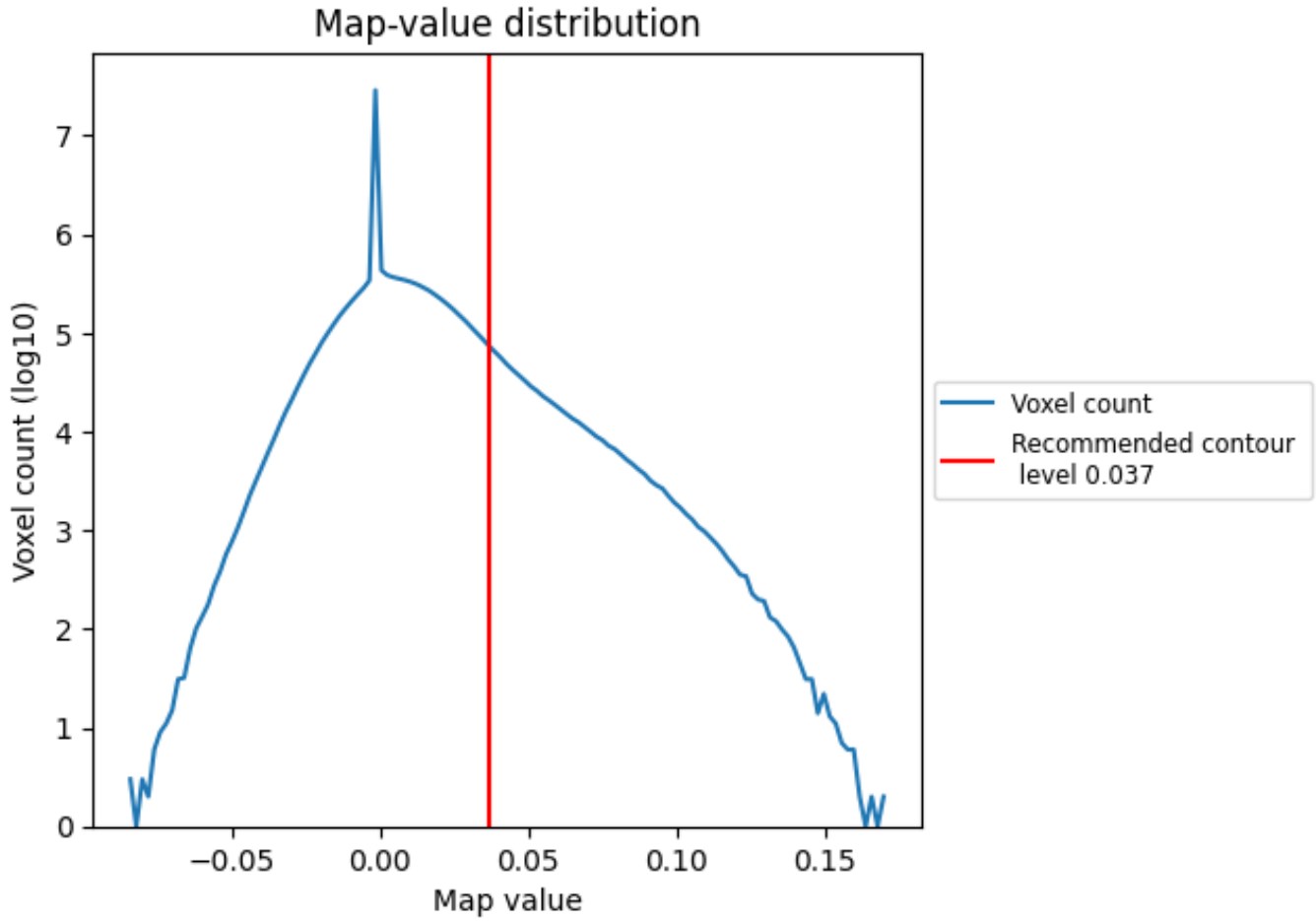
6.6 Mask visualisation (i)

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

7 Map analysis

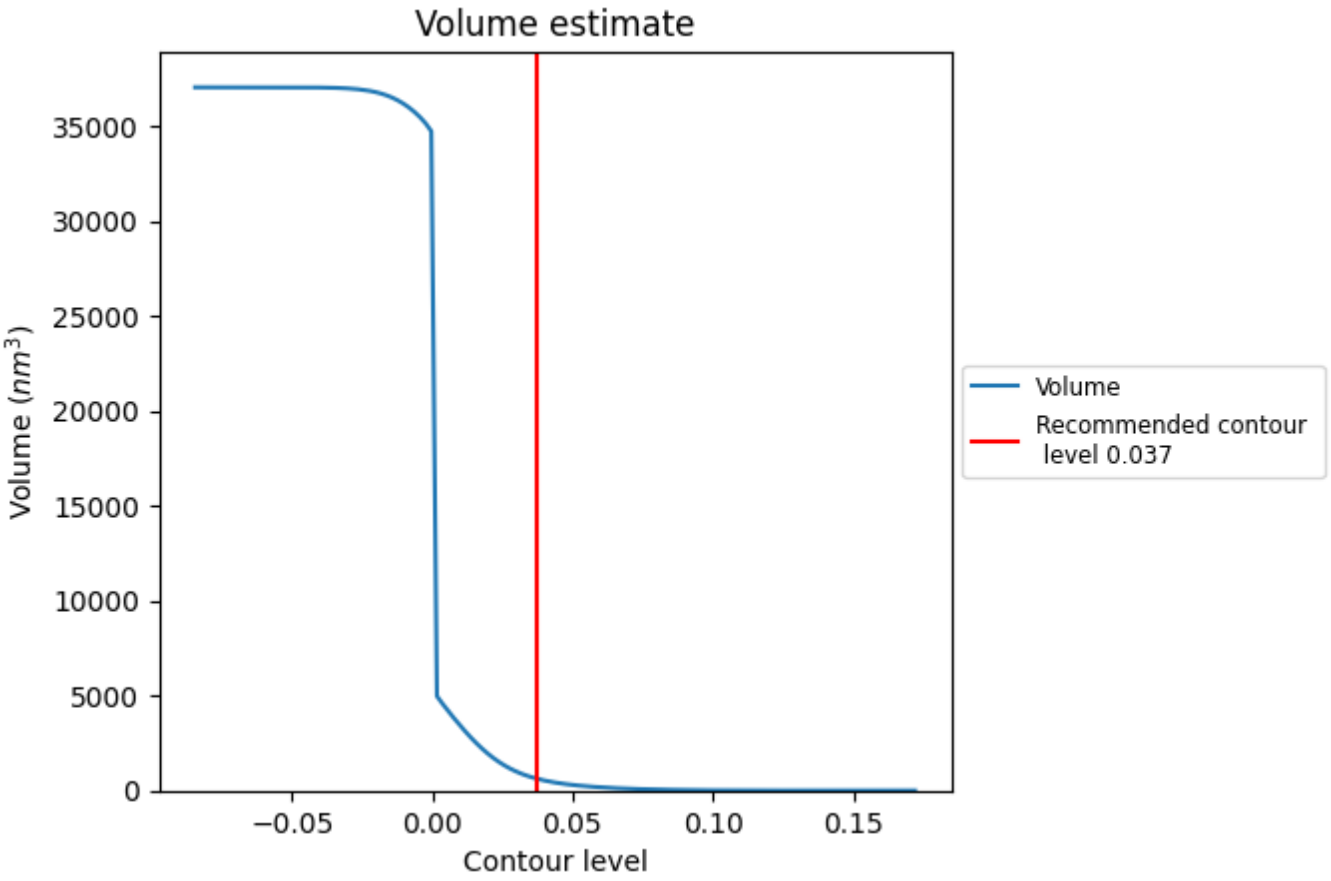
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

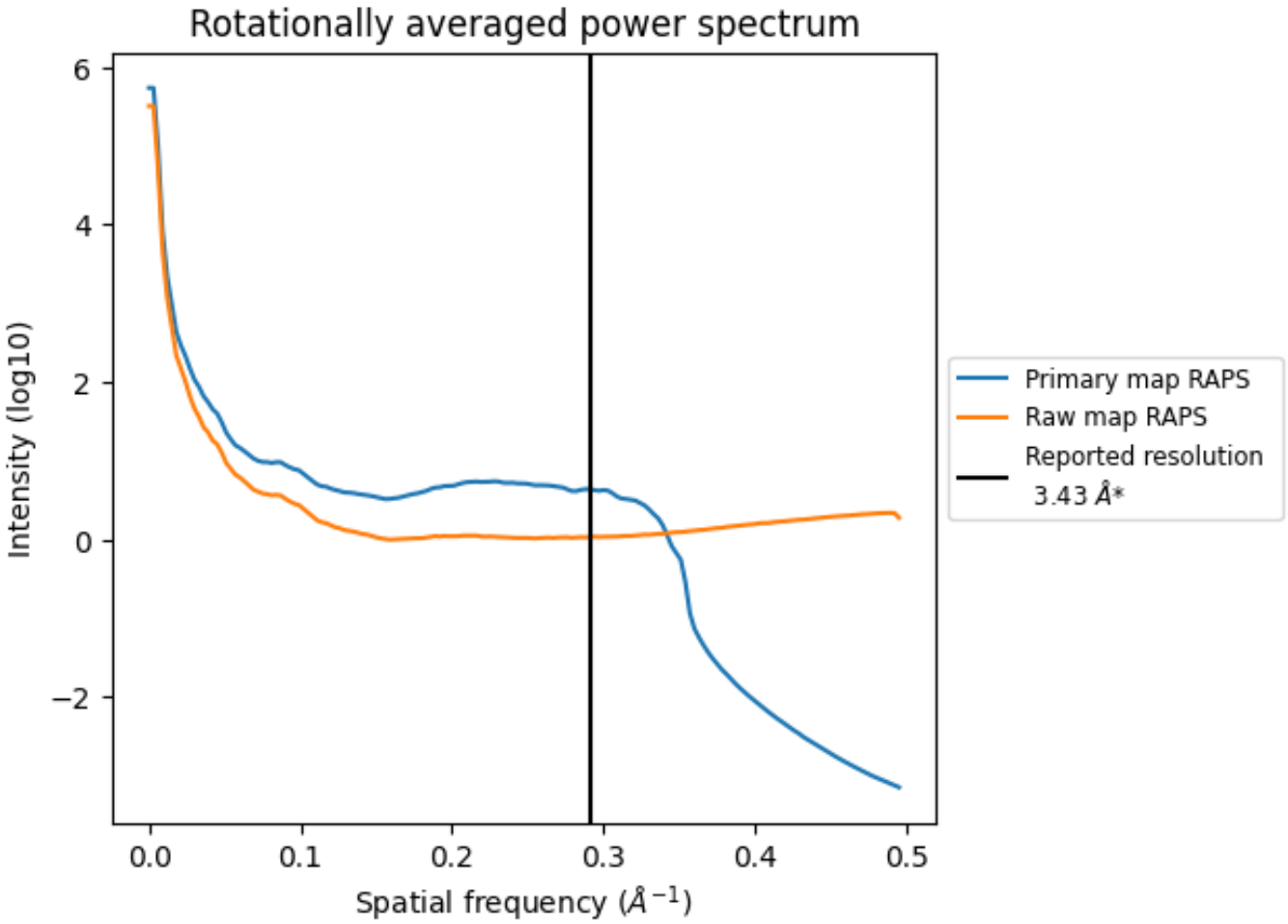
7.2 Volume estimate



The volume at the recommended contour level is 639 nm^3; this corresponds to an approximate mass of 577 kDa.

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

7.3 Rotationally averaged power spectrum (i)

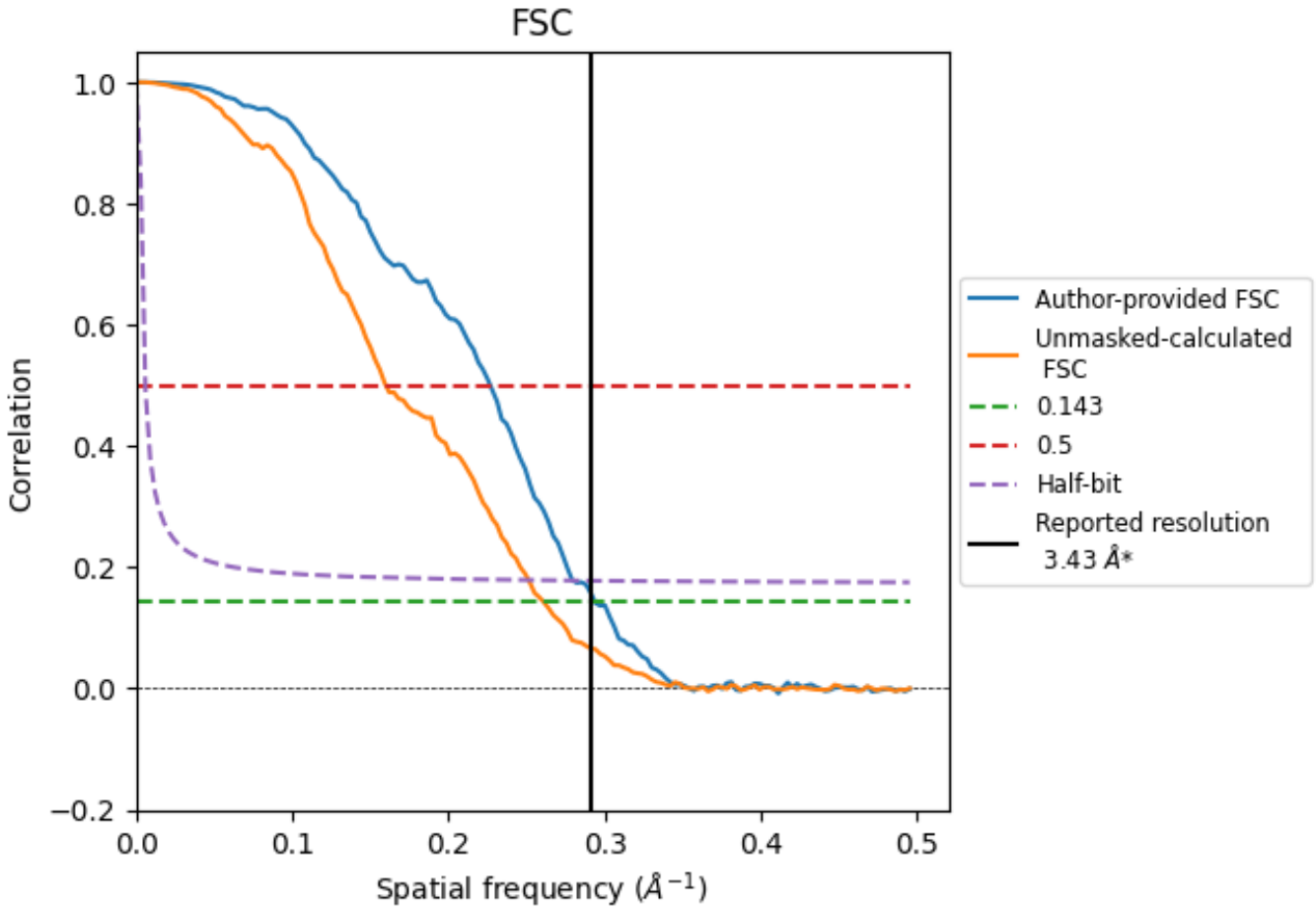


*Reported resolution corresponds to spatial frequency of 0.292 $Å^{-1}$

8 Fourier-Shell correlation

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

8.1 FSC



*Reported resolution corresponds to spatial frequency of 0.292 Å^{-1}

8.2 Resolution estimates (i)

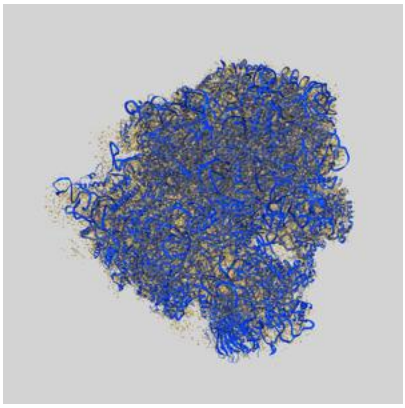
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.43	-	-
Author-provided FSC curve	3.41	4.41	3.57
Unmasked-calculated*	3.84	6.26	3.98

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.84 differs from the reported value 3.43 by more than 10 %

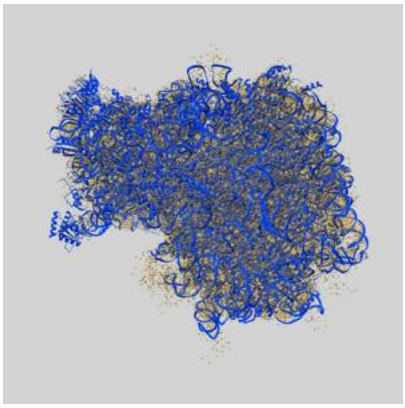
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-53473 and PDB model 9QZP. Per-residue inclusion information can be found in section 3 on page 21.

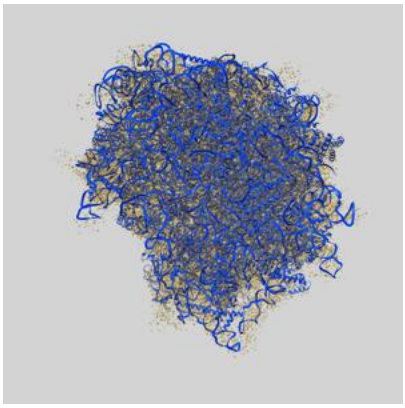
9.1 Map-model overlay



X



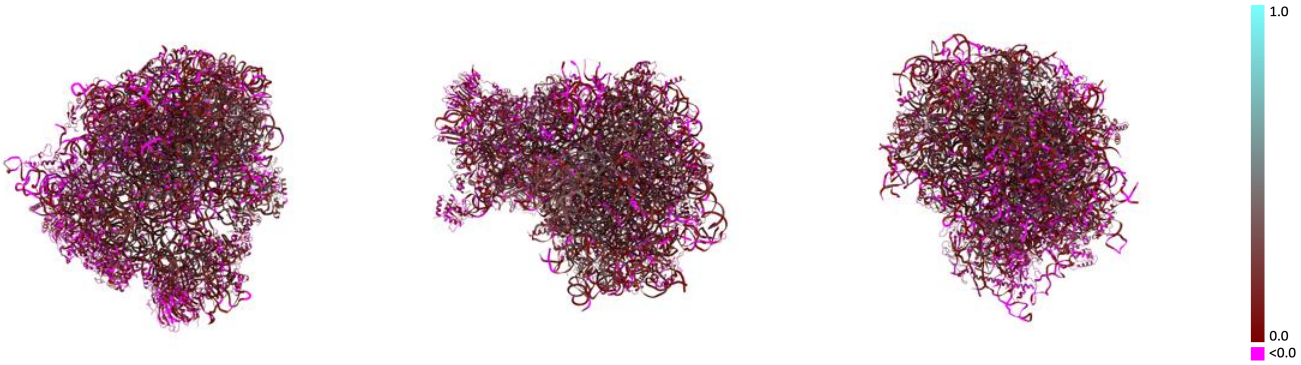
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.037 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

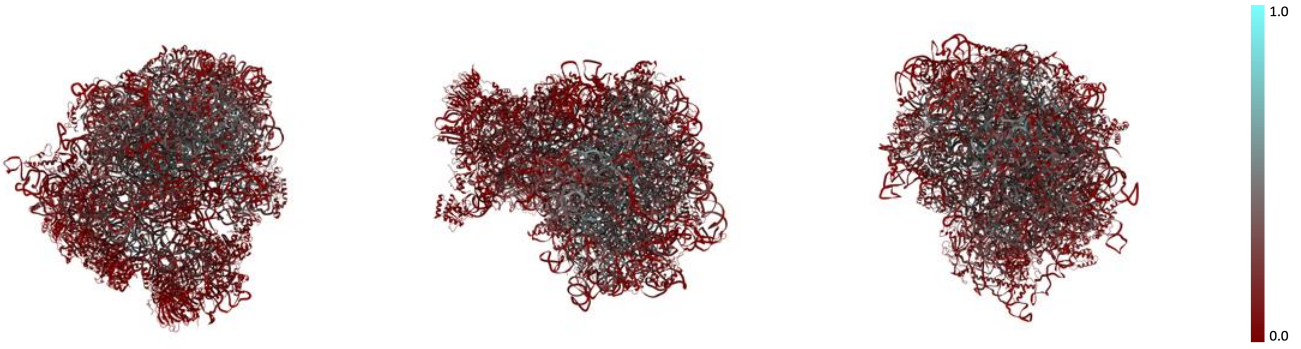
9.2 Q-score mapped to coordinate model (i)



X Y Z

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

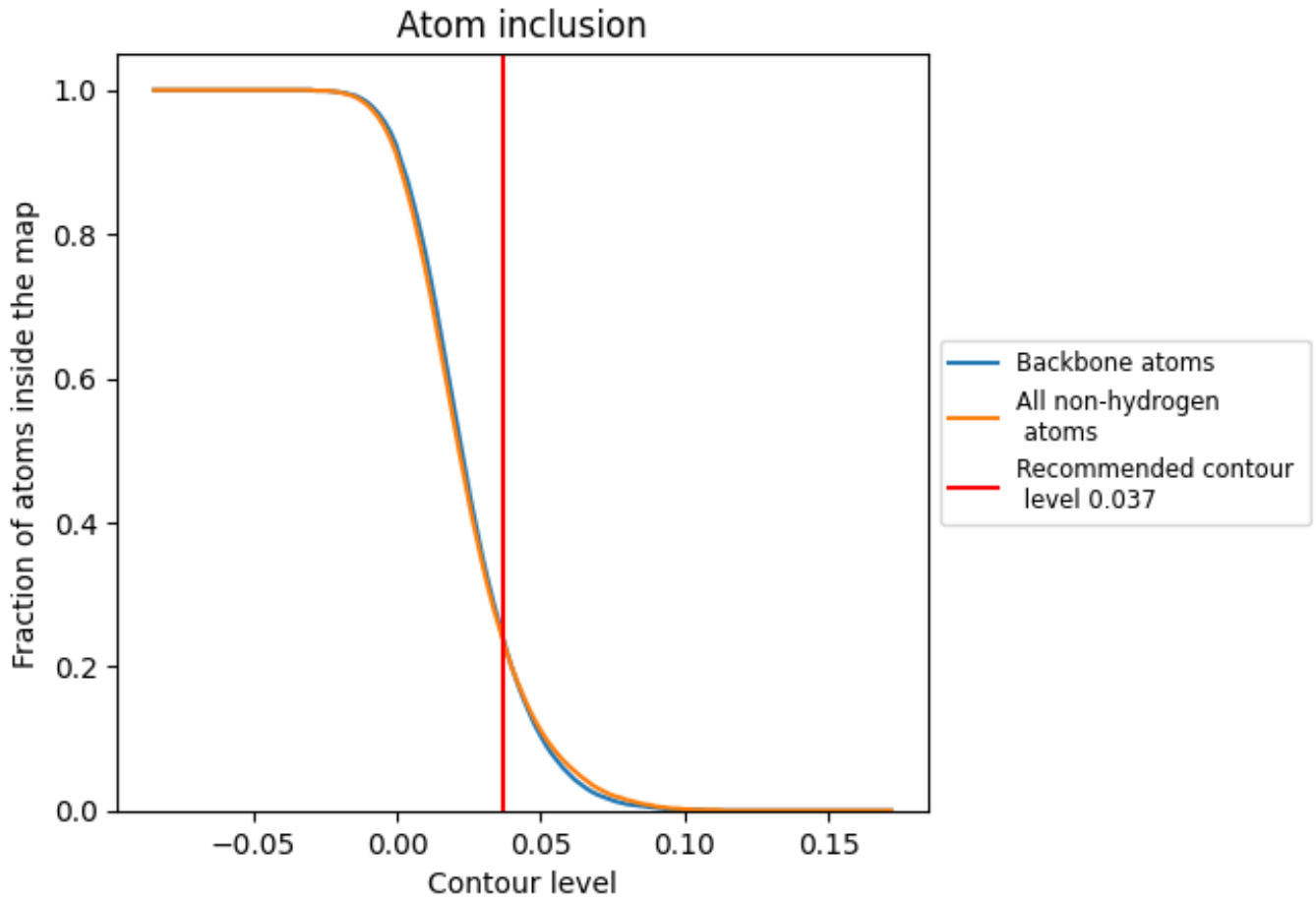
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.037).

9.4 Atom inclusion (i)



At the recommended contour level, 24% of all backbone atoms, 24% 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 (0.037) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.2350	0.1470
A1	0.3230	0.1960
A2	0.3130	0.1510
A3	0.0660	0.1040
B1	0.1860	0.1490
B2	0.4370	0.3050
B3	0.0890	0.1280
Bv	0.0710	0.0640
Bx	0.1400	0.0730
By	0.0450	0.0530
Bz	0.0420	0.0610
C1	0.2260	0.2210
C2	0.3270	0.1570
C3	0.0470	0.0990
D1	0.2650	0.2210
D2	0.2960	0.1690
D3	0.0420	0.0790
E1	0.1430	0.1800
E2	0.2410	0.1500
E3	0.2030	0.1720
F1	0.2360	0.1680
F2	0.2640	0.1720
F3	0.1650	0.1570
G1	0.2250	0.1890
G2	0.2120	0.2410
G3	0.0620	0.1030
H1	0.3710	0.1970
H2	0.1430	0.1250
H3	0.0850	0.1010
I2	0.2800	0.1790
I3	0.0140	0.0420
J2	0.2600	0.1320
J3	0.0930	0.0780
K2	0.3100	0.2250
K3	0.0720	0.0920

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Chain	Atom inclusion	Q-score
L1	0.0050	0.0160
L2	0.2070	0.0900
L3	0.0620	0.0500
M2	0.2930	0.2410
M3	0.0040	0.0240
N2	0.3030	0.2370
N3	0.1190	0.1440
O2	0.1000	0.0940
O3	0.0830	0.1500
P2	0.2640	0.1460
P3	0.1100	0.1030
Q2	0.2020	0.0720
Q3	0.0540	0.0820
R2	0.2030	0.1180
R3	0.0490	0.1140
S2	0.2220	0.1350
S3	0.0550	0.0920
T2	0.2140	0.1970
T3	0.0690	0.1070
U2	0.3270	0.2070
U3	0.0070	0.0230
V2	0.1920	0.1670
W2	0.2490	0.2470
X2	0.2610	0.1740
Y2	0.3140	0.2150
Z2	0.2910	0.1880
a2	0.2640	0.1600
b2	0.2070	0.1220
c2	0.2140	0.1870
d2	0.3040	0.1260
e2	0.1150	0.1340
f2	0.3030	0.1180
g2	0.2690	0.1930
h2	0.2440	0.1220
i2	0.2880	0.2260
j2	0.2430	0.1410
k2	0.2190	0.1470
m2	0.2370	0.1580
n2	0.0220	0.0420
o2	0.0430	0.0870
p2	0.0920	0.1540
q2	0.0520	0.1040

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Chain	Atom inclusion	Q-score
r2	0.0660	0.0390
s2	0.0680	0.1190
t2	0.0250	0.0500
u2	0.0970	0.0450
v2	0.0180	0.1010
w2	0.1120	0.0770
x2	0.0620	0.1350
y2	0.0720	0.1290
z2	0.0480	0.1180